

INSTRUCTION BOOK
FOR
PD-522
DUPLEXER

SERIAL No. _____

TRANSMIT _____

RECEIVE _____

CELWAVE R.F. INC.

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PHOENIX, AZ.

GENERAL DESCRIPTION

This Duplexer consists of six cavities, two in the transmitter side and four in the receiver side.

To retune Cat. No. 522-509 Duplexers in the field the following equipment will be required.

1. A 50 ohm Signal Generator capable of covering the desired transmit and receive frequencies.
2. A 50 ohm input receiver tuned to the desired transmit frequency.
3. A 50 ohm input receiver tuned to the desired receive frequency.

NOTE: Separate transmitter and receiver cables to Duplexer to maintain designed isolation. Separation to be twelve inches minimum.

STEP BY STEP PROCEDURE

The outline drawing shows the location of all adjustments and input and output connections. The individual cavity frequency controls move approximately 2 MHz per turn, therefore, if the new transmit frequency is 3 MHz higher than the original transmit frequency, the transmit frequency adjustment must be screwed out about 1 1/2 turns. If the new receive frequency is to be 1 MHz lower than the original setting, the receiver cavity adjustments should be about 1/2 turn.

Remove antenna harness from duplexer, marking the connectors to assure reassembly to the same terminals.

1. Connect the Signal Generator tuned to the transmit frequency to the TRANSMIT ANTENNA CONNECTOR. Connect a 50 ohm receiver tuned to the transmit frequency to the TRANSMITTER CONNECTOR. Tune #6 cavity for maximum signal into the receiver.

2. Connect the Signal Generator now tuned to the receive frequency, to the TRANSMITTER ANTENNA CONNECTOR. Connect a 50 ohm receiver tuned to the receive frequency to the TRANSMITTER CONNECTOR. Tune #5 cavity for minimum signal into the receiver.

3. Connect the Signal Generator now tuned to the receive frequency, to the RECEIVER ANTENNA CONNECTOR. Connect a 50 ohm receiver tuned to the receive frequency to the RECEIVER CONNECTOR. Tune cavities #2 and 3 for maximum signal into the receiver.

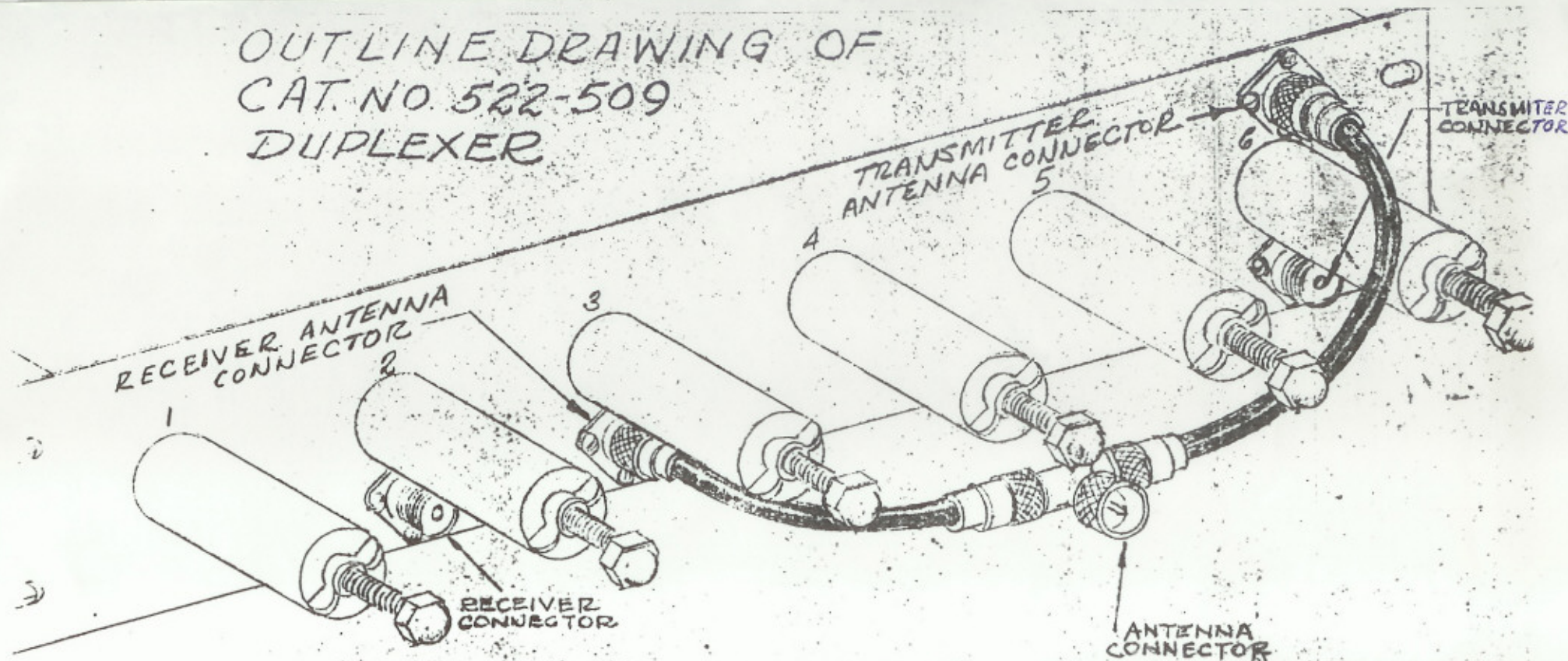
4. Connect the Signal Generator now tuned to the transmit frequency, to the RECEIVER ANTENNA CONNECTOR. Connect a 50 ohm receiver tuned to the transmit frequency to the RECEIVER CONNECTOR. Tune cavities #1 and 4 for minimum signal into the receiver.

