



VDI Even Harmonic Mixer Specifications

Product Name	WR15EHM	WR12EHM	WR10EHM	WR8.0EHM	WR6.5EHM
RF Input Frequency (GHz)	50-75	60-90	75-110	90-140	110-170
Maximum Available LO Frequency (GHz)*	10	12	15	19	24
RF Flange	WR-15 UG-387/U-M	WR-12 UG-387/U-M	WR-10.0 UG-387/U-M	WR-8.0 UG-387/U-M	WR-6.5 UG-387/U-M
SSB Conversion Loss (dB, typ.)†	~20-25dB for 12th Harmonic Mixing	~25-35dB for 8th Harmonic Mixing	~20-25dB for 12th Harmonic Mixing	~20-25dB for 12th Harmonic Mixing	~23-28dB for 12th Harmonic Mixing

Product Name	WR5.1EHM	WR4.3EHM	WR3.4EHM	WR2.8EHM	WR2.2EHM
RF Input Frequency (GHz)	140-220	170-260	220-330	260-400	330-500
Maximum Available LO Frequency (GHz)*	31	36	40	40	40
RF Flange	WR-5.1 UG-387/U-M	WR-4.3 UG-387/U-M	WR-3.4 UG-387/U-M	WR-2.8 UG-387/U-M	WR-2.2 UG-387/U-M
SSB Conversion Loss (dB, typ.)†	~25-35dB for 16th Harmonic Mixing	~25-35dB for 16th Harmonic Mixing	~30-40dB for 18th Harmonic Mixing	~30-40dB for 20th Harmonic Mixing	~35-45dB for 16th Harmonic Mixing

*LO input frequency can be calculated by dividing the RF Input Frequency by the desired harmonic number. LO frequency cannot exceed Maximum Available LO Frequency specification.

†SSB Conversion Loss assumes optimal RF and LO power coupled into EHM.

General Notes:

- VDI provides individualized performance data for each component at a single harmonic factor.
- Performance specifications are typical and are reduced near band edges.
- Optimal LO Input Power is 7-11dBm, with a 13dBm damage limit.
- Optimal RF Input Power is <-25dBm, with a 0dBm damage limit.
- The required LO power for optimal performance varies as a function of frequency within the specified range.
- Operation at different harmonic numbers is possible using alternative diplexers. Contact VDI for more information.
- Conversion Loss increases with higher harmonic number. Conversion loss may increase with higher RF input powers.
- EHMs are typically shipped with a ~100MHz High Pass Filter on the IF port for additional ESD protection.
- IF = \pm (RF - n \times LO) ... for nth harmonic mixing

Purchasing Notes:

- Customer to specify harmonic number at which VDI will test the EHM. If no harmonic number is listed, VDI to test only at harmonic number shown in above table.
- For example: WR5.1EHM-18 is a WR5.1EHM that is to be configured and tested for the 18th harmonic.

Diplexer Summary

ZDSS-3G4G-1+: IF=DC-3GHz, SMA(f); LO=4-20GHz, SMA(f)

MD5: IF=DC-12GHz, SMA(f); LO=20-40GHz, 2.9mm(f)

MD6: IF=DC-10GHz, SMA(f); LO=15-26.5GHz, 2.9mm(f)

Alternative diplexer options may be available upon request.

Typical data is available at www.vadiodes.com

Rev 20200623