

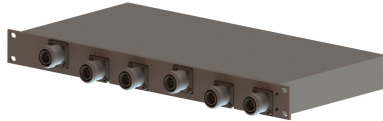


Filters & Combiners

DATA SHEET

Spectrum Sharing 2100 Combiner

PFC-1921-6xx



- Twin unit combines two 2100 MHz base station outputs with a narrow guard band onto a common port per unit
- Full transmit and receive band combining with a guard band of 4.9 MHz to 35.0 MHz
- High power 100 W per input port with insertion loss as low as 0.5 dB
- Fully passive same band combiner with excellent temperature stable filter response
- AISG 2.0 compliant DC/AISG pass through on any inout port with Smart Bias-T
- Low intermodulation with typical transmit isolation of 28 dB port to port
- High reliability of >500K Hours MTBF and multi-strike lightning protection
- Compact 19" rackmount enclosure with wall mounting options

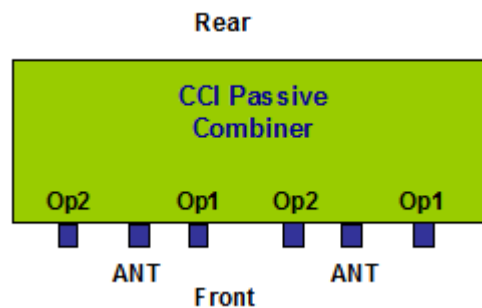
Overview

CCI's Twin Low Loss fully integrated Filter-Combiner combines two operators or two technologies (eg GSM and LTE) on sub-bands of the 2100 band onto a single feeder without the insertion loss normally associated with passive combiners. The unit is fully passive and delivers a matched low insertion loss solution for the sharing of common feeder lines and antennas. The unit is a totally passive low loss filter and no power is required. DC pass is provided as an option if required. The input ports will sense the DC signal and enable DC to pass through to the antenna port. The unit is housed in a single rack-mounted 19" by 1U assembly and can be used with other CCI products for further sector enhancement. Outdoor packaging can be provided. Typical deployment uses two identical units per sector, enabling Tx/Rx from both operator BTS ports to combine onto 2 main feeder lines.

Technical Description:

Internal duplexers deliver signal to independent Tx and Rx filter combiners with ceramic resonators, enabling a high level of control and performance to maintain good isolation while minimizing insertion loss. Stages are kept to a minimum to maximize power and efficiency. Transmit paths are fully isolated from Receive paths to prevent intermodulation products.

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

Spectrum Sharing 2100 Combiner

PFC-1921-6xx

Electrical

RF Parameters	Ports	Frequency(MHz)	Specification
Return Loss	COMMON	Operator 1 RX/TX	18 dB minimum, 20 dB typical
		Operator 2 RX/TX	18 dB minimum, 20 dB typical
	RX/TX 0	Operator 1 RX/TX	18 dB minimum, 20 dB typical
	RX/TX 1	Operator 2 RX/TX	18 dB minimum, 20 dB typical
Insertion Loss Guardband ≤ 5.0 MHz	RX/TX 0 to COMMON	Operator 1 RX & Operator 2 RX	0.9 dB maximum
	RX/TX 1 to COMMON	Operator 1 TX & Operator 2 TX	0.9 dB maximum
Insertion Loss Guardband > 5.0 MHz & < 15.0 MHz	RX/TX 0 to COMMON	Operator 1 RX & Operator 2 RX	0.7 dB maximum
	RX/TX 1 to COMMON	Operator 1 TX & Operator 2 TX	0.7 dB maximum
Insertion Loss Guardband ≥ 15.0 MHz	RX/TX 0 to COMMON	Operator 1 RX & Operator 2 RX	0.5 dB maximum
	RX/TX 1 to COMMON	Operator 1 TX & Operator 2 TX	0.5 dB maximum
Isolation Guardband ≤ 5.0 MHz	RX/TX 0 to RX/TX 1	Operator 1 RX & Operator 2 RX	25 dB minimum, 28 dB typical
	RX/TX 0 to RX/TX 1	Operator 1 TX & Operator 2 TX	25 dB minimum, 28 dB typical
Isolation Guardband > 5.0 MHz & < 15.0 MHz	RX/TX 0 to RX/TX 1	Operator 1 RX & Operator 2 RX	27 dB minimum, 29 dB typical
	RX/TX 0 to RX/TX 1	Operator 1 TX & Operator 2 TX	27 dB minimum, 29 dB typical
Isolation Guardband ≥ 15.0 MHz	RX/TX 0 to RX/TX 1	Operator 1 RX & Operator 2 RX	30 dB minimum, 32 dB typical
	RX/TX 0 to RX/TX 1	Operator 1 TX & Operator 2 TX	30 dB minimum, 32 dB typical

