

Quick Fact Sheet

VectorStar™

E and W Band Millimeter-wave VNA System

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High performance waveguide band system using compact Anritsu mm-wave modules

The VectorStar E and W band millimeter-wave (mm-wave) system incorporates the high performance compact Anritsu mm-wave modules in an economical extended E or W band configuration. The compact size and weight of the 3743A mm-wave module allows users to easily set up a high performance waveguide banded system for the most demanding measurement and installation challenges. The compact modules are optimal for waveguide measurements where traditional large and cumbersome mm-wave modules provide limited power control and poor stability. For antenna measurements, the compact module is ideal when mm-wave modules must be placed on an X/Y positioner for pattern scanning.

The banded version modules are supplied with a standard 1 mm test port connector and appropriate waveguide adapter. The modules are thus ideally suited for typical waveguide measurements as well as on-wafer applications where DC bias is needed.

- The VectorStar E and W band system combines the 40 GHz MS4644B or higher frequency VNA with the 3739C test set to control the banded version mm-wave modules.
- The 3744A-EE mm-wave module provides extended E Band coverage from 56 to 94 GHz with WR12 waveguide flange and operates to 95 GHz.
- The 3744A-EW mm-wave module provides extended W Band coverage from 65 to 110 GHz with WR10 waveguide flange.
- The Anritsu mm-wave modules provide the first millimeter-wave system with real time electronic power leveling thereby eliminating power correction time lag found on alternative systems using software correction feedback.
- Provides accurate, stable power control with widest power sweep for safe, accurate gain compression measurements.



VectorStar ME7838A Millimeter-wave System

- The waveguide adapter can be removed for on-wafer applications and DC bias.
- The mm-wave module can be easily adapted for any waveguide band operating from 54 to 125 GHz.

As with the broadband ME7838A system, the VectorStar waveguide banded system provides power control and power sweep capabilities using real time monitoring and correction through a closed loop. Thus, power sweep is available in an industry-leading range of up to 55 dB or more and without the need for mechanical or electronic attenuators in the mm-wave module. The result is stable power even at extremely low levels.



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3744A-EE Extended-E Band Specifications (Summary)

Frequency (GHz)	Dynamic Range (dB)	Noise Floor (dBm)	Power Range (dBm)
56-80	106	-106 to -111	-55 to 1, -2, or -4
80-85	115	-112	-55 to -6
85-90	105	-110	-55 to -4
90-94	103	-105	-55 to 0

Configuration for VectorStar ME7838 E Band Millimeter-wave System

Action	Part Number	Description
Choose and order one of the three base VNAs, with the options listed	MS4644B MS4640B-007 MS4644B-082	Vector Network Analyzer, 10 MHz to 40 GHz Receiver Offset Option Millimeter-wave Interface
	MS4645B MS4640B-007 MS4645B-082	Vector Network Analyzer, 10 MHz to 50 GHz Receiver Offset Option Millimeter-wave Interface
	MS4647B MS4640B-007 MS4647B-080	Vector Network Analyzer, 10 MHz to 70 GHz Receiver Offset Option Millimeter-wave Interface (Opt 081 if Opt -061 or -062 are used)
Order Test Set	3739C	Broadband and mm-Wave Test Set (Test set also drives mm-Wave modules >110GHz)
Order pair of EE Band mm-Wave modules	3744A-EE (2)	Millimeter-wave module with WR12 extended E Band waveguide output.
Add options if desired to the selected VNA	MS464xB-061	Active Measure Suite, 2 atten. (Substitute MS464xB-082 with MS464xB-083)
	-or- MS464xB-062	Active Measure Suite, 4 atten. (Substitute MS464xB-082 with MS464xB-083)
	MS4640B-070	70 kHz coverage
	MS4640B-002	Time Domain

3744A-EW Extended-W Band Specifications (Summary)

Frequency (GHz)	Dynamic Range (dB)	Noise Floor (dBm)	Power Range (dBm)
65-80	106	-106 to -111	-55 to 1 or -2
80-85	115	-112	-55 to -6
85-90	105	-110	-55 to -4
90-105	103	-105	-55 to 0
105-110	103	-110	-55 to -5

Configuration for VectorStar ME7838 W Band Millimeter-wave System

Action	Part Number	Description
Choose and order one of the three base VNAs, with the options listed	MS4644B MS4640B-007 MS4644B-082	Vector Network Analyzer, 10 MHz to 40 GHz Receiver Offset Option Millimeter-wave Interface
	MS4645B MS4640B-007 MS4645B-082	Vector Network Analyzer, 10 MHz to 50 GHz Receiver Offset Option Millimeter-wave Interface
	MS4647B MS4640B-007 MS4647B-080	Vector Network Analyzer, 10 MHz to 70 GHz Receiver Offset Option Millimeter-wave Interface (Opt 081 if Opt -061 or -062 are used)
Order Test Set	3739C	Broadband and mm-Wave Test Set (Test set also drives mm-Wave modules >110GHz)
Order pair of EW Band mm-Wave modules	3744A-EW (2)	Millimeter-wave module with WR10 extended W Band waveguide output.
Add options if desired to the selected VNA	MS464xB-061	Active Measure Suite, 2 atten. (Substitute MS464xB-082 with MS464xB-083)
	-or- MS464xB-062	Active Measure Suite, 4 atten. (Substitute MS464xB-082 with MS464xB-083)
	MS4640B-070	70 kHz coverage
	MS4640B-002	Time Domain

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