

## SMA 90 Degree Hybrid Coupler from 4 GHz to 18 GHz Rated to 50 Watts

The FMCP1143 is a high power 90 degree hybrid coupler that operates from 4 to 18 GHz and can handle 50 Watts (CW) with 16 dB isolation minimum and 1.5:1 VSWR maximum. The package interface uses SMA Female connectors.

The FMCP1143 is part of Fairview Microwave's family of 90 degree hybrid couplers that offer excellent performance featuring high isolation, low insertion loss and VSWR while maintaining great amplitude/phase balance over the entire operating frequency range. They are available in both narrow and broad bandwidths and can be used in a wide variety of applications including signal sampling, phased array radar, and any application that requires even power distribution with a 90 degree difference in phase.

### Electrical Specifications

Description	Min	Typ	Max	Units
Frequency Range	4		18	GHz
Impedance		50		Ohms
Phase Difference		90		Degrees
Coupling		3		dB
Insertion Loss		1		dB
Isolation	16	18		dB
VSWR		1.4:1	1.5:1	
Amplitude Balance		±0.5	±0.7	dB
Phase Balance		±6	±8	Degrees
Input Power (CW)			50	Watts
Input Power (Peak)			300	Watts

### Mechanical Specifications

#### Size

Length	1.37 in [34.8 mm]
Width	0.43 in [10.92 mm]
Height	0.87 in [22.1 mm]
Weight	0.25 lbs [113.4 g]

#### Configuration

RF Connector Type	SMA Female
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### Environmental Specifications

#### Temperature

Operating Range	-45 to +85 deg C
Storage Range	-55 to +125 deg C

Humidity	100% RH at 35°C, 95% RH at 40°C
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Shock	20G for 11msec half sine wave, 3 axis both directions
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Vibration	25gRMS (15 degrees 2KHz) endurance, 1 hour per axis
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Altitude	30,000 ft.
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### Features:

- 90° Phase Shift Between Output Ports
- High power handling of 50 Watts CW
- 4 to 18 GHz Frequency Range
- VSWR 1.4:1 Typical
- High Isolation of 16 dB Minimum
- Low 1 dB Insertion Loss Typical
- SMA Female Connectors
- Stable performance over Operating Temperature Range

### Applications:

- Test and Measurement
- Commercial Communications
- SATCOM
- Military Communications
- Wireless Communications

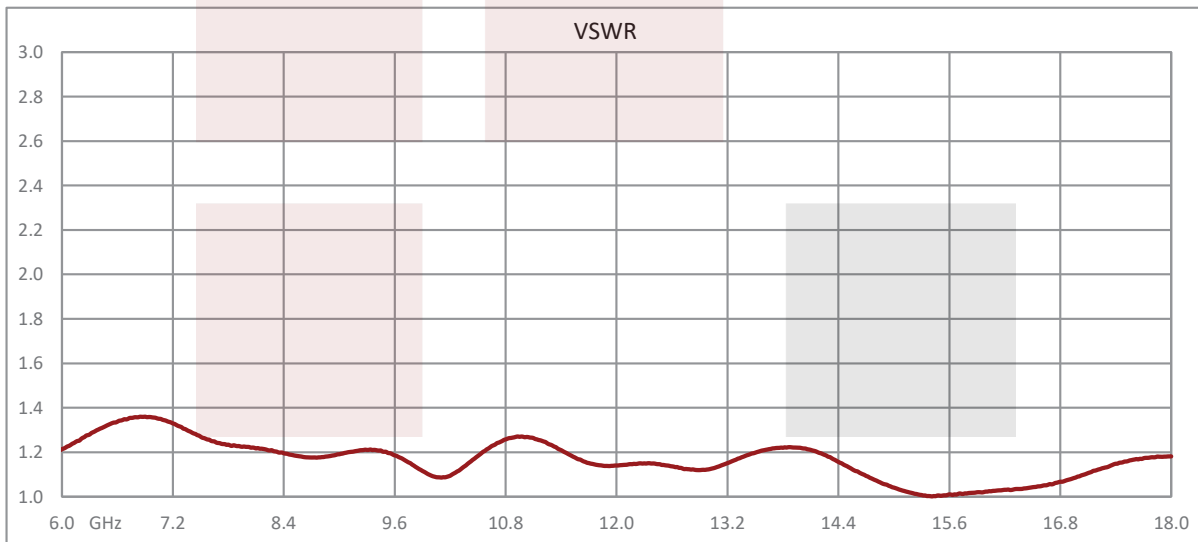
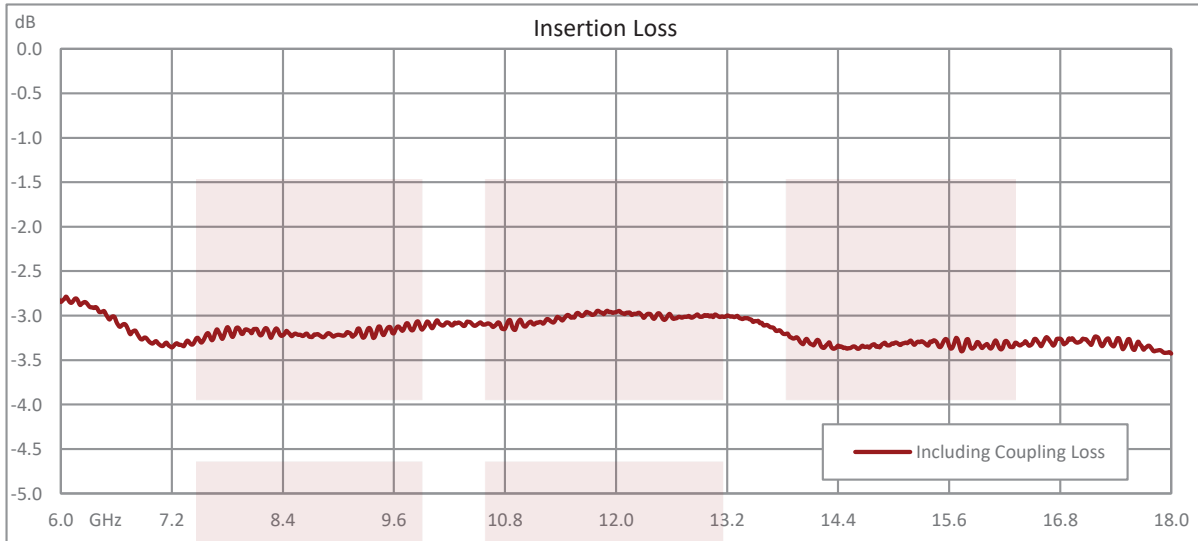
Fairview Microwave  
 301 Leora Ln., Suite 100  
 Lewisville, TX 75056  
 Tel: 1-800-715-4396 / (972) 649-6678  
 Fax: (972) 649-6689  
[www.fairviewmicrowave.com](http://www.fairviewmicrowave.com)  
[sales@fairviewmicrowave.com](mailto:sales@fairviewmicrowave.com)

