

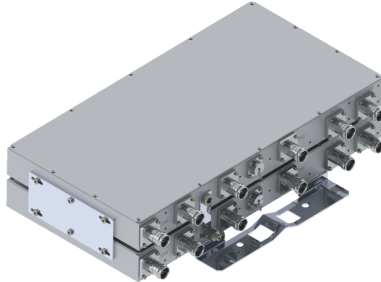


# Filters & Combiners

DATA SHEET

## Broadband Pentaplexer Combiner

5PO-6736-xxx



- Combines 600/700, 850/900, PCS (1850-1995), AWS (1695-2200) and WCS/BRS (2305-2690), which includes AWS 1-3 Extended
- High power 60 W per port with low insertion loss
- Low intermodulation with typical isolation of >50 dB per band
- DC/AISG pass option, Smart Bias-T with pass through on any input port or integrated AISG modem and port
- Outdoor model available in both single and twin configurations
- Also available in a 1U 19" rack mount, see model 5PR-6736-xxx
- High reliability of >500K Hours MTBF and multi-strike lightning protection

### Overview

Communication Components, Inc. Broadband Pentaplexer Combiner combines 600/700, 850/900, PCS, AWS and WCS/2600 band Basestation Tx/Rx signals onto a common port. Specifically intended for use in feeder line limited sites or multi-band high power DAS systems, the CCI Outdoor Pentaplexer model 5PO-0636-xxx facilitates the addition of new technologies like 5G and new spectrum including 600 MHz and "AWS 1-3 Extended" to existing sites while providing a low insertion loss and a high degree of isolation between systems. The cost and complexity of upgrading a Macro or DAS site is 6 reduced.

The CCI Broadband Pentaplexer Combiner 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 DAS system and base station, saving precious transmit power. This unit is an outdoor version available in a single or twin configuration and 19 inch rackmount version is also available in a single or twin configuration, see model number 5PR-6736-xxx. Both rackmount and outdoor units are fully weather rated.

### Technical Description:

The Broadband Pentaplexer Combiner consists of a multiple filters to combine (or divide) full band 600/700, 850/900, PCS, AWS, and WCS/2600 Band signals. This unit can be used as either a splitter or combiner to aggregate multiple bands on a common line. RF ports are available with 7-16 or 4.3-10 connectors. The filters have been designed to minimize insertion loss while maximizing isolation. Particular attention has been given to the intermodulation performance of the Broadband Pentaplexer to minimize any passive intermodulation products from occurring. This Outdoor Version can be pole or wall mounted and all connectors are fully IP68 rated and the unit body is rated for IP67. The mounting kit is included as an accessory.



# Filters & Combiners

## SPECIFICATIONS

### Broadband Pentaplexer Combiner

5PO-6736-xxx

#### Electrical Specification

RF Parameters	Ports	Frequency(MHz)	Specification	
Return Loss	Common	617 - 798	18 dB min., 20 dB typ.	
		824 - 960	18 dB min., 20 dB typ.	
		1850 - 1995	18 dB min., 20 dB typ.	
		1695 - 1780	18 dB min., 20 dB typ.	
		2110 - 2200	18 dB min., 20 dB typ.	
		2305 - 2690	18 dB min., 20 dB typ.	
		600/700	617 - 798	18 dB min., 20 dB Typ.
		850/900	824 - 960	18 dB min., 20 dB typ.
		PCS	1850 - 1995	18 dB min., 20 dB typ.
		AWS	1695 - 1780	18 dB min., 20 dB typ.
Insertion Loss	COM to 600/700	2110 - 2200	18 dB min., 20 dB typ.	
		2305 - 2690	18 dB min., 20 dB typ.	
		600/700	617 - 798	18 dB min., 20 dB Typ.
		850/900	824 - 960	18 dB min., 20 dB typ.
		PCS	1850 - 1995	18 dB min., 20 dB typ.
		AWS	1695 - 1780	18 dB min., 20 dB typ.
		WCS/2600	2305 - 2690	18 dB min., 20 dB typ.
		COM to 600/700	617 - 798	0.35 dB typ., 0.55 dB max.
		COM to 850/900	824 - 960	0.35 dB typ., 0.65 dB max.
		COM to PCS	1850 - 1995	0.35 dB typ., 0.40 dB max.
Isolation	COM to AWS	1695 - 1780	0.35 dB typ., 0.40 dB max.	
		2110 - 2200	0.35 dB typ., 0.40 dB max.	
		COM to WCS/2600	2305 - 2690	0.35 dB typ., 0.55 dB max.
		COM to 600/700	824 - 960	50 dB min.
		1850 - 1995	50 dB min.	
		1695 - 1780	50 dB min.	
		2110 - 2200	50 dB min.	
		2305 - 2690	50 dB min.	
		COM to 850/900	617 - 798	50 dB min.
		1850 - 1995	50 dB min.	
1695 - 1780	50 dB min.			
2110 - 2200	50 dB min.			
2305 - 2690	50 dB min.			
COM to PCS	617 - 798	50 dB min.		
824 - 960	50 dB min.			
1695 - 1780	50 dB min.			
2110 - 2200	50 dB min.			
2305 - 2690	50 dB min.			
COM to AWS	617 - 798	50 dB min.		
824 - 960	50 dB min.			
1850 - 1995	50 dB min.			
2305 - 2690	50 dB min.			
COM to WCS/2600	617 - 798	50 dB min.		
824 - 960	50 dB min.			
1850 - 1995	50 dB min.			
1695 - 1780	50 dB min.			
2110 - 2180	50 dB min.			
2180 - 2200	40 dB min.			



