

Report SUHR/2021/B001002

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### **TEST REPORT**

Application No.: HR/2021/B0010

Applicant: Quectel Wireless Solutions Co., Ltd.

Address of Applicant: Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road,

Minhang District, Shanghai, China 200233

Manufacturer: Quectel Wireless Solutions Co., Ltd.

Address of Manufacturer: Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road,

Minhang District, Shanghai, China 200233

**EUT Description:** Wi-Fi & Bluetooth Module

Model No.: AF51Y

Trade Mark: QUECTEL

FCC ID: XMR202201AF51Y

Standards: 47 CFR FCC Part 2, Subpart J

47 CFR Part 15, Subpart C

**Date of Receipt:** 2022/2/12

**Date of Test:** 2022/2/20 to 2022/3/11

Date of Issue: 2022/4/2

Test Result : PASS \*

\* In the configuration tested, the EUT detailed in this report complied with the standards specified above.

Authorized Signature:

Panta Sun Wireless Laboratory Manager



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#### 1 Version

Revision Record						
Version	Chapter	Date	Modifier	Remark		
01		2022/3/15		Original		
02		2022/4/2		Add A2LA+ILAC		
				logo		



Remark: This report supersedes our previous report SUHR/2021/B001002, issued on 2021-03-15, which is hereby deemed null and void.



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2 Test Summary

Test Item	FCC Rules No.	Test Method	Test Result	Result
Antenna Requirement	15.203/247(b)		Clause 4.1	PASS
AC Power Line Conducted Emission	15.207	ANSI C63.10 2013	Clause 4.2	PASS
Conducted Output Power	15.247 (b)(3)	ANSI C63.10 2013	Clause 4.3	PASS
DTS (6 dB) Bandwidth & 99% Occupied Bandwidth	15.247 (a)(2)	ANSI C63.10 2013	Clause 4.4	PASS
Power Spectral Density	15.247 (e)	ANSI C63.10 2013	Clause 4.5	PASS
Band-edge for RF Conducted Emissions	15.247(d)	ANSI C63.10 2013	Clause 4.6	PASS
RF Conducted Spurious Emissions	15.247(d)	ANSI C63.10 2013	Clause 4.7	PASS
Radiated Spurious Emissions	15.205/15.209	ANSI C63.10 2013	Clause 4.8	PASS
Restricted bands around fundamental frequency (Radiated Emission)	15.205/15.209	ANSI C63.10 2013	Clause 4.9	PASS



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### 3 General Information

### 3.1 Details of Client

Applicant:	Quectel Wireless Solutions Co., Ltd.
Address of Applicant:  Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianl Road, Minhang District, Shanghai, China 200233	
Manufacturer:	Quectel Wireless Solutions Co., Ltd.
Address of Manufacturer:	Building 5, Shanghai Business Park Phase III (Area B), No.1016 Tianlin Road, Minhang District, Shanghai, China 200233

#### 3.2 Test Location

Company:	SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd
Address:  South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industria Area, China (Jiangsu) Pilot Free Trade Zone	
Post code:	215000
Test engineer:	Weller Liu, King-p Li, Nature Shen, Tizzy Song

### 3.3 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

#### • A2LA (Certificate No. 6336.01)

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 6336.01.

#### • Innovation, Science and Economic Development Canada

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0120.

IC#: 27594.

#### • FCC –Designation Number: CN1312

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized as an

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Test Firm Registration Number: 717327



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### 3.4 General Description of EUT

EUT Description:	Wi-Fi & Bluetooth Module
Model No.:	AF51Y
Trade Mark:	QUECTEL
Hardware Version:	R1.0
Software Version:	AG525RGLAAR01A16M4G_OCPU _01.011 (Remark: the SW of branch is Post-CS[13]0.0.125.1)
Operation Frequency:	2400MHz~2483.5MHz fc = 2402 MHz + N * 2 MHz, where: -fc = "Operating Frequency" in MHz, -N = "Channel Number" with the range from 0 to 39.
Bluetooth version:	Bluetooth V5.2
Modulation Type:	GFSK
Number of Channel:	40
Datas Turasti	⊠Provided by client
Rates Type*:	1M PHY 2M PHY
Sample Type:	☐ Portable Device, ☑Module
Antenna Type:	⊠ External, ☐ Integrated
Antenna Gain*:	⊠Provided by client
Antenna Gain .	-1.38dBi(Ant2);
RF Cable*:	⊠Provided by client
RE Caple .	0.5dB
Note: *Since the above data and/o	or information is provided by the client relevant results or conclusions of this

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	Operation Frequency of each channel								
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency		
0	2402MHz	10	2422MHz	20	2442MHz	30	2462MHz		
1	2404MHz	11	2424MHz	21	2444MHz	31	2464MHz		
2	2406MHz	12	2426MHz	22	2446MHz	32	2466MHz		
3	2408MHz	13	2428MHz	23	2448MHz	33	2468MHz		
4	2410MHz	14	2430MHz	24	2450MHz	34	2470MHz		
5	2412MHz	15	2432MHz	25	2452MHz	35	2472MHz		
6	2414MHz	16	2434MHz	26	2454MHz	36	2474MHz		
7	2416MHz	17	2436MHz	27	2456MHz	37	2476MHz		
8	2418MHz	18	2438MHz	28	2458MHz	38	2478MHz		
9	2420MHz	19	2440MHz	29	2460MHz	39	2480MHz		

#### Remark:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The Lowest channel(CH0)	2402MHz
The Middle channel(CH19)	2440MHz
The Highest channel(CH39)	2480MHz



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#### 3.5 Test Environment

Environment Parameter	101.0 kPa Selected Values During Tests				
Relative Humidity	44-46 % RH Ambient				
Value	Temperature( $^{\circ}$ ) Voltage(V)				
NTNV	22~23	3.8			
LTNV	-40	3.8			
HTNV	85	3.8			

Remark:

NV: Normal Voltage NT: Normal Temperature

LT: Low Extreme Test Temperature HT: High Extreme Test Temperature

### 3.6 Description of Support Units

T		
Manufacturer	Description	Model
Quectel	Mother board	V2X&5G-EVB
Qualcomm	Test Software	QRCT4 tool
Dong Guan City GangQi Electronic Co.,Ltd	Adapter	QG36-120300-AX
JONKEY	USB cable	XY02-354-SAM-TYPE-C
Amphenol	Antenna	M3 MIMO Antenna

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### 4 Test results and Measurement Data

### 4.1 Antenna Requirement

Standard requirement: 47 CFR Part 15C Section 15.203 /247(c)

15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(b) (4) requirement:

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

The antenna is External on the main PCB and no consideration of replacement. The best case gain of the antenna is -1.38dBi(Ant2).



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### 4.2 AC Power Line Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.207					
Test Method:	ANSI C63.10: 2013					
Test Frequency Range:	150kHz to 30MHz					
Limit:	Frequency range(MHz)	Limit (dl	BuV)			
	Frequency range(MHZ)	Quasi-peak	Average			
	0.15-0.5	66 to 56*	56 to 46*			
	0.5-5	56	46			
	5-30	60	50			
	* Decreases with the log	arithm of the frequency.				
Test Procedure:	The mains terminal droom.	listurbance voltage test was o	conducted in a shielded			
	<ul> <li>room.</li> <li>2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.</li> <li>3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane.</li> <li>4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.</li> <li>5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to</li> </ul>					



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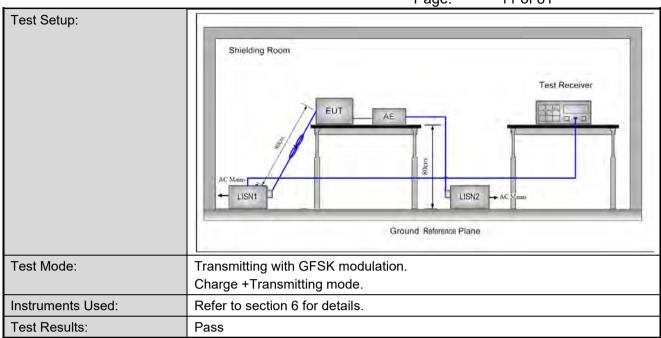
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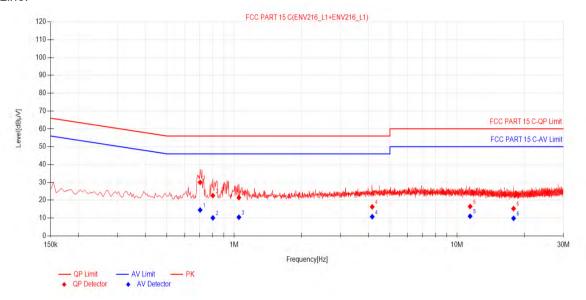
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#### Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

#### Live Line:



Fina	Final Data List								
NO.	Frequency [MHz]	Factor [dB]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict
1	0.7035	10.58	30.01	56.00	25.99	14.51	46.00	31.49	PASS
2	0.8025	10.50	22.56	56.00	33.44	10.10	46.00	35.90	PASS
3	1.0500	10.57	21.46	56.00	34.54	10.47	46.00	35.53	PASS
4	4.1640	10.72	16.29	56.00	39.71	10.74	46.00	35.26	PASS
5	11.4495	10.60	16.47	60.00	43.53	11.01	50.00	38.99	PASS
6	17.9385	10.47	15.28	60.00	44.72	9.84	50.00	40.16	PASS

#### Remark:

- 1. The following Quasi-Peak and Average measurements were performed on the EUT:
- 2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.



