

523-0758370-4021
2nd Edition, 15 January 19
4th Revision, 15 March 19



Rockwell
International

instruction boo

**Collins 476X-
ATC Transponde
Ramp Test Se**

Collins Air Transport Divisio
Avionics and Missiles Gro
Rockwell International
Cedar Rapids, Iowa 5240

Printed in the United States of Amer

Collins 476X-3 ATC Transponder Ramp Test Set

List of Effective Pages

*The asterisk indicates pages changed, added, or deleted by the current change.

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5-9	1 Oct 76		
5-10	1 Feb 78		

We welcome your comments concerning this instruction book. Although every effort has been made to keep it free of errors, some may occur. When reporting a specific problem, please describe it briefly and include the instruction book part number, the paragraph or figure number, and the page number.

Send your comments to: Publications Department
Collins Air Transport Division
Rockwell International
Cedar Rapids, Iowa 52406

CAUTION

The material in this manual is subject to change. Before attempting any maintenance operation on the equipment covered in this manual, verify that you have complete and up-to-date publications by referring to the applicable Publications and Service Bulletin Indexes.



NAVIGATION

476X-3 RAMP TEST CPN 522-4475-XXX

SERVICE BULLETIN NO 1

PROVIDE POWER SUPPLY TRANSIENT PROTECTION

1. PLANNING INFORMATION

A. Effectivity

The modification presented in this service bulletin is applicable to all 476X-3 te sets.

This modification will be incorporated in production units effective with MCN 34 (serial number 226).

B. Reason

This modification protects the transistors in the 476X-3 from switching transient that may be generated when the unit is switched to the self-test mode.

C. Description

The modification consists of installing ten diodes and a resistor.

D. Compliance

This modification is to be performed at the option of the customer.

E. Approval

None.

F. Manpower

The estimated time required to perform this modification is 2 manhours plus 1 hour of testing.

G. Material -- Cost and Availability

Modification kit 606-3575-001 (as itemized in paragraph 3) is available 30 days after receipt of order for shipment of (Price subject to change without not Modification kits may be obtained from Collins Radio Company, Service Parts Department, Cedar Rapids, Iowa 52406. All orders should specify modification kit 606-3575-001 and reference Service Bulletin No 1.



H. Tooling -- Price and Availability

No special tools are required.

I. Weight and Balance

None.

J. References

The testing section of the 476X-3 instruction book is referenced in paragraph 2.C.

K. Other Publications Affected

The second revision to the second edition of the 476X-3 ATC Transponder Ramp Test Set Instruction Book, Collins part number 523-0758370, will cover the changes made in this modification.



2. ACCOMPLISHMENT INSTRUCTIONS

A. Modification Procedure

- (1) Disengage the top cover fasteners, remove four screws below the control panel flange (two on each side), invert the unit, and remove cover.
- (2) To gain access to the inside of the unit, remove the three screws on the front of the unit below the front panel flange, and swing up the hinged front panel.
- (3) To gain access to the batteries and inside portion of the component boards, disengage the six fasteners at the bottom of the unit, and swing out the battery box.
- (4) Position the unit on its left side with the bottom toward the observer so that the battery box will swing downward when freed.
- (5) Loosen the two Dzus fasteners securing the battery box and allow the box to swing down.
- (6) Remove the five screws securing the top cover of the battery box, then remove the cover and set it aside exercising care not to damage the wire connections from the cover to the chassis.
- (7) Remove the 20 batteries from the box.
- (8) Remove the mounting screws from terminal board TB600 and retain hardware. (Refer to figure 1 for location of board.)

NOTE: Refer to figure 2 for location of components referenced in steps (9) through (12).

- (9) Remove and retain R629 (6.8 k Ω , 1/2-watt resistor between terminals 69 and 76) from terminal board TB600.
- (10) Remove diode CR602 (1N191 between terminals 22 and 44).
- (11) Remove base lead of Q601 from terminal 22 and connect to terminal 21.
- (12) Remove collector lead of Q601 from terminal 5 and connect to terminal 22.
- (13) On rear side of terminal board TB600, remove jumpers between terminals 21 and 22 and between terminals 44 and 69. (Refer to figure 3 for location.)
- (14) Remove white-black wire from terminal 44 and connect to terminal 69.
- (15) Add a 1N3064 diode, CR602 (353-3404-000), between terminals 21 (anode) and 44 (cathode), using insulating sleeving (152-2493-000). (Refer to figure 4 for location.)



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- (16) Add a 1N3064 diode, CR619 (353-3404-000), between terminals 69 (anode) and 44 (cathode), using insulating sleeving (152-2493-000). (Refer to figure 4 for location.)
- (17) Replace R629 (745-1387-000) between terminals 44 and 67, using insulating sleeving (152-2493-000). (Refer to figure 5 for location.)
- (18) Replace diode CR603 (between terminals 21 and 42) with a 1N3064 diode (353-3404-000). Connect cathode end to terminal 21. (Refer to figures 2 and 5.)
- (19) Replace diode CR601 between terminals 4 and 21 with a 1N3064 diode (353-3404-000). Connect cathode end to terminal 4. (Refer to figures 2 and 5.)
- (20) Add a 1N3064 diode, CR620 (353-3404-000), between terminals 43 (anode) and 22 (cathode), using insulating sleeving between terminals. (Refer to figure 5 for location.)
- (21) Install three #4 ground lugs (304-0317-000) as shown in figure 1, using hardware already in place.
- (22) Install a 1N645 diode, CR511 (353-2607-000), between the ring of fuse F505 (anode) and the ground lug #1 (cathode), using insulating sleeving (152-2493-000) on exposed leads. (Refer to figure 1.)
- (23) Install a 1N645 diode, CR512 (353-2607-000), between the ring of fuse F504 (anode) and the ground lug #2 (cathode), using insulating sleeving (152-2493-000) on exposed leads. (Refer to figure 1.)
- (24) Install a 1N645 diode, CR513 (353-2607-000), between the ring of fuse F503 (anode) and the ground lug #3 (cathode), using insulating sleeving (152-2493-000) on exposed leads. (Refer to figure 1.)
- (25) Install a 1N645 diode, CR514 (353-2607-000), between the ring of fuse F502 (cathode) and the ground lug #3 (anode), using insulating sleeving (152-2493-000) on exposed leads. (Refer to figure 1.)
- (26) Replace the 20 batteries removed in step (7), observing the marked polarity.
- (27) Replace the battery cover using the hardware removed in step (3).
- (28) Remount terminal board TB600 with the hardware removed in step (8).
- (29) Refasten all the captive fasteners loosened in steps (3) and (5).
- (30) Replace the three flathead screws removed in step (2), fastening the panel to the chassis.
- (31) Put the unit in the bottom cover and fasten, using screws removed in step (1).



B. Identification Procedures

Enter SBI on the information chart (280-3778-010) and stick it to the unit.

C. Testing Procedure

To ensure that the unit was not inadvertently damaged during installation of subject modification, perform the test procedures listed in section 5, paragraph 5.3 Minimum Performance Test of 476X-3 instruction book.



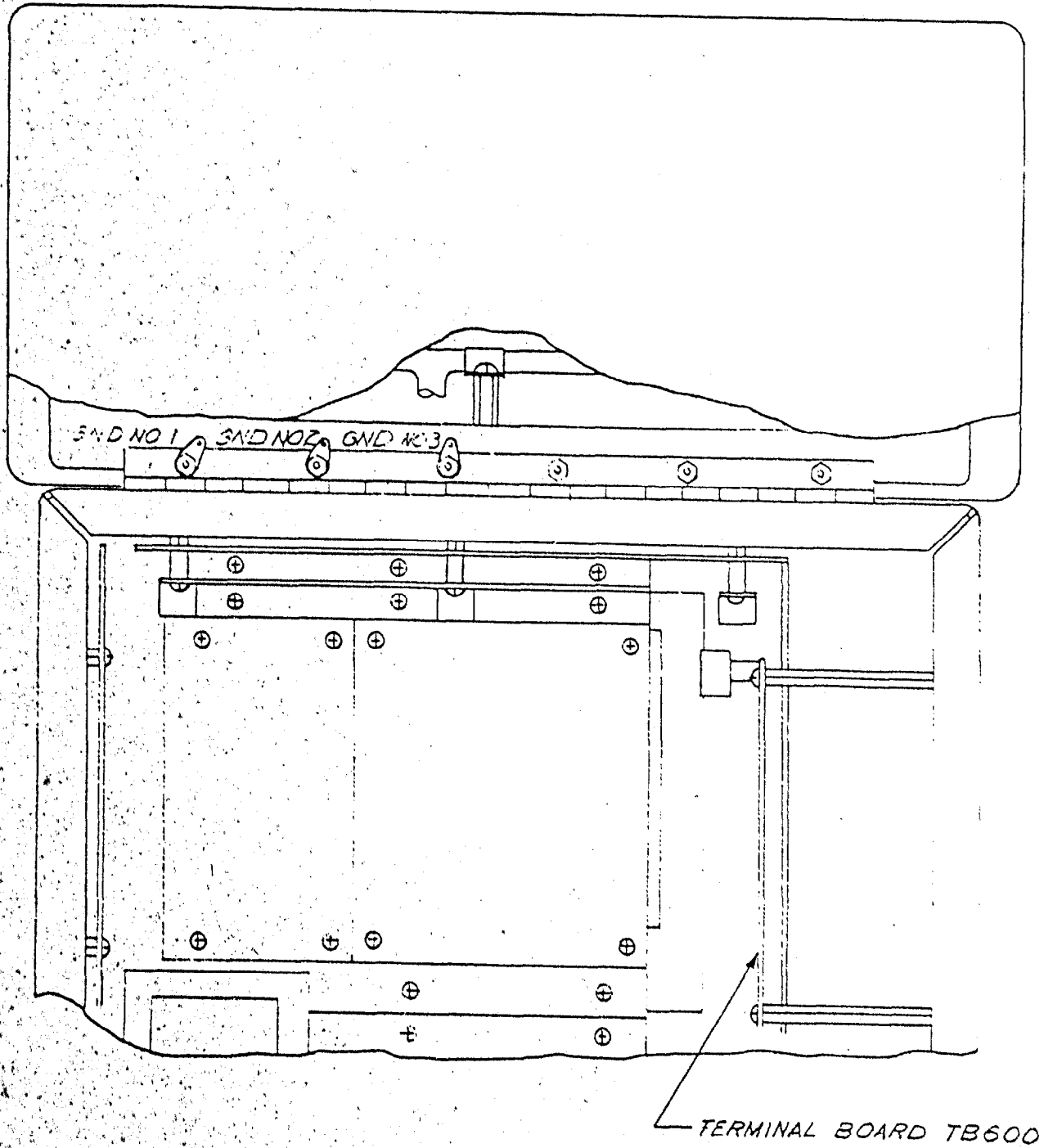
3. MATERIAL INFORMATION

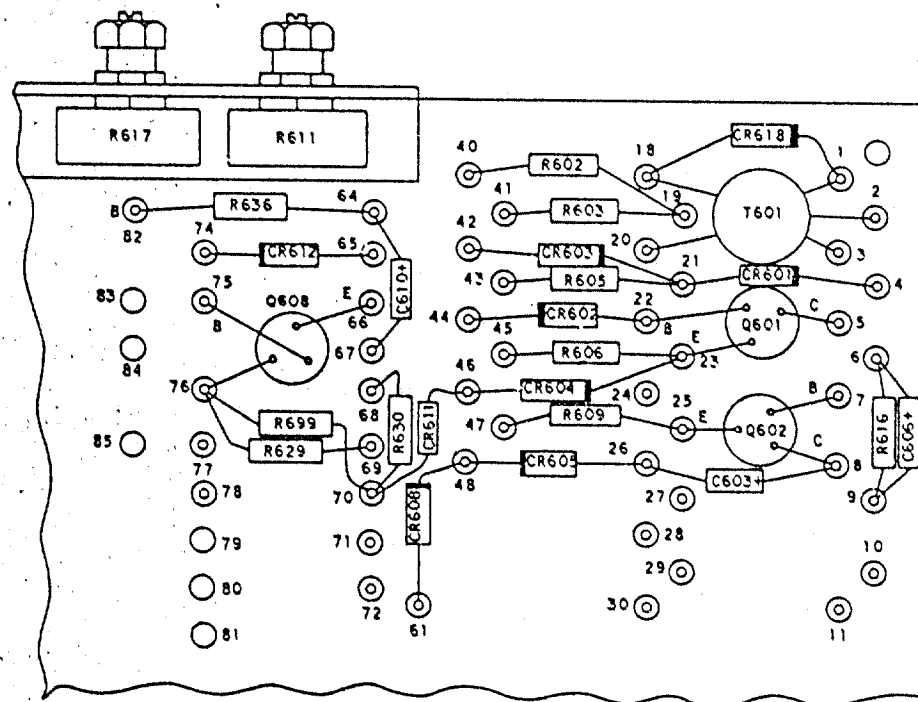
The parts itemized below are required to modify one 476X-3 ATC Transponder Ramp Test Set. Modification kit 606-3575-001 consists of the following:

<u>NEW COLLINS PART NUMBER</u>	<u>QTY</u>	<u>UNIT PRICE</u>	<u>DESCRIPTION</u>	<u>REPLACED COLLINS PART NUMBER</u>	<u>INSTRUCTIONS -DISPOSITION</u>
152-2493-000	2 ft		Insulating sleeving		
304-0317-000	3		#4 ground lugs		
353-2607-000	4		Diode, 1N645		
353-3404-000	6		Diode, 1N3064		
745-1387-000	1		Resistor, 6800 ohm, 1/4 watt		

The following is used but not included in the modification kit. Order only if required.

280-3778-010	1	Chart, information
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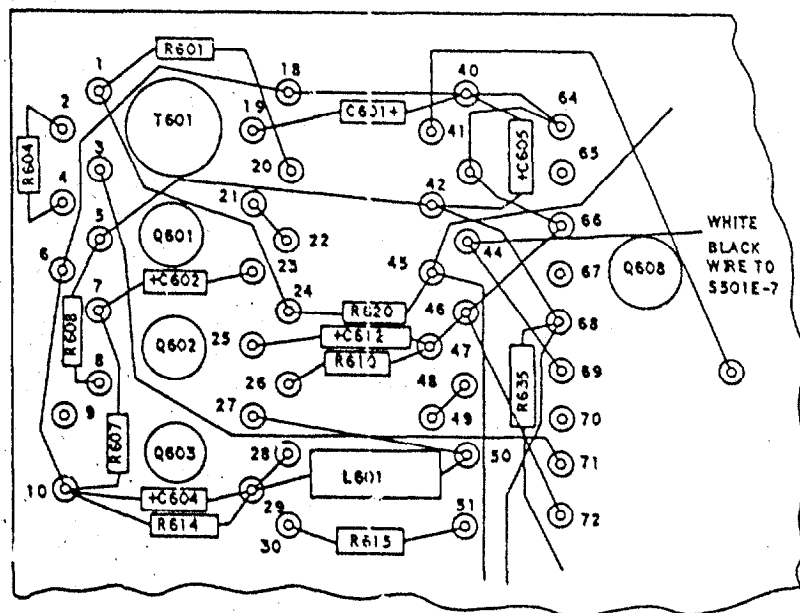


Top Side of TB600 Before Modification
Figure 2

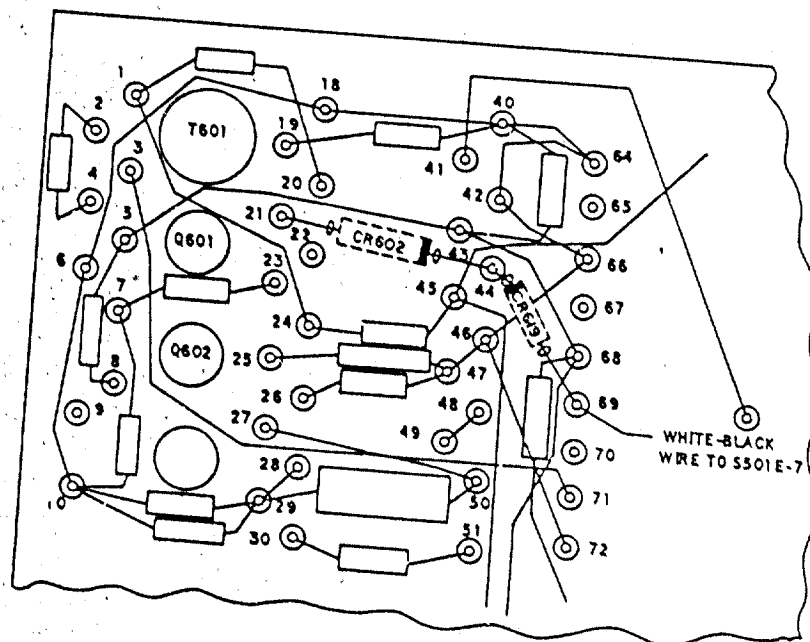
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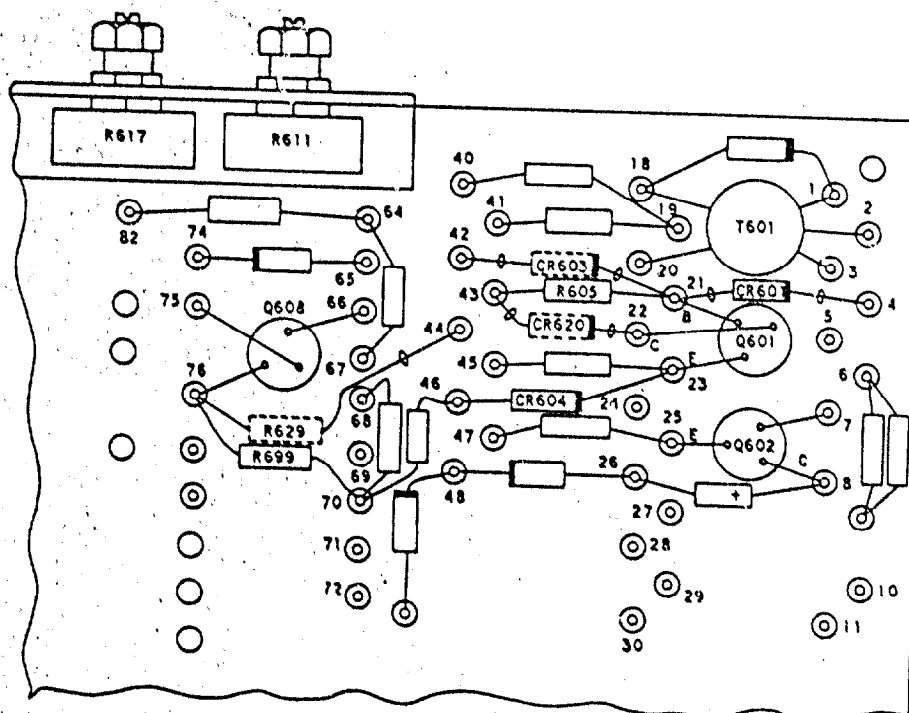


Bottom Side of TB600 Before Modification
Figure 3

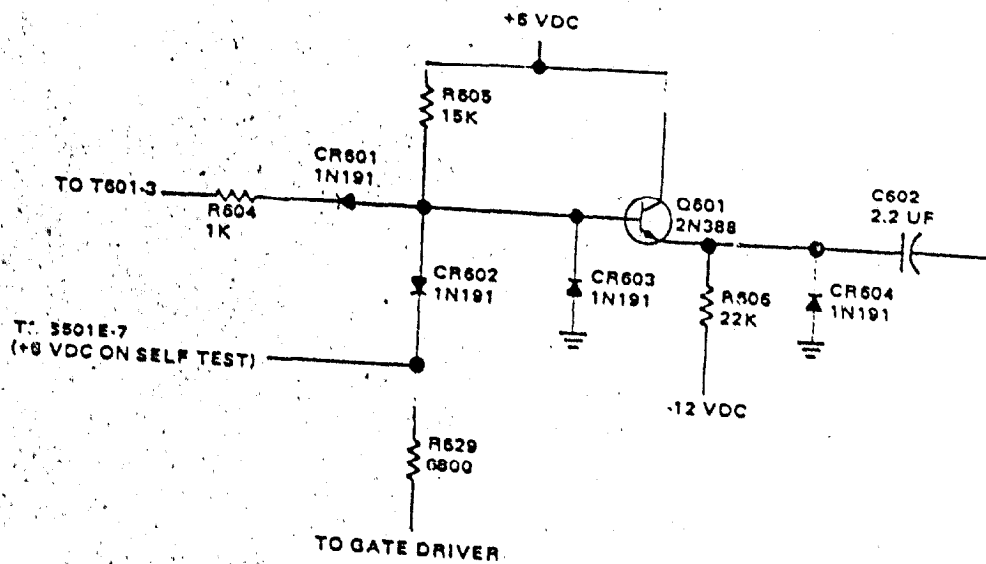


Bottom Side of TB600 After Modification
Figure 4

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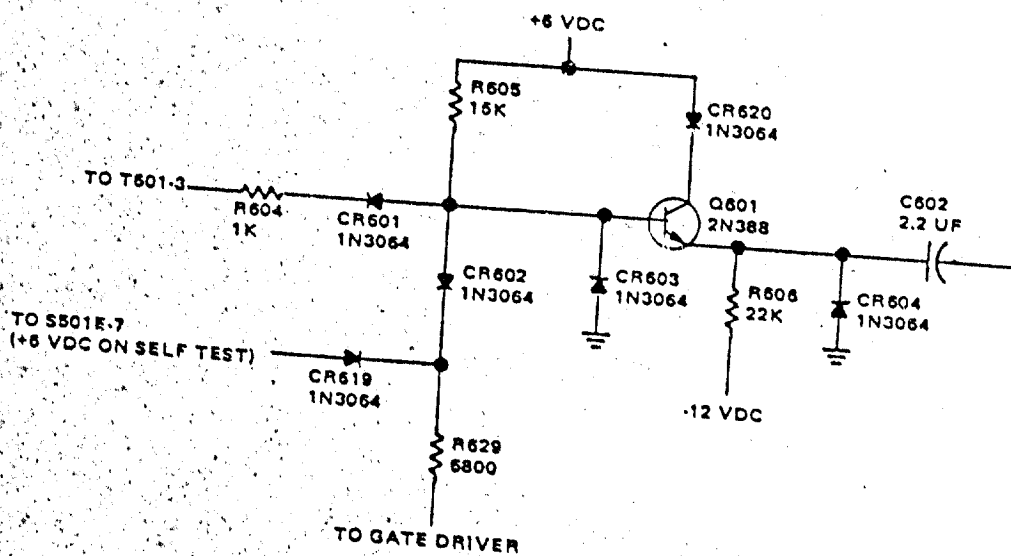


Top Side of TB600 After Modification
Figure 5



Inhibit Gate Before Modification
Figure 6

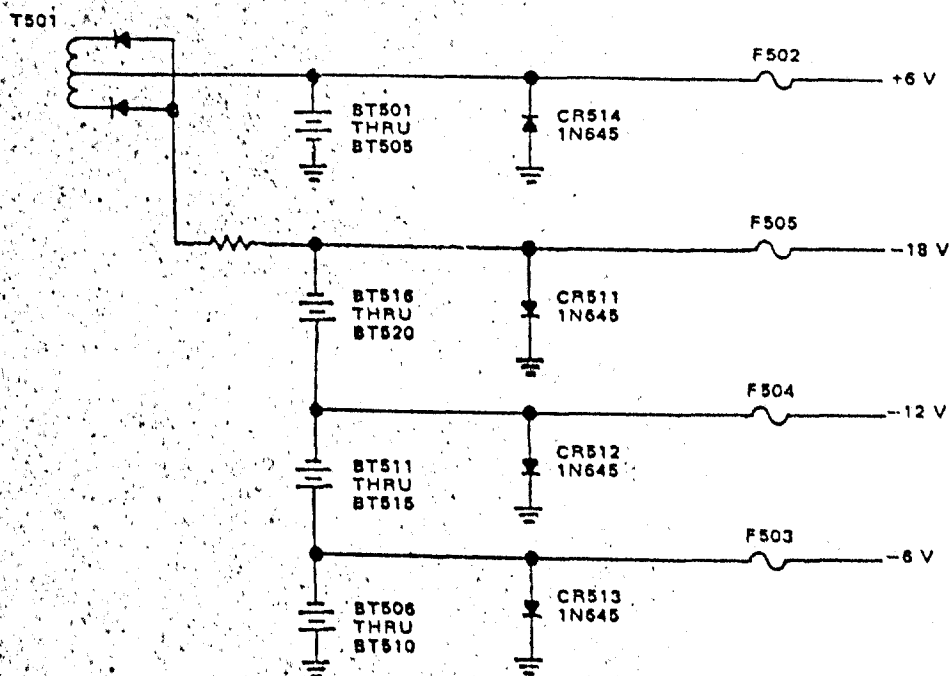
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Inhibit Gate After Modification
Figure 7



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Power Supply After Modification
Figure 8

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SERVICE BULLETIN

NAVIGATION

476X-3 ATC TRANSPONDER RAMP TEST SET (522-4475-001)

SERVICE BULLETIN NO 2

ELIMINATE INTERFERENCE WITH ATC GROUND STATIONS

1. Planning Information

A. Effectivity

The modification presented in this service bulletin is applicable to all 476X-3 ATC Transponder Ramp Test Sets, Collins part number 522-4475-001, serial number 308 and below.

This modification will be incorporated in production units effective with serial number 309.

B. Reason

The 476X-3 ATC Transponder Ramp Test Set and ATC ground stations have a prf interrogation rate of 400. This modification lowers the prf interrogation rate of the 476X-3 ATC Transponder Ramp Test Set to eliminate interference with the ATC ground stations.

C. Description

This modification lowers the pulse repetition frequency of the interrogation oscillator from 400 to 257.

D. Manpower

Estimated 0.5 hour.

E. Material

The resistor required for modification, Collins part number 705-1471-170, (as listed in paragraph 3) is available for shipment within 30 days after receipt of order at a price of (Price subject to change without notice.) The resistor may be obtained from Collins Radio Company, Service Parts Department, Cedar Rapids, Iowa 52406. All orders should specify the resistor part number and reference this service bulletin.



SERVICE BULLETIN

F. Tooling -- Price and Availability

None.

G. References

None.

H. Other Publications Affected

476X-3 ATC Transponder Ramp Test Set Instruction Book, 2nd Edition, 1st Revision; Collins part number 523-0758370.

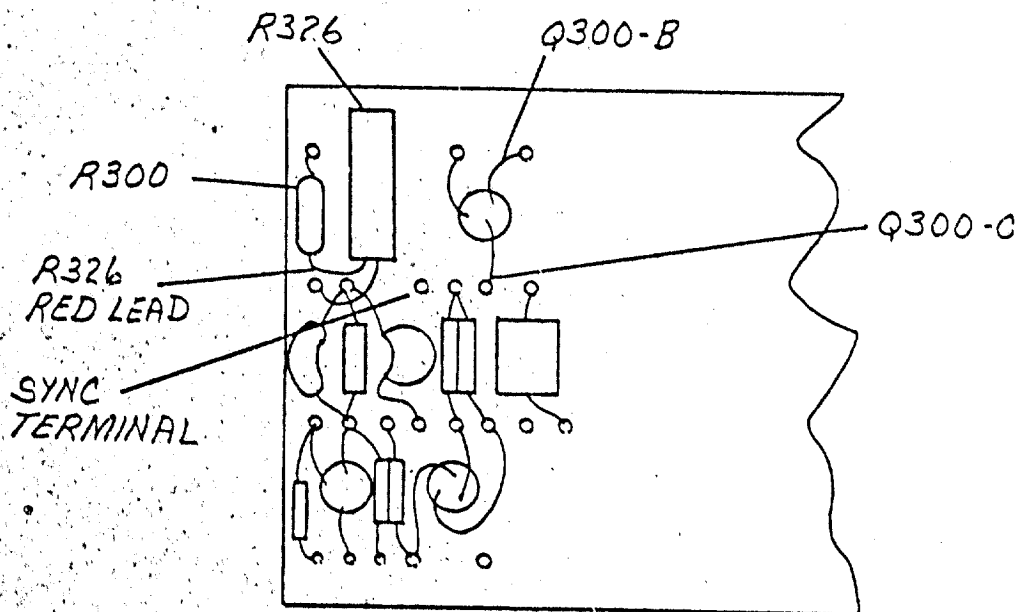


SERVICE BULLETIN

2. Accomplishment Instructions

A. Modification Procedure

- (1) Disconnect 476X-3 from power source.
- (2) Remove four screws from case and lift 476X-3 out of case.
- (3) Locate TB300 on left side of 476X-3 (when viewed from front).
- (4) Locate and remove R300. Refer to figure 1.
- (5) Solder 124-k Ω resistor (CPN 705-1471-170) to terminals where R300 was removed.
- (6) Connect power source to 476X-3 and place MODE selector switch to A.
- (7) Connect oscilloscope to collector of Q300. Connect oscilloscope sync to SYNC terminal on TB300. Refer to figure 1.
- (8) Observe pulses and adjust R326 for a period of $3900 \pm 200 \mu s$.
- (9) Disconnect oscilloscope from TB300. Place 476X-3 MODE selector switch to OFF.
- (10) Replace 476X-3 in case and secure with four screws.



• TB300, Left Side View
Figure 1



B. Testing Procedure

- (1) Perform steps (a) through (l) to ensure the modification has been properly installed. Figure and table references apply to the 476X-3 ATC Transponder Ramp Test Set Instruction Book.
 - (a) Connect equipment as shown in figure 5-6.
 - (b) Set scope controls to TIME BASE A 500 USEC/CM, A delayed by B, DC traces, trace A to 10 V/CM, trace B to .05 V/CM.
 - (c) Adjust 476X-3 OUTPUT control cw to obtain a convenient signal amplitude on scope.
 - (d) Adjust R326 (2 of figure 6-16) to obtain 3900 microsecond pulse spacing.
 - (e) Set input power for the high voltages specified in column B of table 5-2.
 - (f) Check to ensure that pulse spacing remains at 3900 ± 200 microseconds.
 - (g) Set input power for the lower voltages specified in column C of table 5-2.
 - (h) Check to ensure that pulse spacing remains at 3900 ± 200 microseconds.
 - (l) Set 476X-3 MODE selector to OFF and input power for the nominal voltages specified in column A of table 5-2.
- (2) After the modification has been completed, the spacing between interrogation pulse pairs changes from between 2250 and 2750 μ s to between 3700 and 4100 μ s. This change will affect the following test/adjustment paragraphs in the 476X-3 ATC Transponder Ramp Test Set Instruction Book.
 - (a) Paragraph 5.4.4.3, steps d, f and h.
 - (b) Paragraph 5.4.4.4, step f. INTERROGATION RATE control must be adjusted counterclockwise to lock monitored waveforms into sync.

C. Identification Procedure

Ensure that a modification chart is attached to the 476X-3. If the modification chart is a metal plate, Collins part number 791-0688-001, scrape off or black over the number 2. If the modification chart is a sticker, Collins part number 280-3778-010, enter SB 2 on one of the lines.



SERVICE BULLETIN

3. Material Information

The part necessary to modify one 476X-3 ATC Transponder Test Set is listed below.

<u>NEW COLLINS</u> <u>PART NUMBER</u>	<u>QTY</u>	<u>UNIT</u> <u>PRICE</u>	<u>DESCRIPTION</u>	<u>REPLACED COLLINS</u> <u>PART NUMBER</u>	<u>INSTRUCTIONS</u> <u>-DISPOSITION</u>
705-1471-170	1		Resistor, fixed, 124 k Ω , ± 1 %, 1/8 watt, 55D1243F	705-7184-000	Discard

The following may be needed for identification purposes. Order only if required.

791-0688-001	1		Unit modifi- cation plate
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476X-3 ATC TRANSPONDER RAMP TEST SET (522-4475-001)

SERVICE BULLETIN NO 3

ALLOW TEST SETS TO COMPLY WITH NEW FCC REGULATION ON PULSE-REPETITION FREQUENCY

1. Planning Information

A. Effectivity

Applicable to 476X-3 units with serial number 413 and below.

Production Cut-In: Serial Number 414.

B. Reason

To enable units to comply with new FCC regulation paragraph 87.521 (2) that requires PRF of 235 pps ± 5 pps.

C. Description

This service bulletin changes the PRF from 260 pps to 235 pps by replacing resistor R300 and adding a new terminal board assembly.

D. Manpower

Estimated 3.0 man-hours including test time.

E. Material -- Cost and Availability

Modification kit, Collins part number 629-9575-001 (as itemized in paragraph 3), is available for shipment after 26 November 1976 upon receipt of order at the price of (Price subject to change without notice; minimum order charge is) The kit may be obtained from Collins Radio Group/Rockwell International, Service Parts Department, Cedar Rapids, Iowa 52406. All orders should specify the kit part number and reference 476X-3 Service Bulletin Number 3.

F. Tooling -- Price and Availability

None.

G. Weight and Balance

None.

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H. References

476X-3 ATC Transponder Instruction Book, CPN 523-0758370.

I. Other Publications Affected

The next revision to the 476X-3 Transponder Ramp Test Set Instruction Book, CPN 523-0758370, will reflect this modification.

J. Accomplishment Instructions

A. Modification Procedure

- (1) Remove unit from bottom case.
- (2) Referring to figure 1 remove screws to allow front panel to hinge away from lower chassis assembly.
- (3) Referring to figure 2 remove and discard R300 replacing it with a new 27-k Ω resistor (745-1412-000) in new location shown on figure.
- (4) Referring to figure 2 remove C305 and replace it with new 1500-pF capacitor (912-3013-000).

CAUTION: BEFORE DRILLING HOLE IN FOLLOWING STEP BE SURE AREA ON OPPOSITE SIDE IS CLEAR OF WIRES AND COMPONENTS.

- (5) Drill a 0.156-in-diameter hole in the front side of chassis per figure 3.
- (6) Remove and retain mounting hardware for T501 as indicated in figure 3.
- (7) Mount new terminal board assembly (629-9573-001) with component side toward T501 using screw previously removed and new hardware supplied: screw, 6-32 x 7/16 (343-0170-000) and no. 6 flat washer (310-0046-000). The flat washer is used between the terminal board and the chassis as a shim.
- (8) Connect the pendant wires from the new terminal board to TB300 as shown in figure 4.
- (9) Secure pendant wires at approximately one-inch intervals to existing wiring using cable ties (435-1174-010).

B. Testing Procedure

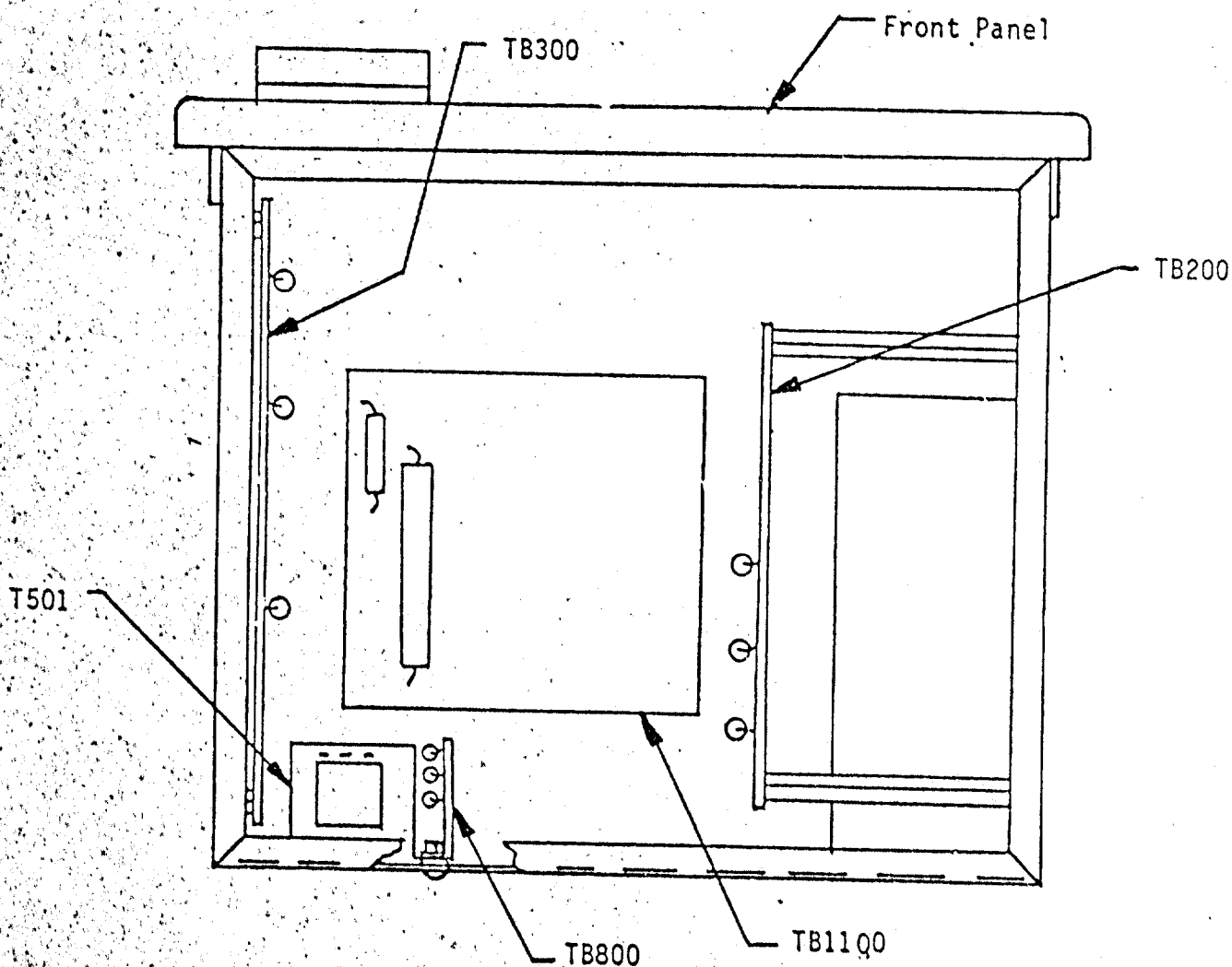
Initial Setup Procedure

Revise 476X-3 ATC Transponder Ramp Test Set Instruction Book as follows:

- (1) Page 5-2, table 5-1:

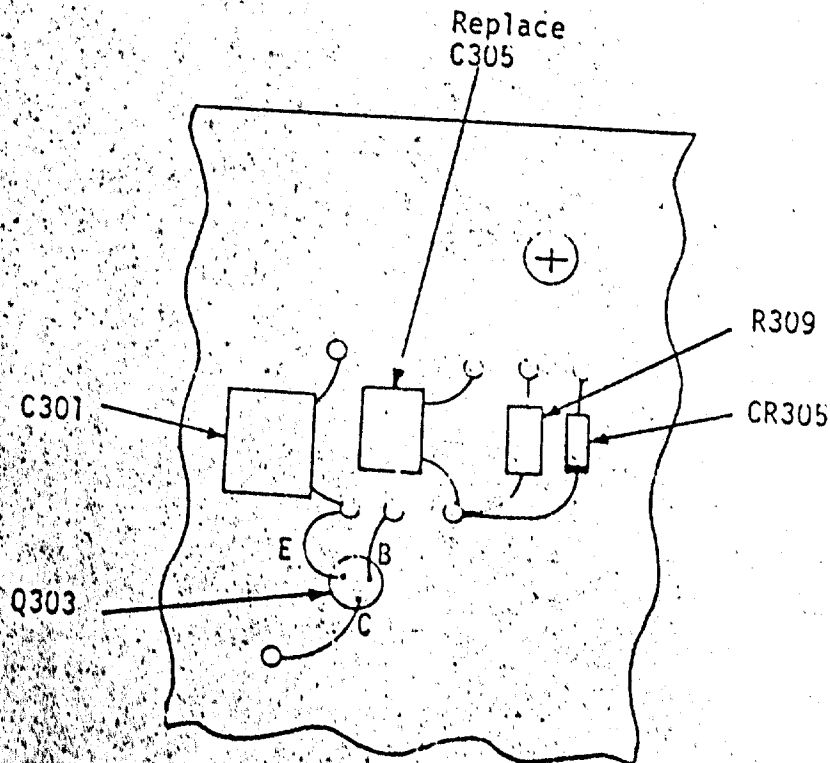
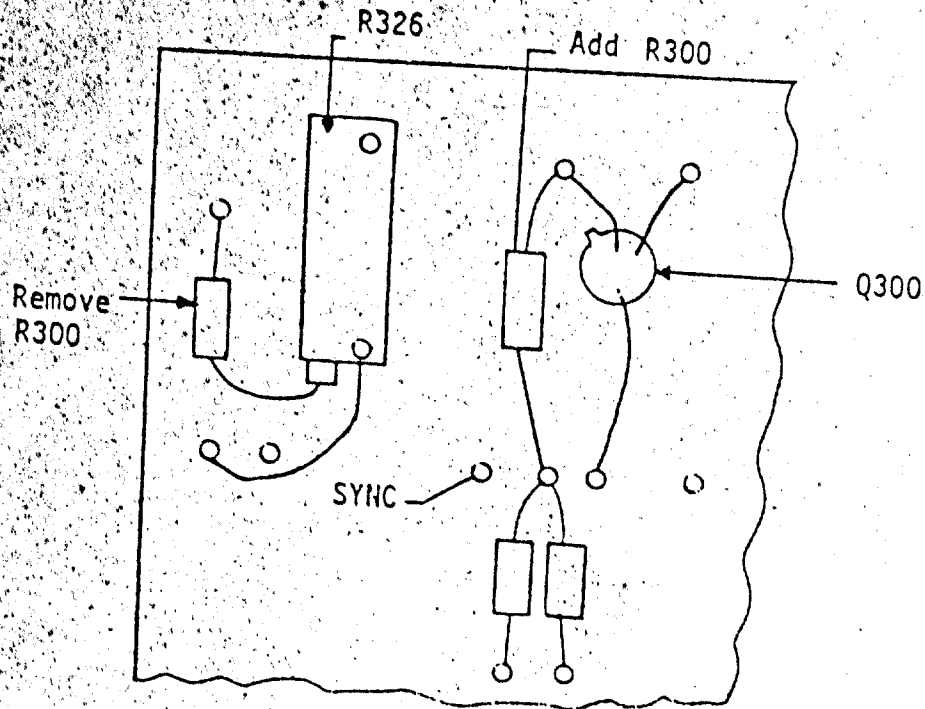
Add new equipment to list:

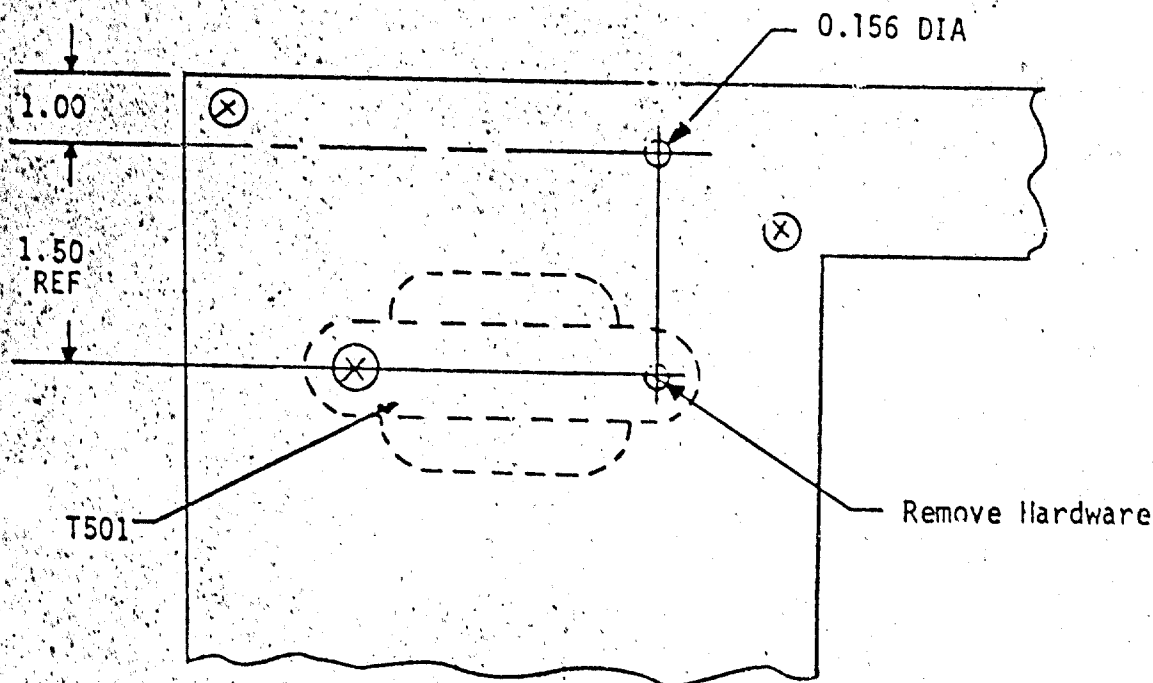
EQUIPMENT	RECOMMENDED MFR AND TYPE NO	REQUIREMENTS
Time interval counter	HP 5245 L Counter	5000- μ s range 1 μ s



476X-3 Chassis Panel Assembly
Figure 1

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476X-3 Chassis, Partial Front View
Figure 3

(2) Page 5-10, paragraph 5.4.4.3:

(a) DELETE: a. Connect equipment as shown in figure 5-6.

ADD: a. Connect equipment as shown in figure 5-6A, contained in this service bulletin.

(b) DELETE: d. Adjust R326 (2 of figure 6-16) to obtain a 2500- μ s pulse spacing.

ADD: d. Adjust R800 (on new TB800) to obtain a 4255- μ s ± 20 μ s pulse spacing.

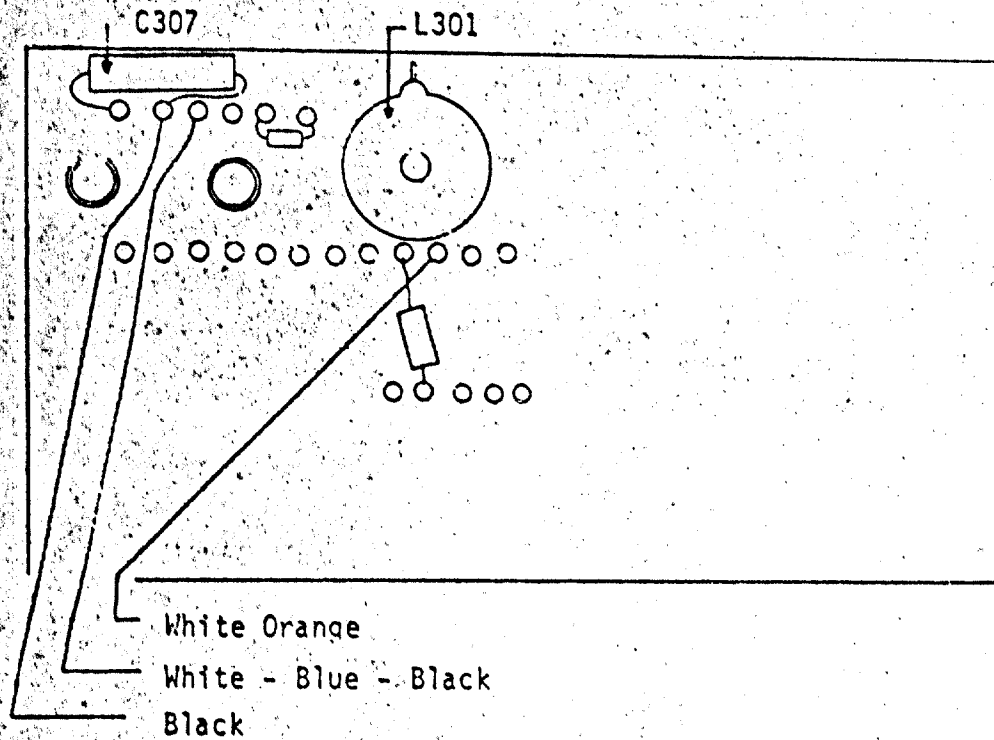
(c) DELETE: f. Check to ensure that pulse spacing remains at 2500 ± 250 microseconds.

ADD: f. Check to ensure that pulse spacing remains at 4255 ± 200 microseconds.

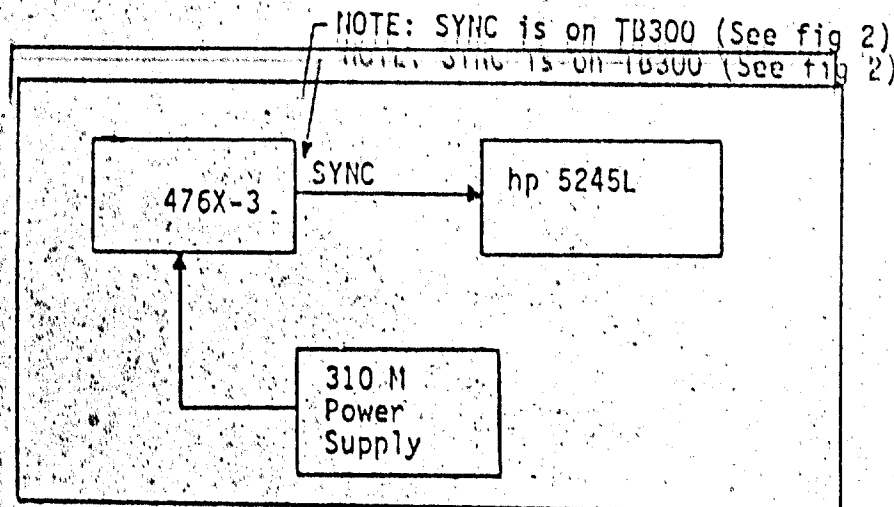
(d) DELETE: h. Check to ensure that pulse spacing remains at 2500 ± 250 microseconds.

ADD: h. Check to ensure that pulse spacing remains at 4255 ± 200 microseconds.

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476X-3 TB300 Partial Rear View
Figure 4



476X-3 Initial Test Set-up
Figure 5-6A

(3) Page 5-10, paragraph 5.4.4.4:

(a) DELETE: f.300PRF ...

(b) ADD: f.250PRF

(4) Perform all steps of paragraphs 5.4.4.3 and 5.4.4.4.

(5) Reassemble unit using hardware previously removed in steps 2.a.(1) and (2).

(6) Perform preoperation check as called out in instruction book, paragraph 3.3, on page 3-6.

C. Identification Procedure

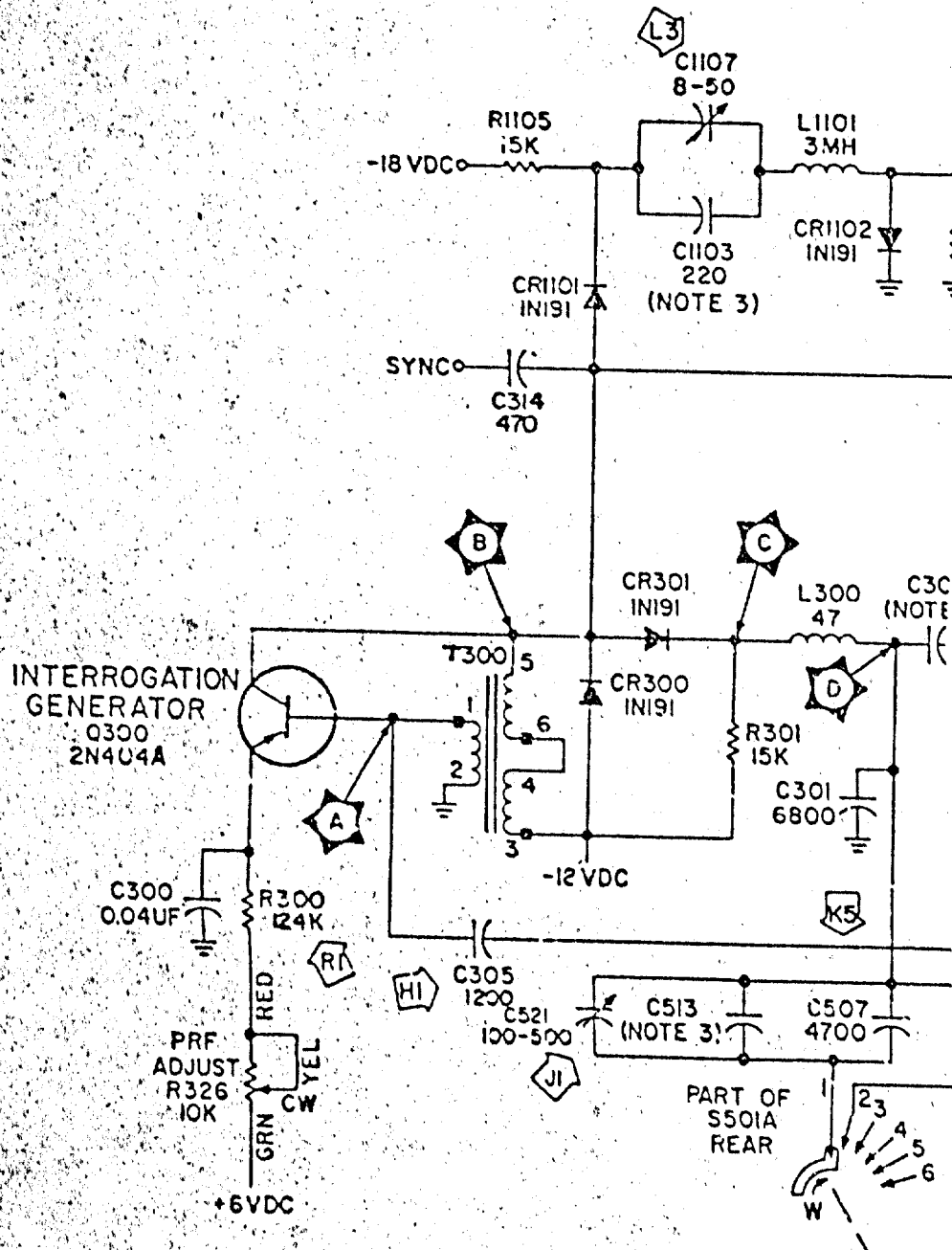
Enter Service Bulletin No 3 on unit modification sticker.

3. Material Information

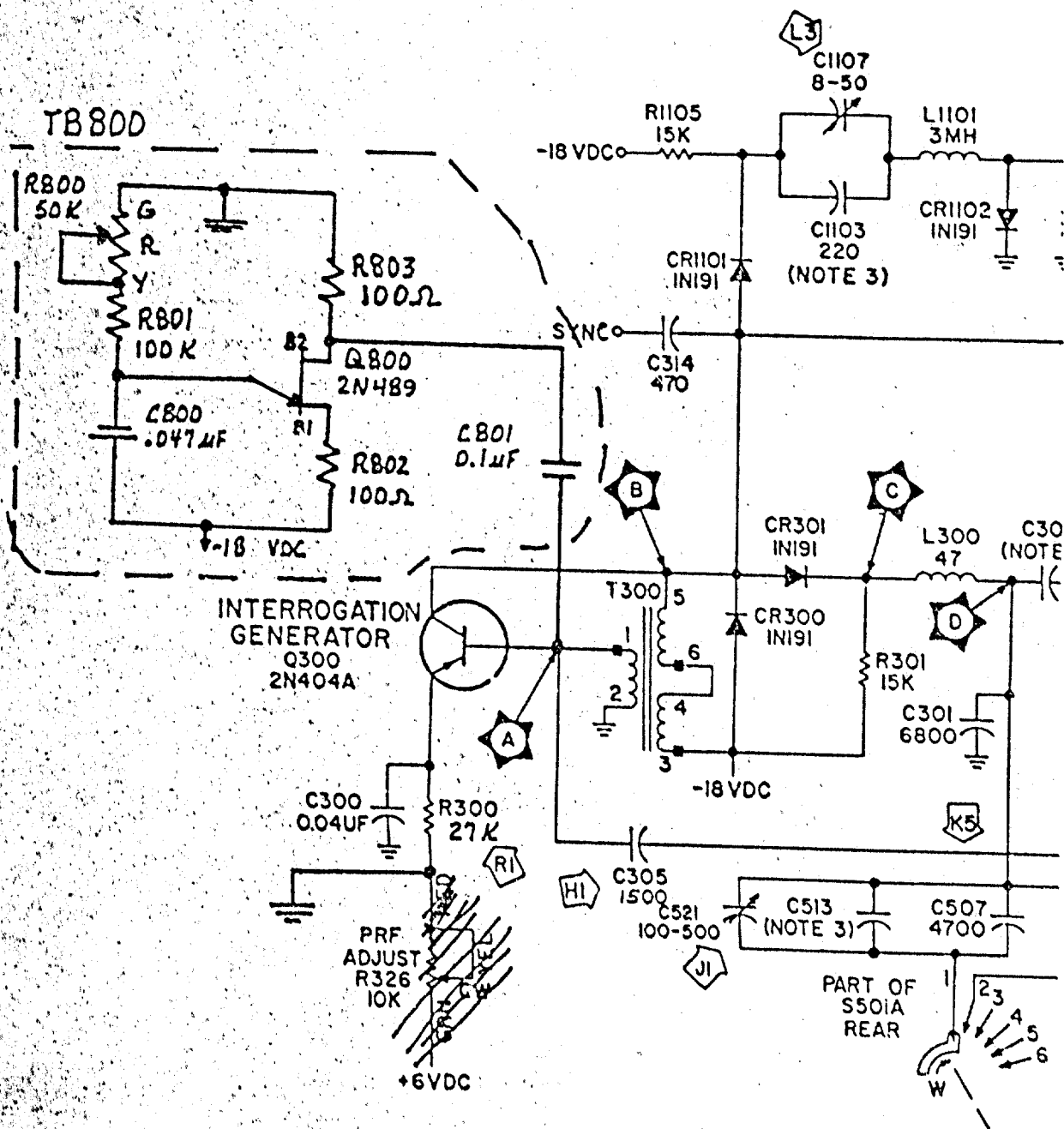
The parts required to modify one 476X-3 are contained in kit 629-9575-001 and are itemized below.

<u>NEW COLLINS PART NUMBER</u>	<u>QTY</u>	<u>UNIT PRICE</u>	<u>DESCRIPTION</u>	<u>REPLACED COLLINS PART NUMBER</u>	<u>INSTRUCTIONS -DISPOSITION</u>
310-0046-000	1		Washer, flat		
343-0170-000	1		Screw, .138-32X.44		
435-1174-010	15		Tie, cable		
629-9573-001	1		Elec, component board		
745-1412-000	1		Resistor, 27 k Ω 1/2 W, R300	705-7184-000	Discard
912-3013-000	1		Capacitor, 1500 pF	912-3007-000	(MCN 128 and up)
				912-2995-000	(MCN 127 and below) Discard

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476X-3 Transponder Partial Schematic
Before Modification
Figure 6



476X-3 Transponder Partial Schematic
After Modification
Figure 7

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476X-3 ATC TRANSPONDER RAMP TEST SET (522-4475-001)

SERVICE BULLETIN NO 4

ALLEVIATE RF OUTPUT FREQUENCY AND POWER OUT TUNING PROBLEM

1. Planning Information

A. Effectivity

Applicable to 476X-3 ATC Transponder Ramp Test Set, Collins part number 522-4475-001, with serial number 585, 583 and below.

Production cut-in: serial number 584, 586 and above.

B. Reason

(1) Condition Modification Affects

In some 476X-3 test sets, difficulty may be encountered in tuning the rf output frequency and level during normal maintenance procedures.

(2) Extent Condition Encountered

This condition was experienced in the field.

(3) Scope of Modification

This modification is a permanent change.

(4) Expected Benefits of Modification

This modification alleviates this problem by revising the rf assembly to the current production model.

C. Description

The rf generator board is replaced with a new assembly.

D. Approval

None.

E. Manpower

Estimated time required is 2.0 man-hours plus test time.

F. Material — Cost and Availability

The parts (as itemized in paragraph 3), are available for shipment 30 weeks after receipt of order at the price of . (Price subject to change without notice; minimum order charge is . The parts may be obtained from Collins Air Transport Division/Rockwell International, Service Parts Department, Cedar Rapids, Iowa 52406. All orders should specify the part numbers and reference 476X-3 Service Bulletin No 4.

G. Tooling — Price and Availability

None.

H. Weight and Balance

Not affected.

I. Electrical Load Data

Not affected.

J. References

None.

K. Other Publications Affected

The next revision to the 476X-3 ATC Transponder Ramp Test Set Instruction Book, Collins part number 523-0758370, will reflect this modification.

2. Accomplishment Instructions

A. Modification Procedure

- (1) Disengage test set top cover fasteners, remove four screws below control panel flange, (two on each side) invert unit and remove lower cover.
- (2) Remove three screws on front of unit (below front panel flange) and swing hinged front panel up to gain access to inside of test set.
- (3) Referring to figure 6-14 in the referenced instruction book, perform the following modifications.

NOTE: Mark all wires attached to assembly for correct reassembly.

- (a) In units having Service Bulletin No 3 installed, remove the two screws securing TB800 board and position it out of the way.
- (b) Remove six screws securing the rf section to the chassis.

- (c) Disconnect the N coaxial connector from the rf cavity on the side of the module.
 - (d) Disconnect the N coaxial connector from the back of the module.
 - (e) Disconnect the -6-V line from R107.
 - (f) Disconnect the -18-V line from R106.
 - (g) Disconnect the wire from the terminal junction of L107 and R111.
 - (h) Disconnect the rf center conductor connected to the terminal junction of C108 and L104.
 - (i) Disconnect the associated shield from its ground lug.
 - (j) Disconnect wire from R108 and wire from R110 center tap.
 - (k) Remove eight screws on the face and eight screws on the bottom of the module to disconnect the rf cavities from the module.
- (4) Attach new, RF Generator Board (634-9526-002) to the rf cavities with screws removed in step 2.A.(3)(k).
 - (5) Reconnect all wires disconnected in steps 2.A.(3)(e) through (j).
 - (6) Connect N coaxial connectors on the back of module, and on the rf cavity on the side of the module.
 - (7) Secure the rf section to the chassis with six screws removed in step 2.A.(3)(b).
 - (8) Replace TB300 if unit being modified has Service Bulletin No 3 installed.

B. Testing Procedure

(1) Power Supplies

- (a) Connect the power supplies as shown in figure 5-6 in the referenced instruction book and adjust for nominal voltage values.

(2) RF Generator Alignment

- (a) Set 476X-3 MODE selector to Mode A.
- (b) With test equipment connected as shown in figure 1; refer to component locations in figure 6-14 in the referenced instruction book, and adjust C102 for maximum amplitude and a frequency of 103 MHz ± 0.01 MHz.
- (c) Connect the test equipment to the ramp test set as shown in figure 5-6 in the referenced instruction book.

- (d) Connect channel A oscilloscope probe to the collector of Q306. Refer to figure 6-16 in the referenced instruction book. Negative pulses must be present.
- (e) Adjust the 476X-3 OUTPUT control fully cw and T/R ATTEN control to 0 position. Referring to figure 6-16 in the referenced instruction book, set R314 1/2 turn from full cw position.
- (f) Set R107 about 45 degrees from full cw position. Refer to figure 6-14 in the referenced instruction book.

NOTE: Do not turn the slug farther than 3/4 inch into the cavity of FL101.

- (g) Adjust the slug in FL101 approximately 1/2 inch from the top.
- (h) Monitor interrogation pulse pair, detected as shown in figure 5-6 in the referenced instruction book on the oscilloscope.
- (i) Adjust C109 and C110, figure 6-14 in the referenced instruction book, FL101, and R107 to obtain maximum pulse amplitude with best pulse shape. Using an insulated tool, first adjust C109, C110, and R107; then adjust FL101 to the peak that has the lowest position in cavity. Repeat this step, as there is interaction between the adjustments.
- (j) Set the signal generator attenuation control to -14 dBm and the mode control to cw position. Assure that the output frequency is 1030 MHz by measuring it with the frequency counter.
- (k) Connect the signal generator rf output to the detector and display the detected output on the oscilloscope. Note a reference on the oscilloscope graticule.
- (l) Disconnect the detector from the signal generator and connect it to the J503 of the 476X-3.
- (m) Adjust the 476X-3 OUTPUT control until the pulse amplitude is at the reference level.
- (n) Without changing the OUTPUT control, adjust R110 as shown in figure 6-14 in the referenced instruction book until panel meter redlines when the CALIBRATE OUTPUT-BATTERY VOLTAGE switch is in the CALIBRATE OUTPUT position. Check to see that the indicator will move below the RECHARGE line and above the red line as the OUTPUT control is varied.
- (o) Set the 476X-3 OUTPUT control to maximum cw position, and note output pulse amplitude on the oscilloscope.
- (p) Disconnect the detector from J503 on the 476X-3 and connect it to the rf output of the signal generator.

- (q) Adjust the signal generator attenuation control for an output/level equal to the pulse amplitude noted in step 2.B.(2)(o). The signal generator output level should be not less than -10 dB mW; that is, the output should be 70 mV or greater.
- (r) Repeat steps 2.B.(2)(o) through (q) with the external power supplies set to provide the low and high voltages specified in table 2 in the instruction book.
- (s) Connect J503 to the frequency counter input connector as shown in figure 2.
- (t) Set 476X-3 MODE selector to A, and hold CALIBRATE OUTPUT-BATTERY VOLTAGE switch to CALIBRATE OUTPUT position.
- (u) Read output frequency directly from frequency counter. The output frequency should be 1029.9 to 1030.1 (1030 nominal) MHz.
- (v) Repeat step 2.B.(2)(u) with 476X-3 input power set for a high voltage specified in column B of table 2 in the referenced instruction book.
- (w) Repeat step 2.B.(2)(u) with 476X-3 input power set for the low voltages specified in column C of table 2 in the referenced instruction book.
- (x) Release CALIBRATE OUTPUT-BATTERY VOLTAGE switch.
- (y) Set input power for nominal voltages specified in column A of table 2 in the referenced instruction book.
- (z) Perform the Minimum Performance Test (MPT) delineated in section 5.3 of the referenced instruction book. If satisfactory, no further calibration is required. If the MPT fails, refer to the appropriate maintenance instructions in section 5.4 of the instruction book.

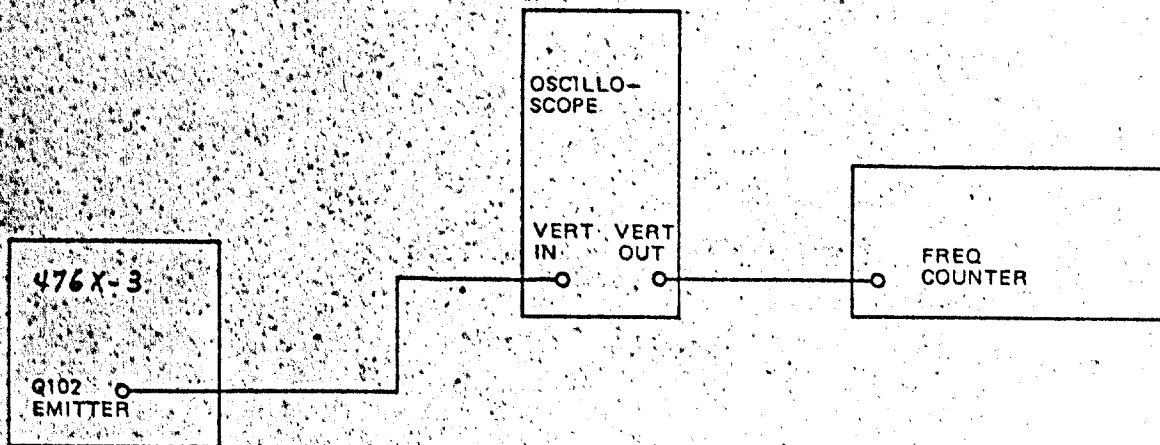
C. Identification Procedure

Darken over number 4 on modification plate located in upper left hand corner of the front panel.

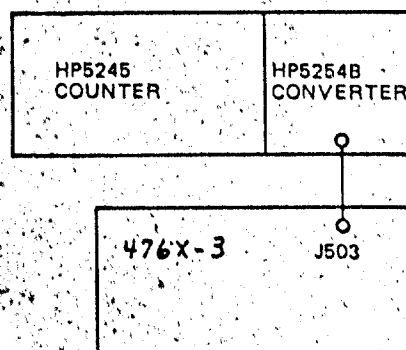
3. Material Information

The part required to modify one 476X-3 test set is listed below.

<u>NEW COLLINS PART NUMBER</u>	<u>QTY</u>	<u>UNIT PRICE</u>	<u>DESCRIPTION</u>	<u>REPLACED COLLINS PART NUMBER</u>	<u>INSTRUCTIONS -DISPOSITION</u>
634-9526-002	1		Board, rf generator	546-4620-004	Discard



Test Setup for Monitoring RF Oscillator Frequency and Waveshape
Figure 1



Output Frequency Measurement Test Setup
Figure 2

Collins Divisions
Cedar Rapids, Iowa 52408
(319) 395-1000
Cable COLINRAD Cedar Rapids



Rockwell
International

March 3, 1978

REVISION 1
TO
476X-3 SERVICE INFORMATION LETTER 1-77

Attached is a revised copy of the 476X-3 Service Information 1-77, titled "Relax Test Procedures In 476X-3 Units," dated 12 December 1977.

This revision changes some test specifications.

Black bars in the margin indicate the changes. Replace the original publication with this revised issue.

COLLINS SERVICE INFORMATION LETTER

Collins Avionics Group/Rockwell International

476X-3 ATC TRANSPONDER RAMP TEST SET (522-4475-001)

SERVICE INFORMATION LETTER 1-77

RELAX TEST PROCEDURES IN 476X-3 UNITS

Due to component deterioration and variances in 476X-3 units Collins Avionics is relaxing some test specifications. These changes will not affect the functional operation of the test set. Listed below is a table of the changes.

476X-3 SPECIFICATION

WAS

NOW

(1) Sensitivity:	≤ -7 dBm	≤ -6 dBm
(2) Selectivity:	6.5 MHz ± 1.5 MHz w/ -17 dBm at J503	6.5 MHz ± 2.0 MHz w/ -1 dBm at J503
(3) Power Output:	Maximum pulse power Not less than -7 dBm	Maximum pulse power Not less than -10 dBm
(4) Attenuator & Pad:	0 dB ATTN Setting: 4 ± 1 dB 5 dB ATTN Setting: 8 ± 1 dB	4 ± 2 dB 8 ± 2 dB
(5) Fixed Pad Attenuation:	45 ± 3 dB	45 ± 5 dB
(6) VSWR	$\leq 1.8:1$	$\leq 2.0:1$

Dec 12/77
1 - Mar 3/78

476X-3 SU. 1-77
Page 1 of 1

Collins 476X-3 ATC Transponder Ramp Test Set

Record of Revisions

RETAIN THIS RECORD IN THE FRONT OF MANUAL.
ON RECEIPT OF REVISIONS, INSERT REVISED PAGES IN THE MANUAL,
AND ENTER DATE INSERTED AND INITIALS.

[illegible]

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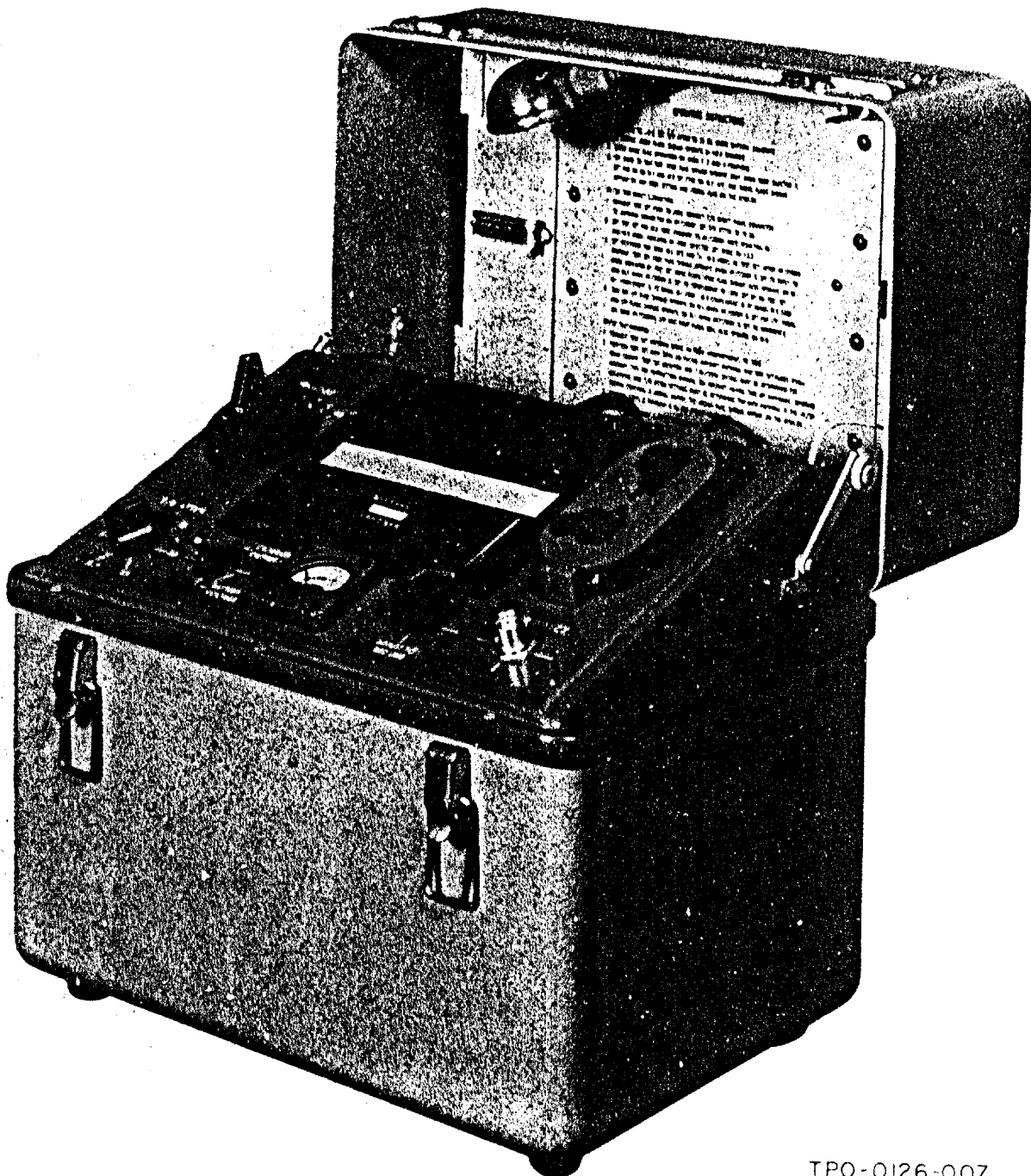
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TPO-0126-007

Figure 1-1. 476X-3 ATC Transponder Ramp Test Set.

section 1

general description

1.1 PURPOSE OF INSTRUCTION BOOK

The purpose of this instruction book is to provide information for operation and maintenance of the 476X-3 ATC Transponder Ramp Test Set (figure 1-1).

1.2 PURPOSE OF EQUIPMENT

The purpose of the 476X-3 ATC Transponder Ramp Test Set is to provide a convenient means of rapidly performing operational tests on ATC transponder systems installed in aircraft. The 476X-3 also may be used for go-no-go bench tests of ATC transponder systems. The 476X-3 has been type accepted by the Federal Communications Commission for radio navigational land test station service under part 87 of the FCC Rules and Regulations.

1.3 EQUIPMENT SUPPLIED

Table 1-1 lists the equipment supplied with the 476X-3 ATC Transponder Ramp Test Set.

1.4 GENERAL CHARACTERISTICS

1.4.1 Physical Description

The 476X-3 ATC Transponder Ramp Test Set

(figure 1-1) is a portable unit housed in a 2-piece aluminum case. The 476X-3 is completely self-contained with a built-in battery power supply consisting of 20 rechargeable, nickel-cadmium cells. A battery charger in the 476X-3 provides the necessary recharging current for the battery power supply. If desired, the 476X-3 may be operated while the batteries are being recharged. A built-in light, provided for night operation, is energized when it is rotated to the operating position and the 476X-3 MODE switch is set to any position other than OFF. Flag type go-no-go indicators show the operational status of the transponder under test.

1.4.2 Functional Description

The 476X-3 ATC Transponder Ramp Test Set produces simulated interrogation signals and analyzes transponder reply signals. It provides testing capability for complete analysis of reply signal pulse trains to detect extraneous as well as missing pulses. The 476X-3 evaluates ATC transponder sensitivity, output power, 3-pulse sls operation, identification capability, 4096 code capability in modes A and B, and complete altitude code capability in mode C. Special automatic programming and suitable indicators incorporated in the 476X-3 enable a single operator to conduct all tests.

Table 1-1. Equipment Supplied.