5. As there is some interaction between the adjustments, it may be necessary to repeat Steps 1 thru 4. As with any device having several interacting adjustments, these steps may have to be repeated four or five times to insure proper final tuning.

NOTE: The last adjustment that should be made is to cavities #1 and 4 in receive channel, and #5 in the transmitter channel.

6. Attach the matching harness back onto the duplexer. The unit may now be placed back into service.

OUTLINE DRAWING OF CAT. NO. 522-509 DUPLER

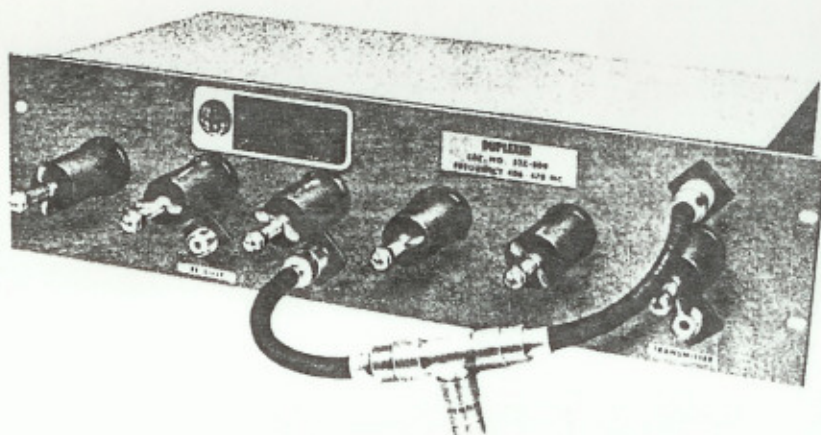


NOTE: THIS DUPLER HAS BEEN FACTORY TUNED TO THE FREQUENCIES MARKED ON THE FRONT COVER OF THIS INSTRUCTION BOOK. THESE FREQUENCIES ARE ALSO ON THE BACK OF THE FRONT PANEL OF THE DUPLER. THE TRANSMIT FREQUENCY IS AT THE TRANSMIT END OF THE PANEL AND THE RECEIVE FREQUENCY IS AT THE RECEIVE END.

THE CABLES BETWEEN THE TWO INPUT TERMINALS OF THE DUPLER AND THE ANTENNA CONNECTOR ARE CUT TO SPECIFIC LENGTHS AND MUST NOT BE CHANGED.

DUPLEXER (406-470 MHz)*

CAT. No. 522-509, 100 db ISOLATION FOR 2 MHz MINIMUM SEPARATION



**Exact frequencies must be specified*

CAT. No. 522-509 DUPLEXER consists of six cavities. One band-pass and one reject cavity are used on the transmitter side. Two band-pass and two reject cavities are used on the receiver side. Aperture coupling is used throughout thus eliminating many cables and connectors normally required for multi-cavity duplexers.

This duplexer is designed to fit a standard 19" rack. It requires 5¼" of vertical space, 8" behind the panel and 4" in front of the panel. The unit weighs 18 lbs. All terminations are Teflon UHF.

The graph shows the response curve of Cat. No. 522-509 Duplexer when tuned for 5 MHz spacings.

Cat. No. 522-509 Duplexer is designed for transmitters having power outputs up to 250 watts.

DUPLEXER (952-960 MHz)*

CAT. No. 524-509, 80 db ISOLATION FOR 3.6 MHz SEPARATION



CAT. No. 524-509 DUPLEXER consists of six cavities; three transmit reject cavities and three receive reject cavities.

This duplexer is designed to fit a standard 19" rack. It requires 5¼" of vertical space, 5" behind the panel and 5½" in front of the panel. The termination to the antennas is