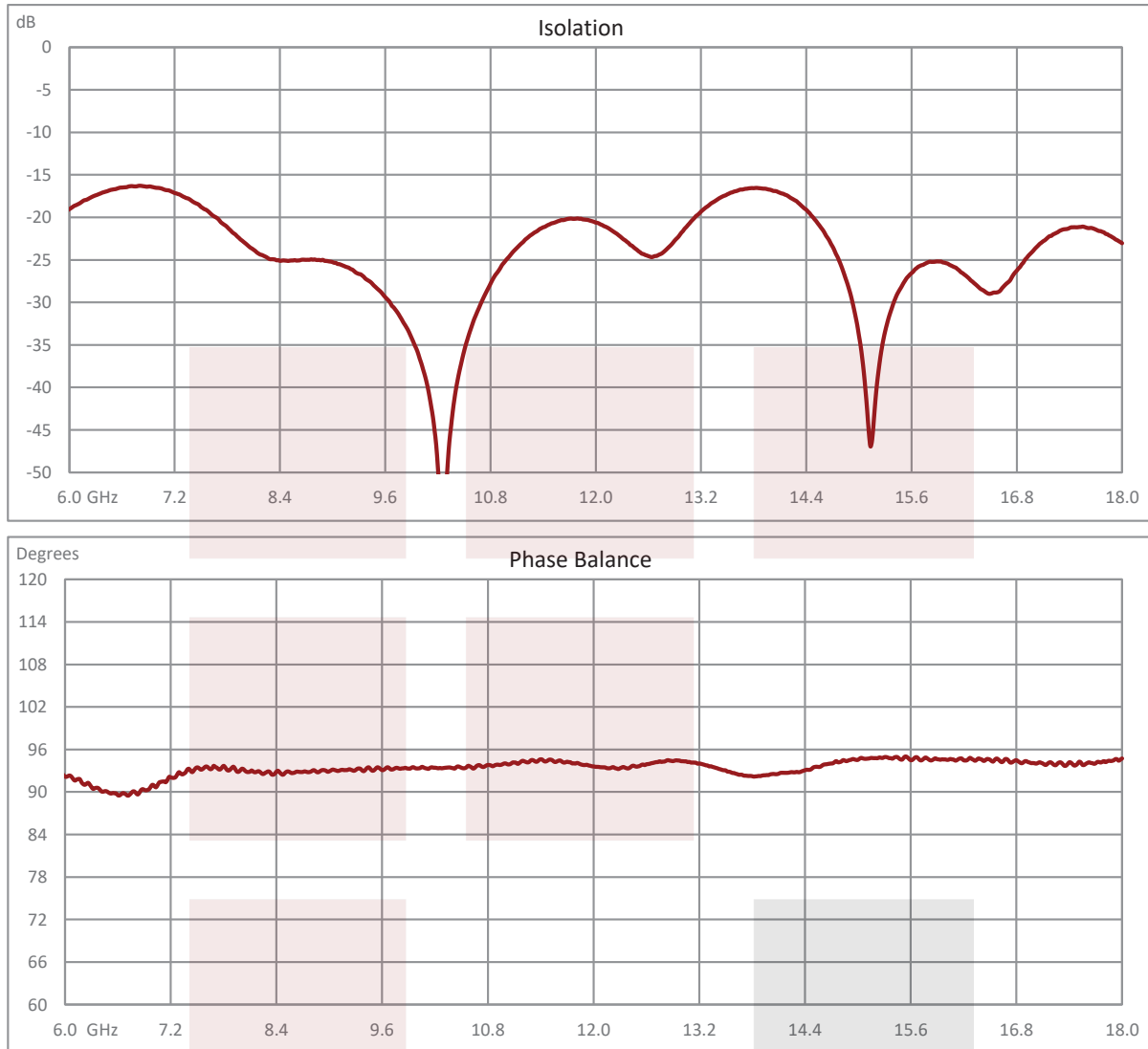
**Compliance Certifications** (see [product page](#) for current document)

