

SMA 90 Degree Hybrid Coupler From 1.4 GHz to 6 GHz Rated to 50 Watts



FMCP1176

Features

- Wide frequency coverage
- Hybrid coupler design
- 3 dB Attenuation
- Insertion loss: 0.7 dB Max
- Isolation: 20 dB Min
- Amplitude balance: ± 0.8 dB
- Phase balance: $\pm 6^\circ$
- Power handling 50 W (CW)
- SMA Female Connectorized package

Applications

- Test and Measurement
- Wireless Communications
- Radar Systems
- Military and Aerospace
- Signal Distribution Networks
- Power Combining/Dividing

Description

This 3 dB hybrid coupler is designed for RF and microwave signal distribution applications. 90 Degree SMA Hybrid Coupler From 1.4 GHz to 6 GHz Rated to 50 Watts. It provides signal splitting and combining with a phase relationship of 90° , insertion loss of 0.7 dB, isolation of 20 dB, amplitude balance of ± 0.8 dB, and phase balance of $\pm 6^\circ$. The unit is optimized for reliable performance across its specified frequency range and power handling capability.

Electrical Specifications

Description	Min	Typ	Max	Units
Frequency Range	1.4		6	GHz
Impedance		50		Ohms
Phase Difference		90		Degrees
Coupling		3		dB
Insertion Loss		0.5	0.7	dB
Isolation	20	22		dB
VSWR		1.2:1	1.3:1	
Amplitude Balance		± 0.6	± 0.8	dB
Phase Balance		± 3	± 6	Degrees
Input Power (CW)			50	Watts
Input Power (Peak)			1	kWatts

Mechanical Specifications

Size

Length	2.38 in [60.45 mm]
Width	0.99 in [25.15 mm]
Height	0.43 in [10.92 mm]
Weight	0.14 lbs [63.5 g]
Finish	Grey Paint

Configuration

RF Connector Type	SMA Female
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Environmental Specifications

Temperature

Operating Range

-40 to +85 deg C

Storage Range

-50 to +105 deg C

Humidity

100% RH at 35°C, 95% RH at 40°C

Shock

20G for 11msec half sine wave, 3 axis both directions

Vibration

25gRMS (15 degrees 2KHz) endurance, 1 hour per axis

Altitude

30,000 ft. (Epoxy Sealed Controlled environment)

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

Plotted and Other Data

Notes:

Typical Performance Data

SMA 90 Degree Hybrid Coupler From 1.4 GHz to 6 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.

