



Filters & Combiners

DATA SHEET

Broadband Outdoor Diplexer

DIP-0710-1727-O-X



- Combines two frequency ranges 696-960 MHz with 1710-2700 MHz onto a single common port.
- The low band port covers 700, 850 and 900 bands and the high band port covers 1800, PCS, AWS and the BRS(EBS) bands.
- High power 200 W per port with low insertion loss in a small, lightweight enclosure
- Low intermodulation with isolation of >45-50 dB port to port
- Available dual unit configuration
- High reliability of >100K Hours MTBF and multi-strike lightning protection
- Available outdoor pole or wall mounting options

Overview

The CCI Outdoor Broadband Diplexer passes the full 700, 850 and 900 bands covering 696-960 MHz on its low band input port and the full 1800, PCS, AWS and BRS bands which includes EBS and covers 1710-2700 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 CCI Outdoor Broadband 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 diplexer is available in a single or dual 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 700/850/900 with the 1800/PCS/AWS/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 IP66. 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.



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SPECIFICATIONS

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Electrical Specification

RF Parameters	Ports	Frequency(MHz)	Specification
Return Loss	COMMON	696 - 960	20 dB minimum
		1710 - 2700	20 dB minimum
	Port 2 700/850/900	696 - 960	20 dB minimum
Insertion Loss	Port 3 1800/PCS/AWS/BRS	1710 - 2700	20 dB minimum
	COMMON to Port 2	696 - 960	0.15 dB typ., 0.2 dB max.
	COMMON to Port 3	1710 - 2700	0.2 dB typ., 0.3 dB max.
Isolation	Port 2 to Port 3	1710 - 2700	50 dB min.
	Port 3 to Port 2	696 - 894	50 dB minimum
	Port 3 to Port 2	894 - 960	45 dB minimum

General Characteristics

Impedance	50 ohms
Continuous Average Power	200 W maximum all ports
Peak Envelope Power	2 kW maximum all ports
Intermodulation Performance	<-110 dBm (-153 dBc) minimum, all bands at 2x +43 dBm tones

Environmental

Operating Temperature	-40 °C to +85 °C
Enclosure	IP66
MTBF	>500,000 hours
Lightning Protection	8/20us, ±20KA max, 10 strikes per IEC61000-4-5

Mechanical

Connectors	3 x 7-16 DIN female long neck for diplexer
Dimensions, body only, single unit	6.81 x 3.78 x 1.91 in. (173 x 96 x 48.5 mm)
Weight, single unit	2.65 lbs (1.2 Kg)
Dimensions, body only, dual unit	6.81 x 3.78 x 3.94 in. (173 x 96 x 100 mm)
Weight, dual unit	5.3 lbs (2.4 kg)
Mounting	Pole (3 - 4.65 in) and Wall mounting bracket