*See chart below for Operator 1 RX/TX and Operator 2 RX/TX frequencies

Model Number	Operator 1		Guard Band	Operator 2	
	RX	TX		RX	TX
PFC-1921-040	1920.1 - 1935.1	2110.1 - 2125.1	5.0	1940.1 - 1950.1	2130.1 - 2140.1
PFC-1921-619	1920.0 - 1935.0	2110.0 - 2125.0	15.0	1950.0 - 1965.0	2140.0 - 2155.0
PFC-1921-620	1919.9 - 1924.9	2109.9 - 2114.9	15.0	1939.9 - 1944.9	2129.9 - 2134.9
PFC-1921-623	1920.0 - 1935.0	2110.0 - 2125.0	35.0	1970.0 - 1980.0	2160.0 - 2170.0
PFC-1921-630	1920.3 - 1940.3	2110.3 - 2130.3	10.0	1950.3 - 1965.3	2140.3 - 2155.3
PFC-1921-640	1919.9 - 1935.0	2109.9 - 2125.0	4.9	1939.9 - 1965.1	2129.9 - 2155.1
PFC-1921-655	1920.1 - 1930.1	2110.1 - 2120.1	5.0	1935.1 - 1950.1	2125.1 - 2140.1
PFC-1921-665	1935.1 - 1945.0	2125.1 - 2135.0	4.9	1949.9 - 1964.9	2139.9 - 2154.9

Contact sales for additional operator frequency combinations or guard band less than 4.9 MHz; unit is factory settable with guardband ≥ 4.9 MHz and ≤ 35.0 MHz



Filters & Combiners

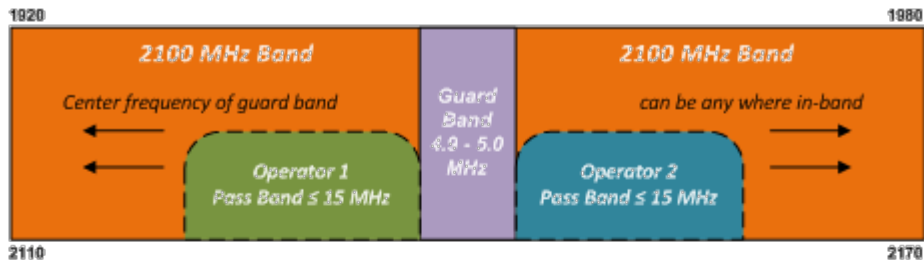
SPECIFICATIONS

Spectrum Sharing 2100 Combiner

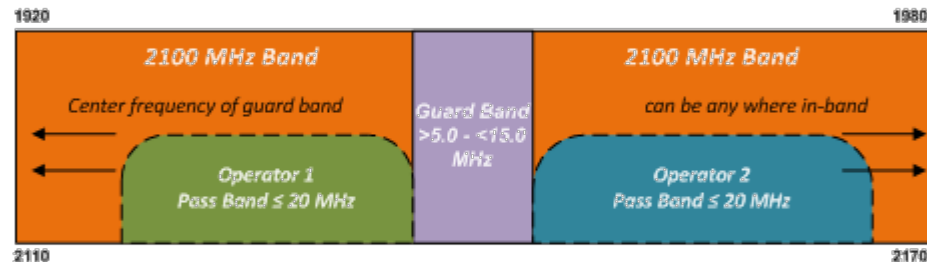
PFC-1921-6xx

General Characteristics	
Impedance	50 ohms
Continuous Average Power	100 W max. (Input ports)
	300 W max. (Common port)
Peak Envelope Power	2 kW max. (all ports)
Intermodulation Performance (at ANT port in RX band)	<-117 dBm (-160 dBc) typical (2 x +43 dBm tones) all bands
DC Pass Current/AISG Pass any port to Common Port)	5A/AISG signal (2.176 MHz) per AISG 2.0 (Auto-detect)

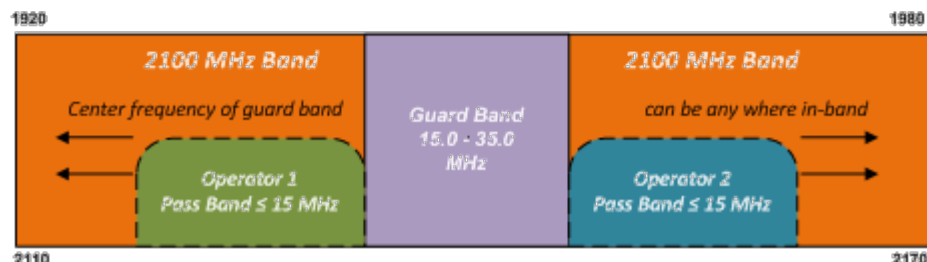
PFC-1921-6xx 2100 MHz Spectrum Sharing Combiner Band Plans