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### Broadband Pentaplexer Combiner

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General Characteristics	
Impedance	50 ohms
Continuous Average Power	100 W max.
Peak Envelope Power	2 kW max.
Intermodulation Performance COM port	<-117 dBm (-160 dBc) typical (2 x +43 dBm tones) all bands

### Environmental Specification

Operating Temperature	-40 °C to +65 °C (Outdoor)
Ingress Protection	IP68(Connectors), I67 (Unit Body)
Relative Humidity	0 - 99% (Outdoor)
MTBF	>500,000 hours
Lightning Protection	8/20us, ±10KA max, 10 strikes each, IEC61000-4-5

### Mechanical Specification

Modularity	Single	Twin
Connectors	6 x 7-16 DIN female long neck or 6 x 4.3-10 - per Pentaplexer	
Dimensions (body only)	9.21 x 17.72 x 1.73 in. (234.0 x 450.0 x 44.0 mm)	9.21 x 18.19 x 3.70 in. (234.0 x 462.0 x 94.0 mm)
Dimensions (with connectors & bracket)	12.72 x 17.72 x 2.36 in. (323.0 x 450.0 x 60.0 mm)	12.72 x 18.19 x 4.33 in. (323.0 x 462.0 x 110.0 mm)
Weight	18.75 lbs (8.5 kg)	37.65 lbs (17.1 kg)
Frontal Wind Load	431.1 N @150km/hour	431.1 N @150km/hour
Lateral Wind Load	35.0 N @150km/hour	74.7 N @150km/hour
Mounting	Pole/Wall mount	

