



M28H2ADC Series
Harmonic Mixer Module
24 to 40 GHz

DESCRIPTION

The M28H2ADC 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-28 (24-40 GHz).



HIGHLIGHTS

- Useful tool to extend measurements to mm-wave
- Extended Ka band frequency down to 24 GHz
- 12 dB Typical Noise Figure
- 6 GHz IF Bandwidth
- Portable Field & Lab Solution
- Industry waveguide compatibility

APPLICATIONS

- 5G
- Point-to-Point Radios
- Ka Band SATCOM
- Military & Defense

ELECTRICAL AND PERFORMANCE SPECIFICATIONS (+25°C)

After a 5 minute warm-up period, the M28H2ADC will satisfy the following specifications.



Electrical Characteristics ¹	MIN	TYP	MAX
RF Input Frequency Range (GHz)	24	--	40
IF Frequency Range (GHz)	0.3		6.5
LO Harmonic Number	--	2	--
LO Input Frequency Range (GHz)	12	--	18
LO Input Power (dBm)	-18	--	-6
Conversion Factor (dB)	--	10	--
Noise Figure (dB) ²	--	12	--
Sensitivity (dBm) ³	--	-162	--
Gain Compression P1dB (dBm)	--	-3	--
VSWR (nominal) ⁴			
RF Input		2.1	
LO Input		2.1	
IF Output		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 (dB) ⁵	WR-28
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. RF input can degrade below 26 GHz for 26 GHz band, for 38 GHz band above 38.4 GHz and for 39 GHz band above 39.7 GHz and below 38.8 GHz.

