



# Filters & Combiners

DATA SHEET

## Broadband Outdoor Diplexer

DPO-3137-xxx



- Combines two frequency ranges 380-2180 MHz with 2300-2700 MHz onto a single common port.
- The low band port covers the 380-2180 MHz frequency range and the high band port covers 2300-2700 MHz frequency range.
- 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
- Available dual unit configuration
- High reliability of >500K Hours MTBF and multi-strike lightning protection
- Available outdoor pole or wall mounting options

### Overview

The CCI Outdoor Broadband Diplexer passes 380-2180 MHz on its low band input port and 2300-2700 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 Diplexer provides full band coverage 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. Optionally, CCI Diplexer can enable Remote Electrical Tilt (RET) and Tower Mount Amplifiers (TMA) control capability by providing DC/AISG 2.0 compliant pass-through on either input, this option is available by special order only. It is available in single or twin unit configuration.

### Technical Description:

The CCI Outdoor Broadband Diplexer consists of multiple filters and can be used as either a splitter or combiner to aggregate the 380-2180 MHz band with the 2300-2700 MHz band on to a common feeder line. The fully weatherproof tower mount outdoor Diplexer can optionally provide 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-T 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 IP67 moisture 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, 4.3-10 or N 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

### Broadband Outdoor Diplexer

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#### Electrical Specification

RF Parameters	Ports	Frequency(MHz)	Specification
Return Loss	COMMON	380 - 2180	18 dB minimum, 20 dB typical
		2300 - 2700	18 dB minimum, 20 dB typical
	Lowband Port	380 - 2180	18 dB minimum, 20 dB typical
	Highband Port	2300 - 2700	18 dB minimum, 20 dB typical
Insertion Loss	COMMON to Lowband Port	380 - 2180	0.2 dB typical, 0.4 dB maximum
	COMMON to Highband Port	2300 - 2700	0.2 dB typical, 0.4 dB maximum
Isolation	Highband Port to Lowband Port	2300 - 2700	60 dB minimum
	Lowband Port to Highband Port	380 - 2180	60 dB minimum

General Characteristics	
Impedance	50 ohms
Continuous Average Power	200 W maximum all ports
Peak Envelope Power	2 kW maximum all ports
DC Pass Current/AISG Pass (special order option)	3.0A/AISG signal (2.176 MHz) per AISG 2.0* * Note this option limits low band to 555-2180 MHz
Intermodulation for 7-16 and 4.3-10 connectors	<-112 dBm (-155 dBc) minimum, all bands at 2x +43 dBm tones
Intermodulation for N-type connectors	<-107 dBm (-150 dBc) minimum, all bands at 2x +43 dBm tones

#### Environmental

Operating Temperature	-20 °C to +65 °C
Enclosure	Unit Body IP67, Connector 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 (or 3 x 4.3-10 female or 3 x N female)	6 x 7-16 DIN female (or 6 x 4.3-10 female or 6 x N female)
Dimensions w/Bracket (HxWxD)	9.45 x 4.73 x 2.24 in. (240 x 120 x 57 mm)	9.45 x 4.73 x 4.37 in. (240 x 120 x 111 mm)
Housing Dimensions (HxWxD)	5.51 x 4.73 x 1.65 in. (140 x 120 x 42 mm)	5.51 x 4.73 x 3.78 in. (140 x 120 x 96 mm)
Weight	2.65 lbs (1.2 Kg)	5.5 lbs. (2.5 kg)
Mounting	Pole/Wall mounting bracket	

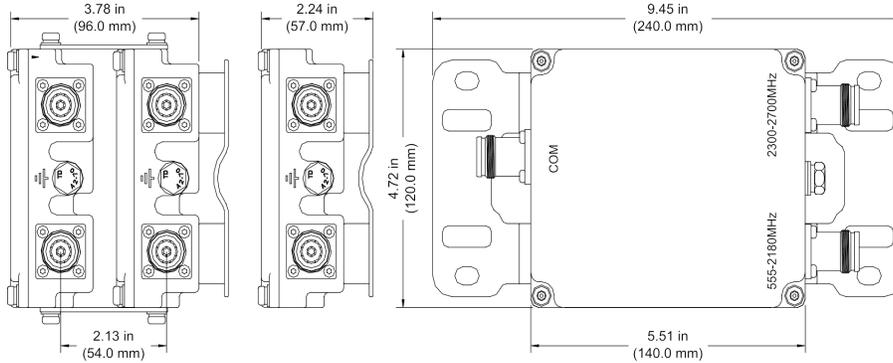


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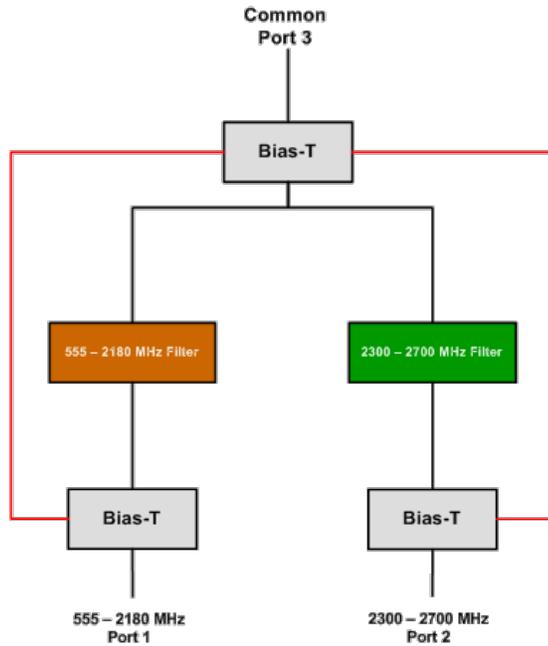
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Outdoor Diplexer Outline Drawing

### Block Diagram



Outdoor Broadband Diplexer with Smart Bias-T Block Diagram



# Filters & Combiners

## STANDARDS & CERTIFICATIONS

### Broadband Outdoor Diplexer

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#### Parts & Accessories

- DPO-3137-0-Sx** Outdoor Broadband Diplexer with no DC/AISG pass-through
- DPO-3137-0-Tx** Outdoor Twin Broadband Diplexer with no DC/AISG pass-through

Option (-x)	Description
-1	7-16 female connectors
-2	4.3-10 female connectors
-3	N-type female 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

