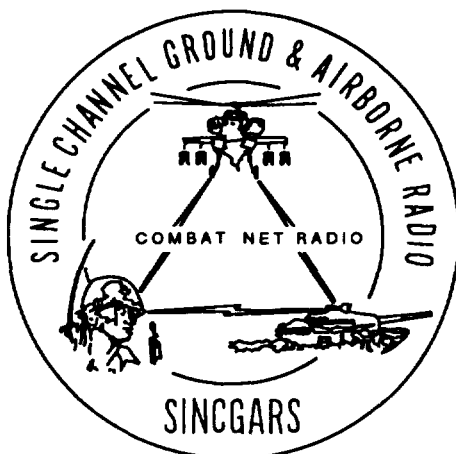


**TECHNICAL MANUAL
GENERAL SUPPORT MAINTENANCE MANUAL**



RADIO SETS

- AN/PRC-119 (NSN 5820-01-151-9915) (EIC:L2A)
- AN/PRC-119A (NSN 5820-01-267-9482) (EIC:L2Q)
- AN/VRC-87 (NSN 5820-01-151-9916) (EIC:L2T)
- AN/VRC-87A (NSN 5820-01-267-9480) (EIC:L22)
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- AN/VRC-92 (NSN 5820-01-151-9921) (EIC:L2Y)
- AN/VRC-92A (NSN 5820-01-267-9477) (EIC:L27)

[UNITS TESTED WITH AN/USM-410(V)2 AND AN/USM-465A]

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No. 4

General Support Maintenance Manual

RADIO SETS

**AN/PRC-119 (NSN 5820-01-151-9915)(EIC:L2A) AN/PRC-119A (NSN 5820-01-267-9482)(EIC:L2Q)
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1-11 and 1-12	1-11/(1-12 blank)
3-85 and 3-86	3-85 and 3-86
3-86.1 and 3-86.2	3-86.1/(3-86.2 blank)
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I-1 and I-2
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General Support Maintenance Manual

RADIO SETS

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AN/VRC-87 (NSN 5820-01-151-9916) (EIC:L2T)	AN/VRC-87A (NSN 5820-01-267-9480) (EIC:L22)
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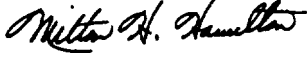
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RADIO SETS

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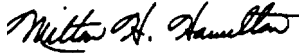
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5 SAFETY STEPS TO FOLLOW IF SOMEONE IS THE VICTIM OF ELECTRICAL SHOCK

1 DO NOT TRY TO PULL OR GRAB THE INDIVIDUAL

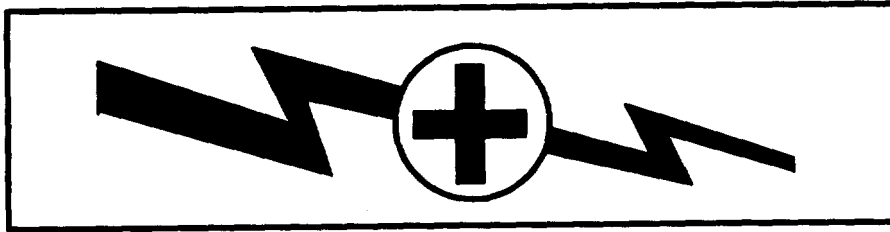
2 IF POSSIBLE, TURN OFF THE ELECTRICAL POWER

3 IF YOU CANNOT TURN OFF THE ELECTRICAL POWER PULL, PUSH, OR LIFT THE PERSON TO SAFETY USING A DRY WOODEN POLE OR A DRY ROPE OR SOME OTHER INSULATION MATERIAL

4 SEND FOR HELP AS SOON AS POSSIBLE

5 AFTER THE INJURED PERSON IS FREE OF CONTACT WITH THE SOURCE OF ELECTRICAL SHOCK, MOVE THE PERSON A SHORT DISTANCE AWAY AND IMMEDIATELY START ARTIFICIAL RESUSCITATION.

WARNING



HIGH VOLTAGE

is used in the operation of this equipment

DEATH ON CONTACT

may result if personnel fail to observe safety precautions.

Never work on electronic equipment unless there is another person nearby who is familiar with the operation and hazards of the equipment and who is competent in administering first aid. When the technicians are aided by operators, they must be warned about dangerous areas.

When possible, the power supply to the equipment must be shut off before beginning work on the equipment. Take particular care to ground every capacitor likely to hold a dangerous potential. When working inside the equipment, after the power has been turned off, always ground every part before touching it.

Be careful not to contact high-voltage connections or 115 volt ac input connections when installing or operating this equipment.

Whenever the nature of the operation permits, keep one hand away from the equipment to reduce the hazard of current flowing through the body.

Do not be misled by the term "low voltage." Potentials as low as 50 volts may cause death under adverse conditions.

For Artificial Respiration, refer to FM 21-11.



CAUTION



**THIS EQUIPMENT CONTAINS PARTS
SENSITIVE TO DAMAGE
BY ELECTROSTATIC DISCHARGE (ESD).**

**USE PRECAUTIONARY PROCEDURES
WHEN TOUCHING, REMOVING, OR INSERTING
PRINTED CIRCUIT BOARDS.**

GENERAL HANDLING PROCEDURES FOR ESD ITEMS

USE WRIST GROUND STRAPS OR
MANUAL GROUNDING PROCEDURES.
KEEP ESD ITEMS IN PROTECTIVE
COVERING WHEN NOT IN USE.
GROUND ALL ELECTRICAL TOOLS
AND TEST EQUIPMENT.

PERIODICALLY CHECK CONTINUITY AND
RESISTANCE OF GROUNDING SYSTEM.
USE ONLY METALIZED SOLDER SUCKERS.
HANDLE ESD ITEMS ONLY IN PROTECTED
AREAS.

MANUAL GROUNDING PROCEDURE

MAKE CERTAIN EQUIPMENT IS POWERED
DOWN.
TOUCH GROUND PRIOR TO REMOVING
ESD ITEMS.

TOUCH PACKAGE OF REPLACEMENT ESD
ITEM TO GROUND BEFORE OPENING.
TOUCH GROUND PRIOR TO INSERTING
REPLACEMENT ESD ITEMS.



ESD PROTECTIVE PACKAGING AND LABELING



INTIMATE COVERING OF ANTISTATIC MATERIAL WITH AN OUTER WRAP OF EITHER TYPE 1
ALUMINIZED MATERIAL OR CONDUCTIVE PLASTIC FILM

OR

HYBRID LAMINATED BAGS HAVING AN INTERIOR OF ANTISTATIC MATERIAL WITH AN OUTER
LAYER OF METALIZED MATERIAL.

LABEL WITH SENSITIVE ELECTRONIC SYMBOL AND CAUTION, AS ABOVE.

CAUTION

Devices such as CMOS, NMOS, MNOS, VMOS, HMOS, thin-film resistors PMOS, and MOSFET used in many equipments can be damaged by static voltages present in most repair facilities. Most of the components contain internal gate protection circuits that are partially effective, but sound maintenance practice and the cost of equipment failure in time and money dictate careful handling of all electrostatic sensitive components.

The following precautions should be observed when handling all electrostatic sensitive components and units containing such components.

CAUTION

Failure to observe all of these precautions can cause permanent damage to the electrostatic sensitive device. This damage can cause the device to fail immediately or at a later date when exposed to an adverse environment.

STEP

- 1 Turn off and/or disconnect all power and signal sources and loads used with the unit.

STEP

- 2 Place the unit on grounded conductive work surfaces.

STEP

- 3 Ground the repair operator using a conductive wrist strap or other device using a 1 M Ω series resistor to protect the operator.

STEP

- 4 Ground any tools (including soldering equipment) that will contact the unit. Contact with the operator's hand provides a sufficient ground for tools that are otherwise electrically isolated.

STEP

- 5 All electrostatic sensitive replacement components are shipped in conductive foam or tubes and must be stored in the original shipping container until installed.

STEP

- 6 When these devices and assemblies are removed from the unit, they should be placed on the conductive work surface or in conductive containers.

STEP

- 7 When not being worked on, wrap disconnected circuit boards in aluminum foil or in plastic bags that have been coated or impregnated with a conductive material.

STEP

- 8 Do not handle these devices unnecessarily or remove from their packages until actually used or tested,

STEP

- 9 Do not mount static pads on conductive surfaces. No test equipment is to be placed on static pads. No equipment resting on a static pad is to be plugged into an electrical outlet.

General Support Maintenance Manual

FOR RADIO SETS

AN/PRC-119 (NSN 5820-01-151-9915) (EIC:L2A) AN/PRC-119A (NSN 5820-01-267-9482) (EIC:L2Q)
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HOW TO USE THIS MANUAL

This manual provides instructions for testing and repair of modules and circuit card assemblies used in the radio systems listed on the front cover. The information presented in this manual will tell you:

- What accessories you need to perform a test,
- What steps you must take to run a test program on the automatic test equipment, and
- If there are any special instructions for repairing a unit.

The manual is designed to help you find information quickly and easily. You should familiarize yourself with the manual content before beginning the maintenance task:

- Chapter 1 contains general information, technical data, and a reference guide for the units to be tested with automatic test equipment. The reference guide lists the units by part number and will assist you in locating information in the manual regarding a specific unit.
- Chapter 2 contains the procedures for testing units with the AN/USM-410(V)2 that are primarily analog.
- Chapter 3 contains the procedures for testing digital units with the AN/USM-465A
- Chapter 4 contains special instructions for repairing faulty units.
- Chapter 5 contains manual troubleshooting maintenance procedures for the Mounting Base MT-6353/VRC (A3014094-1).
- Chapter 6 contains special alignment instructions for alignment devices.

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Schematic diagrams, a list of references, and an expendable/durable supplies and material list are located in the back of the manual.

NOTES:

If your AN/USM-410(V)2 is in a van AN/MSM-105(V) configuration, you must connect the HP-IB interconnect cable (PN 10833B) to connector A3J8 of control station A3 prior to starting any program using the Network Analyzer. Refer to TM 11-6625-2773-30-1.

Some programs use the RF Station A5. Ensure the RF Station power is set to ON and cables W9 and W10 are installed. Do not remove these cables during the ATE survey.

If ID-005C fails survey test during any procedure covered within this manual, return ID-005C to depot for repair.

CHAPTER 1

INTRODUCTION

Section 1. GENERAL INFORMATION

1-1. Scope.

This manual provides general support maintenance instructions for automatic testing and repair of the units used in the radio systems listed on the front cover.

1-2. Consolidated Index of Army Publications and Blank Forms.

Refer to the latest issue of DA Pam 25-30 to determine whether there are new editions, changes, or additional publications pertaining to this equipment.

1-3. Maintenance Forms, Records, and Reports.

a. Reports of Maintenance and Unsatisfactory Equipment. Department of Army forms and procedures used for equipment maintenance will be those prescribed by DA Pam 738-750, as contained in Maintenance Management Update.

b. Reports of Packaging and Handling Deficiencies. Fill out and forward SF 364 (Report of Discrepancy (ROD)) as prescribed in AR 735-11-2/DLAR 4140.55/SECNAVINST 4355.18/AFR 400-54/MCO 4430.3J.

c. Discrepancy in Transportation Deficiency Report (TDR) (SF 361). Fill out and forward Transportation Deficiency Report (TDR) (SF361) as prescribed in AR 55-38/NAVSUPINST 4610.33C/AFR 75-18/MCO P4610.19D/DLAR 4500.15.

1-4. Reporting Equipment Improvement Recommendations (EIR).

If your equipment needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. Put it on an SF 368 (Product Quality Deficiency Report). Mail it to: Commander, US Army Communications-Electronics Command and Fort Monmouth, ATTN: AMSEL-LC-ED-TC, Fort Monmouth, New Jersey 07703-5023. We'll send you a reply.

1-5. Destruction of Army Materiel to Prevent Enemy Use.

Destruction of Army electronics materiel to prevent enemy use shall be in accordance with TM 750-244-2.

1-6. Preparation for Administrative Storage or Shipment.

Equipment issued to and used by Army activities will have preventive maintenance performed in accordance with the PMCS charts prior to administrative storage. When equipment is removed from administrative storage, PMCS should be performed to ensure operational readiness.

1-7. List of Abbreviations.

The following abbreviations are used in this manual:

Abbreviation	Definition
ADPTR	Adapter
AMPL	Amplifier
ANLG	Analog
ASSY	Assembly
ATE	Automatic test equipment
AUD	Audio
CCA	Circuit card assembly
CHAS	Chassis
CPIN	Computer program identification number
DCT	Digital card tester
DEMODO	Demodulator
DIU	Dedicated interface unit
ESD	Electrostatic discharge
ELEK	Electronic
EXT	External
HCI	Hardness critical item
HCP	Hardness critical process
HTSK	Heatsink
ICD	Interface connection device
ID	Identification
IF	Intermediate frequency
IMPD	Impedance
INTFC	Interface
LL	Lower level
MDL	Module
MWO	Modification work order
NTWK	Network
PIU	Programmable interface unit
PN	Part number
PWB	Printed wiring board
PWR	Power
RF	Radio frequency
RT	Receiver-transmitter
SERNO	Serial number
SPLY	supply
SUBASSY	Subassembly
SYNC	Synchronize
TP	Test point
UL	Upper level
UUT	Unit under test
VDT	Video display terminal
W	Watt

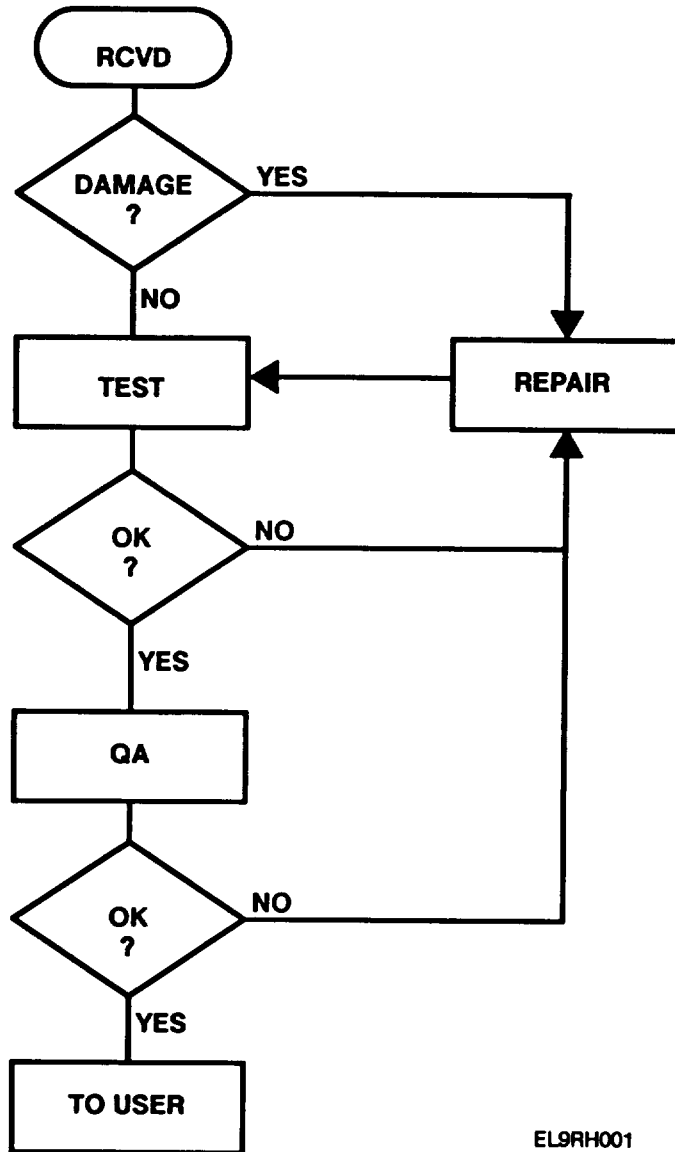
1-8. Nomenclature Cross-Reference List.

The following are nomenclature cross-references used in this manual and in the associated software test programs:

Common Name	Nomenclature	
Test Station	Test Station, Electronic Equipment	AN/USM-410(V)2
Digital Card Tester	Test Set, Digital Card Tester,	AN/USM-465A
Test Adapter A	Adapter, Test-A	J-4823/G
Test Adapter B	Adapter, Test-B	J-4824/G
Test Adapter C	Adapter, Test-C	J-4825/G
Test Adapter D	Adapter, Test-D	J-4826/G
Test Adapter E	Adapter, Test-E	J-4827/G
Test Adapter F	Adapter, Test-F	J-4828/G
Test Adapter G	Adapter, Test-G	J-4830/G
Test Adapter H	Adapter, Test-H	J-4829/G
Test Adapter I, J, K	Adapter, Test-I, J, K	J-4909/G
Test Adapter A6	Adapter, Test-A6	J-4998/G
Test Adapter A7	Adapter, Test-A7	J-4999/G
Test Adapter A8	Adapter, Test-A8	J-6000/G
Test Adapter A9	Adapter, Test-A9	J-6001/G
Test Adapter A10	Adapter, Test-A10	J-6002/G
Test Adapter A11	Adapter, Test-A11	J-6090/G
Test Adapter A12	Adapter, Test-A12	J-6003/G
Test Adapter A13	Adapter, Test-A13	J-6004/G
Test Adapter A14	Adapter, Test-A14	J-6098/G
Test Adapter A16	Adapter, Test-A16	J-6097/G
ICD-A5	Interface Connect Device-A5	J-4951/G
ICD-A	Interface Connect Device-A	J-4821/G
ICD-B	Interface Connect Device-B	J-4824/G
ICD-C	Interface Connect Device-C	J-4820/G
ICD-D	Interface Connect Device-D	J-4819/G
Accessory Kit	Kit, Accessory	J-4831/G
Load Card A	Load Card-A	J-4832/G
Load Card B	Load Card-B	J-4834/G
Load Card C	Load Card-C	J-4833/G

1-9. Support Facility Workflow.

The general support maintenance function is to inspect and test units to isolate defects and repair UUT'S by replacement of discrete components (fig. 1-1). After repair, the UUT'S are tested, inspected and returned to the user.



EL9RH001

Figure 1-1. General Support Workflow Diagram.

Section II. EQUIPMENT DESCRIPTION AND DATA

1-10. Technical Data.

This table provides technical data and dimensions for each UUT.

UNIT UNDER TEST	PART NUMBER	WIDTH	HEIGHT	LENGTH	WEIGHT
RF Amplifier Case	A3013379-1	1.75 in	5.25 in	7.25 in	3.8 lb
(NSN 5895-01-179-2681)	A3018432-1	4.45 cm	13.32 cm	18.41 cm	1.72 kg
(NSN 5895-01-350-7133)	A3142064-1				
(NSN xxxx-xx-xxx-xxxx)	A3168117-1				
CCA-Analog	A3013243-1	NOT FIELDDED			
(NSN 5999-01-169-9836)	A3014176-1	4.05 in	2.26 in	0.49 in	0.10 lb
(NSN 5999-01-298-8068)	A3018025-1	10.29 cm	5.74 cm	1.24 cm	0.05 kg
CCA-One-Watt Audio Amplifier	A3014002-1	NOT FIELDDED			
(NSN 5999-01-275-5524)	A3014195-1	6.72 in	6.07 in	0.88 in	0.63 lb
		17.07 cm	15.42 cm	2.24 cm	0.29 kg
CCA-Power Supply	A3014158-1	4.05 in	2.26 in	0.80 in	.63 lb
(NSN 5895-01-188-3350)		10.29 cm	5.74 cm	2.03 cm	0.29 kg
CCA-Two-Wire Interface	A3014140-1	4.81 in	2.75 in	0.33 in	0.15 lb
(NSN 5820-01-179-2822)	A3018726-1	12.22 cm	8.99 cm	0.64 cm	0.07 kg
(NSN 5998-01-316-8721)	A3142074-1				
	A3147853-1				
Electrical Equipment	A3013349-1	14.70 in	8.50 in	15.20 in	16.00 lb
Amplifier-Adapter Chassis	A3018430-1	34.34 cm	21.59 cm	38.60 cm	7.26 kg
(NSN 5820-01-275-5489)	A3132654-1				
(NSN 5820-01-323-6265)					
RF Amplifier Electrical-Electronic	A3013374-1	1.25 in	5.25 in	12.10 in	3.00 lb
Component Heatsink		3.18 cm	13.34 cm	30.73 cm	1.36 lg
(NSN 5899-01-179-2796)					
IF/Demodulator	A3013360-1	0.68 in	2.56 in	4.75 in	0.36 lb
(NSN 5895-01-179-2836)	A3018758-1	1.27 cm	6.50 cm	12.07 cm	0.16 kg
(NSN 5895-01-307-9506)	A3142081-1				
(NSN 5895-01-318-7991)	A3142186-1				
Power Supply Module Assembly	A3013338-1	1.32 in	2.75 in	3.72 in	1.19 lb
(NSN 6130-01-179-2736)		3.35 cm	7.04 cm	9.96 cm	0.59 kg
Amplifier-Adapter Power Supply	A3013369-1	8.64 in	6.63 in	3.25 in	6.60 lb
(NSN 6130-01-179-2737)	A3018415-1	22.45 cm	16.64 cm	8.26 cm	2.99 kg
	A3142176-1				
Impedance Matching Network	A3018241-1	0.88 in	3.75 in	2.81 in	0.19 lb
(NSN 5915-01-179-2607)		3.35 cm	7.04 cm	7.21 cm	0.09 kg
Synthesizer	A3018235-1	0.94 in	2.69 in	4.50 in	0.64 lb
(NSN 5820-01-179-2608)		2.39 cm	6.83 cm	11.43 cm	0.29 kg
CCA-Audio Data I/O	A3013204-1	4.52 in	2.77 in	0.40 in	0.16 lb
(NSN 5820-01-179-2825)	A3014136-1	11.48 cm	7.04 cm	1.04 cm	0.07 kg
CCA-Audio Power Supply	A3013177-1	4.52 in	2.77 in	0.50 in	0.17 lb
(NSN 5820-01-202-8810)	A3014134-1	11.48 cm	7.04 cm	1.27 cm	0.08 kg

1-10. Technical Data (Continued).

UNIT UNDER TEST	PART NUMBER	WIDTH	HEIGHT	LENGTH	WEIGHT
Exciter/Power Amplifier (NSN 5620-01-188-8818)	A3018124-1	4.08 in 10.36 cm	2.81 in 7.14 cm	1.48 in 3.76 cm	1.28 lb 0.58 kg
CCA-Switching (NSN 5820-01-179-2823)	A3014383-1	4.80 in 12.19 cm	2.76 in 6.96 cm	0.43 in 1.09 cm	0.17 lb 0.08 kg
Tuner/Mixer (NSN 5820-01-314-2772)	A3013361-1	4.81 in	2.69 in	0.63 in	0.34 lb
(NSN 5820-01-188-8817)	A3142048-1	12.22 cm	6.83 cm	2,36 cm	0.15 kg
	A3142127-1				
CCA-Data Rate Adapter (NSN 5999-01-296-5548)	A3014168-1	2.25 in	2.75 in	0.37 in	0.17 lb
	A3019045-1	5.72 cm	6.99 cm	0.94 cm	0.08 kg
Receiver-Transmitter Subassembly Chassis (NSN 5820-01-188-8867)	A3013364-1	9.38 in	3.38 in	9.90 in	6.25 lb
	A3132855-1	23.83 cm	8.58 cm	25.15 cm	2.83 kg
CCA-Display (NSN 5999-01-275-5523)	A3014128-1	2.25 in 5.72 cm	2.75 in 6.99 cm	0.37 in 0.94 cm	.06 lb 0.03 kg
Chassis Assembly (NSN 5999-01-204-5159)	A3013550-1	9.38 in 23.83 cm	3.38 in 8.58 cm	9.38 in 23.83 cm	5.25 lb 2.38 kg
CCA-Audio Control (NSN 5820-01-179-2824)	A3014138-1	4.52 in 11.48 cm	2.77 in 7.04 cm	0.40 in 1.02 cm	0.16 lb 0.07 kg
Control-Monitor Chassis (NSN 5820-01-179-2792)	A3013377-1	4.50 in	3.18 in	4.25 in	2.20 lb
	Part of A3013347-1	11.43 cm	8.08 cm	10.80 cm	0.99 kg
Electronic Components Assembly-Control (NSN 5820-01-179-2680)	A3018077-1	4.80 in 12.19 cm	2.76 in 6.96 cm	0.73 in 1.85 cm	0.22 lb 0.10 kg
CCA-Decoder/Timer (NSN 5820-01-179-2819)	A3014178-1	4.07 in	2.26 in	0.49 in	0.09 lb
	A3018751-1	10.34 cm	5.74 cm	1.24 cm	0.04 kg
Electronic Counter-Countermeasures Control (NSN 5820-01-151-9922)	A3013353-1	4.79 in	2.58 in	0.96 in	0.43 lb
(NSN 5820-01-310-0282)	B4041568-1	12.17 cm	6.55 cm	2.44 cm	0.19 kg
CCA-Microcontroller (NSN 5820-01-179-2820)	A3013240-1	4.06 in	2.26 in	0.37 in	0.06 lb
	A3014174-1	10.31cm	5.74cm	0.94cm	0.03 kg
CCA-Remote I/O (NSN 5998-01-249-0292)	A3014142-1	2.76 in 7.01 cm	2.77 in 7.04 cm	0.39 in 0.99 cm	0.06 lb 0.03 kg
CCA-Remote I/O (NSN 5999-01-282-2854)	A3142337-1	2.76 in 7.01 cm	2.77 in 7.04 cm	0.39 in 0.99 cm	0.06 lb 0.03 kg
Electronic Components Assembly-Control (NSN 5998-01-341-9185)	A3148179-1	4.80 in 12.19 cm	2.76 in 6.96 cm	0.73 in 1.85 cm	0.22 lb 0.10 kg
RT Panel (NSN 5895-01-199-8614)	A3013370-1	9.38 in 28.83 cm	3.38 in 8.58 cm	0.49 in 1.24 cm	1.19 lb 0.59 kg

1-10. Technical Data (Continued).

UNIT UNDER TEST	PART NUMBER	WIDTH	HEIGHT	LENGTH	WEIGHT
Electronic Counter-Countermeasures Control (NSN 5820-01-282-2846)	A3019053-1	4.79 in 12.17 cm	2.58 in 6.55 cm	0.96 in 2.44 cm	0.43 lb 0.19 kg
CCA-ICOM Control (NSN 5999-01-282-2856)	A3142334-1	4.52 in	2.77 in	0.40 in	0.16 lb
(NSN 5998-01-381-9220)	A3167984-1	11.48 cm	7.04 cm	1.02 cm	0.07 kg
	A3191019-1	11.48 cm	7.04 cm	1.02 cm	0.07 kg
Electronic Components Assembly-Fill Routing (NSN 5999-01-287-7131)	A3018890-1	4.81 in 12.22 cm	2.69 in 6.83 cm	0.63 in 2.36 cm	0.34 lb 0.15 kg
CCA-Display (NSN 5998-01-350-1709)	A3142328-1	2.25 in 5.72 cm	2.75 in 6.99 cm	0.37 in 0.94 cm	.06 lb 0.03 kg
Chassis, Electrical Equipment-Receiver-Transmitter Subassembly (NSN 5895-01-344-8473)	A3148159-1	9.38 in 23.83 cm	3.38 in 8.58 cm	9.38 in 23.83 cm	5.25 lb 2.38 kg
Dual Long Range Radio Power Supply (NSN 6130-01-306-8095)	A3018302-1	8.84 in	6.63 in	3.25 in	6.60 lb
	A3147937-1	22.45 cm	16.84 cm	8.26 cm	2.99 kg
Power Supply Subassembly (NSN 6130-01-302-8521)	A3018930-1	8.84 in 22.45 cm	6.63 in 16.84 cm	3.25 in 8.26 cm	6.60 lb 2.99 kg
Power Supply Module Assembly (NSN 6130-01-325-1826)	A3019261-1	1.32 in 3.35 cm	2.75 in 7.04 cm	3.72 in 9.96 cm	1.19 lb 0.59 kg
CCA-Switching (NSN 5998-01-318-4128)	A3142316-1	4.80 in 12.19 cm	2.76 in 6.96 cm	0.43 in 1.09 cm	0.17 lb 0.08 kg
CCA-ICOM Power Supply (NSN 5999-01-282-2855)	A3014414-1	4.52 in 11.48 cm	2.77 in 7.04 cm	0.50 in 1.27 cm	0.17 lb 0.08 kg
CCA-ICOM Data I/O (NSN 5999-01-282-2853)	A3014408-1	4.52 in 11.48 cm	2.77 in 7.04 cm	0.40 in 1.04 cm	0.16 lb 0.07 kg
Vehicular-Adapter Power Supply (NSN 6130-01-357-8563)	A3148148-1	8.84 in 22.45 cm	6.63 in 16.84 cm	3.25 in 8.26 cm	6.60 lb 2.99 kg
Electrical Equipment Amplifier-Adapter Chassis (NSN 5999-01-357-8559)	A3167675-1	14.70 in	8.50 in	15.20 in	16.00 lb
	A3167675-2	34.34 cm	21.59 cm	38.60 cm	7.26 kg
Electronic Components Assembly-Fill I/O (NSN 5998-01-371-2427)	A3147916-1	4.81 in 12.22 cm	2.69 in 6.83 cm	0.40 in 1.02 cm	0.34 lb 0.15 kg
Chassis, Electrical Equipment-Control Receiver-Transmitter Subassembly (NSN 5820-01-355-7387)	A3167954-1	9.38 in 23.83 cm	3.38 in 8.58 cm	9.38 in 23.83 cm	5.25 lb 2.38 kg
ECA - Control (NSN 5895-01-319-6697)	A3167969-1	4.79 in 12.17 cm	2.58 in 6.55 cm	0.96 in 2.44 cm	0.43 lb 0.19 kg

1-11. Test Information.

This table provides test information for each UUT and to assist locating information in the manual.

<u>UUT Part No.</u>	<u>UUT Name</u>	<u>ATE Used</u>	<u>Test Program Tape CPIN File No.</u>	<u>Type of Test</u>	<u>Test Para</u>	<u>Repair Para</u>
A3013177-1	CCA-Audio Power Supply	410	CP0900030G A3013177F	Go/No-Go	2-14	DEPOT
A3013204-1	CCA-Audio Data I/O	410	CP0800030G A3013204F	Go/No-Go	2-13	DEPOT
A3013240-1	CCA-Micro- controller	465A	CP1800030G	Go/No-Go	3-8	DEPOT
A3013338-1	Power Supply Module Assembly	410	CPO700030G A3013338	Diagnostic	2-9	4-29
A3013349-1	Elek Eqpt Amp-Adptr Chassis	410	CP0200030G A3013349	Diagnostic	2-6	4-13
A3013353-1	Electronic Counter- Countermeasures Control	465A	CP1900030G A3013353	Go/No-Go	3-7	DEPOT
A3013360-1	IF/Demodulator	410	CP0700030G A3013360	Diagnostic	2-8	4-32
A3013361-1	Tuner/Mixer	410	CP0700030G A3013361F	Go/No-Go	2-17	DEPOT
A3013384-1	RT Subassembly Chassis	465A	CPO500030G A3013364	Diagnostic	3-2	4-24
A3013369-1	Amplifier-Adapter Power Supply	410	CP0400030G A3013369	Diagnostic	2-10	4-20
A3013370-1	RT Panel	465A	CP0500030G A3013364	Diagnostic	3-2	4-24
A3013374-1	RF Heatsink	410	CP0200030G A3013374A A30133748	Diagnostic	2-7	4-9
A3013377-1 P/O A3013347-1	Control-Monitor Chassis	465A	CP1500030G	Go/No-Go	3-4	DEPOT
A3013379-1	RF Ampl Case	410	CP0300030G A3013379	Diagnostic	2-1	4-5
A3013550-1	Chassis Assembly	465A	CP0500030G A3013364	Diagnostic	3-2	4-24
A3014128-1	CCA-Display	465A	CPO500030G A3013364	Diagnostic	3-2	4-24
A3014134-1	CCA-Audio Power Supply	410	CP0900030G A3013177F	Go/No-Go	2-14	DEPOT
A3014136-1	CCA-Audio Data I/O	410	CP0800030G A3013204F	Go/No-Go	2-13	DEPOT
A3014138-1	CCA-Audio Control	465A	CP1300030G	Go/No-Go	3-3	DEPOT

1-11. Test Information (Continued).

UUT Part No.	UUT Name	ATE Used	Test Program Tape CPIN File No.	Type of Test	Test Para	Repair Para
A3014140-1	2-Wire Interface	410	CP0700030G A3014140F	Go/No-Go	2-5	DEPOT
A3014142-1	CCA-Remote I/O	465A	CP1400030G	Go/No-Go	3-9	DEPOT
A3014158-1	CCA-Power supply	410	CP0700030G A3014158	Go/No-Go	2-4	4-37
A3014168-1	CCA-Data Rate Adapter	465A	CP0800030G A3014168	Go/No-Go	3-1	N/A
A3014174-1	CCA-Micro- controller	465A	CP1800030G	Go/No-Go	3-8	DEPOT
A3014176-1	CCA-Analog	410	CP0200030G A3013243	Go/No-Go	2-2	4-36
A3014178-1	CCA-Decoder/ Timer	465A	CP1100030G	GotNo-Go	3-6	DEPOT
A3014195-1	1-Watt Audio Amplifier	410	CP0300030G A3014002	Diagnostic	2-3	4-35
A3014383-1	CCA-Switching	410	CP0900030G A3014383F	Go/No-Go	2-16	DEPOT
A3014408-1	CCA-ICOM Data I/O	410	CP2900030G A3014408	Go/No-Go	2-23	N/A
A3014414-1	CCA-ICOM Power Supply	410	CP2900030G A3014414	Go/No-Go	2-22	N/A
A3018025-1	CCA-Analog	410	CP0200030G A3013243	Go/No-Go	2-2	4-36
A3018077-1	Electronic Components Assembly Control	465A	CP1000030G	Go/No-Go	3-5	DEPOT
A3018124-1	Exciter/Power Amplifier	410	CP0800030G A3018124F	Go/No-Go	2-15	DEPOT
A3018235-1	Synthesizer	410	CP0400030G A3018235F	Go/No-Go	2-12	DEPOT
A3018241-1	Impedance Matching Network	410	CP0900030G A3018241F	Go/No-Go	2-11	DEPOT
A3018302-1	Dual Long Range Radio Power Supply	410	CP2000030G A3018302	Diagnostic	2-18	4-45
A3018415-1	Amplifier-Adapter Power Supply	410	CP0400030G A3018415	Diagnostic	2-10	4-20
A3018430-1	Elek Eqpt Amp-Adptr Chassis	410	CP0200030G A3013349	Diagnostic	2-6	4-13

1-11. Test Information (Continued).

UUT Part No.	UUT Name	ATE Used	Test Program Tape CPIN File No.	Type of Test	Test Para	Repair Para
A3018432-1	RF Amplifier Case	410	CP0300030G A3013379	Diagnostic	2-1	4-5
A3018726-1	2-Wire Interface	410	CP0700030G A3018726F	Go/No-Go	2-5	DEPOT
A3018751-1	CCA-Decoder/ Timer	465A	CP1200030G	Go/No-Go	3-6	DEPOT
A3018758-1	IF/Demodulator	410	CP0700030G A3018758	Diagnostic	2-8	4-32
A3018890-1	Electronic Components Assembly Fill Routing	465A	CP2700030G A3108890F	Go/No-Go	3-15	DEPOT
A3018930-1	Power Supply Subassembly	410	CP2000030G A3018930	Diagnostic	2-19	4-42
A3019045-1	CCA-Data Rate Adapter	465A	CP0600030G A3019045	Go/No-Go	3-1	N/A
A3019053-1	Control Counter- Countermeasures Electronic	465A	CP2600030G A3019053	Go/No-Go	3-13	DEPOT
A3019261-1	Power Supply Module Assembly	410	CP2900030G A3019261	Diagnostic	2-20	4-29
A3132854-1	Elek Eqpt Amp-Adptr Chassis	410	CP0200030G A3132854	Diagnostic	2-6	4-13
A3132855-1	RT Subassembly Chassis	465A	CP0500030G A3013364	Diagnostic	3-2	4-24
A3142048-1	Tuner/Mixer	410	CP0700030G A3142048F	Go/No-Go	2-17	DEPOT
A3142064-1	RF Amplifier Case	410	CP0300030G A3142064	Diagnostic	2-1	4-5
A3142074-1	2-Wire Interface	410	CP0700030G A3142074F	Go/No-Go	2-5	DEPOT
A3142081-1	IF/Demodulator	410	CP0700030G A3018758	Diagnostic	2-8	4-32
A3142127-1	Tuner/Mixer	410	CP0700030G A3142127F	Go/No-Go	2-17	DEPOT
A3142176-1	Amplifier-Adapter Power Supply	410	CP0400030G A3142176	Diagnostic	2-10	4-20
A3142186-1	IF/Demodulator	410	CP0700030G A3142186	Diagnostic	2-8	4-32
A3142316-1	CCA-Switching	410	CP2900030G A3142316F	Go/No-Go	2-21	DEPOT

1-11. Test Information (Continued).

<u>UUT Part No.</u>	<u>UUT Name</u>	<u>ATE Used</u>	<u>Test Program Tape CPIN File No.</u>	<u>Type of Test</u>	<u>Test Para</u>	<u>Repair Para</u>
A3142328-1	CCA-Display	465A	CP2100030G A3142328F	Go/No-Go	3-16	DEPOT
A3142334-1	CCA-ICOM CONTROL	465A	CP2500030G A3142334	Go/No-Go	3-14	N/A
A3142337-1	CCA-Remote I/O	465A	CP2400030G A3142337	Go/No-Go	3-10	N/A
A3147853-1	2-Wire Interface	410	CP0700030G A3147853F	Go/No-Go	2-5	DEPOT
A3147916-1	Electronic Components Assembly Fill I/O	465A	CP3100030G A3147916	Go/No-Go	3-18	N/A
A3147937-1	Dual Long Range Radio Power Supply	410	CP2000030G A3018302	Diagnostic	2-18	4-45
A3148148-1	Vehicular-Adapter Power Supply	410	CP2000030G A3148148	Diagnostic	2-24	4-49
A3148159-1	Chassis Electrical Equipment- RT Subassembly	465A	CP2200030G A3148159F	Go/No-Go	3-17	DEPOT
A3148179-1	Electronic Components Assembly Control	465A	CP2300030G A3148179F	Go/No-Go	3-11	DEPOT
A3167675-1	Elek Eqpt Amp-Adptr Chassis	410	CP0200030G A3167675	Diagnostic	2-25	4-52
A3167675-2	Elek Eqpt Amp-Adptr Chassis	410	CP0200030G A3167675	Diagnostic	2-25	4-52
A3167954-1	Chassis Electrical Equipment-Control, RT Subassembly	465A	CP3200030G A3167954	Go/No-Go	3-19	N/A
A3167969-1	Electronic Components Assembly-Control	465A	CP3300030G A3167969F	Go/No-Go	3-20	DEPOT
A3167984-1	CCA-ICOM Control	465A	CP3000030G A3167984	Go/No-Go	3-14	N/A
A3168117-1	RF Amplifier Case	410	CP0300030G A3168117	Diagnostic	2-1	4-5
A3191019-1	CCA-ICOM CONTROL	465A	CP3000030G A3191019	Go/No-Go	3-14	N/A
B4041568-1	Electronic Counter- Countermeasures Control	465A	CP1900030G B4041568	Go/No-Go	3-7	DEPOT

CHAPTER 2

TESTING USING AN/USM-410(V)2



CAUTION



THIS EQUIPMENT CONTAINS PARTS SENSITIVE TO DAMAGE
BY ELECTROSTATIC DISCHARGE (ESD).

2-1. RF Amplifier Case A3013379-1, A3018432-1, A3142064-1, and A3168117-1 (6A1).

The following procedure is used to test and troubleshoot the RF amplifier case, 6A1, A3013379-1, A3018432-1, A3142064-1, and A3168117-1 (fig. 2-1). See chapter 4 for maintenance instructions.

REQUIRED TEST ACCESSORIES

- Test Program Tape CPIN CP0300030G
 - File No. A3013379
 - File No. A3142064
 - File No. A3168117
- Adapter, Test-F A3019038-1 Items:
 - Wiring Harness, Branched (W1) A3019040-1
 - ICD-F A3019039-1
- RF Amplifier ENI Model 325LA
- Heatsink, Electrical-Electronic
 - Component Amplifier, RF A3013374-1
- Ž Accessory Kit A3018639-1 Items:
 - Cable Assembly, RF (W1) A3018640-1
 - Cable Assembly, RF (W2) A3018641-1
 - Cable Assembly, RF (W3) A3018642-1
 - Cable Assembly, RF (W4) A3018643-1
 - Cable Assembly, RF (W5) A3019037-1
 - Cable Assembly, RF (W6) A3019037-2
 - Attenuator, 10 W, 10 dB (AT1) A3018544-1
 - Attenuator, 150 W, 30 dB (AT2) A3018545-1
 - Termination, Mismatch 100W A3018792-1
 - Adapter, Connector (CP1) M55339/07-00029
 - Adapter, Connector (CP2) A3018791-1
- Ž AN/USM-410 Test Accessory Kit B4021292 Items:
 - Probe SM-C-869189
 - Probe, Active (RF) SM-C-855100
 - Cable Assembly, RF (W101) B4021271
 - Cable Assembly, RF (W102) B4021272
 - Cable Assembly, RF (W103) (2 reqd) B4021273
- AN/USM-410 Test Accessory Kit B4021293 Items:
 - RF Short BNC Plug 3201-1314-02
- AN/USM-410 Test Accessory Kit B4021294 Items:
 - Adapter, Connector (2 reqd) B4021032
 - Adapter, BNC, Jack-to-Jack UG-914/U
- AN/USM-410 Test Accessory Kit B4039143 Items:
 - 50 Ohm Termination B4039130

RF AMPLIFIER CASE A3013379-1 AND A3018432-1

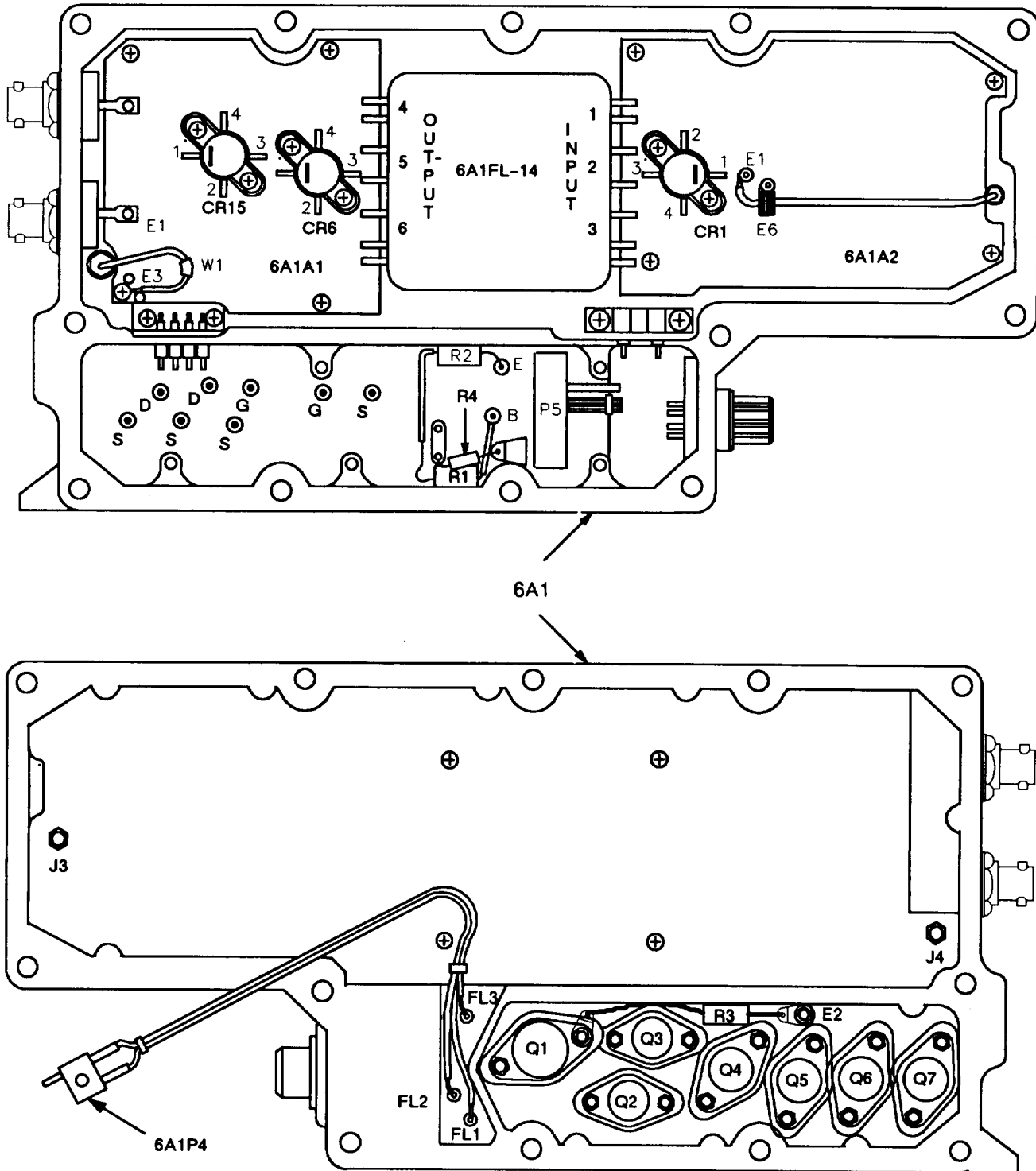
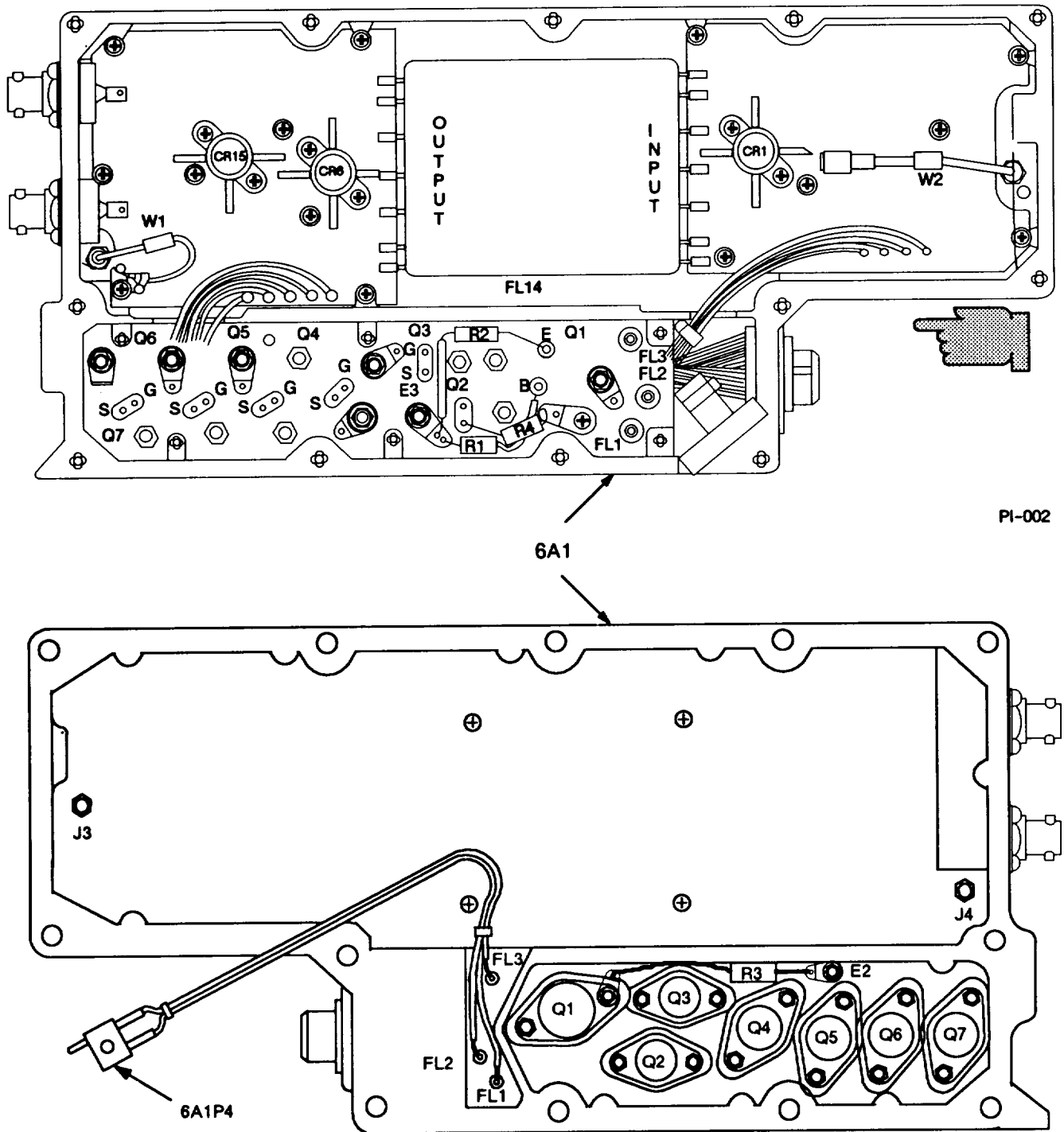


Figure 2-1. RF Amplifier Case (Sheet 1 of 8)

EL9RH002

RF AMPLIFIER CASE A3142064-1



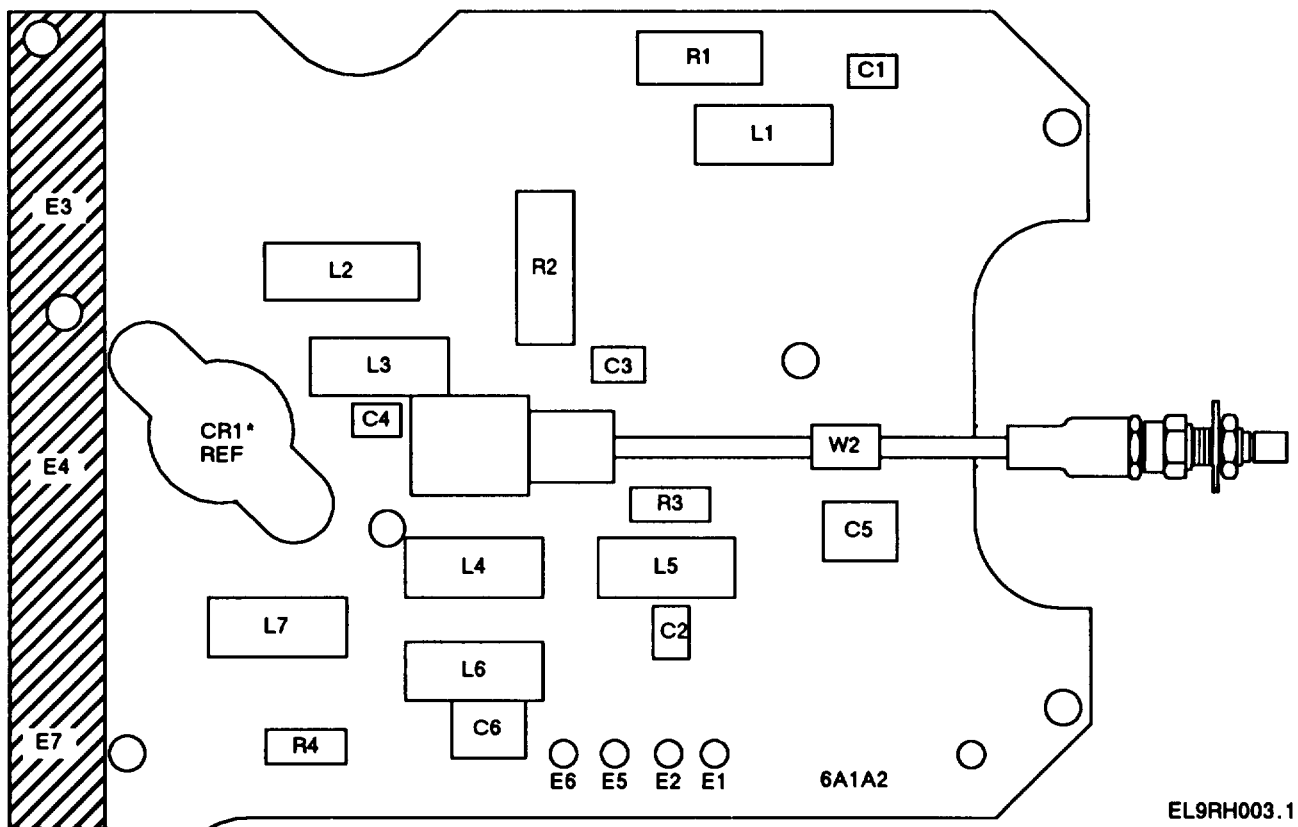
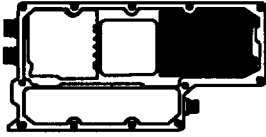
PI-002

EL9RH002.1

Figure 2-1. RF Amplifier Case (Sheet 2 of 8)

CCA-INPUT FILTER/SWITCH (6A1A2) A3142092-1

(Part of A3142064-1 and A3168117-1)



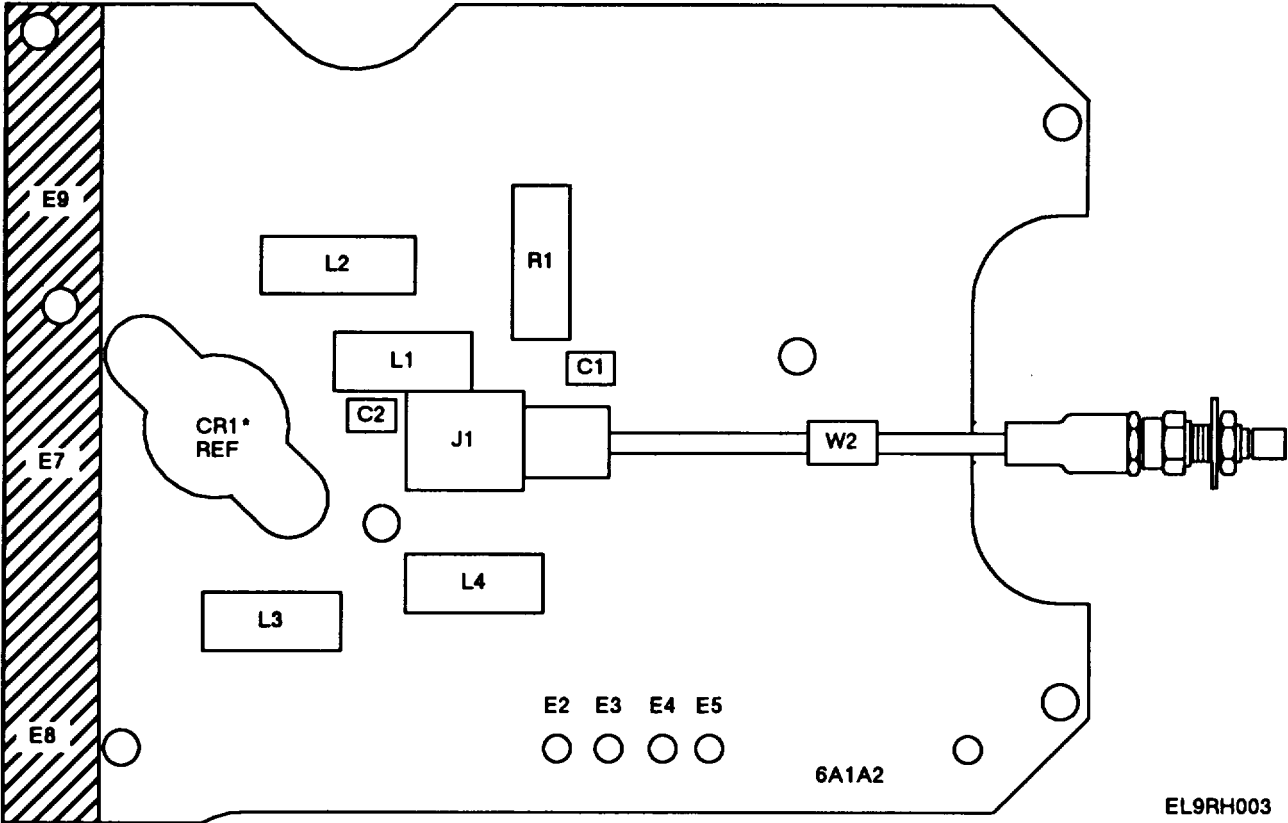
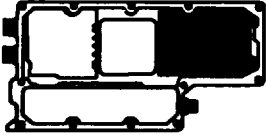
EL9RH003.1

* CR1 IS NOT MOUNTED ON
CCA-INPUT FILTER/SWITCH

Figure 2-1. RF Amplifier Case (Sheet 3 of 8)

CCA-INPUT FILTER/SWITCH (6A1A2) A3018157-1

(Part of A3018432-1)



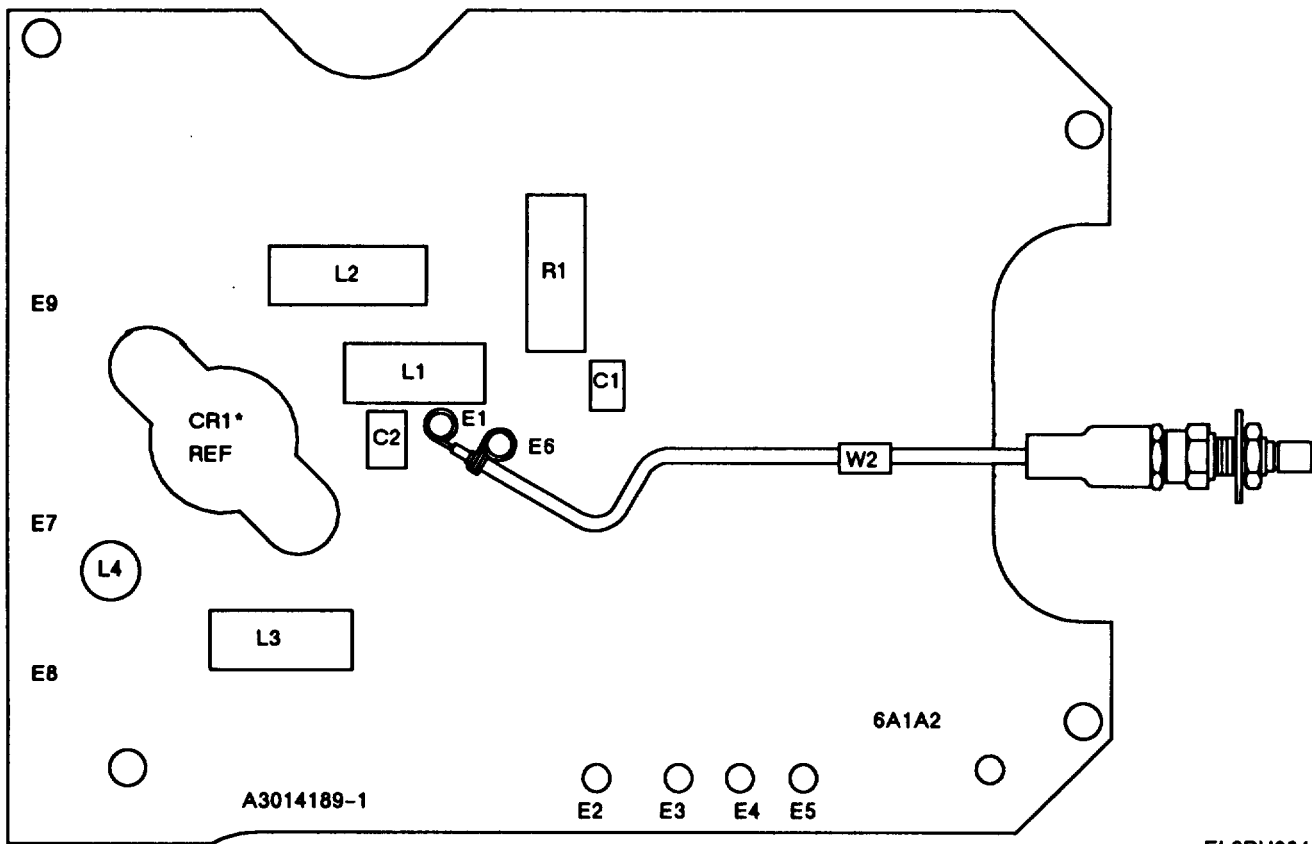
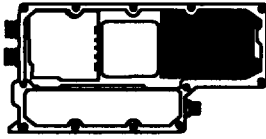
* CR1 IS NOT MOUNTED ON CCA-INPUT FILTER/SWITCH



Figure 2-1. RF Amplifier Case (Sheet 4 of 8)

CCA-INPUT FILTER/SWITCH (6A1A2) A3014189-1

(Part of A3013379-1)



EL9RH004

* CR1 IS NOT MOUNTED ON
CCA-INPUT FILTER/SWITCH

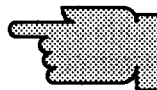


Figure 2-1. RF Amplifier Case (Sheet 5 of 8)

CCA-OUTPUT FILTER/SWITCH (6A1A1) A3014191-1

(Part of A3013379-1)

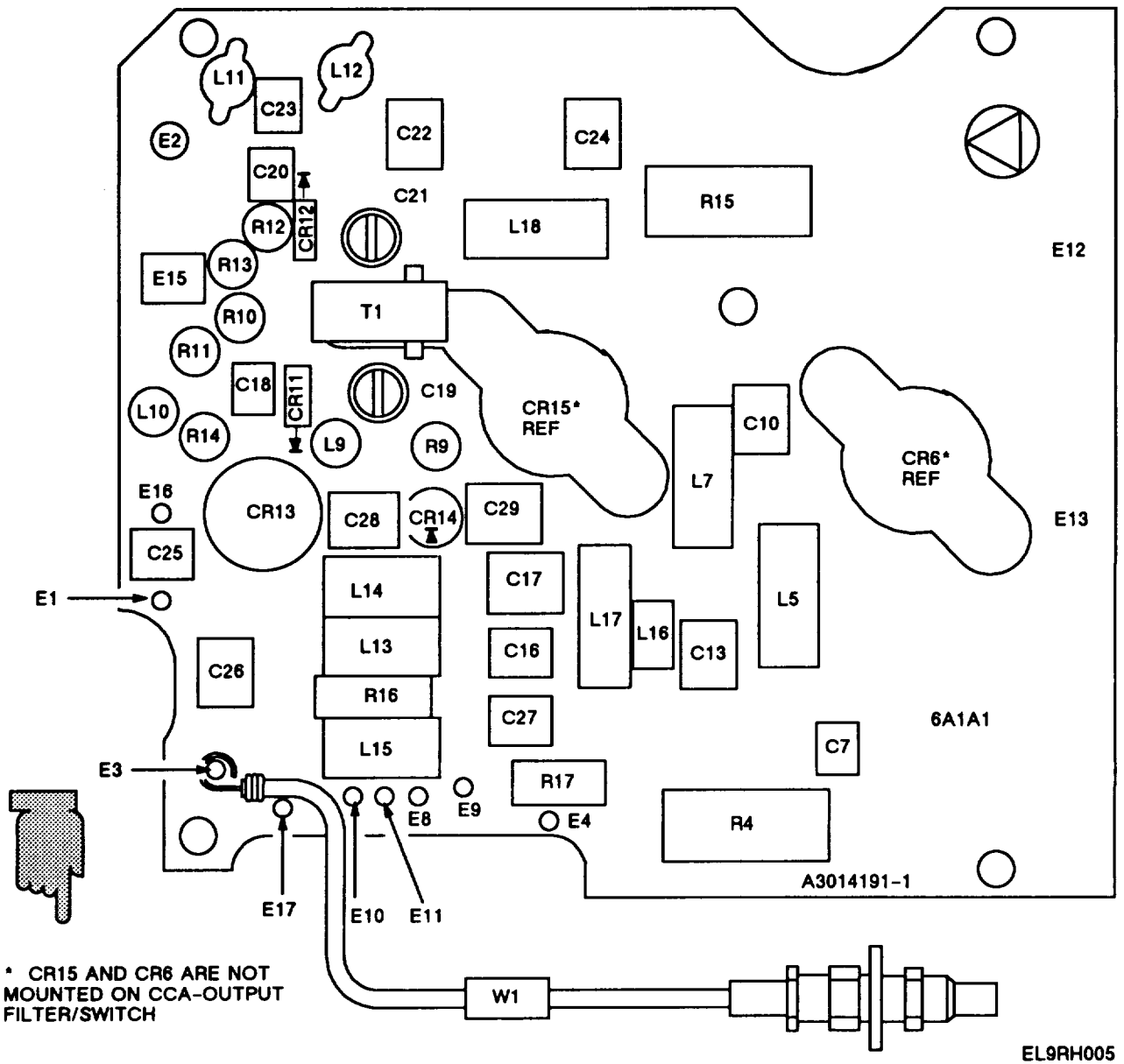
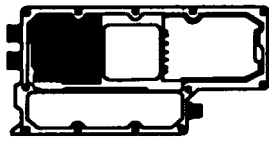
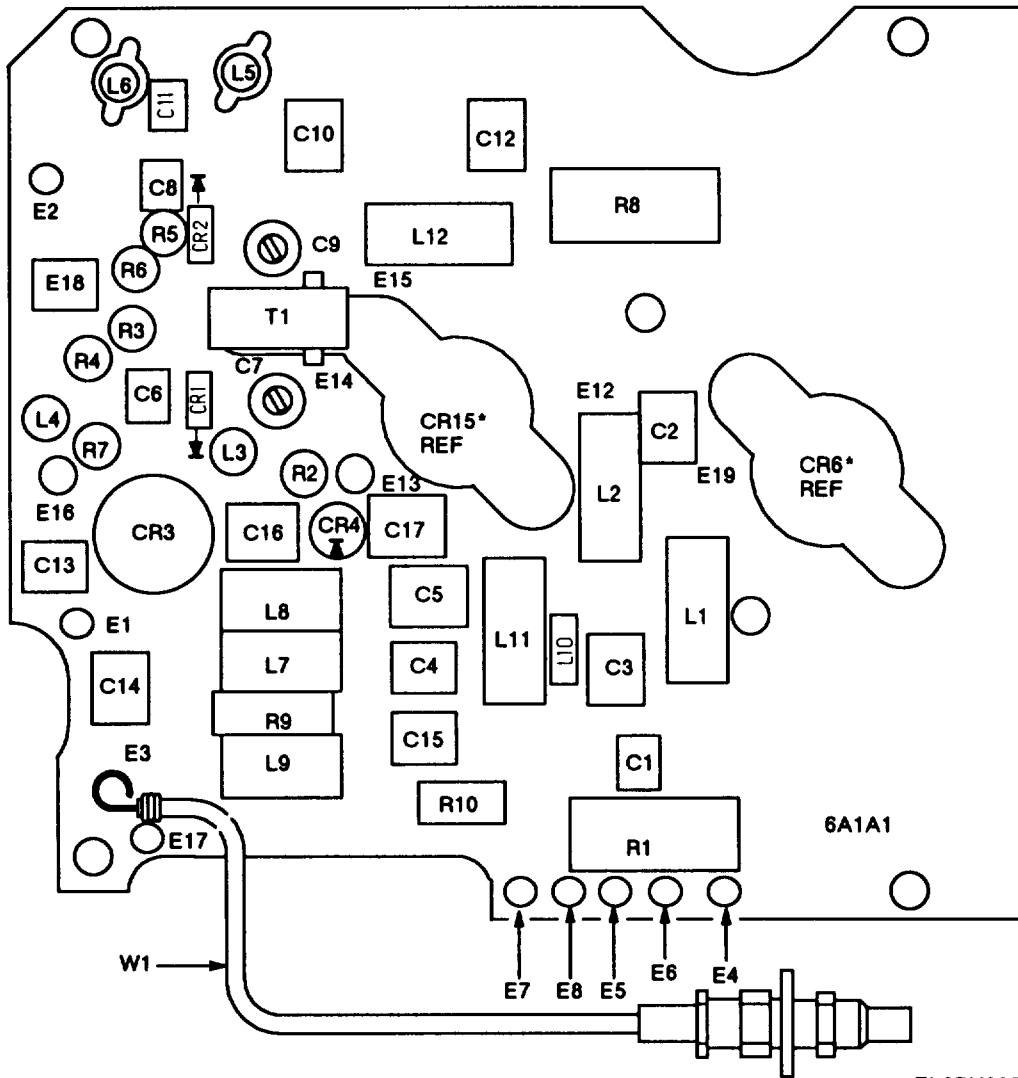
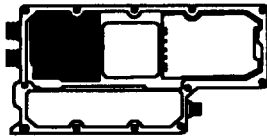


Figure 2-1. RF Amplifier Case (Sheet 6 of 8)

CCA-OUTPUT FILTER/SWITCH (6A1A1) A3018055-1

(Part of A3018432-1)



EL9RH006

* CR15 AND CR6 ARE NOT MOUNTED ON CCA-OUTPUT FILTER/SWITCH



Figure 2-1. RF Amplifier Case (Sheet 7 of 8)

CCA-OUTPUT FILTER/SWITCH (6A1A1) A3142095-1

(Part of A3142064-1)

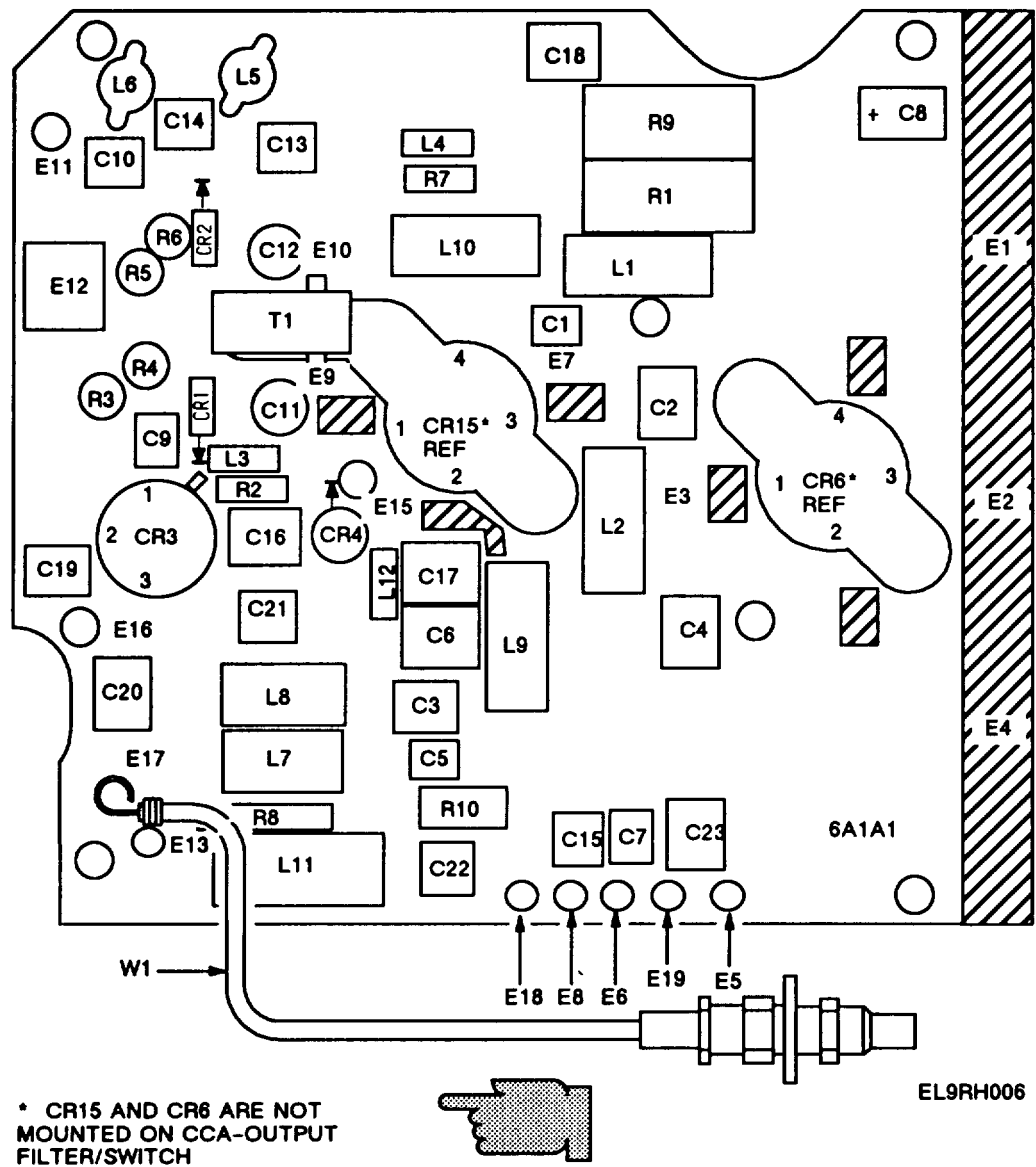
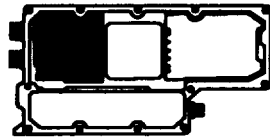


Figure 2-1. RF Amplifier Case (Sheet 8 of 8)

- a. Turn on test station AN/USM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and press RETURN on VDT keyboard.

NOTE

The intermediate code of this program will require 88 blocks on the removable disk pack (DPØ). Before loading the test program ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.

- d. Load test program.
 - (1) Install test program tape CPIN CP0300030G in accordance with TM 11-6625-2773-10.
 - (2) Load file on to disk in accordance with TM 11-6625-2773-10.
- e. Select test.

NOTE

Two part numbers (A3013379-1 and A3018492-1) are served by file name A3013379.

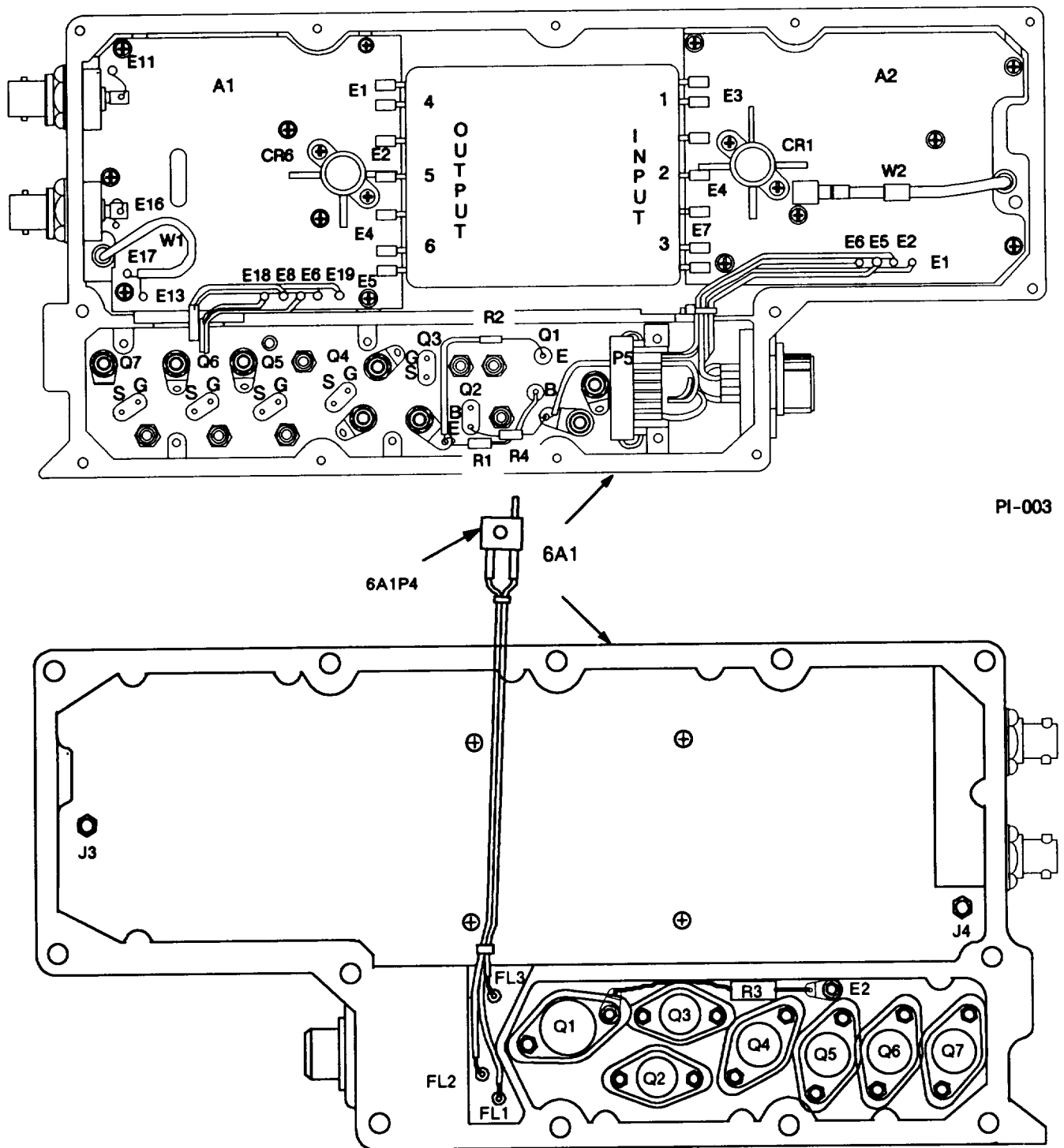
- (1) Enter TEST A3013379, A3142064, or A3168117 and press RETURN on VDT keyboard.
- (2) Press STRT/PROC on the VDT keyboard.
- (3) Follow operator instructions on VDT. Enter part number and serial number and read operator instructions on VDT.
- (4) Verify that the following information is displayed on the VDT:

CASE, AMPLIFIER, RADIO FREQUENCY	
PART NUMBER	A3013379-1
PROGRAM DATE/REV.:	MM/DD/YY REV.-
SERIAL NO. EFFECTIVITY	001 THRU ***
MWO EFFECTIVITY	NONE

OR

CASE, AMPLIFIER, RADIO FREQUENCY	
PART NUMBER	A3018432-1
PROGRAM DATE/REV.:	MM/DD/YY REV.-
SERIAL NO. EFFECTIVITY	001 THRU ***
MWO EFFECTIVITY	NONE

RF AMPLIFIER CASE A3168117-1



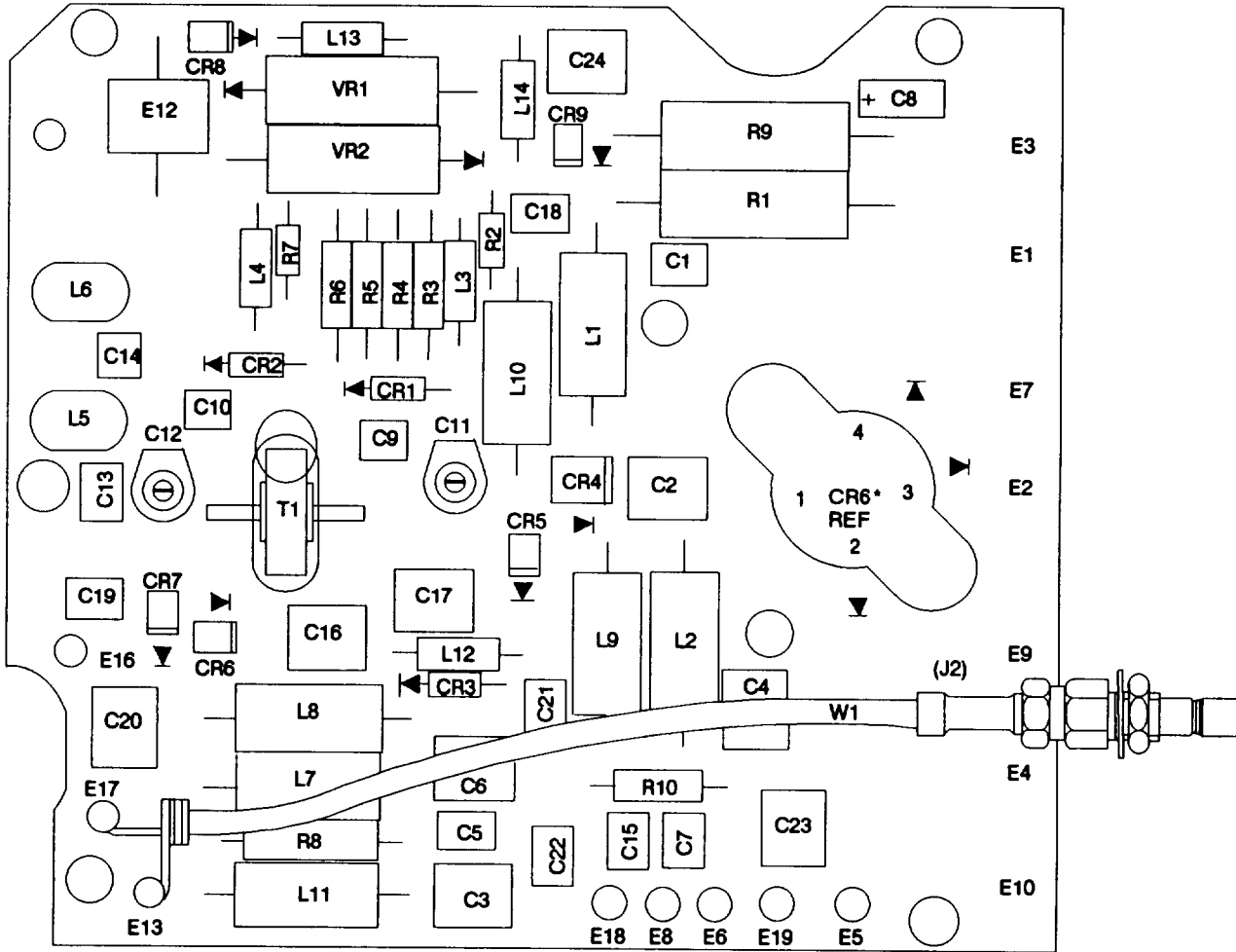
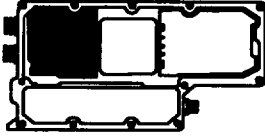
PI-003

EL9RH002.1

Figure 2-1.1. RF Amplifier Case (Sheet 1 of 2)

CCA-OUTPUT FILTER/SWITCH (6A1A1) A3190864-1

(Part of A3168117-1)



* CR6 IS NOT MOUNTED ON
CCA-OUTPUT FILTER/SWITCH

PI-004

Figure 2-1.1. RF Amplifier Case (Sheet 2 of 2)

OR

CASE, AMPLIFIER, RADIO FREQUENCY	
PART NUMBER	A3142064-1
PROGRAM DATE/REV.:	MM/DD/YY REV.--
SERIAL NO. EFFECTIVITY	001 THRU ***
MWO EFFECTIVITY	NONE

OR

CASE, AMPLIFIER, RADIO FREQUENCY	
PART NUMBER	A3168117-1
PROGRAM DATE/REV.:	MM/DD/YY REV.--
SERIAL NO. EFFECTIVITY	001 THRU ***
MWO EFFECTIVITY	NONE

- (5) Press STRT/PROC on the VDT keyboard.
- f. Run ATE survey test if desired. If ATE survey test fails, refer to TM 11-6625-2773-20.

WARNING

- High voltage from 180 to 220 V dc is present on the chassis and components of this UUT.

DEATH MAY OCCUR ON CONTACT

- Use extreme caution when testing, adjusting or probing this UUT.
- DO NOT work on this UUT unless there is another person nearby who is familiar with the operation and hazards of the equipment. This person must be competent in administering first aid.
- DO NOT probe with both hands. Keep one hand away from the equipment to reduce the hazard of current flowing through your body.
- This UUT normally outputs 50 watts of RF energy (100 V rms). RF burns could result from touching output connectors. Observe standard safety precautions when working on electrical equipment.
- FOR ARTIFICIAL RESPIRATION REFER TO FM 21-11.

CAUTION

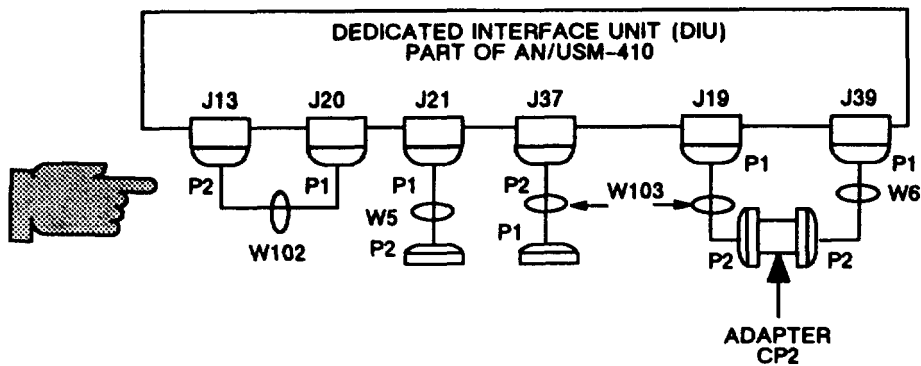
- This UUT contains devices sensitive to damage by electrostatic discharge (ESD).
- This UUT contains direct currents of approximately 6 amps at 27 V. Care must be taken to avoid shorting the 27 V to ground while probing.

g. Install test adapter F.

h. Run ICD-F survey test. If survey test fails refer to TM 11-6625-3094-24.

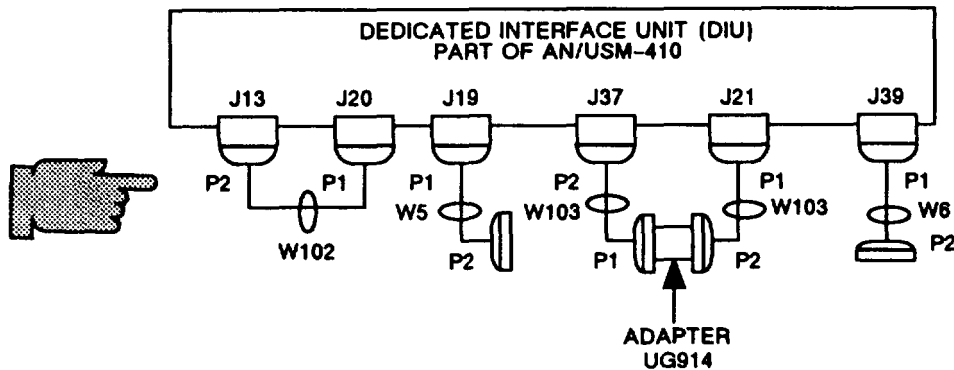
i. I/O part calibration.

- (1) Connect cables W102, W103, W5 and W6 as shown.



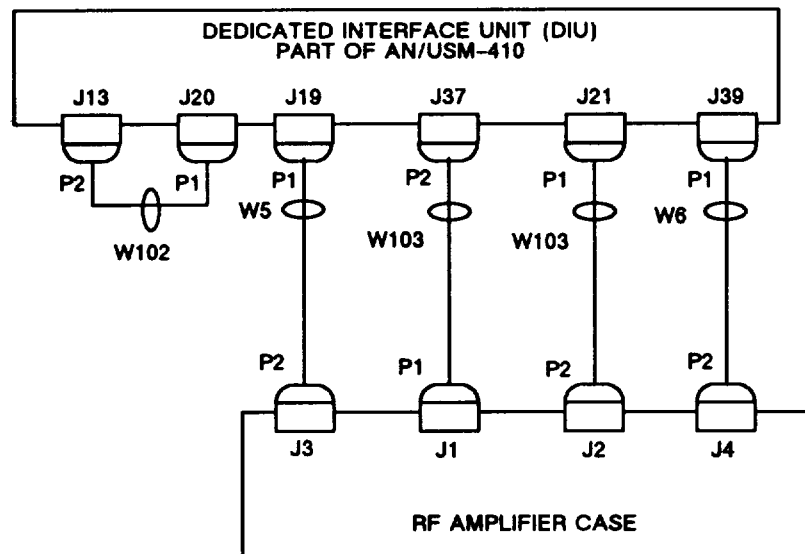
EL9RH007

- (2) Remove adapter CP2 and install adapter UG914 as shown.



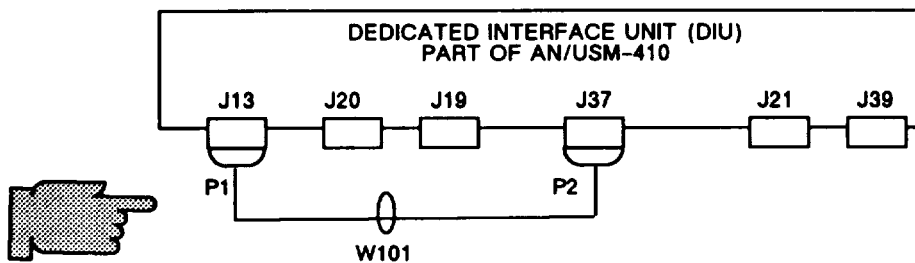
EL9RH008

j. Low power RF testing of UUT.



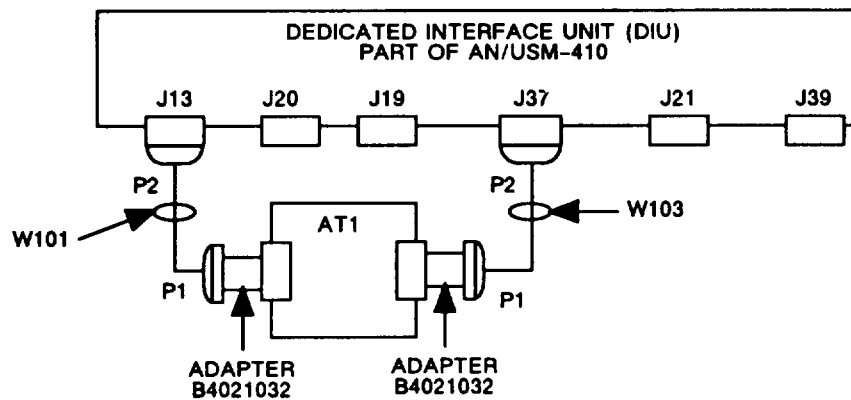
EL9RH009

k. I/O port calibration. Calibrate port by connecting a cable from J13 to J37 on the DIU.



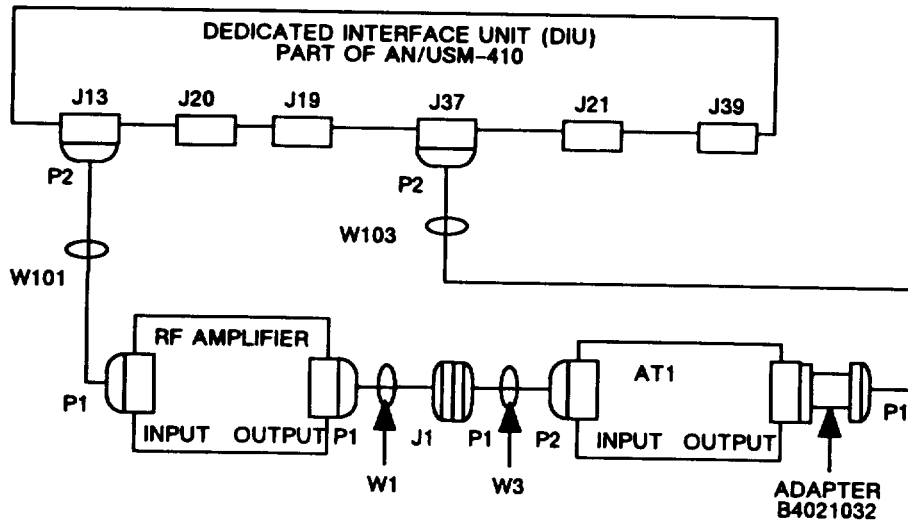
EL9RH010

l. 10 watt attenuation calibration.



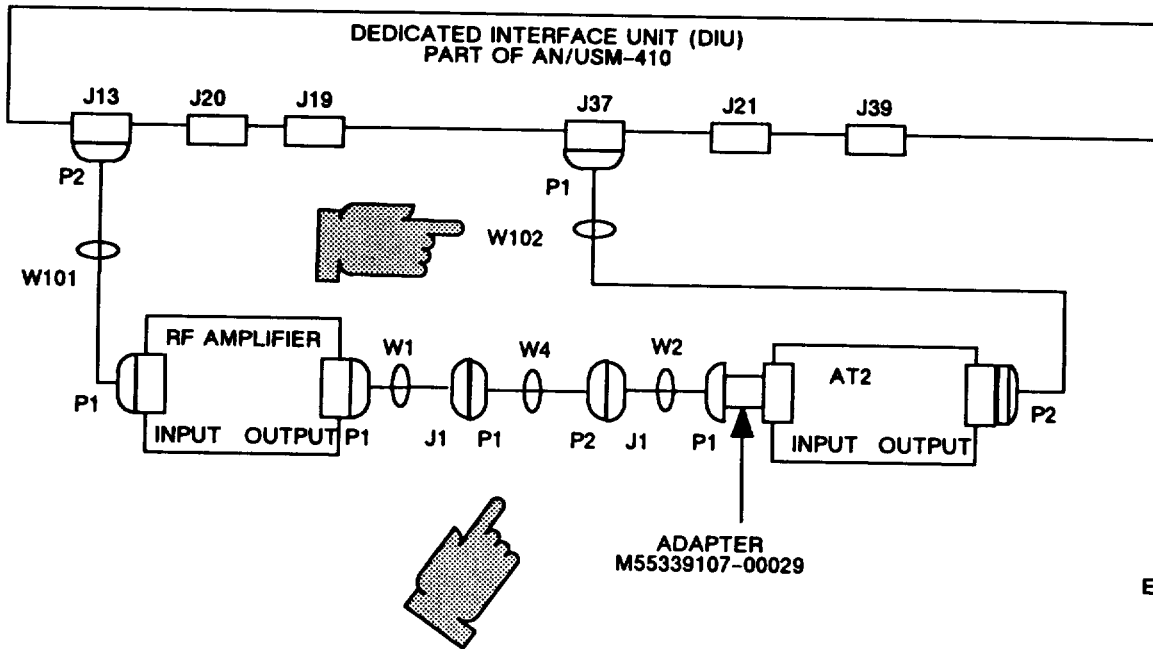
EL9RH011

m. Ancillary RF amplifier calibration.



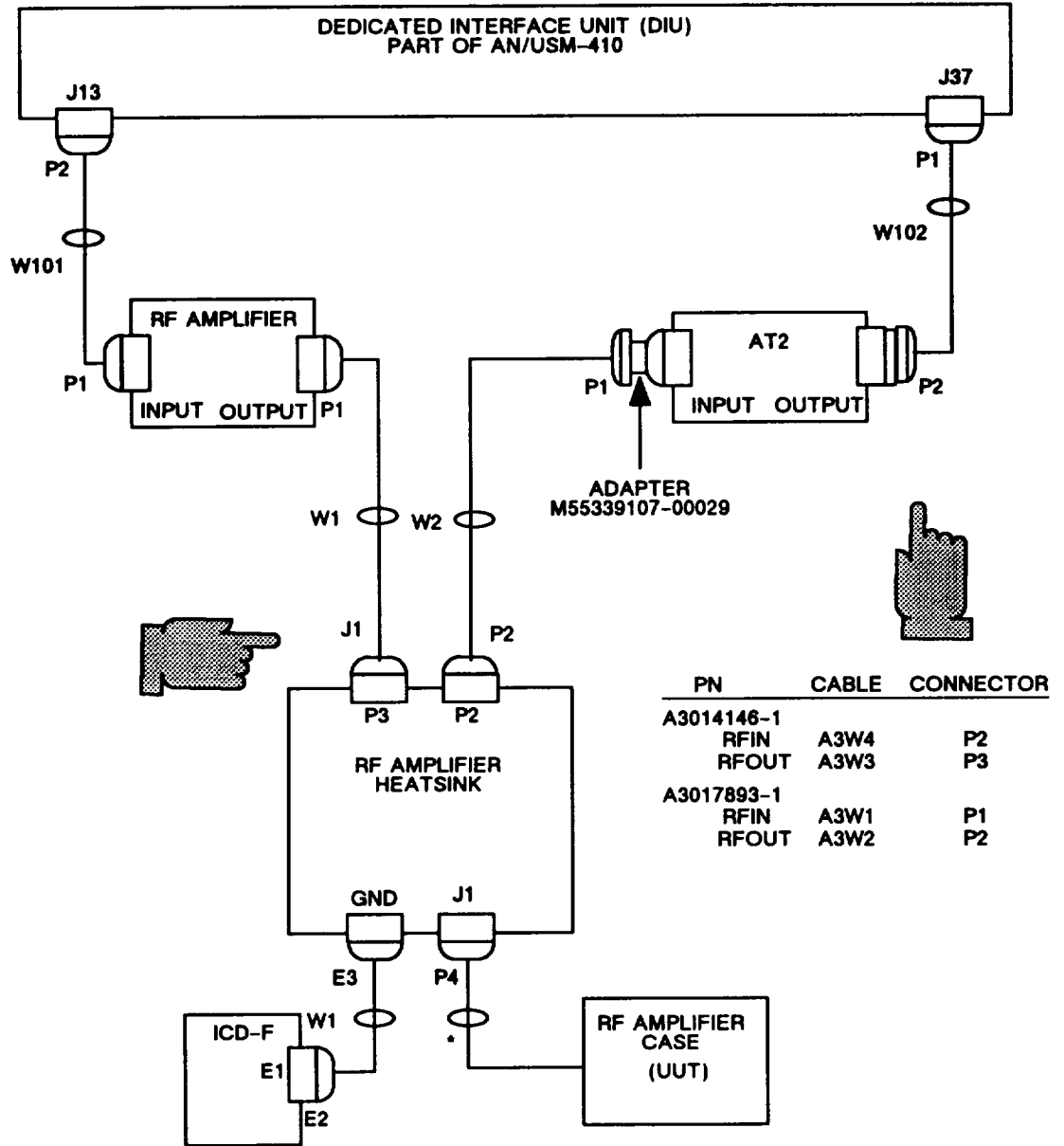
EL9RH012

n. 150 watt attenuation calibration.



EL9RH013

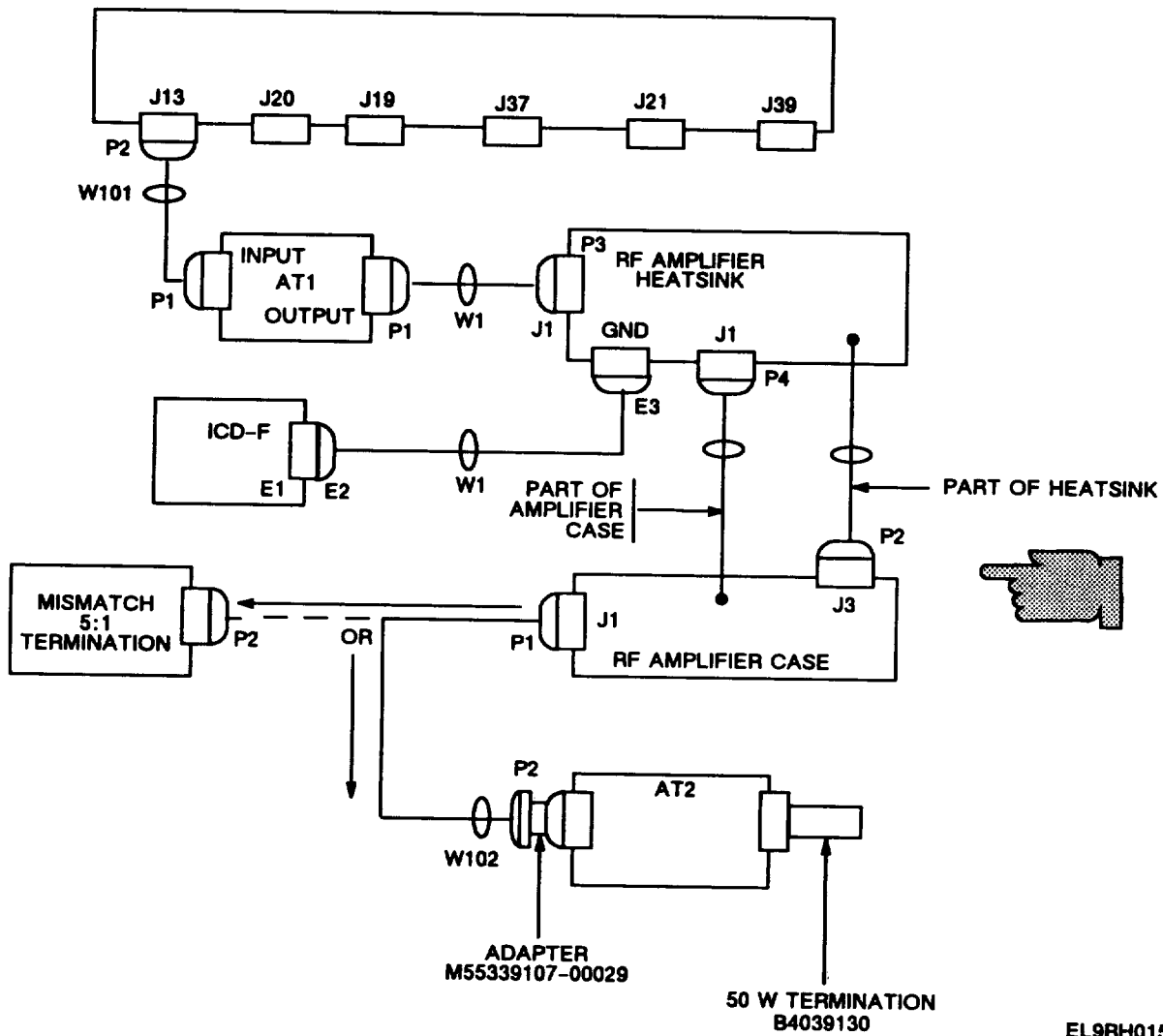
o. Heatsink amplifier calibration.



* PART OF RF AMPLIFIER HEATSINK

EL9RH014

p. UUT high power test.



EL9RH015

q. Test and troubleshoot UUT.

r. Repeat or terminate testing.

- (1) Follow operator instructions on VDT to repeat tests or terminate testing.
- (2) Remove adapter card, ICD, and UUT as required.
- (3) When testing of the UUT has been completed, remove test results from printer. Forward test results, along with the UUT, to next work station.

2-2. CCA-Analog A3013243-1, A3014176-1, and A3018025-1 (7A4).

The following procedure is used to perform Go/No Go testing of the CCA-analog assembly, 7A4, A3014176-1 and A3018025-1 (fig. 2-2 and fig. 2-3). This unit is discarded if it fails the test. Refer to local procedures for disposal.

REQUIRED TEST ACCESSORIES	
• Test Program Tape	CPIN CP0200030G
File No.	A3013243
• ICD	ID-005C
• Adapter Card C	A3017847-1
• Extender Card, Electronic-Test Self-Test C	A3014349-1
• Alignment Tool Kit	B4008667

NOTE

Before testing adapter card C, run the ID-005C survey. Use test program CPIN 11GSG10 File Number ID005C.

- a. Turn on test station AN/USM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and press RETURN on VDT keyboard.

NOTE

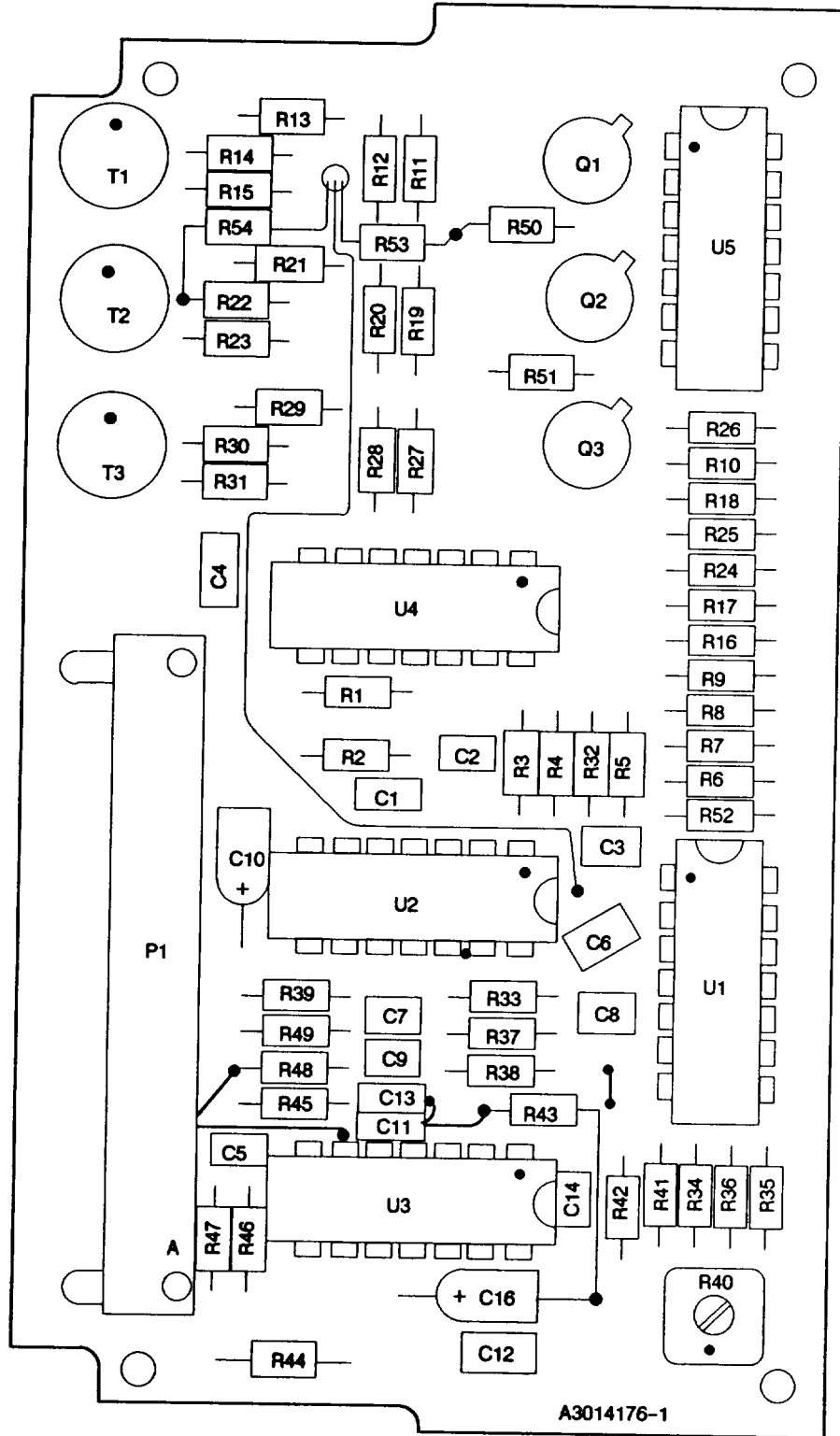
The intermediate code of this program will require 25 blocks on the removable disk pack (DPØ). Before loading the test program ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.

- d. Load test program.
 - (1) Install test program tape CPIN CP0200030G in accordance with TM 11-6625-2773-10.
 - (2) Load file on to disk in accordance with TM 11-6625-2773-10.
- e. Select test.

NOTE

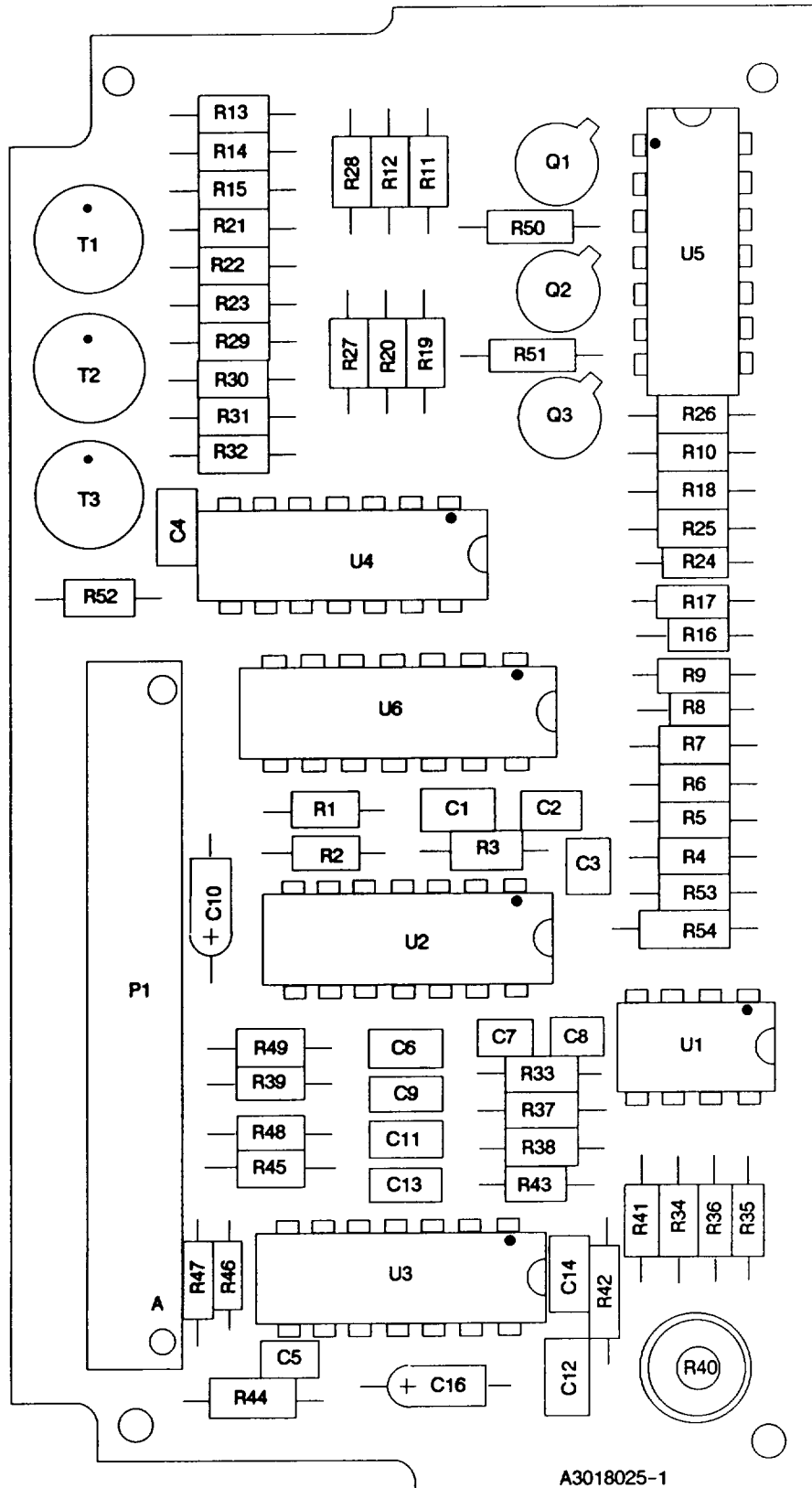
Three part numbers are served by this test program. The file name for this program is A3013243. The A3013243-1 board is not currently used.

- (1) Enter TEST A3013243 and press RETURN on VDT keyboard.
- (2) Follow operator instructions on VDT. Enter part number and serial number and read operator instructions on VDT.



EL9RH016

Figure 2-2. CCA-Analog (7A4) A3014176-1



EL9RH017

Figure 2-3. CCA-Analog (7A4) A3018025-1

(3) Verify that the following information is displayed on the VDT:

```

-----CCA-ANALOG-----
PART NUMBER           A3013243-1
SERIAL NO. EFFECTIVITY: 001 THRU
MWO EFFECTIVITY:      NONE
    
```

OR

```

-----CCA-ANALOG-----
PART NUMBER           A3014176-1
SERIAL NO. EFFECTIVITY: 001 THRU
MWO EFFECTIVITY:      NONE
    
```

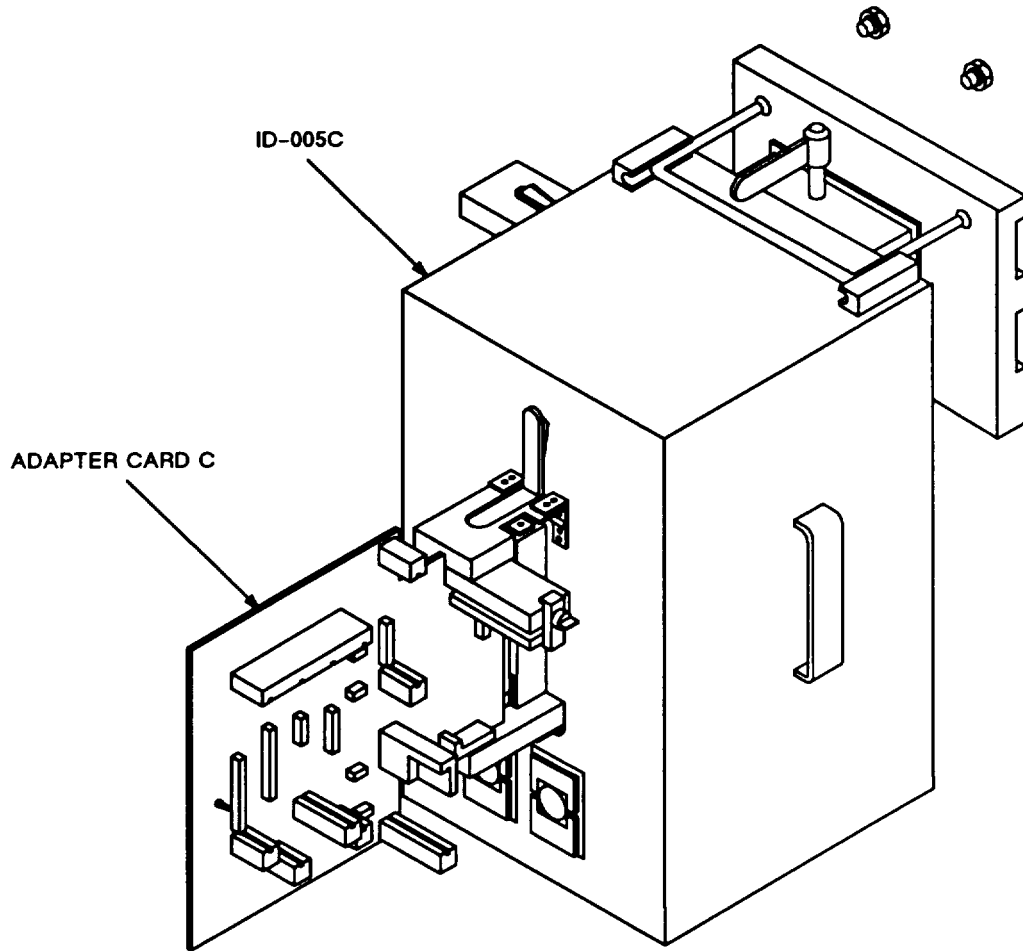
OR

```

-----CCA-ANALOG-----
PART NUMBER           A3018025-1
PROGRAM DATE/REV. :   MM/DD/YY REV
SERIAL NO. EFFECTIVITY: 001 THRU
MWO EFFECTIVITY:      NONE
    
```

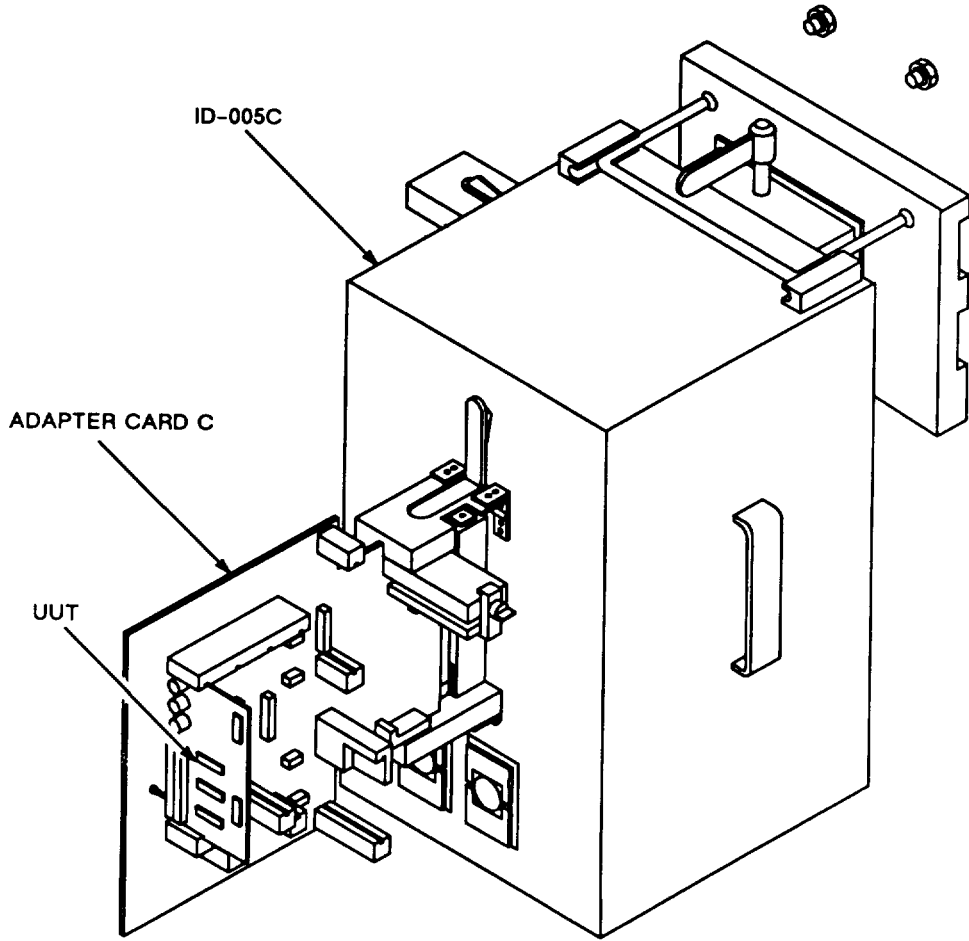
(4) Press STRT/PROC on the VDT keyboard.

- f. Run ATE survey test if desired. If ATE survey fails refer to TM 11-6625-2773-10.
- g. Install ICD ID-005C on J1 of PIU.
- h. Install adapter card C on ID-005C (See fig. 2-4).
- i. Run adapter card survey test. If survey test fails, refer to TM 11-6625-3094-24.
- j. Perform UUT hookup (See fig. 2-5).
- k. Test and troubleshoot UUT.
- l. Repeat or terminate testing.
 - (1) Follow operator instructions on VDT to repeat tests or terminate testing.
 - (2) Remove adapter card, ICD, and UUT as required.
 - (3) When testing of the UUT has been completed, remove test results from printer. Forward test results, along with the UUT, for disposition.



EL9RH018

Figure 2-4. Installation of Adapter Card C for CCA-Analog Assembly



EL9RH019

Figure 2-5. Installation of CCA-Analog Assembly on Adapter Card C

2-3. CCA-One-Watt Audio Amplifier A3014002-1 and A3014195-1 (5A2).

The following procedure is used to test and troubleshoot the one-watt audio amplifier (5A2) A3014002-1 and A3014195-1 (fig. 2-6). Refer to chapter 4 for maintenance instructions.

REQUIRED TEST ACCESSORIES	
• Test Program Tape	CPIN CP0300030G
File No.	A3014002
• ICE	ID-005C
• Adapter Card D	A3014468-1
• Load Card B	A3017839-1
• PIU Probe	SM-C-869189
• Alignment Tool kit.....	B4008667

NOTE

Before testing adapter card D, run the ID-005C survey. Use test program CPIN 11GSG10 File Number ID005C.

- a. Turn on test station AN/USM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and press RETURN on VDT keyboard.

NOTE

The intermediate code of this program will require 93 blocks on the removable disk pack (DPØ). Before loading the test program ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.

- d. Load test program.
 - (1) Install test program tape CPIN CP0300030G in accordance with TM 11-6625-2773-10.
 - (2) Load file on to disk in accordance with TM 11-6625-2773-10.
- e. Select test.

NOTE

Two part numbers are served by this test program. The file name for this program is A3014002. The A3014002-1 board is not currently used.

- (1) Enter TEST A3014002 and press RETURN on VDT keyboard.
- (2) Follow operator instructions on VDT. Enter part number and serial number and read operator instructions on VDT.

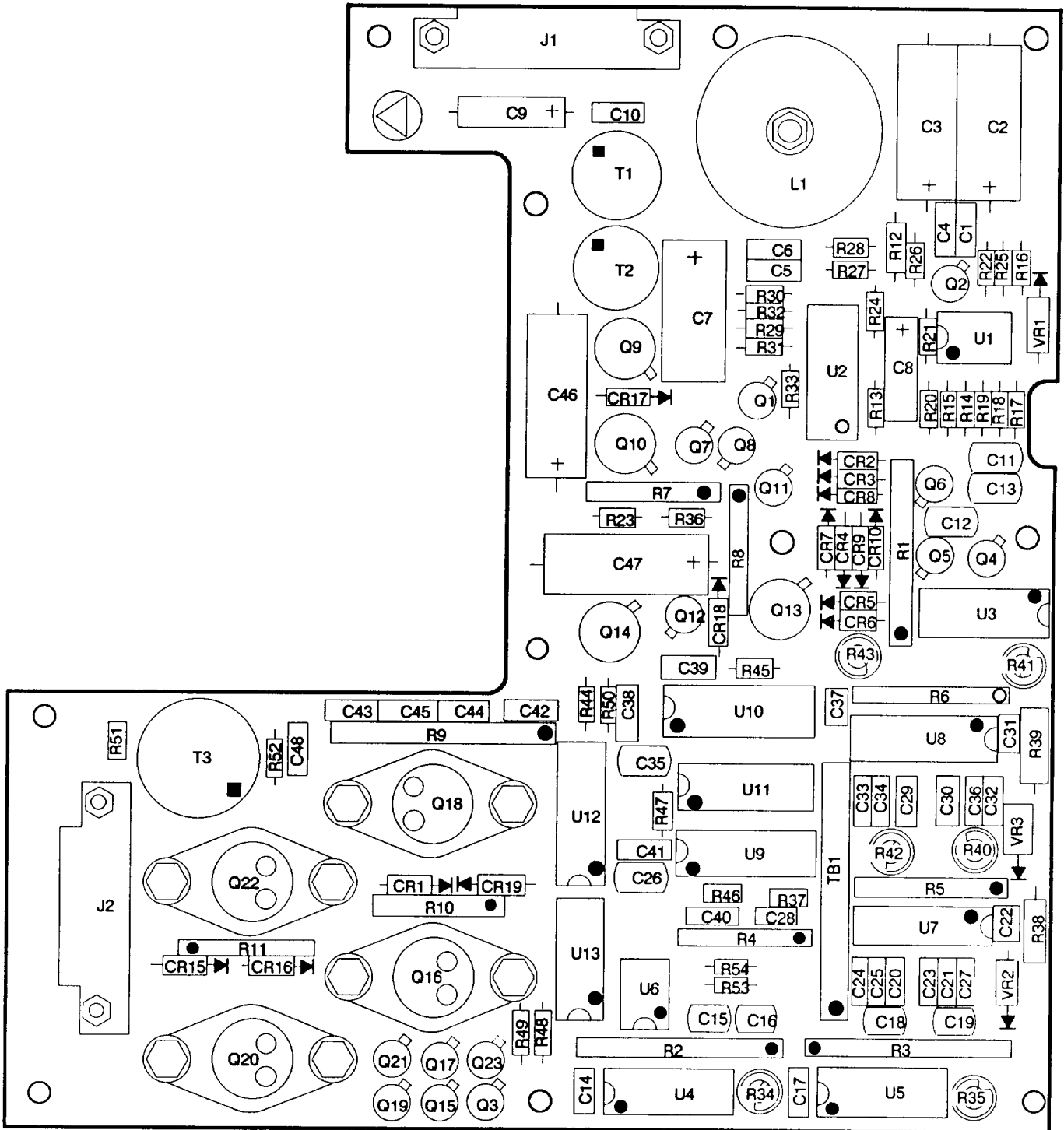


Figure 2-6. CCA-One-Watt Audio Amplifier (5A2) A3014195-1

(3) Verify that the following information is displayed on the VDT:

```

-----CCA-ONE WATT AUDIO AMPLIFIER-----
PART NUMBER           A3014002-1
PROGRAM DATE/REV.:    MM/DD/YY REV
SERIAL NO. EFFECTIVITY: 001 THRU
MWO EFFECTIVITY:      NONE
  
```

OR

```

-----CCA-ONE WATT AUDIO AMPLIFIER-----
PART NUMBER           A3014195-1
PROGRAM DATE/REV.:    MM/DD/YY REV
SERIAL NO. EFFECTIVITY: 001 THRU
MWO EFFECTIVITY:      NONE
  
```

(4) Press STRT/PROC on the VDT keyboard.

- f.* Run ATE survey test if desired. If ATE survey fails refer to TM 11-6625-2773-10.
- g.* Install ICD ID-005C on J1 of PIU.
- h.* Install adapter card D on ID-005C (See fig. 2-7).
- i.* Run adapter card survey test. If survey test fails refer to TM 11-6625-3094-24.
- j.* Install load card B on ID-005C (See fig. 2-8).
- k.* Select load card survey. If survey fails refer the TM 11-6625-3094-24.
- l.* Perform UUT hookup (See fig. 2-9).

WARNING

- High currents are present in this UUT. Do not be misled by the term "low voltage." Potentials as low as 50 volts may cause death under adverse conditions.
- Use extreme caution when testing, adjusting, or probing this UUT.
- DO NOT work on this UUT unless there is another person nearby who is familiar with the operation and hazards of the equipment. This person must be competent in administering first aid.
- DO NOT probe with both hands. Keep one hand away from the equipment to reduce the hazard of current flowing through your body.
- FOR ARTIFICIAL RESPIRATION REFER TO FM 21-11.

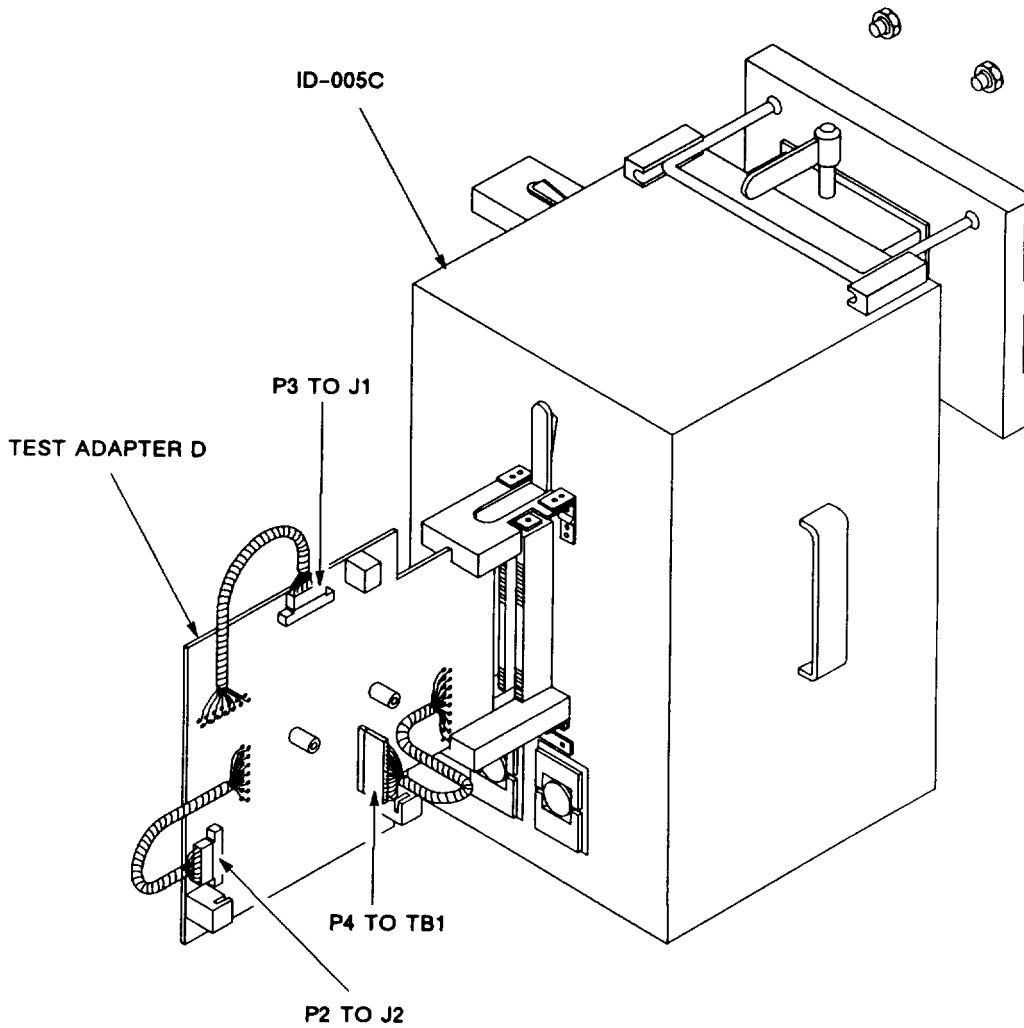
m. Test and troubleshoot UUT.

n. Repeat or terminate testing.

(1) Follow operator instructions on VDT to repeat tests or terminate testing.

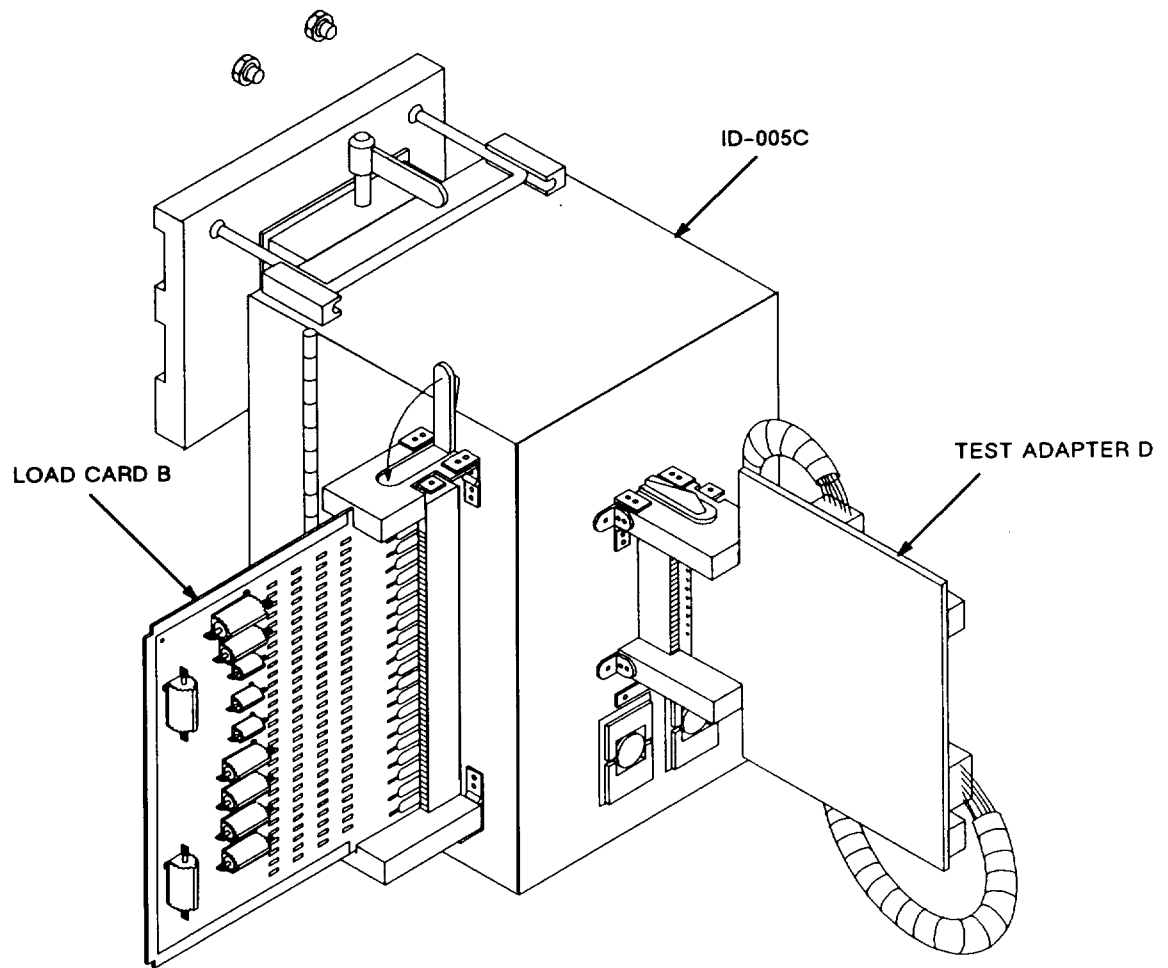
(2) Remove adapter card, ICD, and UUT as required.

(3) When testing of the UUT has been completed, remove test results from printer. Forward test results, along with the UUT, to next work station.



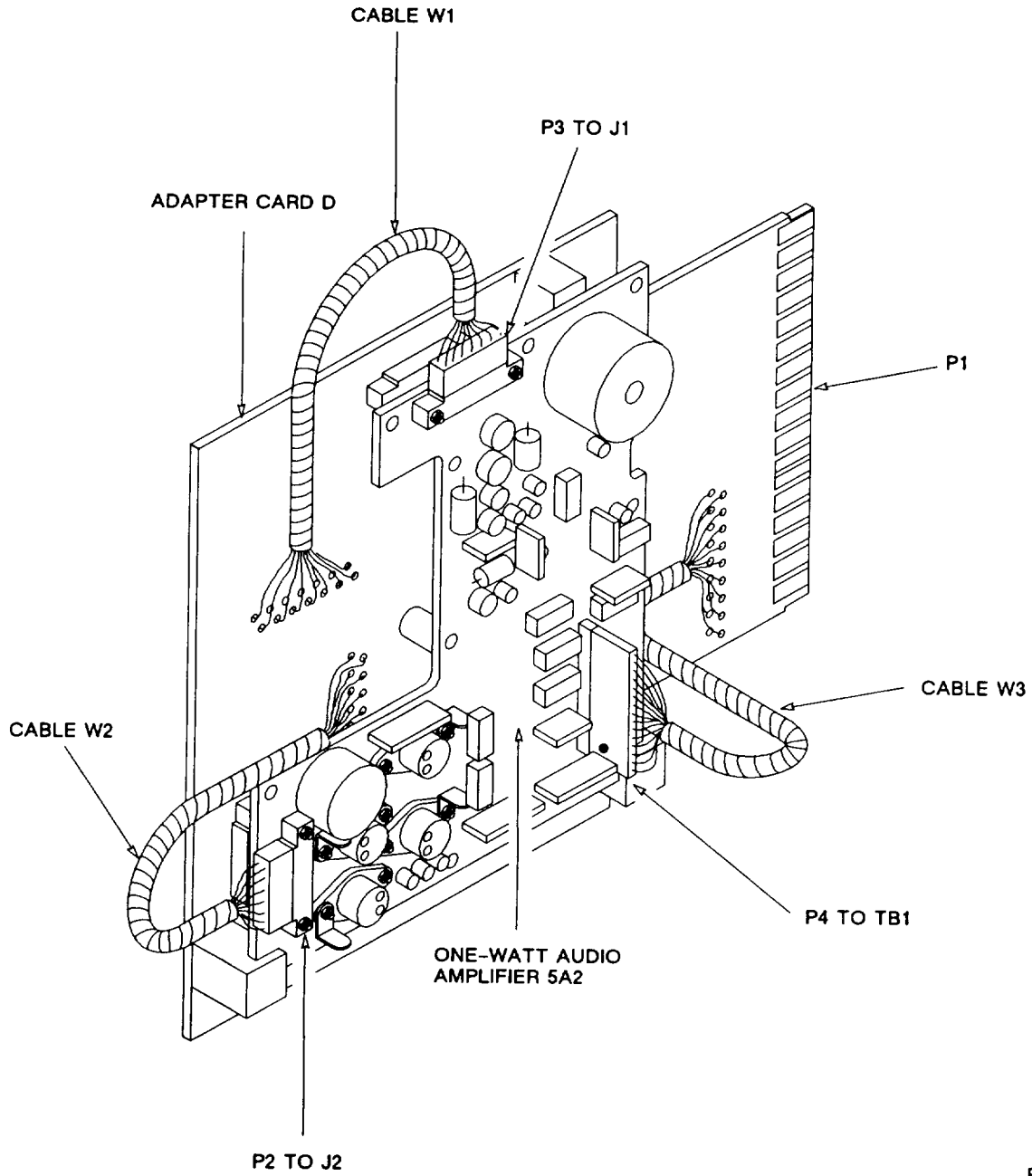
EL9RH021

Figure 2-7. Installation of Adapter Card D for CCA-One-Watt Audio Amplifier (5A2)



EL9RH022

Figure 2-8. Installation of Load Card B for CCA-One-Watt Audio Amplifier



EL9RH023

Figure 2-9. Installation of CCA-One-Watt Audio Amplifier UUT on ICD

2-4. CCA-Power Supply A3014158-1 (7A5).

The following procedure is used to perform a Go/No-Go test on the CCA-power supply, 7A5, A3014158-1 (fig. 2-10). This unit is discarded if it fails the test, Refer to local procedures for disposal.

REQUIRED TEST ACCESSORIES	
• Test Program Tape	CPIN CP0700030G
File No.	A301415 8
Ž ICD	ID-005C
Ž Adapter Card C	A3017847-1
Ž Load Card B	A3017839-1
Ž Extender Card, Electronic-Test Self-Test C	A3014349-1

NOTE

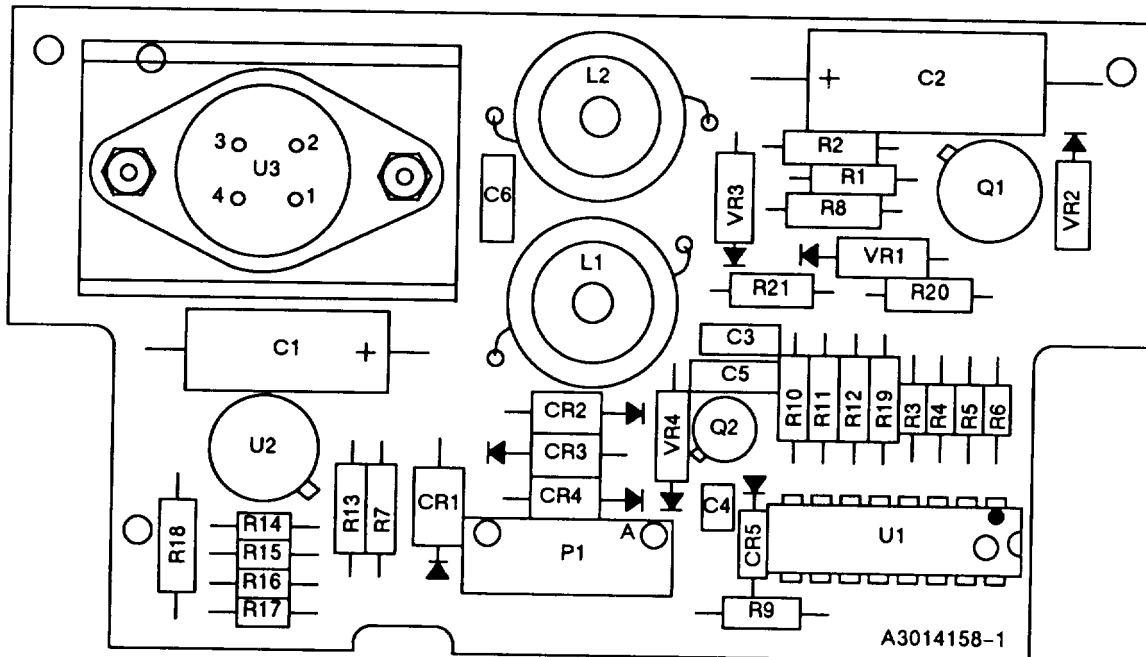
Before testing test adapter C, run the ID-005C survey. Use test program CPIN 11GSG10 File Number ID005C.

- a. Turn on test station AN/USM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and press RETURN on VDT keyboard.

NOTE

The intermediate code of this program will require 90 blocks on the removable disk pack (DPØ). Before loading the test program ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.

- d. Load test program.
 - (1) Install test program tape CPIN CP0700030G in accordance with TM 11-6625-2773-10.
 - (2) Load file on to disk in accordance with TM 11-6625-2773-10.
- e. Select test.
 - (1) Enter TEST A3014158 and press RETURN on VDT keyboard.
 - (2) Follow operator instructions on VDT. Enter part number and serial number and read operator action instructions on VDT.



EL9RH024

Figure 2-10. CCA-Power Supply A3014158-1

(3) Verify that the following information is displayed on the VDT:

```

----CCA-POWER SUPPLY, CONTROL-MONITOR--
PART NUMBER           A3014158-1
PROGRAM DATE/REV.:    MM/DD/YY REV
SERIAL NO. EFFECTIVITY 001 THRU ***
MWO EFFECTIVITY       NONE
    
```

(4) Press STRT/PROC on the VDT keyboard.

- f. Run ATE survey test if desired. If ATE survey fails refer to TM 11-6625-2773-10.
- g. Install ICD ID-005C on J1 of PIU.
- h. Install adapter card C on ID-005C (See fig. 2-11),
- i. Run adapter card survey test. If survey test fails refer to TM 11-6625-3094-24.
- j. Install load card B on ID-005C (See fig. 2-12).

- k. Select load card survey. If survey fails refer to TM 11-6625-3094-24.
- l. Perform UUT hookup (See fig. 2-13).
- m. Test UUT.
- n. Repeat or terminate testing.
 - (1) Follow operator instructions on VDT to repeat tests or terminate testing.
 - (2) Remove adapter card, ICD, and UUT as required.
 - (3) When testing of the UUT has been completed, remove test results from printer. Forward test results, along with the UUT, to next work station.

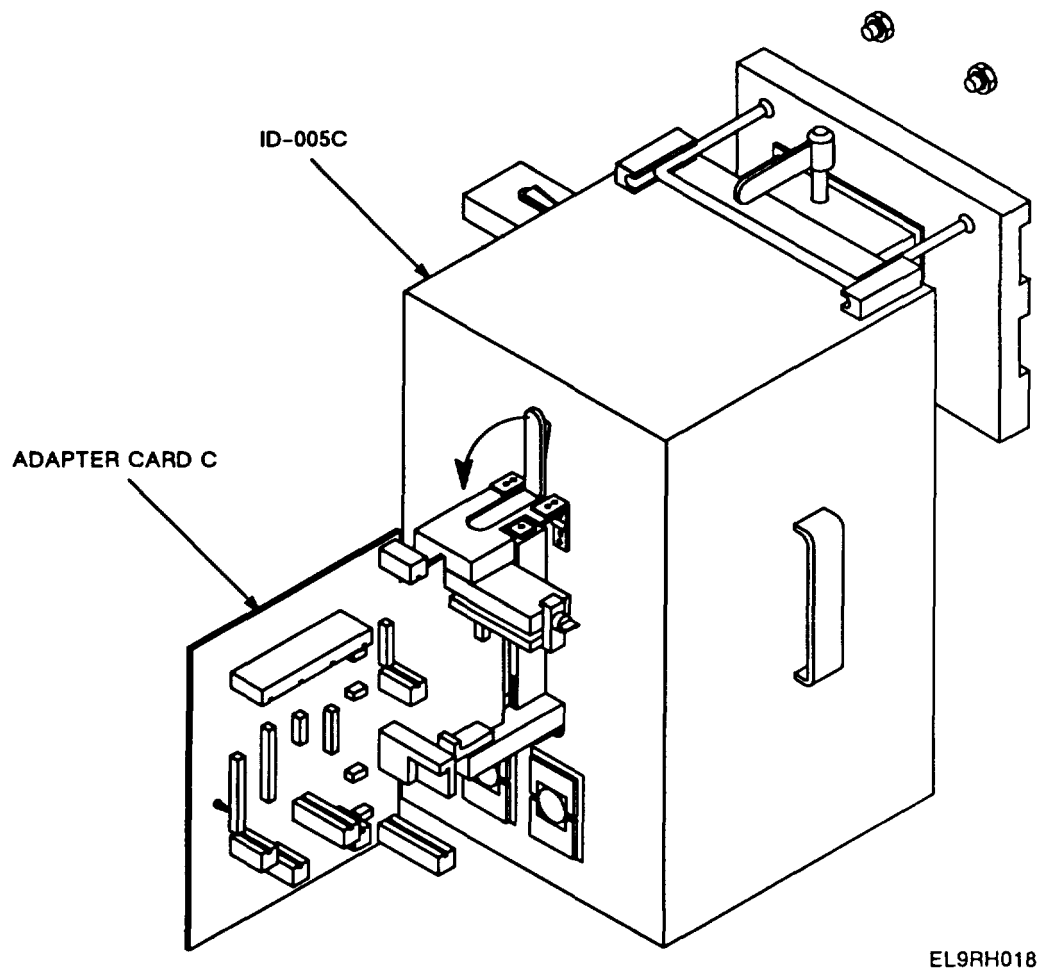
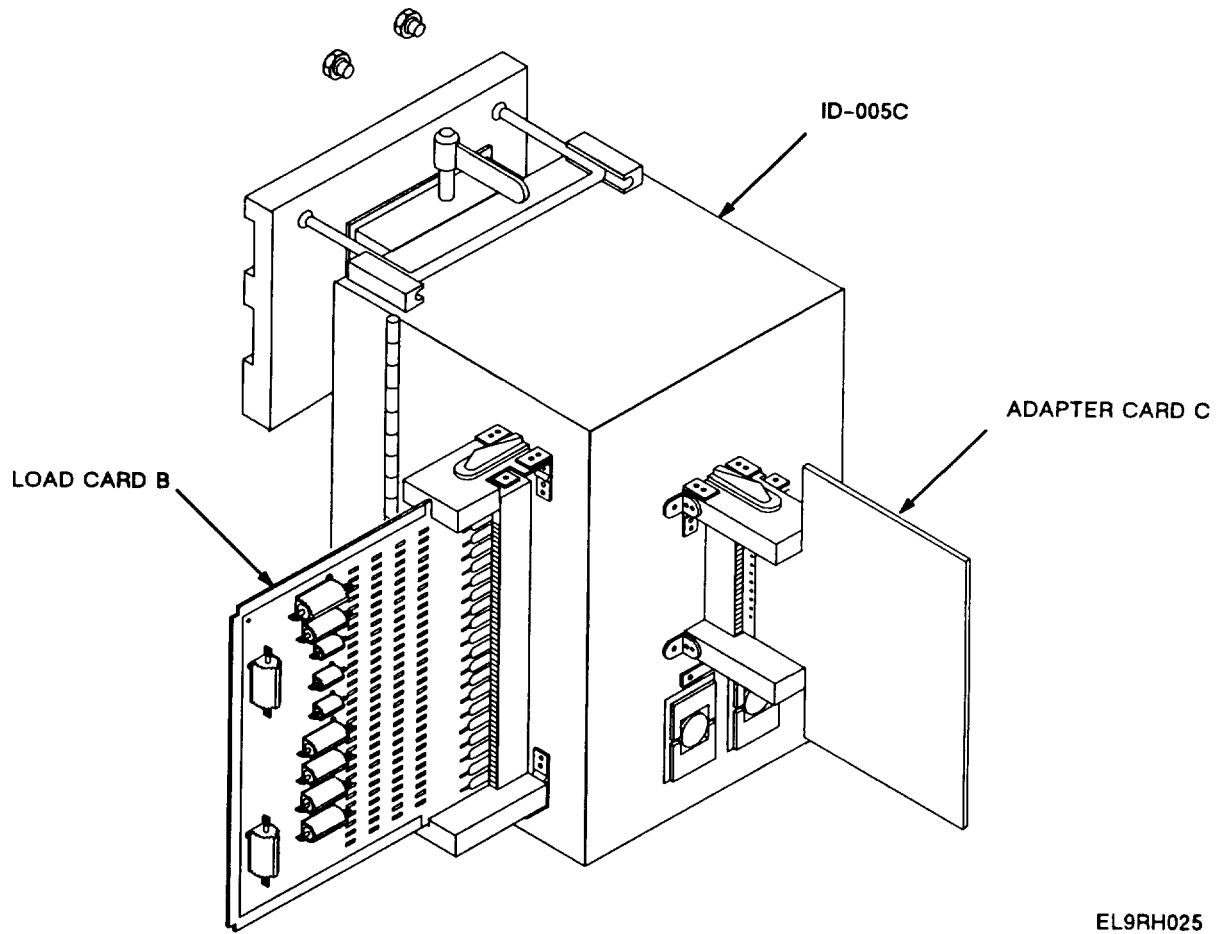
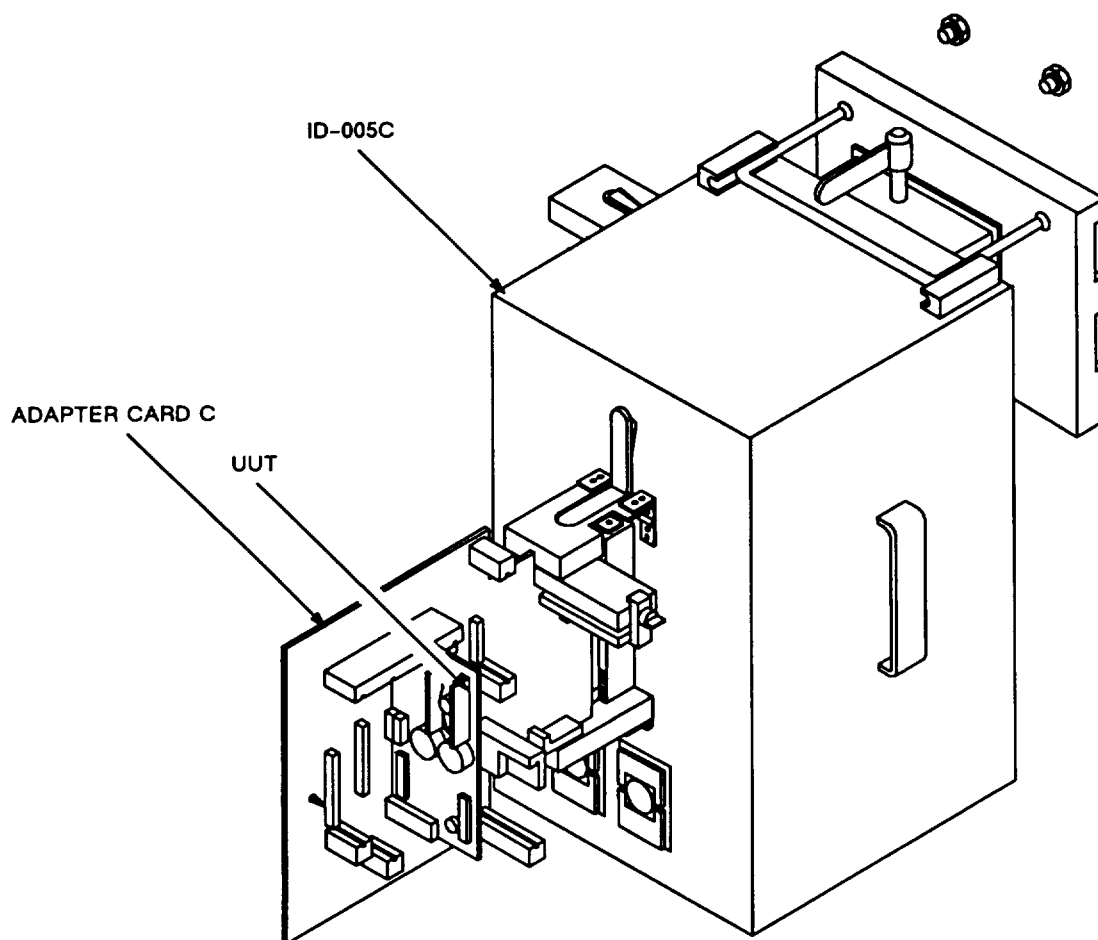


Figure 2-11. Installation of Adapter Card C for CCA-Power Supply A3014158-1



EL9RH025

Figure 2-12. Installation of Load Card B for CCA-Power Supply



EL9RH026

Figure 2-13. Installation of CCA-Power Supply on Adapter Card C

2-5. CCA-Two-Wire Interface A3014140-1, A3018726-1, A3142074-1, and A3147853-1 (1A6).

The following procedure is used to perform GO/No-Go testing of the CCA-two-wire interface assembly A3014140-1, A3018726-1, A3142074-1, and A3147853-1, 1A6, (fig. 2-14, 2-15, 2-16 and 2-17), Return failed assemblies to depot for repair.

REQUIRED TEST ACCESSORIES	
• Test Program Tape	CPIN CP0700030G
File No.	A3014140F
File No	A3018726F
Ž ICE	ID-005C
• Adapter Card C	A3017847-1
• Extender Card, Electronic-Test Self-Test C.....	A3014349-1
Ž Alignment Tool Kit	B4008667

NOTE

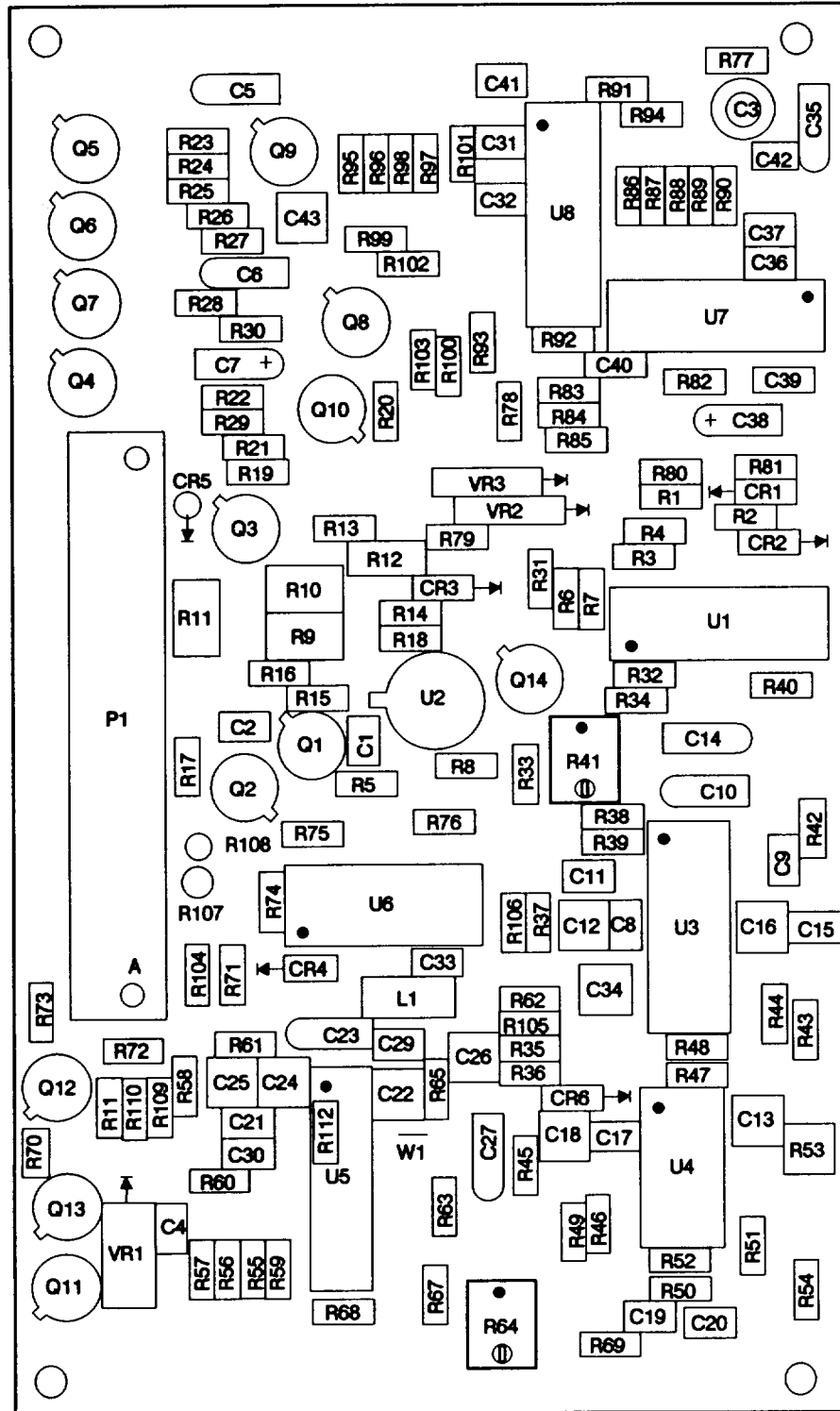
Before testing the test adapter C, run the ID-005C survey. Use test program CPIN 11GSG10 File Number ID005C.

- a. Turn on test station AN/USM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and press RETURN on VDT keyboard.

NOTE

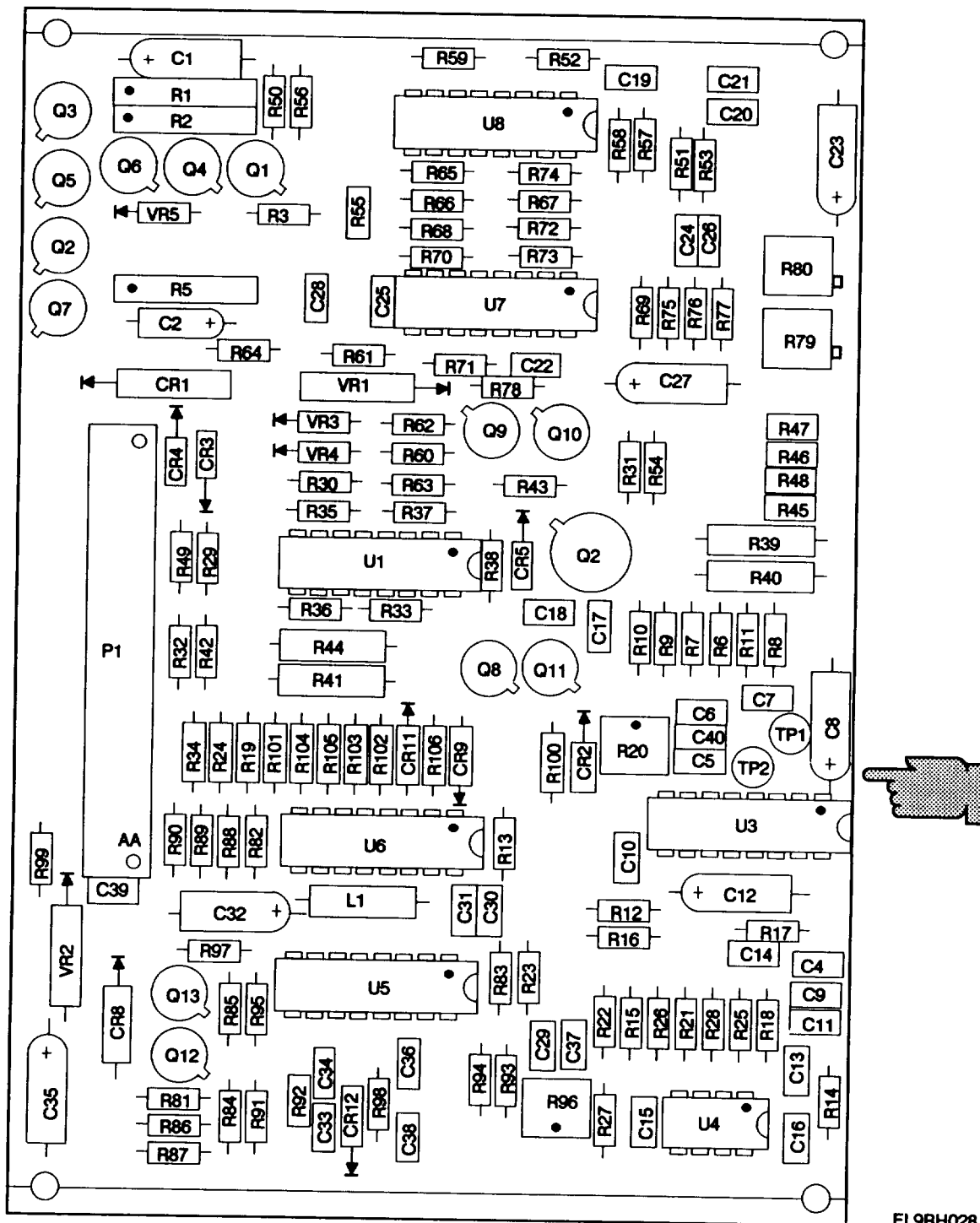
The intermediate code of this program will require 36 blocks on the removable disk pack (DPØ). Before loading the test program ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.

- d. Load test program.
 - (1) Install test program tape CPIN CP0700030G in accordance with TM 11-6625-2773-10.
 - (2) Load file on to disk in accordance with TM 11-6625-2773-10.
- e. Select test.
 - (1) Enter TEST A3014140F or A3018726F and press RETURN on VDT keyboard.
 - (2) Press STRT/PROC on the VDT keyboard.
 - (3) Follow operator instructions on VDT. Enter part number and serial number and read operator instructions on VDT.



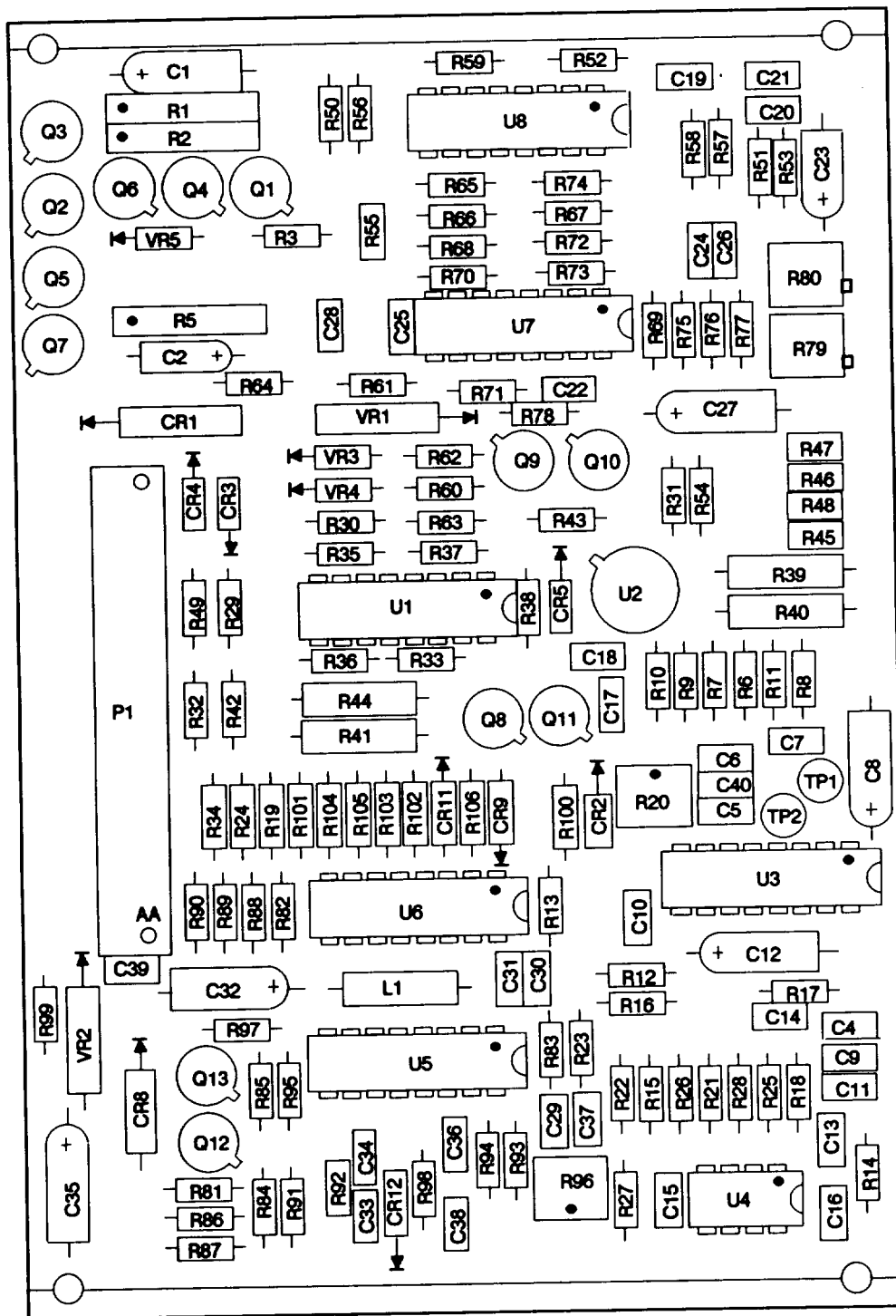
EL9RH027

Figure 2-14. CCA-Two-Wire Interface A30141410-1



EL9RH028

Figure 2-15. CCA-Two-Wire Interface A3018726-1



EL9RH028

Figure 2-16. CCA-Two-Wire Interface A3142074-1

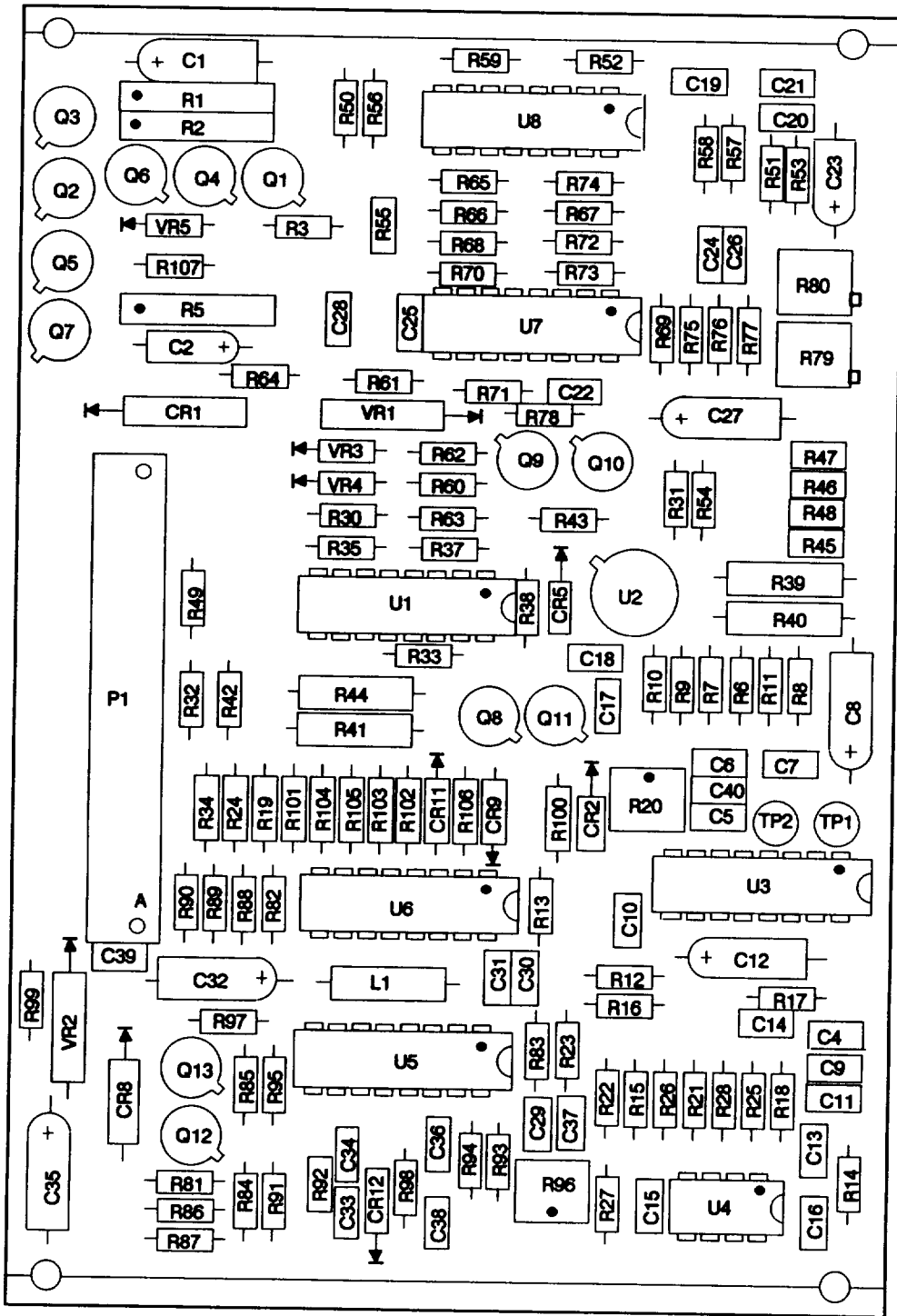


Figure 2-17. CCA-Two-Wire Interface A3147853-1

(4) Verify that the following information is displayed on the VDT:

```

-----CCA-TWO WIRE INTERFACE-----
PART NUMBER           A3014140-1
PROGRAM DATE/REV.:    MM/DD/YY REV
SERIAL NO. EFFECTIVITY: 001 THRU
MWO EFFECTIVITY:      NONE
    
```

OR

```

-----CCA-TWO WIRE INTERFACE-----
PART NUMBER           A3018726-1
PROGRAM DATE/REV.:    MM/DD/YY REV
SERIAL NO. EFFECTIVITY: 001 THRU
MWO EFFECTIVITY:      NONE
    
```

OR

```

-----CCA-TWO WIRE INTERFACE-----
PART NUMBER           A3142074-1
PROGRAM DATE/REV.:    MM/DD/YY REV
SERIAL NO. EFFECTIVITY: 001 THRU
MWO EFFECTIVITY:      NONE
    
```

OR

```

-----CCA-TWO WIRE INTERFACE-----
PART NUMBER           A3147853-1
PROGRAM DATE/REV.:    MM/DD/YY REV
SERIAL NO. EFFECTIVITY: 001 THRU
MWO EFFECTIVITY:      NONE
    
```

(5) Press STRT/PROC on the VDT keyboard.

f. Run ATE survey test if desired. If ATE survey fails refer to TM 11-6625-2773-10.

g. Install ICD ID-005C on J1 of PIU.

h. Install adapter card C on ID-005C (See fig. 2-18).

- i.* Run adapter card survey test. If survey test fails refer to TM 11-6625-3094-24.
- j.* Perform UUT hookup (See fig. 2-19).
- k.* Test and troubleshoot UUT.
- l.* Repeat or terminate testing.
 - (1) Follow operator instructions on VDT to repeat tests or terminate testing.
 - (2) Remove adapter card, ICD, and UUT as required.
 - (3) When testing of the UUT has been completed, remove test results from printer. Forward test results, along with the UUT, to next work station.

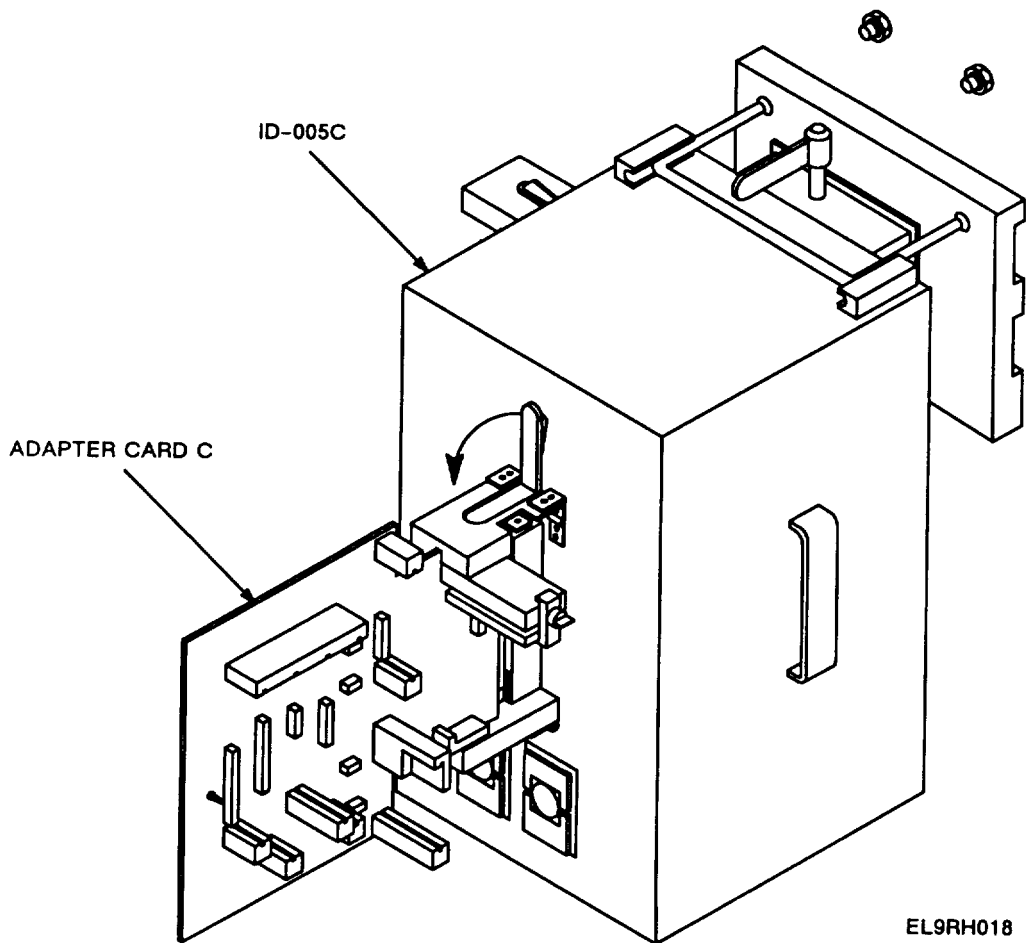


Figure 2-18. Installation of Adapter Card C for CCA-Two-Wire Interface

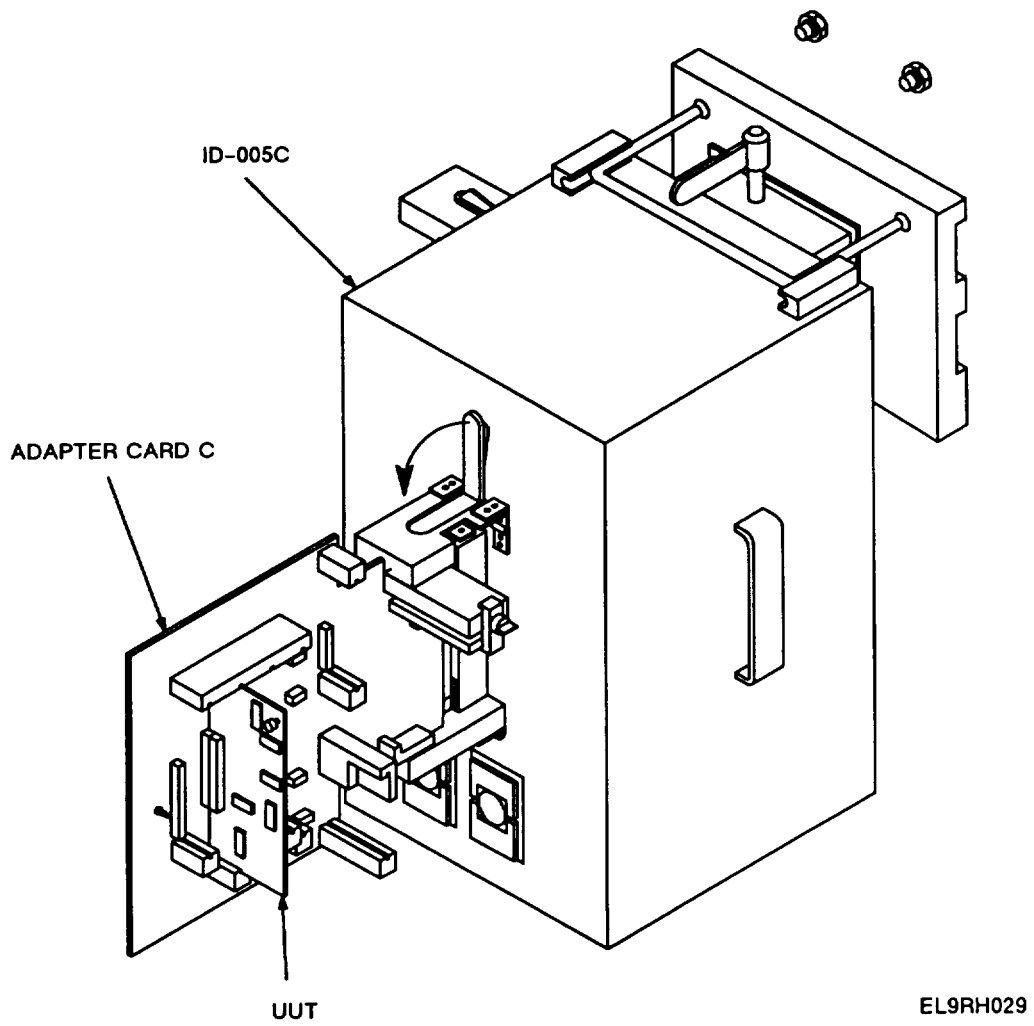


Figure 2-19. Installation of CCA-Two-Wire Interface on Adapter Card C

2-6. Electrical-Equipment Amplifier-Adapter Chassis A3013349-1, A3018430-1, and A3132854-1 (5A3).

The following procedure is used to test and troubleshoot the amplifier adapter chassis A3013349-1, A301 8430-1, and A3132854-1 (5A3) (fig. 2-22). Refer to chapter 4 for maintenance instructions.

REQUIRED TEST ACCESSORIES	
• Test Program Tape	CPIN CP0200030G
File No.	A3013349
File No.	A3132854
Ž ICD	ID-005C
• Test Adapter E	A3014508-1
Ž Self-Test Assembly-Test Adapter E	A3017926-1
• PIU Probe	SM-C-869189

NOTE

Before testing test adapter E, run the ID-005C survey. Use test program CPIN 11GSG10 File Number ID005C.

- a. Turn on test station AN/USM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and press RETURN on VDT keyboard.

NOTE

The intermediate code of this program will require 53 blocks on the removable disk pack (DPØ). Before loading the test program ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.

- d. Load test program.
 - (1) Install test program tape CPIN CP0200030G in accordance with TM 11-6625-2773-10.
 - (2) Load file on to disk in accordance with TM 11-6625-2773-10.
- e. Select test.

NOTE

Two part numbers are served by this test program. The file name for this program is A3013349.

- (1) Enter TEST A3013349 and press RETURN on VDT keyboard.
- (2) Follow operator instructions on VDT. Enter part number and serial number and read operator instructions on VDT.

(3) Verify that the following information is displayed on the VDT:

```

ELECTRICAL EQUIPMENT-AMPLIFIER-ADAPTER CHASSIS
PART NUMBER:           A3013349-1
PROGRAM DATE/REV.:     MM/DD/YY REV
SERIAL NO. EFFECTIVITY: 001 THRU *****
MWO EFFECTIVITY:       NONE
    
```

OR

```

ELECTRICAL EQUIPMENT-AMPLIFIER-ADAPTER CHASSIS
PART NUMBER:           A3018430-1
PROGRAM DATE/REV.:     MM/DD/YY REV
SERIAL NO. EFFECTIVITY: 001 THRU *****
MWO EFFECTIVITY:       NONE
    
```

OR

```

ELECTRICAL EQUIPMENT-AMPLIFIER-ADAPTER CHASSIS
PART NUMBER:           A3132854-1
PROGRAM DATE/REV.:     MM/DD/YY REV
SERIAL NO. EFFECTIVITY: 001 THRU *****
MWO EFFECTIVITY:       NONE
    
```

(4) Press STRT/PROC on the VDT keyboard.

f. Run ATE survey test if desired. If ATE survey fails refer to TM 11-6625-2773-10.

g. Install ICD ID-005C on J1 of PIU.

h. Install test adapter E on ID-005C (See fig. 2-21).

WARNING

This UUT contains voltages of approximately 120 Volts. Observe Standard Safety Precautions when working on Electronic Equipment.

- i. Run test adapter E survey test. If survey test fails refer to TM 11-6625-3094-24.
- j. Perform UUT hookup (See fig. 2-22).

NOTE

The mounting adapter contains a power link used in tracked vehicles. The TPS will instruct you to remove the link for testing. This link must be removed in order to properly test the mounting adapter. When testing is complete, return the link to its original position.

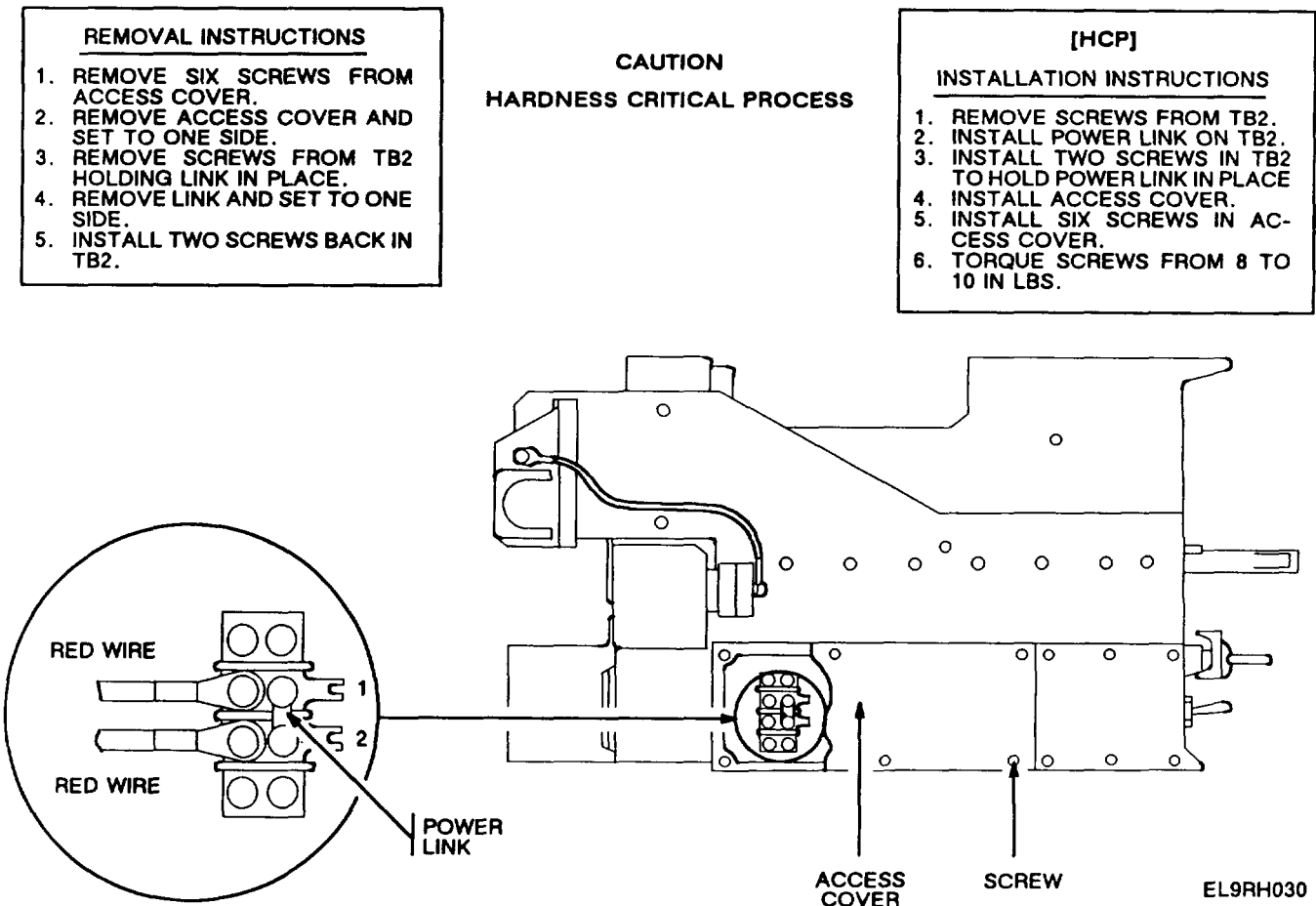


Figure 2-20. Amplifier-Adapter Power Link Location

k. Test and troubleshoot UUT.

l. Repeat or terminate testing.

(1) Follow operator instructions on VDT to repeat tests or terminate testing.

(2) Remove adapter card, ICD, and UUT as required.

(3) When testing of the UUT has been completed, remove test results from printer. Forward test results, along with the UUT, to next work station.

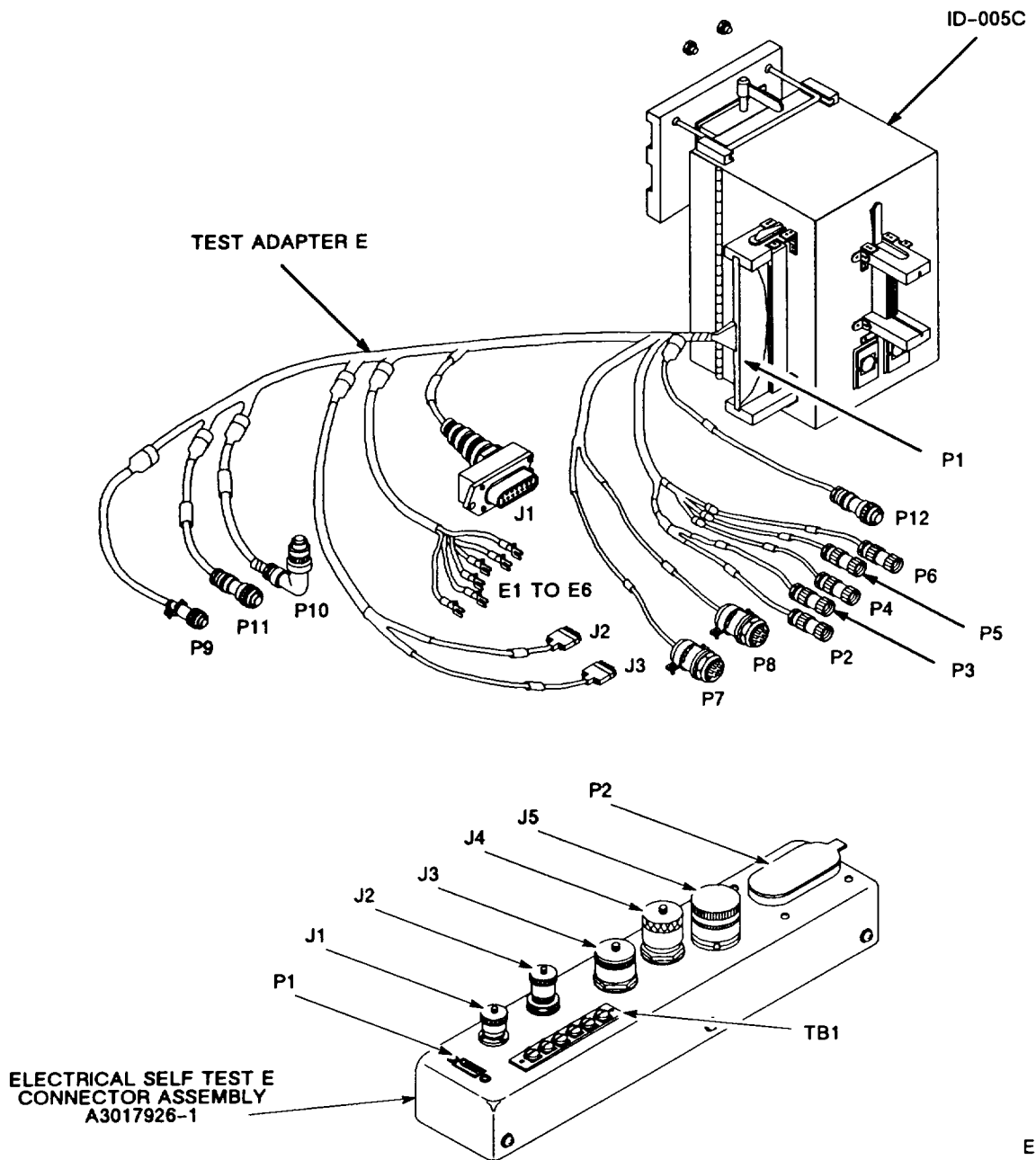
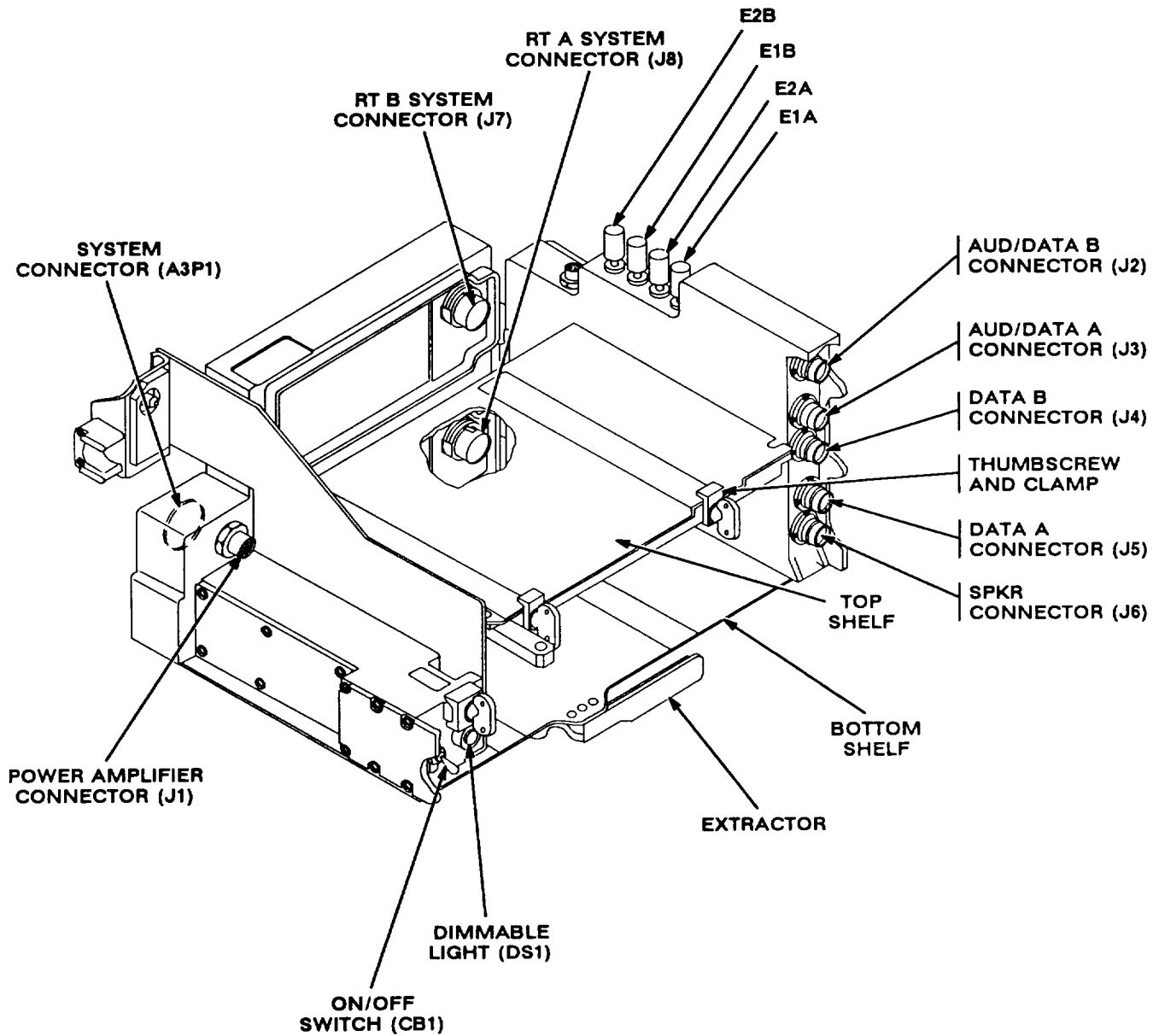


Figure 2-21. Installation of Test Adapter E on ICD ID-005C

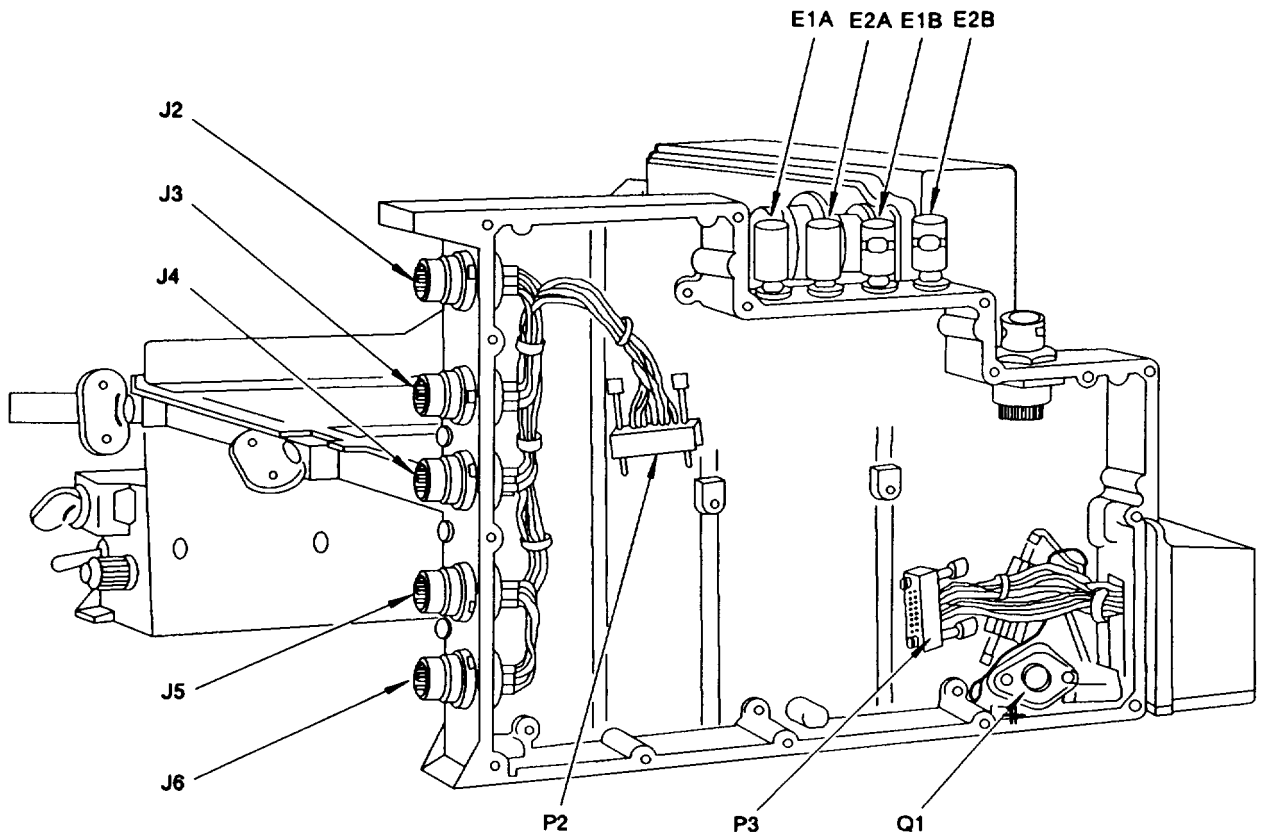
EL9RH031



EL9RH032

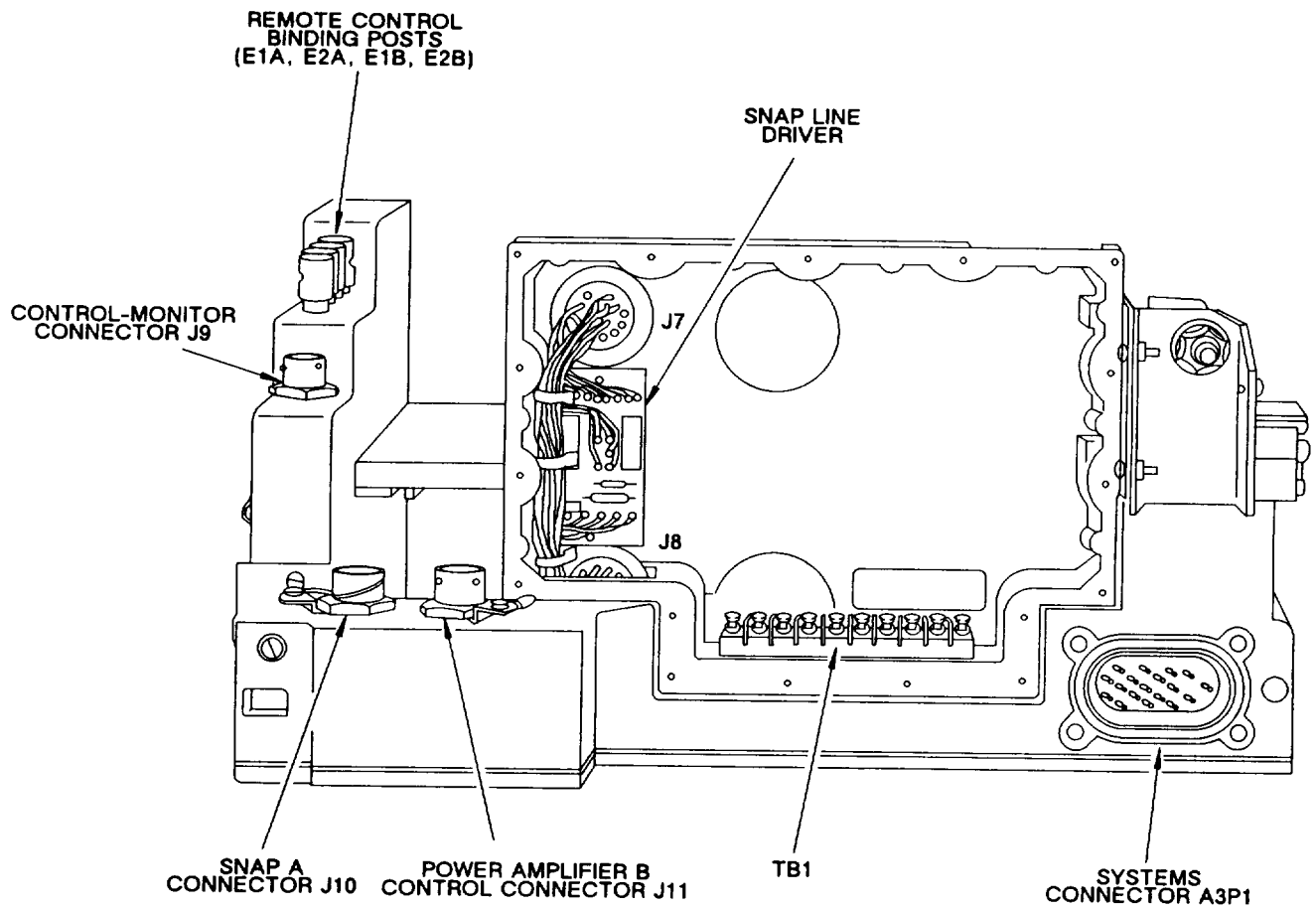
Figure 2-22, Electrical Equipment-Amplifier-Adapter Chassis A3013349-1, A3018430-1, and A3132854-1 Connector Location (Sheet 1 of 3)

CONNECTOR J2 TO J6, P2 AND P3 LOCATION



EL9RH033

Figure 2-22. Electrical Equipment-Amplifier-Adapter Chassis A3013349-1, A3018430-1, and A3132854-1 Connector Location (Sheet 2 of 3)



EL9RH034

Figure 2-22, Electrical Equipment-Amplifier-Adapter Chassis A3013349-1, A3018430-1, and A3132854-1 Connector Location (Sheet 3 of 3)

2-7. RF Heatsink A3013374-1 (6A3).

