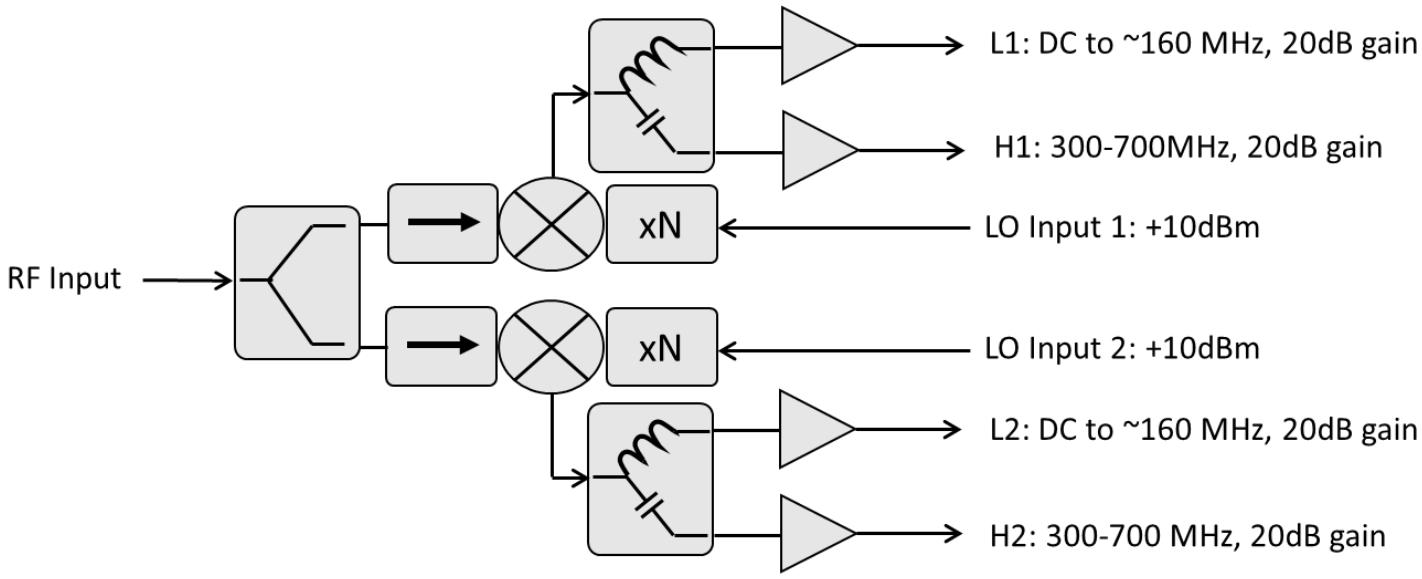
NTX (Noise Test Extension) Module Datasheet

NTX Module

Virginia Diodes' (VDI) Noise Test Extension (NTX) Modules are used to extend the performance of modern absolute phase noise test solutions in the frequency range from 50 GHz through 330 GHz, in frequency bands from WR-15 (50-75 GHz) to WR-3.4 (220-330 GHz) with additional bands under development. VDI NTX Modules include a waveguide splitter with two down-converter mixer chains for cross-correlation.

Low and High IF Frequency Outputs

VDI NTX Module has two IF output channels for each down-converter. The two IF output channels allows for compatibility with different phase noise analyzers. The Low Frequency IF Output Range is DC to ~160 MHz. The High Frequency IF Output Range is ~300-700 MHz. See block diagrams below. Only one set of IF ports (L1, L2 or H1, H2) are used for a given configuration.



