

Z-Matcher

Impedance Matching Network

Tuning Instructions

PRODUCT DESCRIPTION

The Z-Matcher is an impedance matching network designed by Decibel for use with any transmitter that is within the design frequencies of the device. The Z-Matcher allows the transmitter to operate at a maximum efficiency by matching the source impedance (transmitter output impedance) to the load impedance (antenna, duplexer, isolator, etc.).

The following outlines the tuning procedure for the Z-Matcher.

1. Using a 50-ohm coaxial cable, connect the transmitter to a wattmeter and a load as shown in Figure 1.
2. Key the transmitter and adjust the power adjustment control on the transmitter to approximately 80 percent of the desired power level.
3. Insert the Z-Matcher into the transmission line, as close as possible to the transmitter. Connect a voltmeter (VOM) with a low D.C. scale to the feed-thru capacitor on the Z-Matcher (negative ground).
4. Key the transmitter and alternately adjust the two tuning capacitors on the Z-Matcher to achieve maximum out-

5. put power. (Note: The wattmeter or VOM may also peak.)
5. Once the Z-Matcher is optimally tuned, readjust the transmitter power control (located in the final power amplifier) to the desired output power level. Note the voltage reading on the VOM and record this reading versus the wattmeter reading.
6. Remove the wattmeter from the system and readjust the Z-Matcher for optimum output power as shown on the VOM attached to the Z-Matcher.
7. The transmitter will now operate at maximum efficiency. (This can be proven by monitoring P.A. voltage and current both before and after installing and tuning the Z-Matcher.)

Note: Some systems may be connected in such a way that little or no increase in efficiency can be achieved. In such cases, insert a small piece of transmission line – approximately one-quarter wavelength – between the Z-Matcher and the load, and repeat steps 4 through 7.

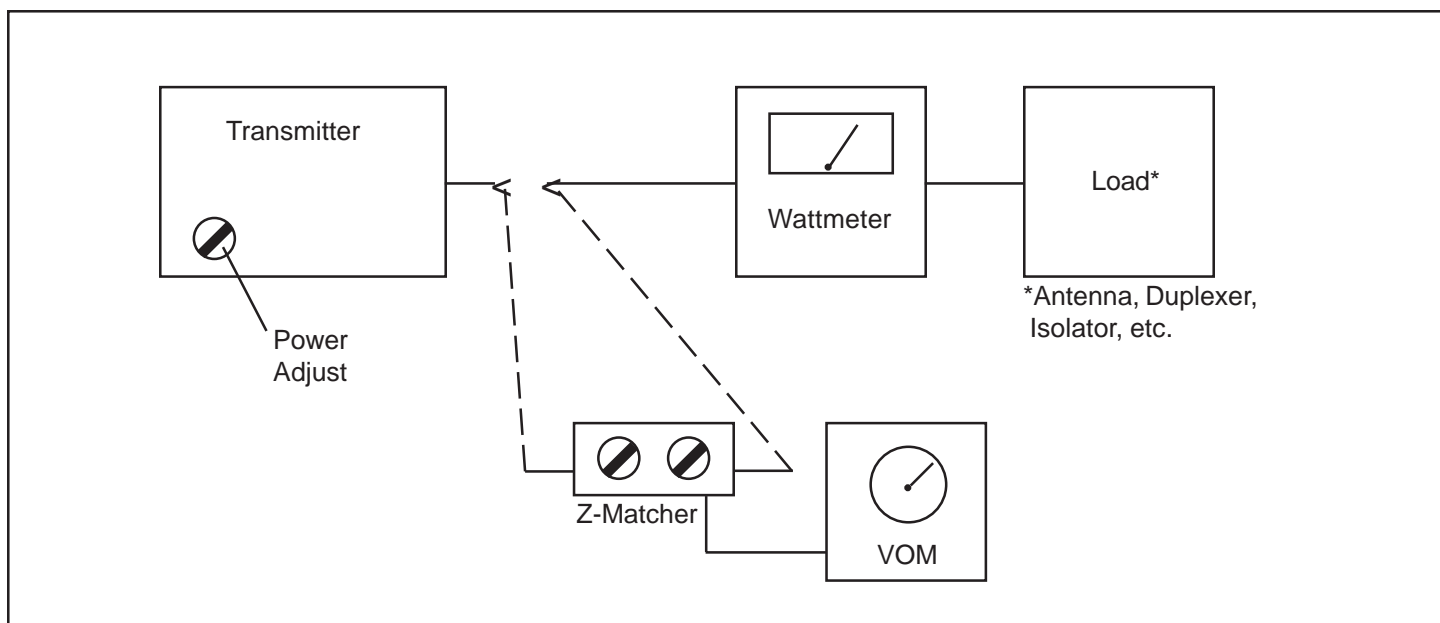


Figure 1 - Block Diagram

