

**TYPE N2 REPEATER**  
**REPEATERED HIGH-FREQUENCY LINE**  
**CARRIER LINE-UP — HIGH-FREQUENCY**  
**LINE MEASUREMENTS**  
**TOTAL REPEATER OUTPUT CARRIER**  
**POWER**

The N2 repeaters are regulating devices which provide relatively constant output carrier power for a wide variation in input carrier power. The 2J repeater test set is a bridging device used to measure the total repeater output carrier power. If a system failure occurs which removes carrier power from the repeaters, the repeaters will increase their gain and amplify noise and crosstalk signals from other systems in the cable until nearly normal output power is apparently present.

The purpose of this section is to provide instructions for measuring the total output carrier power of the N2 repeater with the 2J repeater test set and to determine whether the measured power consists of carrier or noise.

**APPARATUS:**

- 1 — J94002J (2J) Repeater Test Set
- 1 — P14C Cord

STEP	PROCEDURE
1	Remove the shorting plug from either switching jack J2 or J3 on the N2 repeater mounting shelf assembly or the N2 repeater adapter assembly. Leave the remaining shorting plug in the other switching jack.
2	Set the rotary switch on the 2J test set to ADD 10 for the low-high repeater or to 0 for the high-low repeater.
3	Connect the 2J repeater test set, in conjunction with the P14C cord, to the jack cleared in Step 1.
4	Set the DBM toggle switch to E-W or W-E as required. Read the power output on the meter scale.

STEP	PROCEDURE
5	<p><b>Requirement:</b> High-low repeater: <math>+3.0 \pm 1.5</math> dbm  Low-high repeater: <math>+12.0 \pm 1.5</math> dbm</p> <p><b>Note 1:</b> In case these requirements are not met, a repeater may be considered satisfactory if the measured output is within <math>\pm 1</math> db of the average of the other N2 repeaters (at that location) that are transmitting in the same direction in the same cable. However, any low-high repeater output less than <math>+9</math> dbm or high-low repeater output less than <math>0</math> dbm should be reported to the Transmission Engineer through proper channels.</p> <p><b>Note 2:</b> If a 70A spectrum generator is being used as a signal source, the output of the first several repeaters will measure lower because of the waveshape of the signals from the 70A spectrum generator.</p> <p>To determine if the value read on the meter is due to actual carriers or to noise, operate the rotary switch on the 2J test set to MON and the DBM toggle switch to E-W or W-E, as required. This enables audible monitoring of the repeater output from the receiving unit built into the 2J test set.</p> <p><b>Requirement:</b> Normal carriers will be heard as varying 8000-cycle tones.</p> <p><b>Note:</b> The absence of these tones or the presence of excessive noise is an indication of trouble in the repeater under test, in the line, or in the preceding repeater.</p>
6	<p>Disconnect the P14C cord and the 2J test set from the switching jack and restore the shorting plug removed in Step 1.</p>