



**M28H2ADC-K Series
Harmonic Mixer Module
24 to 40 GHz**

DESCRIPTION

The M28H2ADC-K 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 from 24 to 40 GHz.



HIGHLIGHTS

- Useful tool to extend measurements to mm-wave
- Extended Ka Band down to 24 GHz
- 12 dB Typical Noise Figure
- 6 GHz IF Bandwidth
- Portable Field & Lab Solution
- 2.92(f) connector RF input

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-K 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	--	-5
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)	2.92mm (f)
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 ⁵ (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

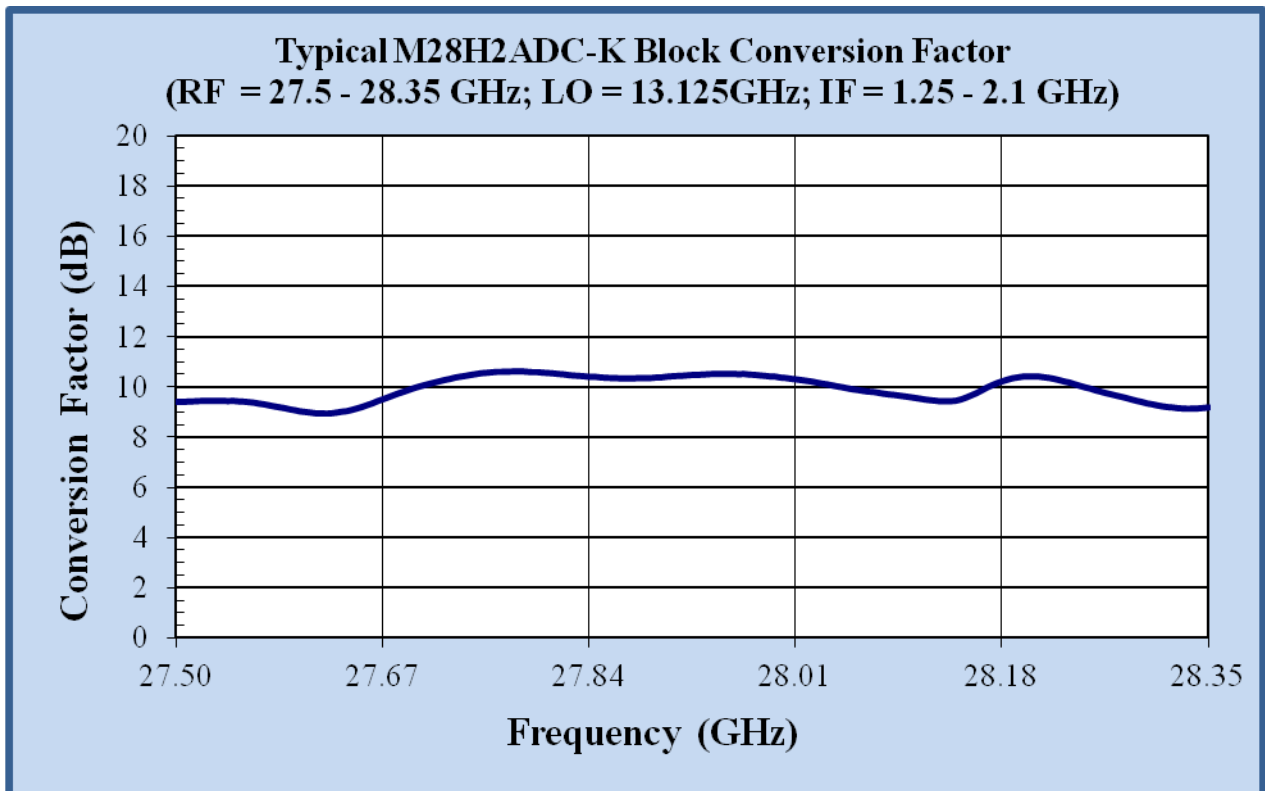
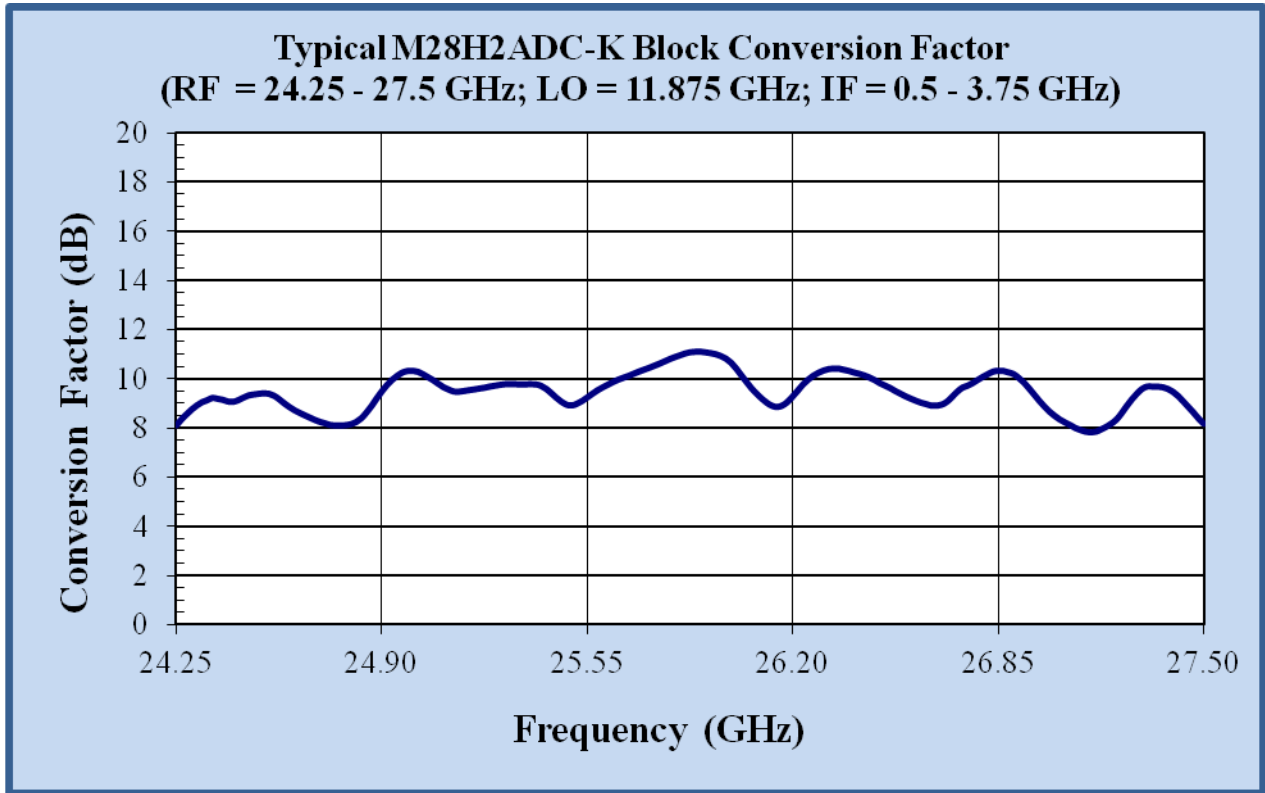
⁴ Nominal values applies to RF block conversion frequency LO frequency & drive level & IF output frequency. RF input degrades below 26 GHz.

