



M15H4ADC Series
Harmonic Mixer Module
50 to 75 GHz

WR15 WR12 WR10 WR08 WR06 WR05 WR03 WR02.2

DESCRIPTION

The M15H4ADC 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 extended WR-15 (50-75 GHz).



HIGHLIGHTS

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

APPLICATIONS

- 802.11ay
- 60 GHz Bands
- Mobile Service
- SATCOM
- Radio Navigation
- Space Research

ELECTRICAL AND PERFORMANCE SPECIFICATIONS (+25°C)



After a 0.5 hour warm-up period, the M15H4ADC will satisfy the following specifications.

Electrical Characteristics ¹	MIN	TYP	MAX
RF Input Frequency Range (GHz)	50	--	75
IF Frequency Range (GHz)	0.3		6.5
LO Harmonic Number	--	4	--
LO Input Frequency Range (GHz)	12.5	--	18.8
LO Input Power (dBm)	-14	--	-4
Conversion Factor (dB)	--	4	--
Noise Figure (dB) ²	--	17	--
Sensitivity (dBm) ³	--	-157	--
Gain Compression P1dB (dBm)	--	-6	--
VSWR (nominal) ^{4,5}			
RF Input		2.4	
LO Input		1.8	
IF Output		2.2	
Operating Temperature Range (°C)	20°	25°	30°
Storage Temperature Range (°C)	0°		50°
Relative Humidity Operating	45-80% (non-condensing)		
Altitude Operating (ft [m])	<10,000 [3048]		

Module Characteristics ¹	Description
RF Input Waveguide Interface (dB) ⁵	WR-15
LO Input Interface	SMA (f)
IF Output Interface	SMA (f)
DC Power	5V @ .45 A Max.
Maximum RF Input Power (dBm)	+20 dBm (100 mW)
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 Noise figure includes the internal IF amplifier

³ Calculate Sensitivity (RBW of 1 Hz) = -174 dBm + noise figure; represents theoretical minimum discernable signal

⁴ Nominal values applies to RF block conversion frequency, LO frequency & drive level & IF output frequency.

⁵ Test Port Flange Configuration is compatible with MIL-DTL-3922/67E (UG387/U)