The following procedure is used to test and troubleshoot the RF heatsink, 6A3, A3013374-1 (fig. 2-23). Refer to chapter 4 for maintenance procedures.

REQUIRED TEST ACCESSORIES	
Ž	Test Program Tape CPIN CP0200030G File No. A3013374A A3013374B
Ž	Wiring Harness, Branched, ICD-G A3014511-1
Ž	RF Amplifier ENI Model 325LA
Ž	Accessory Kit A3018639-1 Items:
	Cable Assembly, RF (W1) A3018640-1
	Cable Assembly, RF (W2) A3018641-1
	Cable Assembly, RF (W3) A3018642-1
	Cable Assembly, RF (W4) A3018643-1
	Attenuator, 10 W, 10 dB (AT1) A3018544-1
	Attenuator, 150 W, 30 dB (AT2) A3018545-1
	Adapter, Connector (CP1) M55339/07-00029
•	ANWSM-410 Test Accessory Kit B4021292 Items:
	Probe SM-C-869189
	Probe, Active (RF) SM-C-855100
	Cable, Assembly, RF (W101) B4021271
	Cable, Assembly, RF (W102) B4021272
	Cable, Assembly, RF (W103) B4021273
	Adapter, Connector (2 reqd) B4021032

- a. Turn on test station ANWSM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and PRESS return on VDT keyboard.

NOTE

The intermediate code of this program will require 40 blocks on the removable disk pack (DPØ). Before loading the test program ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.

d. Load test program.

- (1) Install test program tape CPIN CP0200030G in accordance with TM 11-6625-2773-10,
- (2) Load file onto disk in accordance with TM 11-6625-2773-10.

e. Select test.

- (1) There are two RF amplifiers used in this heatsink. They are interchangeable but require different diagnostic programs. Inspect the amplifier cards, find the part number, and enter the appropriate file name.

- A3014166-1 enter A3013374A
- Ž A3017893-1 enter A3013374B

- (2) Enter TEST A3013374A or TEST A3013374B and press RETURN on VDT keyboard.

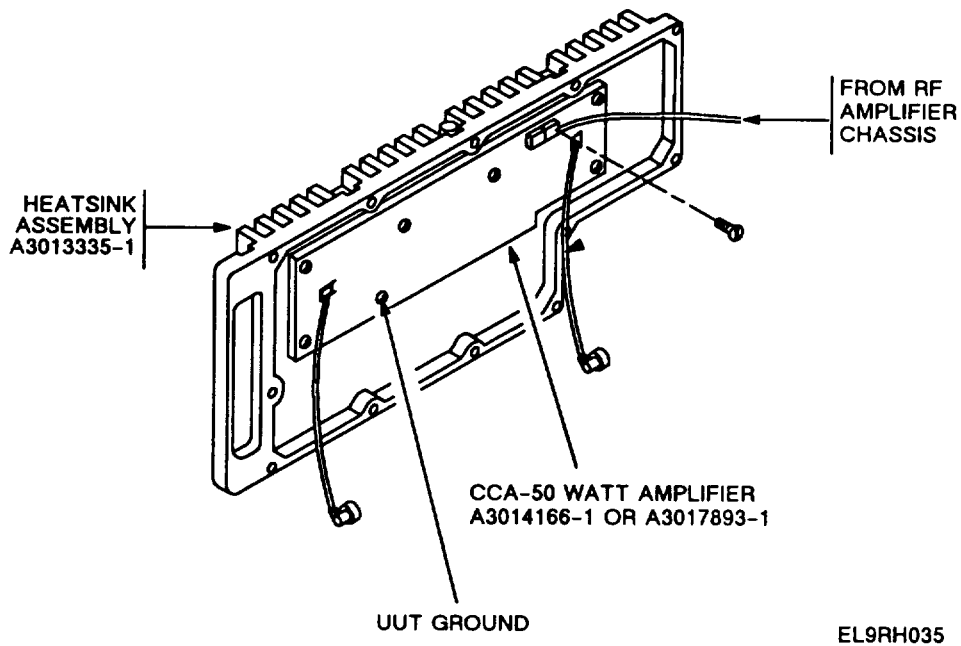


Figure 2-23. Electrical-Electronic Component RF Amplifier Heatsink A3013374-1 (Sheet 1 of 3)

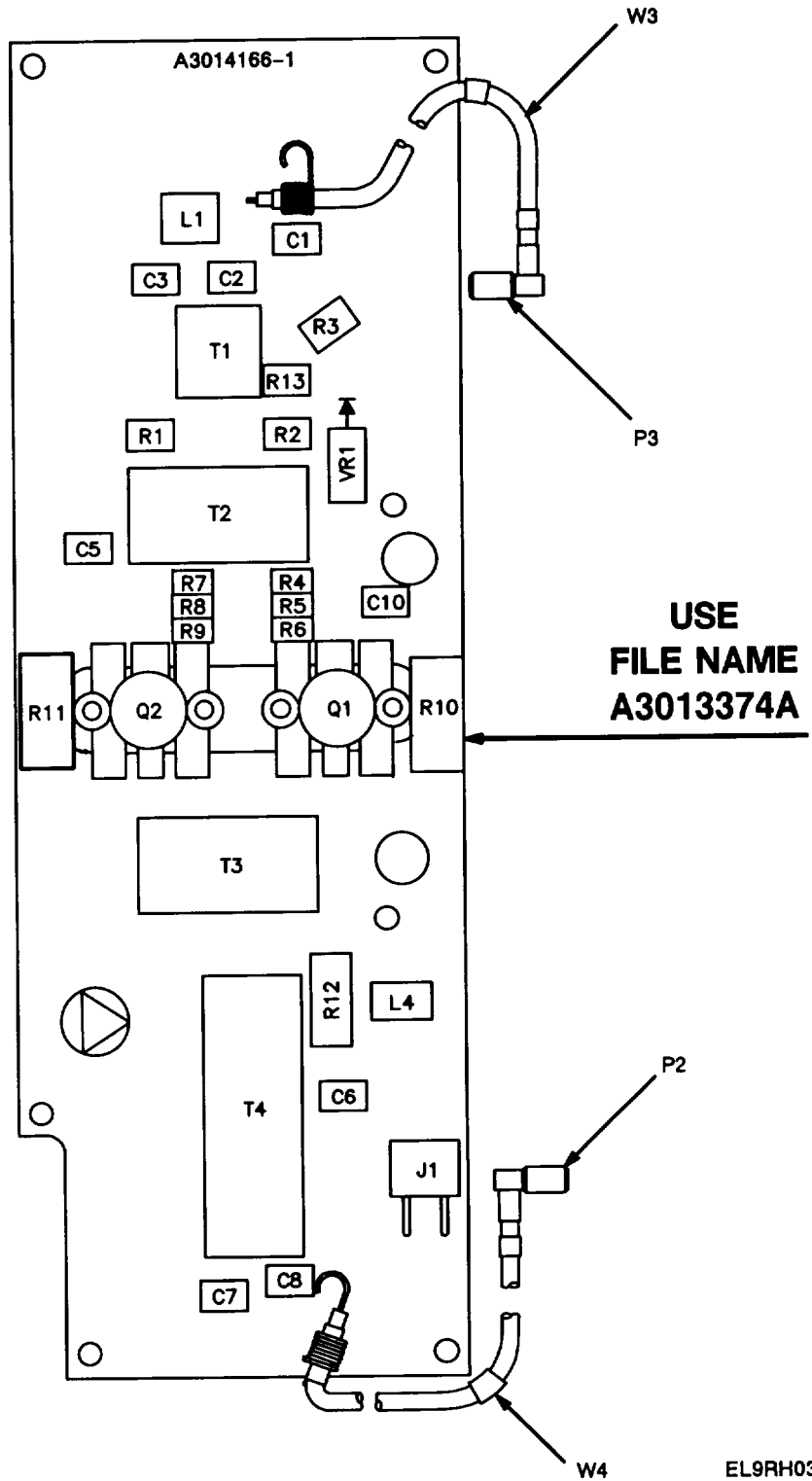


Figure 2-23. Electrical-Electronic Component RF Amplifier Heatsink A3013374-1 (Sheet 2 of 3)

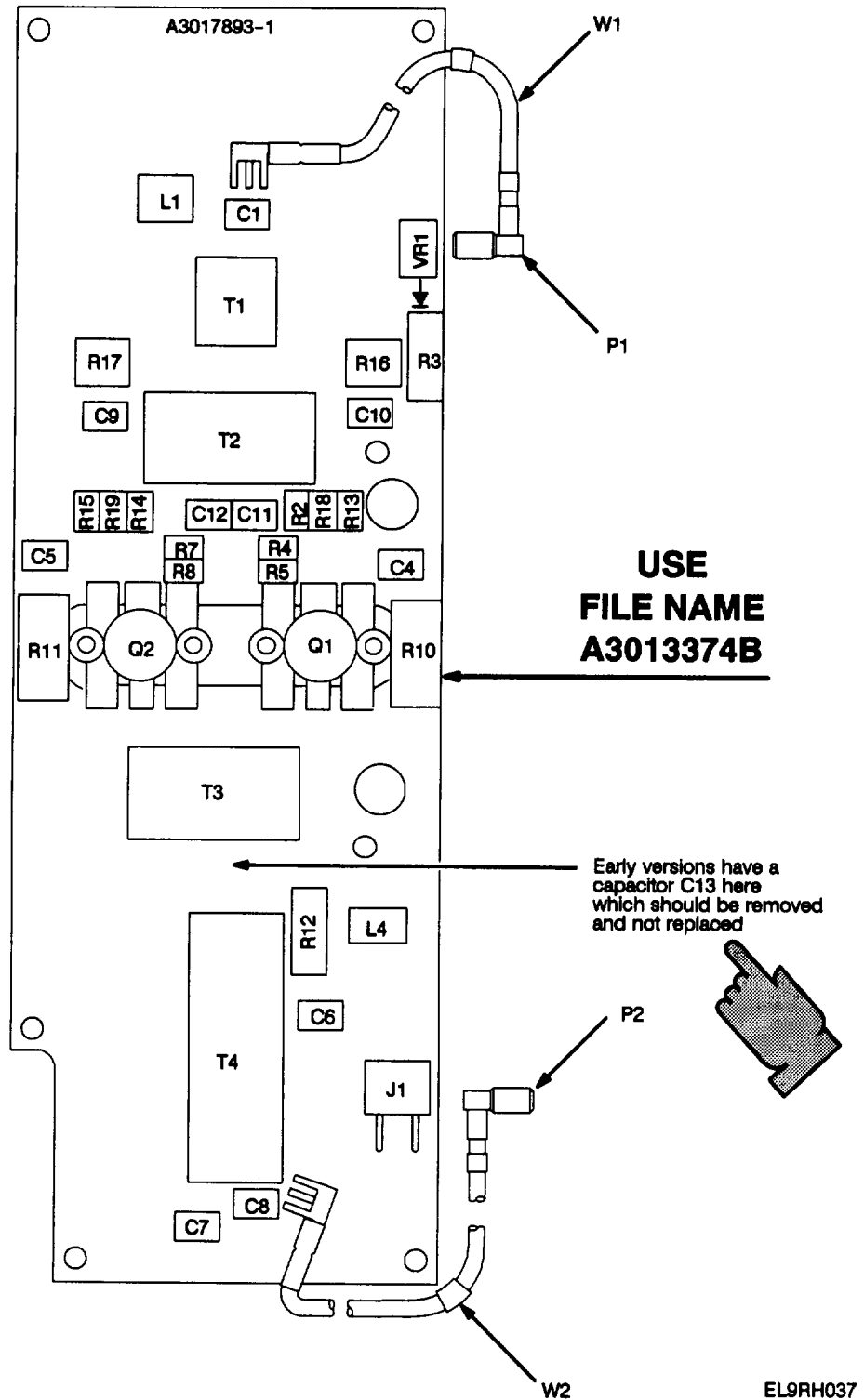


Figure 2-23. Electrical-Electronic Component RF Amplifier Heatsink A3013374-1 (Sheet 3 of 3)

(3) Verify that the following information is displayed on the VDT:

HEATSINK, ELECTRICAL --	
ELECTRONIC COMPONENT AMPLIFIER, RF	
PART NUMBER	A3013374-1
PROGRAM DATE/REV.:	MM/DD/YY REV
SERIAL NO. EFFECTIVITY	001 THRU ***
MWO EFFECTIVITY	NONE

(4) Follow operator instructions on VDT. Enter part number and serial number and read operator instructions on VDT.

(5) Press STRT/PROC on the VDT keyboard.

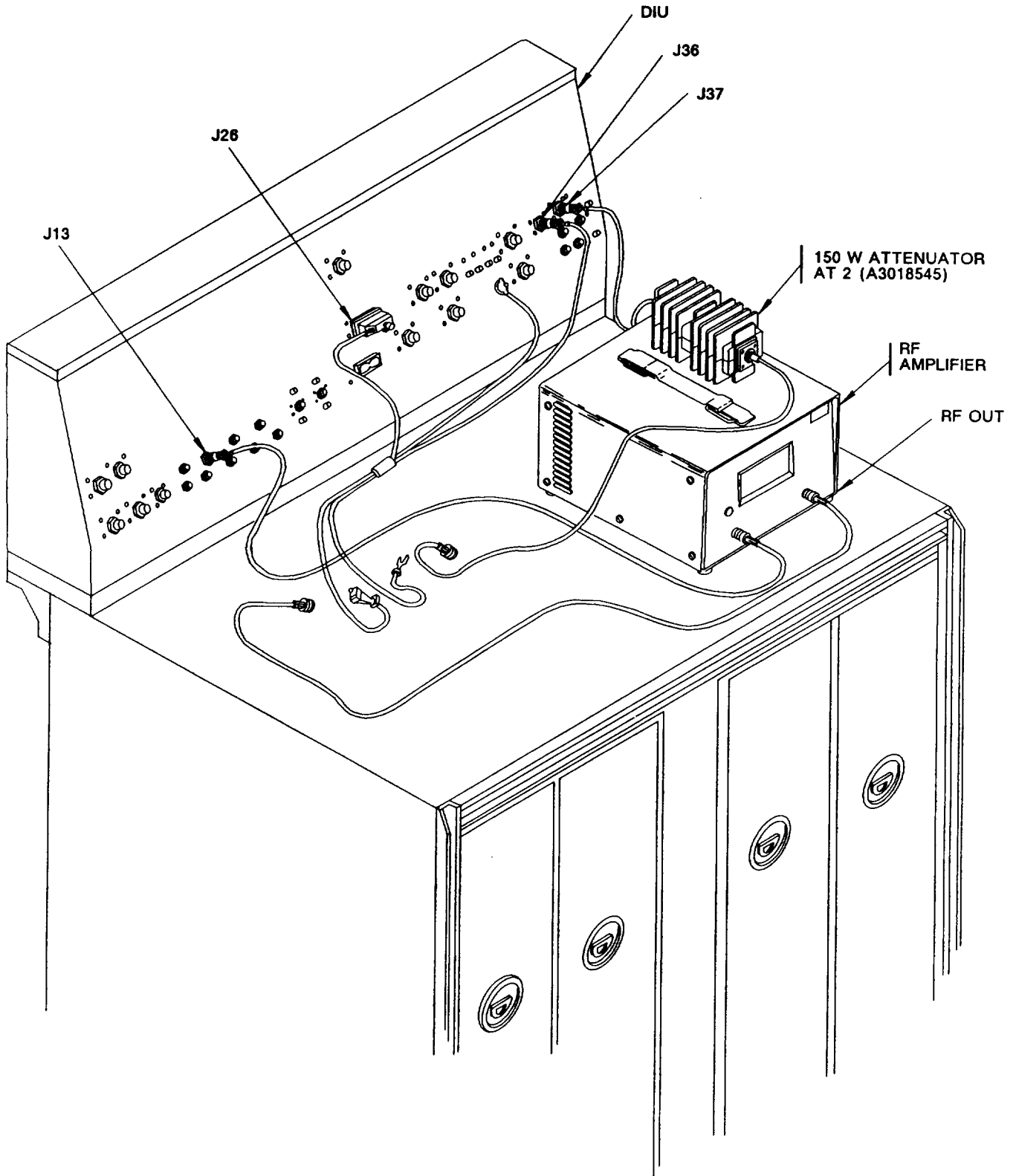
- f. Run ATE survey test if desired. If ATE survey fails refer to TM 11-6625-2773-10.
- g. Install wiring harness, branched-interface connect device G (See fig, 2-24).
- h. Run wiring harness ICD G survey test. If survey test fails refer to TM 11-6625-309-24.
- i. Perform UUT hookup (See fig. 2-25).

WARNING

- Ž This UUT normally outputs 50 watts of RF energy (100V rms). RF burn could result from touching output connectors. Observe standard safety precautions when working on electrical equipment.
- Ž FOR ARTIFICIAL RESPIRATION REFER TO FM 21-11.

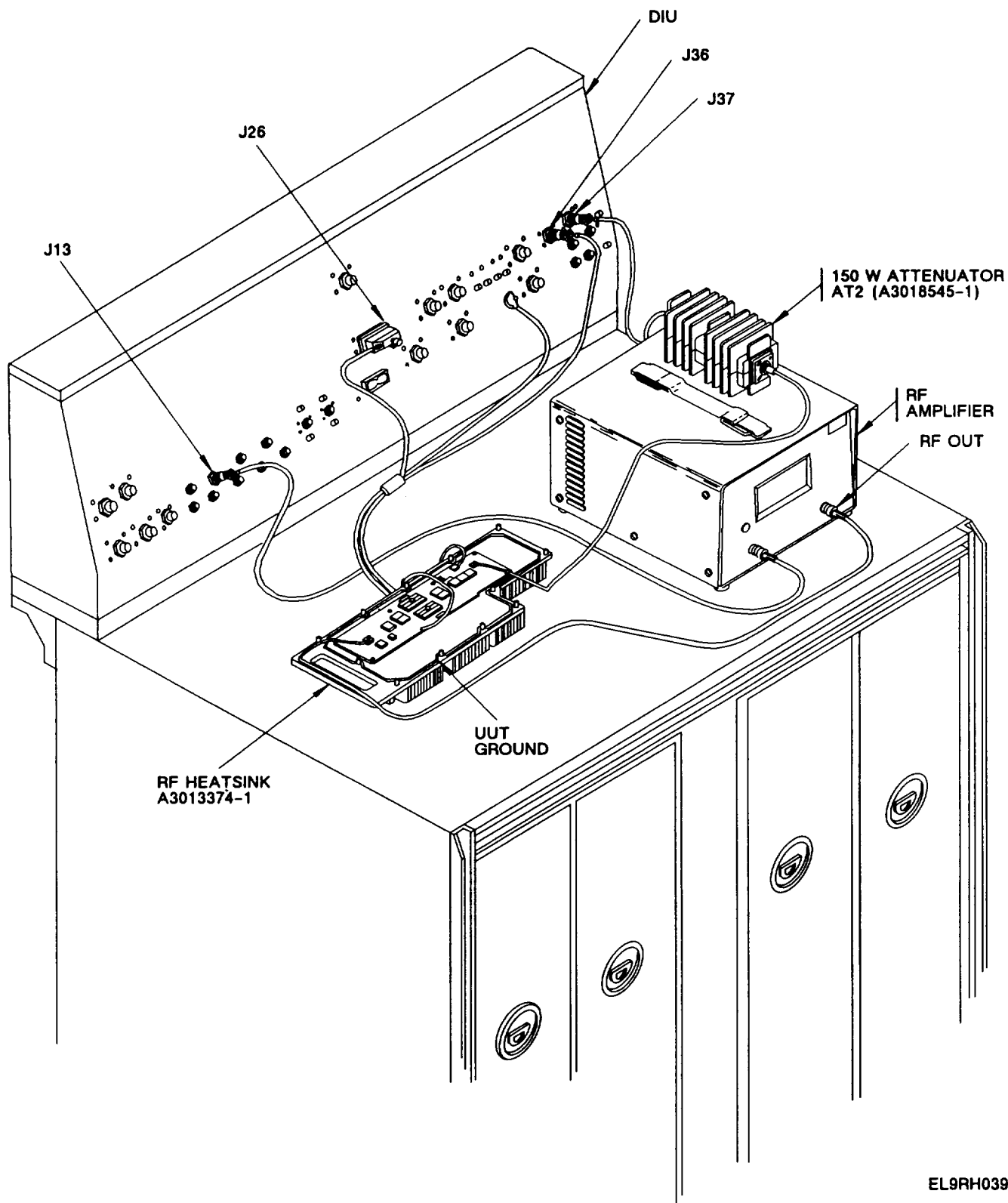
CAUTION

- Ž This UUT contains devices sensitive to damage by electrostatic discharge (ESD).
 - Ž This UUT contains direct currents of approximately 6 amps at 27 V. Care must be taken to avoid shorting the 27 V to ground while probing.
- j. Test and troubleshoot UUT.
 - k. Repeat or terminate testing.
 - (1) Follow operator instructions on VDT to repeat tests or terminate testing.
 - (2) Remove adapter card, ICD, and UUT as required.
 - (3) When testing of the UUT has been completed, remove test results from printer. Forward test results, along with the UUT, to next work station.



EL9RH038

Figure 2-24. Installation of ICD for RF Heatsink.



EL9RH039

Figure 2-25. Installation of RF Heatsink UUT on ICD

2-8. IF/Demodulator A3013360-1, A3018758-1, A3142081-1, and A3142186-1 (1A8).

The following procedure is used to test and troubleshoot the IF/demodulator, 1A8, A3013360-1, A3018758-1, A3142081-1, and A3142186-1 (fig. 2-26). Refer to chapter 4 for maintenance instructions.

NOTE

If your AN/USM-410 (V) 2 is in a van AN/MSM-105(V) configuration, you must connect the HP-IB interconnect cable (PN 10833B) to connector A3J8 of control station A3 prior to starting any program using the Network Analyzer. Refer to TM 11-6625-2773-30-1.

REQUIRED TEST ACCESSORIES

- Test Program Tape CPIN CP0700030G
 - File No. A3013360
 - File No. A3018758
 - File No. A3142186
- ICD ID-005C
- Adapter Card C A3017847-1
- Extender Card, Electronic-Test
Self-Test C A3014349-1
- Accessory Kit A3018639-1 Items:
 - Cable Assembly, RF (W5) A3019037-1
 - Attenuator 1 W, 60dB (AT4) M3933/19-17
 - Attenuator W,10 dB (AT5, AT6) M3933/19-08
 - Attenuator 1 W, 20dB (AT7) M3933/19-12
 - Adapter, Connector (CP4) A3018688-1
 - Adapter, Connector (CP2) A3018791-1
 - Termination Assembly (T1) A3140053-1
- AN/USM-410 Test Accessory Kit B4021292 Items:
 - Probe SM-C-869189
 - Cable Assembly, RF (W107) B4021258
 - Cable Assembly, RF (W102) B4021272
 - Cable Assembly, RF (W103) (2 reqd) B4021273
 - Cable Assembly, RF (W104) (2 reqd) B4021274
 - Probe Active (RF) SM-C-855100
 - Adapter, BNC Jack to Jack UG-274B
- AN/USM-410 Test Accessory Kit B4021295 Items:
 - Adapter, N/BNC (2 reqd) UG-201/A
 - Attenuator, Type N, 10 dB B4039096-3
- AN/USM-410 Test Accessory Kit B4039559 Items:
 - Cable Assembly, RF (W108) B4002577
- Alignment Tool Kit B4008667
- Network Analyzer, HP Model 3577A
- S-Parameter Test Set HP Model 35677A/B
- HP-IB Interconnect Cable 10833B

NOTE

Before testing adapter card C, run the ID-005C survey. Use test program CPIN 11GSG10 File Number ID005C.

This program uses the RF Station A5. Ensure the RF Station power is set to ON and cables W9 and W10 are installed. Do not remove these cables during the ATE survey.

- a. Turn on test station ANWSM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and press RETURN on VDT keyboard.

NOTE

The intermediate code of this program will require 46 blocks on the removable disk pack (DPØ). Before loading the test program ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.

- d. Load test program.
 - (1) Install test program tape CPIN CP0700030G in accordance with TM 11-6625-2773-10.
 - (2) Load file on to disk in accordance with TM 11-6625-2773-10.
- e. Select test.

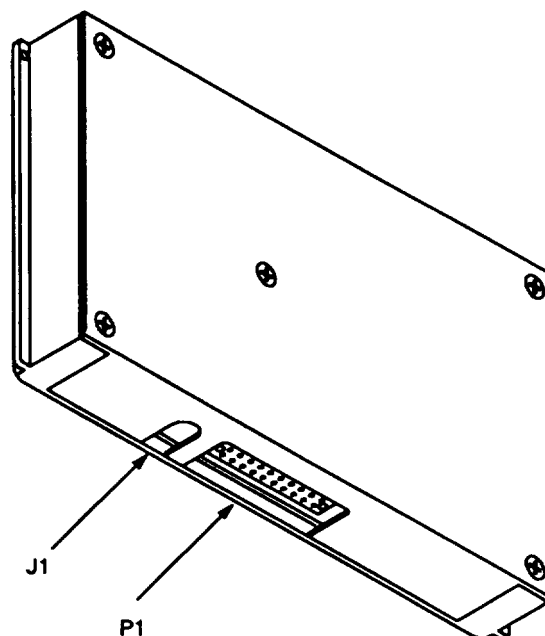


Figure 2-26. IF/Demodulator A3013360-1, A3018758-1, A3142081-1, and A3142186-1 (Sheet 1 of 4)

CCA-IF/DEMODULATOR (1A8) A3014207-1

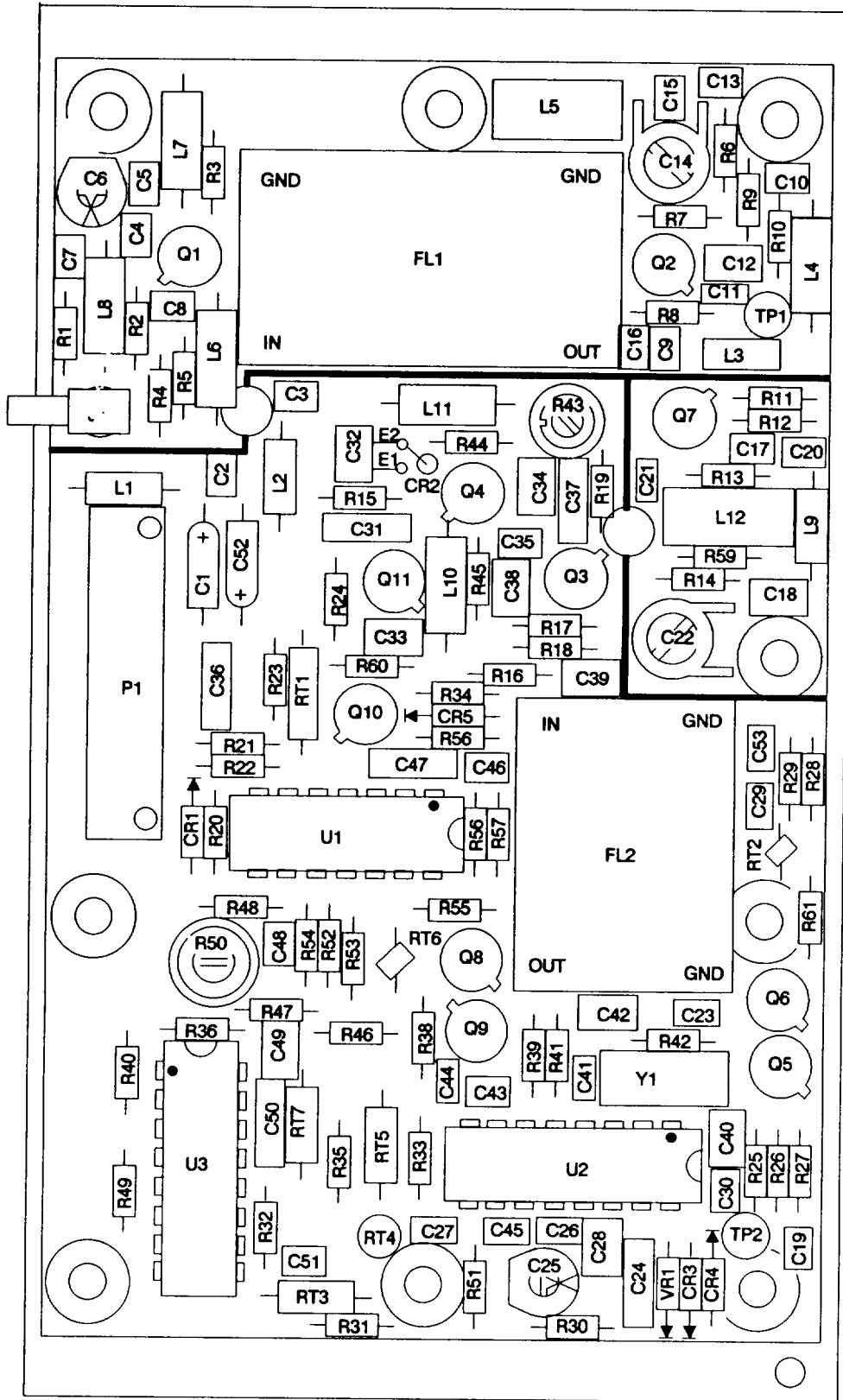
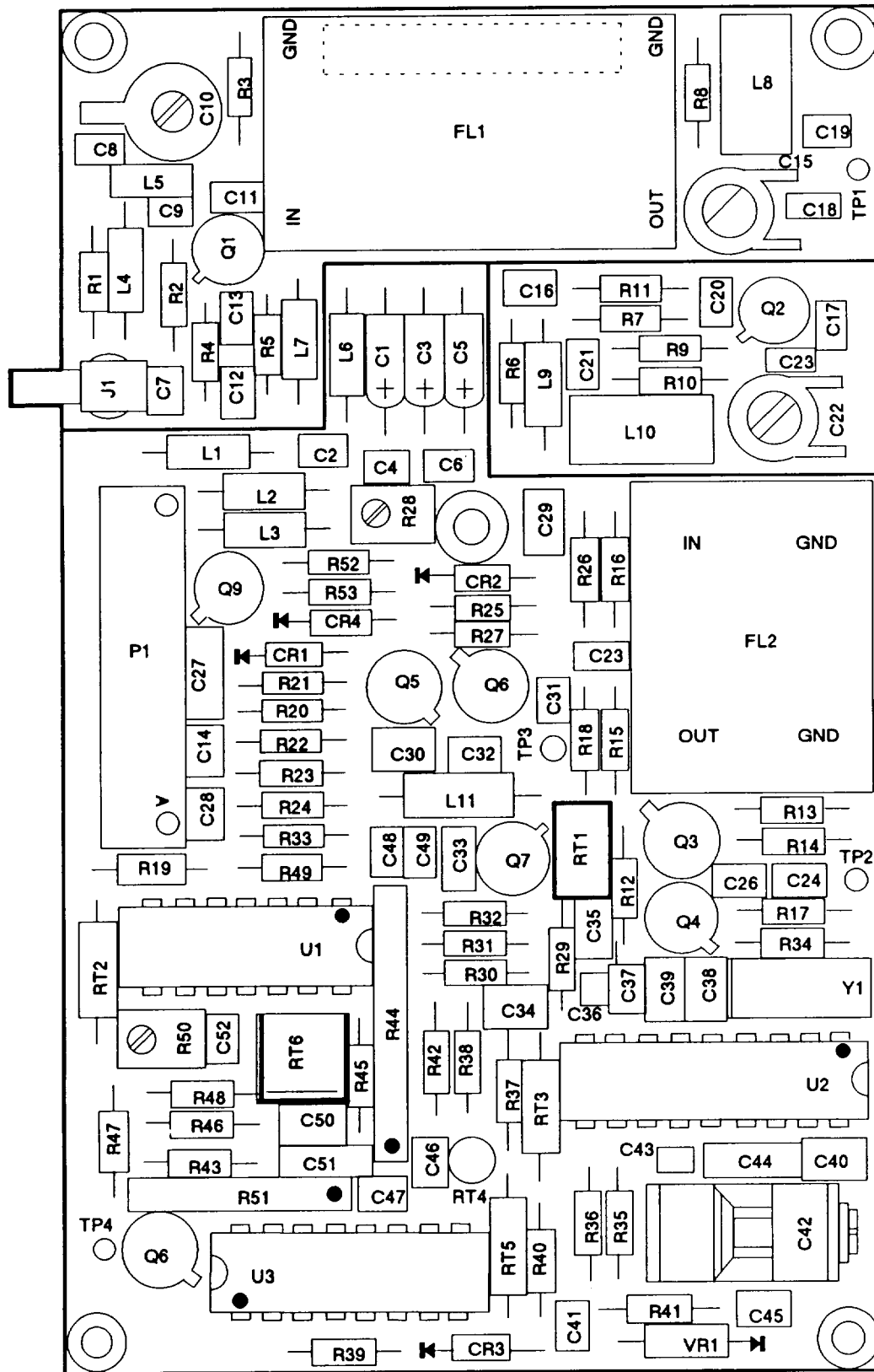


Figure 2-26. IF/Demodulator A3013360-1, A3018758-1, A3142081-1, and A3142186-1 (Sheet 2 of 4)

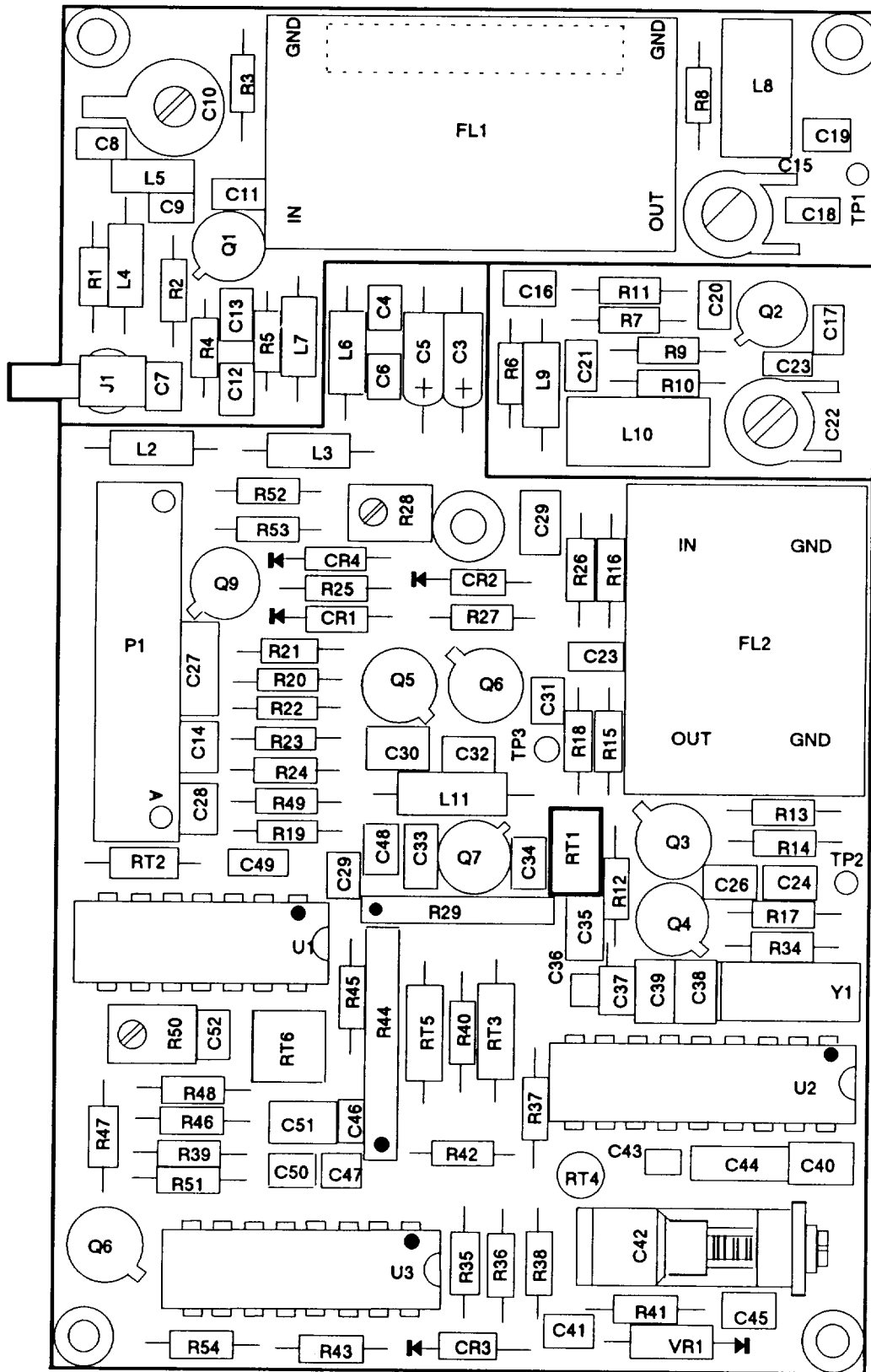
CCA-IF/DEMODULATOR (1A8) A3018739-1



EL9RH041.1

Figure 2-26. IF/Demodulator A3013360-1, A3018758-1, A3142081-1, and A3142186-1 (Sheet 3 of 4)

CCA-IF/DEMODUATOR (1A8) A3142144-1



EL9RH041.2

Figure 2-26. IF/Demodulator A3013360-1, A3018758-1, A3142081-1, and A3142186-1 (Sheet 4 of 4)

- (1) Enter TEST A3013360, A3018758, or A3142186 and press RETURN on VDT keyboard.
- (2) Press STRT/PROCon the VDT keyboard.
- (3) Enter part number and serial number and read operator instructions onVDT. Follow operator instructions on VDT.
- (4) Verify that the following information is displayed on the VDT:

```

-----IF/DEMOMULATOR-----
PART NUMBER:           A3013360-1
PROGRAM DATE/REV.:    MM/DD/YY REV
SERIAL NO. EFFECTIVITY: 001 THRU ***
MWO EFFECTIVITY:      NONE
    
```

OR

```

-----IF/DEMOMULATOR-----
PART NUMBER:           A3018758-1
                                     OR
PART NUMBER:           A3142081-1
PROGRAM DATE/REV.:    MM/DD/YY REV
SERIAL NO. EFFECTIVITY: 001 THRU ***
MWO EFFECTIVITY:      NONE
    
```

OR

```

-----IF/DEMOMULATOR-----
PART NUMBER:           A3142186-1
PROGRAM DATE/REV.:    MM/DD/YY REV
SERIAL NO. EFFECTIVITY: 001 THRU ***
MWO EFFECTIVITY:      NONE
    
```

- (5) Press STRT/PROC on the VDT keyboard.
- f.* Run ATE survey testis desired. If ATE survey fails refer to TM 11-6625-2773-10.
- g.* Install ICD ID-005C on J1 of PIU.
- h.* Install adapter card Con ID-005C (See fig. 2-30).
- i.* Run adapter card survey test. If survey test fails refer to TM 11-6625-3094-24.

j. Install network analyzer and perform the following steps (See fig. 2-29):

- (1) Connect HP-IB interconnect cable from network analyzer to connector A3J8 on Station A3.
- (2) Install all cables on network analyzer (See fig. 2-28).
- (3) Press SPCL FCTN key on network analyzer.
- (4) Press HP-IB ADDRESS key on network analyzer (top key on SOFT-KEY pad).
- (5) Press 11 on network analyzer keypad.
- (6) Press ENTER key on network analyzer (top key on SOFT-KEY pad).

k. Calibrate the ATE for test accessories:

- (1) Measure loss of RF cable W101, W104, W5, and attenuators AT4 and AT5.
- (2) Press PROCEED when completed.

l. Perform UUT hookup (See fig. 2-31).

- Disassemble as required (See fig. 2-27).

m. Perform alignment if required.

- (1) Adjust network analyzer for open-ended cable W5.
- (2) Press PROCEED when completed.
- (3) Adjust network analyzer for short-ended cable W5.
- (4) Press PROCEED when completed.
- (5) Adjust network analyzer for 50 ohm load.
- (6) Press PROCEED when completed.

n. Test and troubleshoot UUT.

o. Repeat or terminate testing.

- (1) Follow operator instructions on VDT to repeat tests or terminate testing.
- (2) Remove adapter card, ICD, and UUT as required.
- (3) When testing of the UUT has been completed, remove test results from printer. Forward test results, along with the UUT, to next work station.

DISASSEMBLY INSTRUCTIONS

1. REMOVE NINE SCREWS FROM REAR COVER.
2. REMOVE REAR COVER AND SET TO ONE SIDE.
3. REMOVE TWO SCREWS FROM FRONT COVER.
4. REMOVE FRONT COVER AND SET TO ONE SIDE.
5. REMOVE CCA AND INSTALL ON TEST ADAPTER.

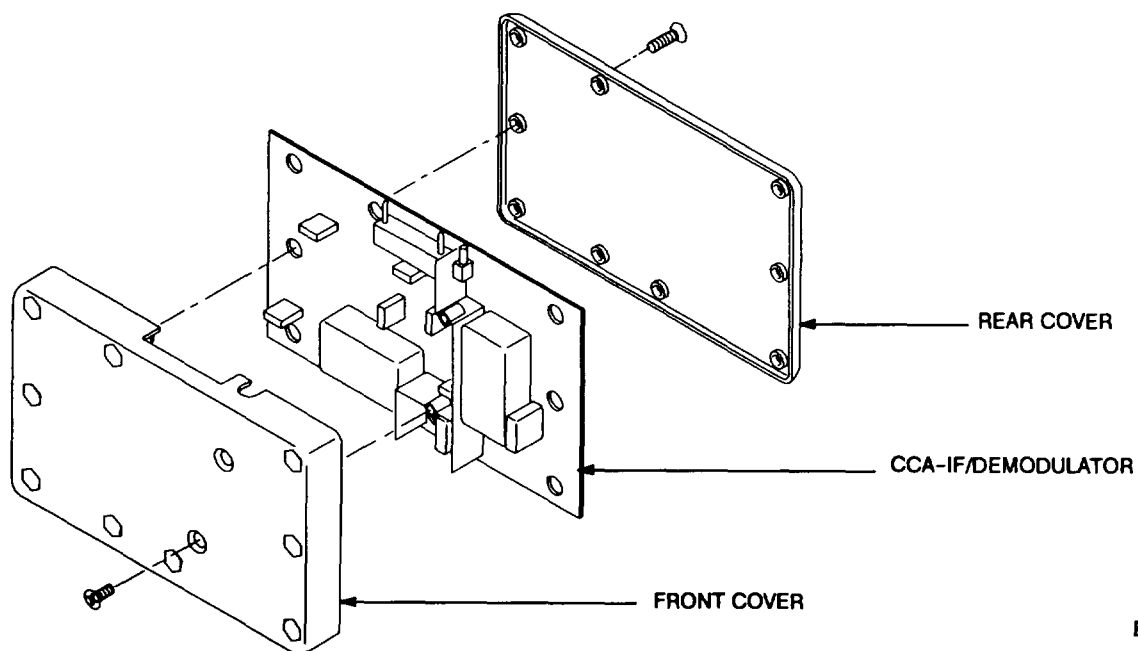


Figure 2-27. Disassembly Procedures for IF/Demodulator

NOTE

If your AN/USM-410(V)2 is in a van AN/MSM-105(V) configuration, you must connect the HP-IB interconnect cable (PN 10833B) to connector A3J8 of control station A3 prior to starting program. Refer to TM 11-6625-2773-30-1.

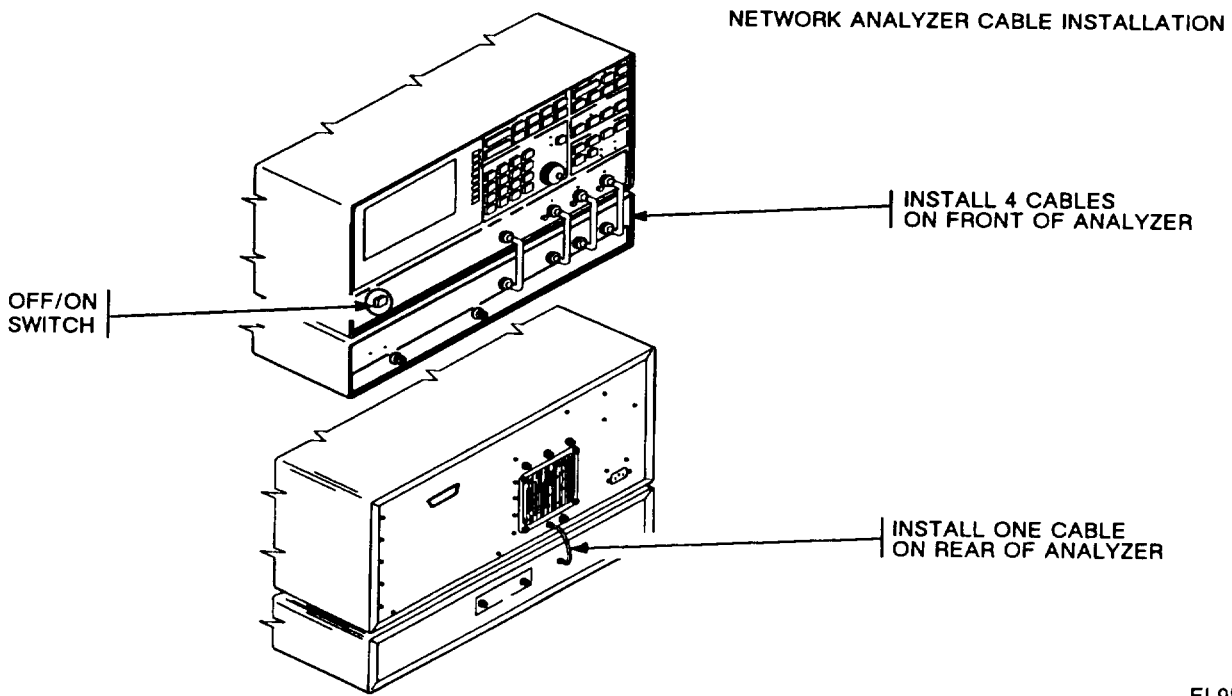
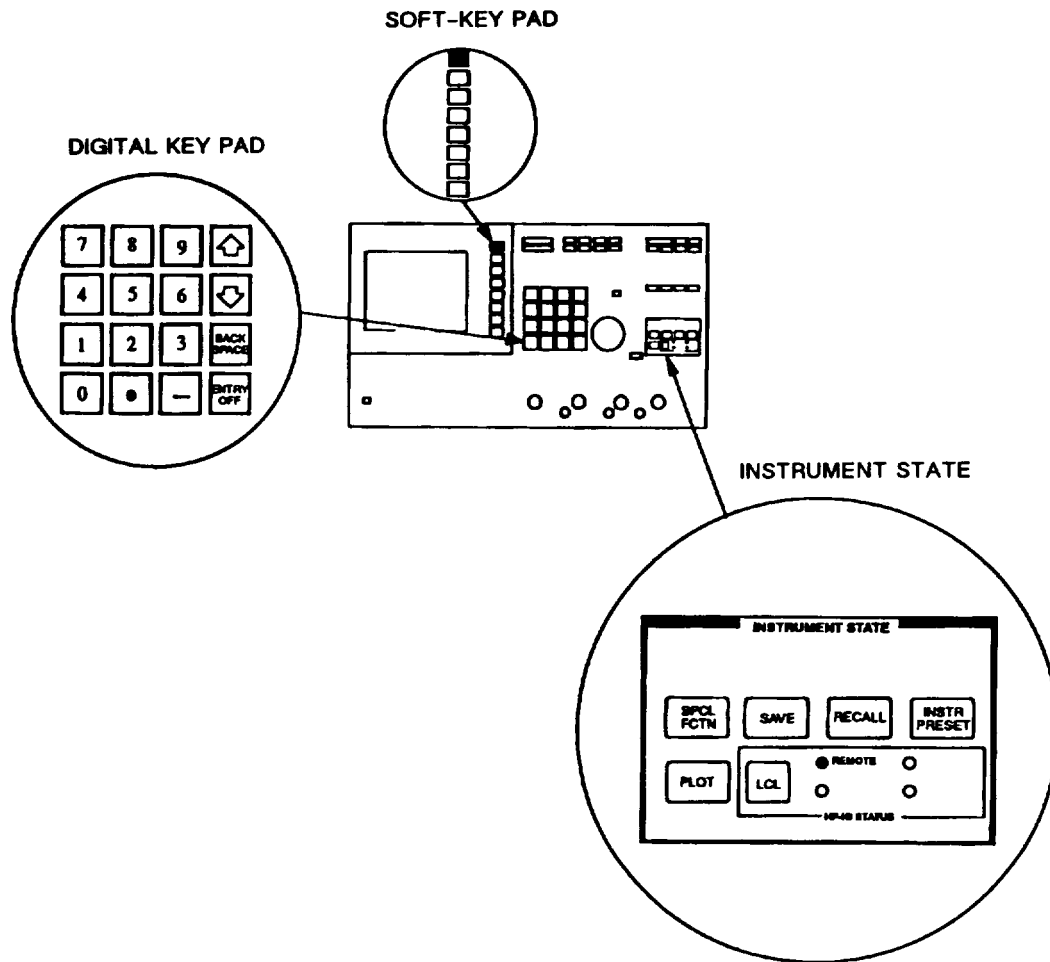


Figure 2-28. Installation of Network Analyzer Cables



EL9RH044

Figure 2-29. Network Analyzer Controls

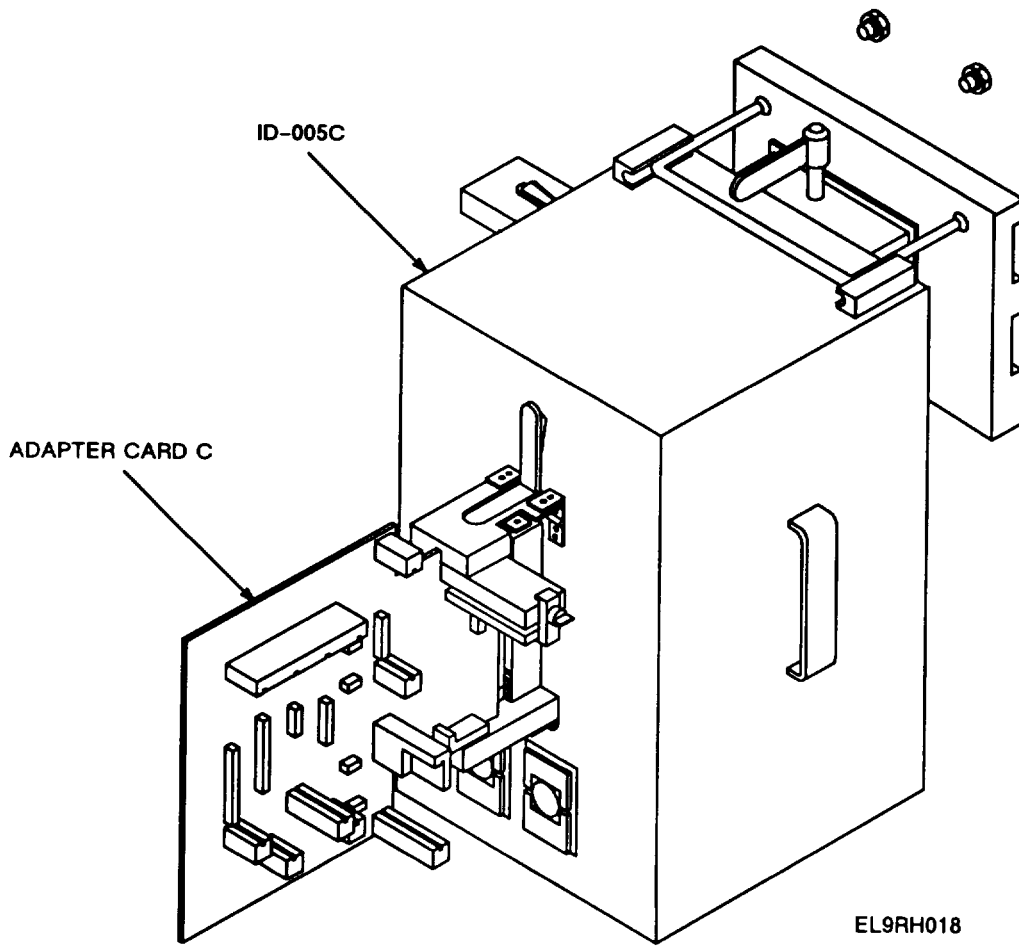


Figure 2-30. Installation of Adapter Card C for IF/Demodulator

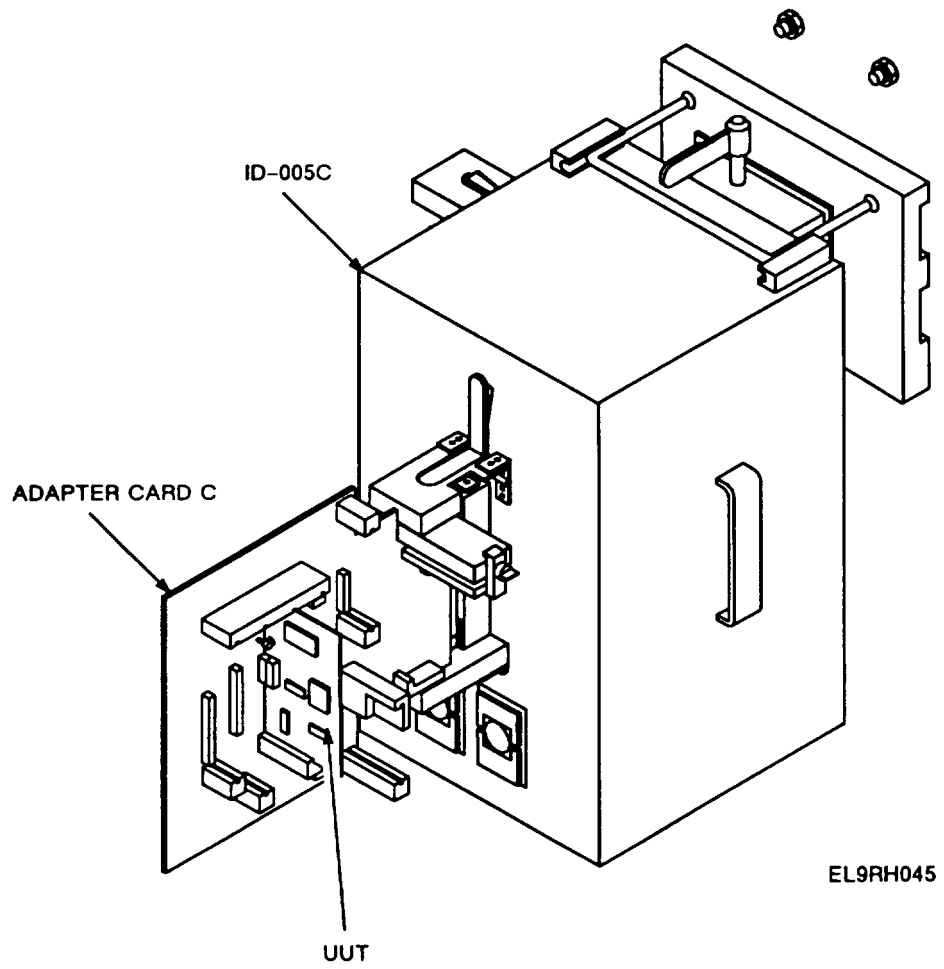


Figure 2-31. Installation of IF/Demodulator on Adapter Card C

2-9. Power Supply-Module Assembly A3013338-1 (1A3).

The following procedure is used to test and troubleshoot the power supply-module assembly, 1A3, A3013338-1 (fig. 2-32). Refer to chapter 4 for maintenance instructions.

REQUIRED TEST ACCESSORIES	
• Test Program Tape	CPIN CP0700030G
File No.	A301 3338
• ICD	ID-005C
• Adapter Card C	A301 7847-1
• Load Card B	A301 7839-1
• Extender Card, Electronic-Test Self-Test C	A3014349-1
• PIU Probe	SM-C-869189
• Alignment Tool Kit	B4008667

NOTE

Before testing adapter cardC, run the ID-005C survey. Use test program CPIN 11GSGIO File Number ID005C.

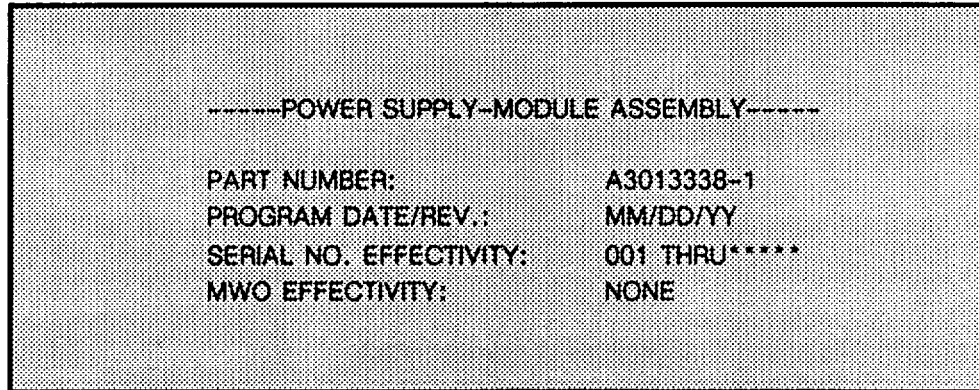
- a. Turn on test station AN/USM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and press RETURN on VDT keyboard.

NOTE

The intermediate code of this program will require 35 blocks on the removable disk pack (DPØ). Before loading the test program ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.

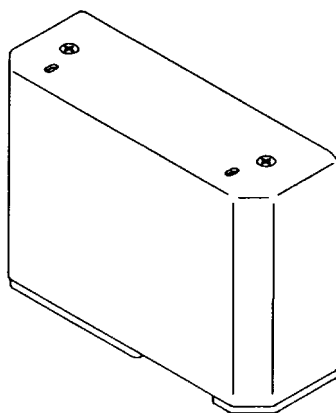
- d. Load test program.
 - (1) Install test program tape CPIN CP0700030G in accordance with TM 11-6625-2773-10.
 - (2) Load file on to disk in accordance with TM 11-6625-2773-10.
- e. Select test.
 - (1) Enter TEST A3013338 and press RETURN on VDT keyboard.
 - (2) Enter part number and serial number and read operator instructions on VDT. Follow operator instructions on VDT.

(3) Verify that the following information is displayed on the VDT:



(4) Press STRT/PROC on the VDT keyboard.

- f. Run ATE survey test if desired. If ATE survey fails refer to TM 11-6625-2773-10.
- g. Install ICD ID-005C on J1 of PIU.
- h. Install adapter card Con ID-005C (See fig. 2-33).
- i. Run adapter card survey test. If survey test fails refer to TM 11-6625-3094-24.
- l. Install load card B on ID-005C (See fig. 2-34).

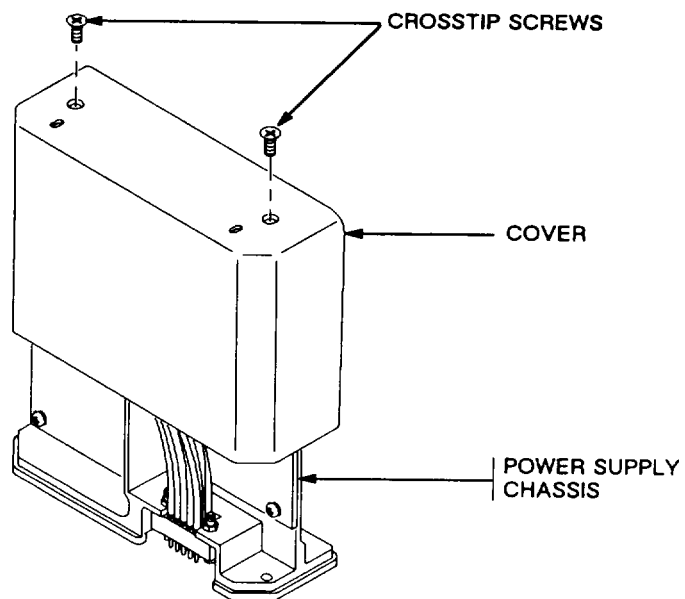


EL9RH046

Figure 2-32. Power Supply-Module Assembly A3013338-1 (Sheet 1 of 6)

DISASSEMBLY INSTRUCTIONS

1. REMOVE TWO SCREWS FROM TOP OF UUT COVER AND SET TO ONE SIDE.
2. LIFT COVER STRAIGHT UP AND SET TO ONE SIDE.



EL9RH047

Figure 2-32. Power Supply-Module Assembly A3013338-1 (Sheet 2 of 6)

POWER SUPPLY FILTER A3014162-1 (IA3A1)

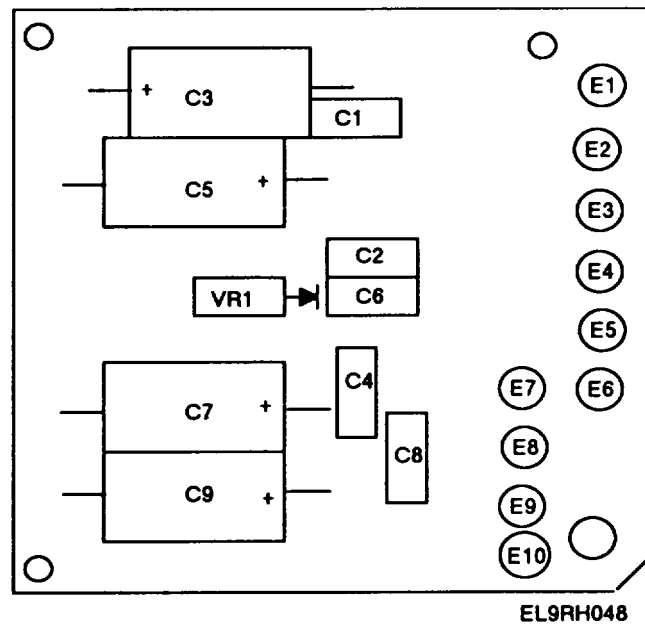


Figure 2-32. Power Supply-Module Assembly A3013338-1 (Sheet 3 of 6)

CCA-SWITCHING, POWER SUPPLY A3014156-1
A3014156-1 (1A3A2)

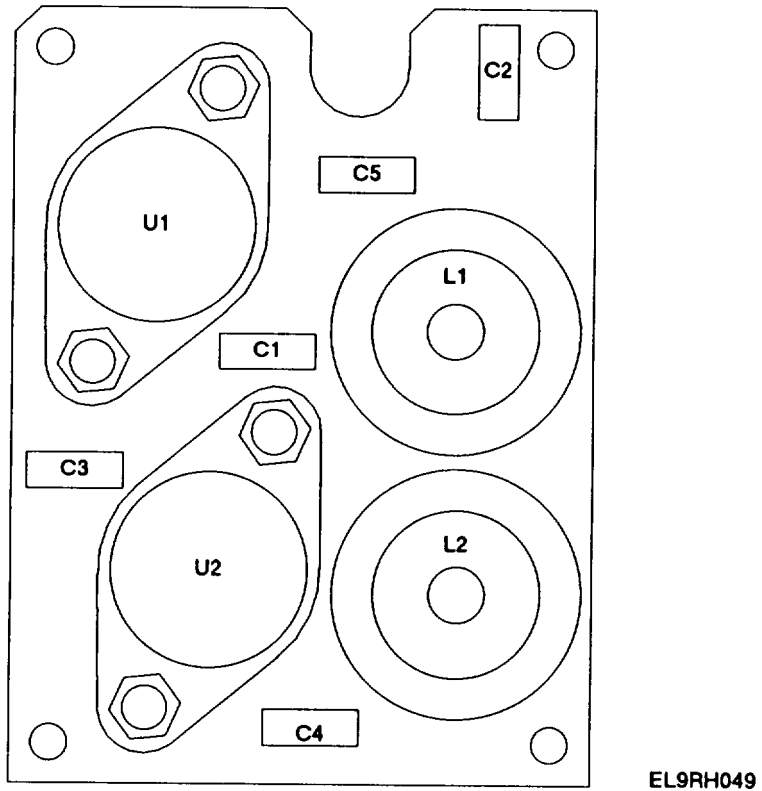
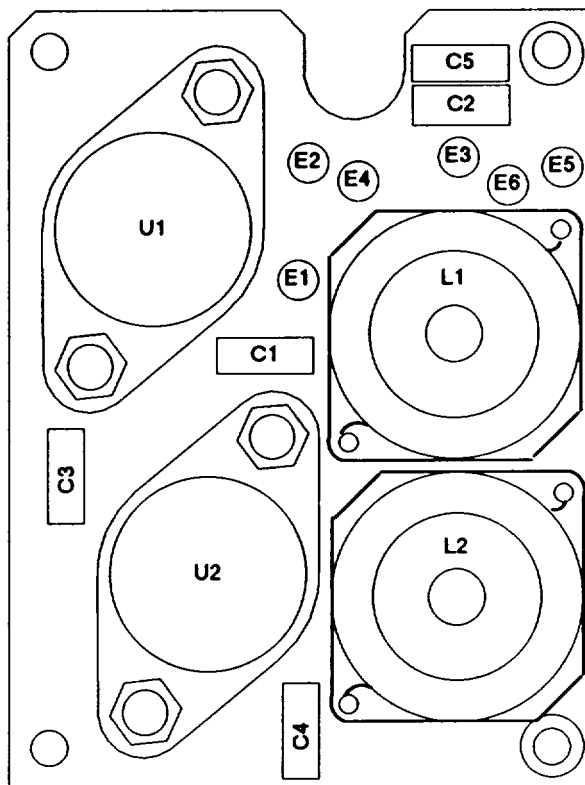


Figure 2-32. Power Supply-Module Assembly A3013338-1 (Sheet 4 of 6)

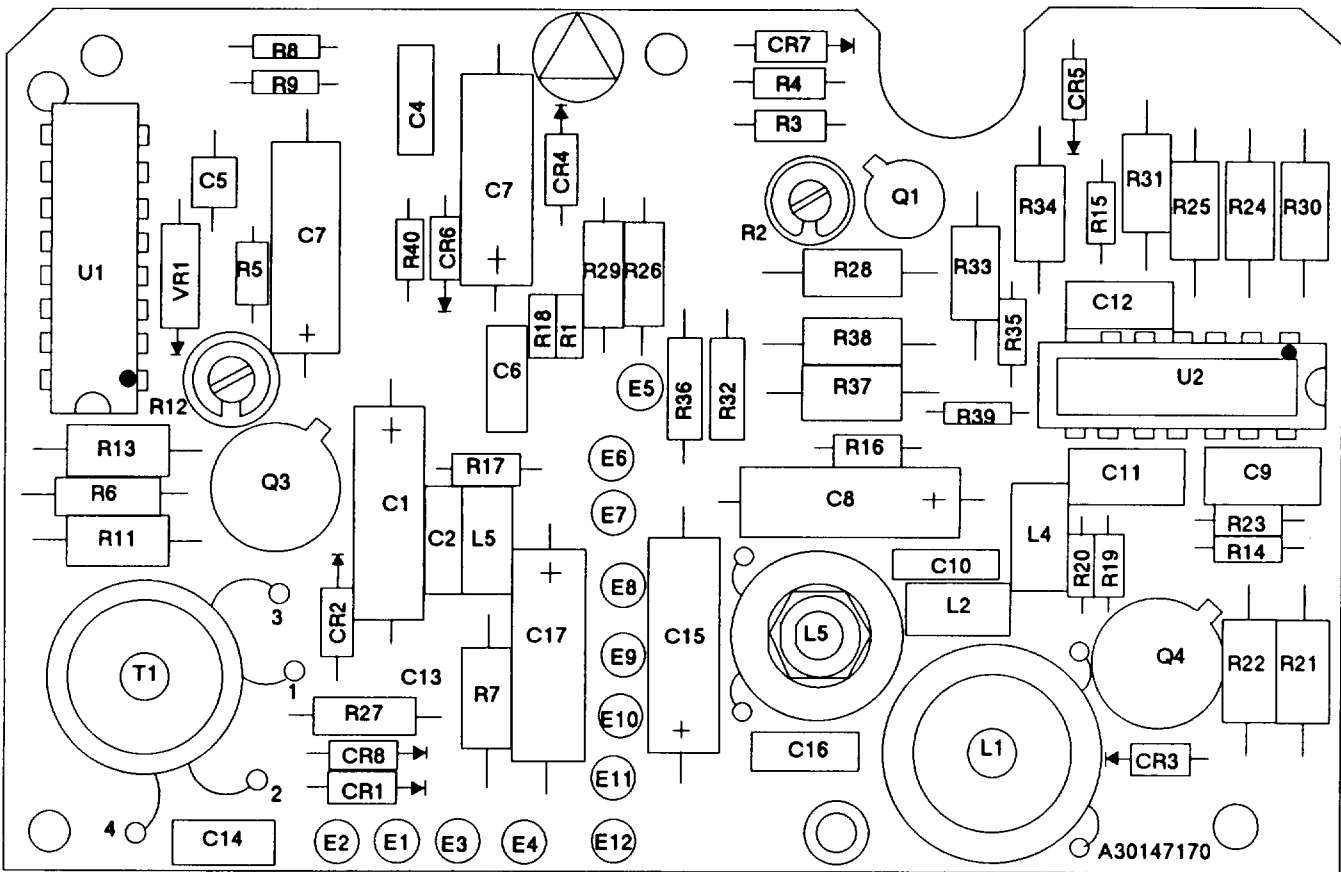
CCA SWITCHING, POWER SUPPLY
A3018807-1 (1A3A2)



EL9RH050

Figure 2-32. Power Supply-Module Assembly A3013338-1 (Sheet 5 of 6)

CCA-REGULATOR ASSEMBLY A3014170-1 (1A3A3)



EL9RH051

Figure 2-32. Power Supply-Module Assembly A3013338-1 (Sheet 6 of 6)

- k. Select load card survey. If survey fails refer to TM 11-6625-3094-24.
- l. Perform UUT hookup (See fig. 2-35).
- m. Remove UUT cover (See fig. 2-32 Sheet 2).
- n. Test and troubleshoot UUT.
- o. Repeat or terminate testing.
 - (1) Follow operator instructions on VDT to repeat tests or terminate testing.
 - (2) Remove adapter card, ICD, and UUT as required.
 - (3) When testing of the UUT has been completed, remove test results from printer. Forward test results, along with the UUT, to next work station.

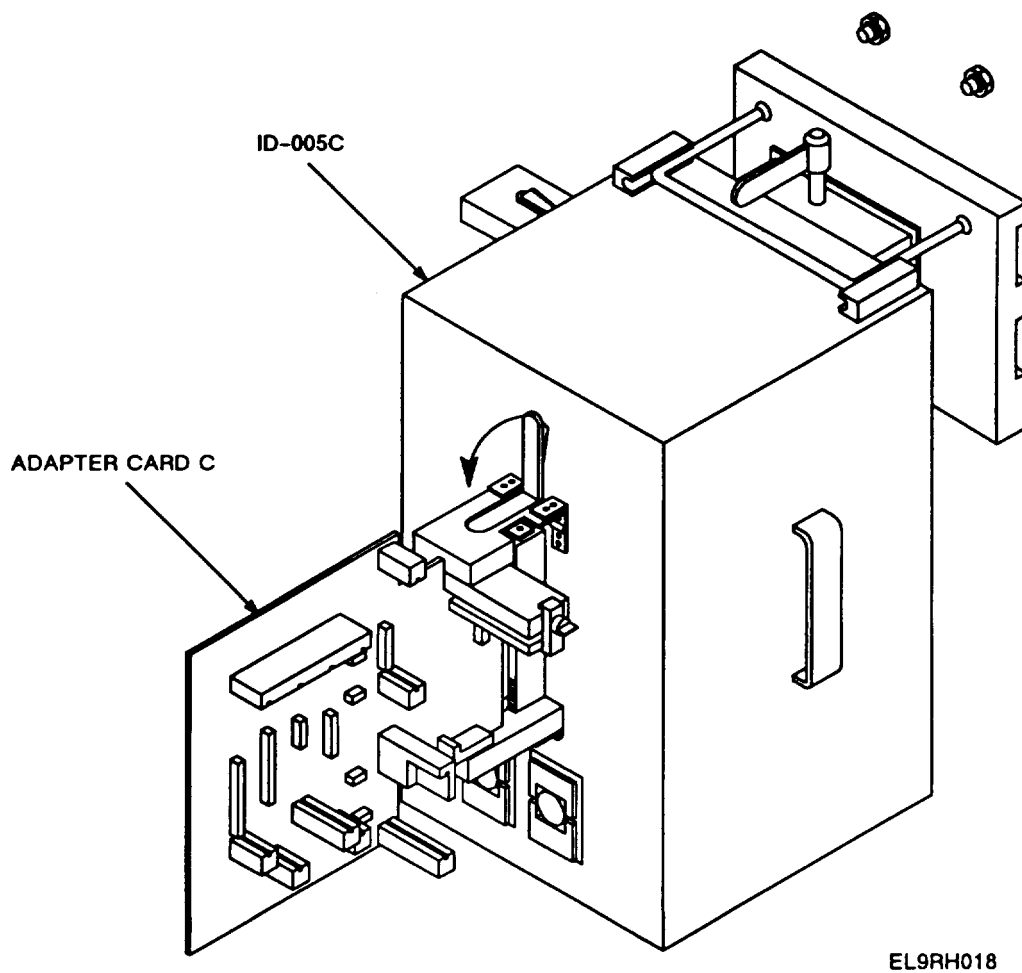


Figure 2-33. Installation of Adapter Card C for Power Supply-Module Assembly

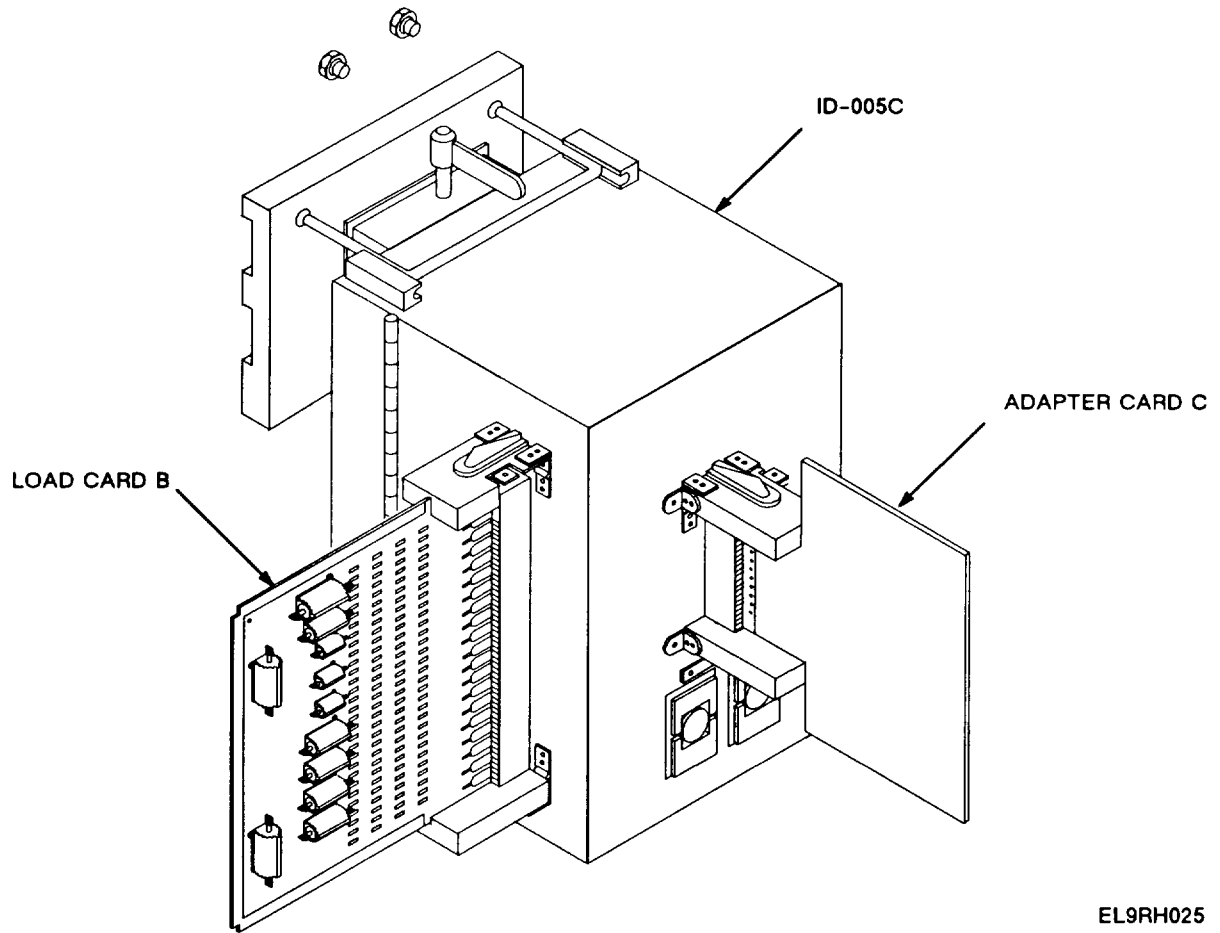


Figure 2-34. Installation of Load Card B for Power Supply-Module Assembly

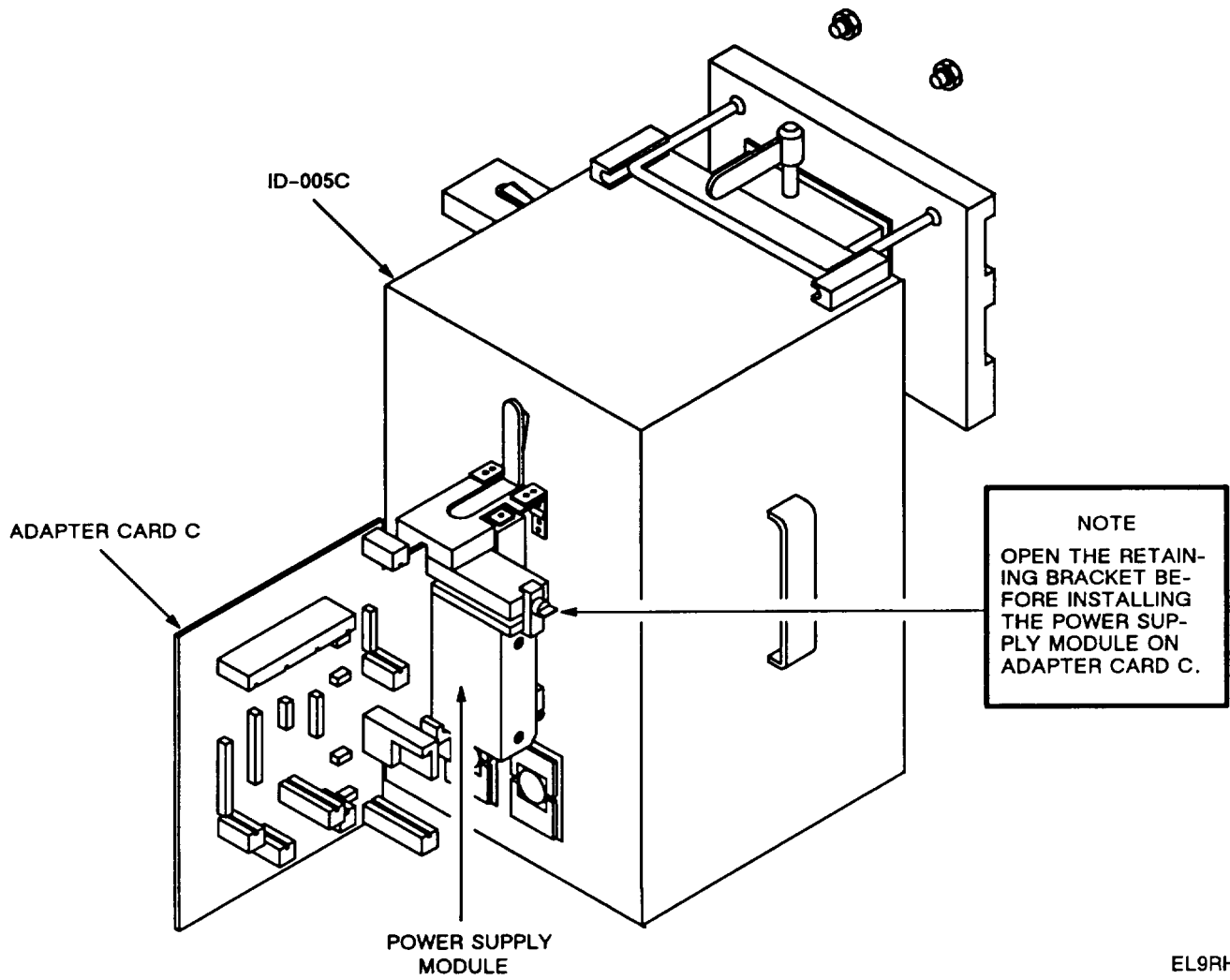


Figure 2-35. Installation of Power Supply-Module Assembly on Adapter Card C

2-10. Amplifier-Adapter Power Supply A3013369-1, A3018415-1, and A3142176-1 (5A1),

The following procedure is used to test and troubleshoot the power supply-amplifier-adapter (5A1) A3013369-1, A3018415-1, and A3142176-1 (fig. 2-36). Refer to chapter 4 for maintenance instructions.

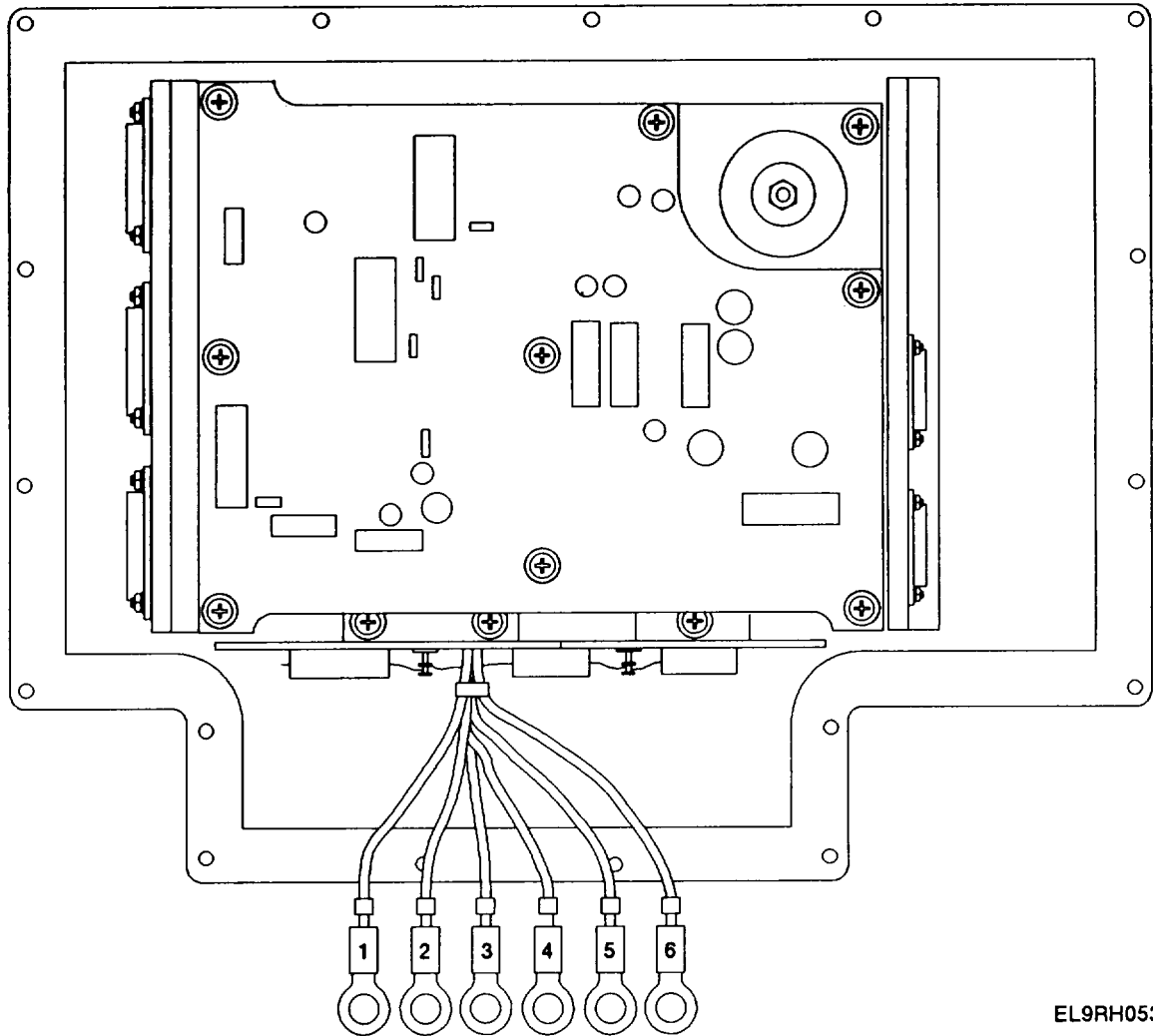
REQUIRED TEST ACCESSORIES	
• Test Program Tape	CPIN CP0400030G
File No.	A3013369
File No.	A3018415
File No.	A3142176
Ž ICDH	A3019208-1
• Cable Assembly, Electrical ICD-H W1	A3019144-1
• Cable Assembly, Electrical ICD-H W2	A3019150-1
• Cable Assembly, Electrical ICD-HW3	A3019151-1
• Cable Assembly, Electrical ICD-H W4	A3019152-1
• Cable Assembly, Electrical ICD-H W5	A3132907-1
• Cable Assembly, Electrical ICD-H W6	A3132907-2
• Cable Assembly, Electrical ICD-H W7	A3132907-3
Ž Probe	SM-C-869189
Ž Alignment Tool Kit	B4008667
• Shield, Safety, Laboratory-Assy	A3167688-1
• Technical Manual ICD-H	TM 11-6625-3094-24

- a. Turn on test station AN/USM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and press RETURN on VDT keyboard.

NOTE

The intermediate code of this program will require 36 blocks of memory on the removable disk pack (DPØ). Before loading the test program ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.

- d. Load test program.
 - (1) Install a test program tape in accordance with TM 11-6625-2773-10.
 - Install CPIN CP0400030G for A3013369-1, A3018415-1, and A3142176-1.
 - (2) Load file onto disk in accordance with TM 11-6625-2773-10.
- e. Select test.
 - (1) Enter TEST A3013369, A3018415, or A3142176 and press RETURN on VDT keyboard.
 - (2) Press STRT/PROC on the VDT keyboard.



EL9RH053

Figure 2-36. Power Supply-Amplifier-Adapter A3013369-1, A3018415-1, and A3142176-1
(Sheet 1 of 8)

DISASSEMBLED VIEW OF POWER SUPPLY 5A1

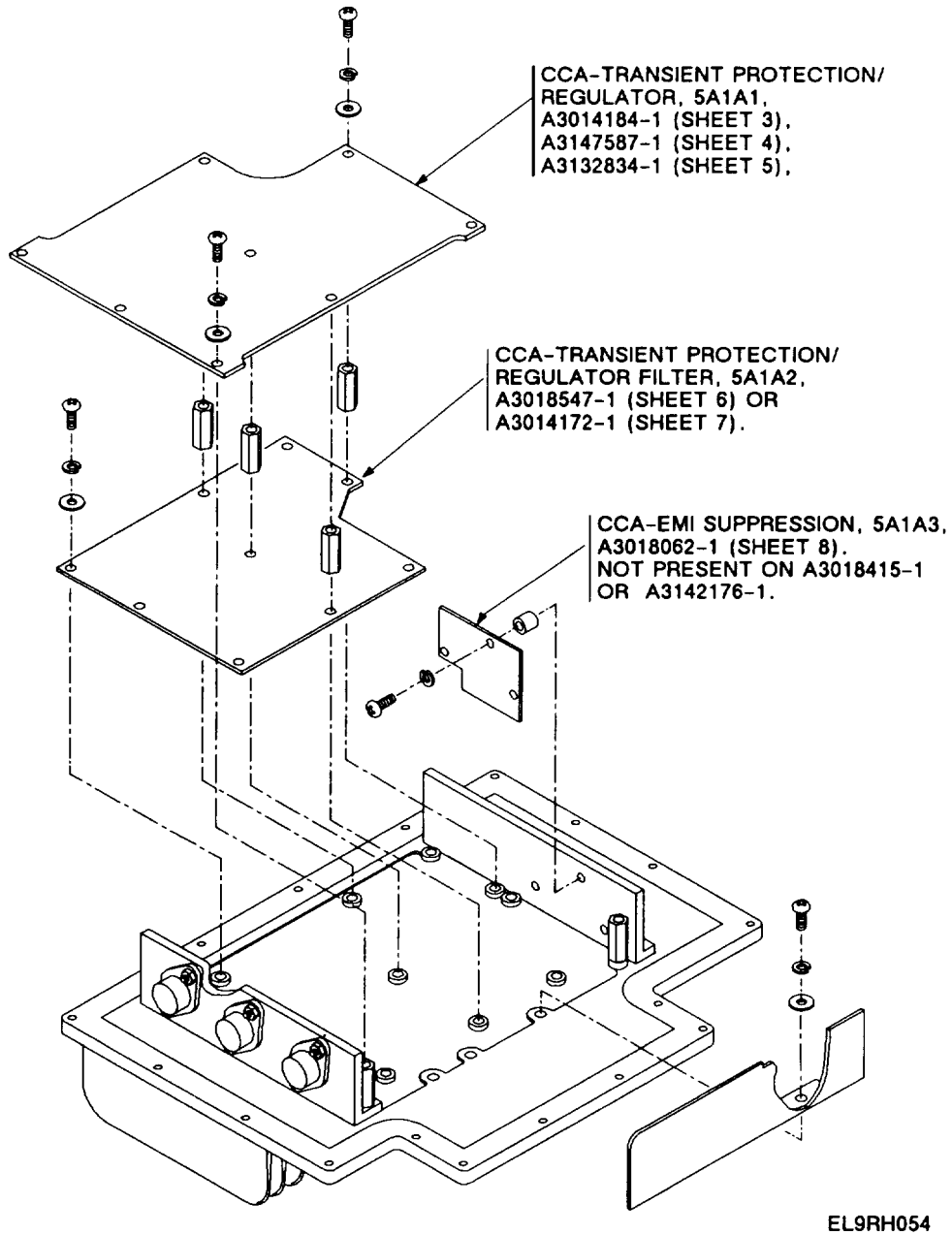


Figure 2-36. Power Supply-Amplifier-Adapter A3013369-1, A3018415-1, and A3142176-1 (Sheet 2 of 8)

CCA-TRANSIENT PROTECTION/REGULATOR A3014184-1 (5A1A1)
 (Part of A3018415-1 and A3013369-1)

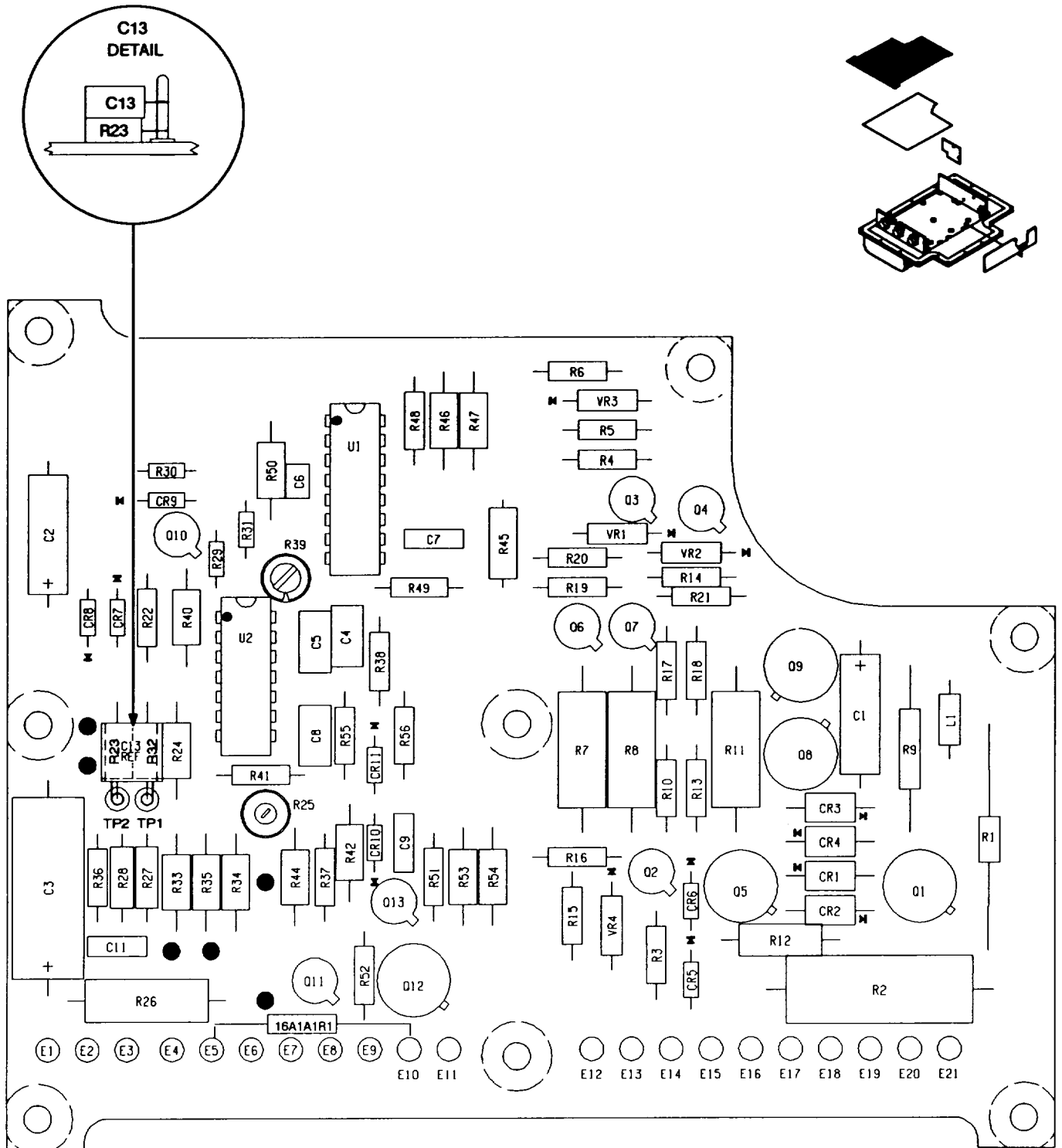
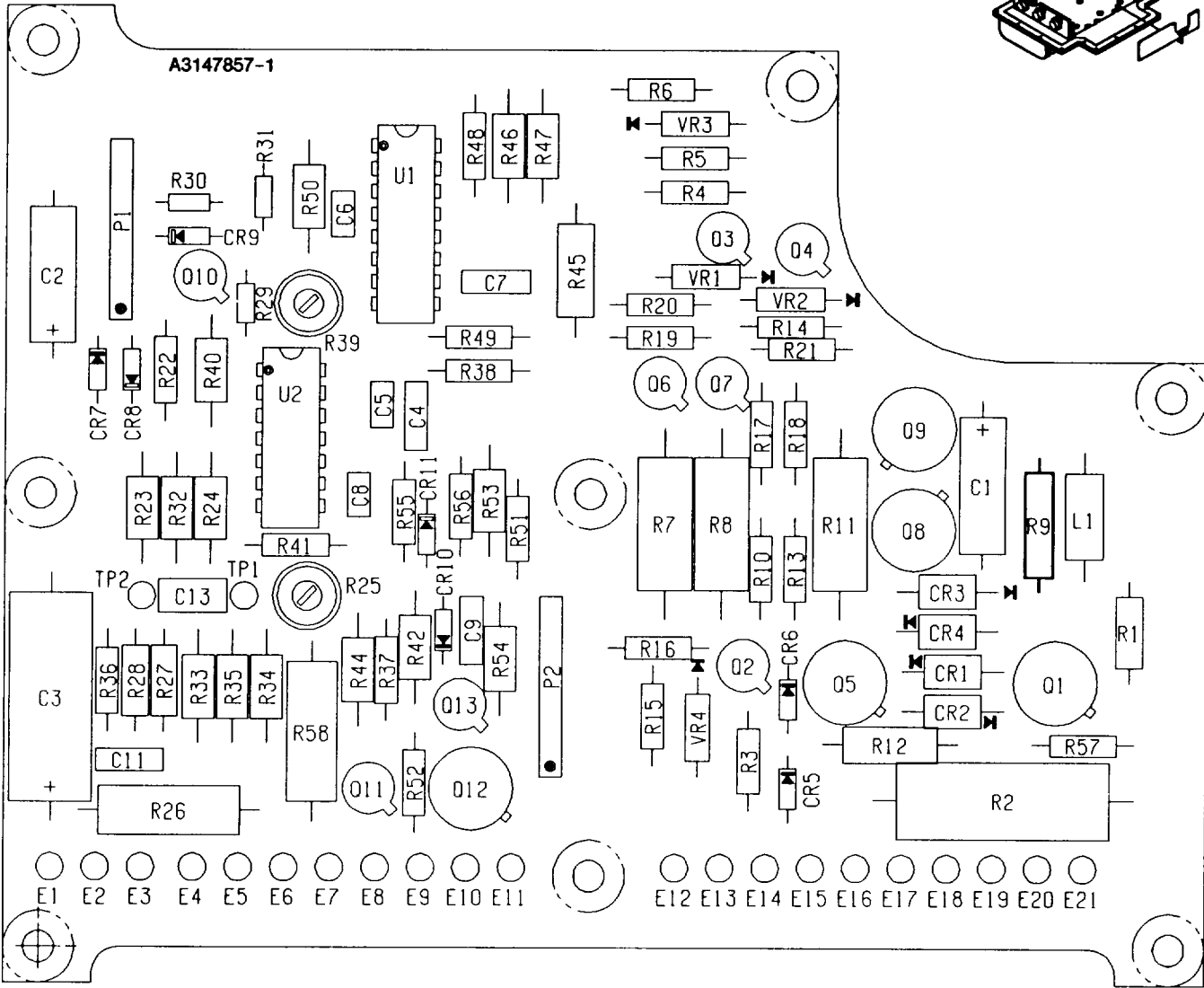
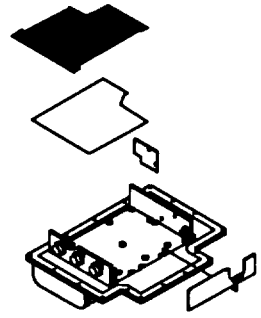


Figure 2-36. Power Supply-Amplifier-Adapter A3013369-1, A3018415-1, and A3142176-1
 (Sheet 3 of 8)

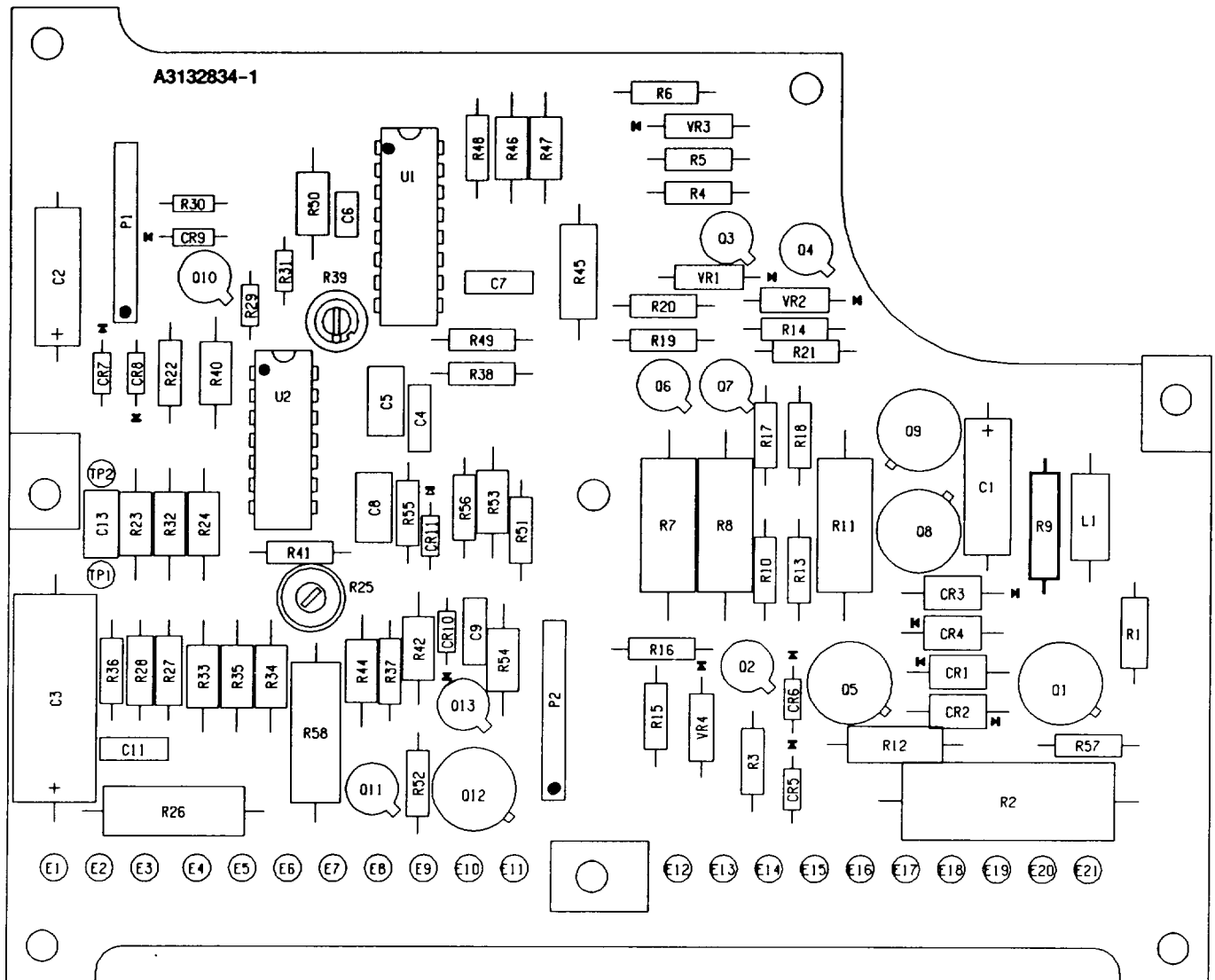
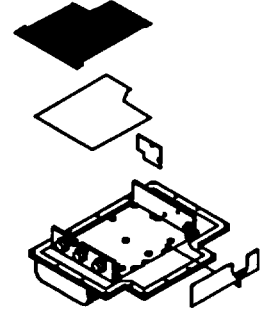
CCA-TRANSIENT PROTECTION/REGULATOR A3147857-1 (5A1A1)
(Part of A3142176-1)



EL9RH055

Figure 2-36. Power Supply-Amplifier-Adapter A3013369-1, A3018415-1, and A3142176-1
(Sheet 4 of 8)

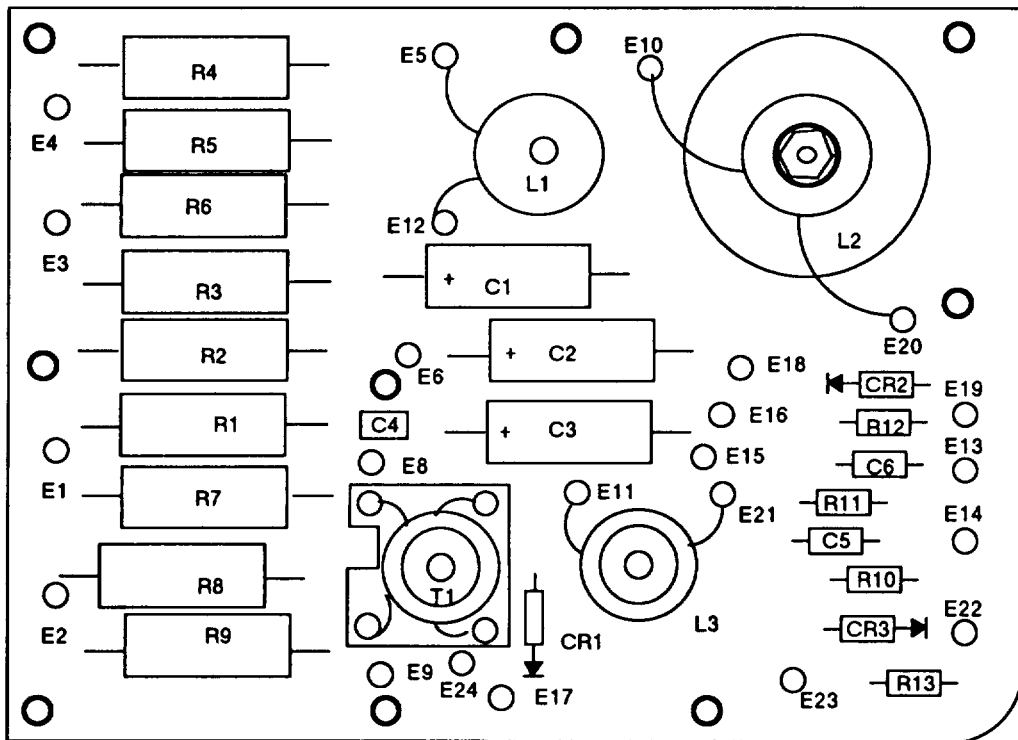
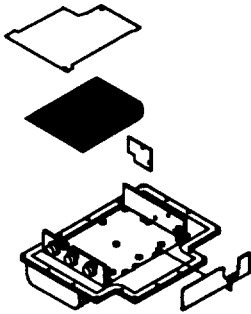
CCA-TRANSIENT PROTECTION/REGULATOR A3132834-1 (5A1A1)
(Part of A3142176-1)



EL9RH055

Figure 2-36. Power Supply-Amplifier-Adapter A3013369-1, A3018415-1, and A3142176-1 (Sheet 5 Of 8)

CCA-TRANSIENT PROTECTION/REGULATOR FILTER A3018547-1 (5A1A2)
 (Part of A3018415-1 and A3142176-1)



EL9RH056

Figure 2-36. Power Supply-Amplifier-Adapter A3013369-1, A3018415-1, and A3142176-1
 (Sheet 6 of 8)

CCA-TRANSIENT PROTECTION FILTER A3014172-1 (5A1A2)
 (Part of A3013369-1)

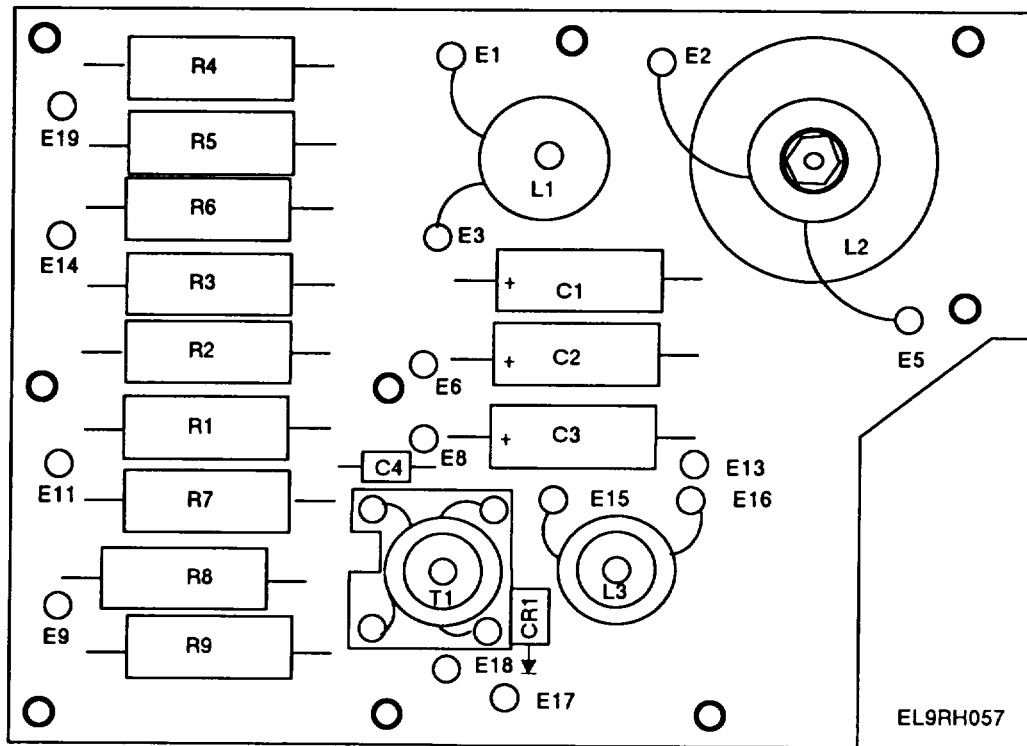
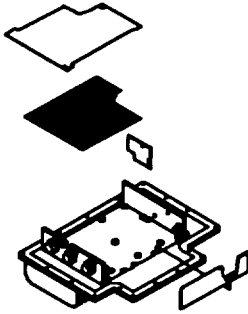
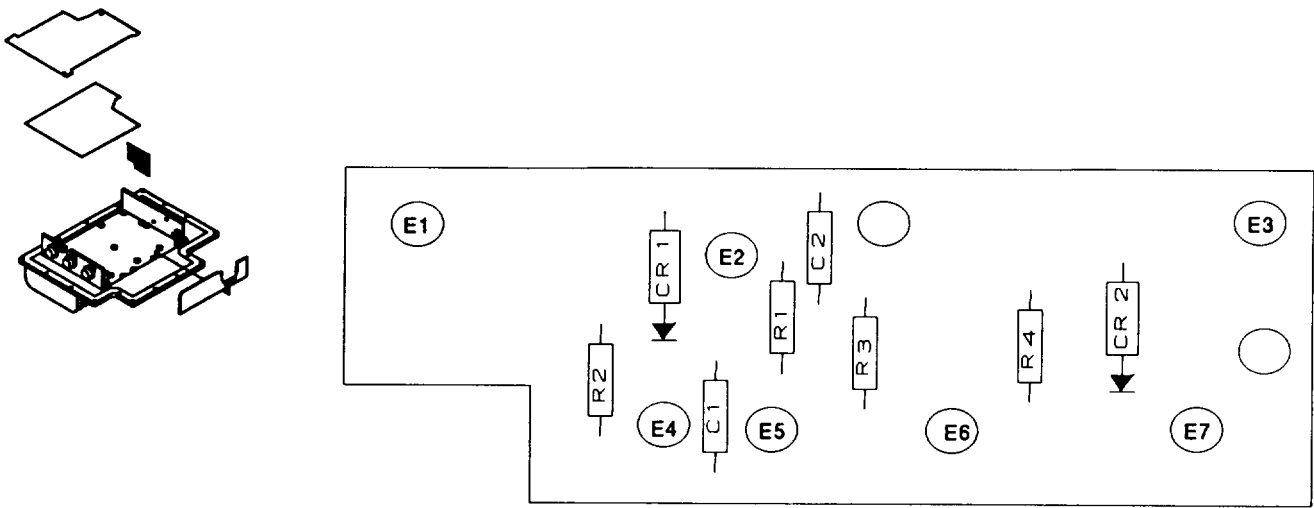


Figure 2-36. Power Supply-Amplifier-Adapter A3013369-1, A3018415-1, and A3142176-1
 (Sheet 7 Of 8)

CCA-ELECTROMAGNETIC INTERFERENCE (EMI) (5A1A3)
SUPPRESSION A3018062-1
(Part of A3013369-1)



EL9RH058

Figure 2-36. Power Supply-Amplifier-Adapter A3013369-1, A3018415-1, and A3142176-1
(Sheet 8 Of 8)

(3) Verify that the following information is displayed on the VDT:

```

-----POWER SUPPLY-----AMPLIFIER-----ADAPTER-----
PART NUMBER:                A3013369-1
PROGRAM DATE/REV.:          MM/DD/YY REV
SERIAL NUMBER EFFECTIVITY:  001 THRU ***
MWO EFFECTIVITY:            NONE
    
```

OR

```

-----POWER SUPPLY-----AMPLIFIER-----ADAPTER-----
PART NUMBER:                A3018415-1
PROGRAM DATE/REV.:          MM/DD/YY REV
SERIAL NUMBER EFFECTIVITY:  001 THRU ***
MWO EFFECTIVITY:            NONE
    
```

OR

```

-----POWER SUPPLY-----AMPLIFIER-----ADAPTER-----
PART NUMBER:                A3142176-1
PROGRAM DATE/REV.:          MM/DD/YY REV
SERIAL NUMBER EFFECTIVITY:  001 THRU ***
MWO EFFECTIVITY:            NONE
    
```

(4) Follow operator instructions on VDT. Enter part number and serial number and read operator instructions on VDT.

(5) Press STRT/PROC on the VDT keyboard.

f. Run ATE survey test if desired. If ATE survey fails refer to TM 11-6625-2773-10.

WARNING

High voltage from 180 to 220 V dc is present on the chassis and components of this UUT.

DEATH MAY OCCUR ON CONTACT

Use extreme caution when testing, adjusting or probing this UUT.

- DO NOT work on this UUT unless there is another person nearby who is familiar with the operation and hazards of the equipment. This person must be competent in administering first aid.
- DO NOT probe with both hands. Keep one hand away from the equipment to reduce the hazard of current flowing through your body.
- FOR ARTIFICIAL RESPIRATION REFER TO FM 21-11.

CAUTION

- This UUT contains devices sensitive to damage by electrostatic discharge (ESD).
 - This UUT contains direct currents of approximately 6 amps at 27 V. Care must be taken to avoid shorting the 27 V to ground while probing.
- g.* Install ICD H on DIU (See fig. 2-37).
- h.* Run ICD survey test. If survey test fails refer to TM 11-6625-3094-24.
- i.* Install UUT on ICD-H (See fig. 2-38).
- j.* Test and troubleshoot UUT.
- k.* Repeat or terminate testing.
- (1) Follow operator instructions on VDT to repeat tests or terminate testing.
 - (2) Remove the ICD, and UUT as required.
 - (3) When testing of the UUT has been completed, remove test results from printer. Forward test results, along with the UUT, to next work station.

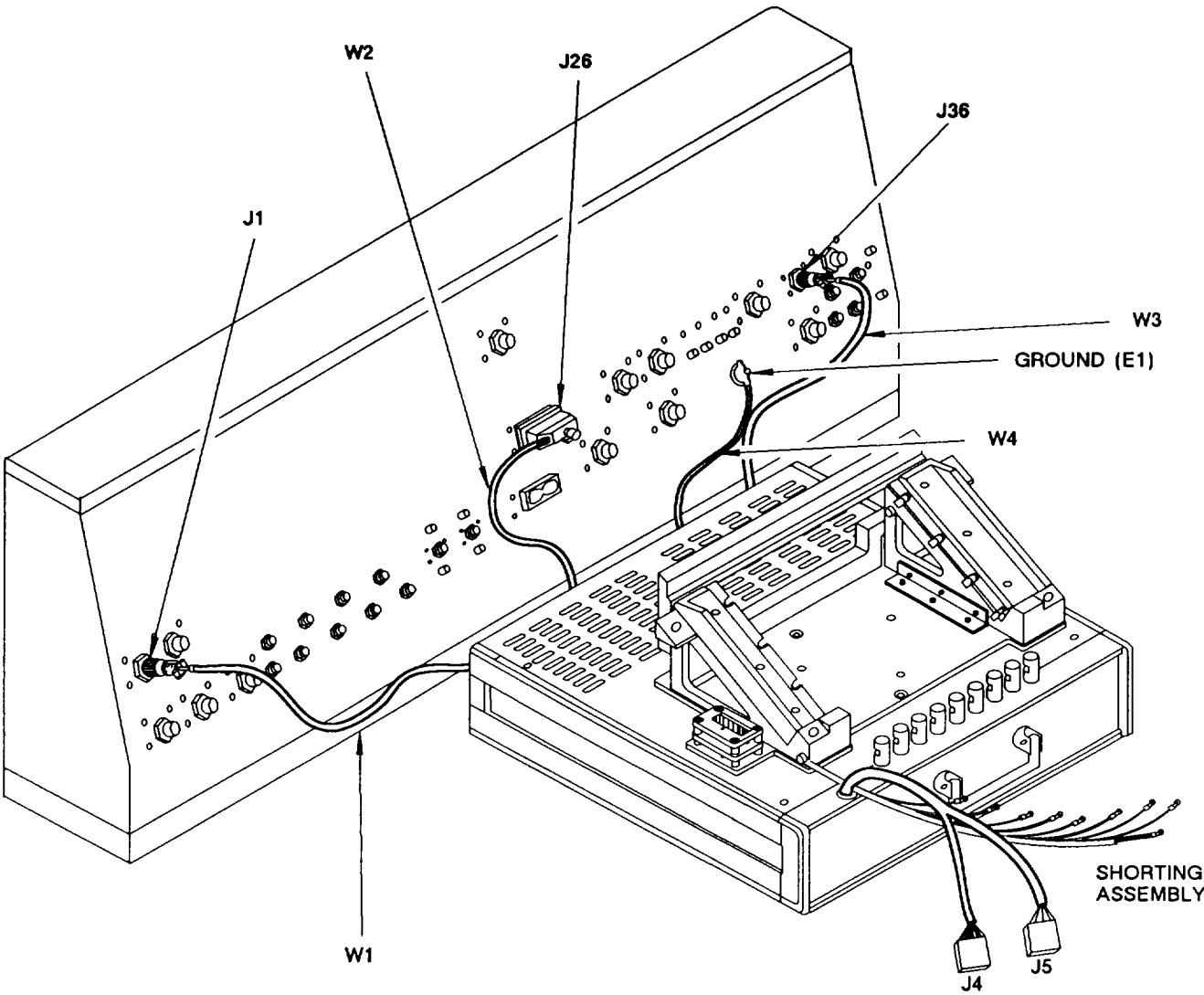
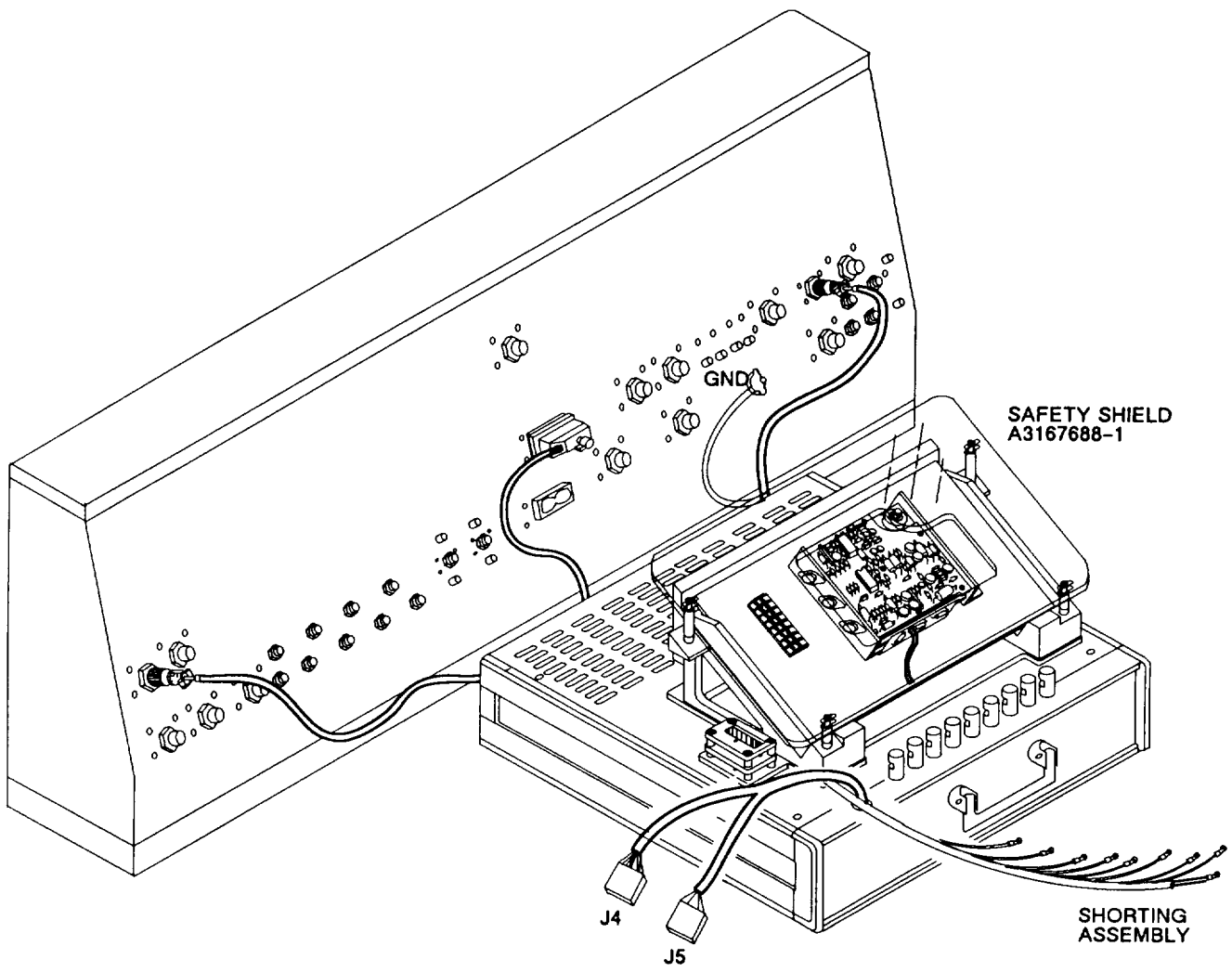


Figure 2-37. Installation of ICD-H on DIU

EL9RH059



EL9RH060

Figure 2-38. Installation of Power Supply Amplifier-Adapter on ICD-H

2-11. Impedance Matching Network A3018241-1 (1A1).

The following procedure is used to perform Go/No-Go testing on the impedance matching network, 1A1, A3018241-1 (fig. 2–39). Return failed assemblies to depot for repair.

NOTE

If your AN/USM-410 (V)2 is in a van AN/MSM-105(V) configuration, you must connect the HP-IB interconnect cable (PN 10833B) to connector A3J8 of control station A3 prior to starting any program using the Network Analyzer. Refer to TM 11-6625-2773–30-1.

REQUIRED TEST ACCESSORIES

- Test Program Tape CPIN CP0900030G
 File No. A3018241 F
- ICD ID-005C
- Test Adapter C Items: A3019036-1
 Adapter Card C A3017847-1
 Wiring Harness, Adapter Card C-W1 A3017868-1
 Wiring Harness, Adapter Card C-W2 A3019211-1
 Extender Card, Electronic-Test
 Self-Test C A3014349-1
- RF Amplifier ENI Model 325LA
- Network Analyzer, HP Model 3577A
- S-Parameter Test Set HP Model 35677A/B
- HP-IB Interconnect Cable 10833B
- Load Card C A3019205-1
- Accessory Kit A3018639-1 Items:
 Cable Assembly, RF (W3) A3018642-1
 Cable Assembly, RF (W5) A3019037-1
 Cable Assembly, RF (W7) A3140032-1
 Cable Assembly, RF (W8) A3140031-1
 Attenuator 10 W, 10 dB (AT1) A3018544-1
 Attenuator 30 W, 3 dB (AT3) A3132886-1
 Termination Assembly (T1) A3140053-1
 Adapter Assembly (CP3) A3140054-1
- AN/USM-410 Test Accessory Kit B4021292 Items:
 Cable Assembly, RF (W101) (2 reqd) B4021271
 Cable Assembly, RF (W103) (2 reqd) 84021273
- AN/USM-410 Test Accessory Kit 84021294 Items:
 Adapter, Connector (2 reqd) 84021032
 Adapter, BNC to N M55339/49-00349
 Adapter, BNCJack to Jack UG-914/U
- AN/USM-410 Test Accessory Kit 84039143 Items:
 Adapter, Connector (2 reqd) UG-210A/U
 500hm Termination 84039130

NOTE

Before testing adapter card C, run the ID-005C survey. Use test program CPIN 11GSG10 File Number ID005C.

This program uses the RF Station A5. Ensure the RF Station power is set to ON and cables W9 and W10 are installed. Do not remove these cables during the ATE survey.

- a. Turn on test station AN/USM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and press RETURN on VDT keyboard.

NOTE

The intermediate code of this program will require 77 blocks on the removable disk pack (DPØ). Before loading the test program ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.

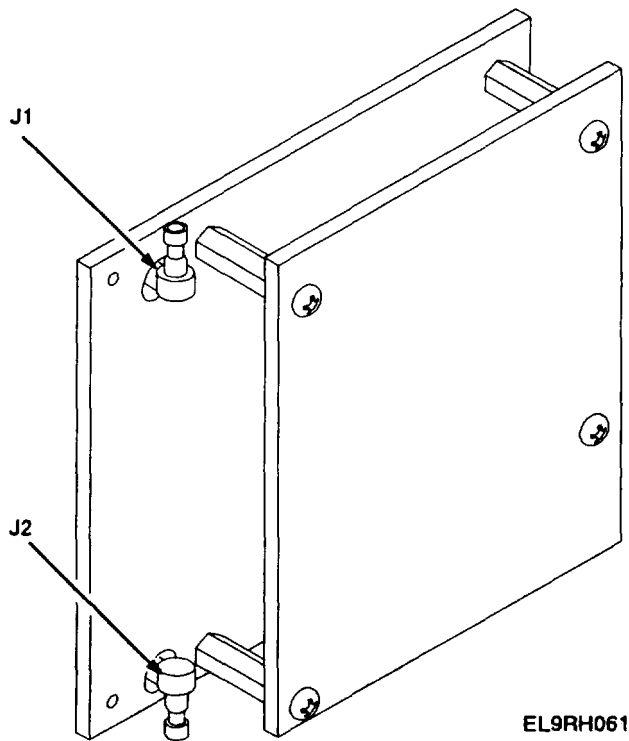
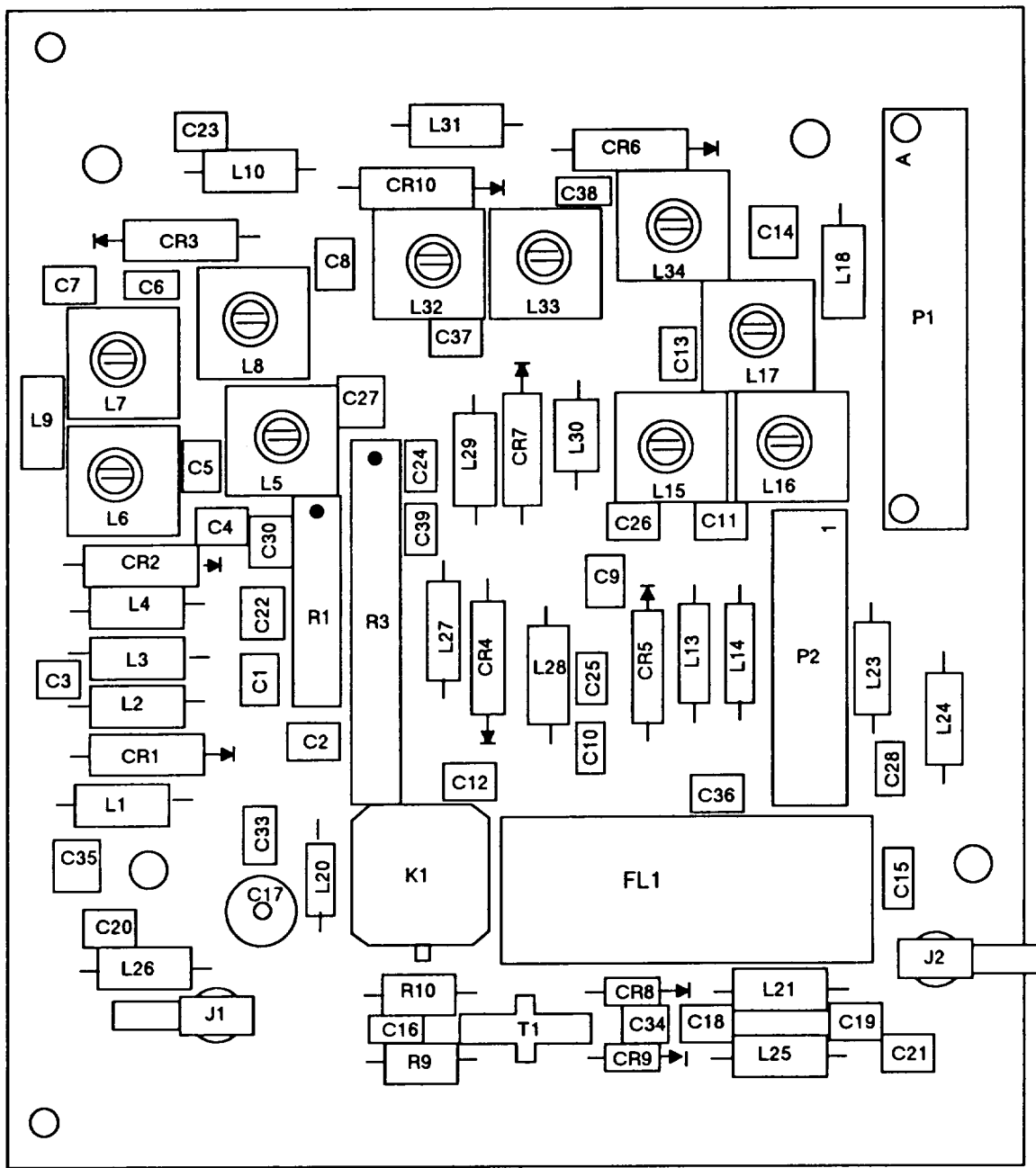


Figure 2-39. Impedance Matching Network A3018241-1 (Sheet 1 of 3)

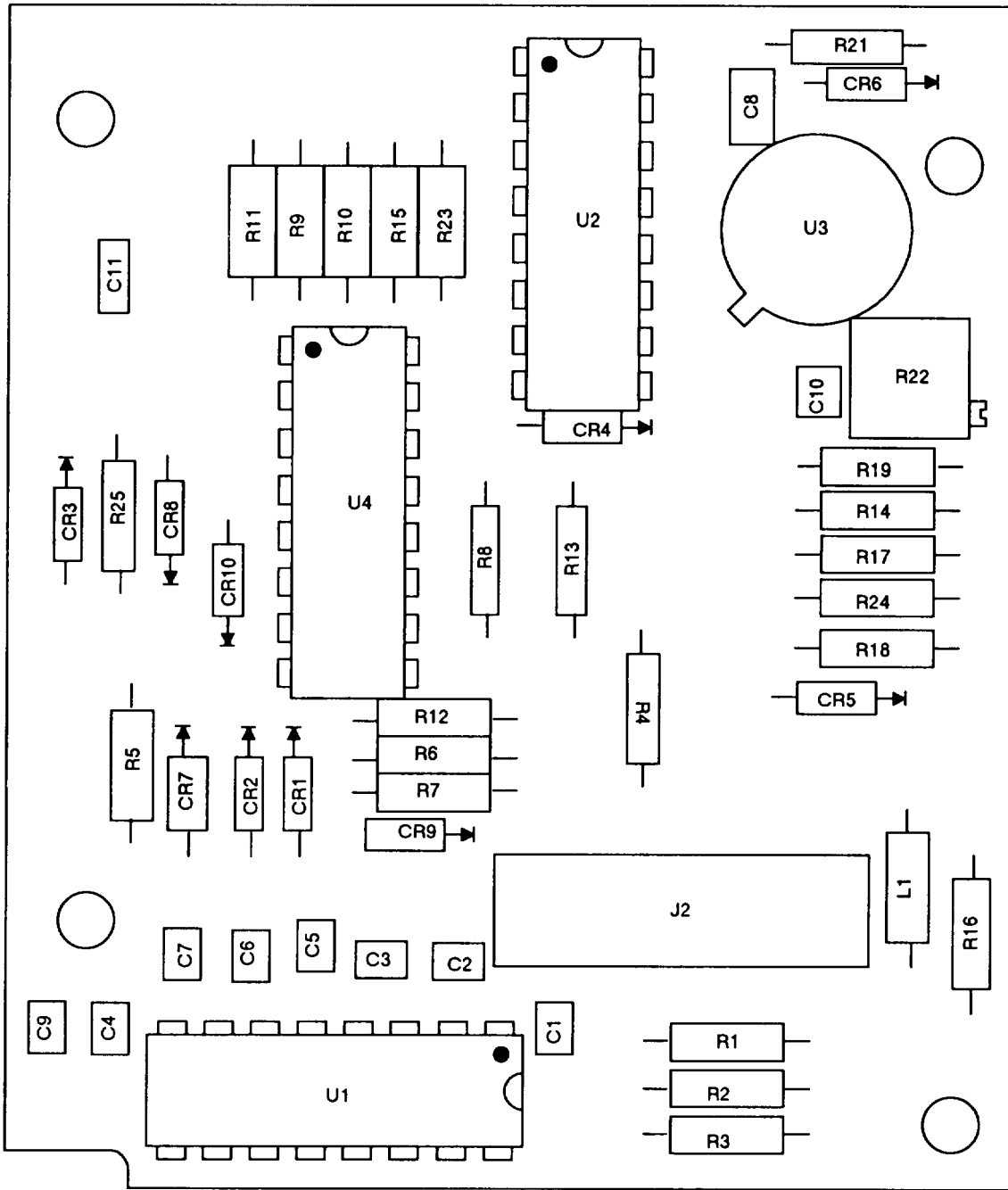
CCA-ANTENNA MATCHING A3018118-1 (1A1A2)



EL9RH062

Figure 2-39. Impedance Matching Network A3018241-1 (Sheet 2 of 3)

CCA-ANTENNA DECODER A3018121-1 (1A3A1)



EL9RH063

Figure 2-39. Impedance Matching Network A3018241-1 (Sheet 3 of 3)

d. Load test program.

- (1) Install test program tape CPIN CP0900030G in accordance with TM 11-6625-2773-10.
- (2) Load file on to disk in accordance with TM 11-6625-2773-10.

e. Select test.

- (1) Enter TEST A3018241 and press RETURN on VDT keyboard.
- (2) Enter part number and serial number and read operator instructions on VDT. Follow operator instructions on VDT.
- (3) Verify that the following information is displayed on the VDT:

-----NETWORK, IMPEDANCE MATCHING-----	
PART NUMBER:	A3018241-1
PROGRAM DATE/REV.:	MM/DD/YY REV
SERIAL NO. EFFECTIVITY:	001 THRU ***
MWO EFFECTIVITY:	NONE

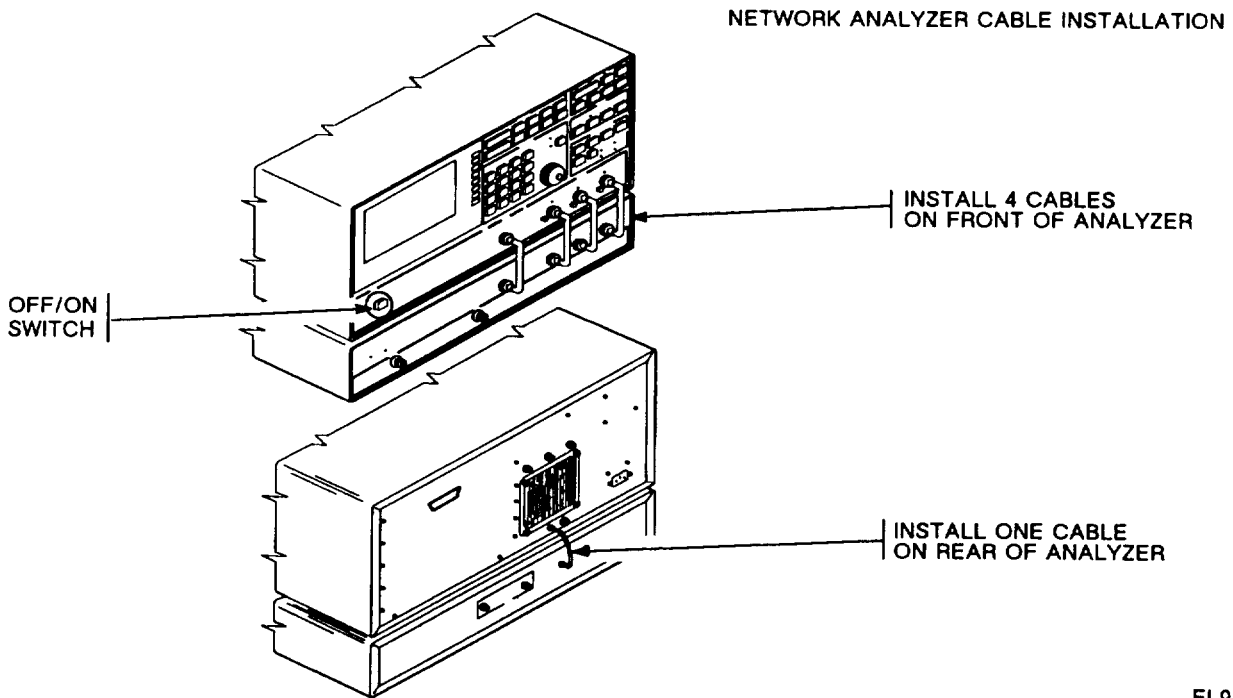
- (4) Press STRT/PROCon the VDT keyboard.
- f. Run ATE survey test is desired. If ATE survey fails refer to TM 11-6625-2773-10.
- g. Install ICD ID-005Con J1 of PIU.
- h. Install adapter card Con ID-005C (See fig. 2-42).
- i. Run adapter card survey test. If survey test fails refer to TM 11-6625-3094-24.
- j. Install load card C on ID-005C (See fig. 2-43).
- k. Select load card survey. If load card survey test fails refer to TM 11-6625-3094-24.
- l. Install network analyzer and perform the following steps:
- (1) Connect HP-IB interconnect cable from network analyzer to connector A3J8 on Station A3.
 - (2) Install cables front and rear of network analyzer (See fig. 2-40).
 - (3) Press SPCL FCTN key on network analyzer (See fig. 2-41).
 - (4) Press HP-IB ADDRESS key on network analyzer (top key on SOFT-KEY pad).
 - (5) Press 11 on network analyzer keypad.
 - (6) Press ENTER key on network analyzer (top key on SOFT-KEY pad).

m. Calibrate the ATE for test accessories:

- (1) Measure loss of RF cable W101.
- (2) Measure loss of attenuator AT1.
- (3) Press PROCEED when completed.
- (4) Adjust network analyzer for open-ended cable W7.
- (5) Press PROCEED when completed.
- (6) Adjust network analyzer for 50 ohm load.
- (7) Press PROCEED when completed.

NOTE

If your AN/USM-410(V)2 is in a van AN/MSM-105(V) configuration, you must connect the HP-IB interconnect cable (PN 10833B) to connector A3J8 of control station A3 prior to starting program. Refer to TM 11-6625-2773-30-1.

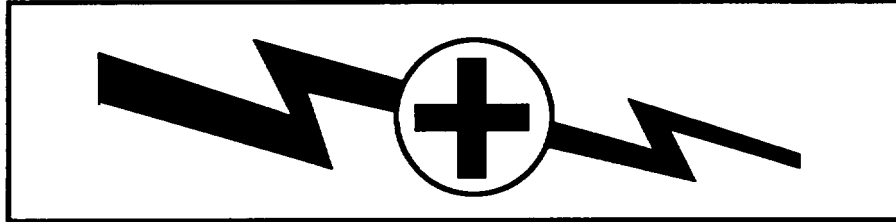


EL9RH043

Figure 2-40. Installation of Network Analyzer Cables,

n. Perform UUT hookup for functional testing (See fig. 2-44).

WARNING



HIGH VOLTAGE

is used in the operation of this equipment

DEATH ON CONTACT

may result if personnel fail to observe safety precautions.

Never work on electronic equipment unless there is another person nearby who is familiar with the operation and hazards of the equipment and who is competent in administering first aid. When the technicians are aided by operators, they must be warned about dangerous areas.

When possible, the power supply to the equipment must be shut off before beginning work on the equipment. Take particular care to ground every capacitor likely to hold a dangerous potential. When working inside the equipment, after the power has been turned off, always ground every part before touching it.

Whenever the nature of the operation permits, keep one hand away from the equipment to reduce the hazard of current flowing through the body.

Do not be misled by the term "low voltage." Potentials as low as 50 volts may cause death under adverse conditions.

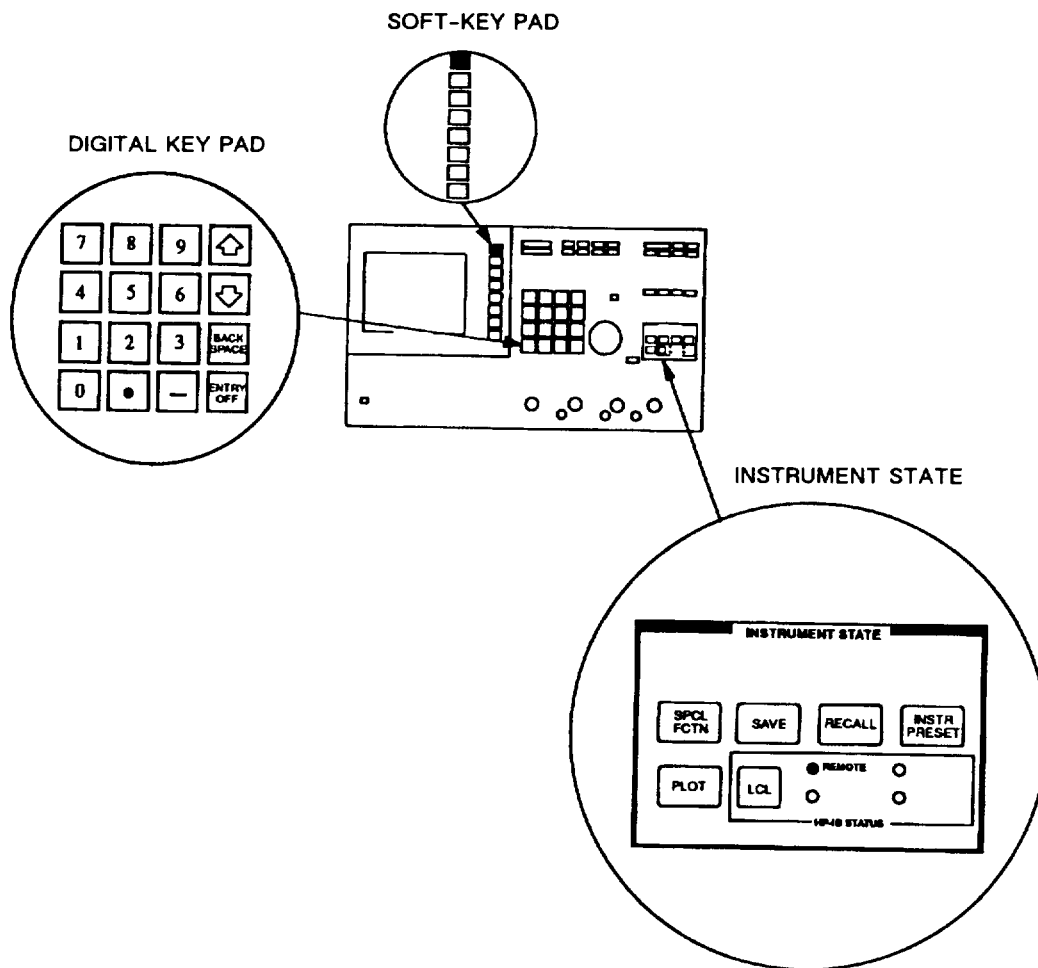
o. Perform UUT functional test .

p. Repeat or terminate testing.

(1) Follow operator instructions on VDT to repeat tests or terminate testing.

(2) Remove adapter card, ICD, and UUT as required.

(3) When testing of the UUT has been completed, remove test results from printer. Forward failed assemblies to depot for repair.



EL9RH044

Figure 2-41. Network Analyzer Controls

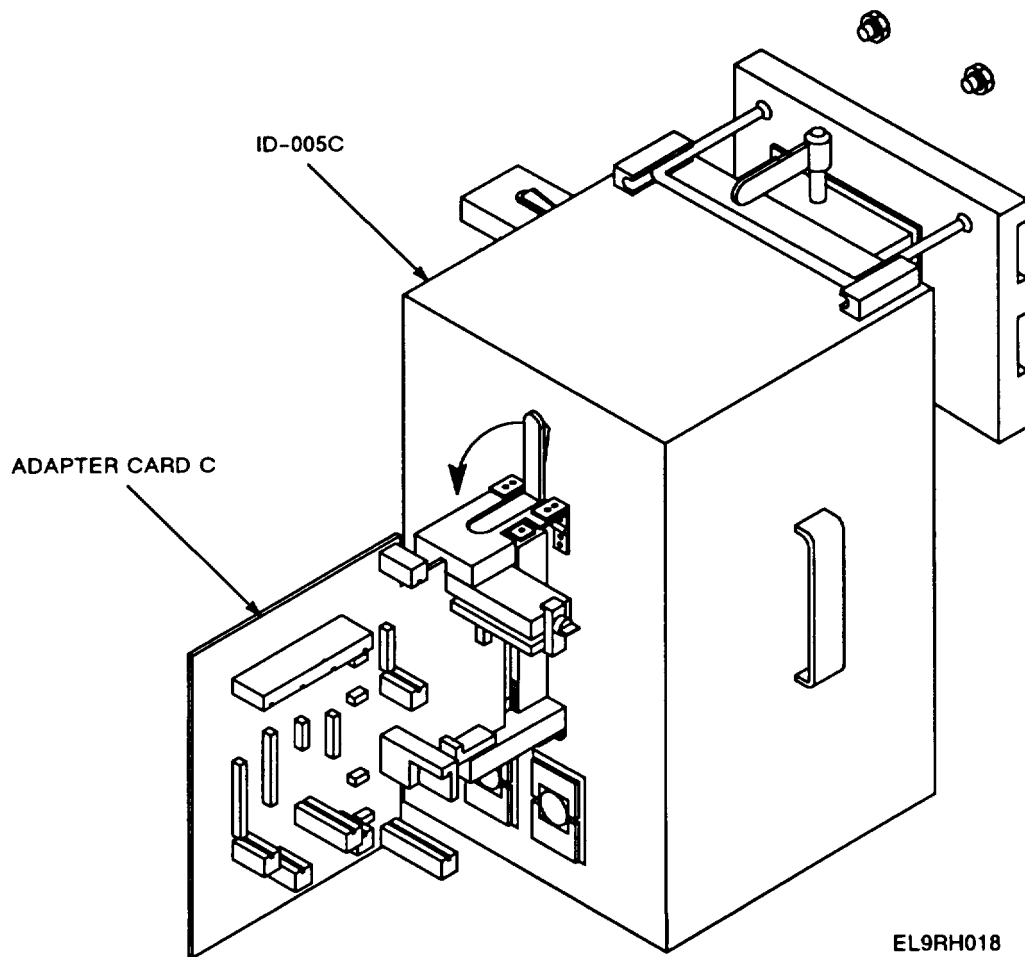


Figure 2-42. Installation of Adapter Card C for Network, Impedance Matching A3018241-1

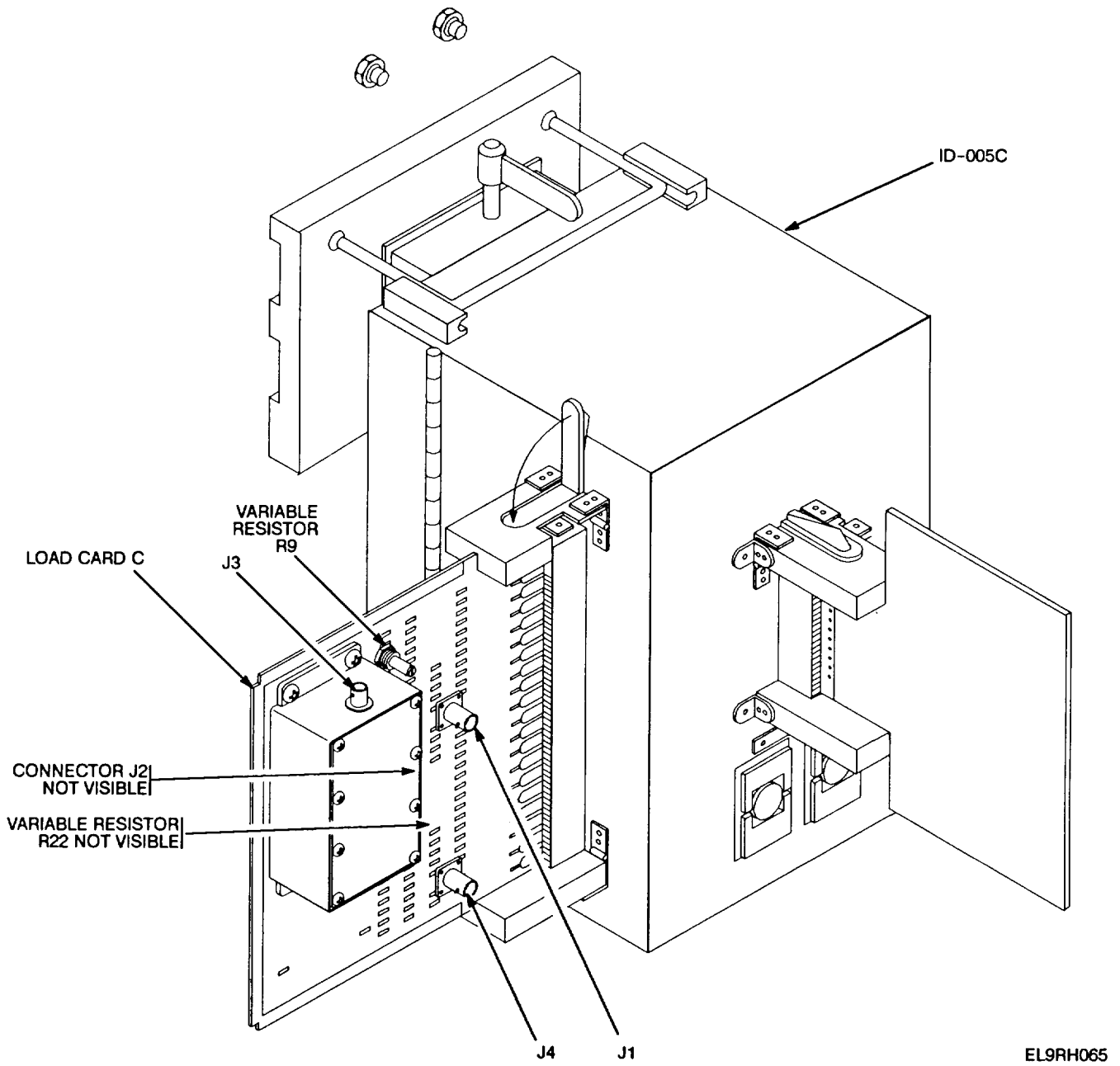


Figure 2-43. Installation of Load Card C

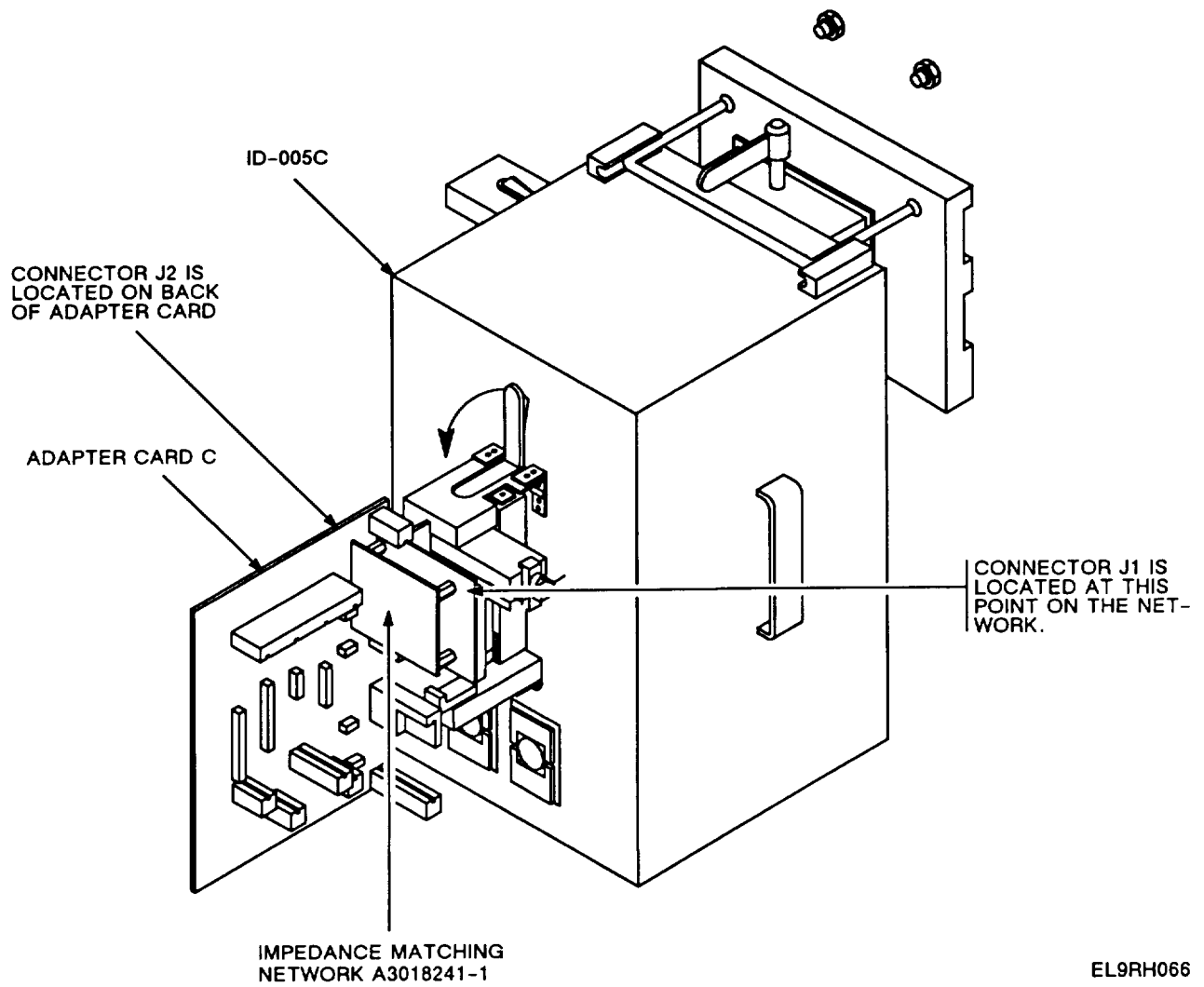


Figure 2-44. Installation of UUT for Functional Testing

2-12. Synthesizer A3018235-1 (1A10).

The following procedure is used to perform test and alignment of the synthesizer (1A10) A3018235-1 (fig. 2-45). If this unit fails the test it will be turned for repair at a higher level of maintenance. Refer to local evacuation procedures.

NOTE

This program uses the RF Station A5. Ensure the RF Station power is set to ON and cables W9 and W10 are installed. Do not remove these cables during the ATE survey.

REQUIRED TEST ACCESSORIES	
• Test Program Tape	CPIN CP0400030G
File No.	A301 8235F
• ICD	ID-005C
Ž Adapter, Test - A A3018429-1 Items:	
Adapter Card A	A301451 2-1
Extender Card, Electronic-Test Self-Test A	A3014499-1
Wiring Harness, Adapter Card A-W1	A3014520-1
• Accessory Kit A3018639-1 Items:	
Cable Assembly, RF (W3)	A3018642-1
Cable Assembly, RF (W5)	A3019037-1
Termination Assembly (T1)	A3140053-1
Adapter, Assembly (CP3)	A3140053-1
Adapter, Connector (CP4).	A3018688-1
Ž AN/USM-410 Test Accessory Kit B4021 292 Items:	
Cable, Assembly, RF (W103) .,	B4021273
Cable Assembly, RF (W107)	B4021258
• ANAJSM-410 Test Accessory Kit B4039143 Items:	
Adapter, Connector (3 reqd)	UG-201A/U
• Alignment Tool Kit	B4008667

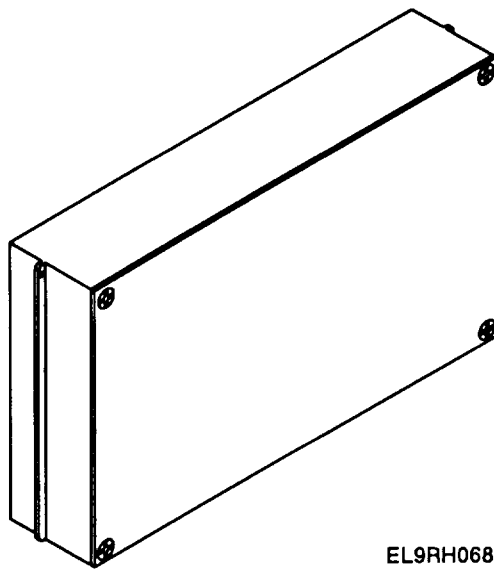
- a. Turn on test station AN/USM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and press RETURN on VDT keyboard.

NOTE

Before testing adapter card A, run the ID-005C survey. Use test program CPIN 11GSG10 File Number IDO05C.

NOTE

The intermediate code of this program will require 27 blocks on the removable disk pack (DPØ). Before loading the test program ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.

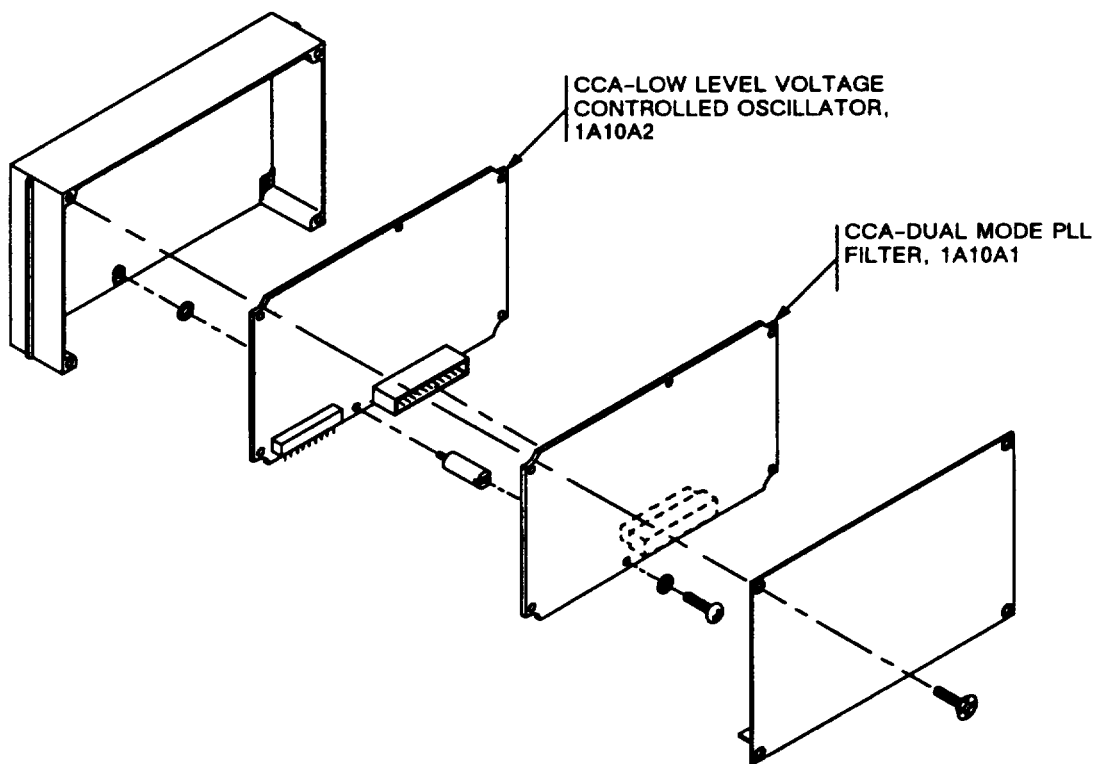


EL9RH068

Figure 2-45. Synthesizer A3018235-1 (Sheet 1 of 4)

DISASSEMBLY INSTRUCTIONS

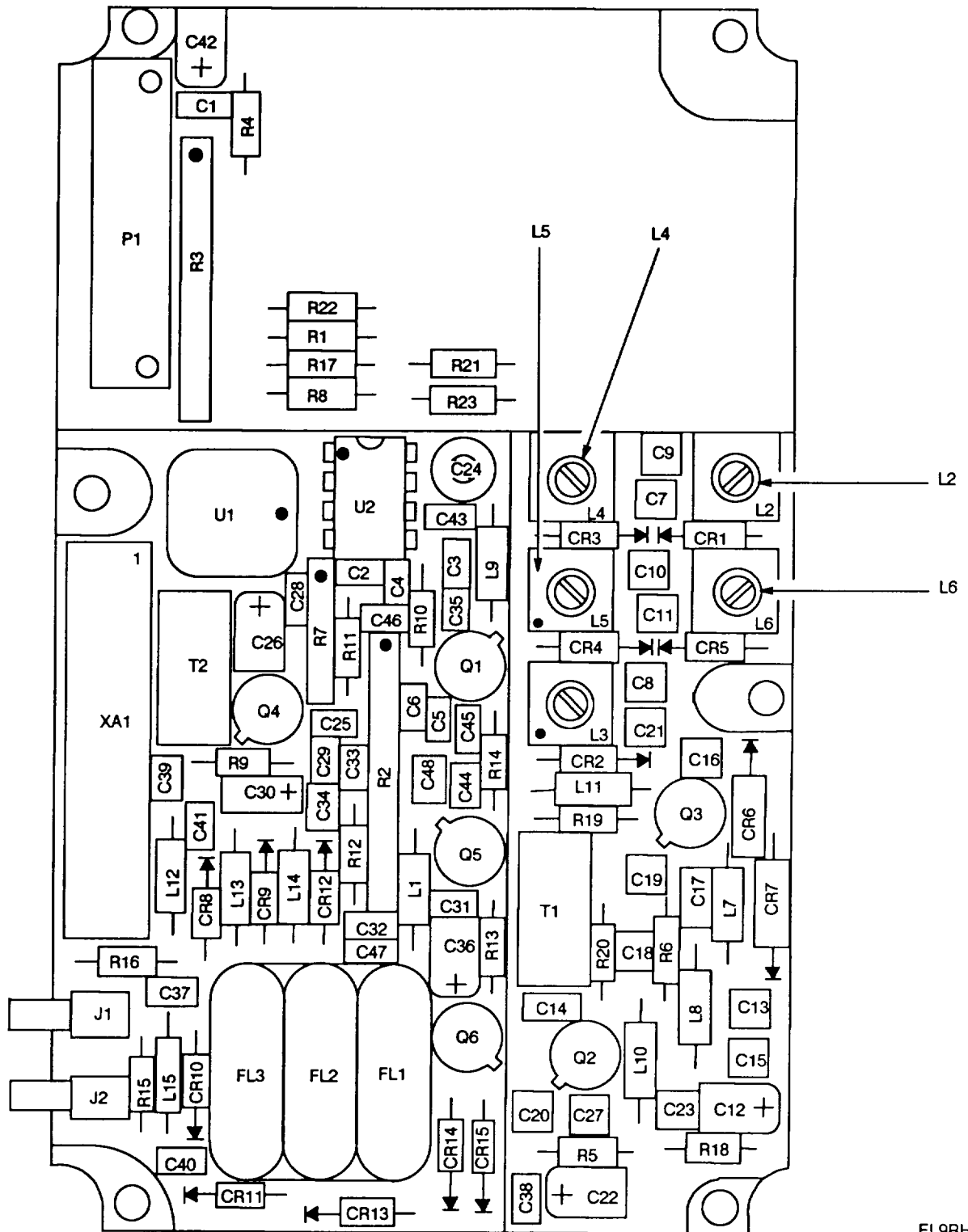
1. REMOVE FOUR SCREWS FROM FRONT COVER, REMOVE FRONT COVER.
2. REMOVE SIX SCREWS AND WASHERS FROM DUAL MODE PLL FILTER.
3. REMOVE DUAL MODE PLL FILTER AND SET TO ONE SIDE
4. INSTALL DUAL MODE PLL FILTER AND LOW LEVEL VOLTAGE CONTROL OSCILLATOR (WITHIN CASE) ON ICD.



EL9RH069

Figure 2-45. Synthesizer A3018235-1 (Sheet 2 of 4)

CCA-LOW LEVEL VOLTAGE CONTROLLED OSCILLATOR
 A3018112-1 and A3142319-1 (1A10A2)



EL9RH070

Figure 2-45. Synthesizer A3018235-1 (Sheet 3 of 4)

CCA-DUAL MODE PLL FILTER
A3018115-1, 1A10A1

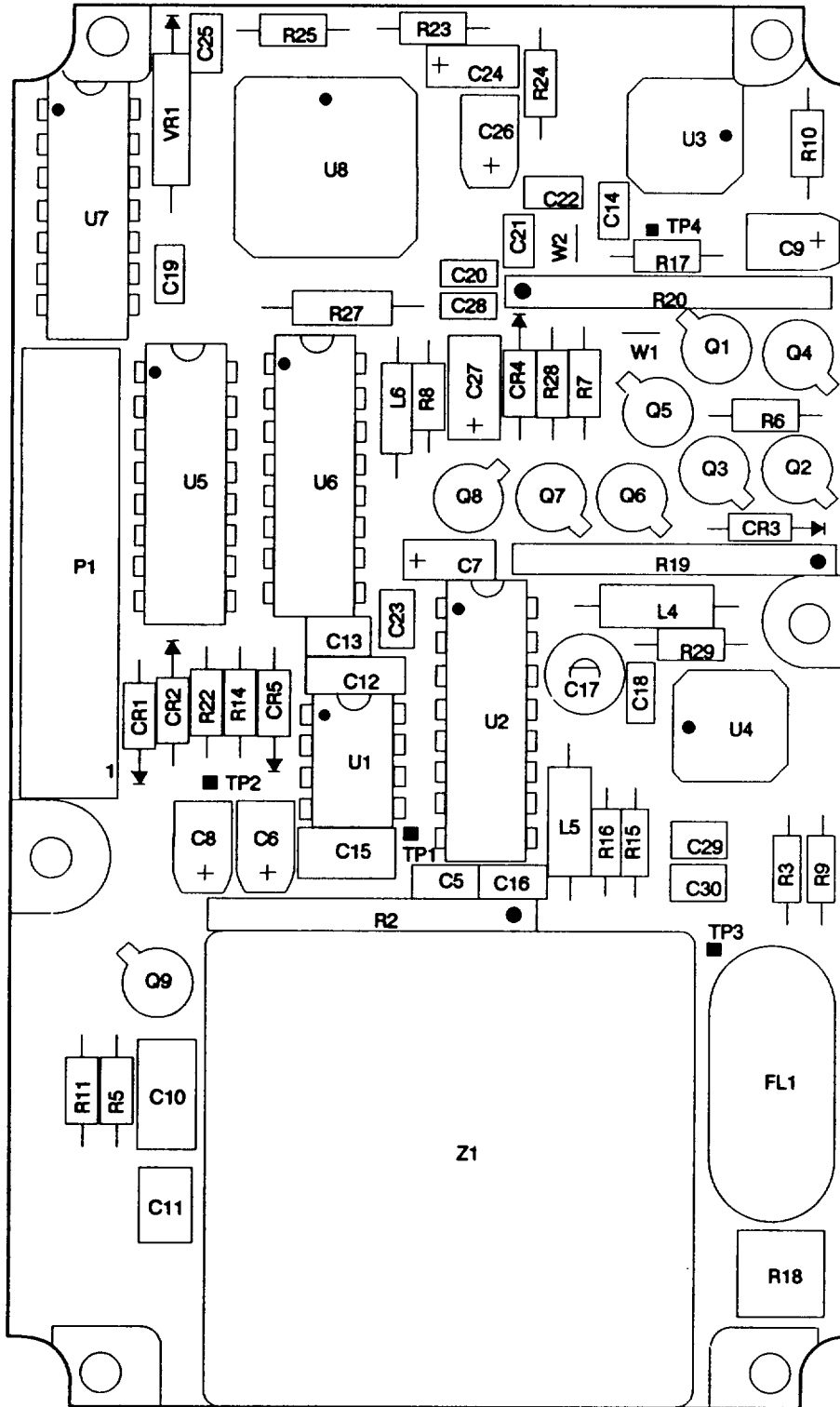


Figure 2-45. Synthesizer A3018235-1 (Sheet 4 of 4)

NOTE

This program contains a survey test for the adapter card. When the survey is completed, you will be instructed to remove all test connections. DO NOT remove the hardline cables on the RF test station.

d. Load test program.

- (1) Install test program tape CPIN CP0400030G in accordance with TM 11-6625-2773-10.
- (2) Load file on to disk in accordance with TM 11-6625-2773-10.
- (3) Enter TEST A3018235F and press RETURN on VDT keyboard.
- (4) Follow operator instructions on VDT. Enter part number and serial number and read operator instructions on VDT.
- (5) Verify that the following information is displayed on the VDT:

```

-----SYNTHESIZER-----
PART NUMBER:           A3018235-1
PROGRAM DATE/REV.:     MM/DD/YY REV
SERIAL NO. EFFECTIVITY: 001 THRU *****
MWO EFFECTIVITY:       NONE

```

- (6) Press STRT/PROC on the VDT keyboard.
- e. Run ATE survey test if desired. If ATE survey fails refer to TM 11-6625-2773-10.
- f. Install ICD ID-005C on J1 of PIU.
- g. Install adapter card A on ID-005C (See fig. 2-46).
- h. Run adapter card survey test. If survey test fails, refer to TM 11-6625-3094-24.
- i. Select test.
- j. Perform UUT hookup (See fig. 2-47).
- k. Align the UUT.
- l. Repeat or terminate testing or alignment,
- (1) Follow operator instructions on VDT to repeat tests or terminate alignment.
 - (2) Remove adapter card, ICD, and UUT as required.

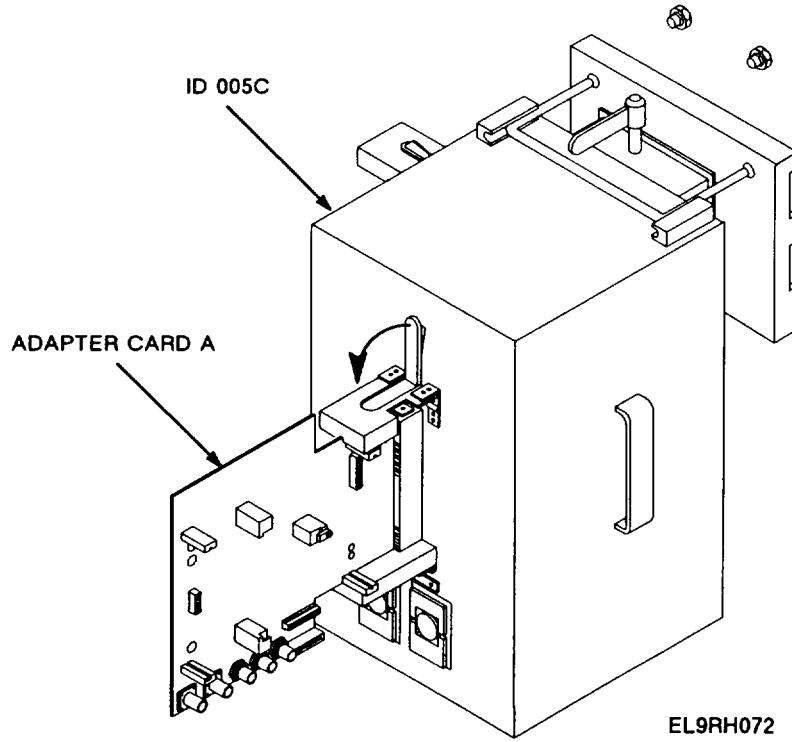


Figure 2-46. Installation of Adapter Card A for Synthesizer Alignment

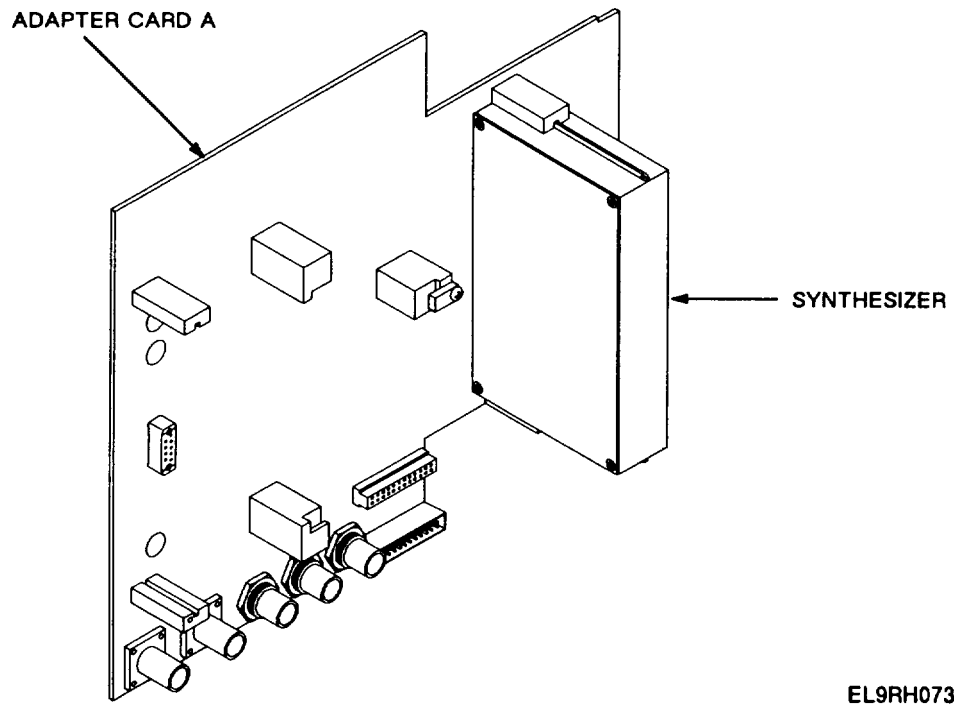


Figure 2-47. Installation of Synthesizer Assembly on Adapter Card A

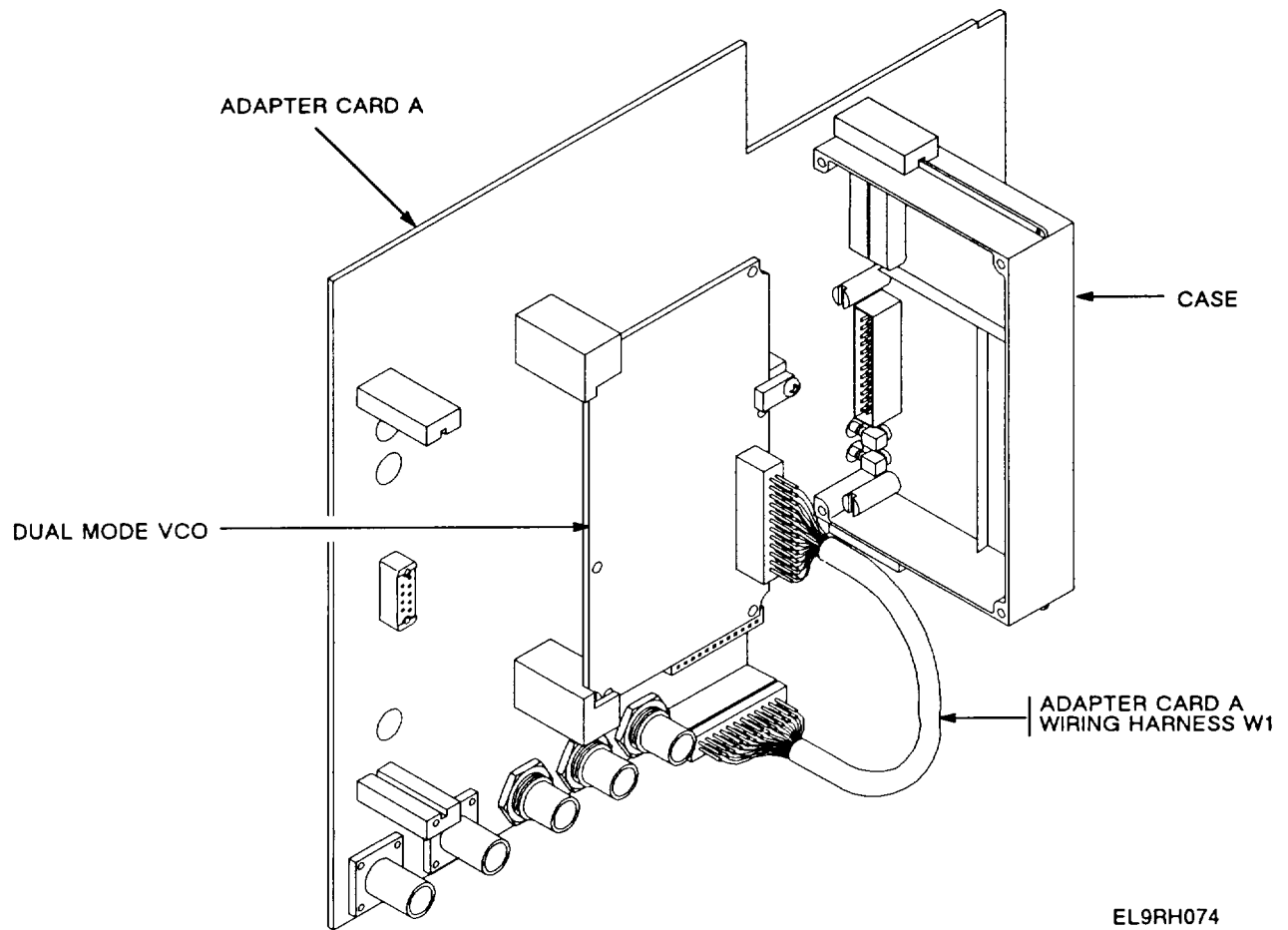


Figure 2-48. Installation of Disassembled Synthesizer Assembly

2-13. CCA-Audio Data I/O A3013204-1 And A3014136-1 (1 A14).

The following procedure is used to perform Go/No-Go testing on the audio data I/O, 1A14, A3014136-1 (see fig. 2-49). Return failed assemblies to depot for repair.

REQUIRED TEST ACCESSORIES	
Ž Test Program Tape	CPIN CP0800030G
File No.	A3013204F
Ž ICD	ID-005C
Ž Adapter Card B	A3014453-1
Ž Load Card A	A3014493-1
Ž Extender Card, Electronic Self-Test B	A3017842-1

NOTE

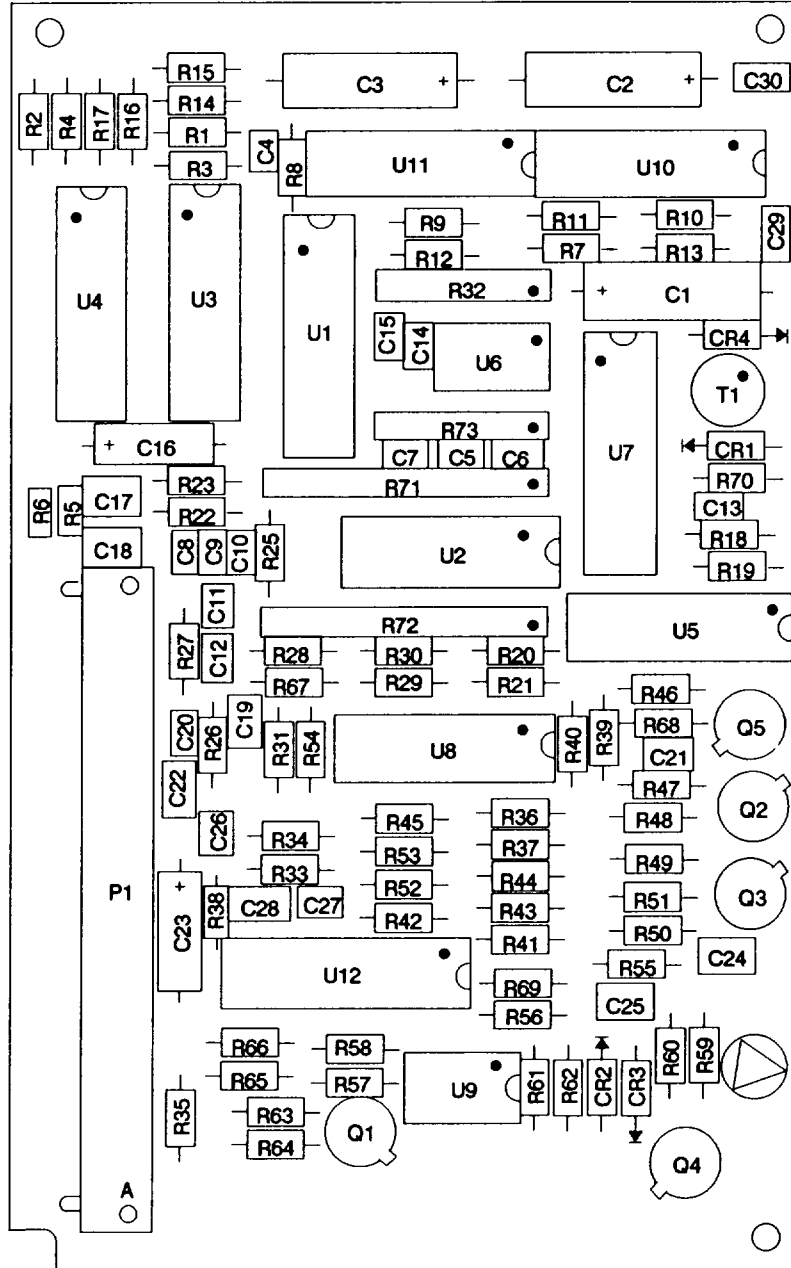
Before testing adapter card B, run the ID-005C survey. Use test program CPIN 11GSG10 File Number ID005C.

- a. Turn on test station AN/USM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and press RETURN on VDT keyboard.
- d. Load test program.

NOTE

The intermediate code of this program requires 16 blocks on the removable disk pack (DPØ). Before loading the test program ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.

- (1) Install test program tape CPIN CP0800030G in accordance with TM 11-6625-2773-10.
- (2) Load file on to disk in accordance with TM 11-6625-2773-10.



CE1UG036

Figure 2-49. CCA-Audio Data I/O (1A14) A3014136-1

e. Select test.

NOTE

Two part numbers are served by this program. The file name for this program is A3013204. The A3013204-1 board is not currently used.

- (1) Enter TEST A3013204F and press RETURN on VDT keyboard.
- (2) Follow operator instructions on VDT. Enter part number and serial number and read operator instructions on VDT.
- (3) Verify that the following information is displayed on the VDT:

```
-----CCA-AUDIO DATA I/O-----  
  
PART NUMBER           A3013204-1  
PROGRAM DATE/REV.:    MM/DD/YY REV.  
SERIAL NO. EFFECTIVITY 001 THRU ***  
MWO EFFECTIVITY       NONE
```

OR

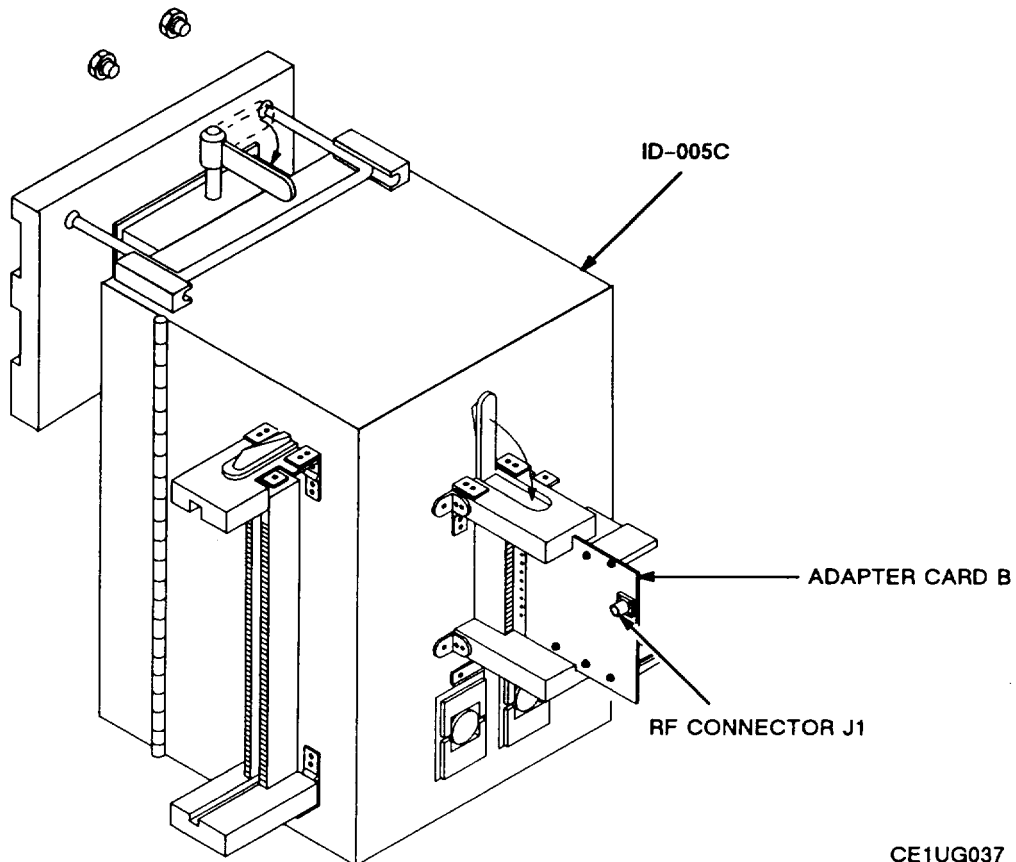
```
-----CCA-AUDIO DATA I/O-----  
  
PART NUMBER           A3014136-1  
PROGRAM DATE/REV.:    MM/DD/YY REV.  
SERIAL NO. EFFECTIVITY 001 THRU ***  
MWO EFFECTIVITY       NONE
```

(4) Press STRT/PROC on the VDT keyboard.

f. Run ATE survey test if desired. If ATE survey fails refer to TM 11-6625-2773-10.

