DB4350 and DB4360 Low Loss Combiners

Tuning Instructions

GENERAL INFORMATION

The DB4350 and DB4360 Low Loss Combiners are designed to allow simultaneous operation of up to eight transmitters into a single broadband antenna. The use of isolators and high Q cavities enable maximum isolation between transmitters with minimum insertion loss for each transmitter when the frequency spacing between transmitters is relatively close.

Each channel of the DB4350 has a DB4002 high Q cavity, while each channel of the DB4360 has a DB4170 high Q cavity; each has approximately 1 dB insertion loss. The cavities are highly selective bandpass filters and must be tuned to the frequency of the transmitter with which they are to be used.

TUNING PROCEDURE

1. Disconnect the first channel from the N-way junction and connect the cable from the high Q cavity to a 50 ohm dummy load.
2. Insert a thru-line wattmeter between the isolator and the high Q cavity.
3. Set the transmitter to “tune” and key the transmitter. Tune the high Q cavity and isolators for minimum reflected power.
4. Reverse leads and tune isolators for isolation.
5. Repeat the above procedure for all the remaining channels.
6. Reconnect all channels to the N-way junction.
7. Connect a 50 ohm dummy load to the antenna port of the combiner.
8. Repeat steps 2 and 3 for all channels.
9. Due to interaction between channels, it may be necessary to repeat step 7.
10. All high Q cavities should now be tuned exactly on frequency. No further tuning of the cavities should be necessary.
11. Place the thru-line wattmeter between the antenna port and the dummy load.
12. Tune each transmitter final through the combiner into the dummy load for a maximum power out at the antenna port. (It should not be necessary to tune the cavities again.)
13. The combiner should now be read for operation.
14. If it becomes necessary to tune one of the channels while the other channels are in operation, disconnect the appropriate cable at the N-way junction and replace it with a shorted quarterwave coaxial stub. Tune the removed cavity to its proper frequency; then remove the coaxial stub and reconnect the cavity to the system.

DECIBEL PRODUCTS
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