FCC RF Test Report

(BLE)

Report No.:	JYTSZ-R12-2500857
Applicant:	Shenzhen Gotron Electronic CO., LTD
Address of Applicant:	7B01, Building A, Block 1, Anhongji Tianyao Plaza, Longhua District, Shenzhen City, Guangdong Province China

Equipment Under Test (EUT)

Product Name:	Smart Phone
Model No.:	GQ5020TH, Armor X16, Armor X16 Ultra, Armor X16E, Armor X16S, Armor X16 Lite, Armor X16s, Armor X16s Pro
Trade Mark:	ulefone
FCC ID:	2AOWK-5020TH
Applicable Standards:	FCC CFR Title 47 Part 15C (§15.247)
Date of Sample Receipt:	23 Apr., 2025
Date of Test:	24 Apr., to 31 Jul., 2025
Date of Report Issued:	07 Aug., 2025
Test Result:	PASS

Project by:	Alan Chen ***Project Engineer***	***Date:***	*07 Aug., 2025*
Reviewed by:	Peter Hans ***Senior Engineer***	***Date:***	*07 Aug., 2025*
Approved by:	Jamet Wei ***Manager***	***Date:***	*07 Aug., 2025*

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in above the application standard version. Test results reported herein relate only to the item(s) tested.

1 Version

Version No.	Date	Description
00	*08 Jul., 2025*	*Original*
01	*07 Aug., 2025*	*Updated Pages 5-19,36 and Appendix-BLE*

2 Contents

3 General Information

3.1 Client Information

Applicant:	Shenzhen Gotron Electronic CO., LTD
Address:	7B01, Building A, Block 1, Anhongji Tianyao Plaza, Longhua District, Shenzhen City, Guangdong Province China
Manufacturer:	Shenzhen Gotron Electronic CO., LTD
Address:	7B01, Building A, Block 1, Anhongji Tianyao Plaza, Longhua District, Shenzhen City, Guangdong Province China
Factory:	Shenzhen Gotron Electronic CO., LTD
Address:	7B01, Building A, Block 1, Anhongji Tianyao Plaza, Longhua District, Shenzhen City, Guangdong Province China

3.2 General Description of E.U.T.

Product Name:	Smart Phone
Model No.:	GQ5020TH, Armor X16, Armor X16 Ultra, Armor X16E, Armor X16S, Armor X16 Lite, Armor X16s, Armor X16s Pro
Operation Frequency:	1 Mbps (LE 1M PHY): 2402 MHz - 2480 MHz 2 Mbps (LE 2M PHY) : 2404 MHz - 2478 MHz 125 kbps (LE Coded PHY, S=8) : 2402 MHz - 2480 MHz 500 kbps (LE Coded PHY, S=2) : 2402 MHz - 2480 MHz
Channel Numbers:	40
Channel Separation:	2MHz
Modulation Technology:	GFSK
Data Speed:	1 Mbps (LE 1M PHY), 2 Mbps (LE 2M PHY), 125 kbps (LE Coded PHY, S=8), 500 kbps (LE Coded PHY, S=2)
Antenna Type:	Internal Antenna
Antenna Gain:	ANT0:0.3 dBi (declare by applicant)
Antenna transmit mode:	SISO (1TX, 1RX)
Power Supply:	Rechargeable Li-ion Battery DC3.87V, 10360mAh
AC Adapter:	Model: UF82PD3303 Input: AC100-240V, 50/60Hz, 0.8A Output: PD:5.0V, 3A 15W or 9V,3A 27W or 12V,2.5A 30W or 15V,2A 30W or 20V,1.5A 30W PPS:0V-11V,3A or 5V-16V,2A 33W Max
Remark:	GQ5020TH, Armor X16, Armor X16 Ultra, Armor X16E, Armor X16S, Armor X16 Lite, Armor X16s, Armor X16s Pro were identical inside, the electrical circuit design, layout, components used and internal wiring, with only difference being model name.
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

3.3 Test Mode and Test Environment

Test Mode:	
Transmitting mode	Keep the EUT in continuous transmitting with modulation

Remark:

1. *For AC power line conducted emission and radiated spurious emission (below 1GHz), pre-scan all data speed, found 1 Mbps (LE 1M PHY) Lowest Channel was worse case mode. The report only reflects the test data of worst mode.*
2. *Channel Low, Mid and High for each type band with rated data rate were chosen for full testing. The field strength of spurious radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for these modes. Just the worst case position (H mode) shown in report.*
3. *During the test, the mobile phone dial interface is used to enter the EUT engineering mode, and the prototype transmission power level is 7.*

Operating Environment:	
Temperature:	15℃ ~ 35℃
Humidity:	20 % ~ 75 % RH
Atmospheric Pressure:	1008 mbar
Voltage:	Nominal: 3.87 Vdc, Extreme: Low 3.50 Vdc, High 4.45 Vdc
Test Engineer:	Hopper Li (Conducted measurement) Real Chen (Radiated measurement)

3.4 Description of Test Auxiliary Equipment

The EUT has been tested as an independent unit.

3.5 Measurement Uncertainty

Parameter	Expanded Uncertainty (Confidence of 95%(U = 2Uc(y)))
Occupied Channel Bandwidth	0.250 MHz
RF output power, conducted	0.75dB
Power Spectral Density, conducted	±3.0 dB
Unwanted Emissions, conducted	2.86 dB
Conducted Emission for LISN (9kHz ~ 150kHz)	±3.0 dB
Conducted Emission for LISN (150kHz ~ 30MHz)	±2.4 dB
Radiated Emission (9kHz ~ 30MHz) (3m SAC)	±3.3 dB
Radiated Emission (30MHz ~ 200MHz) (3m SAC)	±4.6 dB
Radiated Emission (200MHz ~ 1000MHz) (3m SAC)	±5.8 dB
Radiated Emission (1GHz ~ 18GHz) (3m FAR)	5.15 dB
Radiated Emission (18GHz ~ 40GHz) (3m FAR)	5.30 dB

Note: *All the measurement uncertainty value were shown with a coverage k=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.*

3.6 Additions to, Deviations, or Exclusions from the Method

No

3.7 Laboratory Facility

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

- **FCC - Designation No.: CN1211**

JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

- **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber and 10m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

- **CNAS - Registration No.: CNAS L15527**

JianYan Testing Group Shenzhen Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L15527.

- **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: https://portal.a2la.org/scopepdf/4346-01.pdf

3.8 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.
Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.
Tel: +86-755-23118282, Fax: +86-755-23116366
Email: info-JYTee@lets.com, Website: http://jyt.lets.com

3.9 Test Instruments List

Radiated Emission(3m SAC):					
Test Equipment	**Manufacturer**	**Model No.**	**Manage No.**	**Cal. Date (mm-dd-yy)**	**Cal. Due date (mm-dd-yy)**
3m SAC	ETS	9m*6m*6m	WXJ001-1	04-14-2021	04-13-2026
Loop Antenna	Schwarzbeck	FMZB 1519 B	WXJ002-4	01-03-2025	01-02-2026
BiConiLog Antenna	Schwarzbeck	VULB9163	WXJ002	01-03-2025	01-02-2026
Pre-amplifier (30MHz ~ 1GHz)	Schwarzbeck	BBV9743B	WXJ001-2	12-16-2024	12-15-2025
EMI Test Receiver	Rohde & Schwarz	ESRP7	WXJ003-1	12-16-2024	12-15-2025
Coaxial Cable (9kHz ~ 30MHz)	JYT	JYT3M-1G-BB-5M	WXG001-6	01-15-2025	01-14-2026
Coaxial Cable (30MHz ~ 1GHz)	JYTSZ	JYT3M-1G-NN-8M	WXG001-4	01-15-2025	01-14-2026
Band Reject Filter Group	Tonscend	JS0806-F	WXJ089	N/A	
Test Software	Tonscend	TS+	Version: 3.0.0.1		
EMI Test Software	AUDIX	E3	Version: 6.110919b		

Radiated Emission(3m FAR):					
Test Equipment	**Manufacturer**	**Model No.**	**Manage No.**	**Cal. Date (mm-dd-yy)**	**Cal. Due date (mm-dd-yy)**
3m FAR	YUNYI	9m*6m*6m	WXJ097	06-15-2023	06-14-2028
BiConiLog Antenna	Schwarzbeck	VULB9163	WXJ097-2	07-01-2024	06-30-2025
Biconical Antenna	Schwarzbeck	VUBA9117	WXJ002-1	07-01-2024	06-30-2027
Horn Antenna	Schwarzbeck	BBHA9120D	WXJ097-3	06-16-2024	06-15-2025
				05-23-2025	05-22-2026
Horn Antenna	Schwarzbeck	BBHA9120D	WXJ002-3	12-25-2024	12-24-2025
Horn Antenna	Schwarzbeck	BBHA9170	WXJ002-5	12-25-2024	12-24-2025
Horn Antenna	Schwarzbeck	BBHA9170	WXJ002-6	12-25-2024	12-24-2025
Pre-amplifier (30MHz ~ 1GHz)	YUNYI	PAM-310N	WXJ097-5	04-24-2024	04-23-2025
				04-21-2025	04-20-2026
Pre-amplifier (1GHz ~ 18GHz)	YUNYI	PAM-118N	WXJ097-6	04-24-2024	04-23-2025
				04-21-2025	04-20-2026
Pre-amplifier (18GHz ~ 40GHz)	RF System	TRLA-180400G45B	WXJ002-7	12-16-2024	12-15-2025
EMI Test Receiver	Rohde & Schwarz	ESCI3	WXJ003	12-16-2024	12-15-2025
Spectrum Analyzer	Rohde & Schwarz	FSP 30	WXJ004	12-16-2024	12-15-2025
Spectrum Analyzer	KEYSIGHT	N9020B	WXJ081-1	06-11-2024	06-10-2025
				05-08-2025	05-07-2026
Coaxial Cable (30MHz ~ 1GHz)	JYTSZ	JYT3M-1G-NN-13M	WXG097-1	07-30-2024	07-29-2025
Coaxial Cable (1GHz ~ 18GHz)	JYTSZ	JYT3M-18G-NN-8M	WXG097-2	07-30-2024	07-29-2025
Coaxial Cable (18GHz ~ 40GHz)	JYTSZ	JYT3M-40G-SS-8M	WXG097-3	07-30-2024	07-29-2025
High Band Reject Filter Group	Tonscend	JS0806-F	WXJ089	N/A	
Low Band Reject Filter Group	Tonscend	JS0806-F	WXJ097-4	N/A	
Test Software	Tonscend	TS+	Version: 5.0.0		

Conducted Emission:					
Test Equipment	**Manufacturer**	**Model No.**	**Manage No.**	**Cal. Date (mm-dd-yy)**	**Cal. Due date (mm-dd-yy)**
EMI Test Receiver	Rohde & Schwarz	ESR3	WXJ003-2	06-11-2024	06-10-2025
				05-08-2025	05-07-2026
LISN	Schwarzbeck	NSLK 8127	QCJ001-13	12-17-2024	12-16-2025
LISN	Rohde & Schwarz	ESH3-Z5	WXJ005-1	12-17-2024	12-16-2025
LISN Coaxial Cable (9kHz ~ 30MHz)	JYTSZ	JYTCE-1G-NN-2M	WXG003-1	01-15-2025	01-14-2026
RF Switch	TOP PRECISION	RSU0301	WXG003	N/A	
Test Software	AUDIX	E3	Version: 6.110919b		