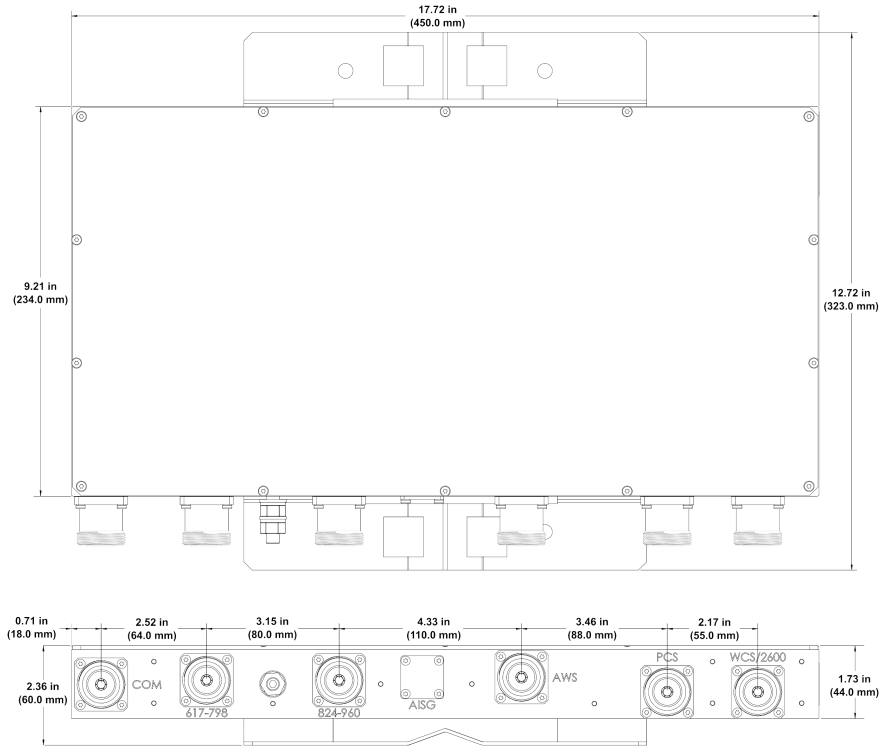


# Filters & Combiners

SPECIFICATIONS

Broadband Pentaplexer Combiner

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Outdoor Single Broadband Pentaplexer Outline Drawing

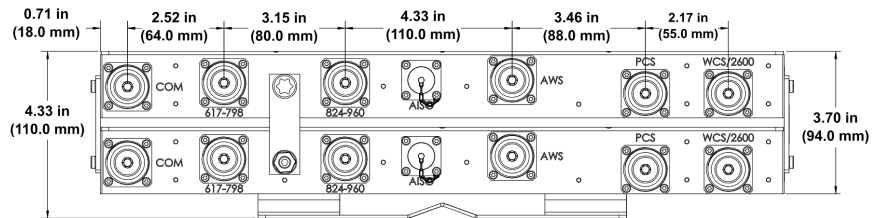
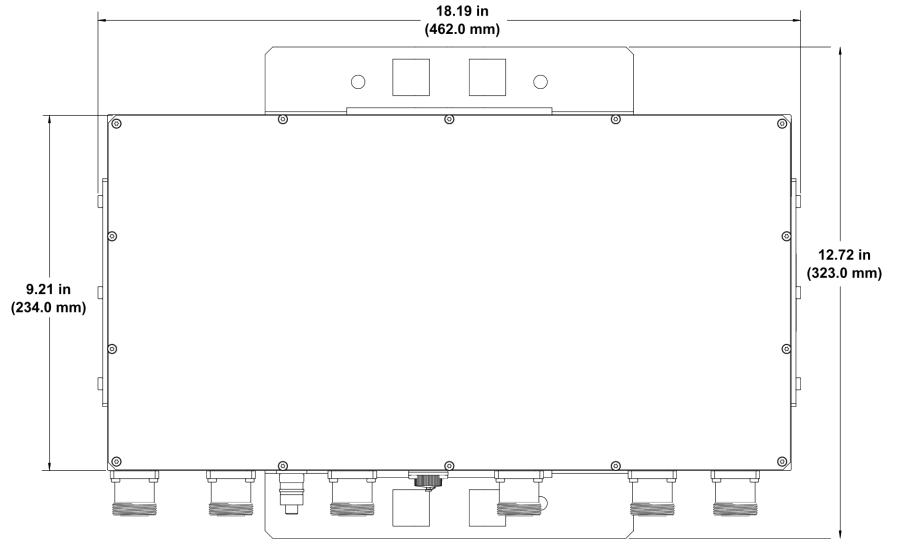


# Filters & Combiners

## SPECIFICATIONS

### Broadband Pentaplexer Combiner

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Outdoor Twin Broadband Pentaplexer with AISG Modem Outline Drawing



