

DB4090 Band Pass / Band Reject Duplexer

806-960 MHz

Installation Instructions

PRODUCT DESCRIPTION

The DB4090 is designed for use in the 806-949 MHz frequency range when the transmitter and receiver frequencies are separated by 45 MHz. It utilizes two (2) identical 1/4 wave cavities and employs a separate notching adjustment. Each section provides 65 dB isolation (nominally) to transmitter noise or receive desensitization.

FIELD TUNING

The duplexer is 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 the 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 ohm) 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.

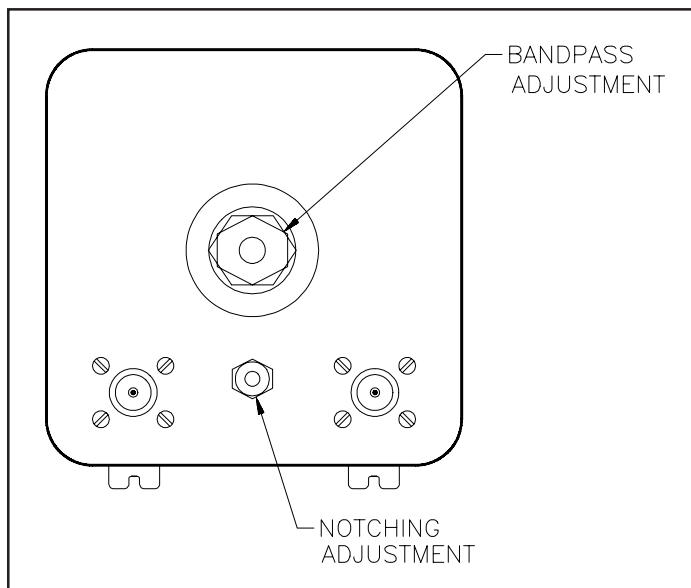


Figure 1 - Adjustment Screws

FIELD TUNING PROCEDURE

1. Connect the equipment as shown in Figure 3a.
2. On each cavity, loosen the hex nut that locks the threaded tuning rod. (See Figures 1 and 2)
3. Tune the signal generator to the desired higher frequency.
4. Tune the band pass adjustment of the high frequency cavity of the duplexer while observing the limiter reading of receiver #1. Tune for a maximum limiter reading. (Turn the tuning screw clockwise to decrease the resonant frequency of the cavity.)
5. Lock the tuning shaft nut after tuning the cavity.
6. Disconnect receiver #1 and connect receiver #2.
7. Tune the signal generator to the desired lower frequency.
8. Tune the notching adjustment of the high pass cavity for a minimum signal into receiver #2.

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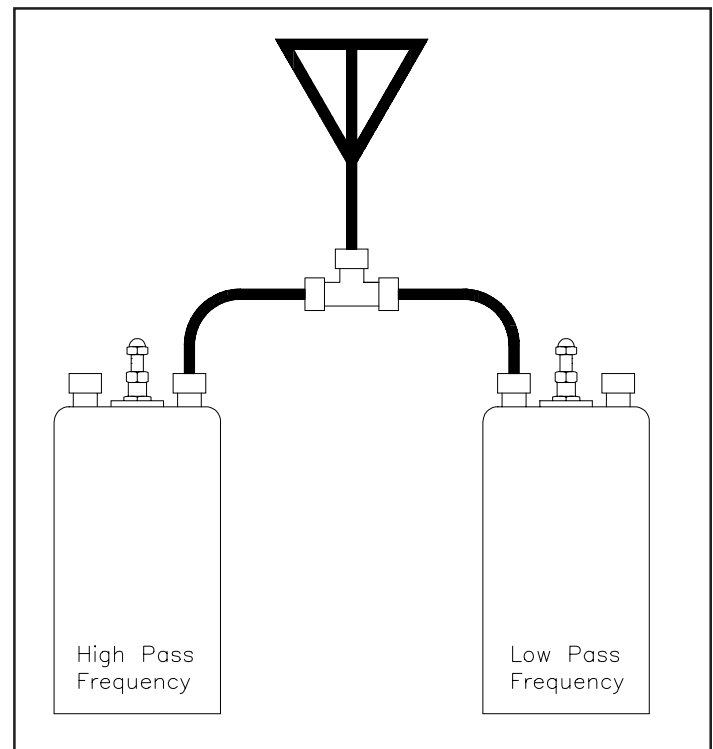