Conducted Method:					
Test Equipment	**Manufacturer**	**Model No.**	**Manage No.**	**Cal. Date (mm-dd-yy)**	**Cal. Due date (mm-dd-yy)**
Spectrum Analyzer	Keysight	N9010B	WXJ004-3	09-10-2024	09-09-2025
Temperature Humidity Chamber	ZHONG ZHI	CZ-A-80D	WXJ032-3	12-17-2024	12-16-2026
Power Detector Box	MWRFTEST	MW100-PSB	WXJ007-4	09-10-2024	09-09-2025
DC Power Supply	Keysight	E3642A	WXJ025-2	N/A	
RF Control Unit	MWRFTEST	MW100-RFCB	WXG006	N/A	
Test Software	MWRFTEST	MTS 8310	Version: 2.0.0.0		

4 Measurement Setup and Procedure

4.1 Test Channel

According to ANSI C63.10-2013 chapter 5.6.1 Table 4 requirement, select lowest channel, middle channel, and highest channel in the frequency range in which device operates for testing. The detailed frequency points are as follows:

LE 1M PHY/ LE Coded PHY, S=8/ LE Coded PHY, S=2:

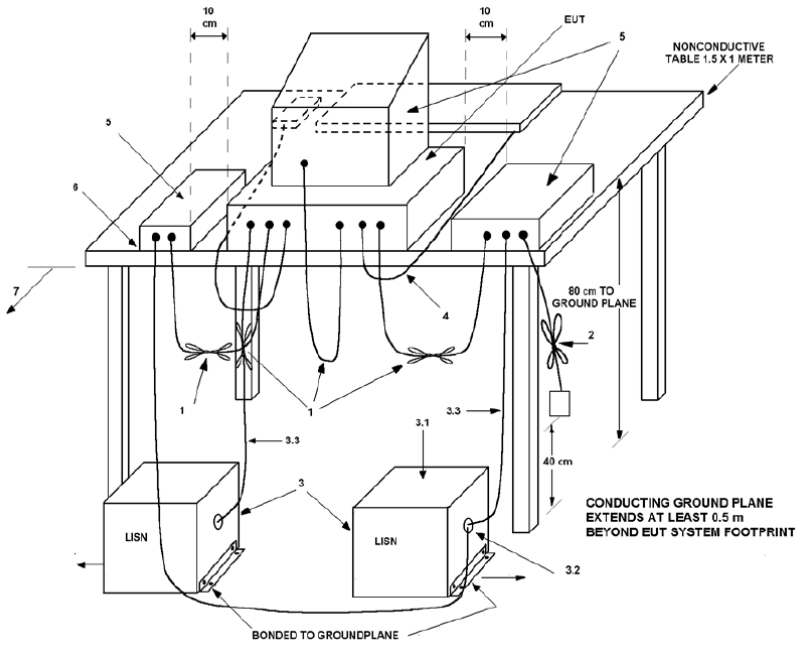
Lowest channel		Middle channel		Highest channel	
Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
0	2402	20	2442	39	2480

LE 2M PHY:

Lowest channel		Middle channel		Highest channel	
Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
4	2404	20	2442	38	2478

4.2 Test Setup

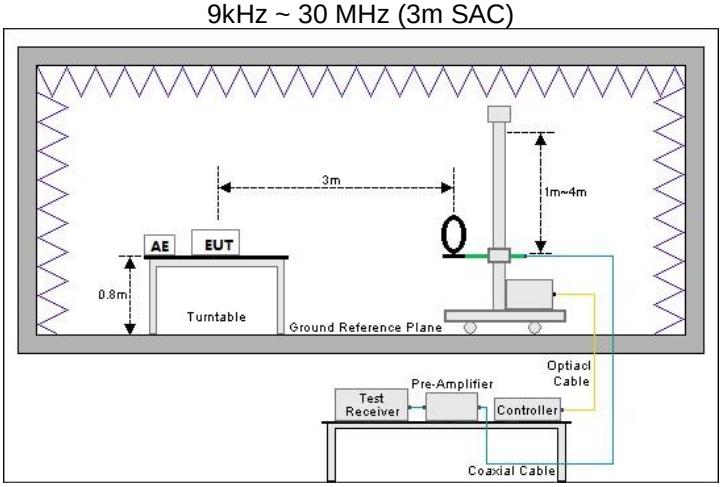
1) Conducted emission measurement:



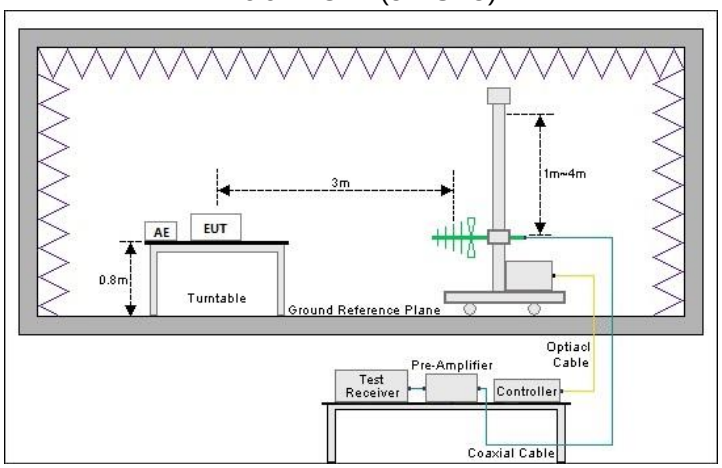
Note: The detailed descriptions please refer to Figure 8 of ANSI C63.4:2014.

2) Radiated emission measurement:

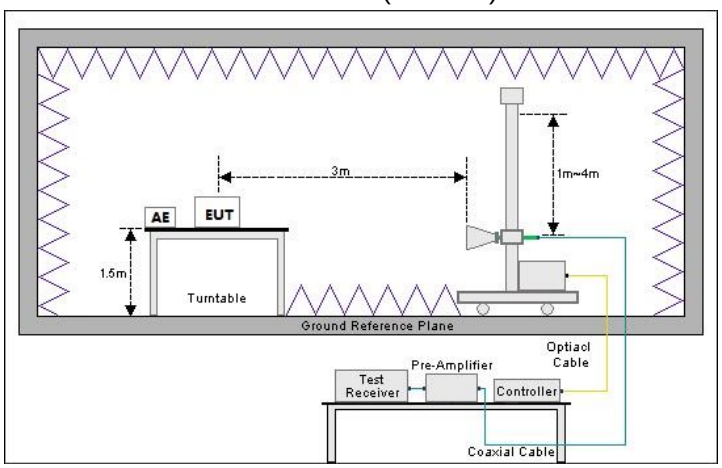
9kHz ~ 30 MHz (3m SAC)



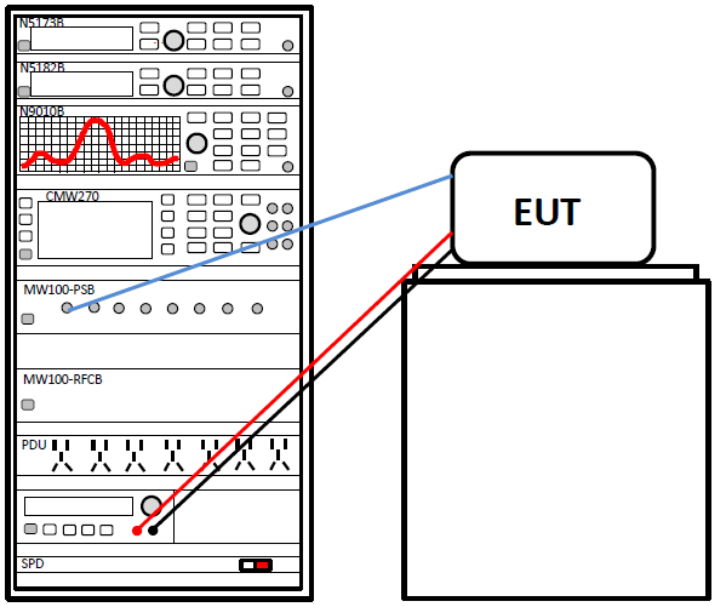
Below 1GHz (3m SAC)



Above 1GHz (3m FAR)



3) Conducted test method



4.3 Test Procedure

Test method	Test step
Conducted emission	1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10 on conducted measurement.
Radiated emission	**For below 30MHz:** 1. The EUT was placed on the table top of a rotating table 0.8 m the ground at a 3 m semi anechoic chamber. The measurement distance from the EUT to the receiving antenna is 3 m. 2. EUT works in each mode of operation that needs to be tested，and having the EUT continuously working, respectively on 3 axis (X, Y & Z) and considered typical configuration to obtain worst position. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations. 3. Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data. **For below 1GHz:** 4. The EUT was placed on the tabletop of a rotating table 0.8 m the ground at a 3 m semi anechoic chamber. The measurement distance from the EUT to the receiving antenna is 3 m. 5. EUT works in each mode of operation that needs to be tested，and having the EUT continuously working, respectively on 3 axis (X, Y & Z) and considered typical configuration to obtain worst position. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations. 6. Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data. **For above 1GHz:** 1. The EUT was placed on the tabletop of a rotating table 1.5 m the ground at a 3 m fully anechoic room. The measurement distance from the EUT to the receiving antenna is 3 m. 2. EUT works in each mode of operation that needs to be tested，and having the EUT continuously working, respectively on 3 axis (X, Y & Z) and considered typical configuration to obtain worst position. The highest signal levels relative to the limit shall be determined by rotating the EUT from 0° to 360° and with varying the measurement antenna height between 1 m and 4 m in vertical and horizontal polarizations. 3. Open the test software to control the test antenna and test turntable. Perform the test, save the test results, and export the test data.
Conducted test method	1. The BLE antenna port of EUT was connected to the test port of the test system through an RF cable. 2. The EUT is keeping in continuous transmission mode and tested in all modulation modes. 3. Open the test software, prepare a test plan, and control the system through the software. After the test is completed, the test report is exported through the test software.

5 Test Results

5.1 Summary

5.1.1 Clause and Data Summary

Test items	Standard clause	Test Method	Test data	Result
Antenna Requirement	15.203 15.247 (b)(4)	/	See Section 5.2	Pass
AC Power Line Conducted Emission	15.207	ANSI C63.10 clause 6.2	See Section 5.3	Pass
Conducted Output Power	15.247 (b)(3)	ANSI C63.10 clause 11.9.1.2 Method PKPM1	Appendix A – BLE 1M PHY Appendix B – BLE 2M PHY Appendix C – BLE Coded PHY, S=2 Appendix D – BLE Coded PHY, S=8	Pass
6dB Emission Bandwidth 99% Occupied Bandwidth	15.247 (a)(2)	ANSI C63.10 clause 11.8.1, ANSI C63.10 clause 6.9.3	Appendix A – BLE 1M PHY Appendix B – BLE 2M PHY Appendix C – BLE Coded PHY, S=2 Appendix D – BLE Coded PHY, S=8	Pass
Power Spectral Density	15.247 (e)	ANSI C63.10 clause 11.10.2	Appendix A – BLE 1M PHY Appendix B – BLE 2M PHY Appendix C – BLE Coded PHY, S=2 Appendix D – BLE Coded PHY, S=8	Pass
Band-edge Emission Conduction Spurious Emission	15.247 (d)	ANSI C63.10 clause 6.10.4	Appendix A – BLE 1M PHY Appendix B – BLE 2M PHY Appendix C – BLE Coded PHY, S=2 Appendix D – BLE Coded PHY, S=8	Pass
Emissions in Restricted Frequency Bands	15.205 15.247 (d)	ANSI C63.10 clause 6.10.5, 11.12.1 and 11.12.2.5.2	See Section 5.4	Pass
Emissions in Non-restricted Frequency Bands	15.209 15.247(d)	ANSI C63.10 clause 6.3, 6.5, 6.6 and 11.12.2.5.2	See Section 5.5	Pass
Test Method:	*ANSI C63.10-2013* *KDB 558074 D01 15.247 Meas Guidance v05r02*			

5.1.2 Test Limit

<table>
<tr><th>Test items</th><th>Limit</th></tr>
<tr><td>AC Power Line Conducted Emission</td><td>
<table>
<tr><th rowspan="2">Frequency (MHz)</th><th colspan="2">Limit (dBµV)</th></tr>
<tr><th>Quasi-Peak</th><th>Average</th></tr>
<tr><td>0.15 – 0.5</td><td>66 to 56 Note 1</td><td>56 to 46 Note 1</td></tr>
<tr><td>0.5 – 5</td><td>56</td><td>46</td></tr>
<tr><td>5 – 30</td><td>60</td><td>50</td></tr>
<tr><td colspan="3">Note 1: The limit level in dBµV decreases linearly with the logarithm of frequency.
Note 2: The more stringent limit applies at transition frequencies.</td></tr>
</table>
</td></tr>
<tr><td>Conducted Output Power</td><td>For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt.</td></tr>
<tr><td>6dB Emission Bandwidth</td><td>The minimum 6 dB bandwidth shall be at least 500 kHz.</td></tr>
<tr><td>99% Occupied Bandwidth</td><td>N/A</td></tr>
<tr><td>Power Spectral Density</td><td>For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.</td></tr>
<tr><td>Band-edge Emission

Conduction Spurious Emission</td><td>In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated 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, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).</td></tr>
</table>

§15.205(a) Restricted Frequency Bands List

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1] 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	[2]
13.36-13.41			

[1] Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

[2] Above 38.6

Emissions in Restricted Frequency Bands

9KHz-30MHz

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100**	3
88 – 216	150**	3
216 – 960	200**	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241.

