



Canada

Exhibit: RF Exposure – FCC

FCC ID: 2AZ6A-GSIGCM

Report File #: 7169009616RF-000

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Client	Geosensors, Inc.	 Canada
Product	R-Series Ground Conductivity Meter	
Standard(s)	FCC KDB 447498:2015	

RF Exposure – FCC

The device is a mobile device intended to generally be used in such a way that a separation distance of at least 20 centimeters is normally maintained between the transmitter's radiating structure and the body of the user or nearby persons.

The EUT contains a 9kHz transmitter and a modularly certified 2400 – 2483.5 MHz DTS transmitter. For the 9kHz transmitter, an inquiry was submitted to FCC and the limits for both E-field and H-field in KDB publication 680106 may be used to show compliance for the EUT.

Radiofrequency Radiation Exposure Evaluation: Mobile Devices

Mobile devices shall be evaluated for RF radiation exposure according to the provisions of FCC §2.1091 and the MPE guidelines identified in FCC §1.1310.

As per FCC §1.1310 Table 1(B), the limit for Maximum Permissible Exposure (MPE) to radiofrequency electromagnetic fields for General Population/Uncontrolled Exposure in the frequency range of 300 MHz to 1.5 GHz is $f/1500 \text{ mW/cm}^2$ and in the frequency range of 1.5GHz to 100GHz is 1.0 mW/cm^2 . Where f = frequency in MHz.

The power density formula is given by:

$$P_d = (P_{out} * G) / (4 * \pi * R^2)$$

Where,

P_d = Power density in mW/cm^2

P_{out} = Conducted output power to antenna in mW

G = Numeric Antenna Gain

π = 3.1416

R = Separation distance in cm

Max power densities (P_d), for the Wi-Fi Module is shown below, as per the FCC approval grant.

Transceiver	FCC ID	Max Power Density (P_d) mW/cm^2
2.4GHz Wi-Fi	2AC7Z-ESP32WROOM32U	0.0132

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Supplementary Procedure for Assessing Compliance with Nerve Stimulation Exposure Limits

Purpose

Evaluation of RF Exposure test data for determining compliance of systems operating at frequencies below 100 kHz is provided on a case-by-case basis following an FCC KDB inquiry. An inquiry was submitted and the limits for both E-field and H-field in KDB publication 680106 may be used to show compliance for the EUT (R-Series Ground Conductivity Meter)

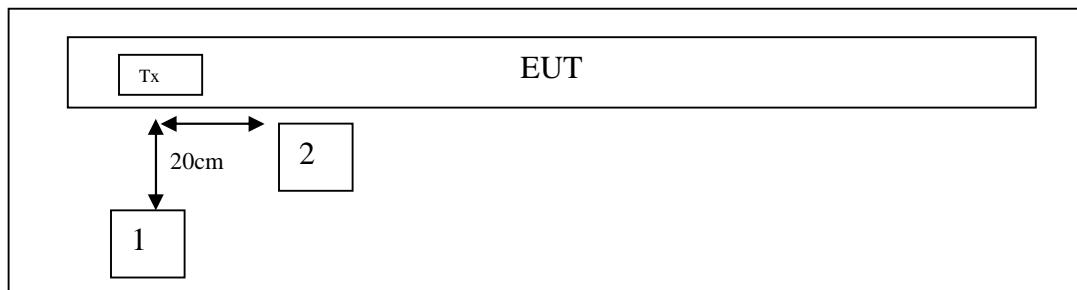
Limit(s) and Method

The limits applied are as per KDB 680106 Section 3 and as defined in SPR-002 Table 2. Whole Body/Torso/Head limits for general public exposure were applied as worst case. The method used is the Direct Measurement as detailed in SPR-002 section: 6.6.1.1 and KDB 680106 Section 3.a)(2). The minimum distance an operator will be from the EUT during normal operation would be more than 20cm. The measurements were maximized and done with the field probe 20cm away from the transmitter.

Results

The EUT passed the requirements. The EUT was checked along the roll angle to find the worst-case emission. The E- and H-field were measured with a field probe 20cm away from the transmitter at position 1 and 2 as shown in the diagram below and worst-case results were obtained at position 2. The results are indicated in the table below.

	Measured	Field Limit	Results
Electric Field (V/m)	10.40 V/m peak	83.0 V/m r.m.s	Pass
Magnetic Field (A/m)	28.59 A/m peak	90.0 A/m r.m.s	Pass

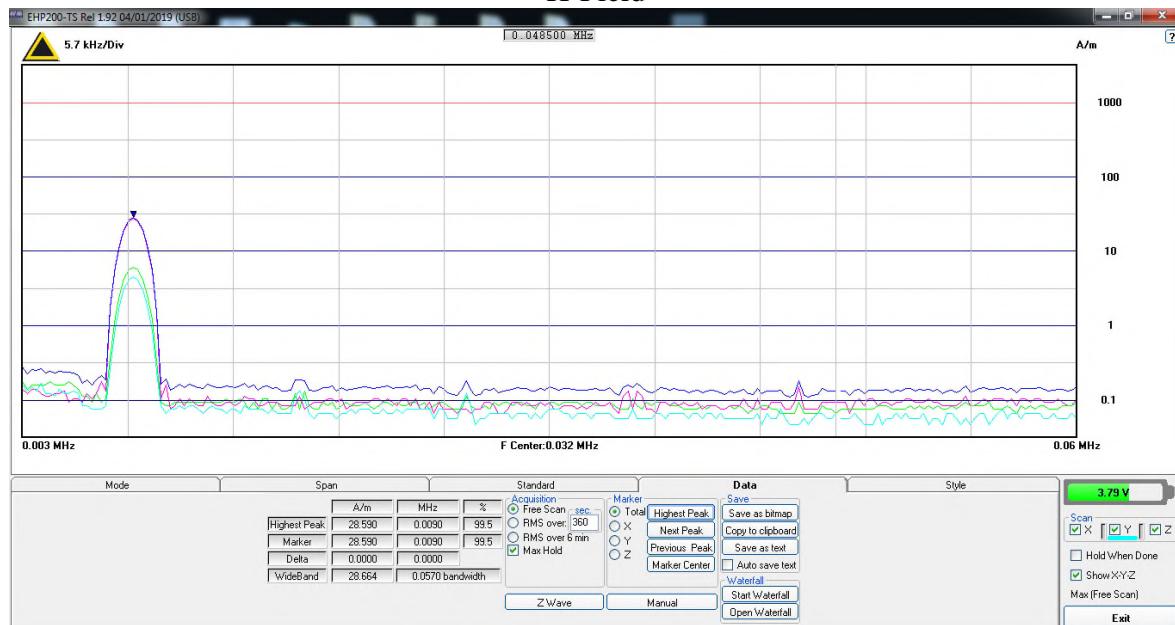


Field Probe Position Diagram

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Graphs

H-Field



E-Field



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Test Equipment List

Equipment	Model No.	Manufacturer	Last Calibration Date	Next Calibration Date	Asset SN
Electric and Magnetic Field Analyzer	EHP-200AC	Narda	Dec 17, 2019	Dec 17, 2021	170WX 90213
Emission Software	EHP200-TS	Narda	NCR	NCR	N/A