

Comprehensive Exhibit Text Document for  
Special Temporary Authorization License Application

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Antenna Information:

The antenna is a mobile station with a maximum radiation aperture of about 12 inches (in the horizontal plane). Please see [Exhibit: antenna01\\_img.jpg](#) for a reference. The antenna connects to a PC-based data processing system (please see [Exhibit: antenna02\\_img.jpg](#)). This is essentially a PC that is used to operate the antenna, display, and capture results. The entire station is compact in size and can operate as a mobile standalone unit as shown.

The antenna radiates a 0.7° horizontal by 4.0° vertical beam. Please see [Exhibit: antenna03\\_img.jpg](#) for visualization of the antenna's beamwidth and scanning principle. Linear vertical polarization is utilized for operation.

Modulating Signal Description:

The modulation used by this antenna is a standard linear frequency modulation which spans a specified bandwidth about a carrier frequency of 93 GHz. Please see [Exhibit: modulation\\_img.jpg](#) for a description of the modulating waveform.

Necessary Bandwidth Description:

The modulation envelope utilizes up to a total of 1.0 GHz about a center frequency of 93.0 GHz (i.e. 92.5 GHz – 93.5 GHz). With a specified tolerance of 0.005 at 93 GHz (0.465 GHz), the radiation will fall within the specified band of 92-94 GHz. The bandwidth is swept repeatedly over a specified average sweep time of 500 us per sweep.

Nature of research project:

This project covers the general development of an experimental W-band imaging radar for obstacle and target detection mainly for small airborne platforms such as helicopters and UAVs. The license is requested to perform local radiation testing as well as experimental flight testing at various mobile locations. The testing of this system requires the following:

Operating power up to 500 mW (ERP)  
Operating frequency between 92-94 GHz

Requested Station Locations:

Mobile: Honeywell Aerospace, Torrance, CA within 10 km centered around:

33.8601705            -118.3196640  
33° 51' 36.6156"       -118° 19' 10.7904"

Mobile: Honeywell Aerospace Paine Field, Everett, WA within 10 km centered around:

47.9107330            -122.2764372  
47° 54' 38.6388"       -122° 16' 35.148"

Mobile: Honeywell Aerospace Deer Valley, Phoenix, AZ within 10 km centered around:

33.6844964            -112.0927762  
33° 41' 4.1856"        -112° 5' 33.9936"