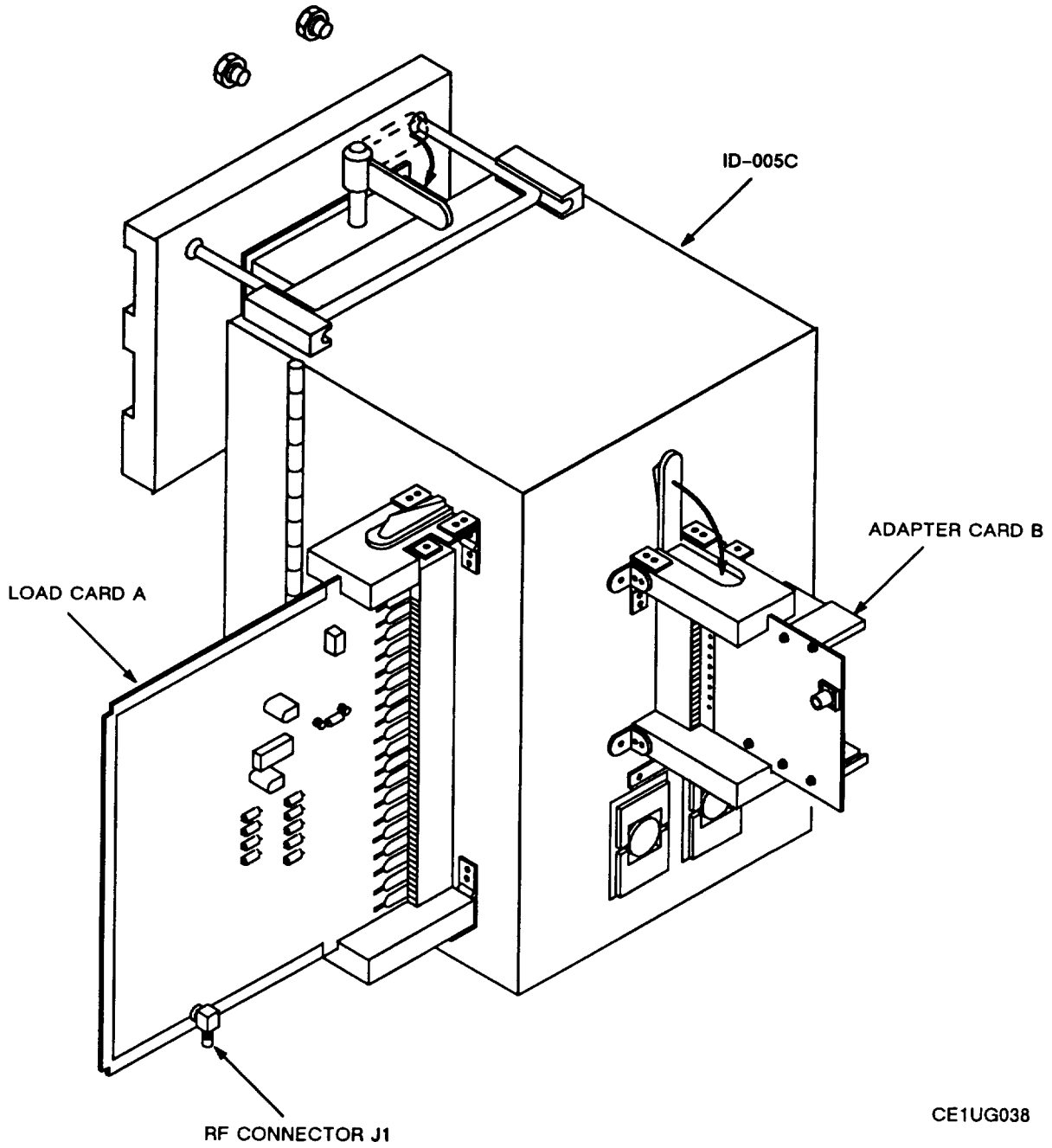
g. Install ICD ID-005C on J1 on PIU.

- h.* Install adapter card B on ID-005C (see fig. 2-50).
- i.* Run adapter card survey test. If survey test fails refer to TM 11-6625-3094-24.
- j.* Install load card A on ID-005C (see fig. 2-51).
- k.* Select load card survey. If load card survey test fails refer to DMWR 11-6625-3094.
- l.* Perform UUT hookup (see fig. 2-52) .
- m.* Test and troubleshoot UUT.
- n.* Repeat or terminate testing.
 - (1) Follow operator instructions on VDT to repeat tests or terminate testing.
 - (2) Remove adapter card, ICD, and UUT as required.
 - (3) If the test passes, return the UUT to stock. If the test fails, return UUT to depot for repair.



CE1UG037

Figure 2-50. Installation of Adapter Card B for CCA-Audio Data I/O



CE1UG038

Figure 2-51. Installation of Load Card A for CCA-Audio Data I/O

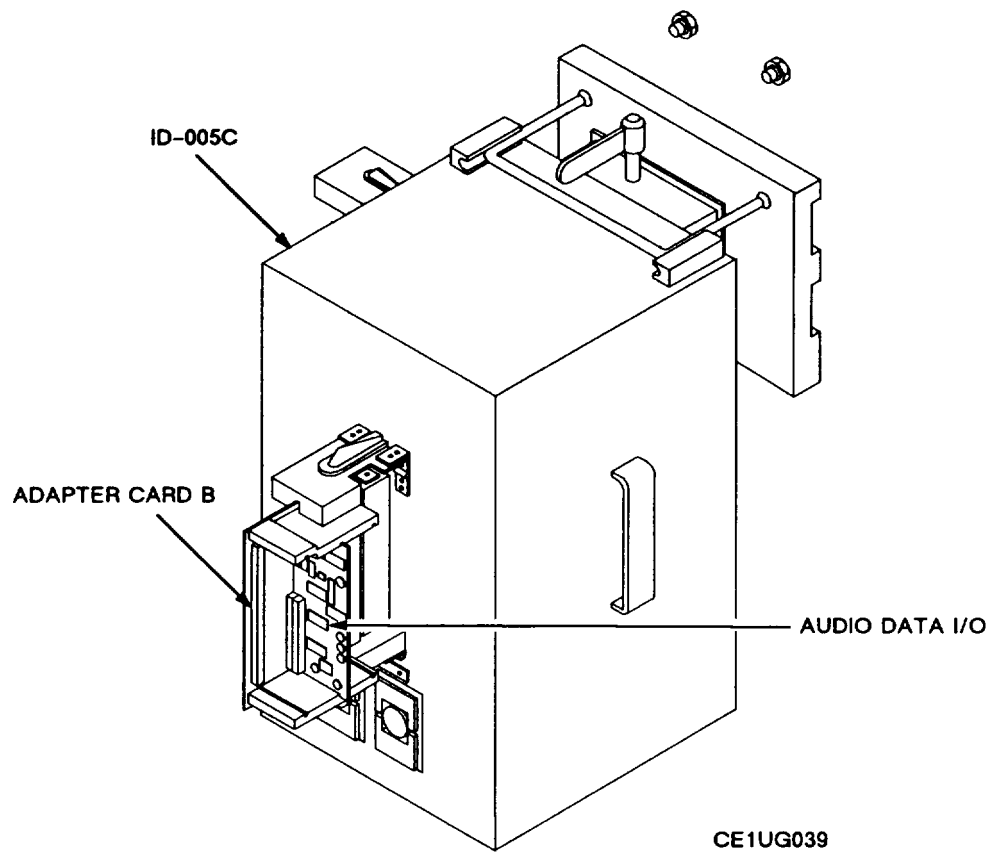


Figure 2-52. Installation of CCA-Audio Data I/O on Adapter Card B

2-14. CCA-Audio Power Supply A3013177-1 And A3014134-1 (1A12).

The following procedure is used to perform Go/No-Go testing on the CCA-audio power supply, 1A12, A3014134-1 (see fig. 2-53). Return failed assemblies to depot for repair.

REQUIRED TEST ACCESSORIES	
Ž Test Program Tape	CPIN CP0900030G
File No.	A3013177F
Ž ICD	ID-005C
Ž Adapter Card B	A3014453-1
Ž Load Card A	A3014493-1
Ž Extender Card, Electronic Self-Test B	A3017842-1

NOTE

Before testing adapter card B, run the ID-005C survey. Use test program CPIN 11GSG10 File Number ID005C.

- a. Turn on test station AN/USM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and press RETURN on VDT keyboard.

NOTE

The intermediate code of this program requires 18 blocks on the removable disk pack (DPØ). Before loading the test program ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.

- d. Load test program.
 - (1) Install test program tape CPIN CP0900030G in accordance with TM 11-6625-2773-10.
 - (2) Load file on to disk in accordance with TM 11-6625-2773-10.

e. Select test.

NOTE

Two part numbers are served by this program. The file name for this program is A3013177. The A3013177-1 board is not currently used.

- (1) Enter TEST A3013177F and press RETURN on VDT keyboard.
- (2) Follow operator instructions on VDT. Enter part number and serial number and read operator instructions on VDT.
- (3) Verify that the following information is displayed on the VDT:

```

-----CCA-AUDIO POWER SUPPLY-----

PART NUMBER           A3013177-1
PROGRAM DATE/REV.:    MM/DD/YY REV.
SERIAL NO. EFFECTIVITY 001 THRU ***
MWO EFFECTIVITY       NONE
    
```

OR

```

-----CCA-AUDIO POWER SUPPLY-----

PART NUMBER           A3014134-1
PROGRAM DATE/REV.:    MM/DD/YY REV.
SERIAL NO. EFFECTIVITY 001 THRU ***
MWO EFFECTIVITY       NONE
    
```

- (4) Press STRT/PROC on the VDT keyboard.

f. Run ATE survey test if desired. If ATE survey fails refer to TM 11-6625-2773-10.

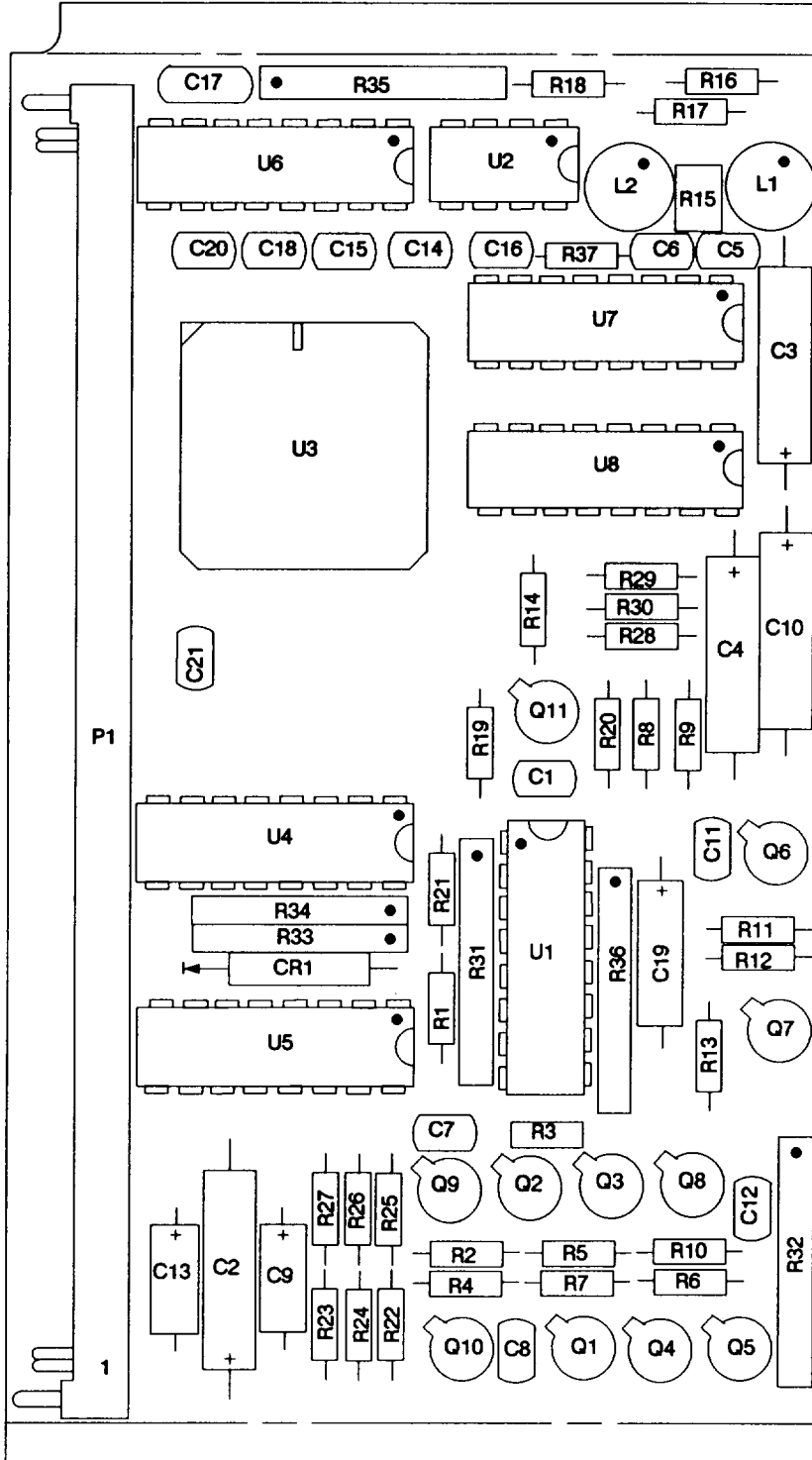
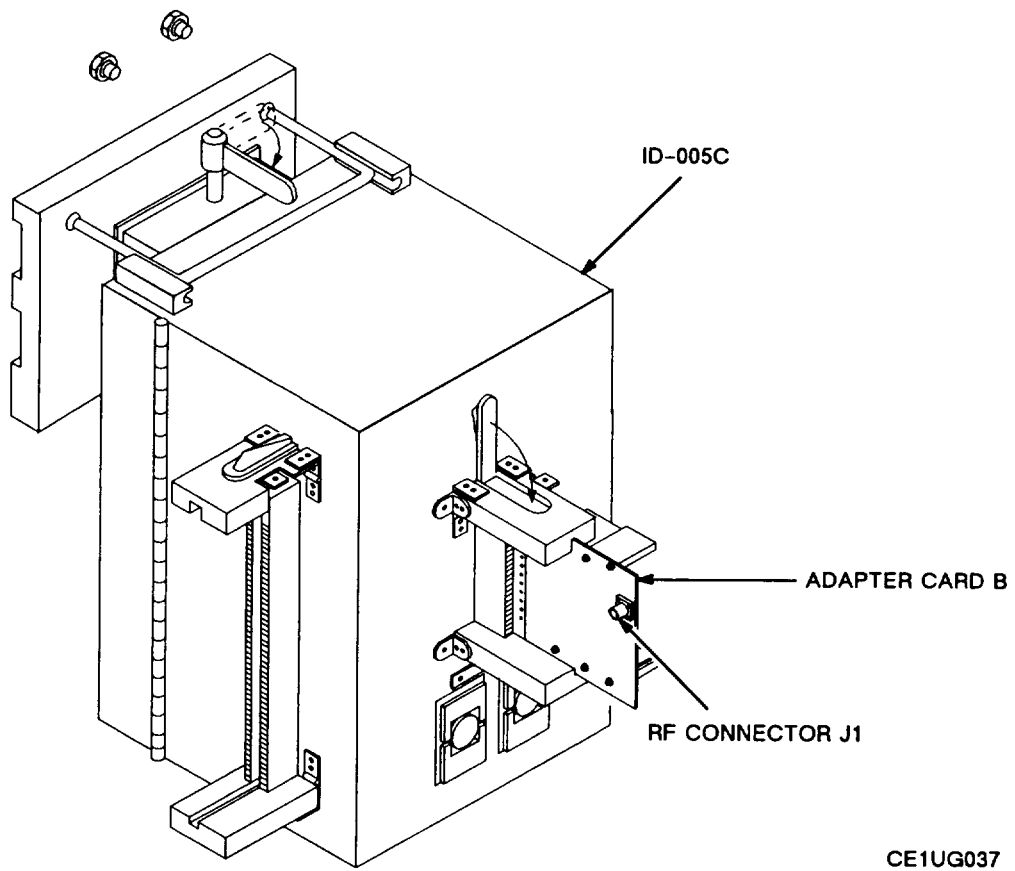


Figure 2-53. CCA-Audio Power Supply (1A12) A3014134-1

- g.* Install ICD ID-005C on J1 of PIU.
- h.* Install adapter card B on ID-005C (see fig. 2-54).
- i.* Run adapter card survey test. If survey test fails refer to TM 11-6625-3094-24.
- j.* Install load card A on ID-005C (see fig. 2-55).
- k.* Select load card survey, If survey test fails refer to TM 11-6625-3094-24.
- l.* Perform UUT hookup (see fig. 2-56).
- m.* Test and troubleshoot UUT.
- n.* Repeat or terminate testing.
 - (1) Follow operator instructions on VDT to repeat tests or terminate testing.
 - (2) Remove adapter card, ICD, and UUT as required.
 - (3) If the test passes, return the UUT to stock. If the test fails, return UT to depot for repair.



CE1UG037

Figure 2-54. Installation of Adapter Card B for CCA-Audio Power Supply

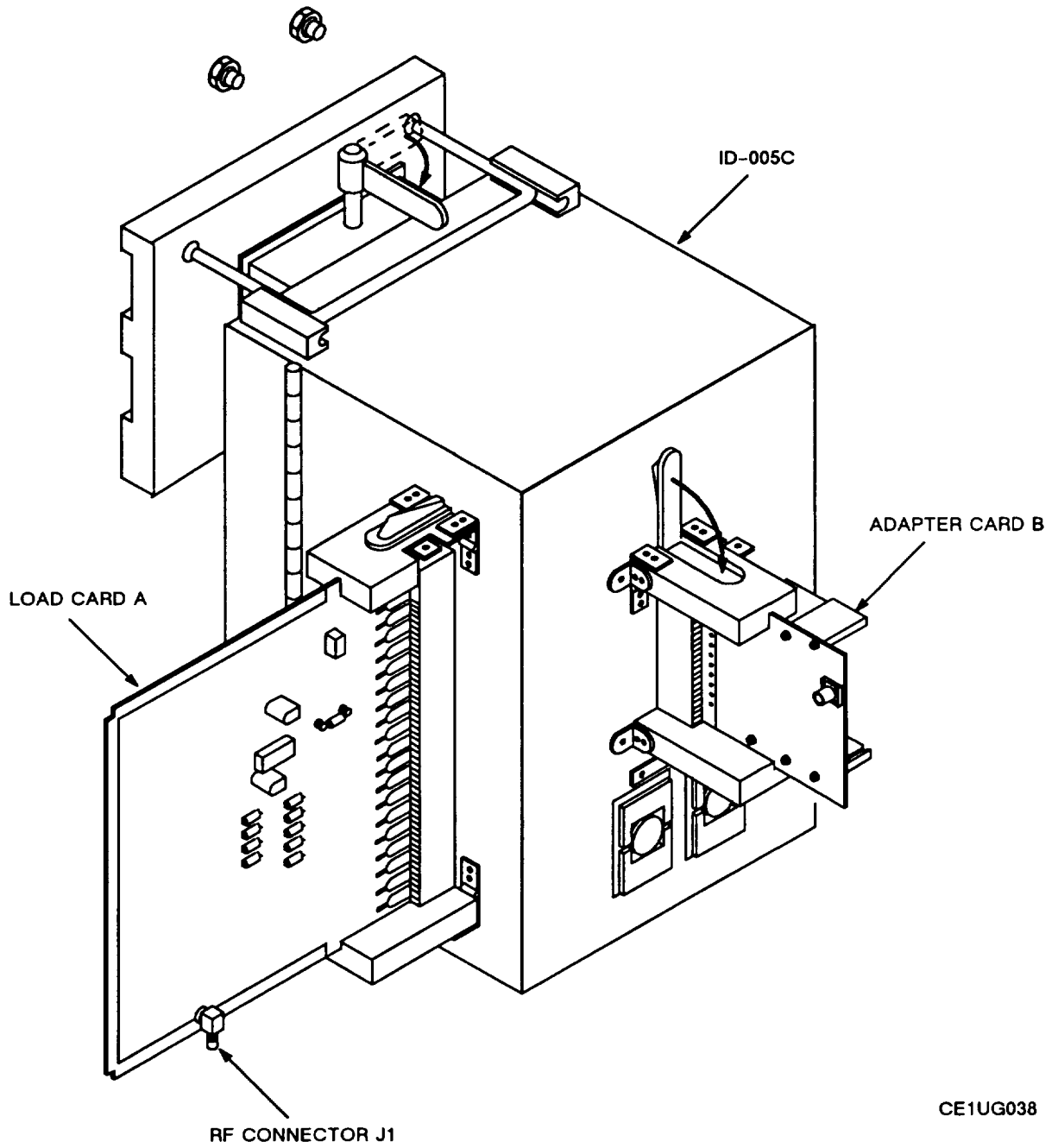
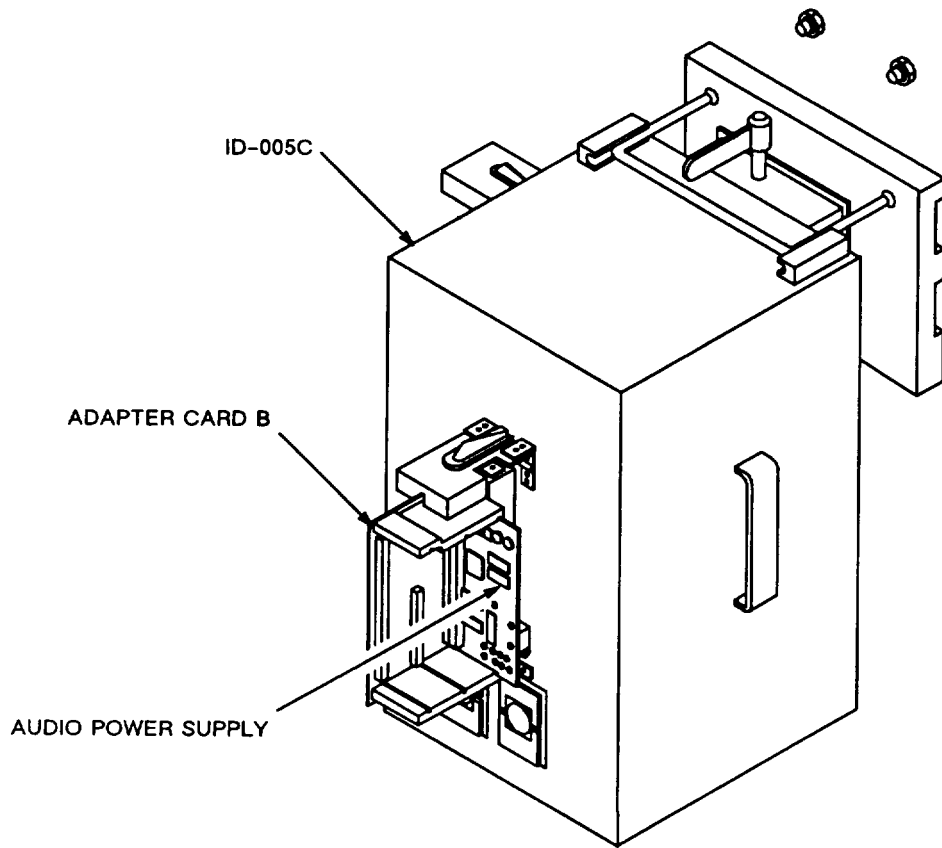


Figure 2-55. Installation of Load Card A for CCA-Audio Power Supply



CE1UG041

Figure 2-56. Installation of CCA-Audio Power Supply on Adapter Card B

2-15. Exciter/Power Amplifier A3018124-1 (1A11).

The following procedure is used to perform Go/No-Go testing on the exciter/power amplifier, IA11, A3018124-1 (see fig. 2-57). Return failed assemblies to depot for repair.

REQUIRED TEST ACCESSORIES	
Ž Test Program Tape	CPINCP0800030G
File No.	A3018124F
Ž ICD	ID-005C
Ž Load Card A	A3014493-1
Ž Adapter, Test-I,J,K P/N A3142247-1 Items:	
Adapter Card K	A3142084-1
Extender Card, Electronic Self Test-1, J, K	A3142308-1
Cable Assy, (W1)	A3132898-I
Lead Assy, Electrical (W5)	A3014244-1
Cable Assy, RF (W8)	A3018716-1
Cable Assy, RF (W10)	A3014523-2
Cable Assy, RF (W12)	A3014523-4
Ž Accessory Kit P/N A3018639-1 Items:	
Termination Assy (T1)	A3140053-1
Adapter, Connector (CP2)	A3018791-I
Adapter, Connector (CP4)	A301 8688-1
10 dB Attenuator (AT1)	A3018544-1
20 dB Attenuator (AT7)	M3933/19-12
Ž AN/USM-410 Test Accessory Kit P/N B402 292 Items:	
Cable Assy, RF (W102)	84021272
Ž AN/USM-410 Test Accessory Kit P/N B4039143 Items:	
Adapter, Connector (3 reqd)	UG-201A/U
Adapter, Connector (3 reqd)	B4021O32
Adapter, Connector	B4035000
Ž AN/USM-410 Test Accessory Kit P/N B4021294 Items:	
Adapter, Connector	UG-491A/U
Adapter, Connector	SM-C-943627

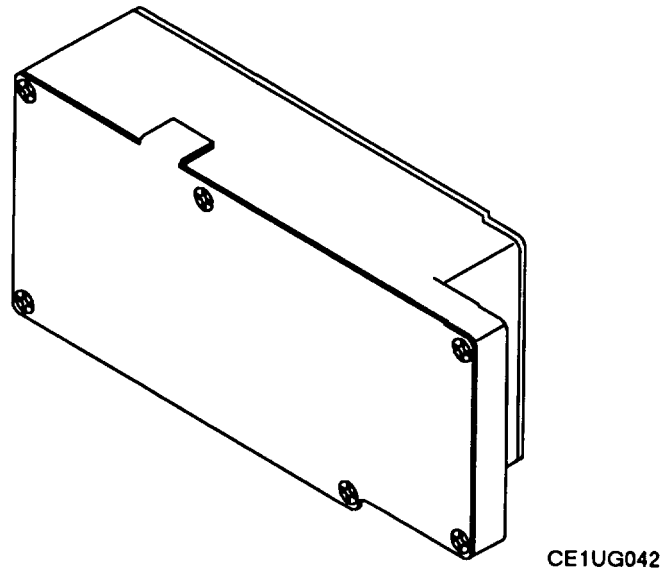


Figure 2-57. Exciter/Power Amplifier A3018124-1

NOTE

This program uses RF station A5. Ensure RF power is set to ON and cables W9 and W10 are installed. Do not remove these cables during the ATE survey.

NOTE

Before testing any adapter cards, run the ID-005C survey. Use test program CPIN 11GSG10 File Number ID005C.

- a. Turn on test station AN/USM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and press RETURN on VDT keyboard.

NOTE

The intermediate code of this program will require 84 blocks on the removable disk pack (DPØ). Before loading the test program ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.

- d. Load test program.
 - (1) Install test program tape CPIN CP0800030G in accordance with TM 11-6625-2773-10.
 - (2) Load file on disk in accordance with TM 11-6625-2773-10.
- e. Select test.
 - (1) Enter TEST A3018124F and press RETURN on VDT keyboard.
 - (2) Follow operator instructions on VDT. Enter part number and serial number and read operator instructions on VDT.
 - (3) Verify that the following information is displayed on the VDT:

----- EXCITER/POWER AMPLIFIER -----	
PART NUMBER:	A3018124-1
PROGRAM DATE:	MM/DD/YY
SERIAL NO. EFFECTIVITY	001 THRU ***
MWO EFFECTIVITY	NONE

- (4) Press STRT/PROC on the VDT keyboard.
- f.* Run ATE survey test if desired, If ATE survey fails refer to TM 11-6625-2773-10.
 - g.* Install ICD ID-005C on J1 of PIU.
 - h.* Install adapter card K on ID-005C (see fig. 2-58).
 - i.* Run adapter card survey test. If survey test fails refer to TM 11-6625-3094-24.
 - j.* Install load card A on ID-005C (see fig. 2-59).
 - k.* Run load card survey test if desired. If load card survey fails refer to TM 11-6625-3094-24.
 - l.* Perform UUT hookup (see fig. 2-60).
 - m.* Test UUT.
 - n.* Repeat or terminate testing.
 - (1) Follow operator instructions on VDT to repeat tests or terminate testing.
 - (2) Remove adapter card, ICD, and UUT as required.
 - (3) If the test passes, return the UUT to stock, if the test fails, return UUT to depot for repair.

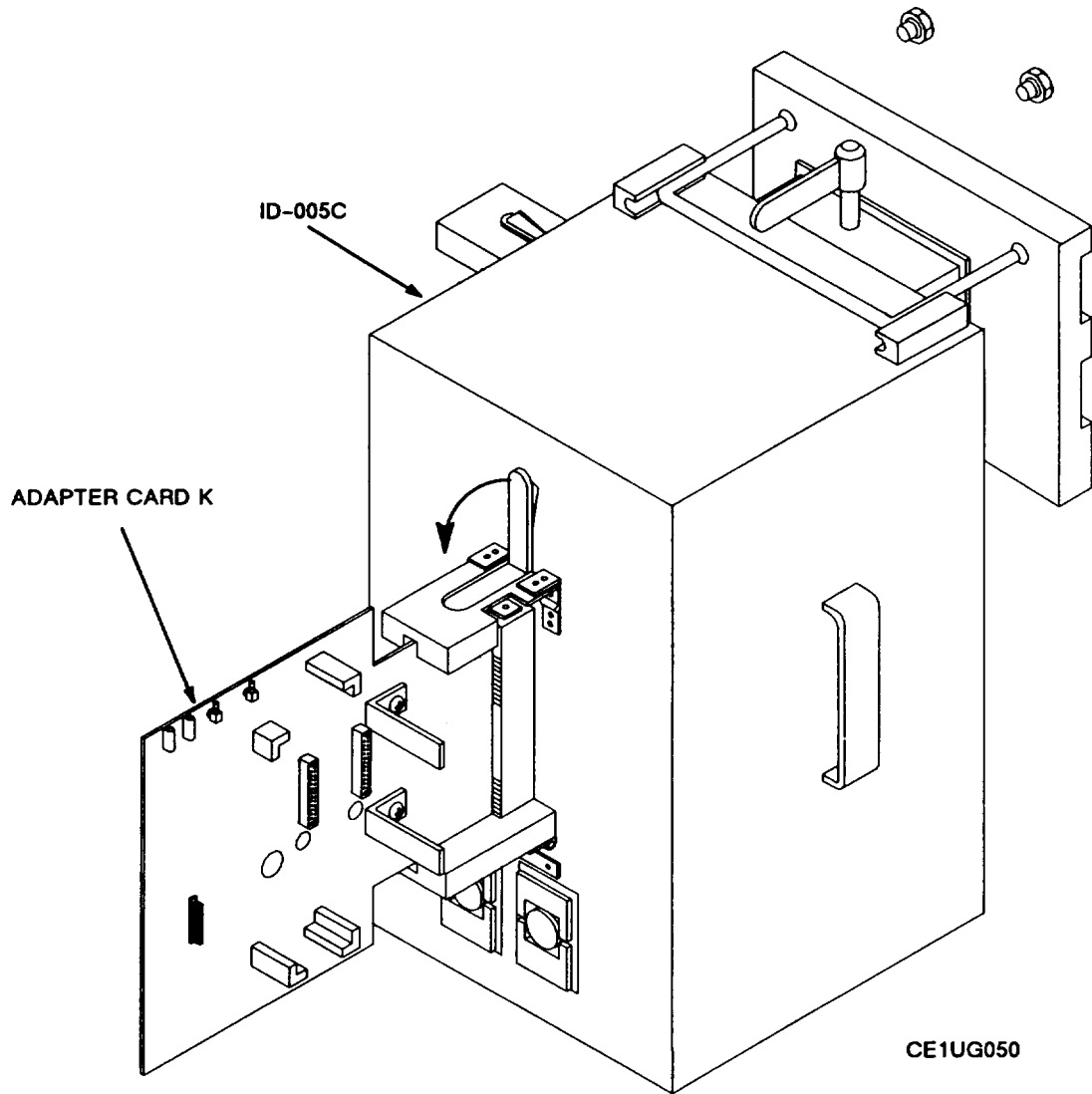
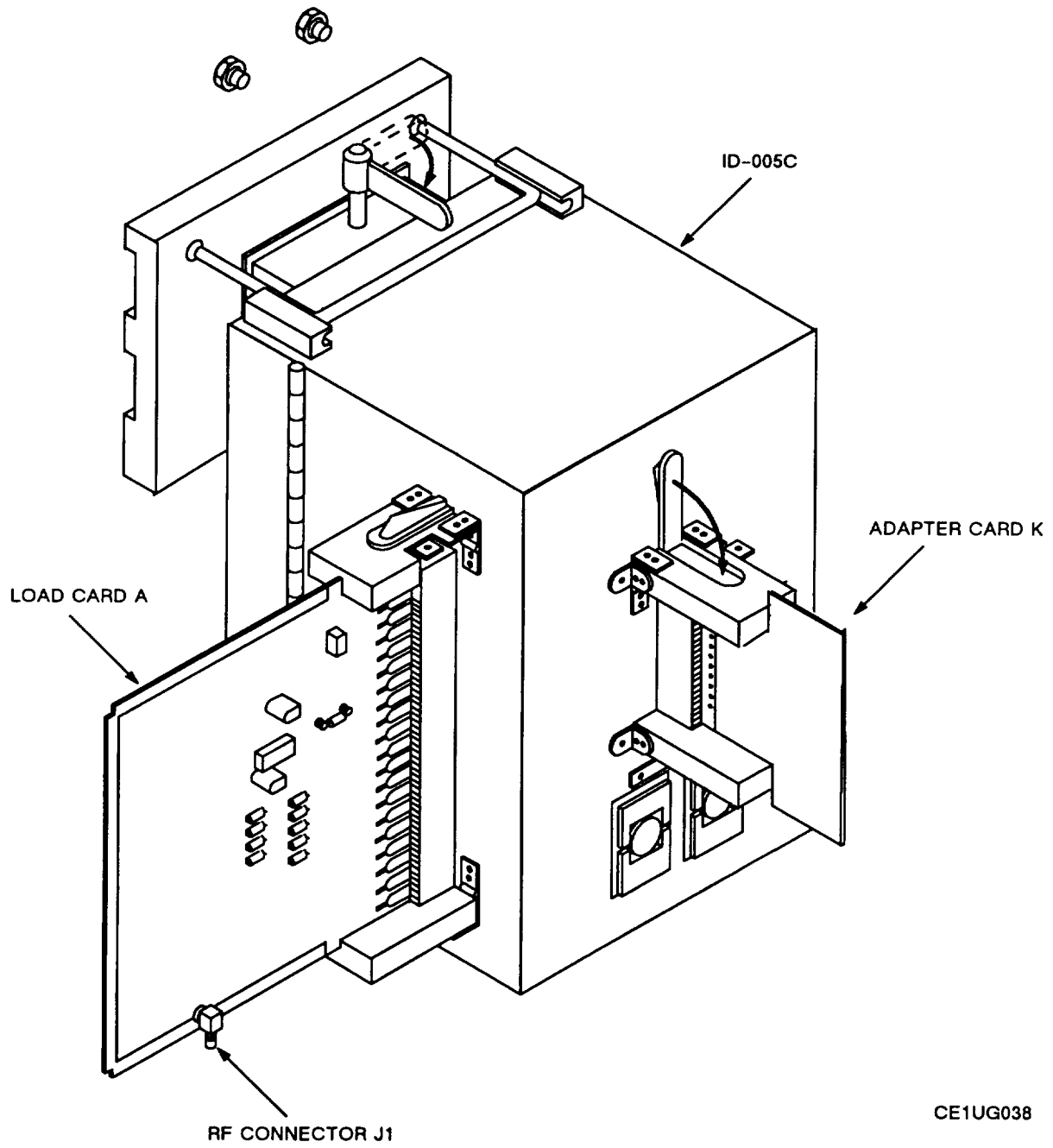


Figure 2-58. Installation of Adapter Card K for Exciter/Power Amplifier



CE1UG038

Figure 2-59. Installation of Load Card A for Exciter/Power Amplifier

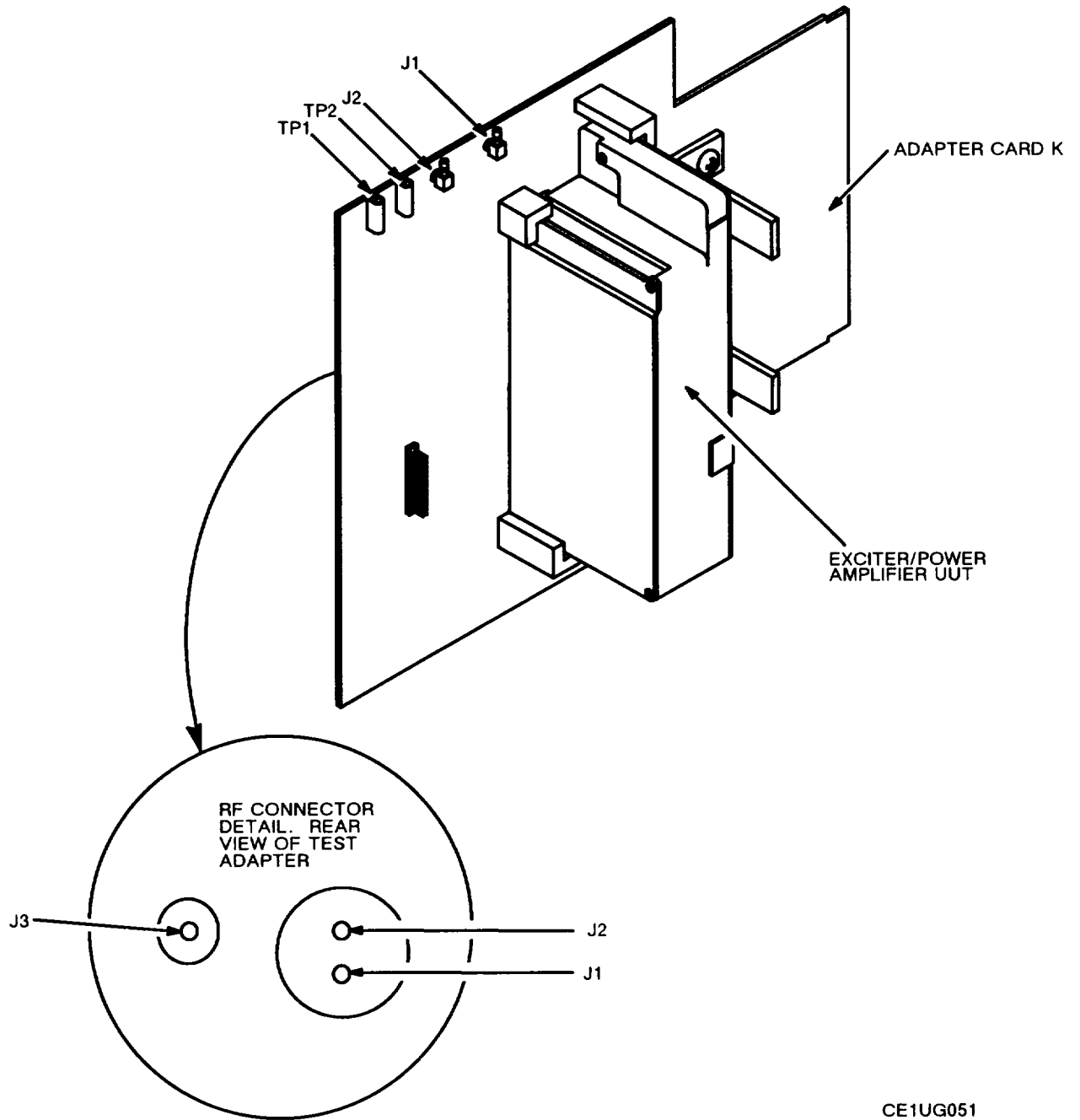


Figure 2-60. Installation of Exciter/Power Amplifier Assembly (1A11) on Adapter Card K

2-16. CCA-Switching A3014383-1 (1A7).

The following procedure is used to perform Go/No-Go testing on the CCA-switching, 1A7, A3014383-1 (see fig. 2-61). Return failed assemblies to depot for repair.

REQUIRED TEST ACCESSORIES	
Ž Test Program Tape	CPIN CP0900030G
File No.	A3014383F
Ž ICD	ID-005C
Ž Adapter Card B	A3014453-1
Ž Load Card A	A3014493-1
Ž Extender Card, Self-Test B	A3017842-1
Ž AN/USM-410(V)2 Accessory Kit B4021293 Items:	
RF Short BNC Plug	3201-1314-02
Ž Cable Assembly, RF (WI)	A3132898-1

NOTE

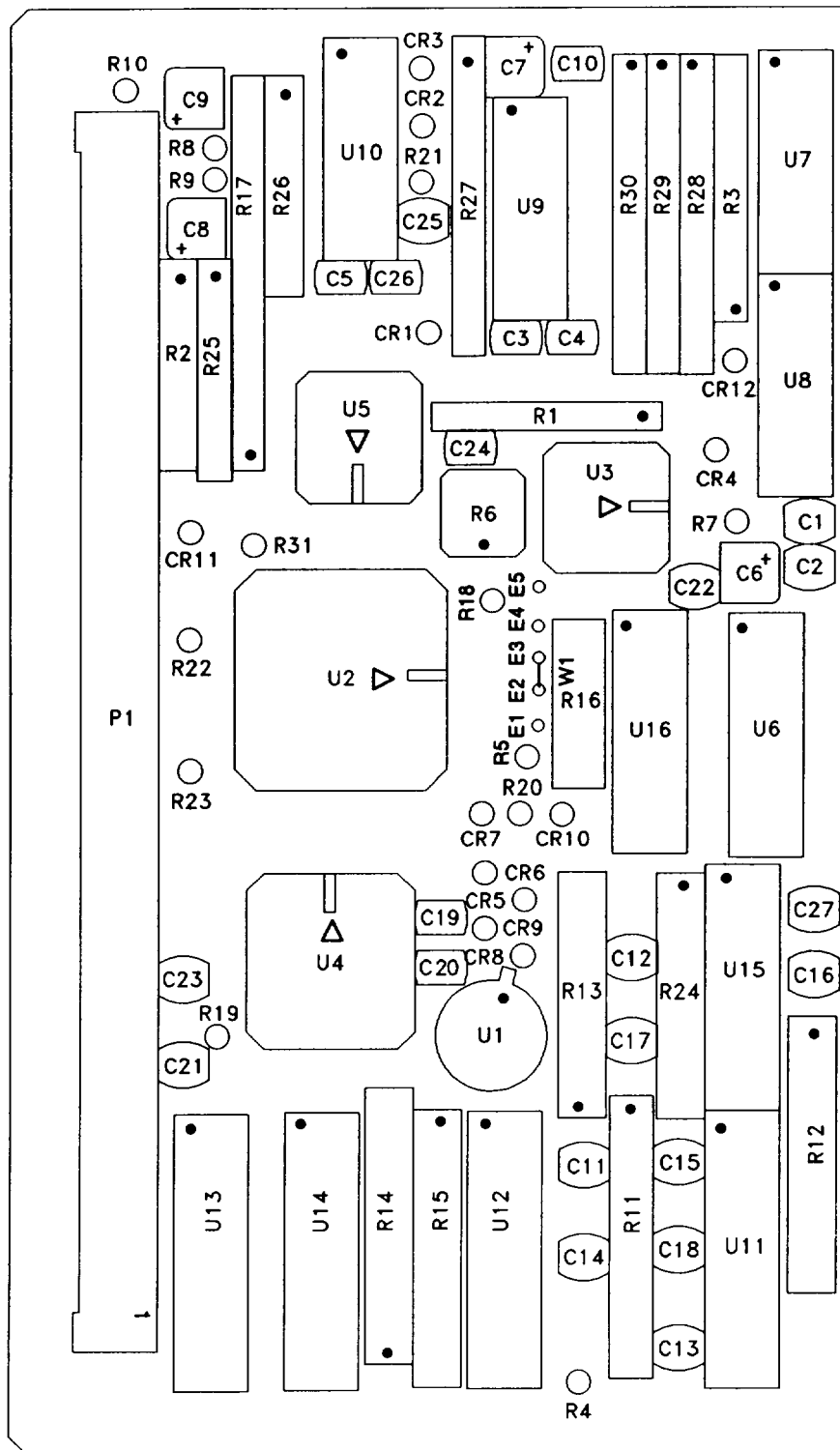
Before testing adapter card B, run the ID-005C survey. Use test program CPIN 11GSG10 File Number ID005C.

- a. Turn on test station AN/USM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and press RETURN on VDT keyboard.

NOTE

The intermediate code of this program requires 28 blocks on the removable disk pack (DPØ). Before loading the test program ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.

- d. Load test program.
 - (1) Install test program tape CPIN CP0900030G in accordance with TM 11-6625-2773-10.
 - (2) Load file on to disk in accordance with TM 11 -6625-2773-10.

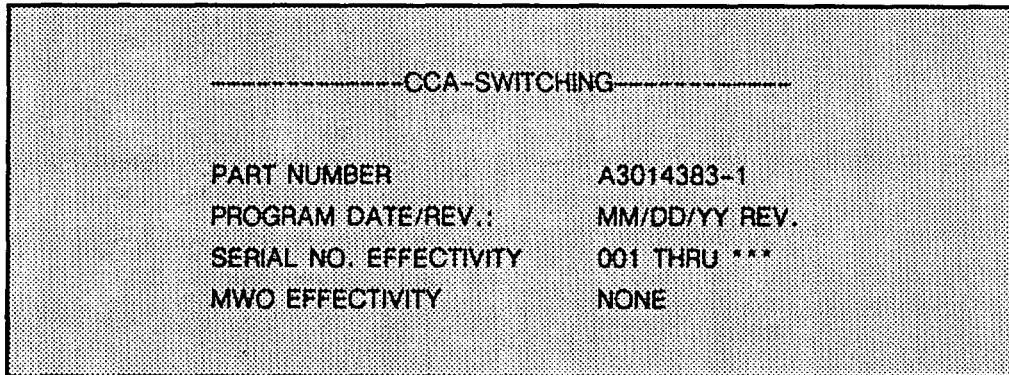


CE1UG056

Figure 2-61. CCA-Switching (1A7) A3014383-1

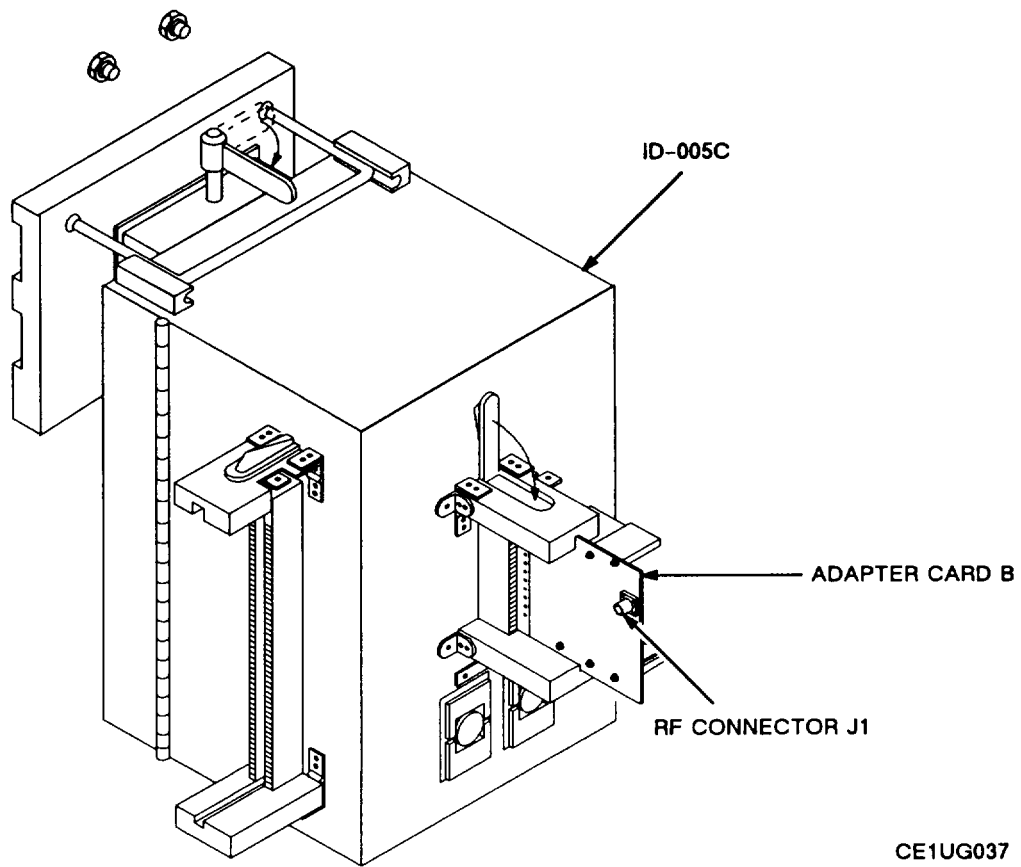
e. Select test.

- (1) Enter TEST A3014383F and press RETURN on VDT keyboard.
- (2) Follow operator instructions on VDT. Enter part number and serial number and read operator instructions on VDT.
- (3) Verify that the following information is displayed on the VDT:



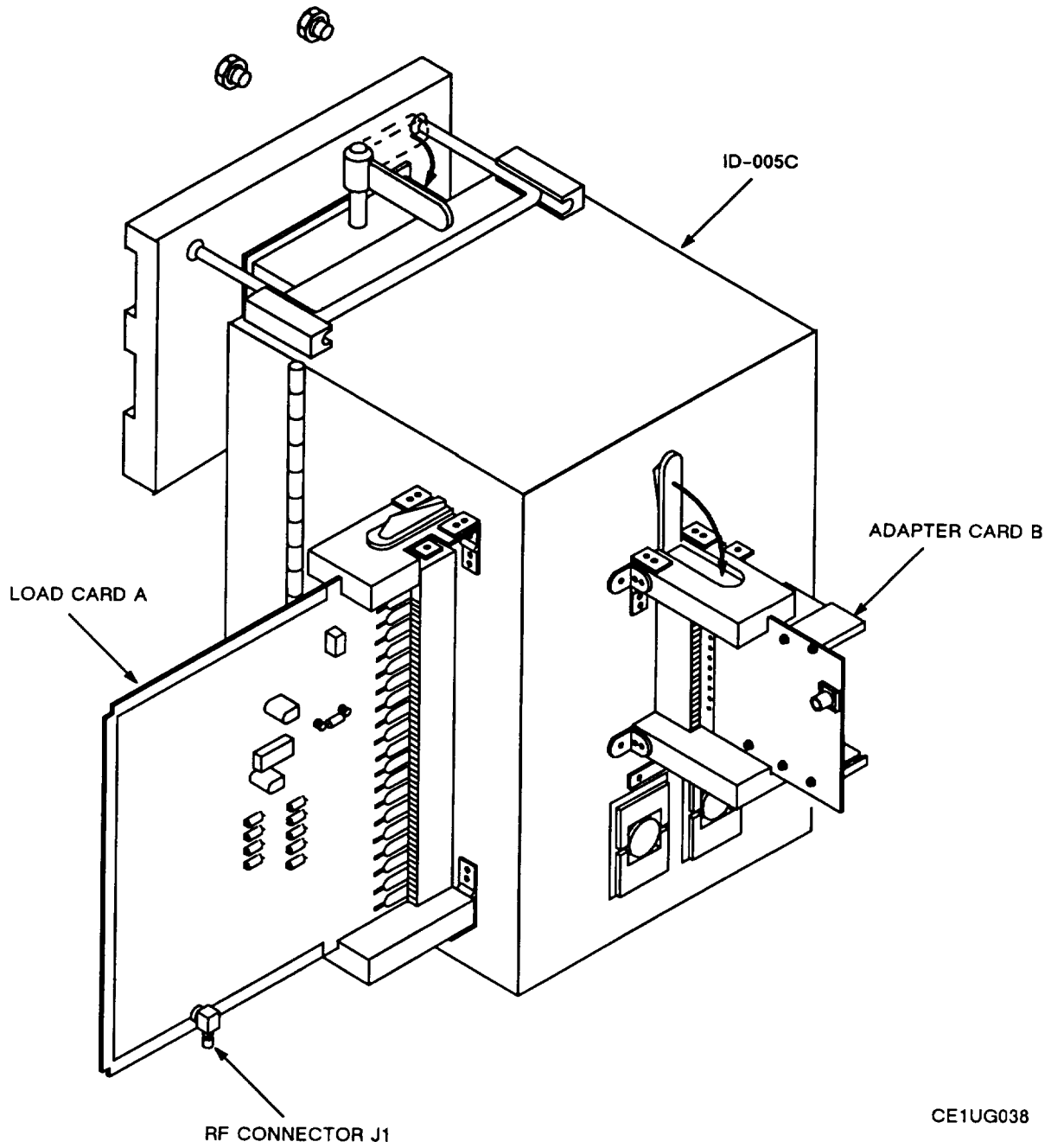
(4) Press STRT/PROC on the VDT keyboard.

- f. Run ATE survey test if desired. If ATE survey fails refer to TM 11-6625-2773-10.
- g. Install ICD ID-005C on J1 of PIU.
- h. Install adapter card B on ID-005C (see fig. 2-62).
- i. Run adapter card survey test. If survey test fails refer to TM 11-6625-3094-24.
- j. Install load card A on ID-005C (see fig, 2-63).
- k. Select load card survey. If survey test fails refer to TM 11-6625-3094-24.
- l. Perform UUT hookup (see fig. 2-64).
- m. Test and troubleshoot UUT.
- n. Repeat or terminate testing.
 - (1) Follow operator instructions on VDT to repeat tests or terminate testing.
 - (2) Remove adapter card, ICD, and UUT as required.
 - (3) If the test passes, return the UUT to stock. If the test fails, return UUT to depot for repair.



CE1UG037

Figure 2-62. Installation of Adapter Card B for CCA-Switching



CE1UG038

Figure 2-63. Installation of Load Card A for CCA-Switching

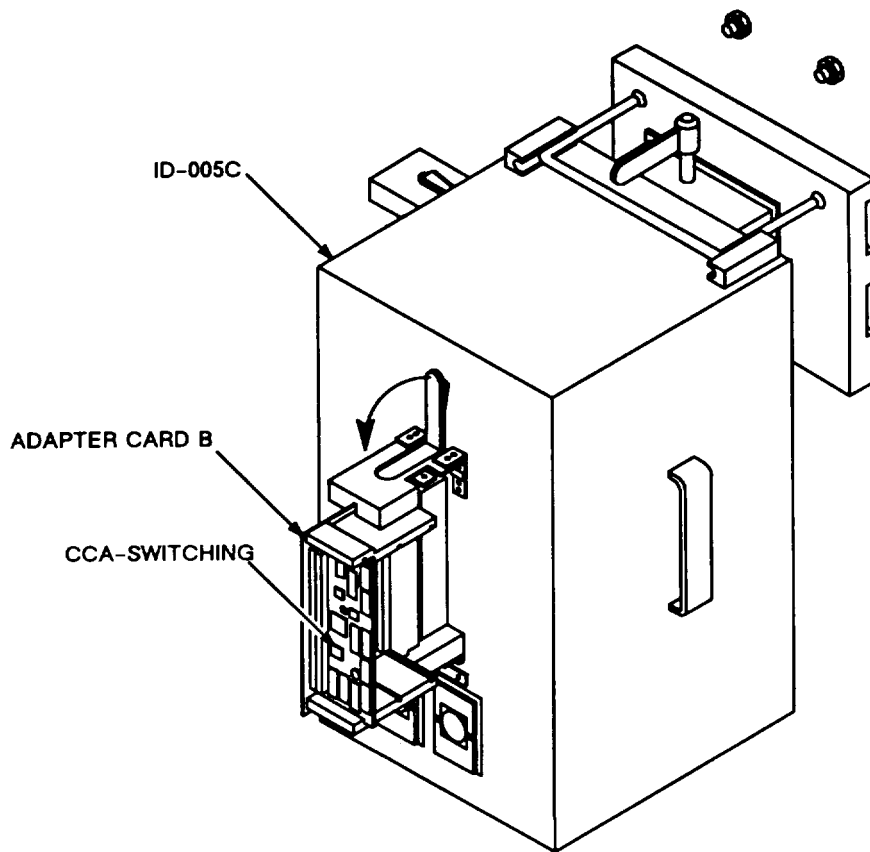


Figure 2-64. Installation of CCA-Switching on Adapter Card B

2-17. Tuner/Mixer A3013361-1, A3142048-1, and A3142127-1 (1A9).

The following procedure is used to perform Go/No-Go testing on the tuner/mixer, 1A9, A3013361-1, A3142048-1, and A31421 27-1 (see fig. 2-65), Return failed assemblies to depot for repair.

REQUIRED TEST ACCESSORIES	
Ž Test Program Tape	CPIN CP0700030G
File No.	A3013361F
File No.	A3142048F
File No.	A3142127F
Ž ICD	ID-005C
Ž Adapter, Test P/N A3018429-1 Items:	
Adapter Card A	A3014512-1
Extender Card, Electronic Test-Self Test A	A3014499-1
Cable Assembly, RF (W2)	A3014521-2
Cable Assembly, RF (W3)	A3014521-3
Cable Assembly, RF (W4)	A3014521-4
Ž Accessory Kit-Adapter Test Set P/N A3018639-1 Items:	
Bandpass, Filter (FL1)	A3140091-1
Attenuator (AT5)	M3933/19-08
Adapter (CP2)	A3018791-1
Ž RF Amplifier, ENI Model	325LA
Ž Network Analyzer, HP Model	3577A
Ž S-Parameter Test Set, HP Model	35677A/B
Ž HP-1B Interconnect Cable HP Model	10833B
Ž AN/USM-410 Test Accessory Kit P/N B4021292 Items:	
Cable Assembly, RF (W101)	B4021271
Cable Assembly, RF (W104)	B4021274
Cable Assembly, RF (W107) (2 reqd)	B4021258
Ž AN/USM-410 Test Accessory Kit P/N B4021294 Items:	
Adapter, BNC Plug-Plug	UG-491A/U
Ž AN/USM-410 Test Accessory Kit P/N B4021293 Items:	
Adapter, Connector (4 reqd)	UG-201A/U

NOTE

If your AN/USM-410 (V)2 is in a van AN/MSM-105(V) configuration, you must connect the HP-IB interconnect cable (PN 10833B) to connector A3J8 of control station A3 prior to starting any program using the Network Analyzer. Refer to TM 11-6625-2773-30-1.

This program uses the RF Station A5. Ensure the RF Station power is set to ON and cables W9 and W10 are installed. Do not remove these cables during the ATE survey.

NOTE

Before testing the test adapter card B, run the ID-005C survey. Use test program CPIN 11GSG10 File Number ID005C.

- a. Turn on test station AN/USM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and press RETURN on VDT keyboard.

NOTE

The intermediate code of this program requires 20 blocks on the removable disk pack (DPØ). Before loading the test program set ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.

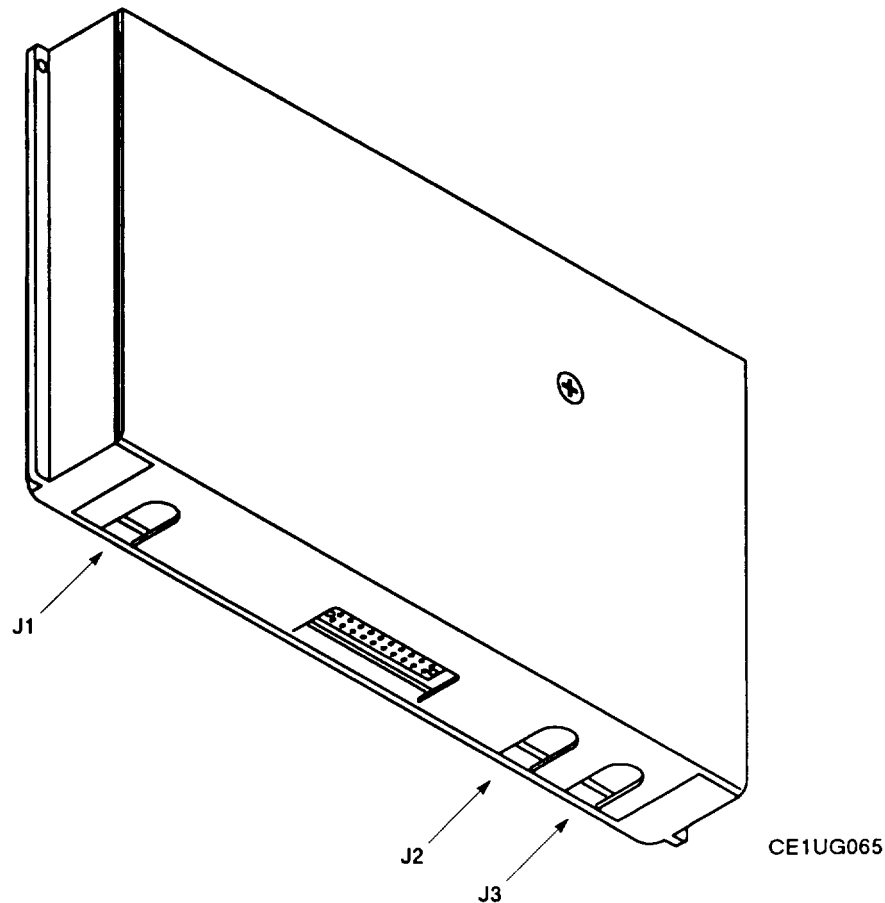


Figure 2-65. Tuner/Mixer A3013361-1, A3142048-1, and A3142127-1 (Sheet 1 of 3)

CCA-TURNER MIXER A3013186-1 (1A9A1)

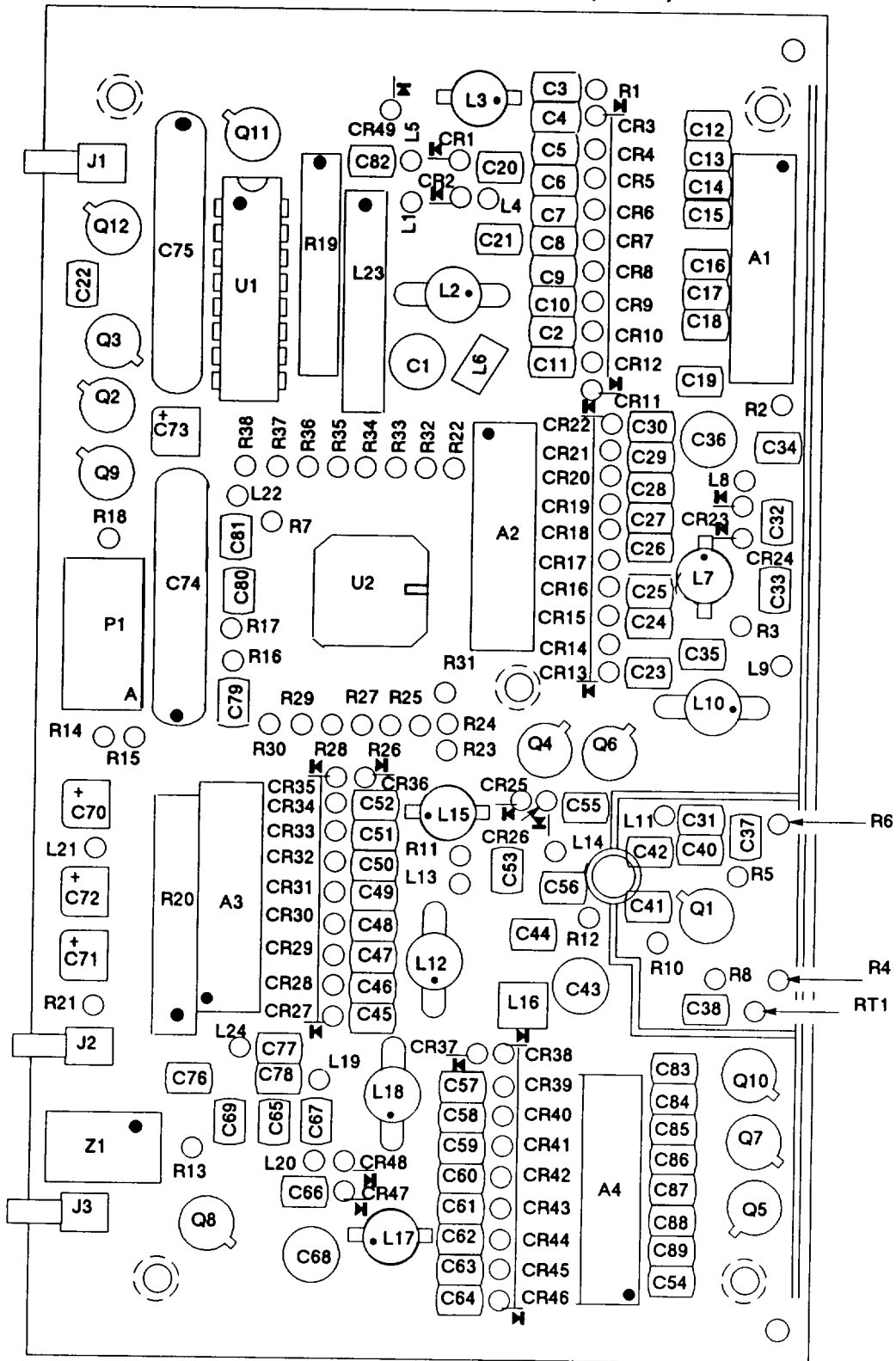
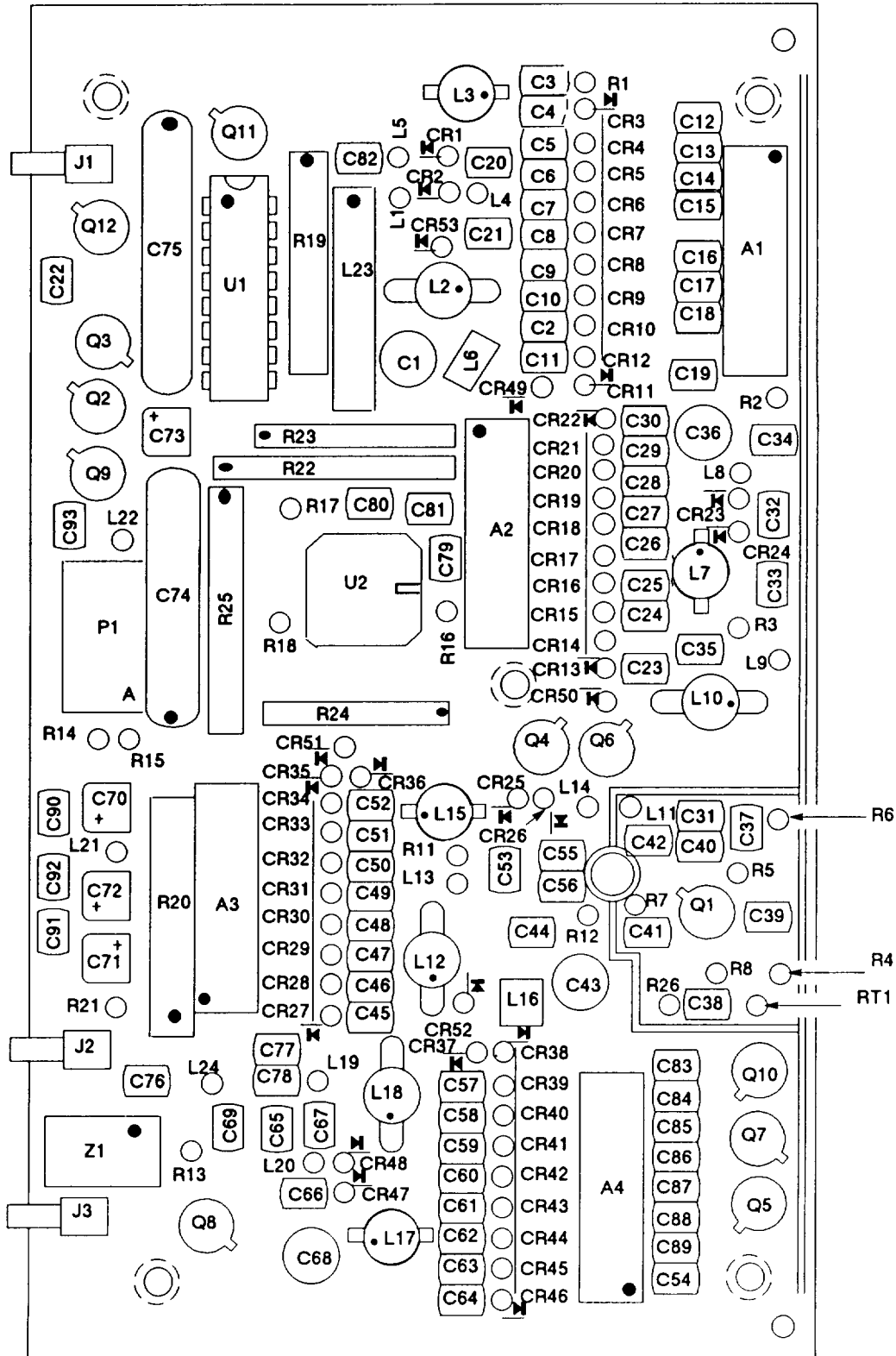


Figure 2-65. Tuner/Mixer A3013361-1, A3142048-1, and A3142127-1 (Sheet 2 of 3)

CCA-TUNER MIXER A3147903-1 (1A9A1)



CE1UG066

Figure 2-65. Tuner/Mixer A3013361-1, A3142048-1, and A3142127-1 (Sheet 3 of 3)

d. Load test program.

- (1) Install test program tape CPIN CP0700030G in accordance with TM 11-6625-2773-10.
- (2) Load file on disk in accordance with TM 11-6625-2773-10.

e. Select test.

- (1) Enter TEST A3013361F, A3142048F, or A3142127F and press RETURN on VDT keyboard.
- (2) Press STRT/PROC on the VDT keyboard.
- (3) Follow operator instructions on VDT. Enter part number and serial number and read operator instructions on VDT.
- (4) Verify that the following information is displayed on the VDT:

```
-----TUNER/MIXER-----  
PART NUMBER           A3013361-1  
PROGRAM DATE/REV.:   MM/DD/YY REV.  
SERIAL NO. EFFECTIVITY 001 THRU ***  
MWO EFFECTIVITY      NONE
```

OR

```
-----TUNER/MIXER-----  
PART NUMBER           A3142048-1  
PROGRAM DATE/REV.:   MM/DD/YY REV.  
SERIAL NO. EFFECTIVITY 001 THRU ***  
MWO EFFECTIVITY      NONE
```

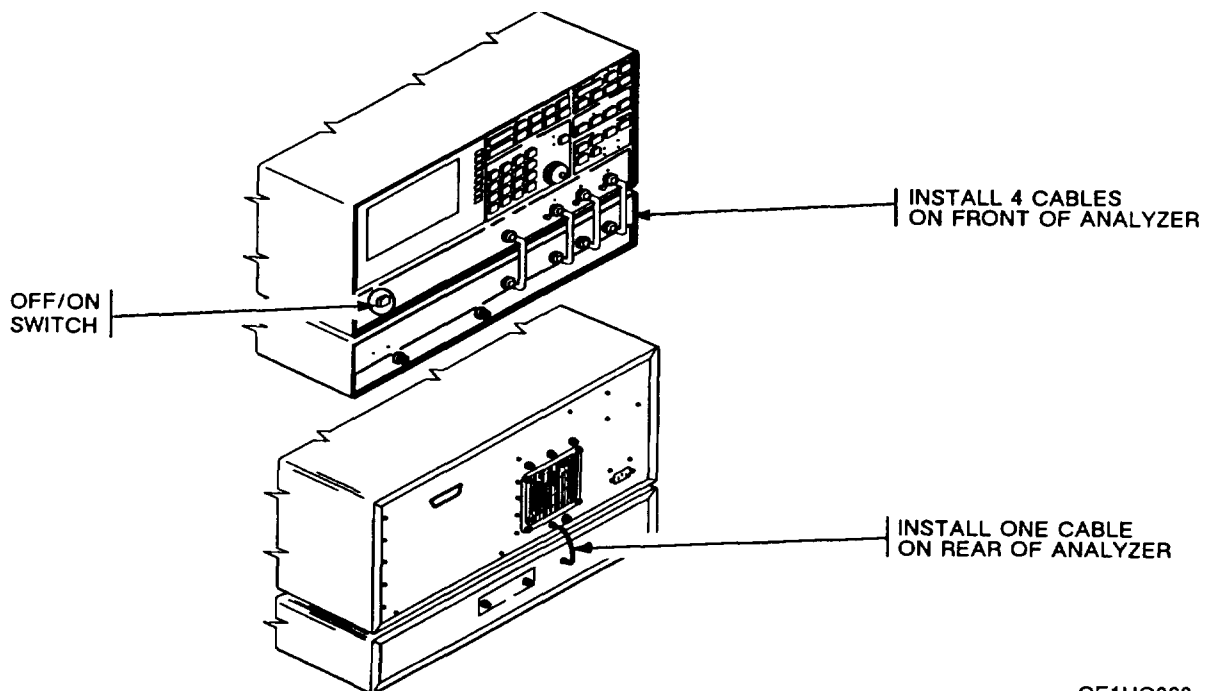
OR

```
-----TUNER/MIXER-----  
PART NUMBER           A3142127-1  
PROGRAM DATE/REV.:   MM/DD/YY REV.  
SERIAL NO. EFFECTIVITY 001 THRU ***  
MWO EFFECTIVITY      NONE
```

- (5) Press STRT/PROC on the VDT keyboard.

f. Run ATE survey test if desired. If ATE survey fails refer to TM 11-6625-2773-10.

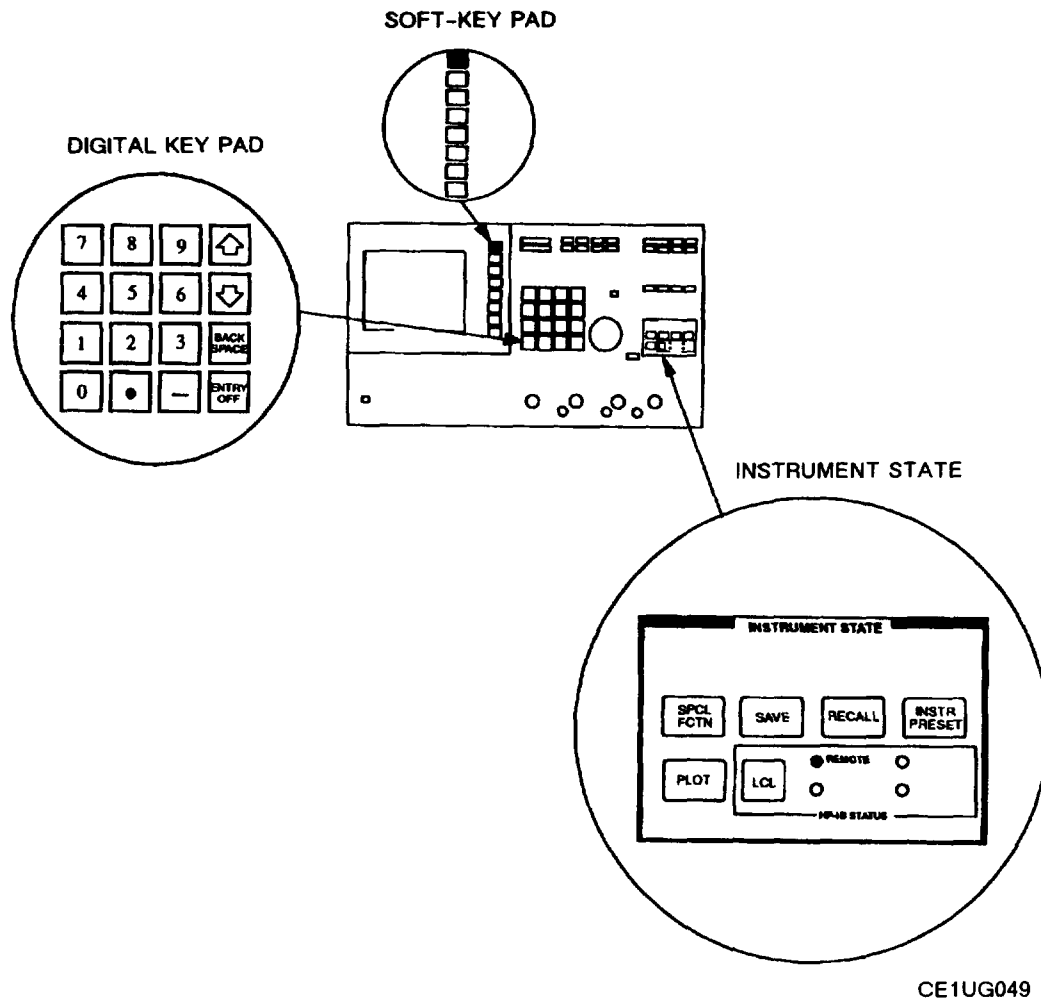
- g. Install ICD ID-005C on J1 of PIU.
- h. Install adapter card A on ID-005C (see fig. 2-68).
- i. Run adapter card survey test. If survey test fails refer to TM 11-6625-3094-24.
- j. Perform UUT hookup (see fig. 2-69).
- k. Install network analyzer and perform the following steps:
 - Ž Connect HP-1B interconnect cable from network analyzer to connector A3J8 on station A3.
 - Ensure IEEE switch (INTERUPT/DISABLE) on the test operator's panel is in the up (ON) position.
 - Ž Intall cables on network analyzer (see fig. 2-66).



CE1UG068

Figure 2-66. Cable Installation for Network Analyzer

- Press ON/OFF switch to ON position.
- Press SPCL FCTN key on network analyzer (see fig. 2-67).
- Press HP-IB ADDRESS key on network analyzer (top key on SOFT-KEY pad).
- Press 11 on network analyzer keypad.
- Press ENTER key on network analyzer (top key on SOFT-KEY pad).



CE1UG049

Figure 2-67. Network Analyzer Instrument Displays

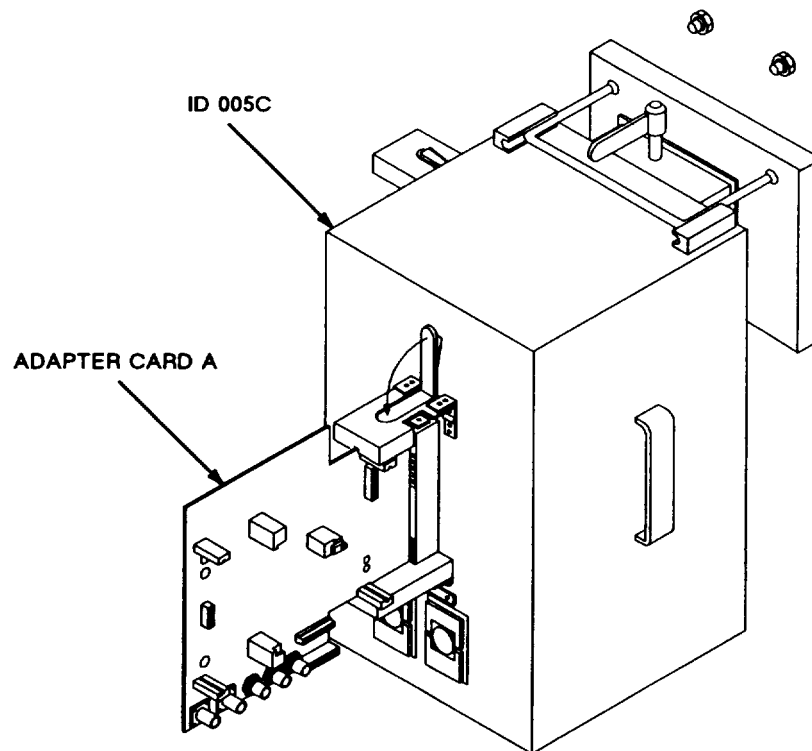
l. Test and troubleshoot UUT.

m. Repeat or terminate testing.

(1) Follow operator instructions on VDT to repeat tests or terminate testing.

(2) Remove adapter card, ICD, and UUT as required.

(3) If the test passes, return the UUT to stock. If the test fails, return UUT to depot for repair.



CE1UG062

Figure 2-68. Installation of Adapter Card A for Tuner/Mixer

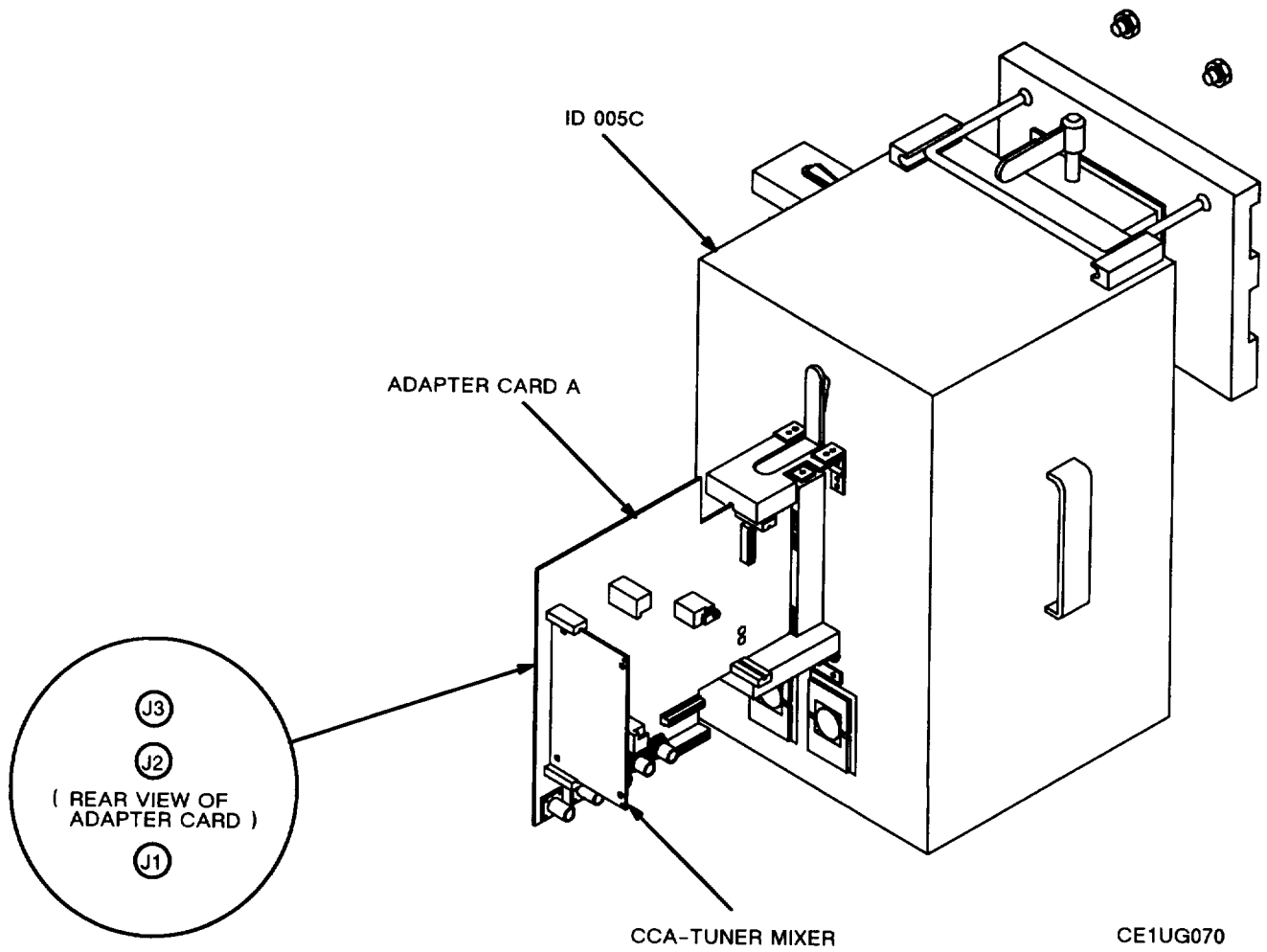


Figure 2-69. Installation of Tuner/Mixer on Adapter Card A

2-18. Dual Long Range Radio Power Supply A3018302-1 and A3147937-1 (16A1A1).

The following procedure is used to test and troubleshoot the dual long range radio power supply A3018302-1 and A3147937-1 (fig. 2-70). Refer to chapter 4 for maintenance instructions.

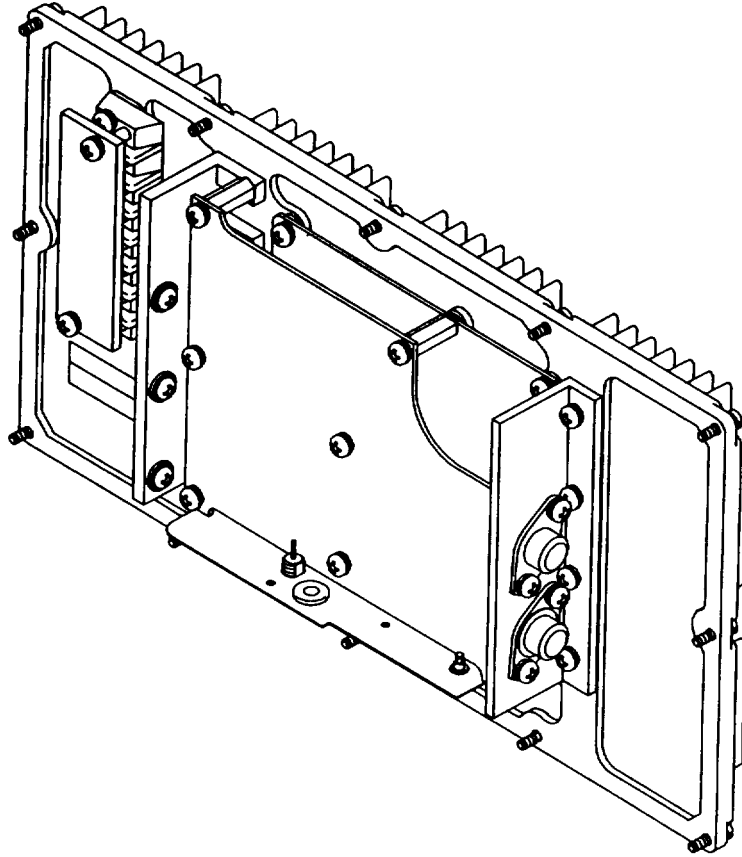
REQUIRED TEST ACCESSORIES	
• Test Program Tape	CPIN CP2000030G
File No.	A3018302
• ICD H	A3019208-1
• Cable Assembly, Electrical ICD-H W1	A3019144-1
Ž Cable Assembly, Electrical ICD-H W2	A3019150-1
• Cable Assembly, Electrical ICD-H W3	A3019151-1
Ž Cable Assembly, Electrical ICD-H W4	A3019152-1
• Cable Assembly, Electrical ICD-H W5	A3132907-1
• Cable Assembly, Electrical ICD-H W6	A3132907-2
• Cable Assembly, Electrical ICD-H W7	A3132907-3
• Shield, Safety, Laboratory-Assy	A3167687-1
• Probe	SM-C-869189
• Alignment Tool Kit	84008667
• Technical Manual ICD-H	TM 11-6625-3094-24

- a. Turn on test station AN/USM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and press RETURN on VDT keyboard.

NOTE

The intermediate code of this program will require 318 blocks of disk space on the removable disk pack (DPØ). Before loading the test program ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.

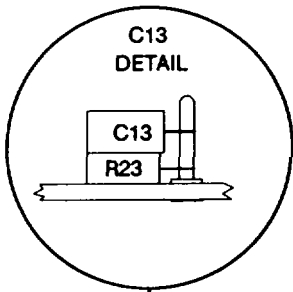
- d. Load test program.
 - (1) Install a test program tape in accordance with TM 11-6625-2773-10.
 - Ž Install CPIN CP2000030G for A3018302-1 and A3147937-1.
 - (2) Load file onto disk in accordance with TM 11-6625-2773-10.
- e. Select test.
 - (1) Enter TEST A3018302 and press RETURN on VDT keyboard.



EL9RH138

Figure 2-70. Dual Long Range Radio Power Supply A3018302-1 and A3147937-1 (Sheet 1 of 5)

CCA-TRANSIENT PROTECTION/REGULATOR
A3014184-1 (16A1A1A1)



NOTE
THIS TRANSIENT PROTECTION/REGULATOR IS USED IN THE A3018302-1 ASSEMBLY.

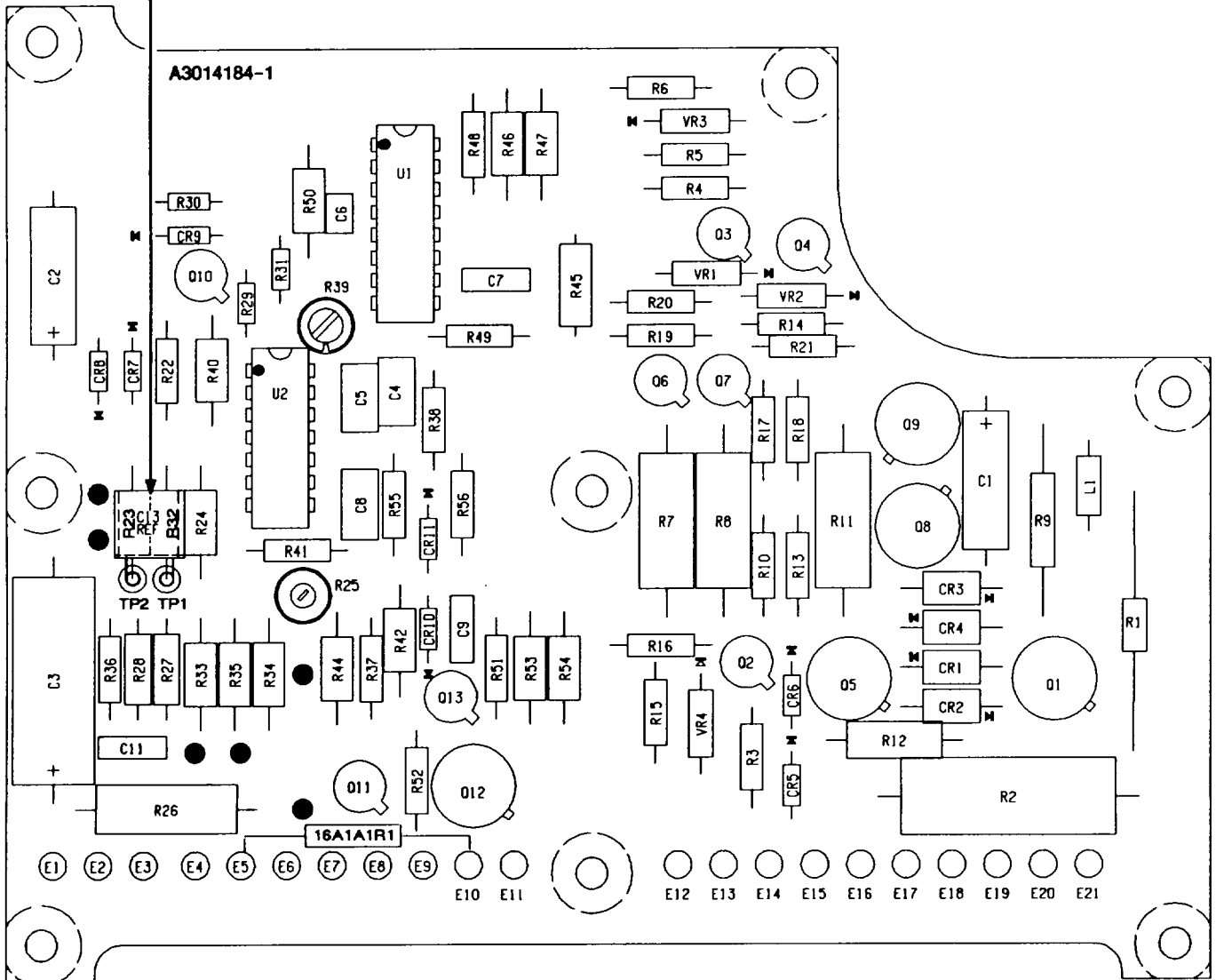
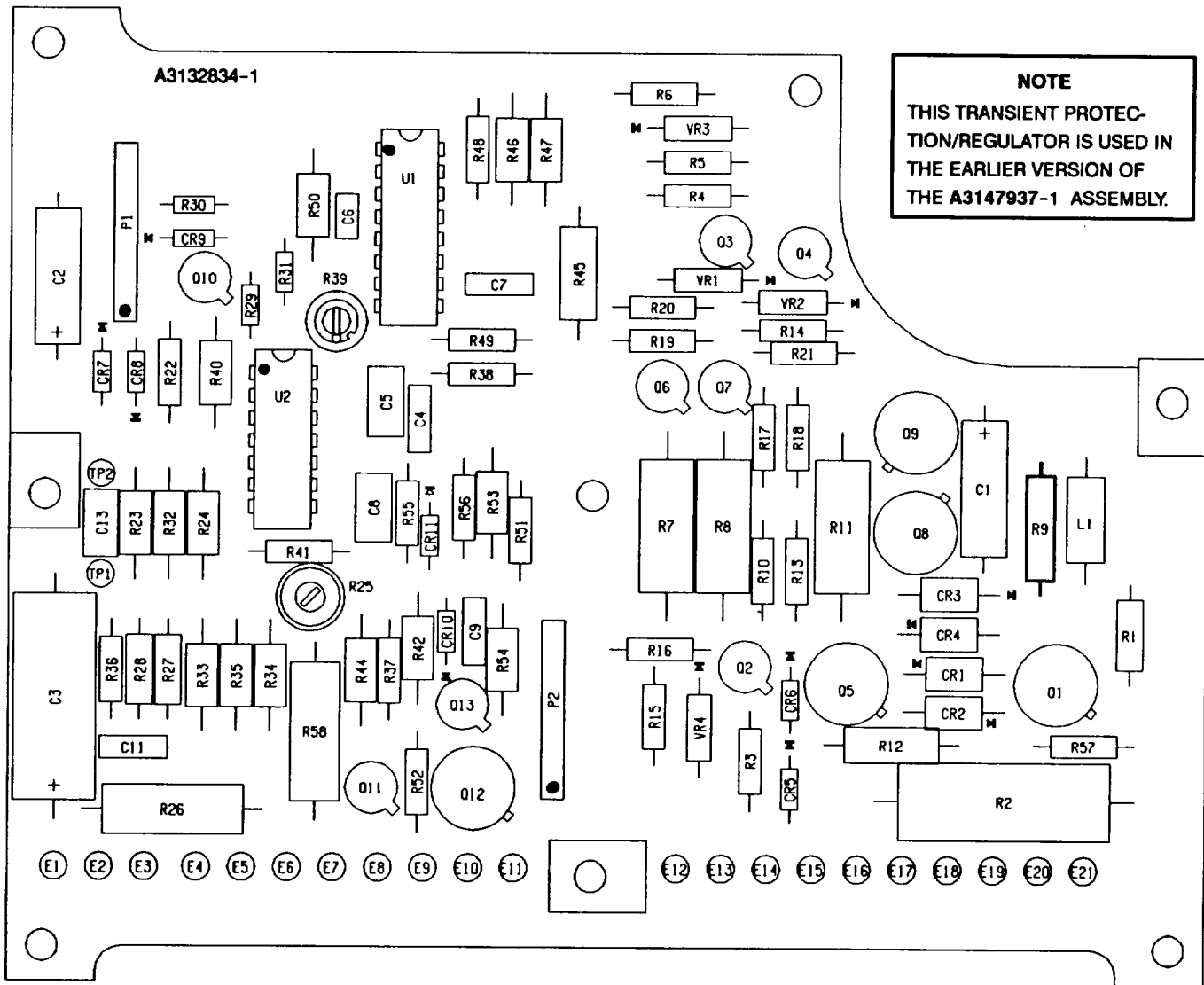


Figure 2-70. Dual Long Range Radio Power Supply A3018302-1 and A3147937-1 (Sheet 2 of 5)

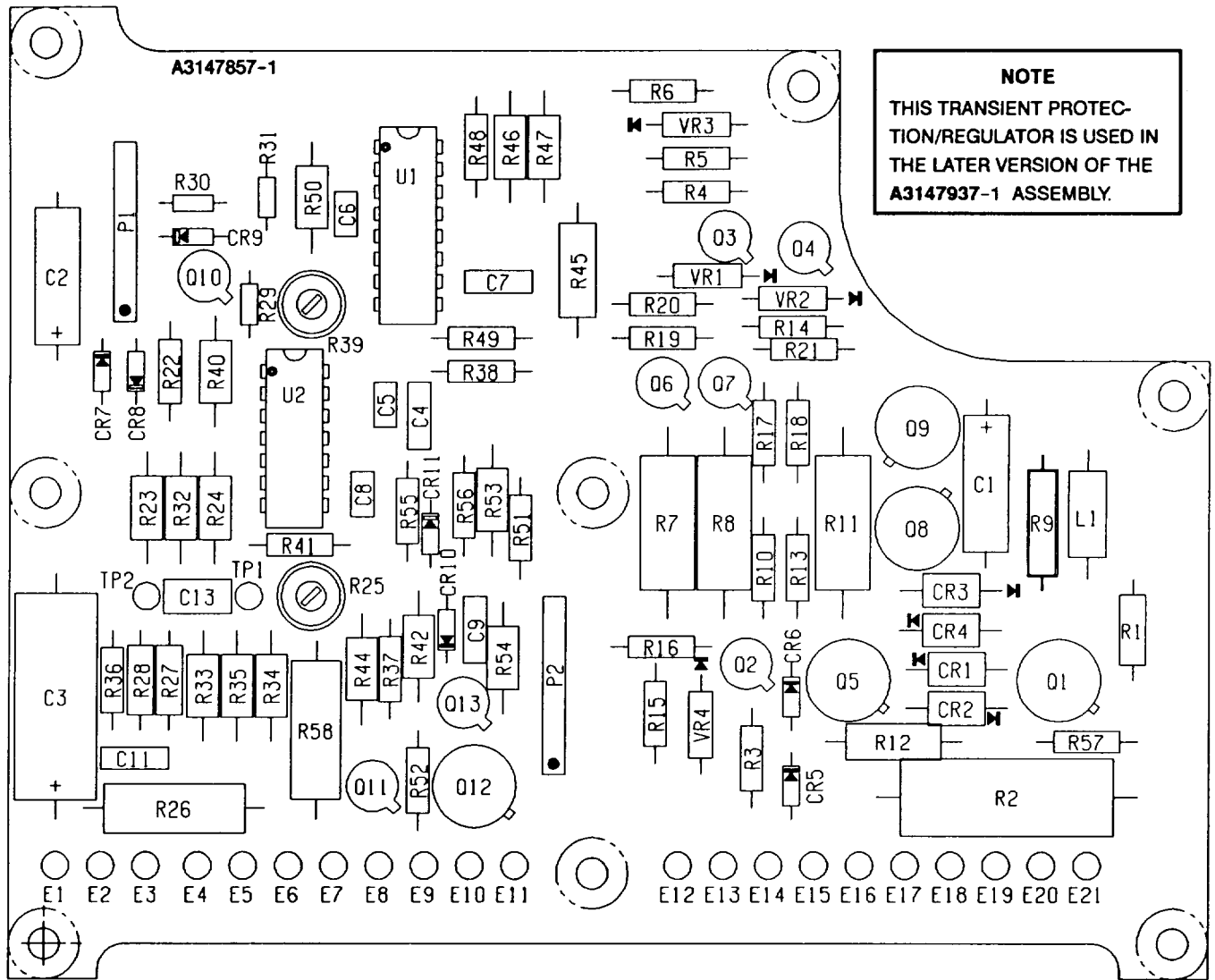
CCA-TRANSIENT PROTECTION/REGULATOR
A3132834-1 (18A1A1A1)



EL9RH140

Figure 2-70. Dual Long Range Radio Power Supply A3018302-1 and A3147937-1 (Sheet 3 of 5)

CCA-TRANSIENT PROTECTION/REGULATOR
A3147857-1 (18A1A1A1)

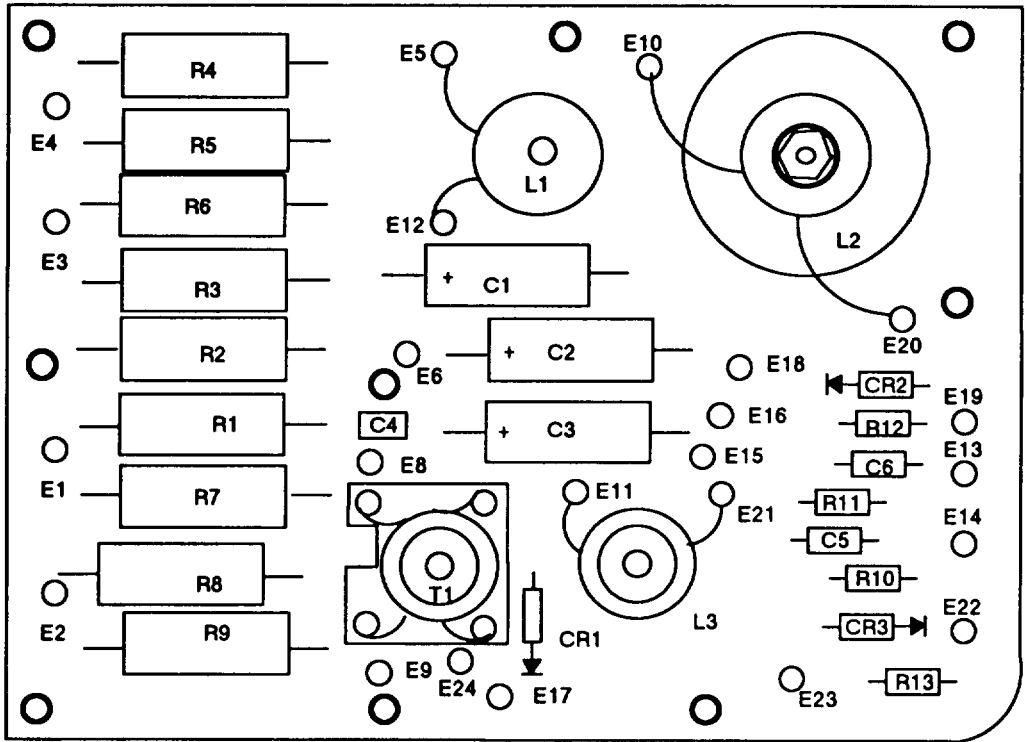


EL9RH141

Figure 2-70. Dual Long Range Radio Power Supply A3018302-1 and A3147937-1 (Sheet 4 of 5)

CCA-TRANSIENT PROTECTION/REGULATOR FILTER
A3018547-1 (16A1A1A2)

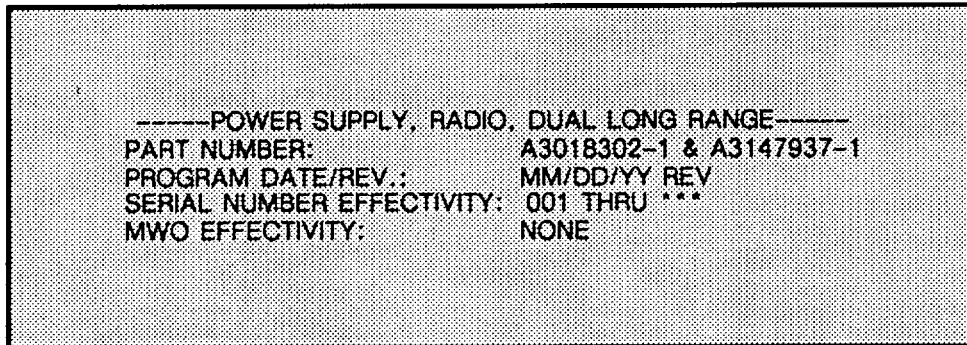
NOTE
THIS TRANSIENT PROTECTION/REGULATOR IS USED IN BOTH THE A3147937-1 AND A3018302-1 ASSEMBLY.



EL9RH142

Figure 2-70. Dual Long Range Radio Power Supply A3018302-1 and A3147937-1 (Sheet 5 of 5)

- (2) Press STRT/PROC on the VDT keyboard.
- (3) Verify that the following information is displayed on the VDT:



- (4) Follow operator instructions on VDT. Enter part number and serial number and read operator instructions on VDT.
 - (5) Press STRT/PROC on the VDT keyboard.
- f. Run ATE survey test if desired. If ATE survey fails refer to TM 11-6625-2773-10.

WARNING

High voltage from 180 to 220 V dc is present on the chassis and components of this UUT.

DEATH MAY OCCUR ON CONTACT

Use extreme caution when testing, adjusting or probing this UUT.

- DO NOT work on this UUT unless there is another person nearby who is familiar with the operation and hazards of the equipment. This person must be competent in administering first aid.
- Ž DO NOT probe with both hands. Keep one hand away from the equipment to reduce the hazard of current flowing through your body.
- FOR ARTIFICIAL RESPIRATION REFER TO FM 21-11.

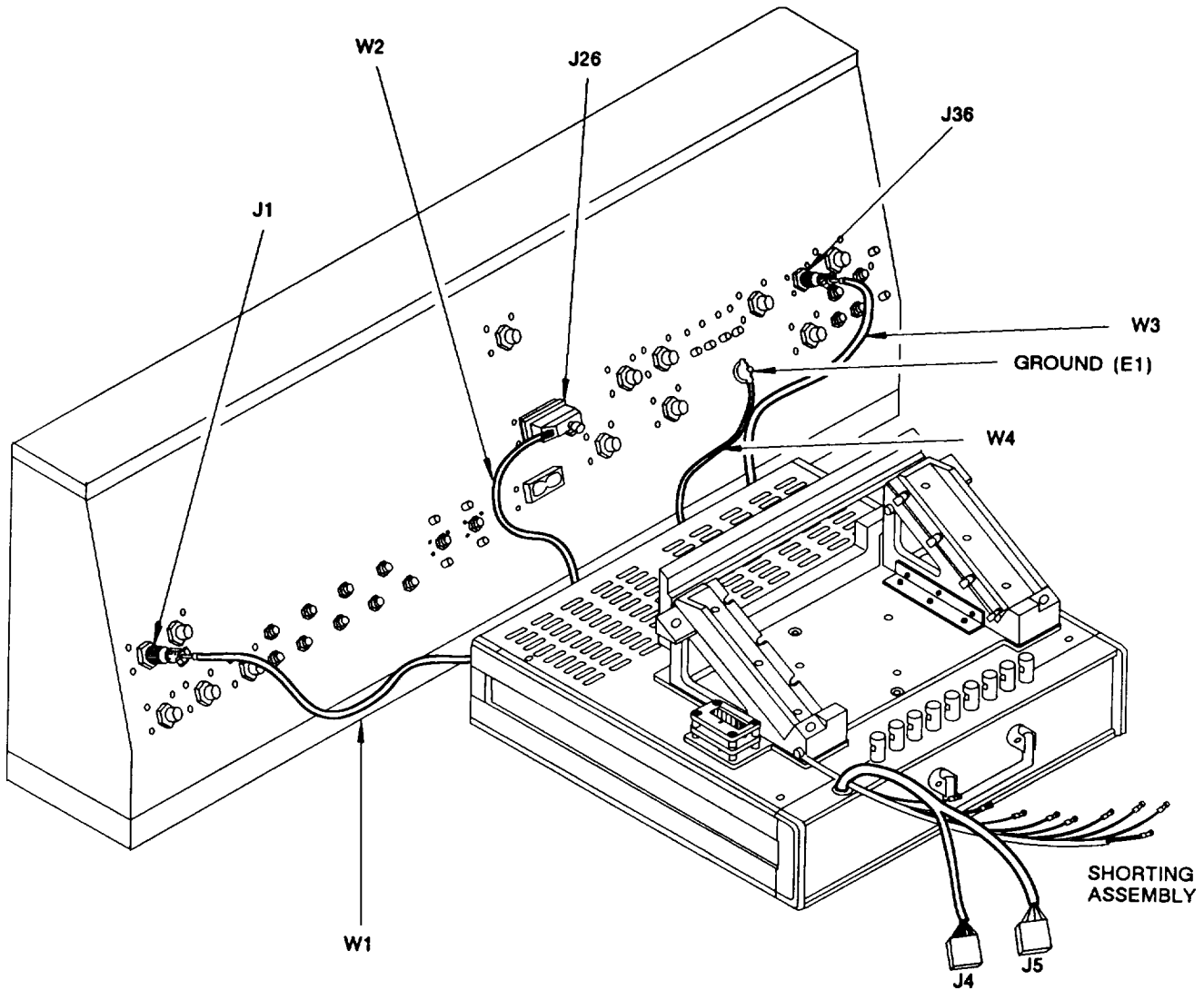
CAUTION

- Ž This UUT contains devices sensitive to damage by electrostatic discharge (ESD).
 - Ž This UUT contains direct currents of approximately 6 amps at 27 V. Care must be taken to avoid shorting the 27 V to ground while probing.
- g. Install ICD H on DIU (See fig. 2-71).
 - h. Run ICD survey test. If survey test fails refer to TM 11-6625-3094-24.
 - i. Install UUT on ICD-H (See fig. 2-72).

j. Test and troubleshoot UUT.

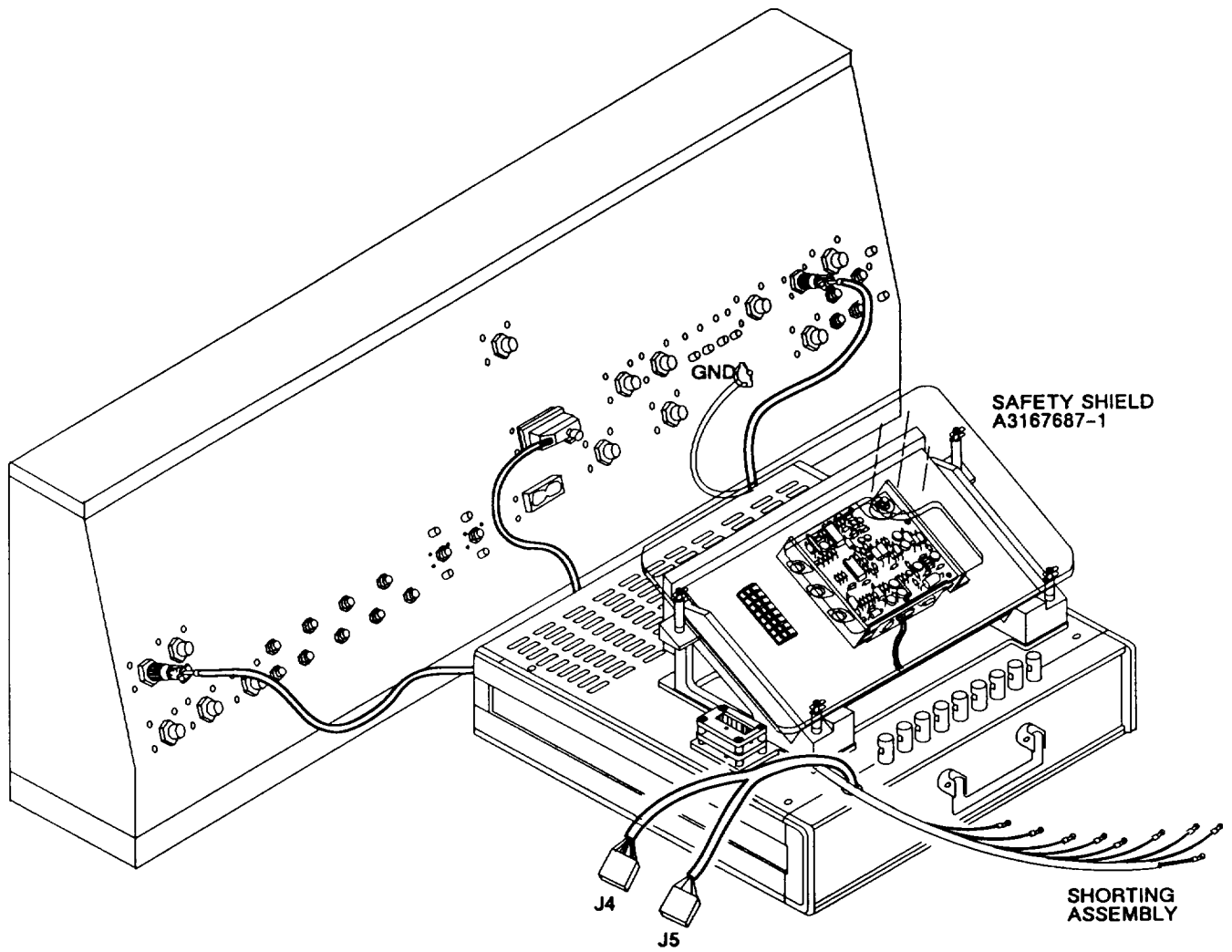
k. Repeat or terminate testing.

- (1) Follow operator instructions on VDT to repeat tests or terminate testing.
- (2) Remove the ICD, and UUT as required.
- (3) When testing of the UUT has been completed, remove test results from printer. Forward test results, along with the UUT, to next work station.



EL9RH143

Figure 2-71. Installation of ICD-H on DIU



EL9RH144

Figure 2-72. Installation of Dual Long Range Radio Power Supply on ICD-H

2-19. Power Supply Subassembly A3018930-1 (8A1).

The following procedure is used to test and troubleshoot the power supply subassembly, 8A1, A3018930-1 (fig. 2-73). Refer to chapter 4 for maintenance instructions.

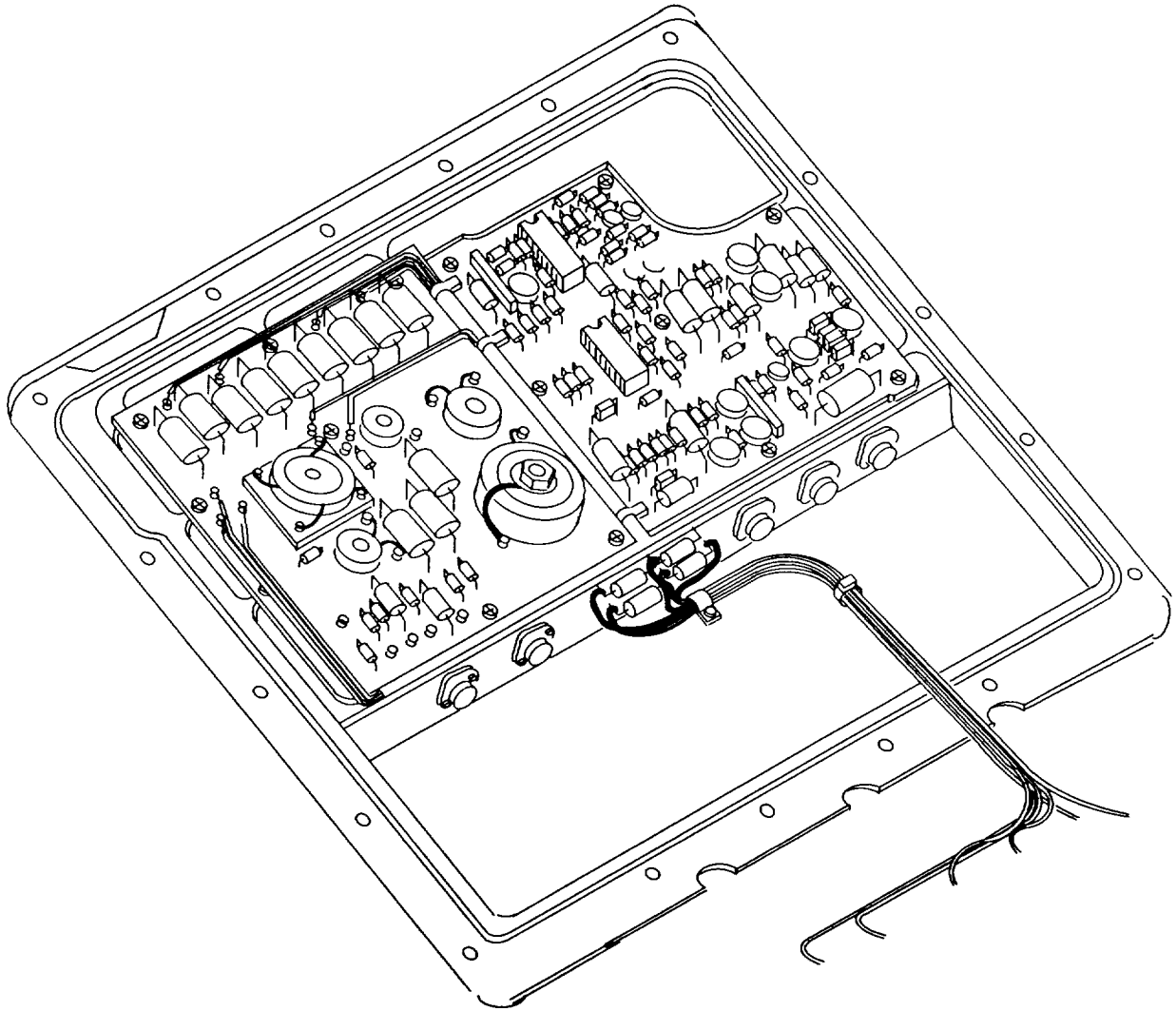
REQUIRED TEST ACCESSORIES	
• Test Program Tape	CPIN CP2000030G
File No.	A3018930
• ICD H	A3019208-1
• Cable Assembly, Electrical ICD-H W1	A3019144-1
• Cable Assembly, Electrical ICD-H W2	A3019150-1
• Cable Assembly, Electrical ICD-H W3	A3019151-1
• Cable Assembly, Electrical ICD-H W4	A3019152-1
• Cable Assembly, Electrical ICD-H W5	A3132907-1
• Cable Assembly, Electrical ICD-H W6	A3132907-2
• Cable Assembly, Electrical ICD-H W7	A3132907-3
• Shield, Safety, Laboratory-Assy	A31 67648-1
Ž Probe	SM-C-869189
Ž Alignment Tool Kit	B4008667
Ž Technical Manual ICD-H	TM 11-6625-30g4-24

- a. Turn on test station AN/USM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and press RETURN on VDT keyboard,

NOTE

The intermediate code of this program will require 275 blocks of disk space on the removable disk pack (DPØ). Before loading the test program ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.

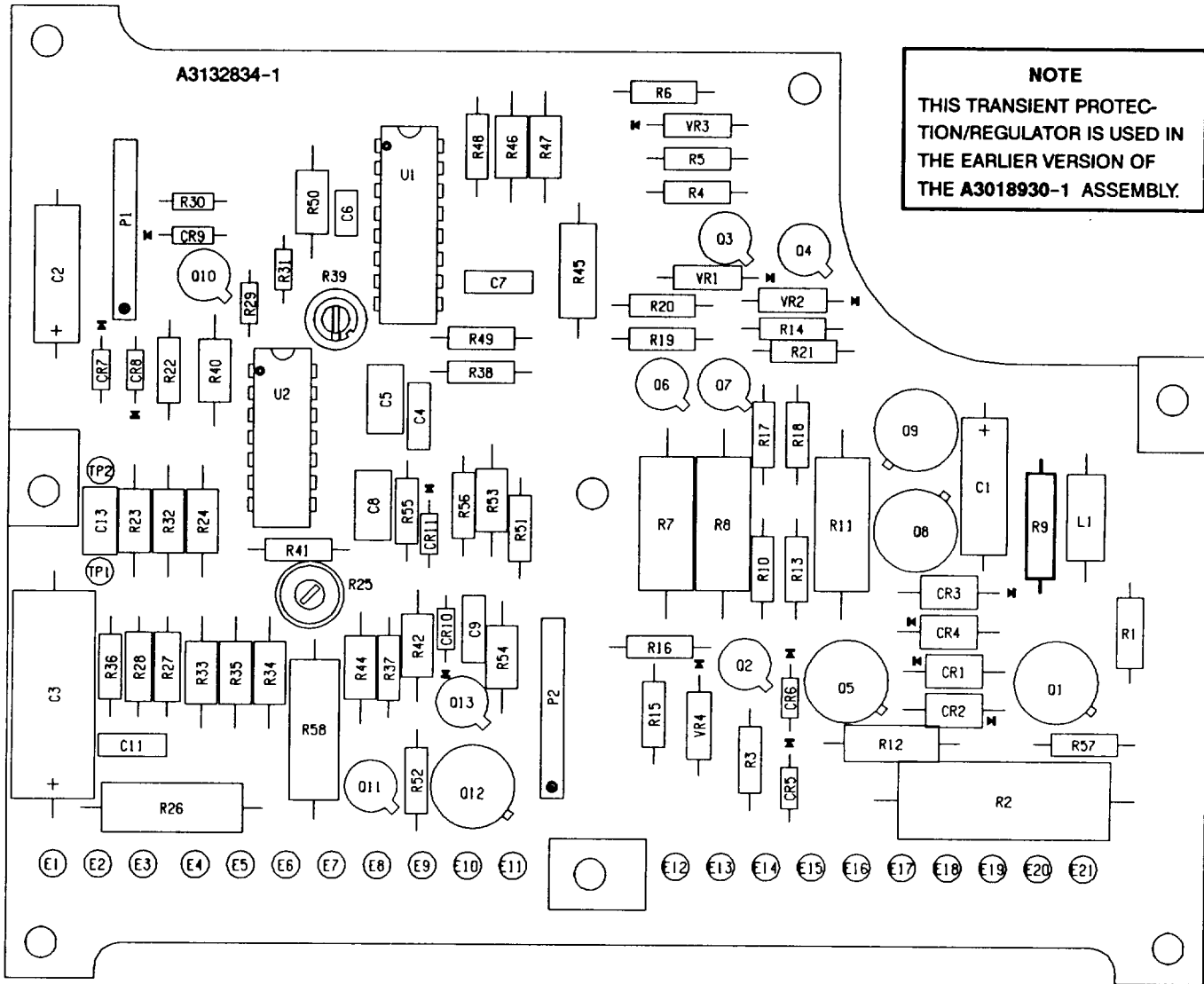
- d. Load test program.
 - (1) Install a test program tape in accordance with TM 11-6625-2773-10.
 - Install CPIN CP2000030G for A3018930-1.
 - (2) Load file onto disk in accordance with TM 11-6625-2773-10,
- e. Select test.
 - (1) Enter TEST A3018930 and press RETURN on VDT keyboard.



EL9RH145

Figure 2-73. Power Supply Subassembly A3018930-1 (Sheet 1 of 4)

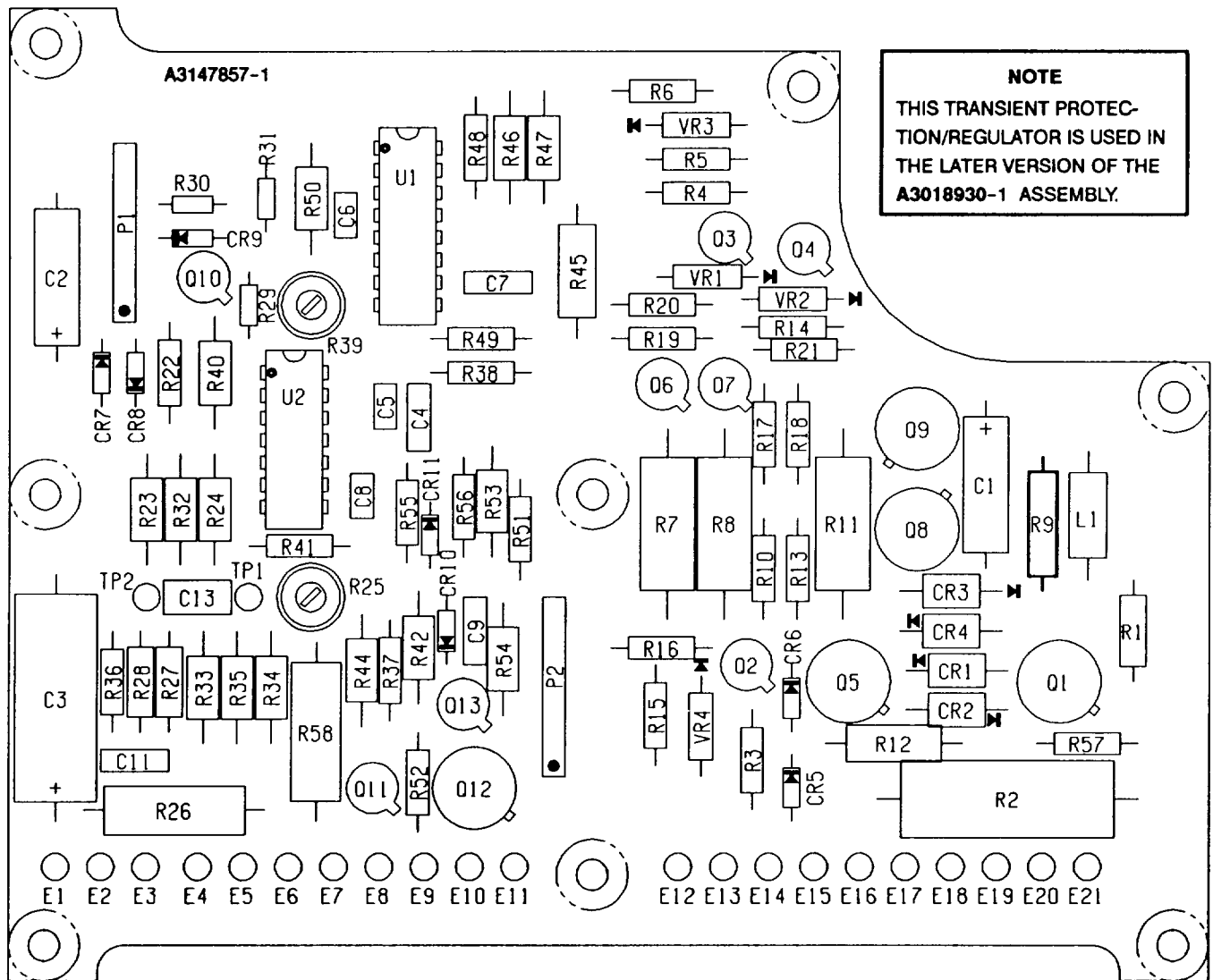
CCA-TRANSIENT PROTECTION/REGULATOR
A3132834-1 (8A1A1)



EL9RH146

Figure 2-73. Power Supply Subassembly A3018930-1 (Sheet 2 of 4)

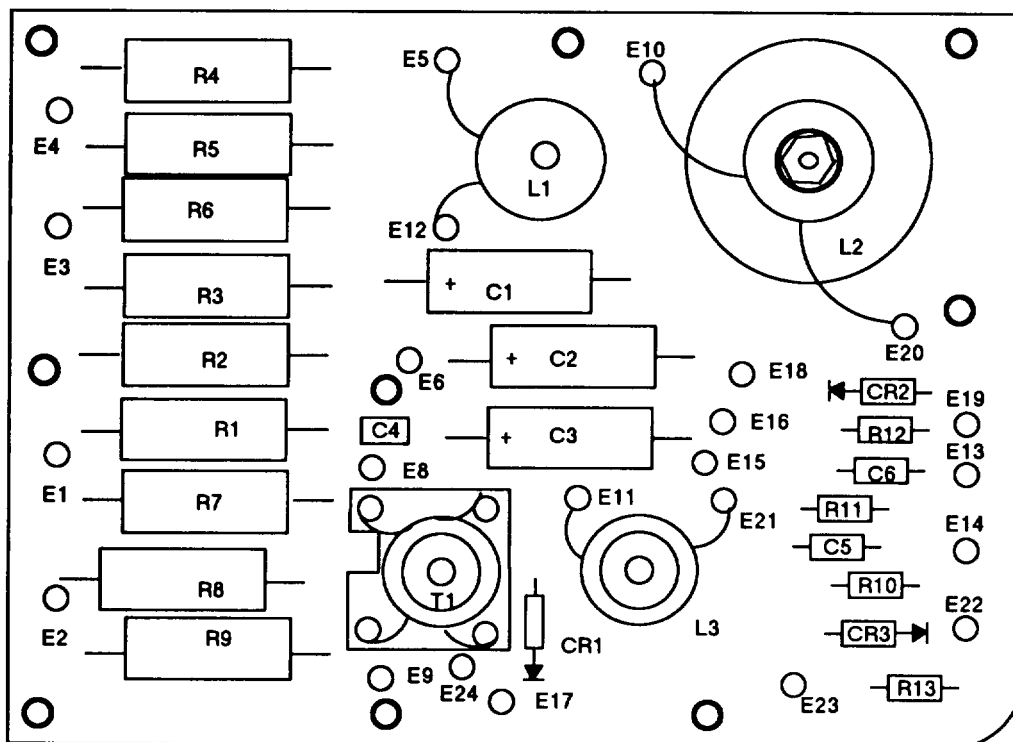
CCA-TRANSIENT PROTECTION/REGULATOR
A3147857-1 (8A1A1)



EL9RH147

Figure 2-73. Power Supply Subassembly A3018930-1 (Sheet 3 of 4)

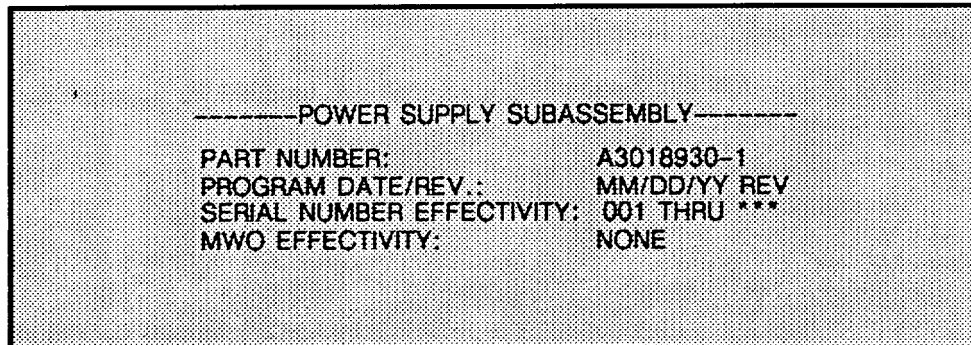
CCA-TRANSIENT PROTECTION/REGULATOR FILTER
A3018547-1 (8A1A2)



EL9RH148

Figure 2-73. Power Supply Subassembly A3018930-1 (Sheet 4 of 4)

- (2) Press STRT/PROC on the VDT keyboard.
- (3) Verify that the following information is displayed on the VDT:



- (4) Follow operator instructions on VDT. Enter part number and serial number and read operator instructions on VDT.
 - (5) Press STRT/PROC on the VDT keyboard.
- f. Run ATE survey test if desired. If ATE survey fails refer to TM 11-6625-2773-10.

WARNING

High voltage from 180 to 220 V dc is present on the chassis and components of this UUT.

DEATH MAY OCCUR ON CONTACT

Use extreme caution when testing, adjusting or probing this UUT.

- DO NOT work on this UUT unless there is another person nearby who is familiar with the operation and hazards of the equipment. This person must be competent in administering first aid.
- DO NOT probe with both hands. Keep one hand away from the equipment to reduce the hazard of current flowing through your body.
- FOR ARTIFICIAL RESPIRATION REFER TO FM 21-11.

CAUTION

- This UUT contains devices sensitive to damage by electrostatic discharge (ESD).
 - This UUT contains direct currents of approximately 6 amps at 27 V. Care must be taken to avoid shorting the 27 V to ground while probing.
- g. Install ICD H on DIU (See fig. 2-74).
 - h. Run ICD survey test. If survey test fails refer to TM 11-6625-3094-24.
 - i. Install UUT on ICD-H (See fig. 2-75).

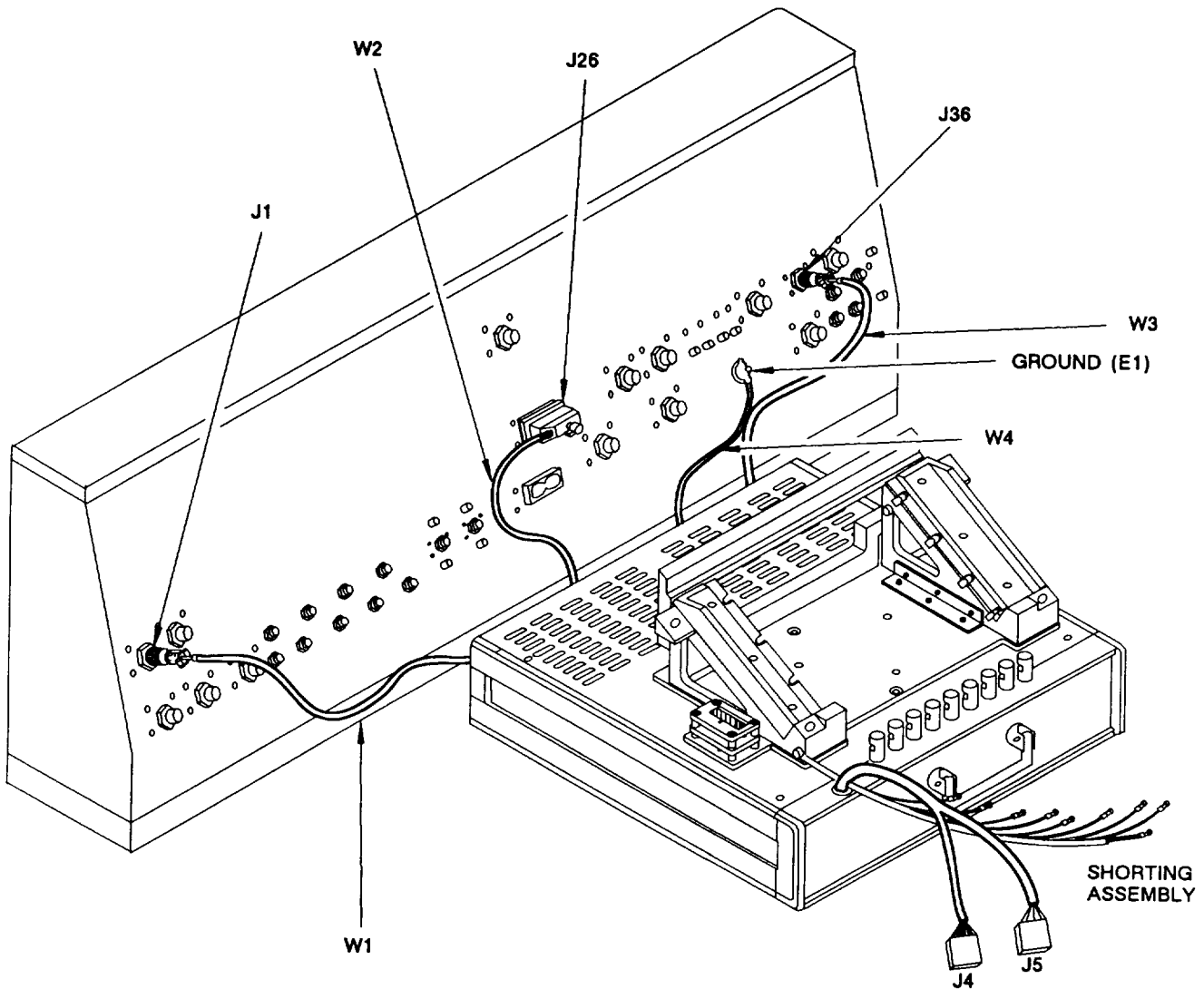
j. Test and troubleshoot UUT.

k. Repeat or terminate testing.

(1) Follow operator instructions on VDT to repeat tests or terminate testing.

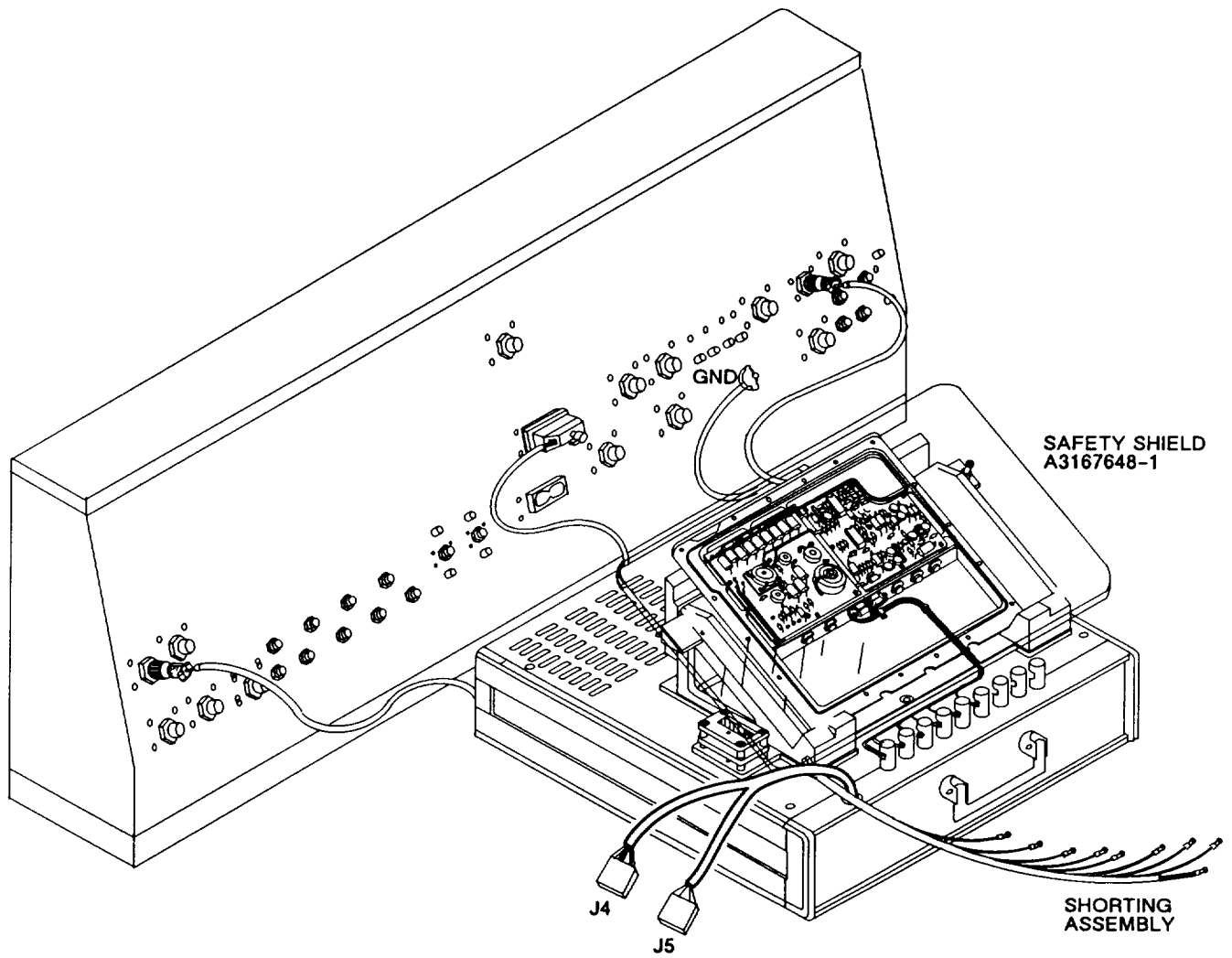
(2) Remove the ICD, and UUT as required.

(3) When testing of the UUT has been completed, remove test results from printer. Forward test results, along with the UUT, to next work station.



EL9RH149

Figure 2-74. Installation of ICD-H on DIU



EL9RH150

Figure 2-75. Installation of Power Supply Subassembly on ICD-H

2-20. Power Supply Module Assembly A3019261-1 (1A3).

The following procedure is used to perform Go/No Go testing of the power supply module assembly, 1A3, A3019261-1 (fig. 2-76 on page 2-164). This unit is discarded if it fails the test. Refer to local procedures for disposal.

REQUIRED TEST ACCESSORIES	
● Test Program Tape	CPIN CP2900030G
File No.	A3019261
● ICD	ID-005C
● Adapter Card L	A3148160-1
● Load Card L1	A3148067-1
● Self Test L4	A3148161-1
● Alignment Tool Kit	B4008667

NOTE

Before testing adapter card L, run the ID-005C survey. Use test program CPIN 11GSG10 File Number ID005C.

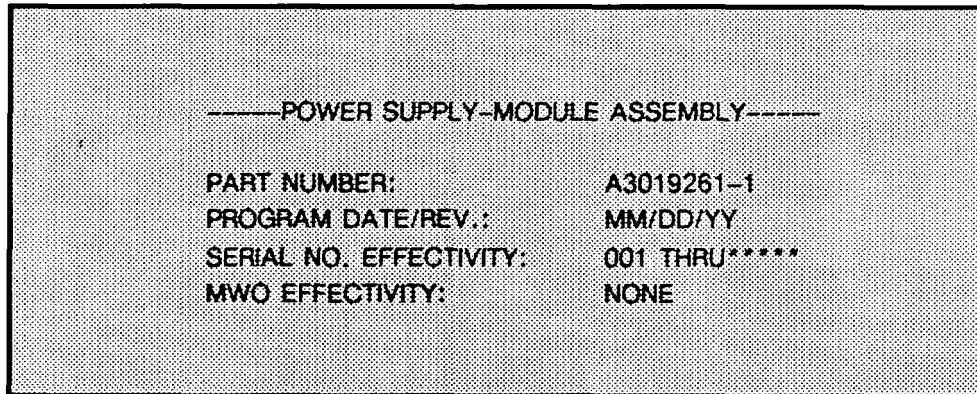
- a. Turn on test station AN/USM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and press RETURN on VDT keyboard.

NOTE

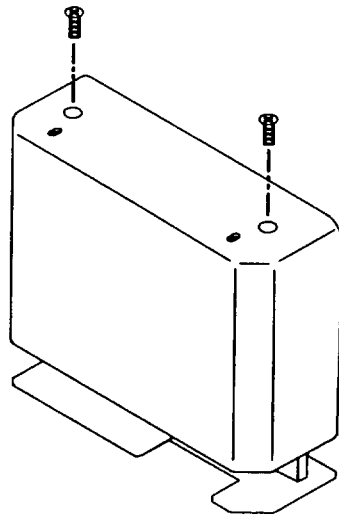
The intermediate code of this program will require 92 blocks on the removable disk pack (DPØ). Before loading the test program ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.

- d. Load test program.
 - (1) Install test program tape CPIN CP2900030G in accordance with TM 11-6625-2773-10.
 - (2) Load file on to disk in accordance with TM 11-6625-2773-10.
- e. Select test.
 - (1) Enter TEST A3019261 and press RETURN on VDT keyboard.
 - (2) Press STRT/PROC on the VDT keyboard.

- (3) Verify that the following information is displayed on the VDT:



- (4) Enter part number and serial number and read operator instructions on VDT. Follow operator instructions on VDT.
- (5) Press STRT/PROC on the VDT keyboard.
- f.* Run ATE survey test if desired. If ATE survey fails refer to TM 11-6625-2773-10.
- g.* Install ICD ID-005C on J1 of PIU.
- h.* Install adapter card L on ID-005C (See fig. 2-77 on page 2-165).
- i.* Run adapter card survey test. If survey test fails refer to TM 11-6625-3094-24.
- j.* Install load card L1 on ID-005C (See fig. 2-78 on page 2-166).
- k.* Select load card survey. If survey fails refer to TM 11-6625-3094-24.
- l.* Perform UUT hookup (See fig. 2-79 on page 2-167).
- (1) Slide UUT into position.
- (2) Tighten captive screws on back of adapter card to hold UUT in place.
- m.* Test and troubleshoot UUT.
- n.* Repeat or terminate testing.
- (1) Follow operator instructions on VDT to repeat tests or terminate testing.
- (2) Remove adapter card L, load card L1, ICD, and UUT as required.
- (3) When testing of the UUT has been completed, remove test results from printer. Forward test results, along with the UUT, to next work station.



EL9AH151

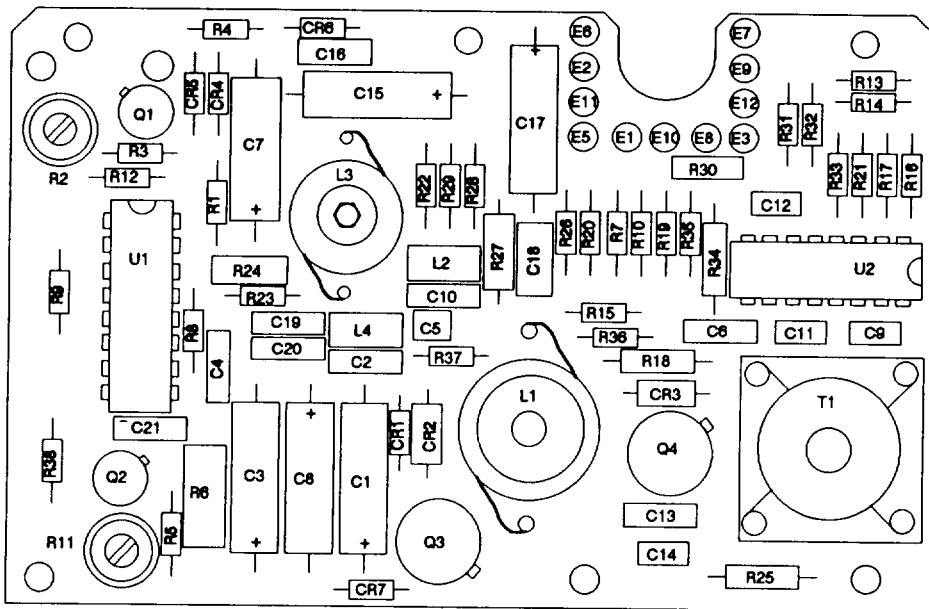
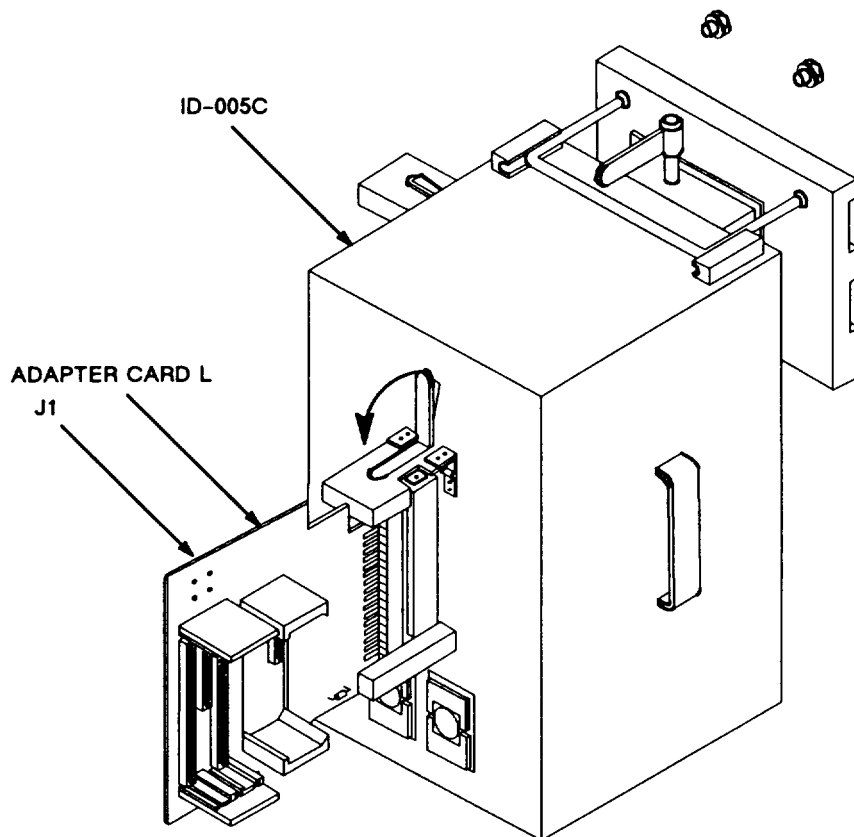
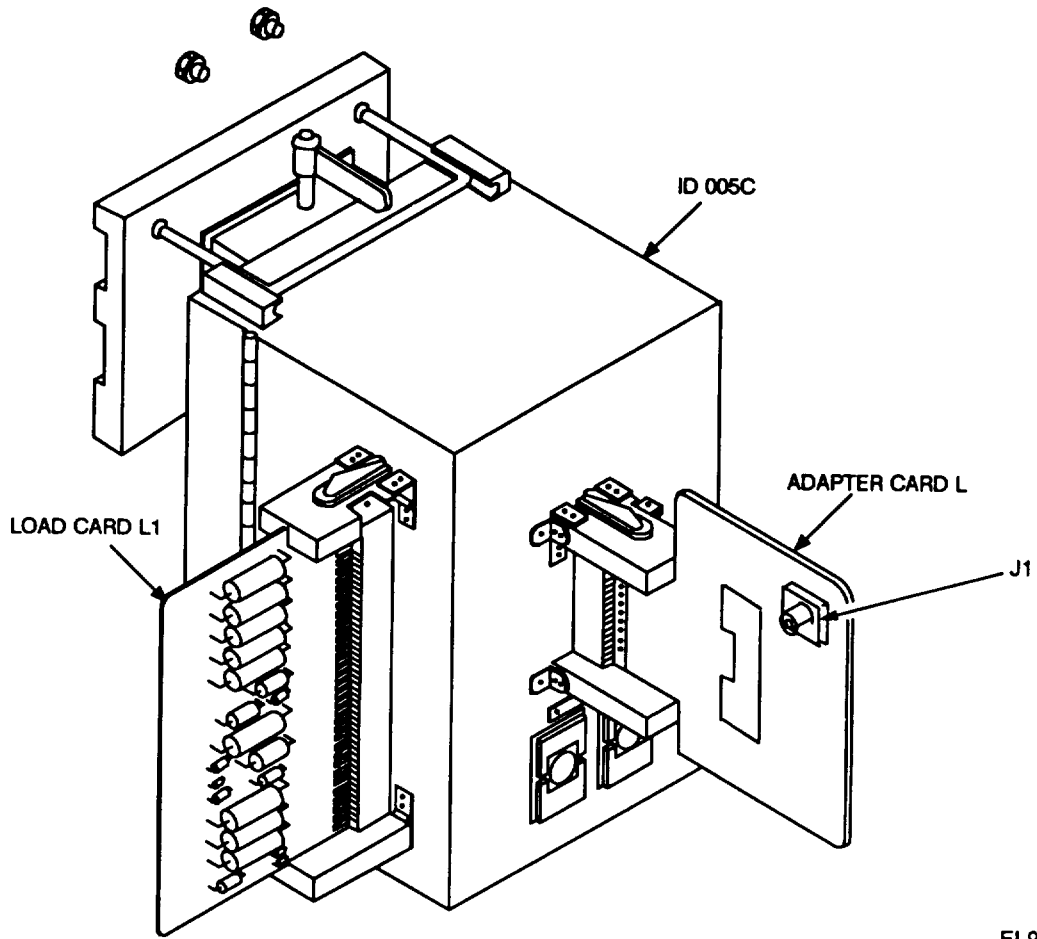


Figure 2-76. Power Supply Module Assembly (1A3) A3019261-1



EL9RH152

Figure 2-77. Installation of Adapter Card L for Power Supply Module Assembly



EL9RH153

Figure 2-78. Installation of Load Card L1 for Power Supply Module Assembly

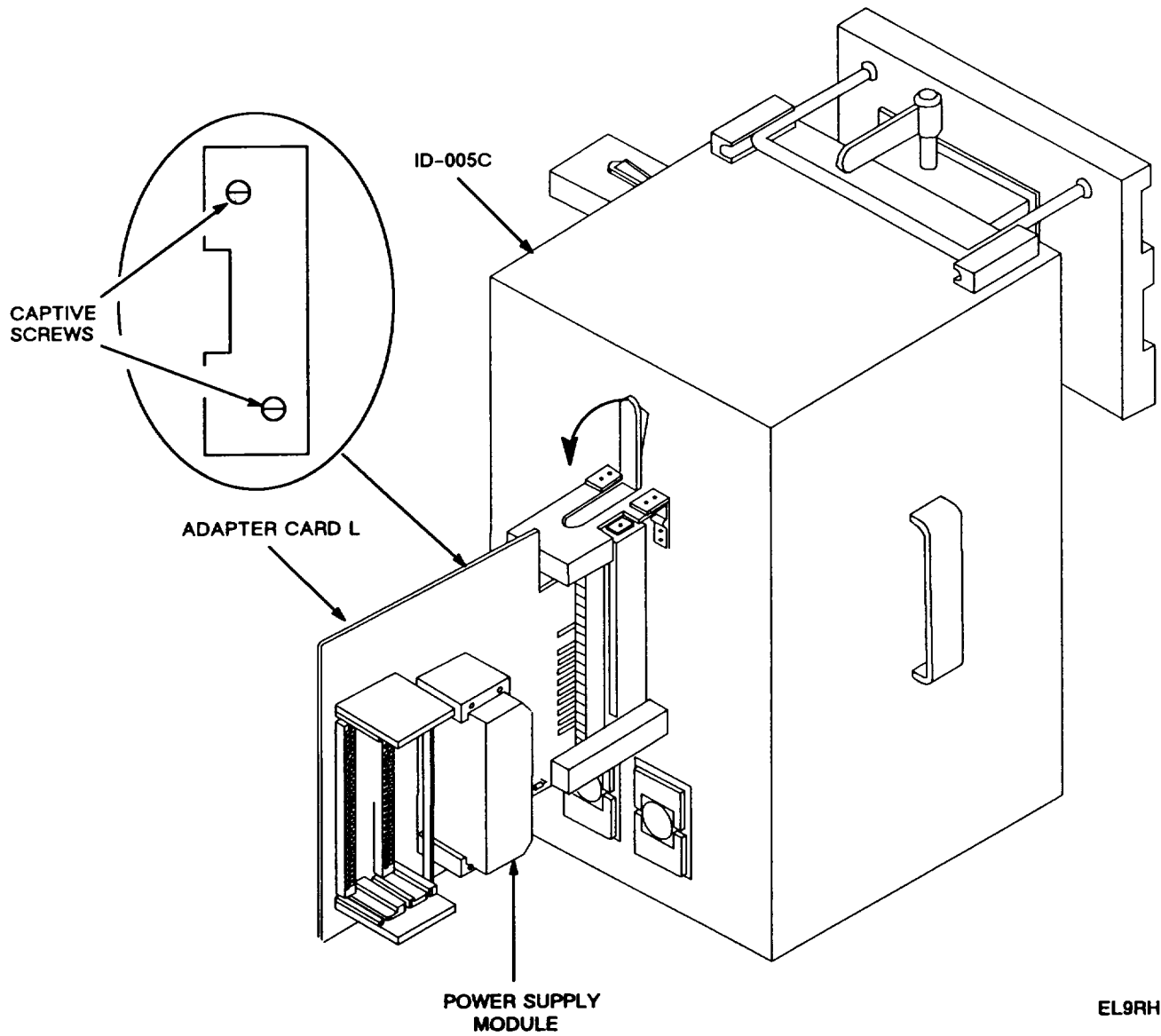


Figure 2-79. Installation of Power Supply Module Assembly on Adapter Card L

2-21. CCA-Switching A3142316-1 (1A7).

The following procedure is used to perform Go/No Go testing of the CCA-switching, 1A7, A3142316-1, (see fig. 2-80 on page 2-169). Return to depot for repair.

REQUIRED TEST ACCESSORIES	
● Test Program Tape	CPIN CP2900030G
File No.	A3142316F
● ICD	ID-005C
● Adapter Card L	A3148160-1
● Load Card L2	A3148070-1
● Self-Test L1	A3148073-1
● Extractor, Electrical Card.	A3148245-1
● Cable Assembly, RF (W103)	B4021273
● AN/USM-410(V)2 Accessory Kit B4021293 Items:	
RF Short BNC Plug	3201-1314-02
● Alignment Tool Kit	84008667

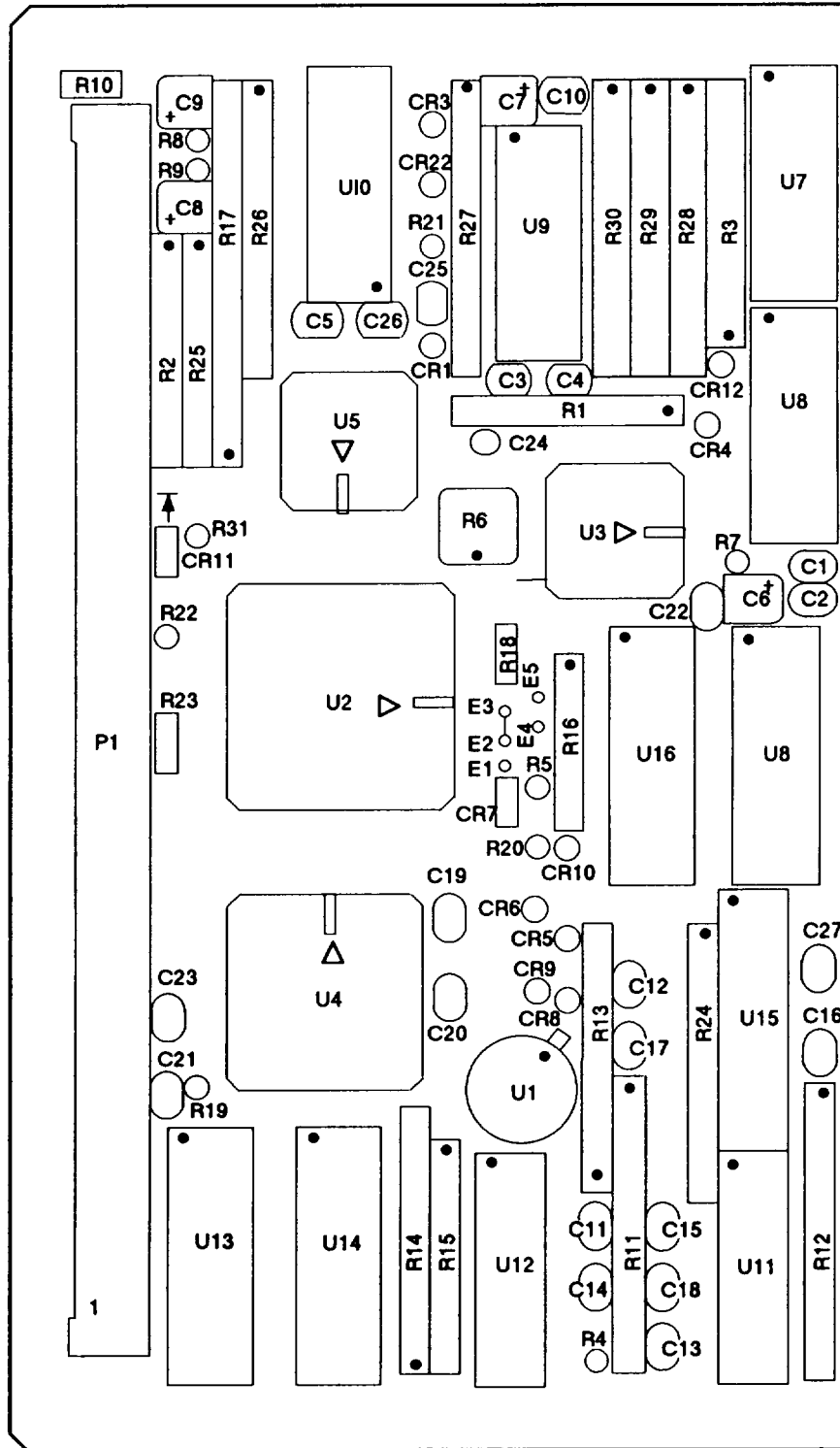
NOTE

Before testing adapter card L, run the ID-005C survey. Use test program CPIN 11GSG10 File Number ID005C.

- a. Turn on test station AN/USM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and press RETURN on VDT keyboard.

NOTE

The intermediate code of this program requires 255 blocks on the removable disk pack (DPØ). Before loading the test program ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.



EL9RH155

Figure 2-80. CCA-Switching (1A7) A3142316-1

d. Load test program.

(1) Install test program tape CPIN CP2900030G in accordance with TM 11-6625-2773-10.

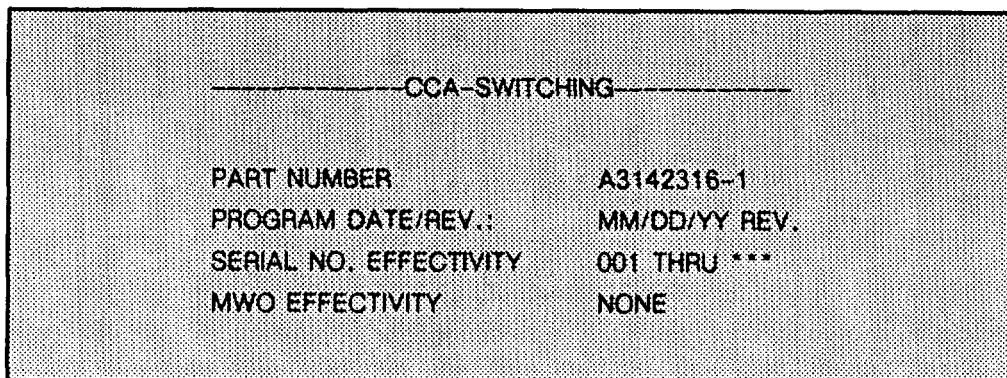
(2) Load file on to disk in accordance with TM 11-6625-2773-10.

e. Select test.

(1) Enter TEST A3142316F and press RETURN on VDT keyboard.

(2) Press STRT/PROC on the VDT keyboard.

(3) Verify that the following information is displayed on the VDT:



CCA-SWITCHING

PART NUMBER	A3142316-1
PROGRAM DATE/REV.:	MM/DD/YY REV.
SERIAL NO. EFFECTIVITY	001 THRU ***
MWO EFFECTIVITY	NONE

(4) Follow operator instructions on VDT. Enter part number and serial number and read operator instructions on VDT.

(5) Press STRT/PROC on the VDT keyboard.

f. Run ATE survey test if desired. If ATE survey fails refer to TM 11-6625-2773-10.

g. Install ICD ID-005C on J1 of PIU.

h. Install adapter card L on ID-005C. See fig. 2-62 on page 2-133.

i. Run adapter card survey test. If survey test fails refer to TM 11-6625-3094-24.

j. Install load card L2 on ID-005C. See fig. 2-63 on page 2-134.

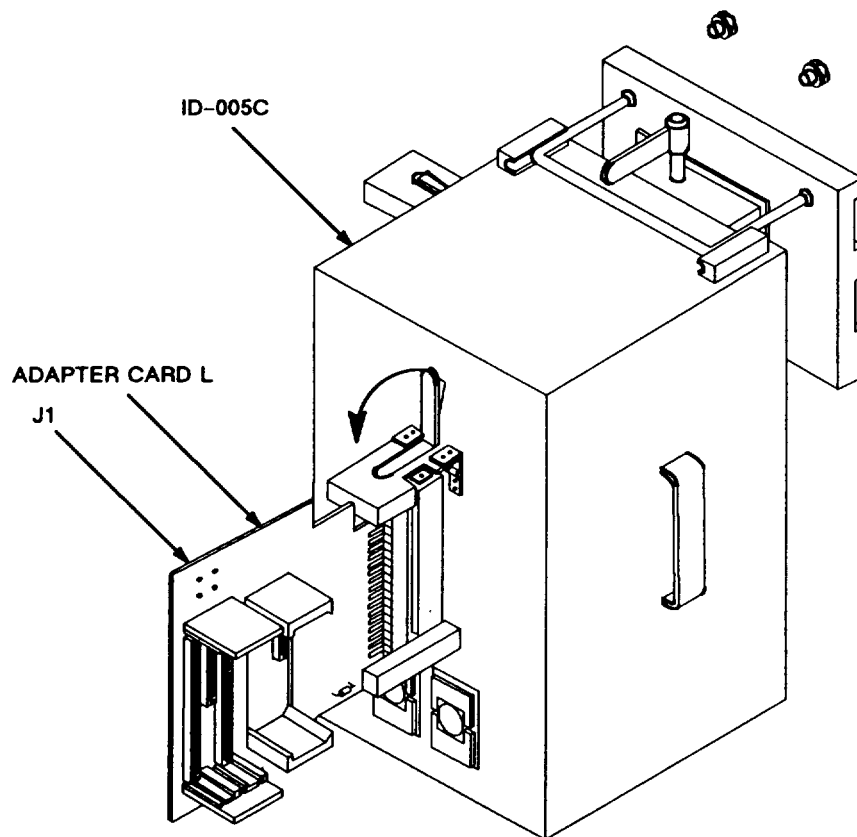
k. Select load card survey. If survey test fails refer to TM 11-6625-3094-24.

l. Perform UUT hookup. See fig. 2-64 on page 2-135.

m. Test and troubleshoot UUT.

n. Repeat or terminate testing.

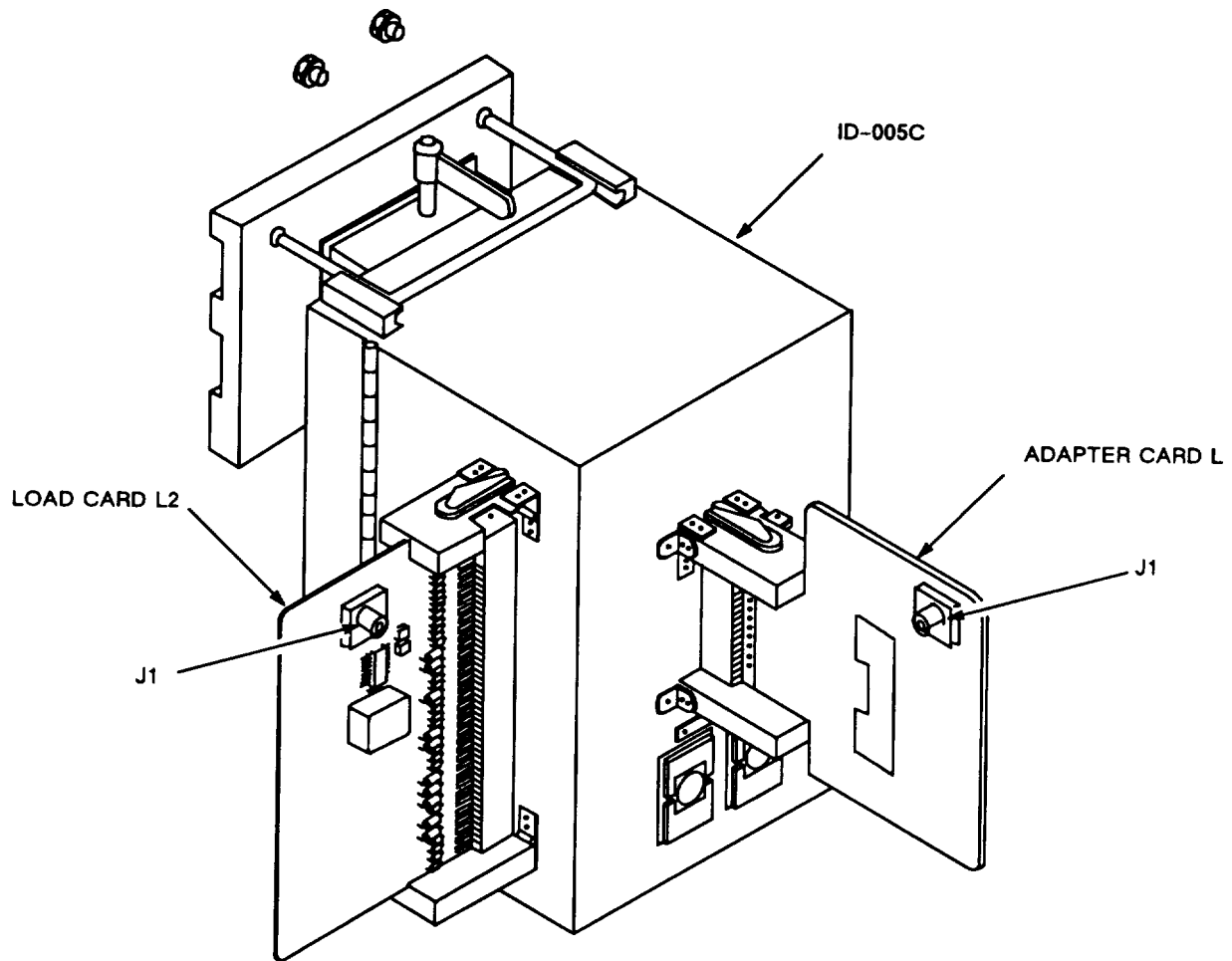
- (1) Follow operator instructions on VDT to repeat tests or terminate testing.
- (2) Remove adapter card L, load card L2, ICD, and UUT as required.
- (3) When testing of the UUT has been completed, remove test results from printer. Forward test results, along with the UUT, to next work station.



EL9RH156

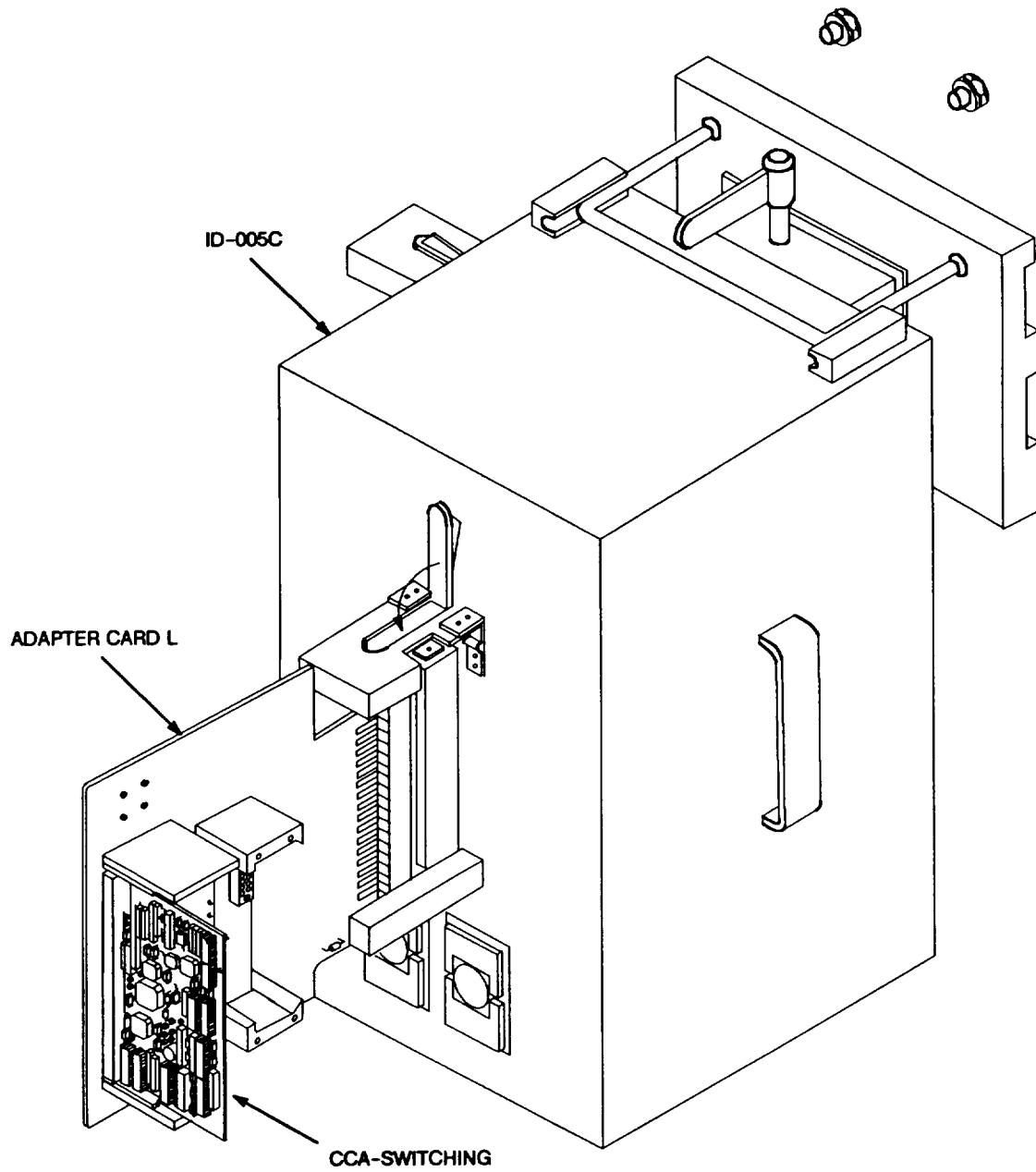
Figure 2-81. Installation of Adapter Card L for CCA-Switching

NOTE:
CHECK FOR RF CABLE CONNECTION BETWEEN
LOAD CARD L2 AND ADAPTER CARD L



EL9RH157

Figure 2-82. Installation of Load Card L2 for CCA-Switching



EL9RH158

Figure 2-83. Installation of CCA-Switching on Adapter Card L

2-22. CCA-ICOM Power Supply A3014414-1 (1A12).

The following procedure is used to perform Go/No Go testing of the CCA-ICOM power supply, 1A12, A3014414-1. See fig. 2-84 on page 2-175 This unit is discarded if it fails the test. Refer to local procedures for disposal.

REQUIRED TEST ACCESSORIES	
● Test Program Tape	CPIN CP2900030G
File No.	A3014414
● ICD	ID-005C
● Adapter Card L	A3148160-1
● Load Card L2	A3148070-1
● Self Test Assembly L3	A3148079-1
● Electrical Card Extractor	A3148245-1

NOTE

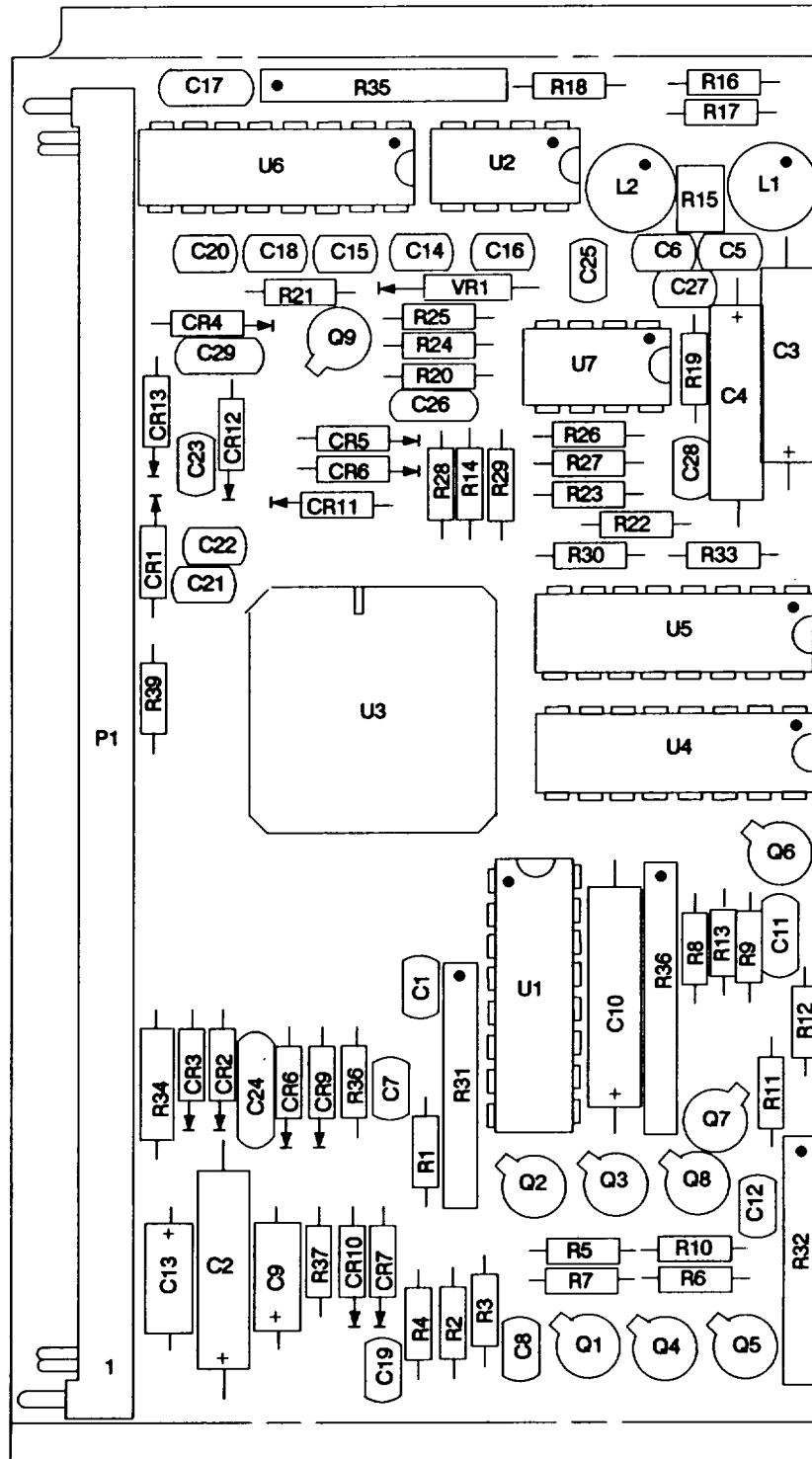
Before testing adapter card L, run the ID-005C survey. Use test program CPIN 11GSG10 File Number ID005C.

- a. Turn on test station AN/USM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and press RETURN on VDT keyboard.

NOTE

The intermediate code of this program requires 158 blocks on the removable disk pack (DPØ). Before loading the test program ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.

- d. Load test program.
 - (1) Install test program tape CPIN CP2900030G in accordance with TM 11-6625-2773-10.
 - (2) Load file on to disk in accordance with TM 11-6625-2773-10.

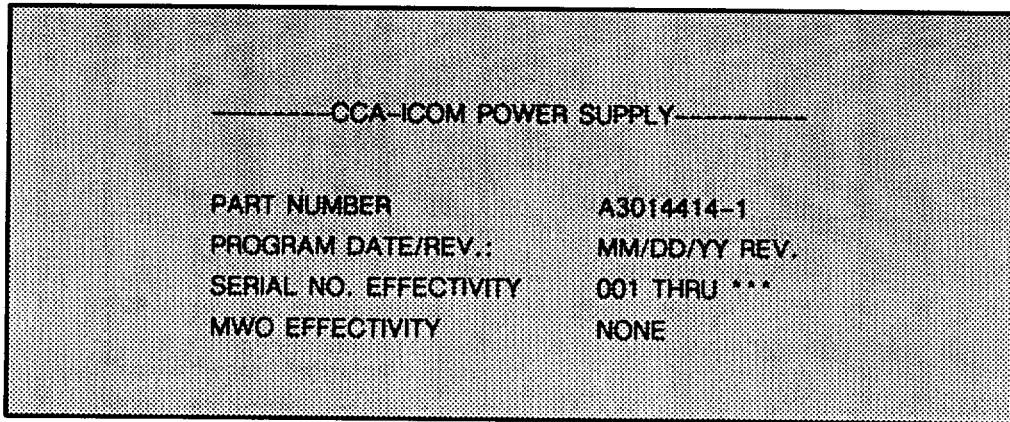


EL9RH159

Figure 2-84. CCA-ICOM Power Supply (1A12) A3014414-1

e. Select test.

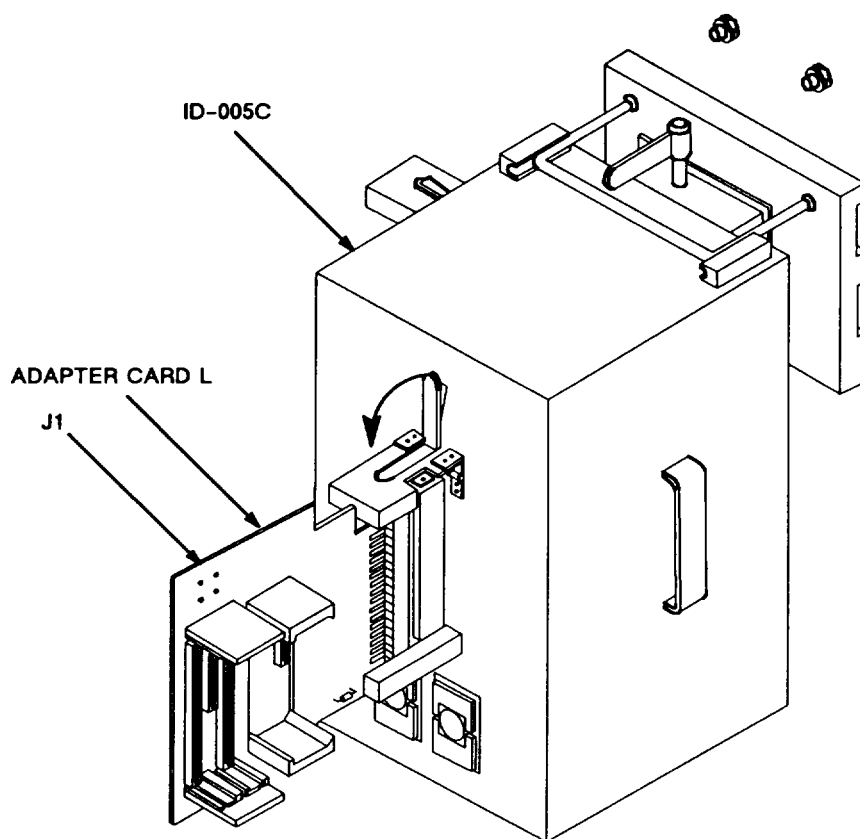
- (1) Enter TEST A3014414 and press RETURN on VDT keyboard.
- (2) Press STRT/PROC on the VDT keyboard.
- (3) Verify that the following information is displayed on the VDT:



- (4) Follow operator instructions on VDT. Enter part number and serial number and read operator instructions on VDT.
 - (5) Press STRT/PROC on the VDT keyboard.
- f. Run ATE survey test if desired. If ATE survey fails to TM 11-6625-2773-10.
- g. Install ICD ID-005C on J1 of PIU.
- h. Install adapter card L on ID-005C. See fig. 2-85 on page 2-177.
- i. Run adapter card survey test. If survey test fails refer to TM 11-6625-3094-24.
- j. Install load card L2 on ID-005C. See fig. 2-86 on page 2-178.
- k. Select load card survey. If survey test fails refer to TM 11-6625-3094-24.
- l. Perform UUT hookup. See fig. 2-87 on page 2-179.
- m. Test and troubleshoot UUT.

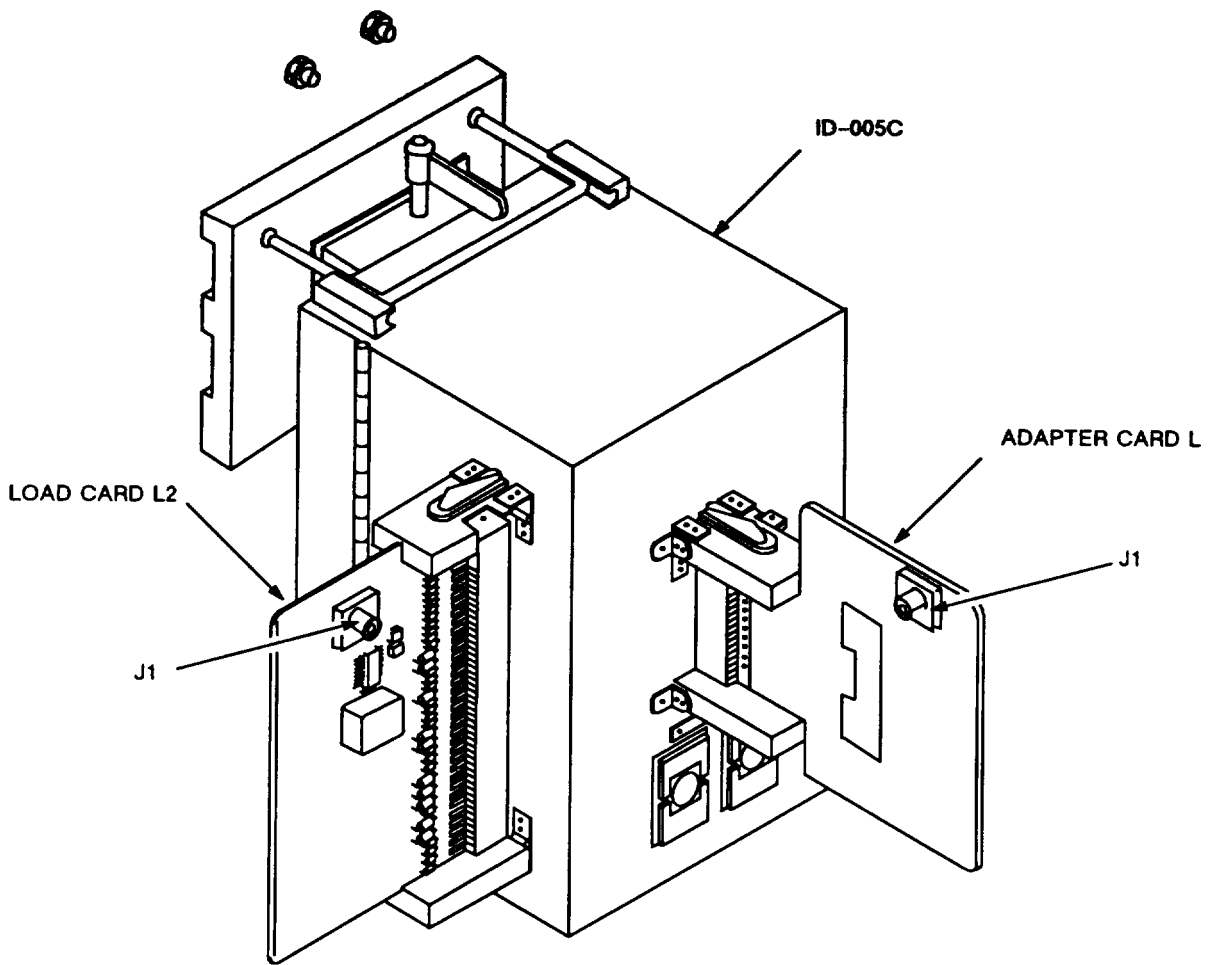
n. Repeat or terminate testing.

- (1) Follow operator instructions on VDT to repeat tests or terminate testing.
- (2) Remove adapter card L, load card L2, ICD, and UUT as required.
- (3) When testing of the UUT has been completed, remove test results from printer. Forward test results, along with the UUT, to next work station.



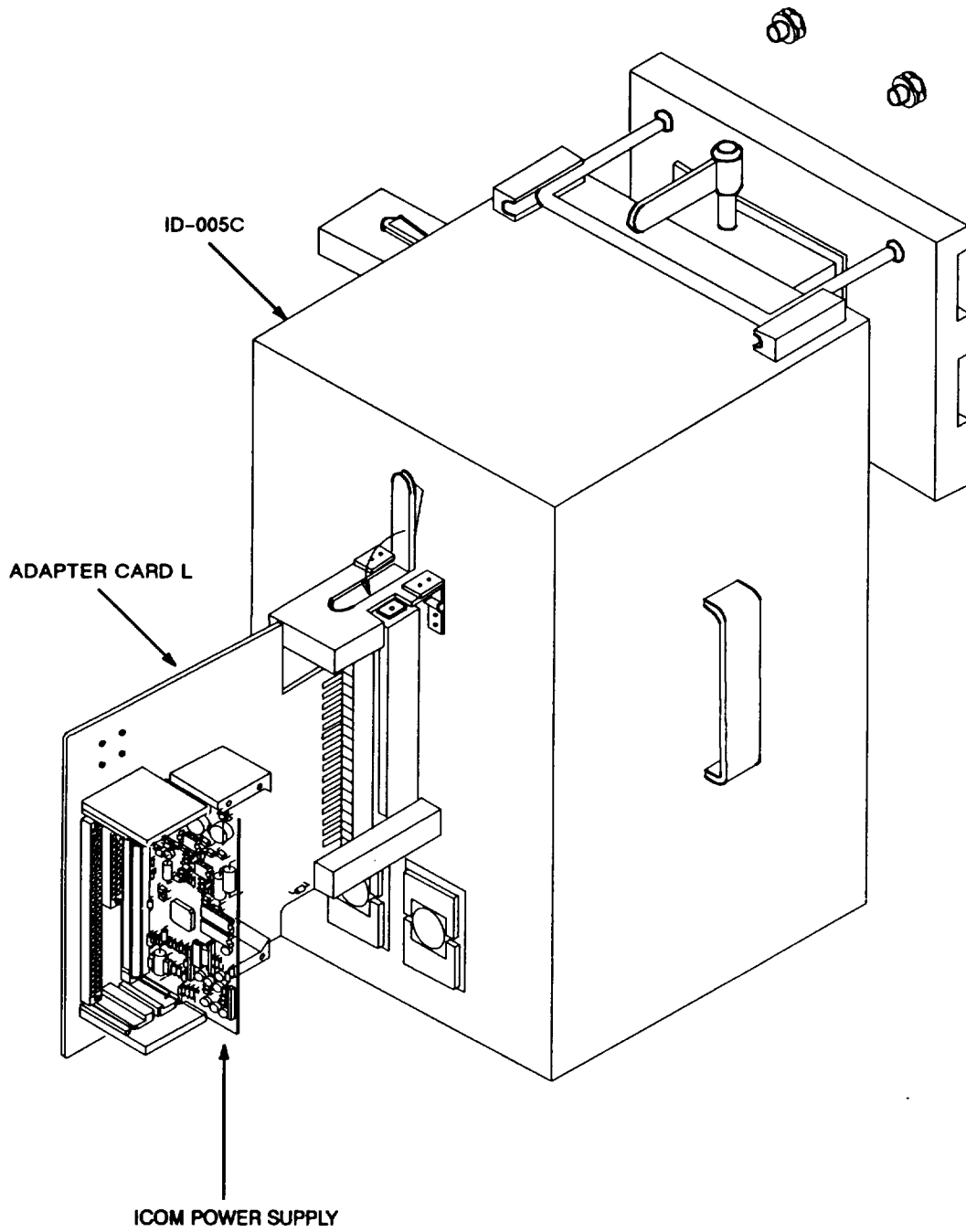
EL9RH160

Figure 2-85. Installation of Adapter Card L for ICOM Power Supply



EL9RH161

Figure 2-86. Installation of Load Card L2 for ICOM Power Supply



EL9RH162

Figure 2-87. Installation of ICOM Power Supply on Adapter Card L

2-23. CCA-ICOM Data I/O A3014408-1 (1A14).

The following procedure is used to perform Go/No Go testing of the CCA-ICOM Data I/O A3014408-1 (1A14) (fig 2-88). This unit is discarded if it fails the test. Refer to local procedures for disposal.

REQUIRED TEST ACCESSORIES	
● Test Program Tape	CPIN CP2900030G
File No.	A3014408
● ICD	ID-005C
● Adapter Card L	A3148160-1
● Load Card L2	A3148070-1
● Self-Test L2	A3148078-1
Electrical Card Extractor	A3148245-1

NOTE

Before testing adapter card L, run the ID-005C survey. Use test program CPIN 11GSG10 File Number ID005C.

- a. Turn on test station AN/USM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and press RETURN on VDT keyboard.

NOTE

The intermediate code of this program will require 109 blocks on the removable disk pack (DPØ). Before loading the test program ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.

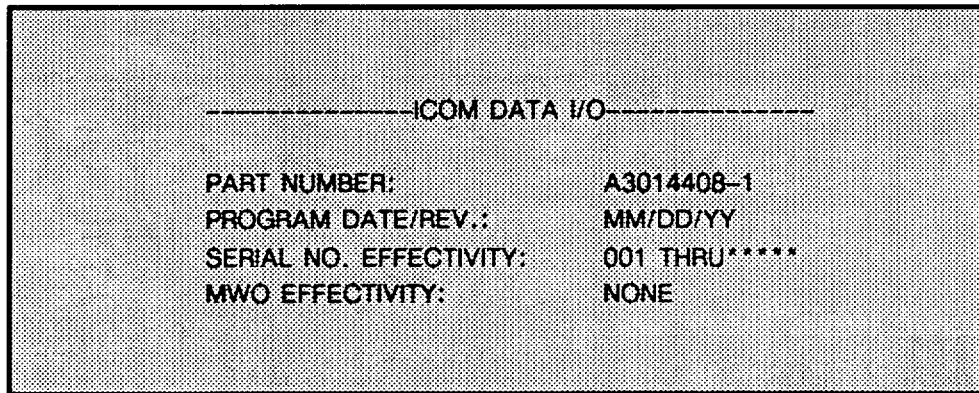
- d. Load test program.
 - (1) Install test program tape CPIN CP2900030G in accordance with TM 11-6625-2773-10.
 - (2) Load file on to disk in accordance with TM 11-6625-2773-10.

e. Select test.

(1) Enter TEST A3014408 and press RETURN on VDT keyboard.

(2) Press STRT/PROC on the VDT keyboard.

(3) Verify that the following information is displayed on the VDT:



(4) Enter part number and serial number and read operator instructions on VDT. Follow operator instructions on VDT.

(5) Press STRT/PROC on the VDT keyboard.

