

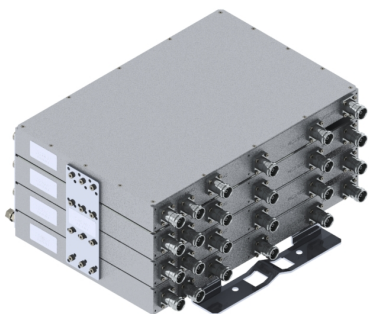


Filters & Combiners

DATA SHEET

Broadband Pentaplexer Combiner

5PO-6919203636-XXX



- The rackmounted Pentaplexer combines the frequency ranges 617-960 MHz, 1850-1995 MHz, 1695-1780/2110-2200MHz and 2 x 2305-2690 MHz onto a common port
- Supports the 600, 700, SMR, 850 and 900 bands on one port, AWS band on a second port, PCS band on a third port, and has two WCS/2600 band input ports
- High power 60 W per port with low insertion loss in a small, lightweight enclosure
- Low intermodulation with isolation of ≥ 50 dB between the frequency ranges and ≥ 25 dB between the twin WCS/2600 band inputs ports
- Pole or wall mount for outdoor
- Available in Single, Twin or Quad Configurations
- High reliability of >500K Hours MTBF

Overview

The CCI Broadband Pentaplexer, which is available in a Quad, Twin or Single configuration, combines the Tx/Rx signals of 617-960 MHz, PCS, AWS and two sets of WCS/BRS band inputs onto a common port. Specifically intended for use in multiband systems with limited feeder lines, this CCI Pentaplexer facilitates the addition of new technologies including LTE and new spectrum including AWS-3 and 600 MHz to existing sites. The Pentaplexer provides a minimum of 50 dB of isolation between each of the individual frequency ranges and a minimum of 25 dB of isolation between the two 2305-2690 band ports. By reducing the number of feeder lines, the cost to upgrade a site (tower loading, leasing and installation costs) is reduced.

The CCI 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 antennas and base station, saving precious transmit power. The Pentaplexer is fully outdoor rated and can be pole or wall mounted.

Technical Description:

The Outdoor Broadband Pentaplexer Combiner consists of multiple filters to combine (or divide) full band 617-960 MHz, PCS, AWS and 2 x WCS/BRS signals. This tower mount unit can be used as either a splitter or combiner to aggregate multiple bands on a common feeder line. All RF ports are terminated in 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. The Pentaplexer is IP67 rated and suitable for use outdoors.

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.



Filters & Combiners

SPECIFICATIONS

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Electrical Specification

RF Parameters	Ports	Frequency(MHz)	Specification
Return Loss	COM	617 - 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.
	LOW BAND	617 - 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.
		2110 - 2200	18 dB min., 20 dB typ.
	WCS/BRS1	2305 - 2690	18 dB min., 20 dB typ.
	WCS/BRS2	2305 - 2690	18 dB min., 20 dB typ.
Insertion Loss	COM to LOW BAND	617 - 960	0.15 dB maximum
	COM to PCS	1850 - 1995	0.3 dB typical, 0.4 dB maximum
	COM to AWS	1695 - 1780	0.3 dB typical, 0.35 dB maximum
		2110 - 2200	0.3 dB typical, 0.35 dB maximum
	COM to WCS/BRS1	2305 - 2690	3.55 dB typical, 3.7 dB maximum
	COM to WCS/BRS2	2305 - 2690	3.55 dB typical, 3.7 dB maximum
Rejection	COM to LOW BAND	1850 - 1995	50 dB min.
		1695 - 1780	50 dB min.
		2110 - 2200	50 dB min.
		2305 - 2690 (1)	50 dB min.
		2305 - 2690 (2)	50 dB min.
	COM to PCS	617 - 960	50 dB min.
		1695 - 1780	50 dB min.
		2110 - 2200	50 dB min.
		2305 - 2690 (1)	50 dB min.
		2305 - 2690 (2)	50 dB min.
	COM to AWS	617 - 960	50 dB min.
		1850 - 1995	50 dB min.
		2305 - 2690 (1)	50 dB min.
		2305 - 2690 (2)	50 dB min.
	COM to WCS/BRS1	617 - 960	53 dB min.
		1850 - 1995	53 dB min.
		1695 - 1780	53 dB min.
		2110 - 2180	53 dB min.
		2180 - 2200	48 dB min.
		2305 - 2690 (2)	25 dB min.
	COM to WCS/BRS2	617 - 960	53 dB min.
		1850 - 1995	53 dB min.
		1695 - 1780	53 dB min.
		2110 - 2180	53 dB min.
		2180 - 2200	48 dB min.
		2305 - 2690 (1)	25 dB min.