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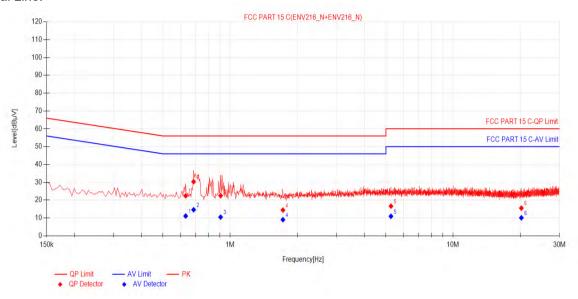
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#### **Neutral Line:**



Fina	Final Data List								
NO.	Frequency [MHz]	Factor [dB]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Verdict
1	0.6315	10.72	22.44	56.00	33.56	11.11	46.00	34.89	PASS
2	0.6855	10.79	30.37	56.00	25.63	14.64	46.00	31.36	PASS
3	0.9060	10.76	22.54	56.00	33.46	10.50	46.00	35.50	PASS
4	1.7250	10.76	14.44	56.00	41.56	9.05	46.00	36.95	PASS
5	5.2665	10.62	16.64	60.00	43.36	10.97	50.00	39.03	PASS
6	20.2650	10.40	15.55	60.00	44.45	10.10	50.00	39.90	PASS

#### Remark:

- 1. The following Quasi-Peak and Average measurements were performed on the EUT:
- 2. Final Test Level = Receiver Reading + LISN Factor + Cable Loss.



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### 4.3 Duty Cycle

The detailed test data see: Appendix



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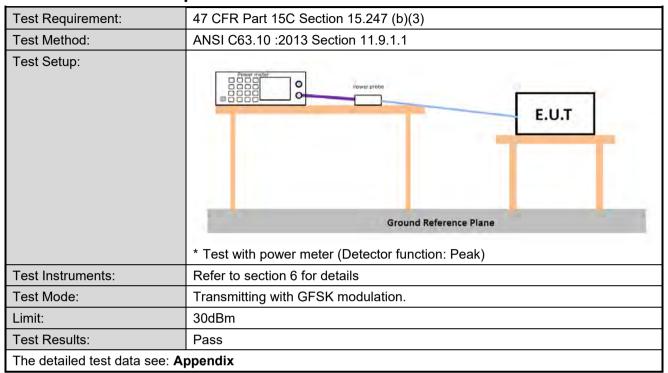
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### 4.4 Conducted Output Power





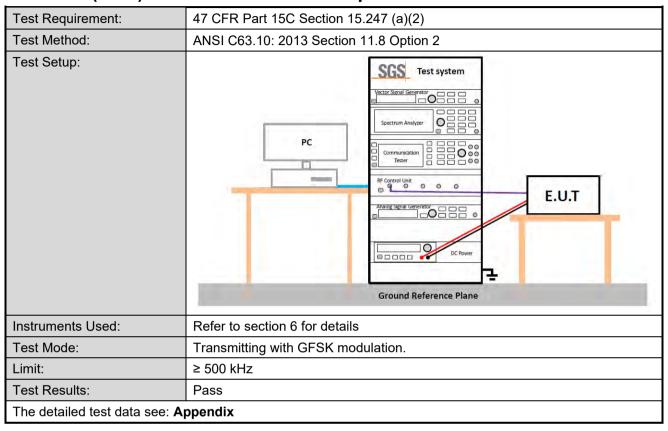
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### 4.5 DTS (6 dB) Bandwidth & 99% Occupied Bandwidth





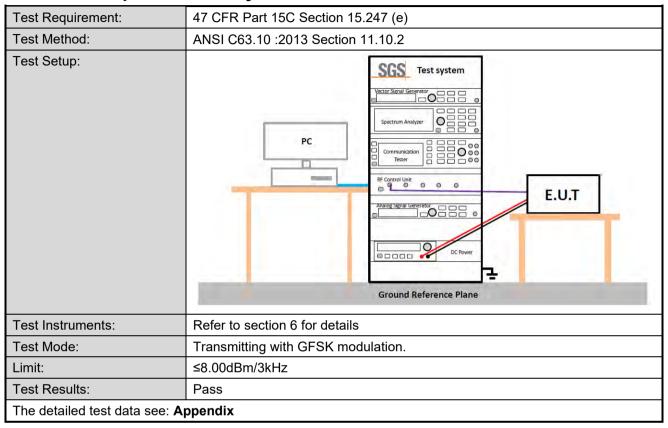
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### 4.6 Power Spectral Density





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### 4.7 Band-edge for RF Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.247 (d)					
Test Method:	ANSI C63.10: 2013 Section 11.13					
Test Setup:	PC    Spectrum Analyzer   O   O   O   O   O   O   O   O   O					
Instruments Used:	Refer to section 6 for details					
Test Mode:	Transmitting with GFSK modulation.					
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.					
Test Results:	Pass					
The detailed test data see: A	ppendix					



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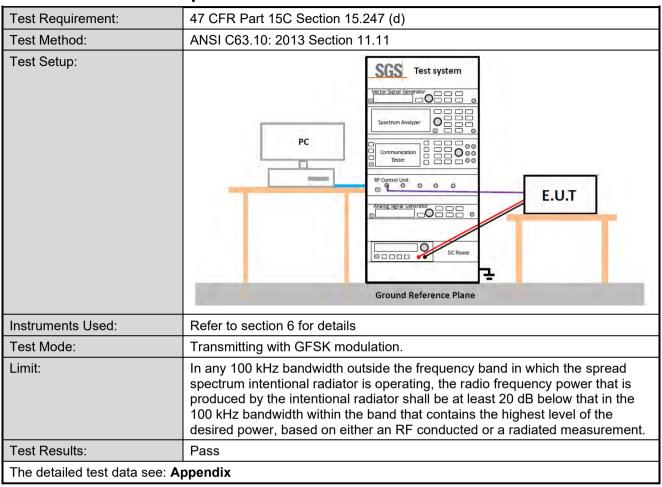
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### 4.8 RF Conducted Spurious Emissions





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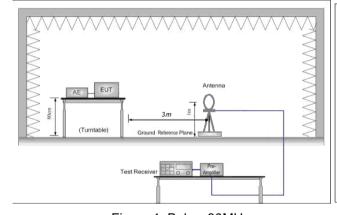
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### 4.9 Radiated Spurious Emissions

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205						
Test Method:	ANSI C63.10 :2013 Section 11.12						
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)						
Limit:	Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)		
	0.009MHz-0.490MHz	2400/F(kHz)	-	-	300		
	0.490MHz-1.705MHz 24000/F(kHz)						
	1.705MHz-30MHz	30	-	-	30		
	30MHz-88MHz	100	40.0	Quasi-peak	3		
	88MHz-216MHz	150	43.5	Quasi-peak	3		
	216MHz-960MHz	200	46.0	Quasi-peak	3		
	960MHz-1GHz	500	54.0	Quasi-peak	3		
	Above 1GHz	500	54.0	Average	3		
	Remark: 15.35(b),Unless	s otherwise specifi	ed, the limit	on peak radio f	requency		
	emissions is 20dB above	e the maximum pe	rmitted avera	age emission lir	mit		
	applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.						

#### Test Setup:



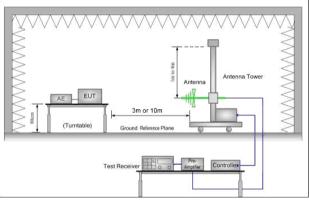


Figure 1. Below 30MHz

Figure 2. 30MHz to 1GHz



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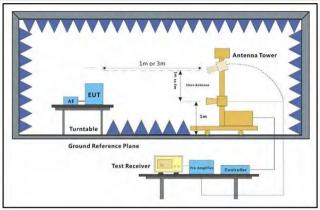


Figure 3. Above 1 GHz

#### Test Procedure:

- a. For below 1GHz(9KHz start), the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For above 1GHz(10th harmonic), the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation
- c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters(for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
- h. Test the EUT in the lowest channel, the middle channel, the Highest channel.
- i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the X axis positioning which it is worse case.
- j. Repeat above procedures until all frequencies measured was complete.
- k. The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line was not reported
- The disturbance above 18GHz was very low, and the harmonics were the highest point could be found when testing, so only the harmonics had been displayed.

#### **Test Configuration:**

Measurements Below 1000MHz

- RBW = 120 kHz
- VBW = 300 kHz
- Detector = Peak



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-	i age. Zz oi o i
	Trace mode = max hold
	Peak Measurements Above 1000 MHz
	• RBW = 1 MHz
	• VBW ≥ 3 MHz
	Detector = Peak
	Sweep time = auto
	Trace mode = max hold
	Average Measurements Above 1000MHz
	• RBW = 1 MHz
	• VBW ≥ [3 *RBW]
	• Detector = RMS (power averaging), if span / (# of points in sweep) ≤ (RBW / 2). Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied, then the detector mode shall be set to peak.
	Sweep time = auto
	Perform a trace average of at least 100 traces.
	Value = Reading + Factor(Antenna Factor + Cable loss – Preamplifier Factor).
Exploratory Test	Transmitting with GFSK modulation.
Mode:	Charge + Transmitting mode.
Final Test Mode:	Transmitting with GFSK modulation.
	Pretest the EUT at Charge + Transmitting mode,
	For below 1GHz part, through pre-scan, the worst case is the lowest channel. Only
	the worst case is recorded in the report.
Instruments Used:	Refer to section 6 for details
Test Results:	Pass
The detailed test data	see: Appendix



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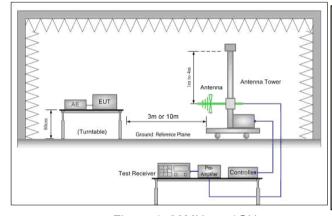
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### 4.10Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15C Section 1	47 CFR Part 15C Section 15.209 and 15.205					
Test Method:	ANSI C63.10: 2013 Section 11.12						
Test Site:	Measurement Distance: 3m	Measurement Distance: 3m (Semi-Anechoic Chamber)					
Limit:	Frequency	Limit (dBuV/m)	Remark				
	30MHz-88MHz	40.0	Quasi-peak				
	88MHz-216MHz	43.5	Quasi-peak				
	216MHz-960MHz	46.0	Quasi-peak				
	960MHz-1GHz	54.0	Quasi-peak				
	Above 1GHz	54.0	Average Value				
	Above IGHZ	74.0	Peak Value				

