

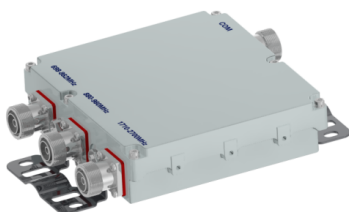


# Filters & Combiners

## DATA SHEET

### Outdoor Broadband Triplexer

TPO-080976-xxx



- Combines the 700/800 Band (698-862 MHz), 900 (880-960 MHz) and DCS/IMT/IMT-E Bands (1710-2700 MHz) onto a common port.
- High power 200 W per port with low insertion loss
- AISG 2.0 compliant with multiple options for DC/AISG pass through
- Low intermodulation with isolation of >50 dB port to port
- Available twin unit configuration
- High reliability of >500K Hours MTBF and multi-strike lightning protection
- Lightweight outdoor enclosure with pole or wall mounting options

#### Overview

The CCI Outdoor Broadband Triplexer combines 700/800 band (698-862), the 900 band (880-960), and DCS/IMT/IMT-E (1710-2700) bands 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) capability by providing DC and AISG 2.0 compliant pass-through.

#### Technical Description:

The Outdoor Broadband Triplexer consists of multiple filters and can be used as either a splitter or combiner to aggregate the 700/800 MHz, 900 MHz and DCS/IMT/IMT-E bands on a common feeder line. The fully weatherproof tower mount outdoor Triplexer provides DC and AISG signal pass-through on any of the band specific ports, enabling power and control for TMA's & RET antennas. 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 immersion proof connectors suited to long-life masthead mounting. The Triplexer can be pole or wall mounted with the included bracket. The RF ports can be configured with either DIN 7-16 or 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.



# Filters & Combiners

## SPECIFICATIONS

### Outdoor Broadband Triplexer

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#### Electrical

RF Parameters	Ports	Frequency(MHz)	Specification
Return Loss	Common	698 - 862	20 dB minimum
		880 - 960	20 dB minimum
		1710 - 2700	20 dB minimum
	700/800	698 - 862	20 dB minimum
	900	880 - 960	20 dB minimum
Insertion Loss	DCS/IMT/IMT-E	1710 - 2700	20 dB minimum
	COM to 700/800	698 - 862	0.5 dB maximum
	COM to 850	880 - 960	0.5 dB maximum
	COM to DCS/IMT/IMT-E	1710 - 2700	0.5 dB maximum
Isolation	COM to 700/800	880 - 960	50 dB minimum
		1710 - 2700	50 dB minimum
	COM to 900	698 - 862	50 dB minimum
		1710 - 2700	50 dB minimum
	COM to DCS/IMT/IMT-E	698 - 862	50 dB minimum
		880 - 960	50 dB minimum

General Characteristics	
Impedance	50 ohms
Continuous Average Power	200 W max. per port
Peak Envelope Power	2 kW max. per port
Intermodulation Performance(all ports)	<-117 dBm (-160 dBc) typical (2 x +43 dBm tones) all bands
DC Pass Current/AISG Pass	3A/AISG signal (2.176 Mhz) per AISG 2.0

#### Environmental

Operating Temperature	-40 °C to +65 °C
Ingress Protection	IP68
Relative Humidity	5% - 95%
MTBF	>500,000 hours
Lightning Protection	8/20us, ±10KA max, 10 strikes per IEC61000-4-5



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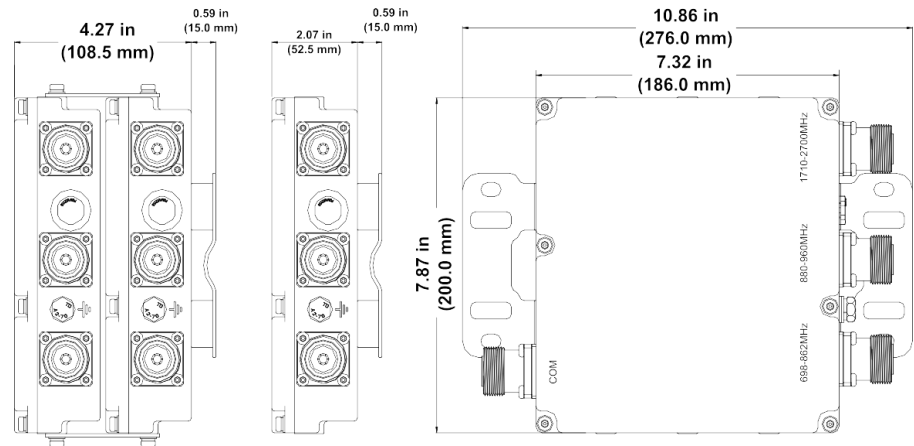
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### Outdoor Broadband Triplexer

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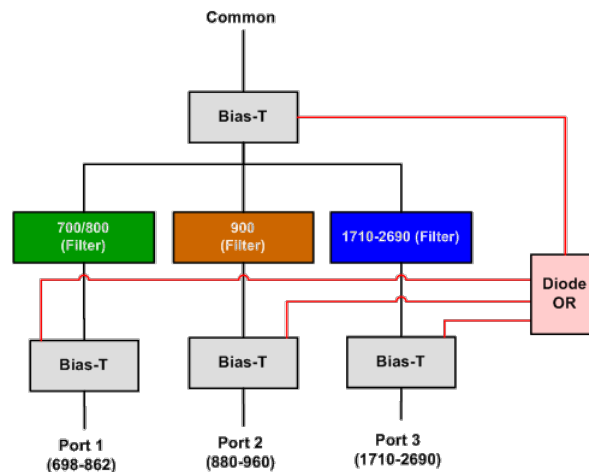
#### Mechanical

Modularity	Single	Twin
Weight with brackets	5.75 lbs (2.6 kg)	11.45 lbs (5.2 kg)
Dimensions with brackets	7.87 x 10.86 x 2.66 in. (200 x 276 x 67.5 mm)	7.87 x 10.86 x 4.86 in. (200 x 186 x 123.5 mm)
Dimensions Enclosure Only	7.87 x 7.32 x 2.07 in. (200 x 186 x 52.5 mm)	
Connectors	4.3-10 or 7-16 female x 4 - per Triplexer	
Mounting	Pole/Wall mounting bracket	



Outdoor Broadband Triplexer Outline Drawing

#### Block Diagram



Outdoor Broadband Triplexer Block Diagram



# Filters & Combiners

## STANDARDS & CERTIFICATIONS

### Outdoor Broadband Triplexer

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#### Parts & Accessories

<b>TPO-080976-S-S1</b>	Outdoor Triplexer with Smart Bias-T and 7-16 DIN connectors
<b>TPO-080976-S-S2</b>	Outdoor Triplexer with Smart Bias-T and 4.3-10 connectors
<b>TPO-080976-S-T1</b>	Outdoor Twin Triplexer with Smart Bias-T and 7/16 DIN connectors
<b>TPO-080976-S-T2</b>	Outdoor Twin Triplexer with Smart Bias-T and 4.3-10 connectors

#### Standards & Compliance

<b>Safety</b>	EN 60950-1, UL 60950-1
<b>Emission</b>	EN 55022
<b>Immunity</b>	EN 55024
<b>Environmental</b>	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

Federal Communication Commission (FCC) Part 15 Class B, CE, CSA US, ISO 9001



**CCI** Communication Components Inc.  
EXTENDING WIRELESS PERFORMANCE