



# Filters & Combiners

DATA SHEET

800/900 MHz Outdoor Diplexer

DPO-0809A-S-xx



- Combines the 800 MHz Band (825-877 MHz) and 900 band (902.6-960 MHz) Band onto a common port.
- High power 200 W per port with low insertion loss
- AISG 2.0 compliant DC/AISG pass through
- Low intermodulation with isolation of >60 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 "800" band with "900" 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 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 unit with a smart bias-tee. 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 IP68 moisture proof enclosure, with IP68 immersion proof 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

### 800/900 MHz Outdoor Diplexer

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#### Electrical

RF Parameters	Ports	Frequency(MHz)	Specification
Return Loss	3 (Common)	825 - 877	18 dB minimum, 20 dB typical
		902.6 - 960	18 dB minimum, 20 dB typical
	1 (800)	825 - 877	18 dB minimum, 20 dB typical
	2 (900)	902.6 - 960	18 dB minimum, 20 dB typical
Insertion Loss	3 to 1 (COM to 800)	825 - 877	0.4 dB maximum, 0.25 dB typical
	3 to 2 (COM to 900)	902.6 - 960	0.4 dB maximum, 0.25 dB typical
Isolation	3 to 1 (COM to 800)	902.6 - 960	60 dB minimum, 65 dB typical
	3 to 2 (COM to 900)	825 - 877	60 dB minimum, 65 dB typical

#### 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 Pass Current/AISG Pass (Any Port to COMMON port)	3A/AISG signal (2.176 Mhz) per AISG 2.0

#### Environmental

Operating Temperature	-40 °C to +65 °C
Relative Humidity	5% - 95%
Ingress Protection	IP68
MTBF	>500,000 hours
Lightning Protection	8/20us, ±10KA max, 10 strikes per IEC61000-4-5

#### Mechanical

Model	DPO-0809A-S-Sx	DPO-0809A-S-Tx
Modularity	Single	Twin
Weight with brackets	6.6 lbs (3.0 Kg)	13.2 lbs (6.0 Kg)
Dimensions with brackets	11.25 x 6.57 x 3.03 in. (286.0 x 167.0 x 77.0 mm)	11.25 x 6.57 x 5.59 in. (286.0 x 167.0 x 142.0 mm)
Dimensions enclosure only	7.95 x 6.57 x 2.44 in. (202.0 x 167.0 x 62.0 mm) - per Diplexer	
Connectors	4.3-10 or 7-16 female x 3 per Diplexer	
Mounting	Pole/Wall mounting bracket	

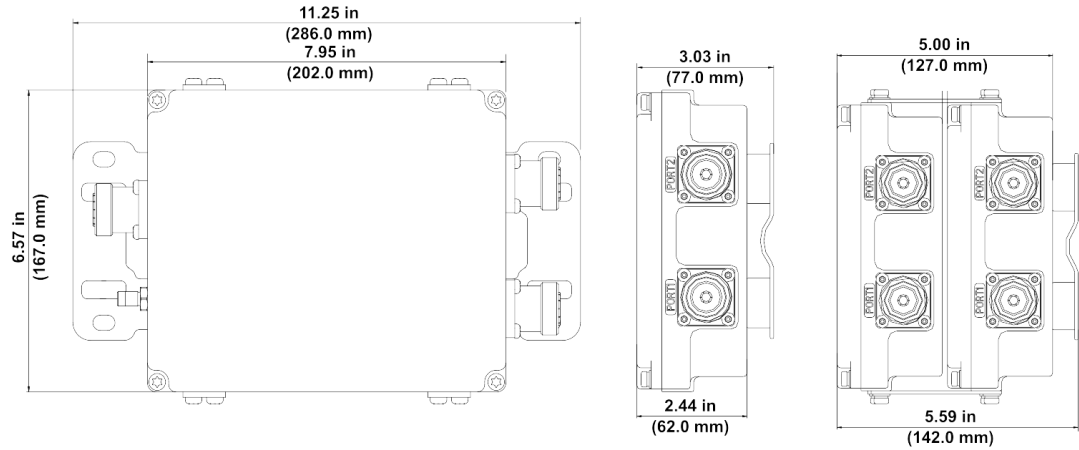


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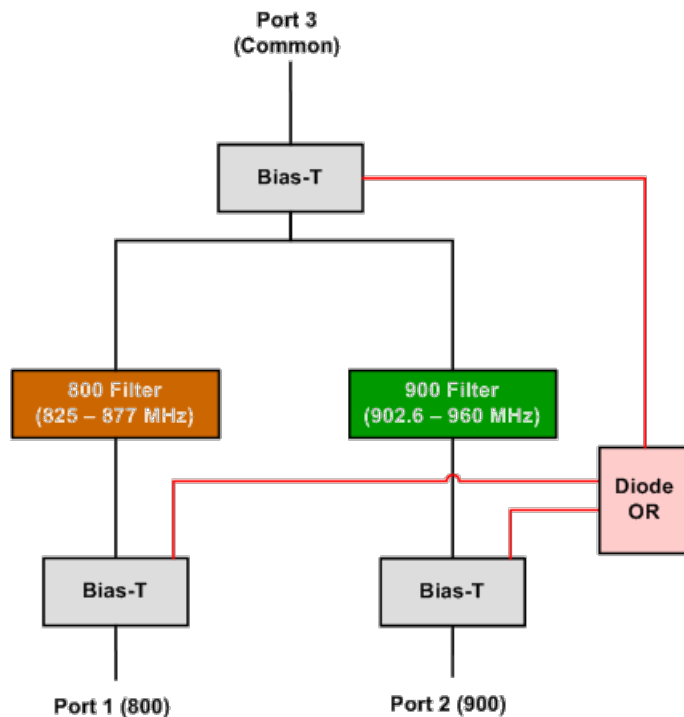
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Outdoor Diplexer Outline Drawing

### Block Diagram



800/900 Low Band Diplexer with Smart Bias-T Block Diagram



# Filters & Combiners

## STANDARDS & CERTIFICATIONS

### 800/900 MHz Outdoor Diplexer

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#### Parts & Accessories

<b>DPO-0809A-S-S1</b>	Outdoor Diplexer with Smart Bias-T and 7-16
<b>DPO-0809A-S-S2</b>	Outdoor Diplexer with Smart Bias-T and 4.3-10 connectors
<b>DPO-0809A-S-T1</b>	Outdoor Twin Diplexer with Smart Bias-T and 7-16 connectors
<b>DPO-0809A-S-T2</b>	Outdoor Twin Diplexer with Smart Bias-T and 4.3-10 connectors

#### 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



# CCI

## Communication Components Inc.

EXTENDING WIRELESS PERFORMANCE