#### Test Setup:



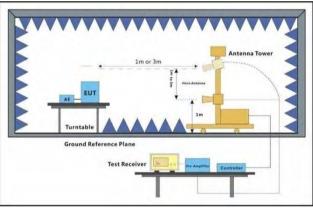


Figure 1. 30MHz to 1GHz

Figure 2. Above 1 GHz

#### Test Procedure:

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- g. Place a marker at the end of the restricted band closest to the transmit



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	frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel  h. Test the EUT in the lowest channel, the Highest channel  i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode,And found the X axis positioning which it is worse case.  j. Repeat above procedures until all frequencies measured was complete.
Test Configuration:	Measurements Below 1000MHz
- J	• RBW = 120 kHz
	• VBW = 300 kHz
	Detector = Peak
	Trace mode = max hold
	Peak Measurements Above 1000 MHz
	• RBW = 1 MHz
	• VBW ≥ 3 MHz
	• Detector = Peak
	• Sweep time = auto
	Trace mode = max hold     Average Magaziromenta Abevia 1000MHz
	Average Measurements Above 1000MHz  • RBW = 1 MHz
	• VBW ≥ [3 *RBW]
	• Detector = RMS (power averaging), if span / (# of points in sweep) ≤ (RBW / 2). Satisfying this condition may require increasing the number of points in the sweep or reducing the span. If this condition cannot be satisfied, then the detector mode shall be set to peak.
	Sweep time = auto
	Perform a trace average of at least 100 traces.
	Value = Reading + Factor(Antenna Factor + Cable loss).
Exploratory Test Mode:	Transmitting with GFSK modulation.
E: 1 =	Charge + Transmitting mode.
Final Test Mode:	Transmitting with GFSK modulation.
	Pretest the EUT at Charge + Transmitting mode.  Only the worst case is recorded in the report.
Instrumente Haadi	
Instruments Used:	Refer to section 6 for details
Test Results:	Pass
The detailed test data see	e: Appendix



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### 5 Measurement Uncertainty (95% confidence levels, k=2)

		, ,		
No.	Item	Measurement Uncertainty		
1	Total RF power, conducted	±0.54dB		
2	RF power density, conducted	±1.03dB		
3	Spurious emissions, conducted	±0.54dB		
4	Radio Frequency	±7.25x 10 <sup>-8</sup> GHz		
5	Duty Cycle	±0.37%		
6	Occupied Bandwidth	±7.25x 10 <sup>-8</sup> GHz		
7	Conduction Emission	± 2.9dB (150kHz to 30MHz)		
		± 3.13dB (9k -30MHz)		
		± 4.8dB (30M -1GHz)		
8	Radiated Emission	± 4.8dB (1GHz to 18GHz)		
		± 4.8dB (Above 18GHz)		



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6 Equipment List

- In the second								
Tonscend Test System								
<b>-</b>				Cal. date	Cal.Due date			
Equipment	Manufacturer	Model No.	Inventory No.	(yyyy-mm- dd)	(yyyy-mm- dd)			
Shielding Room	Brilliant-emc	N/A	SUWI-04-01-06	2021/5/8	2024/5/7			
Temperature and humidity meter	MingGao	TH101B	SUWI-01-01-07	2022/2/16	2023/2/15			
Signal Analyzer	ROHDE&SCHWARZ	FSV3030	SUWI-01-02-02	2021/5/28	2022/5/27			
DC Power Supply	HYELEC	HY3005B	SUWI-01-18-01	2022/2/19	2023/2/18			
Power meter	Anritsu	ML2495A	SUWI-01-31-01	2021/12/4	2022/12/3			
Pulse power sensor	Anritsu	MA2411B	SUWI-01-32-01	2021/12/4	2022/12/3			
Measurement Software	Tonscend	JS1120-3 Test System V 2.6.88.0336	SUWI-02-09-09	NCR	NCR			
Signal Analyzer	ROHDE&SCHWARZ	FSW43	SUWI-01-02-04	2021/5/28	2022/5/27			

CE Test Equipment									
Equipment	Manufacturer	Model No.	Model No. Inventory No.		Cal Due Date				
Shielding Room	Brilliant-emc	N/A	SUWI-04-03-01	2021/5/8	2024/5/7				
Artificial network	ROHDE&SCHWARZ	ENV216	SUWI-01-19-01	2022/2/16	2023/2/15				
Artificial network	ROHDE&SCHWARZ	ENV216	SUWI-01-19-02	2022/2/16	2023/2/15				
Measurement Software	Tonscend	JS32-CE V3.0.0.1	SUWI-02-09-05	NCR	NCR				
Temperature and humidity meter	MingGao	TH101B	SUWI-01-01-06	2022/2/16	2023/2/15				
Test receiver	ROHDE&SCHWARZ	ESR7	SUWI-01-10-01	2022/2/16	2023/2/15				



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	RSE Test Equipment 996-01									
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date					
Semi-Anechoic Chamber	Brilliant-emc	N/A	SUWI-04-02-01	2021/5/8	2024/5/7					
Temperature and humidity meter	MingGao	TH101B	SUWI-01-01-05	2022/2/16	2023/2/15					
Signal Analyzer	ROHDE&SCH WARZ	FSW43	SUWI-01-02-04	2021/5/28	2022/5/27					
Test receiver	ROHDE&SCH WARZ	ESR7	SUWI-01-10-01	2022/2/16	2023/2/15					
Receiving antenna	SCHWRZBECK MESS- ELEKTRONIK	VULB 9163	SUWI-01-11-01	2021/5/16	2022/5/15					
Receiving antenna	SCHWRZBECK MESS- ELEKTRONIK	BBHA 9120D	SUWI-01-11-02	2021/5/16	2022/5/15					
Receiving antenna	SCHWRZBECK MESS- ELEKTRONIK	BBHA 9170	SUWI-01-11-03	2021/5/14	2022/5/13					
Amplifier	Tonscend	TAP9K3G40	SUWI-01-14-01	2022/2/16	2023/2/15					
Amplifier	Tonscend	TAP01018050	SUWI-01-14-02	2022/2/16	2023/2/15					
Amplifier	Tonscend	TAP18040048	SUWI-01-14-03	2022/2/16	2023/2/15					
Active Loop Antenna	SCHWRZBECK MESS- ELEKTRONIK	FMZB 1519B	SUWI-01-21-01	2021/6/10	2022/6/9					
Measurement Software	Tonscend	JS32-RE V3.0.0.3	SUWI-02-09-04	NCR	NCR					
Measurement Software	Tonscend	JS32-RSE 3.0.0.2	SUWI-02-09-04	NCR	NCR					



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### 7 Photographs - Setup Photos

Refer to Appendix A.2 WLAN Setup Photos.



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# **Appendix**



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### DTS Bandwidth Test Result

TestMode	Antenna	Frequency[MHz]	DTS BW [MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
	2402	0.67	2401.67	2402.34	0.5	PASS	
BLE_1M	Ant2	2440	0.68	2439.67	2440.34	0.5	PASS
_		2480	0.67	2479.67	2480.34	0.5	PASS
		2402	1.15	2401.44	2402.59	0.5	PASS
BLE_2M	Ant2	2440	1.15	2439.44	2440.59	0.5	PASS
_		2480	1.16	2479.44	2480.59	0.5	PASS



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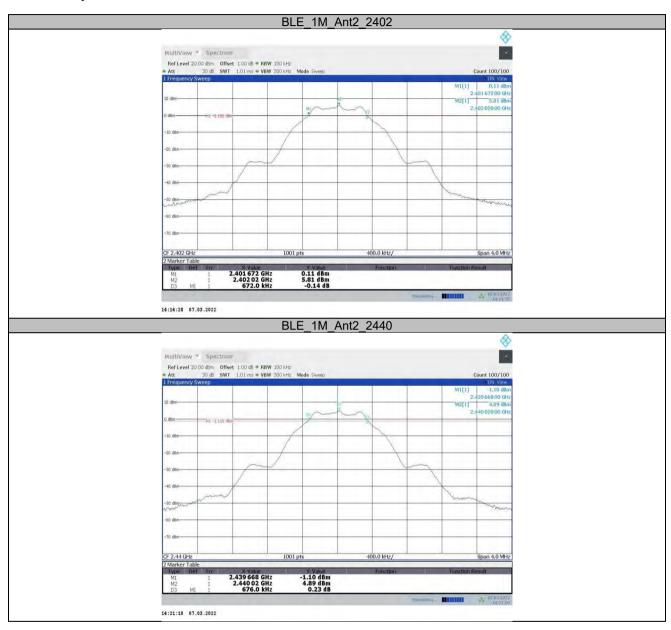


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#### **Test Graphs**





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# Occupied Channel Bandwidth Test Result

TestMode	Antenna	Frequency[MHz]	OCB [MHz]	FL[MHz]	FH[MHz]
BLE_1M	Ant2	2402	1.019	2401.507	2402.526
		2440	1.019	2439.507	2440.526
		2480	1.019	2479.506	2480.525
BLE_2M	Ant2	2402	2.008	2401.021	2403.029
		2440	2.007	2439.021	2441.028
		2480	2.007	2479.021	2481.028



