

DB4060 - DB4062

144-174 MHz Band Pass / Band Reject Duplexer

Tuning Instructions

GENERAL INFORMATION

DB4060 - The DB4060 is a 4 cavity duplexer with 2 cavities in the transmitter section and 2 cavities in the receiver section. It is generally suitable for use with all types of base station equipment when separation between the transmit and receive frequencies is 0.5 MHz or more.

DB4062 - The DB4062 is a 6 cavity duplexer with 3 cavities in the transmitter section and 3 cavities in the receiver section. It is generally suitable for use with all types of base station equipment when the separation between the transmit and receive frequencies is 0.3 MHz or more.

FIELD TUNING

The duplexers are factory-tuned to the exact operating frequencies and shipped ready for immediate installation. No further field tuning or adjustment is required. If it becomes necessary to change the operating frequencies of a duplexer, it may be returned to the factory for retuning or it can be field tuned if the following equipment is available:

1. A signal generator (50 ohms) capable of producing a signal at the transmitter and receiver frequencies.
2. A receiver tuned to the desired receiver frequency.
3. A receiver tuned to the desired transmitter frequency.
4. One 50 ohm pad.
5. One 50 ohm termination.

FIELD TUNING PROCEDURE (See Figs. 1 and 2)

1. Connect the equipment as shown in Figure 3a.
2. On each cavity, loosen the hex nut that locks the threaded tuning rod.
3. Tune the signal generator to the desired higher frequency (either transmitter or receiver frequency).
4. While observing the limiter reading, tune each band pass adjustment of the duplexer's high frequency cavities. Adjust first one cavity, then the other, while reducing the signal generator output to prevent receiver limiter saturation. (Turn the tuning screw clockwise to decrease the resonant frequency of the cavity.)
5. Lock tuning screw shaft nut after tuning each cavity.
6. Disconnect receiver #1 and connect receiver #2.
7. Tune signal generator to the desired lower frequency.
8. Tune each notching adjustment of the high pass cavities for minimum signal into receiver #2.
9. Connect equipment as shown in Figure 3b.

10. Tune the signal generator to the desired lower frequency.
11. While observing the limiter reading of receiver #2, tune each band pass adjustment of the duplexer's low frequency cavities. Tune for a maximum limiter reading. Adjust first one cavity, then the other, while reducing the signal generator output to prevent receiver limiter saturation.
12. Lock tuning screw shaft nut after tuning each cavity.
13. Disconnect receiver #2 and connect receiver #1.
14. Tune signal generator to desired higher frequency.
15. Tune each low pass cavity notching adjustment for minimum signal into receiver #1.
16. The duplexer is now tuned correctly.
17. **SUMMARY:** Tune the band pass adjustment of the high pass cavities to pass higher frequency and notching adjustment of high pass cavities to reject lower frequency; tune band pass adjustment of low pass cavities to pass lower frequency and notching adjustment of low pass cavities to reject higher frequency.

