

CELWAVE

Route 79, Marlboro, New Jersey 07748 • (201) 462-1880 • TWX 710-722-3861

INSTRUCTION BOOK

FOR

CAT. NO. 696,696SR
896,896SR

DUPLER

406 - 512 MHz
800 - 960 MHz

SERIAL NO. 13341

TRANSMIT 461.7

RECEIVE 466.7

DUPLEXER CAT. NOS. 696-509 AND 896-509

DESCRIPTION

This duplexer consists of four 895-509 or 695-509 pass-notch resonators arranged with two resonators in each channel. The 696-509 may be used at spacings from 3 MHz to 15 MHz in the 406 to 512 MHz band. A minimum of 80 dB isolation is provided in each of the two channels at the standard 5 MHz spacing and the insertion loss is less than 1 dB under all conditions. The 896-509, when tuned to standard 3.6 MHz spacing, will provide a minimum of 70 dB isolation in each channel and 1.2 dB insertion loss maximum in the 800-960 MHz band. Each resonator has two adjustments. The large central adjustment moves both the pass and notch frequencies while the smaller off-center screw controls the pass-notch spacing. Any resonator may be adjusted to place the rejection notch on either side of the pass frequency.

TUNING INSTRUCTIONS

The unit is normally supplied tuned to the frequencies specified and no readjustment should be required unless there has been a change in frequency.

The following equipment will be required to tune the duplexer:

1. A 50 ohm Signal Generator with a variable attenuator which covers 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.
4. Two six dB attenuators to place in the lines to the receivers.

The reject (or notch) frequency will maintain its spacing to the pass frequency when the pass adjustment of a cavity (the large central screw) is moved several MHz. For example, a system operating at 450 and 455 MHz which is moved to 452 and 457 MHz will require a minimum of readjustment if the pass is made first. It is strongly recommended that the pass adjustments be made first and that the following instructions be followed.

STEP BY STEP INSTRUCTIONS

Remove the cables from the duplexer, taking note of their position as the duplexer must be assembled in the same manner.

NOTE: In the following steps, the signal generator must be adjusted to prevent saturation of the first limiter in the receiver.