Emissions in Non-restricted Frequency Bands

Above 30MHz

Frequency (MHz)	Limit (dBμV/m)		Detector
	@ 3m	@ 10m	
30 – 88	40.0	30.0	Quasi-peak
88 – 216	43.5	33.5	Quasi-peak
216 – 960	46.0	36.0	Quasi-peak
960 – 1000	54.0	44.0	Quasi-peak

Note: The more stringent limit applies at transition frequencies.

Frequency	Limit (dBμV/m) @ 3m	
	Average	Peake
Above 1 GHz	54.0	74.0

Note: The measurement bandwidth shall be 1 MHz or greater.

5.2 Antenna requirement

Standard requirement:	FCC Part 15 C Section 15.203 /247(b)(4)

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.

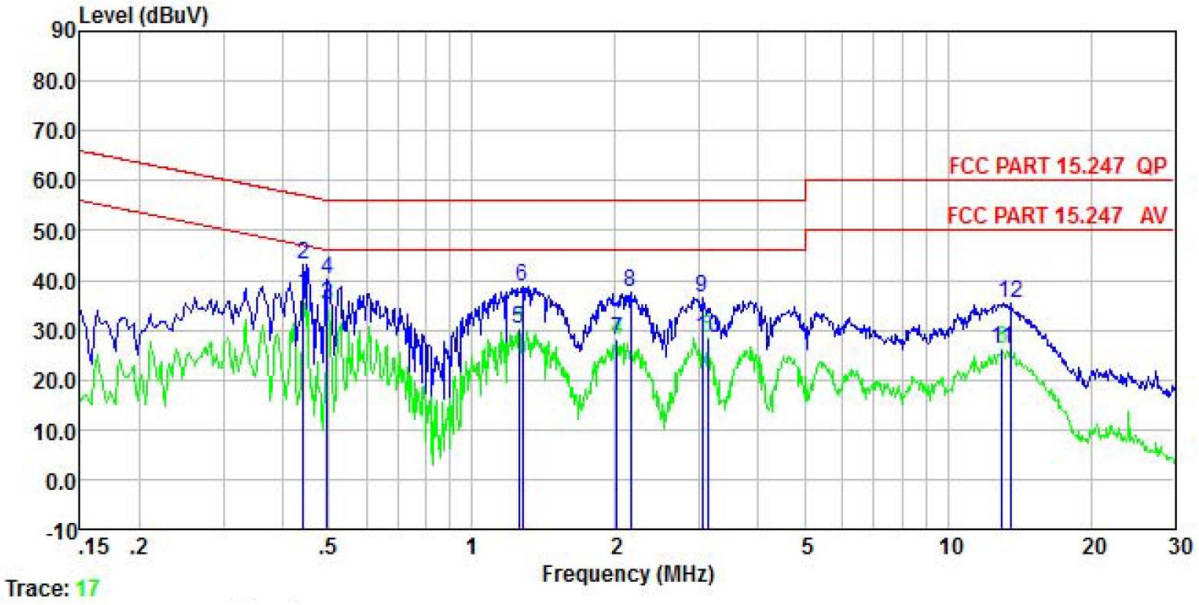
15.247(b) (4) requirement:
(4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi 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.

E.U.T Antenna:

The BLE antenna is an Internal antenna which cannot replace by end-user, the best case gain of the antenna is 0.3 dBi. See product internal photos for details.

5.3 AC Power Line Conducted Emission

Product name:	Smart Phone	**Product model:**	GQ5020TH
Test by:	Alan Chen	**Test mode:**	BLE Tx (LE 1M PHY)
Test frequency:	150 kHz ~ 30 MHz	**Phase:**	Line
Test Channel:	Lowest channel	**Test voltage:**	AC 120 V/60 Hz

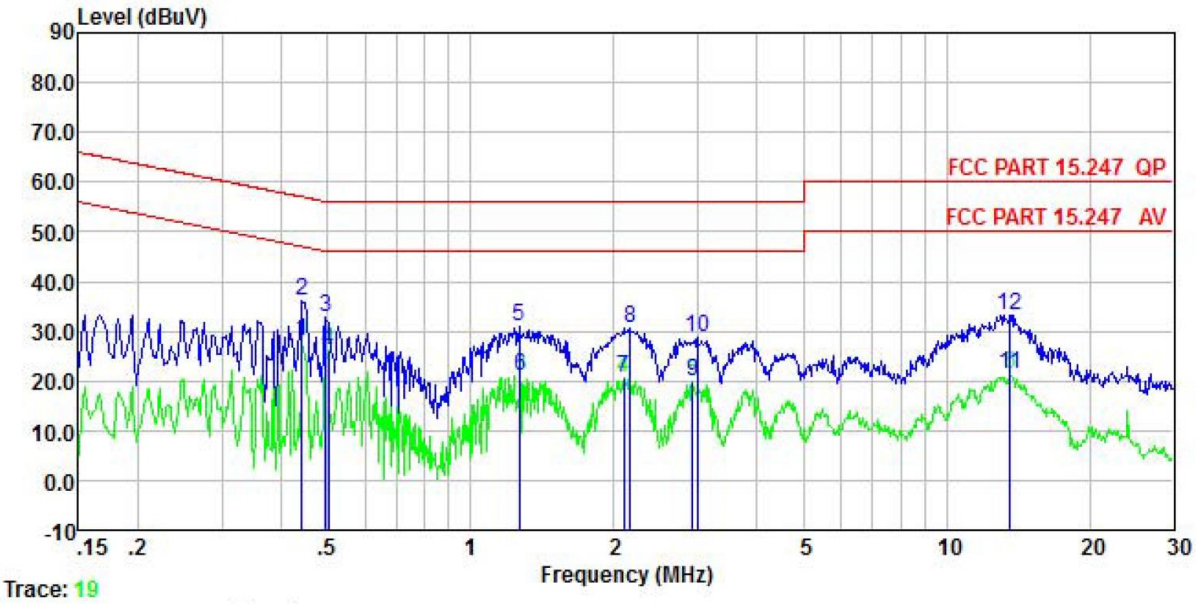


	Freq	Read Level	LISN Factor	Aux Factor	Aux2 Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dB	dBuV	dBuV	dB	
1	0.442	17.36	10.12	0.00	9.88	0.03	37.39	47.02	-9.63	Average
2	0.442	23.04	10.12	0.00	9.88	0.03	43.07	57.02	-13.95	QP
3	0.497	14.83	10.15	0.00	9.88	0.03	34.89	46.05	-11.16	Average
4	0.497	20.26	10.15	0.00	9.88	0.03	40.32	56.05	-15.73	QP
5	1.255	10.12	10.17	0.00	9.88	0.10	30.27	46.00	-15.73	Average
6	1.276	18.57	10.16	0.00	9.88	0.11	38.72	56.00	-17.28	QP
7	2.012	7.65	10.10	0.00	9.88	0.21	27.84	46.00	-18.16	Average
8	2.155	17.47	10.14	0.00	9.88	0.18	37.67	56.00	-18.33	QP
9	3.041	16.24	10.29	0.00	9.89	0.07	36.49	56.00	-19.51	QP
10	3.123	8.31	10.27	0.00	9.89	0.07	28.54	46.00	-17.46	Average
11	12.988	5.43	10.62	0.00	9.92	0.11	26.08	50.00	-23.92	Average
12	13.551	14.56	10.67	0.00	9.92	0.12	35.27	60.00	-24.73	QP

Remark:

1. Level = Read level + LISN Factor + Cable Loss.

Product name:	Smart Phone	Product model:	GQ5020TH
Test by:	Alan Chen	Test mode:	BLE Tx (LE 1M PHY)
Test frequency:	150 kHz ~ 30 MHz	Phase:	Neutral
Test Channel:	Lowest channel	Test voltage:	AC 120 V/60 Hz



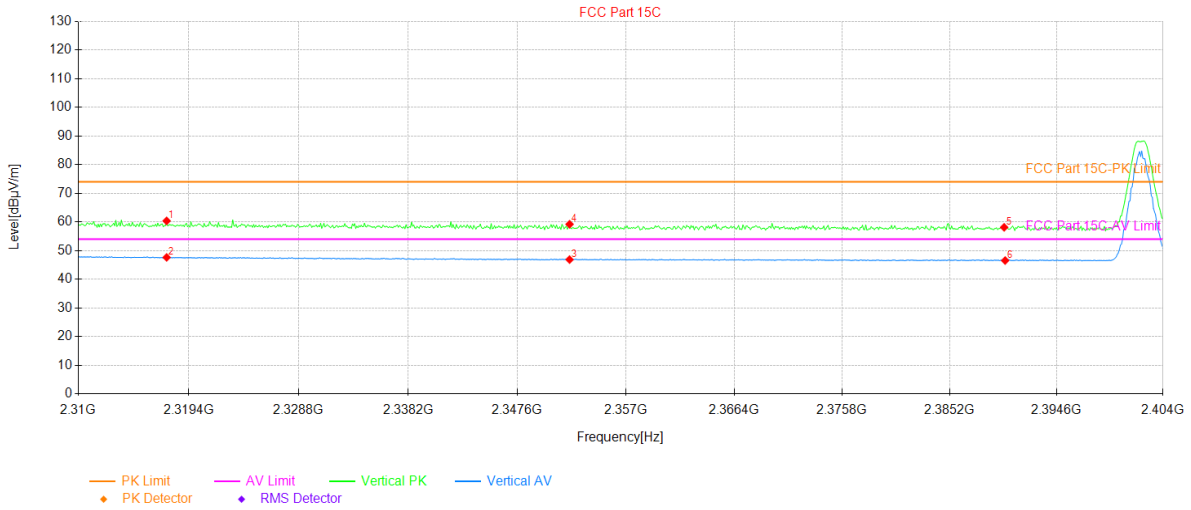
	Freq	Read Level	LISN Factor	Aux Factor	Aux2 Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dB	dBuV	dBuV	dB	
1	0.442	7.86	10.15	0.00	9.88	0.03	27.92	47.02	-19.10	Average
2	0.442	15.93	10.15	0.00	9.88	0.03	35.99	57.02	-21.03	QP
3	0.497	12.66	10.20	0.00	9.88	0.03	32.77	56.05	-23.28	QP
4	0.502	6.11	10.21	0.00	9.88	0.03	26.23	46.00	-19.77	Average
5	1.262	10.65	10.23	0.00	9.88	0.10	30.86	56.00	-25.14	QP
6	1.269	0.84	10.23	0.00	9.88	0.10	21.05	46.00	-24.95	Average
7	2.099	0.30	10.29	0.00	9.88	0.19	20.66	46.00	-25.34	Average
8	2.167	10.42	10.28	0.00	9.88	0.18	30.76	56.00	-25.24	QP
9	2.931	-0.44	10.21	0.00	9.89	0.08	19.74	46.00	-26.26	Average
10	2.993	8.43	10.20	0.00	9.89	0.07	28.59	56.00	-27.41	QP
11	13.623	0.71	10.53	0.00	9.93	0.12	21.29	50.00	-28.71	Average
12	13.623	12.76	10.53	0.00	9.93	0.12	33.34	60.00	-26.66	QP

