

Texas Instruments  
June 29, 2001  
Application for Experimental License  
FCC File Number 0155-EX-PL-2001

Exhibit "Ant"  
Antennas

Texas Instruments is submitting this exhibit to describe the antennas to be used in the three frequencies bands requested. The antennas will be used with transmitters employed in the development of RFID technology. The antennas will typically used indoors but can be used outside throughout continental United States. Although all of the operations during experimental operations may be considered as "mobile" in that they will be operated at temporary locations, the antennas may further be classified as portable (such as attached to handheld devices) and stationary (such as mounted to a pedestal at a locking dock). The antennas are usually tethered to the RF interrogator, which is then connected to a computer.

For 134 kHz inductive technology, the antennas typically range in size from 2" in diameter to 8' to 8' wire loops with maximum read distance of passive transponder being < 10'. The "Q or quality" of the 50 ohm antenna is 100. Inductance is 47 uH.

For 13.56 MHz inductive technology, antenna sizes range from 3"x3" to 4'x 4' in single or multiple array configurations. Maximum read distance of passive inlay transponder is 4 feet from a antenna. The "Q" of the 50 ohm antenna is 30-40.

For UHF (902.5 to 927.5 MHz) back scatter DSS technology, two types "Yagi" (horizontal or vertical polarization) and "Circularized Polar" (circular polarization) antennas are used. Maximum read distance of a passive transponder is 15'.