EQUIPMENT	WEIGHT (lb)	OVERALL DIMENSIONS (Inches)			COLLINS PART NUMBER
		HEIGHT	LENGTH	DEPTH	
476X-3 ATC Transponder Ramp Test Set	*35	14-1/2	13-1/2	9-3/4	522-4475-001
Test cable	0.25		120		548-6921-002
Altitude code calculator	0.125	4-7/16 dia			768-1244-001
*With batteries					

1.5 DETAILED CHARACTERISTICS

Case dimensions.....	34.29 cm (13.5 in) high. 36.84 cm (14.5 in) wide. 27.77 cm (9.75 in) deep.
Weight (with batteries).....	15.86 kg (35 lb).
Construction.....	Unpressurized 2-piece aluminum case with hinged top cover containing antenna and storage for night light and cables.
Antenna.....	Built-in, vertically polarized. Provisions for direct connection to transponder equipment are also provided. The vswr shall be no greater than 2:1 at 1030 MHz.
Framing pulse decoding.....	Accepts framing pulses spaced 20.05 to 20.55 (20.3 nominal) microseconds. Rejects framing pulses spaced less than 19.85 or more than 20.75 microseconds. Other decoding tolerances available by internal adjustment.
Identification code.....	Checks for presence of identification pulse.
Interrogation modes.....	A, B, and C.
Interrogation rate.....	256 (235 with SB 3) interrogations per second, nominal.
Power source.....	20 sealed nickel-cadmium cells with built-in battery charger. Charger requires 103.5 to 126.5 (115 nominal) volts or 207 to 253 (230 nominal) volts, 50- to 1000-Hz power. Fully charged battery operates approximately 10 hours at +25 °C (without use of night light). Nominal recharge time is 8 to 12 hours.
Sensitivity.....	-6 dB mW or better.
Selectivity.....	6.5 $\pm$ 2.0-MHz bandwidth with -1-dB mW signal at J503.
Receive frequency.....	1090 MHz.
Reply code analysis.....	4096 code capability. Checks for presence of all desired pulses and absence of undesired pulses in all replies. Code complement check capability is provided.
Side-lobe suppression check.....	3-pulse sls system. Sls interrogation pulse transmitted at cyclic rate of approximately 1 second on and 1 second off when transponder identification pulse is present in reply.
Transmitter frequency.....	1030 MHz.
Transmitter frequency stability.....	$\pm$ 0.01 percent.
Power output.....	Nominal pulse power -14 $\pm$ 2 dB mW, maximum pulse power not less than -10 dB mW.
Spurious radiation.....	Not greater than -29 dB mW.
Attenuator and pad characteristics.....	Refer to table 5-3.

Fixed pad attenuation..... 45 $\pm$ 5 dB.

Ambient temperature

Operating..... -20 to +120 °F (-28.9 to +48.9 °C).

Nonoperating..... -50 to +160 °F (-46.6 to +71.1 °C).

Ambient humidity..... 95% humidity at 50 degrees for 48 hr.

Shock..... Three shocks of 15 g each for 11 milliseconds in each plane.

section 2

installation

2.1 GENERAL

The unpacking procedures (paragraph 2.2) and subsequent inspection procedures (paragraph 2.3) for the 476X-3 ATC Transponder Ramp Test Set and test set batteries are explained in this section. The equipment should be inspected for visible damage before installation of the batteries (paragraph 2.4). If the equipment is to be stored or reshipped after shipment, refer to the procedures in paragraph 2.5.2.

2.2 UNPACKING

2.2.1 476X-3 ATC Transponder Ramp Test Set Packaging Data

The 476X-3 ATC Transponder Ramp Test Set may be shipped in overseas shipping boxes or in domestic shipping cartons. For domestic shipment, the 476X-3 is packaged inside two corrugated cardboard cartons. For overseas shipment, the cardboard cartons, used for domestic

shipping, are packed within a wooden shipping box. The wooden box may contain either one or two packaged test sets (A and B, figure 2-1). The box may or may not be protected by steel straps. Each 476X-3 is packed as shown in B, figure 2-1. The dimensions, volume, and weight of the packaged test sets are listed in table 2-1.

2.2.2 Battery Packaging Data

The 476X-3 batteries are shipped separately from the 476X-3. They are shipped either in an overseas shipping carton or domestic shipping carton. The batteries are packed as shown in figure 2-2. The dimensions, volume, and weight of the packaged batteries are listed in table 2-2.

2.2.3 476X-3 Unpacking Procedure

To unpack the 476X-3, perform the procedure in steps a through k if the equipment is packed for overseas shipment, or the procedure in steps

Table 2-1. 476X-3 Packaging Data.

TYPE OF SHIPMENT	NO. OF TEST SETS (476X-3) PER PACKAGE	SIZE (inches)			VOLUME (cu ft)	UNIT WEIGHT (lb)
Domestic	1	20-1/8	14-1/2	17-7/8	3.5	42
Oversea	1	25	18	21	7.0	62
	2	25	36	21	13.8	116

Table 2-2. 476X-3 Battery Packaging Data.

TYPE OF SHIPMENT	SIZE (inches)			VOLUME (cu ft)	UNIT WEIGHT (lb)
Domestic	12-3/4	8-1/2	7-1/2	0.6	5
Oversea	12-3/4	8-1/2	7-1/2	0.6	5

Section 2 Installation

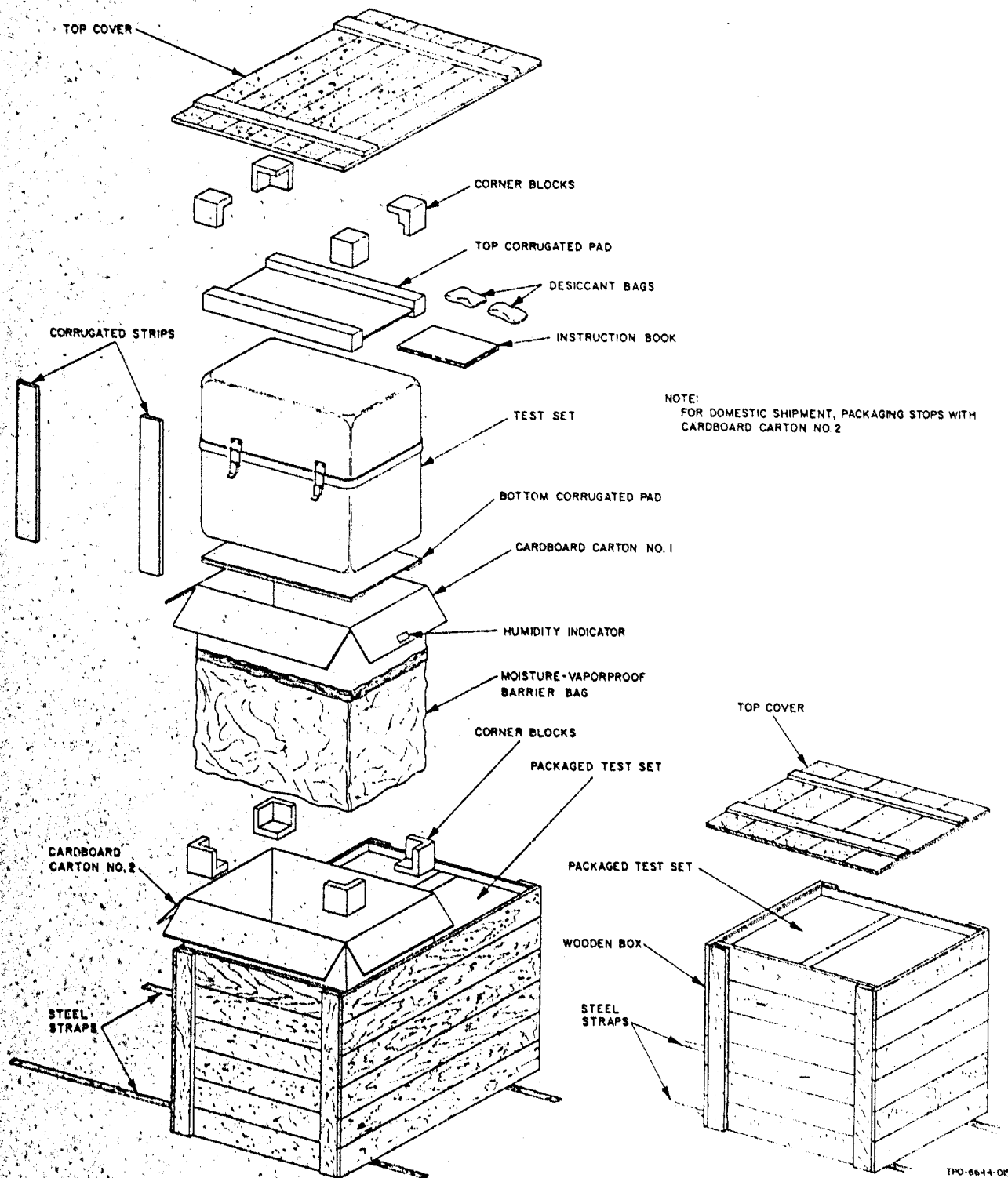


Figure 2-1. Typical Packaging.

section 2

installation

2.1 GENERAL

The unpacking procedures (paragraph 2.2) and subsequent inspection procedures (paragraph 2.3) for the 476X-3 ATC Transponder Ramp Test Set and test set batteries are explained in this section. The equipment should be inspected for visible damage before installation of the batteries (paragraph 2.4). If the equipment is to be stored or reshipped after shipment, refer to the procedures in paragraph 2.5.2.

2.2 UNPACKING

2.2.1 476X-3 ATC Transponder Ramp Test Set Packaging Data

The 476X-3 ATC Transponder Ramp Test Set may be shipped in overseas shipping boxes or in domestic shipping cartons. For domestic shipment, the 476X-3 is packaged inside two corrugated cardboard cartons. For overseas shipment, the cardboard cartons, used for domestic

shipping, are packed within a wooden shipping box. The wooden box may contain either one or two packaged test sets (A and B, figure 2-1). The box may or may not be protected by steel straps. Each 476X-3 is packed as shown in B, figure 2-1. The dimensions, volume, and weight of the packaged test sets are listed in table 2-1.

2.2.2 Battery Packaging Data

The 476X-3 batteries are shipped separately from the 476X-3. They are shipped either in an overseas shipping carton or domestic shipping carton. The batteries are packed as shown in figure 2-2. The dimensions, volume, and weight of the packaged batteries are listed in table 2-2.

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To unpack the 476X-3, perform the procedure in steps a through k if the equipment is packed for overseas shipment, or the procedure in steps

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Domestic	12-3/4	8-1/2	7-1/2	0.6	5
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section 2
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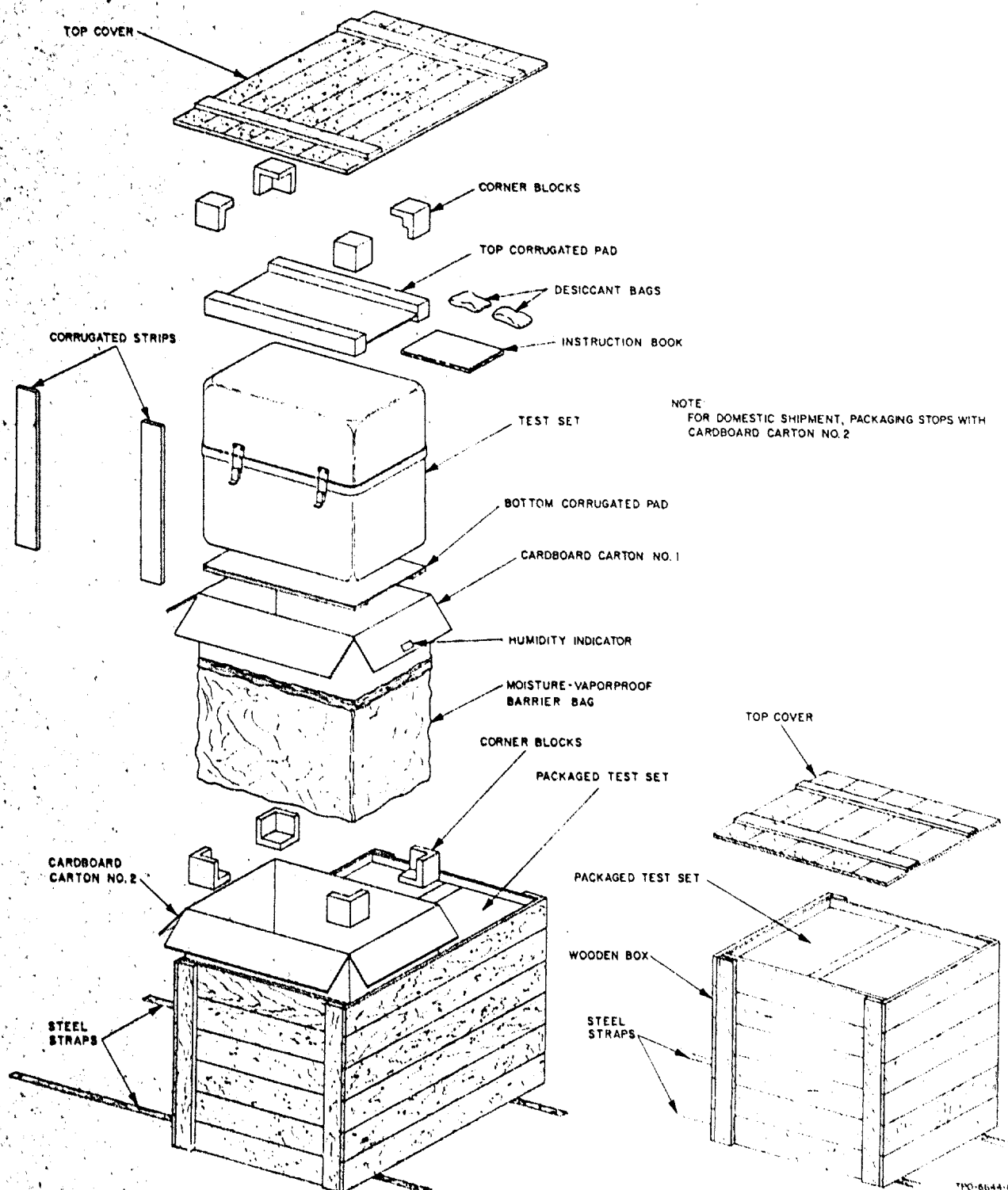
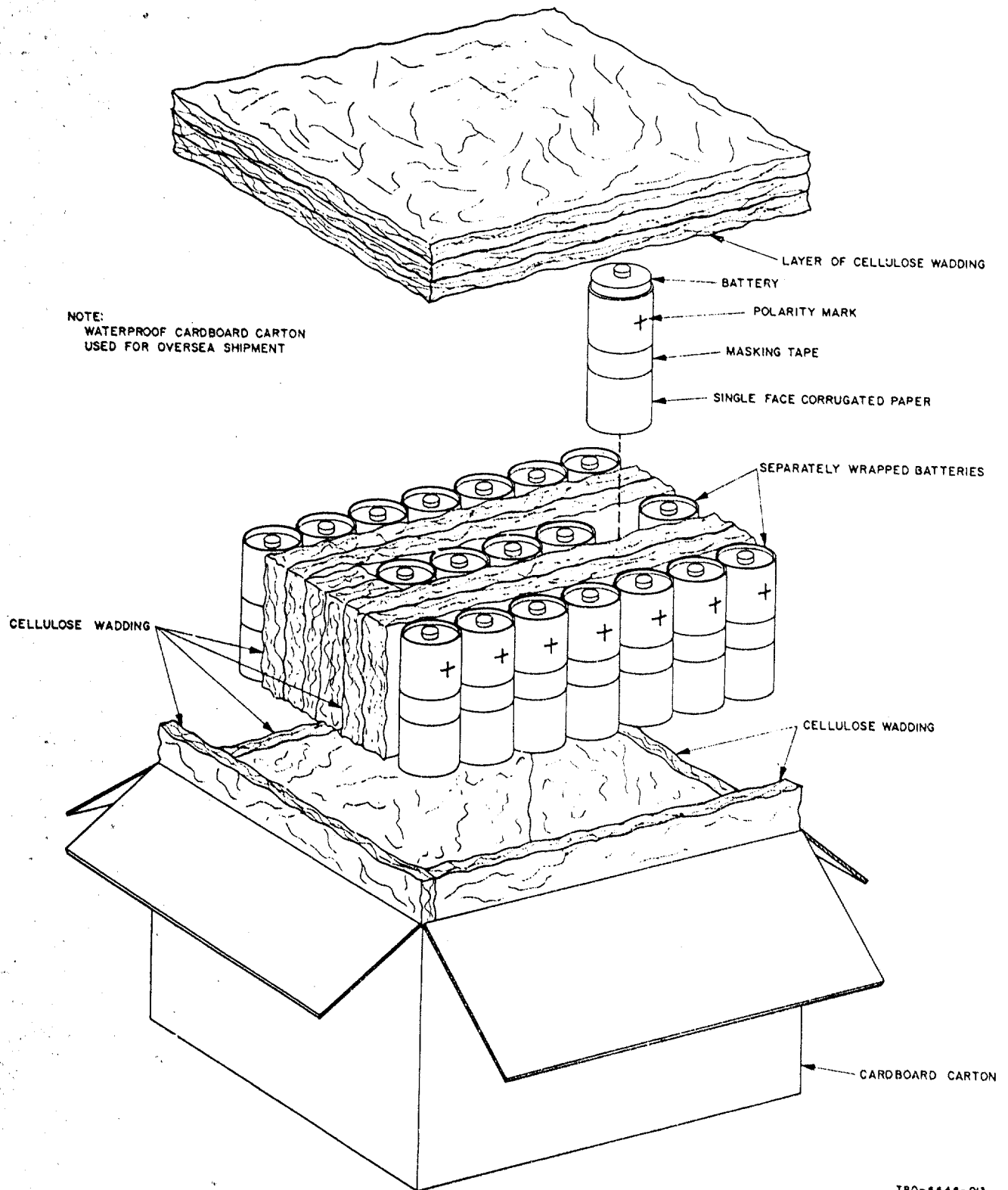


Figure 2-1. Typical Packaging.



TPO-6646-C13

Figure 2-2. Typical Battery Packaging.

Revised 1 August 1968

section 2 installation

d, e, and h through j if the equipment is packed for domestic shipment. While unpacking, check packing materials and containers. Note any shipping damage, and retain packing slip, bill of lading, etc., to substantiate shipping damage claims if necessary. Retain packing materials and containers for storage or reshipment purposes.

- a. If applicable, cut and remove steel straps.
- b. Using a hammer or crowbar, remove wooden box top cover.

Note

If the shipping box contains two packaged test sets, perform steps c through k for each.

- c. Lift packaged 476X-3 out of wooden box.
- d. Slit tape along top seam of package, and open cardboard carton 2.
- e. Lift out the four top corner blocks, and cardboard carton 1 (protected by vaporproof barrier bag).
- f. Tear open and remove barrier bag.
- g. Check humidity indicator on top flap of cardboard carton 1 for indication of excess moisture.
- h. Slit tape along top seam of cardboard carton 1, and open carton.
- i. Lift out desiccant bags, corrugated pad, and instruction book. Desiccant bags, located in top of carton 1, are not used in domestic packaging.
- j. Lift out corrugated strips and 476X-3.
- k. If humidity indicator (step g) shows presence of excess moisture, wipe equipment dry with a clean dry cloth.

2.2.4 476X-3 Battery Unpacking Procedure

To unpack the 476X-3 batteries, perform the following procedures. While unpacking the batteries, check packing materials and container. Note any shipping damage, and retain packing slip, bill of lading, etc., to substantiate shipping damage claim if necessary. Retain packing materials and container for storage or reshipment purposes.

- a. Slit tape along top of cardboard carton 1 and open carton.
- b. Remove cellulose wadding from top of carton.

- c. Remove one battery and unwrap.
- d. Repeat step c for each battery.

2.3 INSPECTION

Inspect the unpacked equipment, and note any damage incurred during shipment. Compare the unpacked equipment with the packing list or table 1-1 to verify that the shipment is complete.

Note

The batteries for the 476X-3 are shipped separately from the 476X-3 and must be installed in the equipment before completing inspection.

Caution

Battery charger connections must be checked (paragraph 2.3.1) before connecting test set to 115- or 230-volt ac source as incorrect connections will cause equipment damage.

2.3.1 Battery Charger Connections

2.3.1.1 General

The 476X-3 battery charger is normally shipped from the factory connected for operation from a 115-volt, 40- to 1000-Hz source. However, the battery charger may be wired for 230-volt operation. To determine the battery charger connections, check the plate on left storage compartment door. If the battery charger connections have to be changed, refer to paragraph 2.3.1.2 or paragraph 2.3.1.3 as applicable.

2.3.1.2 To Change Battery Charger Wiring From 115 Volts AC to 230 Volts AC

- a. Remove 476X-3 lower cover (four Phillips-head screws).
- b. Remove three Phillips-head screws that hold front panel to main chassis, and raise front panel.

Note

Battery charger transformer T501 is mounted inside the 476X-3 chassis against the front wall.

- c. Cut and remove jumpers between terminals 1 and 3 of transformer T501.
- d. Cut and remove jumpers between terminals 2 and 4 of transformer T501.
- e. Connect a jumper between terminals 2 and 3 of T501, and solder in place.
- f. Close 476X-3 front panel, and secure with three Phillips-head screws.
- g. Secure lower cover (four Phillips-head screws).
- h. Replace fuse F501 with 1/4-ampere, 250-volt fuse.
- i. Change plate on left storage compartment door to show that battery charger is wired for 230-volt, 50- to 1000-Hz operation.

2.3.1.3 To Change Battery Charger Wiring From 230 Volts AC to 115 Volts AC

- a. Perform steps a and b of paragraph 2.3.1.2.
- b. Cut and remove jumper between terminals 2 and 3 of T501 (refer to note, paragraph 2.3.1.2).
- c. Connect a jumper between terminals 1 and 3 of T501, and solder in place.
- d. Connect a jumper between terminals 2 and 4 of T501, and solder in place.
- e. Perform steps f and g of paragraph 2.3.1.2.
- f. Replace fuse F501 with 1/2-ampere, 250-volt fuse.
- g. Change plate on left storage compartment door to show that battery charger is wired for 115-volt, 50- to 1000-Hz operation.

2.3.2 Fuses

The 476X-3 is shipped with all fuses installed. Check that none of the fuses have been damaged during shipment. Replace any damaged fuses.

2.3.3 Night Light

Check that a lamp is installed in the night light socket, and that lamp is not damaged. Check operation by pulling night light out to operating position, and rotating MODE selector to SELF TEST.

2.4 INSTALLATION OF 476X-3 BATTERIES

For installation procedures, perform steps a through e and steps g through m of paragraph 5.4.2.6.

2.5 STORAGE OR RESHIPMENT

Caution

The 476X-3 should not be stored or packed for reshipment with batteries installed. Remove the batteries from the test set and store or reship separately from the test set.

2.5.1 Preparation for Storage or Reshipment

To prepare the 476X-3 for storage or reshipment, refer to figure 2-1 and perform the following procedure:

- a. Open the top cover and place MODE selector switch to SELF TEST position.
- b. Place the CALIBRATE OUTPUT BATTERY VOLTAGE switch to BATTERY VOLTAGE position.

Note

Batteries must be fully charged before they are placed in storage or packed for shipment.

- c. Observe that panel meter indicates to the right of RECHARGE.
- d. If panel meter indicates to left or RECHARGE, the batteries should be recharged (refer to paragraph 5.4.2.2).
- e. Set the 476X-3 MODE selector switch to OFF.
- f. Remove the batteries from the 476X-3.

Note

Perform steps a through e of paragraph 5.4.2.6, remove the batteries, then perform steps h through m.

- g. Check that all accessories are stored as follows:
 1. Power cord coiled and stored in left storage compartment.
 2. Antenna cable and test cable coiled and stored in right storage compartment.
 3. T/R DIRECT connector P504 connected to RF connector J503.
 4. Altitude code calculator properly stored.
 5. Night light securely fastened in storage position.

section 2 Installation

- h. Close both storage compartment doors, and secure.
- i. Close top cover, and secure with two latch fasteners.

2.5.2 Packaging

2.5.2.1 General

The procedures used in packaging depend upon the material available and whether the equipment is to be stored or shipped. Suitable packing materials are listed in table 2-3. If the batteries and test set are to be stored, refer to paragraphs 2.5.2.2 and 2.5.2.3 for packing instructions. If the batteries and test set are to be reshipped, refer to paragraphs 2.5.2.4 and 2.5.2.5 for packing instructions.

Table 2-3. Suitable Packing Materials.

MATERIAL	*QUANTITY	
FOR STORAGE		
Waterproof paper	10 sq ft	
Corrugated cardboard	8 sq ft	
Cellulose wadding	8 sq ft	
Waterproof tape (2 in. wide)	12 ft	
FOR RESHIPMENT		
	<u>DOMESTIC</u>	<u>OVERSEA</u>
Waterproof paper	10 sq ft	10 sq ft
Corrugated cardboard	27.5 sq ft	47.5 sq ft
Cellulose wadding	20 sq ft	24 sq ft
Waterproof tape (2 in. wide)	42 ft	56 ft
Humidity indicator	0	1
Desiccant bags	0	2
*Quantity includes sufficient material to package the 476X-3 and 476X-3 batteries.		

2.5.2.2 Packaging 476X-3 Batteries for Storage

Note

The 476X-3 batteries should always be fully charged before packaging for storage.

- a. Wrap each battery individually with corrugated paper, and tape paper in place with masking tape.
- b. Mark positive end of each individually wrapped battery.
- c. Form a container 12-3/4 by 8-1/2 by 7-1/2 inches of corrugated cardboard.
- d. Tape all bottom and side seams with waterproof tape.
- e. Place the individually wrapped batteries in formed cardboard container with positive end facing up.
- f. Place cellulose wadding around the batteries to minimize movement; then fill remainder of container with cellulose wadding.
- g. Close the cardboard container and seal with waterproof tape.

2.5.2.3 Packaging 476X-3 for Storage

- a. Wrap the 476X-3 in waterproof paper and seal along all seams with waterproof tape.
- b. Form a container of corrugated cardboard 13-1/2 by 15-1/8 by 10 inches.
- c. Seal all bottom and side seams with waterproof tape.
- d. Place wrapped 476X-3 into formed container, and add cellulose wadding around sides to minimize movement within first container.
- e. Close cardboard container and seal with waterproof tape.

2.5.2.4 Packaging 476X-3 Batteries for Reshipment

To package 476X-3 batteries scheduled for oversea shipment, perform steps a through i. To package 476X-3 batteries scheduled for domestic shipment, perform steps a and d.

- a. Perform steps a through f of paragraph 2.5.2.2.
- b. Place one desiccant bag in top of first container.
- c. Place a humidity indicator on top flap of first container.
- d. Close container and seal with waterproof tape.
- e. Form a second container 13-3/4 by 9-1/2 by 8-1/4 inches of corrugated cardboard.
- f. Seal all bottom and side seams with waterproof tape.

- g. Place first container inside second container.
- h. Fill sides and top with cellulose wadding to minimize movement within second container.
- i. Close and seal second container with waterproof tape.

2.5.2.5 Packaging 476X-3 for Reshipment

Perform the procedures in steps a through m if equipment is scheduled for oversea shipment, or perform the procedures in steps a through d and steps g and h if equipment is scheduled for domestic shipment.

- a. Perform steps a through d of paragraph 2.5.2.3.
- b. Place two desiccant bags in top of first container.
- c. Place a humidity indicator on top flap of first container.

- d. Fill first container with cellulose wadding to minimize movement.
- e. Close first container and seal with waterproof tape.
- f. Wrap first container with waterproof paper and seal all seams with waterproof tape.
- g. Form a second container of corrugated cardboard 20-1/8 by 14-1/2 by 17-7/8 inches.
- h. Seal all bottom and side seams with waterproof tape.
- i. Place two sheets of cellulose wadding in bottom of second container.
- j. Place first container into second container.
- k. Insert cellulose wadding around all sides and top of first container to minimize movement within second container.
- l. Close second container and seal with waterproof tape.
- m. Place second container into the original wood shipping container and seal.

section 3

operation

3.1 GENERAL

The 476X-3 ATC Transponder Ramp Test Set operating instructions are contained in this section. The 476X-3 operating controls, indicators, and connectors are described in table 3-1. Operating procedures for transponder testing and self-test are contained in paragraph 3.3.

3.1.1 Preliminary Requirements

The 476X-3 must be checked for satisfactory operation before it is used to test an ATC transponder system. Check mode flag operation and battery charge, calibrate the rf output, and perform self-test as specified in paragraph 3.3.1 to determine operating condition of the 476X-3.

3.1.2 ATC Transponder Testing

3.1.2.1 Test Method (Radiated or Direct Connection)

The 476X-3 may be used to test transponders by either the radiation or direct connection

methods. When the radiation method (figure 3-1) is employed, the 476X-3 transmits mode A, mode B, or mode C interrogation signals to the aircraft antenna, and receives the transponder reply pulse train from the aircraft antenna. When checking the aircraft transponder by the direct connection method (figure 3-2), the 476X-3 is connected directly to the transponder through a built-in rf load and attenuator, and the aircraft antenna system is bypassed. The radiation method is recommended for performing a complete system check of the aircraft installation, whereas the direct connection method may be used for bench testing, checking energizing code operation, or isolating a malfunction to the aircraft antenna system or transponder.

3.1.2.2 Manual or Automatic (Programmed Sequence) Operation

Manual operation of the 476X-3 provides continuous interrogation of the transponder under test on one of the manually selected modes

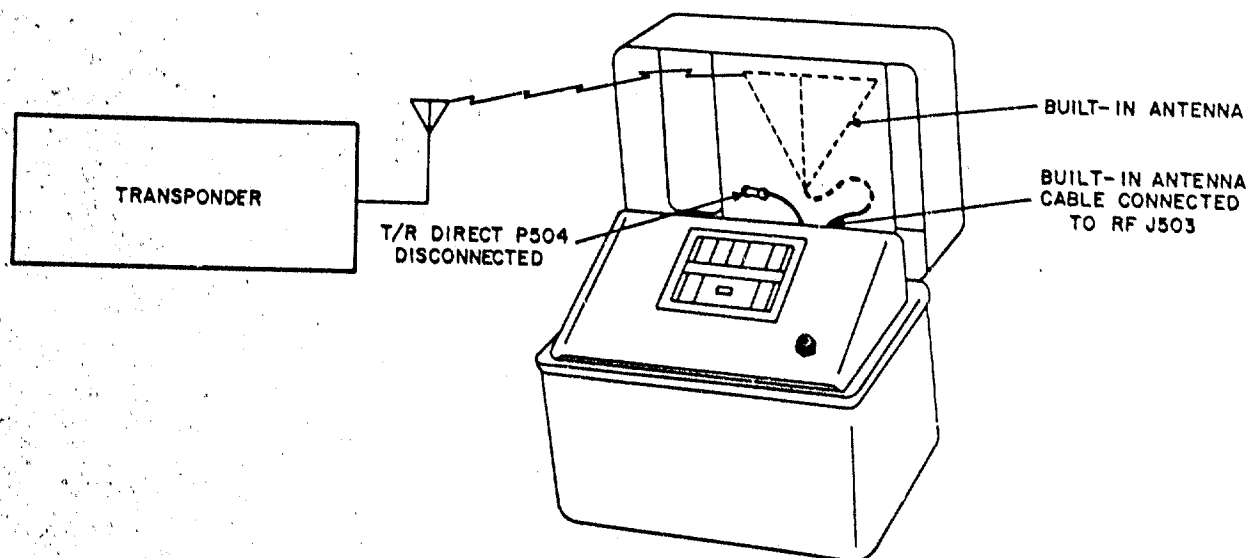


Figure 3-1. Radiation Setup.

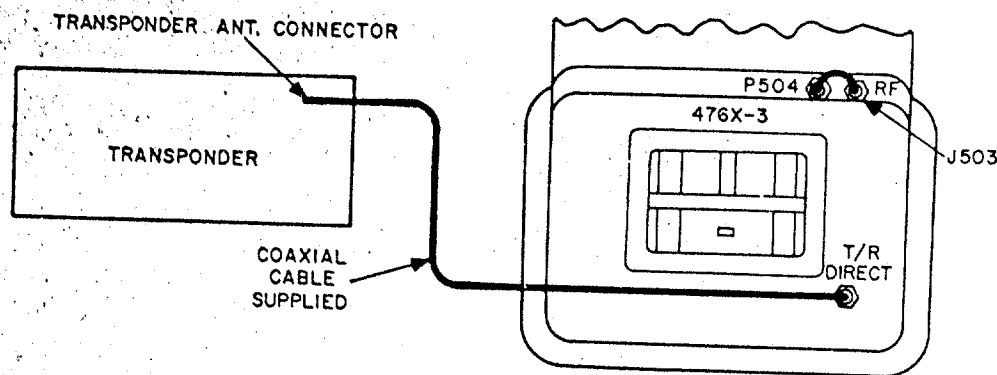


Figure 3-2. Direct Connection Setup.

(A, B, or C). In automatic operation, the 476X-3 interrogates the transponder under test in a programmed (mode A, mode B, and mode C) sequence, with each mode being activated for an interval of approximately 15 seconds. The programmed interrogation sequence is repeated continuously while the MODE selector switch is in the A-B-C position. In automatic operation as in manual operation, the 476X-3 continuously analyzes reply signals received from the transponder under test.

3. TEST PROCEDURES

3.1 General

Complete testing procedures for both manual and automatic methods of operation are contained in paragraph 3.3. The 476X-3 operating controls, indicators, and connectors (figure 3-1), and code selector switches (figure 3-4) are listed in table 3-1.

3.2 Code Selector Switch Operation

A particular code may be selected by operating the CODE selector switches so that the desired code appears, reading top to bottom, in the CODE indicator windows.

3.3 Determination of T/R Attenuator Setting and 476X-3 Location

Due to variation in the relative signal strength of received signals from different aircraft and different test set locations, it is necessary to determine the proper T/R ATTEN control position for each aircraft type. The proper

T/R ATTEN control position and ramp location for the 476X-3 may be determined as follows:

- Perform checks in paragraph 3.3.1.
- Install transponder of known good power output and receiver sensitivity in an aircraft of type to be tested.
- Place 476X-3 approximately 50 feet from aircraft antenna.
- Position 476X-3 so that flag indicators can be seen easily from cockpit of aircraft and opened top cover (antenna) of 476X-3 faces aircraft antenna.

Caution

Avoid the use of emergency codes 7777 or 7600 and radio failure code 7600 during radiated test.

- Operate transponder on any code.
- With 476X-3 operating on proper code and mode, adjust T/R ATTEN control from 25 DB position to first position which provides a CODE flag indication. Note T/R ATTEN control position.
- Move 476X-3 slowly away from aircraft antenna until CODE flag disappears. Keep 476X-3 in full, unobstructed view of cockpit with opened top cover facing aircraft antenna.
- Set T/R ATTEN control to next lower position from that noted in step f.
- Record T/R ATTEN control position, distance and location of 476X-3 from aircraft antenna, and aircraft type for future reference.

Table 3-1. Operating Controls, Indicators, and Connections.

CONTROL, INDICATOR, OR CONNECTOR	FUNCTION														
LIGHT connector J506 and Night light connector P508	Furnishes voltage to night light circuit.														
RF connector J503	Input/output connector for rf. Mates with T/R DIRECT jumper connector P504 for direct method of testing or with antenna connector P503 for radiation method of testing.														
Antenna connector P503	Connects antenna to RF connector J503 for radiation method of testing.														
T/R DIRECT jumper connector P504	Mates with input/output RF connector J503 for direct method of testing.														
T/R DIRECT panel connector J504 (type N)	Provides rf load and fixed attenuator which permits connection directly to transponder under test. T/R DIRECT connector P504 is mated with RF connector J503.														
MODE selector switch (6-position rotary switch)	Controls application of power to 476X-3 circuits and selects mode of operation.														
	<table> <tr> <th>SWITCH POSITION</th><th>ACTION</th></tr> <tr> <td>OFF</td><td>Removes battery power from 476X-3 circuits.</td></tr> <tr> <td>SELF TEST</td><td>Causes IDENT and (when CODE selector switches are set properly) CODE flag to appear. Presence of flags indicates proper operation of 476X-3.</td></tr> <tr> <td>A</td><td>Causes 476X-3 to generate mode A interrogation signals and analyze transponder replies.</td></tr> <tr> <td>B</td><td>Causes 476X-3 to generate mode B interrogation signals and analyze transponder replies.</td></tr> <tr> <td>C</td><td>Causes 476X-3 to generate mode C interrogation signals and analyze transponder replies.</td></tr> <tr> <td>A-B-C</td><td>Causes 476X-3 to generate interrogation signals on modes A, B, and C in programmed automatic sequence and analyze transponder replies.</td></tr> </table>	SWITCH POSITION	ACTION	OFF	Removes battery power from 476X-3 circuits.	SELF TEST	Causes IDENT and (when CODE selector switches are set properly) CODE flag to appear. Presence of flags indicates proper operation of 476X-3.	A	Causes 476X-3 to generate mode A interrogation signals and analyze transponder replies.	B	Causes 476X-3 to generate mode B interrogation signals and analyze transponder replies.	C	Causes 476X-3 to generate mode C interrogation signals and analyze transponder replies.	A-B-C	Causes 476X-3 to generate interrogation signals on modes A, B, and C in programmed automatic sequence and analyze transponder replies.
SWITCH POSITION	ACTION														
OFF	Removes battery power from 476X-3 circuits.														
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A	Causes 476X-3 to generate mode A interrogation signals and analyze transponder replies.														
B	Causes 476X-3 to generate mode B interrogation signals and analyze transponder replies.														
C	Causes 476X-3 to generate mode C interrogation signals and analyze transponder replies.														
A-B-C	Causes 476X-3 to generate interrogation signals on modes A, B, and C in programmed automatic sequence and analyze transponder replies.														

Table 3-1. Operating Controls, Indicators, and Connections (Cont).

CONTROL, INDICATOR, OR CONNECTOR	FUNCTION																
Mode A flag	Shows fluorescent orange to indicate 476X-3 is transmitting a mode A interrogation signal.																
Mode B flag	Shows fluorescent orange to indicate 476X-3 is transmitting a mode B interrogation signal.																
Mode C flag	Shows fluorescent orange to indicate 476X-3 is transmitting a mode C interrogation signal.																
CODE flag	Shows fluorescent orange if the reply received from transponder being tested is correct. Presents blinking indication when code is proper, identification pulse is present, and sls circuits are functioning properly in the transponder.																
IDENT flag	Presents blinking indication if identification pulse in reply from transponder under test is present and spaced correctly and transponder sls circuits are operating properly. Presents steady indication if identification pulse is proper but sls circuits are inoperative.																
CALIBRATE OUTPUT-BATTERY VOLTAGE switch (spring-loaded, 2-position toggle switch normally in BATTERY VOLTAGE position)	Determines function monitored by panel meter. In CALIBRATE OUTPUT position, causes panel meter to indicate transmitter output power. In BATTERY VOLTAGE position, causes panel meter to indicate charge condition of batteries.																
Panel meter	Indicates condition of battery charge or transmitter output power as determined by CALIBRATE OUTPUT-BATTERY VOLTAGE switch position.																
OUTPUT control	Controls transmitter output power.																
T/R ATTEN (6-position rotary switch)	Controls attenuation in transmitted and received rf signal paths to compensate for various radiation distances between the 476X-3 and the aircraft antenna.																
	<table> <tr> <th>SWITCH POSITION</th><th>NOMINAL ATTENUATION (db)</th></tr> <tr> <td>DB</td><td></td></tr> <tr> <td>0</td><td>4</td></tr> <tr> <td>5</td><td>8</td></tr> <tr> <td>10</td><td>13</td></tr> <tr> <td>15</td><td>18</td></tr> <tr> <td>20</td><td>23</td></tr> <tr> <td>25</td><td>28</td></tr> </table>	SWITCH POSITION	NOMINAL ATTENUATION (db)	DB		0	4	5	8	10	13	15	18	20	23	25	28
SWITCH POSITION	NOMINAL ATTENUATION (db)																
DB																	
0	4																
5	8																
10	13																
15	18																
20	23																
25	28																

Table 3-1. Operating Controls, Indicators, and Connections (Cont).

CONTROL, INDICATOR, OR CONNECTOR	FUNCTION
CODE selector switches	Determines, by digit selection, reply code that will be accepted as valid by 476X-3 decoder circuits.
Battery charger power cord	Supplies 115 volts ac or 230 volts ac to battery charger.
Interlock switch	Removes battery power from the 476X-3 when the top cover is closed.
BATTERY CHARGER indicator	Gives visual indication when the battery charger is in operation.

Note

A large metal object such as a ground power unit near the aircraft being tested may reflect the transponder signal and cause difficulty during radiated tests. Care must be taken to provide a reasonably clear area between the aircraft under test and the 476X-3. Personnel should not stand in front of 476X-3 during testing.

3.2.4 Determination of Proper Test Code

Any code may be selected for a test code when testing a transponder that does not have altitude-reporting capability. When testing a transponder that has only 2-digit code capability, select any 4-digit code ending in 00 (example: 4300). The first two digits of such a code become the test code.

Caution

Avoid the use of emergency codes 7777 or 7600 and radio failure code 7600 during radiated test.

Included with each 476X-3 Transponder Test Set is an altitude code calculator. The calculator should be used to determine the proper test code for transponders having altitude reporting capability on mode C.

To determine the altitude code which should be transmitted by the transponder (at field elevations of 0 to 6500 feet), match the field ele-

vation on SCALE A of the calculator to the altimeter setting on SCALE B. Both field elevation and altimeter setting may be obtained from the ATC tower. When SCALE A and SCALE B are aligned properly, the CODE window marked 0 to 6500 FT will display the altitude code. In some cases, two codes will appear. One of these, normally the one closest to the arrow, should be transmitted by the transponder and should be selected as the test code. The other code should be recorded for possible future use. If field elevation is above 6500 feet, SCALE C and SCALE D on the reverse side of the calculator should be substituted for SCALE A and SCALE B respectively. The altitude code (at field elevations below 6500 feet) also may be determined by setting a known pressure altitude on SCALE A under the reference arrow on SCALE B. The codes are again displayed in the 0 to 6500 FT CODE window. Pressure altitude may be determined by setting the altimeter in the aircraft to 29.92 and noting the indicated pressure altitude. (It may be necessary to tap the altimeter lightly to get the proper reading.) Another alternate method of determining the test code, at elevations below 6500 feet, is to set the absolute barometric pressure (such as indicated by a mercury column barometer) on SCALE B over the REF arrow on SCALE A. The altitude code is displayed in the 0 to 6500 FT CODE window.

The FLT. LEVEL and CODE windows, on the left side of the calculator, display various

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flight levels and their corresponding altitude codes for pressure altitudes of 13,000 to 42,500 feet in 500-foot increments. All readings in the FLT. LEVEL window exclude the last two zeros. For example, a reading of 370 in the window labeled FLT. LEVEL corresponds to 37,000 feet. These windows are used to determine test codes when an altitude simulator is employed during test.

Note

The relationship between flight level and pressure altitude is as follows:

Flight level x 100 = pressure altitude in feet.

After the test code has been determined, it is set up on the 476X-3 CODE selector switches. This code is then set up on the transponder control unit in the aircraft and becomes the test code for all modes (A, B, and C) of operation. If tests indicate proper transponder operation in modes A and B and no code flag appears in mode C, the alternate code recorded above should then be substituted as the test code.

3.3 OPERATING PROCEDURES

3.3.1 Preoperation Checks

Before using the 476X-3 to test a transponder, perform preoperation checks in paragraphs 3.3.1.1 through 3.3.1.4.

3.3.1.1 Mode Flag Operation Check

Set MODE selector switch on 476X-3 to A-B-C position, and verify that mode flags indicate A to B to C sequence.

3.3.1.2 Battery Check

To check the charge condition of the 476X-3 batteries, perform the following steps:

- Set MODE selector switch to SELF TEST position.
- Set T/R ATTEN control to 25 DB.

- Observe meter. If indication is right of RECHARGE, battery charge is satisfactory. If indication is to left of RECHARGE, battery voltage is too low for proper 476X-3 operation.

Note

The meter indicates the voltage between the -6-volt bus and ground; this voltage is the best indication of the state of battery charge. Should bad cells be suspected in other battery sections, refer to paragraph 5.4.2.

3.3.1.3 RF Output Calibration

To calibrate the 476X-3 rf output, perform the following steps:

- Set MODE selector switch to SELF TEST position.
- Set T/R ATTEN control to 25 DB.
- Operate CALIBRATE OUTPUT-BATTERY VOLTAGE to CALIBRATE OUTPUT position, and adjust OUTPUT control to obtain a red-line indication on meter.

3.3.1.4 Self-Test

Perform 476X-3 self-test as follows:

- Set MODE selector switch to SELF TEST.
- Set T/R ATTEN control to 25 DB.
- Observe flag indications. IDENT flag should appear.
- Set CODE selector switches to 0000 code.
- Observe flag indications. CODE flag and IDENT flag should appear in steady state.
- Set CODE selector switches to 7777 code.
- Observe flag indications. CODE flag and IDENT flag should appear in steady state.
- Set CODE selector switches to 7773 code.
- Observe flag indications. CODE flag should appear in blinking state and IDENT flag in steady state.
- Set CODE selector switches to 0004 code.
- Observe flag indications. CODE flag should appear in blinking state and IDENT flag in steady state.

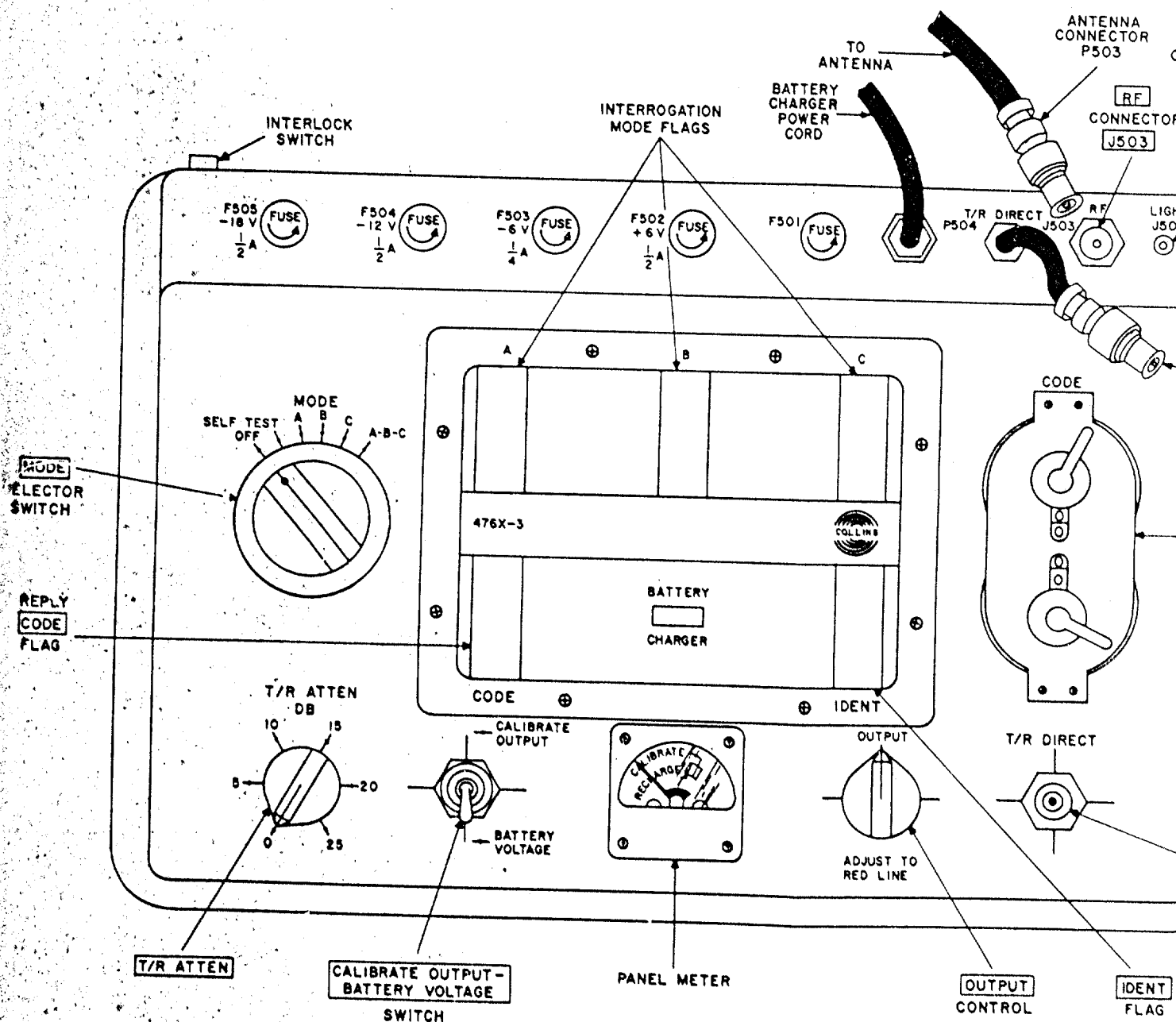


Figure 3-3. Operating Controls, In

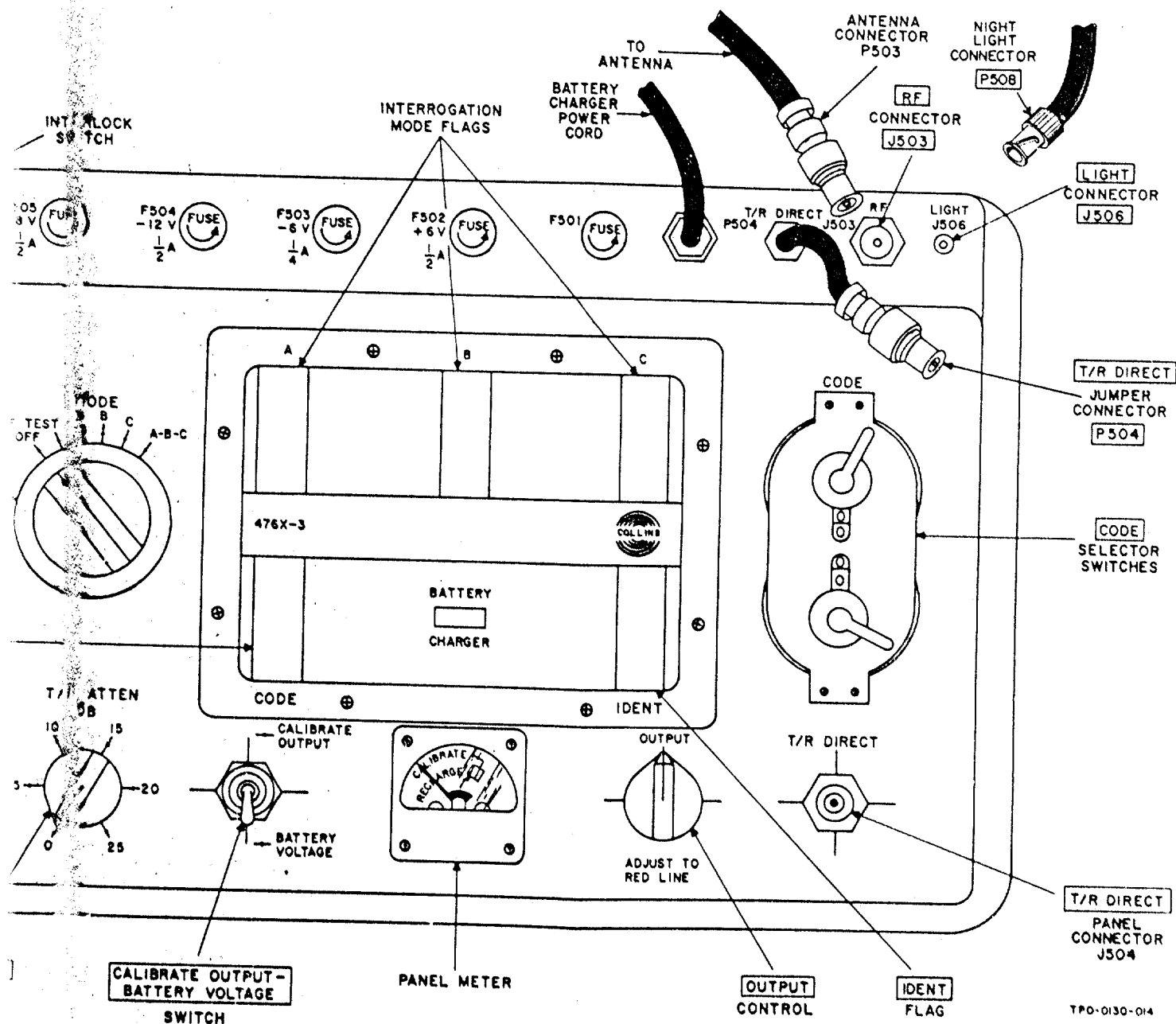


Figure 3-3. Operating Controls, Indicators, and Connections.

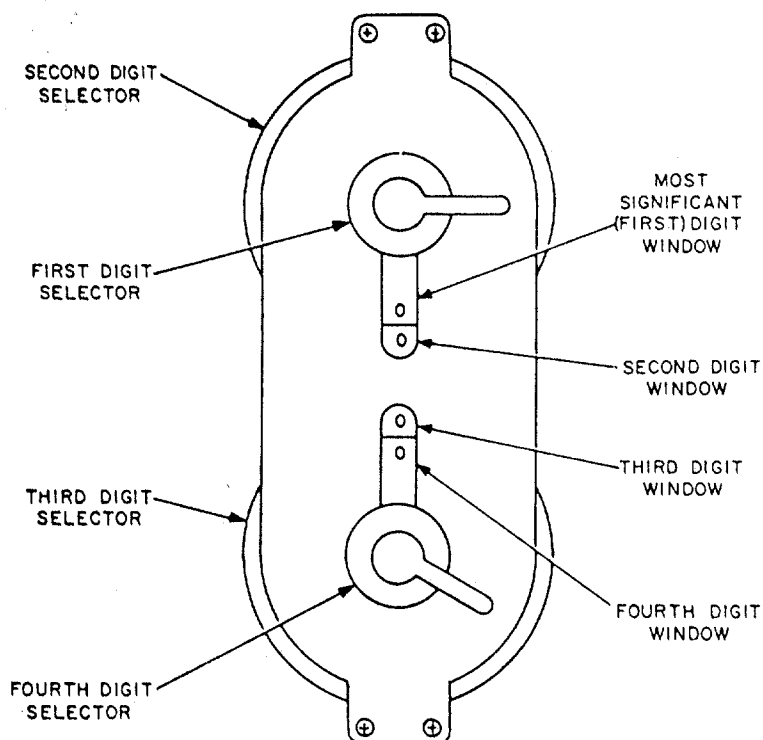


Figure 3-4. Code Selector Switches.

3.3.2 Radiation Method of Operation

To test an aircraft transponder installation by the radiation method, perform the following procedure:

- Perform preoperation checks in paragraph 3.3.1.
- Disconnect 476X-3 T/R DIRECT connector P504 from RF connector J503. Connect antenna connector P503 to RF connector J503.
- Set T/R ATTN control to proper setting for the aircraft installation being tested. (See paragraph 3.2.3.)
- Place 476X-3 in predetermined location (paragraph 3.2.3).
- Position 476X-3 so opened top cover (containing antenna) faces aircraft antenna and so that test set flags are visible from the cockpit.
- Operate the 476X-3 for manual interrogation and reply analysis, paragraph 3.3.4, or for programmed automatic interrogation and reply analysis, paragraph 3.3.5, as desired.

Caution

Avoid the use of emergency code 7777 or 7700 and radio failure code 7600 during radiated tests.

3.3.3 Direct Connection Method of Operation

To test an aircraft transponder by the direct-connection method, perform the following procedure:

- Perform preoperation checks in paragraph 3.3.1.
- Disconnect 476X-3 antenna connector P503 from RF connector J503.
- Connect T/R DIRECT connector P504 to RF connector J503.
- Disconnect aircraft antenna cable from transponder.
- Connect test cable (supplied with 476X-3) between transponder antenna connector and T/R DIRECT panel connector J504 on 476X-3.
- Set T/R ATTN control to 10 DB for ARINC 532D type transponders or to 5 DB for General Aviation type transponders.

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- g. Operate 476X-3 for manual interrogation and reply analysis, paragraph 3.3.4, or for programmed automatic interrogation and reply analysis, paragraph 3.3.5, as desired.

Note

If the transponder does not reply with a T/R ATTEN setting as noted in step f, the transponder output power or sensitivity may be too low. If additional connections, cabling, or attenuators are used between the test set and the transponder, the additional loss from the T/R DIRECT panel connector to the ATC transponder antenna connector may be compensated for by a correspondingly lower setting of the T/R ATTEN control.

3.3.4 Manual Interrogation Test Operation

Manual interrogation of transponders and reply analysis testing should be performed as follows:

- a. Perform procedures in paragraph 3.3.2 or 3.3.3 for radiation method of operation or direct-connection method of operation respectively.
- b. Set 476X-3 Transponder Test Set CODE selector switches to proper test code as determined in paragraph 3.2.4. If transponder under test has altitude reporting capability, use altitude code (determined using calculator, paragraph 3.2.4) for test code.
- c. Set transponder code selectors, located on transponder control panel, to same test code used in step b above.
- d. If transponder under test has altitude reporting capability, set ALT RPTG switch on transponder control panel to OFF.
- e. Set function selector switch on transponder control panel to STBY, energize transponder, and allow 5-minute warmup period.
- f. Set MODE selector switch on 476X-3 to mode A.
- g. Set MODE switch on transponder control panel to A, and set function selector switch to ON.
- h. Observe 476X-3 flag indications. CODE flag should appear.

- i. Set MODE selector switch on 476X-3 to mode B.
- j. Set MODE switch on transponder control panel to B.
- k. Observe 476X-3 flag indications. CODE flag should appear.
- l. If transponder under test has altitude reporting capability, set MODE selector switch on 476X-3 to mode C, and perform steps m through q. If transponder under test does not have altitude reporting capability, proceed to step r.
- m. Set ALT RPTG switch on transponder control panel to ON.
- n. Observe 476X-3 flag indications. CODE flag should appear.
- o. Set ALT RPTG switch on transponder control panel to OFF.
- p. Observe 476X-3 flag indications. CODE flag should disappear.
- q. Set MODE selector switch on 476X-3 to mode B, and proceed to step r.
- r. Set transponder code selectors on transponder control panel to complement of test code. Complement of test code is 7777 minus test code.

Note

This test checks the full code capability of the transponder under test.

- s. Observe flag indications on 476X-3. CODE flag should appear.
- t. Momentarily activate IDENT switch on transponder control panel while observing 476X-3 flag indications. Both CODE and IDENT flags should appear in blinking state for approximately 15 to 30 seconds. This indicates presence of the ident pulse in the reply group and proper operation of transponder sls circuits. A steady presentation of the CODE and IDENT flags during this period indicates presence of ident pulse but no response of transponder sls circuits.

3.3.5 Automatic Interrogation Test Operation

Automatic interrogation of transponders and reply analysis testing should be performed as follows:

- a. Perform procedures in paragraph 3.3.2 or 3.3.3 for radiation method of operation or direct-connection method of operation respectively.
- b. Set 476X-3 Transponder Test Set CODE selector switches to proper test code as determined in paragraph 3.2.4. If transponder under test has altitude reporting capability, use altitude code (determined by using calculator, paragraph 3.2.4) for test code.
- c. Set transponder code selectors, located on transponder control panel, to same test code used in step b.
- d. If transponder under test has altitude reporting capability, set ALT RPTG switch on transponder control panel to OFF.
- e. Set function selector switch on transponder control panel to STBY, energize transponder, and allow 5-minute warmup period.
- f. Set MODE selector switch on 476X-3 to A-B-C position.
- g. Observe flag indications. MODE flags should appear in A to B to C sequence.
- h. Set function selector switch on transponder control panel to ON.
- i. Set MODE switch on transponder control to mode A.
- j. Observe 476X-3 flag indications. The 476X-3 CODE flag should appear each time the MODE A flag appears. During the time interval when the mode A flag is in view, momentarily activate the IDENT switch on the transponder control panel. A blinking

indication of both the IDENT and CODE flags indicates the presence of IDENT pulse in the reply group and proper operation of the transponder sls circuits. The flags will continue to blink for the time interval of the IDENT circuit (15 to 30 seconds) or until MODE A flag disappears.

- k. Set MODE switch on transponder control panel to mode B. Repeat step j; make observations during the time interval the 476X-3 MODE B flag is in view.
- l. When testing a transponder installation having altitude reporting capability, set MODE switch to MODE C on transponder control panel. Observe the 476X-3 flag presentation. When the mode C flag is visible, set the ALT RPTG switch on the transponder control panel to the ON position. The 476X-3 code flag should appear.
- m. Set the code selectors on the transponder control panel to the complement of the test code. (Complement of the test code is 7777 minus test code.)
- n. Set transponder mode selector to A. Code flag should appear when 476X-3 mode A flag is showing and when mode C flag is showing provided ALT RPTG switch on transponder control is on.
- o. Set transponder mode selector switch to mode B. Code flag should appear when 476X-3 mode B flag is visible and when mode C flag is visible provided the ALT RPTG switch is on.

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4.1 GENERAL

The 476X-3 ATC Transponder Ramp Test Set provides a convenient means of rapidly testing an ATC transponder installation in an aircraft or on a test bench. The 476X-3 simulates a ground secondary radar by interrogating the transponder under test and analyzing its reply pulse train. The reply pulse train is analyzed for extraneous as well as missing pulses. The 476X-3 checks transponder sensitivity, output power, altitude capability (if applicable), 3 pulse sls operation, identification capability, and coding capability for 4096 codes on all modes. Self-test circuits in the 476X-3 permit rapid checkout to verify satisfactory 476X-3 operation before a transponder is tested.

4.1.1 Interrogation Signals

Each interrogation signal, figure 4-1, generated by the 476X-3 contains pulse pairs at an rf frequency of 1030 MHz. Each interrogation pulse has a nominal width of 0.8 microsecond. Spacing between the pulses is 7.9 to 8.1 (8.0 nominal) microseconds for a mode A interrogation, 16.9 to 17.1 (17 nominal) microseconds for a mode B interrogation, and 20.9 to 21.1 (21 nominal) microseconds for a mode C interrogation. Interrogation pulses are transmitted at a repetition rate of approximately 256 (235 with SB 3) pulse pairs per second. Interrogation signals from the 476X-3 may be applied to the transponder under test by radiation or direct-connection transmission methods.

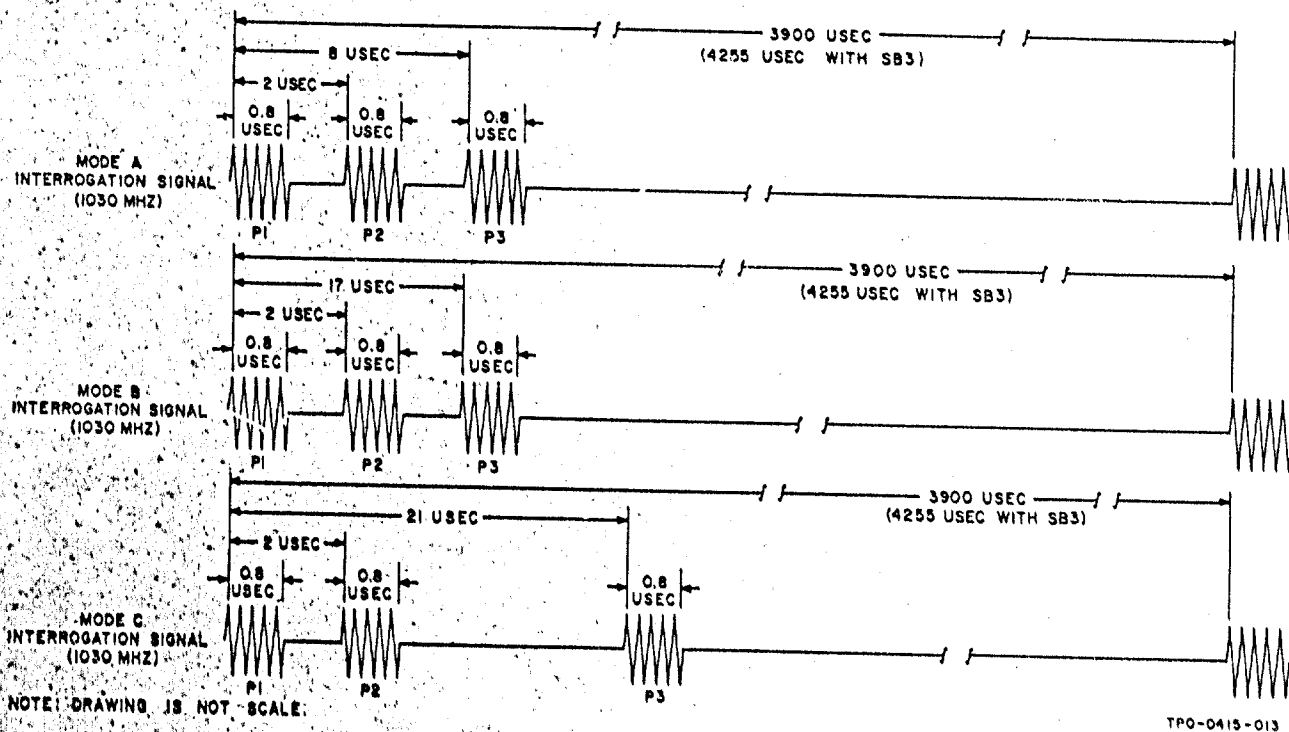


Figure 4-1. Interrogation Signals.

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4.1.2 Transponder Action

An interrogation signal, received by an operational transponder that is set to the interrogation mode in use, triggers the transponder. The triggered transponder generates a reply signal train which consists of successive pulses at an rf carrier frequency of 1090 MHz. Each reply pulse has a nominal width of 0.45 microsecond. The reply signal train always contains two framing pulses and may contain from zero to 12 information pulses, plus an identification pulse. The basic reply pulse spacing is based upon multiples of 1.45 microseconds. The number of pulses in a reply code, for mode A or mode B operation, depends upon the code selected at the transponder control panel. For mode C operation of transponders with altitude reporting capability, the number of pulses in a reply code depends upon the barometric pressure sensed by the altitude encoder. The altitude code that is transmitted in terms of pressure altitude includes both actual altitude above sea level (field elevation) and barometric pressure (altimeter setting). The altitude code calculator tool that is furnished with the 476X-3 makes it easy to determine the proper altitude code if certain information (such as field elevation and altimeter setting) is known.

4.1.3 Reply Code Trains

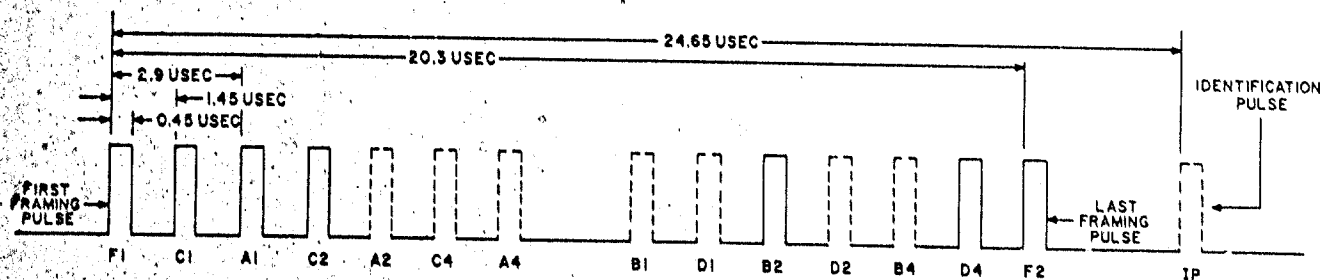
Reply code trains consist of various arrangements of code pulses within the time boundaries of framing pulses. Specific pulse arrangements are assigned representative code numbers. For example, the pulse arrangement illustrated in figure 4-2 is assigned reply code

number 1234. The pulses comprising any particular reply code are arbitrarily identified as F_1 , A_1 , A_2 , A_4 , B_1 , B_2 , B_4 , C_1 , C_2 , C_4 , D_1 , D_2 , D_4 , and F_2 . Pulses F_1 and F_2 are called framing pulses and are always present in any reply code signal. Any or all of the other pulses may or may not be present. In all codes, pulse group A is the most significant digit, and pulse groups B, C, and D are the second, third, and fourth digits respectively. The subscripts 1, 2, and 4, for pulses present in a reply, indicate the binary weighting for each pulse and are added within each pulse group (A, B, C, and D) to determine the code. For the reply shown in figure 4-2, $A_1 = 1$ (most significant digit), $B_2 = 2$ (second digit), $C_1 + C_2 = 3$ (third digit) and $D_4 = 4$ (fourth digit) = 1234 code.

The framing pulses, F_1 and F_2 , are always spaced 20.3 microseconds apart as shown in figure 4-2. The A and B pulses are always spaced some multiple of 2.9 microseconds with respect to the F_1 pulse. The C and D pulses are always spaced some multiple of 1.45 microseconds with respect to the F_1 pulse. Complements exist for all reply codes and consist of all of the information pulses which were not present in a particular reply code. Thus, checking a code and its complement confirms the ability of a transponder to generate any reply pulse. The complement for any specific code is equal to 7777 minus the reply code.

4.1.4 476X-3 Operation

After the 476X-3 has interrogated an ATC transponder, the reply signal from the interrogated transponder is received and detected by



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Figure 4-2. Reply Structure for Code 1234.

the 476X-3. The 476X-3 converts the received rf pulse train into a train of video pulses. The pulses are then analyzed by 476X-3 circuits. If all required pulses are present, spacing between framing pulses is correct, and no extraneous pulses are present, the 476X-3 CODE flag appears. If the transponder reply signal is incorrect, the CODE flag does not appear.

4.2 BLOCK DIAGRAM THEORY

Simplified block diagram theory of operation for the 476X-3 is contained in paragraph 4.2.1. Figure 7-1 is the schematic diagram for the 476X-3 test set.

4.2.1 Simplified Block Diagram

Figure 4-3 is a simplified block diagram which shows major functional divisions of the 476X-3 Transponder Test Set circuits.

4.2.1.1 Common Transmit/Receive Functions

The diplexer, variable attenuator, and fixed attenuator or antenna in the 476X-3 are common to and used for transmit and receive functions. The diplexer routes transmitted and received signals out of or into 476X-3 transmit or receive circuits, respectively, and permits the use of the same transmission path for both signals. The variable attenuator provides attenuation as required for proper adjustment of 476X-3 input/output signal strength at various test locations. When input/output connector J503 is connected to P503, the 476X-3 transmits and receives through its antenna (radiation method). When J503 is connected to P504, the 476X-3 transmits and receives through a fixed attenuator, T/R DIRECT panel connector J504, and a test cable (direct connection method). The fixed attenuator provides attenuation to simulate path losses that are present when the radiation method is used and an rf load to handle the rf power pulses of 500 watts from the transponder.

4.2.1.2 Normal Interrogation Functions

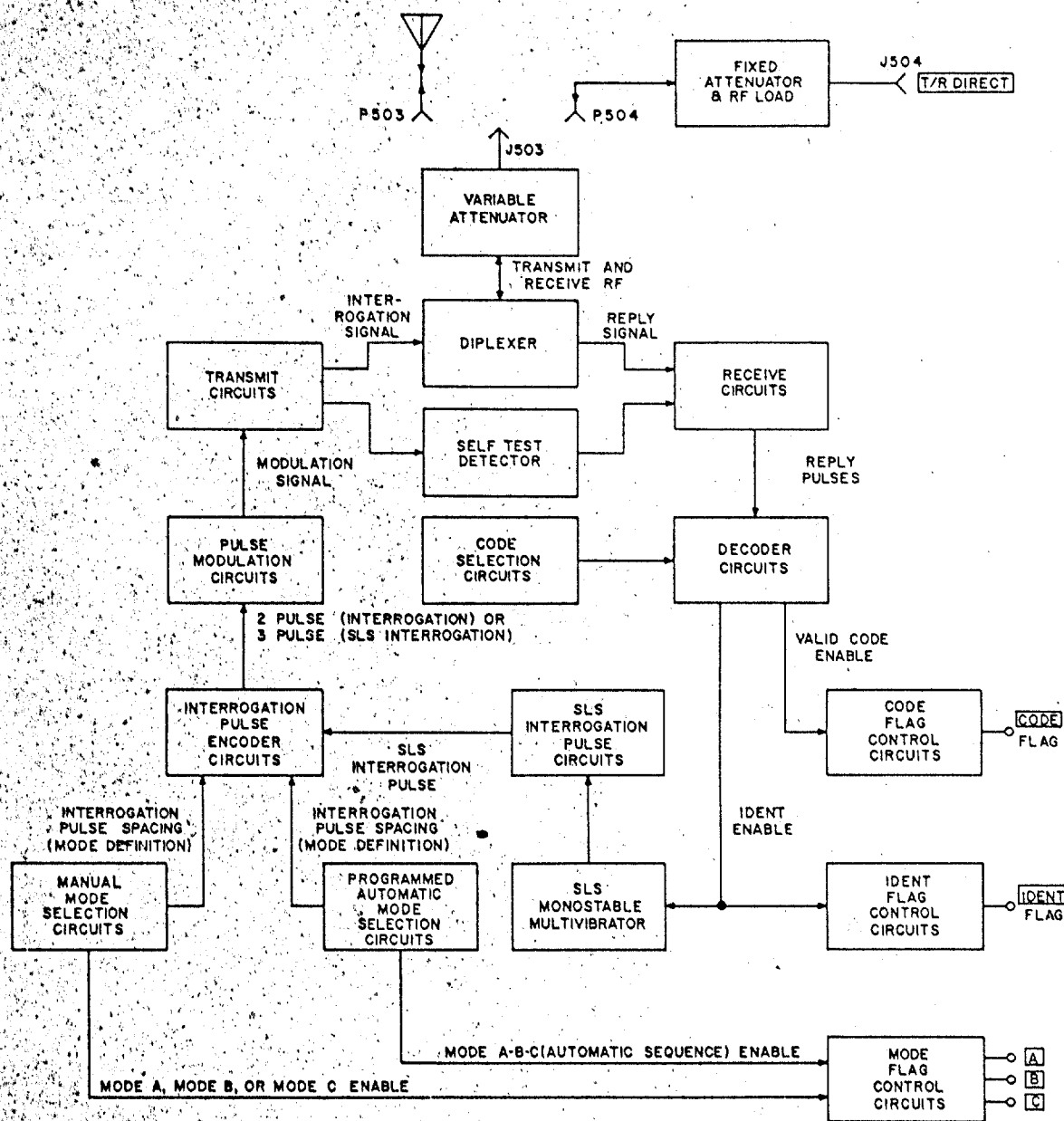
The 476X-3 generates the proper rf interrogation signal to trigger a transponder under test. Pulse spacing between two transmitted pulses in a normal interrogation is established by the

manual or programmed automatic mode selector circuits. This spacing determines the mode (A, B, or C) or the interrogation. The interrogation mode being generated by the 476X-3 must be the same as that which is selected on the transponder control panel to enable the generation of a reply transmission from the transponder. Interrogation pulses are generated at a repetition rate of approximately 256 (235 with SB 3) pulse pairs per second by the interrogation pulse encoder circuits. The manual or programmed automatic mode selection circuits control pulse spacing networks in these circuits to establish time between pulses in each pulse pair. The mode selection circuits cause the individual mode A, B, or C flag to appear and indicate the interrogation mode being transmitted. The programmed automatic mode selection circuits cause mode A, B, and C flags to appear in sequence as each respective interrogation mode is automatically transmitted in the programmed sequence. The interrogation pulse pairs (plus the sls interrogation pulses, when applicable) from the interrogation pulse encoder circuits are at a repetition rate of approximately 256 (235 with SB 3) interrogations per second. The interrogation signal is amplified. The output of the pulse modulation circuits is applied to the transmit circuits where a 103.0-MHz signal is pulse modulated and frequency multiplied 10 times to become a pulse-modulated 1030-MHz interrogation output signal. The pulsed 1030-MHz output signal (1030-MHz bursts representing interrogation pulses) is applied through the diplexer and the variable attenuator to connector J503. From J503, the output is applied to and radiated by the antenna or applied directly through fixed attenuator J504 and a test cable to the transponder under test.

