

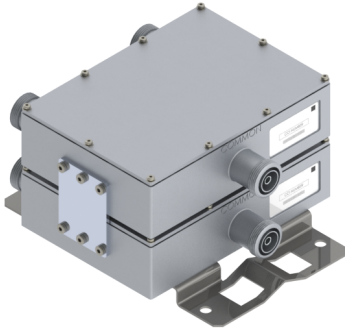


# Filters & Combiners

DATA SHEET

## Outdoor Diplexer

DPO-2136-xxx



- Combines the frequencies covering AWS-PCS (1695-2180 MHz) with WCS-BRS (2300-2690 MHz), including AWS-3
- High power 200 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 >100K Hours MTBF and multi-strike lightning protection
- Available outdoor pole or wall mounting options

### Overview

The CCI Outdoor Diplexer passes the AWS, AWS-3 and PCS bands covering 1695-2180 MHz on its low band input port and the full WCS and BRS bands which covers 2300-2690 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 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 200 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 using the Smart Bias-T.

### Technical Description:

The CCI Outdoor Diplexer consists of multiple filters and can be used as either a splitter or combiner to aggregate the AWS/AWS-3/PCS with the WCS-BRS bands on to a common feeder line. The fully weatherproof tower mount outdoor 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 can be pole or wall mounted and the unit body is rated for IP67. All RF ports are DIN 7-16 connectors which are IP68 rated. The mounting kit is included with the unit as an accessory. 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

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#### Electrical

RF Parameters	Ports	Frequency(MHz)	Specification
Return Loss	COMMON	1695-2180	18 dB min., 20 dB Typ.
		2300-2690	18 dB min., 20 dB Typ.
	AWS/PCS	1695-2180	18 dB min., 20 dB Typ.
	WCS/BRS	2300-2690	18 dB min., 20 dB Typ.
Insertion Loss	COMMON to AWS/PCS	1695-2180	0.2 dB typ., 0.35 dB max.
	COMMON to WCS/BRS	2300-2690	0.2 dB typ., 0.35 dB max.
Rejection	COMMON to AWS/PCS	2300-2690	50 dB min.
	COMMON to WCS/BRS	1695-2180	50 dB min.

General Characteristics	
Impedance	50 ohms
Continuous Average Power	200 W max. (input ports), 500 W max. (Common port)
Peak Envelope Power	1 kW max. (input ports), 3 kW max. (Common port)
Intermodulation Performance	<-114 dBm (-157 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 IP68, Connectors IP68
MTBF	>500,000 hours
Lightning Protection	8/20us, ±10KA max, 10 strikes per IEC61000-4-5

#### Mechanical

Model	Single	Twin
Connectors	3 x 7-16 DIN female	3 x 7-16 DIN female
Dimensions w/Bracket (HxWxD)	8.87 x 7.44 x 2.72 in. (225.3 x 189.0 x 69 mm)	9.0 x 7.93 x 4.9 in. 228.6 x 201.5 x 124.4 mm)
Housing Dimensions (HxWxD)	5.38 x 7.44 x 2.09 in. (136.6 x 189.0 x 53 mm)	5.28 x 7.44 x 4.27 in. (136.6 x 189.0 x 108.4 mm)
Weight with brackets	5.5 lbs (2.5 kg)	12.1 Lbs. (5.5 kg)
Frontal Wind Load @ 150 km/hour	87.7 N (19.7 Lbs.)	87.7 N (19.7 Lbs.)
Lateral Wind Load @ 150 km/hour	32.7 N (7.4 Lbs.)	67.4 N (15.2 Lbs)
Mounting	Pole/Wall mounting bracket	

