

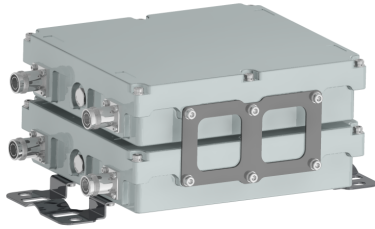


# Filters & Combiners

DATA SHEET

700/800-900 MHz Outdoor Diplexer

DPO-0709A-E-T2



- Combines the 700 MHz Band (703-788 MHz) and 800-900 band (791-960 MHz) Band onto a common port.
- High power 200 W per port with low insertion loss
- AISG 2.0 compliant DC/AISG pass through on either port with Smart DC with Autosense
- Low intermodulation with isolation of >50 dB port to port
- High reliability of >500K Hours MTBF and multi-strike lightning protection
- Twin or Single outdoor (IP67) Lightweight enclosure with flexible pole or wall mounting options

## Overview

CCI's Twin Outdoor Diplexer combines a modified "700" band (703-788 MHz) with a modified "800-900" band (791-960 MHz) 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 Dual 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 Diplexer can optionally provide DC and AISG signal pass-through on either of the band specific ports, enabling power and control for TMA's and RET antennas. The Diplexer is available with DC/AISG pass using Smart DC with autosense. The Smart Bias-Tee architecture passes the DC and AISG carrier frequency from any of the input ports to the common port while blocking the DC and AISG signals from being re-injected into the other input ports. The Diplexer housing is constructed from die cast aluminum and consists of an IP67 enclosure, with IP67 connectors suited to long-life masthead mounting. With a variety of mounting options, the Diplexer can be adapted for use in all outdoor or indoor conditions.



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## SPECIFICATIONS

### 700/800-900 MHz Outdoor Diplexer

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#### Electrical

RF Parameters	Ports	Frequency (MHz)	Specification
Return Loss	3 (COM)	703 - 788	18 dB minimum, 20 dB typical
		791 - 960	18 dB minimum, 20 dB typical
Insertion Loss	1 (700)	703 - 788	18 dB minimum, 20 dB typical
	2 (800-900)	791 - 960	18 dB minimum, 20 dB typical
	3 to 1 (COM to 700)	703 - 785	0.7 dB maximum
		785 - 787	1.0 dB maximum
		787 - 788	1.5 dB maximum
	3 to 2 (COM to 800-900)	791 - 793	1.5 dB maximum
793 - 800		1.0 dB maximum	
800 - 960		0.7 dB maximum	
Isolation	3 to 1 (COM to 700)	791 - 960	40 dB minimum, 45 dB typical
	3 to 2 (COM to 800-900)	703 - 788	40 dB minimum, 45 dB typical
Group Delay	COM to 700	703 - 788	180 ns maximum
	COM to 800-900	791 - 960	240 ns maximum
Group Delay Variation	COM to 700	703 - 788	40 ns maximum
	COM to 800-900	791 - 960	50 ns maximum

DC/AISG	
DC Autosense	DC path is automatically determined, when the unit is used as a combiner or splitter
Combine mode priority	1. 1710 - 1880 MHz 2. 2300 - 2700 MHz 3. 1920 - 2170 MHz 4. 690 - 960 MHz
DC Autosense Combine Mode 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.
DC Autosense Splitter Mode Operation	DC/AISG pass through will be disabled for 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 @ TBD 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

General Characteristics	
Impedance	50 ohms
Continuous Average Power	200 W (+53 dBm) max. per input port simultaneous
Peak Envelope Power	2 kW (+63 dBm) max. per input port simultaneous
Intermodulation Performance (all ports)	<-117dBm (-160 dBc) typical (2 x +43 dBm tones) all bands



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#### Environmental

Operating Temperature	-40 °C to +65 °C
Relative Humidity	5% - 95%
Ingress Protection	IP66
MTBF/Design Life	>500,000 hours/10 years?
Lightning Protection	8/20us, ±10KA max, 10 strikes per IEC61000-4-5

