

FT-757GX

TECHNICAL SUPPLEMENT

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FT-757GX

TECHNICAL SUPPLEMENT



This manual is intended to serve as a technical supplement to the FT-757GX Operating Manual. Detailed information regarding functions, installation, interconnections, and operation has been provided in the Operating Manual, and is not reprinted herein. Therefore, this Technical Supplement is not intended to serve as an independent reference, but to be used in conjunction with the information provided in the Operating Manual.

Because there are nearly four hundred and fifty semiconductor devices in the FT-757GX, circuit description information is provided in the form of numerous block diagrams and a complete Component Applications list. It is our hope that this manner of providing functional information will prove to be more convenient for the owner and technician than would a lengthy verbal description. Those readers who are not familiar with the basic types of analog and digital circuits that serve as the building blocks of the FT-757GX are encouraged to study instructional material, such as that contained in handbooks on amateur radio and digital circuit design, before attempting to understand the design of the FT-757GX. Each block in the block diagrams represents one such basic circuit, while the Component Applications list provides additional details for each semiconductor. Specific circuit details are provided in the schematic diagrams.

The few modifications that have been developed for the FT-757GX since the start of production are all included in this Manual. All of these modifications have been incorporated from Production Lot 5 onwards, while some have been incorporated in **some Lot 4 sets**.

While we believe this technical information is correct and factual, Yaesu assumes no liability for damage that may result from typographical or other errors that may be present. Your cooperation in pointing out any inconsistencies in the technical information would be appreciated.

Yaesu Musen reserves the right to make changes in the circuitry of this transceiver, in the interest of technological improvement, without notification of the owner.

ERRATA FOR THE FT-757GX OPERATING MANUAL

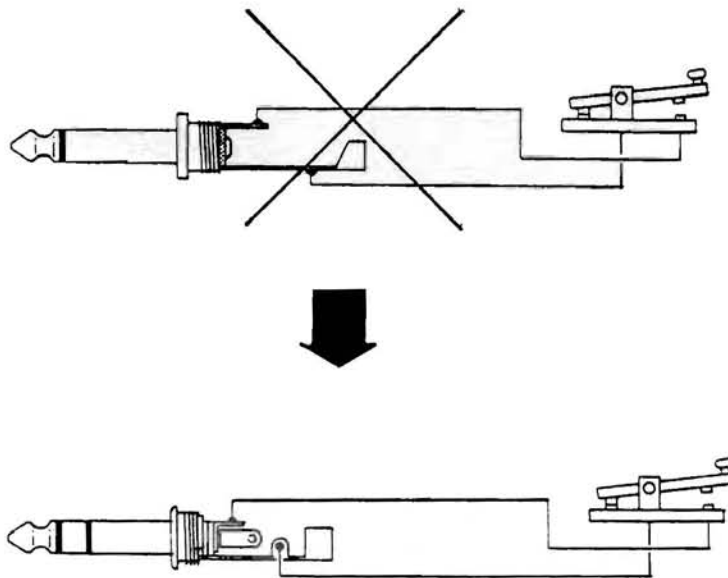
The following corrections apply to the first and second printings of the Operating Manual, with the code numbers E3890183 and E3890183A, respectively, on the back of the rear cover.

First Printing Only: KEY plug requirements

The KEY jack on the rear panel of the FT-757GX will only accept a 3-conductor phone plug for connection of a CW key, keying paddles or an

external keyer. If a 2-conductor plug is used, the outer (ground) contact will be shorted to the sleeve ring (dot) contact, and proper CW transmission will not be possible.

The information stating otherwise on pages 13 (KEYER switch description), 20 (MANUAL KEY Plug drawing), and 28 (middle of second paragraph under CW Transmission instructions) is in error and should be corrected accordingly.



First and Second Printings: QSK Linear Amplifier Connections

The two lower interconnection diagrams on page 19 do not show the connections for the changeover relay closure delay signal ("INH" in the FT-757GX), which is required in order to protect the QSK amplifier from premature excitation when the transceiver is keyed, until the changeover relay contacts in the linear are properly seated. To correct the diagrams, another connection must be shown to the rear panel of the Linear in the upper diagram, and a third conductor must be shown in the QSK Linear Amplifier Connection Cable

drawing at the lower right, one end of which connects to pin 8 of the BAND DATA plug. Later printings of the Operating Manual show screw terminal connections on the Linear, and no RCA plug on the Linear end of the cable (just free wires). The number of the (optional) cable is changed to T9101295A.

Schematic Diagram Correction: R269 on the RF UNIT

Early printings of the Schematic Diagram of the RF UNIT show the value of R269 (bottom center, near J27) as 470 ohms. This should be 150 ohms.

SOLDERING AND DESOLDERING TECHNIQUE

The FT-757GX circuit boards are tough, but mishandling 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 grounded 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 must 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.

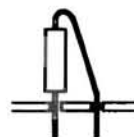
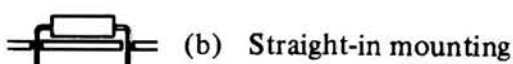
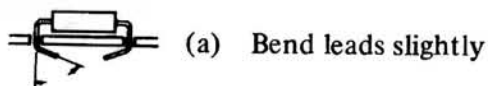
In storage, use only conductive sponge specially designed for CMOS components.

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!).

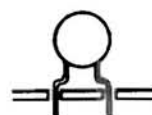
When soldering a CMOS part onto a circuit board, use a low-wattage iron, and be sure to ground the tip with a clip lead, if the tip is not grounded through a three-wire power cord.

INSERTION OF PARTS ON CIRCUIT BOARDS

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



(c) Vertical mounting

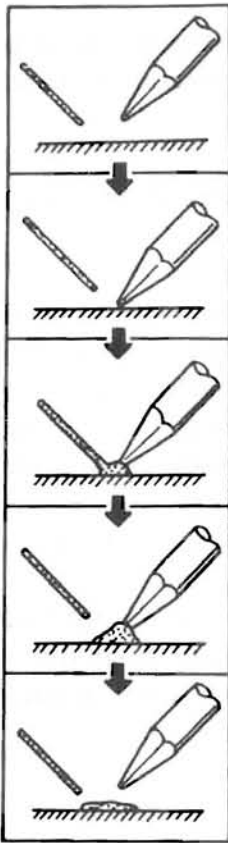


(d) Preformed disc ceramic capacitor



(e) Preformed resistor, diode, etc.

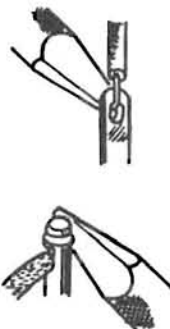
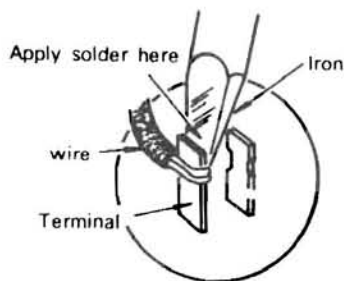
BASIC SOLDERING PRACTICE



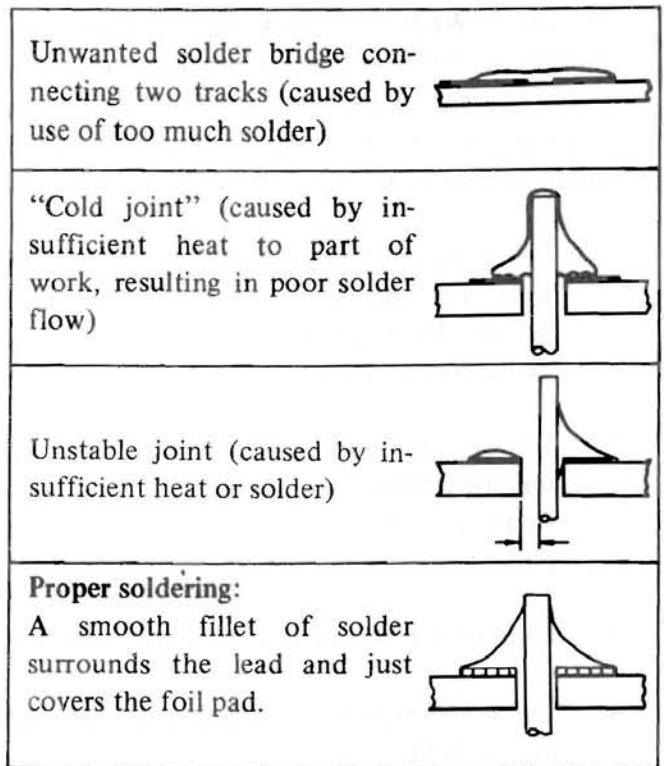
- (1) Prepare soldering iron and solder. The tip of the iron should be thoroughly tinned and wiped clean of excess solder.
- (2) Apply soldering iron to surface to be soldered. Do not press the iron into the surface.
- (3) Apply solder to junction of iron and heated surface.
- (4) When enough solder 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.

Soldering to terminal posts:

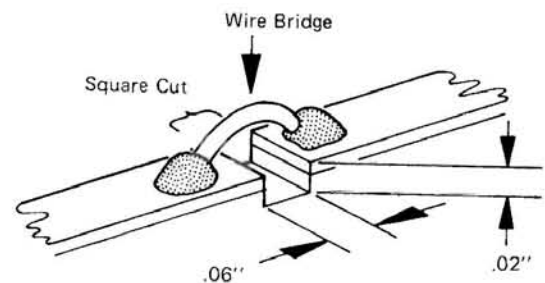
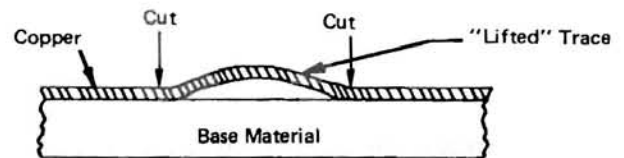
(Be certain to apply heat to both post and wire.)



EXAMPLES OF POOR SOLDERING PRACTICE



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

PERFORMANCE IMPROVEMENT MODIFICATIONS

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 it applies to the Lot number of the particular transceiver being modified.

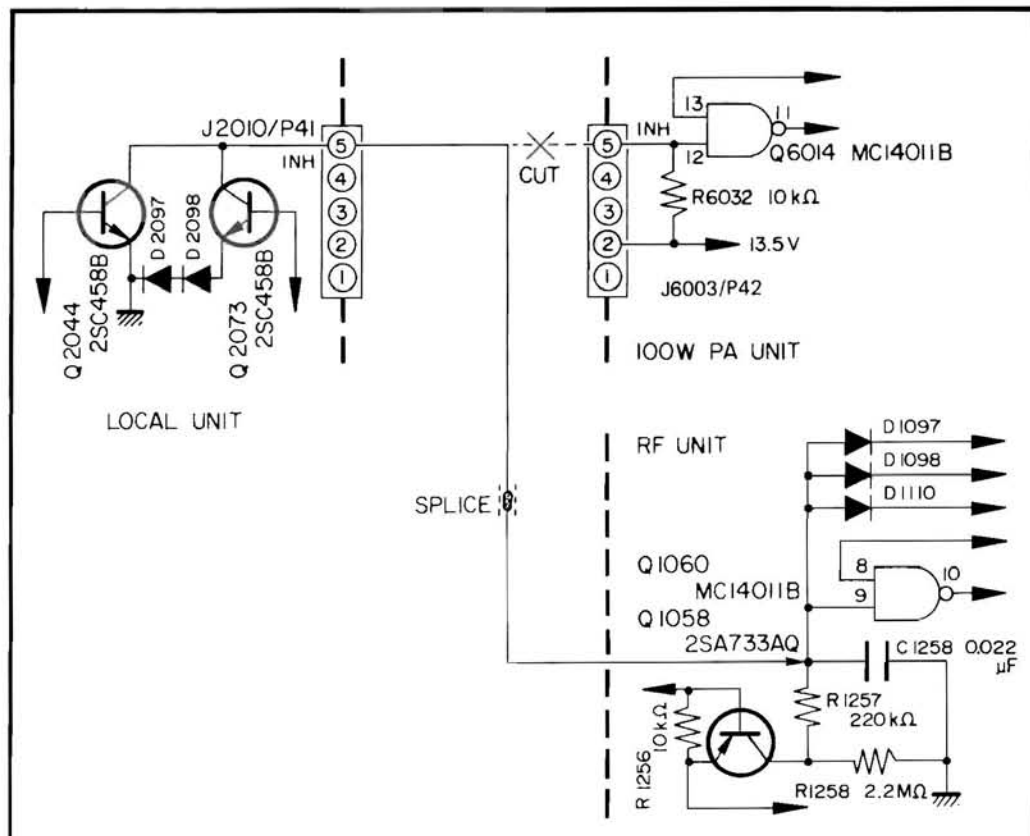
Also, before making any modification, check to see if it has already been carried out by a Yaesu agent, dealer or previous owner.

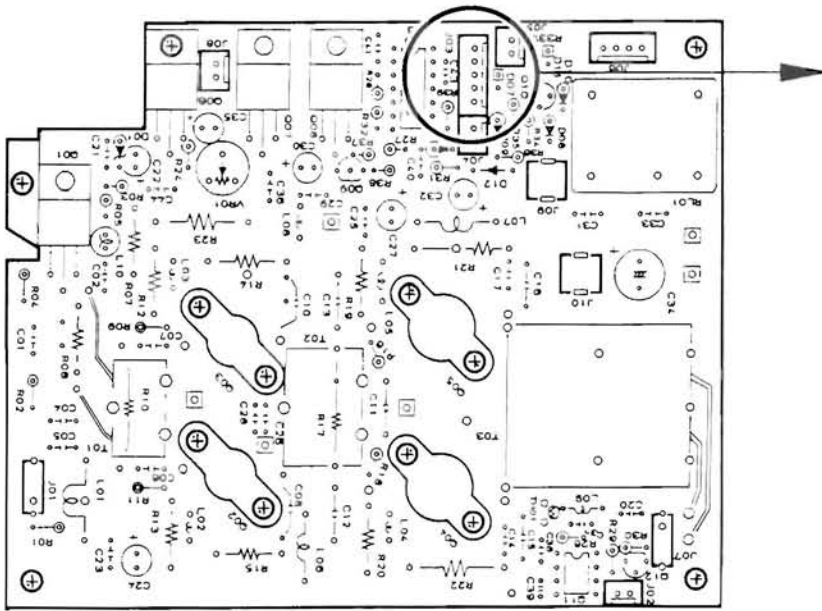
QSK Keying Stability

The following modification may be made to improve the stability of QSK operation, if it is found to be unstable. This modification has already been carried out in some Lot 4 transceivers, and in all transceivers having serial numbers above XX050000 (Lot 5).

The diagrams below and on the following pages indicate the changes to be carried out on the PA Unit and RF Unit during the following steps:

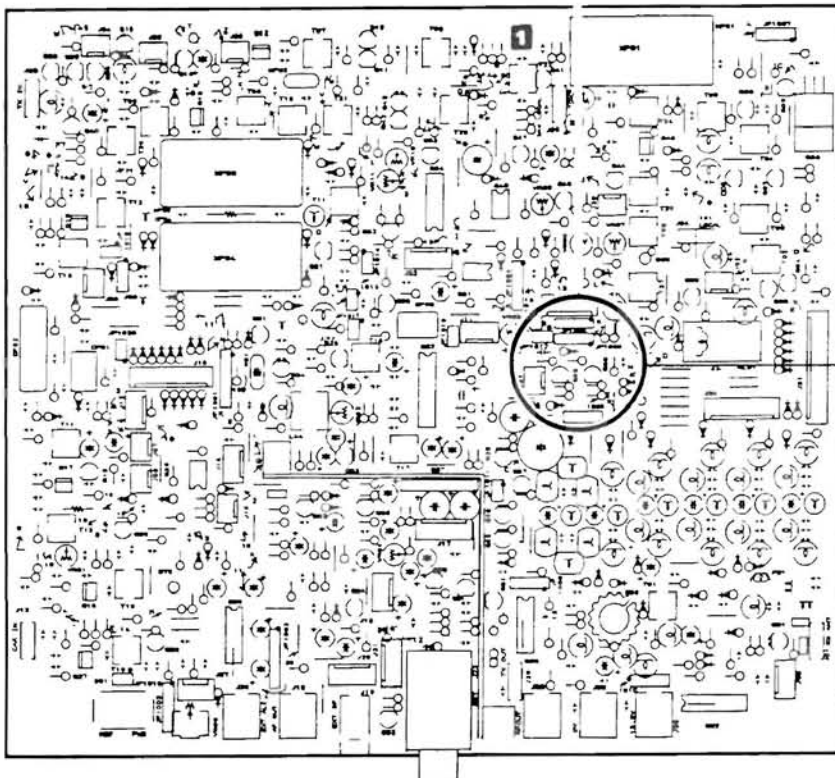
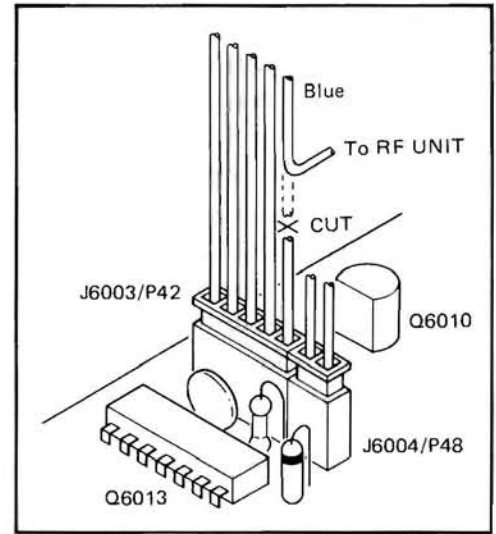
1. Referring to page 11, disconnect the transceiver from the power source and remove the covers.
2. Referring to the 100W PA Unit diagram on the following page, locate P₄₂ and cut the blue wire at pin 5 (INH signal) of this plug. Do not disturb any other connections on this Unit.
3. Now referring to the RF Unit diagram on the following page, solder a 5 cm extension wire to the end of the blue wire removed from the 100W PA Unit, and then carefully insulate the splice with vinyl tape. Solder the other end of the extension to the end of R₁₂₅₇ exposed on the component side of the RF Unit.
4. Route the blue wire carefully so that it will not be pinched when replacing the boards and covers, and then reassemble the parts removed. This completes the modification.





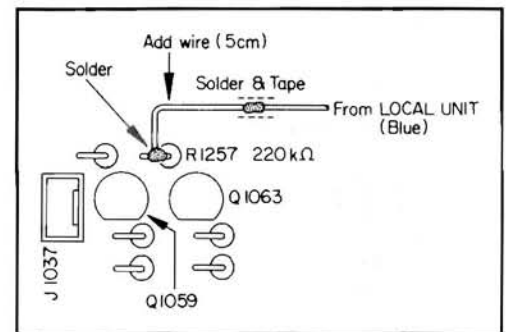
Component side

100W PA UNIT



Component side

RF UNIT

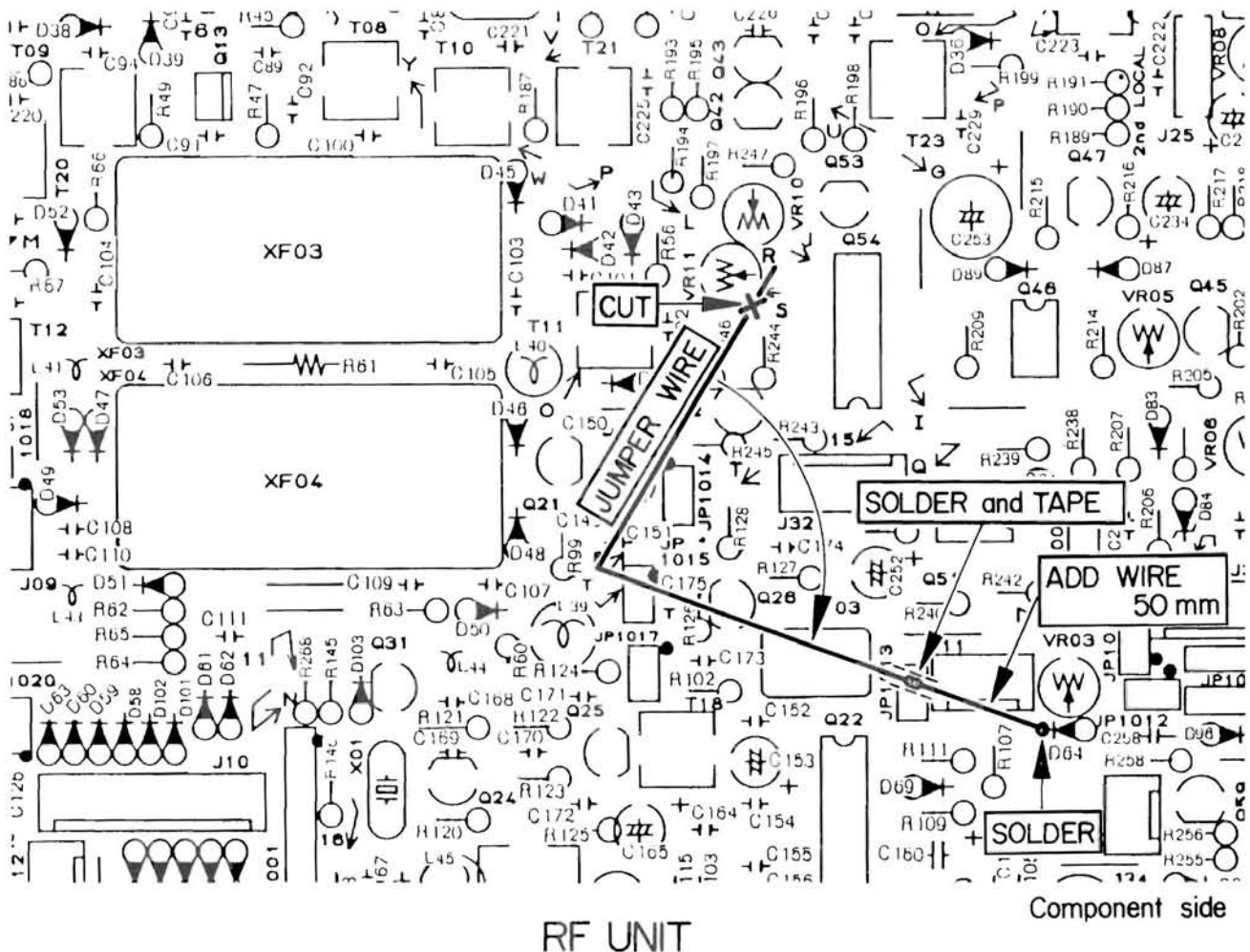
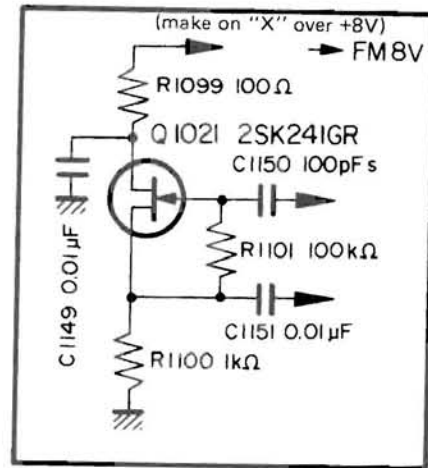


CW Filter Isolation

In some sets prior to Lot 6, IF signal leakage has been found to occur around the CW filter during CW-N reception with the FT-757GX. The cause of this problem is insufficient isolation within FM detection subsystem IC Q₁₀₂₂ (MC3359) on the RF Unit during CW operation. To remedy this problem the following modification will remove the supply voltage from FM 2nd IF signal buffer Q₁₀₂₁, except during FM operation. This modification has already been carried out in all sets from the beginning of Lot 6 onwards, as well as in some of the later sets in Lot 5.

1. Disconnect the power supply, and remove the bottom cover of the transceiver to gain access to the component side of the RF Unit.
2. Referring to the drawing below, cut jumper wire R near the end closest to VR₁₀₁₀ and VR₁₀₁₁. Splice a 3 to 5 cm length of hookup wire to the free end of the jumper, and solder and carefully tape the splice.

3. Now connect the free end of the extended jumper to the cathode of diode D₁₀₆₄ (near VR₁₀₀₃). The cathode lead of this diode is the upper (exposed) lead.
4. Replace the bottom cover and reconnect the power supply. This completes the modification.

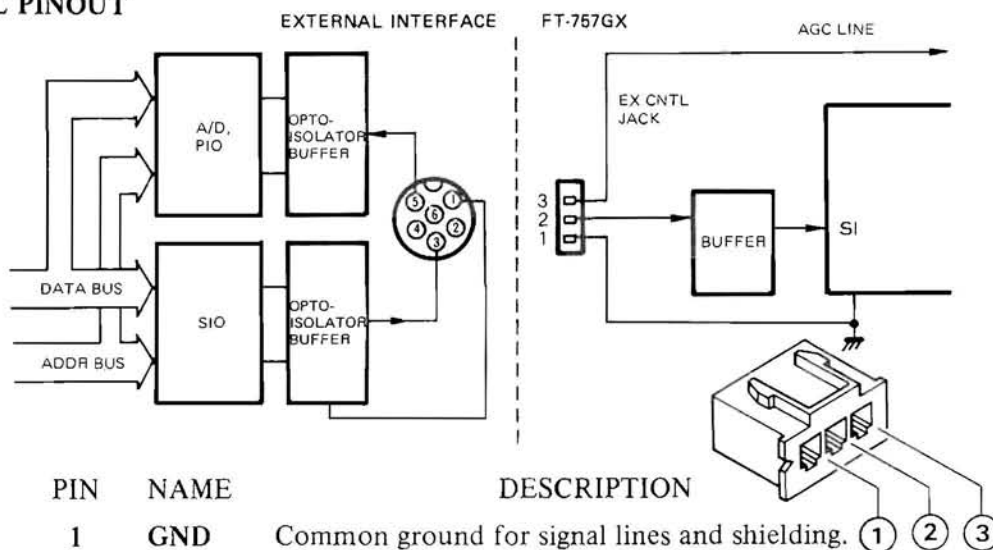


CAT SYSTEM SERIAL INTERFACE DATA MANUAL

The CAT (Computer-Aided Transceiver) System in the FT-757GX allows use of an external microcomputer to control the memory and operating frequency functions of the transceiver. Control signals are passed to the transceiver on a serial data line, accessible at the EXT CNTL jack on the rear of the transceiver. Yaesu offers a number of different Interface Units for making the neces-

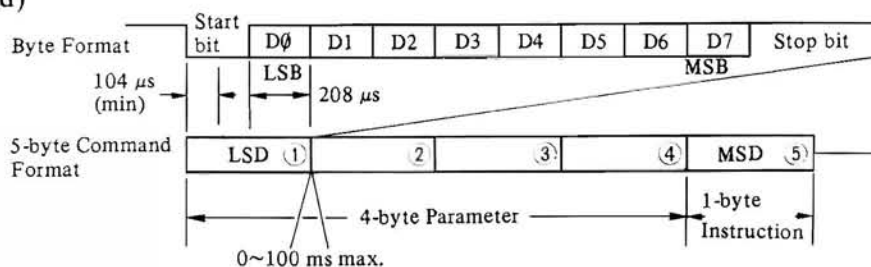
sary data format conversions to connect some of the common brands of microcomputers. Software is provided with some of the Yaesu Interface Units when they are designed for use with one specific microcomputer. The EXT CNTL jack also provides access to the receiver AGC line, for application in user's programs.

EXT CNTL PINOUT



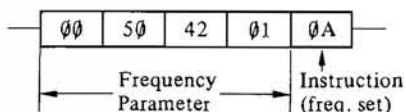
PIN	NAME	DESCRIPTION
1	GND	Common ground for signal lines and shielding.
2	SI	Serial Input: accepts standard TTL-level data.
3	AGC	Automatic Gain Control: analog signal output ranging from +0.4V DC during strong signal reception, to +2.6V DC when no signal is being received.

DATA TIMING FORMAT (4800 bits/second)

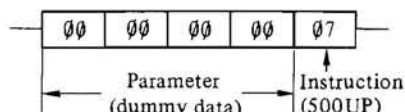


Shown below are examples of two basic types of commands. Each is five bytes in length.

Frequency Enter Command
(Example: to set 14.25000 MHz)



Frequency Step Command
(Example: to step up 500 kHz)

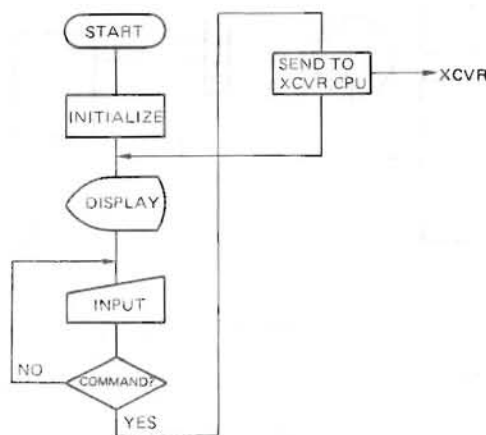


As illustrated in the Frequency Enter Command example, frequency parameter data is sent least-significant digit first. The Frequency Step Command example shows how dummy data ("00") is required in all other commands, preceding the instruction byte.

Once the 5-byte command has been sent to the transceiver, it will respond with the appropriate change indicated on the front panel display. If not, an error has occurred either in the data sent or in the interface connection, so these should

be inspected before the command is sent to the transceiver again. Note that the controls on the transceiver are not disabled when exercising external control; touching any control on the transceiver that duplicates an externally-controlled function will invalidate function indications on the computer display. The external control program may then have to be reinitialized to clear invalidated variables. To avoid problems caused by inadvertent movement of the tuning knob, the D. LOCK command can be programmed to be sent to the transceiver during external control operation.

PROGRAMMING



COMMAND BYTE CODES

No.	COMMAND	DATA					FUNCTION
		1	2	3	4	5	
1	SPLIT	X	X	X	X	01	VFO-A/VFO-B SPLIT ON and OFF.
2	MR/VFO	X	X	X	X	02	Exchange operating freq. between memory and VFO.
3	V ► M	X	X	X	X	03	Write VFO data into memory.
4	D LOCK	X	X	X	X	04	Lock tuning dial.
5	VFO A/B	X	X	X	X	05	Exchange operation between VFOs A and B.
6	M ► V	X	X	X	X	06	Write memory data into operating VFO.
7	500 UP	X	X	X	X	07	Step up 500 kHz (Band Up)
8	500 DWN	X	X	X	X	08	Step down 500 kHz (Band Down)
9	CLAR	X	X	X	X	09	Activate or deactivate clarifier.
10	Frequency set	.1	2	3	4	0A	Enter new operating frequency.
11	V ◄ M	X	X	X	X	0B	Exchange freq. data between VFO and memory.

"X" = dummy data (value irrelevant)

① ② ③ ④ : Frequency data, LSB first.