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#### **Test Graphs**





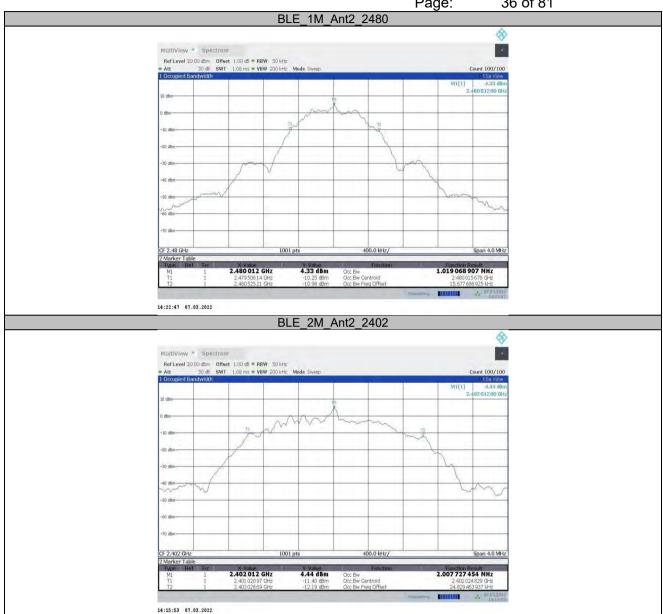
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#### Maximum conducted output power Test Result Peak

TestMode	Antenna	Frequency[MHz]	Conducted Peak Powert[dBm]	Conducted Limit[dBm]	Verdict
		2402	5.79	≤30	PASS
BLE_1M	Ant2	2440	5.12	≤30	PASS
		2480	5.34	≤30	PASS
		2402	5.99	≤30	PASS
BLE_2M	Ant2	2440	5.35	≤30	PASS
		2480	5.57	≤30	PASS



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#### Maximum power spectral density Test Result

TestMode	Antenna	Frequency[MHz]	Result[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
		2402	-8.93	≤8.00	PASS
BLE_1M	Ant2	2440	-9.85	≤8.00	PASS
		2480	-9.37	≤8.00	PASS
		2402	-11.89	≤8.00	PASS
BLE_2M	Ant2	2440	-12.87	≤8.00	PASS
		2480	-12.26	≤8.00	PASS



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#### **Test Graphs**





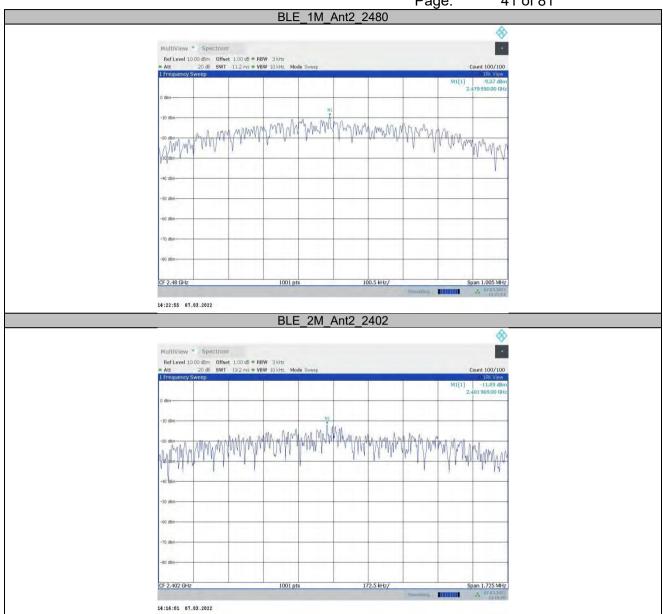
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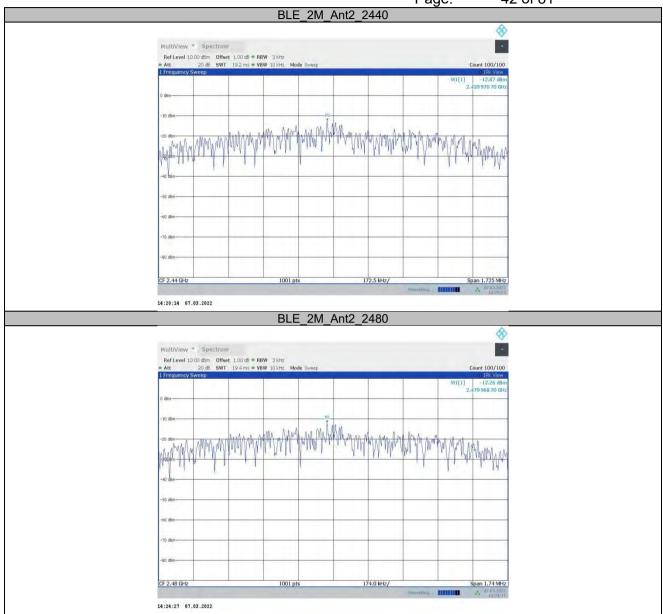
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#### Band edge measurements Test Result

TestMode	Antenna	ChName	Frequency[MHz]	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE 1M	Ant2	Low	2402	5.71	-55.69	≤-14.29	PASS
DLE_ IIVI	1M Ant2	High	2480	5.28	-57.18	≤-14.72	PASS
DIE OM	Ant2	Low	2402	5.71	-39.28	≤-14.29	PASS
BLE_2M Ant2	High	2480	5.30	-57.49	≤-14.7	PASS	



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#### **Test Graphs**

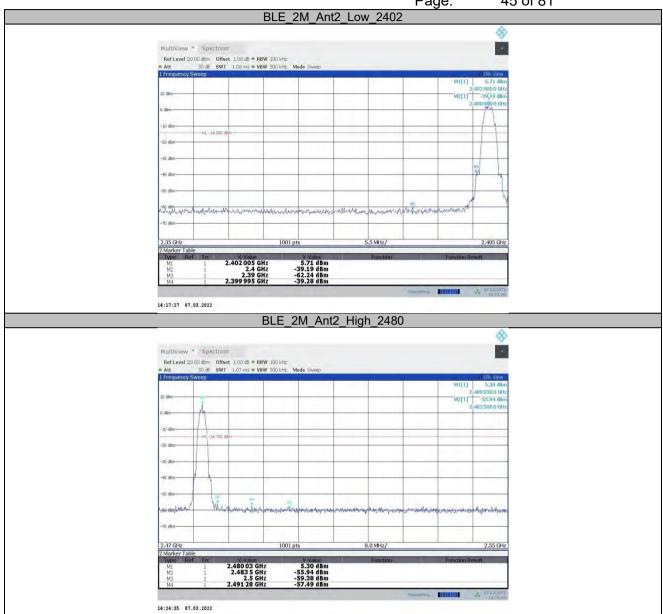






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# **Conducted Spurious Emission Test Result**

TestMode	Antenna	Frequency[MHz]	FreqRange [MHz]	RefLevel [dBm]	Result[dBm]	Limit[dBm]	Verdict
			Reference	5.79	5.79		PASS
		2402	30~1000	5.79	-59.27	≤-14.21	PASS
			1000~26500	5.79	-55.20	≤-14.21	PASS
		2440	Reference	4.87	4.87		PASS
BLE_1M	Ant2		30~1000	4.87	-59.59	≤-15.13	PASS
	_		1000~26500	4.87	-54.16	≤-15.13	PASS
			Reference	5.36	5.36		PASS
		2480	30~1000	5.36	-60.36	≤-14.64	PASS
			1000~26500	5.36	-55.09	≤-14.64	PASS
			Reference	5.80	5.80		PASS
		2402	30~1000	5.80	-59.81	≤-14.2	PASS
			1000~26500	5.80	-54.98	≤-14.2	PASS
			Reference	4.90	4.90		PASS
BLE_2M	Ant2	2440	30~1000	4.90	-59.97	≤-15.1	PASS
_			1000~26500	4.90	-54.21	≤-15.1	PASS
			Reference	5.39	5.39		PASS
		2480	30~1000	5.39	-60.07	≤-14.61	PASS
			1000~26500	5.39	-55.10	≤-14.61	PASS



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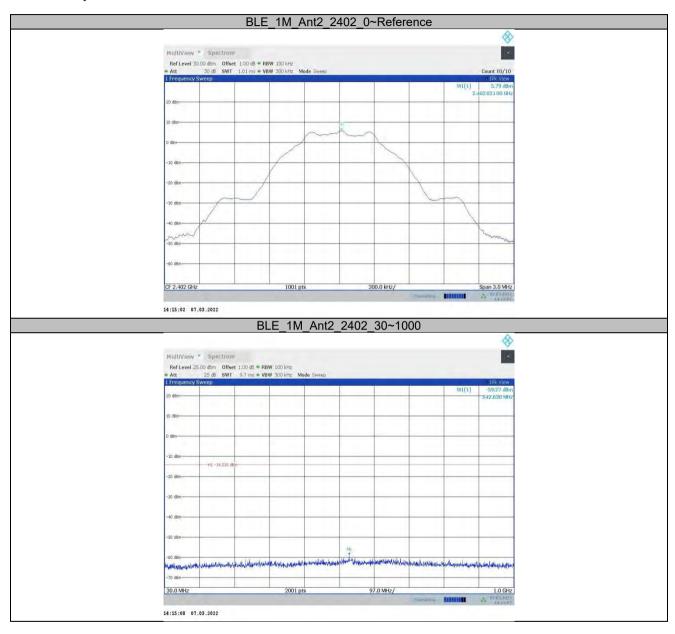