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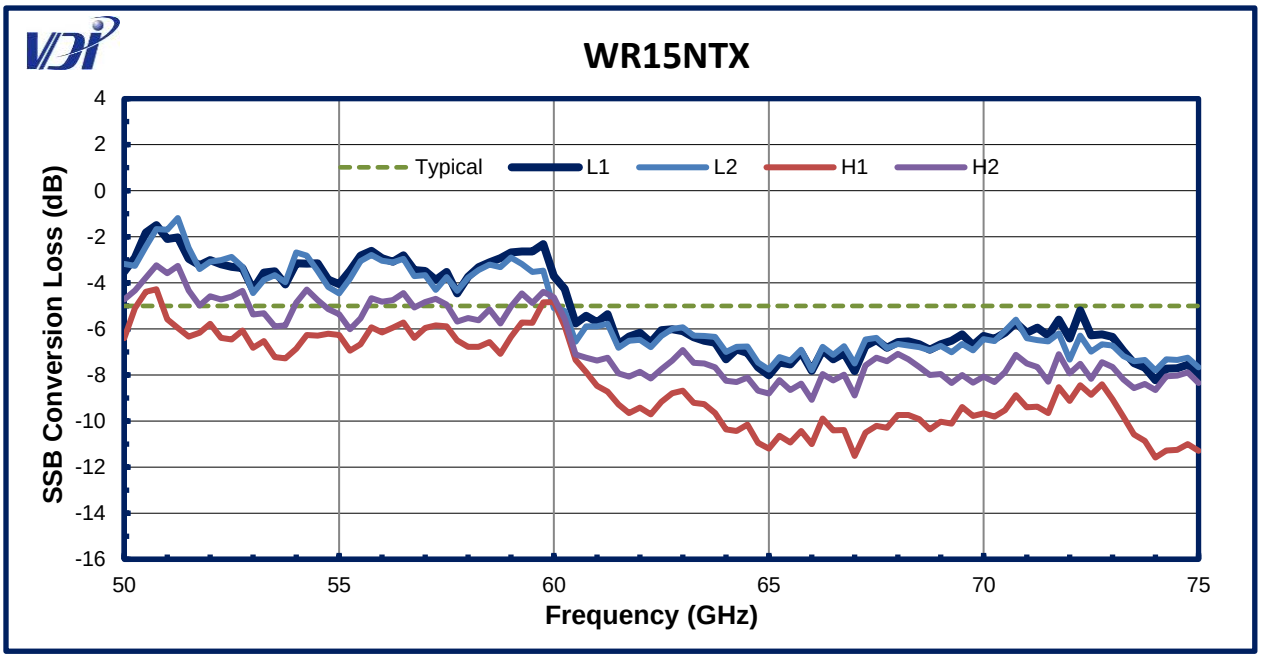
NTX Specifications

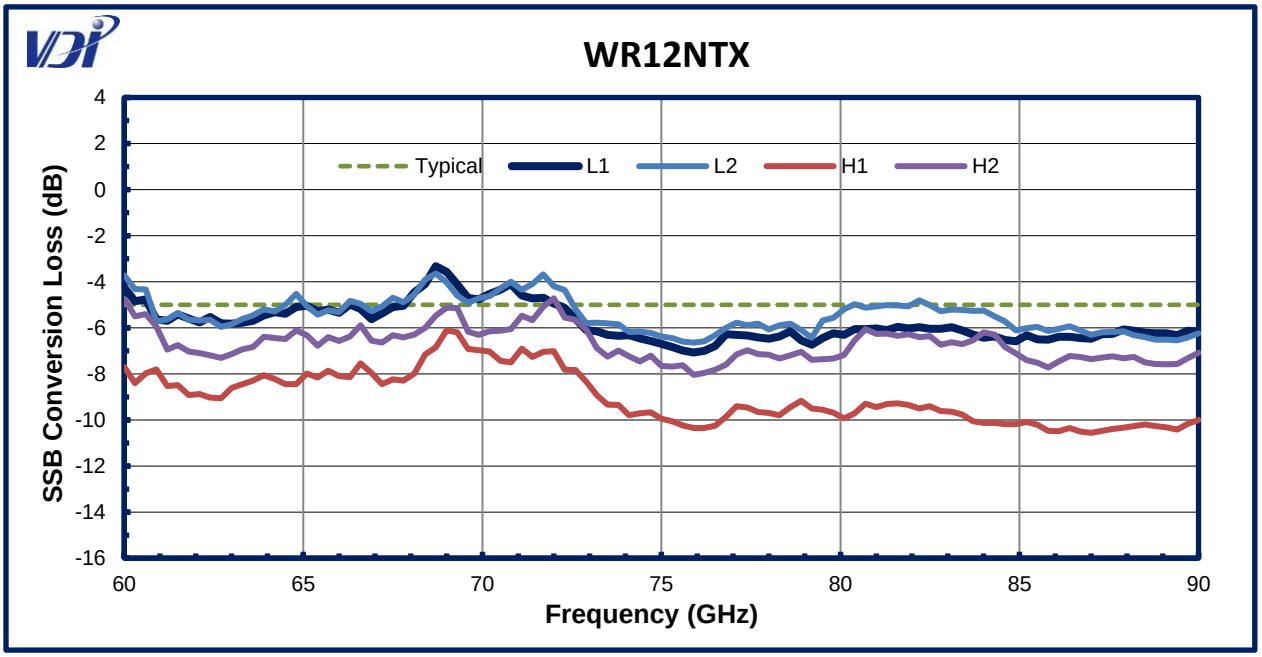
General Specifications for VDI NTX Modules			
Description		**Specification**	**Connector**
LO1 Input Port	Low Frequency (Typical / Damage)	10 dBm ± 3dB / 18 dBm	2.92mm (f)
LO2 Input Port	Low Frequency (Typical / Damage)	10 dBm ± 3dB / 18 dBm	2.92mm (f)
L1 Output	For use with LO1	DC to ~160 MHz	2.92mm (f)
L2 Output	For use with LO2	DC to ~160 MHz	2.92mm (f)
H1 Output	For use with LO1	~300-700 MHz	2.92mm (f)
H2 Output	For use with LO2	~300-700 MHz	2.92mm (f)
RF Test Port	VDI Precision Flange	WR15 to WR1.0	UG-387/UM
+9V / 4A Power Supplies	AC Inputs	100-240VAC, 3.5A, 50-60Hz	U.S. or E.U.
Maximum Weight	--	2.50 lbs. (1.13 kg.)	--
Dimensions	Typical (Length x Width x Height)	7.0” x 4.5” x 1.5”	--
Operating Temperature	Typical / Recommended	25ºC / 20-30ºC	--