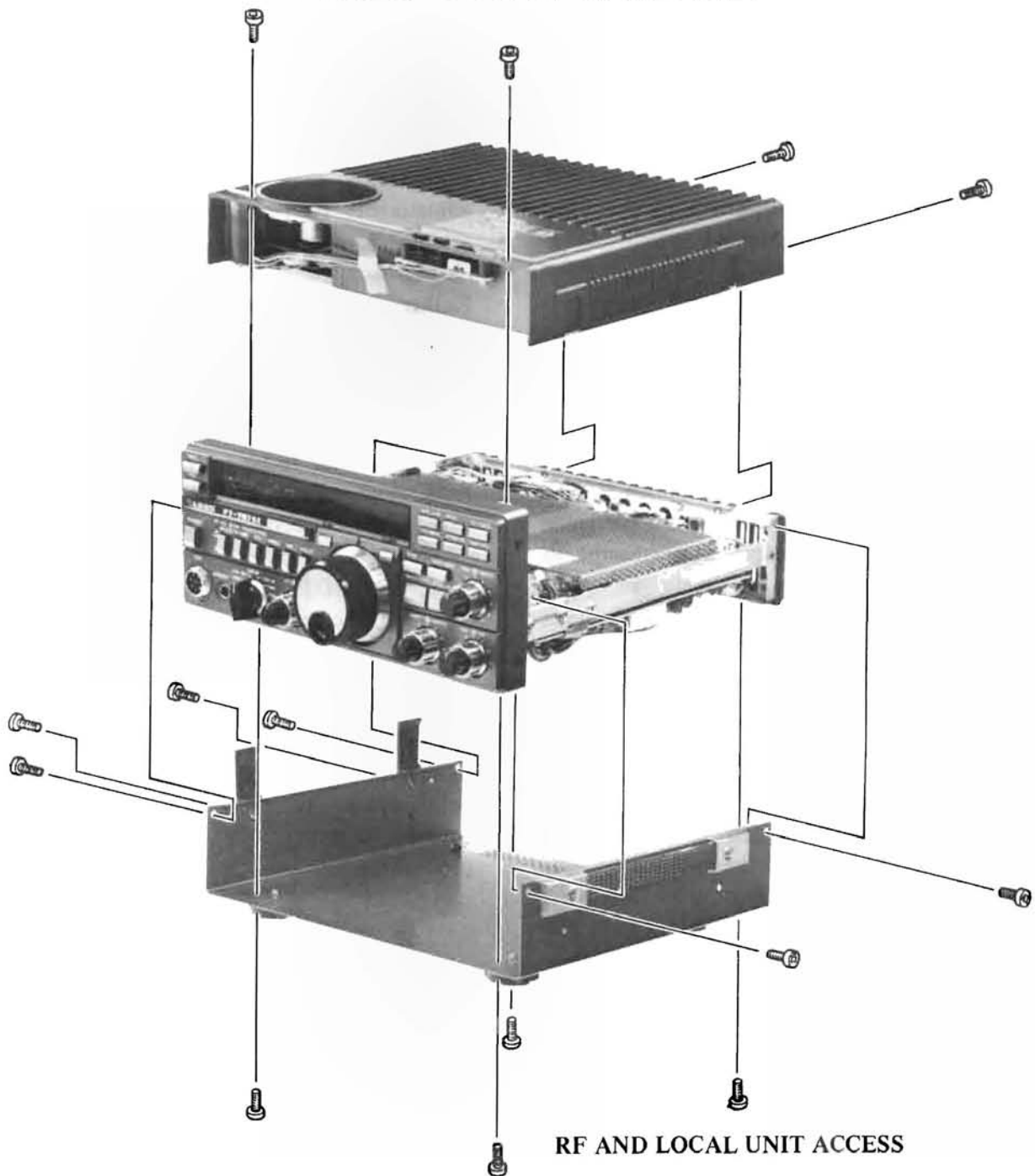
Example: 12.345.67 MHz is stored as follows, (referring to the data locations in the Table):

- ① - 67
- ② - 45
- ③ - 23
- ④ - 01

Data output routines in the external computer may have to be in machine language, as BASIC and other high-level languages are generally too

slow to handle the required routines during data transfer, unless the computer is equipped for 4800-baud output.

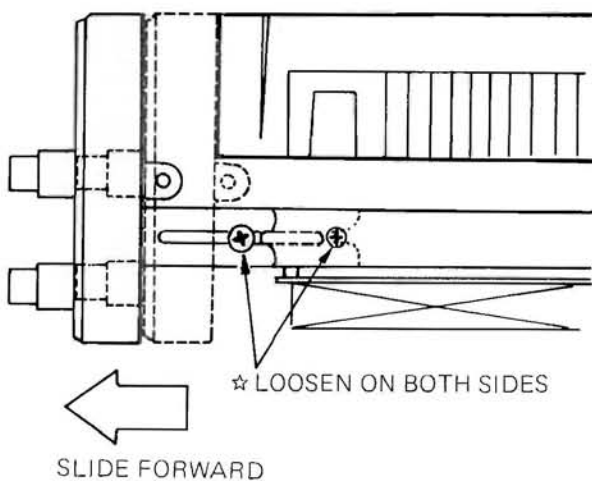
OUTER COVER REMOVAL



RF AND LOCAL UNIT ACCESS

For access to the solder sides of the RF and Local Units, loosen the screws (marked ☆) on each side and slid the front panel forward.

To remove the RF Unit, the KEY jack nut must be removed using a special wrench (see your Yaesu agent). Disconnect the following plugs from their corresponding jacks on the RF UNIT: J₂₇/P₁₄, J₂₁/P₀₈, J₂₉/P₀₅, J₀₃/P₀₃, J₀₁/P₀₁ and J₃₄/P₀₃. Remove the 5 screws in the board and the KEY jack nut. Then note the position of the FWD SET knob, and remove it (it should be replaced in the same position).



SERVICE AND ALIGNMENT

The FT-757GX is carefully designed to allow the knowledgeable operator to make all adjustments required for various station conditions, modes and operator preferences simply from the controls on the front and rear panels, without opening the case of the transceiver. These adjustments are described in the FT-757GX Operating Manual.

The following procedures cover the sometimes critical and tedious adjustments that are not normally required once the transceiver has left the factory. We recommend that these adjustments be made only by authorized Yaesu service representatives, as many are interdependent and difficult to perform correctly without prior experience with FT-757GX alignment. Without such experience and the proper test equipment, any attempt to make internal adjustments is likely to cause degraded transceiver performance, the correction of which is not covered by the warranty policy when caused by unauthorized internal adjustments.

In the unlikely event that a sudden failure occurs during normal operation, do not attempt realignment. Such failures are almost always due to the failure of a component, often in an external accessory, or a problem with the antenna system. Once the external connections have all been checked, if the transceiver is still suspect, the Yaesu representative through whom the transceiver was originally purchased should be contacted immediately for instructions regarding repair. Authorized Yaesu service technicians automatically perform complete performance checks and realignment of all circuits that may be affected once a faulty component has been replaced.

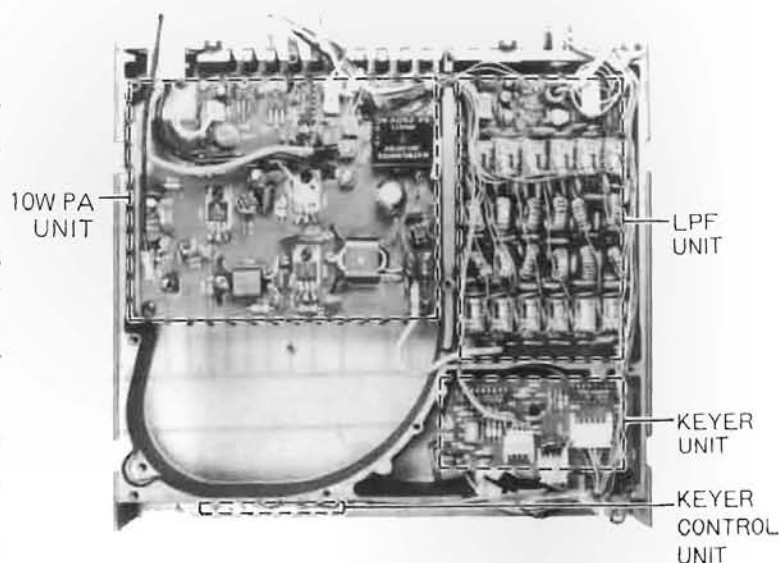
Those who do undertake any of the following alignments are cautioned to proceed only at their own risk. Yaesu must reserve the right to change circuits and alignment procedures in the interest of improved performance, without notifying owners. Under no circumstances should any realignment be attempted unless the normal function and operation of the transceiver are clearly understood, the malfunction has been carefully analyzed and any faulty components replaced, and the need for a specific realignment determined to be absolutely necessary. Procedures not involving adjustments are termed checks, and are included for troubleshooting purposes.

The following test equipment (and thorough familiarity with its use) is required for complete alignment. While most steps do not require all of the equipment listed, the interactions of such adjustments may require that more complex adjustments be performed afterwards. Do not attempt to perform only a single step unless it is clearly isolated electrically from all other steps. Rather, have all test equipment ready before beginning, and follow all of the steps in the order that they are given in each section.

During all of the following procedures that call for the transmitter to be activated, a 50-ohm dummy load must be connected to the antenna jack, except where specifically stated otherwise.

Also, the WIDTH/SHIFT controls must be set to the 12 o'clock position, the RF gain control must be fully clockwise, and the SQL control must be fully counterclockwise, unless stated otherwise.

After completing one step, read the following step to determine whether the same test equipment will be required. If not, remove the test equipment (except dummy load and wattmeter) before proceeding.



FT-757SX (10 W)
Underside of Heatsink

Alignment Equipment

Frequency counter with accuracy of 0.1 ppm to 100 MHz

DC voltmeter with at least 10-Megohm input impedance

RF voltmeter with at least 5% accuracy to 100 MHz, high impedance, and ranging from 10 mV to 3 Vrms

AF millivoltmeter

DC milliammeter ranging to 500 mA

X-Y oscilloscope with 60 MHz bandwidth

RF in-line wattmeter

Resistive dummy load, 50 ohms, 150W; three required for SWR Turndown alignment

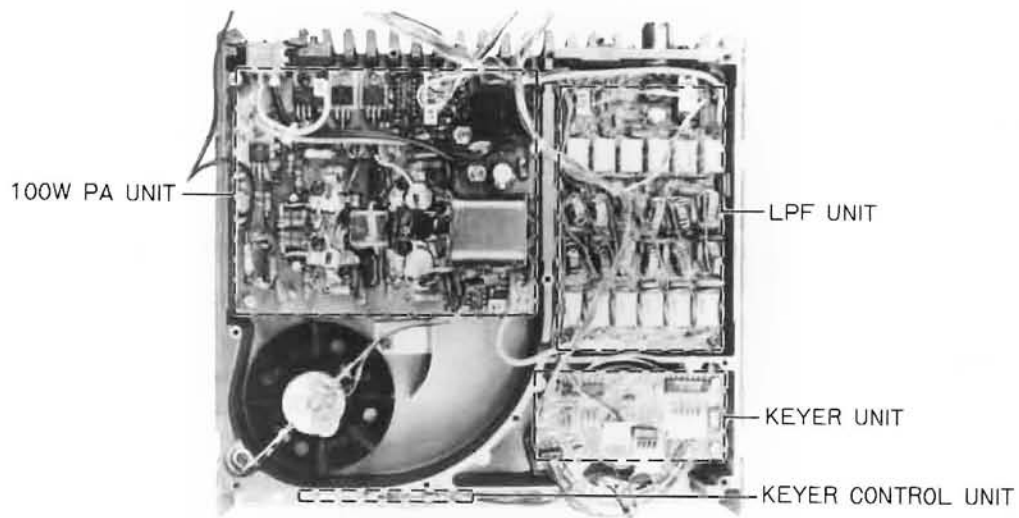
RF signal generator covering 1-30 MHz, with calibrated output levels from 5 dB μ to 100 dB μ

AF signal generator with calibrated output levels from 1 mV to 25 mV

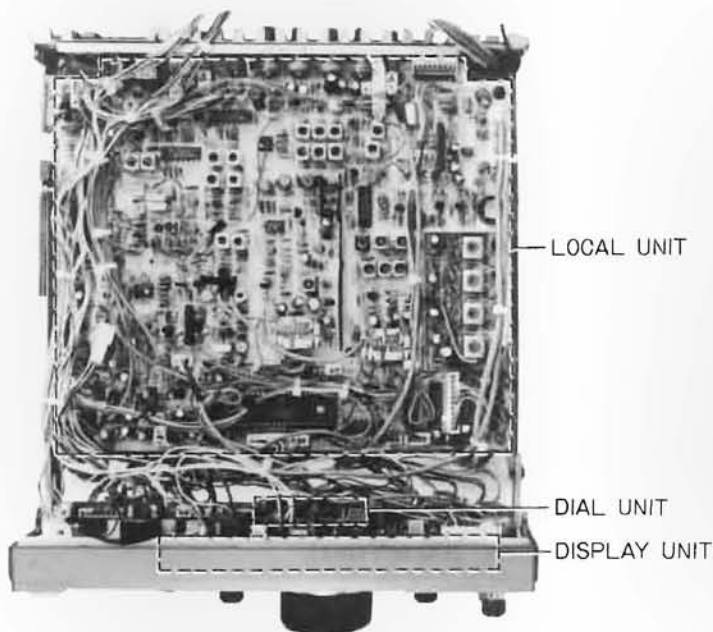
FM deviation meter/SINADer and RF sampling coupler ("T") for FM modulator alignment

Monitor scope for transmitter output display

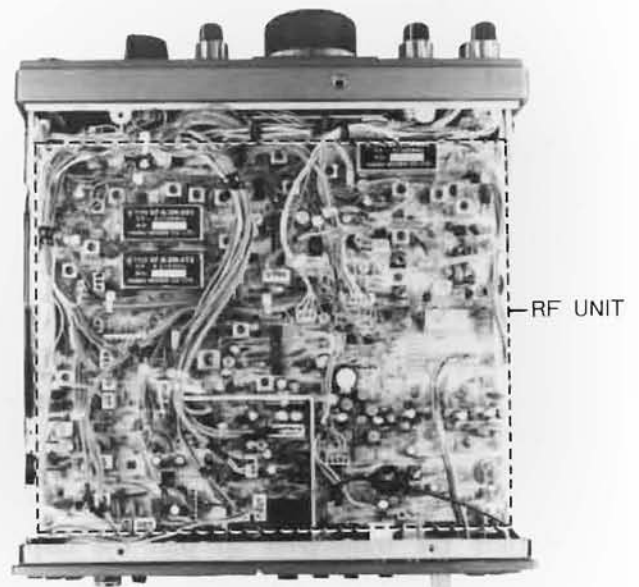
Linear detector for 1-30 MHz



FT-757GX
Underside of Heatsink



Chassis Top View



Chassis Bottom View

ALIGNMENT

LOCAL Unit

A. Third LO BPF

Remove P₁₇ and connect a 50-ohm load across 3rd LO OUT jack J₂₀₀₈, along with the RF voltmeter. Set the transceiver to a CW mode, and while receiving, adjust T₂₀₀₁ and T₂₀₀₂ for maximum deflection on the voltmeter (50 mVrms nominal).

B. SSB, AM, CW RX LO Level

Connect the RF voltmeter to pin 2 of Q₂₀₁₂ and adjust TC₂₀₀₂ so that the difference in level between CW transmit and receive is less than 5 mVrms at this point (output level approximately 100 mVrms).

C. 45 MHz Bandpass Filter

With the transceiver set to the 14 MHz band, connect the RF voltmeter to TP₂₀₀₆ and adjust T₂₀₀₉ and T₂₀₁₀ for maximum voltmeter deflection (more than 80 mVrms).

D. 60 MHz Bandpass Filter

Set the transceiver to the 21 MHz band, and with the RF voltmeter connected as in the previous step, adjust T₂₀₁₁ and T₂₀₁₂ for maximum deflection (more than 80 mVrms).

E. 45 MHz Tripler

Return the transceiver to the 14 MHz band, and connect the RF voltmeter to TP₂₀₀₂. Adjust T₂₀₀₆ and T₂₀₀₇ for maximum deflection (more than 80 mVrms).

F. 15 MHz Reference Frequency

Connect the frequency counter to TP₂₀₀₂ and adjust TC₂₀₀₆ for 45 MHz \pm 20 Hz.

G. 2nd Local Oscillator Frequency

1. Connect the frequency counter to TP₂₀₀₇, and tune the transceiver so that the display indicates 14.000.00. Adjust VR₂₀₀₆ so that the counter shows 32.06000 MHz \pm 20 Hz.
2. Retune the transceiver so that the display shows 13.999.99, and adjust VR₂₀₁₄, if necessary, to obtain 32.05901 MHz on the counter. Now retune the transceiver to 14.000.00 and check that the difference in

the frequencies shown on the counter are within 990 Hz \pm 5 Hz.

H. Carrier Point

Connect the frequency counter to J₂₀₀₈ and adjust the component indicated in the corresponding mode for the frequency shown below:

MODE	ADJUST	COUNTER FREQUENCY
LSB	TC ₂₀₀₅	8213.400 kHz (\pm 50 Hz)
CW	TC ₂₀₀₄	8215.900 kHz (\pm 10 Hz)
USB	VR ₂₀₀₅	8216.600 kHz (\pm 50 Hz)

I. BFO Frequency

Set the transceiver to a CW mode, and connect the frequency counter to pin 2 of Q₂₀₁₂. Adjust TC₂₀₀₁ while receiving for 15.000700 MHz (\pm 10 Hz) on the counter.

J. FM/AM Carrier Frequency

1. Set the transceiver to the FM mode, and connect the frequency counter to J₂₀₀₇. Adjust VR₂₀₀₄ while transmitting for 8.215000 MHz (\pm 50 Hz) on the counter.
2. Rotate the AM CAR control (VR₂₀₀₈) fully clockwise, and set the transceiver to the AM mode. Close the PTT line and check the counter for 8.215000 MHz \pm 300 Hz.

K. Carrier Level

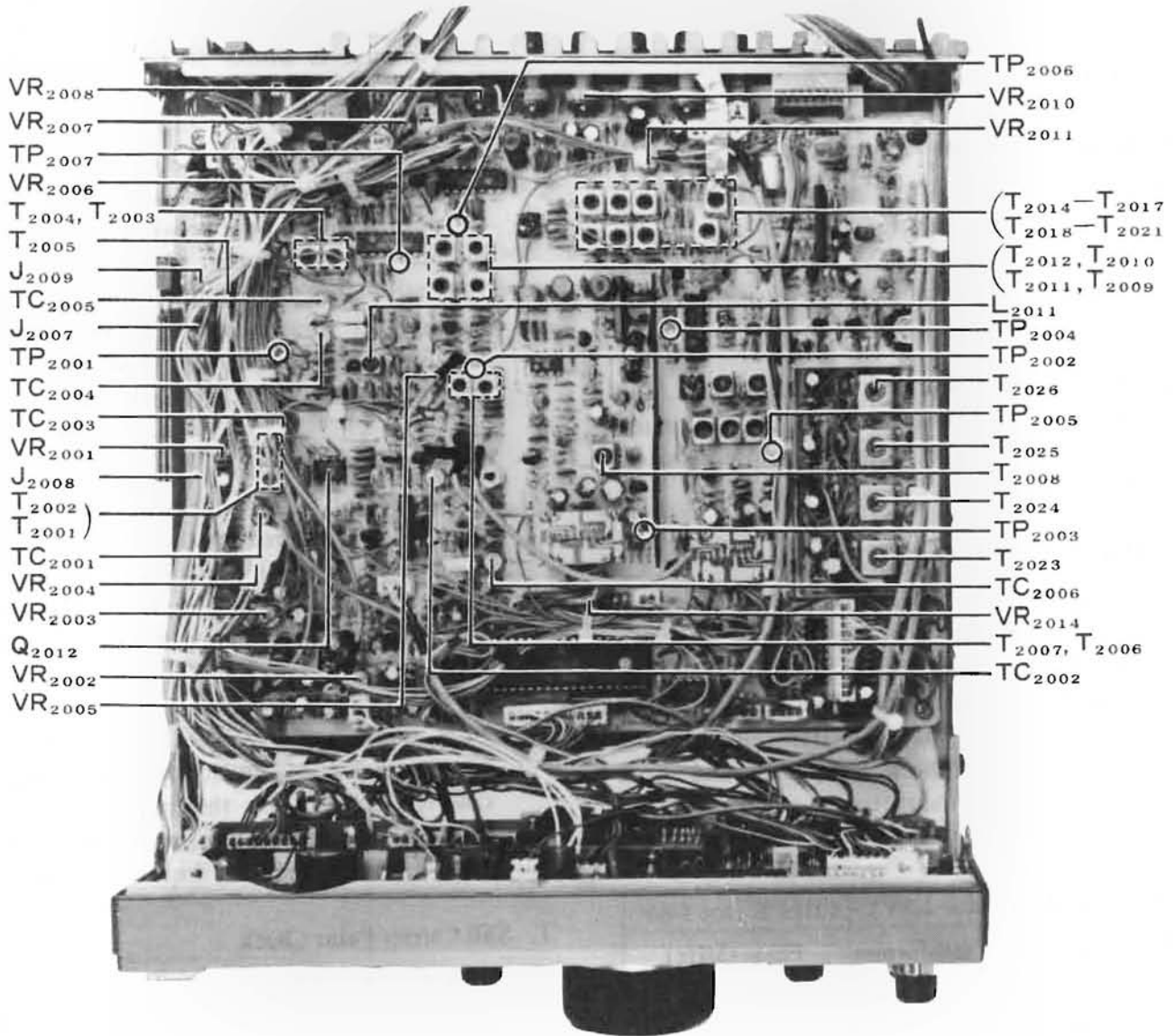
Set the transceiver to the LSB mode, and connect the RF voltmeter to TP₂₀₀₁. Close the PTT line and adjust TC₂₀₀₃ for 90 mVrms (\pm 5 mV).

L. Carrier Balance

With the transceiver set to LSB, connect the RF voltmeter to J₂₀₀₇ and adjust VR₂₀₀₁ for minimum voltage on the meter.

M. AM Carrier Level

1. With the RF voltmeter connected to J₂₀₀₇, set the mode to CW, key the transmitter, and note the voltage indicated on the meter (approx. 200 mVrms).
2. Return to receive, switch the mode to AM, close the PTT line and adjust AM CAR control VR₂₀₀₈ for exactly half of the voltage noted in the previous step.



Chassis Top View: LOCAL Unit
Adjustment Locations

N. PLL Subloop (PLL-1) VCC

1. Connect the hi-Z DC voltmeter to TP₂₀₀₃ and tune the transceiver for 14.499.00 on the display. Adjust T₂₀₀₈ for 5.5 V on the meter.
2. Retune the transceiver for a display of 14.500.00, and check for 2 to 3 volts on the meter.

O. 41 and 56 MHz Bandpass Filters

1. Connect the RF voltmeter to TP₂₀₀₄ and tune the transceiver for 14.250.00 on the display. Adjust T₂₀₁₄ through T₂₀₁₇ for maximum deflection on the voltmeter (more than 60 mVrms).
2. Retune the transceiver to 21.250 MHz, and adjust T₂₀₁₈ through T₂₀₂₁ for maximum deflection on the voltmeter (more than 60 mVrms).

P. Main PLL (PLL-2) VCC

1. Connect the hi-Z DC voltmeter to TP₂₀₀₅ and tune the transceiver to the frequencies shown in the following chart, adjusting the corresponding transformer for 1.5 V on the meter. Then retune the transceiver to the corresponding "check" frequency, and check for 5 to 6 V on the meter.

ADJUSTMENT (for 1.5V)		CHECK (for 5-6V)
Freq. (MHz)	Transformer	Freq. (MHz)
0.500	T ₂₀₂₃	7.499
7.500	T ₂₀₂₄	14.499
14.500	T ₂₀₂₅	21.499
21.500	T ₂₀₂₆	29.999

2. Check for proper VCC control by tuning between the adjustment and check frequencies in each of the above four ranges, using the tuning knob or microphone scanning buttons, and watching the DC voltmeter for smooth voltage change. If the voltage changes unevenly, or jumps, a fault is indicated.

Q. 2nd Local Level

Connect the RF voltmeter to J₂₀₀₉. Adjust T₂₀₀₃ through T₂₀₀₅ for maximum RF voltage on the meter (at least 110 mVrms).

R. IF Shift Zero Point Set

1. Connect the frequency counter to J₂₀₀₉, and with the Shift and Width controls centered, note the counter frequency while receiving. Then key the transmitter and adjust VR₂₀₀₇, if necessary, so that the frequency shown on the counter is within 50 Hz of that shown while receiving.
2. While receiving, check the total adjustment range of the Shift control in USB, LSB and CW, which should be approximately ± 1.3 kHz as shown on the counter. If not, adjust L₂₀₁₁ (not more than 90° in either direction), and then repeat adjustments H, I and J (Carrier Point, BFO Frequency and FM/AM Carrier Frequency), and then this check again.

S. VOX Gain Preset

1. Preset VR₂₀₁₁ fully clockwise, and set the VOX GAIN control on the rear panel fully clockwise. Connect the AF signal generator to the PATCH jack, and apply a 1 kHz signal at 1 mV to check to see if the transmitter activates.
2. Now rotate the VOX GAIN control fully counterclockwise, and slowly adjust VR₂₀₁₁ counterclockwise to the point where the transceiver returns to receive, and then a little further counterclockwise from this point.

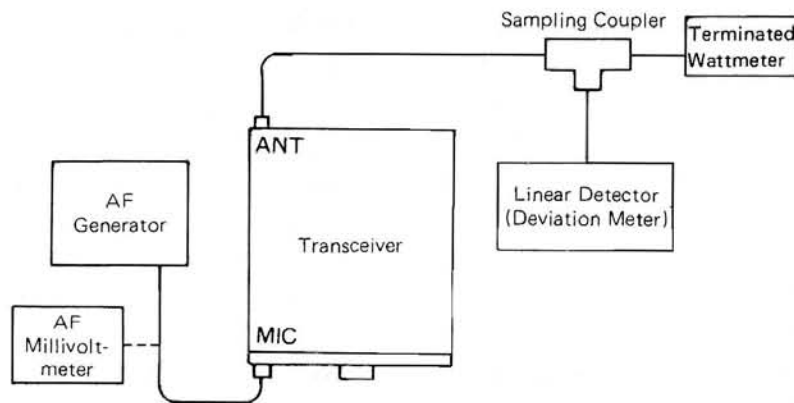
T. SSB Carrier Point Check

1. With the AF generator connected as in the previous step, set the transceiver to the 14 MHz band, USB mode. Close the PTT line and adjust the MIC gain control for 100 watts output (into the dummy load/wattmeter). For the 10-watt model FT-757SX, divide all power outputs by 10.
2. Reduce the frequency of the audio generator while watching the wattmeter, to obtain 25 watts output. Check that the audio frequency is below 350 Hz.
3. Now increase the frequency of the AF generator so that the power output rises to full power and then down to 25 watts again above 2 kHz. Check that the audio frequency is now above 2900 Hz.

- Return to receive, switch to LSB, and repeat the above checks in this mode. If 25 watts output is not obtained outside the specified frequency in any of these checks, repeat the Carrier Point (H) and then the IF Shift Zero Point (R) procedures.

U. FM Modulation

- With the test equipment connected as shown in the following diagram, preset VR_{2002} fully clockwise, and set the AF generator for 10 mV output at 1 kHz. Set the transceiver to FM.
- Adjust VR_{2003} for ± 5 kHz deviation (± 100 Hz), and then reduce the AF generator output level to 1.5 mV, and adjust VR_{2002} for ± 3.5 kHz deviation (± 100 Hz).
- Recheck deviation with 10 mV audio, and repeat the above steps until deviation is within the specified ranges for both audio levels.



RF Unit: Receiver Circuits

A. 3rd Local Buffer

Connect the RF voltmeter to the emitter of Q_{1028} and adjust T_{1019} for maximum RF voltage (0.7 to 0.9 Vrms).

B. 2nd Local Buffer

Connect the RF voltmeter to the jumper between T_{1006} and T_{1023} on the component side of the board, and adjust T_{1022} for maximum RF voltage (0.25 to 0.35 Vrms).

C. Width Oscillator (Coarse)

1. Connect the frequency counter through a 0.01 μ F capacitor to pin 1 of Q_{1022} . Set the WIDTH control to the 12 o'clock position, and adjust L_{1044} for 8.670 MHz \pm 100 Hz on the counter (coarse adjustment).
2. Connect the RF voltmeter to gate two of Q_{1016} and adjust T_{1019} for maximum RF voltage (0.5 to 0.6 Vrms).

D. RX IF Transformers

Preset VR_{1001} fully clockwise and adjust VR_{1010} to the point where the S-meter just begins to deflect. Apply a 60 dB signal at 14.000 MHz from the RF signal generator to the antenna jack, and adjust T_{1016} through T_{1010} and T_{1007} through T_{1004} , in that order, for maximum S-meter deflection. Reduce the signal generator level as necessary to keep the meter below full scale.

E. Width Oscillator (Fine)

With the WIDTH and SHIFT controls both set to the 12 o'clock position, switch the mode back and forth between LSB and USB, adjusting L_{1044} for the same noise pitch.

F. IF Gain and S-Meter Sensitivity

1. Apply a 6 dB signal at 14.000 MHz from the RF signal generator to the antenna jack, and adjust VR_{1001} for an S-meter deflection of S-1.
2. Increase the RF signal level to 100 dB and adjust VR_{1011} so that the S-meter indicates just to full scale.

G. Noise Blanker

Connect the DC voltmeter to gate two of Q_{1013} , and with the RF signal generator connected as above, set the RF level to 40 to 60 dB at 14.000 MHz. With the NB button depressed, adjust T_{1008} and T_{1009} for minimum DC voltage on the meter.