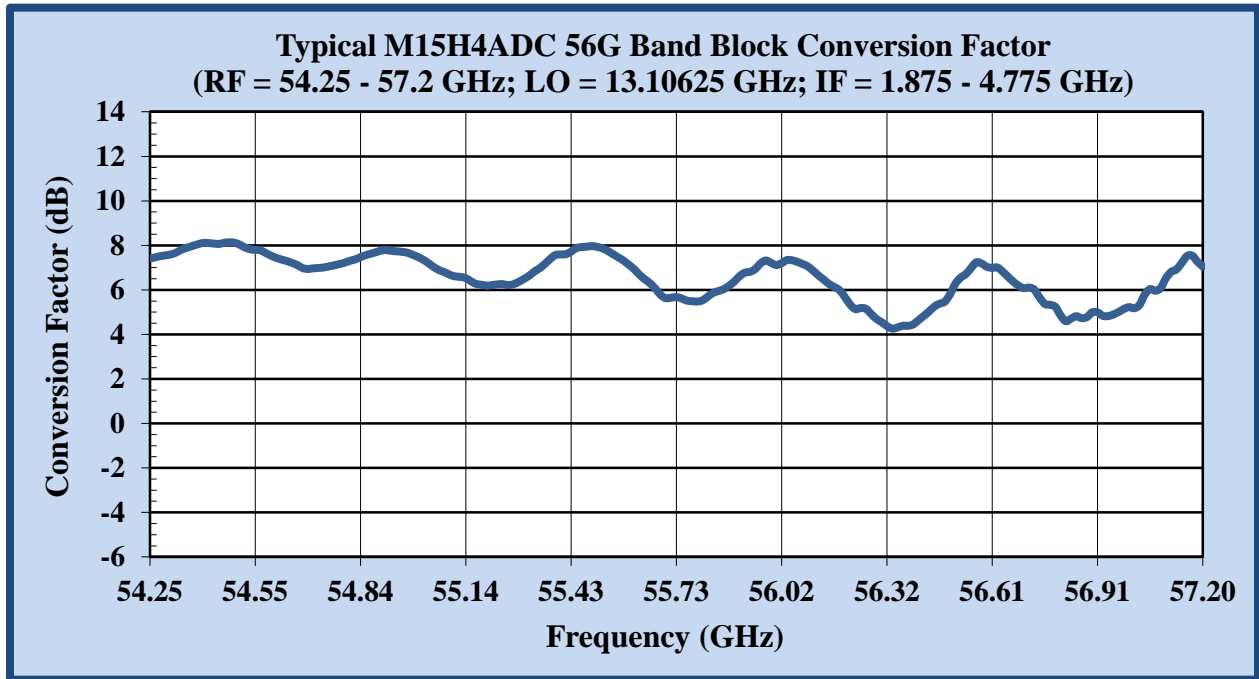
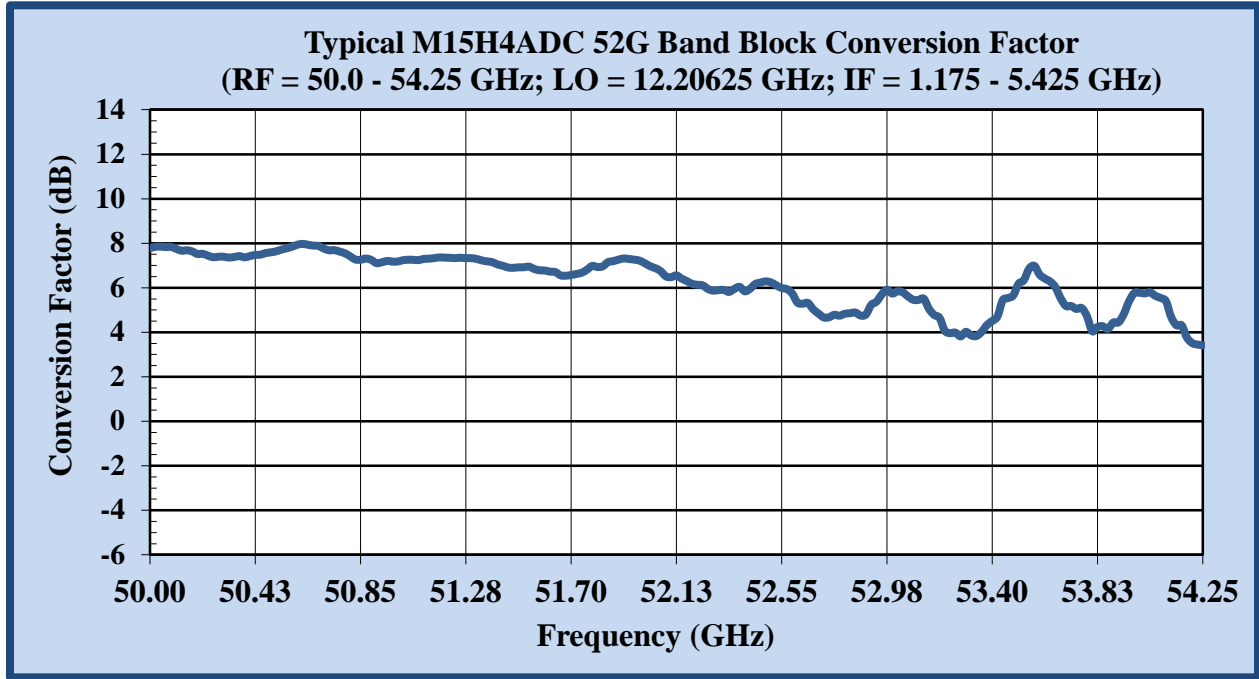
⁶ Excludes input connectors, waveguide output flange and bumper guard.