4.2.1.3 Reply Code Receive Functions

When an operational ATC transponder is interrogated by the 476X-3 and the interrogation mode corresponds to the transponder operation mode, a reply code message is generated and transmitted by the transponder. This reply signal is received at the 476X-3 antenna or the T/R DIRECT connector and, after being attenuated a predetermined amount, is applied to the diplexer. The reply signal is applied from the diplexer to the receive circuits which demodulate the signal and amplify the resulting video

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Figure 4-3. 476X-3 ATC Transponder Ramp Test Set, Block Diagram.

pulse train. The video reply pulse train from the receive circuits is applied to the decoder circuits. When framing pulses are correctly spaced and code pulses correspond to the selected code, decoding action occurs and a valid code enable signal is generated. The code selection circuits control the decoder circuits to determine which code is acceptable as valid. A valid code signal from the decoder circuits activates the code flag circuits and causes the CODE flag to appear.

4.2.1.4 Ident and SLS Functions

The 476X-3 concurrently tests identification and sls (side-lobe suppression) circuits in the transponder under test. When the IDENT switch on the transponder control panel is activated and the transponder is under interrogation, identity pulses are generated in the transponder. An identity pulse, following the last framing pulse, is included in each reply pulse train transmitted during a 15- to 30-second period of time following transponder IDENT switch activation and release. A received identity pulse is processed and applied to the 476X-3 decoder circuits in the same manner as code reply pulses. If the identity pulse is valid, the decoder circuits apply an ident enable signal to the ident flag control circuits and to the sls monostable multivibrator. The ident enable signal activates the ident flag control circuits causing an IDENT flag indication and triggers the sls monostable multivibrator.

The sls monostable multivibrator is an electronic switch that enables the sls interrogation pulse generation circuits when an identity pulse is received. When the monostable multivibrator is triggered, it allows the sls interrogation pulse circuits to operate for approximately 1 second. At the end of this 1-second on-time, the sls monostable multivibrator returns to its quiescent state and the sls interrogation pulse circuits are again disabled. During the 1-second on-condition of the sls interrogation pulse circuits, sls interrogation pulses are provided by these circuits and applied to the interrogation pulse encoder circuits. An sls interrogation pulse is added between the two normal interrogation pulses of each interrogation pulse pair, thereby developing a 3-pulse interrogation signal.

The 3-pulse interrogation signal is transmitted to the transponder under test in the same manner as a normal interrogation, paragraph 4.2.1.2. When the sls circuits in the transponder under test are functioning properly, the 3-pulse interrogation signal is detected as a side-lobe interrogation by the transponder and reply is not produced. Since no reply is received during the 1-second on-condition of the 476X-3 sls interrogation pulse circuits, the IDENT flag returns to a concealed condition. When the sls monostable multivibrator returns to quiescent condition, disabling the sls interrogation pulse circuits, normal 2-pulse interrogations are again transmitted to the transponder. The transponder replies, and the identity pulse again triggers the sls monostable multivibrator in the 476X-3 and causes the IDENT flag to appear. This sequence of actions, explained above, continues for 15 to 30 seconds, during which time the 476X-3 IDENT flag presents a blinking indication. When the transponder under test is transmitting a valid reply code ahead of each identity pulse, the 476X-3 CODE flag also presents a blinking indication. If all transponder circuits except the sls circuits are functioning properly, the 476X-3 CODE and/or IDENT flags present a steady indication during the time they appear.

4.2.1.5 Self-Test Function

The 476X-3 operates in self-test when the MODE selector switch is set to the SELF TEST position. The manual mode selector circuits cause the interrogation pulse encoder circuits to produce pulses 24.65 microseconds apart at a repetition rate of approximately 256 (235 with SB 3) pulse pairs per second. The pulses modulate a 103-MHz signal in the transmit circuits and this modulated signal is applied to a self-test detector circuit. The detected video signal from the transmit circuits is applied directly to the receive circuits and processed as any other received signal. The pulses from the received circuits are applied to the decoder circuits and, since pulse spacing is the same as for identity pulses, an ident enable signal is applied to the sls monostable multivibrator and to the IDENT flag control circuits. The IDENT flag control circuits cause the IDENT flag to appear in a steady state. The sls monostable multivibrator is triggered and then retriggered each time it returns to quiescent condition (at approximately 1-second intervals), thereby resulting in an sls pulse being generated at 1-second intervals 2 microseconds

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after the first pulse of the 24.65-microsecond pulse train.

When code 7777 or 0000 is selected with the CODE selector switches, the decoder circuits produce a valid code enable signal. The valid code enable signal activates the CODE flag control circuits and causes a steady CODE flag indication. In code 7777 or 0000 self-test operation, sls pulses produced during sls monostable multivibrator on-time (approx-

mately 1 second) have no effect on decoder circuit operation.

When code 7773 or 0004 is selected, decoder circuits produce a valid code enable signal only when the sls pulse is present. Since the sls pulse is being generated at a cyclic rate, the result is a blinking code flag indication, indicating proper sls operation. Other codes selected (such as 1111, 2222, etc.) during self-test operation are detected as invalid and the code flag does not appear.

section 5

maintenance

5.1 GENERAL

This section provides service and maintenance procedures for the 476X-3 ATC Transponder Ramp Test Set.

5.2 TEST EQUIPMENT REQUIRED

Table 5-1 lists the test equipment required for testing and calibrating the 476X-3. Equivalent equipment may be used.

Table 5-1. Maintenance Test Equipment.

EQUIPMENT	RECOMMENDED EQUIPMENT MFR AND TYPE NO	REQUIREMENTS
Audio oscillator	Hewlett-Packard 200CD	1000 Hz frequency, $\pm 2\%$ accuracy, 600-ohm output impedance
Vtvm	Hewlett-Packard 410B	0- to 30-volt dc range, $\pm 3\%$ accuracy, 120-megohm input impedance
Signal generator	Hewlett-Packard 612A	1000- to 2000-MHz frequency range, $\pm 1\%$ accuracy, 0.5-volt rf output, 50-ohm output impedance
Oscilloscope	Tektronix 535 or 545	
Plug-in head for oscilloscope	Tektronix 53/54L	Dual trace
Coaxial crystal detector	Hewlett-Packard 423A	1000- to 2000-MHz frequency, $\pm 3\%$ accuracy
Antenna, transponder (237Z-1 L-band)	Collins part number 522-2632-00	
Vswr indicator	Hewlett-Packard 415C	
578X-1 Transponder Bench Test Set	Collins part number 522-1839-006 or 522-1839-016	
Frequency meter	Hewlett-Packard 5245L	1000- to 2000-MHz frequency, ± 1 count accuracy, 50-mV sensitivity, 50-ohm input impedance
Plug-in head for frequency meter	Hewlett-Packard 5245A	1000- to 2000-MHz frequency, ± 1 count accuracy, 50-mV sensitivity, 50-ohm input frequency
L-band attenuator	Empire Devices AT-103	1000- to 2000-MHz frequency, ± 0.5 -dB accuracy, 1.2-to-1 vswr, 50-ohm impedance
50-ohm termination	General Radio 874-wm	$\pm 1\%$ accuracy, 1-to-1 vswr
Vswr bridge	Wiltron 60G50	5 MHz to 2 GHz; input impedance, 50 ohms; insertion loss, 6 dB

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Table 5-1. Maintenance Test Equipment (Cont).

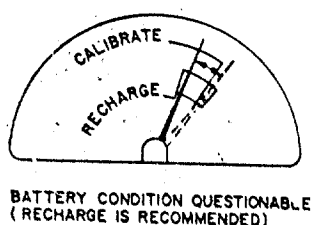
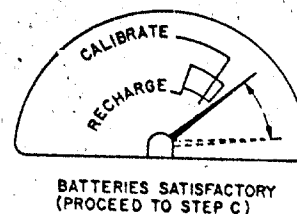
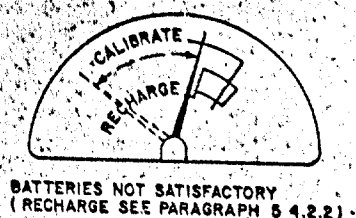
EQUIPMENT	RECOMMENDED EQUIPMENT MFR AND TYPE NO	REQUIREMENTS
External power supply (2)	Electronics Research Associates Model 310m	+6-volt dc output variable from +5.4 to +6.6 volts dc -6-volt dc output variable from -5.4 to -6.6 volts dc -12-volt dc output variable from -13.2 to 11 volts dc -18-volt dc output variable from -19.8 to 16.4 volts dc
621A-6 ATC Transponder or Encoder, 621A-3 ATC Transponder	Collins part number 787-6211-001 Collins part numbers 522-2703-00, 522-2703-011, 522-2703-012, or 522-2703-013	
Transflier	Kay Electric Company Model 1020A	
3-dB pad	460-0010	
Low-pass filter	Hewlett-Packard 360B Fc = 1200 MHz 745-0749-00	50-ohm impedance through bandpass
*599W-1 Adapter	Collins part number 787-6262-001	
GR adapter	General Radio	
GR to BNC adapter	General Radio	
GR to type C adapter	General Radio	
Type N to type BNC adapter	General Radio	
Type N to type C adapter	General Radio	
*599W-1 Adapter is used with 621A-6 Transponder only.		

5.3 MINIMUM PERFORMANCE TEST

The test in this paragraph establishes that the 476X-3 is in proper operating condition or that repair is required. If repair is needed, refer to the adjustment and test procedures (paragraph 5.4).

- Set 476X-3 MODE selector to SELF TEST position.
- Observe panel meter indication and proceed according to instructions on figure 5-1.
- Set 476X-3 MODE selector to A-B-C position, and verify that mode flags appear in A to B to C to A, etc., sequence at intervals of approximately 16 seconds.

- Set T/R ATTEN control to 25 DB and MODE selector to SELF TEST position.
- Hold CALIBRATE OUTPUT - BATTERY VOLTAGE switch in CALIBRATE OUTPUT position. Adjust OUTPUT control for red-line indication on panel meter.
- Release CALIBRATE OUTPUT - BATTERY VOLTAGE switch.
- With CALIBRATE OUTPUT - BATTERY VOLTAGE switch in BATTERY VOLTAGE position, observe flag. IDENT flag should appear continuously.
- Set CODE selector switches to code 0000. The CODE and IDENT flags should appear continuously.



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Figure 5-1. Battery Condition Indicator.

- i. Set CODE selector switches to code 7777. CODE and IDENT flags should appear continuously.
- j. Set CODE selector switches to code 7773. CODE flag should appear intermittently, and IDENT flag should appear continuously.
- k. Set CODE selector switches to code 0004. CODE flag should appear intermittently, and IDENT flag should appear continuously.
- l. Place NIGHT LIGHT to operate position.
- m. Rotate 476X-3 MODE selector through all positions. NIGHT LIGHT should remain on for all positions of MODE selector except the OFF position.
- n. Place MODE selector to mode A and close cover.
- o. Set vtvm SELECTOR switch to +DC position and RANGE control to 30-volt position. Measure the voltage at F502 through F505. The voltage reading should be 0 volt.

forming the procedures given below the batteries should be fully charged.

5.4.2 Batteries

5.4.2.1 Battery Voltages

Nominal high and low battery voltages (table 5-2) are defined as follows. High voltage and low voltage are the limits of the range of voltages in which the 476X-3 will operate correctly. Nominal voltage is the range of voltages most desirable for operation.

Table 5-2. Power Supply Voltage.

INPUT	A (Nominal)	B (High)	C (Low)
+6.0	+5.75 to +6.25	+6.6	+5.6
-6.0	-5.75 to -6.25	-6.6	-5.6
-12.0	-11.5 to -12.5	-13.2	-11.0
-18.0	-17.25 to -18.75	-19.8	-16.4

5.4 ADJUSTMENTS AND TESTS

5.4.1 General

This section describes adjustments and tests to be performed on the 476X-3. Before per-

5.4.2.2 476X-3 Battery Recharging Procedures

This paragraph presents the procedures to be used to recharge the batteries. The batteries normally are recharged in 12 hours. If the 476X-3 is operated while batteries are being recharged, charging time will be longer.

- a. Set MODE selector to the OFF position.

Note

If the 476X-3 is to be operated while the batteries are being charged, set MODE selector switch to the mode to be used, and continue with step b.

- b. Check plate (located on left storage compartment door) to determine if battery charger is wired for 115 or 230 volts ac.
- c. Refer to paragraph 2.3.1.2 or 2.3.1.3 if battery charger is wired for a voltage other than the one to be used.

Caution

Connection of battery charger to an incorrect voltage source will cause damage to equipment.

- d. Connect battery charger power cord to power source (115 or 230 as indicated on plate).
- e. BATTERY CHARGER indicator indicates that battery charger is operating.
- f. When batteries are fully charged, disconnect battery charger from power source.
- g. Place MODE selector to SELF TEST and observe panel meter.
- h. The panel meter should indicate to the right of RECHARGE. If panel meter indicates to the left of RECHARGE, perform the procedures in paragraph 5.4.2.3.
- i. Replace battery charger power cord in left storage compartment.

5.4.2.3 Battery Condition

When a malfunction exists, the procedure in paragraph 5.4.2.4 should be used to test individual sections of the battery under load conditions.

5.4.2.4 Dynamic Battery Test

- a. Place vtvm SELECTOR switch to +DC position and RANGE switch to 10V position.
- b. Connect vtvm common lead to chassis ground on 476X-3.
- c. Place 476X-3 MODE selector to SELF TEST.
- d. Insert dc probe of vtvm into fuse cap receptacle of fuse F502. Vtvm should indicate +6 volts; if below +6 volts, proceed to paragraph 5.4.2.5.
- e. Remove vtvm dc probe from fuse cap receptacle of F502. Place vtvm SELECTOR switch to -DC position.
- f. Insert vtvm dc probe into fuse cap receptacle of fuse F503. Vtvm should indicate -6 volts; if below -6 volts, proceed to paragraph 5.4.2.5.
- g. Remove vtvm leads from 476X-3.
- h. Insert vtvm common probe into fuse cap receptacle of fuse F503. Insert vtvm dc probe into fuse cap receptacle of fuse F504. Vtvm should indicate -6 volts; if below -6 volts, proceed to paragraph 5.4.2.5.
- i. Remove vtvm probes from 476X-3.
- j. Insert vtvm common probe into fuse cap receptacle of fuse F504. Insert vtvm dc probe into fuse cap receptacle of fuse F505. Vtvm should indicate -6 volts; if below -6 volts, proceed to paragraph 5.4.2.5.
- k. Remove vtvm probes from 476X-3, and place 476X-3 MODE selector to OFF.

5.4.2.5 Battery Loading Test

- a. Place 476X-3 MODE selector to OFF.

Caution

Do not hold vtvm probes in fuse cap receptacles for more than 3 seconds while performing following checks. The increased load on batteries may cause permanent damage.

- b. Place vtvm SELECTOR switch to -DC position and RANGE switch to 10V position.
- c. Connect a 10-ohm load in parallel with vtvm probes, and repeat the specific procedure in paragraph 5.4.2.4 that resulted in an indication of less than -6 volts.
- d. If voltage is reduced a noticeable amount (approximately 1.0 volt) from that noted in paragraph 5.4.2.4, repeat steps a through c for each individual cell of that group.
- e. For removal and replacement of batteries, refer to paragraph 5.4.2.6.

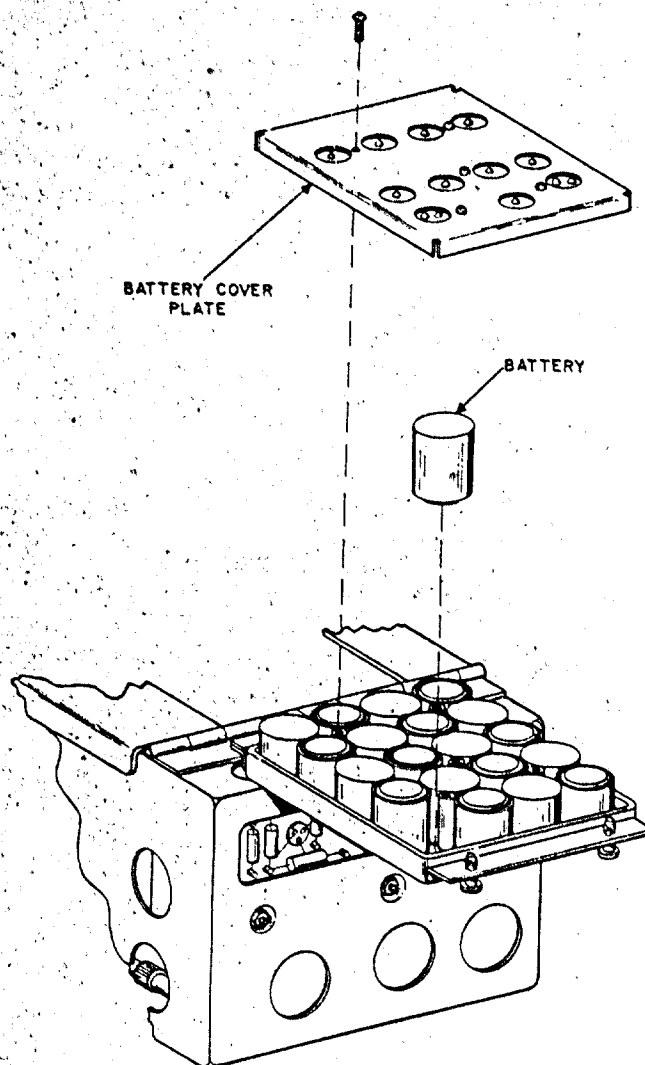


Figure 5-2. Removal and Replacement of Test Set Batteries.

5.4.2.6 Removal and Replacement of 476X-3 Batteries (Refer to figures 5-2 and 5-3.)

- Remove the four screws located below cover panel flange.
- Lift 476X-3 chassis from lower cover.
- Disengage the two Dzus fasteners on bottom of chassis and swing out hinged lid containing battery box.
- Remove five Phillips-head screws retaining battery cover plate.
- Remove battery cover plate.
- Remove defective battery cell.

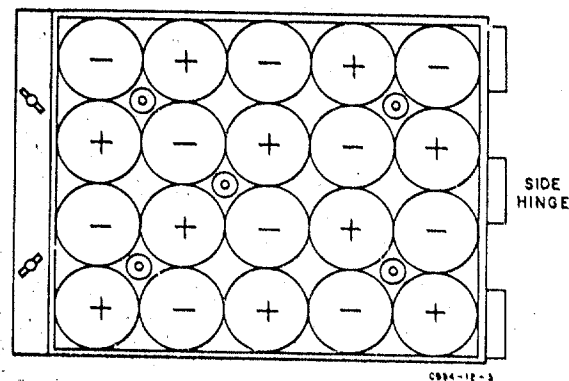


Figure 5-3. Battery Installation Guide.

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Caution

Battery polarity must be correct or damage to equipment can result.

- g. Position batteries in battery box detents. Check each battery for correct polarity as shown in figure 5-3.

Caution

Be sure each hole in battery cover plate is aligned correctly with corresponding screw hole. If battery cover plate is reversed, batteries can be shorted and ruined.

- h. Replace battery cover plate.
- i. Install and tighten five Phillips-head screws.
- j. Close battery box lid and engage the two Dzus fasteners.
- k. Position the lower cover so that the open end is facing up and fasteners are facing forward.
- l. Lower 476X-3 chassis into top cover so that fasteners align.
- m. Replace and tighten the four screws below cover panel flange.

5.4.3 Antenna, Step Attenuator, and Fixed Attenuator VSWR and Attenuation Measurements

5.4.3.1 VSWR Measurement

Use the equipment setup of figure 5-4 to make the following vswr measurements.

Note

When using the HP-612A for the first time, it is necessary to check the symmetry of the rf output. This is done as follows: Connect test setup 1 of figure 5-5; except replace the HP-415C with an oscilloscope. Set MOD UP/NORMAL/DOWN switch to the position that gives least distortion on the oscilloscope, and use that position when making attenuation and vswr measurements.

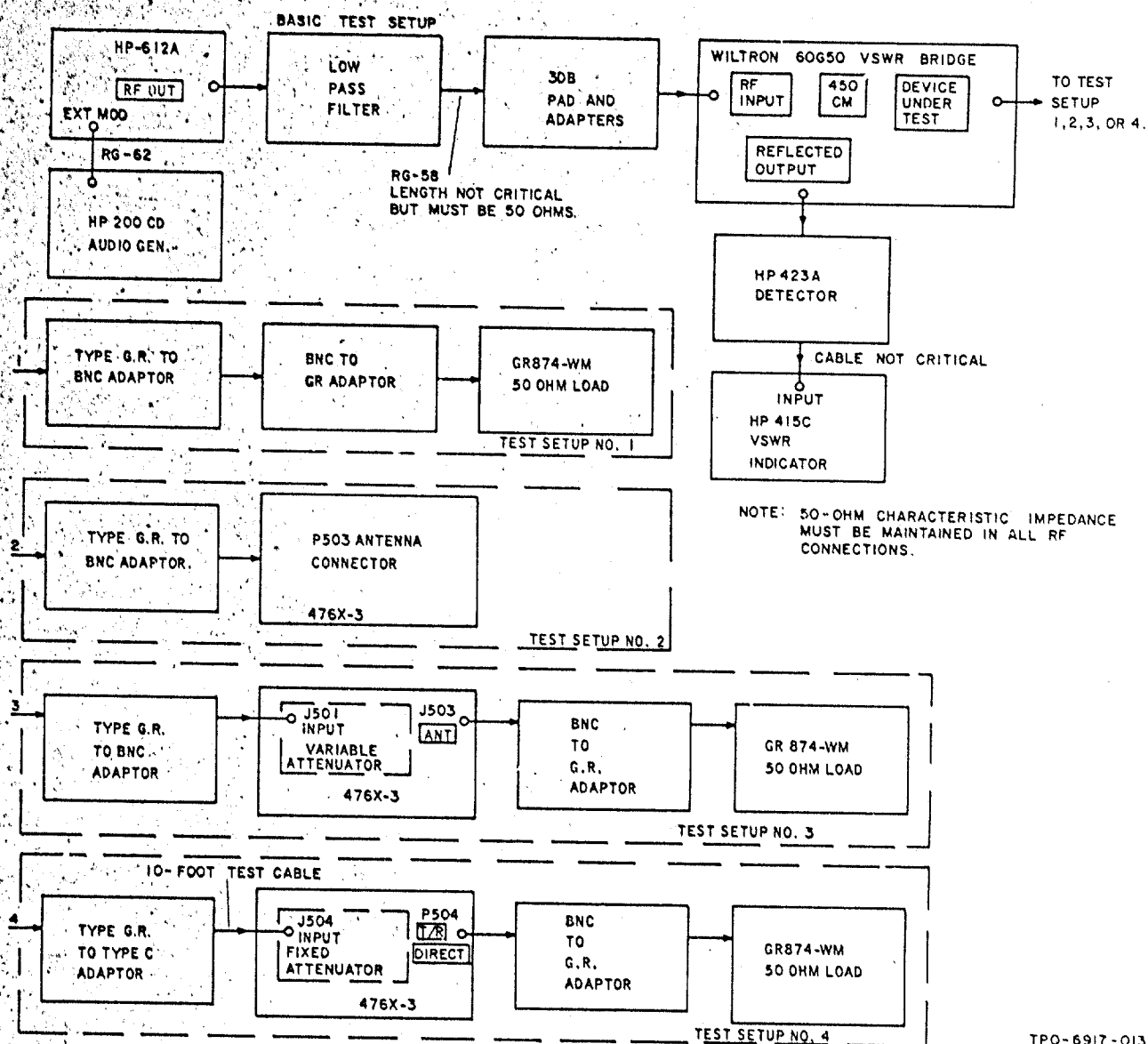
To find the HP-612A input modulation level, set the HP-612A on 1000-Hz internal modulation, and adjust modulation level control to obtain a redline indication. Switch to EXT modulation, and adjust the HP-200CD for a redline indication on the HP-612A.

- a. Connect the basic test setup of figure 5-4. Adjust the HP-612A to 1030 MHz and set its attenuator to -40 dBm. Use the HP-200CD to externally modulate with 1000 Hz.

Note

To adjust the signal generator to 1030 MHz, select CW output and connect output to the frequency counter with the 1000-MHz head.

- b. Set the HP-415C RANGE selector on 50 dB and set input selector on 200 kHz. Adjust audio oscillator frequency for maximum meter reading on the HP-415C. Adjust vernier control on the HP-415C to give a midscale reference reading.
- c. Connect test setup 1 of figure 5-4. Adjust the HP-612A attenuator to obtain the same reference reading as in step b. The difference between the new attenuator setting and the original -40 dB is the return loss (in dB) of the 50-ohm load and adapters. This loss cannot be corrected for and must be small if the attenuator vswr measurements are to be meaningful. Determine the vswr, using the return loss measurement. The vswr should not be more than 1.1:1.
- d. Connect test setup 2 of figure 5-4. Adjust the HP-612A attenuator to obtain the same reference reading as in step b. The difference between the new attenuator setting and -40 dB is the return loss of the antenna. Determine the antenna vswr, using the return loss measurement. The vswr should not be more than 2:1.
- e. Using the following procedures, connect test setup 3 of figure 5-4: Disconnect the coaxial cable (P501) which couples the 476X-3 rf generator to the variable (step) attenuator. Connect the vacant jack (J501) of the step attenuator through an adapter to the vswr bridge. A BNC elbow adapter will ease access to J501. Connect the 50-ohm load through an adapter to the antenna jack (J503) of the test set.
- f. Determine the vswr in each position of the T/R ATTEN switch in the same manner as in step d. The vswr should not be more than 2.0:1 in each position.
- g. Reverse the connections to the test set so that the test signal is fed through the step attenuator from the opposite direction (in J503). Repeat step f.
- h. Connect test setup 4 of figure 5-4. Determine the vswr of the fixed attenuator and test cable in the same manner as in step d. The vswr should not be more than 2.0:1.



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Figure 5-4. VSWR Measurements Test Setup.

- Reverse the connections to the test set so that the test signal is fed through the fixed attenuator and test cable in the opposite direction. Determine the vswr, which should not be more than 2.0:1.

5.4.3.2 Variable Attenuator Measurements

- Connect equipment as shown in figure 5-5, test setup no. 1.
- Set HP-612A attenuation control for -30 dbm.
- Set HP-415C to a convenient reference point and note the HP-612A attenuator setting.

- Connect equipment as shown in figure 5-5, test setup no. 2.
- Set 476X-3 T/R ATTEN control to 0, and adjust the HP-612A attenuator control until the HP-415C returns to the reference set in step c.
- Measure the change in the HP-612A attenuator setting required to obtain the reference reading on the HP-415C noted in step c. The attenuation should be as shown in table 5-3.
- Repeat steps e and f for each T/R ATTEN control position on the 476X-3, and observe

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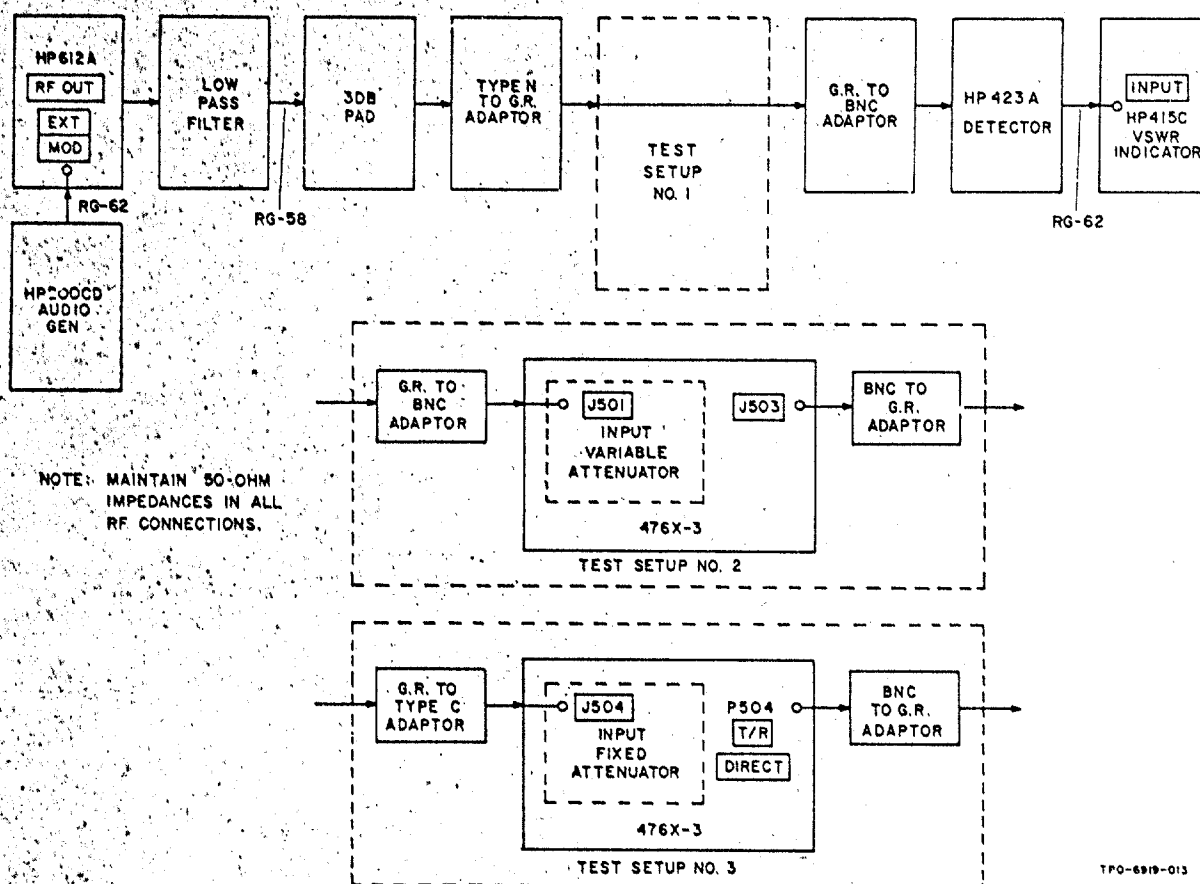


Figure 5-5. Attenuator Measurements Test Setup.

that the HP-612A measured attenuation is within tolerance given in table 5-3.

Table 5-3. T/R Attenuator Settings.

T/R ATTEN (dB)	HP-612A MEASURED ATTENUATION (dB mW)
0	6 to 2 (4 nominal)
5	10 to 6 (8 nominal)
10	15 to 11 (13 nominal)
15	20 to 16 (18 nominal)
20	25 to 21 (23 nominal)
25	30 to 26 (28 nominal)

5.4.3.3 Fixed Attenuator Measurement

- Connect equipment as shown in figure 5-5, test setup no. 1.

- Set HP-612A attenuation control to -40 dB mW, and adjust HP-415C to a convenient reference.
- Connect equipment as shown in figure 5-5, test setup no. 3.
- Increase HP-612A attenuation control until the HP-415C returns to the reference point established in step b.
- HP-612A attenuation control should read -10 to 0 (-5 nominal) dB mW.

5.4.4 Transmitter and Modulator Adjustments and Tests

5.4.4.1 RF Generator Alignment

- Use the equipment setup of figure 5-6 with the detector connected to J503 of the 476X-3. Adjust the power supplies to yield the nominal voltage values specified in table 5-2. Set the 476X-3 MODE selector to mode A.

ADDENDUM 1 TO THE COLLINS 476X-3

ATC TRANSPONDER RAMP TEST SET

INSTRUCTION BOOK (523-0758370-402111 dated 15 March 1978)

Page 5-9. Change steps 5.4.4.1.b, c, and d. to read as follows:

- b. Connect oscilloscope to emitter of Q102 (51 of figure 6-14)
- c. Connect frequency counter to oscilloscope vertical output.
- d. The frequency measured at the emitter of Q102 should be 103.0 MHz. Using insulated tool, adjust C102 (34 of figure 6-14) for maximum amplitude clean signal at 103.0 MHz.

Add the following note after step 5.4.4.1.e.

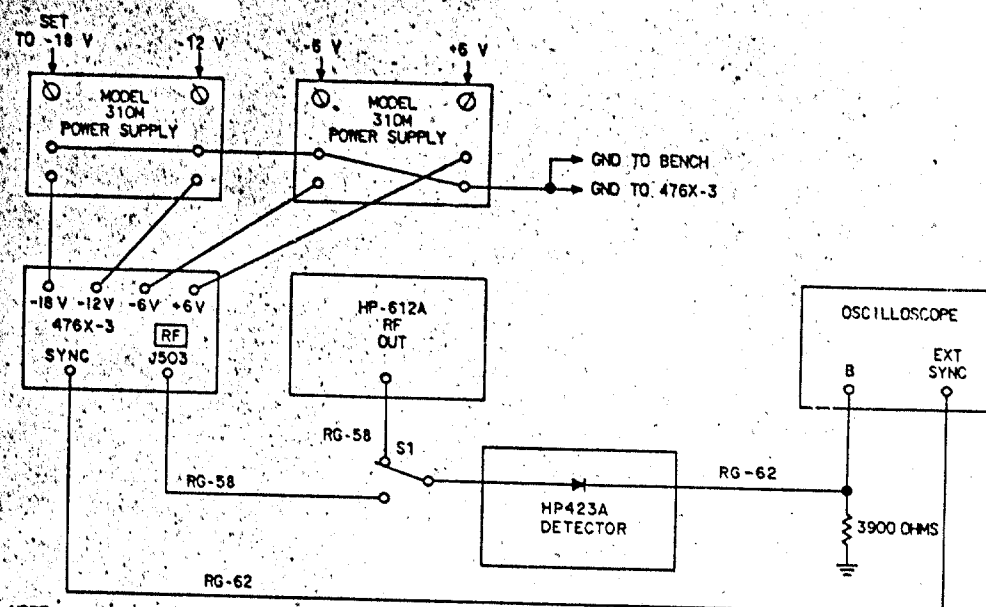
NOTE

THESE PULSES SHOULD BE CLEAR
AND FREE OF AMPLITUDE JITTER.

Add the following note after step 5.4.4.1.k.

NOTE

READJUSTMENT OF C102 MAY BE
REQUIRED IF PULSES ARE OBSERVED
TO EXHIBIT AMPLITUDE JITTER.



NOTE:
S1 INDICATES WIRING CONNECTION CHANGES NECESSARY WHEN CALIBRATING AND TESTING MODULATOR AND TRANSMITTER.

Figure 5-6. Transmitter Modulator Test Setup.

Note

The 476X-3 sync output is an internal connection made to C314. A terminal labeled SYNC, adjacent to R326, is located on the front side of TB300 for this purpose.

- b. Connect one end of the 1K resistor to the emitter of Q102 (51 of figure 6-14).
- c. Set vtvm FUNCTION control to -DC and RANGE selector to 0 - 1.5 volt position. Connect the vtvm probe to the open end of the 1K resistor.
- d. Using an insulated screwdriver, adjust C102 (34 of figure 6-14) for maximum voltage (approximately -0.1 volt dc) indication on the vtvm.
- e. Connect channel A oscilloscope probe to the collector of Q306 (57 of figure 6-16). Negative pulses must be present.
- f. Adjust the 476X-3 OUTPUT control fully cw and T/R ATTEN control to 0 position.
- g. Set R314 (61 of figure 6-16) 1/2 turn from full cw position.
- h. Set R107 (1 of figure 6-14) about 45 degrees from full cw position.

Note

Do not turn the slug farther than 3/4 inch into the cavity of FL101.

- i. Adjust the slug in FL101 approximately 1/2 inch from the top.
- j. Monitor interrogation pulse pair, detected as shown in figure 5-6, on the oscilloscope.
- k. Adjust C109 and C110 (28 and 25 of figure 6-14), FL101, and R107 to obtain maximum pulse amplitude with best pulse shape. Using an insulated tool, first adjust C109, C110, and R107; then adjust FL101 to the peak that has the lowest position in cavity. Repeat this step, as there is interaction between the adjustments.
- l. Set the HP-612A attenuation control to -14 dbm and the mode control to CW position. Assure that the output frequency is 1030 MHz by measuring it with the frequency counter.
- m. Connect the HP-612A rf output to the detector, and display the detected output on the oscilloscope. Note a reference on the oscilloscope graticule.
- n. Disconnect the detector from the HP-612A and connect it to J503 of the 476X-3.

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- k. Adjust the 476X-3 OUTPUT control until the pulse amplitude is at the reference level.
- l. Without changing the OUTPUT control, adjust R110 (9 of figure 6-14) until panel meter redlines when the CALIBRATE OUTPUT - BATTERY VOLTAGE switch is in the CALIBRATE OUTPUT position. Check to see that the indicator will move below the RECHARGE line and above the red line as the OUTPUT control is varied.
- m. Set the 476X-3 OUTPUT control to maximum cw position, and note output pulse amplitude on the oscilloscope.
- n. Disconnect the detector from J503 on the 476X-3 and connect it to the rf output of the HP-612A.
- o. Adjust HP-612A attenuation control for an output level equal to the pulse amplitude noted in step q. The HP-612A output level should be not less than -10 dB mW; that is, the output should be 70 mV or greater.
- p. Repeat steps q through s with the external power supplies set to provide the low and high voltages specified in table 5-2.

5.4.4.2 Transmitter Frequency

- a. Connect J503 to a frequency counter input connector.
- b. Set 476X-3 MODE selector to A, and hold CALIBRATE OUTPUT - BATTERY VOLTAGE switch to CALIBRATE OUTPUT position.
- c. Read output frequency directly from frequency counter. The output frequency should be 1029.9 to 1030.1 (1030 nominal) MHz.
- d. Repeat step c with 476X-3 input power set for the high voltages specified in column B of table 5-2.
- e. Repeat step c with 476X-3 input power set for the low voltages specified in column C of table 5-2.
- f. Release CALIBRATE OUTPUT - BATTERY VOLTAGE switch.
- g. Set input power for the nominal voltages specified in column A of table 5-2.

5.4.4.3 Interrogation PRF

- a. Connect equipment as shown in figure 5-6.
- b. Set scope controls to TIME BASE A 500 U SEC/CM, A delayed by B, DC traces, trace A to 10 V/CM, trace B to .05 V/CM.
- c. Adjust 476X-3 OUTPUT control cw to obtain a convenient signal amplitude on scope.
- d. Adjust R326 (2 of figure 6-16) to obtain 3900-microsecond pulse spacing. With SB 3 installed,

adjust R800 to obtain a 4255-microsecond pulse spacing.

- e. Set input power for the high voltages specified in column B of table 5-2.
- f. Check to ensure that pulse spacing remains at 3900 ± 400 microseconds (4255 ± 200 microseconds with SB 3 installed).
- g. Set input power for the lower voltages specified in column C of table 5-2.
- h. Check to ensure that pulse spacing remains at 3900 ± 400 microseconds (4255 ± 200 microseconds with SB 3 installed).
- i. Set 476X-3 MODE selector to OFF and input power for the nominal voltages specified in column A of table 5-2.

5.4.4.4 Modulator - Pulse Spacing and Width

- a. Connect equipment as shown in figure 5-7.
- b. Set 476X-3 MODE selector to mode A. MODE A indicator should come into view.
- c. While holding the CALIBRATE OUTPUT - BATTERY VOLTAGE switch in the CALIBRATE OUTPUT position, adjust the OUTPUT control for a redline indication on panel meter. Release switch.
- d. Set scope trace B to .05 V/CM AC and trace A to 1 V/CM DC.
- e. Set the 578X-1 ON/OFF POWER switch to ON, the FIXED/VARIABLE SYNC switch to VARIABLE, the 1.0/1.45 MARKER SPACING switch to 1.0, and the SLS POSITION control to full counterclockwise position.
- f. Adjust the 578X-1 sync rate as follows: Starting with the INTERROGATION RATE control set at approximately 250 PRF, slowly adjust the control clockwise until the monitored waveforms lock into sync.
- g. With the 476X-3 MODE selector set to mode A, adjust C501 (10 of figure 6-3) to obtain a pulse spacing of 7.95 to 8.05 (8.0 nominal) microseconds.
- h. Set 476X-3 MODE selector to B. MODE B indicator should come into view.
- i. Adjust C503 (7 of figure 6-3) to obtain a pulse spacing of 16.95 to 17.05 (17.0 nominal) microseconds.
- j. Set 476X-3 MODE selector to C. MODE C indicator should come into view.
- k. Adjust C506 (4 of figure 6-3) to obtain a pulse spacing of 20.95 to 21.05 (21.0 nominal) microseconds.
- l. Place 476X-3 MODE selector to A-B-C. Observe that flag indicators operate from A to B to C and pulse spacing alternates from A to B to C.

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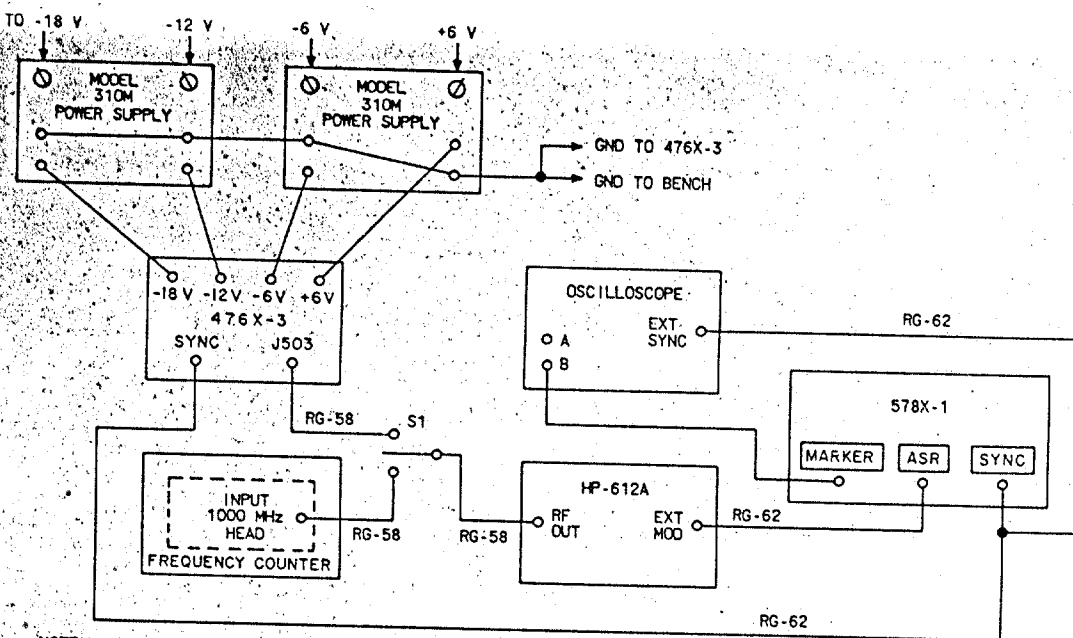
- m. Set 476X-3 input power for the low voltages specified in column C of table 5-2.
- n. Set 476X-3 OUTPUT control to obtain a redline indication on panel meter; then repeat step l.
- o. Set 476X-3 input power for the high voltages specified in column B of table 5-2.
- p. Set 476X-3 OUTPUT control to obtain a redline indication on panel meter; then repeat step l.
- q. Set 578X-1 MARKER SPACING - U/SEC control to 1.45 U/SEC.
- r. Set 476X-3 MODE selector to SELF TEST.
- s. Adjust C521 (2 of figure 6-3) for 24.60- to 24.70- (24.65 nominal) microsecond pulse spacing.
- t. Disconnect one end of CR1103. P2, sls interrogation pulse, should now be present at the detected output.
- u. Adjust C1107 (29 of figure 6-10) to obtain 1.95- to 2.05- (2.0 nominal) microsecond sls pulse spacing between P1 and sls pulse.
- v. Set 476X-3 input power for the low voltages specified in column C of table 5-2. Redline the output as in step c. Assure that the sls and self-test pulse spacing remains within tolerance.
- w. Repeat step v for the high voltages specified in column B of table 5-2.
- x. Set 476X-3 input power for the nominal

- voltages specified in column A of table 5-2.
- y. Set 476X-3 MODE selector to A.
- z. Adjust R314 (61 of figure 6-16) to obtain a pulse width of 0.7 to 0.9 (0.8 nominal) microsecond.
- aa. Measure the rise time and fall time of each pulse of the interrogation. The rise time should be not more than 0.3 microsecond, and the fall time should be not more than 0.35 microsecond.
- ab. Measure the relative pulse amplitude of the interrogation pulses. P2 and P3 should be within $\pm 10\%$ of P1 pulse amplitude.
- ac. Reconnect CR1103.

5.4.5 Receiver Adjustments

- a. Connect equipment as shown in figure 5-8.
- b. Adjust the HP-612A to exactly 1090 MHz using the frequency counter with the 1000-MHz head. Set the HP-612A mode selector to CW during frequency measurement.
- c. Set the HP-612A attenuation control to +3 dbm and connect its output to J503 of the 476X-3.
- d. Externally modulate the HP-612A with the 578X-1 ASR output. Set the HP-612A mode selector to PULSE 1 position.

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NOTE:

S1 INDICATES WIRING CONNECTION CHANGES NECESSARY WHEN CALIBRATING AND TESTING RECEIVER AND DECODER.

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Figure 5-8. Receiver Decoder Test Setup No. 1.

- e. Adjust the 578X-1 ASR output pulse spacing to 20.30 microseconds as follows: Set the 578X-1 1.0/1.45 MARKER SPACING switch to 1.45. Use the 1.45-microsecond markers for time calibration. Fourteen markers equal 20.30 microseconds. Set the 578X-1 MODE selector to mode C which is 21.0 microseconds nominal and adjust the INTERROGATION SPACING control until the pulse spacing is narrowed to 20.30 microseconds.
- f. Connect scope probe to collector of Q202 (33 of figure 6-13), and set R208 (35 of figure 6-13) fully cw.
- g. Do not monitor the first pair of pulses; they are the interrogation pulses. Adjust FL102 for maximum pulse amplitude with best pulse shape. Waveshape should resemble that shown for test-point AA of figure 7-2.

Note

When pulse amplitude reaches 6 volts, reduce the output of the HP-612A before continuing adjustment.

- h. Connect scope probe to emitter of Q204 (37 of figure 6-13), and check that pulse shape resembles that shown for test point AD of figure 7-2.
- i. Set HP-612A output control to 0 dbm.
- j. Set scope trace A to 5 V/CM, and connect to collector of Q605 (105 of figure 6-12).

- k. Set 476X-3 CODE selector switches to code 0077.
- l. Set R611 (7 of figure 6-12) to full cw position, and then readjust R611 ccw until a pulse width of 0.9 to 1.1 microseconds is obtained.

Note

Ensure that the correct pulses of 20.3-microsecond spacing are used.

- m. Connect equipment as shown in figure 5-9, and connect scope probe to base of Q612 (77 of figure 6-12).
- n. Set 476X-3 CODE selector switches to 7777.
- o. Adjust R617 (5 of figure 6-12) so that all pulses are present.
- p. Set encoder for code 7700. There should be no pulses present.

Note

If pulses are present in step p, readjust R617 until all pulses disappear, and then recheck using code 7777.

- q. Connect equipment as shown in figure 5-8. Connect HP-612A RF OUT to J503 on 476X-3.
- r. Set HP-612A to PULSE 1 with an output frequency of 1090 MHz at 0-dbm output. Set 476X-3 CODE selectors to code 0000.
- s. Set scope TIME BASE A to .1 U SEC/CM

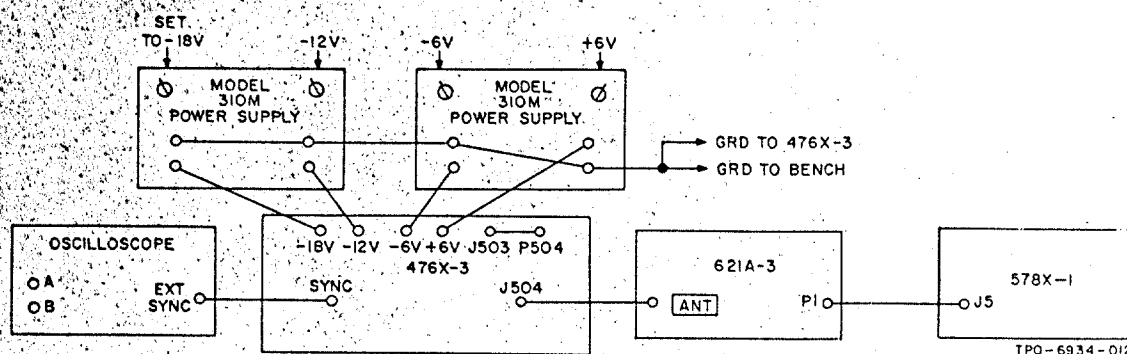


Figure 5-9. Receiver-Decoder Test Setup No. 2.

- and trace A to 5 V/CM. Connect scope probe A to emitter of Q204. Set trace B to 1 V/CM and connect scope probe B to MARKER OUT connector on 578X-1.
- t. Adjust 578X-1 ASR control for a pulse spacing of 20.28 to 20.32 (20.3 nominal) microseconds as described in step e.
- u. Set trace A and trace B amplitude to 2 V/CM. Connect scope probe A to collector of Q407 (125 of figure 6-8) and scope probe B to collector of Q408 (217 of figure 6-8).
- v. Adjust R452 and R458 (126 and 216 of figure 6-8) to obtain a pulse width of 0.37 microsecond.
- w. Adjust the 578X-1 ASR SPACING control to position the second interrogation pulse to the left and right of the nominal spacing.
- x. Observe that the CODE flag drops out of view when the spacing is adjusted not more than 0.5 microsecond left of the nominal spacing and not less than 0.25 microsecond right of the nominal spacing.
- y. Set the CODE selectors to code 7777 and repeat steps w and x.
- z. Set the 476X-3 input power to the low voltage specified in column C of table 5-2 and the CODE selectors to code 0000. Repeat steps w through y.
- aa. Set the 476X-3 input power to the high voltages specified in column B of table 5-2. Repeat steps w through y.
- ab. Connect the equipment as shown in figure 5-9 and set the 578X-1 IDENT switch to the on position.
- ac. Set the 476X-3 to mode A and note that the flag appears between 10 and 18 times within a 20-second period.
- ad. Set the 476X-3 to mode B and note that the flag appears between 10 and 18 times within a 20-second period.

5.4.6 Decoder Tests

5.4.6.1 General

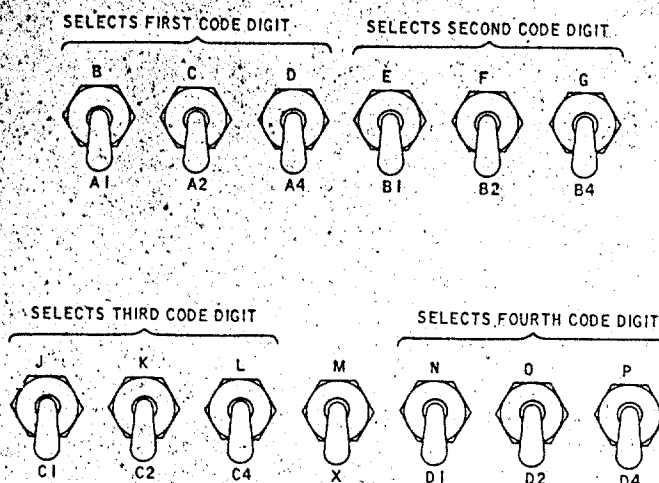
The radiation or direct method, stated in paragraphs 3.3.2 and 3.3.3, may be used for the decoder tests. Paragraph 5.4.6.2 explains the transponder code selection method used to perform the decoder tests in paragraph 5.4.6.3.

5.4.6.2 Transponder Code Selection

The transponder code selection is made on the front panel of 578X-1 test set. Figure 5-10 shows the 578X-1 code selector toggle switches with the corresponding reply pulse identifiers below them. Switches marked A (1, 2, and 4), B (1, 2, and 4), C (1, 2, and 4), and D (1, 2, and 4) on figure 5-10 select the four reply code digits reading from left to right. For example, for code 2457, the A series of switches would select digit 2, the B series of switches would select digit 4, the C series of switches would select digit 5, and the D series of switches would select digit 7. Refer to table 5-4 and figure 5-10 for actual toggle switch positions for the desired code digits.

5.4.6.3 Decoder Accuracy

- a. Set the encoder (578X-1) and the 476X-3 to mode A. Adjust the 578X-1 toggle switches to provide the codes in the far left column of table 5-5. Set the 476X-3 code selectors to the code and complement and check for CODE flag indication.
- b. Repeat step a for mode B.
- c. Repeat step a for mode C. In mode C, the IDENT and CODE flags will blink when the D4 pulse is selected.
- d. Repeat steps a through c with the external power supplies set for the low and high voltages specified in table 5-2.



NOTE:

1. SWITCH LABELED X DOES NOT ACTIVATE ANY CODE REPLY PULSE AND SHOULD BE IN THE DOWN (OFF) POSITION.

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Figure 5-10. 578X-1 Code Selectors.

Table 5-4. 578X-1 Code Selection Chart.

CODE DIGIT DESIRED	SWITCH ()1	SWITCH ()2	SWITCH ()4
0			
1	X		
2		X	
3	X	X	
4			X
5	X		X
6		X	X
7	X	X	X

Note

X indicates an on condition.

(A) series selects the first code digit.

(B) series selects the second code digit.

(C) series selects the third code digit.

(D) series selects the fourth code digit.

Table 5-5. Decoder Accuracy.

621A-3 CODE SELECTOR SETTING	476X-3 CODE SELECTOR SETTING MODE A		476X-3 CODE SELECTOR SETTING MODE B	476X-3 CODE SELECTOR SETTING MODE C
	CODE	COMPLEMENT		
0000	0000	7777	0000	0000
1000	1000	6777	1000	1000
3000	3000	4777	3000	3000
7000	7000	0777	7000	7000
7100	7100	0677	7100	7100
7300	7300	0477	7300	7300
7700	7700	0077	7700	7700
7710	7710	0067	7710	7710
7730	7730	0047	7730	7730
7770	7770	0007	7770	7770
7771	7771	0006	7771	7771
7773	7773	0004	7773	7773
7777	7777	0000	7777	7777

5.4.7 Receiver Sensitivity

Note

- Connect the equipment as shown in figure 5-8.
- Connect the HP-612A output to the frequency counter with 1000-MHz head. Set the HP-612A mode selector to CW and adjust its frequency to 1090 MHz.
- Set the HP-612A mode selector to PULSE 1. Disconnect the rf output from the frequency counter, and connect the rf output to J503 of the 476X-3.
- Set the scope TIME BASE A to 5 U SEC/CM and trace A to 2 V/CM. Connect scope probe A to emitter of Q204 (37 of figure 6-13).
- Adjust the HP-612A attenuation to keep the displayed amplitude less than 6 volts.
- Fine tune FL102 (70 of figure 6-14) to give maximum pulse amplitude with best pulse shape. Pulse shape should closely resemble that shown for test point AD in figure 7-2.
- Set the ASR spacing to 20.3 microseconds. Use the method described in step e of paragraph 5.4.5.
- Set the 476X-3 CODE selectors to code 0000, and turn R208 (35 of figure 6-12) to maximum cw position.
- Reduce the output of the HP-612A until the CODE flag disappears. Note the attenuator position. Receiver sensitivity should be equal to or greater than -6 dB mW; that is, equal to or less than 115 mV.

If sensitivity is too low e.g., -6 or -5, check the front-to-back ratio of CR103 (58 of figure 6-14).

- Repeat step i with external power supplies set for the low and then the high voltages specified in table 5-2.
- Set the HP-612A attenuation level to -4 dbm. Rotate R208 until the CODE flag just operates, and lock R208 in this position.

5.4.8 Receiver Bandwidth

- Maintain the equipment setup of the preceding paragraph.
- Set the HP-612A attenuation control to -1 dbm.
- Increase the HP-612A frequency until the CODE flag drops, then decrease the frequency slightly until the CODE flag just operates.
- Measure this frequency using the frequency counter with 1000-MHz head. Set the HP-612A on CW for the measure. Note frequency. This frequency should be in the range from 1092.25 to 1094.25 MHz.
- Return the HP-612A mode selector to PULSE 1 and decrease the frequency until the CODE flag drops, then increase frequency until the CODE flag just operates. Measure this

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frequency as in step d. Note frequency. This frequency should be in the range from 1085.75 to 1087.75 MHz.

Compute the frequency difference as noted in steps d and e. Receiver bandwidth should be from 4.5 to 8.5 MHz.

5.4.9 Self-Test

1. Disconnect the HP-612A from the 476X-3 and adjust the input power for the nominal values specified in table 5-2.

- b. Set the MODE selector to SELF TEST.
- c. Set the step attenuator to 25 db, and adjust the OUTPUT control for a redline meter reading.
- d. Rotate the CODE selectors through 0000, 1111, 2222, ..., and 7777. The CODE flag should operate only on codes 0000 and 7777.
- e. Set the CODE selectors to 0004, and note that the CODE flag blinks between 10 and 18 times during a 20-second period. Repeat observation on code 7773. Note the I/P flag remains stationary and operates during the above tests.
- f. Disconnect the external power supplies.

section 6

parts list

6.1 INTRODUCTION

6.1.1 General

The purpose of this parts list, prepared by Collins Radio Group of Rockwell International, is for identification, requisition, and issuance of parts.

Parts listed meet critical equipment design specification requirements. Use only part numbers specified in this parts list for replacement of parts.

6.1.2 Group Assembly Parts List

FIG - ITEM Column — Digits preceding the dash refer to figure numbers. Digits following the dash are item numbers assigned in sequence to correspond with item numbers on the illustrations.

PART NO Column — Listed are MIL standard, vendor, or Collins part numbers. Collins part numbering system consists of 10 digits as follows: a 3-digit family number, a 4-digit serial number, and a 3-digit dash number.

INDENT Column — Items are coded 1, 2, 3, etc., to indicate the relationship to the next higher assembly.

DESCRIPTION Column — Lists the noun name, modifier, descriptive information, federal manufacturer's code, reference designation, attaching part (AP), reference to other figures, and effectivities.

Attaching parts are identified by (AP) following the part or parts they attach.

Effectivities are identified by the following methods: MCN (Manufacturer Control Number) 101 and up; CI (Configuration Identifier) 5-digit number; REV (Revision Identifier) dash (-) denotes original, letter A first change, letter B second change, etc. One of the above identifiers is listed on each chassis and/or replaceable assembly. Service Bulletins are identified by SB 1, SB 2, etc.

USABLE ON CODE Column — Part variations within a group of equipment are indicated by a letter code (A, B, C, etc). Absence of a code indicates part applies to all models.

UNITS PER ASSY Column — Quantities specified are per item number. Letters AR denote the selection of parts as required. Letters RF refer to an assembly completely assembled on a preceding figure and illustration.

6.1.3 Numerical Index

PART NUMBER Column — Part numbers are listed in alphanumeric sequence.

FIG - ITEM Column — Digits preceding the dash refer to figure numbers. Digits following the dash are item numbers.

TTL REQ Column — Listed is the total quantity of parts or assemblies covered in the Group Assembly Parts List.

6.1.4 Reference Designation Index

REFERENCE DESIGNATION Column — Reference designations are listed in alphanumeric sequence.

FIG - ITEM Column — Digits preceding the dash refer to figure numbers. Digits following the dash are item numbers.

PART NUMBER Column — Part numbers listed are for items that have reference designations assigned.

6.1.5 How To Use This Parts List

To locate a part number if the assembly in which the part is used is known, turn to the List of Illustrations and find the page number for the assembly in which the part is used. Locate the part and its index number on the illustration and find the index number on the Group Assembly Parts List page to determine its description and part number.

To locate the illustration for a part if the part number is known, refer to the Numerical Index and find the part number. Turn to the Group Assembly Parts List and find the first figure and index number indicated in the Numerical Index for that part. If this figure shows the part in a section or system of the equipment other than the one desired, refer to the other figure numbers listed in the Numerical Index.

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To locate the illustration for a part if the reference designation is known, refer to the Reference Designation Index and find the symbol; turn to the Group Assembly Parts List and find the figure and index number indicated in the index.

6.1.6 Manufacturer's Code, Name, and Address

CODE	MANUFACTURER'S NAME AND ADDRESS	CODE	MANUFACTURER'S NAME AND ADDRESS
00136	McCoy Electronics Co. Watts-Chestnut St. Mt. Holly Springs, PA 17065	04713	Motorola, Inc. Semiconductor Products Div. 5005 E. McDowell Rd. Phoenix, AZ 85008
00222	E.S.C. Electronics Corp. 534 Bergen Blvd. Palisades Park, NJ 07650	05411	DuPage Mfg. Co. 2250 Curtiss Ave. Downers Grove, IL 60515
00656	Aerovox Corp. 740 Belleville Ave. New Bedford, MA 02741	05657	Corbin Hose Clamp Div. of Emhart Corp. 225 Episcopal Rd. Berlin, CT 06037
00853	Sangamo Electric Co. S. Carolina Div. P.O. Box 128 Pickens, SC 29671	07263	Fairchild Semiconductor A Div. of Fairchild Camera and Instrument Corp. 464 Ellis St. Mountain View, CA 94040
01295	Texas Instrument Inc. Component Group 135 N. Central Expressway Dallas, TX 75222	07388	Torotel, Inc. 13402 S. 71 Hwy. Grandview, MO 64030
01930	Amerock Corp. 4000 Auburn St. Rockford, IL 61103	07886	National Radio Co., Inc. Commercial Prod. Div. 78 Stone Pl. Melrose, MA 02176
02768	Fastex, Div. of Ill. Tool Works 195 Algonquin Rd. Des Plaines, IL 60016	07933	Raytheon Co. 141 Spring St. Lexington, MA 02173
02768	General Electric Co. Semi-Conductor Prod. Dept. Electronics Park Syracuse, NY 13201	08257	NPC Electronics P.O. Box 1454 Canoga Park, CA 91304
03877	Transistron Electronic Corp. 168-186 Albion St. Wakefield, MA 01880	08289	Blinn, Deibert, Co., Inc., The 1678 E. 5th Ave. Pomona, CA 91766
04009	Arrow-Hart and Hegeman Electric Co. 103 Hawthorne St. Hartford, CT 06106	08664	Bristol Div. of American Chain and Cable Co., Inc. 40 Bristol St. Waterbury, CT 06720
		08730	Vemaline Products Co., Inc. 455 W. Main St. Wyckoff, NJ 07481

CODE	MANUFACTURER'S NAME AND ADDRESS
08806	General Electric Co. Miniature Lamp Products Dept. Nela Park Cleveland, OH 44112
09922	Burndy Corp Richards Ave. Norwalk, CT 06852
10646	Carborundum Co., The P.O. Box 337 Niagara Falls, NY 14302
11707	Ideal Precision Meter Co., 214 Franklin St. Brooklyn, NY 11222
12014	Chicago Rivet and Machine Co. 950 S. 25th Ave. Bellwood, IL 60104
12615	U.S. Terminals, Inc. 7504 Camargo Rd. Cincinnati, OH 45243
12954	Dickson Electronics Corp. 8700 E. Thomas Rd. Scottsdale, AZ 85252
13499	Collins Divisions Rockwell International Cedar Rapids, IA 52406
14805	KSC Semiconductor Corp. KSC Way, Katrina Rd. Chelmsford, MA 01820
14907	Conrac Corp. Craemer Div. Mill Rock Rd. Old Saybrook, CT 06475
14936	General Instrument Corp. Semiconductor Products Group 600 W. John St. Hicksville, NY 11802
19209	General Electric Co. Electronic Capacitor and Battery Products Sec. P.O. Box 114 Gainesville, FL 32601

CODE	MANUFACTURER'S NAME AND ADDRESS
20093	Electrical Industries Div. of Pepi Inc. 693 Central Ave. Murray Hill, NJ 07971
24446	General Electric Co. 1 River Rd. Schenectady, NY 12305
26553	Computer Instruments Corp. 92 Madison Ave. Hempstead, LI, NY 11550
27193	Cutler-Hammer, Inc. Specialty Products Division 4201 N. 27th St. Milwaukee, WI 53216
35627	Precesion Electronic Components 1971 LTD 19 Hafis Rd. Toronto, ONT., CANADA
49673	RFL Industries Inc. Powerville Rd. Boonton, NJ 07005
53021	Sangano Electric Co. 1301 N. 11th Springfield, IL 62705
56289	Sprague Electric Co. Marshall St. North Adams, MA 01247
61957	United Shoe Machinery Corp. 140 Federal St. Boston, MA 02107
70903	Beldon Mfg. Co. 415 S. Kilpatrick Chicago, IL 60644
71400	Bussmann Mfg. Div. of McGraw-Edison Co. 2536 W. University St. St. Louis, MO 63107
71590	Centralab Div. of Globe-Union, Inc. 5757 N. Green Bay Ave. Milwaukee, WI 53201

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CODE	MANUFACTURER'S NAME AND ADDRESS	CODE	MANUFACTURER'S NAME AND ADDRESS
7744	Chicago Miniature Lamp Works 4433 Ravenswood Ave. Chicago, IL 60640	81349	Military Specifications
77136	Electro Motive Mfg. Co., Inc., The South Park and John Streets Willimantic, CT 06226	81483	International Rectifier Corp. 9220 Sunset Blvd. Los Angeles, CA 90069
77962	Elastic Stop Nut Div. of Amerace Corp. 2330 Vauxhall Rd. Union, NJ 07083	82142	Airco Speer Electronics Div. of Air Reduction Co., Inc. Grand Plaza 945 Grand Ave. Nogales, AZ 85621
77982	Erie Technological Products, Inc. 644 W. 12th St. Erie, PA 16512	82805	Metal Textile Co. 647 1st Ave. Roselle, NJ 07203
77445	Amperex Electronic Corp. 230 Duffy Ave. Hicksville, Long Island, NY 11802	86197	Clifton Precision Products Div. Litton Precision Products, Inc. Maple at Broadway Clifton Heights, PA 19018
77868	Amphenol Corp. Amphenol RF Div. 33 E. Franklin St. Danbury, CT 06810	86577	Precision Metal Products of Malden, Inc. 41 Elm St. Stoneham, MA 02180
77854	Oak Mfg. Co. Switch Div. S. Main Crystal Lake, IL 60014	88044	Aeronautical Standard Group Dept. of Navy and Air Force Silver Springs, MD 20900
77147	Patton Mac Goyer Co. Div. of Avid Corp. 17 Virginia Ave. Providence, RI 02905	89873	Cortland Industries, Inc. 4545 W. Cortland St. Chicago, IL 60639
77250	Pheoll Mfg. Co. Div. of Allied Prod. Corp. 5700 Roosevelt Rd. Chicago, IL 60650	91314	Lewis Spring and Mfg Co. 2652 W. North Ave. Chicago, IL 60647
77789	Shakeproof, Div. of Illinois Tool Works, Inc. St. Charles Rd. Elgin, IL 60120	91637	Dale Electronics, Inc. P.O. Box 609 Columbus, NE 68601
77907	Wrought Washer Mfg. Co. 2100 S. Bay St. Milwaukee, WI 53207	91663	Armstrong Electronics, Inc. 1601 75th St. North Bergen, NJ 07047
80789	Essex Wire Corp. Controls Div. Logansport, IN 46947	91929	Honeywell, Inc. Micro Switch Div. Chicago and Spring Streets Freeport, IL 61032

CODE	MANUFACTURER'S NAME AND ADDRESS
93332	Sylvania Electric Products Inc. Semiconductor Prod. Div. 100 Sylvan Rd. Woburn, MA 01801
94375	Automatic Metal Products Corp. 400 Moreland Rd. Commack, LI, NY 11725
95105	Collins Division Rockwell International Cedar Rapids, IA 52406
95121	Quality Components, Inc. P.O. Box 113 St. Marys, PA 15857
96214	Texas Instruments, Inc. Gov't Div. of Eqpt. Group 13510 N. Central Expressway Dallas, TX 75222
96906	Military Standards
97539	Amp-Hexseal Corp. 41 Honeck St. Englewood, NJ 07631
97722	P.C.A. Electronics, Inc. 16799 Schoenbrn Sepulveda, CA 91343
98003	Nielson Hardware Corp. 770 Wethersfield Ave. Hartford, CT 06114
98291	Sealectro Corp. 225 Hoyt Mamaroneck, NY 10544
98376	Zero Mfg. Co. West Div. 1121 Chestnut St. Burbank, CA 91503
99017	Protective Closures Co., Inc. CA Plugs Div. 2207 Elmwood Buffalo, NY 14216

CODE	MANUFACTURER'S NAME AND ADDRESS
99800	American Precision Industries Inc. Delevan Div. 270 Quaker Rd. East Aurora, NY 14052

6.1.7 Reference Designation Prefixes

The following prefixes have been assigned in this manual:

PREFIX	UNIT PART NUMBER	FIG- ITEM
TB100	546-4620-004	6-2-70
TB200	548-6876-004	6-2-50
TB300	548-6896-006	6-2-83
TB400	548-6996-001	6-2-16
TB502	548-6844-004	6-2-1
TB600	768-7444-002	6-2-42
TB700	768-6859-001	6-2-29
TB800	629-9573-001	6-2-32A
TB1000	763-6059-001	6-2-22
TB1100	763-6091-001	6-2-26

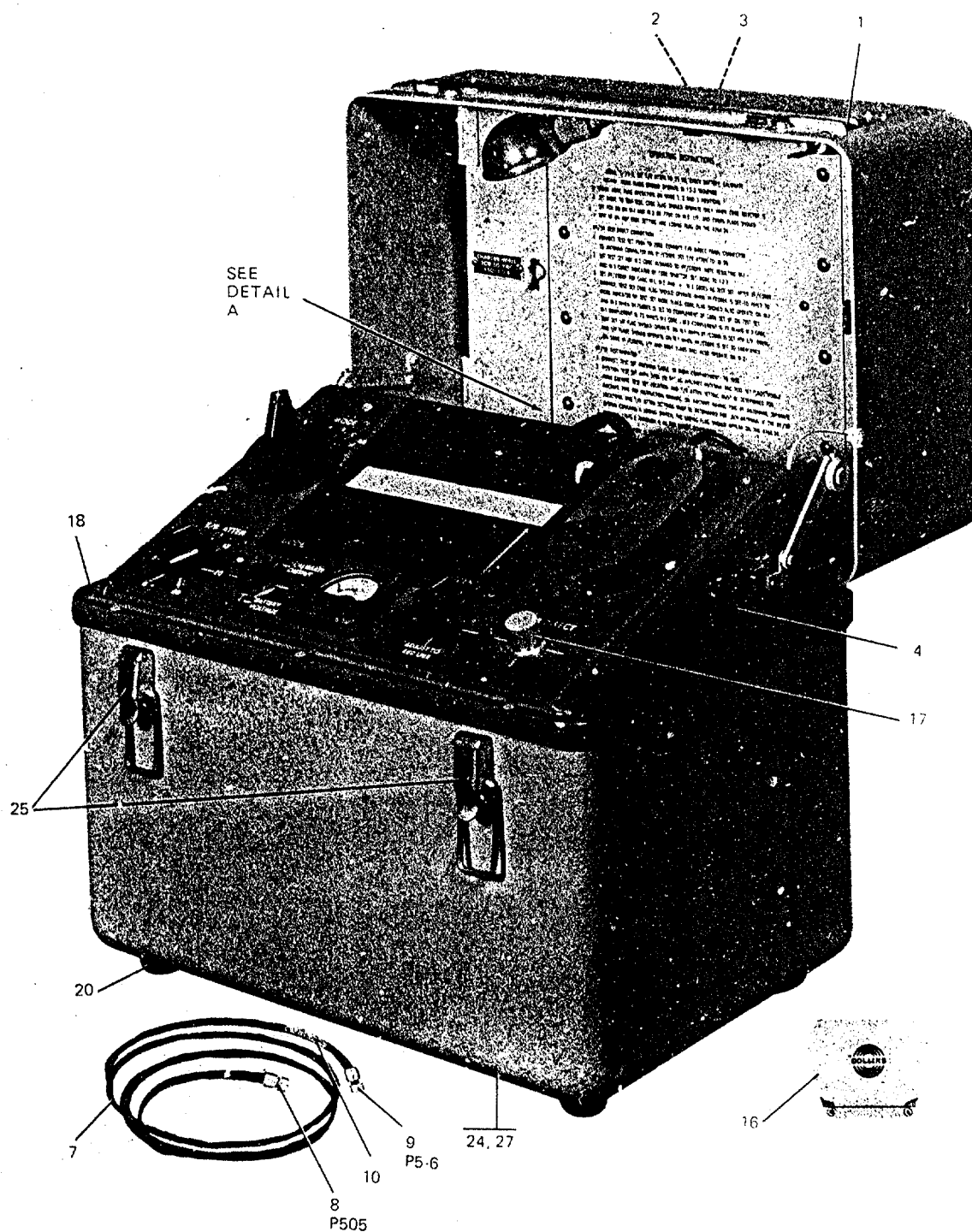
6.1.8 Configuration Identifiers

The following CI's/REV LTR's were used in compiling data for this manual:

CI/ REV LTR	UNIT PART NUMBER	FIG- ITEM
F	522-4475-001	6-1
H	768-7493-001	6-1-18
70011	548-6844-004	6-2-1
H	768-7490-001	6-2-7
B	548-6914-004	6-4-28
74503	768-8661-000	6-4-108
74503	546-4656-000	6-4-137
S	548-6996-001	6-2-16
71365	763-6059-001	6-2-22
71365	763-6091-001	6-2-26
71305	768-8659-001	6-2-29
R	768-7444-002	6-2-42
G	548-6876-004	6-2-50
AH	546-4620-004	6-2-70
74503	546-4628-003	6-2-77
AD	548-6896-006	6-2-83
74503	548-6801-000	6-2-102

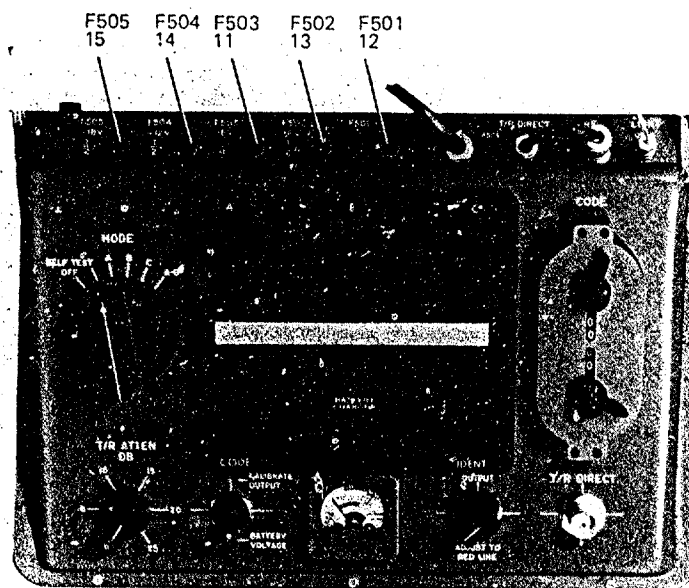
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6.2 GROUP ASSEMBLY PARTS LIST



476X-3 ATC Transponder Ramp Test Set
Figure 6-1 (Sheet 1 of 2)

GROUP ASSEMBLY PARTS LIST



DETAIL A

476X-3 ATC Transponder Ramp Test Set
Figure 6-1 (Sheet 2)

