



UHF T-Pass Expandable Transmitter Combiners 380-512 MHz

TX RX Systems T-pass Transmitter Combiners utilize three-port bandpass cavities and dual ferrite isolators that are designed to be easily expandable while providing all the benefits of ordinary cavity combiners. Expansion can usually be accomplished without modification to the existing system by simply connecting one of our factory-tuned expansion channel assemblies. The T-pass cavity along with a frequency dependent, length-critical cable makes each channel "see" only the antenna and not the other channels. The combiners are capable of operating over the entire 380-420 or 406-512 MHz frequency range, and additional cavities can be connected between the isolator and T-pass filter to customize channel frequency response to system requirements. This flexibility of design makes our T-pass Transmitter Combiners perfect for UHF frequency assignments.

For system requirements that go beyond our standard models, contact TX RX Systems for a customized design.

FEATURES

- ▶ Mechanically and electrically designed for ease of expansion and broadband operation, and inherent flexibility allows for additional filtering and customized configurations
- ▶ Systems are built with our rugged, high quality cavities: Invar-based temperature compensation, adjustable silver-plated coupling loops, heavy-gauge aluminum outer conductors, thick heliarc-welded cavity top plates, and heavy silver plating on microfinished tuning assemblies
- ▶ 6.625" (168 mm) and 10" (254 mm) diameter cavity options
- ▶ Includes dual ferrite isolators: 5W/25W, 5W/60W, and 5W/100W options
- ▶ Low insertion loss, high Tx-Tx and high Ant-Tx isolation gives predictable system performance
- ▶ High intermodulation suppression and excellent transmitter noise suppression
- ▶ Long-term product dependability and customer support
- ▶ Compact Peg-Rack mounting securely holds up to fifteen 6.625" (168 mm) or twelve 10" (254 mm) cavities. 19" mounting option available

TX RX Systems Inc.

