

FCC REPORT

(WIFI)

Applicant: HMD global Oy

Address of Applicant: Bertel Jungin aukio 9, 02600 Espoo, Finland

Equipment Under Test (EUT)

Product Name: Smart Phone

Model No.: TA-1390

Trade mark: NOKIA

FCC ID: 2AJOTTA-1390

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247

Date of sample receipt: 19 Aug., 2021

Date of Test: 20 Aug., to 28 Aug., 2021

Date of report issued: 29 Aug., 2021

Test Result: PASS*

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Bruce Zhang
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the JYT product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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2 Version

Version No.	Date	Description
00	29 Aug., 2021	Original

Tested by:

Mike.ou
Test Engineer

Date:

29 Aug., 2021

Reviewed by:

Winner Zhang
Project Engineer

Date:

29 Aug., 2021

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4 Test Summary

Test Items	Section in CFR 47	Test Data	Result
Antenna requirement	15.203 & 15.247 (b)	See Section 6.1	Pass
AC Power Line Conducted Emission	15.207	See Section 6.2	Pass
Conducted Peak Output Power	15.247 (b)(3)	Refer to the report: SRTC2021-9004(F)-21082801(F)	Refer to the report: SRTC2021-9004(F)-21082801(F)
6dB Emission Bandwidth	15.247 (a)(2)	Refer to the report: SRTC2021-9004(F)-21082801(F)	Refer to the report: SRTC2021-9004(F)-21082801(F)
Power Spectral Density	15.247 (e)	Refer to the report: SRTC2021-9004(F)-21082801(F)	Refer to the report: SRTC2021-9004(F)-21082801(F)
Conducted Band Edge	15.247 (d) & 15.205 & 15.209	Refer to the report: SRTC2021-9004(F)-21082801(F)	Refer to the report: SRTC2021-9004(F)-21082801(F)
Radiated Band Edge		See Section 6.3.1	Pass
Conducted Spurious Emission	15.205 & 15.209	Refer to the report: SRTC2021-9004(F)-21082801(F)	Refer to the report: SRTC2021-9004(F)-21082801(F)
Radiated Spurious Emission		See Section 6.4.1	Pass
Remark: 1. Pass: The EUT complies with the essential requirements in the standard. 2. The report: SRTC2021-9004(F)-21082801(F), issued by The State Radio_monitoring_center Testing Center.			
Test Method:	ANSI C63.10-2013 KDB 558074 D01 15.247 Meas Guidance v05r02		

5 General Information

5.1 Client Information

Applicant:	HMD global Oy
Address:	Bertel Jungin aukio 9, 02600 Espoo, Finland
Manufacturer:	HMD global Oy
Address:	Bertel Jungin aukio 9, 02600 Espoo, Finland

5.2 General Description of E.U.T.

Product Name:	Smart Phone
Model No.:	TA-1390
Operation Frequency:	2412MHz~2462MHz: 802.11b/802.11g/802.11n(HT20) 2422MHz~2452MHz: 802.11n(HT40)
Channel numbers:	11: 802.11b/802.11g/802.11(HT20) 7: 802.11n(HT40)
Channel separation:	5MHz
Modulation technology: (IEEE 802.11b)	Direct Sequence Spread Spectrum (DSSS)
Modulation technology: (IEEE 802.11g/802.11n)	Orthogonal Frequency Division Multiplexing(OFDM)
Data speed (IEEE 802.11b):	1Mbps, 2Mbps, 5.5Mbps, 11Mbps
Data speed (IEEE 802.11g):	6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps, 54Mbps
Data speed (IEEE 802.11n):	Up to 150Mbps
Antenna Type:	Internal Antenna
Antenna gain:	-2.5dBi
Power supply:	Rechargeable Lithium ion Polymer Battery DC3.85V, 4.85Ah
AC adapter:	Adapter 1: Model: TN-050200U3, TN-050200E3, TN-050200C3A Input: AC100-240V, 50/60Hz, 0.35A Output: DC 5.0V, 2.0A 10.0W Note: Only the pins are different between different models Adapter 2: Model: TN-050200U3, TN-050200A3, TN-050200C3A Input: AC100-240V, 50/60Hz, 0.35A Output: DC 5.0V, 2.0A 10.0W Note: Only the pins are different between different models Adapter 3: Model: AD-010A, AD-010X Input: AC100-240V, 50/60Hz, 0.35A Output: DC 5.0V, 2.0A 10.0W Note: Only the pins are different between different models
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

Operation Frequency each of channel for 802.11b/g/n(HT20)							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2412MHz	4	2427MHz	7	2442MHz	10	2457MHz
2	2417MHz	5	2432MHz	8	2447MHz	11	2462MHz
3	2422MHz	6	2437MHz	9	2452MHz		

Note:

- For 802.11n-HT40 mode, the channel number is from 3 to 9;
- Channel 1, 6 & 11 selected for 802.11b/g/n-HT20 as Lowest, Middle and Highest channel. Channel 3, 6 & 9 selected for 802.11n-HT40 as Lowest, Middle and Highest Channel.

5.3 Test environment and mode

Operating Environment:	
Temperature:	24.0 °C
Humidity:	54 % RH
Atmospheric Pressure:	1010 mbar
Test mode:	
Transmitting mode	Keep the EUT in continuous transmitting with modulation
Radiated Emission: The sample was placed 0.8m (below 1GHz)/1.5m (above 1GHz) above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages. We have verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:	
Per-scan all kind of data rate, the follow list were the worst case.	
Mode	Data rate
802.11b	1Mbps
802.11g	6Mbps
802.11n(HT20)	6.5Mbps
802.11n(HT40)	13.5Mbps

5.4 Description of Support Units

The EUT has been tested as an independent unit.

5.5 Measurement Uncertainty

Parameter	Expanded Uncertainty (Confidence of 95%(U = 2Uc(y)))
Conducted Emission (9kHz ~ 30MHz)	±2.62 dB (k=2)
Radiated Emission (9kHz ~ 30MHz) (3m SAC)	±3.13 dB
Radiated Emission (30MHz ~ 1000MHz) (3m SAC)	±4.45 dB
Radiated Emission (1GHz ~ 18GHz) (3m SAC)	±5.34 dB
Radiated Emission (18GHz ~ 40GHz) (3m SAC)	±5.34 dB

Note: The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI C63.26-2015. 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.

5.6 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 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.

- **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>

5.7 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://www.ccis-cb.com>

5.8 Test Instruments list

Radiated Emission:					
Test Equipment	Manufacturer	Model No.	Management Number	Cal.Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
3m SAC	SAEMC	9m*6m*6m	WXJ001-1	01-19-2021	01-18-2024
BiConiLog Antenna	SCHWARZBECK	VULB9163	WXJ002	03-03-2021	03-02-2022
Biconical Antenna	SCHWARZBECK	VUBA9117	WXJ002-1	06-20-2021	06-19-2022
Horn Antenna	SCHWARZBECK	BBHA9120D	WXJ002-2	03-03-2021	03-02-2022
Horn Antenna	SCHWARZBECK	BBHA9120D	WXJ002-3	06-18-2021	06-17-2022
Loop Antenna	SCHWARZBECK	FMZB 1519 B	WXJ002-4	03-07-2021	03-06-2022
Pre-amplifier (30MHz ~ 1GHz)	HP	8447D	WXG001-2	03-07-2021	03-06-2022
Pre-amplifier (1GHz ~ 18GHz)	SKET	LNPA_0118G-50	WXG001-3	03-07-2021	03-06-2022
Pre-amplifier (18GHz ~ 40GHz)	RF System	TRLA-180400G45B	WXG001-9	03-07-2021	03-06-2022
EMI Test Receiver	Rohde & Schwarz	ESRP7	WXJ003-1	03-03-2021	03-02-2022
Spectrum analyzer	Rohde & Schwarz	FSP30	WXJ004	03-03-2021	03-02-2022
Spectrum Analyzer	KEYSIGHT	N9010B	WXJ004-2	11-27-2020	11-26-2021
Coaxial Cable (30MHz ~ 1GHz)	JYT	JYT3M-1G-NN-8M	WXG001-4	03-07-2021	03-06-2022
Coaxial Cable (1GHz ~ 18GHz)	JYT	JYT3M-18G-NN-8M	WXG001-5	03-07-2021	03-06-2022
Coaxial Cable (9kHz ~ 30MHz)	JYT	JYT3M-1G-BB-5M	WXG001-6	03-07-2021	03-06-2022
Coaxial Cable (1GHz ~ 18GHz)	JYT	JYT3M-40G-SS-8M	WXG001-7	03-07-2021	03-06-2022
RF Switch Unit	Tonscend	JS0806-F	WXJ089	N/A	
Test Software	Tonscend	TS+	Version: 3.0.0.1		

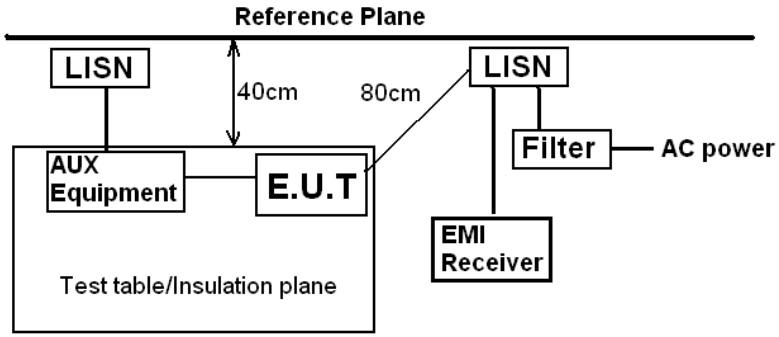
Conducted Emission:					
Test Equipment	Manufacturer	Model No.	Management Number	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
EMI Test Receiver	Rohde & Schwarz	ESCI	WXJ003	03-03-2021	03-02-2022
LISN	Rohde & Schwarz	ENV432	WXJ005-2	04-06-2021	04-05-2022
LISN	Rohde & Schwarz	ESH3-Z5	WXJ005-1	06-17-2020	06-16-2022
Coaxial Cable	JYT	JYTCE-1G-NN-2M	WXG003-1	03-03-2021	03-02-2022
RF Switch	Top Precision	RSU0301	WXG003	N/A	N/A
EMI Test Software	AUDIX	E3	Version: 6.110919b		

6 Test results and Measurement Data

6.1 Antenna requirement

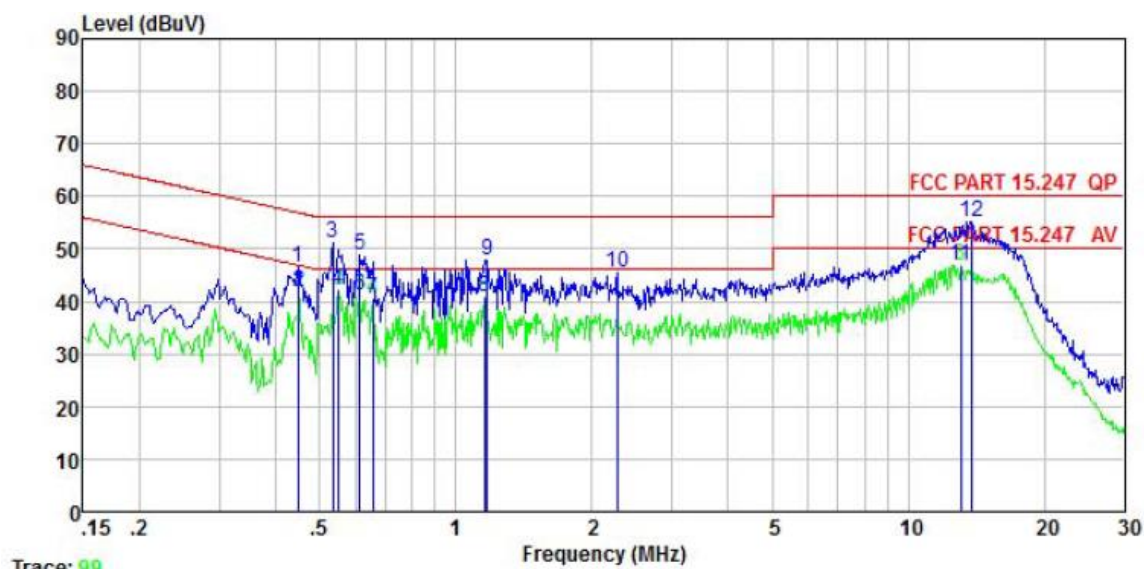
Standard requirement:	FCC Part 15 C Section 15.203 /247(b)
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique 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 Wi-Fi antenna is an Internal antenna which cannot replace by end-user, the best case gain of the antenna is -2.5 dBi.	