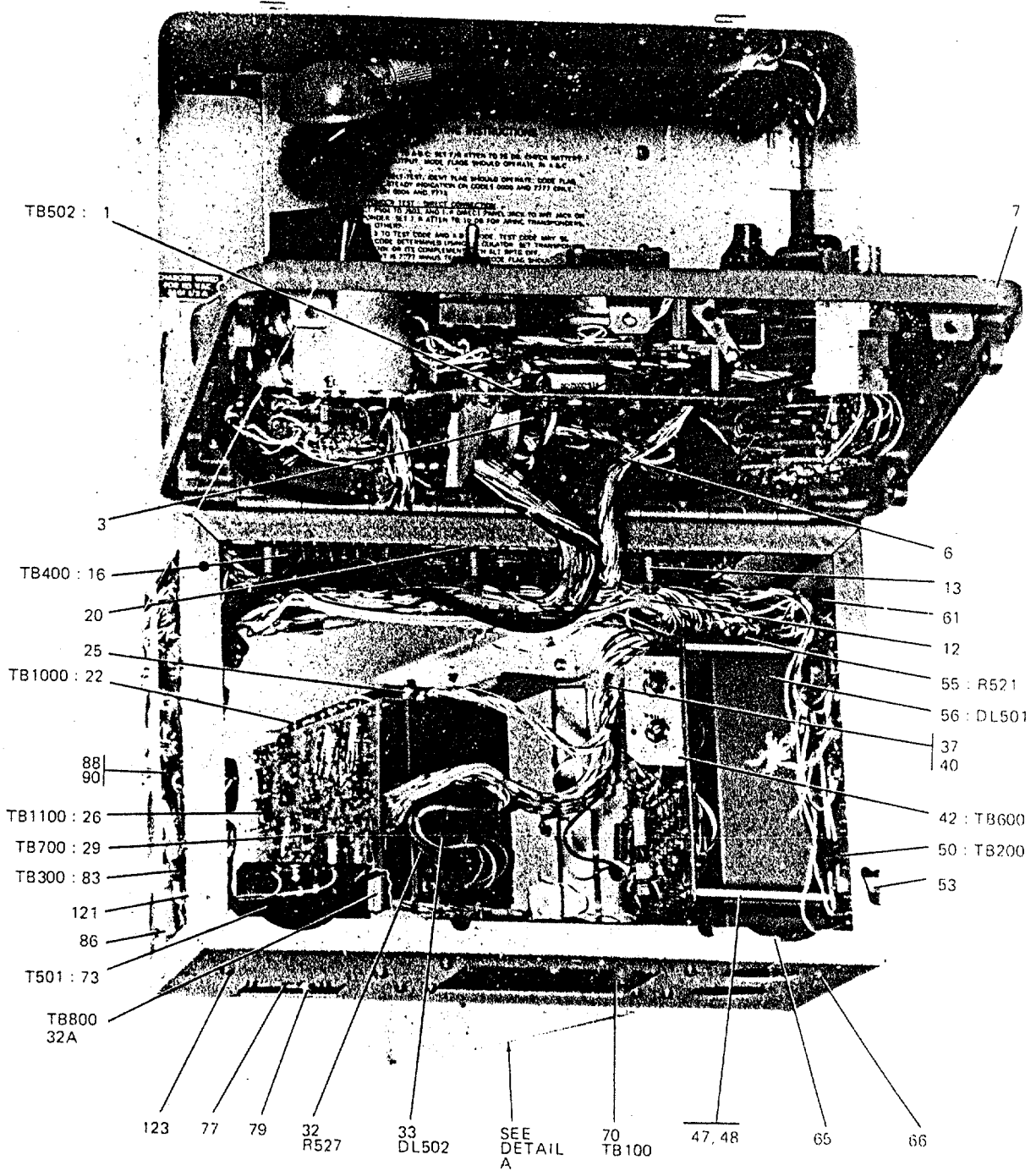
FIG - ITEM	PART NO	IDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-1	522-4475-001	1	ATC TRANSPONDER RAMP TEST SET 476X-3		1
1	767-8042-001	2	PLATE, DESIGNATION		1
1	767-8042-001	2	PLATE, DESIGNATION		1
2	025-0158-000	2	TAG, CAUTION 025-0158-000		1
2	025-0158-000	2	TAG, CAUTION 025-0158-000		1
3	025-0151-000	2	TAG 025-0151-000		1
3	025-0151-000	2	TAG 025-0151-000		1
4	767-0658-000	2	PLATE, IDENT		1
- 5	MS51957-3	2	SCREW, MACH, CD PL STL, 2-56 X 1/4 (V96906)		4
- 6	MS35338-134	2	WASHER, LOCK, SST, 0.088 ID X 0.172 OD (V96906)		4
7	548-6921-002	2	CABLE, RF		1
8	101C1100A	2	CONNECTOR, PLUG, ELEC (V94375) 357-9693-000 P505		1
9	101C1100A	2	CONNECTOR, PLUG, ELEC (V94375) 357-9693-000 P506		1
10	139-3198-000	2	BAND, MKR CABLE 139-3198-000		1
11	F02A250V1-4AS	2	FUSE, CRTG (V81349) 264-4020-000 F503		1
12	F02A250V1-4AS	2	FUSE, CRTG (V81349) 264-4020-000 F501 (110 VOLT USE ONLY)		1
12	384-003	2	FUSE, CARTRIDGE (V75138) 264-2030-000 F501 (220 VOLT USE ONLY)		1
13	F02A250V1-2AS	2	FUSE, CRTG (V81349) 264-4030-000 F502		1

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GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
14	F02A250V1-2AS	2	FUSE, CRTG (V81349) 264-4030-000 F504		1
15	F02A250V1-2AS	2	FUSE, CRTG (V81349) 264-4030-000 F505		1
16	768-1244-000	2	CALCULATOR		1
17	9-16INSCX9-16IN	2	CAP-PLUG, PROT D (V99017) 150-0396-000		1
18	768-7493-001	2	PANEL (SEE FIG 6-2)		1
- 19	MS51957-47	2	SCREW, MACH, SST, 8-32 X 3/4 (V96906) 343-0191-000 (AP)		4
20	F2A	2	FOOT PLASTIC (V89873) 200-1643-000 (EFF TO CI 70253)		4
20	606-9393-001	2	FEET		4
- 21	68NM82	2	NUT, SLFLKG, HEX, AL, 8-32 (V72962) 333-0381-000 (AP)		4
- 22	310-0071-000	2	WASHER, LOCK, SST, 0.151 ID X 0.239 OD (V79807) 310-0071-000 (AP)		4
- 23	MS51957-27	2	SCREW, MACH, SST, 8-32 X 5/16 (V96906) 343-0168-000 (AP)		4
24	546-4609-004	2	BOX, BOTTOM		1
25	HC204-2.00 CATCH	2	CATCH STRIKE (V98003) 015-2156-000		2
- 26	MS20470AD4-5	2	RIVET, SOLID, AL, 0.125 DIA X 5/16 (V96906) 305-1170-000 (AP)		4
27	Z147-212-112B	2	BOX, DRAWN AL (V98376) 141-0537-000		1

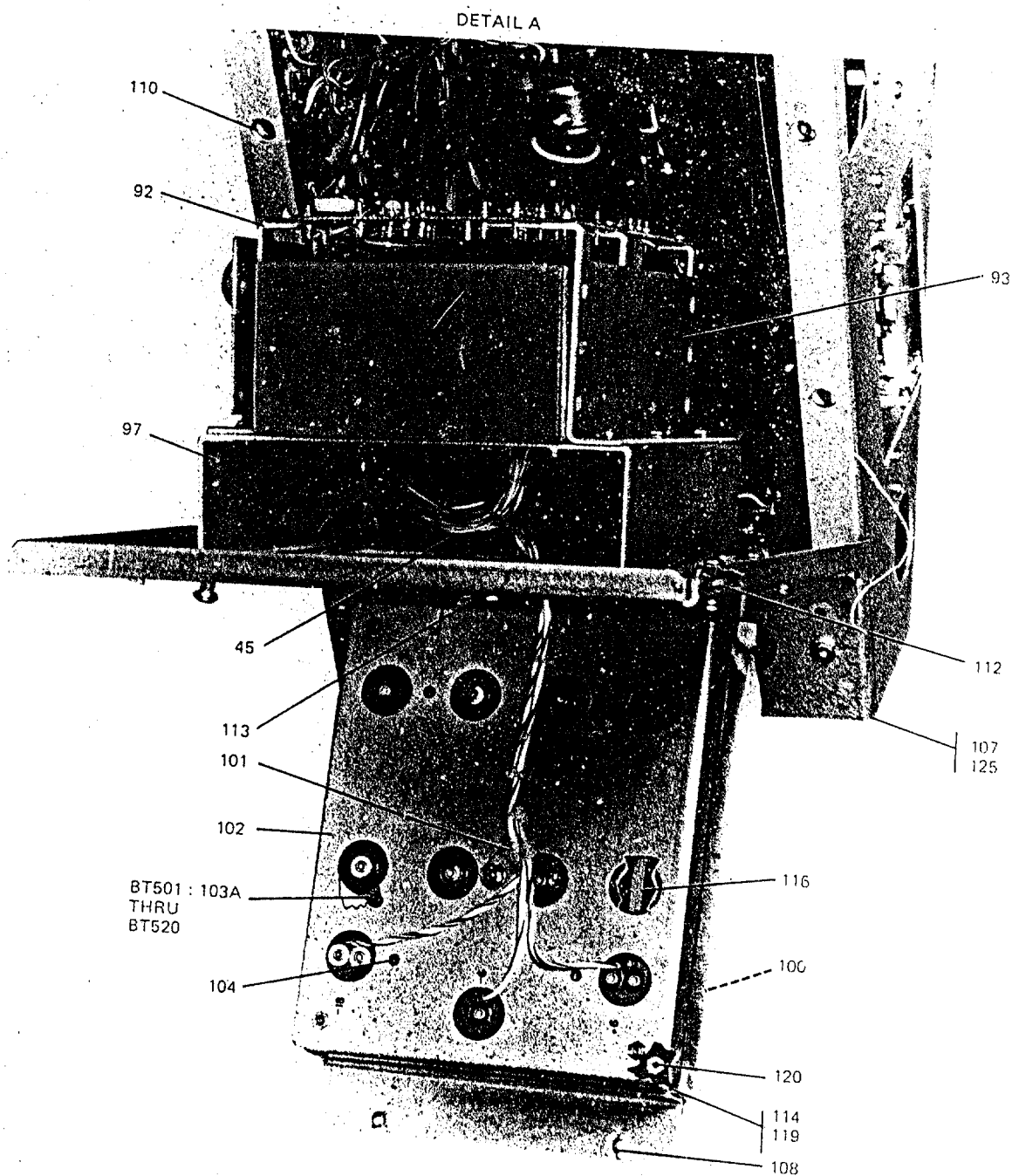
GROUP ASSEMBLY PARTS LIST



Chassis Panel Assembly
Figure 6-2 (Sheet 1 of 2)

Revised 1 October 1976

GROUP ASSEMBLY PARTS LIST



Chassis Panel Assembly
Figure 6-2 (Sheet 2)

GROUP ASSEMBLY PARTS LIST

FIG- ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-2 -	768-7493-001	1	PANEL, CHASSIS (SEE FIG 6-1-18 FOR NHA)		REF
1	548-6844-004	2	MODULATOR TB502 (SEE FIG 6-3)		1
2	MS51957-13	2	SCREW, MACH, STL, 4-40 X 1/4 (V96906)		3
3	HP4N	2	343-0133-000 (AP)		
4	MS51957-27	2	CLAMP, LOOP (V09922) 150-1541-000		1
5	310-0046-000	2	SCREW, MACH, SST, 6-32 X 5/16 (V96906)		1
6	768-7492-001	2	343-0168-000 (AP)		
7	768-7490-001	2	WASHER, FLAT, SST, 0.147 ID X 0.312 OD (V79807)		1
8	MS35649-244	2	310-0046-000 (AP)		
9	MS35338-135	2	WIRING HARNESS		1
10	MS51959-19	2	PANEL ASSY (SEE FIG 6-4)		1
11	MS51959-29	2	NUT, PLAIN, HEX, SST, 4-40 (V96906; 313-0043-000 (AP)		6
12	HP7N	2	WASHER, LOCK, SST, 0.115 ID X 0.209 OD (V96906)		6
13	541-5987-002	2	310-0279-000 (AP)		
14	MS51957-20	2	SCREW, MACH, SST, 4-40 X 3/4 (V96906)		6
15	310-0045-000	2	342-0050-000 (AP)		
16	548-6996-001	2	SCREW, MACH, SST, 6-32 X 7/16 (V96906)		3
17	MS51959-12	2	342-0063-000 (AP)		
18	MS51957-13	2	CLAMP, LOOP (V09922) 150-1544-000		3
19	MS35338-135	2	SPACER		3
20	540-9041-003	2	SCREW, MACH, STL, 4-40 X 7/8 (V96906)		3
21	MS51957-13	2	343-0140-000 (AP FOR 12-13)		
22	763-6059-001	2	WASHER, FLAT, SST, 0.125 ID X 0.312 OD (V79807)		6
23	MS51957-31	2	310-0045-000 (AP FOR 12-13)		
24	310-6360-000	2	DECODER, VIDEO TB400 (SEE FIG 6-8)		1
25	541-6021-002	2	SCREW, MACH, SST, 4-40 X 3/16 (V96906)		3
26	763-6091-001	2	342-0043-000 (AP)		
27	MS51957-13	2	SCREW, MACH, STL, 4-40 X 1/4 (V96906)		2
28	310-0045-000	2	343-0133-000 (AP)		
29	768-8659-000	2	WASHER, LOCK, SST, 0.115 ID X 0.209 OD (V96906)		5
30	MS51957-13	2	310-0279-000 (AP)		
31	310-0045-000	2	POST		8
32	RCR20G181KS	2	SCREW, MACH, STL, 4-40 X 1/4 (V96906)		8
32A	629-9573-001	2	343-0133-000 (AP)		
32B	MS51957-29	2	COMPLEMENT BOARD TB1000 (SEE FIG 6-9)		1
32C	310-0046-000	2	SCREW, MACH, SST, 6-32 X 5/8 (V96906)		4
33	52-23C	2	343-0173-000 (AP)		
34	MS51957-27	2	WASHER, FLAT, SST, 0.147 ID X 0.375 OD (V79807)		4
35	MS35338-136	2	310-6360-000 (AP)		
		2	SPACER		4
		2	SLS BOARD (SEE FIG 6-10)		1
		2	SCREW, MACH, STL, 4-40 X 1/4 (V96906)		4
		2	343-0133-000 (AP)		
		2	WASHER, FLAT, SST, 0.125 ID X 0.312 OD (V79807)		4
		2	310-0045-000 (AP)		
		2	DECODER TB700 (SEE FIG 6-11)		1
		2	SCREW, MACH, STL, 4-40 X 1/4 (V96906)		4
		2	343-0133-000 (AP)		
		2	WASHER, FLAT, SST, 0.125 ID X 0.312 OD (V79807)		4
		2	310-0045-000 (AP)		
		2	RESISTOR, FXD, CMPSN, 180 OHMS, 10%, 1/2W (V81349) 745-1321-000 R527		1
R	32A 629-9573-001	2	ELECTRONIC COMPONENT BOARD TB800 (EFF CI 76203) (SEE FIG 6-18) SB3		1
	32B MS51957-29	2	SCREW, MACH, SST, 6-32 X 7/16 (V96906)		1
	32C 310-0046-000	2	343-0170-000 (AP)		
		2	WASHER, FLAT, SST, 0.147 ID X 0.312 OD (V79807)		1
		2	310-0046-000 (AP)		
	33 52-23C	2	NETWORK, PULSE (V00222) 799-0051-000 DL502		1
	34 MS51957-27	2	SCREW, MACH, SST, 6-32 X 5/16 (V96906)		6
		2	343-0168-000 (AP)		
	35 MS35338-136	2	WASHER, LOCK, SST, 0.141 ID X 0.250 OD (V96906)		6
		2	310-0282-000 (AP)		

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GROUP ASSEMBLY PARTS LIST

FIG- ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
2 - 36	310-0046-000	2	WASHER, FLAT, SST, 0.147 ID X 0.312 OD (V79807) 310-0046-000 (AP)		6
37	HP7N	2	CLAMP, LOOP (V09922) 150-1544-000		1
- 38	MS51957-18	2	SCREW, MACH, STL, 4-40 X 5/8 (V96906) 343-0138-000 (AP)		1
- 39	310-0045-000	2	WASHER, FLAT, SST, 0.125 ID X 0.312 OD (V79807) 310-0045-000 (AP)		1
40	541-5979-002	2	SPACER		1
- 41	MS51957-12	2	SCREW, MACH, STL, 4-40 X 3/16 (V96906) 343-0132-000 (AP)		1
- 42	768-7444-002	2	DIVERTER, VIDEO SIG TB600 (SEE FIG 6-12)		1
- 43	MS51957-12	2	SCREW, MACH, STL, 4-40 X 3/16 (V96906) 343-0132-000 (AP)		2
- 44	MS35338-135	2	WASHER, LOCK, SST, 0.115 ID X 0.209 OD (V96906) 310-0279-000 (AP)		2
45	540-9033-003	2	POST		2
- 46	MS51957-14	2	SCREW, MACH, SST, 4-40 X 5/16 (V96906) 343-0134-000 (AP)		2
47	540-9069-003	2	POST		2
48	541-5983-002	2	SPACER		2
- 49	MS51957-19	2	SCREW, MACH, STL, 4-40 X 3/4 (V96906) 343-0139-000 (AP FOR 47-48)		2
50	548-6876-004	2	AMPLIFIER, VIDEO TB200 (SEE FIG 6-13)		1
- 51	MS51957-12	2	SCREW, MACH, STL, 4-40 X 3/16 (V96906) 343-0132-000 (AP)		2
- 52	MS35338-135	2	WASHER, LOCK, SST, 0.115 ID X 0.209 OD (V96906) 310-0279-000 (AP)		2
53	540-9037-003	2	POST		2
- 54	MS51957-12	2	SCREW, MACH, STL, 4-40 X 3/16 (V96906) 343-0132-000 (AP)		2
55	RCR20G181KS	2	RESISTOR, FXD, CMPSN, 180 OHMS, 10%, 1/2W (V81349) 745-1321-000 R520		1
56	1571B	2	NETWORK, PLS DLY (V26553) 799-0073-000 DL501		1
- 57	MS35649-264	2	NUT, PLAIN, HEX, SST, 6-32 (V96906) 313-0002-000 (AP)		3
- 58	MS35338-136	2	WASHER, LOCK, SST, 0.141 ID X 0.250 OD (V96906) 310-0282-000 (AP)		3
- 59	310-0046-000	2	WASHER, FLAT, SST, 0.147 ID X 0.312 OD (V79807) 310-0046-000 (AP)		6
- 60	MS51957-27	2	SCREW, MACH, SST, 6-32 X 5/16 (V96906) 343-0168-000 (AP)		2
61	4007-4HT	2	TERMINAL, LUG (V77147) 304-0015-000		2
- 62	MS35649-244	2	NUT, PLAIN, HEX, SST, 4-40 (V96906) 313-0043-000 (AP)		1
- 63	MS35338-135	2	WASHER, LOCK, SST, 0.115 ID X 0.209 OD (V96906) 310-0279-000 (AP)		1
- 64	MS51957-14	2	SCREW, MACH, SST, 4-40 X 5/16 (V96906) 343-0134-000 (AP)		1
65	546-4597-003	2	CABLE		1
66	2104-04-01-2520N	2	TERMINAL, LUG (V78189) 304-0317-000		1
- 67	MS35649-264	2	NUT, PLAIN, HEX, SST, 6-32 (V96906) 313-0002-000 (AP)		1
- 68	MS35338-135	2	WASHER, LOCK, SST, 0.115 ID X 0.209 OD (V96906) 310-0279-000 (AP)		1
- 69	MS51957-14	2	SCREW, MACH, SST, 4-40 X 5/16 (V96906) 343-0134-000 (AP)		1
70	546-4620-004	2	CHASSIS, RF GENERATOR TB100 (SEE FIG 6-14)		1
- 71	MS51957-13	2	SCREW, MACH, STL, 4-40 X 1/4 (V96906) 343-0133-000 (AP)		1
- 72	MS35338-135	2	WASHER, LOCK, SST, 0.115 ID X 0.209 OD (V96906) 310-0279-000 (AP)		6

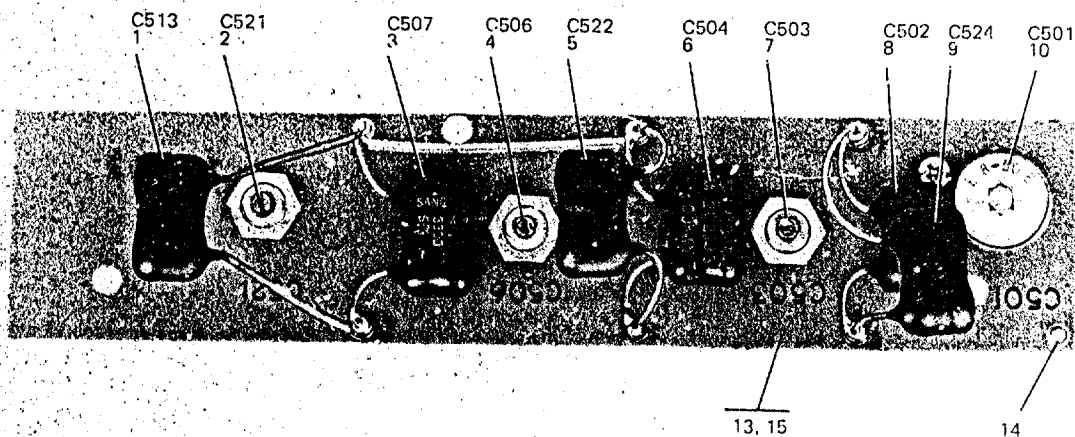
GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-2	73	29612	2 TRANSFORMER, PWR (V80089) 664-1802-000 T501		1
-	74	MS35649-264	2 NUT, PLAIN, HEX, SST, 6-32 (V96906) 313-0002-000 (AP)		2
-	75	MS35338-136	2 WASHER, LOCK, SST, 0.141 ID X 0.250 OD (V96906) 310-0282-000 (AP)		2
-	76	MS51957-27	2 SCREW, MACH, SST, 6-32 X 5/16 (V96906) 343-0168-000 (AP)		2
77	546-4628-003		2 BOARD ASSY (SEE FIG 6-15)		1
-	78	MS51957-13	2 SCREW, MACH, STL, 4-40 X 1/4 (V96906) 343-0133-000 (AP)		4
-	79	540-9041-003	2 POST		4
-	80	MS51959-12	2 SCREW, MACH, SST, 4-40 X 3/16 (V96906) 342-0043-000 (AP)		2
-	81	MS51957-13	2 SCREW, MACH, STL, 4-40 X 1/4 (V96906) 343-0133-000 (AP)		2
-	82	MS35338-135	2 WASHER, LOCK, SST, 0.115 ID X 0.209 OD (V96906) 310-0279-000 (AP)		2
83	548-6896-006		2 MODULATOR TB300 (SEE FIG 6-16)		1
-	84	MS51957-13	2 SCREW, MACH, STL, 4-40 X 1/4 (V96906) 343-0133-000 (AP)		4
-	85	MS35338-135	2 WASHER, LOCK, SST, 0.115 ID X 0.209 OD (V96906) 310-0279-000 (AP)		4
86	540-9037-003		2 POST		4
-	87	MS51957-13	2 SCREW, MACH, STL, 4-40 X 1/4 (V96906) 343-0133-000 (AP)		4
88	2104-06-02-2520N		2 TERMINAL, LUG (V78189) 304-0318-000		8
-	89	MS51957-27	2 SCREW, MACH, SST, 6-32 X 5/16 (V96906) 343-0168-000 (AP)		4
90	500-8921-001		2 POST		4
-	91	MS51957-26	2 SCREW, MACH, SST, 6-32 X 1/4 (V96906) 343-0167-000 (AP)		4
92	548-6958-002		2 BRACKET, TERMINAL BOARD		1
93	548-6957-002		2 BRACKET, TERMINAL BOARD		1
-	94	MS51957-26	2 SCREW, MACH, SST, 6-32 X 1/4 (V96906) 343-0167-000 (AP FOR 92-93)		6
-	95	MS35338-136	2 WASHER, LOCK, SST, 0.141 ID X 0.250 OD (V96906) 310-0282-000 (AP FOR 92-93)		6
-	96	310-0046-000	2 WASHER, FLAT, SST, 0.147 ID X 0.312 OD (V79807) 310-0046-000 (AP FOR 92-93)		6
97	548-6863-003		2 BRACKET		1
-	98	MS51957-26	2 SCREW, MACH, SST, 6-32 X 1/4 (V96906) 343-0167-000 (AP)		6
-	99	MS35338-136	2 WASHER, LOCK, SST, 0.141 ID X 0.250 OD (V96906) 310-0282-000 (AP)		6
100	548-6993-003		2 INSULATOR, PLATE		1
101	768-1549-001		2 CLAMP, LOOP		1
102	548-6801-000		2 COVER, BOX (SEE FIG 6-17)		1
-	103	P348-0003-000	2 SCREW, MACH, SST, 6-32 X 3/8 (V77250) 348-0003-000 (AP)		5
103A	41B00-2A460		2 BATTERY, STORAGE (V19209) 221-0002-000 BT501 THRU BT520		20
104	540-9230-003		2 POST		5
-	105	P330-3059-340	2 SCREW, MACH, STL, 6-32UNC2A X 7/16 (V77250) 330-3059-340 (AP)		5
-	106	310-0046-000	2 WASHER, FLAT, SST, 0.147 ID X 0.312 OD (V79807) 310-0046-000 (AP)		5
107	548-6895-005		2 CHASSIS		1
108	9622-13-00-0243		3 STUD, TURNLOCK, FSTNR, CD PL STL, 0.172 DIA X 0.437 (V02768) 012-1229-000		8
-	109	98-2CP	3 PIN, FSTNR, CD PL STL, 0.069 DIA X 0.317 (V78189) 012-1031-000 (AP)		8

Section 6
Parts list

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	IDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-2 110	9802-01-01-0543	3	RECEPTACLE (V02768) 012-1026-000		8
-111	MS20426AD3-3	3	RIVET, SOLID, AL, 3/32 DIA X 3/16 (V96906)		16
112	NCN6-2-2-1	3	NUT, CAPTIVE, SST, 6-32 (V07886) 334-0857-000		6
113	011-4023-000119	3	TERMINAL, FEEDTH (V98291) 306-0326-000		2
114	546-4591-004	3	BOARD, CONTACT		1
-115	MS51959-12	3	SCREW, MACH, SST, 4-40 X 3/16 (V96906)		4
116	546-4540-002	4	STRIP, CONT		10
-117	R3472X1-4CADPL	4	RIVET, TUBULAR, CD PL BRS, 0.128 DIA X 1/4 (V12014) 305-0181-000 (AP)		20
-118	310-6240-000	4	WASHER, FLAT, NP BRS, 0.125 ID X 0.281 OD (V79807) 310-6240-000 (AP)		40
119	546-4591-003	4	BOARD, CONTACT		1
120	NCN4-1-2	3	NUT, CAPTIVE, SST, 4-40 (V07886) 334-0443-000		4
121	AN366DF832A	3	NUT, SLFLKG, PL, AL, 8-32 (V88044) 333-0250-000		4
-122	MS20426AD3-3	3	RIVET, SOLID, AL, 3/32 DIA X 3/16 (V96906)		8
123	AN366DF632A	3	NUT, SLFLKG, PL, AL, 6-32 (V88044) 333-0248-000		3
-124	MS20426AD3-3	3	RIVET, SOLID, AL, 3/32 DIA X 3/16 (V96906)		6
125	548-6894-005	3	CHASSIS		1



Modulator Subassembly
Figure 6-3

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GROUP ASSEMBLY PARTS LIST

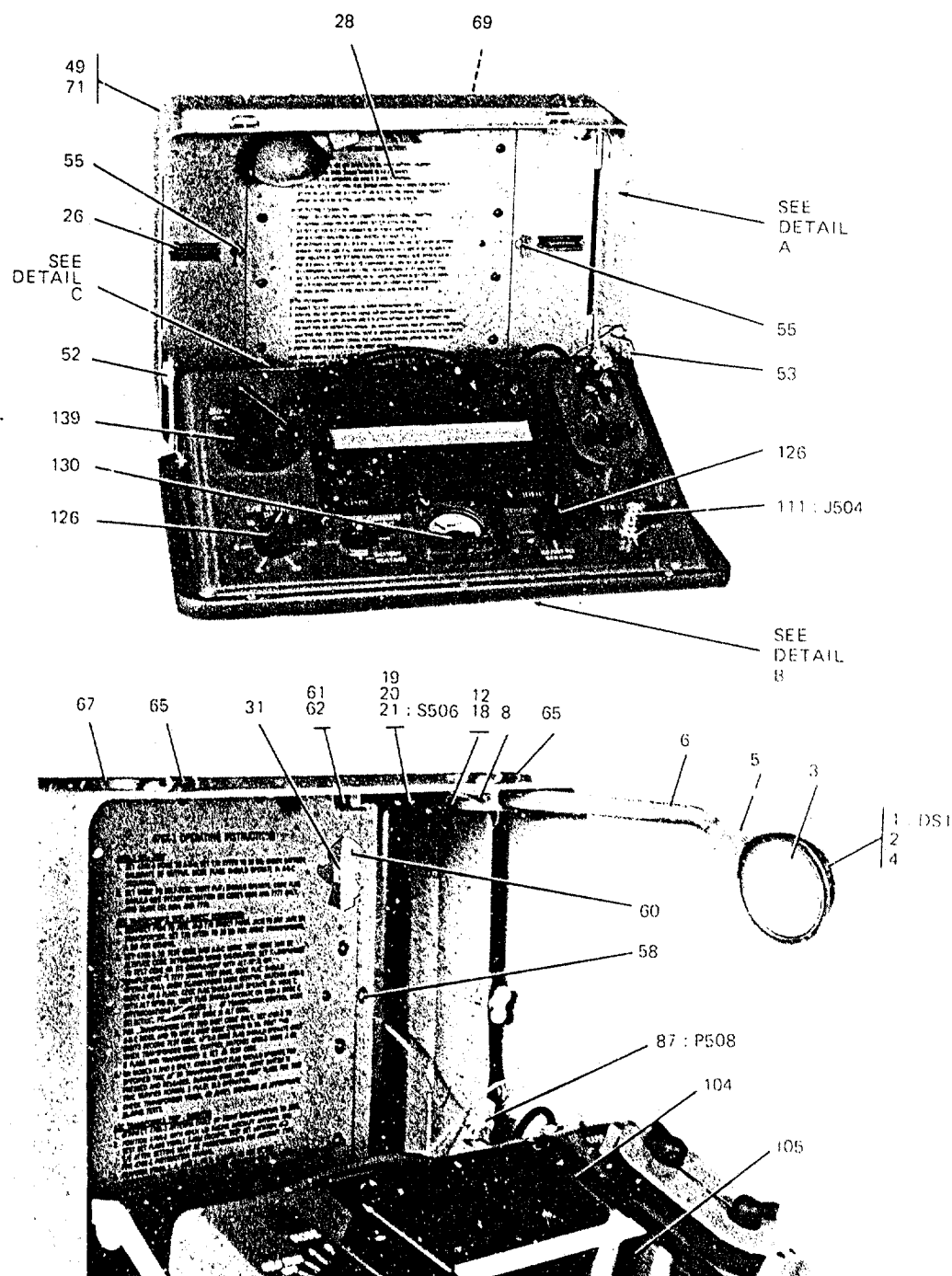
FIG- ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-3 -	548-6844-004	1	MODULATOR TB502 (SEE FIG. 6-2-1 FOR NHA)		REF
1	CM05FD101J03	2	CAPACITOR,FXD, MICA DIEL, 100PF, 5%, 500V (V81349) 912-2816-000 C513		AR
1	CM05FD121J03	2	CAPACITOR,FXD, MICA DIEL, 120PF, 5%, 500V (V81349) 912-2822-000 C513		AR
1	CM05FD151J03	2	CAPACITOR,FXD, MICA DIEL, 150PF, 5%, 500V (V81349) 912-2828-000 C513		AR
1	CM05FD181J03	2	CAPACITOR,FXD, MICA DIEL, 180PF, 5%, 500V (V81349) 912-2834-000 C513		AR
1	CM05FD271J03	2	CAPACITOR,FXD, MICA DIEL, 270PF, 5%, 500V (V81349) 912-2846-000 C513		AR
1	CM05FD391J03	2	CAPACITOR,FXD, MICA DIEL, 390PF, 5%, 500V (V81349) 912-2858-000 C513		AR
1	DM15F471J300WV4C R	2	CAPACITOR,FXD, MICA DIEL, 470PF, 5%, 500V (V72136) 912-2864-000 C513		AR
1	CM06FD561J03	2	CAPACITOR,FXD, MICA DIEL, 560PF, 5%, 500V (V81349) 912-2983-000 C513		AR
1	CM06FD821J03	2	CAPACITOR,FXD, MICA DIEL, 820PF, 5%, 500V (V81349) 912-2995-000 C513		AR
1	CM06FD911J03	2	CAPACITOR,FXD, MICA DIEL, 910PF, 5%, 500V (V81349) 912-2998-000 C513		AR
1	CM06FD102J03	2	CAPACITOR,FXD, MICA DIEL, 1000PF, 5%, 500V (V81349) 912-3001-000 C513		AR
1	D205F681J0	2	CAPACITOR,FXD, MICA DIEL, 680PF, 5%, 500V (V00853) 912-3303-000 C513		AR
2	PD52419	2	CAPACITOR,VAR, MICA DIEL, 100 TO 500PF, 1000V (V72136) 918-0032-000 C521		1
3	CM06FD472J03	2	CAPACITOR,FXD, MICA DIEL, 4700PF, 5%, 500V (V81349) 912-3052-000 C507 (EFF TO CI 70011)		1
3	CM06FD432J03	2	CAPACITOR,FXD, MICA DIEL, 4300PF, 5%, 500V (V81349) 912-3049-000 C507 (EFF CI 70011)		1
4	PD52419	2	CAPACITOR,VAR, MICA DIEL, 100 TO 500PF, 1000V (V72136) 918-0032-000 C506		1
5	CM05FD101J03	2	CAPACITOR,FXD, MICA DIEL, 100PF, 5%, 500V (V81349) 912-2816-000 C522		AR
5	CM05FD121J03	2	CAPACITOR,FXD, MICA DIEL, 120PF, 5%, 500V (V81349) 912-2822-000 C522		AR
5	CM05FD151J03	2	CAPACITOR,FXD, MICA DIEL, 150PF, 5%, 500V (V81349) 912-2828-000 C522		AR
5	CM05FD181J03	2	CAPACITOR,FXD, MICA DIEL, 180PF, 5%, 500V (V81349) 912-2834-000 C522		AR
5	CM05FD271J03	2	CAPACITOR,FXD, MICA DIEL, 270PF, 5%, 500V (V81349) 912-2846-000 C522		AR
5	CM05FD391J03	2	CAPACITOR,FXD, MICA DIEL, 390PF, 5%, 500V (V81349) 912-2858-000 C522		AR
5	DM15F471J300WV4C R	2	CAPACITOR,FXD, MICA DIEL, 470PF, 5%, 500V (V72136) 912-2864-000 C522		AR
5	CM06FD561J03	2	CAPACITOR,FXD, MICA DIEL, 560PF, 5%, 500V (V81349) 912-2983-000 C522		AR
5	CM06FD821J03	2	CAPACITOR,FXD, MICA DIEL, 820PF, 5%, 500V (V81349) 912-2995-000 C522		AR
5	CM06FD911J03	2	CAPACITOR,FXD, MICA DIEL, 910PF, 5%, 500V (V81349) 912-2998-000 C522		AR
5	CM06FD102J03	2	CAPACITOR,FXD, MICA DIEL, 1000PF, 5%, 500V (V81349) 912-3001-000 C522		AR
5	D205F681J0	2	CAPACITOR,FXD, MICA DIEL, 680PF, 5%, 500V (V00853) 912-3303-000 C522		AR
6	CM06FD272J03	2	CAPACITOR,FXD, MICA DIEL, 2700PF, 5%, 500V (V81349) 912-3034-000 C504 (EFF TO CI 70011)		1
6	CM06FD242J03	2	CAPACITOR,FXD, MICA DIEL, 2400PF, 5%, 500V (V81349) 912-3028-000 C504 (EFF CI 70011)		1
7	PD52419	2	CAPACITOR,VAR, MICA DIEL, 100 TO 500PF, 1000V (V72136) 918-0032-000 C503		1

section 6
parts list

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-3	8	CM06FD102J03	2 CAPACITOR,FXD, MICA DIEL, 1000PF, 5%, 500V (V81349) 912-3001-000 C502		1
	9	CM05FD101J03	2 CAPACITOR,FXD, MICA DIEL, 100PF, 5%, 500V (V81349) 912-2816-000 C524		AR
	9	CM05FD121J03	2 CAPACITOR,FXD, MICA DIEL, 120PF, 5%, 500V (V81349) 912-2822-000 C524		AR
	9	CM05FD151J03	2 CAPACITOR,FXD, MICA DIEL, 150PF, 5%, 500V (V81349) 912-2828-000 C524		1
	9	CM05FD181J03	2 CAPACITOR,FXD, MICA DIEL, 180PF, 5%, 500V (V81349) 912-2834-000		AR
	9	CM05FD271J03	2 CAPACITOR,FXD, MICA DIEL, 270PF, 5%, 500V (V81349) 912-2846-000		AR
	9	CM05FD391J03	2 CAPACITOR,FXD, MICA DIEL, 390PF, 5%, 500V (V81349) 912-2858-000		AR
	9	DM15F471J300WV4C R	2 CAPACITOR,FXD, MICA DIEL, 470PF, 5%, 500V (V72136) 912-2864-000		AR
	9	CM06FD561J03	2 CAPACITOR,FXD, MICA DIEL, 560PF, 5%, 500V (V81349) 912-2983-000		AR
	9	CM06FD821J03	2 CAPACITOR,FXD, MICA DIEL, 820PF, 5%, 500V (V81349) 912-2995-000		AR
	9	CM06FD911J03	2 CAPACITOR,FXD, MICA DIEL, 910PF, 5%, 500V (V81349) 912-2998-000 C524		AR
	9	CM06FD102J03	2 CAPACITOR,FXD, MICA DIEL, 1000PF, 5%, 500V (V81349) 912-3001-000 C524		AR
	9	D205F681J0	2 CAPACITOR,FXD, MICA DIEL, 680PF, 5%, 500V (V00853) 912-3303-000 C524		AR
	10	557-018-8-50E	2 CAPACITOR,VAR, CER DIEL, 8 TO 75PF, 350V (V72982) 917-1075-000 C501		1
	- 11	P313-0132-000	2 NUT,PLAIN,HEX, SST, 4-40 (V77250) 313-0132-000 (AP)		2
	- 12	P347-0006-000	2 SCREW,MACH, SST, 4-40 X 1/4 (V77250) 347-0006-000 (AP)		2
	13	548-6843-003	2 TERMINAL BOARD		1
	15	548-6842-003	3 TERMINAL BOARD		1
	17	3PP4-668	3 TERMINAL,FEEDTH (V86577) 306-0954-000		?

GROUP ASSEMBLY PARTS LIST

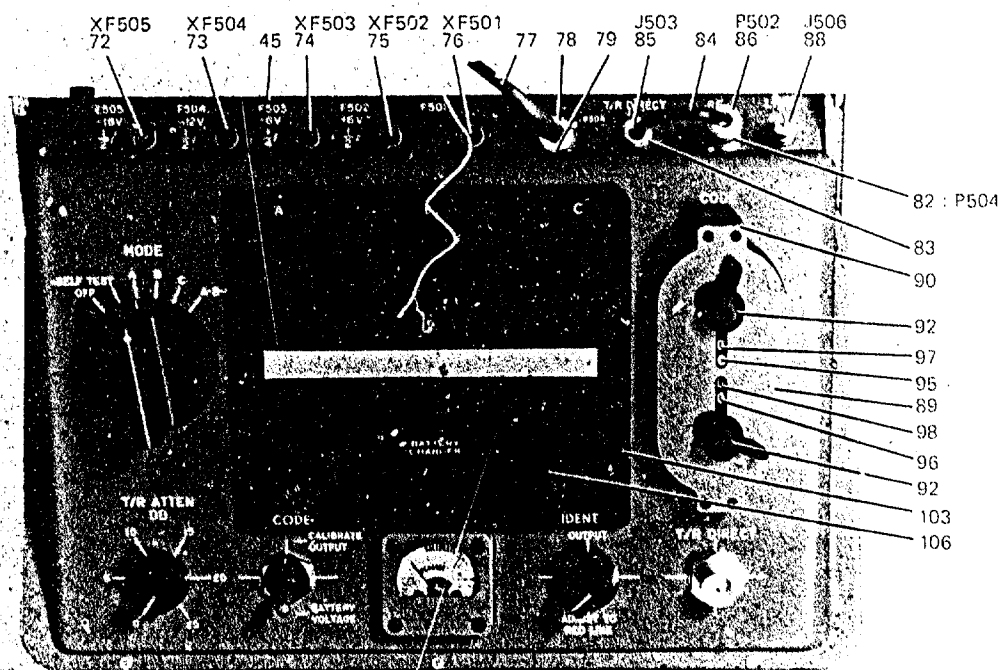
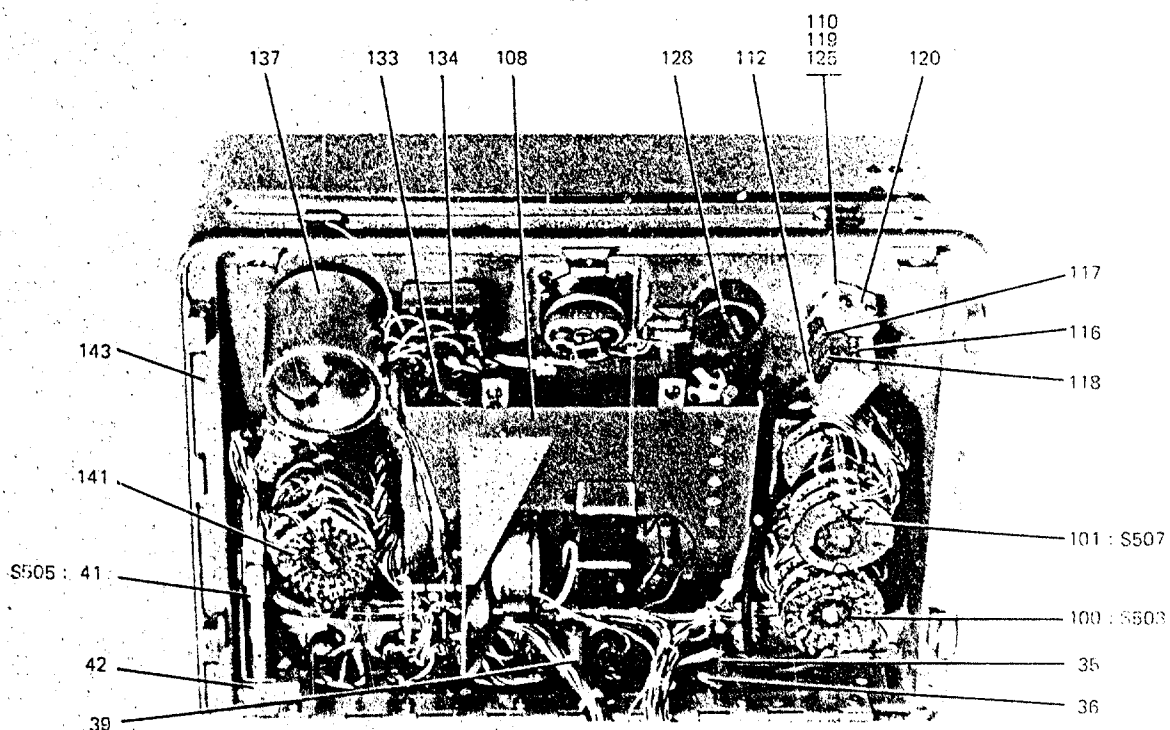


Panel Assembly
Figure 6-4 (Sheet 1 of 2)

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GROUP ASSEMBLY PARTS LIST

DETAIL B



DETAIL C

Panel Assembly
Figure 6-4 (Sheet 2)

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-4 -	768-7490-001	1	PANEL ASSY (SEE FIG 6-2-7 FOR NHA)		REF
1	1813	2	LAMP, INCAND (V08806) 262-0987-000 DS1		1
2	547-1680-002	2	REFLECTOR ASSY		1
3	547-1676-002	3	LENS, LAMP		1
4	547-1685-003	3	REFLECTOR, LAMP		1
5	547-1681-002	2	NUT, LAMP		1
6	547-1683-002	2	HOLDER, LAMP		1
7	328-0267-000	2	SETSCREW, SST, 8-32 X 3/16 (V08664) 328-0267-000 (AP)		1
8	4007-4HT	2	TERMINAL, LUG (V77147) 304-0015-000		1
9	MS51957-13	2	SCREW, MACH, STL, 4-40 X 1/4 (V96906) 343-0133-000 (AP)		1
10	MS35338-135	2	WASHER, LOCK, SST, 0.115 ID X 0.209 OD (V96906) 310-0279-000 (AP)		1
11	310-6323-000	2	WASHER, FLAT, SST, 0.251 ID X 0.625 OD (V79807) 310-6323-000 (AP)		1
12	540-1678-002	2	POST		1
13	MS51957-26	2	SCREW, MACH, SST, 6-32 X 1/4 (V96906) 343-0167-000 (AP)		1
14	310-0046-000	2	WASHER, FLAT, SST, 0.147 ID X 0.312 OD (V79807) 310-0046-000 (AP)		1
15	331-2020-000	2	SHIM, BRS, 0.2500 ID X 0.500 OD (V79807) 331-2020-000 (AP)		2
16	P331-9000-000	2	WASHER, SHIM, BRS, 0.255 ID X 0.500 OD (V77250) 331-9000-000 (AP)		2
17	503-3145-000	2	SHIM (AP)		1
18	547-1679-002	2	BLOCK		1
19	3017	2	TERMINAL, LUG (V77147) 304-3000-000		1
20	JS7	2	ADAPTER, SW ACTR (V91929) 266-3117-000		1
21	11SM3T	2	SWITCH, SENS (V91929) 266-3105-000 S506		1
22	MS35649-224	2	NUT, PLAIN, HEX, SST, 2-56 (V96906) 313-0037-000 (AP)		2
23	MS35338-134	2	WASHER, LOCK, SST, 0.088 ID X 0.172 OD (V96906) 310-0275-000 (AP)		2
24	310-0044-000	2	WASHER, FLAT, SST, 0.093 ID X 1/4 OD (V79807) 310-0044-000 (AP)		2
25	MS51957-7	2	SCREW, MACH, SST, 2-56 X 1/2 (V96906) 343-0128-000 (AP)		2
26	548-6813-000	2	PLATE, INSTRUCTION		1
27	MS51957-1	2	SCREW, MACH, SST, 2-56 X 1/8 (V96906) 343-0122-000 (AP)		2
28	548-6914-004	2	ANTENNA, RF (SEE FIG 6-5)		1
29	MS51957-13	2	SCREW, MACH, STL, 4-40 X 1/4 (V96906) 343-0133-000 (AP)		16
30	310-0045-000	2	WASHER, FLAT, SST, 0.125 ID X 0.312 OD (V79807) 310-0045-000 (AP)		16
31	3017	2	TERMINAL, LUG (V77147) 304-3000-000		2
32	MS35649-244	2	NUT, PLAIN, HEX, SST, 4-40 (V96906) 313-0043-000 (AP)		2
33	MS35338-135	2	WASHER, LOCK, SST, 0.115 ID X 0.209 OD (V96906) 310-0279-000 (AP)		2
34	MS51957-14	2	SCREW, MACH, SST, 4-40 X 5/16 (V96906) 343-0134-000 (AP)		2
35	RTMT16-6M	2	TERMINAL, STUD (V91663) 306-0979-000		1
36	2104-06-02-2520N	2	TERMINAL, LUG (V78189) 304-0318-000		1
37	MS51959-30	2	SCREW, MACH, SST, 6-32 X 1/2 (V76906) 342-0064-000 (AP FOR 35-36)		1
38	MS35338-136	2	WASHER, LOCK, SST, 0.141 ID X 0.250 OD (V96906) 310-0282-000 (AP FOR 35-36)		1
39	540-9221-003	2	POST		1
40	MS51959-30	2	SCREW, MACH, SST, 6-32 X 1/2 (V96906) 342-0064-000 (AP)		1
41	A109283	2	CIRCUIT BREAKER (V71482) 260-3007-000 S505		1

Section 6

Parts list

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-4	42	546-4574-002	2 SPACER		1
-	43	MS51959-30	2 SCREW, MACH, SST, 6-32 X 1/2 (V96906) 342-0064-000 (AP)		1
-	44	MS35338-136	2 WASHER, LOCK, SST, 0.141 ID X 0.250 OD (V96906) 310-0282-000 (AP)		1
-	45	548-6920-002	2 STRIP, STIFF		1
-	46	MS35649-264	2 NUT, PLAIN, HEX, SST, 6-32 (V96906) 313-0002-000 (AP)		2
-	47	MS35338-136	2 WASHER, LOCK, SST, 0.141 ID X 0.250 OD (V96906) 310-0282-000 (AP)		2
-	48	MS51959-30	2 SCREW, MACH, SST, 6-32 X 1/2 (V96906) 342-0064-000 (AP)		2
-	49	548-6829-005	2 BOX, TOP		1
-	50	MS51957-26	2 SCREW, MACH, SST, 6-32 X 1/4 (V96906) 343-0167-000 (AP)		4
-	51	MS35338-136	2 WASHER, LOCK, SST, 0.141 ID X 0.250 OD (V96906) 310-0282-000 (AP)		4
-	52	3200AIR	3 SUPPORT, FRICT (V01930) 015-2084-000 (EFF TO CI 70183)		1
-	52	797-1337-001	3 SUPPORT (EFF CI 70183)		1
-	53	015-2085-000	3 SUPPORT (EFF TO CI 70183)		1
-	53	797-1338-001	3 SUPPORT (EFF CI 70183)		1
-	54	MS20426AD4-4	3 RIVET, SOLID, AL, 1/8 DIA X 1/4 (V96906) 305-1373-000 (AP FOR 52-53)		4
-	55	9622-18-02-0243	3 STUD, WG HD, FSTNR, CD PL STL, 0.172 DIA X 0.500 (V02768) 012-1043-000		2
-	56	98-2CP	2 PIN, FSTNR, CD PL STL, 0.069 DIA X 0.317 (V73189) 012-1031-000 (AP)		2
-	57	MS21332-41	2 WASHER, SPR TNSN PH BRZ, 0.199 ID X 318 OD (V96906) 140-1110-000 (AP)		2
-	58	9802-01-01-0543	3 RECEPTACLE (V02768) 012-1026-000		2
-	59	MS20426AD3-3	3 RIVET, SOLID, AL, 3/32 DIA X 3/16 (V96906) 305-1361-000 (AP)		4
-	60	NCN4-1-2	3 NUT, CAPTIVE, SST, 4-40 (V07886) 334-0443-000		16
-	61	547-1666-002	3 CLIP		2
-	62	547-1667-002	3 PLATE, SHIM		2
-	63	305-2073-000	2 (AP FOR 61-62)		2
-	64	310-0045-000	3 WASHER, FLAT, SST, 0.125 ID X 0.312 OD (V79807) 310-0045-000 (AP FOR 61-62)		2
-	65	15797ZPHOOK	3 HOOK, LUGGAGE (V05657) 015-0205-000		2
-	66	MS20470AD4-4	3 RIVET, SOLID, AL, 1/8 DIA X 1/4 (V96906) 305-1169-000 (AP)		4
-	67	548-6960-002	3 CHANNEL		1
-	68	MS20426AD4-4	3 RIVET, SOLID, AL, 1/8 DIA X 1/4 (V96906) 305-1373-000 (AP)		5
-	69	80-2	3 HANDLE, LUGGAGE (V08730) 015-2158-000		1
-	70	MS20470AD4-4	2 RIVET, SOLID, AL, 1/8 DIA X 1/4 (V96906) 305-1169-000 (AP)		6
-	71	548-6828-005	3 BOX, TOP		1
-	72	HKPHJRZZ	2 FUSEHOLDER (V71400) 265-1019-000 XF505		1
-	73	HKPHJRZZ	2 FUSEHOLDER (V71400) 265-1019-000 XF504		1
-	74	HKPHJRZZ	2 FUSEHOLDER (V71400) 265-1019-000 XF503		1
-	75	HKPHJRZZ	2 FUSEHOLDER (V71400) 265-1019-000 XF502		1
-	76	HKPHJRZZ	2 FUSEHOLDER (V71400) 265-1019-000 XF501		1
-	77	KH4491	2 CABLE ASSY, PWR (V70903) 426-4096-000		1
-	78	768-7260-001	2 CLAMP, CABLE		1
-	79	768-7261-001	2 CABLE FEEDTHRU		1
-	80	8947-151	2 NUT, PLAIN, HEX, NP BRS, 15/32-32 (V04009) 334-4030-000 (AP FOR 77-79)		1
-	81	MS9021-010	2 GASKET (V96906) 013-0248-000 (AP FOR 77-79)		1
-	82	M39012-16-0001	2 CONNECTOR, PLUG, ELEC (V81349) 357-9292-000 P504		1
-	83	01405	2 FEEDTHRU, CABLE (V94375) 357-9561-000		1
-	84	548-6807-002	2 CABLE, RF		1

GROUP ASSEMBLY PARTS LIST

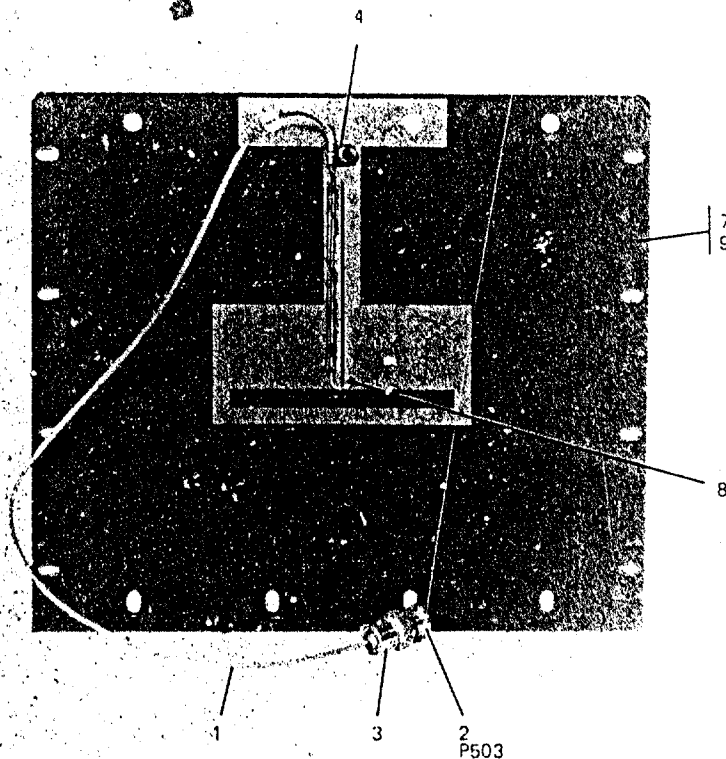
FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-4	85	10083000C75	3 CONNECTOR, RCPT, ELEC (V94375) 357-9248-000 J503		1
	86	M39012-16-0001	3 CONNECTOR, PLUG, ELEC (V81349) 357-9292-000 P503		1
	87	45900	2 CONNECTOR, PLUG, ELEC (V74868) 357-9239-000 P508		1
	88	0750	2 CONNECTOR, PLUG, ELEC (V94375) 357-9215-000 J506		1
	89	763-6333-001	2 MASK, DIAL		1
	90	548-6852-002	2 PEDESTAL, MASK (EFF TO REV LTR H)		2
	90	540-9014-003	2 POST (EFF REV LTR H)		4
	- 91	P343-0683-000	2 SCREW, MACH, SST, 2-56 X 13/16 (V77250) 343-0683-000 (AP FOR 89-90)		4
	92	548-6858-003	2 KNOB, SELECTOR		2
	- 93	328-0267-000	2 SETSCREW, SST, 8-32 X 3/16 (V08664) 328-0267-000 (AP)		4
	- 94	P322-0149-000	2 SCREW, MACH, NP BRS, 0-80 X 1/8 (V77250) 322-0149-000 (AP)		6
	95	548-6864-003	2 DIAL, SCALE		1
	96	548-6855-002	2 DIAL, SCALE		1
	97	548-6853-002	2 KNOB, CODE		1
	98	548-6854-002	2 KNOB, CODE		1
	- 99	328-0267-000	2 SETSCREW, SST, 8-32 X 3/16 (V08664) 328-0267-000 (AP FOR 97-98)		4
	- 100	224904LK6	2 SWITCH, RTRY (V76854) 259-1515-000 S503		1
	101	208374LK6	2 SWITCH, RTRY (V76854) 259-1265-000 S507		1
	- 102	N9065 3-8	2 NUT, HEX, SHAFT CRES, 5/8-24 (97539) 334-1270-000 (AP FOR 100-101)		2
	103	768-7026-002	2 BEZEL INDICATOR		1
	104	546-4631-003	2 GASKET		1
	105	546-4632-003	2 WINDOW		1
	106	767-8041-001	2 MASK, INDICATOR		1
	- 107	P342-0315-000	2 SCREW, MACH, BRS, 4-40 X 3/8 (V77250) 342-0315-000 (AP FOR 103-106)		8
	108	768-8661-001	2 INDICATOR ASSY (SEE FIG 6-6)		1
	- 109	MS51959-28	2 SCREW, MACH, SST, 6-32 X 3/8 (V96906) 342-0062-000 (AP)		4
	110	546-4650-000	2 PAD ASSY		1
	111	546-4574-002	3 CONNECTOR J504		1
	112	546-4575-002	3 PLATE		3
	- 113	P343-0285-000	3 SCREW, MACH, NP BRS, 4-40 X 1/4 (V77250) 343-0285-000 (AP)		1
	- 114	MS35333-104	3 WASHER, LOCK, CD PL BRZ, 0.123 ID X 0.270 OD (V96906) 373-3010-000 (AP)		1
	115	545-7549-003	3 WASHER		1
	116	RCR32G822JS	3 RESISTOR, FXD, CMPSN, 8.2K, 5%, 1W (V81349) 745-3390-000 R503		1
	117	RCR32G510JS	3 RESISTOR, FXD, CMPSN, 51 OHMS, 5%, 1W (V81349) 745-3298-000 R502		1
	118	RCR32G510JS	3 RESISTOR, FXD, CMPSN, 51 OHMS, 5%, 1W (V81349) 745-3298-000 R504		1
	119	546-4601-003	3 PAD, RF		1
	120	546-4599-003	4 PAD, RF		1
	- 121	P342-0144-000	4 SCREW, MACH, NP BRS, 2-56 X 5/16 (V77250) 342-0144-000 (AP)		2
	- 122	P343-0290-000	4 SCREW, MACH, NP BRS, 4-40 X 5/8 (V77250) 343-0290-000 (AP)		2
	- 123	P343-0283-000	4 SCREW, MACH, NP BRS, 4-40 X 1/8 (V77250) 343-0283-000 (AP)		2
	- 124	MS35333-104	3 WASHER, LOCK, CD PL BRZ, 0.123 ID X 0.270 OD (V96906) 373-3010-000 (AP)		4
	125	546-4600-003	4 PAD, RF		1
	126	544-0779-004	2 KNOB, POINTER		2
	- 127	328-0267-000	2 SETSCREW, SST, 8-32 X 3/16 (V08664) 328-0267-000 (AP)		2
	128	RV4NAYSD103B	2 RESISTOR, VAR, 10K, 20%, 2W (V81349) 380-2657-000 R501		1

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Section 6
Parts list

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-4 -129	N9030 1-4	2	NUT, HEX, SHAFT, CRES, 3/8-32 (V97539) 334-1264-000 (AP)		1
130	59-7082	2	MILLIAMMETER (V11707) 458-1017-000 M501		1
-131	MS35649-244	2	NUT, PLAIN, HEX, SST, 4-40 (V96906) 313-0043-000 (AP)		4
-132	MS51957-188	2	SCREW, MACH, SST, 4-40 X 5/8 (V96906) 343-0024-000 (AP)		4
133	RCR20G152KS	2	RESISTOR, FXD, CMPSN, 1.5K, 10%, 1/2W (V81349) 745-1359-000 R528		1
134	7675K4	2	SWITCH, TGL (V27193) 266-0078-000 S504		1
-135	H1267ASILICONE		NUT, HEX, SEAL, NP BRS, 15/32-32 (V49673) 334-0459-000 (AP)		
-136	1722-01	2	WASHER, LOCK, SST, 0.480 ID X 0.607 OD (V78189) 373-0083-000 (AP)		1
137	546-4656-000	2	ATTENUATOR ASSY (SEE FIG 6-7)		1
-138	N9030 1-4	2	NUT, HEX, SHAFT, CRES, 3/8-32 (V97539) 334-1264-000 (AP)		1
139	548-6999-003	2	KNOB (EFF REV LTR H)		1
139	608-7444-001	2	KNOB ASSY (EFF REV LTR H)		1
-140	328-0267-000	2	SETSCREW, SST, 8-32 X 3/16 (V08664) 328-0267-000 (AP)		2
141	224905MF5	2	SWITCH, RTRY (V76854) 259-1514-000 S501		1
-142	N9030 1-4	2	NUT, HEX, SHAFT, CRES, 3/8-32 (V97539) 334-1264-000 (AP)		1
143	548-6865-004	2	PANEL		1



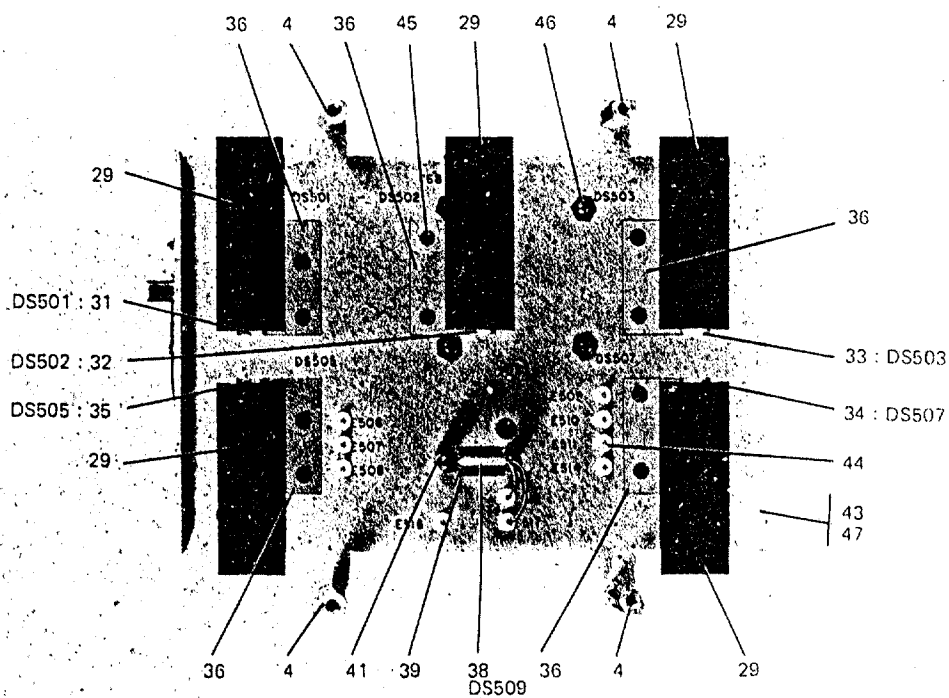
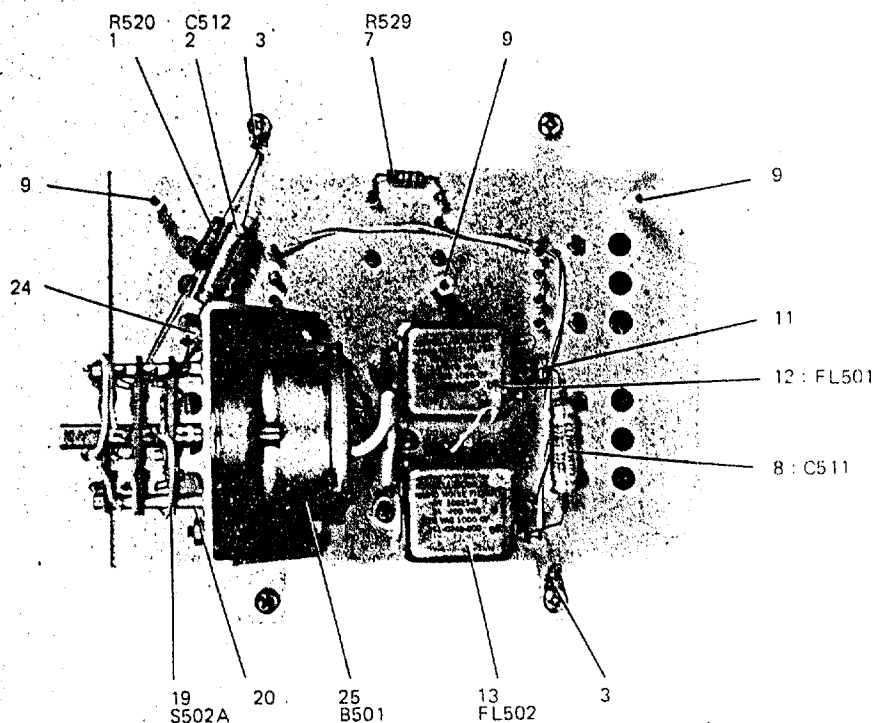
RF Antenna
Figure 6-5

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-5 -	548-6914-004	1	ANTENNA, RF (SEE FIG 6-4-28 FOR NHA)		REF
1	548-6899-003	2	CABLE, RF		1
2	M39012-16-0001	3	CONNECTOR, PLUG, ELEC (V81349) 357-9292-000 P503		1
3	K101-11	3	ADAPTER, CABLE (V94375) 357-9597-000		1
4	3017	2	TERMINAL, LUG (77147) 304-3000-000		1
5	MS35649-244	2	NUT, PLAIN, HEX, SST, 4-40 (V96906) 313-0043-000 (AP)		1
6	MS51957-13	2	SCREW, MACH, STL, 4-40 X 1/4 (V96906) 343-0133-000 (AP)		1
7	548-6909-005	2	CIRCUIT CARD		1
8	1P4-26B	3	TERMINAL, STUD (V86577) 306-0973-000		1
9	548-6908-005	3	CIRCUIT CARD		1

Section 6
Parts list

GROUP ASSEMBLY PARTS LIST



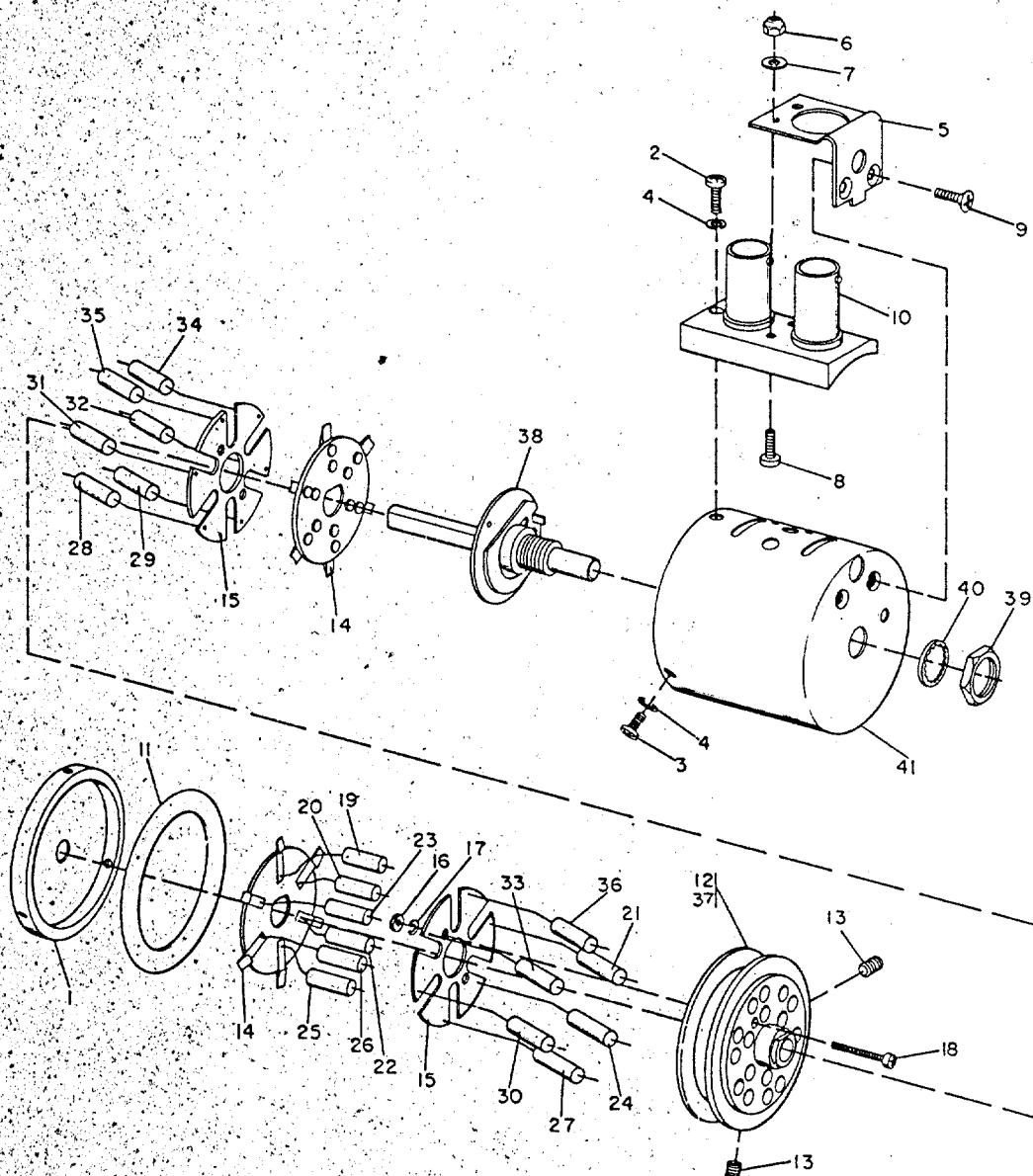
Indicator Assembly
Figure 6-6

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GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-6	768-8661-001	1	1 INDICATOR ASSY (SEE FIG 6-4-108 FOR NHA)		REF
1	RN65C9092F	2	2 RESISTOR,FXD, FILM, 90.9K, 1%, 1/4W (V81349)		1
2	CL20BE600UPE	2	705-4608-000 R520		1
3	4007-8HT	2	2 CAPACITOR,FXD, ELCTLT, 60UF, M15%P75%, 15V		1
4	543-0666-002	2	(V81349) 184-7038-000 C512		2
5	MS51957-26	2	2 TERMINAL,LUG (V77147) 304-0017-000		4
6	MS35338-136	2	2 SPACER		4
7	RCR20G333KS	2	2 SCREW,MACH, SST, 6-32 X 1/4 (V96906)		4
8	CL21BJ180TPE	2	343-0167-000 (AP FOR 3-4)		4
9	540-9051-003	2	2 WASHER,LOCK, SST, 0.141 ID X 0.250 OD (V96906)		4
10	MS51959-13	2	310-0282-000 (AP FOR 3-4)		1
11	4007-4HT	2	2 RESISTOR,FXD, CMPSN, 33K, 10%, 1/2W (V81349)		1
12	3JX37H	2	2 CAPACITOR,FXD, ELCTL1, 18UF, M15%P50%, 50V		1
13	3JX37B	2	(V81349) 184-7228-000 C511		3
14	MS51957-14	2	2 POST		3
15	MS35338-135	2	2 SCREW,MACH, SST, 4-40 X 1/4 (V96906)		3
16	541-5962-002	2	342-0044-000 (AP)		1
17	226112K	2	2 TERMINAL,LUG (V77147) 304-0015-000		1
18	541-5966-002	2	2 FILTER,RAD INTF (V56289) 241-0248-000 FL501		1
19	P313-0132-000	2	2 FILTER,RAD INTF (V56289) 241-0248-000 FL502		1
20	8942	2	2 SCREW,MACH, SST, 4-40 X 5/16 (V96906)		4
21	P347-0016-000	2	343-0134-000 (AP FOR 12-13)		4
22	4007-8HT	2	2 WASHER,LOCK, SST, 0.115 ID X 0.209 OD (V96906)		4
23	800P	2	310-0279-000 (AP FOR 12-13)		4
24	P313-0045-000	2	2 POST (AP FOR 12-13)		4
25	MS35338-136	1	1 DELETED		1
26	768-5261-001	2	1 DELETED		1
27	AN56504L2	2	2 SWITCH SECT,RTR (V76854) 269-2389-000 S502A		1
28	11600BEE01D304	2	2 SPACER		6
29	11600BEE01D304	2	2 NUT,PLAIN,HEX, SST, 4-40 (V77250) 313-0132-000		2
30	11600BEE01D304	2	(AP FOR 17-20)		2
31	11600BEE01D304	2	2 WASHER,NM, PHEN, 0.116 ID X 0.187 OD (V76854)		2
32	11600BEE01D304	2	302-0262-000 (AP FOR 17-20)		2
33	11600BEE01D304	2	2 SCREW,MACH, SST, 4-40 X 1-1/4 (V77250)		2
34	11600BEE01D304	2	347-0016-000 (AP FOR 17-20)		1
35	11600BEE01D304	2	2 TERMINAL,LUG (V77147) 304-0017-000		1
36	768-5447-002	2	2 MOTOR,DC (V14907) 230-0345-000 B501		1
37	MS51957-13	2	2 NUT,PLAIN,HEX, SST, 6-32 (V77250) 313-0045-000		2
38	C2A	2	(AP FOR 24-25)		2
39	139-0369-00	2	2 WASHER,LOCK, SST, 0.141 ID X 0.250 OD (V96906)		2
40	MS51957-3	2	310-0282-000 (AP FOR 24-25)		2
41	540-9014-003	2	2 SCREW,MACH, SST, 6-32 X 5/16 (V96906)		2
42	MS51957-2	2	343-0168-000 (AP FOR 24-25)		2
43	768-7035-001	2	2 FLAG ASSY		5
44	SL304-301WHT	2	2 SETSCREW, CD PL STL, 4-40 X 1/8 (V88044)		5
45	F22NCFMA2-40	2	328-0371-000 (AP)		1
46	NCN4-2-2-1	2	2 SOLENOID,ELEC (V86197) 482-5065-010 DS501		1
47	768-7027-001	2	2 SOLENOID,ELEC (V86197) 482-5065-010 DS502		1
		2	2 SOLENOID,ELEC (V86197) 482-5065-010 DS503		1
		2	2 SOLENOID,ELEC (V86197) 482-5065-010 DS507		1
		2	2 SOLENOID,ELEC (V86197) 482-5065-010 DS505		1
		2	2 PLATE, MTG		5
		2	2 SCREW,MACH, STL, 4-40 X 1/4 (V96906)		10
		2	343-0133-000 (AP)		1
		2	2 LAMP,GLOW (V71744) 262-0679-000 DS509		1
		2	2 CLIP,ELEC (V91314) 139-0369-000		1
		2	2 SCREW,MACH, CD PL STL, 2-56 X 1/4 (V96906)		1
		2	343-0124-000 (AP)		1
		2	2 POST		2
		2	2 SCREW,MACH, SST, 2-56 X 3/16 (V96906)		2
		2	343-0123-000 (AP)		1
		2	2 BASE, MOTOR MTG		10
		3	2 TERMINAL,FEEDTH (V12615) 306-1851-000		10
		3	2 NUT,SLFLKG, CD PL STL, 4-40 (V72962)		10
		3	333-0840-000		4
		3	2 NUT,CAPTIVE, SST, 4-40 (V07886) 334-0856-000		1
		3	2 BASE		1