Guard band 4.9-5.0 MHz, total bandwidth of passbands & guard band is ≤35.2 MHz



Guard band >5.0-15.0 MHz, total bandwidth of passbands & guard band is ≤45.0 MHz



Guard band 15.0-35.0 MHz, total bandwidth of passbands & guard band is ≤60.0 MHz



Filters & Combiners

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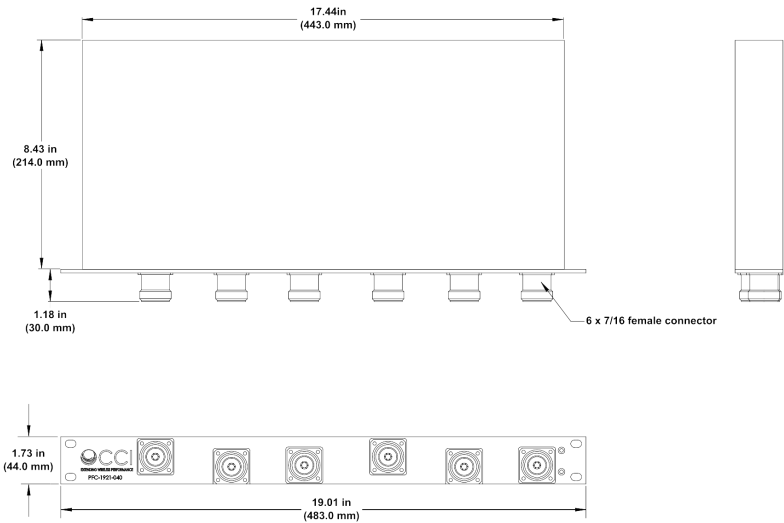
PFC-1921-6xx

Environmental

Operating Temperature	-10 °C to +65 °C
Ingress Protection	IP20 minimum (Indoor)
Humidity	5% - 95%
MTBF	>500,000 hours
Lightning Protection	8/20us, ±10KA max, 10 strikes per IEC61000-4-5

Mechanical

Connectors	6 x 7-16 DIN female
Dimensions(body only)(HxWxD)	8.43 x 17.44 x 1.73 in. (214.0 x 443.0 x 44.0 mm)
Dimensions (with rack mount+Conn)(HxWxD)	9.61x 19.01 x 1.73 in. (244.0 x 483.0 x 44.0 mm)
Weight with brackets	19.8 lbs (9 kg)
Mounting	Rack Mount



PFC-1921-6xx 2100 MHz Spectrum Sharing Combiner Outline Drawing



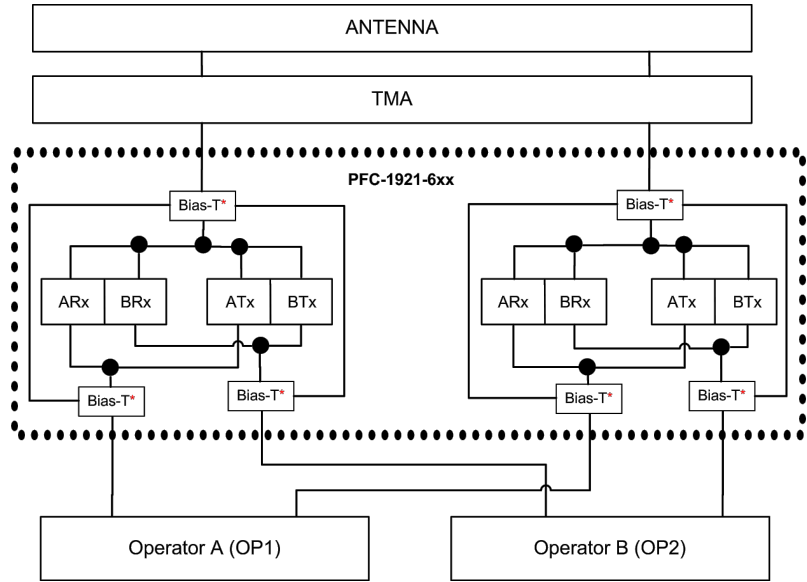
Filters & Combiners

SPECIFICATIONS

Spectrum Sharing 2100 Combiner

PFC-1921-6xx

Block Diagram



PFC-1921-6xx 2100 MHz Spectrum Sharing Combiner Typical Application / Block Diagram



Filters & Combiners

STANDARDS & CERTIFICATIONS

Spectrum Sharing 2100 Combiner

PFC-1921-6xx

Parts & Accessories

PFC-1921-6xx Spectrum Sharing 2100 MHz Rack Mount Combiner with Smart Bias-Tee and 7/16 connectors

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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