6.2 Conducted Emission

Test Requirement:	FCC Part 15 C Section 15.207		
Test Frequency Range:	150 kHz to 30 MHz		
Class / Severity:	Class B		
Receiver setup:	RBW=9 kHz, VBW=30 kHz		
Limit:	Frequency range (MHz)	Limit (dBuV)	
		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 logarithm of the frequency.			
Test procedure	- The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.), which provides a 50ohm/50uH coupling impedance for the measuring equipment. - 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). - 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(latest version) on conducted measurement.		
Test setup:	 Remark: E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m		
Test Instruments:	Refer to section 5.8 for details		
Test mode:	Refer to section 5.3 for details		
Test results:	Passed		
Remark:	Pre-Scan all adapter and all modulation , And the report only reflects the worst mode		

Measurement Data:

Product name:	Smart Phone	Product model:	TA-1390
Test by:	Mike	Test mode:	Wi-Fi Tx mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Line
Test voltage:	AC 120 V/60 Hz	Environment:	Temp: 22.5℃ Humi: 55%

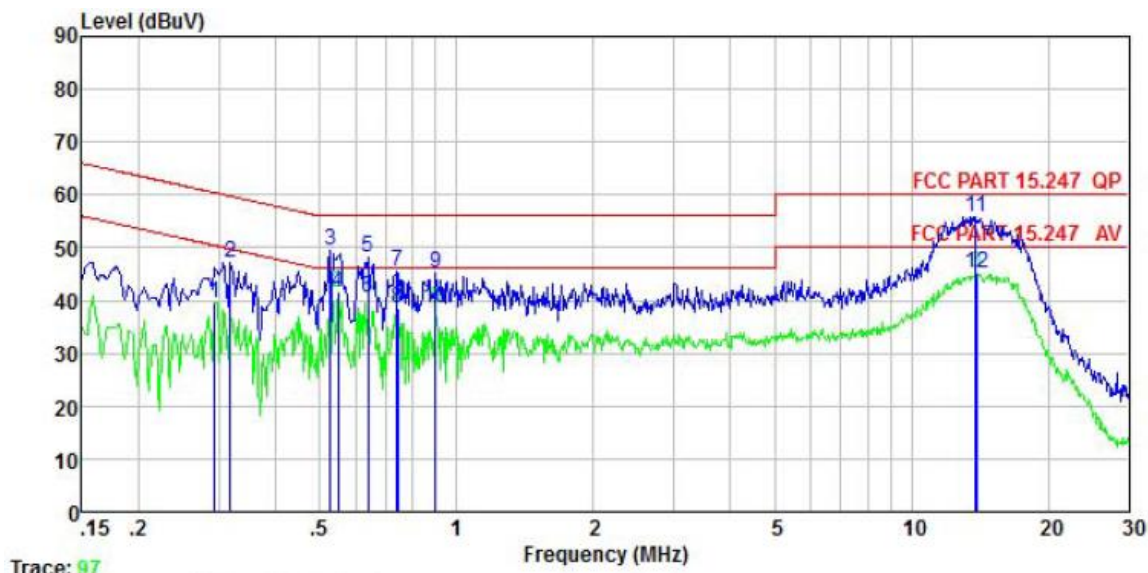


	Freq	Read Level	LISN Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.447	36.00	10.28	0.05	0.03	46.36	56.93	-10.57	QP
2	0.449	31.49	10.28	0.02	0.03	41.82	46.89	-5.07	Average
3	0.535	41.07	10.29	-0.36	0.03	51.03	56.00	-4.97	QP
4	0.549	32.12	10.29	-0.36	0.02	42.07	46.00	-3.93	Average
5	0.614	38.74	10.30	-0.38	0.02	48.68	56.00	-7.32	QP
6	0.614	31.10	10.30	-0.38	0.02	41.04	46.00	-4.96	Average
7	0.654	30.57	10.30	-0.39	0.03	40.51	46.00	-5.49	Average
8	1.160	30.28	10.32	0.29	0.08	40.97	46.00	-5.03	Average
9	1.172	37.00	10.32	0.29	0.09	47.70	56.00	-8.30	QP
10	2.273	35.36	10.34	-0.28	0.17	45.59	56.00	-10.41	QP
11	13.057	32.92	10.71	3.01	0.11	46.75	50.00	-3.25	Average
12	13.768	41.12	10.73	3.24	0.12	55.21	60.00	-4.79	QP

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Aux Factor + Cable Loss.

Product name:	Smart Phone	Product model:	TA-1390
Test by:	Mike	Test mode:	Wi-Fi Tx mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Neutral
Test voltage:	AC 120 V/60 Hz	Environment:	Temp: 22.5℃ Humi: 55%



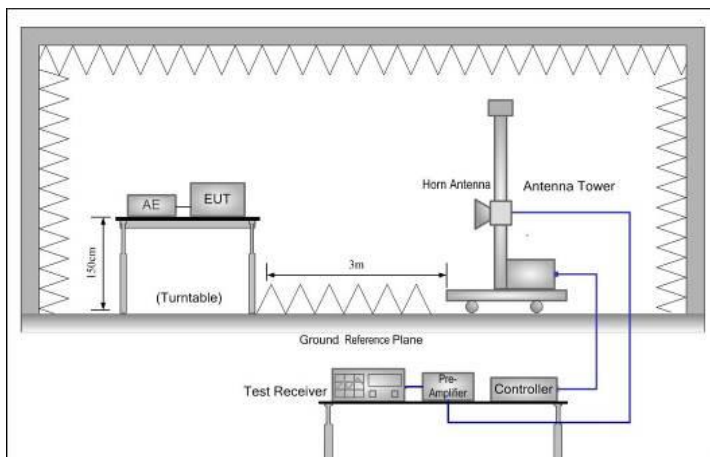
	Freq	Read Level	LISN Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.294	29.35	10.25	0.01	0.03	39.64	50.41	-10.77	Average
2	0.318	37.02	10.25	-0.01	0.03	47.29	59.75	-12.46	QP
3	0.527	39.06	10.28	0.03	0.03	49.40	56.00	-6.60	QP
4	0.549	31.17	10.29	0.03	0.02	41.51	46.00	-4.49	Average
5	0.637	37.87	10.29	0.04	0.02	48.22	56.00	-7.78	QP
6	0.637	30.30	10.29	0.04	0.02	40.65	46.00	-5.35	Average
7	0.739	35.03	10.30	0.05	0.03	45.41	56.00	-10.59	QP
8	0.743	28.01	10.30	0.05	0.03	38.39	46.00	-7.61	Average
9	0.899	34.74	10.31	0.07	0.04	45.16	56.00	-10.84	QP
10	0.899	28.07	10.31	0.07	0.04	38.49	46.00	-7.51	Average
11	13.841	42.32	10.70	2.78	0.12	55.92	60.00	-4.08	QP
12	13.915	31.57	10.70	2.78	0.12	45.17	50.00	-4.83	Average

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Aux Factor + Cable Loss.

6.3 Band Edge

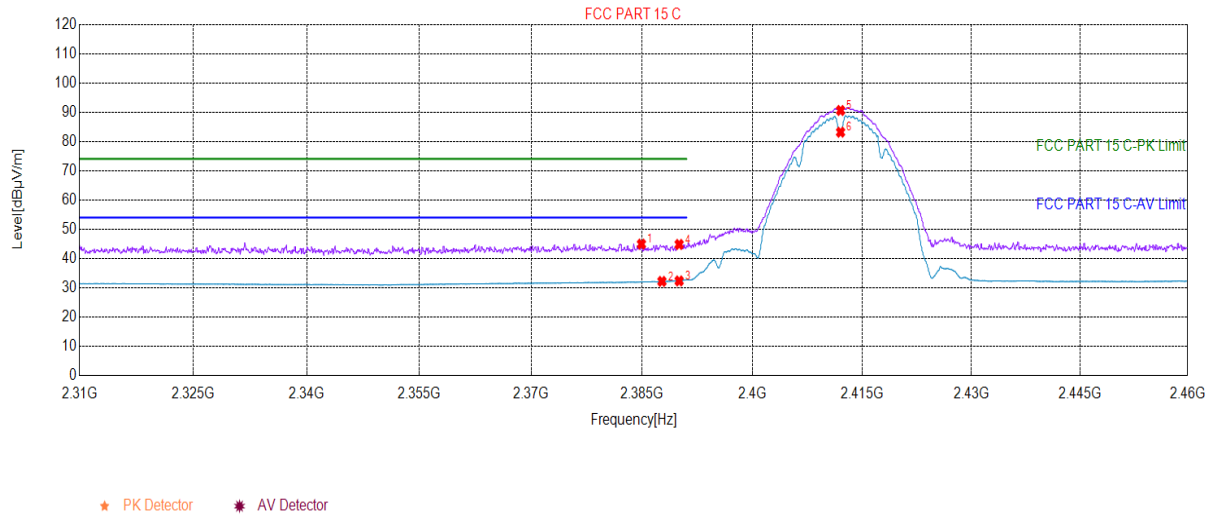
6.3.1 Radiated Emission Method

Test Requirement:	FCC Part 15 C Section 15.209 and 15.205				
Test Frequency Range:	2310 MHz to 2390 MHz and 2483.5 MHz to 2500 MHz				
Test Distance:	3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		RMS	1MHz	3MHz	Average Value
Limit:	Frequency	Limit (dBuV/m @3m)		Remark	
	Above 1GHz	54.00		Average Value	
		74.00		Peak Value	
Test Procedure:	1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. 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. 4. 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 rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. 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.				
Test setup:					
Test Instruments:	Refer to section 5.8 for details				
Test mode:	Refer to section 5.3 for details				
Test results:	Passed				

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11b Channel 1

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2384.88	44.91	7.99	74.00	29.09	159	59	Vertical
2	2387.66	32.18	8.05	54.00	21.82	184	112	Vertical
3	2390.00	32.34	8.11	54.00	21.66	162	156	Vertical
4	2390.00	44.80	8.11	74.00	29.20	321	191	Vertical
5	2412.00	90.58	8.31	0.00	-90.58	262	132	Vertical
6	2412.00	83.15	8.31	0.00	-83.15	215	262	Vertical

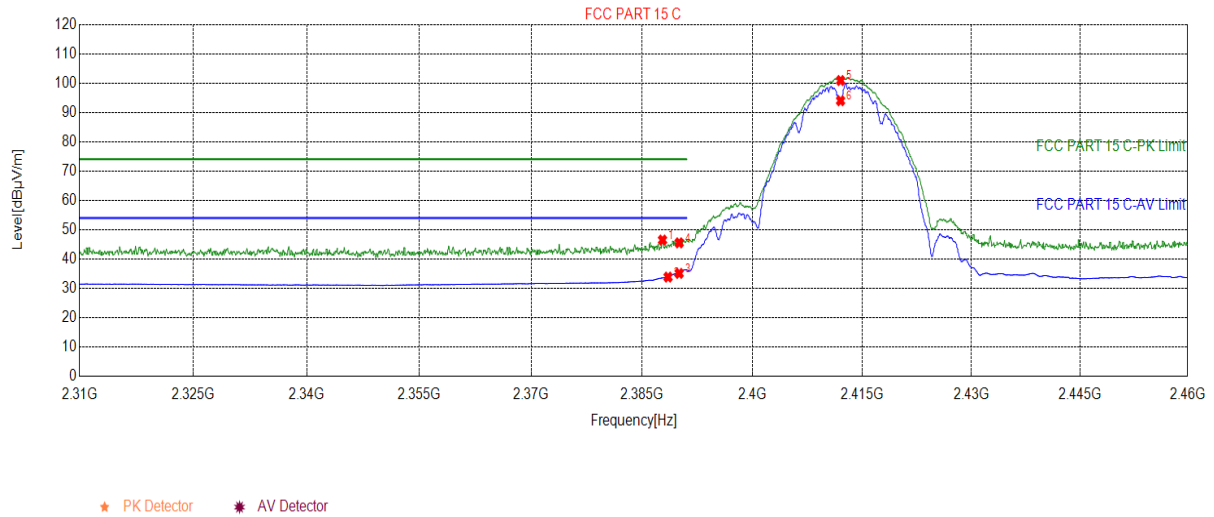
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11b Channel 1