GROUP ASSEMBLY PARTS LIST



Attenuator Assembly
Figure 6-7

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-7	546-4656-000	1	ATTENUATOR ASSY (SEE FIG 6-4-137 FOR NHA)		REF
1	546-4582-003	2	PLATE, COVER		1
2	MS51957-14	2	SCREW, MACH, SST, 4-40 X 5/16 (V96906)		1
			343-0134-000 (AP)		
3	MS51957-12	2	SCREW, MACH, STL, 4-40 X 3/16 (V96906)		2
			343-0132-000 (AP)		
4	MS35338-135	2	WASHER, LOCK, SST, 0.115 ID X 0.209 OD (V96906)		3
			310-0279-000 (AP)		
5	546-4581-003	2	SPRING, ATTENUATOR		1
6	68-1660-26	2	NUT, SLFLKG, HEX, AL, 2-56 (V72962) 333-0604-000 (AP)		2
7	310-6320-000	2	WASHER, FLAT, SST, 0.092 ID X 0.218 OD (V79807)		2
			310-6320-000 (AP)		
8	P347-0022-000	2	SCREW, MACH, SST, 2-56 X 1/4 (V77250)		2
			347-0022-000 (AP)		
9	P342-0151-000	2	SCREW, MACH, NP BRS, 4-40 X 3/16 (V77250)		2
			342-0151-000 (AP)		
10	546-4659-000	2	COAX FITTING ASSY J501, J502		1
11	31-648	2	GASKET, SHLD (V82805) 018-1168-000		1
12	546-4657-000	2	RESISTOR BARREL ASSY		1
13	335-0021-000	3	SETSCREW, SST, 6-32 X 3/16 (V08664) 335-0021-000		2
14	546-4658-000	3	BOARD, MOUNTING		2
15	546-4537-002	3	PLATE, GROUND		2
16	MS35649-224	3	NUT, PLAIN, HEX, SST, 2-56 (V96906) 313-0037-000 (AP)		2
17		1	DELETE		
18	P347-0001-000	3	SCREW, MACH, SST, 2-56 X 5/8 (V77250)		2
			347-0001-000 (AP)		
19	RCR20G301JS	3	RESISTOR, FXD, CMPSN, 300 OHMS, 5%, 1/2W (V81349)		1
			745-1329-000 R526		
20	RCR20G150JS	3	RESISTOR, FXD, CMPSN, 15 OHMS, 5%, 1/2W (V81349)		1
			745-1274-000 R527		
21	RCR20G121JS	3	RESISTOR, FXD, CMPSN, 120 OHMS, 5%, 1/2W (V81349)		1
			745-1313-000 R505		
22	RCR20G121JS	3	RESISTOR, FXD, CMPSN, 120 OHMS, 5%, 1/2W (V81349)		1
			745-1313-000 R507		
23	RCR20G510JS	3	RESISTOR, FXD, CMPSN, 51 OHMS, 5%, 1/2W (V81349)		1
			745-1298-000 R506		
24	RCR20G820JS	3	RESISTOR, FXD, CMPSN, 82 OHMS, 5%, 1/2W (V81349)		1
			745-1306-000 R508		
25	RCR20G820JS	3	RESISTOR, FXD, CMPSN, 82 OHMS, 5%, 1/2W (V81349)		1
			745-1306-000 R510		
26	RCR20G101JS	3	RESISTOR, FXD, CMPSN, 100 OHMS, 5%, 1/2W (V81349)		1
			745-1309-000 R509		
27	RCR20G620JS	3	RESISTOR, FXD, CMPSN, 62 OHMS, 5%, 1/2W (V81349)		1
			745-1301-000 R511		
28	RCR20G620JS	3	RESISTOR, FXD, CMPSN, 62 OHMS, 5%, 1/2W (V81349)		1
			745-1301-000 R513		
29	RCR20G201JS	3	RESISTOR, FXD, CMPSN, 200 OHMS, 5%, 1/2W (V81349)		1
			745-1322-000 R512		
30	RCR20G560JS	3	RESISTOR, FXD, CMPSN, 56 OHMS, 5%, 1/2W (V81349)		1
			745-1299-000 R514		
31	RCR20G560JS	3	RESISTOR, FXD, CMPSN, 56 OHMS, 5%, 1/2W (V81349)		1
			745-1299-000 R516		
32	RCR20G361JS	3	RESISTOR, FXD, CMPSN, 360 OHMS, 5%, 1/2W (V81349)		1
			745-1333-000 R515		
33	RCR20G560JS	3	RESISTOR, FXD, CMPSN, 56 OHMS, 5%, 1/2W (V81349)		1
			745-1299-000 R517		
34	RCR20G560JS	3	RESISTOR, FXD, CMPSN, 56 OHMS, 5%, 1/2W (V81349)		1
			745-1299-000 R519		
35	RCR20G681JS	3	RESISTOR, FXD, CMPSN, 680 OHMS, 5%, 1/2W (V81349)		1
			745-1344-000 R518		

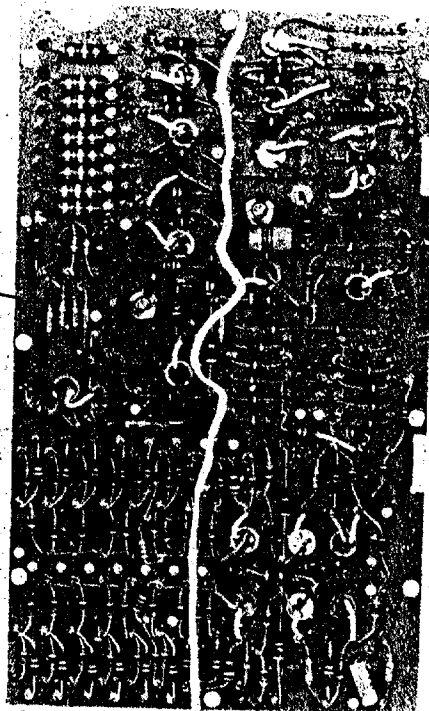
Section 6

Parts list

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
36	RCR20G301JS	3	RESISTOR,FXD, CMPSN, 300 OHMS, 5%, 1/2W (V81349) 745-1329-000 R524		1
37	546-4605-004	3	BARREL		1
38	208564F	2	DETENT,SW (V76854) 259-1263-000		1
39	P313-0064-000	2	NUT,PLAIN,HEX, SST, 3/8-32 (V77250) 313-0064-000 (AP)		1
40	1720-02	2	WASHER,LOCK, SST, 0.391 ID X 0.507 OD (V78189) 373-0085-000 (AP)		1
41	546-4584-003	2	HOUSING, ATTENUATOR		1

SEE
DETAIL
A

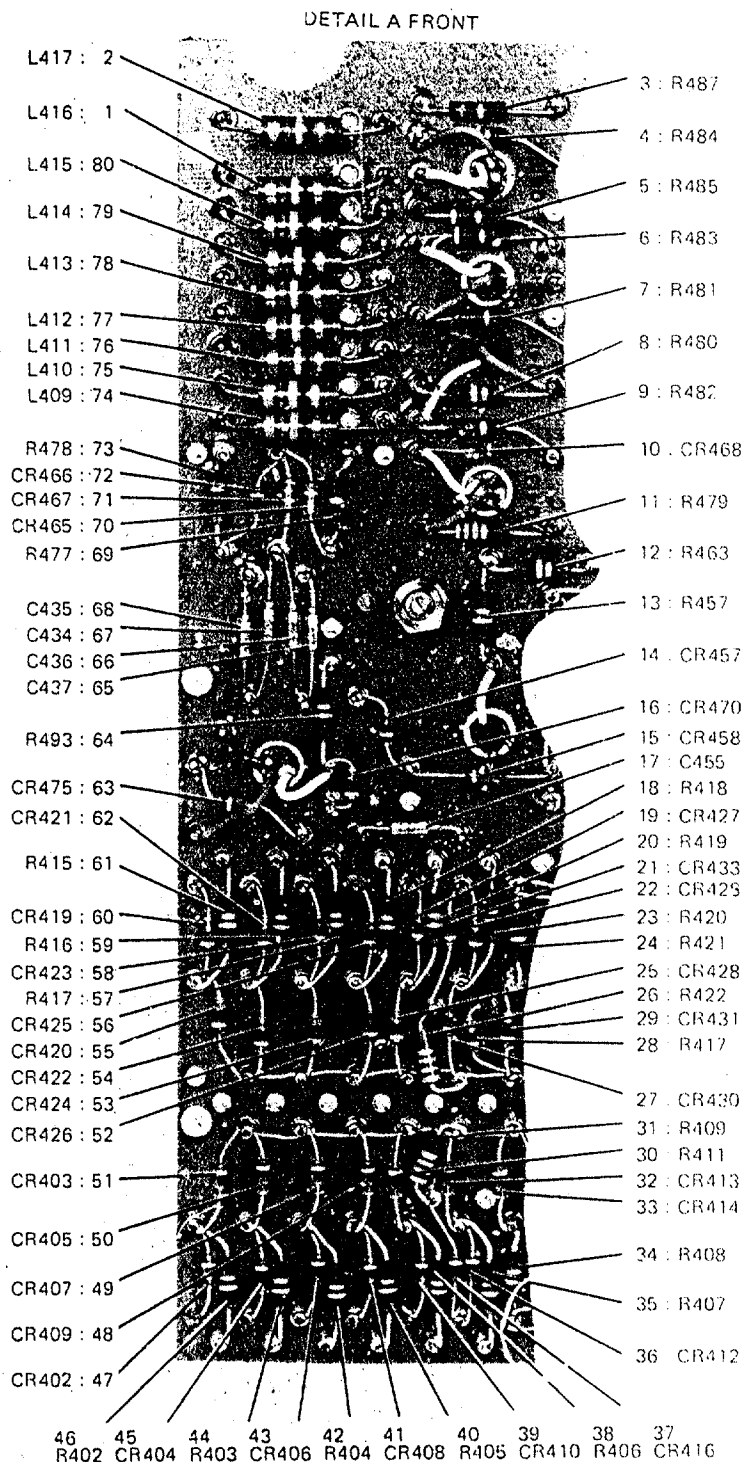


SEE
DETAIL
B

Video Decoder
Figure 6-8 (Sheet 1 of 5)

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GROUP ASSEMBLY PARTS LIST

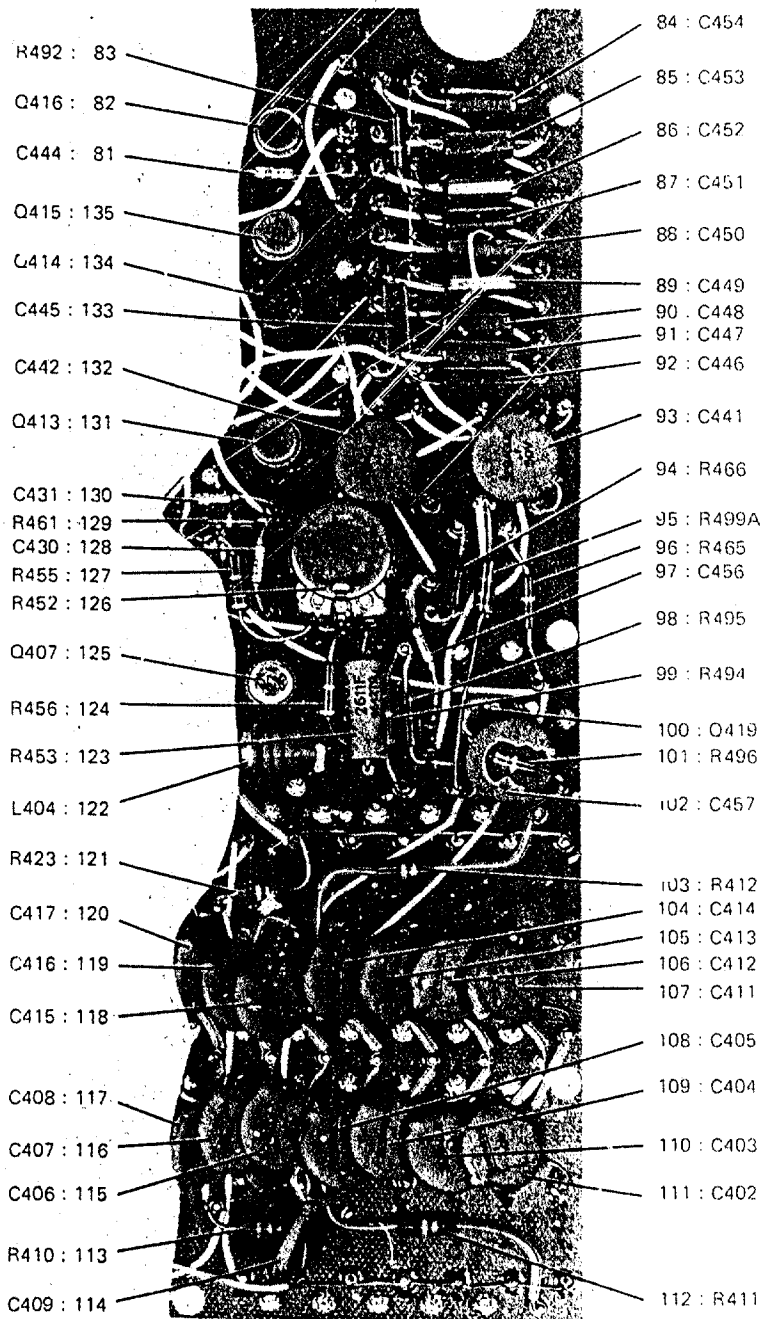


Video Decoder
Figure 6-8 (Sheet 2)

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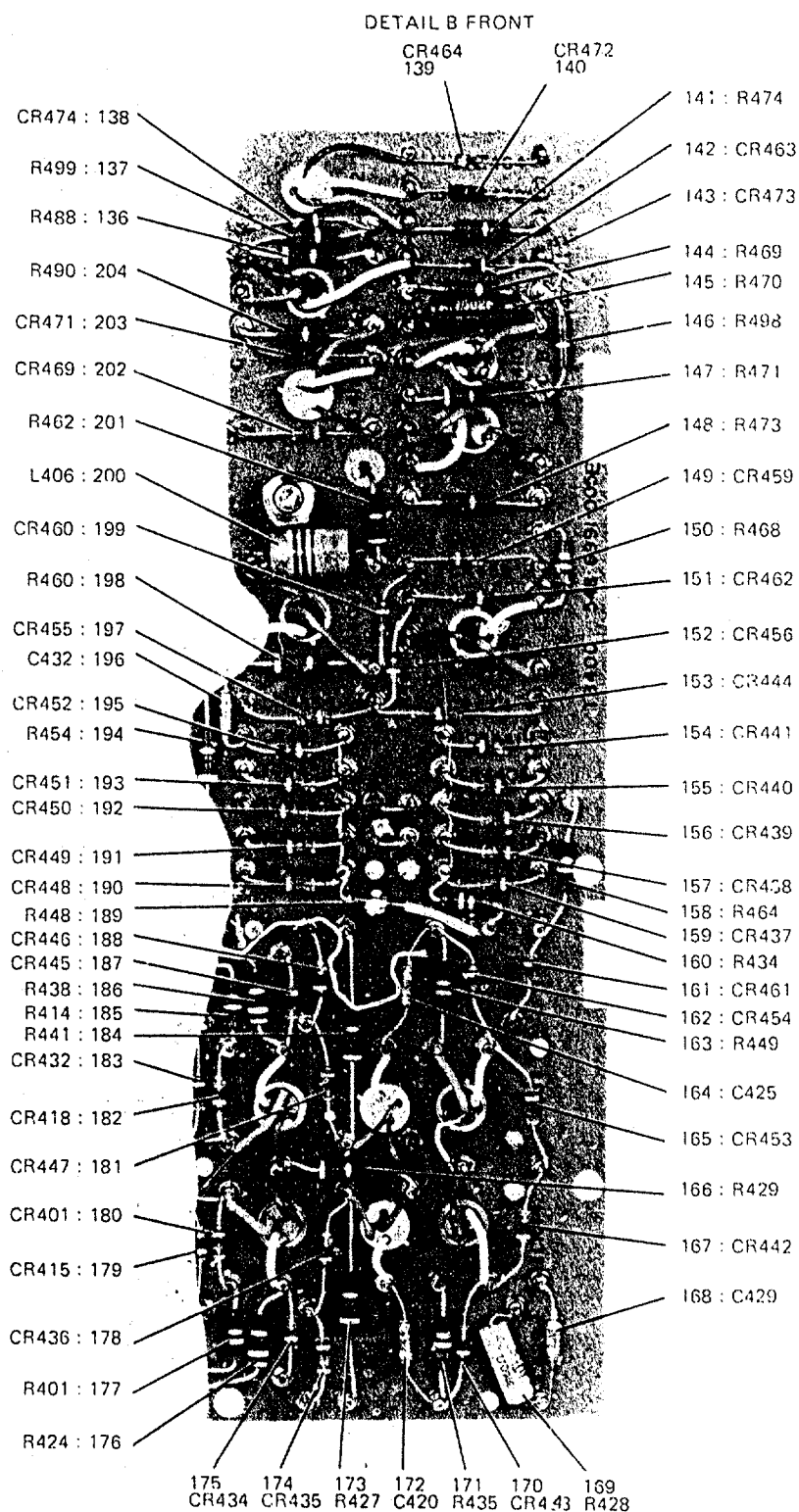
GROUP ASSEMBLY PARTS LIST

DETAIL A REAR



Video Decoder
Figure 6-8 (Sheet 3)

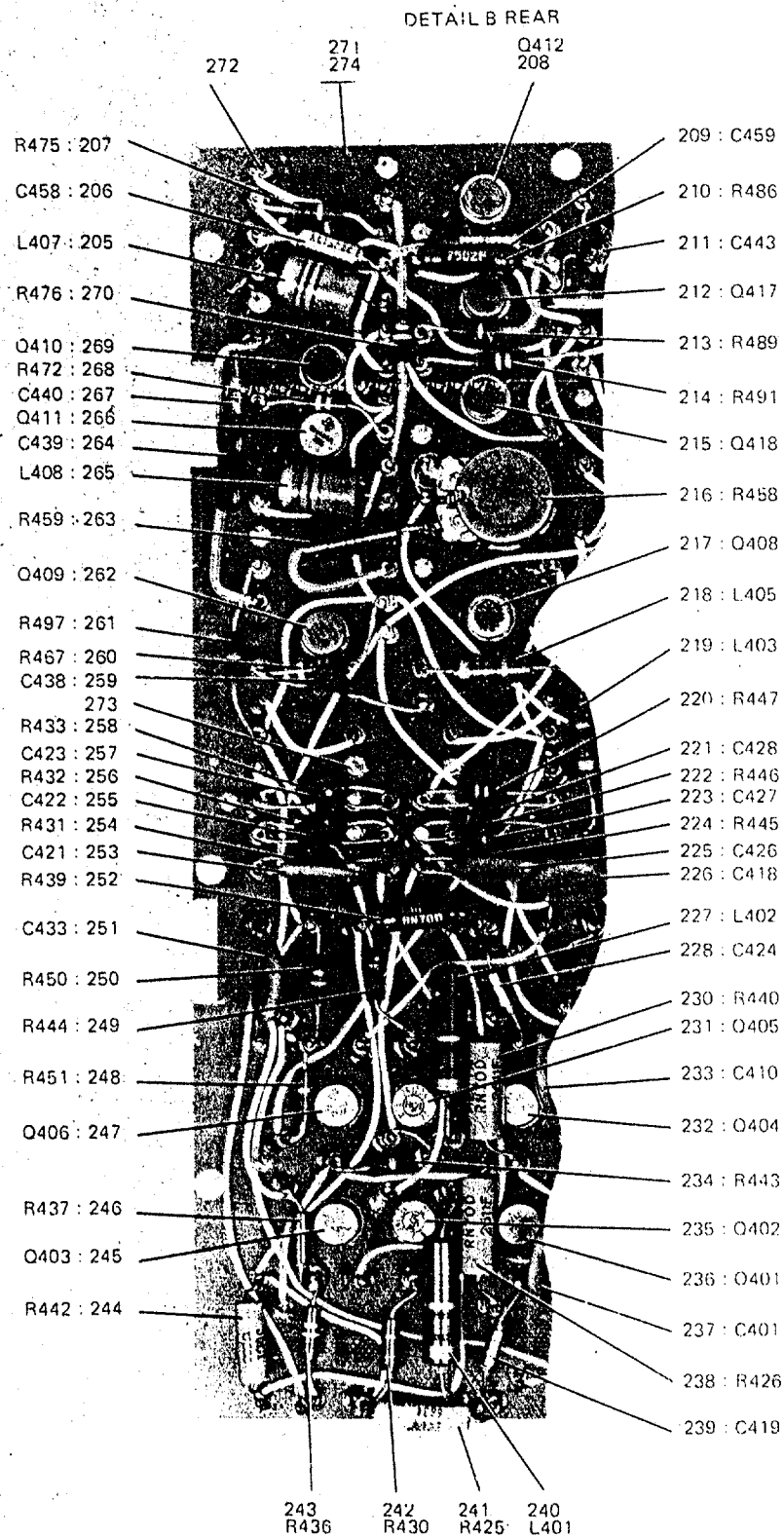
GROUP ASSEMBLY PARTS LIST



Video Decoder
Figure 6-8 (Sheet 4)

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GROUP ASSEMBLY PARTS LIST



Video Decoder
Figure 6-8 (Sheet 5)

GROUP ASSEMBLY PARTS LIST

FIG ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-8	548-6996-001	1	DECODER, VIDEO (SEE FIG 6-2-16 FOR NHA)		REF
1	4422-10-38	2	COIL, RF, 33UH (V82142) 240-0170-000 L416		1
2	4422-11-117	2	COIL, RF, 39UH (V82142) 240-0171-000 L417		1
3	RCR20G562KS	2	RESISTOR, FXD, CMPSN, 5.6K, 10%, 1/2W (V81349) 745-1384-000 R487		1
4	RCR20G103KS	2	RESISTOR, FXD, CMPSN, 10K, 10%, 1/2W (V81349) 745-1394-000 R484		1
5	RCR20G472KS	2	RESISTOR, FXD, CMPSN, 4.7K, 10%, 1/2W (V81349) 745-1380-000 R485		1
6	RCR20G472KS	2	RESISTOR, FXD, CMPSN, 4.7K, 10%, 1/2W (V81349) 745-1380-000 R483		1
7	RCR20G102KS	2	RESISTOR, FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R481		1
8	RCR20G103KS	2	RESISTOR, FXD, CMPSN, 10K, 10%, 1/2W (V81349) 745-1394-000 R480		1
9	RCR20G101KS	2	RESISTOR, FXD, CMPSN, 100 OHMS, 10%, 1/2W (V81349) 745-1310-000 R482		1
10	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR468 (EFF TO CI 71305)		1
10	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR468 (EFF CI 71305)		1
11	RCR20G333KS	2	RESISTOR, FXD, CMPSN, 33K, 10%, 1/2W (V81349) 745-1415-000 R479		1
12	RCR20G104KS	2	RESISTOR, FXD, CMPSN, 0.10MEGO, 10%, 1/2W (V81349) 745-1436-000 R463		1
13	RCR20G104KS	2	RESISTOR, FXD, CMPSN, 0.10MEGO, 10%, 1/2W (V81349) 745-1436-000 R457		1
14	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR457 (EFF TO CI 71305)		1
14	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR457 (EFF CI 71305)		1
15	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR458 (EFF TO CI 71305)		1
15	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR458 (EFF CI 71305)		1
16	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR470 (EFF TO CI 71305)		1
16	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR470 (EFF CI 71305)		1
17	150D225X0020A2	2	CAPACITOR, FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C455		1
18	RCR20G153KS	2	RESISTOR, FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R418		1
19	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR427 (EFF TO CI 71305)		1
19	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR427 (EFF CI 71305)		1
20	RCR20G153KS	2	RESISTOR, FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R419		1
21	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR433 (EFF TO CI 71305)		1
21	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR433 (EFF CI 71305)		1
22	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR429 (EFF TO CI 71305)		1
22	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR429 (EFF CI 71305)		1
23	RCR20G153KS	2	RESISTOR, FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R420		1
24	RCR20G153KS	2	RESISTOR, FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R421		1
25	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR428 (EFF TO CI 71305)		1

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GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-8 25	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR428 (EFF CI 71305)		1
26	RCR20G333KS	2	RESISTOR,FXD, CMPSN, 33K, 10%, 1/2W (V81349) 745-1415-000 R422		1
27	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR430 (EFF TO CI 71305)		1
27	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR430 (EFF CI 71305)		1
28	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR417 (EFF TO CI 71305)		1
28	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR417 (EFF CI 71305)		1
29	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR431 (EFF TO CI 71305)		1
29	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR431 (EFF CI 71305)		1
30	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR411 (EFF TO CI 71305)		1
30	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR411 (EFF CI 71305)		1
31	RCR20G333KS	2	RESISTOR,FXD, CMPSN, 33K, 10%, 1/2W (V81349) 745-1415-000 R409		1
32	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR413 (EFF TO CI 71305)		1
32	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR413 (EFF CI 71305)		1
33	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR414 (EFF TO CI 71305)		1
33	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR414 (EFF CI 71305)		1
34	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R408		1
35	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R407		1
36	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR412 (EFF TO CI 71305)		1
36	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR412 (EFF CI 71305)		1
37	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR416 (EFF TO CI 71305)		1
37	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR416 (EFF CI 71305)		1
38	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R406		1
39	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR410 (EFF TO CI 71305)		1
39	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR410 (EFF CI 71305)		1
40	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R405		1
41	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR408 (EFF TO CI 71305)		1
41	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR408 (EFF CI 71305)		1
42	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R404		1
43	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR406 (EFF TO CI 71305)		1
43	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR406 (EFF CI 71305)		1
44	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R403		1
45	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR404 (EFF TO CI 71305)		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-8 45	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR404 (EFF CI 71305)		1
46	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R402		1
47	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR402 (EFF TO CI 71305)		1
47	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR402 (EFF CI 71305)		1
48	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR409 (EFF TO CI 71305)		1
48	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR409 (EFF CI 71305)		1
49	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR407 (EFF TO CI 71305)		1
49	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR407 (EFF CI 71305)		1
50	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR405 (EFF TO CI 71305)		1
50	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR405 (EFF CI 71305)		1
51	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR403 (EFF TO CI 71305)		1
51	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR403 (EFF CI 71305)		1
52	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR426 (EFF TO CI 71305)		1
52	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR426 (EFF CI 71305)		1
53	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR427 (EFF TO CI 71305)		1
53	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR424 (EFF CI 71305)		1
54	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR422 (EFF TO CI 71305)		1
54	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR422 (EFF CI 71305)		1
55	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR420 (EFF TO CI 71305)		1
55	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR420 (EFF CI 71305)		1
56	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR425 (EFF TO CI 71305)		1
56	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR425 (EFF CI 71305)		1
57	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R417		1
58	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR423 (EFF TO CI 71305)		1
58	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR423 (EFF CI 71305)		1
59	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R416		1
60	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR419 (EFF TO CI 71305)		1
60	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR419 (EFF CI 71305)		1
61	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R415		1
62	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR421 (EFF TO CI 71305)		1
62	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR421 (EFF CI 71305)		1

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GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
148 63	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR425 (EFF TO CI 71305)		1
63	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR425 (EFF CI 71305)		1
64	RCR20G103KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/2W (V81349) 745-1394-000 R493		1
66	150D225X0020A2	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C437		1
67	150D225X0020A2	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C434		1
68	150D225X0020A2	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C435		1
69	RCR20G682KS	2	RESISTOR,FXD, CMPSN, 6.8K, 10%, 1/2W (V81349) 745-1387-000 R477		1
70	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR465 (EFF TO CI 71305)		1
70	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR465 (EFF CI 71305)		1
71	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR467 (EFF TO CI 71305)		1
71	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR467 (EFF CI 71305)		1
72	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR466 (EFF TO CI 71305)		1
72	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR466 (EFF CI 71305)		1
73	RCR20G682KS	2	RESISTOR,FXD, CMPSN, 6.8K, 10%, 1/2W (V81349) 745-1387-000 R478		1
74	4422-11-117	2	COIL,RF, 39UH (V82142) 240-0171-000 L409		1
75	4422-11-117	2	COIL,RF, 39UH (V82142) 240-0171-000 L410		1
76	4422-11-117	2	COIL,RF, 39UH (V82142) 240-0171-000 L411		1
77	4422-11-117	2	COIL,RF, 39UH (V82142) 240-0171-000 L412		1
78	4422-11-117	2	COIL,RF, 39UH (V82142) 240-0171-000 L413		1
79	4422-11-117	2	COIL,RF, 39UH (V82142) 240-0171-000 L414		1
80	4422-11-117	2	COIL,RF, 39UH (V82142) 240-0171-000 L415		1
81	150D105X9035A2	2	CAPACITOR,FXD, ELCTLT, 1UF, 10%, 35V (V56289) 184-7697-000 C444		1
82	2N404A	2	TRANSISTOR (V01295) 352-0378-000 Q416		1
83	RCR20G681KS	2	RESISTOR,FXD, CMPSN, .680 OHMS, 10%, 1/2W (V81349) 745-1345-000 R492		1
84	DR5E470G0	2	CAPACITOR,FXD, MICA DIEL, 47PF, 2%, 500V (V00853) 912-0469-000 C454		1
85	DR5E101G0	2	CAPACITOR,FXD, MICA DIEL, 100PF, 2%, 500V (V00853) 912-0493-000 C453		1
86	DR5E101G0	2	CAPACITOR,FXD, MICA DIEL, 100PF, 2%, 500V (V00853) 912-0493-000 C452		1
87	DR5E101G0	2	CAPACITOR,FXD, MICA DIEL, 100PF, 2%, 500V (V00853) 912-0493-000 C451		1
88	DR5E101G0	2	CAPACITOR,FXD, MICA DIEL, 100PF, 2%, 500V (V00853) 912-0493-000 C450		1
89	DR5E101G0	2	CAPACITOR,FXD, MICA DIEL, 100PF, 2%, 500V (V00853) 912-0493-000 C449		1
90	DR5E101G0	2	CAPACITOR,FXD, MICA DIEL, 100PF, 2%, 500V (V00853) 912-0493-000 C448		1
91	DR5E101G0	2	CAPACITOR,FXD, MICA DIEL, 100PF, 2%, 500V (V00853) 912-0493-000 C447		1
92	DR5E101G0	2	CAPACITOR,FXD, MICA DIEL, 100PF, 2%, 500V (V00853) 912-0493-000 C446		1
93	33C41B3	2	CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C441		1
94	RCR20G562KS	2	RESISTOR,FXD, CMPSN, 5.6K, 10%, 1/2W (V81349) 745-1384-000 R466		1
95	RCR07G103KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/4W (V81349) 745-0785-000 R499A		1

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FIG ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-8	96	RCR20G562KS	2 RESISTOR,FXD, CMPSN, 5.6K, 10%, 1/2W (V81349) 745-1384-000 R465		1
	97	150D225X0020A2	2 CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C456		1
	98	RCR20G102KS	2 RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R495		1
	99	RCR20G471KS	2 RESISTOR,FXD, CMPSN, 470 OHMS, 10%, 1/2W (V81349) 745-1338-000 R494		1
	100	2N404	2 TRANSISTOR (V96214) 352-0158-000 Q419		1
	101	RCR20G183KS	2 RESISTOR,FXD, CMPSN, 18K, 10%, 1/2W (V81349) 745-1405-000 R496		1
	102	33C41B3	2 CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C457		1
	103	RCR20G103KS	2 RESISTOR,FXD, CMPSN, 10K, 10%, 1/2W (V81349) 745-1394-000 R412		1
	104	33C41B3	2 CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C414		1
	105	33C41B3	2 CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C413		1
	106	33C41B3	2 CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C412		1
	107	33C41B3	2 CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C411		1
	108	33C41B3	2 CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C405		1
	109	33C41B3	2 CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C404		1
	110	33C41B3	2 CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C403		1
	111	33C41B3	2 CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C402		1
	112	RCR20G103KS	2 RESISTOR,FXD, CMPSN, 10K, 10%, 1/2W (V81349) 745-1394-000 R411		1
	113	RCR20G104KS	2 RESISTOR,FXD, CMPSN, 0.1OMEGA, 10%, 1/2W (V81349) 745-1436-000 R410		1
	114	33C41B3	2 CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C409		1
	115	33C41B3	2 CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C406		1
	116	33C41B3	2 CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C407		1
	117	33C41B3	2 CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C408		1
	118	33C41B3	2 CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C415		1
	119	33C41B3	2 CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C416		1
	120	33C41B3	2 CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C417		1
	121	RCR20G104KS	2 RESISTOR,FXD, CMPSN, 0.1OMEGA, 10%, 1/2W (V81349) 745-1436-000 R423		1
	122	OM0073	2 COIL,RF, 500UH (V99800) 240-0073-000 L404		1
	123	RN70D2611F	2 RESISTOR,FXD, FILM, 2.61K, 1%, 3/4W (V81349) 705-7616-000 R453		1
	124	RCR20G472KS	2 RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/2W (V81349) 745-1380-000 R456		1
	125	2N1224	2 TRANSISTOR (V73445) 352-0165-000 Q407 (EFF TO REV LTR P)		1
	125	2N3284	2 TRANSISTOR (V04713) 352-1024-010 Q407 (EFF REV LTR P TO REV LTR R)		1
	125	2N1142	2 TRANSISTOR (V04713) 352-0162-000 Q407 (EFF REV LTR R)		1

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GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-8 126	RV5LAYS8103B	2	RESISTOR,VAR, CMPSN, 10K, 20%, 1/2W (V81349) 380-2907-000 R452 (EFF TO REV LTR N)		1
126	RV5LAYS8103B	2	RESISTOR,VAR, 10K, 20%, 1/2W (V81349) 380-6290-000 R452 (EFF REV LTR N)		1
127	RCR20G332KS	2	RESISTOR,FXD, CMPSN, 3.3K, 10%, 1/2W (V81349) 745-1373-000 R455		1
128	150D225X0020A2	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C430		1
129	RCR20G102KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R461		1
130	150D225X0020A2	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C431		1
131	2N404	2	TRANSISTOR (V96214) 352-0158-000 Q413		1
132	33C4183	2	CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C442		1
133	DR5E470G0	2	CAPACITOR,FXD, MICA DIEL, 47PF, 2%, 500V (V0C853) 912-0469-000 C445		1
134	2N525	2	TRANSISTOR (V04713) 352-0094-000 Q414		1
135	2N388	2	TRANSISTOR (V01295) 352-0241-000 Q415		1
136	RCR20G472KS	2	RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/2W (V81349) 745-1380-000 R488		1
137	RCR20G272KS	2	RESISTOR,FXD, CMPSN, 2.7K, 10%, 1/2W (V81349) 745-1370-000 R499		1
138	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR474 (EFF TO CI 71305)		1
138	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR474 (EFF CI 71305)		1
139	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR464 (EFF TO CI 71305)		1
139	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR464 (EFF CI 71305)		1
140	1N816	2	SEMICONV DEVICE (V03877) 353-2564-000 CR472		1
141	RCR20G272KS	2	RESISTOR,FXD, CMPSN, 2.7K, 10%, 1/2W (V81349) 745-1370-000 R474		1
142	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR463 (EFF TO CI 71305)		1
142	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR463 (EFF CI 71305)		1
143	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR473 (EFF TO CI 71305)		1
143	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR473 (EFF CI 71305)		1
144	RCR20G221KS	2	RESISTOR,FXD, CMPSN, 220 OHMS, 10%, 1/2W (V81349) 745-1324-000 R469		1
145	RN70D7502F	2	RESISTOR,FXD, FILM, 75K, 1%, 3/4W (V81349) 705-7686-000 R470		1
146	RCR20G272KS	2	RESISTOR,FXD, CMPSN, 2.7K, 10%, 1/2W (V81349) 745-1370-000 R498		1
147	RCR20G472KS	2	RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/2W (V81349) 745-1380-000 R471		1
148	RCR20G272KS	2	RESISTOR,FXD, CMPSN, 2.7K, 10%, 1/2W (V81349) 745-1370-000 R473		1
149	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR459 (EFF TO CI 71305)		1
149	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR459 (EFF CI 71305)		1
150	RCR20G183KS	2	RESISTOR,FXD, CMPSN, 18K, 10%, 1/2W (V81349) 745-1405-000 R468		2
151	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR462 (EFF TO CI 71305)		1
151	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR462 (EFF CI 71305)		1
152	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR456 (EFF TO CI 71305)		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-8 152	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR456 (EFF CI 71305)		1
153	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR444 (EFF TO CI 71305)		1
153	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR444 (EFF CI 71305)		1
154	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR441 (EFF TO CI 71305)		1
154	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR441 (EFF CI 71305)		1
155	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR440 (EFF TO CI 71305)		1
155	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR440 (EFF CI 71305)		1
155	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR439 (EFF TO CI 71305)		1
156	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR439 (EFF CI 71305)		1
157	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR438 (EFF TO CI 71305)		1
157	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR438 (EFF CI 71305)		1
158	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R464		1
159	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR437 (EFF TO CI 71305)		1
159	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR437 (EFF CI 71305)		1
160	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R434		1
161	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR461 (EFF TO CI 71305)		1
161	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR461 (EFF CI 71305)		1
162	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR454 (EFF TO CI 71305)		1
162	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR454 (EFF CI 71305)		1
163	RCR20G183KS	2	RESISTOR,FXD, CMPSN, 18K, 10%, 1/2W (V81349) 745-1405-000 R449		1
164	150D225X0020A2	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C425		1
165	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR453 (EFF TO CI 71305)		1
165	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR453 (EFF CI 71305)		1
166	RCR20G472KS	2	RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/2W (V81349) 745-1380-000 R429		1
167	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR442 (EFF TO CI 71305)		1
167	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR442 (EFF CI 71305)		1
168	150D225X0020A2	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C429		1
169	RN65D3161F	2	RESISTOR,FXD, FILM, 3.16K, 1%, 1/2W (V81349) 705-7120-000 R428		1
170	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR443 (EFF TO CI 71305)		1
170	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR443 (EFF CI 71305)		1

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FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-8 171	RCR20G183KS	2	RESISTOR,FXD, CMPSN, 18K, 10%, 1/2W (V81349) 745-1405-000 R435		1
172	150D225X0020A2	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C420		1
173	RCR20G471KS	2	RESISTOR,FXD, CMPSN, 470 OHMS, 10%, 1/2W (V81349) 745-1338-000 R427		1
174	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR435 (EFF TO CI 71305)		1
174	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR435 (EFF CI 71305)		1
175	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR434 (EFF TO CI 71305)		1
175	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR434 (EFF CI 71305)		1
176	RCR20G392KS	2	RESISTOR,FXD, CMPSN, 3.9K, 10%, 1/2W (V81349) 745-1377-000 R424		1
177	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R401		1
178	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR436 (EFF TO CI 71305)		1
178	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR436 (EFF CI 71305)		1
179	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR415 (EFF TO CI 71305)		1
179	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR415 (EFF CI 71305)		1
180	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR401 (EFF TO CI 71305)		1
180	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR401 (EFF CI 71305)		1
181	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR447 (EFF TO CI 71305)		1
181	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR447 (EFF CI 71305)		1
182	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR418 (EFF TO CI 71305)		1
182	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR418 (EFF CI 71305)		1
183	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR432 (EFF TO CI 71305)		1
183	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR432 (EFF CI 71305)		1
184	RCR20G471KS	2	RESISTOR,FXD, CMPSN, 470 OHMS, 10%, 1/2W (V81349) 745-1338-000 R441		1
185	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R414		1
186	RCR20G392KS	2	RESISTOR,FXD, CMPSN, 3.9K, 10%, 1/2W (V81349) 745-1377-000 R438		1
187	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR445 (EFF TO CI 71305)		1
187	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR445 (EFF CI 71305)		1
188	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR446 (EFF TO CI 71305)		1
188	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR446 (EFF CI 71305)		1
189	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R448		1
190	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR448 (EFF TO CI 71305)		1
190	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR448 (EFF CI 71305)		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-8 191	1N191	2	SEMICOND DEVICE (V14936) 353-2023-000 CR449 (EFF TO CI 71305)		1
191	1N270	2	SEMICOND DEVICE (V08257) 353-2018-000 CR449 (EFF TO CI 71305)		1
192	1N191	2	SEMICOND DEVICE (V14936) 353-2023-000 CR450 (EFF TO CI 71305)		1
192	1N270	2	SEMICOND DEVICE (V08257) 353-2018-000 CR450 (EFF TO CI 71305)		1
194	RCR20G471KS	2	RESISTOR,FXD, CMPSN, 470 OHMS, 10%, 1/2W (V81349) 745-1338-000 R454		1
195	1N191	2	SEMICOND DEVICE (V14936) 353-2023-000 CR452 (EFF TO CI 71305)		1
195	1N270	2	SEMICOND DEVICE (V08257) 353-2018-000 CR452 (EFF TO CI 71305)		1
196	150D225X0020A2	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C432		1
197	1N191	2	SEMICOND DEVICE (V14936) 353-2023-000 CR455 (EFF TO CI 71305)		1
197	1N270	2	SEMICOND DEVICE (V08257) 353-2018-000 CR455 (EFF TO CI 71305)		1
198	RCR20G471KS	2	RESISTOR,FXD, CMPSN, 470 OHMS, 10%, 1/2W (V81349) 745-1338-000 R460		1
199	1N191	2	SEMICOND DEVICE (V14936) 353-2023-000 CR466 (EFF TO CI 71305)		1
199	1N270	2	SEMICOND DEVICE (V08257) 353-2018-000 CR466 (EFF TO CI 71305)		1
200	DM0073	2	COIL,RF, 500UH (V99800) 240-0073-000 L406		1
201	RCR20G472KS	2	RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/2W (V81349) 745-1380-000 R462		1
202	1N191	2	SEMICOND DEVICE (V14936) 353-2023-000 CR469 (EFF TO CI 71305)		1
202	1N270	2	SEMICOND DEVICE (V08257) 353-2018-000 CR469 (EFF TO CI 71305)		1
203	1N816	2	SEMICOND DEVICE (V03877) 353-2564-000 CR471		1
204	RCR20G102KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R490		1
205	DM0073	2	COIL,RF, 500UH (V99800) 240-0073-000 L407		1
206	150D226X001582	2	CAPACITOR,FXD, ELCTLT, 22UF, 20%, 15V (V56289) 184-7373-000 C458		1
207	RCR20G102KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R475		1
208	2N1039	2	TRANSISTOR (V14905) 352-0143-000 Q412		1
209	150D226X001582	2	CAPACITOR,FXD, ELCTLT, 22UF, 20%, 15V (V56289) 184-7373-000 C459		1
210	RN70D7502F	2	RESISTOR,FXD, FILM, 75K, 1%, 3/4W (V81349) 705-7686-000 R486		1
211	CM05FD221J03	2	CAPACITOR,FXD, MICA DIEL, 220PF, 5%, 500V (V81349) 912-2840-000 C443		1
212	2N404A	2	TRANSISTOR (V01295) 352-0378-000 Q417		1
213	RCR20G272KS	2	RESISTOR,FXD, CMPSN, 2.7K, 10%, 1/2W (V81349) 745-1370-000 R489		1
214	RCR20G103KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/2W (V81349) 745-1394-000 R491		1
215	2N1039	2	TRANSISTOR (V14805) 352-0143-000 Q418		1
216	RV5LAYS8103B	2	RESISTOR,VAR, CMPSN, 10K, 20%, 1/2W (V81349) 380-2907-000 R458 (EFF TO REV LTR N)		1
217	2N1224	2	TRANSISTOR (V73445) 352-0165-000 Q408 (EFF TO REV LTR P)		1
217	2N3284	2	TRANSISTOR (V04713) 352-1024-010 Q408 (EFF REV LTR P TO REV LTR R)		1
217	2N1142	2	TRANSISTOR (V04713) 352-0162-000 Q408 (EFF REV LTR R)		1
218	4422-10-38	2	COIL,RF, 33UH (V82142) 240-0170-000 L405		1

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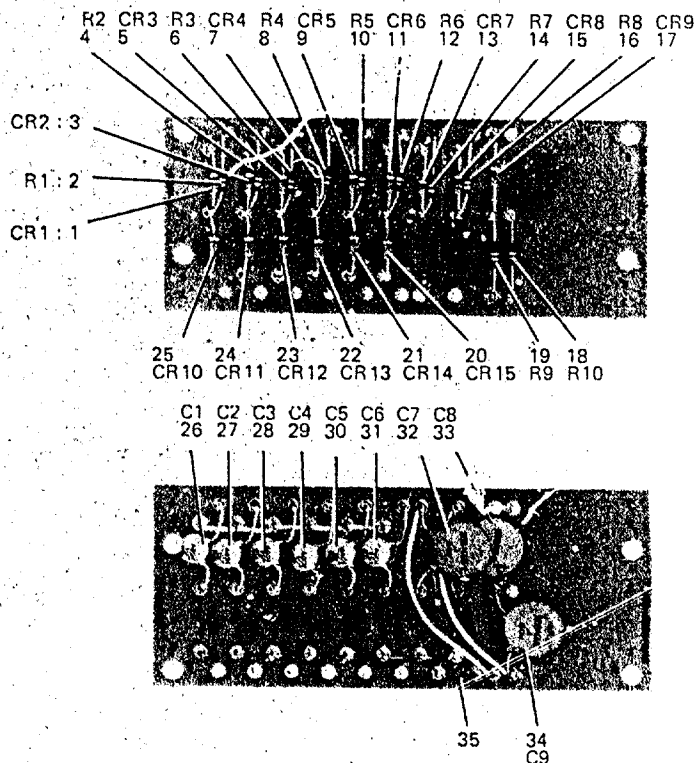
FIG- ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
8-219	4422-10-38	2	COIL, RF, 33UH (V82142) 240-0170-000 L403		1
220	RCR20G153KS	2	RESISTOR, FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R447		1
221	805-014X5V0103Z	2	CAPACITOR, FXD, CER DIEI, 0.01UF, M20%P80%, 100V (V72982) 913-3680-000 C428		1
222	RCR20G153KS	2	RESISTOR, FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R446		1
223	805-014X5V0103Z	2	CAPACITOR, FXD, CER DIEI, 0.01UF, M20%P80%, 100V (V72982) 913-3680-000 C427		1
224	RCR20G153KS	2	RESISTOR, FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R445		1
225	33C41B3	2	CAPACITOR, FXD, CER DIEI, 0.1UF, 20%, 50V (V56289) 913-3886-000 C426		1
226	33C41B3	2	CAPACITOR, FXD, CER DIEI, 0.1UF, 20%, 50V (V56289) 913-3886-000 C418		1
227	240-0191-000	2	COIL, RF, 56UH (V82142) 240-0191-000 L402 (EFF TO REV LTR S)		1
227	MS75103-6	2	COIL, RF, 56UH (V96906) 240-1624-000 L402 (EFF REV LTR S)		1
228	150D225X0020A2	2	CAPACITOR, FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C424		1
229			DELETE		
230	RN70D2611F	2	RESISTOR, FXD, FILM, 2.61K, 1%, 3/4W (V81349) 705-7616-000 R440		1
231	2N1224	2	TRANSISTOR (V73445) 352-0165-000 Q405 (EFF TO REV LTR P)		1
231	352-1024-000	2	TRANSISTOR Q405 (EFF REV LTR P TO REV LTR R)		1
231	2N1142	2	TRANSISTOR (V04713) 352-0162-000 Q405 (EFF REV LTR R)		1
232	2N404	2	TRANSISTOR (V96214) 352-0158-000 Q404		1
233	33C41B3	2	CAPACITOR, FXD, CER DIEI, 0.1UF, 20%, 50V (V56289) 913-3886-000 C410		1
234	RCR20G472KS	2	RESISTOR, FXD, CMPSN, 4.7K, 10%, 1/2W (V81349) 745-1380-000 R443		1
235	2N1224	2	TRANSISTOR (V73445) 352-0165-000 Q402 (EFF TO REV LTR P)		1
235	2N3284	2	TRANSISTOR (V04713) 352-1024-010 Q402 (EFF REV LTR P TO REV LTR R)		1
235	2N1142	2	TRANSISTOR (V04713) 352-0162-000 Q402 (EFF REV LTR R)		1
236	2N404	2	TRANSISTOR (V96214) 352-0158-000 Q401		1
237	33C41B3	2	CAPACITOR, FXD, CER DIEI, 0.1UF, 20%, 50V (V56289) 913-3886-000 C401		1
238	RN70D2611F	2	RESISTOR, FXD, FILM, 2.61K, 1%, 3/4W (V81349) 705-7616-000 R426		1
239	150D225X0020A2	2	CAPACITOR, FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C419		1
240	240-0191-000	2	COIL, RF, 56UH (V82142) 240-0191-000 L401 (EFF TO REV LTR S)		1
240	240-0191-000	2	COIL, RF, 56UH (V82142) 240-0191-000 L401 (EFF REV LTR S)		1
241	RN70D14R7F	2	RESISTOR, FXD, FILM, 14.7 OHMS, 1%, 3/4W (V81349) 705-7508-000 R425		1
242	RCR20G562KS	2	RESISTOR, FXD, CMPSN, 5.6K, 10%, 1/2W (V81349) 745-1384-000 R430		1
243	RCR20G103KS	2	RESISTOR, FXD, CMPSN, 10K, 10%, 1/2W (V81349) 745-1394-000 R436		1
244	RL42S331J	2	RESISTOR, FXD, FILM, 330 OHMS, 5%, 2W (V81349) 745-7094-000 R442		1
246	RCR20G222KS	2	RESISTOR, FXD, CMPSN, 2.2K, 10%, 1/2W (V81349) 745-1366-000 R437		1
247	2N404	2	TRANSISTOR (V96214) 352-0158-000 Q406		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-8 248	RCR20G222KS	2	RESISTOR,FXD, CMPSN, 2.2K, 10%, 1/2W (V81349) 745-1366-000 R451		1
249	RCR20G562KS	2	RESISTOR,FXD, CMPSN, 5.6K, 10%, 1/2W (V81349) 745-1384-000 R444		1
250	RCR20G103KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/2W (V81349) 745-1394-000 R450		1
251	33C4183	2	CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C433		1
252	RN70D4640F	2	RESISTOR,FXD, FILM, 464 OHMS, 1%, 3/4W (V81349) 705-7580-000 R439		1
253	33C4183	2	CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C421		1
254	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R431		1
255	805-014X5V0103Z	2	CAPACITOR,FXD, CER DIEL, 0.01UF, M20%P80%, 100V (V72982) 913-3680-000 C422		1
256	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R432		1
257	805-014X5V0103Z	2	CAPACITOR,FXD, CER DIEL, 0.01UF, M20%P80%, 100V (V72982) 913-3680-000 C423		1
258	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R433		1
259	805-014X5V0103Z	2	CAPACITOR,FXD, CER DIEL, 0.01UF, M20%P80%, 100V (V72982) 913-3680-000 C438		1
260	RCR20G473KS	2	RESISTOR,FXD, CMPSN, 47K, 10%, 1/2W (V81349) 745-1422-000 R467		1
261	RCR20G102KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R497		1
262	2N388	2	TRANSISTOR (V01295) 352-0241-000 Q409		1
263	RN70D2611F	2	RESISTOR,FXD, FILM, 2.61K, 1%, 3/4W (V81349) 705-7616-000 R459		1
264	D205F681J0	2	CAPACITOR,FXD, MICA DIEL, 680PF, 5%, 500V (V00853) 912-3303-000 C439 (EFF TO CI 70011)		1
264	CM06FD122J03	2	CAPACITOR,FXD, MICA DIEL, 1200PF, 5%, 500V (V81349) 912-3007-000 (EFF CI 70011)		1
265	DM0073	2	COIL,RF, 500UH (V99800) 240-0073-000 L408		1
266	2N404A	2	TRANSISTOR (V01295) 352-0378-000 Q411		1
267	150D105X9035A2	2	CAPACITOR,FXD, ELCTLT, 1UF, 10%, 35V (V56289) 184-7697-000 C440		1
268	RCR20G103KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/2W (V81349) 745-1394-000 R472		1
269	2N404A	2	TRANSISTOR (V01295) 352-0378-000 Q410		1
270	RCR20G103KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/2W (V81349) 745-1394-000 R476		1
271	548-6992-005	2	TERMINAL BOARD		1
272	3PP4-66B	2	TERMINAL,FEEDTH (V86577) 306-0954-000		236
273	1P4-26B	2	TERMINAL,STUD (V86577) 306-0973-000		17
274	548-6991-005	2	TERMINAL BOARD		1

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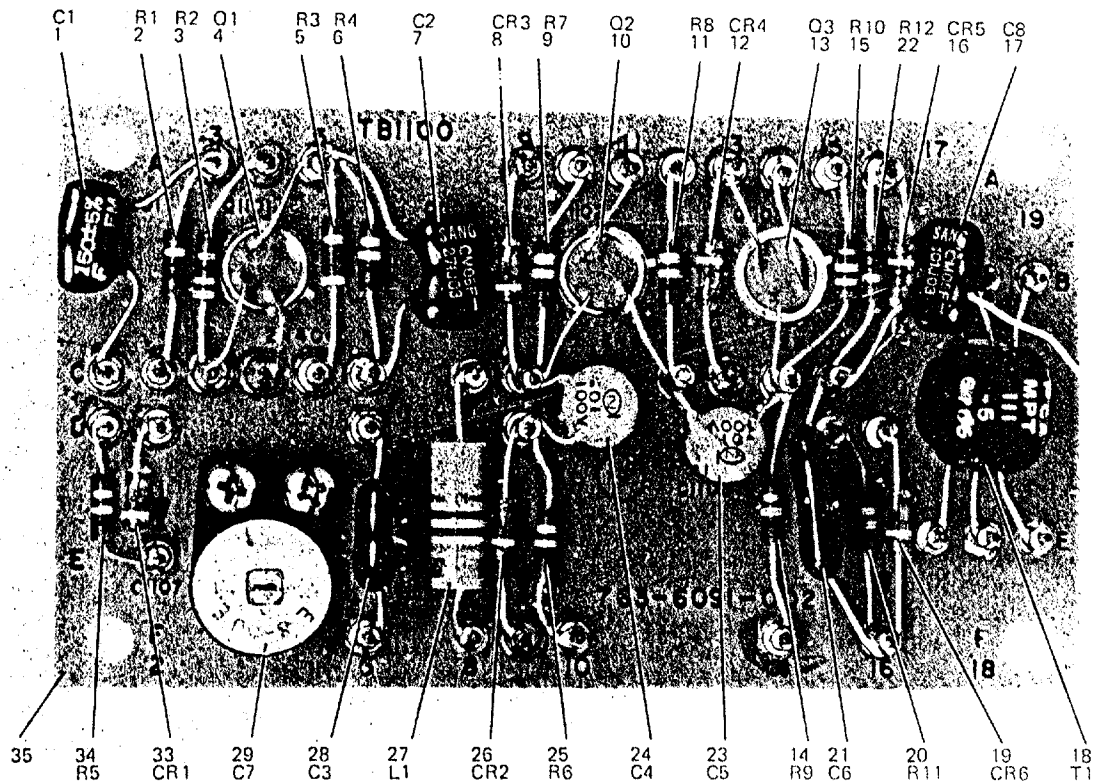


Complement Board
Figure 6-9

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-9 -	763-6059-001	1	COMPLEMENT BOARD TB1000 (SEE FIG 6-2-22 FOR NHA)		REF
1	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR1		1
2	RCR07G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/4W (V81349) 745-0791-000 R1		1
3	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR2		1
4	RCR07G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/4W (V81349) 745-0791-000 R2		1
5	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR3		1
6	RCR07G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/4W (V81349) 745-0791-000 R3		1
7	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR4		1
8	RCR07G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/4W (V81349) 745-0791-000 R4		1
9	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR5		1
10	RCR07G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/4W (V81349) 745-0791-000 R5		1
11	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR6		1
12	RCR07G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/4W (V81349) 745-0791-000 R6		1
13	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR7		1
14	RCR07G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/4W (V81349) 745-0791-000 R7		1
15	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR8		1
16	RCR07G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/4W (V81349) 745-0791-000 R8		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
17	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR9		1
18	RCR07G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/4W (V81349) 745-0791-000 R10		1
19	RCR07G103KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/4W (V81349) 745-0785-000 R9		1
20	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR15		1
21	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR14		1
22	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR13		1
23	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR12		1
24	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR11		1
25	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR10		1
26	805-014X5V0103Z	2	CAPACITOR,FXD, CER DIEL, 0.01UF, M20%P80%, 100V (V72982) 913-3680-000 C1		1
27	805-014X5V0103Z	2	CAPACITOR,FXD, CER DIEL, 0.01UF, M20%P80%, 100V (V72982) 913-3680-000 C2		1
28	805-014X5V0103Z	2	CAPACITOR,FXD, CER DIEL, 0.01UF, M20%P80%, 100V (V72982) 913-3680-000 C3		1
29	805-014X5V0103Z	2	CAPACITOR,FXD, CER DIEL, 0.01UF, M20%P80%, 100V (V72982) 913-3680-000 C4		1
30	805-014X5V0103Z	2	CAPACITOR,FXD, CER DIEL, 0.01UF, M20%P80%, 100V (V72982) 913-3680-000 C5		1
31	805-014X5V0103Z	2	CAPACITOR,FXD, CER DIEL, 0.01UF, M20%P80%, 100V (V72982) 913-3680-000 C6		1
32	33C41B3	2	CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C7		1
33	33C41B3	2	CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C8		1
34	33C41B3	2	CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C9		1
35	763-6059-002	2	COMPLEMENT BOARD		1



SLS Board
Figure 6-10

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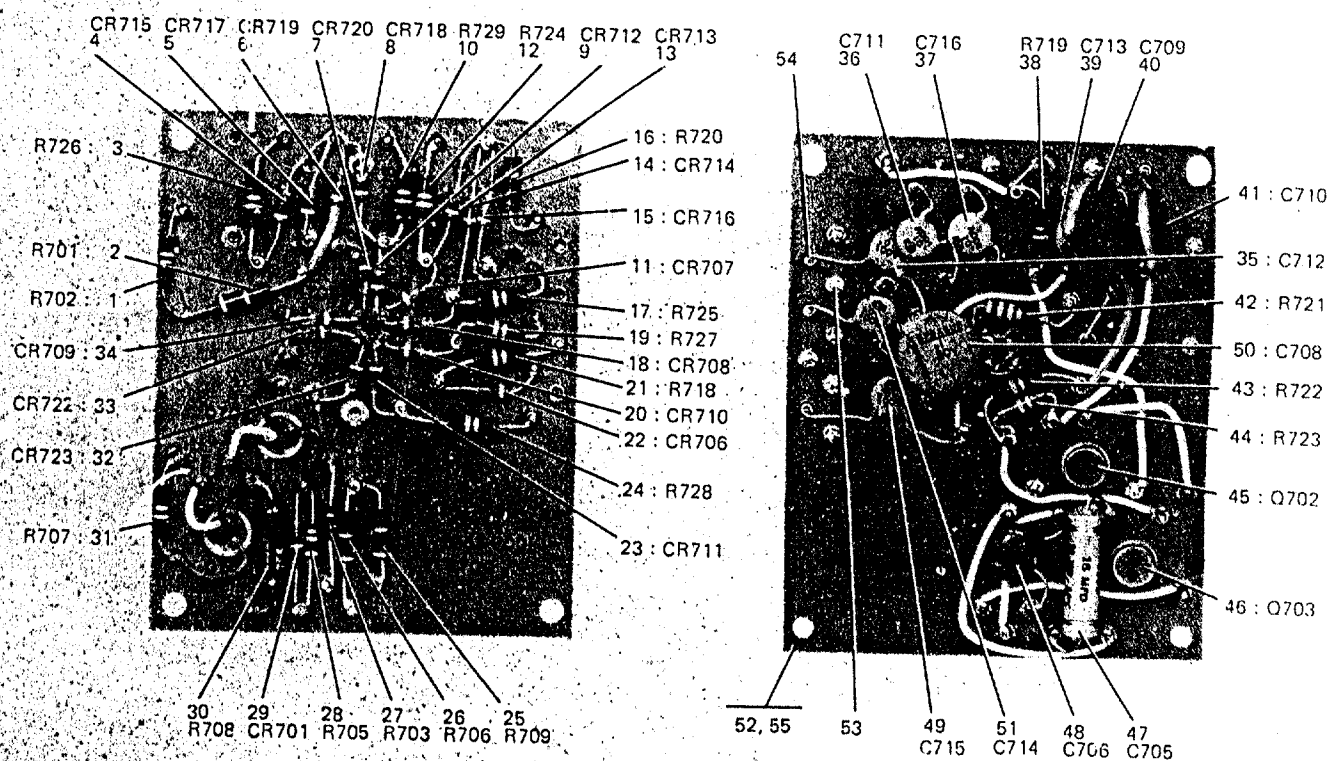
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GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
FIG 10 -	763-6091-001	1	SLS BOARD TB1100 (SEE FIG 6-2-26 FOR NHA1)		REF
1	CM05FD151J03	2	CAPACITOR,FXD, MICA DIEL, 150PF, 5%, 500V (V81349) 912-2828-000 C1		1
2	RCR07G102KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/4W (V81349) 745-0749-000 R1		1
3	RCR07G332KS	2	RESISTOR,FXD, CMPSN, 3.3K, 10%, 1/4W (V81349) 745-0767-000 R2		1
4	2N404	2	TRANSISTOR (V96214) 352-0158-000 Q1		1
5	RCR07G471KS	2	RESISTOR,FXD, CMPSN, 470 OHMS, 10%, 1/4W (V81349) 745-0737-000 R3		1
6	RCR07G223KS	2	RESISTOR,FXD, CMPSN, 22K, 10%, 1/4W (V81349) 745-0797-000 R4		1
7	CM05FD271J03	2	CAPACITOR,FXD, MICA DIEL, 270PF, 5%, 500V (V81349) 912-2846-000 C2		1
R	8	1N191	2 SEMICOND DEVICE (V14936) 353-2023-000 CR3 (EFF TO CI 71365)		1
R	8	1N270	2 SEMICOND DEVICE (V08257) 353-2018-000 CR3 (EFF TO CI 71365)		1
	9	RCR07G103KS	2 RESISTOR,FXD, CMPSN, 10K, 10%, 1/4W (V81349) 745-0785-000 R7		1
	10	2N404	2 TRANSISTOR (V96214) 352-0158-000 Q2		1
	11	RCR07G103KS	2 RESISTOR,FXD, CMPSN, 10K, 10%, 1/4W (V81349) 745-0785-000 R8		1
R	12	1N191	2 SEMICOND DEVICE (V14936) 353-2023-000 CR4 (EFF TO CI 71365)		1
R	12	1N270	2 SEMICOND DEVICE (V08257) 353-2018-000 CR4 (EFF TO CI 71365)		1
	13	2N404	2 TRANSISTOR (V96214) 352-0158-000 Q3		1
	14	RCR07G104KS	2 RESISTOR,FXD, CMPSN, 0.10MEGO, 10%, 1/4W (V81349) 745-0821-000 R9		1
	15	RCR07G134JS	2 RESISTOR,FXD, CMPSN, 0.13MEGO, 5%, 1/4W (V81349) 745-0825-000 R10		1
R	16	1N191	2 SEMICOND DEVICE (V14936) 353-2023-000 CR5 (EFF TO CI 71365)		1
	17	CM05FD101J03	2 CAPACITOR,FXD, MICA DIEL, 100PF, 5%, 500V (V81349) 912-2816-000 C8		1
R	18	MPT111-5	2 TRANSFORMER,PLS (V97722) 674-3030-000 T1		1
	19	1N191	2 SEMICOND DEVICE (V14936) 353-2023-000 CR6 (EFF TO CI 71365)		1
R	19	1N270	2 SEMICOND DEVICE (V08257) 353-2018-000 CR6 (EFF TO CI 71365)		1
	20	RCR07G104KS	2 RESISTOR,FXD, CMPSN, 0.10MEGO, 10%, 1/4W (V81349) 745-0821-000 R11		1
	21	CM06FD102J03	2 CAPACITOR,FXD, MICA DIEL, 1000PF, 5%, 500V (V81349) 912-3001-000 C6		1
	22	RCR07G102KS	2 RESISTOR,FXD, CMPSN, 1K, 10%, 1/4W (V81349) 745-0749-000 R12		1
	23	805-014X5V0103Z	2 CAPACITOR,FXD, CER DIEL, 0.01UF, M20%P80%, 100V (V72982) 913-3680-000 C5		1
	24	805-014X5V0103Z	2 CAPACITOR,FXD, CER DIEL, 0.01UF, M20%P80%, 100V (V72982) 913-3680-000 C4		1
	25	RCR07G104KS	2 RESISTOR,FXD, CMPSN, 0.10MEGO, 10%, 1/4W (V81349) 745-0821-000 R6		1
R	26	1N191	2 SEMICOND DEVICE (V14936) 353-2023-000 CR2 (EFF TO CI 71365)		1
	27	MS90540-11	2 COIL,RF, 3000UH (V96906) 240-2551-000 L1		1
	28	CM05FD221J03	2 CAPACITOR,FXD, MICA DIEL, 220PF, 5%, 500V (V81349) 912-2840-000 C3		1
	29	557-018-8-50E	2 CAPACITOR,VAR, CER DIEL, 8 TO 75PF, 350V (V72982) 917-1075-000 C7		1
-	30	68-1660-40	2 NUT,SLFLKG,HEX, AL, 4-40 (V72962) 333-0605-000 (AP)		2

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-10 - 31	310-0045-000	2	WASHER, FLAT, SST, 0.125 ID X 0.312 OD (V79807)		4
- 32	MS51957-14	2	SCREW, MACH, SST, 4-40 X 5/16 (V96906)		2
R 33	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR1 (EFF TO CI 71365)		1
R 33	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR1 (EFF CI 71365)		1
34	RCR07G153KS	2	RESISTOR, FXD, CMPSN, 15K, 10%, 1/4W (V81349)		1
35	763-6091-002	2	SLS BOARD		1



Decoder
Figure 6-11

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GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
-11 -	768-8659-001	1	DECODER TB700 (SEE FIG 6-2-29 FOR NHA)		REF
1	RCR20G103KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/2W (V81349) 745-1354-000 R702		1
2	RCR20G472KS	2	RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/2W (V81349) 745-1380-000 R701		1
3	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R726		1
4	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR715 (EFF TO CI 71305)		1
4	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR715 (EFF CI 71305)		1
5	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR717 (EFF TO CI 71305)		1
5	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR717 (EFF CI 71305)		1
6	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR719 (EFF TO CI 71305)		1
6	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR719 (EFF CI 71305)		1
7	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR720 (EFF TO CI 71305)		1
7	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR720 (EFF CI 71305)		1
8	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR718 (EFF TO CI 71305)		1
8	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR718 (EFF CI 71305)		1
9	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR712 (EFF TO CI 71305)		1
9	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR712 (EFF CI 71305)		1
10	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R729		1
11	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR707 (EFF TO CI 71305)		1
11	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR707 (EFF CI 71305)		1
12	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R724		1
13	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR713 (EFF TO CI 71305)		1
13	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR713 (EFF CI 71305)		1
14	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR714 (EFF TO CI 71305)		1
14	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR714 (EFF CI 71305)		1
15	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR716 (EFF TO CI 71305)		1
15	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR716 (EFF CI 71305)		1
16	RCR20G152KS	2	RESISTOR,FXD, CMPSN, 1.5K, 10%, 1/2W (V81349) 745-1359-000 R720		1
17	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R725		1
18	1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR708 (EFF TO CI 71305)		1
18	1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR708 (EFF CI 71305)		1
19	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R727		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
R 6-11	20 1N191	2	SEMICOND DEVICE (V14936) 353-2023-000 CR710 (EFF TO CI 71305)		1
R	20 1N270	2	SEMICOND DEVICE (V08257) 353-2018-000 CR710 (EFF CI 71305)		1
	21 RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R718		1
R	22 1N191	2	SEMICOND DEVICE (V14936) 353-2023-000 CR706 (EFF TO CI 71305)		1
R	22 1N270	2	SEMICOND DEVICE (V08257) 353-2018-000 CR706 (EFF CI 71305)		1
R	23 1N191	2	SEMICOND DEVICE (V14936) 353-2023-000 CR711 (EFF TO CI 71305)		1
R	23 1N270	2	SEMICOND DEVICE (V08257) 353-2018-000 CR711 (EFF CI 71305)		1
	24 RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R728		1
	25 RCR20G472KS	2	RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/2W (V81349) 745-1380-000 R709		1
	26 RCR20G472KS	2	RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/2W (V81349) 745-1380-000 R706		1
	27 RCR07G222KS	2	RESISTOR,FXD, CMPSN, 2.2K, 10%, 1/4W (V81349) 745-0761-000 R703		1
	28 RCR07G473KS	2	RESISTOR,FXD, CMPSN, 47K, 10%, 1/4W (V81349) 745-0809-000 R705		1
R	29 1N191	2	SEMICOND DEVICE (V14936) 353-2023-000 CR701 (EFF TO CI 71305)		1
R	29 1N270	2	SEMICOND DEVICE (V08257) 353-2018-000 CR701 (EFF CI 71305)		1
	30 RN70D7502F	2	RESISTOR,FXD, FILM, 75K, 1%, 3/4W (V81349) 705-7686-000 R708		1
	31 RCR20G103KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/2W (V81349) 745-1394-000 R707		1
R	32 1N191	2	SEMICOND DEVICE (V14936) 353-2023-000 CR723 (EFF TO CI 71305)		1
R	32 1N270	2	SEMICOND DEVICE (V08257) 353-2018-000 CR723 (EFF CI 71305)		1
R	33 1N191	2	SEMICOND DEVICE (V14936) 353-2023-000 CR722 (EFF TO CI 71305)		1
R	33 1N270	2	SEMICOND DEVICE (V08257) 353-2018-000 CR722 (EFF CI 71305)		1
R	34 1N191	2	SEMICOND DEVICE (V14936) 353-2023-000 CR709 (EFF TO CI 71305)		1
R	34 1N270	2	SEMICOND DEVICE (V08257) 353-2018-000 CR709 (EFF CI 71305)		1
	35 805-014X5V0103Z	2	CAPACITOR,FXD, CER DIEL, 0.01UF, M20%P80%, 100V (V72982) 913-3680-000 C712		1
	36 805-014X5V0103Z	2	CAPACITOR,FXD, CER DIEL, 0.01UF, M20%P80%, 100V (V72982) 913-3680-000 C711		1
	37 805-014X5V0103Z	2	CAPACITOR,FXD, CER DIEL, 0.01UF, M20%P80%, 100V (V72982) 913-3680-000 C716		1
	38 RCR20G104KS	2	RESISTOR,FXD, CMPSN, 0.10MEGO, 10%, 1/2W (V81349) 745-1436-000 R719		1
	39 805-014X5V0103Z	2	CAPACITOR,FXD, CER DIEL, 0.01UF, M20%P80%, 100V (V72982) 913-3680-000 C713		1
	40 33C41B3	2	CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C709		1
	41 33C41B3	2	CAPACITOR,FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C710		1
	42 RCR20G333KS	2	RESISTOR,FXD, CMPSN, 33K, 10%, 1/2W (V81349) 745-1415-000 R721		1
	43 RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R722		1
	44 RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R723		1

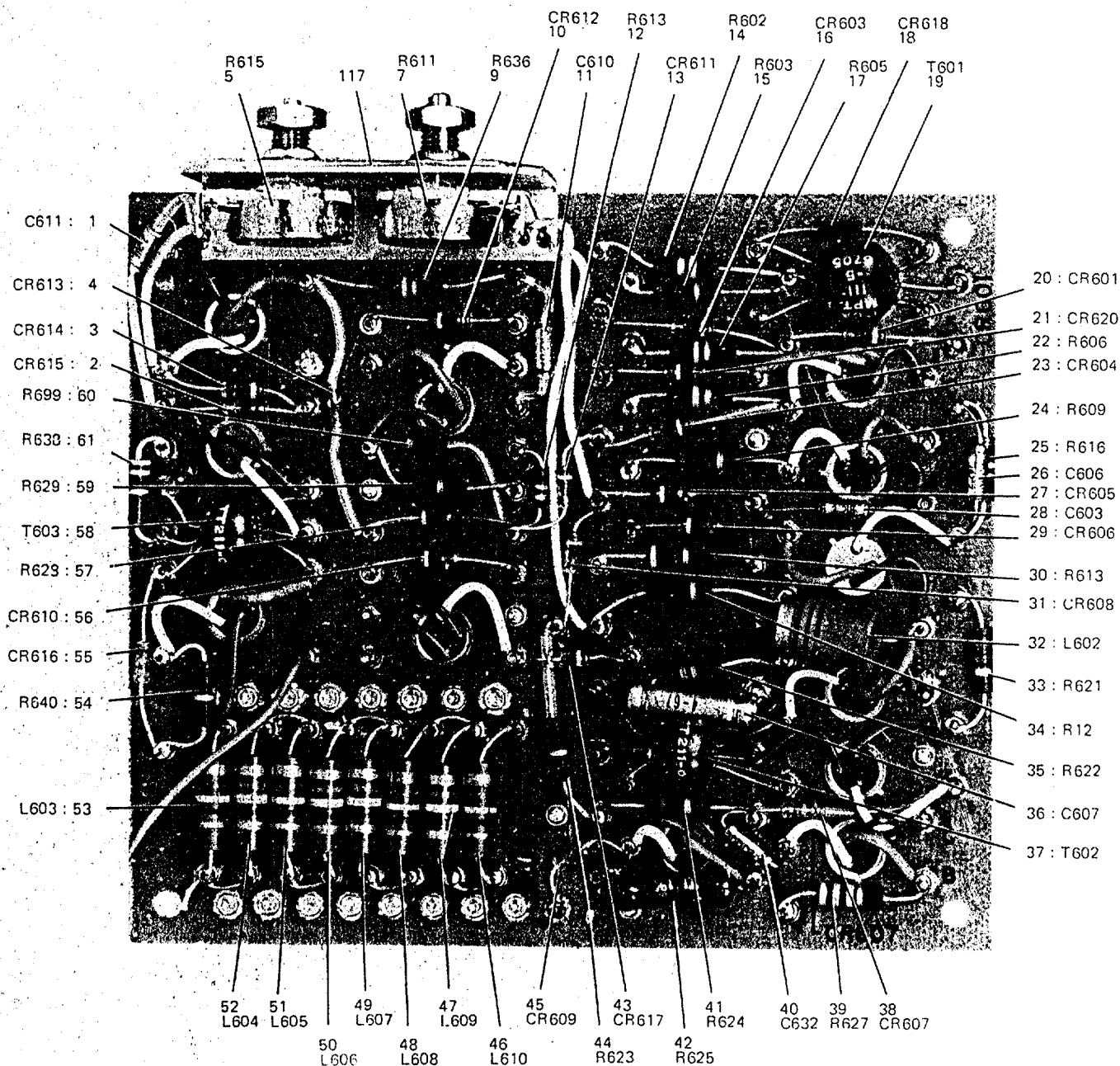
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GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-1	45 2N404A	2	TRANSISTOR (V01295) 352-0378-000 Q702		1
	46 2N404A	2	TRANSISTOR (V01295) 352-0378-000 Q703		1
	47 610D156G030KD5	2	CAPACITOR, FXD, ELCTLT, 15UF, M10%P75%, 30V (V56289) 183-2352-030 C705		1
	48 DM15F471J300WV4C R	2	CAPACITOR, FXD, MICA DIEL, 470PF, 5%, 500V (V72136) 912-2864-000 C706		1
	49 805-014X5V01032	2	CAPACITOR, FXD, CER DIEL, 0.01UF, M20%P80%, 100V (V72982) 913-3680-000 C715		1
	50 33C41R3	2	CAPACITOR, FXD, CER DIEL, 0.1UF, 20%, 50V (V56289) 913-3886-000 C708		1
	51 805-014X5V01032	2	CAPACITOR, FXD, CER DIEL, 0.01UF, M20%P80%, 100V (V72982) 913-3680-000 C714		1
	52 768-7353-002	2	TERMINAL BOARD ASSY		1
	53 3PP4-66B	3	TERMINAL, FEEDTH (V86577) 306-0954-000		46
	54 1P4-26B	3	TERMINAL, STUD (V86577) 306-0973-000		11
	55 768-7353-001	3	TERMINAL BOARD		1

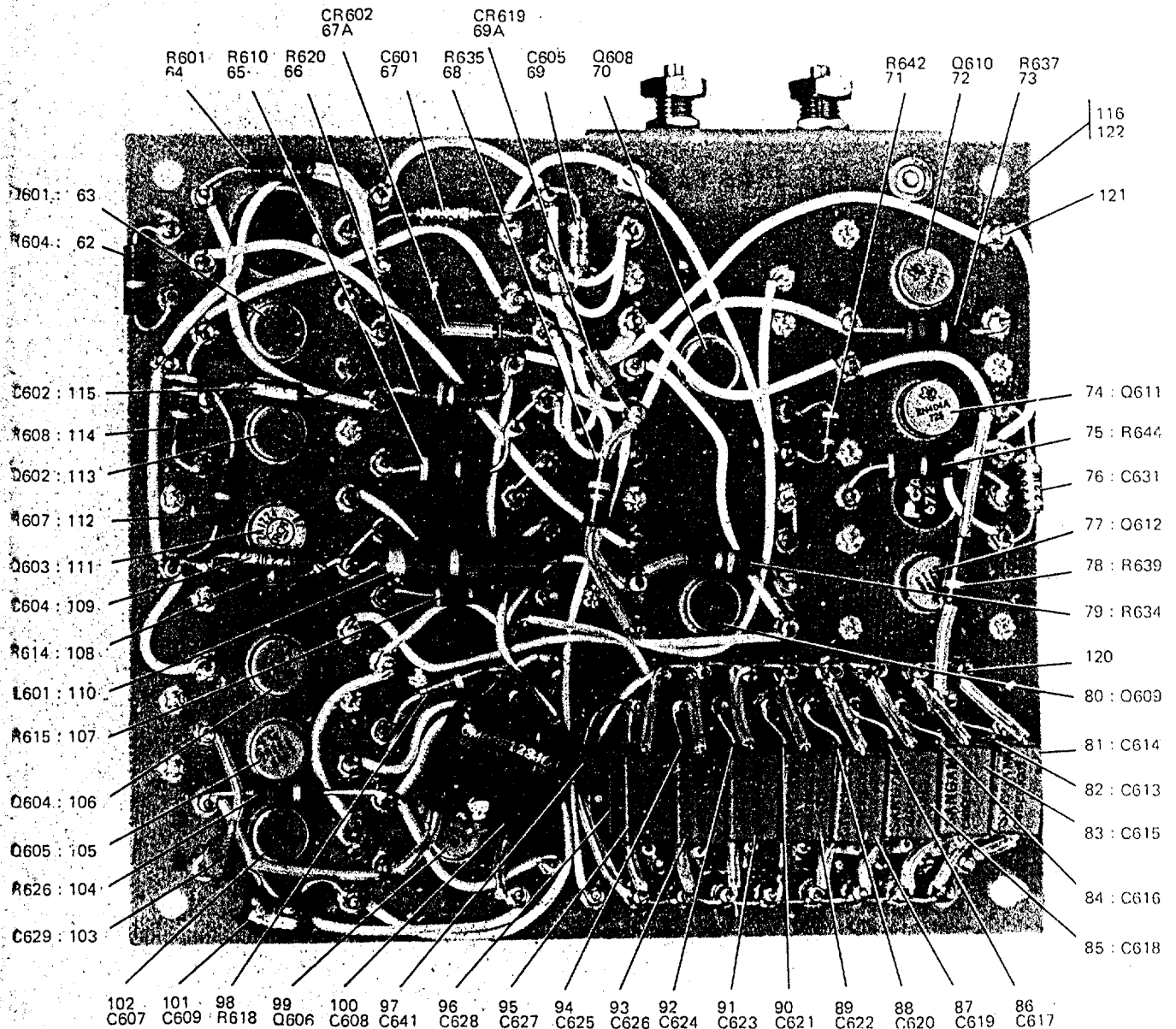
GROUP ASSEMBLY PARTS LIST



Video Signal Diverter
Figure 6-12 (Sheet 1 of 2)

