FT-102

TECHNICAL SUPPLEMENT

YAESU MUSEN CO., LTD.
C.P.O. BOX 1500
TOKYO, JAPAN

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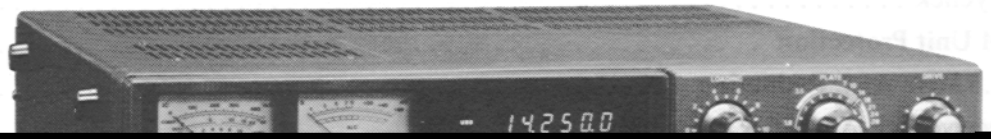
FT-102
HF ALL MODE TRANSCEIVER



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Pages 17-25 have been deleted from the Supplement, as they describe procedures for hand conversions that are not authorized in certain countries. This material is available from Yaesu representatives in those countries where such operation and modification of the FT-102 is legal. Contact your nearest authorized Yaesu dealer for details.

ERRATA
FOR THE FT-102 INSTRUCTION MANUAL

These errata apply to early printings of the Instruction Manual, up to the present. Only those of possible technical significance are listed here, although there were a few other minor typo-

NIT, was in-

Page 40, Upper left photo:

The title of this photo, RECT. A U

6. Retune the AG to 1 kHz, and switch the HEATER on, 14 MHz band. Tune up the transmitter for 100 watts output, adjusting the signal generator output level to obtain this power output with the MIC GAIN control at the 12 o'clock position.

7. Now adjust the audio generator frequency to 300 Hz while maintaining a constant generator output level. If the ALC indication on METER II does not change during this audio frequency change, check the output power level, which should now be 25 watts. If necessary, adjust VR_{4005} for 25 watts output. If the ALC indication changes, repeat step 5 with the MIC GAIN control set lower and the signal generator level correspondingly higher.

8. Return to receive, switch the MODE selector to USB and repeat step 6, adjusting VR_{4006}, if necessary, to obtain 25 watts output.

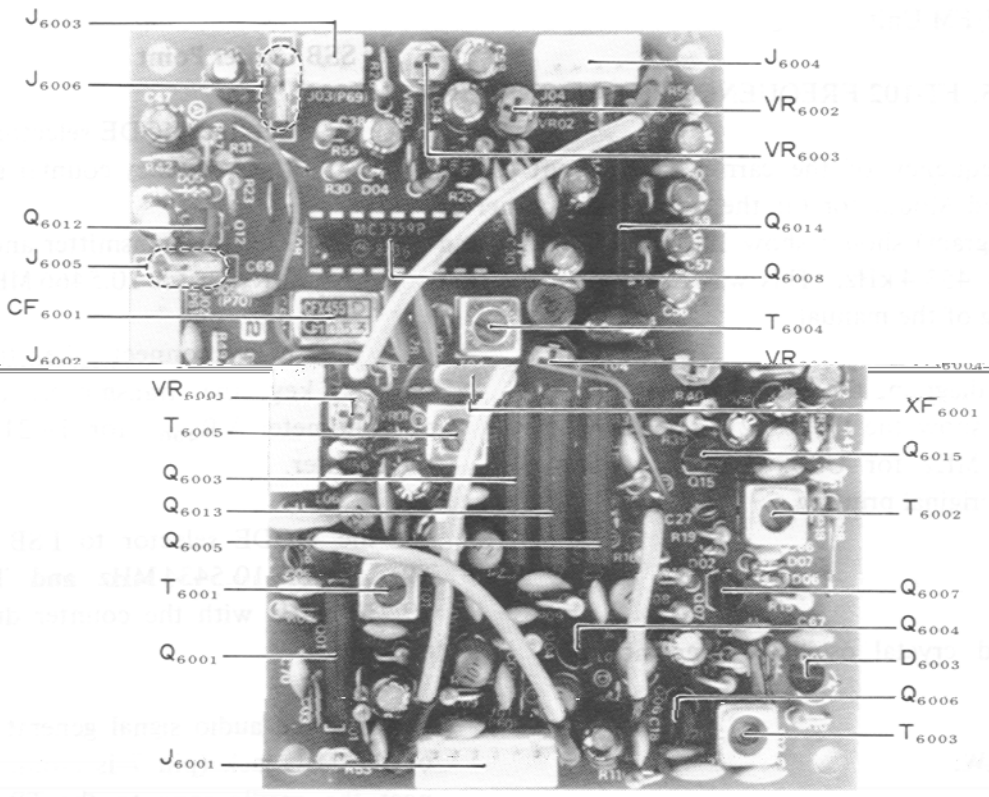
Page 47, AM/FM UNIT (photo):

This photo was replaced from the second printing of the manual with the photo of the updated Unit, shown below. Also, the Varactor Pinout diagram was denoted as D6003 in later printings.

Page 52, AM/FM Unit Installation:

Step 3 of the procedure was corrected as follows:

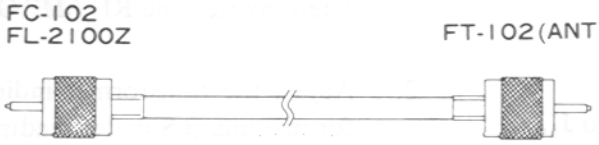
3. Remove the plastic covers from the two conectors and connect the six connectors to the AM/FM Unit as shown in Figure 2.



AM/FM UNIT

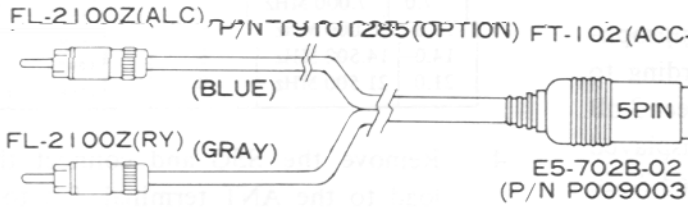
INTERCONNECTION CABLE INFORMATION

A



P/N T9100160A (65 cm)
T9100161 (1 m)

B



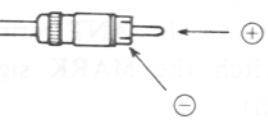
-2)

1. ALC inner conductor
2. ALC/RY outer conductor
3. RY inner conductor
4. ALC/RY outer conductor
5. ——

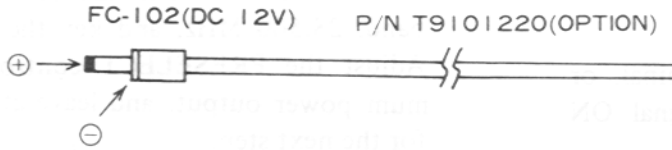
SP-102

C

FT-102(12V)

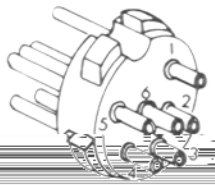


D



PIN No.
1. ALC
2. GND
3. TX GND
4. GND
5. RX GND
Shell GND

ACC-2

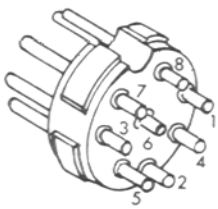


PIN No.
1. TX GND
2. KEY-1
3. 100kHz(REF) OUT
4. N.C.
5. RX GND
6. GND
Shell GND

ACC-1

PIN No.
1. UP
2. FAST
3. GND
4. DWN
5. MUTE
6. SIDE TONE OUT
7. 100kHz (REF) OUT

EXT VFO/RCVR B



PIN No.
1. +8V
2. +12V
3. +500kHz
4. TX 12V
5. CW 8V
6. EXT VFO IN
7. GND
8. SAMPLE IN

EXT VFO/RCVR A

RF UNIT ALIGNMENT (PB-2342)

Bandpass Filters

1. Connect the sweep generator output to J_{1001} (TX IN), and connect the oscilloscope to RF OUT jack J_5 on the rear panel. Turn the HEATER switch OFF.

2. Key the transmitter and adjust the appropriate transformer for each band according to the following chart to obtain the correct 3 dB bandwidth with minimum ripple, as displayed on the scope. Ripple should not exceed 3 dB.

Band	Adjust	Passband (-3 dB)
1.8	T_{1011}, T_{1022}	1.8– 2.0 MHz
3.5	T_{1013}, T_{1014}	3.5– 4.0 MHz
7.0	T_{1015}, T_{1016}	7.0– 7.3 MHz
10.0	T_{1017}, T_{1018}	10.0–10.5 MHz
14.0	T_{1019}, T_{1020}	14.0–14.5 MHz
18.0	T_{1021}, T_{1022}	18.0–18.5 MHz
21.0	T_{1023}, T_{1024}	21.0–21.5 MHz
24.5	T_{1025}, T_{1026}	24.5–25.5 MHz
28/29	T_{1027}, T_{1028}	28.0–29.9 MHz

Preselector

1. Connect the SSG to the ANT terminal, or alternatively, switch the MARK signal ON (rear panel switch).

2. Set the FT-102 to the band and frequency shown in the following chart, and set the PRESELECT control to the position indicated. Switch the RF AMP ON.

3. Adjust the transformer indicated in the chart for maximum S-meter reading.

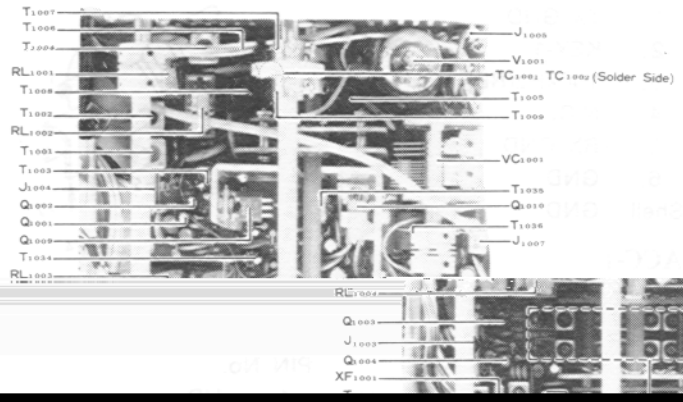
Band	Frequency	Preselect	Transformer	S-meter
1.8	1.900 MHz	2	T_{1001}	
3.5	4.000 MHz	8	T_{1004}	
7.0	7.000 MHz	5	T_{1005}	
10.0	10.000 MHz	6	T_{1006}	Maxi
14.0	14.500 MHz	8	T_{1007}	
21.0	21.500 MHz	8	T_{1008}	

4. Remove the SSG and connect the d load to the ANT terminal. Set to 29.5 band, 30.000 MHz, PRESELECT to 8 the transmitter and adjust T_{1009} for mum power output.

5. Reconnect the SSG to the ANT termin adjust TC_{1001} for maximum RX S- indication.

6. Remove the SSG and connect the du load to the ANT terminal. Set to 28.5 band, 28.500 MHz, and key the transm Adjust the PRESELECT control for mum power output, and leave at this s for the next step.

7. Repeat step 5, adjusting TC_{1002}.



SOLDERING AND DESOLDERING TECHNIQUE ON PRINTED CIRCUIT BOARDS

*The FT-102 circuit boards are tough, but mis*handling during soldering can cause circuit traces to "lift." While this does not cause permanent damage to the board, much servicing trouble can result, because of the tendency for this lifted trace to break. A few simple precautions will keep your circuit boards in A-1 condition.

1. Use only a 12 to 30-watt chisel-tip soldering iron, with the tip arounded or isolated from AC and DC potential. Voltage at the tip can easily destroy CMOS components.

2. Use only the minimum amount of heat necessary to remove a component, or to cause the solder to "flow" when installing a new component.

3. USE ONLY 60/40 ROSIN CORE SOLDER.

4. Use solder removing braid and flux to absorb excess solder before installing a new component. A solder sucker can also be used, but most be handled with care to avoid lifting traces.

5. Do not attempt to remove DIP ICs without first cutting all of the pins on the component side of the board, unless you have the correct desoldering equipment (spring-loaded clamp and all-pin desoldering tip).

If you do lift a trace, don't worry! Read on to find out how to repair traces like a pro.

NOTES ON USE OF CMOS COMPONENTS:

As CMOS devices are extremely sensitive to damage from static electricity, special precautions must be observed.

In storage, use only conductive sponge specially designed for CMOS components.

When installing a CMOS part in a socket, or on a circuit board, be certain that the power is off. In addition, the technician should rest his hand on the chassis as the component is inserted, so as to place his hand at the same potential as the chassis (better to discharge small amounts of static electricity through your fingers than through a $5 IC !).

When soldering a CMOS part onto a circuit board, use a low-wattage iron, and be sure to ground the tip with a clip lead, if the tip is not grounded through a three-wire power cord.

CIRCUIT BOARDS

INSERTION OF PARTS ON

All of the below are acceptable ways of inserting components into circuit board mounting holes.

(c) Vertical mounting

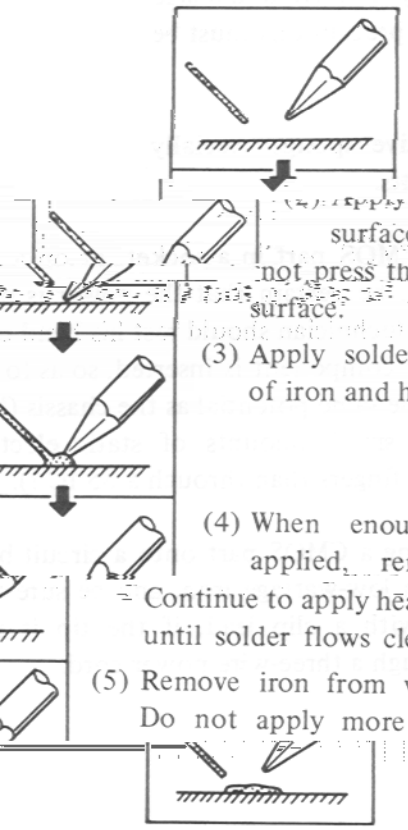
(d) Preformed disc ceramic capacitor

(e) Preformed resistor, diode, etc.

(a) Bend leads slightly

(b) Straight-in mounting

BASIC SOLDERING PRACTICE



(1) Prepare soldering iron and solder. The tip of the iron should be thoroughly tinned and wiped clean of excess solder.

(2) Apply soldering iron to surface to be soldered. Do not press the iron into the surface.

(3) Apply solder to junction of iron and heated surface.

(4) When enough solder is applied, remove solder. Continue to apply heat just until solder flows cleanly.

(5) Remove iron from work. Do not apply more heat than necessary for good solder flow.

Proper soldering:
A smooth fillet of solder surrounds the lead and just covers the foil pad.

EXAMPLES OF POOR SOLDERING PRACTICE

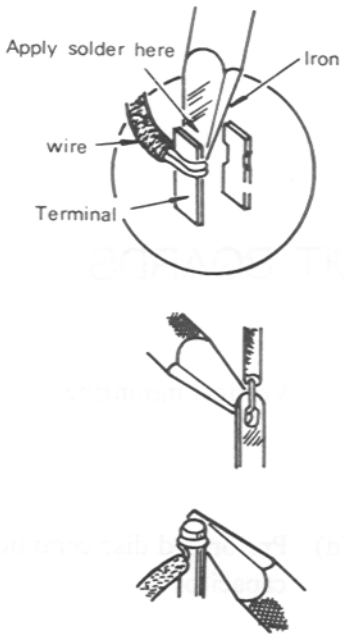
Unwanted solder bridge connecting two tracks (caused by use of too much solder)

Cold joint (caused by insufficient heat to part of work resulting in poor solder flow)

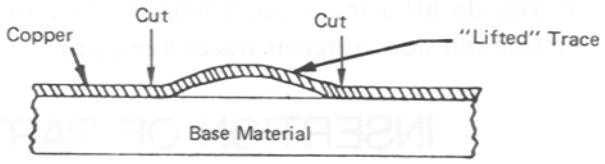
Unstable joint (caused by insufficient heat or solder)

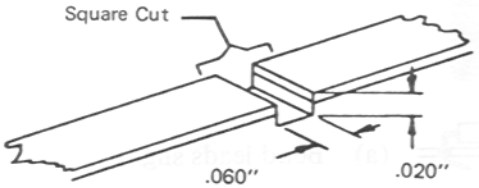
Soldering to terminal posts:

(Be certain to apply heat to both post and wire.)



If you have previously lifted a trace, make an etch cut on each side of the lifted trace as shown in the drawing, and install a wire bridge.





Coat Cut Area With Eastman 910
After Soldering Wire Bridge

TYPICAL PART FAILURES, CAUSES AND SYMPTOMS

PARTS	CAUSE OF TROUBLE	SYMPTOMS
Semiconductors (IC, FET, TR)	High supply voltage Open circuit Excessive drive High temperature	Short or open circuit Output decreases to 1/2 at 80°C Internal noise Instability
MOS FET MOS IC	Static electricity	Total failure Short or open circuit
Crystal Crystal filter	Shock High temperature Aging	No oscillation Off frequency Frequency drift Filter bandpass change
Resistor	Excessive power High temperature	Component burned Value changed Open circuit
Potentiometer	Excessive power Shock Dust or oil Wear	Component burned Open circuit Noise Unsmooth rotation
Capacitor	Excess voltage High temperature Aging	Shorted Leakage Open/decreased capacitance
Variable capacitor Trimmer capacitor	Ratings exceeded Dust between plates Shock, forced rotation	Shorted Leakage Unsmooth rotation
Coils	Ratings exceeded Misadjusted Core or bobbin broken	Open or short circuit Leakage or shorted turns Detuned
Switch	Ratings exceeded Aging Dust or oil	Poor contact Unsmooth operation Open circuit
Relay	Ratings exceeded Humidity Dust or oil on contacts	Coil open Poor or intermittent contact Noise

MODIFICATION PROCEDURES

This section includes modifications that were developed for the FT-102 for special operating requirements, as well as for improved transceiver performance. Also included are modifications that must be made in accessory equipment for use with the FT-102.

Modifications to improve transceiver performance have been incorporated into the production line at some point in time, so that those transceivers produced after that time do not require the modification. Each procedure indicates the range of serial numbers that were not modified when they left the factory. Serial numbers are composed of a letter and a number, indicating the date of manufacture, followed by six digits. The first two digits (closest to the date code) are the Production Lot number. So, for example, serial number 0C123456 is from Production Lot 12, set number 3456. Before making any modification, make sure that the procedure to be followed applies to the Lot number of

RF Unit Access (Solder side)

Disconnect and remove the optional AM/FM Unit, if installed. Referring to page 38 of the Instruction Manual for Unit locations, remove the four screws from the AF Unit (PB-2344), and gently fold it over the VFO. Then remove the two machine screws affixing the shield panel that was behind the AF Unit, and remove the panel from the main chassis, using care to avoid bending the 7-lug terminal strip that also mounts under one of the panel screws. The solder side of the RF Unit is now accessible.

WARNING

HIGH VOLTAGE IS PRESENT INSIDE THE TRANSCEIVER, AND IS RETAINED IN THE HIGH VOLTAGE CAPACITORS EVEN WHEN THE POWER IS OFF AND THE POWER SOURCE DISCONNECTED. BEFORE REMOV

Keyclick

This modification is provided to remedy possible keyclick trouble with FT-102s having serial numbers between XX030001 and XX069999. Keyclicks were not a problem in the first two production lots, but appeared after certain other modifications were carried out in production. This modification has already been incorporated in later production lots (after Lot 6).

1. On the component side of the RF Unit, install a 1 μF, 50 WV electrolytic capacitor, as shown in Figures 1 and 2. The positive lead of the capacitor is soldered to the lead of R1045, and the negative lead to the TEST PIN (G1).

2. Referring to Figures 3 and 4, cut the white wire connected to J4017 on the Local Unit, and wrap the end of the white wire with insulating tape to prevent it from shorting to other parts.

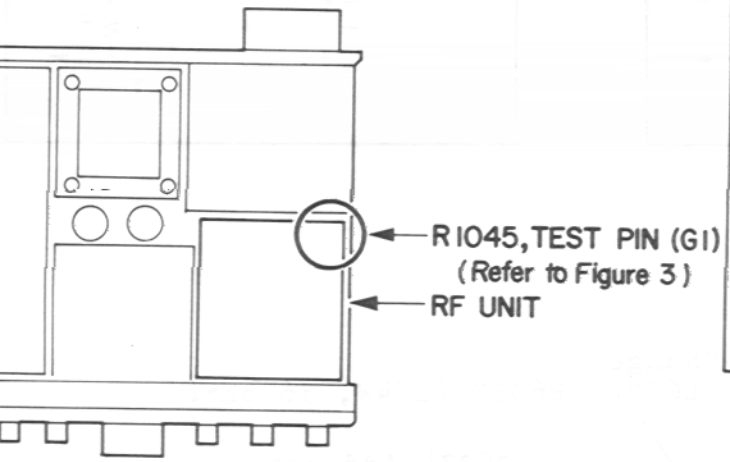


Figure 1 TOP VIEW

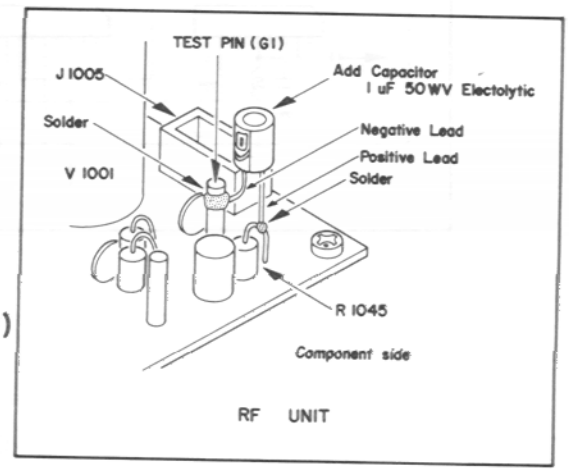


Figure 2

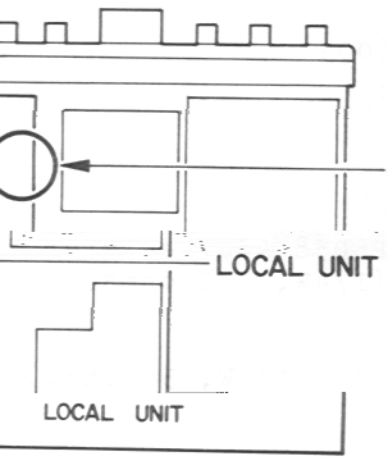


Figure 4

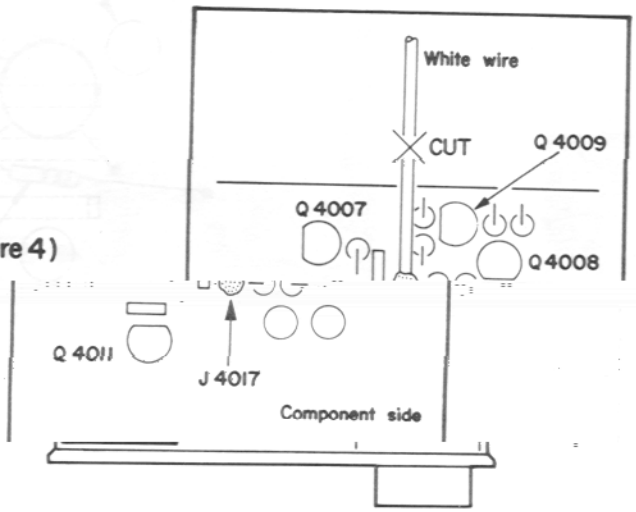


Figure 3 BOTTOM VIEW

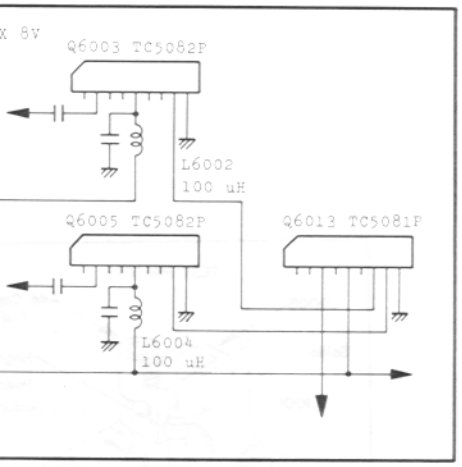
FM Unit Protection

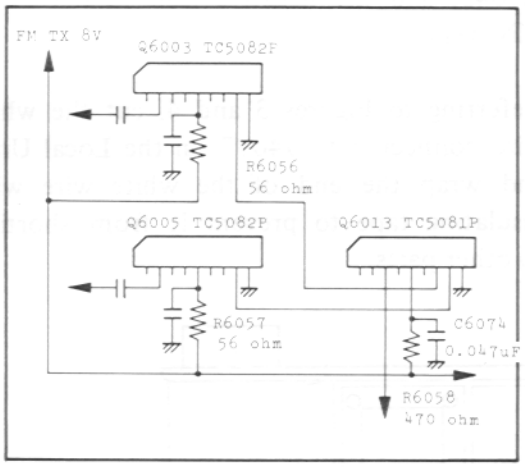
This modification can be adopted in the early models of the FM Unit in the FT-102, in order to prevent damage to the TC5081AP used in the Unit.

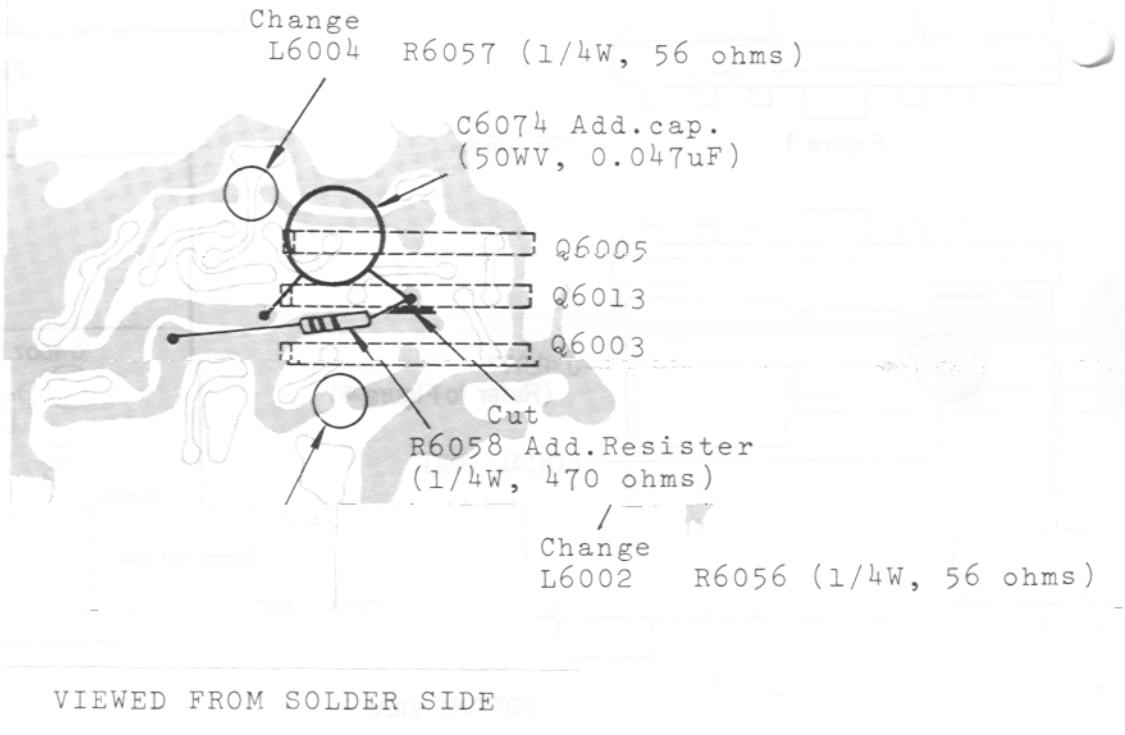
1. Remove the FM Unit from the transceiver, and L6002 and L6004 from the Unit.
3. On the solder side of the Unit, cut the copper pattern connected to pin 5 of Q6013, and solder a 470-ohm resistor across the cut.
4. Solder a 0.047 μF disc ceramic capacitor between pin 5 of Q6013 and ground.
5. Replace the FM Unit in the transceiver and reconnect all plugs.

56-ohm resistors in the same locations
L6002 and L6004 were installed.

2. Install 5
where L







VIEWED FROM SOLDER SIDE

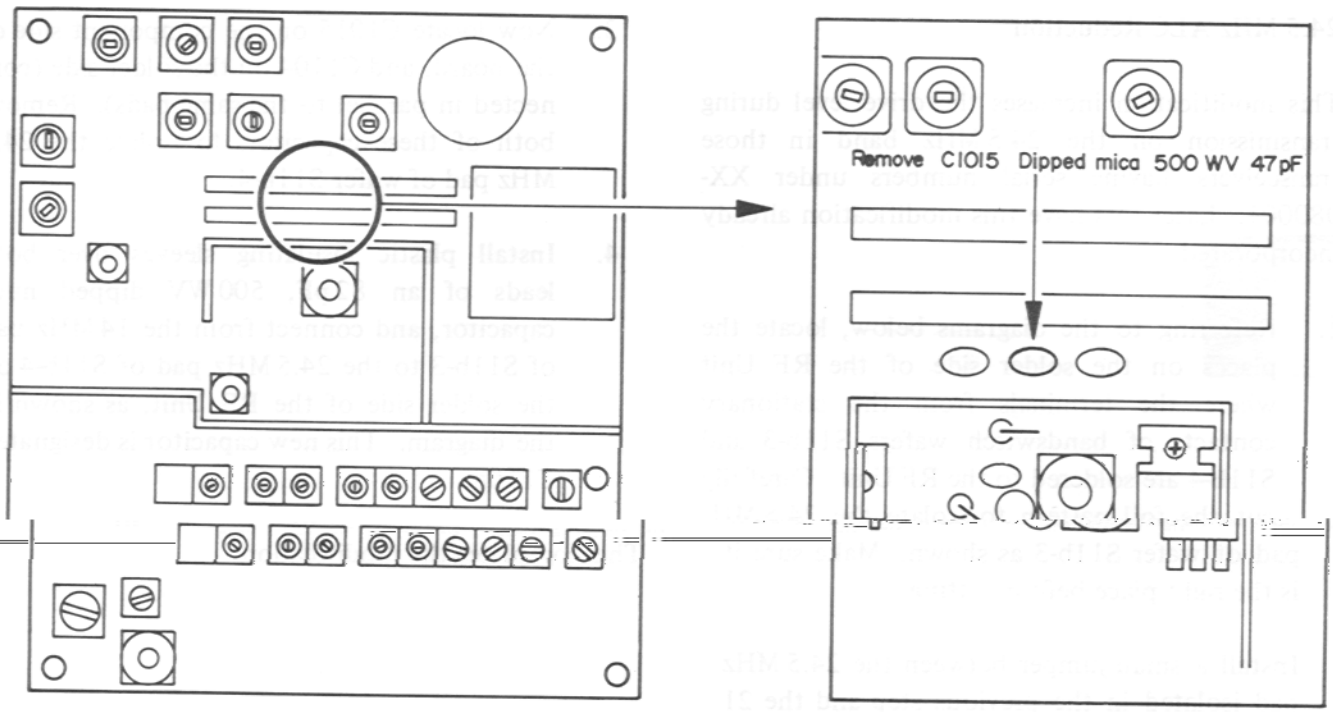
24.5 MHz ALC Reduction

This modification increases the drive level during transmission on the 24.5 MHz band in those transceivers having serial numbers under XX-080001. Later sets have this modification already incorporated.