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2387.73	46.46	8.06	74.00	27.54	174	15	Horizontal
2	2388.48	33.83	8.07	54.00	20.17	185	213	Horizontal
3	2390.00	35.09	8.11	54.00	18.91	213	29	Horizontal
4	2390.00	45.51	8.11	74.00	28.49	262	191	Horizontal
5	2412.00	100.86	8.31	0.00	-100.86	292	91	Horizontal
6	2412.00	93.96	8.31	0.00	-93.96	159	213	Horizontal

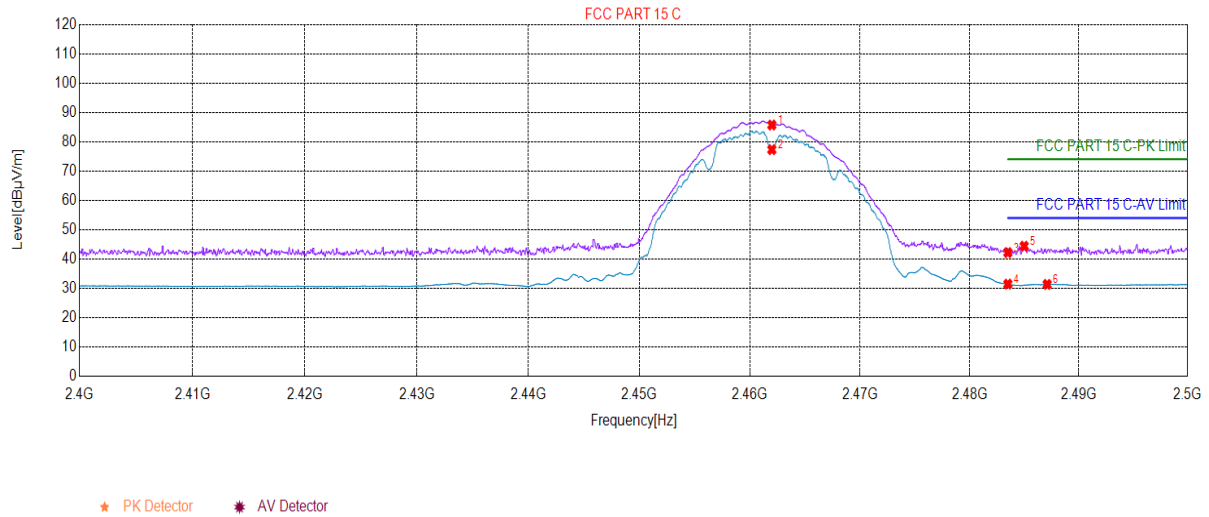
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11b Channel 11

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2462.00	85.69	6.60	0.00	-85.69	174	14	Vertical
2	2462.00	77.29	6.60	0.00	-77.29	185	28	Vertical
3	2483.50	42.19	6.79	74.00	31.81	196	196	Vertical
4	2483.50	31.45	6.79	54.00	22.55	231	123	Vertical
5	2484.99	44.38	6.79	74.00	29.62	262	59	Vertical
6	2487.09	31.34	6.79	54.00	22.66	159	96	Vertical

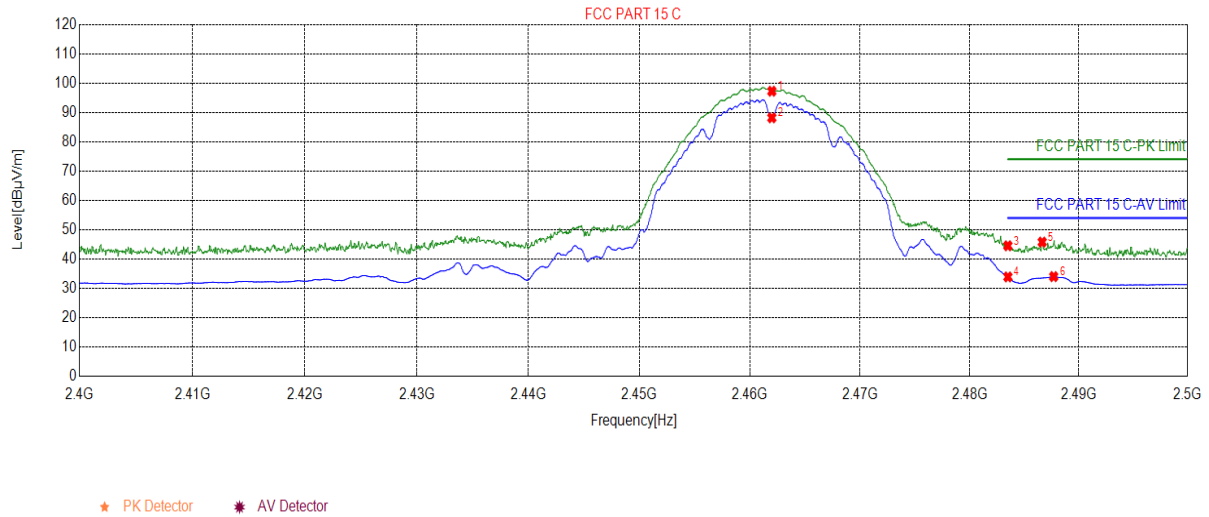
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Humi: 57%

802.11b Channel 11

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2462.00	97.22	6.60	0.00	-97.22	185	95	Horizontal
2	2462.00	88.15	6.60	0.00	-88.15	196	123	Horizontal
3	2483.50	44.51	6.79	74.00	29.49	213	258	Horizontal
4	2483.50	33.89	6.79	54.00	20.11	262	154	Horizontal
5	2486.64	45.77	6.79	74.00	28.23	291	12	Horizontal
6	2487.69	34.00	6.79	54.00	20.00	154	64	Horizontal

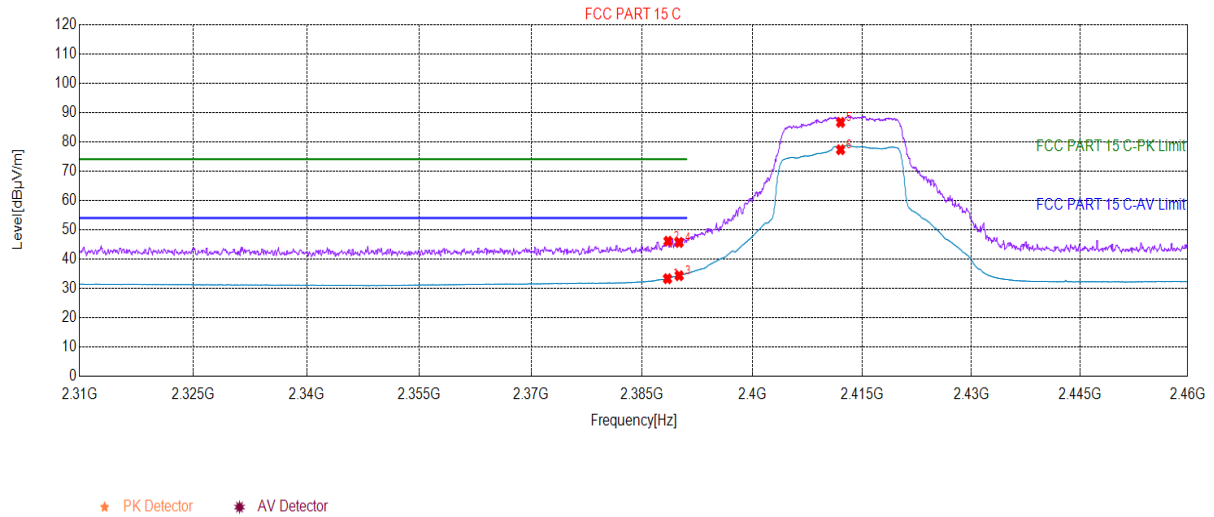
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11g Channel 1

Test Graph



Suspected List

Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2388.41	33.28	8.07	54.00	20.72	174	24	Vertical
2	2388.48	46.06	8.07	74.00	27.94	254	123	Vertical
3	2390.00	34.31	8.11	54.00	19.69	196	258	Vertical
4	2390.00	45.65	8.11	74.00	28.35	185	191	Vertical
5	2412.00	86.58	8.31	0.00	-86.58	213	123	Vertical
6	2412.00	77.27	8.31	0.00	-77.27	261	261	Vertical

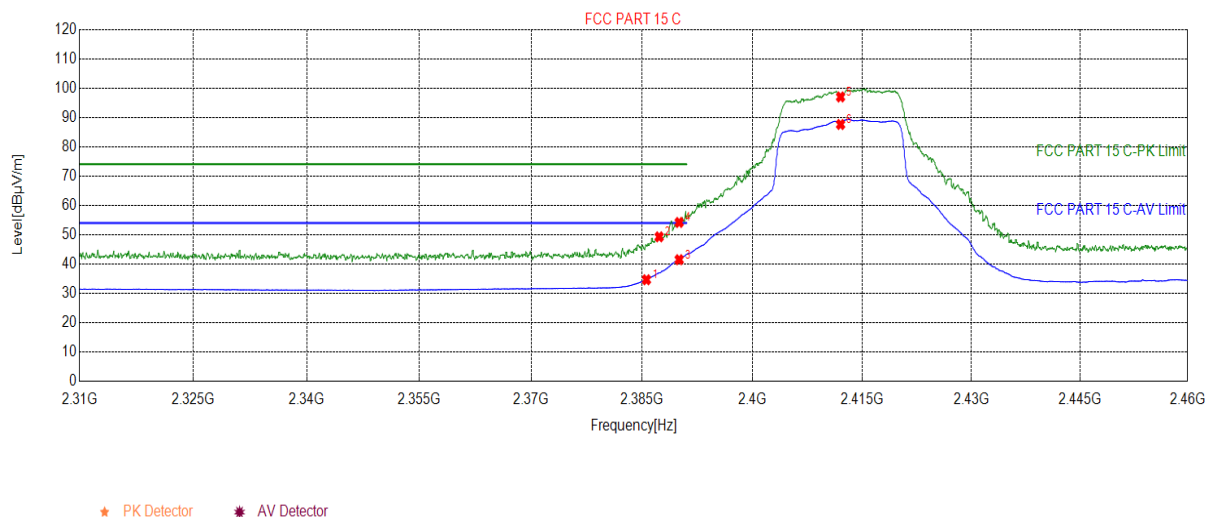
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11g Channel 1

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2385.56	34.63	8.00	54.00	19.37	174	96	Horizontal
2	2387.28	49.26	8.04	74.00	24.74	185	123	Horizontal
3	2390.00	41.47	8.11	54.00	12.53	196	258	Horizontal
4	2390.00	54.18	8.11	74.00	19.82	233	23	Horizontal
5	2412.00	96.96	8.31	0.00	-96.96	262	261	Horizontal
6	2412.00	87.58	8.31	0.00	-87.58	261	213	Horizontal

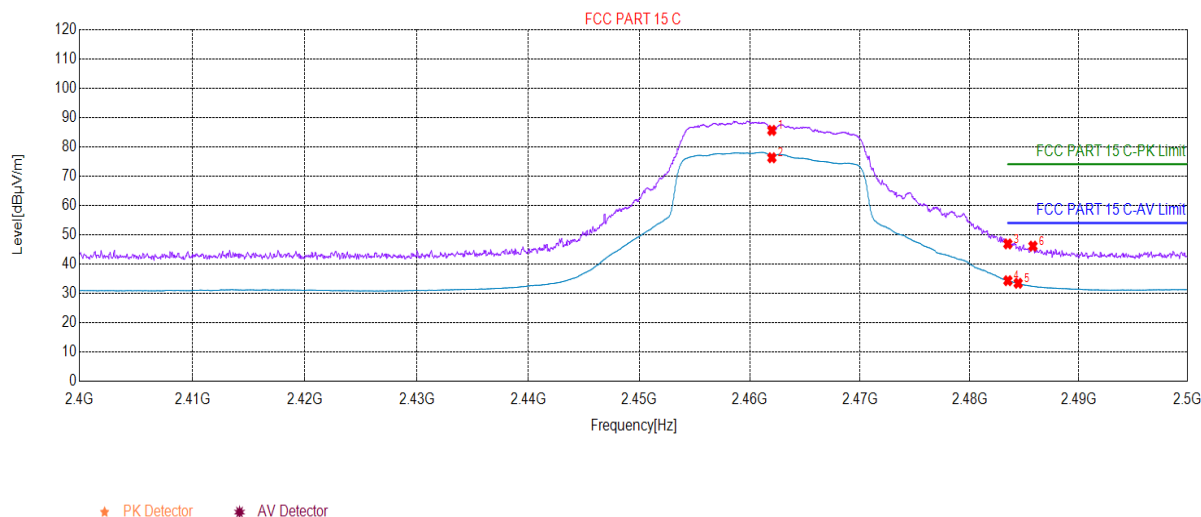
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11g Channel 11