**Plotted and Other Data**

Notes:

**Typical Performance Data**





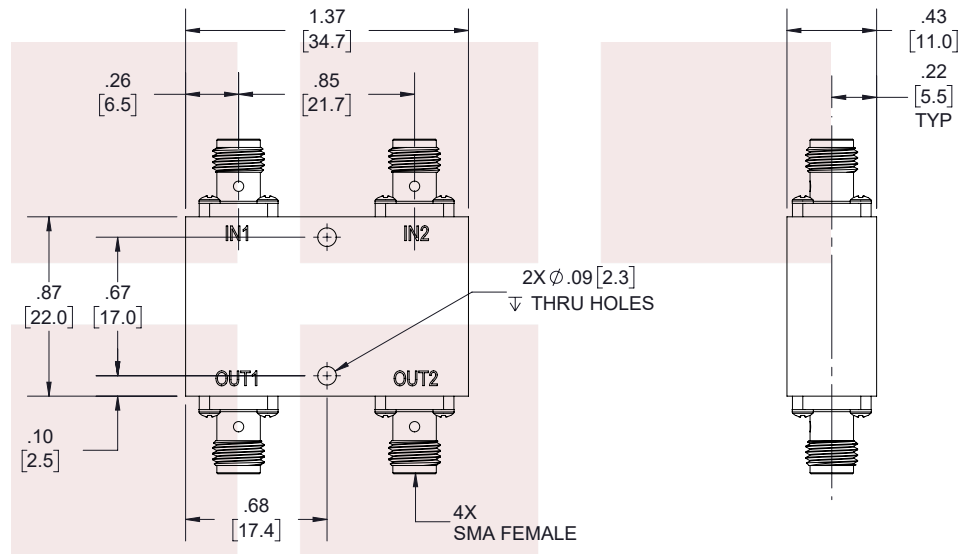
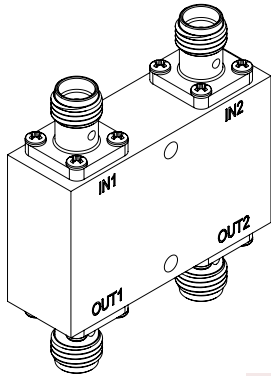
SMA 90 Degree Hybrid Coupler from 4 GHz to 18 GHz Rated to 50 Watts from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.

For additional information on this product, please click the following link: [SMA 90 Degree Hybrid Coupler from 4 GHz to 18 GHz Rated to 50 Watts FMCP1143](https://www.fairviewmicrowave.com/sma-90-degree-hybrid-coupler-4-18-ghz-50-watts-fmcp1143)

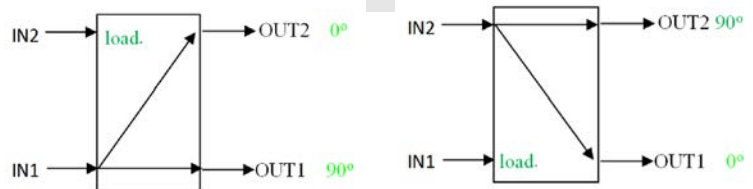
URL: <https://www.fairviewmicrowave.com/sma-90-degree-hybrid-coupler-4-18-ghz-50-watts-fmcp1143-p.aspx>

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	1/16/2020	S.PONG



**Schematic:**



LABEL:

FAIRVIEW MICROWAVE  
FMCP1143  
D/C: YYWW

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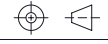
TITLE  
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UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES  
DIMENSIONS IN [ ] ARE MILLIMETERS

TOLERANCES: CABLE LENGTH (L) TOLERANCES:

.X = ±.2 [5.08] FRACTIONS L ≤ 12 [305] = +1 [25] / -0  
.XX = ±.02 [.51] ± 1/32 12 [305] < L ≤ 60 [1524] = +2 [51] / -0  
.XXX = ±.005 [.13] ANGLES ± 1° 60 [1524] < L ≤ 120 [3048] = +4 [102] / -0  
120 [3048] < L ≤ 300 [7620] = +6 [152] / -0  
300 [7620] < L = +5%L / -0

THIRD-ANGLE PROJECTION



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SHEET 1 OF 1

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

SCALE N/A

SIZE A	CAGE CODE 3FKR5	DRAWN BY K.DANG	ITEM NO. FMCP1143	REV A
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T-Rev.D