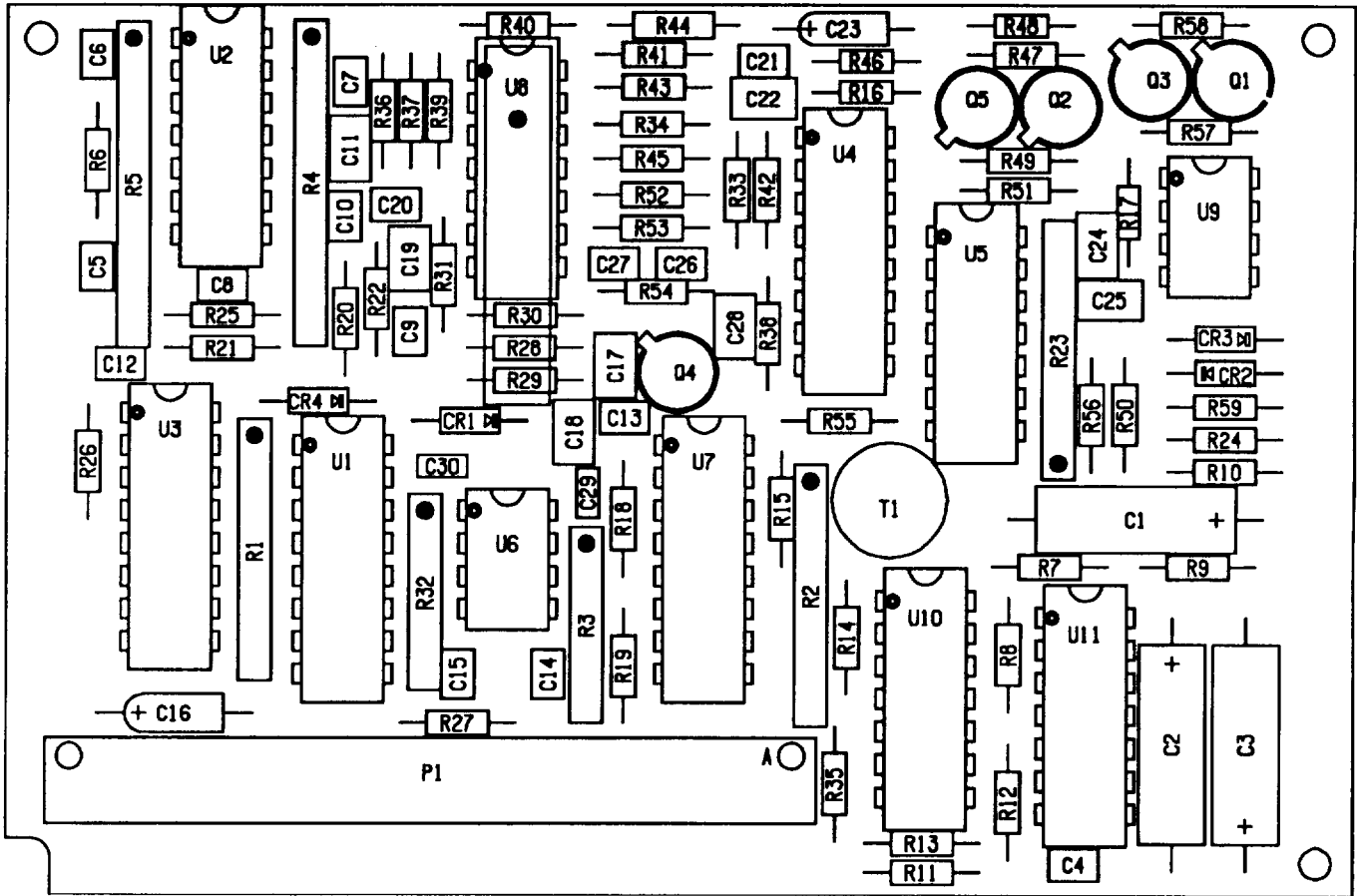
f. Run ATE survey test if desired. If ATE survey fails refer to TM 11-6625-2773-10.

g. Install ICD ID-005C on J1 of PIU.

h. Install adapter card L on ID-005C . (See fig. 2-89).

i. Run adapter card survey test. If survey test fails refer to TM 11-6625-3094-24.

j. Install load card L2 on ID-005C (See fig. 2-90).



EL9RH163

Figure 2-88. CCA-ICOM Data I/O (1A14) A3014408-1

k. Select load card survey. If survey fails refer to TM 11-6625-3094-24.

l. Perform UUT hookup (See fig. 2-91).

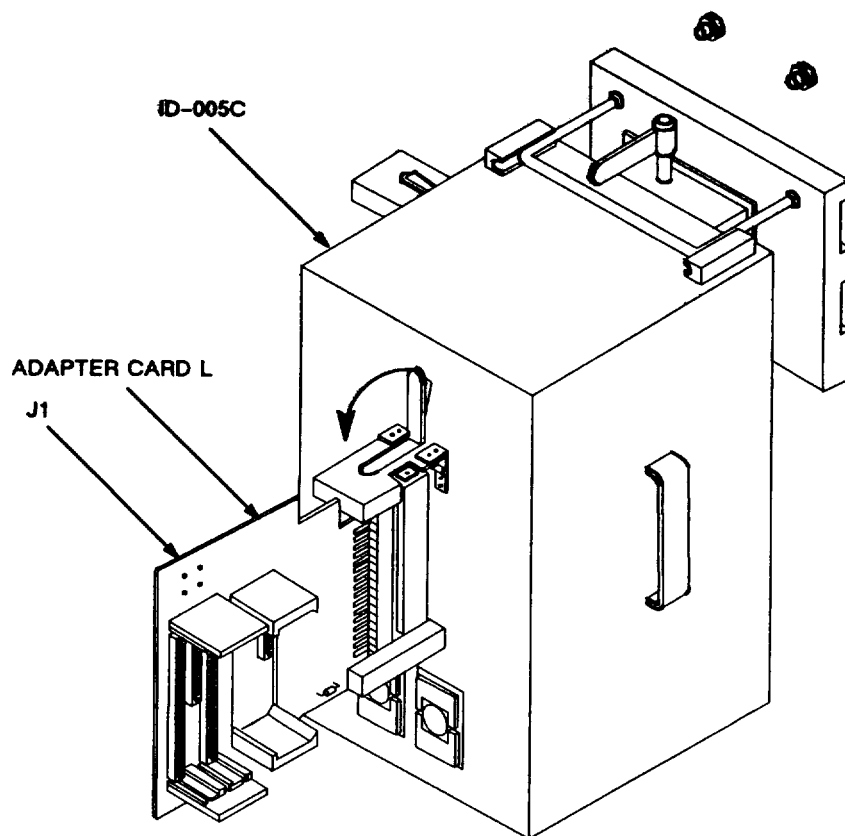
m. Test and troubleshoot UUT.

n. Repeat or terminate testing.

(1) Follow operator instructions on VDT to repeat tests or terminate testing.

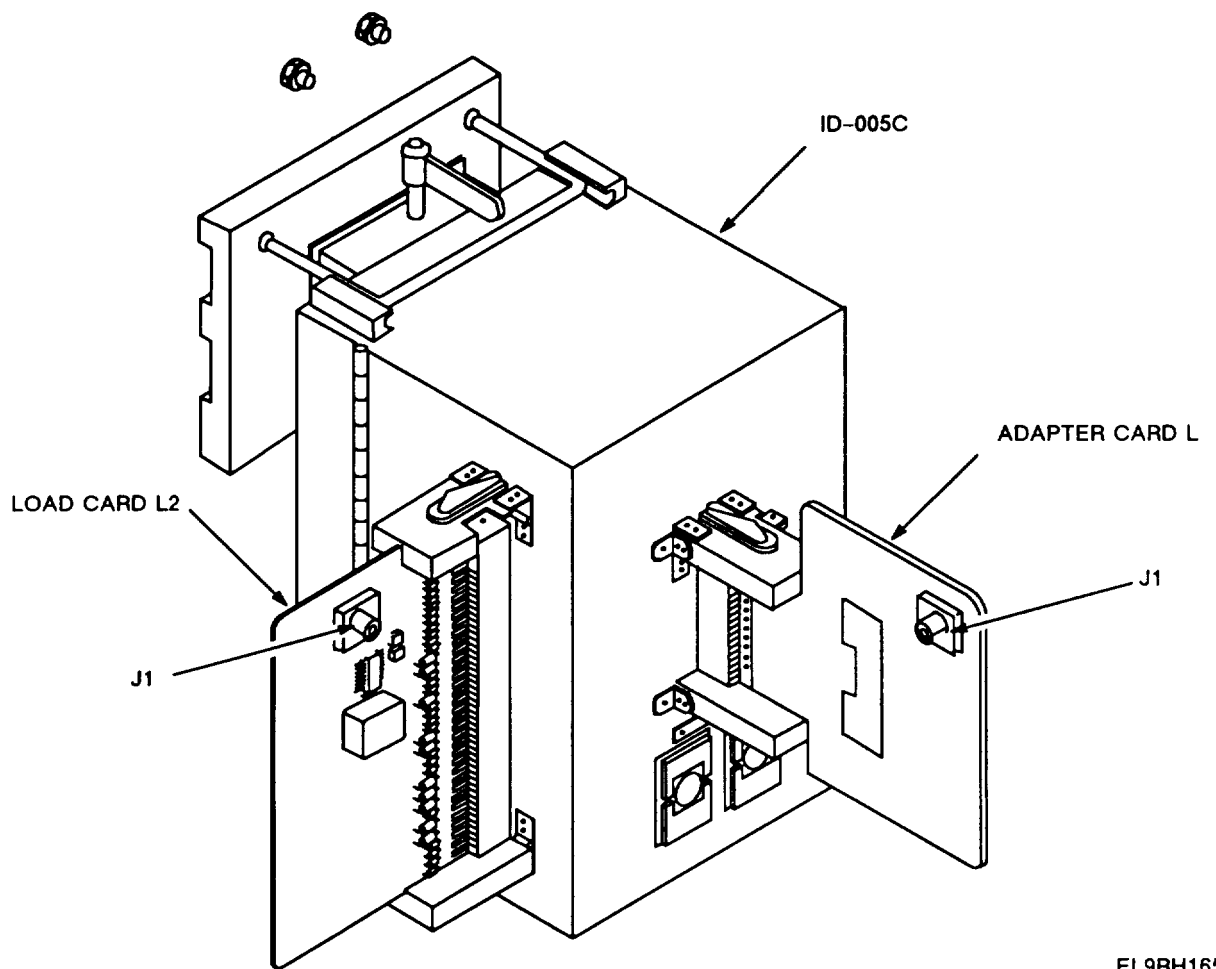
(2) Remove adapter card L, load card L2, ICD, and UUT as required.

(3) When testing of the UUT has been completed, remove test results from printer. Forward test results, along with the UUT, to next work station.



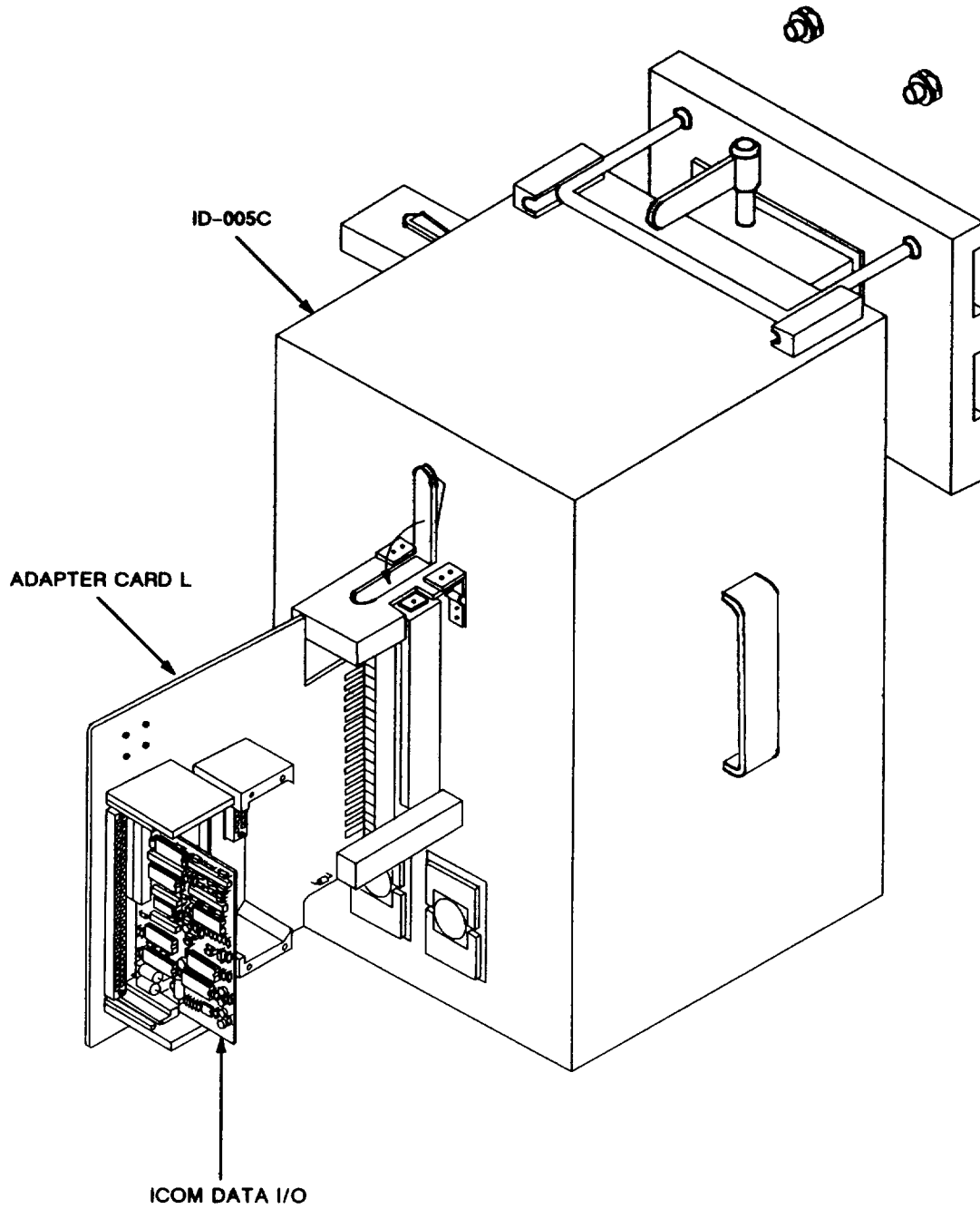
EL9RH164

Figure 2-89. Installation of Adapter Card L for CCA-ICOM Data I/O



EL9RH165

Figure 2-90. Installation of Load Card L2 for CCA-ICOM Data I/O



EL9RH166

Figure 2-91. Installation of ICOM Data I/O on Adapter Card L

2-24.Vehicular-Adapter Power Supply A3148148-1 (5A1).

The following procedure is used to test and troubleshoot the power supply vehicular-adapter A3148148-1 (5A1) (fig. 2-92). Refer to chapter 4 for maintenance instructions.

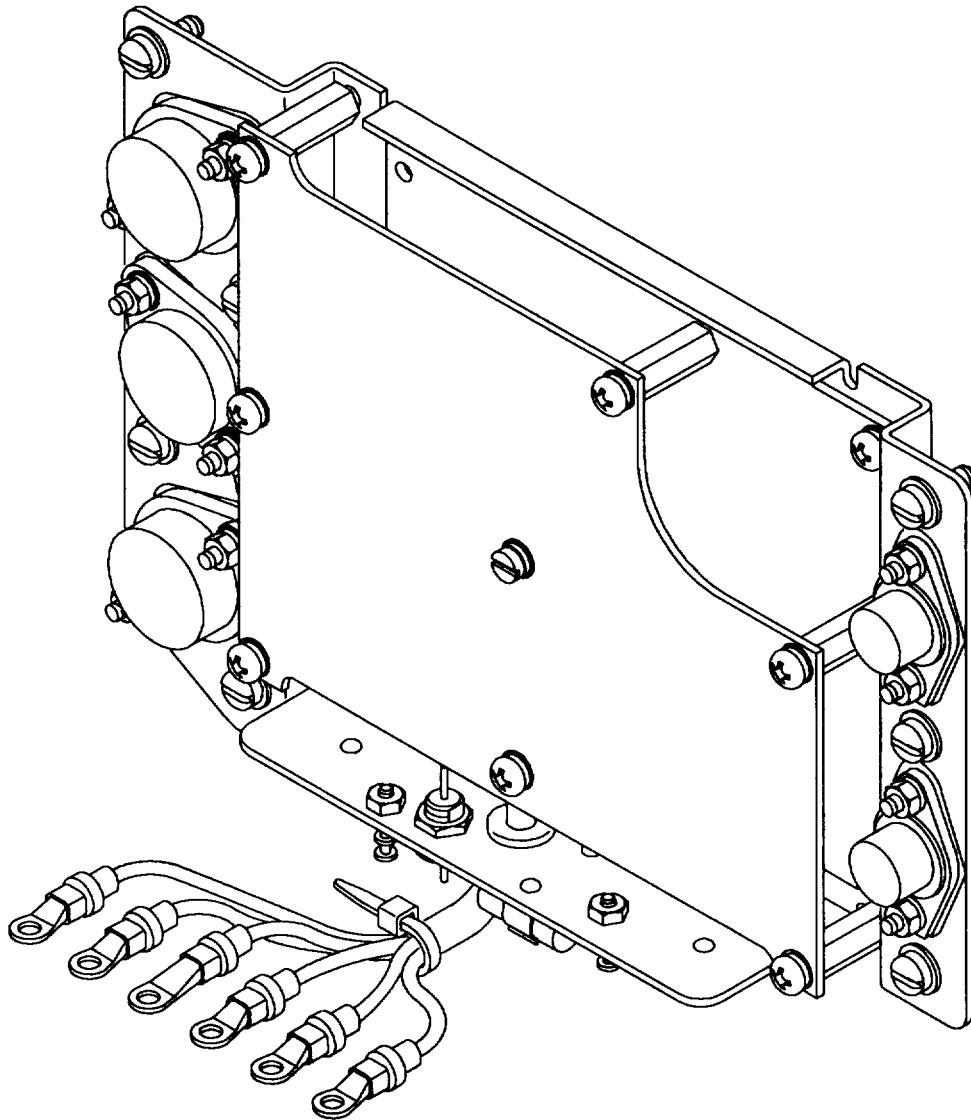
REQUIRED TEST ACCESSORIES	
● Test Program Tape	CPIN CP2000030G
File No.	A3148148
● ICD H	A3019208-1
● Cable Assembly, Electrical ICD-H W1	A3019144-1
● Cable Assembly, Electrical ICD-H W2	A3019150-1
● Cable Assembly, Electrical ICD-H W3	A3019151-1
● Cable Assembly, Electrical ICD-H W4	A3019152-1
● Cable Assembly, Electrical ICD-H W5	A3132907-1
● Cable Assembly, Electrical ICD-H W6	A3132907-2
● Cable Assembly, Electrical ICD-H W7	A3132907-3
● Shield, Safety, Laboratory-Assy	A3167758-1
● Support-Assembly	A3167753-1
● Probe	SM-C-869189
● Alignment Tool Kit	B4008667
● Technical Manual ICD-H	TM11-6625-3094-24

- a. Turn on test station AN/USM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and press RETURN on VDT keyboard.

NOTE

The intermediate code of this program will require 36 blocks of memory on the removable disk pack (DPØ). Before loading the test program ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.

- d. Load test program.
 - (1) Install a test program tape in accordance with TM 11-6625-2773-10.
 - Install CPIN CP2000030G for A3148148-1.
 - (2) Load file onto disk in accordance with TM 11-6625-2773-10.
- e. Select test.
 - (1) Enter TEST A3148148 and press RETURN on VDT keyboard.
 - (2) Press STRT/PROC on the VDT keyboard.



EL9RH053

Figure 2-92. Power Supply Vehicular-Adapter A3148148-1
(Sheet 1 of 5)

DISASSEMBLED VIEW OF POWER SUPPLY 5A1 (Sheet 1 of 2)

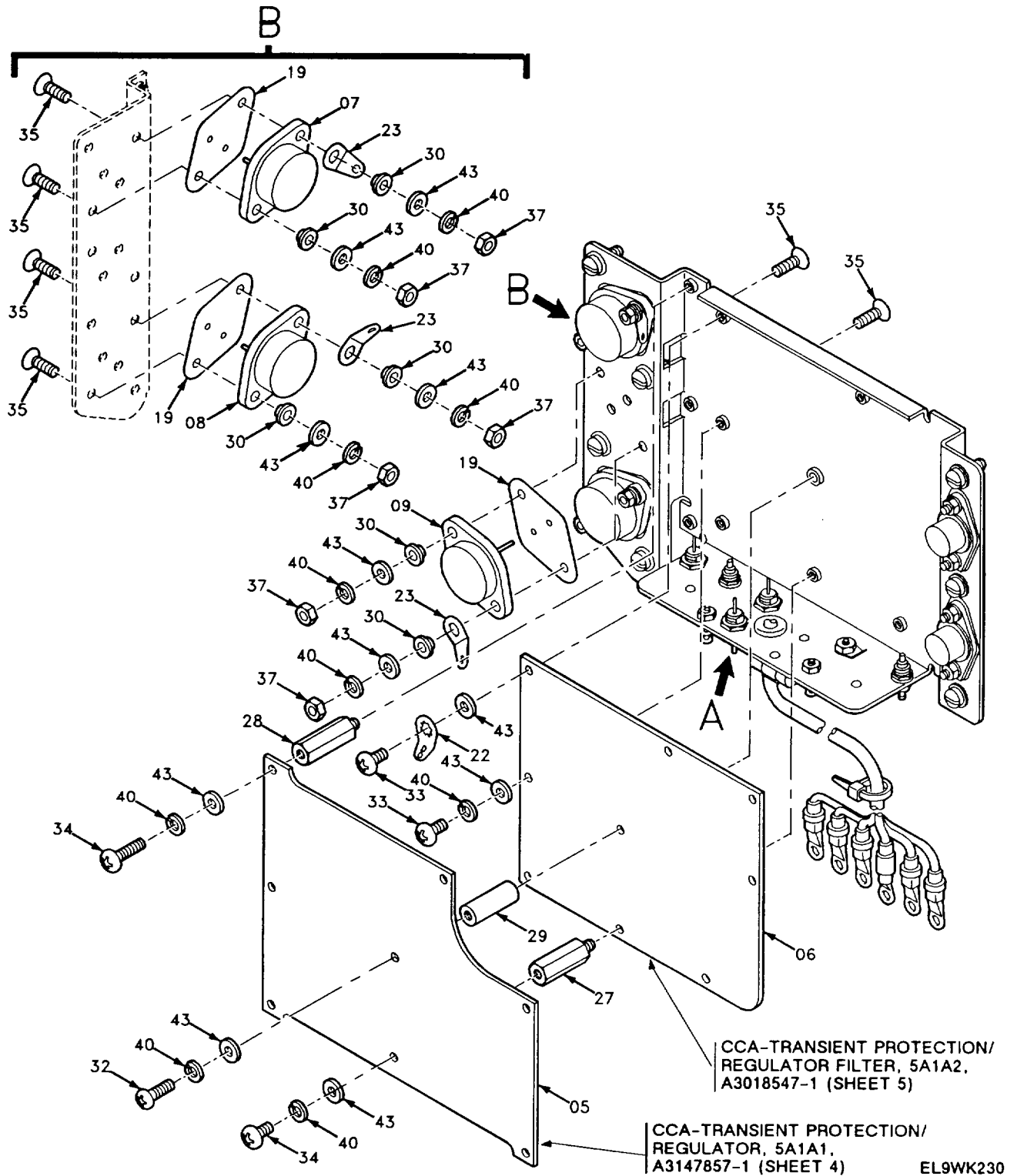
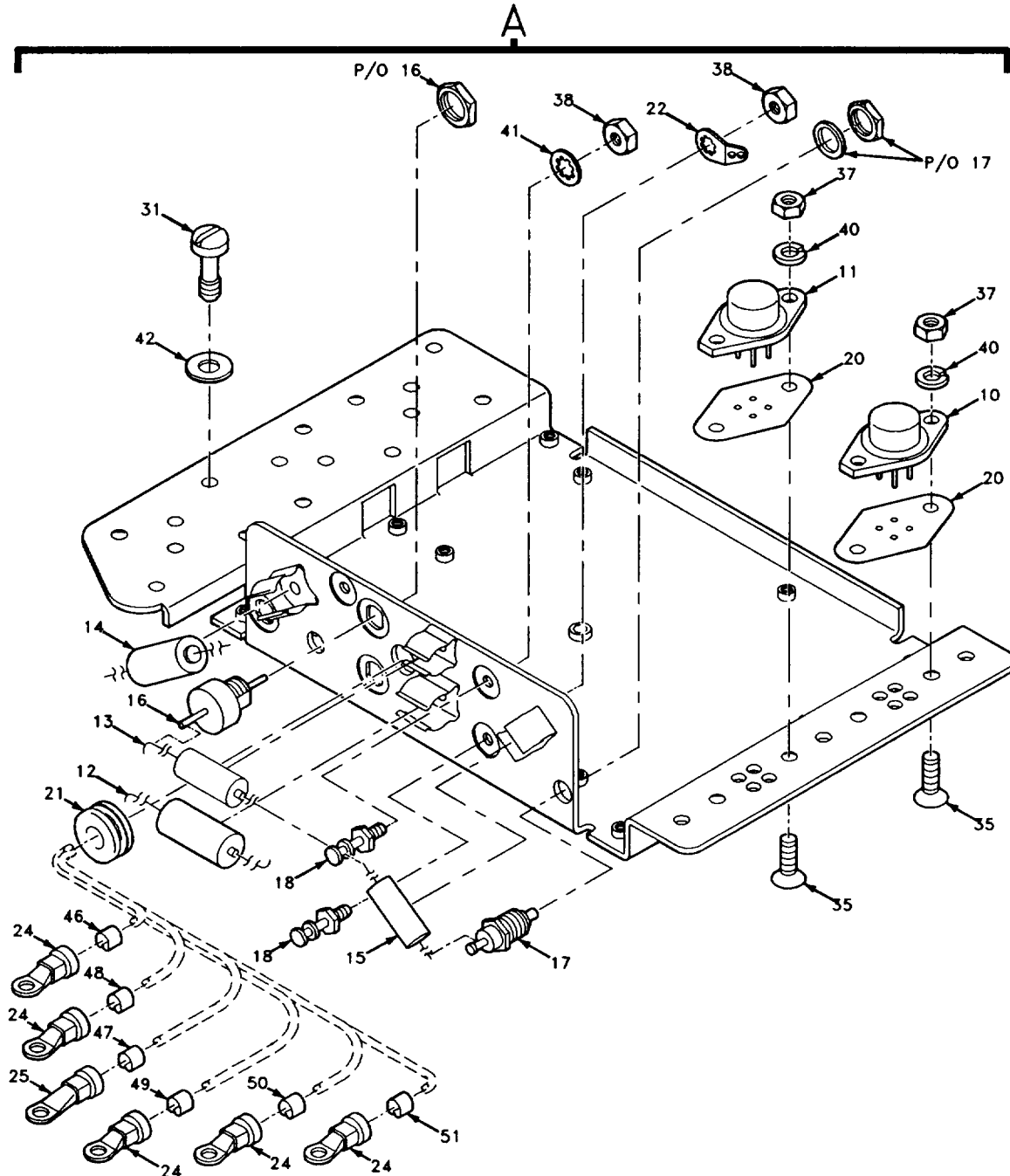


Figure 2-92. Supply Vehicular-Adapter A3148148-1 (Sheet 2 of 5)

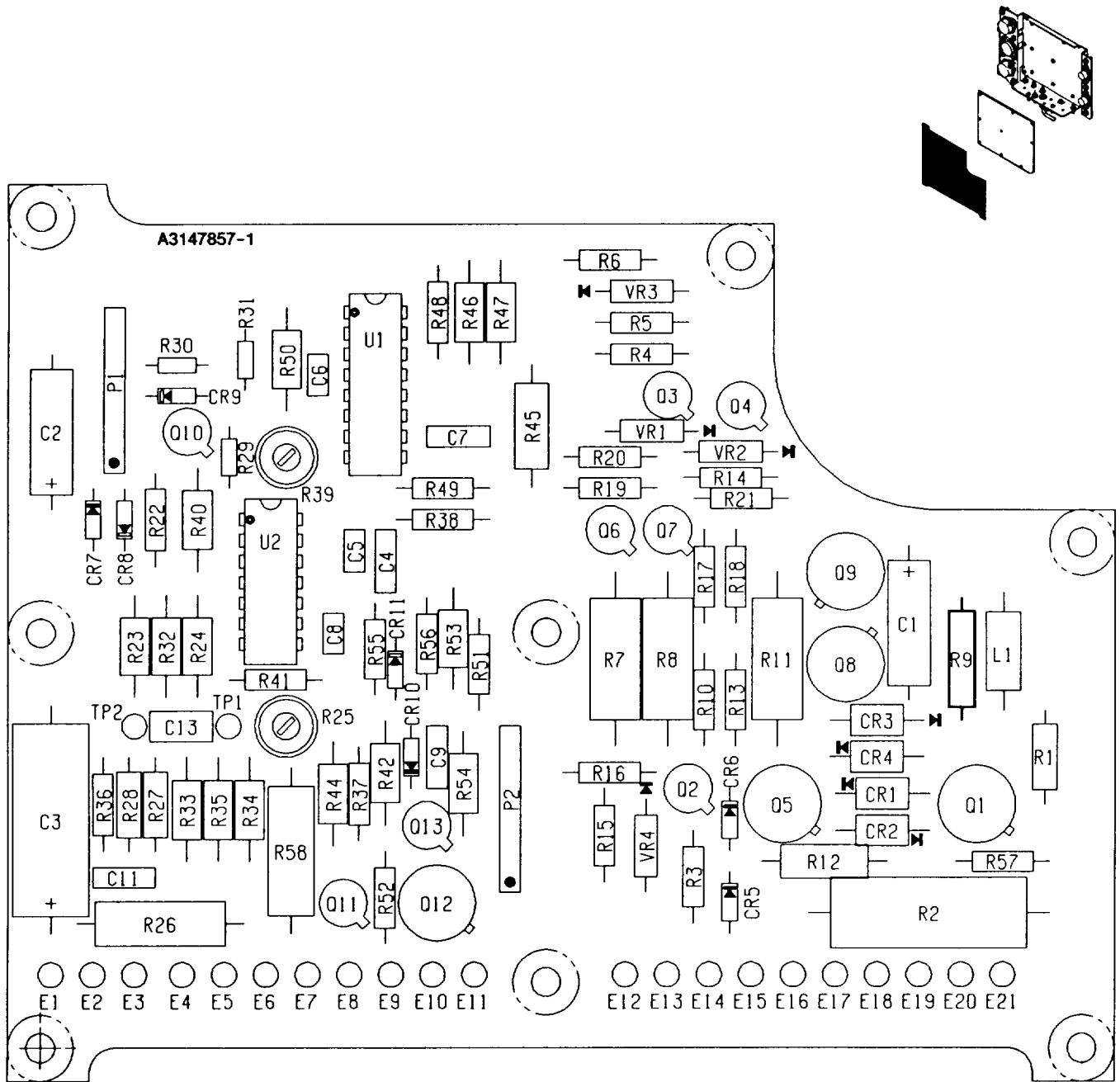
DISASSEMBLED VIEW OF POWER SUPPLY 5A1 (Sheet 2 of 2)



EL9WK230A

Figure 2-92. Power Supply Vehicular-Adapter A3148148-1 (Sheet 3 of 5)

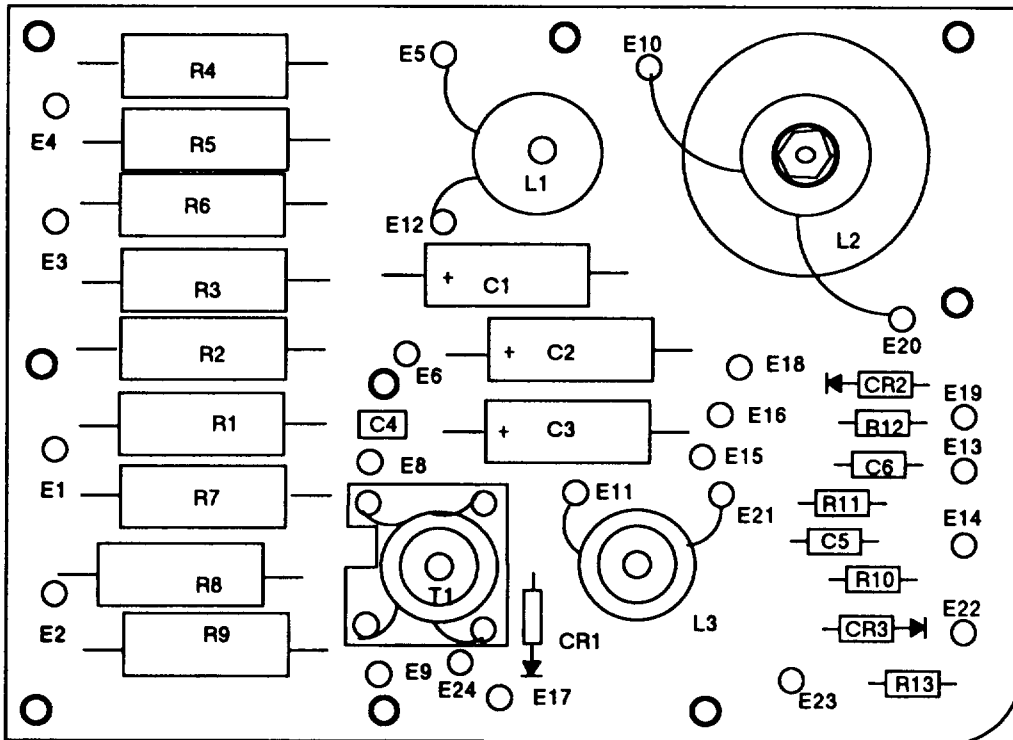
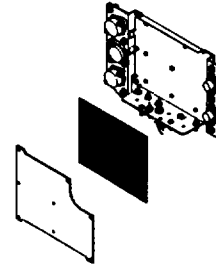
CCA-TRANSIENT PROTECTION/REGULATOR A3147857-1 (5A1A1)
(Part of A3148148-1)



EL9RH055

Figure 2-92. Power Supply Vehicular-Adapter A3148148-1
(Sheet 4 of 5)

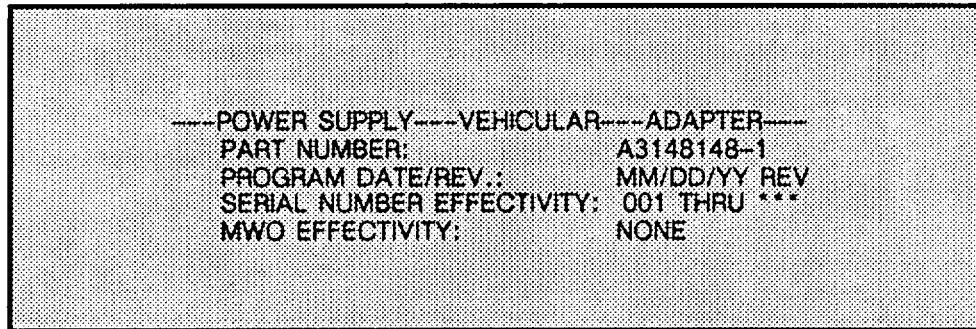
CCA-TRANSIENT PROTECTION/REGULATOR FILTER A3018547-1 (5A1A2)
 (Part of A3148148-1)



EL9RH056

Figure 2-92. Power Supply Vehicular-Adapter A3148148-1
 (Sheet 5 of 5)

- (3) Verify that the following information is displayed on the VDT:



- (4) Follow operator instructions on VDT. Enter part number and serial number and read operator instructions on VDT.
- (5) Press STRT/PROC on the VDT keyboard.
- f. Run ATE survey test if desired. If ATE survey fails refer to TM 11-6625-2773-10.

WARNING

High voltage from 180 to 220 V dc is present on the chassis and components of this UUT.

DEATH MAY OCCUR ON CONTACT

Use extreme caution when testing, adjusting or probing this UUT.

- DO NOT work on this UUT unless there is another person nearby who is familiar with the operation and hazards of the equipment. This person must be competent in administering first aid.
- DO NOT probe with both hands. Keep one hand away from the equipment to reduce the hazard of current flowing through your body.
- FOR ARTIFICIAL RESPIRATION REFER TO FM 21-11.

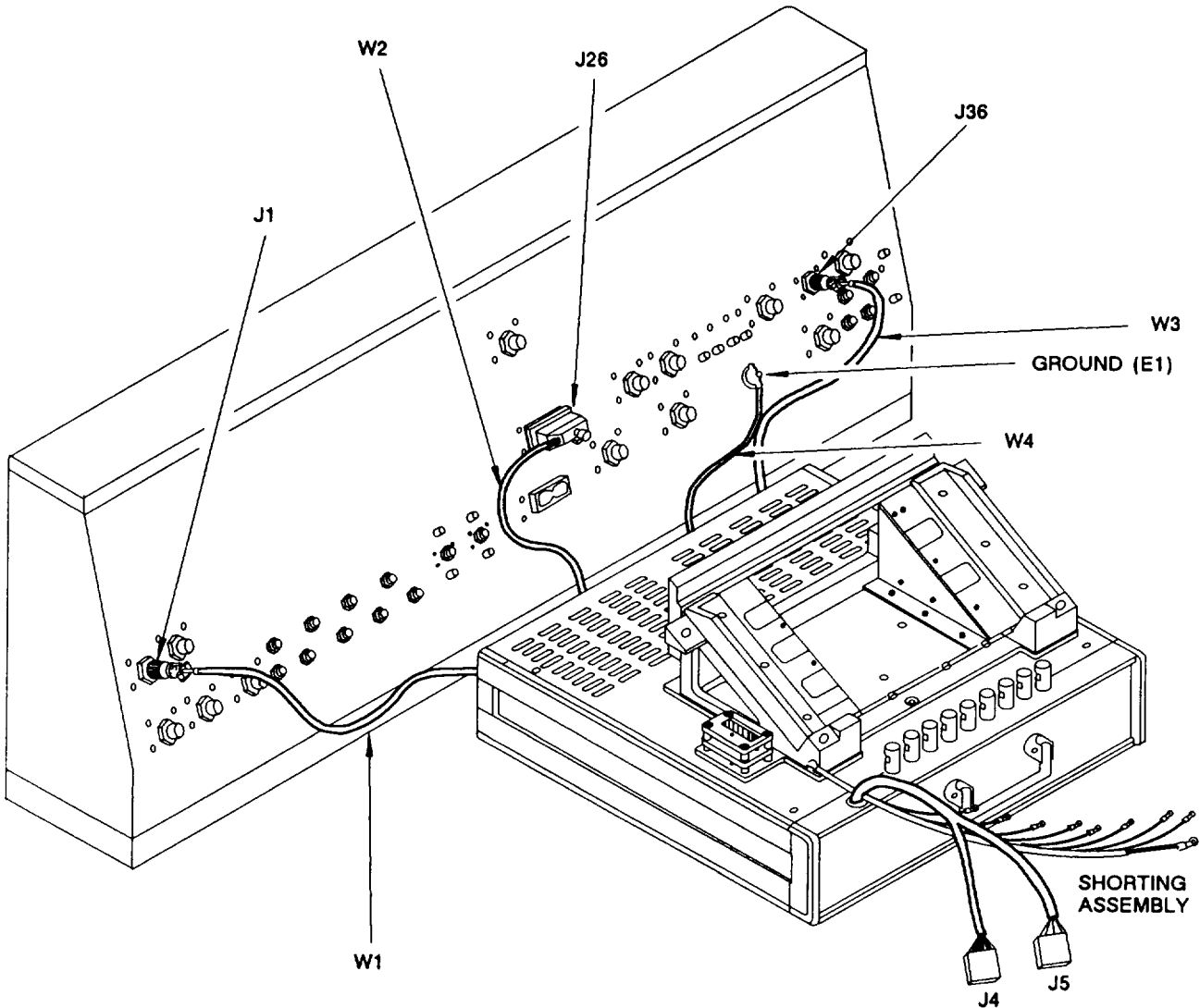
CAUTION

- This UUT contains devices sensitive to damage by electrostatic discharge (ESD).
 - This UUT contains direct currents of approximately 6 amps at 27 V. Care must be taken to avoid shorting the 27 V to ground while probing.
- g. Install ICD H on DIU (See fig. 2-93).
- h. Run ICD survey test. If survey test fails refer to TM 11-6625-3094-24.
- i. Install UUT on ICD-H (See fig. 2-94).

j. Test and troubleshoot UUT.

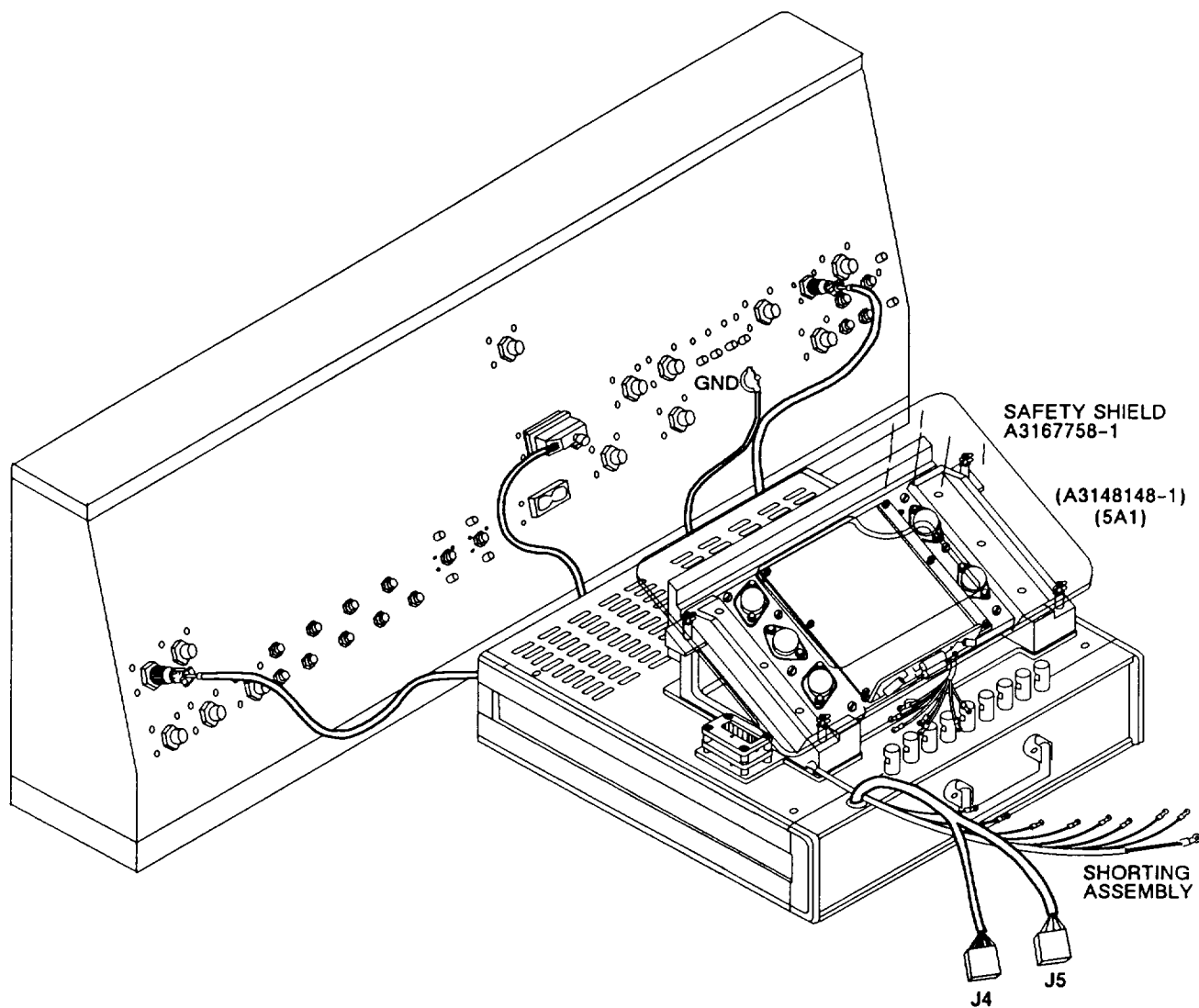
k. Repeat or terminate testing.

- (1) Follow operator instructions on VDT to repeat tests or terminate testing.
- (2) Remove the ICD, and UUT as required.
- (3) When testing of the UUT has been completed, remove test results from printer. Forward test results, along with the UUT, to next work station.



EL9RH059

Figure 2-93. Installation of ICD-H on DIU



EL9RH060

Figure 2-94. Installation of Power Supply Vehicular-Adapter on ICD-H

2-25. Electrical Equipment Amplifier-Adapter Chassis A3167675-1 or A3167675-2 (5A3).

The following procedure is used to test and troubleshoot the electrical equipment amplifier-adapter chassis A3167675-1 (minus the vehicular-adapter power supply (5A1) A3148148-1 and the one-Watt audio amplifier (5A2) A3014195-1) or A3167675-2 (5A3) (fig. 2-96). Refer to chapter 4 for maintenance instructions.

REQUIRED TEST ACCESSORIES	
● Test Program Tape	CPIN CP0200030G
File No.	A3167675
● ICD	ID-005C
● Test Adapter E	A3014508-1
● Self-Test Assembly-Test Adapter E	A3017926-1
● PIU Probe	SM-C-869189

NOTE

Before testing test adapter E, run the ID-005C survey. Use test program CPIN 11GSG10 File Number ID005C.

- a. Turn on test station AN/USM-410(V)2.
- b. Perform operational procedures in accordance with TM 11-6625-2773-10.
- c. Enter DIR USERAREA1 and press RETURN on VDT keyboard.

NOTE

The intermediate code of this program will require 53 blocks on the removable disk pack (DPØ). Before loading the test program ensure that the DPØ has sufficient space to load the intermediate code. If there are not enough blocks on the present disk, reformat the disk or obtain a new disk.

- d. Load test program.
 - (1) Install test program tape CPIN CP0200030G in accordance with TM 11-6625-2773-10.
 - (2) Load file on to disk in accordance with TM 11-6625-2773-10.
- e. Select test.

NOTE

Two part numbers are served by this test program. The A3167675-1 can only be tested if the vehicular-adapter power supply (5A1) A3148148-1 and the one-Watt audio amplifier (5A2) A3014195-1 have been removed.

- (1) Enter TEST A3167675 and press RETURN on VDT keyboard.
- (2) Follow operator instructions on VDT. Enter part number and serial number and read operator instructions on VDT.
- (3) Verify that the following information is displayed on the VDT:

```

----- ELECTRICAL EQUIPMENTAMPLIFIER-ADAPTER CHASSIS -----
PART NUMBER:           A3167675
PROGRAM DATE/REV.:     MM/DD/YY REV
SERIAL NO. EFFECTIVITY: 001 THRU *****
MWO EFFECTIVITY:       NONE
    
```

- (4) Press STRT/PROC on the VDT keyboard.
- f. Run ATE survey test if desired. If ATE survey fails refer to TM 11-6625-2773-10.
- g. install ICD ID-005C on J1 of PIU.
- h. Install test adapter E on ID-005C (See fig. 2-95).

WARNING

This UUT contains voltages of approximately 120 Volts. Observe Standard Safety Precautions when working on Electronic Equipment.

- i. Run test adapter E survey test. If survey test fails refer to TM 11-6625-3094-24.
- j. Perform UUT hookup (See fig. 2-96).
- k. Test and troubleshoot UUT.
- l. Repeat or terminate testing.
 - (1) Follow operator instructions on VDT to repeat tests or terminate testing.
 - (2) Remove adapter card, ICD, and UUT as required.
 - (3) When testing of the UUT has been completed, remove test results from printer. Forward test results, along with the UUT, to next work station.

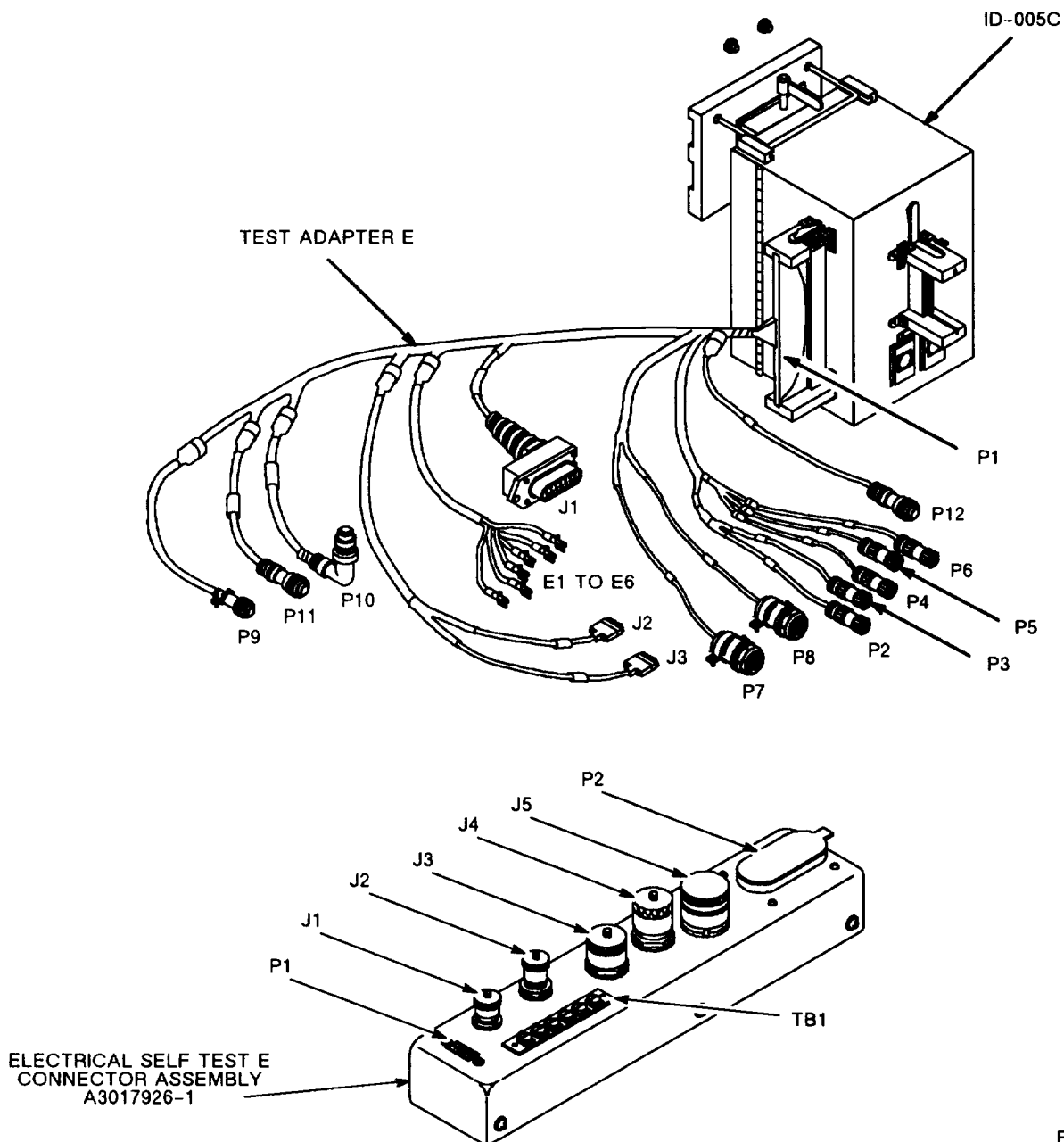
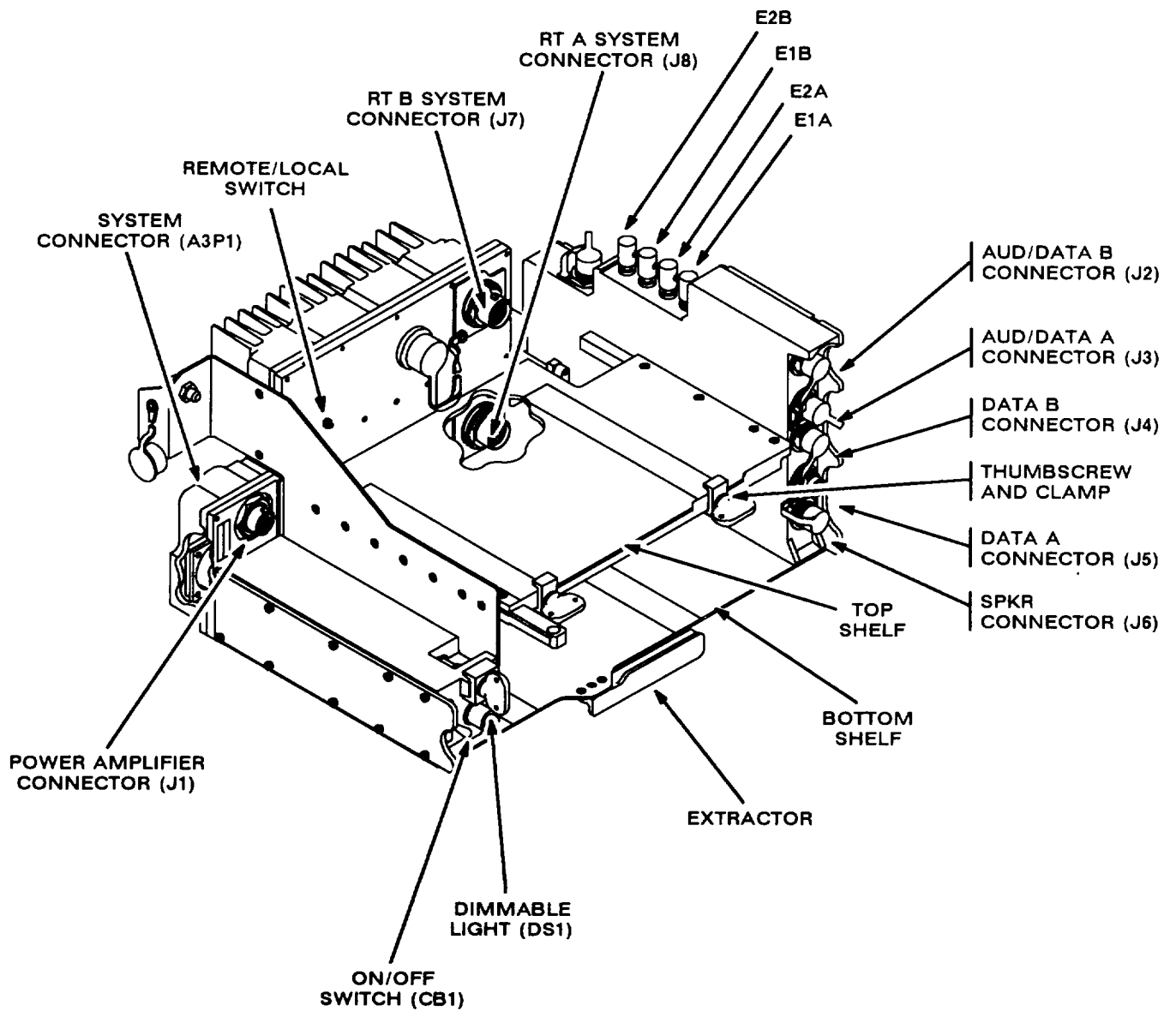


Figure 2-95. Installation of Test Adapter E on ICD ID-005C

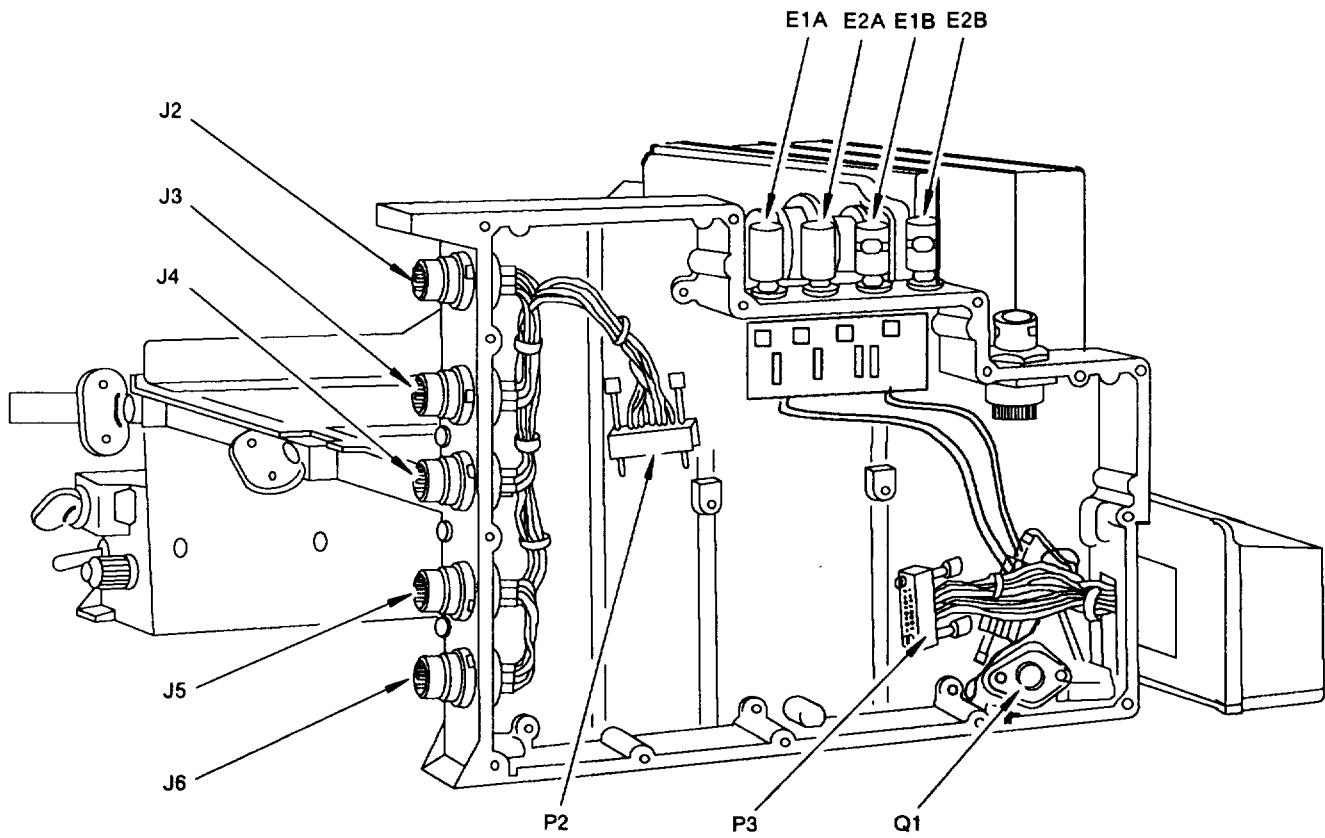
EL9RH031



EL9RH032

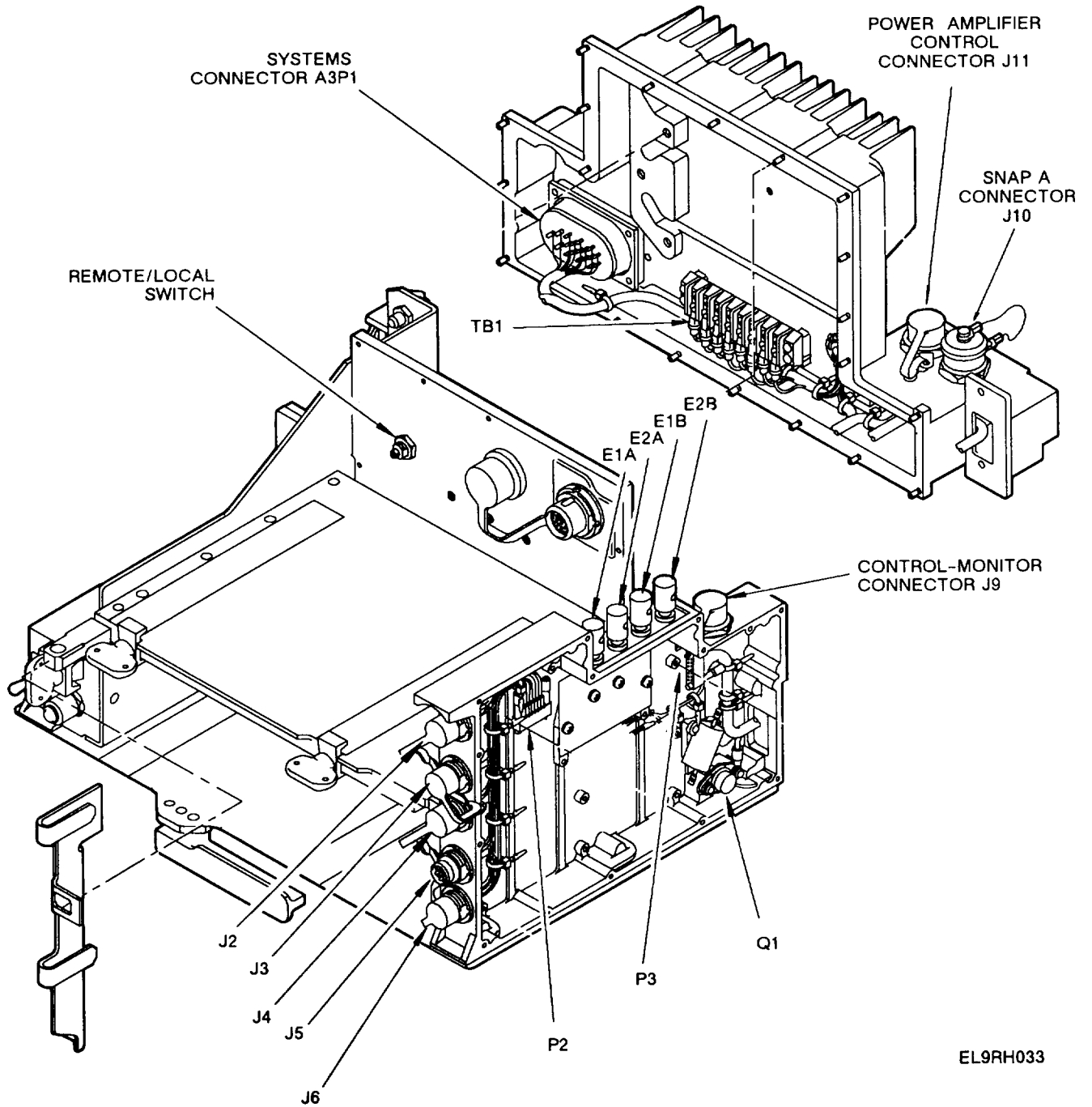
Figure 2-96. Electrical Equipment Amplifier-Adapter Chassis A3167675-1 or A3167675-2 Connector Location (Sheet 1 of 3)

CONNECTOR J2 TO J6, P2 AND P3 LOCATION



EL9RH033

Figure 2-96. Electrical Equipment Amplifier-Adapter Chassis A3167675-1 or A3167675-2
Connector Location (Sheet 2 of 3)



EL9RH033

Figure 2-96. Electrical Equipment Amplifier-Adapter Chassis A3167675-1 or A3167675-2
Connector Location (Sheet 3 of 3)

CHAPTER 3 TESTING USING AN/USM-465A



CAUTION



THIS EQUIPMENT CONTAINS PARTS SENSITIVE TO DAMAGE
BY ELECTROSTATIC DISCHARGE (ESD).

3-1. CCA-Data Rate Adapter A3014168-1 and A3019045-1 (1A15).

The following procedure is used to perform Go/No-Go testing of the data rate adapter (1A15) A3014168 and A3019045-1 (fig. 3-1 and 3-2). This unit is discarded if it fails the test. Refer to local procedures for disposal.

REQUIRED TEST ACCESSORIES

- Test Program Tape CPIN CP0800030G
 File No A3014168
 File No A3019045
- ICD-D A3014296-1 Items:
 Interface Connector Device A3014476-1

- a. Turn on digital card tester AN/USM-465A.
- b. Perform operational procedures in accordance with TM 11-6625-3038-10.

NOTE

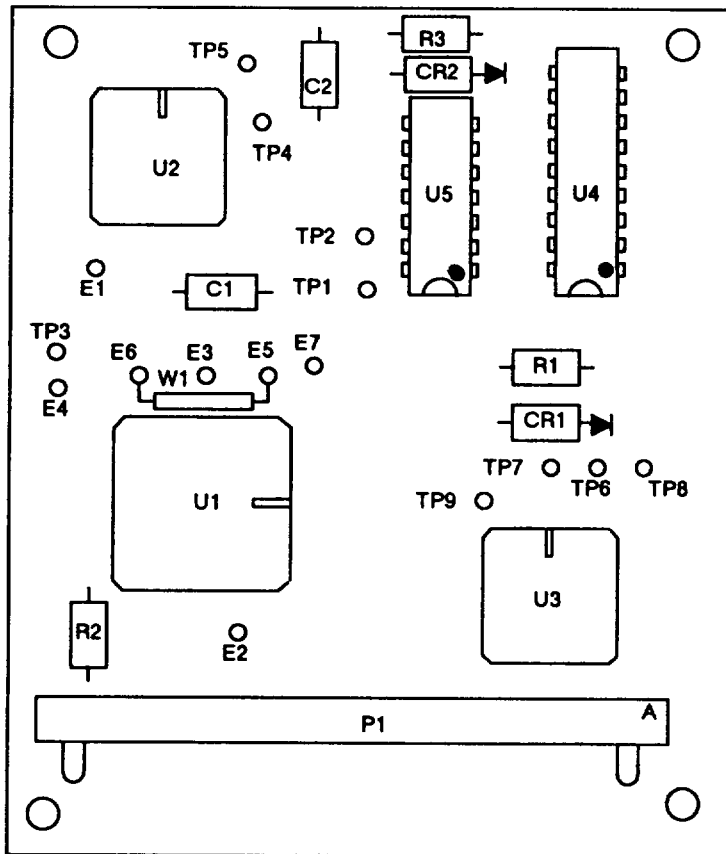
This program requires AN/USM-465A software version 2.0 be installed.

- c. Load test program.
 - (1) Install test program tape CP0800030G in digital card tester in accordance with TM 11-6625-3038-10.
 - (2) Enter LOAD Ø, then press EXECUTE.
 - (3) When READY appears on the display, type RUN and press EXECUTE.
 - (4) Verify that the following information is printed:

>ENTER THE LAST FOUR
 >DIGITS OF THE UUT
 >P/N A301????-1
 >PRESS EXECUTE

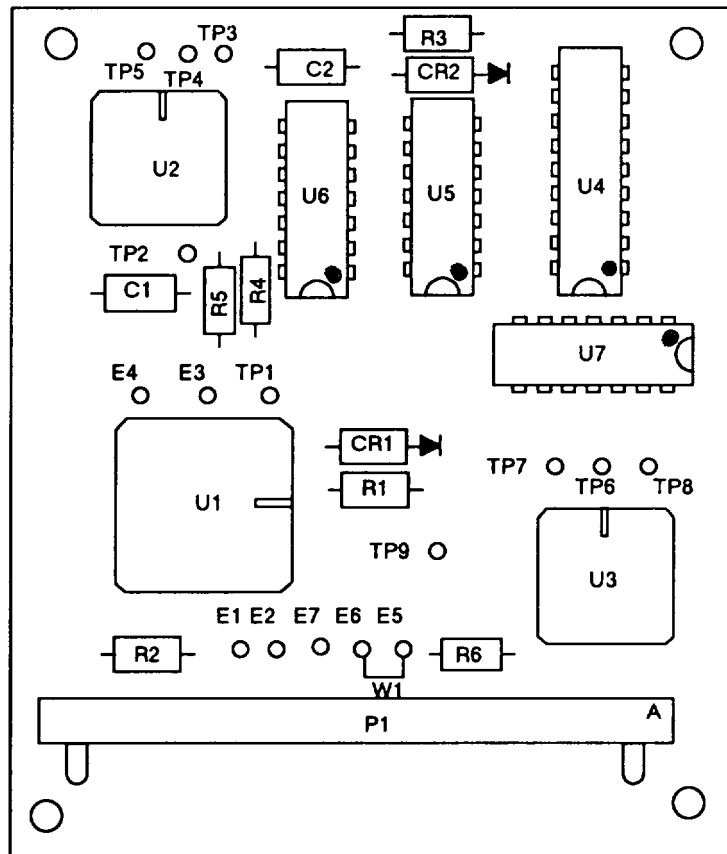
THEN

>PRINT PROGRAM NOTES?
>ENTER YES OR NO,
>PRESS EXECUTE



EL9RH075

Figure 3-1. CCA-Data Rate Adapter A3014168-1

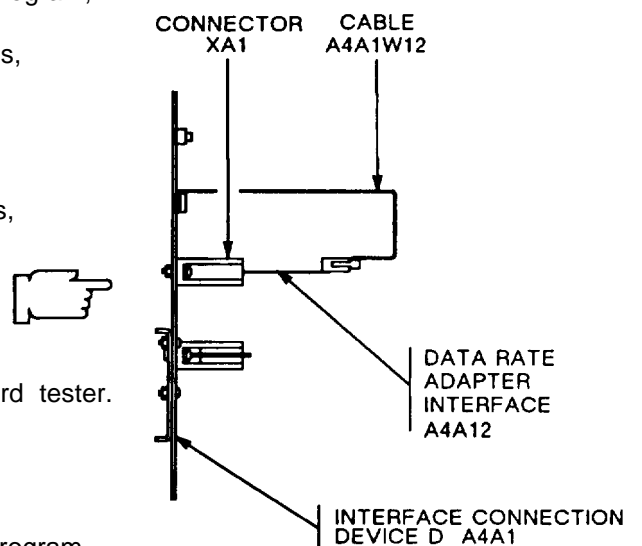


EL9RH076

Figure 3-2. CCA-Data Rate Adapter A3019045-1

- (5) Follow operator instructions as indicated by program,
- d. Run ATE survey test if desired. (If survey test fails, refer to TM 11-6625 -3038-20.)
- e. Install ICD-D on digital card tester (See fig, 3-3).
- f. Run ICD survey test if desired. (If survey test fails, refer to TM 11-6625-3094-24.)

- (1) Install data rate adapter interface A4A12 before running survey test.
- (2) Follow instructions presented by the digital card tester.
- (3) Remove data rate adapter interface A4A12 before testing UUT.
- (4) Follow operator instructions as indicated by program,

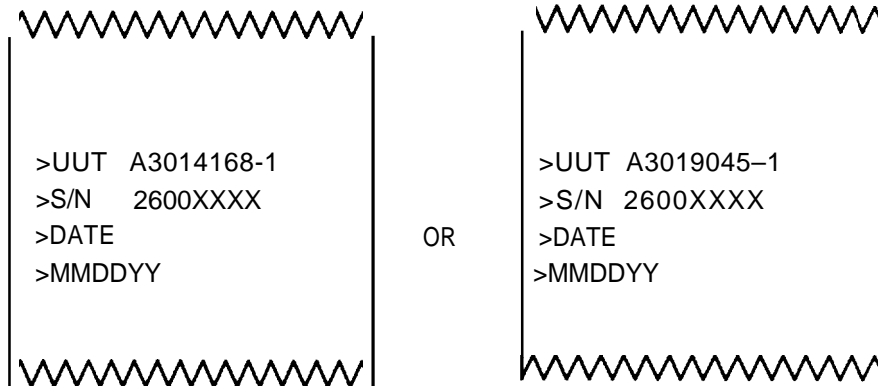


EL9RH077

TM11-5820-914-40

g. Perform UUT hookup (See fig. 3-4).

h. Verify that the following information is printed:



i. Test UUT.

j. Repeat or terminate testing.

- (1) Follow operator instructions to repeat tests or terminate testing.
- (2) Remove ICD and UUT as required.
- (3) When testing of UUT has been completed, remove test results from printer. Forward test results along with UUT to the next work station.

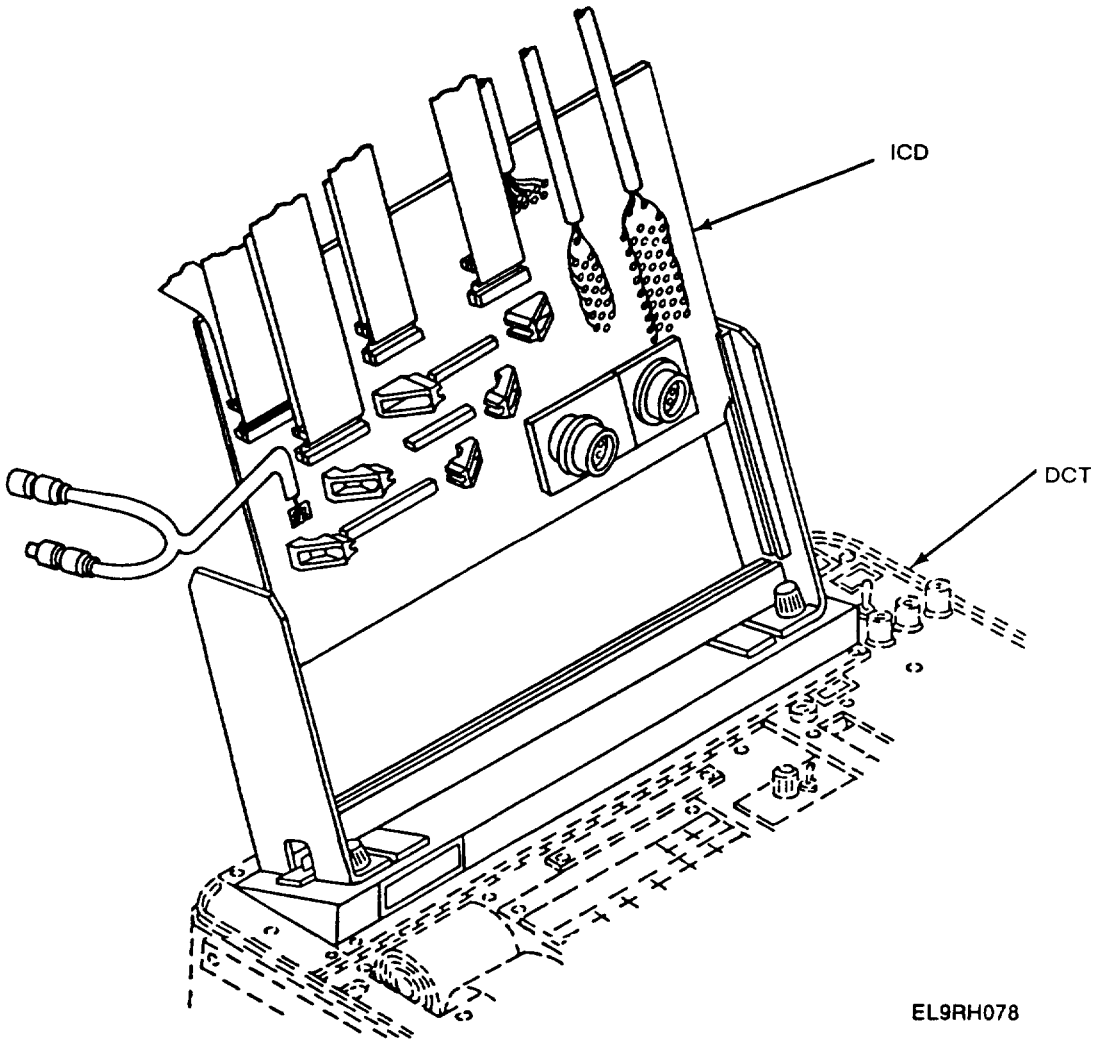


Figure 3-3. Installation of ICD-D on DCT for CCA-Data Rate Adapter

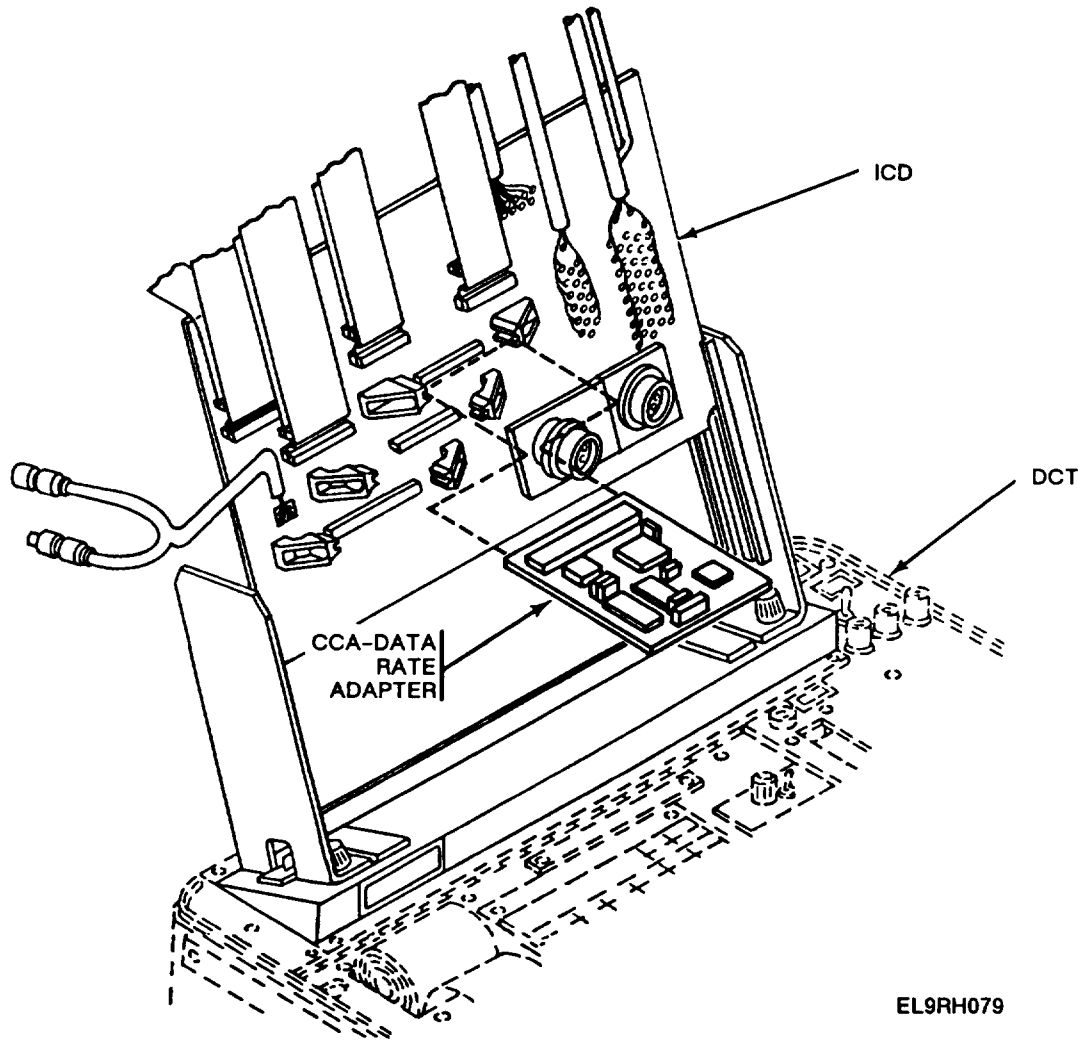


Figure 3-4. Installation of CCA-Data Rate Adapter on ICD

3-2. Receiver-Transmitter Subassembly Chassis A3013364-1 and A3132855-1 (1A16).

The following procedure is used to test and troubleshoot the receiver-transmitter subassembly chassis (1A16) A3013364-1 and A3132855-1 (fig. 3-5). It contains the CCA-display (1A16A1A1) A3014128-1 (fig. 3-6), RT Chassis A3013550-1 , and RT Panel A3013370-1 .

If the CCA-Display, A3014128-1 (1A16A1A1), is turned in without the front panel or chassis, install it in the receiver-transmitter subassembly chassis issued to your facility. Refer to fig. 3-8.

If the Panel, A3013370-1, is turned in without the display or front panel, install it in the receiver-transmitter subassembly issued to your facility. Refer to fig. 3-8.

If the Chassis, A3013550-1 (1A16A1A2), is turned in without the display or front panel, install it in the receiver-transmitter subassembly issued to your facility. Refer to fig. 3-8.

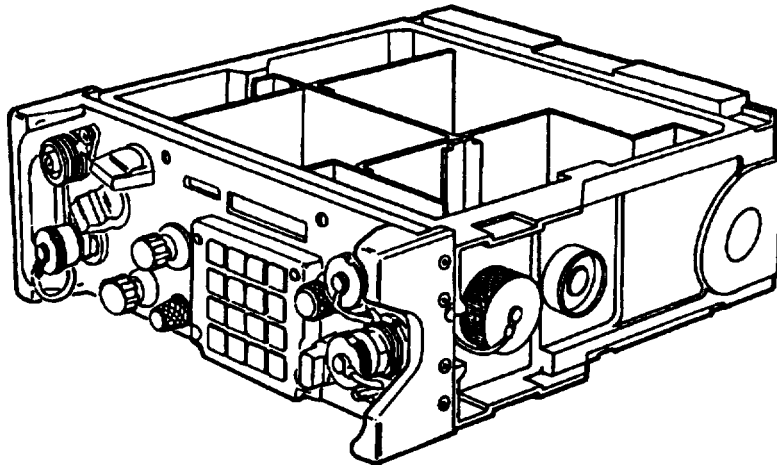
REQUIRED TEST ACCESSORIES	
• Test Program Tape	CPIN CP0500030G
Ž ICD-D A3014296-1 items:	
Interface Connect Device	A3014476-1
Jumper A4A2	A3014261-1
Jumper A4A3	A3014264-1
Jumper A4A4	A3014267-1
Jumper A4A5	A3014270-1
Jumper A4A6	A3014273-1
Jumper A4A7	A3014276-1
Jumper A4A8	A3014279-1
Electrical Equipment Shelf	A3017933-1
Circuit Card Extractor	A3013669-1
Electrical Connector Plug BNC	M3902/16-002
Dummy Connector Plug	A3132841-1

a. Turn on digital card tester AN/USM-465A.

b. Perform operational procedures in accordance with TM 11-6825-3038-10.

NOTE

This program requires AN/USM-465A software version 2.0 be installed.



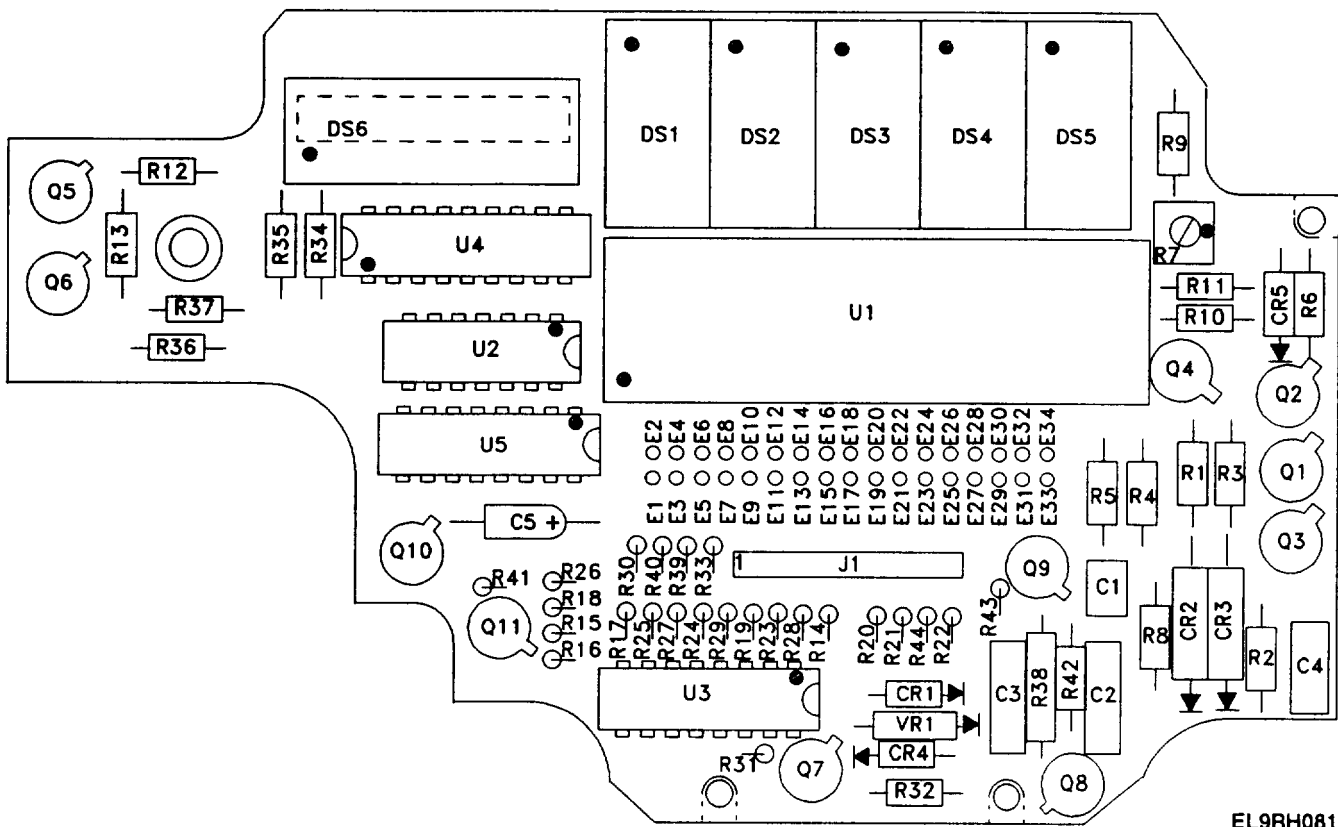
NOTE

THIS UUT DOES NOT HAVE A PART NUMBER STAMPED ON THE CHASSIS. USE THE PN STAMPED ON THE BACKPLANE TO IDENTIFY THE UUT.

RT PN	BACKPLANE PN
A3013364-1	A3014487-1
A3132855-1	A3018799-1

EL9RH080

Figure 3-5. Chassis Electrical Equipment-Receiver-Transmitter Subassembly (1A16) A3013364-1 or A3132855-1



EL9RH081

Figure 3-6. CCA-Display A3014128-1 (1A16A1A1)

c. Load test program.

- (1) Install test program tape CPIN CP0500030G in digital card tester in accordance with TM 11-6625-3038-10.
- (2) Enter LOAD 0, then press EXECUTE.
- (3) When READY appears on the display, type RUN and press EXECUTE.
- (4) Verify that the following information is printed:

```

>ENTER THE LAST FOUR
>DIGITS OF THE UUT
>P/N A301????-1
>P/N A313XXXX-1
>PRESS EXECUTE
    
```

THEN

```

>PRINT PROGRAM NOTES?
>ENTER YES OR NO,
>PRESS EXECUTE
    
```

- (5) Follow operator instructions as indicated by program.

d. Run ATE survey test if desired. (If survey test fails, refer to TM 11-6625 -3038-20.)

e. Install ICD-D (See fig. 3-1 O),

f. Run ICD survey test if desired. Self-test requires that ICD cables (3-1 1) be mated with connectors on the ICD backplane (See fig. 3-12) Refer to TM 11 -6625-3094-24 if the ICD fails survey test.

g. Initial settings for the front panel controls are as follows:

Ž	CHAN	1
Ž	FCTN	TEST
•	RF	M
Ž	MODE	FH
•	DATA	OFF
Ž	DIM	CCW
•	VOL	CW
•	WHSP	IN

h. Perform UUT Hookup.

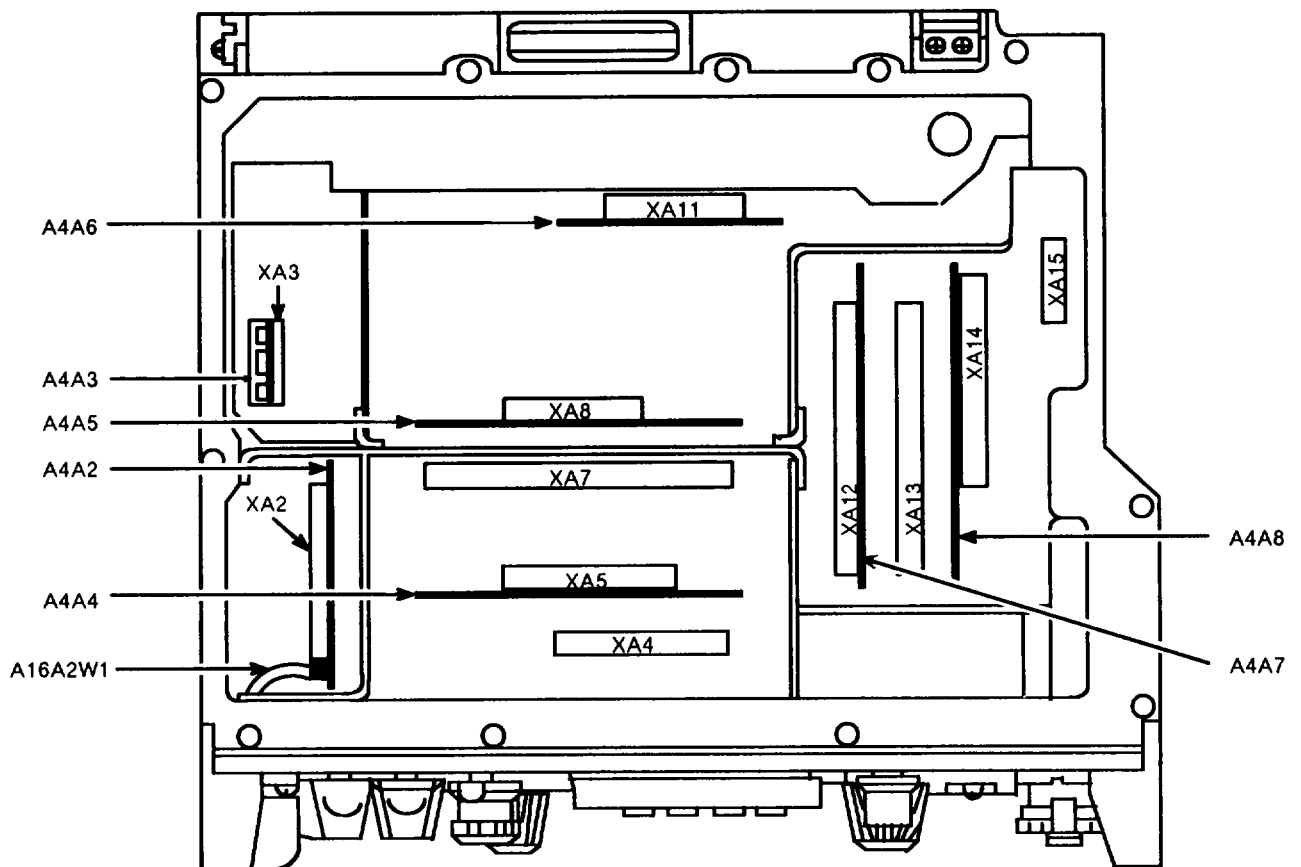
(1) Install jumper cards and cables as shown in fig. 3-7.

(2) Connect W13 to RT Chassis as directed by the test program.

(3) Install BNC connector on rt ANT connector when directed by the test program.

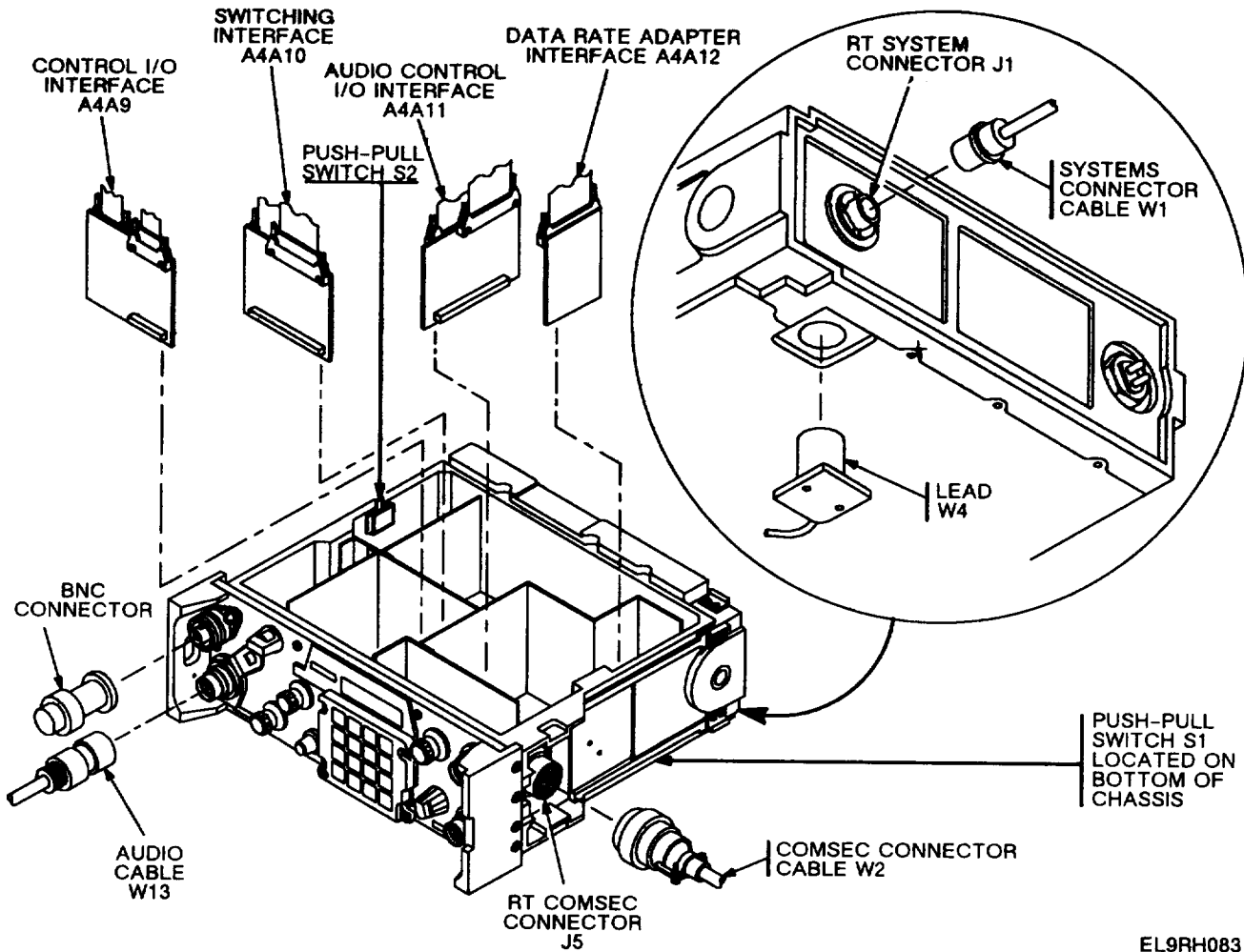
i. Disassemble UUT as required by the test program. See fig. 3-8 for procedures.

INITIAL INSTALLATION INSTRUCTIONS			
JUMPER CARDS	CHASSIS CONNECTOR	INTERFACE OR CABLE	CHASSIS CONNECTOR
A4A2	XA2	A4A9	XA4
A4A3	XA3	A4A10	XA7
A4A4	XA5	A4A11	XA13
A4A5	XA8	A4A12	XA15
A4A6	XA11	W1	J1
A4A7	XA12	W2	J5
A4A8	XA14	W4	BATTERY COMPARTMENT
A4A2J1	A16A2W1		



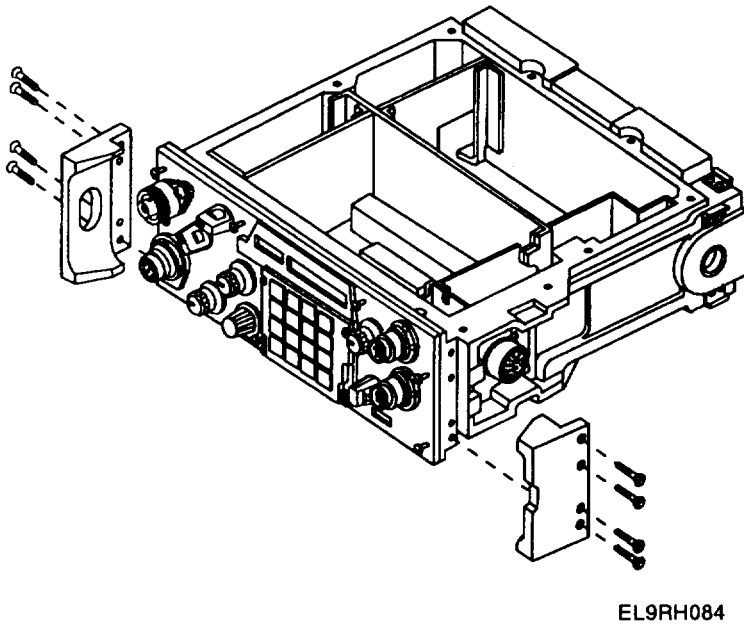
EL9RH082

Figure 3-7. Installation of UUT on ICD (Sheet 1 of 2)

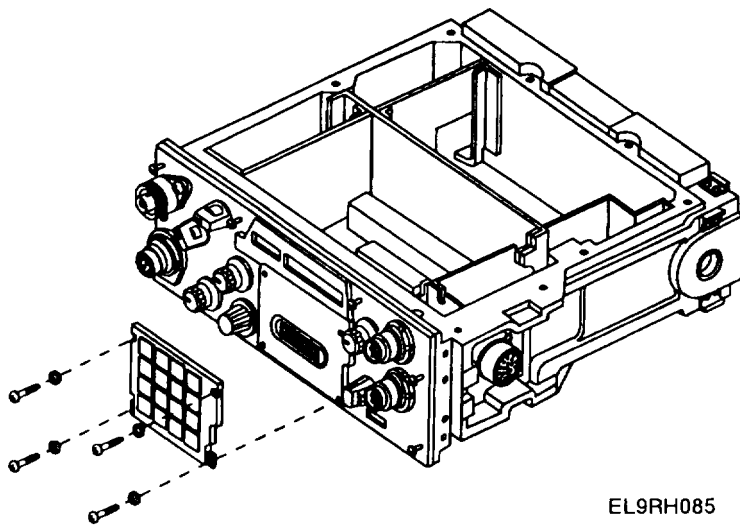


EL9RH083

Figure 3-7. Installation of UUT on ICD. (Sheet 2 of 2)

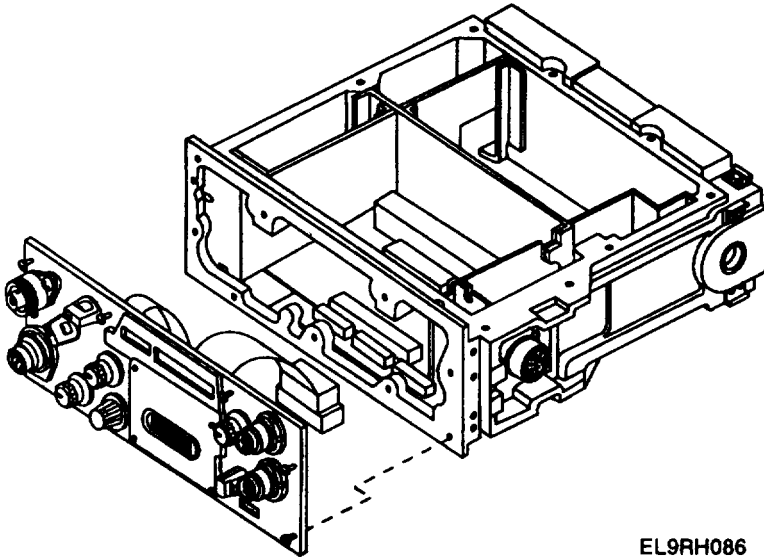


- DISASSEMBLY PROCEDURES:
- Ž REMOVE FOUR SCREWS EACH FROM HANDLE AND GUARD ASSEMBLIES.
 - Ž REMOVE HANDLES AND GUARDS AND SET TO ONE SIDE.



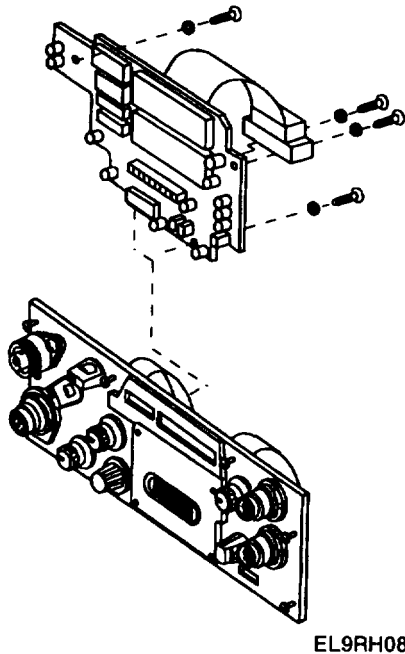
- REMOVE FOUR SCREWS AND WASHERS FROM KEYPAD.
- REMOVE KEYPAD AND SET TO ONE SIDE,

Figure 3-8. Installation of Diagnostic Shelf for Testing Display Module (Sheet 1 of 3)



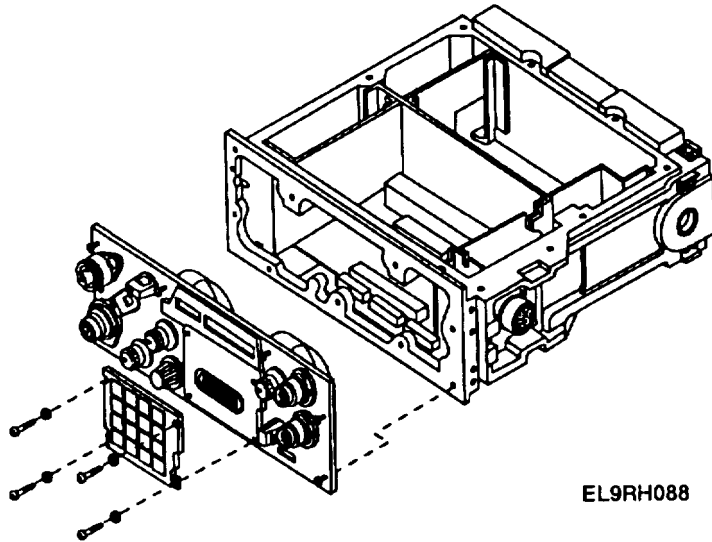
DISASSEMBLY PROCEDURES:

- LOOSEN NINE CAPTIVE SCREWS ON THE FRONT PANEL.
- DISCONNECT CONNECTORS P1, P2, AND P3 BY EVENLY LOOSENING CAPTIVE CONNECTOR SCREWS.
- REMOVE MAIN CHASSIS AND SET TO ONE SIDE.



- REMOVE FOUR SCREWS AND WASHERS FROM CCA-DISPLAY AND SET TO ONE SIDE
- REMOVE CCA-DISPLAY FROM FRONT PANEL AND SET TO ONE SIDE

Figure 3-8, Installation of Diagnostic Shelf for Testing Display Module (Sheet 2 of 3)



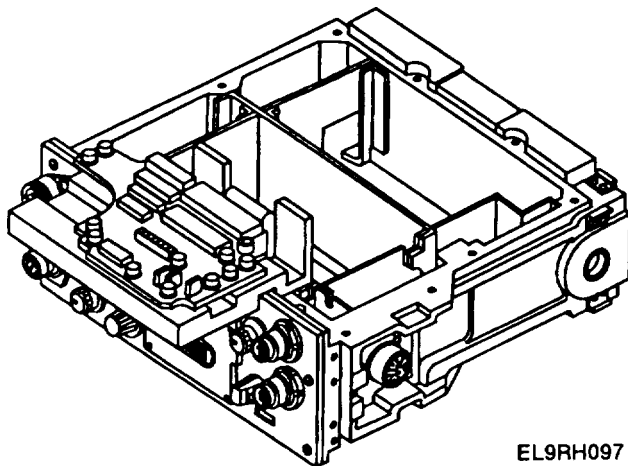
EL9RH088

- ASSEMBLY PROCEDURES:
- Ž CONNECT P1 TO J1.
 - Ž CONNECT P3 TO J3.
 - INSTALL FRONT PANEL ASSEMBLY ON MAIN CHASSIS.
 - LOOSELY INSTALL SCREWS IN FRONT PANEL. (DO NOT TIGHTEN SCREWS) .

NOTE

THE KEYPAD IS INSTALLED FOR FUNCTIONAL (GO/NO-GO) TESTING OF THE RT SUBASSEMBLY.

THE KEYPAD IS REMOVED FOR DIAGNOSTIC TESTING. FOLLOW THE INSTRUCTIONS ON THE DCT PRINTED TAPE.

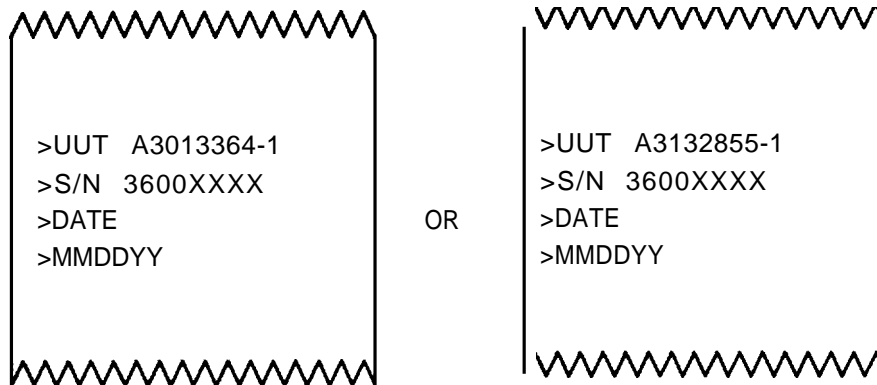


EL9RH097

- Ž INSTALL SHELF ON TOP OF RT FRONT PANEL CHASSIS.
- Ž PLACE CCA-DISPLAY ON SHELF.
- CONNECT P2 TO J2 .
- INSTALL KEYPAD ON CCA-DISPLAY.

Figure 3-8. Installation of Diagnostic Shelf for Testing Display Module (Sheet 3 of 3)

j. Verify that the following information is printed:

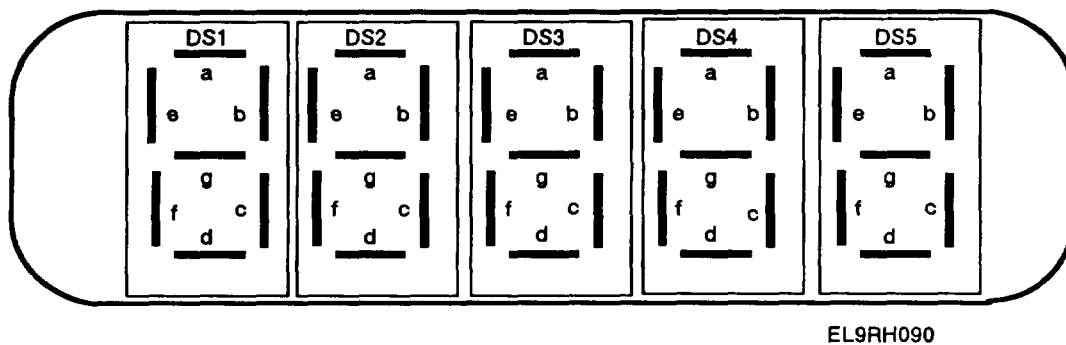


k. Test UUT.

NOTE

If the UUT passes all TPS tests wire number three maybe bad. This wire is connected between E71 and E27 on the backplane. The shield is connected to E74. Use the ohmmeter on the AN/USM-465A to test the continuity of this wire.

- (1) Check continuity of backplane wire number three if all TPS tests are passed.
- (2) Probe CCA-display as required. Observe the front of the RT chassis display (fig. 3-9) to identify dark (unlit) light emitting diode (LED) segments.



EL9RH090

Figure 3-9. Light Emitting Diode Segment Identification.

- (3) Each display segment is driven by U1. If a segment is not lit refer to Table 3-1 to identify the U1 driver pin associated with it.

Table 3-1. Identification of U1 Segment Driver Pins.

DS1		DS2		DS3		DS4		DS5	
SEGMENT	U1	SEGMENT	U1	SEGMENT	U1	SEGMENT	U1	SEGMENT	U1
a	29	a	36	a	4	a	11	a	18
b	28	b	35	b	3	b	10	b	17
c	27		34	c	2	c	9	c	16
d	26	d	33	d	40	d	8	d	15
e	25	e	32	e	39	e	7	e	14
f	24	f	31	f	38	f	6	f	13
g	23	g	30	g	37	g	5	g	12

l. Check backplane traces for opens and shorts. Refer to Table 3-2 for wiring data.

m. Repeat or terminate testing,

- (1) Follow operator instructions to repeat tests or terminate testing.
- (2) Remove ICD and UUT as required.
- (3) When testing UUT has been completed, remove test results from printer. Forward test results along with UUT to the next work station.

Table 3-2. Wiring Data.

FROM	TO	FROM	TO	FROM	TO	FROM	TO	FROM	TO
A1-A	A2-R	A1-E	A9-E	A2-V	A4-29	A4-15	A12-55	A4-61	J2-FF
A1-A	A3-J	A1-E	A10-E	A2-W	A6-L	A4-16	A12-42	A5-A	A7-17
A1-A	A3-N	A1-E	A11-C	A2-X	A6-C	A4-17	A7-61	A5-C	A7-16
A1-A	A4-8	A1-E	E19	A2-A	A6-J	A4-18	J1-P	A5-F	A6-E
A1-A	A5-H	A1-F	NIC	A2-B	A6-H	A4-19	A11-K	A5-F	A12-40
A1-A	A6-X	A1-Q	A2-I	A2-C	A4-47	A4-19	J2-W	A5-G	A8-N
A1-A	A7-77	A1-G	A4-48	A2-D	A7-49	A4-20	A7-2	A5-I	A7-34
A1-A	A8-P	A1-G	A9-D	A2-E	A7-48	A4-20	A12-43	A5-J	A7-37
A1-A	A9-F	A1-G	A11-K	A2-F	N/C	A4-21	E1O	A5-K	A7-38
A1-A	A10-J	A1-Q	A11-A	A2-G	A4-1	A4-21	J2-P	A5-L	A7-41
A1-A	A11-X	A1-G	E23	A2-H	A2-K	A4-22	A6-B	AS-M	A7-40
A1-A	A12-47	A1-G	J3-R	A2-I	A4-47	A4-22	A7-52	A5-M	A8-A
A1-A	E56	A1-H	N/C	A2-I	E57	A4-22	J1-DD	A5-M	A12-70
A1-A	J1-KK	A1-1	A4-51	A2-J	A7-53	A4-23	A11-M	A5-N	A7-31
A1-A	J2-E	A1-1	A9-H	A2-L	A6-G	A4-23	J2-H	A5-N	A6-B
A1-A	R3-1	A1-1	A10-G	A2-M	A6-G	A4-24	E69	A5-N	A13-74
A1-B	A2-Y	A1-1	A11-G	A2-N	A4-50	A4-25	A7-75	A5-O	TEST
A1-B	A2-Z	A1-1	E17	A2-N	J2-B	A4-26	E-20		POINT
A1-B	A3-D	A1-J	N/C	A2-O	A6-V	A4-26	R7-2	A5-P	A12-63
A1-B	A3-H	A1-K	N/C	A3-B	A3-C	A4-54	A7-8	A5-Q	A12-51
A1-B1	A3-L	A1-L	N/C	A3-B	E76	A4-27	A12-56	A5-R	A8-D
A1-B	A4-6	A1-M	A3-M	A3-E	A6-F	A4-28	J1-Y	A5-S	A12-54
A1-B	A5-E	A1-M	A3-R	A3-F	A5-D	A4-29	A2-V	A5-T	A12-44
A1-B	A5-V	A1-N	N/C	A3-F	A6-Z	A4-30	E7	A5-U	J2-HH
A1-B	A5-Z	A1-O	N/C	A3-F	A7-72	A4-30	J1-U	A5-W	A12-68
A1-B	A6-B	A1-P	N/C	A3-F	A8-O	A4-31	J1-NN	A5-X	A7-63
A1-B	A6-F	A1-Q	A3-A	A3-F	A9-A	A4-32	J1-LL	A5-Y	A7-59
A1-B	A7-I	A1-Q	A11-R	A3-F	A1-H	A4-33	J1-M	A5-A	A7-57
A1-B	A7-25	A2-A	A4-3	A3-F	A11-D	A4-34	J1-X	A5-A	A8-C
A1-B	A7-74	A2-A	A11-L	A3-F	A12-57	A4-35	J1-Z	A5 -	TEST
A1-B	A6-H	A2-B	A7-46	A3-F	J2-A	A4-36	J1-F		POINT
A1-B	A6-I	A2-C	N/C	A3-K	A5-B	A4-37	TEST	A5-E	E73
A1-B	A8-J	A2-D	E48	A3-K	A6-T		POINT	A5-F	A7-51
A1-B	A9-I	A2-E	A4-54	A3-K	A7-76	A4-38	A7-45	A5-G	A7-35
A1-B	A10-C	A2-F	A6-U	A3-K	A8-Q	A4-38	A11-1	A6-A	A7-28
A1-B	A10-N	A2-F	A7-3	A3-K	A9-C	A4-38	A12-46	A6-D	N/C
A1-B	A11-B	A2-F	A12-52	A3-K	A10-F	A4-38	E18	A6-E	A7-20
A1-B	A12-36	A2-G	A7-13	A3-K	A11-F	A4-38	E58	A6-N	N/C
A1-B	A12-37	A2-G	A12-62	A3-K	A12-41	A4-38	J1-V	A6-O	E72
A1-B	A12-38	A2-H	N/C	A3-K	E60	A4-38	J2-KK	A6-P	N/C
A1-B	A12-39	A2-I	A1-G	A4-2	J2-F	A4-39	E52	A6-Q	E71
A1-B	J1-D	A2-I	A4-48	A4-4	A7-24	A4-40	J1-R	A6-R	N/C
A1-B	J2-BB	A2-I	A10-K	A4-4	A10-A	A4-41	A7-50	A6-S	N/C
A1-B	J3-H	A2-I	A11-A	A4-4	A11-W	A4-41	J1-T	A6-Y	A7-12
A1-B	E9	A2-I	E23	A4-5	A5-D	A4-42	A7-44	A6-Y	A12-61
A1-B	E49	A2-I	J2-R	A4-5	J2-U	A4-42	J1-L	A6-C	A7-73
A1-B	E50	A2-J	J2-C	A4-5	A7-66	A4-43	E67	A7-4	A12-48
A1-B	E59	A2-K	N/C	A4-7	E64	A4-44	J1-N	A7-5	A12-49
A1-B	E61	A2-L	A4-11	A4-9	J1-B	A4-45	A2-T	A7-6	A12-45
A1-B	E74	A2-M	A6-X	A4-10	A7-22	A4-45	E68	A7-7	A12-53
A1-B	E77	A2-N	A4-12	A4-10	A11-P	A4-46	A5-C	A7-9	A12-58
A1-B	E78	A2-N	A6-M	A4-13	A7-65	A4-46	J1-J	A7-10	A12-59
A1-B	E79	A2-O	A6-W	A4-13	A10-I	A4-52	J2-DD	A7-11	A12-60
A1-C	A-2C	A2-P	A6-D	A4-13	A11-Y	A4-53	J2-JJ	A7-11	E14
A1-C	A7-23	A2-Q	A6-K	A4-13	A12-77	A4-54	A2-E	A7-14	N/C
A1-C	A1 1-J	A2-R	A3-J	A4-13	J1-K	A4-55	J2-N	A7-15	A12-67
A1-C	A1 1-J	A2-R	A3-N	A4-13	J2-AA	A4-56	J2-NN	A7-18	E62
A1-C	E8	A2-S	A6-I	A4-13	R4-1	A4-57	J2-J	A7-19	J1-E
A1-C	N/C	A2-T	E68	A4-14	E15	A4-59	J2-T	A7-21	J1-C
A1-E	A4-49	A2-U	A4-58	A4-15	A7-43	A4-60	J2-X	A7-26	A11-V

Table 3-2. Wiring Data. (Cont)

FROM	TO	FROM	TO	FROM	TO
A7-27	E-51	A12-23	A15-B	A13-48	N/C
A7-29	A12-72	A12-24	A13-42	A13-55	E34
A7-30	J1-W	A12-25	A13-31	A13-56	A15-M
A7-32	J1-AA	A12-26	A13-24	A13-57	E44
A7-33	E63	A12-27	A14-K	A13-59	N/C
A7-36	A8-M	A12-28	A13-45	A13-60	N/C
A7-39	A12-64	A12-28	A15-O	A13-62	N/C
A7-54	A12-69	A12-29	A13-53	A13-63	N/C
A7-55	N/C	A12-30	A13-54	A13-64	E33
A7-56	A12-73	A12-31	A13-13	A13-65	E43
A7-58	A12-50	A12-32	A15-P	A13-67	A14
A7-60	A1O-B	A12-33	A15-Q	A13-68	E42
A7-60	A11-U	A12-34	A13-16	A13-74	E31
A7-62	J1-H	A12-34	A15-C	A13-75	E41
A7-67	E55	A12-35	A13-37	A13-76	E30
A7-68	E53	A12-65	N/C	A13-77	E40
A7-69	E65	A12-66	N/C	A14-A	J3-V
A7-70	E54	A12-71	N/C	A14-D	J3-K
A7-71	E66	A12-75	E12	A14-H	E16
A8-E	TEST POINT	A12-76	E6	A14-N	J3-W
A8-L	J2-MM	A13-I	A14-B	A14-P	JP4
A9-G	A11-T	A13-2	A15-G	A14-Q	J3-Z
A10-Q	A11-H	A13-3	A15-F	A14-R	E11
A10-Q	E75	A13-4	A14-O	A14-V	J3-E
A11-N	J2-M	A13-5	A14-I	A14-X	J3-S
A11-O	E3	413-7	E36	A14-A	J3-T
A11-Q	E2	A13-8	J3-X	A14-C	J3-F
A11-W	E1	A13-9	A15-	A14-D	N/C
A12-I	A12-70	A13-10	E46	A14-F	J3-H
A12-I	A14-O	A13-11	A14-M	A14-G	J3-N
A12-2	A13-69	A13-12	A15-D	A14-J	J3-B
A12-2	A14-M	413-14	A14-W	A15-B	J3-R
A12-2	A15-I	413-15	A14-C	A15-C	J3-U
A12-2	J3-C	413-18	A14-G	A15-D	J3-D
A12-3	A13-71	413-19	A14-E	A15-E	J3-A
A12-3	A4-I	413-20	A14-S	A15-F	J3-B
A12-4	A14-U	413-21	A15-A	A15-G	J3-E
A12-5	E38	A13-22	A14-Y	A15-H	J3-J
A12-6	A14-L	A13-23	A15-Z	J1-A	E70
A12-7	E28	A13-25	A15-Y	J1-S	J2-L
A12-8	A14-H	A13-25	J3-D	J1-BB	E80
A12-9	J3-C	A13-26	J3-M	J1-BB	E82
A12-10	E39	A13-27	A15-X	J1-CC	J2-K
A12-11	E29	A13-27	J3-A	J1-CC	R7-1
A12-12	A14-E	A13-28	A15-W	J1-CC	R8-2
A12-13	13-72	A13-29	J3-Y	J1-FF	J2-CC
A12-13	A14-N	A13-30	A14-B	J1-FF	E81
A12-14	A15-J	A13-30	JP2	J1-FF	D83
A12-15	A14-I	A13-32	A15-V	J1-HH	J2-V
A12-16	N/C	A13-33	A14-T	J1-JJ	J2-Y
A12-17	N/C	A13-34	E35	J2-S	E4
A12-18	A13-58	A13-36	A15-T	E5	JP1
A12-18	A15-L	A13-38	A15-S	E13	JP3
A12-19	A13-49	A13-39	N/C		
A12-20	A13-6	A13-30	A15-R		
A12-21	A13-61	A13-41	E45		
A12-22	A13-35	A13-43	N/C		
A12-22	A15-U	A13-44	N/C		
A12-23	A13-17	A13-46	N/C		
		A13-47	A15-N		

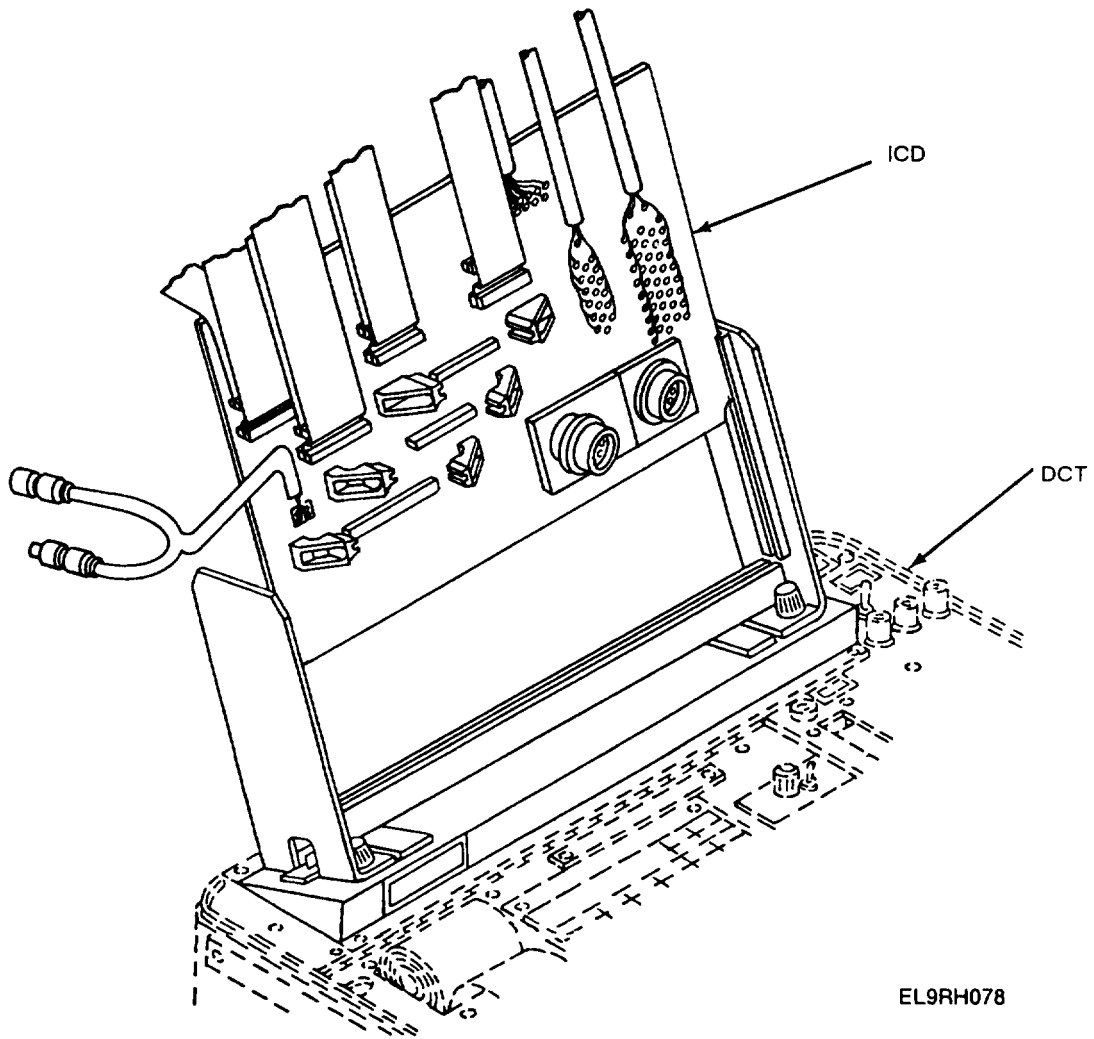


Figure 3-10. Installation of ICD-D for Receiver-Transmitter Chassis

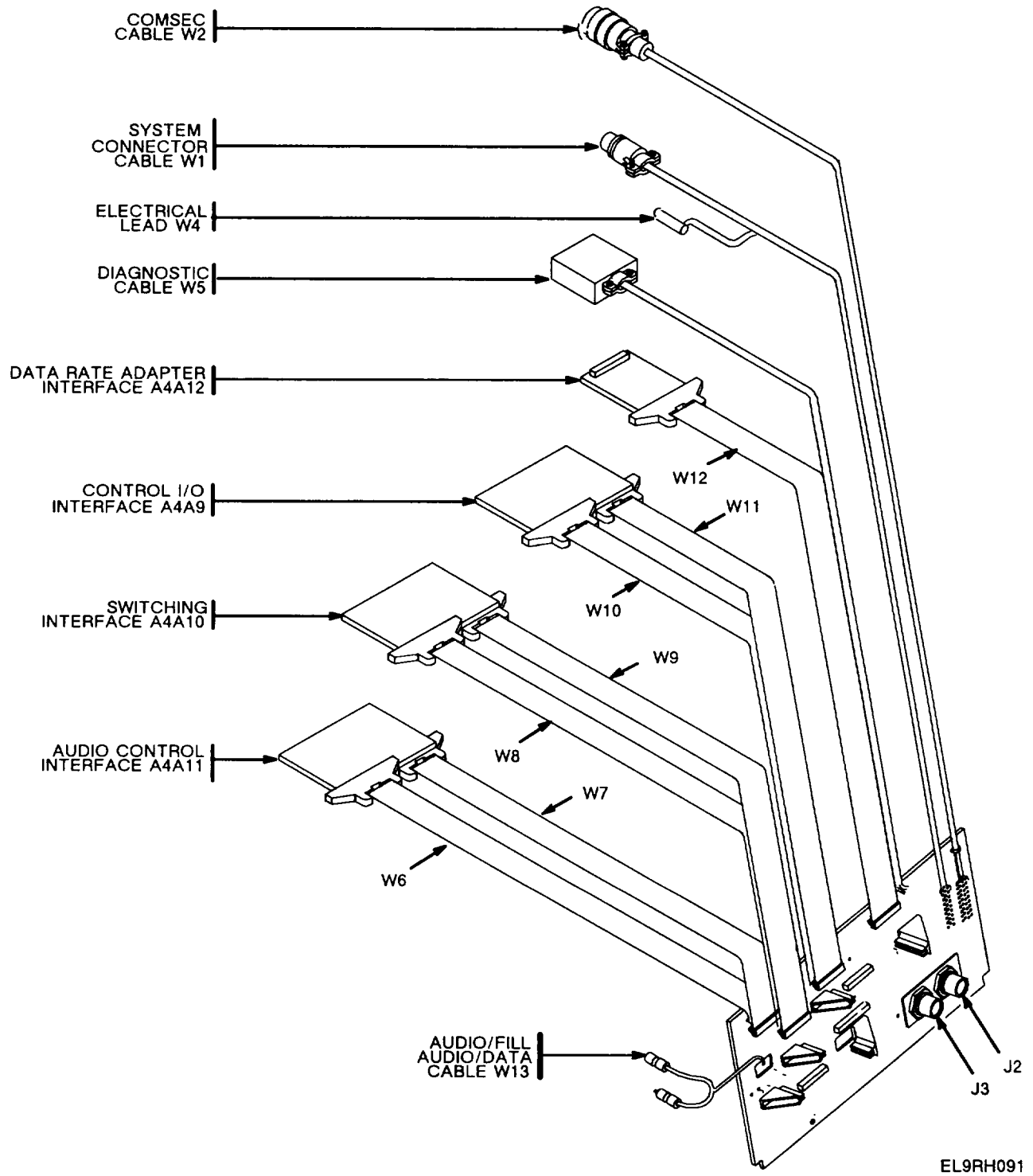
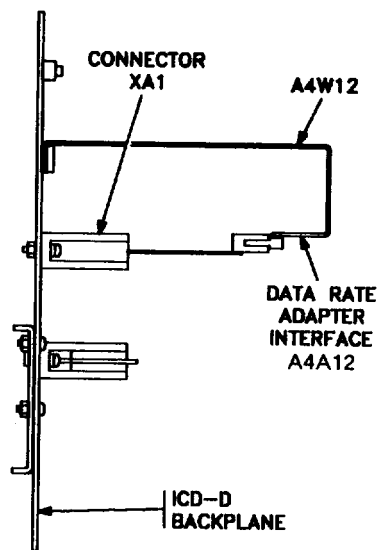
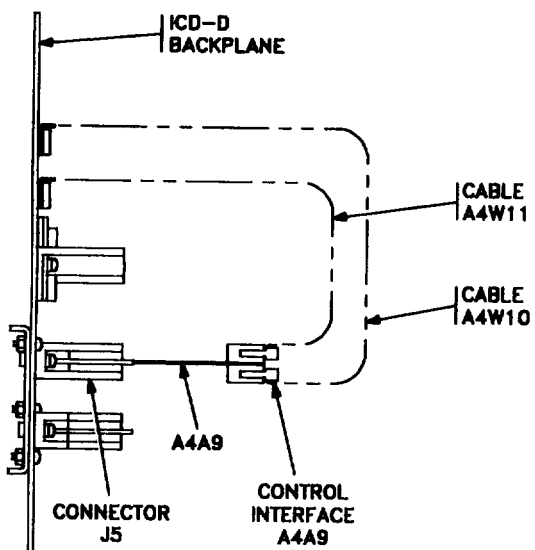
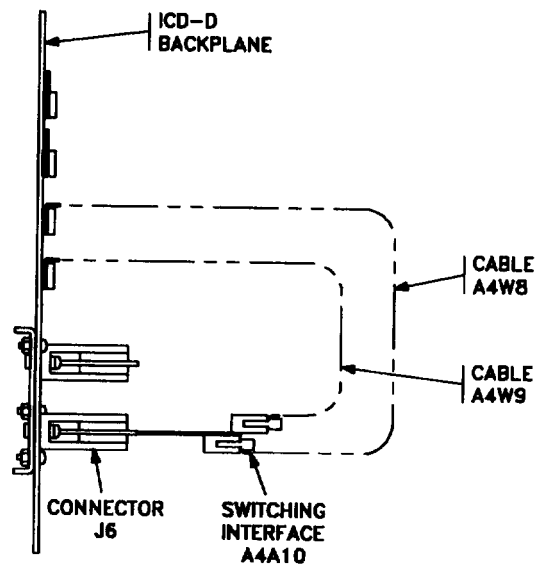
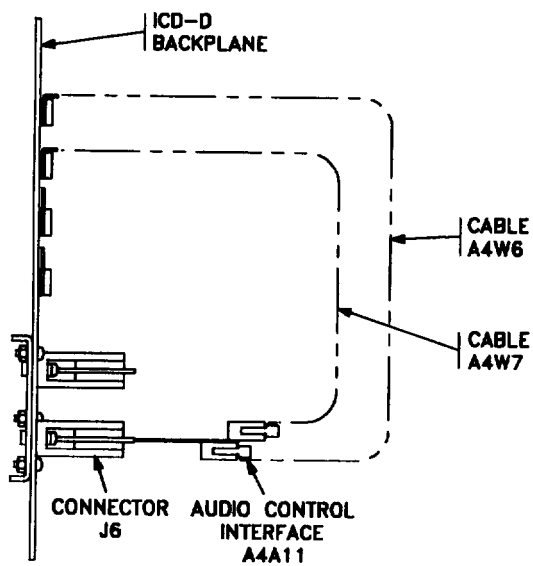
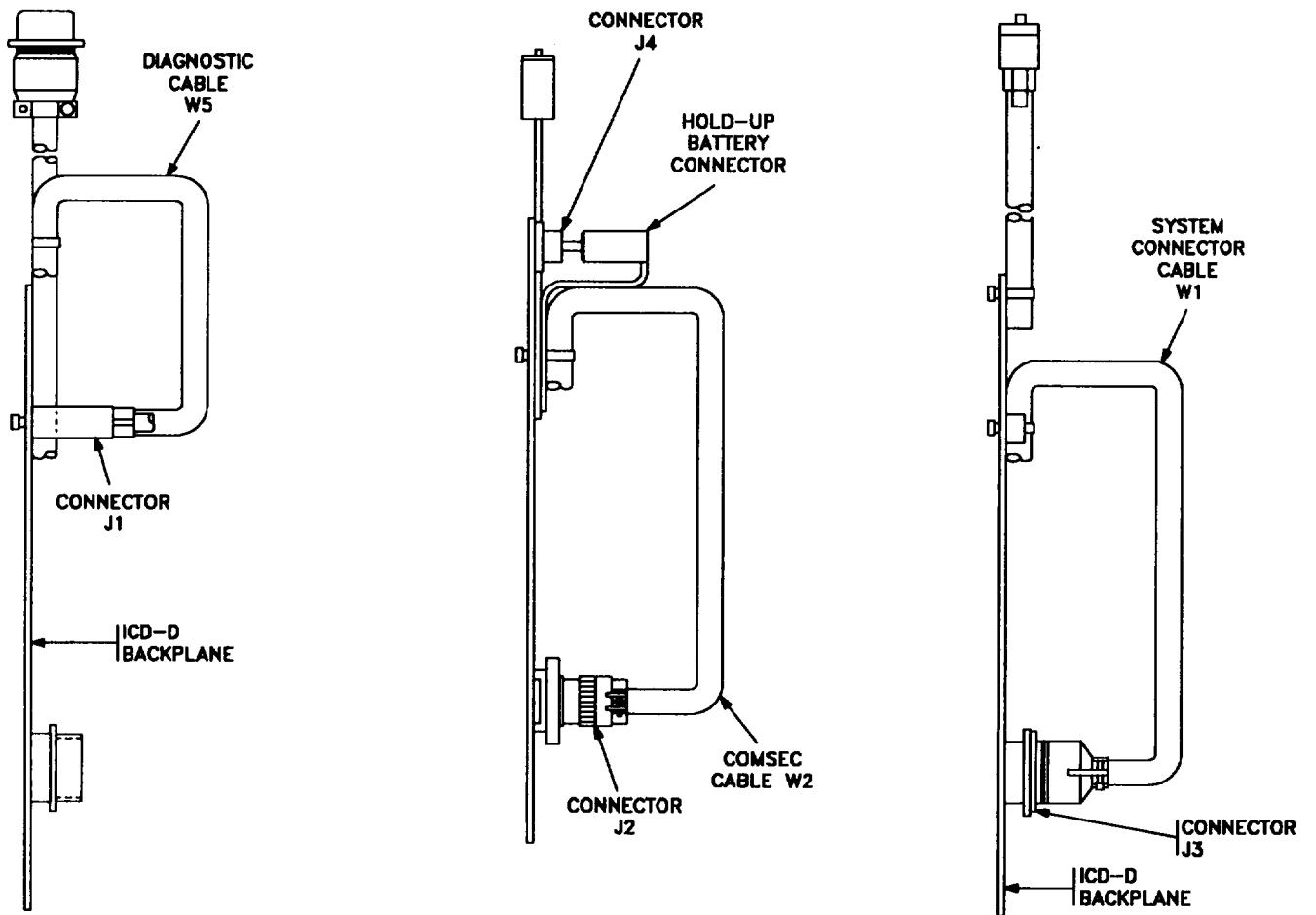


Figure 3-11. ICD-D Interface and Cable Location



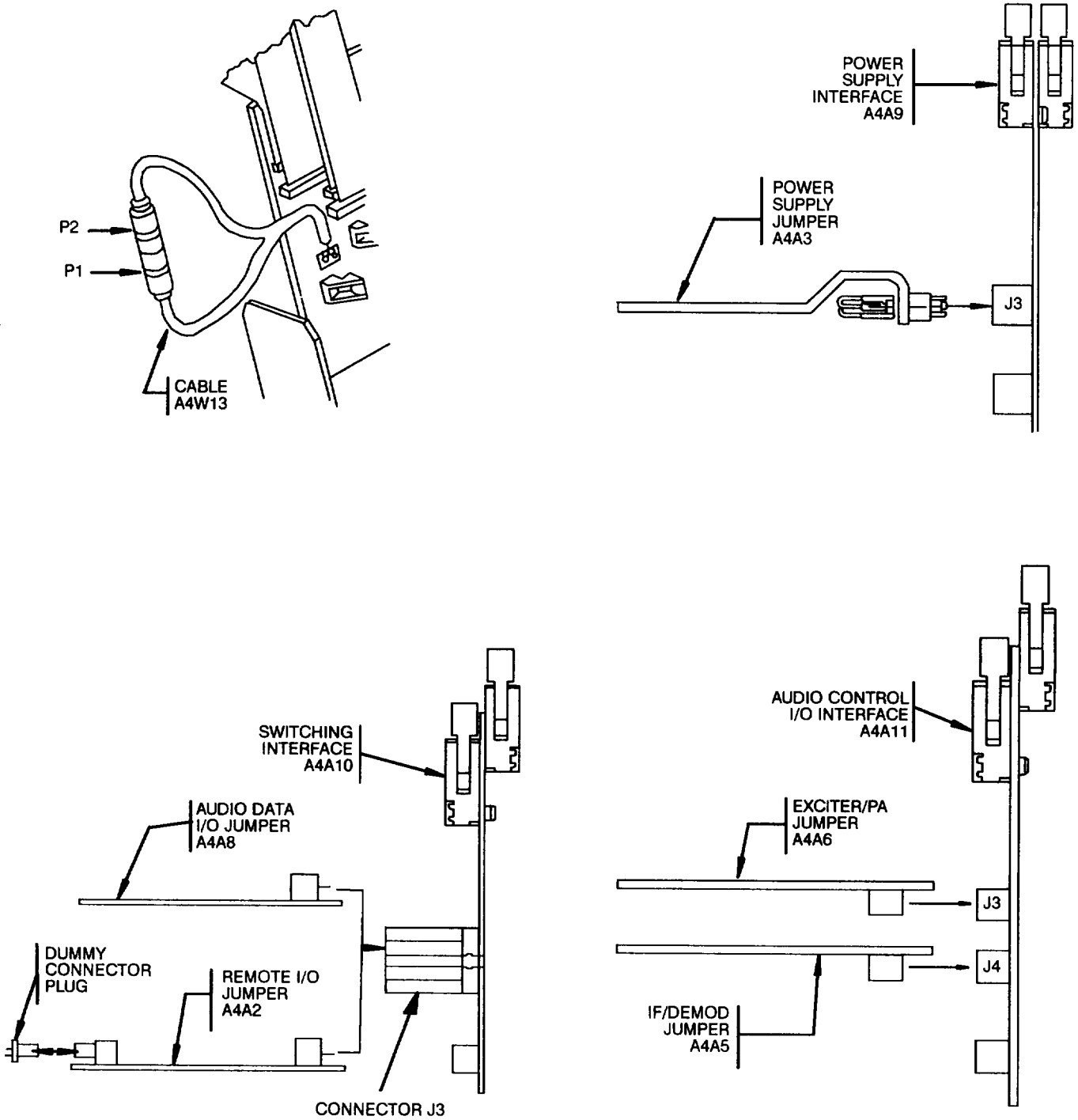
EL9RH092

Figure 3-12. Self-Test Intraconnections (Sheet 1 of 4)



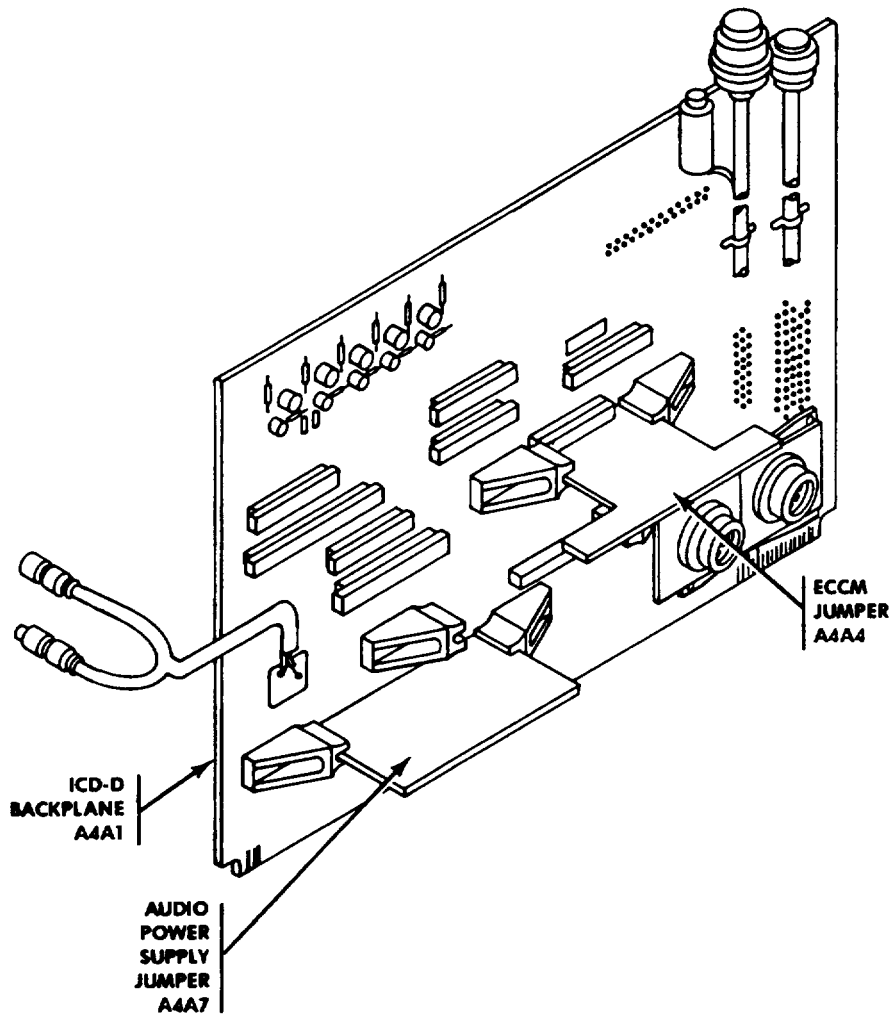
EL9RH093

Figure 3-12. Self-Test Intraconnections (Sheet 2 of 4)



EL9RH094

Figure 3-12. Self-Test Intraconnections (Sheet 3 of 4)



EL9RH095

Figure 3-12. Self-Test Intraconnections (Sheet 4 of 4)

3-3. CCA-Audio Control A3014138-1 (1A13).

The following procedure is used to perform Go/No-Go testing on CCA-audio control A3014138-1 (1A13) (see fig. 3-13), Return failed assemblies to depot for repair.

<p style="text-align: center;">REQUIRED TEST ACCESSORIES</p> <p>Ž Test Program Tape , CPIN CP1300030G</p> <ul style="list-style-type: none">• ICD-A A3014256-1• Self-Test Card A A3018512-1

- a. Turn on digital card tester AN/USM-465A.
- b. Perform operational procedures in accordance with TM 11-6625-3038-10.

NOTE

This program requires AN/USM-465A software version 2.0 be installed.

- c. Load test program.
 - (1) Install test program tape CPIN CP1300030G in digital card tester in accordance with TM 11-6625-3038-10.
 - (2) Enter LOAD 0, then press EXECUTE.
 - (3) When READY appears on the display, type RUN and press EXECUTE.
 - (4) Verify that the following information is printed:

```

┌───────────────────────────────────────────────────────────────────────────────────┐
│ >ENTER THE LAST FOUR                                                             │
│ >DIGITS OF THE UUT                                                               │
│ >P/N A301 ????-1                                                                │
│ >PRESS EXECUTE                                                                   │
└───────────────────────────────────────────────────────────────────────────────────┘

```

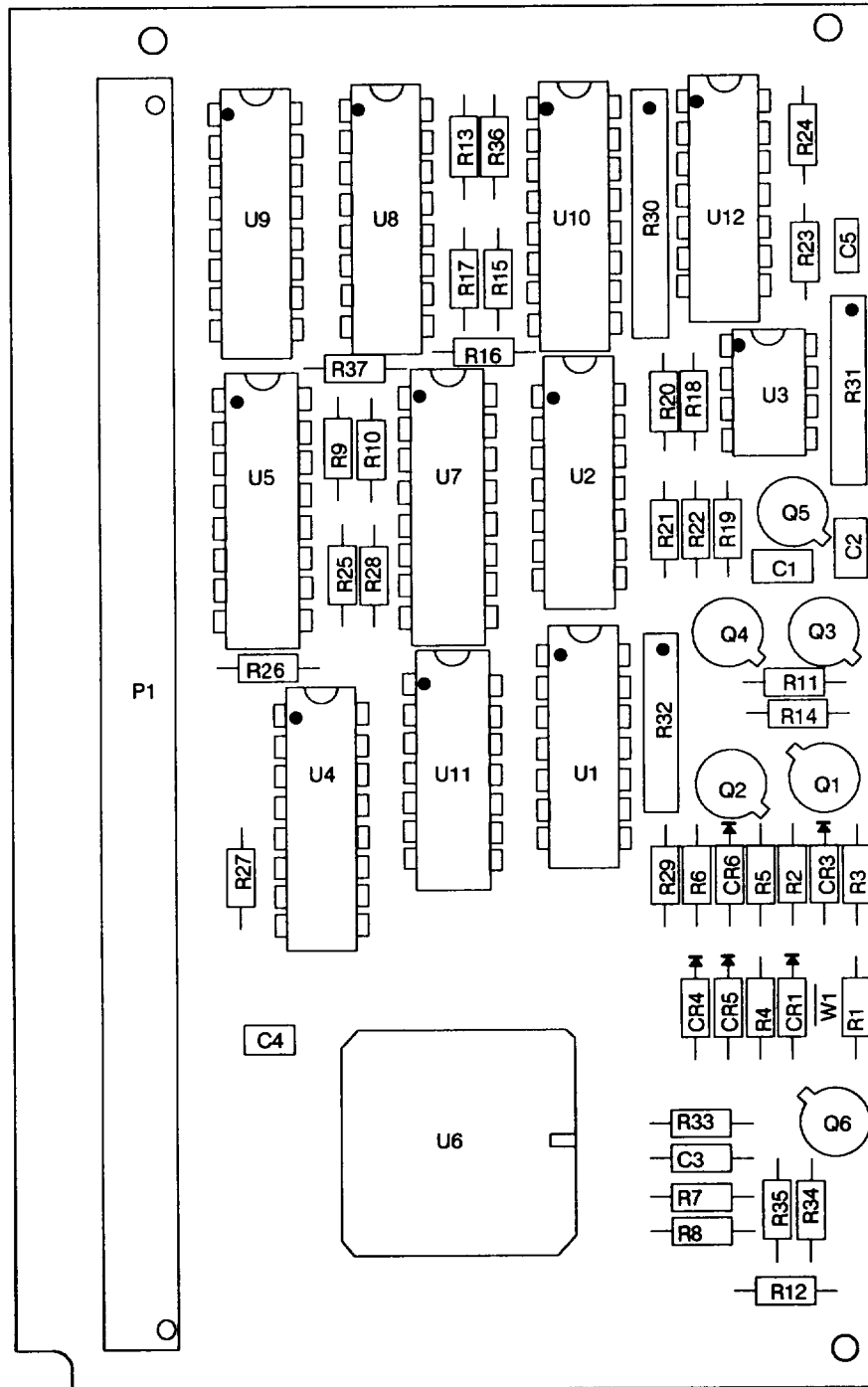


Figure 3-13. CCA-Audio Control (1A13) A3014138-1

CE1UG001

THEN

```
>PRINT PROGRAM NOTES?  
>ENTER YES OR NO,  
>PRESS EXECUTE
```

(5) Follow operator actions as instructed by program.

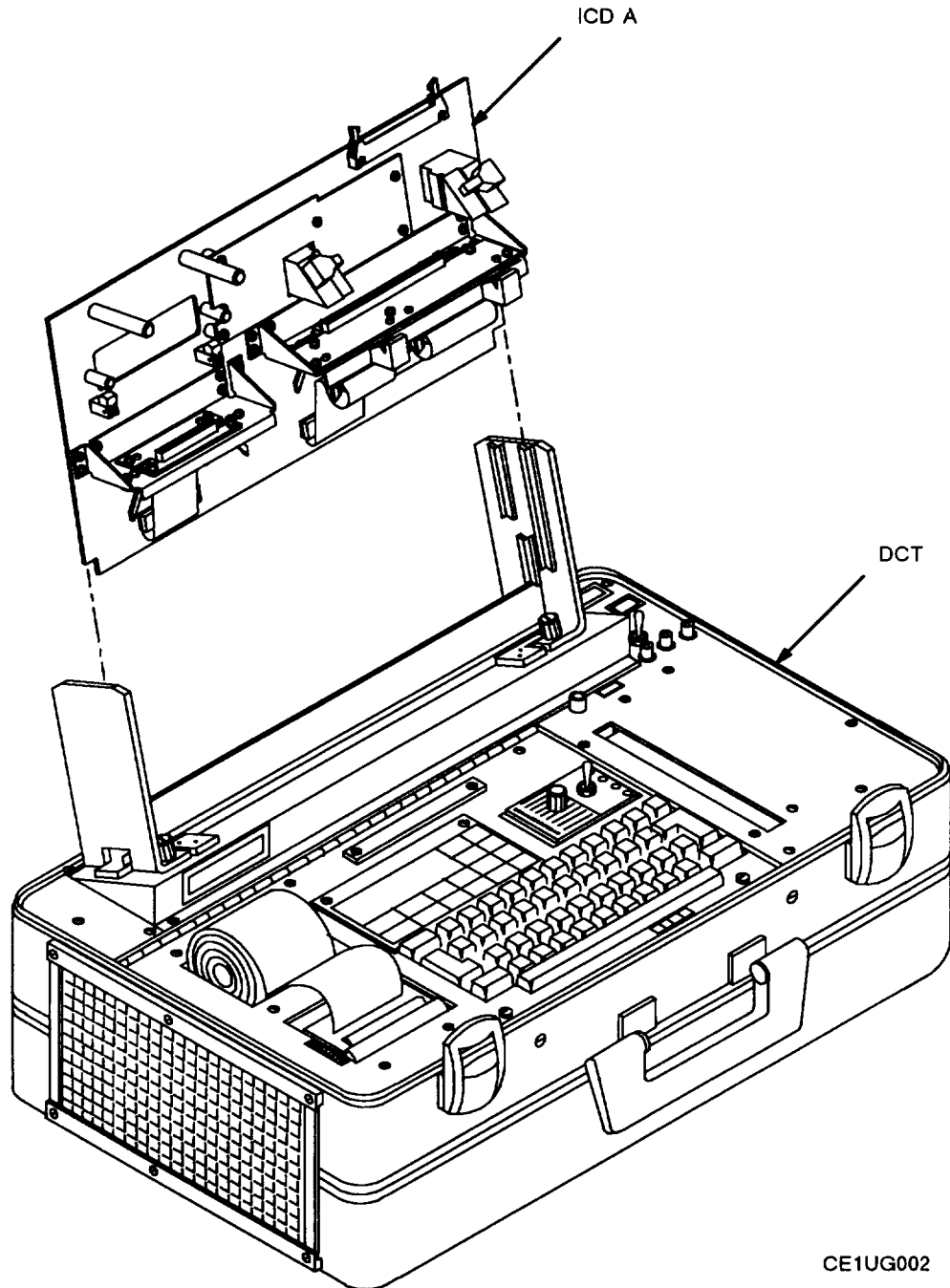
- d.* Run ATE survey test if desired. (If survey test fails, refer to TM 11-6625-3038-20.)
- e.* Install ICD-A on digital card tester (see fig. 3-14).
- f.* Run ICD survey test if desired, (If survey test fails, refer to TM 11-6625-3094-24.)
- g.* Perform UUT hookup (see fig. 3-15).
- h.* Verify that the following information is printed:

```
>UUT A3014138-1  
>S/N 2000XXXX  
>>DATE  
>MM DD YY
```

i. Test UUT.

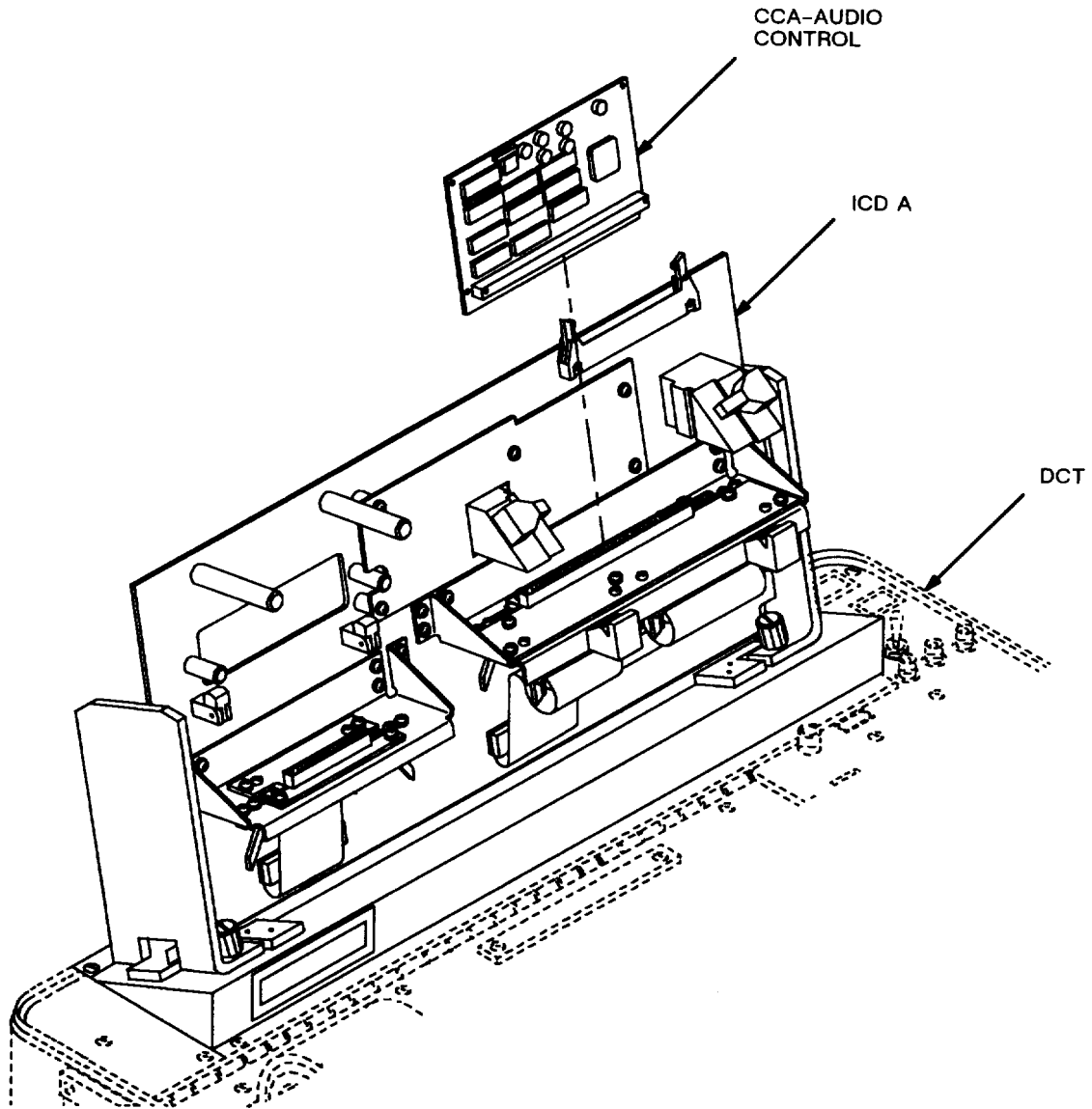
j. Repeat or terminate testing,

- (1) Follow operator actions to repeat tests or terminate testing.
- (2) Remove ICD and UUT as required.
- (3) If the test passes, return UUT to stock. If the test fails, return UUT to depot for repair.



CE1UG002

Figure 3-14. Installation of ICD-A for CCA-Audio Control A3014138-1



CE1UG003

Figure 3-15. Installation of CCA-Audio Control on ICD-A

3-4. Control-Monitor Chassis A3013377-1 Part of A3013347-1 (7A1A1).

The following procedure is used to perform Go/No-Go testing on the control-monitor chassis, 7A1A1, A3013377-1 part of A3013347-1 (see fig. 3-1 6), Return failed assemblies to depot for repair.

REQUIRED TEST ACCESSORIES

- Test Program Tape CPIN Cp150030G
- ICD-C A3014255-1

- a. Turn on digital card tester AN/USM-465A.
- b. Perform operational procedures in accordance with TM 11-6625-3038-10.

NOTE

This program requires AN/USM-465A software version 2.0 be installed.

- c. Load test program.
 - (1) Install test program tape CPIN CP1500030G in digital card tester in accordance with TM 11-6625-3038-10.
 - (2) Enter LOAD 0, then press EXECUTE.
 - (3) When READY appears on the display, type RUN and press EXECUTE.
 - (4) Verify that the following information is printed:

NOTE

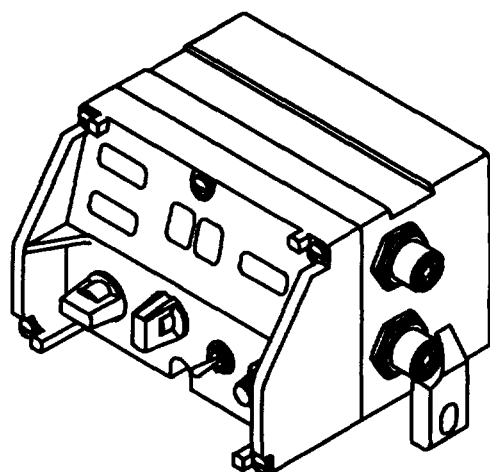
When prompted for part number, enter 3377.

>ENTER THE LAST FOUR
 >DIGITS OF THE UUT
 >P/N A301 ????-1
 >PRESS EXECUTE

THEN

```
>PRINT PROGRAM NOTES?  
>ENTER YES OR NO,  
>PRESS EXECUTE
```

- (5) Follow operator actions as instructed by program,
- d. Run ATE survey test if desired, (If survey test fails, refer to TM 11-6625-3038-20.)
- e. Install ICD-C (see fig. 3-18),
- f. Run ICD survey test if desired. (If survey test fails, refer to TM 11-6625-3094-24.)
- g. Perform UUT hookup (see fig. 3-19).

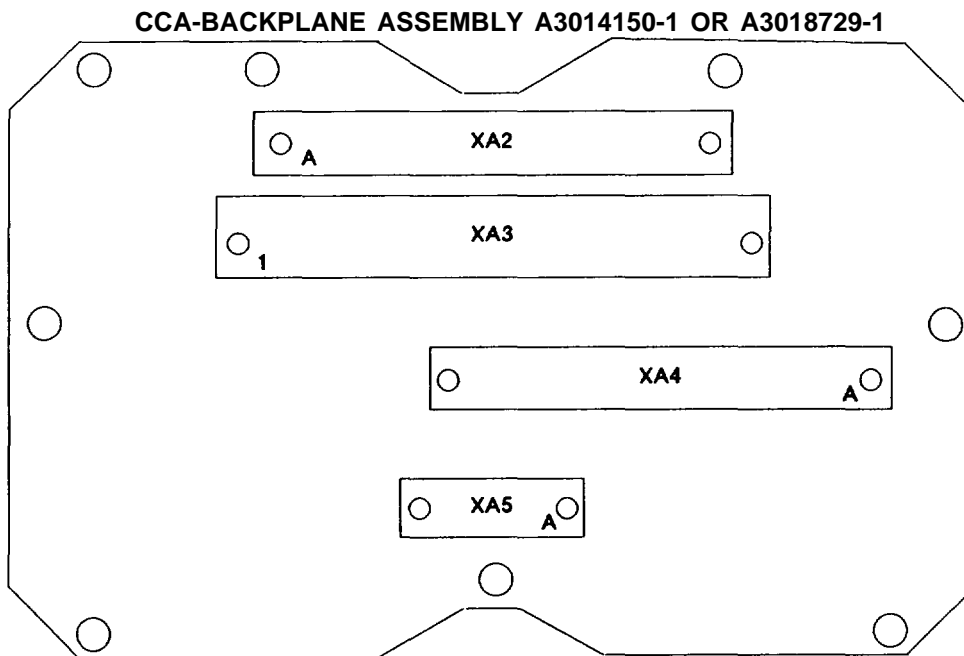


NOTE

THE REAR COVER OF THIS CHASSIS IS REMOVED AND INSTALLED AT A LOWER LEVEL OF MAINTENANCE.

CE1UG006

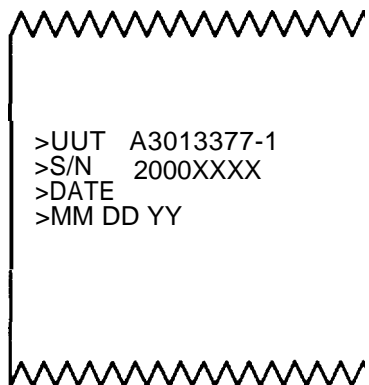
Figure 3-16. Chassis, Electrical Equipment-Control-Monitor (7A1A1) A3013377-1
Part of A3013347-1 (Sheet 1 of 2)



CE1UG008

**Figure 3-16. Chassis, Electrical Equipment-Control-Monitor (7A1A1) A3013377-1
Part of A3013347-1 (Sheet 2 of 2)**

h. Verify that the following information is printed:

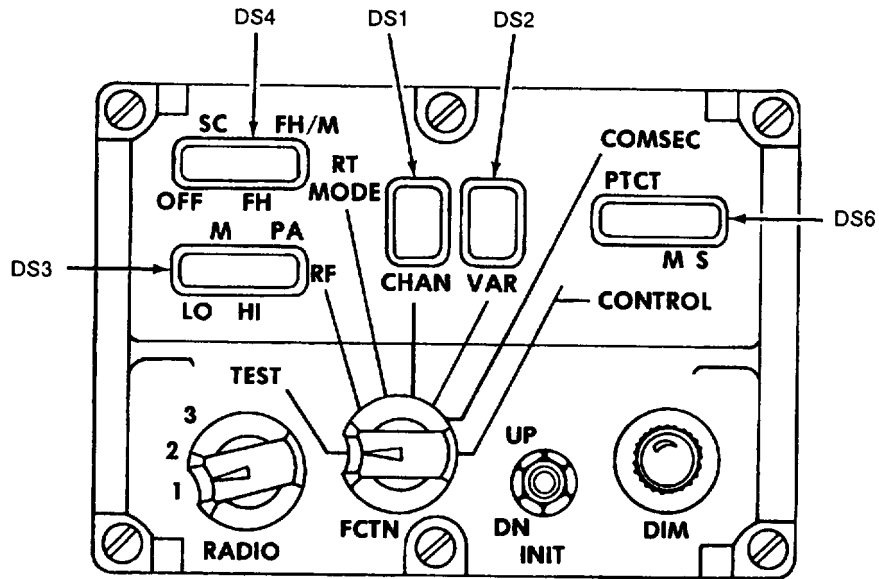


i. Test UUT.

- (1) Insert interface cards A3A2, A3A3, A3A4, and A3A5 into case (fig. 3-19).
- (2) Refer to fig. 3-17 to identify faulty light emitting diodes (LED) when prompted by test program.

NOTE

Use this figure to identify the faulty light emitting diode (LED) when prompted by the test program

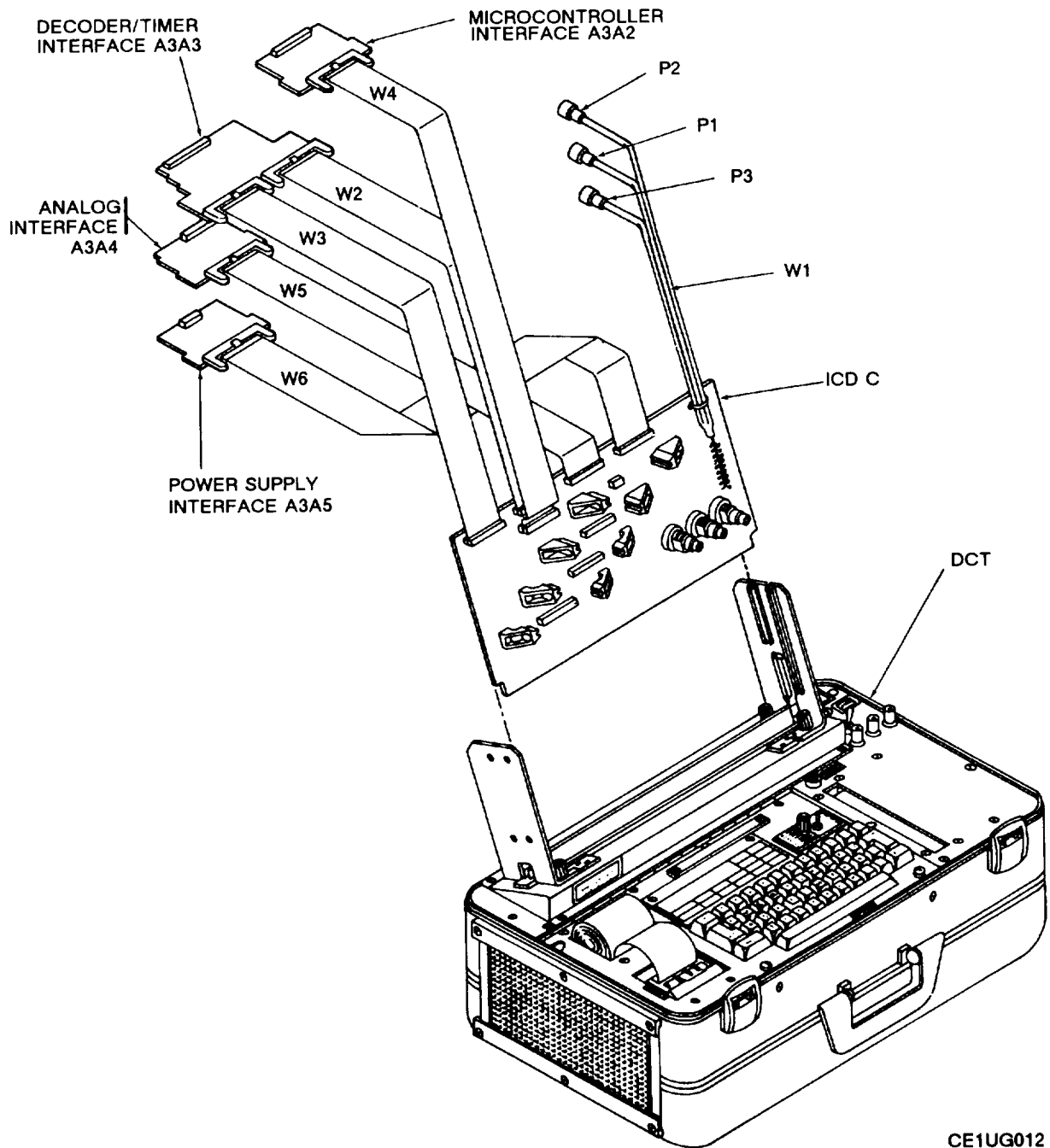


CE1UG009

Figure 3-17. Identification of Control-Monitor Display LEDs

j. Repeat or terminate testing.

- (1) Follow operator actions to repeat tests or terminate testing.
- (2) Remove ICD and UUT as required.
- (3) If the test passes, return UUT to stock. If the test fails, return UUT to depot for repair.



CE1UG012

Figure 3-18. Installation of ICD-C for Control-Monitor Chassis (7A1A1)

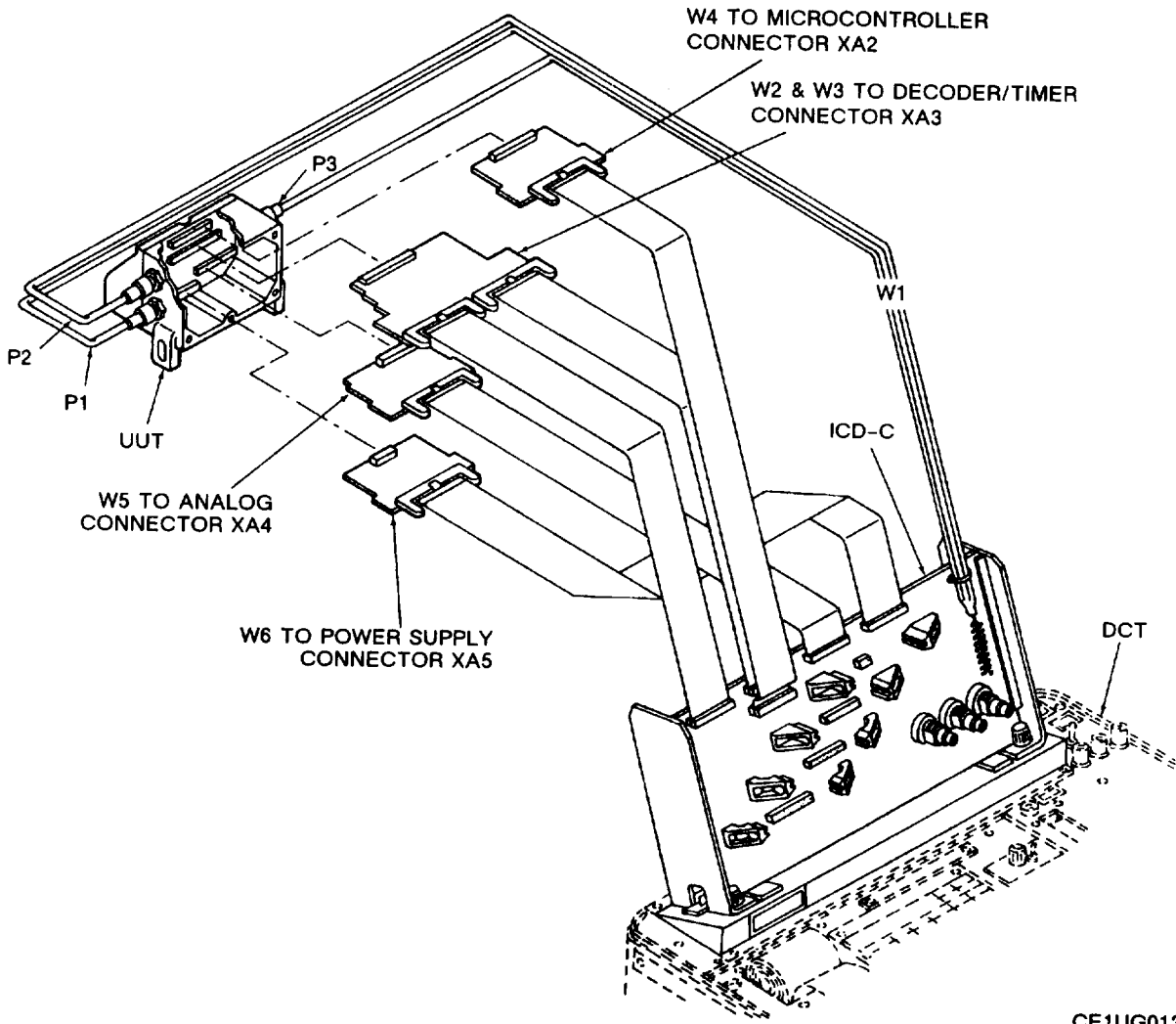


Figure 3-19. Installation of Control-Monitor Chassis on ICD-C

3-5. Electronic Components Assembly-Control A3018077-1(1A4).

The following procedure is used to perform Go/No-Go testing on electronic components assembly-control (1A4) A3018077-1 (see fig. 3-20). Return failed assemblies to depot for repair.

REQUIRED TEST ACCESSORIES	
• Test program Tape	CPIN Cp1000030G
• ICD B	A3014302-1
• Self-Test Card B A2A2	A3014252-1
• Cable Assembly A2W1	A3017804-1
• Interface Card A2W1A1	
P/O Cable Assy A2W1	A3014354-1

- a. Turn on digital card tester AN/USM-465A.
- b. Perform operational procedures in accordance with TM 11-6625-3038-10.

NOTE

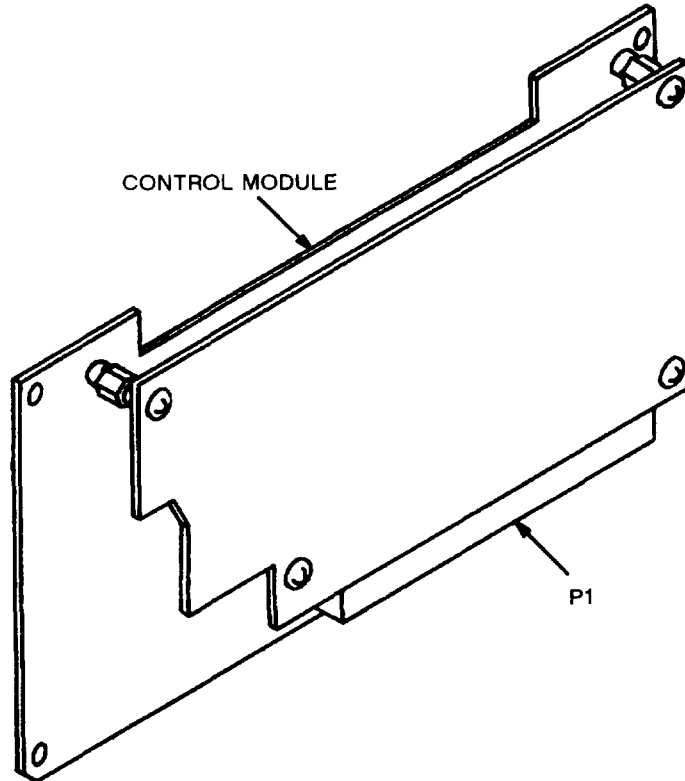
This program requires AN/USM-465A software version 2.0 be installed.

- c. Load test program.
 - (1) Install test program tape CPIN CP1000030G in digital card tester in accordance with TM 11-6625-3038-10.
 - (2) Enter LOAD Ø, then press EXECUTE.
 - (3) When READY appears on the display, type RUN and Press EXECUTE.
 - (4) Verify that the following information is printed:

NOTE

DO NOT enter a B404XXXX-1 part number. B404????-1 contains a provision for a future program. It has no effect on this TPS.

>ENTER THE LAST FOUR
>DIGITS OF THE UUT
>P/N A301 ????-1
 B404????-1
>PRESS EXECUTE



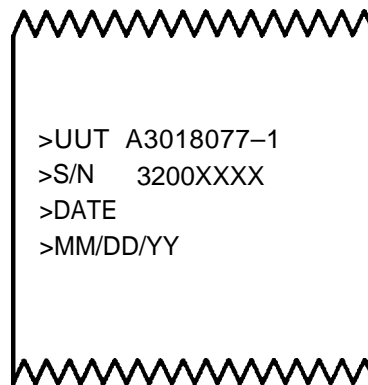
CE1UG014

Figure 3-20, Electronic Components Assembly-Control A3018077-1

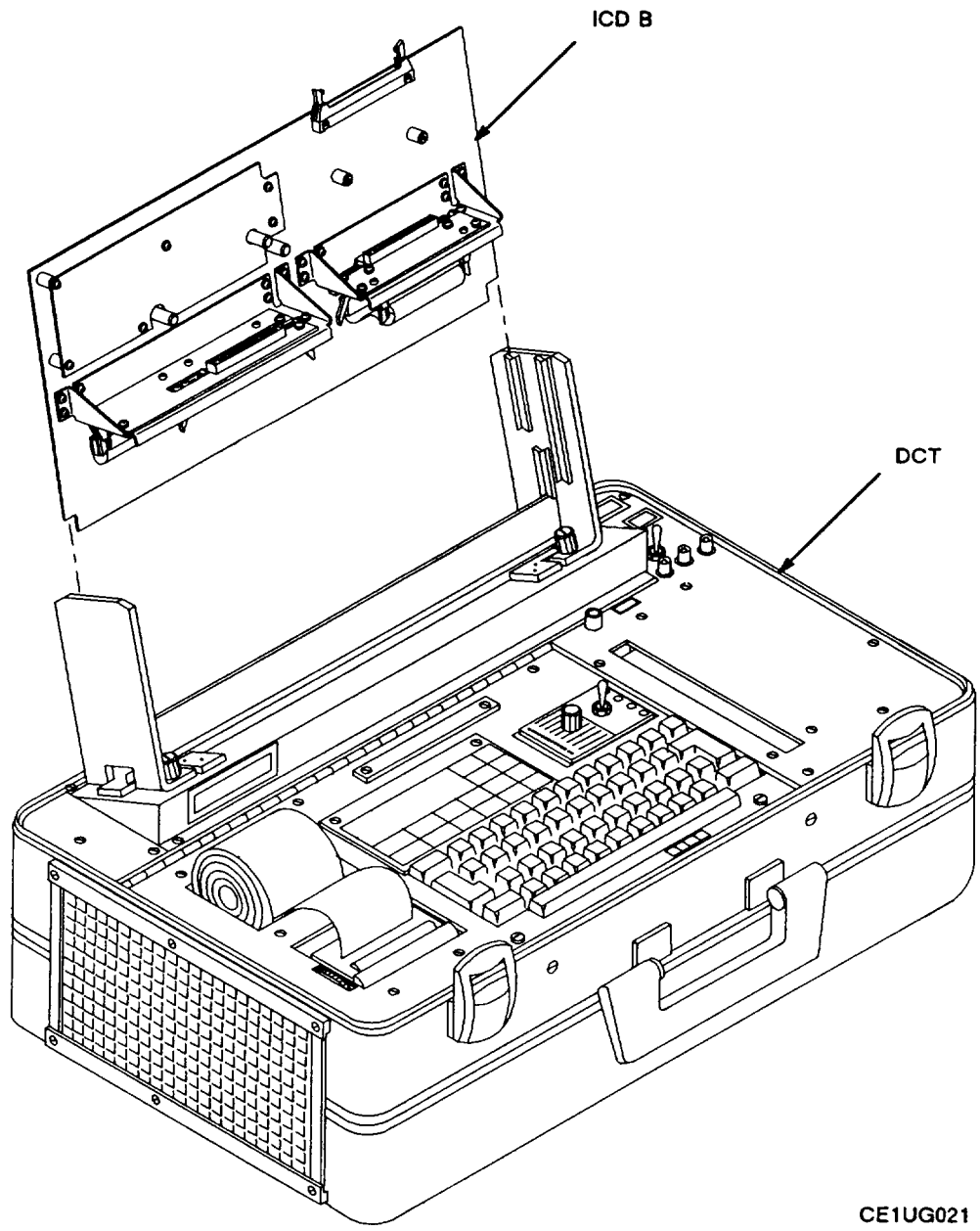
THEN

>PRINT PROGRAM NOTES?
>ENTER YES OR NO,
>PRESS EXECUTE.

- (5) Follow operator actions as instructed by program.
- d.* Run ATE survey test if desired. (If survey test fails, refer to TM 11-6625-3038 -20.)
- e.* Install ICD-B on digital card tester (see fig. 3-21).
- f.* Run ICD survey test if desired. (If survey test fails, refer to TM 11-6625 -3094-24.)
- g.* Install UUT for functional test (see fig. 3-22) .
- h.* Verify that the following information is printed:



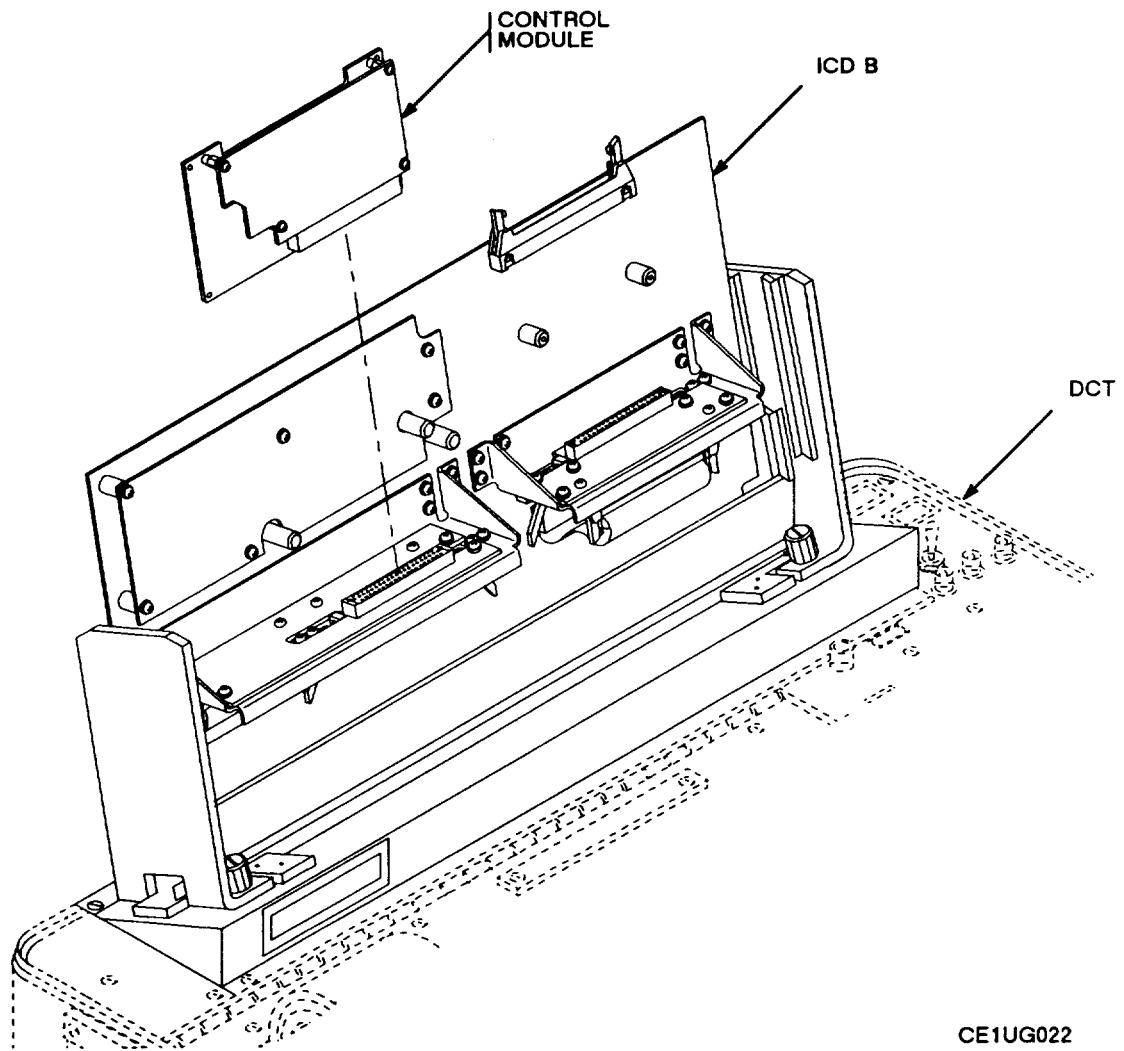
- i.* Perform test of UUT.
- j.* Repeat or terminate testing.
 - (1) Follow operator actions to repeat tests or terminate testing.
 - (2) Remove ICD and UUT as required.
 - (3) If the test passes, return UUT to stock. If the test fails, return UUT to depot for repair.



CE1UG021

Figure 3-21. Installation of ICD B for Electronic Component Assembly-Control

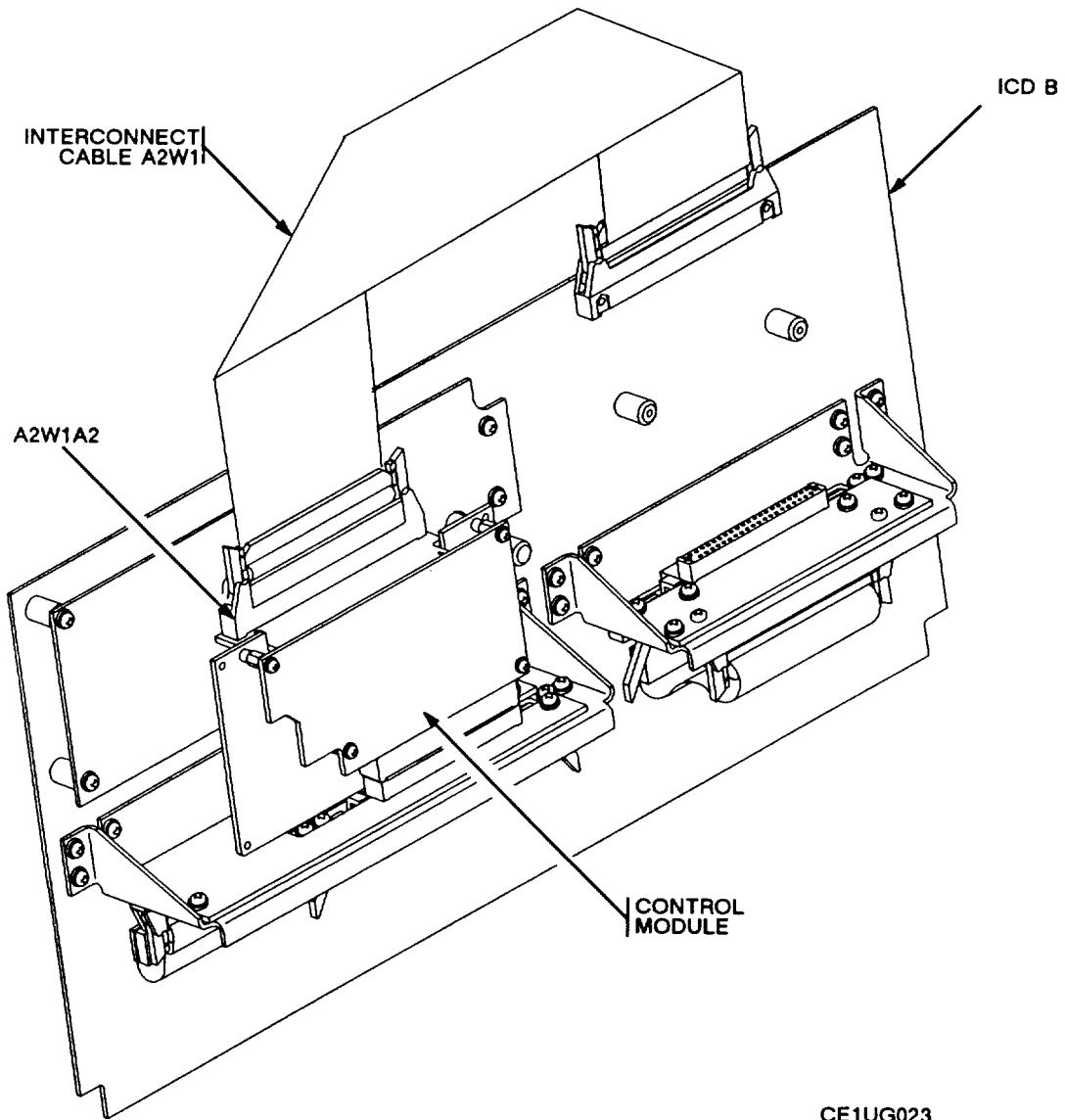
STEP 1. INSTALL UUT ON ICD B



CE1UG022

Figure 3-22. Installation of Electronic Components
Assembly-Control for Functional Testing (Sheet 1 of 2)

STEP 2 REMOVE UUT FROM ICD.
CONNECT CABLE FROM J1 TO UUT,
INSTALL UUT ON ICD AS SHOWN.



CE1UG023

Figure 3-22. installation of Electronic Components
Assembly-Control for Functional Testing (Sheet 2 of 2)

3-6. CCA-Decoder/Timer A3014178-1 and A3018751-1(7A3).

The following procedure is used to perform Go/No-Go testing on CCA-decoder/timer A3014178-1 and A3018751-1 (7A3) (see fig. 3-23). Return failed assemblies to depot for repair.

REQUIRED TEST ACCESSORIES	
● Test Program Tape (P/N A3014178-1) . . . CPIN CP1100030G	
● Test Program Tape (P/N A3018751-1) . . . CPIN CP1200030G	
● ICD-B	A3014302-1
● Self Test Card B (A2A2)	A3014252-1
● Cable Assembly A2W1	A3017804-1
● Interface Card A2W1A1	
P/O Cable Assy A2W1	A3014354-1
● Interface Card A2W1A2	
P/O Cable Assy A2W1	A3014315-1

- a. Turn on digital card tester AN/USM-465A.
- b. Perform operational procedures in accordance with TM 11-6625-3038-10.

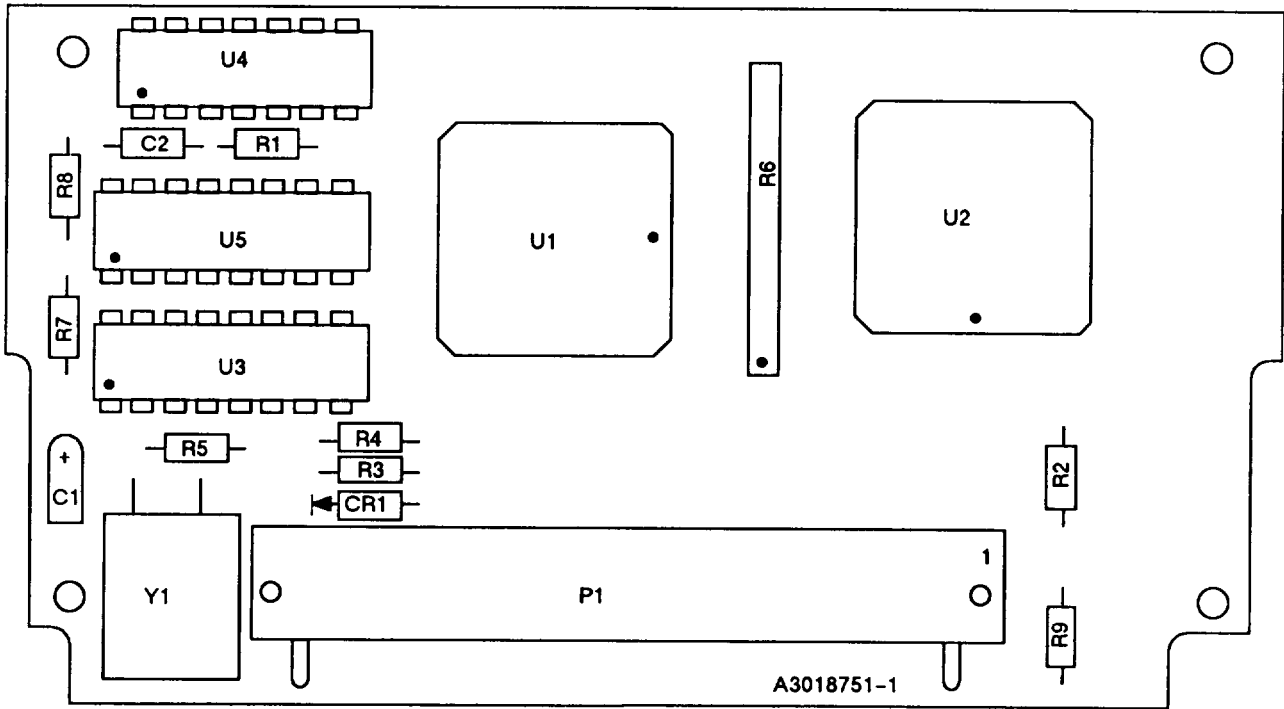
NOTE

This program requires AN/USM-465A software version 2.0 be installed.

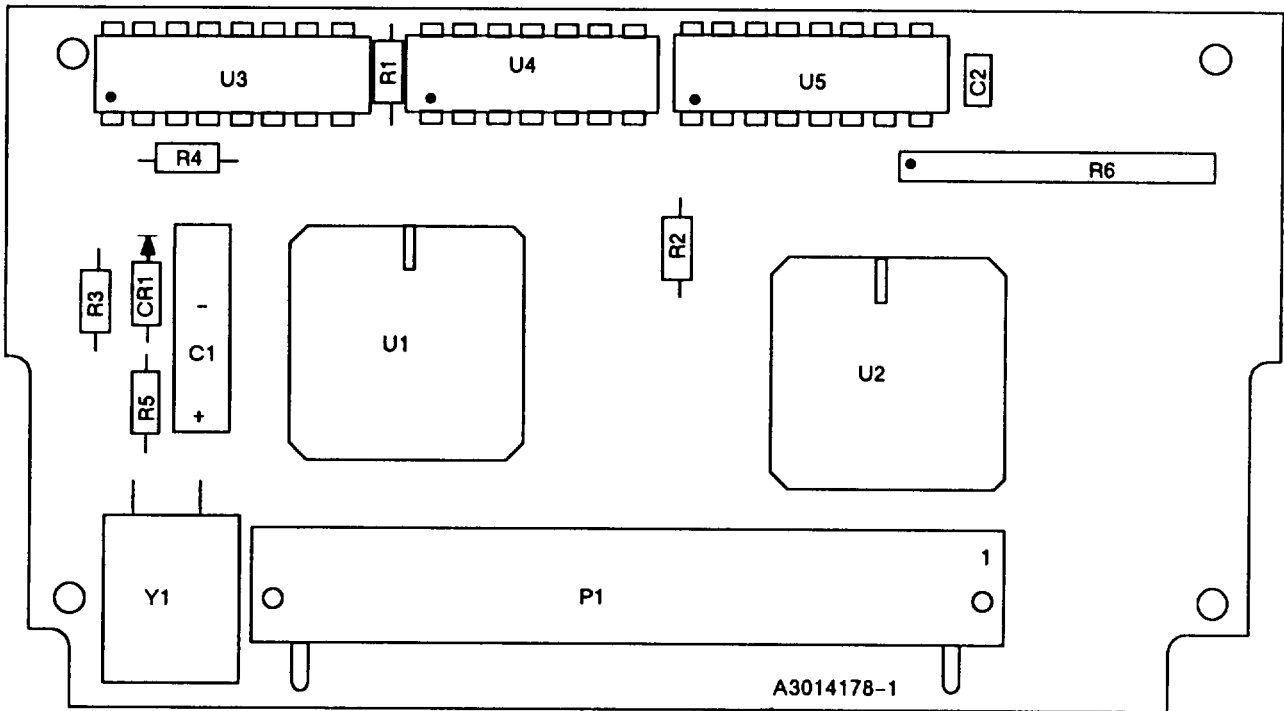
- c. Load test program.
 - (1) Install test program tape CPIN CP1100030G or CPIN CP1200030G in digital card tester in accordance with TM 11 -6625-3038-10.
 - (2) Enter LOAD Ø, then press EXECUTE.
 - (3) When READY appears on the display, type RUN and press EXECUTE.
 - (4) Verify that the following information is printed:

```

>ENTER THE LAST FOUR
>DIGITS OF THE UUT
>P/N A301????-1
    B404????-1
>PRESS EXECUTE
    
```



CE1UG025



CE1UG026

Figure 3-23. CCA-Decoder/Timer (7A3) A3018751-1 and A3014178-1

THEN

```

>PRINT PROGRAM NOTES?
>ENTER YES OR NO,
>PRESS EXECUTE.
    
```

(5) Follow operator actions as instructed by program.