H. FM 3rd Local

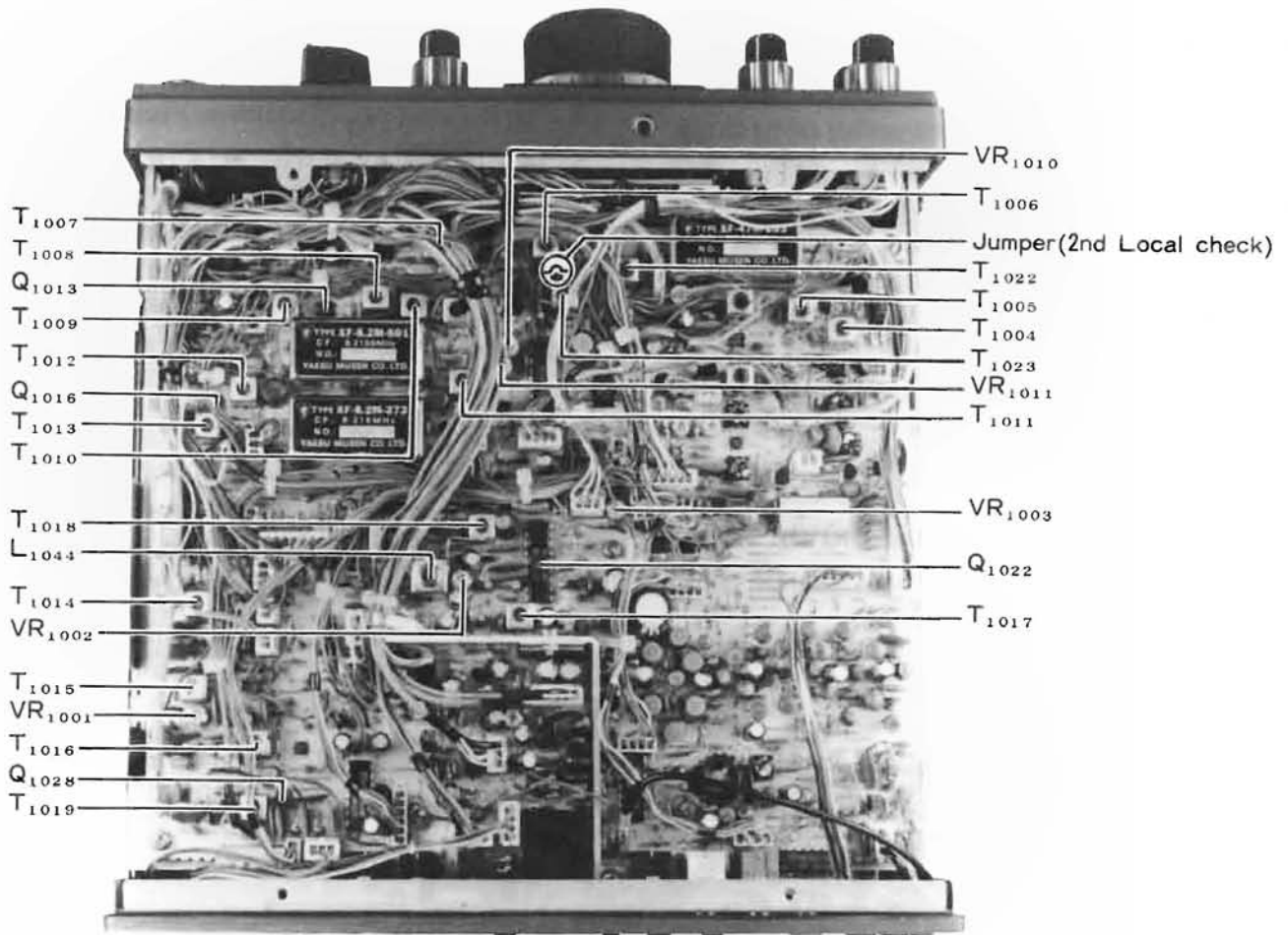
With the RF signal generator connected to the antenna jack, apply a 40 to 60 dB signal at 14.000 MHz, modulated with a 1 kHz tone at \pm 3.5 kHz deviation. Connect the AF voltmeter across the speaker terminals; set the SQL control fully counterclockwise, and adjust T_{1017} for maximum AF voltage on the meter.

I. Squelch Threshold

Beginning with the transceiver in the AM mode, with no signal applied at the antenna jack, advance the SQL control gradually from the fully counterclockwise position just to the point where the squelch closes. Then switch to the FM mode, and adjust VR_{1003} to the point where the squelch again just closes.

J. FM RX AF Output Level

1. With the AF voltmeter connected across the speaker terminals, apply a 40 dB signal at 14.000 MHz (with no modulation) from the RF generator to the antenna jack. Set the transceiver to the USB mode, tune for a heterodyne, and adjust the AF gain control for 0.1 V on the AF voltmeter.
2. Switch to the FM mode and modulate the RF signal with 1 kHz at \pm 3.5 kHz deviation, without changing the generator output level. Adjust VR_{1002} for 0.1 V on the AF voltmeter.



Chassis Bottom View: RF Unit
RX Adjustment Locations

RF Unit: Transmitter Circuits

A. ALC Meter Zero Set

With the transceiver tuned to 14 MHz, USB mode, and with no microphone input, key the transmitter and adjust VR₁₀₀₈ to the threshold point where ALC just starts to produce meter deflection (METER switch in ALC position).

B. TX IF Transformers

At 14 MHz, CW mode, with the METER switch set to ALC, preset VR₁₀₀₆ to the center of its range. Press the MOX switch and adjust T₁₀₂₀, T₁₀₂₁ and T₁₀₂₃ through T₁₀₂₅ for maximum deflection on the ALC meter. If no deflection is found at first, set the METER switch to PO and the rear panel FWD/REV switch to FWD. Return the METER switch to ALC when the PO indication is maximum. If the ALC indication is overscale, reduce the setting of the DRIVE control.

C. TX Power

At 14 MHz, CW mode, set the DRIVE control fully clockwise and adjust VR₁₀₀₆ for 100 watts output (10 watts for FT-757SX).

D. PO Meter

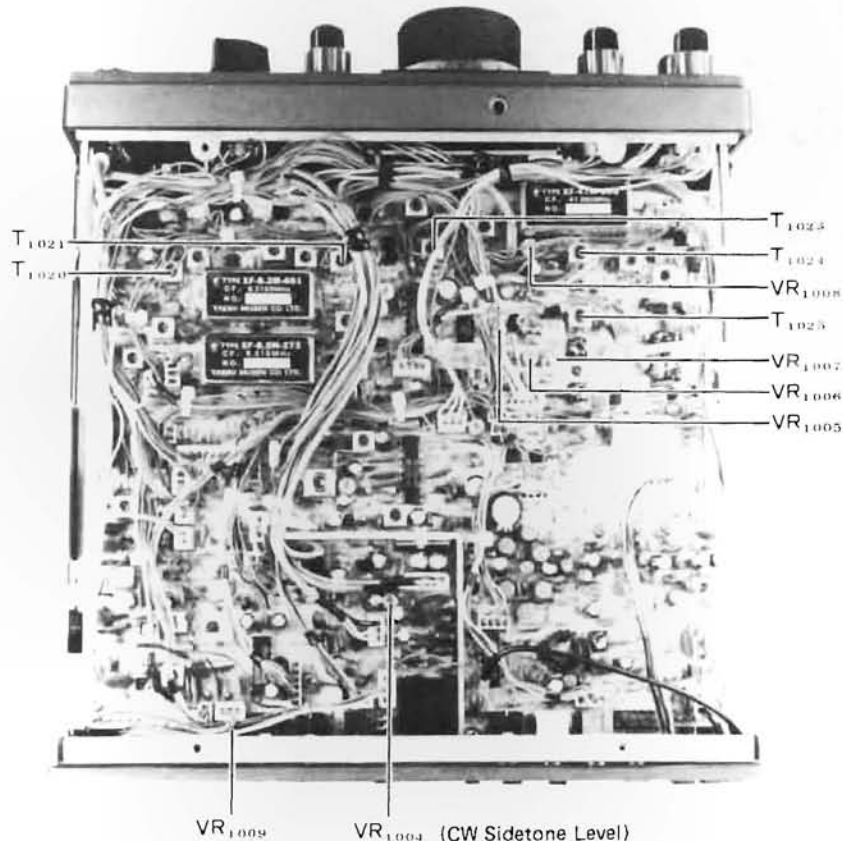
At 14 MHz, CW mode, press the MOX button and adjust the DRIVE control for 100 watts output on the external wattmeter. Set the rear panel FWD/REV switch to FWD, and with the front panel METER switch set to PO, adjust the FWD SET control for internal PO meter indication of 100 watts.

E. SWR Turndown (Automatic Final Protection)

At 14 MHz, CW mode, connect a 16.6-ohm dummy load (three 50-ohm loads in parallel) and a thru-type wattmeter to the antenna jack. Rotate the DRIVE control fully clockwise, press the MOX button, and adjust VR₁₀₀₇ to the point where power indication on the wattmeter just begins to drop.

F. CW Sidetone Level

With the AF voltmeter connected across the speaker terminals, in a CW mode with a key connected, close the key and adjust VR₁₀₀₄ for 0.3 V sidetone output on the meter.



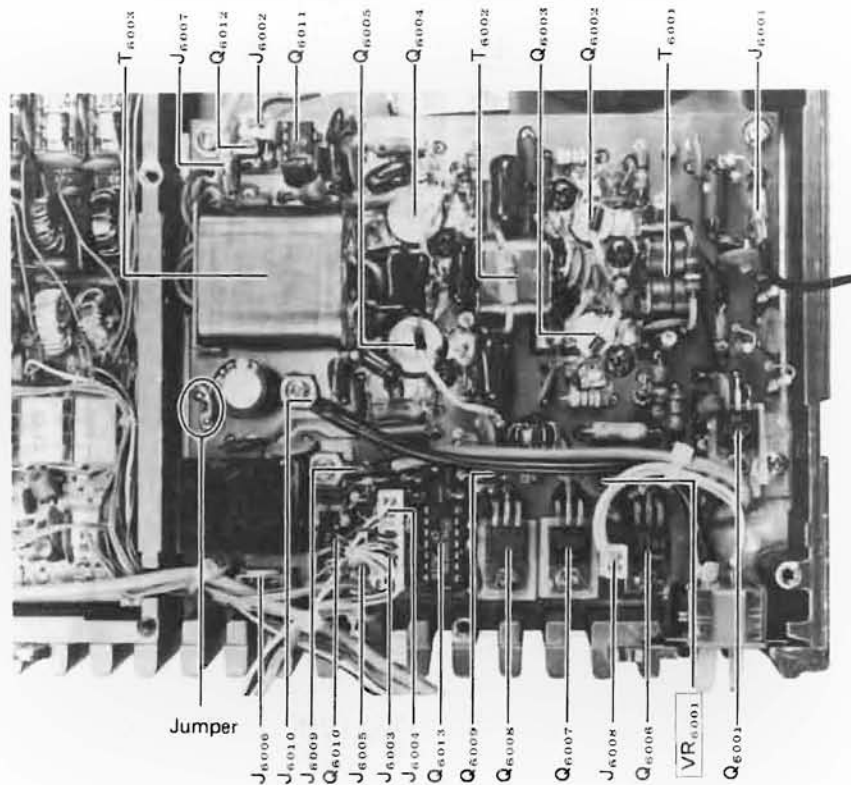
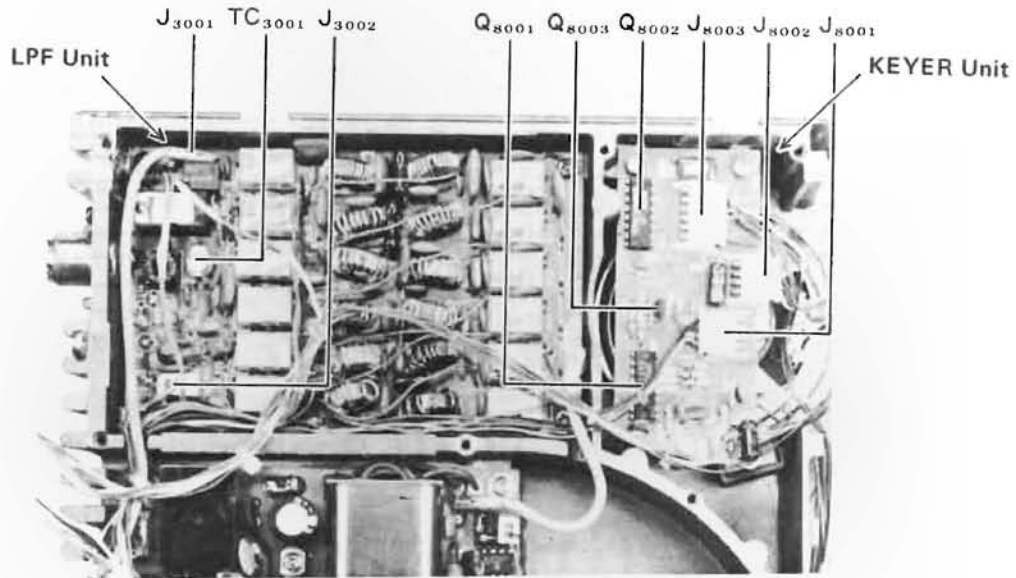
Chassis Bottom View: RF Unit
TX Adjustment Locations

LPF Unit: Directional CM Coupler Balance

Set the METER switch to PO and the rear panel FWD-REV switch to REV. Set the transceiver to the CW mode, and transmit a 14 MHz carrier into the dummy load. Adjust TC₃₀₀₁ for minimum deflection on the meter.

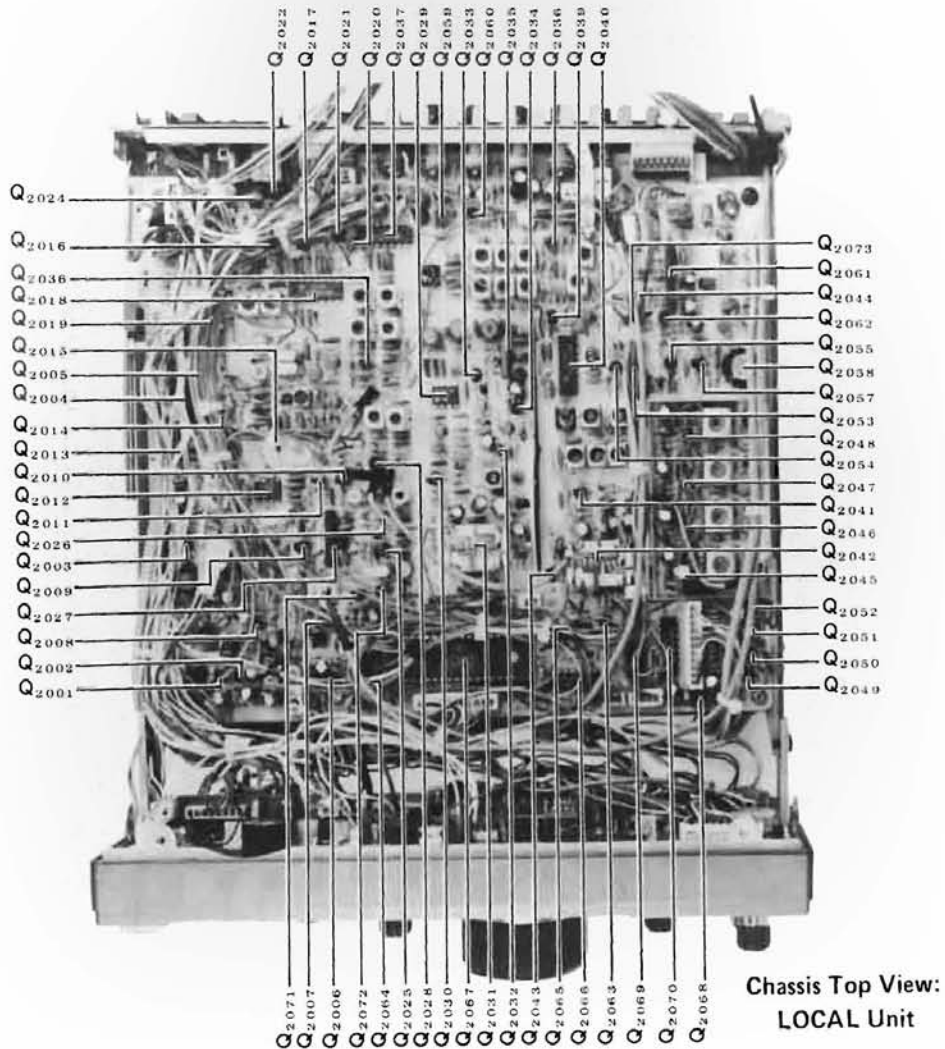
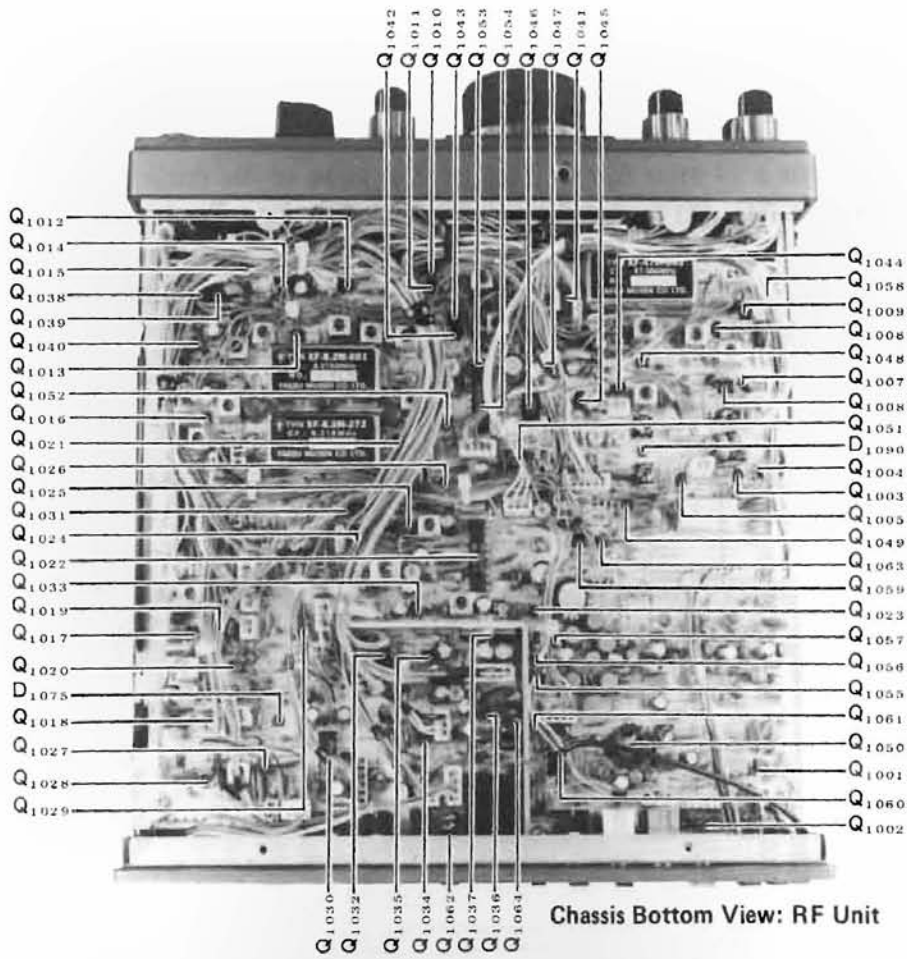
PA Unit: Idling Current

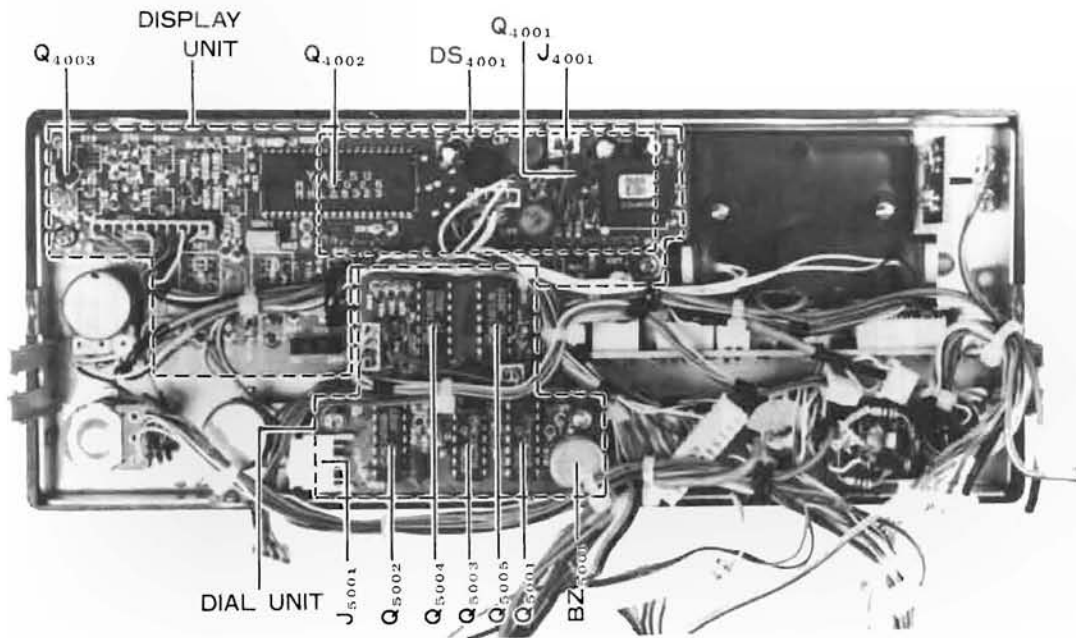
Remove the jumper shown in the following figure, and connect the DC milliammeter (500 mA range) in place of the jumper. With the transceiver set to an SSB mode and with no audio applied to the transmitter, close the PTT line and adjust VR₆₀₀₁ for 250 mA (± 100 mA) on the ammeter. Replace the jumper after the adjustment. For the FT-757SX, adjust VR₇₀₀₁ for 150 mA (± 50 mA).



PA Unit

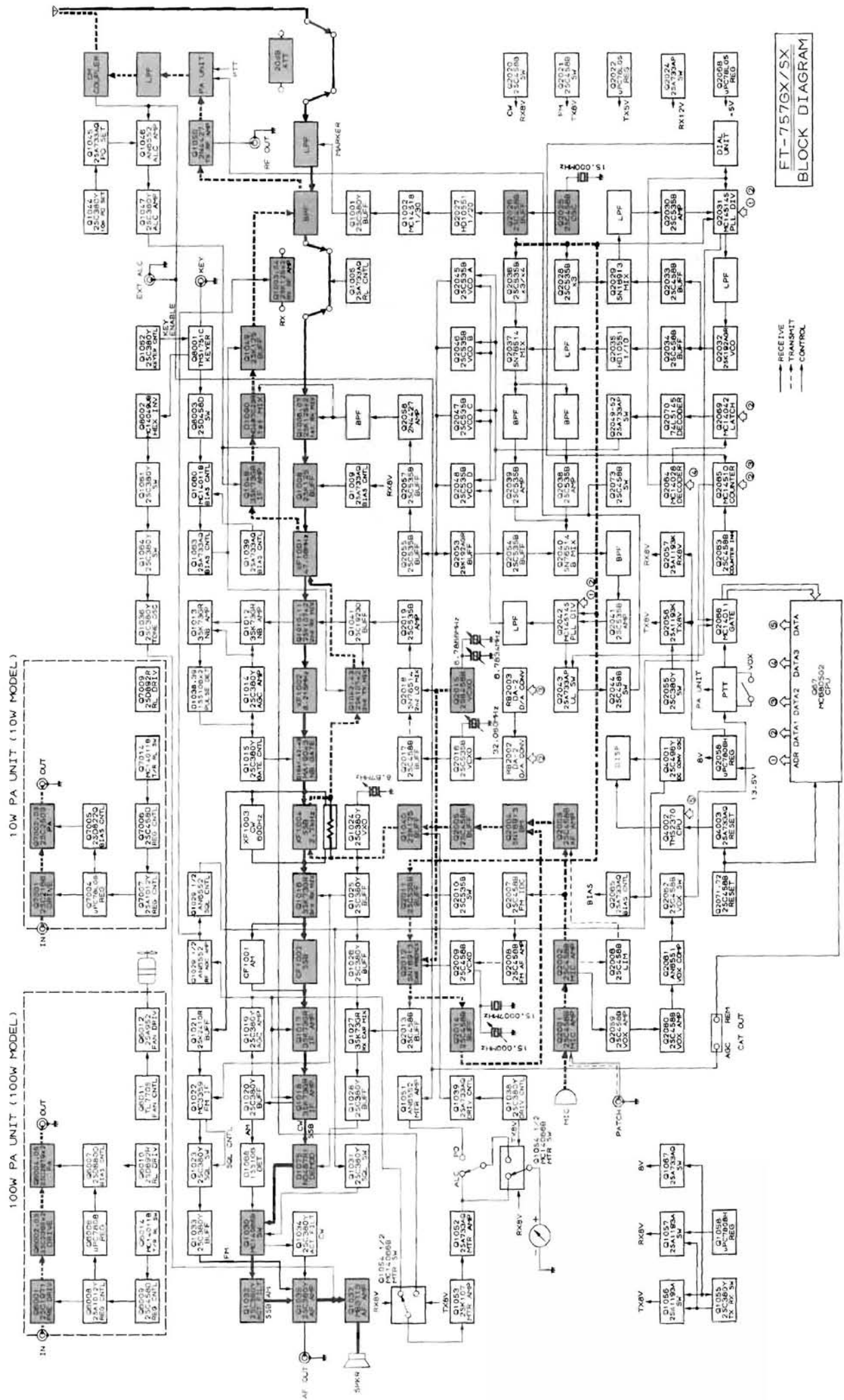
SEMICONDUCTOR LOCATIONS





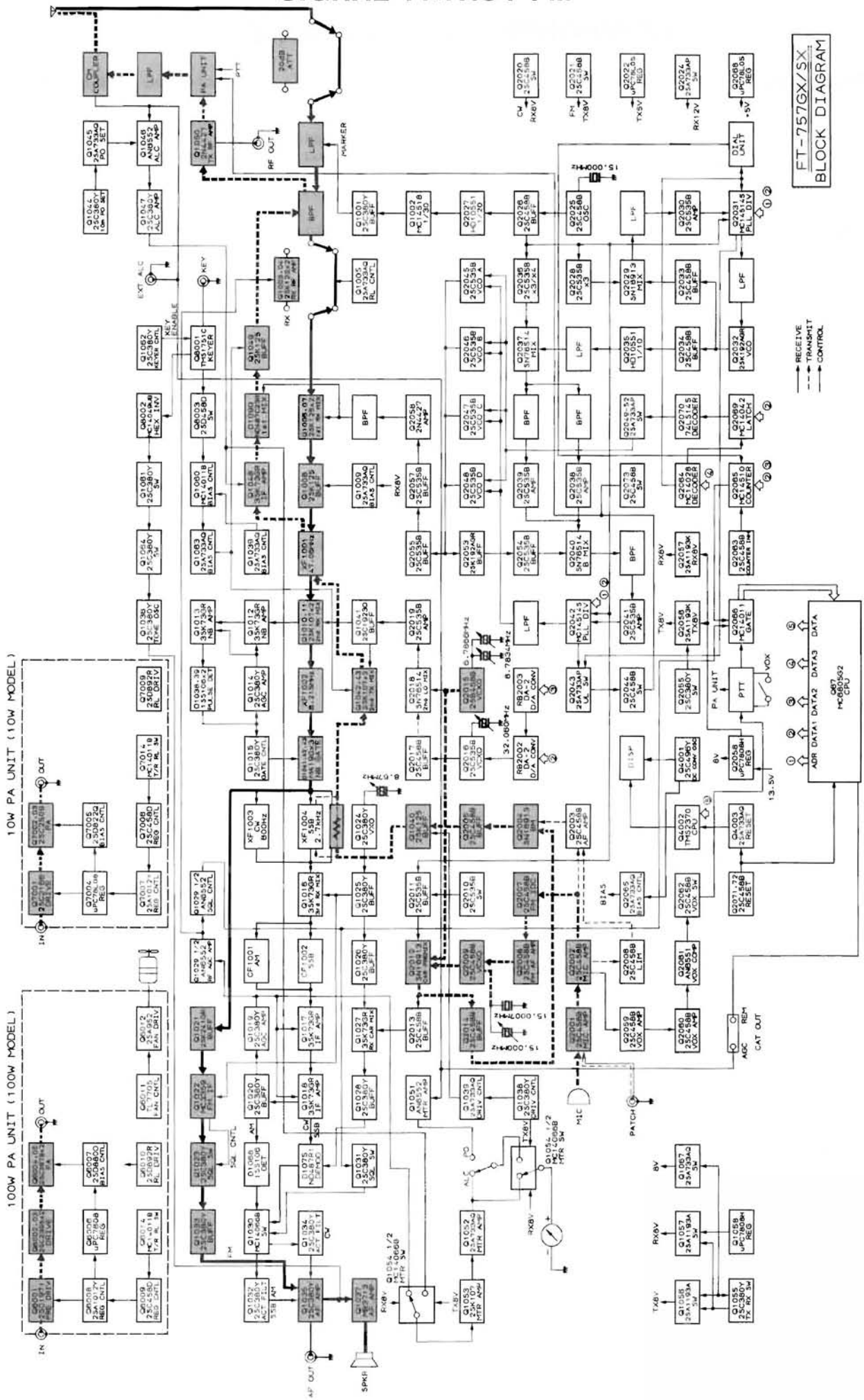
Inside Front Panel

SIGNAL PATHS : SSB



FT-757GX/SX
BLOCK DIAGRAM

SIGNAL PATHS : FM



FT-757GX/SX
BLOCK DIAGRAM

COMPONENT APPLICATIONS

MAIN CHASSIS

LOCATION	NOMENCLATURE	TYPE	APPLICATION
Q1	μPC7808H	Regulator IC	8V Reg for Local Unit

RF UNIT

LOCATION	NOMENCLATURE	TYPE	APPLICATION
Q1001	2SC380TMY	NPN Si TR	Marker Buffer Amp
Q1002	MC14518BCP	Dual BCD Counter	1/30 Divider (Marker)
Q1003	2SK125	JFET	RX RF Amplifier
Q1004	"	"	"
Q1005	2SA733AQ	PNP Si TR	Relay Driver
Q1006	2SK125	JFET	RX 1st Mixer
Q1007	"	"	"
Q1008	"	"	RX 1st IF Post-Amp
Q1009	2SA733AQ	PNP Si TR	RX Front End Mute (on TX)
Q1010	2SK107-3	JFET	RX 2nd Mixer
Q1011	"	"	"
Q1012	3SK73GR	MOSFET	RX Noise Amp
Q1013	"	"	"
Q1014	2SC380TMY	NPN Si TR	RX NB AGC Amp
Q1015	"	"	RX NB Gate Sw
Q1016	3SK73GR	MOSFET	RX 3rd Mixer
Q1017	"	"	RX 3rd IF Amp
Q1018	"	"	"
Q1019	2SC380TMY	NPN Si TR	RX AGC Amp
Q1020	"	"	RX AGC Buffer
Q1021	2SK241GR	JFET	RX 2nd IF Buffer
Q1022	MC3359P	FM RX IC	FM RX 3rd Mixer, Lim Amp, Discriminator, Noise Amp, Squelch Sw
Q1023	2SC380TMY	NPN Si TR	RX Squelch Sw
Q1024	"	"	RX IF Width LO
Q1025	"	"	RX Width Local Amp
Q1026	"	"	RX Local Buffer Amp
Q1027	3SK73GR	MOSFET	RX Carrier Mixer
Q1028	2SC380TMY	NPN Si TR	RX Carrier Buffer
Q1029	AN6552	Dual Op amp	RX RF AGC Amp, Auto Scan Diff Amp
Q1030	MC14066B	Quad Analog sw IC	RX Detector Selector Switch
Q1031	2SC380TMY	NPN Si TR	RX Detector Squelch Switch
Q1032	"	"	RX AM, SSB Active LPF
Q1033	"	"	RX FM AF Buffer
Q1034	"	"	RX CW Active LPF
Q1035	"	"	RX AF Preamp
Q1036	"	"	TX Sidetone Osc
Q1037	MB3713	AF amp IC	RX AF Power Amp
Q1038	2SC380TMY	NPN Si TR	TX SSB Drive Sw
Q1039	2SA733AQ	"	TX Drive Enable Sw (T/R)
Q1040	2SK125	JFET	TX 1st IF Buffer
Q1041	2SC1923O	NPN Si TR	2nd LO Buffer (RX and TX)
Q1042	2SK107-3	JFET	TX 2nd Mixer
Q1043	"	"	"
Q1044	2SC380TMY	NPN Si TR	TX 10m PO Reduction Sw (for JAs)
Q1045	2SA733AQ	PNP Si TR	"