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#### **Test Graphs**





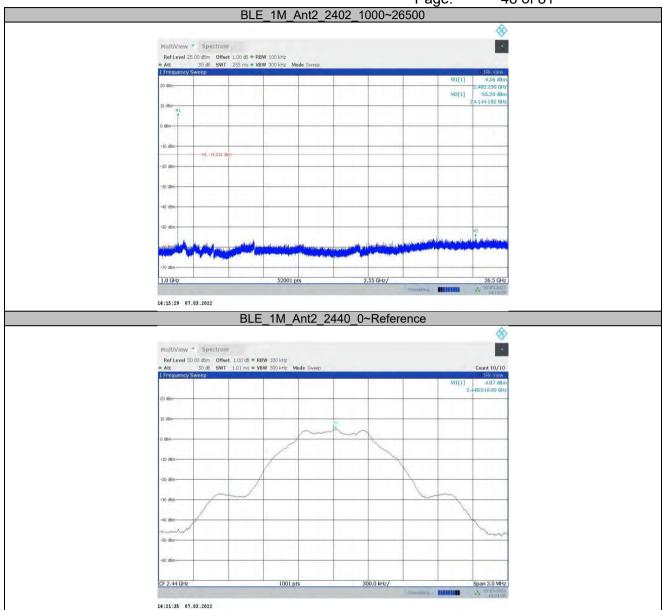
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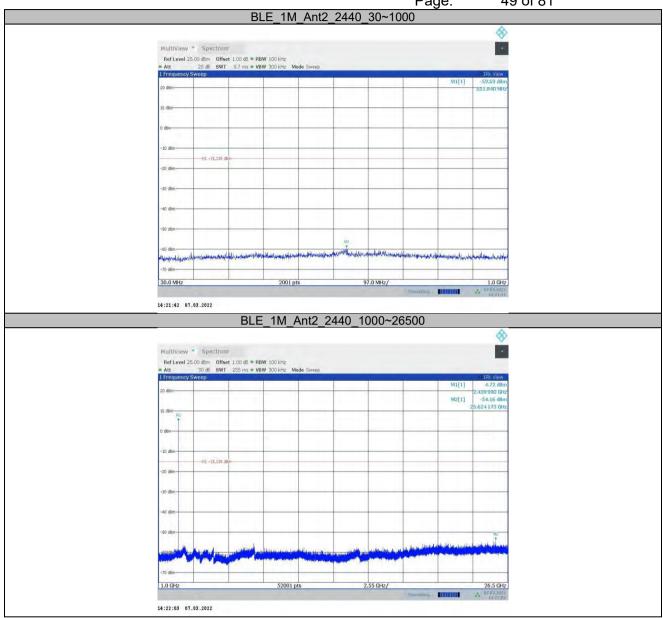
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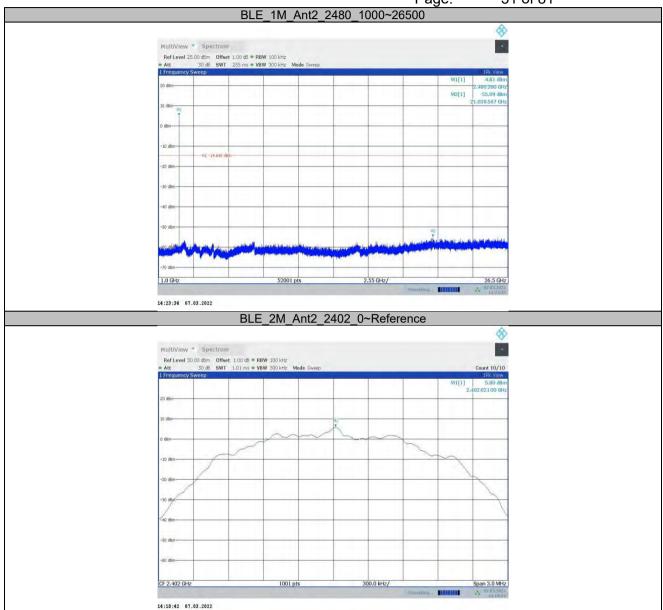
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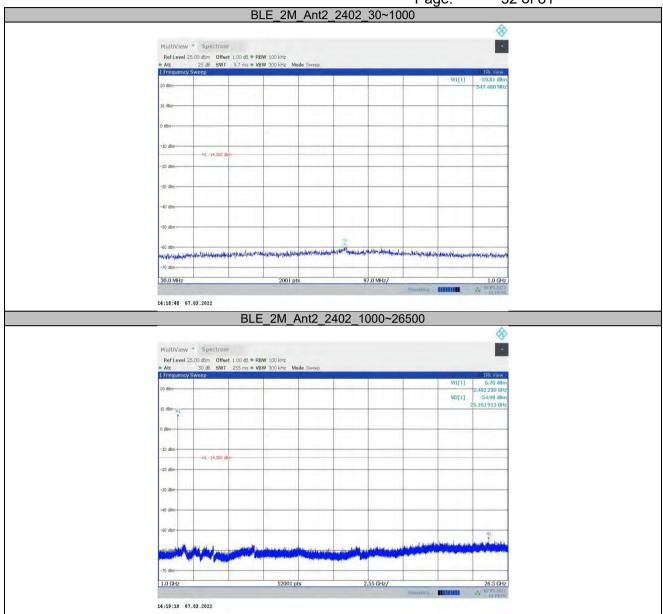
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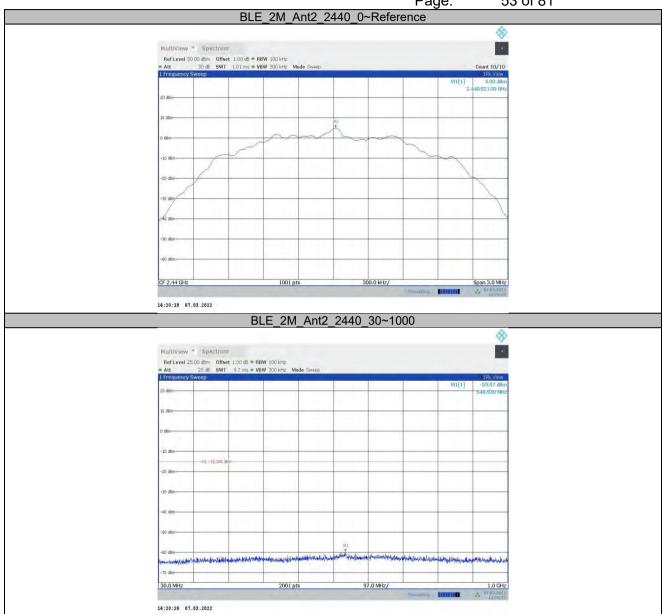
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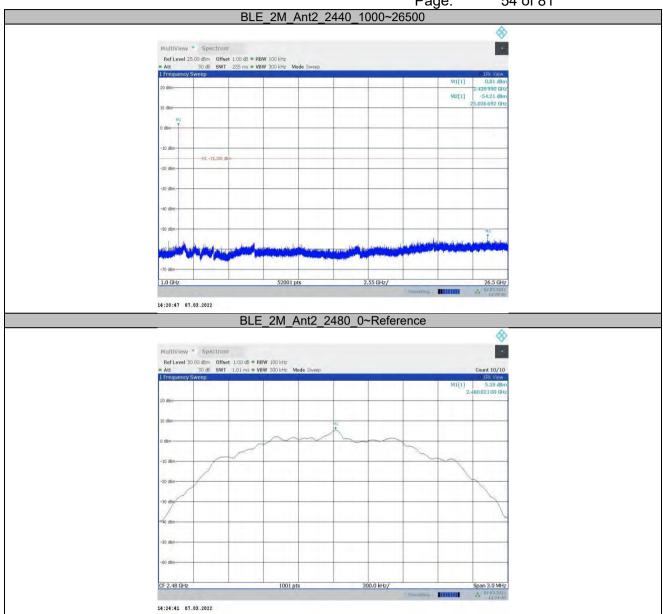
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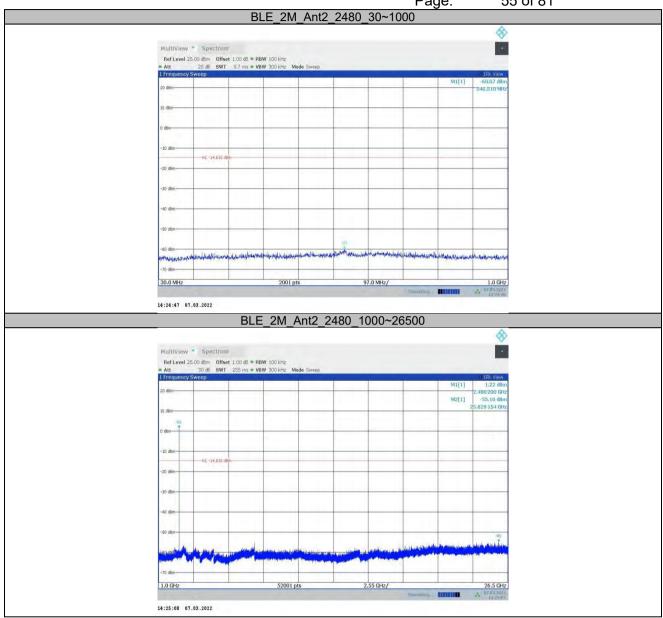
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#### **Duty Cycle** Test Result

TestMode	Antenna	Eroguopov(MUz)	ON Time	Period	Duty Cycle	Duty Cycle
restiviode	Antenna	Frequency[MHz]	[ms]	[ms]	[%]	Factor[dB]
		2402	0.39	0.63	61.90	2.08
BLE_1M	Ant2	2440	0.39	0.63	61.90	2.08
		2480	0.39	0.63	61.90	2.08
		2402	0.20	0.63	31.75	4.98
BLE_2M	Ant2	2440	0.20	0.63	31.75	4.98
		2480	0.20	0.63	31.75	4.98



