

SUBJ: Proposed Approval for Testing Persistent Systems Wave Relay Data Downlink System for testing with the KRIV FOX network.

Description:

Persistent Systems, LLC has developed a data downlink system for use with airborne and ground terminal users. FOX has requested testing of the Persistent Systems Data Downlink for evaluation of this technology for mobile and airborne operations. Testing with FOX is scheduled for JAN-June 2018, setup and training will begin as soon as a grant is approved (please see requested dates below). To facilitate testing and evaluation, Persistent Systems is requesting that AFTRCC approve the following test and evaluation plan.

Frequency Requested: 2377.00 MHz

Duration of Program: 180 days (JAN –JUL 2018)

Program Notes: 2377.00 MHz is the preferred frequency to provide a consistent benchmark for testing and evaluation, however any frequency from 2360.00 to 2390.00 MHz can be utilized. Frequency change can be facilitated from the ground should the need to do so arise. Planned testing and demonstration can take place during daytime and/ or night time hours as needed. A seven (7) day week is planned for testing and evaluation.

Note: Map & Radio Specifications on following page for program plans discussed below.

Persistent Systems, LLC and KRIV FOX will operate primarily in the 50MIRAD area shown in the map below daily as needed for testing. A ground antenna will be located at 4261 SW Freeway Houston, Texas 77027 (29.728493°N, -95.446828°W). The ground station antenna is omni directional and is intended to maintain a link to mobile transmit stations. The MIRAD for this request is 50mi (80.5km) to allow for max range testing. Ground check use is the primary intent, no aircraft operating at this time.

Testing will cover systems operation, real-time telemetry data, and high definition full motion video from remote ground station(s). Throughout the program period, frequency changes and/ or complete shutdown of all radiating sources from the Wave Relay units can be accomplished from the ground within 30 minutes of notification.

For stop buzzer please contact Jeffery Washington at (816) 559-1866.

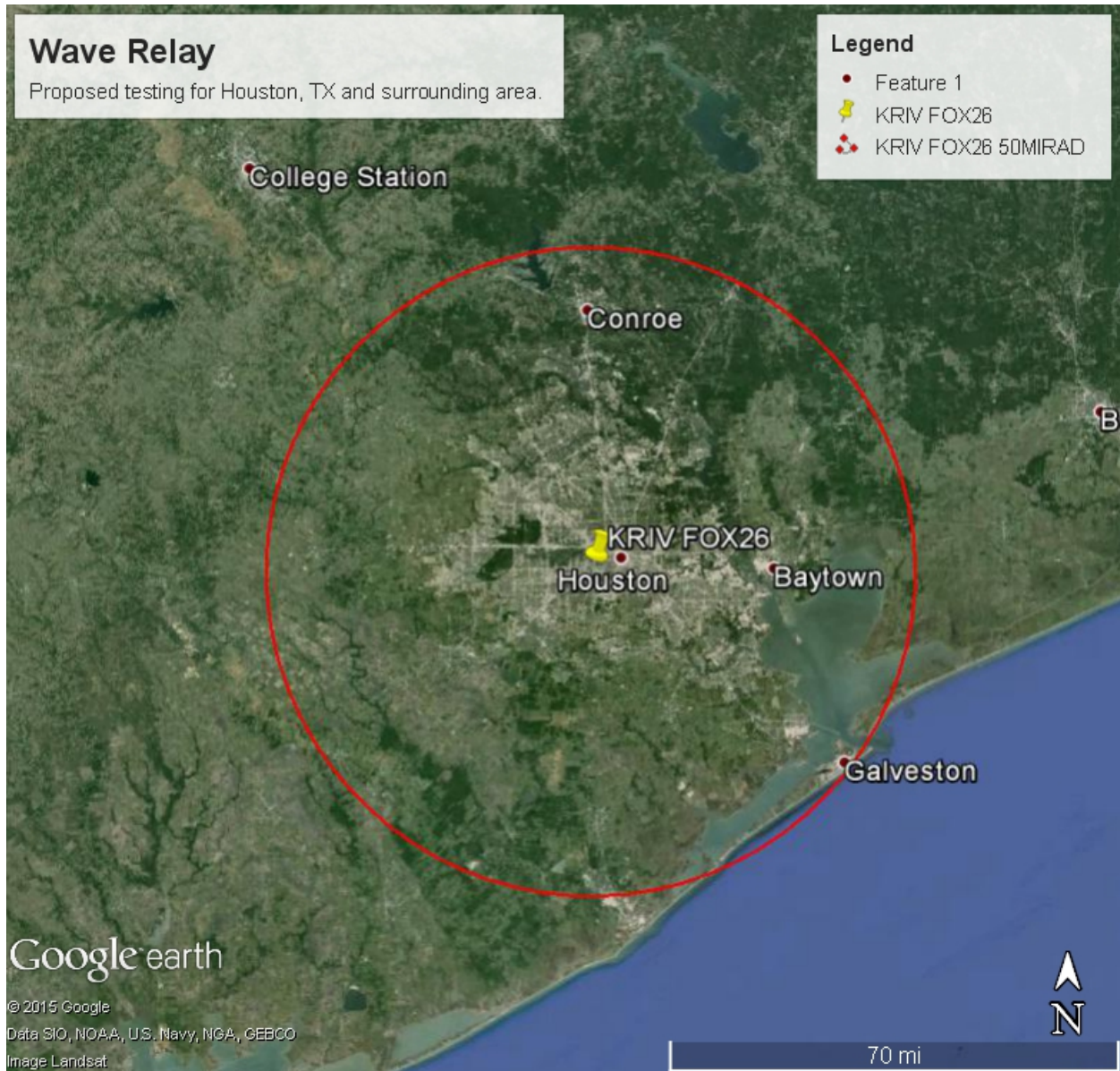


Figure 1 Area of Operations

Common Specifications for S-Band and L-Band Radio Modules

Frequency Range

S-Band: 2200 - 2507 MHz

L-Band: 1350 - 1390 MHz

RF Modulation

OFDM (64QAM, 16QAM, QPSK, BPSK)

Antenna Chains

3 Independent RF Chains

TX/RX Operating Modes

All MIMO modes from SISO to 3x3

Channel Bandwidth

5, 10, and 20 MHz

Software Configurable

Peak TCP Throughput

150 Mbps at 20 MHz Channel

MIMO Techniques

Maximal Ratio Combining

Space-Time Block Coding

Spatial Multiplexing

Max. Aggregate Transmit Power

6W (2W per RF Chain)

ISM Band Certifications

FCC Part 15 Subpart C, 15.247

RSS-247, Issue 1, May 2015

RSS-GEN, Issue 4, November 2014

ANSI C63.10: 2013

ANSI C63.4: 2014

TX Power Control

33 to 16.5 dBm, 0.5 dB per step

Power Control Accuracy

+/- 2 dB

Frequency Accuracy

+/- 4 ppm, max.

Spurious Output, Harmonic

-53 dBc

Spurious Output, Non-Harmonic

-65 dBc

Minimum Receiver

Sensitivity

-98 dBm at 5 MHz bandwidth, BPSK

Max. Peak

Consumpt

40W (3 Ch)

Power Co

1.9W (3 Ch)

Power Co

Standby

0.15W

Operating

-40°C to +

ESD Prote

+/- 8KV Cc

per IEC 61

Dimension

3.8 x 2.6 x 1

9.7 x 6.6 x

Weight

4.6 oz

130 g

Figure 2 Radio Specification