

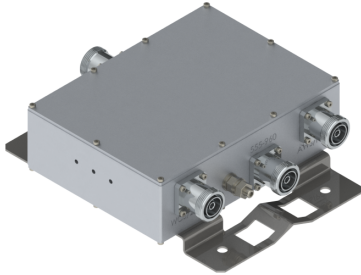


# Filters & Combiners

DATA SHEET

## Outdoor Broadband Triplexer

TPO-697136-xxx



- The Outdoor triplexer the frequency ranges 555-960 MHz, 1695-2200 MHz, and 2305-2690 MHz onto a common port.
- Supports the 600/700/850/900 bands on port 1, AWS/PCS bands on port 2, and the WCS/BRS bands on port 3
- 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 the frequency ranges 555-960 MHz, 1695-2200 MHz, and 2305-2690 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) 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 600/700/850/900 bands on port 1, the AWS/PCS bands on port 2, and the 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 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 IP67 moisture 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

TPO-697136-xxx

#### Electrical Specification

RF Parameters	Ports	Frequency(MHz)	Specification	
Return Loss	Common	555 - 960	18 dB minimum, 20 dB typical	
		1695 - 2200	18 dB minimum, 20 dB typical	
		2305 - 2690	18 dB minimum, 20 dB typical	
	600/700/850/900	555 - 960	18 dB minimum, 20 dB typical	
		AWS/PCS	1695 - 2200	18 dB minimum, 20 dB typical
		WCS/BRS	2305 - 2690	18 dB minimum, 20 dB typical
Insertion Loss	COMMON to 600/700/850/900	555 - 960	0.15 typical, 0.2 dB maximum	
	COMMON to AWS/PCS	1695 - 2200	0.2 dB typical, 0.35 dB maximum	
	COMMON to WCS/BRS	2305 - 2690	0.2 dB typical, 0.35 dB maximum	
Isolation	COMMON to 600/700/850/900	1695 - 2200	50 dB minimum	
		2305 - 2690	50 dB minimum	
	COMMON to AWS/PCS	555 - 960	50 dB minimum	
		2305 - 2690	50 dB minimum	
COMMON to WCS/BRS	555 - 960	50 dB minimum		
	1695 - 2200	50 dB minimum		

#### General Characteristics

Impedance	50 ohms
Continuous Average Power	300 W max.
Peak Envelope Power	5 kW max.
IM Performance(all ports)	<-117 dBm (-160 dBc) typical (2x +43 dBm tones) all bands
DC Pass Current/AISG Pass	3A/AISG signal (2.176 Mhz) per AISG 2.0

#### Environmental Specification

Operating Temperature	-50 °C to +60 °C
Ingress Protection	IP67
MTBF	>500,000 hours
Lightning Protection	8/20us, ±10KA max., 10 strikes per IEC61000-4-5

#### Mechanical Specification

Model	Single	Twin
Connectors	4 x 7-16 DIN female or 4 x 4.3-10 female	8 x 7-16 DIN female or 8 x 4.3-10 female
Dimensions w/Bracket	10.09 x 8.27 x 3.13 in. (256.2 x 210.0 x 79.4 mm)	10.09 x 8.76 x 5.88 in. (256.2 x 222.5 x 149.4 mm)
Housing Dimensions	6.16 x 8.27 x 2.59 in. (156.4 x 210.0 x 65.8 mm)	6.16 x 8.27 x 5.35 in. (156.4 x 210.0 x 135.8 mm)
Weight	8.3 lbs (3.78 kg)	16.06 lbs (7.3 kg)
Frontal Wind Load	111.3 N @150km/hour	111.3 N @150km/hour
Lateral Wind Load	35.0 N @150km/hour	70.0 N @150km/hour

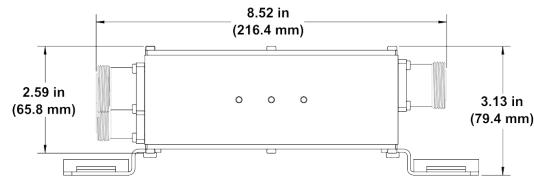
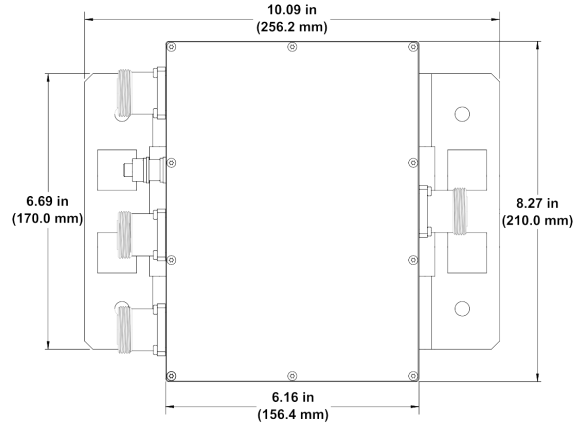


