

- 2) Gently tilt only the top of the assembly up from the card cage. Keep the bottom of the assembly in place. The bottom mounting plate (part of the card cage) has an overhang on it to support the display/user interface board. If the assembly is lifted straight out the overhang it could possibly damage the interface circuit board.
 - 3) With the display/user interface board standing up straight gently move it upwards while lifting it out about an inch or two. This should allow the overhang to clear the interface circuit board without damage.
 - 4) Remove the ribbon cable that connects the display/user interface assembly to the card cage, see **Figure 13**.
 - 5) To replace the display/user interface assembly repeat steps 1 through 4 in reverse order.
- 1) All RF cables attached to the assembly must be removed (5/16" wrench).
 - 2) Remove the Phillips screws that hold the assembly mount brackets to the back plate and remove the assembly from the cabinet.
 - 3) Reverse steps 2 and 1 to install the replacement filter. When replacing the RF cables do not overtighten the SMA connectors. They should be tightened just slightly more than hand tight or to the specification of 7 in/lbs.

Card Cage Replacement

To replace the card cage follow the steps listed below in sequential order. The required tools are a #1 Phillips screwdriver with an extended shaft to reach down far enough into the unit to loosen the mounting screws.



Note: Power to the SB II cabinet must be turned OFF during the card cage replacement process.

Power Supply Replacement

The SB II power supply assembly is field replaceable. Follow the steps listed below in sequential order. The required tools are a #1 Phillips screwdriver.

- 1) Turn off AC power at the junction box.
- 2) Disconnect the 3 conductor cable that brings AC power to the supply from the junction box.
- 3) Disconnect the red and black leads from the power supply that connect to the card cage.
- 4) Remove the Phillips screws that hold the power supply mount bracket to the back plate and remove the assembly from the cabinet.
- 5) Reverse steps 4 through 2 to install the replacement power supply.

- 1) Disconnect the display/user interface assembly.
- 2) Disconnect 4 cables at the backplane of the card cage which are assessable with the display/user interface board out of the way.
- 3) Remove the row of Phillips screws which hold the card cage to the back plate. There is a row of screws at the top and bottom of the cage.
- 4) To install a replacement cage perform steps 3 through 1 in reverse order.

Duplexer / Filter Replacement

The filter assemblies are field replaceable. Follow the steps listed below in sequential order. The required tools are a #1 Phillips screwdriver with an extended shaft to reach down far enough into the unit to loosen the mounting screws.



Note: Power to the SB II cabinet must be turned OFF during the filter replacement process.

Tuning Instructions

Tuning instructions are provided in support of field service activities. It is assumed that the procedures listed in this manual will be carried out by a qualified electronics technician observing all standard safety practices.

The amplifier assemblies used in the model 61-83B-50-XXX-XX signal boosters are of sufficient bandwidth to cover the entire range of operation. Tuning is not required. The individual filters used in the duplexer are passive devices of rugged electrical and mechanical design. They are tuned at the factory for the original design requirements and require no adjustment or maintenance. These devices will stay properly tuned unless they have

been physically damaged or are tampered with. Combine preselector filters provide the input and output selectivity for the system. These filters have a carefully shaped response curve that passes a number of contiguous communication channels with each filter designed to cover a 12 MHz bandwidth.

TEST EQUIPMENT

A two channel network analyzer that simultaneously displays both transmission and reflection is best for properly tuning a preselector. A single channel tracking generator/spectrum analyzer combination may be adequate but is not accurate enough to verify factory specifications. A return loss bridge would also be required when using a tracking generator. Skill and experience are also needed and the personnel doing the work should be thoroughly familiar with the use of the network

analyzer. A Hewlett Packard 8752B or equivalent network analyzer is recommended.

PRESELECTOR TUNING

The following is a general outline of the tuning procedure.

- 1) Connect test equipment as shown in **Figure 14**.
- 2) Set the analyzer to the desired center frequency and desired bandwidth.
- 3) Loosen the tuning rod locking nuts.
- 4) If the preselector is severely out of tune, set the analyzer for 10 dB/div vertical scale on the transmission channel and alternately adjust the tuning rods in pairs working from the center to the end rods for maximum signal at the center frequency. Note that for preselectors with an odd number of rods, start with the center rod and then move to the pairs, one on either side of center.
- 5) Repeat step 4 tuning to maximize the signal at the center frequency. The response should start to take on the desired shape and symmetry. Setup the analyzer for 1 dB/div (2 dB/div for a tracking generator) on the transmission channel and then re-adjust the rods in the same fashion. Make sure that the return loss curve meets or exceeds the published specification over the range and is relatively symmetrical. Fine adjust the tuning rods to adjust symmetry.
- 7) Lock all tuning rods after the desired response is obtained. Note that a slight dissymmetry in either the transmission or reflection response may be unavoidable.

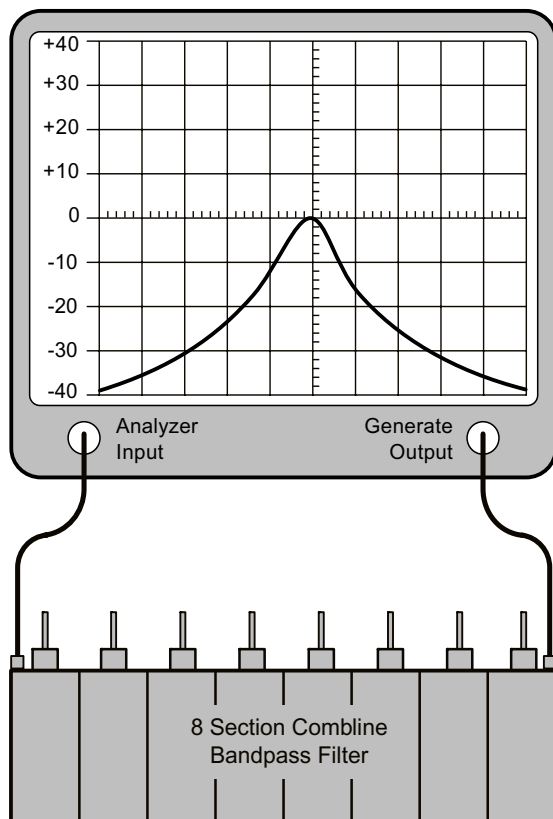


Figure 14: Preselector Tuning.

RECOMMENDED SPARES

It is recommended that one spare of each of the following assemblies be kept on hand for emergency repair purposes; Power Supply 8-20667, Uplink Power Amplifier 3-21121, Downlink Power Amplifier 3-2119, Mid Level Amplifier Card 3-19576, Low Level Amplifier Card 3-19575, Low Gain Amplifier Card 3-20294, Attenuator Card 3-20208, Power Distribution Card 3-19833, Controller Card 3-19832, and the Display/User Interface Assembly 3-19831.