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2462.00	85.56	6.60	0.00	-85.56	174	96	Vertical
2	2462.00	76.22	6.60	0.00	-76.22	185	123	Vertical
3	2483.50	46.85	6.79	74.00	27.15	196	258	Vertical
4	2483.50	34.30	6.79	54.00	19.70	213	174	Vertical
5	2484.44	33.43	6.79	54.00	20.57	262	199	Vertical
6	2485.79	46.10	6.79	74.00	27.90	261	26	Vertical

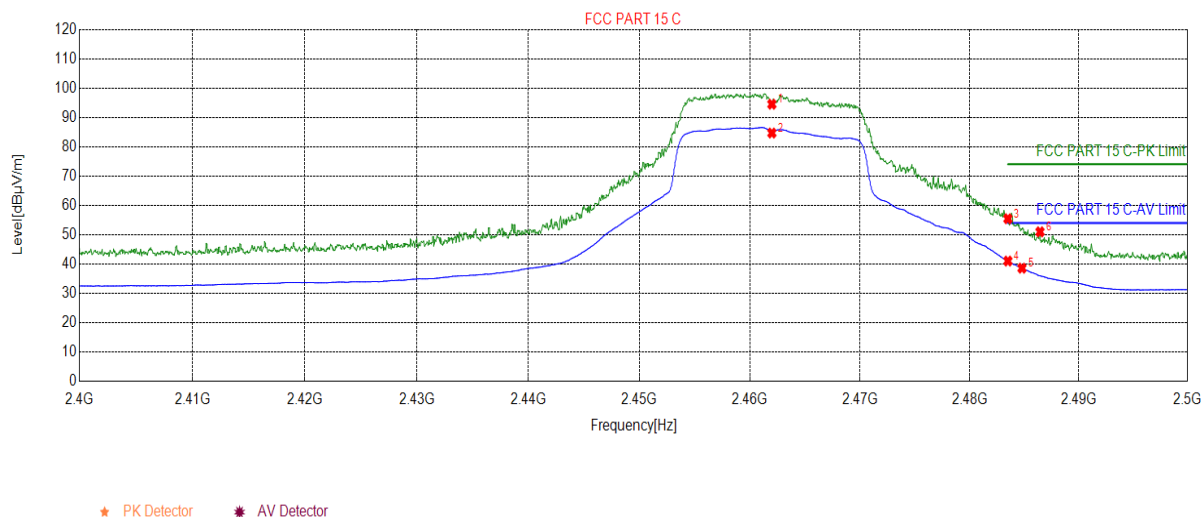
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11g Channel 11

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2462.00	94.48	6.60	0.00	-94.48	174	96	Horizontal
2	2462.00	84.66	6.60	0.00	-84.66	185	123	Horizontal
3	2483.50	55.43	6.79	74.00	18.57	196	216	Horizontal
4	2483.50	41.01	6.79	54.00	12.99	231	159	Horizontal
5	2484.79	38.58	6.79	54.00	15.42	262	194	Horizontal
6	2486.44	50.96	6.79	74.00	23.04	154	215	Horizontal

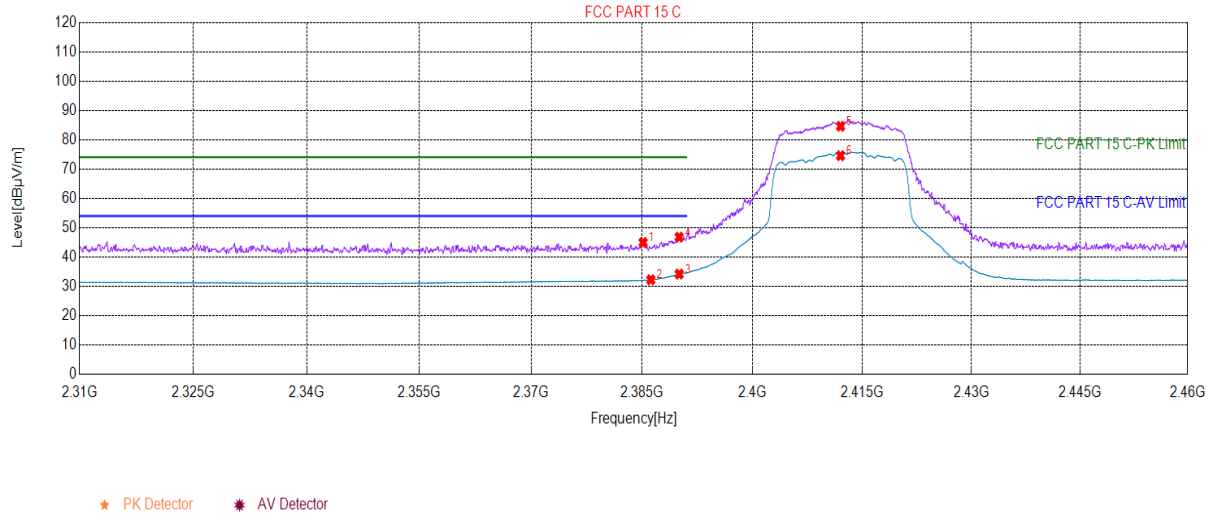
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11n20 Channel 1

Test Graph



Suspected List

Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2385.11	44.96	7.99	74.00	29.04	174	81	Vertical
2	2386.16	32.24	8.02	54.00	21.76	185	213	Vertical
3	2390.00	34.18	8.11	54.00	19.82	196	259	Vertical
4	2390.00	46.79	8.11	74.00	27.21	231	191	Vertical
5	2412.00	84.58	8.31	0.00	-84.58	262	123	Vertical
6	2412.00	74.54	8.31	0.00	-74.54	261	16	Vertical

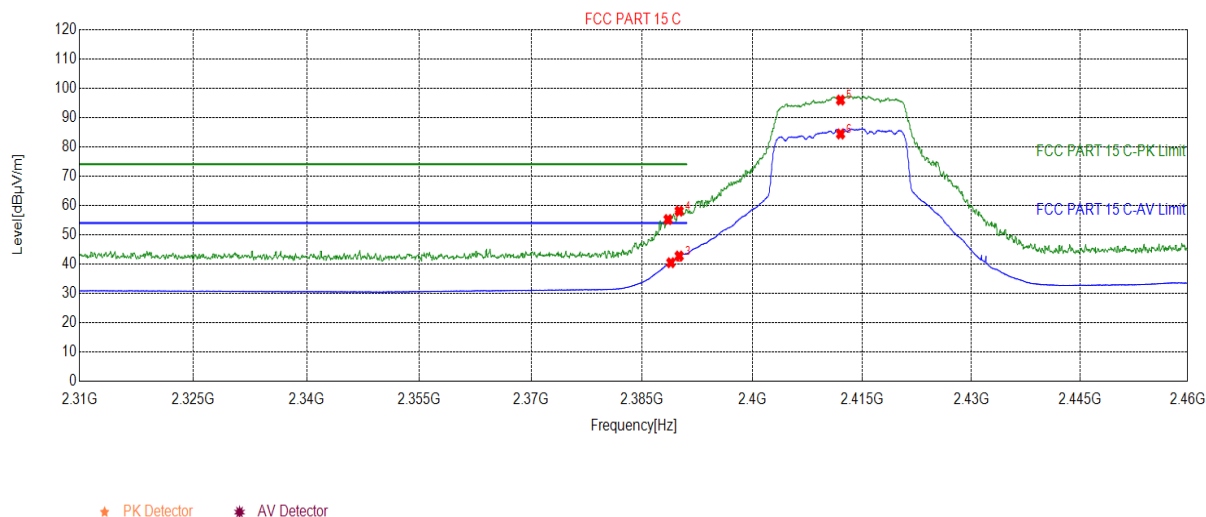
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11n20 Channel 1

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2388.48	55.17	8.07	74.00	18.83	285	96	Horizontal
2	2388.86	40.44	8.08	54.00	13.56	296	123	Horizontal
3	2390.00	42.73	8.11	54.00	11.27	247	258	Horizontal
4	2390.00	58.03	8.11	74.00	15.97	174	174	Horizontal
5	2412.00	95.89	8.31	0.00	-95.89	185	196	Horizontal
6	2412.00	84.33	8.31	0.00	-84.33	196	23	Horizontal

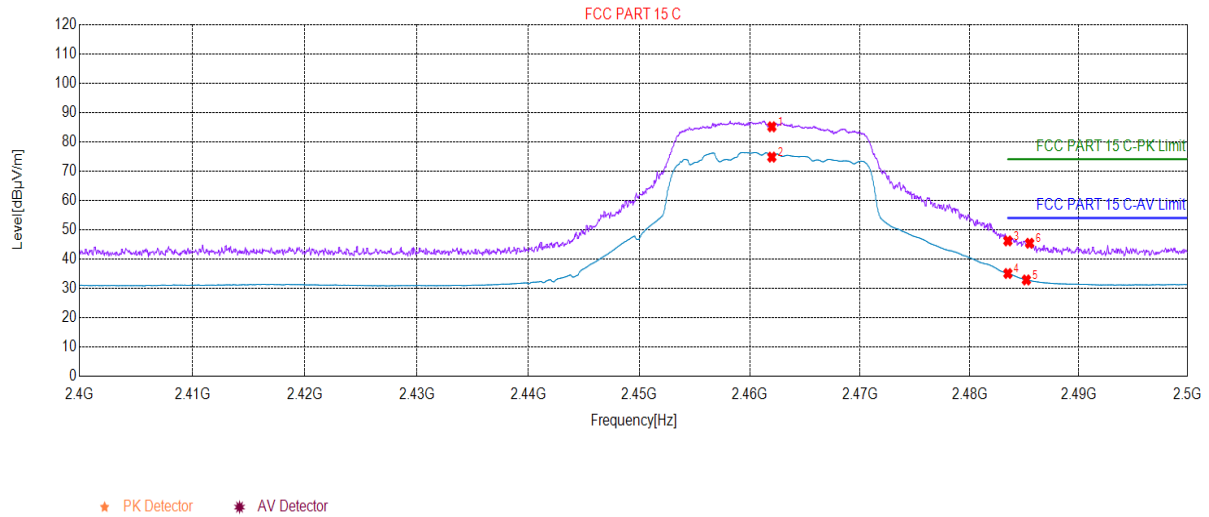
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11n20 Channel 11

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2462.00	85.09	6.60	0.00	-85.09	174	45	Vertical
2	2462.00	74.74	6.60	0.00	-74.74	185	123	Vertical
3	2483.50	46.18	6.79	74.00	27.82	196	233	Vertical
4	2483.50	35.05	6.79	54.00	18.95	213	326	Vertical
5	2485.19	32.86	6.79	54.00	21.14	262	219	Vertical
6	2485.49	45.37	6.79	74.00	28.63	291	159	Vertical

