

Millimeter-Wave Testing Facilities



Figure 1. Millimeter-wave VNA and electro-optic probe station for testing from 45MHz to 110 GHz.

The University of Delaware Nano-photonics Group has extensive testing facilities for millimeter-wave optical interactions. At the heart of this capability is our Agilent 8510C vector network analyzer system. This test equipment provides for full two-port S-parameter measurements from 45MHz to 110GHz, using 8517B and 85106D Agilent test modules. We have full facilities for testing a wide range of components using this equipment, including a variety of waveguide and coaxial adapters and fixtures for testing of standalone components and an antenna table for the testing of free space antenna and imaging structures. This table includes a fully automated near-field scanning system optimized for characterization of refractive and diffractive dielectric lenses in the millimeter-wave regime. In addition, a modified Signatone probe station equipped with customizable fiber-optic stages allows for high-speed characterization of electro-optic and photonic components, as well as traditional electrical devices to frequencies as high as 110GHz. This probe station may also be used with our Agilent 8703B Lightwave Component Analyzer to provide direct, calibrated measurements of optical transmitter, modulator, or detector response for devices up to 20GHz.

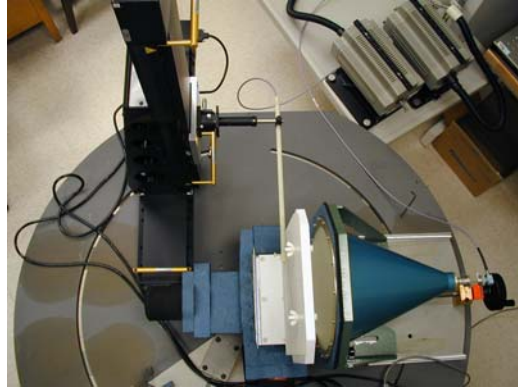
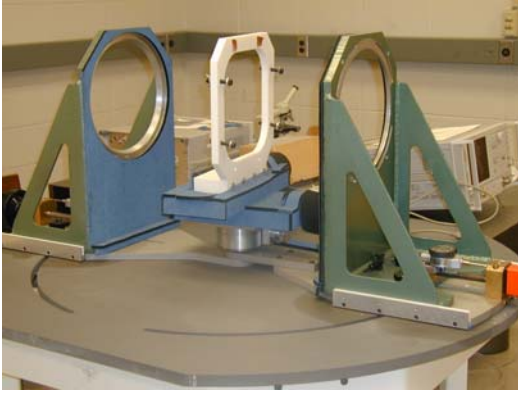


Figure 2. Millimeter-wave antenna and quasi-optical near field measurement table.