

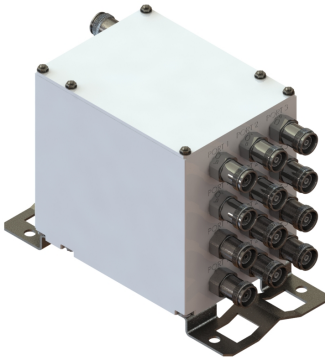


Filters & Combiners

DATA SHEET

Outdoor Broadband Triplexer

TPO-394630-xxx



- The Outdoor triplexer combines Low Band 380-960 MHz, Mid Band 1425-2690 MHz, and High Band 3300-5925 MHz onto a common port.
- Supports 380-960 MHz band on port 1, 1425-2690 MHz band on port 2, and the 3300-5925 MHz band on port 3
- High power 200 W per port with low insertion loss in a small, lightweight enclosure
- AISG 2.0 pass-through with Smart Bias-T on either the Low Band or Mid Band ports when that port is powered or optionally on any dedicated port.
- Low intermodulation with isolation of >50 dB port to port
- High reliability of >500K Hours MTBF and multi-strike lightning protection
- Twin or Quad outdoor (IP67) Triplexer with flexible pole or wall mounting options

Overview

The CCI Outdoor Broadband Triplexer combines the frequency ranges 380-960 MHz, 1425-2690 MHz, and 3300-5925 MHz onto a common port. Specifically intended for use in multi-band systems with limited feeder lines, this CCI Triplexer facilitates the addition of new technologies including LTE and new spectrum onto existing sites, while providing a high degree of isolation between systems. Decreasing the number of feeder lines lowers tower loading, leasing and installation expenditures and the total cost to upgrade a site is significantly reduced. Twin and quad units mounted on a single bracket are available.

The CCI Outdoor 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. The Triplexer enables full Remote Electrical Tilt (RET) and Tower Mount Amplifiers (TMA) control capability by providing DC and AISG 2.0 compliant pass-through on either the 380-960, 1425-2690 or 3300-5925 input ports or using the Smart Bias-T to provide DC/AISG to the 380-960 or 1425-2690 ports to the Common port..

Technical Description:

The Outdoor Broadband Triplexer consists of multiple filters and can be used as either a splitter or combiner to aggregate the 380-960 band on port 1, the 1425-2690 band on port 2, and the 3300-5925 band on port 3 onto a common feeder line. The fully weatherproof tower mount outdoor Triplexer provides DC and AISG signal pass-through, enabling power and control for TMA's & RET antennas. The Triplexer is available with DC/AISG pass options including a smart bias-tee. The Smart Bias-Tee architecture passes the DC and AISG carrier frequency from either the 380-960 or 1425-2690 input ports to the common port while blocking the DC and AISG signals from being re-injected into the other input ports. The Triplexer has internal multi-strike lightning protection using a multi-stage surge protection circuit. The unit has been designed to minimize insertion loss while maximizing isolation. Particular attention has been given to the intermodulation performance of the Triplexer to minimize any passive intermodulation products from occurring. The Triplexer housing is constructed from die cast aluminum and consists of an IP67 moisture proof enclosure, with IP68 moisture proof connectors suited to long-life masthead mounting. The Triplexer can be pole or wall mounted with the included bracket. The RF ports are configured with 4.3-10 female connectors. CCI filter and combiner products are designed and produced to ISO 9001 certification standards for reliability and quality at our state-of-the-art engineering and manufacturing facilities.



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SPECIFICATIONS

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TPO-394630-xxx

Electrical Specification

RF Parameters	Ports	Frequency(MHz)	Specification	
Return Loss	COM	380 - 960	18 dB minimum, 20 dB typical	
		1425 - 2690	18 dB minimum, 20 dB typical	
		3300 - 5925	18 dB minimum, 20 dB typical	
	1 (380 - 960)	380 - 960	18 dB minimum, 20 dB typical	
		2 (1425 - 2690)	1425 - 2690	18 dB minimum, 20 dB typical
		3 (3300 - 5925)	3300 - 5925	18 dB minimum, 20 dB typical
Insertion Loss	COM to Port 1	380 - 960	0.15 dB typical, 0.20 dB maximum	
	COM to Port 2	1425 - 2690	0.20 dB typical, 0.40 dB maximum	
	COM to Port 3	3300 - 5925	0.20 dB typical, 0.25 dB maximum	
Isolation	COM to Port 1	1425 - 2690	50 dB minimum	
		3300 - 5925	50 dB minimum	
	COM to Port 2	380 - 960	50 dB minimum	
		3300 - 5925	50 dB minimum	
	COM to Port 3	380 - 960	50 dB minimum	
		1425 - 2690	50 dB minimum	