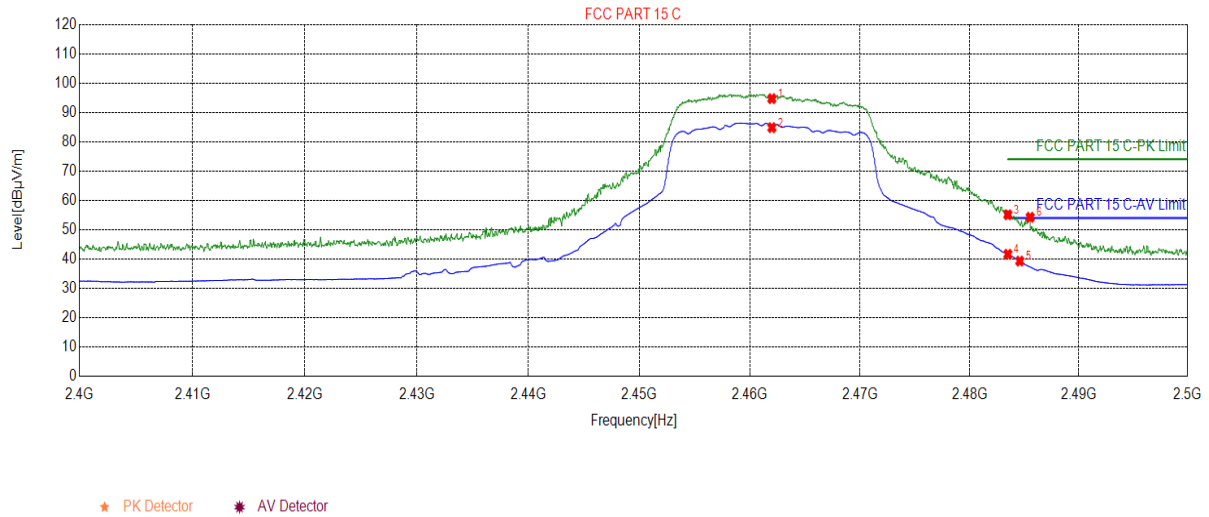
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11n20 Channel 11

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2462.00	94.68	6.60	0.00	-94.68	174	96	Horizontal
2	2462.00	84.79	6.60	0.00	-84.79	185	123	Horizontal
3	2483.50	55.09	6.79	74.00	18.91	196	216	Horizontal
4	2483.50	41.63	6.79	54.00	12.37	231	191	Horizontal
5	2484.59	39.29	6.79	54.00	14.71	262	156	Horizontal
6	2485.54	54.23	6.79	74.00	19.77	291	213	Horizontal

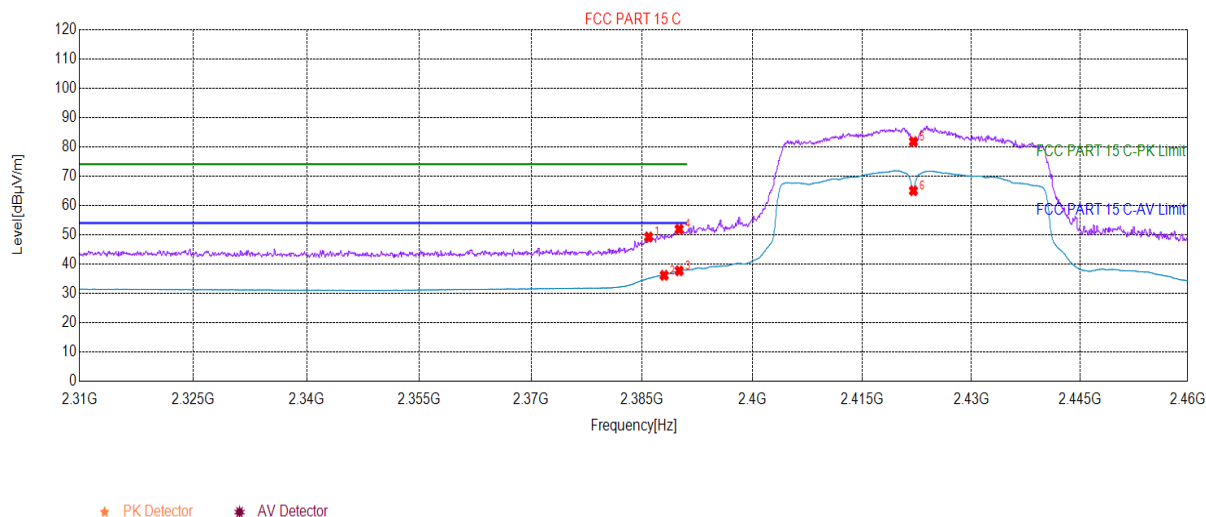
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11n40 Channel 3

Test Graph



Suspected List

Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2385.86	49.23	8.01	74.00	24.77	174	49	Vertical
2	2387.96	36.13	8.06	54.00	17.87	185	162	Vertical
3	2390.00	37.68	8.11	54.00	16.32	199	259	Vertical
4	2390.00	51.86	8.11	74.00	22.14	321	191	Vertical
5	2422.00	81.73	8.27	0.00	-81.73	262	213	Vertical
6	2422.00	64.98	8.27	0.00	-64.98	291	261	Vertical

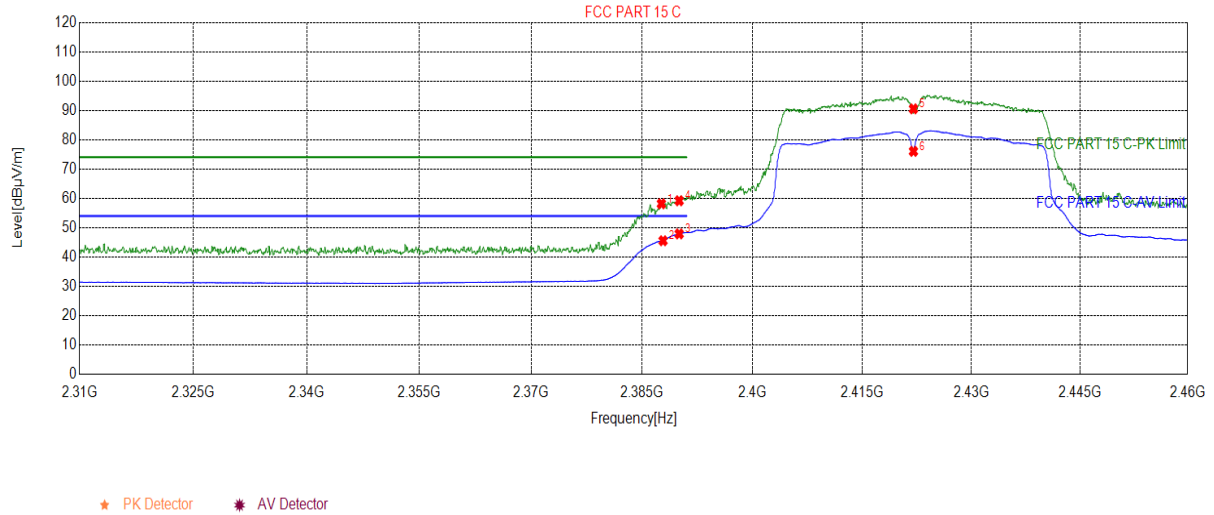
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Humi: 57%

802.11n40 Channel 3

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2387.58	58.16	8.05	74.00	15.84	178	59	Horizontal
2	2387.81	45.54	8.06	54.00	8.46	196	123	Horizontal
3	2390.00	47.88	8.11	54.00	6.12	231	251	Horizontal
4	2390.00	59.18	8.11	74.00	14.82	258	81	Horizontal
5	2422.00	90.52	8.27	0.00	-90.52	241	231	Horizontal
6	2422.00	76.03	8.27	0.00	-76.03	184	261	Horizontal

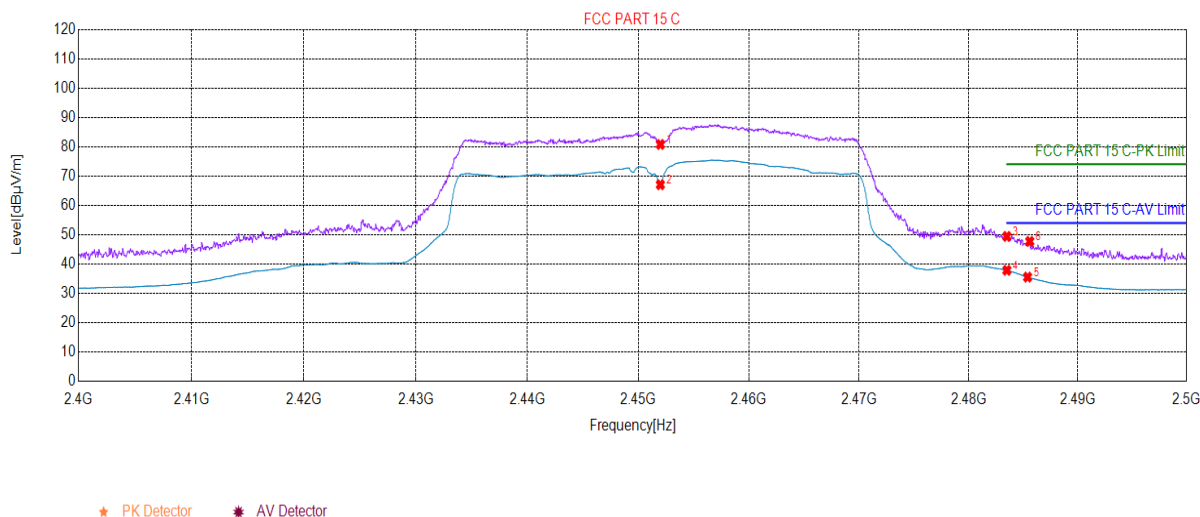
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11n40 Channel 9

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2452.00	80.78	6.65	0.00	-80.78	174	58	Vertical
2	2452.00	67.04	6.65	0.00	-67.04	185	123	Vertical
3	2483.50	49.40	6.79	74.00	24.60	196	156	Vertical
4	2483.50	37.86	6.79	54.00	16.14	231	191	Vertical
5	2485.39	35.53	6.79	54.00	18.47	262	23	Vertical
6	2485.59	47.71	6.79	74.00	26.29	291	261	Vertical

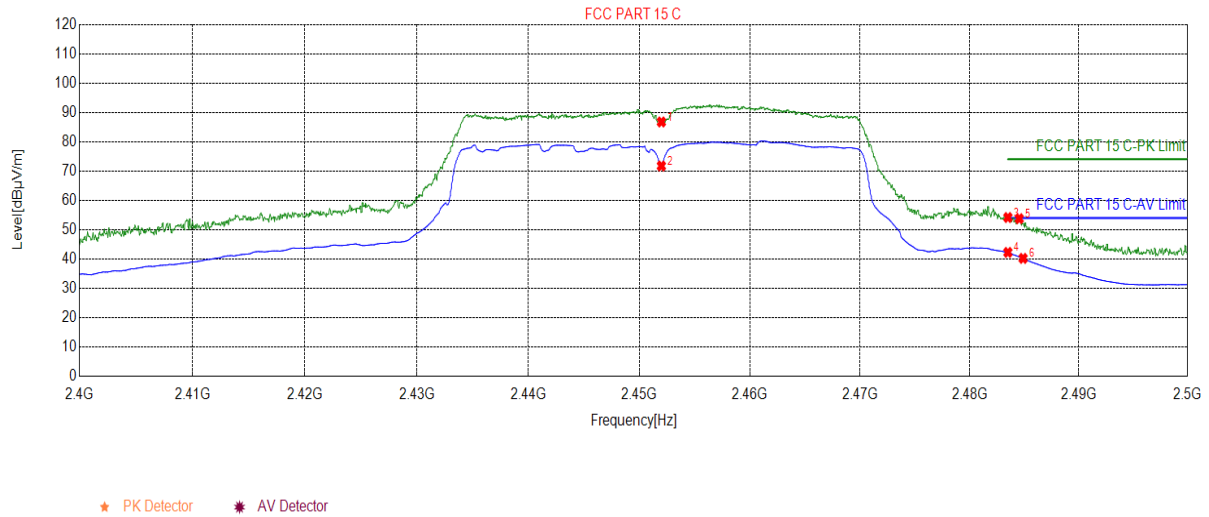
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11n40 Channel 9