1. Referring to the diagrams below, locate the places on the solder side of the RF Unit where the terminals from the stationary contacts of bandswitch wafers S11b-3 and S11b-4 are soldered to the RF Unit. Carefully

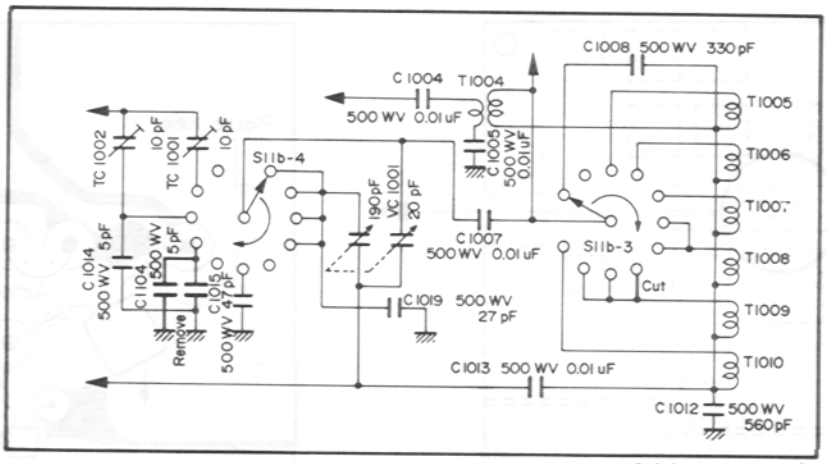
3. Now locate C1015 on the component side of the board, and C1104 on the solder side (connected in parallel to the same pads). Remove both of these capacitors to isolate the 24.5 MHz pad of wafer S11b-4.

4. Install plastic insulating sleeves over both leads of an 82 pF, 500 WV dipped mica capacitor, and connect from the 14 MHz pad of S11b-3 to the 24.5 MHz pad of S11b-4 on the solder side of the RF Unit, as shown in the diagram. This new capacitor is designated C1108.

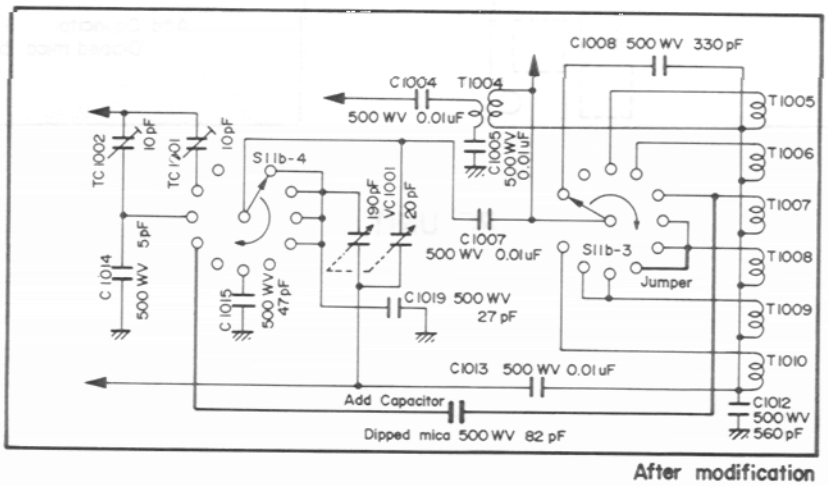


Component side

RF UNIT



Original



After modification

Receiver RF Amplifier Protection

lification provides better protection for amplifier FETs from spikes that may at the input for those FT-102s having serial s below XX040000. It has been incorpo- *all transceivers from Lot 4.*

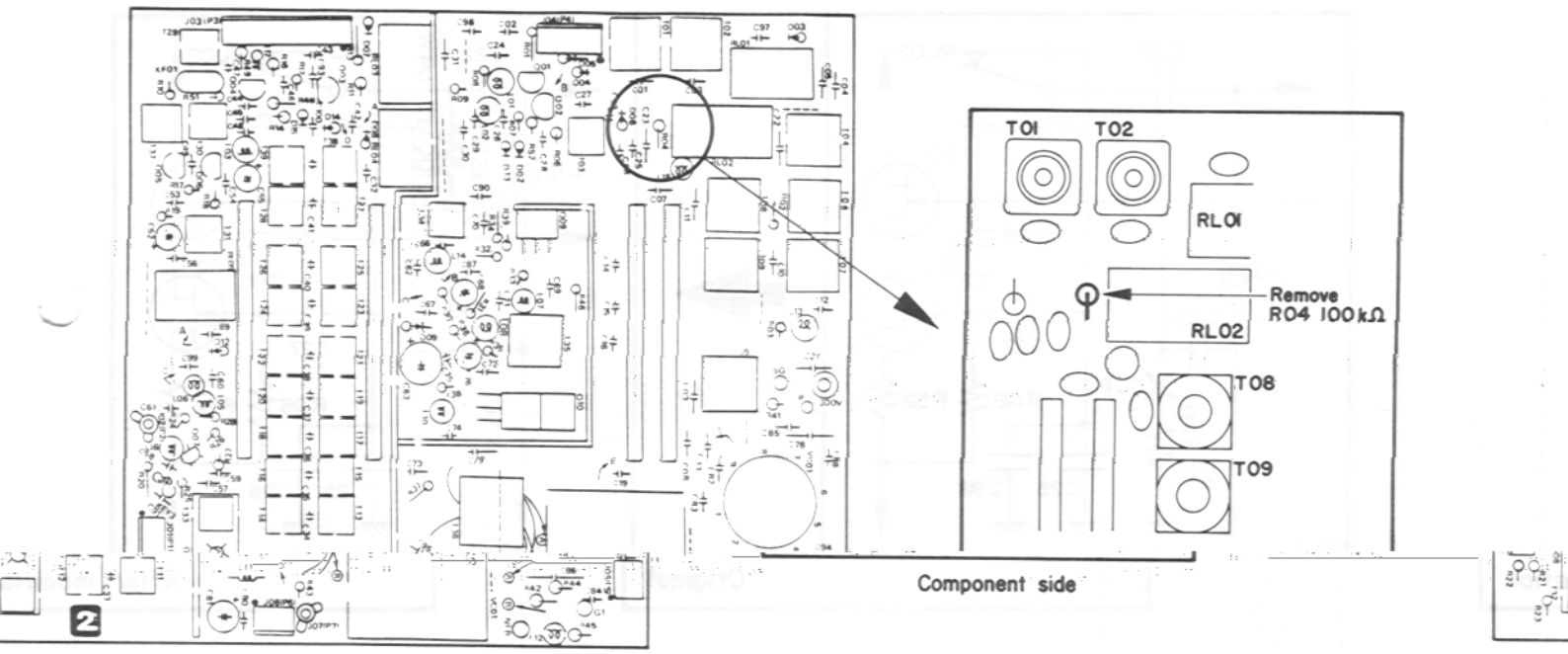
This mod the RF appear number *rated in*

move the covers and expose the solder side of the RF Unit as described on page 8.

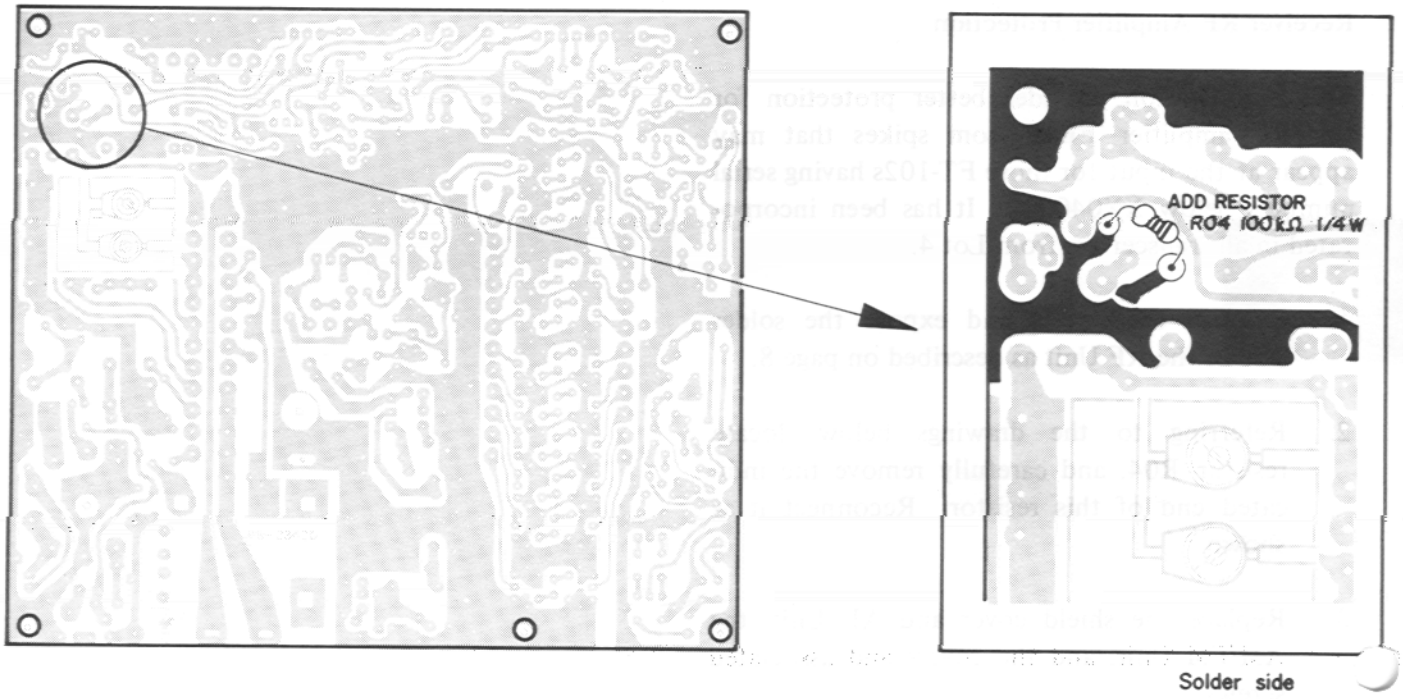
1. Re

2. Referring to the drawings below, locate resistor R04, and carefully remove the indicated end of this resistor. Reconnect it as shown.

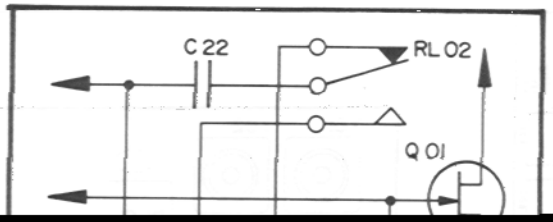
3. Replace the shield cover and AF Unit, the AM/FM Unit, and the covers and associated screws.

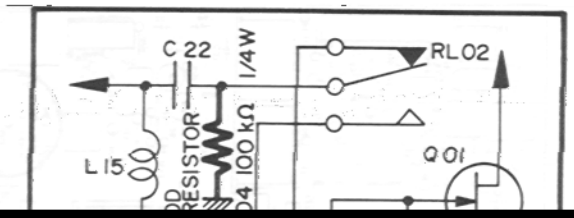


RF UNIT


ADD RESISTOR
R04 100kΩ 1/4W
Solder side

RF UNIT


C 22
RL 02
Q 01


C 22
1/4W
RL 02
L 15
Q 01

Receiver Spurious Reduction

This modification serves to reduce the spurious
of the receiver in the amateur bands in
FT-102s having serial numbers below
000.

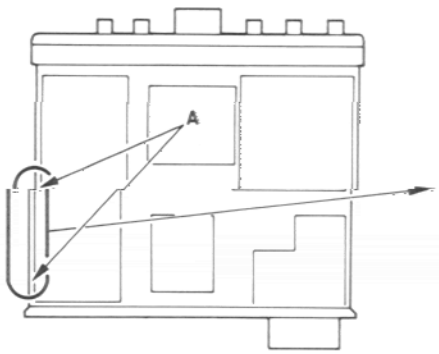
ay the transceiver upside down on the work
rface, and remove the bottom cover.

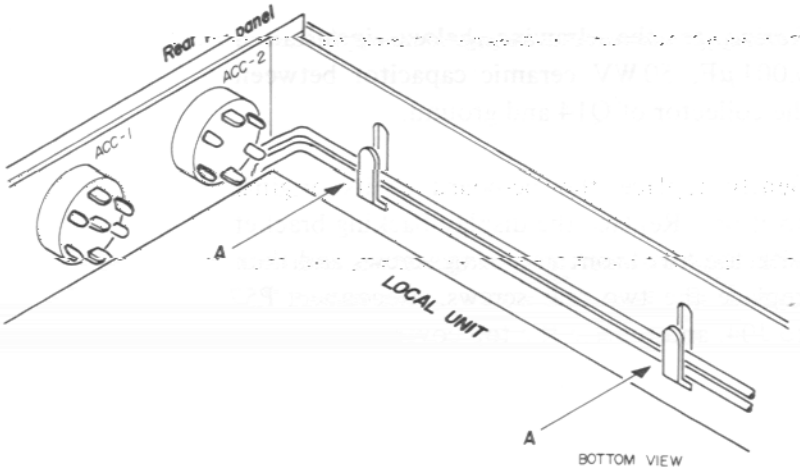
eferring to the diagrams below, carefully
end the two chassis clips (marked A) slightly
inwards about 3 mm, so that the two gray
shielded cables can be removed from the
clips. It is not necessary to disconnect these
cables from the pc-board.

3. Remove the seven screws affixing the Local Unit (PB-2345), and carefully lift the outer edge of the board, folding it towards the middle of the transceiver so that the solder side is exposed.

4. Referring to the local unit diagram below, install heavy wire or copper straps insulated with plastic sleeving in the three locations shown, connecting the ground patterns on the Local Unit.

5. Replace the Local Unit and its screws, reinstall the gray cables in the chassis clips and bend them back into place, and replace the cover.





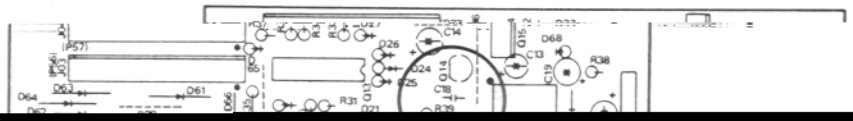
Counter Noise Reduction

This modification will reduce drifting counter noise that may appear on the lower frequency bands in those FT-102s having serial numbers below XX040000. It has been incorporated into production from Lot 4.

1. Remove the top cover, and without pulling on the wires, remove P57, the 13-pin connector plug nearest the edge of the Counter Unit (PB-2346A). Then remove the four screws affixing the Unit, and slide the pc-board back so that it can be tipped up to expose the solder side.

2. Referring to the drawing below, install a 0.001 μF, 50 WV ceramic capacitor between the collector of Q14 and ground.

3. Gently replace the pc-board in its original position. Replace the display-backing bracket with the two front mounting screws, and then replace the two rear screws. Reconnect P57 to J04, and replace the top cover.



B. 10-meter Band Modification

The procedure for this modification is the same for all models. DO NOT perform this modification if Modification A has been performed.

It requires the sacrifice of all but one existing 10-meter 500 kHz segment. The new segment will be selected when the BAND selector and switch are set to the same position as used for the 10-meter segment being replaced.

1. Perform steps 1, 2 and 3 of the previous modification procedure.
2. Install 1SS53 diodes (white band) on the solder side of the Local Unit at the locations shown in Figure 5, making sure that the banded ends of the diodes are aligned as indicated. Install D_D for 28.0 – 28.5 MHz, or D_E for 28.5 – 29.0 MHz (DO NOT INSTALL BOTH). Then perform step 5 of the previous modification procedure.

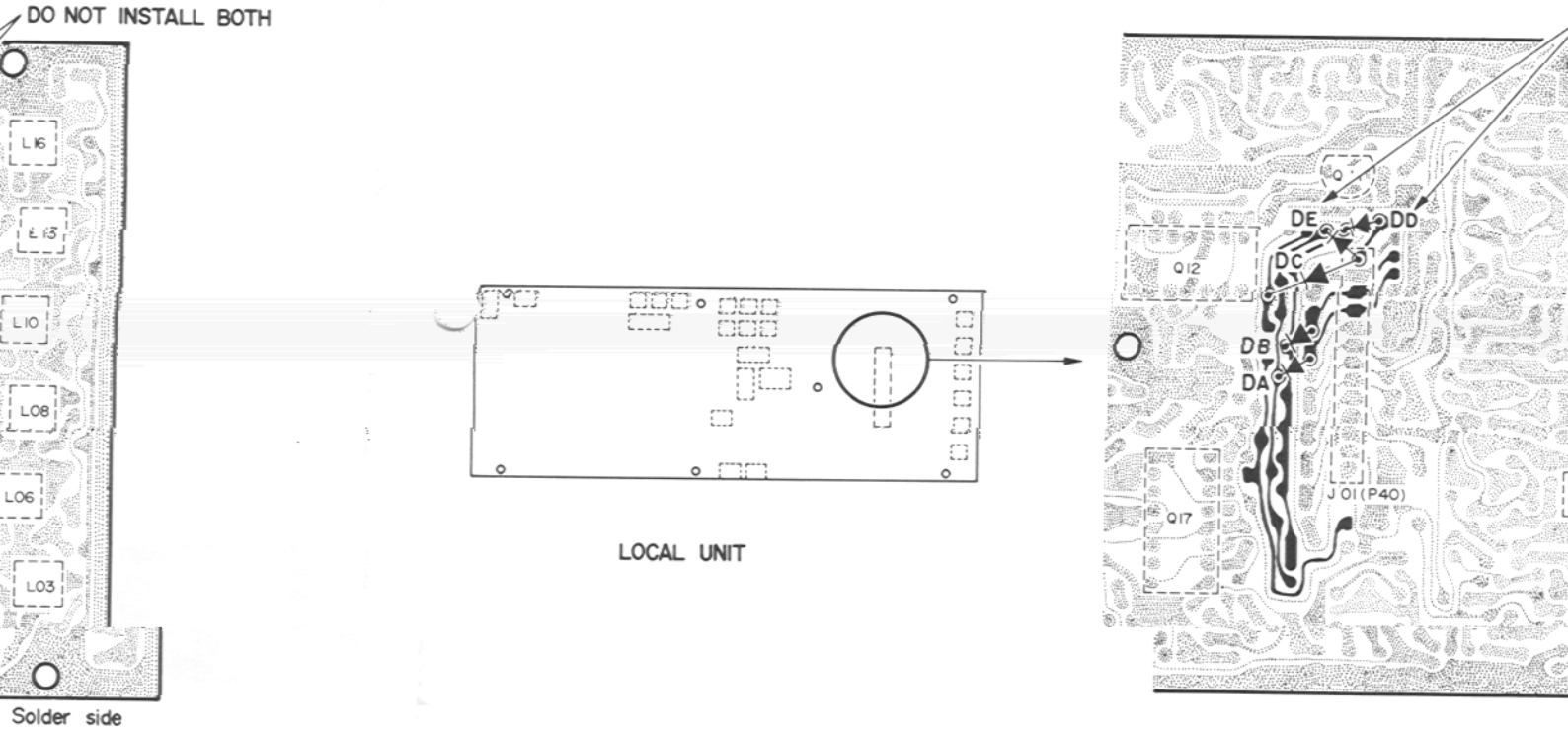


Figure 5

MEMO

— MEMO —

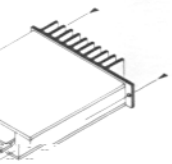
MODIFICATION OF THE FTV-901R TRANSVERTER FOR USE WITH THE FT-102 TRANSCEIVER

This modification enables the FTV-901R to be used with those FT-102s having serial numbers above 030000 for VHF and/or UHF operation. Earlier FT-102s should first be modified by an authorized Yaesu agent.

Parts required:

One ALC AMP Unit, Part No. C022940
One Connection Cable E, Part No. T9101282, shown in Fig.
One 24-centimeter length of hookup wire.

1. Remove the twelve screws affixing the top and bottom covers of the FTV-901R, and remove the covers (Figure 1).



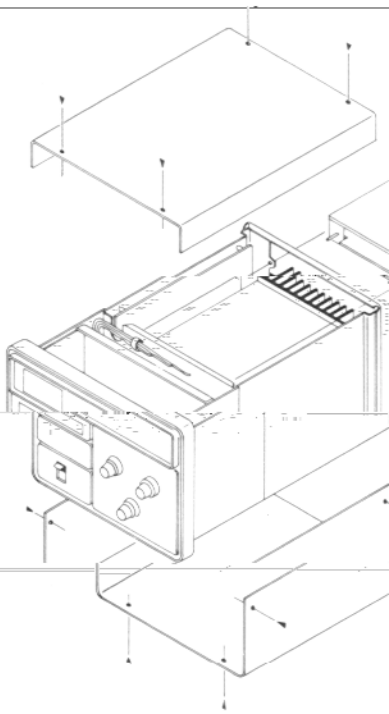


Figure 1

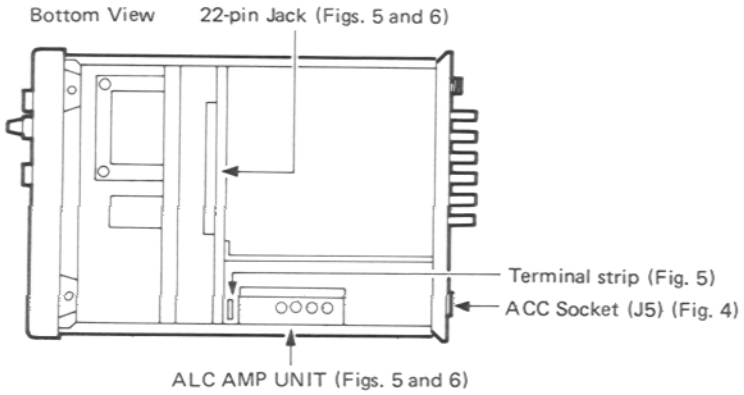


Figure 2

2. On POWER switch S2a, disconnect the blue wire from the OFF terminal, and reconnect this wire to the ON terminal, as shown in Figure 3.

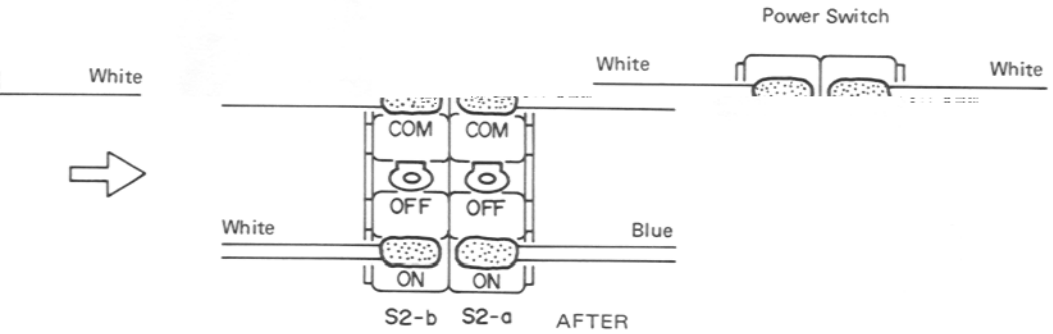


Figure 3

3. On the ACC socket (J5), disconnect the large white wire from pins 2 and 5, and reconnect this wire to the ground terminal at the socket, as shown in Figure 4. Also, if a diode is connected to pins 1 and 4 of the ACC socket (early models), remove this diode from the transverter.

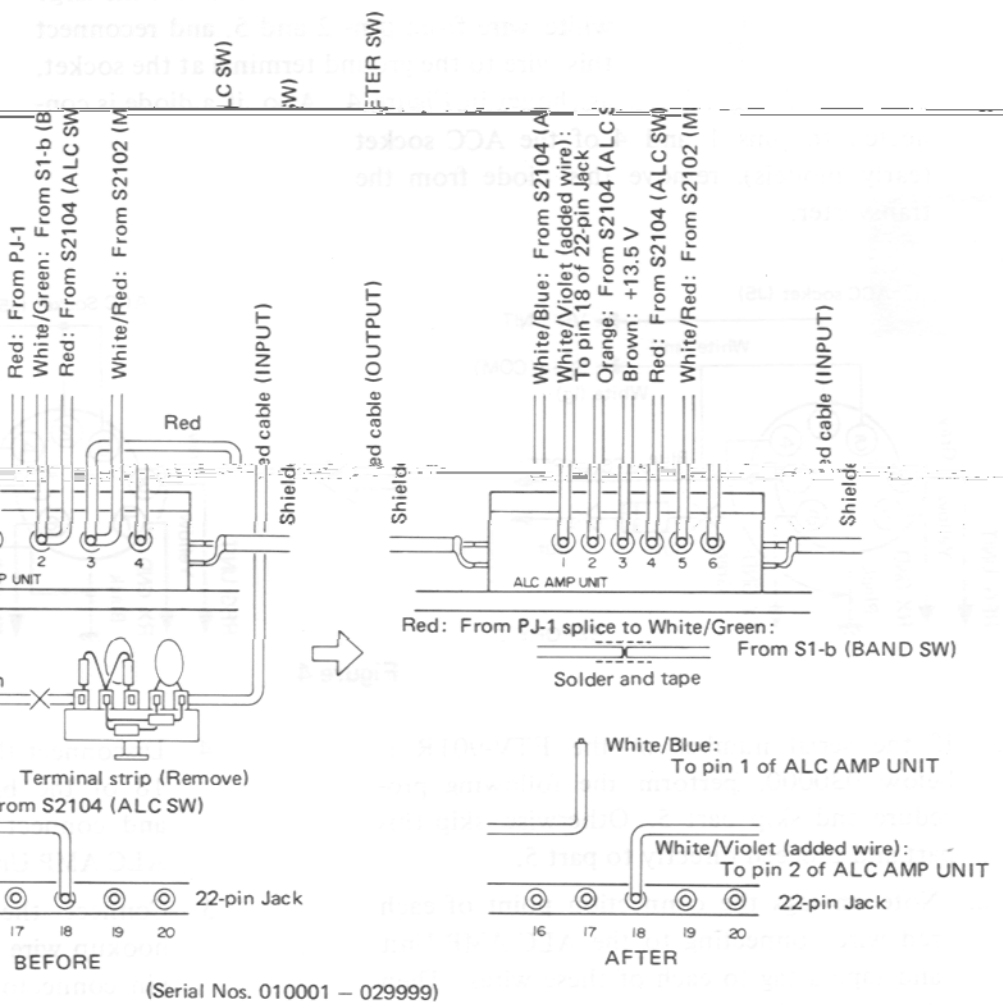


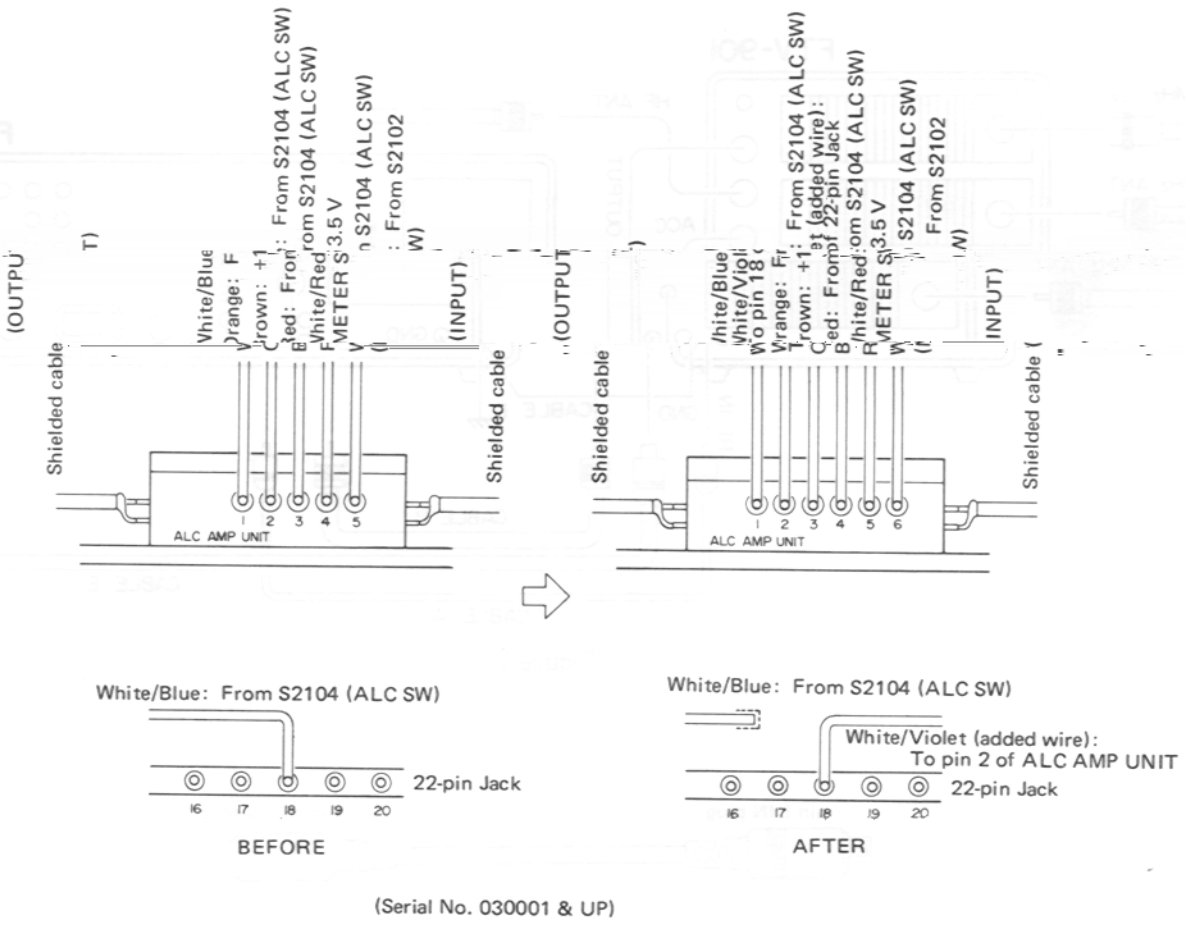
Figure 5

Rs with serial number 3. Disconnect the white/blue wire from pin 5. For those FTV-901 above 030000, perform the follow ving pro- 18 of the blue 22-pin connector jack, cedure.

and carefully insulate the end of thi a. Disconnect all wires from the A LC AMP wire with plastic tape. Unit (two shielded, and one each orange, 4. Connect the 24-centimeter piece of brown, red, white/blue and white/re d). hookup wire from pin 18 of the 22-pin b. Remove the four screws in the sid le of the jack to pin 2 of the new ALC AMP Unit. chassis affixing the ALC AMP Unit , and re- place the original Unit with the n ew ALC AMP Unit (Part No. C022940).

6. Modification is now complete. Replace the top and bottom covers of the FTV-901R and their twelve screws, and connect the transverter to the FT-102 as shown in Figure 7. c. Reconnect the wires to the new Unit as shown in Figure 6 and described bel

1. Connect the input shielded wi ire to the input terminal, and the outpu t shielded wire to the output terminal of f the ALC AMP Unit.
2. Connect the wires removed fro m the old ALC AMP Unit to the new Uni it: white/ blue to pin 1, orange to pin 3, brown to pin 4, red to pin 5, and white/ red to pin 6.