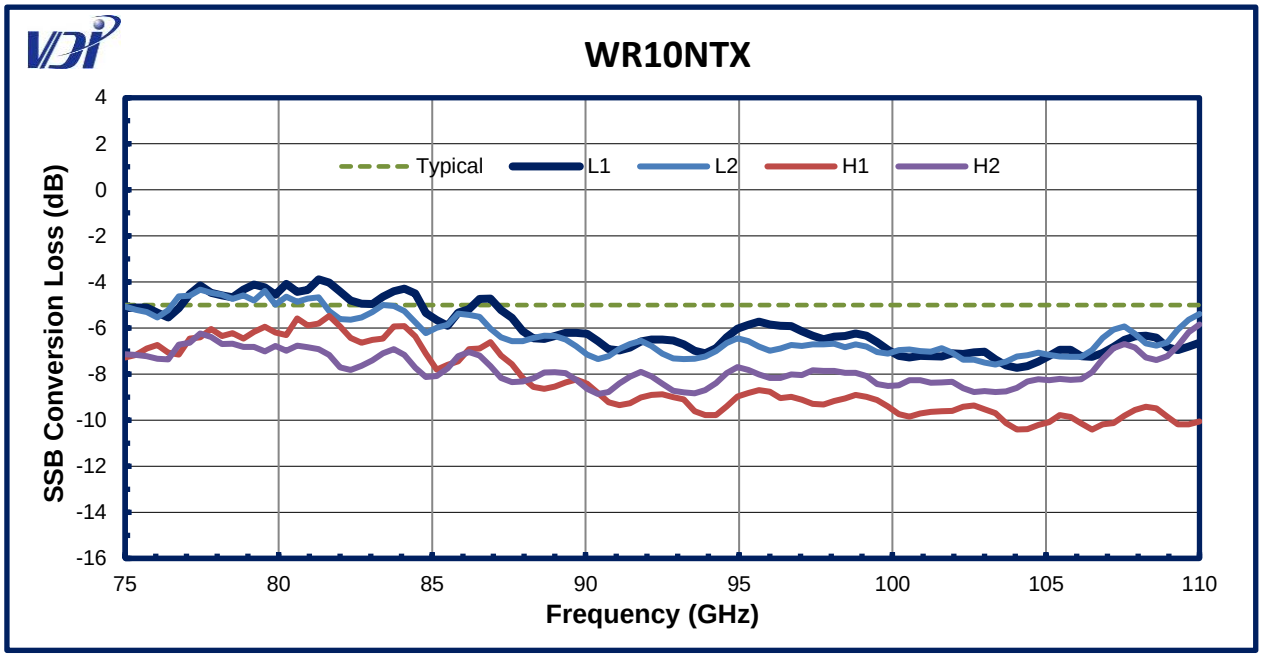
VDI NTX Module Specifications								
Description	**WR15**	**WR12**	**WR10**	**WR8.0**	**WR6.5**	**WR5.1**	**WR4.3**	**WR3.4**
RF Frequency Band (GHz)	50-75	60-90	75-110	90-140	110-170	140-220	170-260	220-330
RF Power Limits (P1dB, est. / Damage, typ.)	-5 / +5	-5 / +5	-5 / +5	-5 / +5	-5 / +5	-5 / +5	-5 / +5	-5 / +5
SSB Conversion Loss (Low IF Output, est., typ.)*	-5	-5	-5	-4	-4	-3	-2	-1
SSB Conversion Loss (High IF Output, est., typ.)*	-5	-5	-5	-4	-4	-3	-2	-1
LO Harmonic Factor	6	6	6	12	12	12	24	24