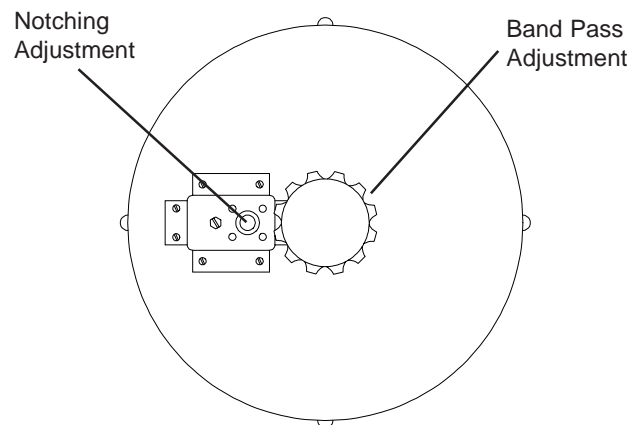


Figure 1 - Single Cavity



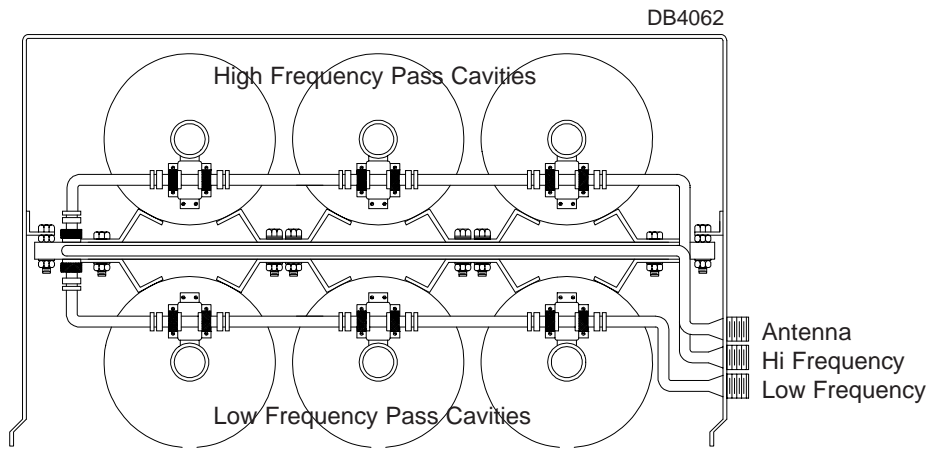


Figure 2 - Duplexer Layout

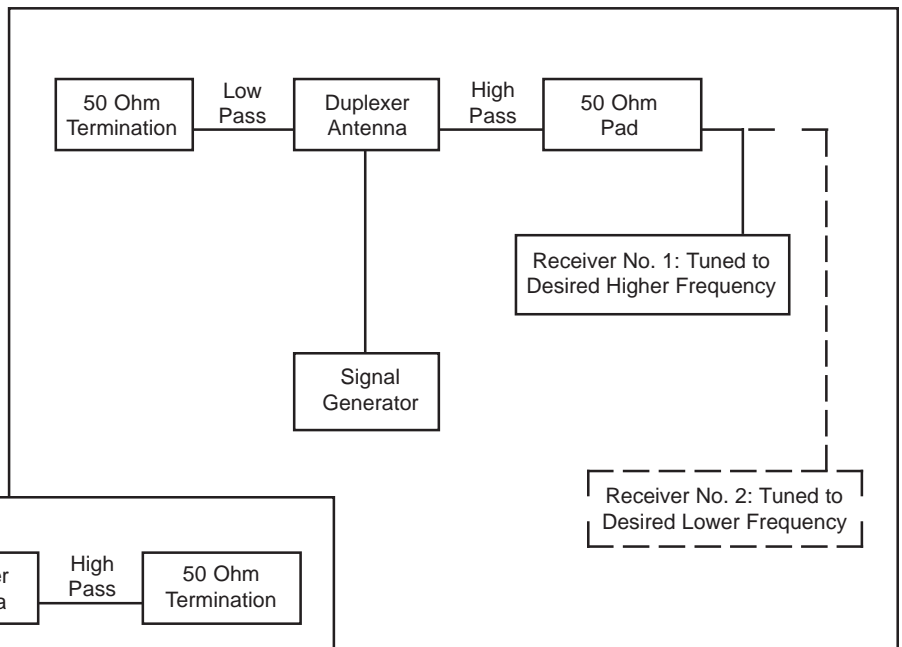


Figure 3a - Field Tuning

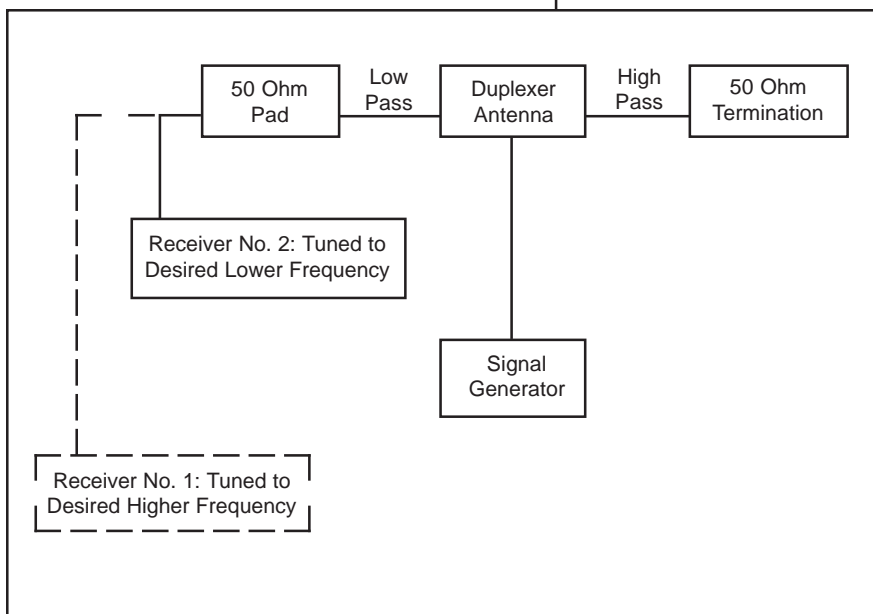


Figure 3b - Field Tuning