General Characteristics	
Impedance	50 ohms
Continuous Average Power	200 W maximum (input ports), 500 W maximum (Common port)
Peak Envelope Power	1 kW maximum (input ports) 5 kW maximum (Common port)
IM Performance(all ports)	<-117 dBm (-160 dBc) typical (2x +43 dBm tones) 380-960 and 1425-2690 bands only
DC Pass Current/AISG Pass (Port 1 or Port 2 to COM)	3A/AISG signal (2.176 Mhz) per AISG 2.0

Environmental Specification

Operating Temperature	-40 °C to +65 °C
Ingress Protection	IP67
Relative Humidity	0 - 99%
MTBF	>500,000 hours
Lightning Protection	8/20us, ±10KA max, 10 strikes each, IEC61000-4-5

Mechanical Specification

Model	Single	Twin	Quad
Connectors	4 x 4.3-10 female	8 x 4.3-10 female	16 x 4.3-10 female
Dimensions w/Bracket	4.65 x 9.45 x 2.56 in. (118 x 240 x 65 mm)	4.65 x 9.45 x 3.94 in. (118 x 240 x 100 mm)	4.65 x 9.45 x 6.69 in. (118 x 240 x 170 mm)
Housing Dimensions	4.65 x 6.26 x 1.93 in. (118 x 159 x 49 mm)	4.65 x 6.26 x 3.31 in. (118 x 159 x 84 mm)	4.65 x 6.26 x 6.06 in. (118 x 159 x 154 mm)
Weight	3.8 lbs (1.73 kg)	6.6 lbs (2.98 kg)	12.05 lbs (5.475 kg)
Frontal Wind Load	96.2 N @150km/hour	96.2 N @150km/hour	96.2 N @150km/hour
Lateral Wind Load	26.5 N @150km/hour	45.4 N @150km/hour	83.2 N @150km/hour