Q1046	AN6552	Dual Op amp	TX ALC Diff Amps
Q1047	2SC380TMY	NPN Si TR	TX ALC Buffer
Q1048	3SK73GR	MOSFET	TX 2nd IF Amp
Q1049	2SK125	JFET	TX RF Post-Amp
Q1050	2N4427	NPN Si TR	TX RF Preamp
Q1051	AN6552	Dual Op amp	PO Meter Amps
Q1052	2SA733AQ	PNP Si TR	RX/TX S/ALC Meter Amp
Q1053	2SK107-3	JFET	"
Q1054	MC14066B	Quad Analog sw IC	Meter Function Selector
Q1055	2SC380TMY	NPN Si TR	Inverter for TX8V Sw Q1056
Q1056	2SA1193K	PNP Si TR	T/R Sw for TX8V on RF Unit
Q1057	"	"	T/R Sw for RX8V on RF Unit
Q1058	μPC7808H	Regulator IC	8V Reg for RF Unit
Q1059	2SA733AQ	PNP Si TR	PTT Switch Buffer
Q1060	MC14011BCP	Quad NAND	T/R Switching Sync
Q1061	2SC380TMY	NPN Si TR	TX Sidetone Switch (w/Q1064)
Q1062	"	"	TX CW Key Enable Sw
Q1063	2SA733AQ	PNP Si TR	TX IF T/R Sw
Q1064	2SC380TMY	NPN Si TR	TX Sidetone Osc Sw
Q1065	2SA733AQ	PNP Si TR	-8V Delay Switch
D1001	MA190	Si Diode	Marker Output Sw
D1002	"	"	Marker Divider Preset Switch
D1003	"	"	"
D1004	"	"	BPF to TX RF Preamp Switch (TX 8V)
D1005	"	"	"
D1006	"	"	TX Switch
D1007	1SS97	Schottky Barrier Diode	BPF Switch (0.5~2.5MHz)
D1008	"	"	" (")
D1009	"	"	" (2.5~4.0MHz)
D1010	"	"	" (")
D1011	"	"	" (4.0~7.5MHz)
D1012	"	"	" (")
D1013	"	"	" (7.5~14.5MHz)
D1014	"	"	" (")
D1015	"	"	" (14.5~21.5MHz)
D1016	"	"	" (")
D1017	"	"	" (21.5~30MHz)
D1018	"	"	" (")
D1019	"	"	"
D1020	"	"	"
D1021	MA190	Si Diode	BC BPF Enable Switch
D1022	"	"	1.9MHz BPF Enable Switch
D1023	"	"	BC RF Amp Relay Sw
D1024	-	-	Not Used
D1025	-	-	"
D1026	-	-	"
D1027	MA190	Si Diode	24.5/28MHz BPF/LPF Diode OR (28MHz)
D1028	"	"	" (24.5MHz)
D1029	"	"	18/21MHz BPF/LPF Diode OR (21MHz)
D1030	"	"	" (18MHz)
D1031	"	"	10/14MHz BPF/LPF Diode OR (14MHz)
D1032	"	"	" (10MHz)
D1033	"	"	Back Pulse Canceller

D1034	"	"	RX 1st IF T/R Sw (to XF01)	D1081	"	"	RX CW AF Filter Sw Not Used
D1035	"	"	TX 2nd IF T/R Sw (from XF01)	D1082	-	-	Temperature Comp for ALC
D1036	"	"	TX 2nd IF T/R Sw (to XF01)	D1083	MV12	Varistor	Rev ALC Latchup Protector
D1037	"	"	RX 1st IF T/R Sw (from XF01)	D1084	RD9.1EB2	Zener Diode	Reverse EXT ALC Protector
D1038	1SS106	Schottky Barrier Diode	NB Noise Detector	D1085	MA190	Si Diode	"
D1039	"	"	"	D1086	RD9.1EB2	Zener Diode	Fwd/Rev ALC Diode OR (Rev)
D1040	MA190	Si Diode	Reverse Voltage Isolator	D1087	MA190	Si Diode	Fwd ALC Latchup Protector
D1041	"	"	NB Gate	D1088	RD9.1EB2	Zener Diode	Fwd/Rev ALC Diode OR (Fwd)
D1042	"	"	"	D1089	MA190	Si Diode	TX 3rd Mixer
D1043	"	"	"	D1090	ND487C2-3R	Ring Module	Reverse Voltage Isolator (from Meter Amp Q1051a)
D1044	"	"	RX 2nd IF T/R Sw (to Xtal Filters)	D1091	MA190	Si Diode	" (from " Q1060d)
D1045	"	"	TX 1st IF T/R Sw (from Xtal Filters)	D1092	"	"	PTT Line Switch
D1046	"	"	CW Xtal Filter Sw	D1093	"	"	CW Keying Line Sw Not Used
D1047	"	"	"	D1094	"	"	18MHz TX Disable
D1048	1SS97	Schottky Barrier Diode	SSB Xtal Filter Sw	D1095	"	"	24.5MHz TX Disable
D1049	"	"	"	D1096	-	-	ALC Preset Fwd Bias
D1050	"	"	AM Attenuator Sw	D1097	MA190	Si Diode	SSB Xtal Filter Sw
D1051	"	"	"	D1098	"	"	" (CW-W)
D1052	MA190	Si Diode	TX 1st IF T/R Sw (to Xtal Filters)	D1099	MV12	Varistor Diode	" (SSB)
D1053	"	"	RX 2nd IF T/R Sw (from Xtal Filters)	D1100	MA190	Si Diode	AM Squelch Switch
D1054	"	"	RX 3rd IF AM Filter Switch	D1101	"	"	RF AGC Threshold Set
D1055	"	"	"	D1102	"	"	Non-FM Squelch Hang Timer
D1056	"	"	RX 3rd IF SSB/CW Ceramic Filter Sw	D1103	"	"	NB AGC Limiter
D1057	"	"	"	D1104	HZ4B3	Zener Diode	"
D1058	"	"	RX 3rd IF SSB/CW Filter Selector (SSB)	D1105	MA190	Si Diode	TX RF OUT Switch
D1059	"	"	" (CW-W)	D1106	HZ3C1	Zener Diode	Demodulator FM
D1060	"	"	" (CW-N)	D1107	MA190	Si Diode	Disable Switch (from TX 8V)
D1061	"	"	RX 3rd IF AM Filter Selector (AM)	D1108	"	"	"
D1062	"	"	" (FM)	D1109	"	"	"
D1063	"	"	CW-N Xtal Filter Sw	XF1001	XF-47M-203-01	Crystal Filter	RX 1st IF Filter
D1064	"	"	FM Demodulator Activator Switch	XF1002	8.2M20	"	" 2nd IF "
D1065	1SS106	Schottky Barrier Diode	RX AGC Detector	XF1003	XF8.2M-601-01	"	" " " (CW-N)
D1066	"	"	"	XF1004	XF8.2M-272-01	"	" " " (SSB, CW-W)
D1067	"	"	Forward Bias for AM Detector	CF1001	LF-H6S	Ceramic Filter	RX 3rd IF Filter (AM)
D1068	"	"	RX AM Detector	CF1002	CFJ445K13	"	" (SSB, CW)
D1069	"	"	RX FM Noise Detector	CF1003	CFG455E1	"	" (FM)
D1070	1SV50	Varactor Diode	IF Width Frequency Control	X1001	HC-18/U 8670kHz	Crystal	IF Width Oscillator
D1071	MA190	Si Diode	BFO Premixer Enable Sw (SSB)	LOCAL UNIT			
D1072	"	"	CW BFO and AF Filter Sw (CW-W)	LOCA-TION	NOMEN-CLATURE	TYPE	APPLICATION
D1073	"	"	" (CW-N)	Q2001	2SC458B	NPN Si TR	TX MIC Amp
D1074	"	"	BFO Premixer Enable Sw (CW)	Q2002	"	"	"
D1075	ND487R1-3R	Ring Module	RX SSB, CW Demodulator	Q2003	"	"	TX AF Amp (SSB/AM)
D1076	MA190	Si Diode	Reverse Voltage Protector (SCAN Line)	Q2004	SN16913P	Mixer IC	TX SSB Balanced Modulator (also AM Mod)
D1077	"	"	RX SSB/AM AF Filter Sw (SSB)	Q2005	2SC458B	NPN Si TR	TX 1st IF Buffer Amp
D1078	"	"	" (AM)	Q2006	"	"	TX SSB PROC AF Limiter Amp
D1079	"	"	RX SSB/AM AF Filter Switch	Q2007	"	"	TX FM IDC
D1080	"	"	RX FM AF Buffer Sw	Q2008	"	"	TX FM AF Amp

Q2009	"	"	15MHz VCXO (TX FM/CW)	Q2055	"	"	PLL2 VCO Output Buffer Amp
Q2010	2SC535B	"	FM/CW TX Carrier Disable Sw	Q2056	-	-	Not Used
Q2011	"	"	RX and SSB/AM TX, 15MHz Car LO Buffer	Q2057	2SC535B	NPN Si TR	1st RX/3rd TX LO Preamp
Q2012	SN16913P	Mixer IC	Carrier Premixer	Q2058	2N4427	"	1st Local Amp
Q2013	2SC458B	NPN Si TR	RX Carrier LO Buffer	Q2059	2SC458B	"	VOX Amplifier
Q2014	"	"	TX Carrier LO Buffer	Q2060	"	"	"
Q2015	"	"	6.78MHz SSB Car and SHIFT VCXO	Q2061	AN6551	Op amp IC	VOX Comparator
Q2016	2SC535B	"	32.06MHz 2nd LO and WIDTH VCXO	Q2062	2SC458B	NPN Si TR	VOX Switch
Q2017	2SC458B	"	32.06MHz Buffer Amp	Q2063	"	"	Counter Startup Delay Switch
Q2018	SN76514N	Mixer IC	2nd Local Premixer	Q2064	MC14028BCP	BCD-Dec Decoder IC	μ P PLL Div Freq Data Decoder
Q2019	2SC535B	NPN Si TR	2nd Local Buffer Amp	Q2065	MC14510BCP	BCD U/D Counter IC	Tuning Pulse Counter
Q2020	2SC458B	"	Disable Sw (CW) RX and SSB/AM TX Carrier	Q2066	MC14011BCP	Quad NAND IC	Tuning, Auto Scan Gates
Q2021	"	"	" (FM)	Q2067	SC82072P	8-bit μ P LSI	Freq Control CPU
Q2022	μ PC78L05	Regulator IC	Reg for RX IF Shift Preset on TX	Q2068	μ PC78L05	Regulator IC	5V Reg for Local and Dial Unit Logic
Q2023	-	-	Not Used	Q2069	MC14042BCP	Quad Latch IC	μ P Band Data Decoder Latch
Q2024	2SA733AP	PNP Si TR	IF Shift Disable on TX	Q2070	SN74LS145N	BCD-Dec-Decoder IC	Band Data BCD-Dec Decoder
Q2025	2SC458B	NPN Si TR	15MHz PLL Ref, RX and SSB/AM TX Car Oscillator	Q2071	2SC458B	NPN Si TR	CPU Startup Reset Delay Switch
Q2026	"	"	15MHz Buffer Amp	Q2072	"	"	"
Q2027	HD10551P	Divider IC	1/20 Ref Divider for Marker	Q2073	"	"	TX Inhibit Switch (for MAN and EXT)
Q2028	2SC535B	NPN Si TR	45MHz Tripler for PLL1 LO	D2001	1N270	Ge Diode	TX, SSB PROC Limiter
Q2029	SN16913P	Mixer IC	PLL1 Mixer	D2002	"	"	"
Q2030	2SC535B	NPN Si TR	PLL1 IF Amp	D2003	MA190	Si Diode	TX FM IDC Switch
Q2031	MC145145	CMOS IC	PLL1 Prog Div and Phase Detector	D2004	"	"	"
Q2032	2SK192AGR	JFET	34-39MHz VCO (PLL1)	D2005	"	"	TX AF Amp Disable Switch (CW)
Q2033	2SC458B	NPN Si TR	PLL1 VCO Feedback Buffer	D2006	"	"	TX AF Amp Disable Switch (FM)
Q2034	"	"	PLL1 VCO Output Buffer	D2007	MV103	Varistor Diode	Temp Compensator for FM Modulator
Q2035	HD10551P	Divider IC	1/10 PLL1 Output Divider	D2008	MA190	Si Diode	TX CW Car Osc Crystal Switch
Q2036	2SC535B	NPN Si TR	PLL Ref Tripler/Quadrupler	D2009	"	"	TX FM Car Osc Crystal Switch
Q2037	SN76514N	Mixer IC	PLL2 Local Premixer	D2010	FC53M-5	Varactor Diode	FM Modulator
Q2038	2SC535B	NPN Si TR	PLL2 41MHz Local Amp	D2011	MA190	Si Diode	TX FM Car Osc Bias Sw
Q2039	"	"	PLL2 56MHz Local Amp	D2012	"	"	TX FM/CW Car Osc Disable Sw (RX)
Q2040	SN76514N	Mixer IC	PLL2 Mixer	D2013	"	"	RX, SSB/AM TX 15MHz Car LO Disable (FM/CW TX)
Q2041	2SC535B	NPN Si TR	PLL2 IF Amp	D2014	"	"	Enable Sw (")
Q2042	MC145145	CMOS IC	PLL2 Prog Div and Phase Detector	D2015	"	"	Rev Voltage Isolator (SSB/CW RX)
Q2043	2SA733AP	PNP Si TR	PLL Unlock Switch	D2016	RD7.5EB3	Zener Diode	7.5V Reg for Car Sw Q2011
Q2044	2SC458B	NPN Si TR	TX Inhibit Switch (for Unlock)	D2017	MA190	Si Diode	USB Car LO Xtal Sw for USB, CW, AM, FM
Q2045	2SC535B	"	PLL2 1st RX, 3rd TX Local VCO (0.5~7.5MHz)	D2018	"	"	LSB Car LO Xtal Sw
Q2046	"	"	" (7.5~14.5MHz)	D2019	FC52M-5	Varactor Diode	6.78MHz VCXO IF SHIFT Control
Q2047	"	"	" (14.5~21.5MHz)	D2020	1SV50	"	32.06MHz 2nd LO IF WIDTH Control
Q2048	"	"	" (21.5~30.0MHz)	D2021	MA190	Si Diode	Rev Voltage Isolator (CW TX Sw)
Q2049	2SA733AP	PNP Si TR	PLL2 LO and VCO Bandwidth (0.5~7.5MHz)	D2022	"	"	" (FM TX Sw)
Q2050	"	"	" (7.5~14.5MHz)	D2023	"	"	" (SHIFT TX Preset)
Q2051	"	"	" (14.5~21.5MHz)	D2024	1SS101	Schottky Barrier Diode	" (")
Q2052	"	"	" (21.5~30MHz)	D2025	RD9.1EB3	Zener Diode	Reg for SHIFT Reference
Q2053	2SK192AGR	JFET	PLL2 VCO Feedback Buffer Amp				
Q2054	2SC535B	NPN Si TR	"				

D2026	MA190	Si Diode	Rev Voltage Isolator (SHIFT TX Preset)	D2074	"	"	" D "
D2027	"	"	" (AM Car Preset)	D2075	"	"	VOX Rectifier
D2028	"	"	Carrier Premix Vcc OR (on LSB)	D2076	"	"	"
D2029	"	"	" (on USB)	D2077	1N270	Ge Diode	ANTI TRIP Rectifier
D2030	"	"	" (on CW)	D2078	"	"	"
D2031	"	"	Bal Mod Car Bias OR (on CW)	D2079	MA190	Si Diode	Sidetone Enable, A-TRIP Disable Switch
D2032	"	"	" (on FM)	D2080	"	"	Delay (Q2061) Rev Voltage Isolator
D2033	"	"	USB Car VCXO Sw OR (on CW)	D2081	RD6.2EB3	Zener Diode	VOX Clamp
D2034	"	"	" (on AM)	D2082	MA190	Si Diode	Sidetone Delay Enable Switch
D2035	"	"	" (on FM)	D2083	"	"	INH Line Rev Voltage Protector (for Q2064)
D2036	"	"	SSB/AM TX AF Amp Vcc OR (on LSB)	D2084	1SS97	Schottky Barrier Diode	Backup Battery Protector
D2037	"	"	" (on USB)	D2085	"	"	5V Vcc Rev Voltage Protector
D2038	"	"	" (on AM)	D2086	MA190	Si Diode	Scan Clock Diode OR Scan Pulse Diode OR
D2039	"	"	USB Car VCXO Sw OR (on USB)	D2087	"	"	PTT Jack Rev Voltage Protection for Q2064
D2040	1SS106	Schottky Barrier Diode	INH Reverse Voltage Isolator	D2088	"	"	Delayed PTT Diode OR to CPU
D2041	1S1554	Si Diode	Back Pulse Cancellor	D2089	"	"	TX 13.5V Sw Signal Diode OR to CPU
D2042	RD5.1EB2	Zener Diode	Vcc Reg for Marker Divider	D2090	"	"	Counter Startup Threshold Set
D2043	FC53M5	Varactor Diode	34-39MHz VCO (PLL1)	D2091	RD9.1EB3	Zener Diode	Shift Disable (Q2024) Switch Bias
D2044	RD5.1EB2	Zener Diode	Vcc Reg for PLL1 Output Divider	D2092	MA190	Si Diode	CPU Clock Reset Sw PLL1 Unlock Diode OR
D2045	MA190	Si Diode	PLL Ref Triple In Sw	D2093	"	"	PLL2 Unlock Diode OR
D2046	"	"	PLL Ref Quadruple Input Switch	D2094	"	"	CPU Startup Reset Threshold Set
D2047	"	"	45MHz PLL Ref Triple Output Switch	D2095	"	"	INH Sw Forward Bias "
D2048	"	"	60MHz PLL Ref Quadruple Out Sw	D2096	RD8.2EB3	Zener Diode	FM Shift Diode OR AM "
D2049	"	"	41MHz PLL2 LO BPF Input Switch	D2097	MA190	Si Diode	CW BFO Carrier Oscillator
D2050	"	"	56MHz PLL2 LO BPF Input Switch	D2098	"	"	FM Carrier Oscillator
D2051	"	"	41MHz PLL2 LO BPF Output Switch	D2099	"	"	USB Carrier Oscillator
D2052	"	"	56MHz PLL2 LO BPF Output Switch	D2100	"	"	LSB Carrier Oscillator
D2053	1SV103	Varactor Diode	PLL 2 VCO A Control (0.5~7.5MHz)	X2001	15.0007MHz	HC-18/U Crystal	2nd LO and WIDTH VCXO
D2054	"	"	" B Control (7.5~14.5MHz)	X2002	15.000MHz	"	PLL Ref and AM Car Oscillator
D2055	"	"	" C Control (14.5~21.5MHz)	X2003	6.7834MHz	"	
D2056	"	"	" D Control (21.5~30.0MHz)	X2004	6.7866MHz	"	
D2057	MA190	Si Diode	" A Out Sw	X2005	32.060MHz	HC-43/U	
D2058	"	"	" B "	X2006	15.000MHz	"	
D2059	"	"	" C "				
D2060	"	"	" D "				
D2061	"	"	PLL2 41MHz BPF OR (with VCO A on)				
D2062	"	"	" (" B on)				
D2063	"	"	PLL2 56MHz BPF OR (with VCO C on)				
D2064	"	"	" (" D on)				
D2065	"	"	Dec Band Data-to-VCO A Decoder OR				
D2066	"	"	" "				
D2067	"	"	" "				
D2068	"	"	Dec Band Data-to-VCO A Decoder OR				
D2069	"	"	" B "				
D2070	"	"	" B "				
D2071	"	"	" C "				
D2072	"	"	" C "				
D2073	"	"	" D "				

LPF UNIT

LOCATION	NOMEN- CLATURE	TYPE	APPLICATION
D3001	1S1555	Si Diode	Back Pulse Cancellor
D3002	"	"	"
D3003	"	"	"
D3004	"	"	"
D3005	"	"	"
D3006	"	"	"
D3007	1SS106	Schottky Barrier Diode	Rev ALC/SWR Detector
D3008	"	"	Fwd ALC/SWR Detector
D3009	"	"	Rev ALC/SWR Detector
D3010	"	"	Fwd ALC/SWR Detector

D3011	"	"	RF Pickup Rectifier
D3012	1S1555	Si Diode	RF Pickup Detector Bias
D3013	"	"	Back Pulse Cancellor

DISPLAY UNIT

LOCATION	NOMENCLATURE	TYPE	APPLICATION
Q4001	2SC496Y	NPN Si TR	DC-DC Converter Oscillator
Q4002	TMS2370	4-bit CPU	Display Control CPU
Q4003	2SA733AQ	PNP Si TR	CPU Reset Switch
D4001	1S1555	Si Diode	Display "CH" Diode OR (b-seg) " (g-seg)
D4002	"	"	"
D4003	1SS55	"	-30V Rectifier
D4004	HZ5C1	Zener Diode	-25V Bias
D4005	RD30EB2	"	-30V Regulator
D4006	1S1555	Si Diode	-8V Rectifier
D4007	HZ4B3	Zener Diode	-4V Regulator
D4008	1S1555	Si Diode	CLAR, M→VFO, VFO→M, PB2 Sw
D4009	"	"	VFO→M Sw
D4010	"	"	INH Switch
D4011	"	"	UP Switch
D4012	"	"	DWN Switch
D4013	"	"	CLAR Switch
D4014	"	"	D LOCK Switch
D4015	"	"	VFO A/B Switch
D4016	"	"	M→VFO Switch
D4017	"	"	SPLIT Switch
D4018	"	"	MR Switch
D4019	"	"	VFO→M Switch
D4020	LN410YP	LED	ON AIR Indicator
D4021	1S1555	Si Diode	D LOCK, VFO A/B, M→VFO Clamp
D4022	"	"	VFO→M, INH Clamp
D4023	"	"	UP, DWN, CLAR Clamp
D4024	"	"	SPLIT, MR, VFO→M Clamp
D4025	"	"	INT Clamp
CO4001	CSB500E	Ceramic Resonator	500kHz Display CPU Clock Oscillator

DIAL UNIT

LOCATION	NOMENCLATURE	TYPE	APPLICATION
Q5001	MC14011BCP	Quad NAND IC	Beeper Multivibrator
Q5002	MC14584BCP	Hex Schmitt Trig IC	Pulse Shapers
Q5003	MC14071BCP	Quad OR IC	Up/Down Logic
Q5004	MC14071BCP	Dual 4 AND IC	"
Q5005	MC14013BCP	Dual "D" F-F	Up/Down Logic, Buzzer Switch
D5001	1S1555	Si Diode	Tune Disable by Buzzer Diode OR
D5002	"	"	Tune Disable by D LOCK Diode OR
D5003	"	"	Buzzer Timer

100W PA UNIT

LOCATION	NOMENCLATURE	TYPE	APPLICATION
Q6001	2SC1971	NPN Si TR	TX Predriver
Q6002	2SC2395	"	TX Driver
Q6003	"	"	"
Q6004	2SC2879	"	TX Final Amplifier
Q6005	"	"	"
Q6006	μPC7808H	Regulator IC	Final Bias Reg
Q6007	2SD880-O	NPN Si TR	"
Q6008	2SA1012Y	PNP Si TR	TX 13.5V Sw
Q6009	2SC458D	NPN Si TR	TX 13.5V Sw Driver
Q6010	2SD892R	"	Power ON Relay Driver
Q6011	TL7705	OP Amp IC	Fan Switching Comparator
Q6012	2SA952L	PNP Si TR	Fan Driver
Q6013	MC14011BCP	Quad NAND IC	TX/RX Sw and Delay (for TX 13.5V)
D6001	HZ3C1	Zener Diode	Predriver Bias Regulator
D6002	10D10	Si Diode	Temp Compensator (for Driver Bias)
D6003	"	"	"
D6004	"	"	Temp Compensator (for Final Amp Bias)
D6005	"	"	"
D6006	1S1555	"	PTT T/R Delay Trigger
D6007	"	"	PTT Delay Gate OR
D6008	"	"	Reverse Voltage Isolator
D6009	"	"	PTT 13.5V Diode OR
D6010	"	"	PWR Relay Back Pulse Cancellor
D6011	"	"	RX Mute Diode OR
D6012	"	"	PWR ON Rev Voltage Isolator

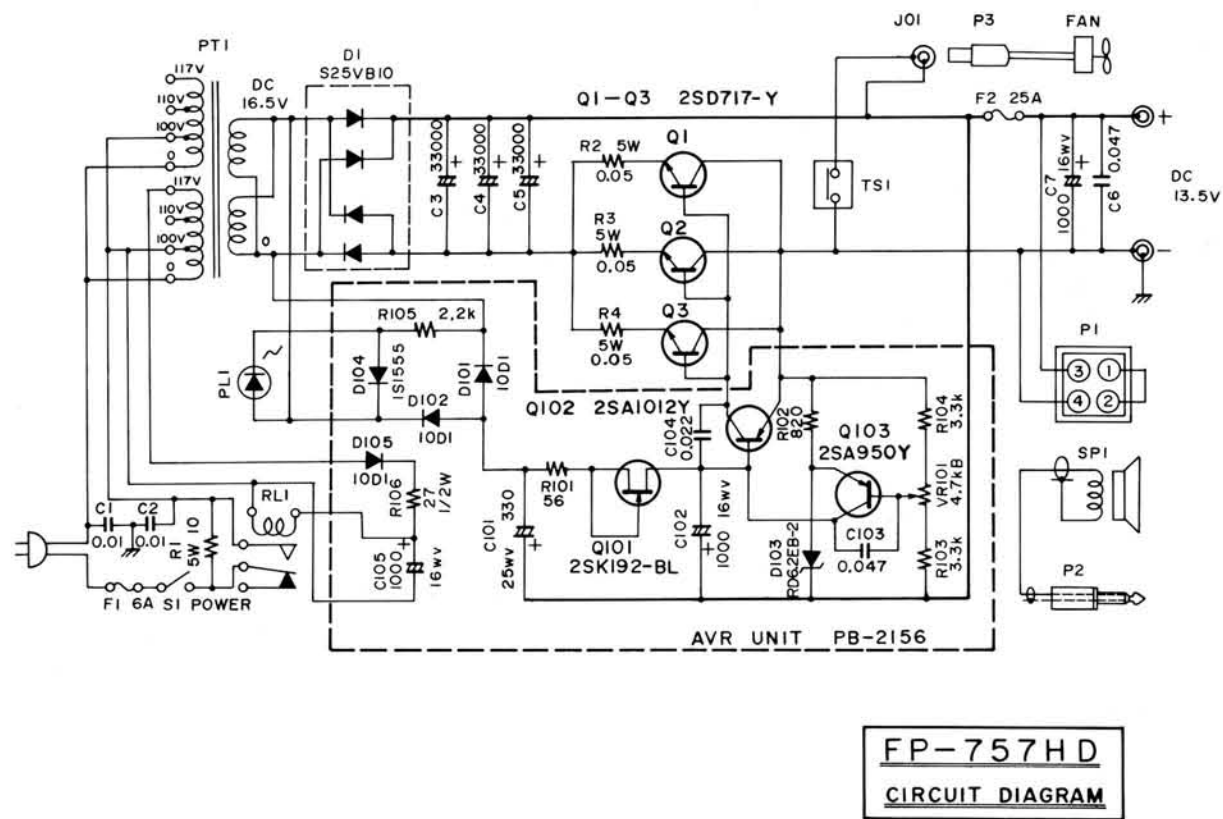
10W PA

LOCATION	NOMENCLATURE	TYPE	APPLICATION
Q7001	2SC2166	NPN Si TR	TX Driver
Q7002	2SC2509	"	TX Final Amplifier
Q7003	"	"	"
Q7004	μPC78L08	Regulator IC	Final Bias Regulator
Q7005	2SD882Q	NPN Si TR	"
Q7006	2SC458D	"	TX 13.5V Sw Driver
Q7007	2SA1012Y	PNP Si TR	TX 13.5V Switch
Q7008	MC14011BCP	Quad NAND IC	TX/RX Sw and Delay (for TX 13.5V) Relay Driver
Q7009	2SD892R	NPN Si TR	"
D7001	HZ3C1	Zener Diode	Driver Bias Regulator
D7002	MV11	Varistor Diode	Temp Compensator (for Final Bias)
D7003	1S1555	Si Diode	PTT T/R Delay Trigger
D7004	"	"	PTT Delay Gate OR
D7005	"	"	PTT 13.5V Diode OR
D7006	"	"	Reverse Voltage Isolator
D7007	"	"	PWR Relay Back Pulse Cancellor
D7008	"	"	RX Mute Diode OR
D7009	"	"	PWR ON Rev Voltage Isolator

KEYER UNIT

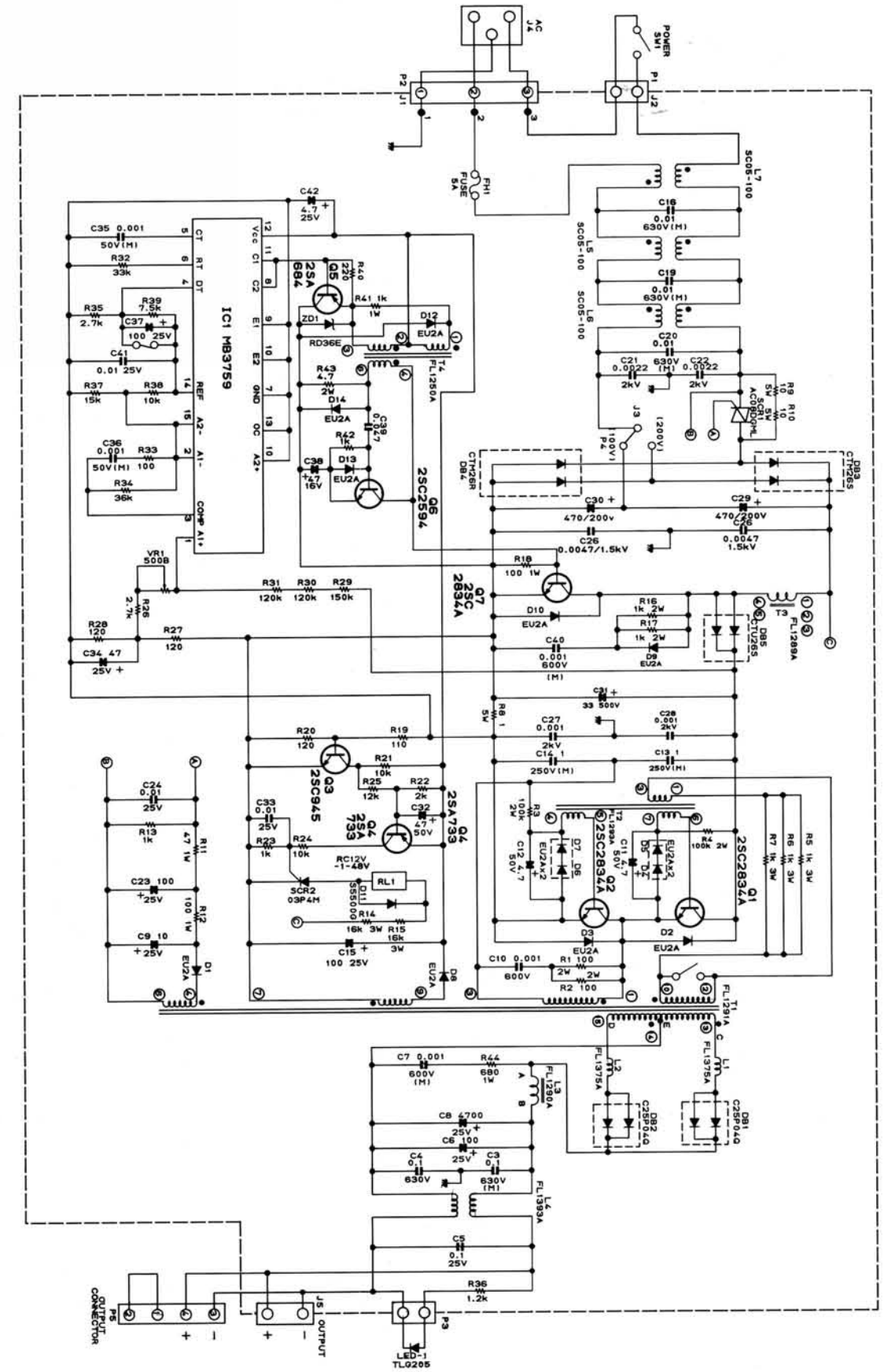
LOCATION	NOMENCLATURE	TYPE	APPLICATION
Q8001	TMS1751C	4-bit CPU	Keyer Microprocessor
Q8002	MC14049UBCP	HEX Inverter	Monostable Multi-vibrator
Q8003	2SC458D	NPN Si TR	Keying Line Driver
D8001	RD5.1EB	Zener Diode	Vcc Regulator
D8002	1SS106	Schottky Barrier Diode	Clamp
CO8001	CSA1.00MK	Ceramic Resonator	1MHz Clock Oscillator