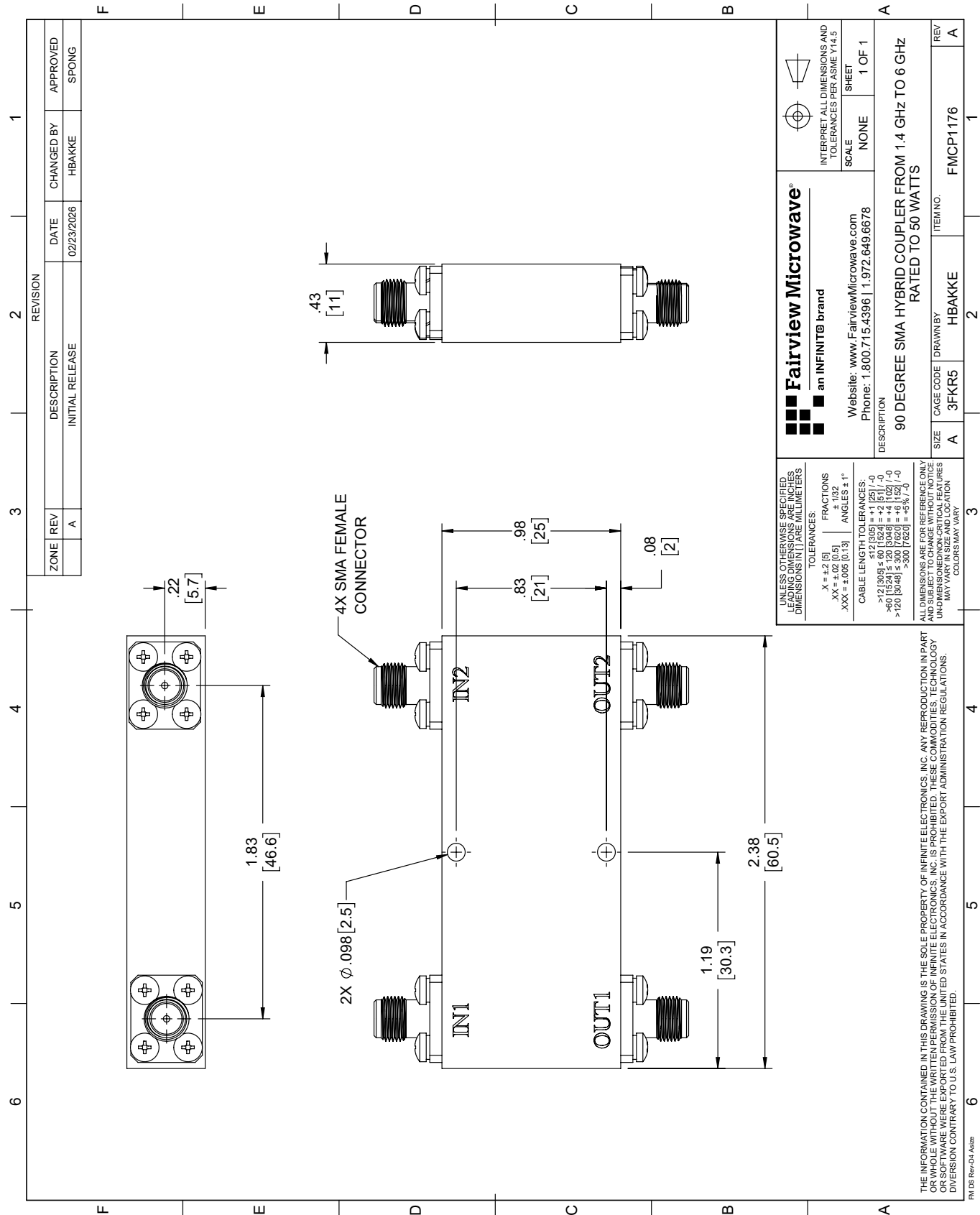
For additional information on this product, please click the following link: [SMA 90 Degree Hybrid Coupler From 1.4 GHz to 6 GHz Rated to 50 Watts FMCP1176](#)

URL: <https://www.fairviewmicrowave.com/sma-90-degree-hybrid-coupler-1.4-6-ghz-50-watts-fmcp1176>

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FMCP1176 CAD Drawing

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TOLERANCES:		SCALE		SHEET	
X = ± 0.015 XX = ± 0.02 [0.15] XXX = 0.005 [0.13]		FRACTIONS ± 1/32 ANGLES ± 1°		1 OF 1	
CABLE LENGTH TOLERANCES: >12 [3048] = +1 [25] / -0 >12 [3048] = +1 [25]					

UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. DIMENSIONS IN [] ARE IN MILLIMETERS.

TOLERANCES:

X = ±.2 [5] FRACTIONS ±.132

.XX = ±.02 [0.5] ANGLES ± 1°

.XXX = ±.005 [0.13]

CABLE LENGTH TOLERANCES:

>12 [305] ≤ 60 [1524] = ±.125 [3.18] / -0

>60 [1524] ≤ 120 [3048] = ±.125 [3.18] / -0

>120 [3048] ≤ 300 [7620] = ±.125 [3.18] / -0

>300 [7620] = ±.125 [3.18] / -0

ALL DIMENSIONS ARE FOR REFERENCE ONLY. DIMENSIONS MAY VARY IN SIZE AND LOCATION. UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE IN INCHES. DIMENSIONS IN [] ARE IN MILLIMETERS. COLORS MAY VARY.

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