

## **Request for Experimental License Exhibit**

### **Purpose:**

AT&T Laboratories wishes to conduct tests with multiple new radio systems with integrated adaptive antennas to evaluate the performance of a novel short distance microwave radio digital communications network from several suppliers. We hope to evaluate various performance characteristics of the system in a real world Rural/Suburban outdoor environment. Performance characteristics such as data throughput, latency, error rates, availability, and susceptibility to and generation of self and external interference will be investigated.

### **Radio Systems:**

These radios will be installed and tested by AT&T Laboratories personnel using microwave radio and digital communications test equipment. Each radio unit weighs about 33 lbs. and is housed in a weatherproof outdoor enclosure approximately 10.4 (w) x 25 (h) x 4 (d) inches in size. Each radio unit consists of a transmitter, a receiver and an integrated adaptive beamforming antenna. The maximum transmitter power of the radio unit will not exceed 47 dBm/10 MHz EIRP.

### **Antenna Systems:**

Much of the experimentation will be centered around the evaluation of the integrated adaptive antenna system in a non-line-of-sight (NLOS) environment, so the exact antenna gains and beam widths to be realized are unknown at this time. However, the maximum gain of any antenna deployed will not exceed 20 dBi. Furthermore, the main lobe of any antenna deployed will be pointed approximately to the horizon plus or minus 10 degrees. The azimuthal orientation of the main lobe of the antenna may be arbitrary.

### **Equipment Deployment:**

Testing will occur between base radio units deployed on masts on the roof top of the AT&T Facility at 3400 W Plano Parkway, Plano TX, 75075 (33-00-31.63N; 96-45-32.10W) and prototype fixed user equipment located within a five (5) kilometer radius of the Facility. The ground elevation around this location is 218 meters above mean sea level. No more than 3 radio transmitters will be operated simultaneously. Radios will be mounted on rigid masts on the building rooftop and will not exceed a height of 19 meters (65 feet) above ground level. The roof level of the building in Plano, TX is 3 stories (50 feet) above ground level. See the diagram in Figure 1 for a depiction of the building deployment.

### **Spectrum Use:**

The radio transmitters may occupy spectrum between 3550-3650 MHz. Depending on how it is configured, each radio will use a digitally modulated 10 MHz, 20 MHz or 40 MHz channel in this band. The total transmit power of any transmitter will not exceed 32 dBm (1.6 Watts).

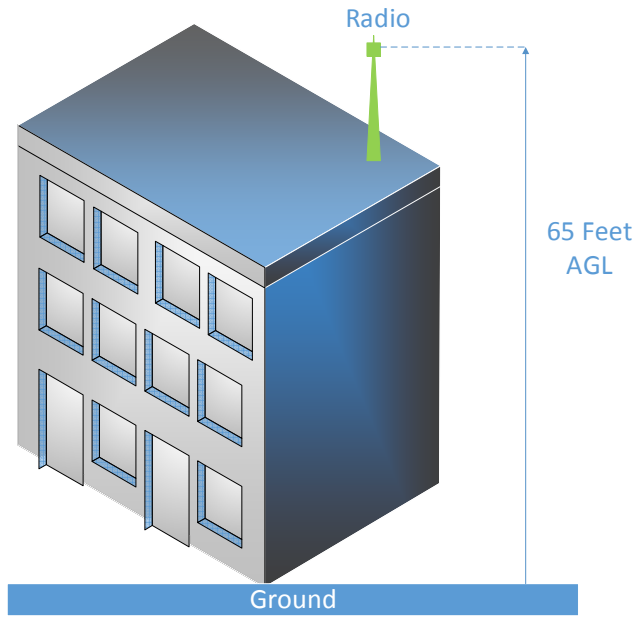


Figure 1 - Possible Radio Mount Plano, TX