

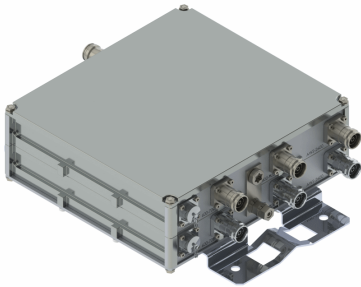


Filters & Combiners

DATA SHEET

Outdoor Broadband Triplexer

TPO-678946-xxx



- The Outdoor triplexer combines the frequency ranges 617-798 MHz, 824-960 MHz, and 1425-2690 MHz onto a common port.
- Supports the 600/700 bands on port 1, 850/900 bands on port 2, and the 1400/PCS/AWS/WCS/BRS bands on port 3
- High power 200 W per port with low insertion loss in a small, lightweight enclosure
- AISG 2.0 pass-through on either input port with Smart Bias-T or optional AISG Modem and Port
- Low intermodulation with isolation of >50 dB port to port
- High reliability of >500K Hours MTBF and multi-strike lightning protection
- Twin or Single outdoor (IP67) Triplexer with flexible pole or wall mounting options

Overview

The CCI Outdoor Broadband Triplexer combines the frequency ranges 617-798 MHz, 824-960 MHz, and 1425-2690 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. An optional twin unit with two Triplexers mounted on a single bracket is also 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 input port using the Smart Bias-T or via an optional AISG modem and port.

Technical Description:

The Outdoor Broadband Triplexer consists of multiple filters and can be used as either a splitter or combiner to aggregate the 600/700 bands on port 1, the 850/900 bands on port 2, and the 1400/PCS/AWS/WCS/BRS bands 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 or AISG modem and output port. The Smart Bias-Tee architecture passes the DC and AISG carrier frequency from any one 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 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 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

Outdoor Broadband Triplexer

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Electrical Specification

RF Parameters	Ports	Frequency(MHz)	Specification
Return Loss	Common	617 - 798	18 dB minimum, 20 dB typical
		824 - 960	18 dB minimum, 20 dB typical
		1425 - 2690	18 dB minimum, 20 dB typical
	600/700	617 - 798	18 dB minimum, 20 dB typical
	850/900	824 - 960	18 dB minimum, 20 dB typical
Insertion Loss	1400/PCS/AWS/WCS/BRS	1425 - 2690	18 dB minimum, 20 dB typical
	COMMON to 600/700	617 - 798	0.3 dB Typical, 0.6 dB maximum
	COMMON to 850/900	824 - 960	0.4 dB typical, 0.7 dB maximum
Isolation	COMMON to 1400/PCS/AWS/WCS/BRS	1425 - 2690	0.1 dB typical, 0.2 dB maximum
		COMMON to 600/700	824 - 960
	COMMON to 850/900	1425 - 2690	50 dB minimum
		617 - 798	50 dB minimum
		1425 - 2690	50 dB minimum
COMMON to 1400/PCS/AWS/WCS/BRS	617 - 798	50 dB minimum	
		824 - 960	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) all bands
DC Pass Current/AISG Pass (Any Port to COMMON port)	3A/AISG signal (2.176 Mhz) per AISG 2.0
Modem Option	9600 Baud per AISG 2.0/3GPP TS 25.461

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
Connectors	4 x 4.3-10 female	8 x 4.3-10 female
Dimensions w/Bracket	12.80 x 9.69 x 2.44 in. (325.0 x 246.0 x 62.0 mm)	12.80 x 9.69 x 3.82 in. (325.0 x 246.0 x 97.0 mm)
Housing Dimensions	8.94 x 9.69 x 1.97 in. (227.0 x 246.0 x 50.0 mm)	8.94 x 9.69 x 3.39 in. (227.0 x 246.0 x 86.0 mm)
Weight	7.7 lbs (3.5 kg)	13.2 lbs (6.0 kg)
Frontal Wind Load	232 N @150km/hour	232 N @150km/hour
Lateral Wind Load	39 N @150km/hour	67 N @150km/hour