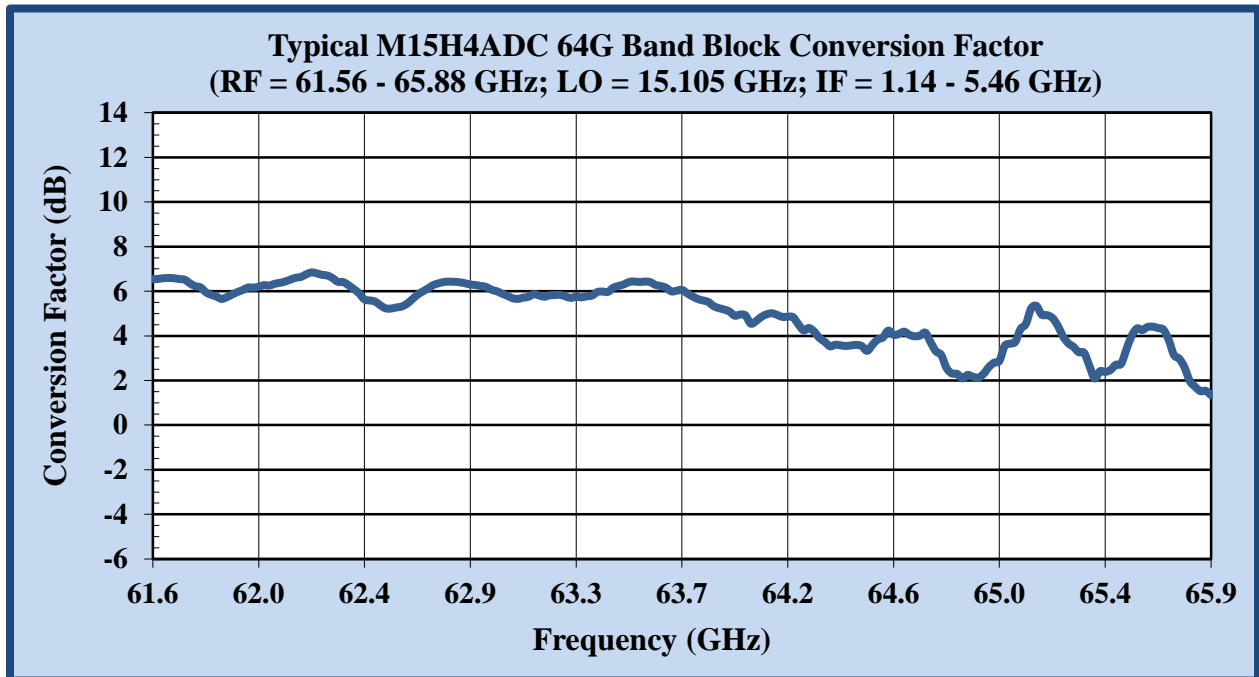
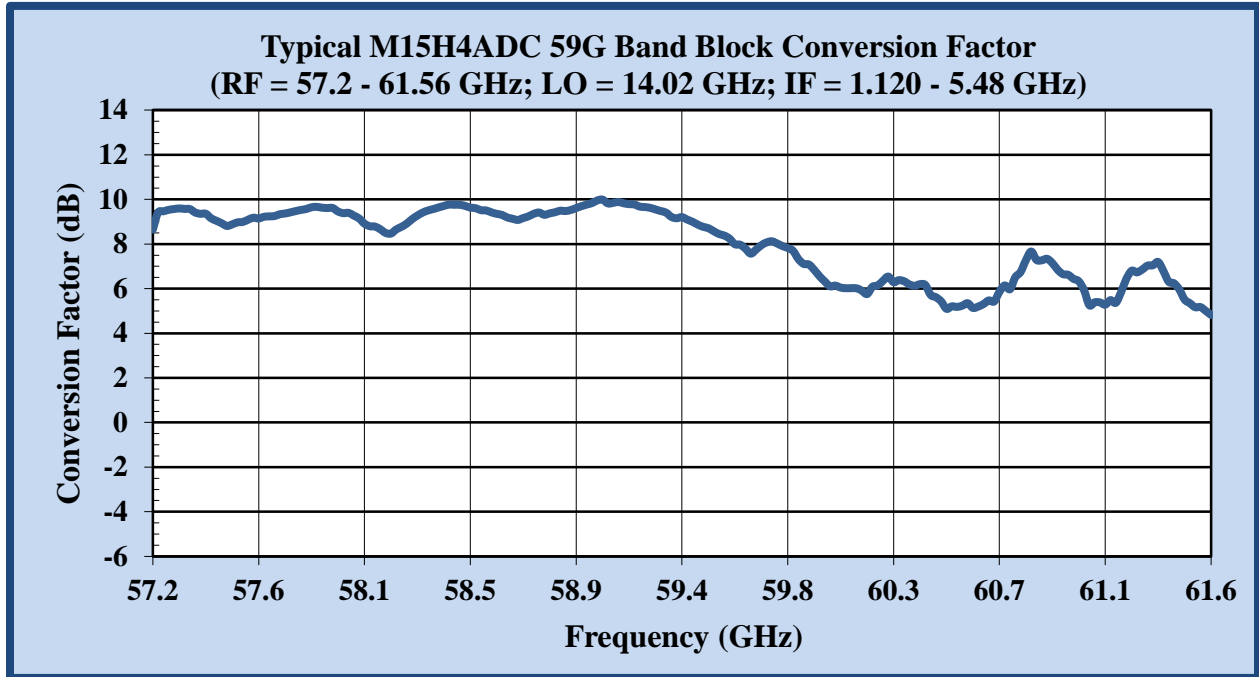


