

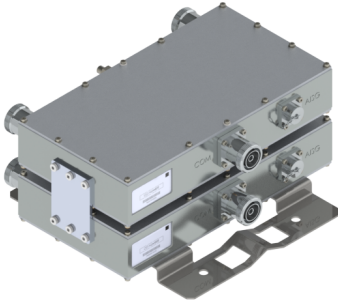


Filters & Combiners

DATA SHEET

600-700/800-900 Outdoor Diplexer

DPO-6789B-D-X2



- Combines the 600/700 MHz Band (617-798 MHz) and the 800/900 MHz Band (824-960 MHz) onto a common port.
- High power 200 W per port with low insertion loss
- AISG 2.0 pass-through with Smart DC which allows DC/AISG pass through in both combine and split paths
- Low intermodulation with isolation of >50 dB port to port
- Available twin unit configuration
- High reliability of >500K Hours MTBF and multi-strike lightning protection
- Lightweight outdoor enclosure with pole or wall mounting options

Overview

CCI's Outdoor Diplexer combines 600/700 MHz band and 800/900 MHz band base stations onto a common feeder line. Specifically intended for use in dual band systems, the diplexer reduces the number of required feeder lines while providing a high degree of isolation between systems. By reducing the number of feeder lines, the cost to upgrade a site is reduced. Additionally, diplexers can be utilized in "crowded" sites where feeder lines are not easily accessible. Optional unit with two Diplexers mounted on a single bracket is available.

Technical Description:

The CCI Outdoor Diplexer provides full band performance in each band with low insertion loss, low Intermodulation, high isolation and high power handling. Excellent return loss and low insertion loss delivers an excellent match to antennas and base station, saving precious transmitter power. The fully weatherproof tower mount unit has DC/AISG pass through Smart DC with full autosense DC capability, which allows DC/AISG pass through in both the combine and split paths. The diplexer housing is constructed from die cast aluminum and consists of an IP67 moisture proof enclosure, with IP67 immersion 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.



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SPECIFICATIONS

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Electrical

RF Parameters	Ports	Frequency(MHz)	Specification	
Return Loss	Common	617 - 798	18 dB minimum, 20 dB typical	
		824 - 960	18 dB minimum, 20 dB typical	
	600/700	617 - 798	18 dB minimum, 20 dB typical	
		824 - 960	18 dB minimum, 20 dB typical	
	Insertion Loss	COM to 600/700	617 - 798	0.2 dB typical, 0.5 dB max
		COM to 800/900	824 - 960	0.3 dB typical, 0.6 dB max
Isolation	COM to 600/700	824 - 960	50 dB minimum	
	COM to 800/900	617 - 798	50 dB minimum	

General Characteristics

Impedance	50 ohms
Continuous Average Power	200 W max. per input port simultaneous
Peak Envelope Power	2 kW max. per input port simultaneous
Intermodulation Performance(all ports)	<-117dBm (-160 dBC) typical (2 x +43 dBm tones) all bands

DC/AISG

Smart DC	DC path is automatically determined, when the unit is used as a combiner or splitter
Combine mode standard priority*	1. 617 - 798 MHz 2. 824 - 960 MHz
	*Customer can request a different priority at time of purchase
Combine Path Operation	The port with DC voltage (7 - 30 V) is automatically passed to the COMMON Port. If more than one port has DC voltage present, the port with the highest priority is passed. If a short circuit is detected on the COMMON Port DC/AISG is disabled for the entire unit.
Split Path Operation	DC/AISG pass through will be disabled for all ports where a short circuit is detected and DC/AISG will be passed to all other ports.
DC Bypass Power-Up to Operating Time	<100 ms
Current Consumption @ voltage	35 mA typical, 50 mA maximum (7.0 to 30 VDC)
Current (Single Path)	2.5 A maximum
Current Common	2.5 A maximum
AISG signal	2.176 MHz, per AISG 2.0

Environmental

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



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Mechanical

Model	Single	Twin
Connectors	3 x 4.3-10 female	6 x 4.3-10 female
Dimensions w/Bracket (HxWxD)	10.47 x 9.45 x 2.87 in. (266 x 240 x 73 mm)	11.1 x 9.45 x 5.43 in. (282 x 240 x 138 mm)
Housing Dimensions (HxWxD)	10.47 x 5.63 x 2.36 in. (266 x 143 x 60 mm)	10.47 x 5.63 x 4.92 in. (266 x 143 x 125 mm)
Weight	7.9 lbs (3.6 kg)	15.4 lbs (7.0 kg)
Frontal Wind Load @ 150 km/hour	172.6 N (38.8 lbs)	172.6 N (38.8 lbs)
Lateral Wind Load @150 km/hour	25.8 N (5.8 lbs)	51.6 N (11.6 lbs)
Mounting	Pole/Wall mounting bracket	Pole/Wall mounting bracket