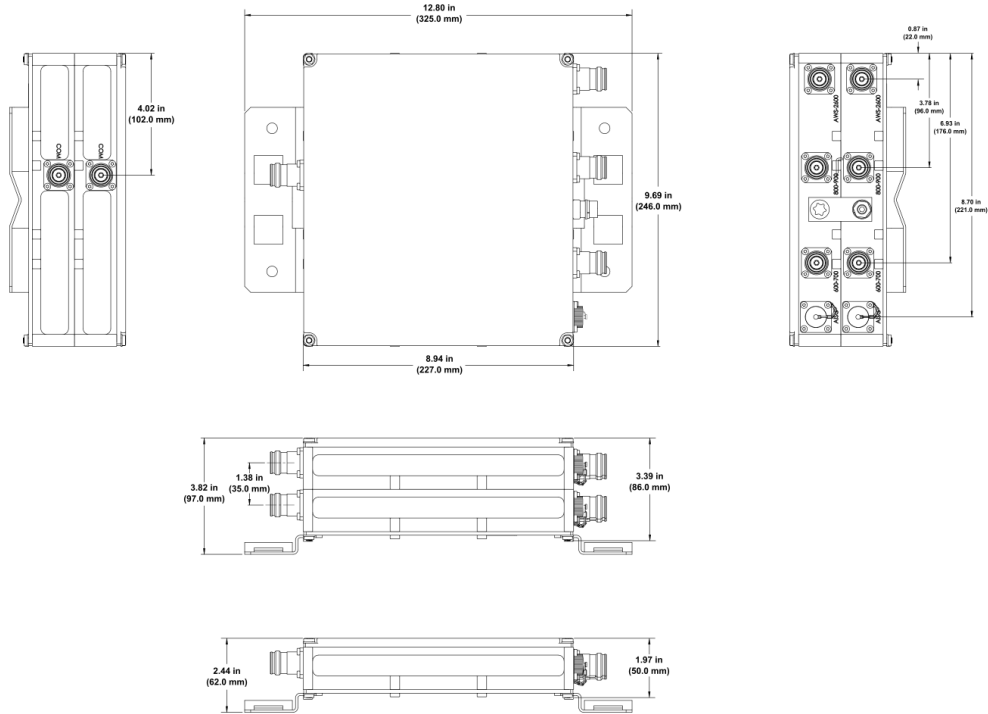


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Outdoor Broadband Triplexer Outline Drawing



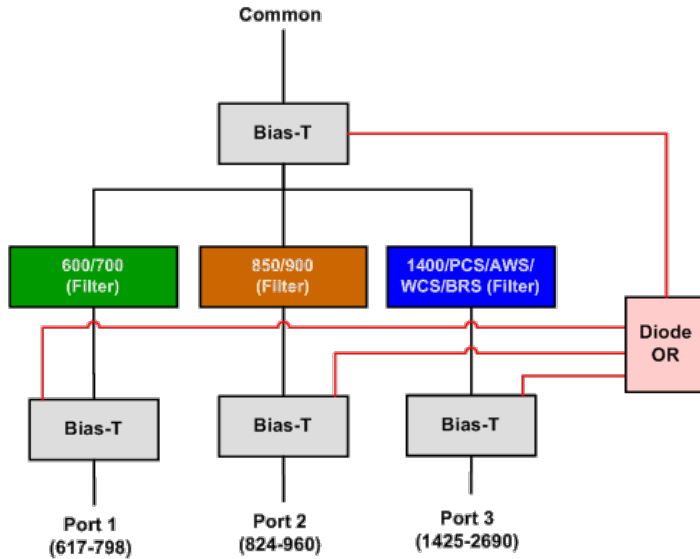
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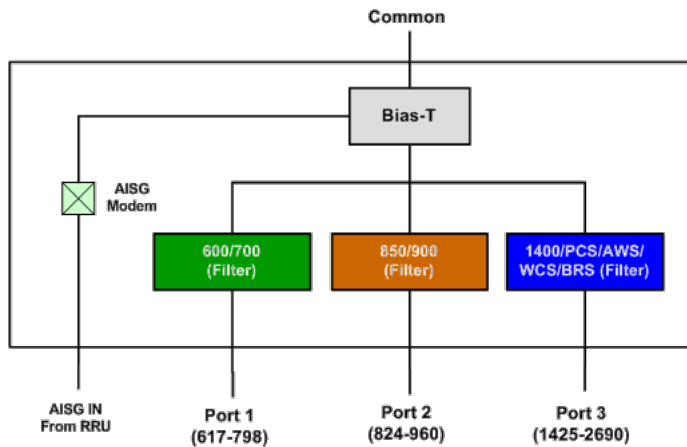
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Block Diagram



Outdoor Broadband Triplexer with Smart Bias-T Block Diagram



Outdoor Broadband Triplexer with AISG Modem Block Diagram



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STANDARDS & CERTIFICATIONS

Outdoor Broadband Triplexer

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Parts & Accessories

TPO-678946-S-S2	Single 600-700/850-900/1400-BRS Triplexer with 4.3-10 connectors and Smart Bias-T for DC/AISG pass through
TPO-678946-S-T2	Twin 600-700/850-900/1400-BRS Triplexer with 4.3-10 connectors and Smart Bias-T for DC/AISG pass through
TPO-678946-M-S2	Single 600-700/850-900/1400-BRS Triplexer with 4.3-10 connectors and AISG Modem and Output Port
TPO-678946-M-T2	Twin 600-700/850-900/1400-BRS Triplexer with 4.3-10 connectors and AISG Modem and Output Port

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



CCI Communication Components Inc.
EXTENDING WIRELESS PERFORMANCE