

Exhibit II

Syracuse Waveform Tests

The frequency selected was chosen to coincide with the emission capability of the AN/TPS 59 radar system, an existing product built for the Federal Government.

Emission –

Two types of waveforms will be contrasted. The first type is the traditional LFM (linear frequency modulation) radar pulse. The pulse is 25 Mhz wide and 1 millisecond in duration. The second wave form is a frequency hopping spread spectrum type based on the IEEE 802.11 standard. This wave form is well understood and commonly used in the wireless local area networking. It is in the library of predefined waveform types built into the Agilent E4430 Signal Generator.

The maximum power of +13 dBm into the antenna.

1st Waveform –

AN/TPS59 LFM Waveform

Signal will be generated by the Agilent 4300 signal generator with the following parameters. It will be at a frequency between a low point of 1200 Mhz and a high point of 1400 Mhz. It will be pulsed operation with a 40% maximum duty cycle. In a one second time frame there will be a maximum of 400 each one millisecond pulses and 600 milliseconds of zero power with the 400 millisecond pulse being evenly spaced in one second. The signal will be 25Mhz wide beginning with a frequency point and terminating 26 Mhz additional Mhz. The time period is 1 millisecond for the frequency to increase to 25 Mhz. Input power to the antenna will be the maximum power of the E4300 signal generator is capable of and that is +13 dBm. The maximum keying speed is not applicable. The pulse repetition interval will be 40% of the duty cycle with 1 millisecond pulse duration.

2nd Waveform –

Signal will be generated with the following parameters. The generator will use an internal pseudo random noise data sequence to generate a portion of the modulating data. An interface laptop computer will provide the remaining data stream to fill out the modulation data stream to 802.11 specifications. Maximum keying speed is not applicable. The frequency assignments for 802.11 are 2402 to 2495 MHz. These will be modified to 1200 to 1400 Mhz with the same 83.5 Mhz bandwidth. The same number of hop channels will be utilized, 79 channels. The same GFSK 2 level modulation will be used at the same 1 Mbps rate.

Beam width information. The path length will be limited to 500 feet to the reflector. The beam width is estimated at 30 degrees of range.

This research is intended to compare two emission types, the first type is the traditional radar LFM waveform and the second type is a spread spectrum type emission. For this comparison, a simple 802.11 public waveform will be sufficient. A winRadio model 3500 Software defined radio (SDR) will be the common receiver. There will be two sets of software created and run on the SDR to make measurements of each emission and these will be downloaded into a laptop computer for analysis. The frequency band was chosen to take advantage of existing Lockheed Martin radar licenses, test sites and equipment sets. The research will have a development phase at Syracuse University. Lockheed Martin and Syracuse University School of Engineering have teamed to perform this research. This research is being funded by Lockheed Martin Corporation.