

From: Stacy Fairchild

To: Anthony Serafini

Date: August 22, 2006

Subject:

FCC STA 0514-EX-ST-2006

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Message:

The system being designed is composed of a single transmit antenna and a receive array composed of 28 Rx elements. The waveform is selectable and can be either a Multi-frequency continuous wave (MF-CW) or a frequency modulated continuous wave (FMCW) at X-band. The MFCW base frequency is set at 9.1 GHz.

The test involves using a prototype transmit antenna and full receive array to verify the system performance in terms of its capability to estimate range, range rate, and angle to a test target. The tests also confirm the ability to track a test target. The test involves setting the Rx/Rx antenna at a fixed location and using a frequency translating transponder as the test article. The Transmit antenna gain is less than 20-dB. The radar is used to estimate the range and angle of the transponder with respect to the receive array. The transponder is set at a nominal range of 1-Km from the radar. The transponder offset frequency is 300 MHz; resulting a frequency of 9.4 GHz. The transponder is composed of an X-band antenna with a gain of 15 dB. The transponder EIRP is less than 30 dBm.