- d. Run ATE survey test if desired. (If survey test fails, refer to TM 11-6625-3038-20.)
- e. Install ICD-B on digital card tester (see fig. 3-24).
- f. Run ICD survey test if desired. (If survey test fails, refer to TM 11-6625-3094-24.)
- g. Perform UUT hookup (see fig. 3-25).
- h. Verify that the following information is printed:

```

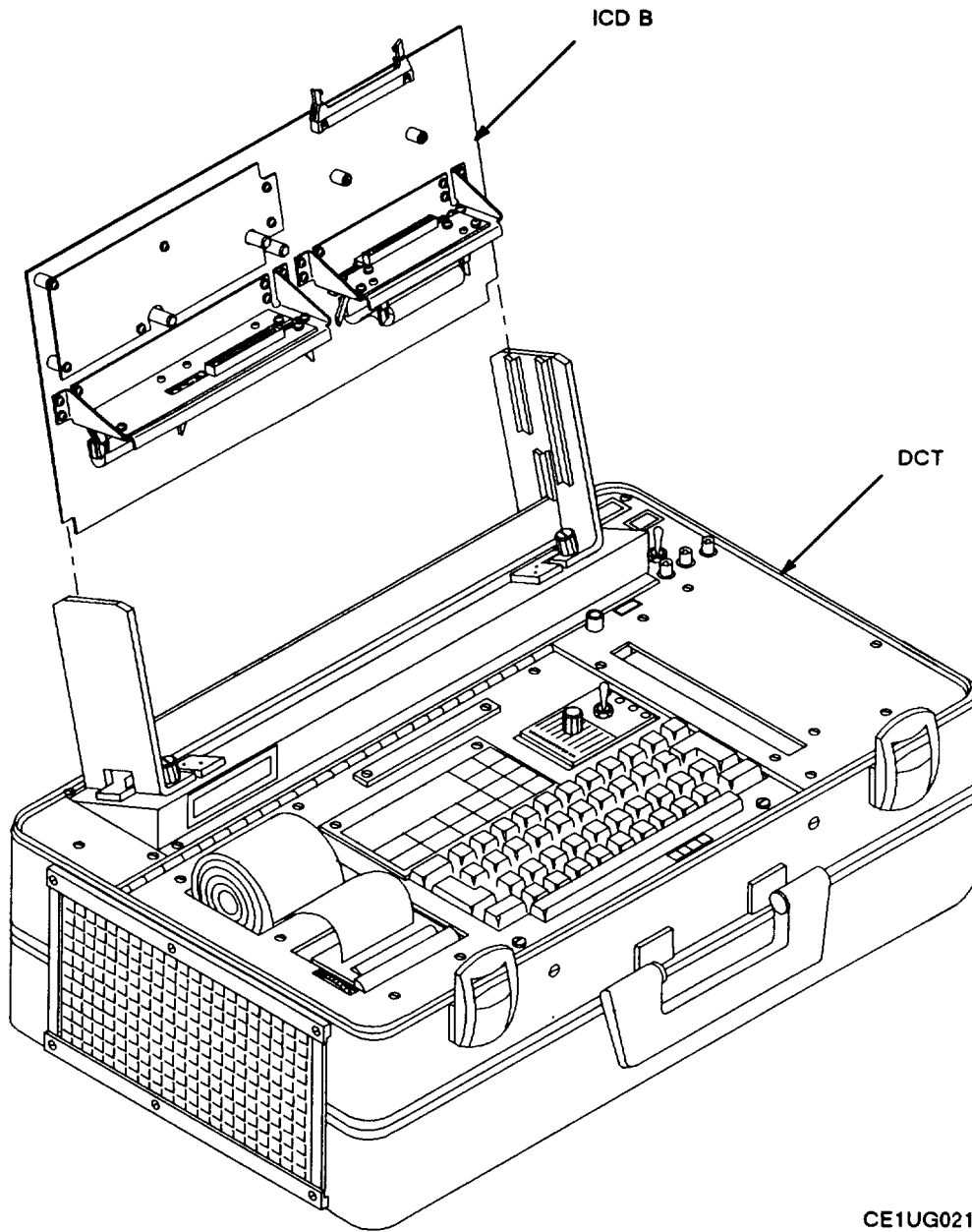
>UUT A3014178-1
>S/N 5400XXXX
>DATE
>MM DD YY
    
```

OR

```

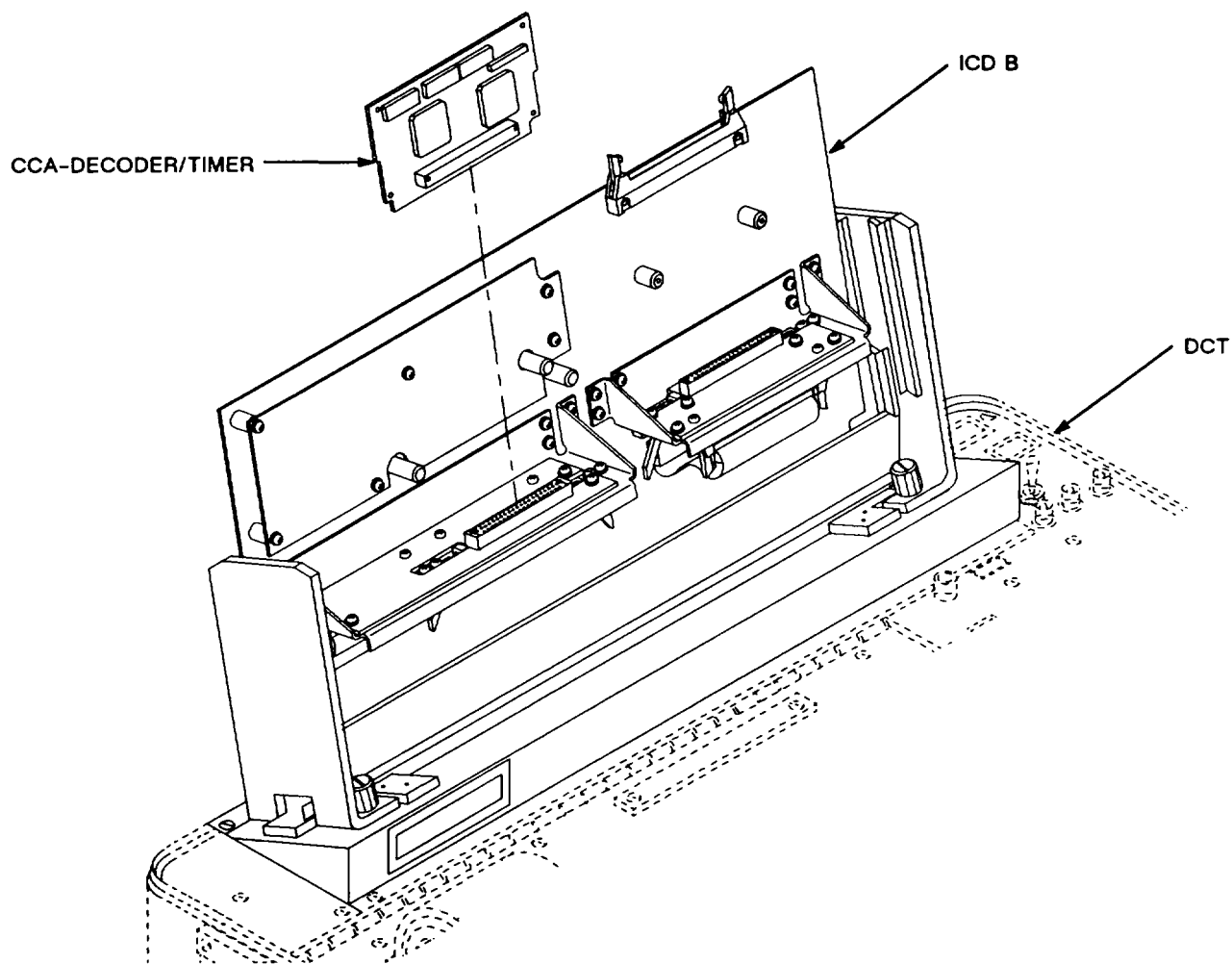
>UUT A3018751-1
>S/N 5400XXXX
>DATE
>MM DD YY
    
```

- i. Test UUT.
- j. Repeat or terminate testing.
 - (1) Follow operator actions to repeat tests or terminate testing,
 - (2) Remove ICD and UUT as required.
 - (3) If the test passes, return UUT to stock. If the test fails, return UUT to depot for repair.



CE1UG021

Figure 3-24. Installation of ICD B for CCA-Decoder/Timer (7A3)



CE1UG027

Figure 3-25. Installation of CCA-Decoder/Timer (7A3) on ICD B

3-7. Electronic Counter-Countermeasures Control A3013353-1 and B4041568-1 (1A5).

The following procedure is used to perform Go/No-Go testing on the electronic counter-countermeasures control A3013353-1 and B4041568-1 (1A5) (see fig. 3-26). Return failed assemblies to depot for repair.

Required Test Accessories	
● Test Program Tape	
File No	A3013353F
File No	B4041568F
● Test Adapter A8	A3148051-1
● ICD A1	B4041573-1
● Backplane Assembly-ECCM Extender ..	A3148216-1
● 33 Pin Shorting Card	A3148100-2
● 41 Pin Extender Card	A3148257-1

- a. Turn on digital card tester AN/USM-465A.
- b. Perform operational procedures in accordance with TM11-6625-3038-10.

NOTE

This program requires AN/USM-465A software version 2.0 be installed.

- c. Load test program.
 - (1) Install test program tape A3013353F or B4041568F in digital card tester in accordance with TM11-6625-3038-10.
 - (2) Enter LOAD \emptyset , then press EXECUTE,
 - (3) When READY appears on the display, type RUN and press EXECUTE.
 - (4) Verify that the following information is printed:

```
>ENTER THE LAST FOUR
>DIGITS OF THE UUT
>P/N A301????-1 OR
>P/N B404????-1
>PRESS EXECUTE
```

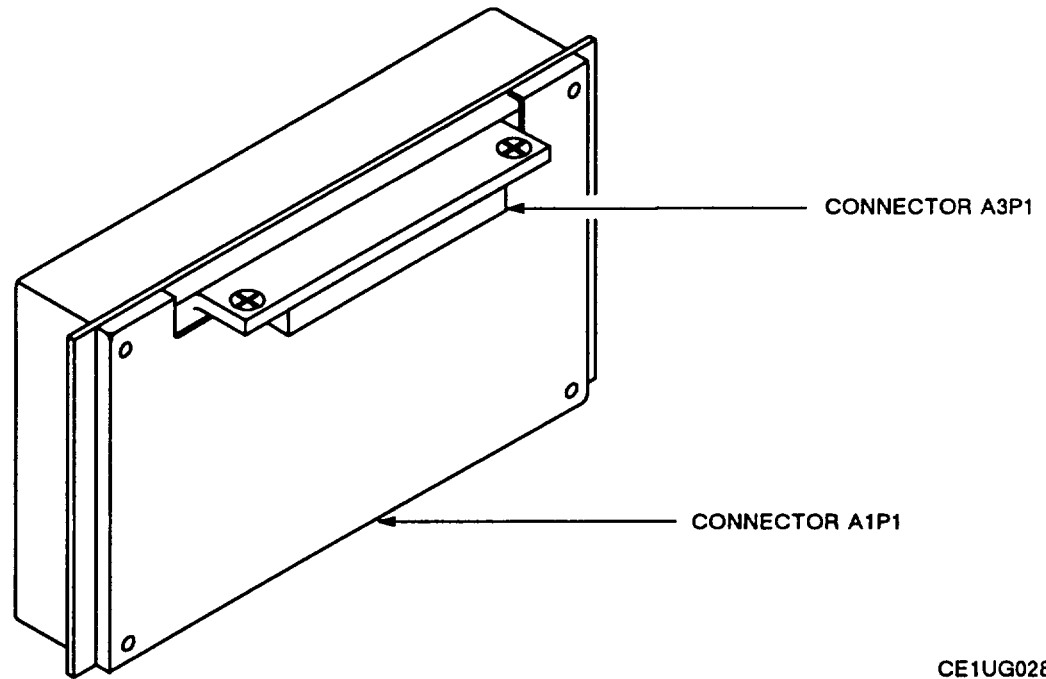
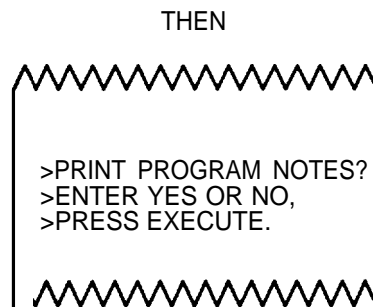
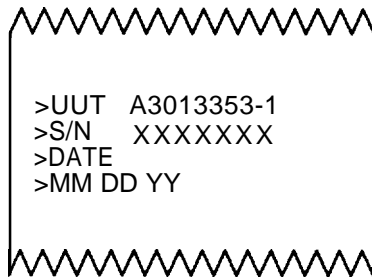


Figure 3-26. Electronic Counter-Countermeasures Control A3013353-1 or B4041568-1

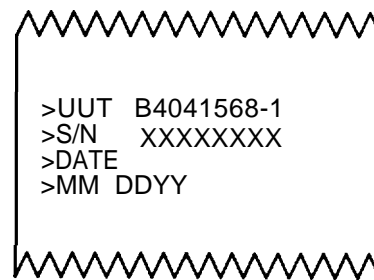


- (5) Follow operator actions as instructed by program.
- d. Run ATE survey test if desired. (If survey test fails, refer to TM 11-6625-3038-20.)
- e. Install Test Adapter A8 and ICD A1 on digital card tester (see fig. 3-27).
- f. Run ICD survey test if desired. (If survey test fails, refer to TM 11-6625-3094-24.)
- g. Perform UUT hookup (see fig. 3-28).

h. Verify that the following information is printed:



OR



i. Test UUT.

j. Repeat or terminate testing.

- (1) Follow operator actions to repeat tests or terminate testing.
- (2) Remove ICD and UUT as required.
- (3) If the test passes, return UUT to stock. If the test fails, return UUT to depot for repair.

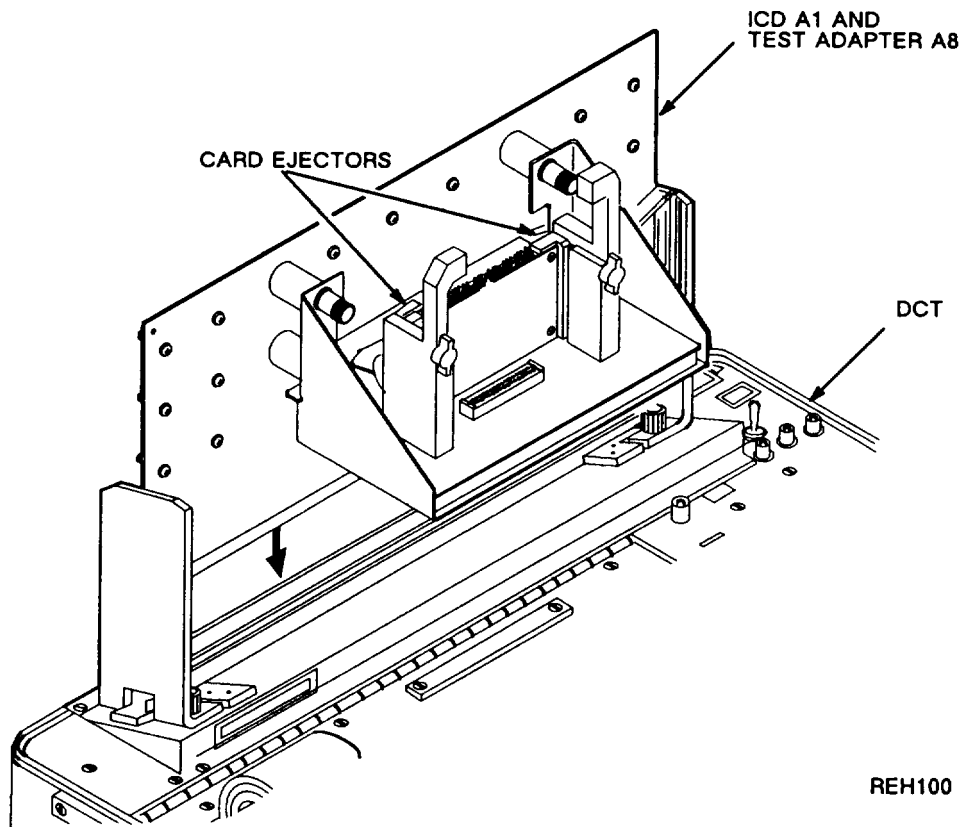


Figure 3-27. Installation of Test Adapter A8 and ICD A1 for Electronic Counter-Countermeasures Control A3013353-1 or B4041568-1 (Sheet 1 of 2)

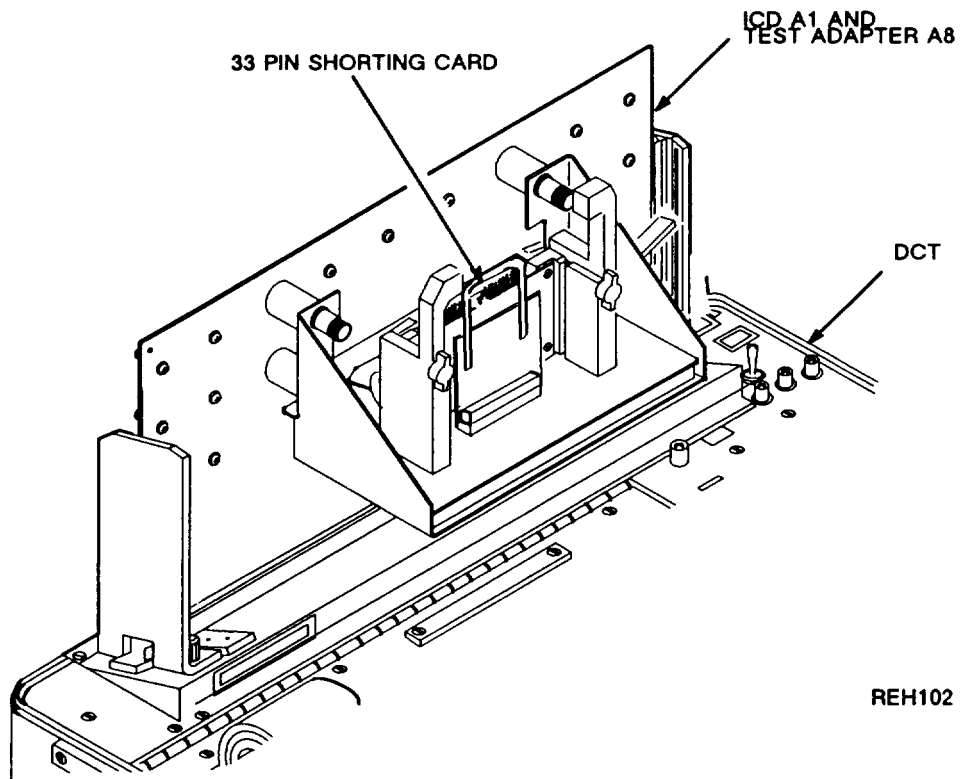
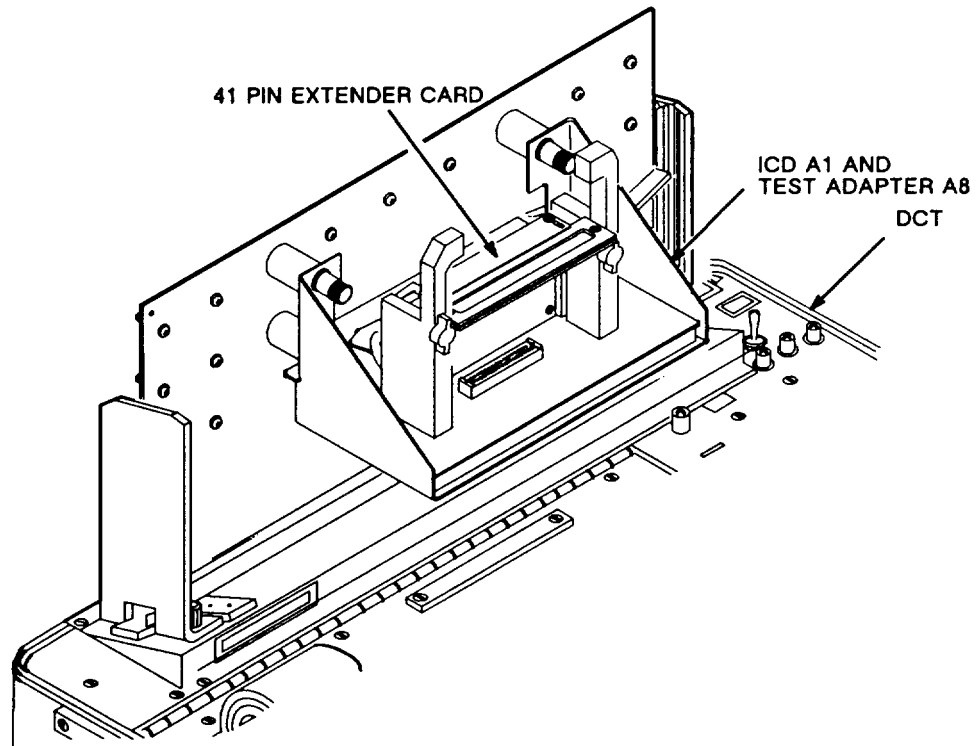


Figure 3-27. Installation of Test Adapter A8 and ICD A1 for Electronic Counter-Countermeasures Control A3013353-1 or B4041568-1 (Sheet 2 of 2)

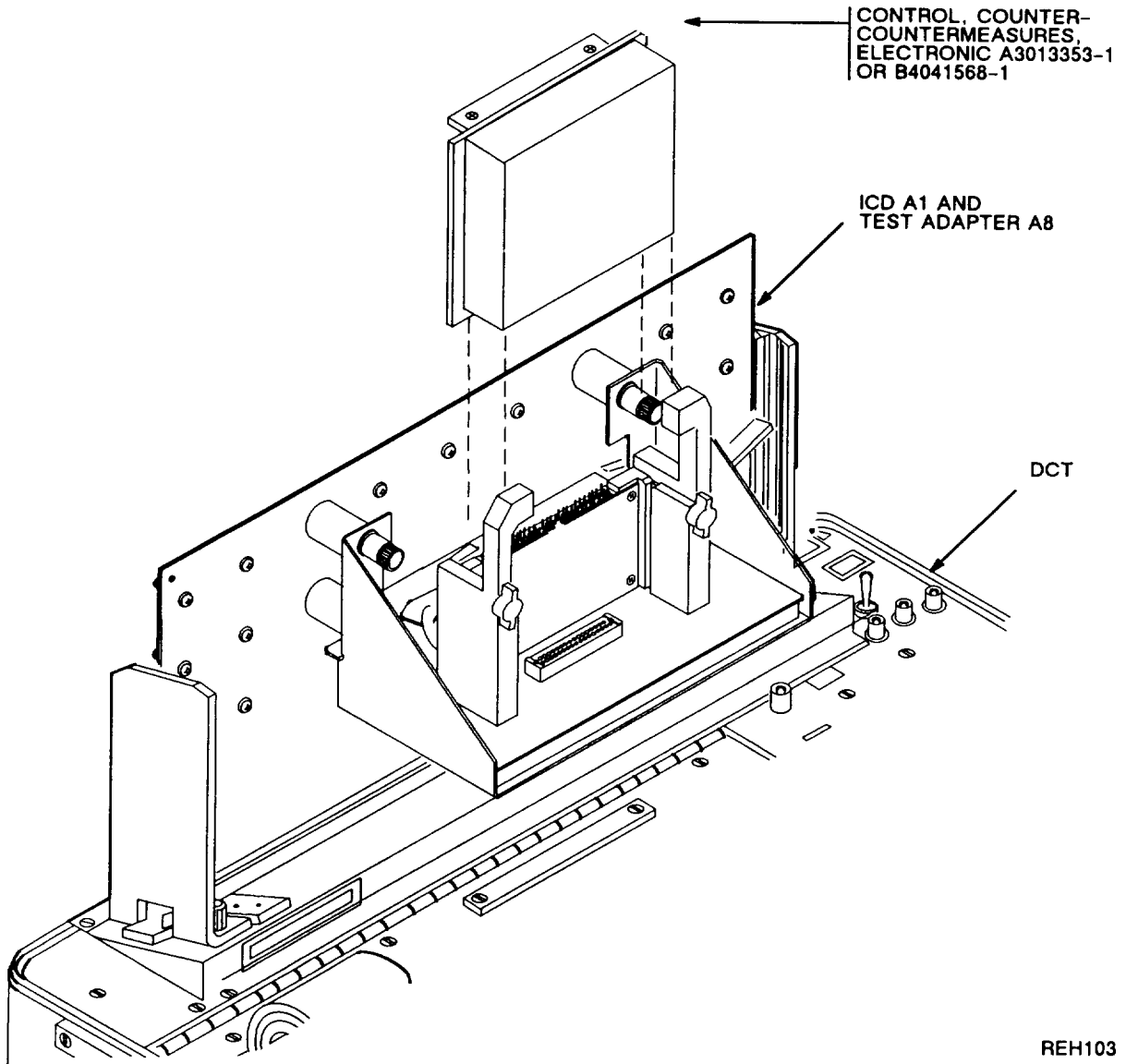


Figure 3-28. Installation of Electronic Counter-Countermeasures Control A3013353-1 or B4041568-1 on Test Adapter A8

3-8. CCA-Microcontroller A3013240-1 and A3014174-1 (7A2).

The following procedure is used to perform Go/No-Go testing on the CCA-microcontroller A3013240-1 or A3014174-1 (7A2) (see fig. 3-29). Return failed assemblies to depot for repair.

REQUIRED TEST ACCESSORIES	
● Test Program Tape	CPIN CP1800030G
● ICD-A	A3014256-1
● Self-Test Card A	A3018512-1

- a. Turn on digital card tester AN/USM-465A.
- b. Perform operational procedures in accordance with TM 11-6625-3038-10.

NOTE

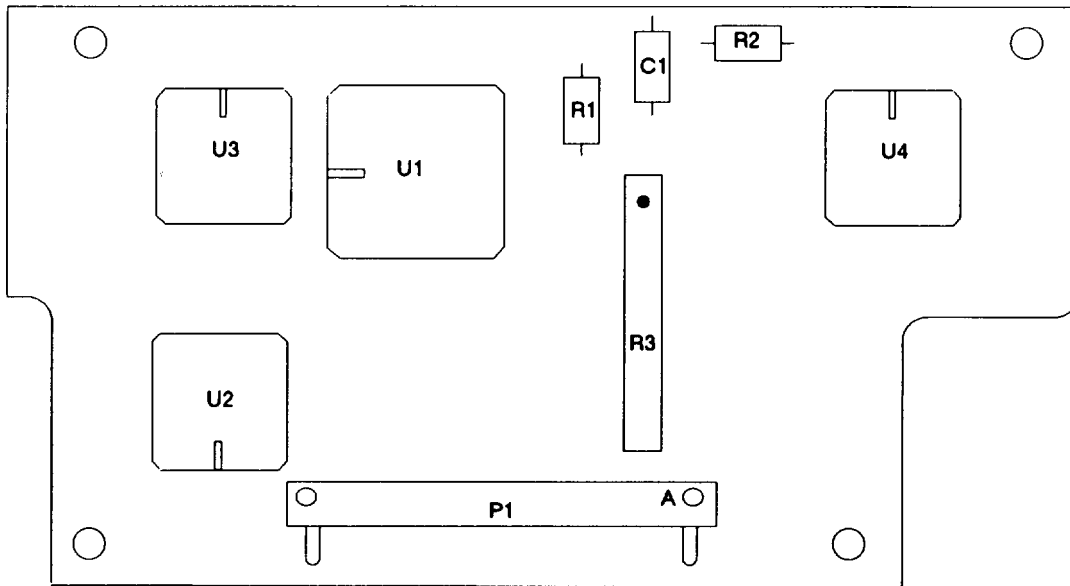
This program requires AN/USM-465A software version 2.0 be installed.

- c. Load test program.
 - (1) Install test program tape CPIN CP1800030G in digital card tester in accordance with TM 11-6625-3038-10.
 - (2) Enter LOAD Ø then press EXECUTE.
 - (3) When READY appears on the display, type RUN and press EXECUTE.
 - (4) Verify that the following information is printed:

```

>ENTER THE LAST FOUR
>DIGITS OF THE UUT
>P/N A301????-1
>PRESS EXECUTE
    
```

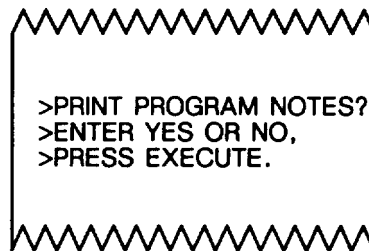

BOTH MICROCONTROLLER ASSEMBLIES HAVE THE SAME PART LOCATION.



CE1UG032

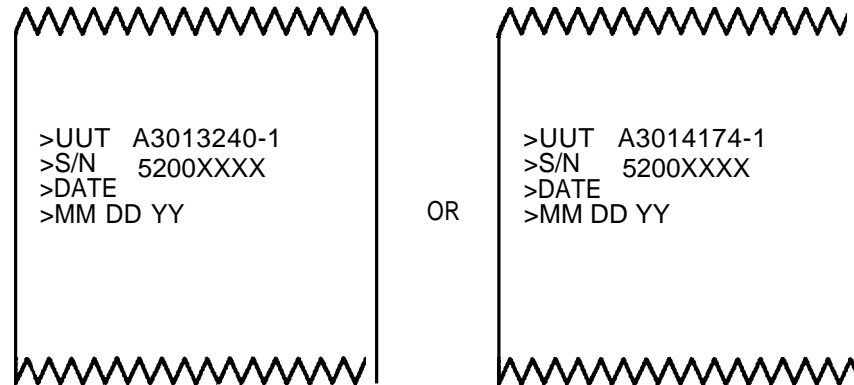
Figure 3-29. CCA-Microcontroller (7A2) A3013240-1 and A3014174-1

THEN

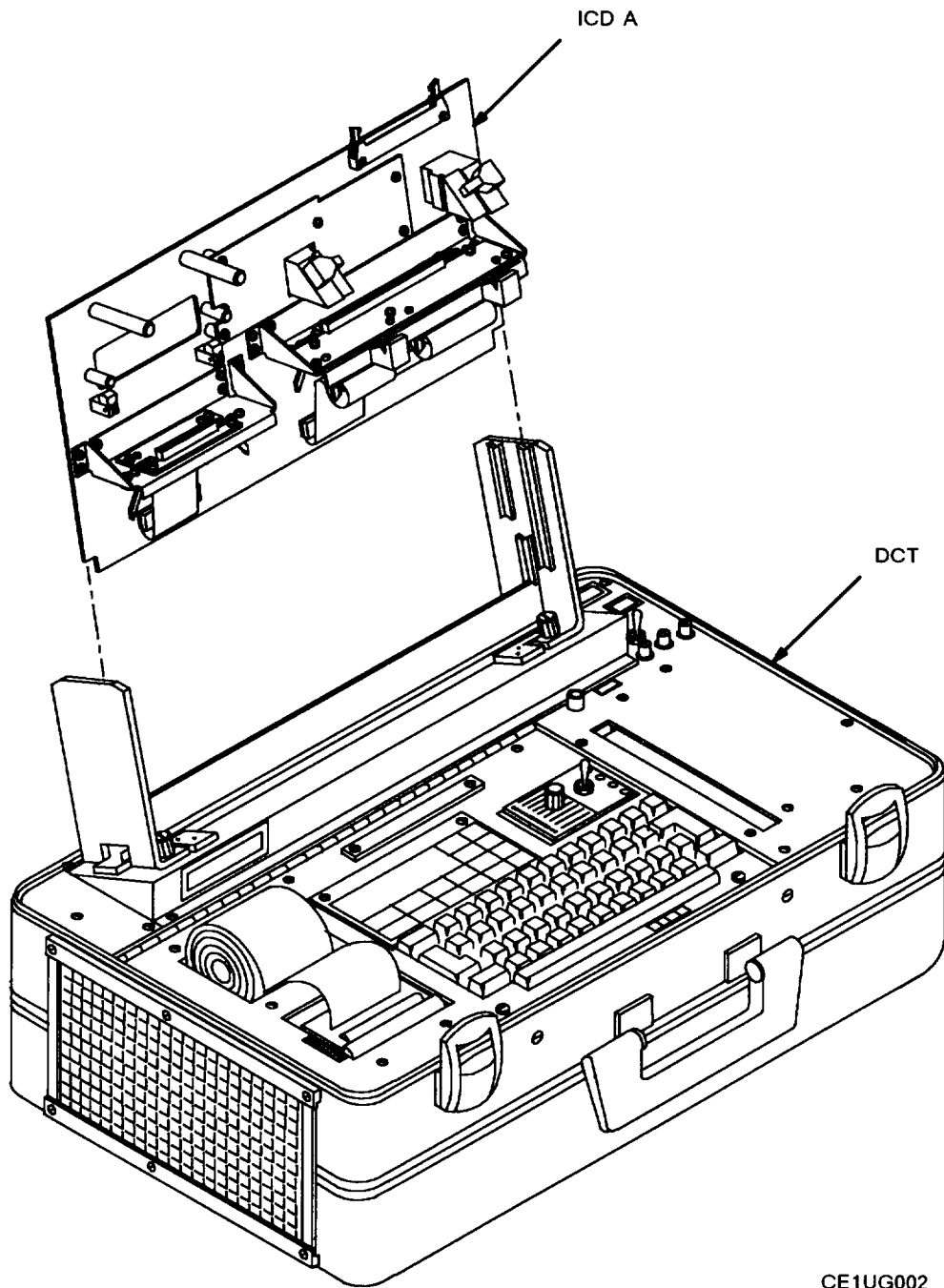


- (5) Follow operator actions as instructed by program.
- d. Run ATE survey test if desired. (If survey test fails, refer to TM 11-6625-3038-20.)
- e. Install ICD-A (see fig. 3-30).
- f. Run ICD survey test if desired, (If survey test fails, refer to TM 11-6625-3094-24.)

- g. Perform UUT hookup (see fig, 3-31).
- h. Verify that the following information is printed:



- i. Test UUT.
- j. Repeat or terminate testing.
 - (1) Follow operator actions to repeat tests or terminate testing,
 - (2) Remove ICD and UUT as required.
 - (3) If the test passes, return UUT to stock. If the test fails, return UUT to depot for repair.



CE1UG002

Figure 3-30. Installation of ICD A for CCA-Microcontroller

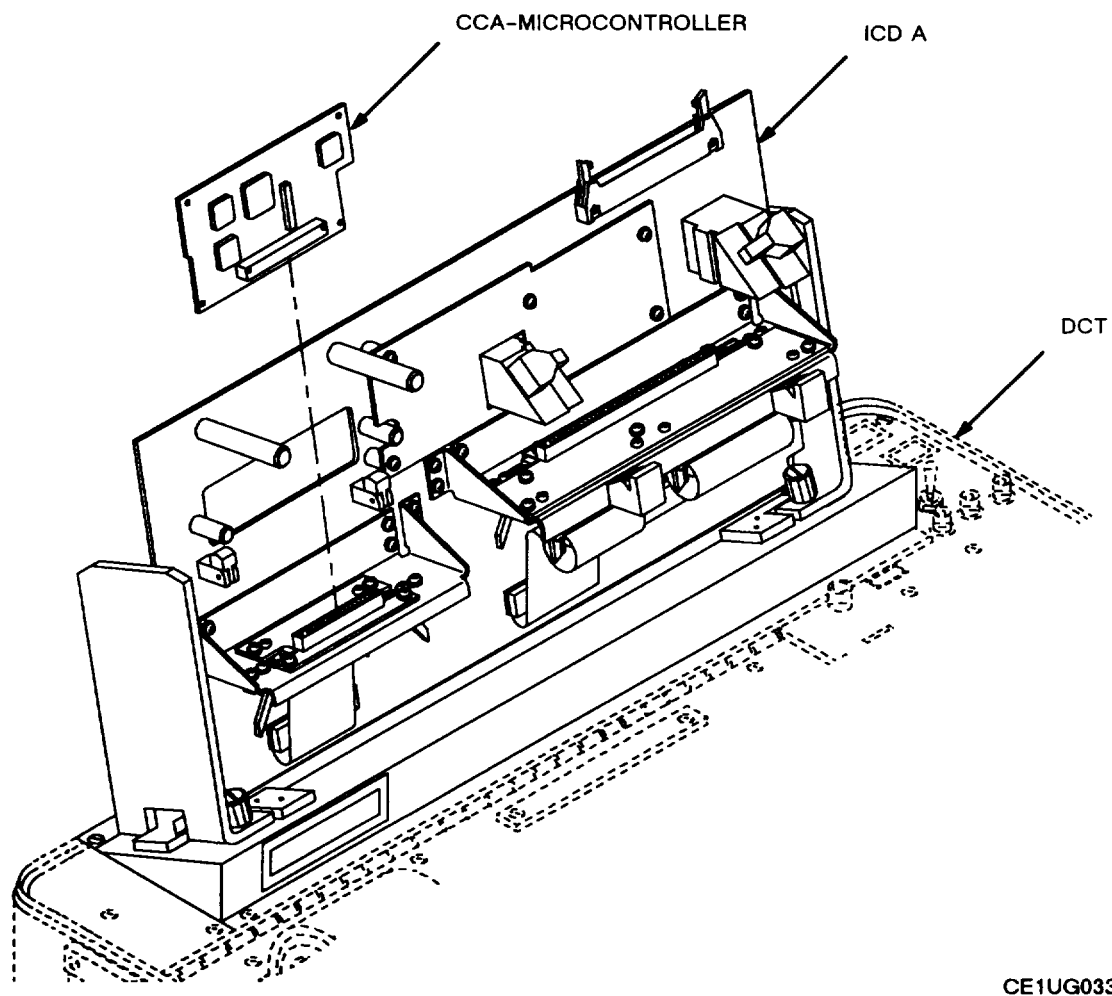


Figure 3-31. Installation of CCA-Microcontroller on ICD A

3-9. CCA-Remote I/O A3014142-1 (1A2).

The following procedure is used to perform Go/No-Go testing on CCA-remote I/O A3014142-1 (1A2) (see fig. 3-32). Return failed assemblies to depot for repair.

REQUIRED TEST ACCESSORIES	
• Test Program Tape	CPIN CP1400030G
Ž ICD-B	A3014302-1
Ž Self Test Card B	A3014252-1
Ž Cable Assy A2W1	A3017804-1
Ž Interface Card A2W1A1 P/O Cable Assy A2W1	A3014354-1
Ž Interface Card A2W1A2 P/O Cable Assy A2W1	A3014315-1

- a. Turn on digital card tester AN/USM-465A.
- b. Perform operational procedures in accordance with TM 11-6625-3038-10.

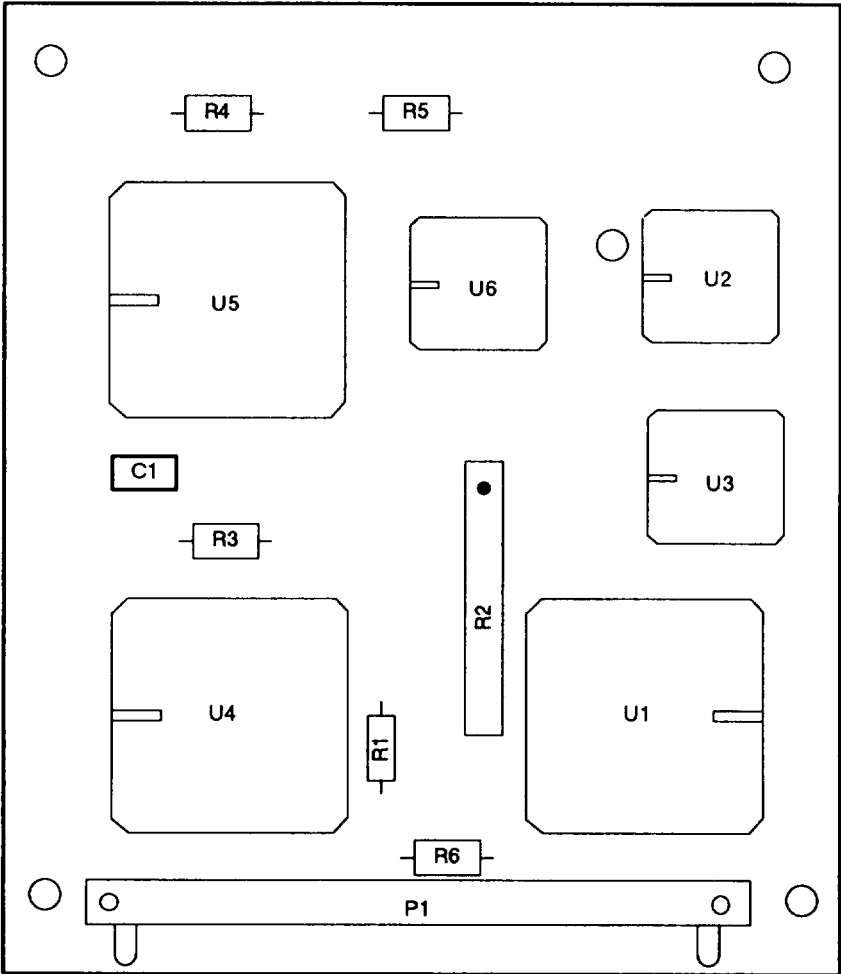
NOTE

This program requires AN/USM-465A software version 2.0 be installed.

- c. Load test program.
 - (1) Install test program tape CPIN CP1400030G in digital card tester in accordance with TM 11-6625-3038-10.
 - (2) Enter LOAD Ø then press EXECUTE,
 - (3) When READY appears on the display, type RUN and press EXECUTE.

(4) Verify that the following information is printed:

>ENTER THE LAST FOUR
>DIGITS OF THE UUT
>P/N A301????-1
>PRESS EXECUTE



CE1UG034

Figure 3-32. CCA-Remote I/O (1A2) A3014142-1

THEN

```
>PRINT PROGRAM NOTES?  
>ENTER YES OR NO,  
>PRESS EXECUTE.
```

(5) Follow operator actions as instructed by program.

- d. Run ATE survey test if desired. (If survey test fails, refer to TM 11-6625-3038-20.)
- e. Install ICD-B (see fig. 3-33).
- f. Run ICD survey test if desired, (If survey test fails, refer to TM 11-6625-3094-24.)
- g. Perform UUT hookup (see fig. 3-34).
- h. Verify that the following information is printed:

```
>UUT A3014142-1  
>S/N 2200XXXX  
>DATE  
>MM DD YY
```

- i. Test UUT.
- j. Repeat or terminate testing.
 - (1) Follow operator actions to repeat tests or terminate testing.
 - (2) Remove ICD and UUT as required,
 - (3) If the test passes, return UUT to stock. If the test fails, return UUT to depot for repair.

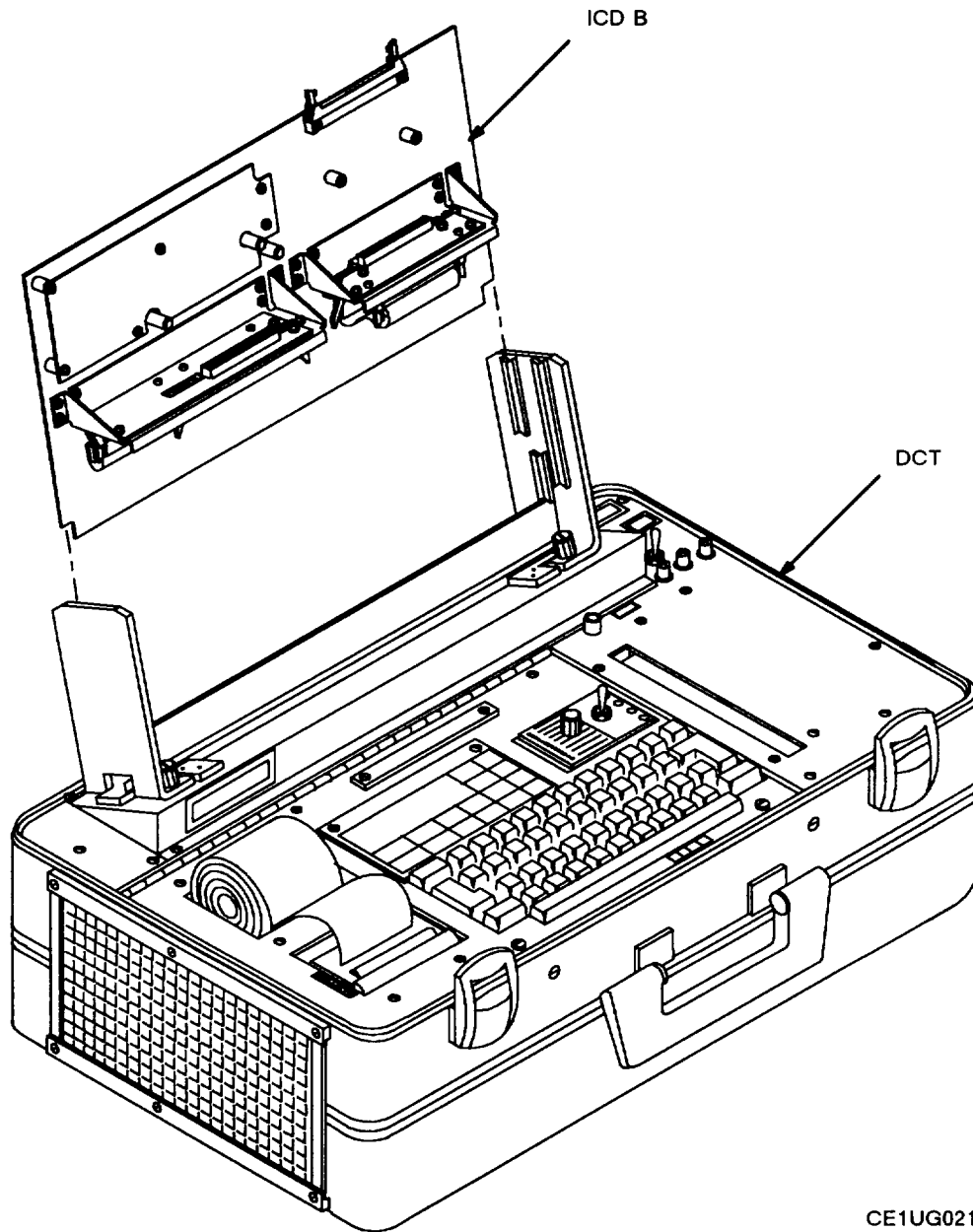
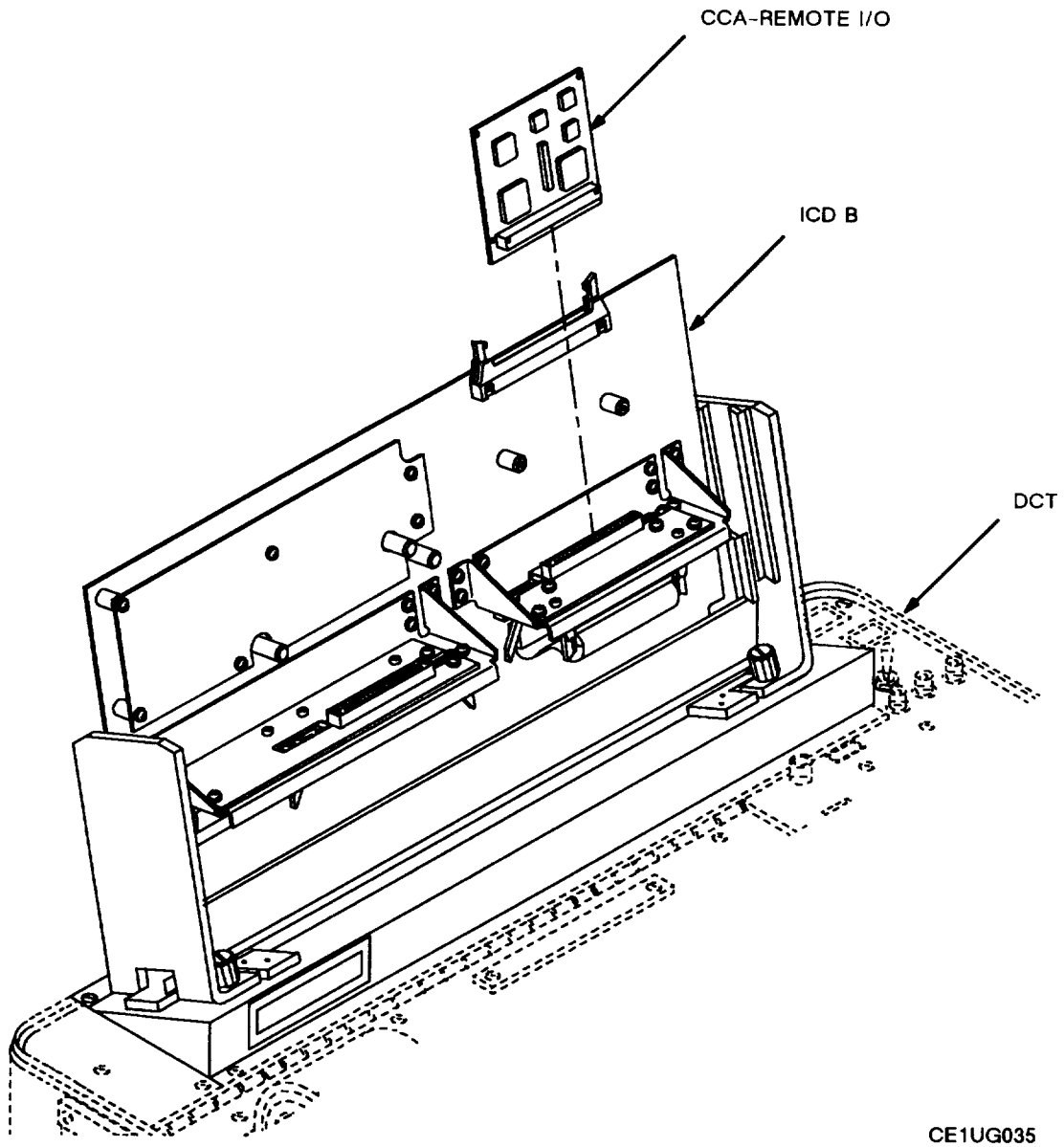


Figure 3-33. Installation of ICD B for CCA-Remote I/O A3014142-1



CE1UG035

Figure 3-34. Installation of CCA-Remote I/O on ICD B

3-10. CCA-Remote I/O A3142337-1 (1A2).

The following procedure is used to perform Go/No Go testing of CCA-remote I/O, 1A2, A3142337-1 (see fig. 3-35 on page 3-64). This unit is discarded if it fails the test. Refer to local procedures for disposal.

REQUIRED TEST ACCESSORIES	
● Test Program Tape	CPIN CP2400030G
File No	A3142337
● ICD-A5	B4041573-2
● Test Adapter A7	A3148050-1
● 41 Pin Shorting Card	A3148096-2

a. Turn on digital card tester AN/USM-465A.

b. Perform operational procedures in accordance with TM 11-6625-3038-10.

NOTE

This program requires AN/USM-465A software version 2.0 be installed.

c. Load test program.

(1) Install test program tape CPIN CP2400030G in digital card tester in accordance with TM 11-6625-3038-10.

(2) Enter LOAD Ø then press EXECUTE.

(3) When READY appears on the display, type RUN and press EXECUTE.

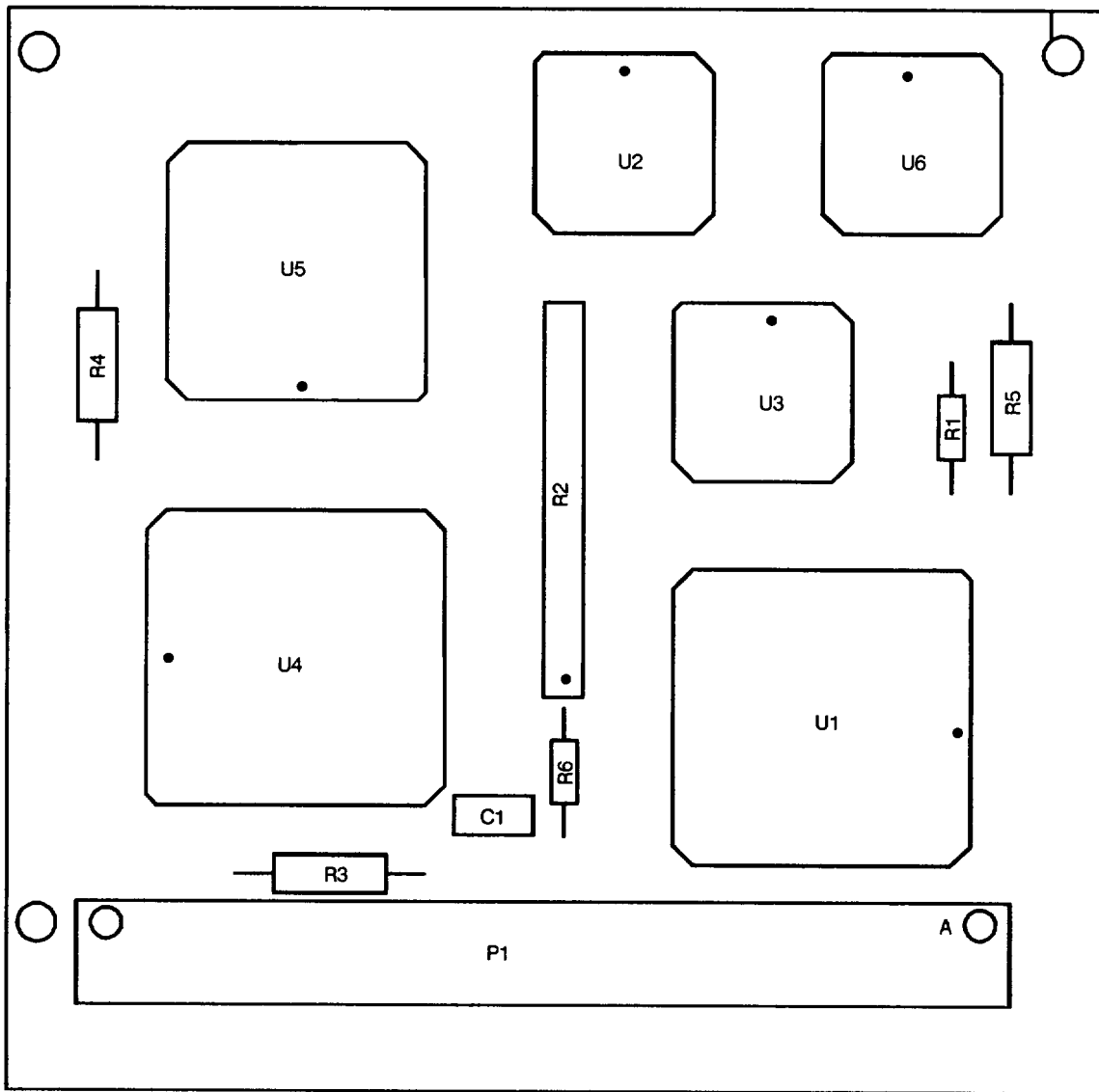


Figure 3-35. CCA-Remote I/O (1A2) A3142337-1

(4) Verify that the following information is printed:

```

> ENTER THE LAST FOUR
> DIGITS OF THE UUT
> P/N - A314????-1
> PRESS EXECUTE
    
```

THEN

```

> PRINT PROGRAM NOTES?
> ENTER Y=YES, N = NO,
> PRESS EXECUTE
    
```

(5) Follow operator actions as instructed by program.

- d. Run ATE survey test if desired. (If survey test fails, refer to TM 11-6625-3038-20.)
- e. Install Test Adapter A7 and ICD A5 on digital card tester (see fig. 3-36).
- f. Run ICD survey test if desired. (If survey test fails, refer to TM 11-6625-3094-24.)
- g. Perform UUT hookup (see fig. 3-37).
- h. Verify that the following information is printed:

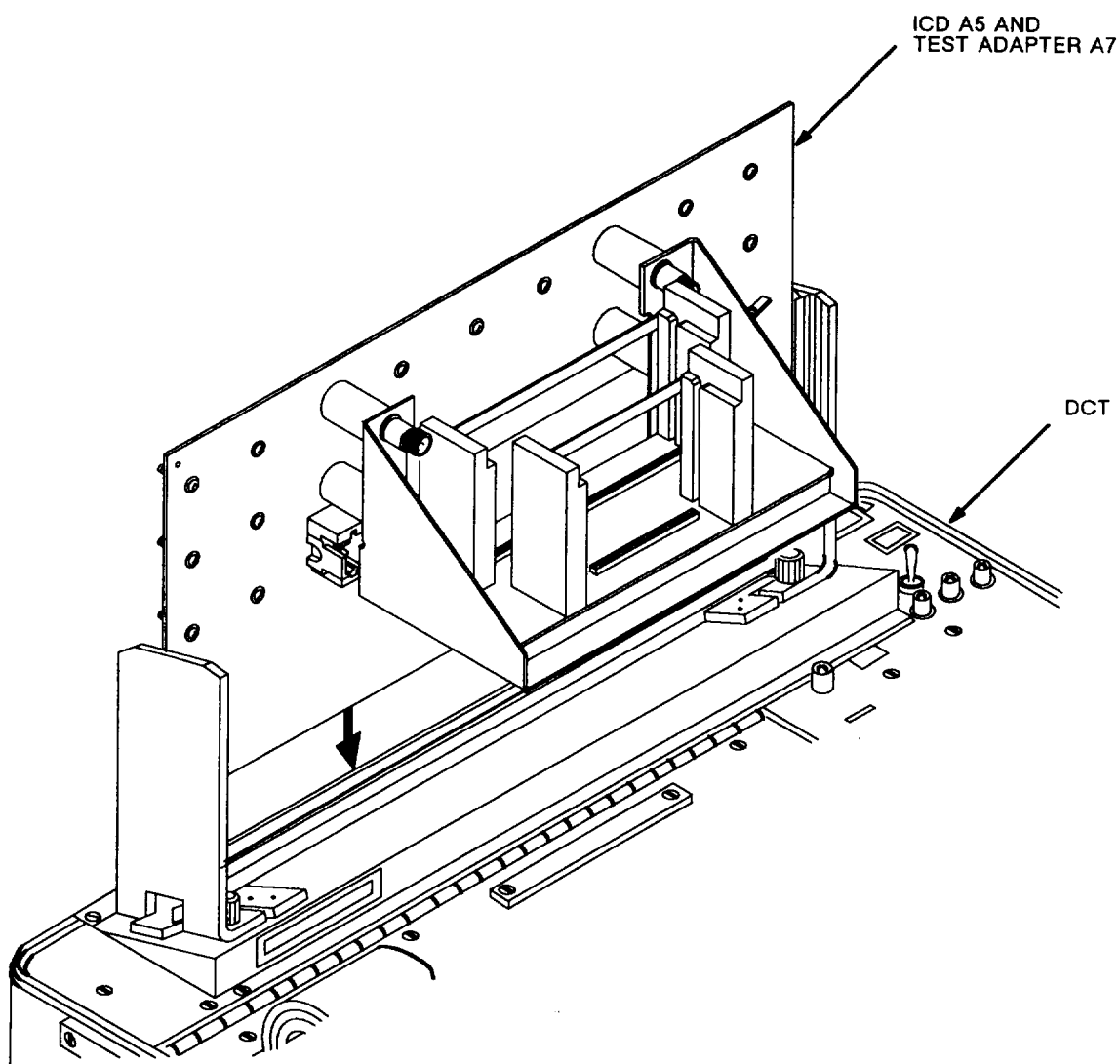
```

> UUT A3142337-1
> S/N XXXXXXXXX
> DATE
> MM/DD/YY
    
```

i. Test UUT.

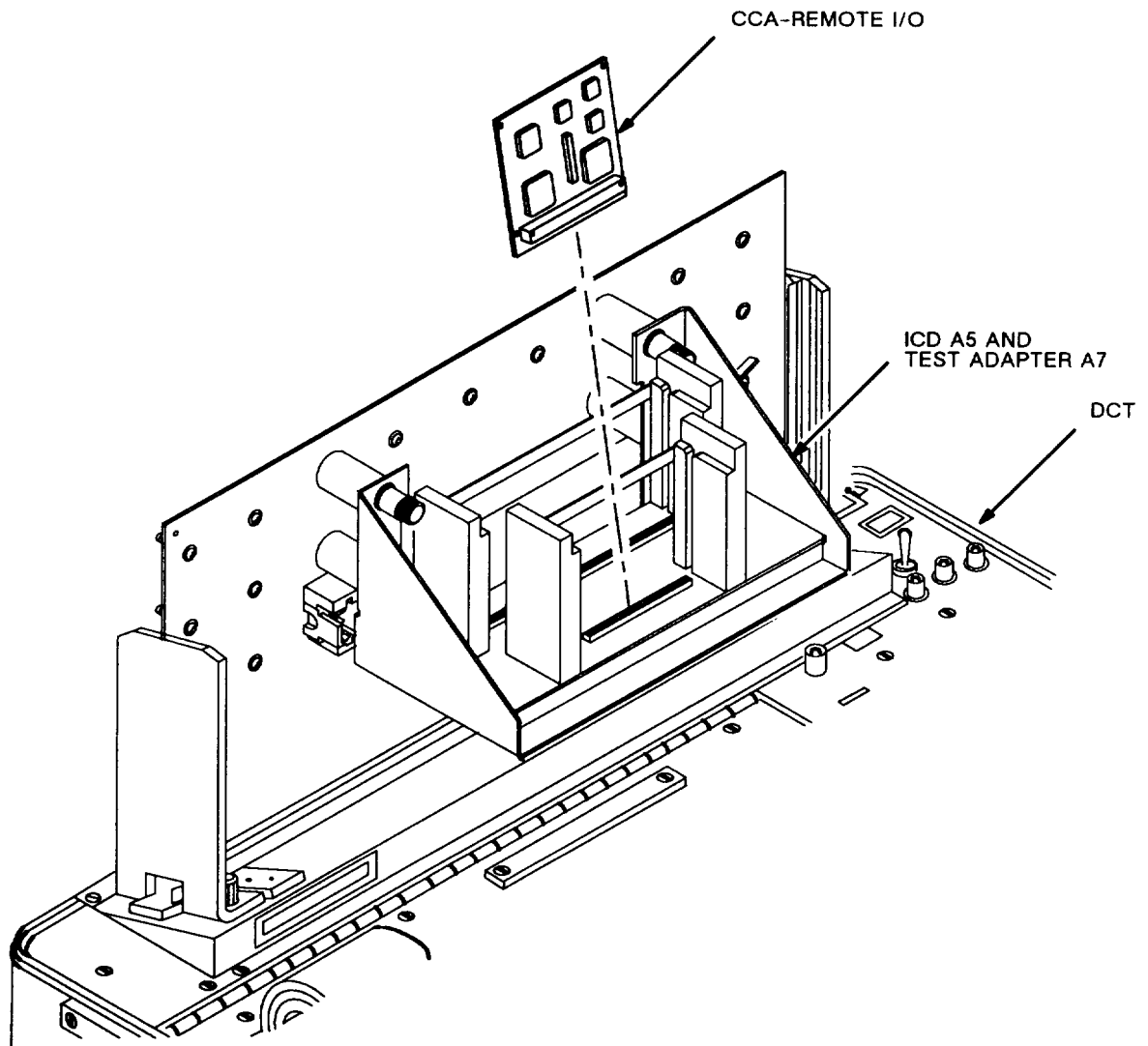
j. Repeat or terminate testing.

- (1) Follow operator actions to repeat tests or terminate testing.
- (2) Remove ICD and UUT as required.
- (3) When testing of UUT has been completed, remove test results from printer. Forward test results along with UUT to the next work station.



REH100

Figure 3-36. Installation of Test Adapter A7 for CCA-Remote I/O



REH101

Figure 3-37. Installation of CCA-Remote I/O on Test Adapter A7

3-11. Electronic Components Assembly-Control A3148179-1 (1A4).

The following procedure is used to perform Go/No Go testing of the electronic components assembly control (1A4) A3148179-1 (see fig. 3-38). Return to depot for repair.

REQUIRED TEST ACCESSORIES	
• Test Program Tape	CPIN CP2300030G
File No	A3148179F
• ICD A5	B4041573-2
Z Test Adapter A10	A3148053-1
Z Cable Assembly A10W1	A3148095-1
Z 61 Pin Shorting Card	A3148092-2

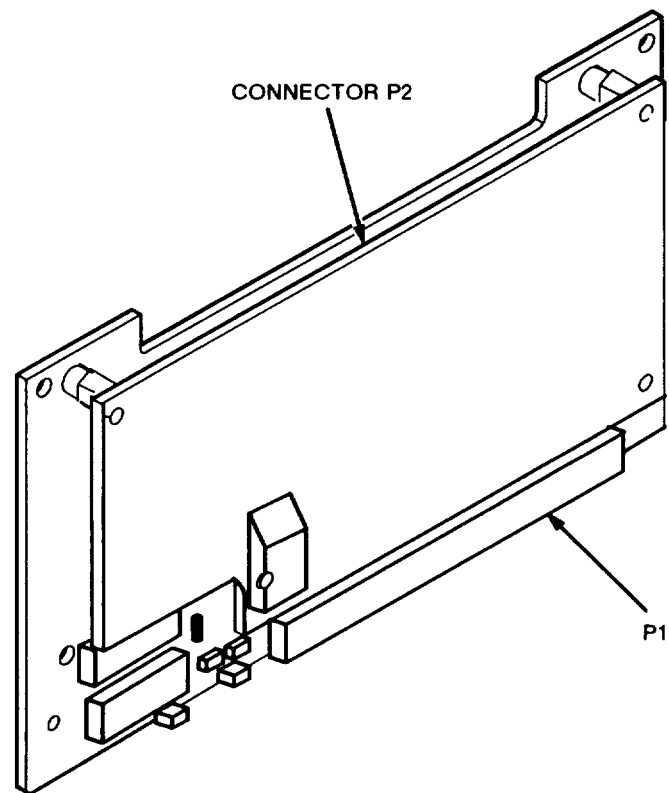
- a. Turn on digital card tester AN/USM-465A.
- b. Perform operational procedures in accordance with TM 11-6625-3038-10.

NOTE

This program requires AN/USM-465A software version 2.0 be installed.

- c. Load test program.
 - (1) Install test program tape CPIN CP2300030G in digital card tester in accordance with TM 11-6625-3038-10.
 - (2) Enter LOAD Ø, then press EXECUTE.
 - (3) When READY appears on the display, type RUN and press EXECUTE.
 - (4) Verify that the following information is printed:

>ENTER THE LAST FOUR
>DIGITS OF THE UUT
>P/N - A314????-1
>PRESS EXECUTE



REH102

Figure 3-38. Electronic Components Assembly-Control 1A4) A3148179-1

THEN

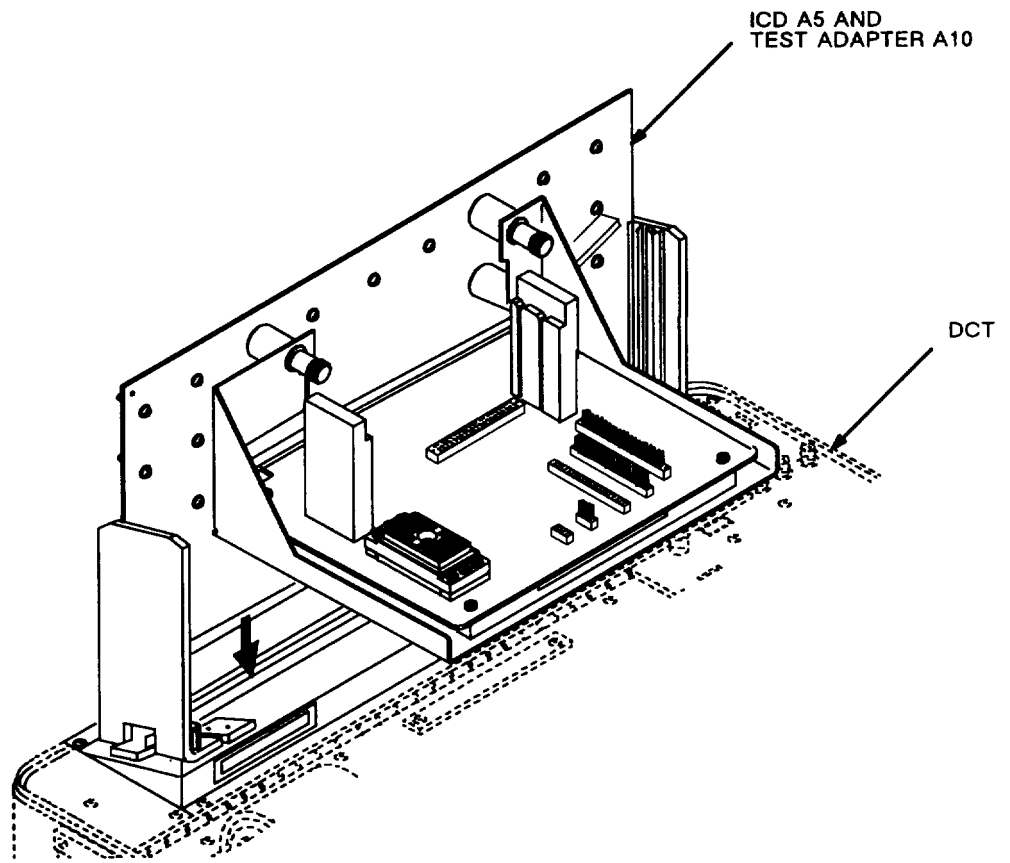
```
>PRINT PROGRAM NOTES?  
>ENTER Y=YES, N= NO,  
>PRESS EXECUTE.
```

(5) Follow operator actions as instructed by program,

- d. Run ATE survey test if desired. (If survey test fails, refer to TM 11-6625-3038-20.)
- e. Install Test Adapter A10 and ICD A5 on digital card tester (see fig. 3-39).
- f. Run ICD survey test if desired. (If survey test fails, refer to TM 11-6625-3094-24.)
- g. Install UUT for functional test (see fig. 3-40).
- h. Verify that the following information is printed:

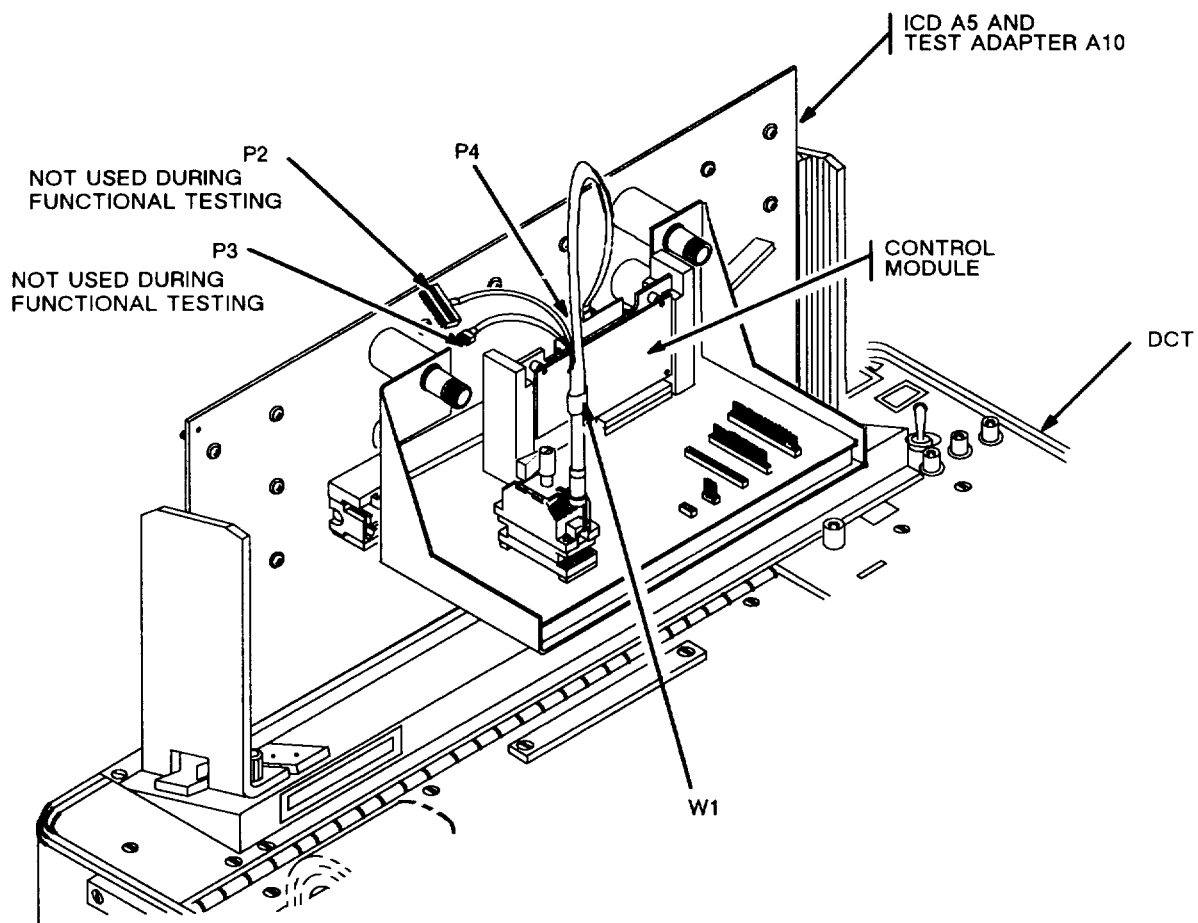
```
>UUT A3148179-1  
>S/N xxxxxxxxxx  
>DATE  
>MM/DD/YY
```

- i. Test UUT.
- j. Repeat or terminate testing.
 - (1) Follow operator actions to repeat tests or terminate testing.
 - (2) Remove ICD and UUT as required.
 - (3) When testing of UUT has been completed, remove test results from printer, Forward test results along with UUT to the next work station.



REH103

Figure 3-39. Installation of Test Adapter A10 for Electronic Components Assembly-Control



REH104

**Figure 3-40. Installation of Electronic Components
Assembly-Control for Functional Testing**

NOTE

PAGES 3-73 THROUGH 3-76 DELETED.

3-13. Control, Counter-Countermeasures, Electronic A3019053-1 (1A5).

The following procedure is used to perform Go/No-Go testing of the control, counter-countermeasures, electronic (1A5) A3019053-1 (see fig. 3-44). Return failed assemblies to depot for repair.

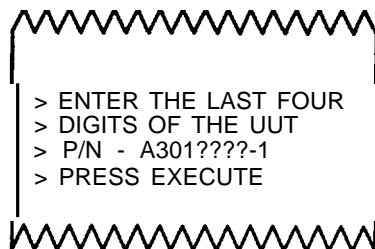
Required Test Accessories	
● Test Program Tape	CPIN CP2600030G
File No	A3019053F
● Test Adapter A8	A3148051-1
● ICD A5	B4041573-2
● Backplane Assembly-ECCM Extender . .	A3148216-1
● 33 Pin Shorting Card	A3148100-2
● 41 Pin Extender Card	A3148257-1

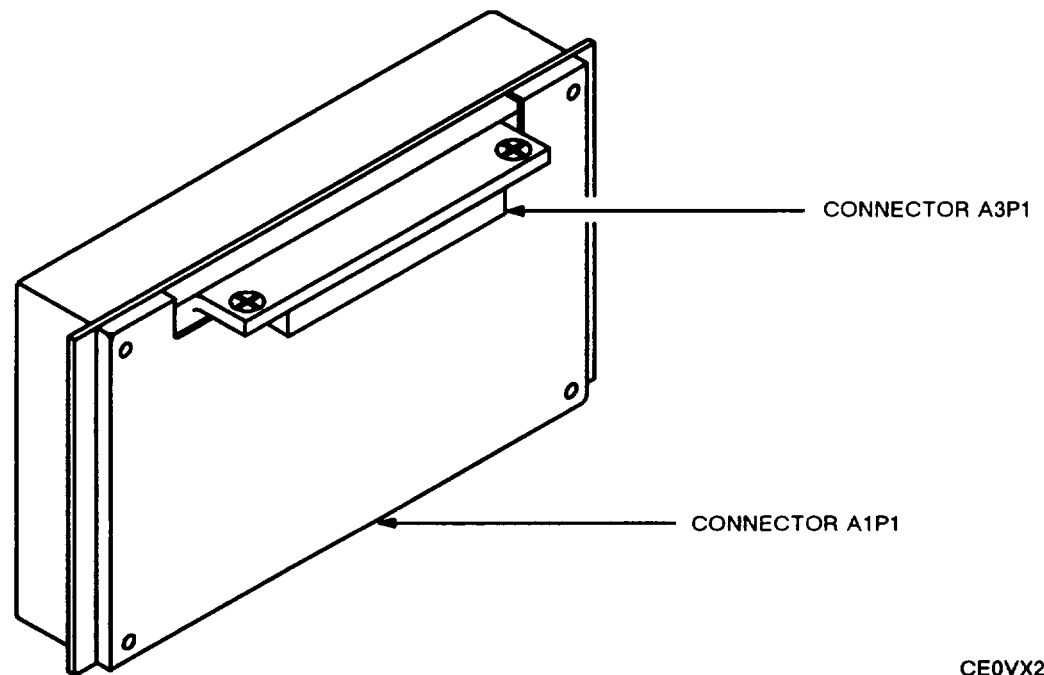
- a. Turn on digital card tester AN/USM-465A
- b. Perform operational procedures in accordance with TM 11-6625-3038-10.

NOTE

This program requires AN/USM-465A software version 2.0 be installed.

- c. Load test program.
 - (1) Install test program tape CPIN CP2600030G in digital card tester in accordance with TM 11-6625-3038-10.
 - (2) Enter LOAD Ø, then press EXECUTE.
 - (3) When READY appears on the display, type RUN and press EXECUTE.
 - (4) Verify that the following information is printed:





CE0VX200

Figure 3-44. Control, Counter-Countermeasures, Electronic (1A5) A3019053-1

THEN

```
>PRINT PROGRAM NOTES?  
>ENTER Y=YES, N= NO,  
>PRESS EXECUTE.
```

(5) Follow operator actions as instructed by program.

- d. Run ATE survey test if desired. (If survey test fails, refer to TM 11-6625-3038-20.)
- e. Install Test Adapter A8 and ICD A5 on digital card tester.
- f. Run ICD survey test if desired (see fig. 3-45). (If survey test fails, refer to TM 11-6625-3094-24.)

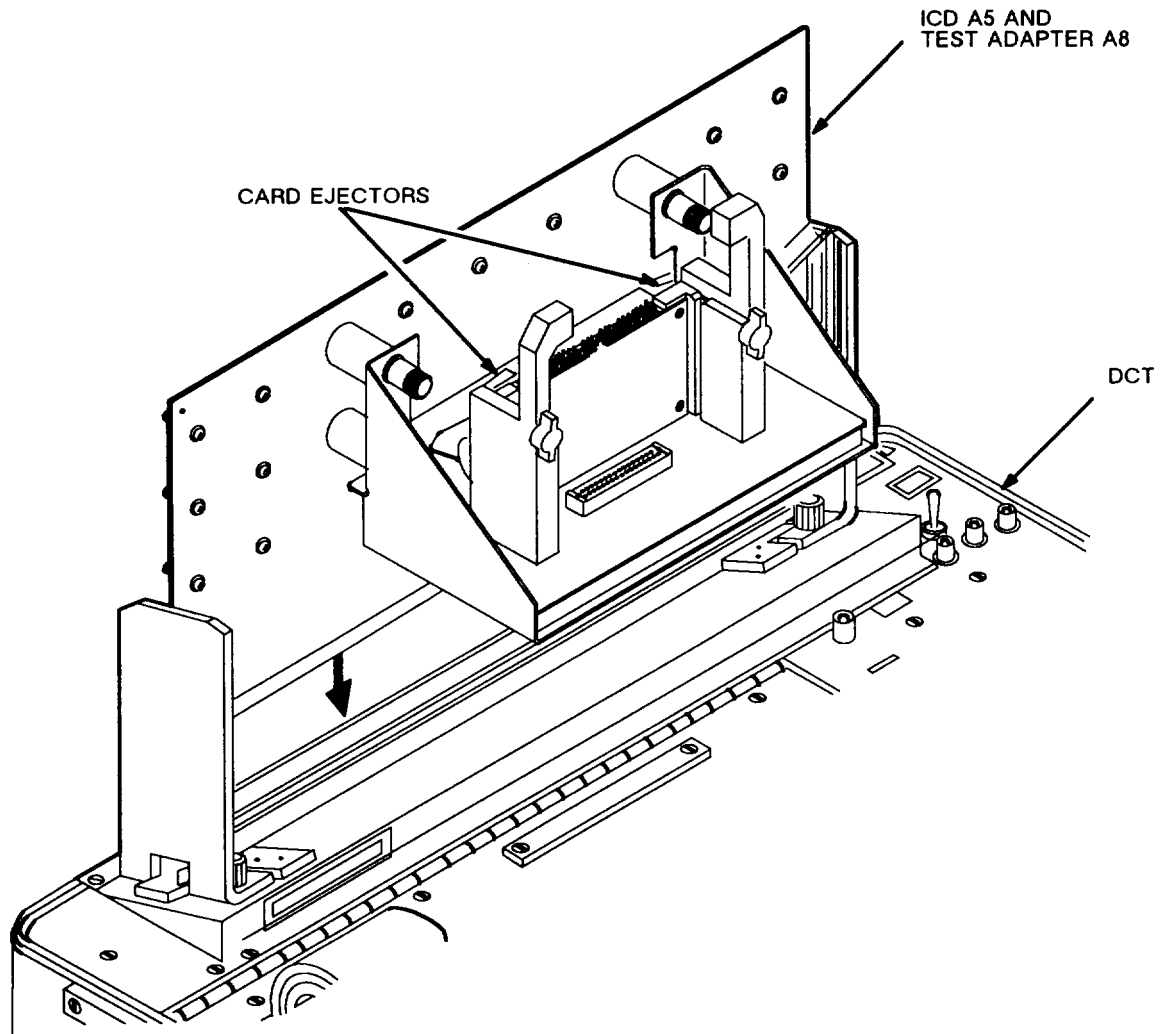
NOTE

Use ejector handles for removal of 41 pin extender card.

- g. Perform UUT hookup (see fig. 3-46).
- h. Verify that the following information is printed:

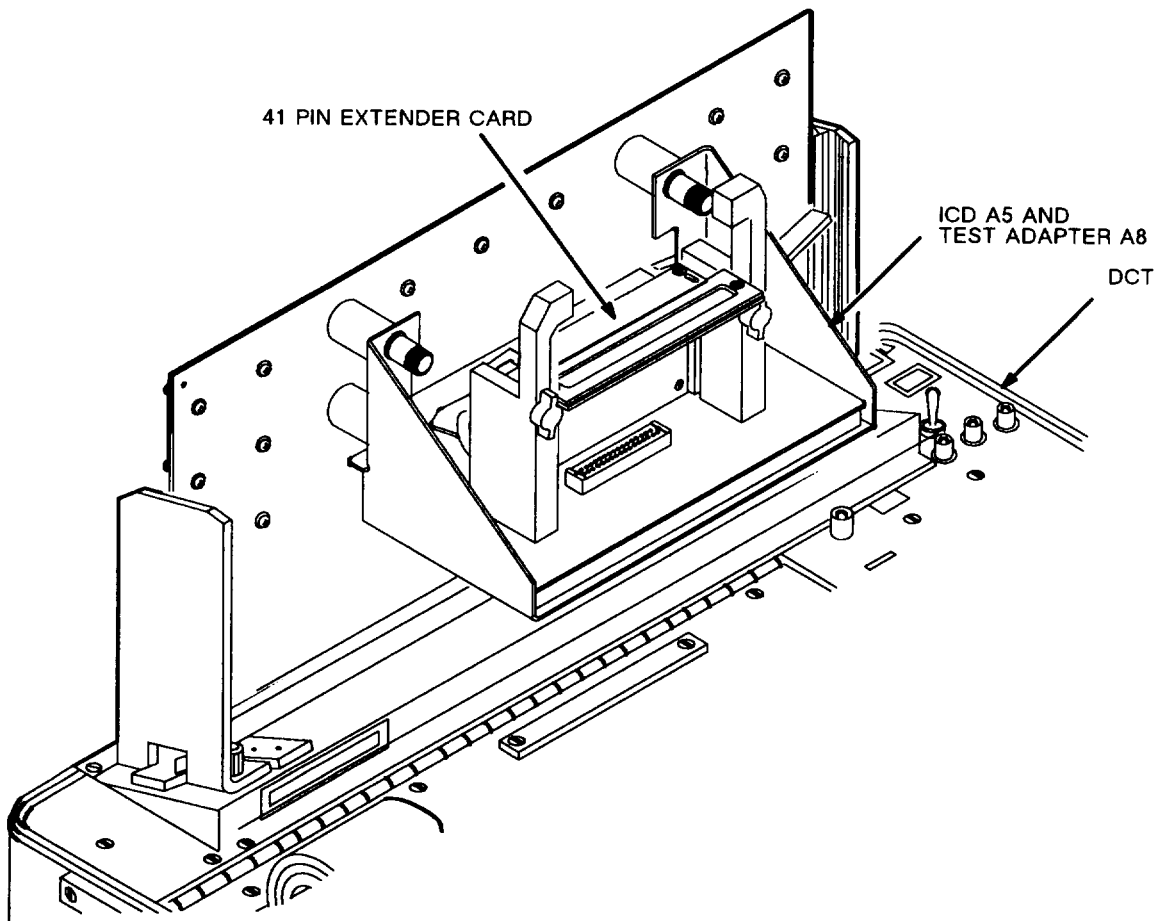
```
>UUT A3019053-1  
>S/N XXXXXXXXXX  
>DATE  
>MM/DD/YY
```

- i. Test UUT.
- j. Repeat or terminate testing.
 - (1) Follow operator actions to repeat tests or terminate testing.
 - (2) Remove ICD and UUT as required.
 - (3) When testing of UUT has been completed, remove test results from printer. Forward test results along with UUT to the next work station.



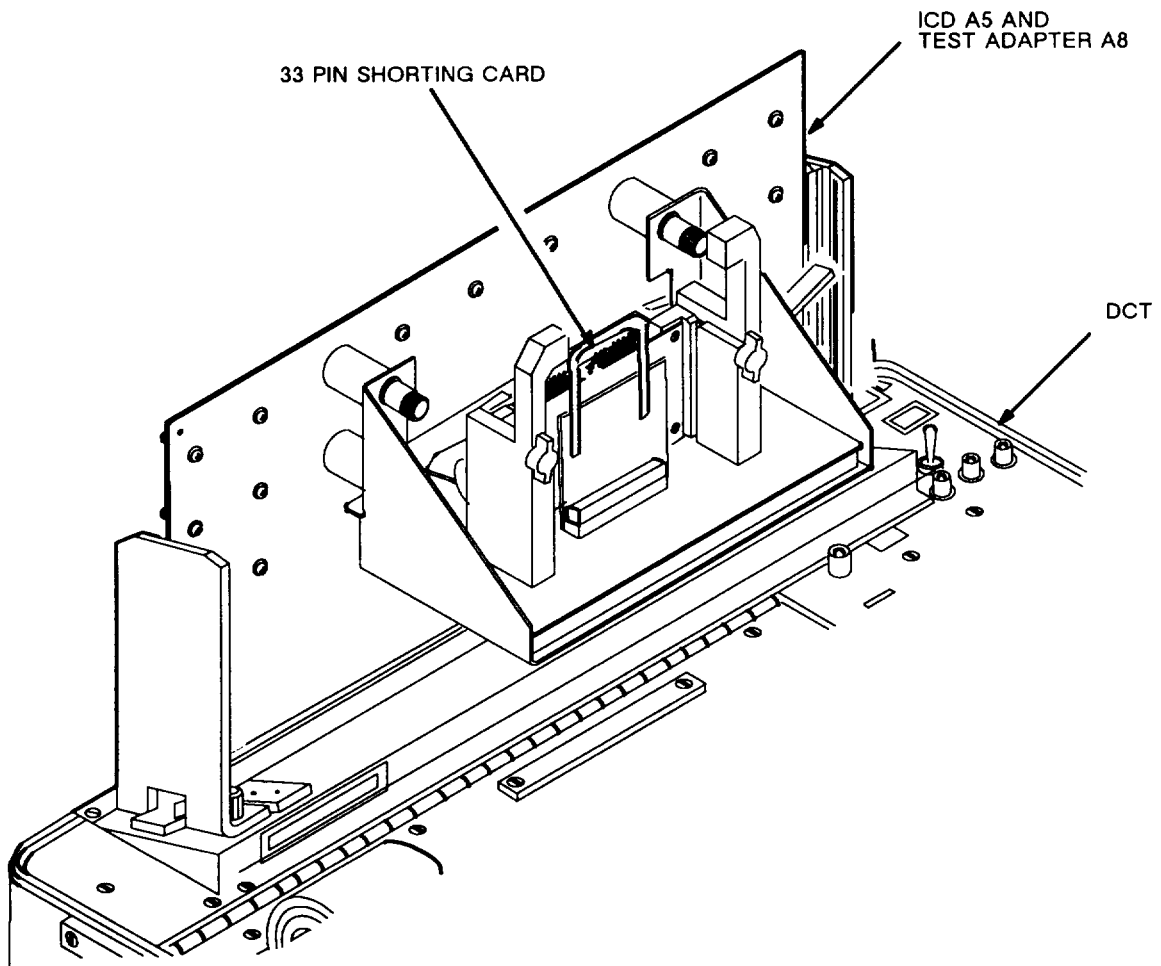
REH108

Figure 3-45. Installation of Test Adapter A8 and ICD A5 on Digital Card Tester (Sheet 1 of 3)



REH109

Figure 3-45, Installation of Test Adapter A8 and ICD A5 on Digital Card Tester (Sheet 2 of 3)



REH110

Figure 3-45. Installation of Test Adapter A8 and ICD A5 on Digital Card Tester (Sheet 3 of 3)

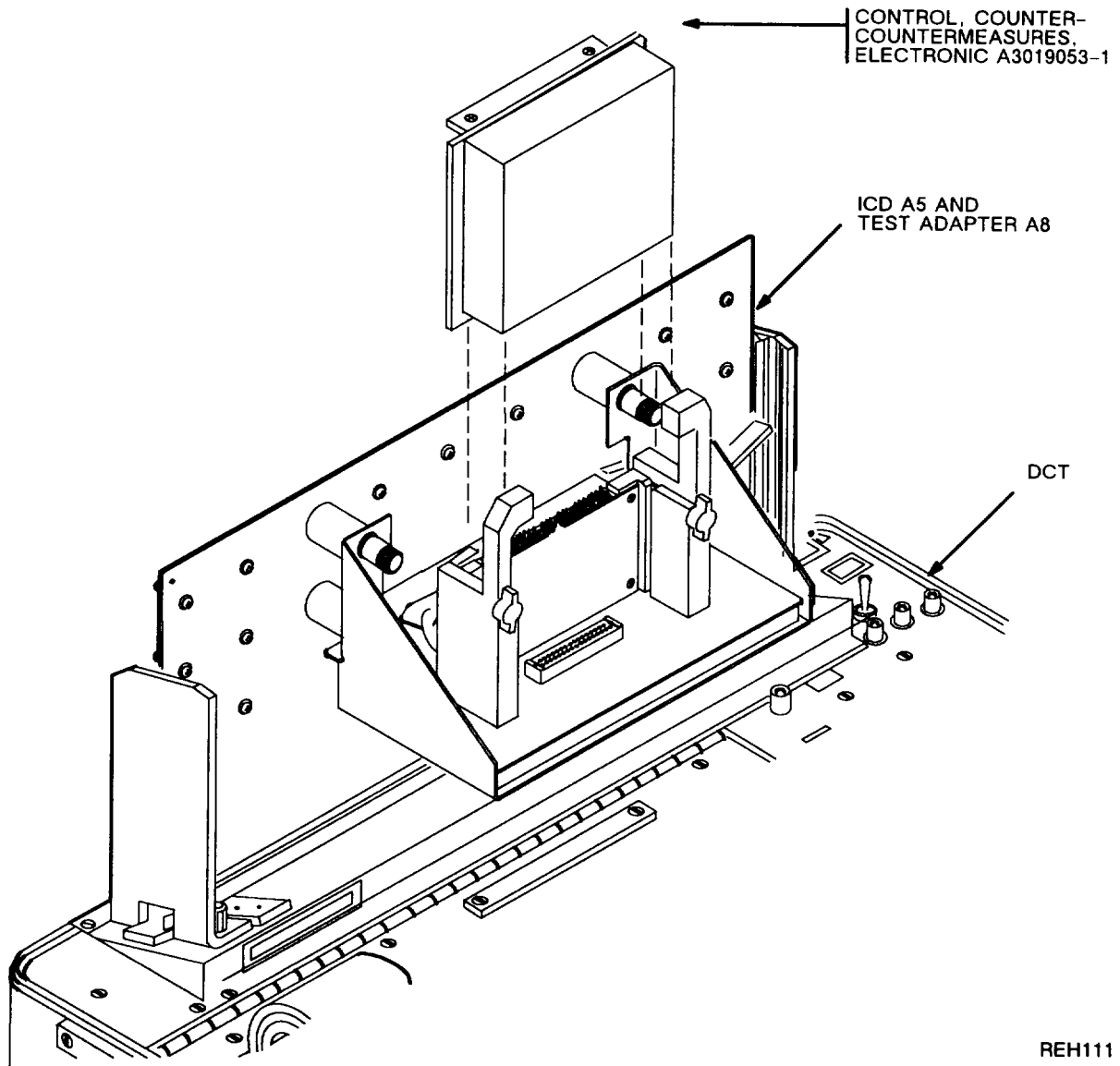


Figure 3-46. Installation of Control, Counter-Countermeasures, Electronic, A3019053-1, on Test Adapter A8

3-14. CCA-ICOM Control, A3142334-1, A3167984-1 or A3191019-1 (1A13).

The following procedure is used to perform Go/No Go testing of the ICOM Control, 1A13, A3142334-1, A3167984-1, or A3191019-1 (see fig. 3-47 on page 3-86). This unit is discarded if it fails the test. Refer to local procedures for disposal.

REQUIRED TEST ACCESSORIES	
● Test Program Tape	CPIN CP2500030G
File No.	A3142334
OR	
● Test Program Tape	CPIN CP3400030G
File No.	A3167984
OR	
● Test Program Tape	CPIN CP3000030G
File No:	A3191019
● Test Adapter A7	A3148050-1
● ICD A5	B4041573-2
● 77 Pin Shorting Card	A3148087-2
● Extractor, Electrical Card	A3148245-1

- a. Turn on digital card tester AN/USM-465A.
- b. Perform operational procedures in accordance with TM 11-6625-3038-10

NOTE

This program requires AN/USM-465A software version 2.0 be installed.

- c. Load test program.
 - (1) Install test program tape CPIN CP2500030G for A3142334, CPIN CP3400030G for A3167984, or CPIN CP3000030G for A3191019 in digital card tester in accordance with TM 11-6625-3038-10.
 - (2) Enter LOAD Ø, then press EXECUTE.
 - (3) When READY appears on the display, type RUN and press EXECUTE.
 - (4) Verify that the following information is printed:

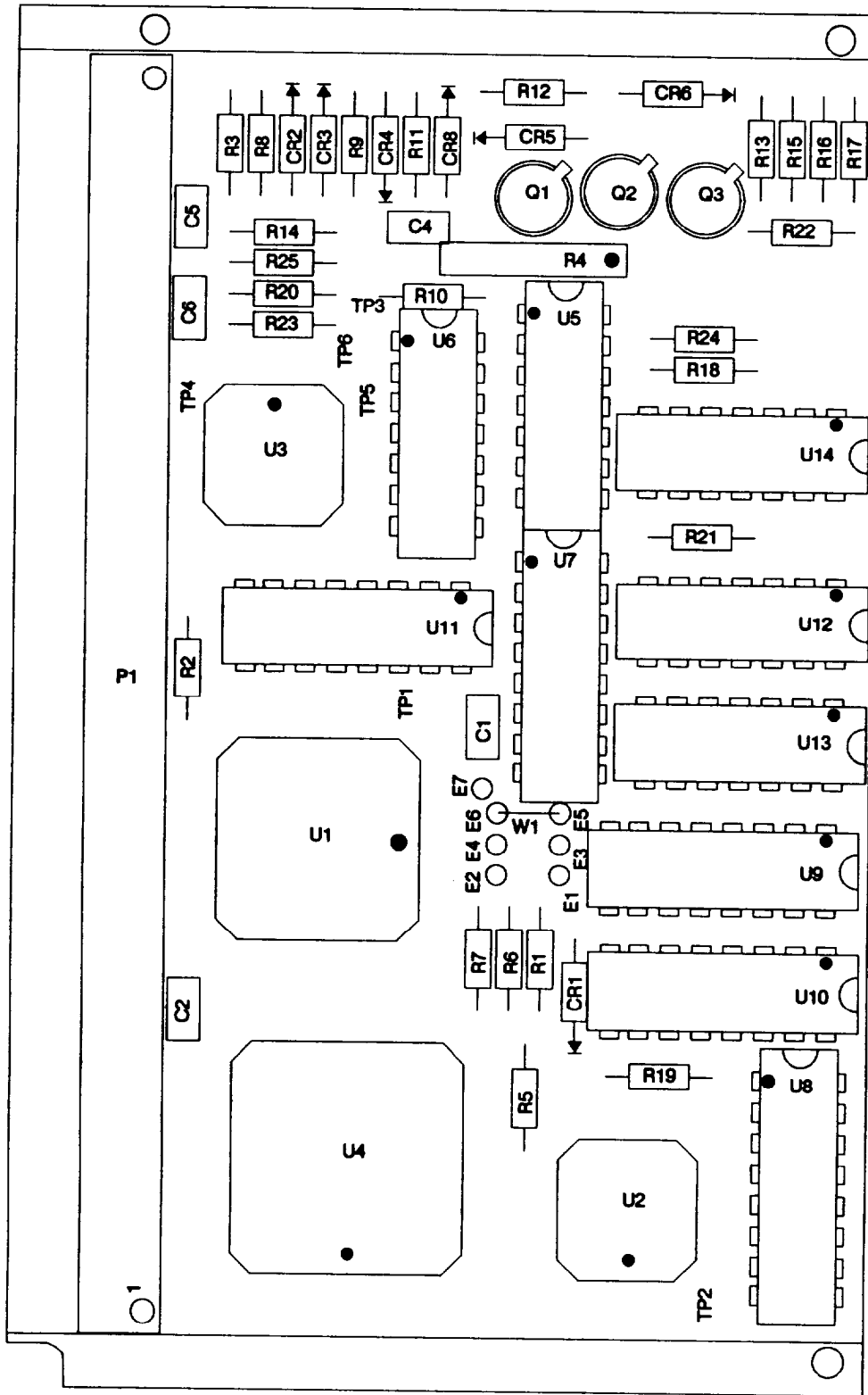
> ENTER THE LAST FOUR
 > DIGITS OF THE UUT
 > P/N - A314????-1
 > PRESS EXECUTE

OR

> ENTER THE LAST FOUR
 > DIGITS OF THE UUT
 > P/N - A316????-1
 > PRESS EXECUTE

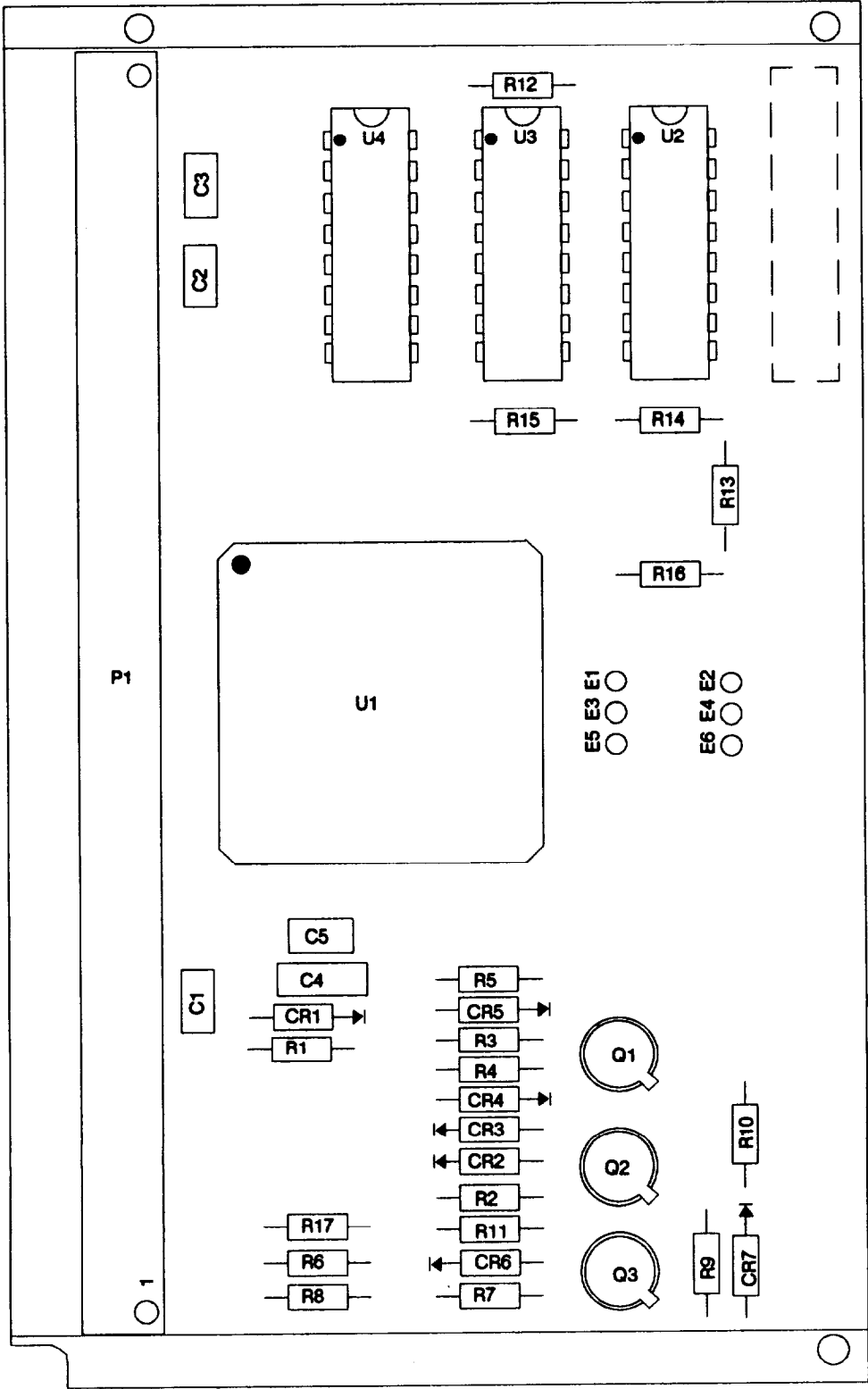
OR

> ENTER THE LAST FOUR
 > DIGITS OF THE UUT
 > P/N - A319????-1
 > PRESS EXECUTE



REH100

Figure 3-47. ICOM Control (1A13) A3142334-1



REH103

Figure 3-47.1. ICOM Control (1A13) A3167984-1 or A3191019-1

THEN

```

> PRINT PROGRAM NOTES?
> ENTER Y=YES, N=NO,
> PRESS EXECUTE.
    
```

- (5) Follow operator actions as instructed by program.
- d.* Run ATE survey test if desired. (If survey test fails, refer to TM 11-6625-3038-20).
- e.* Install Test Adapter A7 and ICD A5 on digital card tester (see fig. 3-48 on page 3-88).
- f.* Run ICD survey test if desired. (If survey test fails, refer to TM 11-6625-3094-24).
- g.* Perform UUT hookup (see fig. 3-49 on page 3-89).
- h.* Verify that the following information is printed:

```

> UUT A3142334-1
> S/N XXXXXXXXXX
> DATE
> MM/DD/YY
    
```

OR

```

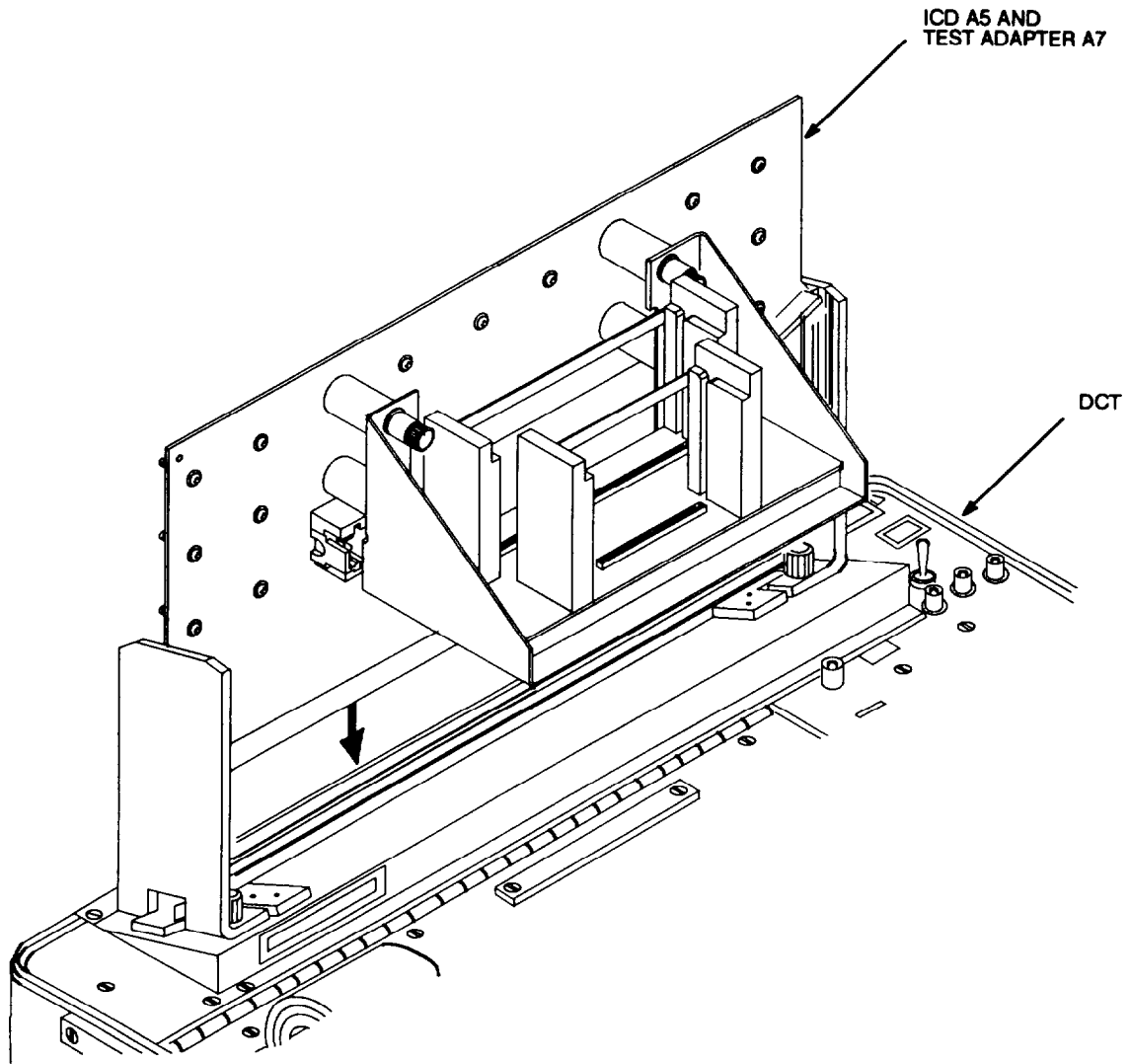
> UUT A3167984-1
> S/N XXXXXXXXXX
> DATE
> MM/DD/YY
    
```

OR

```

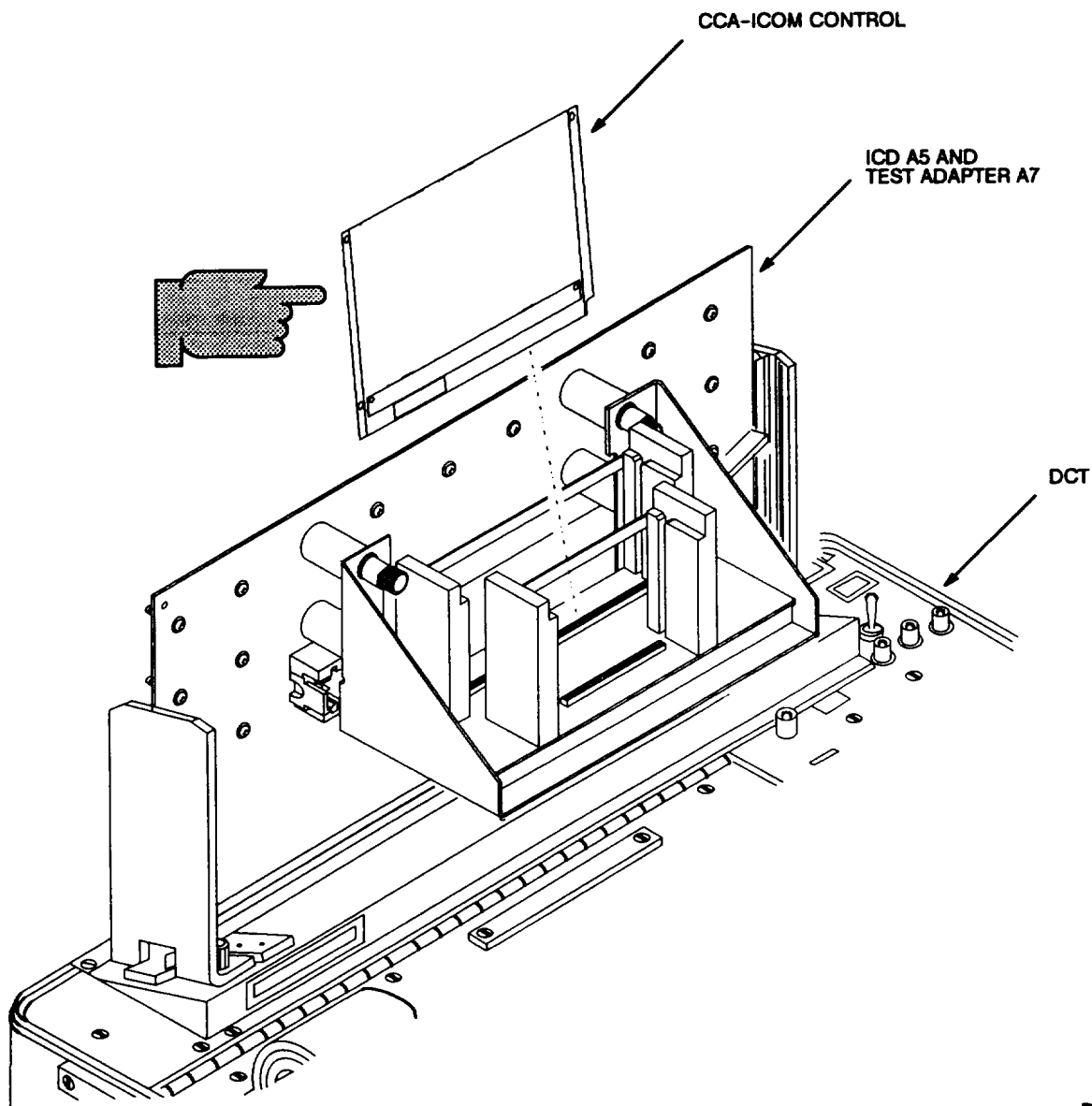
> UUT A3191019-1
> S/N XXXXXXXXXX
> DATE
> MM/DD/YY
    
```

- i.* Test UUT
- j.* Repeat or terminate testing.
 - (1) Follow operator actions to repeat tests or terminate testing.
 - (2) Remove ICD and UUT as required.
 - (3) When testing of UUT has been completed, remove test results from printer. Forward test results along with UUT to the next work station.



REH101

Figure 3-48. Installation of Test Adapter A7 for CCA-ICOM Control



REH102

Figure 3-49. Installation of CCA-ICOM Control on Test Adapter A7

3-15. Electronic Components Assembly-Fill Routing A3018890-1 (1A15)

The following procedure is used to perform Go/No Go testing of the electronic components assembly-fill routing, 1A15, A3018890-1. See fig. 3-50 on page 3-91. Return failed assemblies to depot for repair.

REQUIRED TEST ACCESSORIES

- Test Program Tape CPIN CP2700030G
File No A3018890F
- Test Adapter A6..... A3148049-1
- ICD A5 B4041573-2
- 77 Pin Shorting Card A3148087-2

- a. Turn on digital card tester AN/USM-465A.
- b. Perform operational procedures in accordance with TM 11-6625-3038-10.

NOTE

This program requires AN/USM-465A software version 2.0 be installed.

- c. Load test program.
 - (1) Install test program tape CPIN CP2700030G in digital card tester in accordance with TM 11-6625-3038-10.
 - (2) Enter LOAD Ø, then press EXECUTE.
 - (3) When READY appears on the display, type RUN and press EXECUTE.
 - (4) Verify that the following information is printed:

```
>ENTER THE LAST FOUR  
>DIGITS OF THE UUT  
>P/N - A301????-1  
>PRESS EXECUTE
```

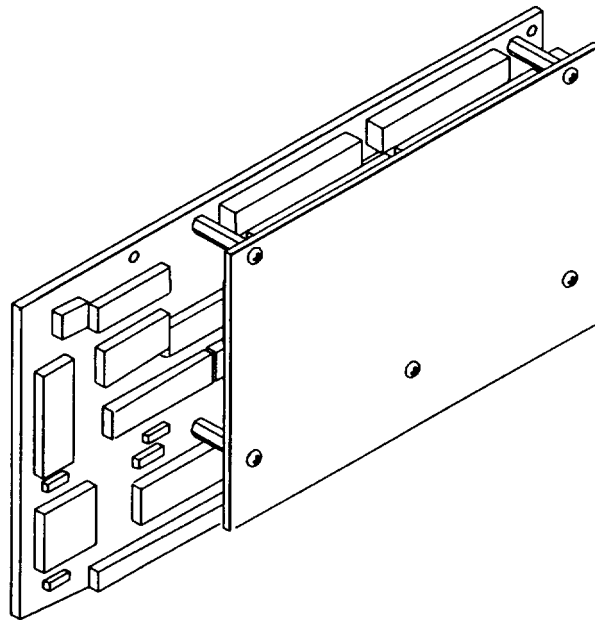


Figure 3-50. Electronic Components Assembly-Fill Routing (1A15) A3018890-1 (Sheet 1 of 3)

CCA-FILL ROUTING I/O A3018887-1
(Bottom Board)

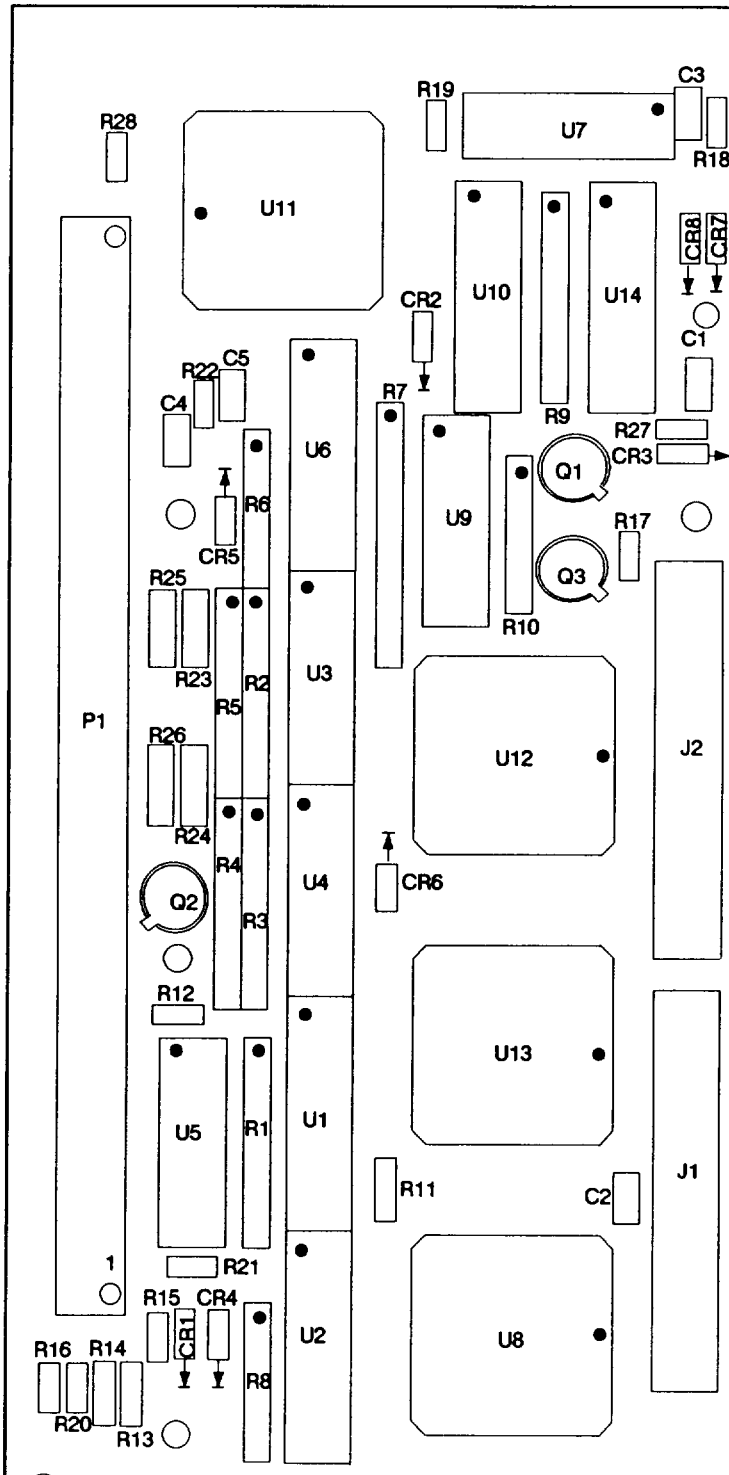


Figure 3-50. Electronic Components Assembly-Fill Routing (1A15) A3018890-1 (Sheet 2 of 3)

CCA-FILL ROUTING CONTROL A3018884-1
(Top Board)

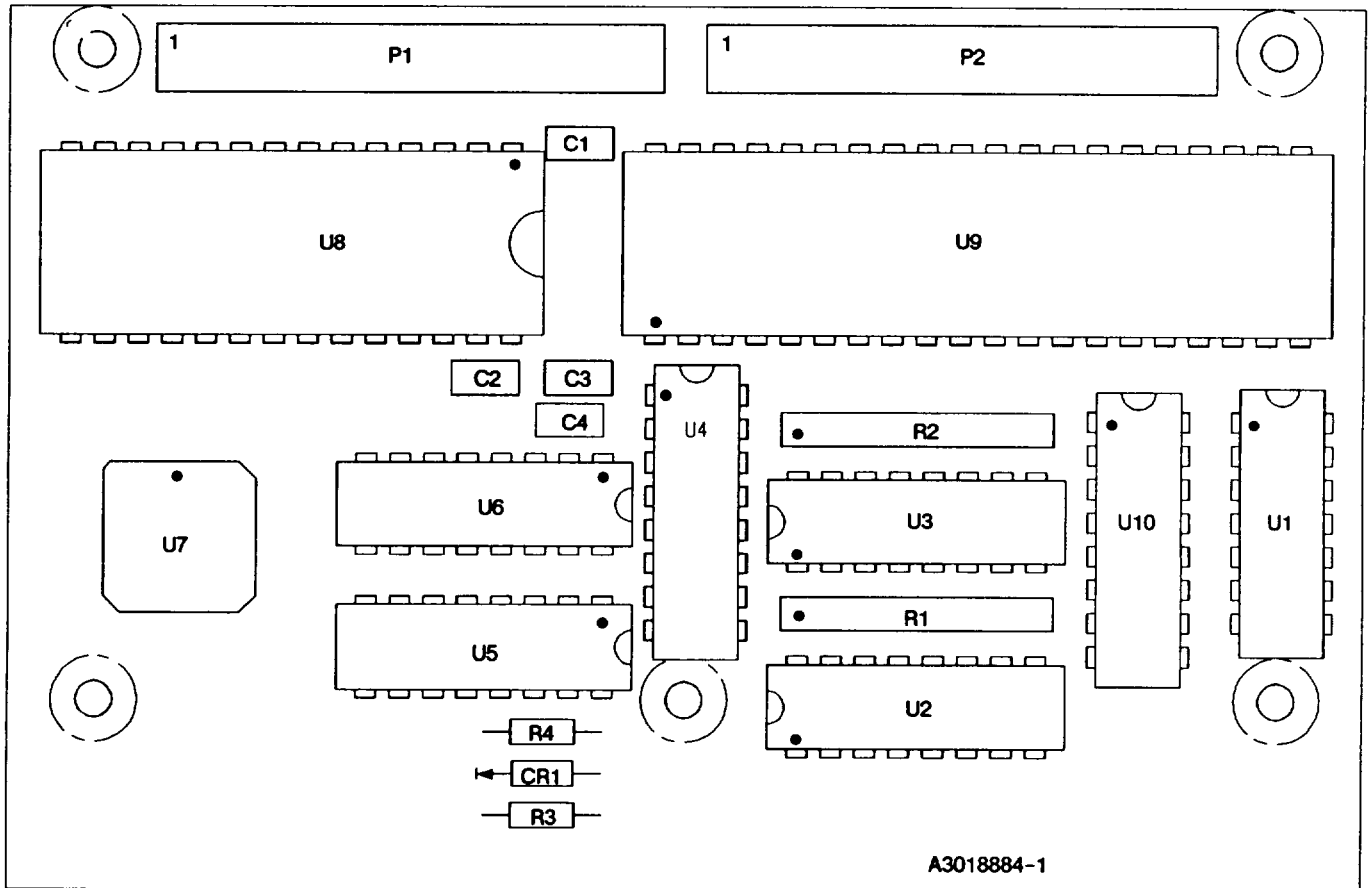


Figure 3-50. Electronic Components Assembly-Fill Routing (1A15) A3018890-1 (Sheet 3 of 3)

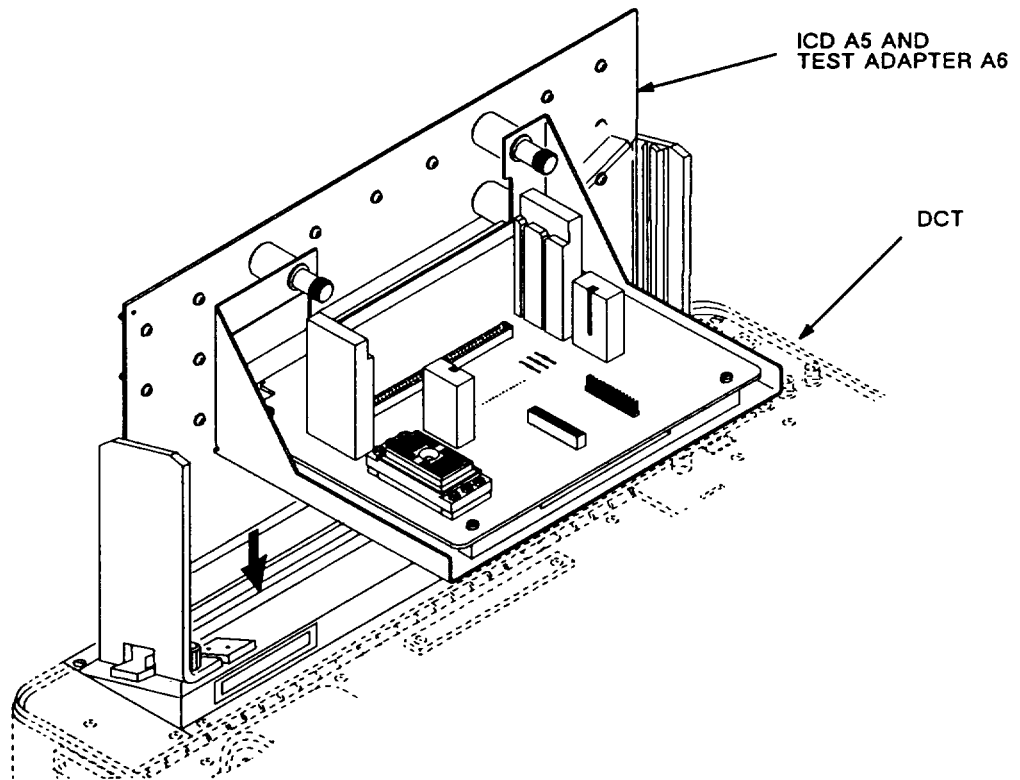
THEN

```
>PRINT PROGRAM NOTES?  
>ENTER Y=YES, N= NO,  
>PRESS EXECUTE.
```

- (5) Follow operator actions as instructed by program.
- d. Run ATE survey test if desired. (If survey test fails, refer to TM 11-6625-3038-20.)
- e. Install Test Adapter A6 and ICD A5 on digital card tester (see fig. 3-51 on page 3-95).
- f. Run ICD survey test if desired. (If survey test fails, refer to TM 11-6625-3094-24.)
- g. Perform UUT hookup as required. (See fig. 3-52 on page 3-96).
- h. Verify that the following information is printed:

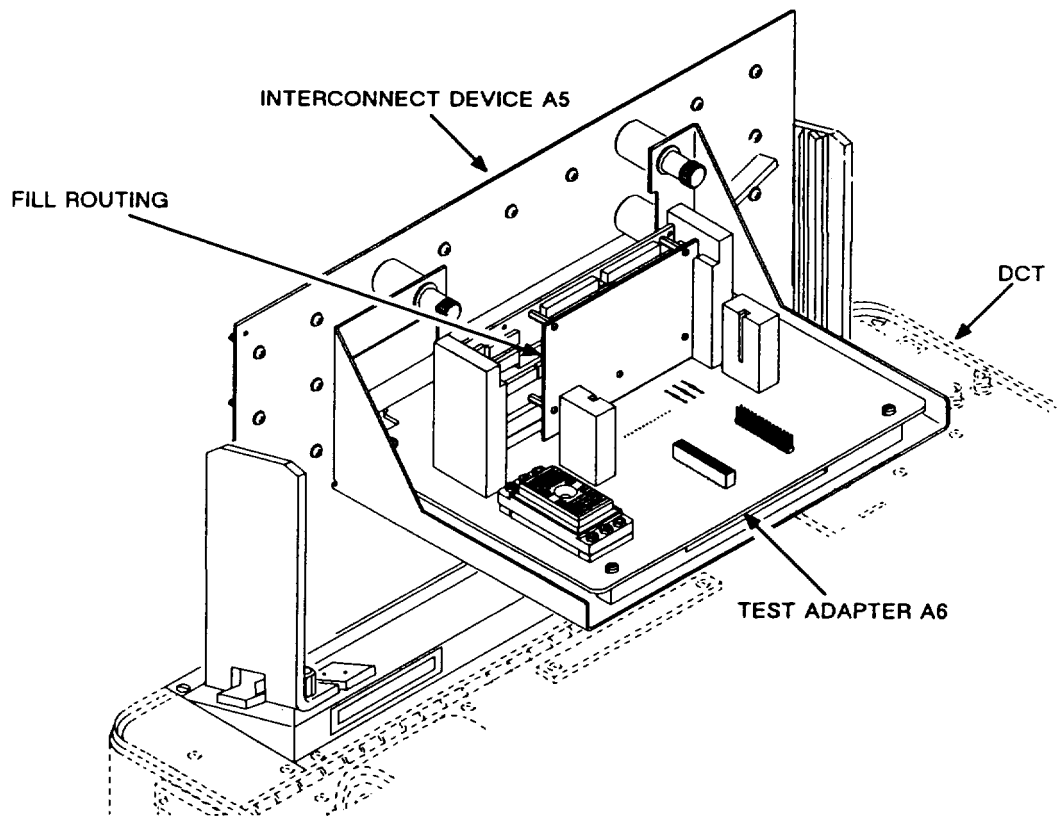
```
>UUT A3018890-1  
>S/N XXXXXXXXXX  
>DATE  
>MM/DD/YY
```

- 1. Repeat or terminate testing.
 - (1) Follow operator actions to repeat tests or terminate testing.
 - (2) Remove ICD and UUT as required.
 - (3) When testing of UUT has been completed, remove test results from printer. Forward test results along with UUT to the next work station.



REH115

Figure 3-51. Installation of ICD A5 with Test Adapter A6 on DCT



REH116

Figure 3-52. Installation of Electronic Components Assembly-Fill Routing for Functional Testing

3-16. CCA-Display A3142328-1 (1A17A1A1)

The following procedure is used to perform Go/No Go testing of the CCA-display (1A17A1A1) A3142328-1 (fig, 3-53 on page 3-98). Return failed assemblies to depot for repair,

REQUIRED TEST ACCESSORIES	
• Test program Tape	CPIN CP2100030G
File No	A3142328F
• ICDA5	B4041573-2
• Test Adapter A12	A3148055-1
• 34 Pin Shorting Plug	A3148155-1

- a. Turn on digital card tester AN/USM-465A.
- b. Perform operational procedures in accordance with TM 11-6625-3038-10.

NOTE

This program requires AN/USM-465A software version 2.0 be installed.

- c. Load test program.
 - (1) Install test program tape CPIN CP2100030G in digital card tester in accordance with TM 11-6625-3038-10.
 - (2) Enter LOAD Ø, then press EXECUTE.
 - (3) When READY appears on the display, type RUN and press EXECUTE.

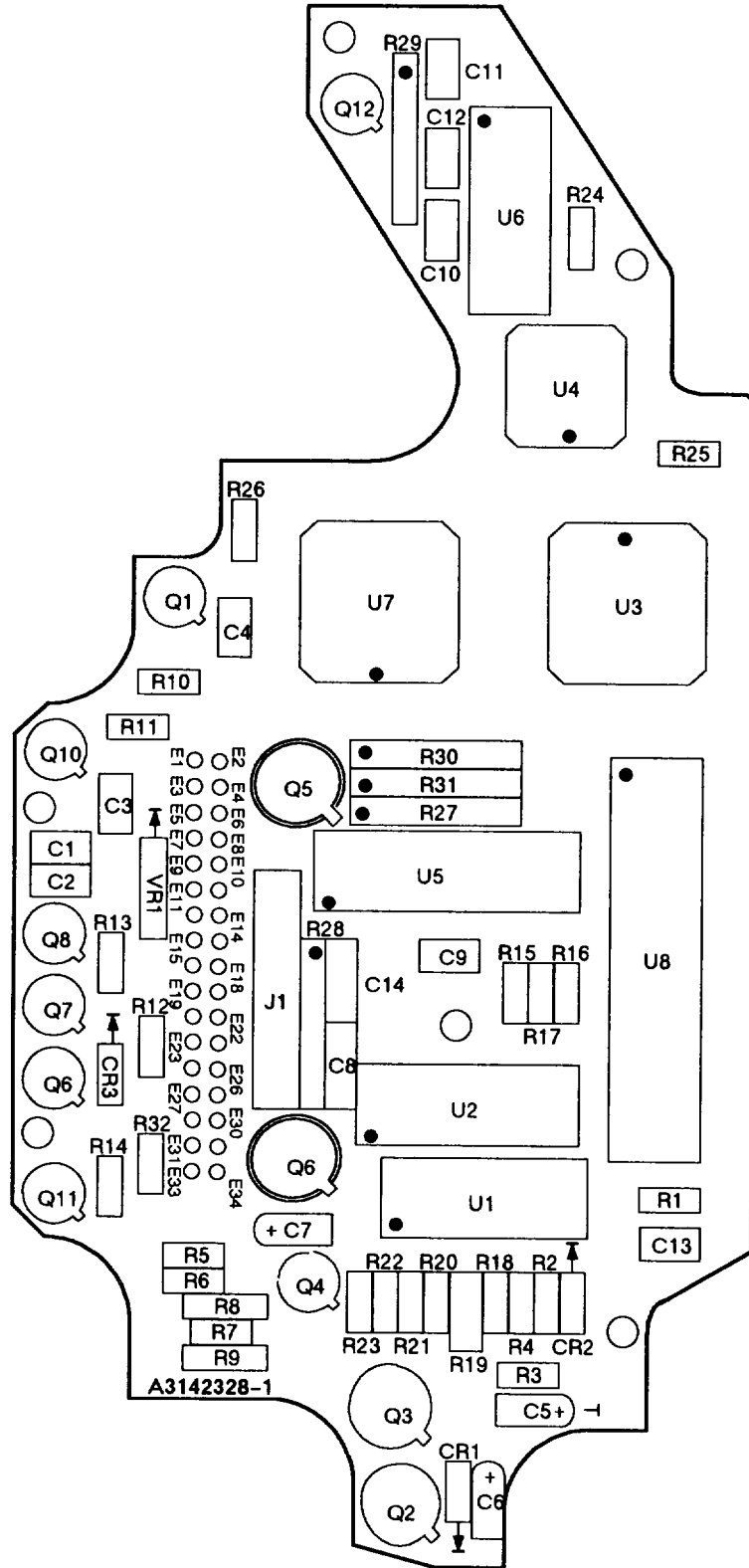


Figure 3-53. CCA-Display (1A17A1A1) A3142328-1

(4) Verify that the following information is printed:

```

>ENTER THE LAST FOUR
>DIGITS OF THE UUT
>P/N - A314????-1
>PRESS EXECUTE
    
```

THEN

```

>PRINT PROGRAM NOTES?
>ENTER Y=YES, N=NO,
>PRESS EXECUTE
    
```

(5) Follow operator instructions as indicated by program.

d. Run ATE survey test if desired. (If survey test fails, refer to TM 11-6625-3038-20.)

e. Install Test Adapter A12 and ICD A5 on digital card tester (See fig. 3-54 on page 3-100).

f. Run ICD survey test if desired. Refer to TM 11-6625-3094-24 if the ICD fails survey test.

g. Enter UUT serial number.

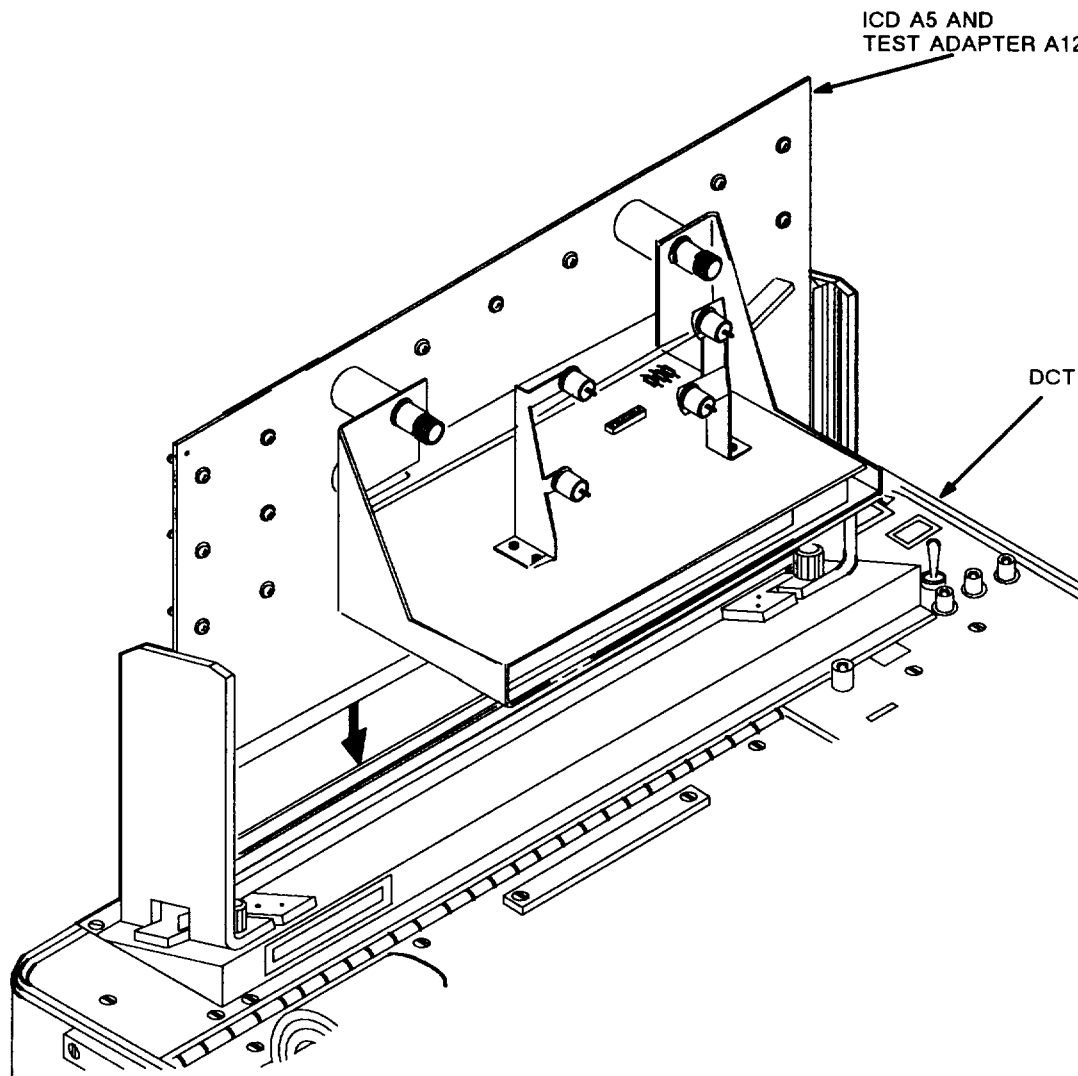
h. Perform UUT Hookup. (See fig. 3-55)

i. Verify that the following information is printed:

```

>UUT A3142328-1
>S/N xxxxxxxxxxxx
>DATE
>MM/DD/YY
    
```

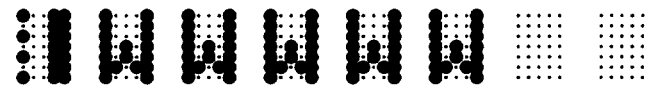
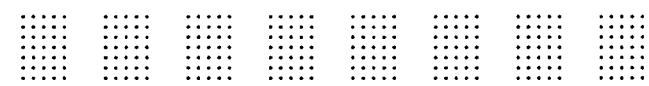
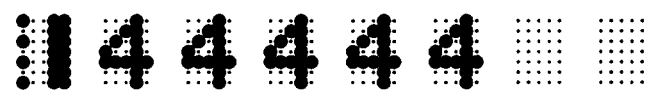
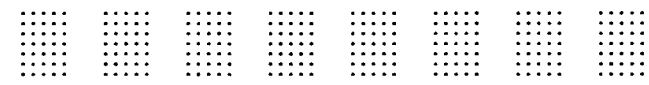
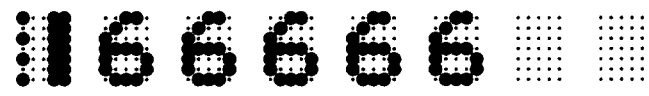


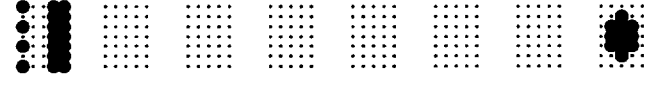
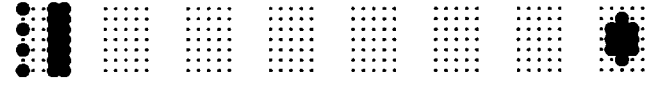
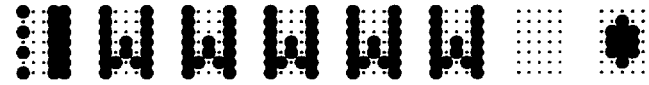

- j. Test UUT.
- k. During testing certain displays will be referenced. These displays are shown in table 3-3 on page 3-101.
- l. Check backplane traces for opens and shorts.
- m. Repeat or terminate testing.
 - (1) Follow operator instructions to repeat tests or terminate testing.
 - (2) Remove ICD and UUT as required.
 - (3) When testing UUT has been completed, remove test results from printer, Forward test results along with UUT to the next work station.



REH117

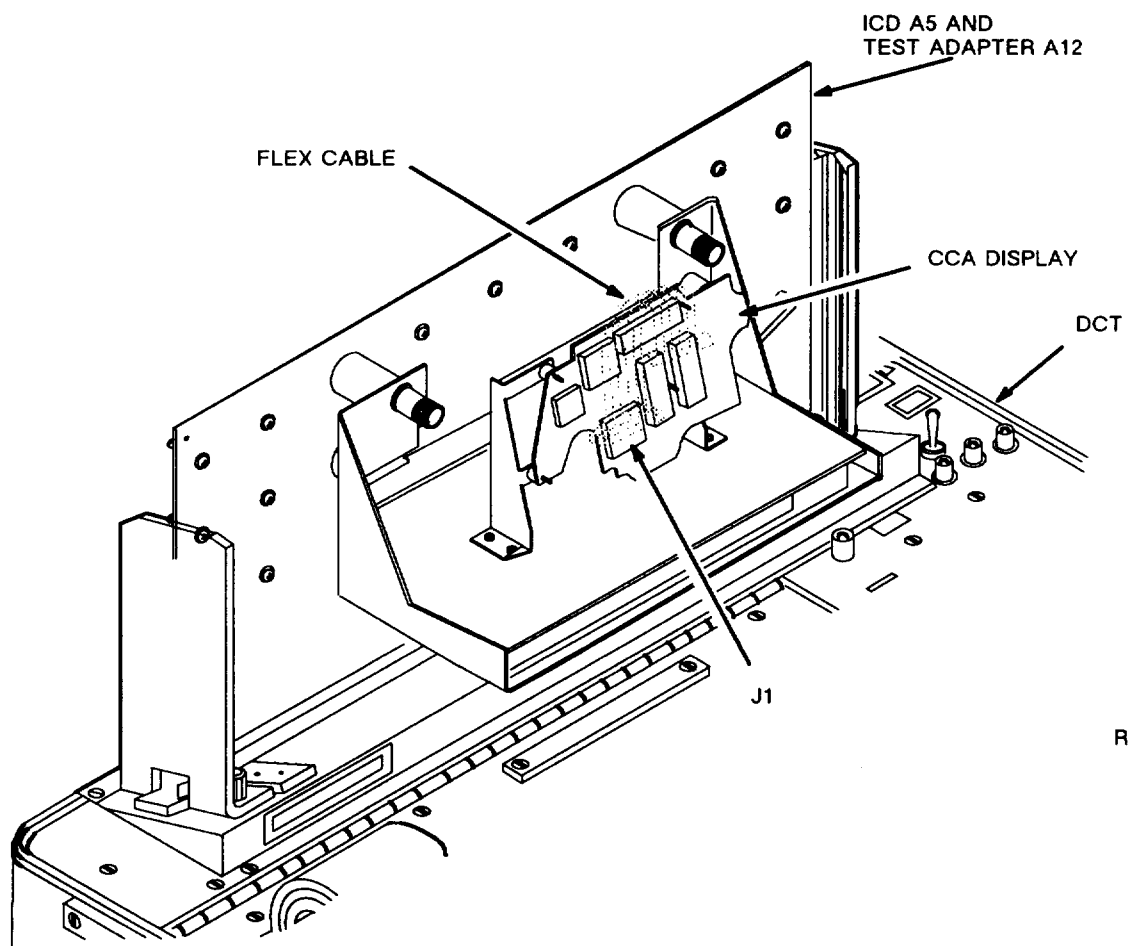
Figure 3-54. Installation of ICD A5 and Test Adapter A12 on DCT

Table 3-3. CCA-Display Test Displays

	entry 1
	entry 2
	entry 3
	entry 4
	entry 5
	entry 6
	entry 7
	entry 8
	always on - - - - - ^
	entry 9
	flashing - - - - - ^
	entry 10
	entry 11
	^ - - - - - rising bar ramp

NOTE

Connect flex cable connector to J1 of test adapter A12.



REH118

Figure 3-55. Installation of CCA-Display for Functional Testing

**3-17. Chassis, Electrical Equipment-Receiver-Transmitter Subassembly
A3148159-1 (1A17A2).**

The following procedure is used to test and troubleshoot the chassis, electrical equipment–receiver–transmitter subassembly (1A17A2) A31 481 59–1 (See fig. 3–56). Return failed assemblies to depot for repair.

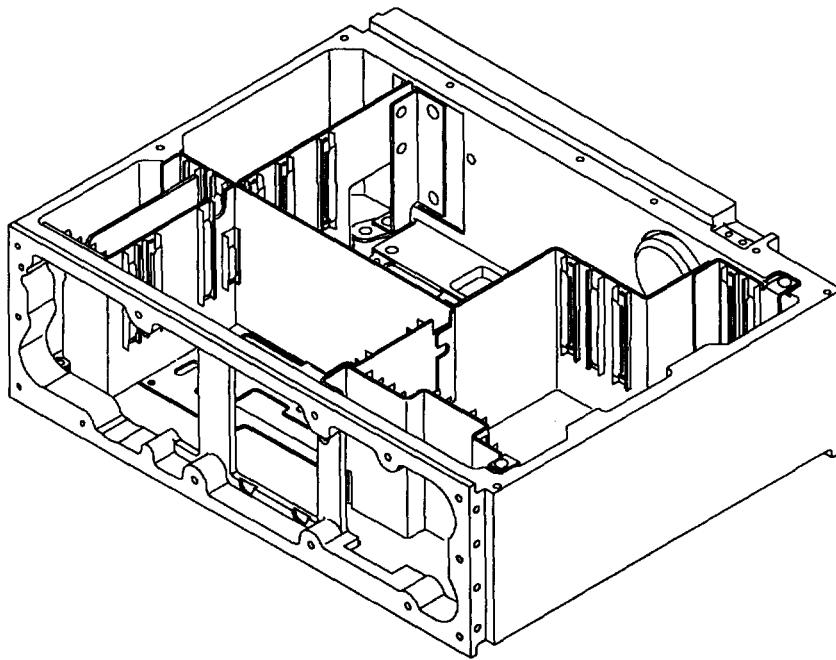
REQUIRED TEST ACCESSORIES

- Test Program Tape CPIN CP2200030G
File No A31481 59F
- ICD-A5 B4041573–2
- Test Adapter A13, A3148056–1 with items:
 - 77 Pin Shorting Card A3148087-2 (4 ea)
 - 61 Pin Shorting Card A3148092-2 (2 ea)
 - 41 Pin Shorting Card A3148096-2 (2 ea)
 - 33 Pin Shorting Card A3148100-2 (2 ea.)
 - 25 Pin Shorting Card A3148104-2
 - 17 Pin Shorting Card A3148108-2 (3 ea.)
 - 9 Pin Shorting Card A3148112-2
 - 34 Pin Shorting Plug A3148155-1 (2 ea)
 - 29 Pin Shorting Plug A3148156-1
 - 27 Pin Shorting Plug A3148157-1
 - 14 Pin Shorting Plug A3148158-1
 - Wiring Harness, Branched A13W1 with . . . A3148150-1
77 Pin Circuit Card A3148087–1
 - Wiring Harness, Branched A13W2 with . . . A3148151-1
33 Pin Circuit Card A3148100-1
61 Pin Circuit Card A3148092-1
 - Wiring Harness, Branched A13W3 with . . . A3148152-1
25 Pin Circuit Card A3148104-1
41 Pin Circuit Card A3148096-1
 - Wiring Harness, Branched A13W4 with . . . A3148154-1
9 Pin Circuit Card A3148112-1
17 Pin Circuit Card A3148108-1

- a. Turn on digital card tester AN/USM-465A.
- b. Perform operational procedures in accordance with TM 11-6625-3038-10.

NOTE

This program requires AN/USM-465A software version 2.0 be installed.



REH119

Figure 3-56. Chassis, Electrical Equipment-Receiver-Transmitter Subassembly (1A17A2) A3148159-1

c. Load test program.

- (1) Install test program tape CPIN CP2200030G in digital card tester in accordance with TM 11-6625-3038-10.
- (2) Enter LOAD Ø, then press EXECUTE.
- (3) When READY appears on the display, type RUN and press EXECUTE.
- (4) Verify that the following information is printed:

```
>ENTER THE LAST FOUR
>DIGITS OF THE UUT
>PIN - A313????-1
>PIN - A314????-1
>PRESS EXECUTE
```

THEN

```
> PRINT PROGRAM NOTES?
> ENTER Y= YES, N = NO,
> PRESS EXECUTE
```

(5) Follow operator instructions as indicated by program.

d. Run ATE survey test if desired. (If survey test fails, refer to TM 11-6625-3038-20.)

e. Install Test Adapter A13 and ICD A5 on digital card tester (See fig. 3-57 on page 3-106).

CAUTION

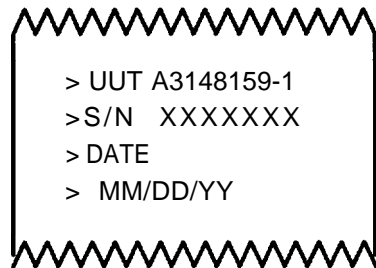
When performing tests with the Test Adapter A13, you must support the underside of the test adapter when installing and removing connectors to avoid damage to the test adapter or the ICD.

f. Run ICD survey test if desired. Self-test requires that ICD cables be mated with connectors on the ICD backplane (See fig. 3-58). Refer to TM 11-6625-3094-24 if the ICD fails survey test.

g. Perform UUT Hookup.

- Install jumper cards and cables as shown in fig. 3-59 and 3-60.

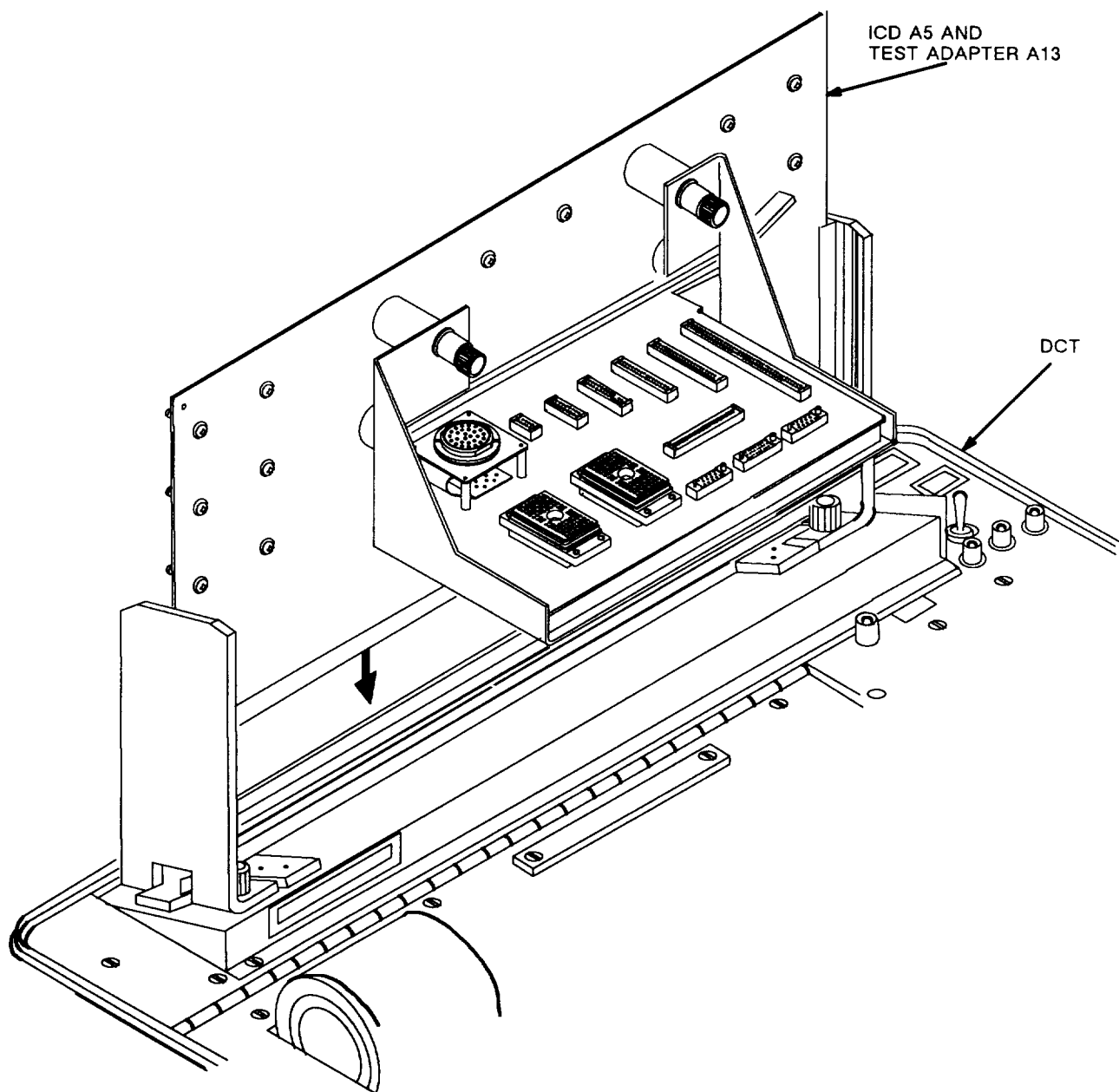
h. Verify that the following information is printed:



i. Test UUT.

NOTE

When testing UUT, place on a flat surface to avoid depressing interlock switches.



REH120

Figure 3-57. Installation of Test Adapter A13 with ICD A5 on DCT

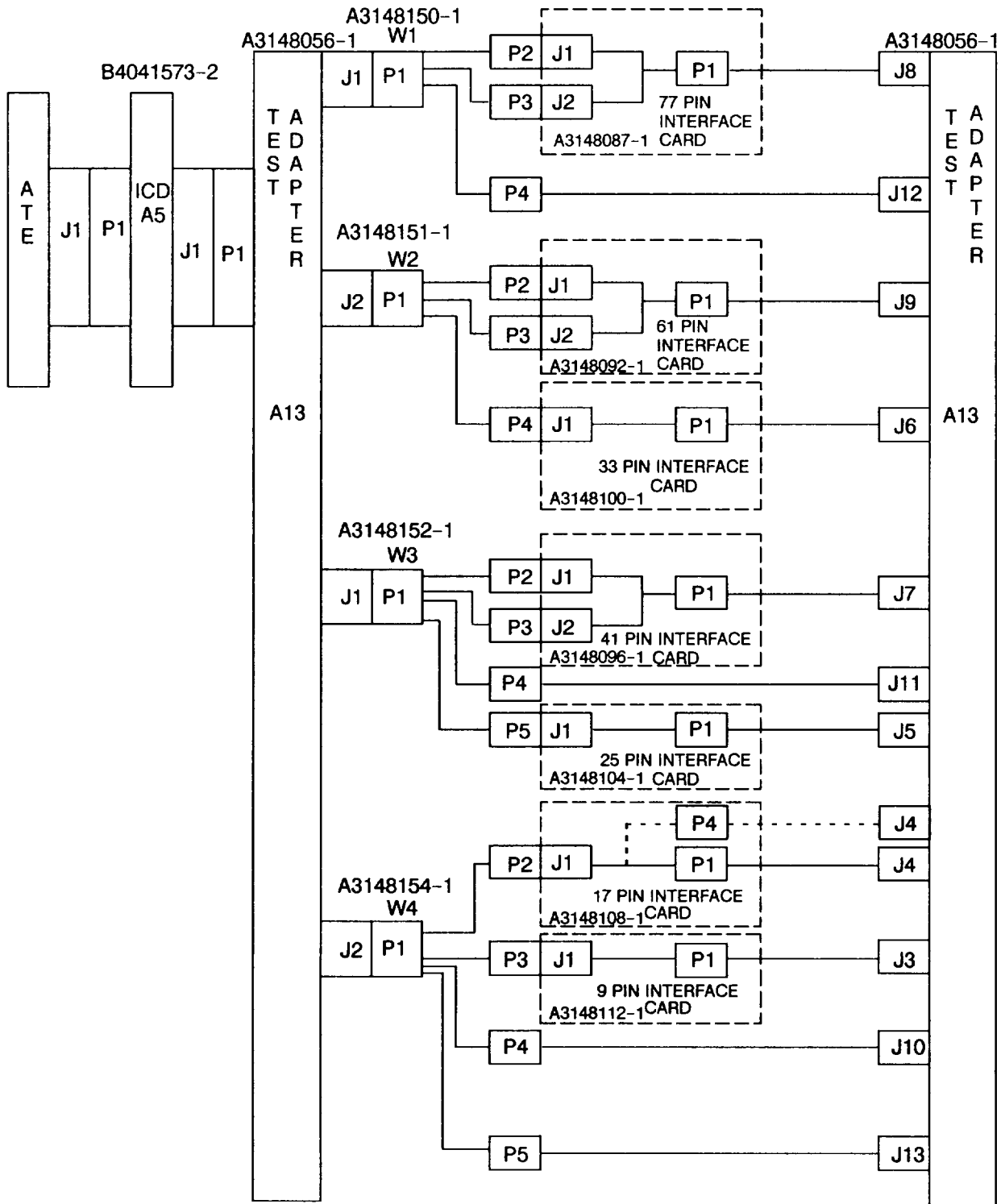
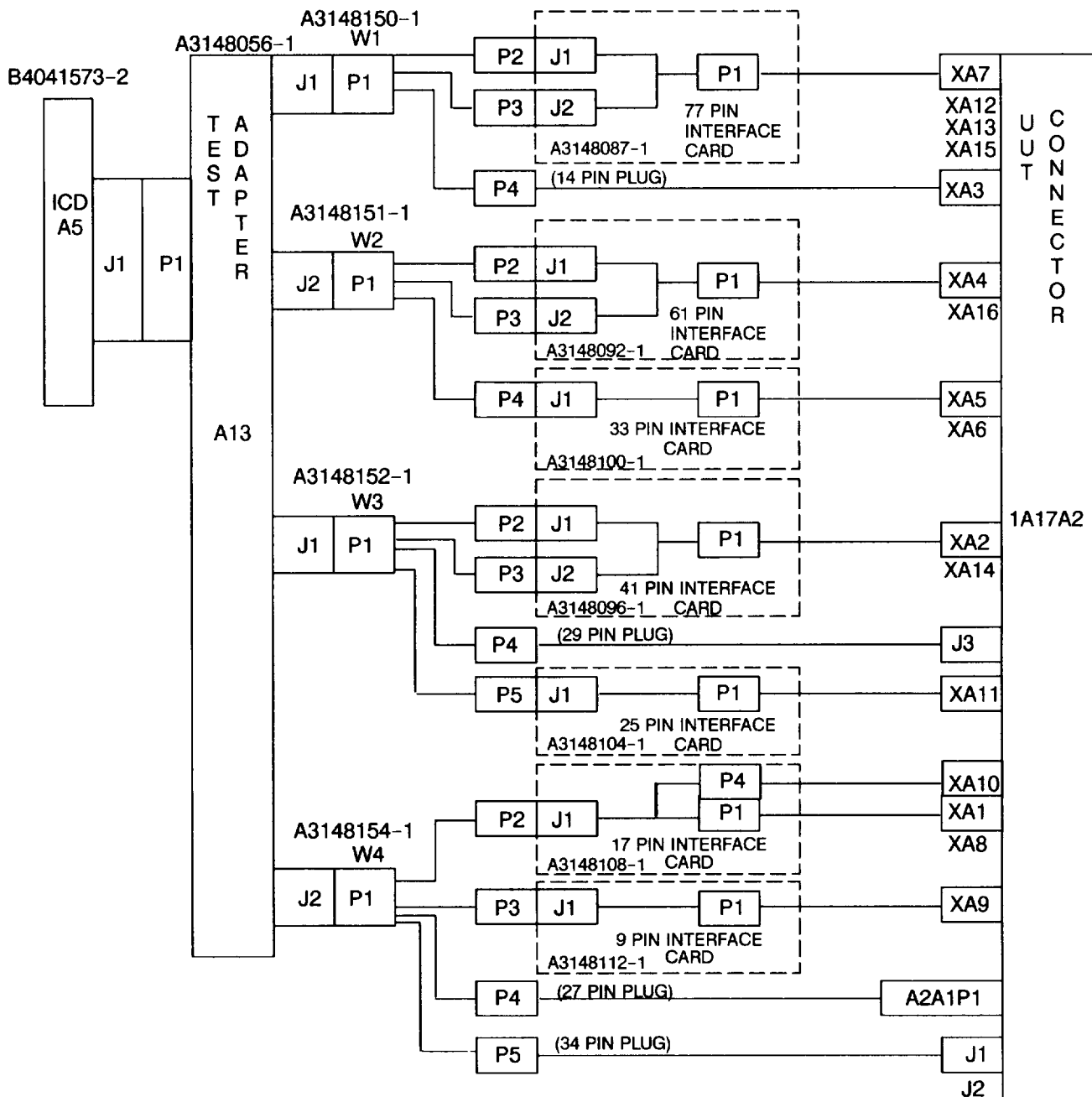


Figure 3-58. Self-Test Cable Installation Diagram



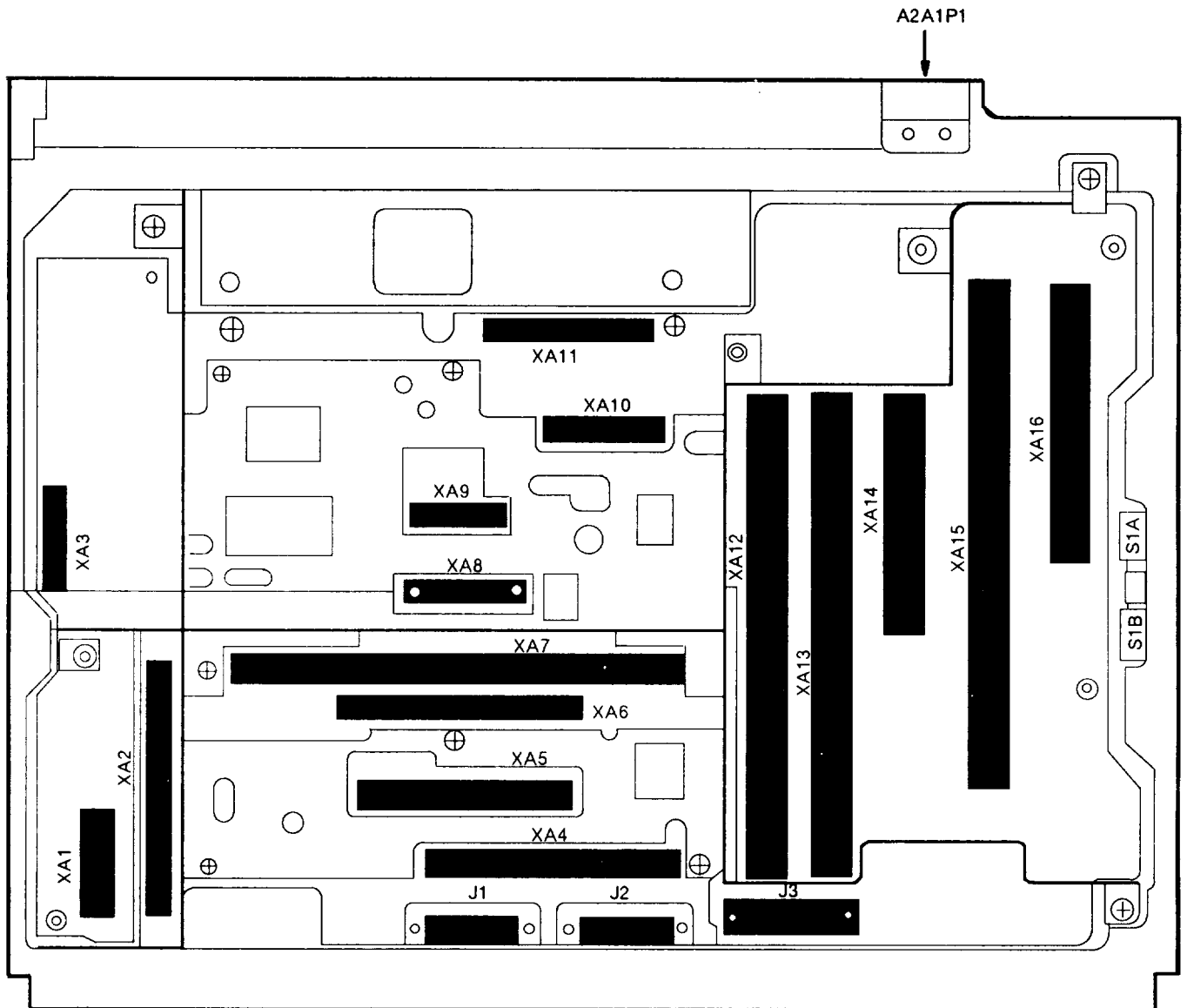
SHORTING CARD/PLUG ASSEMBLY

UUT CONNECTOR

9 PIN SHORTING CARD P/N A3148112-2	XA9
14 PIN SHORTING PLUG P/N A3148158-1	XA3
17 PIN SHORTING CARD P/N A3148108-2	XA1, XA8(P2), XA10(P3)
25 PIN SHORTING CARD P/N A3148104-2	XA11
27 PIN SHORTING PLUG P/N A3148157-1	A2A1P1
29 PIN SHORTING PLUG P/N A3148156-1	J3
33 PIN SHORTING CARD P/N A3148100-2	XA5, XA6
34 PIN SHORTING PLUG P/N A3148155-1	J1, J2
41 PIN SHORTING CARD P/N A3148096-2	XA2, XA14
61 PIN SHORTING CARD P/N A3148092-2	XA4, XA16
77 PIN SHORTING CARD P/N A3148087-2	XA7, XA12, XA13, XA15

REH122

Figure 3-59. Installation Diagram to Chassis



REH123

Figure 3-60. Location of Backplane Connectors

j. Refer to fig. 3-60 and the following table for placement of shorting cards.

SHORTING CARD/PLUG ASSEMBLY

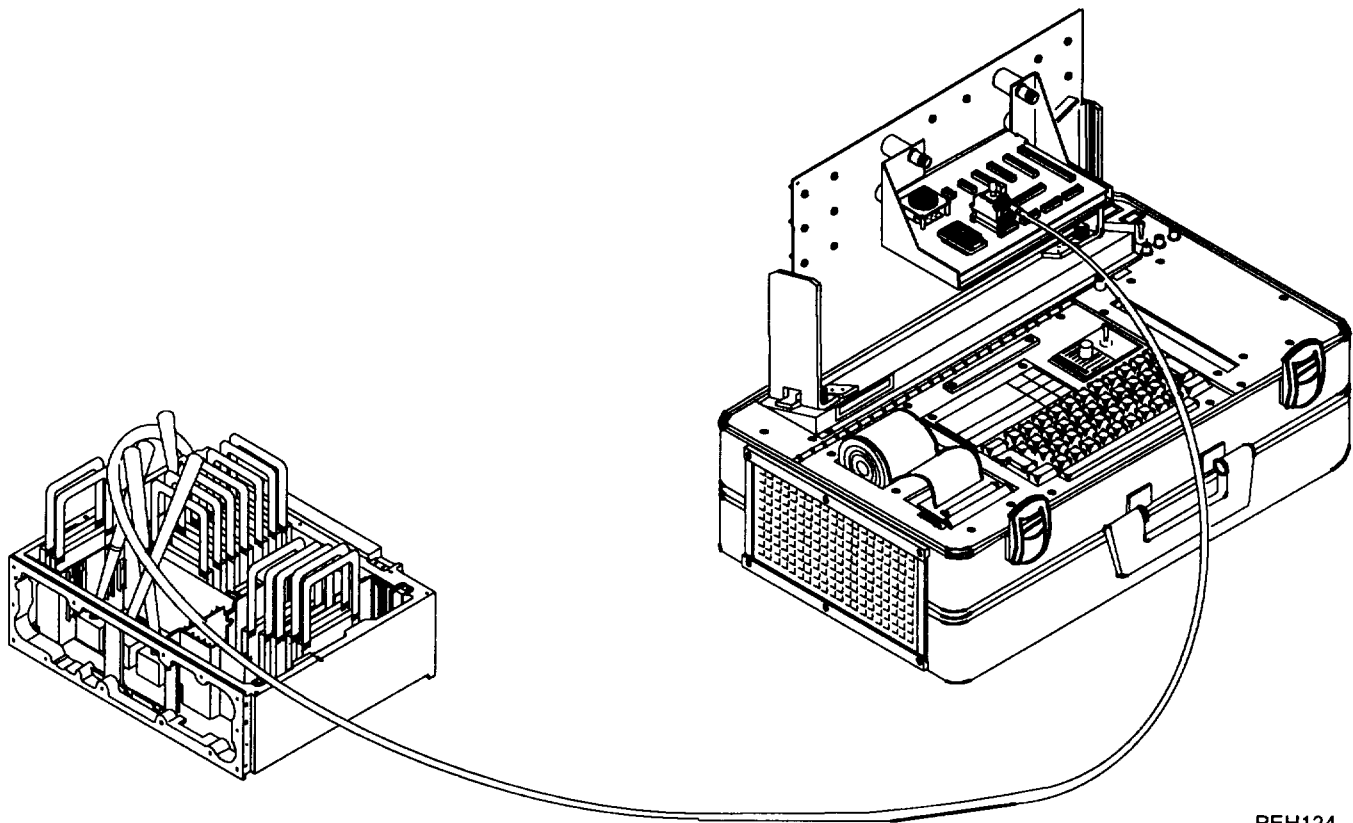
- 9 PIN SHORTING CARD P/N A3148112-2
- 17 PIN SHORTING CARD P/N A3148108-2
- 25 PIN SHORTING CARD P/N A3148104-2
- 27 PIN SHORTING PLUG P/N A3148157-1
- 29 PIN SHORTING PLUG P/N A3148156-1
- 33 PIN SHORTING CARD P/N A3148100-2
- 34 PIN SHORTING PLUG P/N A3148155-1
- 41 PIN SHORTING CARD P/N A3148096-2
- 61 PIN SHORTING CARD P/N A3148092-2
- 77 PIN SHORTING CARD P/N A3148087-2

UUT CONNECTOR

- XA9
- XA1, XA8(P2), XA10(P3)
- XA11
- A2A1 P1
- J3
- XA5, XA6
- J1, J2
- XA2, XA14
- XA4, XA16
- XA7, XA12, XA13, XA15

k. Repeat or terminate testing,

- (1) Follow operator instructions to repeat tests or terminate testing.
- (2) Remove ICD and UUT as required.
- (3) When testing UUT has been completed, remove test results from printer. Forward test results along with UUT to the next work station.



REH124

Figure 3-61. Installation of Test A13 with ICD A5 on DCT and Chassis.

3-18. Electronic Components Assembly-Fill I/O A3147916-1(1A15)

The following procedure is used to perform Go/No Go testing of the electronic components assembly-fill I/O, 1A15, A3147916-1. See fig. 3-62 on page 3-112. This unit is discarded if it fails the test. Refer to local procedures for disposal.

REQUIRED TEST ACCESSORIES	
• Test Program Tape	CPIN CP3100030G
File No	A3147916
• Test Adapter A6	A3148049-1
• ICD A5	B4041573-2
• 77 Pin Shorting Card	A3148087-2

- a. Turn on digital card tester AN/USM-465A.
- b. Perform operational procedures in accordance with TM 11-6625-3038-10.

NOTE

This program requires AN/USM-465A software version 2.0 be installed.

- c. Load test program.
 - (1) Install test program tape CPIN CP3100030G in digital card tester in accordance with TM 11-6625-3038-10.
 - (2) Enter LOAD Ø, then press EXECUTE.
 - (3) When READY appears on the display, type RUN and press EXECUTE.
 - (4) Verify that the following information is printed:

> ENTER THE LAST FOUR
 > DIGITS OF THE UUT
 > P/N - A314????-1
 > PRESS EXECUTE

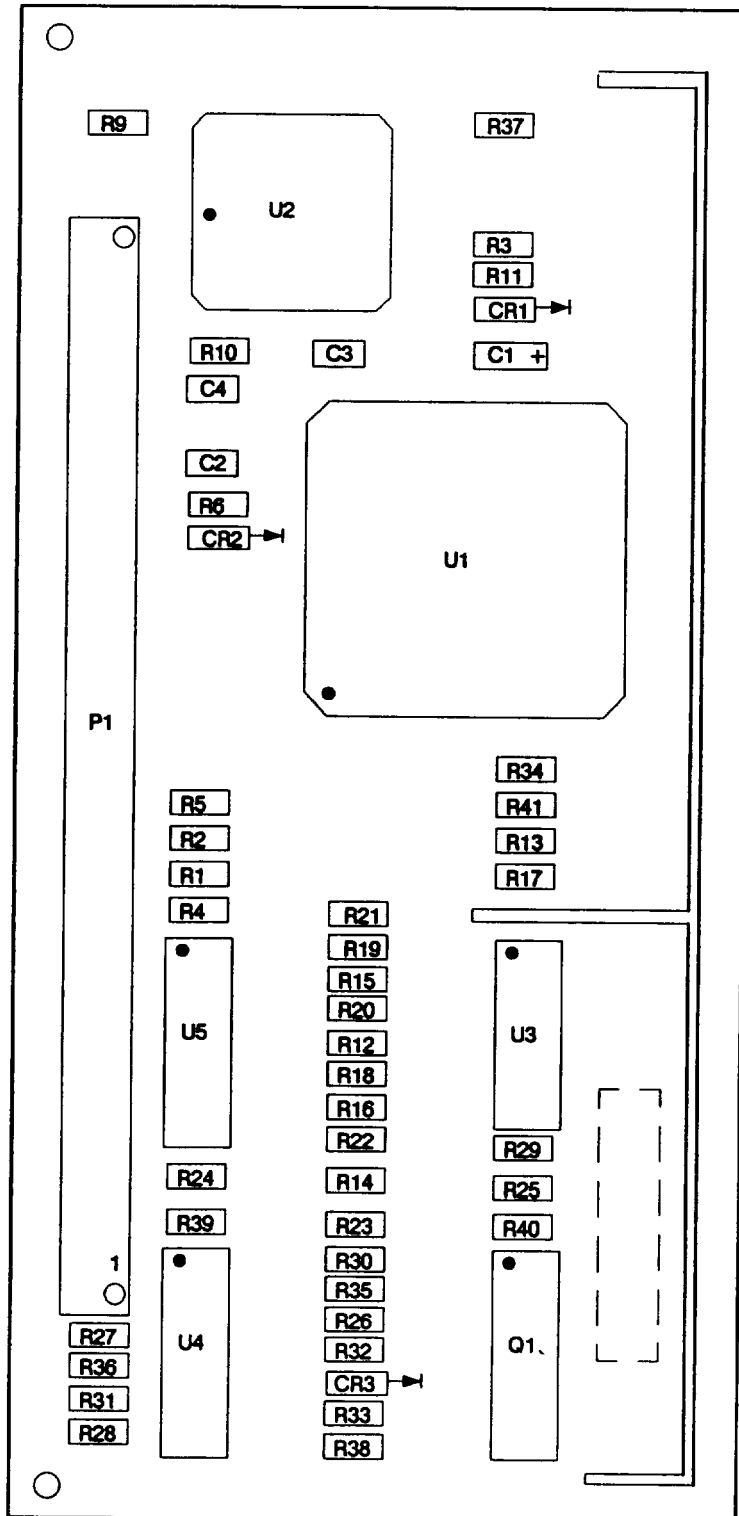


Figure 3-62. Electronic Components Assembly-Fill I/O (1A15) A3147916-1

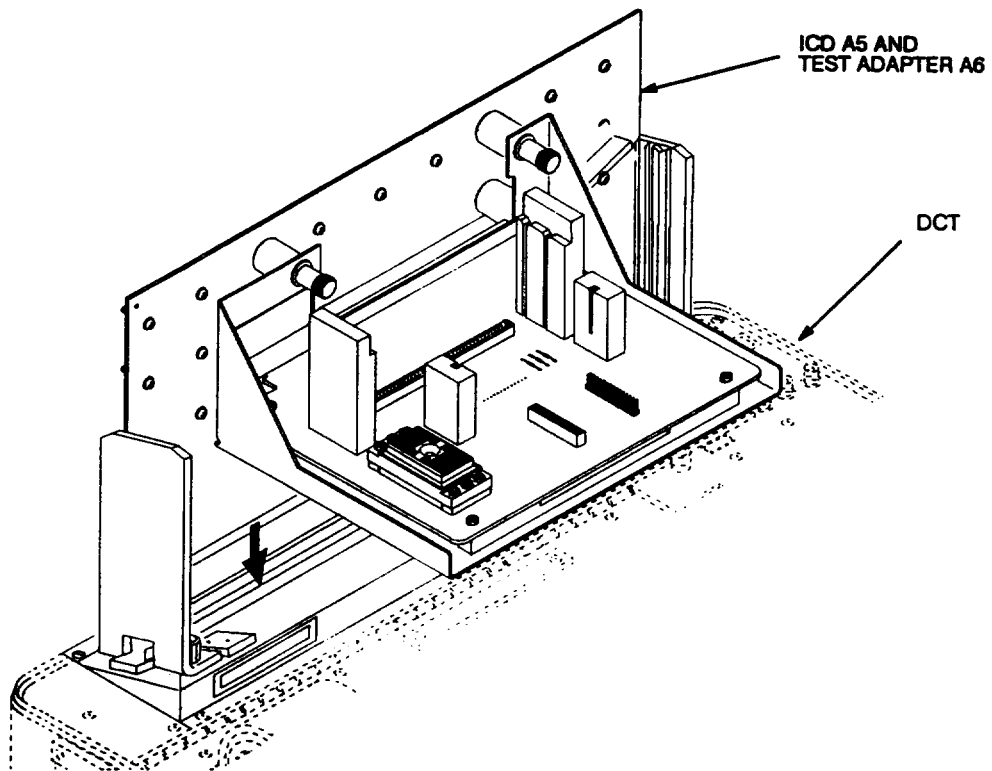
THEN

```
> PRINT PROGRAM NOTES?  
> ENTER Y= YES, N= NO,  
> PRESS EXECUTE.
```

- (5) Follow operator actions as instructed by program.
- d. Run ATE survey test if desired. (If survey test fails, refer to TM 11-6625-3038-20.)
 - e. Install Test Adapter A6 and ICD A5 on digital card tester (see fig. 3-63 on page 3-114).
 - f. Run ICD survey test if desired. (If survey test fails, refer to TM 11-6625-3094-24.)
 - g. Perform UUT hookup as required. (See fig. 3-64 on page 3-115).
 - h. Verify that the following information is printed:

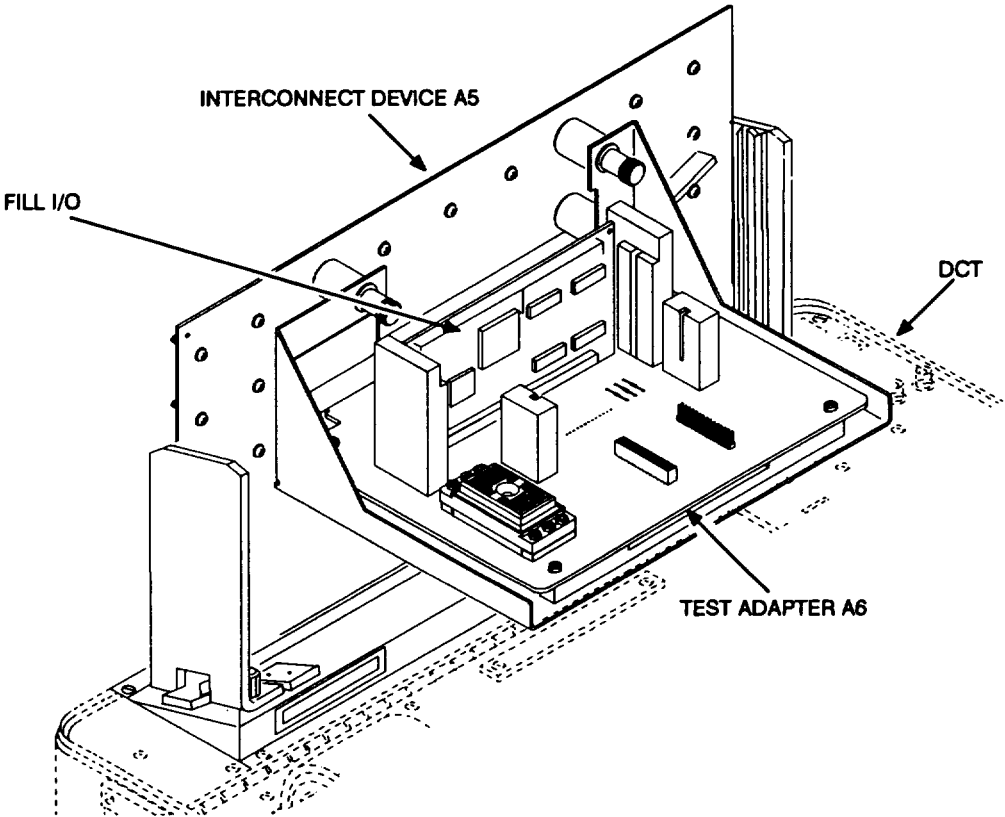
```
> UUT A3147916-1  
> S/N XXXXXXXXX  
> DATE  
> MM/DD/YY
```

- i. Repeat or terminate testing.
 - (1) Follow operator actions to repeat tests or terminate testing.
 - (2) Remove ICD and UUT as required.
 - (3) When testing of UUT has been completed, remove test results from printer. Forward test results along with UUT to the next work station.



REH104

Figure 3-63. Installation of ICD A5 with Test Adapter A6 on DCT



REH116

Figure 3-64. Installation of Electronic Components Assembly-Fill I/O for Functional Testing

**3-19. Chassis, Electrical Equipment-Control, Receiver-Transmitter Subassembly
A3167954-1 (19A13A2).**

The following procedure is used to perform a Go/No-Go test of the chassis, electrical equipment-control, receiver-transmitter subassembly (19A13A2) A3167954-1 (See fig. 3-65). This unit is discarded if it fails the test. Refer to local procedures for disposal.

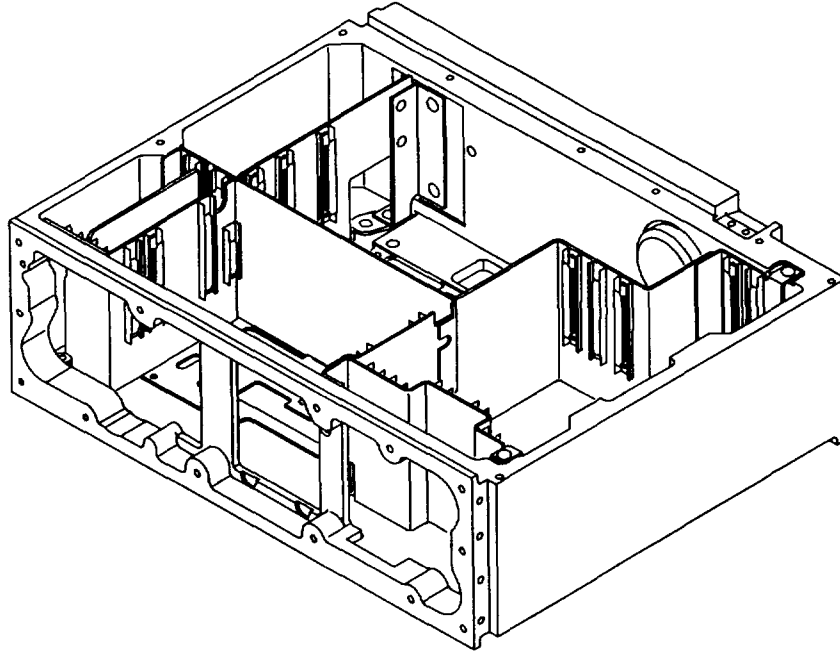
REQUIRED TEST ACCESSORIES

- Test Program Tape CPIN CP3200030G
File No A3167954
- ICD A5 B4041573-2
- Test Adapter A13, A3148056-1 with items:
 - Wiring Harness, Branched A13W1, A3148150-1 with:
 - 77 Pin Circuit Card A3148087-1
 - Wiring Harness, Branched A13W2, A3148151-1 with
 - 33 Pin Circuit Card A3148100-1
 - 61 Pin Circuit Card A3143092-1
 - Wiring Harness, Branched A13W3, A3148152-1 with:
 - 25 Pin Circuit Card A3148104-1
 - 41 Pin Circuit Card A3148096-1
 - Wiring Harness, Branched A13W4, A3148154-1 with:
 - 9 Pin Circuit Card A3148112-1
 - 17 Pin Circuit Card A3148108-1
 - 9 Pin Shorting Card A3148112-2
 - 14 Pin Shorting Plug A3148158-1
 - 17 Pin Shorting Card A3148108-2 (3 ea.)
 - 25 Pin Shorting Card A3148104-2
 - 27 Pin Shorting Plug A3148157-1
 - 29 Pin Shorting Plug A3148156-1
 - 33 Pin Shorting Card A3148100-2 (2 ea.)
 - 34 Pin Shorting Plug A3148155-1 (2 ea.)
 - 41 Pin Shorting Card A3146096-2 (2 ea.)
 - 61 Pin Shorting Card A3148092-2 (2 ea.)
 - 77 Pin Shorting Card A3148087-2 (4 ea.)
- Test Adapter A16, A3190863-1 with:
 - 33 Pin Shorting Card A3148100-2
 - 77 Pin Shorting Card A3148087-2

- a. Turn on digital card tester AN/USM-465A.
- b. Perform operational procedures in accordance with TM 11-6625-3038-10.

NOTE

This program requires AN/USM-485A software version 2.0 be installed.



REH105

Figure 3-65. Chassis, Electrical Equipment-Control, Receiver-Transmitter Subassembly (19A13A2) A3167954-1

c. Load test program.

- (1) Install test program tape CPIN CP3200030G in digital card tester in accordance with TM 11-6625-3036-10.
- (2) Enter LOAD Ø, then press EXECUTE.
- (3) When READY appears on the display, type RUN and press EXECUTE.
- (4) Verify that the following information is printed:

```

> ENTER THE LAST FOUR
> DIGITS OF THE UUT
> P/N - A316????-1
> PRESS EXECUTE

```

THEN

```

> PRINT PROGRAM NOTES?
> ENTER Y= YES, N= NO,
> PRESS EXECUTE

```

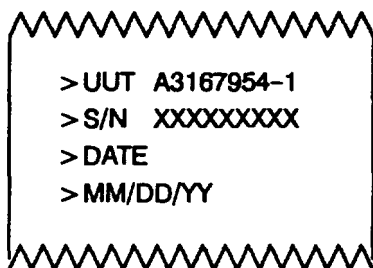
(5) Follow operator instructions as indicated by program.

- d. Run ATE survey test if desired. (If survey test fails, refer to TM 11-6625-3038-20.)
- e. Install Test Adapter A13, Test Adapter A16, and ICD A5 on digital card tester (See fig. 3-66 on page 3-119).

CAUTION

When performing tests with the Test Adapter A13, you must support the underside of the test adapter when installing and removing connectors to avoid damage to the test adapter or the ICD.

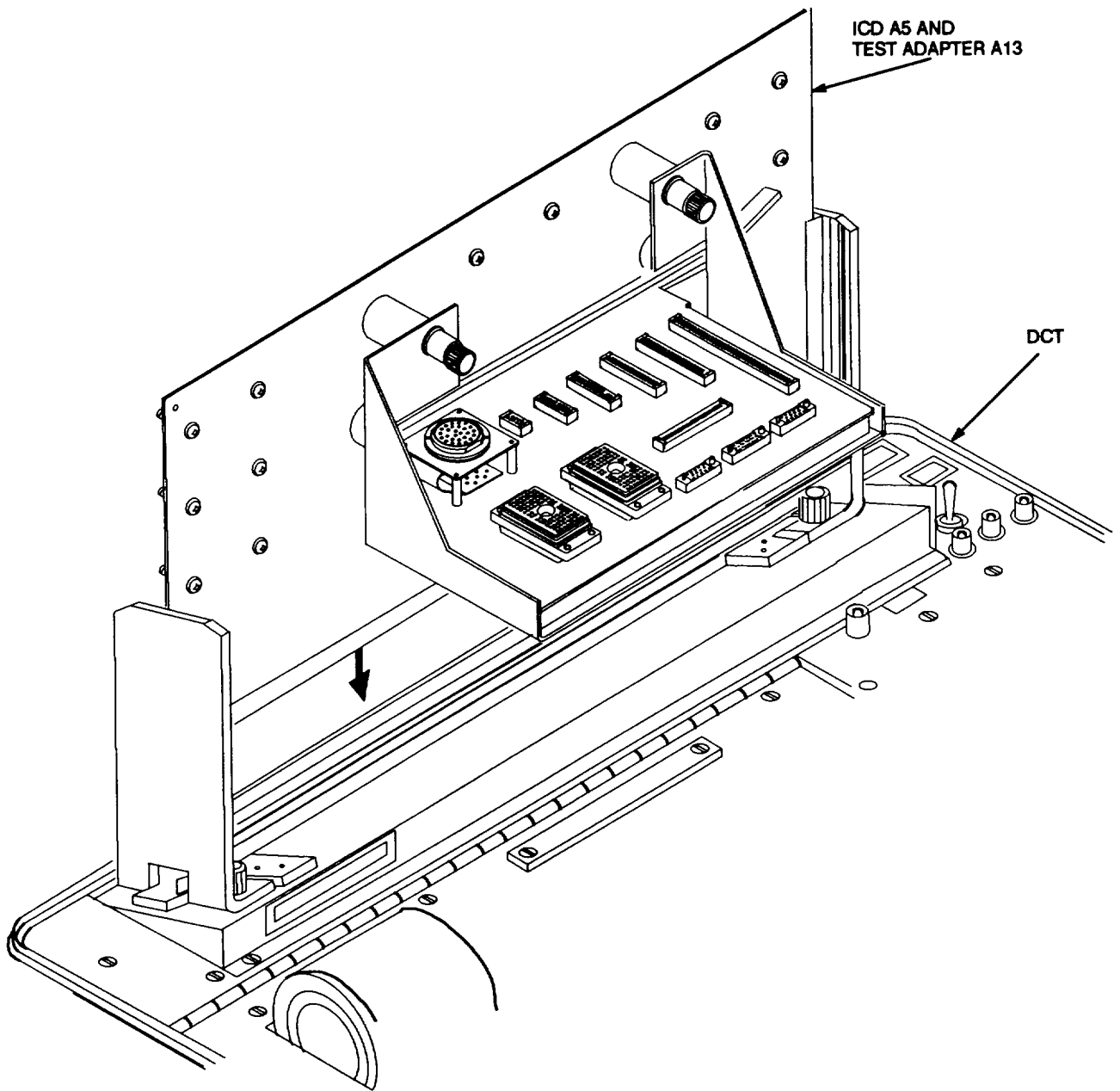
- f. Run ICI) survey test if desired. Self-test requires that ICD cables be mated with connectors on the ICD backplane (See fig. 3-67). Refer to TM 11-6625-3094-24 if the ICD fails survey test.
- g. Perform UUT Hookup.
 - Install jumper cards and cables as required by referring to figs. 3-68,3-69, and 3-70.
- h. Verify that the following information is printed:



- i. Test UUT

NOTE

When testing UUT, place on a flat surface to avoid depressing interlock switches.



