



VDI Integrated Mixer / Amplifier / Multiplier Chain Specifications

Product Name	WR15MixAMC-I	WR12MixAMC-I	WR10MixAMC-I	WR8.0MixAMC-I	WR6.5MixAMC-I	WR5.1MixAMC-I	WR4.3MixAMC-I
RF Frequency Band (GHz)	50-75	60-90	75-110	90-140	110-170	140-220	170-260
RF Flange (UG-387/U-M)	WR-15	WR-12	WR-10	WR-8.0	WR-6.5	WR-5.1	WR-4.3
Standard Multiplication Factor	6	6	6	12	12	12	24
LO Input Frequency (GHz, Standard Multiplication Factor)	8.33-12.5	10-15	12.5-18.33	7.5-11.67	9.17-14.17	11.67-18.33	7.08-10.83
Alternative Multiplication Factor††	-	-	-	6	6	6	12
LO Input Frequency (GHz, Alt Multiplication Factor)	-	-	-	15-23.33	18.33-28.33	23.33-36.67	14.17-21.67
RF Power Limits: Compression / Damage (dBm)	-10 / 0	-10 / 0	-10 / 0	-10 / 0	-10 / 0	-10 / 0	-10 / 0
MixAMC-I-N SSB Conversion Loss (Typical) (dB)†	10	10	10	10	10	11	11
MixAMC-I SSB Conversion Loss (Typical) (dB)†	-2	-2	-2	-2	-2	-1	-1
IF Output Port, Max Frequency (GHz)	7.5	9	11	14	17	22	26
Bias Voltage (V)	+5.5	+5.5	+5.5	+5.5	+5.5	+5.5	+5.5

Product Name	WR3.4MixAMC-I	WR2.8MixAMC-I	WR2.2MixAMC-I	WR1.5MixAMC-I	WR1.0MixAMC-I		
RF Frequency Band (GHz)	220-330	260-400	330-500	500-750	750-1100		
RF Flange (UG-387/U-M)	WR-3.4	WR-2.8	WR-2.2	WR-1.5	WR-1.0		
Standard Multiplication Factor	24	24	36	54	72		
LO Input Frequency (GHz, Standard Multiplication Factor)	9.17-13.75	10.83-16.67	9.17-13.89	9.26-13.89	10.42-15.28		
Alternative Multiplication Factor††	12	12	12	18	36		
LO Input Frequency (GHz, Alt Multiplication Factor)	18.33-27.5	21.67-33.33	27.5-41.67	27.78-41.67	20.83-30.56		
RF Power Limits: Compression / Damage (dBm)	-10 / 0	-10 / 0	-10 / 0	-10 / 0	-20 / -10		
MixAMC-I-N SSB Conversion Loss (Typical) (dB)†	12	13	14	18	25		
MixAMC-I SSB Conversion Loss (Typical) (dB)†	0	1	2	6	13		
IF Output Port, Max Frequency (GHz)	40	40	40	40	40		
Bias Voltage (V, ±0.1V)	+5.5	+5.5	+9	+9	+9		

†For MixAMC-I (configured with internal IF amplifier with ~12dB gain), intrinsic mixer conversion loss is estimated by adding 12dB to the MixAMC-I SSB Conversion Loss data.

For MixAMC-I-N (configured without internal IF amplifier), the MixAMC-I-N SSB Conversion Loss is the intrinsic mixer conversion loss.

††MixAMC-I can be configured with alternative LO multiplication factors. VDI recommends using lower LO multiplication factors whenever possible.

General Notes:

- MixAMC-I products require a user supplied voltage.
- MixAMC-I products are shipped with a heat sink and fan assembly, but may be removed. If heat sink and fan assembly is removed, user must provide sufficient heat sinking to maintain a maximum case temperature below 45 C.
- All LO and IF connectors are 2.9mm(f).
- LO Input Damage Limit for the Standard Multiplication Factor configuration is 6dBm. Contact VDI for damage limits for alternative multiplication factors.
- Standard configuration includes ~100kHz-40GHz IF amplifier, ~12dB gain. There is no direct access to the mixer IF port.
- The user can choose to remove the IF amplifier from the MixAMC-I. If the amplifier is removed, the IF port is extremely ESD sensitive. To choose this option, add -N to the name on the Purchase Order. For example, for WR10MixAMC-I with no IF amplifier, customer must specify WR10MixAMC-I-N on the Purchase Order.
- Intrinsic mixer conversion loss is specified at IF ~322.5 MHz, loss increases at a rate of ~1.5dB/10 GHz up to the specified maximum IF.

How to Order:

PRODUCT or PRODUCT-N or PRODUCT-MXX or PRODUCT-N-MXX

PRODUCT = Choose from "Product Name" in above table.

-N = To configure product without integrated IF amplifier

-MXX = To configure product with alternative multiplication factor, where XX is the multiplication factor

Examples:

WR6.5MixAMC-I: 110-170 GHz Integrated Mixer / Amplifier / Multiplier Chain, with standard multiplication factor (N=12), with integrated IF amplifier

WR6.5MixAMC-I-N: 110-170 GHz Integrated Mixer / Amplifier / Multiplier Chain, with standard multiplication factor (N=12), with NO IF amplifier. IF port is extremely ESD sensitive.

WR6.5MixAMC-I-M6: 110-170 GHz Integrated Mixer / Amplifier / Multiplier Chain, with multiplication factor of N=6, with integrated IF amplifier

WR6.5MixAMC-I-N-M6: 110-170 GHz Integrated Mixer / Amplifier / Multiplier Chain, with multiplication factor of N=6, with NO IF amplifier. IF port is extremely ESD sensitive.