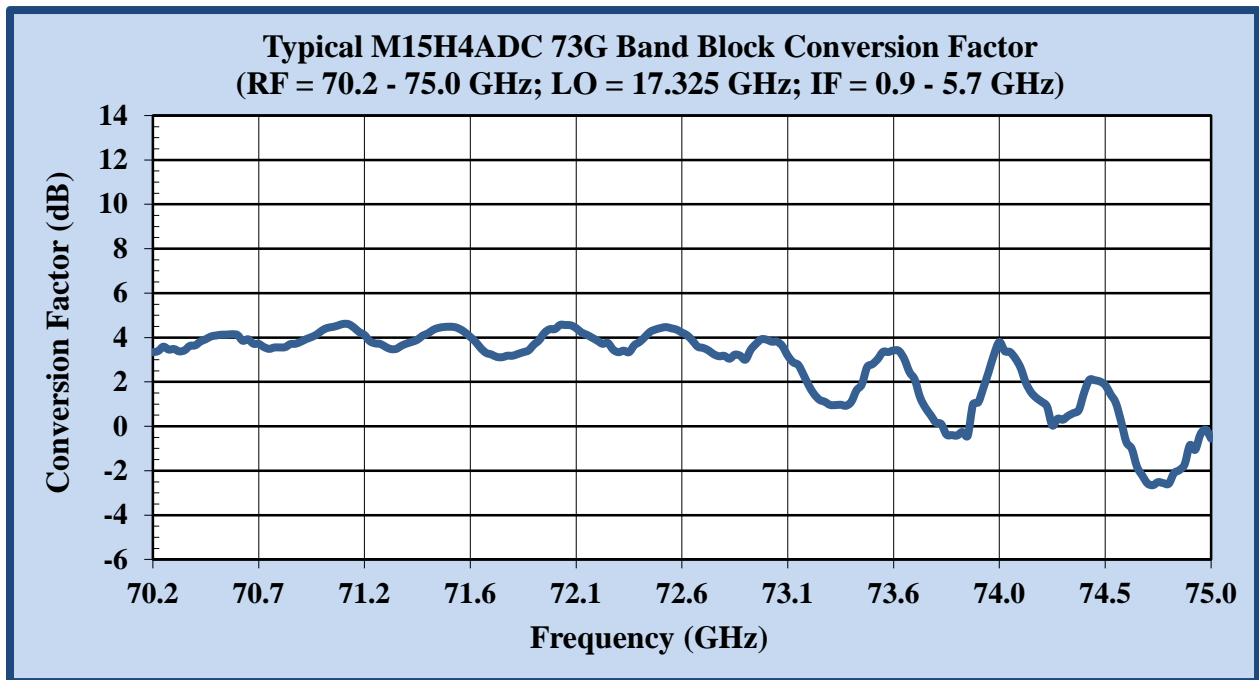
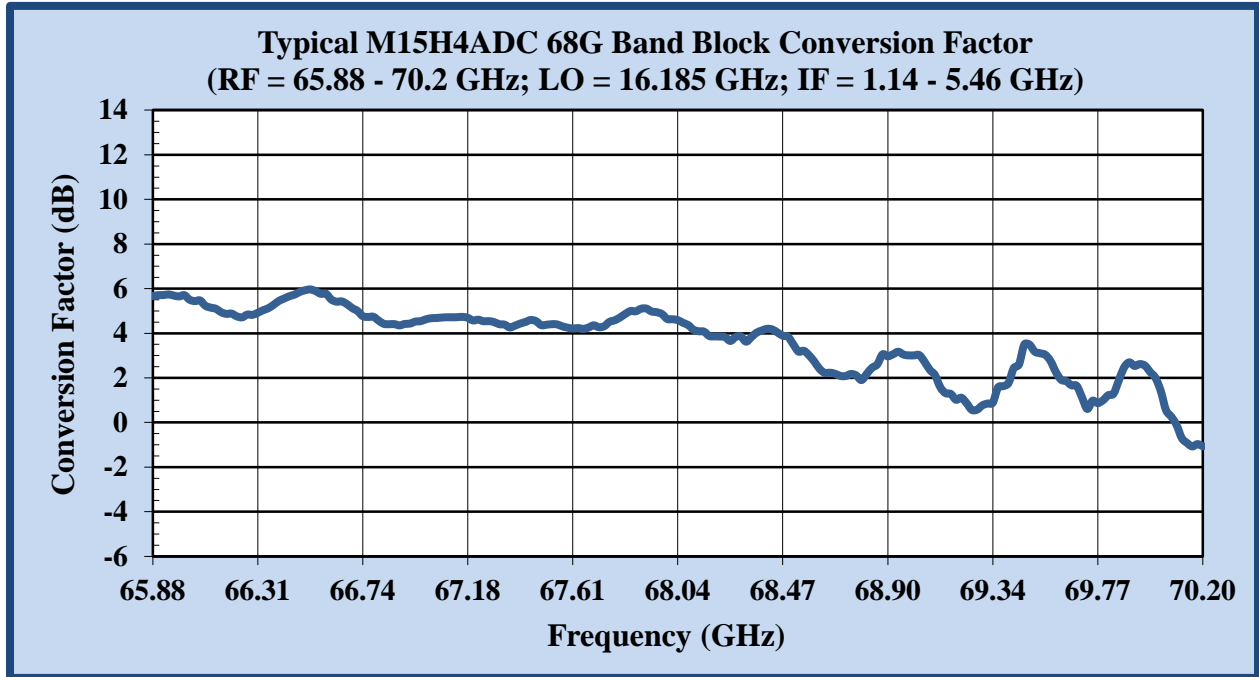