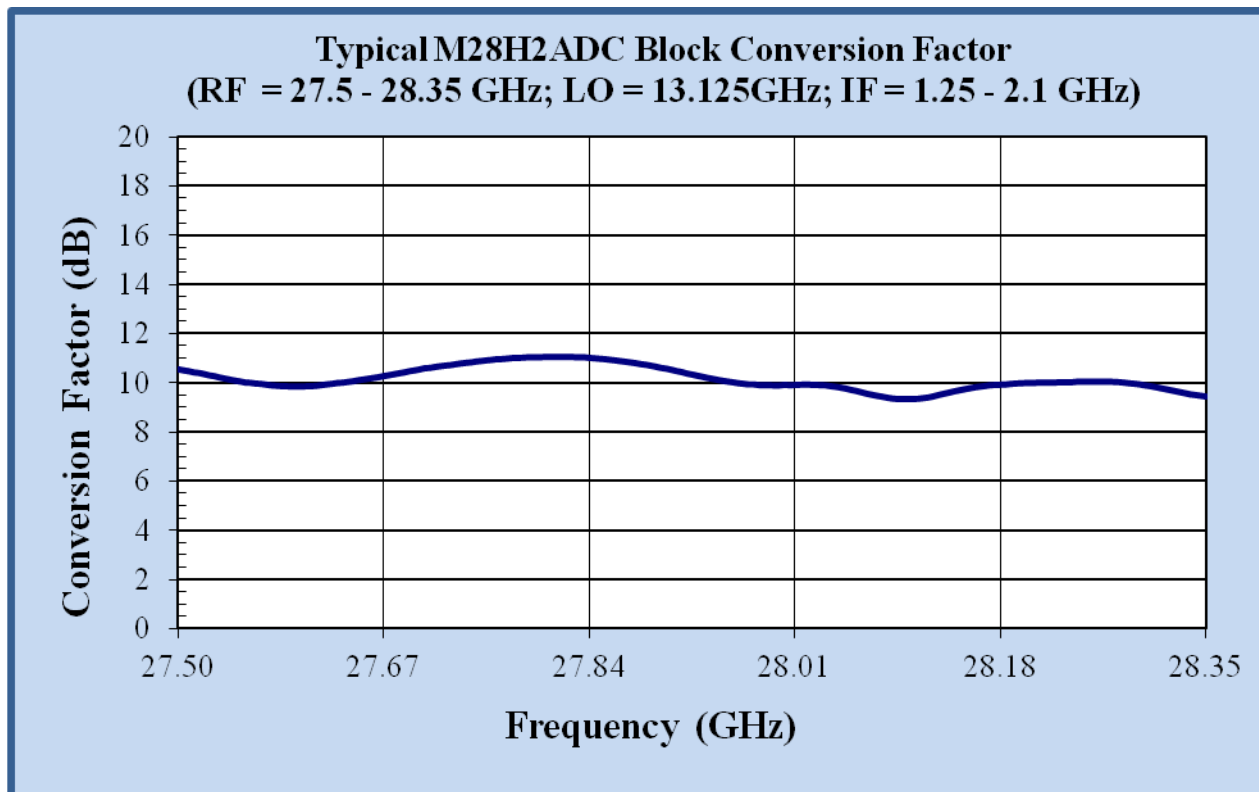
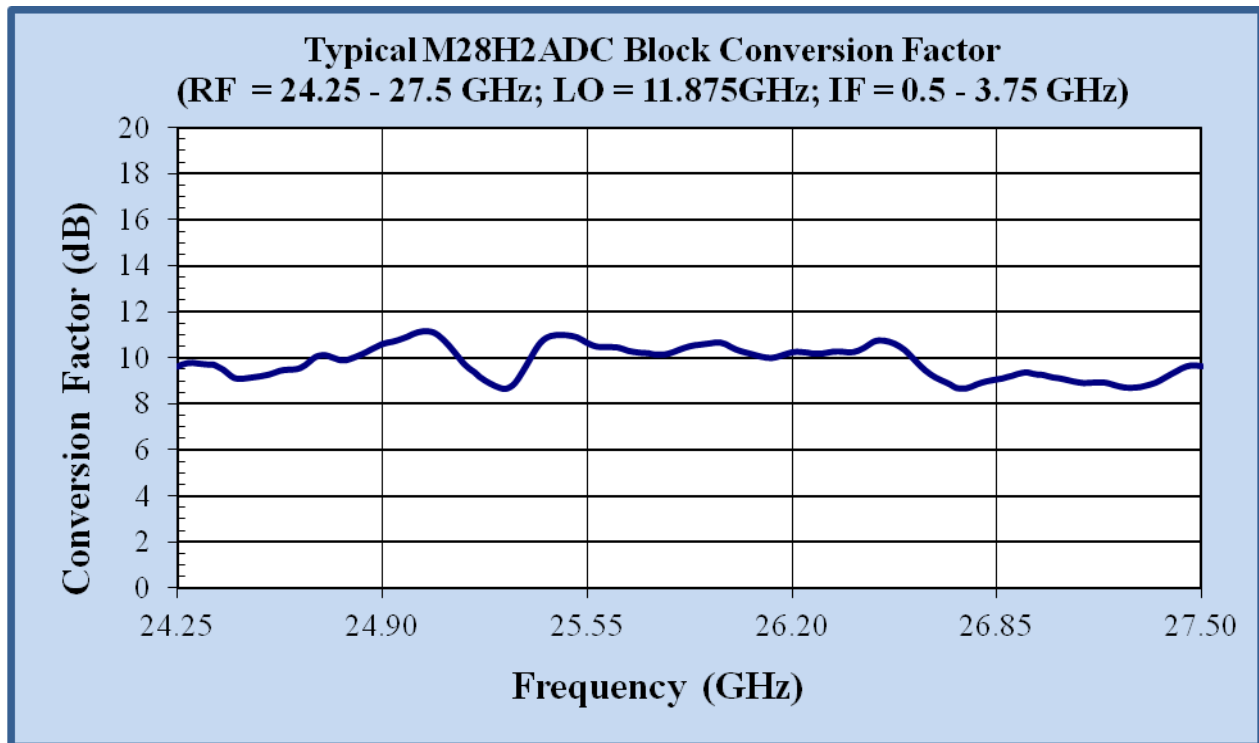
⁵ Test Port Flange Configuration is compatible with MIL-DTL-3922/67E (UG599/U)

