6. Measurement Data (continued)

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

6.11.1 RF Exposure for devices that operate above 6 GHz

Requirements: 2.1093(b): 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 20 centimeters of the body of the user.

2.1093 (d): Portable devices that transmit at frequencies above 6 GHz are to be evaluated in terms of the MPE limits specified 47 CFR 1.1310. Measurements and calculations to demonstrate compliance with MPE Field strength or power density limits for device operating above 6 GHz should be made at a minimum distance of 5 cm from the radiating source.

1.1310, Table 1: Limits for Maximum Permissible Exposure (MPE), Section (B): Limits for General Population/Uncontrolled Exposure for devices that operate between 1500 to 100,000 MHz is 1.0 mW/cm^2 using a 30 minute averaging time.

Center Frequency (GHz)	MPE Distance (cm)	DUT Peak Output Power (dBm)	DUT Antenna Gain (dBi)	DUT Peak Power (mW)	Power Density		FCC Limit (mW/cm^2)
					(mW/cm^2)	(W/m^2)	
	(1)	(2)	(3)		(4)		(5)
6.497	5	-2.85	0.0	0.519	0.0016514	0.0165139	1
6.493	5	-7.67	0.0	0.171	0.0005443	0.0054431	1

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

1. 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.
2. Section 6.7 of this test report. Measured Peak Power at 3 Meters.
3. Antenna Gain included in the measured values of Section 6.7
4. Power density is calculated from field strength measurement and antenna gain.
5. Reference CFR 1.1310, Table 1: Limits for Maximum Permissible Exposure (MPE), Section (B): Limits for General Population/Uncontrolled Exposure.

Note: This is the peak power of the device in a 50 MHz bandwidth, the time averaged power is significantly lower. **20 * LOG (1.3 mS / 12.5 mS) = -19.66 dB**

The BLE Module and UWB radios do not operate simultaneously.

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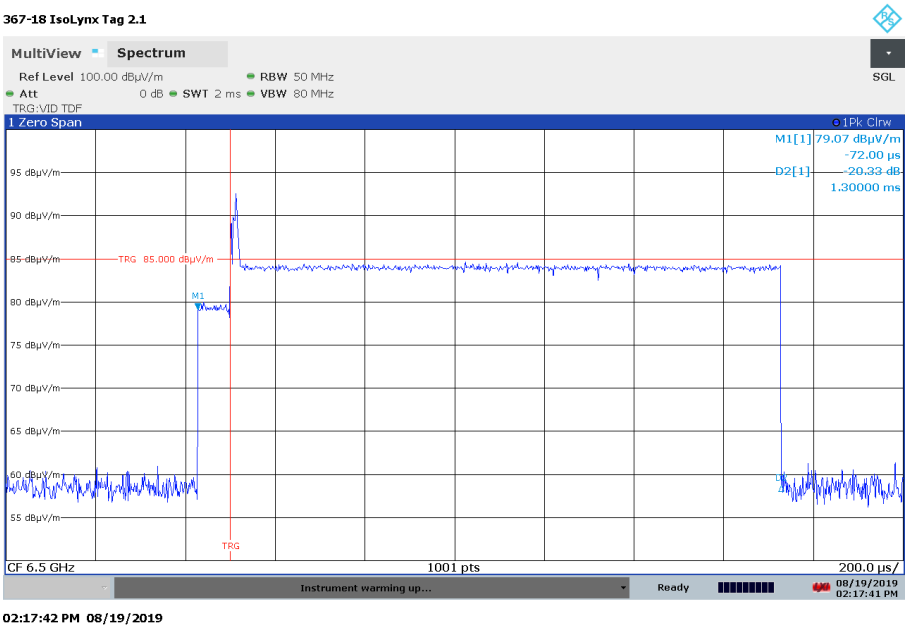
6. Measurement Data (continued)