Remark:

1. Level = Read level + LISN Factor + Cable Loss.

5.4 Emissions in Restricted Frequency Bands

Product Name:	Smart Phone	Product Model:	GQ5020TH
Test By:	Robin Gu	Test mode:	BLE Tx (LE 1M PHY)
Test Channel:	Lowest channel	Polarization:	Vertical
Test Voltage:	DC 3.87V		



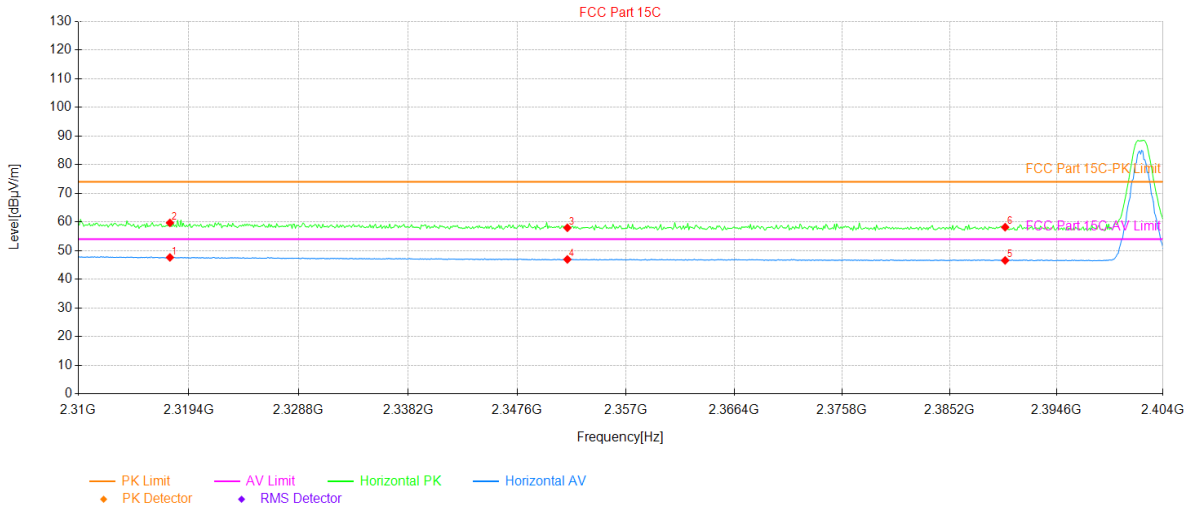
Suspected Data List

NO.	Freq. [MHz]	Reading [dBµV]	Factor [dB/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict	Polarity
1	2317.52	23.89	36.45	60.34	74.00	13.66	176	PK	PASS	Vertical
2	2317.52	11.17	36.45	47.62	54.00	6.38	209	AV	PASS	Vertical
3	2352.11	10.87	35.97	46.84	54.00	7.16	48	AV	PASS	Vertical
4	2352.11	23.19	35.97	59.16	74.00	14.84	86	PK	PASS	Vertical
5	2390.00	22.17	35.93	58.10	74.00	15.90	63	PK	PASS	Vertical
6	2390.09	10.59	35.93	46.52	54.00	7.48	29	AV	PASS	Vertical

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Product Name:	Smart Phone	Product Model:	GQ5020TH
Test By:	Robin Gu	Test mode:	BLE Tx (LE 1M PHY)
Test Channel:	Lowest channel	Polarization:	Horizontal
Test Voltage:	DC 3.87V		



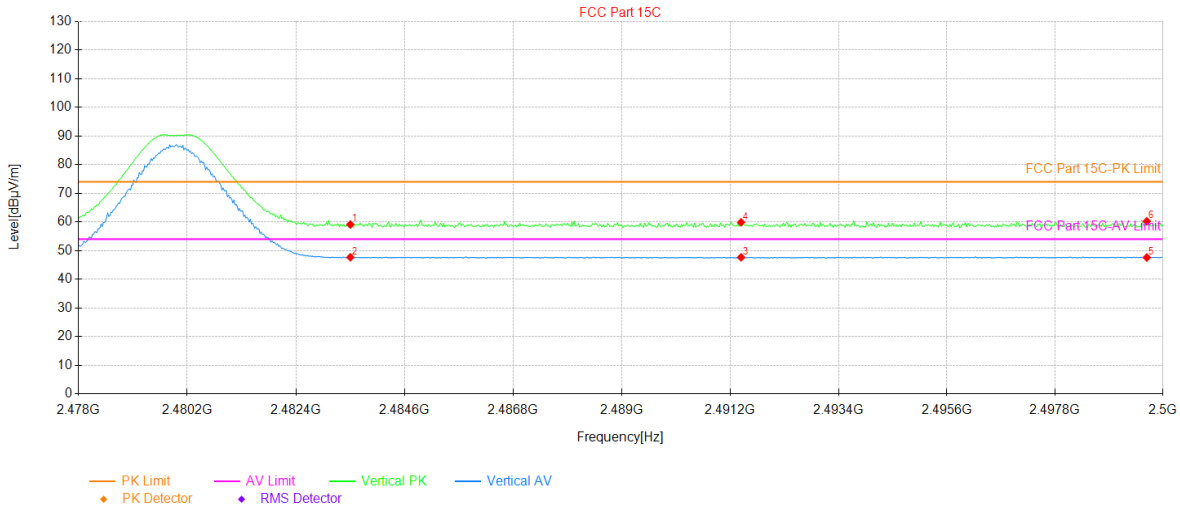
Suspected Data List

NO.	Freq. [MHz]	Reading [dBµV]	Factor [dB/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict	Polarity
1	2317.80	11.14	36.45	47.59	54.00	6.41	76	AV	PASS	Horizontal
2	2317.80	23.21	36.45	59.66	74.00	14.34	208	PK	PASS	Horizontal
3	2351.92	21.97	35.97	57.94	74.00	16.06	219	PK	PASS	Horizontal
4	2351.92	10.93	35.97	46.90	54.00	7.10	42	AV	PASS	Horizontal
5	2390.09	10.63	35.93	46.56	54.00	7.44	23	AV	PASS	Horizontal
6	2390.09	22.22	35.93	58.15	74.00	15.85	189	PK	PASS	Horizontal

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Product Name:	Smart Phone	Product Model:	GQ5020TH
Test By:	Robin Gu	Test mode:	BLE Tx (LE 1M PHY)
Test Channel:	Highest channel	Polarization:	Vertical
Test Voltage:	DC 3.87V		



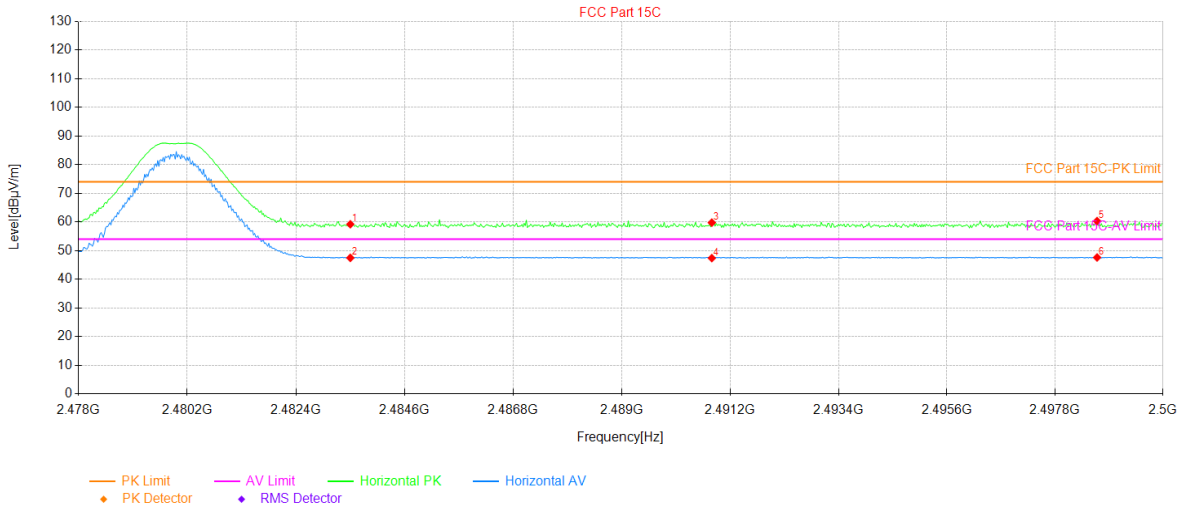
Suspected Data List

NO.	Freq. [MHz]	Reading [dBµV]	Factor [dB/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict	Polarity
1	2483.50	22.34	36.74	59.08	74.00	14.92	1	PK	PASS	Vertical
2	2483.50	10.91	36.74	47.65	54.00	6.35	32	AV	PASS	Vertical
3	2491.42	10.88	36.76	47.64	54.00	6.36	40	AV	PASS	Vertical
4	2491.42	23.09	36.76	59.85	74.00	14.15	152	PK	PASS	Vertical
5	2499.67	10.80	36.78	47.58	54.00	6.42	144	AV	PASS	Vertical
6	2499.67	23.43	36.78	60.21	74.00	13.79	246	PK	PASS	Vertical

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Product Name:	Smart Phone	Product Model:	GQ5020TH
Test By:	Robin Gu	Test mode:	BLE Tx (LE 1M PHY)
Test Channel:	Highest channel	Polarization:	Horizontal
Test Voltage:	DC 3.87V		



