

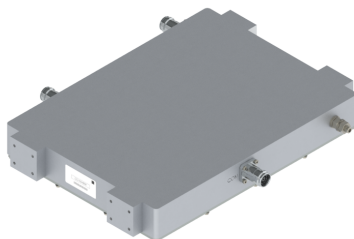


Filters & Combiners

DATA SHEET

WCS (A & B Band)/SDARS Band Diplexer

DPO-2323-Sx



- Combines WCS A&B Block with SDARS SXM Terrestrial Repeater Band onto a single common port.
- High power 200 W with low insertion loss in a small, lightweight enclosure
- Low intermodulation with isolation of >60 dB port to port
- AISG 2.0 compliant with DC and AISG pass-through on the WCS 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 WCS A&B bands covering 2305-2315 MHz and 2350-2360 MHz on one input port and the full SDARS SXM Terrestrial Repeater Band covering 2324.54-2341.285 MHz on the other input port. This Diplexer is specifically designed to combine the SDARS SXM Terrestrial Repeater Bands with the WCS A&B Bands in order to share a common feeder line and antenna while providing a high degree of isolation between systems. Reducing the total number of feeder lines and antennas required minimizes overall tower loading, leasing and installation requirements and deployment times.

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 WCS port to the common port.

Technical Description:

The CCI Outdoor Broadband Diplexer consists of multiple filter stages and can be used as either a splitter or combiner to aggregate the WCS A&B Block with SDARS SXM Terrestrial Repeater Band on a common antenna feeder line. The fully weatherproof tower mount outdoor diplexer has DC block on the SDARS port and DC and AISG 2.0 signal pass-through on the WCS 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 4.3-10 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

WCS (A & B Band)/SDARS Band Diplexer

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Electrical

RF Parameters	Ports	Frequency(MHz)	Specification
Return Loss	COMMON	2305 - 2315	18 dB min., 20 dB Typ.
		2324.54 - 2341.285	18 dB min., 20 dB Typ.
		2350 - 2360	18 dB min., 20 dB Typ.
	SXM	2324.54 - 2341.285	18 dB min., 20 dB Typ.
	WCS	2305 - 2315	18 dB min., 20 dB Typ.
		2350 - 2360	18 dB min., 20 dB Typ.
Insertion Loss	COMMON to SXM	2324.54 - 2341.285	1.0 dB typ., 1.5 dB max.
	COMMON to WCS	2305 - 2315	0.8 dB typ., 1.2 dB max.
		2350 - 2360	0.8 dB typ., 1.2 dB max.
Isolation	COMMON to WCS	2324.54 - 2341.285	60 dB min.
		2305 - 2315 (A & B)	60 dB min.
	COMMON to SXM	2315 - 2320 (C)	14 dB min. @ 2320 MHz
		2345 - 2350 (D)	14 dB min. @ 2345 MHz
		2350 - 2360 (A & B)	60 dB min.

General Characteristics

Impedance	50 ohms
Continuous Average Power	200 W max. (all ports)
Peak Envelope Power	1 kW max. (all ports)
Intermodulation Performance(all ports)	<-117 dBm (-160 dBc) typical (2 x +43 dBm tones) all bands
DC/AISG Pass current (WCS port to COMMON port)	3A/AISG signal (2.176 Mhz) per AISG 2.0

Environmental

Operating Temperature	-40 °C to +65 °C
Enclosure	IP67 (Unit Body), IP68 (Connector)
MTBF	>500,000 hours
Lightning Protection	8/20us, ±10KA max, 10 strikes per IEC61000-4-5

Mechanical

Connectors	3 x 4.3-10 female long neck
Dimensions - (w/o connectors & built-in spacers)(HxWxD)	9.80 x 13.19 x 1.96 in. (249.0 x 335.0 x 49.9 mm)
Dimensions - (with connectors & built-in spacers)(HxWxD)	12.22 x 14.37 x 1.96 in. (310.4 x 365.0 x 49.9 mm)
Weight	12.9 lbs (5.86 kg)
Mounting	Pole/Wall Mount Bracket supplied with ECHO Repeater



Filters & Combiners

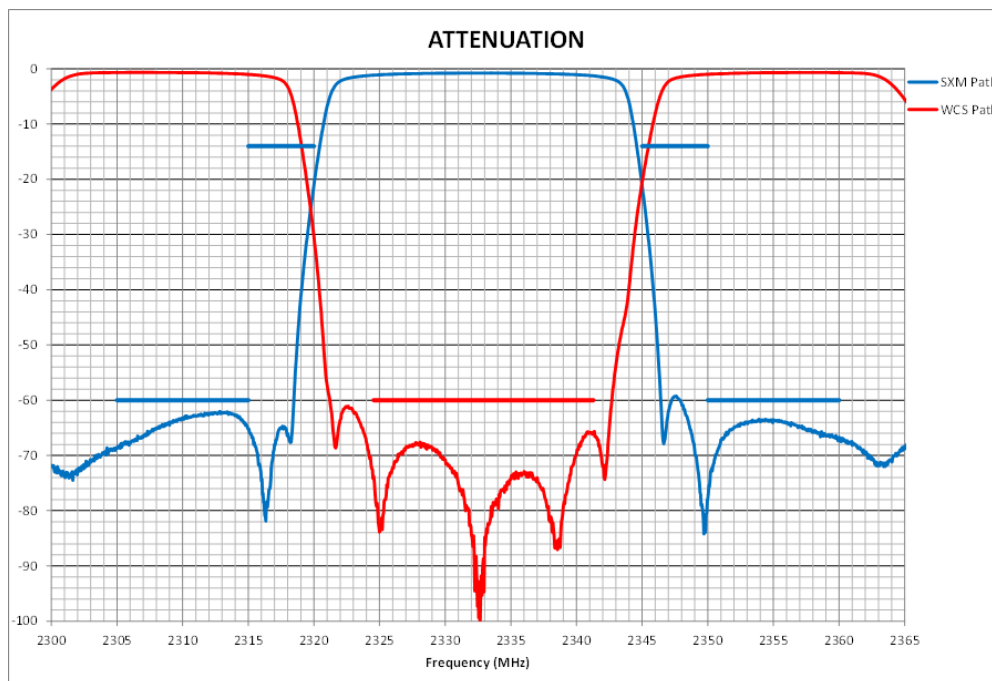
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Outdoor Broadband Diplexer (DPO-2323-Sx) WCS/SXM Insertion Loss Filter Response