1. TRANSMITTER SIDE

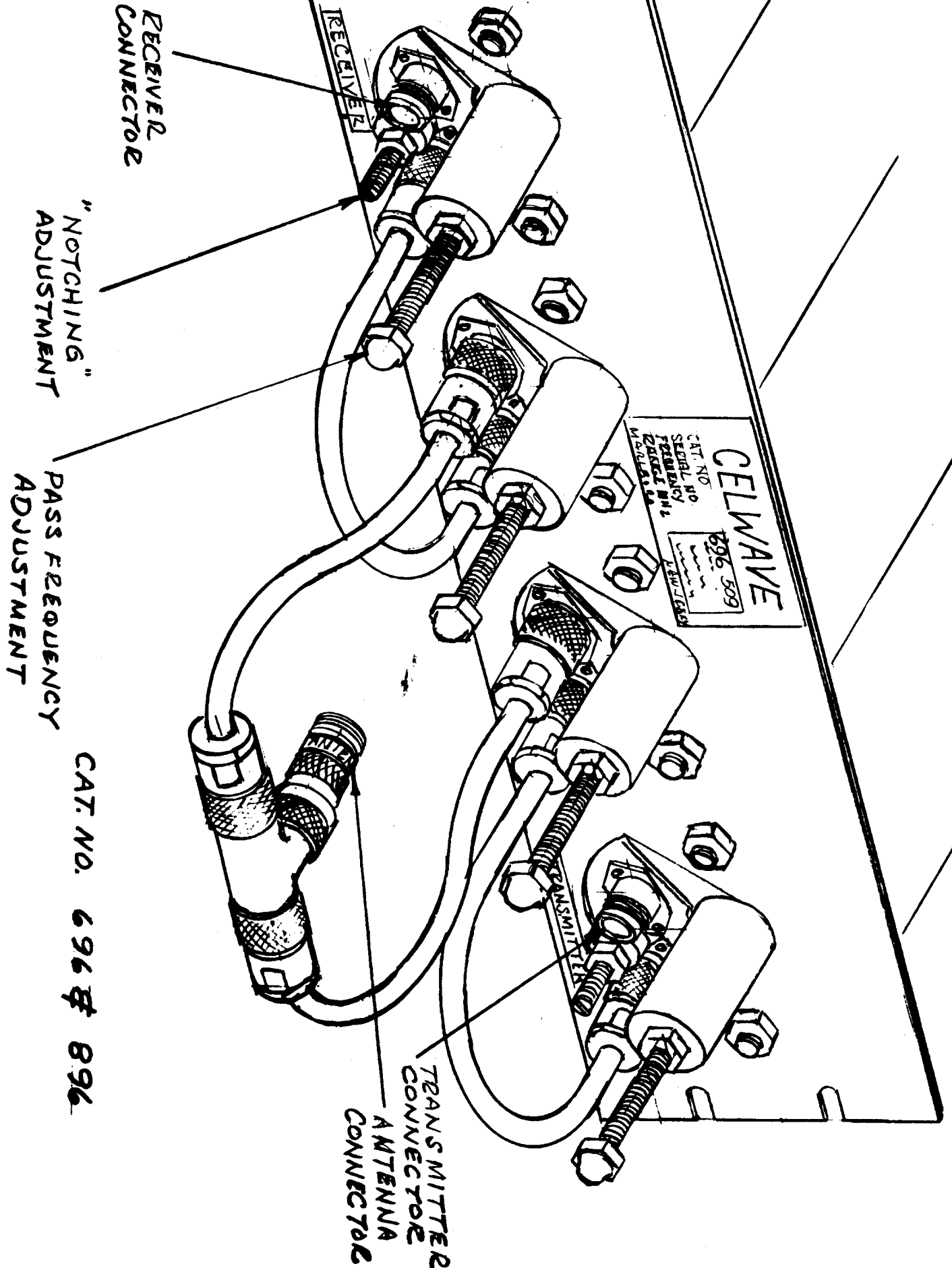
- a. Connect each of the two resonators, one at a time between a Signal Generator tuned to the transmit frequency and a 50 ohm receiver tuned to the transmit frequency. Turn the large central tuning screw for maximum transfer of signal at the transmit frequency.
- b. Now connect each of the two resonators, one at a time, between a Signal Generator now tuned to the receive frequency and a 50 ohm receiver tuned to the receive frequency. Turn the small off-center notching screw for minimum transfer of signal at the receive frequency.