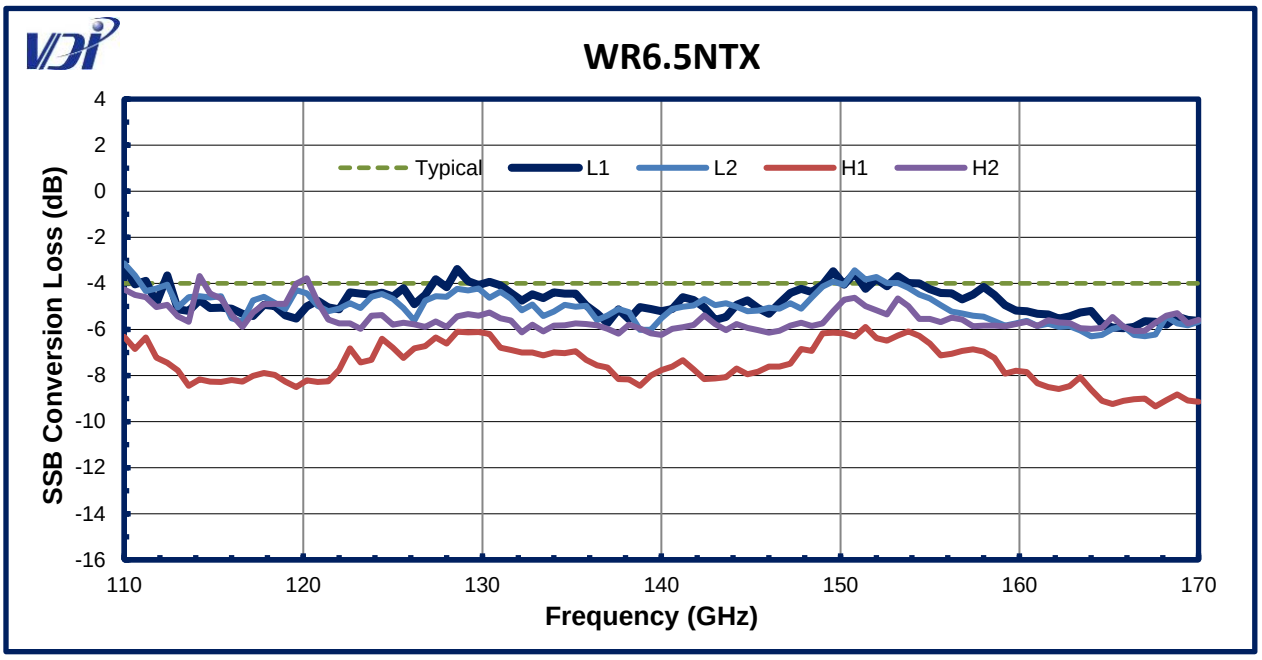
*SSB Conversion Loss is measured from the RF Test Port IF Output Port (H1, H2, L1 or L2 as specified). Negative conversion loss is conversion gain. This includes waveguide splitter loss, isolator loss, and IF amplifier gain. L1 and L2 are tested at 150 MHz IF. H1 and H2 are measured at 500 MHz IF.

