YAESU FP-757GX
SWITCHING POWER SUPPLY

The FP-757GX is a solid state switching supply designed to match the FT-757GX All Mode HF Transceiver. The extremely small size and light weight are the obvious advantages of the latest switching supply technology, which eliminates the need for a bulky power transformer. Gone too is the heat caused by power losses in the transformer, resulting in extremely high efficiency and tight regulation over wide ranges of AC input voltage and DC output current demands.

SPECIFICATIONS

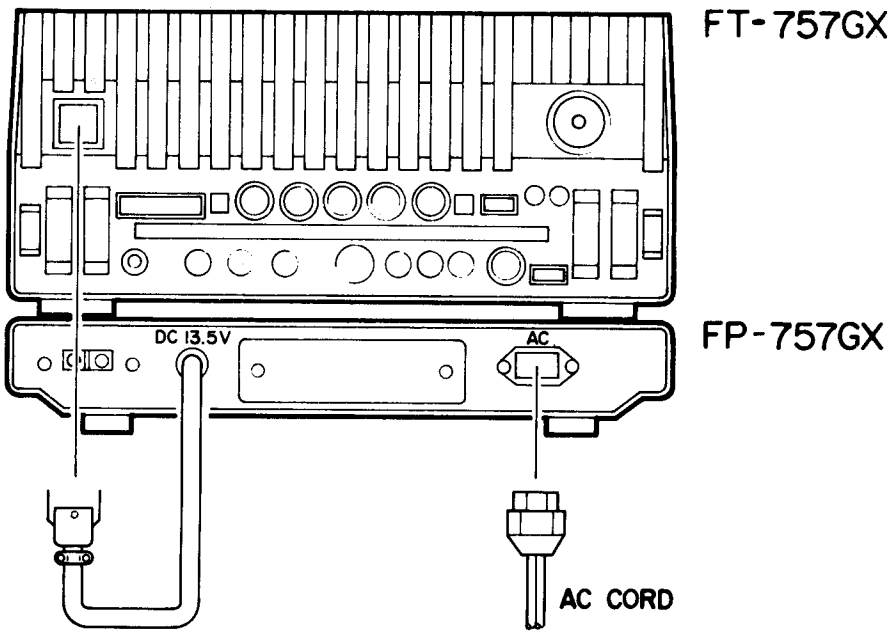
Input Voltage:	85 to 132 V or 170 to 264 VAC (selectable)
Output Voltage:	13.5 VDC at rated load (approx. 15 V at 1 A)
Load Rating:	1 A to 20 A (50% duty cycle at 20 A less than 30 seconds)
Ripple:	600 mV p-p at 20 A
Operating Temperature Range:	0°C to 40°C
Case Size (WHD):	238 x 39 x 238 m
Weight:	approx. 2 kg (4.4 lb)

INSTALLATION

Although the high efficiency of the FP-757GX allows it to run cool even at high current, care must be taken to avoid overheating in conditions of very high humidity and/or ambient air temperature. Make sure that adequate space is provided for the free flow of air around the sides of the FP-757GX at all times.

INTERCONNECTIONS

Before connecting the FP-757GX, check that the voltage range on the label on the rear panel near the AC power jack includes your local AC line voltage. If not, perform the AC Voltage Change procedure below before connecting power. Connect the DC 13.5 V cable from the FP-757GX to the DC 13.5 V jack on the rear panel of the FT-757GX. Check to make sure that all POWER switches are OFF, and then connect the AC cord to the wall outlet.



OPERATION

Always switch the power supply on before the transceiver, and switch the transceiver off before the power supply. This will avoid possible damage to the transceiver due to supply transients.

While the FP-757GX is capable of providing 20 A with a 50% duty cycle, full power drain periods must be limited to 30 seconds. For 100% continuous duty operation, current drain must be limited to below 10 A.