8625 Industrial Pkwy, Angola, NY 14006
716.549.4700 | Sales@txrx.com | www.txrx.com

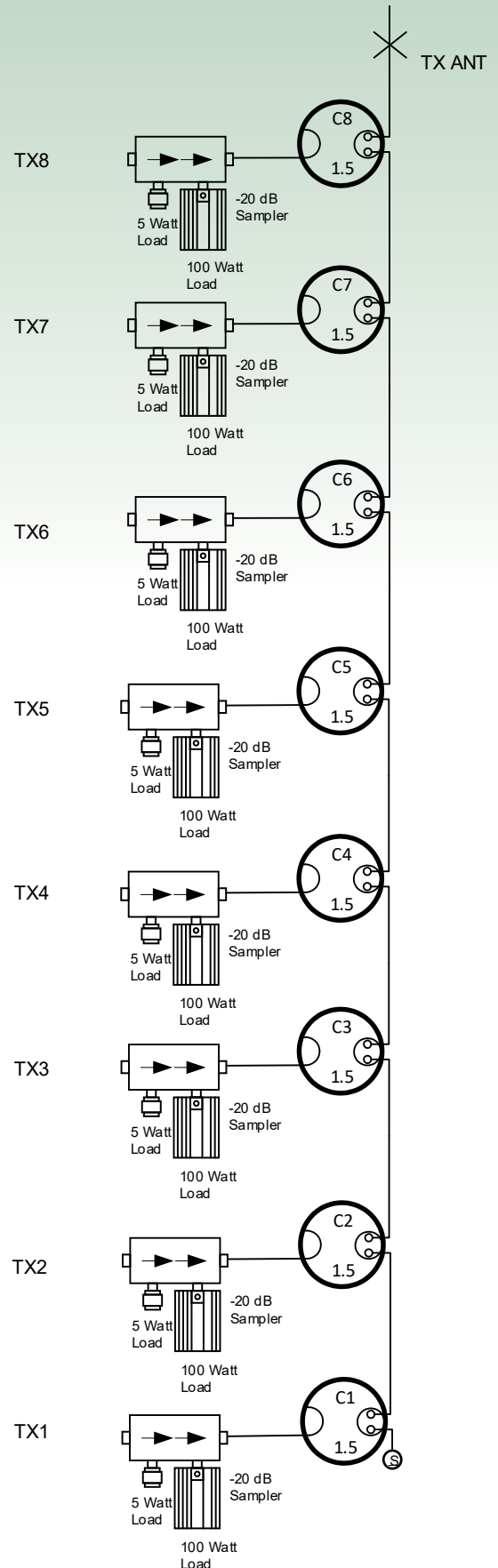
SPECIFICATIONS

Frequency Range Options	380-420 MHz 406-512 MHz
Cavity Type	3/4 wave
Cavity Diameter Options	6.625" (168 mm) 10" (254 mm)
Maximum Continuous Transmit Power	See table for specific model
Continuous Isolator Load Power	See Model Matrix
Minimum Tx-Tx Separation	See Model Matrix
Typical Tx-Tx Isolation at Minimum Separation	-80 dB
Typical Antenna-Tx Isolation	-70 dB
Typical Tx Noise Suppression	See curves for specific model
Nominal Input Impedance	50 Ohms
Maximum Input Return Loss (VSWR)	-20 dB (1.22:1)
Temperature Range	-30° C to +60° C
Connectors, Input & Antenna	N-female
Mechanical Mounting Options (add -MC or -LR to end of model number)	Default: Peg-Rack -MC*: 19" rack mount adaptor plates, 17.5" (184.25 mm) high -LR: System supplied without Peg-Rack
Maximum Channels per Rack	Fifteen 6.625" (168 mm) channels Twelve 10" (254 mm) channels
Dimensions	See Model Matrix
Weight	See Model Matrix

*Note: -MC option reduces maximum number of channels to ten 10" or twelve 6.625" channels per rack.

TX RX Systems Inc.

8625 Industrial Pkwy, Angola, NY 14006
716.549.4700 | Sales@txrx.com | www.txrx.com



Example of model 73-67-01-2D-08

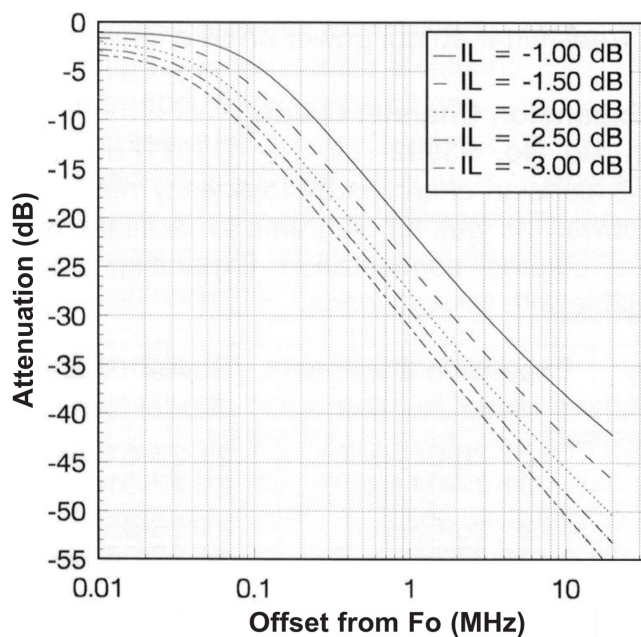
Model Matrix

Model Number	Cavity Diameter, in (mm)	Isolator Power (W)	Frequency Range (MHz)	Minimum Tx-Tx Separation at Cavity Loss	Dimensions (HWD)	Weight (Basic Single channel) (Expansion Assy)
73-56-11-xx-nn	6.625" (168)	125	380-420	150kHz @ -2.0dB	65.25" x 24" x 37.5" (1659 x 610 x 953 mm)	37 lbs (16.7 kg) 16 lbs (7.2 kg)
73-67-11-xx-nn	6.625" (168)	150	406-512	215 kHz @ -1.5 dB 115 kHz @ -2.5. dB	65.25" x 24" x 36" (1659 x 610 x 914 mm)	36 lbs (16.3 kg) 15 lbs (6.8 kg)
73-67-25-xx-nn	10" (168)	150	406-512	150 kHz @ -1.5 dB 75 kHz @ -2.5. dB	79.5" x 24" x 36" (2019 x 610 x 914 mm)	41 lbs (20.4 kg) 19 lbs (8.6 kg)