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GROUP ASSEMBLY PARTS LIST



Video Signal Diverter
Figure 6-12 (Sheet 2)

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-12 -	768-7444-002		1 DIVERter, VIDEO SIGNAL TB600 (SEE FIG 6-2-42 FOR NHA)		REF
	1 150D225X0020A2	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C6111		1
	2 1N270	2	SEMICONd DEVICE (V08257) 353-2018-000 CR615		1
R	3 1N191	2	SEMICONd DEVICE (V14936) 353-2023-000 CR614 (EFF TO CI 71305)		1
R	3 1N270	2	SEMICONd DEVICE (V08257) 353-2018-000 CR614 (EFF CI 71305)		1
R	4 1N251	2	SEMICONd DEVICE (V07263) 353-2883-000 CR613		1
	5 RV5LAYS8253B	2	RESISTOR,VAR, CMPSN, 25K, 20%, 1/2W (V81349) 380-2908-000 R617 (EFF TO REV LTR M)		1
R	5 RV5LAYS8253B	2	RESISTOR,VAR, 25K, 20%, 1/2W (V81349) 380-6299-000 R617 (EFF REV LTR M)		1
-	6 P334-0266-000	2	NUT,PLAIN,HEX, NP BRS, 1/4-32 (V77250) 334-0266-000 (AF)		1
R	7 RV5LAYS8103B	2	RESISTOR,VAR, CMPSN, 10K, 20%, 1/2W (V81349) 380-2907-000 R611 (EFF TO REV LTR M)		1
R	7 RV5LAYS8103B	2	RESISTOR,VAR, 10K, 20%, 1/2W (V81349) 380-6290-000 R611 (EFF REV LTR M)		1
-	8 P334-0266-000	2	NUT,PLAIN,HEX, NP BRS, 1/4-32 (V77250) 334-0266-000 (AP)		1
	9 RCR20G103KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/2W (V81349) 745-1394-000 R636		1
R	10 1N191	2	SEMICONd DEVICE (V14936) 353-2023-000 CR612 (EFF TO CI 71305)		1
R	10 1N270	2	SEMICONd DEVICE (V08257) 353-2018-000 CR612 (EFF TO CI 71305)		1
	11 150D225X0020A2	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C610		1
	12 RCR07G103KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/4W (V81349) 745-0785-000 R630		1
R	13 1N191	2	SEMICONd DEVICE (V14936) 353-2023-000 CR611 (EFF TO CI 71305)		1
R	13 1N270	2	SEMICONd DEVICE (V08257) 353-2018-000 CR611 (EFF CI 71305)		1
R	14 RCR20G103KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/2W (V81349) 745-1394-000 R602		1
	15 RCR20G822KS	2	RESISTOR,FXD, CMPSN, 8.2K, 10%, 1/2W (V81349) 745-1391-000 R603		1
R	16 1N191	2	SEMICONd DEVICE (V14936) 353-2023-000 CR603 (EFF TO CI 71305)		1
R	16 1N3064	2	SEMICONd DEVICE (V03508) 353-3404-000 CR603 (EFF CI 71305)		1
	17 RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R605		1
	18 1N816	2	SEMICONd DEVICE (V03877) 353-2564-000 CR618		1
	19 MPT111-5	2	TRANSFORMER,PLS (V97722) 674-3030-000 T601		1
R	20 1N191	2	SEMICONd DEVICE (V14936) 353-2023-000 CR601 (EFF TO CI 71305)		1
R	20 1N3064	2	SEMICONd DEVICE (V03508) 353-3404-000 CR601 (EFF CI 71305)		1
R	21 1N191	2	SEMICONd DEVICE (V14936) 353-2023-000 CR620 (EFF TO CI 71305)		1
R	21 1N3064	2	SEMICONd DEVICE (V03508) 353-3404-000 CR620 (EFF CI 71305)		1
	22 RCR20G223KS	2	RESISTOR,FXD, CMPSN, 22K, 10%, 1/2W (V81349) 745-1408-000 R606		1
R	23 1N191	2	SEMICONd DEVICE (V14936) 353-2023-000 CR604 (EFF TO CI 71305)		1
R	23 1N3064	2	SEMICONd DEVICE (V03508) 353-3404-000 CR604 (EFF CI 71305)		1

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Section 6
Parts list

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
*12	24	RCR20G101KS	2 RESISTOR,FXD, CMPSN, 100 OHMS, 10%, 1/2W (V81349) 745-1310-000 R609		1
	25	RCR20G104KS	2 RESISTOR,FXD, CMPSN, 0.10MEGO, 10%, 1/2W (V81349) 745-1436-000 R616		1
	26	150D225X0020A2	2 CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C606		1
R	27	1N191	2 SEMICOND DEVICE (V14936) 353-2023-000 CR605 (EFF TO CI 71305)		1
R	27	1N270	2 SEMICOND DEVICE (V08257) 353-2018-000 CR605 (EFF CI 71305)		1
	28	150D225X0020A2	2 CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C603		1
R	29	1N191	2 SEMICOND DEVICE (V14936) 353-2023-000 CR606 (EFF TO CI 71305)		1
R	29	1N270	2 SEMICOND DEVICE (V08257) 353-2018-000 CR606 (EFF CI 71305)		1
	30	RCR20G471KS	2 RESISTOR,FXD, CMPSN, 470 OHMS, 10%, 1/2W (V81349) 745-1338-000 R613		1
R	31	1N191	2 SEMICOND DEVICE (V14936) 353-2023-000 CR608 (EFF TO CI 71305)		1
R	31	1N270	2 SEMICOND DEVICE (V08257) 353-2018-000 CR608 (EFF CI 71305)		1
	32	DM0073	2 COIL,RF, 500UH (V99800) 240-0073-000 L602		1
	33	RCR20G181KS	2 RESISTOR,FXD, CMPSN, 180 OHMS, 10%, 1/2W (V81349) 745-1321-000 R621		1
	34	RCR20G222KS	2 RESISTOR,FXD, CMPSN, 2.2K, 10%, 1/2W (V81349) 745-1366-000 R612		1
	35	RCR20G153KS	2 RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R622		1
	36	CL20BJ4R5TPE	2 CAPACITOR,FXD, ELCTLT, 4.5UF, M15*P50%, 50V (V81349) 184-7037-000 C607		1
	37	EP6287	2 TRANSFORMER,PLS (V97722) 674-3062-000 T602		1
	38	1N3287	2 SEMICOND DEVICE (V03877) 353-2605-000 CR607		1
	39	RCR20G333KS	2 RESISTOR,FXD, CMPSN, 33K, 10%, 1/2W (V81349) 745-1415-000 R627		1
	40	150D225X0020A2	2 CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C632		1
	41	RCR20G562KS	2 RESISTOR,FXD, CMPSN, 5.6K, 10%, 1/2W (V81349) 745-1384-000 R624		1
	42	RN70D2152F	2 RESISTOR,FXD, FILM, 21.5K, 1%, 3/4W (V81349) 705-7660-000 R625		1
R	43	1N191	2 SEMICOND DEVICE (V14936) 353-2023-000 CR617 (EFF TO CI 71305)		1
R	43	1N270	2 SEMICOND DEVICE (V08257) 353-2018-000 CR617 (EFF CI 71305)		1
	44	RCR20G102KS	2 RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R623		1
	45	1N3287	2 SEMICOND DEVICE (V03877) 353-2605-000 CR609		1
	46	4422-11-117	2 COIL,RF, 39UH (V82142) 240-0171-000 L610		1
	47	4422-11-117	2 COIL,RF, 39UH (V82142) 240-0171-000 L609		1
	48	4422-11-117	2 COIL,RF, 39UH (V82142) 240-0171-000 L608		1
	49	4422-11-117	2 COIL,RF, 39UH (V82142) 240-0171-000 L607		1
	50	4422-11-117	2 COIL,RF, 39UH (V82142) 240-0171-000 L606		1
	51	4422-11-117	2 COIL,RF, 39UH (V82142) 240-0171-000 L605		1
	52	4422-11-117	2 COIL,RF, 39UH (V82142) 240-0171-000 L604		1
	53	4422-11-117	2 COIL,RF, 39UH (V82142) 240-0171-000 L603		1
	54	RCR20G100KS	2 RESISTOR,FXD, CMPSN, 10 OHMS, 10%, 1/2W (V81349) 745-1268-000 R640		1
R	55	1N3287	2 SEMICOND DEVICE (V03877) 353-2605-000 CR616		1
R	56	1N191	2 SEMICOND DEVICE (V14936) 353-2023-000 CR610 (EFF TO CI 71305)		1
R	56	1N270	2 SEMICOND DEVICE (V08257) 353-2018-000 CR610 (EFF CI 71305)		1

GROUP ASSEMBLY PARTS LIST

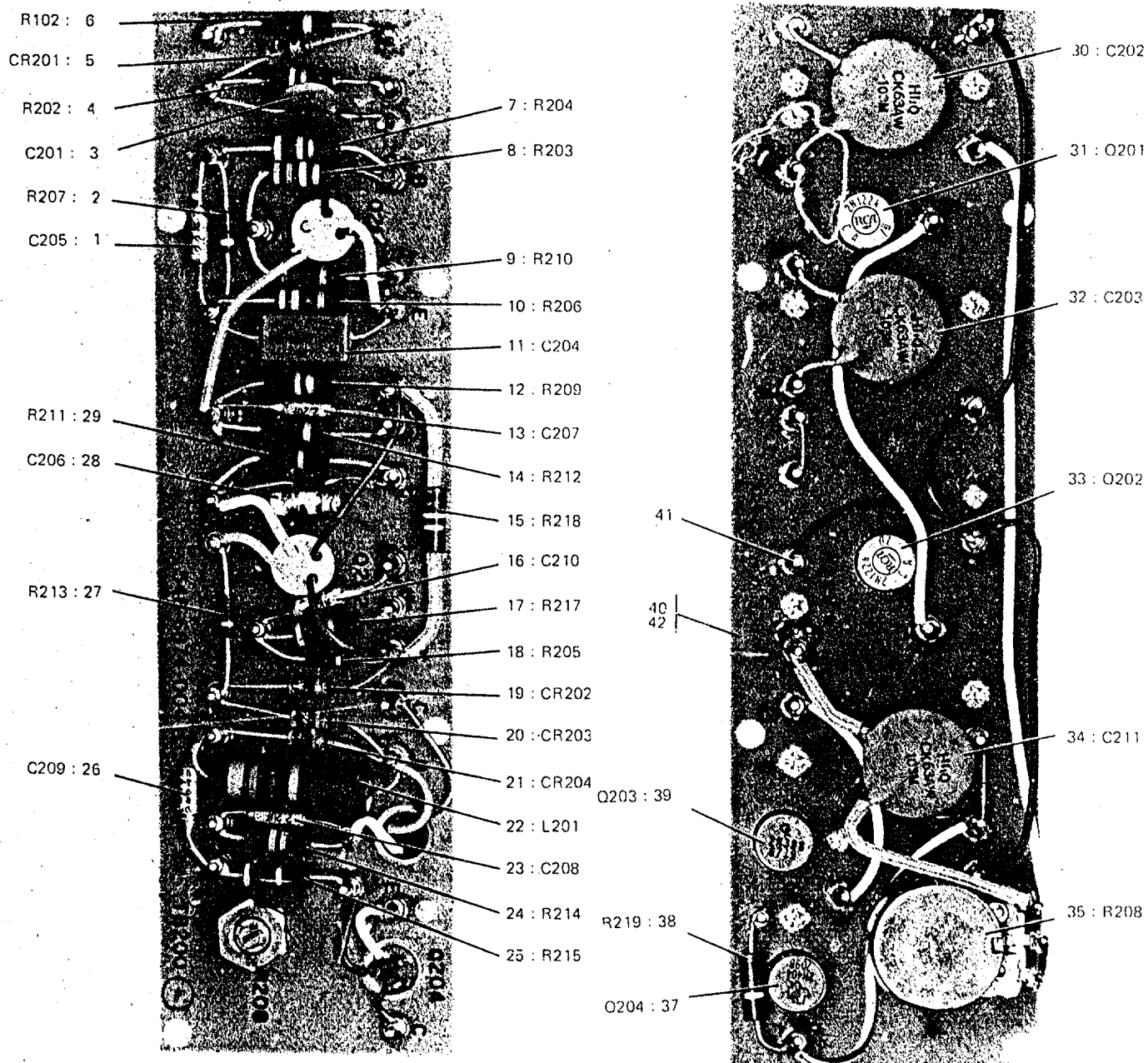
FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-12	57 RCR07G472KS	2	RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/4W (V81349) 745-0773-000 R628		1
	58 EP6287	2	TRANSFORMER,PLS (V97722) 674-3062-000 T603		1
	59 RCR20G682KS	2	RESISTOR,FXD, CMPSN, 6.8K, 10%, 1/2W (V81349) 745-1387-000 R629		1
	60 RCR07G222KS	2	RESISTOR,FXD, CMPSN, 2.2K, 10%, 1/4W (V81349) 745-0761-000 R699		1
	61 RCR20G330KS	2	RESISTOR,FXD, CMPSN, 33 OHMS, 10%, 1/2W (V81349) 745-1289-000 R638		1
	62 RCR20G102KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R604		1
	63 2N388	2	TRANSISTOR (V01295) 352-0241-000 Q601		1
	64 RCR20G102KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R601		1
	65 RCR20G471KS	2	RESISTOR,FXD, CMPSN, 470 OHMS, 10%, 1/2W (V81349) 745-1338-000 R610		1
	66 RCR20G123KS	2	RESISTOR,FXD, CMPSN, 12K, 10%, 1/2W (V81349) 745-1398-000 R620		1
	67 150D225X0020A2	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C601		1
R	67A 1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR602 (EFF TO CI 71305)		1
R	67A 1N3064	2	SEMICONV DEVICE (V03508) 353-3404-000 CR602 (EFF CI 71305)		1
	68 RCR20G103KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/2W (V81349) 745-1394-000 R635		1
	69 150D225X0020A2	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C605		1
R	69A 1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR619 (EFF TO CI 71305)		1
R	69A 1N3064	2	SEMICONV DEVICE (V03508) 353-3404-000 CR619 (EFF CI 71305)		1
	70 2N404	2	TRANSISTOR (V96214) 352-0158-000 Q608		1
	71 RCR07G471KS	2	RESISTOR,FXD, CMPSN, 470 OHMS, 10%, 1/4W (V81349) 745-0737-000 R642		1
	72 2N404	2	TRANSISTOR (V96214) 352-0158-000 Q610		1
	73 RCR20G682KS	2	RESISTOR,FXD, CMPSN, 6.8K, 10%, 1/2W (V81349) 745-1387-000 R637		1
	74 2N404A	2	TRANSISTOR (V01295) 352-0378-000 Q611		1
	75 RCR20G471KS	2	RESISTOR,FXD, CMPSN, 470 OHMS, 10%, 1/2W (V81349) 745-1338-000 R644		1
	76 150D225X0020A2	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C631		1
	77 2N388	2	TRANSISTOR (V01295) 352-0241-000 Q612		1
	78 RCR20G181KS	2	RESISTOR,FXD, CMPSN, 180 OHMS, 10%, 1/2W (V81349) 745-1321-000 R639		1
	79 RCR20G183KS	2	RESISTOR,FXD, CMPSN, 18K, 10%, 1/2W (V81349) 745-1405-000 R634		1
	80 2N404	2	TRANSISTOR (V96214) 352-0158-000 Q609		1
	81 DR3E511G0	2	CAPACITOR,FXD, MICA DIEL, 510PF, 2%, 500V (V00853) 912-0544-000 C614		1
	82 DR3E511G0	2	CAPACITOR,FXD, MICA DIEL, 510PF, 2%, 500V (V00853) 912-0544-000 C613		1
	83 DR3E511G0	2	CAPACITOR,FXD, MICA DIEL, 510PF, 2%, 500V (V00853) 912-0544-000 C615		1
	84 DR3E511G0	2	CAPACITOR,FXD, MICA DIEL, 510PF, 2%, 500V (V00853) 912-0544-000 C616		1
	85 DR3E511G0	2	CAPACITOR,FXD, MICA DIEL, 510PF, 2%, 500V (V00853) 912-0544-000 C618		1
	86 DR3E511G0	2	CAPACITOR,FXD, MICA DIEL, 510PF, 2%, 500V (V00853) 912-0544-000 C617		1
	87 DR3E511G0	2	CAPACITOR,FXD, MICA DIEL, 510PF, 2%, 500V (V00853) 912-0544-000 C619		1

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GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
8-12 88	DR3E511G0	2	CAPACITOR,FXD, MICA DIEL, 510PF, 2%, 500V (V00853) 912-0544-000 C620		1
89	DR3E511G0	2	CAPACITOR,FXD, MICA DIEL, 510PF, 2%, 500V (V00853) 912-0544-000 C622		1
90	DR3E511G0	2	CAPACITOR,FXD, MICA DIEL, 510PF, 2%, 500V (V00853) 912-0544-000 C621		1
91	DR3E511G0	2	CAPACITOR,FXD, MICA DIEL, 510PF, 2%, 500V (V00853) 912-0544-000 C623		1
92	DR3E511G0	2	CAPACITOR,FXD, MICA DIEL, 510PF, 2%, 500V (V00853) 912-0544-000 C624		1
93	DR3E511G0	2	CAPACITOR,FXD, MICA DIEL, 510PF, 2%, 500V (V00853) 912-0544-000 C626		1
94	DR3E511G0	2	CAPACITOR,FXD, MICA DIEL, 510PF, 2%, 500V (V00853) 912-0544-000 C625		1
95	DR3E511G0	2	CAPACITOR,FXD, MICA DIEL, 510PF, 2%, 500V (V00853) 912-0544-000 C627		1
96	DR3E511G0	2	CAPACITOR,FXD, MICA DIEL, 510PF, 2%, 500V (V00853) 912-0544-000 C628		1
97	RCR07G561KS	2	RESISTOR,FXD, CMPSN, 560 OHMS, 10%, 1/4W (V81349) 745-0740-000 R641		1
98	RCR20G121KS	2	RESISTOR,FXD, CMPSN, 120 OHMS, 10%, 1/2W (V81349) 745-1314-000 R618		1
99	2N404A	2	TRANSISTOR (V01295) 352-0378-000 Q606		1
100	CM07FD123J03	2	CAPACITOR,FXD, MICA DIEL, 12000PF, 5%, 500V (V81349) 912-2738-000 C608		1
101	CM05ED470J03	2	CAPACITOR,FXD, MICA DIEL, 47PF, 5%, 500V (V81349) 912-2792-000 C609		1
102	2N404	2	TRANSISTOR (V96214) 352-0158-000 Q607		1
103	CK60AW102M	2	CAPACITOR,FXD, CER DIEL, 1000PF, 20%, 1000V (V81349) 913-1186-000 C629		1
104	RCR20G562KS	2	RESISTOR,FXD, CMPSN, 5.6K, 10%, 1/2W (V81349) 745-1384-000 R626		1
105	2N388	2	TRANSISTOR (V01295) 352-0241-000 Q605		1
106	2N388	2	TRANSISTOR (V01295) 352-0241-000 Q604		1
107	RCR20G472KS	2	RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/2W (V81349) 745-1380-000 R615		1
108	RCR20G102KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R614		1
109	150D225X0020A2	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C604		1
110	240-0191-000	2	COIL,RF, 56UH (V82142) 240-0191-000 L601 (EFF TO REV LTR R)		1
110	MS75103-6	2	COIL,RF, 56UH (V96906) 240-1624-000 L601 (EFF REV LTR R)		1
111	2N1224	2	TRANSISTOR (V73445) 352-0165-000 Q603 (EFF TO REV LTR N)		1
111	2N3284	2	TRANSISTOR (V04713) 352-1024-010 Q603 (EFF REV LTR N TO REV LTR P)		1
111	2N1142	2	TRANSISTOR (V04713) 352-0162-000 Q603 (EFF REV LTR P)		1
112	RCR20G102KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R607		1
113	2N388	2	TRANSISTOR (V01295) 352-0241-000 Q602		1
114	RCR20G392KS	2	RESISTOR,FXD, CMPSN, 3.9K, 10%, 1/2W (V81349) 745-1377-000 R608		1
115	150D225X0020A2	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C602		1
116	548-6975-006	2	TERMINAL BOARD ASSY		1
117	548-6871-003	3	BRACKET, MOUNTING		1
118	R4012X3-16	3	RIVET,TUBULAR, AL, 1/8 DIA X 3/16 (V12014) 305-2031-000 (AP)		2
119	310-0131-000	3	WASHER,FLAT, BRS, 0.125 ID X 1/4 OD (V05411) 310-0131-000		2
120	1P4-26B	3	TERMINAL,STUD (V86577) 306-0973-000		16
121	3PP4-66B	3	TERMINAL,FEEDTH (V86577) 306-0954-000		113
122	548-6974-006	3	TERMINAL BOARD		1

GROUP ASSEMBLY PARTS LIST



Video Amplifier
Figure 6-13

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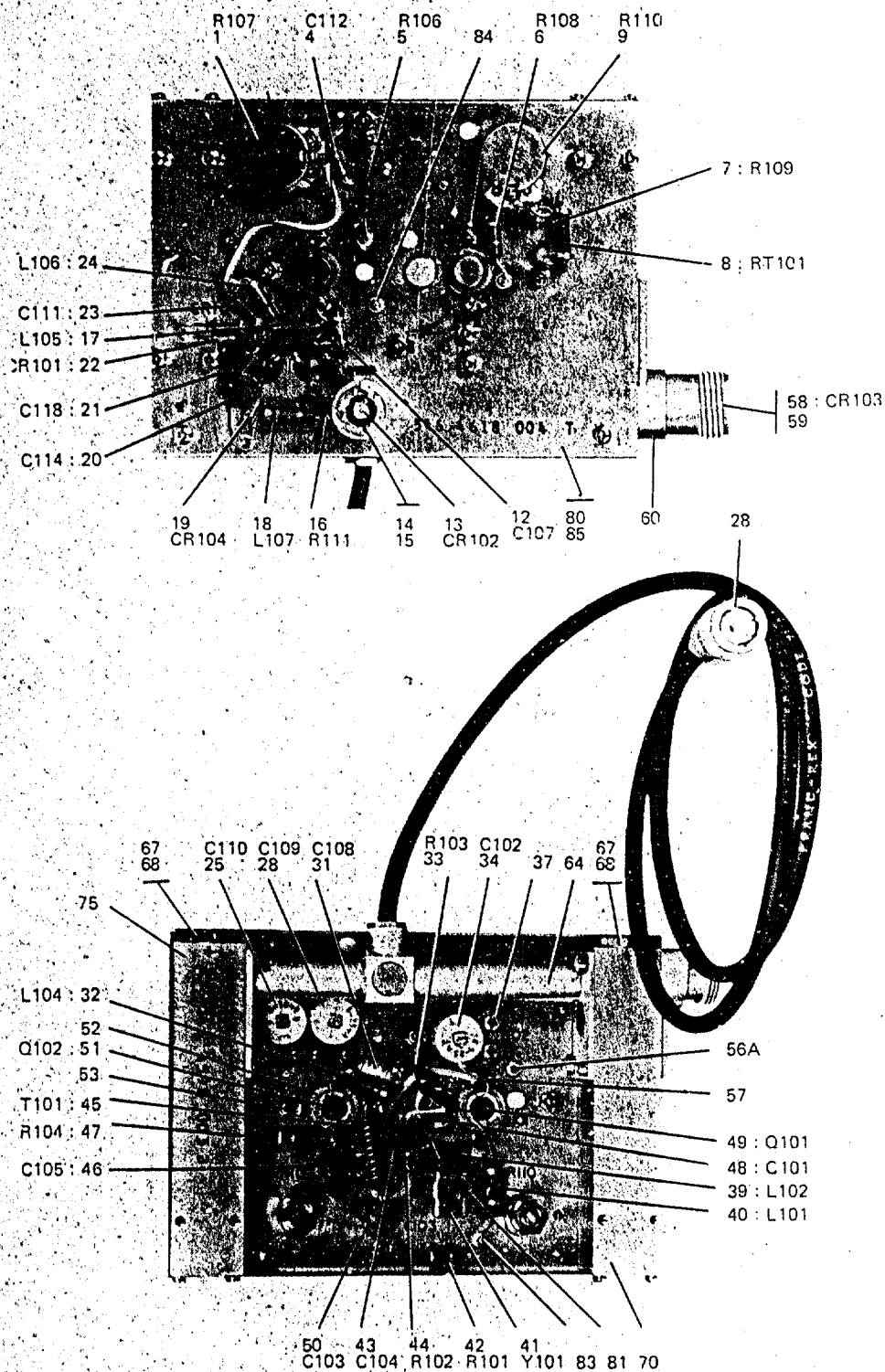
GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY	
6-13 -	548-6876-004		1 AMPLIFIER, VIDEO TB200 (SEE FIG 6-2-50 FOR NHA)		REF	
1	150D225X0020A2	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289)		1	
			184-7377-000 C205			
2	RCR07G272KS	2	RESISTOR,FXD, CMPSN, 2.7K, 10%, 1/4W (V81349)		1	
			745-0764-000 R207			
3	805-014X5V0103Z	2	CAPACITOR,FXD, CER DIEL, 0.01UF, M20%P80%, 100V (V72982) 913-3680-000 C201		1	
4	RCR20G564KS	2	RESISTOR,FXD, CMPSN, 0.56MEGO, 10%, 1/2W (V81349) 745-1468-000 R202		1	
5	1N67A	2	SEMICONO DEVICE (V03877) 353-0147-000 CR201		1	
6	RCR20G222KS	2	RESISTOR,FXD, CMPSN, 2.2K, 10%, 1/2W (V81349)		1	
			745-1366-000 R201			
7	RCR20G473KS	2	RESISTOR,FXD, CMPSN, 47K, 10%, 1/2W (V81349)		1	
			745-1422-000 R204			
8	RCR20G334KS	2	RESISTOR,FXD, CMPSN, 0.33MEGO, 10%, 1/2W (V81349) 745-1457-000 R203		1	
R	9	RCR20G682KS	2	RESISTOR,FXD, CMPSN, 6.8K, 10%, 1/2W (V81349)		1
			745-1387-000 R210 (EFF TO REV LTR F)			
R	9	RCR20G103KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/2W (V81349)		1
			745-1394-000 R210 (EFF REV LTR F)			
10	RCR20G331KS	2	RESISTOR,FXD, CMPSN, 330 OHMS, 10%, 1/2W (V81349) 745-1331-000 R206		1	
11	DR3E471G0	2	CAPACITOR,FXD, MICA DIEL, 470PF, 2%, 300V (V00853) 912-0541-000 C204		1	
12	RCR20G103KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/2W (V81349)		1	
			745-1394-000 R209			
13	150D225X0020A2	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289)		1	
			184-7377-000 C207			
14	RCR20G222KS	2	RESISTOR,FXD, CMPSN, 2.2K, 10%, 1/2W (V81349)		1	
			745-1366-000 R212			
15	RCR20G683KS	2	RESISTOR,FXD, CMPSN, 68K, 10%, 1/2W (V81349)		1	
			745-1429-000 R218			
16	150D225X0020A2	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289)		1	
			184-7377-000 C210			
17	RCR20G471KS	2	RESISTOR,FXD, CMPSN, 470 OHMS, 10%, 1/2W (V81349) 745-1338-000 R217		1	
R	18	RCR07G222KS	2	RESISTOR,FXD, CMPSN, 2.2K, 10%, 1/4W (V81349)		1
			745-0761-000 R205 (EFF TO CI 70913)			
R	18	RCR07G272KS	2	RESISTOR,FXD, CMPSN, 2.7K, 10%, 1/4W (V81349)		1
			745-0764-000 R205 (EFF CI 70913 TO REV LTR F)			
R	18	RCR20G472KS	2	RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/2W (V81349)		1
			745-1380-000 R205 (EFF REV LTR F)			
19	1N67A	2	SEMICONO DEVICE (V03877) 353-0147-000 CR202		1	
20	1N67A	2	SEMICONO DEVICE (V03877) 353-0147-000 CR203		1	
21	1N67A	2	SEMICONO DEVICE (V03877) 353-0147-000 CR204		1	
R	22	240-0192-000	2	COIL,RF, 82UH (V82142) 240-0192-000 L201 (EFF TO REV LTR G)		1
R	22	MS75103-8	2	COIL,RF, 82UH (V96906) 240-1625-000 L201 (EFF REV LTR G)		1
23	150D225X0020A2	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289)		1	
			184-7377-000 C208			
24	RCR20G153KS	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349)		1	
			745-1401-000 R214			
25	RCR20G472KS	2	RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/2W (V81349)		1	
			745-1380-000 R215			
26	150D225X0020A2	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289)		1	
			184-7377-000 C209			
27	RCR07G682KS	2	RESISTOR,FXD, CMPSN, 6.8K, 10%, 1/4W (V81349)		1	
			745-0779-000 R213			
28	BU20152NY5X	2	CAPACITOR,FXD, CER DIEL, 1000PF, GMV, 500V (V71590) 913-0146-000 C206		1	
29	RCR20G151KS	2	RESISTOR,FXD, CMPSN, 150 OHMS, 10%, 1/2W (V81349) 745-1317-000 R211		1	

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-13	30	CK63AW103M	2. CAPACITOR,FXD, CER DIEL, 10000PF, 20%, 500V (V81349) 913-1188-000 C202		1
R	31	2N1224	2. TRANSISTOR (V73445) 352-0165-000 Q201 (EFF TO REV LTR E)		1
R	31	2N527	2. TRANSISTOR (V24446) 352-0124-000 Q201 (EFF REV LTR E TO REV LTR F)		1
R	31	2N3468	2. TRANSISTOR (V04713) 352-0660-020 Q201 (EFF REV LTR F)		1
	32	CK63AW103M	2. CAPACITOR,FXD, CER DIEL, 10000PF, 20%, 500V (V81349) 913-1188-000 C203		1
R	33	2N1224	2. TRANSISTOR (V73445) 352-0165-000 Q202 (EFF TO REV LTR E)		1
R	33	2N527	2. TRANSISTOR (V24446) 352-0124-000 Q202 (EFF REV LTR E TO REV LTR F)		1
R	33	2N3468	2. TRANSISTOR (V04713) 352-0660-020 Q202 (EFF REV LTR F)		1
	34	CK63AW103M	2. CAPACITOR,FXD, CER DIEL, 10000PF, 20%, 500V (V81349) 913-1188-000 C211		1
R	35	RV5LAYSB103B	2. RESISTOR,VAR, CMPSN, 10K, 20%, 1/2W (V81349) 380-2907-000 R208 (EFF TO REV LTR D)		1
R	35	380-0629-000	2. RESISTOR,VAR, 25K, 20%, 2W (V35627) 380-0629-000 R208 (EFF REV LTR D)		1
	36	P334-0266-000	2. NUT,PLAIN,HEX, NP BRS, 1/4-32 (V77250) 334-0266-000 (AP)		1
	37	2N404	2. TRANSISTOR (V96214) 352-0158-000 Q204		1
	38	RCR20G151KS	2. RESISTOR,FXD, CMPSN, 150 OHMS, 10%, 1/2W (V81349) 745-1317-000 R219		1
	39	2N388	2. TRANSISTOR (V01295) 352-0241-000 Q203		1
	40	548-6875-004	2. AMPLIFIER BOARD, VIDEO		1
	41	3PP4-66B	3. TERMINAL,FEEDTH (V86577) 306-0954-000		32
	42	548-6874-004	3. AMPLIFIER BOARD		1

GROUP ASSEMBLY PARTS LIST



RF Generator Chassis
Figure 6-11

GROUP ASSEMBLY PARTS LIST

FIG- ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-14 -	546-4620-004	1	CHASSIS, RF GENERATOR TR100 (SEE FIG 6-2-70 FOR NHA)		REF
R 1	RV5LAYSBI02B	2	RESISTOR,VAR, CMPSN, 1K, 20%, 1/2W (V81349)		1
- 2	P334-0253-00	2	380-2904-000 R107 (EFF TO REV LTR AF)		1
- 3	1714-05	2	NUT,PLAIN,HEX, NP BRS, 1/4-32 (V77250)		1
4	150D225X0020A2	2	334-0253-000 (AP)		1
5	RCR20G101KS	2	WASHER,LOCK, SST, 0.267 ID X 0.408 OD (V78189)		1
6	RCR20G472KS	2	373-0090-000 (AP)		1
7	RCR20G561KS	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289)		1
8	0550F5-247	2	184-7377-000 C112		1
R 9	RV5LAYSBI03B	2	RESISTOR,FXD, CMPSN, 100 OHMS, 10%, 1/2W (V81349)		1
R 9	RV5LAYSBI03B	2	(V81349) 745-1310-000 R106		1
- 10	P334-0253-00	2	RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/2W (V81349)		1
- 11	1714-05	2	745-1380-000 R108		1
12	CC30UJ750G	2	RESISTOR,FXD, CMPSN, 560 OHMS, 10%, 1/2W (V81349)		1
13	1N21BR	2	(V81349) 745-1342-000 R109		1
14	542-8196-000	2	RESISTOR,THRM, 1K, 10%, 1W (V10646)		1
15	546-4561-002	2	714-1720-000 RT101		1
16	RCR20G271KS	2	RESISTOR,VAR, CMPSN, 10K, 20%, 1/2W (V81349)		1
17	LT4K027	2	380-2907-000 R110 (EFF TO REV LTR AF)		1
18	4412-13-36	2	RESISTOR,VAR, 10K, 20%, 1/2W (V81349)		1
19	FD100	2	380-6290-000 R110 (EFF REV LTR AF)		1
20	QC10-00UF5PCT	2	NUT,PLAIN,HEX, NP BRS, 1/4-32 (V77250)		1
21	CM05ED330J03	2	334-0253-000 (AP)		1
22	DAR2132	2	WASHER,LOCK, SST, 0.267 ID X 0.408 OD (V78189)		1
23	CC22PH120J	2	373-0090-000 (AP)		1
24	LT4K027	2	CAPACITOR,FXD, CER DIEL, 75PF, 2%, 500V (V81349)		1
25	557-018-8-50E	2	916-4975-000 C107		1
- 26	P313-0156-00	2	SEMICONV DEVICE (V93332) 353-2904-000 CR102		1
- 27	P347-0089-000	2	(V81349) 745-1328-000 R111		1
28	557-018-5-25A	2	COIL,RF, 0.15UH (V81349) 240-0066-000 L105		1
- 29	P313-0156-00	2	COIL,RF, 4.70UH (V82142) 240-0160-000 L107		1
- 30	P347-0089-000	2	SEMICONV DEVICE (V07263) 353-3024-000 CR104		1
31	CC20CH7ROC	2	CAPACITOR,FXD, CER DIEL, 10PF, 5%, 500V (V95121)		1
32	LT4K029	2	913-3000-000 C114		1
33	RCR20G102KS	2	CAPACITOR,FXD, MICA DIEL, 33PF, 5%, 500V (V81349)		1
34	557-018-5-25A	2	(V81349) 912-2780-000 C118		1
		2	SEMICONV DEVICE (V03508) 353-3024-010 CR101		1
		2	CAPACITOR,FXD, CER DIEL, 12PF, 5%, 500V (V81349)		1
		2	928-0283-000 C111		1
		2	COIL,RF, 0.15UH (V81349) 240-0066-000 L106		1
		2	CAPACITOR,VAR, CER DIEL, 8 TO 75PF, 350V (V72982) 917-1075-000 C110		1
		2	NUT,PLAIN,HEX, NP BRS, 4-40 (V77250)		2
		2	313-0156-000 (AP)		2
		2	SCREW,MACH, NP BRS, 4-40 X 3/16 (V77250)		2
		2	347-0089-000 (AP)		2
		2	CAPACITOR,VAR, CER DIEL, 5 TO 37.5PF, 350V (V72982) 917-1073-000 C109		1
		2	NUT,PLAIN,HEX, NP BRS, 4-40 (V77250)		2
		2	313-0156-000 (AP)		2
		2	SCREW,MACH, NP BRS, 4-40 X 3/16 (V77250)		2
		2	347-0089-000 (AP)		2
		2	CAPACITOR,FXD, CER DIEL, 7PF, 1/4PF, 500V (V81349) 916-0125-000 C108		1
		2	COIL,RF, 0.33UH (V81349) 240-0068-000 L104		1
		2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349)		1
		2	745-1352-000 R103		1
		2	CAPACITOR,VAR, CER DIEL, 5 TO 37.5PF, 350V (V72982) 917-1073-000 C102		1

Section 6
parts list

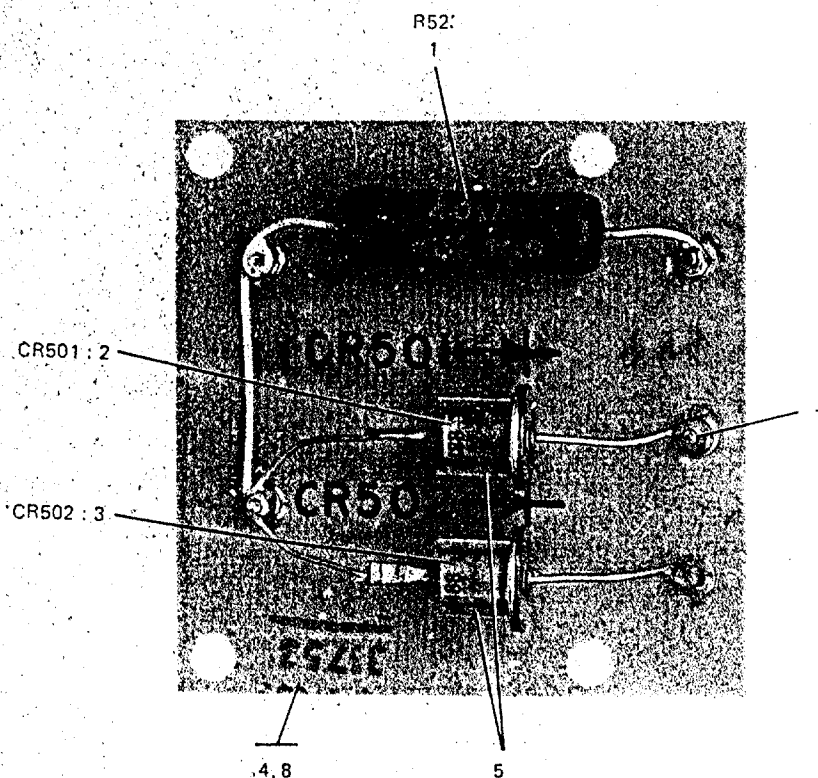
GROUP ASSEMBLY PARTS LIST

FIG- ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
14 - 35	P347-0089-000	2	SCREW, MACH, NP BRS, 4-40 X 3/16 (V77250)		2
- 36	310-0396-000	2	WASHER, LOCK, BRZ, 0.115 ID X 0.202 OD (V79807)		2
37	540-9037-003	2	POST		2
- 38	P347-0089-000	2	SCREW, MACH, NP BRS, 4-40 X 3/16 (V77250)		2
39	LT4K029	2	COIL, RF, 0.33UH (V81349) 240-0068-000 L102		1
40	4412-13-36	2	COIL, RF, 4.70UH (V82142) 240-0160-000 L101		1
41	290-7371-00M20	2	XTAL UNIT, QTZ, 103.0000MHZ (V90136) 290-7371-000 Y101		1
42	RCR20G471KS	2	RESISTOR, FXD, CMPSN, 470 OHMS, 10%, 1/2W (V81349) 745-1338-000 R101		1
43	HTS127-2000Z	2	CAPACITOR, FXD, CER DIEL, 2000PF, M20%P100%, 350V (V00656) 913-3338-000 C104		1
44	RCR20G562KS	2	RESISTOR, FXD, CMPSN, 5.6K, 10%, 1/2W (V81349) 745-1384-000 R102		1
45	546-4532-001	2	COIL, RF, T101		1
46	HTS127-2000Z	2	CAPACITOR, FXD, CER DIEL, 2000PF, M20%P100%, 350V (V00656) 913-3338-000 C105		1
47	RCR20G390KS	2	RESISTOR, FXD, CMPSN, 39 OHMS, 10%, 1/2W (V81349) 745-1293-000 R104		1
48	M38-500	2	CAPACITOR, FXD, MICA DIEL, 500PF, 20%, 500V (V53021) 912-0937-000 C101		1
49	2N1142	2	TRANSISTOR (V01295) 352-0162-010 Q101 (EFF TO REV LTR AF)		1
49	2N4080	2	TRANSISTOR (V34156) 352-0771-010 Q101 (EFF REV LTR AF)		1
50	913-1476-000	2	CAPACITOR, FXD, CER DIEL, 1000PF, 500V (V71590) 913-1476-000 C103		1
51	2N1142	2	TRANSISTOR (V01295) 352-0162-010 Q102		1
52	A51048	2	HOLDER, TSTR (V08289) 139-2504-000 (EFF TO CI 70011)		2
52	119-0506-000009	2	HOLDER, XSTR (V98291) 352-9508-000 (EFF CI 70011 TO CI 71113)		2
53	4040-2HT	2	TERMINAL, LUG (V77147) 304-0014-000		8
- 54	P313-0050-000	2	NUT, PLAIN, HEX, NP BRS, 2-56 (V77250) 313-0050-000 (AP)		5
- 55	310-0075-000	2	WASHER, LOCK, BRZ, 0.088 ID X 0.165 OD (V79807) 310-0075-000 (AP)		5
- 56	P343-0298-000	2	SCREW, MACH, NP BRS, 2-56 X 3/16 (V77250) 343-0298-000 (AP)		5
56A	AB396-1	2	TERMINAL, STUD, (V12615) 306-1281-000 (EFF REV LTR AF)		1
- 56B	310-0075-000	2	WASHER, LOCK, BRZ, 0.088 ID X 0.165 OD (V79807) 310-0075-000 (AP) (EFF REV LTR AF)		1
57	AA40WPP	2	TERMINAL, FEEDTH (V20093) 306-0070-000		4
58	1N21BR	2	SEMICONV DEVICE (V93332) 353-2904-000 CR103		1
59	542-8196-002	2	RING		1
60	546-4570-002	2	BLOCK, ADAPTER		1
- 61	P347-0089-000	2	SCREW, MACH, NP BRS, 4-40 X 3/16 (V77250) 347-0089-000 (AP)		2
- 62	P347-0094-000	2	SCREW, MACH, NP BRS, 4-40 X 1/2 (V77250) 347-0094-000 (AP)		2
- 63	310-0396-000	2	WASHER, LOCK, BRZ, 0.115 ID X 0.202 OD (V79807) 310-0396-000 (AP)		4
64	546-4598-003	2	CRYSTAL MIXER ASSY		1
- 65	P347-0089-000	2	SCREW, MACH, NP BRS, 4-40 X 3/16 (V77250) 347-0089-000 (AP)		8
- 66	310-0396-000	2	WASHER, LOCK, BRZ, 0.115 ID X 0.202 OD (V79807) 310-0396-000 (AP)		8
67	544-7696-002	2	ROD		2

GROUP ASSEMBLY PARTS LIST

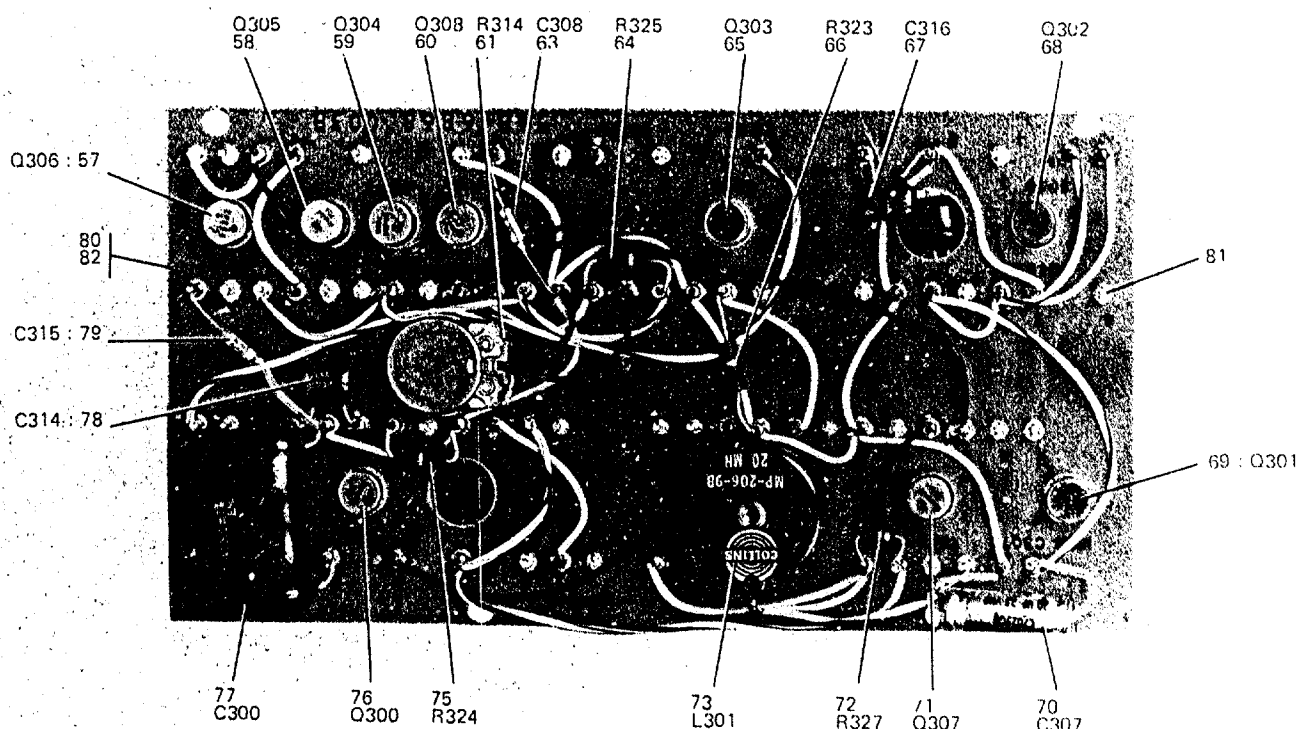
FIG- ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-14	68 544-8822-003	2	CONTACT		2
- 69	P334-0253-00	2	NUT, PLAIN, HEX, NP BRS, 1/4-32 (V77250)		2
			334-0253-000 (AP FOR 67-68)		
	70 546-4595-003	2	BLOCK, FIL		1
- 71	P347-0089-000	2	SCREW, MACH, NP BRS, 4-40 X 3/16 (V77250)		3
			347-0089-000 (AP)		
- 72	P343-0297-000	2	SCREW, MACH, NP BRS, 2-56 X 1/8 (V77250)		4
			343-0297-000 (AP)		
- 73	310-0396-000	2	WASHER, LOCK, BRZ, 0.115 ID X 0.202 OD (V79807)		3
			310-0396-000 (AP)		
- 74	310-0075-000	2	WASHER, LOCK, BRZ, 0.088 ID X 0.165 OD (V79807)		4
			310-0075-000 (AP)		
	75 546-4596-003	2	BLOCK, FIL		1
- 76	P347-0089-000	2	SCREW, MACH, NP BRS, 4-40 X 3/16 (V77250)		5
			347-0089-000 (AP)		
- 77	P343-0297-000	2	SCREW, MACH, NP BRS, 2-56 X 1/8 (V77250)		4
			343-0297-000 (AP)		
- 78	310-0396-000	2	WASHER, LOCK, BRZ, 0.115 ID X 0.202 OD (V79807)		5
			310-0396-000 (AP)		
- 79	310-0075-000	2	WASHER, LOCK, BRZ, 0.088 ID X 0.165 OD (V79807)		4
			310-0075-000 (AP)		
	80 546-4619-004	2	CHASSIS, RF GENERATOR		1
	81 542-8415-002	3	CLIP		1
- 82	SE23PL	3	EYELET, MTL, BRS, 0.105 DIA X 0.093 (V61957)		2
			307-1062-000 (AP)		
	83 SL173-197	3	TERMINAL, STDF (V12615) 306-1261-000		8
	84 SL174-198	3	TERMINAL, FEEDTH (V12615) 306-1271-000		2
	85 546-4618-004	3	CHASSIS		1

GROUP ASSEMBLY PARTS LIST



Rectifier Board Assembly
Figure 6-15

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
-15 -	546-4628-003	1	BOARD ASSY, RECTIFIER (SEE FIG 6-2-77 FOR NHA)		REF
1	CW5-500K40R00J	2	RESISTOR, F.D, WW 40 OHMS, 5%, 6.5W (V91637) 747-5432-000 R523		1
2	1N1488	2	SEMICONV DEVICE (V81483) 353-1657-000 CR501		1
3	1N1488	2	SEMICONV DEVICE (V81483) 353-1657-000 CR502		1
4	546-4627-003	2	BOARD ASSY		1
5	M24066-2-105	3	CLIP, SPR TNSN (V81349) 139-0762-000		2
- 6	R4008X1-8CHROMAT	3	RIVET, TUBULAR, AL, 0.089 DIA X 1/8 (V12014)		2
	EDP		305-0170-000 (AP)		
7	3PP4-668	3	TERMINAL, FEEDTH (V86577) 306-0954-000		5
8	546-4626-003	3	BOARD		1



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parts list

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
8-16 -	548-6896-006	1	MODULATOR SUBASSEMBLY TB300 (SEE FIG 6-2-83 FOR NHA)		REF
1	RN65D6812F	2	RESISTOR,FXD, FILM, 68.1K, 1%, 1/2W (V81349)		1
1	RN55D1243F	2	705-7184-000 R300 (EFF TO CI 71366)		
2	1690-103	2	RESISTOR,FXD, FILM, 124K, 1%, 1/8W (V81349)		1
3	68-1660-26	2	705-1471-170 R300 (EFF CI 71366 TO CI 76203)SB3		
4	MS51957-6	2	RESISTOR,VAR, 10K, 15%, 1/4W (V91637)		1
5	CK62AW472M	2	377-9092-000 R326		
6	RCR20G102KS	2	NUT,SLFLKG,HEX, AL, 2-56 (V72962) 333-0604-000 (AP)		2
7	RCR20G222KS	2	SCREW,MACH, SST, 2-56 X 7/16 (V96906)		2
8	204-0073-000	2	343-0127-000 (AP)		
9	MPT111-5	2	CAPACITOR,FXD, CER DIEL, 4700PF, 20%, 500V (V81349) 913-1187-000 C311		1
10	RCR20G682KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349)		1
11	150D225X0020A2	2	745-1352-000 R318		
12	RCR20G181KS	2	RESISTOR,FXD, CMPSN, 2.2K, 10%, 1/2W (V81349)		1
13	1N191	2	745-1366-000 R316		
13	1N270	2	COIL,RF,L305		1
14	1N191	2	TRANSFORMER,PLS (V97722) 674-3030-000 T300		1
14	1N270	2	RESISTOR,FXD, CMPSN, 6.8K, 10%, 1/2W (V81349)		1
15	RCR20G153KS	2	745-1387-000 R313		
16	240-0190-000	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289)		1
16	MS75103-5	2	184-7377-000 C310		
17	CM07FD682J03	2	RESISTOR,FXD, CMPSN, 180 OHMS, 10%, 1/2W (V81349) 745-1321-000 R315		1
18	CM05ED390J03	2	SEMICONV DEVICE (V14936) 353-2023-000 CR301 (EFF TO CI 71366)		1
18	CM05ED470J03	2	SEMICONV DEVICE (V08257) 353-2018-000 CR301 (EFF CI 71366)		1
18	CM05ED560J03	2	SEMICONV DEVICE (V14936) 353-2023-000 CR300 (EFF TO CI 71366)		1
18	CM05ED680J03	2	SEMICONV DEVICE (V08257) 353-2018-000 CR300 (EFF CI 71366)		1
18	CM05ED820J03	2	RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349)		1
18	CM05FD101J03	2	745-1401-000 R301		
18	CM05FD121J03	2	COIL,RF, 47UH (V82142) 240-0190-000 L300 (EFF TO REV LTR AD)		1
18	CM05FD151J03	2	COIL,RF, 47UH (V96906) 240-1623-000 L300 (EFF REV LTR AD)		1
18	CM05FD181J03	2	CAPACITOR,FXD, MICA DIEL, 6800PF, 5%, 500V (V81349) 912-2723-000 C301		1
18	CM05FD271J03	2	CAPACITOR,FXD, MICA DIEL, 39PF, 5%, 500V (V81349) 912-2786-000 C302		AR
		2	CAPACITOR,FXD, MICA DIEL, 47PF, 5%, 500V (V81349) 912-2792-000 C302		AR
		2	CAPACITOR,FXD, MICA DIEL, 56PF, 5%, 500V (V81349) 912-2798-000 C302		AR
		2	CAPACITOR,FXD, MICA DIEL, 68PF, 5%, 500V (V81349) 912-2804-000 C302		AR
		2	CAPACITOR,FXD, MICA DIEL, 82PF, 5%, 500V (V81349) 912-2810-000 C302		AR
		2	CAPACITOR,FXD, MICA DIEL, 100PF, 5%, 500V (V81349) 912-2816-000 C302		AR
		2	CAPACITOR,FXD, MICA DIEL, 120PF, 5%, 500V (V81349) 912-2822-000 C302		AR
		2	CAPACITOR,FXD, MICA DIEL, 150PF, 5%, 500V (V81349) 912-2828-000 C302		AR
		2	CAPACITOR,FXD, MICA DIEL, 180PF, 5%, 500V (V81349) 912-2834-000 C302		AR
		2	CAPACITOR,FXD, MICA DIEL, 270PF, 5%, 500V (V81349) 912-2846-000 C302		AR

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-16	18 CM05FD391J03	2	CAPACITOR,FXD, MICA DIEL, 390PF, 5%, 500V (V81349) 912-2858-000 C302		AR
	18 DM15F471J300WV4C R	2	CAPACITOR,FXD, MICA DIEL, 470PF, 5%, 500V (V72136) 912-2864-000 C302		AR
	18 CM06FD561J03	2	CAPACITOR,FXD, MICA DIEL, 560PF, 5%, 500V (V81349) 912-2983-000 C302		AR
	18 CM06FD821J03	2	CAPACITOR,FXD, MICA DIEL, 820PF, 5%, 500V (V81349) 912-2995-000 C302		AR
	18 CM06FD911J03	2	CAPACITOR,FXD, MICA DIEL, 910PF, 5%, 500V (V81349) 912-2998-000 C302		AR
	18 CM06FD102J03	2	CAPACITOR,FXD, MICA DIEL, 1000PF, 5%, 500V (V81349) 912-3001-000 C302		AR
	18 D205F681J0	2	CAPACITOR,FXD, MICA DIEL, 680PF, 5%, 500V (V00853) 912-3303-000 C302		AR
	19 CM06FD821J03	2	CAPACITOR,FXD, MICA DIEL, 820PF, 5%, 500V (V81349) 912-2995-000 C305 (EFF THRU MCN 127)SB3		1
	19 CM06FD152J03	2	CAPACITOR,FXD, MICA DIEL, 1500PF, 5%, 500V (V81349) 912-3013-000 C305 (EFF MCN 128 TO CI 76203)SB3		1
	19 CM06FD152J03	2	CAPACITOR,FXD, MICA DIEL, 1500PF, 5%, 500V (V81349) 912-3013-000 C305 (EFF CI 76203)SB3		1
	20 RCR20G104KS	2	RESISTOR,FXD, CMPSN, 0.10MEGO, 10%, 1/2W (V81349) 745-1436-000 R309		1
R	21 1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR305 (EFF TO CI 71366)		1
R	21 1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR305 (EFF CI 71366)		1
R	22 1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR306 (EFF TO CI 71366)		1
R	22 1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR306 (EFF CI 71366)		1
	23 RCR20G104KS	2	RESISTOR,FXD, CMPSN, 0.10MEGO, 10%, 1/2W (V81349) 745-1436-000 R302		1
R	24 1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR302 (EFF TO CI 71366)		1
R	24 1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR302 (EFF CI 71366)		1
	25 RCR20G102KS	2	RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R321		1
	26 150D225X002042	2	CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C313		1
	27 RCR20G103KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/2W (V81349) 745-1394-000 R322		1
	28 RCR20G103KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/2W (V81349) 745-1394-000 R303		1
	29 RCR20G104KS	2	RESISTOR,FXD, CMPSN, 0.10MEGO, 10%, 1/2W (V81349) 745-1436-000 R307		1
	30 CK63AW103M	2	CAPACITOR,FXD, CER DIEL, 10000PF, 20%, 500V (V81349) 913-1188-000 C303		1
	31 RCR20G103KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/2W (V81349) 745-1394-000 R304		1
	32 CK63AW103M	2	CAPACITOR,FXD, CER DIEL, 10000PF, 20%, 500V (V81349) 913-1188-000 C304		1
	33 RCR20G103KS	2	RESISTOR,FXD, CMPSN, 10K, 10%, 1/2W (V81349) 745-1394-000 R305		1
	34 RCR20G104KS	2	RESISTOR,FXD, CMPSN, 0.10MEGO, 10%, 1/2W (V81349) 745-1436-000 R306		1
R	35 1N191	2	SEMICONV DEVICE (V14936) 353-2023-000 CR303 (EFF TO CI 71366)		1
R	35 1N270	2	SEMICONV DEVICE (V08257) 353-2018-000 CR303 (EFF CI 71366)		1
	36 MPT111-5	2	TRANSFORMER,PLS (V97722) 674-3030-000 T301		1

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Section 6
Parts list

GROUP ASSEMBLY PARTS LIST

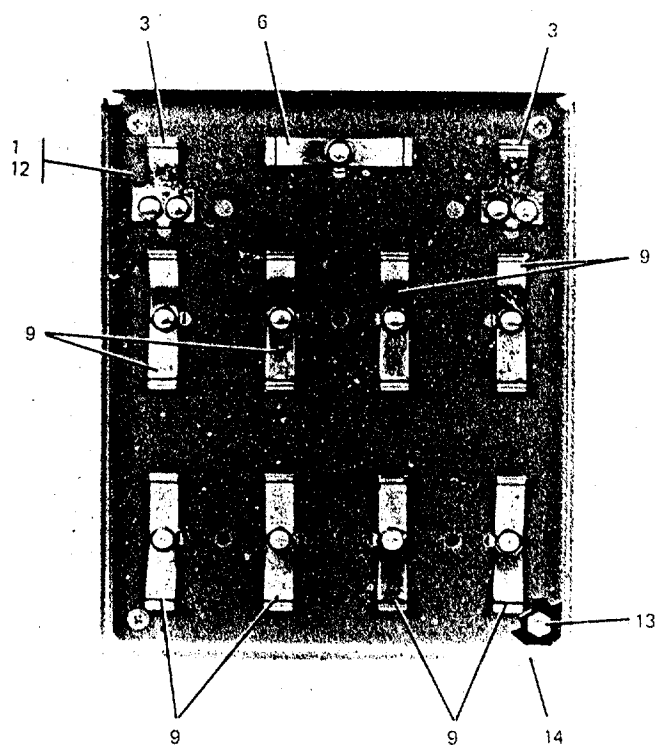
FIG - ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
-16	37	RCR07G102KS	2 RESISTOR,FXD, CMPSN, 1K, 10%, 1/4W (V81349) 745-0749-000 R328		1
R	38	1N191	2 SEMICOND DEVICE (V14936) 353-2023-000 CR304 (EFF TO CI 71366)		1
R	38	1N270	2 SEMICOND DEVICE (V08257) 353-2018-000 CR304 (EFF CI 71366)		1
	39	D205F102J0	2 CAPACITOR,FXD, MICA DIEL, 1000PF, 5%, 500V (V00853) 912-3315-000 C306		1
	40	RCR20G272KS	2 RESISTOR,FXD, CMPSN, 2.7K, 10%, 1/2W (V81349) 745-1370-000 R308		1
	41	RCR20G182KS	2 RESISTOR,FXD, CMPSN, 1.8K, 10%, 1/2W (V81349) 745-1363-000 R310		1
R	42	1N191	2 SEMICOND DEVICE (V14936) 353-2023-000 CR313 (EFF TO CI 71366)		1
R	42	1N270	2 SEMICOND DEVICE (V08257) 353-2018-000 CR313 (EFF CI 71366)		1
R	43	1N191	2 SEMICOND DEVICE (V14936) 353-2023-000 CR312 (EFF TO CI 71366)		1
R	43	1N270	2 SEMICOND DEVICE (V08257) 353-2018-000 CR312 (EFF CI 71366)		1
R	44	240-0191-000	2 COIL,RF, 56UH (V82142) 240-0191-000 L306 (EFF TO REV LTR AD)		1
R	44	MS75103-6	2 COIL,RF, 56UH (V96906) 240-1624-000 L306 (EFF REV LTR AD)		1
R	45	1N191	2 SEMICOND DEVICE (V14936) 353-2023-000 CR311 (EFF TO CI 71366)		1
R	45	1N270	2 SEMICOND DEVICE (V08257) 353-2018-000 CR311 (EFF CI 71366)		1
	46	1N751A	2 SEMICOND DEVICE (V12954) 353-2710-000 CR308		1
	47	1N751A	2 SEMICOND DEVICE (V12954) 353-2710-000 CR307		1
	48	RCR20G153KS	2 RESISTOR,FXD, CMPSN, 15K, 10%, 1/2W (V81349) 745-1401-000 R312		1
R	49	1N191	2 SEMICOND DEVICE (V14936) 353-2023-000 CR310 (EFF TO CI 71366)		1
R	49	1N270	2 SEMICOND DEVICE (V08257) 353-2018-000 CR310 (EFF CI 71366)		1
	50	RCR20G562KS	2 RESISTOR,FXD, CMPSN, 5.6K, 10%, 1/2W (V81349) 745-1384-000 R311		1
	51	150D225X0020A2	2 CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C309		1
	52	RCR20G102KS	2 RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R317		1
	53	RCR20G222KS	2 RESISTOR,FXD, CMPSN, 2.2K, 10%, 1/2W (V81349) 745-1366-000 R320		1
	54	1N3287	2 SEMICOND DEVICE (V03877) 353-2605-000 CR309		1
	55	RCR20G472KS	2 RESISTOR,FXD, CMPSN, 4.7K, 10%, 1/2W (V81349) 745-1380-000 R319		1
	56	DM15F471J300WV4C	2 CAPACITOR,FXD, MICA DIEL, 470PF, 5%, 500V (V72136) 912-2864-000 C312		1
R	57	2N388	2 TRANSISTOR (V01295) 352-0241-000 Q306		1
	58	2N404	2 TRANSISTOR (V96214) 352-0158-000 Q305		1
	59	2N404	2 TRANSISTOR (V96214) 352-0158-000 Q304		1
	60	2N388	2 TRANSISTOR (V01295) 352-0241-000 Q308		1
R	61	RV5LAYSBI03B	2 RESISTOR,VAR, CMPSN, 10K, 20%, 1/2W (V81349) 380-2907-000 R314 (EFF TO REV LTR AC)		1
R	61	RV5LAYSBI03B	2 RESISTOR,VAR, 10K, 20%, 1/2W (V81349) 380-6290-000 R314 (EFF REV LTR AC)		1
-	62	P334-0266-000	2 NUT,PLAIN,HEX, NP, BRS, 1/4-32 (V77250) 334-0266-000 (AP)		1
	63	150D225X0020A2	2 CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C308		1

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO.	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-16	64	RCR20G102KS	2 RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R325		1
	65	2N404	2 TRANSISTOR (V96214) 352-0158-000 Q303		1
	66	RCR20G102KS	2 RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R323		1
	67	CM05FD101J03	2 CAPACITOR,FXD, MICA DIEL, 100PF, 5%, 500V (V81349) 912-2816-000 C316		1
	68	2N404	2 TRANSISTOR (V96214) 352-0158-000 Q302		1
	69	2N404	2 TRANSISTOR (V96214) 352-0158-000 Q301		1
	70	CL22BG2COUNE	2 CAPACITOR,FXD, ELCTLT, 20UF, M15%P75%, 25V (V81349) 184-7033-000 Q307		1
	71	2N404A	2 TRANSISTOR (V01295) 352-0378-000 Q307		1
	72	RCR07G183KS	2 RESISTOR,FXD, CMPSN, 18K, 10%, 1/4W (V81349) 745-0794-000 R327		1
	73	12379B	2 COIL,RF, 20MH (V07388) 240-0265-000 L301		1
	74	MS51957-28	2 SCREW,MACH, SST, 6-32 X 3/8 (V96906) 343-0169-000 (AP)		1
	75	RCR20G102KS	2 RESISTOR,FXD, CMPSN, 1K, 10%, 1/2W (V81349) 745-1352-000 R324		1
	76	2N404A	2 TRANSISTOR (V01295) 352-0378-000 Q300		1
	77	DM42F403J03	2 CAPACITOR,FXD, MICA DIEL, 40000PF, 5%, 500V (V72136) 912-3142-000 C300		1
	78	DM15F471J300WV4C R	2 CAPACITOR,FXD, MICA DIEL, 470PF, 5%, 500V (V72136) 912-2864-000 C314		1
	79	150D225X0020A2	2 CAPACITOR,FXD, ELCTLT, 2.2UF, 20%, 20V (V56289) 184-7377-000 C315		1
	80	548-6869-003	2 TERMINAL BOARD		1
	81	3PP4-668	3 TERMINAL,FEEDTH (V86577) 306-0954-000		78
	82	548-6868-003	3 BOARD		1

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GROUP ASSEMBLY PARTS LIST

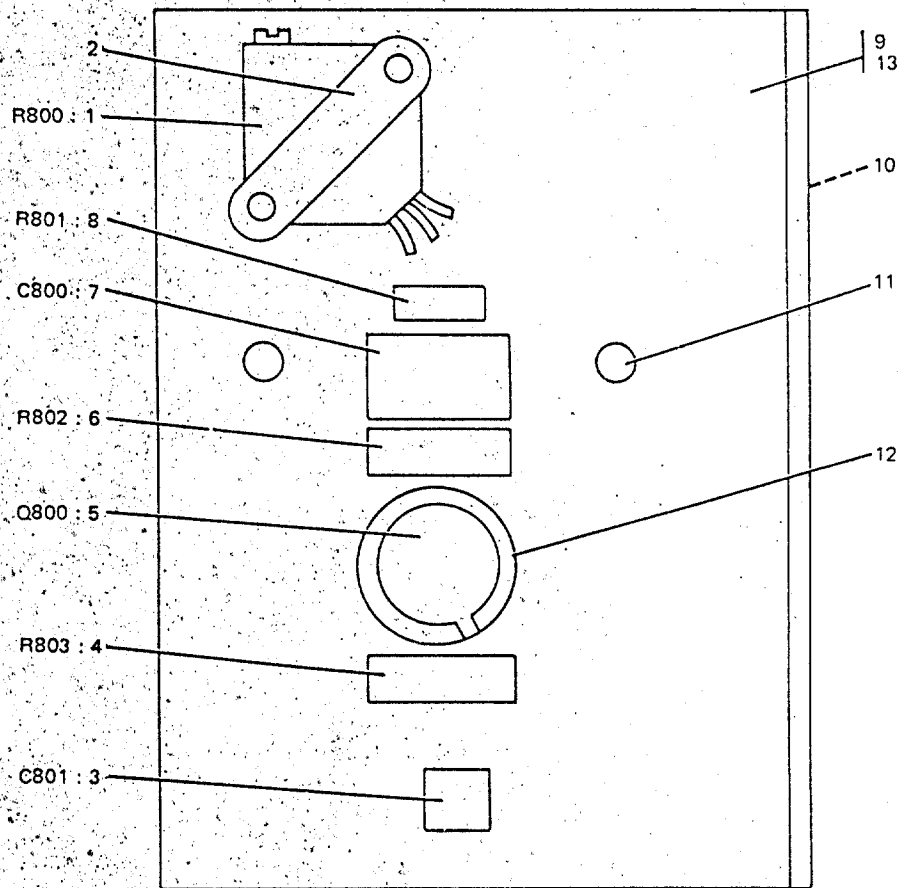


Battery Box Cover
Figure 6-17

GROUP ASSEMBLY PARTS LIST

FIG - ITEM	PART NO.	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-17 -	548-6801-000	1	COVER, BATTERY BOX (SEE FIG 6-2-102 FOR NHA)		REF
1	777-0596-001	2	BOX, BATTERY		1
- 2	MS51959-12	3	SCREW, MACH, SST, 4-40 X 3/16 (V96906)		4
3	546-4542-002	3	342-0043-000 (AP)		
- 4	R3472X1-4CADPL	3	SPRING, CONTACT		2
5	310-0054-000	3	RIVET, TUBULAR, CD PL BRS, 0.128 DIA X 1/4 (V12014) 305-0181-000 (AP)		4
- 6	546-4547-002	3	WASHER, FLAT, BRS, 0.125 ID X 0.312 OD (V79807)		8
- 7	R3472X1-4CADPL	3	310-0054-000 (AP)		
8	310-0054-000	3	SPRING, CONTACT		1
- 9	546-4541-002	3	RIVET, TUBULAR, CD PL BRS, 0.128 DIA X 1/4 (V12014) 305-0181-000 (AP)		1
- 10	R3472X1-4CADPL	3	WASHER, FLAT, BRS, 0.125 ID X 0.312 OD (V79807)		2
11	310-0054-000	3	310-0054-000 (AP)		
- 12	546-4592-003	3	SPRING, CONTACT		8
13	NCN4-1-2	3	RIVET, TUBULAR, CD PL BRS, 0.128 DIA X 1/4 (V12014) 305-0181-000 (AP)		8
- 14	548-6815-003	3	WASHER, FLAT, BRS, 0.125 ID X 0.312 OD (V79807)		16
		3	310-0054-000 (AP)		
		3	BOARD, CONTACT		1
		2	NUT, CAPTIVE, SST, 4-40 (V07886) 334-0443-000		4
		2	COVER, BOX		1

GROUP ASSEMBLY PARTS LIST



TP4-9566-019

Electronic Component Assembly
Figure 6-18

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GROUP ASSEMBLY PARTS LIST

FIG- ITEM	PART NO	INDENT	DESCRIPTION	USABLE ON CODE	UNITS PER ASSY
6-18	629-9573-001		ELECTRONIC COMPONENT ASSEMBLY TB800 (SEE FIG. 6-2-32A FOR NHA)		1
1	RJ22CL503	2	RESISTOR,VAR, 50K, 10%, 1/4W (V81349)		1
2	756-7045-002	2	380-3755-090 R800		1
2	MS51957-5	2	STRAP,MOUNTING		1
2	MS35338-134	2	SCREW,MACH, SST, 2-56 X 3/8 (V96906)		2
3	CK06BX104K	2	343-0126-000 (AP)		2
4	RCR20G101KS	2	WASHER,LOCK, SST, 0.088 ID X 0.172 OD (V96906)		1
5	2N489	2	310-0275-000 (AP)		1
6	RCR20G101KS	2	CAPACITOR,FXD, CER DIEL, 0.1UF, 10%, 100V (V81349) 913-5019-440 C801		1
7	LP88A1B473J	2	RESISTOR,FXD, CMPSN, 100 OHMS, 10%, 1/2W (V81349) 745-1310-000 R803		1
8	RC20BF152J	2	TRANSISTOR (V01295) 352-0171-000 Q800		1
9	629-9571-001	2	RESISTOR,FXD, CMPSN, 100 OHMS, 10%, 1/2W (V81349) 745-1310-000 R802		1
10	F12NCFMA2-62	2	CAPACITOR, FXD, PLSTC DIEL, 0.047UF, 5%, 100V (V01884) 933-1084-090 C800		1
11	SL304-301WHT	2	RESISTOR,FXD, CMPSN, 1.5K, 5%, 1/2W (V81349) 745-1092-000 R801		1
12	119-0506-000009	2	BOARD,PRST		1
13	629-9571-002	3	NUT,SLFLKG, CD PL STL, 6-32 (V72962)		2
		3	333-0842-000		8
		3	TERMINAL,FEEDTH (V12615) 306-1851-000		1
		3	HOLDER,XSTR (V98291) 352-9508-000		1
		3	BOARD,TERMINAL		1

Section 6
Parts list

6-1 NUMERICAL INDEX

PART NUMBER	FIG - ITEM	TTL REQ	PART NUMBER	FIG - ITEM	TTL REQ
PA40WPP	6-14-57	4		6-3-9	AR
PA396-1	6-14-56A	1		6-10-21	1
PA366DF832A	6-2-123	3		6-16-18	AR
PA366DF832A	6-2-121	4	CM06FD122J03	6-8-264	1
PA56504L2	6-6-30	5	CM06FD152J03	6-16-19	1
PA09263	6-4-41	1		6-16-19	1
PA1048	6-14-52	2	CM06FD242J03	6-3-6	1
PA20152NY5X	6-13-28	1	CM06FD272J03	6-3-6	1
PA20CH7ROC	6-14-31	1	CM06FD432J03	6-3-3	1
PA22PH120J	6-14-23	1	CM06FD472J03	5-3-3	1
PA30UJ750G	6-14-12	1	CM06FD561J03	6-3-1	AR
PA06BX104K	6-18-3	1		6-3-5	AR
PA60AW102M	6-12-103	1		6-3-9	AR
PA62AW472M	6-16-5	1	CM06FD821J03	6-16-18	AR
PA63AW103M	6-13-30	1		6-3-1	AR
	6-13-32	1		6-3-5	AR
	6-13-34	1		6-3-9	AR
	6-16-30	1		6-16-18	AR
	6-16-32	1		6-16-19	1
PA20BE600UPE	6-6-2	1	CM06FD911J03	6-3-1	AR
PA20BJ4RSTPE	6-12-36	1		6-3-5	AR
PA21BJ180TPE	6-6-8	1		6-3-9	AR
PA22BG200UNE	6-16-70	1		6-16-18	AR
PA05ED330J03	6-14-21	1	CM07FD123J03	6-12-100	1
PA05ED390J03	6-16-18	AR	CM07FD682J03	6-16-17	1
PA05ED470J03	6-12-101	1	CW5-500K40R00J	6-15-1	1
	6-16-18	AR	C2A	6-6-38	1
PA05ED560J03	6-16-18	AR	DAR2132	6-14-22	1
PA05ED680J03	6-16-18	AR	DM0073	6-8-122	1
PA05ED820J03	6-16-18	AR		6-8-200	1
PA05FD101J03	6-3-1	AR		6-8-205	1
	6-3-5	AR		6-8-265	1
	6-3-9	AR		6-12-12	1
	6-10-17	1	DM15F471J300WV4C	6-3-1	AR
	6-16-18	AR	R		
	6-16-67	1		6-3-5	AR
PA05FD121J03	6-3-1	AR		6-3-9	AR
	6-3-5	AR		6-11-48	1
	6-3-9	AR		6-16-18	AR
PA05FD151J03	6-16-18	AR		6-16-56	1
	6-3-1	AR		6-16-78	1
	6-3-5	AR	DM42F403J03	6-16-77	1
	6-3-9	1	DR3E471G0	6-13-11	1
	6-10-1	1	DR3E511G0	6-12-81	1
PA05FD181J03	6-16-18	AR		6-12-82	1
	6-3-1	AR		6-12-83	1
	6-3-5	AR		6-12-84	1
	6-3-9	AR		6-12-85	1
	6-16-18	AR		6-12-86	1
PA05FD221J03	6-8-211	1		6-12-87	1
PA05FD271J03	6-10-28	1		6-12-88	1
	6-3-1	AR		6-12-89	1
	6-3-5	AR		6-12-90	1
	6-3-9	AR		6-12-91	1
	6-10-7	1		6-12-92	1
PA05FD391J03	6-16-18	AR		6-12-93	1
	6-3-1	AR		6-12-94	1
	6-3-5	AR		6-12-95	1
	6-3-9	AR		6-12-96	1
PA06FD102J03	6-16-18	AR	DR5E101G0	6-8-85	1
	6-3-1	AR		6-8-86	1
	6-3-5	AR		6-8-87	1
	6-3-8	1		6-8-88	1
				6-8-89	1