(Serial No. 030001 & UP)

Figure 6

CAUTION

ONCE THE FTV-901R HAS BEEN MODIFIED IT MUST NOT BE USED WITH ANY MODEL TRANSCEIVER OTHER THAN THE FT-102, OR SEVERE DAMAGE TO THE EQUIPMENT MAY RESULT.

WHENEVER USING THE FTV-901R WITH THE FT-102 BE ABSOLUTELY CERTAIN THAT THE HEATER SWITCH ON THE FT-102 IS OFF, AND THAT THE TUBES HAVE HAD AT LEAST 30 SECONDS TO COOL.

WHEN USING THE FTV-901R WITH THE FT-102, THE IF MONITOR OF THE FT-102 WILL NOT FUNCTION NORMALLY. ALTHOUGH IT MAY SOUND DISTORTED, THIS IS NOT AN INDICATION OF DISTORTION OF THE OUTPUT OF THE FTV-901R.

ALSO, WHEN TRANSMITTING WITH THE FT-102 AND FTV-901R, THE IC, PO AND ALC METER FUNCTIONS IN THE FT-102 ARE DISABLED, AS WELL AS THE PLATE AND LOAD CONTROLS.

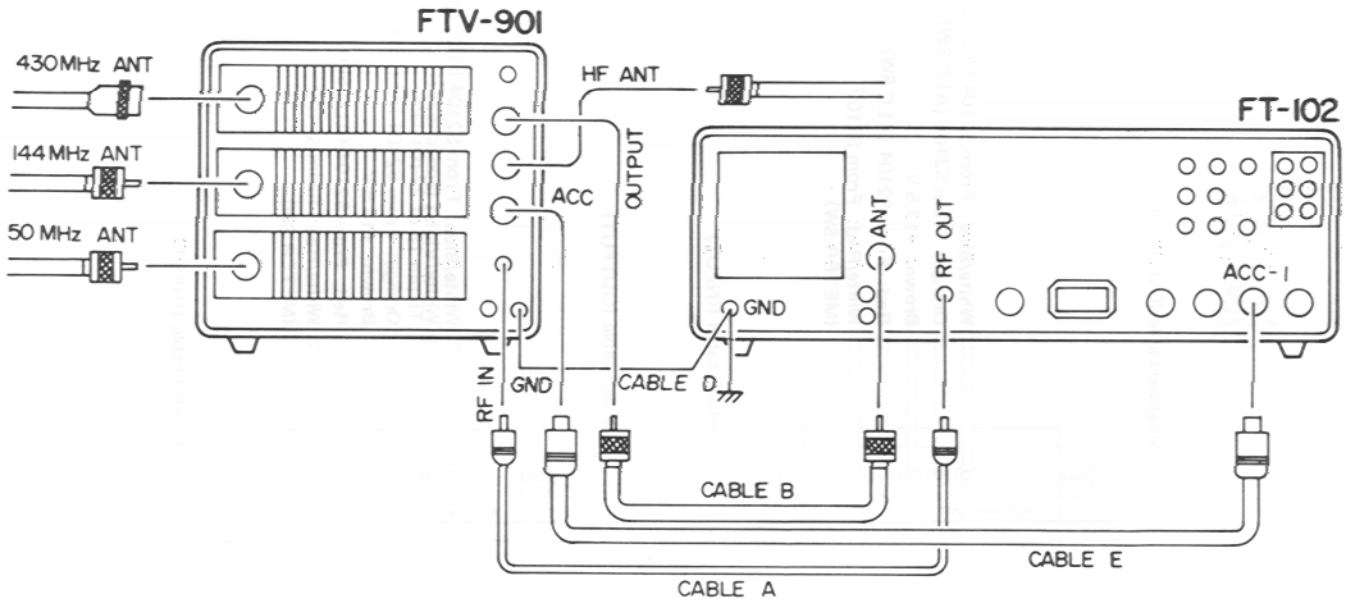


Figure 7

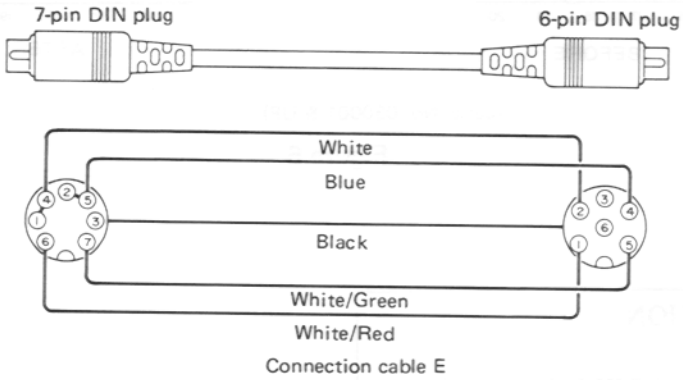


Figure 8

MODIFICATION OF THE FTV-107 TRANSVERTER FOR USE WITH THE FT-102 TRANSCEIVER

This modification enables the FTV-107 to be used with those FT-102s having serial numbers above 030000 for VHF and/or UHF operation. Earlier FT-102s should first be modified by an authorized Yaesu agent.

Parts required:

One Connection Cable E, Part No. T9101283, shown in Fig. 4
One 47-ohm, 2-watt wire-wound resistor, part No. J31336470
One piece of hookup wire, approximately 20 centimeters long
One piece of vinyl insulation sleeve

1. Remove the fourteen screws affixing the top and bottom covers of the FTV-107, and remove the covers. (Figure 1.)

CAUTION

ONCE THE FTV-107 HAS BEEN MODIFIED IT MUST NOT BE USED WITH THE FT-107, FT-ONE, OR ANY TRANSCEIVER OTHER THAN THE FT-102, OR SEVERE DAMAGE TO THE EQUIPMENT MAY RESULT.
WHENEVER USING THE FTV-107 WITH THE FT-102 BE ABSOLUTELY CERTAIN THAT THE HEATER SWITCH ON THE FT-102 IS OFF, AND THAT THE TUBES HAVE HAD AT LEAST 30 SECONDS TO COOL.
WHEN USING THE FTV-107 WITH THE FT-102, THE IF MONITOR OF THE FT-102 WILL NOT FUNCTION NORMALLY. ALTHOUGH IT MAY SOUND DISTORTED, THIS IS NOT AN INDICATION OF DISTORTION OF THE OUTPUT OF THE FTV-107. ALSO, WHEN TRANSMITTING WITH THE FT-102 AND FTV-107, THE IC, PO AND ALC METER FUNCTIONS IN TH ARE DISABLED, AS WELL AS THE AND LOAD CONTROLS.

E FT-102
E PLATE

2. Rewire POWER switch S02 as described below and shown in Figure 2.
   a. Disconnect the yellow wire from the COM terminal of switch section S02-b and insulate the end of this wire with plastic tape.
   b. Connect the 20 cm piece of hookup wire from this COM terminal to the ground terminal of the meter.
   c. Disconnect the yellow wire from the ON terminal of the switch, and also insulate the end of this wire with plastic tape.
   d. Disconnect the red wire from the ON terminal of the S02-a section of the switch, and connect this wire to the ON terminal of the S02-b section, as shown in the Figure.
   e. Cut the insulation sleeve in half, and slip one piece over each lead of the 47-ohm resistor. Then connect the resistor from the ON terminal of S02-a to the meter lamp.

3. Replace the top and bottom covers and their screws, and connect the FT-102 to the FTV-107 as shown in Figure 3. This completes the modification.

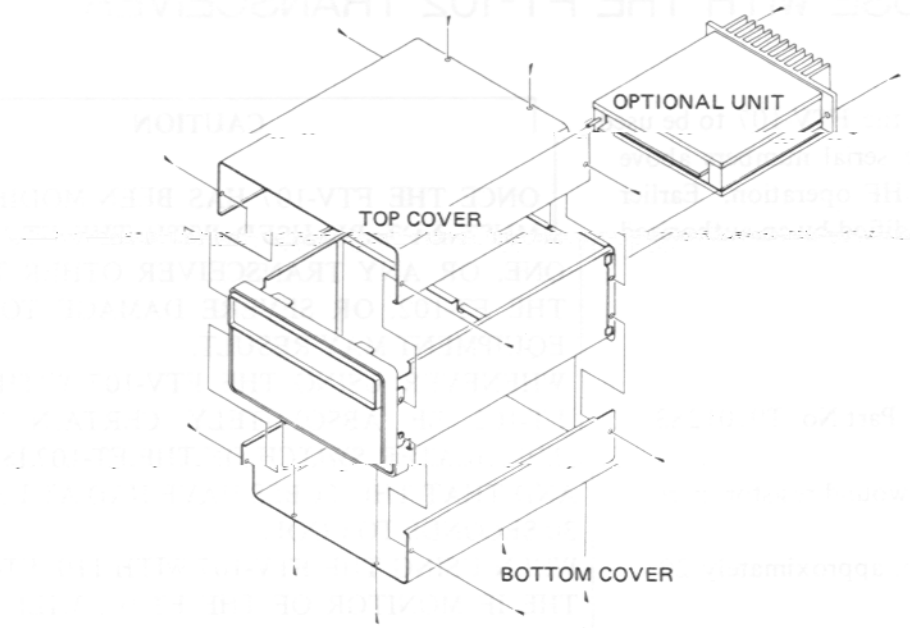
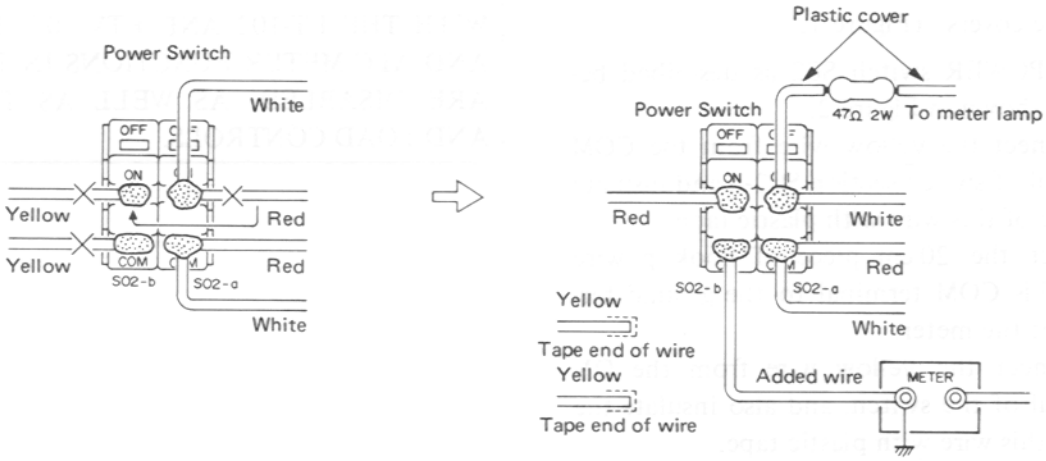


Figure 1



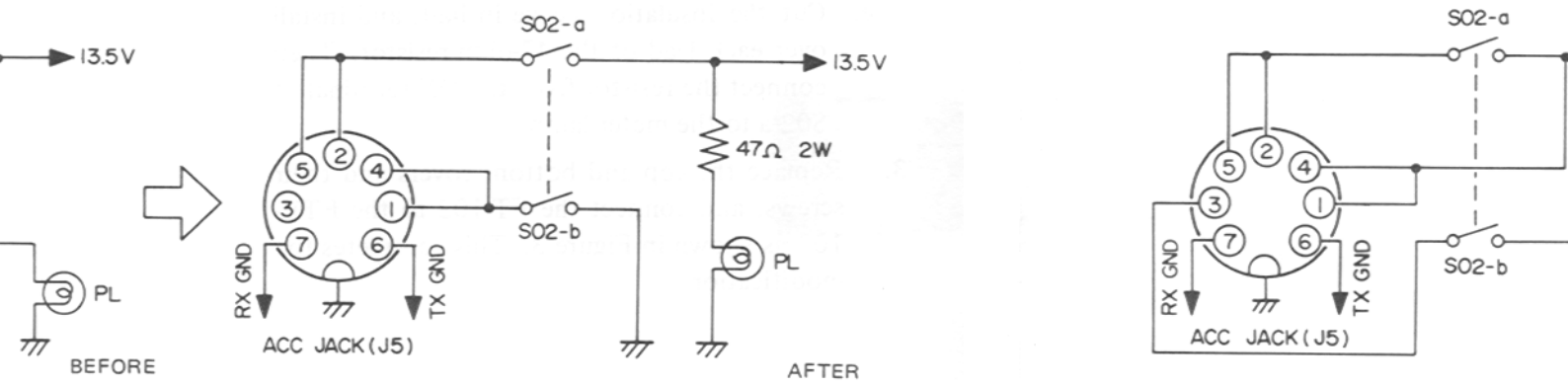


Figure 2

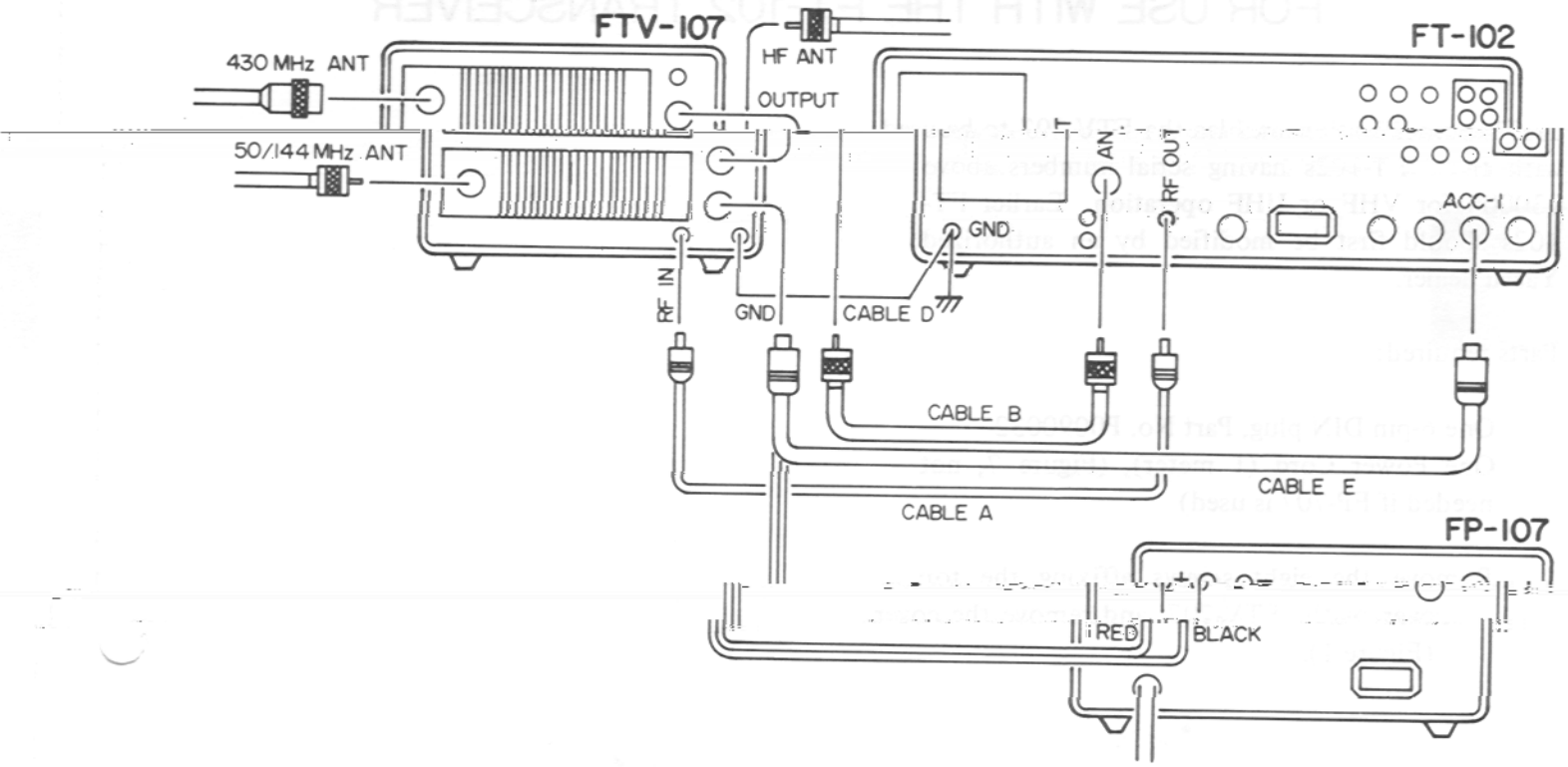
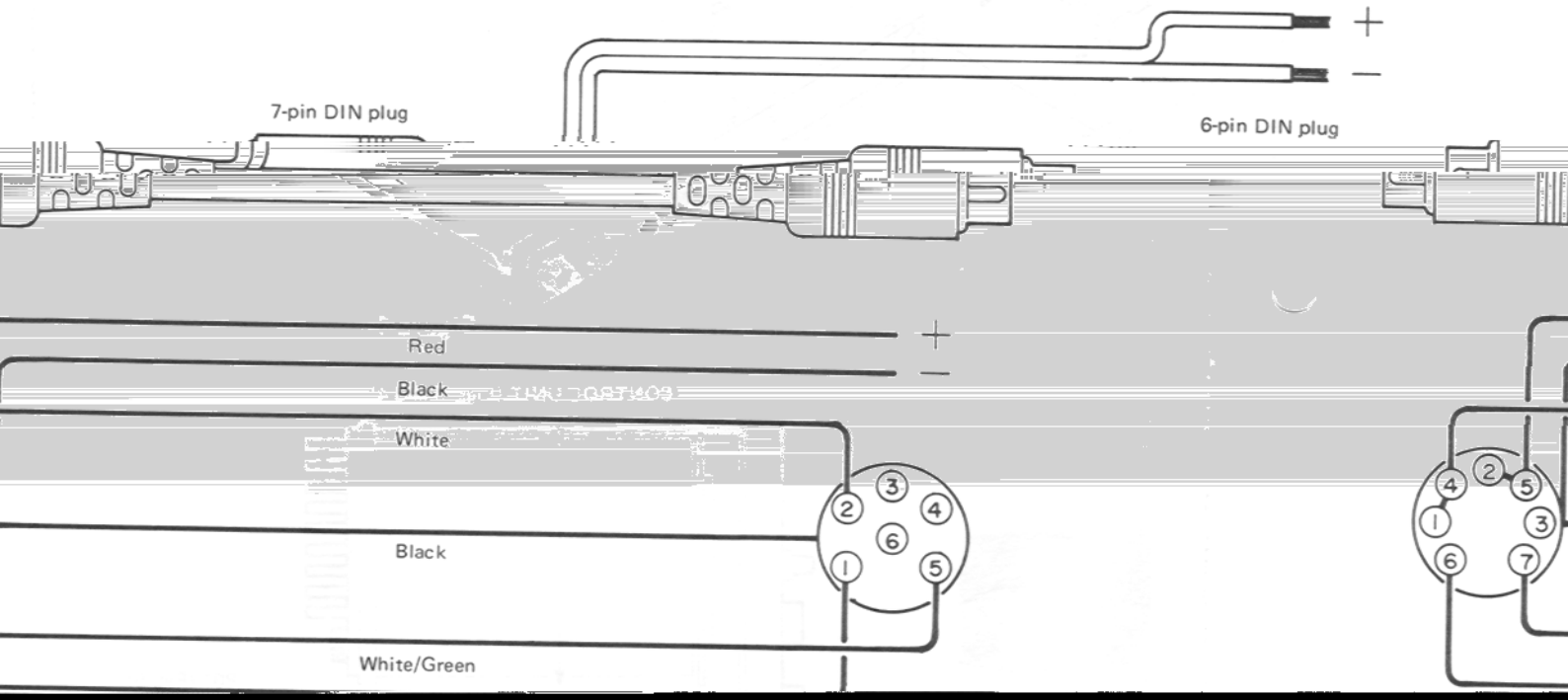

FTV-107
FT-102
430 MHz ANT
50/144 MHz ANT
HF ANT
OUTPUT
ANT
RF OUT
ACC-1
GND
RF IN
GND
CABLE D
CABLE B
CABLE E
CABLE A
FP-107
RED
BLACK

Figure 3


7-pin DIN plug
6-pin DIN plug
+
−
Red
Black
White
Black
White/Green
2
3
4
6
1
5
4
2
5
1
3
6
7

MODIFICATION OF THE FTV-707 TRANSVERTER FOR USE WITH THE FT-102 TRANSCEIVER

This modification enables the FTV-707 to be used with those FT-102s having serial numbers above 030000 for VHF or UHF operation. Earlier FT-102s should first be modified by an authorized Yaesu dealer.

Parts required:

One 6-pin DIN plug, Part No. P0090032
One Power Cord (1 meter), (Figure 7, not needed if FP-707 is used)

1. Remove the eight screws affixing the top cover of the FTV-707, and remove the cover (Figure 1).

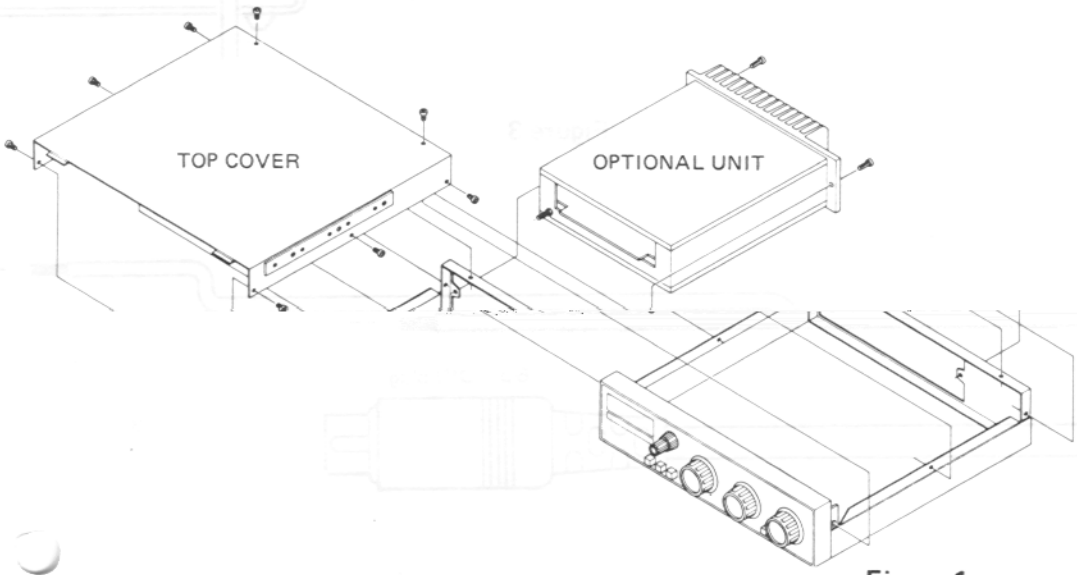
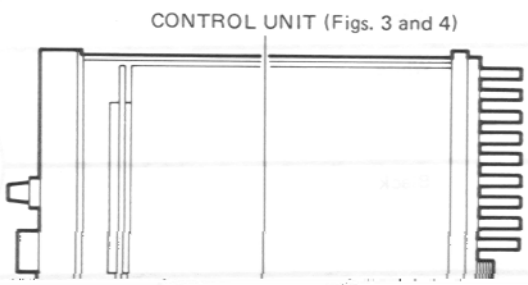


Figure 1



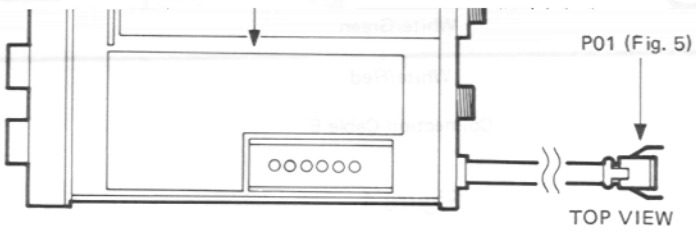


Figure 2

2. Referring to Figures 2 and 3, disconnect all wires and connectors from the Control Unit as described in the following steps:

   a. Disconnect 8-pin connector P02 from J01, and 9-pin connector P03 from J02.

   b. Disconnect the following wires by carefully sliding their connectors off of the contact pins on the Control Unit:

      1. the orange wire at the DC 13.5 V OUT

   c. Disconnect the next set of wires by unsoldering their connections at the Control Unit:

      1. the white/brown wire at the TX 13.5 V IN terminal

      2. the yellow wire at the TX 13.5 V OUT terminal

      3. the center conductor of the coax at the RX OUT terminal

3. Now remove the five screws from the Control Unit, and remove the Unit from the transverter.

4. Referring to Figure 4, carefully cut the four *tracks on the solder side of the Control Unit*, and install four jumpers as illustrated.

5. Replace the Control Unit and its five screws, and reconnect each connector and wire in the same order that they were removed in part 2, above; i.e. connect P02 to J01 first, and solder the bare wire to the HF ANT terminal last.

6. Replace the top cover of the transverter, and replace the eight screws.

7. Replace the 4-pin connector (P01) at the end of the connection cable on the FTV-707 with the 6-pin DIN plug as shown in Figure 5 and described below:

a. Remove the four screws on the 4-pin connector, and slide the black metal cover back to expose the wire connections to the pins. Unsolder the wires and remove the *4-pin connector parts.*

b. Slide the shell of the DIN connector over the cable, and connect the white/brown wire to pin 2 of the DIN plug. Connect the black wire to the case (ground) of the DIN plug, and the yellow wire to pin 1 of the DIN plug.

c. Carefully insulate the end of the red wire with plastic tape, and then slide the shell of the DIN plug over the connections. Schematic diagrams are shown in Figure 8.

CAUTION

ONCE THE FTV-707 HAS BEEN MODIFIED IT *MUST NOT BE USED WITH ANY MODEL* TRANSCEIVER OTHER THAN THE FT-102, OR SEVERE DAMAGE TO THE EQUIPMENT MAY RESULT.

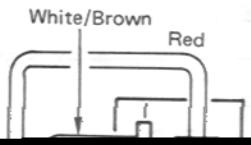
WHENEVER USING THE FTV-707 WITH THE FT-102, BE ABSOLUTELY CERTAIN THAT THE HEATER SWITCH ON THE FT-102 IS OFF, AND THAT THE TUBES HAVE HAD AT LEAST 30 SECONDS TO COOL.

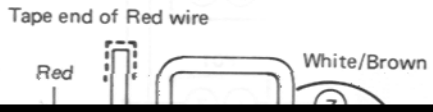
WHEN USING THE FTV-707 WITH THE FT-102, THE IF MONITOR OF THE FT-102 WILL NOT FUNCTION NORMALLY. ALTHOUGH IT MAY SOUND DISTORTED, THIS IS NOT AN INDICATION OF DISTORTION OF THE OUTPUT OF THE FTV-707.

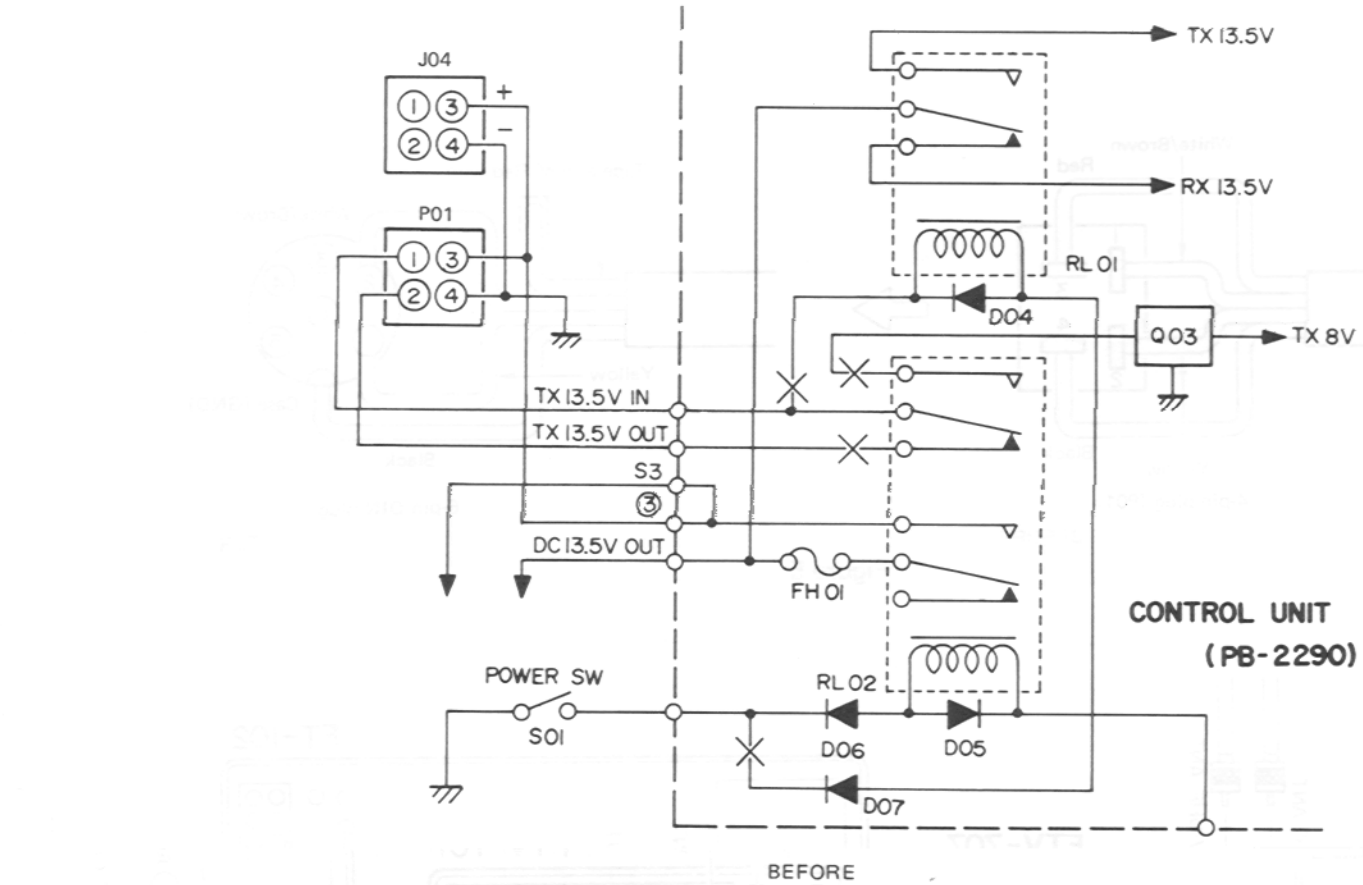
ALSO, WHEN TRANSMITTING WITH THE FT-102 AND FTV-707, THE IC, PO AND ALC METER FUNCTIONS IN THE FT-102 ARE DISABLED, AS WELL AS THE PLATE AND LOAD CONTROLS.

FTV-707 to the FT-102 as shown in
he FP-707 supply is not being used,
DC to the FTV-707 using the Power
ed under "Parts required", after con-
-pin connector left from part 7, as
re 7.