FP-757HD SCHEMATIC DIAGRAM



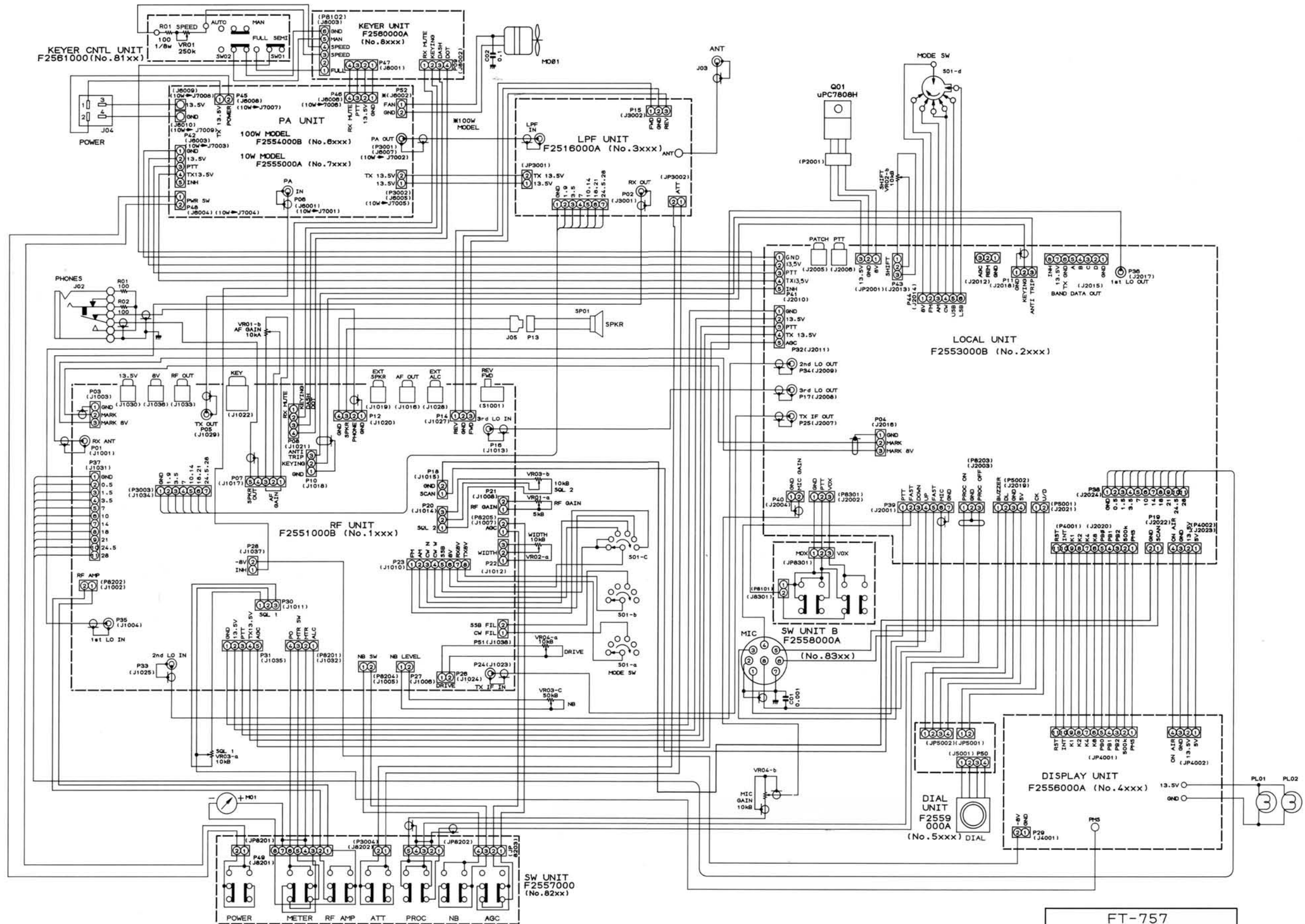
FP-757HD
CIRCUIT DIAGRAM

FP-757GX SCHEMATIC DIAGRAM



FP-757GX
CIRCUIT DIAGRAM

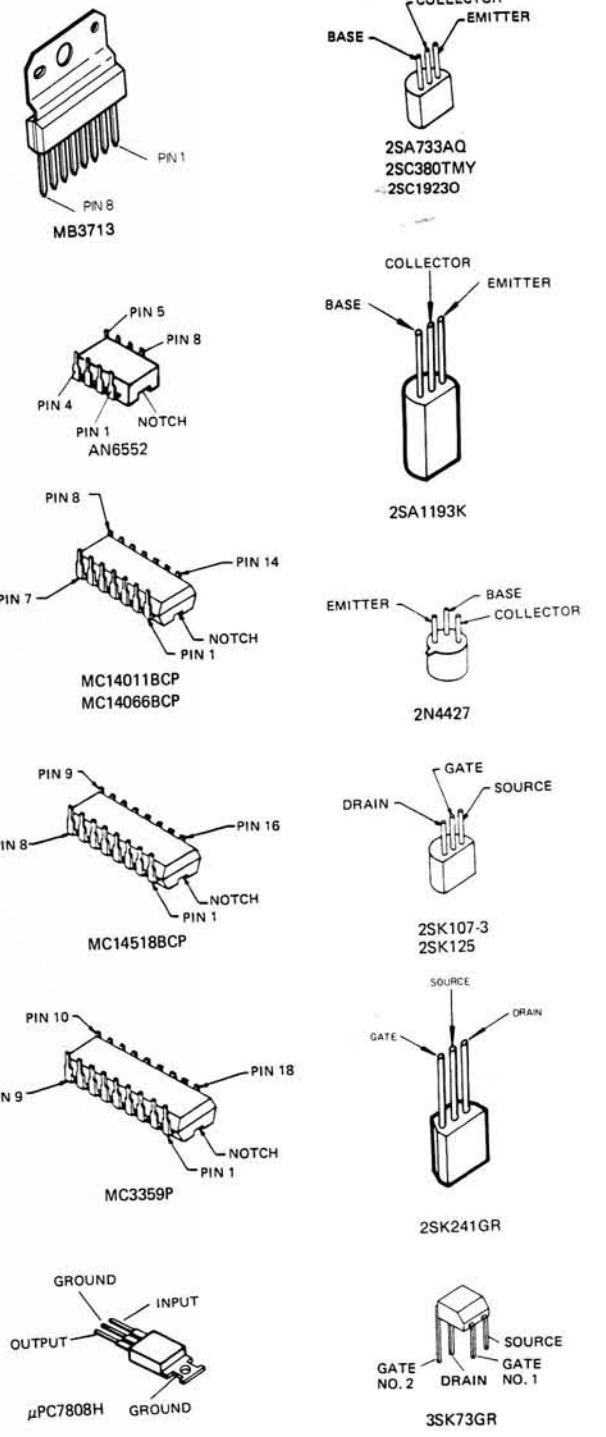
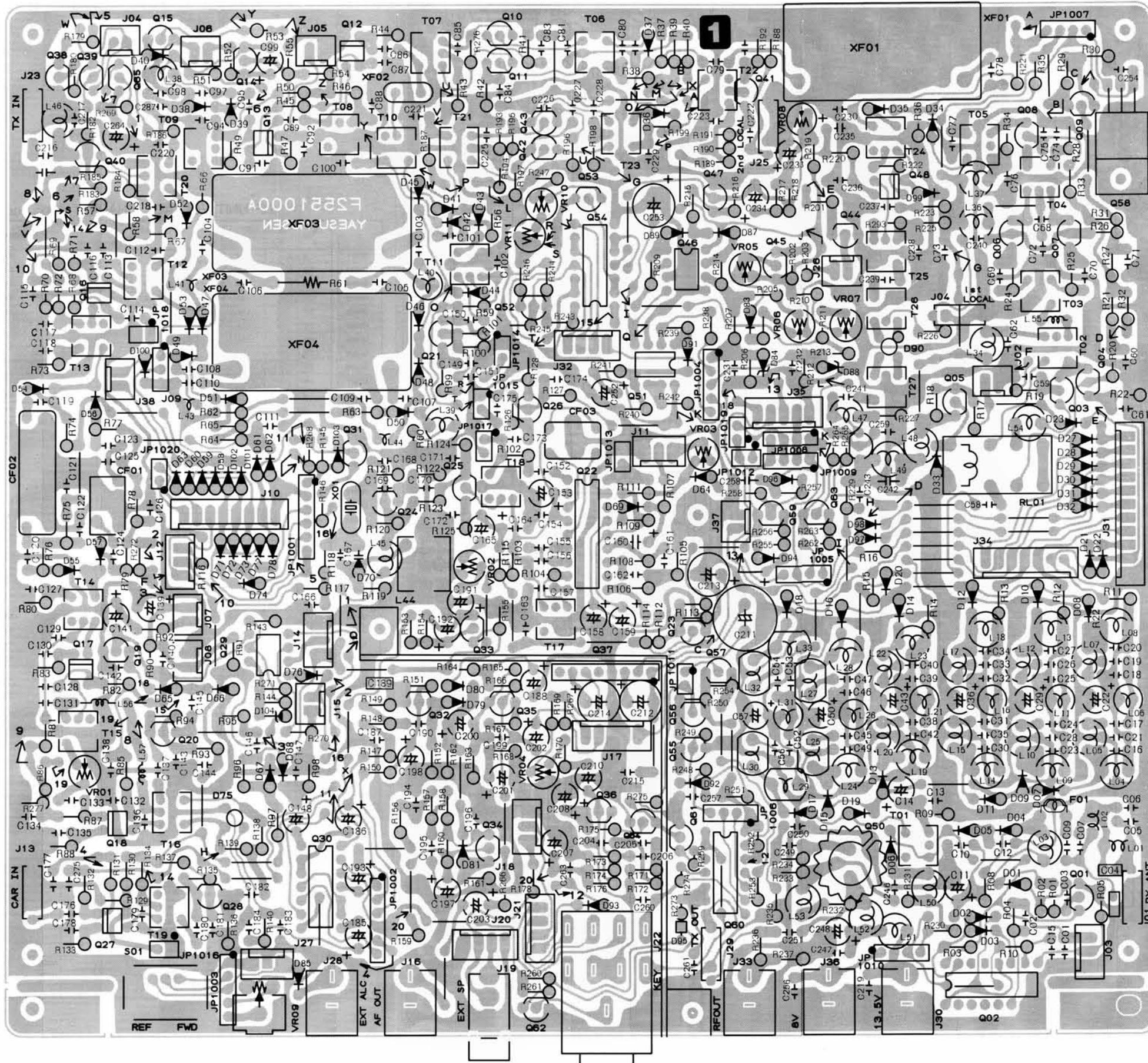
CONNECTION DIAGRAM



FT-757
CONNECTION DIAGRAM

RF UNIT PARTS LAYOUT

(component side)

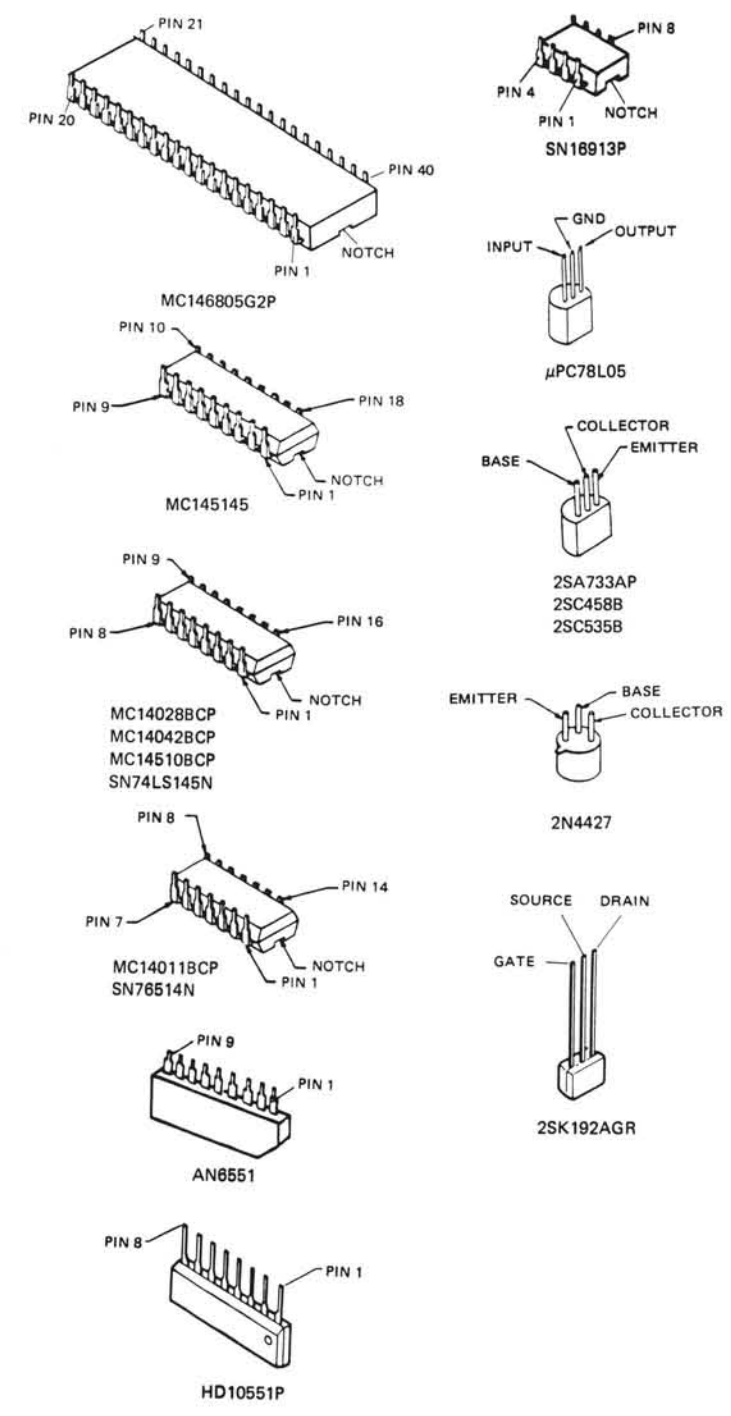
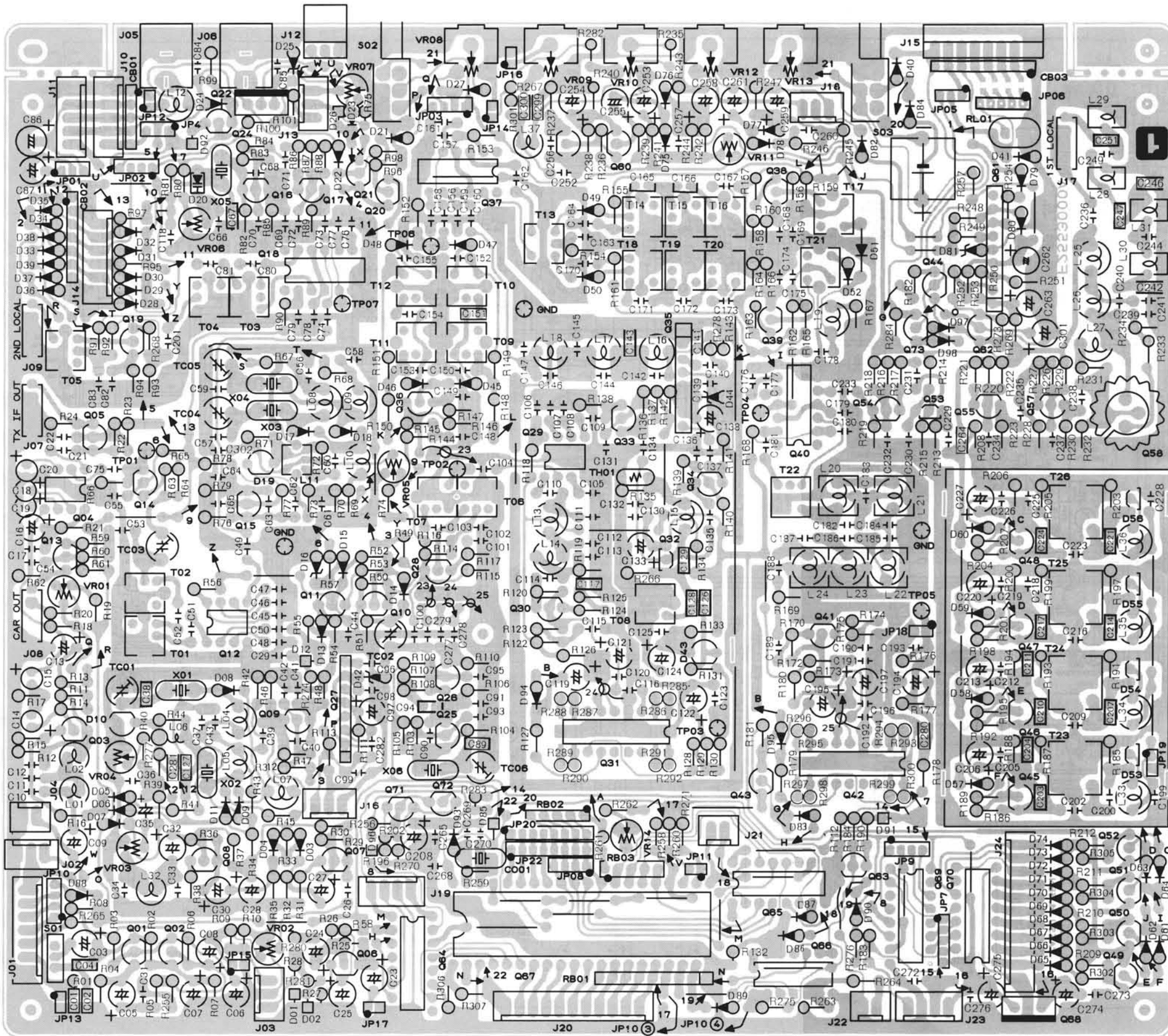


RF UNIT IC VOLTAGE CHART (DC VOLTS)

PIN No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	REMARKS
Q1002	8.1	8.1					0	0		7.2								8.1	MARKER ON
Q1022			6.9	7.3	1.1	1.1							2.6	0.7					
Q1029	-6.6	5.2	3.4	-8.0	3.1	3.4	6.8	7.9											SOL MIN
Q1029	7.0		3.4	-8.0	9.1	3.4	6.8	7.9											SOL MAX
Q1030					7.9	8.8	7.1					7.2	7.8	7.9					SOL MIN
Q1037		13.4																	
Q1046	-1.4			-8.0				-4.5	7.9										
Q1051									7.9										
Q1054	3.1	3.1	3.1	3.2	-0.8	-0.8							7.3	7.3	7.9				
Q1060	0	0	7.9	8.0	0.6	0.6	0	7.3	0	8.0	8.0	14.1	0.6	8.0					RX-TX
Q1060	7.3	7.3	0	8.0	0.6	0.6	0	7.3	0	8.0	8.0	14	0.6	8.0					MODE CW TX

LOCAL UNIT PARTS LAYOUT

(component side)

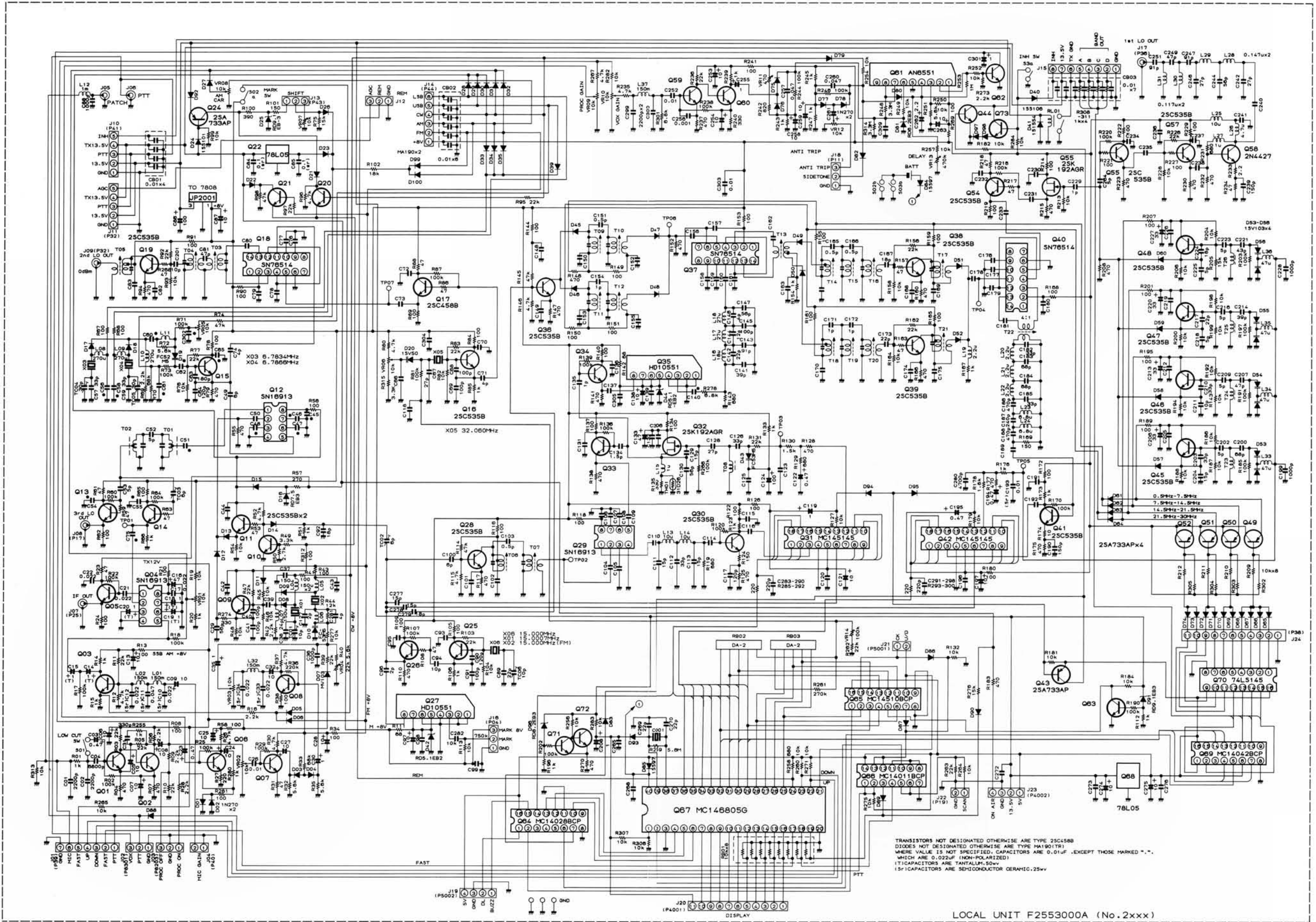


LOCAL UNIT IC VOLTAGE CHART

(DC VOLTS)

PIN No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	REMARKS
Q2004	—	—	2.5	0	2.6	3.6	3.6	7.2											
Q2012	—	—	2.3	0	—	3.2	3.2	6.4											
Q2018	—	7.2	—	3.9	—	—	—	—	2.6	3.9	—	3.9	—	—					
Q2027	0	0	—	0	4.9/0.7	0	4.9/0.7	—											MARKER ON/OFF
Q2029	—	—	2.5	0	—	3.5	3.5	7.1											
Q2031	—	—	—	0	7.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Q2035	0	0	—	0	4.9	4.9	4.9	—											
Q2037	—	7.1	—	—	—	—	—	—	—	—	—	—	—	—					
Q2040	—	7.8	—	—	—	—	—	—	2.5	3.9	—	3.9	—	—					
Q2042	—	—	—	0	6.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Q2051	7.8	1.4	7.2	3.9	0	0.9	2.8	1.4	—										
Q2054	0	0	—	—	—	0	0	0	—	0	0	0	0	0	0	5.1			
Q2055	0	0	0	0	0	0	4.9	0	0	5.6	0	0	4.6	5.1	5.0	5.1			
Q2056	5.1	5.1	0	4.9	0	0	0	0	0	5.1	0	4.3	4.3	5.1					
Q2059	0	5.1	0	0	0	5.1	0	0	0	5.1	0	4.6	0	—	5.1				
Q2070	12.9	12.9	13.5	13.5	1.0	0.5	12.9	0	12.9	12.5	12.4	0	5.1	0	5.1	5.1			20m

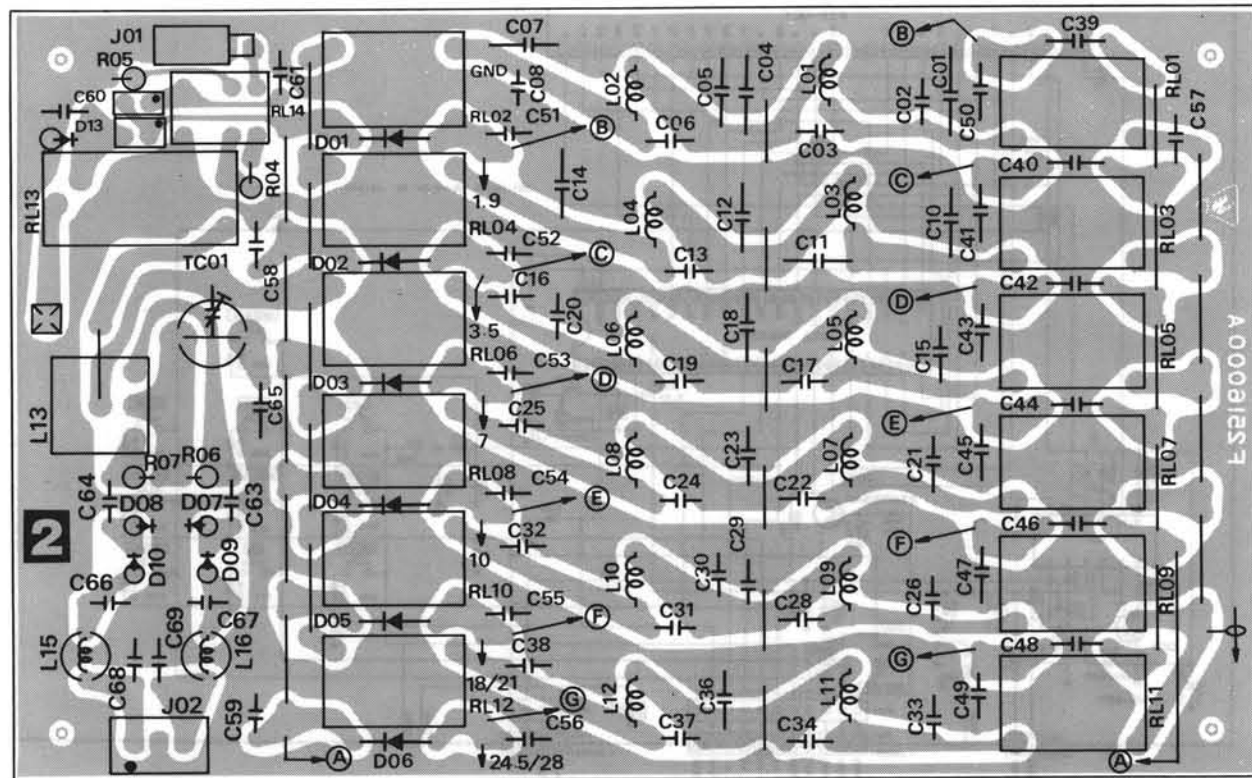
LOCAL UNIT SCHEMATIC DIAGRAM



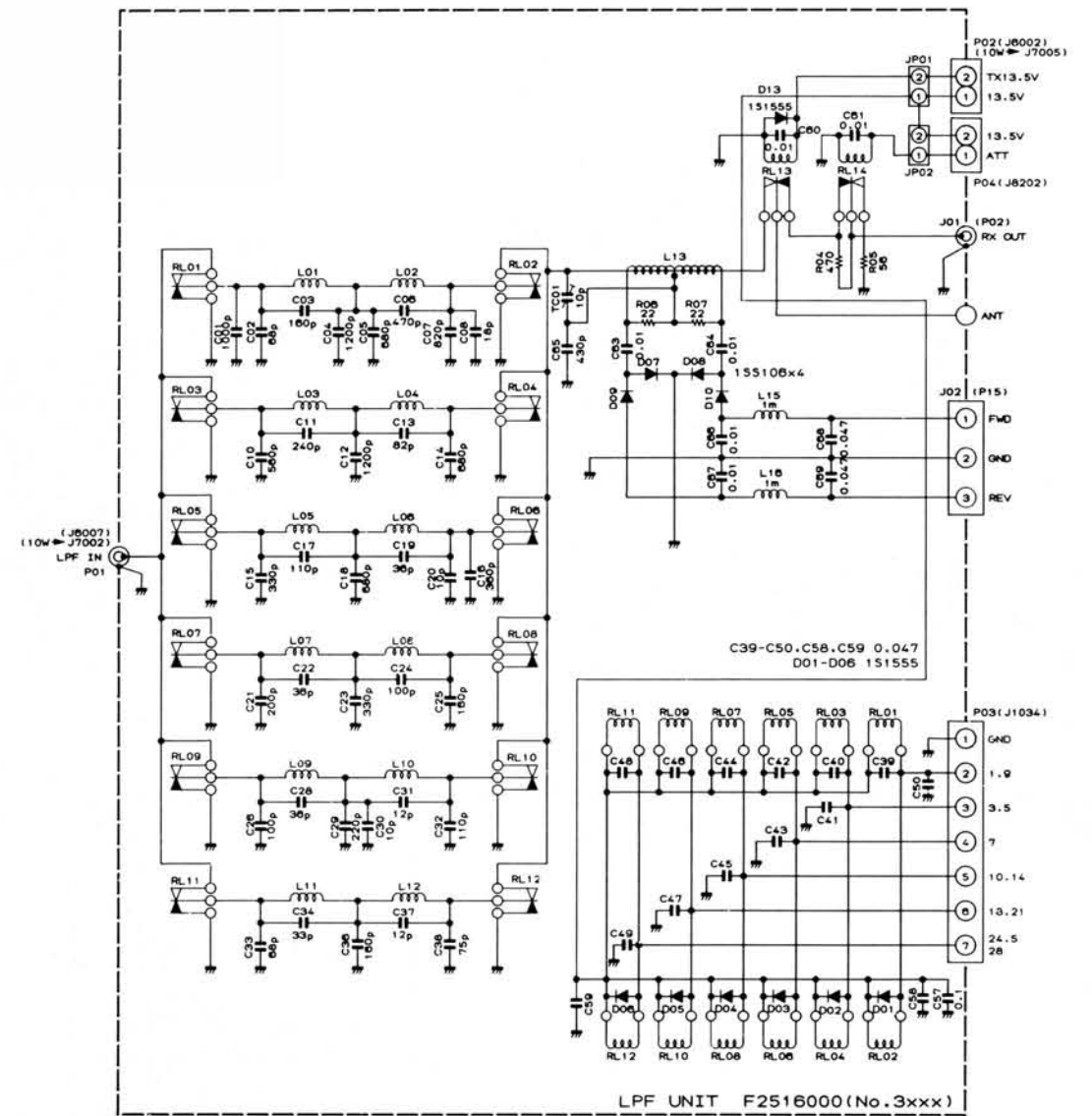
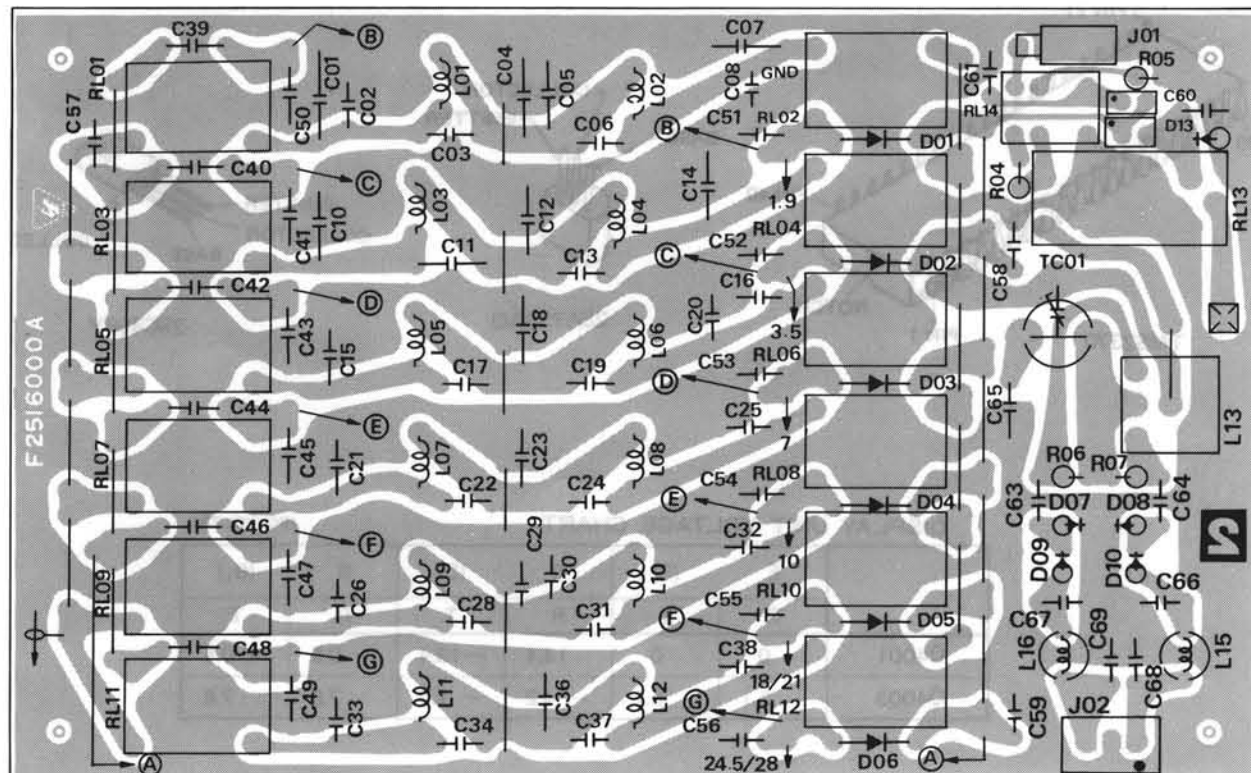
LOCAL UNIT F255300A (No. 2xXX)

