

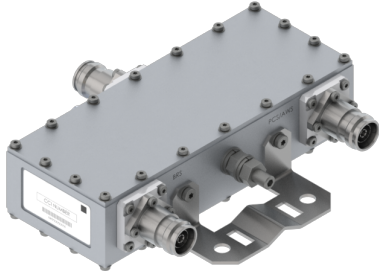


# Filters & Combiners

DATA SHEET

## Outdoor Diplexer

DPO-7126-xxx



- Combines the frequencies covering PCS/AWS (1695-2180 MHz) with BRS (2496-2690 MHz)
- High power 250 W per port with low insertion loss in a small, lightweight enclosure
- Low intermodulation with isolation of >50 dB port to port
- Smart Bias-T enables DC and AISG 2.0 pass-through on either input port
- High reliability of >500K Hours MTBF and multi-strike lightning protection
- Weatherproof enclosure (IP67) with available outdoor pole or wall mounting options

### Overview

The CCI Outdoor Diplexer passes the PCS and AWS bands covering 1695-2180 MHz on its low band input port and the full BRS band which covers 2496-2690 MHz on its high band input port. The Diplexer combines the low band and high band signals on to a common port and is specifically intended for use in multi-band systems with limited feeder lines. The Diplexer facilitates the addition of new technologies including LTE and new spectrum to 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 significantly reduces the total cost to upgrade a site.

The CCI Outdoor Diplexer provides full band performance for each band with low insertion loss, low Intermodulation, and high 250 W per port power handling. Excellent return loss performance delivers the best match to the antennas and base station, saving precious transmit power. The CCI Diplexer 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. The diplexer is available in a single or twin unit configuration.

### Technical Description:

The CCI Outdoor Diplexer consists of multiple filters and can be used as either a splitter or combiner to aggregate the PCS/AWS with the BRS bands on to a common feeder line. The fully weatherproof tower mount outdoor Diplexer provides DC and AISG signal pass-through on either 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 Diplexer 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 Diplexer to minimize any passive intermodulation products from occurring. The Diplexer 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 Diplexer 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 Diplexer

DPO-7126-xxx

#### Electrical

RF Parameters	Ports	Frequency(MHz)	Specification
Return Loss	COMMON	1695 - 2180	18 dB minimum, 20 dB typical
		2496 - 2690	18 dB minimum, 20 dB typical
	PCS/AWS	1695 - 2180	18 dB minimum, 20 dB typical
	BRS	2496 - 2690	18 dB minimum, 20 dB typical
Insertion Loss	COMMON to PCS/AWS	1695 - 2180	0.2 dB typical, 0.25 dB maximum
	COMMON to BRS	2496 - 2690	0.2 dB typical, 0.25 dB maximum
Rejection	COMMON to PCS/AWS	1695 - 2180	50 dB minimum
	COMMON to BRS	2496 - 2690	50 dB minimum
Isolation	AWS/PCS to BRS	1695 - 2180	50 dB minimum
	BRS to AWS/PCS	2496 - 2690	50 dB minimum

General Characteristics	
Impedance	50 ohms
Continuous Average Power	250 W maximum (input ports), 500 W maximum (Common port)
Peak Envelope Power	1 kW maximum (input ports), 3 kW maximum (Common port)
Intermodulation Performance	<-117 dBm (-160 dBc) at 2 x +43 dBm tones all bands
DC Pass Current/AISG Pass	3A/AISG signal (2.176 Mhz) per AISG 2.0 on either input port

#### Environmental

Operating Temperature	-40 °C to +65 °C
Enclosure	Enclosure IP67, Connectors IP68
MTBF	>500,000 hours
Lightning Protection	8/20us, ±20KA maximum, 10 strikes per IEC61000-4-5

#### Mechanical

Model	DPO-2126-x-Sx	DPO-2126-x-Tx	DPO-2126-x-Qx
Modularity	Single	Twin	Quad
Weight with brackets	3.7 lbs (1.6 Kg)	7.3 lbs (3.3 Kg)	14.4 lbs (6.6 Kg)
Dimensions with brackets	5.94 x 7.94 x 2.02 in. (151 x 201.8 x 51.4 mm)	5.94 x 7.94 x 4.07 in. (151 x 201.8 x 103.4 mm)	5.94 x 7.94 x 8.17 in. (151 x 201.8 x 207.4 mm)
Dimensions single enclosure	3.03 x 7.42 x 1.92 in. (77 x 188.5 x 48.8 mm)		
Connectors	3 x 7-16 DIN female long neck or 3 x 4.3-10 female		
Mounting	Pole/Wall mounting bracket		