#### Mechanical

Model	DPO-0709A-S-Sx (2 In, 1 Out)	DPO-0709A-S-Tx (4 In, 2 Out)
Modularity	Single	Twin
Ports, In-Line	2 x BTS, 1 x ANT	4 x BTS, 2 x ANT
Connectors	3 x 4.3-10 female	6 x 4.3-10 female
Weight with brackets (estimated)	6.39 lbs (2.90 Kg)	13.18 lbs (5.95 Kg)
Dimensions with brackets (estimated)	12.44 x 8.07 x 2.83 in. (316 x 205 x 72 mm)	12.44 x 8.07 x 5.20 in. (316 x 205 x 132 mm)
Dimensions enclosure only (estimated)	9.06 x 8.07 x 2.24 in. (230 x 205 x 57 mm) - per Diplexer	
Weight with brackets	2.3 Kg	4.8 Kg
Housing Ground Lug	1 x M8	1 x M8
Finish	Housing - Powder Coat Gray; Bracket(s) - 304 Stainless Steel (Passivated per ASTM A-967)	
Packaging Size	TBD	21.85 x 16.15 x 8.86 in. (555 x 410 x 225 mm) for 2 pcs.
Packaging Weight	TBD	33.4 Lbs. (5.2 kg) for 2 pcs.
Available Mast Diameter	3 to 6 inches (76.2 to 152.4 mm)	
Pole Mounting	Use integral mouting bracket and the 2 band clamps provided (Orientation, the connectors will be in-line with mast)	
Wall Mounting	Use integral mouting bracket and appropriate fasteners (Orientation, no restrictions)	

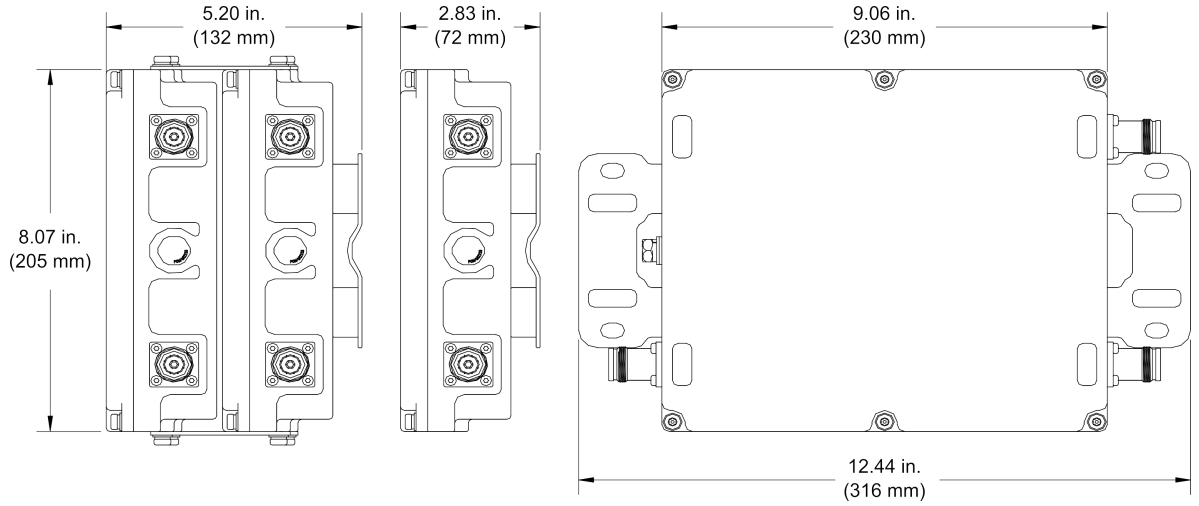


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## SPECIFICATIONS

### 700/800-900 MHz Outdoor Diplexer

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Outdoor Diplexer Outline Drawing



# Filters & Combiners

## STANDARDS & CERTIFICATIONS

### 700/800-900 MHz Outdoor Diplexer

DPO-0709A-E-T2

#### Parts & Accessories

- DPO-0709A-E-S2** Single Outdoor Diplexer with 4.3-10 connectors and Smart DC for DC/AISG pass-through in either direction on any port
- DPO-0709A-E-T2** Twin Outdoor Diplexer with 4.3-10 connectors and Smart DC for DC/AISG pass-through in either direction on any port

#### Standards & Compliance

<b>Safety</b>	EN 60950-1, UL 60950-1
<b>Emission</b>	EN 55022
<b>Immunity</b>	EN 55024
<b>Environmental</b>	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

