



# Filters & Combiners

DATA SHEET

## Outdoor Diplexer

DIP-1921A-O-AISG-1



- Low Loss
- Small, lightweight
- AISG 2.0 compliant
- Good Isolation
- Good IM
- Lightning protected
- High reliability
- Full AWS (including AWS-3) and PCS bands
- Optional Dual Unit available

### Overview

Communication Components, Inc. Outdoor Combiner/Diplexer combines AWS and PCS band Basestation Tx/Rx onto a common feeder line. Specifically intended for use in dual band systems, the outdoor diplexer DIP-1921A-O-AISG-1 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. By reducing the number of feeder lines, the cost to upgrade a site (tower loading, leasing and installation costs) is significantly reduced.

The CCI Outdoor Combiner/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. DC and AISG pass-through retains full RET and TMA capability utilizing CCI's AISG suite of products. Optional Dual unit with two Diplexers mounted on a single bracket is available.

### Technical Description:

The Diplexer consists of multiple filters to combine (or divide) full band PCS and AWS signals. This tower mount unit separates (or combines) both Tx and Rx signals of PCS and AWS onto separate DIN 7-16 connectors. The fully weatherproof tower mount unit incorporates bypass circuitry which senses DC and AISG carrier frequency when presented to either port and automatically routes both to the antenna port. The unit has internal lightning strike protection using a multi-stage surge protection circuit. The filters have been designed to minimize Insertion Loss while maximizing isolation. DIN Connectors are fully IP68 unmated.



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## SPECIFICATIONS

### Outdoor Diplexer

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#### Electrical

RF Parameters	Ports	Frequency(MHz)	Specification	
Return Loss	COMMON	1850 - 1995	18 dB min., 20 dB Typ.	
		1710 - 1780	18 dB min., 20 dB Typ.	
		2110 - 2180	18 dB min., 20 dB Typ.	
	PCS	COMMON	1850 - 1995	18 dB min., 20 dB Typ.
			1710 - 1780	18 dB min., 20 dB Typ.
			2110 - 2180	18 dB min., 20 dB Typ.
	AWS	COMMON	1850 - 1995	18 dB min., 20 dB Typ.
			1710 - 1780	18 dB min., 20 dB Typ.
			2110 - 2180	18 dB min., 20 dB Typ.
Insertion Loss	COMMON to PCS	1850 - 1995	0.2 dB typ., 0.3 dB max.	
	COMMON to AWS	1710 - 1780	0.2 dB typ., 0.3 dB max.	
		2110 - 2180	0.2 dB typ., 0.3 dB max.	
Rejection	PCS to AWS	1850 - 1995	50 dB min.	
		1710 - 1780	50 dB min.	
	AWS to PCS	2110 - 2180	46 dB min.	

General Characteristics	
Impedance	50 ohms
Continuous Average Power	300 W max. (all ports)
Peak Envelope Power	3 kW max. (all ports)
Intermodulation Performance(all ports)	<-110 dBm (-153 dBc) typical (2 x +43 dBm tones) all bands
DC/AISG Pass current (AWS or PCS port 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(body only)(HxWxD)	5.08 x 7.32 x 2.09 in. (129 x 186 x 53 mm)
Weight	5.1 lbs (2.3 kg)
Mounting	Pole/Wall mounting bracket