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General Characteristics	
Impedance	50 ohms
Continuous Average Power	60 W maximum per input port
Peak Envelope Power	1.2 kW maximum per input port, excluding WCS/BRS port which is 650 W
Intermodulation Performance(all ports)	<-117 dBm (-160 dBc) typical (2 x +43 dBm tones) all bands
DC Pass Current/AISG Pass	Not applicable

Environmental Specification

Operating Temperature	-40 °C to +65 °C
Enclosure & Connectors	IP67 (indoor/outdoor)
Relative Humidity	0 - 99%
MTBF	>500,000 hours
Lightning Protection	8/20us, ±10KA max, 10 strikes each, IEC61000-4-5

Mechanical Specification

Configuration	Single	Twin	Quad
Connectors	6x 4.3-10 female	12 x 4.3-10 female	24 x 4.3-10 female
Dimensions w/o Bracket	10.24 x 15.24 x 1.69 in. (260 x 387 x 43 mm)	10.24 x 15.24 x 3.46 in. (260 x 387 x 88 mm)	10.24 x 15.24 x 7.01 in. (260 x 387 x 178 mm)
Dimensions w/ Bracket	13.74 x 15.24 x 2.32 in. (349 x 387 x 59 mm)	13.74 x 15.75 x 4.09 in. (349 x 400 x 104 mm)	13.74 x 15.75 x 7.64 in. (349 x 400 x 194 mm)
Weight	16.6 lbs (7.55 kg)	32.4 lbs (14.71 kg)	63.5 lbs (28.85 kg)
Frontal Wind Load	407.6 N @150km/hour	407.6 N @150km/hour	407.6 N @150km/hour
Lateral Wind Load	38 N @150km/hour	77.7 N @150km/hour	157.2 N @150km/hour
Mounting	Wall or Pole mount		