REH106

Figure 3-66. Installation of Test Adapter A13 with ICD A5 on DCT

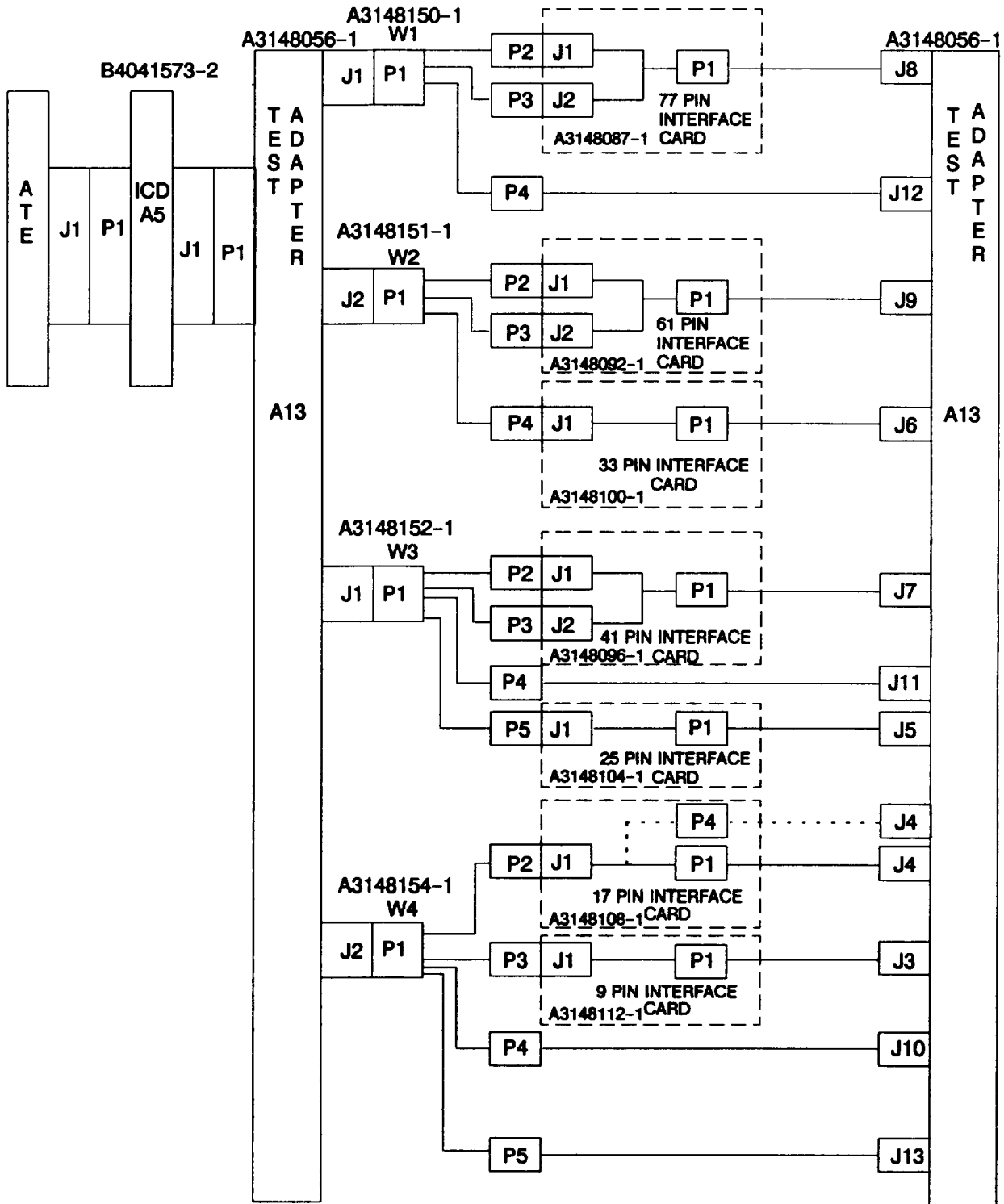
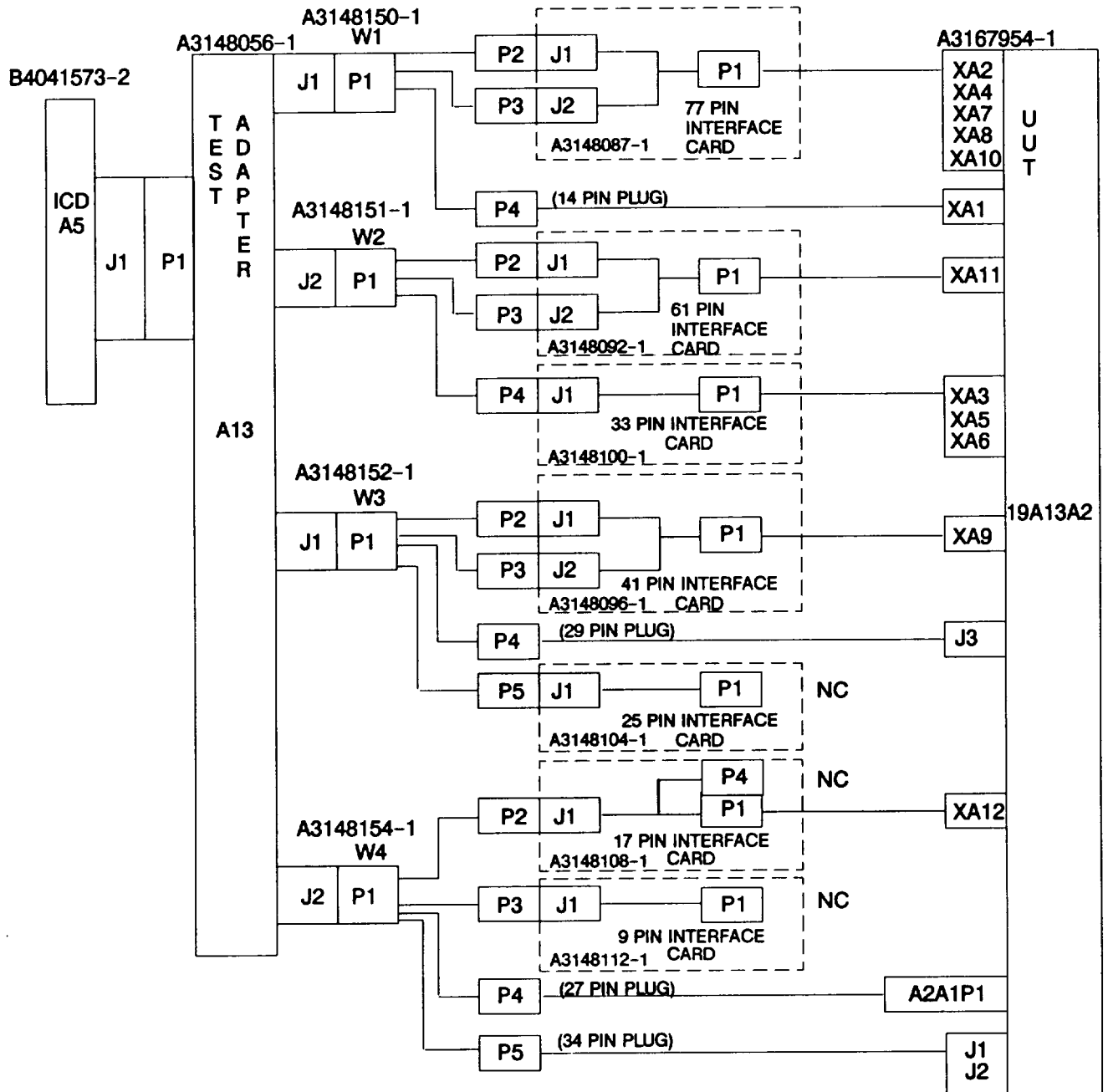


Figure 3-67. Self-Test Cable Installation Diagram



SHORTING CARD/PLUG ASSEMBLY

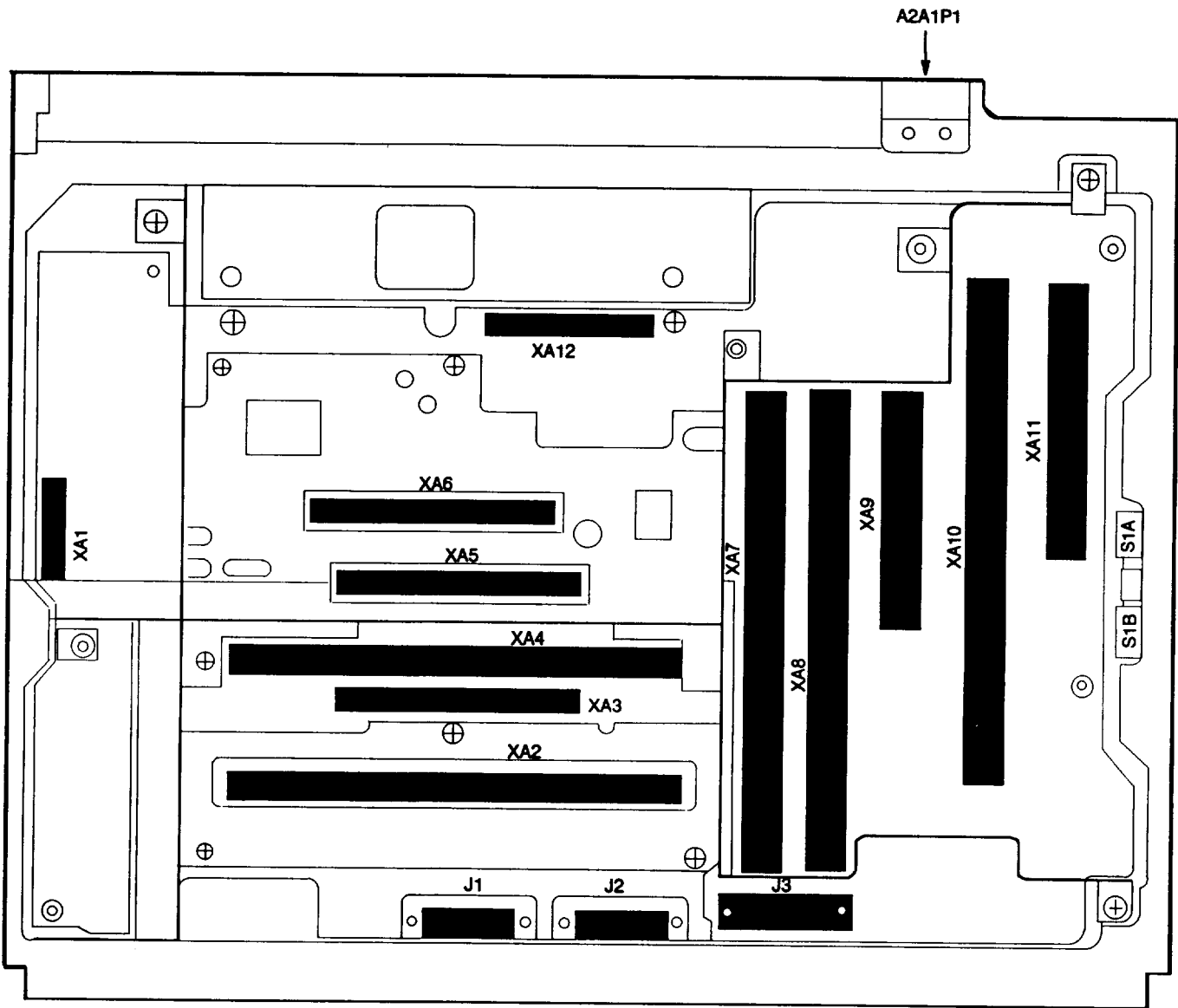
- 9 PIN SHORTING CARD P/N A3148112-2
- 14 PIN SHORTING PLUG P/N A3148158-1
- 17 PIN SHORTING CARD P/N A3148108-2
- 25 PIN SHORTING CARD P/N A3148104-2
- 27 PIN SHORTING PLUG P/N A3148157-1
- 29 PIN SHORTING PLUG P/N A3148156-1
- 33 PIN SHORTING CARD P/N A3148100-2
- 34 PIN SHORTING PLUG P/N A3148155-1
- 41 PIN SHORTING CARD P/N A3148096-2
- 61 PIN SHORTING CARD P/N A3148092-2
- 77 PIN SHORTING CARD P/N A3148087-2

UUT CONNECTOR

- NA
- XA1
- XA12
- NA
- A2A1P1
- J3
- XA3, XA5, XA6,
- J1, J2
- XA9
- XA11
- XA2, XA4, XA7, XA8, XA10

REH108

Figure 3-68. Installation Diagram to Chassis



NOTE:

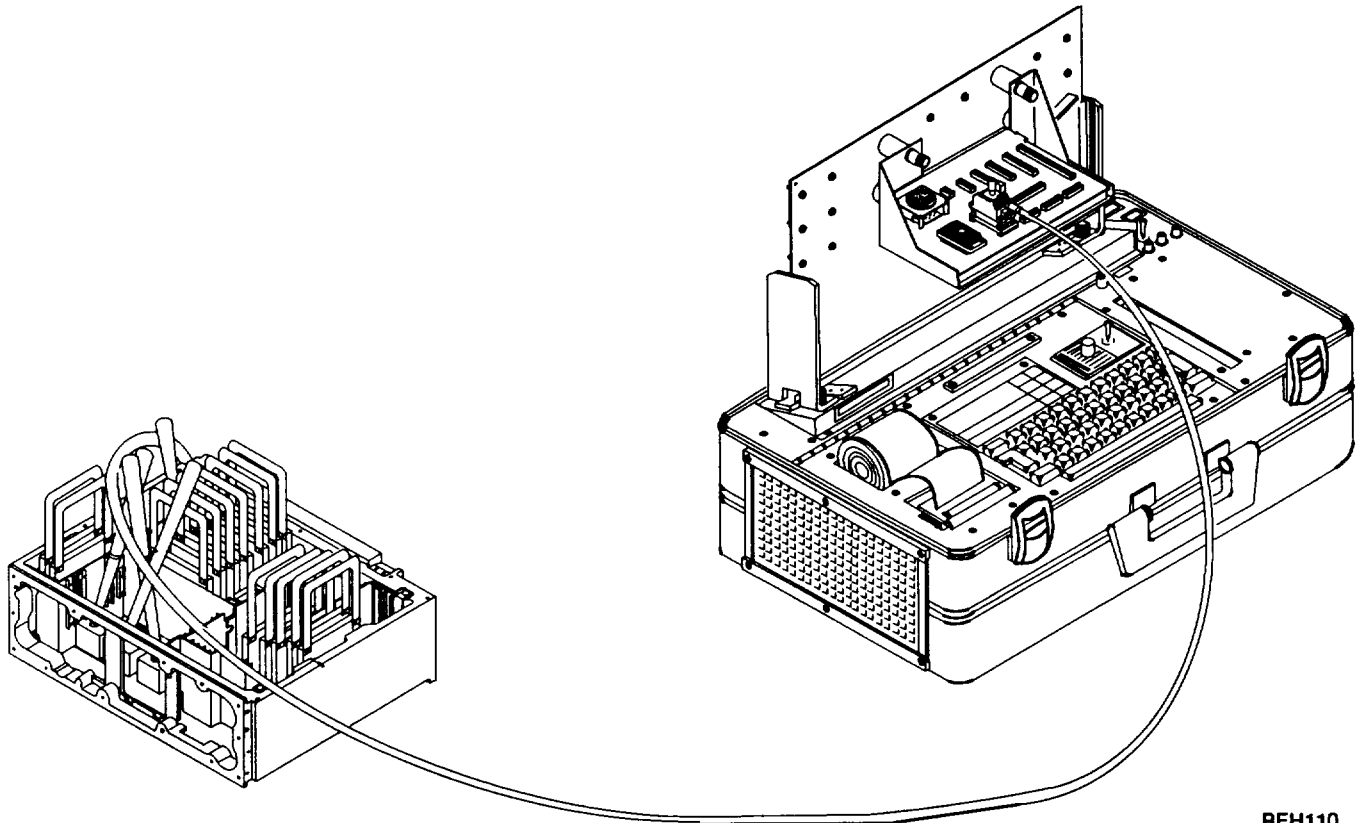
REH109

Switch S1A is located on top of the chassis frame.
Switch S1B is located on bottom of the chassis frame.

Figure 3-69. Location of Backplane Connectors

j. Repeat or terminate testing.

- (1) Follow operator instructions to repeat tests terminate testing.
- (2) Remove ICD and UUT as required.
- (3) When testing UUT has been completed, remove test results from printer. Forward test results along with UUT to the next work station.



REH110

Figure 3-70. Installation of Test Adapter A13 with ICD A5 on DCT and Chassis

3-20. Electronic Components Assembly-Control A3167969-1 (19A2).

The following procedure is used to perform Go/No-Go testing of the electronic components assembly-control (19A2) A3167969-1 (see fig. 3-71). Return failed assemblies to depot for repair.

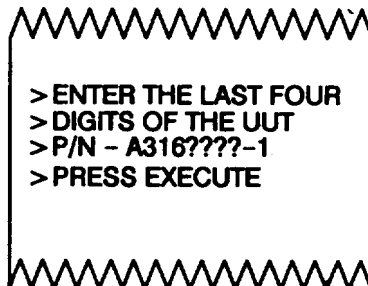
REQUIRED TEST ACCESSORIES	
• Test Program Tape	CPIN CP3300030G
File No	A3167969F
• Test Adapter A14	A3190861-1
• ICD A5	B4041573-2
• 77 Pin Shorting Card	A3148087-2

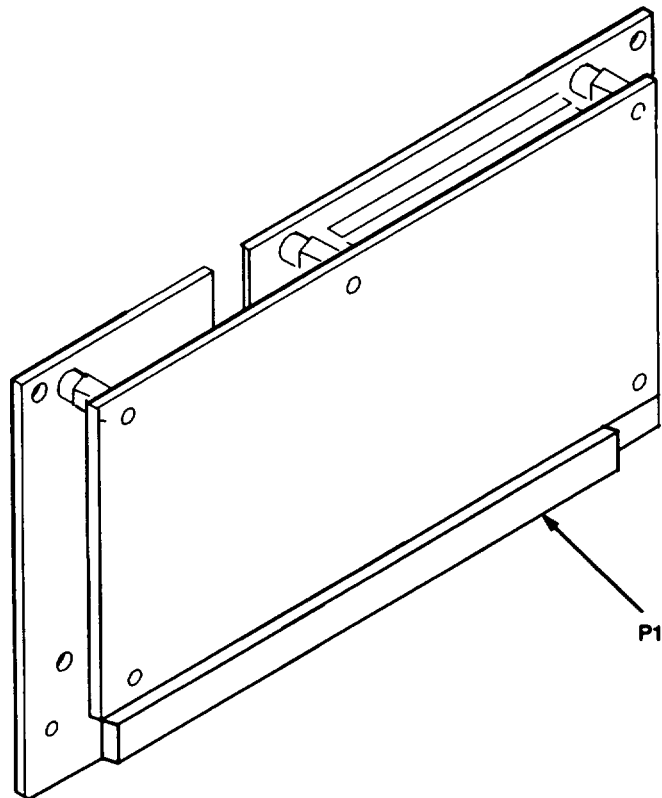
- a. Turn on digital card tester AN/USM-465A.
- b. Perform operational procedures in accordance with TM 11-6625-3038-10.

NOTE

This program requires AN/USM-465A software version 2.0 be installed.

- c. Load test program.
 - (1) Install test program tape CPIN CP33000W3 in digital card tester in accordance with TM 11-6625-3038-10.
 - (2) Enter LOAD Ø, then press EXECUTE.
 - (3) When READY appears on the display, type RUN and press EXECUTE.
 - (4) Verify that the following information is printed:

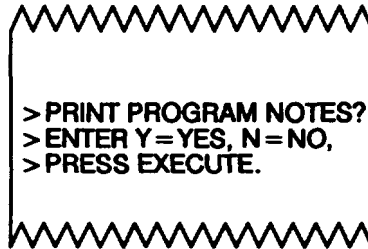




REH111

Figure 3-71. Electronic Components Assembly-Control (19A2) A3167969-1

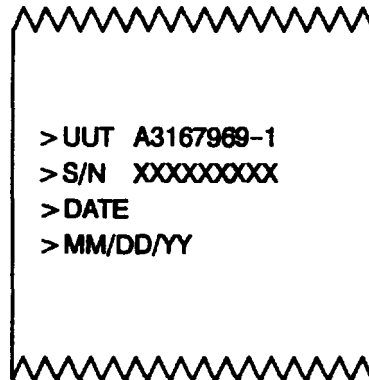
THEN



```
> PRINT PROGRAM NOTES?  
> ENTER Y= YES, N= NO,  
> PRESS EXECUTE.
```

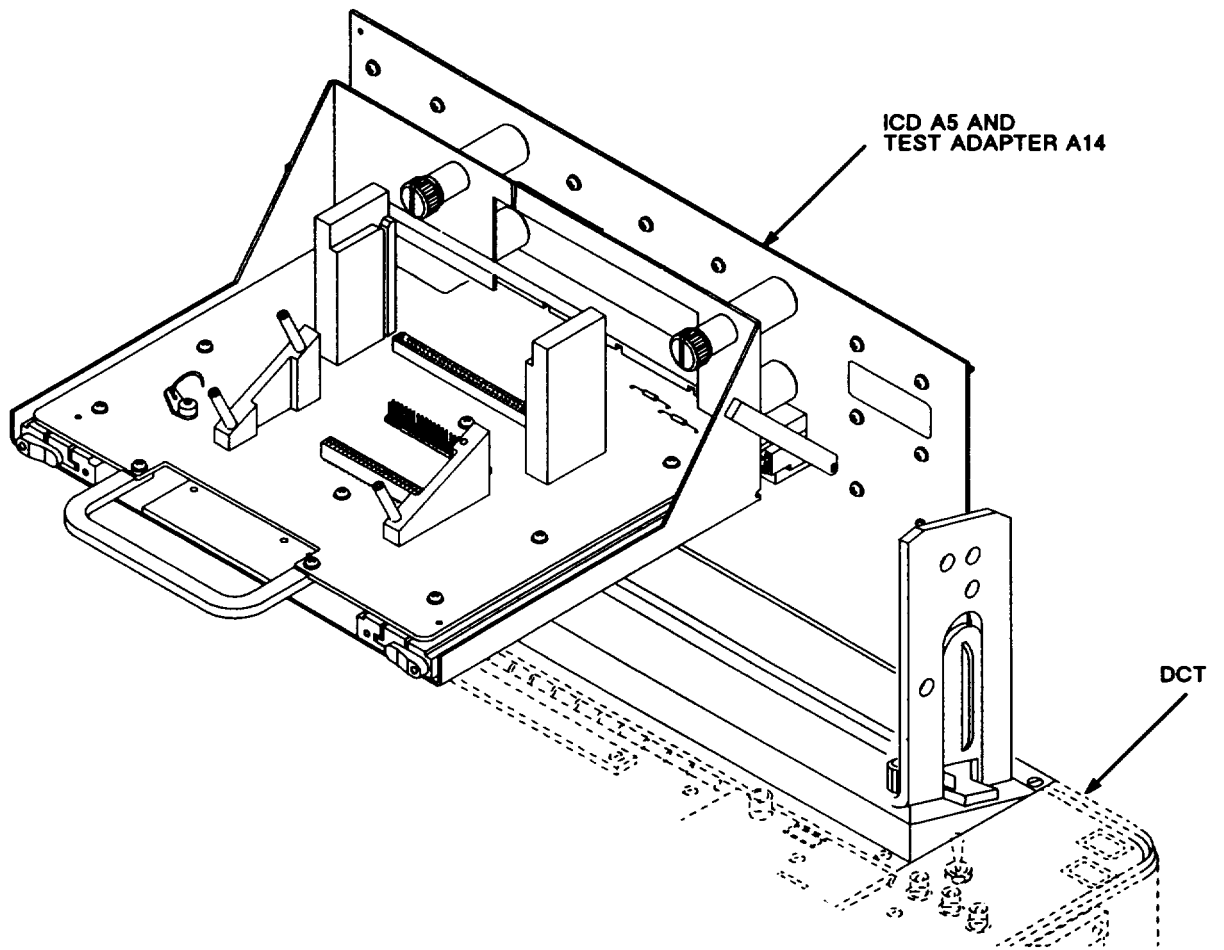
(5) Follow operator actions as instructed by program.

- d. Run ATE survey test If desired (if survey test falls, refer to TM 11-6625-3038-20).
- e. Install Test Adapter A14 and ICD A5 on digital card tester (see fig. 3-72).
- f. Run ICD survey test if desired (if survey test fails, refer to TM 11-6625-3094-24).
- g. Install UUT for functional test (see fig. 3-73).
- h. Verify that the following information is printed:



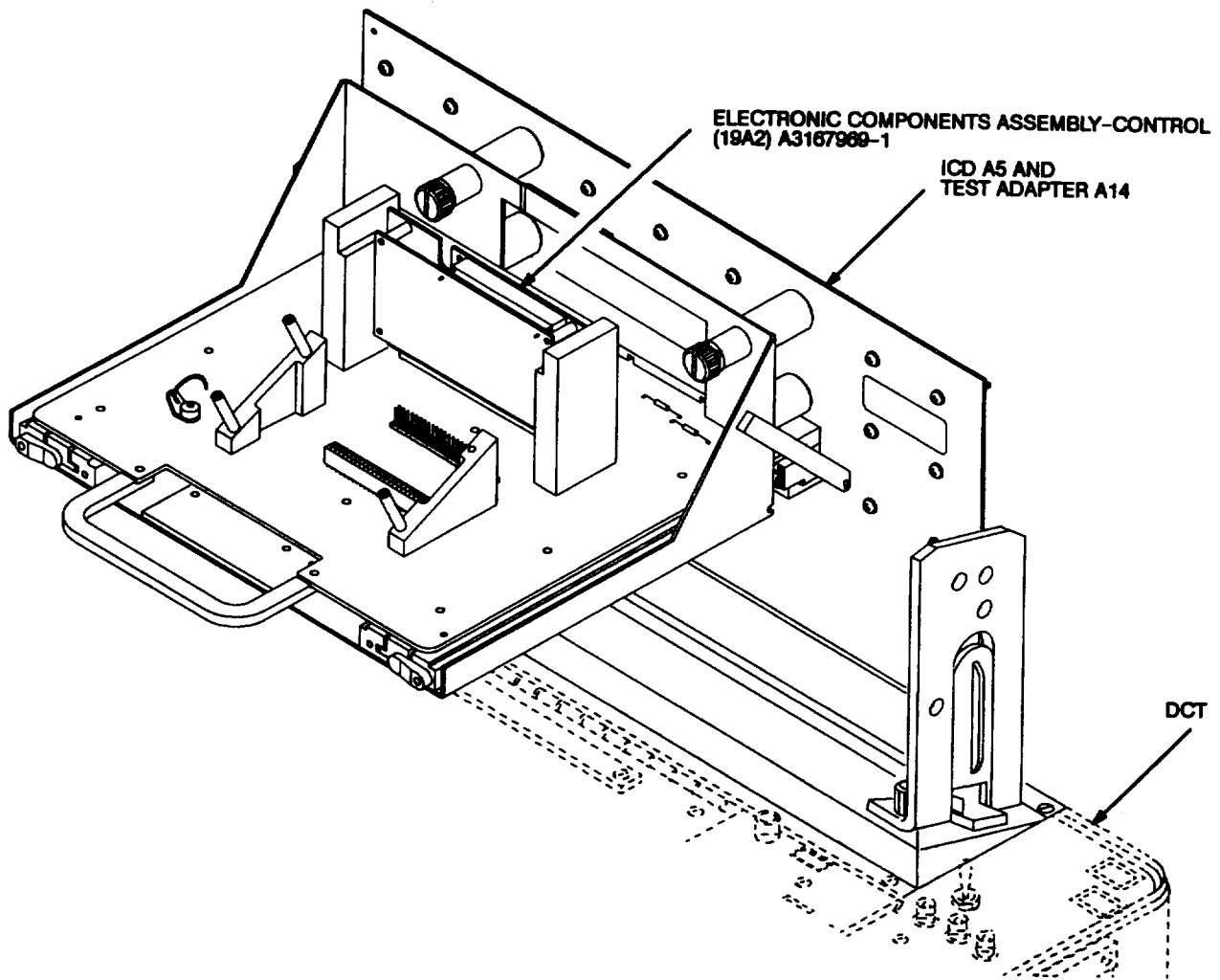
```
> UUT A3167969-1  
> S/N XXXXXXXXX  
> DATE  
> MM/DD/YY
```

- i. Test UUT.
- j. Repeat or terminate testing.
 - (1) Follow operator actions to repeat tests or terminate testing.
 - (2) Remove ICD and UUT as required.
 - (3) When testing of UUT has been completed, remove test results from printer. Forward test results along with UUT to the next workstation.



ICD-009A

Figure 3-72. Installation of Test Adapter A14 for
Electronic Component Assembly-Control



ICD-010A

Figure 3-73. Installation of Electronic Components Assembly-Control for Functional Testing

CHAPTER 4

MAINTENANCE PROCEDURES FOR UUT

Section I. REPAIR PARTS, SPECIAL TOOLS: TEST, MEASUREMENT AND DIAGNOSTIC EQUIPMENT (TMDE): AND SUPPORT EQUIPMENT

4-1. Common Tools and Equipment.

Common tools and equipment are authorized by the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

4-2. Special Tools, TMDE, and Support Equipment.

- a. *Special Tools.* No special tools are required.
- b. *TMDE and Support Equipment.* Refer to TM 11-5820-914-40P for TMDE and support equipment.

4-3. Repair Parts.

Repair parts are listed and illustrated in the repair parts and special tools list, TM 11-5820-914-40P.

4-4. General Maintenance Procedures.

- a. Color coded wires are used in the maintenance of circuit card assemblies, chassis, and the RF Amplifier Case. The wire color code is provided for informational purposes only. The actual wire color may differ from what is stated in the wire list. You may replace wires with any color wire available. If necessary, replace any wire with the next larger gage wire. However, never replace wires with a smaller gage wire.
- b. Maintenance and repair of circuit boards and printed circuit boards will be performed in accordance with TB 43-0127,

CAUTION

All circuit cards contain static sensitive devices susceptible to electrostatic damage. DO NOT attempt to replace components on the circuit cards without using protective devices. Refer to MIL-HDBK-263 for protection of electrical and electronic parts, assemblies and equipment.

**Section II. MAINTENANCE PROCEDURES FOR RF AMPLIFIER CASE
A3013379-1, A3018432-1, A3142064-1, AND A3168117-1 (6A1)**

4-5. Maintenance of RF Amplifier Case Connectors.

a. The following schematics will be required for maintenance:

RF Amplifier Case	FO-22
CCA-Output Fifter/Switch A3014191-1	FO-23
CCA-Output Filter/Switch A3018055-1	FO-25
CCA-Output Filter/Switch A3142095-1	FO-39
CCA-Output Filter/Switch A3190884-1	FO-40
CCA-input Filter/Switch A3014189-1	FO-24
CCA-input Filter/Switch A3018157-1	FO-26
CCA-input Filter/Switch A3142092-1	FO-41

b. Refer to fig. 4-1 for component replacement.

NOTE

RF Amplifier Case A3018432-1 has a wiring harness that connects all of the following pins. This harness is not present in the RF Amplifier-Case A3013379-1. Remove the electrical tie down straps before replacing any wires in the RF Amplifier A3018432-1.

c. Connector J1 and J2.

- (1) Torque nut to 30 in/lb.
- (2) Replace wires as required. Use the following wire list to replace wires.

FROM	TO	COLOR/TRACER
J1	A1A1E2	Black (item 40, App. B)
J2	A1A1E1	Black (item 40, App. B)

d. Connector P5. Replace wiring as required. Use the following wire list for replacement:

- (1) Cover all solder cup pins at P5 with sleeving (item 28, App. B)
- (2) Cover transistor source and gate pins with sleeving (item 28, App. B)

FROM	TO	COLOR/TRACER
1	Q5-gate	Green (item 45, App. B)
2	Q3-gate	Orange(item 43, App. B)
3	A1P1-N	White/Orange (item 53, App. B)
4	Q4-gate	Yellow (item 44, App. B)
5	A1P1-P	White/Yellow (item 54, App. B)
8	Q6-gate	Blue (item 46, App. B)
7	A1P1-M	White/Blue (item 56, App. B)
8	A1P1-R	White/Green (item 55, App. B)
9	Q7-gate	Violet (item 47, App. B)
10	Q7-drain	White/Violet (item 57, App. B)
11	Q6-drain	White/Blue (item 56, App. B)
12	Q4-drain	White /Yellow (item 54, App. B)
13	Q3-drain	White/Orange (item 53, App. B)

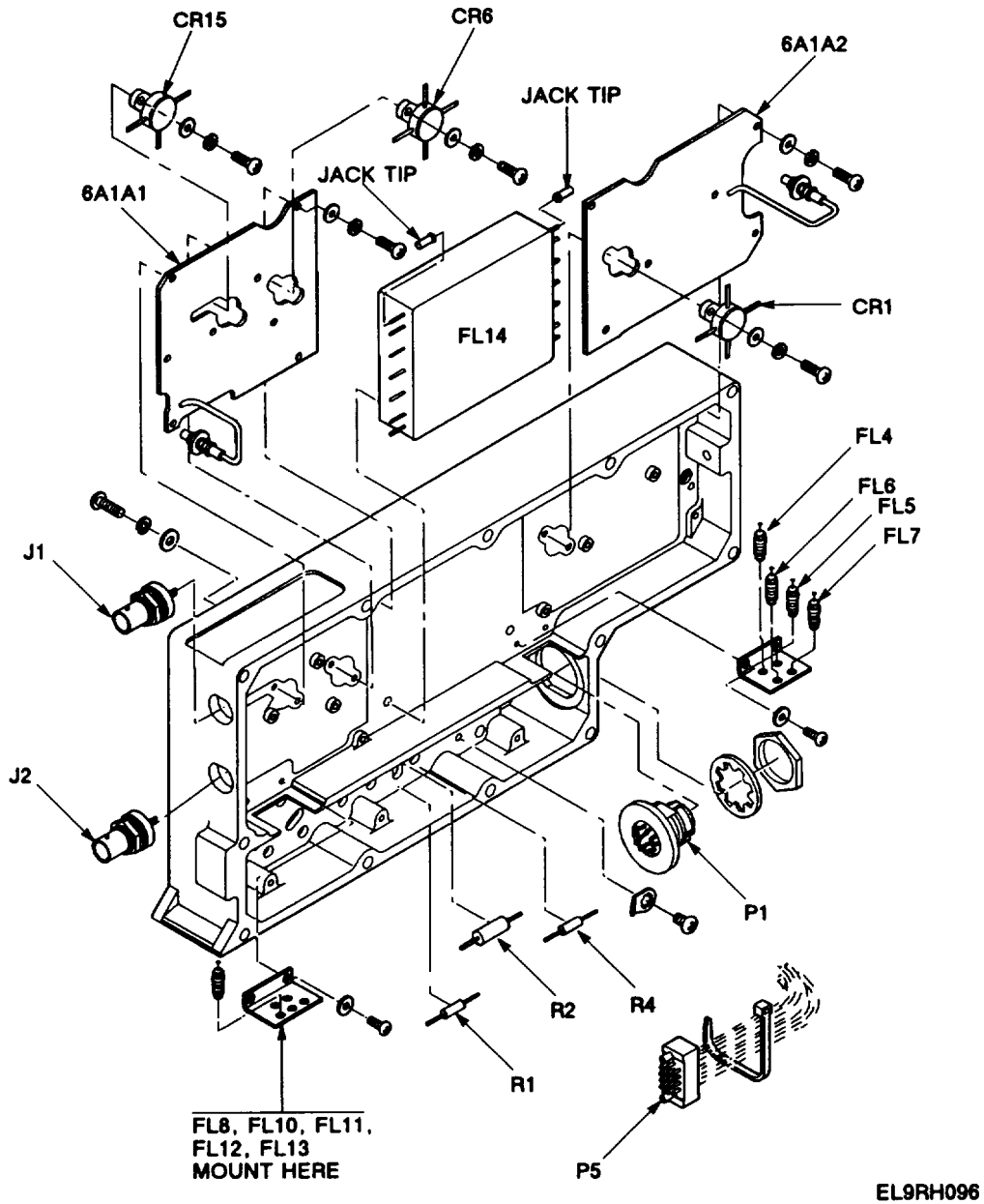


Figure 4-1. Exploded View of A3013379-1 RF Amplifier Case

FROM	TO	COLOR/TRACER
14	Q5-drain	White/Green (item 55, App. B)
15	A1P1-F	Red (item 42, App. B)
16	A1P1-C	Orange (item 43, App. B)
17	Q2-base	White/Violet (item 57, App. B)
18	FL2	Red (item 42, App. B)
19	FL12	White/Gray (item 58, App. B)
20	A1E1	Black (item 40, App. B)
21	FL13	White (item 49, App. B)
22	A1P1-J	White/Brown (item 51, App. B)
23	A1P1-K	White/Red (item 52, App. B)
24	FL3	White (item 49, App. B)
25	FL4	Yellow (item 44, App. B)

e. Connector P1. Replace wiring as required. Use the following wire list for replacement:

FROM	TO	COLOR/TRACER
P1-A	A1E1	Black (item 75, App. B)
		Cover all solder cup pins at P1 with sleeving (item 28, App. B)
P1-B	FL8	Yellow (item 44, App. B)
		Cover all solder cup pins at P1 with sleeving (item 28, App. B)
P1-C	A1P5-16	Orange (item 43, App. B)
		Cover all solder cup pins at P1 with sleeving (item 28, App. B)
		Cover all solder cup pins at P5 with sleeving (item 28, App. B)
P1-D	FL2	Red (item 77, App. B)
		Cover all solder cup pins at P1 with sleeving (item 28, App. B)
P1-F	A1P5-15	Red (item 42, App. B)
		Cover all solder cup pins at P1 with sleeving (item 28, App. B)
		Cover all solder cup pins at P5 with sleeving (item 28, App. B)
		Connect shield to E-11.
P1-H	A1Q1-base	White/black (item 67, App. B)
		Cover all solder cup pins at P1 with sleeving (item 28, App. B)
		Cover transistor source and gate pins with sleeving (item 28, App. B)
		Connect shield to E-11.
P1-J	A1P5-22	White/Brown, (item 51, App. B)
		Cover all solder cup pins at P1 with sleeving (item 28, App. B)
		Cover all solder cup pins at P5 with sleeving (item 28, App. B)
P1-K	A1P5-23	White/Red (item 52, App. B)
		Cover all solder cup pins at P1 with sleeving (item 28, App. B)
		Cover all solder cup pins at P5 with sleeving (item 28, App. B)
P1-L	FL3	White (item 66, App. B)
		Cover all solder cup pins at P1 with sleeving (item 28, App. B)

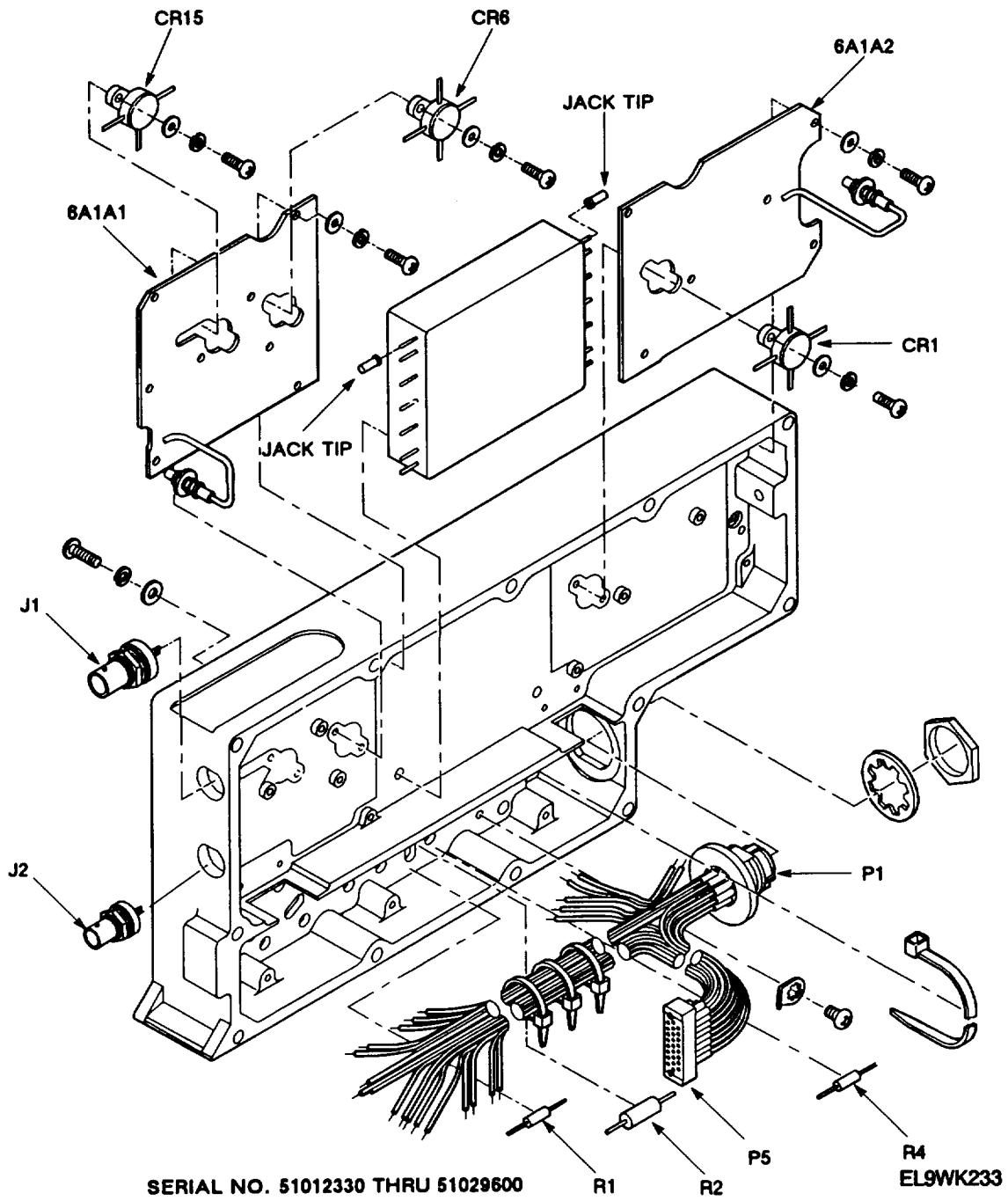
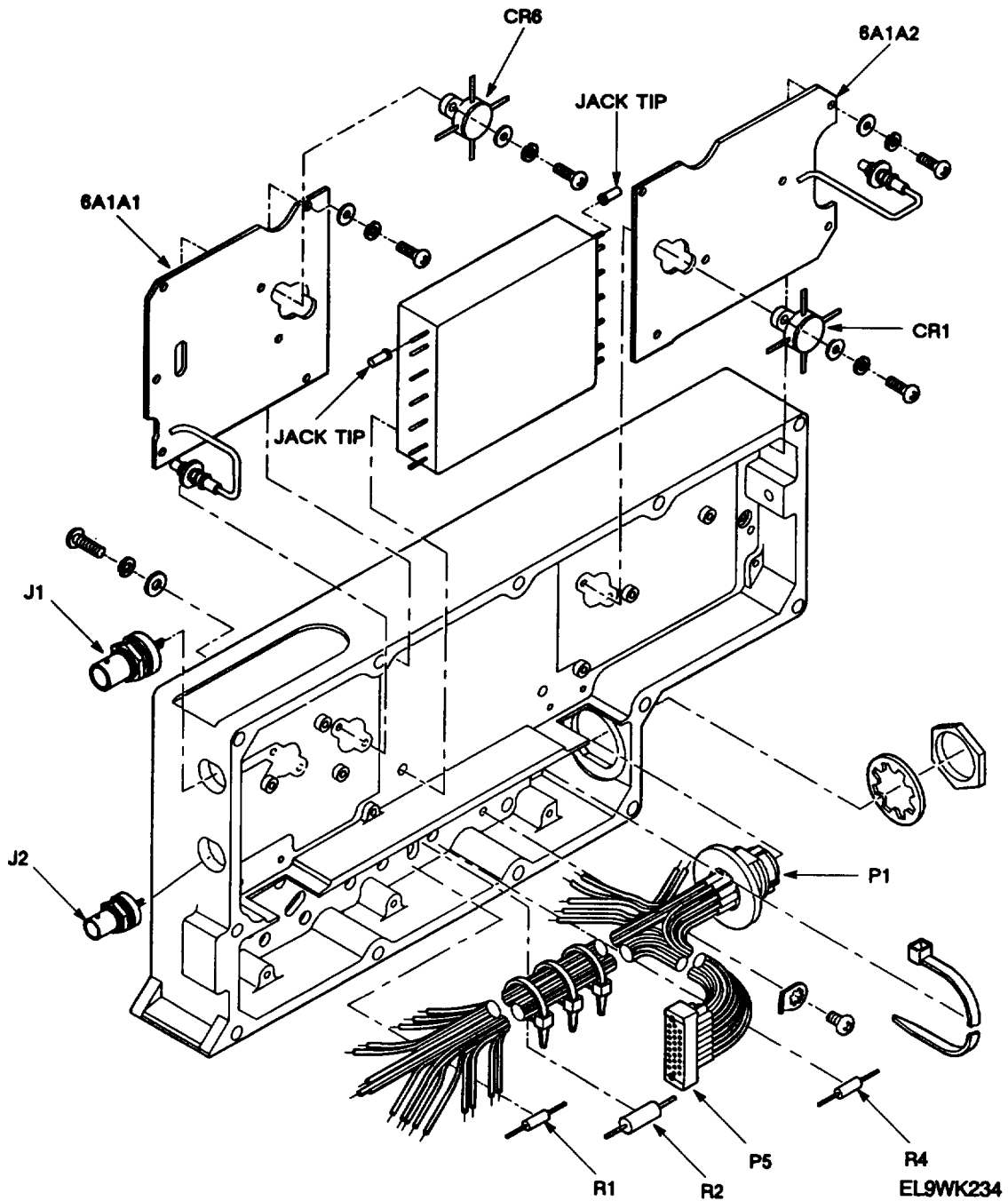


Figure 4-1.1. Exploded View of A3142064-1 RF Amplifier Case



SERIAL NO. 51029601 AND UP

Figure 4-1.2. Exploded View of A3168117-1 RF Amplifier Case

FROM	TO	COLOR/TRACER
P1-M	A1P5-7	White/Blue (item 56, App. B)
		Cover all solder cup pins at P1 with sleeving (item 28, App. B)
		Cover all solder cup pins at P5 with sleeving (item 28, App. B)
		Connect shield to E-11.
P1-N	A1 P5-3	White/Orange (item 53, App. B)
		Cover all solder cup pins at P1 with sleeving (item 28, App. B)
		Cover all solder cup pins at P5 with sleeving (item 28, App. B)
		Connect shield to E-11,
P1-P	A1P5-5	White/Yellow (item 54, App. B)
		Cover all solder cup pins at P1 with sleeving (item 28, App. B)
		Cover all solder cup pins at P5 with sleeving (item 28, App. B)
		Connect shield to E-11.
P1-R	A1P5-8	White/Green (item 55, App. B)
		Cover all solder cup pins at P1 with sleeving (item 28, App. B)
		Cover all solder cup pins at P5 with sleeving (item 28, App. B)

f. Connector, P1, Alignment. Use alignment tool D, A3018870-1, to align connector Refer to fig. 4-2.

4-6. Transistors and Diodes.

- a. Replace as required.
- b. Torque mounting nuts to 4 in/lb.
- c. Transistor Wiring. Replace wiring as required, Replace R1 , R2 or R4 as required, Use the following wiring list for replacement actions:

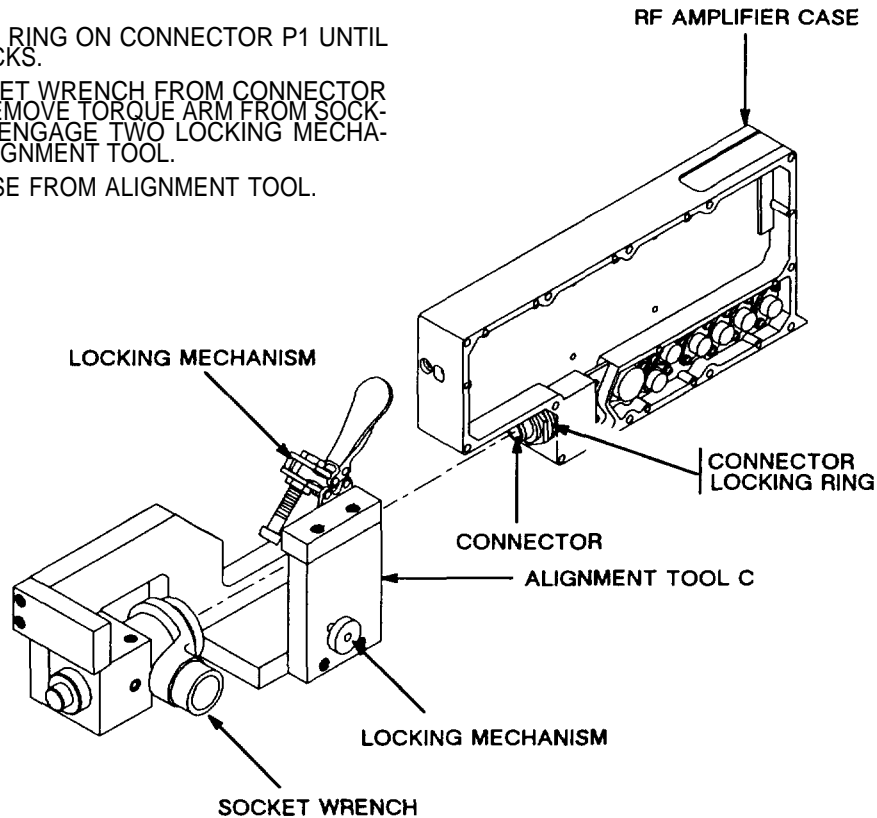
<u>FROM</u>	TO	COLOR/TRACER
Q1 Emitter	Q2 Collector	Resistor R2 is connected between emitter and collector.
Collector	FL1	BUSS
Base	Q2 Collector	Resistor R1 is connected between collector and base.
		Install Sleeve (item 28, App. B) to R1 and R2 leads.
		Install Sleeve (item 28, App. B) to base lead.
Q2 Emitter	Gnd	
	A1-E1	Resistor R4 is connected between emitter and A1-E1 .
		Install Sleeve (item 28, App. B) to R4 leads,
		Install Sleeve (item 28, App. B) to emitter lead.
Q2 Collector	Q1 Base	Resistor R1 is connected between collector and base.
Base	P5-17	White/Violet (item 57, App. B)
		Cover solder cup pin at P5 with sleeving (item 28, App. B)
		Install Sleeve (item 28, App. B) to base lead.

NOTE

ALL CIRCUIT CARDS IN THIS UUT CONTAIN STATIC SENSITIVE DEVICES SUSCEPTIBLE TO ELECTROSTATIC DAMAGE. **DO NOT** ATTEMPT TO REPLACE OR ADJUST THE UUT WITHOUT USING PROTECTIVE DEVICES.

CONNECTOR P1 REPLACEMENT PROCEDURES

1. INSTALL CONNECTOR P1 INTO IT'S MOUNTING HOLE. APPLY THREE DROPS OF SEALING COMPOUND (ITEM 10, APP B) ON TO CONNECTOR THREADS. INSTALL AND FINGER TIGHTEN LOCKING RING ON CONNECTOR THEN BACK OFF 1/2 TURN.
2. DISENGAGE TWO LOCKING MECHANISMS ON ALIGNMENT TOOL. SLIDE RF PA CASE INTO THE ALIGNMENT TOOL. ENSURE KEYWAY OF CONNECTOR P1 ALIGNS WITH KEYWAY OF ALIGNMENT TOOL.
3. ENGAGE TWO LOCKING MECHANISMS ON ALIGNMENT TOOL. INSERT 70 IN/LB TORQUE ARM INTO SOCKET WRENCH ON ALIGNMENT TOOL AND LOCK. ENSURE SOCKET WRENCH ENGAGES LOCKING RING ON CONNECTOR P1 .
4. TIGHTEN LOCKING RING ON CONNECTOR P1 UNTIL TORQUE ARM CLICKS.
5. DISENGAGE SOCKET WRENCH FROM CONNECTOR LOCKING RING. REMOVE TORQUE ARM FROM SOCKET WRENCH. DISENGAGE TWO LOCKING MECHANISMS ON THE ALIGNMENT TOOL.
6. REMOVE RFPA CASE FROM ALIGNMENT TOOL.



EL9RH098

Figure 4-2. Alignment of P1 on RF Amplifier Case

FROM	TO	COLOR/TRACER
Q3 Source	Q4 Source	Black (item 40, App. B)
Gate	A1E1	Black (item 40, App B)
Drain	P5-2	Red (item 42, App. B)
	P5-13	White/Red (item 52, App. B)
	FL6	White/red (item 52, App. B)
	Cover solder cup pin at P5 with sleeving (item 28, App. B)	
	Install Sleeve (item 28, App. B) to gate and drain leads.	
Q4 Source	Q5 Source	Black (item 40, App. B)
Gate	P5-4	Orange (item 43, App. B)
Drain	P5-12	White/Orange (item 53, App. B)
	FL7	White/Orange (item 53, App. B)
	Cover solder cup pin at P5 with sleeving (item 28, App. B)	
	Install Sleeve (item 28, App. B) to gate and drain leads.	
Q5 Source	Q6 Source	Black (item 40, App. B)
Gate	P5-1	Yellow (item 44, App. B)
Drain	P5-14	White/Yellow (item 54, App. B)
	FL5	White/Yellow (item 54, App. B)
	Cover solder cup pin at P5 with sleeving (item 28, App. B)	
	Install Sleeve (item 28, App. B) to gate and drain leads.	
Q6 Source	Q7 Source	Black (item 40, App. B)
Gate	P5-6	Green (item 45, App. B)
Drain	P5-11	White/Green (item 55, App. B)
	FL10	White/Green (item 55, App. B)
	Cover solder cup pin at P5 with sleeving (item 28, App. B)	
	Install Sleeve (item 28, App. B) to gate and drain leads.	
Q7 Source	Q6 Source	Black (item 40, App. B)
Gate	P5-9	Blue (item 46, App. B)
Drain	P5-10	White/Blue (item 56, App. B)
	FL11	White/Blue (item 56, App. B)

d. Terminal lugs, Bend lug 90° before installation. Install lugs on transistors.

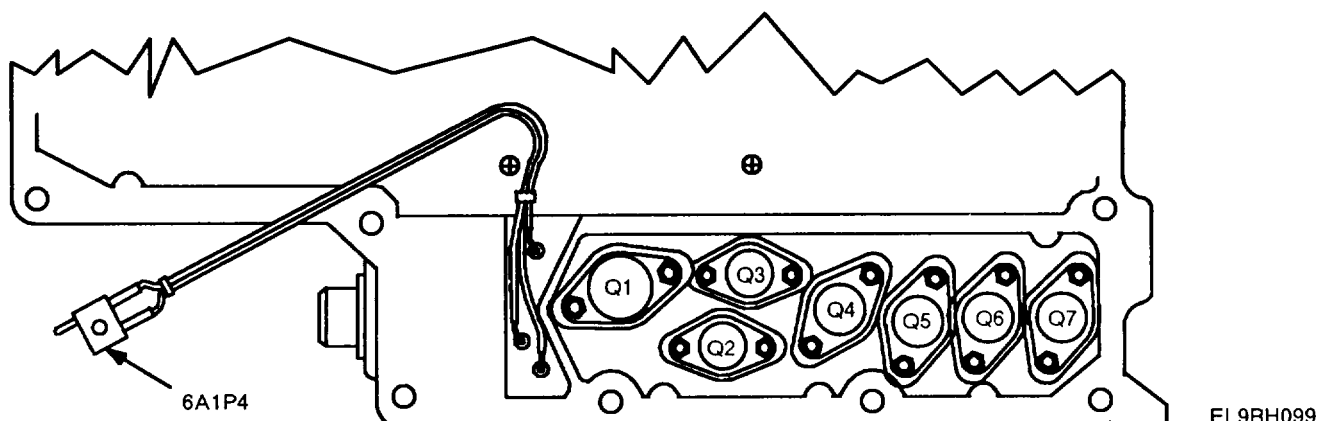


Figure 4-3. Location of RF Case Transistors.

e. Filters FL4, FL5, FL6, FL7, FL8, FL10, FL11, FL12, FL13. Replace wiring as required. Use the following list for wire replacement:

FROM	TO		<u>COLOR/TRACER</u>
	A3013379-1	A3018432-1	
FL4	A1A2-E2	A1A2-E2	Yellow (item 63, App. B)
	FL8	FL8	Yellow (item 63, App. B)
	P5-25	P5-25	Yellow (item 63, App. B)
FL5	A1A2-E4	A1A2-E4	White/Green (item 55, App. B)
	Q5 Drain	Q5-Drain	White/Green (item 55, App. B)
FL6	A1A2-E3	A1A2-E3	White/Orange (item 53, App. B)
	Q3 Drain	Q3 Drain	White/Orange (item 53, App. B)
FL7	A1A2-E5	A1A2-E5	White/Yellow(item 54, App. B)
	Q4 Drain	Q4 Drain	White/Yellow (item 54, App. B)
FL8	A1 A1-E5	A1A1-E7	Yellow (item 63, App. B)
	P1-B	P1-B	Yellow (item 63, App. B)
	FL4	FL4	Yellow (item 63, App. B)
FL10	A1 A1-E4	A1A1-E4	White/Blue (item 56, App. B)
	Q6 Drain	Q6 Drain	White/Blue (item 56, App. B)
FL11	A1A1-E9	A1A1-E4	White/Violet (item 57, App. B)
	Q7 Drain	A7 Drain	White/Violet (item 57, App. B)
FL12	A1A1-E10	A1A1-E7	White/Gray (item 58, App. B)
	A1P5-19	A1P5-19	White/Gray (item 58, App. B)
FL13	A1A1-E8	A1A1-E11	White (item 49, App. B)
	A1P1-21	A1P5-21	White (item 49, App. B)

f. Low Pass Filter FL-14. Install jack tip on filter leads before soldering to CCA.

g. Mounting Screws. Torque mounting screws to 4 in/lb.

h. Diodes 6A1A1CR6 and 6A1A1CR15. Coat bottom surface of diode with thermal compound (item 36, App B).

i. Mounting Screws. Torque mounting screws to 4 in/lb.

4-7. CCA-Filter/Switch, Output (6A1A1).

- a. *Electrical Surge Arrestor.* **HCI** Install text replacement parts as required. Do not install electrical surge arrestors closer than 0.5 mm to printed wiring board.
E15 (A3014191-1)
E18 (A3018055-1)
- b. *Component Mounting.* Component lead protrusion will not exceed 1.5 mm. Maximum component height will not exceed 15.25 mm.
- c. *Resistors R4, R15 and R16.* Apply adhesive (item 13, App B) before installing.
- d. *Mounting Holes and Solder Pads for CR6 and CR15.* Apply conformal coating (item 8, App B) NO CLOSER than 1/3 inch of mounting holes.
- e. *Capacitors C19 and C20.* Apply electrical enamel insulation (item 6, App B) to variable capacitors after any repair action or adjustment.
- f. *Diodes 6A1A1CR6,* Coat bottom surface of component with heat sink compound (item 36, App B).
- g. *Mounting Screws.* Torque mounting screws to 4 in/lb.

4-8. CCA-Filter/Switch, Input (6A1A2).

- a. *Resistor R1.* Apply adhesive sealant (item 3, App B) to R1 before installing.
- b. *Diode.* Coat bottom surface of diode with heat sink compound (item 13, App B).
- c. *c. Conformal Coating.* Apply as required. DO NOT apply conformal coating within 1/3 inch of mounting holes on circuit cards.
(item 8, App B)

**Section III. MAINTENANCE PROCEDURES FOR ELECTRICAL-ELECTRONIC
COMPONENT-AMPLIFIER RF HEATSINK A3013374-1**

4-9. Schematics.

- a. For A3014166-1, refer to figure FO-27.
- b. For A3017893-1, refer to figure FO-28.

CAUTION

All circuit cards in this UUT contain static sensitive devices susceptible to electrostatic damage. DO NOT attempt to replace components without using protective devices.

4-10. Thermal Resistor RT1 and RT2.

- a. Remove thermal resistors.
- b. Use hammer and chisel to remove all traces of thermal resistor or epoxy material from heat sink.
- c. Replace thermal resistors.

CAUTION

DO NOT allow uncured epoxy to get between heatsink assembly and CCA-Amplifier. You will be unable to safely remove the module after the epoxy has cured.

- d. Apply Epoxy (item 7, App B). Epoxy curing times depend on ambient temperature. The higher the temperature the more rapidly the epoxy will set up and cure:

TEMP	TIME
78°F (25.5°C)	8 hours
150°F (63.9°C)	45 minutes
250°F (121.1°C)	20 minutes

- e. Cure epoxy and assemble the heat sink.

4-11. CCA-50 Watt RF Amplifier A3014166-1.

- a. *Conformal Coating.* (item 8, App B) Apply as required. Do not apply conformal coating within 9.5 mm of the circumference of the holes on either side of the circuit card.
- b. *Thermal Resistance Pads.* Do not apply conformal coating on top side of the lead pads.
- c. *Jumper Wire.* Cover the jumper wire from E2 to E4 with Electrical Insulation Sleeve (item 20, App B).
- d. *Cable Assembly W4.* Solder cable shield directly to the ground plane.
- e. *Resistor R3, R10, and R11.* Resistor may hang over the edge of the circuit card.
- f. *Resistors R10, R11.* Apply adhesive-sealant (item 3, App B) to resistors before installing on circuit card.
- g. *Inductor L4.* Apply adhesive-sealant (item 3, App B) to inductor L4 before installing on circuit card.
- h. *Transformers T1, T2, T3, and T4.* Apply adhesive-sealant (item 3, App B) to transformers before installing on circuit card.
- i. *Jumper Wire.* Cover the jumper wire from E2 to E4 with Electrical Insulation Sleeve (item 20, App B).

j. *Power Amplifier Transistor Assembly.*

WARNING

The ceramic portion of the transistors Q1 and Q2 contains BERYLLIUM OXIDE (BeO). BeO dust is highly toxic. Use extreme care when removing and installing these transistors. DO NOT scrape, grind, or crush the ceramic portion of these transistors. DO NOT ingest or inhale BeO dust.

- (1) Apply heatsink compound (item 13, App B) to the transistor mounting surface before installing transistors.
- (2) Replace (Q1, Q2, and R1) at the same time. These are a matched set.

4-12. CCA-50 Watt RF Amplifier A3017893-1.

CAUTION

Early versions of CCA A3017893-1 have a capacitor C13 located across the output of the amplifier circuit which has a tendency to short and **should be removed and not replaced.**

- a. *Resistors R10 and R11.* Apply adhesive-sealant (item 3, App B) under resistor before installing.
- b. *inductor L4,* Apply adhesive-sealant (item 3, App B) beneath the inductor before installing.
- c. *Transformer T1, T2, T3 and T4.* Apply adhesive-sealant (item 3, App B) beneath the transformers before installing.
- d. *Connector J1 (A3014166-1 or A3017892-1).*
 - (1) Replace connector as required.
 - (2) Install connector on circuit card.
 - (3) Apply one drop of sealing compound (item 10, App B) to screw. Install screw and tighten,
 - (4) Use wire list to replace wires to connector:

<u>FROM</u>	TO
J1-A	E4
J1 -C	E3
J1-D	E2

- (5) Cover solder joints with Electrical Insulation Sleeve (item 20, App B).

**Section I. MAINTENANCE PROCEDURES FOR ELECTRICAL EQUIPMENT
AMPLIFIER-ADAPTER CHASSIS A3013349-1, A3018430-1, AND A3132854-1**

Refer to FO-20 for schematic diagram,

4-13. CCA-Remote Control Transformer (A3A1).

a. Replace.

b. Use the following wire list for replacing wires:

FROM	TO	COLOR/TRACER
A1-E1	J8-a	Black (item 59, App. B)
A1-E2	J8-Y	White (item 66, App. B)
A1-E3	J9-C	White/Black (item 67, App. B)
A1-E3	E2A	White/Black (item 67, App. B)
A1-E4	J9-B	White/Red (item 68, App. B)
A1-E4	E1A	White/Red (item 68, App. B)
A1-E5	J7-a	Black (item 59, App. B)
A1-E6	J7-Y	White (item 66, App. B)
A1-E7	J9-E	White/Orange (item 69, App. B)
A1-E7	E1B	White/Orange (item 69, App. B)
A1-E8	J9-D	White (item 66, App. B)
A1-E8	E2B	White (item 66, App. B)
A1-E1 (Shield)	E5	White (item 49, App. B)
A1-E2 (Shield)	E5	White (item 49, App. B)
A1-E5 (Shield)	E7	Black (item 40, App. B)
A1-E6 (Shield)	E7	Black (item 40, App. B)

4-14. CCA-SNAP Line Driver (A3A2),

a. Removal Instructions.

- (1) Remove two screws, lockwashers, flat washers, and non-metalic washers.
- (2) Unsolder wires from E1 to D18.
- (3) Replace CCA-SNAP line driver as required.

b. Assembly Instructions

- (1) Solder wires E1 thru E18 to CCA.
- (2) Insert two screws, lockwashers, and flat washers in CCA,
- (3) Place two non-metalic washers between the CCA-SNAP line driver and amplifier-adapter chassis.
- (4) Tighten screws two turns,

CAUTION

Push the CCA-SNAP line driver to the left as far as possible before securing set screws. This will avoid damage to the CCA-SNAP line driver when the power supply 5A1 is installed.

- (5) Tighten screws until snug,

c. Use the following wire list for replacing wires.

<u>FROM</u>	<u>TO</u>	<u>COLOR/TRACER</u>
A2-E1	J8-Q	White/Black (item 67, App. B)
A2-E2	J8-P	White (item 49, App. B)
A2-E3	J8-N	White/Orange (item 53, App. B)
A2-E4	J8-G	Blue (item 46, App. B)
A2-E5	J8-C	White/Green (item 55, App. B)
A2-E6	J8-T	White/Blue (item 56, App. B)
A2-E7	J10-C	White/Violet (item 57, App. B)
A2-E8	J10-B	White/Gray (item 58, App. B)
A2-E9	J10-A	White/Yellow (item 54, App. B)
A2-E10	J10-F	Green (item 45, App. B)
A2-E11	J10-H	Violet (item 47, App. B)
A2-E12	J10-K	Gray (item 48, App. B)
A2-E13	E9	Black (item 40, App. B)
A2-E13	J7-d	Black (item 40, App. B)
A2-E13	J10-D	Black (item 40, App. B)
A2-E14	TB1-4	Yellow (item 44, App. B)
A2-E15	J8-A	Orange (item 43, App. B)
A2-E16	J8-R	Brown (item 41, App. B)
A2-E17	J10-J	White/Brown (item 51, App. B)
A2-E18	J10-E	White/Red (item 52, App. B)

4-15. Amplifier-Adapter Connectors.

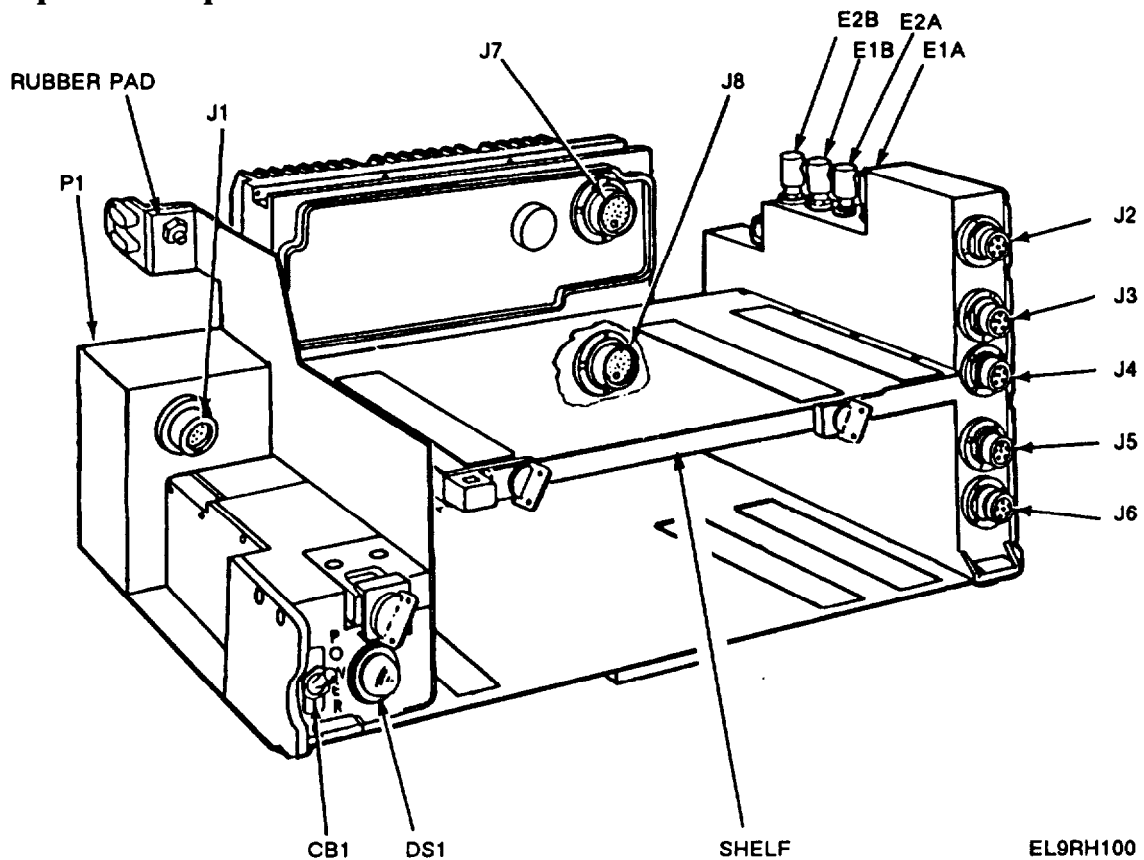


Figure 4-4. Connector Location on Amplifier-Adapter

a. Connector P1.

- (1) Apply sealing compound (item 10, App. B)
- (2) Install connector and refer to fig. 4-5 for alignment procedures.
- (3) Use the following wire list to replace wires.

<u>FROM</u>	<u>TO</u>	<u>COLOR/TRACER</u>
P1-A	E9	Black (item 96, App. B)
P1-B	CB1-2	Yellow (item 98, App. B)
P1-C	TB1-1	White (item 111, App. B)
P1-C	TB2-1	White (item 111, App. B)
P1-D	P3-3	White/Blue (item 56, App. B)
P1-E	K1-X1	Brown (item 60, App. B)
P1-F	P3-9	Brown (item 41, App. B)
P1-H	J8-D	Orange (item 43, App. B)
P1-K	P3-12	White/Yellow (item 54, App. B)
P1-K	J8-S	White/Yellow (item 54, App. B) (Not connected on A3132854-1)
P1-M	P3-1	Yellow (item 44, App. B)
P1-N	P3-8	Green (item 45, App. B)
P1-P	J7-D	Blue (item 46, App. B)
P1-S	P3-11	White/Violet (item 57, App. B)
P1-S	J7-S	White/Violet (item 57, App. B) (Not connected on A3132854-1)
P1-U	P3-2	White (item 49, App. B)
P1-V	E9	Black (item 75, App. B)
P1-M (Shield)	P1-H (Shield)	Black (item 40, App. B)
P1-P (Shield)	P1-M (Shield)	Black (item 40, App. B)
P1-U (Shield)	P1-P (Shield)	Black (item 40, App. B)
P1-U (Shield)	P1-V	Black (item 40, App. B)

- (4) Install screws and torque to approximately 14 to 16 in/lb.

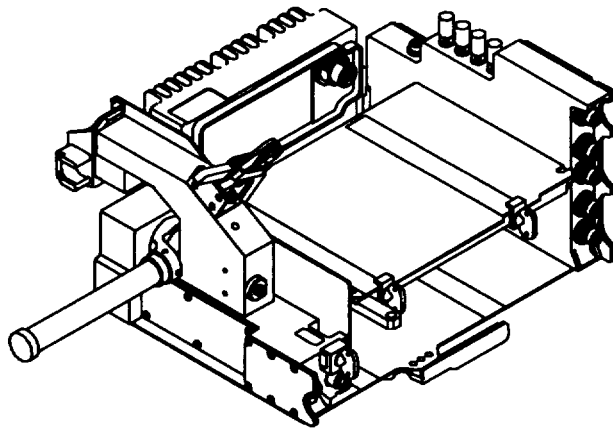
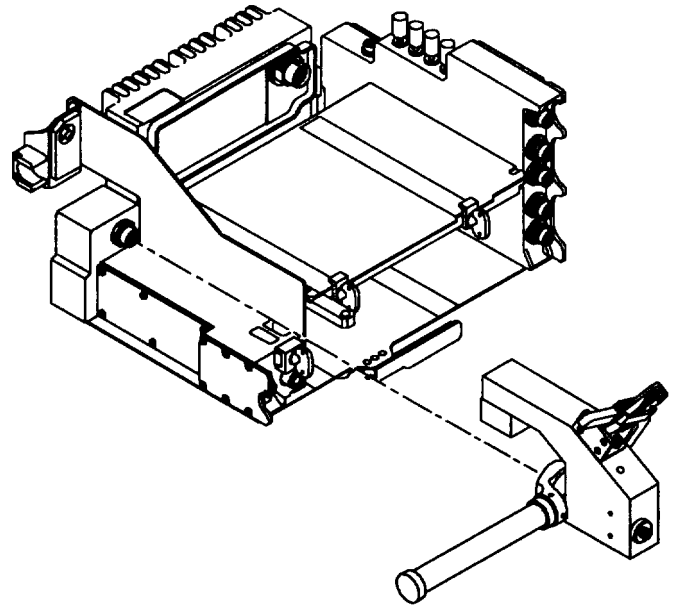
b. Connector P2.

- (1) Replace as required.
- (2) Use the following wire list to replace wires:

<u>FROM</u>	<u>TO</u>	<u>COLOR/TRACER</u>
P2-2	36-E	White/Yellow (item 54, App. B)
P2-5	J2-B	White/Blue (item 56, App. B)
P2-6	J3-B	White/Brown (item 51, App. B)
P2-8	J3-D	White/Orange (item 53, App. B)
P2-9	J2-D	White/Gray (item 58, App. B)
P2-10	J3-C	White/Red (item 52, App. B)
P2-11	J2-C	White/Violet (item 57, App. B)
P2-12	J5-F	White/Green (item 55, App. B)
P2-13	J4-F	White (item 49, App. B)
P2-14	J6-A	Black (item 40, App. B)

CONNECTOR J1 REPLACEMENT PROCEDURES

1. REMOVE RUBBER PAD FROM RFPA SUPPORT. INSTALL CONNECTOR J1 INTO IT'S MOUNTING HOLE. APPLY THREE DROPS OF SEALING COMPOUND (ITEM 10, APP. B) TO THREADS OF CONNECTOR J1. INSTALL AND FINGER TIGHTEN LOCKING RING THEN BACK OFF 1/2 TURN.
2. DISENGAGE LOCKING MECHANISM ON ALIGNMENT TOOL, SLIDE ALIGNMENT TOOL INTO AMPLIFIER-ADAPTER ENSURING CONNECTOR KEYWAY ALIGNS WITH KEYWAY OF ALIGNMENT TOOL AND GUIDE PIN IS SEATED. ENGAGE LOCKING MECHANISM.
3. INSERT 70 IN/LB TORQUE ARM INTO SOCKET WRENCH ON ALIGNMENT TOOL AND LOCK. ENSURE SOCKET WRENCH ENGAGES LOCKING RING ON CONNECTOR J1
4. TIGHTEN LOCKING RING UNTIL TORQUE ARM CLICKS.
5. DISENGAGE SOCKET WRENCH FROM CONNECTOR LOCKING RING, REMOVE TORQUE ARM.
6. DISENGAGE LOCKING MECHANISM ON THE ALIGNMENT TOOL, SLIDE ALIGNMENT TOOL OUT OF AMPLIFIER-ADAPTER.
7. INSTALL OR REPLACE RUBBER PAD AS REQUIRED,



EL9RH101

Figure 4-5. Alignment of RF PA Connector J1 on AM-7239/VRC

c. Connector J2 through J6.

- (1) Apply sealing compound (item 10, App. B).
- (2) Install spanner nut and torque from 88 to 92 in/lb,
- (3) Use the following wire list to replace wires:

FROM	TO	COLOR/TRACER
J2-B	P2-5	White/Blue (item 56, App. B)
J2-C	P2-11	White/Violet (item 57, App. B)
J2-D	P2-9	White/Gray (item 58, App. B)
J3-B	P2-6	White/Brown (item 51, App. B)
J3-C	P2-10	White/Red (item 52, App. B)
J3-D	P2-8	White/Orange (item 53, App. B)
J4-A	J2-A	Black (item 40, App. B)
J4-B	J2-B	White/Blue (item 56, App. B)
J4-C	J2-C	White/Violet (item 57, App. B)
J4-D	J2-D	White/Gray (item 58, App. B)
J4-F	P2-13	White (item 49, App. B)
J5-A	J3-A	Black (item 40, App. B)
J5-B	J3-B	White/Brown (item 51, App. B)
J5-C	J3-C	White/Red (item 52, App. B)
J5-D	J3-D	White/Orange (item 53, App. B)
J5-F	P2-12	White/Green (item 55, App. B)
J6-A	P2-14	Black (item 40, App. B)
J6-B	J5-B	White/Brown (item 51, App. B)
J6-C	J5-C	White/Red (item 52, App. B)
J6-D	J5-D	White/Orange (item 53, App. B)
J6-E	P2-2	White/Yellow (item 54, App. B)
J6-F	J5-A	Black (item 40, App. B)

d. Connector P3.

- (1) Replace as required.
- (2) Use the following wire list to replace wires:

FROM	TO	COLOR/TRACER
P3-1	P1-M	Yellow (item 44, App. B)
P3-2	P1-U	White (item 49, App. B)
P3-3	P1-D	White/Blue (item 56, App. B)
P3-4	J8-K	White/Brown (item 51, App. B)
P3-5	J7-K	White/Red (item 52, App. B)
P3-6	Q1-base	Green (item 45, App. B)
P3-7	TB1-3	Orange (item 43, App. B)
P3-8	P1-N	Green (item 45, App. B)
P3-9	P1-F	Brown (item 41, App. B)
P3-10	Q1-collector	Blue (item 46, App. B)
P3-11	P1-S	White/Violet (item 57, App. B)
P3-12	P1-K	White/Yellow (item 54, App. B)
P3-13	TB1-4	Yellow (item 44, App. B)
P3-14	E11	Black (item 40, App. B)
P3-8 (Shield)	P3-9 (Shield)	Black (item 40, App. B)
P3-9 (Shield)	E11	Black (item 40, App. B)

e. Connector J1.

- (1) Apply sealing compound (item 10, App B) to threads before installing.
- (2) Install hex nut and torque from 68 to 72 in/lb.
- (3) Use the following wire list to replace wires to connector:

<u>FROM</u>	<u>TO</u>	<u>COLOR/TRACER</u>
J1-A	E9	Black (item 75, App. B)
J1-B	TB1-4	Yellow (item 79, App. B)
J1-C	TB1-3	Orange (item 78, App. B)
J1-D	TB1-2	Red (item 77, App. B)
J1-F	TB1-6	Blue (item 65, App. B)
J1-J	J8-X	White/Gray (item 58, App. B)
J1-K	J8-J	White/Violet (item 57, App. B)
J1-M	J8-V	Gray (item 48, App. B)
J1-N	J8-H	Green (item 45, App. B)
J1-P	J8-M	Violet (item 47, App. B)
J1-R	J8-L	White/Red (item 52, App. B)

f. Connector J7. See fig. 4-6 for replacement procedures or alignment instructions.

- (1) Replace as required.
- (2) Use the following wire list to replace wires to connector:

<u>FROM</u>	<u>TO</u>	<u>COLOR/TRACER</u>
J7-D	P1-P	Blue (item 46, App. B)
J7-F	TB1-3	Orange (item 78, App. B)
J7-H	J11-N	White/Yellow (item 54, App. B)
J7-J	J11-K	White/Orange (item 53, App. B)
J7-K	P3-5	White/Red (item 52, App. B)
J7-L	J11-R	White/Brown (item 51, App. B)
J7-M	J11-P	White (item 49, App. B)
J7-S	P1-S	White/Violet (item 57, App. B) (Not connected on A3132854-1)
J7-V	J11-M	White/Gray (item 58, App. B)
J7-X	J11-J	White/Green (item 55, App. B)
J7-Y	A1-E6	White (item 66, App. B)
J7-Z	E9	Black (item 75, App. B)
J7-a	A1-E5	Black (item 59, App. B)
J7-d	A2-E13	Black (item 40, App. B)

- (3) Apply adhesive sealant compound (item 10, App. B) to connector threads before installing spanner nut.
- (4) Install spanner nut.
- (5) Use alignment fixture F to align connector J7.
- (6) Install bottom access cover and screws and washers.
- (7) Torque screws to 8 - 10 in/lb.

g. Connector J8. See fig. 4-7 for replacement procedures or alignment instructions.

- (1) Replace as required.
- (2) Use the following wire list to replace wires to connector:

<u>FROM</u>	<u>TO</u>	<u>COLOR/TRACER</u>
J8-A	A2-E15	Orange (item 43, App. B)
J8-C	A2-E5	White/Green (item 55, App. B)
J8-D	P1-H	Orange (item 43, App. B)
J8-F	TB1-3	Orange (item 78, App. B)
J8-G	A2-E4	Blue (item 46, App. B)
J8-H	J1-N	Green (item 45, App. B)
J8-J	J1-K	White/Violet (item 57, App. B)
J8-K	P3-4	White/Brown (item 51, App. B)
J8-L	J1-R	White/Red (item 52, App. B)
J8-M	J1-P	Violet (item 47, App. B)
J8-N	A2-E3	White/Orange (item 53, App. B)
J8-P	A2-E2	White (item 49, App. B)
J8-Q	A2-E1	White/Black (item 67, App. B)
J8-R	A2-E16	Brown (item 41, App. B)
J8-S	P1-K	White/Yellow (item 54, App. B) (Not connected on A3132854-1)
J8-T	A2-E6	White/Blue (item 56, App. B)
J8-V	J1-M	Gray (item 48, App. B)
J8-X	J1-J	White/Gray (item 58, App. B)
J8-Y	A1-E2	White (item 66, App. B)
J8-Z	E9	Black (item 75, App. B)
J8-a	A1-E1	Black (item 59, App. B)
J8-d	E9	Black (item 40, App. B)

- (3) Apply adhesive sealant (item 3, App. B) to connector threads before installing spanner nut.
- (4) Install spanner nut.
- (5) Use alignment fixture to align J8 and torque spanner nut to 88 - 92 in/lb (See fig. 4-7).
- (6) Install bottom access cover, screws, and washers.
- (7) Torque screws to 8 - 10 in/lb.

h. Electrical Binding Posts. (Refer to fig. 4-3).

- (1) Discard split lockwasher supplied with new binding post.
- (2) Install hex nut on binding post and torque to 5 - 7 in/lb.

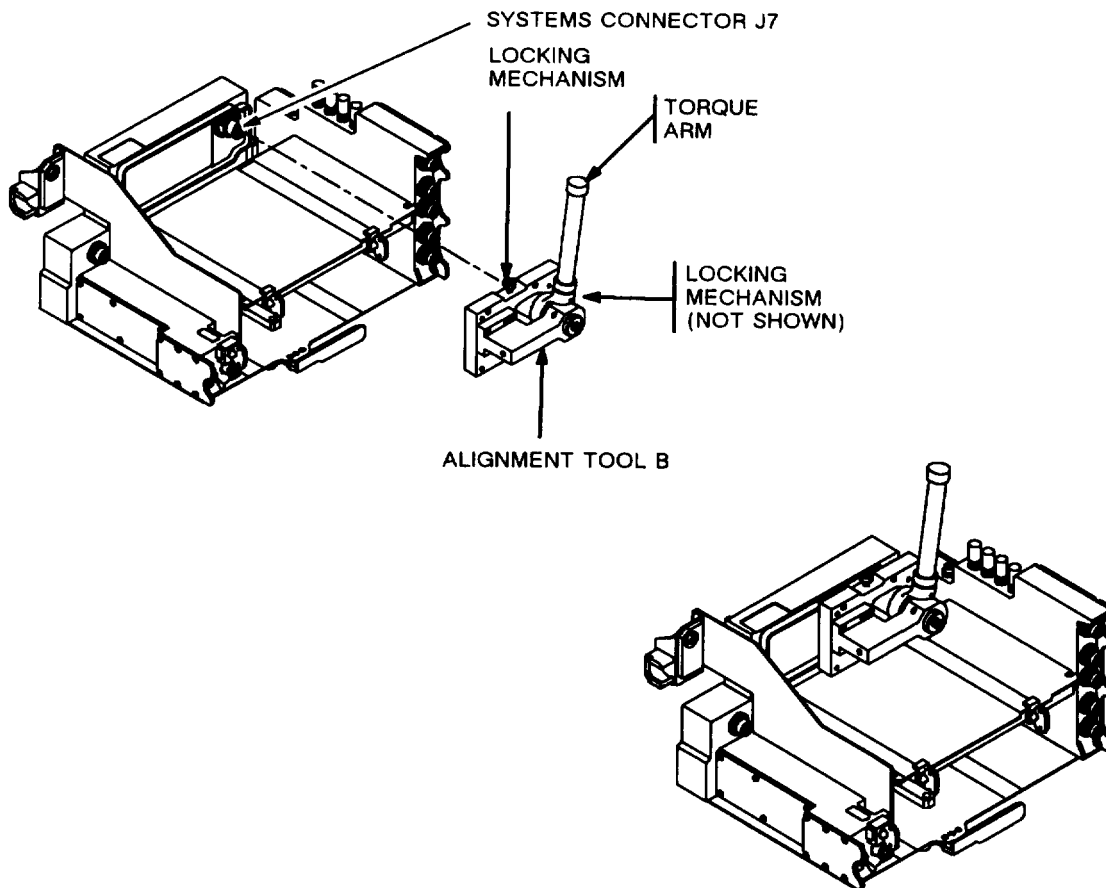
i. Bottom Access Cover. Install screws and washers then torque to 8 - 10 in/lb.

j. Miscellaneous Wiring.

FROM	TO	COLOR/TRACER
E1	CR1 Cathode	White (item 111, App. B)
E2	E3	Wire, copper (item 106, App. B)
E9	E10	Black (item 94, App. B)
E9	E11	Black (item 94, App. B)
E9	J1-A	Black (item 75, App. B)
E9	J7-Z	Black (item 75, App. B)
E9	J8-Z	Black (item 75, App. B)
E9	J8-d	Black (item 40, App. B)
E9	A2-E13	Black (item 40, App. B)
E9	TB1-5	Black (item 96, App. B)
E10	E4	Black (item 75, App. B)
E11	R1-2	Black (item 40, App. B)
K1-X1	CR6 Cathode	
K1-X2	CR6 Anode	
R1-1	Q1-E	Yellow (item 44, App. B)
TB2-1	CR1 Cathode	White (item 111, App. B)
TB1 -2	J1-D	Red (item 77, App. B)
TB1-2	J9-F	Red (item 42, App. B)
TB1-3	J1-C	Orange (item 78, App. B)
TB1-3	J7-F	Orange (item 78, App. B)
TB1-3	J8-F	Orange (item 78, App. B)
TB1-3	P3-7	Orange (item 43, App. B)
TB1-4	J1-B	Yellow (item 79, App. B)
TB1-4	P3-13	Yellow (item 44, App. B)
TB1-4	A2-E14	Yellow (item 44, App. B)
TB1-5	E9	Black (item 96, App. B)
TB1-6	J1-F	Blue (item 65, App. B)

CONNECTOR J7 REPLACEMENT PROCEDURES

1. REMOVE CONNECTOR LOCK RING AND SET TO ONE SIDE .
2. UNSOLDER AND TAG WIRES FROM CONNECTOR PINS.
3. REMOVE AND REPLACE CONNECTOR.
4. SOLDER WIRES TO CONNECTOR PINS.
5. REMOVE CONNECTOR DUST CAP, CHAIN, AND RETAINING SCREW,
6. INSTALL CONNECTOR J7 INTO IT'S MOUNTING HOLE. APPLY THREE DROPS OF SEALING COMPOUND (ITEM 10, APP. B) ON CONNECTOR THREADS, INSTALL AND FINGER TIGHTEN CONNECTOR LOCKING RING THEN BACK OFF 1/2 TURN.
7. DISENGAGE TWO LOCKING MECHANISMS ON ALIGNMENT TOOL, INSTALL ALIGNMENT TOOL ON CONNECTOR J7 ENSURING KEYWAY OF CONNECTOR ALIGNS WITH KEYWAY OF ALIGNMENT TOOL.
8. TIGHTEN TWO LOCKING MECHANISMS ON ALIGNMENT TOOL, INSERT 90 IN/LB TORQUE ARM INTO SOCKET WRENCH ON ALIGNMENT TOOL AND LOCK. ENSURE SOCKET WRENCH ENGAGES LOCKING RING ON CONNECTOR J7.
9. TIGHTEN LOCKING RING OF CONNECTOR J7 UNTIL TORQUE ARM CLICKS,
10. DISENGAGE SOCKET WRENCH FROM CONNECTOR LOCKING RING, REMOVE TORQUE ARM, LOOSEN TWO LOCKING MECHANISMS ON ALIGNMENT TOOL, DISENGAGE SOCKET WRENCH FROM CONNECTOR LOCKING RING. REMOVE ALIGNMENT TOOL FROM THE APLIFIER-ADAPTER.
11. REPLACE CONNECTOR DUST CAP, CHAIN, AND RETAINING SCREW,

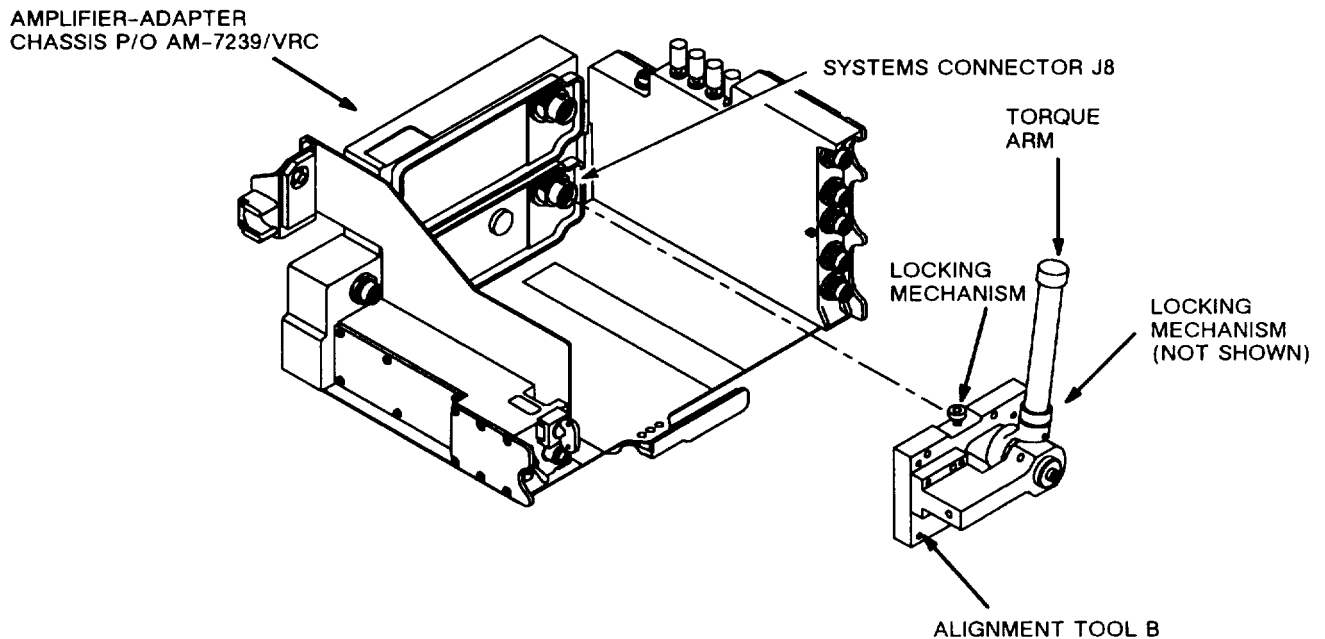


EL9RH102

Figure 4-6. Alignment of RT Systems Chassis Connector J7

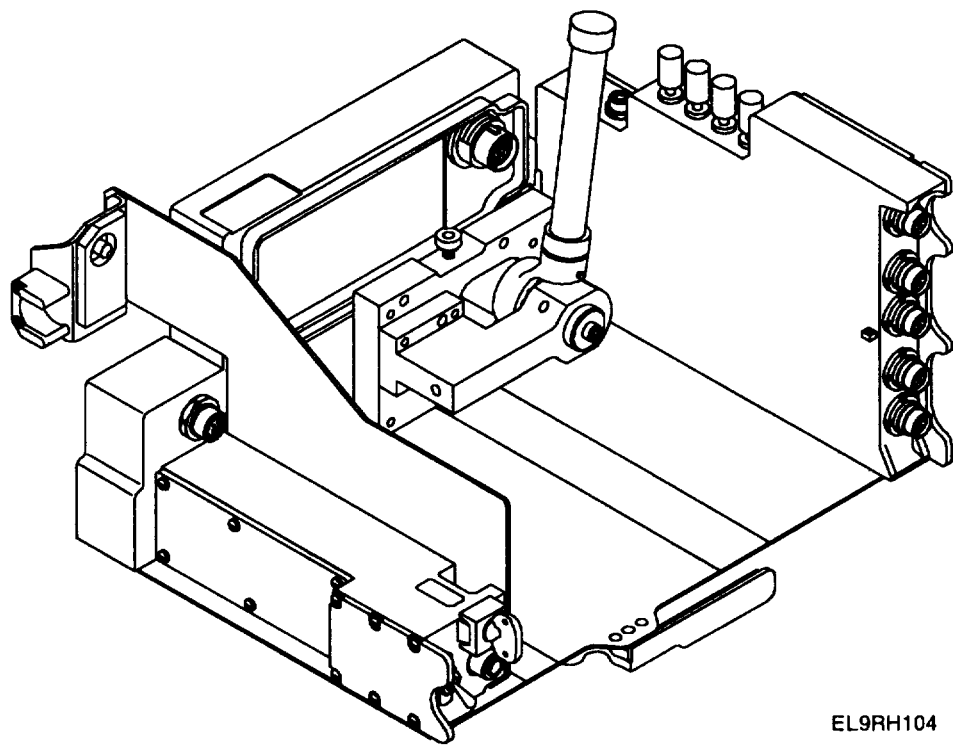
CONNECTOR J8 REPLACEMENT PROCEDURES

1. REMOVE 10 SCREWS AND WASHERS FROM EQUIPMENT SHELF AND REMOVE EQUIPMENT SHELF.
2. REMOVE CONNECTOR LOCK RING AND SET TO ONE SIDE.
3. UNSOLDER AND TAG WIRES FROM CONNECTOR PINS.
4. REMOVE AND REPLACE CONNECTOR.
5. SOLDER WIRES TO CONNECTOR PINS.
6. REMOVE CONNECTOR DUST CAP, CHAIN, AND SCREW.
7. INSTALL CONNECTOR J8 INTO ITS MOUNTING HOLE. APPLY THREE DROPS OF SEALING COMPOUND (ITEM 10, APP, B) ON CONNECTOR THREADS. INSTALL AND FINGER TIGHTEN CONNECTOR LOCKING RING THEN BACK OFF 1/2 TURN.
8. DISENGAGE TWO LOCKING MECHANISMS ON ALIGNMENT TOOL. INSTALL ALIGNMENT TOOL ON CONNECTOR J8 ENSURING KEYWAY OF CONNECTOR ALIGNS WITH KEYWAY OF ALIGNMENT TOOL.
9. TIGHTEN TWO LOCKING MECHANISMS ON ALIGNMENT TOOL. ENGAGE SOCKET WRENCH ON CONNECTOR J8 LOCKING RING. TIGHTEN CONNECTOR LOCKING RING BY HAND.
10. INSERT 90 IN/LB TORQUE ARM IN SOCKET WRENCH ON ALIGNMENT TOOL AND LOCK. ENSURE SOCKET WRENCH ENGAGES LOCKING RING ON CONNECTOR J8.
11. TIGHTEN LOCKING RING OF CONNECTOR J8 UNTIL TORQUE ARM CLICKS.
12. DISENGAGE SOCKET WRENCH FROM CONNECTOR LOCKING RING. REMOVE TORQUE ARM. LOOSEN TWO LOCKING MECHANISMS ON ALIGNMENT TOOL. REMOVE ALIGNMENT TOOL FROM CONNECTOR J8.
13. REPLACE CONNECTOR DUST CAP, CHAIN, AND RETAINING SCREW.
14. REPLACE EQUIPMENT SHELF AND INSTALL 10 SCREWS AND WASHERS.



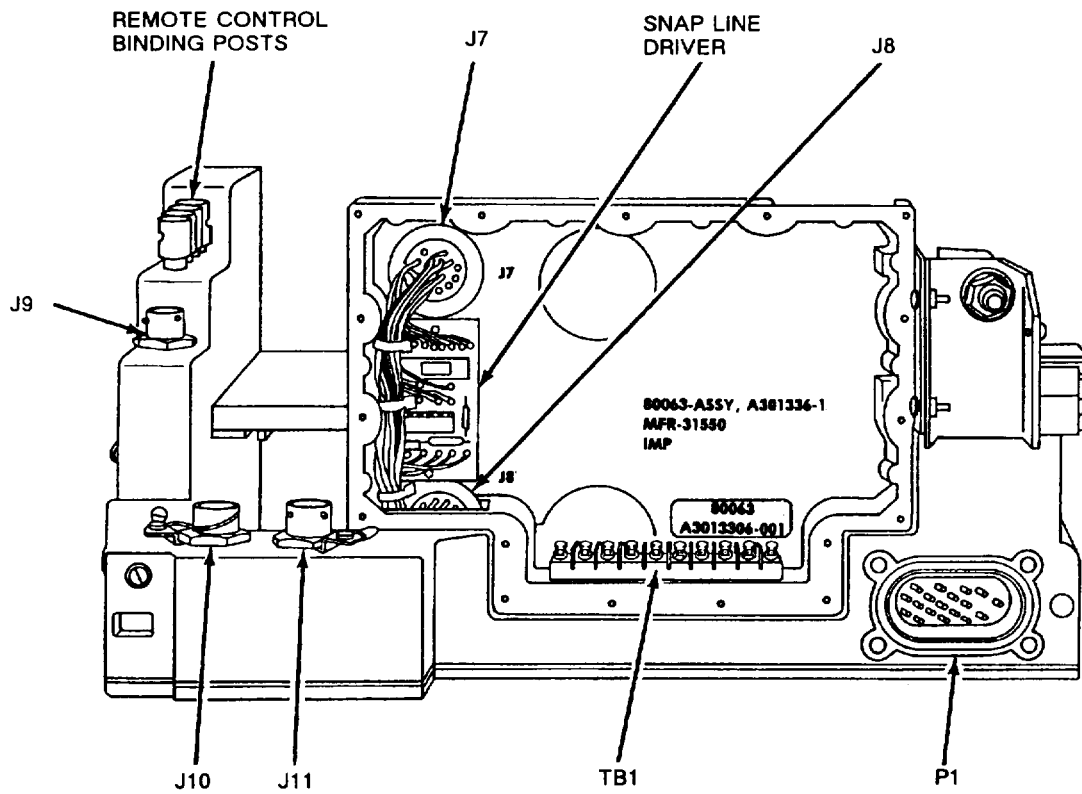
EL9RH103

Figure 4-7. Alignment of RT Systems Connector J8 on AM-7239/VRC (Sheet 1 of 2)



EL9RH104

Figure 4-7. Alignment of RT Systems Connector J8 on AM-7239/VRC (Sheet 2 of 2)



EL9RH105

Figure 4-8. Connector Placement for J7 through J11

k. Connector J9.

- (1) Align connector J9 keyway.
- (2) Apply sealing compound (item 21, App. B) to connector threads,
- (3) Torque hex nut to 58-62 in/lb.
- (4) Use the following wire list to replace wires to connector:

<u>FROM</u>	<u>TO</u>	<u>COLOR/TRACER</u>
J9-A	E8	Black (item 59, App. B)
J9-B	A1-E4	White/Red (item 68, App. B)
J9-C	A1-E3	White/Black (item 67, App. B)
J9-D	A1-E8	White (item 66, App. B)
J9-E	A1-E7	White/Orange (item 69, App. B)
J9-F	TB1-2	Red (item 42, App. B)

l. Connector J10,

- (1) Apply sealing compound (item 10, App B) to connector threads.
- (2) Torque hex nut to 68-72 in/lb.
- (3) Use the following wire list to replace wires to connector:

<u>FROM</u>	<u>TO</u>	<u>COLOR/TRACER</u>
J10-A	A2-E9	White/Yellow (item 54, App. B)
J10-B	A2-E8	White/Gray (item 58, App. B)
J10-C	A2-E7	White/Violet (item 57, App. B)
J10-D	A2-E13	Black (item 40, App. B)
J10-E	A2-E18	White/Red (item 52, App. B)
J10-F	A2-E10	Green (item 45, App. B)
J10-H	A2-E11	Violet (item 47, App. B)
J10-J	A2-E17	White/Brown (item 51, App. B)
J10-K	A2-E12	Gray (item 48, App. B)

m. Connector J11.

- (1) Apply sealing compound (item 10, App) to connector threads.
- (2) Torque hex nut to 68-72 in/lb.
- (3) Use the following wire list to replace wires to connector:

<u>FROM</u>	<u>TO</u>	<u>COLOR/TRACER</u>
J11-A	NC	Black (item 75, App. B)
J11-J	J7-X	White/Green (item 55, App. B)
J11-K	J7-J	White/Orange (item 53, App. B)
J11-M	J7-V	White/Gray (item 58, App. B)
J11-N	J7-H	White/Yellow (item 54, App B)
J11-P	J7-M	White (item 49, App. B)
J11-R	J7-L	White/Brown (item 51, App. B)

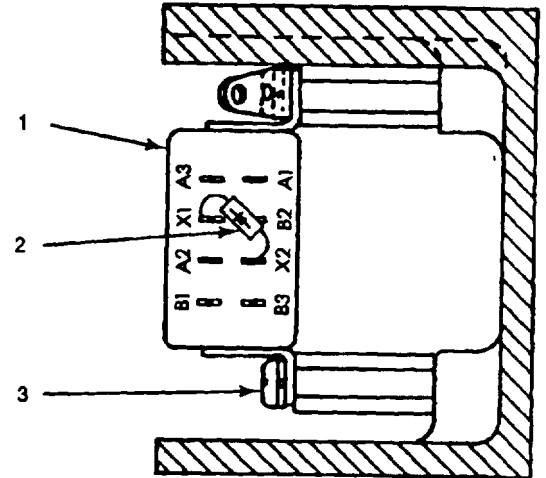
4-16. Electrical Surge Arrestors.

a. Replace as required. **HCI** The Electrical surge arrestors E12, E13, E14, and E15 are hardness critical items **HCI**. Replacement of the electrical surge arrestors is a hardness critical process **HCP**. These arrestors are not tested for serviceability by the ATE. Replace arrestors if they look defective or have an unusual odor.

b. Do not substitute any other type surge arrestors.

4-17. Relay K1.

- a. Replace Relay K1 (1) as required.
- b. Replace diode (2). Observe polarity.
- c. Apply sealing compound (item 10, App) to mounting screws and washers (3).



d. Use the following wire list to replace wires to relay:

FROM	TO	COLOR/TRACER	EL9RH106
K1-X1	CR6 Cathode		
K1-X2	CR6 Anode		
K1-A1	TB2-2	Red (item 97, App. B)	
K1-A1	K1-B1	Wire, copper (item 105, App. B) (cover 20 gage wire with item 31, App.B)	
K1-A2	TB2-1	White (item 111, App. B)	
K1-A2	K1-B2	Wire, copper (item 105, App. B) (cover 20 gage wire with item 31, App. B)	
K1-X2	E10	Black (item 59, App. B)	
K1-X1	P1-E	Brown (item 60, App. B)	

4-18. Circuit Breaker CB1.

- a. Replace as required.
- b. Use the following wire list to replace wires to circuit breaker:

FROM	TO	COLOR/TRACER
CB1-1	TB2-2	Red (item 97, App. B)
CB1-1	DS1-2	Red (item 42, App. B)
CB1-2	P1-B	Yellow (item 98, App. B)

c. Install circuit breaker CB1. Torque the hex nut to 19 - 21 in/lb.

4-19. Indicator-Light Housing DS1.

- a. Replace as required.
- b. Use the following wire list to replace wires to indicator-light housing:

FROM	TO	COLOR/TRACER
DS1-1	E10	Black (item 40, App. B)
DS1-2	CB1-1	Red (item 42, App. B)

- c. Install DS1 Indicator-light housing. Torque the hex nut to 29 - 31 in/lb.

**Section V. MAINTENANCE PROCEDURES FOR AMPLIFIER-ADAPTER
POWER SUPPLY A3013369-1, A3018415-1, OR A3142176-1**

4-20. Power Supply Heatsink Assembly A3013297-1 or A3018017-1 (5A1).

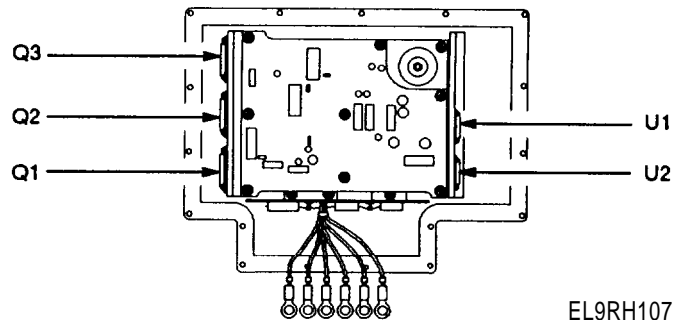
- a. Refer to fig. FO-13
- b. Refer to fig. 4-6 for disassembly procedures.

c. *Transistors Q1, Q2, and Q3.*

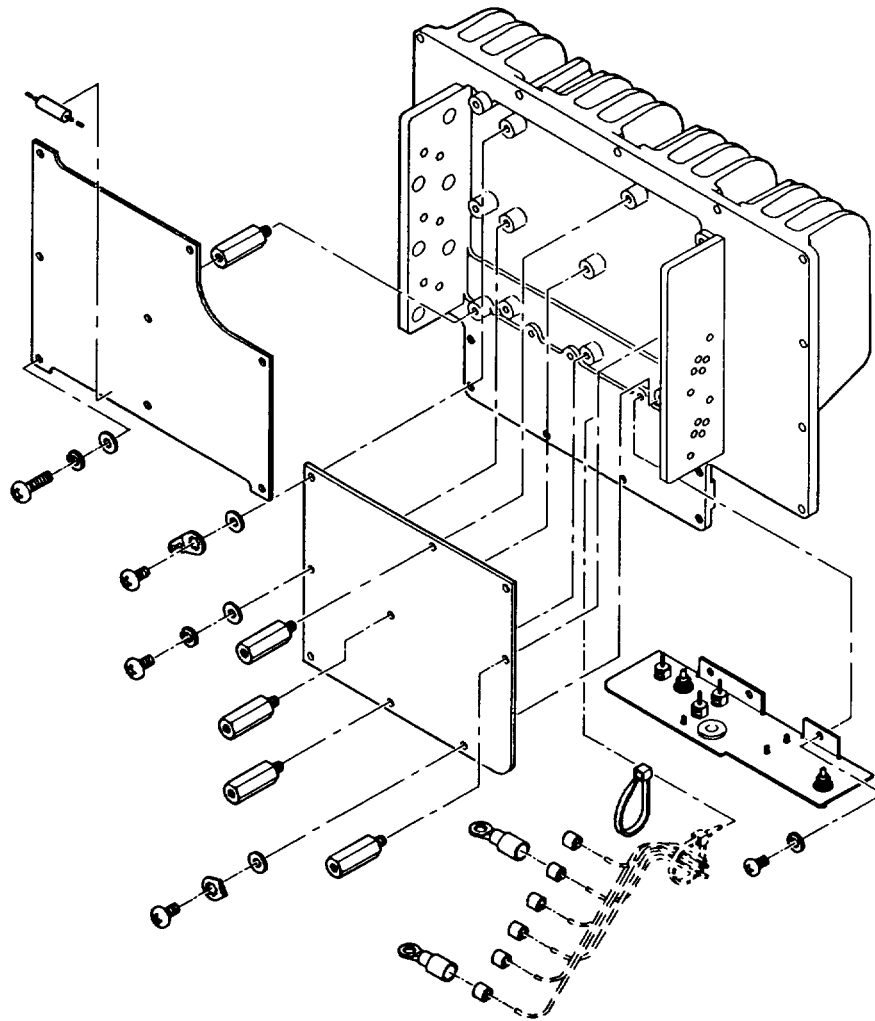
- (1) Install as required.
- (2) Install electrical insulation sleeve (item 28, App. B).
- (3) Apply sealing compound (item 10, App B) to screw threads before installing nuts.

d. *Microcircuits U1 and U2.*

- (1) Install as required.
- (2) Install electrical insulation sleeve (item 28, App. B).
- (3) Apply sealing compound (item 10, App B) to screw threads before installing nuts.



EL9RH107



EL9RH108

Figure 4-9. Disassembly of Power Supply

e. Capacitors *C1, C2, C3 and C4.*

- (1) Apply adhesive sealant (item 3, App. B) before installing.
- (2) Apply electrical insulation sleeve (item 30, App. B) to the positive lead.

CAUTION

All circuit cards assemblies in the amplifier-adapter power supply contain static sensitive devices susceptible to electrostatic damage. DO NOT attempt to replace components without using protective devices.

4-21. CCA-Transient Protection/Regulator Filter A3014172-1 or A3018547-1.

a. Refer to the following schematics:

- (1) Fig. FO-15 for A3014172-1.
- (2) Fig. FO-17 for A3018547-1.

b. *Conformal Coating (item 8, App. B).*

- (1) Apply as required.
- (2) DO not apply conformal coating to the mounting holes on either side of the board.
- (3) Do not apply conformal coating within 10 mm diameter of mounting holes.

c. Component mounting procedures.

- (1) Leads should not protrude more than 1.5 mm above rear side.
- (2) Capacitors C1, C2, and C3. Apply adhesive sealant (item 3, App. B), before installing.
- (3) Resistors R1 through R9. Apply adhesive sealant (item 3, App. B), before installing.
- (4) Inductor L1 and L3. Apply adhesive sealant (item 3, App. B), before installing.
- (5) Inductor L2. Apply electrical insulation sleeve (item 24, App. B) to electrical lead attached to terminal E20 prior to installing L2.

4-22. CCA-Transient Protection/Regulator A3014184-1.

- a. Refer to fig. FO-14.
- b. *Capacitors C3 and C13.* Apply adhesive sealant Type I Clear, RTV(item 3, App B), before installing.
- c. *Capacitors C4, C5, C6, C7, C8, C9, and C11.* Mount flush with board.
- d. *Resistors R1 and R2.* Apply adhesive sealant (item 3, App. B), before installing.
- e. *Resistors R25 and R39.* Coat with electrical insulating enamel (item 6, App. B) after adjustment.
- f. *Transistors Q2, Q3, Q4, Q6, Q7, Q10, Q11, and Q13.* Install mounting pad beneath each component before installing.

4-23. Maintenance of Wiring Harness.

- a. Replace as required.
- b. Power Supply A3013369-1 Wire List.

FROM	TO	COLOR/TRACER
A1A1-E6	AFL2-2	White/Orange (item 53, App. B)
A1A2-E1	A1A2-E6	White/Blue (item 91, App. B)
A1A2-E3	A1FL1-2	Brown(item 76, App. B)
A1A2-E2	A1FL2-2	White/Orange (item 88, App. B)
A1A2-E6	A1A2-E8	Green (item 80, App. B)
A1A2-E8	A1A1-E1	White/Blue (item 91, App. B)
A1A2-E9	A1A1-E15	Gray item 83, App. B)
A1A2-E9	A1Q1-E	Gray (item 83, App. B)
A1A2-E9	TB1-2	Gray (item 83, App. B)
A1A2-E10	A1A1-E2	White/Black (item 67, App. B)
A1A2-E11	A1Q1-C	Blue (item 81, App. B)
A1A2-E12	A1A1-E8	White/Green (item 71, App. B)
A1A2-E13	A1-E6	Black (item 75, App. B)
A1A2-E14	A1Q3-E	Violet (item 82, App. B)
A1A2-E14	A1A1-E16	Violet (item 82, App. B)
A1A2-E15	A1FL3-2	White/Yellow (item 89, App. B)
A1A2-E16	A1A1-E9	Yellow (item 63, App. B)
A1A2-E17	A1E3-2	White (item 66, App. B)
A1A2-E18	A1E2-2	Black (item 75, App. B)
A1A2-E19	A1FL3-2	White/Yellow (item 54, App. B)
A1A2-E19	A1Q3-C	Red (item 77, App. B)
A1A3-E1	A1A2-E5	Orange (item 78, App. B)
A1A3-E2	A1A1-E4	Red (item 77, App. B)
A1A3-E3	A1A2-E16	Yellow (item 79, App. B)
A1A3-E4	A1A1-E7	Green (item 64, App. B)
A1A3-E5	A1A1-E3	Blue (item 81, App. B)
A1A3-E6	A1-E6	Black (item 75, App. B)
A1A3-E7	A1A1-E12	Brown (item 60, App. B)
A1E1-1	TB1-1	Red (item 77, App. B)
A1E1-2	A1Q1-C	Red (item 77, App. B)
A1E2-1	TB1-5	Black (item 75, App. B)
A1E3-1	TB1-6	White (item 66, App. B)
A1E3-2	A1A1-E11	White (item 66, App. B)
A1E4-2	A1A1-E10	Black (item 75, App. B)
A1FL1-1	TB1-4	Brown (item 76, App. B)
A1FL2-1	TB1-2	White/Orange (item 88, App. B)
A1FL3-1	TB1-3	White/Yellow (item 89, App. B)
A1Q1-B	A1A1-E14	Green (item 64, App. B)
A1Q1-C	A1A2-E19	Red (item 77, App. B)
A1Q2-B	A1A1-E13	White/Orange (item 69, App. B)
A1Q2-E	A1-E7	Black (item 75, App. B)
A1Q3-B	A1A1-E18	White/Red (item 68, App. B)
A1Q3-C	A1A1-E17	Red (item 77, App. B)

c. Power Supply A3018415-1 Wire List.

FROM	TO	COLOR/TRACER
A1A1-E6	A1FL2-1	White/Orange (item 69, App. B)
A1A1-E19	A1FL3-1	White/Yellow (item 70, App. B)
A1A2-E1	A1Q2-C	Blue (item 81, App. B)
A1A2-E2	A1Q1-E	Gray (item 83, App. B)
A1A2-E2	A1A1-E15	Gray (item 83, App. B)
A1A2-E2	TB1-2	Gray (item 83, App. B)
A1A2-E3	A1Q3-E	Violet (item 82, App. B)
A1A2-E3	A1A1-E16	Violet (item 82, App. B)
A1A2-E4	A1Q3-C	Red (item 77, App. B)
A1A2-E6	A1A1-E	White/Blue (item 91, App. B)
A1A2-E8	A1A1-E2	White/Black (item 85, App. B)
A1A2-E9	A1A1-E8	White/Green (item 71, App. B)
A1A2-E10	A1FL2-2	White/Orange (item 88, App. B)
A1A2-E11	A1FL3-2	White/Yellow (item 89, App. B)
A1A2-E12	A1FL3-2	Brown (item 76, App. B)
A1A2-E13	A1A1-E4	Brown (item 76, App. B)
A1A2-E13	A1U1-4	Red (item 77, App. B)
A1A2-E14	A1A1-E3	Blue (item 81, App. B)
A1A2-E14	A1U2-4	Blue (item 81, App. B)
A1A2-E15	A1-E6	White (item 84, App. B)
A1A2-E16	A1U1-2	Black (item 75, App. B)
A1A2-E16	A1A1-E10	Black (item 75, App. B)
A1A2-E16	A1U2-2	Black (item 75, App. B)
A1A2-E17	A1E3-2	White (item 66, App. B)
A1A2-E18	A1A1-E7	Green (item 64, App. B)
A1A2-E19	A1U1-3	Brown (item 60, App. B)
A1A2-E21	A1A1-E9	Yellow (item 63, App. B)
A1A2-E22	A1U2-3	White/Orange (item 69, App. B)
A1A2-E23	A1A1-E12	Brown (item 60, App. B)
A1E1-1	TB1-1	Red (item 77, App. B)
A1E1-2	A1Q1-C	Red (item 77, App. B)
A1E2-1	TB1-5	Black (item 75, App. B)
A1E3-1	TB1-6	White (item 66, App. B)
A1E3-2	A1A1-E11	White (item 66, App. B)
A1E4-2	A1A1-E10	Black (item 75, App. B)
A1FL1-1	TB1-2	Brown (item 76, App. B)
A1FL2-1	TB1-3	White/Orange (item 88, App. B)
A1FL3-1	TB1-4	White/Yellow (item 89, App. B)
A1Q1-B	A1A1-E14	Green (item 64, App. B)
A1Q1-C	A1A2-E4	Red (item 77, App. B)
A1Q2-B	A1A1-E13	White/Orange (item 69, App. B)
A1Q2-E	A1-E7	Black (item 75, App. B)
A1Q3-B	A1A1-E18	White/Red (item 68, App. B)
A1Q3-C	A1A1-E17	Red (item 77, App. B)
A1U1-1	A1A2-E20	Orange (item 78, App. B)
A1U2-1	A1A2-E21	Yellow (item 79, App. B)

d. Cable Marker Sleeve.

Cable markers are used on the six leads used to connect the power supply to the mounting adapter terminal board TB1. Apply these markers when required.

	<u>FROM</u>	<u>TO</u>	<u>MARKER PART NO.</u>
(1)	A1E1-1	TB1-1	A301310-1 (item 14, App. B)
(2)	A1FL2-1	TB102	A301310-2 (item 15, App. B)
(3)	A1FL3-1	TB1-3	A3013106-3 (item 16, App. B)
(4)	A1FL1-1	TB1-4	A3103106-4 (item 17, App. B)
(5)	A1E2-1	TB1-5	A3013106-5 (item 18, App. B)
(6)	A1E3-1	TB1-6	A3013106-6 (item 19, App. B)

Section VI. MAINTENANCE PROCEDURES FOR ELECTRICAL EQUIPMENT-RECEIVER-TRANSMITTER SUBASSEMBLY CHASSIS A3013364-1 AND A3132855-1 (1A16)

4-24. Data Entry Keyboard.

NOTE:

The data entry keyboard is a direct support replaceable item. The TPS will not diagnose faulty data entry board. If the keyboard is thought to be defective test it with the Maintenance Group OA-9263A/GRC or OA-9297/GRC (See TM 11-5820-890-30-3).

HCI The data entry keyboard is a hardness critical item. DO NOT replace with an unauthorized part.

a. **HCP** Data Entry Keyboard.

- (1) Replace as required.
- (2) Apply silicone compound (item 12, App. B) to the sealing gasket before assembly.
- (3) Install all screws and tighten until snug.

4-25. Resistors and Switches.

- a. Apply silicone compound (item 10, App. B) to switch O-rings before installing switch.
- b. Install lock ring and torque as shown:

TORQUE REQUIREMENTS

SWITCH	VALUE(IN/LB)
S1 , S2, S4, S6	11 TO 13
S5	19 TO 21
S3	29 TO 31

- c. Torque resistor R1 lock ring to 11 - 13 in/lb.
- d. Mount R17, R25, R30, R31 ,R40, and R41 flush to the board.

4-26. Chassis Connectors.

a. Connectors J2, J3, and J4.

- (1) Apply silicone compound (item 12, App, B) to connector O-rings before installing connector.
- (2) Apply sealing compound (item 10, App. B) to connector threads before installing lock ring.
- (3) Torque lock rings to 88 - 92 in/lb.

b. Connector J5.

- (1) Apply silicone compound (item 12, App. B) to connector O-rings before installing connector.
- (2) Apply sealing compound (item 10, App. B) to connector threads before installing lock ring,
- (3) Torque lock rings to 8-10 in/lb.

c. Connector P1.

- (1) Apply silicone compound (item 12, App, B) to connector O-rings before installing connector,
- (2) Apply sealing compound (item 10, App. B) to connector threads before installing lock ring.
- (3) Install P1 systems connector in to its mounting hole. Apply three drops of sealing compound (item 10, App. B) to connector threads. Install and finger tighten connector locking ring, then back off 1/2 turn.
- (4) Loosen three locking mechanisms on the alignment tool. Install alignment tool on connector ensuring keyway of connector aligns with keyway of alignment tool.
- (5) Tighten three locking mechanisms on alignment tool. Insert 90 in/lb torque arm in to the socket wrench and lock. Ensure socket wrench engages locking ring on the connector.
- (6) Tighten locking ring of connector until torque arm clicks.
- (7) Disengage socket wrench from locking ring. Remove torque arm. Loosen three locking mechanisms. Remove alignment tool from connector P1.

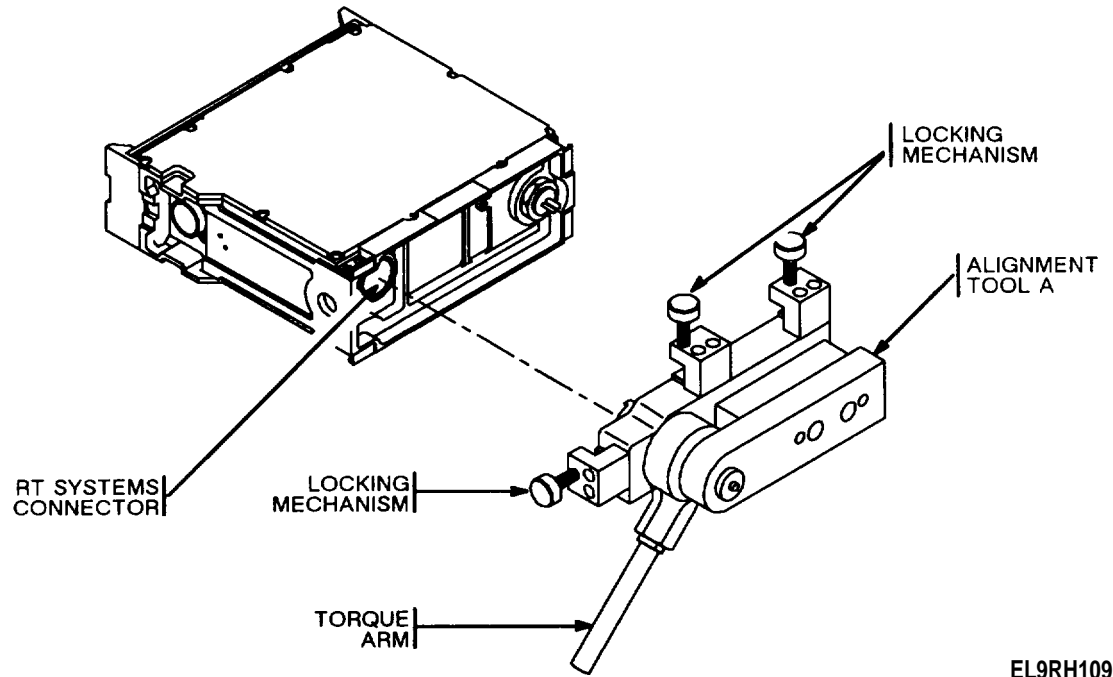


Figure 4-10. Alignment of RT Systems Connector P1

d. Connector J6.

- (1) Apply silicone compound (item 12, App. B) to connector O-ring before installing connector.
- (2) Apply sealing compound (item 10, App. B) to connector threads before installing lock ring.
- (3) Install lock ring and torque to 48 - 52 in/lb.

4-27. Observation Windows.

NOTE:

HCI The observation window is a hardness critical item. DO NOT replace with an unauthorized part. Unauthorized part replacement will degrade the nuclear hardness of this radio.

- a. Apply sealing compound (item 10, App. B) to mounting screws before installing window.
- b. Tighten screws until snug.
- c. *Electrical Shielding Gasket.* Apply sealant adhesive (item 3, App. B) to bottom of groove before installing in rt panel. Wipe away excessive adhesive and air cure for 24 hours.

4-28. Backplane Assembly.

a. Replace as required.

b. Use the following wire list to replace wires connected to the backplane:

FROM	TO	COLOR
E24	E78	Black (item 40, App. B)
E25	E82	Red (item 61, App. B)
E26	E72	White (item 49, App. B)
E27	E71	Black (item 75, App. B)
E70	J6(+)	Red (item 42, App. B)
E73	S1-1	Yellow (item 44, App. B)
E73	S2-1	Yellow (item 44, App. B)
E75	E83	Red (item 77, App. B)
E76	E81	Red (item 77, App. B)
E79	J6(-)	Black (item 75, App. B)
E80	J6(+)	Red (item 77, App. B)

c. *Conformal Coating.*
(item 8, App. B)

Apply as required. Do not apply conformal coating within 7.5 mm of mounting holes (either side of PWB).

d. *Leads*

Solder wire and component leads as required. Component leads shall not protrude more than 1.5 mm on component side of board or 0.76 mm on rear side of pwb.

e. *Common Components.*

See fig. 4-11 for component layout.

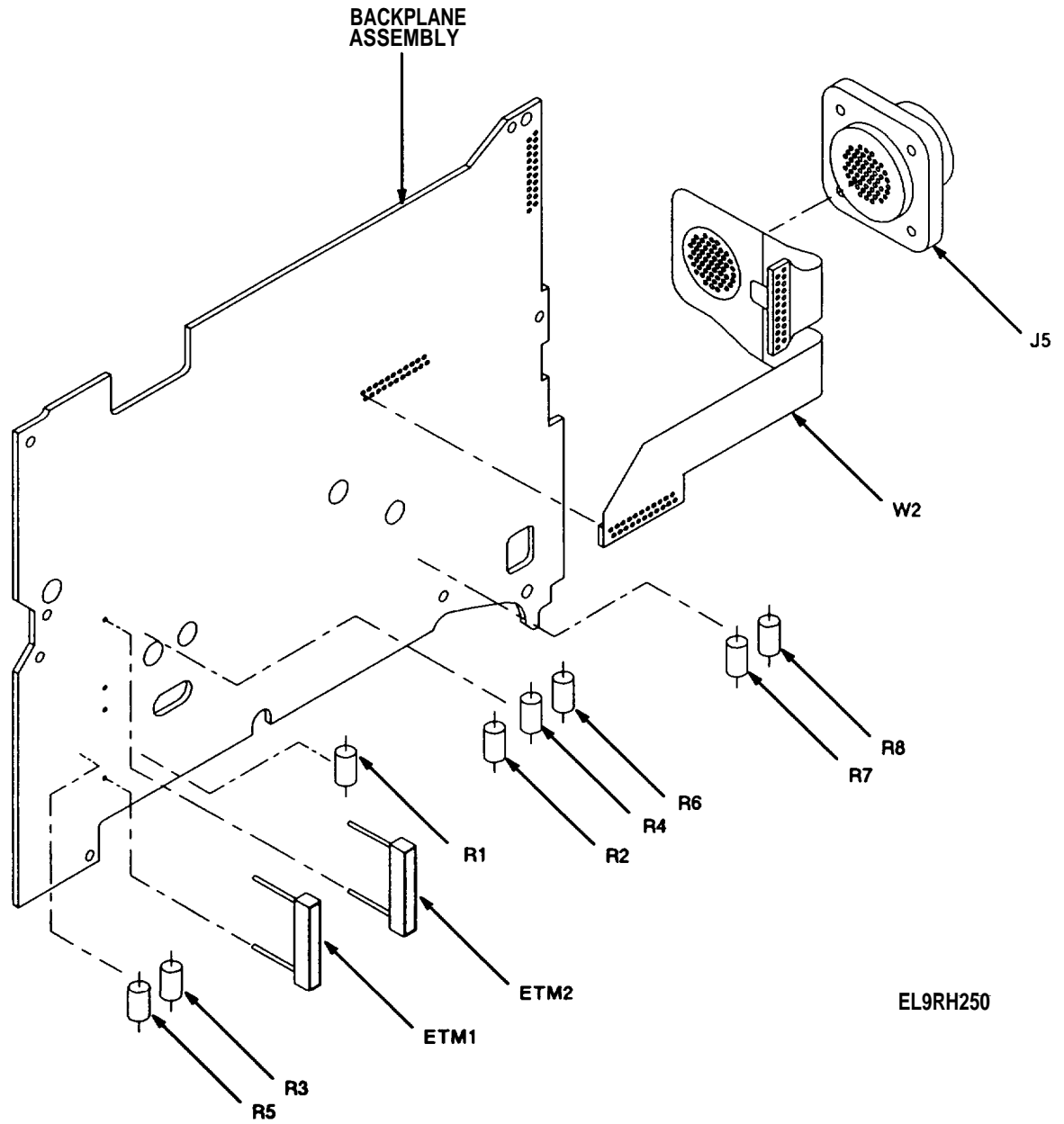
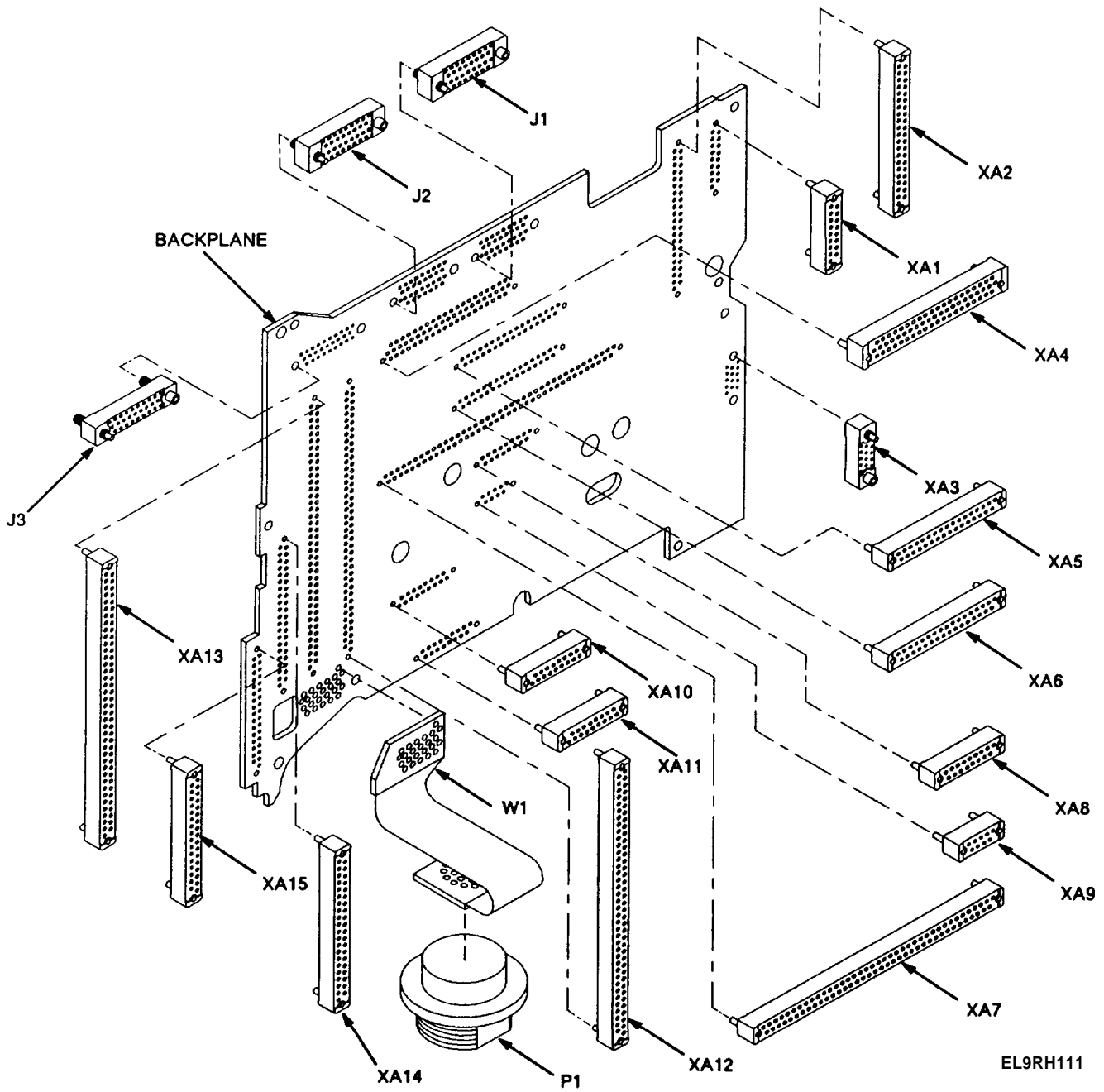


Figure 4-11. Component Layout of Backplane Assembly (Sheet 1 of 2)



EL9RH111

Figure 4-11. Component Layout of Backplane Assembly (Sheet 2 of 2)

**Section VII. MAINTENANCE OF POWER SUPPLY
MODULE ASSEMBLY A3013338-1 (1A3)**

4-29. Disassembly Instructions (Refer to fig. 4-12).

- a. Remove screws from cover (1).
- b. Remove cover and set to one side (2).
- c. Remove six screws (3) from CCA-power supply regulator 1A3A3 (4).
- d. Remove insulator (5).
- e. Remove CCA-power supply regulator 1A3A3 (4).
- f. Remove four screws (8) from CCA-power supply filter 1A3A1 (7).
- g. Remove insulator (6).
- h. Remove four screws (11) from CCA-switching 1A3A2 (12).
- i. Remove insulator (13).
- j. Remove P1 from chassis. (DO NOT remove P1 except for replacement of connector.)

4-30. Maintenance of Power Supply Circuit Card Assemblies.

- a. Refer to the following schematic diagrams for maintenance purposes:
 - (1) See fig. FO-3 for CCA-power supply filter 1A3A1 (7).
 - (2) See fig. FO-1 for CCA-switching 1A3A2 (12).
 - (3) See fig. FO-2 for CCA-power supply regulator 1A3A3 (4).
 - (4) See fig. 4-12 for power supply module disassembly/assembly.
- b. *Filter A1 (6).* Apply adhesive (item 3, App. B), to capacitors C3, C5, C7, and C9 before installing.

 Mount capacitors C1, C2, C6, and C8 flush to board.

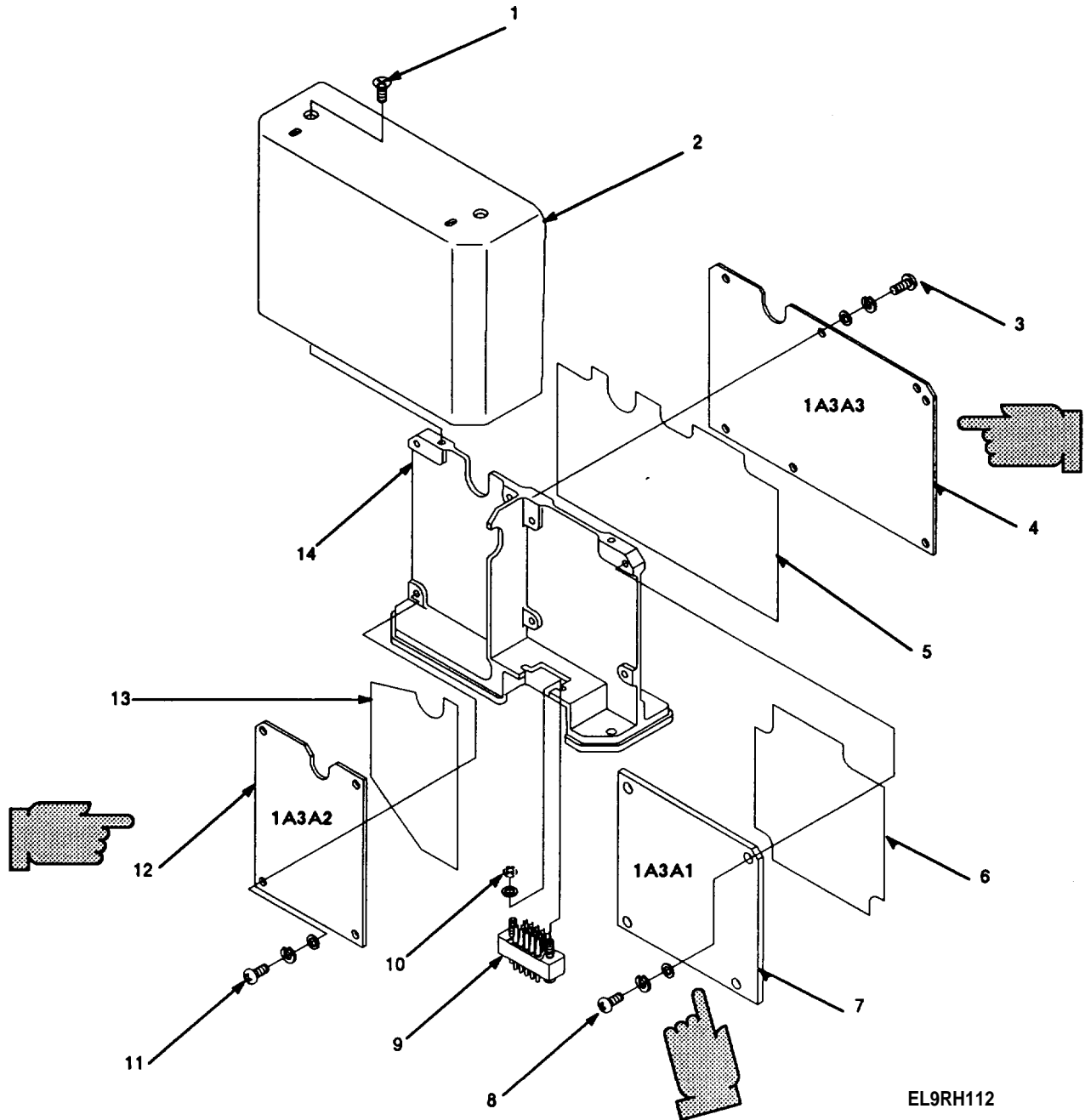
 Replace Insulation sleeving (item 28, App. B) on wires installed on P1.
- c. *Switching A2 (12).* Mount capacitors C1, C2, C3, and C4 flush to board.
- d. *Regulator A3 (4).*
 - (1) Apply adhesive (item 3, App. B), to capacitors C11, C3, C7, C8, C15, C17, L2, L4, and L5 before installing.
 - (2) Mount capacitors C2, C4, C5, C10, C13, and C16 flush to board,
 - (3) Apply adhesive (item 3, App. B), to Coils L2, L4, and L5 before installing.
 - (4) Coils L1 and L3 may not exceed 0.5 mm from top of board. Apply adhesive (item 3, App. B), to mounting screw to secure locking nut.
 - (5) *Resistors R2 and R12:* Do not apply conformal coating to these resistors. Apply electrical insulating enamel (item 6, App. B) after adjustment.

(6) Use the following wire list to replace wires in power supply:

FROM	TO	COLOR/TRACER
A1-E1	A3E1	Violet (item 47, App. B)
	P1-F	Violet (item 47, App. B)
A1-E2	A3-E3	Blue (item 46, App. B)
	P1-E	Blue (item 46, App. B)
A1-E3	A3-E10	White/Red (item 52, App. B)
	P1-K	White/Red (item 52, App. B)
A1-E4	A3-E11	White (item 66, App. B)
	P1-B,C	White (item 66, App. B)
A1-E5	A3-E5	Orange (item 62, App. B)
	P1-J,N	Orange (item 62, App. B)
A1-E6	N/C	
A1-E7	A3-E12	Red (item 42, App. B)
	P1-A	Red (item 42, App. B)
A1-E8	A3-E7	White/Orange (item 69, App. B)
	P1-M,R	White/Orange (item 53, App. B)
A1-E9	A3-E2	Black (item 75, App. B)
	P1-H,L	Black (item 40, App. B)
A1-E10	P1-D	Black (item 40, App. B)
A2-E1	A3-E9	Green (item 45, App. B)
A2-E2	A3-E12	Black (item 75, App. B)
A2-E3	A3-E8	White/Green (item 55, App. B)
A2-E4	A3-E6	Yellow (item 63, App. B)
A2-E5	A3-E5	Orange (item 62, App. B)
A2-E6	A3-E7	White/Orange (item 69, App. B)

4-31. Assembly Instructions.

- a. Install insulation sleeving (item 29, App. B) to wire harnesses before installing circuit cards.
- b. Install insulator (13) on chassis (14) (See fig. 4-12).
- c. Install CCA-switching 1A3A2 (12).
- d. Install four screws (11) in CCA-switching 1A3A2 (12) and torque to 2.5 in/lbs.
- e. Install connector P1 (9). Do not tighten retaining nuts (10).
- f. Install insulator (6) on chassis (14).
- g. Install CCA-power supply filter 1A3A1 (7).
- h. Install four screws (8) in CCA-power supply filter 1A3A1 (7) and torque to 2.5 in/lbs.
- i. Install insulator (5) on chassis (14).
- j. Install CCA-power supply regulator 1A3A3 (4) on chassis (14).
- k. Install six screws (3) in CCA-power supply regulator 1A3A3 (4)
- l. Install six screws (3) in CCA-power supply regulator 1A3A3 (4) and torque to 2.5 in/lbs.
- m. Align connector P1 (See fig. 4-13).
- n. Install cover (2).
- o. Apply one drop of (item 10, App. B) sealing compound to screws (1),
- p. Install screws in cover and tighten until snug.



EL9RH112

Figure 4-12. Assembly of Power Supply Module

ALIGNMENT PROCEDURES

1. LOOSEN LOCKING NUTS.
2. SET POWER SUPPLY ON ALIGNMENT FIXTURE H.
3. MOVE CONNECTOR P1 BACK AND FORTH IN ORDER TO SEAT THE POWER SUPPLY ON THE ALIGNMENT FIXTURE.
4. INSURE THE CONNECTOR FITS INTO ALIGNMENT FIXTURE BLOCK AND THE POWER SUPPLY SET FLUSH ON THE FIXTURE.
5. TIGHTEN THE LOCKING NUTS ON P1.

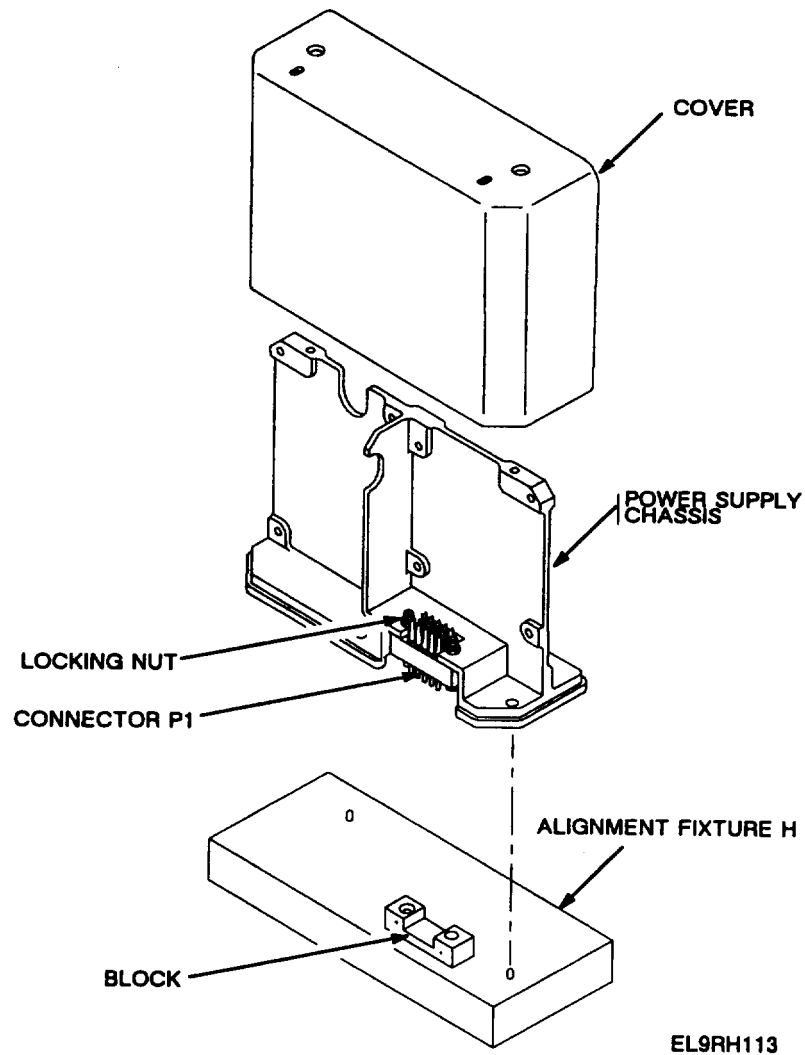


Figure 4-13. Alignment of Power Supply Assembly Connector P1.

Section VIII. MAINTENANCE PROCEDURES FOR MODULES AND CIRCUIT CARD ASSEMBLIES

CAUTION

- All circuit cards contain static sensitive devices susceptible to electrostatic damage.
- DO NOT attempt to replace **components** without using protective devices.

4-32. Intermediate Frequency/Demodulator Assembly A3013360-1 (1A8).

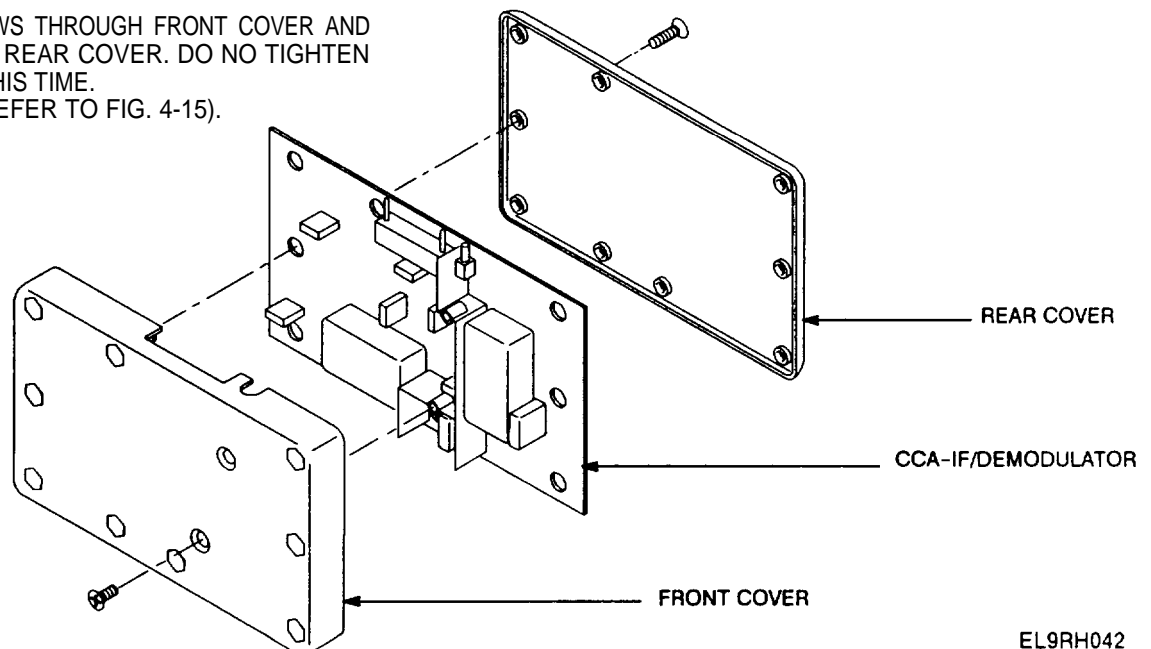
a. Circuit Card Assembly (1A8A1).

- (1) See fig. FO-6 for A3014207-1.
- (2) See fig. FO-7 for A3018739-1.
- (3) Lead shall not protrude more than 1.0 mm from bottom of circuit card.
- (4) Do not apply conformal coating within 5.0 mm of the edge of circuit card.
- (5) Do not apply conformal coating within 1.5 mm of the top and bottom of the circuit card.
- (6) Do not apply conformal coating within 7.0 mm of mounting holes.
- (7) Do not apply conformal coating to mounting area.

b. Assemble UUT.

ASSEMBLY INSTRUCTIONS

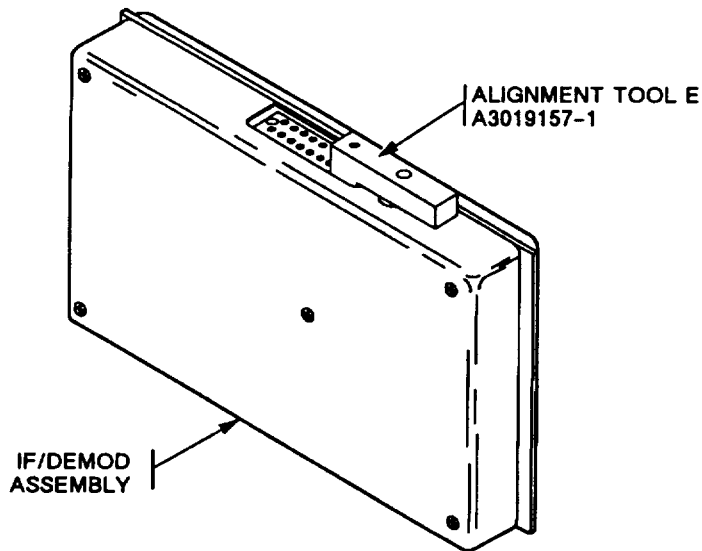
1. INSTALL CCA IN COVER.
2. INSTALL REAR COVER OVER CCA AND ALIGN SCREW HOLES IN REAR COVER.
3. APPLY SEALING COMPOUND (ITEM 10, APP. B) TO SCREWS.
4. INSTALL SCREWS THROUGH FRONT COVER AND THREAD INTO REAR COVER. DO NOT TIGHTEN SCREWS AT THIS TIME.
5. ALIGN CCA (REFER TO FIG. 4-15).



EL9RH042

Figure 4-14. Assembly Instructions for Intermediate Frequency/Demodulator

- (1) Place assembled IF/Demodulator in palm of left hand with connector facing up.



EL9RH114

Figure 4-15. IF/Demodulator Front and Rear Covers Alignment

- (2) Place alignment fixture on top of connector pinguide and move the circuit card assembly as required until alignment fixture E (A3019188-1) fits between connector and covers as shown.
- (3) Tighten screws until secure. Do not over tighten screws: the covers may bow or become distorted and allow emission of RF energy and cause internal EMI.

4-33. CCA-Data Rate Adapter A3014168-1 and A3019045-1 (1A15).

This UUT is not repairable. However, schematics are included. Refer to the following schematics:

- a. See fig. FO-8 for A3014168-1.
- b. See fig. FO-9 for A3019045-1.

4-34. CCA-Display A3014128-1 (1A16A1A1).

CAUTION

The CCA-Display contains static sensitive devices susceptible to electrostatic damage. DO NOT attempt to replace components without using protective devices.

- a. See fig. FO-11.
- b. Replace components as required.
- c. Apply conformal coating (item 8, App. B) as required.
- d. DO NOT apply conformal coating to mounting holes. The screws provide the ground return circuit for the display board.
- e. DO NOT apply conformal coating to resistor R7.
- f. Apply electrical insulation enamel (item 6, App. B) to R7 after adjustment.
- g. Install new electrical mounting pad under any replaced transistor.
- h. Install screws and torque to 8-10 in/lbs.

4-35. CCA-One-Watt Audio Amplifier A3014195-1 (5A2).

- a. See fig. FO-19.
- b. *Capacitors C2, C3, C7, C8, C9, C46, and C47:* Apply adhesive (item 3, App. B) to capacitors before installing.
- c. *Variable Resistors:* Apply electrical insulating enamel (item 6, App. B) to resistors after alignment or replacement, DO NOT apply conformal coating to variable resistors.

4-36. CCA-Analog A3014176-1 and A3018025-1 (7A4).

This UUT is not repairable. However, schematics are included. Refer to the following schematics:

- a. See fig. FO-29 for A3014176-1.
- b. See fig. FO-30 for A3018025-1.

4-37. CCA-Power Supply A3014158-1 (7A5).

This UUT is not repairable. However, a schematic is included (See fig. FO-31).

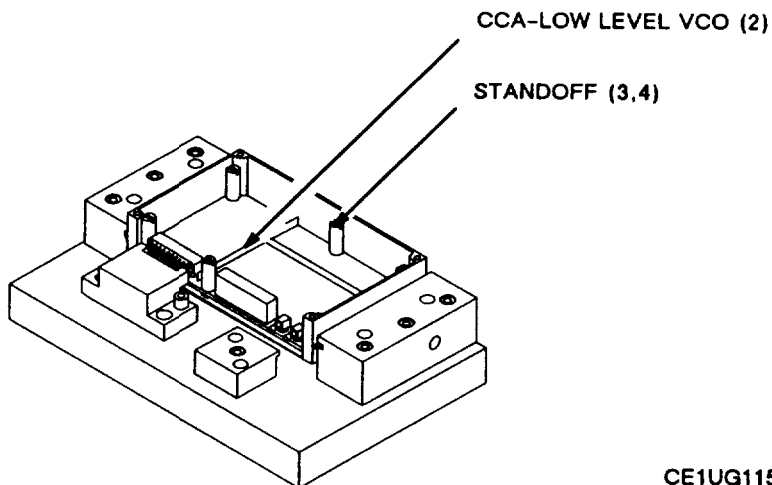
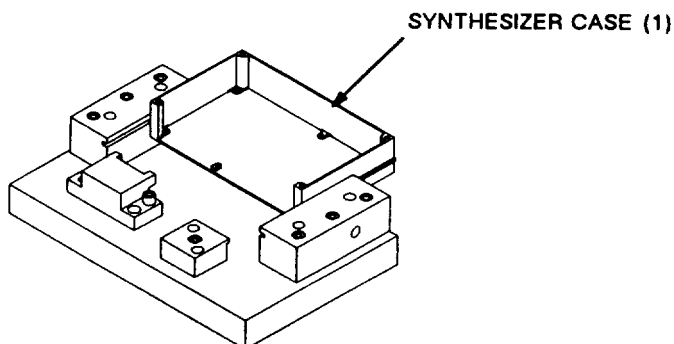
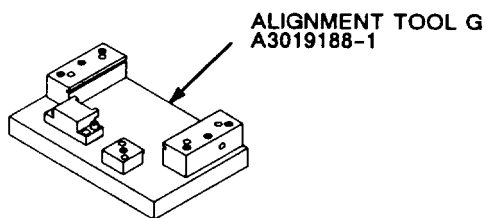
4-38. Synthesizer A3018235-1 (1A10).

This module is not repairable at the GS facility. However, it must be properly assembled after each disassembly.

- a. Perform alignment procedures (See fig. 4-16).
- b. Install self-locking screws in standoffs and tighten.

ALIGNMENT PROCEDURES

1. INSERT SYNTHESIZER CASE INTO ALIGNMENT TOOL G.
2. INSTALL CCA-LOW LEVEL VCO IN CASE AND LOOSELY INSTALL STANDOFFS.
3. ADJUST CCA-LOW LEVEL VCO UNTIL CONNECTOR P1 FITS INTO ALIGNMENT TOOL CONNECTOR BLOCK.
4. TIGHTEN STANDOFFS AND REMOVE SYNTHESIZER UUT FROM THE ALIGNMENT TOOL.
5. INSTALL CCA-DUAL MODE PLL AND COVER.



CE1UG115

Figure 4-16. Alignment of Synthesizer Connector

- c. Install case cover.

NOTE

Self-locking screws are used in this module; they can be reused several times. When the self-locking screws require replacement install machine-pan headed screws and use sealing compound (item 10, App. B) to secure the screws.

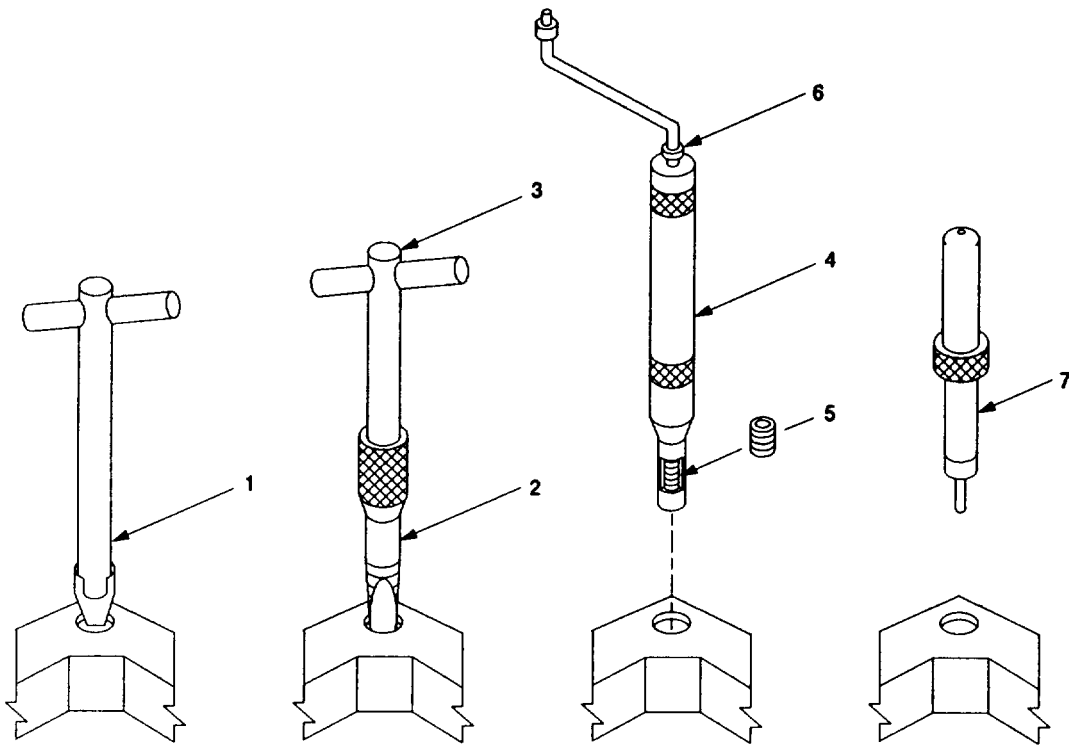
- d. Apply sealing compound (item 10, App. B) to machine-pan headed screw before installing in cover.
- e. Tighten screws.

4-39. THREADED SCREW INSERT REPLACEMENT PROCEDURE.

Threaded screw inserts are replaced as described in the next paragraph. The following table lists the threaded screw inserts included in the maintenance group. It also identifies where they are used in the equipment.

EQUIPMENT	LOCATION	SCREW INSERT TYPE	SIZE	QTY
Rt Chassis	where holding battery cover attaches	MA3330-102	M3x1	2
Rt Chassis	where top cover attaches	MA3330-102	M3x1	11
Rt Chassis	where bottom cover attaches	MA3330-102	M3x1	12
Rt Chassis	where the handle assembly attaches	MA3330-152	M3x1.5	4
Rt Chassis	where the ground assembly attaches	MA3330-152	M3x1.5	4
Rt Chassis	where keypad attaches to front panel	MA3330-100	M2.2x1	4
Amplifier-Adapter	where the power supply mounts	MA3330-152	M3x1.5	17
Amplifier-Adapter	where the access covers mount	MA3330-152	M3x1.5	12
Amplifier-Adapter	where the bottom access cover mounts	MA3330-152	M3x1.5	2
Amplifier-Adapter	where the power amplifier securing thumbscrew mounts	MA3330-209	M8x2	1
Amplifier-Adapter	on the bottom of the audio amplifier case where 3 screws of the bottom plate are secured	MA3330-152	M3x1.5	3
Amplifier-Adapter	on the bottom of the CB1 case where 2 screws of the bottom plate are attached	MA3330-152	M3x1.5	2
Amplifier-Adapter	where the audio amplifier access cover mounts	MA3330-152	M3x1.5	15
Mounting Base Connector Assembly	where cover mounts	MA3330-152	M3x1.5	8
Mounting Base Connector Assembly	where connector J5 mounts	MA3330-104	M4x1	2
Mounting Base Connector Assembly	where guide pin mounts	MA3330-105	M5x1	1
Control-Monitor	where rear cover mounts	MA3330-154	M4x1.5	6
Control-Monitor	where front panel mounts	MA3330-154	M4x1.5	6

ITEM	ACTION	REMARKS
REMOVAL		
a. Threaded insert extractor (1)	Refer to figure 4-17. Place in hole. Tap extractor to seat in insert. Maintain steady pressure on extractor and unscrew insert. Remove insert from hole.	For recessed M3x1 inserts, use tool 1227-02. For all others, use tool 1227-6, or 1227-02 depending on the insert size.
b. Thread cleaning tap (2)	Select proper size tap. Insert and secure in brace (3). Start carefully in hole. Screw tap to bottom of hole. Unscrew tap.	



EL9RH135

Figure 4-17. Threaded Screw Insert Replacement

INSTALLATION

- c. Prewinder (4) and insert (5) Loosen stop collar (6) with Allen wrench. Extend threaded shaft beyond end of prewinder 1 thread longer than insert. Move stop collar to top of tool body and tighten. Retract threaded shaft. Place insert in prewinder with tang end toward prewinder tip. Rotate shaft until insert projects beyond the tip one full turn. Place tip in hole. Screw insert into hole until stop collar touches the tool body. Retract prewinder.
- d. Tang breakoff tool (7) Place on tang. Break off tang by pressing down on tool. Remove tang breakoff tool. Remove broken tang from hole.

Section IX. PREPARATION FOR STORAGE OR SHIPMENT**4-40. Special Preservation, Packaging, Packing, Marking, and Shipping Requirements.**

Electrostatic discharge (ESD) poses a serious problem to users of equipment containing UUTs that are electrostatic static discharge sensitive (ESDS). Many of the UUTs you are packing and processing are highly susceptible to damage from the discharge of static electricity, even at levels which cannot be seen or felt.

4-41. Procedures.

The following steps should be followed when packing a static sensitive module for storage or shipment.

- a. *Module:* Place inside antistatic bag (2) or inside antistatic wrapping material (3). See fig. 4-18.
- b. *Antistatic package (4):* Seal with adhesive tape. Attach "sensitive electronic devices" unit pack label (5) Place inside approved shipping container (6). Attach "sensitive electronic devices" intermediate pack label (7).

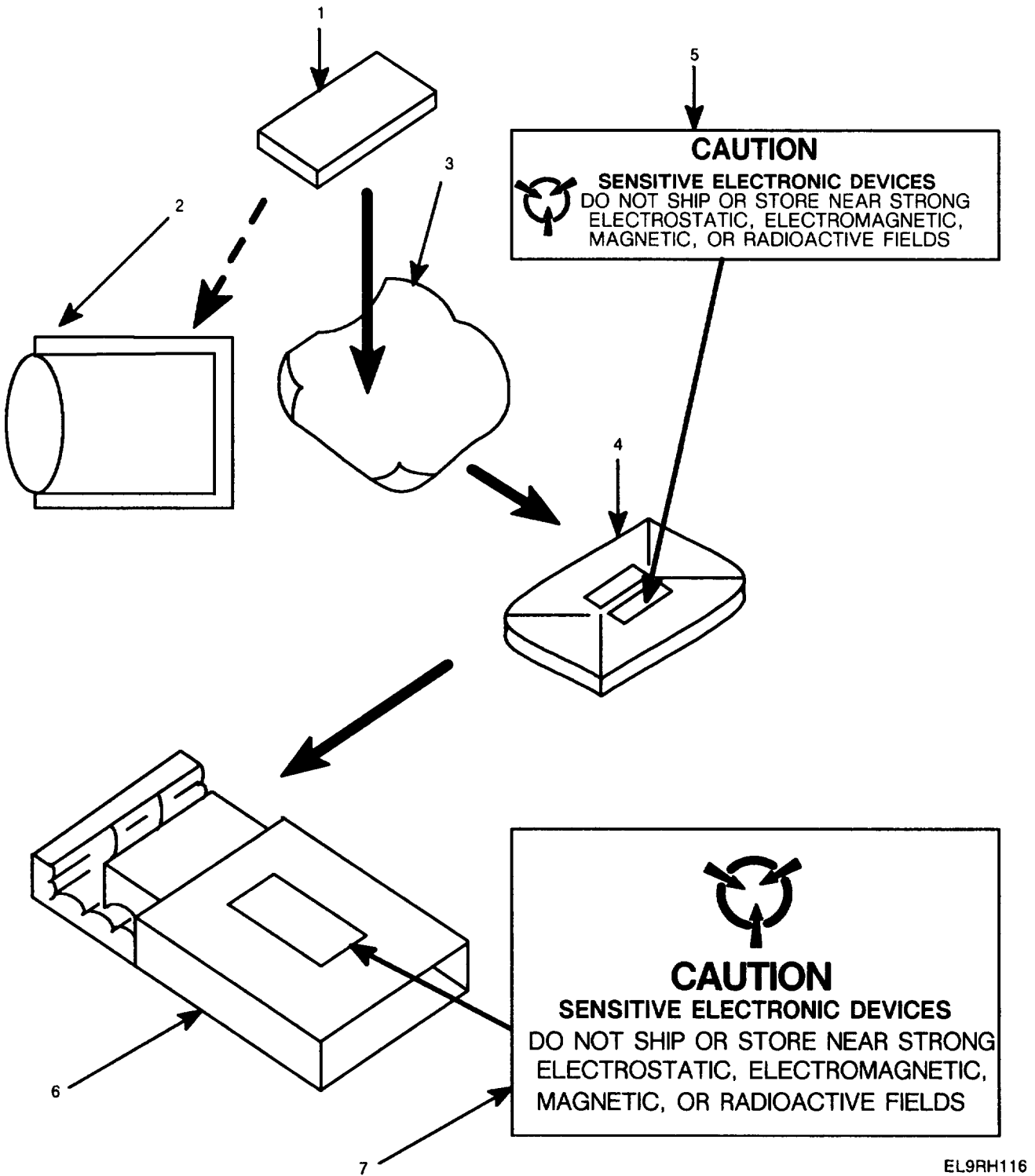


Figure 4-18. Packing Static Sensitive Modules

**Section X. MAINTENANCE PROCEDURES FOR POWER SUPPLY
SUBASSEMBLY A3018930-1**

CAUTION

All circuit cards in the power supply subassembly contain static sensitive devices susceptible to electrostatic damage. DO NOT attempt to replace components on the circuit cards without using protective devices.

4-42. CCA-Transient Protection/Regulator A3132834-1 or A3147857-1.

- a. Refer to fig. 4-19 for CCA-Transient Protection/Regulator A3132834-1 or A3147857-1 removal and installation.
- b. Remove eight screws (1), lock washers (2), flat washers (3), and one ground lug (5) securing CCA-Transient Protection/Regulator (4) to standoffs (5) on power supply subassembly chassis (6).
- c. Remove CCA-Transient Protection/Regulator (4) from power supply subassembly chassis (6).
- d. Install CCA-Transient Protection/Regulator (4) on power supply subassembly chassis (6) with eight screws (1), lock washers (2), flat washers (3), and one ground lug (5).
- e. Refer to fig. FO-35 for schematic of CCA-Transient Protection/Regulator A3132834-1.
- f. Refer to fig. FO-36 for schematic of CCA-Transient Protection/Regulator A3147857-1.
- g. *Capacitors C3*. Apply adhesive sealant Type I Clear, RTV (item 3, App B), before installing.
- h. *Capacitors C4, C5, C6, C7, C8, C9, and C11*. Mount flush with board.
- i. *Resistors R2*, Apply adhesive sealant (item 3, App. B), before installing.
- j. *Resistors R25 and R39*. Coat with electrical insulating enamel (item 6, App. B) after adjustment.
- k. *Transistors Q1, Q2, Q3, Q4, Q6, Q7, Q10, Q11, and Q13*. Install mounting pad beneath each component before installing.

4-43. CCA-Transient Protection/Regulator Filter A3018547-1.

- a. Refer to fig. 4-19 for CCA-Transient Protection/Regulator Filter A3018547-1 removal and installation.
- b. Remove nine screws (1), nine lock washers (2), nine flat washers (3), and one ground lug (5) securing CCA-Transient Protection/Regulator Filter (7) to power supply subassembly chassis (6).
- c. Remove CCA-Transient Protection/Regulator Filter (7) from power supply subassembly chassis (6).
- d. Install CCA-Transient Protection/Regulator Filter (7) on power supply subassembly chassis (6) with nine screws (1), nine lock washers (2), nine flat washers (3), and one ground lug (5).
- e. Refer to fig. FO-17 for schematic of A3018547-1.
- f. For maintenance of CCA-Transient Protection/Regulator Filter A3018547-1 refer to para 4-21.

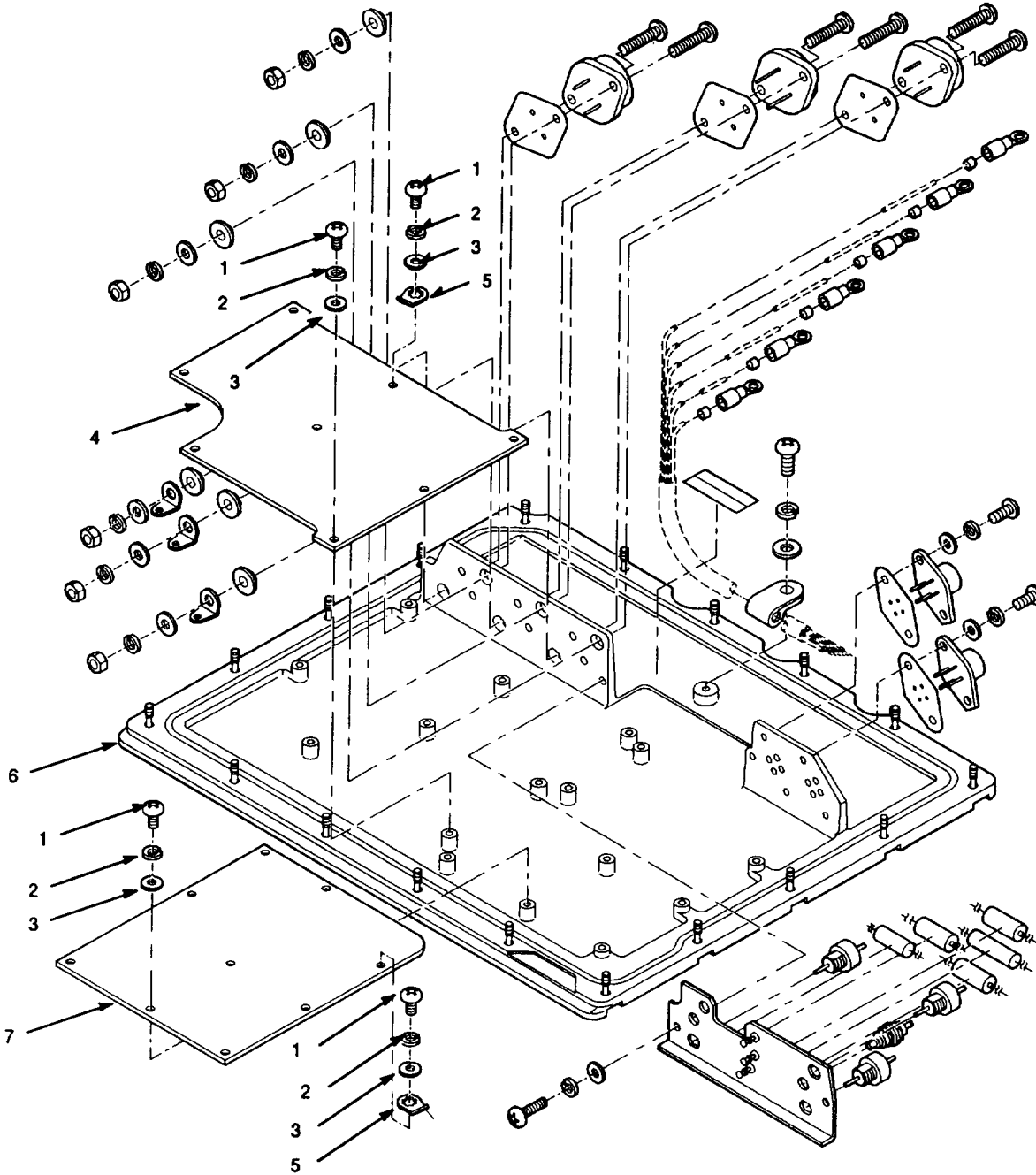


Figure 4-19. Disassembly of Single Radio Mount Power Supply

4-44. Maintenance of Power Supply Subassembly Wiring Harness.

a. Replace as required.

<u>FROM</u>	<u>TO</u>	<u>COLOR/TRACER</u>
A1-E1	A2-E6	Brown (item 76, App. B)
A1-E2	A2-E8	White (item 84, App. B)
A1-E3	U2 pin 4	Violet (item 82, App. B)
A1-E4	U1 pin 4	White/Orange (item 88, App. B)
A1-E6	FL2-1	Orange (item 62, App. B)
A 1-E7	A2-E18	White/Blue (item 72, App. B)
A1-E8	A2-E9	White/Black (item 67, App. B)
A1-E9	A2-E21	White/Yellow (item 70, App. B)
A1-E10	E8	Black (item 75, App. B)
A1-E11	E3-2	Blue (item 65, App. B)
A1-E12	A2-E23	Green (item 64, App. B)
A1-E13	Q2-B	White/Green (item 71, App. B)
A1-E14	Q1-B	White/Violet (item 73, App. B)
A1-E15	Q1-E	Red (item 77, App. B)
A1-E16	Q3-E	Gray (item 83, App. B)
A1-E17	Q3-C	White/Red (item 68, App. B)
A1-E18	Q3-B	White/Brown (item 108, App. B)
A1-E19	FL3-1	Yellow (item 63, App. B)
A2-E1	Q2 pin C	White/Gray (item 93, App. B)
A2-E2	Q1-E	Red (item 77, App. B)
A2-E3	Q3-E	Gray (item 83, App. B)
A2-E4	E1-2	White/Red (item 68, App. B)
A2-E10	FL2-2	Orange (item 62, App. B)
A2-E11	FI-3	White/Brown (item 86, App. B)
A2-E12	FL1-2	White/Violet (item 92, App. B)
A2-E13	U1 pin 4	White/Orange (item 88, App. B)
A2-E14	U2 pin 4	Violet (item 82, App. B)
A2-E15	E7	Black (item 75, App. B)
A2-E17	E3-2	Blue (item 65, App. B)
A2-E19	U1 pin 3	Yellow (item 79, App. B)
A2-E20	U1 pin 1	White/Black/Orange (item 110, App. B)
A2-E21	U2 pin 1	White/Yellow (item 70, App. B)
A2-E22	U2 pin 3	White/Green (item 90, App. B)
E1-1	P1	White/Red (item 68, App. B)
E1-2	Q1 pin C	White/Red (item 68, App. B)
E3-1	P6	Blue (item 65, App. B)
E5-1	P2	Red (item 77, App. B)
E5-1	FL1-1	Red (item 77, App. B)
E5-2	Q1 pin E	Red (item 77, App. B)
E6-1	P5	Black (item 75, App. B)
E7	U2 pin 2	Black (item 75, App. B)
E7	U1 pin 2	Black (item 75, App. B)
E8	Q2 pin E	Black (item 75, App. B)
FL2-1	P3	Orange (item 78, App. B)
FL3-1	P4	Yellow (item 79, App. B)
Q1 -C	Q3 pin C	White/Red (item 68, App. B)

Section XI. MAINTENANCE PROCEDURES FOR DUAL LONG RANGE RADIO
POWER SUPPLY A3018302-1 AND A3147937-1

CAUTION

All circuit cards assemblies in the amplifier-adapter power supply contain static sensitive devices susceptible to electrostatic damage. DO NOT attempt to replace components without using protective devices.

4-45. CCA-Transient Protection/Regulator A3014184-1, A3132834-1, or A3147857-1.

- a. Refer to fig. 4-20 for CCA-Transient Protection/Regulator A3014184-1, A3132834-1, or A3147857-1 removal and installation.
- b. Remove eight screws (1), lock washers (2), and flat washers (3) securing CCA-Transient Protection/Regulator (4) to standoffs (5) on power supply chassis (6).
- c. Remove CCA-Transient Protection/Regulator (4) from power supply chassis (6).
- d. If previously removed, install CCA-Transient Protection/Regulator Filter (10) on power supply chassis (6).
- e. Install CCA-Transient Protection/Regulator (4) on power supply chassis (6) with eight screws (1), lock washers (2), and flat washers (3).
- f. Refer to fig. FO-35 for schematic of CCA-Transient Protection/Regulator A3132834-1.
- g. Refer to fig. FO-36 for schematic of CCA-Transient Protection/Regulator A3147857-1.
- h. Refer to fig, FO-14 for schematic of CCA-Transient Protection/Regulator A3014184-1.
- i. For maintenance of CCA-Transient Protection/Regulator A3014184-1 refer to para 4-22.
- j. For maintenance of CCA-Transient Protection/Regulator A3132834-1 or A3147857-1 refer to para 4-42.

4-46. CCA-Transient Protection/Regulator Filter A3018547-1.

- a. Refer to fig. 4-20 for CCA-Transient Protection/Regulator Filter A3018547-1 removal and installation.
- b. If not previously removed, remove CCA-Transient Protection/Regulator (4) from power supply chassis (6).
- c. Remove four screws (7), four flat washers (3), two ground lugs (8), and two lock washers (2) securing CCA-Transient Protection/Regulator Filter (10) to power supply chassis (6).
- d. Remove five standoffs (9) securing CCA-Transient Protection/Regulator Filter (10) to power supply chassis (6).
- e. Remove CCA-Transient Protection/Regulator Filter (10) from power supply chassis (6).
- f. Install CCA-Transient Protection/Regulator Filter (10) on power supply chassis (6) with five standoffs (9).
- g. Install CCA-Transient Protection/Regulator Filter (10) on power supply chassis (6) with four screws (7), four flat washers (3), two ground lugs (8), and two lock washers (2).
- h. Refer to fig. FO-17 for CCA-Transient Protection/Regulator Filter A3018547-1.
- i. For maintenance of CCA-Transient Protection/Regulator Filter A3018547-1 refer to para 4-21.

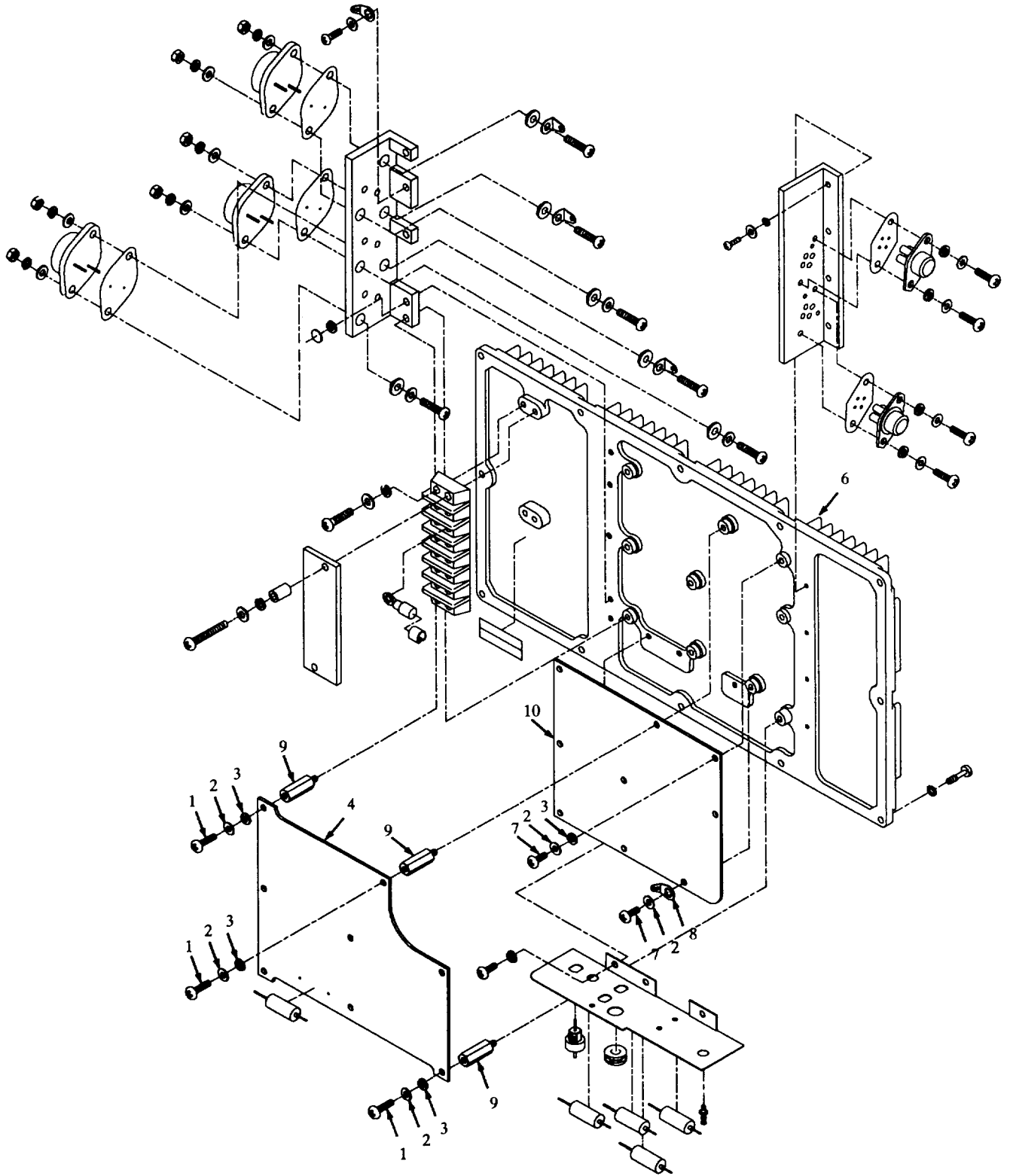


Figure 4-20. Disassembly of Dual Long Range Radio Power Supply A3018302-1 and A3147937-1

4-47, Maintenance of Dual Long Range Radio Power Supply A3018302-1 Wiring Harness.

a. Replace as required.

FROM	TO	COLOR/TRACER
A1-E6	B2-FL2-1	Orange (item 62, App. B)
A1-E15	B1-Q1-E	Red (item 77, App. B)
A1-E19	B2-FL3-2	Yellow (item 63, App. B)
A2-E1	B1-Q2-C	Red (item 77, App. B)
A2-E2	TB1-2	Red (item 77, App. B)
A2-E2	A1-E15	Red (item 77, App. B)
A2-E3	B1-Q3-E	Yellow (item 79, App. B)
A2-E3	A1-E16	Yellow (item 79, App. B)
A2-E4	B1-Q3-C	Red (item 77, App. B)
A2-E6	A1-E1	Red (item 77, App. B)
A2-E8	A1-E2	White (item 66, App. B)
A2-E9	A1-E8	Green (item 64, App. B)
A2-E10	B2-FL-2	Orange (item 78, App. B)
A2-E11	B2-FL3-2	Yellow (item 63, App. B)
A2-E12	B2-FL1-2	Red (item 77, App. B)
A2-E13	U1 pin 4	Orange (item 62, App. B)
A2-E13	A1-E4	Red (item 77, App. B)
A2-E14	U2 pin 4	Yellow (item 63, App. B)
A2-E14	A1-E3	Yellow (item 79, App. B)
A2-E15	E6	Black (item 75, App. B)
A2-E16	U1 pin 2	Black (item 75, App. B)
A2-E16	U2 pin 2	Black (item 75, App. B)
A2-E17	B2-E3-2	Blue (item 65, App. B)
A2-E18	A1-E7	Green (item 64, App. B)
A2-E19	U1 pin 3	Green (item 64, App. B)
A2-E20	U1 pin 1	Orange (item 78, App. B)
A2-E21	U2 pin 1	Yellow (item 79, App. B)
A2-E21	A1-E9	Yellow (item 63, App. B)
A2-E22	U2 pin 3	Green (item 64, App. B)
A2-E23	A1-E12	Green (item 64, App. B)
B1-Q1-B	A1-E14	Green (item 64, App. B)
B1-Q1-C	A2-E4	Red (item 77, App. B)
B1-Q2-B	A1-E13	Green (item 64, App. B)
B1-Q2-E	E7	Black (item 75, App. B)
B1-Q3-B	A1-E18	Green (item 64, App. B)
B2-E1-1	TB1-1	Red (item 77, App. B)
B2-E1-2	B1-Q1-C	Red (item 77, App. B)
B2-E1-2	A1-E17	Red (item 77, App. B)
B2-E2-1	TB1-5	Black (item 75, App. B)
B2-E3-1	TB1-6	Blue (item 65, App. B)
B2-E3-2	A1-E11	Blue (item 65, App. B)
B2-E4-2	A1-E10	Black (item 75, App. B)
B2-FL1-1	TB1-2	Red (item 77, App. B)
B2-FL2-1	TB1-3	Orange (item 78, App. B)
B2-FL3-1	TB1-4	Yellow (item 79, App. B)

4-48. Maintenance of Dual Long Range Radio Power Supply A3147937-1 Wiring Harness.

a. Replace as required.

FROM	TO	COLOR/TRACER
A1-E6	FL2-1	Orange (item 62, App B.)
A1-E10	E4	Black (item 75, App B.)
A1-E11	E3	Blue (item 65, App B.)
A1-E13	Q2-B	White (item 66, App B.)
A1-E14	Q1-B	Green (item 64, App B.)
A1-E15	Q1-E	Red (item 77, App B.)
A1-E17	E1	White/Red (item 87, App B.)
A1-E18	Q3-B	White/Brown (item 108, App B.)
A1-E19	FL3-1	Yellow (item 63, App B.)
A2-E1	Q2-C	Red (item 77, App B.)
A2-E2	A1-E15	Red (item 77, App B.)
A2-E2	TB1-2	Red (item 77, App B.)
A2-E3	Q3-E	Gray (item 83, App B.)
A2-E3	A1-E16	Gray (item 83, App B.)
A2-E4	Q1-C	Red (item 77, App B.)
A2-E4	Q3-C	Red (item 77, App B.)
A2-E6	A1-E1	Brown (item 76, App B.)
A2-E8	A1-E2	White/Gray (item 74, App B.)
A2-E9	A1-E8	White/Black (item 67, App B.)
A2-E10	FL2-2	Orange (item 78, App B.)
A2-E11	FL3-2	White/Violet (item 92, App B.)
A2-E12	FL1-2	Red (item 77, App B.)
A2-E13	A1-E4	White/Orange (item 88, App B.)
A2-E13	U1 pin 4	White/Orange (item 69, App B.)
A2-E14	A1-E3	Violet (item 82, App B.)
A2-E14	U2 pin 4	Violet (item 109, App B.)
A2-E15	E6	Black (item 75, App B.)
A2-E16	U1 pin 2	Black (item 75, App B.)
A2-E16	U2 pin 2	Black (item 75, App B.)
A2-E17	E3	Blue (item 65, App B.)
A2-E18	A1-E7	White/Blue (item 72, App B.)
A2-E20	U1 pin 1	Orange (item 78, App B.)
A2-E19	U1 pin 3	Blue (item 65, App B.)
A2-E21	A1-E9	White/Yellow (item 70, App B.)
A2-E21	U2 pin 1	White/Yellow (item 89, App B.)
A2-E23	A1-E12	Green (item 64, App B.)
A2-E22	U2 pin 3	Green (item 64, App B.)
E1	Q1-C	Red (item 77, App B.)
E1	TB1-1	White/Red (item 87, App B.)
E2	TB1-5	Black (item 75, App B.)
E3	TB1-6	Blue (item 65, App B.)
E7	Q2-E	Black (item 75, App B.)
FL1-1	TB1-2	Red (item 77, App B.)
FL2-1	TB1-3	Orange (item 78, App B.)
FL3-1	TB1-4	Yellow (item 79, App B.)

**Section XII MAINTENANCE PROCEDURES FOR VEHICULAR-ADAPTER
POWER SUPPLY A3148148-1**

CAUTION

All circuit cards assemblies in the vehicular-adapter power supply contain static sensitive devices susceptible to electrostatic damage. DO NOT attempt to replace components without using protective devices.

4-49, CCA-Transient Protection/Regulator A3147857-1.

- a. Refer to fig. 4-21 for CCA-Transient Protection/Regulator A3147857-1 removal and installation.
- b. Remove eight screws (34), lock washers (40), and flat washers (43) securing CCA-Transient Protection/Regulator (05) to standoffs (27) on power supply chassis.
- c. Remove CCA-Transient Protection/Regulator (05) from power supply chassis.
- d. If previously removed, install CCA-Transient Protection/Regulator Filter (06) on power supply chassis.
- e. Install CCA-Transient Protection/Regulator (05) on power supply chassis with eight screws (34), lock washers (40), and flat washers (43).
- f. Refer to fig. FO-36 for schematic of CCA-Transient Protection/Regulator A3147857-1.
- g. For maintenance of CCA-Transient Protection/Regulator A3147857-1 refer to para 4-42.

4-50. CCA-Transient Protection/Regulator Filter A3018547-1.

- a. Refer to fig. 4-21 for CCA-Transient Protection/Regulator Filter A3018547-1 removal and installation.
- b. If not previously removed, remove CCA-Transient Protection/Regulator (4) from power supply chassis.
- c. Remove three screws (33), three flat washers (43), one ground lug (22), and two lock washers (40) securing CCA-Transient Protection/Regulator Filter (06) to power supply chassis.
- d. Remove five standoffs (27) securing CCA-Transient Protection/Regulator Filter (06) to power supply chassis.
- e. Remove CCA-Transient Protection/Regulator Filter (06) from power supply chassis.
- f. Install CCA-Transient Protection/Regulator Filter (06) on power supply chassis with five standoffs (27) .
- g. Install three screws (33), three flat washers (43), one ground lug (22), and two lock washers (40) securing CCA-Transient Protection/Regulator Filter (06) to power supply chassis.
- h. Refer to fig. FO-17 for CCA-Transient Protection/Regulator Filter A3018547-1.
- i. For maintenance of CCA-Transient Protection/Regulator Filter A3018547-1 refer to para 4-21.

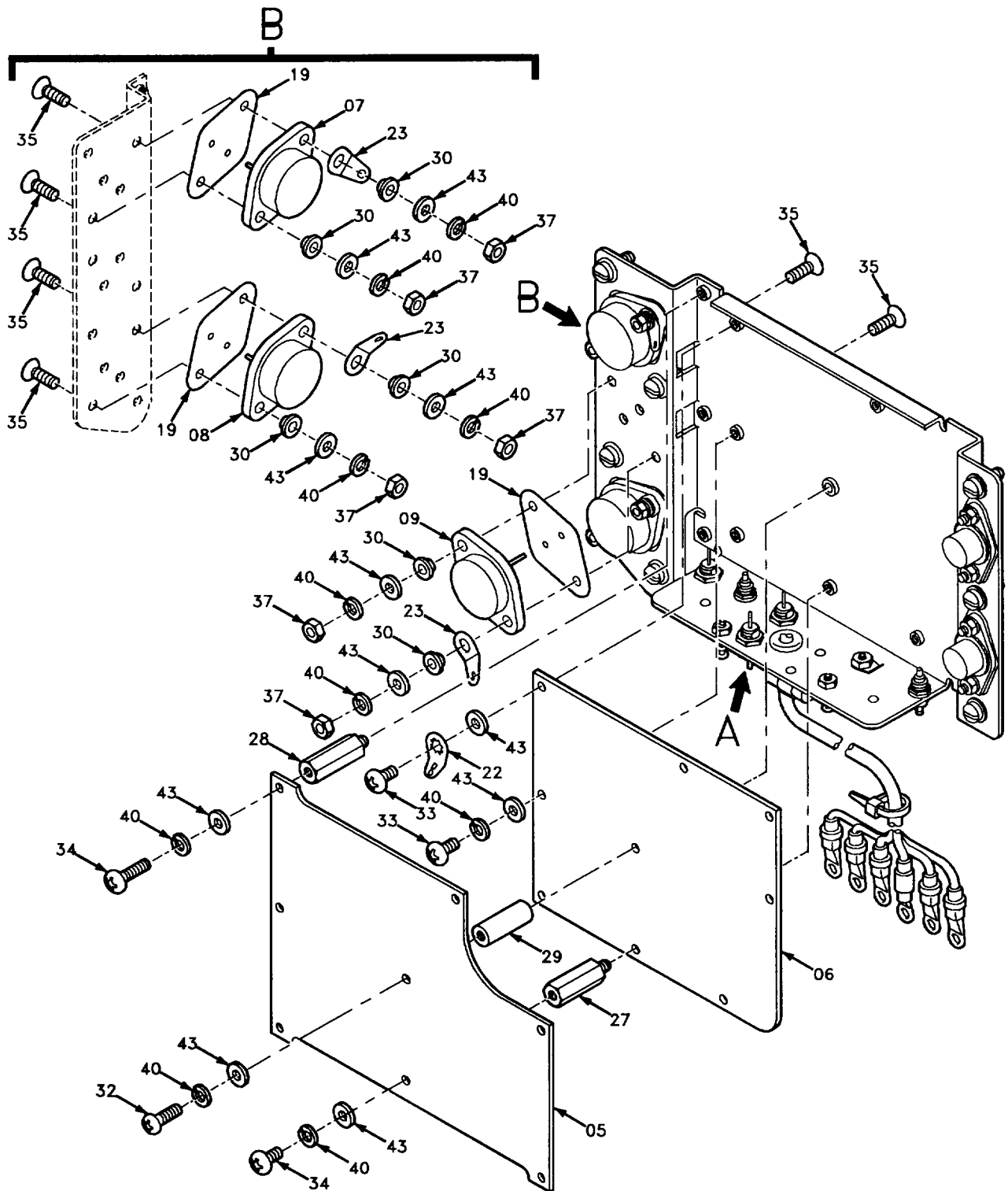


Figure 4-21. Disassembly of Vehicular-Adapter Power Supply A3148148-1 (Sheet 1 of 2)

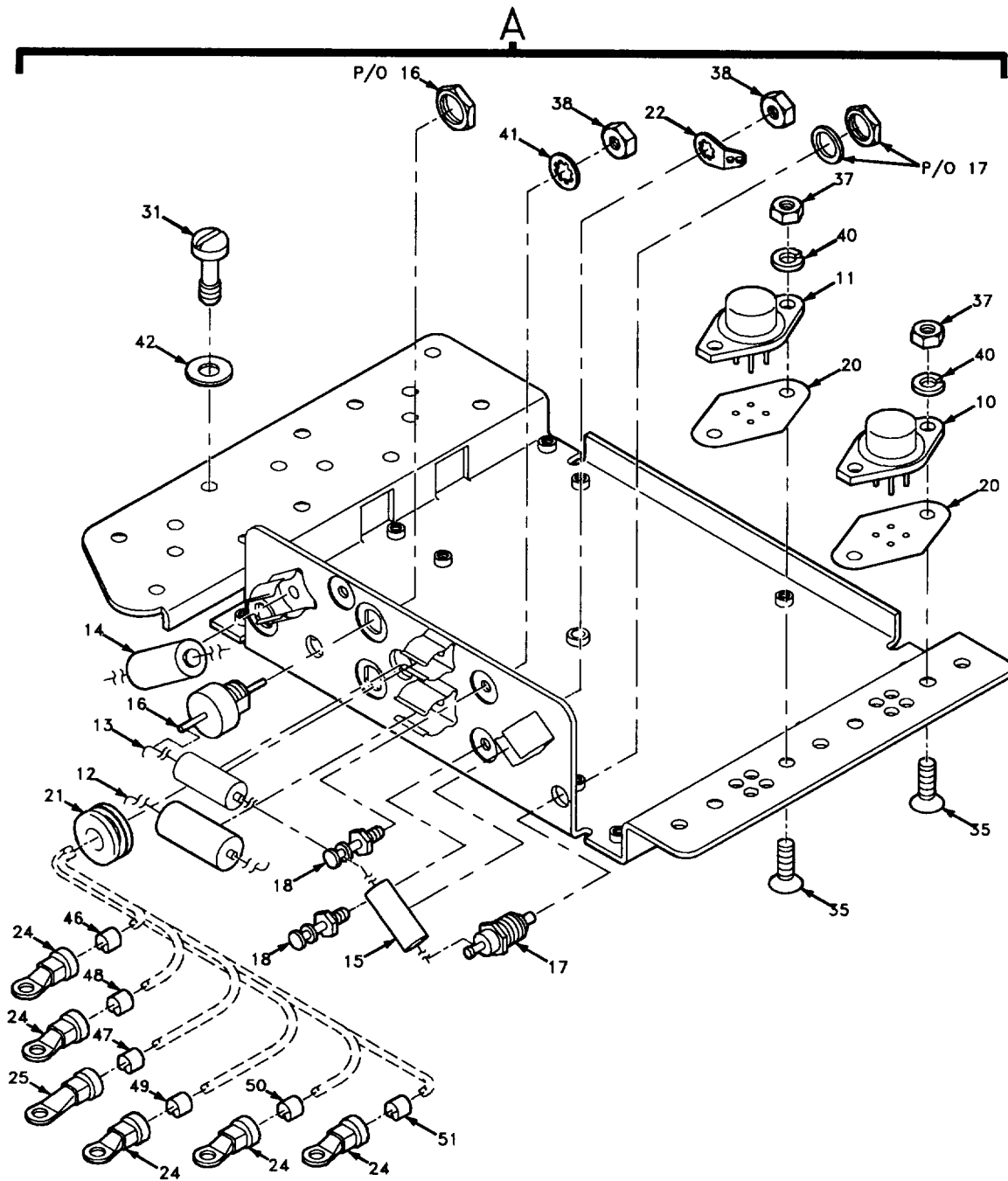


Figure 4-21. Disassembly of Vehicular-Adapter Power Supply A3148148-1 (Sheet 2 of 2)

4-51. Maintenance of Vehicular-Adapter Power Supply A3148148-1 Wiring Harness.

a. Replace as required.