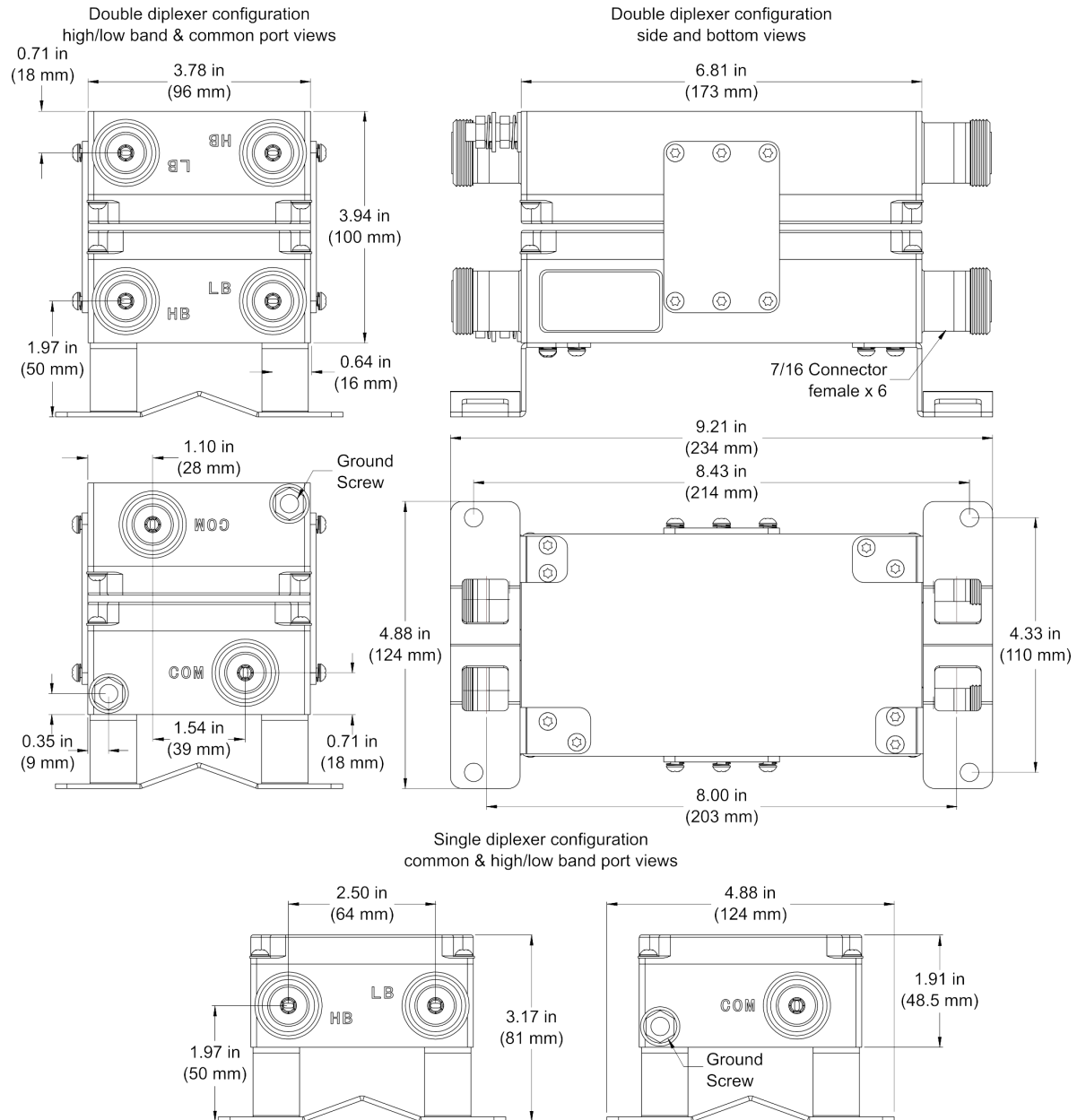


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Outdoor Diplexer Outline Drawing



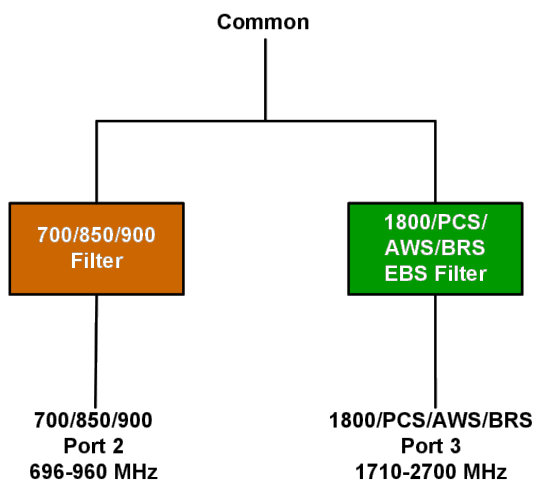
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Block Diagram



Outdoor Diplexer Block Diagram



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STANDARDS & CERTIFICATIONS

Broadband Outdoor Diplexer

DIP-0710-1727-O-X

Parts & Accessories

DIP-0710-1727-O Single Outdoor Diplexer with bracket

DIP-0710-1727-O-D Dual Outdoor Diplexer with 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 IP66, IP68

Certifications

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



CCI Communication Components Inc.
EXTENDING WIRELESS PERFORMANCE