

## TPRC-1510-1, 2 PASS-REJECT CAVITIES

The Telewave TPRC-1510-1 and TPRC-1510-2 are 10" diameter, 1/4-wavelength Pass-Reject cavities with an adjustable coupling loop and tuning capacitor. Pass-Reject cavities reject all frequencies outside a narrow pass band, with a tunable notch for additional protection with close spacing. These cavities are commonly used to reduce transmitter sideband noise, and protect receivers against desensitization.

TPRC-1510 cavities cover 148-174 MHz. All cavities are tuned to specified frequencies prior to shipping, and no further adjustments should be required. The positive locking mechanism allows for quick field re-tuning if frequency changes become necessary.

These cavities feature calibrated adjustable coupling, and insertion loss can be easily set from 0.5 dB to 2 dB or more to improve selectivity. This allows cavity response to be optimized for any operating environment. At densely populated sites, the TPRC-1510-2 dual cavity filter provides greater selectivity with minimum insertion loss. Multiple cavities can also provide a wider passband when required. Mounting rails are provided for all multiple-cavity filters.

Excellent frequency stability is achieved by the use of a specially machined compensator and Invar rod. The pass and reject frequencies are temperature stable from -30°C to +70°C. Telewave Ground Loop technology places the center conductor of each coupling loop at DC ground potential for lightning protection and noise reduction.

Heavy duty materials are used throughout each cavity to insure high performance and long life. Cavity top plates are machined from 1/4-inch aluminum, and are heliarc welded to the cavity body at the high current point for improved conductivity and strength. This allows Telewave cavities to handle up to 350 watts, depending on insertion loss.

Rigid foam inserts support the tuner assembly allowing vertical or horizontal mounting. Similar metals and alodined aluminum help prevent galvanic corrosion. Silver plated tuners and beryllium copper finger stock provide non-corrosive low loss contact, and ensure reliable, long-term performance.



TPRC-1510-1

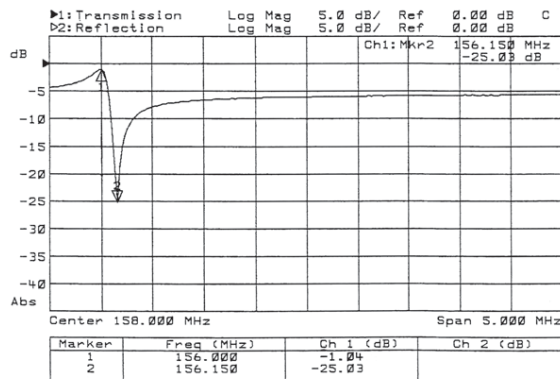


TPRC-1510-2

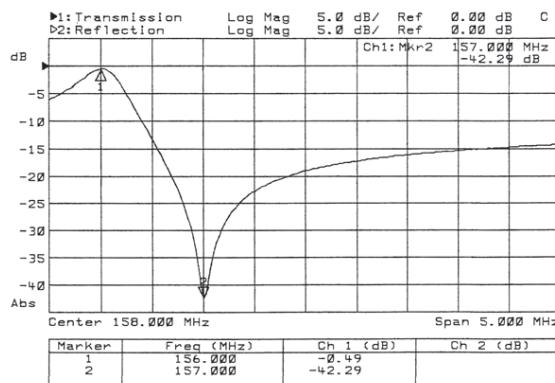
# TPRC-1510-1, 2

## TYPICAL SELECTIVITY CHARACTERISTICS

**Figure 1 TPRC-1510-1  
1 dB INSERTION LOSS  
150 kHz PASS TO REJECT**



**Figure 2 TPRC-1510-1  
0.5 dB INSERTION LOSS  
1 MHz PASS TO REJECT**



MODEL	TPRC-1510-1	TPRC-1510-2
Insertion loss (adjustable)	0.5 to 2.0 dB	1.0 to 4.0 dB
Attenuation at 1dB insertion loss	See figure 1	
Maximum dimensions with tuners extended in. (cm)	10 x 28 (25.4 x 71)	10 x 19 x 28 (25.4 x 48 x 71)
Net weight lb. (kg)	10 (4.5)	21.5 (9.8)
Shipping weight lb. (kg)	13 (5.9)	24 (10.9)

COMMON SPECIFICATIONS	
Tuning frequency range	148-174 MHz
Nominal impedance	50 ohms
VSWR at resonance (max)	1.5:1
Input power (max) vs. insertion loss	0.5 dB - 350 watts, 1 dB - 250 watts, 2 dB - 150 watts
Temperature range	-30°C to +60°C
Cavity electrical length	1/4 wavelength
Outer conductor, end plates	6061-T6 aluminum
Inner conductor, coupling loops	Silver plated copper
Tuning rod	Invar
Contactors, fingerstock	Beryllium copper
Cavity dimensions (Diam. x H) in. (cm)	10 x 23.5 (25.4 x 60)
Connectors	N or UHF female (opt.)
Finish	Gray acrylic enamel

**NOTE:** Customized response curves are available to meet exact system requirements.