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#### **Test Graphs**





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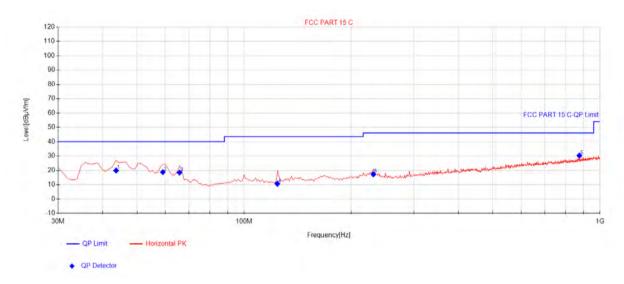


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# Radiated Spurious Emissions Radiated emission below 1GHz

Worst case mode:BLE\_2M Channel 00



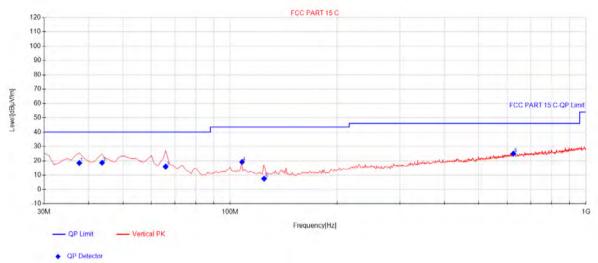
Final	Final Data List											
NO.	Frequency	Reading	Factor	QP Value	QP Limit	QP Margin	Height	Angle	Polarity			
	[MHz]	[dBµV]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Olding			
1	43.6636	35.08	-15.23	19.85	40.00	20.15	116	356	Horizontal			
2	59.0829	34.75	-16.05	18.70	40.00	21.30	152	227.5	Horizontal			
3	65.8238	36.34	-17.90	18.44	40.00	21.56	241	343.1	Horizontal			
4	123.9506	29.32	-18.64	10.68	43.50	32.82	185	189.9	Horizontal			
5	230.7035	31.96	-14.75	17.21	46.00	28.79	265	336.6	Horizontal			
6	875.0191	32.14	-1.84	30.30	46.00	15.70	185	6.2	Horizontal			





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Final	Final Data List											
NO.	Frequency	Reading	Factor	QP Value	QP Limit	QP Margin	Height	Angle	Polarity			
	[MHz]	[dBµV]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	· olamy			
1	37.6782	35.18	-16.72	18.46	40.00	21.54	185	151	Vertical			
2	43.6453	33.85	-15.23	18.62	40.00	21.38	211	309	Vertical			
3	65.8648	33.79	-17.90	15.89	40.00	24.11	199	21	Vertical			
4	108.0065	35.85	-16.69	19.16	43.50	24.34	322	0	Vertical			
5	124.5544	26.18	-18.64	7.54	43.50	35.96	174	56.3	Vertical			
6	625.0243	30.09	-5.12	24.97	46.00	21.03	214	202.7	Vertical			

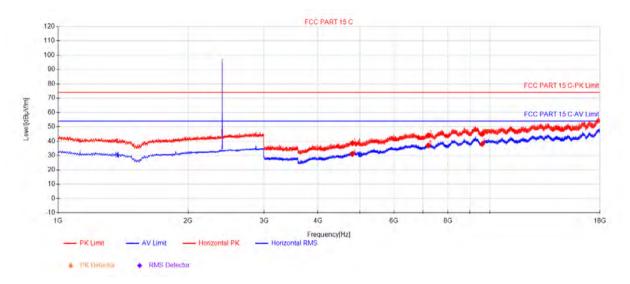




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# Radiated emission Above 1GHz BLE 1M\_Channel 00



Data	Data List											
	Frequency	Reading	Factor	Level	Limit	Margin	Height	Angle	<b>5</b>			
NO.	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity			
1	4804	50.81	-12.33	38.48	74.00	35.52	362	358	Horizontal			
2	7206	49.98	-5.91	44.07	74.00	29.93	185	236	Horizontal			
3	9608	44.39	0.49	44.88	74.00	29.12	264	236	Horizontal			
4	4804	43.33	-12.33	31.00	54.00	23.00	186	276	Horizontal			
5	7206	42.97	-5.91	37.06	54.00	16.94	264	208	Horizontal			
6	9608	37.55	0.49	38.04	54.00	15.96	177	34	Horizontal			

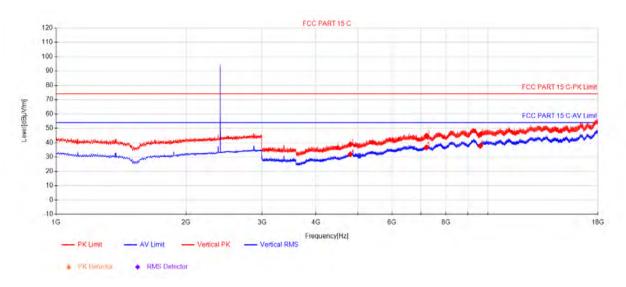




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#### BLE 1M\_Channel 00



Data	Data List											
	Frequency	Reading	Factor	Level	Limit	Margin	Height	Angle				
NO.	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity			
1	4804	51.12	-12.33	38.79	74.00	35.21	362	266	Vertical			
2	7206	50.66	-5.91	44.75	74.00	29.25	196	3	Vertical			
3	9608	45.12	0.49	45.61	74.00	28.39	142	0	Vertical			
4	4804	44.15	-12.33	31.82	54.00	22.18	185	0	Vertical			
5	7206	42.51	-5.91	36.60	54.00	17.40	264	100	Vertical			
6	9608	37.23	0.49	37.72	54.00	16.28	175	264	Vertical			

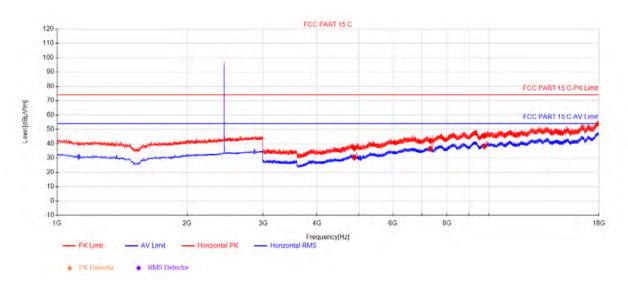




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#### BLE 1M\_Channel 19



Data	Data List											
	Frequency	Reading	Factor	Level	Limit	Margin	Height	Angle				
NO.	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity			
1	4880	49.11	-12.48	36.63	74.00	37.37	162	231	Horizontal			
2	7320	47.32	-5.41	41.91	74.00	32.09	175	356	Horizontal			
3	9760	44.18	1.02	45.20	74.00	28.80	264	0	Horizontal			
4	4880	42.66	-12.48	30.18	54.00	23.82	185	0	Horizontal			
5	7320	41.87	-5.41	36.46	54.00	17.54	264	334	Horizontal			
6	9760	37.01	1.02	38.03	54.00	15.97	178	32	Horizontal			

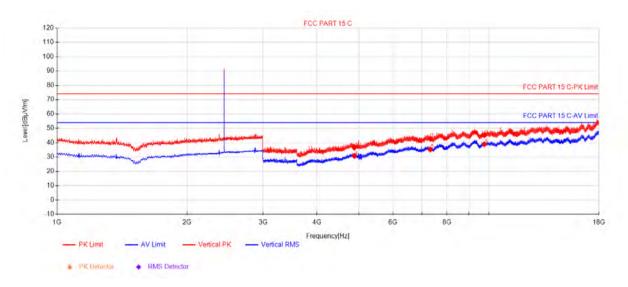




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#### BLE 1M\_Channel 19



Data	Data List												
	Frequency	Reading	Factor	Level	Limit	Margin	Height	Angle					
NO.	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity				
1	4880	49.01	-12.48	36.53	74.00	37.47	162	104	Vertical				
2	7320	48.11	-5.41	42.70	74.00	31.30	175	208	Vertical				
3	9760	44.08	1.02	45.10	74.00	28.90	241	68	Vertical				
4	4880	43.22	-12.48	30.74	54.00	23.26	185	0	Vertical				
5	7320	40.55	-5.41	35.14	54.00	18.86	264	310	Vertical				
6	9760	37.87	1.02	38.89	54.00	15.11	175	358	Vertical				

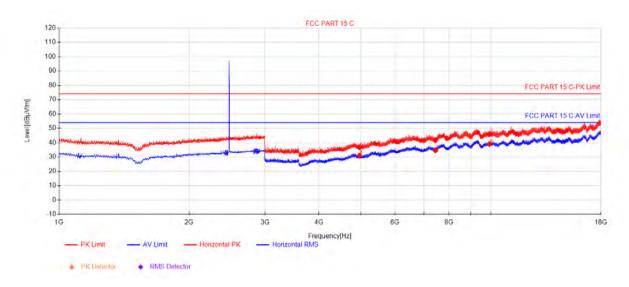




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#### BLE 1M\_Channel 39



Data	Data List											
	Frequency	Reading	Factor	Level	Limit	Margin	Height	Angle				
NO.	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity			
1	4960	49.13	-12.41	36.72	74.00	37.28	152	131	Horizontal			
2	7440	46.94	-5.36	41.58	74.00	32.42	163	197	Horizontal			
3	9920	44.56	1.29	45.85	74.00	28.15	185	64	Horizontal			
4	4960	43.29	-12.41	30.88	54.00	23.12	264	164	Horizontal			
5	7440	39.83	-5.36	34.47	54.00	19.53	175	164	Horizontal			
6	9920	37.67	1.29	38.96	54.00	15.04	261	164	Horizontal			