Connect the F
Figure 6. If t
connect 12 V
Cord mentione
necting the 4-
shown in Figur


White/Brown
Red


Tape end of Red wire
Red
White/Brown


J04
P01
TX 13.5V
RX 13.5V
RL 01
D04
Q03
TX 8V
TX 13.5V IN
TX 13.5V OUT
S3
DC 13.5V OUT
FH 01
CONTROL UNIT
(PB-2290)
POWER SW
S01
RL 02
D06
D05
D07
BEFORE

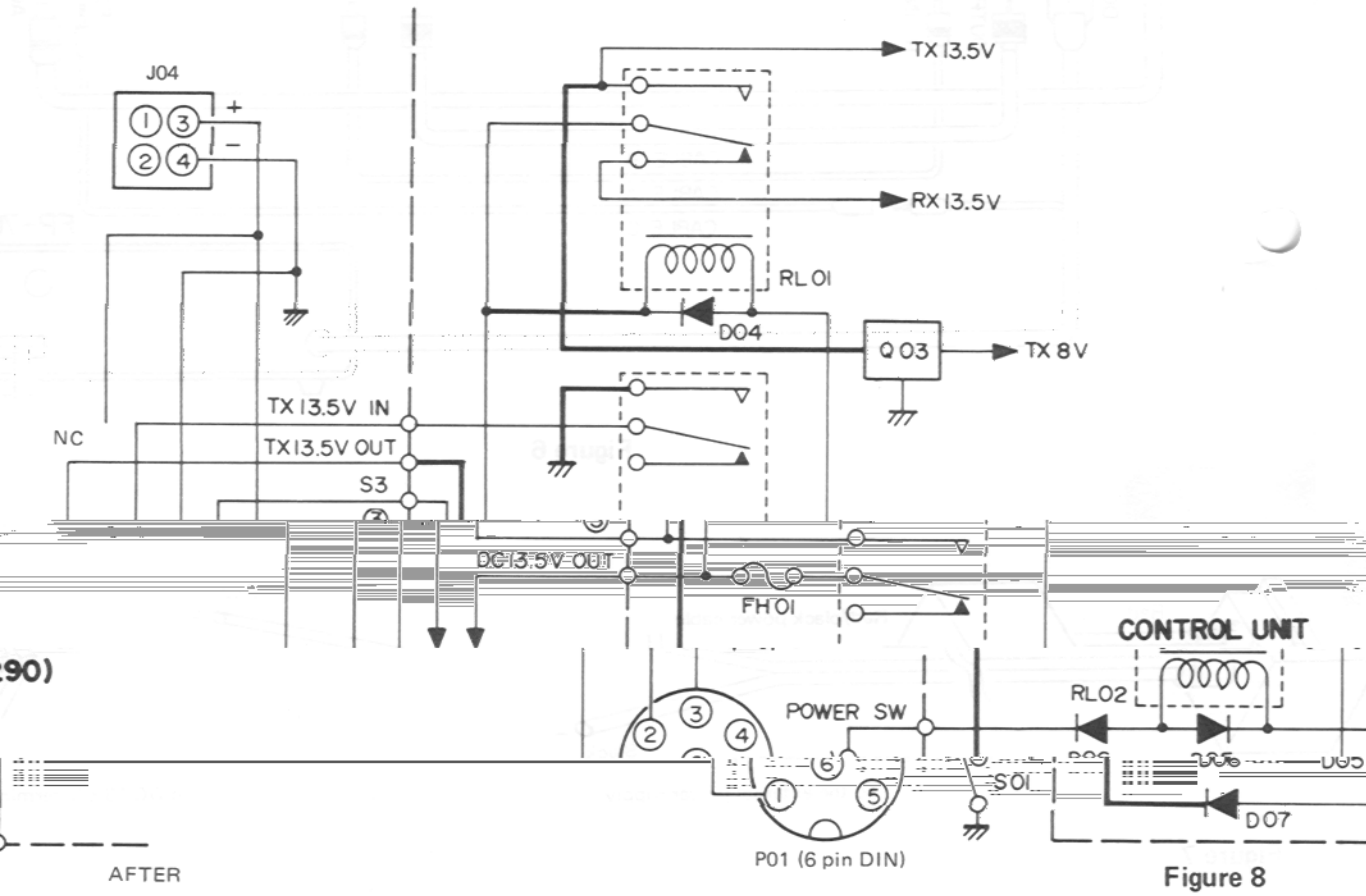

J04
TX 13.5V
RX 13.5V
RL 01
D04
Q03
TX 8V
TX 13.5V IN
NC
TX 13.5V OUT
S3
DC 13.5V OUT
FH 01
CONTROL UNIT
(PB-22
POWER SW
RL02
S01
D07
P01 (6 pin DIN)
AFTER

Figure 8

MAIN CHASSIS

PART NO.	DEVICE	TYPE	FUNCTION
Q1	2SB705R	Transistor	Regulator
Q2	μPC7808H	IC	〃
Q3	μPC7812H	〃	〃
Q4	〃	〃	〃
D1	S4V10	Si Diode Bridge	Rectifier
D2	1S1555	Si Diode	Switch
⟩	⟩	⟩	⟩
D5	1S1555	Si Diode	Switch
D6	Not Used		
D7	〃		
D8	1S1555	Si Diode	Switch
D9	〃	〃	〃
D10	Not Used		
D11	1S1555	Si Diode	Switch
D12	〃	〃	〃
D13	〃	〃	〃
D14	10D1	〃	Back Pulse Canceling Diode
D15	1S1555	Si Diode	Switch
⟩	⟩	⟩	⟩
D19	1S1555	Si Diode	Switch
D20	10D1	〃	〃
D21	1S1555	〃	〃

V1001	12BY7A	Vacuum
XF1001	8.2M20A	Monolith Filter

IF UNIT

PART NO.	DEVICE	TYPE
Q2001	2SK125Y	Junction
Q2002	〃	〃
Q2003	3SK73GR	Dual Gate MOS FET
Q2004	〃	〃
Q2005	2SK19TM-GR	Junction
Q2006	2SC1815Y	Transistor
Q2007	〃	〃
Q2008	〃	〃
Q2009	〃	〃
Q2010	3SK73GR	Dual Gate MOS FET
Q2011	2SC1815Y	Transistor
Q2012	2SC1815GR	〃
Q2013	2SK19TM-GR	Junction
Q2014	2SA564AR	Transistor
Q2015	*2SC1815Y*	〃
Q2016	TA7060AP	IC
Q2017	3SK73GR	Dual Gate MOS FET
Q2018	2SC1815GR	Transistor
Q2019	2SC1583	
Q2020	〃	
Q2021	2SC380Y	
Q2022	2SC1815GR	

RF UNIT

PART NO.	DEVICE	TYPE	FUNCTION
Q1001	2SK125Y	Junction FET	RX RF Amplifier
Q1002	〃	〃	〃
Q1003	2SC1815Y	Transistor	RX Buffer Amplifier (for IF OUT-2)
Q1004	2SK125Y	Junction FET	RX Buffer Amplifier (for FM, N.B)
Q1005	〃	〃	RX N.B. AGC Amplifier
Q1006	〃	〃	TX COMP. Meter Amplifier
Q1007	2SC2407	Transistor	TX MONI. Buffer Amplifier (for CW, SSB, AM)
Q1008	ND487C2-3R	IC (Ring Module)	TX MONI. Mixer (for CW, SSB)
Q1009	2SC1589	Transistor	TX MONI. Demodulator (for CW, SSB)
Q1010	2SC1971	〃	TX MONI. Buffer Amplifier (for AM)
D1001	Not Used		TX MONI. Amplifier
D1002	1S1555	Si Diode	Regulator
D1003	〃	〃	Back Pulse Canceling Diode
D1004	〃	〃	Switch
D1005	〃	〃	〃
D1006	〃	〃	Back Pulse Canceling Diode
D1007	〃	〃	〃
D1008	〃	〃	〃
D1009	HZ3C1	Zener Diode	Regulator
D1010	10D10	Si Diode	Temperature Compensator
D1011	〃	〃	〃
D1012	1S1555	〃	Back Pulse Canceling Diode
D1013	〃	〃	Regulator
D1014	〃	〃	Switch
D1015	〃	〃	〃
Q2023	〃	〃	TX 1st Mixer
Q2024	2SC380Y	Transistor	TX RF Amplifier
Q2025	2SK19TM-Y	Junction FET	TX 2nd Mixer
Q2026	〃	〃	TX RF Amplifier
Q2027	2SC380Y	Transistor	TX Driver Amplifier
Q2028	〃	〃	RX 1st IF Filter
Q2029	2SK19BL	Junction FET	TX ALC Meter Amplifier
Q2030	2SC1815Y	Transistor	TX ALC Meter Peak Hold Controller
Q2031	2SK19TM-GR	Junction FET	TX ALC Meter Amplifier
Q2032	2SA564AR	Transistor	〃
Q2033	2SC1815Y	〃	TX ALC Meter Peak Hold Controller
Q2034	2SA564AR	〃	〃
Q2035	〃	〃	〃

D2001	1SS97	Schottky Barrier Di.	RX N.B. GATE
D2002	〃	〃	〃
D2003	FC63	Varactor Diode	〃
D2004	1S1555	Si Diode	Switch
D2010	1S1555	Si Diode	Switch
D2011	1SS97	Schottky Barrier Di.	Switch
D2020	1SS97	Schottky Barrier Di.	Switch
D2021	1S1555	Si Diode	〃
D2022	1SS97	Schottky Barrier Di.	〃
D2023	1S1555	Si Diode	〃
D2024	1SS97	Schottky Barrier Di.	Switch
D2028	1SS97	Schottky Barrier Di.	Switch
D2029	1S1555	Si Diode	〃
D2030	〃	〃	〃
D2031	FC-53M-4	Varactor Diode	RX Notch Filter Rejection Frequency Controller
D2032	1S1555	Si Diode	Switch
D2036	1S1555	Si Diode	Switch
D2037	Not Used		
D2038	1N60	Ge diode	RX AM Detector
D2039	1N270	〃	RX AGC Detector
D2040	〃	〃	〃
D2041	1S1555	Si Diode	Switch
D2045	1S1555	Si Diode	Switch
D2046	1SS97	Schottky Barrier Di.	TX ALC Detector

D2067	1S1555	Si Diode	Switch
D2068	〃	〃	Threshold Level Compensator
D2069	Not Used		
D2070	〃		
D2071	1S1555	Si Diode	Switch
D2072	〃	〃	〃
D2073	BZ090	Zener Diode	Regulator
D2074	〃	〃	〃
D2075	1S1555	Si Diode	Switch
D2076	1S1555	Si Diode	Switch
D2078	1S1555	Si Diode	Switch
D2079	Not Used		
D2080	1N60	Ge Diode	RX AM Detector
D2081	1S1555	Si Diode	Switch
D2082	〃	〃	〃
TH2001	D33A	Thermistor	Temperature Compensator
XF2001	XF-8.2HS	Crystal Filter	RX 1st IF Filt (for SSB, CW) TX SSB Filter
XF2002	XF-8.2GA	〃	RX 1st IF Filt (for AM; Opti
XF2003	XF-8.2HC	〃	RX 1st IF Filt (for CW(W); C
XF2003	XF-8.2HCN	〃	RX 1st IF Filt (for CW(N); O
XF2004	XF-8.2HSN	〃	RX 1st IF Filt (for SSB(N); C
XF2005	XF-455C	〃	RX 2nd IF Fil (for CW(W); C
XF2005	XF-455CN	〃	RX 2nd IF Fil (for CW(N); O
CF2001	CFM-455J1	Ceramic Filter	RX 2nd IF Fil SSB(W), (N), C TX SSB Filter

AF UNIT

PART NO.	DEVICE	TYPE	FUNCTIO
Q3001	2SC732TM-GR	Transistor	TX MIC Ampl
Q3002	2SC1815GR	〃	〃

Q3019	MC14066B	IC	Switch
Q3020	2SC1815Y	Transistor	RX AF Active L.P.F. (for CW)
Q3021	〃	〃	RX AF Buffer Amplifier (for CW)
Q3022	2SC1815GR	〃	RX AF Active L.P.F. (for AM, SSB)
Q3023	〃	〃	RX AF Buffer Amplifier (for AM, SSB)
Q3024	AN6551	IC	RX AF A.P.F.
Q3025	μPC2002V	〃	RX Audio Amplifier
Q3026	2SK19TMY	Junction FET	Carrier Oscillator (for CW, AM, FM)
Q3027	2SC380Y	Transistor	Carrier Buffer Amplifier (for CW)
Q3028	〃	〃	Carrier Frequency Controller
Q3029	〃	〃	Carrier Buffer Amplifier (for AM, FM)
Q3030	2SC1815Y	〃	MUTE Switch
D3001	1S1555	Si Diode	Switch
D3002	1SS97	Schottky Barrier Di.	TX Balanced Modulator
D3005	1SS97	Schottky Barrier Di.	TX Balanced Modulator
D3006	1S1555	Si Diode	Switch
D3007	1N270	Ge Diode	〃
D3008	HZ3C1	Zener Diode	〃
D3009	1N270	Ge Diode	〃
D3010	1S1555	Si Diode	〃
D3011	1N60	Ge Diode	TX ANTI-TRIP Detector
D3012	1S1555	Si Diode	Switch
D3013	〃	〃	〃
D3014	1N60	Ge Diode	TX VOX Detector
D3015	10D1	Si Diode	Back Pulse Canceling Diode
D3016	1S1555	Si Diode	Switch
D3020	1S1555	Si Diode	Switch
D3021	1N60	Ge Diode	RX Balanced Demodulator
D3024	1N60	Ge Diode	RX Balanced Demodulator
D3025	1S1555	Si Diode	Switch
D3028	1S1555	Si Diode	Switch
D3029	Not Used		
D3030	1S1555	Si Diode	Switch
D3031	〃	〃	〃
D3032	〃	〃	〃
D3033	Not Used		
D3034	〃		
D3035	1S1555	Si Diode	Switch
X 3001	8.2159 MHz	Crystal	Carrier Oscillator *(for CW, AM, FM)*

LOCAL UNIT

PART NO.	DEVICE	TYPE	FUNCTION
Q4001	2SC945AQ	Transistor	RX 1st Local VCO. TX 2nd Local VCO. (for 1.9, 3.5 MHz)
Q4002	〃	〃	RX 1st Local VCO. TX 2nd Local VCO. (for 7, 10 MHz)
Q4003	〃	〃	RX 1st Local VCO. TX 2nd Local VCO. (for 14 MHz)
Q4004	〃	〃	RX 1st Local TX 2nd Loca (for 18 MHz)
Q4005	〃	〃	RX 1st Local TX 2nd Loca (for 21, 24.5
Q4006	〃	〃	RX 1st Local TX 2nd Loca (for 28 MHz,
Q4007	2SC535B	〃	RX 1st Local Amplifier, TX Local Buffer
Q4008	2SC2407	〃	〃
Q4009	2SC945AQ	〃	PLL UNLOC
Q4010	〃	〃	〃
Q4011	2SC535B	〃	RX 1st Local Amplifier, TX Local Buffer
Q4012	SN76514N	IC	PLL Mixer
Q4013	2SC535B	Transistor	PLL IF Buffe
Q4014	〃	〃	〃
Q4015	〃	〃	〃
Q4016	2SA733AQ	〃	PLL UNLOC
Q4017	SN74LS192	IC	PLL Program Divider
Q4018	MC4044	〃	PLL Phase De
Q4019	SN74LS90	〃	PLL Referenc 1/10 Divider
Q4020	MC14518BCP	〃	PLL Referenc 1/40 Divider
Q4021	2SC945AQ	Transistor	PLL Referenc Amplifier
Q4022	2SC732GR	〃	PLL Active L
Q4023	〃	〃	〃
Q4024	SN76514N	IC	PLL Mixer
Q4025	3SK73GR	Dual Gate MOS FET	〃
Q4026	2SC945AQ	Transistor	PLL Referenc
Q4027	〃	〃	PLL Referenc Buffer Amplif
Q4028	〃	〃	〃
Q4029	〃	〃	PLL Referenc
Q4030	3SK73GR	Dual Gate MOS FET	PLL Mixer
Q4031	2SC945AQ	Transistor	PLL Buffer A
Q4032	〃	〃	RX 2nd, TX 1 Frequency Co
Q4033	〃	〃	RX 2nd, TX 1
Q4034	〃	〃	RX 2nd, TX 1 Buffer Amplif
Q4035	〃	〃	〃
Q4036	〃	〃	Carrier VCXO (for CW, SSB)
Q4037	〃	〃	VCXO Buffer
Q4038	3SK73GP	Dual Gate MOS FET	RX 2nd, TX 1st
Q4039	2SC945AQ	Transistor	RX 2nd, TX 1st Buffer Amplifie
Q4040	3SK73GR	Dual Gate MOS FET	Carrier Mixer
Q4041	2SC945AQ	Transistor	Carrer Buffer A
Q4042	〃	〃	Switch

COUNTER UNIT

PART NO.	DEVICE	TYPE	FUNCTION
Q5001	2SC1815GR	Transistor	Counter Buffer Amplifier
Q5002	[illegible]	"	"
Q5003	MC14518B	IC	Counter Divider
Q5004	"	"	"
Q5005	MC14011B	"	Counter Mixer
Q5006	MC14022	"	Counter Divider
Q5007	TC5070	"	Counter
Q5008	TC5066	"	Frequency Display Driver
Q5009	"	"	Frequency Display Digit Driver
Q5010	"	"	Frequency Display Segment Driver
Q5011	MC14011	"	Counter Encoder
Q5012	MC14081B	"	"
Q5013	"	"	"
Q5014	2SC1815GR	Transistor	Oscillator (for DC-DC Converter)
Q5015	78L05	IC	Regulator
D5001	1S1555	Si Diode	Switch

D4001 1SS53 Si Diode Switch
D4041 1SS53 Si Diode Switch
D4042 FC-52M Varactor Diode RX 1st Local VCO. TX 2nd Local VCO. (for 7, 10 MHz)
D4043 1SS53 Si Diode Switch
D4044 " " "
D4045 " " "
D4046 FC-52M Varactor Diode RX 1st Local VCO. TX 2nd Local VCO. (for 7, 10 MHz)
D4047 1SS53 Si Diode Switch
D4048 FC-52M Varactor Diode TX 2nd Local VCO. (for 14 MHz)
D4049 1SS53 Si Diode Switch
D4050 FC-52M Varactor Diode RX 1st Local VCO. TX 2nd Local VCO. (for 18 MHz)
D4051 1SS53 Si Diode Switch
D4052 " " "
D4053 " " "
D4054 FC-52M Varactor Diode RX 1st Local VCO. TX 2nd Local VCO. (for 21, 24.5 MHz)
D4055 1SS53 Si Diode Switch
D4056 " " "
D4057 " " "
D4058 FC-52M Varactor Diode
D4059 1SS53 Si Diode
D4060 " "
D4061 " "
D4062 HZ5C2 Zener Diode
D4063 1SS53 Si Diode
D4074 1SS53 Si Diode
D4075 1SS97 Schottky Barrier Di.
D4076 Not Used
D4077 1SS53 Si Diode
D4078 " "
D4079 1SV50 Varactor Diode
D4080 1SS53 Si Diode
D4081 " "
D4082 1SV50 Varactor Diode
D4083 10D1 Si Diode
D4084 1SS97 Schottky Barrier Di.
D4085 1SS53 Si Diode
D4086 1S1555 Si Diode
D4089 1S1555 Si Diode
D5065 1S1555 Si Diode
D5066 HZ5C2 Zener Diode Regulator
D5067 1S1554 Si Diode Switch
D5068 Not Used
D5069 1S1555 Si Diode Switch
X4001 10.0 MHz Crystal
X4002 19.215 MHz "
X4003 10.5434 MHz "
X4004 10.5466 MHz "
DS5001 FIP9E8 Fluorescent Tube Frequency Display

FM/AM UNIT (OPTION)

PART NO.	DEVICE	TYPE	FUNCTION
Q6001	TA7069P	IC	TX AM Modulator
Q6002	2SK19TM-GR	Junction FET	TX 2nd IF Buffer Amplifier
Q6003	TC5082P	IC	TX 2nd IF 1/2⁸ Divider
Q6004	2SK19TM-GR	Junction FET	VCO Buffer Amplifier
Q6005	TC5082P	IC	VCO 1/2⁸ Divider
Q6006	2SK19TM-BL	Junction FET	VCO (for FM TX Carrier)
Q6007	2SC380Y	Transistor	VCO Buffer Amplifier
Q6008	MC3359	IC	RX FM Mixer, Limiter Amplifier, Discriminator, Noise Amplifier, Squelch Switch
Q6009	Not Used		
Q6010	2SC1815GR	Transistor	RX Squelch Switch
Q6011	"	"	"
Q6012	"	"	RX Mute Switch
Q6013	TC5081P	IC	Phase Detector
Q6014	μPC577H	"	TX MIC Limiter Amplifier (for FM)
Q6015	2SC1815GR	Transistor	Active L.P.F.
D6001	1S1555	Si Diode	Switch
D6002	"	"	"
D6003	MV104	Varactor Diode	TX FM Modulator
D6004	1N60	Ge Diode	RX FM Noise Detector
D6005	"	"	"

D6006	1S1555	Si Diode	TX IDC.
D6007	〃	〃	〃
XF6001	8.2M20A	Crystal Filter	RX FM 1st IF Filfter
CF6001	CFX455D	Ceramic Filter	RX FM Discriminator
TH6001	Not Used		
TH6002	D33A	Thermistor	Temperature Compensator

VFO UNIT

PART NO.	DEVICE	TYPE	FUNCTION
Q7001	VFO-01	IC	Oscillator, Buffer Amplifier
D7001	1S2236	Varactor Di	Clarifier Frequency Controller

RECT A UNIT

PART NO.	DEVICE	TYPE	FUNCTION
Q8001	2SA733AQ	Transistor	KEY Switch
Q8002	2SC1815Y	〃	〃
Q8003	2SA639Q	〃	〃
Q8004	2SC2229	〃	TX ALC DC Amplifier
D8001	SM1-12	Si Diode	Rectifier
D8002	10D10	〃	〃
D8003	〃	〃	〃
D8004	〃	〃	Back Pulse Canceling Diode
D8005	〃	〃	〃
D8006	〃	〃	Rectifier
D8007	1S1555	〃	Switch
D8008	〃	〃	〃
D8009	Not Used		
D8010	〃		
D8011	1S1555	Si Diode	Temperature Compensator
D8012	〃	〃	〃
D8013	〃	〃	KEY Switch
D8014	〃	〃	〃
D8015	〃	〃	TX ALC Detector
D8016	〃	〃	Switch
D8017	〃	〃	Temperature Compensator
D8018	〃	〃	Switch

RECT B UNIT

PART NO.	DEVICE	TYPE	FUNCTION
Q8501	2SA733AQ	Transistor	Regulator
Q8502	μPC78L12	IC	〃
Q8503	2SC496Y	Transistor	〃
Q8504	2SC1815Y	〃	Switch
Q8505	μPC78L15	IC	Regulator
D8501	10D10	Si Diode	Rectifier
D8504	10D10	Si Diode	Rectifier
D8505	V06B	〃	〃
D8506	HZ6C1	Zener Diode	Regulator
D8507	AW01-24	〃	〃

VR UNIT

PART NO.	DEVICE	TYPE	FUNCTION
D9001	1S1555	Si Diode	Switch

SW UNIT A

PART NO.	DEVICE	TYPE	FUNCTION
D9201	1S1555	Si Diode	Switch
D9202	〃	〃	〃
D9203	GD4-203SRD	LED	Clarifier Indicator
D9204	〃	〃	〃

SW UNIT B

PART NO.	DEVICE	TYPE	FUNCTION
D9401	1S1555	Si Diode	Switch
D9405	1S1555	Si Diode	Switch

RELAY UNIT A

PART NO.	DEVICE	TYPE	FUNCTION
D9601	1S1555	Si Diode	Back Pulse Canceling Diode
D9602	1N60	Ge Diode	TX PO. Meter Voltage Detector

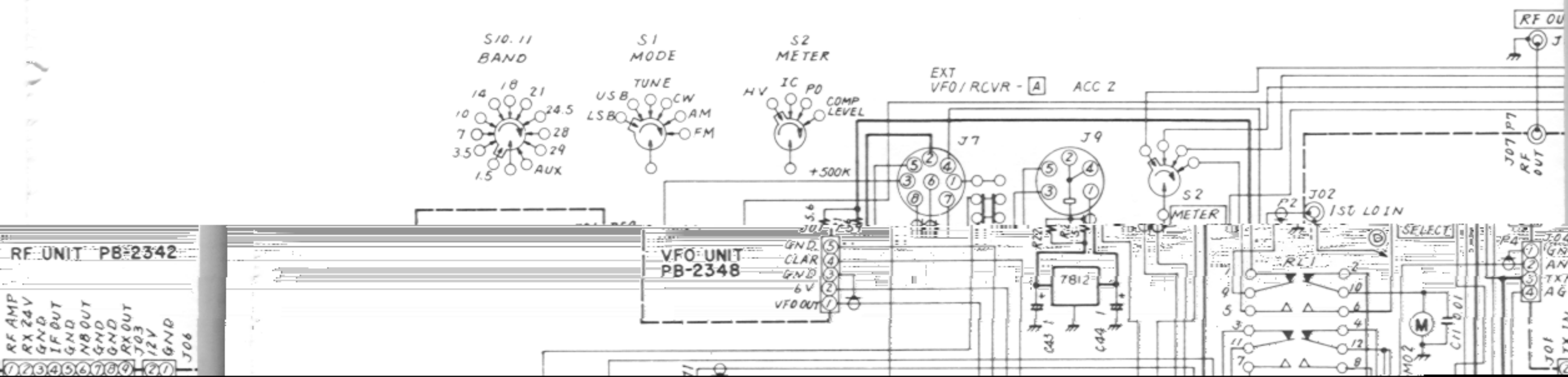
FINAL BOARD

PART NO.	DEVICE	TYPE	FUNCTION
V9801	6146B	Vacuum Tube	TX Final Amplifier
V9802	〃	〃	〃
V9803	〃	〃	〃
	(V9801, V9803: 100W Type)		

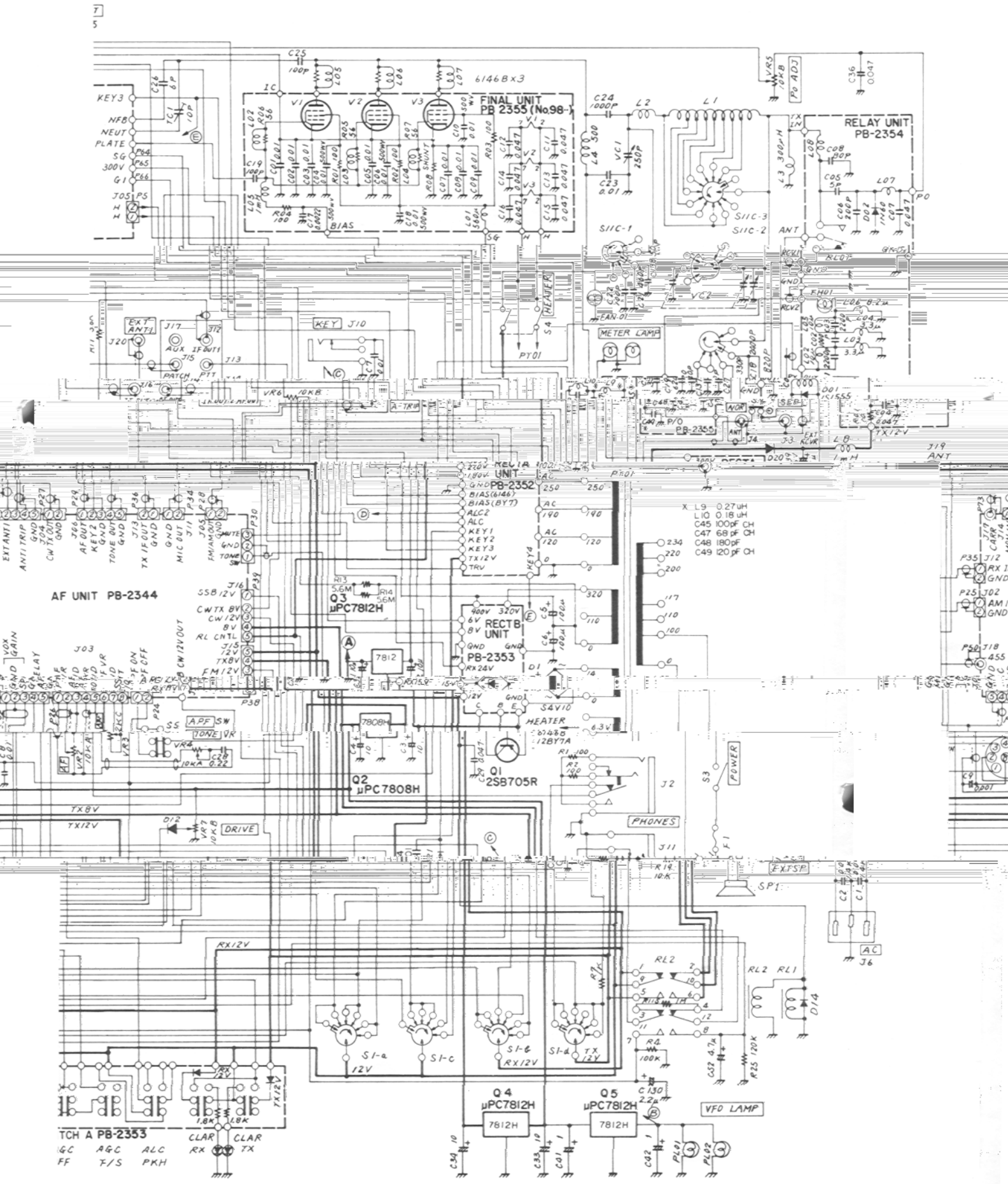
RELAY UNIT B

PART NO.	DEVICE	TYPE	FUNCTION
D9901	1S1555	Si Diode	Switch
D9902	10D10	〃	Back Pulse Canceling Diode

