

## TWPC-4510-1,2 BANDPASS CAVITY



TWPC-4510-1



TWPC-4510-2

The Telewave TWPC-4510-1 and 4510-2 are 10" diameter,  $\frac{1}{4}$ -wavelength, high "Q" bandpass cavity filters with superior selectivity. Bandpass cavities reject all frequencies outside a narrow pass band. These cavities reduce transmitter sideband noise, and also protect receivers against desensitization.

TWPC-4510 cavities cover 400-512 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 retuning if frequency changes become necessary.

These cavities also 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 4510-2 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.

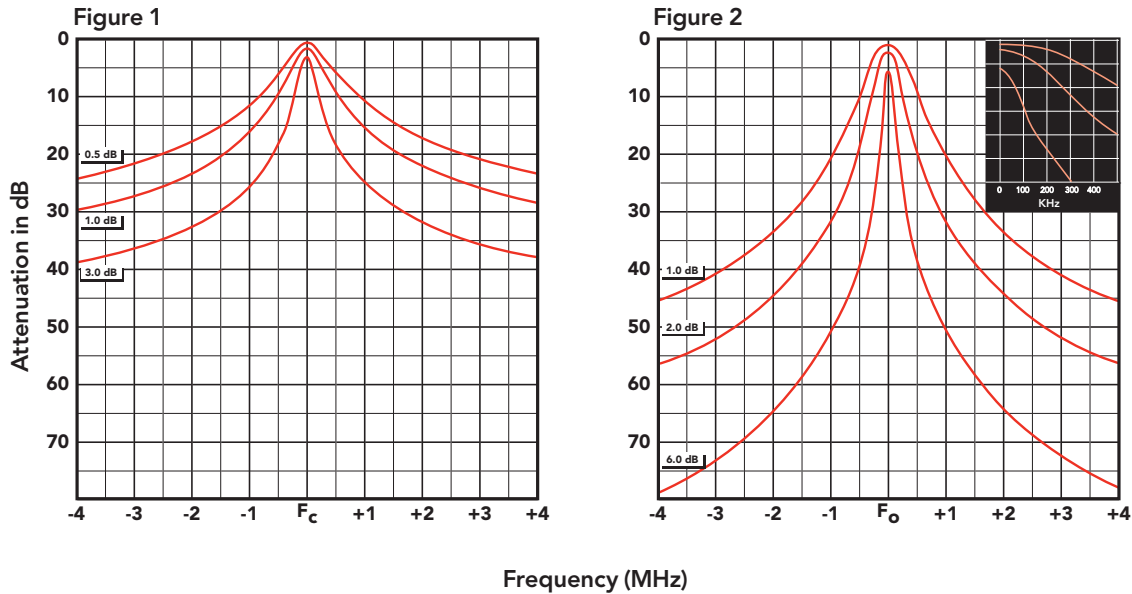
Excellent frequency stability is achieved by the use of a specially machined compensator and Invar rod. The pass frequency is temperature stable from  $-30^{\circ}\text{C}$  to  $+70^{\circ}\text{C}$ . Telewave Ground Loop technology places the center conductor of each coupling loop at DC ground potential 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  $\frac{1}{4}$ -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.

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.

# TWPC-4510-1,2

TYPICAL BANDPASS CAVITY RESPONSE CURVES



MODEL	TWPC-4510-1	TWPC-4510-2
Insertion loss (adjustable)	0.5 to 2.0 dB	1.0 to 4.0 dB
Attenuation	See figure 1	See figure 2
Maximum dimensions with tuners extended in. (cm)	10 x 17 (25.4 x 43)	10.25 x 20 x 17 (26 x 50.8 x 43)
Net weight lb. (kg)	7.5 (3.4)	17 (7.7)
Shipping weight lb. (kg)	10 (4.5)	22 (10)
<b>COMMON SPECIFICATIONS</b>		
Tuning frequency range	400-512 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 +70°C	
Cavity electrical length	¼ 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 12 (25.4 x 31)	
Connectors	N or UHF female (opt.)	
Finish	Gray acrylic enamel	

**NOTE:** When ordering be sure to specify exact frequency and model number.  
Contact the factory if additional information or assistance is required.