



WR15 WR12 WR10 **WR08** WR06 WR05 WR03 WR02.2

**M08H4BDC Series**  
**WR08 Harmonic Mixer Module**  
**90 to 140 GHz**

**DESCRIPTION**

The M08H4BDC Series is designed specifically for handheld spectrum analyzers as a portable solution for millimeter wave spectrum analysis measurement. Utilizing the handheld spectrum analyzer tracking generator as an LO source and the built-in DC supply, this harmonic mixer provides millimeter wave measurements in WR-08 (90-140 GHz).



**HIGHLIGHTS**

- Useful tool to extend measurements to mm-wave
- 18 dB Typical Noise Figure
- 6 GHz IF Bandwidth
- Portable Field & Lab Solution
- Industry waveguide compatibility
- CE & KCC Compliance

**APPLICATIONS**

- 6G
- Radio Astronomy
- Space Research
- Satellite

**ELECTRICAL AND PERFORMANCE SPECIFICATIONS (+25°C)**



After a 5 minute warm-up period, the M08H4BDC will satisfy the following specifications.

Electrical Characteristics <sup>1</sup>	MIN	TYP	MAX
RF Input Frequency Range (GHz)	90	--	140
IF Frequency Range (GHz)	0.3		6.5
LO Harmonic Number	--	4	--
LO Input Frequency Range <sup>2</sup> (GHz)	21.68	--	34.18
LO Input Power (dBm)	-12	-8	-5
Conversion Factor (dB)	--	-12	--
Noise Figure [Nominal](dB) <sup>3</sup>	--	18	--
Sensitivity [Nominal] (dBm) <sup>4</sup>	--	-156	--
Gain Compression P1dB [Nominal] (dBm)	--	-10	--
VSWR [nominal]			
RF Input		2.5:1	
LO Input		2.3:1	
IF Output		1.2:1	
Operating Temperature Range (°C)	-10°	25°	55°
Storage Temperature Range (°C)	-35°		75°
Relative Humidity Operating	45-80% (non-condensing)		
Altitude Operating (ft [m])	<10,000 [3048]		

Module Characteristics <sup>1</sup>	Description
RF Input Waveguide Interface <sup>5</sup>	WR-08
LO Input Interface	2.92mm(f)
IF Output Interface	2.92mm(f)
DC Power	5V @ .45 A Max.
Maximum RF Input Power (dBm)	+13 dBm (20 mW)
Maximum LO Input Power (dBm)	+10 (10mW)
Size <sup>6</sup> (L x W x H)	2.86" x 3.72" x 1.64" (72.7 mm x 94.5 mm x 41.7 mm)
Weight	≤ 14 oz (397 g)

<sup>1</sup> Specifications are typical and subject to change without notice

<sup>2</sup> LO frequency is calculated with IF = 3300 MHz IF.

<sup>3</sup> Noise figure includes diplexer and internal IF amplifier

<sup>4</sup> Calculate Sensitivity (RBW of 1 Hz) = -174 dBm + noise figure; represents theoretical minimum discernable signal

<sup>5</sup> Test Port Flange Configuration is compatible with MIL-DTL-3922/67E (UG-387/UM)

<sup>6</sup> Excludes input connectors, waveguide output flange and bumper guard

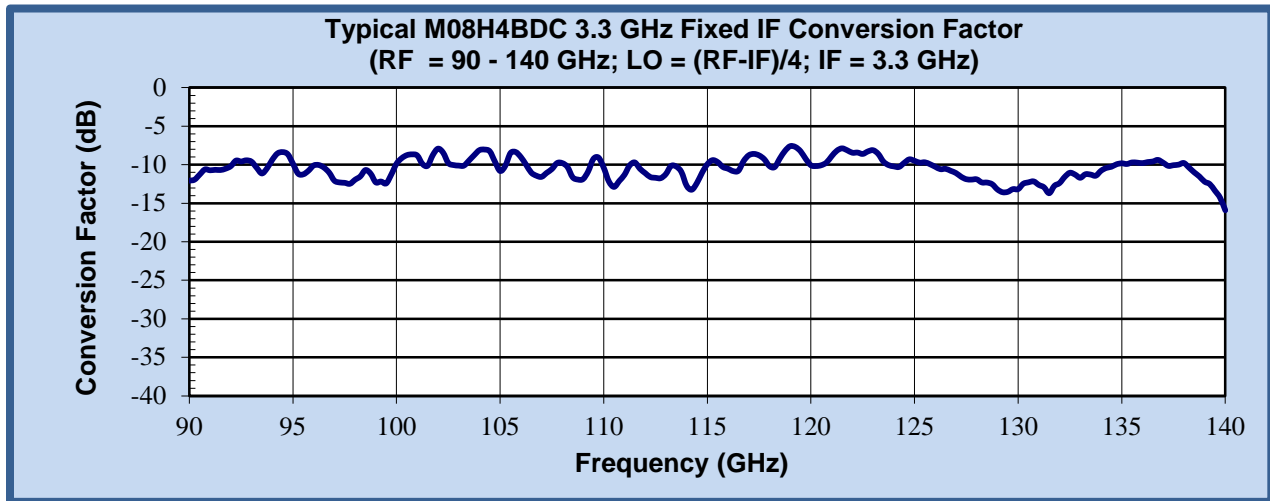


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## TYPICAL PERFORMANCE

The following typical performance is available when used with the Keysight FieldFox.



## ORDER INFORMATION

Model Number	Description
M08H4BDC <sup>1</sup>	WR-08 Harmonic Mixer Module, 90 to 140 GHz with Carrying Case & DC Bias Cable.
<b>Options</b>	
M08H4BDC -100 <sup>2</sup>	WR-08 Harmonic Mixer Module with 2 ea. 2.92mm(m)/2.4mm(f) Adapter
<b>Accessories:</b>	
V00DCUSBS1	DC Bias Cable, USB(m) to 90° SMB(f), 12" Lg
M00KM24F	Adapter, 2.92mm(m) to 2.4mm(f)
M08RH	Horn Antenna, WR-08
MC2151	Carrying Case, Micro Converter, Clear

<sup>1</sup> Base model includes a Carrying Case (MC2151) & DC bias cable (V00DCUSBS1)

<sup>2</sup> Add accessories for "direct connect" between OML module & FieldFox with NMD 2.4mm(m) Test Ports

## MECHANICAL DIMENSIONS (If necessary, contact OML for more detailed drawings)