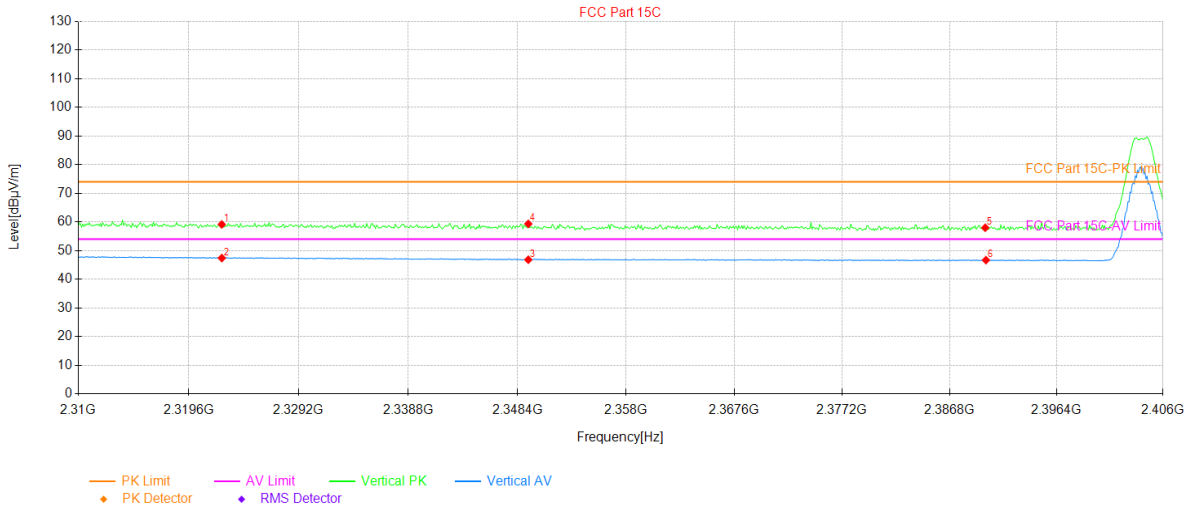
Suspected Data List

NO.	Freq. [MHz]	Reading [dBµV]	Factor [dB/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict	Polarity
1	2483.50	22.42	36.74	59.16	74.00	14.84	19	PK	PASS	Horizontal
2	2483.50	10.72	36.74	47.46	54.00	6.54	108	AV	PASS	Horizontal
3	2490.83	22.97	36.76	59.73	74.00	14.27	261	PK	PASS	Horizontal
4	2490.83	10.60	36.76	47.36	54.00	6.64	336	AV	PASS	Horizontal
5	2498.66	23.51	36.77	60.28	74.00	13.72	179	PK	PASS	Horizontal
6	2498.66	10.82	36.77	47.59	54.00	6.41	168	AV	PASS	Horizontal

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Product Name:	Smart Phone	Product Model:	GQ5020TH
Test By:	Robin Gu	Test mode:	BLE Tx (LE 2M PHY)
Test Channel:	Lowest channel	Polarization:	Vertical
Test Voltage:	DC 3.87V		



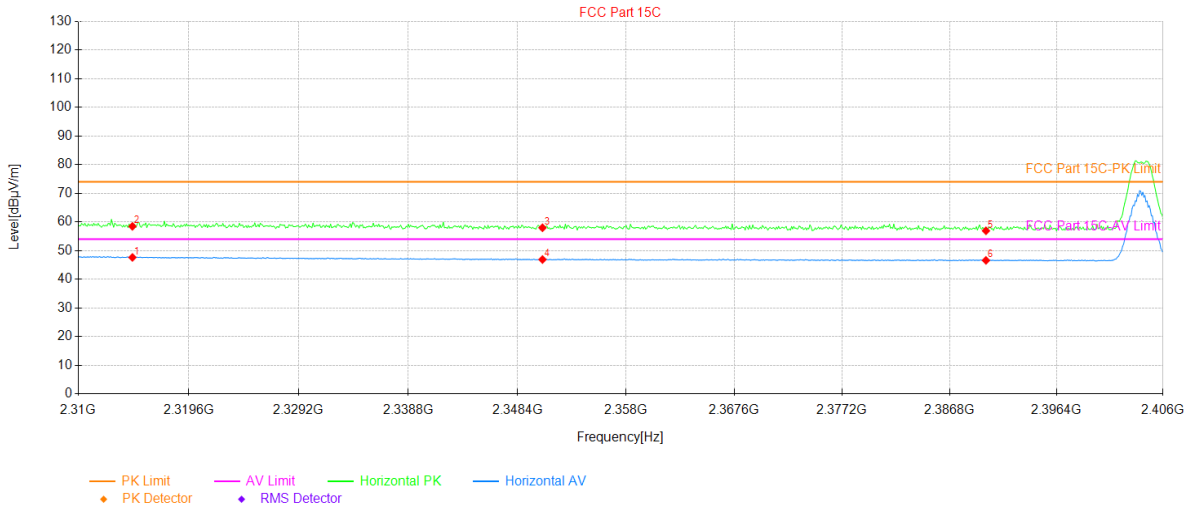
Suspected Data List

NO.	Freq. [MHz]	Reading [dBµV]	Factor [dB/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict	Polarity
1	2322.48	22.74	36.36	59.10	74.00	14.90	158	PK	PASS	Vertical
2	2322.48	11.02	36.36	47.38	54.00	6.62	322	AV	PASS	Vertical
3	2349.36	10.82	35.98	46.80	54.00	7.20	222	AV	PASS	Vertical
4	2349.36	23.33	35.98	59.31	74.00	14.69	90	PK	PASS	Vertical
5	2390.00	22.03	35.93	57.96	74.00	16.04	358	PK	PASS	Vertical
6	2390.06	10.74	35.93	46.67	54.00	7.33	34	AV	PASS	Vertical

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Product Name:	Smart Phone	Product Model:	GQ5020TH
Test By:	Robin Gu	Test mode:	BLE Tx (LE 2M PHY)
Test Channel:	Lowest channel	Polarization:	Horizontal
Test Voltage:	DC 3.87V		



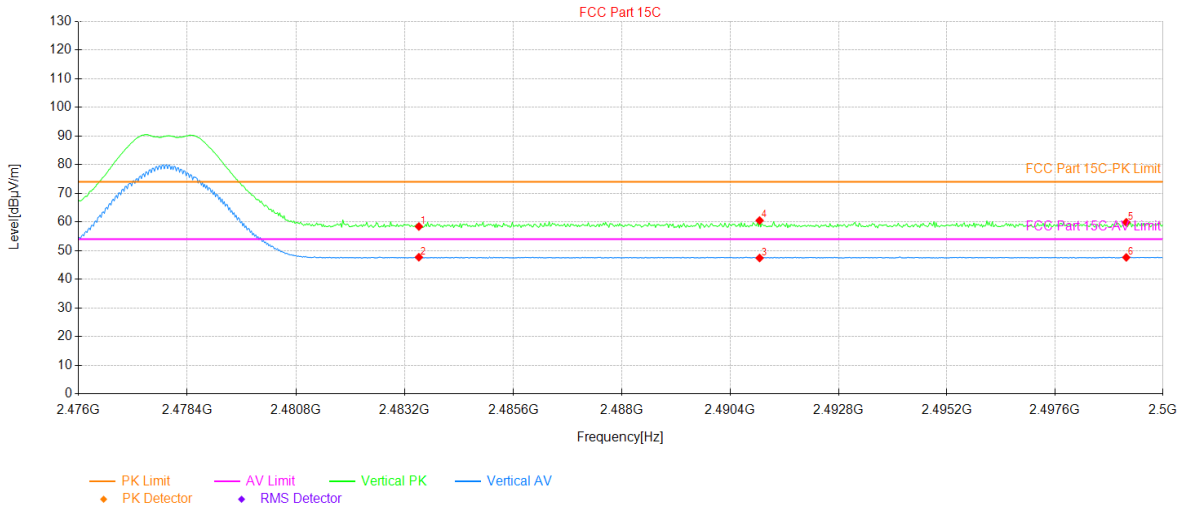
Suspected Data List

NO.	Freq. [MHz]	Reading [dBµV]	Factor [dB/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict	Polarity
1	2314.70	11.12	36.49	47.61	54.00	6.39	109	AV	PASS	Horizontal
2	2314.70	21.95	36.49	58.44	74.00	15.56	102	PK	PASS	Horizontal
3	2350.61	21.99	35.97	57.96	74.00	16.04	53	PK	PASS	Horizontal
4	2350.61	10.90	35.97	46.87	54.00	7.13	154	AV	PASS	Horizontal
5	2390.06	20.96	35.93	56.89	74.00	17.11	318	PK	PASS	Horizontal
6	2390.06	10.64	35.93	46.57	54.00	7.43	318	AV	PASS	Horizontal

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Product Name:	Smart Phone	Product Model:	GQ5020TH
Test By:	Robin Gu	Test mode:	BLE Tx (LE 2M PHY)
Test Channel:	Highest channel	Polarization:	Vertical
Test Voltage:	DC 3.87V		



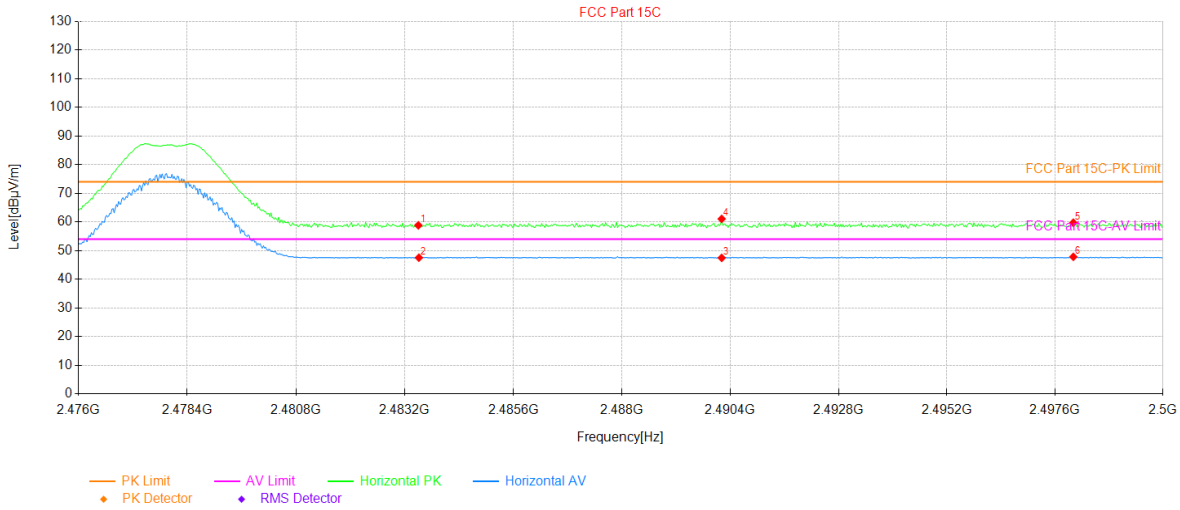
Suspected Data List

NO.	Freq. [MHz]	Reading [dBµV]	Factor [dB/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict	Polarity
1	2483.51	21.64	36.74	58.38	74.00	15.62	63	PK	PASS	Vertical
2	2483.51	10.93	36.74	47.67	54.00	6.33	52	AV	PASS	Vertical
3	2491.05	10.64	36.76	47.40	54.00	6.60	314	AV	PASS	Vertical
4	2491.05	23.72	36.76	60.48	74.00	13.52	90	PK	PASS	Vertical
5	2499.18	23.08	36.78	59.86	74.00	14.14	56	PK	PASS	Vertical
6	2499.18	10.82	36.78	47.60	54.00	6.40	258	AV	PASS	Vertical

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Product Name:	Smart Phone	Product Model:	GQ5020TH
Test By:	Robin Gu	Test mode:	BLE Tx (LE 2M PHY)
Test Channel:	Highest channel	Polarization:	Horizontal
Test Voltage:	DC 3.87V		



