

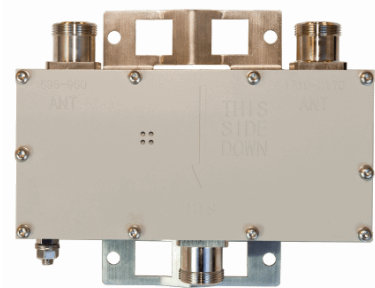


Filters & Combiners

DATA SHEET

Outdoor Broadband Diplexer

DIP-0721-O-AISG



- Combines low band frequencies 694-960 MHz with high band 1695-2180 MHz onto a single common port.
- Supports 700, 850 and 900 MHz bands on the low band port and DCS, PCS and AWS bands on the high band port
- High power 500 W with low insertion loss in a small, lightweight enclosure
- Low intermodulation with isolation of >50 dB port to port
- AISG 2.0 compliant with DC and AISG pass-through on the high band port
- 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 the full 700/850/900 bands covering 694-960 MHz on its low band input port and the full DCS/PCS/AWS bands including AWS-3 covering 1695-2180 MHz on its high band input port. This Diplexer combines the low band and high band signals on the 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 including AWS-3 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 power handling. Excellent return loss 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 the high band port to the common port.

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 and DCS/PCS/AWS bands on a common feeder line. The fully weatherproof tower mount outdoor diplexer has DC block on the low band port and DC and AISG 2.0 signal pass-through on the high band port providing power and control for TMA's & RET antennas. 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 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.



Filters & Combiners

SPECIFICATIONS

Outdoor Broadband Diplexer

DIP-0721-O-AISG

Electrical Specification

RF Parameters	Ports	Frequency(MHz)	Specification
Return Loss	Common	694-960	18 dB min. 20 dB Typ.
		1695-2180	18 dB min. 20 dB Typ.
	700/850/900	694-960	18 dB min. 20 dB Typ.
	DCS/PCS/AWS	1695-2180	18 dB min. 20 dB Typ.
Insertion Loss	BTS to 700/850/900	694-960	0.1 dB typ., 0.2 dB max.
	BTS to DCS/PCS/AWS	1695-2180	0.2 dB typ., 0.25 dB max.
Rejection	BTS to 700/850/900	1695-2180	60 dB min.
	BTS to DCS/PCS/AWS	694-960	50 dB min.
Isolation	700/850/900 to DCS/PCS/AWS	1695-2180	50 dB min.
		694-960	50 dB min.

General Characteristics	
Impedance	50 ohms
Continuous Average Power	500 W max. (all ports)
Peak Envelope Power	2 kW max. (all ports)
Intermodulation Performance(all ports)	<-110 dBm (-153 dBc) typical (2x +43 dBm tones) all bands
DC Pass Current/AISG Pass (700/850 to COMMON port)	3A/AISG signal (2.176 Mhz) per AISG 2.0

Environmental

Operating Temperature	-40 °C to +65 °C
Enclosure	IP66 (Unit Body), IP68 (Connector)
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
Dimensions - Single Unit(w/o brackets)(HxWxD)	6.46 x 8.54 x 1.89 in. (164 x 217 x 48 mm)
Dimensions - Single Unit(with brackets)(HxWxD)	7.3 x 8.54 x 2.6 in. (185.4 x 217 x 66 mm)
Weight with brackets	5.5 lbs (2.5 kg)
Mounting	Pole/Wall mounting bracket

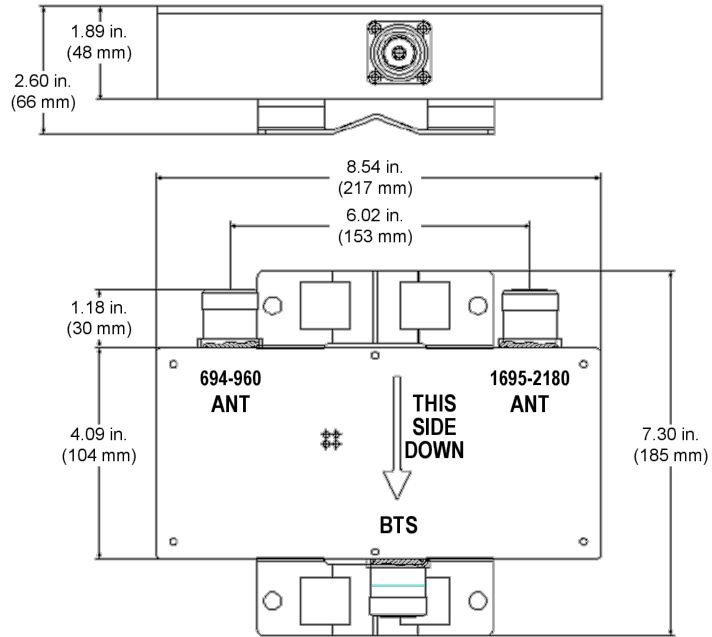


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SPECIFICATIONS

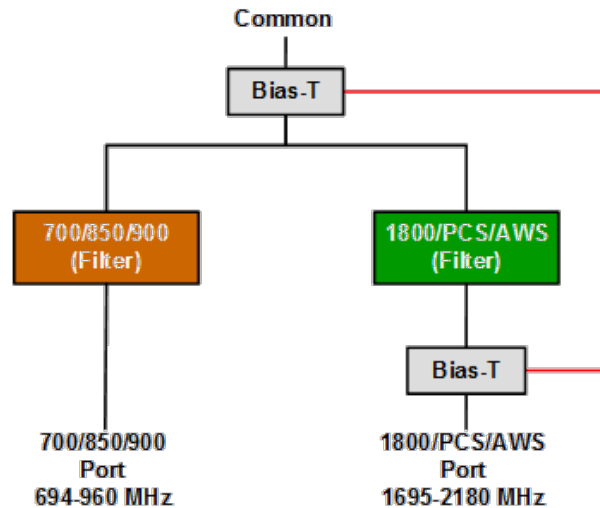
Outdoor Broadband Diplexer

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Outdoor Broadband Diplexer Outline Drawing

Block Diagram



Outdoor Broadband Diplexer Block Diagram



Filters & Combiners

STANDARDS & CERTIFICATIONS

Outdoor Broadband Diplexer

DIP-0721-O-AISG

Parts & Accessories

DIP-0721-O-AISG Outdoor Broadband 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

Antenna Interface Standards Group (AISG), Federal Communication Commission (FCC) Part 15 Class B, CE, CSA US, ISO 9001