Figure 2 - Two-Cavity Duplexer



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9. Connect the equipment as shown in Figure 3b.
10. Tune signal generator to the desired lower frequency.
11. While observing the limiter reading of receiver #2, tune the band pass adjustment of the low frequency cavity. Tune for a maximum limiter reading.
12. Lock the tuning screw shaft nut after tuning the cavity.
13. Disconnect receiver #2 and connect receiver #1.
14. Tune signal generator to the desired higher frequency.
15. Tune the low pass cavity notching adjustment for a minimum signal into receiver #1.
16. The duplexer is now tuned.
17. To summarize: Tune the band pass adjustment of the high pass cavity so that it passes the higher frequency and the notching adjustment so that it rejects the lower frequency. Tune the band pass adjustment of the low pass cavity so that it passes the lower frequency and the notching adjustment so that it rejects the higher frequency.

Figure 3a - Field Tuning

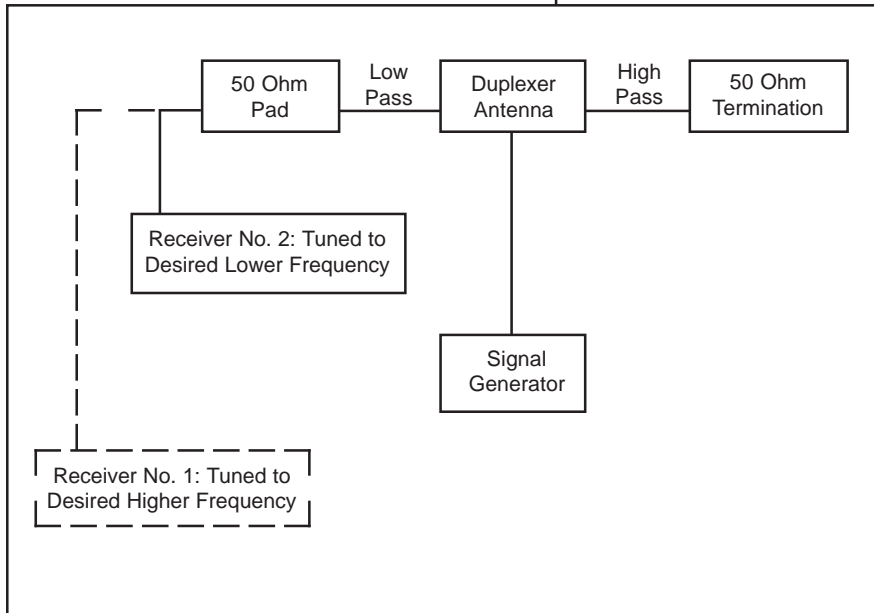
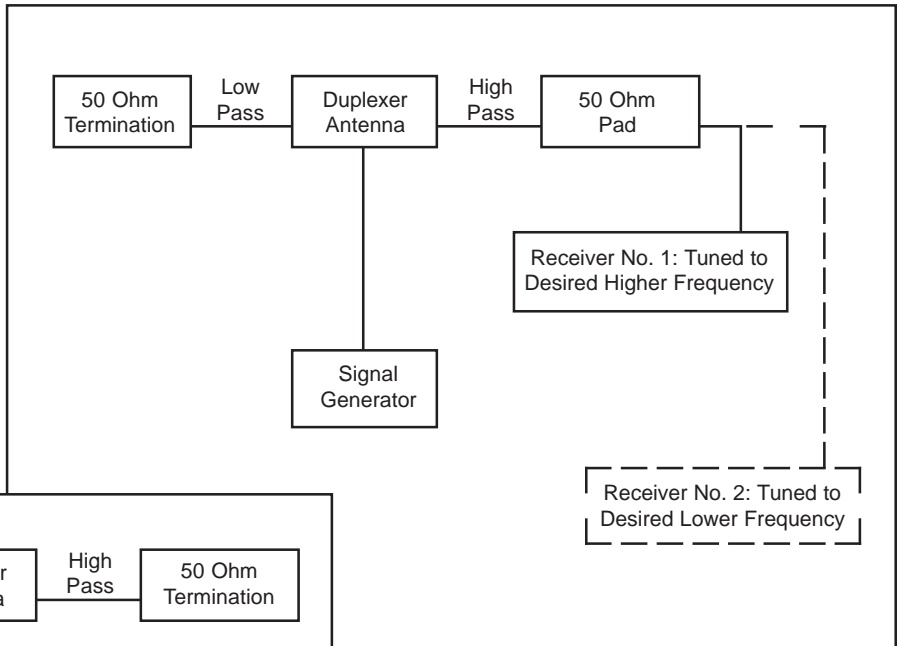


Figure 3b - Field Tuning