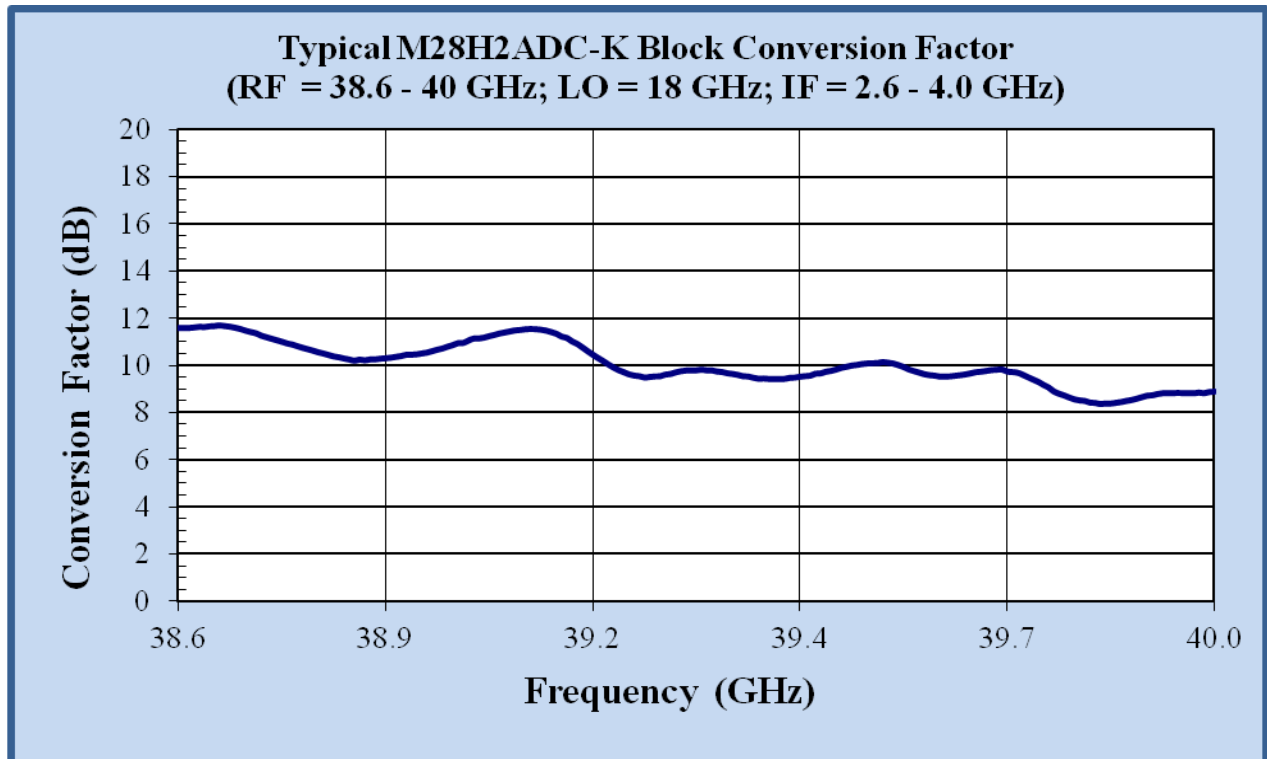
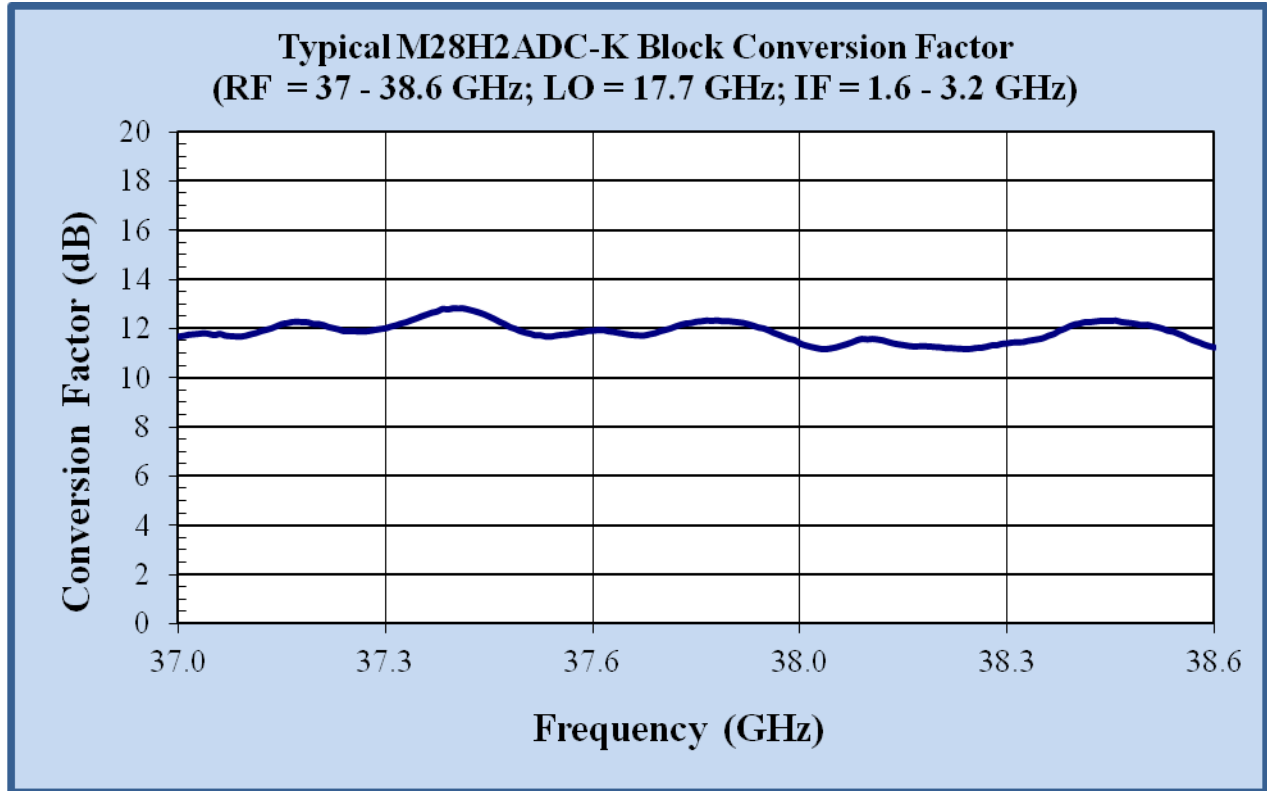
⁵ Excludes input & output connector & bumper guard.



TYPICAL PERFORMANCE

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







ORDER INFORMATION

Model Number	Description
M28H2ADC-K ¹	WR-28 Harmonic Mixer Module, 24 to 40 GHz, 2.92mm(f) RF Input connector with Carrying Case & DC Bias Cable
Options	
M28H2ADC-K-100 ²	M28H2ADC-K with 2 ea. N(m)/SMA(m) Adapter
M28H2ADC-K-101 ³	M28H2ADC-K with 2 ea. SMA(m/f) Adapter
M28H2ADC-K-102 ⁴	M28H2ADC-K with 2 ea. N(m)/SMA(m) & 2 ea. SMA(m/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)
WA28-2.92m	Adapter, End Launch, WR-28 to 2.92(m)
M28RH	Horn Antenna, WR-28
MC2151	Carrying Case, Micro Converter, Clear

¹ Base model includes a DC bias cable (V00DCUSBS1)

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 3.5mm(m) Test Ports

⁴ Add accessories for "direct connect" between OML module & FieldFox with Type N(f) or with 3.5mm(m) Test Port

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