TYPICAL PERFORMANCE

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









ORDER INFORMATION

Model Number	Description
M15H4ADC ¹	WR-15 Harmonic Mixer Module, 50 to 75 GHz with DC Bias Cable & Carrying Case
Options	
M15H4ADC-100 ²	WR-15 Harmonic Mixer Module with 2 ea. N(m)/SMA(m) Adapter
M15H4ADC-101 ³	WR-15 Harmonic Mixer Module with 2 ea. SMA(m/f) Adapter
M15H4ADC-102 ⁴	WR-15 Harmonic Mixer Module with 2 ea. N(m)/SMA(m), 2 ea. SMA(m/f) Adapter
M15H4ADC-103 ⁵	WR-15 Harmonic Mixer Module with 2 ea. SMA(m)/2.4mm(f) Adapter
Accessories:	
V00DCUSBS1	DC Bias Cable, USB(m) to 90° SMB(f), 12" Lg
M00NMSM	Adapter, Type-N(m) to SMA(m)
M00SMSF	Adapter, SMA(m/f)
M00SM2.4F	Adapter SMA(m) to 2.4mm(f)
WA15-18.5f	Adapter, End Launch, WR-15 to 1.85(f)
M15RH	Horn Antenna, WR-15, nominal 24 dBi
MC2151	Carrying Case, Micro Converter, Clear

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

² Add accessories for "direct connect" between OML Module & FieldFox with Type N(f) Test Ports

³ Add accessories for "direct connect" between OML Module & FieldFox with 3.5 mm(m) Test Ports

⁴ Add accessories for "direct connect" between OML Module & FieldFox with NMD 2.4 mm(m) Test Ports

⁵ Add accessories for "direct connect" between OML Module & FieldFox with NMD 2.4 mm(m) Test Ports

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