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PART NUMBER	FIG - ITEM	TTL REQ	PART NUMBER	FIG - ITEM	TTL REQ
DR5E101G0	6-8-90	1		6-2-52	2
	6-8-91	1		6-2-63	1
	6-8-92	1		6-2-68	1
DR5E470G0	6-8-84	1		6-2-72	6
	6-8-133	1		6-2-82	2
C205F102J0	6-16-39	1		6-2-85	4
D205F681J0	6-3-1	AR		6-4-10	1
	6-3-5	AR		6-4-33	2
	6-3-9	AR		6-6-15	4
	6-16-18	AR		6-7-4	3
EP6287	6-12-37	1	MS35338-136	6-2-35	6
	6-12-58	1		6-2-58	3
FD100	6-14-19	1		6-2-75	2
F02A250V1-2AS	6-1-13	1		6-2-95	6
	6-1-14	1		6-2-99	6
	6-1-15	1		6-4-38	1
F02A250V1-4AS	6-1-11	1		6-4-44	1
	6-1-12	1		6-4-47	2
F12NCFMA2-62	6-18-10	2		6-4-51	4
F2A	6-1-20	4		6-6-6	4
F22NCFMA2-40	6-6-45	10		6-6-27	2
HC204-2.00 CATCH	6-1-25	2	MS35649-224	6-4-22	2
HKPHJRZZ	6-4-72	1		6-7-16	2
	6-4-73	1	MS35649-244	6-2-8	6
	6-4-74	1		6-2-62	1
	6-4-75	1		6-4-32	2
	6-4-76	1		6-4-131	4
HP4N	6-2-3	1		6-5-5	1
HP7N	6-2-12	3	MS35649-264	6-2-57	3
	6-2-37	1		6-2-67	1
HTS127-2000Z	6-14-43	1		6-2-74	2
	6-14-46	1		6-4-46	2
HI267ASILICONE	6-4-135		MS51957-1	6-4-27	2
JS7	6-4-20	1	MS51957-12	6-2-41	1
KH4491	6-4-77	1		6-2-43	2
K101-11	6-5-3	1		6-2-51	2
LP88A1B473J	6-18-7	1		6-2-54	2
LT4K027	6-14-17	1		6-7-3	2
	6-14-24	1	MS51957-13	6-2-2	3
LT4K029	6-14-32	1		6-2-18	2
	6-14-39	1		6-2-21	8
MPT111-5	6-10-18	1		6-2-27	4
	6-12-19	1		6-2-30	4
	6-16-9	1		6-2-71	1
	6-16-36	1		6-2-78	4
MS20426AD3-3	6-2-111	16		6-2-81	2
	6-2-122	8		6-2-84	4
	6-2-124	6		6-2-87	4
	6-4-59	4		6-4-9	1
MS20426AD4-4	6-4-54	4		6-4-29	16
	6-4-68	5		6-5-6	1
MS20470AD4-4	6-4-66	4		6-6-37	10
	6-4-70	6	MS51957-14	6-2-46	2
MS20470AD4-5	6-1-26	4		6-2-64	1
MS21332-41	6-4-57	2		6-2-69	1
MS35333-104	6-4-114	1		6-4-34	2
	6-4-124	4		6-6-14	4
MS35338-134	6-1-6	4		6-7-2	1
	6-4-23	2		6-10-32	2
	6-18-2	2	MS51957-18	6-2-38	1
MS35338-135	6-2-9	6	MS51957-18B	6-4-132	4
	6-2-19	5	MS51957-19	6-2-49	2
	6-2-44	2	MS51957-2	6-6-42	2

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PART NUMBER	FIG - ITEM	TTL REQ	PART NUMBER	FIG - ITEM	TTL REQ
MS51957-20	6-2-14	3	P313-0156-00	6-14-26	2
MS51957-26	6-2-91	4		6-14-29	2
	6-2-94	6	P322-0149-000	6-4-94	6
	6-2-98	6	P330-3059-340	6-2-105	5
	6-4-13	1	P331-9C00-000	6-4-16	2
	6-4-50	4	P334-0253-00	6-14-2	1
	6-6-5	4		6-14-10	1
MS51957-27	6-1-23	4		6-14-69	2
	6-2-4	1	P334-0266-000	6-12-6	1
	6-2-34	6		6-12-8	1
	6-2-60	2		6-13-36	1
	6-2-76	2		6-16-62	1
	6-2-89	4	P342-0144-000	6-4-121	2
	6-6-28	2	P342-0151-000	6-7-9	2
MS51957-28	6-16-74	1	P342-0315-000	6-4-107	8
MS51957-29	6-2-32R	1	P343-0283-000	6-4-123	2
MS51957-3	6-1-5	4	P343-0285-000	6-4-113	1
	6-6-40	1	P343-0290-000	6-4-122	2
MS51957-31	6-2-23	4	P343-0297-000	6-14-72	4
MS51957-47	6-1-19	4		6-14-77	4
MS51957-5	6-18-2	2	P343-0298-000	6-14-56	5
MS51957-6	6-16-4	2	P343-0683-000	6-4-91	4
MS51957-7	6-4-25	2	P347-0001-000	6-7-18	2
MS51959-12	6-2-17	3	P347-0006-000	6-3-12	2
	6-2-80	2	P347-0016-000	6-6-23	2
	6-2-115	4	P347-0022-000	6-7-8	2
	6-17-2	4	P347-0089-000	6-14-27	2
MS51959-13	6-6-10	3		6-14-30	2
MS51959-19	6-2-10	6		6-14-35	2
MS51959-28	6-4-109	4		6-14-38	2
MS51959-29	6-2-11	3		6-14-61	2
MS51959-30	6-4-37	1		6-14-65	8
	6-4-40	1		6-14-71	3
	6-4-43	1		6-14-76	5
	6-4-48	2	P347-0094-000	6-14-62	2
MS75103-5	6-16-16	1	P348-0003-000	6-2-103	5
MS75103-6	6-8-227	1	QC10-00UF5PCT	6-14-20	1
	6-12-110	1	RCR07G102KS	6-10-2	1
	6-16-44	1		6-10-22	1
MS75103-8	6-13-22	1		6-16-37	1
MS9021-010	6-4-81	1	RCR07G103KS	6-8-95	1
MS90540-11	6-10-27	1		6-9-19	1
P24066-2-105	6-15-5	2		6-10-9	1
M38-500	6-14-48	1		6-10-11	1
P39012-16-0001	6-4-82	1		6-12-12	1
	6-4-86	1	RCR07G104KS	6-10-14	1
	6-5-2	1		6-10-20	1
NCN4-1-2	6-2-120	4		6-10-25	1
	6-4-60	16	RCR07G134JS	6-10-15	1
	6-17-13	4	RCR07G153KS	6-9-2	1
NCN4-2-2-1	6-6-46	4		6-9-4	1
NCN6-2-2-1	6-2-112	6		6-9-6	1
N9030-1-4	6-4-129	1		6-9-8	1
	6-4-138	1		6-9-10	1
	6-4-142	1		6-9-12	1
N9065-3-8	6-4-102	2		6-9-14	1
PD52419	6-3-2	1		6-9-16	1
	6-3-4	1		6-9-18	1
	6-3-7	1		6-10-34	1
P313-0045-000	6-6-26	2	RCR07G183KS	6-16-72	1
P313-0050-000	6-14-54	5	RCR07G222KS	6-11-27	1
P313-0064-000	6-7-39	1		6-12-60	1
P313-0132-000	6-3-11	2		6-13-18	1
	6-6-21	2			

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RCR07G272KS	6-13-2	1		6-16-29	1
	6-13-18	1		6-16-34	1
RCR07G332KS	6-10-3	1	RCR20G121JS	6-7-21	1
RCR07G471KS	6-10-5	1		6-7-22	1
	6-12-71	1	RCR20G121KS	6-12-98	1
RCR07G472KS	6-12-57	1	RCR20G123KS	6-12-66	1
RCR07G473KS	6-11-28	1	RCR20G150JS	6-7-20	1
RCR07G561KS	6-12-97	1	RCR20G151KS	6-13-29	1
RCR07G682KS	6-13-27	1		6-13-38	1
RCR20G100KS	6-12-54	1	RCR20G152KS	6-4-133	1
RCR20G101JS	6-7-26	1		6-11-16	1
RCR20G101KS	6-8-9	1	RCR20G153KS	6-8-18	1
	6-12-24	1		6-8-20	1
	6-14-5	1		6-8-23	1
	6-18-4	1		6-8-24	1
	6-18-6	1		6-8-34	1
RCR20G102KS	6-8-7	1		6-8-35	1
	6-8-98	1		6-8-38	1
	6-8-129	1		6-8-40	1
	6-8-204	1		6-8-42	1
	6-8-207	1		6-8-44	1
	6-8-261	1		6-8-46	1
	6-12-44	1		6-8-57	1
	6-12-62	1		6-8-59	1
	6-12-64	1		6-8-61	1
	6-12-108	1		6-8-158	1
	6-12-112	1		6-8-160	1
	6-14-33	1		6-8-177	1
	6-16-6	1		6-8-185	1
	6-16-25	1		6-8-189	1
	6-16-52	1		6-8-220	1
	6-16-64	1		6-8-222	1
	6-16-66	1		6-8-224	1
	6-16-75	1		6-8-254	1
RCR20G103KS	6-8-4	1		6-8-256	1
	6-8-8	1		6-8-258	1
	6-8-64	1		6-11-3	1
	6-8-103	1		6-11-10	1
	6-8-112	1		6-11-12	1
	6-8-214	1		6-11-17	1
	6-8-243	1		6-11-19	1
	6-8-250	1		6-11-21	1
	6-8-268	1		6-11-24	1
	6-8-270	1		6-11-43	1
	6-11-1	1		6-11-44	1
	6-11-31	1		6-12-17	1
	6-12-9	1		6-12-35	1
	6-12-14	1		6-13-24	1
	6-12-68	1		6-16-15	1
	6-13-9	1		6-16-48	1
	6-13-12	1	RCR20G181KS	6-2-32	1
	6-16-27	1		6-2-55	1
	6-16-28	1		6-12-33	1
	6-16-31	1		6-12-78	1
	6-16-33	1		6-16-12	1
RCR20G104KS	6-8-12	1	RCR20G182KS	6-16-41	1
	6-8-13	1	RCR20G183KS	6-8-101	1
	6-8-113	1		6-8-150	2
	6-8-121	1		6-8-163	1
	6-11-38	1		6-8-171	1
	6-12-25	1		6-12-79	1
	6-16-20	1	RCR20G201JS	6-7-29	1

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RCR20G222KS	6-8-246	1		6-7-33	1
	6-8-248	1		6-7-34	1
	6-12-34	1	RCR20G561KS	6-14-7	1
	6-13-6	1	RCR20G562KS	6-8-3	1
	6-13-14	1		6-8-94	1
	6-16-7	1		6-8-96	1
	6-16-53	1		6-8-242	1
RCR20G223KS	6-12-22	1		6-8-249	1
RCR20G271KS	6-14-16	1		6-12-41	1
RCR20G272KS	6-8-137	1		6-12-104	1
	6-8-141	1		6-14-44	1
	6-8-146	1		6-16-50	1
	6-8-148	1		6-13-4	1
	6-8-213	1	RCR20G564KS	6-7-27	1
	6-16-40	1	RCR20G620JS	6-7-28	1
RCR20G301JS	6-7-19	1		6-7-35	1
	6-7-36	1	RCR20G681JS	6-8-83	1
RCR20G330KS	6-12-61	1	RCR20G681KS	6-8-69	1
RCR20G331KS	6-13-10	1	RCR20G682KS	6-8-73	1
RCR20G332KS	6-8-127	1		6-12-59	1
RCR20G333KS	6-6-7	1		6-12-73	1
	6-8-11	1		6-13-9	1
	6-8-26	1		6-16-10	1
	6-8-31	1	RCR20G683KS	6-13-15	1
	6-11-42	1	RCR20G820JS	6-7-24	1
	6-12-39	1		6-7-25	1
RCR20G334KS	6-13-8	1	RCR20G822KS	6-12-15	1
RCR20G361JS	6-7-32	1	RCR32G510JS	6-4-117	1
RCR20G390KS	6-14-47	1		6-4-118	1
RCR20G392KS	6-8-176	1		6-4-116	1
	6-8-186	1	RCR32G822JS	6-18-8	1
	6-12-114	1	RC20BF152J	6-18-1	1
RCR20G471KS	6-8-99	1	RJ22CL503	6-8-244	1
	6-8-173	1	RL42S331J	6-16-1	1
	6-8-184	1	RN55D1243F	6-6-1	1
	6-8-194	1	RN65C9092F	6-8-169	1
	6-8-198	1	RN65D3161F	6-16-1	1
	6-12-30	1	RN65D6812F	6-8-241	1
	6-12-65	1	RN70D14R7F	6-12-42	1
	6-12-75	1	RN70D2152F	6-8-123	1
	6-13-17	1	RN70D2611F	6-8-230	1
	6-14-42	1		6-8-238	1
RCR20G472KS	6-8-5	1		6-8-263	1
	6-8-6	1	RN70D4640F	6-8-252	1
	6-8-124	1	RN70D7502F	6-8-145	1
	6-8-136	1		6-8-210	1
	6-8-147	1		6-11-30	1
	6-8-166	1		6-4-35	1
	6-8-201	1	RTMT16-6M	6-4-128	1
	6-8-234	1	RV4NAYS0103B	6-14-1	1
	6-11-2	1	RV5LAYS0102B	6-8-126	1
	6-11-25	1	RV5LAYS0103B	6-8-126	1
	6-11-26	1		6-8-216	1
	6-12-107	1		6-12-7	1
	6-13-18	1		6-12-7	1
	6-13-25	1		6-13-35	1
	6-14-6	1		6-14-9	1
	6-16-55	1		6-14-9	1
RCR20G473KS	6-8-260	1		6-16-61	1
	6-13-7	1		6-16-61	1
RCR20G510JS	6-7-23	1	RV5LAYS0253B	6-12-5	1

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	6-17-4	4		6-8-143	1
	6-17-7	1		6-8-149	1
	6-17-10	8		6-8-151	1
R4008X1-8CHROMAT	6-15-6	2		6-8-152	1
EDP				6-8-153	1
R4012X3-16	6-12-118	2		6-8-154	1
SE23PL	6-14-82	2		6-8-155	1
SL173-197	6-14-83	8		6-8-156	1
SL174-198	6-14-84	2		6-8-157	1
SL304-301WHT	6-6-44	10		6-8-159	1
	6-18-11	8		6-8-161	1
Z147-212-112B	6-1-27	1		6-8-162	1
O11-4023-000119	6-2-113	2		6-8-165	1
C1405	6-4-83	1		6-8-167	1
O15-2085-000	6-4-53	1		6-8-170	1
O25-0151-000	6-1-3	1		6-8-174	1
	6-1-3	1		6-8-175	1
O25-0158-000	6-1-2	1		6-8-178	1
	6-1-2	1		6-8-179	1
C550F5-247	6-14-8	1		6-8-180	1
O750	6-4-88	1		6-8-181	1
1N148B	6-15-2	1		6-8-182	1
	6-15-3	1		6-8-183	1
1N191	6-8-10	1		6-8-187	1
	6-8-14	1		6-8-188	1
	6-8-15	1		6-8-190	1
	6-8-16	1		6-8-191	1
	6-8-19	1		6-8-192	1
	6-8-21	1		6-8-195	1
	6-8-22	1		6-8-197	1
	6-8-25	1		6-8-199	1
	6-8-27	1		6-8-202	1
	6-8-28	1		6-9-1	1
	6-8-29	1		6-9-3	1
	6-8-30	1		6-9-5	1
	6-8-32	1		6-9-7	1
	6-8-33	1		6-9-9	1
	6-8-36	1		6-9-11	1
	6-8-37	1		6-9-13	1
	6-8-39	1		6-9-15	1
	6-8-41	1		6-9-17	1
	6-8-43	1		6-9-20	1
	6-8-45	1		6-9-21	1
	6-8-47	1		6-9-22	1
	6-8-48	1		6-9-23	1
	6-8-49	1		6-9-24	1
	6-8-50	1		6-9-25	1
	6-8-51	1		6-10-8	1
	6-8-52	1		6-10-12	1
	6-8-53	1		6-10-16	1
	6-8-54	1		6-10-19	1
	6-8-55	1		6-10-26	1
	6-8-56	1		6-10-33	1
	6-8-58	1		6-11-4	1
	6-8-60	1		6-11-5	1
	6-8-62	1		6-11-6	1
	6-8-63	1		6-11-7	1
	6-8-70	1		6-11-8	1
	6-8-71	1		6-11-9	1
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	6-11-20	1	6-8-56	1	
	6-11-22	1	6-8-58	1	
	6-11-22	1	6-8-60	1	
	6-11-29	1	6-8-62	1	
	6-11-32	1	6-8-63	1	
	6-11-33	1	6-8-70	1	
	6-11-34	1	6-8-71	1	
	6-12-3	1	6-8-72	1	
	6-12-10	1	6-8-138	1	
	6-12-13	1	6-8-139	1	
	6-12-16	1	6-8-142	1	
	6-12-20	1	6-8-143	1	
	6-12-21	1	6-8-149	1	
	6-12-23	1	6-8-151	1	
	6-12-27	1	6-8-152	1	
	6-12-29	1	6-8-153	1	
	6-12-31	1	6-8-154	1	
	6-12-43	1	6-8-155	1	
	6-12-56	1	6-8-156	1	
	6-12-67A	1	6-8-157	1	
	6-12-69A	1	6-8-159	1	
	6-16-13	1	6-8-161	1	
	6-16-14	1	6-8-162	1	
	6-16-21	1	6-8-165	1	
	6-16-22	1	6-8-167	1	
	6-16-24	1	6-8-170	1	
	6-16-35	1	6-8-174	1	
	6-16-38	1	6-8-175	1	
	6-16-42	1	6-8-178	1	
	6-16-43	1	6-8-179	1	
	6-16-45	1	6-8-180	1	
	6-16-49	1	6-8-181	1	
W21BR	6-14-13	1	6-8-182	1	
	6-14-58	1	6-8-183	1	
W251	6-12-4	1	6-8-187	1	
W270	6-8-10	1	6-8-188	1	
	6-8-14	1	6-8-190	1	
	6-8-15	1	6-8-191	1	
	6-8-16	1	6-8-192	1	
	6-8-19	1	6-8-195	1	
	6-8-21	1	6-8-197	1	
	6-8-22	1	6-8-199	1	
	6-8-25	1	6-8-202	1	
	6-8-27	1	6-10-8	1	
	6-8-28	1	6-10-12	1	
	6-8-29	1	6-10-19	1	
	6-8-30	1	6-10-33	1	
	6-8-32	1	6-11-4	1	
	6-8-33	1	6-11-5	1	
	6-8-36	1	6-11-6	1	
	6-8-37	1	6-11-7	1	
	6-8-39	1	6-11-8	1	
	6-8-41	1	6-11-9	1	
	6-8-43	1	6-11-11	1	
	6-8-45	1	6-11-13	1	
	6-8-47	1	6-11-14	1	
	6-8-48	1	6-11-15	1	
	6-8-49	1	6-11-18	1	
	6-8-50	1	6-11-20	1	
	6-8-51	1	6-11-22	1	
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	6-8-53	1			

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	6-11-33	1		6-8-67	1
	6-11-34	1		6-8-68	1
	6-12-2	1		6-8-97	1
	6-12-3	1		6-8-128	1
	6-12-10	1		6-8-130	1
	6-12-13	1		6-8-164	1
	6-12-27	1		6-8-168	1
	6-12-29	1		6-8-172	1
	6-12-31	1		6-8-196	1
	6-12-43	1		6-8-228	1
	6-12-56	1		6-8-239	1
	6-16-13	1		6-12-1	1
	6-16-14	1		6-12-11	1
	6-16-21	1		6-12-26	1
	6-16-22	1		6-12-28	1
	6-16-24	1		6-12-40	1
	6-16-35	1		6-12-67	1
	6-16-38	1		6-12-69	1
	6-16-42	1		6-12-76	1
	6-16-43	1		6-12-109	1
	6-16-45	1		6-12-115	1
	6-16-49	1		6-13-1	1
1N3064	6-12-16	1		6-13-13	1
	6-12-20	1		6-13-16	1
	6-12-21	1		6-13-23	1
	6-12-23	1		6-13-26	1
	6-12-67A	1		6-14-4	1
	6-12-69A	1		6-16-11	1
1N3287	6-12-38	1		6-16-26	1
	6-12-45	1		6-16-51	1
	6-12-55	1		6-16-63	1
	6-16-54	1		6-16-79	1
1N67A	6-13-5	1	150D226X0015B2	6-8-206	1
	6-13-19	1		6-8-209	1
	6-13-20	1	1571B	6-2-56	1
	6-13-21	1	15797ZPHOOK	6-4-65	2
1N751A	6-16-46	1	1690-103	6-16-2	1
	6-16-47	1	1714-05	6-14-3	1
1N816	6-8-140	1		6-14-11	1
	6-8-203	1	1720-02	6-7-40	1
	6-12-18	1	1722-01	6-4-136	1
1P4-26B	6-5-8	1	1813	6-4-1	1
	6-8-273	17	2N1039	6-8-208	1
	6-11-54	11		6-8-215	1
	6-12-120	16	2N1142	6-8-125	1
100B3000C75	6-4-85	1		6-8-217	1
101C1100A	6-1-8	1		6-8-231	1
	6-1-9	1		6-8-235	1
11SM3T	6-4-21	1		6-12-111	1
116008EE01D304	6-6-31	1		6-14-49	1
	6-6-32	1		6-14-51	1
	6-6-33	1	2N1224	6-8-125	1
	6-6-34	1		6-8-217	1
	6-6-35	1		6-8-231	1
119-0506-000009	6-14-52	2		6-8-235	1
	6-18-12	1		6-12-111	1
12379R	6-16-73	1		6-13-31	1
139-0369-00	6-6-39	1		6-13-33	1
139-3198-000	6-1-10	1	2N3284	6-8-125	1
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N388	6-13-33	1	3PP4-66B	6-3-17	7
	6-8-135	1		6-8-272	236
	6-8-262	1		6-11-53	46
	6-12-63	1		6-12-121	113
	6-12-77	1		6-13-41	32
	6-12-105	1		6-15-7	5
	6-12-106	1		6-16-81	78
	6-12-113	1	3017	6-4-19	1
	6-13-39	1		6-4-31	2
	6-16-57	1		6-5-4	1
	6-16-60	1	305-2073-000	6-4-63	2
N404	6-8-100	1	31-648	6-7-11	1
	6-8-131	1	310-0044-000	6-4-24	2
	6-8-232	1	310-0045-000	6-2-15	6
	6-8-236	1		6-2-28	4
	6-8-247	1		6-2-31	4
	6-10-4	1		6-2-39	1
	6-10-10	1		6-4-30	16
	6-10-13	1		6-4-64	2
	6-12-70	1	310-0046-000	6-10-31	4
	6-12-72	1		6-2-5	1
	6-12-80	1		6-2-32C	1
	6-12-102	1		6-2-36	6
	6-13-37	1		6-2-59	6
	6-16-58	1		6-2-96	6
	6-16-59	1		6-2-106	5
	6-16-65	1		6-4-14	1
	6-16-68	1	310-0054-000	6-17-5	8
	6-16-69	1		6-17-8	2
N404A	6-8-82	1		6-17-11	16
	6-8-212	1	310-0071-000	6-1-22	4
	6-8-266	1	310-0075-000	6-14-55	5
	6-8-269	1		6-14-56B	1
	6-11-45	1		6-14-74	4
	6-11-46	1		6-14-79	4
	6-12-74	1	310-0131-000	6-12-119	2
	6-12-99	1	310-0396-000	6-14-36	2
	6-16-71	1		6-14-63	4
	6-16-76	1		6-14-66	8
N4080	6-14-49	1		6-14-73	3
N489	6-18-5	1		6-14-78	5
N525	6-8-134	1	310-6240-000	6-2-118	40
N527	6-13-31	1	310-6320-000	6-7-7	2
	6-13-33	1	310-6323-000	6-4-11	1
04-0073-000	6-16-8	1	310-6360-000	6-2-24	4
08374LK6	6-4-101	1	3200AIR	6-4-52	1
08564F	6-7-38	1	324-0318-000	6-4-36	1
104-04-01-2520N	6-2-66	1	328-0267-000	6-4-7	1
104-06-02-2520N	6-2-88	8		6-4-93	4
	6-4-36	1		6-4-99	4
24904LK6	6-4-100	1		6-4-127	2
24905MF5	6-4-141	1		6-4-140	2
26112K	6-6-19	1	33C41B3	6-8-93	1
40-0190-000	6-16-16	1		6-8-102	1
40-0191-000	6-8-227	1		6-8-104	1
	6-8-240	1		6-8-105	1
	6-8-240	1		6-8-106	1
	6-12-110	1		6-8-107	1
	6-16-44	1		6-8-108	1
40-0192-000	6-13-22	1		6-8-109	1
90-7371-00M20	6-14-41	1		6-8-110	1
9612	6-2-73	1		6-8-111	1

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33C4183	6-8-114	1	540-9037-003	6-2-53	2
	6-8-115	1		6-2-86	4
	6-8-116	1		6-14-37	2
	6-8-117	1	540-9041-003	6-2-20	8
	6-8-118	1		6-2-79	4
	6-8-119	1	540-9051-003	6-6-9	3
	6-8-120	1	540-9069-003	6-2-47	2
	6-8-132	1	540-9221-003	6-4-39	1
	6-8-225	1	540-9230-003	6-2-104	5
	6-8-226	1	541-5962-002	6-6-16	4
	6-8-233	1	541-5966-002	6-6-20	6
	6-8-237	1	541-5979-002	6-2-40	1
	6-8-251	1	541-5983-002	6-2-48	2
	6-8-253	1	541-5987-002	6-2-13	3
	6-9-32	1	541-6021-002	6-2-25	4
	6-9-33	1	542-8196-000	6-14-14	1
	6-9-34	1	542-8196-002	6-14-59	1
	6-11-40	1	542-8415-002	6-14-81	1
	6-11-41	1	543-0666-002	6-6-4	4
	6-11-50	1	544-0779-004	6-4-126	2
331-2020-000	6-4-15	2	544-7696-002	6-14-67	2
335-0021-000	6-7-13	2	544-8822-003	6-14-68	2
343-1270-000	6-4-102	2	545-7549-003	6-4-115	1
343-3000-000	6-5-4	1	546-4532-001	6-14-45	1
352-1024-000	6-8-231	1	546-4537-002	6-7-15	2
380-0629-000	6-13-35	1	546-4540-002	6-2-116	10
384-003	6-1-12	1	546-4541-002	6-17-9	8
4007-4HT	6-2-61	2	546-4542-002	6-17-3	2
	6-4-8	1	546-4547-002	6-17-6	1
	6-6-11	1	546-4561-002	6-14-15	1
4007-8HT	6-6-3	2	546-4570-002	6-14-60	1
	6-6-24	1	546-4574-002	6-4-111	1
4040-2HT	6-14-53	8	546-4575-002	6-4-112	3
41800-2AA60	6-2-103A	20	546-4576-002	6-4-42	1
4412-13-36	6-14-18	1	546-4581-003	6-7-5	1
	6-14-40	1	546-4582-003	6-7-1	1
4422-10-38	6-8-1	1	546-4584-003	6-7-41	1
	6-8-218	1	546-4591-003	6-2-119	1
	6-8-219	1	546-4591-004	6-2-114	1
4422-11-117	6-8-2	1	546-4592-003	6-17-12	1
	6-8-74	1	546-4595-003	6-14-70	1
	6-8-75	1	546-4596-003	6-14-75	1
	6-8-76	1	546-4597-003	6-2-65	1
	6-8-77	1	546-4598-003	6-14-64	1
	6-8-78	1	546-4599-003	6-4-120	1
	6-8-79	1	546-4600-003	6-4-125	1
	6-8-80	1	546-4601-003	6-4-119	1
	6-12-46	1	546-4605-004	6-7-37	1
	6-12-47	1	546-4609-004	6-1-24	1
	6-12-48	1	546-4618-004	6-14-85	1
	6-12-49	1	546-4619-004	6-14-80	1
	6-12-50	1	546-4620-004	6-2-70	1
	6-12-51	1		6-14-	REF
	6-12-52	1	546-4626-003	6-15-8	1
	6-12-53	1	546-4627-003	6-15-4	1
45900	6-4-87	1	546-4628-003	6-2-77	1
500-8921-001	6-2-90	4		6-15-	REF
503-3145-000	6-4-17	1	546-4631-003	6-4-104	1
52-23C	6-2-33	1	546-4632-003	6-4-105	1
522-4475-001	6-1	1	546-4650-000	6-4-110	1
540-1678-002	6-4-12	1	546-4656-000	6-4-137	1
540-9014-003	6-4-90	4		6-7-	REF
	6-6-41	2	546-4657-000	6-7-12	1
540-9033-003	6-2-45	2			

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346-4658-000	6-7-14	2	59-7082	6-4-130	1
346-4659-000	6-7-10	1	606-9393-001	6-1-20	4
347-1666-002	6-4-61	2	608-7444-001	6-4-139	1
347-1667-002	6-4-62	2	610D156G030KD5	6-11-47	1
347-1676-002	6-4-3	1	629-9571-001	6-18-9	1
347-1679-002	6-4-18	1	629-9571-002	6-18-13	1
347-1680-002	6-4-2	1	629-9573-001	6-2-32A	1
347-1681-002	6-4-5	1		6-18-	1
347-1683-002	6-4-6	1	68-1660-26	6-7-6	2
347-1685-003	6-4-4	1		6-16-3	2
348-6801-000	6-2-102	1	68-1660-40	6-10-30	2
	6-17-	REF	68NM82	6-1-21	4
348-6807-002	6-4-84	1	756-7045-002	6-18-2	1
348-6813-000	6-4-26	1	763-6059-001	6-2-22	1
348-6815-003	6-17-14	1		6-9-	REF
348-6828-005	6-4-71	1	763-6059-002	6-9-35	1
348-6829-005	6-4-49	1	763-6091-001	6-2-26	1
348-6842-003	6-3-15	1		6-10-	REF
348-6843-003	6-3-13	1	763-6091-002	6-10-35	1
348-6844-004	6-2-1	1	763-6333-001	6-4-89	1
	6-3-	REF	767-0658-000	6-1-4	1
348-6852-002	6-4-90	2	767-8041-001	6-4-106	1
348-6853-002	6-4-97	1	767-8042-001	6-1-1	1
348-6854-002	6-4-98	1		6-1-1	1
348-6855-002	6-4-96	1	7675K4	6-4-134	1
348-6858-003	6-4-92	2	768-1244-000	6-1-16	1
348-6863-003	6-2-97	1	768-1549-001	6-2-101	1
348-6864-003	6-4-95	1	768-5261-001	6-6-29	5
348-6865-004	6-4-143	1	768-5447-002	6-6-36	5
348-6868-003	6-16-82	1	768-7026-002	6-4-103	1
348-6869-003	6-16-80	1	768-7027-001	6-6-47	1
348-6871-003	6-12-117	1	768-7035-001	6-6-43	1
348-6874-004	6-13-42	1	768-7260-001	6-4-78	1
348-6875-004	6-13-40	1	768-7261-001	6-4-79	1
348-6876-004	6-2-50	1	768-7353-001	6-11-55	1
	6-13-	REF	768-7353-002	6-11-52	1
348-6894-005	6-2-125	1	768-7444-002	6-2-42	1
348-6895-005	6-2-107	1		6-12-	REF
348-6896-006	6-2-83	1	768-7490-001	6-2-7	1
	6-16-	REF		6-4-	REF
348-6899-003	6-5-1	1	768-7492-001	6-2-6	1
348-6908-005	6-5-9	1	768-7493-001	6-1-18	1
348-6909-005	6-5-7	1		6-2-	REF
348-6914-004	6-4-28	1	768-8659-000	6-2-29	1
	6-5-	REF	768-8659-001	6-11-	REF
348-6920-002	6-4-45	1	768-8661-001	6-4-108	1
348-6921-002	6-1-7	1		6-6-	REF
348-6957-002	6-2-93	1	777-0596-001	6-17-1	1
348-6958-002	6-2-92	1	797-1337-001	6-4-52	1
348-6960-002	6-4-67	1	797-1338-001	6-4-53	1
348-6974-006	6-12-122	1	80-2	6-4-69	1
348-6975-006	6-12-116	1	800P	6-6-25	1
348-6991-005	6-8-274	1	805-014X5V0103Z	6-8-221	1
348-6992-005	6-8-271	1		6-8-223	1
348-6993-003	6-2-100	1		6-8-255	1
348-6996-001	6-2-16	1		6-8-257	1
	6-8-	REF		6-8-259	1
348-6999-003	6-4-139	1		6-9-26	1
357-018-5-25A	6-14-28	1		6-9-27	1
	6-14-34	1		6-9-28	1
357-018-8-50E	6-3-10	1		6-9-29	1
	6-10-29	1		6-9-30	1
	6-14-25	1		6-9-31	1

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805-014X5V01032	6-10-23	1			
	6-10-24	1			
	6-11-35	1			
	6-11-36	1			
	6-11-37	1			
	6-11-39	1			
	6-11-49	1			
	6-11-51	1			
	6-13-3	1			
8942	6-6-22	2			
8947-151	6-4-80	1			
9-16INSCX9-16IN	6-1-17	1			
913-1476-000	6-14-50	1			
913-3303-000	6-8-264	1			
9622-13-00-0243	6-2-108	8			
9622-18-02-0243	6-4-55	2			
98-2CP	6-2-109	8			
	6-4-56	2			
9802-01-01-0543	6-2-110	8			
	6-4-58	2			

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REFERENCE DESIGNATION	FIG - ITEM	PART NUMBER	REFERENCE DESIGNATION	FIG - ITEM	PART NUMBER
TS01THRUBTS20	6-2-103A	41800-2AA60	CR406	6-8-43	1N270
R501	6-6-25	800P	CR407	6-8-49	1N191
R1	6-9-1	1N191	CR407	6-8-49	1N270
R1	6-10-33	1N191	CR408	6-8-41	1N191
R1	6-10-33	1N270	CR408	6-8-41	1N270
R10	6-9-25	1N191	CR409	6-8-48	1N191
R101	6-14-22	0AR2132	CR409	6-8-48	1N270
R102	6-14-13	1N216R	CR410	6-8-39	1N191
R103	6-14-58	1N216R	CR410	6-8-39	1N270
R104	6-14-19	FD100	CR411	6-8-30	1N191
R11	6-9-24	1N191	CR411	6-8-30	1N270
R12	6-9-23	1N191	CR412	6-8-36	1N191
R13	6-9-22	1N191	CR412	6-8-36	1N270
R14	6-7-21	1N191	CR413	6-8-32	1N191
R15	6-9-20	1N191	CR413	6-8-32	1N270
R2	6-9-3	1N191	CR414	6-8-33	1N191
R2	6-10-26	1N191	CR414	6-8-33	1N270
R201	6-13-5	1N67A	CR415	6-8-179	1N191
R202	6-13-19	1N67A	CR415	6-8-179	1N270
R203	6-13-20	1N67A	CR416	6-8-37	1N191
R204	6-13-21	1N67A	CR416	6-8-37	1N270
R3	6-10-8	1N191	CR417	6-8-28	1N191
R3	6-9-5	1N191	CR417	6-8-28	1N270
R3	6-10-8	1N270	CR418	6-8-182	1N191
R300	6-16-14	1N270	CR418	6-8-182	1N270
R300	6-16-14	1N191	CR419	6-8-60	1N191
R301	6-16-13	1N270	CR419	6-8-60	1N270
R301	6-16-13	1N191	CR420	6-8-55	1N191
R302	6-16-24	1N191	CR420	6-8-55	1N270
R302	6-16-24	1N270	CR421	6-8-62	1N191
R303	6-16-35	1N191	CR421	6-8-62	1N270
R303	6-16-35	1N270	CR422	6-8-54	1N191
R304	6-16-38	1N270	CR422	6-8-54	1N270
R304	6-16-38	1N191	CR423	6-8-58	1N191
R305	6-16-21	1N270	CR423	6-8-58	1N270
R305	6-16-21	1N191	CR424	6-8-53	1N270
R306	6-16-22	1N270	CR425	6-8-56	1N191
R306	6-16-22	1N191	CR425	6-8-56	1N270
R307	6-16-47	1N751A	CR425	6-8-63	1N191
R308	6-16-46	1N751A	CR425	6-8-63	1N270
R309	6-16-54	1N3287	CR426	6-8-52	1N191
R310	6-16-49	1N270	CR426	6-8-52	1N270
R310	6-16-49	1N191	CR427	6-8-53	1N191
R311	6-16-45	1N270	CR427	6-8-19	1N191
R311	6-16-45	1N191	CR427	6-8-19	1N270
R312	6-16-43	1N191	CR428	6-8-25	1N191
R312	6-16-43	1N270	CR428	6-8-25	1N270
R313	6-16-42	1N270	CR429	6-8-22	1N191
R313	6-16-42	1N191	CR429	6-8-22	1N270
R4	6-9-7	1N191	CR430	6-8-27	1N191
R4	6-10-12	1N270	CR430	6-8-27	1N270
R4	6-10-12	1N191	CR431	6-8-29	1N191
R401	6-8-180	1N191	CR431	6-8-29	1N270
R401	6-8-180	1N270	CR432	6-8-183	1N191
R402	6-8-47	1N191	CR432	6-8-183	1N270
R402	6-8-47	1N270	CR433	6-8-21	1N191
R403	6-8-51	1N191	CR433	6-8-21	1N270
R403	6-8-51	1N270	CR434	6-8-175	1N191
R404	6-8-45	1N191	CR434	6-8-175	1N270
R404	6-8-45	1N270	CR435	6-8-174	1N191
R405	6-8-50	1N191	CR435	6-8-174	1N270
R405	6-8-50	1N270	CR436	6-8-178	1N191
R406	6-8-43	1N191	CR436	6-8-178	1N270

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CR437	6-8-159	1N191	CR469	6-8-202	1N270
CR437	6-8-159	1N270	CR470	6-8-16	1N191
CR438	6-8-157	1N191	CR470	6-8-16	1N270
CR438	6-8-157	1N270	CR471	6-8-203	1N816
CR439	6-8-156	1N191	CR472	6-8-140	1N816
CR439	6-8-156	1N270	CR473	6-8-143	1N191
CR440	6-8-155	1N191	CR473	6-8-143	1N270
CR440	6-8-155	1N270	CR474	6-8-138	1N191
CR441	6-8-154	1N191	CR474	6-8-138	1N270
CR441	6-8-154	1N270	CR5	6-9-9	1N191
CR442	6-8-167	1N191	CR5	6-10-16	1N191
CR442	6-8-167	1N270	CR501	6-15-2	1N1488
CR443	6-8-170	1N191	CR502	6-15-3	1N1488
CR443	6-8-170	1N270	CR6	6-10-19	1N270
CR444	6-8-153	1N191	CR6	6-9-11	1N191
CR444	6-8-153	1N270	CR6	6-10-19	1N191
CR445	6-8-187	1N191	CR601	6-12-20	1N191
CR445	6-8-187	1N270	CR601	6-12-20	1N3064
CR446	6-8-188	1N191	CR602	6-12-67A	1N191
CR446	6-8-188	1N270	CR602	6-12-67A	1N3064
CR447	6-8-181	1N191	CR603	6-12-16	1N191
CR447	6-8-181	1N270	CR603	6-12-16	1N3064
CR448	6-8-190	1N191	CR604	6-12-23	1N3064
CR448	6-8-190	1N270	CR604	6-12-23	1N191
CR449	6-8-191	1N191	CR605	6-12-27	1N191
CR449	6-8-191	1N270	CR605	6-12-27	1N270
CR450	6-8-192	1N191	CR606	6-12-29	1N270
CR450	6-8-192	1N270	CR606	6-12-29	1N191
CR452	6-8-195	1N191	CR607	6-12-38	1N3287
CR452	6-8-195	1N270	CR608	6-12-31	1N191
CR453	6-8-165	1N191	CR608	6-12-31	1N270
CR453	6-8-165	1N270	CR609	6-12-45	1N3287
CR454	6-8-162	1N191	CR610	6-12-56	1N191
CR454	6-8-162	1N270	CR610	6-12-56	1N270
CR455	6-8-197	1N191	CR611	6-12-13	1N270
CR455	6-8-197	1N270	CR611	6-12-13	1N191
CR456	6-8-152	1N191	CR612	6-12-10	1N270
CR456	6-8-152	1N270	CR612	6-12-10	1N191
CR457	6-8-14	1N191	CR613	6-12-4	1N251
CR457	6-8-14	1N270	CR614	6-12-3	1N191
CR458	6-8-15	1N191	CR614	6-12-3	1N270
CR458	6-8-15	1N270	CR615	6-12-2	1N270
CR459	6-8-149	1N191	CR616	6-12-55	1N3287
CR459	6-8-149	1N270	CR617	6-12-43	1N270
CR461	6-8-161	1N191	CR617	6-12-43	1N191
CR461	6-8-161	1N270	CR618	6-12-18	1N816
CR462	6-8-151	1N191	CR619	6-12-69A	1N191
CR462	6-8-151	1N270	CR619	6-12-69A	1N3064
CR463	6-8-142	1N191	CR620	6-12-21	1N191
CR463	6-8-142	1N270	CR620	6-12-21	1N3064
CR464	6-8-139	1N191	CR7	6-9-13	1N191
CR464	6-8-139	1N270	CR701	6-11-29	1N191
CR465	6-8-70	1N191	CR701	6-11-29	1N270
CR465	6-8-70	1N270	CR706	6-11-22	1N191
CR466	6-8-72	1N191	CR706	6-11-22	1N270
CR466	6-8-72	1N270	CR707	6-11-11	1N270
CR466	6-8-199	1N191	CR707	6-11-11	1N191
CR466	6-8-199	1N270	CR708	6-11-18	1N191
CR467	6-8-71	1N191	CR708	6-11-18	1N270
CR467	6-8-71	1N270	CR709	6-11-34	1N270
CR468	6-8-10	1N191	CR709	6-11-34	1N191
CR468	6-8-10	1N270	CR710	6-11-20	1N191
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2R711	6-11-23	1N270	C302	6-16-18	CM05ED470J03
2R712	6-11-9	1N191	C302	6-16-18	CM05FD391J03
2R712	6-11-9	1N270	C302	6-16-18	DM15F471J300WV4C
2R713	6-11-13	1N191			R
2R713	6-11-13	1N270	C302	6-16-18	CM05FD271J03
2R714	6-11-14	1N191	C302	6-16-18	CM05FD151J03
2R714	6-11-14	1N270	C302	6-16-18	CM05FD101J03
2R715	6-11-4	1N191	C302	6-16-18	CM05FD121J03
2R715	6-11-4	1N270	C302	6-16-18	CM05ED680J03
2R716	6-11-15	1N191	C302	6-16-18	CM05ED820J03
2R716	6-11-15	1N270	C302	6-16-18	CM06FD561J03
2R717	6-11-5	1N191	C302	6-16-18	CM05ED560J03
2R717	6-11-5	1N270	C303	6-16-30	CK63AW103M
2R718	6-11-8	1N191	C304	6-16-32	CK63AW103M
2R718	6-11-8	1N270	C305	6-16-19	CM06FD821J03
2R719	6-11-6	1N191	C305	6-16-19	CM06FD152J03
2R719	6-11-6	1N270	C305	6-16-19	CM06FD152J03
2R720	6-11-7	1N191	C306	6-16-39	D205F102J0
2R720	6-11-7	1N270	C308	6-16-63	150D225X0020A2
2R722	6-11-33	1N270	C309	6-16-51	150D225X0020A2
2R722	6-11-33	1N191	C310	6-16-11	150D225X0020A2
2R723	6-11-32	1N191	C311	6-16-5	CK62AW472M
2R723	6-11-32	1N270	C312	6-16-56	DM15F471J300WV4C
2R8	6-9-15	1N191			R
2R9	6-9-17	1N191	C313	6-16-26	150D225X0020A2
1	6-9-26	805-014X5V0103Z	C314	6-16-78	DM15F471J300WV4C
1	6-10-1	CM05FD151J03			R
101	6-14-48	M38-500	C315	6-16-79	150D225X0020A2
102	6-14-34	557-018-5-25A	C316	6-16-67	CM05FD101J03
103	6-14-50	913-1476-000	C4	6-10-24	805-014X5V0103Z
104	6-14-43	HTS127-20007	C4	6-9-29	805-014X5V0103Z
105	6-14-46	HTS127-2000Z	C401	6-8-237	33C41B3
107	6-14-12	CC30UJ750G	C402	6-8-111	33C41B3
108	6-14-31	CC20CH7ROC	C403	6-8-110	33C41B3
109	6-14-28	557-018-5-25A	C404	6-8-109	33C41B3
110	6-14-25	557-018-8-50F	C405	6-8-108	33C41B3
111	6-14-23	CC22PH120J	C406	6-8-115	33C41B3
112	6-14-4	150D225X0020A2	C407	6-8-116	33C41B3
114	6-14-20	QC10-00UF5PCT	C408	6-8-117	33C41B3
118	6-14-21	CM05ED330J03	C409	6-8-114	33C41B3
2	6-10-7	CM05FD271J03	C410	6-8-233	33C41B3
2	6-9-27	805-014X5V0103Z	C411	6-8-107	33C41B3
201	6-13-3	805-014X5V0103Z	C412	6-8-106	33C41B3
202	6-13-30	CK63AW103M	C413	6-8-105	33C41B3
203	6-13-32	CK63AW103M	C414	6-8-104	33C41B3
204	6-13-11	DR3E471G0	C415	6-8-118	33C41B3
205	6-13-1	150D225X0020A2	C416	6-8-119	33C41B3
206	6-13-28	BU20152NY5X	C417	6-8-120	33C41B3
207	6-13-13	150D225X0020A2	C418	6-8-226	33C41B3
208	6-13-23	150D225X0020A2	C419	6-8-239	150D225X0020A2
209	6-13-26	150D225X0020A2	C420	6-8-172	150D225X0020A2
210	6-13-16	150D225X0020A2	C421	6-8-253	33C41B3
211	6-13-34	CK63AW103M	C422	6-8-255	805-014X5V0103Z
3	6-10-28	CM05FD221J03	C423	6-8-257	805-014X5V0103Z
3	6-9-28	805-014X5V0103Z	C424	6-8-228	150D225X0020A2
300	6-16-77	DM42F403J03	C425	6-8-164	150D225X0020A2
301	6-16-17	CM07FD682J03	C426	6-8-225	33C41B3
302	6-16-18	CM06FD821J03	C427	6-8-223	805-014X5V0103Z
302	6-16-18	CM06FD911J03	C428	6-8-221	805-014X5V0103Z
302	6-16-18	CM06FD102J03	C429	6-8-168	150D225X0020A2
302	6-16-18	D205F681J0	C430	6-8-128	150D225X0020A2
302	6-16-18	CM05FD181J03	C431	6-8-130	150D225X0020A2

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C433	6-8-251	33C41B3	C522	6-3-5	CM06FD102J03
C434	6-8-67	150D225X0020A2	C522	6-3-5	D205F681J0
C435	6-8-68	150D225X0020A2	C524	6-3-9	CM05FD101J03
C437	6-8-66	150D225X0020A2	C524	6-3-9	CM05FD121J03
C438	6-8-259	805-014X5V0103Z	C524	6-3-9	CM05FD151J03
C439	6-8-264	D205F681J0	C524	6-3-9	CM06FD0911J03
C440	6-8-267	150D105X9035A2	C524	6-3-9	CM06FD102J03
C441	6-8-93	33C41B3	C524	6-3-9	D205F681J0
C442	6-8-132	33C41B3	C6	6-10-21	CM06FD102J03
C443	6-8-211	CM05FD221J03	C6	6-9-31	805-014X5V0103Z
C444	6-8-81	150D105X9035A2	C601	6-12-67	150D225X0020A2
C445	6-8-133	DR5E470G0	C602	6-12-115	150D225X0020A2
C446	6-8-92	DR5E101G0	C603	6-12-28	150D225X0020A2
C447	6-8-91	DR5E101G0	C604	6-12-109	150D225X0020A2
C448	6-8-90	DR5E101G0	C605	6-12-69	150D225X0020A2
C449	6-8-89	DR5E101G0	C606	6-12-26	150D225X0020A2
C450	6-8-88	DR5E101G0	C607	6-12-36	CL20BJ4R5TPE
C451	6-8-87	DR5E101G0	C608	6-12-100	CM07FD123J03
C452	6-8-86	DR5E101G0	C609	6-12-101	CM05ED470J03
C453	6-8-85	DR5E101G0	C610	6-12-11	150D225X0020A2
C454	6-8-84	DR5E470G0	C6111	6-12-1	150D225X0020A2
C455	6-8-17	150D225X0020A2	C613	6-12-82	DR3E511G0
C456	6-8-97	150D225X0020A2	C614	6-12-81	DR3E511G0
C457	6-8-102	33C41B3	C615	6-12-83	DR3E511G0
C458	6-8-206	150D226X0015B2	C616	6-12-84	DR3E511G0
C459	6-8-209	150D226X0015B2	C617	6-12-86	DR3E511G0
C5	6-10-23	805-014X5V0103Z	C618	6-12-85	DR3E511G0
C5	6-9-30	805-014X5V0103Z	C619	6-12-87	DR3E511G0
C501	6-3-10	557-018-8-50E	C620	6-12-88	DR3E511G0
C502	6-3-8	CM06FD102J03	C621	6-12-90	DR3E511G0
C503	6-3-7	PD52419	C622	6-12-89	DR3E511G0
C504	6-3-6	CM06FD272J03	C623	6-12-91	DR3E511G0
C504	6-3-6	CM06FD242J03	C624	6-12-92	DR3E511G0
C506	6-3-4	PD52419	C625	6-12-94	DR3E511G0
C507	6-3-3	CM06FD472J03	C626	6-12-93	DR3E511G0
C507	6-3-3	CM06FD432J03	C627	6-12-95	DR3E511G0
C511	6-6-8	CL21BJ180TPE	C628	6-12-96	DR3E511G0
C512	6-6-2	CL20BE600UPE	C629	6-12-103	CK60AW102M
C513	6-3-1	CM05FD101J03	C631	6-12-76	150D225X0020A2
C513	6-3-1	CM05FD121J03	C632	6-12-40	150D225X0020A2
C513	6-3-1	CM05FD151J03	C7	6-10-29	557-018-8-50E
C513	6-3-1	CM05FD181J03	C7	6-9-32	33C41B3
C513	6-3-1	CM05FD271J03	C705	6-11-47	610D156G030KD5
C513	6-3-1	CM05FD391J03	C706	6-11-48	DM15F471J300WV4C
C513	6-3-1	DM15F471J300WV4C			R
C513	6-3-1	CM06FD561J03	C708	6-11-50	33C41B3
C513	6-3-1	CM06FD821J03	C709	6-11-40	33C41B3
C513	6-3-1	CM06FD0911J03	C710	6-11-41	33C41B3
C513	6-3-1	CM06FD102J03	C711	6-11-36	805-014X5V0103Z
C513	6-3-1	D205F681J0	C712	6-11-35	805-014X5V0103Z
C521	6-3-2	PD52419	C713	6-11-39	805-014X5V0103Z
C522	6-3-5	CM05FD101J03	C714	6-11-51	805-014X5V0103Z
C522	6-3-5	CM05FD121J03	C715	6-11-49	805-014X5V0103Z
C522	6-3-5	CM05FD151J03	C716	6-11-37	805-014X5V0103Z
C522	6-3-5	CM05FD181J03	C8	6-10-17	CM05FD101J03
C522	6-3-5	CM05FD271J03	C8	6-9-33	33C41B3
C522	6-3-5	CM05FD391J03	C800	6-18-7	LP88A1B473J
C522	6-3-5	DM15F471J300WV4C	C801	6-18-3	CK06RX104K
		R	C9	6-9-34	33C41B3
C522	6-3-5	CM06FD561J03	DL501	6-2-56	1571R
C522	6-3-5	CM06FD821J03	DL502	6-2-33	52-23C
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5502	6-6-32	11600BEE01D304	M501	6-4-130	59-7082
5503	6-6-33	11600BEE01D304	P503	6-4-36	M39012-16-0001
5505	6-6-35	11600BEE01D304	P503	6-5-2	M39012-16-0001
5507	6-6-34	11600BEE01D304	P504	6-4-82	M39012-16-0001
5509	6-6-38	C2A	P505	6-1-8	101C1100A
5501	6-6-12	3JX378	P506	6-1-9	101C1100A
5502	6-6-13	3JX378	P508	6-4-87	45900
501	6-1-12	F02A250V1-4AS	Q1	6-10-4	2N404
501	6-1-12	384-003	Q101	6-14-49	2N1142
502	6-1-13	F02A250V1-2AS	Q101	6-14-49	2N4080
503	6-1-11	F02A250V1-4AS	Q102	6-14-51	2N1142
504	6-1-14	F02A250V1-2AS	Q2	6-10-10	2N404
505	6-1-15	F02A250V1-2AS	Q201	6-13-31	2N527
501	6-7-10	546-4659-000	Q201	6-13-31	2N3468
502	6-7-10		Q201	6-13-31	2N1224
503	6-4-85	100B3000C75	Q202	6-13-33	2N3468
504	6-4-111	546-4574-002	Q202	6-13-33	2N527
506	6-4-88	0750	Q202	6-13-33	2N1224
	6-10-27	MS90540-11	Q203	6-13-39	2N388
501	6-14-40	4412-13-36	Q204	6-13-37	2N404
502	6-14-39	LT4K029	Q3	6-10-13	2N404
504	6-14-32	LT4K029	Q300	6-16-76	2N404A
505	6-14-17	LT4K027	Q301	6-16-69	2N404
506	6-14-24	LT4K027	Q302	6-16-68	2N404
507	6-14-18	4412-13-36	Q303	6-16-65	2N404
501	6-13-22	240-0192-000	Q304	6-16-59	2N404
501	6-13-22	MS75103-8	Q305	6-16-58	2N404
500	6-16-16	240-0190-000	Q306	6-16-57	2N388
500	6-16-16	MS75103-5	Q307	6-16-70	CL22RG200UNE
501	6-16-73	12379B	Q307	6-16-71	2N404A
505	6-16-8	204-0073-000	Q308	6-16-60	2N388
506	6-16-44	MS75103-6	Q401	6-8-236	2N404
506	6-16-44	240-0191-000	Q402	6-8-235	2N1224
501	6-8-240	240-0191-000	Q402	6-8-235	2N3284
501	6-8-240	240-0191-000	Q402	6-8-235	2N1142
502	6-8-227	240-0191-000	Q404	6-8-232	2N404
502	6-8-227	MS75103-6	Q405	6-8-231	2N1224
503	6-8-219	4422-10-38	Q405	6-8-231	352-1024-000
504	6-8-122	DM0073	Q405	6-8-231	2N1142
505	6-8-218	4422-10-38	Q406	6-8-247	2N404
506	6-8-200	DM0073	Q407	6-8-125	2N1224
507	6-8-205	DM0073	Q407	6-8-125	2N3284
508	6-8-265	DM0073	Q407	6-8-125	2N1142
509	6-8-74	4422-11-117	Q408	6-8-217	2N1224
510	6-8-75	4422-11-117	Q408	6-8-217	2N3284
511	6-8-76	4422-11-117	Q408	6-8-217	2N1142
512	6-8-77	4422-11-117	Q409	6-8-262	2N388
513	6-8-78	4422-11-117	Q410	6-8-269	2N404A
514	6-8-79	4422-11-117	Q411	6-8-266	2N404A
515	6-8-80	4422-11-117	Q412	6-8-208	2N1039
516	6-8-1	4422-10-38	Q413	6-8-131	2N404
517	6-8-2	4422-11-117	Q414	6-8-134	2N525
501	6-12-110	240-0191-000	Q415	6-8-135	2N388
501	6-12-110	MS75103-6	Q416	6-8-82	2N404A
502	6-12-32	DM0073	Q417	6-8-212	2N404A
503	6-12-53	4422-11-117	Q418	6-8-215	2N1039
504	6-12-52	4422-11-117	Q419	6-8-100	2N404
505	6-12-51	4422-11-117	Q601	6-12-63	2N388
506	6-12-50	4422-11-117	Q602	6-12-113	2N388
507	6-12-49	4422-11-117	Q603	6-12-111	2N1142
508	6-12-48	4422-11-117	Q603	6-12-111	2N1224
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C605	6-12-105	2N388	R307	6-16-29	RCR20G104KS
C606	6-12-99	2N404A	R308	6-16-40	RCR20G272KS
C607	6-12-102	2N404	R309	6-16-20	RCR20G104KS
C608	6-12-70	2N404	R310	6-16-41	RCR20G182KS
C609	6-12-80	2N404	R311	6-16-50	RCR20G562KS
C610	6-12-72	2N404	R312	6-16-48	RCR20G153KS
C611	6-12-74	2N404A	R313	6-16-10	RCR20G682KS
C612	6-12-77	2N388	R314	6-16-61	RV5LAYS8103B
C702	6-11-45	2N404A	R314	6-16-61	RV5LAYS8103B
C703	6-11-46	2N404A	R315	6-16-12	RCR20G181KS
C800	6-18-5	2N489	R316	6-16-7	RCR20G222KS
RT101	6-14-8	0550F5-247	R317	6-16-52	RCR20G102KS
R1	6-9-2	RCR07G153KS	R318	6-16-6	RCR20G102KS
R1	6-10-2	RCR07G102KS	R319	6-16-55	RCR20G472KS
R10	6-10-15	RCR07G134JS	R320	6-16-53	RCR20G222KS
R10	6-9-18	RCR07G153KS	R321	6-16-25	RCR20G102KS
R101	6-14-42	RCR20G471KS	R322	6-16-27	RCR20G103KS
R102	6-14-44	RCR20G562KS	R323	6-16-66	RCR20G102KS
R103	6-14-33	RCR20G102KS	R324	6-16-75	RCR20G102KS
R104	6-14-47	RCR20G390KS	R325	6-16-64	RCR20G102KS
R106	6-14-5	RCR20G101KS	R326	6-16-2	1690-103
R107	6-14-1	RV5LAYS8102B	R327	6-16-72	RCR07G183KS
R108	6-14-6	RCR20G472KS	R328	6-16-37	RCR07G102KS
R109	6-14-7	RCR20G561KS	R4	6-10-6	RCR07G223KS
R11	6-10-20	RCR07G104KS	R4	6-9-8	RCR07G153KS
R110	6-14-9	RV5LAYS8103B	R401	6-8-177	RCR20G153KS
R110	6-14-9	RV5LAYS8103B	R402	6-8-46	RCR20G153KS
R111	6-14-16	RCR20G271KS	R403	6-8-44	RCR20G153KS
R12	6-10-22	RCR07G102KS	R404	6-8-42	RCR20G153KS
R2	6-9-4	RCR07G153KS	R405	6-8-40	RCR20G153KS
R2	6-10-3	RCR07G332KS	R406	6-8-38	RCR20G153KS
R201	6-13-6	RCR20G222KS	R407	6-8-35	RCR20G153KS
R202	6-13-4	RCR20G564KS	R408	6-8-34	RCR20G153KS
R203	6-13-8	RCR20G334KS	R409	6-8-31	RCR20G333KS
R204	6-13-7	RCR20G473KS	R410	6-8-113	RCR20G104KS
R205	6-13-18	RCR20G472KS	R411	6-8-112	RCR20G103KS
R205	6-13-18	RCR07G272KS	R412	6-8-103	RCR20G103KS
R205	6-13-18	RCR07G222KS	R414	6-8-185	RCR20G153KS
R206	6-13-10	RCR20G331KS	R415	6-8-61	RCR20G153KS
R207	6-13-2	RCR07G272KS	R416	6-8-59	RCR20G153KS
R208	6-13-35	380-0629-000	R417	6-8-57	RCR20G153KS
R208	6-13-35	RV5LAYS8103B	R418	6-8-18	RCR20G153KS
R209	6-13-12	RCR20G103KS	R419	6-8-20	RCR20G153KS
R210	6-13-9	RCR20G682KS	R420	6-8-23	RCR20G153KS
R210	6-13-9	RCR20G103KS	R421	6-8-24	RCR20G153KS
R211	6-13-29	RCR20G151KS	R422	6-8-26	RCR20G333KS
R212	6-13-14	RCR20G222KS	R423	6-8-121	RCR20G104KS
R213	6-13-27	RCR07G682KS	R424	6-8-176	RCR20G392KS
R214	6-13-24	RCR20G153KS	R425	6-8-241	RN70D14R7F
R215	6-13-25	RCR20G472KS	R426	6-8-238	RN70D2611F
R217	6-13-17	RCR20G471KS	R427	6-8-173	RCR20G471KS
R218	6-13-15	RCR20G683KS	R428	6-8-169	RN65U3161F
R219	6-13-38	RCR20G151KS	R429	6-8-166	RCR20G472KS
R3	6-9-6	RCR07G153KS	R430	6-8-242	RCR20G562KS
R3	6-10-5	RCR07G471KS	R431	6-8-254	RCR20G153KS
R300	6-16-1	RN55D1243F	R432	6-8-256	RCR20G153KS
R300	6-16-1	RN65D6812F	R433	6-8-258	RCR20G153KS
R301	6-16-15	RCR20G153KS	R434	6-8-160	RCR20G153KS
R302	6-16-23	RCR20G104KS	R435	6-8-171	RCR20G183KS
R303	6-16-28	RCR20G103KS	R436	6-8-243	RCR20G103KS
R304	6-16-31	RCR20G103KS	R437	6-8-246	RCR20G222KS
R305	6-16-33	RCR20G103KS	R438	6-8-186	RCR20G392KS

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REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG - ITEM	PART NUMBER	REFERENCE DESIGNATION	FIG - ITEM	PART NUMBER
R439	6-8-252	RN70D4640F	R5	6-10-34	RCR07G153KS
R440	6-8-230	RN70D2611F	R5	6-9-10	RCR07G153KS
R441	6-8-184	RCR20G471KS	R501	6-4-128	RV4NAYS0103B
R442	6-8-244	RL42S331J	R502	6-4-117	RCR32G510JS
R443	6-8-234	RCR20G472KS	R503	6-4-116	RCR32G822JS
R444	6-8-249	RCR20G562KS	R504	6-4-118	RCR32G510JS
R445	6-8-224	RCR20G153KS	R505	6-7-21	RCR20G121JS
R446	6-8-222	RCR20G153KS	R506	6-7-23	RCR20G510JS
R447	6-8-220	RCR20G153KS	R507	6-7-22	RCR20G121JS
R448	6-8-189	RCR20G153KS	R508	6-7-24	RCR20G820JS
R449	6-8-163	RCR20G183KS	R509	6-7-26	RCR20G101JS
R450	6-8-250	RCR20G103KS	R510	6-7-25	RCR20G820JS
R451	6-8-248	RCR20G222KS	R511	6-7-27	RCR20G620JS
R452	6-8-126	RV5LAYS8103B	R512	6-7-29	RCR20G201JS
R452	6-8-126	RV5LAYS8103B	R513	6-7-28	RCR20G620JS
R453	6-8-123	RN70D2611F	R514	6-7-30	RCR20G560JS
R454	6-8-194	RCR20G471KS	R515	6-7-32	RCR20G361JS
R455	6-8-127	RCR20G332KS	R516	6-7-31	RCR20G560JS
R456	6-8-124	RCR20G472KS	R517	6-7-33	RCR20G560JS
R457	6-8-13	RCR20G104KS	R518	6-7-35	RCR20G681JS
R458	6-8-216	RV5LAYS8103B	R519	6-7-34	RCR20G560JS
R459	6-8-263	RN70D2611F	R520	6-2-55	RCR20G181KS
R460	6-8-198	RCR20G471KS	R520	6-6-1	RN65C9092F
R461	6-8-129	RCR20G102KS	R523	6-15-1	CW5-500K40R00J
R462	6-8-201	RCR20G472KS	R524	6-7-36	RCR20G301JS
R463	6-8-12	RCR20G104KS	R526	6-7-19	RCR20G301JS
R464	6-8-158	RCR20G153KS	R527	6-2-32	RCR20G181KS
R465	6-8-96	RCR20G562KS	R527	6-7-20	RCR20G150JS
R466	6-8-94	RCR20G562KS	R528	6-4-133	RCR20G152KS
R467	6-8-260	RCR20G473KS	R529	6-6-7	RCR20G333KS
R468	6-8-150	RCR20G183KS	R6	6-10-25	RCR07G104KS
R469	6-8-144	RCR20G221KS	R6	6-9-12	RCR07G153KS
R470	6-8-145	RN70D7502F	R601	6-12-64	RCR20G102KS
R471	6-8-147	RCR20G472KS	R602	6-12-14	RCR20G103KS
R472	6-8-268	RCR20G103KS	R603	6-12-15	RCR20G822KS
R473	6-8-148	RCR20G272KS	R604	6-12-62	RCR20G102KS
R474	6-8-141	RCR20G272KS	R605	6-12-17	RCR20G153KS
R475	6-8-207	RCR20G102KS	R606	6-12-22	RCR20G223KS
R476	6-8-270	RCR20G103KS	R607	6-12-112	RCR20G102KS
R477	6-8-69	RCR20G682KS	R608	6-12-114	RCR20G392KS
R478	6-8-73	RCR20G682KS	R609	6-12-24	RCR20G101KS
R479	6-8-11	RCR20G333KS	R610	6-12-65	RCR20G471KS
R480	6-8-8	RCR20G103KS	R611	6-12-7	RV5LAYS8103B
R481	6-8-7	RCR20G102KS	R611	6-12-7	RV5LAYS8103B
R482	6-8-9	RCR20G101KS	R612	6-12-34	RCR20G222KS
R483	6-8-6	RCR20G472KS	R613	6-12-30	RCR20G471KS
R484	6-8-4	RCR20G103KS	R614	6-12-108	RCR20G102KS
R485	6-8-5	RCR20G472KS	R615	6-12-107	RCR20G472KS
R486	6-8-210	RN70D7502F	R616	6-12-25	RCR20G104KS
R487	6-8-3	RCR20G562KS	R617	6-12-5	RV5LAYS8253B
R488	6-8-136	RCR20G472KS	R617	6-12-5	RV5LAYS8253B
R489	6-8-213	RCR20G272KS	R618	6-12-98	RCR20G121KS
R490	6-8-204	RCR20G102KS	R620	6-12-66	RCR20G123KS
R491	6-8-214	RCR20G103KS	R621	6-12-33	RCR20G181KS
R492	6-8-83	RCR20G681KS	R622	6-12-35	RCR20G153KS
R493	6-8-64	RCR20G103KS	R623	6-12-44	RCR20G102KS
R494	6-8-99	RCR20G471KS	R624	6-12-41	RCR20G562KS
R495	6-8-98	RCR20G102KS	R625	6-12-42	RN70D2152F
R496	6-8-101	RCR20G183KS	R626	6-12-104	RCR20G562KS
R497	6-8-261	RCR20G102KS	R627	6-12-39	RCR20G333KS
R498	6-8-146	RCR20G272KS	R628	6-12-57	RCR07G472KS
R499	6-8-137	RCR20G272KS	R629	6-12-59	RCR20G682KS
R499A	6-8-95	RCR07G103KS	R630	6-12-12	RCR07G103KS

REFERENCE DESIGNATION INDEX

REFERENCE DESIGNATION	FIG - ITEM	PART NUMBER	REFERENCE DESIGNATION	FIG - ITEM	PART NUMBER
R634	6-12-79	RCR20G183KS	TB700	6-2-29	768-8659-000
R635	6-12-68	RCR20G103KS	TB800	6-2-32A	629-9573-001
R636	6-12-9	RCR20G103KS	TH800	6-18-	629-9573-001
R637	6-12-73	RCR20G682KS	T1	6-10-18	MPT111-5
R638	6-12-61	RCR20G330KS	T101	6-14-45	546-4532-001
R639	6-12-78	RCR20G181KS	T300	6-16-9	MPT111-5
R640	6-12-54	RCR20G100KS	T301	6-16-36	MPT111-5
R641	6-12-97	RCR07G561KS	T501	6-2-73	29612
R642	6-12-71	RCR07G471KS	T601	6-12-19	MPT111-5
R644	6-12-75	RCR20G471KS	T602	6-12-37	EP6287
R699	6-12-60	RCR07G222KS	T603	6-12-58	EP6287
R7	6-9-14	RCR07G153KS	XF501	6-4-76	HKPHJRZZ
R7	6-10-9	RCR07G103KS	XF502	6-4-75	HKPHJRZZ
R701	6-11-2	RCR20G472KS	XF503	6-4-74	HKPHJRZZ
R702	6-11-1	RCR20G103KS	XF504	6-4-73	HKPHJRZZ
R703	6-11-27	RCR07G222KS	XF505	6-4-72	HKPHJRZZ
R705	6-11-28	RCR07G473KS	Y101	6-14-41	290-7371-00M20
R706	6-11-26	RCR20G472KS			
R707	6-11-31	RCR20G103KS			
R708	6-11-30	RN70U7502F			
R709	6-11-25	RCR20G472KS			
R718	6-11-21	RCR20G153KS			
R719	6-11-38	RCR20G104KS			
R720	6-11-16	RCR20G152KS			
R721	6-11-42	RCR20G333KS			
R722	6-11-43	RCR20G153KS			
R723	6-11-44	RCR20G153KS			
R724	6-11-12	RCR20G153KS			
R725	6-11-17	RCR20G153KS			
R726	6-11-3	RCR20G153KS			
R727	6-11-19	RCR20G153KS			
R728	6-11-24	RCR20G153KS			
R729	6-11-10	RCR20G153KS			
R8	6-9-16	RCR07G153KS			
R8	6-10-11	RCR07G103KS			
R800	6-18-1	RJ22CL503			
R801	6-18-8	RC20BF152J			
R802	6-18-6	RCR20G101KS			
R803	6-18-4	RCR20G101KS			
R9	6-10-14	RCR07G104KS			
R9	6-9-19	RCR07G103KS			
S501	6-4-141	224905MF5			
S502A	6-6-19	226112K			
S503	6-4-100	224904LK6			
S504	6-4-134	7675K4			
S505	6-4-41	A109263			
S506	6-4-21	11SM3T			
S507	6-4-101	208374LK6			
TB100	6-14-	546-4620-004			
TB100	6-2-70	546-4620-004			
TB1000	6-2-22	763-6059-001			
TB1000	6-9-	763-6059-001			
TB1100	6-10-	763-6091-001			
TB200	6-2-50	548-6876-004			
TB200	6-13-	548-6876-004			
TB300	6-2-83	548-6896-006			
TB300	6-16-	548-6896-006			
TB400	6-2-16	548-6996-001			
TB502	6-2-1	548-6844-004			
TB502	6-3-	548-6844-004			
TB600	6-2-42	768-7444-002			
TB600	6-12-	768-7444-002			
TB700	6-11-	768-8659-001			

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SCHEMATIC CHANGES

PAGE	REVISION IDENTIFICATION	DESCRIPTION OF REVISION REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY
7-3/7-4	A1	Changed value of variable attenuator resistors to increase accuracy of attenuator.		
7-3/7-4	C1	Added C522 (note 3) to increase accuracy of pulse shape and spacing.		
7-3/7-4	D1	Changed C306 from 1000 pF to 0.01 μ F to increase the amplitude of the sls pulse.		
7-3/7-4	D2	At primary of T501 (115-volt ac source) DS2 connections moved from P502 to T501-2 to correct schematic discrepancy.		
7-3/7-4	E1	Changed value of R1101 from 5600 to 1000 ohms to increase the output of the gate driver.		
7-3/7-4	F1	Changed S505-1, 2, 3, 4, 5, 6, 7, 9, and 10 to read S505-2, 5, 7, 9, 3, 4, 10, 6 and 1 to correct schematic discrepancy.		
7-3/7-4	G1	Added C316 at secondary of T301 to increase interrogation pulse width.		
7-3/7-4	G2	Added R328 at secondary of T301 to increase interrogation pulse width.		
7-3/7-4	G3	Added R1112 at secondary of T1101 to increase sls pulse shape.		

476X-3 ATC Transponder Ramp Test Set, Schematic Diagram
Figure 7-1 (Sheet A)

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AGE	REVISION IDENTIFICATION	DESCRIPTION OF REVISION REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY
-3/7-4	G4	Added C1108 to secondary of T1101 to increase sls pulse shape.		MCN 127
-3/7-4	H1	Changed C305 from 1200 to 820 pF to increase the interrogation pulse width.		
-3/7-4	J1	Added C521 at S501A-1 to increase pulse accuracy.		
-3/7-4	J4	Interchanged R498 and R474 to correct schematic discrepancy.		
-3/7-4	J5	Interchanged R489 and R499 to correct schematic discrepancy.		
-3/7-4	J6	Connected R486 to -18-volt dc supply to correct schematic discrepancy.		
-3/7-4	J7	Changed R704 to R705 to correct schematic discrepancy.		
-3/7-4	K2	Changed C502 from 150 pf to 1000 pf to increase pulse accuracy.		
-3/7-4	K3	Changed C504 from 2000 pf to 2700 pf to increase pulse accuracy.		
-3/7-4	K5	Changed C507 from 3300 pf to 4700 pf to increase pulse accuracy.		
-3/7-4	L1	Changed DS2 to read DS509 to correct schematic discrepancy.		
-3/7-4	L2	At primary of T501 (230-volt ac source) changed F501 from 1/2 ampere to 1/4 ampere to correct schematic discrepancy.		
-3/7-4	L3	Changed C1107 and C110 from 8-75 to 8-50 pF to correct schematic discrepancy.		

476X-3 ATC Transponder Ramp Test Set, Schematic Diagram
Figure 7-1 (Sheet B).

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PAGE	REVISION IDENTIFICATION	DESCRIPTION OF REVISION REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY
7-3/7-4	L4	Changed C1104 from 0.01 pF to 0.01 μ F to correct schematic discrepancy.		
7-3/7-4	L6	Changed C1106 from 510 pf to 1000 pf to increase amplitude of sls pulse.		
7-3/7-4	L7	Added C524 at S502A-E (front) to increase pulse accuracy.		
7-3/7-4	L8	Added C512 to S501D-8 (rear) to eliminate transit spikes when placed to the ON position.		
7-3/7-4	L9	Changed S502A-5A, 3A, and 11A to read S502A-E, C, and K to correct schematic discrepancy.		
7-3/7-4	L11	Changed S508 to S506 to correct schematic discrepancy.		
7-3/7-4	L12	Changed C102 and C109 from 5-37.5 pf to 5-25 pf to correct schematic discrepancy.		
7-3/7-4	L13	Changed R317 from 10K to 1K to correct schematic discrepancy.		
7-3/7-4	L14	Changed CR101 from FD100 to FD1766 to correct schematic discrepancy.		
7-3/7-4	L15	Changed C107 to L107 to correct schematic discrepancy.		
7-3/7-4	L16	Changed C201 from 1000 pf to 0.01 uf to increase pulse amplitude of sls pulse.		
7-3/7-4	L17	Added R641, C605, C631, and C632 to increase output of relay gate timer.		
7-3/7-4	L18	Added R644 to secondary of T603 to reduce recovery time of diverter amplifier.		

476X-3 ATC Transponder Ramp Test Set, Schematic Diagram
Figure 7-1 (Sheet C)

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PAGE	REVISION IDENTIFICATION	DESCRIPTION OF REVISION REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY
7-3/7-4	L19	Changed R610 from 1K to 470 to reduce recovery time of diverter amplifier.		
7-3/7-4	L20	Disconnected R629 from the anode of CR611 and connected it to the collector of Q608.		
7-3/7-4	L22	Added R699 to the collector of Q608 to increase the output of the gate driver.		
7-5/7-6	L24	Added CR475 to DL501-10 to reduce reflections from delay line.		
7-5/7-6	L25	Changed CR401 from 1N19 to 1N191 to correct schematic discrepancy.		
7-5/7-6	L26	Changed R433 to CR433 to correct schematic discrepancy.		
7-5/7-6	L27	Added R499A to the base of Q419 to reduce reflections from the delay line.		
7-5/7-6	M1	Changed CR1014 to CR1012, CR1013 to CR1014, CR1005 to CR1003, CR1003 to CR1004, CR1004 to CR1003, and CR1012 to CR1013 to correct schematic discrepancy.		
7-3/7-4	N1	Added CR511-514 (1N645), CR619 (1N3064), CR620 (1N3064), and changed CR601-CR604 (1N191) to 1N3064 to reduce switching transients when changed to self-test.		
7-3/7-4	P1	Changed R205 from 2.2 to 2.7 kilohms to correct schematic discrepancy.		