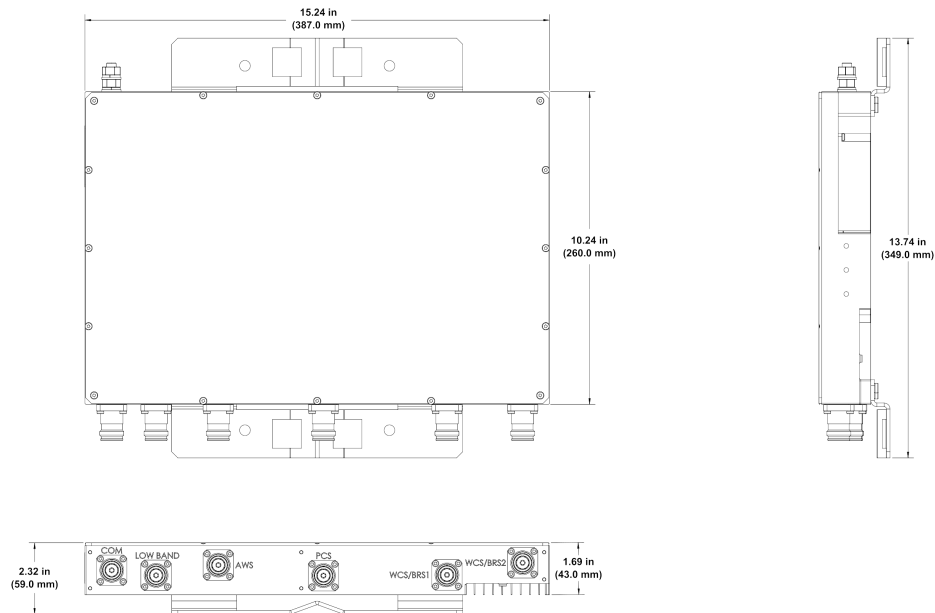


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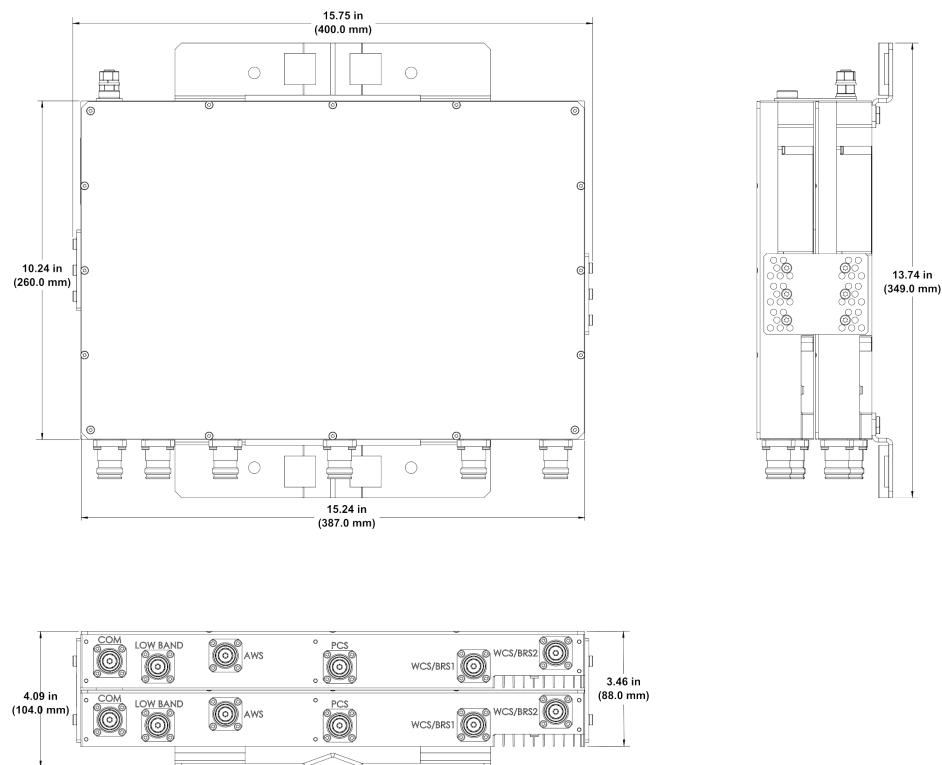
SPECIFICATIONS

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Single Broadband Pentaplexer (5PO-6919203636-x-S2) Outline Drawing