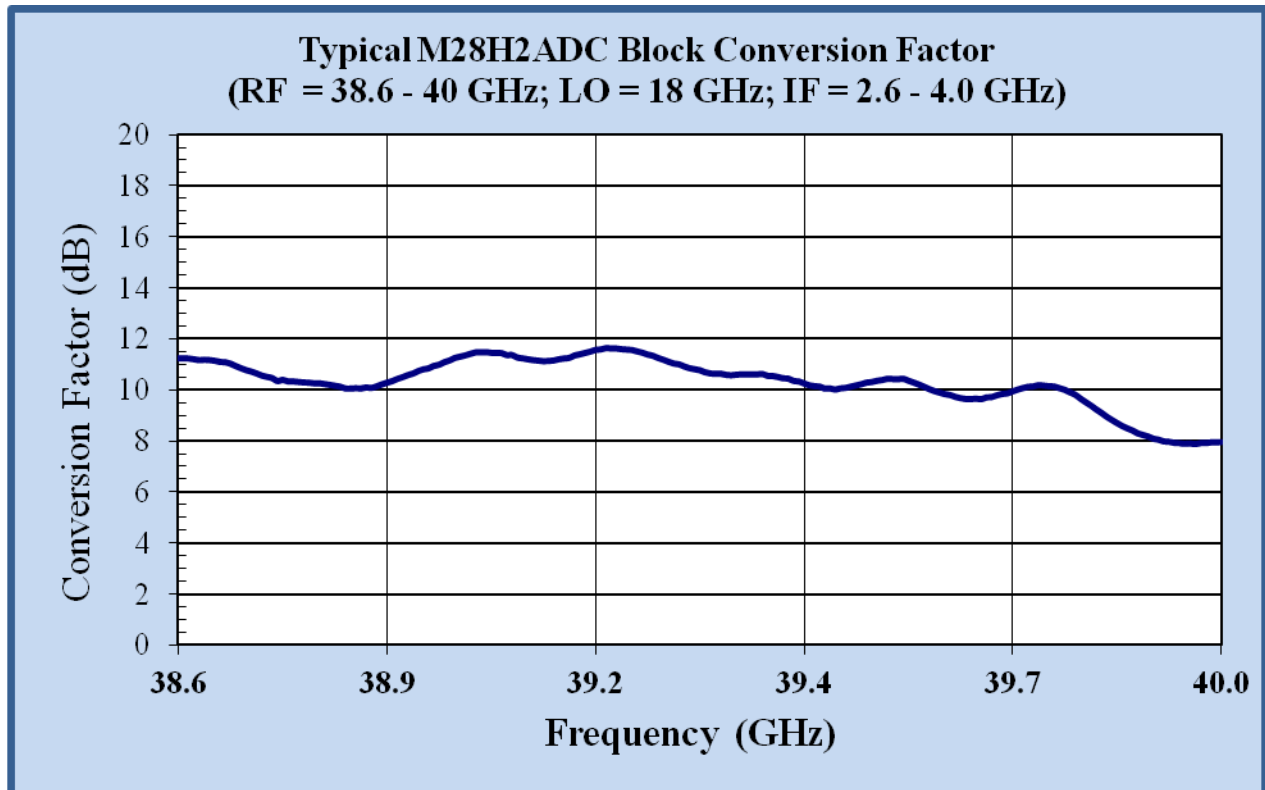
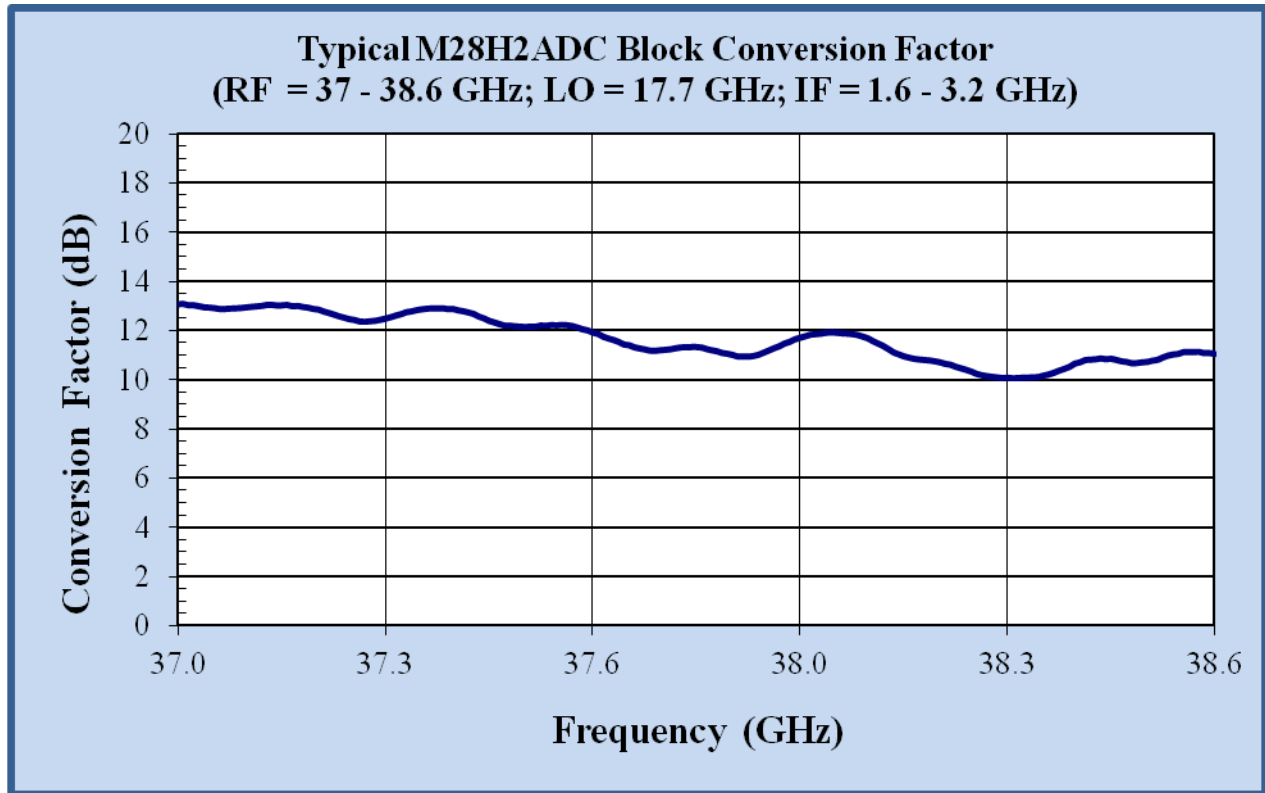
⁶ Excludes input connectors, waveguide output flange and bumper guard.



TYPICAL PERFORMANCE

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







ORDER INFORMATION

Model Number	Description
M28H2ADC ¹	WR-28 Harmonic Mixer Module, 24 to 40 GHz
Options	
M28H2ADC-100	WR-28 Harmonic Mixer Module with 2 ea. N(m)/SMA(m) Adapter & Carrying Case
M28H2ADC-101	WR-28 Harmonic Mixer Module with 2 ea. SMA(m/f) Adapter & Carrying Case
M28H2ADC-102	WR-28 Harmonic Mixer Module with 2 ea. N(m)/SMA(m), 2ea. SMA(m/f) Adapter & Carrying Case
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)
WA28-2.92f	Adapter, End Launch, WR-28 to 2.92(f)
M28RH	Horn Antenna, WR-28
MC2151	Carrying Case, Micro Converter, Clear

¹ Base model includes a DC bias cable (V00DCUSBS1)

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