LPF UNIT PARTS LAYOUT

Component Side

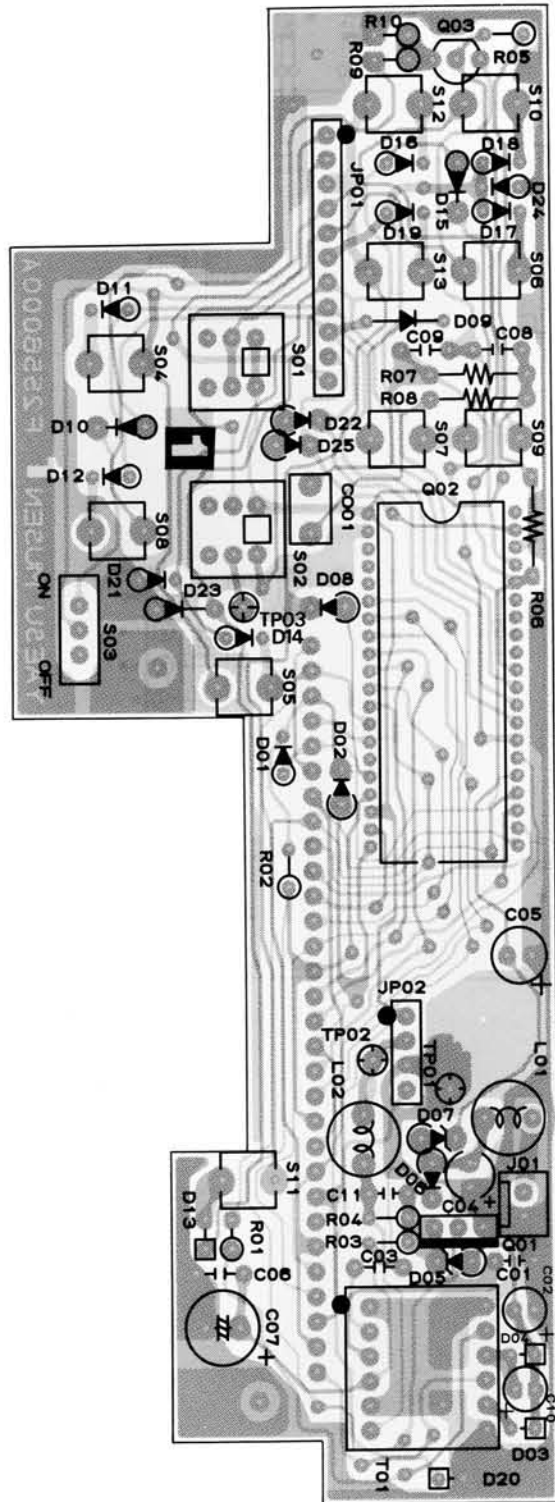


Solder Side

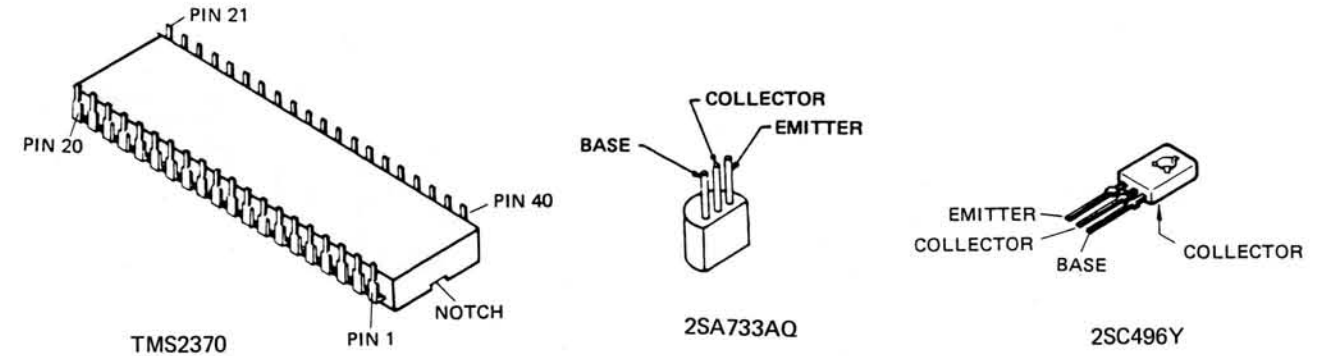
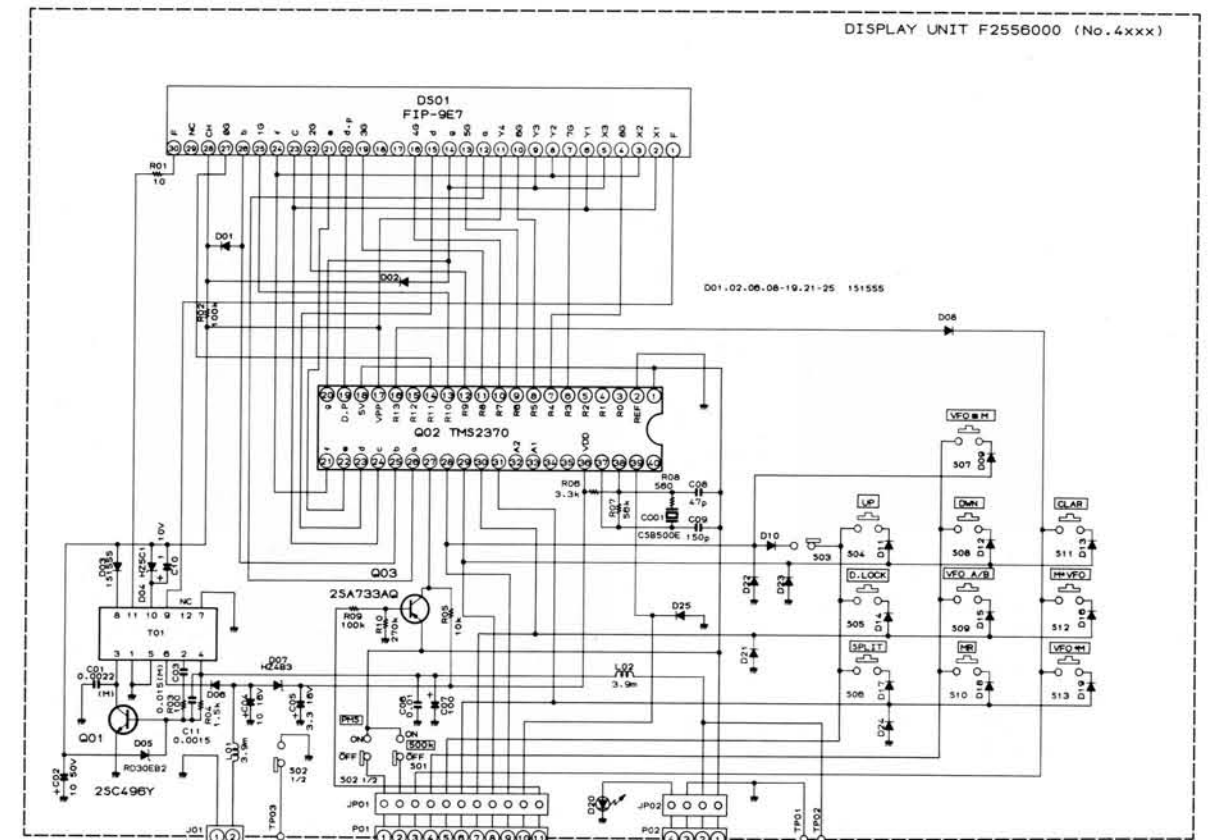
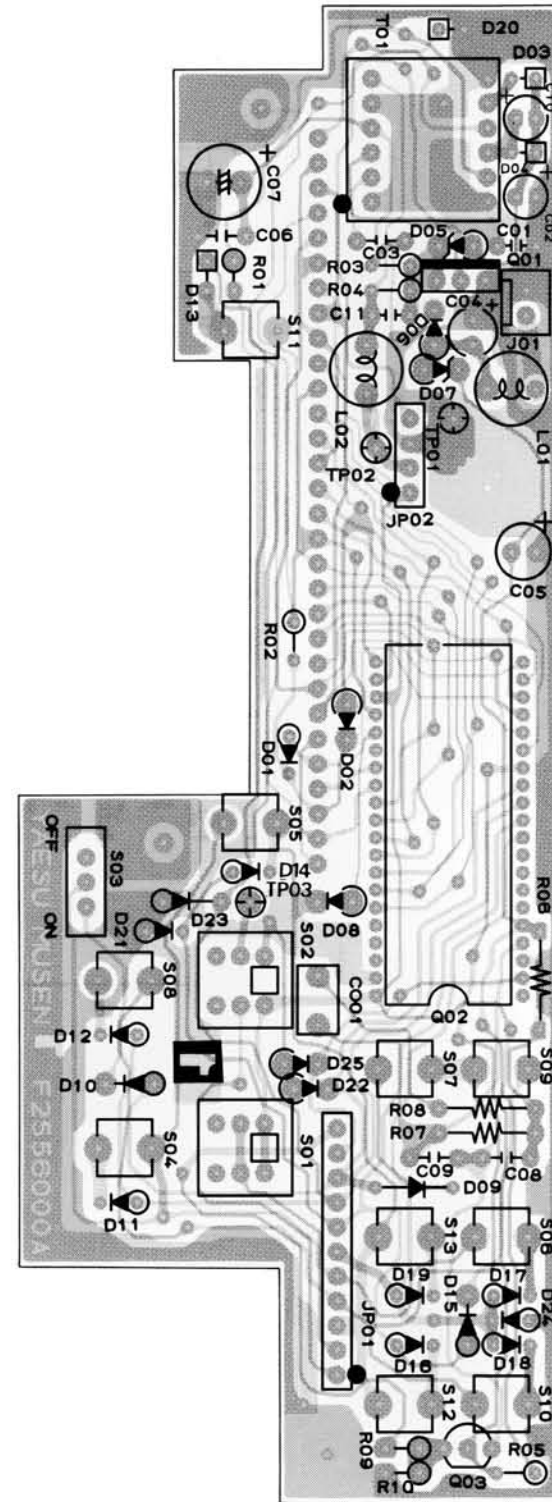


DISPLAY UNIT PARTS LAYOUT

Component Side



Solder Side

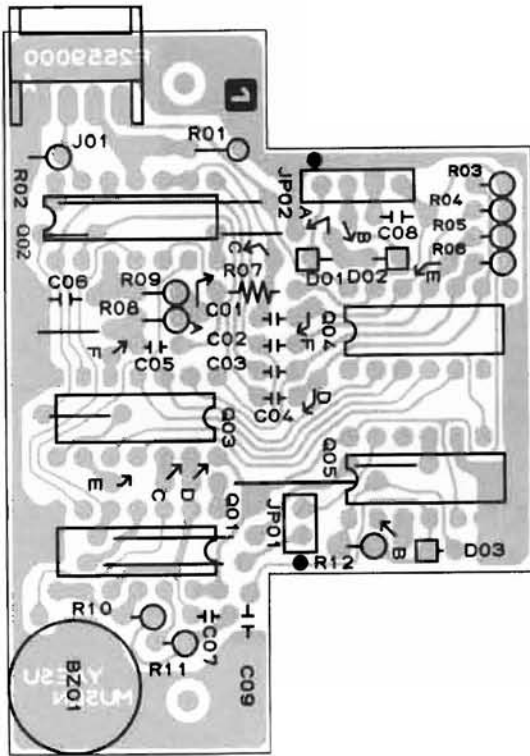


DISPLAY UNIT VOLTAGE CHART (DC VOLTS)

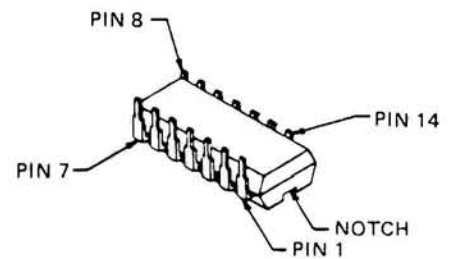
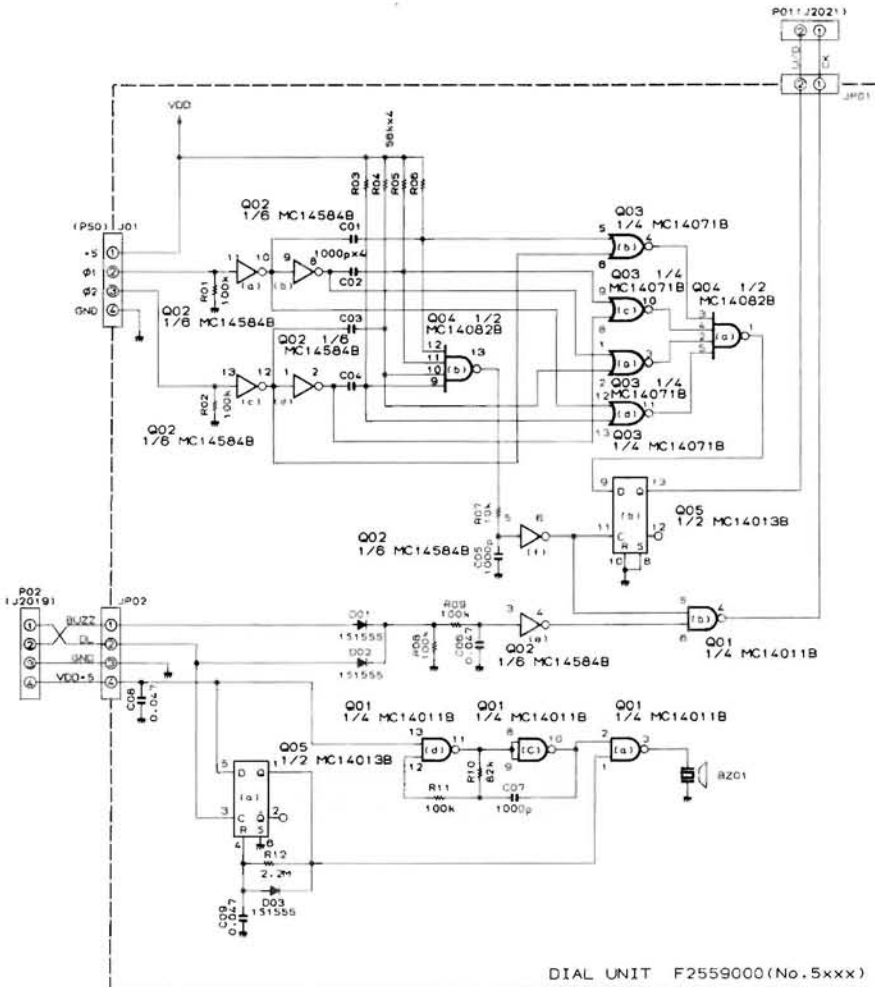
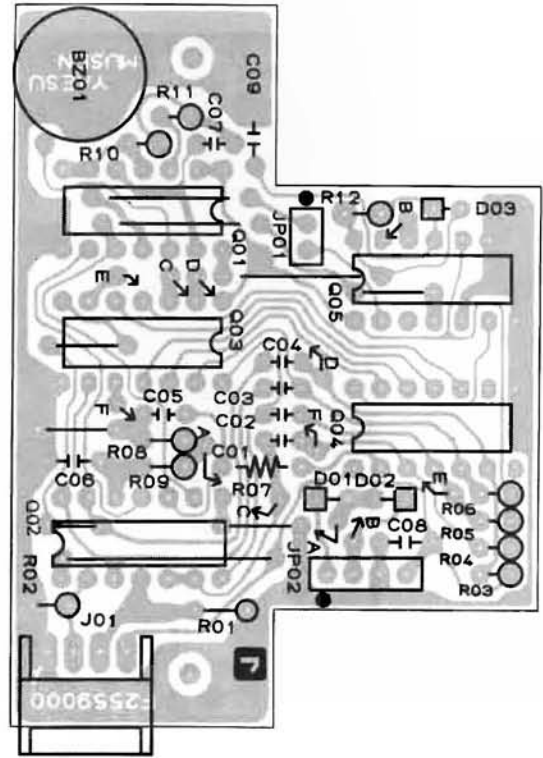
	E	(S)	C	(D)	B	(G ₁)
	R	T	R	T	R	T
Q4001	0	0	13.4	-13.4	-0.5	-0.5
Q4003	5.1	5.1	-4.2	-4.2	7.8	7.8

DIAL UNIT PARTS LAYOUT

Component Side



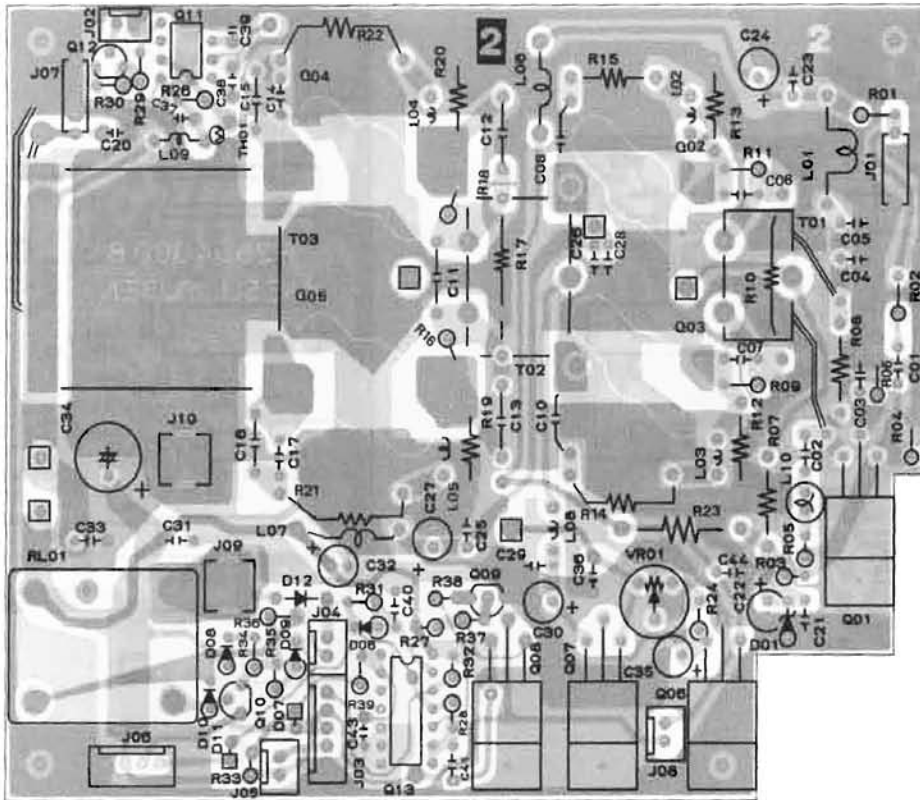
Solder Side



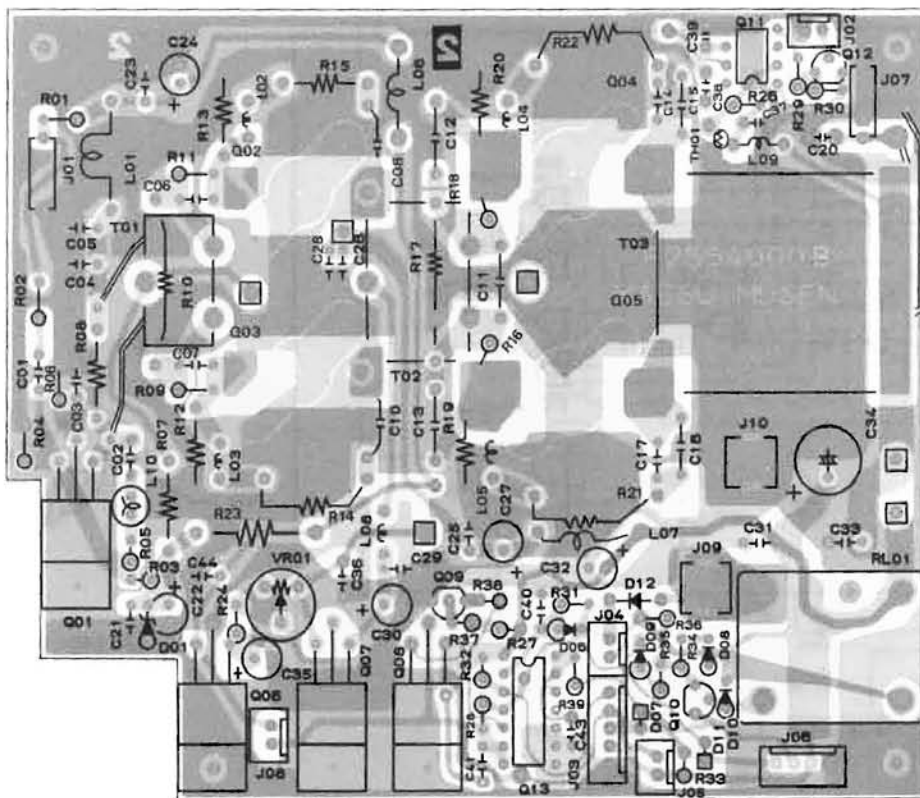
- MC14011BCP
- MC14013BCP
- MC14071BCP
- MC14584BCP

100W PA UNIT PARTS LAYOUT

Component side

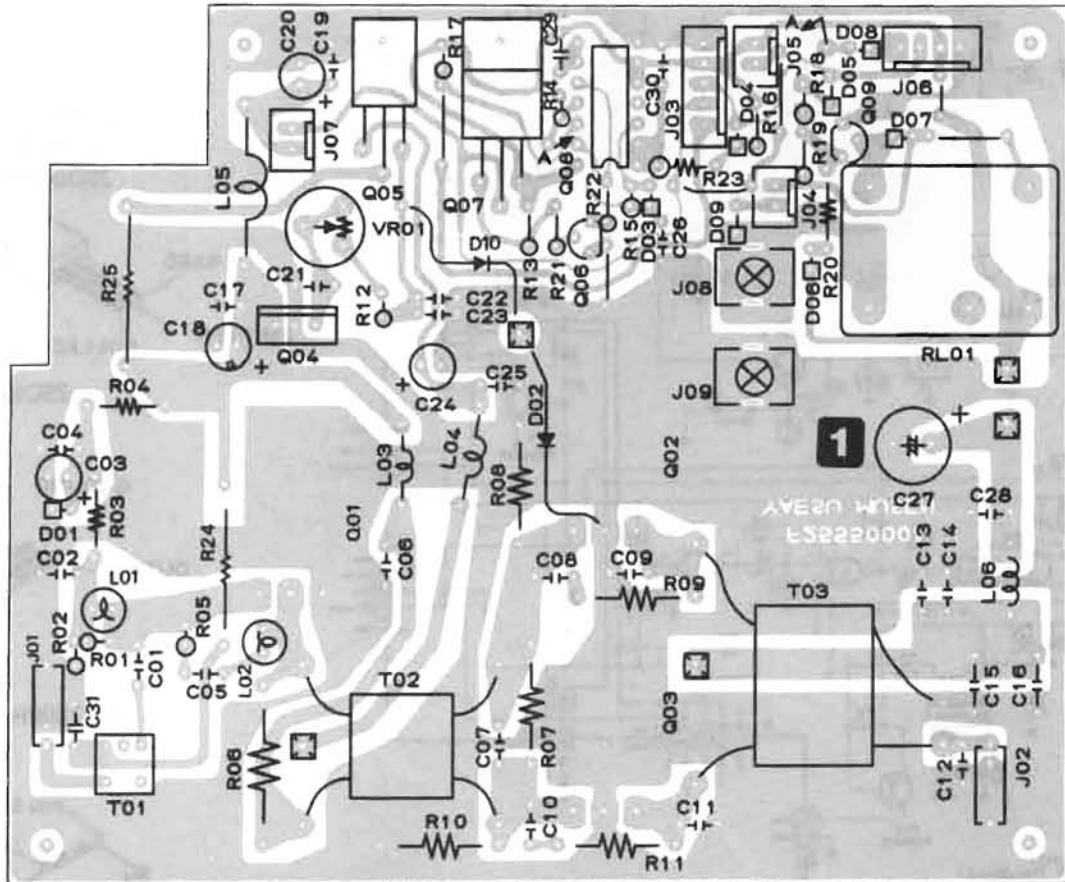


Solder side

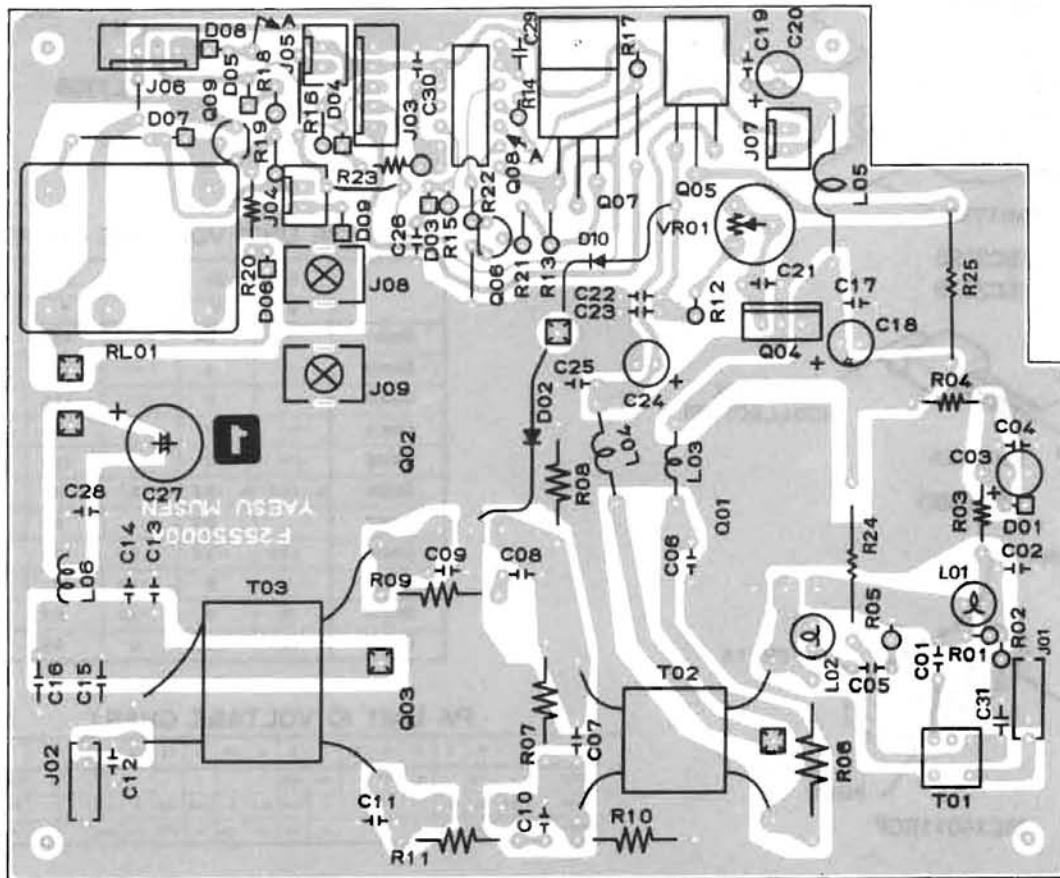


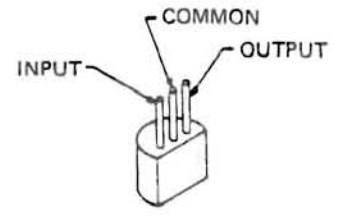
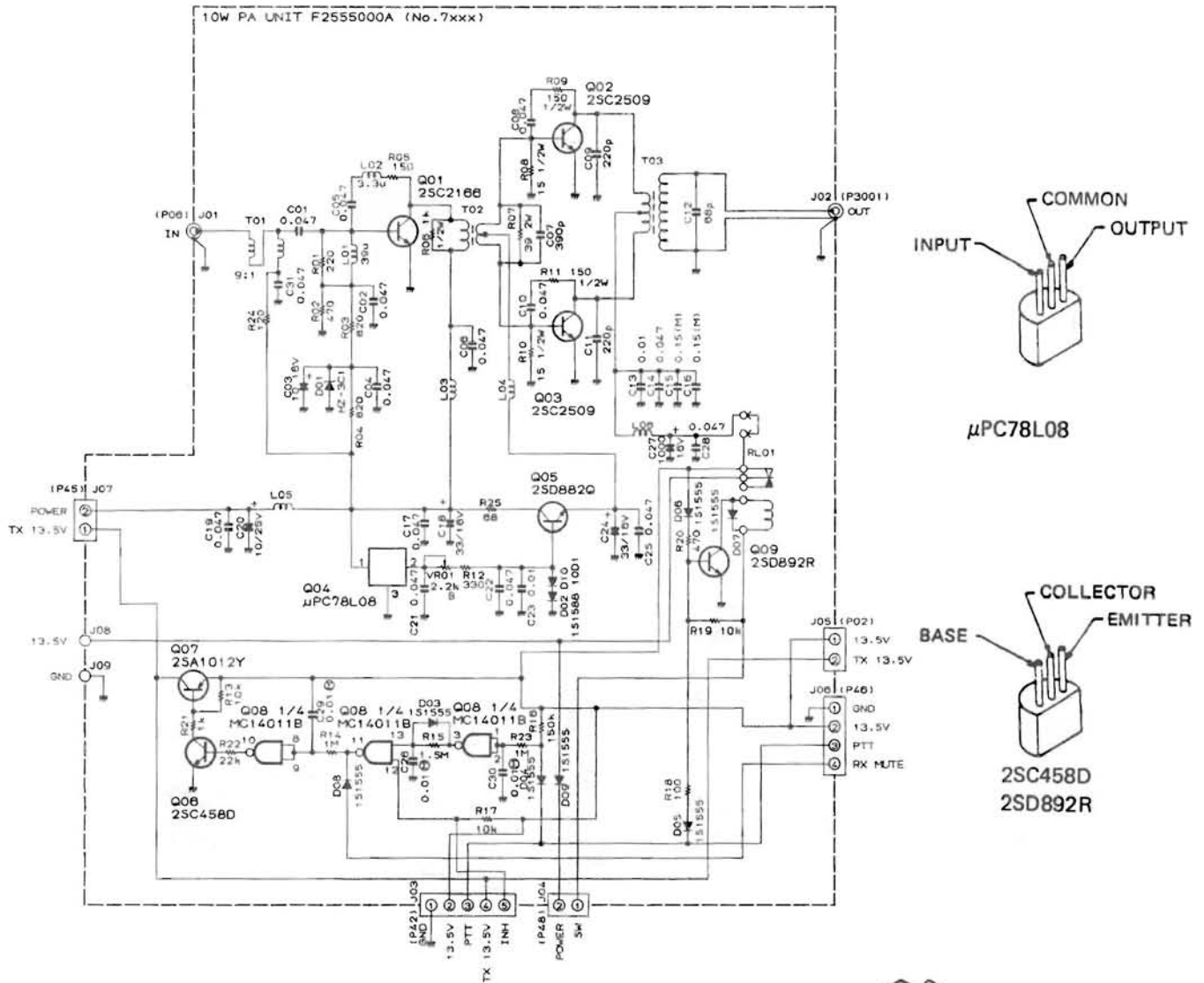
10W PA UNIT PARTS LAYOUT