FROM	TO	COLOR/TRACER
A1-E6	FL2-1	White/Orange (item 69, App B.)
A1-E1	E2-2	Black (item 75, App B.)
A1-E11	E3-2	White (item 49, App B.)
A1-E13	Q2-B	White/Orange (item 69, App B.)
A1-E14	Q1-B	Green (item 64, App B.)
A1-E17	Q3-C	Red (item 77, App B.)
A1-E18	Q3-B	White/Red (item 68, App B.)
A1-E19	FL3-1	White/Yellow (item 54, App B.)
A2-E1	Q2-C	Blue (item 81, App B.)
A2-E2	A1-E15	Gray (item 83, App B.)
A2-E2	Q1-E	Gray (item 83, App B.)
A2-E3	A1-E16	Violet (item 82, App B.)
A2-E3	Q3-E	Violet (item 82, App B.)
A2-E4	Q1-C	Red (item 77, App B.)
A2-E4	Q3-C	Red (item 77, App B.)
A2-E6	A1-E1	White/Blue (item 91, App B.)
A2-E8	A1-E2	White/Black (item 67, App B.)
A2-E9	A1-E8	White/Green (item 71, App B.)
A2-E10	FL2-2	White/Orange (item 88, App B.)
A2-E11	FL3-2	White/Yellow (item 89, App B.)
A2-E12	FL1-2	Brown (item 76, App B.)
A2-E13	A1-E4	Red (item 77, App B.)
A2-E13	U1 pin 4	Red (item 77, App B.)
A2-E14	A1-E3	Blue (item 81, App B.)
A2-E14	U2 pin 4	Blue (item 81, App B.)
A2-E15	E2-2	Black (item 75, App B.)
A2-E16	U1 pin 2	Black (item 75, App B.)
A2-E16	U2 pin 2	Black (item 75, App B.)
A2-E17	E3-2	White (item 66, App B.)
A2-E18	A1-E7	Green (item 64, App B.)
A2-E19	U1 pin 3	Brown (item 60, App B.)
A2-E20	U1 pin 1	Orange (item 78, App B.)
A2-E21	U2 pin 1	Yellow (item 79, App B.)
A2-E21	A1-E9	Yellow (item 63, App B.)
A2-E22	U2 pin 3	White/Orange (item 69, App B.)
A2-E23	A1-E12	Brown (item 60, App B.)
E1-2	Q1-C	Red (item 77, App B.)
E7	Q2-E	Black (item 75, App B.)

**Section XI. MAINTENANCE PROCEDURES FOR ELECTRICAL EQUIPMENT
AMPLIFIER-ADAPTER CHASSIS A3167675-1 OR A3167675-2**

Refer to FO-42 for schematic diagram.

4-52. Amplifier-Adapter Chassis Wiring

a. Connector J9.

- (1) Align connector J9 keyway.
- (2) Apply sealing compound (item 21, App. B) to connector threads.
- (3) Torque hex nut to 58-62 in/lb.
- (4) Use the following wire list to replace wires to connector:

<u>FROM</u>	<u>TO</u>	<u>COLOR/TRACER</u>
J9-A	A1-E14	White/Black (item 67, App. B)
J9-B	A1-E4	White/Red (item 68, App. B)
J9-C	A1-E3	Black (item 59, App. B)
J9-D	A1-E8	White (item 66, App. B)
J9-E	A1-E7	White/Orange (item 69, App. B)
J9-F	TB1-2	Red (item 42, App. B)

4-53. Amplifier-Adapter Power Control Wiring

a. Use the following wire list to replace wires to assembly:

<u>FROM</u>	<u>TO</u>	<u>COLOR/TRACER</u>
CB1-1	CR1	Red (item 97, App. B)
CB1-1	TB2-2	Red (item 61, App. B)
CB1-2	TB2-1	Yellow (item 98, App. B)
DS1-1	E10	Black (item 40, App. B)
DS1-2	E18	Orange (item 43, App. B)
E1	K1-B2	White (item 111, App. B)
E2	E3	Wire, copper (item 105, App. B)
E4	E10	Black (item 75, App. B)
E10	DS1-1	Black (item 40, App. B)
E10	K1-X2	Black (item 59, App. B)
E18	DS1 -2	Orange (item 43, App. B)
K1-A1	CR1	Red (item 97, App. B)
K1-A1	K1-B1	Wire, copper (item 105, App. B)
K1-A2	K1-B2	Wire, copper (item 105, App. B)
K1-A2	TB2-4	White (item 111, App. B)
K1-B2	E1	White (item 111, App. B)
K1-X1	TB2-3	Brown (item 60, App. B)
K1 -X2	E10	Black (item 59, App. B)
TB2-1	CB1-2	Yellow (item 98, App. B)
TB2-2	CB1-1	Red (item 61, App. B)
TB2-3	K1-X1	Brown (item 60, App. B)
TB2-4	K1-A2	White (item 111, App. B)

4-54. One Watt Audio Amplifier Wiring

a. Use the following wire list to replace wires to assembly:

FROM	TO	COLOR/TRACER
A1-E3	E2A	White/Black (item 67, App. B)
A1-E4	E1A	White/Red (item 68, App. B)
A1-E7	E1 B	White/Orange (item 69, App. B)
A1-E8	E2B	White (item 66, App. B)

4-55. Branched Wiring Harness W1

a. *Connector J2 through J6.* (Branched wiring harness W1)

- (1) Apply sealing compound (item 10, App. B).
- (2) Install spanner nut and torque from 88 to 92 in/lb.
- (3) Use the following wire list to replace wires:

FROM	TO	COLOR/TRACER
J2-B	P2-5	White/Blue (item 56, App. B)
J2-C	P2-11	White/Violet (item 57, App. B)
J2-D	P2-9	White/Gray (item 58, App. B)
J3-B	P2-6	White/Brown (item 51, App. B)
J3-C	P2-10	White/Red (item 52, App. B)
J3-D	P2-8	White/Orange (item 53, App. B)
J4-A	J2-A	Black (item 40, App. B)
J4-B	J2-B	White/Blue (item 56, App. B)
J4-C	J2-C	White/Violet (item 57, App. B)
J4-D	J2-D	White/Gray (item 58, App. B)
J4-F	P2-13	White (item 49, App. B)
J5-A	J3-A	Black (item 40, App. B)
J5-B	J3-B	White/Brown (item 51, App. B)
J5-C	J3-C	White/Red (item 52, App. B)
J5-D	J3-D	White/Orange (item 53, App. B)
J5-F	P2-12	White/Green (item 55, App. B)
J6-A	P2-14	Black (item 40, App. B)
J6-B	J5-B	White/Brown (item 51, App. B)
J6-C	J5-C	White/Red (item 52, App. B)
J6-D	J5-D	White/Orange (item 53, App. B)
J6-E	P2-2	White/Yellow (item 54, App. B)
J6-F	J5-A	Black (item 40, App. B)

4-56. Branched Wiring Harness W3

a. CCA-Remote Control Transformer A3.

- (1) Replace.
- (2) Use the following wire list for replacing wires:

<u>FROM</u>	<u>TO</u>	<u>COLOR/TRACER</u>
A3-E1	J8-a	Black (item 59, App. B)
A3-E2	J8-Y	White (item 66, App. B)
A3-E3	A1-E1	Black (item 59, App. B)
A3-E4	A1-E2	White (item 66, App. B)
A3-E5	J7-a	Black (item 59, App. B)
A3-E6	J7-Y	White (item 66, App. B)
A3-E7	A1-E5	Black (item 59, App. B)
A3-E8	A1-E6	White (item 66, App. B)
A1-E1	A3-E3	Black (item 59, App. B)
A1-E2	A3-E4	White (item 66, App. B)
A1-E5	A3-E7	Black (item 59, App. B)
A1-E6	A3-E8	White (item 66, App. B)

b. CCA-SNAP Line Driver A2.

- (1) Removal Instructions.
 - (a) Remove two screws, lockwashers, flat washers, and non-metalic washers.
 - (b) Unsolder wires from E1 to D18,
 - (c) Replace CCA-SNAP line driver as required.
- (2) Assembly Instructions.
 - (a) Solder wires E1 thru E18 to CCA.
 - (b) Insert two screws, lockwashers, and flat washers in CCA.
 - (c) Place two non-metalic washers between the CCA-SNAP line driver and amplifier-adapter chassis.
 - (d) Tighten screws two turns.

CAUTION

Push the CCA-SNAP line driver to the left as far as possible before securing screws. This will avoid damage to the CCA-SNAP line driver when the power supply 5A1 is installed.

- (e) Tighten screws until snug.

(3) Use the following wire list for replacing wires:

FROM	TO	COLOR/TRACER
A2-E1	J8-Q	White/Black (item 67, App. B)
A2-E2	J8-P	White (item 49, App. B)
A2-E3	J8-N	White/Orange (item 53, App. B)
A2-E4	J8-G	Blue (item 46, App. B)
A2-E5	J8-C	White/Green (item 55, App. B)
A2-E6	J8-T	White/Blue (item 56, App. B)
A2-E7	J10-C	White/Violet (item 57, App. B)
A2-E8	J10-B	White/Gray (item 58, App. B)
A2-E9	J10-A	White/Yellow (item 54, App. B)
A2-E10	J10-F	Green (item 45, App. B)
A2-E11	J10-H	Violet (item 47, App. B)
A2-E12	J10-K	Gray (item 48, App. B)
A2-E13	E9	Black (item 40, App. B)
A2-E13	J7-d	Black (item 40, App. B)
A2-E13	J10-D	Black (item 40, App. B)
A2-E14	TB1 -4	Yellow (item 44, App. B)
A2-E15	J8-A	Orange (item 43, App. B)
A2-E16	J8-R	Brown (item 41, App. B)
A2-E17	J10-J	White/Brown (item 51, App. B)
A2-E18	J10-E	White/Red (item 52, App. B)

c. Connector P1.

- (1) Apply sealing compound (item 10, App. B)
- (2) Install connector.
- (3) Use the following wire list to replace wires:

FROM	TO	COLOR/TRACER
P1-A	E9	Black (item 75, App. B)
P1-B	TB2-1	Yellow (item 79, App. B)
P1-C	TB-1	White (item 84, App. B)
P1-C	TB2-4	White (item 84, App. B)
P1-D	P3-3	White/Blue (item 56, App. B)
P1-E	S1-2	Brown (item 60, App. B)
P1-F	P3-9	Brown (item 60, App. B)
P1-H	J8-D	Orange (item 43, App. B)
P1-K	P3-12	White/Yellow (item 54, App. B)
P1-M	P3-1	Yellow (item 44, App. B)
P1-N	P3-8	Green (item 45, App. B)
P1-P	J7-D	Blue (item 46, App. B)
P1-S	P3-11	White/Violet (item 57, App. B)
P1-U	P3-2	White (item 49, App. B)
P1-V	E9	Black (item 75, App. B)
P1-M (Shield)	P1-H (Shield)	Black (item 40, App. B)
P1-P (Shield)	P1-M (Shield)	Black (item 40, App. B)
P1-U (Shield)	P1-P (Shield)	Black (item 40, App. B)
P1-U (Shield)	P1-V	Black (item 40, App. B)

d. Connector P3.

- (1) Replace as required.
- (2) Use the following wire list to replace wires:

FROM	TO	COLOR/TRACER
P3-1	P1-M	Yellow (item 44, App. B)
P3-2	P1-U	White (item 49, App. B)
P3-3	P1-D	White/Blue (item 56, App. B)
P3-4	J8-K	White/Brown (item 51, App. B)
P3-5	J7-K	White/Red (item 52, App. B)
P3-6	Q1-base	Green (item 45, App. B)
P3-7	TB1-3	Orange (item 43, App. B)
P3-8	P1-N	Green (item 45, App. B)
P3-9	P1-F	Brown (item 60, App. B)
P3-10	Q1-collector	Blue (item 46, App. B)
P3-11	P1-S	White/Violet (item 57, App. B)
P3-12	P1-K	White/Yellow (item 54, App. B)
P3-13	TB1-4	Yellow (item 44, App. B)
P3-14	E11	Black (item 40, App. B)

e. Connector J1.

- (1) Apply sealing compound (item 10, App B) to threads before installing.
- (2) Install hex nut and refer to fig. 4-23 for alignment procedures.
- (3) Use the following wire list to replace wires to connector:

FROM	TO	COLOR/TRACER
J1-A	E9	Black (item 75, App. B)
J1-B	TB1-4	Yellow (item 79, App. B)
J1-C	TB1-3	Orange (item 78, App. B)
J1-D	TB1-2	Red (item 77, App. B)
J1-F	TB1-6	Blue (item 46, App. B)
J1-J	J8-X	White/Gray (item 58, App. B)
J1-K	J8-J	White/Violet (item 57, App. B)
J1-M	J8-V	Gray (item 48, App. B)
J1-N	J8-H	Green (item 45, App. B)
J1-P	J8-M	Violet (item 47, App. B)
J1-R	J8-L	White/Red (item 52, App. B)

f. Connector J7. See fig. 4-24 for replacement procedures or alignment instructions.

(1) Replace as required.

(2) Use the following wire list to replace wires to connector:

FROM	TO	COLOR/TRACER
J7-D	P1-P	Blue (item 46, App. B)
J7-F	TB1-3	Orange (item 78, App. B)
J7-H	J11-N	White/Yellow (item 54, App. B)
J7-J	J11-K	White/Orange (item 53, App. B)
J7-K	P3-5	White/Red (item 52, App. B)
J7-L	J11-R	White/Brown (item 51, App. B)
J7-M	J11-P	White (item 49, App. B)
J7-V	J11-M	White/Gray (item 58, App. B)
J7-X	J11-J	White/Green (item 55, App. B)
J7-Y	A3-E6	White (item 66, App. B)
J7-Z	E9	Black (item 75, App. B)
J7-a	A3-E5	Black (item 59, App. B)
J7-d	A2-E13	Black (item 40, App. B)

(3) Apply adhesive sealant compound (item 10, App B) to connector threads before installing spanner nut.

(4) Install spanner nut.

(5) Use alignment fixture F to align connector J7.

(6) Install bottom access cover and screws and washers.

(7) Torque screws to 8-10 in/lb.

g. Connector J8. See fig. 4-25 for replacement procedures or alignment instructions.

- (1) Replace as required.
- (2) Use the following wire list to replace wires to connector:

FROM	TO	COLOR/TRACER
J8-A	A2-E15	Orange (item 43, App. B)
J8-C	A2-E5	White/Green (item 55, App. B)
J8-D	P1-H	Orange (item 43, App. B)
J8-F	TB1-3	Orange (item 43, App. B)
J8-G	A2-E4	Blue (item 46, App. B)
J8-H	J1-N	Green (item 45, App. B)
J8-J	J1-K	White/Violet (item 57, App. B)
J8-K	P3-4	White/Brown (item 51, App. B)
J8-L	J1-R	White/Red (item 52, App. B)
J8-M	J1-P	Violet (item 47, App. B)
J8-N	A2-E3	White/Orange (item 53, App. B)
J8-P	A2-E2	White (item 49, App. B)
J8-Q	A2-E1	White/Black (item 67, App. B)
J8-R	A2-E16	Brown (item 41, App. B)
J8-T	A2-E6	White/Blue (item 56, App. B)
J8-V	J1-M	Gray (item 48, App. B)
J8-X	J1-J	White/Gray (item 58, App. B)
J8-Y	A3-E2	White (item 66, App. B)
J8-Z	E9	Black (item 75, App. B)
J8-a	A3-E1	Black (item 59, App. B)
J8-d	E9	Black (item 40, App. B)

- (3) Apply adhesive sealant (item 3, App B) to connector threads before installing spanner nut.
- (4) Install spanner nut.
- (5) Use alignment fixture to align J8 and torque spanner nut to 88-92 in/lb (See fig, 4-25).
- (6) Install bottom access cover, screws, and washers.
- (7) Torque screws to 8 - 10 in/lb.

h. Electrical Binding Posts, (Refer to fig, 4-22.)

- (1) Discard split lockwasher supplied with new binding post.
- (2) Install hex nut on binding post and torque to 5 - 7 in/lb.

i. Bottom Access Cover. Install screws and washers then torque to 8 - 10 in/lb.

j. Connector J10.

- (1) Apply sealing compound (item 10, App B) to connector threads.
- (2) Torque hex nut to 68 - 72 in/lb.
- (3) Use the following wire list to replace wires to connector:

FROM	TO	COLOR/TRACER
J10-A	A2-E9	White/Yellow (item 54, App. B)
J10-B	A2-E8	White/Gray (item 58, App. B)
J10-C	A2-E7	White/Violet (item 57, App. B)
J10-D	A2-E13	Black (item 40, App. B)
J10-E	A2-E18	White/Red (item 52, App. B)
J10-F	A2-E10	Green (item 45, App. B)
J10-H	A2-E11	Violet (item 47, App. B)
J10-K	A2-E12	Gray (item 48, App. B)
J10-J	A2-E17	White/Brown (item 51, App. B)

k. Connector J11.

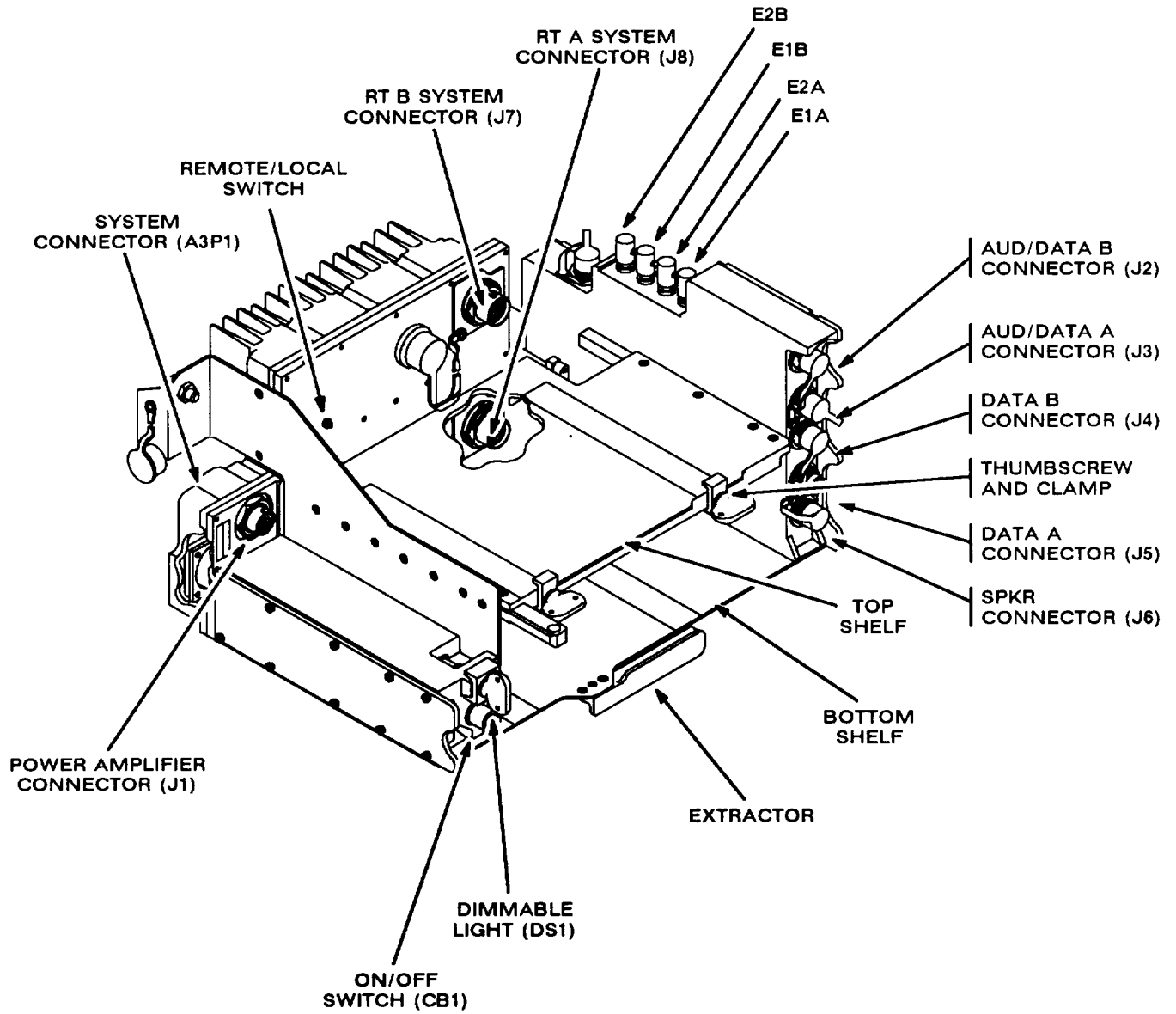
- (1) Apply sealing compound (item 10, App) to connector threads.
- (2) Torque hex nut to 68-72 in/lb.
- (3) Use the following wire list to replace wires to connector:

FROM	TO	COLOR/TRACER
J11 -A	E9	Black (item 75, App. B)
J11 -J	J7-X	White/Green (item 55, App. B)
J11 -K	J7-J	White/Orange (item 53, App. B)
J11 -M	J7-V	White/Gray (item 58, App. B)
J11 -N	J7-H	White/Yellow (item 54, App B)
J11 -P	J7-M	White (item 49, App. B)
J11 -R	J7-L	White/Brown (item 51, App. B)

I. Miscellaneous Wiring.

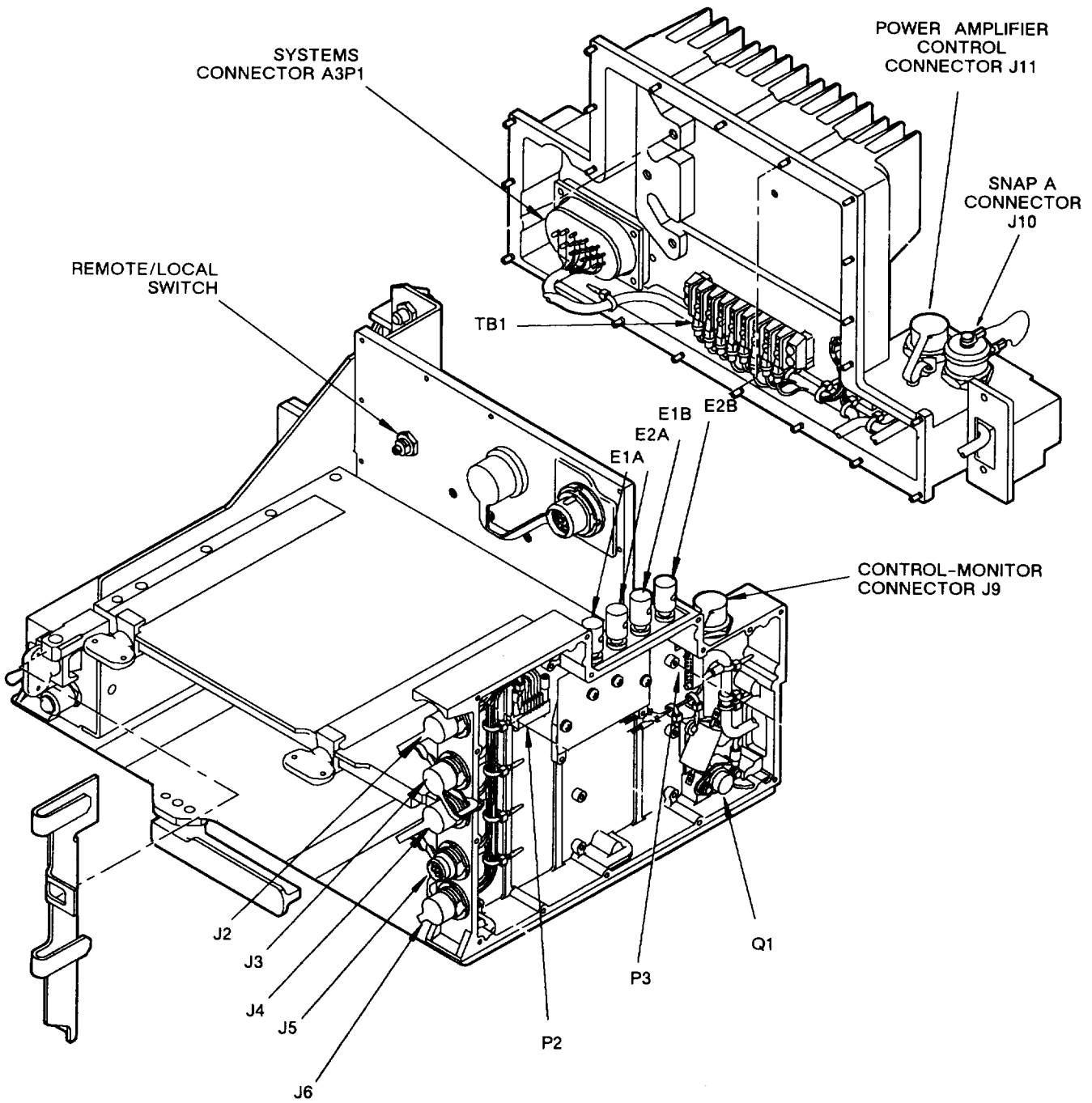
<u>FROM</u>	<u>TO</u>	<u>COLOR/TRACER</u>
E9	E10	Black (item 94, App. B)
E9	E11	Black (item 94, App. B)
E9	J1-A	Black (item 75, App. B)
E9	J7-Z	Black (item 75, App. B)
E9	J8-Z	Black (item 75, App. B)
E9	J11-A	Black (item 75, App. B)
E9	A2-E13	Black (item 40, App. B)
E10	E4	Red (item 97, App. B)
E11	R1-2	Black (item 40, App. B)
E11	P3-14	Black (item 40, App. B)
E1 (Shield)	A1-E13	Black (item 40, App. B)
E1 (Shield)	A1-E19	Black (item 40, App. B)
E2 (Shield)	A1-E13	Black (item 40, App. B)
E2 (Shield)	A1-E19	Black (item 40, App. B)
E5 (Shield)	A1-E14	Black (item 40, App. B)
E5 (Shield)	A1-E19	Black (item 40, App. B)
E6 (Shield)	A1-E14	Black (item 40, App. B)
E6 (Shield)	A1-E19	Black (item 40, App. B)
R1-2	E11	Black (item 40, App. B)
R1-1	Q1-E	Yellow (item 44, App. B)
S1-C	TB2-3	Brown (item 60, App. B)
S1-I	TB2-2	Red (item 61, App. B)
TB1-2	J1-D	Red (item 77, App. B)
TB1-2	J9-F	Red (item 42, App. B)
TB1-3	J1-C	Orange (item 78, App. B)
TB1-3	J7-F	Orange (item 78, App. B)
TB1-3	J8-F	Orange (item 78, App. B)
TB1-3	P3-7	Orange (item 43, App. B)
TB1-3	E18	Black (item 40, App. B)
TB1-4	J1-B	Yellow (item 79, App. B)
TB1-4	P3-13	Yellow (item 44, App. B)
TB1-4	A2-E14	Yellow (item 44, App. B)
TB1-5	E9	Black (item 96, App. B)
TB1-6	J1-F	Blue (item 46, App. B)
TB2-1	CR1 Cathode	Black (item 96, App. B)
TB2-2	S1-I	Red (item 61, App. B)
TB2-3	S1-C	Brown (item 60, App. B)
P3-8 (Shield)	P3-9 (Shield)	Black (item 40, App. B)
P3-9 (Shield)	E11	Black (item 40, App. B)

4-57. Amplifier-Adapter Connectors



EL9RH100

Figure 4-22. Connector Location on Amplifier-Adapter (Sheet 1 of 2)

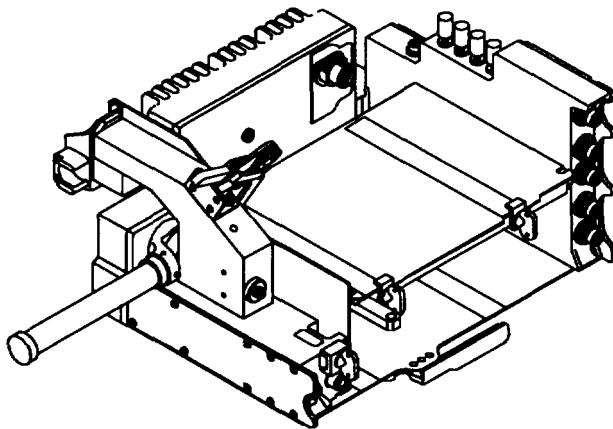
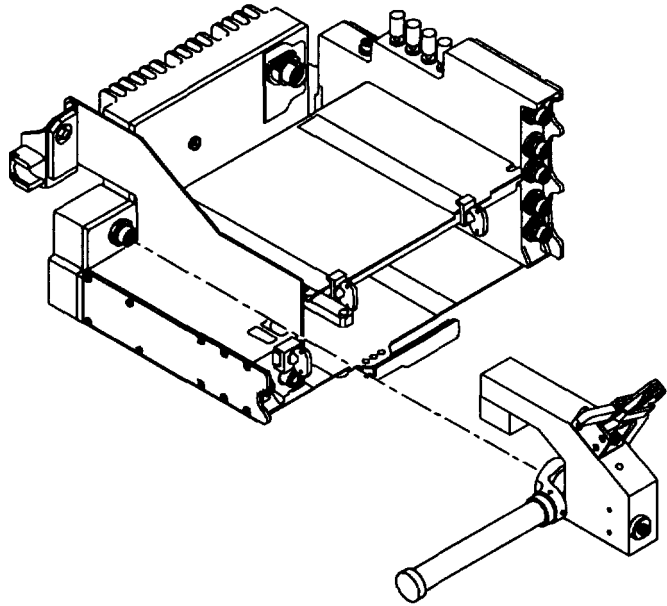


EL9RH101

Figure 4-22. Connector Location on Amplifier-Adapter (Sheet 2 of 2)

CONNECTOR J1 REPLACEMENT PROCEDURES

1. REMOVE RUBBER PAD FROM RFA SUPPORT. INSTALL CONNECTOR J1 INTO IT'S MOUNTING HOLE. APPLY THREE DROPS OF SEALING COMPOUND (ITEM 10, APP. B) TO THREADS OF CONNECTOR J1. INSTALL AND FINGER TIGHTEN LOCKING RING THEN BACK OFF 1/2 TURN.
2. DISENGAGE LOCKING MECHANISM ON ALIGNMENT TOOL. SLIDE ALIGNMENT TOOL INTO AMPLIFIER-ADAPTER ENSURING CONNECTOR KEYWAY ALIGNS WITH KEYWAY OF ALIGNMENT TOOL AND GUIDE PIN IS SEATED. ENGAGE LOCKING MECHANISM.
3. INSERT 70 IN/LB TORQUE ARM INTO SOCKET WRENCH ON ALIGNMENT TOOL AND LOCK. ENSURE SOCKET WRENCH ENGAGES LOCKING RING ON CONNECTOR J1.
4. TIGHTEN LOCKING RING UNTIL TORQUE ARM CLICKS.
5. DISENGAGE SOCKET WRENCH FROM CONNECTOR LOCKING RING. REMOVE TORQUE ARM.
6. DISENGAGE LOCKING MECHANISM ON THE ALIGNMENT TOOL. SLIDE ALIGNMENT TOOL OUT OF AMPLIFIER-ADAPTER.
7. INSTALL OR REPLACE RUBBER PAD AS REQUIRED.

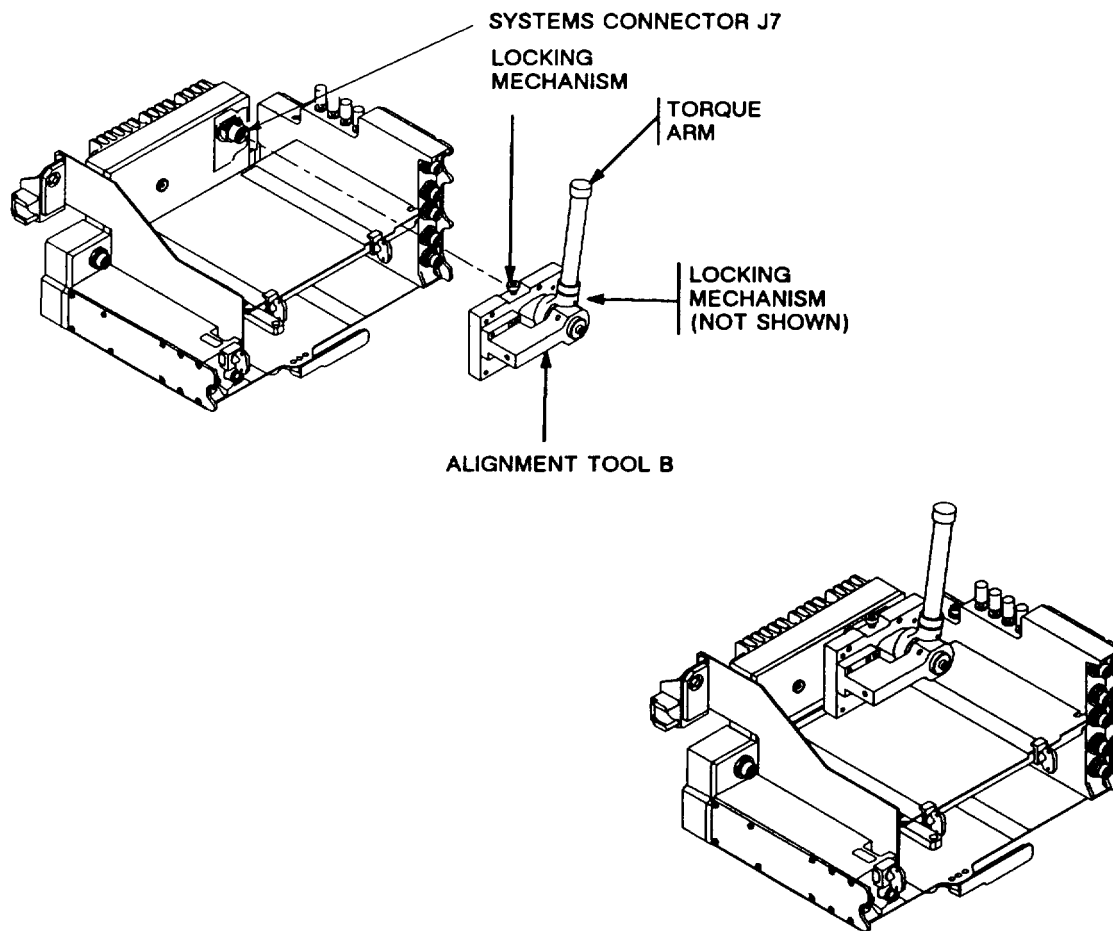


EL9RH101

Figure 4-23. Alignment of RF PA Connector J1 on AM-7239B/VRC

CONNECTOR J7 REPLACEMENT PROCEDURES

1. REMOVE CONNECTOR LOCK RING AND SET TO ONE SIDE.
2. UNSOLDER AND TAG WIRES FROM CONNECTOR PINS.
3. REMOVE AND REPLACE CONNECTOR.
4. SOLDER WIRES TO CONNECTOR PINS.
5. REMOVE CONNECTOR DUST CAP, CHAIN, AND RETAINING SCREW.
6. INSTALL CONNECTOR J7 INTO IT'S MOUNTING HOLE. APPLY THREE DROPS OF SEALING COMPOUND (ITEM 10, APP. B) ON CONNECTOR THREADS. INSTALL AND FINGER TIGHTEN CONNECTOR LOCKING RING THEN BACK OFF 1/2 TURN.
7. DISENGAGE TWO LOCKING MECHANISMS ON ALIGNMENT TOOL. INSTALL ALIGNMENT TOOL ON CONNECTOR J7 ENSURING KEYWAY OF CONNECTOR ALIGNS WITH KEYWAY OF ALIGNMENT TOOL.
8. TIGHTEN TWO LOCKING MECHANISMS ON ALIGNMENT TOOL. INSERT 90 IN/LB TORQUE ARM INTO SOCKET WRENCH ON ALIGNMENT TOOL AND LOCK. ENSURE SOCKET WRENCH ENGAGES LOCKING RING ON CONNECTOR J7.
9. TIGHTEN LOCKING RING OF CONNECTOR J7 UNTIL TORQUE ARM CLICKS.
10. DISENGAGE SOCKET WRENCH FROM CONNECTOR LOCKING RING. REMOVE TORQUE ARM. LOOSEN TWO LOCKING MECHANISMS ON ALIGNMENT TOOL. DISENGAGE SOCKET WRENCH FROM CONNECTOR LOCKING RING. REMOVE ALIGNMENT TOOL FROM THE APLIFIER-ADAPTER.
11. REPLACE CONNECTOR DUST CAP, CHAIN, AND RETAINING SCREW.

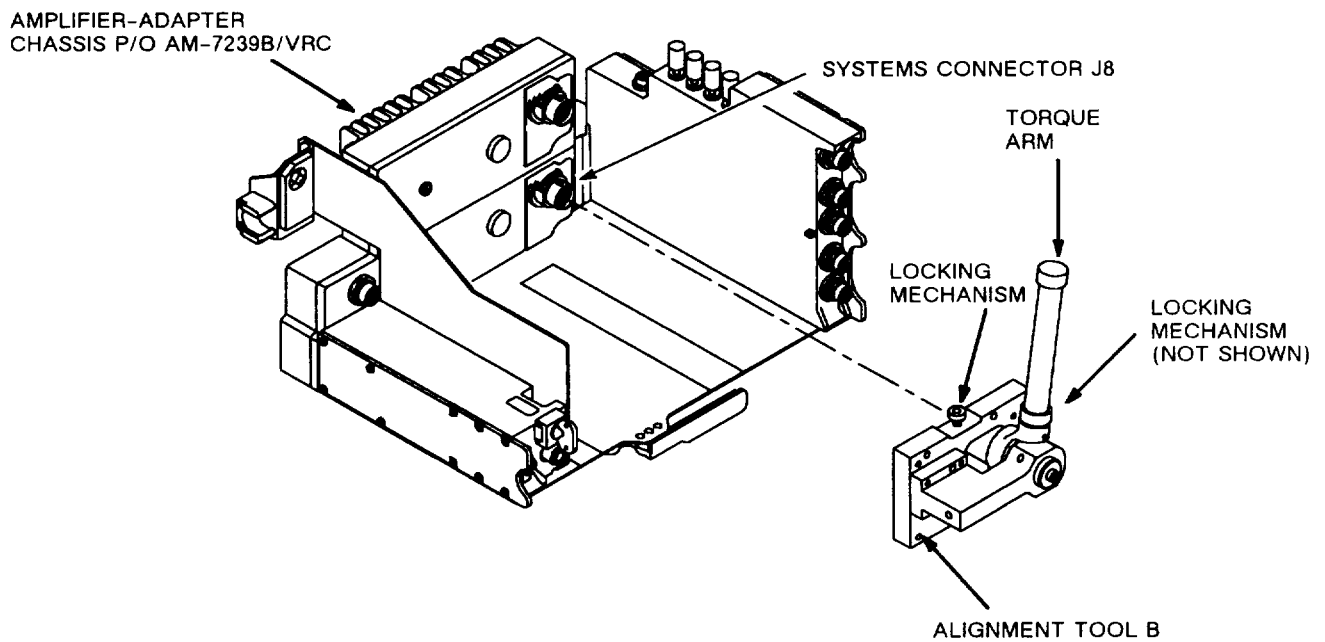


EL9RH102

Figure 4-24. Alignment of RT Systems Chassis Connector J7

CONNECTOR J8 REPLACEMENT PROCEDURES

1. REMOVE 10 SCREWS AND WASHERS FROM EQUIPMENT SHELF AND REMOVE EQUIPMENT SHELF.
2. REMOVE CONNECTOR LOCK RING AND SET TO ONE SIDE.
3. UNSOLDER AND TAG WIRES FROM CONNECTOR PINS
4. REMOVE AND REPLACE CONNECTOR.
5. SOLDER WIRES TO CONNECTOR PINS.
6. REMOVE CONNECTOR DUST CAP, CHAIN, AND SCREW.
7. INSTALL CONNECTOR J8 INTO ITS MOUNTING HOLE. APPLY THREE DROPS OF SEALING COMPOUND (ITEM 10, APP. B) ON CONNECTOR THREADS. INSTALL AND FINGER TIGHTEN CONNECTOR LOCKING RING THEN BACK OFF 1/2 TURN.
8. DISENGAGE TWO LOCKING MECHANISMS ON ALIGNMENT TOOL. INSTALL ALIGNMENT TOOL ON CONNECTOR J8 ENSURING KEYWAY OF CONNECTOR ALIGNS WITH KEYWAY OF ALIGNMENT TOOL.
9. TIGHTEN TWO LOCKING MECHANISMS ON ALIGNMENT TOOL. ENGAGE SOCKET WRENCH ON CONNECTOR J8 LOCKING RING. TIGHTEN CONNECTOR LOCKING RING BY HAND.
10. INSERT 90 IN/LB TORQUE ARM IN SOCKET WRENCH ON ALIGNMENT TOOL AND LOCK. ENSURE SOCKET WRENCH ENGAGES LOCKING RING ON CONNECTOR J8.
11. TIGHTEN LOCKING RING OF CONNECTOR J8 UNTIL TORQUE ARM CLICKS.
12. DISENGAGE SOCKET WRENCH FROM CONNECTOR LOCKING RING. REMOVE TORQUE ARM. LOOSEN TWO LOCKING MECHANISMS ON ALIGNMENT TOOL. REMOVE ALIGNMENT TOOL FROM CONNECTOR J8.
13. REPLACE CONNECTOR DUST CAP, CHAIN, AND RETAINING SCREW.
14. REPLACE EQUIPMENT SHELF AND INSTALL 10 SCREWS AND WASHERS.



EL9RH103

Figure 4-25. Alignment of RT Systems Connector J8 on AM-7239B/VRC (Sheet 1 of 2)

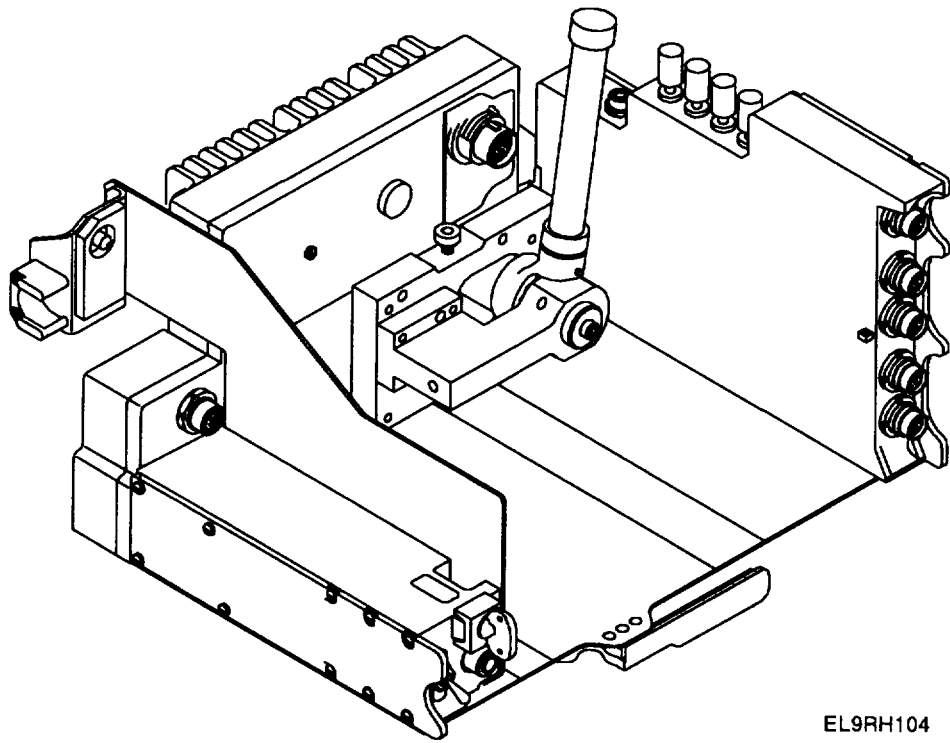


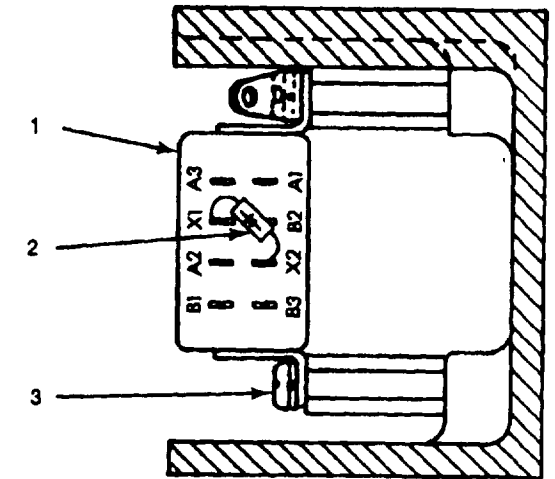
Figure 4-25. Alignment of RT Systems Connector J8 on AM-7239B/VRC (Sheet 2 of 2)

4-58. Electrical Surge Arrestors.

- a. Electrical surge arrestors E12, E13, E14, and E15 are repaired by replacing the CCA Dual Transient Protection (A3167790-1). Replace CCA if arrestors look defective or have an unusual odor. The CCA is a non repairable item and is discarded when defective.
- b. Replace CCA Dual Transient Protection (A3167790-1) as required.

4-59. Relay K1.

- a. Replace Relay K1 (1) as required.
- b. Replace diode (2). Observe polarity.
- c. Apply sealing compound (item 10, App. B) to mounting screws and washers (3).



- d. Use the following wire list to replace wires to relay:

<u>FROM</u>	<u>TO</u>	<u>COLOR/TRACER</u>
K1-A1	CR1	Red (item 97, App. B)
K1-A1	K1-B1	Wire, copper (item 105, App. B)
K1-A2	K1-B2	Wire, copper (item 105, App. B)
K1-A2	TB2-4	White (item 111, App. B)
K1-B2	E1	White (item 111, App. B)
K1-X1	TB2-3	Brown (item 60, App. B)
K1-X2	E10	Black (item 59, App. B)

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4-60. Circuit Breaker CB1.

- a. Replace as required.
- b. Use the following wire list to replace wires to circuit breaker:

<u>FROM</u>	<u>TO</u>	<u>COLOR/TRACER</u>
CB1-1	CR1	Red (item 97, App. B)
CB1-1	TB2-2	Red (item 61, App. B)
CB1-2	TB2-1	Yellow (item 98, App. B)

- c. Install circuit breaker CB1. Torque the hex nut to 19 - 21 in/lb.

4-61. Indicator-Light Housing DS1.

- a. Replace as required.
- b. Use the following wire list to replace wires to indicator-light housing:

<u>FROM</u>	<u>TO</u>	<u>COLOR/TRACER</u>
DS1-1	E10	Black (item 40, App. B)
DS1-2	E18	Orange (item 43, App. B)

- c. Install DS1 Indicator-light housing. Torque the hex nut to 29 - 31 in/lb.

CHAPTER 5

**MAINTENANCE PROCEDURES FOR MOUNTING BASE,
ELECTRICAL EQUIPMENT MT-6353/VRC CHASSIS (A3014094-1)**

**Section I. REPAIR PARTS, SPECIAL TOOLS, TMDE,
AND SUPPORT EQUIPMENT**

5-1. Common Tools and Equipment.

For authorized common tools and equipment, refer to the Modified Table of Organization and Equipment (MTOE) applicable to your unit.

5-2. Special Tools, TMDE, and Support Equipment.

- a. *Special Tools.* No special tools are required.
- b. *TMDE and Support Equipment.* Refer to TM 11-5820-914-40P for TMDE and Support Equipment.

5-3. Repair Parts.

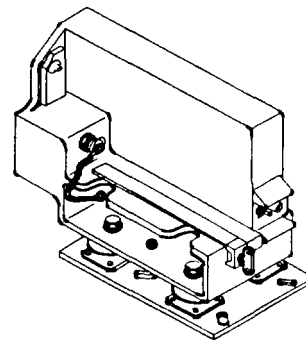
Repair parts are listed and illustrated in the repair parts and special tools list TM 11-5820-914-40P.

Section II. PRINCIPLES OF OPERATION

5-4. Power Supply Input Circuits

Primary power is supplied through J1 Pin B. The dc is applied to circuit breaker CB1. From CB1, the dc is applied to contacts A1 and B1 of relay K1. Relay K1 must be energized before the dc can be applied to the power supply module. When K1 is energized, contacts A1 and B1 are connected to contacts A2 and B2 respectively. Relay K1 is remotely energized by applying SW 27V dc from the mounting adapter to J1 pin C. When K1 is energized, DS1 is lit to indicate that 27 V dc has been applied to the power supply module. CR1 provides EMP protection by conducting large impulses to ground. EMI protection is provided by VR1 and VR2.

Mounting Base MT-6353/VRC Chassis
A3014094-1



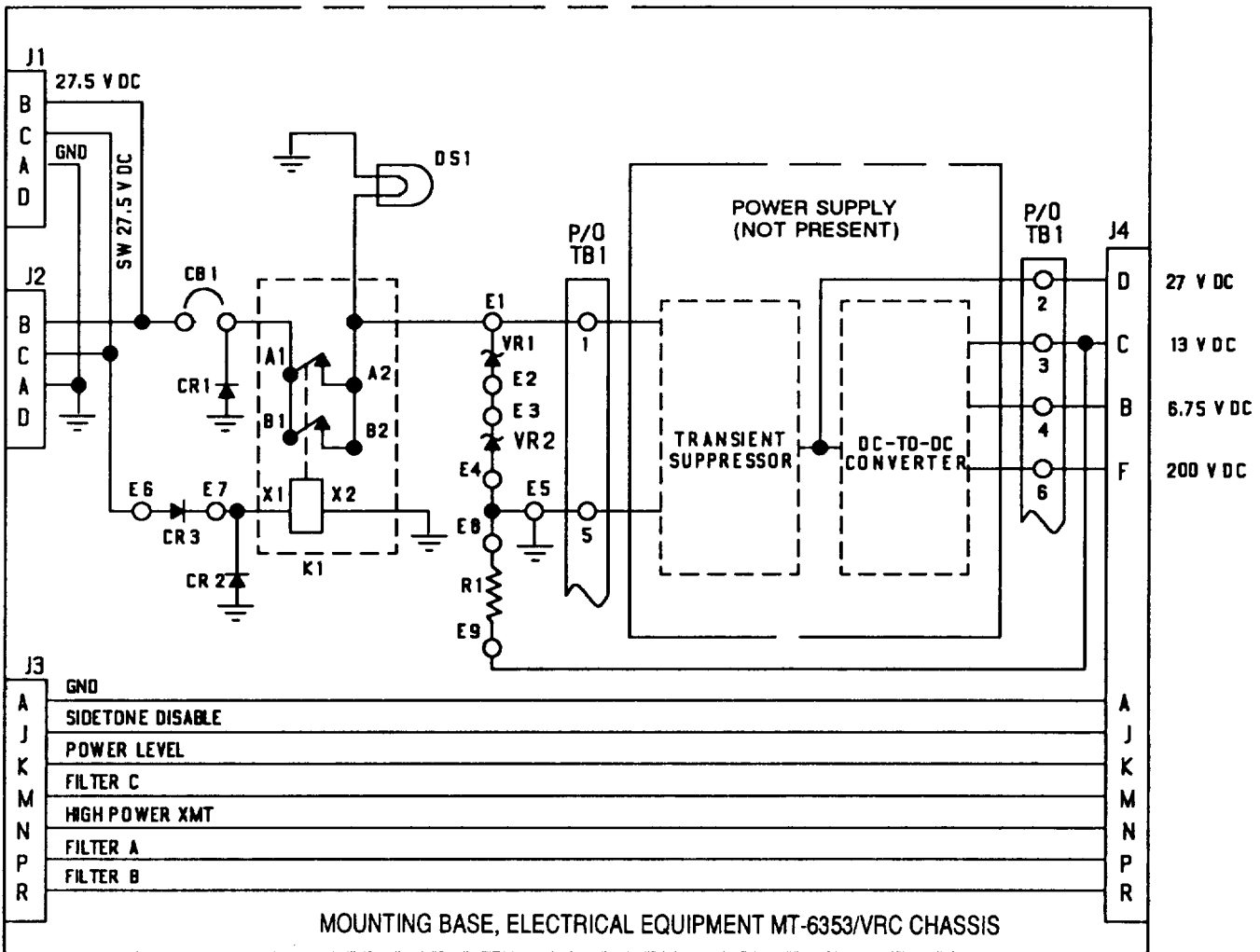
EL9RH117

5-5. Control Signal Input Circuits

Control signals are received from the receiver-transmitter through connector J3. They are wired pin for pin to connector J4. These input signals control band selection and keying circuits of the power amplifier.

BAND	FREQ (MHz)	PIN
A	30-43	P
B	43-61.4	R
C	61.4-88	M

Sidetone disable signals are sent from the RF PA to the receiver-transmitter to indicate when the VSWR is excessive. A power level signal is sent to the receiver-transmitter to indicate that the PA has been keyed.



EL9RH118

Figure 5-1. Block Diagram of MT-6353/VRC Chassis

Section III. TROUBLESHOOTING PROCEDURES

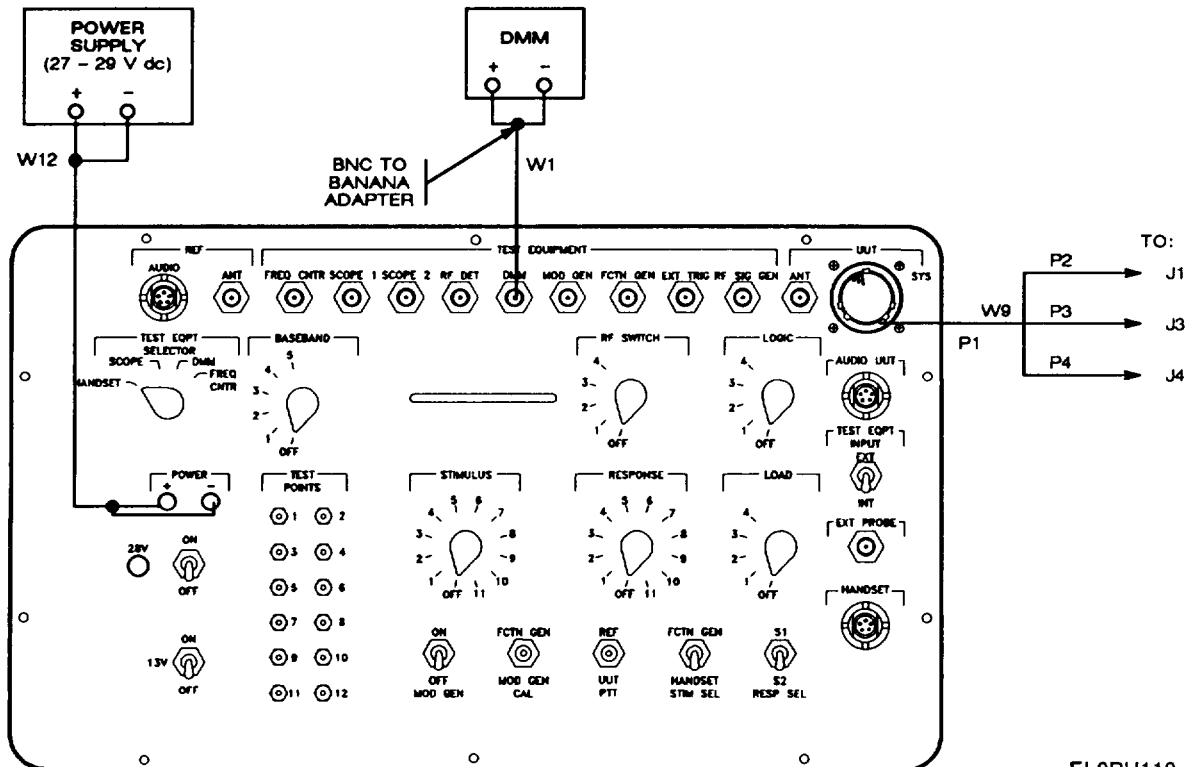
5-6. Installation of PA Mount for Maintenance.

TOOLS

Maintenance Kit OA-9263A/GRC or OA-9297/GRC
 Tool Kit TK-105/G
 DC Power Supply
 Digital Multimeter

EQUIPMENT PRESETS

MAINTENANCE GROUP:
 28V: OFF
 13 v; OFF
 STIMULUS: OFF
 RESPONSE: 7
 LOAD: OFF
 RF SWITCH OFF
 MOD GEN: OFF
 LOGIC: OFF
 TEST EQPT SELECTOR: DMM
 TEST EQPT INPUT: INT
 BASEBAND: OFF
 CAL: OFF
 Pi-r: OFF
 STIM SEL: HANDSET
 RESP SEL: S1
 PA MOUNT:
 DS1 : FULL CW
 CBI : OFF



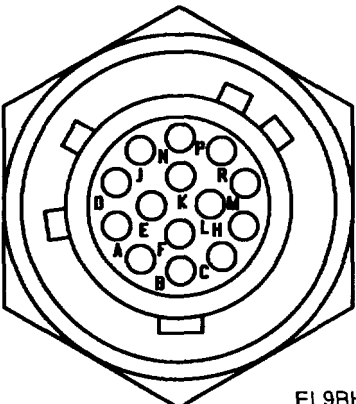
EL9RH119

5-7. Operational Check.

The operational check provides a step-by-step procedure for evaluating a PA mount. If the operational check is passed, the PA mount can be returned to service; if not, the bad module or a troubleshooting chart will be identified. The operational check is divided into steps with each step verifying a particular function. Follow the instruction in the "Action" column. Check the response. If the response is correct, proceed with the next lettered step. When a Step has been completed, proceed with the next STEP. "No response" in the "Response" column means the response may be ignored. The switch settings for the test equipment are given in the "EQUIPMENT PRESETS" section of each test setup figure. Set the test equipment switches to the indicated presets and then verify the settings. If a test response is incorrect, check the equipment settings and the test adapter cabling before going to a troubleshooting chart or replacing a bad module.

Step 1. Turn-On Check.	
Action	Response
<ul style="list-style-type: none"> a. Remove connector caps from connectors J1, J3, and J4. b. Adjust test power supply for 27 V dc. c. Connect test setup as shown in para 5-6. d. Turn-on test power supply. 28 V: ON e. Set PA mount CB1: ON. f. Connect TP4 to TP5 on OA-9297/GRC with jumper cable. Listen for relay contacts to close. 	<ul style="list-style-type: none"> a. No response. b. No response c. No response. d. Test power supply circuit breaker does not trip. If the circuit breaker trips, repair short between connector J1 pin B and ground. e. DS1 does not light. If it does, relay K1 is bad. CB1 does not trip. If it does, go to chart 4 page 5-11. f. Responses: <ul style="list-style-type: none"> 1. Relay contacts close. If they do not, go to chart 1 page 5-8. 2. CB1 remains at ON. If it trips to OFF, go to chart 2 page 5-9. 3. DS1 lights. If it does not, go to chart 3 page 5-10.

Step 2. Interconnection Check.

Action	Response																
<p>a. Remove jumper cable from TP4 and TP5. 28 V: OFF Turn off test power supply. TEST EQPT SELECTOR: DMM RESPONSE: 1 RESP SEL: S2</p> <p>b. Set RESPONSE to positions 2 through 7. Read DMM at each position.</p>	<p>a. DMM reading is less than 1 ohm (continuity). If not, the wire from J3-A to J4-A is bad.</p> <p>b. DMM reading is less than 1 ohm (continuity) at each position. If not, the wire from J3-(pin) to J4-(pin) is bad.</p> <table border="0"> <thead> <tr> <th><u>RESPONSE position</u></th> <th><u>Pin</u></th> </tr> </thead> <tbody> <tr><td>2</td><td>J</td></tr> <tr><td>3</td><td>K</td></tr> <tr><td>4</td><td>M</td></tr> <tr><td>5</td><td>N</td></tr> <tr><td>6</td><td>P</td></tr> <tr><td>7</td><td>R</td></tr> </tbody> </table>	<u>RESPONSE position</u>	<u>Pin</u>	2	J	3	K	4	M	5	N	6	P	7	R		
<u>RESPONSE position</u>	<u>Pin</u>																
2	J																
3	K																
4	M																
5	N																
6	P																
7	R																
<p>c. Disconnect cable at mounting base connector J3. Set RESPONSE to positions 7 through 1. Read DMM at each position.</p>	<p>c. DMM reading is infinite ohms (open circuit) at each position. If any indicate continuity the wire is shorted to ground. Check wiring harness and replace bad wire.</p> <p style="text-align: center;">J3, J4</p>  <table border="0"> <thead> <tr> <th><u>RESPONSE position</u></th> <th><u>Pin</u></th> </tr> </thead> <tbody> <tr><td>1</td><td>A</td></tr> <tr><td>2</td><td>J</td></tr> <tr><td>3</td><td>K</td></tr> <tr><td>4</td><td>M</td></tr> <tr><td>5</td><td>N</td></tr> <tr><td>6</td><td>P</td></tr> <tr><td>7</td><td>R</td></tr> </tbody> </table>	<u>RESPONSE position</u>	<u>Pin</u>	1	A	2	J	3	K	4	M	5	N	6	P	7	R
<u>RESPONSE position</u>	<u>Pin</u>																
1	A																
2	J																
3	K																
4	M																
5	N																
6	P																
7	R																

Step 2. Interconnection Check. (Cont.)	
Action	Response
d. RESPONSE: 8 RESP SEL: S1 Read DMM.	d. DMM reads less than 160 Ω. If not, R1 is bad.
e. Disconnect test cable W9 from chassis.	e. No response
NOTE The following steps test the wiring harness wire numbers 1 through 6.	
f. Check resistance from 1 to E1.	f. Resistance is less than 1 Ω. If not, replace wire from 1 to E1.
g. Check resistance from 5 to E5.	g. Resistance is less than 1 Ω. If not, replace wire from 5 to E5.
h. Check resistance from 2 to J4-D.	h. Resistance is less than 1 Ω. If not, replace wire from 2 to J4-D.
i. Check resistance from 3 to J4-C.	i. Resistance is less than 1 Ω. If not, replace wire from 3 to J4-C.
j. Check resistance from 4 to J4-B.	j. Resistance is less than 1 Ω. If not, replace wire from 4 to J4-B.
k. Check resistance from 6 to J4-F.	k. Resistance is less than 1 Ω. If not, replace wire from 6 to J4-F.

5-8. Troubleshooting.

Troubleshoot a faulty PA mount as follows:

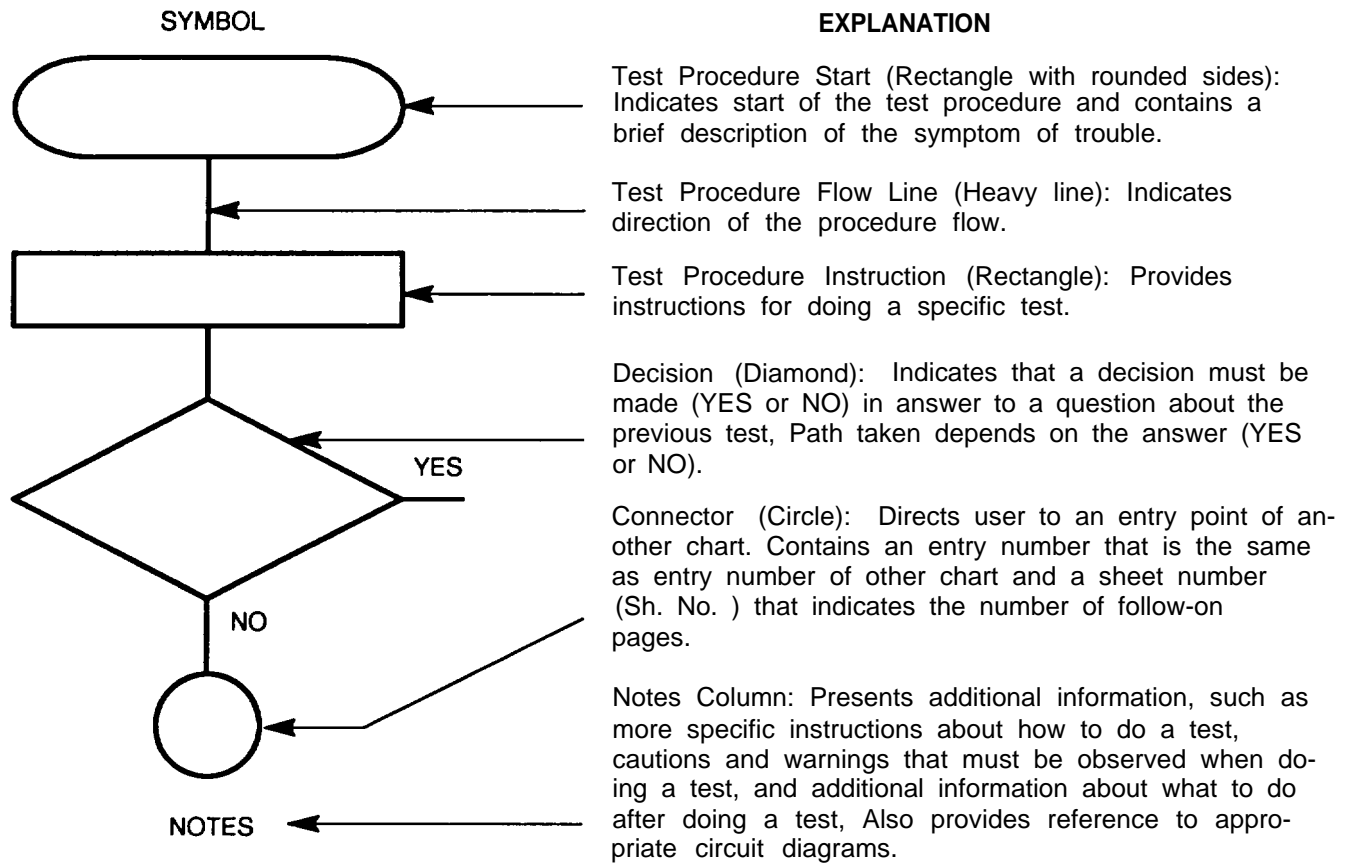
- a. *Inspect the PA mount for damage.* Repair any damage before proceeding with testing. See section IV if repairs are necessary.
- b. *Verify the symptom.* Perform the operational check in paragraph 5-7. This will direct you to the correct troubleshooting flow chart or identify the fault.
- c. *Troubleshoot the PA mount.* It will identify the defective module or component.
- d. *Replace the defective component.* Follow the procedures in section IV.
- e. *Verify the repair.* Repeat the operational check in paragraph 5-7 that failed. If it passes, then continue with the rest of the operational check. When the operational check is passed, the PA mount can be returned for use.

5-9. Troubleshooting Chart Index.

The following index is provided for rapid access to the troubleshooting charts.

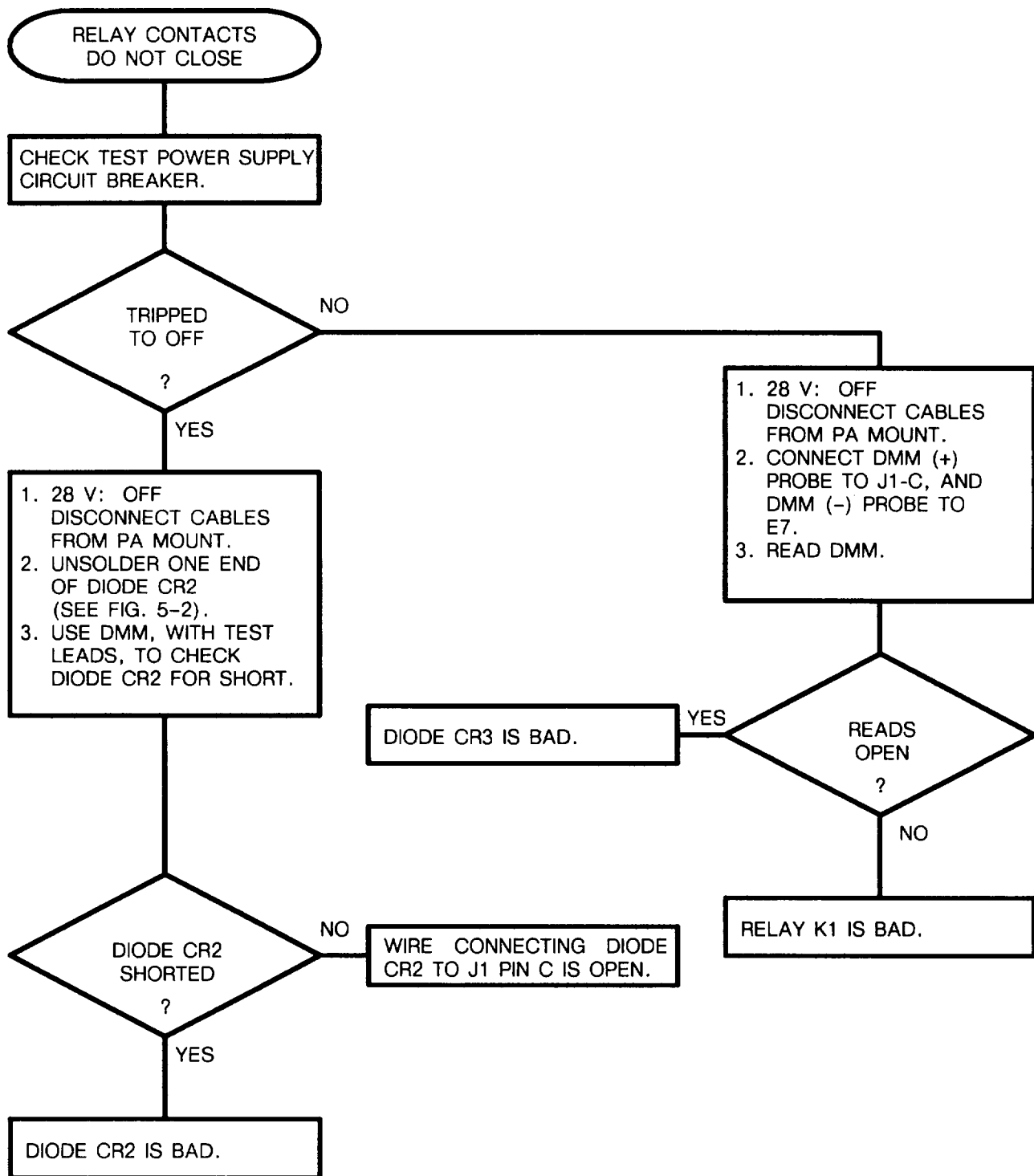
<u>Chart</u>	<u>Symptom</u>
1	Relay contacts do not close
2	CB1 trips when power applied
3	Lamp DS1 does not light
4	CB1 trips when turned on

5-10. Explanation of Symbols and Notes.



5-11. Troubleshooting Flow Charts.

CHART 1
 Troubleshooting Relay K1 Circuit
 (Sheet 1 of 1)



5-11. Troubleshooting Flow Charts. (Cont.)

CHART 2
 Troubleshooting Short on Input to Power Supply
 (Sheet 1 of 1)

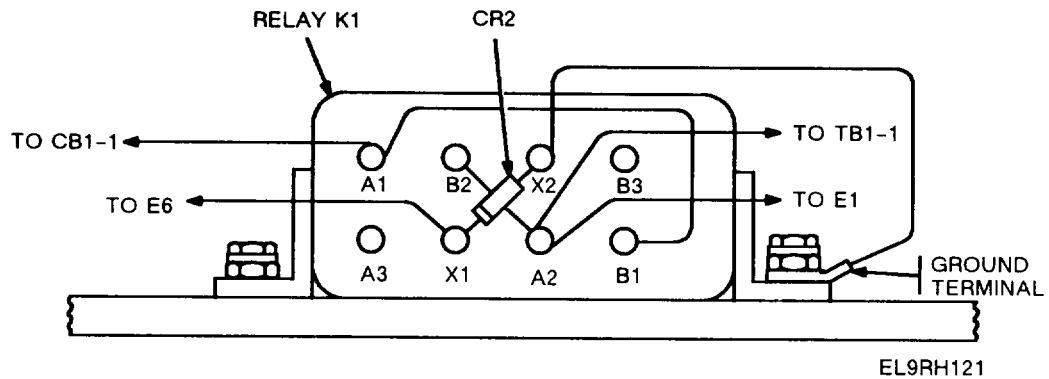
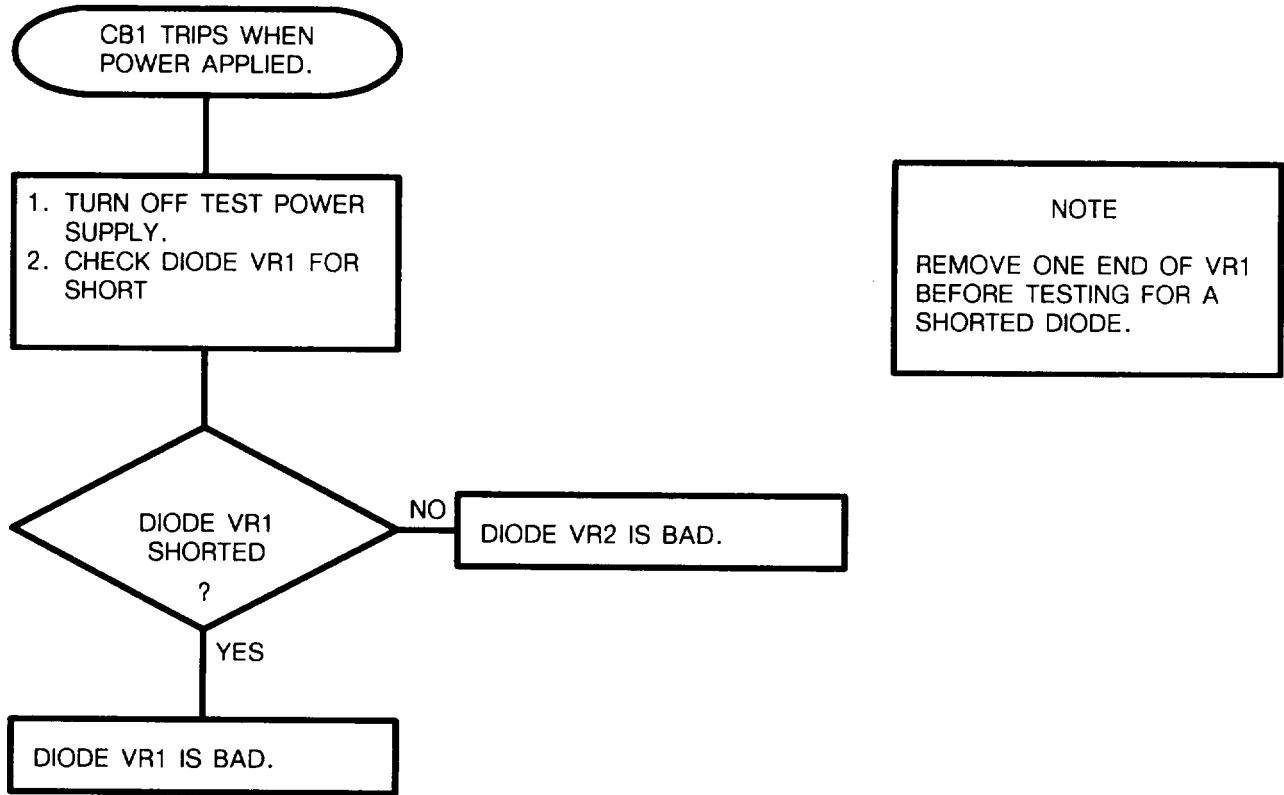
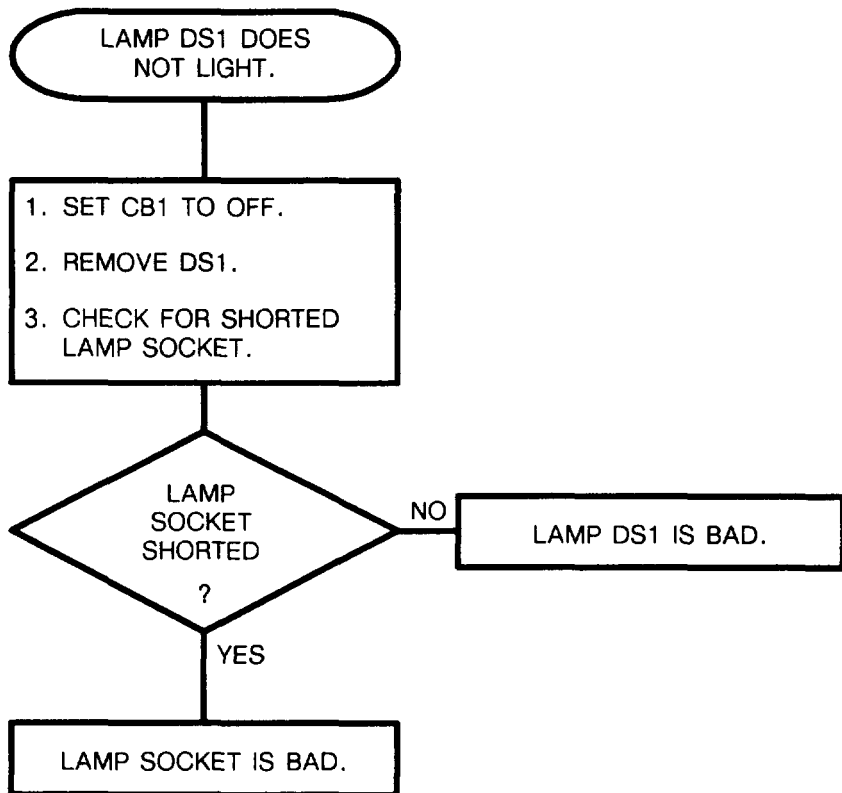


Figure 5-2. Diode CR2 Position on Relay K1

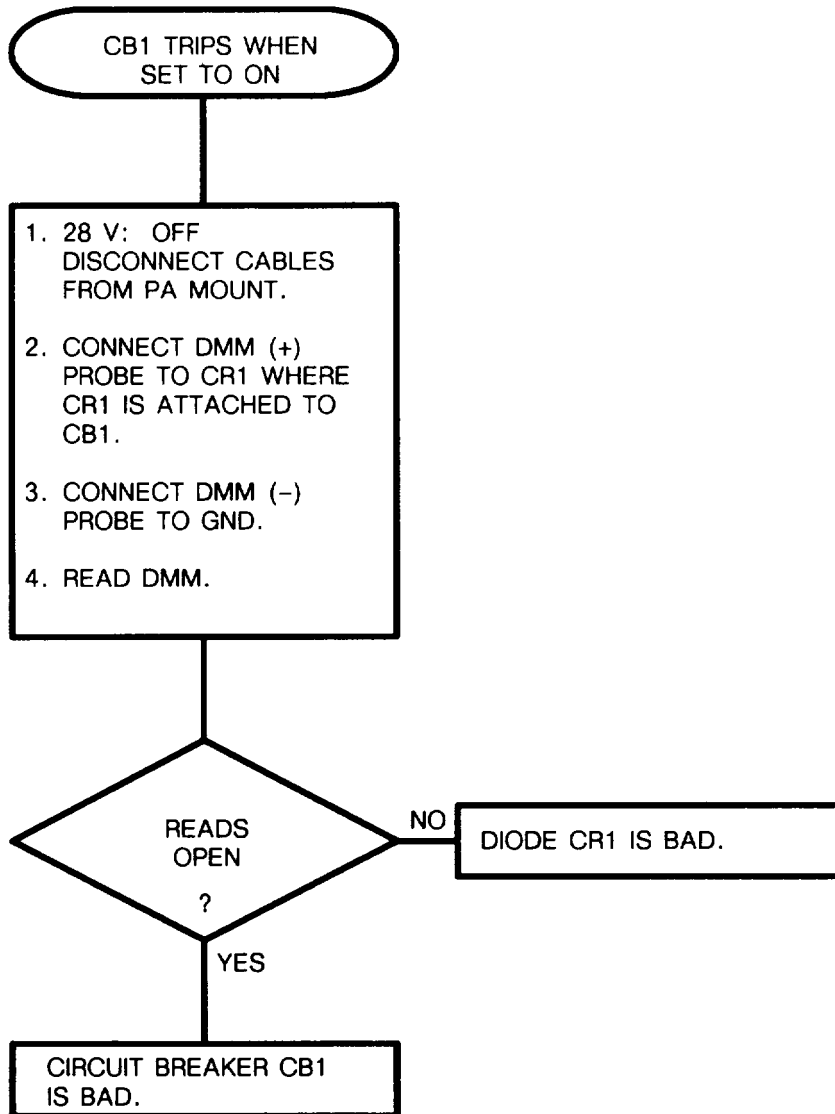
5-11. Troubleshooting Flow Charts. (Cont.)

CHART3
Troubleshooting Short on Input to Power Supply
(Sheet 1 of 1)



5-11. Troubleshooting Flow Charts. (Cont.)

CHART 4
Troubleshooting Circuit Breaker CB1
(Sheet 1 of 1)



Section IV. MAINTENANCE PROCEDURES

5-12. General.

The power supply and the chassis form the electrical equipment mounting base MT-6353/VRC. However, the chassis will be returned for repair separately.

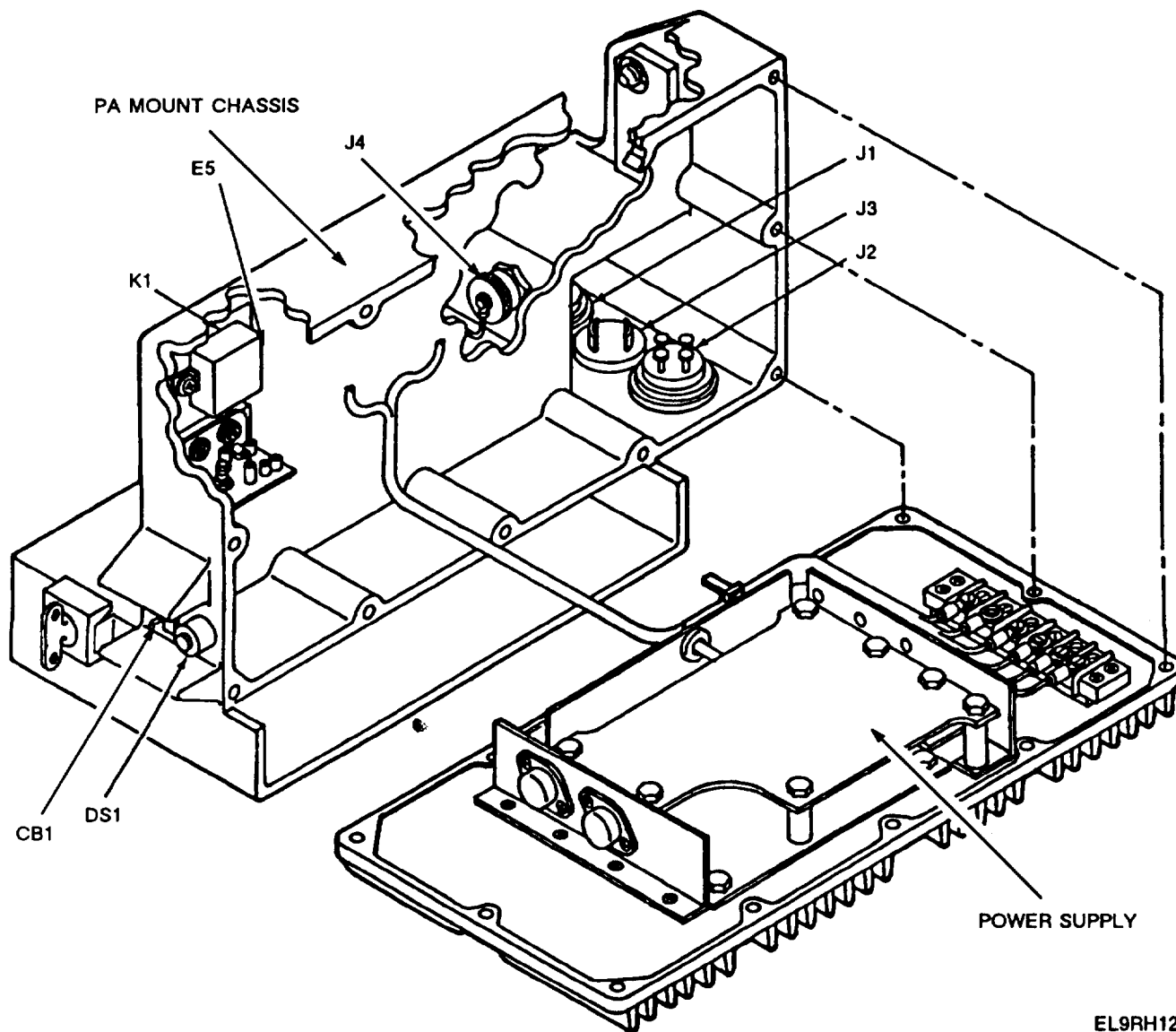


Figure 5-3. Component Location In PA Mount

5-13. Lamp Socket for DS1 Replacement.

REMOVAL

- a. *Lens assembly.* Loosen and remove.
- b. *Lamp DS1.* Pull free from lens assembly.
- c. *Lamp socket.* Unsolder wires connected to lamp socket.
- d. *Nut.* Loosen and remove.
- e. *Lamp socket.* Remove.

INSTALLATION

- f. *Lamp socket.* Hold in place and install nut. Torque nut to 30 in-lb. Solder wires to lamp socket
- g. *Lamp DS1.* Install.
- h. *Lens assembly.* Install and tighten.

5-14. Relay K1 Replacement.

REMOVAL

- a. *Relay K1.* Loosen screws securing relay to PA mount chassis (See fig. 5-4). Unsolder wires from relay. Unsolder diode CR2 from relay. Remove screws and washers from relay mounting bracket.

INSTALLATION

- b. *Relay K1.* Replace any damaged insulation sleeving on wires or CR2. Solder diode CR2 to relay. Observe proper orientation. Solder wires to relay. Hold in place and install screws. Install screws and washers and tighten.

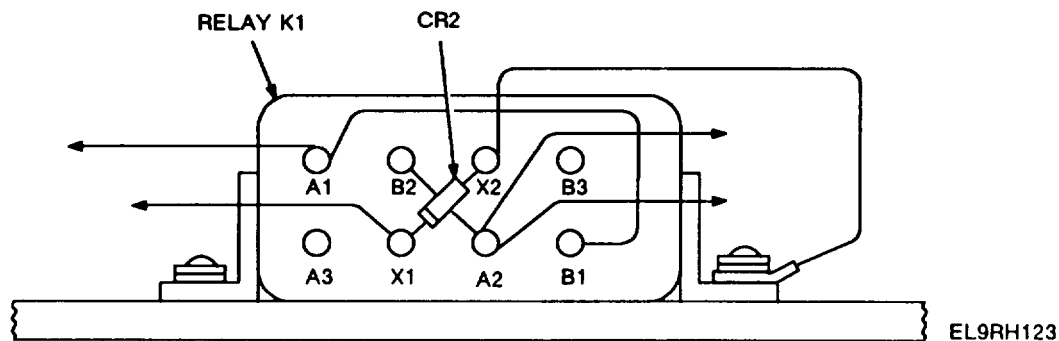


Figure 5-4. Relay K1 and Diode CR2 Mounting Detail

5-15. Diode CR1 Replacement.

REMOVAL

- a. *Diode CR1.* Unsolder wire from bottom of diode. Loosen and remove nut securing diode to mounting bracket. Remove diode (See fig. 5-5).

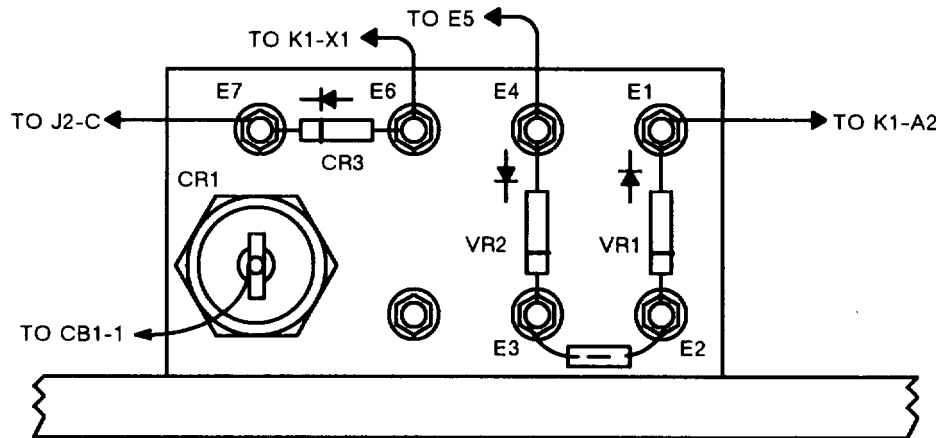
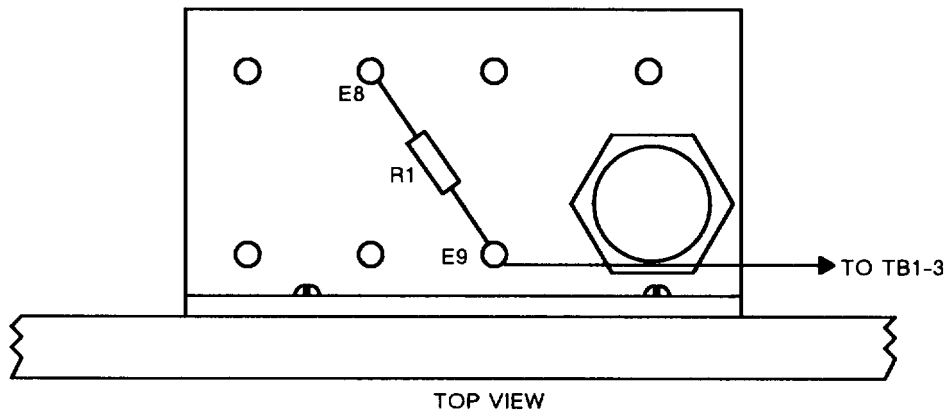


Figure 5-5. Bottom View of Mounting Bracket

INSTALLATION

- b. *Diode CR1.* Hold in place and thread nut onto diode. Tighten nut. Solder wire to diode terminal (See fig. 5-5).



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Figure 5-6. Top View of Mounting Bracket

5-16. Diode VR1, VR2, CR2, CR3, or Resistor R1 Replacement.

REMOVAL

- a. *Diode CR2.* Unsolder and remove. See fig. 5-5 for component location.

INSTALLATION

- b. *Diode CR2.* Place new insulation sleeving on leads of new diode. Install in place. Observe proper orientation. Solder.
- c. *Mounting bracket.* Remove two screws with lockwashers and flat washers securing mounting bracket to chassis.
- d. *Diode VR1, VR2, CR3, or Resistor R1.* Unsolder and remove. See fig. 5-5 and 5-6 for location of diodes on mounting bracket.
(Note orientation of components before unsoldering).
- e. *Wire connecting E2 to E3.* Inspect wire and insulation sleeving. If damaged replace.
- f. *Diode VR1, VR2, CR3, or Resistor R1.* Attach to terminal lugs and solder. Observe proper orientation.
- g. *Mounting bracket.* Align with holes in chassis. Thread two screws with lockwashers and flat washers. Tighten.

5-17. Circuit Breaker CB1 Replacement.

REMOVAL

- a. *CB1.* Loosen and remove nut securing CB1 to chassis. Pull CB1 out of chassis far enough to gain access to wires. Unsolder three wires from CB1.
(Note the location of the wires before unsoldering).

INSTALLATION

- b. *CB1.* Solder three wires to CB1. Push CB1 through front of chassis. Install ON/OFF plate and thread nut. Tighten to 30 in-lb.

5-18. Connector J2 Replacement.

REMOVAL

- a. *PA mount.* Set on work surface with right side toward you.
- b. *Connector J2.* Remove connector cover. Remove spanner nut with spanner wrench. Gently pull connector out through side for maximum access.
- c. *Wires.* Unsolder from connector J2.

INSTALLATION

- d. Connector J2. Inspect O-ring on new connector. If damaged, replace connector. (O-ring must be in good condition in order to use connector).
- e. Wires. Solder onto correct leads of good connector J2.
- f. Connector J2. Slide into mounting hole. Thread spanner nut. Torque to 100 in-lb. Reinstall connector cover.

5-19. Connector J3 Replacement.

REMOVAL

- a. Connector J2. Remove connector cover. Remove spanner nut with spanner wrench. Push into chassis.
- b. Connector J1. Remove connector cover and spanner nut.
- c. Connector J3. Remove connector cover. Use socket wrench to remove lock nut securing J3 to chassis. Push connector into chassis and pull out through side.
- d. Insulating sleeving. Slide back from solder connections on J3.
- e. Wires. Unsolder from connector J3. Replace any damaged insulation sleeving (Note the location of the wires before unsoldering).

INSTALLATION

- f. Connector J3. Inspect O-ring on new connector, If damaged, replace connector. (O-ring must be in good condition in order to use connector).
- g. Wires. Solder onto correct leads of good connector J3. Slide insulation sleeving over solder connections.
- h. Connector J3. Slide into correct mounting hole. Thread lock nut and torque to 100 in-lb. Reinstall connector cover.
- i. Connector J1. Thread spanner nut. Torque nut to 100 in-lb. Reinstall connector cover.
- j. Connector J2. Slide into correct mounting hole. Thread spanner nut. Torque nut to 100 in-lb. Reinstall connector cover.

5-20. Connector J1 Replacement.

REMOVAL

- a. *Connector J2.* Remove from chassis. Do not unsolder wires.
- b. *Connector J1.* Remove connector cover. Remove spanner nut with spanner wrench.
- c. *Connector J3.* Remove from chassis. Do not unsolder wires.
- d. *Connector J1.* Push into chassis and pull out through side for maximum access.
- e. *Insulating sleeving.* Slide back from solder connections on J1.
- f. *Wires.* Unsolder from connector J1. Replace any damaged insulation sleeving.

INSTALLATION

- g. *Connector J1.* Inspect O-ring on new connector. If damaged, replace connector. (O-ring must be in good condition in order to use connector).
- h. *Wires.* Solder onto correct leads of good connector J1. Slide insulation sleeving over solder connections.
- i. *Connector J1, J2, or J3.* Slide into proper mounting hole.
- j. *Connector J3 .* Thread and tighten lock nut. Torque to 100 in-lb. Reinstall connector cover.
- k. *Connector J1, J2.* Thread and tighten spanner nuts on each. Torque to 100 in-lb. Reinstall connector covers.

5-21. Connector J4 Replacement.

REMOVAL

- a. *Connector J4.* Remove from chassis.
- b. *Wires.* Unsolder.

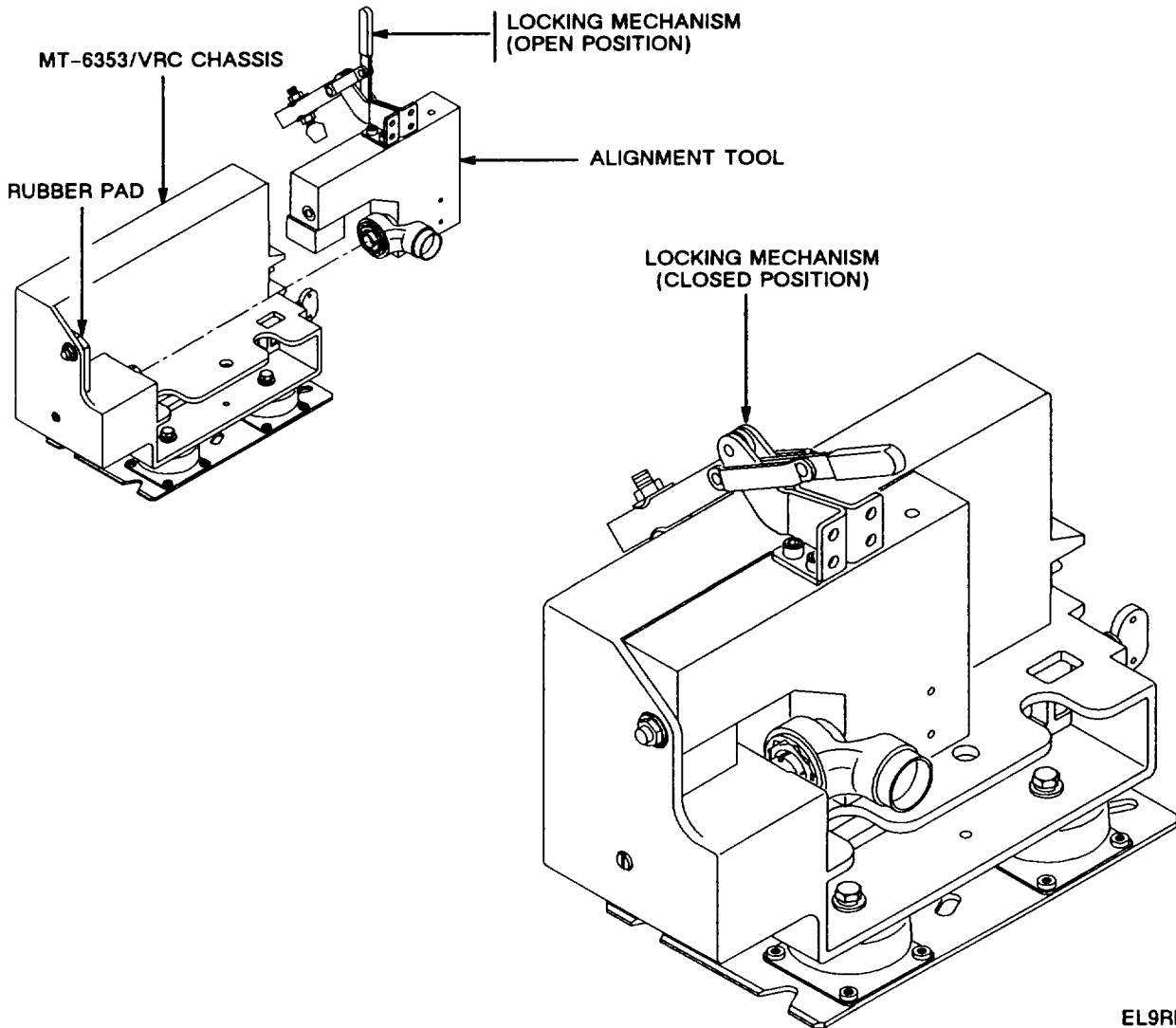
INSTALLATION

- c. *Connector J4.* Solder wires to connector terminals. Apply silicone compound to O-ring. Install O-ring on J4. Install connector J4 in chassis. Install Hex nut loosely on connector. (Do not tighten nut before alignment of connector).

ALIGNMENT

d. Alignment Instructions.

1. REMOVE RUBBER PAD FROM RF PA SUPPORT. INSTALL CONNECTOR J4 IN TO ITS MOUNTING HOLE. APPLY 3 DROPS OF SEALING COMPOUND (ITEM 10, APP. B) ON CONNECTOR THREADS. INSTALL AND FINGER TIGHTEN LOCKING NUT ON CONNECTOR, THEN BACK OFF 1/2 TURN.
2. DISENGAGE LOCKING MECHANISM OF ALIGNMENT TOOL ON TO RF PA AUXILIARY MOUNT ENSURING CONNECTOR KEYWAY ALIGNS WITH ALIGNMENT TOOL KEYWAY AND GUIDE PIN IS SEATED. ENGAGE CONNECTOR LOCKING RING.
3. INSERT 70 IN/LB TORQUE ARM IN TO SOCKET WRENCH ON ALIGNMENT TOOL AND LOCK. ENSURE SOCKET WRENCH ENGAGES CONNECTOR LOCKING RING.
4. TIGHTEN LOCKING RING ON CONNECTOR UNTIL TORQUE ARM CLICKS.
5. DISENGAGE SOCKET WRENCH FROM CONNECTOR LOCKING RING. REMOVE TORQUE ARM FROM SOCKET WRENCH. DISENGAGE LOCKING MECHANISM OF ALIGNMENT TOOL. REMOVE ALIGNMENT TOOL FROM RPPA AUXILIARY MOUNT.



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Figure 5-7. Alignment of RF PA Connector J4 on MT-6353/VRC Chassis

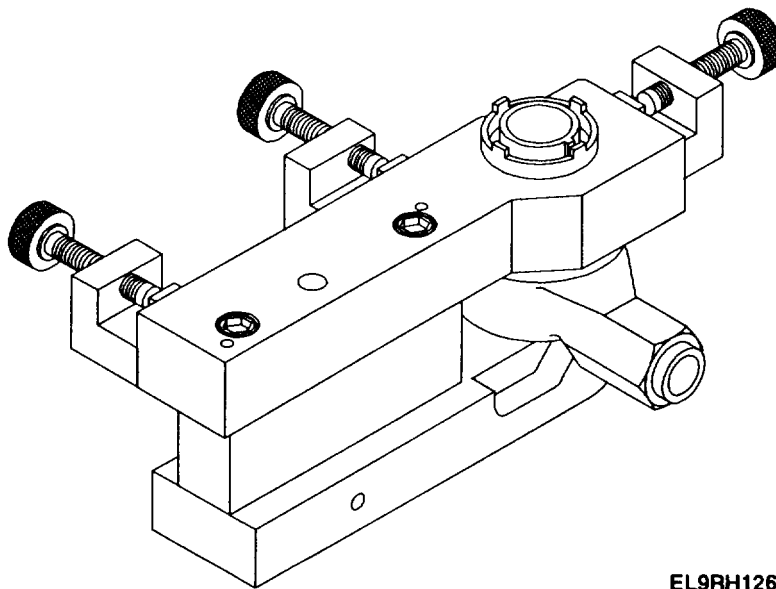
CHAPTER 6

MAINTENANCE PROCEDURES FOR ALIGNMENT TOOLS

6-1. General.

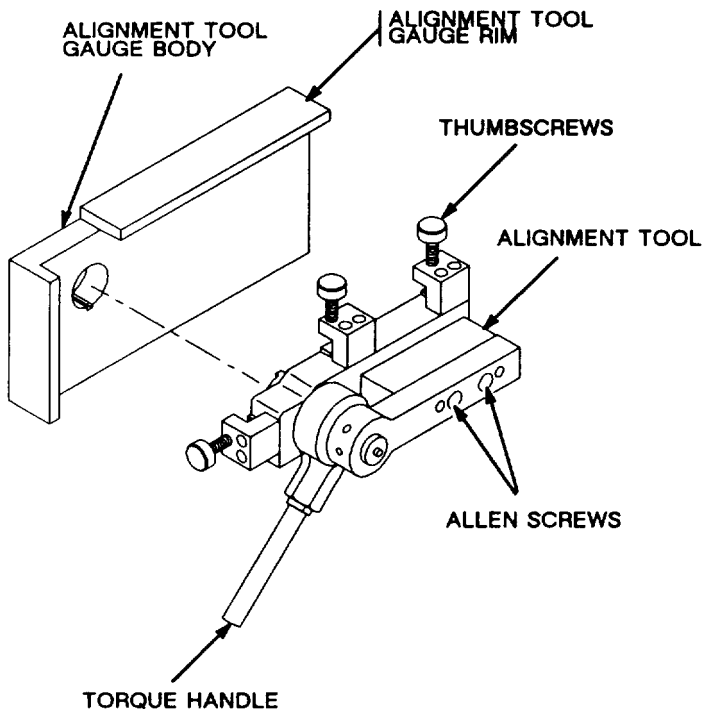
- a. The alignment tools for the UUT are contained in five protective alignment cases. Instructions for their use is contained in chapter 4. This chapter will concern itself with the maintenance of the alignment tools.
- b. Alignment tools are contained in the following cases:
 - (1) Alignment Tool-Receiver-Transmitter RT-1439/VRC Case, A3142114-1
 - (a) Alignment Tool A, A3018557-1
 - (b) Alignment Tool Gage, A3018590-1
 - (c) Torque Arm-90 in/lbs, A3018527-2
 - (d) Alignment Tool Carrying Case A3142115-1
 - (2) Alignment Tool-Amplifier-Adapter, Vehicular AM-7239/VRC Case, A3142116-1
 - (a) Alignment Tool B (for System Connector J7 and J8 of AM-7239/VRC) A3018869-1
 - (b) Alignment Tool C (for Connector J1 of AM-7239/VRC) A3018905-1
 - (c) Set Gauge Assembly, GO-NOGO, A3019022-1
 - (d) Plain Cylindrical Gauge Flush Pin Assembly, A3019113-1
 - (e) Alignment Tool Carrying Case A3142115-2
 - (3) Alignment Tool-Amplifier, RF AM-7238/VRC Case, A3142118-1
 - (a) Alignment Tool D (for Connector P1 of AM-7238/VRC), A3018870-1
 - (b) Torque Arm-70 in/lbs, A3018527-1
 - (c) Set Gage Assembly, GO-NOGO, A3019102-1
 - (d) Alignment Tool Carrying Case A3142115-1
 - (4) Tool-Circuit Card Assemblies Case, A3142120-1
 - (a) IF/Demodulator Alignment Tool E, A3019157-1
 - (b) IF/Demodulator Alignment Tool F, A3142221-1
 - (c) RT Power Supply Connector Alignment Tool G, A3019194-1
 - (d) Synthesizer Alignment Tool H, A3019188-1
 - (e) Alignment Tool Carrying Case A3142115-4
 - (5) Alignment Tool-Mounting Base, Electrical Equipment MT-6353-1 Case A3142122-1
 - (a) Alignment Tool I (for connector J4 of MT-6353/VRC), A3142191-1
 - (b) Set Gage A3142188-1
 - (c) Alignment Tool Carrying Case A3142115-2
 - (6) Maintenance Interval.
 - The operator shall check the alignment fixture against the alignment set gage every 30 days.

6-2. Alignment Tool Receiver-Transmitter Case, A3132114-1.



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Figure 6-1. Alignment Tool A



ADJUSTMENT PROCEDURES

1. LOOSEN THREE THUMB SCREWS ON ALIGNMENT TOOL.
2. PLACE ALIGNMENT TOOL ON ALIGNMENT TOOL GAGE.
3. ALIGNMENT TOOL SHOULD FIT FLUSH WITH GAGE

NOTE

IF ALIGNMENT TOOL DOES NOT FIT FLUSH WITH ALIGNMENT TOOL GAGE BODY, THE ALIGNMENT TOOL REQUIRES ADJUSTMENT. PROCEED TO STEP 4 BELOW.

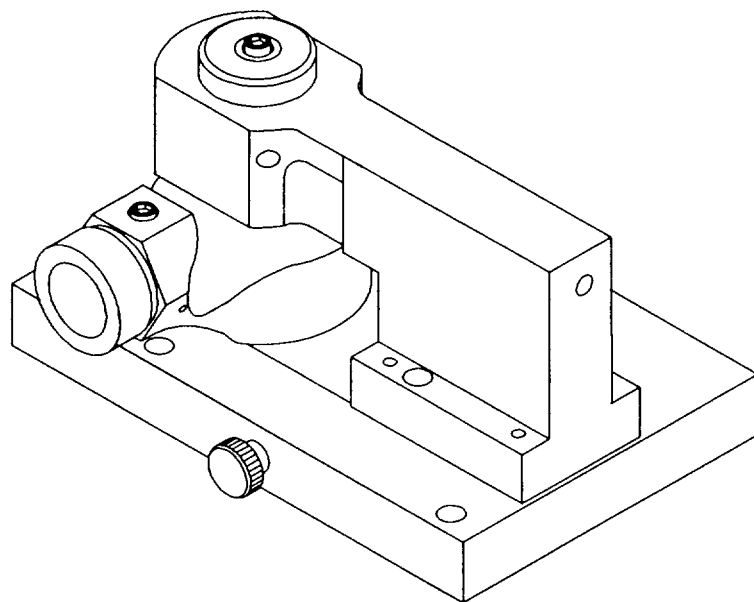
4. LOOSEN TWO ALLEN SCREWS ON ALIGNMENT TOOL.
5. USE FINGERS TO ROTATE ALIGNMENT TOOL HEAD UNTIL THE HEAD FITS INTO THE ALIGNMENT GAGE BODY AND THE ALIGNMENT TOOL FITS FLUSH WITH GAGE.
6. TIGHTEN THREE THUMBSCREWS.
7. TIGHTEN TWO ALLEN SCREWS.
8. LOOSEN THREE THUMBSCREWS AND REMOVE ALIGNMENT TOOL FROM GAGE.

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Figure 6-2. Adjustment of Alignment Tool A

6-3. Alignment Tool Amplifier-Adapter, Vehicular Case, A3142116-1.

- a. *Alignment Tool B (for system connector J7 and J8 of AM-7239/VRC or AM-7239B/VRC) A3018869-1.*



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Figure 6-3. Alignment Tool B

ADJUSTMENT PROCEDURES
FOR ALIGNMENT TOOL B A3018869-1

- CHECK PROCEDURES FOR ALIGNMENT TOOL:
1. PLACE ALIGNMENT TOOL B ON CHECK FIXTURE.
 2. ALIGN MACHINE BOLT AND HEADLESS PIN WITH OUTER SIDES OF CHECK FIXTURE.
 3. TIGHTEN TWO THUMBSCREWS.
 4. HOLD SOCKET WRENCH IN AN UP POSITION.
 5. GENTLY PUSH THE ALIGNMENT ROD UP UNTIL THE ALIGNMENT ROD KEY ENGAGES THE CHECK STEP. THE ALIGNMENT ROD KEY SHOULD NOT RISE MORE THAN 1/8 IN INTO KEYWAY.
- ADJUSTMENT PROCEDURES:
6. SLIDE AND HOLD SOCKET IN UPWARD POSITION.

7. TO ADJUST KEYWAY SLOT TO THE RIGHT, LOOSEN BACK SET SCREW. TO ADJUST KEYWAY SLOT TO THE LEFT, LOOSEN FRONT SET SCREW AND TIGHTEN BACK SCREW.

NOTE

DO NOT FORCE THE CHECK FIXTURE ALIGNMENT ROD KEY INTO THE ALIGNMENT TOOL KEYWAY

8. GENTLY MOVE THE ALIGNMENT ROD UP AND DOWN WHILE ADJUSTING THE ADJUSTING SET SCREW.
9. TIGHTEN THE TWO SET AND CAP SCREWS.
10. LOOSEN THUMBSCREWS AND REMOVE ALIGNMENT TOOL FROM THE CHECK FIXTURE.

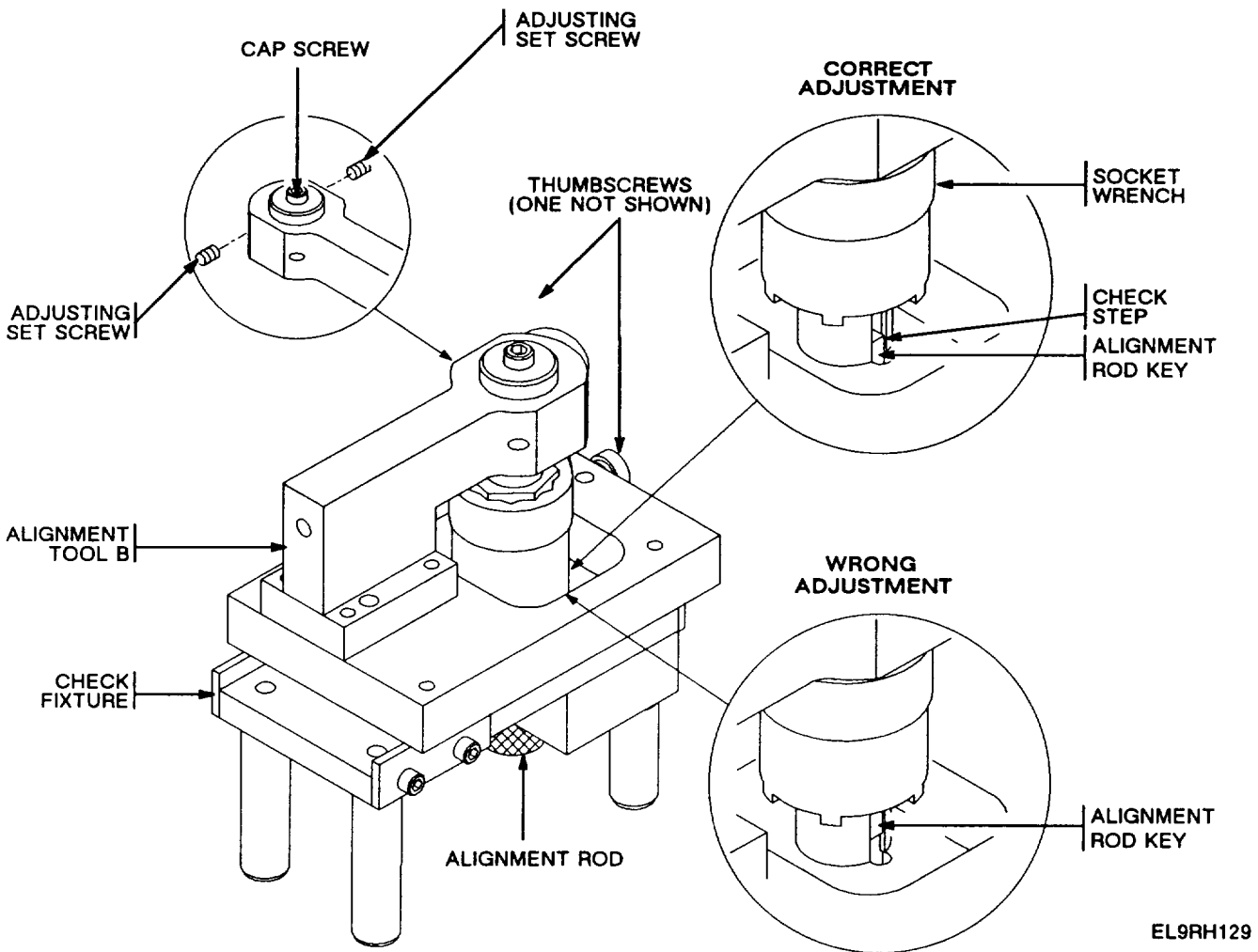
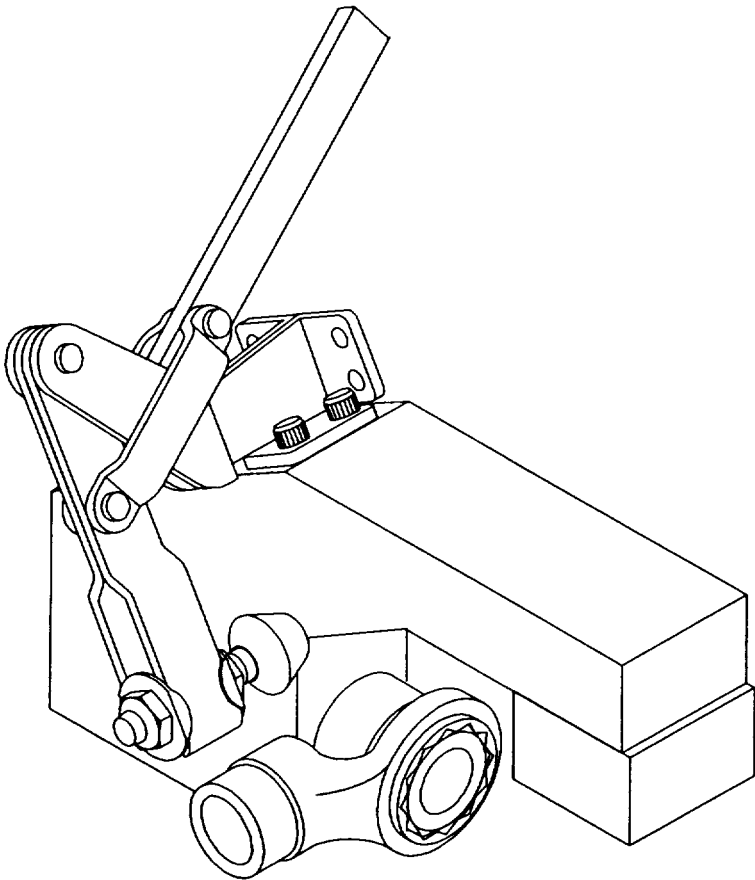


Figure 6-4. Adjustment of Alignment Tool B

b. Alignment Tool C (for Connector J1 of AM-7239/VRC or AM-7239B/VRC) A3018905-1.



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Figure 6-5. Alignment Tool C

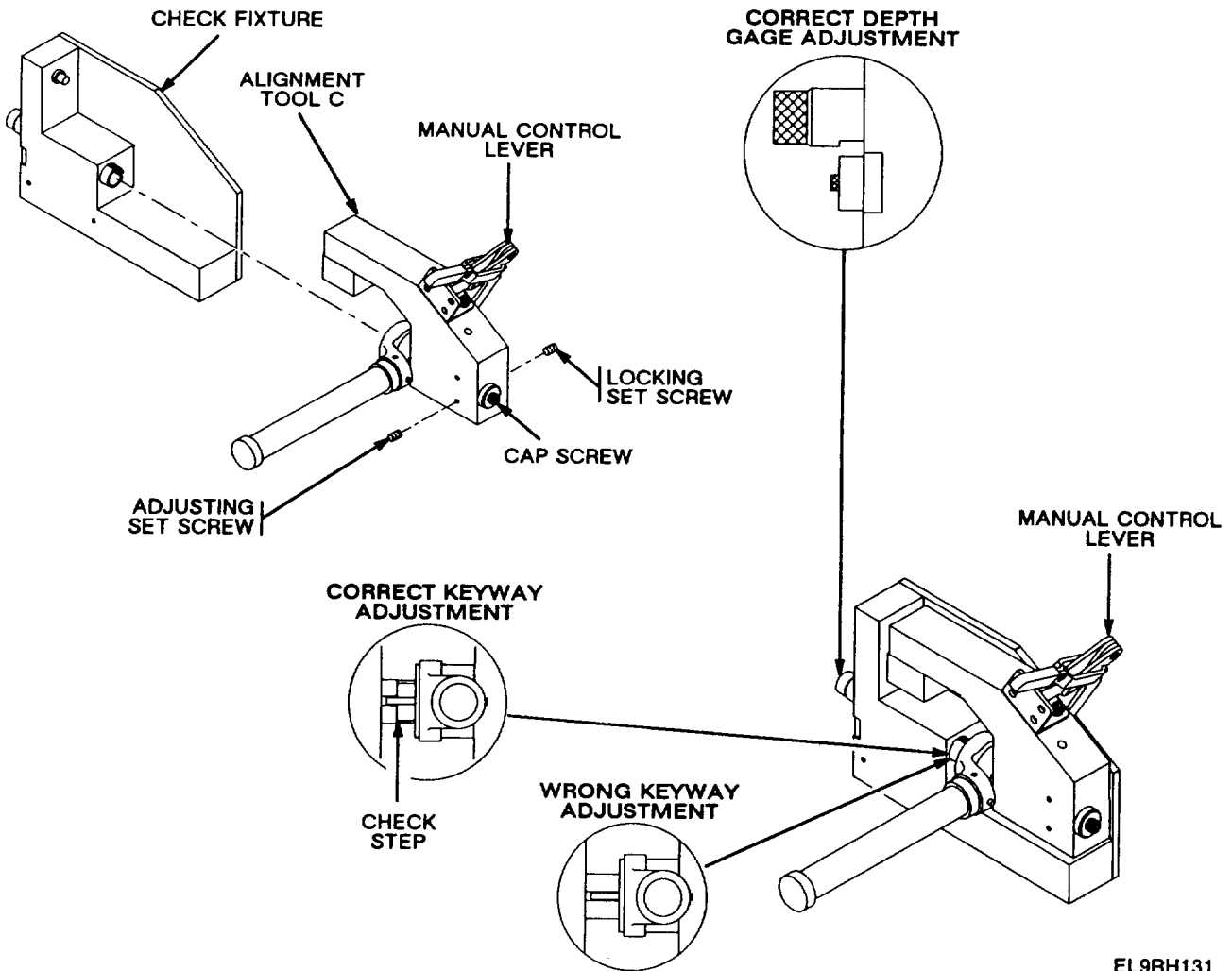
ADJUSTMENT PROCEDURES
FOR ALIGNMENT TOOL C A3018905-1

- CHECK PROCEDURES FOR ALIGNMENT TOOL:
1. PLACE ALIGNMENT TOOL C ON CHECK FIXTURE.
 2. ENGAGE MANUAL CONTROL LEVER TO LOCK ALIGNMENT TOOL IN PLACE.
 3. SLIDE THE RULE DEPTH GAGE ON TO THE SHOULDERED SHAFT.
 4. CHECK FOR PROPER KEYWAY ALIGNMENT.
- ADJUSTMENT PROCEDURES:
5. REMOVE ALIGNMENT TOOL FROM CHECK FIXTURE.

6. LOOSEN ADJUSTING SCREWS AND LOCKING CAP SCREW.
7. PLACE ALIGNMENT TOOL ON CHECK FIXTURE.
8. TO ADJUST KEYWAY UPWARD, LOOSEN FRONT SET SCREW AND TIGHTEN REAR SET SCREW. TO ADJUST KEYWAY DOWNWARD, LOOSEN REAR SET SCREW, THEN TIGHTEN THE FRONT SET SCREW.
9. ENSURE PROPER ADJUSTMENT BY GENTLY MOVING DEPTH GAGE BACK AND FORTH.
10. TIGHTEN THE TWO ADJUSTING SCREWS AND CAP SCREW.
11. DISENGAGE THE MANUAL CONTROL LEVER AND REMOVE ALIGNMENT TOOL FROM THE CHECK FIXTURE.

NOTE

DO NOT FORCE THE CHECK FIXTURE DEPTH GAGE OVER THE ALIGNMENT TOOL KEY.

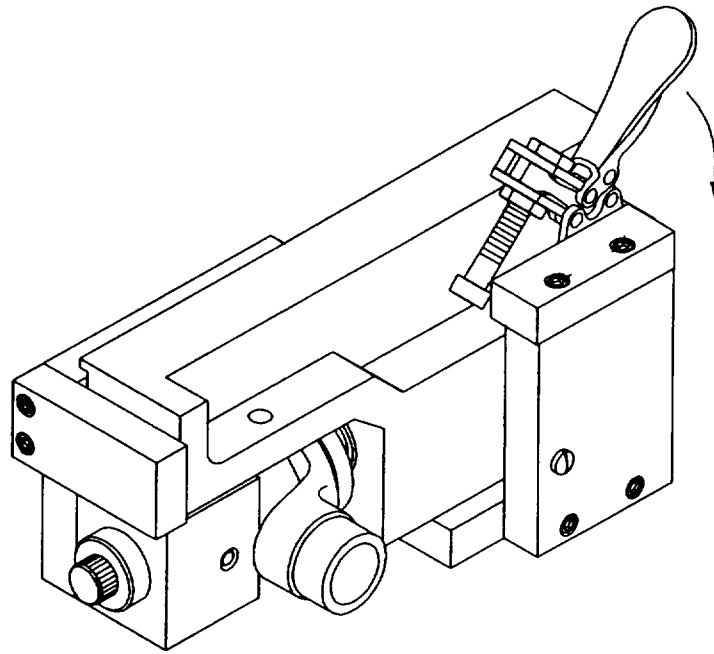


EL9RH131

Figure 6-6. Adjustment of Alignment Tool C

6-4. Alignment Tool RF Amplifier, AM-7238/VRC Case, A3132118-1

- a. *Alignment Tool D*, A3018870-1. Used to align connector P1 of AM-7238/VRC.



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Figure 6-7. Alignment Tool D

b. Check adjustment of Alignment Tool.

ADJUSTMENT PROCEDURES
FOR ALIGNMENT TOOL D A3018870-1

CHECK PROCEDURES FOR ALIGNMENT TOOL:

1. PLACE ALIGNMENT TOOL D ON CHECK FIXTURE.
2. ENGAGE MANUAL CONTROL LEVER ON SLIGNMENT TOOL, TIGHTEN LOCKING SCREW.
3. SLIDE RULE DEPTH GAGE ONTO SHOULDERED SHAFT.
4. CHECK FOR PROPER KEYWAY ALIGNMENT.

ADJUSTMENT PROCEDURES:

5. VIEWING FIXTURE FROM BOTTOM, ADJUST KEYWAY UPWARD BY LOOSENING FRONT SET SCREW AND TIGHTENING THE REAR SET SCREW. TO ADJUST KEYWAY DOWNWARD, LOOSEN THE REAR SET SCREW AND TIGHTEN THE FRONT SET SCREW.

NOTE

DO NOT FORCE THE CHECK FIXTURE DEPTH GAGE OVER THE ALIGNMENT TOOL KEY.

6. GENTLY MOVE THE DEPTH GAGE BACK AND FORTH TO ENSURE PROPER ADJUSTMENT.
7. TIGHTEN THE TWO ADJUSTING SCREWS AND CAP SCREW.
8. DISENGAGE CONTROL LEVER AND REMOVE ALIGNMENT TOOL FROM THE CHECK FIXTURE.

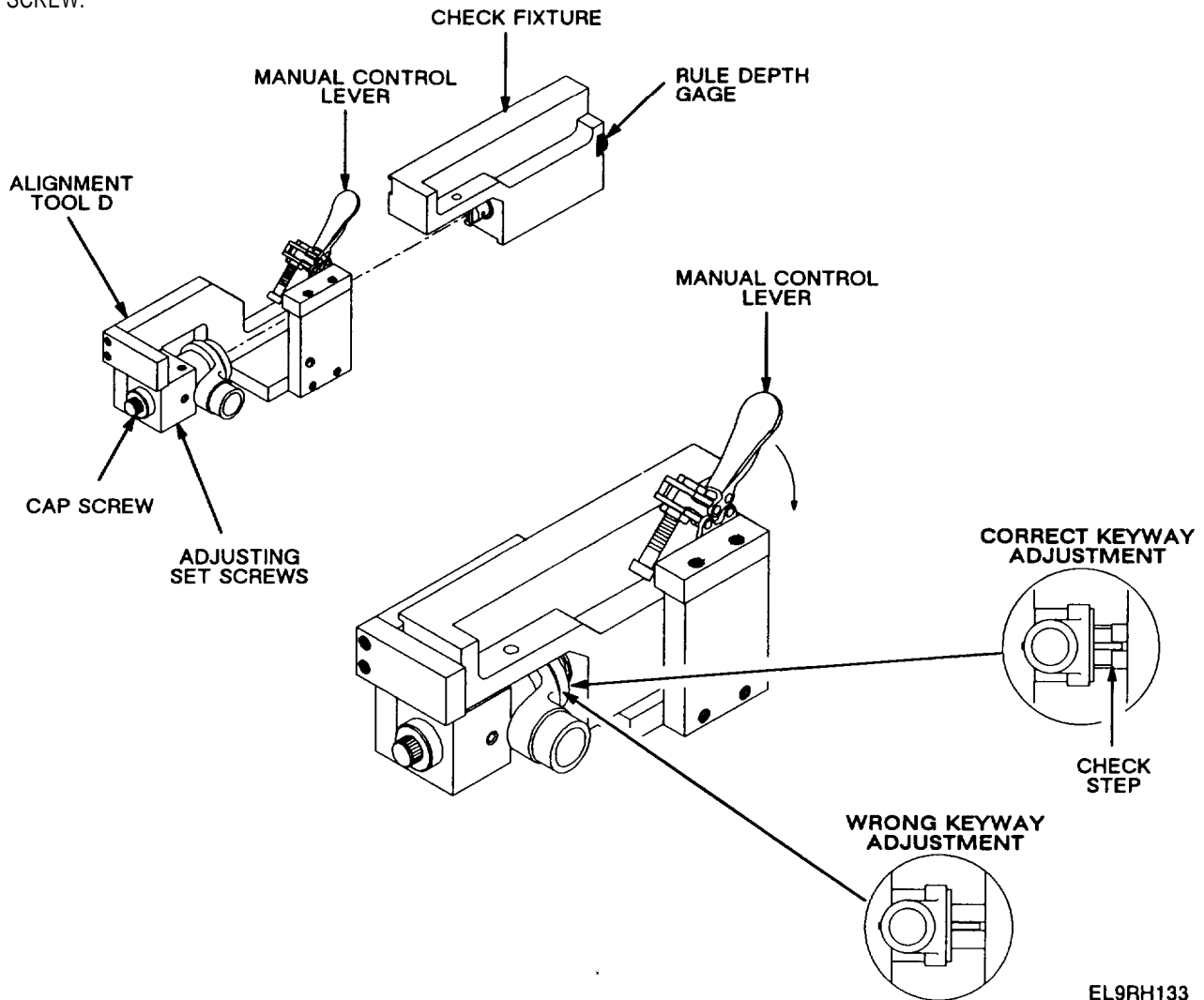
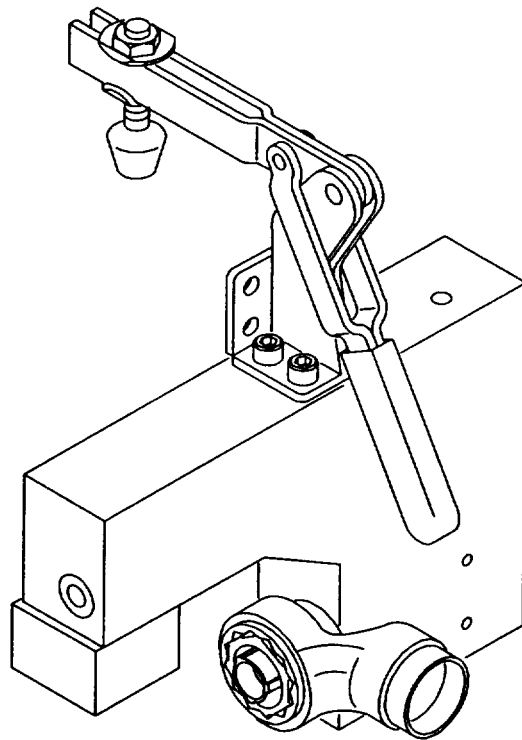


Figure 6-8. Adjustment of Alignment Tool D

EL9RH133

6-5. Alignment Tool Mounting Base, Electrical Equipment MT-6353/VRC Case A3142122-1.

- a. *Alignment Tool I (for connector J4 of MT-6353/VRC), A3142191-1.*



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Figure 6-9. Alignment Tool I

b. Nylon Spacer Adjustment.

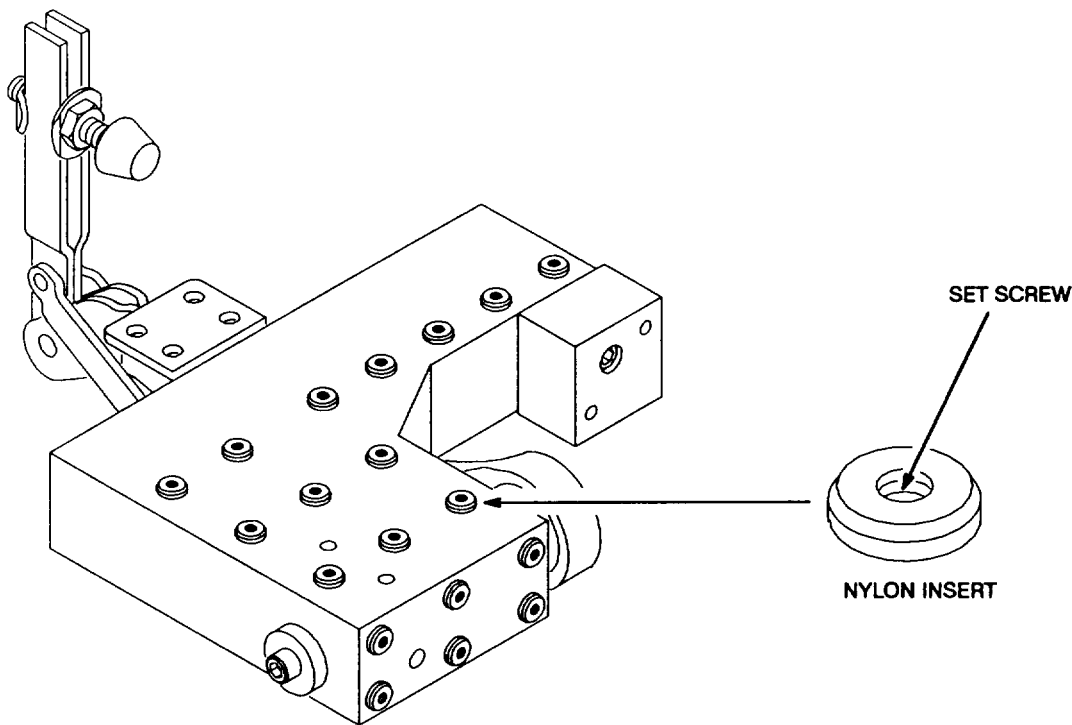
Nylon spacers, located on the side and bottom of the alignment tool, provide a light-friction surface to ease the installation and removal of the alignment tool. These spacers may be replaced when worn or the alignment tool keyways do not line up properly.

REMOVAL

1. Turn set screw inside the spacer clockwise.
2. Remove and replace spacer.

INSTALL

1. Turn set screw inside the spacer counter-clockwise.
2. Seat the spacer in the alignment tool by tapping with a hammer.



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Figure 6-10. Adjustment of Alignment Tool I (Sheet 1 of 2)

ADJUSTMENT

1. Place alignment tool in the set gage and engage keyways.
2. Do Not close the manual control lever.
3. Observe the nylon spacer for any gaps between the nylon spacers and the set gage.
4. Adjust nylon spacers as required to align the keyways.
5. Remove alignment tool from set gage.

c. Alignment Tool Adjustment Procedures

CHECK PROCEDURES FOR ALIGNMENT TOOL:

1. PLACE ALIGNMENT TOOL I ON CHECK FIXTURE.
2. ENGAGE MANUAL CONTROL LEVER.
3. SLIDE THE RULE DEPTH GAGE ON TO THE SHOULDERED SHAFT.
4. CHECK FOR PROPER KEYWAY ALIGNMENT.

ADJUSTMENT PROCEDURES:

5. REMOVE ALIGNMENT TOOL FROM CHECK FIXTURE.

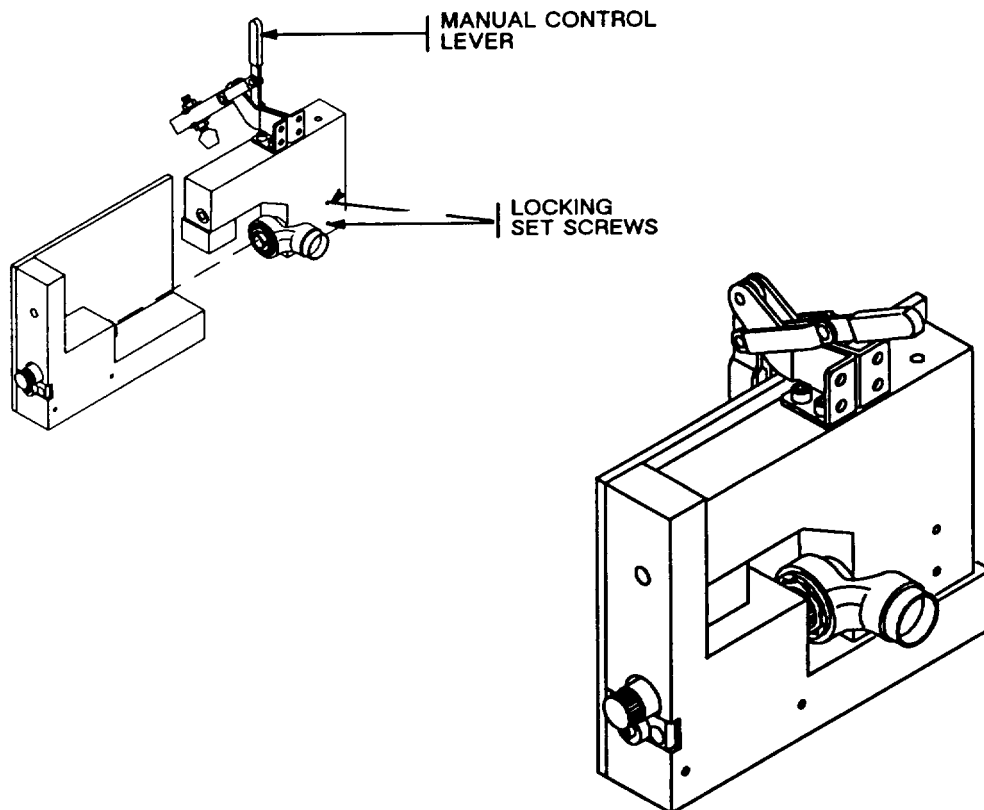
NOTE
DO NOT FORCE THE CHECK FIXTURE DEPTH GAGE OVER THE ALIGNMENT TOOL KEY.

6. LOOSEN THE FOLLOWING SET SCREWS:
TWO ADJUSTING SET SCREWS.
TWO LOCKING SET SCREWS.
CAP SCREW

7. PLACE ALIGNMENT TOOL ON CHECK FIXTURE
8. ENGAGE LOCKING MECHANISM.
9. USE THE ADJUSTING SET SCREWS TO ROTATE THE ALIGNMENT FIXTURE KEY AS FOLLOWS:

TIGHTEN THE TOP SCREW TO MOVE THE KEYWAY COUNTER CLOCKWISE. TIGHTEN THE BOTTOM SCREW TO MOVE THE KEYWAY CLOCKWISE WHILE SLIDING THE DEPTH GAGE BACK AND FORTH TO ENSURING KEYWAY IS PROPERLY ALIGNED WITH DEPTH GAGE.

10. TIGHTEN THE TWO LOCKING SET SCREWS.
11. TIGHTEN THE TWO ADJUSTING SET SCREWS AND CAP SCREW.
12. REMOVE THE ALIGNMENT TOOL FROM THE CHECK FIXTURE.



EL9RH137

Figure 6-10. Adjustment of Alignment Tool I (Sheet 2 of 2)

APPENDIX A REFERENCES

SCOPE

This appendix lists all forms, field manuals, technical manuals, and miscellaneous publication references in this manual.

FORMS

DA Form 2028	Recommended Changes to Publications and Blank Forms.
DA Form 2028-2	Recommended Changes to Equipment Technical Publications.
SF 361	Transportation Discrepancy Report (TDR).
SF 364	Report of Discrepancy
SF 368	Product Quality Deficiency Report

TECHNICAL MANUAL

TM 11-5820-890-10-1	Department of the Army Technical Manual: Operator's Manual SINCGARS Ground Combat Net Radio, ICOM
TM 11-5820-890-10-2	Department of the Army Technical Manual: SINCGARS ICOM Ground Radio Operator's Pocket Size
TM 11-5820-890-10-3	Department of the Army Technical Manual: Operator's Manual SINCGARS Ground Combat Net Radio, NON-ICOM
TM 11-5820-890-10-4	Department of the Army Technical Manual: SINCGARS NON-ICOM Ground Radio Operator's Pocket Size
TM 11-5820-890-20-1	Department of the Army Unit Maintenance Technical Manual: Unit Maintenance Manual Ground ICOM Radio Sets AN/PRC-119A (NSN 5820-01-267-9482), AN/VRC-87A (NSN 5820-01-267-9480), AN/VRC-87C (NSN 5820-01-304-2045), AN/VRC-88A (NSN 5820-01-267-9481), AN/VRC-88C (NSN 5820-01-304-2044), AN/VRC-89A (NSN 5820-01-267-9479), AN/VRC-90A (NSN 5820-01-268-5105), AN/VRC-91A (NSN 5820-01-267-9478), AN/VRC-92A (NSN 5820-01-267-9477)
TM 11-5820-890-20-2	Department of the Army Technical Manual: Unit Maintenance Manual Ground NON-ICOM Radio Sets AN/PRC-119 (NSN 5820-01-151-9915), AN/VRC-87 (NSN 5820-01-151-9916), AN/VRC-87D (NSN 5820-01-351-5259), AN/VRC-88 (NSN 5820-01-151-991 7), AN/VRC-88D (NSN 5820-01-352-1694), AN/VRC-89 (NSN 5820-01-151-991 8), AN/VRC-90 (NSN 5820-01-151-9919), AN/VRC-91 (NSN 5820-01-151-9920), AN/VRC-92 (NSN 5810-01-151-9921),

REFERENCES Continued

TECHNICAL MANUAL

Continued

- TM 11-5820-890-30-1 Department of the Army Technical Manual:
Direct Support Maintenance Manual Ground ICOM Radio Sets
- TM 11-5820-890-30-3 Department of the Army Technical Manual:
Direct Support Maintenance Manual Ground NON-ICOM Radio Sets
- TM 11-5820-890-30-4 Department of the Army Technical Manual:
Direct Support Maintenance Manual Ground NON-ICOM Radio Sets
- TM 11-5820-890-20P Department of the Army Unit Maintenance Repair Parts and Special Tools Lists:
Radio Sets
AN/PRC-119 (NSN 5820-01-151-9915), AN/PRC-119A (NSN 5820-01-267-9482),
AN/VRC-87 (NSN 5820-01-151-9916), AN/VRC-87A (NSN 5820-01-267-9480),
AN/VRC-87C (NSN 5820-01-304-2045), AN/VRC-88 (NSN 5820-01-151-9917),
AN/VRC-88A (NSN 5820-01-267-9481), AN/VRC-87D (NSN 5820-01-351-5259),
AN/VRC-88C (NSN 5820-01-304-2044), AN/VRC-88D (NSN 5820-01-352-1694),
AN/VRC-89 (NSN 5820-01-151-9918), AN/VRC-89A (NSN 5820-01-267-9479),
AN/VRC-90 (NSN 5820-01-151-9919), AN/VRC-90A (NSN 5820-01-268-5105),
AN/VRC-91 (NSN 5820-01-151-9920), AN/VRC-91A (NSN 5820-01-267-9478),
AN/VRC-92 (NSN 5810-01-151-9921), AN/VRC-92A (NSN 5820-01-267-9477),
- TM 11-5820-890-30P-1 Department of the Army Unit and Direct Support Maintenance Repair Parts and
Special Tools Lists: Radio Sets
AN/PRC-119 (NSN 5820-01-151-9915), AN/PRC-119A (NSN 5820-01-267-9482),
AN/VRC-87 (NSN 5820-01-151-9916), AN/VRC-87A (NSN 5820-01-267-9480),
AN/VRC-87C (NSN 5820-01-304-2045), AN/VRC-88 (NSN 5820-01-151-9917),
AN/VRC-88A (NSN 5820-01-267-9481), AN/VRC-87D (NSN 5820-01-351-5259),
AN/VRC-88C (NSN 5820-01-304-2044), AN/VRC-88D (NSN 5820-01-352-1694),
AN/VRC-89 (NSN 5820-01-151-9918), AN/VRC-89A (NSN 5820-01-267-9479),
AN/VRC-90 (NSN 5820-01-151-9919), AN/VRC-90A (NSN 5820-01-268-5105),
AN/VRC-91 (NSN 5820-01-151-9920), AN/VRC-91A (NSN 5820-01-267-9478),
AN/VRC-92 (NSN 5810-01-151-9921), AN/VRC-92A (NSN 5820-01-267-9477)
- TM 11-5820-914-40P Department of the Army General Support Maintenance Repair Parts and
Special Tools Lists: Radio Sets
AN/PRC-119 (NSN 5820-01-151-9915), AN/PRC-119A (NSN 5820-01-267-9482),
AN/VRC-87 (NSN 5820-01-151-9916), AN/VRC-87A (NSN 5820-01-267-9480),
AN/VRC-87C (NSN 5820-01-304-2045), AN/VRC-88 (NSN 5820-01-151-9917),
AN/VRC-88A (NSN 5820-01-267-9481), AN/VRC-87D (NSN 5820-01-351-5259),
AN/vRC-88C (NSN 5820-01-304-2044), AN/VRC-88D (NSN 5820-01-352-1694),
AN/VRC-89 (NSN 5820-01-151-9918), AN/VRC-89A (NSN 5820-01-267-9479),
AN/VRC-90 (NSN 5820-01-151-9919), AN/VRC-90A (NSN 5820-01-268-5105),
AN/VRC-91 (NSN 5820-01-151-9920), AN/VRC-91A (NSN 5820-01-267-9478),
AN/VRC-92 (NSN 5810-01-151-9921), AN/VRC-92A (NSN 5820-01-267-9477)

REFERENCES Continued

TECHNICAL MANUAL

Continued

- TM 11-6625-2773-10 Operators Manual Test Station, Electronic Equipment AN/USM-410(V)2 (NSN 6625-01-069-4223)
- TM 11-6625-2773-30-1 Direct Support Maintenance Manual Test Station Electronic Equipment AN/USM-410(V)2 (NSN 6625-01-069-4223)
- TM 11-6625-3038-10 Operators Manual Test Set, Digital Card Tester AN/USM-465A (NSN 6625-01-126-2473)
- TM 11-6625-3038-20 Organizational Maintenance Manual Test Set, Digital Card Tester AN/USM-465A (NSN 6625-01-126-2473)
- TM 11-6625-3094-24 Unit, Direct Support, and General Support Maintenance Manual, SINCGARS Interconnect Devices (ICD) used with AN/USM-410(V)2 and ANAJSM-465A.
- TM 750-244-2 Procedure for Destruction of Electronics Materiel to Prevent Enemy Use (Electronics Command).

MISCELLANEOUS PUBLICATIONS

- AMDF (AR 708-1) IAW Packaging Segment of AMDF by NSN.
- AR 735-244-2 Reporting of Item and Packaging Discrepancies.
- DA Pam 25-30 Consolidated Index of Army Publications and Blank Forms.
- FM 21-11 Artificial Respiration.
- DA Pam 738-750 The Army Maintenance Management System (TAMMS).
- MIL-HDBK-263 Electrostatic Discharge Control Handbook for Protection of Electrical and Electronic Parts, Assemblies, and Equipment (Excluding Electrically Initiated Explosive Devices) Metric.
- SB 11-624 Warning Notice for Vehicles in Which Radios are Mounted.
- TB 43-0127 Maintenance and Repair of Printed Circuit Boards and Printed Circuit Boards.
- TB 43-0128 CECOM Test Program Set (TPS) Index.

**APPENDIX B
EXPENDABLE/DURABLE SUPPLIES
AND MATERIALS LIST**

Section I. INTRODUCTION

B-1. SCOPE.

This listing is for informational purposes only and is not authority to requisition the listed items. These items are authorized to you by CTA 50-970, Expendable/Durable Items (Except Medical, Class V, Repair Parts, and Heraldic Items) or CTA 8-100, Army Medical Department Expendable/Durable Items.

B-2. EXPLANATION OF COLUMNS.

- a. Column (1)-Item Number, This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (e.g. "use cleaning compound, item 5, App. B").
- b. Column (2)--Level. This column identifies the lowest level of maintenance that requires the listed item.

(enter as applicable)

C--Operator/Crew

O--Organizational Maintenance

F--Direct Support Maintenance

H--General Support Maintenance

- c. Column (3)-National Stock Number. This is the National Stock Number assigned to the item; use it to request or requisition the listed item.

d. Column (4)-Description. Indicates the Federal item name and, if required, a description to identify the item. The last line for each item indicates the Commercial and Government Entity Code (CAGEC) in parentheses followed by the part number.

e. Column (5)-Unit of Measure (U/M), Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e. g., ea, in, pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

Section II.
EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

(1) ITEM NO.	(2) LEVEL	(3) NSN	(4) DESCRIPTION (CAGEC) PART NUMBER	(5) U/M
1	H		Adhesive, cyanoacrylate (80063) A3018529-1	AR
2	H		Adhesive (81349) TYPE II CLASS III	AR
3	H		Adhesive, sealant (81349) TYPE I CLEAR	AR
4	H	6810-00-286-5435	Alcohol (81348) TTI 735	AR
5	H	6515-00-059-5235	Applicator disposable (81348) GG~A 616	AR
6	H	8010-00-133-5706	Enamel, electrical insulation (81349) MIL-E-22118	PG
7	H		Epoxy coating kit (80063) A3013074-1	AR
8	H		Insulating comp, electrical (81349) TYPE AR	AR
9	H	8030-00-081-2339	Sealing compound (05972) Grade A	AR
10	H	8030-00-981-7006	Sealing compound (05972) Grade HV	AR
11	H	8030-00-900-2373	Sealing compound primer, (05972) PRIMER N	AR
12	H	6850-00-177-5094	Silicone compound, clear (81349) MIL-S-8660	AR
13	H	6850-00-927-9461	Silicone compound, Heatsink (81349) MIL-C-47113	AR
14	H	5975-01-345-3315	Sleeve marker (80063) A3013106-1	EA
15	H	5975-01-345-3316	Sleeve marker (80063) A3013106-2	EA
16	H	5975-01-345-3317	Sleeve marker (80063) A3013106-3	EA
17	H	5975-01-345-3318	Sleeve marker (80063) A3013106-4	EA
18	H	5975-01-345-3319	Sleeve marker (80063) A3013106-5	EA
19	H	5975-01-345-3320	Sleeve marker (80063) A3013106-6	EA

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST - CONT.

(1) ITEM NO.	(2) LEVEL	(3) NSN	(4) DESCRIPTION (CAGEC) PART NUMBER	(5) U/M
20	H		Sleeving, electrical (81349) A3013102-09162	AR
21	H		Sleeving, electrical (81349) A3013102-09202	AR
22	H	5970-00-812-2974	Sleeving, insulation (81349) M23053/5-103-0	FT
23	H	5970-01-222-5422	Sleeving, insulation (81349) M23053/5-207-0	FT
24	H	5970-01-162-6918	Sleeving, insulation (81349) M23053/5-305-0	FT
25	H	5970-01-304-3188	Sleeving, insulation (81349) M23053/8-005-0	FT
26	H		Sleeving, electrical, (81349) TYPE 1 CLB 12GA	AR
27	H		Sleeving, electrical, (81349) TYPE 1 CLB 14 GA	AR
28	H		Sleeving, electrical, (81349) TYPE 1 CLB 16GA	AR
29	H		Sleeving, electrical, (81349) TYPE 1 CLB 17GA	AR
30	H		Sleeving, electrical, (81349) TYPE 1 CLB 18GA	AR
31	H		Sleeving, electrical, (81349) TYPE 1 CLB 24GA	AR
32	H	3439-00-555-4629	Solder (81348) SN60WRP0-032 1lb	AR
33	H	3439-01-233-1124	Solder (81348) SN63WRMAP0.025	AR
34	H	5975-00-168-7979	Strap, tiedown, electrical (96906) MS3367-4-1	AR
35	H	5975-00-727-5153	Strap, tiedown, electrical (96906) MS3367-4-9	AR

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST - CONT.

(1) ITEM NO.	(2) LEVEL	(3) NSN	(4) DESCRIPTION (CAGEC) PART NUMBER	(5) U/M
36	H	5970-00-110-4483	Thermal compound (05820) TYPE 120	AR
37	H	6810-00-664-0387	Tricloroethane (18876) 801032	GAL
38	H		Tubing, non-metallic (80063) A3013051-1	AR
39	H		Tubing, non-metallic (80063) A3013501-2	AR
40	H	6145-00-059-5602	Wire, electrical, Black, 19 strands 24 gage (81349) M16878/4BEE0	AR
41	H	6145-00-450-6068	Wire, electrical, Brown, 19 strands 24 gage (81349) M1687814BEE1	AR
42	H		Wire, electrical, Red, 19 strands 24 gage (81349) M16878/4BEE2	AR
43	H	6145-00-445-6456	Wire, electrical, Orange, 19 strands 24 gage (81349) M16878/4BEE3	AR
44	H	6145-00-059-5604	Wire, electrical, Yellow, 19 strands 24 gage (81349) M16878/4BEE4	AR
45	H	6145-00-267-9466	Wire, electrical, Green, 19 strands 24 gage (81349) M16878/4BEE5	AR
46	H	6145-00-226-6718	Wire, electrical, Blue, 19 strands 24 gage (81349) M16878/4BEE6	AR
47	H	6145-00-226-6721	Wire, electrical, Violet, 19 strands 24 gage (81349) M16878/4BEE7	AR
48	H	6145-00-331-4779	Wire, electrical, Gray, 19 strands 24 gage (81349) M16878/4BEE8	AR
49	H	6145-00-808-4849	Wire, electrical, White, 19 strands 24 gage (81349) M16878/4BEE9	AR

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST - CONT.

(1) ITEM NO.	(2) LEVEL	(3) NSN	(4) DESCRIPTION (CAGEC) PART NUMBER	(5) U/M
50	H		Wire, electrical, White/Black, 19 strands 24 gage (81349) M16878/4BEE930	AR
51	H	6145-00-435-2308	Wire, electrical, White/Brown, 19 strands 24 gage (81349) M16878/4BEE91	AR
52	H	6145-00-756-2859	Wire, electrical, White/Red, 19 strands 24 gage (81349) M16878/4BEE92	AR
53	H	6145-00-435-2307	Wire, electrical, White/Orange, 19 strands 24 gage (81349) M16878/4BEE93	AR
54	H	6145-00-445-6435	Wire, electrical, White/Yellow, 19 strands 24 gage (81349) M16878/4BEE94	AR
55	H	6145-00-452-4122	Wire, electrical, White/Green, 19 strands 24 gage (81349) M16878/4BEE95	AR
56	H	6145-00-452-3876	Wire, electrical, White/Blue, 19 strands 24 gage (81349) M16878/4BEE96	AR
57	H	6145-00-450-6401	Wire, electrical, White/Violet, 19 strands 24 gage (81349) M16878/4BEE97	AR
58	H		Wire, electrical, White/Gray, 19 strands 24 gage (81349) M16878/4BEE98	AR
59	H	6145-00-062-6683	Wire, electrical, Black, 19 strands 22 gage (81349) M16878/4FE0	AR
60	H	6145-00-817-3609	Wire, electrical, Brown, 19 strands 22 gage (81349) M16878/4BFE1	AR
61	H	6145-00-062-6685	Wire, electrical, Red, 19 strands 22 gage (81349) M16878/4BFE2	AR
62	H	6145-00-062-6684	Wire, electrical, Orange, 19 strands 22 gage (81349) M16878/4BFE3	AR

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST - CONT.

(1) ITEM NO.	(2) LEVEL	(3) NSN	(4) DESCRIPTION (CAGEC) PART NUMBER	(5) U/M
63	H	6145-00-062-6682	Wire, electrical, Yellow, 19 strands 22 gage (81349) M16878/4BFE4	AR
64	H		Wire, electrical, Green, 19 strands 22 gage (81349) M16878/4BFE5	AR
65	H	6145-00-062-6691	Wire, electrical, Blue, 19 strands 22 gage (81349) M16878/4BFE6	AR
66	H	6145-00-062-5700	Wire, electrical, White, 19 strands 22 gage (81349) M16878/4BFE9	AR
67	H	6145-00-059-5613	Wire, electrical, White/Black, 19 strands 22 gage (81349) M16878/4BFE90	AR
68	H	6145-01-046-2154	Wire, electrical, White/Red, 19 strands 22 gage (81349) M16878/4BFE92	AR
69	H	6145-00-347-1032	Wire, electrical, White/Orange, 19 strands 22 gage (81349) M16878/4BFE93	AR
70	H	6145-00-080-3774	Wire, electrical, White/Yellow, 19 strands 22 gage (81349) M16878/4BFE94	AR
71	H	6145-00-614-4065	Wire, electrical, White/Green, 19 strands 22 gage (81349) M16878/4BFE95	AR
72	H	6145-00-080-3777	Wire, electrical, White/Blue, 19 strands 22 gage (81349) M16878/4BFE96	AR
73	H		Wire, electrical, White/Violet, 19 strands 22 gage (81349) M16878/4BFE97	AR
74	H	6145-00-809-9215	Wire, electrical, White/Gray, 19 strands 22 gage (81349) M16878/4BFE98	AR
75	H	6145-00-062-6686	Wire, electrical, Black, 19 strands 20 gage (81349) M16878/4BGEO	AR

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST - CONT.

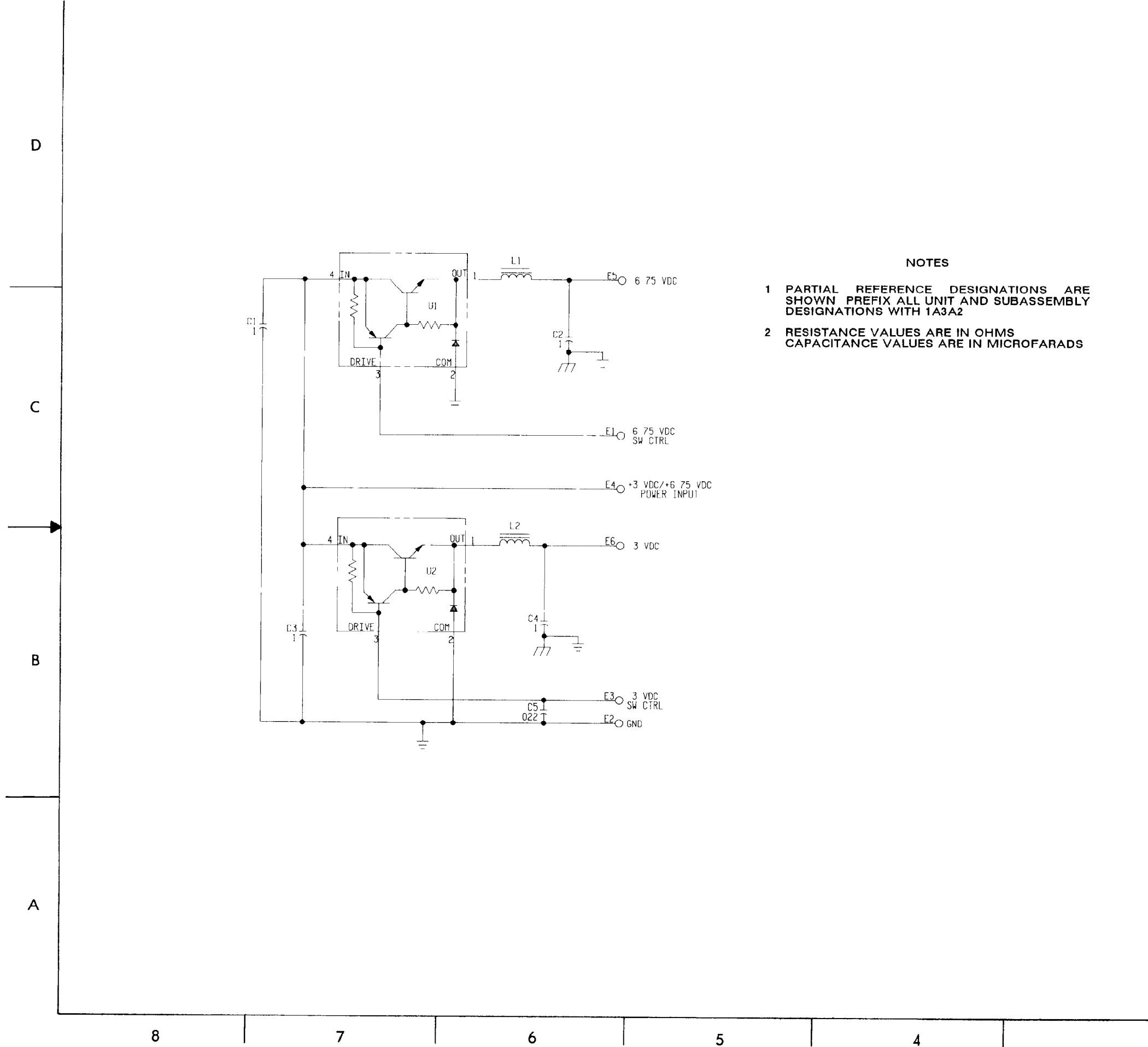
(1) ITEM NO.	(2) LEVEL	(3) NSN	(4) DESCRIPTION (CAGEC) PART NUMBER	(5) U/M
76	H	6145-00-062-5698	Wire, electrical, Brown, 19 strands 20 gage (81349) M16878/4BGE1	AR
77	H	6145-00-062-5699	Wire, electrical, Red, 19 strands 20 gage (81349) M16878/4BGE2	AR
78	H	6145-00-062-6687	Wire, electrical, Orange, 19 strands 20 gage (81349) M16878/4BGE3	AR
79	H	6145-00-817-3597	Wire, electrical, Yellow, 19 strands 20 gage (81349) M16878/4BGE4	AR
80	H	6145-00-087-4645	Wire, electrical, Green, 19 strands 20 gage (81349) M16878/4BGE5	AR
81	H	6145-00-062-6690	Wire, electrical, Blue, 19 strands 20 gage (81349) M16878/4BGE6	AR
82	H	6145-00-062-6688	Wire, electrical, Violet, 19 strands 20 gage (81349) M16878/4BGE7	AR
83	H	6145-01-137-0895	Wire, electrical, Gray, 19 strands 20 gage (81349) M1687814BGE8	AR
84	H	6145-00-088-0404	Wire, electrical, White, 19 strands 20 gage (81349) M16878/4BGE9	AR
85	H	6145-00-815-4169	Wire, electrical, White/Black, 19 strands 20 gage (81349) M16878/4BGE90	AR
86	H	6145-00-681-8378	Wire, electrical, White/Brown, 19 strands 20 gage (81349) M16878/4BGE91	AR
87	H	6145-01-036-3643	Wire, electrical, White/Red, 19 strands 20 gage (81349) M16878/4BGE92	AR
88	H		Wire, electrical, White/Orange, 19 strands 20 gage (81349) M16878/4BGE93	AR

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST - CONT.

(1) ITEM NO.	(2) LEVEL	(3) NSN	(4) DESCRIPTION (CAGEC) PART NUMBER	(5) U/M
89	H	6145-01-046-5564	Wire, electrical, White/Yellow, 19 strands 20 gage (81349) M16878/4BGE94	AR
90	H	6145-01-046-3431	Wire, electrical, White/Green, 19 strands 20 gage (81349) M16878/4BGE95	AR
91	H	6145-01-047-0528	Wire, electrical, White/Blue, 19 strands 20 gage (81349) M16878/4BGE96	AR
92	H	6145-00-104-7786	Wire, electrical, White/Violet, 19 strands 20 gage (81349) M16878/4BGE97	AR
93	H	6145-00-809-9555	Wire, electrical, White/Gray, 19 strands 20 gage (81349) M16878/4BGE98	AR
94	H	6145-00-813-1738	Wire, electrical, Black, 19 strands 18 gage (81349) M16878/4BHE0	AR
95	H	6145-00-727-0021	Wire, electrical, Red, 19 strands 18 gage (81349) M16878/4BHE2	AR
96	H	6145-00-347-1171	Wire, electrical, Black, 19 strands 16 gage (81349) M16878/4BJE0	AR
97	H	6145-00-553-8517	Wire, electrical, Red, 19 strands 16 gage (81349) M16878/4BJE2	AR
98	H	6145-00-688-5402	Wire, electrical, Yellow, 19 strands 16 gage (81349) M16878/4BJE4	AR
99	H		Wire, electrical (81349) M27072/105-L1	AR
100	H		Wire, electrical (81349) M27072/105-L3	AR
101	H		Wire, electrical (81349) M27072/105-L4	AR
102	H		Wire, electrical (81349) M27072/105-L5	AR
103	H		Wire, electrical (81349) M27072/105-L6	AR

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST - CONT.

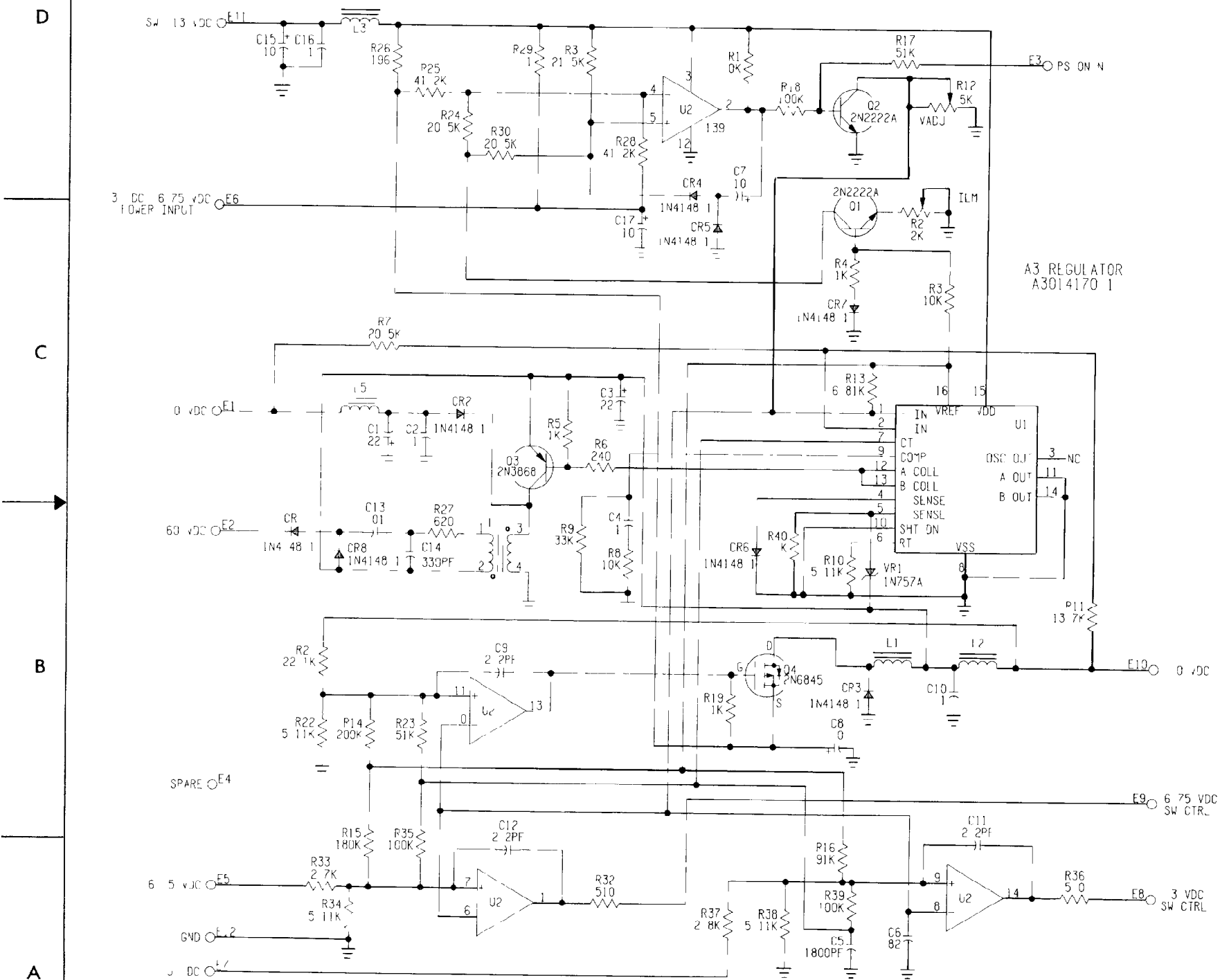
(1) ITEM NO.	(2) LEVEL	(3) NSN	(4) DESCRIPTION (CAGEC) PART NUMBER	(5) U/M
104	H		Wire, electrical (81 349) M27072/105-L9	AR
105	H	6145-00-839-7432	Wire, copper (81348) QQW343S20S1T	AR
106	H	6145-00-160-4775	Wire, copper (81348) QQW343S22S1T	AR
107	H	6145-00-577-3420	Wire, copper (81348) QQW343S24S1T	AR
108	H	6145-00-809-9207	Wire, electrical, White/Brown, 19 strands 22 gage (81349) M16878/4BFE91	AR
109	H	6145-00-062-3701	Wire, electrical, Violet, 19 strands 22 gage (81349) M16878/4BFE7	AR
110	H	6145-01-047-0527	Wire, electrical, Wht/Blk/Orn, 19 strands 20 gage (81349) M16878/4BGE903	AR
111	H	6145-00-295-2812	Wire, electrical, White, 19 strands 16 gage (81349) M16878/4BJE9	AR



NOTES

- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 1A3A2
- 2 RESISTANCE VALUES ARE IN OHMS CAPACITANCE VALUES ARE IN MICROFARADS

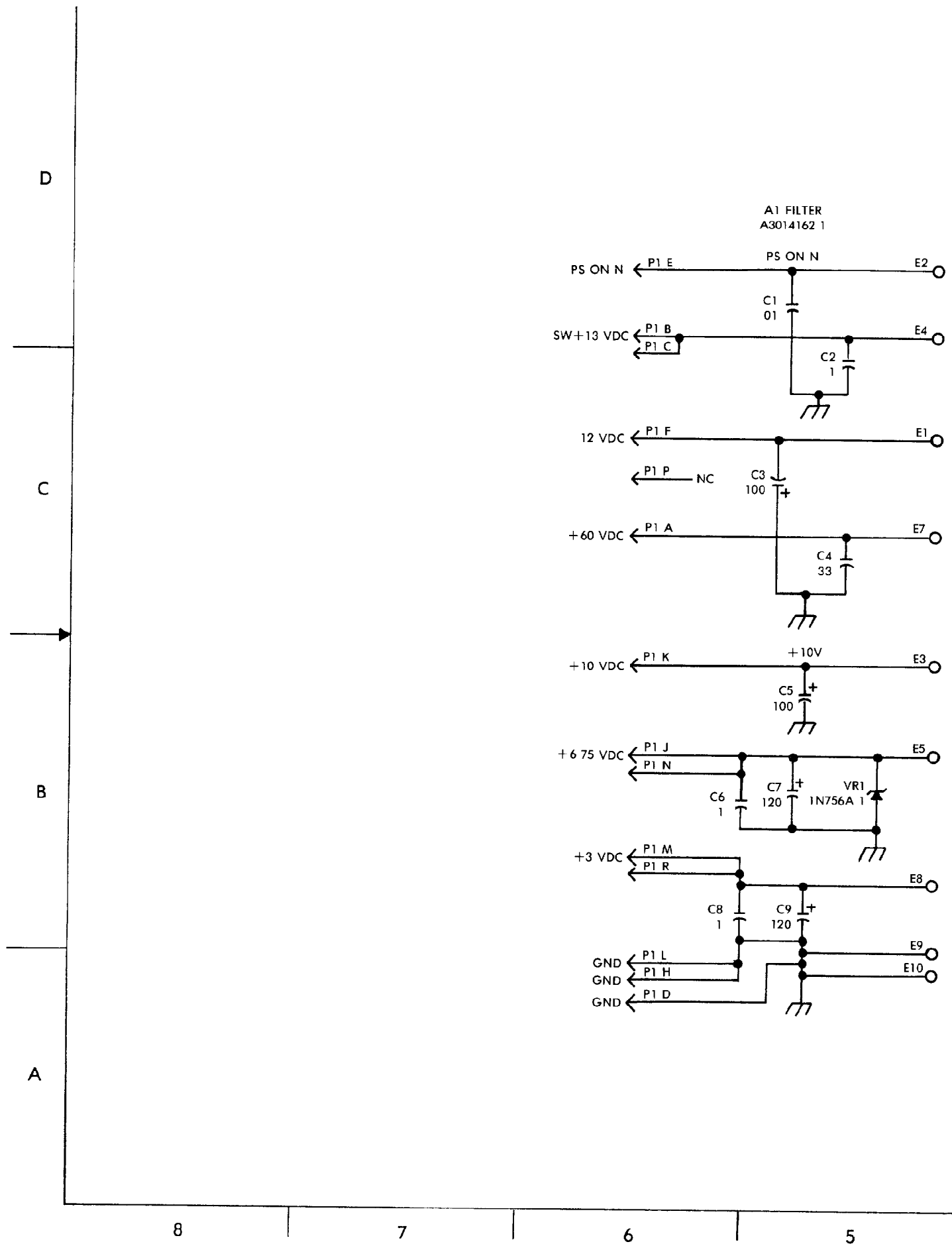
FO-1 CCA-Power Supply Switching A3014156-1 or A3018807-1 Schematic Diagram



- NOTES
- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 1A3
 - 2 RESISTANCE VALUES ARE IN OHMS CAPACITANCE VALUES ARE IN MICROFARADS

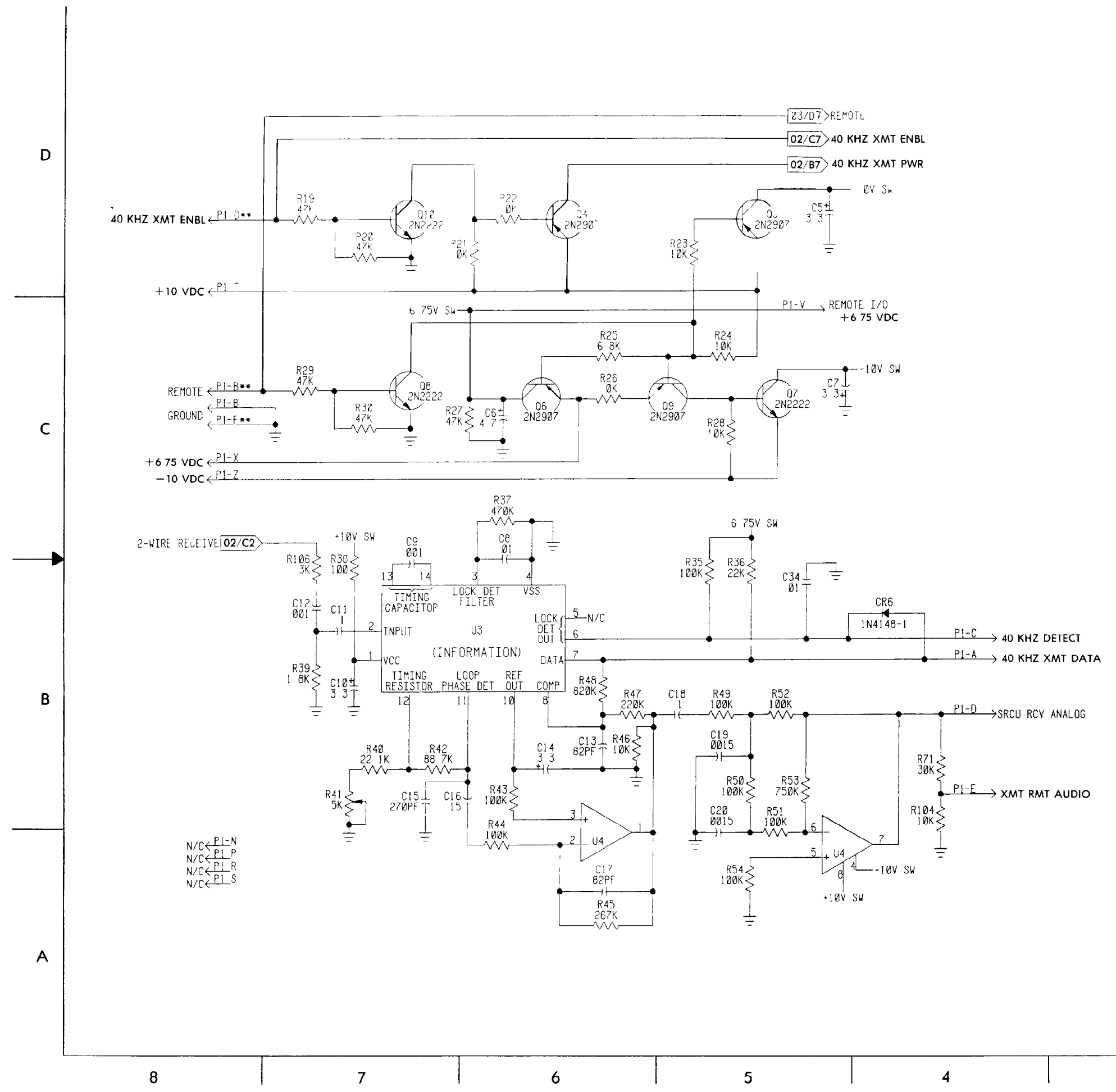
FO-2 Power Supply Regulator A3014170-1 Schematic Diagram

8 | 7 | 6 | 5 | 4 | 3



- NOTES**
- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 1A3
 - 2 RESISTANCE VALUES ARE IN OHMS CAPACITANCE VALUES ARE IN MICROFARADS

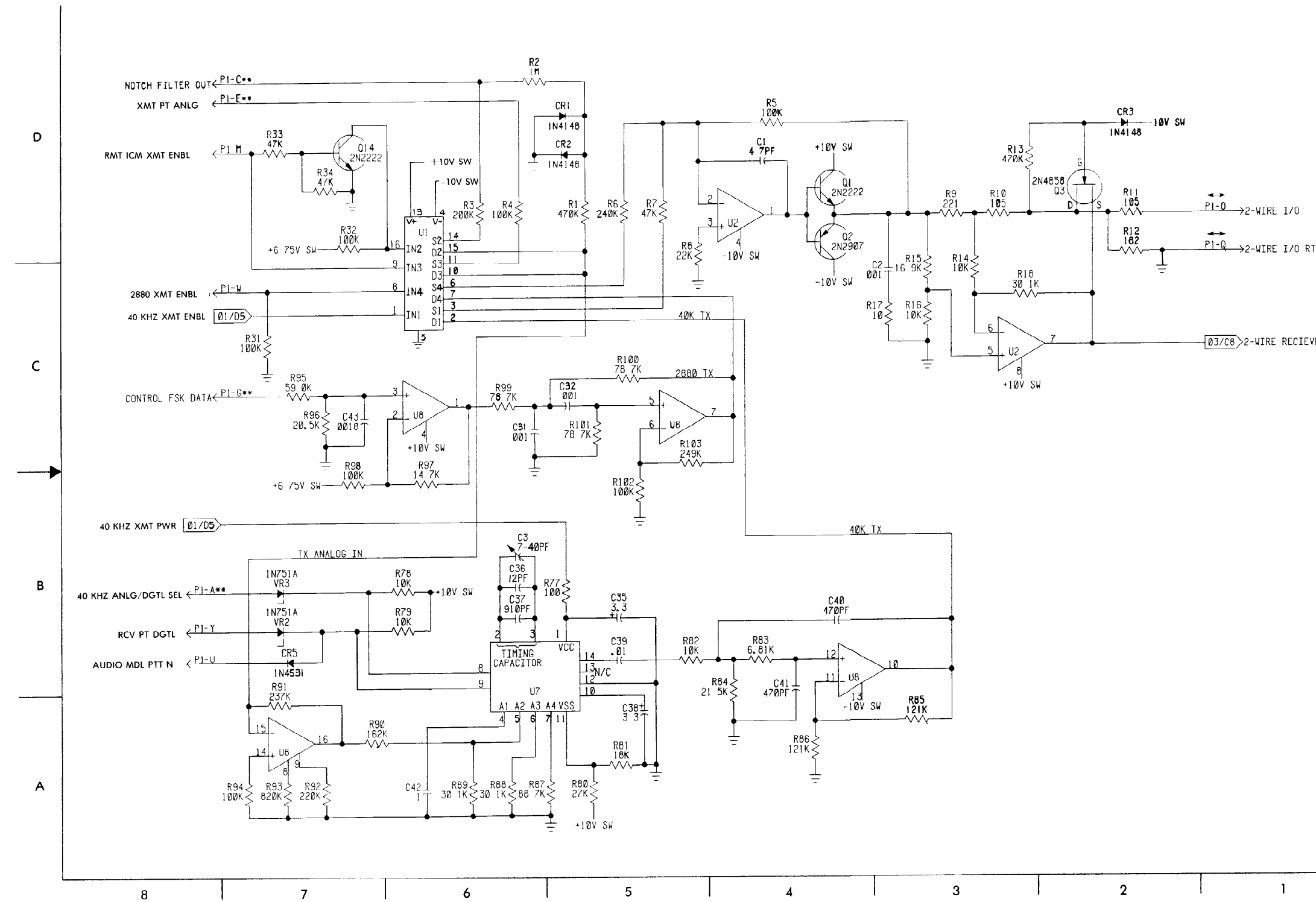
FO-3 Power Supply Filter A3014162-1 Schematic Diagram



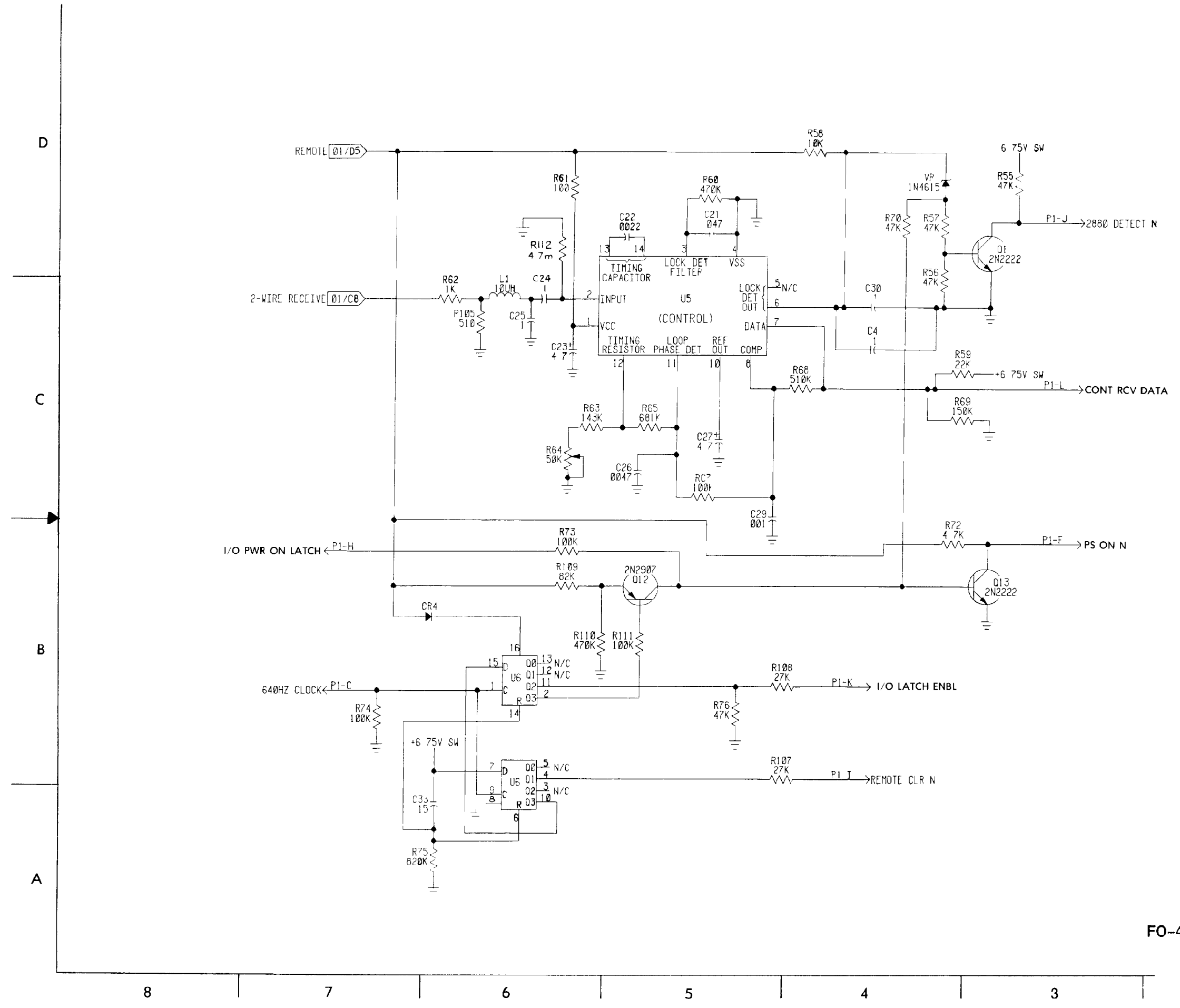
NOTES

- 1 PARTIAL REFERENCES ARE SHOWN PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 1A6
- 2 RESISTANCE VALUES ARE IN OHMS CAPACITANCE VALUES ARE IN MICROFARADS
- 3 TEXT WITHIN OFF-SHEET SYMBOL INDICATES SHEET NUMBER AND ZONE CONTROL OF CONTINUING SIGNAL LINE
- 4 DOUBLE ASTRICK [**] FOLLOWING A LETTER INDICATES THAT THE LETTER IS IN LOWER CASE

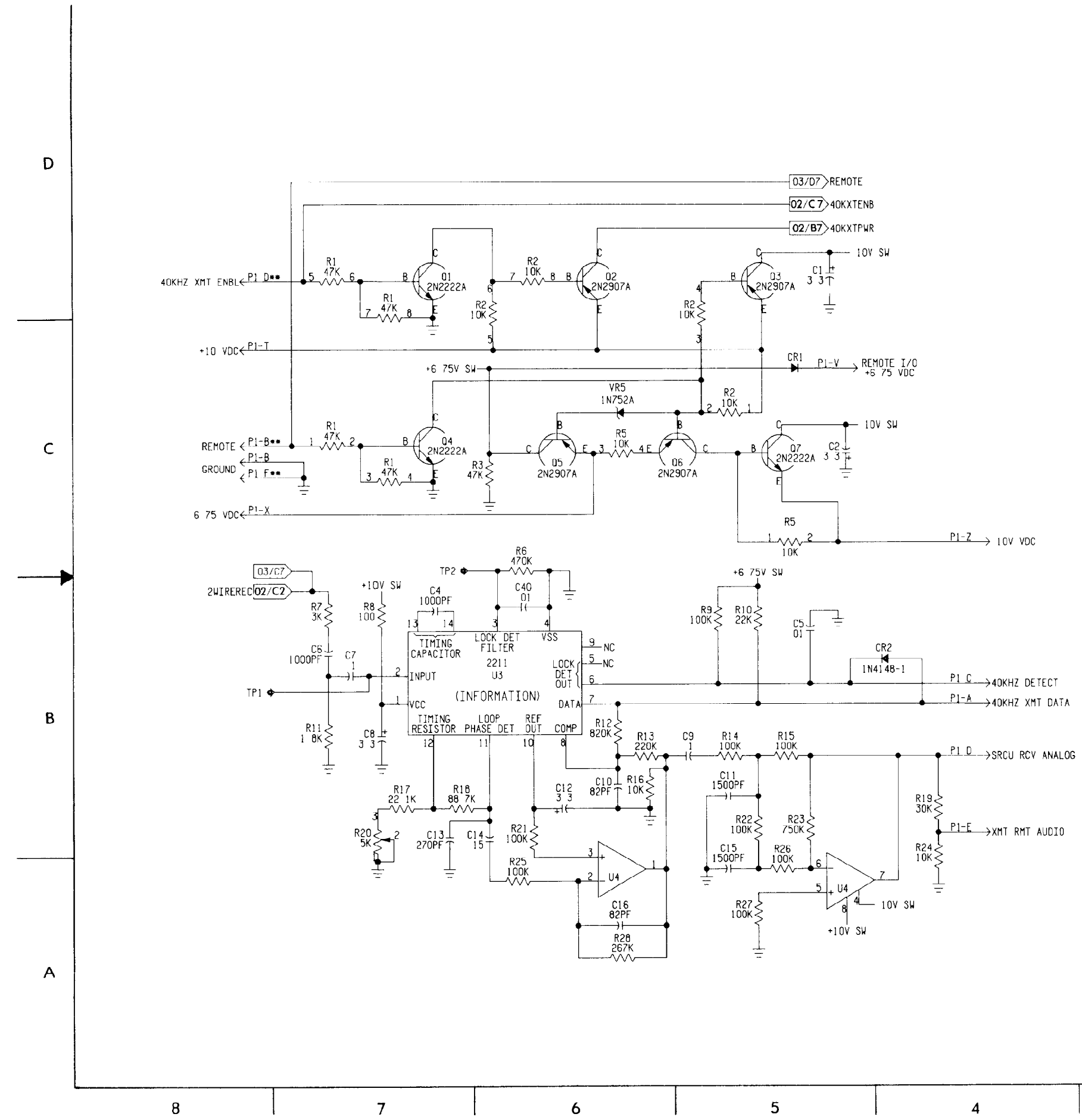
FO-4 Two-wire Interface A3014140-1 Schematic Diagram (Sheet 1 of 3)



FO-4 Two-wire Interface A3014140-1 Schematic Diagram (Sheet 2 of 3)



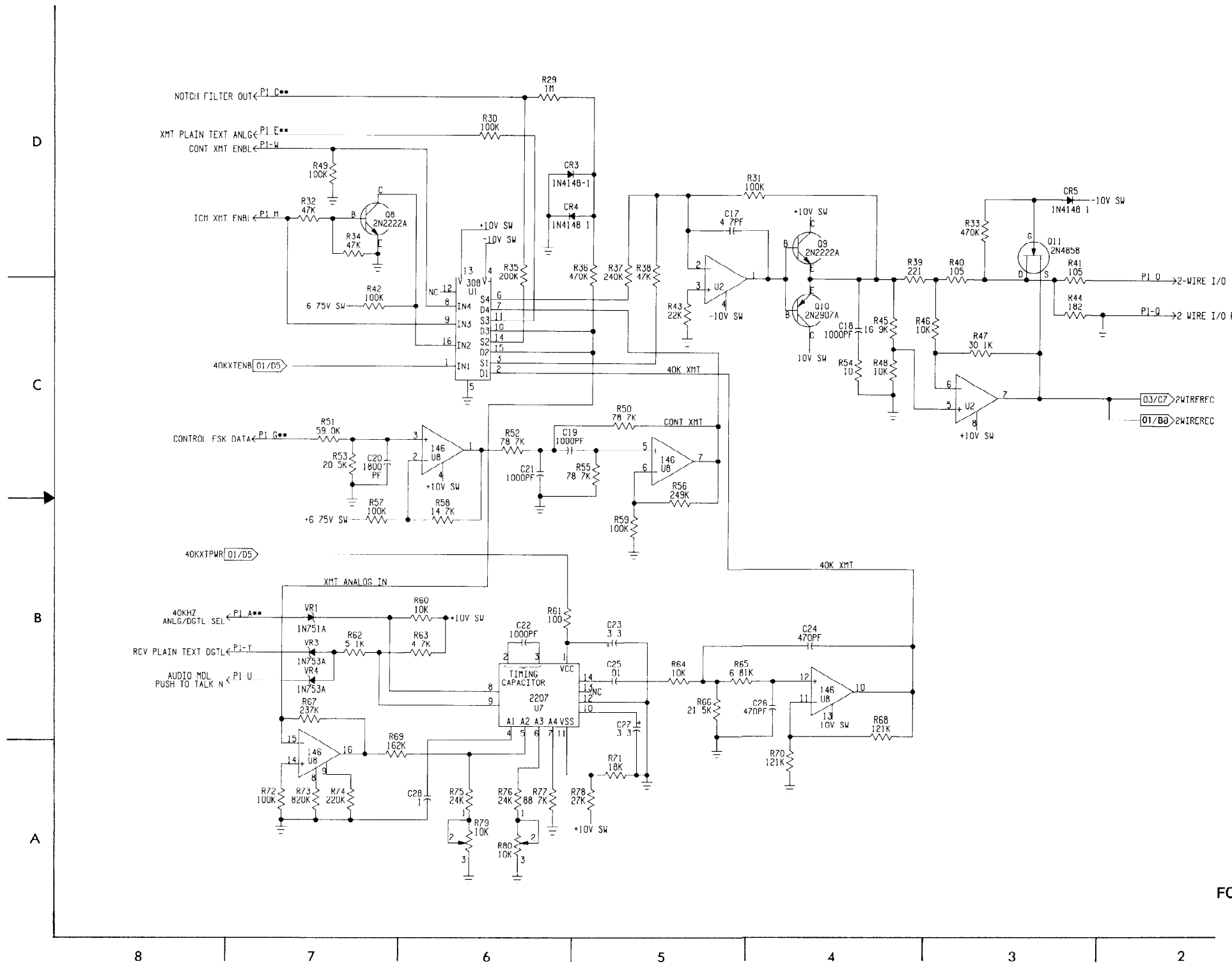
FO-4 Two-wire Interface A3014140-1 Schematic Diagram (Sheet 3 of 3)



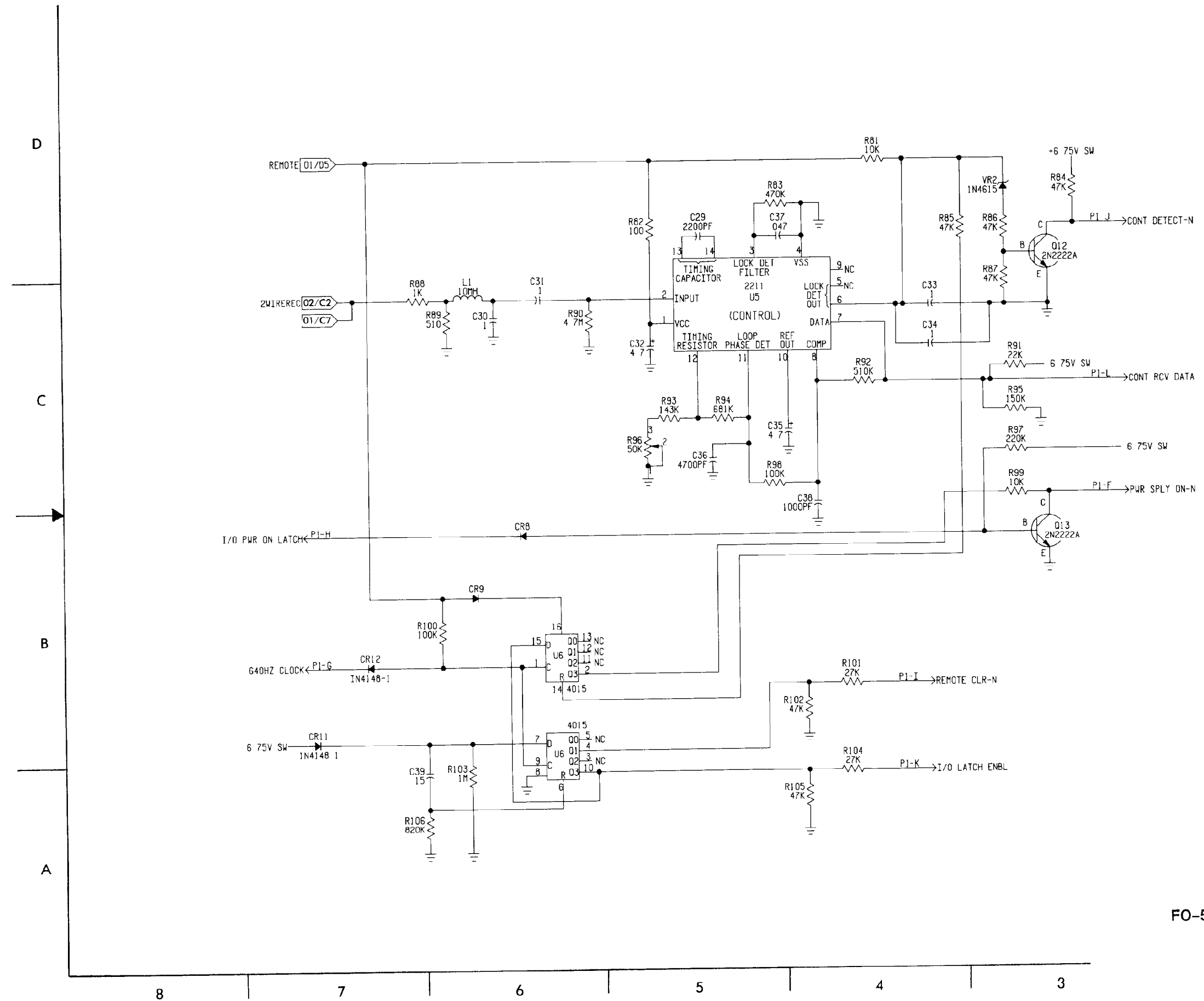
NOTES

- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 1A6
- 2 RESISTANCE VALUES ARE IN OHMS CAPACITANCE VALUES ARE IN MICROFARADS
- 3 TEXT WITHIN OFF-SHEET SYMBOL INDICATES SHEET NUMBERS AND ZONE CONTROL OF CONTINUING SIGNAL LINE
- 4 DOUBLE ASTRICK [**] FOLLOWING A LETTER INDICATES THAT THE LETTER IS IN LOWER CASE

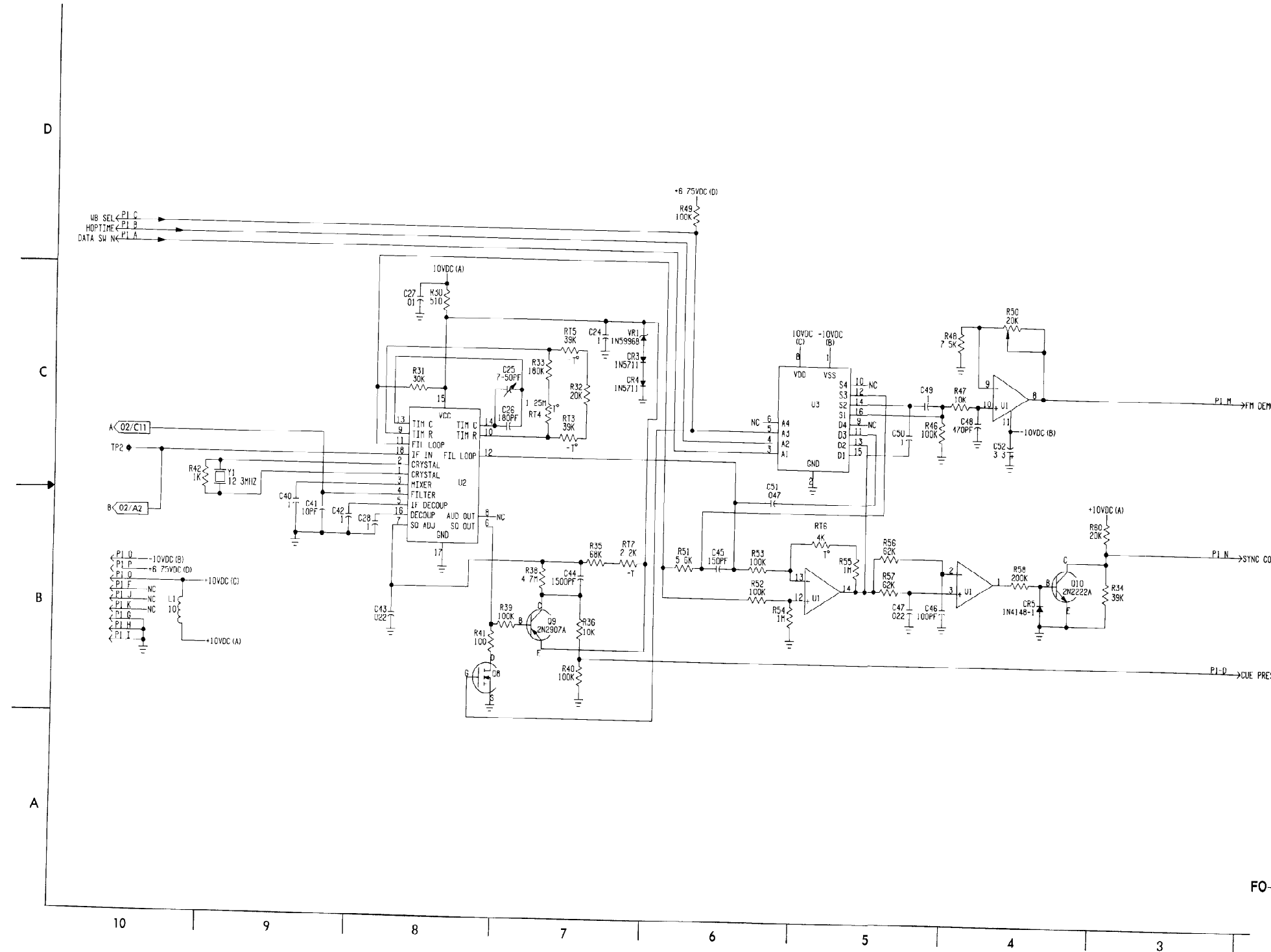
FO-5 CCA-Two-wire Interface A3018726-1 Schematic Diagram (Sheet 1 of 3)



FO-5 CCA-Two-wire Interface A3018726-1 Schematic Diagram (Sheet 2 of 3)

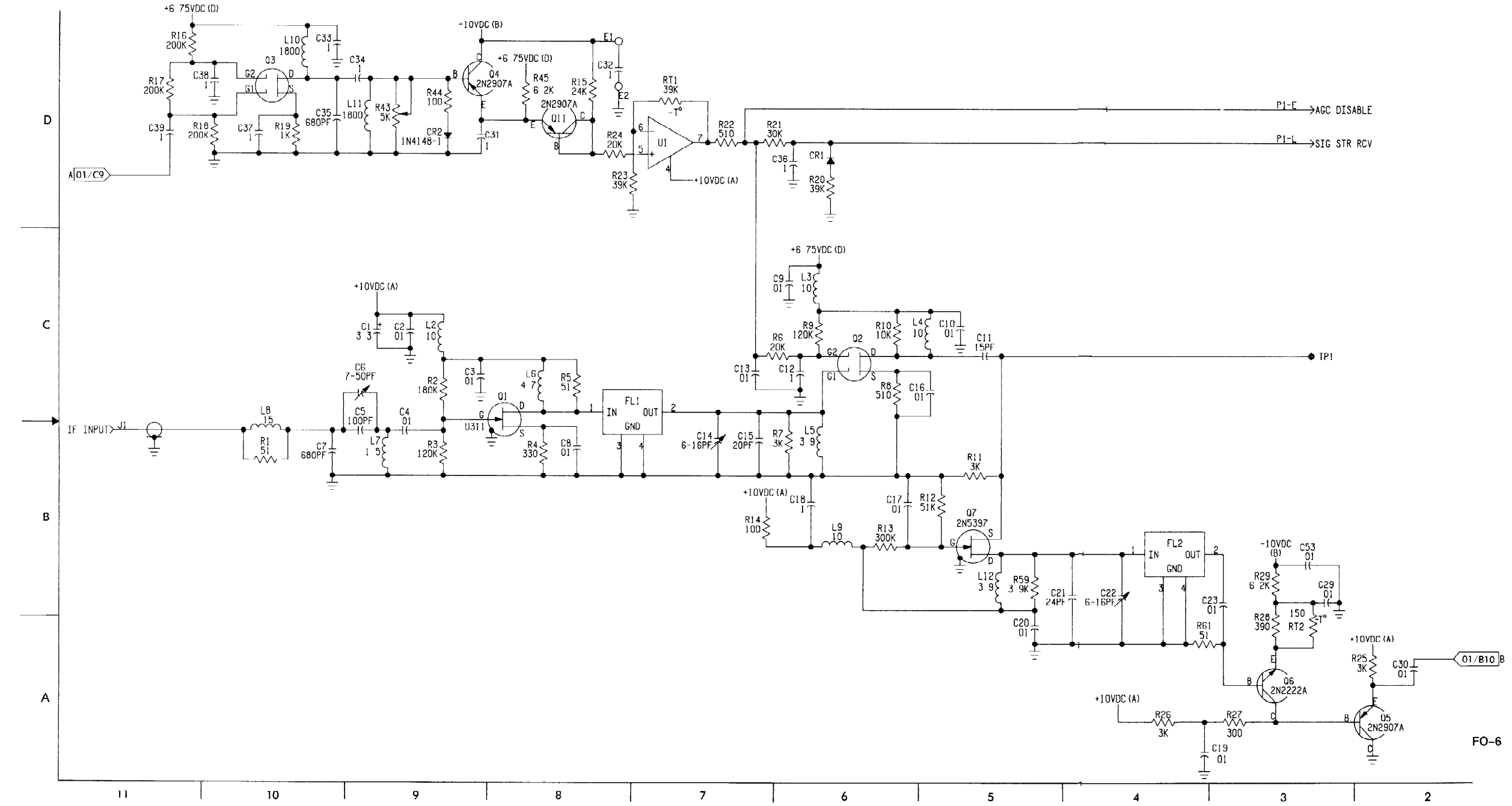


FO-5 CCA-Two-wire Interface A3018726-1 Schematic Diagram (Sheet 3 of 3)

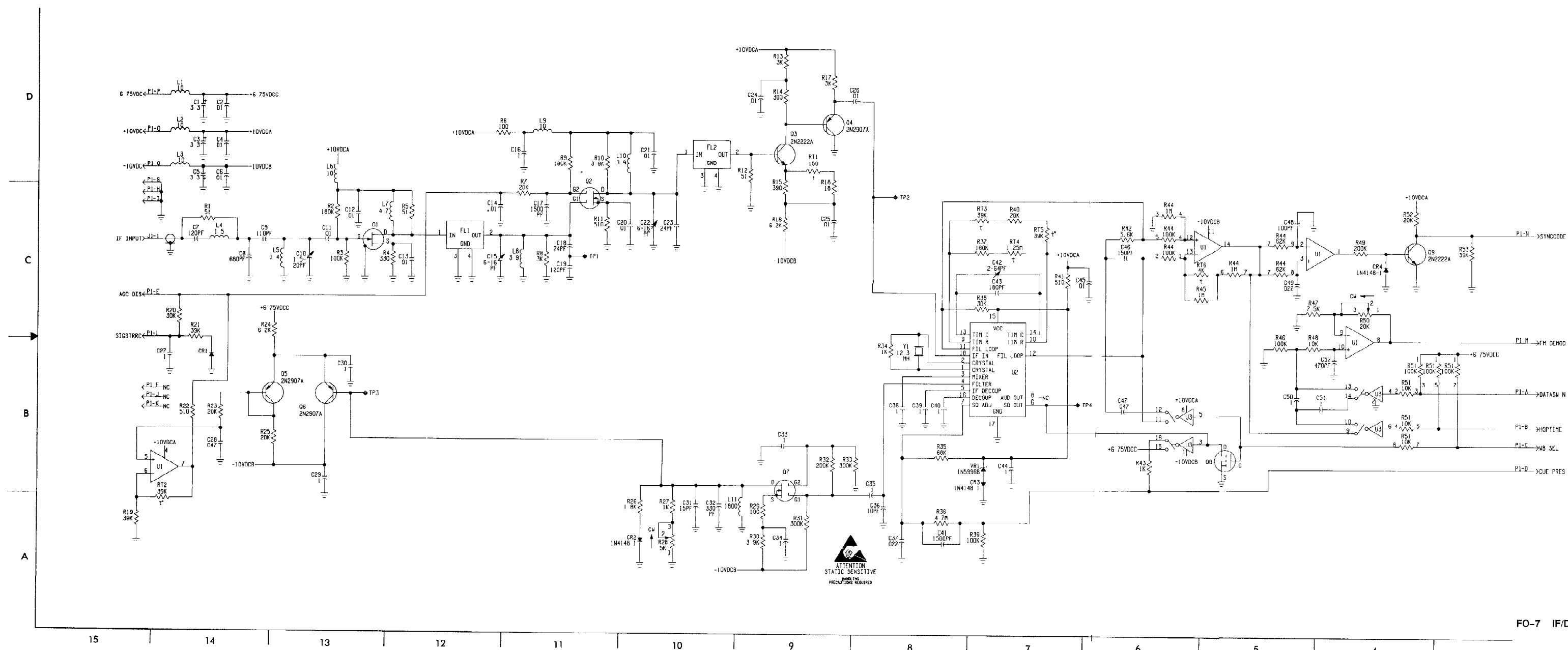


- NOTES
- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH TAB A1
 - 2 RESISTANCE VALUES ARE IN OHMS. CAPACITANCE VALUES ARE IN MICROFARADS. INDUCTANCE VALUES ARE IN MICROHENRIES
 - 3 TEXT IN BOATS SYMBOL () INDICATES SHEET NUMBER AND ZONE LOCATION OF CONTINUING SIGNAL LINES
 - 4 THIS IF/DEMULATOR USES CCA-IF/DEMULATOR A3014207-1

FO-6 IF/Demodulator A3013360-1 Schematic Diagram (Sheet 1 of 2)

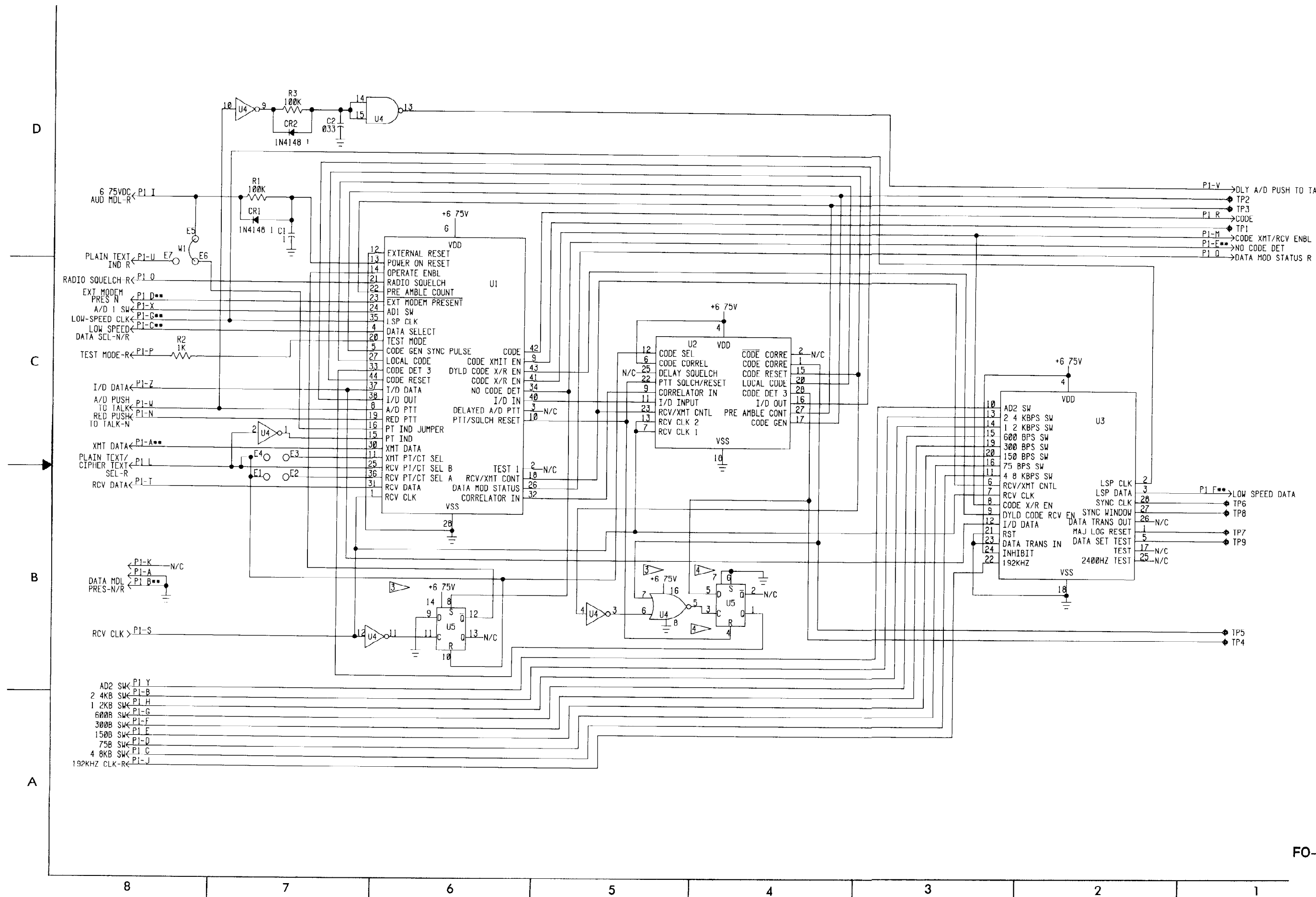


FO-6 IF/Demodulator A3013360-1 Schematic Diagram (Sheet 2 of 2)



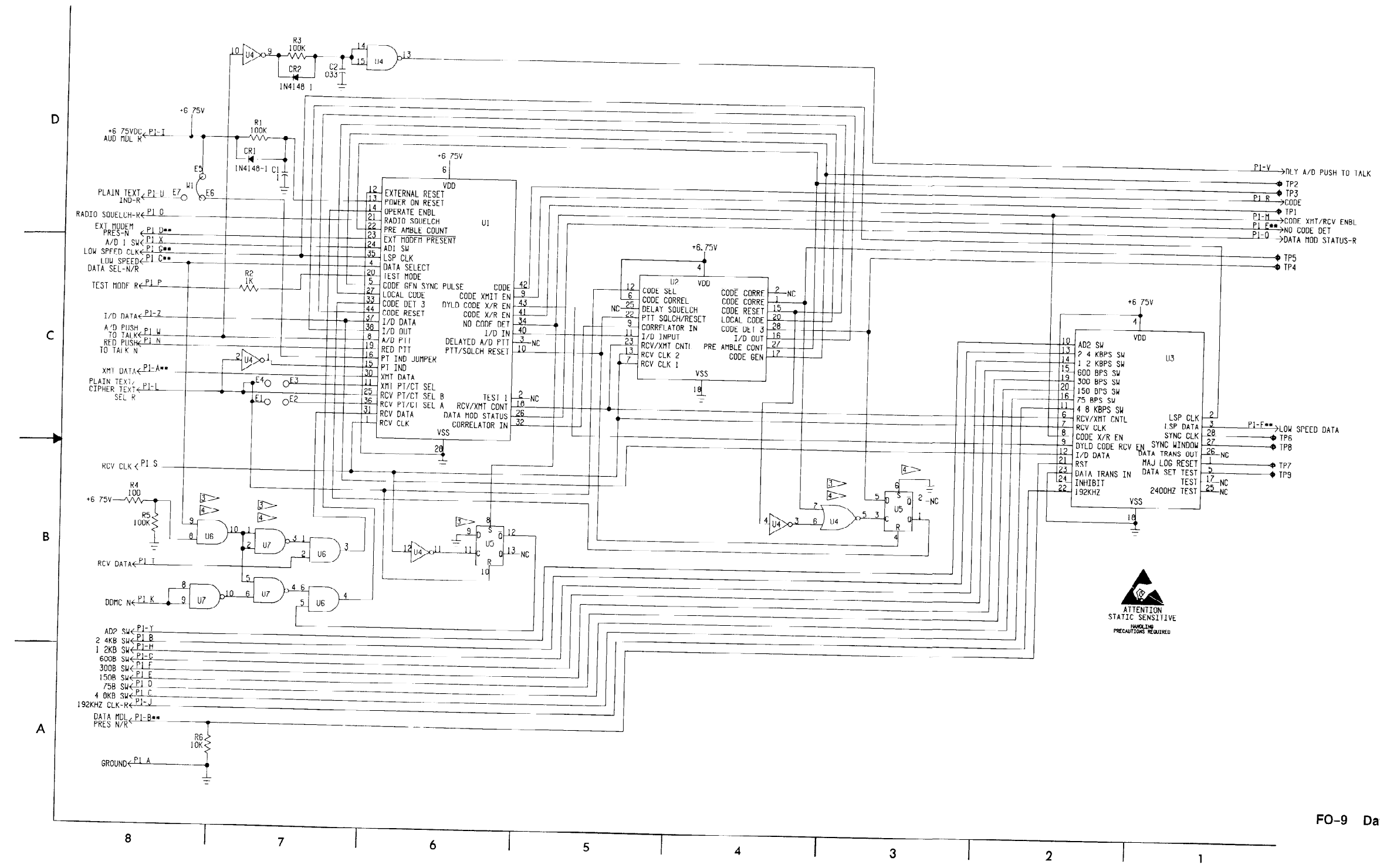
- NOTES
- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH TAB.
 - 2 RESISTANCE VALUES ARE IN OHMS. CAPACITANCE VALUES ARE IN MICROFARADS. INDUCTANCE VALUES ARE IN MICROHENRIES.
 - 3 THIS IF/DEMOMULATOR USES CCA-IF/DEMOMULATOR A3018758-1.

