

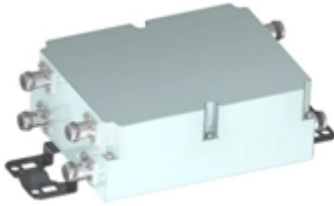


Filters & Combiners

DATA SHEET

Broadband Outdoor Diplexer

DPO-0465-A-x2



- Combines two frequency ranges DC-490 MHz with 694-960/1700-2700/3300-3800 MHz onto a single common port.
- The low band port covers the VHF bands covering DC-490 MHz and the high band port covers 694-960/1700-2700/3300-3800 bands.
- High power 300 W per port with low insertion loss in a small, lightweight enclosure
- Low intermodulation with port to port isolation of >50 dB
- 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 VHF bands covering DC-490 MHz on its low band input port and 694-960/1700-2700/3300-3800 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 300 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 Remote Electrical Tilt (RET) and Tower Mount Amplifiers (TMA) control capability by providing DC/AISG 2.0 compliant pass-through on the low band port to the common port. 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 VHF (DC-490 MHz) with the 694-960/1700-2700/3300-3800 MHz bands on to a common feeder line. The fully weatherproof tower mount outdoor Diplexer provides DC and AISG signal pass-through, enabling power and control for TMA's & RET antennas. The Bias-T passes the DC and AISG carrier frequency from the low band input port to the common port. 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 are configured with 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

Broadband Outdoor Diplexer

DPO-0465-A-x2

Electrical Specification

RF Parameters	Ports	Frequency(MHz)	Specification
Return Loss	COMMON	DC-490	19 dB min., 20 dB typ.
		694-960 / 1427-1525 / 1700-2700 / 3300-3800	19 dB min., 30 dB typ.
	Lowband Port 1	DC-490	19 dB min., 20 dB typ.
	Highband Port 2	694-960 / 1427-1525 / 1700-2700 / 3300-3800	19 dB min., 20 dB typ.
Insertion Loss	COMMON to Lowband Port 1	DC-490 / 694-960	0.22 typ., 0.26 dB max.
	COMMON to Highband Port 2	1427-1525 / 1700-2700	0.10 typ., 0.15 dB max.
		3300-3800	0.20 dB typ., 0.30 dB max.
Isolation	Highband Port 2 to Lowband Port 1	694-960 / 1427-1525 / 1700-2700 / 3300-3800	50 dB minimum
	Lowband Port 1 to Highband Port 2	DC-490	60 dB minimum

General Characteristics

Impedance	50 ohms
Continuous Average Power	300 W maximum all ports
Peak Envelope Power	3 kW maximum all ports
Intermodulation Performance	<-112 dBm (-155 dBc) minimum, all bands at 2x +43 dBm tones
DC Pass Current/AISG Pass	3A/AISG signal (2.176 MHz per AISG 2.0)

Environmental

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

Mechanical

Model	Single	Twin
Connectors	3 x 4.3-10 female	6 x 4.3-10 female
Housing Dimensions	8.86 x 6.69 x 1.77 in. (225 x 170 x 45 mm)	8.86 x 6.69 x 3.31 in. (225 x 170 x 84 mm)
Weight	5.7 lbs (2.6 Kg)	12.1 lbs. (5.5 kg)
Mounting	Pole (3 - 4.65 in) and Wall mounting bracket	

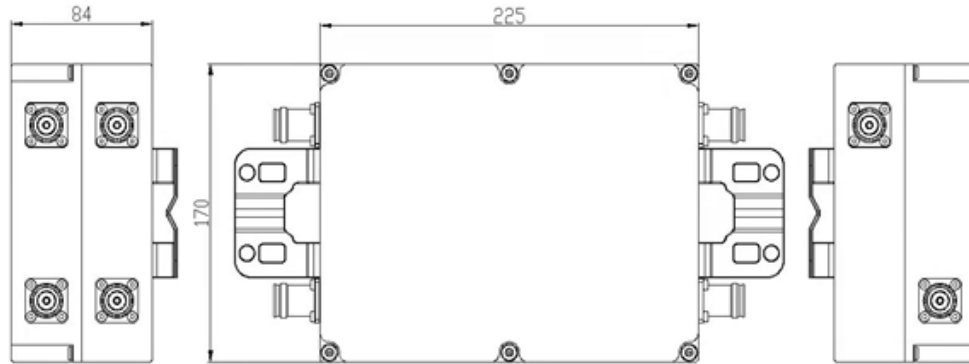


Filters & Combiners

SPECIFICATIONS

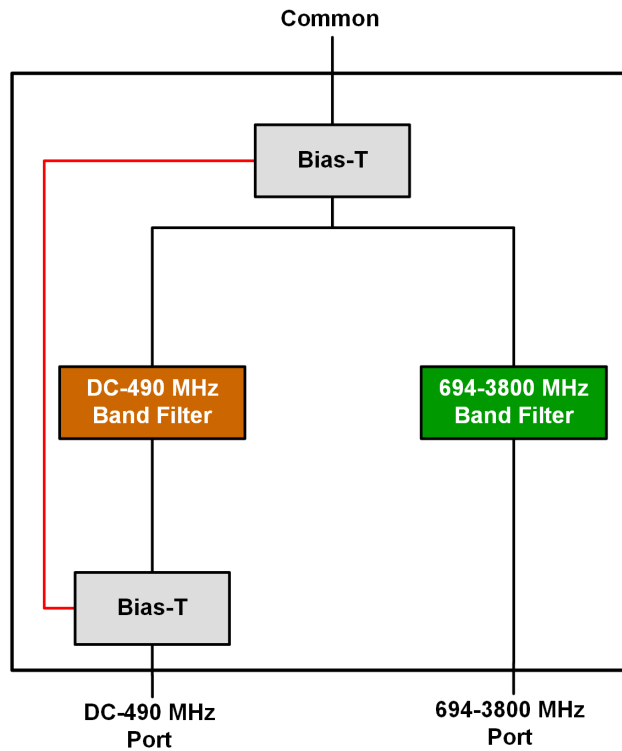
Broadband Outdoor Diplexer

DPO-0465-A-x2



Outdoor Diplexer Outline Drawing

Block Diagram



Outdoor Broadband Diplexer Block Diagram



Filters & Combiners

STANDARDS & CERTIFICATIONS

Broadband Outdoor Diplexer

DPO-0465-A-x2

Parts & Accessories

- DPO-0465-A-S2** Outdoor Broadband Diplexer with 4.3-10 connectors and DC/AISG pass-through on low band port
- DPO-0465-A-T2** Outdoor Twin Broadband Diplexer with 4.3-10 connectors and DC/AISG pass-through on low band 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

