

Pacific Antenna Systems LLC.

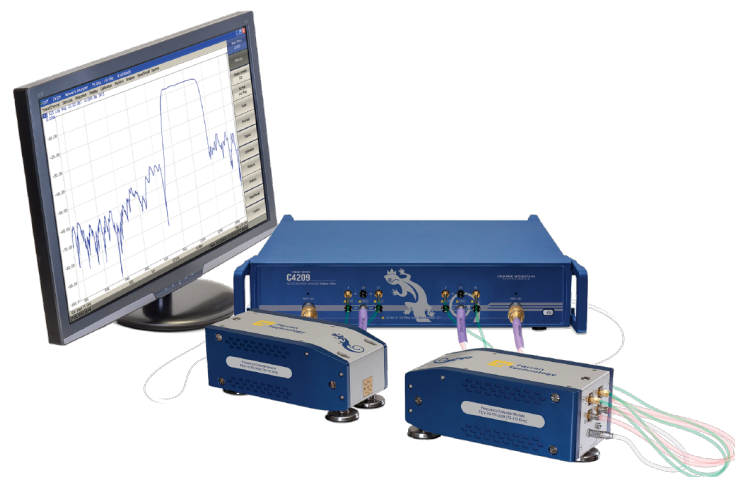
CobaltFx system anchored by the Cobalt C4209 4-port 9 GHz VNA Delivers Accurate and Repeatable mmWave Measurements

Copper Mountain Technologies' CobaltFx frequency extension system has given Anthony Macari and the team at Pacific Antenna Systems (PAS) the ability to make accurate and stable [mmWave measurements](#) for various antenna types. PAS uses a CobaltFx system anchored by the Cobalt C4209 4-port 9 GHz VNA with FEV-10 extenders. The CobaltFx system has proven to be a versatile tool for making precise metrology-grade measurements with repeatable results. The system's ease of use combined with responsive customer support has allowed Anthony to simplify measurements for himself and his colleagues.

[Pacific Antenna Systems](#) is an antenna development company located in Camarillo, California. PAS has an extensive design history, which includes over 70 years of experience in antenna systems design. The company designs antenna solutions for a variety of applications including communications, radar, high-power microwave antennas, and electronic warfare.

Pacific Antenna Systems needed a frequency extension system to perform mmWave measurements in the W band frequency range. Cost is always a factor when purchasing test equipment, especially for smaller companies like PAS. But the features and ease of use were key considerations for them when making a purchasing decision. "It's important to have a system capable of capturing data and moving it into the software environment for manipulation and post-processing data for easy analysis," said Anthony Macari, Vice President of Pacific Antenna Systems.

These mmWave measurements can be difficult because any misalignment will contaminate your measurement. It's imperative that your measurement system is accurate and stable. Rerunning measurements wastes time and money because their workers are skilled and expensive. When it was time to make a decision, Anthony compared CMT's VNA to a similar product from a larger competitor and concluded that the VNA and extender module's "performance compared very well, I was pleasantly surprised by the equal accuracy and stability that Copper Mountain Technologies provided with a significantly less expensive unit."



Pacific Antenna Systems uses a Cobalt C4209 VNA with FEV-10 extenders for their measurements, which are mostly in the 90-96 GHz frequency range. Using a 9 GHz VNA as a base unit helped lower the total cost of their mmWave measurement system. Anthony works with various antenna types for radar, electronic warfare, and telecommunications. These applications require several measurement types. Standard S_{11} and S_{21} measurements, magnitude and phase measurements, and what he calls 'baby range' measurements, which are smaller range measurements used to setup the correct absorber for specific application types. He utilizes the portability of his USB VNA by making measurements from the field, not just the lab.

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Anthony Macari, Pacific Antenna Systems

Pacific Antenna Systems' CobaltFx system has proven to effectively perform an array of measurements. The ease of use has been a tremendous benefit for PAS. "The software has an intuitive interface, it's almost impossible to get lost. You don't want to have to scramble to find the software features you need," said Macari. "One thing that's really nice is that you have large amounts of memory and storage options that the USB interface provides." Anthony uses MATLAB for partial automation. The automation capabilities allow him to streamline measurement setup and obtain consistent results. It's a huge benefit for him when setting up measurements for his colleagues.

The benefits of purchasing from CMT go beyond the capabilities and performance of the VNA. "The customer support has been superior," said Macari. "The big guys put you in the queue, but CMT's responsiveness has been terrific". He acknowledged the importance of swift customer support for small companies whose employees sometimes lack familiarity with the equipment. When an issue arises, it's refreshing to get immediate feedback from informed engineers who work diligently to find a resolution. Responsive support can be the difference between effective measurements and a frustrating halt in productivity.