

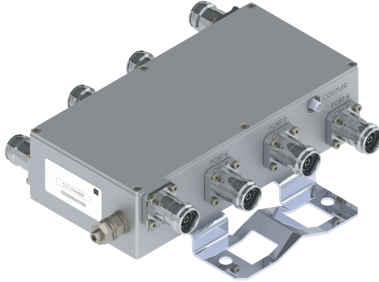


# Filters & Combiners

DATA SHEET

## 4x4 Wideband Hybrid Combiner

HYO-68-4xx



- Wideband Hybrid Combiner covering 2700 - 5925 MHz
- Coupled output port
- Near lossless combining
- High in-band isolation
- Outdoor capable unit
- High power Handling 500W per port and 3KW peak
- RoHS compliant

### Overview

CCI's High Power Outdoor 4x4 Hybrid Combiner with output coupler is commonly used to combine multiple Base Station (BTS) resources into a Distributed Antenna System (DAS). The RF from each input port is present equally at each one of the four output ports of the 4x4 Hybrid. The Model HYO-68-4xx is a wideband device that can combine all wireless frequency bands from 2700 to 5925 MHz and provides a minimum of 30 dB of port to port isolation, 32 dB typical. It has been designed to minimize PIM whilst providing maximum Isolation between ports.

#### Technical Description:

CCI's outdoor wideband 4x4 Hybrid Combiner covers the full spectrum from 2700 MHz to 5925 MHz. The unit allows DC/AISG pass-through on all ports for powering Tower Mount Amplifiers. The unit is housed in an IP67 moisture proof enclosure, with IP67 moisture proof connectors suited for long-life. The combiner can be wall or pole mounted.



# Filters & Combiners

## SPECIFICATIONS

### 4x4 Wideband Hybrid Combiner

HYO-68-4xx

#### Electrical

RF Parameters	Ports	Frequency(MHz)	Specification
Insertion Loss	Input <sup>1</sup> to Output <sup>2</sup>	2700 - 5925	6.1 dB ± 0.2 dB
	Input <sup>1</sup> to Coupled Port <sup>3</sup>	2700 - 5925	34 dB ± 10 dB
Isolation	Input Port <sup>1</sup> to Input Port <sup>1</sup>	2700 - 5925	30 dB min. , 32 dB typ.
Return Loss	All Ports	2700 - 5925	25 dB min.

<sup>1</sup>Ports 1-4; <sup>2</sup>Ports 5-8; <sup>3</sup>Test Port

#### General Characteristics

Impedance	50 ohms
Continuous Average Power	500 W maximum (per port)
Peak Envelope Power	3 kW maximum
DC Pass Current/AISG Pass	DC paths: Port 1 to Port 5; Port 2 to Port 7; Port 3 to Port 6; Port 4 to Port 8 (max 6.5 A per AISG 2.0)

#### Environmental

Operating Temperature	-40 °C to +70 °C
Ingress Protection	IP67
Relative Humidity	0 - 95%

#### Mechanical

Parameters	HYO-68-4F2
Input Connectors	4.3-10 female x 4 (Port 1 - 4)
Output Connectors	4.3-10 female x 4 (Port 5 - 8)
Coupled Port Connector	SMA female x 1
Dimensions (body only)(HxWxD)	3.82 x 7.87 x 2.09 in. (97.0 x 200.0 x 53.0 mm)
Dimensions (incl. brackets)(HxWxD)	7.64 x 8.86 x 2.72 in. (194.0 x 225.0 x 69.0 mm)
Weight with brackets	5.3 lbs (2.4 Kg)
Mounting	Pole/Wall mounting bracket