Outdoor Broadband Diplexer (DPO-2323-Sx) WCS/SXM Attenuation Filter Response

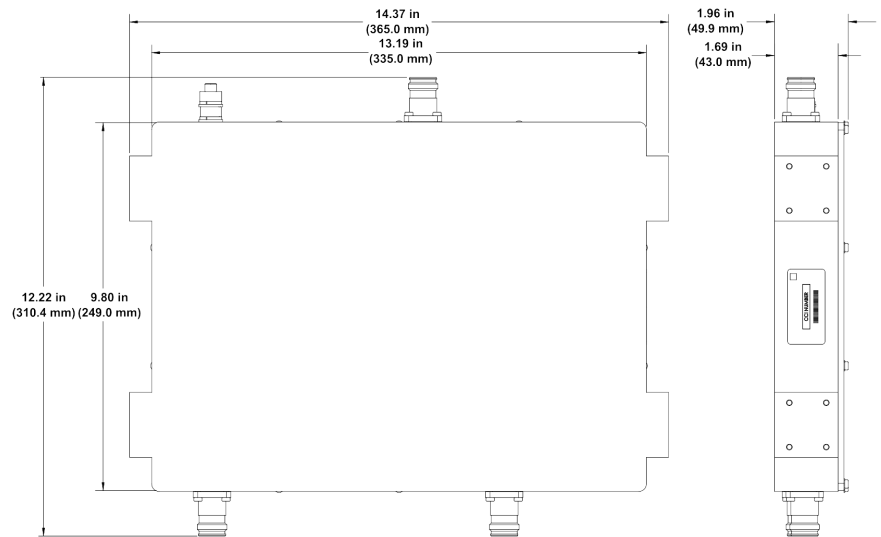


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SPECIFICATIONS

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Outdoor Broadband Diplexer (DPO-2323-Sx) WCS/SXM with Bracket Outline Drawing



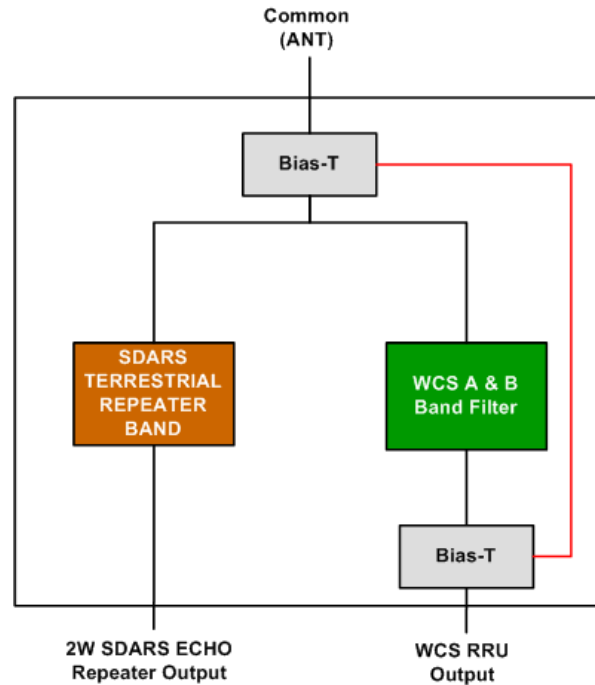
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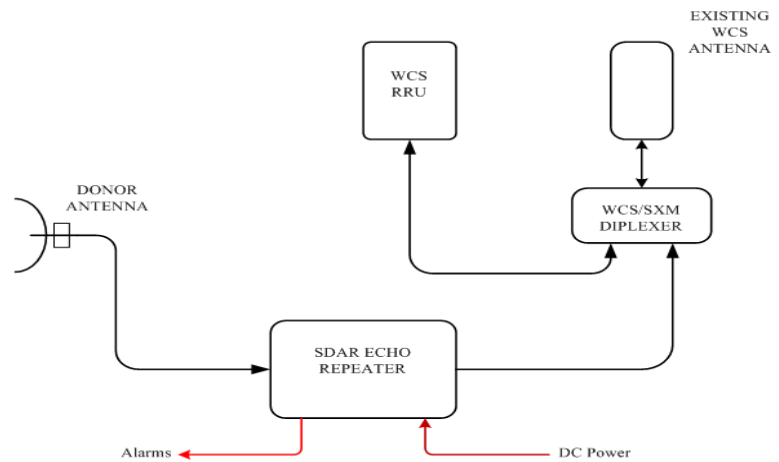
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Block Diagram



Outdoor Broadband Diplexer (DPO-2323-S2) WCS/SXM Block Diagram



Broadband Diplexer (DPO-2323-Sx) WCS/SXM Typical Application Drawing



Filters & Combiners

STANDARDS & CERTIFICATIONS

WCS (A & B Band)/SDARS Band Diplexer

DPO-2323-Sx

Parts & Accessories

DPO-2323-S2 Outdoor Diplexer with DC/AISG on WCS Port with 4.3-10 connectors

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

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



CCI Communication Components Inc.

EXTENDING WIRELESS PERFORMANCE