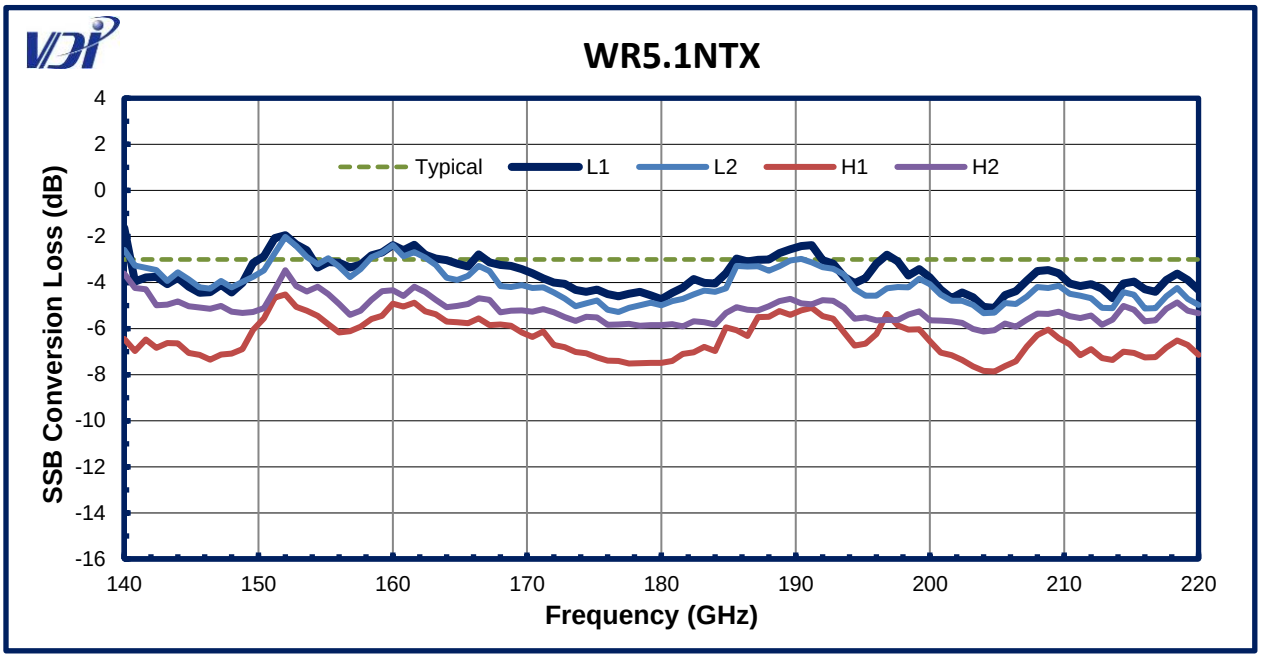
NTX Performance

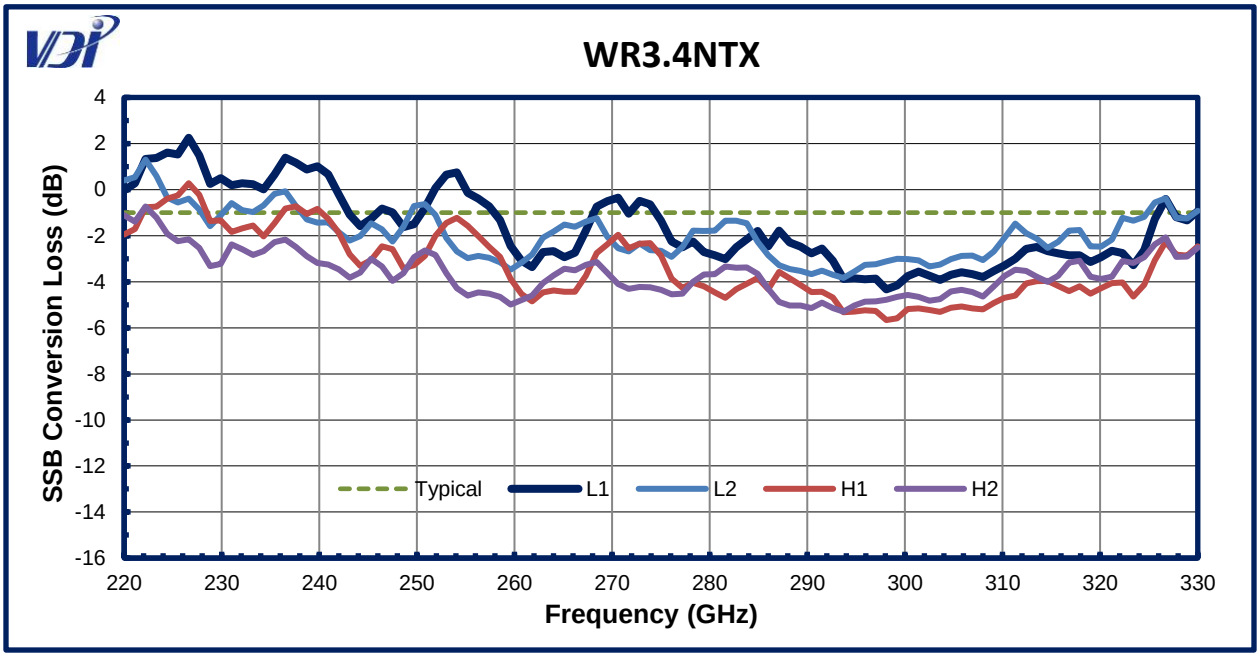












NTX Dimensions