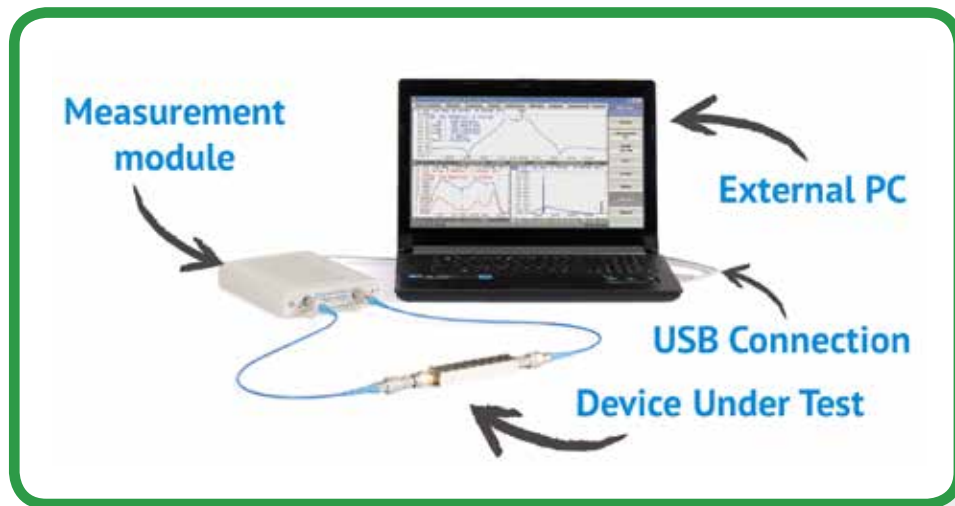


# Vector Network Analyzers



## What is a USB VNA?

Engineers are demanding better value, high performance and more flexibility from the test equipment on the bench or in the field, which drove us to reevaluate the traditional approach to a lab-grade VNA.

We decided to do something different.

Our solution is a VNA that has the same performance as traditional analyzers, but off-loads all processing functions to an external PC. This results in a highly accurate, ultra compact instrument that represents a solution unlike any other.

## About CMT

Copper Mountain Technologies is based in Indianapolis, IN, USA. CMT's vector network analyzers are used for a variety of RF and Microwave applications from 20 kHz to 110 GHz in the US and around the world. We serve development and production engineers in radio communications, medical, educational, cable, broadcast, and defense industries.



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## USB VNAs from Copper Mountain Technologies

- S-parameter measurement solutions from 20 kHz to 110 GHz
- Measured parameters:  $S_{11}, \dots, S_{44}$
- Dynamic range as high as 150 dB typ. (1 Hz IF bandwidth)
- Measurement speeds as fast as 10  $\mu$ s per point

## Reflectometer Series:

Powered and operated via USB connection to an existing external PC, these reflectometers perform lab quality measurements of the  $S_{11}$  parameter in various presentation formats. Their portable size allows operation in any environment without the use of a test cable, (Patent US 9,291,657) resulting in highly dependable performance and calibration stability. Each reflectometer is fully programmable using COM/DCOM automation.

R54



Frequency range: **85 MHz to 5.4 GHz**  
Measurement points: 2-100,001  
Time domain with gating standard

R60



Frequency range: **1 MHz to 6.0 GHz**  
Measurement points: 2-100,001  
Time domain with gating standard

R140



Frequency range: **85 MHz to 14 GHz**  
Measurement points: 2-100,001  
Time domain with gating standard

## Compact Series:

Our popular compact series combines a maximum standard feature set with a compact size suitable for many applications. These instruments are a great value solution for magnitude and phase measurements from 20 kHz to 8.5 GHz. This series includes time domain with gating, fixture simulation, frequency offset mode, and each instrument is fully programmable using COM/DCOM automation.

TR1300/1



Frequency range: **300 kHz to 1.3 GHz**  
Dynamic range: 135 dB typ.  
Measured parameters:  $S_{11}, S_{21}$

7530



Frequency range: **20 kHz to 3.0 GHz**  
Dynamic range: 133 dB typ.  
**75  $\Omega$  impedance**  
Measured parameters:  $S_{11}, S_{21}, S_{12}, S_{22}$  (S7530)  
 $S_{11}, S_{21}$  (TR7530)

5048



Frequency range: **20 kHz to 4.8 GHz**  
Dynamic range: 133 dB typ.  
Measured parameters:  $S_{11}, S_{21}, S_{12}, S_{22}$  (S5048)  
 $S_{11}, S_{21}$  (TR5048)

S5065



Frequency range: **20 kHz to 6.5 GHz**  
Dynamic range: **>138 dB typ.**  
Measured parameters:  $S_{11}, S_{21}, S_{12}, S_{22}$

S5085



Frequency range: **20 kHz to 8.5 GHz**  
Dynamic range: **>138 dB typ.**  
Measured parameters:  $S_{11}, S_{21}, S_{12}, S_{22}$

## Planar Series:

The family of full size instruments includes our analyzers that provide **lab quality** performance in a **19-inch chassis**, including a **4-port configuration and direct access to receivers**. Time domain with gating, fixture simulation, frequency offset mode are standard. All devices are ATE compatible, rack mountable, and easy to program and share between multiple users.