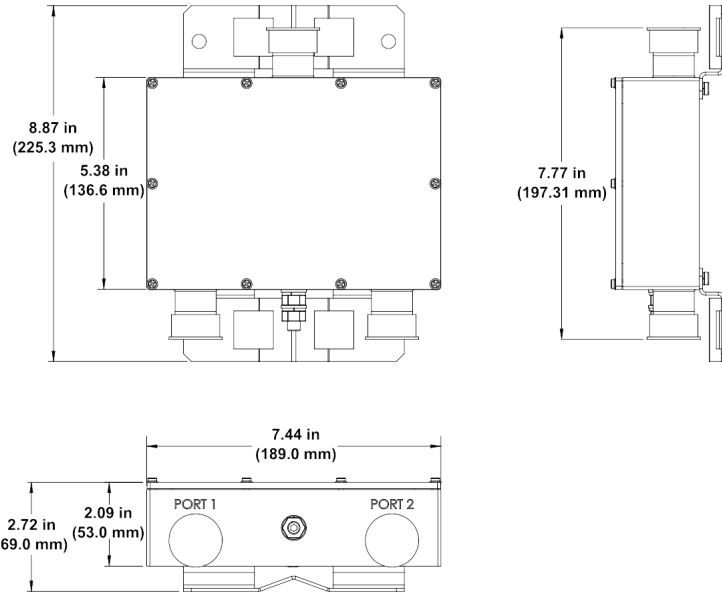


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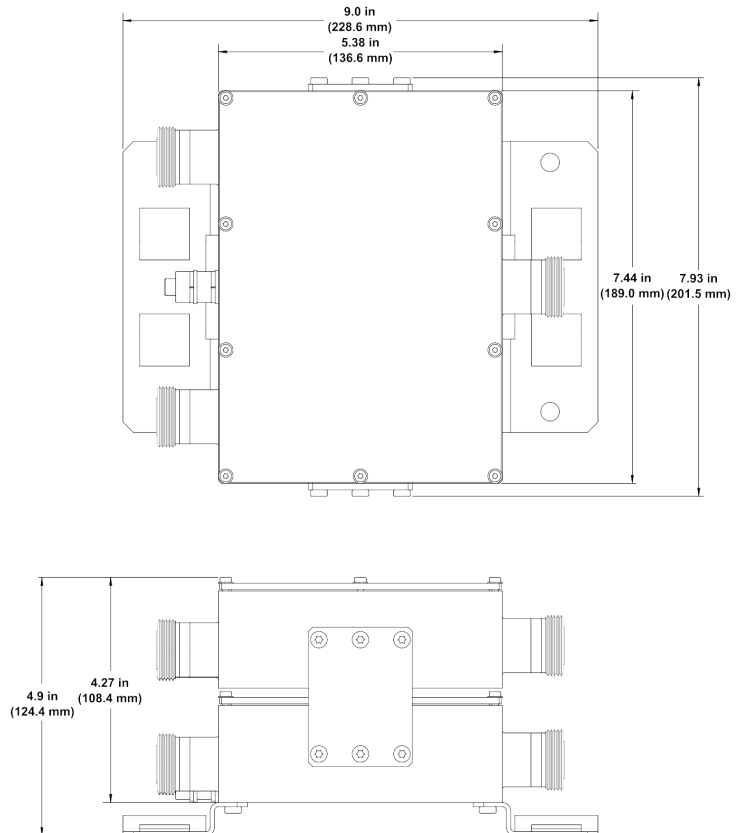
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Outdoor Diplexer Outline Drawing



Outdoor Twin Diplexer Outline Drawing



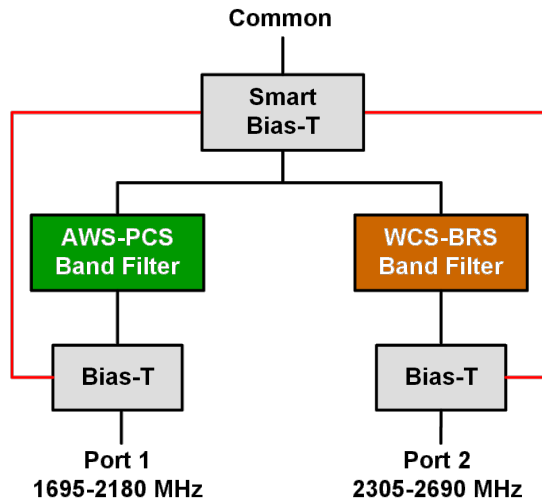
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SPECIFICATIONS

Outdoor Diplexer

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Block Diagram



Outdoor Diplexer Block Diagram



# Filters & Combiners

## STANDARDS & CERTIFICATIONS

### Outdoor Diplexer

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#### Parts & Accessories

- DPO-2136-S-S1** Outdoor Diplexer with 7/16 connector, Smart Bias-T and wall/pole mounting bracket
- DPO-2136-S-T1** Twin Outdoor Diplexer with 7/16 connector, Smart Bias-T and wall/pole mounting bracket

#### 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

