

Purpose of Experiment:

To develop a prototype for a new communication architecture which combines the advantages of mm-wave technology with MIMO (multiple input/multiple output) technology. This architecture is called Continuous Aperture Phased MIMO and uses Discrete Lens Arrays (DLA). The prototype will test the feasibility of this architecture for use in next generation wireless technologies.

Experiment Description:

We will transmit arbitrary data from one point to one or more points. The DLA allows for beam forming and controlling the direction of transmission. Each beam will transmit at a rate of 125 Mbits/sec. This implies we need 125 MHz of bandwidth plus excess bandwidth. The carrier frequency will be well within the range of 9.5 and 10.5 GHz. This range is strictly enforced by the band pass filter we have. (Reactel--6C11-10G-X1GS11)

Reason for License

Transmission between 9.5 GHz and 10 GHz is the only option given the equipment we have.