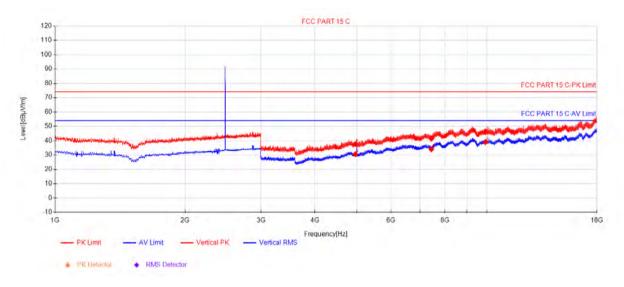




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#### BLE 1M\_Channel 39



Data	Data List													
	Frequency	Reading	Factor	Level	Limit	Margin	Height	Angle						
NO.	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity					
1	4960	50.03	-12.41	37.62	74.00	36.38	263	354	Vertical					
2	7440	46.77	-5.36	41.41	74.00	32.59	214	198	Vertical					
3	9920	44.75	1.29	46.04	74.00	27.96	174	198	Vertical					
4	4960	42.89	-12.41	30.48	54.00	23.52	264	132	Vertical					
5	7440	39.30	-5.36	33.94	54.00	20.06	263	132	Vertical					
6	9920	37.62	1.29	38.91	54.00	15.09	333	354	Vertical					



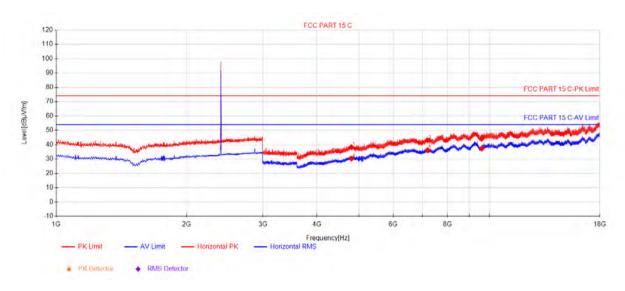
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#### BLE 2M\_Channel 00



Data	Data List													
	Frequency	Reading	Factor	Level	Limit	Margin	Height	Angle						
NO.	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity					
1	4804	50.52	-12.33	38.19	74.00	35.81	162	298	Horizontal					
2	7206	48.95	-5.91	43.04	74.00	30.96	185	265	Horizontal					
3	9608	43.60	0.49	44.09	74.00	29.91	264	31	Horizontal					
4	4804	42.51	-12.33	30.18	54.00	23.82	196	228	Horizontal					
5	7206	41.98	-5.91	36.07	54.00	17.93	264	0	Horizontal					
6	9608	36.79	0.49	37.28	54.00	16.72	175	65	Horizontal					

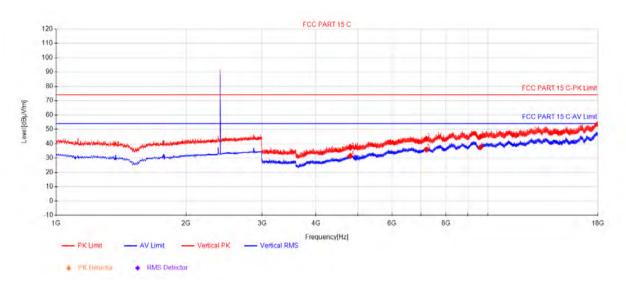




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#### BLE 2M\_Channel 00



Data	List								
	Frequency	Reading	Factor	Level	Limit	Margin	Height	Angle	
NO.	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity
1	4804	49.38	-12.33	37.05	74.00	36.95	162	291	Vertical
2	7206	49.33	-5.91	43.42	74.00	30.58	175	55	Vertical
3	9608	44.32	0.49	44.81	74.00	29.19	264	3	Vertical
4	4804	43.74	-12.33	31.41	54.00	22.59	196	55	Vertical
5	7206	41.73	-5.91	35.82	54.00	18.18	264	0	Vertical
6	9608	36.87	0.49	37.36	54.00	16.64	188	55	Vertical

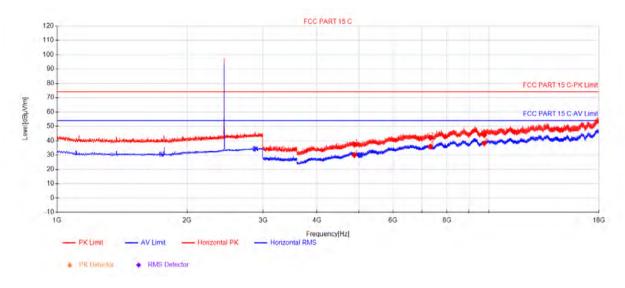




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#### BLE 2M\_Channel 19



Data	List								
	Frequency	Reading	Factor	Level	Limit	Margin	Height	Angle	
NO.	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity
1	4880	49.71	-12.48	37.23	74.00	36.77	214	136	Horizontal
2	7320	47.42	-5.41	42.01	74.00	31.99	186	169	Horizontal
3	9760	42.82	1.02	43.84	74.00	30.16	241	169	Horizontal
4	4880	42.32	-12.48	29.84	54.00	24.16	175	239	Horizontal
5	7320	41.23	-5.41	35.82	54.00	18.18	165	33	Horizontal
6	9760	37.12	1.02	38.14	54.00	15.86	185	0	Horizontal

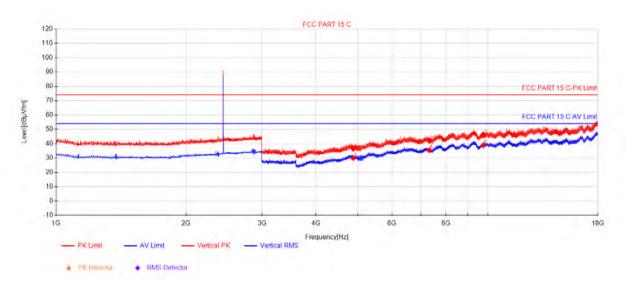




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#### BLE 2M\_Channel 19



Data	Data List													
	Frequency	Reading	Factor	Level	Limit	Margin	Height	Angle						
NO.	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity					
1	4880	48.88	-12.48	36.40	74.00	37.60	296	0	Vertical					
2	7320	47.38	-5.41	41.97	74.00	32.03	241	32	Vertical					
3	9760	45.34	1.02	46.36	74.00	27.64	132	135	Vertical					
4	4880	42.39	-12.48	29.91	54.00	24.09	174	0	Vertical					
5	7320	40.83	-5.41	35.42	54.00	18.58	236	135	Vertical					
6	9760	37.84	1.02	38.86	54.00	15.14	111	356	Vertical					



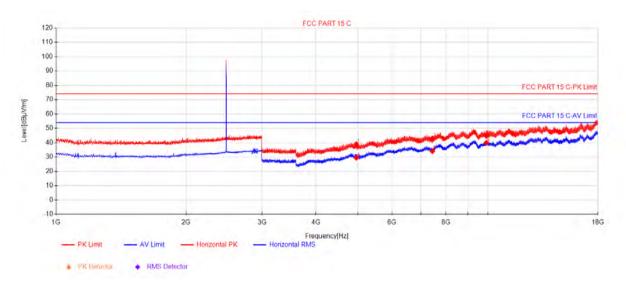
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#### BLE 2M\_Channel 39



Data	Data List													
	Frequency	Reading	Factor	Level	Limit	Margin	Height	Angle						
NO.	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity					
1	4960	51.38	-12.41	38.97	74.00	35.03	261	359	Horizontal					
2	7440	48.30	-5.36	42.94	74.00	31.06	175	359	Horizontal					
3	9920	43.40	1.29	44.69	74.00	29.31	264	3	Horizontal					
4	4960	41.83	-12.41	29.42	54.00	23.63	177	354	Horizontal					
5	7440	39.37	-5.36	34.01	54.00	19.99	264	300	Horizontal					
6	9920	38.54	1.29	39.83	54.00	14.17	185	102	Horizontal					



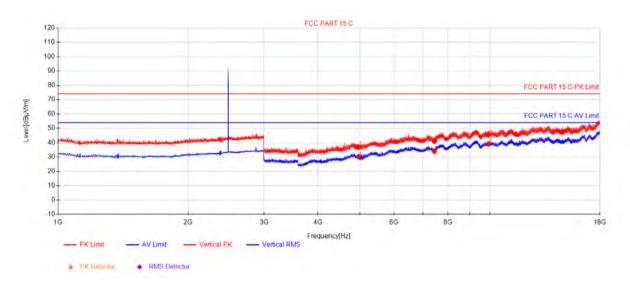
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#### BLE 2M\_Channel 39



Data	List								
	Frequency	Reading	Factor	Level	Limit	Margin	Height	Angle	· · ·
NO.	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity
1	4960	49.32	-12.41	36.91	74.00	37.09	174	272	Vertical
2	7440	46.22	-5.36	40.86	74.00	33.14	365	122	Vertical
3	9920	43.99	1.29	45.28	74.00	28.72	174	3	Vertical
4	4960	42.57	-12.41	30.16	54.00	23.84	264	34	Vertical
5	7440	39.25	-5.36	33.89	54.00	20.11	188	85	Vertical
6	9920	37.76	1.29	39.05	54.00	14.95	214	96	Vertical

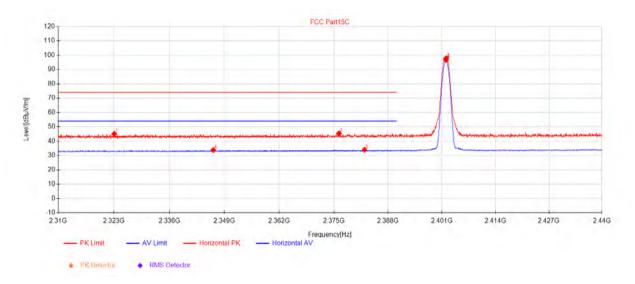




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# Restricted bands around fundamental frequency BLE 1M\_Channel 00