— MEMO —

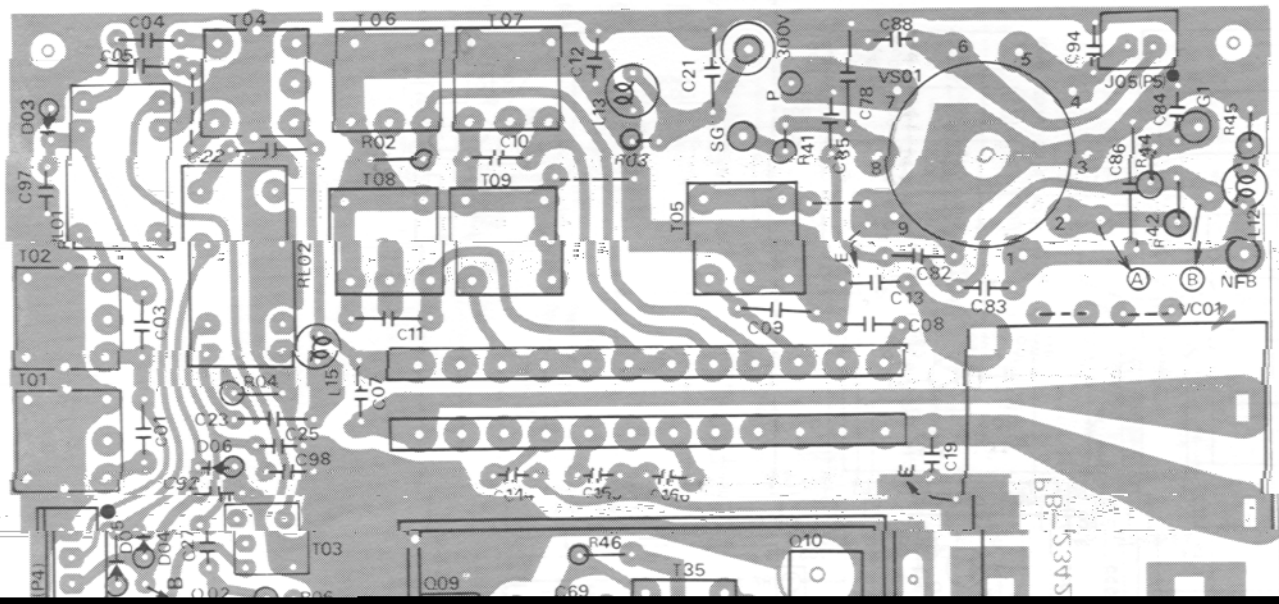


S10.11
BAND
14
18
21
24.5
10
7
28
3.5
29
1.5
AUX
S1
MODE
TUNE
USB
CW
LSB
AM
FM
S2
METER
HV
IC
PO
COMP
LEVEL
+500K
EXT
VFO/RCVR - A
ACC 2
J7
J9
S2
METER
J02
1ST LO IN
SELECT
RL1
7812
RF OUT
RF UNIT PB-2342
VFO UNIT
PB-2348
GND
CLAR
GND
6V
VFO OUT
RF AMP
RX 24V
GND
IF OUT
GND
NB OUT
GND
GND
RX OUT
J03
12V
GND
J06
C43
C44
C11
J01

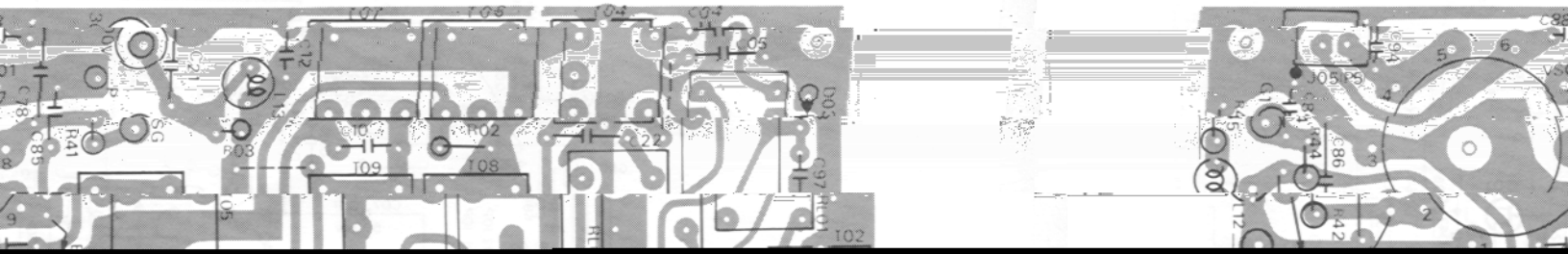


FT-102
WIRING DIAGRAM

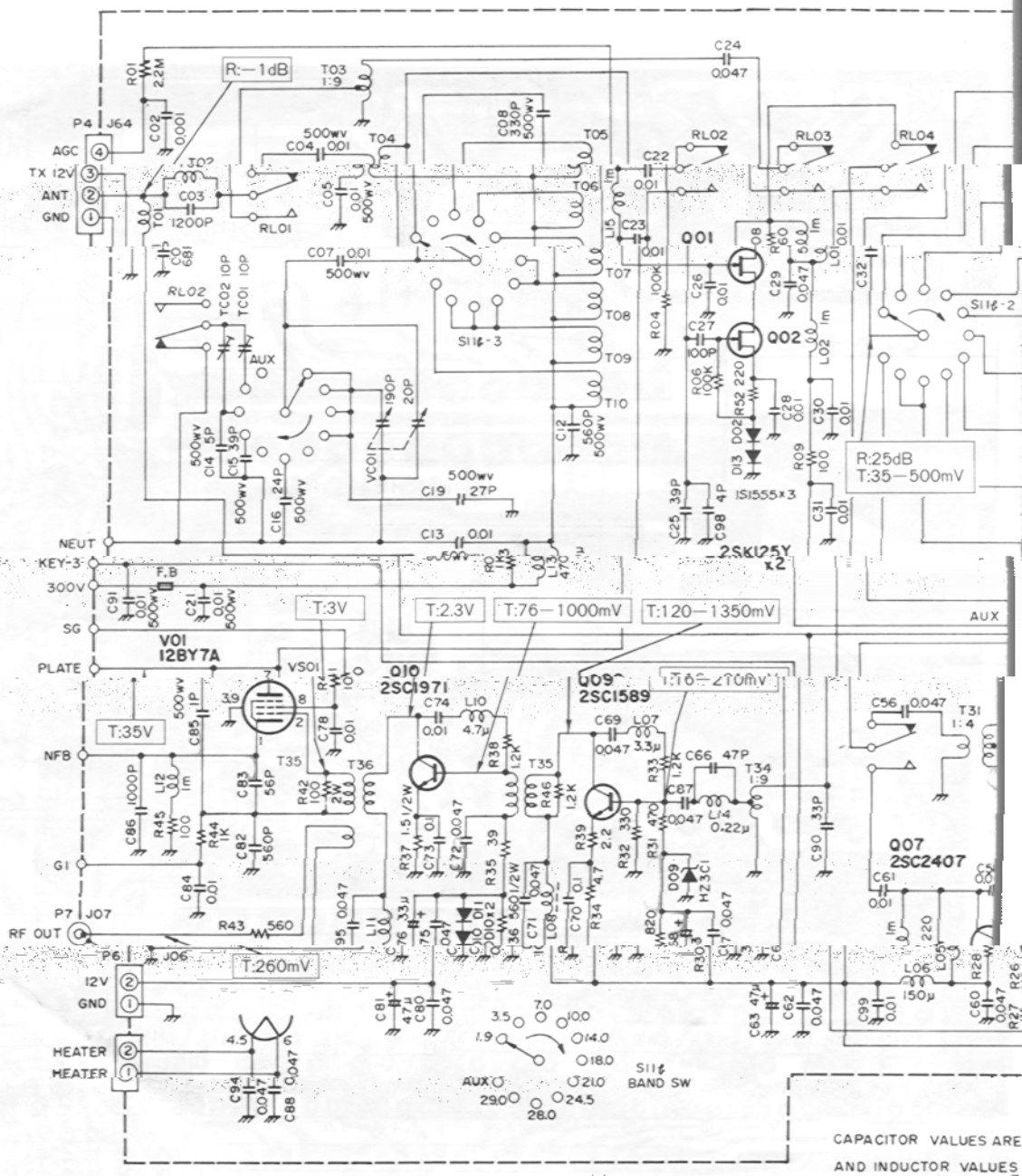
RF UNIT PARTS LAYOUT



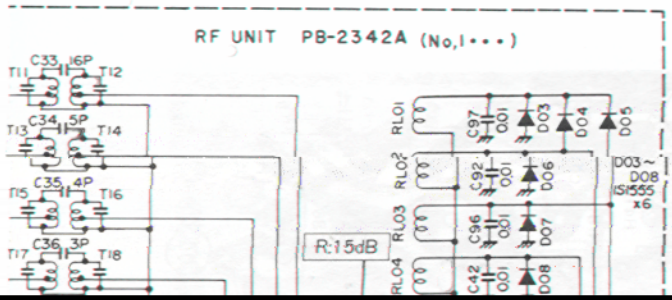
RF UNIT PARTS LAYOUT

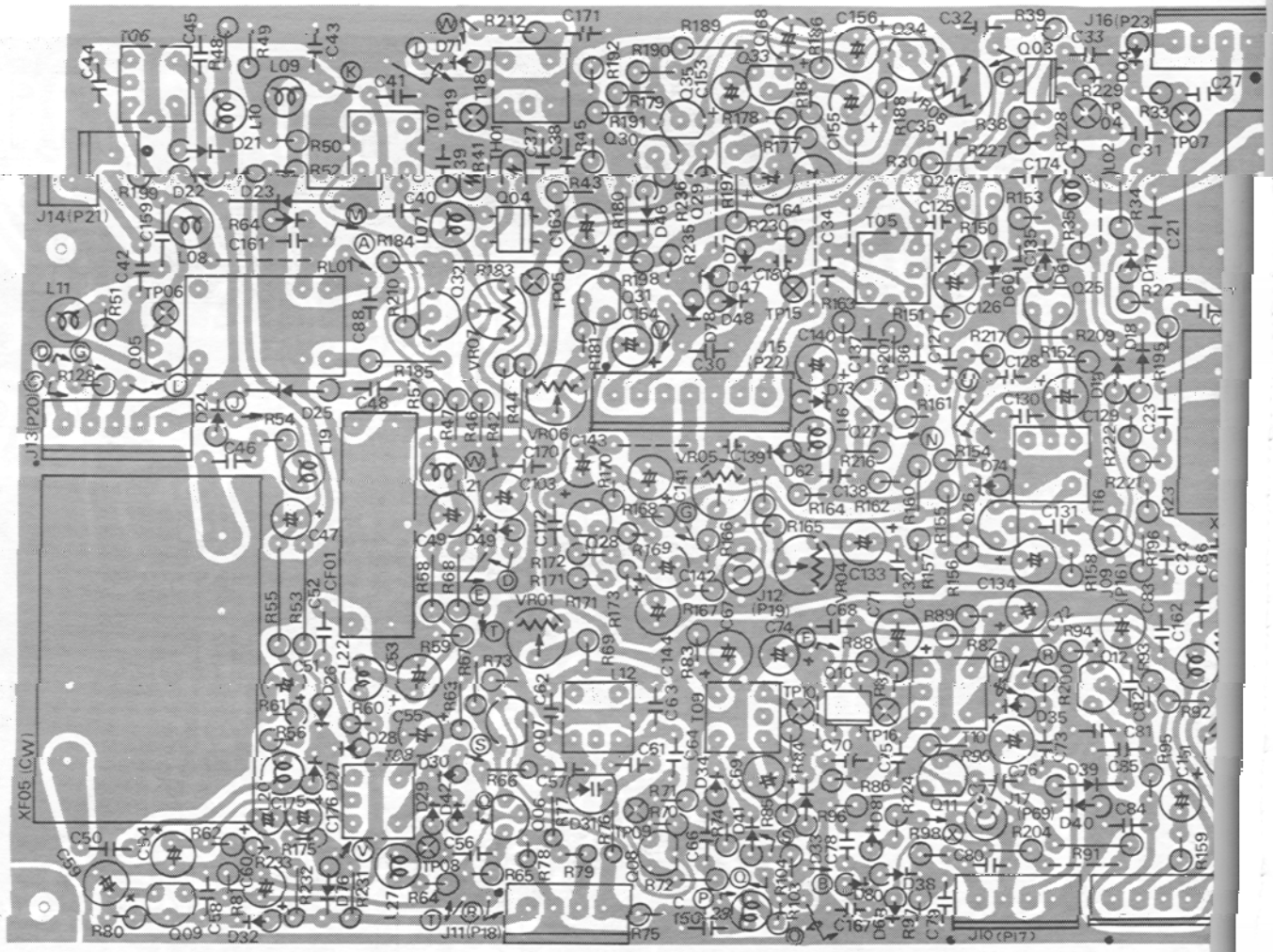


RF UNIT



	E / S (V)	C / D (V)	B / G (V)	G_2 (V)	REM
Q1001	7.5	24.0	4.1		
Q1002	4.0	7.5	1.6		
Q1003	12.0	24.0	12.8		
Q1004	3.4	24.0	0		
Q1005	2.8	23.5	0		
Q1006	2.8	23.5	0		
Q1007	5.9	12.0	6.4		TX
Q1009	0.4	12.0	1.2		
Q1010	0.3	12.0	1.2		


RF UNIT PB-2342A (No,1•••)
C33 16P
T11
T12
C34 5P
T13
T14
C35 4P
T15
T16
C36 3P
T17
T18
R:15dB
RL01
RL02
RL03
RL04
C97 .001
C92 .001
C96 .001
C42 .001
D03
D04
D05
D06
D07
D08
D03 ~ D08 1SI555 x6



	E / S	C / D	B / G	G_2	REM
Q2001	2.2	9.6	0		
Q2002	9.6	24.0	7.5		
Q2003	1.0	12.0	1.4	4.6	
Q2004	2.3	8.6	2.0	3.6	
Q2005	0.4	12.0	0		T
Q2006	3.0	9.8	3.6		
Q2007	3.0	9.7	3.7		
Q2008	3.7	9.8	4.3		
Q2009	9.8	11.5	10.3		
Q2010	2.3	8.3	2.2	5.3	

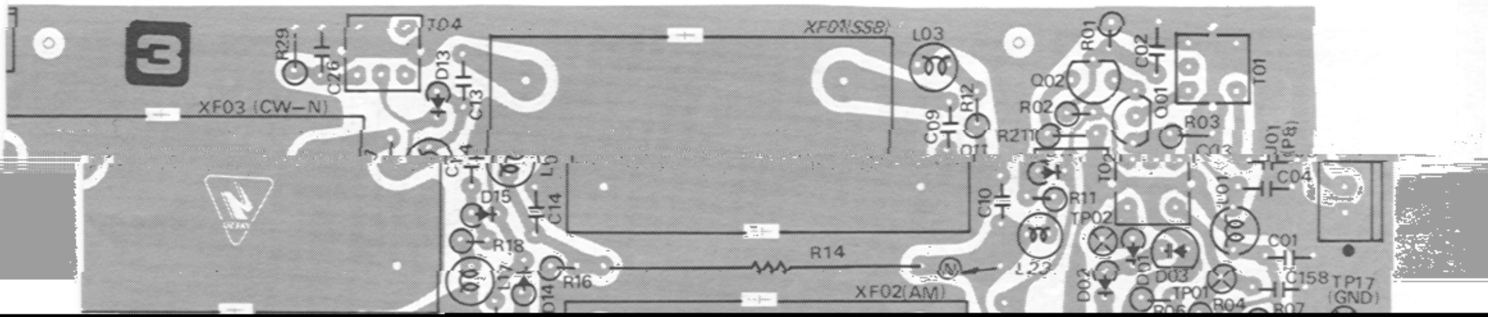
	E / S	C
Q2019	1.0	C_1 C_2
Q2020	1.0	C_1 C_2
Q2021	2.0	1
Q2022	0	
Q2023	0	1
Q2024	5.3	
Q2025	1.1	
Q2026	7.0	
Q2027	1.2	
Q2028	1.1	

Q2011	4.0	7.8	4.6			Q2029	1.6	
Q2012	0	4.8	0			Q2030	0	
Q2013	7.0	8.0	5.2			Q2031	4.2	1

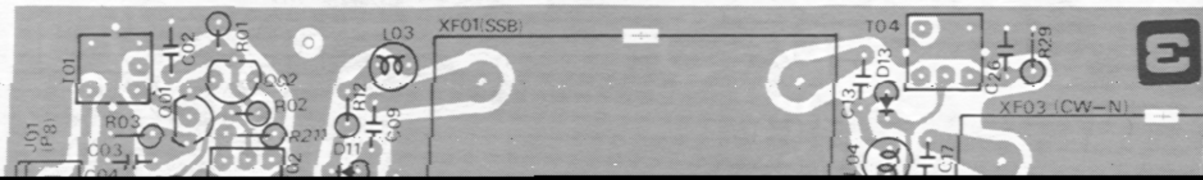
	4.8	0	5.0			Q2032	11.5	
	2.2	12.0	2.8		T COMP ON	Q2033	0.3	
	③ 0	④⑤12.0			T	Q2034	11.8	

Q2017	2.0	11.8	2.4	4.2	T	Q2035	4.3	
Q2018	0	8.2	0					

ARTS LAYOUT

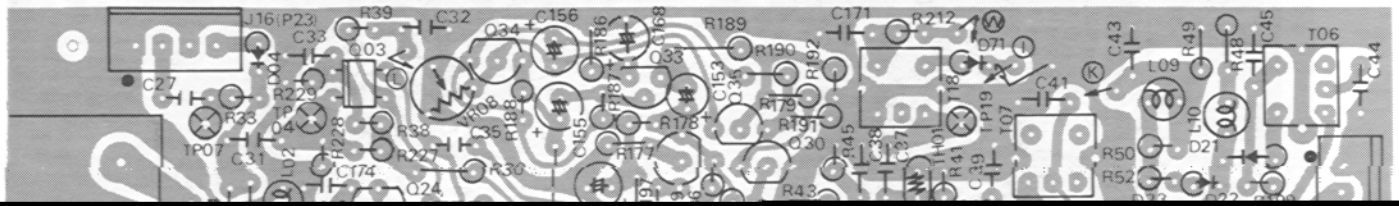

3
R29
C26
T04
D13
C13
XF03 (CW-N)
XF01(SSB)
L03
R01
C02
T01
Q02
R02
R12
C09
Q01
R03
R21
C04
D15
C14
R18
R16
D14
R14
XF02(AM)
C10
R11
TP02
L22
D02
D01
D03
TP01
C01
C158
TP17
(GND)
R06
R04
R07

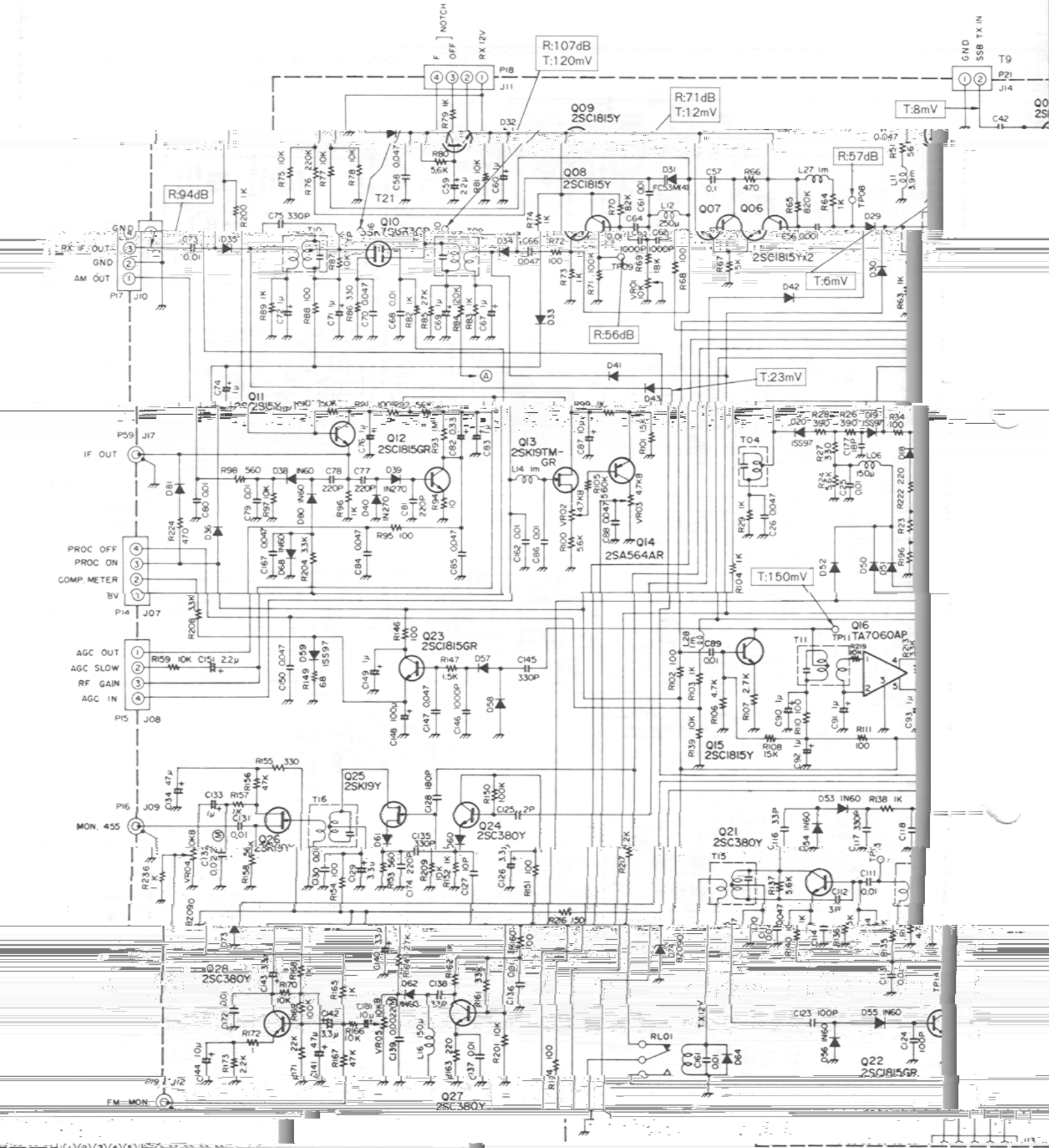
IF UNIT



T01
C02
R01
L03
XF01(SSB)
T04
D13
C26
R29
XF03 (CW-N)
Q01
Q02
R02
R03
R12
C09
D11
C03
C04
J01
(P8)
C13
L04
C17

PARTS LAYOUT

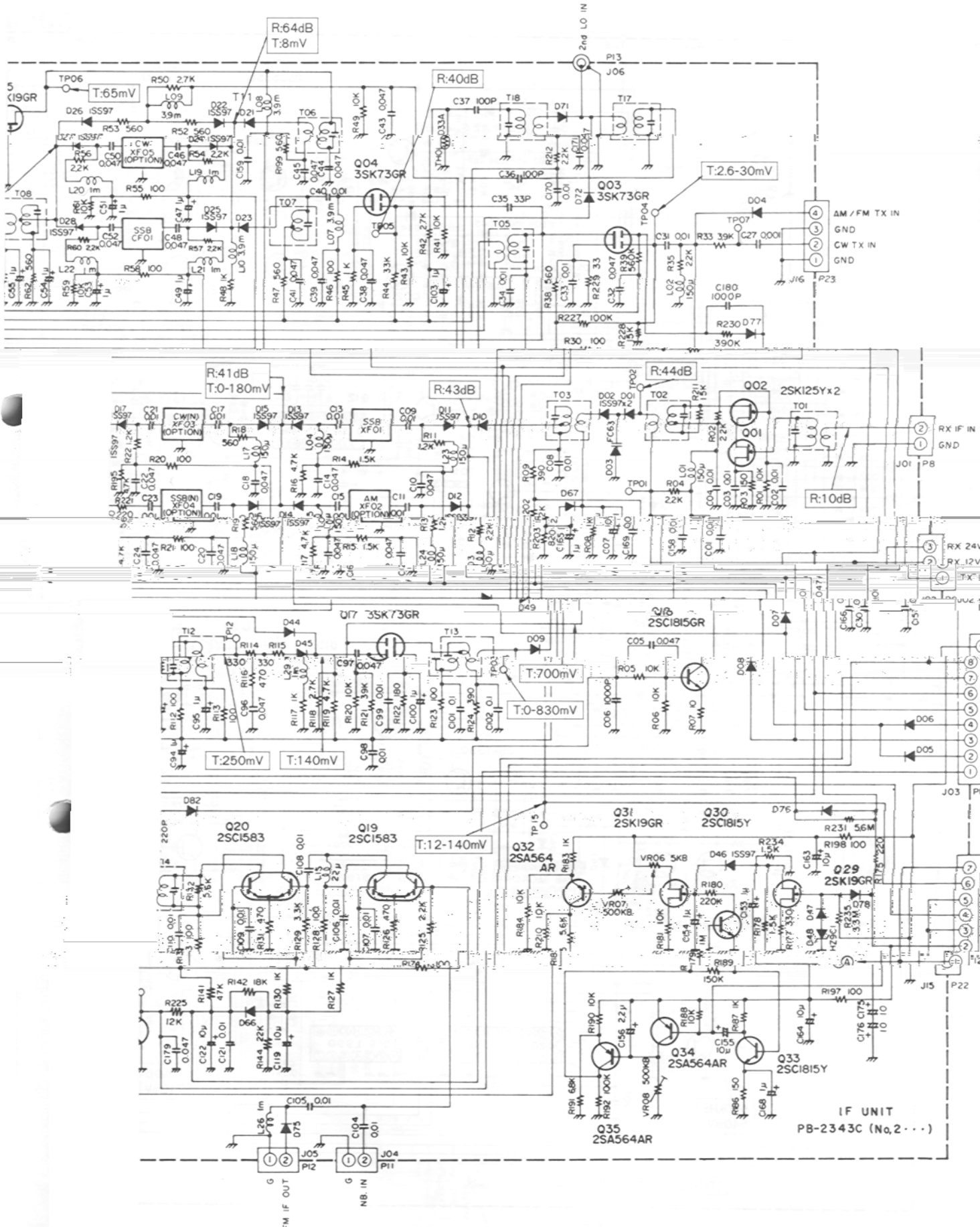




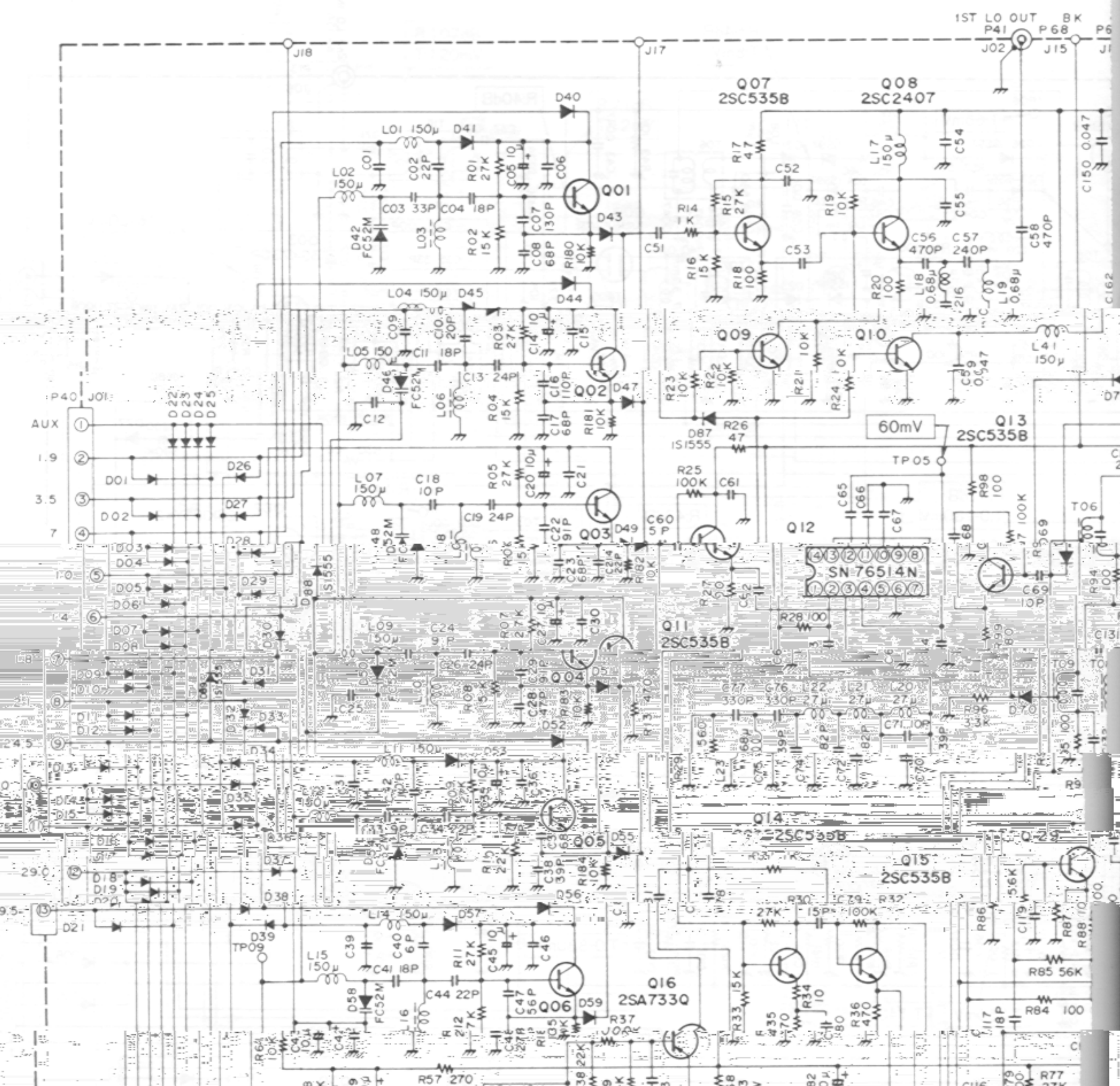
CAPACITOR VALUES ARE IN μF 50WV; RESISTOR VALUES A
1/4W AND INDUCTOR VALUES ARE IN HENRIES UNLESS
NOTED.

DIODES ARE 1S1555 UNLESS OTHERWISE NOTED.