Notes:

1. "xx" indicates isolator and load configurations. 2B = 5W/25W; 2C=5W/60W; 2D=5W/100W
2. "nn" indicates number of channels
3. To get total weight, multiply the expansion channel weight by nn-1, and add to basic single channel weight

73-56-11 Series Systems 6.625" Diameter 3/4 Wave Fo=400MHz



73-56-11 Series Systems (6.625" Cavity Diameter)						
Tx-to-Tx Separation	Cavity Loss (dB)	Max Power	Loss (dB) vs. No. of Channels			
			2	4	8	12
1 MHz	-1.5	150W	-2.4	-2.6	-2.9	-3.1
250 kHz			-2.9	-3.8	-4.4	-4.7
150 kHz	-2.0	125W	-3.6	-4.8	-5.6	-6.0

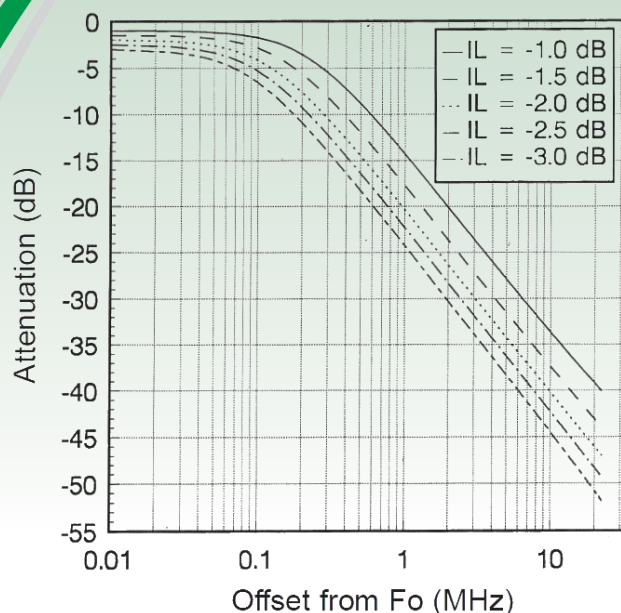
(Above) For 380-420 MHz systems (above): typical insertion loss and maximum input power as a function of Tx-Tx separation, cavity loss setting, and number of channels

(Left) For 380-420 MHz systems: typical Tx noise attenuation vs. offset from frequency and insertion loss setting

TX RX Systems Inc.

