



Case Study: Free Instrument Trial Helps ORBCOMM Find a VNA for IoT Applications

Phil Lafleur and his team of engineers at ORBCOMM needed a VNA solution to help with the design and verification of various IoT devices. Although CMT VNAs were on Phil's radar as he began the purchasing process, most of his team had never used a VNA from Copper Mountain Technologies. After a successful [field trial](#), they were pleased with the price, performance, and partnership provided by Copper Mountain Technologies and the [Cobalt C1409 4-Port 9 GHz Analyzer](#). They were able to find a single instrument to cover all their VNA measurement needs without breaking the budget.

[ORBCOMM](#) is a global leader and innovator in the industrial Internet of Things (IoT) sector, providing solutions that connect businesses to their assets to deliver increased visibility and operational efficiency. The company offers a broad set of asset monitoring and control solutions, including seamless satellite and cellular connectivity, unique hardware, and powerful applications all backed by end-to-end customer support from installation to deployment to customer care.

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Phil Lafleur, ORBCOMM

Phil Lafleur is ORBCOMM’s Vice President of Hardware. He and his team are responsible for design and introduction of industrial IoT products to volume production. They use VNAs for various design and verification projects to prepare their products for production. Once an item is produced at volume, these IoT devices and their accessories are used by customers across the globe in applications ranging from transportation and maritime to smart grids and even Covid-19 vaccine transportation.

When it was time to upgrade VNA instrumentation Phil asked himself what equipment was familiar to his team? And what equipment do they like to use? “Everyone has their favorite brand, but many of my guys were not familiar with CMT VNAs,” said Lafleur. “It was important to get a trial unit in their hands to try before making any decisions.” Phil took advantage of CMT’s [free instrument trials](#) and brought in a 4-Port Cobalt VNA to test drive. Throughout the trial, Phil and his team were impressed with several aspects of the CMT VNA. “We found the user interface and software to be very intuitive and functional,” said Lafleur. The USB form factor of CMT VNAs separates the measurement module from the processing module to take advantage of continued component and technology innovation. “We like that there is no built-in operating system,” explained Lafleur. “We used to have an analyzer with Windows XP which was a constant point of frustration for our IT department. But now there is no need for us to get IT involved.” ORBCOMM was also pleased with how easily the VNA integrated with their Python test automation, “It was a complete drop-in.” Lafleur recounted. “We didn’t have to change a single line in our scripts.”



Once the CMT Analyzer was validated by ORBCOMM’s team of engineers, the final decision came down to price and performance. Ultimately, Lafleur decided on the [Cobalt C1409 4-Port 9 GHz Analyzer](#). Most of ORBCOMM’s projects only require two ports and in the past Lafleur and his team owned a 2-port VNA and would rent a 4-port instrument as needed. With the price point of the C1409, ORBCOMM was able to purchase a 4-port VNA that is suitable for all their projects and eliminated the additional cost of renting a VNA for certain measurements. According to Phil, “All aspects of the C1409’s RF performance are as good or better on a practical basis than instruments I’ve used in the past.” The compact size of the analyzer has been especially helpful during the pandemic because they are able to bring the equipment home when needed. Beyond the performance of the VNA, the support from Copper Mountain Technologies’ engineers has exceeded expectations. “We were pleasantly surprised with how responsive the CMT support staff was to our initial questions,” noted Lafleur. Phil offered a final piece of advice to anyone considering purchasing a CMT VNA. “Get a trial unit and let the RF engineers have at it. Once they have it in hand, they’ll never return it.”