



**RADIO PHYSICS**

## **Supplemental Statement of Radio Physics Solutions**

### **FCC Experimental License File 1666-EX-ST-2017**

This application is demonstrating to potential clients a concealed threat detection solution – MiRTLE 30. This technology has been developed by RPS in the United Kingdom and tested there for the Home Office. Radio Physics MiRTLE® patented technology fuses proprietary millimeter wave radar techniques with artificial intelligence to provide instant standoff threat detection of concealed person borne threats. The system is optimized to detect person borne suicide bomb vests and assault weapons. Radio Physics plans to expand the detection capability to include hand guns and knives. MiRTLE's stand-off detection capability remains unmatched and is gaining traction as a critical system for a wide range of security applications.

We are seeking permission for brief demonstrations in California, Maryland, Virginia and DC to local, state, and federal government potential users of up to 2 units.

We believe that the technology being tested here is "new technology" in the context of 47 U.S.C. 157. Therefore we ask that this be treated under the provisions of Section 7, particularly with respect to the burden test of § 157(a):

Any person or party (other than the Commission) who opposes a new technology or service proposed to be permitted under this chapter shall have the burden to demonstrate that such proposal is inconsistent with the public interest. (Emphasis added)

The unit to be tested is designated here MiRTLE 3x and uses less bandwidth than the unit being developed and tested in UK in order to minimize regulatory complexity under FCC Rules. The MiRTLE 3x will be limited in emissions to the band 81-86 GHz which also contains Fixed Service units under the "licensed light" provisions of Part 101, Subpart Q (47 C.F.R §§ 101.1501,1527)

The use of this equipment will be indoor only and we request such a restriction as a special condition in order to assure other users that this test will not interfere with them. At this frequency range normal building material is essentially opaque. Furthermore the maximum elevation angle of the 35 dBi antenna will be zero degrees, also protecting licensed users in this band.

We recognize that there may be federal users in this band and would be glad to give NTIA several days' notice of any new operating location in the 4 requested jurisdictions in a coordination process. However, since the expected operating locations will generally be shopping centers we suspect that proximity to federal users in the same band will be unlikely.

### **Technical Issues in Application**

The transmitter in this test will have a power of 8 mW and will be feeding a 35 dBi antenna.

The maximum elevation angle will be zero degrees. The azimuthal angle will vary as the antenna is rotated to look at various objects in the indoor location. The antenna will have a maximum height of 2m and will only be used at indoor locations.

All exposed surfaces of the device will comply with FCC RF safety limits.

The STOP BUZZER contact for this experiment is Ed Godere who can be reached at (617) 513-4156, edgodere@rpssys.com

Any questions about this application should be directed to Dr. Michael Marcus, consultant to RPS, 301-229-7714, mjmarcus@marcus-spectrum.com

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