304/1



Frequency range: **100 kHz to 3.2 GHz**  
Measured parameters:  $S_{11}, S_{21}, S_{12}, S_{22}$   
Dynamic range: **140 dB typ.**  
Measurement time per point: 125  $\mu$ s min typ.

804/1



Frequency range: **100 kHz to 8.0 GHz**  
Measured parameters:  $S_{11}, S_{21}, S_{12}, S_{22}$   
Dynamic range: **150 dB typ.**  
Measurement time per point: 100  $\mu$ s min typ.

808/1



Frequency range: **100 kHz to 8.0 GHz**  
Measured parameters:  $S_{11}, \dots, S_{44}$   
Dynamic range: **150 dB typ.**  
Four ports with two independent signal sources

814/1



Frequency range: **100 kHz to 8.0 GHz**  
Measured parameters:  $S_{11}, S_{21}, S_{12}, S_{22}$   
Dynamic range: **150 dB typ.**  
**Direct access to receivers**

## Calibration and Accessories:

Copper Mountain Technologies has a variety of Automatic Calibration Modules, mechanical calibration kits, databased calibration kits, cables, matching pads, adapters, and other accessories. Visit [www.coppermountaintech.com](http://www.coppermountaintech.com) to learn more.

ACMS



CMT's **Automatic Calibration Modules** deliver fast and accurate electronic VNA calibration. They are available in 2-port configurations from 6 to 20 GHz and a 4-port configuration at 8 GHz. There is also a 75  $\Omega$  4 GHz model.

OTHER



CMT also offers an extensive number of different **cables, matching pads, adapters, mechanical calibration kits** and other accessories to complete your test setup.



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For more information visit [www.coppermountaintech.com](http://www.coppermountaintech.com)

## Cobalt Series:

Cobalt series VNAs offer an **unmatched size-price-performance combination** for S-parameter measurements between **100 kHz and 9 or 20 GHz**. With a typical dynamic range of **145 dB and up to 10  $\mu$ s per point** they're optimal for modern applications like fast production environments, SAW Filters, and 5G BTS filter tuning. These compact, high-performance VNAs incorporate several new proprietary manufacturing and test approaches that contribute to exceptional speed and metrological accuracy.

C1209



Frequency range: **0.1 MHz to 9.0 GHz**  
Measured parameters:  $S_{11}, S_{21}, S_{12}, S_{22}$   
Dynamic range: **145 dB typ.** (1 Hz IF bandwidth)  
Measurement time per point: **10  $\mu$ s min typ.**

C1220



Frequency range: **0.1 MHz to 20.0 GHz**  
Measured parameters:  $S_{11}, S_{21}, S_{12}, S_{22}$   
Dynamic range: **145 dB typ.** (1 Hz IF bandwidth)  
Measurement time per point: **15  $\mu$ s min typ.**



## CobaltFx Series:

CobaltFx is an unprecedented approach for millimeter-wave S-parameter measurements in three dedicated waveguide bands, **50-75 GHz, 60-90 GHz and 75-110 GHz**. The system is anchored by **C4209 a 9 GHz Cobalt Series USB VNA** and features frequency extension modules from Farran Technology and a **precision calibration kit**.

FEV-15



Frequency range: **50.0 GHz to 75.0 GHz**  
Measured parameters:  $S_{11}, S_{21}, S_{12}, S_{22}$   
System dynamic range: 120 dB typ.  
(10 Hz IF bandwidth)

FEV-12



Frequency range: **60.0 GHz to 90.0 GHz**  
Measured parameters:  $S_{11}, S_{21}, S_{12}, S_{22}$   
System dynamic range: 110 dB typ.  
(10 Hz IF bandwidth)

FEV-10



Frequency range: **75.0 GHz to 110.0 GHz**  
Measured parameters:  $S_{11}, S_{21}, S_{12}, S_{22}$   
System dynamic range: 110 dB typ.  
(10 Hz IF bandwidth)