

From: David Kenney

To: Leann Nguyen

Date: October 06, 2014

Subject: FCC File# 0848-EX-ST-2014

Message:

From: David Kenney [mailto:David.Kenney@segmail.com]

Sent: Monday, October 06, 2014 3:00 PM

To: Leann Nguyen

CC: Curry, Justin

Subject: RE: FOPEN License request denied

Response should highlight the following:

• FOPEN is a foliage penetration radar with a maximum detection range of less than 300 meters through the woods. UHF/AM operations are not likely to occur within this range. It is recommended that the FAA restrict its search to a 1 km range which is well beyond FOPEN detection capability in foliage

• FOPEN spreads its power over a 50 MHz bandwidth, so narrowband UHF/AM operations only see a fraction of the total power transmitted by FOPEN. It is more likely that narrowband UHF/AM signals will disrupt FOPEN coherency

1. Electric field strength of FOPEN (50 W peak power, 10 dBi gain)
1. at 3 m = 40.8 V/m peak, 0.6487 V/m average
2. at 300 m = 0.408 V/m peak, 0.0065 V/m average
3. at 1000 m = 0.122 V/m peak, 0.0019 V/m average
4. Signal is spread over 50 MHz of bandwidth so density per MHz of bandwidth is 50 times less.

• FOPEN is a pulsed Doppler radar, not a CW radar, and, as such, our maximum duty cycle is very low. Duty cycle of FOPEN with pulses 1-5 enabled is:

1. $(.25+.5+1+2+4)*1e-6/(1/2048) = 0.0159$

• Transmitted signals are Band Pass Filtered to 225-275 MHz, with >40 dB stop band attenuation at frequencies less than 216 MHz or greater than 290 MHz

• FOPEN employs a directive antenna with 10 dB gain, 45 deg beamwidth and >30 dB front to back ratio

Dave Kenney

410-381-8740

Alternative Contact Fred Simone Engineering Manager 631-755-7337