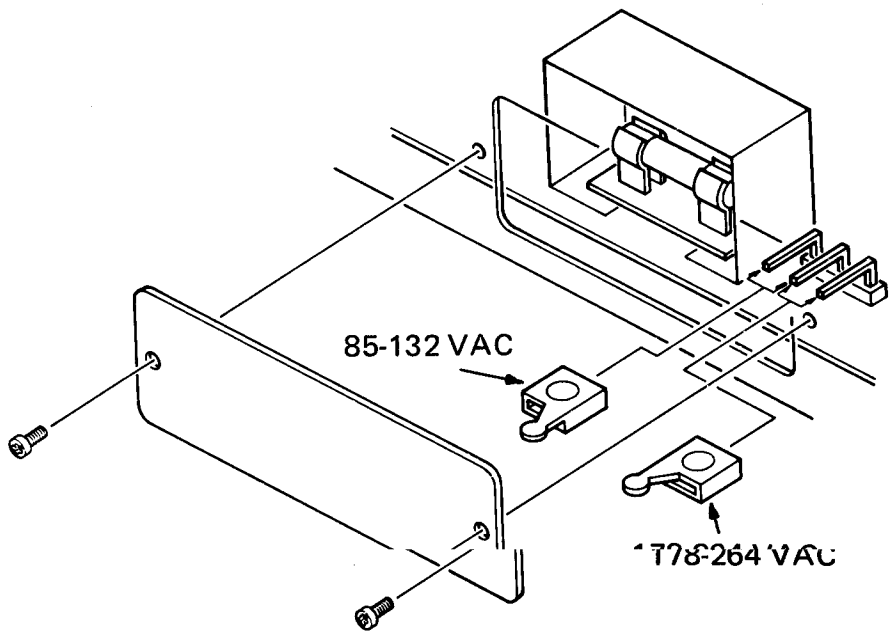
Auxiliary DC terminals are provided on the rear of the FP-757GX for powering other equipment that requires 13.5 VDC. Current drain from these terminals is limited to 10 A, but in no case should the total current drain from the supply exceed 20 A.

The automatic protection circuit in the FP-757GX will shut off output from the supply if current drain exceeds approximately 25 A. If this occurs, switch off the supply POWER switch and all connected equipment, and investigate the cause (such as a short circuit in the DC supply line or connectors). Once the problem is corrected, and after at least 10 seconds, switch the FP-757GX back on, followed by the FT-757GX and other equipment. If the power supply fails to come on, a short may still be present at the output, or the automatic protection circuit may have failed, in which case the AC line fuse inside the FP-757GX will have blown. To replace the fuse, remove the two screws and subpanel on the rear of the supply, and use a 5 A fuse ONLY, for replacement.