476X-3 ATC Transponder Ramp Test Set, Schematic Diagram
Figure 7-1 (Sheet D)

Revised 1 October 1976

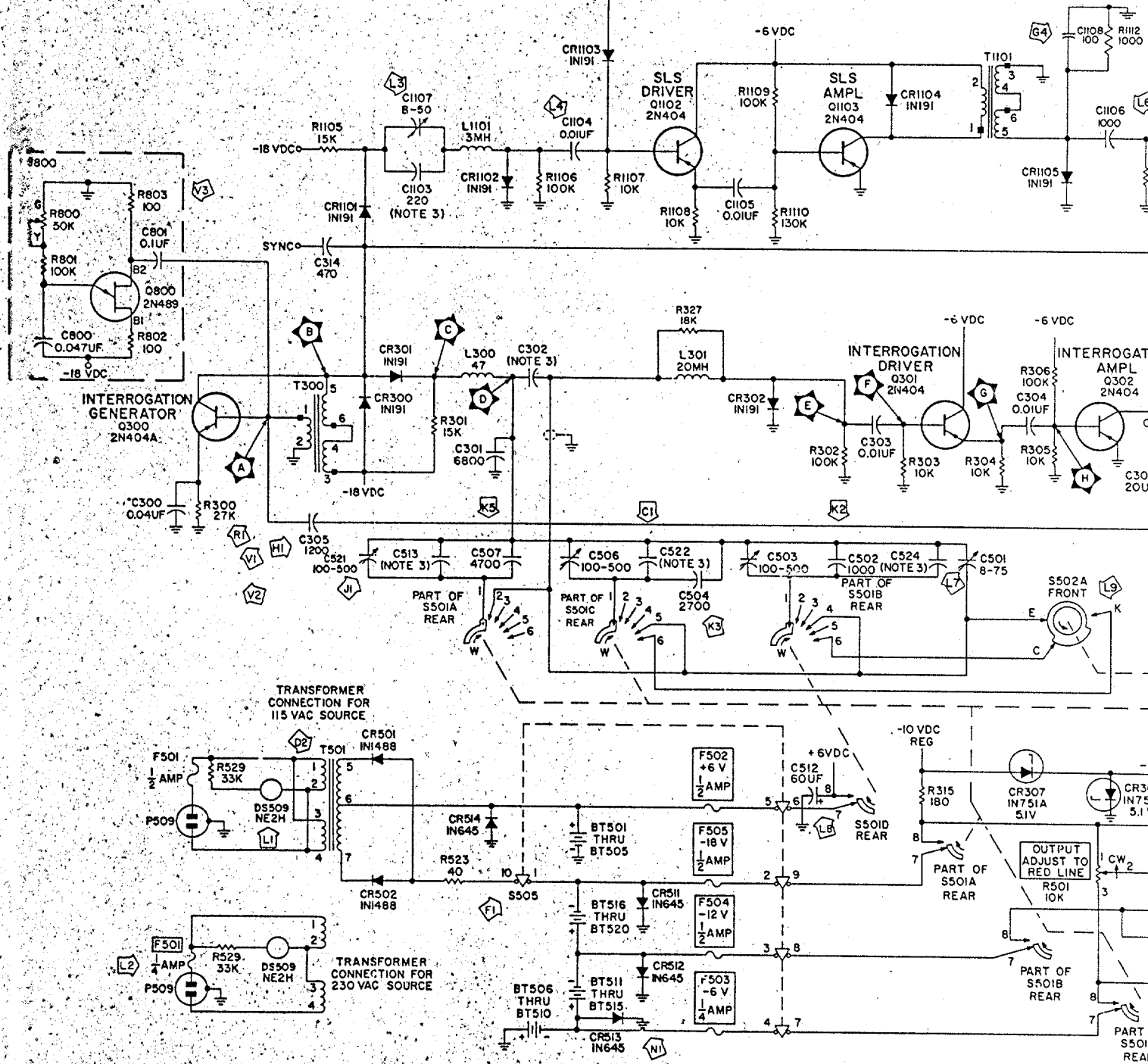
PAGE	REVISION IDENTIFICATION	DESCRIPTION OF REVISION REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY
7-3/7-4	R1	Changed R300 from 68.1 to 124 kilohms to avoid interference with ATC ground stations.		
7-3/7-4	S1	Deleted choke L102.		
7-3/7-4	S2	Changed Q101 from 2N1142 to 2N4080 because of cost effectiveness.		
7-3/7-4	T1	Changed Q201 and Q202 from 2N1224 to 2N3468 because of nonavailability of 2N1224 transistor. Changed R210 from 6800 to 10 kilohms and R205 from 2700 to 4700 ohms. Changed location of R218 from base of Q202 and collector of Q202 to the junction of R205/R210 and the base of Q202 to provide proper bias for transistor Q202.		
7-5/7-6	T2	Changed Q402, Q405, Q407, and Q408 from 2N1224 to 2N1142 because of nonavailability of 2N1224 transistor.		
7-3/7-4	T3	Changed Q603 from 2N1124 to 2N1142 because of nonavailability of 2N1224 transistor.		
7-3/7-4	U1	Added connection between R601 and T601-1 to correct schematic discrepancy.		
7-5/7-6	U2	Changed C439 from 680 to 1200 pF to correct schematic discrepancy.		
7-3/7-4	U3	Changed C112 polarity to correct schematic discrepancy.		
7-3/7-4	U4	Added wire connection between L605 and L606 to correct schematic discrepancy.		

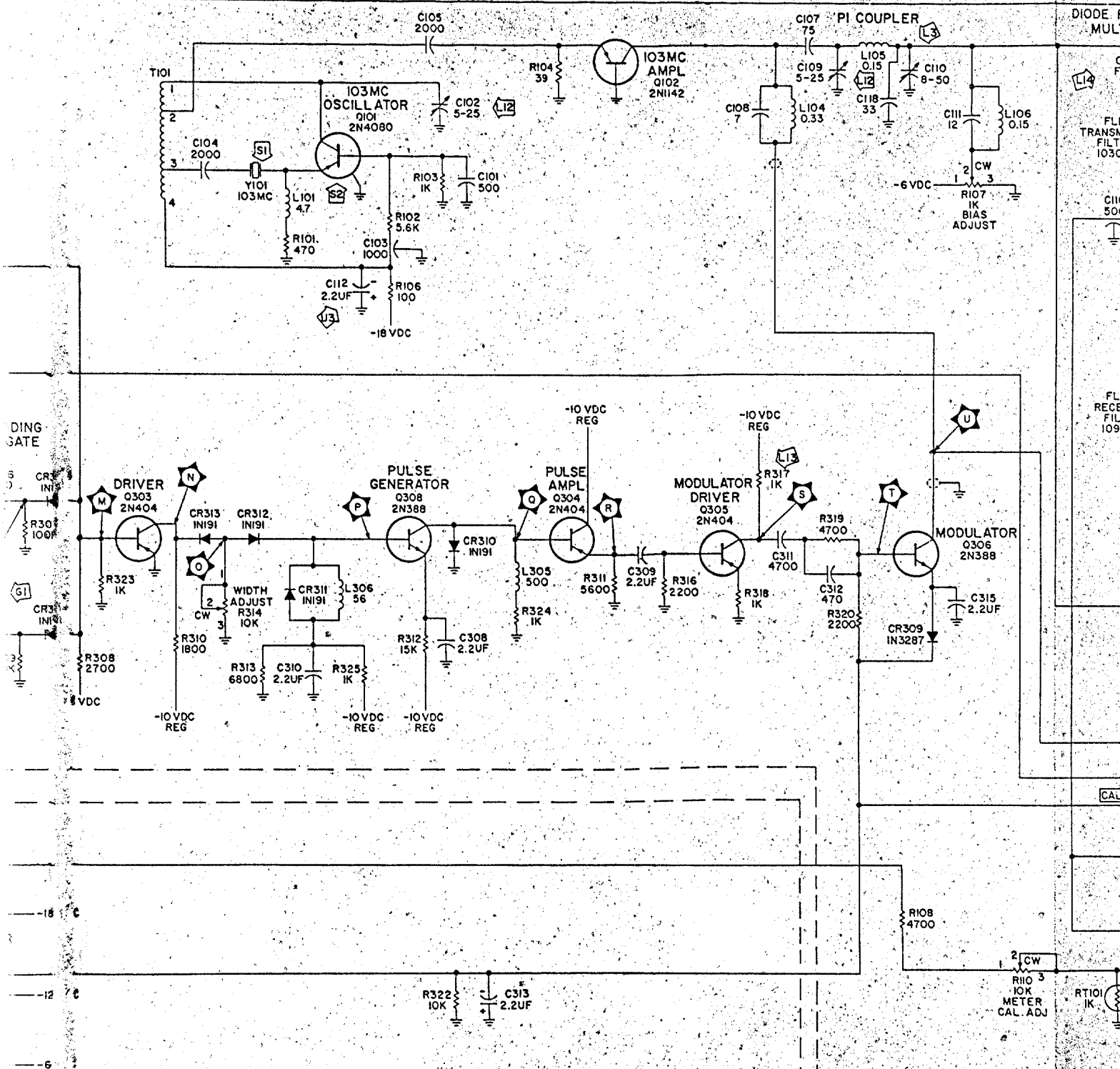
476X-3 ATC Transponder Ramp Test Set, Schematic Diagram
Figure 7-1 (Sheet E)

AGE	REVISION IDENTIFICATION	DESCRIPTION OF REVISION REASON FOR CHANGE	SERVICE BULLETIN	EFFECTIVITY
1-3/7-4	V1	Changed R300 from 124 to 27 kilohms and connected it to ground instead of R326.	3	Serno 414
1-3/7-4	V2	Deleted R326.	3	Serno 414
1-3/7-4	V3	Added terminal board assembly TB800. Service bulletin 3 changes the PRF to 235 $\pm$ 5 pps to comply with new FCC regulation, paragraph 87.521(2).	3	Serno 414

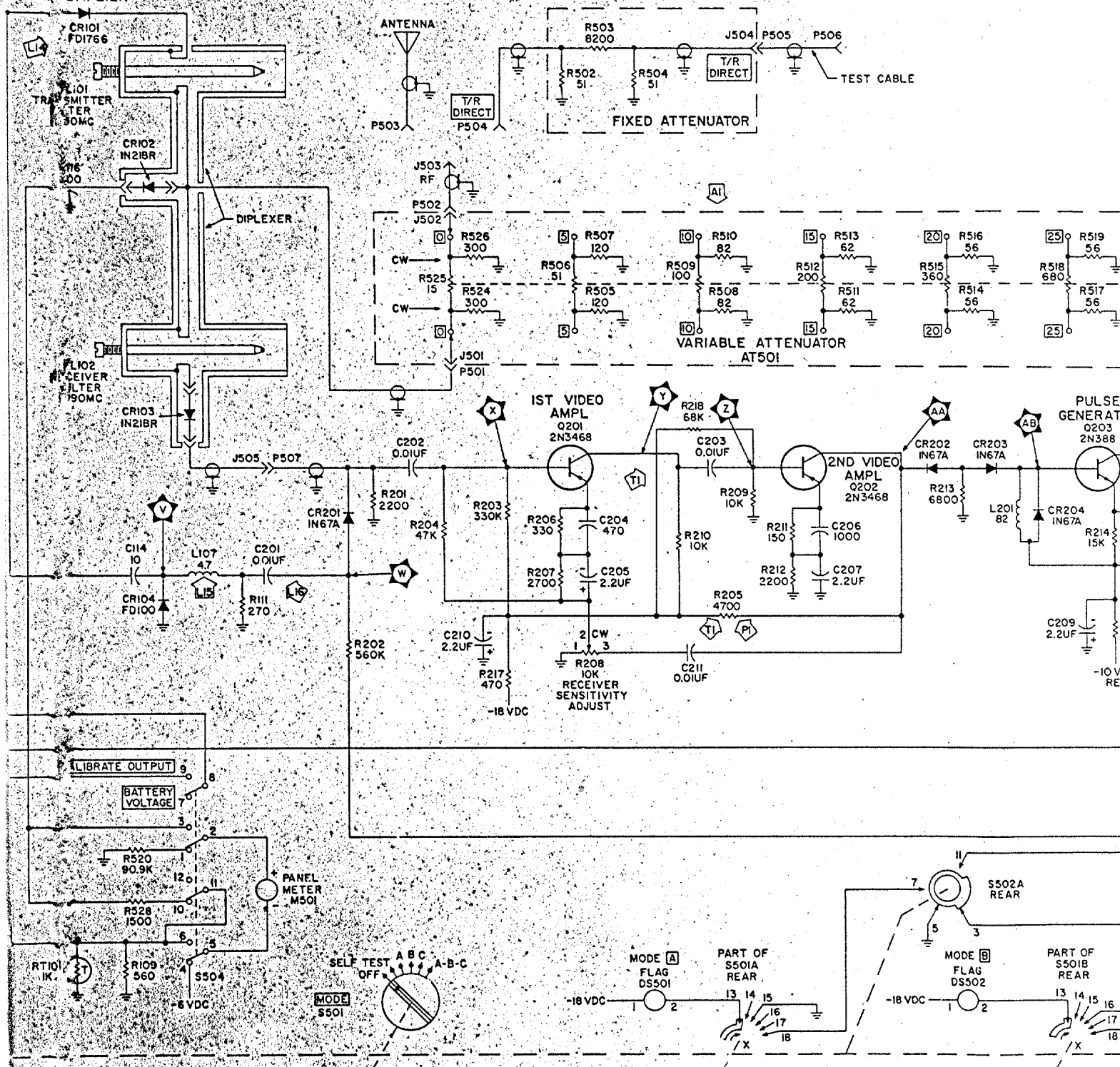
176X-3 ATC Transponder Ramp Test Set, Schematic Diagram
Figure 7-1 (Sheet F)

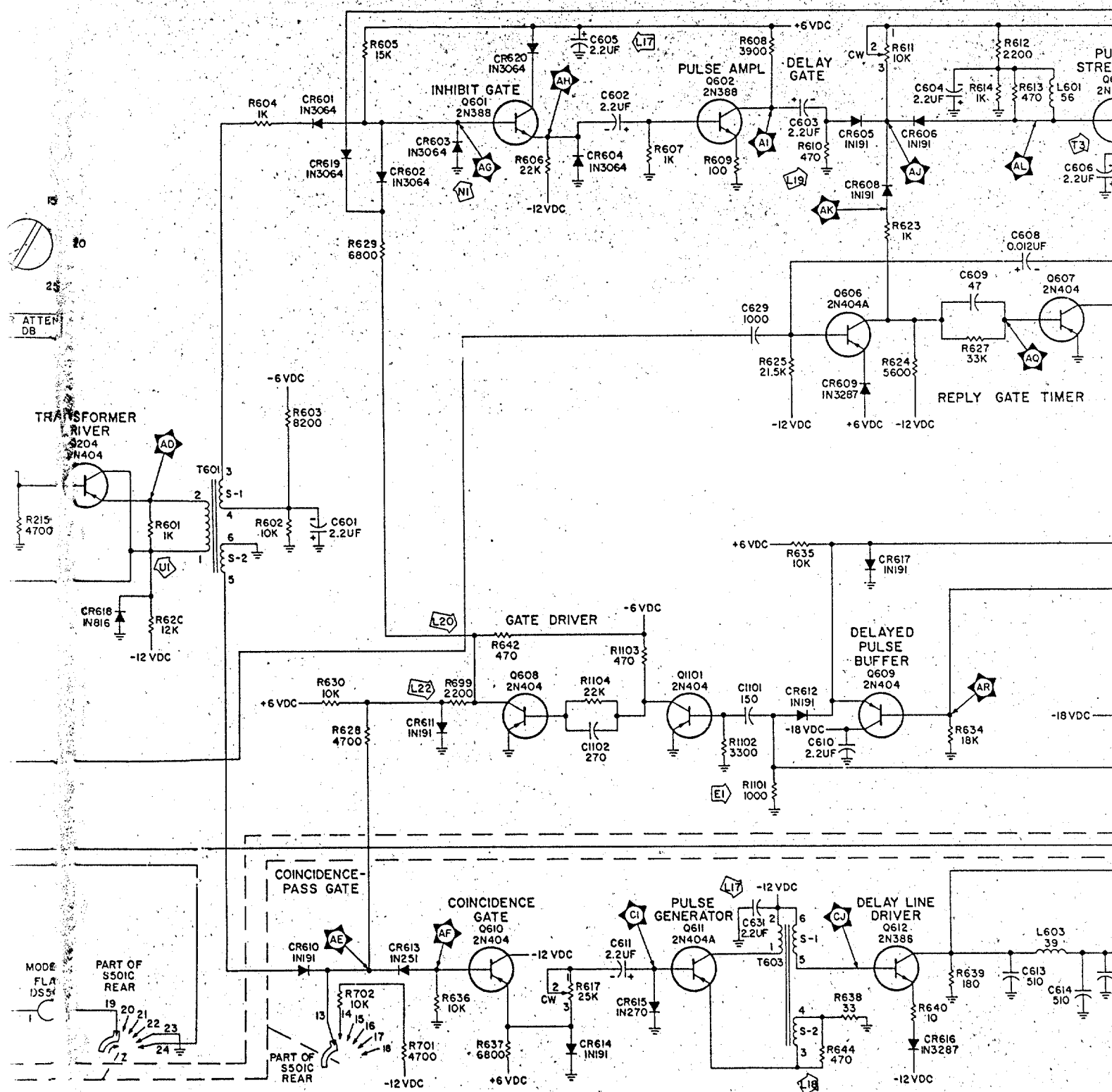
- NOTES:
1. UNLESS OTHERWISE INDICATED, ALL RESISTANCE VALUES ARE IN OHMS, ALL CAPACITANCE VALUES ARE IN PICOFARADS AND ALL INDUCTANCE VALUES ARE IN MICROHENRYS.
 2. TAP CONNECTION DETERMINED DURING DECODER ALIGNMENT.
 3. VALUES OF C302, C513, C522, C523, C703 AND C1103 ARE DETERMINED AT FACTORY. REPLACE WITH CAPACITORS OF SAME VALUE.
 4. VALUE OF C612 IS TEST SELECTED AS .027UF, 2.2UF OR NOT USED.

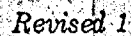




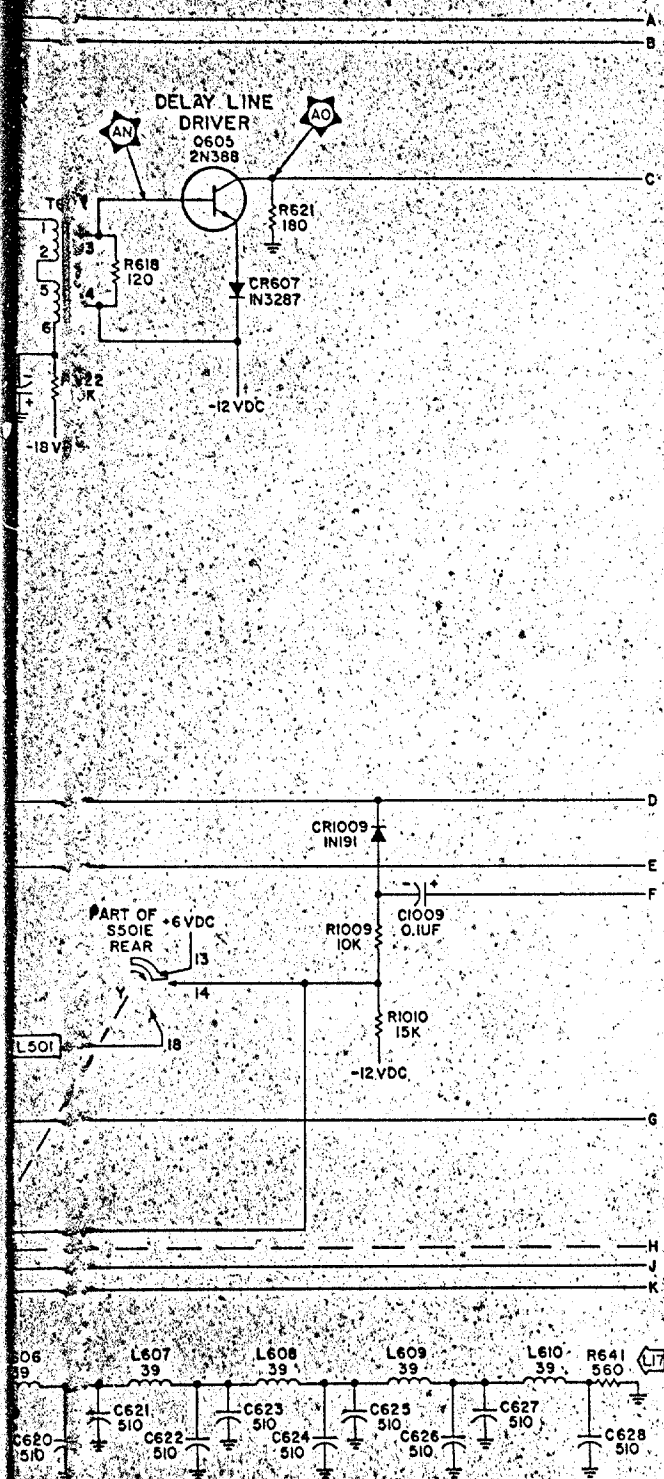
DIO FREQUENCY MULTIPLIER



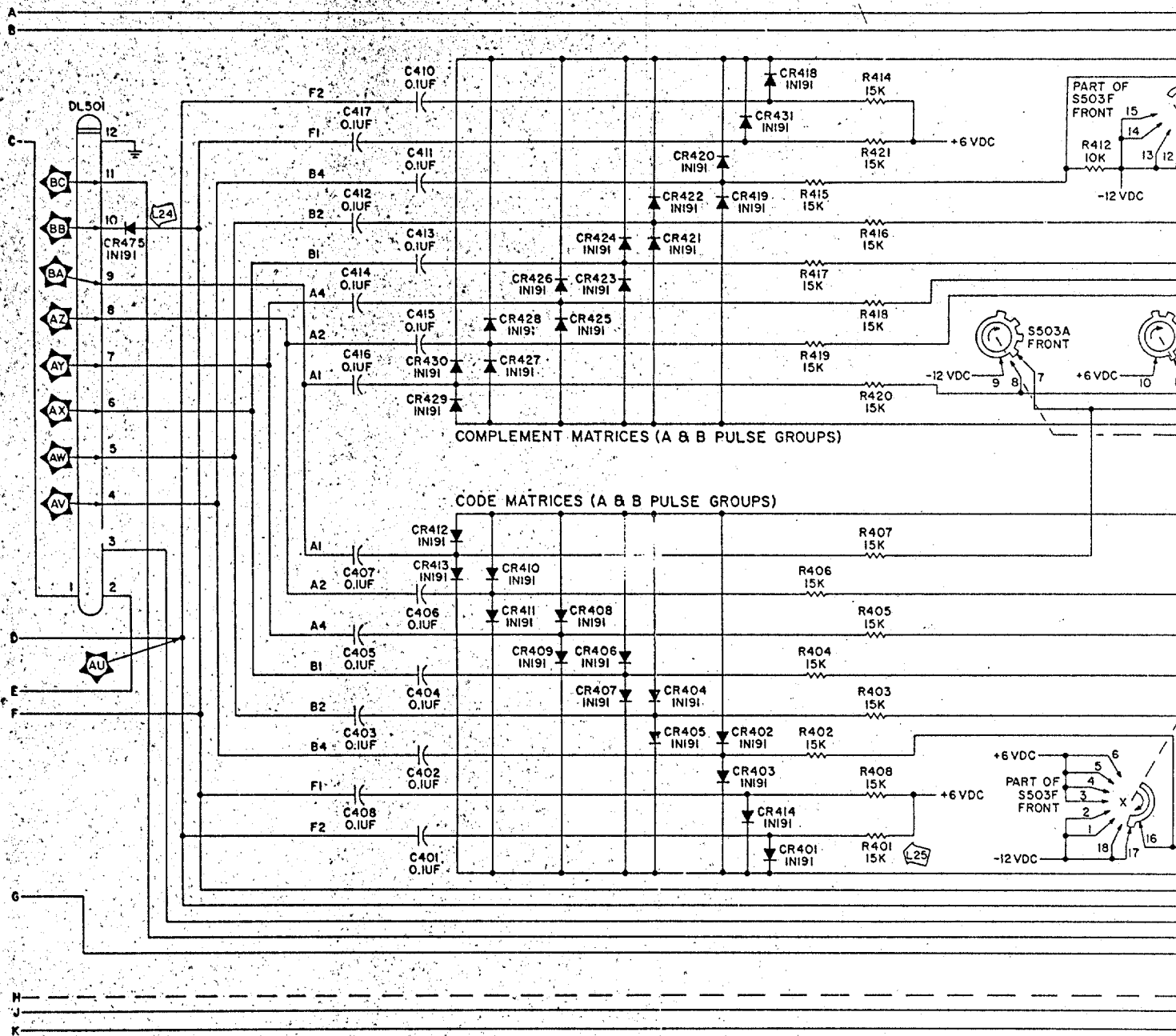


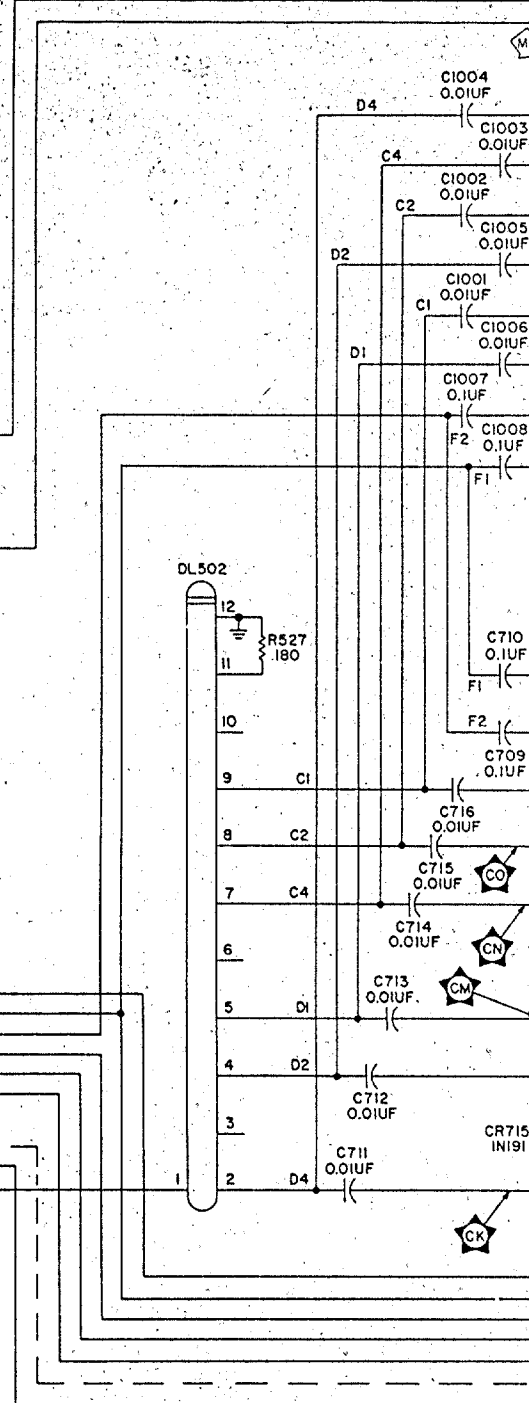
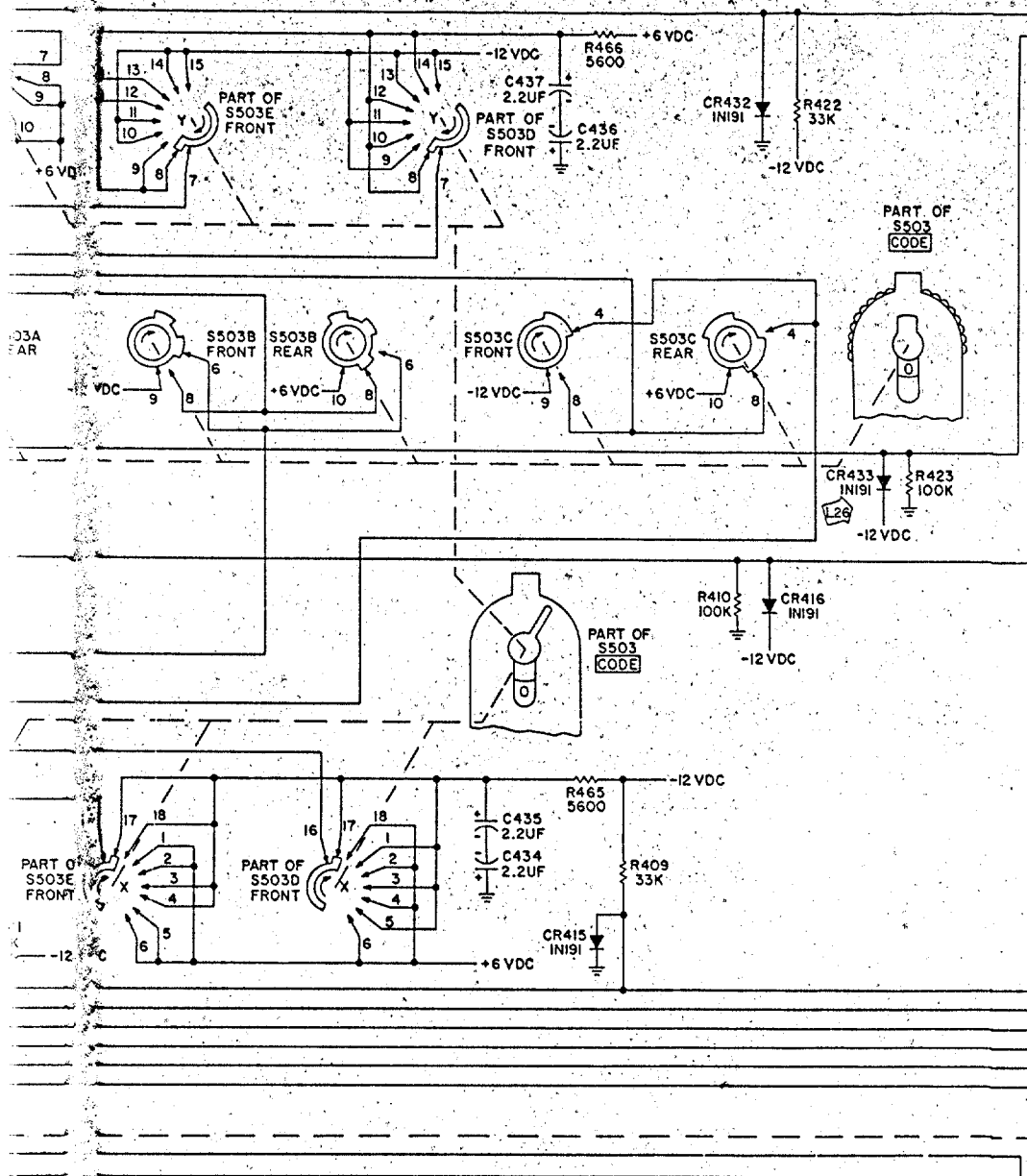


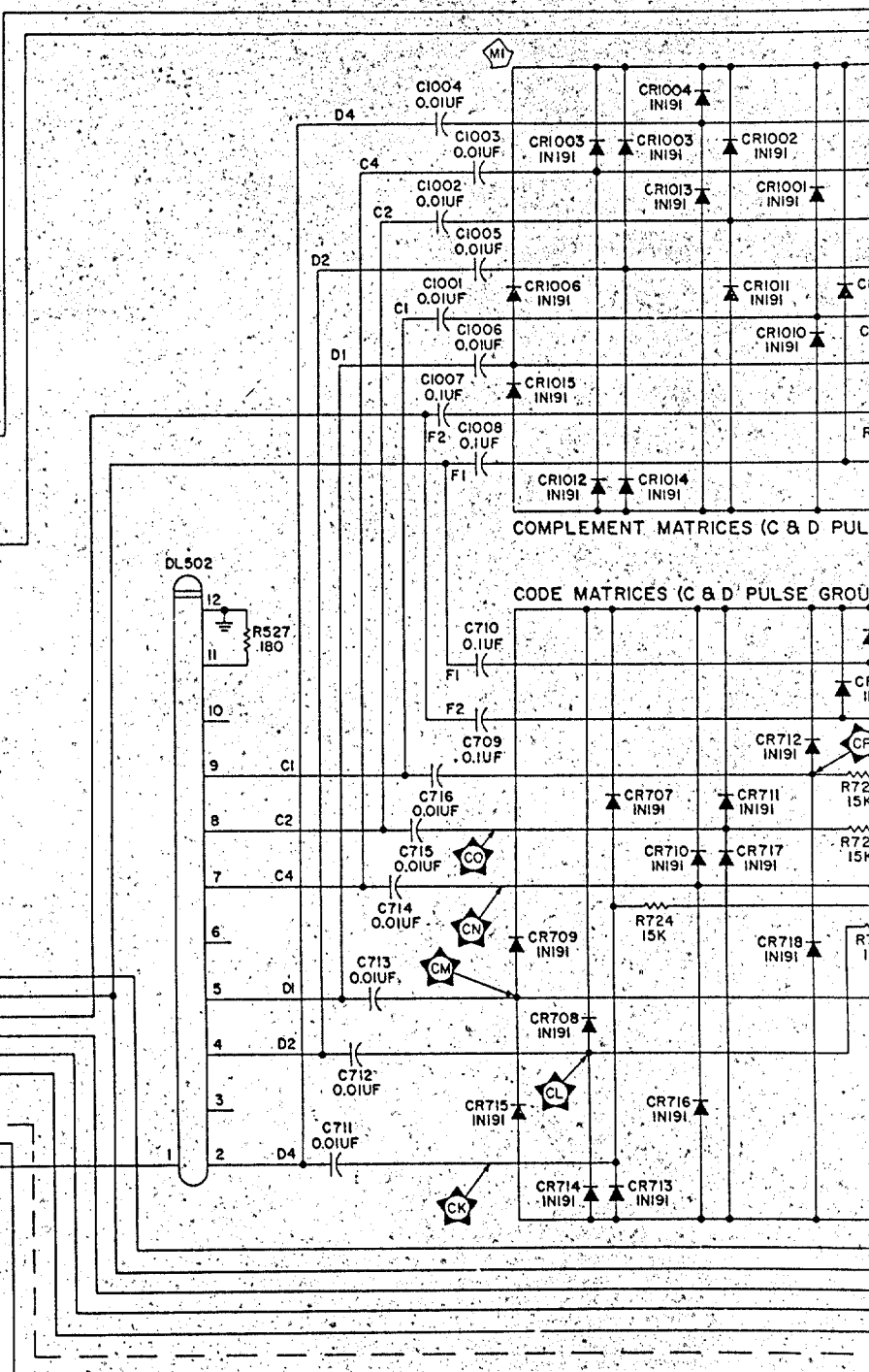
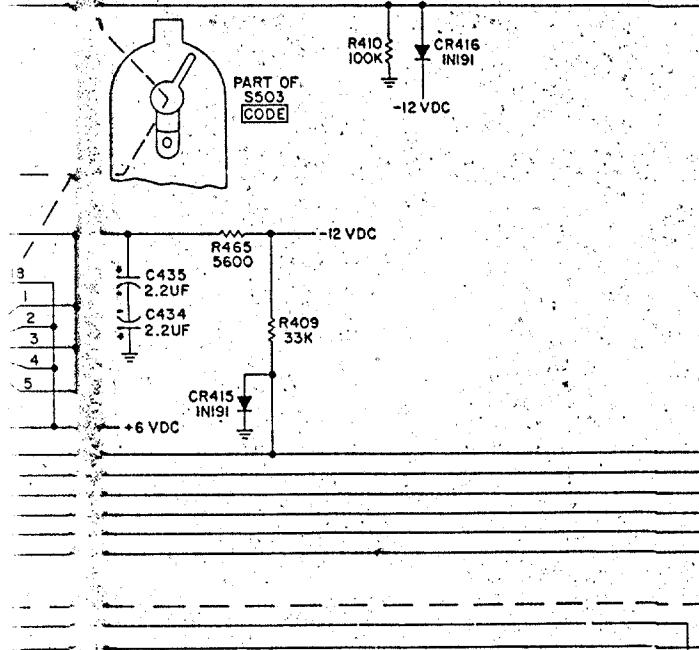
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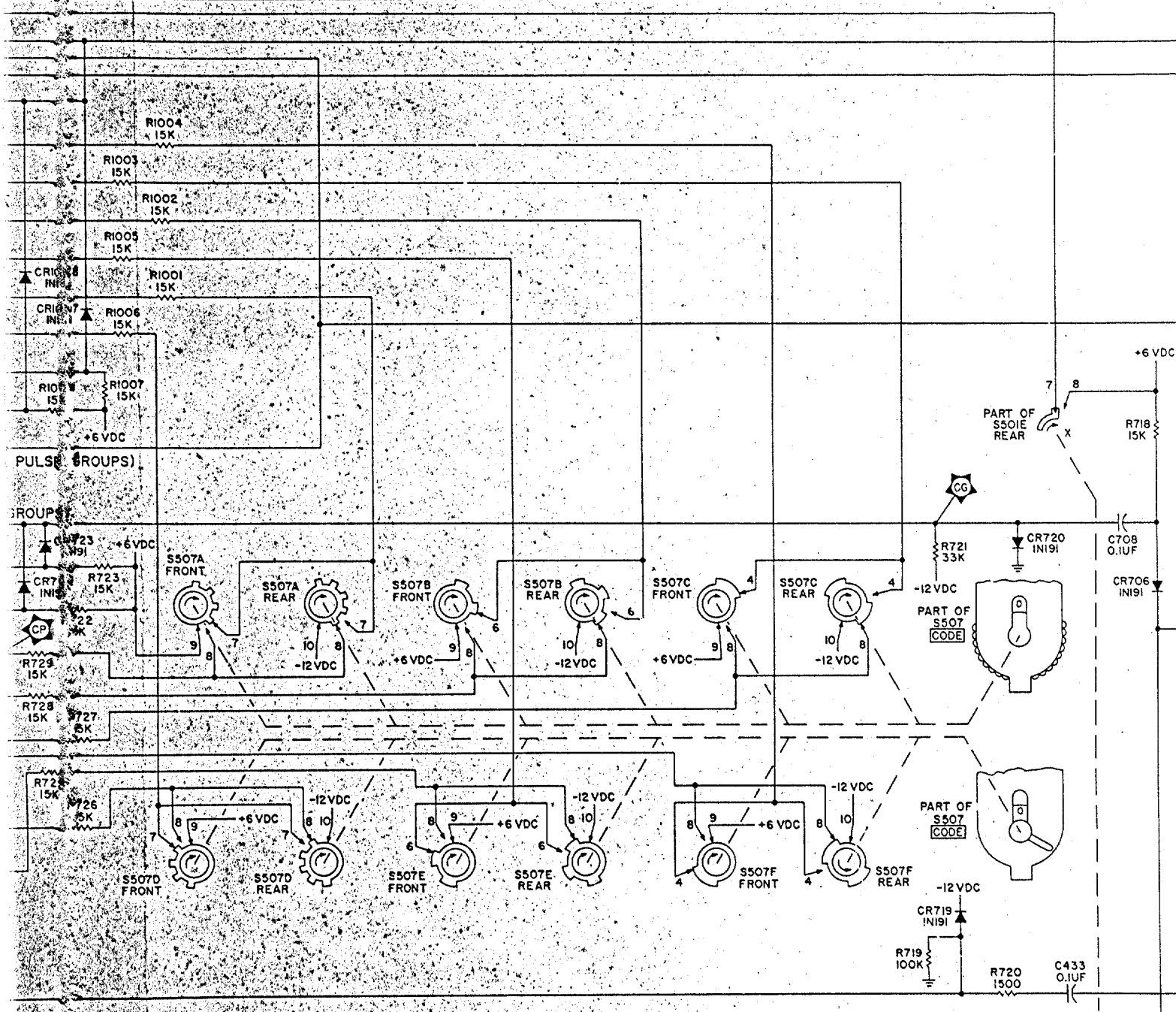


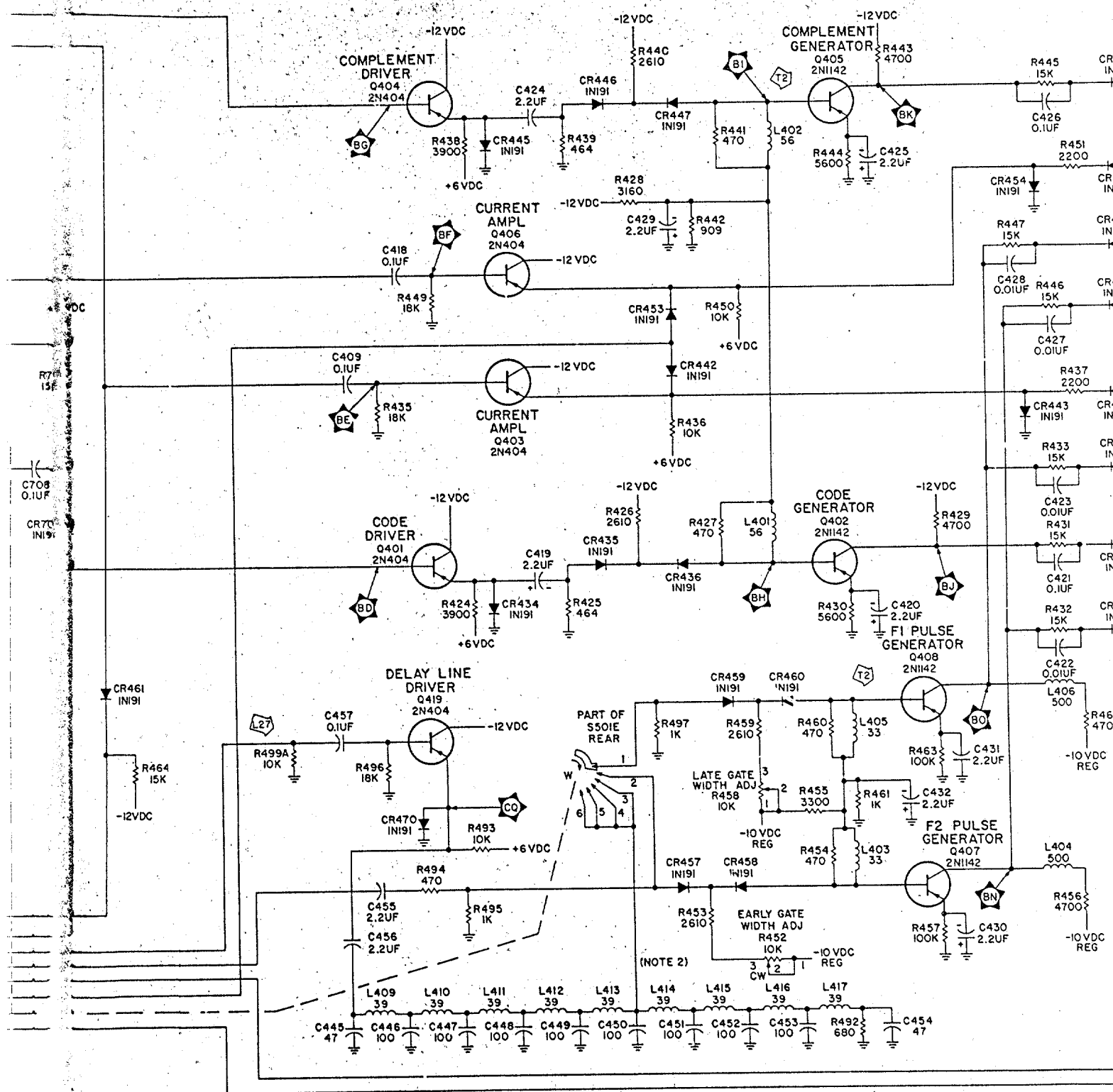
176X-3 ATC Transponder Ramp Test Set
Schematic Diagram
Figure 7-1 (Sheet 1 of 2)

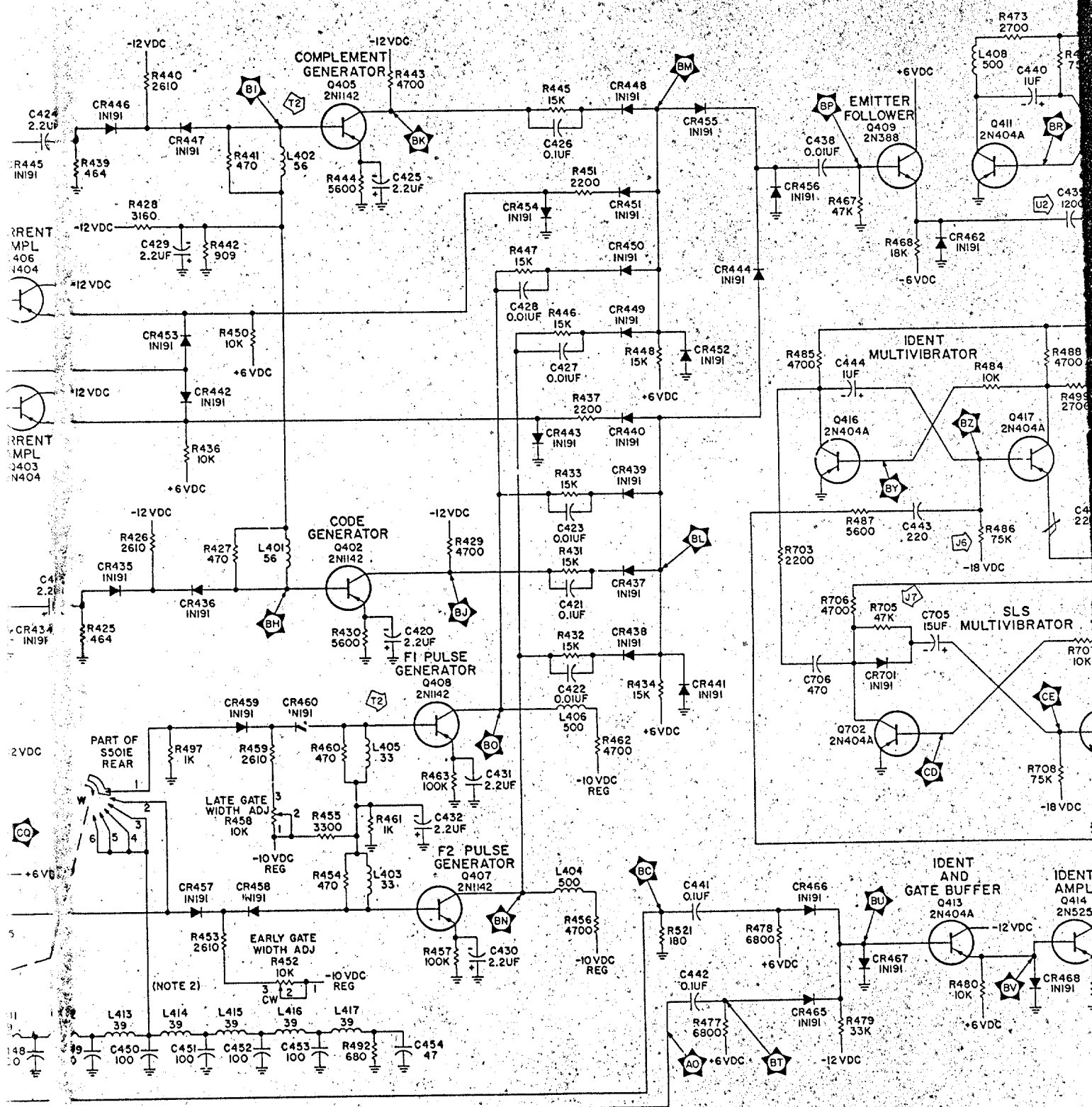




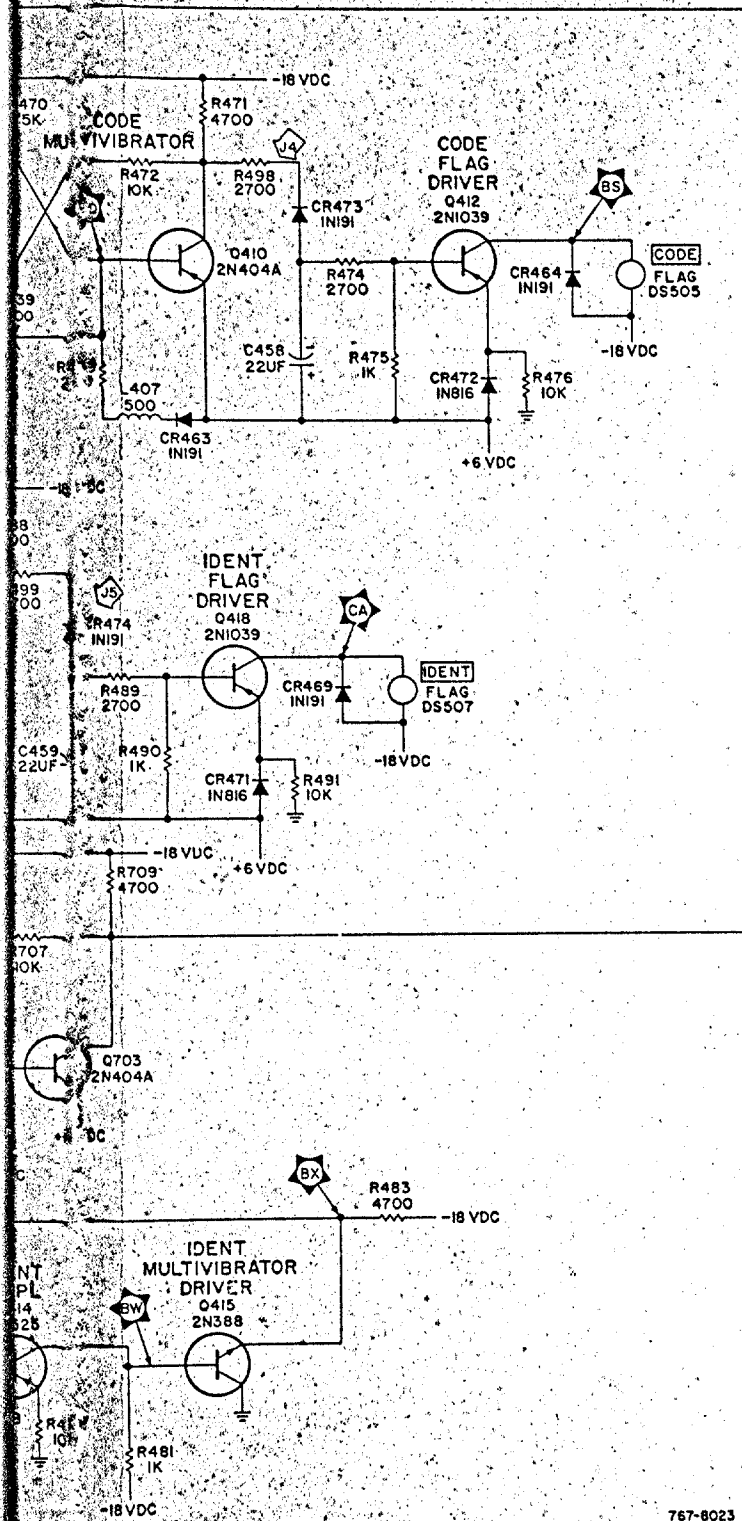




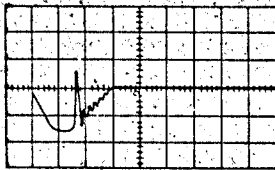




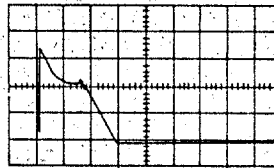
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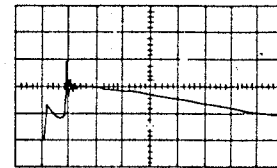
176X-3 ATC Transponder Ramp Test Set,
Schematic Diagram
Figure 7-1 (Sheet 2)



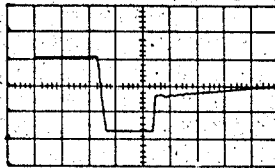
TEST POINT A
Q300 BASE
5 V/CM
2 USEC/CM



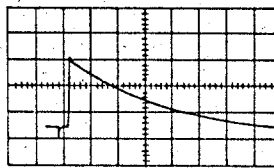
TEST POINT B
Q300 COLLECTOR
5 V/CM
2 USEC/CM



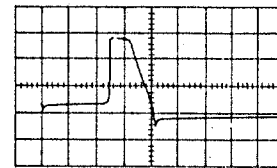
TEST POINT C
CR301 CATHODE
10 V/CM
2 USEC/CM



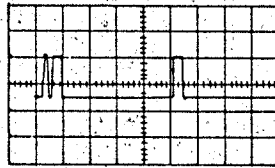
TEST POINT G
Q301 EMITTER
2V/CM
10 USEC/CM



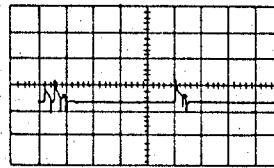
TEST POINT H
Q302 BASE
1V/CM
50 USEC/CM



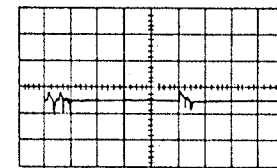
TEST POINT I
Q302 COLLECTOR
2 V/CM
10 USEC/CM



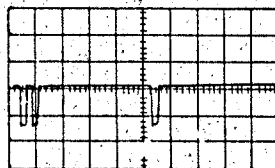
TEST POINT N
Q303 COLLECTOR
5 V/CM
5 USEC/CM



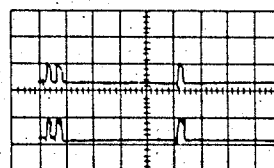
TEST POINT O
JUNCTION CR312
AND CR313
0.5 V/CM
5 USEC/CM



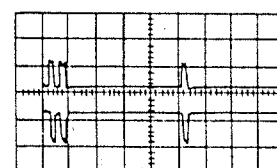
TEST POINT P
Q308 BASE
0.5 V/CM
5 USEC/CM



TEST POINT U
Q308 COLLECTOR
5 V/CM
5 USEC/CM

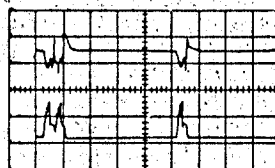


TEST POINT V
CR104 CATHODE
0.5 V/CM
5 USEC/CM

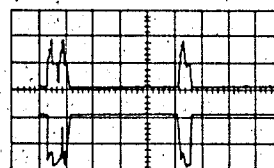


TEST POINT W
CR201 ANODE
0.5 V/CM
5 USEC/CM

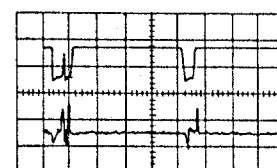
TEST POINT Y
Q201 COLLECTOR
0.5 V/CM
5 USEC/CM



TEST POINT AF
Q610 BASE
2 V/CM
5 USEC/CM



TEST POINT AH
Q601 EMITTER
1 V/CM
5 USEC/CM

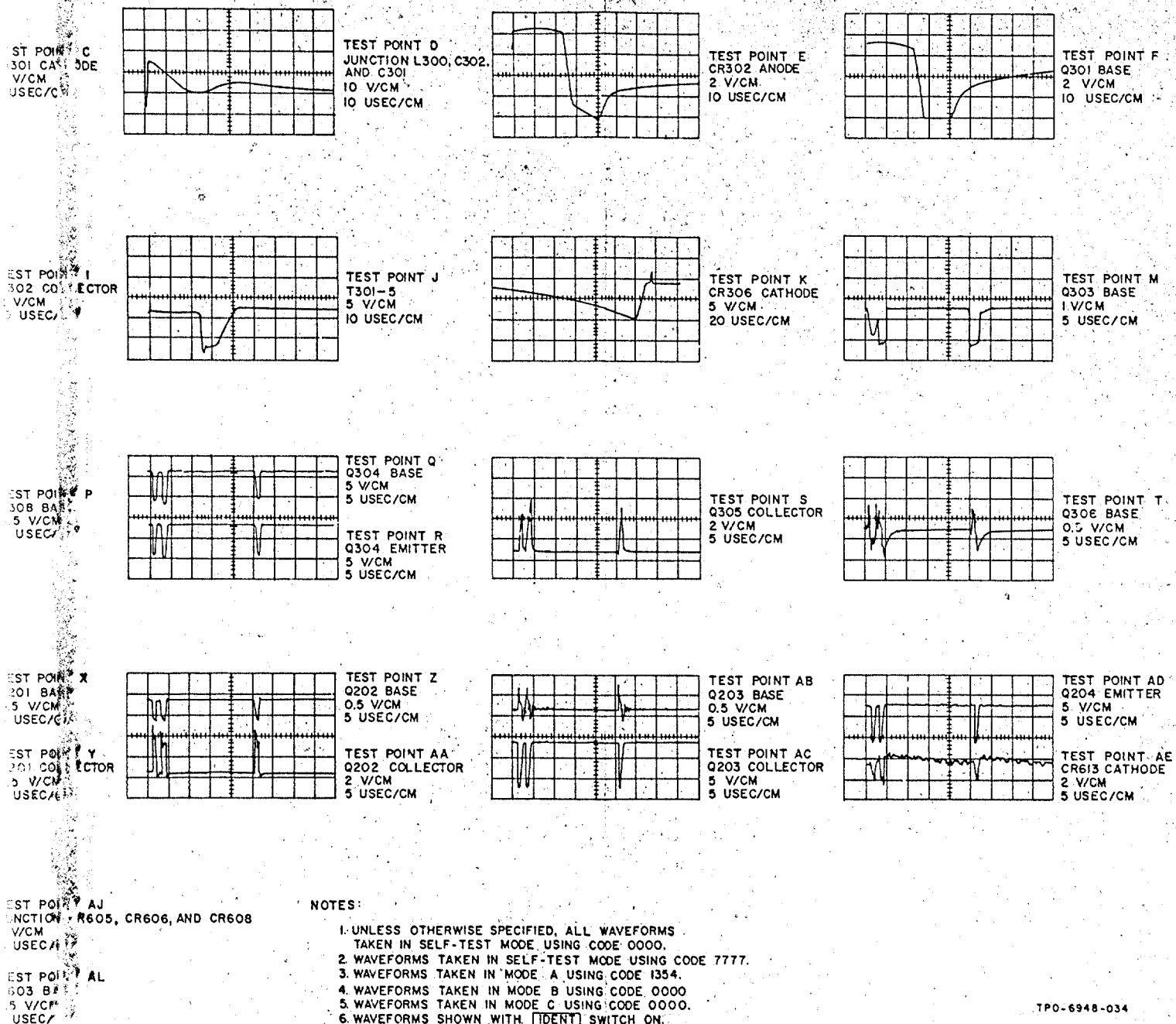


TEST POINT AJ
JUNCTION CR605, CR606,
2 V/CM
5 USEC/CM

TEST POINT AG
Q601 BASE
2 V/CM
5 USEC/CM

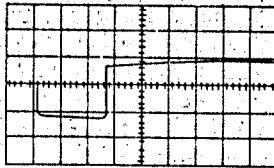
TEST POINT AI
Q602 EMITTER
2 V/CM
5 USEC/CM

TEST POINT AL
Q603 BASE
0.5 V/CM
5 USEC/CM

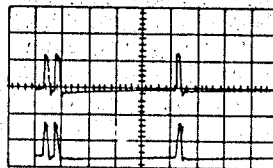


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Figure 7-2. 476X-3 ATC Transponder Ramp Test Set, Waveform Diagram (Sheet 1 of 3).

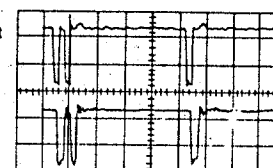


TEST POINT AK
CR608 ANODE
5 V/CM
50 USEC/CM



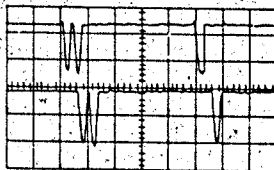
TEST POINT AM
Q603 COLLECTOR
5 V/CM
5 USEC/CM

TEST POINT AN
Q605 BASE
2 V/CM
5 USEC/CM



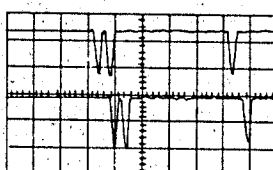
TEST POINT AO
Q605 COLLECTOR
5 V/CM
5 USEC/CM

TEST POINT AP
DL502-1
5 V/CM
5 USEC/CM



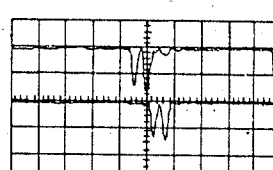
TEST POINT AX
DL501-6
5 V/CM
5 USEC/CM

TEST POINT AY
DL501-7
5 V/CM
5 USEC/CM



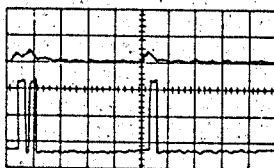
TEST POINT AZ
DL501-8
5 V/CM
5 USEC/CM

TEST POINT BA
DL501-9
5 V/CM
5 USEC/CM



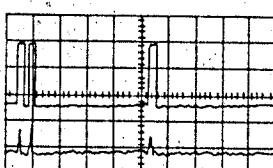
TEST POINT BB
DL501-10
5 V/CM
5 USEC/CM

TEST POINT BC
DL501-11
5 V/CM
5 USEC/CM



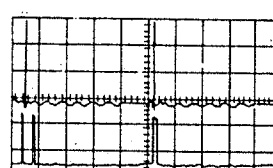
TEST POINT BI
Q405 BASE
0.5 V/CM
5 USEC/CM

TEST POINT BJ
Q402 COLLECTOR
2 V/CM
5 USEC/CM



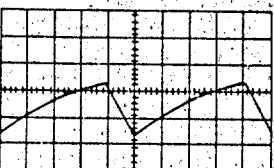
TEST POINT BK
Q405 COLLECTOR
5 V/CM
5 USEC/CM

TEST POINT BL
JUNCTION CR437
AND CR441
0.5 V/CM
5 USEC/CM

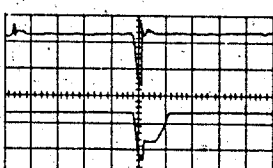


TEST POINT BM
JUNCTION CR451
AND CR455
0.5 V/CM
5 USEC/CM

TEST POINT BN
Q407 COLLECTOR
2 V/CM
5 USEC/CM

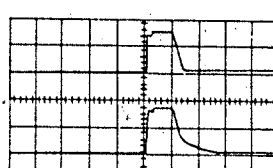


TEST POINT BS
Q412 COLLECTOR
2 V/CM
10 MS/CM



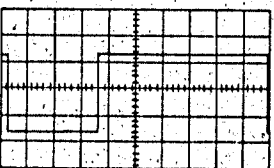
TEST POINT BU
Q413 BASE
2 V/CM
5 USEC/CM

TEST POINT BV
Q414 BASE
2 V/CM
5 USEC/CM

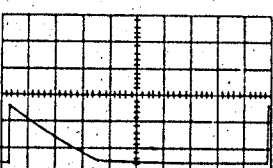


TEST POINT BW
Q415 BASE
10 V/CM
5 USEC/CM

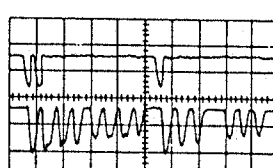
TEST POINT BX
Q415 EMITTER
10 V/CM
5 USEC/CM



TEST POINT CD
Q702 BASE
2 V/CM
0.2 USEC/CM



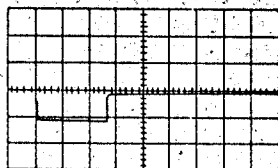
TEST POINT CE
Q703 BASE
5 V/CM
0.2 USEC/CM



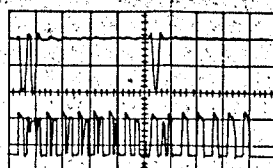
TEST POINT CG
CR720 ANODE
2 V/CM
5 USEC/CM

TEST POINT CH
CR719 ANODE
5 V/CM
5 USEC/CM

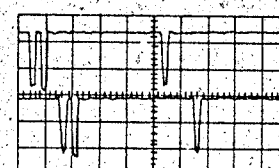
TEST POINT AO
5 COLLECTOR
CM
SEC/CM



TEST POINT AQ
Q607 BASE
5 V/CM
50 USEC/CM



TEST POINT AR
Q609 BASE
5 V/CM
5 USEC/CM



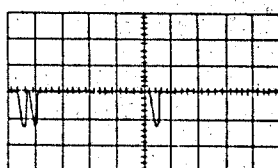
TEST POINT AV
DL501-4
5 V/CM
5 USEC/CM

TEST POINT AW
DL501-5
5 V/CM
5 USEC/CM

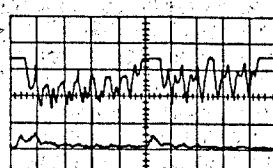
TEST POINT AP
Q2-1
CM
SEC/CM

TEST POINT AS
Q608 BASE
2 V/CM
5 USEC/CM

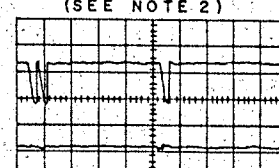
TEST POINT BP
Q1-10
CM
SEC/CM



TEST POINT BD
Q401 BASE
2 V/CM
5 USEC/CM



TEST POINT BE
Q403 BASE
5 V/CM
5 USEC/CM



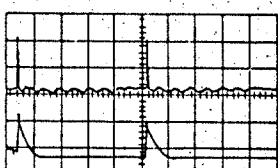
TEST POINT BG
Q404 BASE
2 V/CM
5 USEC/CM

TEST POINT BH
Q402 BASE
0.5 V/CM
5 USEC/CM

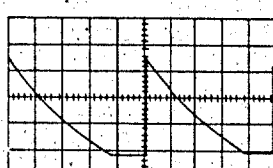
TEST POINT BF
Q1-11
CM
SEC/CM

TEST POINT BF
Q406 BASE
0.5 V/CM
5 USEC/CM

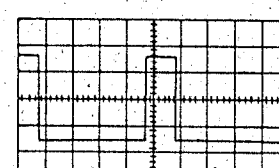
TEST POINT BO
SECTION C
CR455
V/CM
SEC/CM



TEST POINT BO
Q408, COLLECTOR
2 V/CM
5 USEC/CM



TEST POINT BQ
Q410 BASE
5 V/CM
10 MS/CM

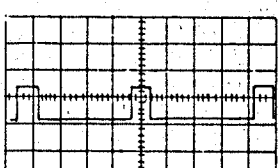


TEST POINT BR
Q411 BASE
2 V/CM
10 MS/CM

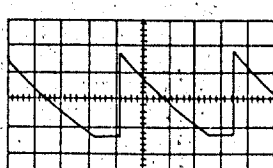
TEST POINT BP
Q409 BASE
1 V/CM
5 USEC/CM

TEST POINT BP
Q409 BASE
1 V/CM
5 USEC/CM

TEST POINT BY
Q416 BASE
5 V/CM
10 MS/CM



TEST POINT BY
Q416 BASE
5 V/CM
10 MS/CM



TEST POINT BZ
Q417 BASE
5 V/CM
10 MS/CM

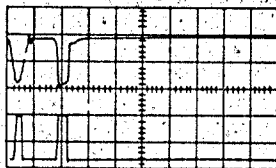
TEST POINT BZ
Q417 BASE
5 V/CM
10 MS/CM

TEST POINT BZ
Q417 BASE
5 V/CM
10 MS/CM

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Figure 7-2. 476X-3 ATC Transponder Ramp Test Set, Waveform Diagram (Sheet 2 of 3).

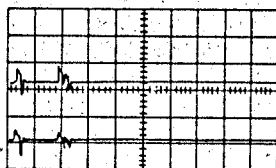
(SEE NOTE 3).



TEST POINT M
Q303 BASE
1 V/CM
5 USEC/CM

TEST POINT N
Q303 COLLECTOR
5 V/CM
5 USEC/CM

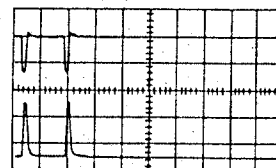
(SEE NOTE 3)



TEST POINT O
JUNCTION CR313
AND CR32
0.5 V/CM
5 USEC/CM

TEST POINT P
Q308 BASE
0.5 V/CM
5 USEC/CM

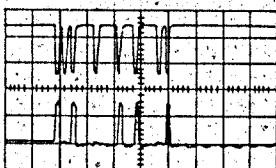
(SEE NOTE 3)



TEST POINT Q
Q304 BASE
5 V/CM
5 USEC/CM

TEST POINT S
Q305 COLLECTOR
2 V/CM
5 USEC/CM

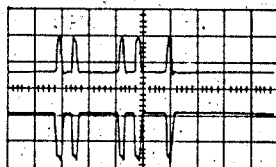
(SEE NOTE 3)



TEST POINT AC
Q203 COLLECTOR
1 V/CM
5 USEC/CM

TEST POINT AG
Q601 BASE
1 V/CM
5 USEC/CM

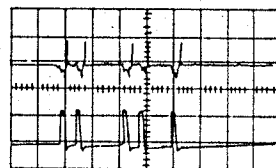
(SEE NOTE 3)



TEST POINT AH
Q601 EMITTER
1 V/CM
5 USEC/CM

TEST POINT AI
Q602 COLLECTOR
2 V/CM
5 USEC/CM

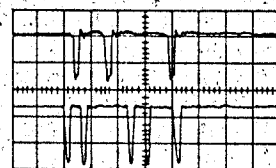
(SEE NOTE 3)



TEST POINT AL
Q603 BASE
0.5 V/CM
5 USEC/CM

TEST POINT AM
Q603 COLLECTOR
2 V/CM
5 USEC/CM

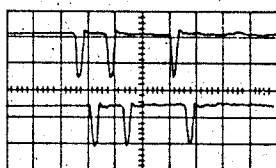
(SEE NOTE 3)



TEST POINT AP
DL502-1
5 V/CM
5 USEC/CM

TEST POINT AU
CR1009 CATHODE
5 V/CM
5 USEC/CM

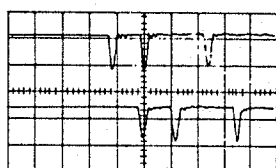
(SEE NOTE 3)



TEST POINT CK
JUNCTION CR707
AND CR713
5 V/CM
5 USEC/CM

TEST POINT CL
JUNCTION CR708
AND CR714
5 V/CM
5 USEC/CM

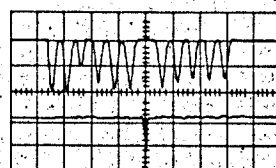
(SEE NOTE 3)



TEST POINT CM
JUNCTION CR709
AND CR715
5 V/CM
5 USEC/CM

TEST POINT CN
JUNCTION CR710
AND CR716
5 V/CM
5 USEC/CM

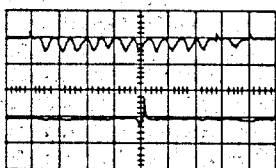
(SEE NOTE 3)



TEST POINT BE
Q403 BASE
5 V/CM
5 USEC/CM

TEST POINT BD
Q401 BASE
2 V/CM
5 USEC/CM

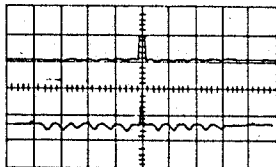
(SEE NOTE 3)



TEST POINT BH
Q402 BASE
0.5 V/CM
5 USEC/CM

TEST POINT BM
JUNCTION CR448
AND CR455
0.5 V/CM
5 USEC/CM

(SEE NOTE 3)



TEST POINT BJ
Q402 COLLECTOR
5 V/CM
5 USEC/CM

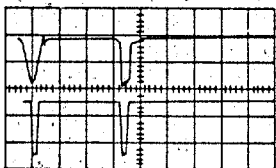
TEST POINT BL
JUNCTION CR437
AND CR439
1 V/CM
5 USEC/CM

(SEE NOTE 3 AND 6)



TEST POINT BU
CR1009 CATHODE
2 V/CM
5 USEC/CM

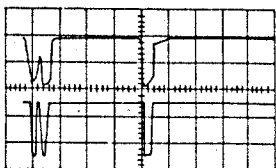
(SEE NOTE 4)



TEST POINT M
Q303 BASE
1 V/CM
5 USEC/CM

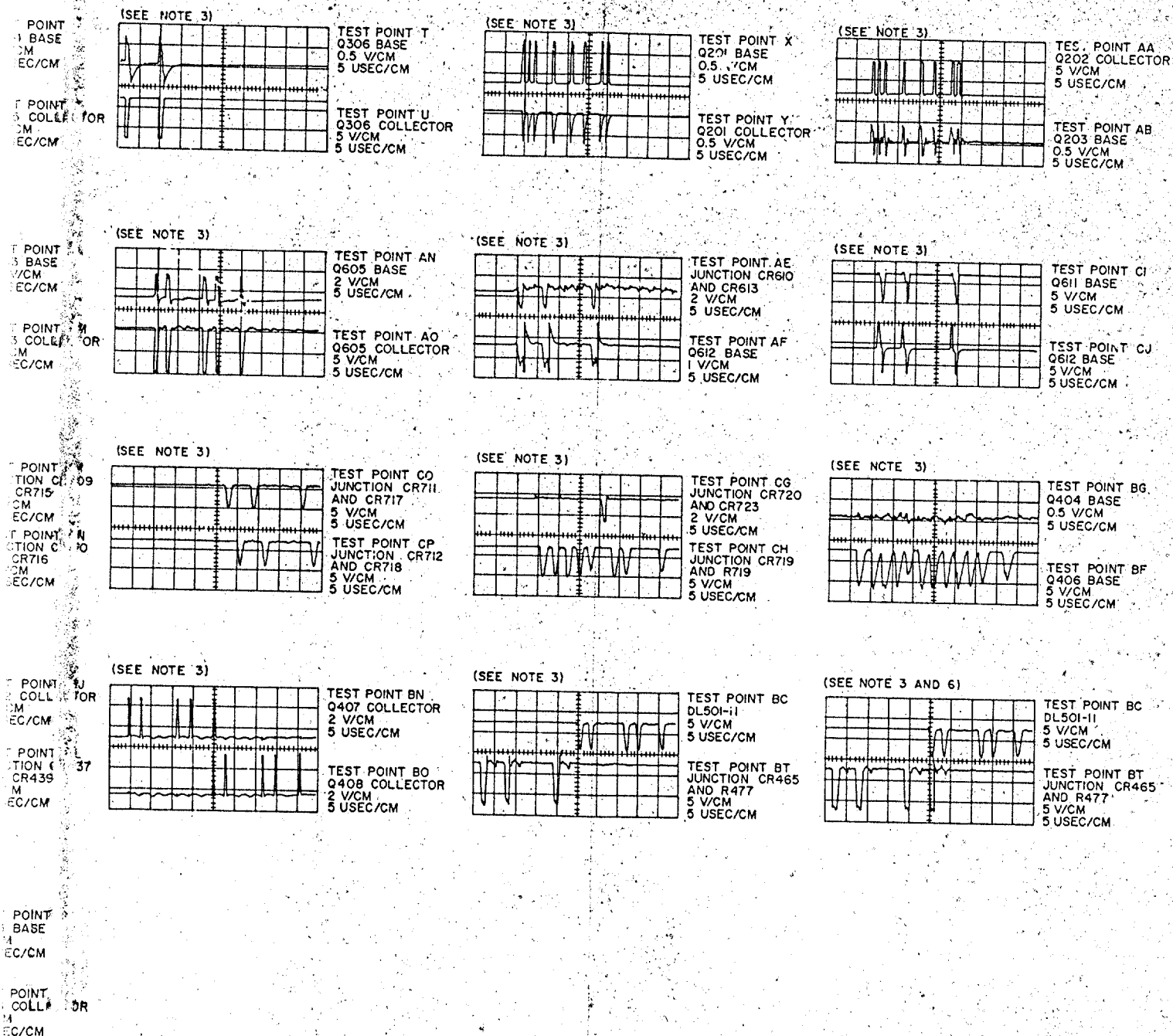
TEST POINT V
Q306 COLLECTOR
5 V/CM
5 USEC/CM

(SEE NOTES 5 AND 6)



TEST POINT M
Q303 BASE
1 V/CM
5 USEC/CM

TEST POINT U
Q306 COLLECTOR
1 V/CM
5 USEC/CM



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Figure 7-2. 476X-3 ATC Transponder Ramp Test Set, Waveform Diagram (Sheet 3 of 3).