IN Ω,
HERWISE

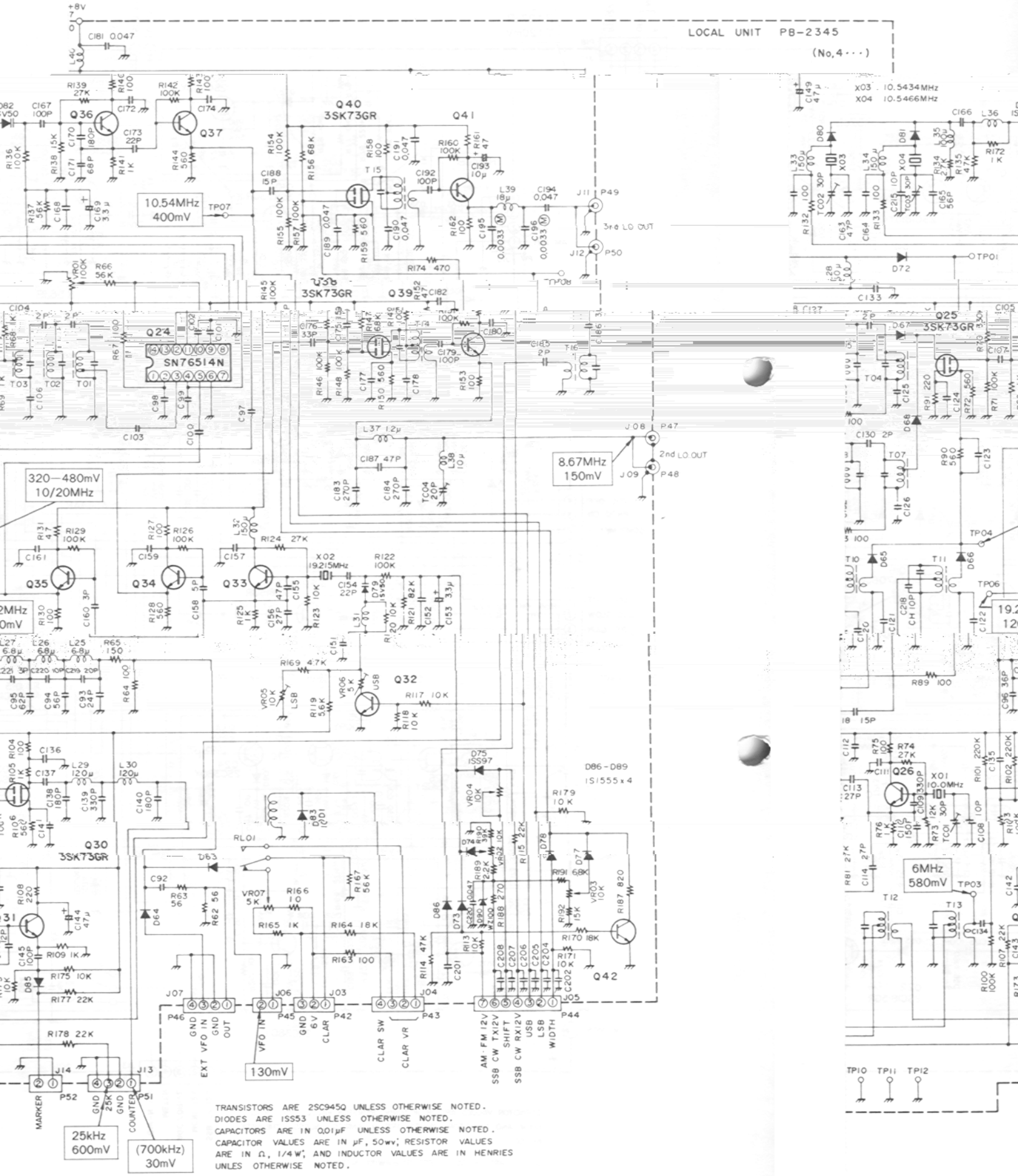

R:64dB
T:8mV
2nd LO IN
P13
J06
T:65mV
R:40dB
T:2.6-30mV
Q04
3SK73GR
Q03
3SK73GR
AM / FM TX IN
GND
CW TX IN
GND
J16
P23
R:41dB
T:0-180mV
R:43dB
R:44dB
Q02
2SK125Y×2
Q01
RX IF IN
GND
J01
P8
R:10dB
Q07 3SK73GR
Q18
2SC1815GR
T:700mV
=
T:0-830mV
T:250mV
T:140mV
T:12-140mV
Q20
2SC1583
Q19
2SC1583
Q32
2SA564
AR
Q31
2SK19GR
Q30
2SC1815Y
Q29
2SK19GR
Q34
2SA564AR
Q33
2SC1815Y
Q35
2SA564AR
IF UNIT
PB-2343C (No.2···)
FM IF OUT
J05
P12
J04
P11
J03
J15
P22

LOCA



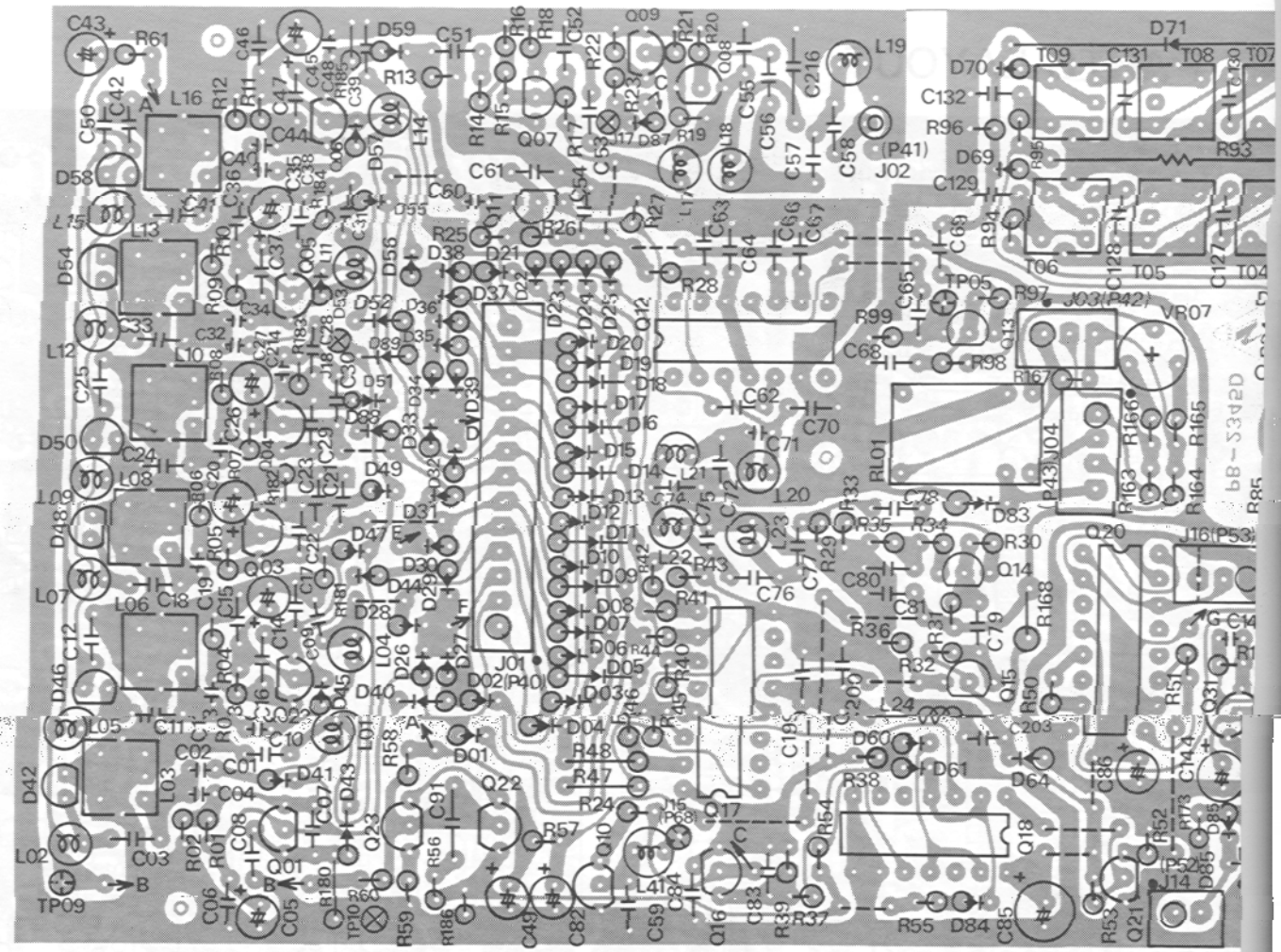
1ST LO OUT
P41
J02
P68
J15
J18
J17
Q07
2SC535B
Q08
2SC2407
Q01
Q02
Q03
Q04
Q05
Q06
Q09
Q10
Q11
2SC535B
Q12
SN 76514N
Q13
2SC535B
Q14
2SC535B
Q15
2SC535B
Q16
2SA733Q
60mV
TP05
TP09
P40
J01
AUX
1.9
3.5
7
28.0
29.0
29.5
24.5

L UNIT



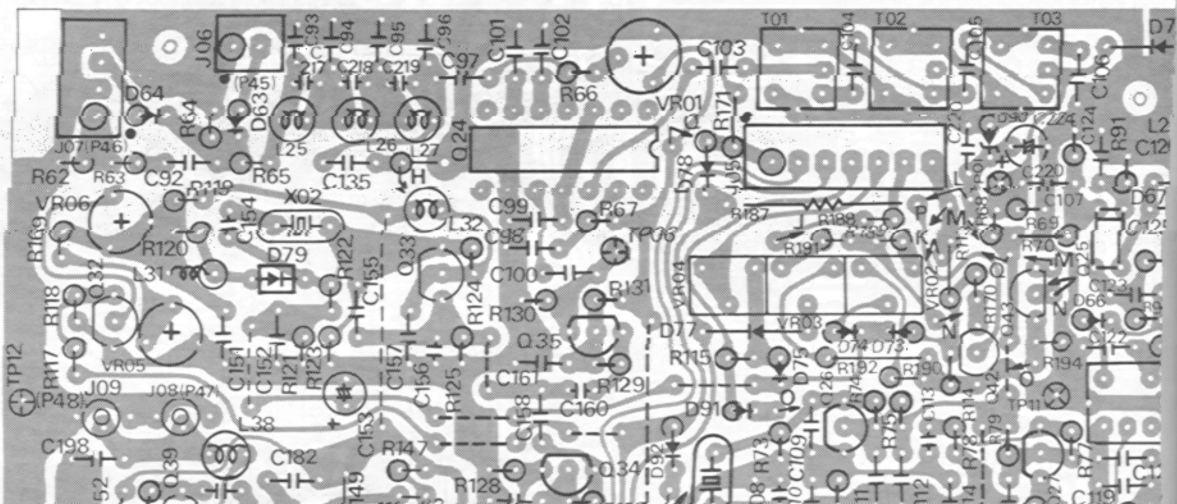
TRANSISTORS ARE 2SC945Q UNLESS OTHERWISE NOTED.
DIODES ARE 1SS53 UNLESS OTHERWISE NOTED.
CAPACITORS ARE IN 0.01μF UNLESS OTHERWISE NOTED.
CAPACITOR VALUES ARE IN μF, 50wv; RESISTOR VALUES ARE IN Ω, 1/4W; AND INDUCTOR VALUES ARE IN HENRIES UNLES OTHERWISE NOTED.

LOCAL UNIT PARTS LAYOUT



	E / S	C / D	B / G	G_2	REM		E / S
Q4001	2.3	7.2	2.6		1.8MHz	Q4022	0.8
Q4002	2.3	7.2	2.6		7 MHz	Q4023	0
Q4003	2.3	7.2	2.6		14 MHz	Q4024	⑥ 0
Q4004	2.3	7.2	2.6		18 MHz	Q4025	1.7

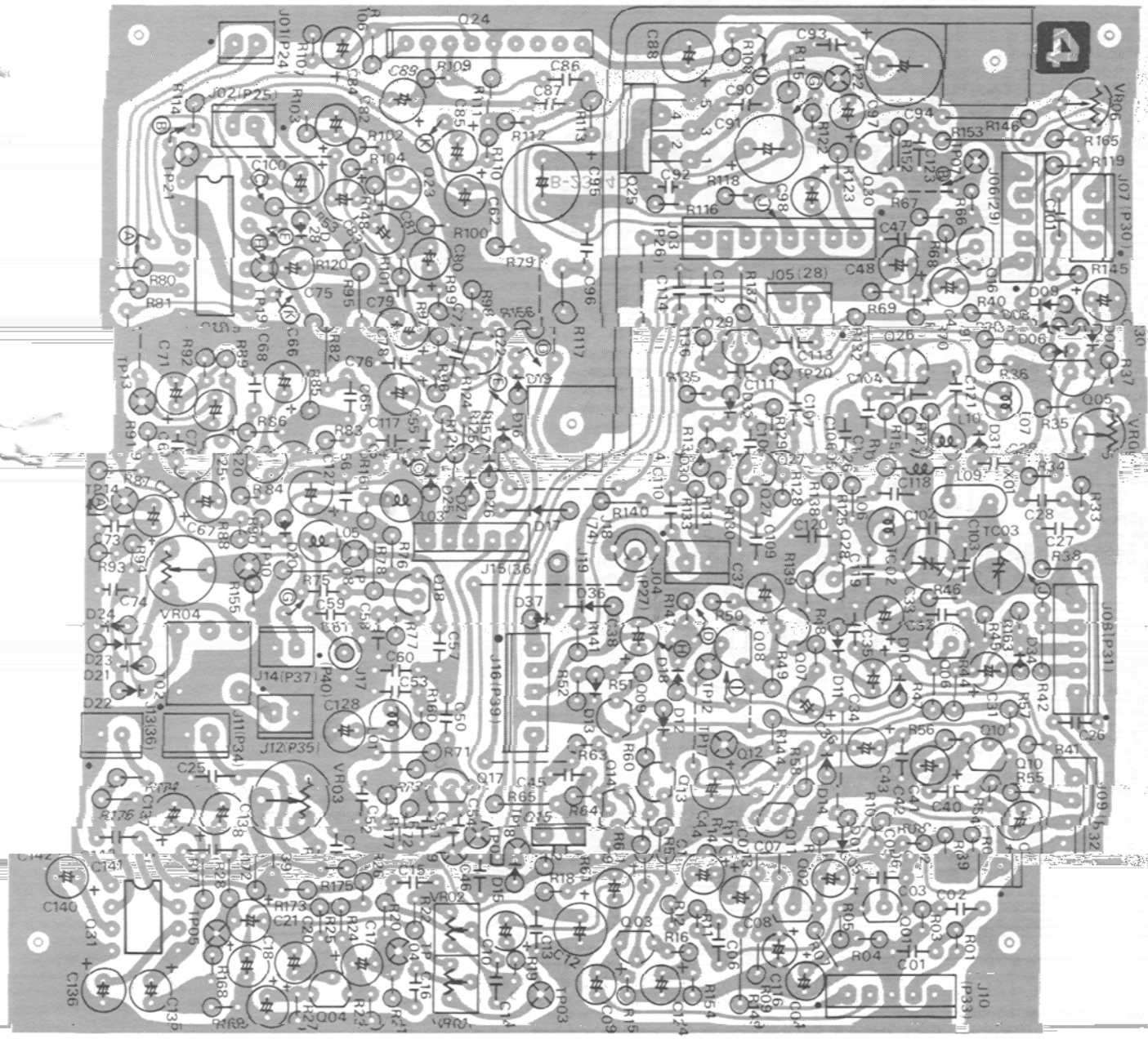
LOCAL UN



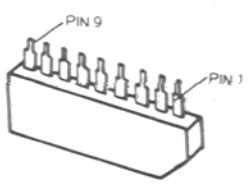
J06
(P45)
J07(P46)
D64
D63
R64
R62
R63
C92
R65
C93
C94
C95
C96
C217
C218
C219
C97
C101
C102
R66
C103
VR01
R171
Q24
D78
L25
L26
L27
C135
T01
T02
T03
C104
C105
C106
C120
C124
R91
C107
R69
R70
C220
C224
D90
D67
VR06
R119
R169
R120
X02
C154
L32
C99
C98
R67
TP06
R187
R188
R191
R189
L31
D79
R122
C155
Q33
C100
R124
R130
R131
VR04
VR03
VR02
R113
R170
Q25
C123
D66
C122
R118
Q32
R117
VR05
C151
C152
R121
R123
C157
C156
R125
Q35
C161
R129
D77
R115
D75
D74
D73
R192
R190
R194
Q43
Q42
TP11
TP12
(P48)
J09
J08(P47)
L38
C153
C158
C160
D91
C126
R74
R75
C113
R114
R79
R78
R77
C119
C198
Q39
C182
R147
R128
Q34
D92
R73
C109

NIT PARTS LAYOUT

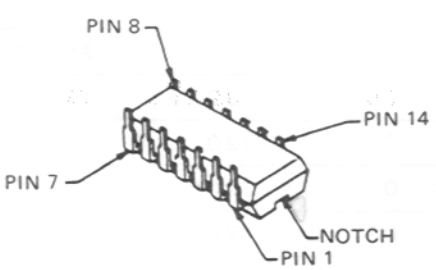
AF UNIT PARTS LAYOUT



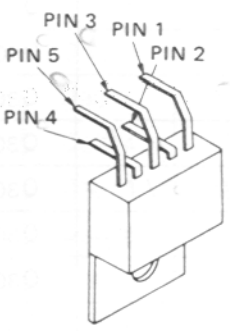
Viewed from Component Side



AN6551

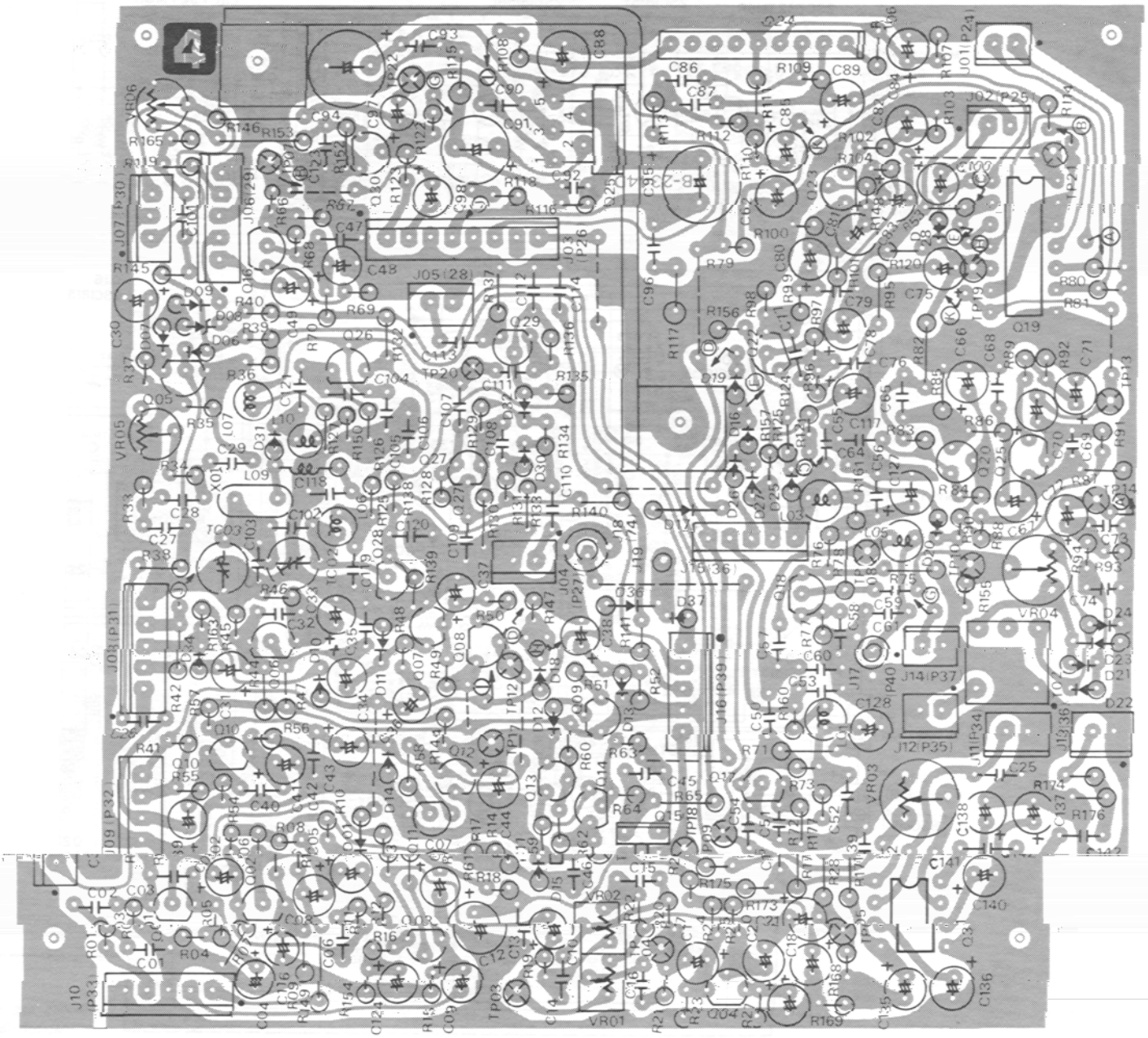


MC14066B

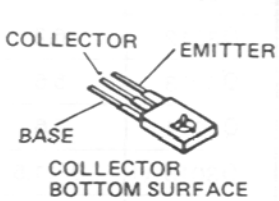


μPC2002V

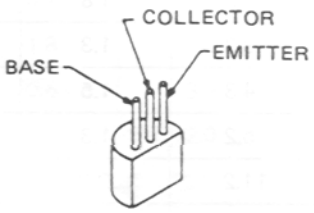
AF UNIT PARTS LAYOUT



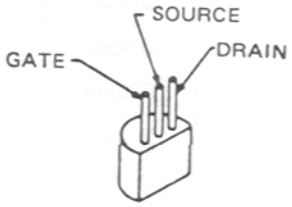
Viewed from Solder Side



2SA496Y

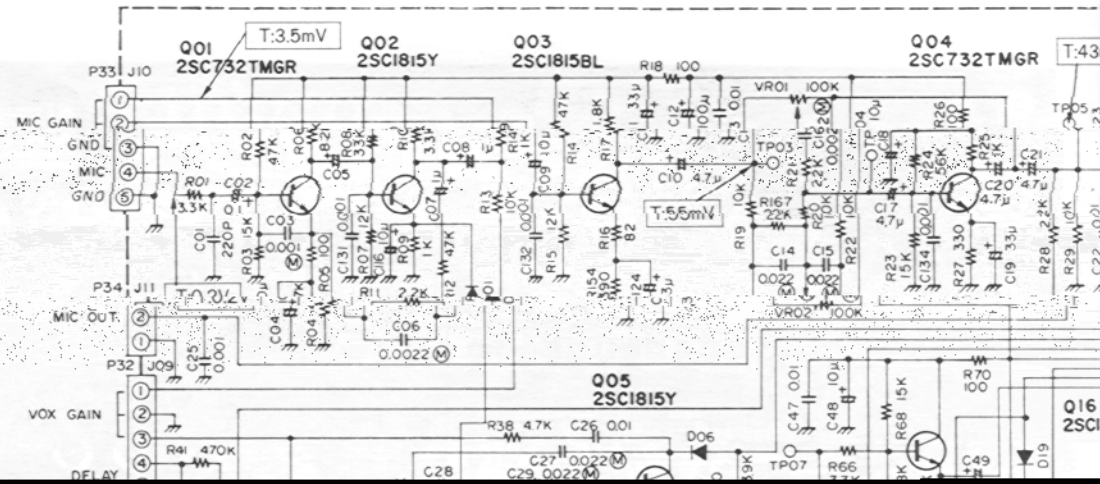


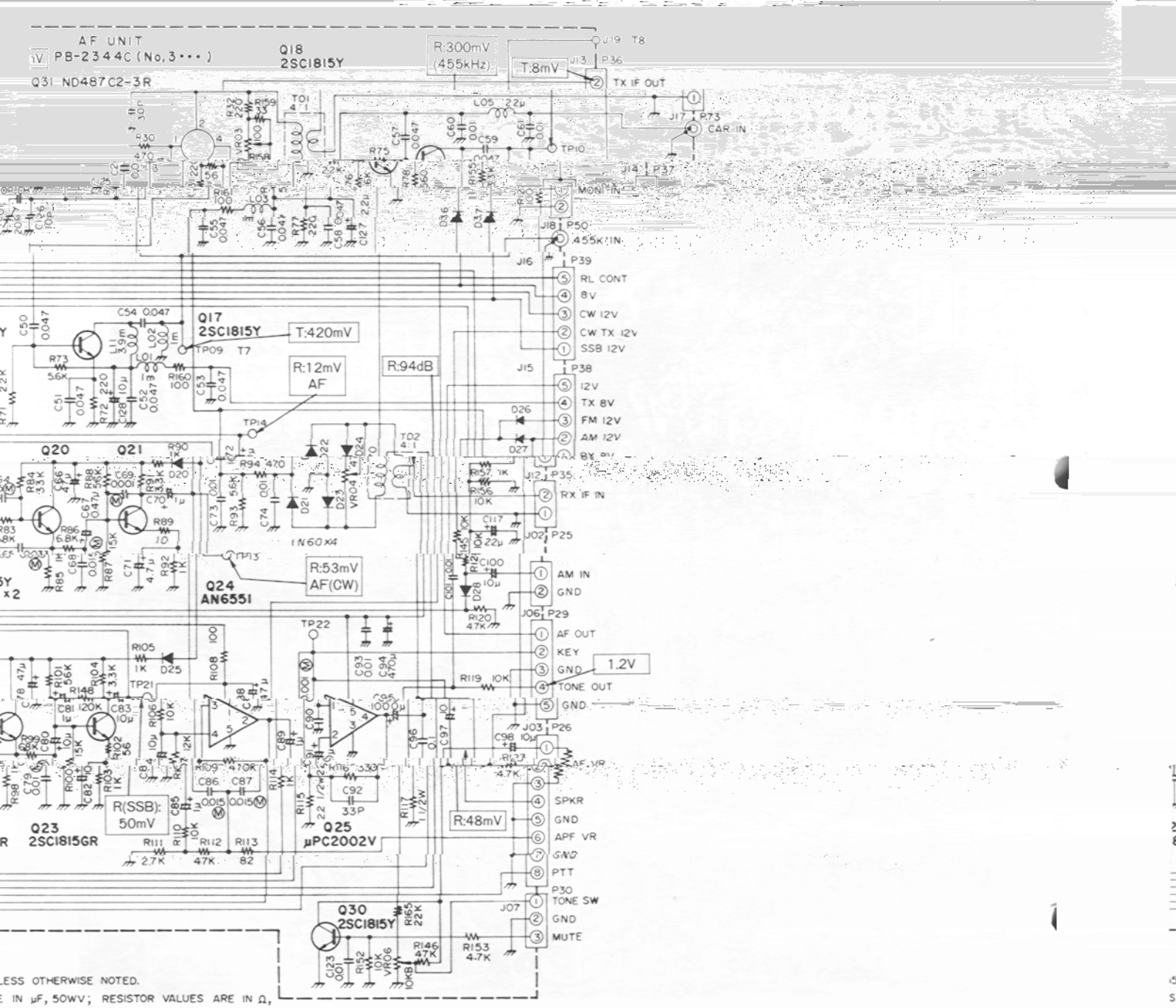
2SA733Q
2SC380Y
2SC732TM-GR
2SC1815BL
2SC1815GR
2SC1815Y



2SK19Y

AF UN

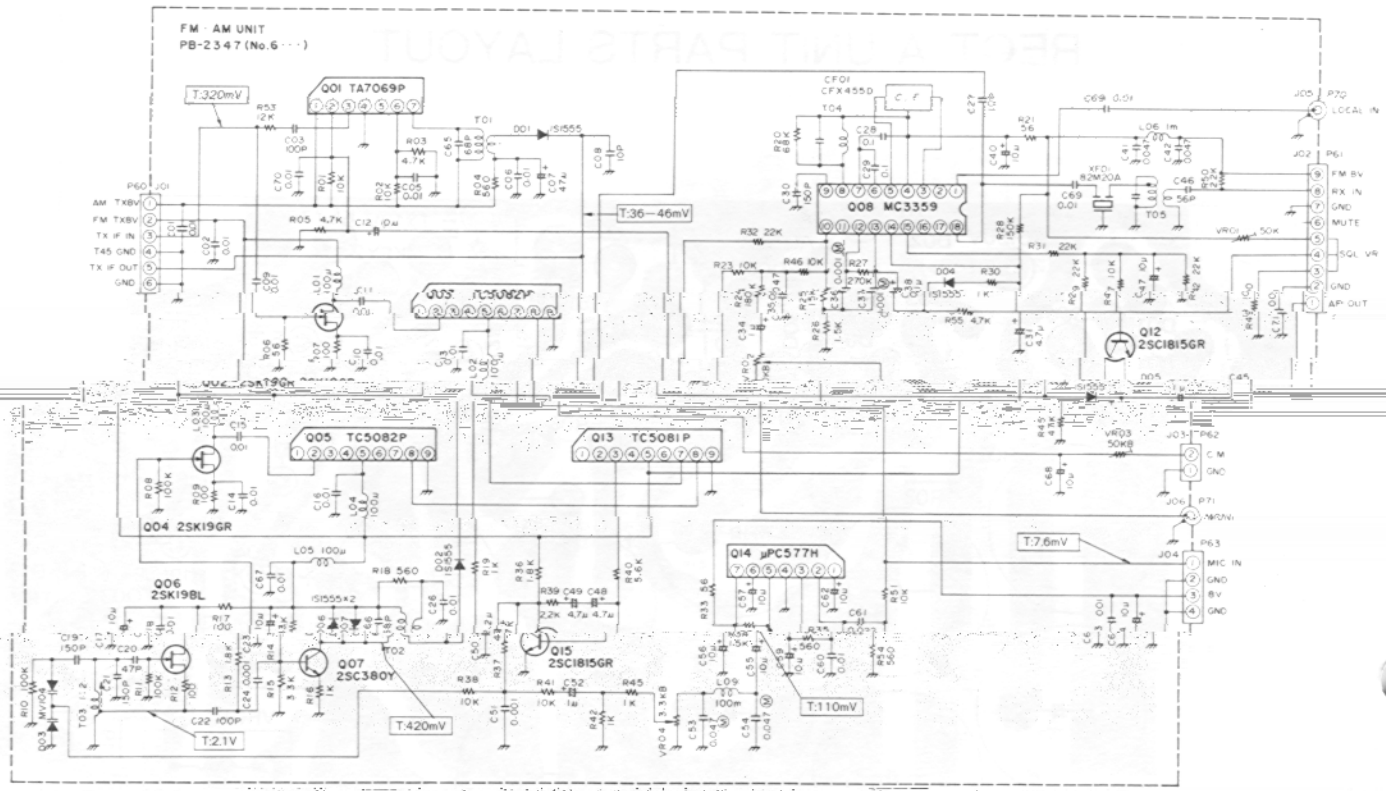

Q01
2SC732TMGR
T:3.5mV
Q02
2SC1815Y
Q03
2SC1815BL
Q04
2SC732TMGR
T:43
P33 J10
MIC GAIN
GND
MIC
GND
P34 J11
MIC OUT.
P32 J09
VOX GAIN
DELAY
R18 100
VR01 100K
VR02 100K
TP03
TP05
TP07
T:1.55mV
Q05
2SC1815Y
D06
R38 4.7K
C26 0.01
C27 0.0022
C29 0.0022
R41 470K
R70 100
R68 15K
C47 0.01
C48 10μ
C49
D19
Q16
2SC

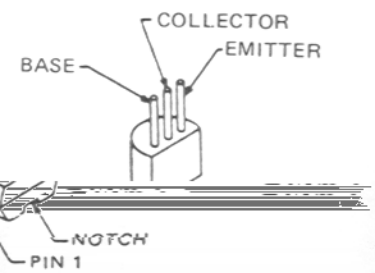


LESS OTHERWISE NOTED.
E IN µF, 50WV; RESISTOR VALUES ARE IN Ω,
VALUES ARE IN HENRIES UNLESS OTHERWISE NOTED.