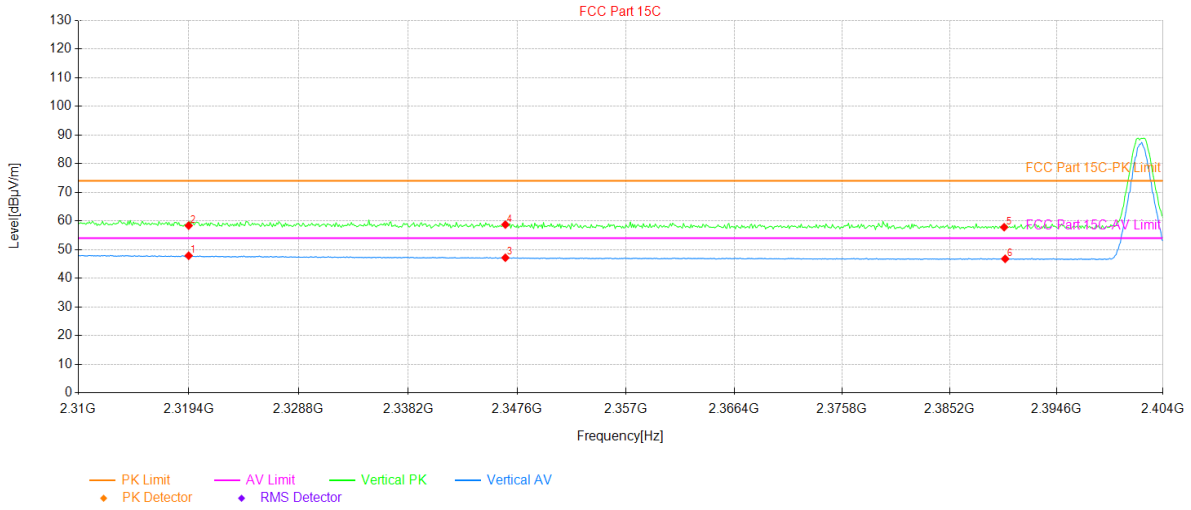
Suspected Data List

NO.	Freq. [MHz]	Reading [dBµV]	Factor [dB/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict	Polarity
1	2483.50	22.05	36.74	58.79	74.00	15.21	233	PK	PASS	Horizontal
2	2483.51	10.78	36.74	47.52	54.00	6.48	274	AV	PASS	Horizontal
3	2490.21	10.68	36.76	47.44	54.00	6.56	68	AV	PASS	Horizontal
4	2490.21	24.28	36.76	61.04	74.00	12.96	214	PK	PASS	Horizontal
5	2498.01	22.94	36.77	59.71	74.00	14.29	106	PK	PASS	Horizontal
6	2498.01	11.05	36.77	47.82	54.00	6.18	151	AV	PASS	Horizontal

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Product Name:	Smart Phone	Product Model:	GQ5020TH
Test By:	Robin Gu	Test mode:	BLE Tx (LE Coded PHY, S=2)
Test Channel:	Lowest channel	Polarization:	Vertical
Test Voltage:	DC 3.87V		



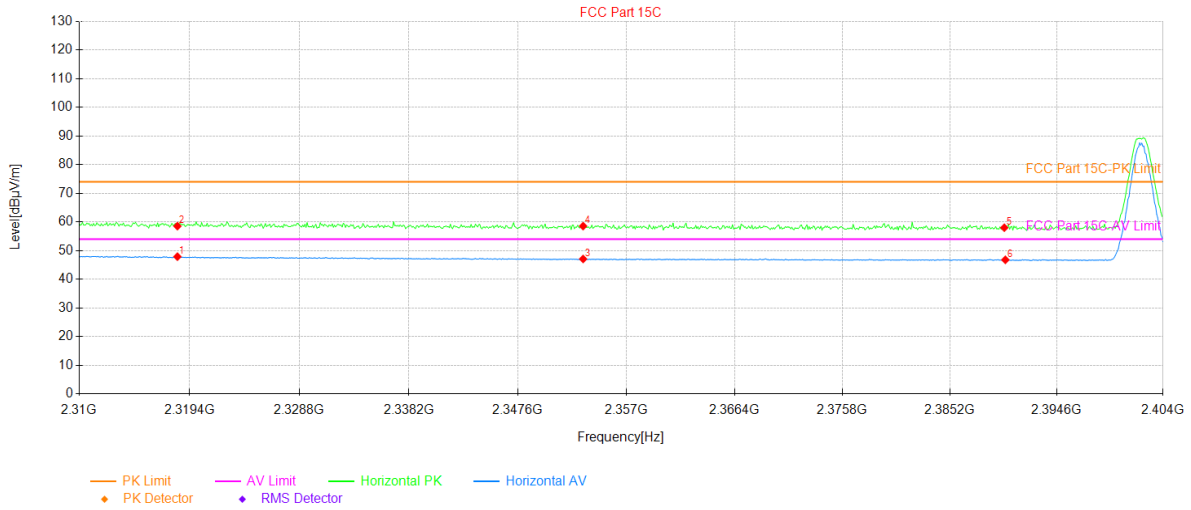
Suspected Data List

NO.	Freq. [MHz]	Reading [dBµV]	Factor [dB/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict	Polarity
1	2319.40	11.44	36.41	47.85	54.00	6.15	216	AV	PASS	Vertical
2	2319.40	21.93	36.41	58.34	74.00	15.66	243	PK	PASS	Vertical
3	2346.57	11.13	36.01	47.14	54.00	6.86	149	AV	PASS	Vertical
4	2346.57	22.68	36.01	58.69	74.00	15.31	273	PK	PASS	Vertical
5	2390.00	21.87	35.93	57.80	74.00	16.20	111	PK	PASS	Vertical
6	2390.09	10.83	35.93	46.76	54.00	7.24	250	AV	PASS	Vertical

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Product Name:	Smart Phone	Product Model:	GQ5020TH
Test By:	Robin Gu	Test mode:	BLE Tx (LE Coded PHY, S=2)
Test Channel:	Lowest channel	Polarization:	Horizontal
Test Voltage:	DC 3.87V		



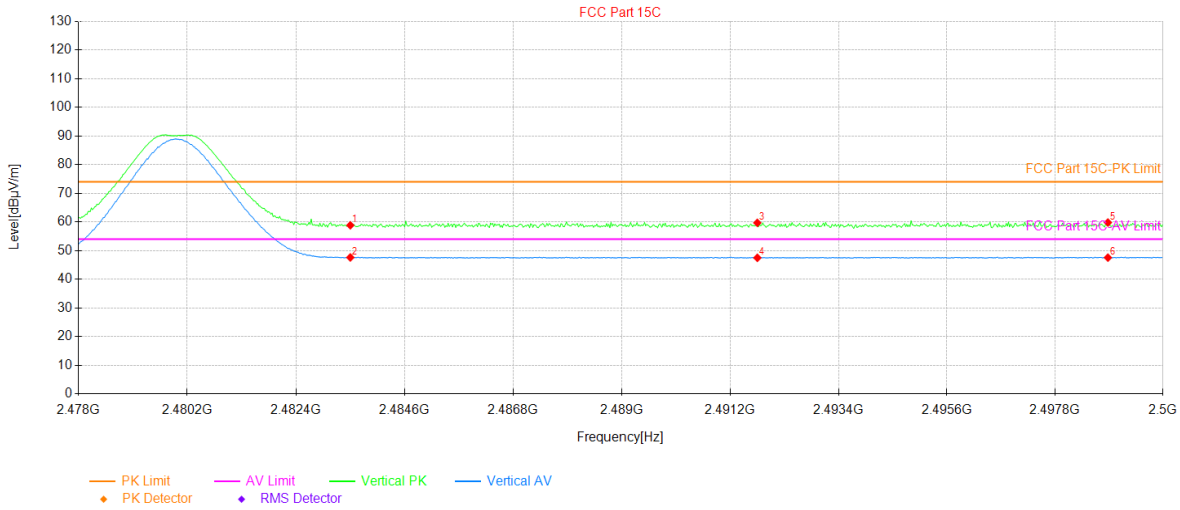
Suspected Data List

NO.	Freq. [MHz]	Reading [dBµV]	Factor [dB/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict	Polarity
1	2318.37	11.43	36.43	47.86	54.00	6.14	116	AV	PASS	Horizontal
2	2318.37	22.08	36.43	58.51	74.00	15.49	279	PK	PASS	Horizontal
3	2353.24	11.09	35.97	47.06	54.00	6.94	357	AV	PASS	Horizontal
4	2353.24	22.56	35.97	58.53	74.00	15.47	113	PK	PASS	Horizontal
5	2390.00	22.04	35.93	57.97	74.00	16.03	105	PK	PASS	Horizontal
6	2390.09	10.84	35.93	46.77	54.00	7.23	298	AV	PASS	Horizontal

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Product Name:	Smart Phone	Product Model:	GQ5020TH
Test By:	Robin Gu	Test mode:	BLE Tx (LE Coded PHY, S=2)
Test Channel:	Highest channel	Polarization:	Vertical
Test Voltage:	DC 3.87V		



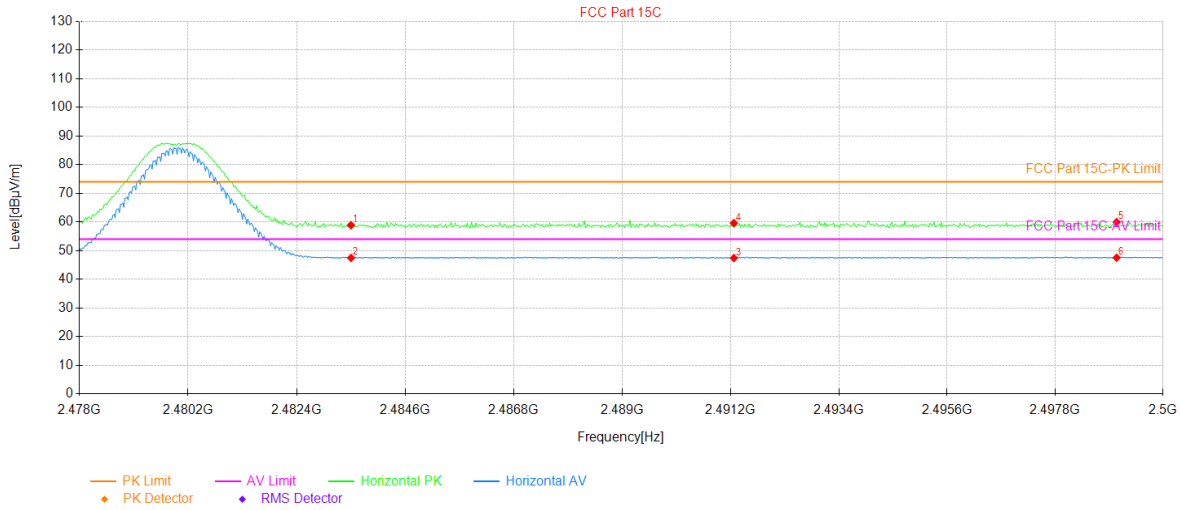
Suspected Data List

NO.	Freq. [MHz]	Reading [dBµV]	Factor [dB/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict	Polarity
1	2483.50	22.07	36.74	58.81	74.00	15.19	96	PK	PASS	Vertical
2	2483.50	10.85	36.74	47.59	54.00	6.41	210	AV	PASS	Vertical
3	2491.75	22.91	36.76	59.67	74.00	14.33	251	PK	PASS	Vertical
4	2491.75	10.71	36.76	47.47	54.00	6.53	24	AV	PASS	Vertical
5	2498.88	23.00	36.77	59.77	74.00	14.23	70	PK	PASS	Vertical
6	2498.88	10.76	36.77	47.53	54.00	6.47	115	AV	PASS	Vertical

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Product Name:	Smart Phone	Product Model:	GQ5020TH
Test By:	Robin Gu	Test mode:	BLE Tx (LE Coded PHY, S=2)
Test Channel:	Highest channel	Polarization:	Horizontal
Test Voltage:	DC 3.87V		