Component side

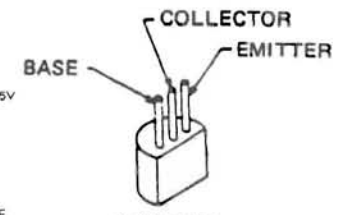


Solder side

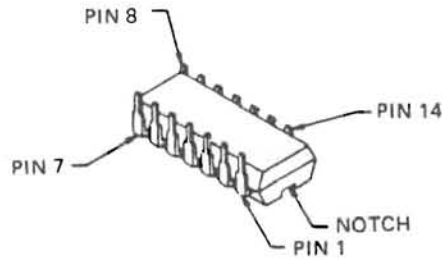




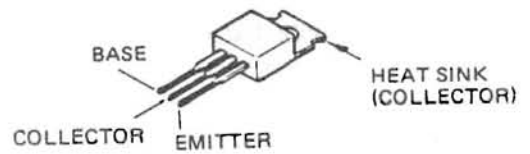
μPC78L08



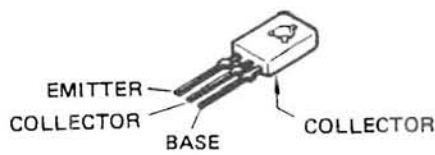
2SC458D
2SD892R



MC14011BCP



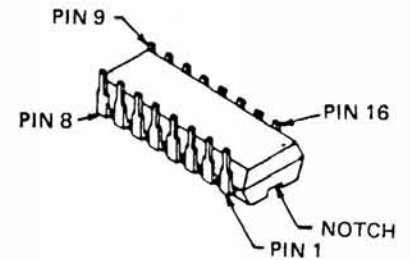
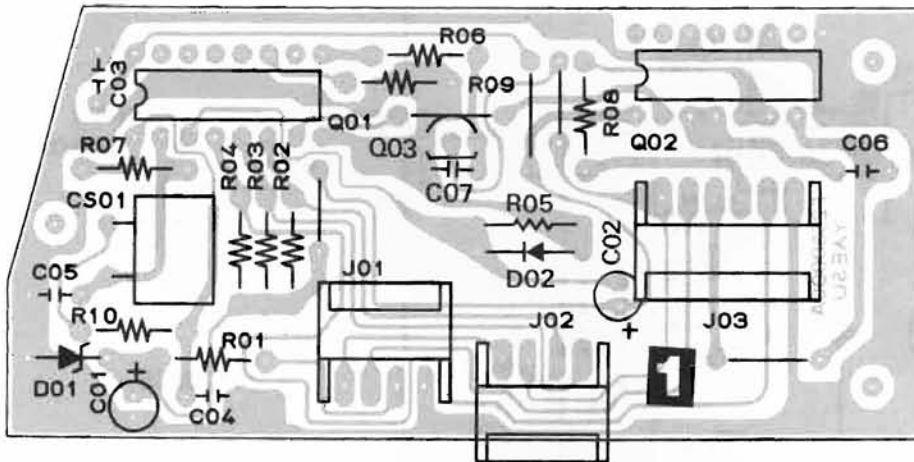
2SA1012Y
2SC2166
2SC2509



2SD882Q

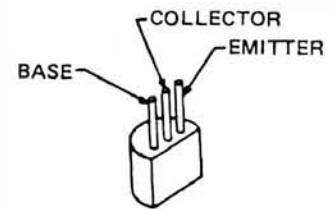
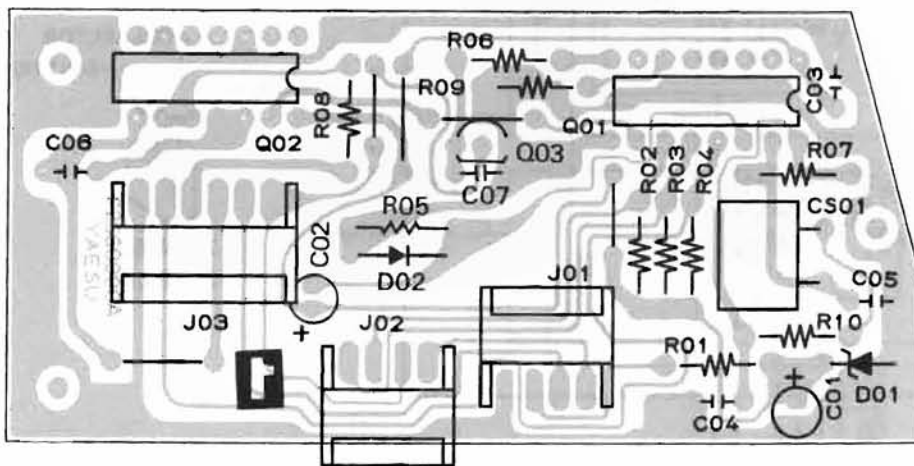
KEYER UNIT PARTS LAYOUT

Component Side



MC14049UBCP
TMS1751C

Solder Side

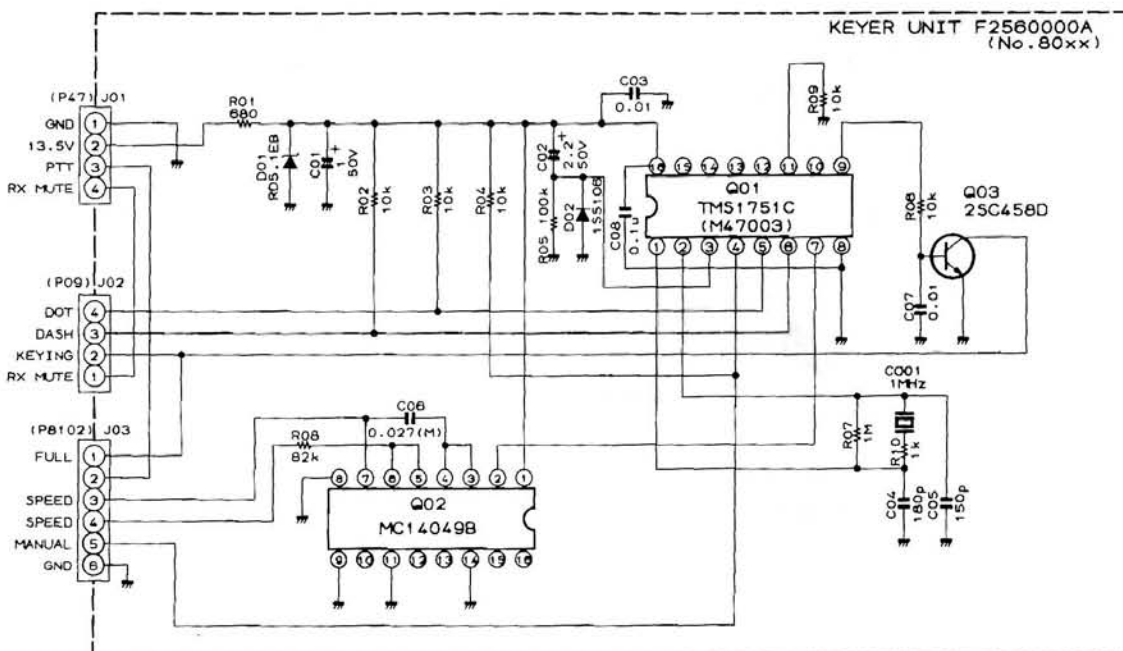


2SC458D

KEYER UNIT VOLTAGE CHARTS (DC VOLTS)

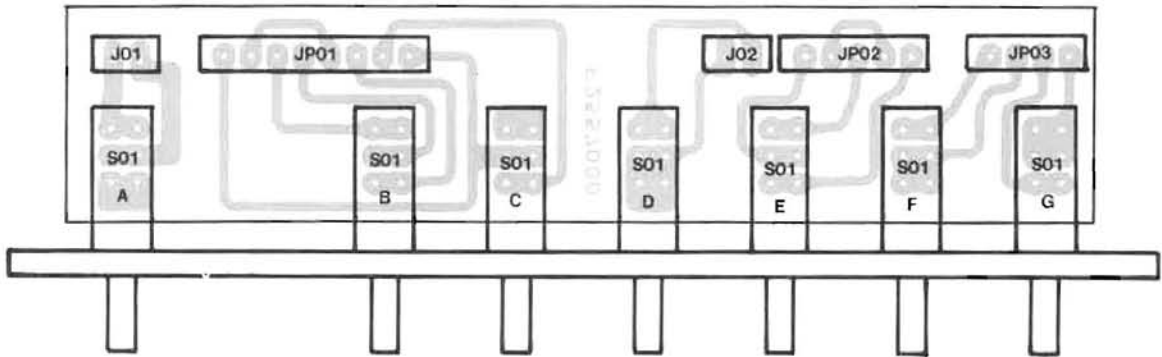
	E	(S)	C	(D)	B	(G)
	MARK	SPACE	MARK	SPACE	MARK	SPACE
Q8003	0	0	0	6.8	0.7	0

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Q8001 AUTO	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	5.0
Q8001 MANUAL	-	-	-	4.2	-	-	-	-	-	-	-	-	-	-	-	5.0
Q8001 SPACE	-	-	-	0	0	-	0	0	-	0	-	-	-	-	-	5.0
Q8001 MARK	-	-	-	4.5	4.5	-	4.8	4.8	-	4.8	-	-	-	-	-	5.0
Q8002	4.0	-	-	-	-	-	0	0	-	0	-	0	-	0	-	-

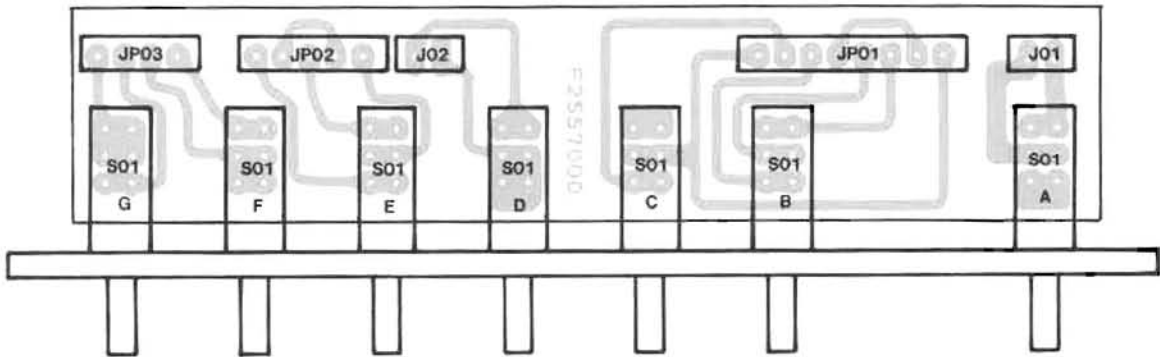


SWITCH UNIT A

Component Side

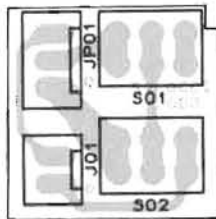


Solder Side

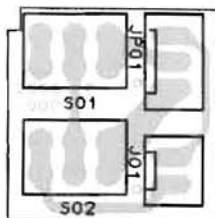


SWITCH UNIT B

Component Side

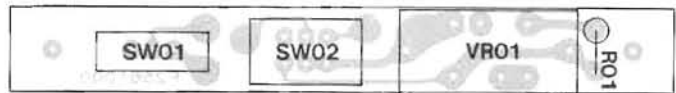


Solder Side

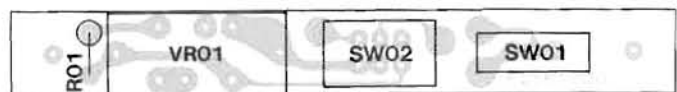


KEYER CONTROL UNIT

Component Side



Solder Side



MEMO

FT-757GX PARTS LIST

MAIN CHASSIS				R3500310	FT-18VF
Symbol No.	Part No.	Name & Description		R6100760A	FT-18D
		IC		R3100770B	FT-13WK
Q1	G1090294	μPC7808H		R3100780A	FT-9
				R3100790A	Push Button A
				R3100800A	" B
				R3100810A	" C
R1, 2	J01245101	RESISTORS Carbon Film 1/4W TJ 100Ω		R3100820A	" D
				R3100830A	" E
				R3100840A	" F
				R3100850A	" G
VR1	J62800082	POTENTIOMETER K16BA001R 5KB/10KA RF/AF		R3100860A	" H
VR2, 4	J62800083	K16BA001R 10KBx2 WIDTH/SHIFT, DRIVE/MIC		R3100870A	" J
VR3	J63800003	K16C2001A 50KB 10KBx2 SQL/NB		R3100880A	" K
				R3100890	Slide Knob A
				R3100900	" B
		CAPACITORS		RF UNIT	
C1	K10176102	Ceramic Disc 50WV 0.001μF (DD104B102K50V)	Symbol No.	Part No.	Name & Description
C2	K19179001	" " 50WV 0.1μF (RSB305YF104Z6L5)		F2551000	Printed Circuit Board
				C025510A	PCB with Components
					ICS
		METER	Q1002	G1090108	MC14518BCP
M1	M0290041	Y-40-W (3890)	Q1022	G1090389	MC3359
			Q1029, 1046, 1051	G1090246	AN6552
			G1030, 1055	G1090257	MC14066B
		SPEAKER	Q1037	G1090494	MB3713
SP1	M4090061	SS-70T	Q1058	G1090294	μPC7808H
			Q1060	G1090068	MC14011B
		SWITCH			
S1	N0190126	SRN-2-4-6			FETS
			Q1003, 1004, 1006- 1008, 1040, 1049	G3801250	2SK125
		LAMPS	Q1010, 1011, 1042 1043, 1053	G3801070C	2SK107-3
PL1,2	Q1000047	BQ044-32514M	Q1012, 1013, 1016- 1018, 1027, 1048	G4800730G	3SK73GR
	S2000006	Color Cap	Q1021	G3802410G	2SK241GR
		RECEPTACLES			
J1	P0090158	FM-214-8SS MIC			
J2	P1090134	S-G7627 PHONES			TRANSISTORS
J3	P1090352	FM-MDR-MI ANT	Q1005, 1009, 1039 1045, 1052, 1059 1063	G3107331Q	2SA733AQ
J4	P0090026	QS-1B4M POWER	Q1056, 1057	G3111930K	2SA1193K
J5/P12		5240-021	Q1001, 1014, 1015 1019, 1020, 1023- 1026, 1028, 1031 1036, 1038, 1044 1047, 1055, 1061 1062, 1064	G3303800Y	2SC380TMY
		ROTARY ENCODER			
	Q9000249	Z99-W-09 (M8307009)			
		MOTOR			
MOTOR 1	M2190004	MDN-7R1	Q1032-1035	G3304580B	2SC458B
	R3500250	Radial FAN	Q1041	G3319230O	2SC1923O
			Q1050	G3090010	2N4427
		GROUND TERMINAL			DIODES
	Q9000078	T-10	D1001-1006, 1017 1018, 1021-1023 1027-1037, 1040 -1047, 1052-	G2090237	Si MA190
		KNOBS			
	R3100730A	FT-50V MAIN TUNING			
	R7100750A	Rubber Ring			

R1021, 1027, 1032 1033, 1039, 1040 1044, 1058, 1081 1087, 1094, 1101 1114, 1118, 1126 1131, 1135, 1144 1145, 1169, 1170 1193, 1205, 1209 1211, 1214, 1216 1239, 1260, 1264	J02245104	" " " " 100kΩ	1137, 1150, 1152 1176		(DD105SL101J50V)
			C1012	K00179015	" " " " 110 pF (DD105SL111J50V)
			C1032	K00175121	" " " " 120 pF (DD105SL121J50V)
			C1006, 1157	K00175151	" " " " 150 pF (DD106SL151J50V)
			C1175	K00175221	" " " " 220 pF (DD107SL221J50V)
R1281	J01215104	" " 1/8W TJ 100kΩ	C1018, 1097, 1098	K00179020	" " " " 240 pF (DD107SL241J50V)
R1031, 1057, 1111 1132, 1143, 1151 1154, 1160	J02245154	" " 1/4W SJ 150kΩ	C1025	K00179021	" " " " 300 pF (DD107SL301J50V)
R1257, 1268	J02245224	" " " " 220kΩ	C1169-1171	K06179018	" " " UJ 330 pF (DD110UJ331J50V)
R1108	J02245334	" " " " 330kΩ			
R1246	J02245474	" " " " 470kΩ	C1017, 1019	K00175681	" " " SL 680 pF (DD110SL681J50V)
R1218, 1251, 1273 1274	J02245105	" " " " 1MΩ	C1072, 1074-1078 1080, 1142, 1145 1146, 1222, 1228- 1230, 1237-1240 1249	K12171102	" " " E 0.001μF (DD104E102P50V)
R1090	J02245155	" " " " 1.5MΩ			
R1019, 1258	J02245225	" " " " 2.2MΩ			
		POTENTIOMETERS			
VR1001	J51745332	H0651A010-3.3KB 3.3kΩB	C1224, 1271	K10176102	" " " B 0.001μF (DD104B102K50V)
VR1005-1007	J51745472	H0651A011-4.7KB 4.7kΩB	C1021, 1028, 1035 1042, 1049, 1056 1058, 1081, 1083- 1085, 1087, 1088 1091-1094, 1096 1101-1112, 1115 1119, 1120, 1123 1124, 1133, 1144 1149, 1151, 1166 1168, 1172, 1174 1177, 1216-1218 1220, 1221, 1223 1225-1227, 1231 1232, 1243, 1256 1268, 1269, 1275 1276	K13179008	" " " F 0.01μF (DD106F103Z50V)
VR1002, 1004, 1008 1010	J51745103	H0651A013-10KB 10kΩB			
VR1003	J51745473	H0651A017-47KB 47kΩB			
VR1011	J51745105	H0651A025-1MB 1MΩB			
VR1009	J51757103	H1052C013-10KB 10kΩB			
VR1012	J50705102	EVNA1AA00B13-1KB 1kΩB			
		CAPACITORS			
C1167	K06172030	Ceramic Disc 50WV UJ 3 pF (DD104UJ030C50V)			
C1068	K00172040	" " " SL 4 pF (DD104SL040C50V)			
C1003, 1052, 1054	K00172050	" " " " 5 pF (DD104SL050C50V)			
C1045, 1047	K00173080	" " " " 8 pF (DD104SL080D50V)			
C1265	K00173100	" " " " 10 pF (DD104SL100D50V)	C1001, 1009, 1010 1013, 1015, 1059- 1063, 1069, 1070 1073, 1100, 1116- 1118, 1121, 1122 1125-1132, 1134- 1136, 1138, 1143 1178-1184, 1219 1236, 1241, 1242 1244, 1246, 1247 1250, 1251, 1259	K13179009	" " " " 0.047μF (DD110F473Z50V)
C1030, 1034	K00175120	" " " " 12 pF (DD104SL120J50V)			
C1038, 1040, 1278	K00175150	" " " " 15 pF (DD104SL150J50V)			
C1007, 1095, 1173	K00175220	" " " " 22 pF (DD104SL220J50V)			
C1031, 1033	K00179007	" " " " 30 pF (DD104SL300J50V)			
C1053	K00175330	" " " " 33 pF (DD104SL330J50V)	C1270, 1272, 1274	K19149021	Semiconductor Ceramic 25WV (UAT08X473K-L45AE) 0.047μF
C1024, 1026	K00175390	" " " " 39 pF (DD104SL390J50V)	C1113, 1266	K19149023	" " " " (UAT10X683K-L45AE) 0.068μF
C1002, 1046, 1079	K00175470	" " " " 47 pF (DD104SL470J50V)	C1154-1156, 1160 1215, 1235, 1254	K19149025	" " " " (UAT10X104K-L46AE) 0.1μF
C1039	K00175560	" " " " 56 pF (DD104SL560J50V)	C1161, 1162, 1199 1263	K50177102	Mylar 50WV 0.001μF (50F2U102M)
C1004	K00175680	" " " " 68 pF (DD104SL680J50V)	C1189	K50177152	" " " " 0.0015μF (50F2U152M)
C1016, 1020	K00175750	" " " " 75 pF (DD104SL750J50V)	C1196	K50177222	" " " " 0.0022μF (50F2U222M)
C1005, 1023, 1027	K00175820	" " " " 82 pF (DD104SL820J50V)	C1163, 1164, 1187 1210, 1257, 1260 1261	K50177103	" " " " 0.01μF (50F2U103M)
C1086, 1089, 1114	K00175101	" " " " 100 pF			

C1194	K50177153	" "	0.015μF	L1056	L1190133	LAL04NA101K	100μH
		(50F2U153M)					
C1140, 1147, 1190 1204-1206, 1258	K50177223	" "	0.022μF				
		(50F2U223M)				TRANSFORMERS	
C1195	K50177333	" "	0.033μF	T1001, 1002	L0020789A		
		(50F2U333M)		T1003, 1026, 1027	L0020788A		
C1234	K40179010	Electrolytic	50WV (50RE-0.47)	0.47μF	T1004, 1006, 1023-1025	L0021225	
C1011, 1014, 1141 1148, 1165, 1185 1186, 1191, 1193 1200, 1202, 1203	K40179013	" "	1μF	(50RE1)	T1005	L0021224	
					T1007	L0021396	
					T1008-1012, 1018 1020	L0021199	
C1139, 1159, 1208 1233	K40179012	" "	4.7μF	(50RE4R7)	T1013, 1014, 1017 1019	L0020422	
C1022, 1029, 1036 1043, 1050, 1057 1099, 1153, 1158 1192, 1207, 1248 1252, 1267	K40179014	" "	10μF	(50RE10)	T1015, 1016	L0020420	
					T1021	L0021395	
					T1022	L0021233	
C1188, 1197, 1198 1201	K40149025	" "	25WV (25RE22)	22μF			FERRITE BEADS
						L9190001	Ri3x3x1
C1212, 1264	K40149022	" "	47μF	(25RE47)			
C1214, 1253	K40149003	" "	100μF	(25RE100)			RELAY
					RL1001	M1190052	MR62-12S
C1211	K40129031	" "	16WV (16RC470)	470μF			
C1274	K70120002	Tantalum	16WV (489D106X0016C1)	10μF			SWITCH
					SI001	N6090046	SSP322
		BLOCK CAPACITOR					CONNECTORS
CB1001	K80000002	CA1036		J1001, 1004, 1013 1023, 1025, 1029	P1090255		TMP-JA
				J1002, 1005-1008 1015, 1024, 1026 1037, 1038	P0090191		B2B-XH-A
		INDUCTORS					
L1001	L0021221						
L1002	L0021222						
L1003, 1050, 1052 1057, 1036, 1037 1039	L1190175	LHL06NA101K	100μH	J1003, 1011, 1012 1014, 1018, 1027	P0090192		B3B-XH-A
				J1020, 1021, 1032	P0090193		B4B-XH-A
				J1017, 1035	P0090194		B5B-XH-A
L1004, 1008	L1190184	LHL06NA561K	560μH	J1034	P0090196		B7B-XH-A
L1005, 1007	L1190171	LHL06NA470K	47μH	J1010	P0090197		B8B-XH-A
L1006	L1190020	FL5H-151K	150μH	J1031	P0090200		B11B-XH-A
L1009, 1013, 1015 1017	L1190168	LHL06NA270K	27μH	J1009	P0090352		3022-03A
				J1016, 1028, 1033	P1090348		S-Q3097-01 Black
L1010, 1012	L1190172	LHL06NA560K	56μH	J1036	P1090354		S-Q3097-04 Yellow
L1011	L1190070	FL4H-8R2K	8.2μH	J1019	P1090350		S-G8035
L1014, 1018	L1190167	LHL06NA220K	22μH	J1022	P1090351		S-G4617
L1016	L1190013	FL4H-6R8K	6.8μH	J1030	P1090296		S-Q3397-02
L1019, 1023	L1190165	LHL06NA150K	15μH				
L1020, 1022, 1046 1047	L1190163	LHL06NA100K	10μH				LAMP FUSE
L1021	L1190110	FL4H-4R7M	4.7μH	F1001	QI000010		BQ041-22803A
L1024, 1028	L1190160	LHL06NA5R6K	5.6μH				
L1025, 1027	L0190068	RC855-8R2K	8.2μH				
L1026	L1190087	FL4H-1R5M	1.5μH				HEATSINK
L1029, 1033	L0190063	RC855-3R3M	3.3μH		R5047914B		T0-5
L1030, 1032	L0190066	RC855-5R6K	5.6μH		R0100930A		
L1031	L1190005	FL4H-1R0M	1μH		R0103450		Shield Plate
L1034, 1038, 1045 1048, 1049, 1051	L1190187	LHL06NA102K	1mH				
L1040-1043	L1190121	S4-101K	100μH				TP TERMINAL
L1044	L0021394				Q5000037		TP-H
L1053	L1190159	LHL06NA4R7K	4.7μH				
L1054	L1190158	LHL06NA3R9K	3.9μH				
L1055	L1190113	FL3H-R22M	0.22μH				

C2204	K06175150	" " " UJ 15 pF (DD104UJ150J50V)	C2063	K02179023	" " " " 180 pF (DD110CH181J50V)
C2092, 2167, 2279	K00175180	" " " SL 18 pF (DD104SL180J50V)	C2187	K00179020	" " " SL 240 pF (DD107SL241J50V)
C2224	K06175180	" " " UJ 18 pF (DD104UJ180J50V)	C2031	K00175331	" " " " 330 pF (DD107SL331J50V)
C2089	K06179004	" " " " 20 pF (DD104UJ200J50V)	C2186, 2188	K00175471	" " " " 470 pF (DD109SL471J50V)
C2217	K06175220	" " " " 22 pF (DD104UJ220J50V)	C2036, 2088, 2199 2228, 2256	K12171102	" " " " E 0.001μF (DD104E102P50V)
C2142, 2173	K00175220	" " " SL 22 pF (DD104SL220J50V)	C2001, 2002	K12171222	" " " " 0.0022μF (DD105E222P50V)
C2038	K02179010	" " " CH 24 pF (DD104CH240J50V)	C2037, 2039, 2042- 2044, 2050, 2066	K13179008	" " " " F 0.01μF (DD106F103Z50V)
C2067	K02179011	" " " " 27 pF (DD104CH270J50V)	2070, 2072, 2073 2076-2080, 2082		
C2128	K06175270	" " " UJ 27 pF (DD104UJ270J50V)	2083, 2093, 2095 2098, 2099, 2101		
C2242, 2246	K00175270	" " " SL 27 pF (DD104SL270J50V)	2102, 2104-2110 2114-2116, 2118		
C2269, 2270	K00179007	" " " " 30 pF (DD104SL300J50V)	2120, 2125, 2131 2132, 2136, 2137		
C2112, 2182, 2185	K00175330	" " " " 33 pF (DD104SL330J50V)	2139, 2148-2150 2152, 2153, 2155		
C2126, 2203, 2210	K06175330	" " " UJ 33 pF (DD104UJ330J50V)	-2159, 2161- 2164, 2168-2170		
C2057, 2059	K02175330	" " " CH 33 pF (DD105CH330J50V)	2174-2181, 2189 2191, 2192, 2196		
C2141	K00175390	" " " SL 39 pF (DD104SL390J50V)	2205, 2212, 2219 2226, 2230-2238		
C2214	K06175390	" " " UJ 39 pF (DD104UJ390J50V)	2240, 2241, 2265 2268, 2272, 2273		
C2221	K06179008	" " " " 43 pF (DD104UJ430J50V)	2276, 2282, 2303 -2307		
C2081, 2249	K00175470	" " " SL 47 pF (DD104SL470J50V)	C2017, 2021, 2022 2045-2048, 2051	K13179010	" " " " 0.022μF (DD108F223Z50V)
C2207	K06175470	" " " UJ 47 pF (DD104UJ470J50V)	2054-2056, 2058 2060-2062, 2065		
C2147, 2244	K00175560	" " " SL 56 pF (DD104SL560J50V)	2075, 2140, 2160 2302		
C2029	K02175560	" " " CH 56 pF (DD106CH560J50V)	C2299, 2300	K19149005	Semiconductor Ceramic 25WV (UAT04X222K-L05AE) 0.0022μF
C2130	K05175560	" " " RH 56 pF (DD106RH560J50V)	C2280	K19149009	" " " " (UAT05X472K-L05AE) 0.0047μF
C2200	K06175680	" " " UJ 68 pF (DD105UJ680J50V)	C2004	K19149011	" " " " (UAT05X682K-L05AE) 0.0068μF
C2183, 2184	K00175680	" " " SL 68 pF (DD104SL680J50V)	C2026, 2123, 2193 2252	K19149013	" " " " (UAT05X103K-L05AE) 0.01μF
C2143, 2247, 2251	K00179013	" " " " 91 pF (DD105SL910J50V)	C2010, 2012, 2033 2034	K19149017	" " " " (UAT06X223K-L45AE) 0.022μF
C2145	K00175101	" " " " 100 pF (DD105SL101J50V)	C2011, 2257, 2260	K19149021	" " " " (UAT08X473K-L45AE) 0.047μF
C2040, 2041	K02175101	" " " CH 100 pF (DD107CH101J50V)	C2084, 2085	K19149025	" " " " (UAT10X104K-L46AE) 0.1μF
C2068, 2069, 2091	K06175101	" " " UJ 100 pF (DD107UJ101J50V)	C2283-2298	K22170143	Ceramic Chip 50WV SL 220 pF (C2012SL1H221JFA)
C2090	K06175121	" " " " 120 pF (DD107UJ121J50V)	C2014, 2015, 2018- 2021	K70140007	Tantalum 25WV 1μF (489D105X0025A1)
C2064	K02175121	" " " CH 120 pF (DD109CH121J50V)	C2308	K70120002	" " " " 16WV 10μF (489D106X0016C1)
C2117	K00175121	" " " SL 120 pF (DD107SL121J50V)	C2003, 2023, 2122 2194, 2195	K40179010	Electrolytic 50WV 0.47μF (50RE-R47)
C2190	K00175151	" " " " 150 pF (DD106SL151J50V)	C2035, 2119, 2255 2261, 2301	K40179013	" " " " 1μF (50RE1)
C2239	K02175151	" " " CH 150 pF (DD109CH151J50V)	C2262	K40179009	" " " " 2.2μF (50RE2R2)