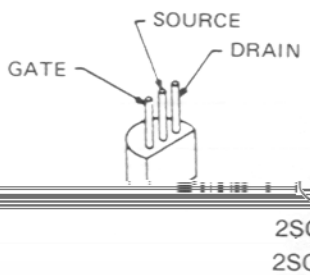
B / G_1	REM		E / S	C / D	B / G_1	REM
0		Q3021	0.7	3.9	1.3	
0		Q3022	1.8	5.3	2.5	
6.2		Q3023	0.6	3.9	1.3	
1.8		Q3024	⑤ 0	①⑨12.0	④ 6.2	CW
2.0/11.3	R / T	Q3025	③ 0	⑤ 12.0		
4.2		Q3026	0.8	7.8	0	CW
2.3	T	Q3027	8.4	12.0	9.5	CW
2.2		Q3028	0	8.0	0.7	AM
		Q3029	7.2	10.5	7.8	AM
2.0		Q3030	0	0	0	

AM/FM UNIT PARTS LAYOUT

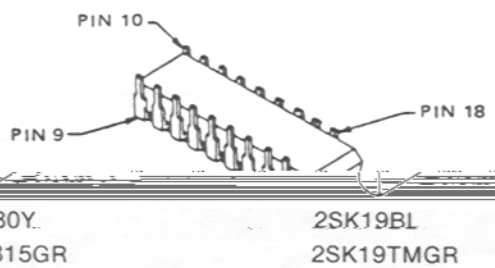




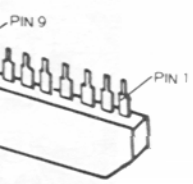
2SC380Y
2SC1815GR



2SK19BL
2SK19TMGR



MC3359

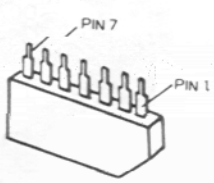


TC5081P
TC5082P

	E / S	C / D	B / G	G_2	REM
Q6001	④ 0	①⑦ 8.0			AM - T
Q6002	0.5	8.0	0		FM - T
Q6003	⑨ 0	⑤ 8.0			FM - T
Q6004	0.7	8.0	0		FM - T
Q6005	⑨ 0	⑤ 8.0			FM - T
Q6006	1.0	7.2	0		FM - T
[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
Q6008		④⑧ 8.0			FM

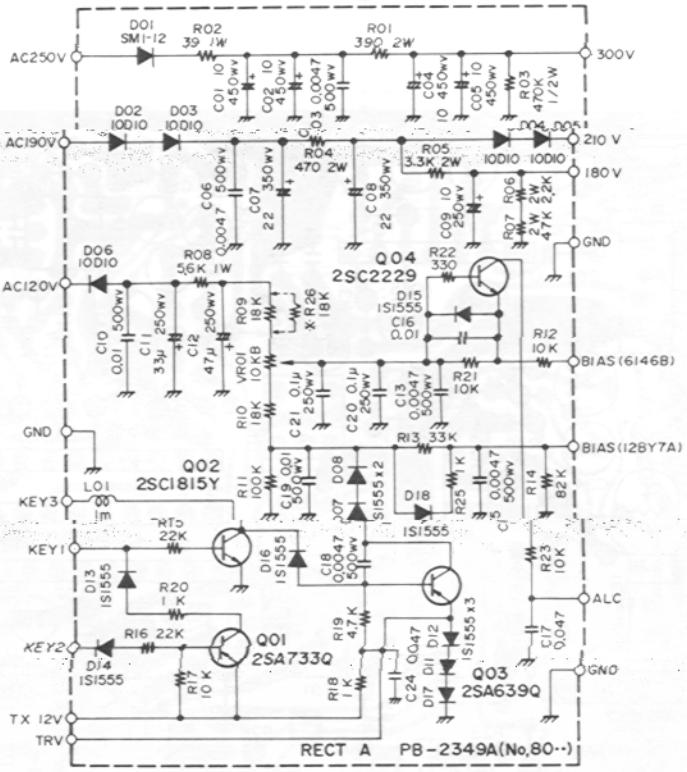
R

Q6012	0	0	0/0.7		R / T
Q6013	⑨ 0	⑤ 8.0			FM - T
Q6014	④ 0	⑦ 8.0			
Q6015	0	(VCV)	(VCV)		
Q6016					
Q6017					



TA7069P
μPC577H

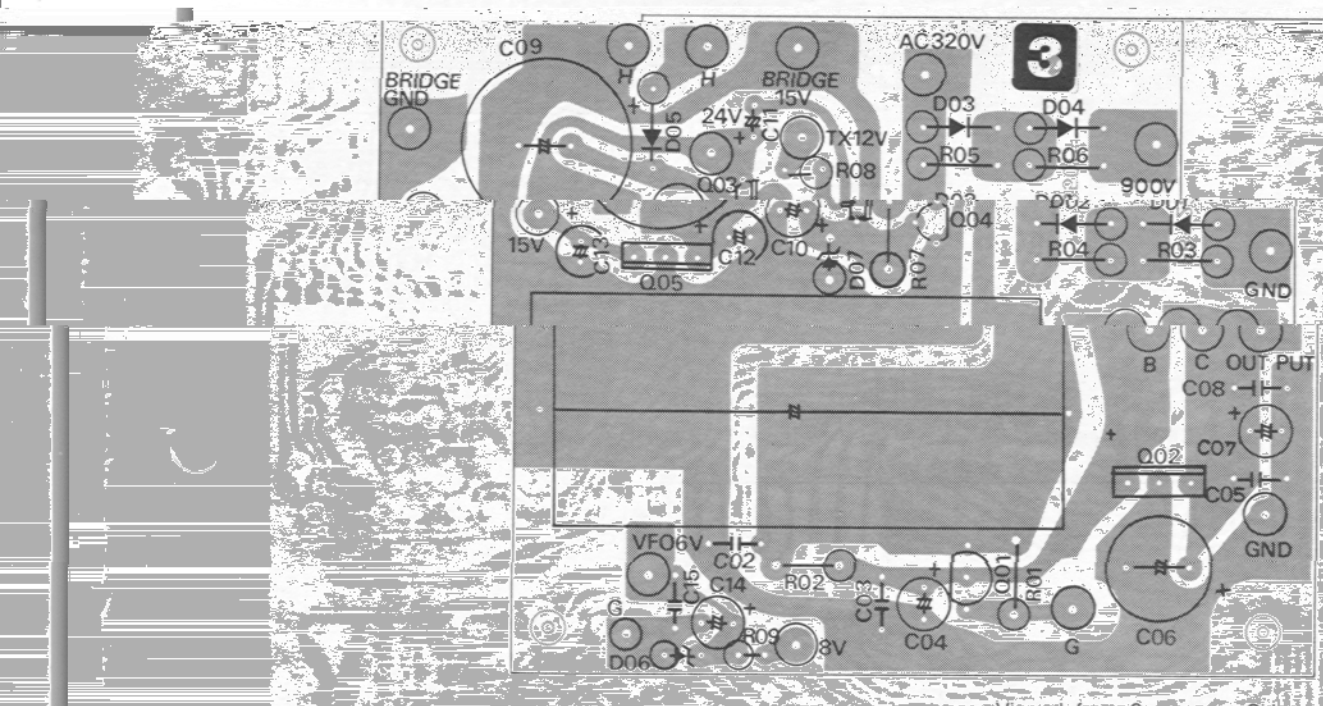
RECT A UNIT PARTS LAYOUT



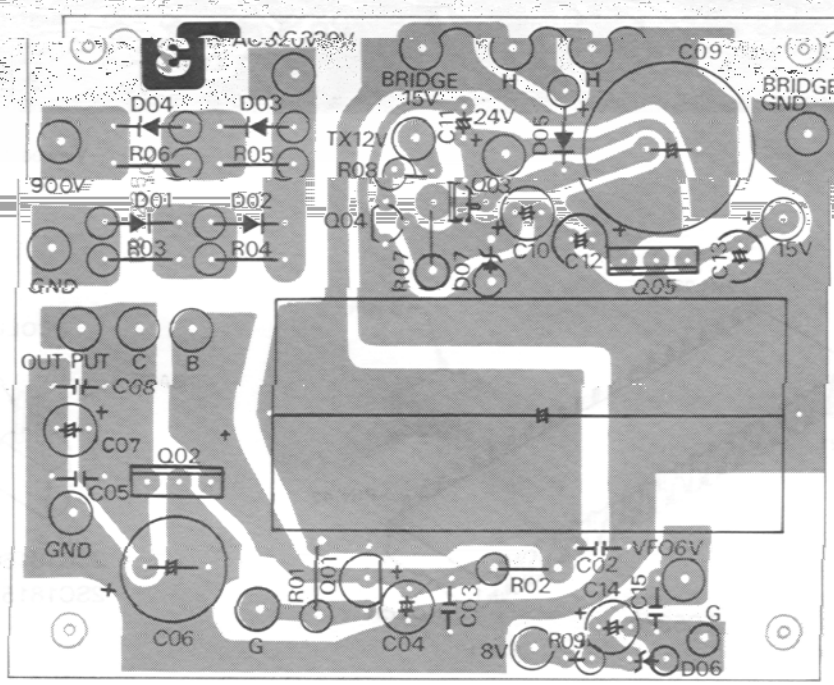
CAPACITOR VALUES ARE IN μF, 50wv; RESISTOR VALUES ARE IN Ω, ARE IN 1/2, 1/4W, AND INDUCTOR VALUES ARE IN HENRIES UNLESS OTHERWISE NOTED.

	E/S	C/D	B/G	REM	
Q8001	0/12.0	0/ 0	0/12.0	KEY UP	R/T CW

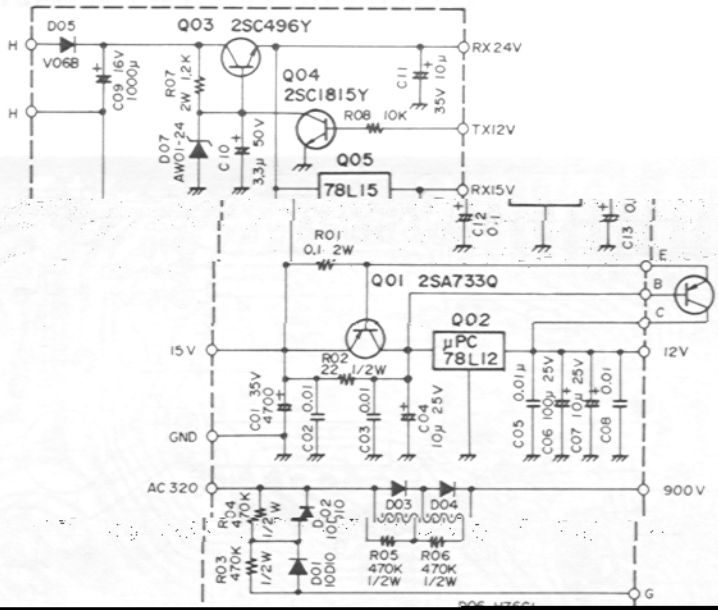
RECT B UNIT PARTS LAYOUT



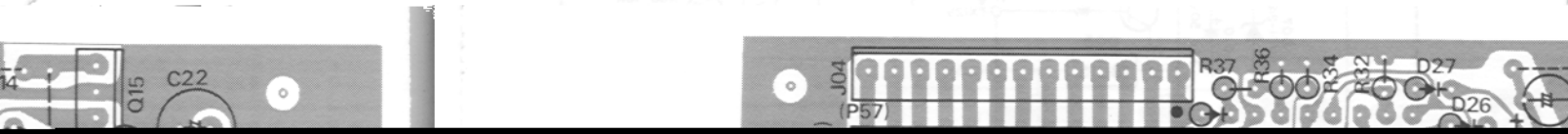
Viewed from Component Side



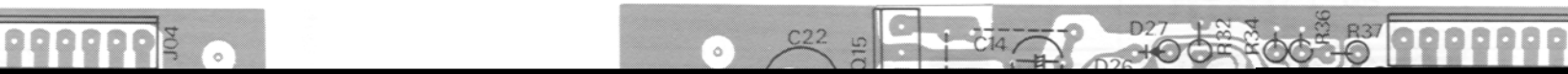
Viewed from Solder Side


D05
V06B
Q03 2SC496Y
RX24V
C09 16V 1000μ
R07 2W 1.2K
Q04 2SC1815Y
C11 35V 10μ
R08 10K
TX12V
D07 AW01-24
C10 3.3μ 50V
Q05 78L15
RX15V
C12 0.1
C13 0.1
R01 0.1 2W
Q01 2SA733Q
Q02 μPC 78L12
15V
R02 22Ω 1/2W
12V
C01 35V 4700μ
C02 0.01
C03 0.01
C04 10μ 25V
C05 0.01μ
C06 100μ 25V
C07 10μ 25V
C08 0.01
GND
AC 320
900V
R04 470K 1/2W
D02 10D10
D03
D04
R05 470K 1/2W
R06 470K 1/2W
R03 470K 1/2W
D01 10D10
E
B
C
G

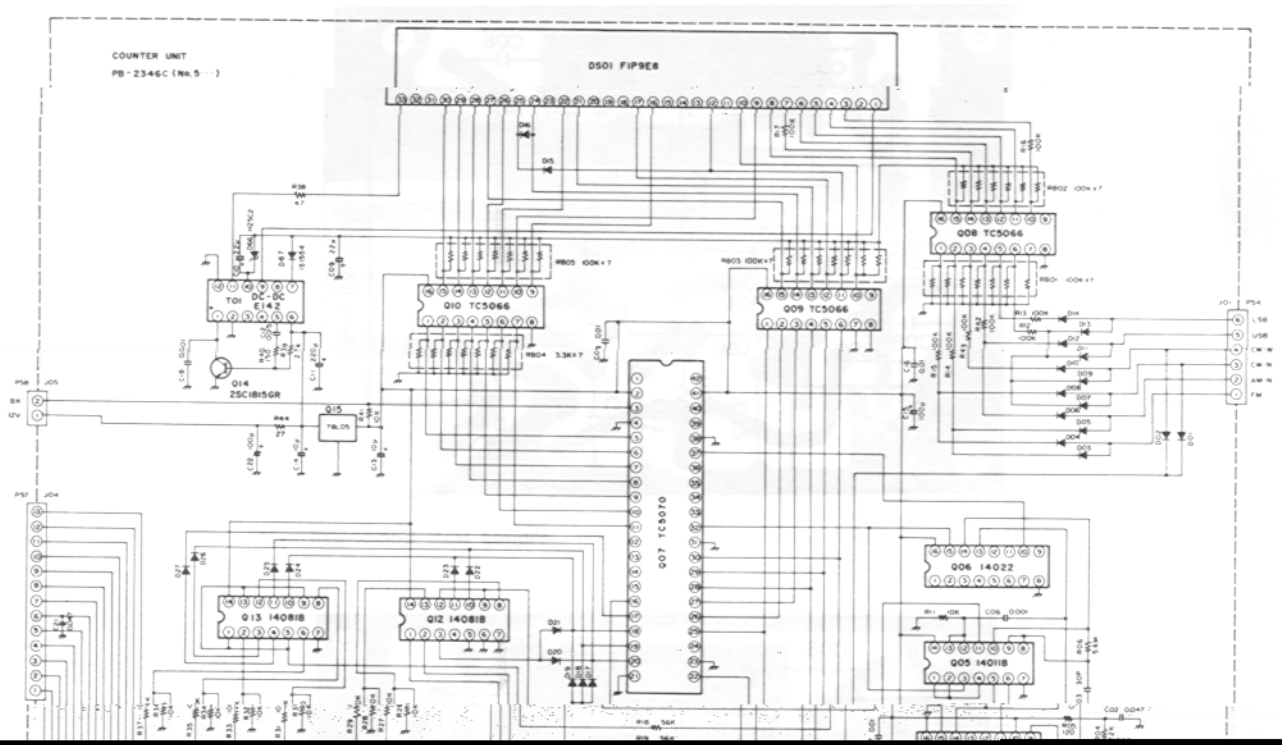
COUNTER UNIT PARTS LAYOUT



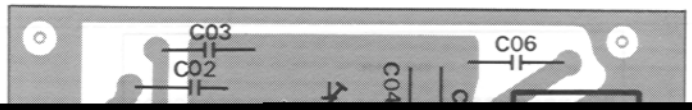
COUNTER UNIT PARTS LAYOU



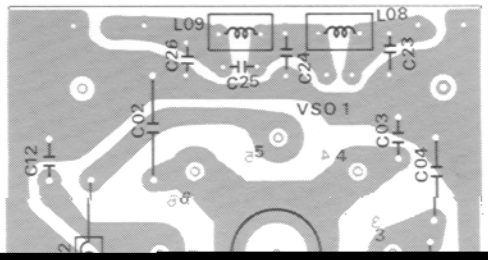
COUNTER UNIT



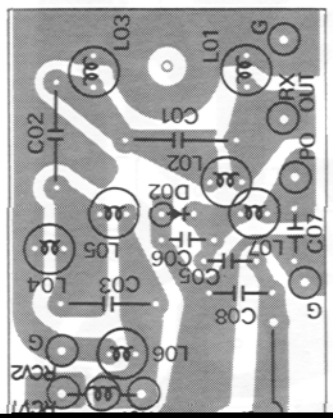
VFO UNIT PARTS LAYOUT

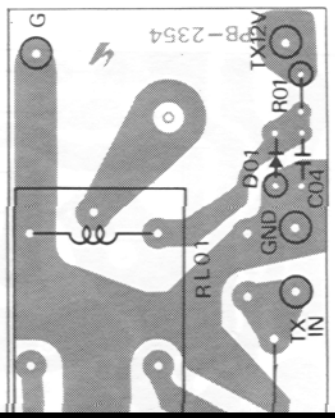


FINAL UNIT PARTS LAYOUT

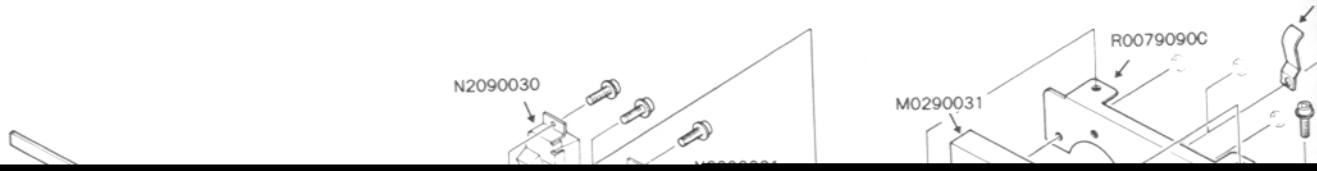


RELAY UNIT PARTS LAYOUT

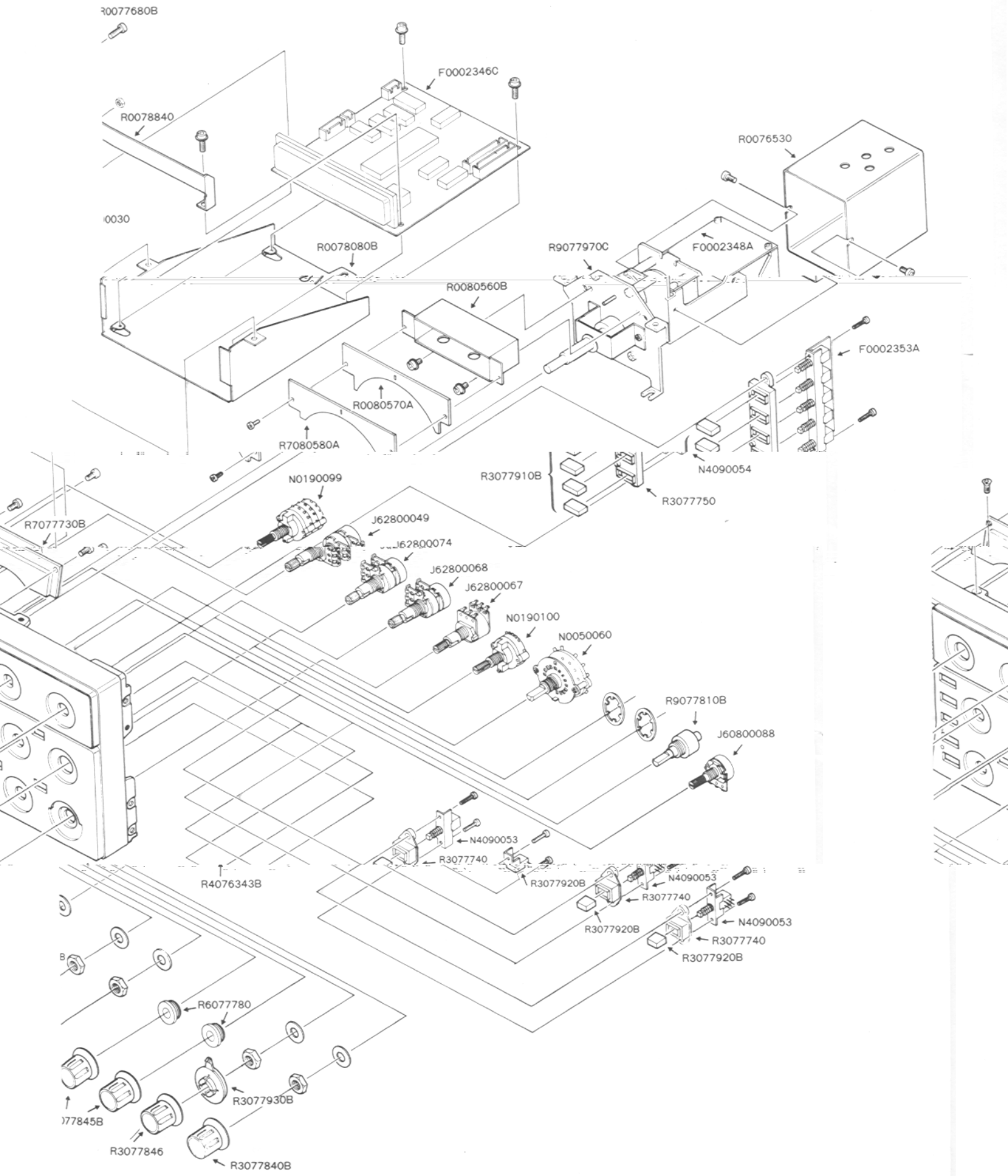




FRONT PANE



EL REMOVAL


R0077680B
F0002346C
R0078840
R0076530
R0078080B
R9077970C
F0002348A
R0080560B
F0002353A
R0080570A
R7080580A
N4090054
R3077910B
R3077750
N0190099
R7077730B
J62800049
J62800074
J62800068
J62800067
N0190100
N0050060
R9077810B
J60800088
N4090053
R3077740
R3077920B
R4076343B
R6077780
R3077930B
R3077846
R3077840B

PARTS LIST

MAIN CHASSIS		
Symbol No.	Part No.	Name & Description
		VACUUM TUBE
V1, 2, 3	G6090001	6146B
		IC
Q2	G1090294	μPC7808H
Q3, 4, 5, 6	G1090301	μPC7812H
		TRANSISTOR
Q1	G3207050R	2SB705R

C22, 25	K00359001	Ceramic Disc 3KWV 100 pF (CC45SL3F101KY)
C21	K00329002	" " 1.5KWV 460 pF (MD25WK461J1.5KV)
C24	K12359001	" " 3KWV 1000 pF (CK45E3F102KY)
C20	K30279039	Dipped Mica 500WV 330 pF (DM19D331K5)
C37	K30276331	" " 330 pF (LCQ17331K5)
C19	K30279046	" " " 620 pF

		METER	P24 (with wire)	T9204377	
M1	M0290030	Y38-01	P26 (")	T9204382B	
M2	M0290031	Y38-02	P29 (")	T9204378A	
			P30 (")	T9204401	
			P34 (")	T9204390	
		SPEAKER	P40 (")	T9204380	
SP1	M4090044	SF-92BYM2 8Ω 2W	P41 (")	T9302301A	
			P42 (")	T9204381B	
			P46 (")	T9204383A	
		RELAY	P51 (")	T9204384A	
RL1, 2	M1190004	FRC-203D012/04CS01 DC 12V	P52 (")	T9204385	
			P53 (")	T9204386A	
			P54 (")	T9204393	
		RELAY SOCKET	P57 (")	T9204387	
RLS1, 2	M1490010	263H204	P58 (")	T9204388B	
			P62 (")	T9024389	
		TERMINAL BOARD			
	Q6000003	1L2PS (0-1-0)			**CONNECTION CABLES**
	Q6000012	1L4PS (3-0-1)		T9302200B	
	Q6000006	1L3PS (1-0-2)		T9302300C	
		SWITCH			
S1	N0190099	SRN-3066			**FUSE**
S2	N0190100	SRN-1034	F1	Q0000012	6A (100V–117V)
S3	N2090030	EST-159R		Q0000004	3A (200V–234V)
S4	N2090031	EST-157R			
S5–7	N4090053	SUJ 12A			
S8	N6090004	SSF-22-08b			**DC FUSE HOLDER**
S9	N6090043	SSF-12-045	FH1	P2000012	SN2059
S10	N0050060	BAND SW A			
S11	N0050061A	BAND SW C			
		JACK			**COOLING FAN**
J9	P1090031	D5-701B-00	FAN1	M2090003	FB-08B12LY
J21	P1090033	D6-701B-00			
J8	P1090034	D7-701B-00			*** CONNECTION UNIT ***
J7	P1090152	D8-703B-11		F0002476	Printed Circuit Board
J1	P0090158	EM214-8SS		C024760A	PCB with D9701–9703, R9701

RF UNIT

Symbol No.	Part No.	Name & Description
PB-2342D	F0002342D	Printed Circuit board
	C0023420	PCB with Components
		VACUUM TUBE
V1001	G6090002	12BY7A
		VACUUM TUBE SOCKET
VS1001	P3090022	SB-9403

		IC
Q1008	G2090135	ND487C2-3R
		TRANSISTOR
Q1009	G3315890	2SC1589
Q1003	G3318150Y	2SC1815Y
Q1010	G3319710	2SC1971
Q1007	G3324070	2SC2407
		FET
Q1001, 1002 1004–1006	G3801250Y	2SK125Y
		DIODE
D1002–1008	G2015550	Si 1S1555
	G2090002	" 10D10
	G2090217	Zener HZ3C1
		CRYSTAL FILTER
	H1102050	8.2M20A
		RESISTOR
	J01275159	Carbon Film 1/2W TJ 1.5Ω
	J02245229	" " 1/4W SJ 2.2Ω
	J02245479	" " " " 4.7Ω
	J02245100	" " " " 10Ω
	J02245150	" " " " 15Ω
R1035	J02245390	" " " " 39Ω
R1007, 1011 1014, 1041 1042, 1045	J02245101	" " " " 100Ω
R1021	J02245121	" " " " 120Ω
R1027	J02245151	" " " " 150Ω
R1028, 1052	J02245221	" " " " 220Ω
R1018, 1019 1032	J02245331	" " " " 330Ω
R1031	J02245471	" " " " 470Ω
R1008, 1024 1043	J02245561	" " " " 560Ω
R1036	J02245681	" " " " 680Ω
R1030	J02245821	" " " " 820Ω
R1003, 1013 1016, 1017 1044, 1048 1051	J01215102	" " 1/8W TJ 1kΩ
R1033, 1038 1050	J02245122	" " " SJ 1.2kΩ
R1025	J02245152	" " " " 1.5kΩ
R1010, 1054	J02245222	" " " " 2.2kΩ
R1046	J02245472	" " " " 4.7kΩ
R1053	J01215103	" " 1/8W TJ 10kΩ
R1006, 1049	J02245104	" " 1/4W SJ 100kΩ
R1004	J01215104	" " 1/8W TJ 100kΩ
R1012	J02245184	" " 1/4W SJ 180kΩ
R1001	J02245225	" " " " 2.2MΩ

		CAPACITOR
C1037–1040	K02179003	Ceramic Disc 50WV CH 2 p (DD104CH020C50V02)
C1036, 1041 1102	K02179004	" " " " 3 p (DD104CH030C50V02)
C1035	K02172040	" " " " 4 p (DD104CH040C50V02)
C1098	K00172040	" " " SL 4 p (DD104SL040C50V02)
C1101	K02172050	" " " CH 5 p (DD104CH050C50V02)
C1034	K02173070	" " " " 7 p (DD104CH070D50V02)
C1033	K02173160	" " " " 16 p (DD104CH160J50V02)
C1090	K02173330	" " " SL 33 (DD104SL330J50V02)
C1025	K02175390	" " " CH 39 pF (DD105CH390J50)
C1027, 1047	K00175101	" " " SL 100 pF (DD105SL101J50V02)
C1085	K30273010	Dipped Mica 500WV 1 pF (LCQ11010D5)
C1106	K30173010	" " " 1 pF (LCQ11010D05)
C1107	K30173020	" " " 2 pF (LCQ11020D05)
C1014	K30273050	" " 500WV 5 pF (LCQ11050D5)
C1019	K30276240	" " " 24 pF (LCQ17240K5)
	K30276270	" " " 27 pF (LCQ12270K5)
C1016	K30276390	" " " 33 pF (LCQ12330K5)
C1066	K30176470	" " " 47 pF (Z11C470K05)
C1083	K30276560	" " " 56 pF (LCQ12560K5)
C1001	K30176680	" " 50WV 68 pF (Z11D680K05)
C1108	K30276820	" " " 500WV 82 pF (LCQ12820K5)
C1008	K30276331	" " " 330 pF (LCQ18331K5)
C1026, 1082	K30276561	" " " 560 pF (LCQ18561K5)

D1010, 1011	
D1009	
XF1001	
R1037	
R1039	
R1026, 1034	
R1022, 1023	

C1086	K30276102	Dipped Mica 500WV 1000 pF (LCQ21102K5)	
C1003	K30279095	" " " 1200 pF (DM19D122J5)	
C1002	K10179016	Ceramic Disc 50WV 0.001μF (DB201YB102K5L5)	
C1004, 1005 1007, 1013	K12279007	" " 500WV 0.01μF (CD110E103P500)	
1021, 1022			
" "	50WV	0.01μF (DD106F103Z50V)	
1059, 1061 1074, 1092–1094 1096, 1097 1099, 1100			
C1024, 1029 1044, 1053 1054, 1056 1060, 1062 1069, 1071 1072, 1075 1087, 1088	K13179009	" " " 0.047μF (DD110F473Z50V)	
C1103	K19149001	Semiconductor Ceramic 25WV 0.01μF (UAT04X102K-L05AE)	
C1070	K19149005	" " " 0.0022μF	
C1067, 1080 1095	K19149021	" " " 0.047μF (UAT08X473L45AE)	
C1073, 1089	K19149025	" " " 0.1μF (UAT13X104K-L46AE)	
C1068, 1076	K40129008	Electrolytic 16WV 33μF (16RE33)	
C1063, 1081	K40129002	" " 47μF (16RE47)	
C1105	K70120003	Tantalum 16WV 47μF (489D476X0016F1)	
		VARIABLE CAPACITOR	
VC1001	K90000038	20P/190P C121D113	
		TRIMMER CAPACITOR	
TC1001, 1002	K91000028	ECV-1ZW10X53	
		INDUCTOR	
L1001, 1002 1005, 1015	L1190017	FL5H102K 1 mH	
L1003, 1006	L1190020	FL5H151K 150μH	
L1007, 1016	L1190009	FL4H3R3M 3.3μH	
L1010	L1190011	FL4H4R7M 4.7μH	
L1012, 1017 1018	L1190090	LAL04102K-NA 1 mH	
L1013	L1190120	FL5H471K 470μH	
L1008	L0021214A		
L1011	L1020032		

		TRANSFORMER
T1001	L0020294	
T1002	L0020418	
T1003	L0020789A	
T1004	L0020170	
T1005	L0021169A	
T1006, 1007	L0021170A	
T1008	L0021172A	
T1009	L0021173A	
T1012	L0021174	BPF 160A
T1013	L0021177	BPF 80B
T1014	L0021176	BPF 80A
T1015	L0021179	BPF 40B
T1016	L0021178	BPF 40A
T1017	L0021181	BPF 30B
T1018	L0021180	BPF 30A
T1019	L0021183	BPF 20B
T1020	L0021182	BPF 20A
T1021	L0021185	BPF 17B
T1022	L0021184	BPF 17A
T1023	L0021187	BPF 15B
T1024	L0021186	BPF 15A
T1025	L0021189	BPF 12B
T1026	L0021188	BPF 12A
T1027	L0021191	BPF 10B
T1028	L0021190	BPF 10A
T1029	L0021192	
T1030	L0021193	
T1031–1034	L0020788A	
T1035	L0021194	
T1036	L0021195	
T1037	L0020788A	