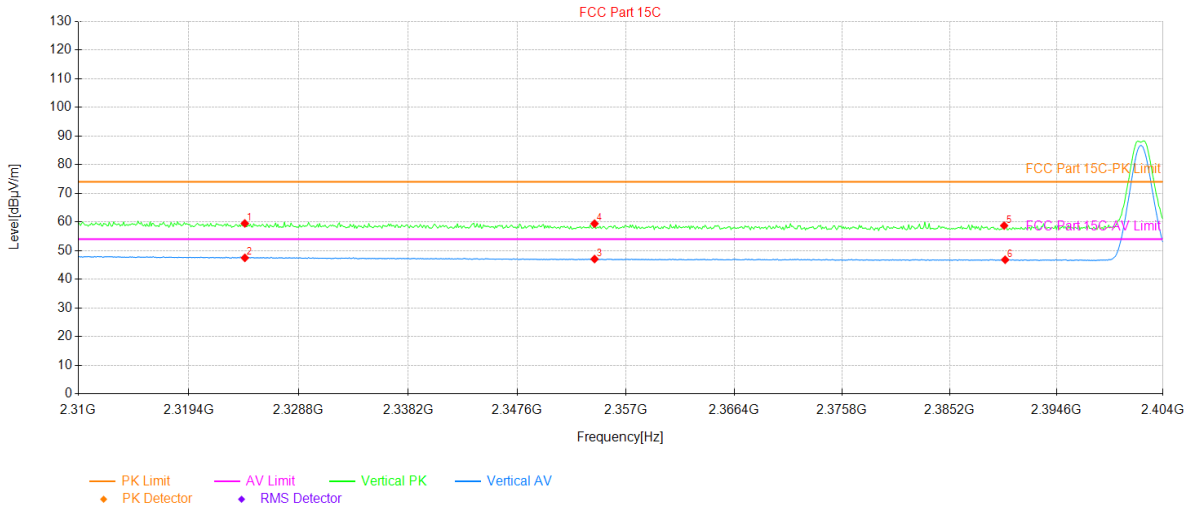
Suspected Data List

NO.	Freq. [MHz]	Reading [dBµV]	Factor [dB/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict	Polarity
1	2483.50	22.08	36.74	58.82	74.00	15.18	152	PK	PASS	Horizontal
2	2483.50	10.69	36.74	47.43	54.00	6.57	110	AV	PASS	Horizontal
3	2491.27	10.62	36.76	47.38	54.00	6.62	84	AV	PASS	Horizontal
4	2491.27	22.80	36.76	59.56	74.00	14.44	304	PK	PASS	Horizontal
5	2499.05	23.15	36.77	59.92	74.00	14.08	326	PK	PASS	Horizontal
6	2499.05	10.74	36.77	47.51	54.00	6.49	228	AV	PASS	Horizontal

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Product Name:	Smart Phone	Product Model:	GQ5020TH
Test By:	Robin Gu	Test mode:	BLE Tx (LE Coded PHY, S=8)
Test Channel:	Lowest channel	Polarization:	Vertical
Test Voltage:	DC 3.87V		



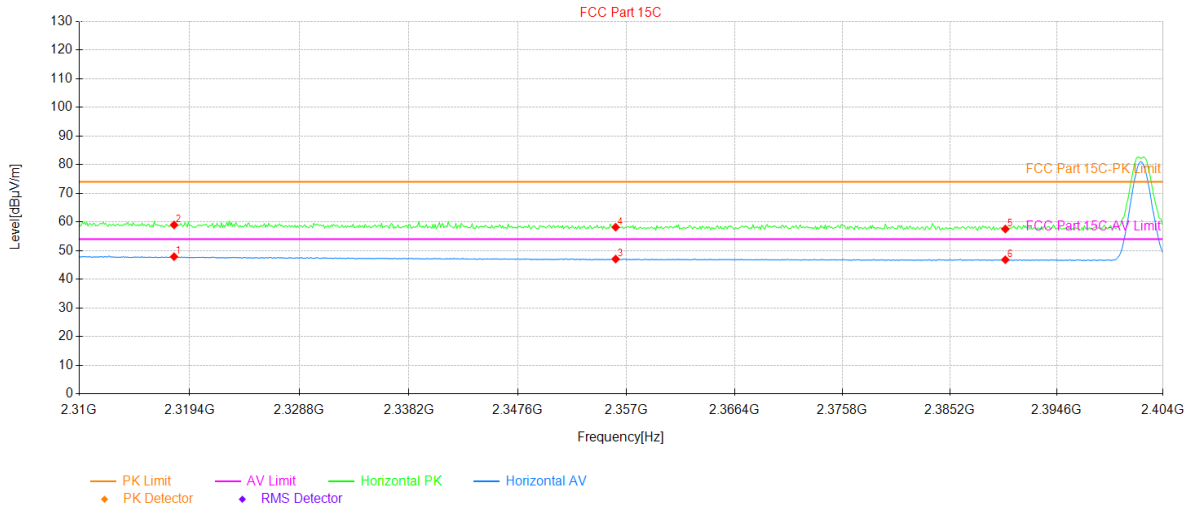
Suspected Data List

NO.	Freq. [MHz]	Reading [dBµV]	Factor [dB/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict	Polarity
1	2324.19	23.14	36.33	59.47	74.00	14.53	18	PK	PASS	Vertical
2	2324.19	11.12	36.33	47.45	54.00	6.55	240	AV	PASS	Vertical
3	2354.27	11.08	35.96	47.04	54.00	6.96	58	AV	PASS	Vertical
4	2354.27	23.42	35.96	59.38	74.00	14.62	26	PK	PASS	Vertical
5	2390.00	22.76	35.93	58.69	74.00	15.31	318	PK	PASS	Vertical
6	2390.09	10.86	35.93	46.79	54.00	7.21	218	AV	PASS	Vertical

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Product Name:	Smart Phone	Product Model:	GQ5020TH
Test By:	Robin Gu	Test mode:	BLE Tx (LE Coded PHY, S=8)
Test Channel:	Lowest channel	Polarization:	Horizontal
Test Voltage:	DC 3.87V		



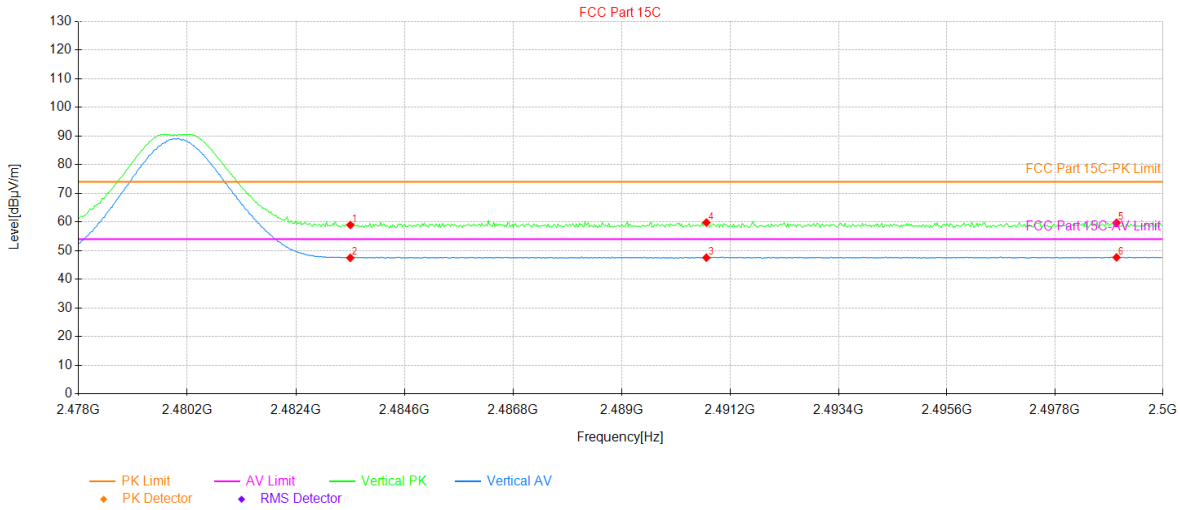
Suspected Data List

NO.	Freq. [MHz]	Reading [dBµV]	Factor [dB/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict	Polarity
1	2318.08	11.42	36.44	47.86	54.00	6.14	2	AV	PASS	Horizontal
2	2318.08	22.50	36.44	58.94	74.00	15.06	73	PK	PASS	Horizontal
3	2356.06	11.06	35.97	47.03	54.00	6.97	132	AV	PASS	Horizontal
4	2356.06	22.16	35.97	58.13	74.00	15.87	53	PK	PASS	Horizontal
5	2390.09	21.58	35.93	57.51	74.00	16.49	292	PK	PASS	Horizontal
6	2390.09	10.86	35.93	46.79	54.00	7.21	92	AV	PASS	Horizontal

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Product Name:	Smart Phone	Product Model:	GQ5020TH
Test By:	Robin Gu	Test mode:	BLE Tx (LE Coded PHY, S=8)
Test Channel:	Highest channel	Polarization:	Vertical
Test Voltage:	DC 3.87V		



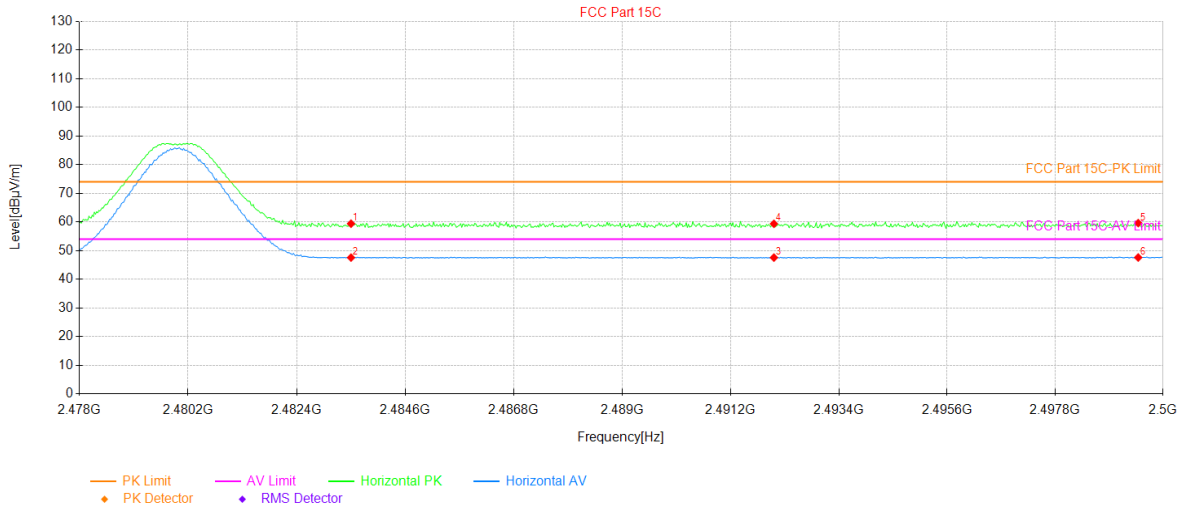
Suspected Data List

NO.	Freq. [MHz]	Reading [dBµV]	Factor [dB/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict	Polarity
1	2483.50	22.18	36.74	58.92	74.00	15.08	0	PK	PASS	Vertical
2	2483.50	10.71	36.74	47.45	54.00	6.55	246	AV	PASS	Vertical
3	2490.72	10.75	36.76	47.51	54.00	6.49	74	AV	PASS	Vertical
4	2490.72	23.01	36.76	59.77	74.00	14.23	126	PK	PASS	Vertical
5	2499.05	22.93	36.77	59.70	74.00	14.30	37	PK	PASS	Vertical
6	2499.05	10.85	36.77	47.62	54.00	6.38	307	AV	PASS	Vertical

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Product Name:	Smart Phone	Product Model:	GQ5020TH
Test By:	Robin Gu	Test mode:	BLE Tx (LE Coded PHY, S=8)
Test Channel:	Highest channel	Polarization:	Horizontal
Test Voltage:	DC 3.87V		