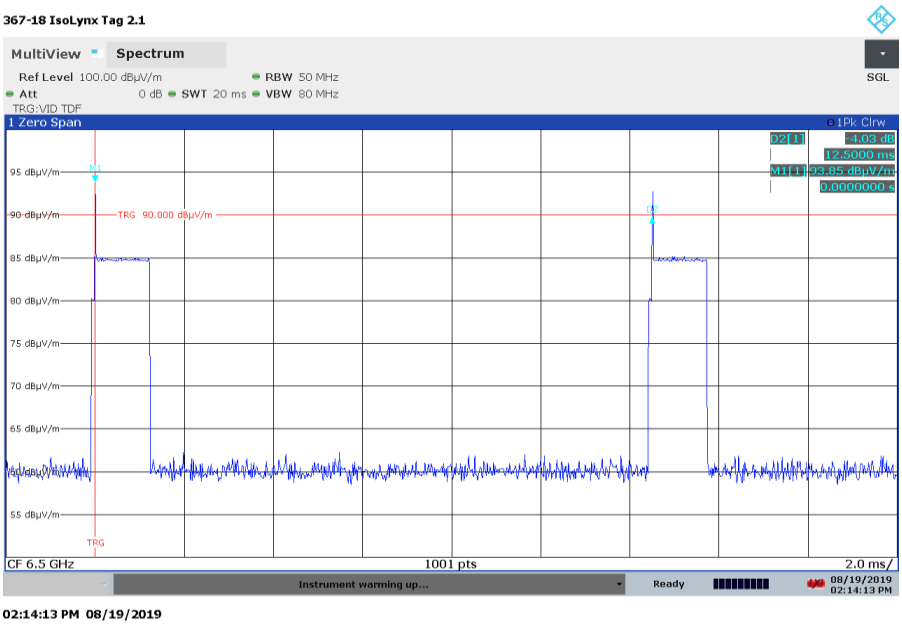
6.11. Public Exposure to Radio Frequency Energy Levels (1.1307 (b)(1))

6.11.1 RF Exposure for devices that operate above 6 GHz (continued)

Worst Case Duty Cycle of the device Burst Length = 1.3 mS



Repetition Time = 12.5 mS



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6. Measurement Data (continued)

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

6.11.1 RF Exposure for devices that operate above 6 GHz (continued)

Time averaged power when using the worst case peak power at close distances

Worst Case Peak Output Power of -2.85 dBm or 0.519 mW shows the antenna could be used at a distance of 0.203 cm (2.03 mm) from the body and still be under the FCC Limit of 1 mW/cm^2

Frequency (GHz)	MPE Distance (cm)	DUT Output Power (dBm)	DUT Antenna Gain (dBi)	DUT Output Power milliWatts	Power Density		FCC Limit (mW/cm²)
					(mW/cm^2)	(W/m^2)	
	(1)	(2)	(3)		(4)		(5)
6.497	0.2032	-2.85	0.0	0.519	0.9998681	9.9986814	1

Further reduction is achieved using the time averaged power of the device that is 19.66 dB lower than the peak power. The time averaged power of -22.51 dBm or 0.006 mW results in a distance of 0.0212 cm (0.212 mm) from the body which provides a calculated exposure below the 1 mW/cm^2 limit.

Frequency (GHz)	MPE Distance (cm)	DUT Output Power (dBm)	DUT Antenna Gain (dBi)	DUT Output Power milliWatts	Power Density		FCC Limit (mW/cm²)
					(mW/cm^2)	(W/m^2)	
	(1)	(2)	(3)		(4)		(5)
6.497	0.0212	-22.51	0.0	0.006	0.9933869	9.9338687	1

A conservative measured distance of the actual end usage of the product results in a distance of at least 0.7 mm from the body when using the clip shown in the manual maintaining the antenna is on the side away from the body. That results in an exposure level significantly below the 1 mW/cm^2 limit.

Frequency (GHz)	MPE Distance (cm)	DUT Output Power (dBm)	DUT Antenna Gain (dBi)	DUT Output Power milliWatts	Power Density		FCC Limit (mW/cm²)
					(mW/cm^2)	(W/m^2)	
	(1)	(2)	(3)		(4)		(5)
6.497	0.7	-22.51	0.0	0.006	0.0009112	0.0091116	1

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