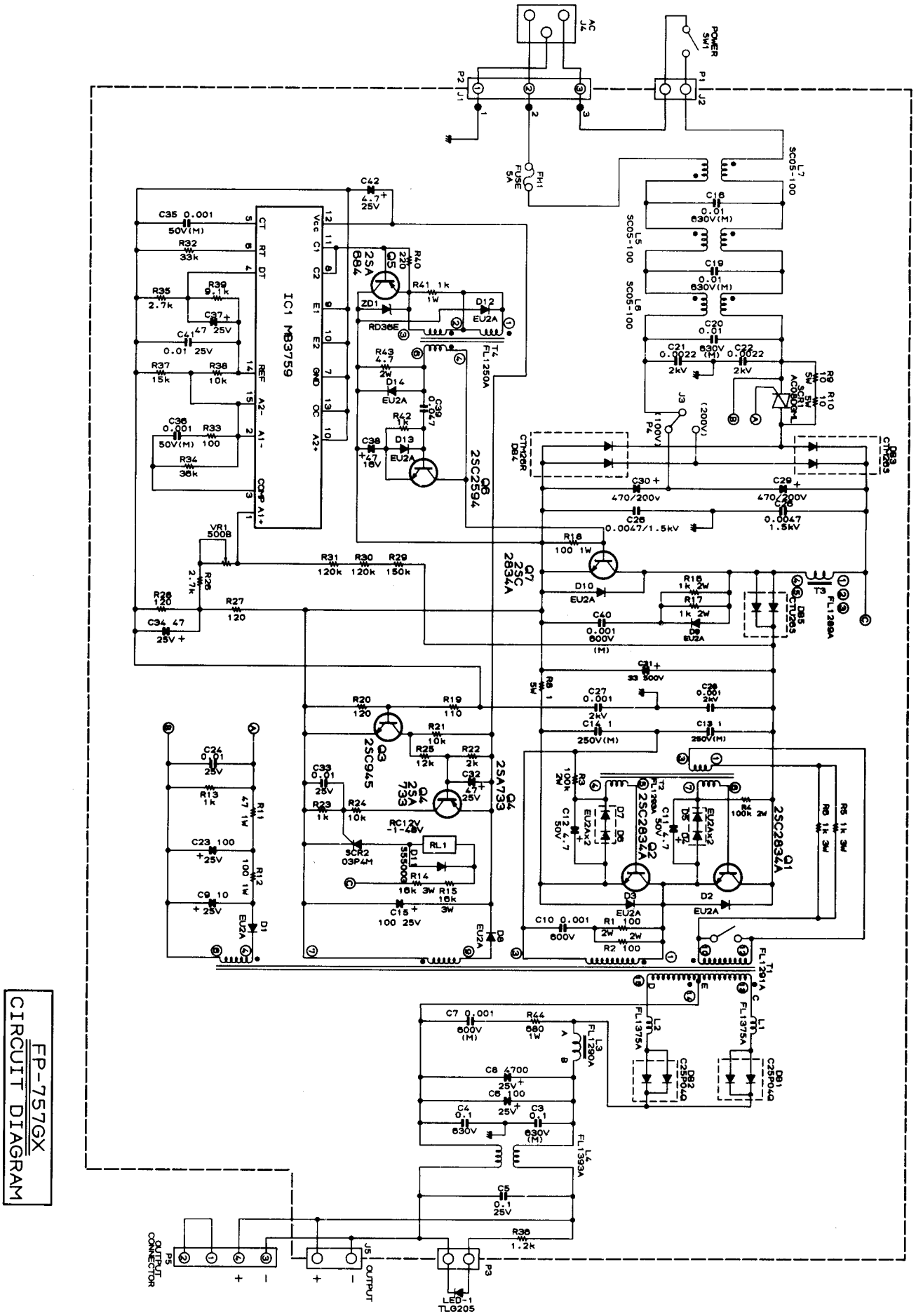
AC VOLTAGE CHANGE

If the AC voltage range marked on the rear panel of the FP-757GX (near the AC jack) does not include your local AC line voltage, remove the two screws and subpanel on the rear of the supply. Locate the jumper plug at the left side of the opening (when viewed from the rear), and notice that this plug jumpers two of the three pins on the mating connector. To change the AC range of the supply, simply remove the jumper plug and reinstall it so that the center pin of the connector is now jumpered to the pin that had no connection previously.

Now replace the subpanel and its two screws, and replace the AC voltage sticker with one that shows the new range.



FT-757GX


FP-757GX
CIRCUIT DIAGRAM
IC1 MB3759
Q1 2SC2834A
Q2 2SC2834A
Q3 2SC945
Q4 2SA733
Q5 2SA684
Q6 2SC2594
Q7 2SC2834A
Q8 2SA733
AC J4
POWER SW1
FUSE 5A
OUTPUT
LED-1 TLG205

SURGE PROTECTION MODIFICATION

FOR THE FP-757GX SWITCHING POWER SUPPLY

The use of the FP-757GX in some locations has resulted in failures of some of the components in the power supply. If Q7 (2SC2834A), DB3 (CTM26S), DB4 (CTM26R), SCR1 (AC08DGML) or 10-ohm 5W resistors R9 and R10 have failed, transients may be present on the AC line, in which case this modification should be performed.