		RELAY
RL1001, 1003	M1190002	FBR211AD012
RL1004, 1005	M1190037	FBR211AD024
RL1002	M1190006	FBR221D012M
		FERRITE BEADS
	L9190024	FB-101
		SWITCH
S1001	N0050062A	CSP4-4-11
	Q5000025	Wrapping terminal A
	Q5000031	" " C

1078, 1084		
C1026, 1028 1030–1032 1042, 1043 1045, 1046 1048, 1049 1057, 1058	K13179008	

IF UNIT

Symbol No.	Part No.	Name & Description
PB-2343C	F0002343C	Printed Circuit Board
	C00023430	PCB with Components
		IC
Q2016	G1090381	TA7060AP
		TRANSISTOR

Symbol No.	Part No.	Name & Description
		CRYSTAL FILTER
XF2001	H1102051	XF-8.2HS
		CERAMIC FILTER
CF2001	H3900290	CFJ-455K13
		RESISTOR
R2172	J02245010	Carbon Film 1/4W SJ 1Ω
R2007, 2094	J02245100	〃 〃 〃 〃 10Ω

	2168, 2187 2200				2150, 2169 2192, 2227		
1kΩ	R2084	J02245124	Carbon-Film	1/4W SJ	120kΩ	R2236	J01245102 Carbon-Film 1/4W TJ
1.2kΩ	R2020, 2189	J02245154	" "	" "	150kΩ	R2011, 2013 2022	J02245222 " " " SJ
	R2076, 2180	J02245224	" "	" "	220kΩ	R2014, 2015 2067, 2101 2147, 2178 2234	J01245152 " " " TJ
1.5kΩ	R2230	J02245394	" "	" "	390kΩ		
	R2039, 2105	J02245564	" "	" "	560kΩ		
	R2065	J02245824	" "	" "	820kΩ		
	R2039, 2179	J02245105	" "	" "	1MΩ		
2.2kΩ	R2235	J02245335	" "	" "	3.3MΩ	R2004, 2012 2035, 2054 2056, 2057 2060, 2125 2173, 2202	J02245222 " " " SJ
	R2231	J02245565	" "	" "	5.6MΩ		
			POTENTIOMETER				
	VR2002, 2003 2006	J51752502	RGS6-FAN 5KB		5kΩB		
2.2kΩ						R2212, 2217	J01215222 " " 1/8W TJ
2.7kΩ	*VR2001, 2004 2005*	*J51752103*	*RGS6-FAN 10KB*		*10kΩB*	R2042, 2050 2107, 2118	J02245272 " " 1/4W SJ
3.3kΩ	VR2007, 2008	J51752504	RGS6-FAN 500KB		500kΩB	R2129, 2204 2208	J02245332 " " " "
3.3kΩ						R2213	J01215332 " " 1/8W TJ
3.9kΩ						R2033	J02245392 " " 1/4W SJ
			CAPACITOR				
2 pF 50V02)	R2016, 2017 2106, 2119 2134, 2195 2196	J02245472	" "	" "	4.7kΩ	C2125	K00175180 Ceramic Disc 50WV SL (DD104SL020C
3 pF 50V02)						C2112	K00172030 " " " " (DD104SL030C
10 pF 50V02)	R2024, 2080 2092, 2100 2132, 2137 2185	J02245562	" "	" "	5.6kΩ	C2127	K10176102 " " " " (DD104SL100D
18 pF						C2177	K00175180 " " " "

2130, 2131 2137, 2157–			C2148	K40129007	〃 〃 100μF (16PE100)

3021, 3030			R3017	J02245182	" " " "	1.8kΩ	
			R3011, 3021	J02245222	" " " "	2.2kΩ	
						3059, 3071	
						3075, 3121	
bon Film 1/4W SJ	2.7kΩ			FET		R3111	J02245272
" " " "	3.3kΩ		Q3026	G3090034	2SK19Y	R3001, 3010	J02245332
						3040, 3047	
						3057, 3066	
				DIODE		3091, 3104	
			D3015	G2090001	Si 10D1	3125, 3155	
" " " "	3.9kΩ		D3011, 3014	G2090029	Ge 1N60	R3039	J02245392
" " " "	4.7kΩ		3021–3024			R3004, 3012	J02245472
			D3007, 3009	G2090093	" 1N270	3033, 3035	
			D3001, 3006, 3010, 3012 3013, 3016 3020, 3025– 3028, 3030– 3032, 3034 3036, 3037	G2015550	Si 1S1555	3038, 3042 3050, 3051 3063, 3065 3120, 3123	
" " " TJ	4.7kΩ					R3153	J01245472
" " " SJ	5.6kΩ					R3073, 3076 3093	J02245562
" " " "	6.8kΩ			G2090118	Schottky 1SS97	R3082, 3083	J02245682
			D3008	G2090217	Zener HZ3C1	3086, 3095 3096, 3099	
" " " "	8.2kΩ				CRYSTAL	R3006	J02245822
" " " "	10kΩ		X3001	H0102449	8.2159MHz	R3013, 3019	J02245103
						3020, 3022	
						3028, 3048	
					RESISTOR	3052, 3053	
			R3115	J01275229	Carbon Film 1/2W TJ 2.2Ω	3061, 3080	
				J00245330	" " 1/4W VJ 33Ω	3081, 3082	
			R3102	J02245560	" " " SJ 56Ω	3106, 3110	
			R3016, 3113	J02245820	" " " " 82Ω	3119, 3121	
			R3005, 3018 3026, 3070 3079, 3089 3108, 3132 3135, 3140 3160, 3161 3173	J02245101	" " " " 100Ω	3138, 3139 3145, 3147 3152, 3162– 3164, 3172	
" " 1/8W VJ	10kΩ					R3156	J00215103
" " 1/4W SJ	12kΩ					R3007, 3015	J02245123
						3045, 3054	
						3107	
" " " "	15kΩ		R3072, 3077 3127	J02245221	" " " " 220Ω	R3003, 3023	J02245153
			R3027, 3116	J02245331	" " " " 330Ω	3062, 3068	
			R3154	J02245391	" " " " 390Ω	3087, 3100	
" " " "	18kΩ		R3064, 3094	J02245471	" " " " 470Ω	R3067	J02245183
" " " "	22kΩ		R3078, 3150 3174, 3177	J02245561	" " " " 560Ω	R3036, 3165 3167	J02245223
" " " "	33kΩ		R3009, 3025 3034, 3046	J02245102	" " " " 1kΩ	R3008, 3044	J02245333
						3055, 3084	
" " " "	47kΩ					R3002, 3014	J02245473
						3112, 3128	
						3136, 3144	
						3146	
" " " "	56kΩ					R3024, 3088 3101	J02245563
" " " "	100kΩ					R3122, 3126 3171	J02245104
" " " "	330kΩ					R3097	J02245334
" " " "	470kΩ		R3157	J00215102	" " 1/8W VJ 1kΩ	R3041, 3109	J02245474
Wire Wound 1/2W	1Ω		R3175	J02245122	" " 1/4W SJ 1.2kΩ	R3117	J31276010
			R3037	J02245152	" " 1/4W SJ 1.5kΩ		

		POTENTIOMETER				(50F2U103M)	
VR3003	J51727103	CR19R101	10kΩ	C3064, 3068	K50177153	" "	0.015μF
VR3004	J51723471	SR19R471	470Ω	3077, 3086		(50F2U153M)	
VR3005	J51752502	RGS6FAN	5kΩ	3087			
VR3006	J51752103	RGS6FAN	10kΩ	C3014, 3015	K50177223	Mylar 50WV	0.022μF
VR3001, 3002	J51752104	RGS6FAN	100kΩ	3027–3029		(50F2U223)	
		CAPACITOR		C3065	K50177333	" "	0.033μF
C3107, 3111	K02173100	Ceramic Disc	50WV CH 10 pF			(50F2U333M)	
0.1μF			(DD104CH100D50V02)	C3002	K40179002	Electrolytic	"

4106, 4128 4144, 4150 4159								R4121 R4025, 4037 4071, 4097 4100, 4103 4122, 4126	J02245823 J02245104	" " " " 82kΩ " " " " 100kΩ				
R4056	J02245681	Carbon Film	1/4W	SJ	680Ω										
R4187	J01245821	" "	"	TJ	820Ω										
	R4014, 4022 4031, 4041– 4048, 4053	J02245102	"	SJ	1kΩ				4129, 4136 4142, 4145 4146, 4148						
							4060, 4068 4069, 4076 4105, 4109 4125, 4141 4165, 4172				4151, 4154 4155, 4157 4160			
Film	1/4W	SJ	220kΩ								R4101, 4102	J02245224	Carbon F		
"	1/8W	VJ	220kΩ								R4186	J00215224	"		
"	1/4W	SJ	330kΩ				R4049	J01245102	"	"	" TJ	1kΩ	R4070	J02245334	"
Film	1W		33Ω				R4058	J02245152	"	"	" SJ	1.5kΩ	R4168	J20306330	Metallic
TIOMETER								J00215222	"	"	1/8W VJ	2.2kΩ			POTENT
502H			5kΩB				R4134	J02245272	"	"	1/4W SJ	2.7kΩ	VR4006, 4007	J51724502	PN822H

C4173, 4214	K00175220	" " " SL 22 pF (DD104SL220J50V02)	C4183, 4184	K00175271	" " " " 270 pF (DD107SL271J50V02)
C4093	K00179006	Ceramic Disc 50WV SL 24 pF (DD104SL240J50V02)	C4076, 4070 4139	K00175331	" " " " 330 pF (DD107SL331J50V02)
C4019	K02179010	" " " CH 24 pF (DD104CH240J50V02)	C4056, 4058	K00175471	Ceramic Disc 50WV SL 470 pF (DD109SL471J50V02)
C4013, 4026	K06179010	" " " UJ 24 pF (DD104UJ240J50V02)	C4109	K30176331	Dipped Mica 50WV 330 pF (LCQ17331K05)
C4048, 4156	K02179011	" " " CH 27 pF (DD105CH270J50V02)	C4216	K30176681	" " " 680 pF (LCQ18681K05)
C4113, 4114	K00175270	" " " SL 27 pF (DD104SL270J50V02)	C4001, 4006 4009, 4012 4015, 4021 4025, 4030	K13179008	Ceramic Disc " 0.01μF (DD106F103Z50V)
C4003	K02179013	" " " CH 33 pF (DD105CH330J50V02)			
C4078, 4176	K00175330	" " " SL 33 pF (DD107SL330J50V02)	C4031, 4036 4039, 4042		
C4038	K02175390	" " " CH 39 pF (DD105-257CH390J50V02)	4046, 4051– 4055, 4061– 4068, 4078 4080, 4081		
C4070, 4075	K00175390	" " " SL 39 pF (DD104SL390J50V02)			
C4028, 4155	K02175470	" " " CH 47 pF (DD106CH470J50V02)	4083, 4092 4097, 4102		
C4165,4223	K06175470	" " " UJ 47 pF (DD104UJ470J50V02)	4106, 4107 4111, 4112		
C4187	K00175470	" " " SL 47 pF (DD104SL470J50V02)	4115, 4116 4119–4126		
C4047	K02175560	" " " CH 56 pF (DD106CH560J50V02)	4129, 4132– 4134, 4136		
C4096	K00179008	" " " SL 36 pF (DD104SL360J50V02)	4137, 4141 4142, 4151		
C4094	K00179011	" " " " 62 pF (DD104SL620J50V02)	4152, 4157 4159, 4161		
C4095	K00175560	" " " " 56 pF (DD104SL560J50V02)	4162, 4164 4166, 4168		
C4008, 4037 4171	K02175680	" " " CH 68 pF (DD107CH680J50V02)	4172, 4174 4177, 4178		
C4017, 4023	K06175680	" " " UJ 68 pF (DD105-257UJ680J50V02)	4180, 4182 4198, 4200		
C4135	K00175680	" " " SL 68 pF (DD104SL680J50V)	4203		
			C4201	K23140001	MKH Chip 25WV 0.01 F

4193			
C4224	K40129008	" " (16RE33)	33μF
C4144, 4149	K40129002	" " (16RE47)	47μF
C4085	K40129007	Electrolytic 16WV (16RE100)	100μF
C4091	K5420000	MKH 100WV ((32560A1154K)	0.15μF
C4225	K70127225	Tantalum 16WV (CS15E1C2R2M)	2.2μF
		TRIMMER CAPACITOR	
	T91000075	TZ03R200E	20 pF
TC4001–4003	K91000081	TZ03R300E	30 pF
		INDUCTOR	
L4001, 4002 4004, 4005 4007, 4009 4011, 4012 4014, 4015 4017, 4024 4028, 4032–4034,	L1190020	FL5H151K	150μH
L4018, 4019	L1190004	FL4HR68M	0.68μH
L4020–4022	L1190073	FL5H270K	27μH
L4023	L1190031	FL5H680K	68μH
L4026, 4027	L1190013	FL4H6R8K	6.8μH
L4029, 4030	L1190018	FL5H121K	120μH
L4035,	L1190016	FL5H101K	100μH
L4037, 4038	L1190006	FL4H1R2M	1.2μH
L4039, 4026 4027	L1190021	FL5H180K	18μH
L4041	L1190096	LAL04151K-NA	150μH
L4003	L0021200		

COUNTER UNIT

Symbol No.	Part No.	Name & Description
PB-2346C	F0002346C	Pinted Circuit Board
	C0023460	PCB with Components
		IC
Q5015	G1090084	78L05
Q5005, 5011	G1090068	MC14011
Q5006	G1090385	MC14022
Q5012, 5013	G1090053	MC14081B
Q5003	G1090476	TC4518BP or μPC4518C
Q5004	G1090108	MC14518B
Q5008–5010	G1090387	TC5066
Q5007	G1090386	TC5070
		TRANSISTOR
Q5014	G3318150G	2SC1815GR
Q5001, 5002	G3318150Y	2SC1815Y
		DIODE
D5067	G2015540	Si 1S1554
D5061–5064 5069	G2015550	" 1S1555
D5066	G2090185	Zener HZ5C2
		FCD
DS5001	G6090027	FIP9E8
		TRANSFORMER
T5001	L2030077	E-I42

CAPACITOR				CRYSTAL FILTER		
C5003	K06179006	Ceramic Disc 50WV UJ (DD104UJ300J50V02)	30 pF	XF6001	H1102050	8.2M20A
C5007, 5008 5016, 5017	K13179008	" " " (DD106F103Z50V)	0.01μF			**CERAMIC FILTER**
C5001, 5002 5004, 5021	K13179009	" " " (DD110F473Z50V)	0.047μF	CF6001	H3900270	CFX455D 455kHz
C5006, 5018	K50177102	Mylar " (50F2U102M)	0.001μF			**RESISTOR**
C5012	K50177153	" "	0.015μF	R6006, 6021 6033, 6056	J02245560	Carbon Film 1/4W SJ 56Ω
		(50F2U153M)		R6007, 6009 6012, 6017 6049	J02245101	" " " " 100Ω
C5010	K40179009	Electrolytic " (50RE2R2)	2.2μF	R6058	J02245471	" " " " 470Ω
C5013, 5014	K40129004	" 16WV (16RE10)	10μF	R6004, 6018 6035	J02245561	" " " " 560Ω
C5009	K40129016	" " (16RE22)	22μF	R6054	J02245561	" " " " 560Ω
C5015, 5022	K40129007	" " (16RE100)	100μF	R6016, 6019 6030, 6034	J02245102	" " " " 1kΩ
C5011	K40129009	" " (16RE220)	220μF		J01245102	" " " TJ 1kΩ
				R6026	J02245152	" " " SJ 1.5kΩ
				R6013, 6036	J02245182	" " " " 1.8kΩ
				R6039, 6050	J02245222	" " " " 2.2kΩ
		TP TERMINAL		R6015	J02245332	" " " " 3.3kΩ
	Q5000036	TP-G		R6003, 6005 6055	J02245472	" " " " 4.7kΩ
				R6040	J02245562	" " " " 5.6kΩ
				R6001, 6002 6023, 6041 6046, 6047 6051	J02245103	" " " " 10kΩ
AM/FM UNIT (OPTION)						
Symbol No.	Part No.	Name & Description		R6038	J01245103	" " 1/8W TJ 10kΩ
PB-2347 B	F0002347 B C0023470	Printed Circuit Board PCB with Components		R6053	J02245123	" " " SJ 12kΩ
				R6025	J02245153	" " " " 15kΩ
				R6029, 6031 6032	J02245223	" " 1/4W " 22kΩ
				R6042	J02215223	" " 1/8W " 22kΩ
		IC		R6014	J02245333	" " 1/4W " 33kΩ
Q6001	G1090388	TA7069P		R6024, 6037 6045	J02245473	" " " " 47kΩ
Q6008	G1090389	MC3359			J01215473	" " 1/8W TJ 47kΩ
Q6013	G1090048	TC5081P		R6020	J02245683	" " 1/4W SJ 68kΩ
Q6003, 6005	G1090239	TC5082P		R6008, 6010 6011	J02245104	" " " " 100kΩ
Q6014	G1090072	μPC574H		R6028	J02245154	" " " " 150kΩ
				R6027	J02245274	" " " " 270kΩ
		TRANSISTOR				
Q6007	G3303800Y	2SC380Y				**POTENTIOMETER**
Q6012, 6015	G3318150G	2SC1815GR		VR6004	J51752102	RGS6-FAN1KB 1KB
				VR6001, 6003	J51752503	RGS6-FAN50KB 50KB
		FET		VR6002	J51752103	RGS6-FAN10KB 10KB
Q6006	G3090036	2SK19BL				
Q6002, 6004	G3090035	2SK19TMGR				

	DIODE			**CAPACITOR**	
G2015550	Si 1S1555	C6008, 6027	K00173100	Ceramic Disc 50WV SL 10 pF (DD104SL100D50V02)	D6001, 6002 6004–6007
		C6020	K05185470	" " 63WV " 47 pF (RD871-1N220-470J63V)	

C6046	K02175560	Ceramic Disc 63WV CH 56 pF (DD106CH560J50V02)			TRANSFORMER
C6065, 6066	K00175680	" " " " 68 pF (DD104SL680J50V02)	T6001, 6002	L0020892	
C6003, 6022	K00175101	" " " " 100 pF (DD105SL101J50V02)	T6003	L0021212	
C6030	K02175151	" " " " 150 pF (DD109CH151J50V02)	T6004	L0020422	R12-7947
C6019, 6021	K05185151	" " " RH 150 pF (RD8742N220151J63V)	T6005	L0021199	
C6024, 6051	K10176102	" " " 0.001μF (DD104B102K50V02)			
C6001, 6002 6005, 6006	K13179008	" " " 0.01μF (DD106F103Z50V)			

VFO UNIT

Symbol No.	Part No.	Name & Description
PB-2348-A	F0002348 A	Printed Circuit Board
	C0023480	PCB with Components

					IC
			Q7001	G1090390	VFO-1
					DIODE
			D7001	G2022360	Varact
					RESIS
C6061	K19149017	Semiconductor Ceramic 25WV 0.022μF (UAT06X223K)	R7002	J01245561	Carbon
C6035, 6042	K19149021	" " " 0.047μF (UAT08X473-L45AE)	R7001	J01245103	
					CAPACIT
C6028, 6029	K19149025	" " 50WV 0.1μF (UAT13X104L46AE)	C7017	K6172020	Ceramic D
C6036, 6037	K50177102	Mylar 50WV 0.001μF (50F2U102M)	C7016	K06172040	" "
	K23140001	Ceramic Chip 25WV 0.01μF (GR42Y5V103Z25V)	C7001, 7004	K06179052	" "
	K50177223	Mylar 50WV 0.022μF (50F2U223)	C7013	K02179062	" "
C6053, 6054	K50177473	" " 0.047μF (50F2U473)	C7015	K02173080	" " (DD104C
C6038	K40179002	Electrolytic " 0.1μF (50RC2-R1)	C7014	K02179065	" " (UP125C
C6048, 6049	K40179010	" " 0.47μF (50RER47)	C7002	K06179053	" " (UP125U
C6034, 6045, 6052	K40179013	" " 1μF (50RE1)	C7003, 7005	K02179063	" " (UP125C
C6050	K40179009	" " 2.2μF (50RE2.2)	C7006	K02179064	" " (UP125C
C6031, 6059	K40149001	" 25WV 4.7μF (25RE4R7)	C7010, 7012	K10179034	" " (UP125I
C6012, 6017 6023, 6040 6047, 6055–6057, 6062 6024, 6068	K40129004	" 16WV 10μF (16RE10)	C7011	K10179035	" " (UP125S
			C7007–7009	K15179001	" " (TP125X
C6007	K40129002	" " 47μF (16RE47)			
					VARIABLE CAPA
			VC7001	K90000024	C521R112
		INDUCTOR			TRIMMER CAPA
L6001, 6003–6005	L1190016	FL5H101K 100μH	TC7002	K91000090	PS100 1
L6006	L1190017	FL5H102K 1 mH	TC7001	K91000103	PSS-100-10P 1
L6009	L1190102	S-104K	TC7003	K91000116	CTZ81F 3

		INDUCTOR	
L7002, 7004	L1190132	LAL04NA221K	220μH
L7003	L1190090	LAL04NA102K	1 mH
L7005, 7006	L1190131	LAL04NA1R8M	1.8 mH
		CONNECTOR	
	P0090149	PI021-05M	5 pF
		VFO LAMP	
PL7001, 7002	Q1000049	K0320.Z.1	12V 100 mA

		POTENTIOMETER	
VR8001	J50753103	EVTJ6A505B14	10kΩB
		CAPACITOR	
C8003, 8006 8013, 8018	K12279004	Ceramic Disc 500WV (ECK-D-2H-472-PE)	0.0047μF
C8010, 8016 8019	K12279002	" " " (ECK-D-2H-103-PE)	0.01μF
C8017, 8024	K19149021	Semiconductor Ceramic " (UAT08X473K-L45AE)	0.047μF
C8001, 8002 8004, 8005	K40270106	Electrolytic 450WV (450RH10)	10μF
C8009	K40240106	" 250WV (250RH10)	10μF
C8012	K40200226	" 35WV (350RH22)	22μF
C8011	K40240336	" 250WV (250RH33)	33μF
C8015	K40179009	" 50WV (50RE2R2)	2.2μF
	K52240002	Metallized Film 250WV (MD1-2E104M)	0.1μF
C8021	K52240003	" " " (MD1-2E224M)	0.22μF
		INDUCTOR	
L8001	L1190090	LAL04-102K	1 mH
		TP TERMINAL	
	Q5000038	TP1	

RECT A UNIT

Symbol No.	Part No.	Name & Description
PB-2349C	F0002349C	Printed Circuit Board
	C0023490	PCB with Components
		TRANSISTOR
Q8003	G3106390Q	2SA639Q
Q8001	G3107331Q	2SA733AQ
Q8002	G3318150Y	2SC1815Y
Q8004	G3322290	2SC2229
		DIODE
D8002–8006	G2090002	Si 10D10
D8007, 8008 8011–8019	G2015550	" 1S1555
D8001	G2090081	" SM1-12
		RESISTOR
R8022	J02245331	Carbon Film 1/4W SJ 300Ω

J02245102	" " " "	1kΩ	R8017, 8018 8020, 8025 8027
J01245222	" " " TJ	2.2kΩ	R8028
J02245332	" " " SJ	3.3kΩ	R8016
J02245472	" " " "	4.7kΩ	R8019
J02245103	" " " "	10kΩ	R8012, 8021
J02245153	" " " "	15kΩ	R8014
J01245183	" " " TJ	18kΩ	R8009
J02245183	" " " SJ	18kΩ	R8010
J02245223	" " " "	22kΩ	R8015
J02245393	" " " "	39kΩ	R8013
J02245274	" " " "	270kΩ	R8011
J10276474	Carbon Composition 1/2W GK	470kΩ	R8003
J20306390	Metallic Film 1W	39Ω	R8001
J20336391	" " 2W	390Ω	R8002
J20336471	" " 2W	470Ω	R8004
J20336222	" " 2W	2.2kΩ	R8006
J20336332	" " "	3.3kΩ	R8005
J20336562	" " "	5.6kΩ	R8008
J20336473	" " "	47kΩ	R8007

RECT B UNIT

Symbol No.	Part No.	Name & Description
PB-2350C	F0002350C	Printed Circuit Board
	C0023500	PCB with Components
		IC
Q8502	G1090507	μPC78L12A
Q8505	G1090391	μPC78L15
		TRANSISTOR
Q8501	G3107331Q	2SA733AQ
Q8503	G3304960Y	2SC496Y
Q8504	G3318150Y	2SC1815Y

		DIODE	
D8501–8504	G2090002	Si 10D10	
D8505	G2090003	〃 V06B	
D8507	G2090224	Zener AW01-24	
D8506	G2090111	〃 HZ6C1	
		RESISTOR	
R8509	J02245560	Carbon Film 1/4W SJ	56Ω
R8508	J02245103	〃 〃 〃 〃	10kΩ
R8503–8506	J10276474	Carbon Composition 1/2W GK	470kΩ
R8502	J20336220	Matallic Film 2W	22Ω
R8507	J20336122	〃 〃 〃	1.2kΩ
R8501	J31336019	Wire Wound 〃	0.1Ω
		CAPACITOR	
C8502, 8503, 8505, 8508, 8515	K13179008	Ceramic Disc 50WV (DD106F103Z50V)	0.01μF
C8510	K40179011	Electrolytic 〃 (50RE3R3)	3.3μF
C8504, 8507	K40149008	〃 25WV (25RL10)	10μF
C8514	K40129004	〃 16WV (16RE10)	10μF
C8506	K40149003	〃 25WV (25RL100)	100μF
C8509	K40129021	〃 16WV (16R102S)	1000μF
C8501	K41160478	〃 35WV (35TL4700)	4700μF
C8512, 8513	K70160003	Tantalum 〃 (35SC0.1μF)	0.1μF
		[illegible]	
		[illegible]	
		TP TERMINAL	
	Q5000038	TP-1 [illegible]	
	[illegible]		
	[illegible]		
	[illegible]		
	[illegible]		

VR UNIT

		POTENTIOMETER	
VR9001, 9003, 9004	J66800001	K1213000310KB	10KB
VR9005	J66800003	K12130004-10KA	10KA
VR9002	J66800002	K12130003500KB	500KB

SW UNIT A

Symbol No.	Part No.	Name & Description	
PB-2353A	F0002353A	Printed Circuit Board	
	C0023530	PCB with Components	
		DIODE	
D9201, 9202	G2015550	Si 1S1555	
D9203, 9204	*G2090060*	*LED GD-4-203SR-D*	
		RESISTOR	
R9201, 9202	J02245182	Carbon Film 1/4W SJ	1.8kΩ
		SWITCH	
S9201	N4090053	SUJ52A	
		TP TERMINAL	
	Q5000020	MS60121 [illegible]	

SW UNIT B

Symbol No.	Part No.	Name & Description	
PB-2352C	F0002352C	Printed Circuit Board	
	C0023520	PCB with Components	
		DIODE	
D9401, 9403–9407	G2015550	Si 1S1555	
		RESISTOR	
R9403	J02245392	Carbon Film 1/4W SJ	3.9kΩ
R9401, 9402	J02245103	〃 〃 〃 〃	10kΩ

		RESISTOR			**CAPACITOR**
R9601	J02245100	Carbon Film 1/4W SJ 10Ω	C9820	K30275270	Dipped Mica 500WV 27 pF (LCQ12270J5)
			C9823	K02175121	" " 50WV CH 120 pF (DD109CH121J50V02)
		CAPACITOR			
C9605	K30273050	Dipped Mica 500WV 5 pF (LCQ11050D5)	C9824	K30175181	" " " 180 pF (LCQ17181J05)
C9608	K31306800	Mica 1KV 80 pF (CM11800KJ0)	C9819	K02309003	Ceramic Disc 3KWV 100 pF (CC45CH3EJ101KX)
C9606	K00179019	Ceramic Disc 50WV SL 200 pF (DD106SL201J50V02)	C9825	K02175680	" " 50WV CH 68 pF (DD107CH680J50V02)
C9602	K30279051	" " 500WV 1000 pF (DM19D102K5)	C9826	K02175101	" " " " 100 pF (DD107CH101J50V02)
C9601, 9603	K30279058	" " " 2000 pF (DM19D202K5)	C9817	K12279003	" " 500WV 0.0022μF (ECKD2H222PE)
C9604, 9607	K13179009	" " 50WV 0.047μF (DD110F473Z50V)	C9804, 9806 9810	K12279002	" " " 0.01μF (ECKD2H103PE)
			C9801, 9802 9803, 9805 9807, 9808 9809, 9821 9822	K13179008	" " 50WV 0.01μF (DD106F103Z50V)
		INDUCTOR			
L9602, 9605	L1190014	FL5H100 10μH			
L9603, 9604	L1190009	FL5H3R3 3.3μH	C9811, 9812 9813, 9814 9815, 9816	K13179009	" " " 0.047μF (DD110F473250V)
L9606	L1190070	FL4H8R2 8.2μH			
L9607	L1190024	FL5H221 220μH			
L9608	L0021293				**INDUCTOR**
			L9807	L1190020	FL5H151K 150μH
		RELAY	L9805	L1190024	FL5H221K 220μH
RL9601	M1190043	G2U112P-14 10V	L9801	L1190039	FL5H561K 560μH
			L9802, 9803 9804	L1020307	
		LAMP FUSE			
FH9601	Q1000010	BC041-22805A		L1190017	FL5H102K 1 mH
			L9806	L1190090	LAL04102K 1 mH
			L9808	L0190032	RF3855-R27K
	Q5000021	Wrapping Terminal C	L9809	L0190030	RF3855-R18K
					RELAY
			RL9801	M1190002	FBR211AD012

FINAL BOARD

Symbol No.	Part No.	Name & Description
PB-2355 B	F0002355 B	Printed Circuit Board
	C0023550	PCB with Components
		TRANSISTOR
Q9801	G3318150Y	2SC1815Y
		DIODE
D9802	G2090002	Si 10D10
D9801	G2015550	" 1S1555
		VACUUM TUBE SOCKET
VS9801, 9802 9803	P3090024	SB3606
		RESISTOR
R9801, 9802 9803, 9804	J01275101	Carbon Film 1/2W TJ 100Ω
R9806, 9807	J02245103	" " 1/4W SJ 10kΩ
R9805	J32009014	Meter Shunt 0.67Ω

ACCESSORIES

Symbol No.	Part No.	Name & Description
		AC POWER CORD
	T9000482	YFC-03K 3 wire, 3 prong plug (UL)
	T9013284	EC-4007-007 3 wire, 2 prong EU plug
	T9013283	SC-4111-001 3 wire, 3 prong Australian plug
		FUSE
	Q0000012	6A (100V-117V) 100W
	Q0000004	3A (200V-234V) "
	Q0000004	3A (100V-117V) 10W
	Q0000003	2A (200V-234V) "
		PLUG
	P0090018	STP-58 RCA PLUG
	P0090007	SH3001 KEY PLUG
	P0090034	P2240 SP PLUG
	P0090031	E5-702B-02 DIN PLUG (5P)
	P0090032	E6-701B-02 DIN PLUG (6P)