Test Graph



Suspected List

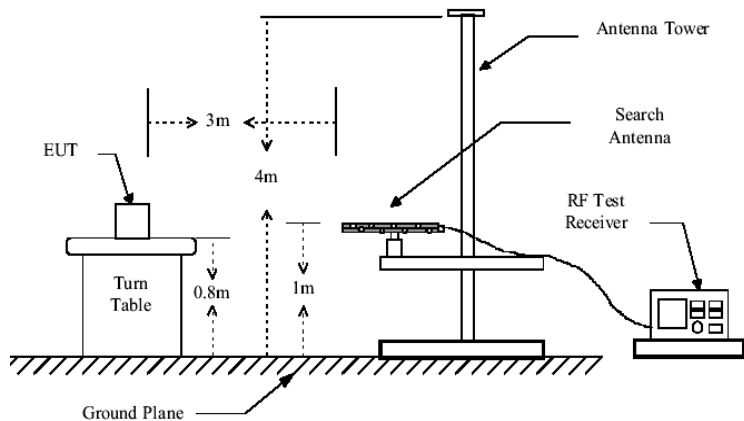
Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2452.00	86.74	6.65	0.00	-86.74	174	96	Horizontal
2	2452.00	71.72	6.65	0.00	-71.72	185	123	Horizontal
3	2483.50	54.16	6.79	74.00	19.84	196	259	Horizontal
4	2483.50	42.25	6.79	54.00	11.75	231	181	Horizontal
5	2484.54	53.76	6.79	74.00	20.24	262	158	Horizontal
6	2484.89	40.21	6.79	54.00	13.79	291	195	Horizontal

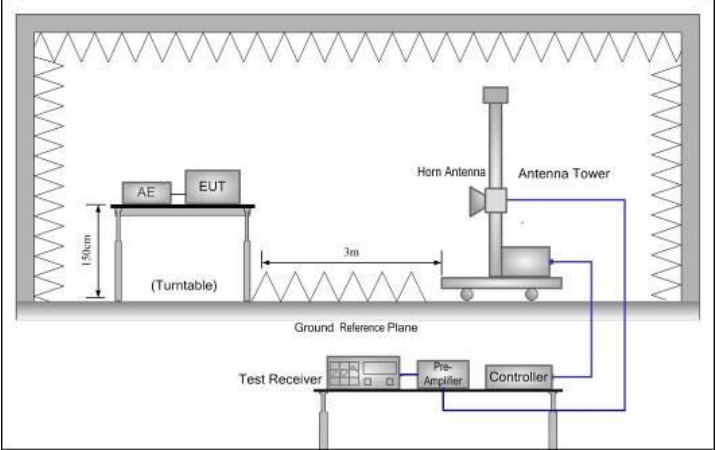
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

6.4 Spurious Emission

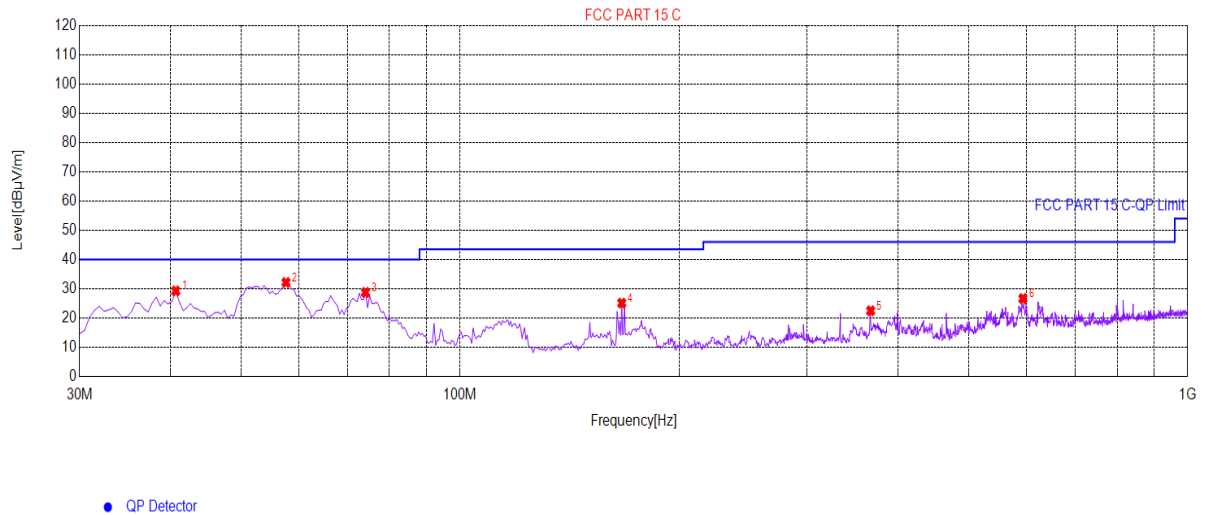
6.4.1 Radiated Emission Method

Test Requirement:	FCC Part 15 C Section 15.209 and 15.205				
Test Frequency Range:	9kHz to 25GHz				
Test Distance:	3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
RMS		1MHz	3MHz	Average Value	
Limit:	Frequency	Limit (dBuV/m @3m)			Remark
	30MHz-88MHz	40.0			Quasi-peak Value
	88MHz-216MHz	43.5			Quasi-peak Value
	216MHz-960MHz	46.0			Quasi-peak Value
	960MHz-1GHz	54.0			Quasi-peak Value
	Above 1GHz	54.0			Average Value
74.0			Peak Value		
Test Procedure:	1. The EUT was placed on the top of a rotating table 0.8m(below 1GHz)/1.5m(above 1GHz) above the ground at a 3 meter chamber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. 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. 4. 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 rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. 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.				
Test setup:	Below 1GHz  Above 1GHz				

	
Test Instruments:	Refer to section 5.8 for details
Test mode:	Refer to section 5.3 for details
Test results:	Passed
Remark:	1. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Z-axis is the worst case. 2. Pre-Scan all adapter, And the report only reflects the worst mode. 3. 9 kHz to 30MHz is lower than the limit 20dB, so only shows the data of above 30MHz in this report.

Measurement Data (worst case):
Below 1GHz:

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Humi: 57%

Test Graph

Suspected List

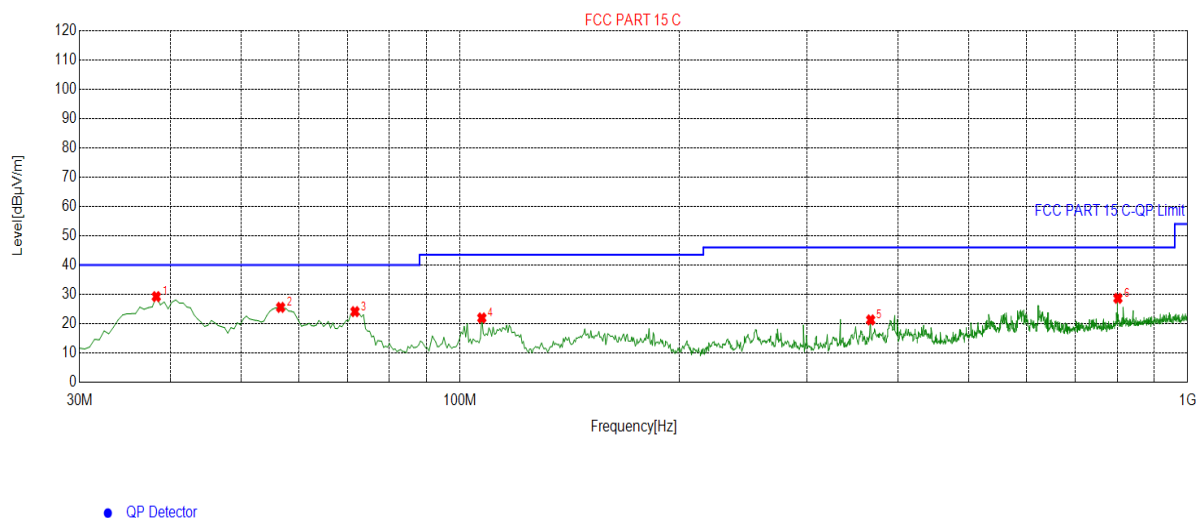
Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	40.6753	29.26	-22.87	40.00	10.74	197	306	Vertical
2	57.6588	32.16	-22.18	40.00	7.84	154	174	Vertical
3	74.1571	28.76	-24.13	40.00	11.24	224	325	Vertical
4	166.838	25.11	-23.95	43.50	18.39	263	314	Vertical
5	366.758	22.48	-17.60	46.00	23.52	281	344	Vertical
6	593.851	26.66	-12.26	46.00	19.34	287	2	Vertical

Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	38.2491	29.22	-23.16	40.00	10.78	187	137	Horizontal
2	56.6883	25.55	-22.15	40.00	14.45	165	266	Horizontal
3	71.7309	24.10	-23.93	40.00	15.90	114	160	Horizontal
4	107.153	21.94	-22.77	43.50	21.56	258	358	Horizontal
5	366.758	21.27	-17.60	46.00	24.73	236	16	Horizontal
6	802.021	28.64	-10.23	46.00	17.36	274	34	Horizontal

Remark:

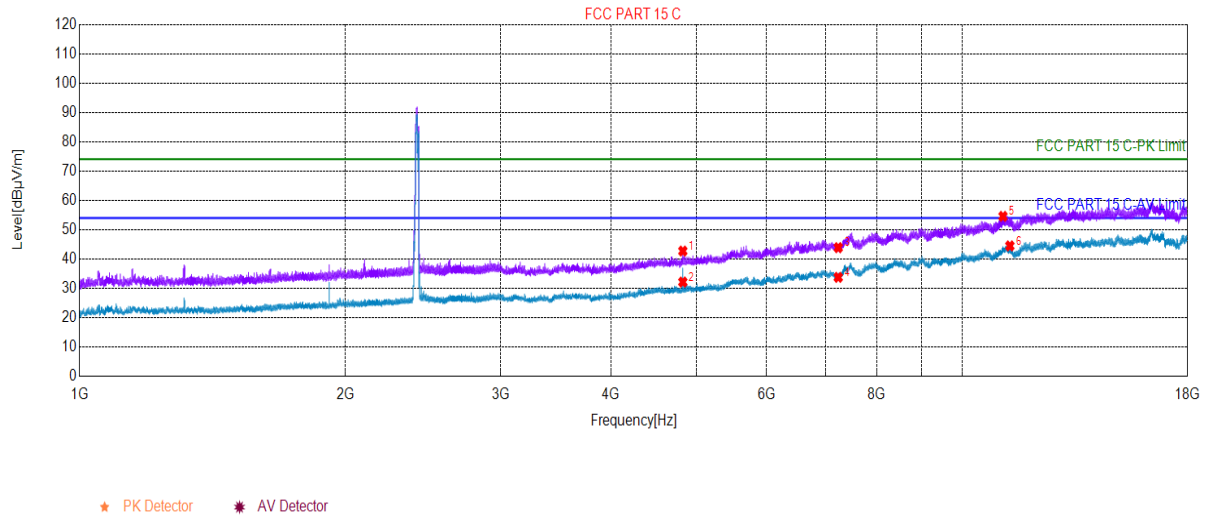
- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Above 1GHz:

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11b Channel 1

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4824.00	42.71	-18.20	74.00	31.29	158	202	Vertical
2	4824.00	32.15	-18.20	54.00	21.85	196	202	Vertical
3	7236.00	43.88	-10.83	74.00	30.12	231	342	Vertical
4	7236.00	33.74	-10.83	54.00	20.26	291	289	Vertical
5	11120.7	54.55	-0.86	74.00	19.45	185	184	Vertical
6	11322.3	44.47	-0.54	54.00	9.53	156	70	Vertical

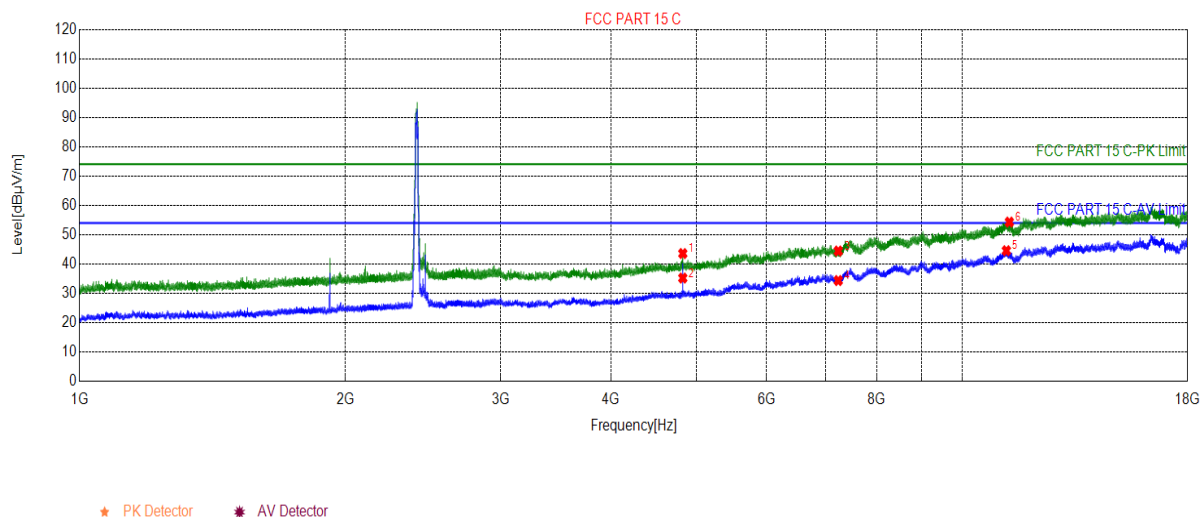
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11b Channel 1