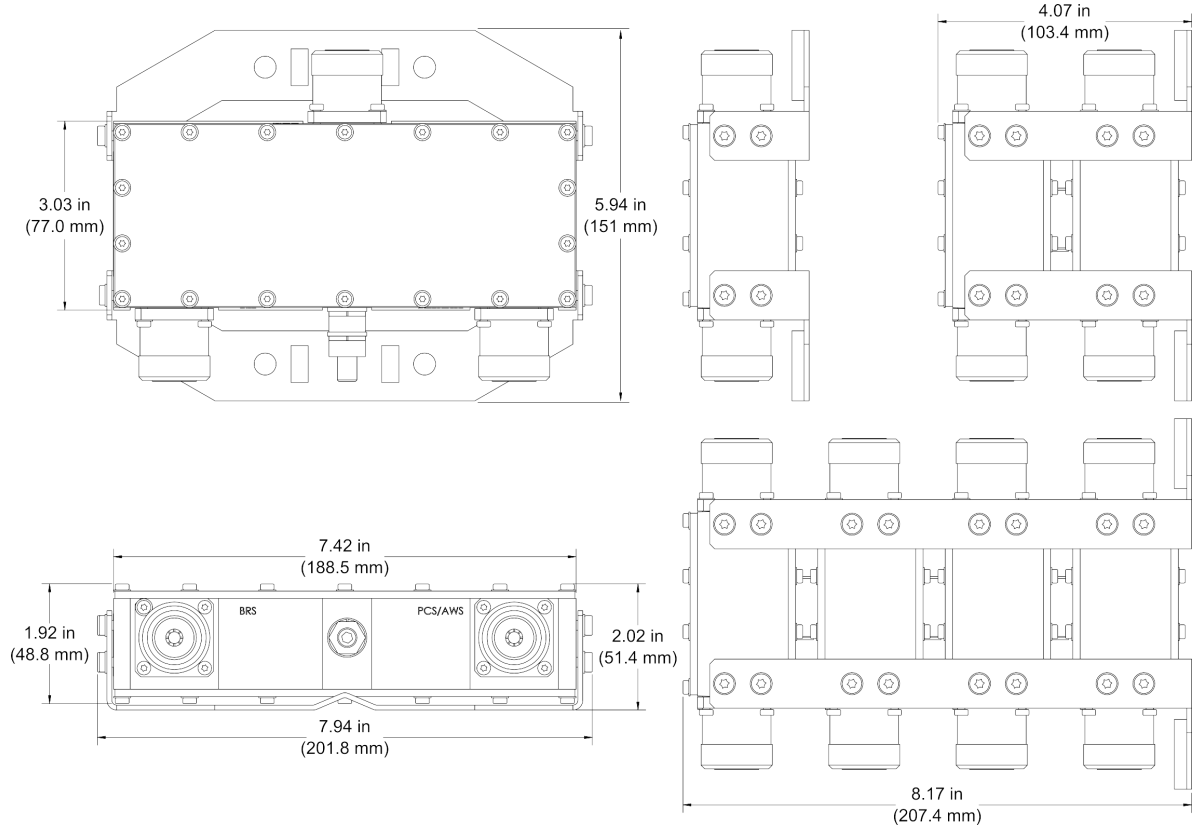


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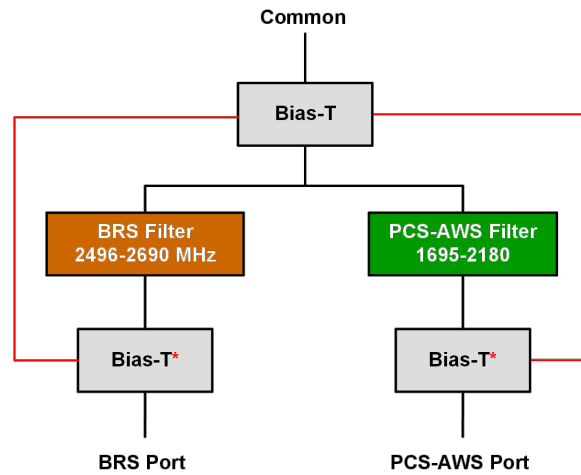
### Outdoor Diplexer

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Outdoor Diplexer Outline Drawing

### Block Diagram



Outdoor Diplexer Block Diagram

\*See ordering details for the DC/AISG pass-through options



# Filters & Combiners

## STANDARDS & CERTIFICATIONS

### Outdoor Diplexer

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#### Parts & Accessories

DPO-7126-x-S1	Outdoor Diplexer with 7-16 DIN connectors
DPO-7126-x-S2	Outdoor Diplexer with 4.3-10 connectors
DPO-7126-x-T1	Outdoor Twin Diplexer with 7/16 DIN connectors
DPO-7126-x-T2	Outdoor Twin Diplexer with 4.3-10 connectors
DPO-7126-x-Q1	Outdoor Quad Diplexer with 7/16 DIN connectors
DPO-7126-x-Q2	Outdoor Quad Diplexer with 4.3-10 connectors

Option (-x)	Description
-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 High Band to COMMON, DC Block on all other input ports
-S	Smart Bias-T, DC/AISG Pass through on either 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

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