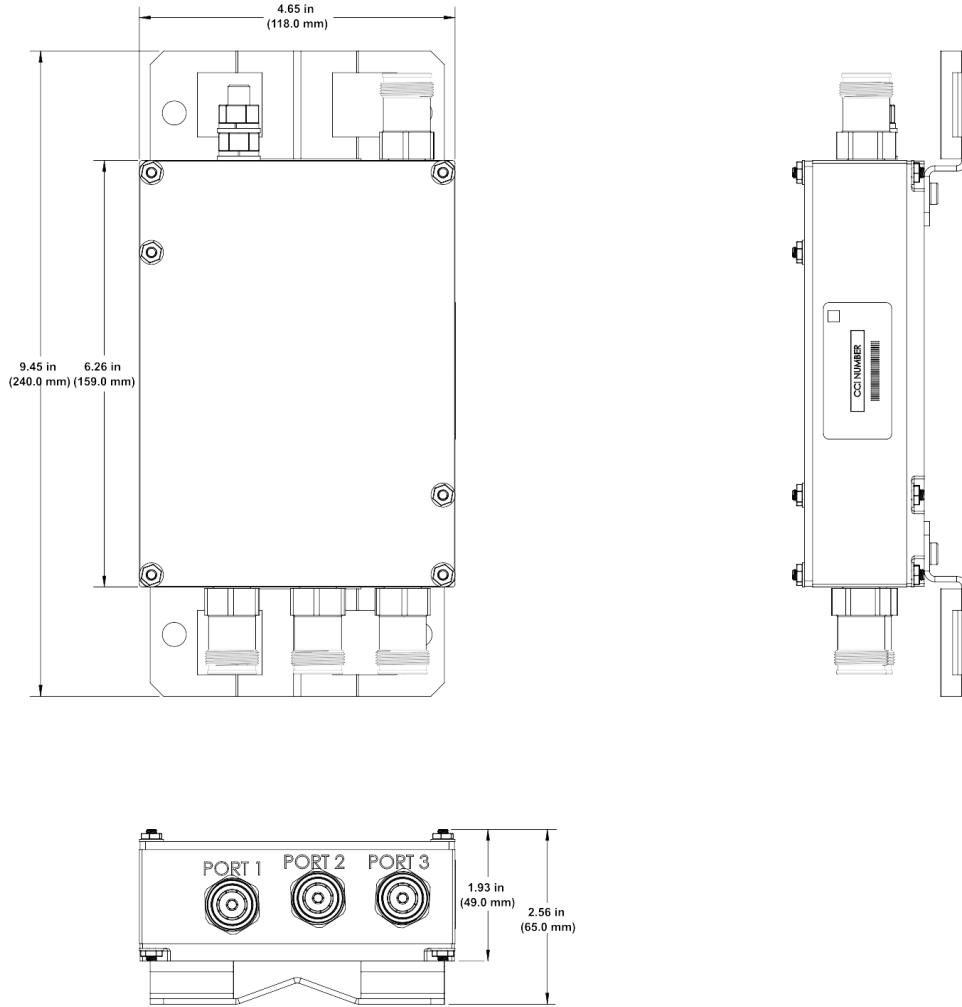


Filters & Combiners

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TPO-394630-xxx



Single Outdoor Broadband Triplexer Outline Drawing

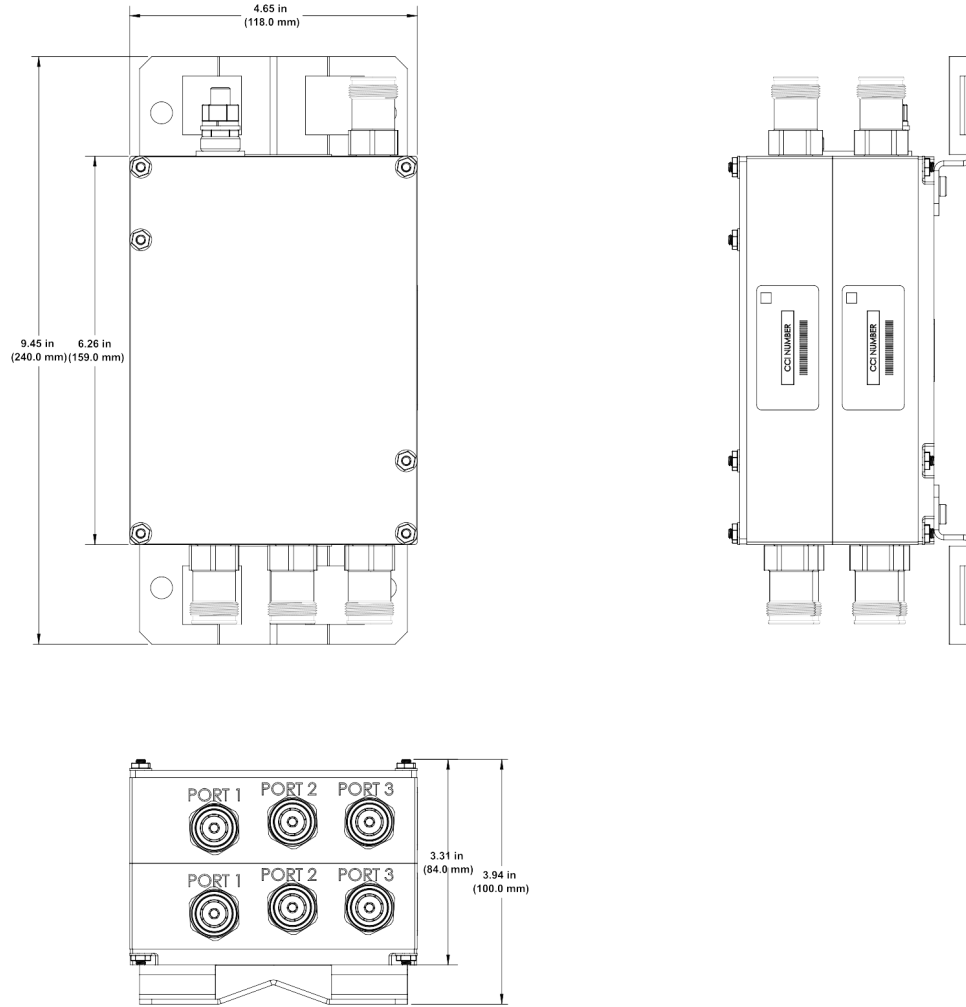


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SPECIFICATIONS

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TPO-394630-xxx



Twin Outdoor Broadband Triplexer Outline Drawing

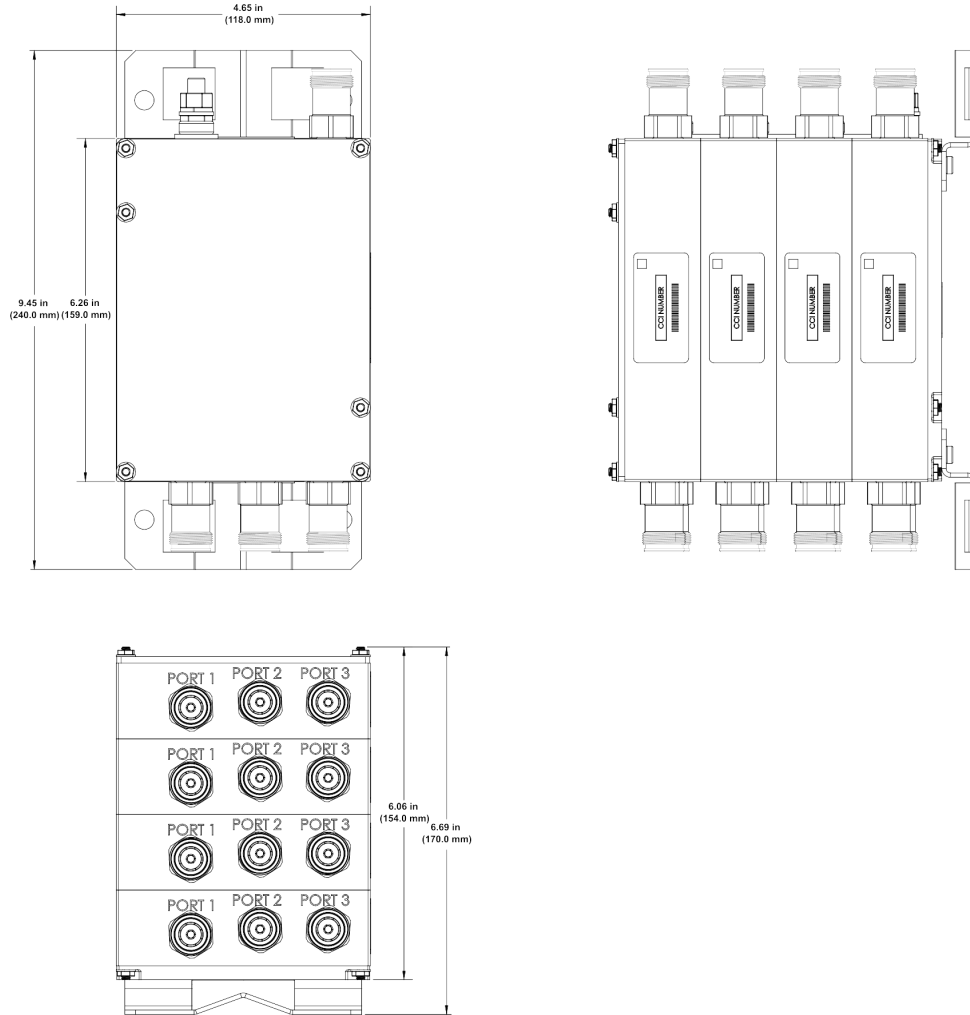


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TPO-394630-xxx



Quad Outdoor Broadband Triplexer Outline Drawing



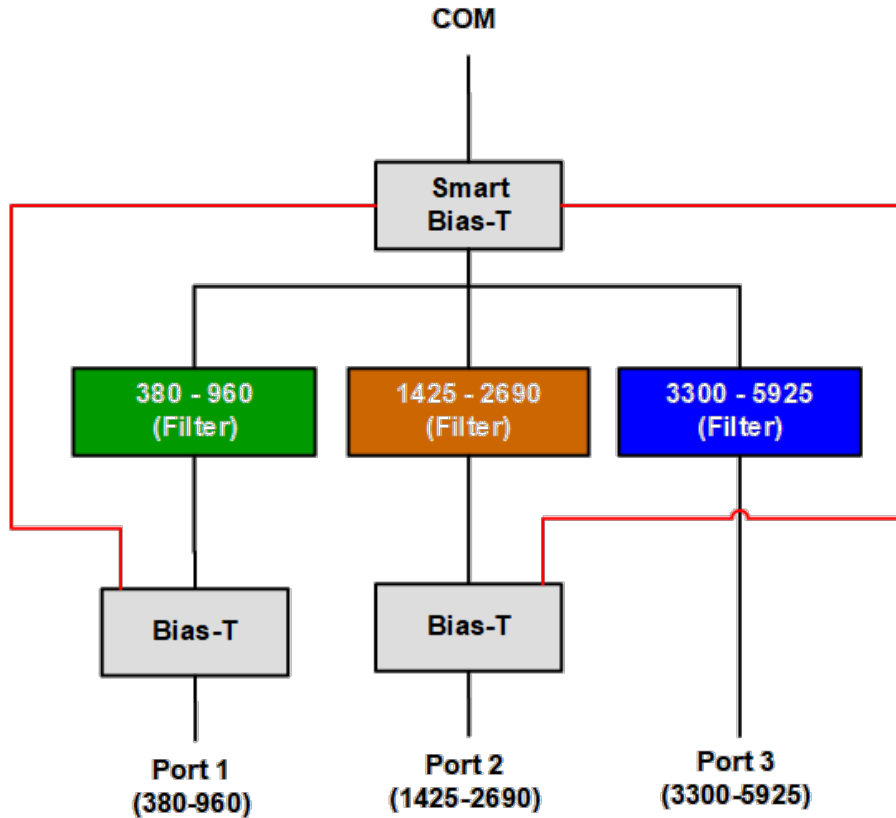
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Block Diagram



Outdoor Broadband Triplexer with Smart Bias-T Block Diagram