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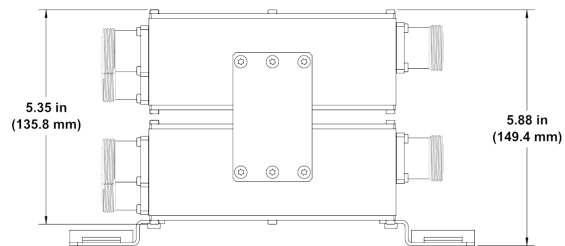
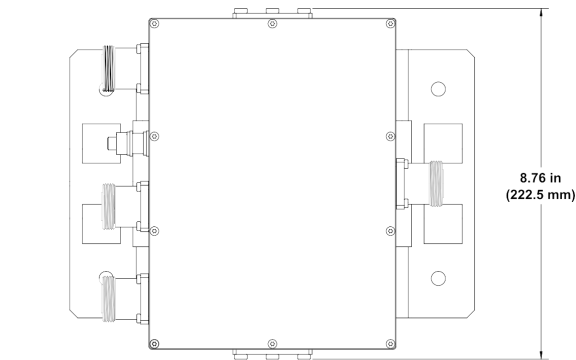
SPECIFICATIONS

## Outdoor Broadband Triplexer

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Single Outdoor Broadband Triplexer Outline Drawing



Twin Outdoor Broadband Triplexer Outline Drawing



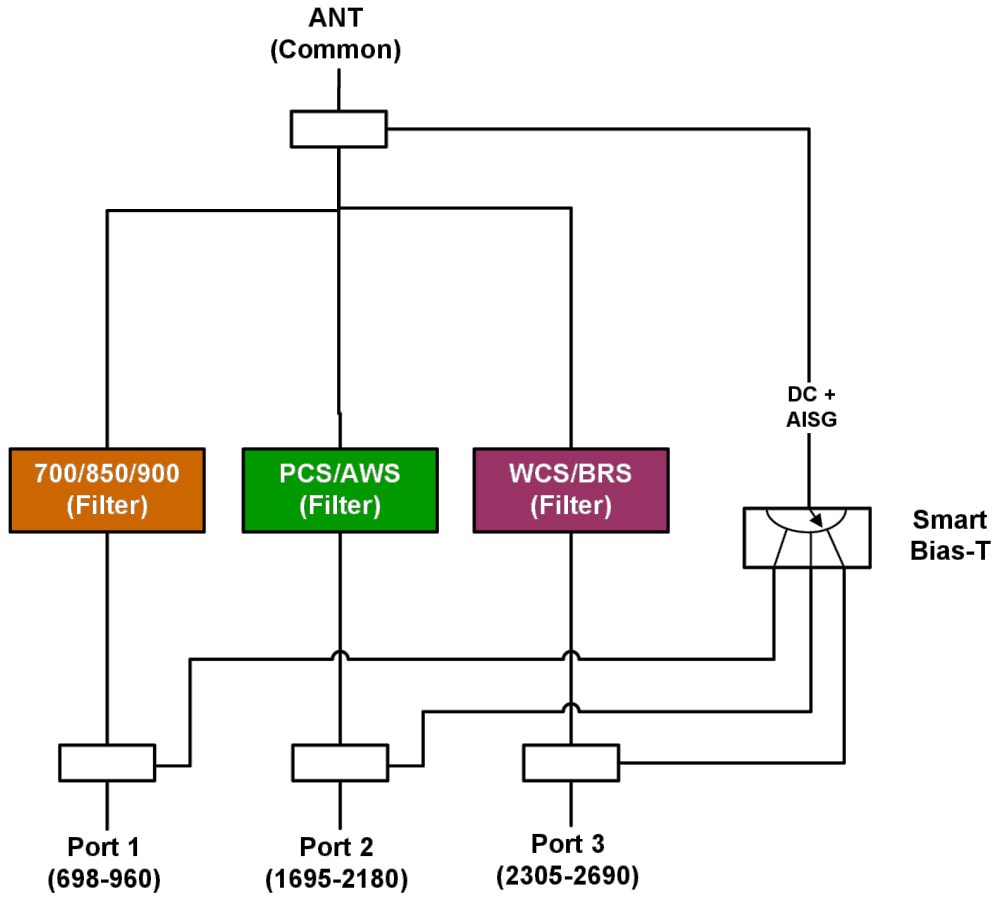
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SPECIFICATIONS

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Block Diagram



Outdoor Broadband Triplexer Block Diagram



# Filters & Combiners

STANDARDS & CERTIFICATIONS

## Outdoor Broadband Triplexer

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### Parts & Accessories

<b>TPO-697136-x-S1</b>	Outdoor Triplexer with 7-16 connectors
<b>TPO-697136-x-S2</b>	Outdoor Triplexer with 4.3-10 connectors
<b>TPO-697136-x-T1</b>	Outdoor Twin Triplexer with 7/16 connectors
<b>TPO-697136-x-T2</b>	Outdoor Twin Triplexer with 4.3-10 connectors

Option (-x)	Description
-S	Smart Bias-T, DC/AISG Pass through on either port
-0	No DC/AISG Pass through
-1	DC/AISG Pass through Low Band to COMMON, DC Block on all other input ports
-2	DC/AISG Pass through AWS/PCS Band to COMMON, DC Block on all other input ports
-3	DC/AISG Pass through WCS/BRS to COMMON, DC Block on all other input ports

### 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

