

# VectorStar® 2- and 4-Port Millimeter-Wave Vector Network Analyzer

## 2- and 4-port version of the VectorStar ME7838A operating with external Millimeter-Wave (mmWave) modules

The VectorStar ME7838A mmWave system combines the MS4640B series Vector Network Analyzer (VNA) and 3739C test set to control 2 external mmWave modules for measurement frequencies from 110 GHz to 1.1 THz and higher in waveguide bands. The 3739C test set routes the internal RF and LO signals from VectorStar, thus eliminating the need for external sources. If 4 ports are required, a 3736B test set and the MN4697C 4-port test set with 2 additional modules can be attached. OML or VDI modules may be used.

The VectorStar ME7838A, the first mmWave VNA system with real-time power leveling, has best-in-class stability with the widest power level control. The mmWave system detects IF and RF power, and provides correction to the mmWave power in real time and without the need for software correction feedback. This method delivers stable mmWave power even at low levels, and reduces the risk of overdriving power-sensitive mmWave devices that are inherent in other systems. Thus, power sweep is available in an industry-leading range of up to 55 dB and without the need for mechanical attenuators in the mmWave module.

- The first mmWave system with real-time electronic power leveling, 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
- 4-port test set (MN4697C) and master mmWave test set (3736B) can be added to standard 2-port system for 4-port operation
- No need to purchase expensive 4-port test sets initially – upgrade the VectorStar mmWave system when needed and budget permits



**VectorStar ME7838A Millimeter-Wave System**

### Key Specifications

|  |   |
|--|---|
| Frequency                                      | Waveguide bands from 110 GHz to 1.1 THz and higher                    |
| Power, Dynamic Range, and Residual Performance | As provided by vendor mmWave modules and appropriate calibration kits |



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# Quick Fact Sheet

## VectorStar® 2- and 4-Port Millimeter-Wave Vector Network Analyzer



### Configuration for ME7838A VectorStar 2-Port Millimeter-Wave System (> 110 GHz)

| Action   | Part Number                           | Description   |
|--|---------------------------------------|---|
| Choose and Order One of the Three Base VNAs, with the Options Listed | MS4642B<br>MS4640B-007<br>MS4642B-082 | Vector Network Analyzer, 10 MHz to 20 GHz Receiver Offset Option mmWave Interface                 |
|  | MS4644B<br>MS4640B-007<br>MS4644B-082 | Vector Network Analyzer, 10 MHz to 40 GHz Receiver Offset Option mmWave Interface                 |
|  | MS4647B<br>MS4640B-007<br>MS4647B-082 | Vector Network Analyzer, 10 MHz to 70 GHz Receiver Offset Option mmWave Interface                 |
| Order Test Set   | 3739C                                 | Broadband & mmWave Test Set   |
| Order System Cables  | SM6626                                | mmWave module interface cables substituting for broadband cables (1 pair)                         |
| Choose and Order Pair of mmWave Modules                              | OML VxxVNA2-T/R, 2 each -or-          | Choose appropriate OML, Inc. mmWave band module. Include external OML power supply or equivalent. |
|  | VDI WRxxTxRx-20G, 2 each              | Choose appropriate VIRGINIA Diodes, Inc. mmWave band module                                       |
| Add Options if Desired to the Selected VNA                           | MS464xB-051                           | External VNA loops (substitute MS464xB-082 with MS464xB-083)                                      |
|  | 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   |

### Configuration for ME7838A VectorStar 4-Port Millimeter-Wave System (> 110 GHz)

| Action   | Part Number   | Description   |
|--|---|---|
| Choose and Order One of the Three Base VNAs, with the Options Listed | MS4642B<br>MS4640B-007<br>MS4642B-082<br>MS4642B-051, 061, or 062 | Vector Network Analyzer, 10 MHz to 20 GHz Receiver Offset Option mmWave Interface Access Loop or Active Suite |
|  | MS4644B<br>MS4640B-007<br>MS4644B-082<br>MS4644B-051, 061, or 062 | Vector Network Analyzer, 10 MHz to 40 GHz Receiver Offset Option mmWave Interface Access Loop or Active Suite |
|  | MS4647B<br>MS4640B-007<br>MS4647B-082<br>MS4647B-051, 061, or 062 | Vector Network Analyzer, 10 MHz to 70 GHz Receiver Offset Option mmWave Interface Access Loop or Active Suite |
|  | Order Test Set  | 3739C   |
| Order 4-Port Test Set  | MN4697C   | 4-Port Test Set   |
| Order Master Test Set  | 3736B   | 4-Port Master Test Set  |
| Order System Cables  | SM6626(2)   | mmWave module interface cables substituting for broadband cables (1 pair)                                     |
| Choose and Order mmWave Modules                                      | OML VxxVNA2-T/R, 4 each -or-                                      | Choose appropriate OML, Inc. mmWave band module. Include external OML power supply or equivalent              |
|  | VDI WRxxTxRx-20G, 4 each  | Choose appropriate VIRGINIA Diodes, Inc. mmWave band module   |
| Add Options if Desired to the Selected VNA                           | MS4640B-070   | 70 kHz coverage   |
|  | MS4640B-002   | Time Domain   |



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