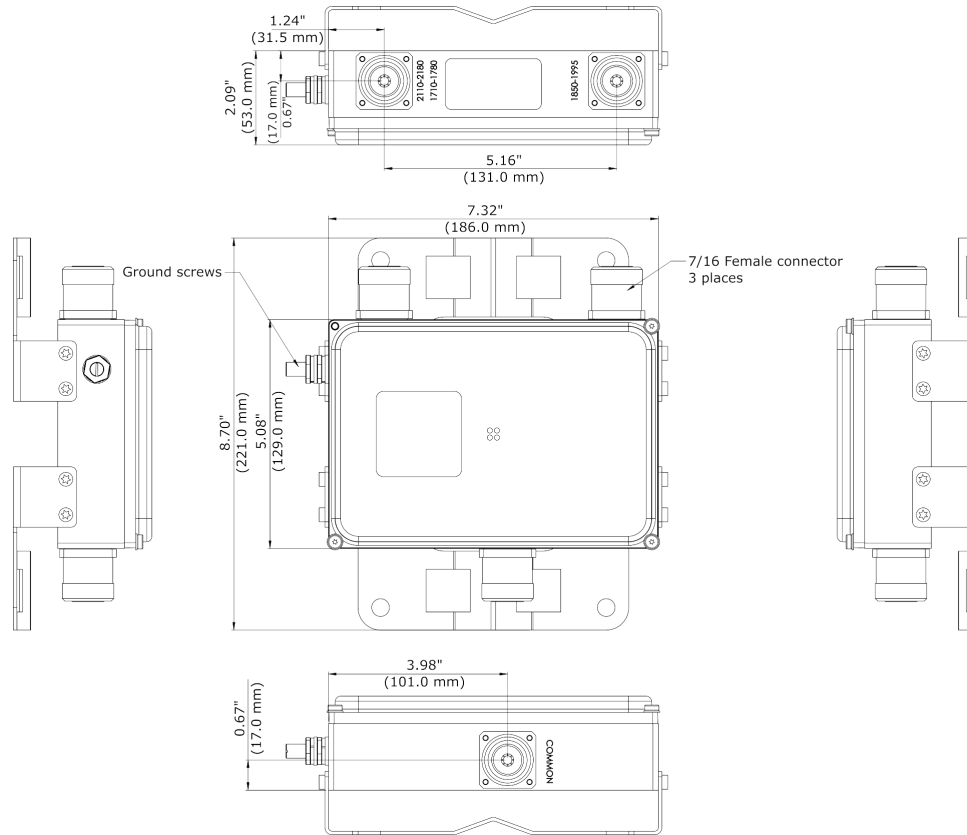


# Filters & Combiners

## SPECIFICATIONS

### Outdoor Diplexer

DIP-1921A-O-AISG-1



Outdoor Diplexer Outline Drawing

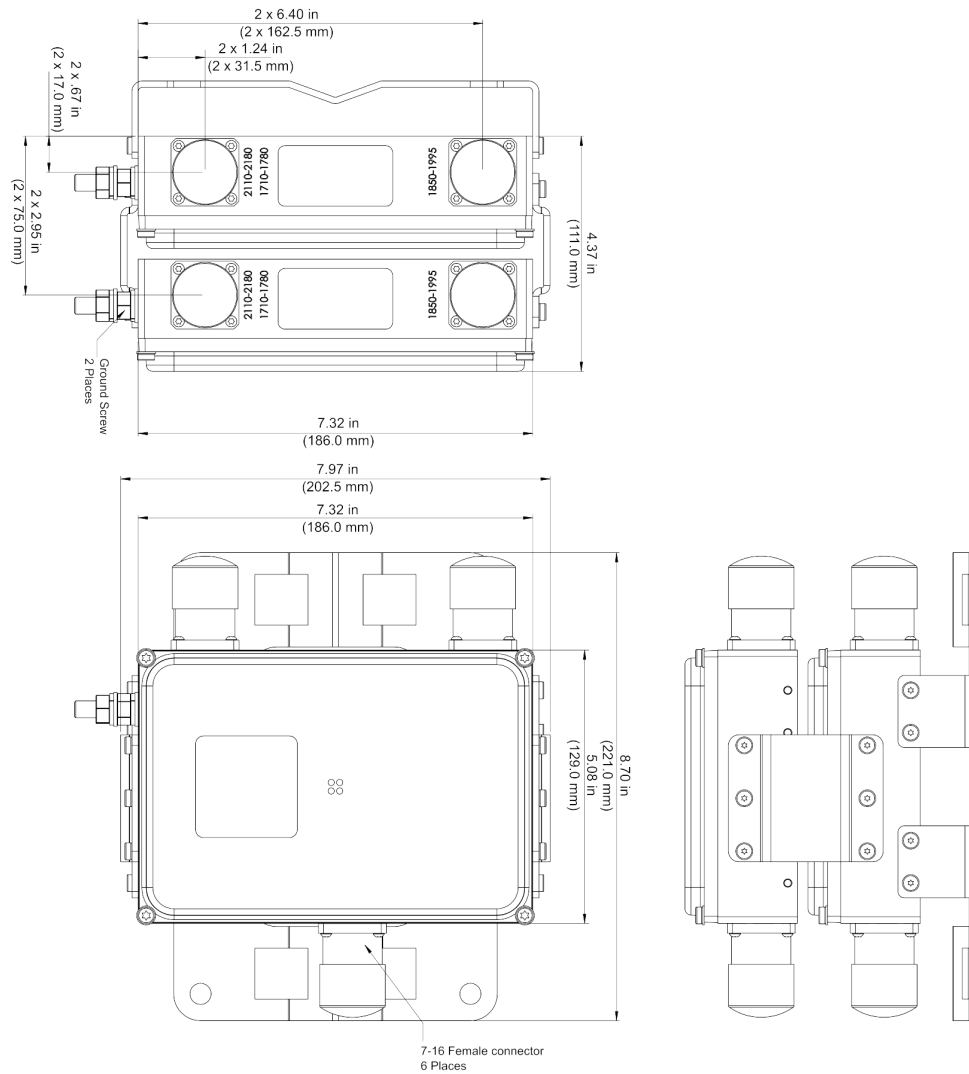


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## SPECIFICATIONS

## Outdoor Diplexer

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Dual Outdoor Diplexer with Bracket Outline Drawing



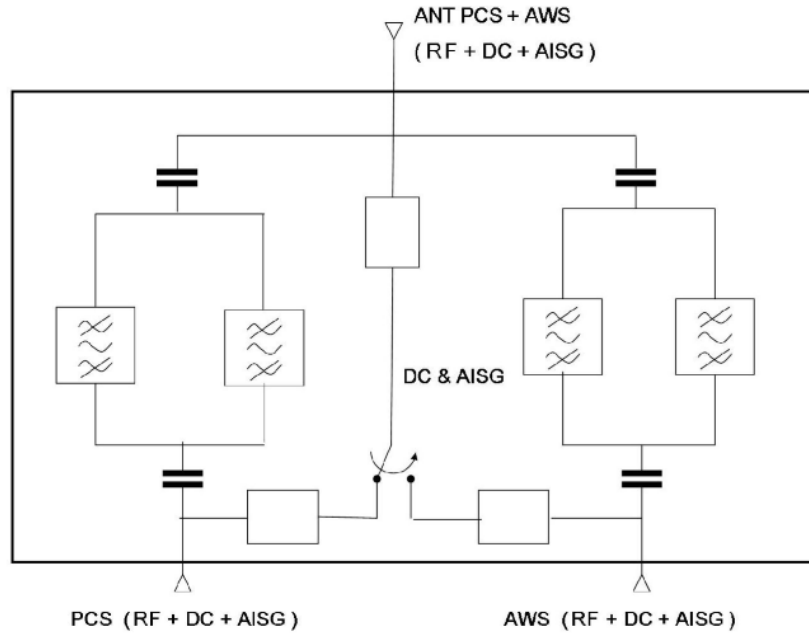
# Filters & Combiners

SPECIFICATIONS

Outdoor Diplexer

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Block Diagram



Outdoor Diplexer Block Diagram



# Filters & Combiners

ORDERING

Outdoor Diplexer

DIP-1921A-O-AISG-1

Parts & Accessories

**DIP-1921A-O-AISG-1** Single Outdoor Diplexer with bracket

**DIP-1921A-O-AISG-1D** Dual Outdoor Two Diplexers with bracket



# Filters & Combiners

STANDARDS &  
CERTIFICATIONS

Outdoor Diplexer

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Certifications

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