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4824.00	43.57	-18.20	74.00	30.43	174	228	Horizontal
2	4824.00	35.20	-18.20	54.00	18.80	185	229	Horizontal
3	7236.00	44.44	-10.83	74.00	29.56	231	344	Horizontal
4	7236.00	34.36	-10.83	54.00	19.64	262	329	Horizontal
5	11218.5	44.53	-0.59	54.00	9.47	292	128	Horizontal
6	11307.3	54.30	-0.68	74.00	19.70	156	329	Horizontal

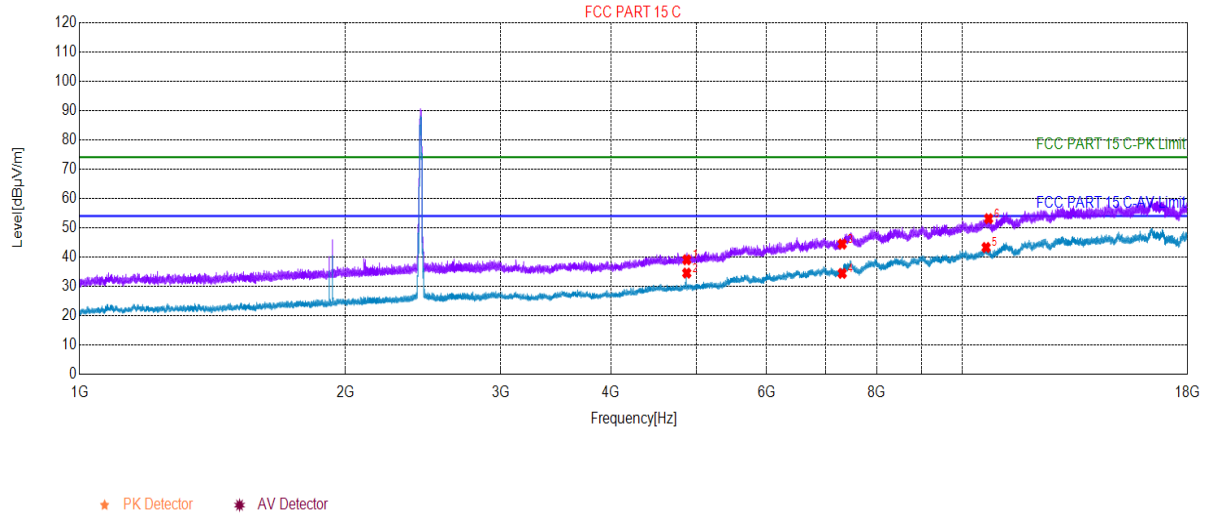
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11b Channel 6

Test Graph



Suspected List

Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4874.00	39.05	-18.02	74.00	34.95	189	185	Vertical
2	4874.00	34.50	-18.02	54.00	19.50	196	199	Vertical
3	7311.00	44.43	-10.82	74.00	29.57	125	227	Vertical
4	7311.00	34.41	-10.82	54.00	19.59	258	141	Vertical
5	10640.7	43.24	-2.07	54.00	10.76	274	126	Vertical
6	10709.7	53.07	-2.44	74.00	20.93	185	184	Vertical

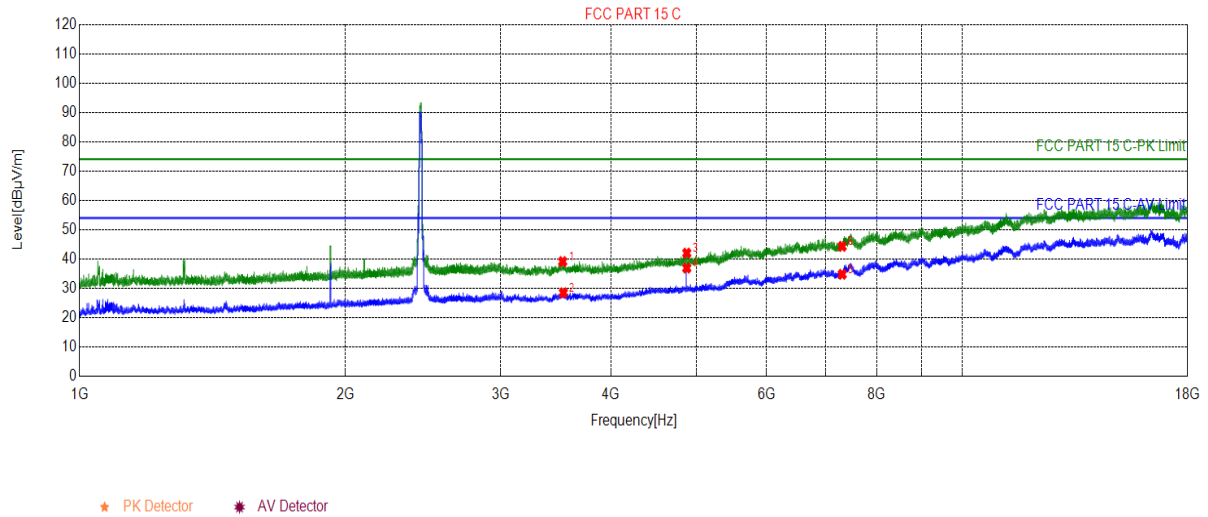
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11b Channel 6

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3526.22	39.12	-22.55	74.00	34.88	174	40	Horizontal
2	3532.82	28.47	-22.63	54.00	25.53	185	129	Horizontal
3	4874.00	42.00	-18.02	74.00	32.00	321	41	Horizontal
4	4874.00	36.89	-18.02	54.00	17.11	262	231	Horizontal
5	7311.00	34.78	-10.82	54.00	19.22	292	319	Horizontal
6	7311.00	44.31	-10.82	74.00	29.69	156	187	Horizontal

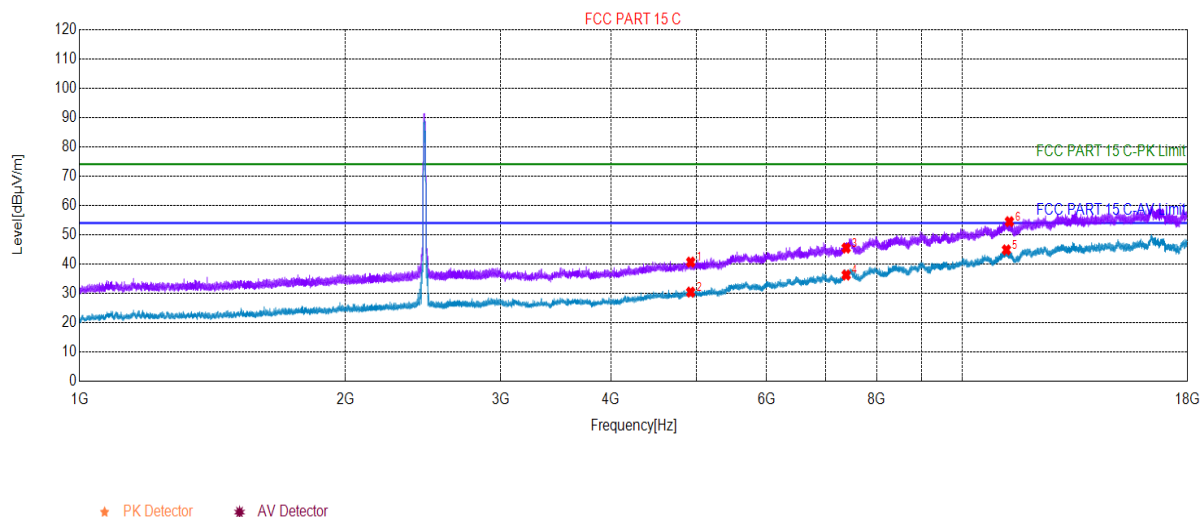
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11b Channel 11

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4924.00	40.65	-17.70	74.00	33.35	274	170	Vertical
2	4924.00	30.41	-17.70	54.00	23.59	285	286	Vertical
3	7386.00	45.43	-9.56	74.00	28.57	296	328	Vertical
4	7386.00	36.23	-9.56	54.00	17.77	159	300	Vertical
5	11219.7	44.81	-0.59	54.00	9.19	184	272	Vertical
6	11307.9	54.44	-0.67	74.00	19.56	175	70	Vertical

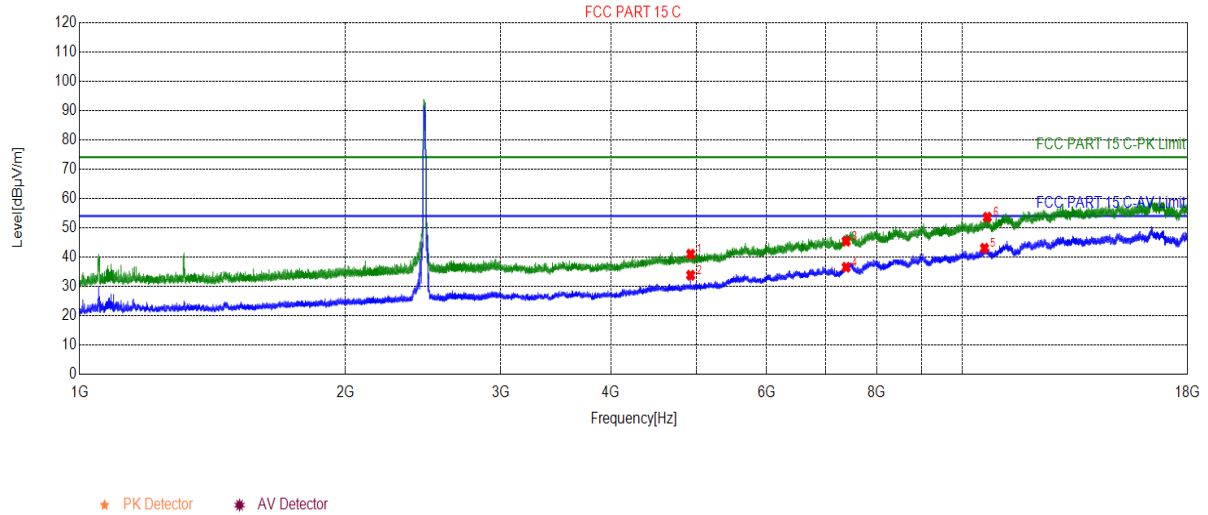
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Humi: 57%

802.11b Channel 11

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4924.00	40.97	-17.70	74.00	33.03	145	272	Horizontal
2	4924.00	33.79	-17.70	54.00	20.21	213	343	Horizontal
3	7386.00	45.38	-9.56	74.00	28.62	284	27	Horizontal
4	7386.00	36.51	-9.56	54.00	17.49	184	258	Horizontal
5	10596.3	43.00	-2.11	54.00	11.00	194	272	Horizontal
6	10673.7	53.57	-2.27	74.00	20.43	156	173	Horizontal