Data	List								
	Frequency	Reading	Factor	Level	Limit	Margin	Height	Angle	
NO.	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity
1	2323.065	42.12	2.98	45.10	74.00	28.90	162	198	Horizontal
2	2376.235	42.14	3.20	45.34	74.00	28.66	162	198	Horizontal
3	2402	94.35	3.31	97.66	-	-	162	198	Horizontal
4	2346.335	30.70	3.07	33.77	54.00	20.23	162	198	Horizontal
5	2382.345	30.74	3.23	33.97	54.00	20.03	162	198	Horizontal
6	2402	93.37	3.31	96.68	-	-	162	198	Horizontal



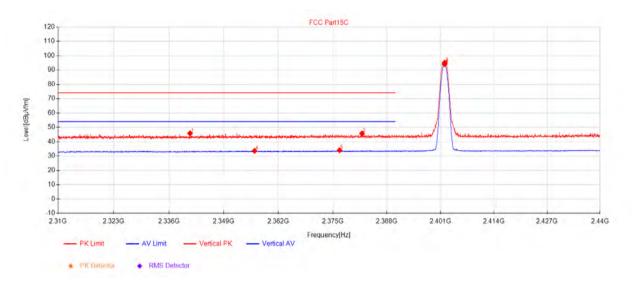
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#### BLE 1M\_Channel 00



Data	List								
	Frequency	Reading	Factor	Level	Limit	Margin	Height	Angle	
NO.	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity
1	2341.005	42.76	3.05	45.81	74.00	28.19	290	280	Vertical
2	2382.02	42.43	3.22	45.65	74.00	28.35	290	280	Vertical
3	2402	91.76	3.31	95.07	-	-	290	280	Vertical
4	2356.3125	30.43	3.12	33.55	54.00	20.45	290	280	Vertical
5	2376.625	30.75	3.20	33.95	54.00	20.05	290	280	Vertical
6	2402	90.73	3.31	94.04	-	-	290	280	Vertical

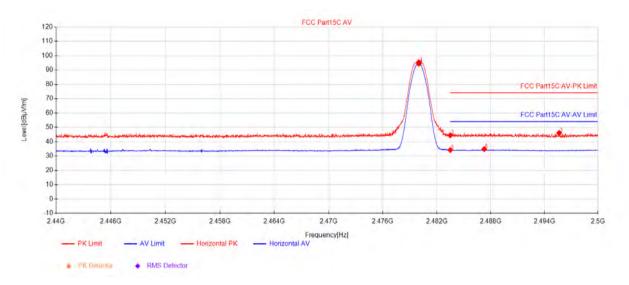




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#### BLE 1M\_Channel 39



Data	List								
NIC	Frequency	Reading	Factor	Level	Limit	Margin	Height	Angle	D
NO.	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity
1	2480	91.47	3.88	95.35	-	-	192	287	Horizontal
2	2483.5	40.45	3.91	44.36	74.00	29.64	192	287	Horizontal
3	2495.65	42.00	4.00	46.00	74.00	28.00	192	287	Horizontal
4	2480	90.41	3.88	94.29	-	-	192	287	Horizontal
5	2483.5	30.22	3.91	34.13	54.00	19.87	192	287	Horizontal
6	2487.28	30.85	3.94	34.79	54.00	19.21	192	287	Horizontal

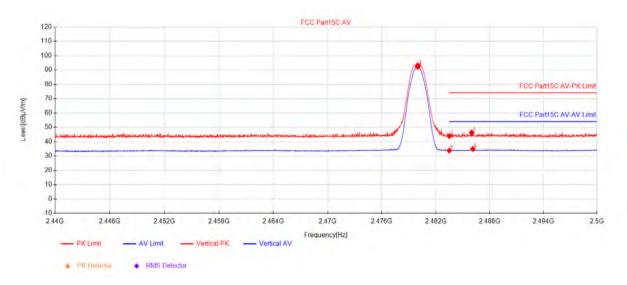




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#### BLE 1M\_Channel 39



Data	Data List													
	Frequency	Reading	Factor	Level	Limit	Margin	Height	Angle						
NO.	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity					
1	2480	89.26	3.88	93.14	-	-	295	284	Vertical					
2	2483.5	39.93	3.91	43.84	74.00	30.16	295	284	Vertical					
3	2485.99	42.37	3.93	46.30	74.00	27.70	295	284	Vertical					
4	2480	88.24	3.88	92.12	-	-	295	284	Vertical					
5	2483.5	29.82	3.91	33.73	54.00	20.27	295	284	Vertical					
6	2486.125	30.94	3.93	34.87	54.00	19.13	295	284	Vertical					

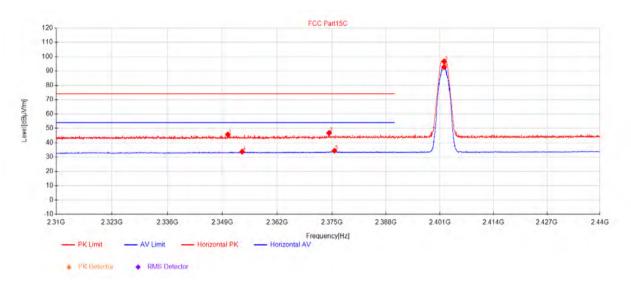




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#### BLE 2M\_Channel 00



Data	List								
	Frequency	Reading	Factor	Level	Limit	Margin	Height	Angle	
NO.	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity
1	2350.2675	42.59	3.09	45.68	74.00	28.32	186	202	Horizontal
2	2374.35	43.51	3.19	46.70	74.00	27.30	186	202	Horizontal
3	2402	93.31	3.31	96.62	-	-	186	202	Horizontal
4	2353.6475	30.53	3.11	33.64	54.00	20.36	186	202	Horizontal
5	2375.6175	31.13	3.20	34.33	54.00	19.67	186	202	Horizontal
6	2402	89.37	3.31	92.68	-	-	186	202	Horizontal

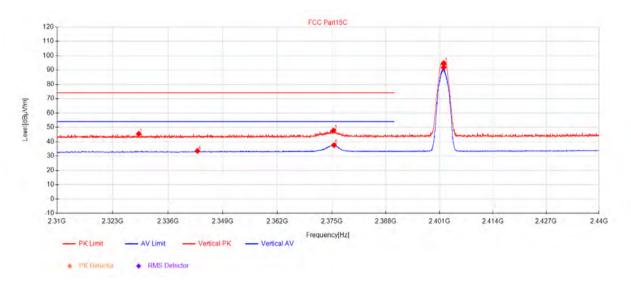




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#### BLE 2M\_Channel 00



Data List									
NO.	Frequency	Reading	Factor	Level	Limit	Margin	Height	Angle	
	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity
1	2329.1425	42.42	3.00	45.42	74.00	28.58	296	283	Vertical
2	2375.4225	44.57	3.20	47.77	74.00	26.23	296	283	Vertical
3	2402	91.37	3.31	94.68	-	-	296	283	Vertical
4	2342.9875	30.43	3.06	33.49	54.00	20.51	296	283	Vertical
5	2375.5525	34.34	3.20	37.54	54.00	16.46	296	283	Vertical
6	2402	88.34	3.31	91.65	-	-	296	283	Vertical

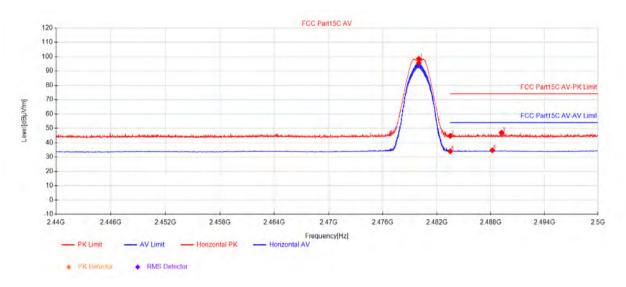




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#### BLE 2M\_Channel 39



Data List									
	Frequency	Reading	Factor	Level	Limit	Margin	Height	Angle	
NO.	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity
1	2480	94.56	3.88	98.44	-	-	156	202	Horizontal
2	2483.5	40.80	3.91	44.71	74.00	29.29	156	202	Horizontal
3	2489.215	42.97	3.95	46.92	74.00	27.08	156	202	Horizontal
4	2480	91.68	3.88	95.56	-	-	156	202	Horizontal
5	2483.5	30.03	3.91	33.94	54.00	20.06	156	202	Horizontal
6	2488.18	30.69	3.94	34.63	54.00	19.37	156	202	Horizontal

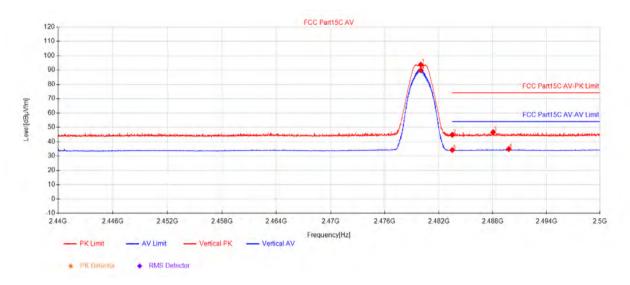




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#### BLE 2M\_Channel 39



Data List									
	Frequency	Reading	Factor	Level	Limit	Margin	Height	Angle	
NO.	[MHz]	[dBµV/m]	[dB]	[dBµV/m]	[dBµV/m]	[dB]	[cm]	[°]	Polarity
1	2480	89.82	3.88	93.70	-	-	288	274	Vertical
2	2483.5	40.79	3.91	44.70	74.00	29.30	288	274	Vertical
3	2488.045	42.56	3.94	46.50	74.00	27.50	288	274	Vertical
4	2480	85.94	3.88	89.82	-	-	288	274	Vertical
5	2483.5	30.22	3.91	34.13	54.00	19.87	288	274	Vertical
6	2489.8	30.85	3.96	34.81	54.00	19.19	288	274	Vertical

The End



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