

6. Measurement Data (continued)

6.10. Public Exposure to Radio Frequency Energy Levels (1.1307 (b)(1))

6.10.1. SAR Test Exclusion Calculation

Requirement: Portable devices as defined in § 2.1093 of this chapter operating under Part 15 are subject to radio frequency radiation exposure requirements as specified in §§ 1.1307(b) and 2.1093 of this chapter. For a 1-g SAR, the test exclusion result must be ≤ 3.0 .

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:

$$\text{SAR Test Exclusion} = \frac{P_{\text{MAX}}}{d_{\text{MIN}}^2} \times \sqrt{f_{(\text{GHz})}} \quad (1)$$

P_{MAX} mW Maximum power of channel, including tune-up tolerance

d_{MIN} mm Minimum test separation distance, mm (≤ 50 mm)

$f_{(\text{GHz})}$ GHz $f_{(\text{GHz})}$ is the RF channel transmit frequency in GHz (>100 MHz and <6 GHz)

(1) FCC OET 447498 - Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies.

Result: The device under test meets the exclusion requirement detailed in FCC OET 447498.

Channel:		3	3	
Input:	P_{MAX}	0.9207	0.9400	mW
	d_{MIN}	5.000	5.000	mm
	$f_{(\text{GHz})}$	4.653	4.488	GHz
Test Exclusion:		0.397	0.398	
Limit Exemption:		3.000	3.000	

¹ Taken from the peak data in Section 6.8 of this test report (converted to mW).

The device does not exceed the test limit exemption and therefore a routine SAR Evaluation is not required

The Bluetooth and UWB Radios do not operate simultaneously.

6. Measurement Data (continued)

6.10. Public Exposure to Radio Frequency Energy Levels (1.1307 (b)(1), RSS-GEN, Issue 4 Section 3.2, RSS 102)

6.10.2. RF Exposure Evaluation

Requirement: SAR evaluation is required if the separation distance between the user and/or bystander and the antenna and/or radiating element of the device is less than or equal to 20 cm, except when the device operates at or below the applicable output power level (adjusted for tune-up tolerance) for the specified separation distance defined in Table 1. Portable devices are subject to radio frequency radiation exposure requirements.

6.10.3 RF Exposure for devices that operate above 6 GHz

Center Frequency (GHz)	MPE Distance (cm)	DUT Output Power (dBm EIRP)	DUT Antenna Gain (dBi)	Power Density		FCC Limit	ISED Limit
				(mW/cm ²)	(W/m ²)		
	(1)	(2)	(3)	(4)		(5)	(6)
6.4860	5	-0.19	0.0	0.0030468	0.0304684	1	10
6.4890	5	-0.28	0.0	0.0029844	0.0298435	1	10
6.4910	5	-0.47	0.0	0.0028566	0.0285660	1	10
6.2371	5	-0.58	0.0	0.0027852	0.0278516	1	10

$$PD = \frac{OP + AG}{(4 \times \pi \times d^2)}$$

- Reference CFR 2.1093(b): For purposes of this section, a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 5 centimeters of the body of the user.
- Section 6.8 of this test report.
- Data supplied by the client. Antenna manufacturers data sheet.
- Power density is calculated from field strength measurement and antenna gain.
- Reference CFR 1.1310, Table 1: Limits for Maximum Permissible Exposure (MPE), Section (B): Limits for General Population/Uncontrolled Exposure.
- Reference IESD RSS-102 Table 4 RF Field Strength Limits for Devices Used by the General Public (Uncontrolled Environment)

6. Measurement Data (continued)**6.10. Public Exposure to Radio Frequency Energy Levels (RSS-GEN, RSS-102)****Public Exposure to Radio Frequency Energy Levels RSS-GEN, Issue 4 Section 3.2, RSS 102****6.10.4. RSS 102 Issue 5 Exemption**

Requirement: SAR evaluation is required if the separation distance between the user and/or bystander and the antenna and/or radiating element of the device is less than or equal to 20 cm, except when the device operates at or below the applicable output power level (adjusted for tune-up tolerance) for the specified separation distance defined in Table 1. Portable devices are subject to radio frequency radiation exposure requirements.

Test Notes: The limit was taken from Table 1 of RSS-102 Issue 5. For limb-worn devices where the 10 gram value applies, the exemption limits for routine evaluation in Table 1 are multiplied by a factor of 2.5.

Results: Compliant

Channel	Frequency	Separation Distance	Maximum Power	RSS-102 Limit	Result
	MHz	mm	mW	mW	
3	4653	≤5	0.921	3.75	Compliant
3	4488	≤5	0.940	3.93	Compliant