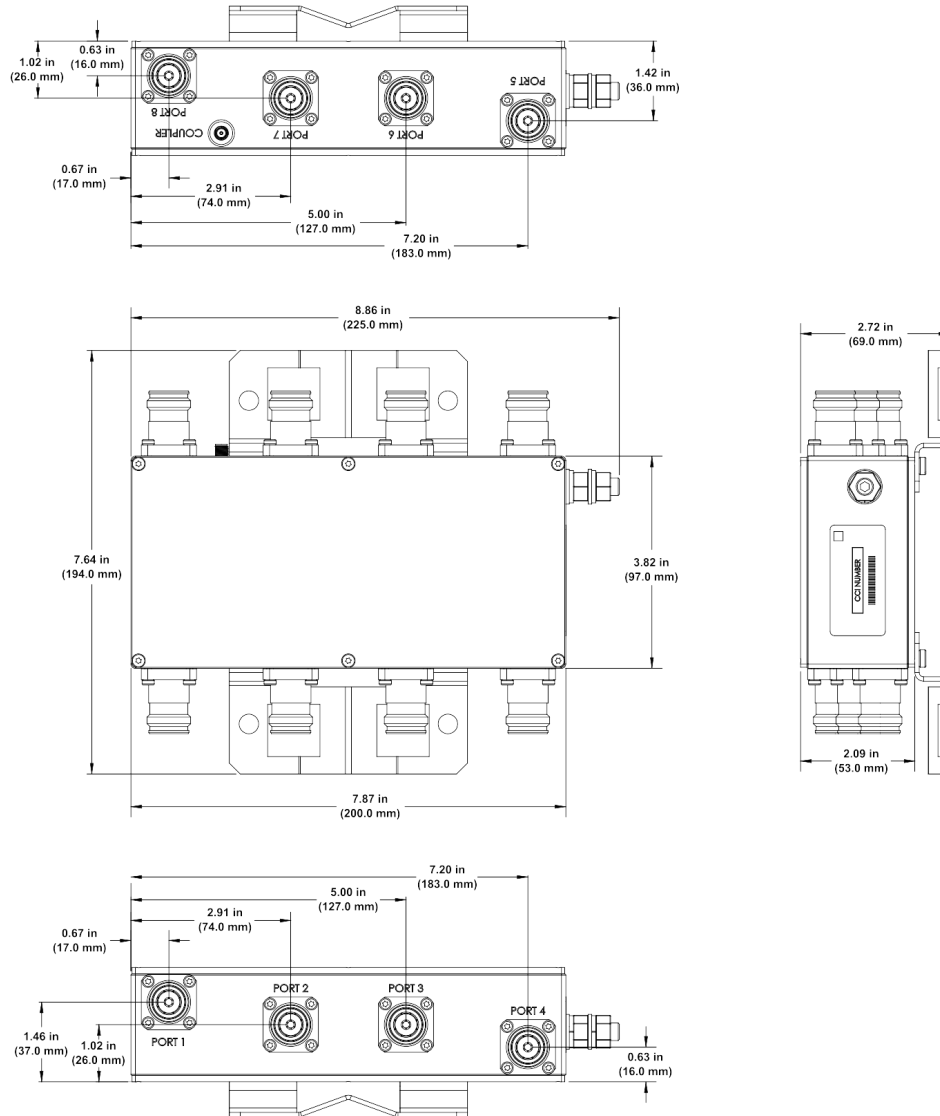


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4-Way Hybrid Combiner Outline Drawing with 4.3-10 Connectors



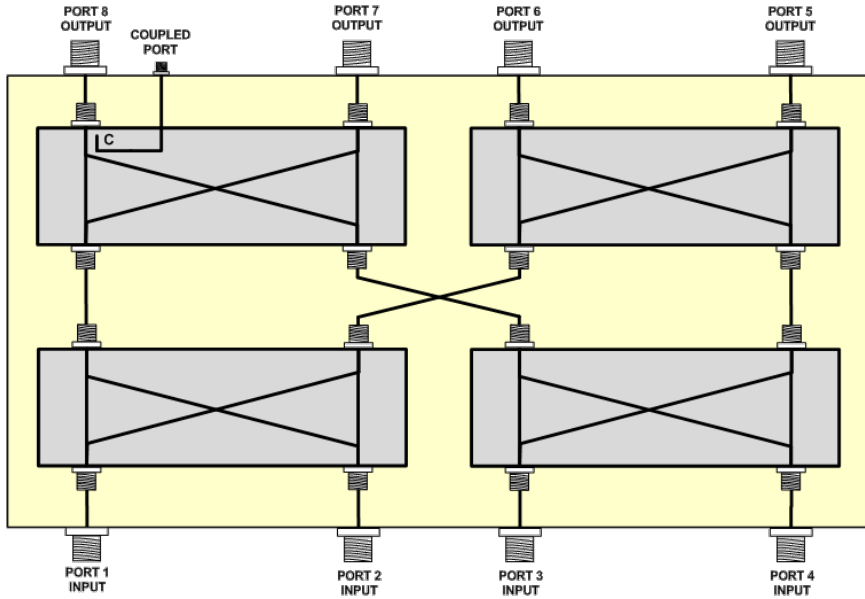
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SPECIFICATIONS

4x4 Wideband Hybrid Combiner

HYO-68-4xx

Block Diagram



4 x 4 Hybrid Combiner Block Diagram



# Filters & Combiners

## STANDARDS & CERTIFICATIONS

### 4x4 Wideband Hybrid Combiner

HYO-68-4xx

#### Parts & Accessories

**HYO-68-4F2** Outdoor Wideband 4-Way Hybrid Combiner with coupler and 4.3-10 Connectors

#### Standards & Compliance

<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, GR-63-CORE 4.3.1, EN 60529 IP65 & IP67

#### Certifications

Antenna Interface Standards Group (AISG), Federal Communication Commission (FCC) Part 15 Class B, CE, CSA US, ISO 9001