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STANDARDS & CERTIFICATIONS

Outdoor Broadband Triplexer

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Parts & Accessories

TPO-394630-x-S2	Single 380-960/1425-2690/3300-5925 Triplexer with 4.3-10 connectors
TPO-394630-x-S2	Single 380-960/1425-2690/3300-5925 Triplexer with 4.3-10 connectors
TPO-394630-x-T2	Twin 380-960/1425-2690/3300-5925 Triplexer with 4.3-10 connectors
TPO-394630-x-T2	Twin 380-960/1425-2690/3300-5925 Triplexer with 4.3-10 connectors
TPO-394630-x-Q2	Quad 380-960/1425-2690/3300-5925 Triplexer with 4.3-10 connectors
TPO-394630-x-Q2	Quad 380-960/1425-2690/3300-5925 Triplexer with 4.3-10 connectors

Option (-x)	Description
-S	Smart Bias-T, DC/AISG Pass through on either 380-960 port or 1425-2690 port when port is powered
-0	No DC/AISG Pass through
-1	DC/AISG Pass through 380-960 port, DC Block on all other input ports
-2	DC/AISG Pass through 1425-2690 port, DC Block on all other input ports
-3	DC/AISG Pass through 3300-5925 port, DC Block on all other input ports

Standards & Compliance

Safety	EN 60950-1, UL 60950-1
Emission	EN 55022
Immunity	EN 55024
Environmental	IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-5, IEC 60068-2-6, IEC-60068-2-11, IEC 60068-2-14, IEC 60068-2-18, IEC 60068-2-27, IEC 60068-2-29, IEC 60068-02-30, IEC 60068-2-52, IEC 60068-2-64, IEC61000-4-5, GR-63-CORE 4.3.1, EN 60529 IP67, IP68

Certifications

Antenna Interface Standards Group (AISG), Federal Communication Commission (FCC) Part 15 Class B, CE, CSA US, ISO 9001

