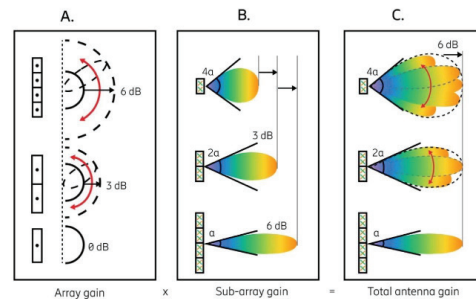
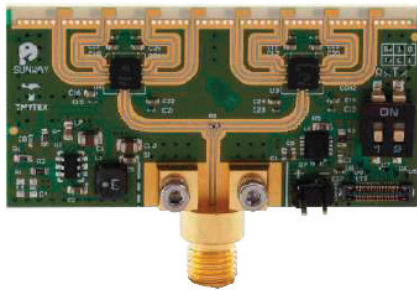


# Anritsu, Diamond Engineering, and Diamond Microwave Chambers Antenna Measurement Solution

Antenna and antenna-related measurements play a vital role in communication systems across many industries. Since antennas are critical for transmitting and receiving all wireless communications, it is important for developers/designers to test them to ensure their utmost precision. Standard antenna measurements have more or less focused on radiation patterns – gain, beam width, bandwidth at various frequencies, etc. – however, with advancements in recent technologies, especially 5G, these measurements have become more complex. This requires testing more parameters and ensuring a higher level of accuracy with measurements. The three main components for making antenna measurements are: an anechoic chamber; controlling/analyzing software with required hardware (motors, etc.); and, a high-end vector network analyzer (VNA) with high dynamic range and superior stability.



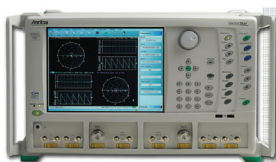
## Anritsu, Diamond Engineering, and Diamond Microwave Chambers

The manufacturing of various devices – user equipment (UEs) like cell phones, base station chips with integrated antenna and related circuitry, and phased-array antennas – have recently seen significant growth and an increase in design complexity. To ensure proper operation, these devices must undergo accurate and precise antenna measurements. The Anritsu VectorStar™ MS4640B vector network analyzer solution, together with the Diamond Engineering software/hardware solutions and Diamond Microwave Chambers, create a robust anechoic chambers solution. These products provide frequency coverage from 70 kHz to 110 GHz, with the option for coverage up to 145 GHz with Anritsu's VectorStar broadband VNA system.

### Anechoic Chamber Solution for Antenna Measurements

This solution is ideal for making a variety of antenna measurements, from basic antennas used in satellite/basestation applications to testing beamforming of phased array antennas in various modes.

The **Anritsu VectorStar high-performance VNA solutions** provide frequency coverage from 70 kHz to 20/40/70/110/145 GHz and beyond. The high dynamic range and variable lengths (3/5/10 m) from Anritsu in various configurations of Tx/Rx and Tx only helps the antenna characterization in difficult arrangements.



VectorStar VNA Family

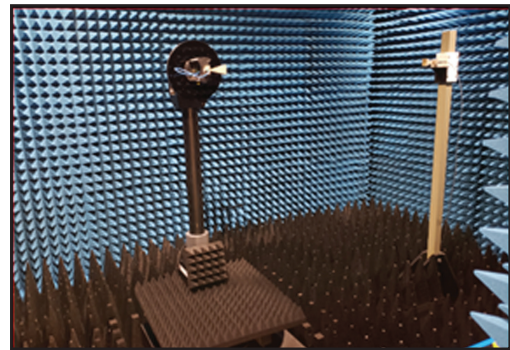
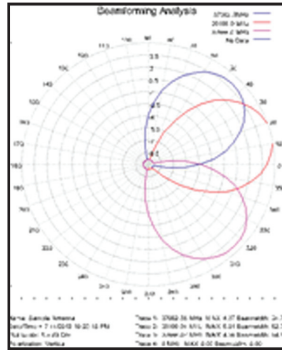
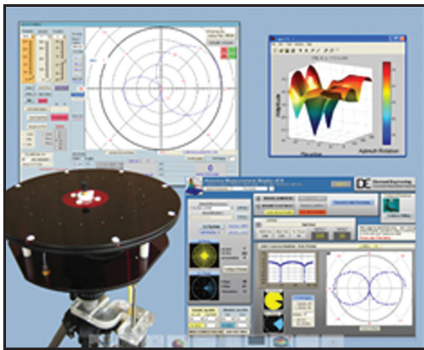


ShockLine VNA Family

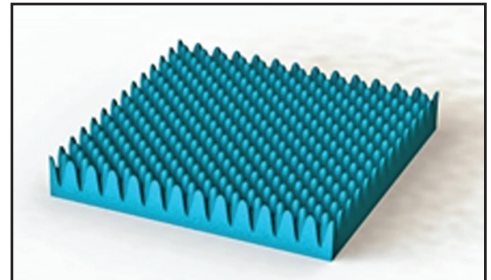
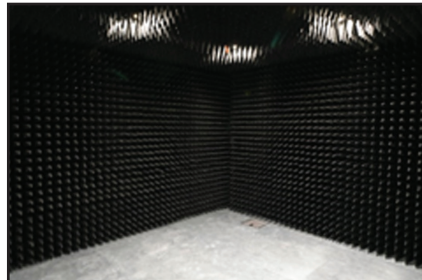
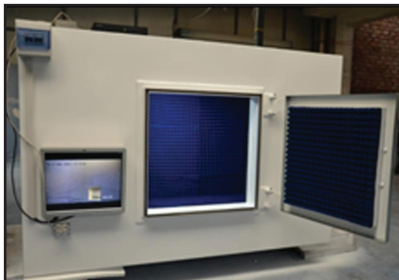


ShockLine E-Band VNA

The **Diamond Engineering positioners and measurements software** are scalable measurement solutions for antenna and wireless test applications up to 110 GHz, including 5G, WiGig, automotive radar, and defense applications. Products range from single-axis turntables to complete multi-axis spherical systems with weight capacities up to 100 lbs. The included software offers powerful data acquisition and analysis tools with remote automation features as well as a stand-alone Python module for independent positioner control. All products carry a 3 year warranty and feature personal setup and operation support.



**Diamond Microwave Chambers (DMC)** are a leading manufacturer and supplier of anechoic chambers, RF shield rooms, 5G mmWave shielding cabinets, and RF/microwave and millimeter-wave form and polypropylene hybrid absorbers. DMC offers turnkey solutions by working with all test system suppliers and technical partners to provide integrated antenna measurement, free-space measurement, and EMI/EMC test solutions.



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