Suspected Data List

NO.	Freq. [MHz]	Reading [dBµV]	Factor [dB/m]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Angle [°]	Detector	Verdict	Polarity
1	2483.50	22.62	36.74	59.36	74.00	14.64	267	PK	PASS	Horizontal
2	2483.50	10.81	36.74	47.55	54.00	6.45	94	AV	PASS	Horizontal
3	2492.08	10.78	36.76	47.54	54.00	6.46	75	AV	PASS	Horizontal
4	2492.08	22.58	36.76	59.34	74.00	14.66	353	PK	PASS	Horizontal
5	2499.49	22.80	36.78	59.58	74.00	14.42	105	PK	PASS	Horizontal
6	2499.49	10.80	36.78	47.58	54.00	6.42	293	AV	PASS	Horizontal

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

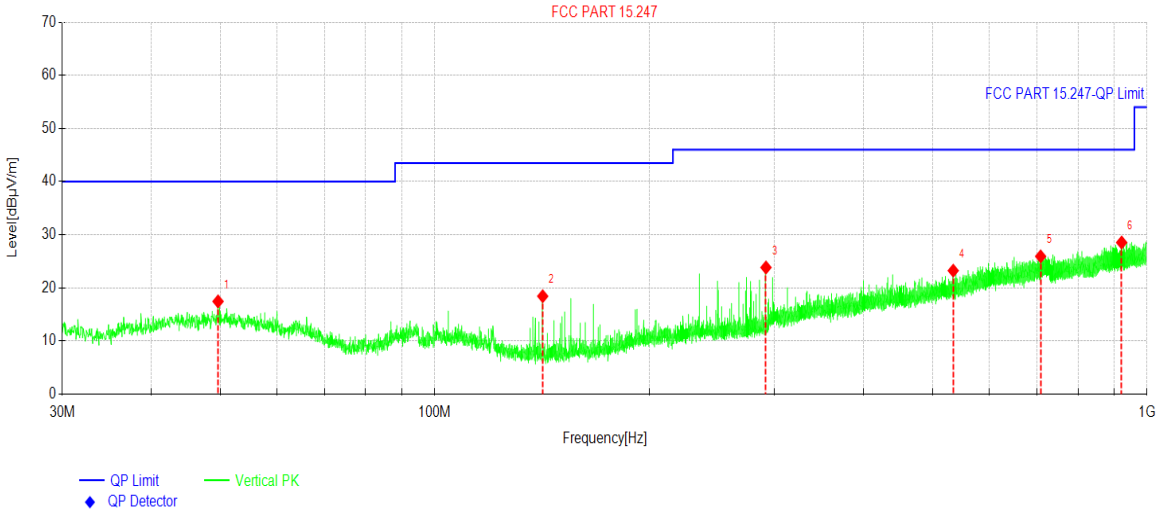
5.5 Emissions in Non-restricted Frequency Bands

Below 30MHz:

Test Frequency from 9KHz to 30MHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.

Below 1GHz:

Product Name:	Smart Phone	**Product Model:**	GQ5020TH
Test By:	Kiran Zeng	**Test mode:**	BLE Tx (LE 1M PHY)
Test Frequency:	30 MHz ~ 1 GHz	**Polarization:**	Vertical
Test Channel:	Lowest channel	**Test Voltage:**	DC 3.87V



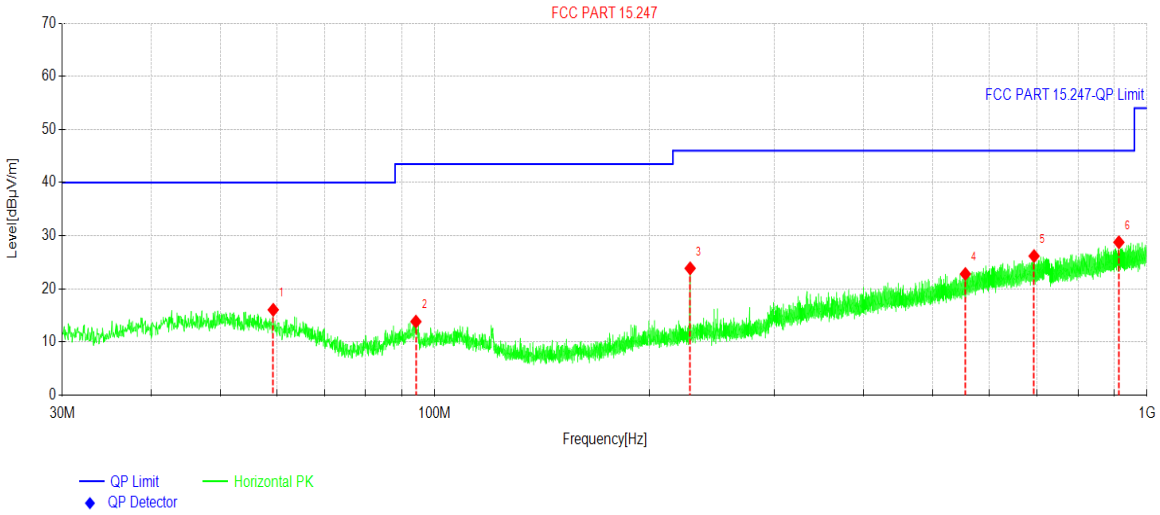
Suspected Data List

NO.	Freq. [MHz]	Reading[dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Trace	Polarity
1	49.6435	29.86	-12.41	17.45	40.00	22.55	PK	Vertical
2	141.7981	36.42	-17.99	18.43	43.50	25.07	PK	Vertical
3	291.8161	36.70	-12.87	23.83	46.00	22.17	PK	Vertical
4	534.5707	31.22	-7.98	23.24	46.00	22.76	PK	Vertical
5	709.1310	30.93	-5.01	25.92	46.00	20.08	PK	Vertical
6	921.3776	30.61	-2.08	28.53	46.00	17.47	PK	Vertical

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Product Name:	Smart Phone	Product Model:	GQ5020TH
Test By:	Kiran Zeng	Test mode:	BLE Tx (LE 1M PHY)
Test Frequency:	30 MHz ~ 1 GHz	Polarization:	Horizontal
Test Channel:	Lowest channel	Test Voltage:	DC 3.87V



Suspected Data List

NO.	Freq. [MHz]	Reading[dBµV/m]	Factor [dB]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Trace	Polarity
1	59.3440	29.91	-13.85	16.06	40.00	23.94	PK	Horizontal
2	94.1202	29.10	-15.26	13.84	43.50	29.66	PK	Horizontal
3	228.3749	38.25	-14.39	23.86	46.00	22.14	PK	Horizontal
4	555.9603	30.47	-7.67	22.80	46.00	23.20	PK	Horizontal
5	694.2407	31.49	-5.32	26.17	46.00	19.83	PK	Horizontal
6	913.1807	31.04	-2.27	28.77	46.00	17.23	PK	Horizontal

Remark:

1. Level = Reading + Factor(Antenna Factor + Cable Loss – Preamplifier Factor).

Above 1GHz:

BLE Tx (LE 1M PHY)						
Test channel: Lowest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
4804.00	48.49	-7.98	40.51	74.00	33.49	Vertical
4804.00	48.81	-7.98	40.83	74.00	33.17	Horizontal
Detector: Average Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
4804.00	39.62	-7.98	31.64	54.00	22.36	Vertical
4804.00	39.79	-7.98	31.81	54.00	22.19	Horizontal
Test channel: Middle channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
4884.00	48.20	-7.46	40.74	74.00	33.26	Vertical
4884.00	48.50	-7.46	41.04	74.00	32.96	Horizontal
Detector: Average Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
4884.00	39.40	-7.46	31.94	54.00	22.06	Vertical
4884.00	39.80	-7.46	32.34	54.00	21.66	Horizontal
Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
4960.00	48.82	-7.00	41.82	74.00	32.18	Vertical
4960.00	47.99	-7.00	40.99	74.00	33.01	Horizontal
Detector: Average Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
4960.00	40.09	-7.00	33.09	54.00	20.91	Vertical
4960.00	39.57	-7.00	32.57	54.00	21.43	Horizontal

Remark:

1. Level = Reading + Factor.

2. *Test Frequency up to 25GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.*

BLE Tx (LE 2M PHY)						
Test channel: Lowest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
4808.00	47.99	-7.98	40.01	74.00	33.99	Vertical
4808.00	48.74	-7.98	40.76	74.00	33.24	Horizontal
Detector: Average Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
4808.00	40.06	-7.98	32.08	54.00	21.92	Vertical
4808.00	40.26	-7.98	32.28	54.00	21.72	Horizontal
Test channel: Middle channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
4884.00	48.75	-7.46	41.29	74.00	32.71	Vertical
4884.00	48.40	-7.46	40.94	74.00	33.06	Horizontal
Detector: Average Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
4884.00	39.25	-7.46	31.79	54.00	22.21	Vertical
4884.00	39.52	-7.46	32.06	54.00	21.94	Horizontal
Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
4956.00	48.32	-7.00	41.32	74.00	32.68	Vertical
4956.00	48.09	-7.00	41.09	74.00	32.91	Horizontal
Detector: Average Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
4956.00	39.68	-7.00	32.68	54.00	21.32	Vertical
4956.00	40.02	-7.00	33.02	54.00	20.98	Horizontal

Remark:

1. Level = Reading + Factor.

2. *Test Frequency up to 25GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.*

BEL Tx (LE Coded PHY, S=2)						
Test channel: Lowest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
4804.00	48.22	-7.98	40.24	74.00	33.76	Vertical
4804.00	47.99	-7.98	40.01	74.00	33.99	Horizontal
Detector: Average Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
4804.00	39.68	-7.98	31.70	54.00	22.30	Vertical
4804.00	40.20	-7.98	32.22	54.00	21.78	Horizontal
Test channel: Middle channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
4884.00	48.98	-7.46	41.52	74.00	32.48	Vertical
4884.00	48.73	-7.46	41.27	74.00	32.73	Horizontal
Detector: Average Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
4884.00	39.85	-7.46	32.39	54.00	21.61	Vertical
4884.00	39.58	-7.46	32.12	54.00	21.88	Horizontal
Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
4960.00	48.65	-7.00	41.65	74.00	32.35	Vertical
4960.00	48.56	-7.00	41.56	74.00	32.44	Horizontal
Detector: Average Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
4960.00	39.33	-7.00	32.33	54.00	21.67	Vertical
4960.00	39.51	-7.00	32.51	54.00	21.49	Horizontal

Remark:

1. Level = Reading + Factor.

2. *Test Frequency up to 25GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.*

BEL Tx (LE Coded PHY, S=8)						
Test channel: Lowest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
4804.00	48.53	-7.98	40.55	74.00	33.45	Vertical
4804.00	48.12	-7.98	40.14	74.00	33.86	Horizontal
Detector: Average Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
4804.00	39.84	-7.98	31.86	54.00	22.14	Vertical
4804.00	40.22	-7.98	32.24	54.00	21.76	Horizontal
Test channel: Middle channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
4884.00	48.78	-7.46	41.32	74.00	32.68	Vertical
4884.00	48.94	-7.46	41.48	74.00	32.52	Horizontal
Detector: Average Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
4884.00	40.03	-7.46	32.57	54.00	21.43	Vertical
4884.00	40.08	-7.46	32.62	54.00	21.38	Horizontal
Test channel: Highest channel						
Detector: Peak Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
4960.00	48.58	-7.00	41.58	74.00	32.42	Vertical
4960.00	48.66	-7.00	41.66	74.00	32.34	Horizontal
Detector: Average Value						
Frequency (MHz)	Read Level (dBμV)	Factor (dB)	Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Polarization
4960.00	39.45	-7.00	32.45	54.00	21.55	Vertical
4960.00	39.33	-7.00	32.33	54.00	21.67	Horizontal

Remark:

1. Level = Reading + Factor.

2. *Test Frequency up to 25GHz, and the emission levels of other frequencies are lower than the limit 20dB, not show in test report.*

------End of report------