



WR15 WR12 WR10 WR08 WR06 WR05 WR03 WR02.2

M05H6BDC Series
WR05 Harmonic Mixer Module
140 to 220 GHz

DESCRIPTION

The M05H6BDC 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-05 (140 – 220 GHz).



HIGHLIGHTS

- Useful tool to extend measurements to mm-wave
- 26 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 M05H4BDC will satisfy the following specifications.



Electrical Characteristics ¹	MIN	TYP	MAX
RF Input Frequency Range (GHz)	140	--	220
IF Frequency Range (GHz)	0.3		6.5
LO Harmonic Number	--	6	--
LO Input Frequency Range ² (GHz)	22.78	--	36.12
LO Input Power (dBm)	-12	-8	-5
Conversion Factor (dB)	--	-20	--
Noise Figure [Nominal](dB) ³	--	26	--
Sensitivity [Nominal] (dBm) ⁴	--	-148	--
Gain Compression P1dB [Nominal] (dBm)	--	-15	--
VSWR [nominal]			
RF Input		2.9:1	
LO Input		3.0:1	
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 ¹	Description
RF Input Waveguide Interface ⁵	WR-05
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 (20mW)
Size ⁶ (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)

¹ Specifications are typical and subject to change without notice

² LO frequency is calculated with IF = 3300 MHz IF.

³ Noise figure includes diplexer and internal IF amplifier

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

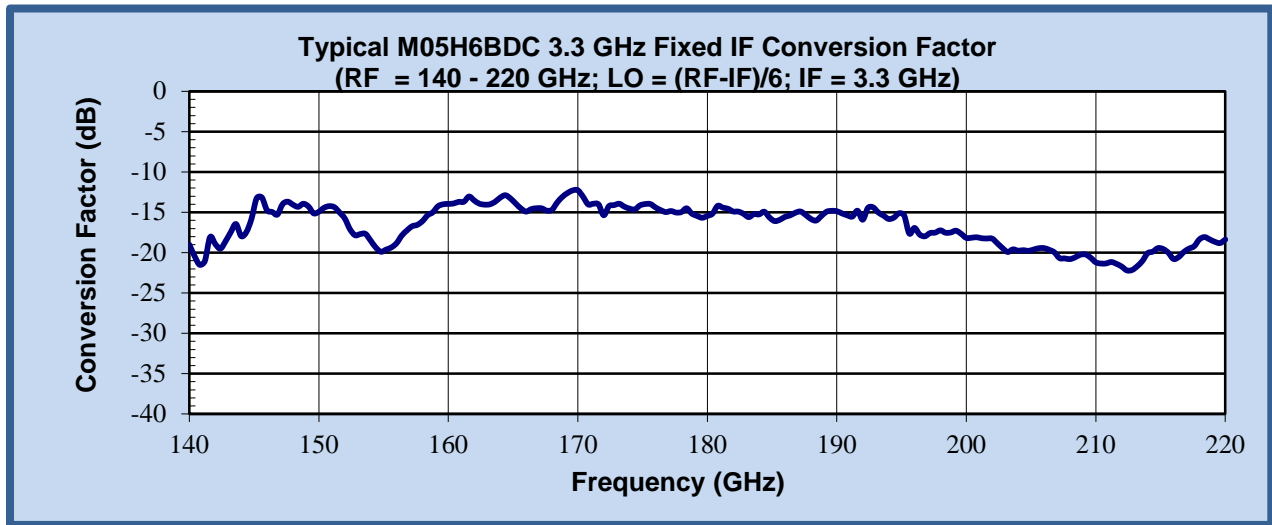
⁵ Test Port Flange Configuration is compatible with MIL-DTL-3922/67E (UG-387/UM)

⁶ Excludes input connectors, waveguide output flange and bumper guard



TYPICAL PERFORMANCE

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



ORDER INFORMATION

Model Number	Description
M05H6BDC ¹	WR-05 Harmonic Mixer Module, 140 to 220 GHz with Carrying Case & DC Bias Cable.
Options	
M05H6BDC -100 ²	WR-05 Harmonic Mixer Module with 2 ea. 2.92mm(m)/2.4mm(f) Adapter
Accessories:	
V00DCUSBS1	DC Bias Cable, USB(m) to 90° SMB(f), 12" Lg
M00KM24F	Adapter, 2.92mm(m) to 2.4mm(f)
M05RH	Horn Antenna, WR-05
MC2151	Carrying Case, Micro Converter, Clear

¹ Base model includes a Carrying Case (MC2151) & DC bias cable (V00DCUSBS1)

² 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)