C2005–2009, 2013 2024, 2025, 2027 2028, 2032, 2087 2097, 2121, 2138 2197, 2254, 2258 2259, 2263, 2274 2275	K40179014	" "	10 μ F (50RE10)			RELAY
				RL2001	M1190053	H112N
						SWITCHES
				S2001	N6090041	SSS312089
				S2002, 2003	N4090012	SPJ-22-A01
C2253	K40129004	" "	16WV (16RE10)	10 μ F		
C2206, 2213, 2220 2227	K40129008	" "	" "	33 μ F (16RE33)		CONNECTORS
C2016	K40109002	" "	10WV (10RE47)	47 μ F	J2004, 2021, 2022	P0090191 B2B-XHA
C2124	K40109001	" "	" "	100 μ F (10RE100)	J2002, 2003, 2013 2016, 2018	P0090192 B3B-XHA
C2086	K40129020	" "	16WV (16RC100)	100 μ F	J2012	P0090204 S3B-XHA
					J2019, 2023	P0090193 B4B-XHA
					J2010, 2011	P0090194 B5B-XHA
					J2014	P0090195 B6B-XHA
					J2001	P0090196 B7B-XHA
					J2015	P0090209 S8B-XHA
					J2020, 2024	P0090200 B11B-XHA
					J2007–2009, 2017	P1090255 TMP-JA
CB2001	K80000001	CA1034	0.01x4		J2005	P1090348 S-Q3097-01 Black
CB2002	K80000002	CA1036	0.01x6		J2006	P1090296 S-Q3097-02 Red
CB2003	K80000003	CA1037	0.01x7		P2001 with wire	T9204722A 3021-03
						TRIMMER CAPACITORS
TC2001, 2006	K91000085	CTZ51C112		10 pF		
TC2002, 2003	K91000108	CTZ51A157		6 pF	BAT2001	Q9000248 LITHIUM BATTERY
TC2004, 2005	K91000093	CTZ51F118		30 pF		
						TP TERMINALS
						INDUCTORS
						Q5000050 TP-K
L2001, 2002, 2032	L1190115	S-154K		150mH		Q5000037 TP-H
L2004, 2005, 2007	L1190177	LHL06NA151K		150 μ H		
L2006	L0021206A					R5047912B HEATSINK
L2008–2010	L1190180	LHL06NA151K		270 μ H		
L2011	L0020746					R0100940A Shield Case
L2012	L1190017	FL5H102K		1mH		R0100950 " Cover
L2013, 2014, 2025	L1190163	LHL06NA100K		10 μ H		R0102280 " Plate A
L2015, 2027	L1190151	LHL06NA1ROM		1 μ H		R0103060 " " B
L2016	L1190134	S4-180K		18 μ H		
L2017, 2018	L2290147	S4-270K		27 μ H		
L2019–2022	L1190155	LHL06NA2R2M		2.2 μ H		
L2022, 2023	L1190161	LHL06NA6R8K		6.8 μ H		
L2026	L1190159	LHL06NA4R7K		4.7 μ H		
L2028, 2029	L0021409					
L2030, 2031	L0021410					
L2033–2036	L1190171	LHL06NA470K		47 μ H		
						DIODES
					D3001–3006, 3013	G2015550 Si 1S1555
					D3007–3011	G2090244 Schottky Barrier 1SS106
T2001	L0021197					
T2002	L0021199					
T2003–2005	L0021337					
						RESISTORS
T2006, 2007, 2009 2010	L0020909				R3006, 3007	J01245220 Carbon Film 1/4W TJ 22 Ω
T2008	L0021205				R3005	J02245560 " " " SJ 56 Ω
T2011, 2012, 2018– 2021	L0020805				R3004	J02245471 " " " " 470 Ω
T2013, 2022	L0020788A					
T2014–2017	L0021338				C3003, 3025, 3036	K30275161 Dipped Mica 500WV 160 pF (LCQ17161J5)
T2023	L0021398					
T2024	L0021399				C3021	K30275201 " " " " 200 pF (LCQ17201J5)
T2025	L0021400					
T2026	L0021401					
	L9190016	Shield Case				

C3029	K30275221	" " 220 pF (LCQ17221J5)	L3013	L0021347		
			L3015, 3016	L1190017	FL5H-102K	1mH
C3011	K30275241	" " 240 pF (LCQ17241J5)				
C3015, 3023	K30275331	" " 330 pF (LCQ17331J5)			RELAYS	
			RL3001-3012	M1190050	DS1-S DC12V	
C3016	K30275361	" " 360 pF (LCQ17361J5)	RL3013	M1190005	NR-HD-12V	
			RL3014	M1190051	FBR22D12-P	
C3065	K30275431	" " 430 pF (LCQ18431J5)				
C3006	K30275471	" " 470 pF (LCQ17471J5)			CONNECTORS	
			J3001	P1090255	TMP-JA	
C3010	K30275561	" " 560 pF (LCQ18561J5)	J3002	P0090192	B3B-XHA	
			P3001 (with wire)	T9311501		
C3005, 3014, 3018	K30275681	" " 680 pF (LCQ18681J5)	P3002 "	T9204723	XHP-2	
			P3003 "	T9204724	XHP-7	
C3007	K30275821	" " 820 pF (LCQ18821J5)	P3004 "	T9204725A	XHP-2	
C3001	K30275102	" " 1000 pF (LCQ21102J5)			TP TERMINAL	
C3004, 3012	K30279095	" " 1200 pF (DM19D122J5)		Q5000025	Wrapping A	
C3020, 3030	K00275100	Ceramic Disc 50WV SL 10 pF (DD06SL100D500V)	DISPLAY UNIT			
C3031, 3037	K00275120	" " " " 12 pF (DD06SL120J500V)	Symbol No.	Part No.	Name & Description	
				F2556000	Printed Circuit Board	
C3008	K00275180	" " " " 18 pF (DD06SL180J500V)		C025560A	PCB with Components	
C3034	K00275330	" " " " 33 pF (DD06SL330J500V)			IC	
C3019, 3022, 3028	K00275360	" " " " 36 pF (DD06SL360J500V)	Q4002	G1090546	TMS2370	
C3002, 3033	K00275680	" " " " 68 pF (DD09SL680J500V)			TRANSISTORS	
C3038	K00275750	" " " " 75 pF (DD09SL750J500V)	Q4003	G3107331Q	2SA733AQ	
			Q4001	G3304960Y	2SC496Y	
C3013	K00275820	" " " " 82 pF (DD09SL820J500V)			DIODES	
C3024, 3026	K00275101	" " " " 100 pF (DD09SL101J500V)	D4001, 4002, 4006	G2015550	Si	1S1555
C3017, 3032	K00275111	" " " " 110 pF (DD09SL111J500V)	4008-4019, 4021-4025			
C3060, 3061, 3063 3064, 3066, 3067	K13179008	" " 50WV F 0.01μF (DD106F103Z50V)	D4003	G2090132	Si	1SS55
			D4004	G2090188	Zener	HZ5C1
C3039-3050, 3058 3059, 3068, 3069	K13179009	" " " " 0.047μF (DD110F473Z50V)	D4005	G2090265	"	RD30EB2
			D4007	G2090266	"	HZ4B3
			D4020	G2090202	LED	LN410YP
					TRIMMER CAPACITOR	
TC3001	K91000012	ECV1ZW10x32 10 pF			DISPLAY	
			DS4001	G6090033	FIP9E7	
					INDUCTORS	
L3001	L0021405				CERAMIC RESONATOR	
L3002	L0021406		CO4001	H7900150	CSB500E	
L3003	L0020615				RESISTORS	
L3004	L0021433					
L3005	L0020617					
L3006	L0020618		R4001	J02245100	Carbon Film	1/4W SJ 10Ω
L3007	L0021407		R4003	J02245101	" " " "	100Ω
L3008	L0021408		R4008	J01245561	" " " "	TJ 560Ω
L3009	L0020621		R4004	J02245152	" " " "	SJ 1.5kΩ
L3010	L0020622		R4006	J01245332	" " " "	TJ 3.3kΩ
L3011	L0020623		R4005	J02245103	" " " "	SJ 10kΩ
L3012	L0020624		R4007	J01245563	" " " "	TJ 56kΩ

		RESISTORS					
R6017, 6021, 6022	J21339003	Metallic Film 2W (ERG-2SJ390)	39Ω	C6022, 6024, 6027 6030, 6032, 6035	K70140013	Tantalum 25WV (489D106X0025D1)	10μF
R6023	J21339004	" " " (ERG-2SJ680)	68Ω	C6037	K40179013	Electrolytic 50WV (50RE1)	1μF
R6009, 6011, 6016 6018	J02275159	Carbon Film 1/2W SJ	1.5Ω	C6039	K40129016	" 16WV (16RE22)	22μF
R6006	J02245479	" " 1/4W "	4.7Ω	C6034	K40129021	" " (16R102S)	1000μF
R6007, 6019, 6020	J01275180	" " 1/2W TJ	18Ω				
R6012, 6013	J01275240	" " " "	24Ω				
R6002	J02245330	" " 1/4W SJ	33Ω				
R6010	J01275390	" " 1/2W TJ	39Ω			INDUCTORS	
R6035	J02245101	" " 1/4W SJ	100Ω	L6001, 6006, 6007	L1020015		
R6001	J02245121	" " " "	120Ω	L6002-6005	L1020035A		
R6014, 6015	J01275121	" " 1/2W TJ	120Ω	L6009	L1190020		150μH
R6024	J02245221	" " 1/4W SJ	220Ω	L6010	L1190009	FL4H-3R3M	3.3μH
R6003-6005	J02245331	" " " "	330Ω				
R6034	J02245471	" " " "	470Ω				
R6008	J01275102	" " 1/2W TJ	1kΩ			TRANSFORMERS	
R6037	J02245102	" " 1/4W SJ	1kΩ	T6001	L0021402		
R6026	J02245392	" " " "	3.9kΩ	T6002	L0021403		
R6029, 6030	J02245472	" " " "	4.7kΩ	T6003	L0021404		
R6027, 6032, 6036	J02245103	" " " "	10kΩ				
R6038	J02245223	" " " "	22kΩ				
R6033	J02245154	" " " "	150kΩ			RELAY	
R6039	J02245105	" " " "	1MΩ	RL6001	M1190055	JB1a-DC12V	
R6028	J01245105	" " " TJ	1MΩ				
R6031	J02245155	" " " SJ	1.5MΩ				
						CONNECTORS	
				J6002, 6004, 6005 6008	P0090191	B2B-XHA	
		POTENTIOMETER					
VR6001	J51723102	H1051A004-1KB	1kΩB	J6006	P0090193	B4B-XHA	
				J6003	P0090194	B5B-XHA	
				J6001, 6007	P1090255	TMP-JA	
		CAPACITORS					
C6020	K30276820	Dipped Mica 50WV (LCQ12820K5)	82 pF		Q5000011	TERMINAL C	
C6009	K30276121	" " " (LCQ17121K5)	120 pF		R0100960A	HEATSINK	
C6045, 6046	K30276471	" " " (LCQ17471K5)	470 pF		Q9000192	THERMAL CONDUCTOR	
C6019	K30276621	" " " (LCQ18621K5)	620 pF		Q9000029	INSULATOR	
C6011	K30279092	" " " (DM19D751J5)	750 pF		R0100970	TERMINAL	
C6018	K30279051	" " " (DM19D102K5)	1000 pF	10W PA UNIT			
C6012, 6013	K30279097	" " " (DM19D502J5)	5000 pF	Symbol No.	Part No.	Name & Description	
C6006, 6007	K10179038	Ceramic Disc 50WV B (DD108B472K50V)	0.0047μF		F2555000	Printed Circuit Board	
C6002, 6003, 6026	K13179008	" " " F (DD106F103Z50V)	0.01μF		C025550A	PCB with Components	
C6001, 6004, 6008 6010, 6014, 6017 6021, 6023, 6025 6028, 6029, 6031 6036	K13179009	" " " " (DD110F473Z50V)	0.047μF			ICS	
C6033, 6044	K19149025	Semiconductor Ceramic (UAT13X104-L46AE)	25WV 0.1μF	Q7004	G1090080	μPC78L08	
C6005, 6038, 6040 6041, 6043	K50177103	Mylar 50WV (50F2U103M)	0.01μF	Q7008	G1090068	MC14011BCP	
C6015, 6016	K50177683	" " " (50F2U683M)	0.068μF			TRANSISTORS	
				Q7007	G3110120Y	2SA1012Y	
				Q7006	G3304580D	2SC458D	
				Q7001	G3321660	2SC2166	
				Q7002, 7003	G3325090	2SC2509	
				Q7005	G3408820Q	2SD882Q	
				Q7009	G3408920R	2SD892R	
						DIODES	
				D7003-7009	G2015550	Si 1S1555	
				D7001	G2090217	Zener HZ3C1	

D7002, 7010	G2090001	Si 10D1	L7005	L1020666	
		RESISTORS			TRANSFORMERS
R7008, 7010	J01275150	Carbon Film 1/2W TJ 15Ω	T7001	L0020789A	
R7007	J01275390	" " " " 39Ω	T7002	L0020833A	
R7025	J20336680	Metallic Film 2W 68Ω	T7003	L0020834A	
R7018	J02245101	" " 1/4W SJ 100Ω			
R7024	J01245121	Carbon Film " TJ 120Ω			
R7009, 7011	J01275151	" " 1/2W " 150Ω			RELAY
R7005	J02245151	" " 1/4W SJ 150Ω	RL7001	M1190054	JB1-DC12V
R7001	J02245221	" " " " 220Ω			
R7012	J02245331	" " " " 330Ω			
R7002	J02245471	" " " " 470Ω			CONNECTORS
R7020	J01245471	" " " TJ 470Ω	J7001, 7002	P1090255	TMP-JA
R7003, 7004	J01245821	" " " " 820Ω	J7004, 7005, 7007	P0090191	B2B-XHA
R7006	J01275102	" " 1/2W " 1kΩ	J7006	P0090193	B4B-XHA
R7021	J02245102	" " 1/4W SJ 1kΩ	J7003	P0090194	B5B-XHA
R7013, 7017, 7019	J02245103	" " " " 10kΩ			
R7022	J02245223	" " " " 22kΩ		Q5000011	TP TERMINAL
R7016	J02245154	" " " " 150kΩ			
R7014	J01245105	" " " TJ 1MΩ		R0103180B	HEATSINK
R7023	J02245105	" " " SJ 1MΩ		Q9000192	THERMAL CONDUCTOR
R7015	J02245155	" " " " 1.5MΩ		R0100970	TERMINAL
		POTENTIOMETER	KEYER UNIT		
VR7001	J51727222	H1021A309-2.2KB 2.2kΩB	Symbol No.	Part No.	Name & Description
				F2560000	Printed Circuit Board
				C025600A	PCB with Components
		CAPACITORS			
C7012	K30276680	Dipped Mica 500WV 68 pF (LCQ12680K5)			ICS
C7009, 7011	K30276221	" " " 220 pF (LCQ17221K5)	Q8001	G1090531	TMS1751C
			Q8002	G1090052	MC14049UBCP
C7007	K30276391	" " " 390 pF (LCQ17391K5)			
C7005	K10179038	Ceramic Disc 50WV 0.0047μF (DD108B472K50V)			TRANSISTOR
			Q8003	G3304580D	2SC458D
C7013, 7023	K13179008	" " " F 0.01μF (DD106F103Z50V)			
C7001, 7002, 7004 7006, 7008, 7010 7014, 7017, 7019 7021, 7022, 7025 7028, 7031	K13179009	" " " " 0.047μF (DD110F473Z50V)			DIODES
			D8002	G2090244	Schottky Barrier 1SS106
			D8001	G2090167	Zener RD5.1EB
C7026, 7029, 7030	K50177103	Mylar " 0.01μF (50F2U103M)			CERAMIC RESONATOR
			CO8001	H7900140	CSA1.00MK
C7015, 7016	K50177154	" " 0.15μF (50F2U154M)			
C7003	K40129004	Electrolytic 16WV 10μF (16RE10)			RESISTORS
			R8001	J01245681	Carbon Film 1/4W TJ 680Ω
C7020	K40149008	" 25WV 10μF (25RE10)	R8010	J01245102	" " " " 1kΩ
			R8002-8003, 8006 8009	J01245103	" " " " 10kΩ
C7018, 7024	K40129008	" 16WV 33μF (16RE33)	R8008	J01245823	" " " " 82kΩ
			R8005	J01245104	" " " " 100kΩ
C7027	K40129021	" " 1000μF (16R102S)	R8007	J01245105	" " " " 1MΩ
		INDUCTORS			CAPACITORS
L7001	L1190027	FL5H-390K 39μH	C8005	K00175151	Ceramic Disc 50WV SL 150 pF (DD106SL151J50V)
L7002	L1190009	FL4H-3R3M 3.3μH			
L7003, 7006	L1020032		C8004	K00175181	" " " " 180 pF (DD106SL181J50V)
L7004	L1020015				

C8003, 8007	K13179008	" " " F 0.01 μ F (DD106F103Z50V)	S8301, 8302	N4090083	SWITCHES SPJ222D
C8008	K19179001	" " " " 0.1 μ F (RSB305YF104Z6L5)			
C8006	K50177223	Mylar 50WV 0.022 μ F (50F2U223M)	J8301	P0090191	CONNECTORS B2B-XHA
C8001	K40179013	Electrolytic " 1 μ F (S0RE1)	P8301 (with wire)	T9204735	5395-03
C8002	K40179009	" " 2.2 μ F (S0RE2R2)			
			ACCESSORIES		
			Symbol No.	Part No.	Name & Description
				T9014900	DC POWER CORD
		CONNECTORS			Plug
J8001, 8002	P0090205	S4B-XHA			Fuse Holder
J8003	P0090207	S6B-XHA			
					FUSE
KEYER CONTROL UNIT				Q0000009	20A FT-757GX
Symbol No.	Part No.	Name & Description		Q0000012	6A FT-757SX
	F2561000	Printed Circuit Board			
	C025610A	PCB with Components			
					KEY PLUG
				P0090008	SH3603
		RESISTOR			
R8101	J00215101	Carbon Film 1/8W VJ 100 Ω			RCA PLUG
				P0090018	STP-58
		POTENTIOMETER			
VR8101	J64800002	S1021G901-250KBX2			
		SWITCHES			
S8101	N6090041	SSS312089			
S8102	N6090047	SSS322			
		CONNECTORS			
P8101 (with wire)	T9204730B	XHP-2			
P8102 "	T9204731	XHP-6			
SWITCH UNIT A					
Symbol No.	Part No.	Name & Description			
	F2557000	Printed Circuit Board			
	C025570A	PCB with Components			
		SWITCH ASSY			
S8201	N4090084	SUJ71A			
		CONNECTORS			
J8201, 8202	P0090191	B2B-XHA			
JP8201 (with wire)	T9204732A	5395-08			
JP8202 "	T9204733B	5395-05			
JP8203 "	T9204734	5395-04			
SWITCH UNIT B					
Symbol No.	Part No.	Name & Description			
	F2558000	Printed Circuit Board			
	C025580A	PCB with Components			

FP-757GX PARTS LIST

MAIN CHASSIS			R01,02		RESISTORS		
Symbol No.	Part No.	Description	R03,04	J20335101	Metallic film	2W	100 Ω
		LED	R05,06	J20335104	" "	"	100 kΩ
LED1	G2090136	TLG-205	R08	J20355102	" "	3W	1 kΩ
		LED SOCKET	R09,10	J10375010	Metal solid	5W	1 Ω
P3	P1090416	TLS-U01X-A1	R11	J30376100	Cement	5W	10 Ω
			R12,18	J20305470	Metallic film	1W	47 Ω
			R13,23,42	J20305101	" "	"	100 Ω
			R14,15	J00245102	Carbon film	¼W	1 kΩ
		CONNECTORS	R16,17	J20355163	Metallic film	3W	16 kΩ
P1	P1090414	5196-02	R19	J20335102	" "	2W	1 kΩ
P2	P1090415	5196-03	R20,27,28	J00245111	Carbon film	¼W	110 Ω
P5	P1090042	QS-P4FK	R21,24,38	J00245121	" "	"	120 Ω
		TERMINALS	R22	J00245103	" "	"	10 kΩ
J4	P0090094	NC-174	R25	J00245202	" "	"	2 kΩ
J5	Q6000083	D-05-2P	R26,35	J00245123	" "	"	12 kΩ
			R29	J00245272	" "	"	2.7 kΩ
		SWITCH	R30,31	J00245154	" "	"	150 kΩ
SW1	N2090030	EST-159R	R32	J00245124	" "	"	120 kΩ
			R33	J00245333	" "	"	33 kΩ
			R34	J00245101	" "	"	100 Ω
			R36	J00245363	" "	"	36 kΩ
		MAIN UNIT	R37	J00245122	" "	"	1.2 kΩ
		Printed Circuit Board	R39	J00245153	" "	"	15 kΩ
		FP1114-051	R40	J00245912	" "	"	9.1 kΩ
			R41	J00245221	" "	"	220 Ω
		TRANSISTORS	R43	J20305102	Metallic film	1W	1 kΩ
Q1,2,7	G3328340A	2SC2834A	R44	J20335479	" "	2W	4.7 Ω
Q3	G3309450	2SC945		J20305681	" "	1W	680 Ω
Q4	G3107330	2SA733					
Q5	G3106840	2SA684					
Q6	G3325940	2SC2594	VR01		POTENTIOMETER		
				J51763501	ET-6P		500 ΩJ
		TRIAC					
SCR01	G3090063	AC08DGML					
		THYRISTOR	C01,02,17,18	-	Not used		
SCR02	G3090064	03P4M	C03,04	K52280005	Metalized film	630 WV	0.1 μF (630VMM104M)
			C16,19,20	K52280003	Metalized film	630 WV	0.01 μF (630VMM103M)
		IC	C05	K13149001	Ceramic	25 WV	0.1 μF (ECK-F1E104ZE)
IC01	G1090612	MB3759	C06	K40149005	Electrolytic	25 WV	1000 μF (TWSS25V1000)
		DUAL SCHOTTKY DIODES	C07,10,40	K52280004	Metalized film	630 WV	0.001 μF (ECQM6102MZ)
DB01,02	G2090298	C25P04Q	C08	K40149026	Electrolytic	25 WV	4700 μF (RP25V4700)
		DUAL SILICON DIODES	C09	K40149008	" "	"	10 μF (TWSS25V10)
DB03	G2090299	CTM26S Cathode Common	C11,12	K40179012	" "	50 WV	4.7 μF (MHA50V4R7)
DB04	G2090300	CTM26R Anode Common	C13,14	K52240004	Metalized film	250 WV	1 μF (250VMM105M)
		DUAL FAST RECOVERY DIODE	C15,23	K40149003	Electrolytic	25 WV	100 μF (TWSS25V100)
DB05	G2090301	CTU26S Cathode Common	C21,22	K12339001	Ceramic disc	2 kV	0.0022 μF (ECK-D3D222KBN)
		ZENER DIODE	C24,33,41	K13179012	Ceramic disc	50 WV	0.01 μF (ECK-F1H1032F)
ZD01	G2090302	RD36E	C25,26	K12329002	" "	1.5 kV	0.0047 μF (ECK-DAL472PE)
		FAST RECOVERY DIODES	C27,28	K12339002	" "	2 kV	0.001 μF (ECK-D3D102KBN)
D01-10,12-14	G2090303	EU2A	C29,30	K40239001	Electrolytic	200 WV	470 μF (RP200V470)
D11	G2090304	S5500G					

C31	K41279001	"	500 WV	33 μ F			
		(ECE-B2HS330)					
C32	K50170021	Metalized film	50 WV	0.047 μ F			
		(50UMS473M)					
C34,37	K40149022	Electrolytic	25 WV	47 μ F			
		(TWSS25V47)					
C35,36	K50170022	Metalized film	50 WV	0.001 μ F			
		(50UMS102M)					
C38	K40129040	Electrolytic	16 WV	47 μ F			
		(UPA1C470MEH)					
C39	K13179013	Ceramic disc	50 WV	0.047 μ F			
		(ECK-F1H473ZF)					
C42	K40179012	Electrolytic	50 WV	4.7 μ F			
		(TWSS50V4R7)					
		TRANSFORMERS					
T01	L2190007	FL1291A					
T02	L2190008	FL1293A					
T03	L2190009	FL1250A					
T04	L2190010	FL1289A					
		INDUCTORS					
L01,02	L2190011	FL1375A					
L03	L2190012	FL1290A					
L04	L2190013	FL1293A					
L05-07	L2190014	SC05-100					
L08,09	L2190015	FR9-5					
		RELAY					
RL01	M1190060	RC12V-5G					
		CONNECTORS					
J01	P0090425	5277-03A					
J02	P0090424	5277-02A					
J03	P0090426	5049-04A					
		JUMPER JACK					
	Q9000274	026-4802					
		FUSE					
	Q0000027	5A					
		FUSE HOLDER					
	P2000027	FU306					
		ACCESSORIES					
		AC CORD					
	T9013280	2 wire, 2 prong plug (YFC-13K)					
	T9013282	3 wire, 3 prong UL plug(YFC-03K)					
	T9013283	3 wire, 3 prong Australian plug (YFC-07K)					
	T9013284	3 wire, 2 prong EU plug(YFC-09K)					
		SPARE FUSE					
	Q0000027	5A					

FP-757HD PARTS LIST

MAIN CHASSIS						JACK	
Symbol No.	Part No.	Description		P0090093	XG-9242	(FAN)	
TRANSISTORS							
Q1-3	G34071700Y	2SD7170 or Y				PLUG	
				P1090140	PJ-2	(FAN)	
DIODE						THERMAL SWITCH	
D1	G2090121	S25VB10	TS1	N7090027	OHD-50M		
RESISTORS						RECEPTACLE	
R1	J30379002	Cement 5 W 10 Ω (SQ5L 10)		P0090094	PA125		
R2-4	J30379001	" " 0.05 Ω (SQ5L R05)				FUSES	
				Q0000012	6A	100V-117VAC	
				Q0000004	3A	200V-234VAC	
CAPACITORS						AVR UNIT	
C1,2	K12329001	Ceramic disc 1.4 KV 0.01 μF (ECK-DAL103PE)		F0002156	Printed Circuit Board		
				C021561A	PCB with Components		
C6	K13179009	" " 50 WV 0.047 μF (DD110F473Z50V)				FET	
C3-5	K43140005	Electrolytic 25 WV 33000 μF (25LE33000)	Q101	G3801920B	2SK192BL		
POWER TRANSFORMER						TRANSISTORS	
PT1	L3030081A		Q103	G3109500Y	2SA950Y		
			Q102	G3110120Y	2SA1012Y		
SPEAKER						DIODES	
SP1	M4090048	SA-128D1	D101,102,105	G2090001	Si	10D1	
			D104	G2015550	Si	1S1555	
			D103	G2090246	Zener	RD6.2EB2	
RELAY						RESISTORS	
RL1	M1090016	FRL263D012/01CS-0E					
SWITCH						RESISTORS	
SW1	N2090024	8H2011	R106	J00275270	Carbon film	½W	27 Ω VJ
	S6000026	Switch lever	R101	J02245560	" "	¼W	56 Ω SJ
			R102	J02245821	" "	"	820 Ω "
			R105	J02245222	" "	"	2.2 kΩ "
			R103,104	J02245332	" "	"	3.3 kΩ "
OUTPUT TERMINALS							
	Q5000044	T1 (Red)					
	Q5000045	T1 (Black)					
OUTPUT CABLE						POTENTIOMETER	
	T9203030D		VR101	J50735472	H1022A	311-4.7KB	4.7 kΩB
FUSES						CAPACITORS	
F1	Q0000012	6A (100-117 VAC)	C104	K50177223	Mylar	50 WV	0.022 μF
F1	Q0000004	3A (200-234 VAC)	C103	K50177473	" "	"	0.047 μF
F2	Q0000033	25A (MF-60) DC			(50F2U473M)		
FUSE HOLDERS						CAPACITORS	
FH1	P20000012	SN2059	C101	K40149010	Electrolytic	25 WV	330 μF
FH2	Q2000001	SN1101	C102,105	K40129011	"	16 WV	1000 μF
					(16RE1000)		
LED						ACCESSORIES	
PL1	G2090141	DB20 (Red)				AC CORD	
				T9013280	2 wire, 2 prong plug (YFC-13K)		
				T9013282	3 wire, 3 prong UL plug(YFC-03K)		
				T9013283	3 wire, 3 prong Australian plug (YFC-07K)		
	Q6000013	1L5PS (2-0-3)			3 wire, 2 prong EU plug(YFC-09K)		
	Q6000014	1L5PS (3-0-2)		T9013284			
FAN/MOTOR						SPARE FUSES	
	M2090003	FB-08B12LY		Q0000012	6A	100V-117VAC	
				Q0000004	3A	200V-234VAC	
	R7080690	FAN PACKING		Q0000033	25A	DC	