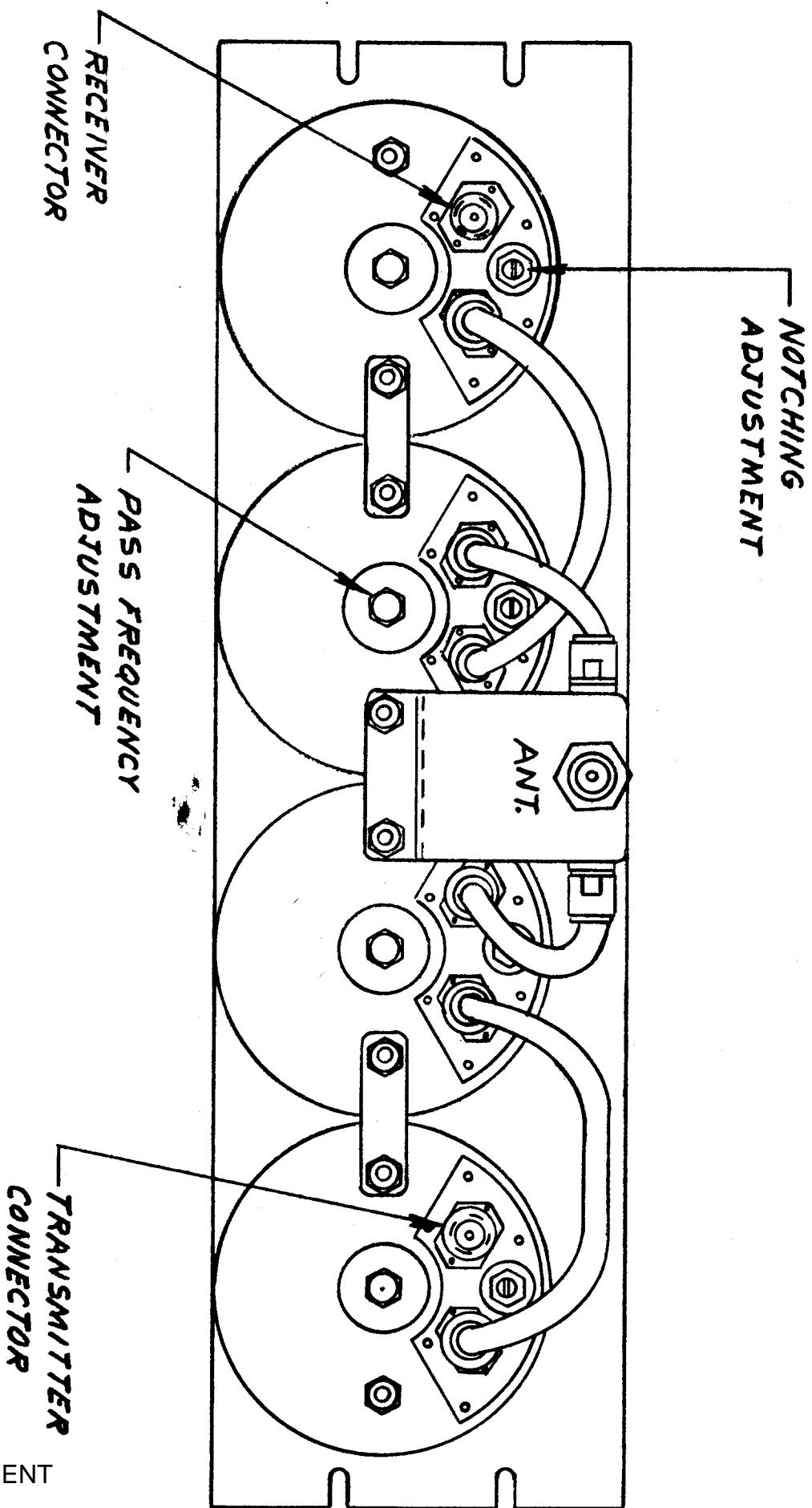
2. RECEIVER SIDE

- a. Connect each of two resonators, one at a time, between a Signal Generator tuned to the receive frequency and a 50 ohm receiver tuned to the receive frequency. Turn the large central tuning screw for maximum transfer of signal at the receive frequency.
 - b. Now connect each of the two resonators between a Signal Generator now tuned to the transmit frequency and a 50 ohm receiver tuned to the transmit frequency. Turn the small off-center notching screw for minimum transfer of signal at the transmit frequency.
3. Re-install the cable harness. The unit may now be placed back in service.

896-509 DUPLEXER SPECIFICATIONS

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|---------------------------|---------------------------------------|
| Frequency Range | 806 - 962 MHz |
| Minimum Frequency Spacing | 3.6 MHz |
| Isolation Per Channel | 70 dB Min. |
| Insertion Loss | 1.2 dB |
| Maximum Power | 100 Watts |
| Physical Size | 19" x 5.25" x 8" (473 x 133 x 203 mm) |
| Weight | 18 lbs. (8.2 Kg) |





CAT. NO. 696 SR 4896SR

END OF DOCUMENT