Twin Broadband Pentaplexer (5PO-6919203636-x-T2) Outline Drawing

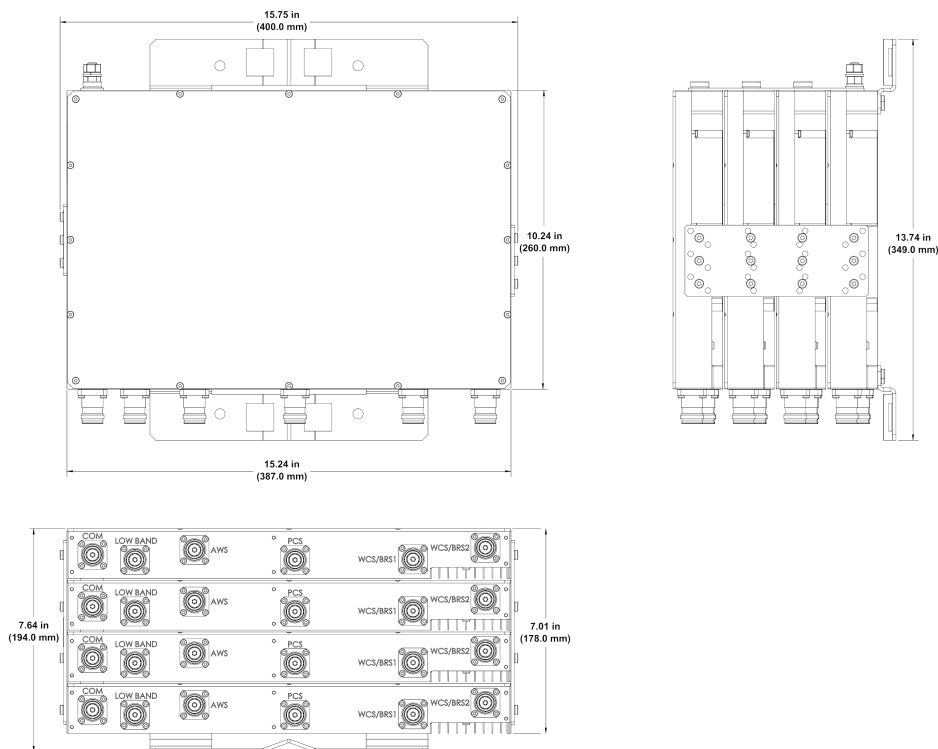


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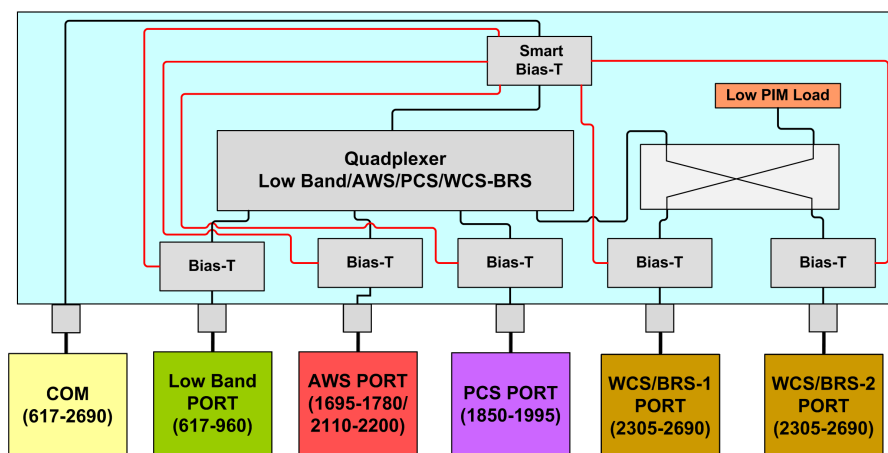
Broadband Pentaplexer Combiner

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Quad Broadband Pentaplexer (5PO-6919203636-x-Q2) Outline Drawing

Block Diagram



Broadband Pentaplexer (5PO-6919203636-xxx) Block Diagram



Filters & Combiners

STANDARDS & CERTIFICATIONS

Broadband Pentaplexer Combiner

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Parts & Accessories

5PO-6919203636-x-S2	Single Pentaplexer with 4.3-10 connectors (see options for DC or AISG Pass through)
5PO-6919203636-x-T2	Twin Pentaplexer with 4.3-10 connectors (see options for DC or AISG Pass through)
5PO-6919203636-x-Q2	Quad Pentaplexer with 4.3-10 connectors (see options for DC or AISG Pass through)

Option (-x)	Description
-S	Smart Bias-T, DC/AISG Pass through on either port
-0	No DC/AISG Pass through and No DC Block
-1	DC/AISG Pass through LOW BAND to COM, DC Block on all other input ports
-2	DC/AISG Pass through PCS Band to COM, DC Block on all other input ports
-3	DC/AISG Pass through AWS to COM, DC Block on all other input ports
-4	DC/AISG Pass through WCS/BRS1 to COM, DC Block on all other input ports
-5	DC/AISG Pass through WCS/BRS2 to COM, DC Block on all other input ports
-B	DC Block on all ports

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



CCI

Communication Components Inc.

EXTENDING WIRELESS PERFORMANCE