8625 Industrial Pkwy, Angola, NY 14006
716.549.4700 | Sales@txrx.com | www.txrx.com

73-67-11 Series Systems 6.625" Diameter Quarterwave, Fo=460 MHz

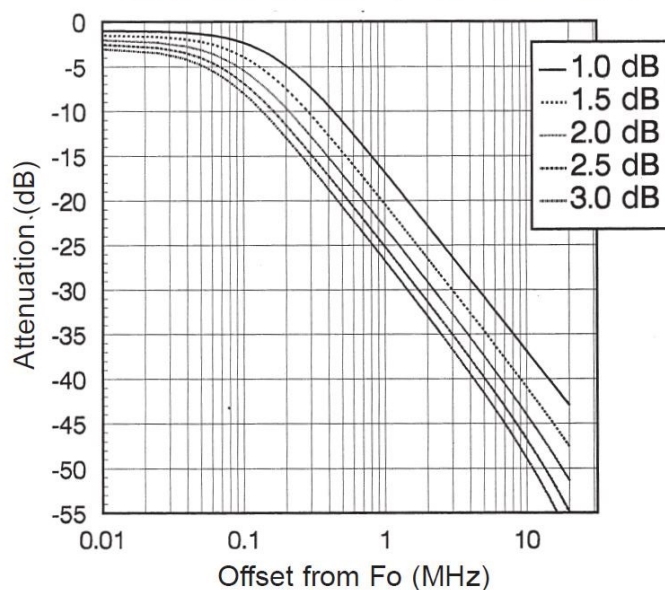


73-67-11 Series Systems (6.625" Cavity Diameter)						
Tx-to-Tx Separation	Cavity Loss (dB)	Max Power	Loss (dB) vs. No. of Channels			
			2	4	8	12
1 MHz	-1.5	150W	-2.4	-2.6	-2.9	-3.1
250 kHz			-2.9	-3.8	-4.4	-4.7
150 MHz	-2.0	130W	-3.6	-4.8	-5.6	-6.0
125 kHz	-2.5	110W	-4.1	-5.2	-6.0	-6.4

(Above) For 406-512 MHz systems (above): typical insertion loss and maximum input power as a function of Tx-Tx separation, cavity loss setting, and number of channels

(Left) For 406-512 MHz systems: typical Tx noise attenuation vs. offset from frequency and insertion loss setting

73-67-25 Series Systems 10" Diameter Quarterwave, Fo=460 MHz



73-67-25 Series Systems (10" Cavity Diameter)						
Tx-to-Tx Separation	Cavity Loss (dB)	Max Power	Loss (dB) vs. No. of Channels			
			2	4	8	12
1 MHz	-1.5	150W	-2.4	-2.5	-2.8	-3.1
250 kHz			-2.7	-3.2	-3.7	-4.0
125 kHz	-2.0	125W	-3.4	-4.4	-5.0	-5.5
75 kHz	-2.5		-4.3	-5.6	-6.6	-7.1

(Above) For 406-512 MHz systems (above): typical insertion loss and maximum input power as a function of Tx-Tx separation, cavity loss setting, and number of channels

(Left) For 406-512 MHz systems: typical Tx noise attenuation vs. offset from frequency and insertion loss setting

TX RX Systems Inc.

8625 Industrial Pkwy, Angola, NY 14006
716.549.4700 | Sales@txrx.com | www.txrx.com

EXPANSION CHANNEL GUIDE

T-pass Combiner Model Number	Cavity Diameter, in (mm)	Frequency Range	Expansion Channel Model Number	Starter Channel Model Number
73-56-11-xx-nn	6.625" (168)	380-400 400-420	21-56A-11-xx-T 21-56B-11-xx-T	21-56A-11-xx-TS 21-56B-11-xx-TS
73-67-11-xx-nn	6.625" (168)	406-430 450-470 470-490 490-512 510-530	21-65-11-xx-T 21-70-11-xx-T 21-71-11-xx-T 21-72-11-xx-T 21-75-11-xx-T	21-65-11-xx-TS 21-70-11-xx-TS 21-71-11-xx-TS 21-72-11-xx-TS 21-75-11-xx-TS
73-67-25-xx-nn	10" (254)	406-430 450-470 470-490 490-512 510-530	21-65-25-xx-T 21-70-25-xx-T 21-71-25-xx-T 21-72-25-xx-T 21-75-25-xx-T	21-65-25-xx-TS 21-70-25-xx-TS 21-71-25-xx-TS 21-72-25-xx-TS 21-75-25-xx-TS

Notes:

1. "xx" indicates isolator and load configurations. 2B = 5W/25W; 2C=5W/60W; 2D=5W/100W
2. "nn" indicates number of channels
3. Starter channels are provided with a short circuit on the T-pass loop



TX RX Systems Inc.

8625 Industrial Pkwy, Angola, NY 14006
716.549.4700 | Sales@txrx.com | www.txrx.com