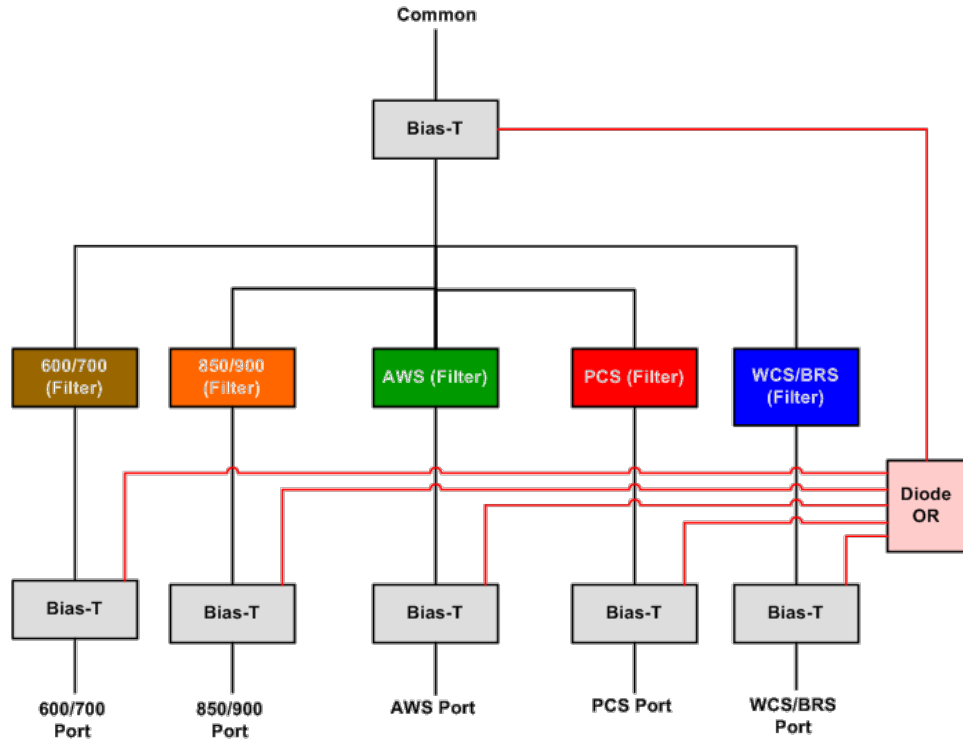
# Filters & Combiners

SPECIFICATIONS

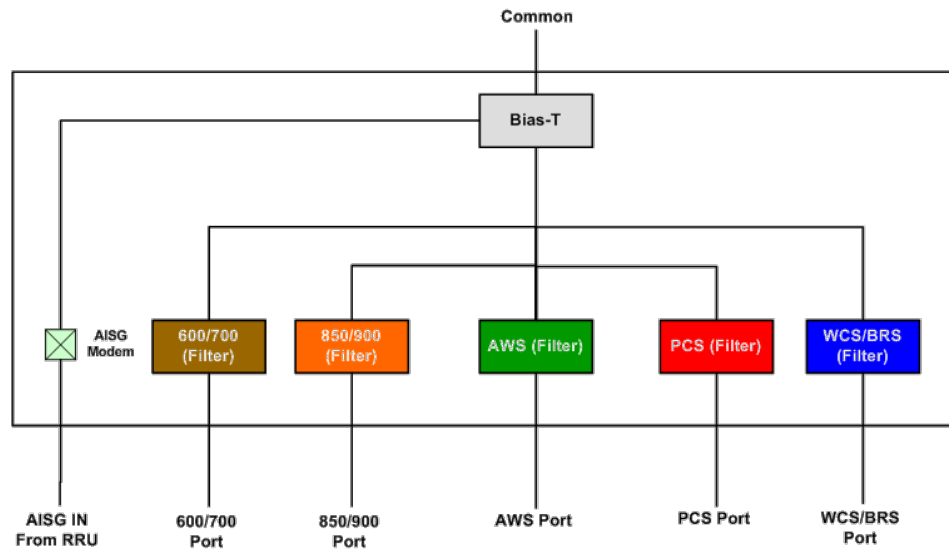
Broadband Pentaplexer Combiner

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Block Diagram



Outdoor Broadband Pentaplexer with Smart Bias-T Block Diagram



Outdoor Broadband Pentaplexer with AISG Modem Block Diagram



# Filters & Combiners

## STANDARDS & CERTIFICATIONS

### Broadband Pentaplexer Combiner

5PO-6736-xxx

#### Parts & Accessories

<b>5PO-6736-x-S1</b>	Outdoor Single Broadband Pentaplexer with 7-16 DIN connectors
<b>5PO-6736-x-S2</b>	Outdoor Single Broadband Pentaplexer with 4.3-10 connectors
<b>5PO-6736-x-T1</b>	Outdoor Twin Broadband Pentaplexer with 7-16 DIN connectors
<b>5PO-6736-x-T2</b>	Outdoor Twin Broadband Pentaplexer with 4.3-10 connectors

Option (-x)	Description
-S	Smart Bias-T, DC/AISG Pass through on any port
-0	No DC/AISG Pass through
-1	DC/AISG Pass through 600/700 Band to COMMON, DC Block on all other input ports
-2	DC/AISG Pass through 850/900 Band to COMMON, DC Block on all other input ports
-3	DC/AISG Pass through PCS to COMMON, DC Block on all other input ports
-4	DC/AISG Pass through AWS to COMMON, DC Block on all other input ports
-5	DC/AISG Pass through WCS/BRS to COMMON, DC Block on all other input ports
-M	AISG Modem with AISG output port

#### Certifications

<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

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