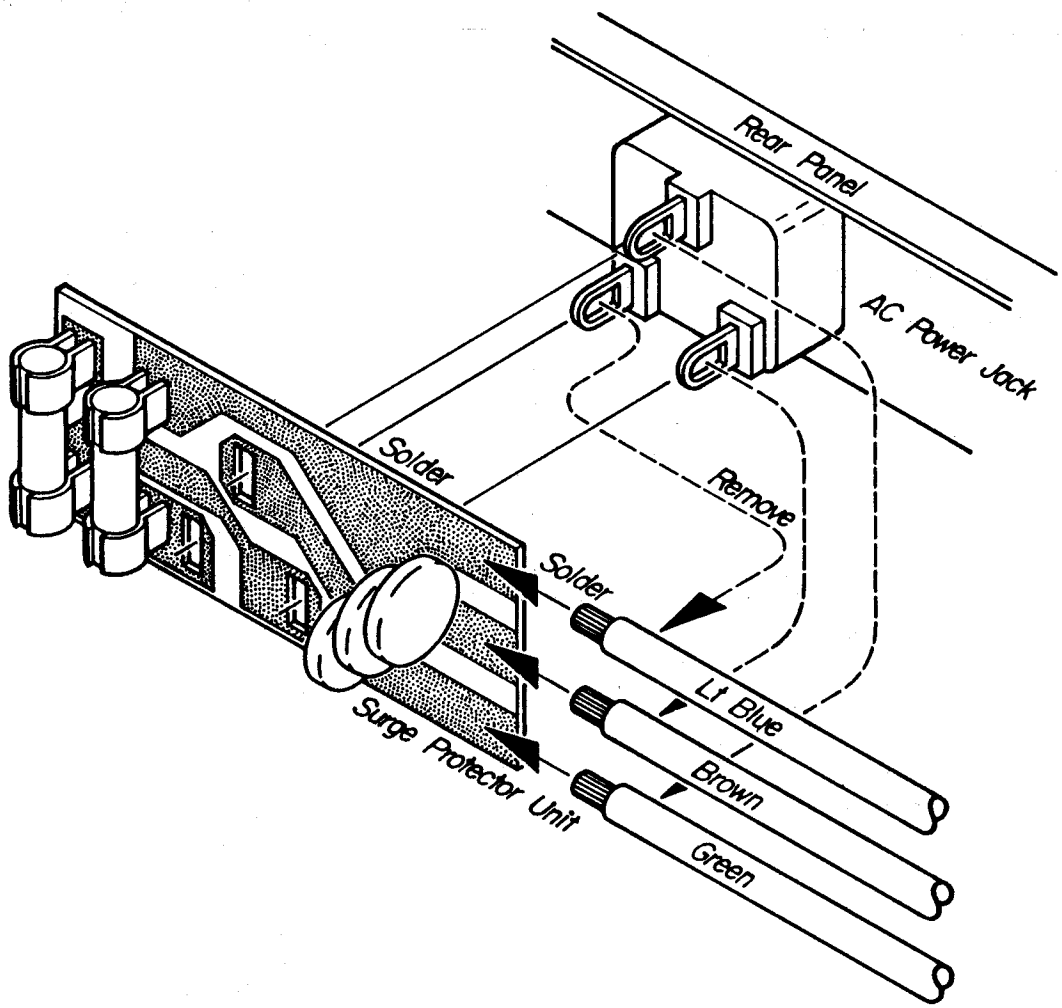
(Requires Surge Protection Modification Kit no. D3000397)

1. Disconnect AC cable from the FP-757GX, and remove the 8 screws affixing the top cover. Carefully slide the cover back and off of the chassis. Check the components listed above, and replace any that are damaged.

2. Unsolder the three large wires (Lt Blue, Brown and Green) from the rear of the AC power jack, and carefully remove all excess solder from the jack pins.

3. Solder the three wires removed from the AC power jack to the points on the Surge Protector Board as shown below.

4. Press the Surge Protector Board on to the three AC power jack pins as shown in the diagram, and solder it into place. This completes the modification. Replace the top cover and 12 screws before reconnecting the AC cord.



FP—757GX MODIFICATION KIT
(D3000397)

FP-757GX

SWITCHING POWER SUPPLY ADDENDUM

For proper receiver performance, use of the FP-757GX requires that the receiving antenna be resonant, or a good distance away from the station and fed by coaxial cable or otherwise shielded. If this is not done, switching noise from the FP-757GX may enter the receiver via the antenna.

If a non-resonant antenna is used, or if a resonant antenna is used for receiving far from its resonant frequency, the FC-757AT or other antenna tuner may be useful to bring the antenna system into resonance. However, if a non-resonant antenna is to be used without a tuner and connected directly to the transceiver, the FP-700 or FP-757HD power supplies are recommended instead of the FP-757GX.

The overload protection circuit in the FP-757GX requires at least 10 seconds to recover after the FP-757GX has been overloaded, or <u>any time that the power supply is switched off</u>. The POWER switch on the FP-757GX must not be switched on-and-off repeatedly without allowing this circuit the necessary time to recover.

WHENEVER THE FP-757GX IS SWITCHED OFF, ALLOW AT LEAST 10 SECONDS BEFORE SWITCHING IT BACK ON, OR DAMAGE TO THE SUPPLY MAY RESULT.