FO-7 IF/Demodulator A3018758-1 Schematic Diagram



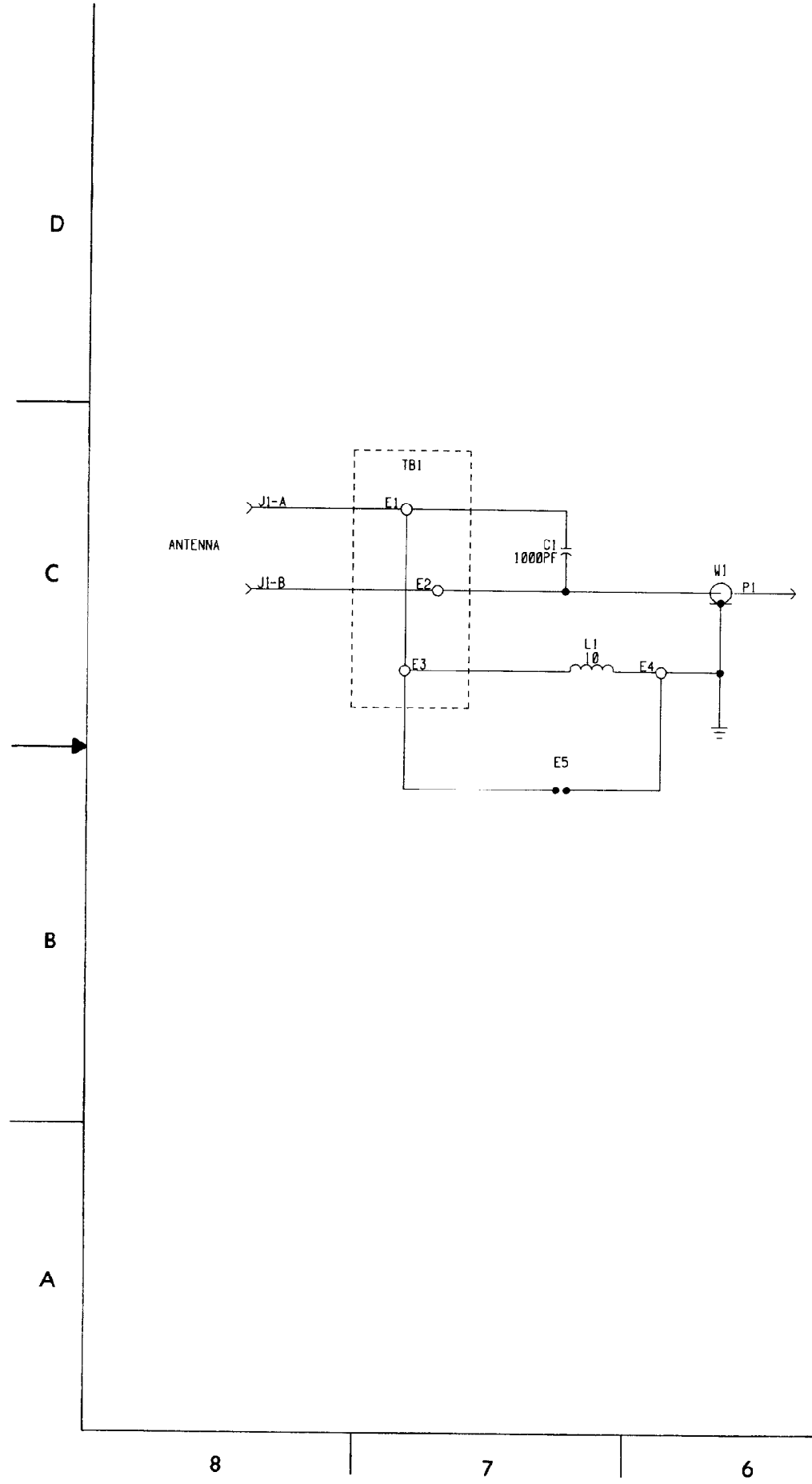
- NOTES
- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 1A15.
 - 2 RESISTANCE VALUES ARE IN OHMS. CAPACITANCE VALUES ARE IN MICROFARADS. INDUCTANCE VALUES ARE IN MICROHENRIES.
 - 3 DOUBLE ASTERISK (*) FOLLOWING LETTER INDICATES THAT THE LETTER IS LOWER CASE.

FO-8 Data Rate Adapter A3014168-1 Schematic Diagram



- NOTES
- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 1A15.
 - 2 RESISTANCE VALUES ARE IN OHMS. CAPACITANCE VALUES ARE IN MICROFARADS. INDUCTANCE VALUES ARE IN MICROHENRIES.

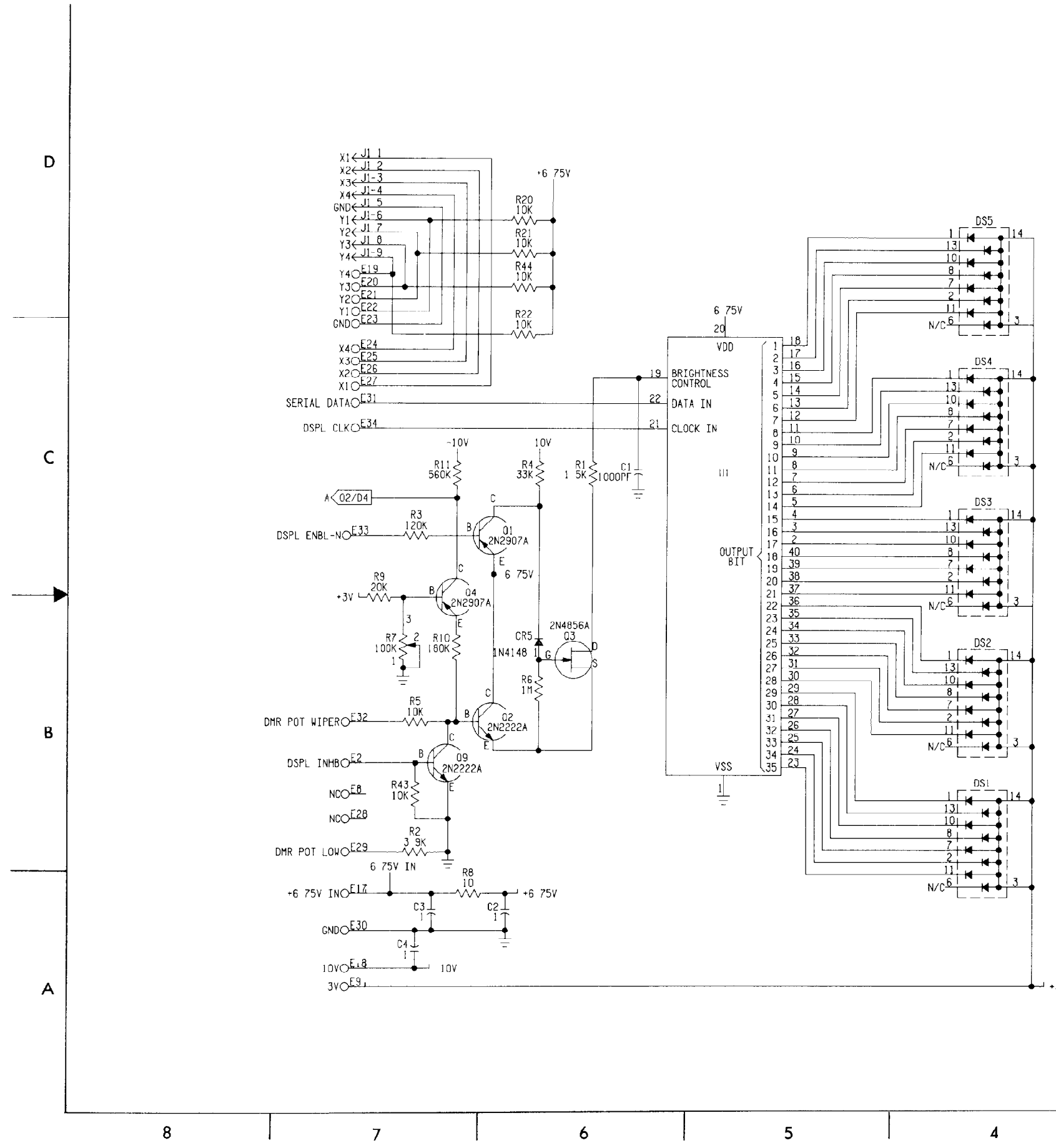
FO-9 Data Rate Adapter A3019045-1 Schematic Diagram



NOTES

- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 1A16A1
- 2 CAPACITANCE VALUES ARE IN MICROFARADS INDUCTANCE VALUES ARE IN MICROHENRIES

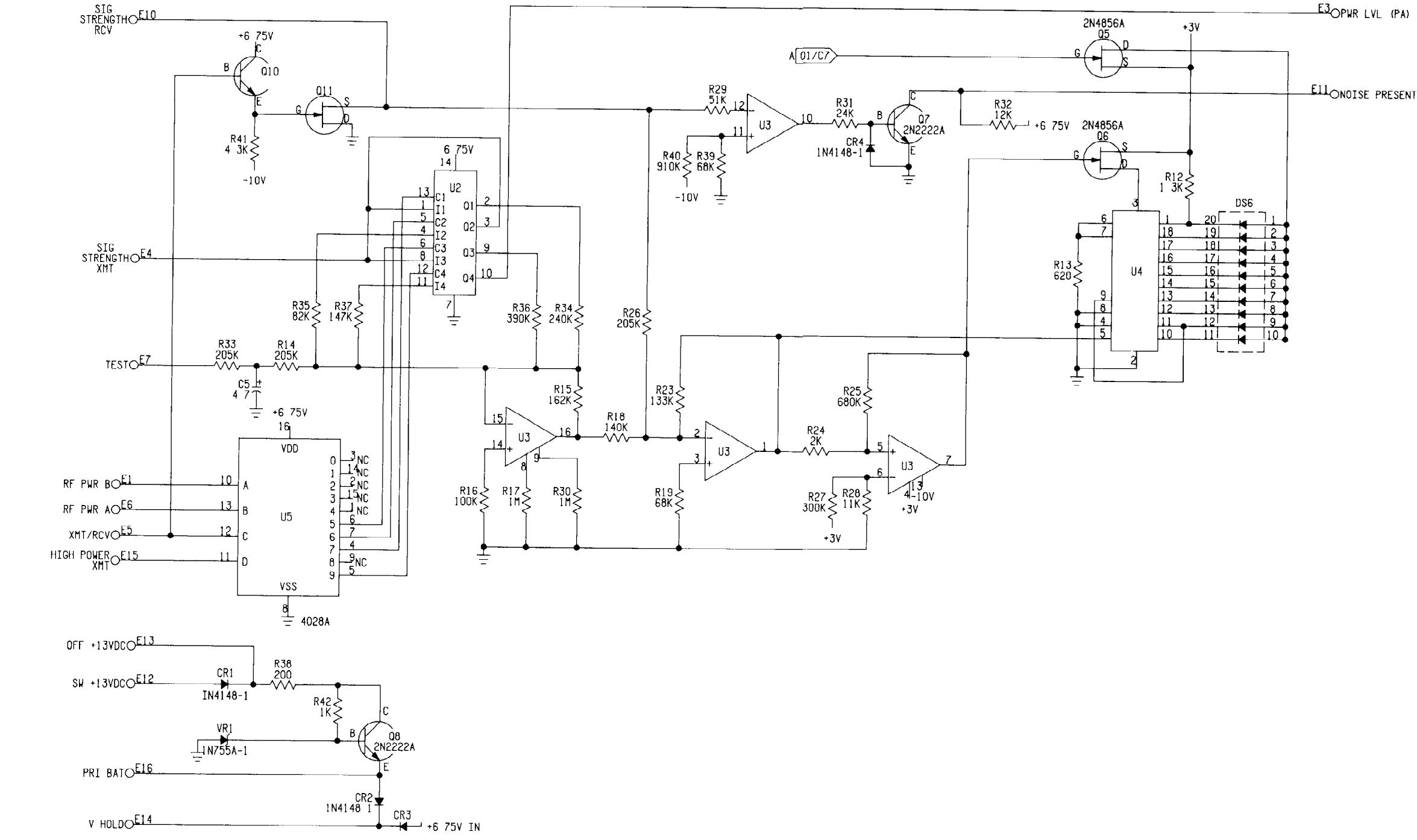
FO-10 RT Panel Matching Network A3013370-1 Schematic Diagram



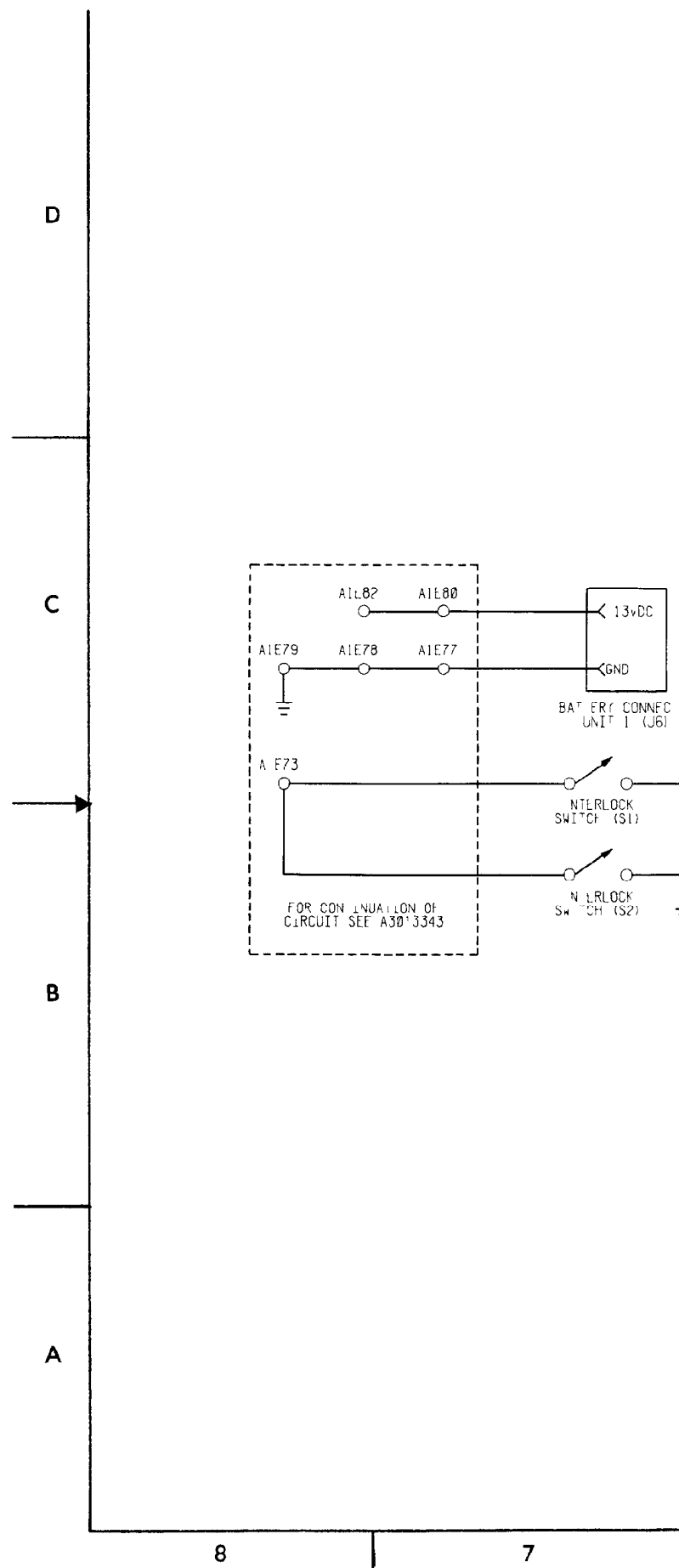
- NOTES
- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 1A16
 - 2 RESISTANCE VALUES ARE IN OHMS CAPACITANCE VALUES ARE IN MICROFARADS
 - 3 TEXT BOAT SYMBOL \Rightarrow INDICATES SHEET NUMBER AND ZONE LOCATION OF CONTINUING SIGNAL LINE

FO-11 CCA-Display A3014128-1 Schematic Diagram (Sheet 1 of 2)

D
C
B
A



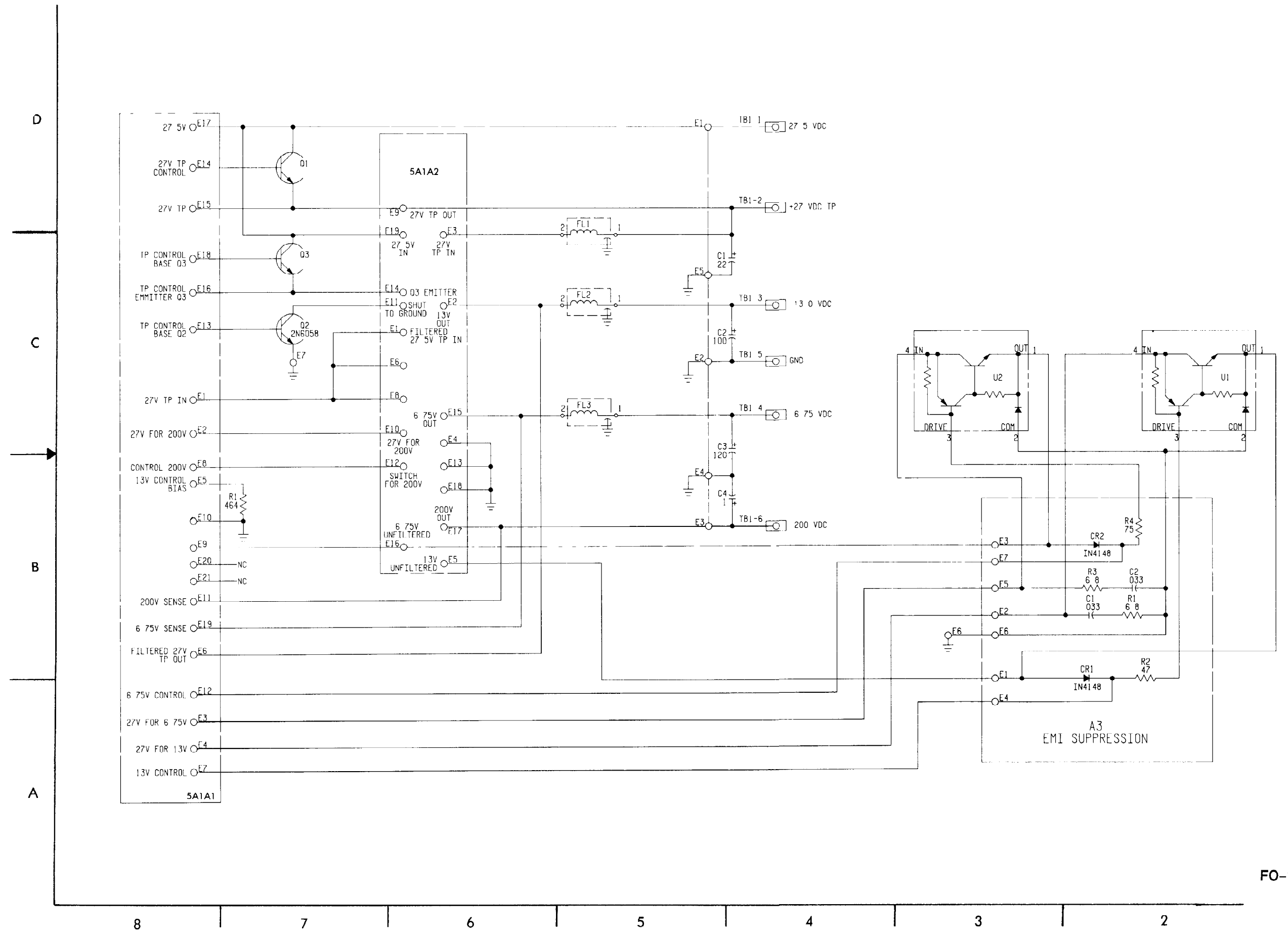
FO-11 CCA-Display A3014128-1 Schematic Diagram (Sheet 2 of 2)



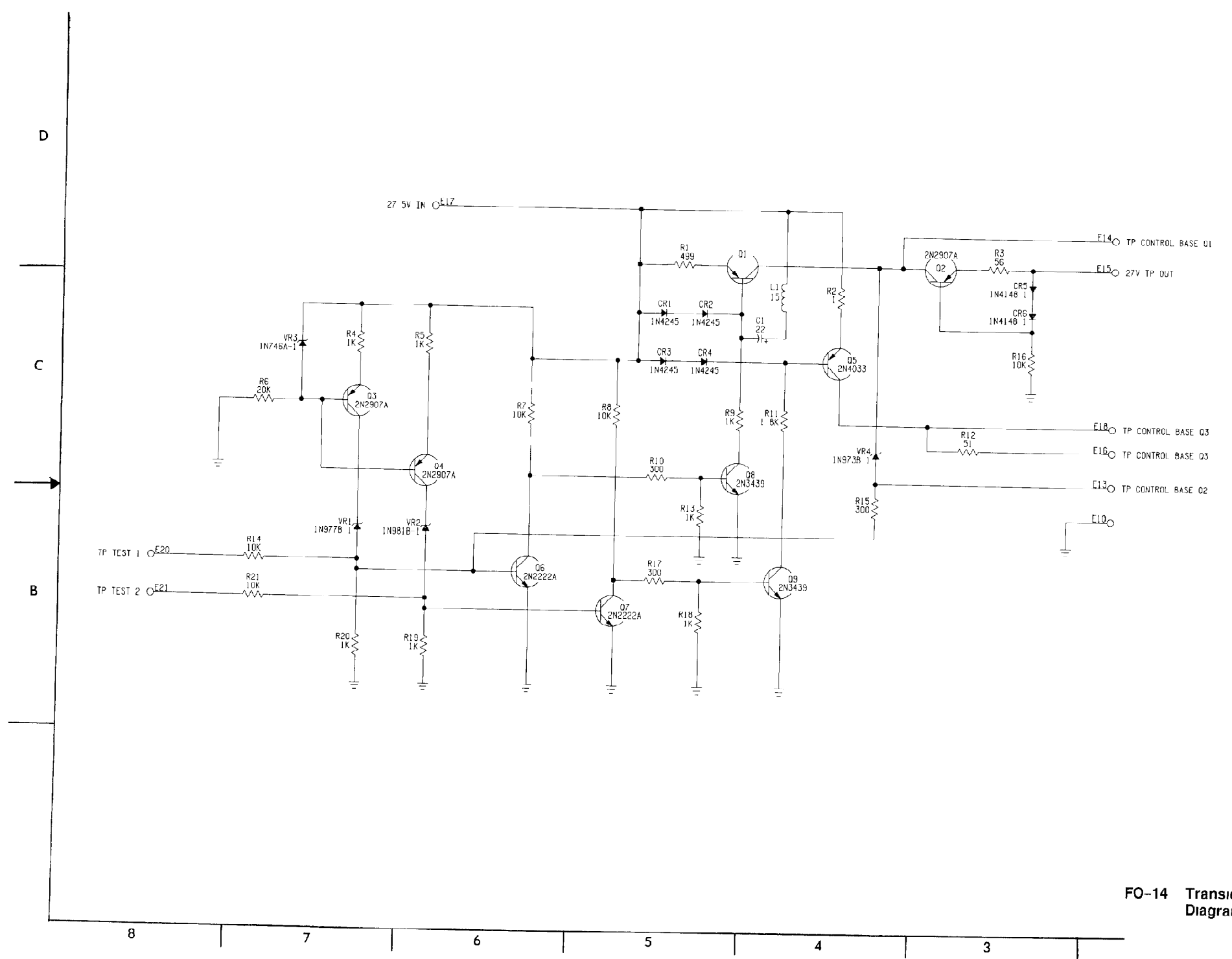
NOTES

- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 1A16A2

FO-12 Chassis, Electrical Equipment-Receiver-Transmitter Subassembly A3013350-1 Schematic Diagram

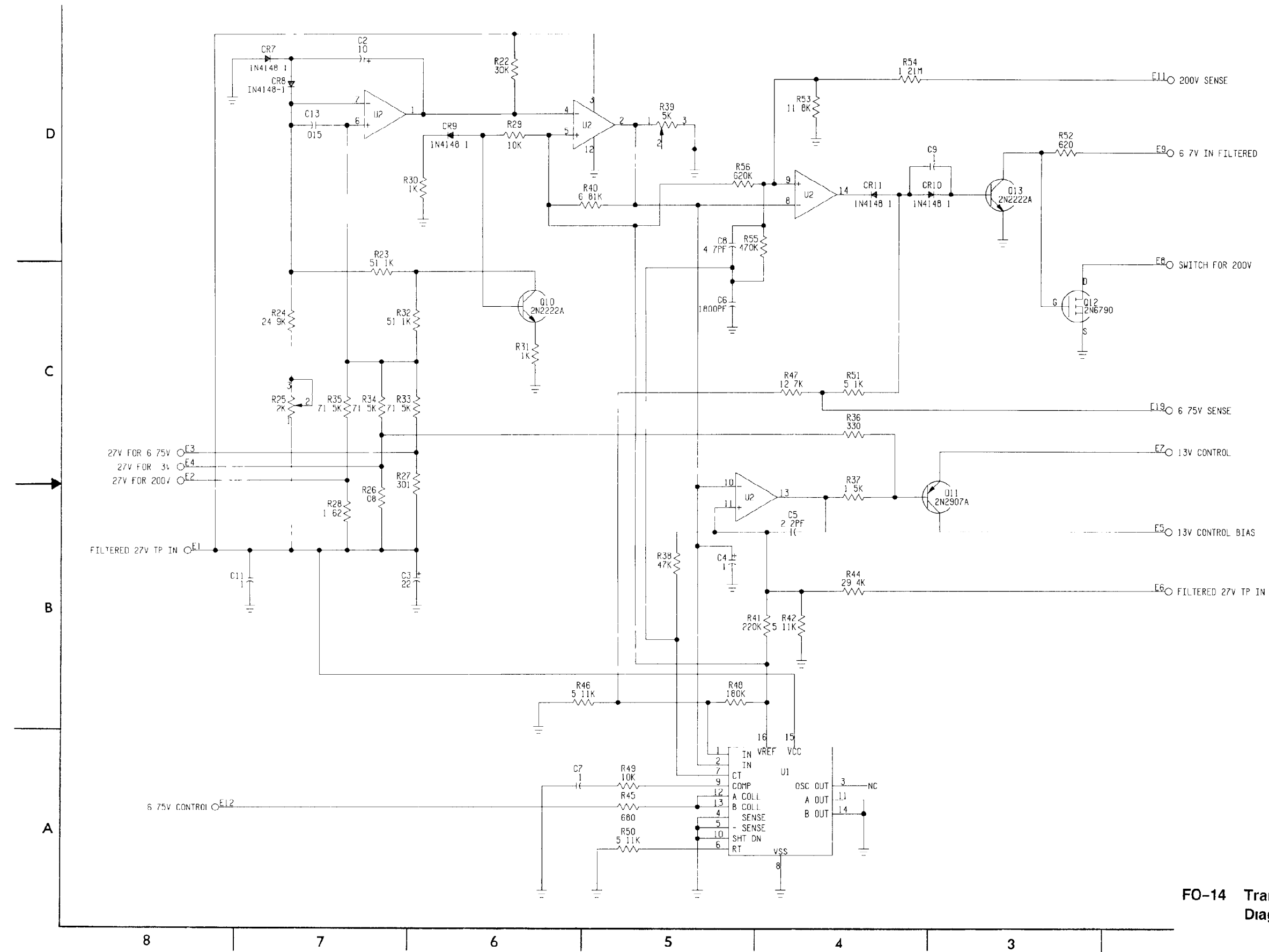


FO-13 Amplifier-Adapter Power Supply A3013369-1 Schematic Diagram

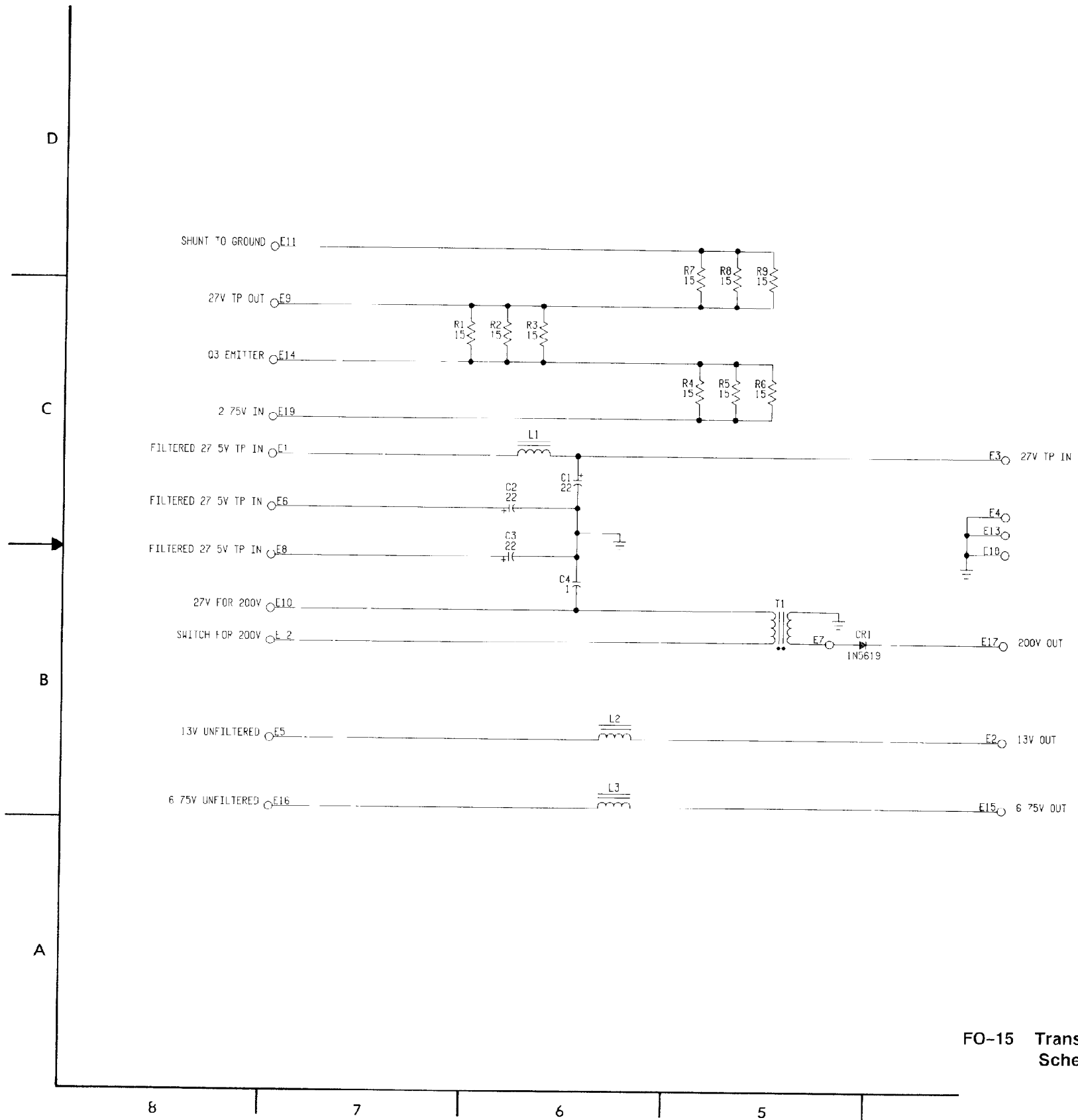


- NOTES
- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 5A1A1
 - 2 RESISTANCE VALUES ARE IN OHMS
CAPACITANCE VALUES ARE IN MICROFARADS
INDUCTANCE VALUES ARE IN MICROHENRIES

FO-14 Transient Protection/Regulator A3014184-1 Schematic Diagram (Sheet 1 of 2)

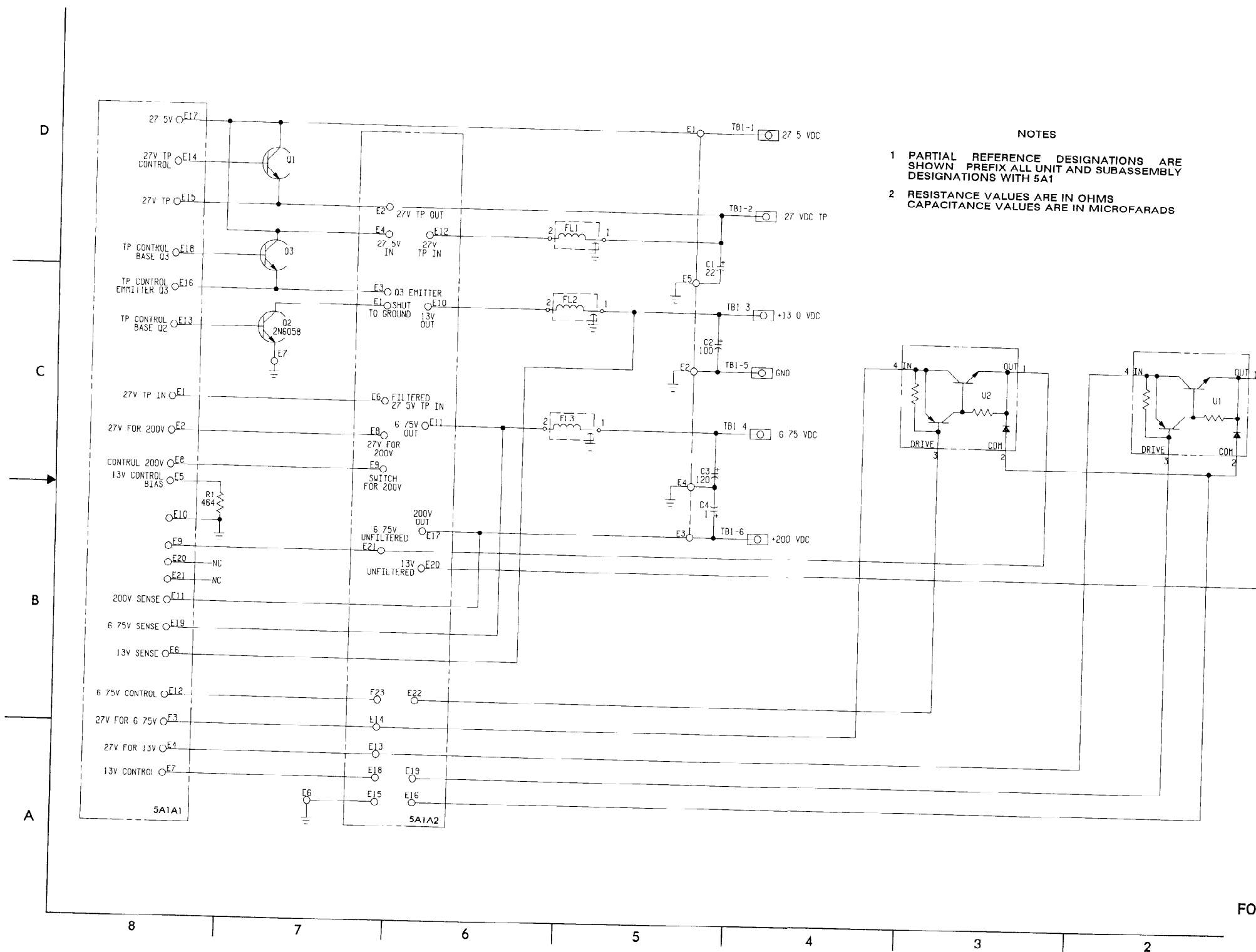


FO-14 Transient Protection/Regulator A3014184-1 Schematic Diagram (Sheet 2 of 2)



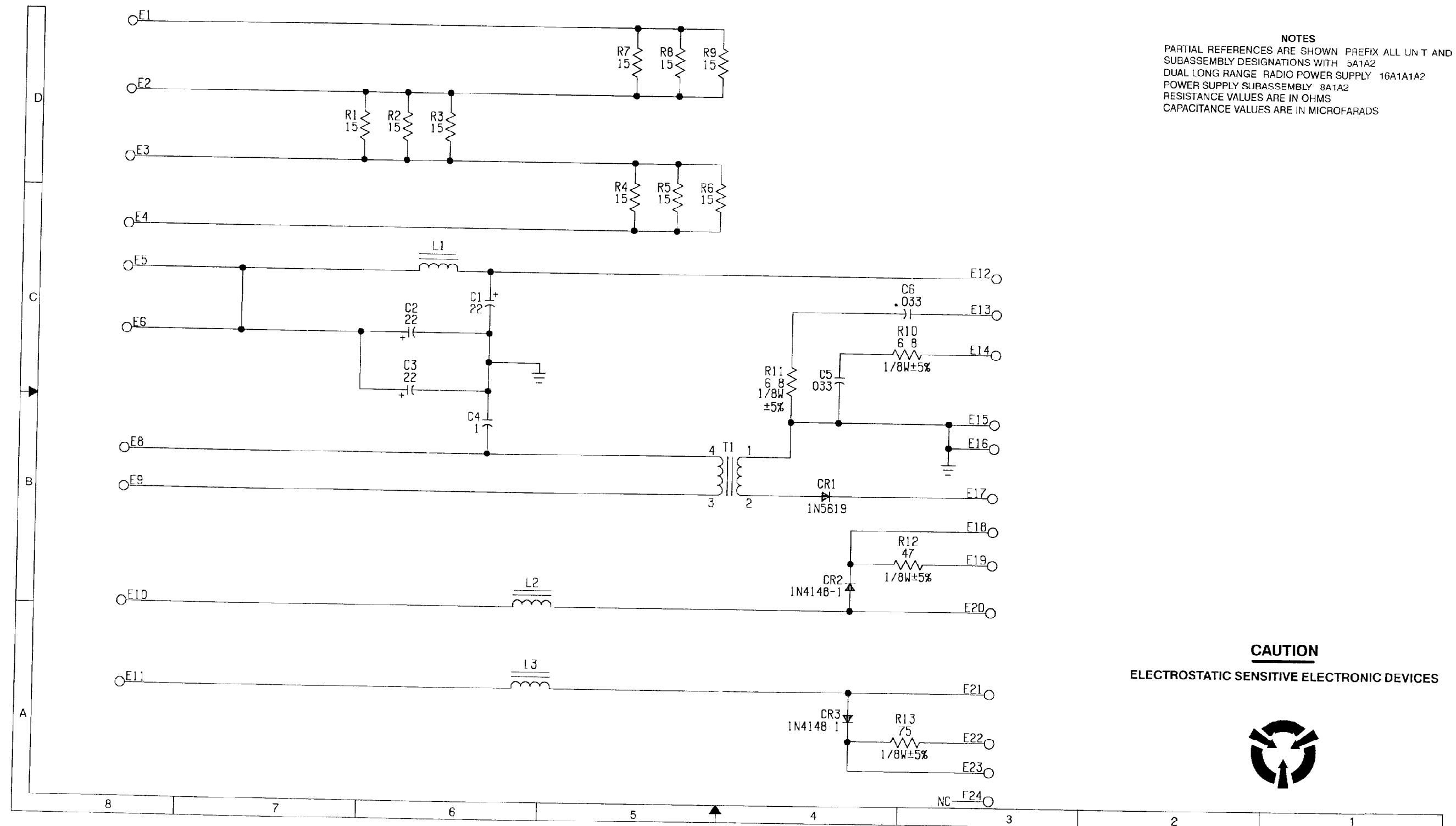
- NOTES**
- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 5A1A2.
 - 2 RESISTANCE VALUES ARE IN OHMS. CAPACITANCE VALUES ARE IN MICROFARADS.

FO-15 Transient Protection/Regulator Filter A3014172-1
Schematic Diagram



- NOTES
- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 5A1
 - 2 RESISTANCE VALUES ARE IN OHMS. CAPACITANCE VALUES ARE IN MICROFARADS

FO-16 Power Supply A3018415-1 Schematic Diagram



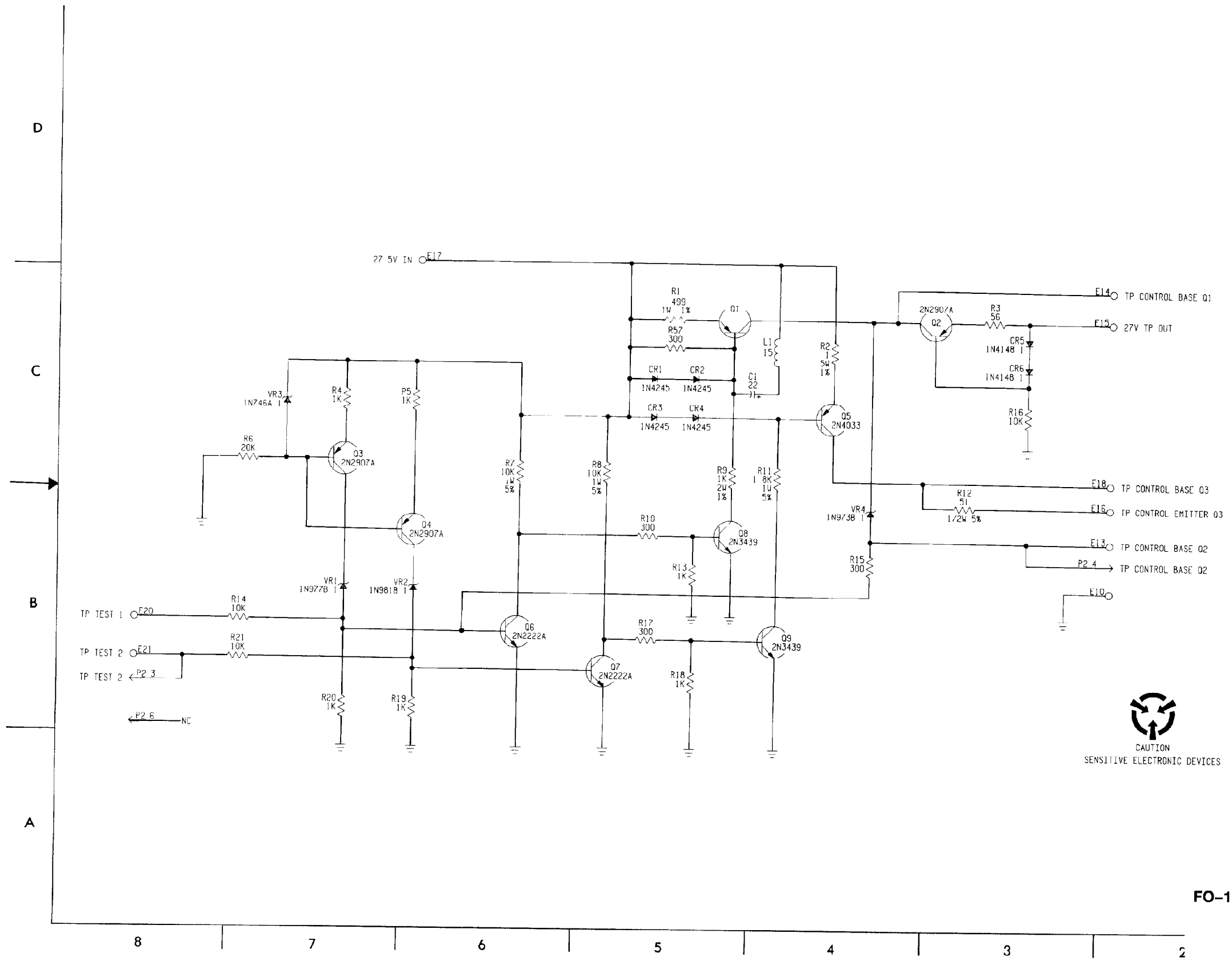
NOTES
 PARTIAL REFERENCES ARE SHOWN PREFIX ALL UNIT AND
 SUBASSEMBLY DESIGNATIONS WITH 5A1A2
 DUAL LONG RANGE RADIO POWER SUPPLY 16A1A1A2
 POWER SUPPLY SUBASSEMBLY 8A1A2
 RESISTANCE VALUES ARE IN OHMS
 CAPACITANCE VALUES ARE IN MICROFARADS

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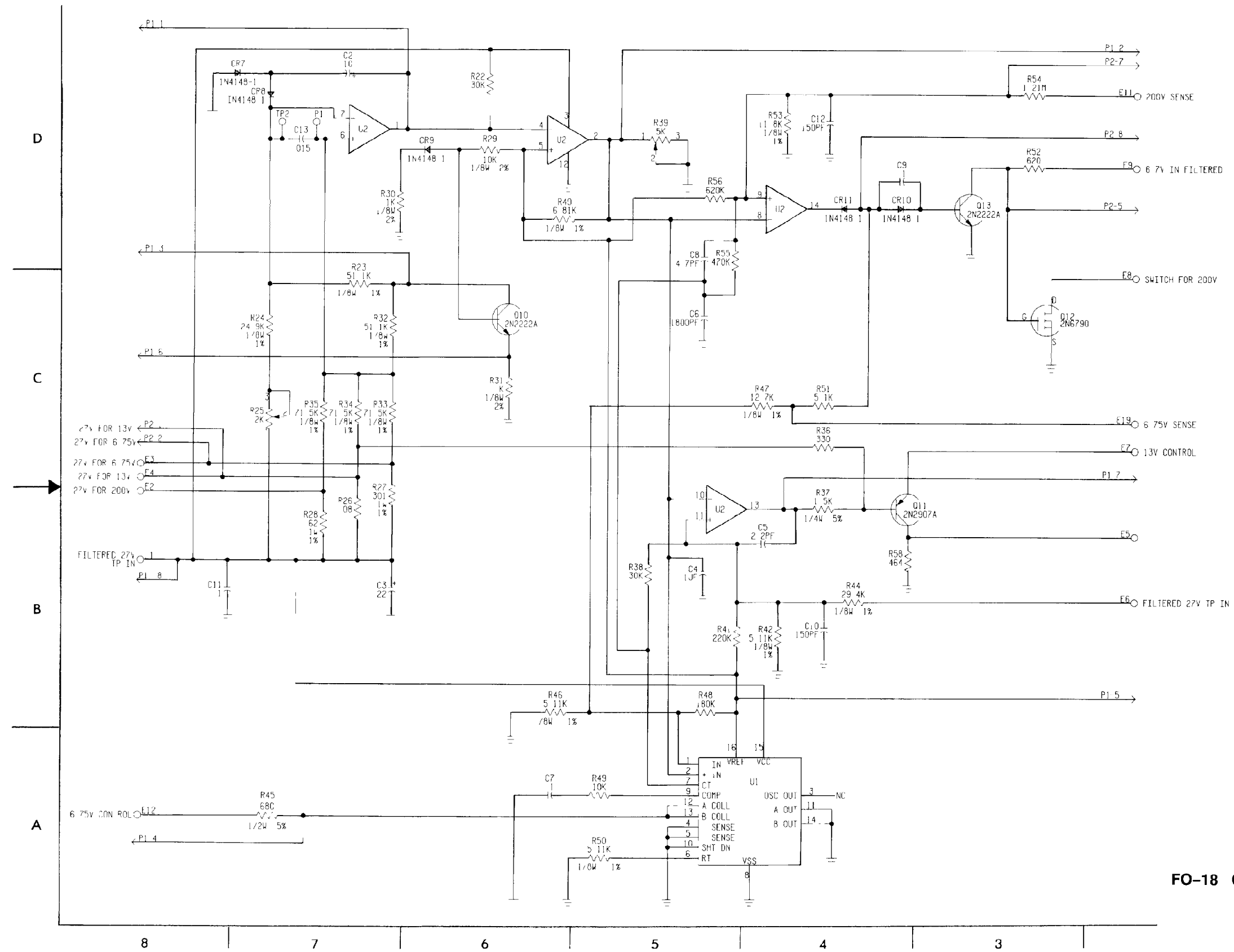
FO-17 CCA-Transient Protection/Regulator Filter
 A3018547-1 Schematic Diagram

FP-47/(FP-48 blank)

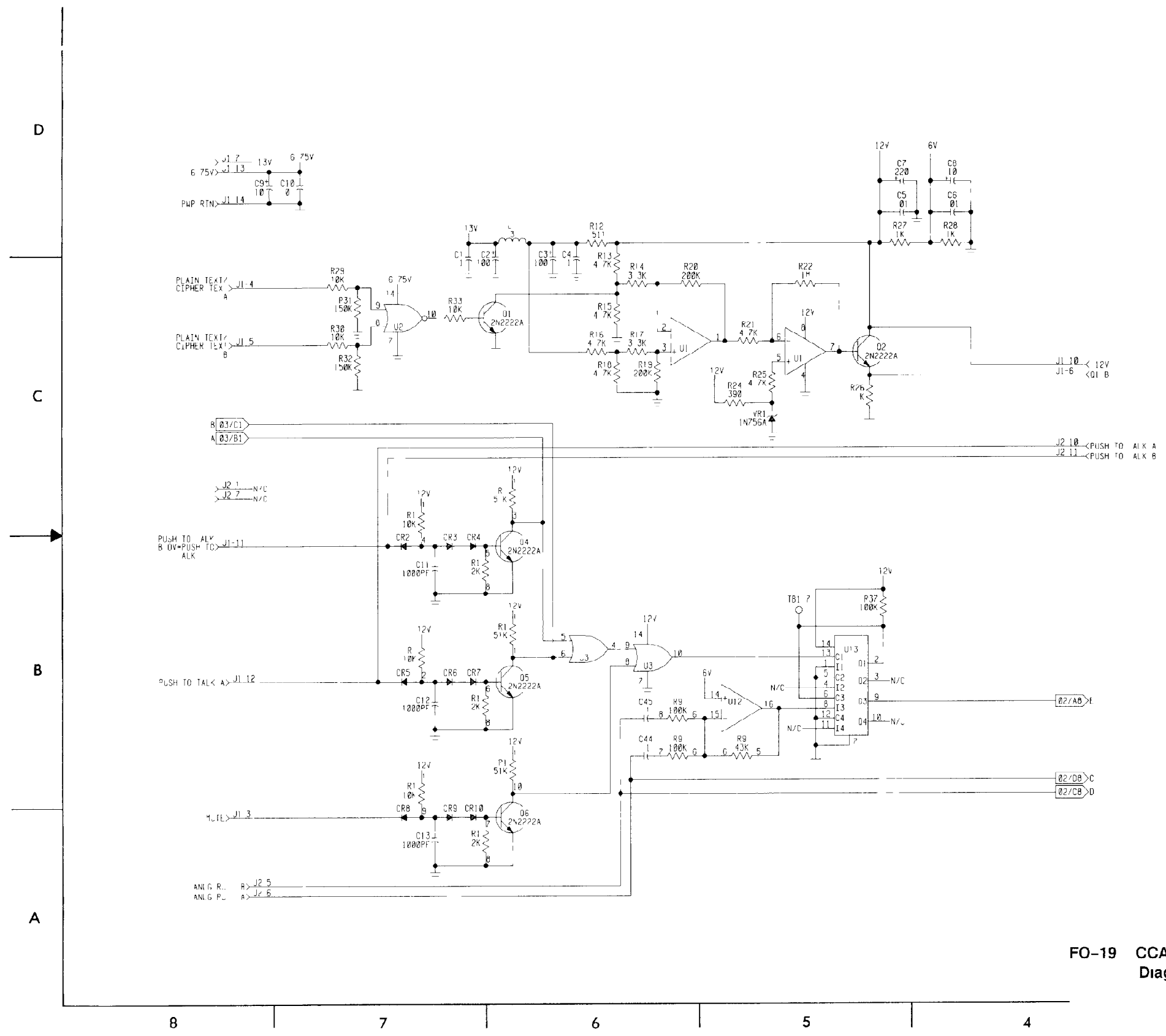



- NOTES
- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 5A1A2
 - 2 RESISTANCE VALUES ARE IN OHMS. CAPACITANCE VALUES ARE IN MICROFARADS. INDUCTANCE VALUES ARE IN MICROHENRIES



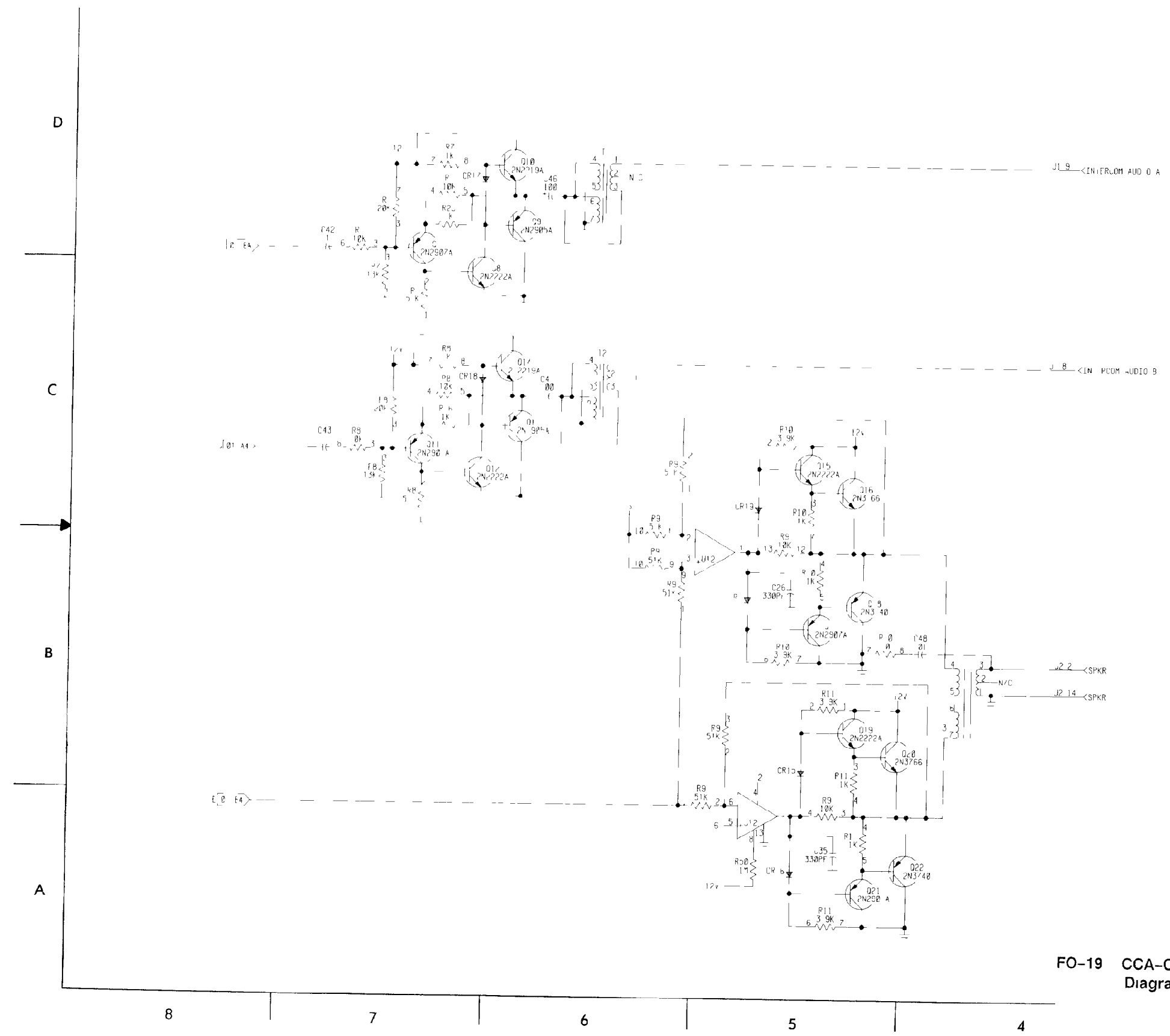


FO-18 CCA-Transient Protection/Regulator A3132834-1
Schematic Diagram (Sheet 2 of 2)

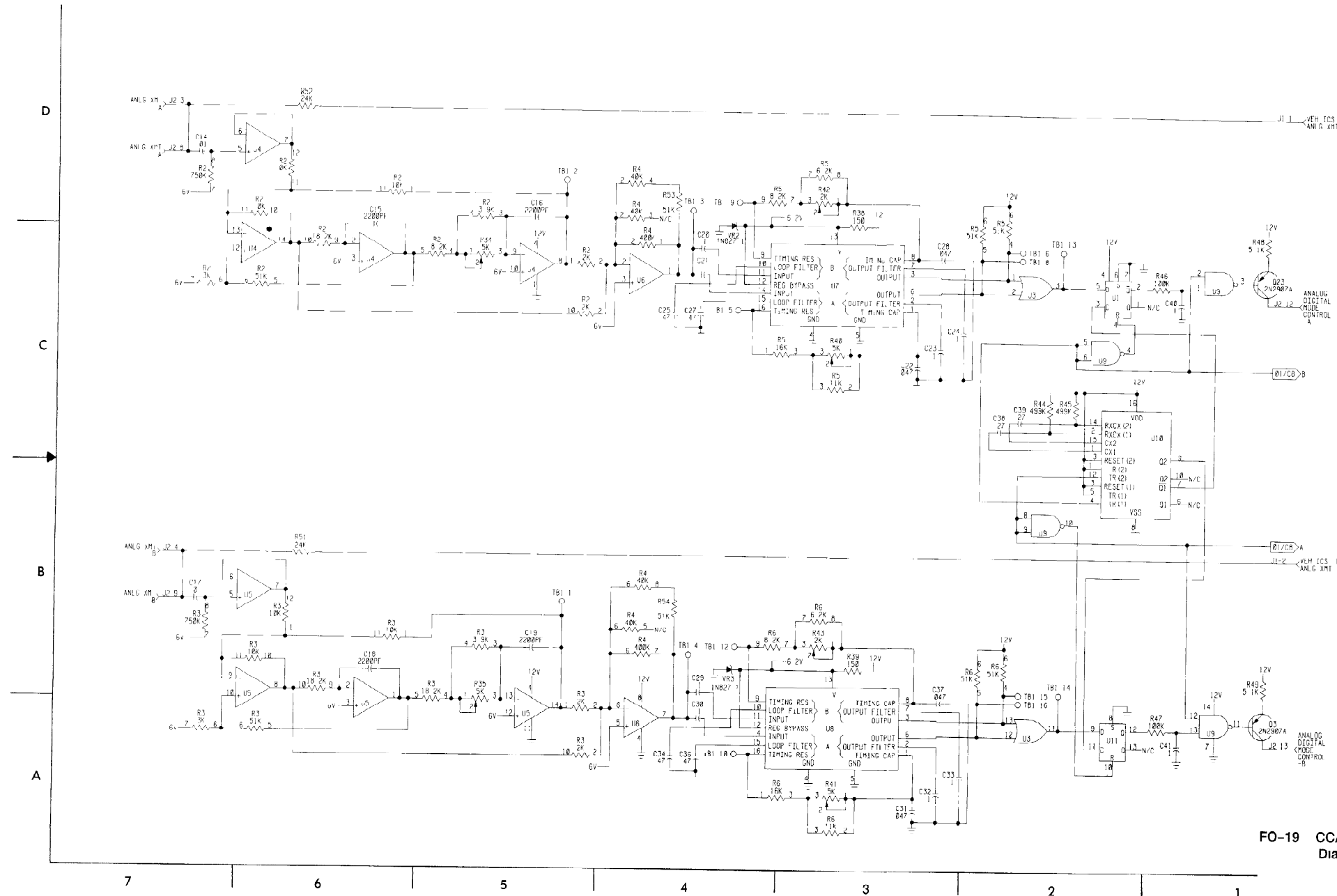


- NOTES**
- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 5A2.
 - 2 RESISTANCE VALUES ARE IN OHMS. CAPACITANCE VALUES ARE IN MICROFARADS. INDUCTANCE VALUES ARE IN MICROHENRIES.
 - 3 TEXT WITHIN OFF-SHEET  INDICATES SHEET NUMBER AND ZONE CONTROL LOCATION OF CONTINUING SIGNAL LINE.

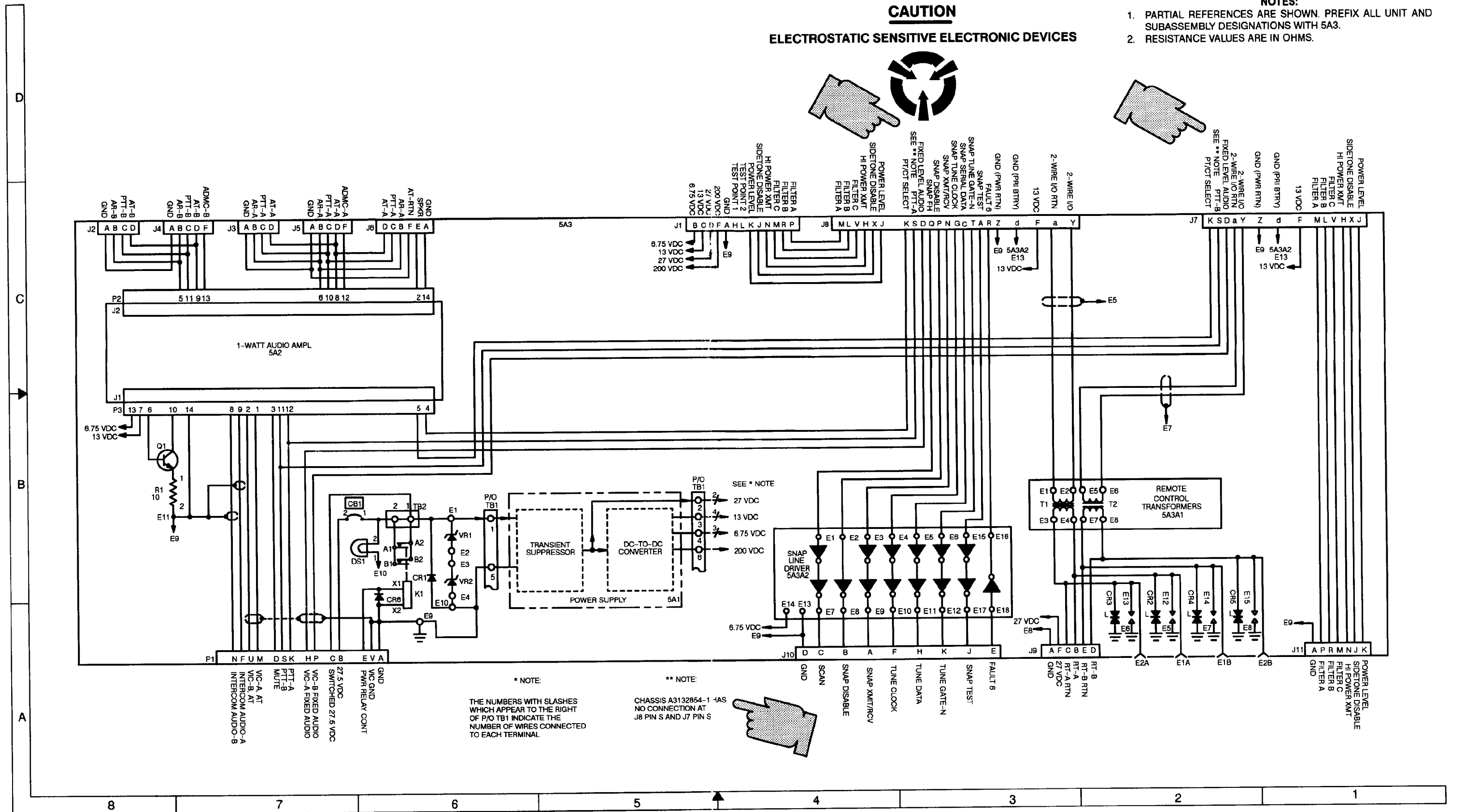
FO-19 CCA-One Watt Audio Amplifier A3014195-1 Schematic Diagram (Sheet 1 of 3)



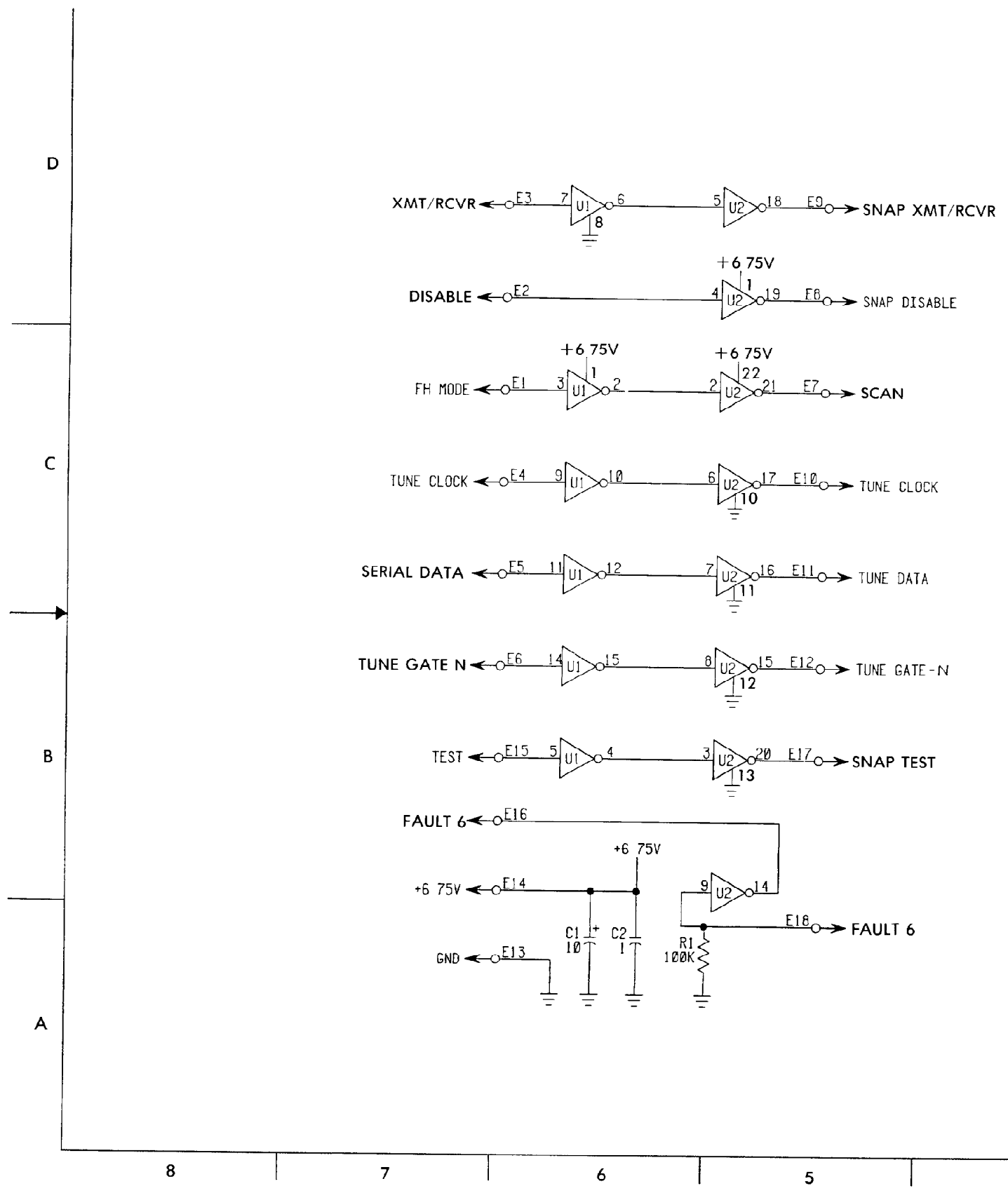
FO-19 CCA-One Watt Audio Amplifier A3014195-1 Schematic Diagram (Sheet 2 of 3)



FO-19 CCA-One Watt Audio Amplifier A3014195-1 Schematic Diagram (Sheet 3 of 3)

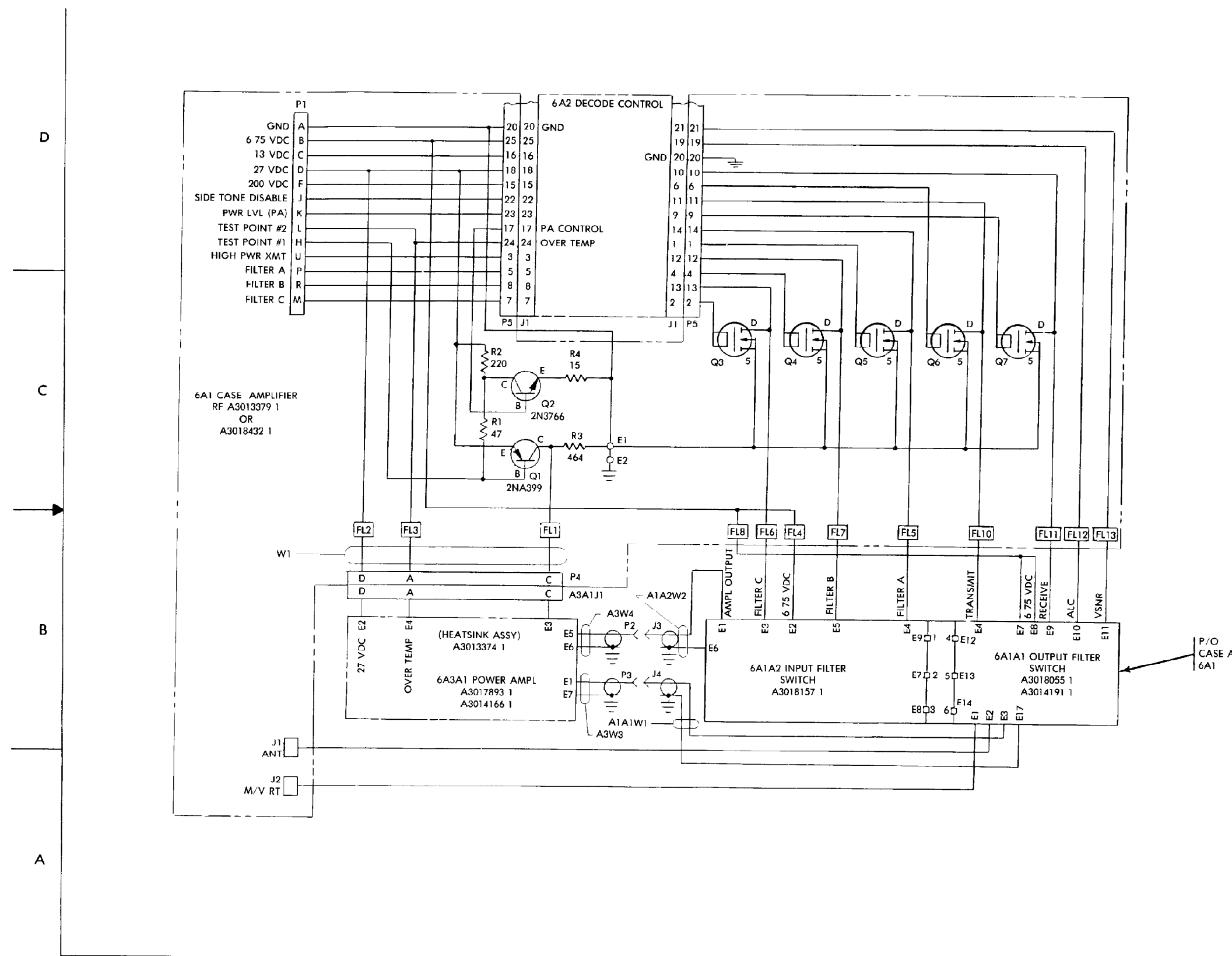


FO-20. Amplifier-Adapter Chassis A3013349-1, A3018430-1, and A3132854-1 Schematic Diagram



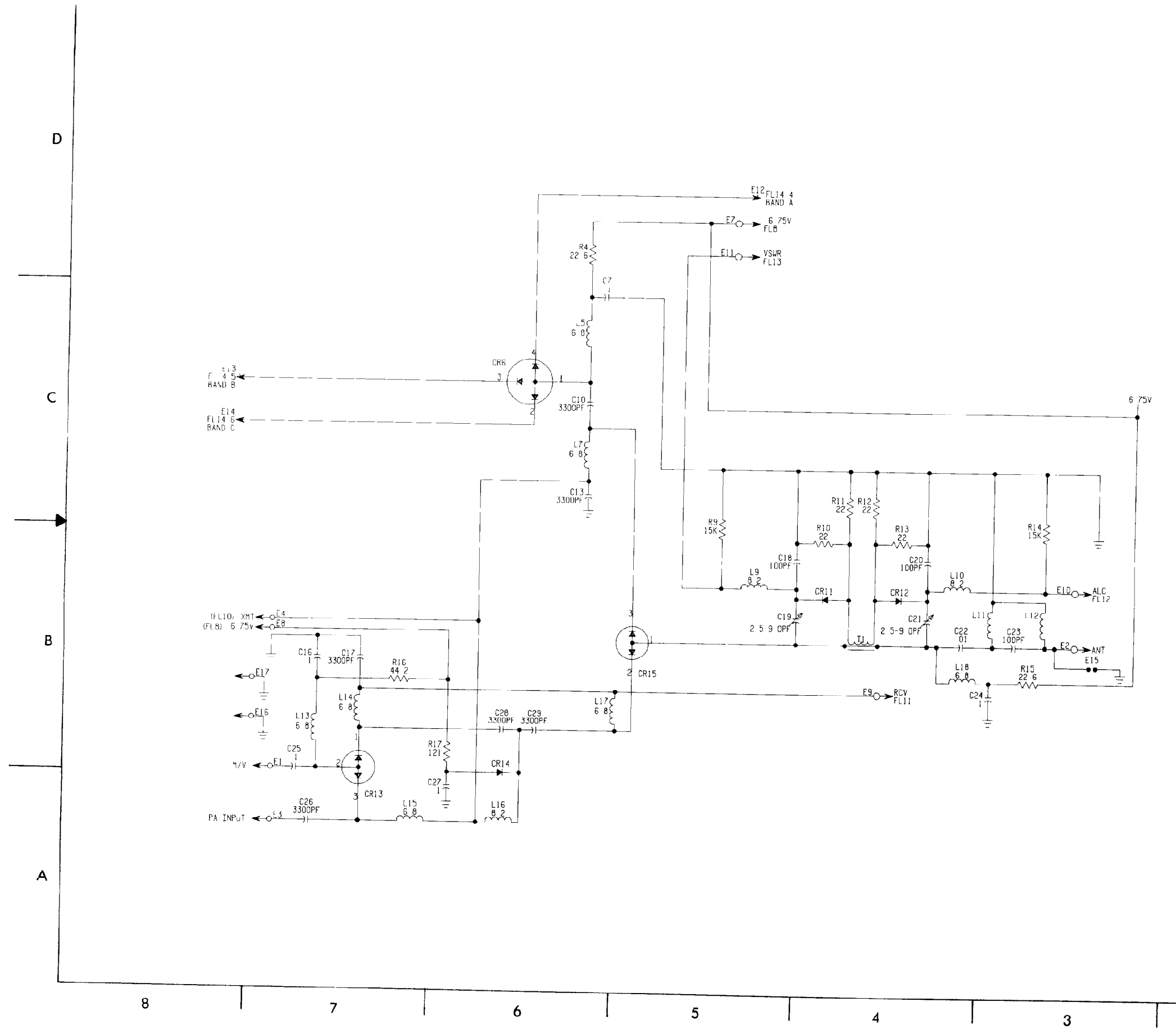
- NOTES
- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 5A3A2
 - 2 RESISTANCE VALUES ARE IN OHMS. CAPACITANCE VALUES ARE IN MICROFARADS

FO-21 CCA-Snap Line Driver A3014193-1 Schematic Diagram



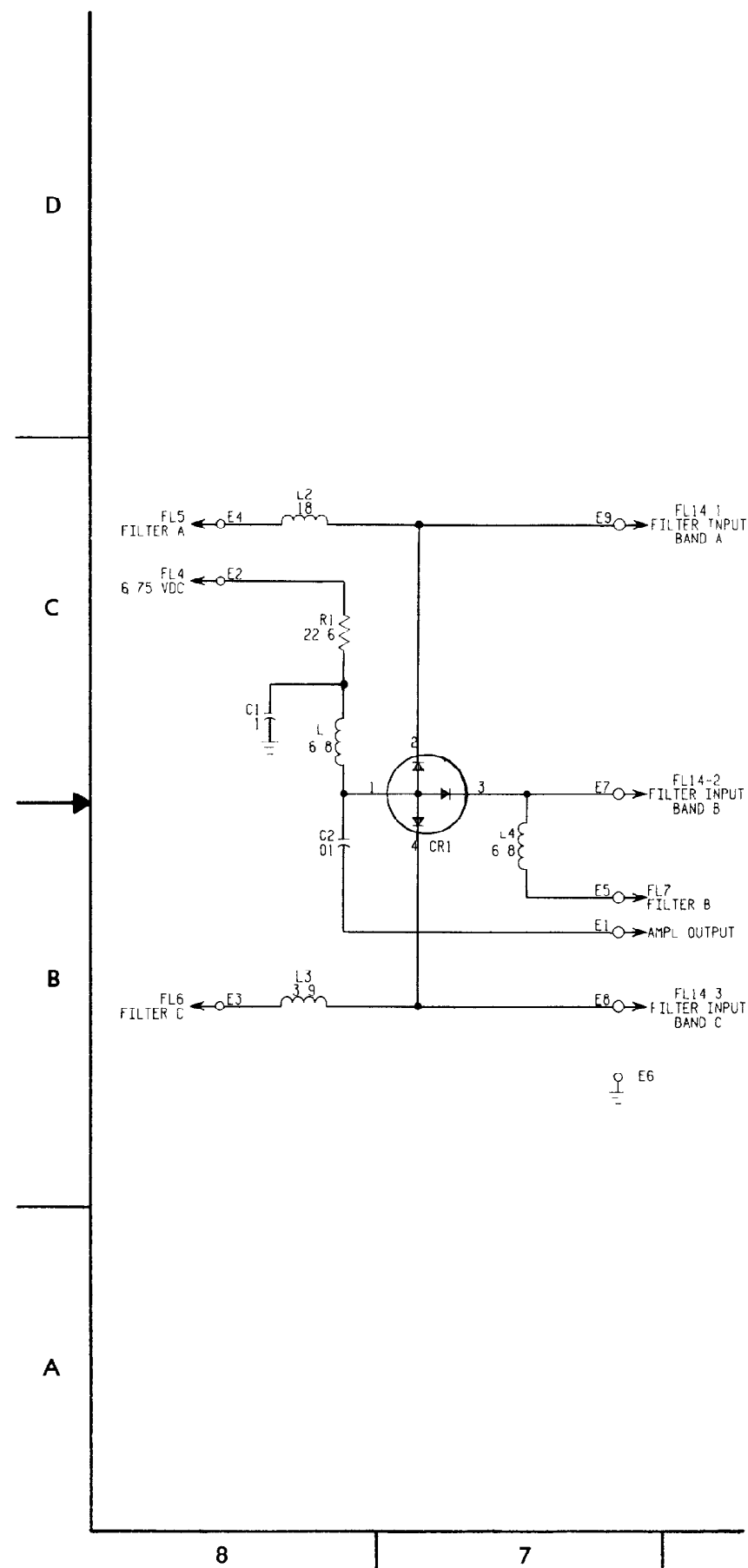
- NOTES
- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 6A
 - 2 RESISTANCE VALUES ARE IN OHMS

FO-22 RF Amplifier Case A3013379-1 or A3018432-1 Schematic Diagram



- NOTES
- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 6A1A1.
 - 2 RESISTANCE VALUES ARE IN OHMS. CAPACITANCE VALUES ARE IN MICROFARADS. INDUCTANCE VALUES ARE IN MICROHENRIES.

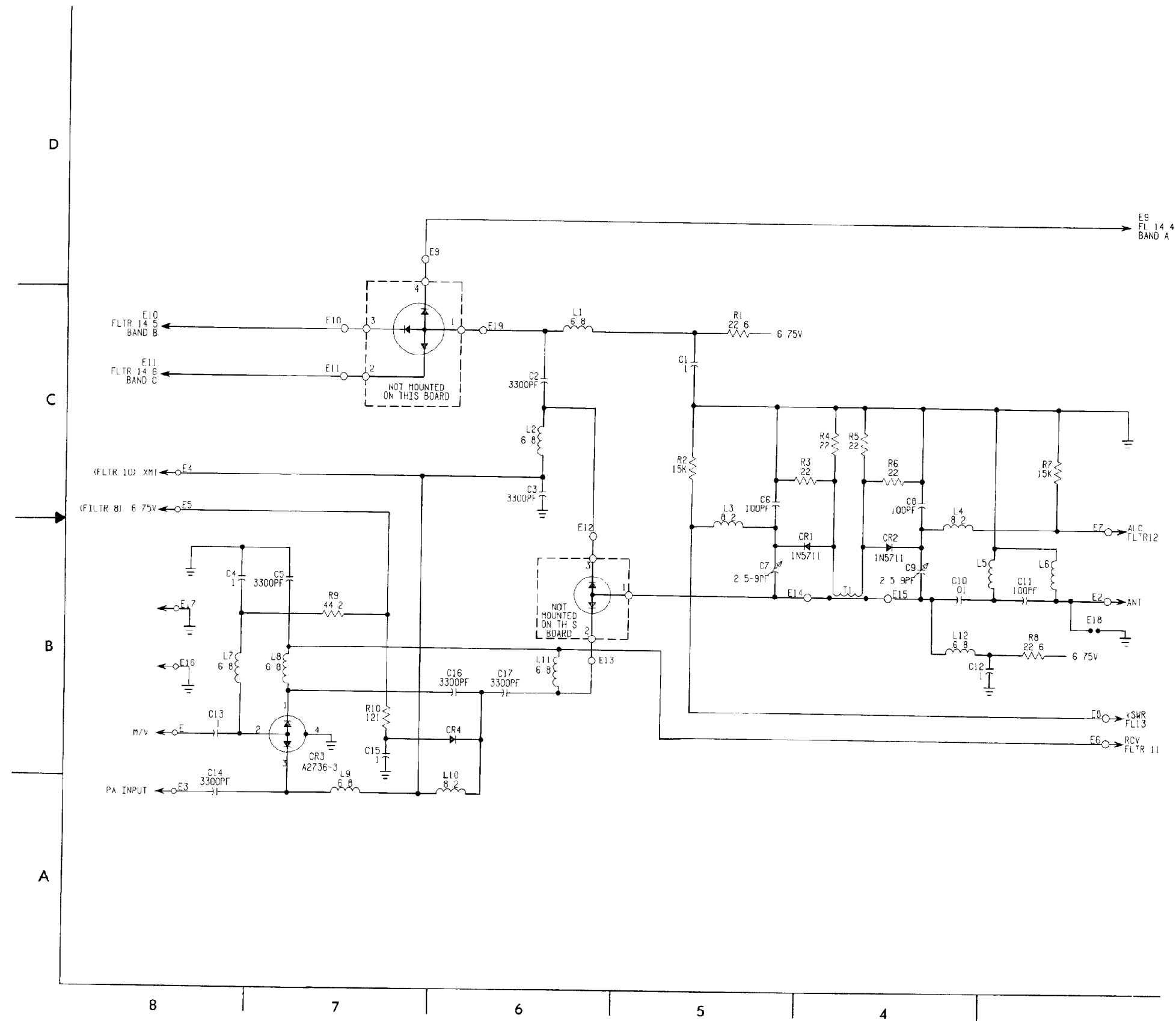
FO-23 CCA-Output Filter/Switch A3014191-1 Schematic Diagram



NOTES

- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 6A1A2
- 2 RESISTANCE VALUES ARE IN OHMS
CAPACITANCE VALUES ARE IN MICROFARADS
INDUCTANCE VALUES ARE IN MICROHENRIES

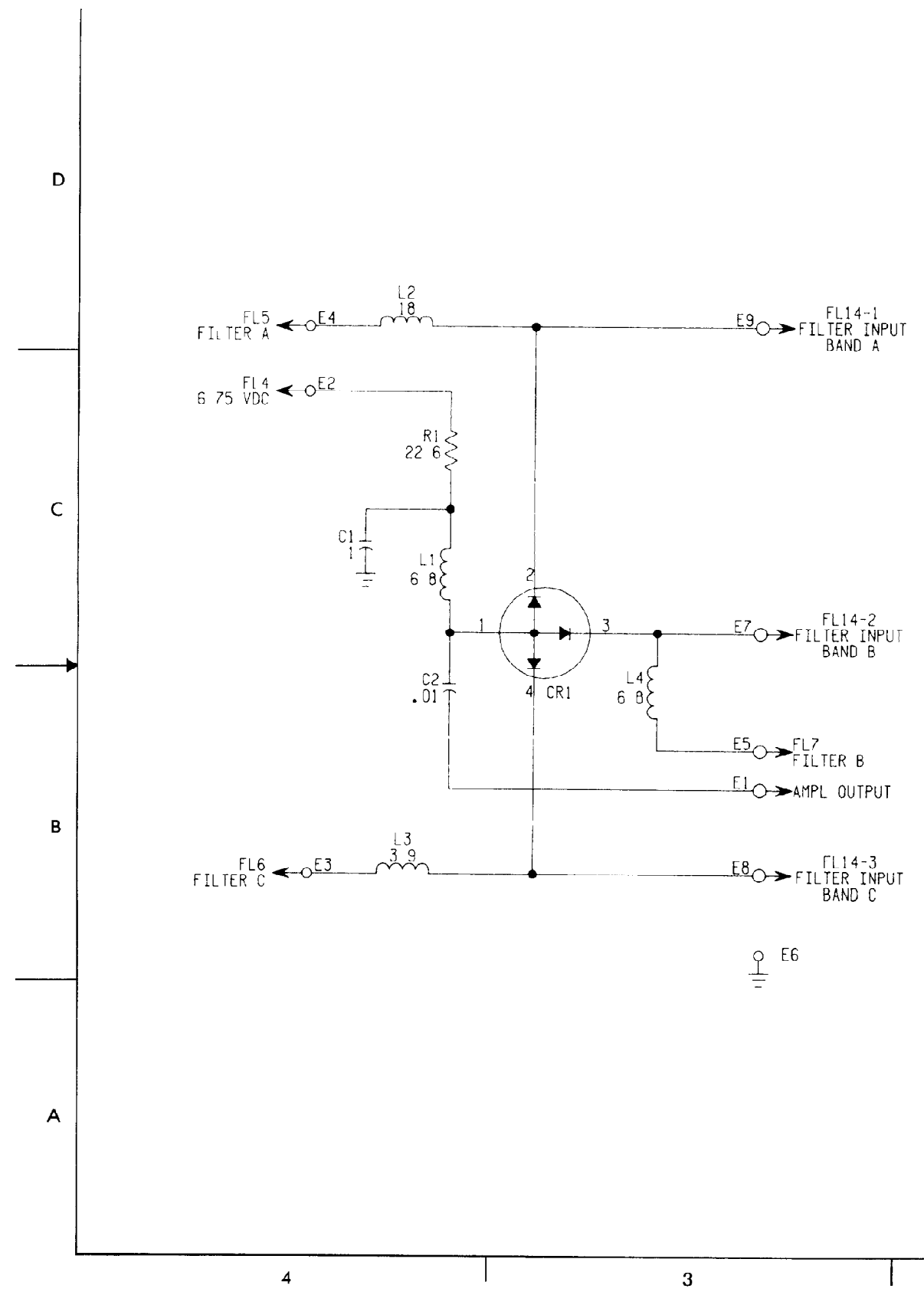
FO-24 CCA-Input Filter/Switch A3014189-1
Schematic Diagram



- NOTES
- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 6A1A1
 - 2 RESISTANCE VALUES ARE IN OHMS
CAPACITANCE VALUES ARE IN MICROFARADS
INDUCTANCE VALUES ARE IN MICROHENRIES

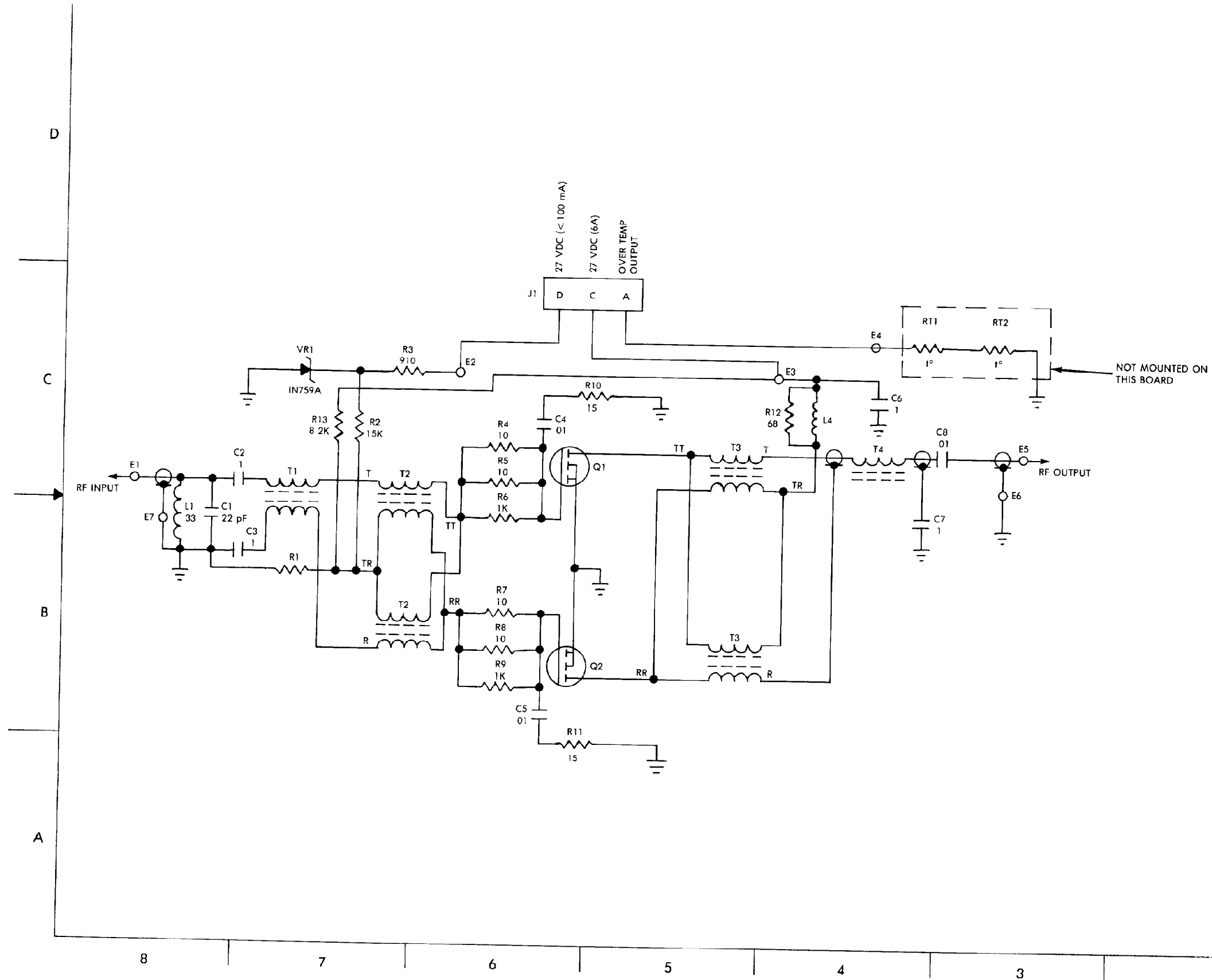


FO-25 CCA-Output Filter/Switch A3018055-1 Schematic Diagram



- NOTES
- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 6A1A2
 - 2 RESISTANCE VALUES ARE IN OHMS
CAPACITANCE VALUES ARE IN MICROFARADS
INDUCTANCE VALUES ARE IN MICROHENRIES

FO-26 CCA-Input Filter/Switch A3018157-1
Schematic Diagram



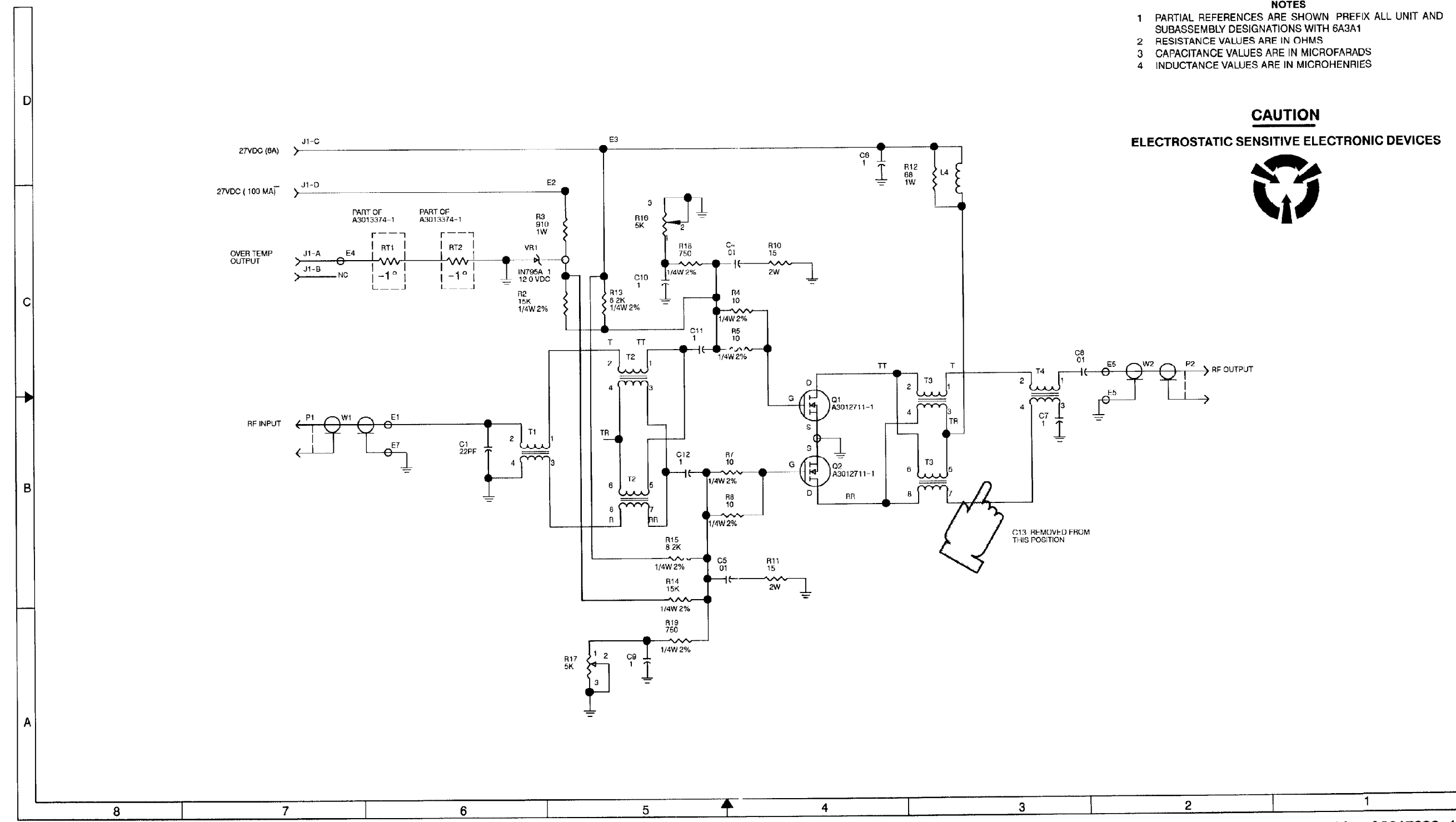
NOTES

- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 6A3A1
- 2 RESISTANCE VALUES ARE IN OHMS. CAPACITANCE VALUES ARE IN MICROFARADS. INDUCTANCE VALUES ARE IN MICROHENRIES.

FO-27 CCA-50 Watt RF Amplifier A3014166-1 Schematic Diagram

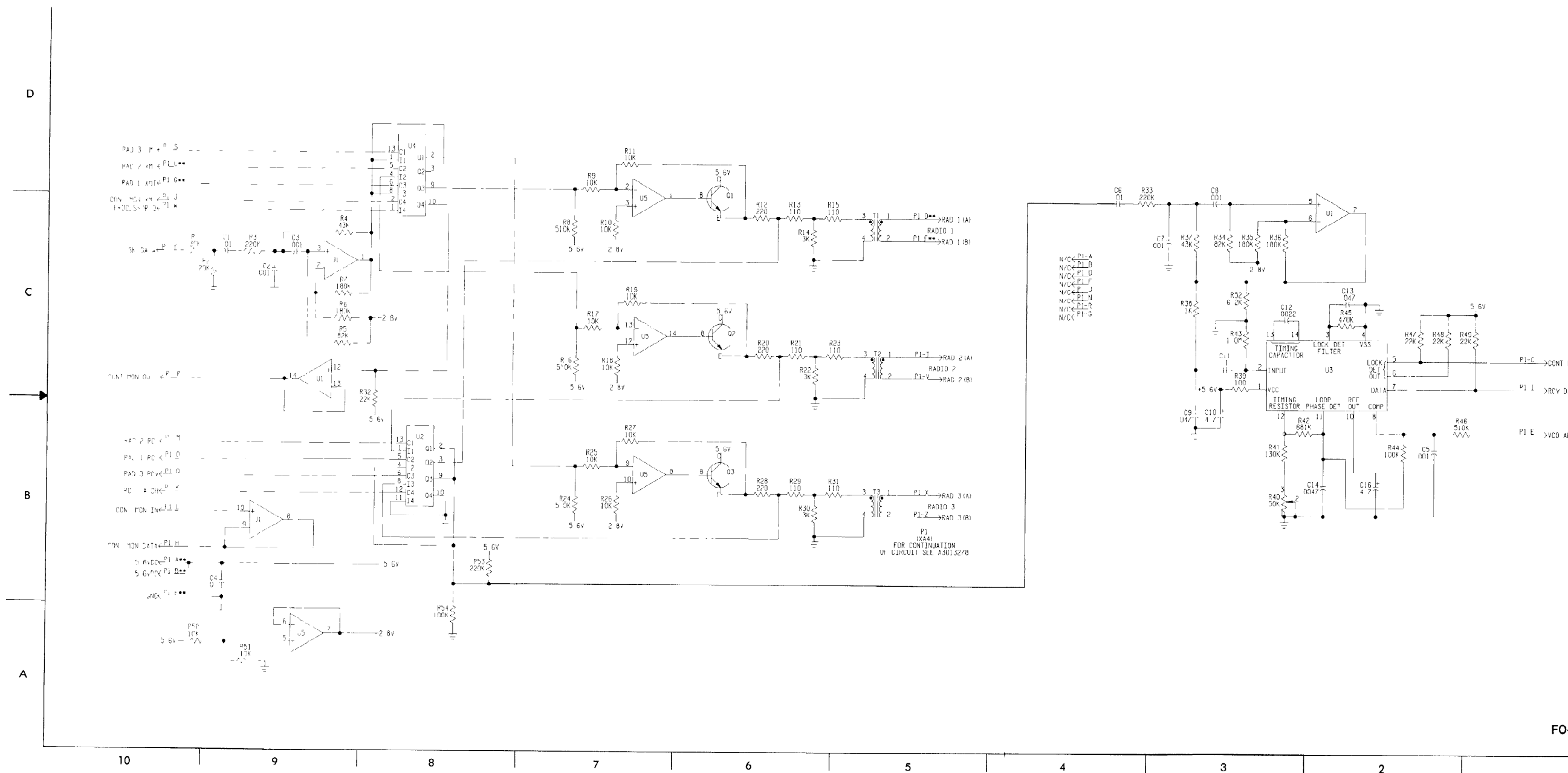
- NOTES**
- 1 PARTIAL REFERENCES ARE SHOWN PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 6A3A1
 - 2 RESISTANCE VALUES ARE IN OHMS
 - 3 CAPACITANCE VALUES ARE IN MICROFARADS
 - 4 INDUCTANCE VALUES ARE IN MICROHENRIES

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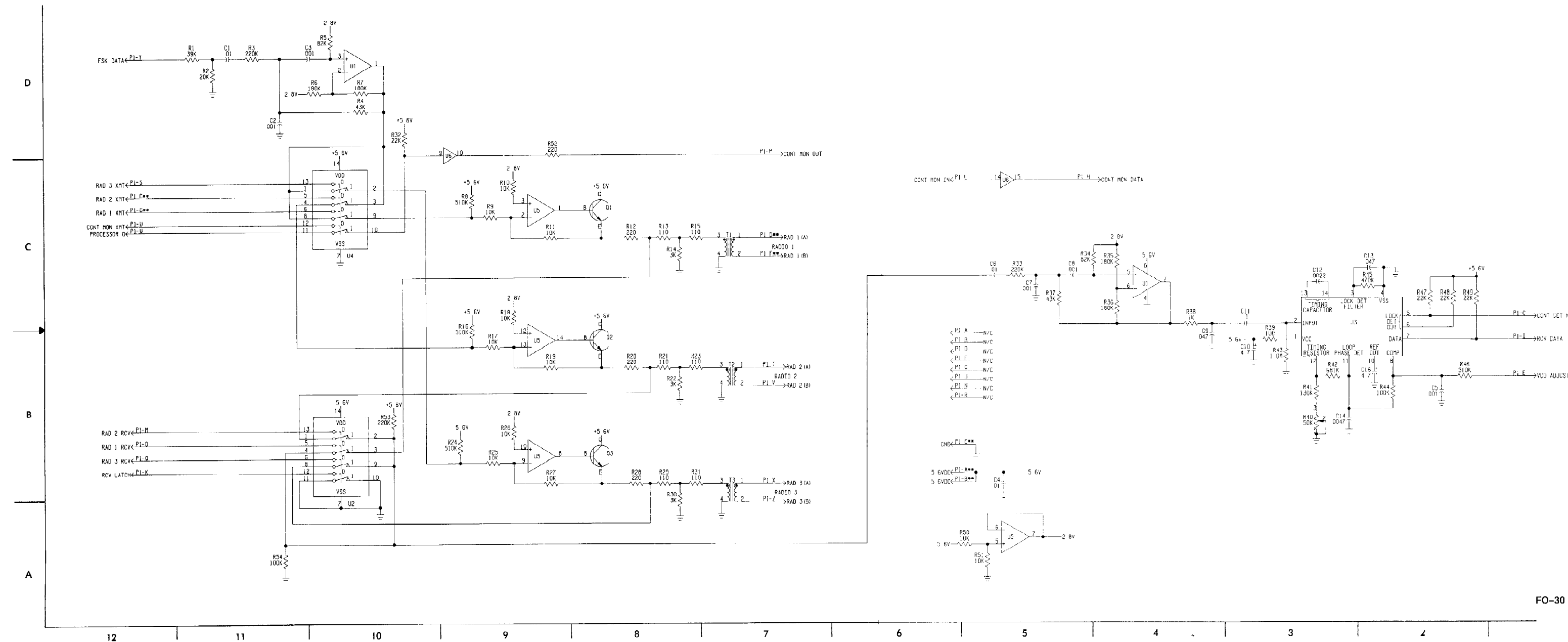
FO-28 CCA 50 Watt RF Amplifier A3017893-1
Schematic Diagram

Change 3 FP-75/(FP-76 blank)



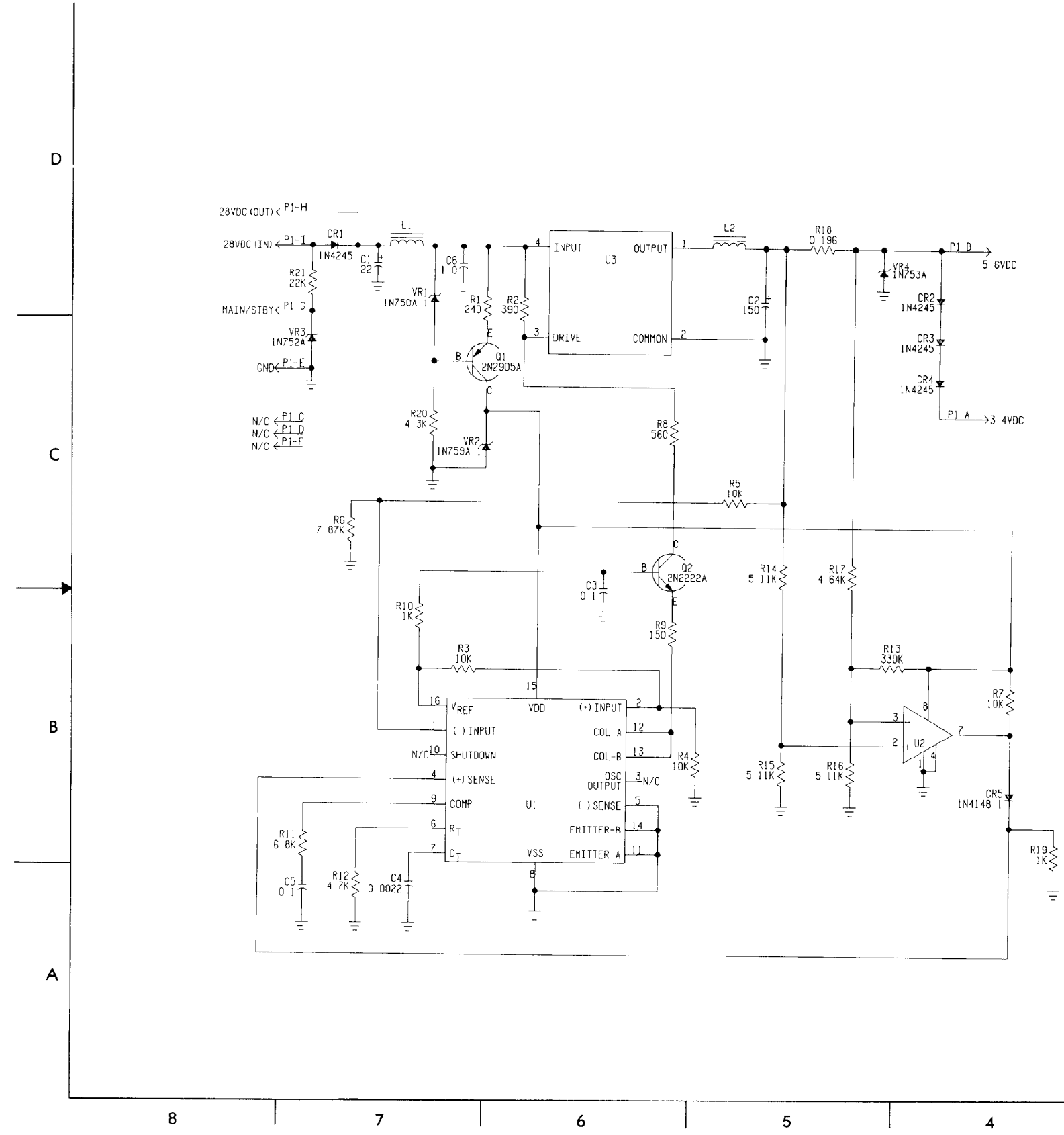
- NOTES
- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 7A4
 - 2 RESISTANCE VALUES ARE IN OHMS CAPACITANCE VALUES ARE IN MICROFARADS INDUCTANCE VALUES ARE IN MICROHENRIES
 - 3 DOUBLE ASTERISK (*) FOLLOWING LETTER INDICATES THAT THE LETTER IS LOWER CASE

FO-29 CCA-Analog A3014176-1 Schematic Diagram



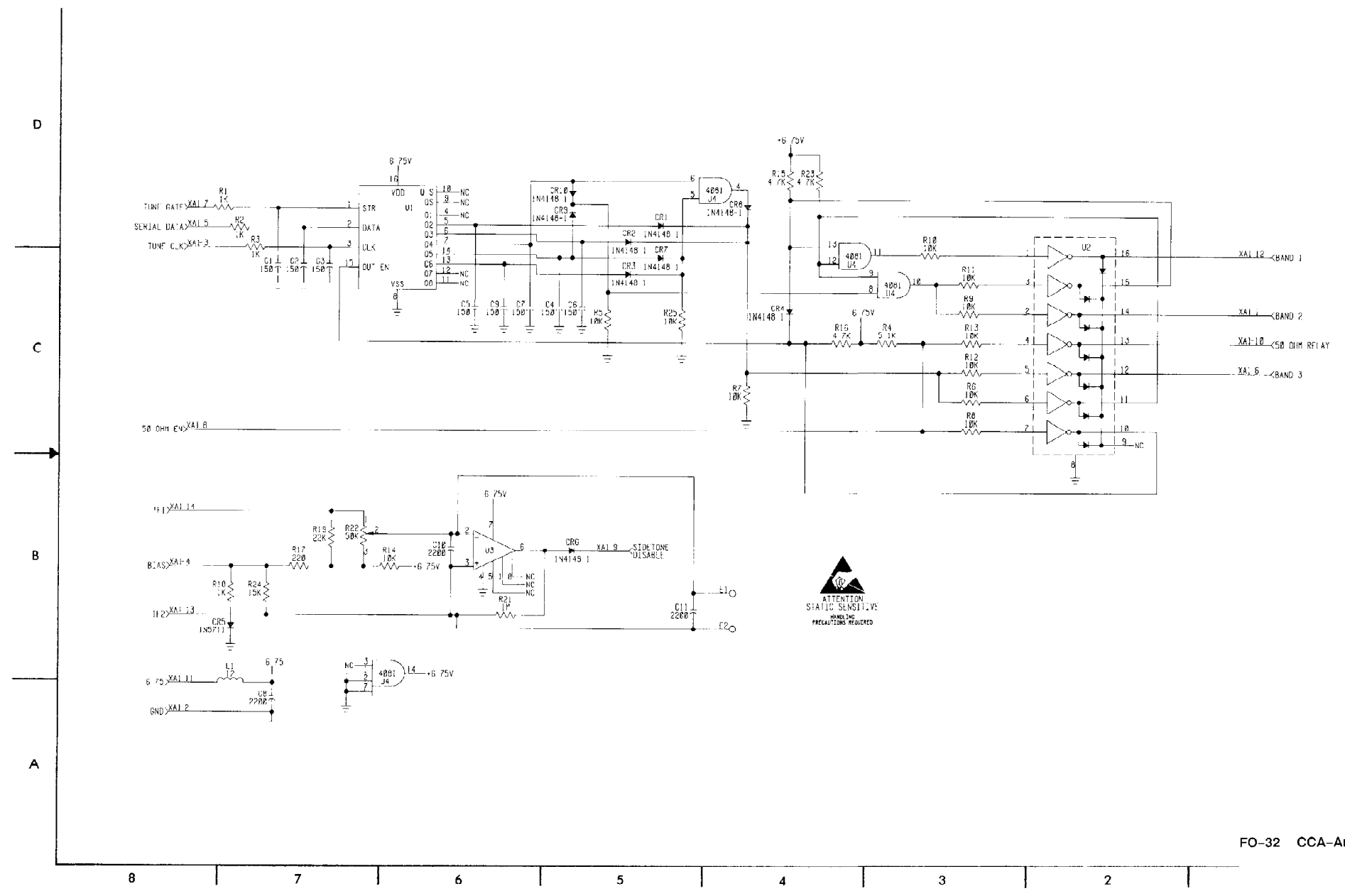
- NOTES
- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN. PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 7A.
 - 2 RESISTANCE VALUES ARE IN OHMS. CAPACITANCE VALUES ARE IN MICROFARADS. INDUCTANCE VALUES ARE IN MICROHENRIES.
 - 3 DOUBLE ASTERISK (**) FOLLOWING LETTER INDICATES THAT THE LETTER IS LOWER CASE.

FO-30 CCA-Analog A3018025-1 Schematic Diagram

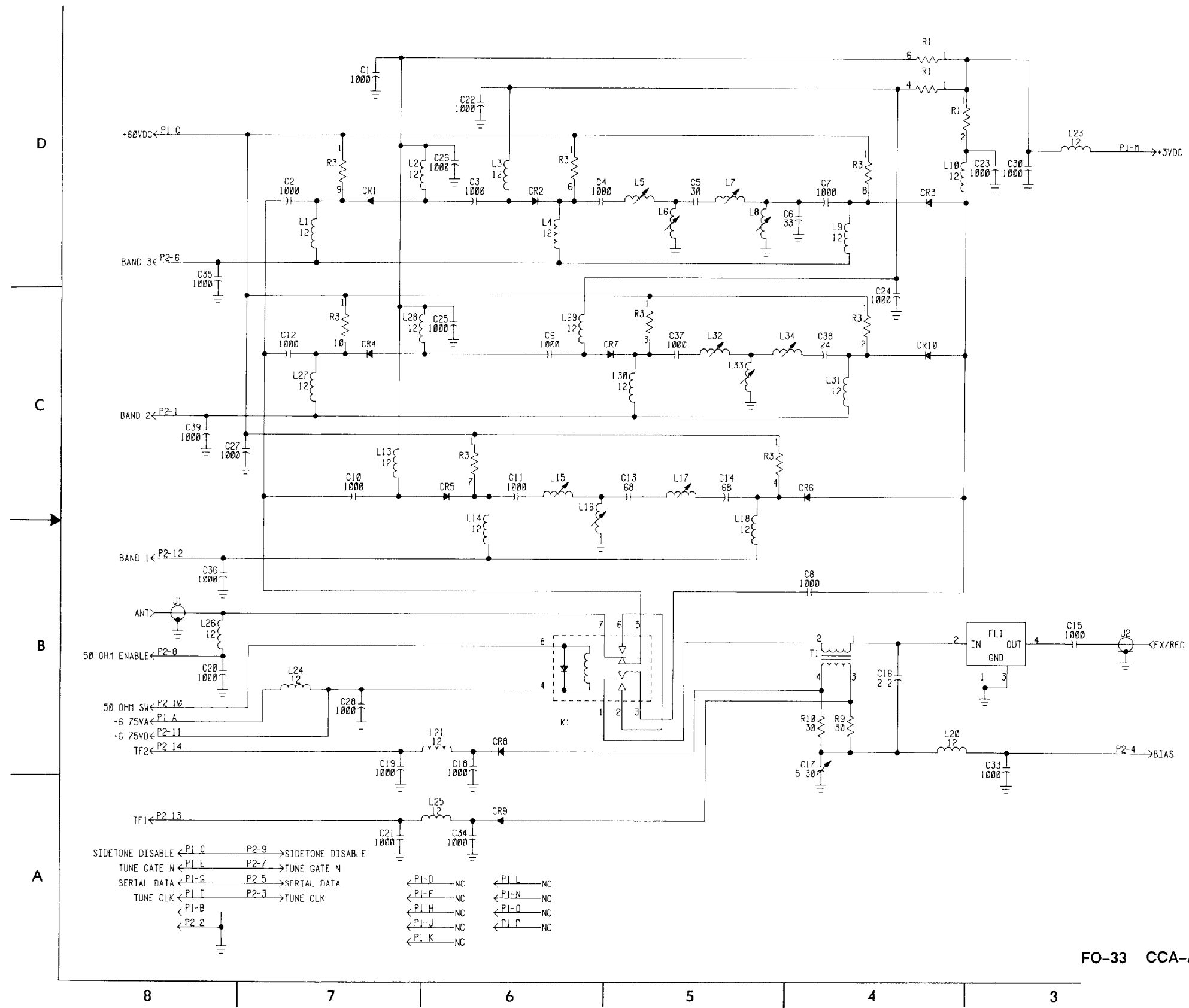


- NOTES**
- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 7A5
 - 2 RESISTANCE VALUES ARE IN OHMS CAPACITANCE VALUES ARE IN MICROFARADS

FO-31 CCA-Power Supply A3014158-1 Schematic Diagram



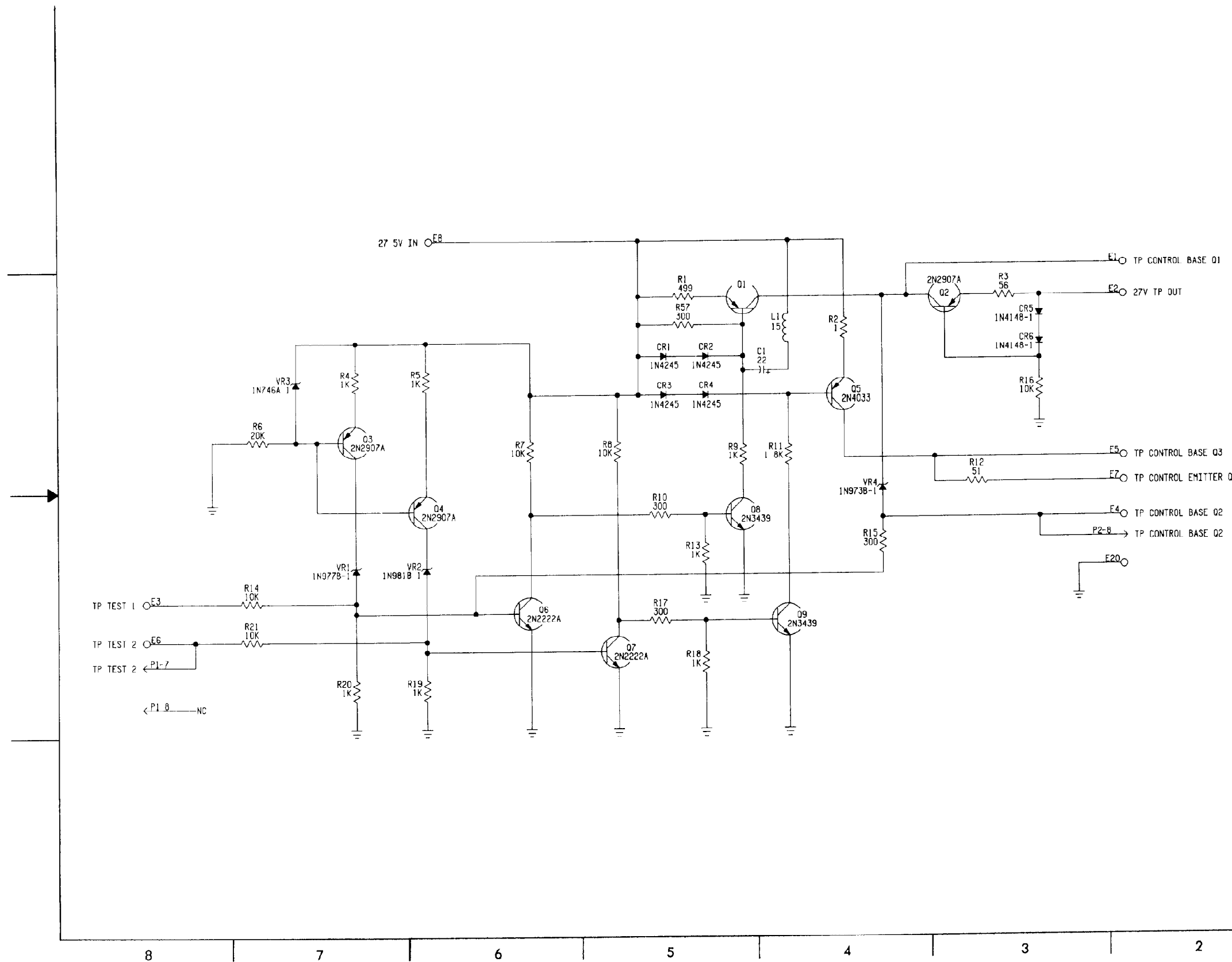
FO-32 CCA-Antenna Decoder A3018121-1 Schematic Diagram



NOTES

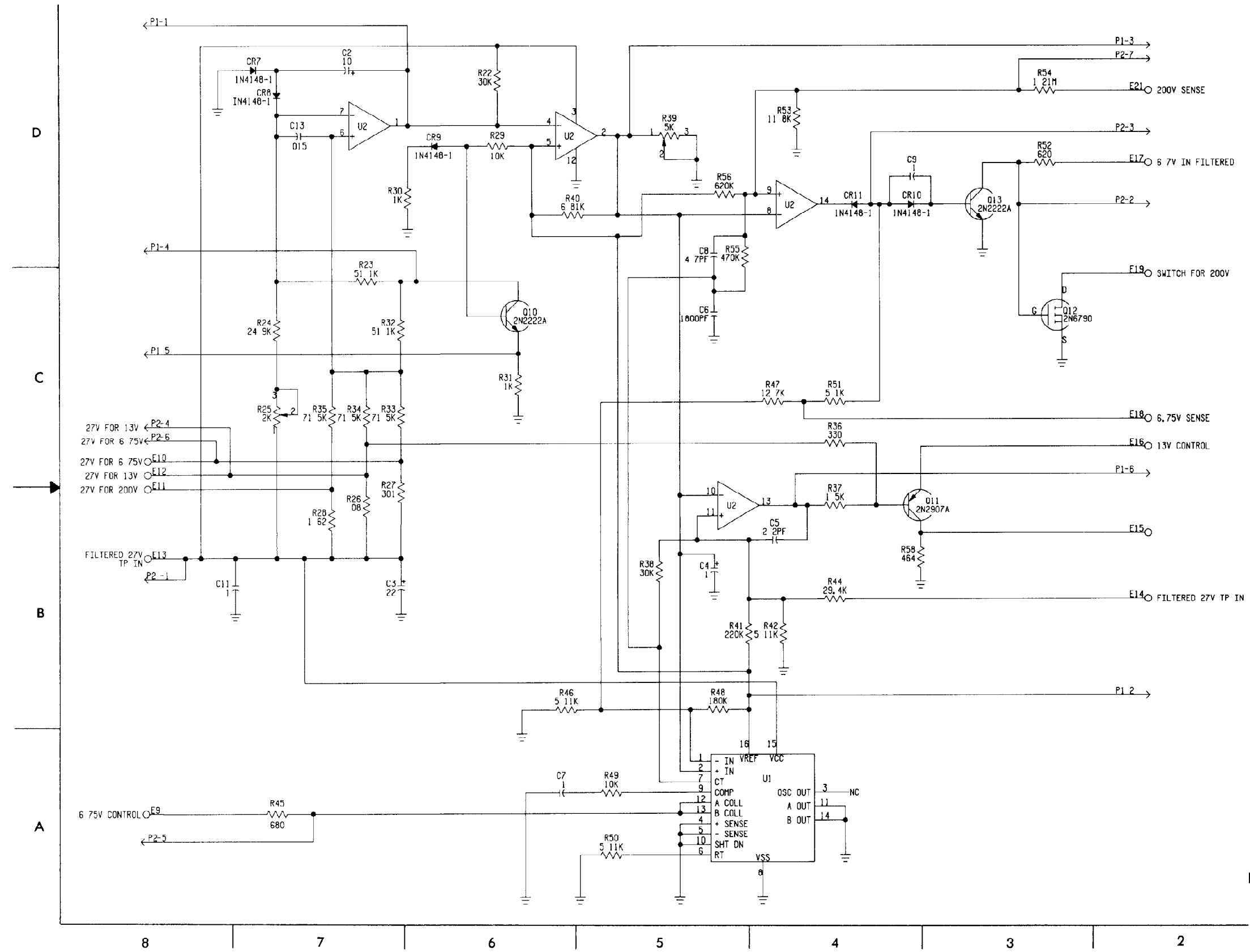
- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 1A2
- 2 RESISTANCE VALUES ARE IN OHMS CAPACITANCE VALUES ARE IN MICROFARADS INDUCTANCE VALUES ARE IN MICROHENRIES

FO-33 CCA-Antenna Matching A3018118-1 Schematic Diagram



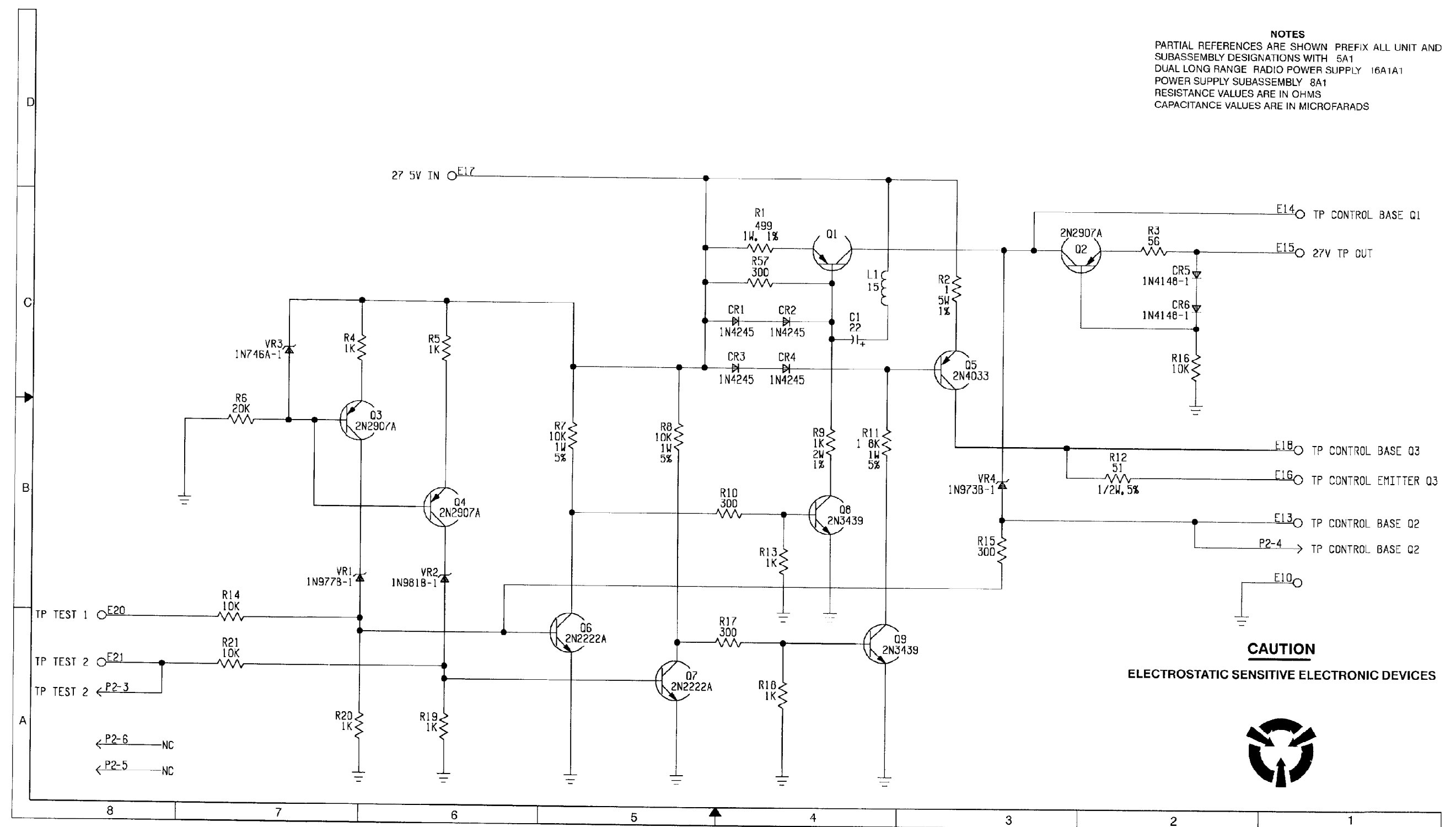
- NOTES
- 1 PARTIAL REFERENCE DESIGNATIONS ARE SHOWN PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 5A3A1
 - 2 RESISTANCE VALUES ARE IN OHMS
CAPACITANCE VALUES ARE IN MICROFARADS
INDUCTANCE VALUES ARE IN MICROHENRIES

FO-34 Transient Protection/Regulator A3018810-1
Schematic Diagram (Sheet 1 of 2)



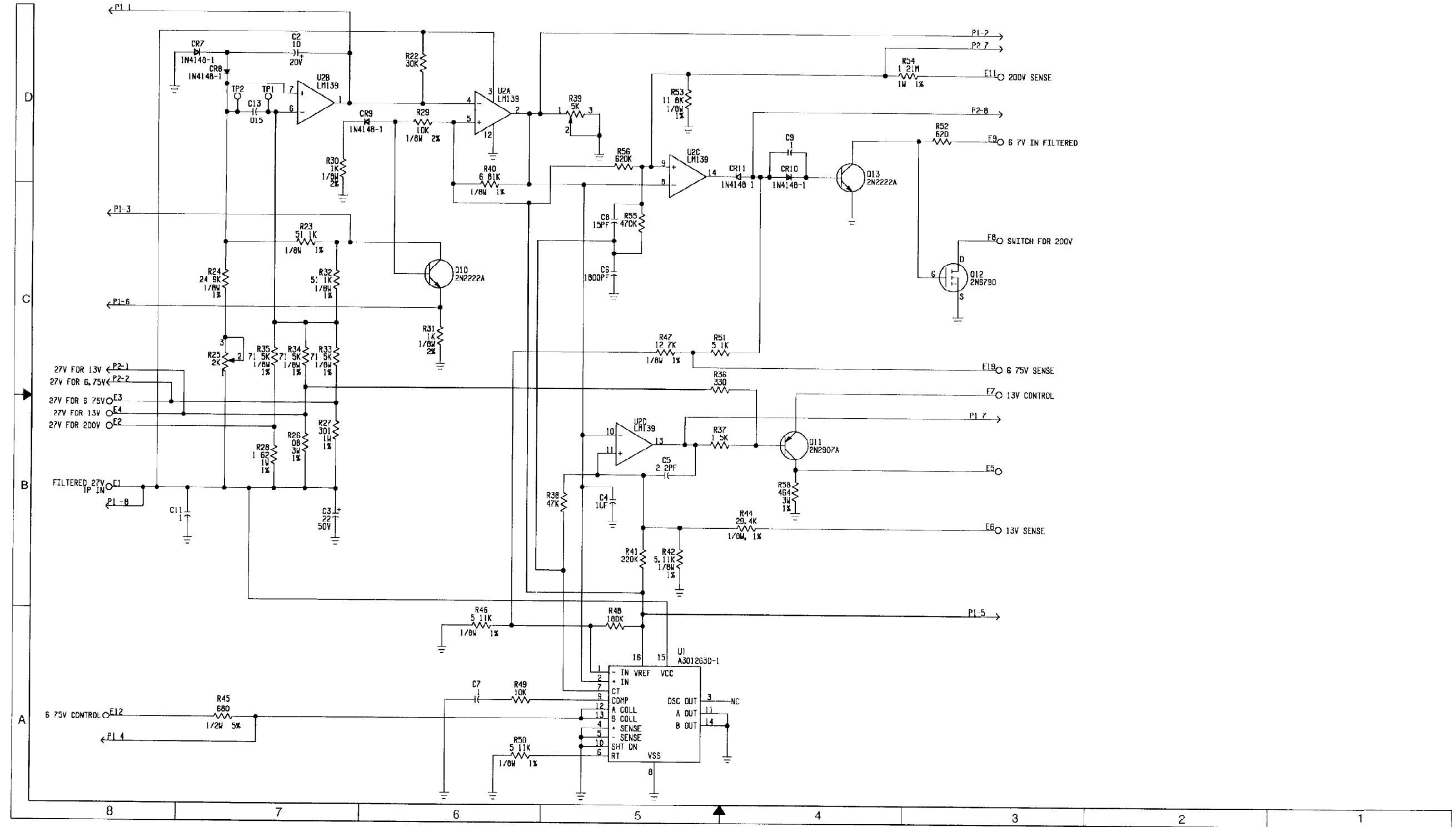
FO-34 Transient Protection/Regulator A3018810-1 Schematic Diagram (Sheet 2 of 2)

NOTES
 PARTIAL REFERENCES ARE SHOWN PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 5A1
 DUAL LONG RANGE RADIO POWER SUPPLY 16A1A1
 POWER SUPPLY SUBASSEMBLY 8A1
 RESISTANCE VALUES ARE IN OHMS
 CAPACITANCE VALUES ARE IN MICROFARADS



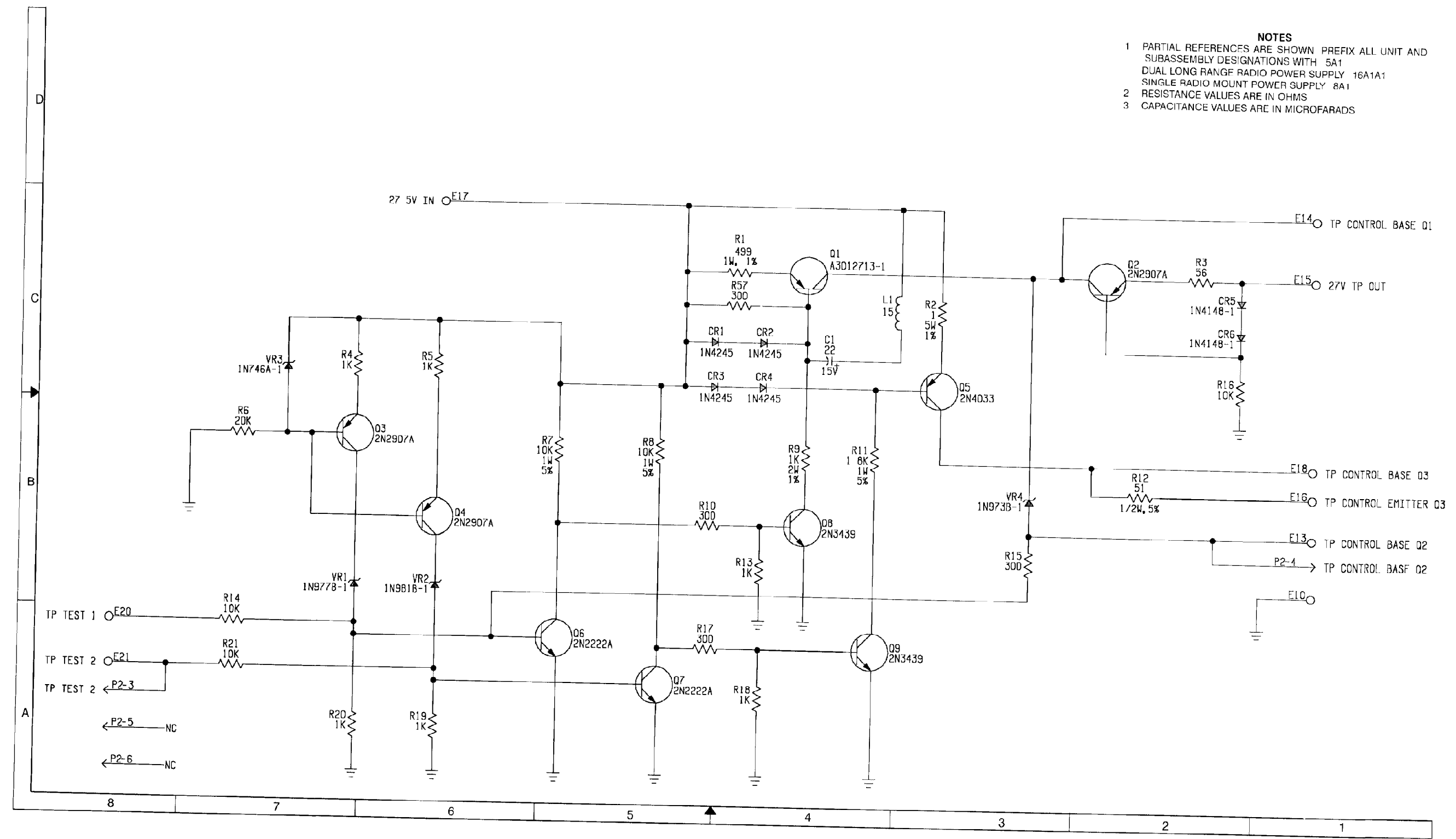
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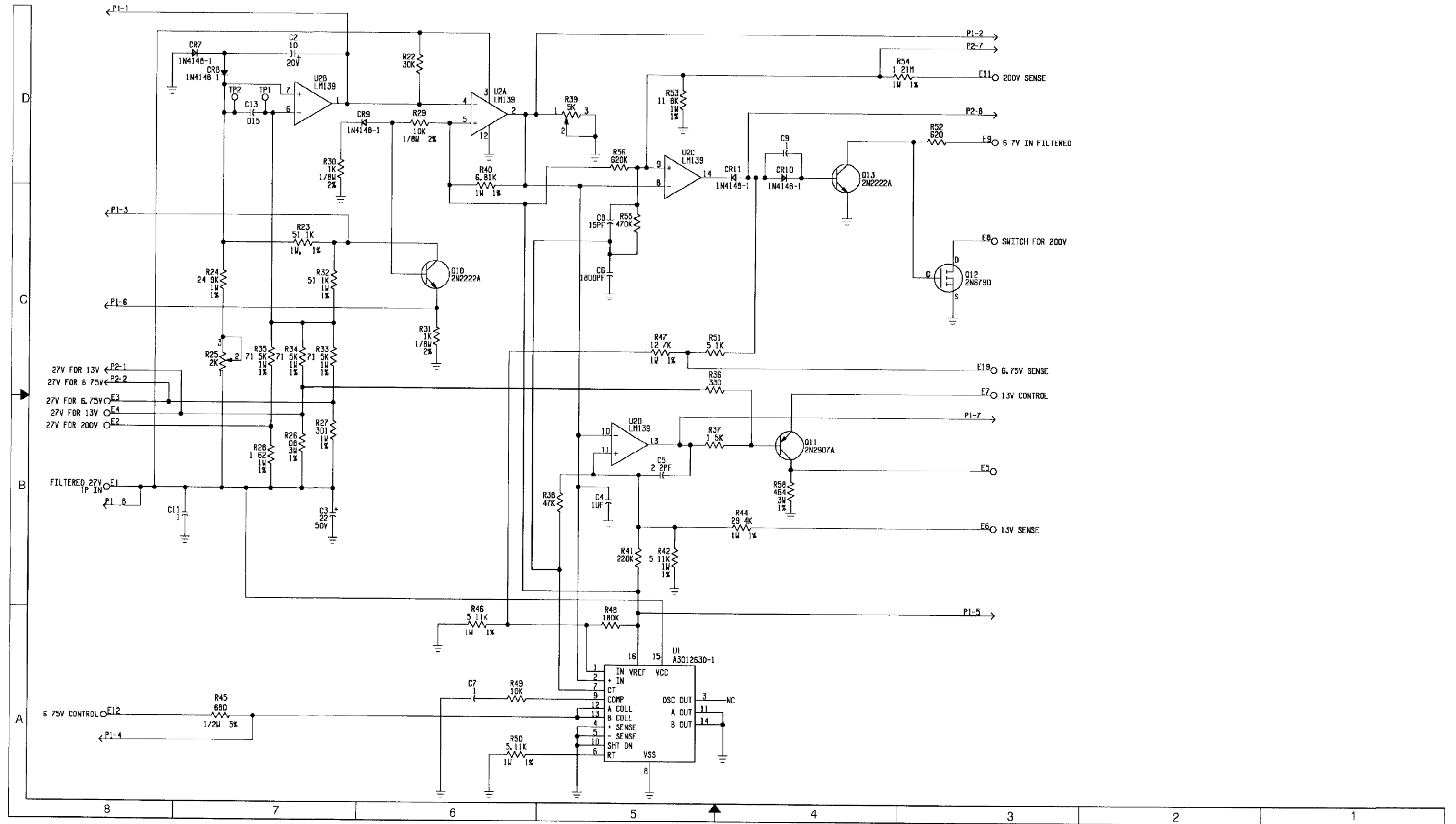
FO-35 CCA-Transient Protection/Regulator A3132834-1 (5A1) Schematic Diagram (Sheet 2 of 2)

- NOTES**
- 1 PARTIAL REFERENCES ARE SHOWN. PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 5A1
 - 2 RESISTANCE VALUES ARE IN OHMS
 - 3 CAPACITANCE VALUES ARE IN MICROFARADS

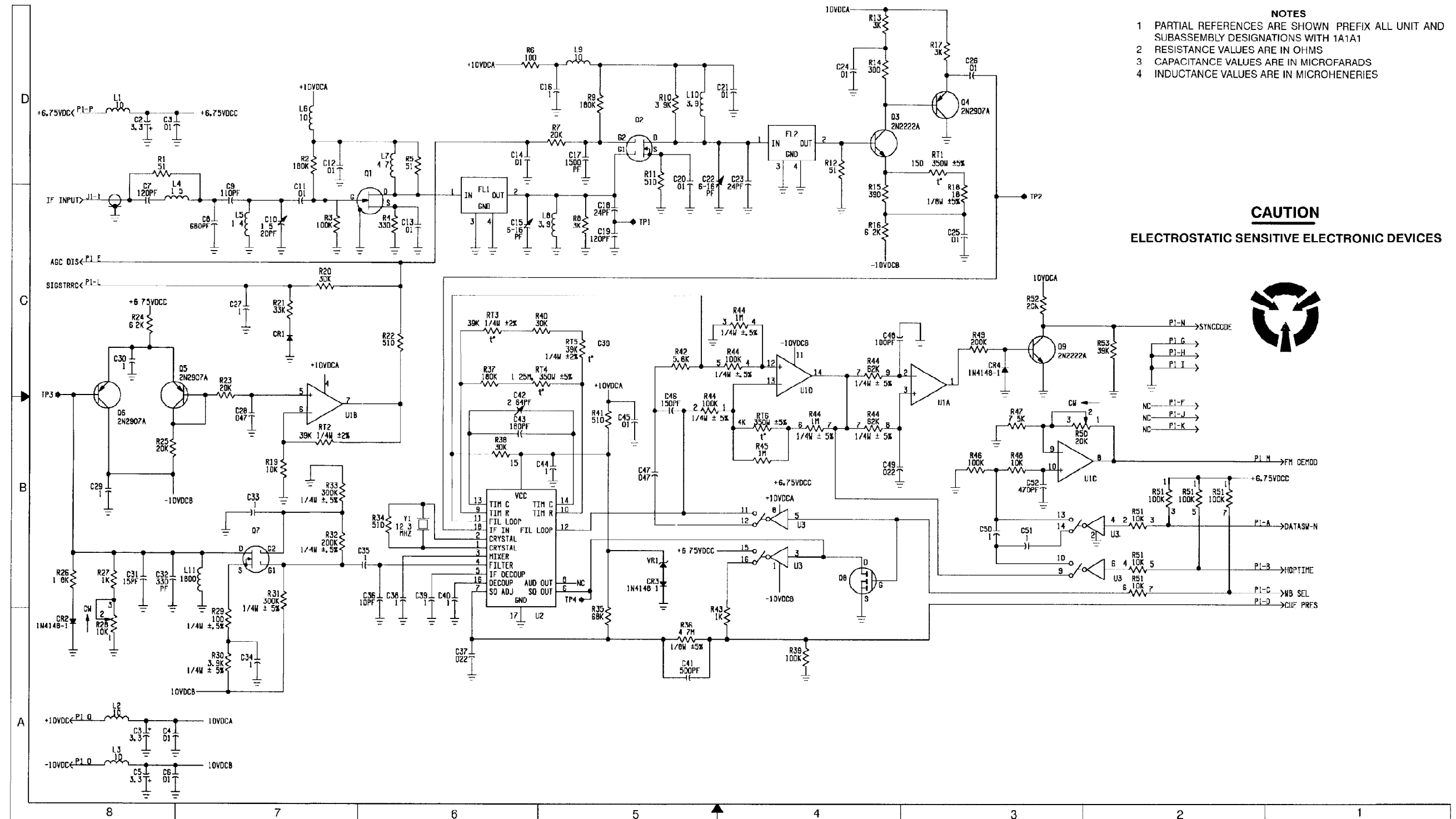


FO-36 CCA-Transient Protection/Regulator A3147857-1 (5A1) Schematic Diagram (Sheet 1 of 2)

FP-95/(FP-96 blank)



FO-36 CCA-Transient Protection/Regulator A3147857-1 (5A1) Schematic Diagram (Sheet 2 of 2)



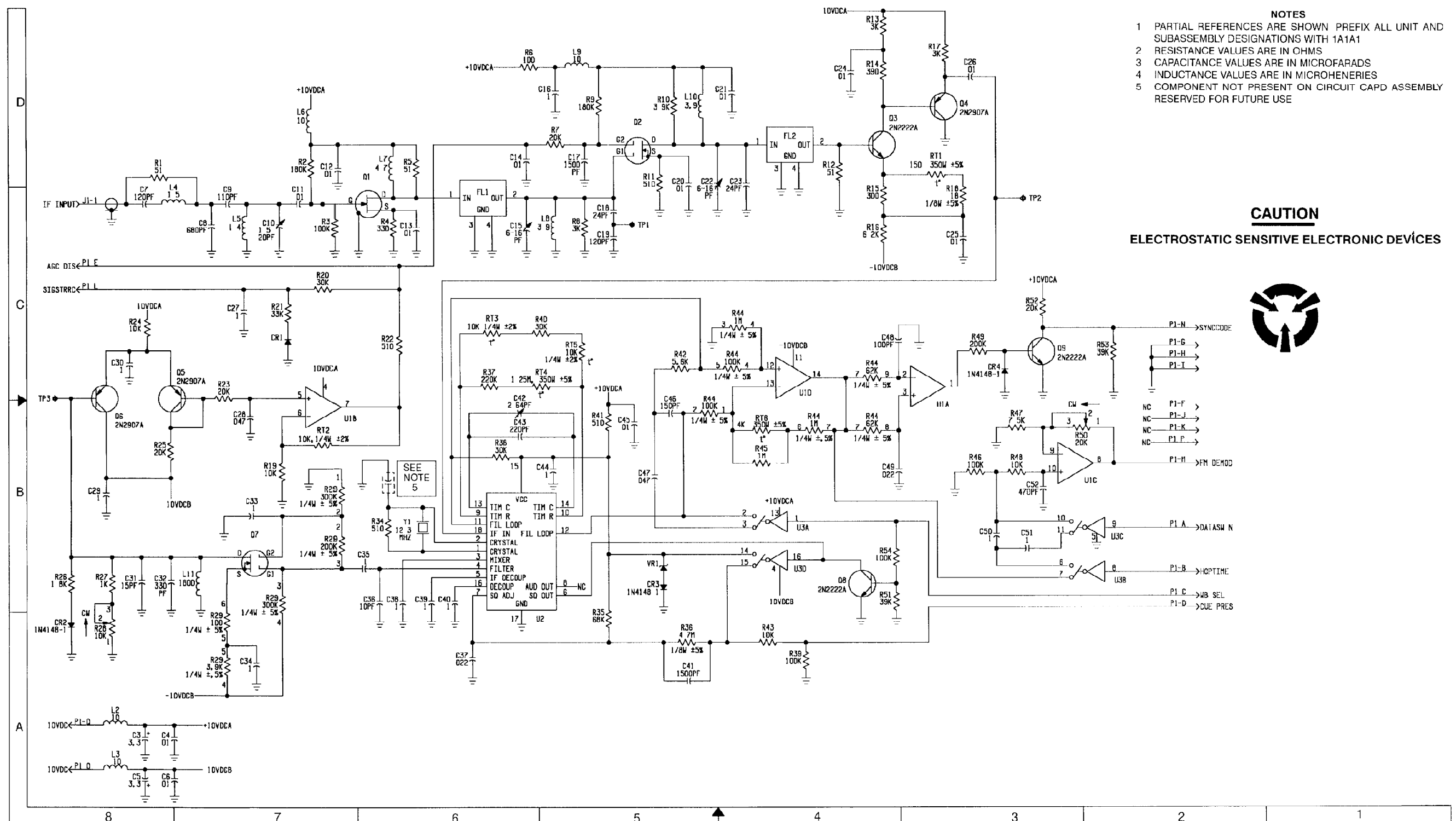
- NOTES**
- 1 PARTIAL REFERENCES ARE SHOWN PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 1A1A1
 - 2 RESISTANCE VALUES ARE IN OHMS
 - 3 CAPACITANCE VALUES ARE IN MICROFARADS
 - 4 INDUCTANCE VALUES ARE IN MICROHENRIES

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FO-37 IF/Demodulator A3142081-1 (1A8)
Schematic Diagram

FP-99/(FP-100 blank)



- NOTES**
- 1 PARTIAL REFERENCES ARE SHOWN PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 1A1A1
 - 2 RESISTANCE VALUES ARE IN OHMS
 - 3 CAPACITANCE VALUES ARE IN MICROFARADS
 - 4 INDUCTANCE VALUES ARE IN MICROHENRIES
 - 5 COMPONENT NOT PRESENT ON CIRCUIT CAPD ASSEMBLY RESERVED FOR FUTURE USE

CAUTION
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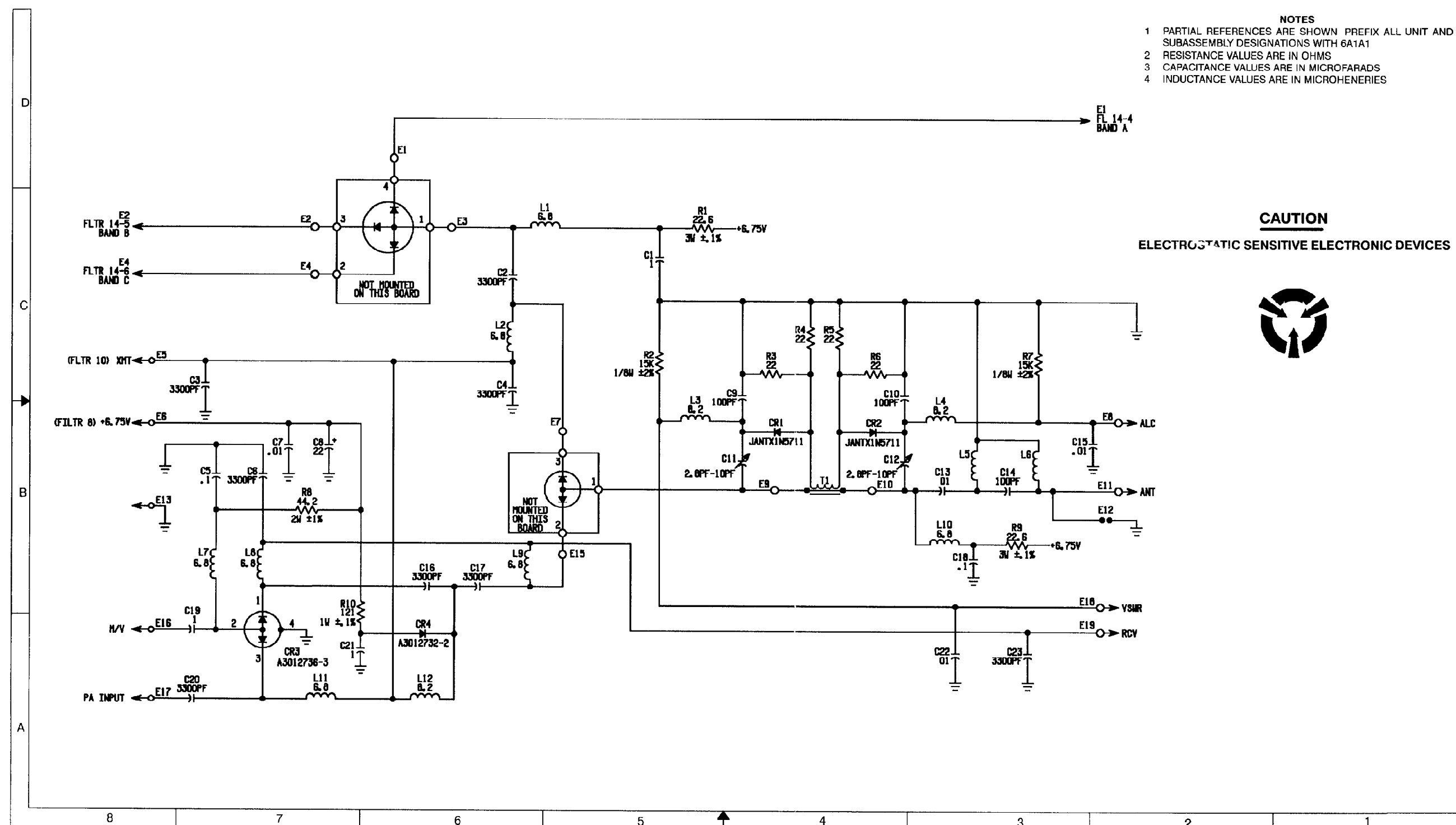


FO-38 IF/Demodulator A3142186-1 (1A8) Schematic Diagram

FP-101/(FP-102 blank)

- NOTES**
- 1 PARTIAL REFERENCES ARE SHOWN PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 6A1A1
 - 2 RESISTANCE VALUES ARE IN OHMS
 - 3 CAPACITANCE VALUES ARE IN MICROFARADS
 - 4 INDUCTANCE VALUES ARE IN MICROHENRIES

CAUTION
ELECTROSTATIC SENSITIVE ELECTRONIC DEVICES

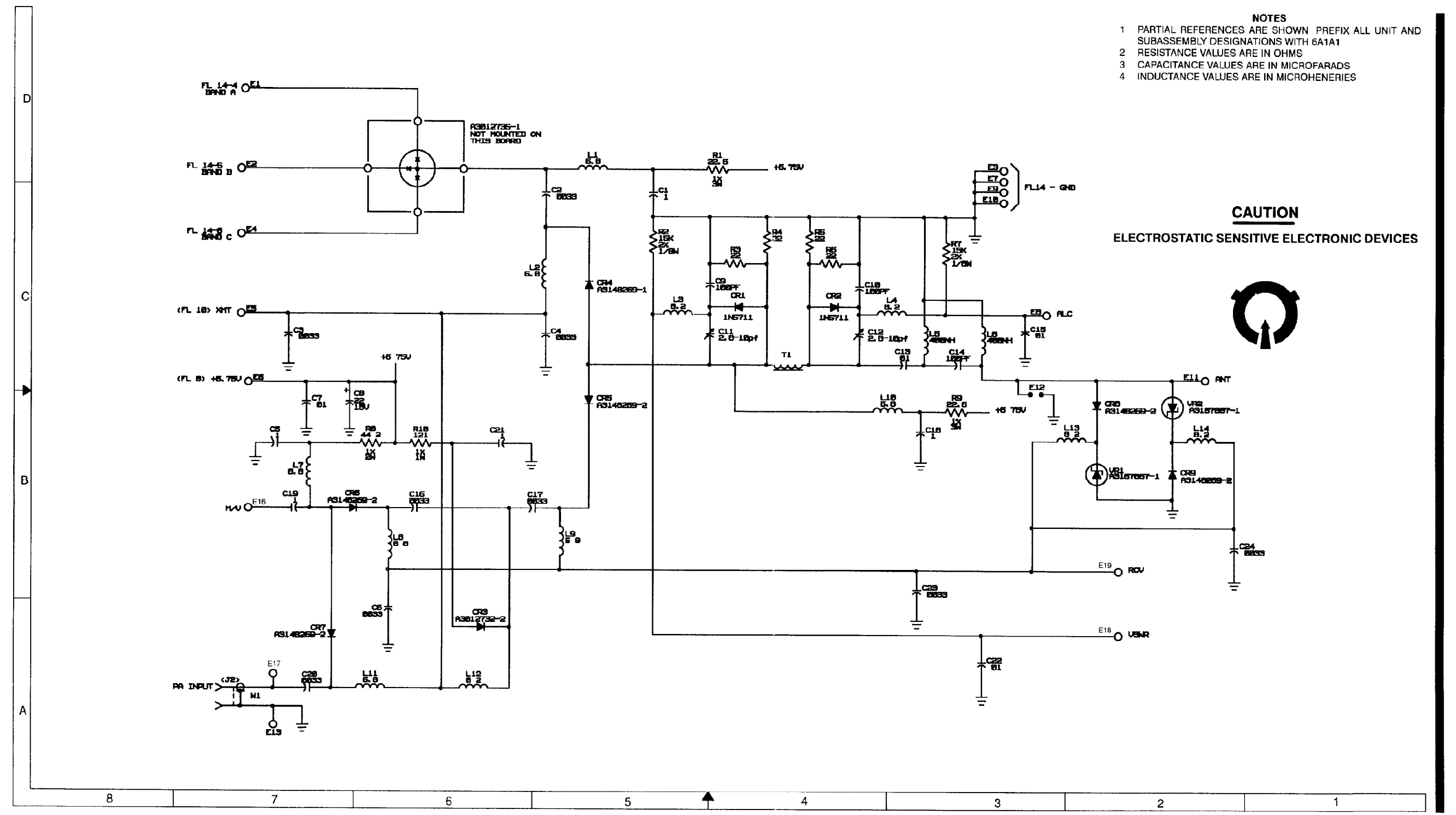


FO-39 CCA-Output Filter/Switch A3142095-1 (6A1A1) Schematic Diagram

Change 2 FP-103/(FP-104 blank)

- NOTES**
- 1 PARTIAL REFERENCES ARE SHOWN. PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 6A1A1
 - 2 RESISTANCE VALUES ARE IN OHMS
 - 3 CAPACITANCE VALUES ARE IN MICROFARADS
 - 4 INDUCTANCE VALUES ARE IN MICROHENRIES

CAUTION
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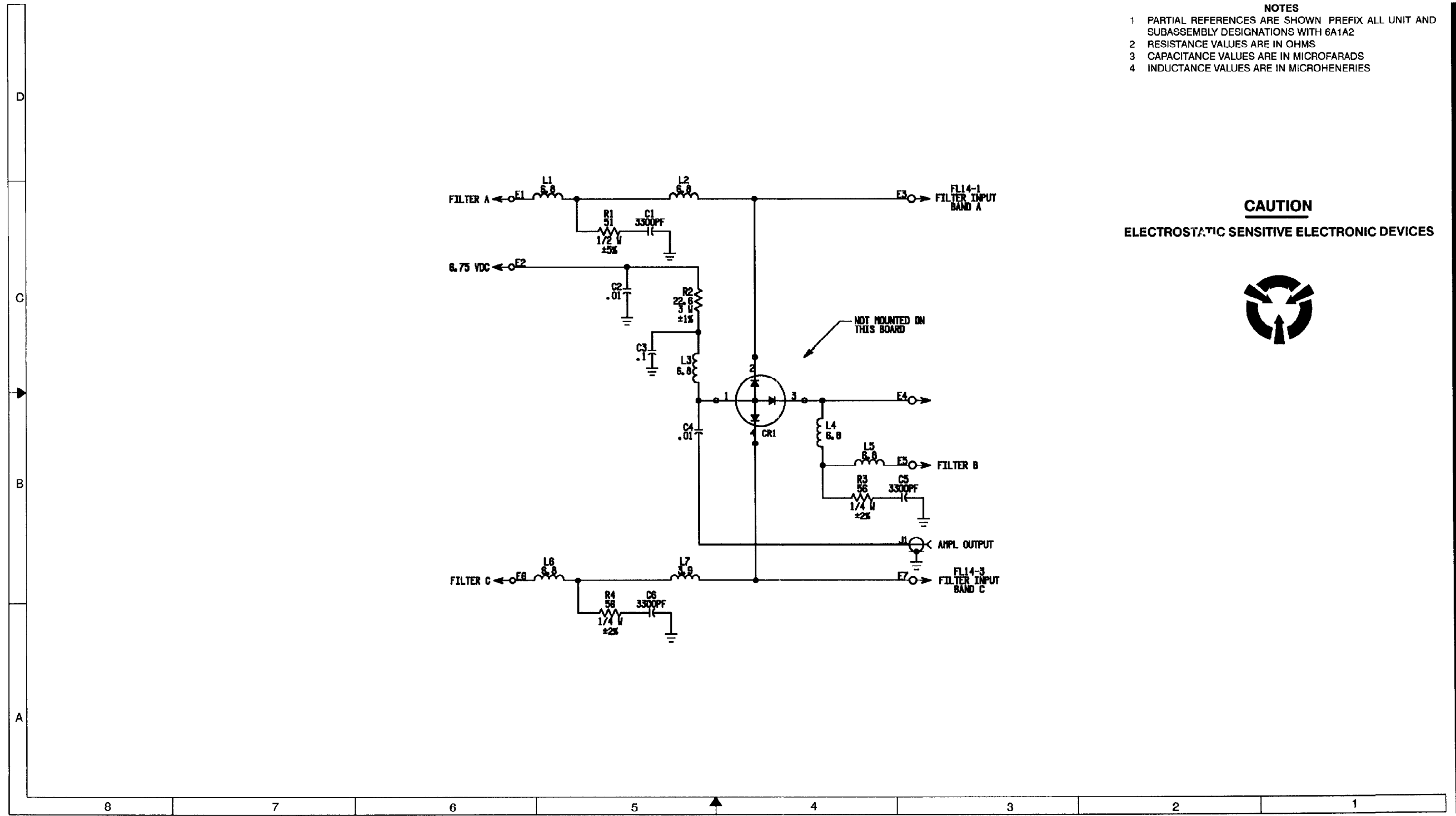
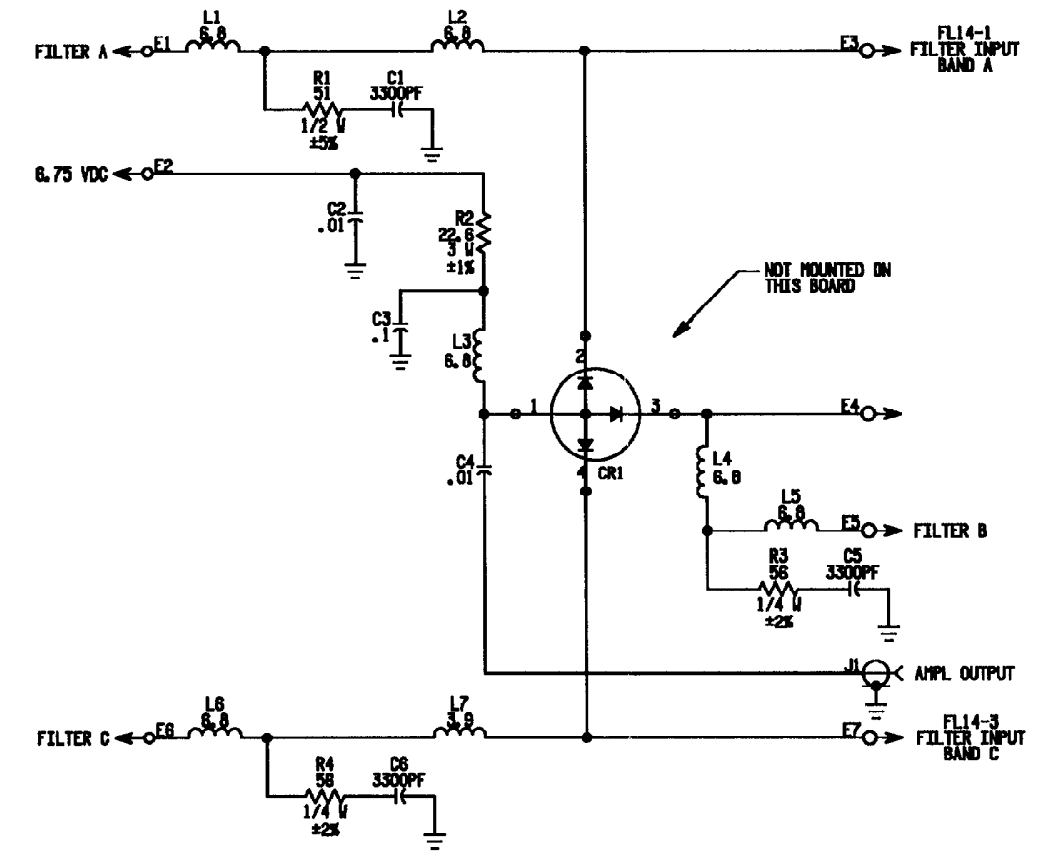


FO-40 CCA-Output Filter/Switch A3190864-1 (6A1A1) Schematic Diagram

Change 2 FP-105/(FP-106 blank)

- NOTES**
- 1 PARTIAL REFERENCES ARE SHOWN PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 6A1A2
 - 2 RESISTANCE VALUES ARE IN OHMS
 - 3 CAPACITANCE VALUES ARE IN MICROFARADS
 - 4 INDUCTANCE VALUES ARE IN MICROHENRIES

CAUTION
ELECTROSTATIC SENSITIVE ELECTRONIC DEVICES



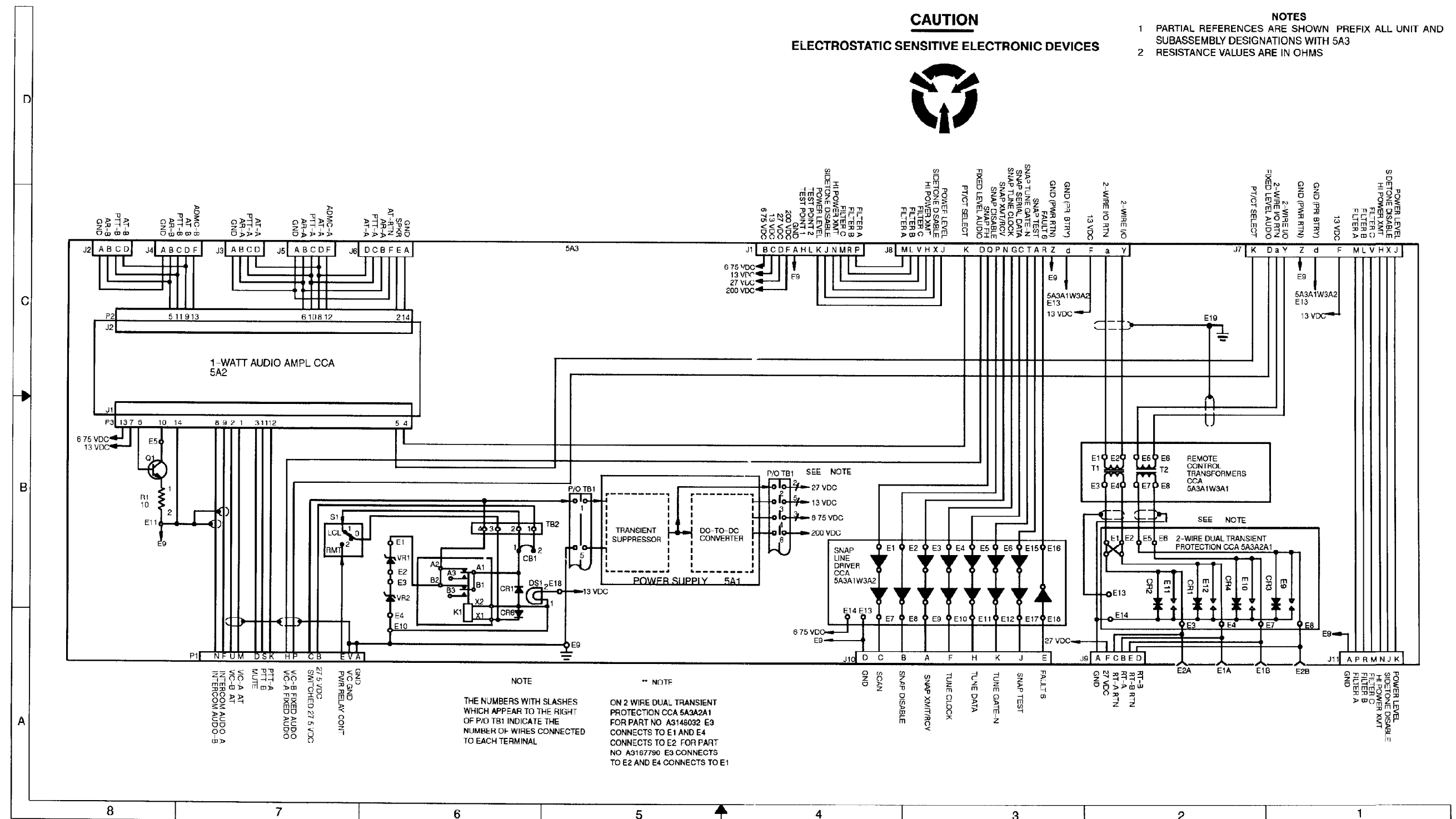
FO-41 CCA-Input Filter/Switch A3142092-1 (6A1A2) Schematic Diagram

Change 2 FP-107/(FP-108 blank)

CAUTION
ELECTROSTATIC SENSITIVE ELECTRONIC DEVICES



- NOTES**
- PARTIAL REFERENCES ARE SHOWN PREFIX ALL UNIT AND SUBASSEMBLY DESIGNATIONS WITH 5A3
 - RESISTANCE VALUES ARE IN OHMS



FO-42 Amplifier-Adapter Chassis A3167675-1 and A3167675-2 Schematic Diagram

Change 3 FP-109/(FP-110 blank)

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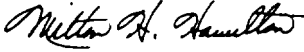
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2-25	2-28			<p>Recommend that the installation antenna alignment procedure be changed throughout to specify a 2° IFF antenna lag rather than 1°.</p> <p>REASON: Experience has shown that with only a 1° lag, the antenna servo system is too sensitive to wind gusting in excess of 25 knots, and has a tendency to rapidly accelerate and decelerate in hunts, causing strain to the drive train. Hunting is minimized by adjusting the lag to 2° without degradation of operation.</p>
3-10	3-3		3-1	<p>Item 5, Functions Column. Change "2 dB" to "3 dB".</p> <p>REASON: The adjustment procedure for the TRANS POWER FAULT indicator calls for a 3 dB (500 watts) adjustment to light TRANS POWER FAULT indicator.</p>
5-6	5-8			<p>Add new step f.1 to read, "Replace cover plate removed in step f.1 above."</p> <p>REASON: To replace the cover plate.</p>
		FO-3		<p>Zone C 3. On J1-2, change "+24 VDC" to "+5 VDC".</p> <p>REASON: This is the output line of the 5 VDC power supply. +24 VDC is the input voltage.</p>

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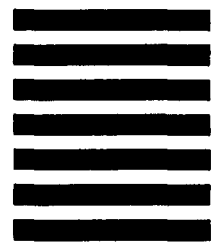
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