DATA SHEET

Broadband Pentaplexer Combiner

5PX-072626-0-SX

- The rackmounted Pentaplexer combines the frequency ranges 617-960 MHz, 1850-1995 MHz, 1695-1780/2110-2180 MHz and 2 x 2305-2690 MHz onto a common port
- Supports the 600, 700, SMR, 850 and 900 bands on port 1, PCS band on port 2, AWS band on port 3, and has two WCS/BRS band input ports one each on ports 4 and 5
- 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/BRS band inputs ports
- Available configurations include a rack or wall mount for indoor and pole or wall mount for outdoor
- High reliability of >500K Hours MTBF

Overview

The CCI rack mounted Broadband Pentaplexer 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 23 dB of isolation between the two WCS/BRS band ports for the entire 2305-2690 MHz frequecy range and 25 dB of isolation in the BRS band specifically. 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 with an optional outdoor configuration.

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 fully weatherproof unit can be optionally configured with wall/pole brackets or 7-16 DIN 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 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.

SPECIFICATIONS

Broadband Pentaplexer Combiner

5PX-072626-0-SX

Electrical Specification

RF Parameters	Ports	Frequency(MHz)	Specification
Return Loss	Common	617 - 960	20 dB typical, 18 dB minimum
		1850 - 1995	20 dB typical, 18 dB minimum
		1695 - 1780	20 dB typical, 18 dB minimum
		2110 - 2180	20 dB typical, 18 dB minimum
		2305 - 2690	20 dB typical, 18 dB minimum
	Low Band	617 - 960	20 dB typical, 18 dB minimum
	PCS	1850 - 1995	20 dB typical, 18 dB minimum
	AWS	1695 - 1780	20 dB typical, 18 dB minimum
		2110 - 2180	20 dB typical, 18 dB minimum
	WCS/BRS1	2305 - 2690	20 dB typical, 18 dB minimum
	WCS/BRS2	2305 - 2690	20 dB typical, 18 dB minimum
Insertion Loss	COM to Low Band	617 - 960	0.15 dB typical, 0.2 dB maximum
	COM to PCS	1850 - 1995	0.35 dB typical, 0.5 dB maximum
	COM to AWS	1695 - 1780	0.35 dB typical, 0.5 dB maximum
		2110 - 2180	0.35 dB typical, 0.5 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 minimum
		1695 - 1780	50 dB minimum
		2110 - 2180	50 dB minimum
		2305 - 2690	50 dB minimum
	COM to PCS	617 - 960	50 dB minimum
		1695 - 1780	50 dB minimum
		2110 - 2180	50 dB minimum
		2305 - 2690	50 dB minimum
	COM to AWS	617 - 960	50 dB minimum
		1850 - 1995	50 dB minimum
		2305 - 2690	50 dB minimum
	COM to WCS/BRS1	617 - 960	50 dB minimum
		1850 - 1995	50 dB minimum
		1695 - 1780	50 dB minimum
		2110 - 2180	50 dB minimum
	COM to WCS/BRS2	617 - 960	50 dB minimum
		1850 - 1995	50 dB minimum
		1695 - 1780	50 dB minimum
		2110 - 2180	50 dB minimum
Isolation	WCS/BRS1 to WCS/BRS2	2500 - 2570	25 dB minimum
		2620 - 2690	25 dB minimum
		2305 - 2690	23 dB minimum

