



Filters & Combiners

DATA SHEET

Outdoor Broadband Triplexer

TPX-782125



- Low Loss
- Small, lightweight
- Good Isolation
- Good IM
- Lightning protected
- High reliability
- Full 700/850/SMR, PCS/AWS and 2500/2600 bands

Overview

Communication Components, Inc. Outdoor Broadband Triplexer combines Basestation Tx/Rx signals from 700/850/SMR on the first port, PCS/AWS on the second port, and 2500/2600 band on the third port, onto a common port. Specifically intended for use in multi-band systems with limited feeder lines, the CCI Triplexer model TPX-782125 facilitates the addition of new technologies to existing sites while providing a high degree of isolation between systems. By reducing the number of feeder lines, the cost to upgrade a site (tower loading, leasing and installation costs) is reduced. The CCI Outdoor Broadband Triplexer provides full band performance for each band with low insertion loss, low Intermodulation, and high power handling. Excellent return loss delivers the best match to the antennas and base station, saving precious transmit power.

Technical Description:

The Outdoor Broadband Triplexer consists of multiple filters to combine (or divide) full band 700/850/SMR, PCS/AWS, and 2500/2600 MHz signals onto a common port. This tower mount unit can be used as either a splitter or combiner to aggregate multiple bands on a common feeder line. All RF ports consist of DIN 7-16 connectors. The fully weatherproof tower mount unit incorporates multiple options for DC and AISG 2.0 pass-through, including an Intelligent Bias-Tee. The Intelligent Bias-Tee architecture passes the DC and AISG carrier frequency from any of the input ports to the common port while blocking the DC and AISG signals from being re-injected into the other input ports. The unit has internal lightning strike protection using a multi-stage surge protection circuit.

The filters have been designed to minimize insertion loss while maximizing isolation. Particular attention has been given to the intermodulation performance of the Broadband Triplexer to minimize any passive intermodulation products from occurring. All DIN Connectors are fully IP68 rated and the unit body is rated for IP66.



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SPECIFICATIONS

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Electrical Specification

RF Parameters	Ports	Frequency(MHz)	Specification		
Return Loss	Common	694 - 960	18 dB min., 20 dB typ.		
		1710 - 2170	18 dB min., 20 dB typ.		
		2500 - 2700	18 dB min., 20 dB typ.		
	700/850/SMR	700/850/SMR	694 - 960	18 dB min., 20 dB typ.	
			PCS/AWS	1710 - 2170	18 dB min., 20 dB typ.
			2500/2700	2500 - 2700	18 dB min., 20 dB typ.
	Insertion Loss	700/850/SMR	694 - 960	0.2 dB typ.	
			PCS/AWS	1710 - 2170	0.2 dB typ.
			2500/2700	2500 - 2700	0.2 dB typ.
	Rejection	700/850/SMR to PCS/AWS or 2500/2700	1710 - 2170	50 dB min.	
			2500 - 2700	50 dB min.	
		PCS/AWS to 700/850/SMR or 2500/2700	694 - 960	50 dB min.	
2500 - 2700			50 dB min.		
2500/2700 to 700/850/SMR or PCS/AWS		694 - 960	50 dB min.		
		1710 - 2170	50 dB min.		

General Characteristics	
Impedance	50 ohms
Continuous Average Power	300 W max.
Peak Envelope Power	5 kW max.
Intermodulation Performance(all ports)	<-110 dBm (-153 dBc) typical (2 x +43 dBm tones) all bands
DC Pass Current/AISG Pass (PCS/AWS to ANT port)	3A/AISG signal (2.176 Mhz) per AISG 2.0

Environmental Specification

Operating Temperature	-50 °C to +60 °C
Enclosure	IP66 (Unit Body), IP68 (Connector)
MTBF	>500,000 hours
Lightning Protection	8/20us, ±20KA max., 10 strikes per IEC61000-4-5

Mechanical Specification

Connectors	4 x 7-16 DIN female long neck
Dimensions single unit (body only)(HxWxD)	6.46 x 7.4 x 1.9 in. (164 x 188 x 49 mm)
Dimensions 2 units stacked (body only)(HxWxD)	6.46 x 7.4 x 3.94 in. (164 x 188 x 100 mm)
Weight	7.25 lbs (3.25 kg); 2 units w/brackets 14.5 lbs (6.5 kg)
Mounting	Pole/Wall mounting bracket

