

Re: FCC ID QF74108F  
Applicant: Geophysical Survey Systems, Inc.  
Correspondence Reference Number: 24259  
731 Confirmation Number: EA454448

1) Upload a plot and table of data to show the -10 dB points. The plot should consist of max hold PEAK detector field strength level measured in any direction versus frequency. The field strength measurement for these points must account for non-linearities across the band that would be on the spectrum plot (ie: antenna and amplifier is not equal across the band). Submit a procedure for obtaining the peak plot used to determine the -10 dB points. Indicate any preamplifiers used in the test setup.

A description of the test procedure is contained in contained in section 3.2 of the revised test report.

All data is corrected for antenna factor, preamplifier and cable loss.

A list of preamps used is shown in 3.2.2(2) and contained in the equipment list in Section 8.

The data is acquired by computer and consists of 400 points. A table of data is unwieldy and extraneous. All data is contained in the plot (Figure 3.2-1).

2) The test report does not contain enough information to determine whether the simulated RMS calculation is correct. Please provide the following information.

a) What were the VBW settings?

- RBW, VBW, sweep time are listed in 4.2.2(5)

b) What detector function did you use for obtaining the level at each point?

- detector function is listed in 4.2.2(5)

c) You indicated measurements were made from T<sub>max</sub>-.5mS to T<sub>max</sub>+.5mS. What analyzer settings were used to implement this?

- Based on previous FCC comments, calculation in 1ms window is not required for the alternate test method. Therefore, 1ms calculation is no longer used. Calculations are performed using data taken during the sweep time specified in the report.

c) What was the sweep time of the analyzer?

- sweep time information is contained in 4.2.2(5)

\*\*\*Additional information or tests may be requested depending on whether the proper measurements were made. Since you are not using an RMS detector, measurements must agree with the Measurement Procedure #3 in Appendix F in the Report and Order Docket 98-153 for making RMS measurement calculations when using an analyzer that does not incorporate an RMS detector.

3) The table 1 indicates measurements were at 3 meters while the Antenna factor lists Antenna factor dB(1/m). The antenna factor should that for 3 meters. Please explain/correct. Provide the antenna factor chart for the antennas used. What is the manufacturer and model no. of the antenna used. Verify that the measurements listed in Table 2 and 3 which were performed at 1 meter, have the proper 1 meter antenna factors for the antenna used.

The unit shown for antenna factor was misinterpreted. The dB(1/m) is an indication of antenna factor in general (dB/m) necessary to get final data in dBuV/m. Antenna factors used are the factors appropriate to the specified test distance(s)

A list of equipment (including calibration dates) has been added as Section 8. A table and/or plot of antenna factors is extraneous information. The antenna factor at each frequency is included in the tables of data.

4) Indicate compliance with 15.503(f). The device must be designed to operate when in contact with the ground and have shielding to direct emissions toward the ground. In addition, imaging systems must have a manual switch which causes the transmitter to cease within 10 seconds.

Section 15.503(f) requires operation in contact with or within 1m of the ground. The 4108F operates 1m above ground and was tested in that configuration. Section 15.503(f) is a definition and indicates that a GPR achieves its function by directing energy into the ground. The test results show that the equipment complies with the RMS and QP limits in normal operating conditions.

5) Indicate compliance with 15.509(g), the label information must be on the device. Show where this label will be placed on the device.

A revised exhibit showing the wording of the label has been submitted.

6) Provide complete schematics. The schematics should show the Remote Control System with the kill switch circuitry.

The remote control system is a Class A approved PC. The EUT does all of the signal generation, transmitting and processing. The 'kill switch' is a contact closure at the end of the cable. The microprocessor on the radar board in the EUT processes the contact closure and disables the transmitter.

7) What is the center frequency? Show calculation.

The center frequency calculation and result is shown in Section 3.3

8) The data taken with a horn antenna (this application used a horn above 960 MHz) should have the horn facing the radiating head of the device. Submit new data as necessary.

During the testing reported in the revised report, all data below 1000MHz is taken with a log periodic antenna. Above 1000MHz, a horn antenna is used and aimed at the EUT, as described in 4.2.2(13) and (17)