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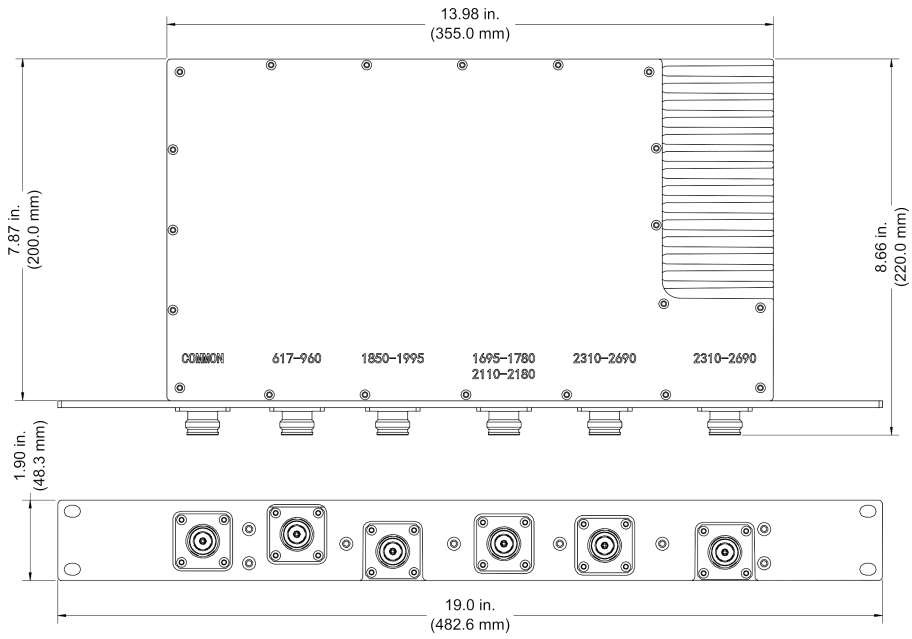
General Characteristics	
Impedance	50 ohms
Continuous Average Power	60 W maximum per input port
Peak Envelope Power	1.2 kW maximum per input port, excluding WCS/BRS port which is 650 W
Intermodulation Performance(all ports)	<-117 dBm (-160 dBc) typical (2 × +43 dBm tones) all bands
DC Pass Current/AISG 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

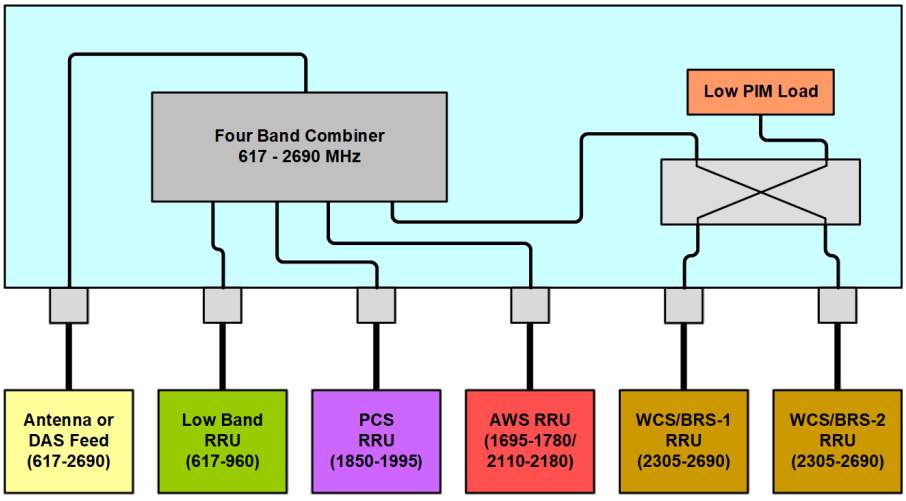
Mechanical Specification

Connectors	6 x 4.3-10 female or 6 x 7-16 DIN female
Dimensions enclosure	1.9 x 13.98 x 7.87 in. (48.3 x 355.0 x 200.0 mm)
Weight	12.58 lbs (5.7 kg)
Mounting	19" rack mount



Rack mount Broadband Pentaplexer (5PX-072626-0-S2) Outline Drawing

Block Diagram



Rackmount Broadband Pentaplexer Block Diagram

STANDARDS & CERTIFICATIONS

Broadband Pentaplexer Combiner

5PX-072626-0-SX

Parts & Accessories

5PX-072626-0-S1	Rackmount Pentaplexer with 7-16 DIN connectors (no DC or AISG Pass through)
5PX-072626-0-S2	Rackmount Pentaplexer with 4.3-10 connectors (no DC or AISG Pass through)

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

Federal Communication Commission (FCC) Part 15 Class B, CE, CSA US, ISO 9001