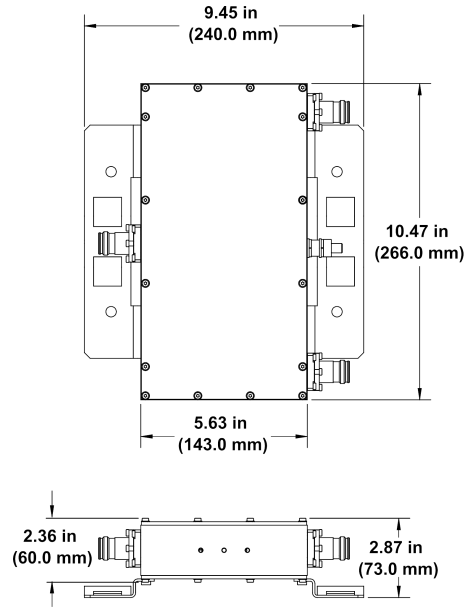


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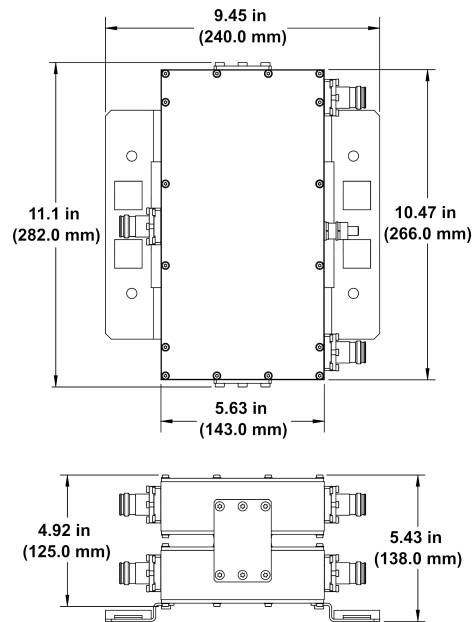
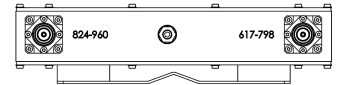
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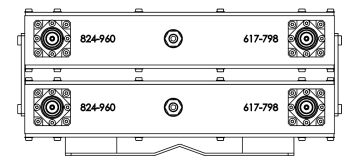
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Outdoor Diplexer Outline Drawing



Outdoor Twin Diplexer Outline Drawing





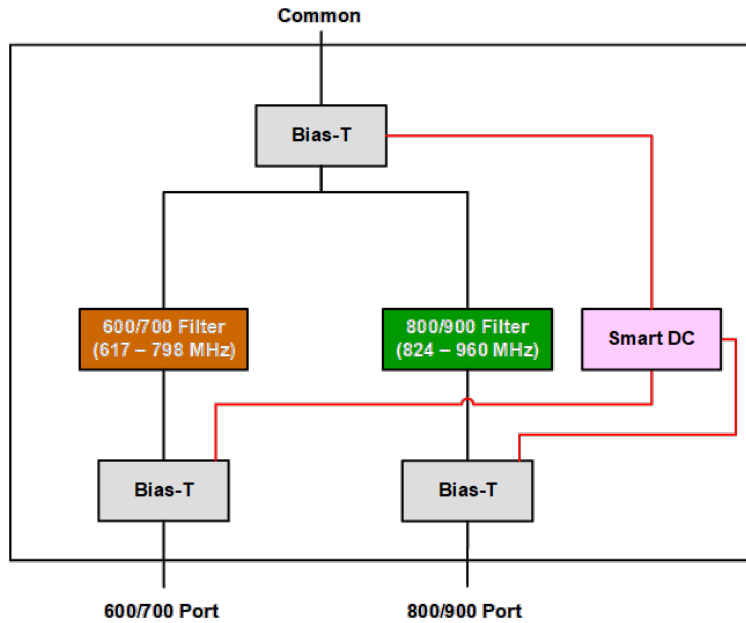
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Block Diagram



Block Diagram, 600-700/800-900 Diplexer with Smart DC



Filters & Combiners

STANDARDS & CERTIFICATIONS

600-700/800-900 Outdoor Diplexer

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Parts & Accessories

- DPO-6789B-D-S2** Single with 4.3-10 connectors and Smart DC for DC/AISG pass-through in either direction on any port
- DPO-6789B-D-T2** Twin with 4.3-10 connectors and Smart DC for DC/AISG pass-through in either direction on any 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

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