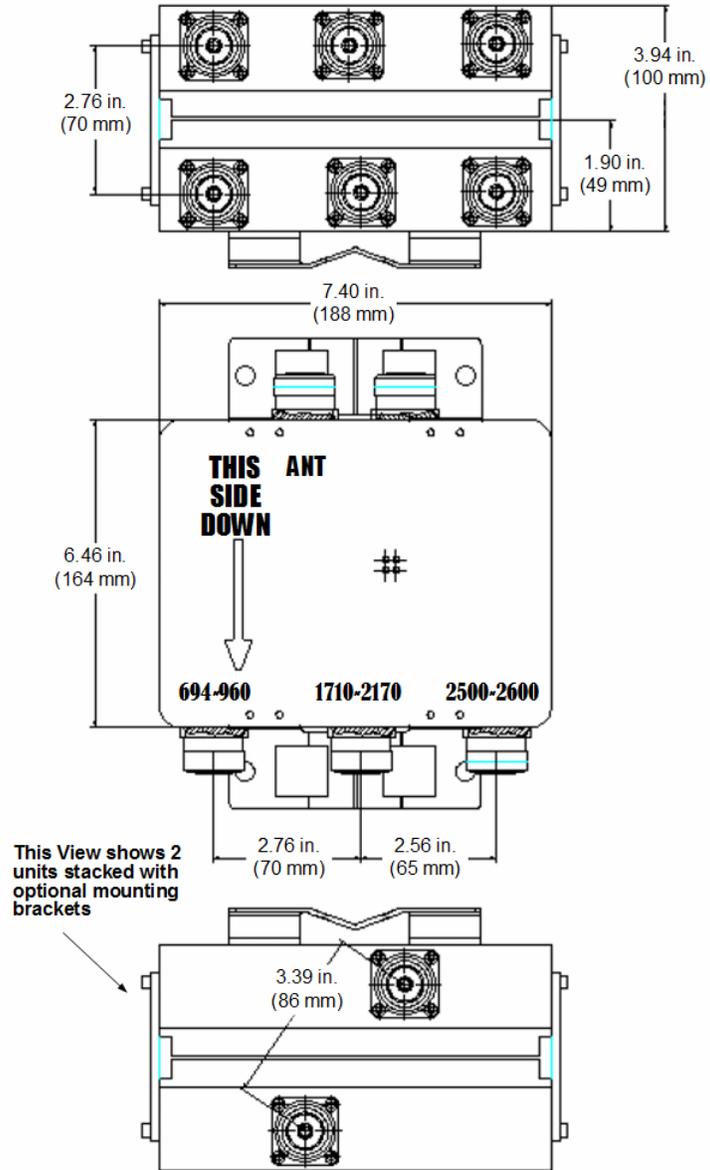


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Outdoor Broadband Triplexer Outline Drawing



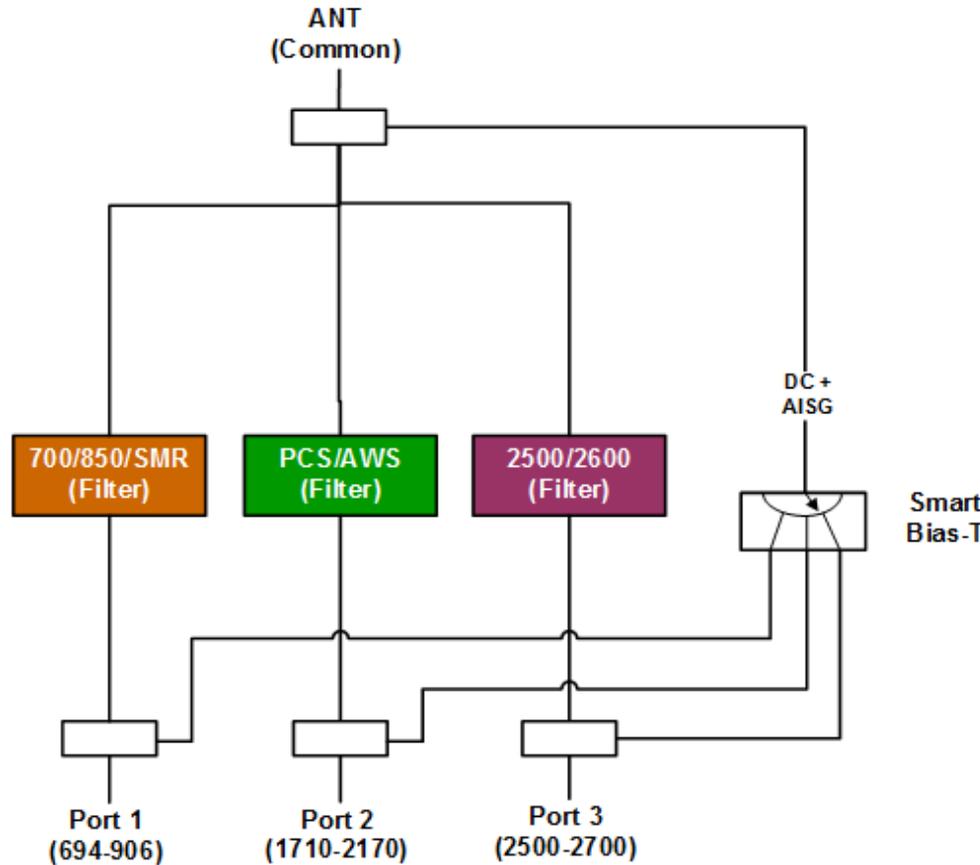
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Block Diagram



Outdoor Broadband Triplexer Block Diagram (TPX-782125-04 shown, other options available)



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ORDERING

Outdoor Broadband Triplexer

TPX-782125

Parts & Accessories

TPX-782125-**	Single Unit Outdoor Broadband Triplexer
TPX-782125-**-D	Dual Unit Outdoor Broadband Triplexer
Option (-**)	Description
-00	DC Block on all ports
-01	DC/AISG Pass thru Port 1 to COMMON, DC Block on ports 2 & 3
-02	DC/AISG Pass thru Port 2 to COMMON, DC Block on ports 1 & 3
-03	DC/AISG Pass thru Port 3 to COMMON, DC Block on ports 1 & 2
-04	Smart Bias-T



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STANDARDS &
CERTIFICATIONS

Outdoor Broadband Triplexer

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Certifications

Antenna Interface Standards Group (AISG), Federal Communication Commission (FCC) Part 15 Class B, CE, CSA US

