COMPLIANCE WORLDWIDE INC.
TEST REPORT 407-15R1

In Accordance with the Requirements of

Industry Canada RSS 220, Issue 1, March 2009
Federal Communications Commission 47 CFR Part 15, Subpart F
Technical Requirements for Ground Penetrating Radar Systems
SAR Test Exclusion per KDB 447498 D01 v06 and IC RSS-102

Issued to

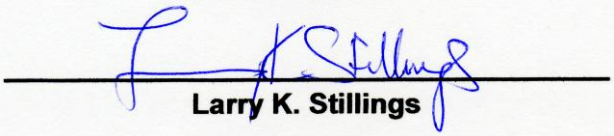
Geophysical Survey Systems, Inc.
40 Simon Street
Nashua, NH 03060-3075
603-893-1109

For the
StructureScan Mini XT

FCC ID: QF7MINIXT
IC: 8498A-MINIXT

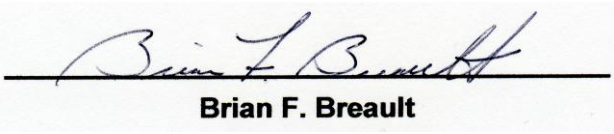
Report Issued on December 27, 2015
Revision R1 Issued on January 19, 2016

Tested by



Larry K. Stillings

Reviewed By



Brian F. Breault

6. Measurement Data (continued)

6.7. Public Exposure to Radio Frequency Energy Levels (1.1307 (b)(1)), KDB 447498 D01 v06, RSS-GEN 5.5, RSS 102

6.7.1. SAR Test Exclusion for UWB transmitter

Requirement: Portable devices are subject to radio frequency radiation exposure requirements as explained in FCC KDB 447498 D01 General RF Exposure Guidance v06, dated October 23, 2015.

For a 1-g SAR, the test exclusion result must be ≤ 3.0 and ≤ 7.5 for 10-g extremity SAR.

Test Notes: The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by the following formula:

$$\text{SAR Test Exclusion} = \frac{P_{MAX}}{d_{MIN}} \times \sqrt{f_{(GHz)}} \quad (1)$$

P_{MAX}	mW	Maximum power of channel, including tune-up tolerance
d_{MIN}	mm	Minimum test separation distance, mm (≤ 50 mm)
$f_{(GHz)}$	GHz	$f_{(GHz)}$ is the RF channel transmit frequency in GHz (>100 MHz and <6 GHz)

Power and distance are rounded to the nearest mW and mm before calculation

The result is rounded to one decimal place for comparison

The values 3.0 and 7.5 are referred to as numeric thresholds below

Per KDB 447498 Appendix A SAR Exclusion Threshold at 50 mm is 274 mW at 300 MHz. Extremity SAR is 2.5 times this value or 685 mW at 300 MHz.

The manufacturer's mechanical drawing shows the distance of the EUT's antenna to the handle is 160 mm (see attached page).

Per KDB 447498 Appendix B the approximate power exclusion is 494 mW at 160 mm and 300 MHz.

SAR Test Exclusion = P((numeric threshold) + (160 – 50 mm)) x (f(MHz) /150)

Per IC RSS-102, Section 2.5.1 Table 1 devices operating ≤ 300 MHz and at a separation distance ≥ 50 mm shall be at or below 345 mW.

The power of the EUT is -0.22 dBm or 0.95 mW and therefore meets the SAR Test exclusion requirements of KDB 447498 D01 and IC RSS-102.

Compliance Worldwide, Inc. - 357 Main Street - Sandown, NH 03873
(603) 887 3903 Fax (603) 887 6445
www.complianceworldwide.com

6. Measurement Data (continued)

6.7. Public Exposure to Radio Frequency Energy Levels (1.1307 (b)(1)), KDB 447498 D01 v06, RSS-GEN 5.5, RSS 102

6.7.2. SAR Test Exclusion for 802.11b/g/n WiFi Module transmitter

Requirement: Portable devices are subject to radio frequency radiation exposure requirements as explained in FCC KDB 447498 D01 General RF Exposure Guidance v06, dated October 23, 2015.

For a 1-g SAR, the test exclusion result must be ≤ 3.0 and ≤ 7.5 for 10-g extremity SAR.

Test Notes: The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by the following formula:

$$\text{SAR Test Exclusion} = \frac{P_{MAX}}{d_{MIN}} \times \sqrt{f_{(GHz)}} \quad (1)$$

P_{MAX}	mW	Maximum power of channel, including tune-up tolerance
d_{MIN}	mm	Minimum test separation distance, mm (≤ 50 mm)
$f_{(GHz)}$	GHz	$f_{(GHz)}$ is the RF channel transmit frequency in GHz (>100 MHz and <6 GHz)

Power and distance are rounded to the nearest mW and mm before calculation

The result is rounded to one decimal place for comparison

The values 3.0 and 7.5 are referred to as numeric thresholds below

Per KDB 447498 Appendix A SAR Exclusion Threshold at 50 mm is 96 mW at 2450 MHz and 66 mW at 5200 MHz. Extremity SAR is 2.5 times these values or 240 mW at 2450 MHz and 165 mW at 5200 MHz.

The manufacturer's mechanical drawing shows the distance of the Embedded WiFi module to the handle is 119 mm (see attached page).

Per KDB 447498 Appendix B the approximate power exclusion is 696 mW at 110 mm and 2450 MHz and 666 mW at 5200 MHz.

SAR Test Exclusion = P((numeric threshold) + (110 – 50 mm)) x 10

Per IC RSS-102, Section 2.5.1 Table 1 devices operating at 2450 MHz and at a separation distance ≥ 50 mm shall be at or below 309 mW and at 5800 MHz at or below 106 mW.

The power of the WiFi Module shown in the original grant exhibit are below these levels and therefore meets the SAR Test exclusion requirements of KDB 447498 D01 and IC RSS-102.

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