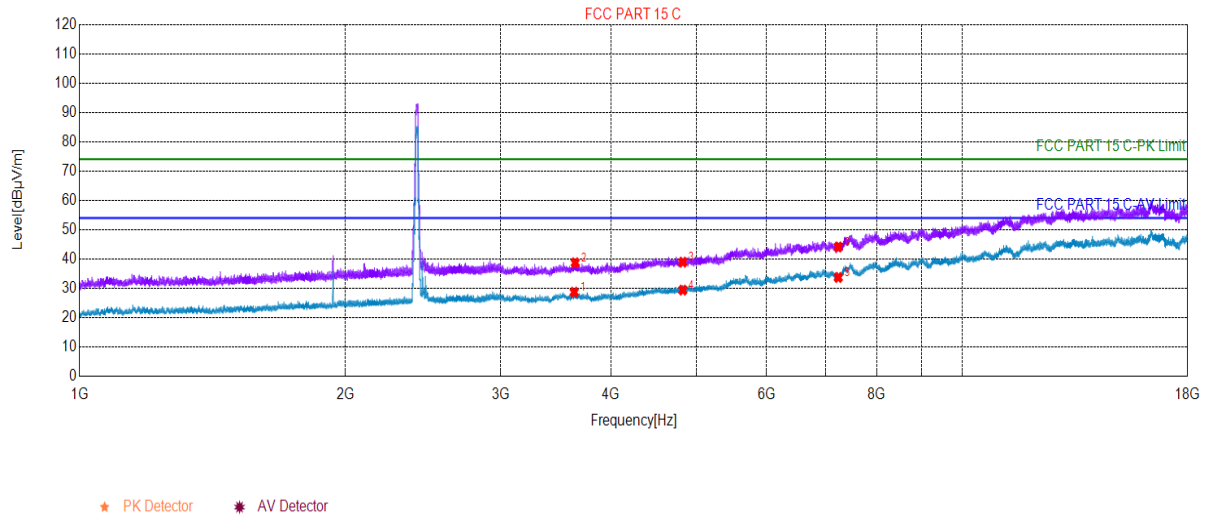
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11g Channel 1

Test Graph



Suspected List

Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3633.62	28.70	-22.32	54.00	25.30	185	55	Vertical
2	3643.22	38.71	-22.21	74.00	35.29	196	84	Vertical
3	4824.00	38.93	-18.20	74.00	35.07	231	155	Vertical
4	4824.00	29.39	-18.20	54.00	24.61	262	360	Vertical
5	7236.00	33.70	-10.83	54.00	20.30	291	226	Vertical
6	7236.00	44.10	-10.83	74.00	29.90	154	143	Vertical

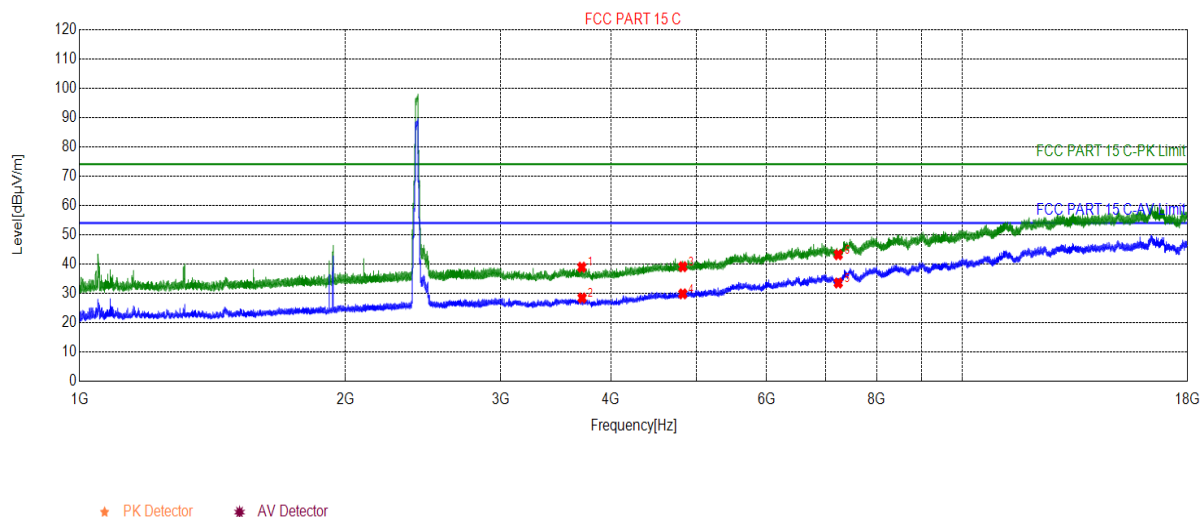
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Humi: 57%

802.11g Channel 1

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3706.82	38.89	-22.85	74.00	35.11	174	99	Horizontal
2	3709.82	28.43	-22.80	54.00	25.57	185	170	Horizontal
3	4824.00	39.08	-18.20	74.00	34.92	213	356	Horizontal
4	4824.00	29.83	-18.20	54.00	24.17	262	170	Horizontal
5	7236.00	33.52	-10.83	54.00	20.48	291	331	Horizontal
6	7236.00	43.18	-10.83	74.00	30.82	156	113	Horizontal

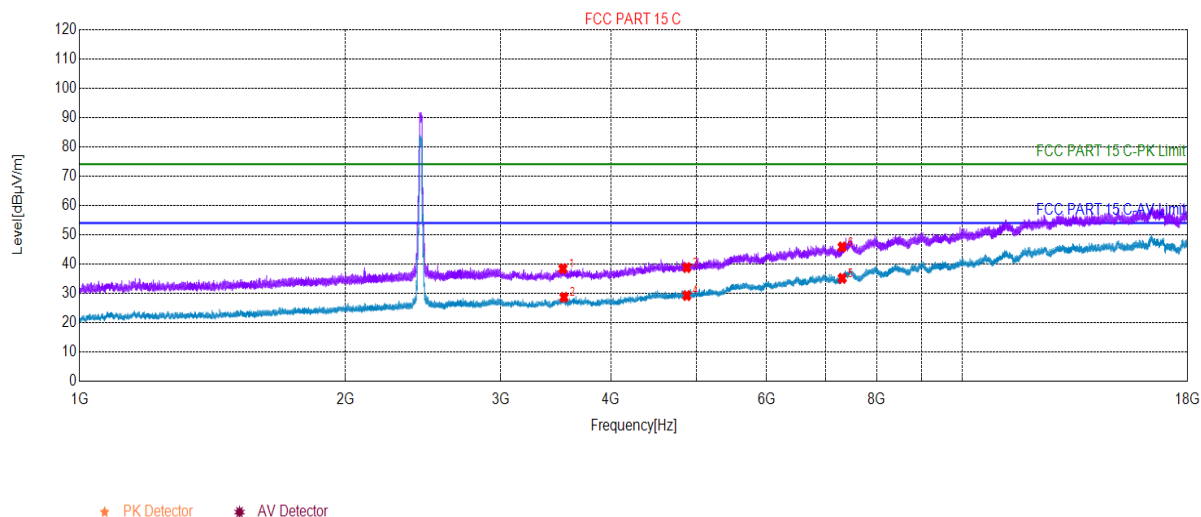
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11g Channel 6

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3528.62	38.41	-22.58	74.00	35.59	168	171	Vertical
2	3538.22	28.64	-22.69	54.00	25.36	213	319	Vertical
3	4874.00	38.77	-18.02	74.00	35.23	291	158	Vertical
4	4874.00	29.23	-18.02	54.00	24.77	158	245	Vertical
5	7311.00	35.13	-10.82	54.00	18.87	147	70	Vertical
6	7311.00	45.82	-10.82	74.00	28.18	185	141	Vertical

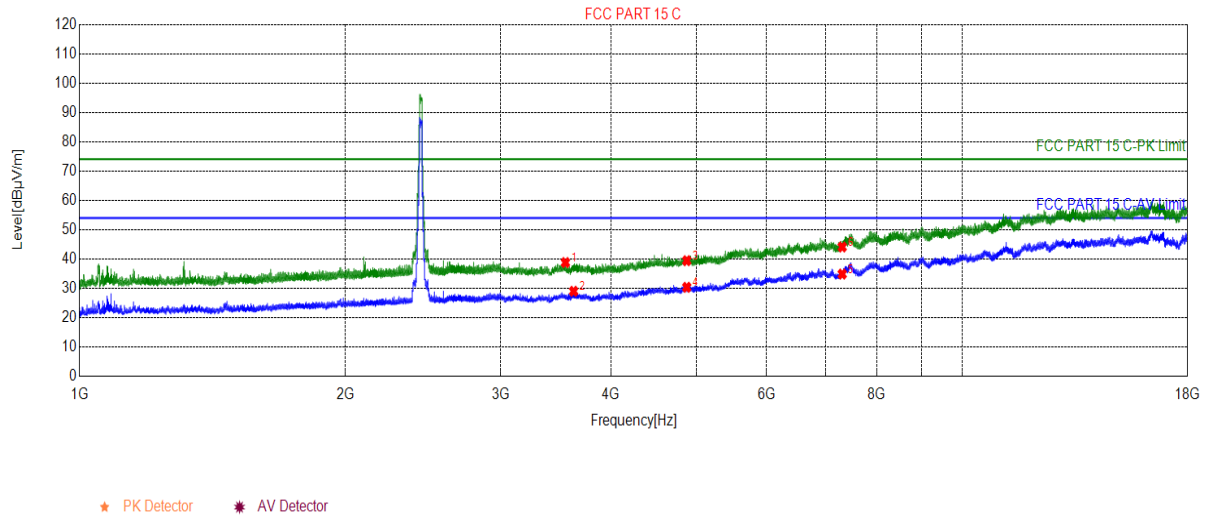
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Humi: 57%

802.11g Channel 6

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3552.02	38.79	-22.82	74.00	35.21	147	12	Horizontal
2	3628.22	29.00	-22.38	54.00	25.00	185	258	Horizontal
3	4874.00	39.43	-18.02	74.00	34.57	196	357	Horizontal
4	4874.00	30.36	-18.02	54.00	23.64	231	215	Horizontal
5	7311.00	34.86	-10.82	54.00	19.14	252	302	Horizontal
6	7311.00	44.10	-10.82	74.00	29.90	191	201	Horizontal

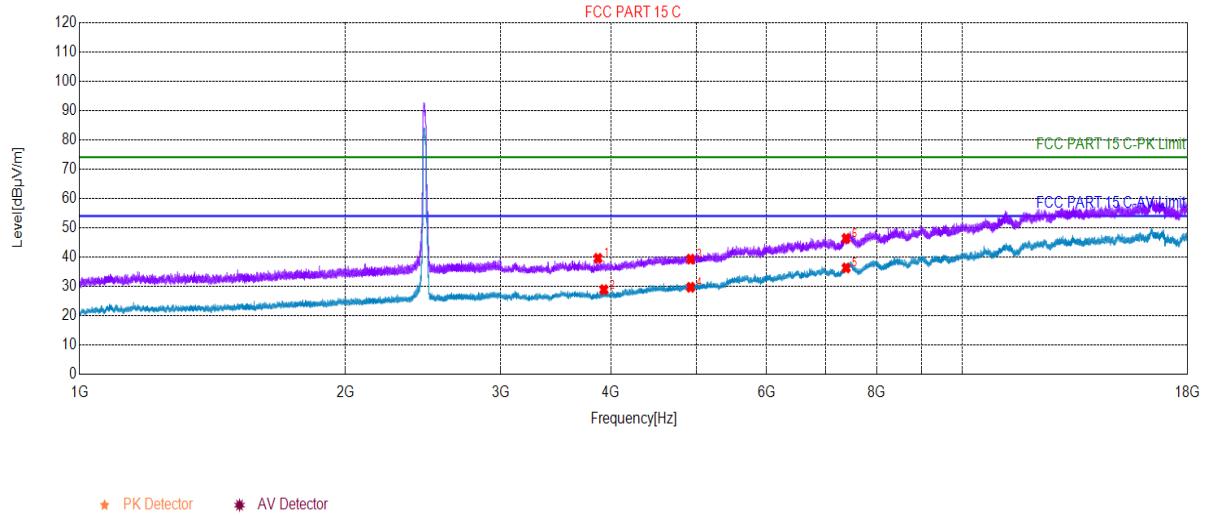
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11g Channel 11

Test Graph



Suspected List

Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3866.43	39.55	-22.20	74.00	34.45	174	272	Vertical
2	3926.43	28.86	-21.67	54.00	25.14	185	230	Vertical
3	4924.00	39.26	-17.70	74.00	34.74	196	230	Vertical
4	4924.00	29.67	-17.70	54.00	24.33	213	360	Vertical
5	7386.00	36.26	-9.56	54.00	17.74	262	2	Vertical
6	7386.00	46.33	-9.56	74.00	27.67	291	230	Vertical

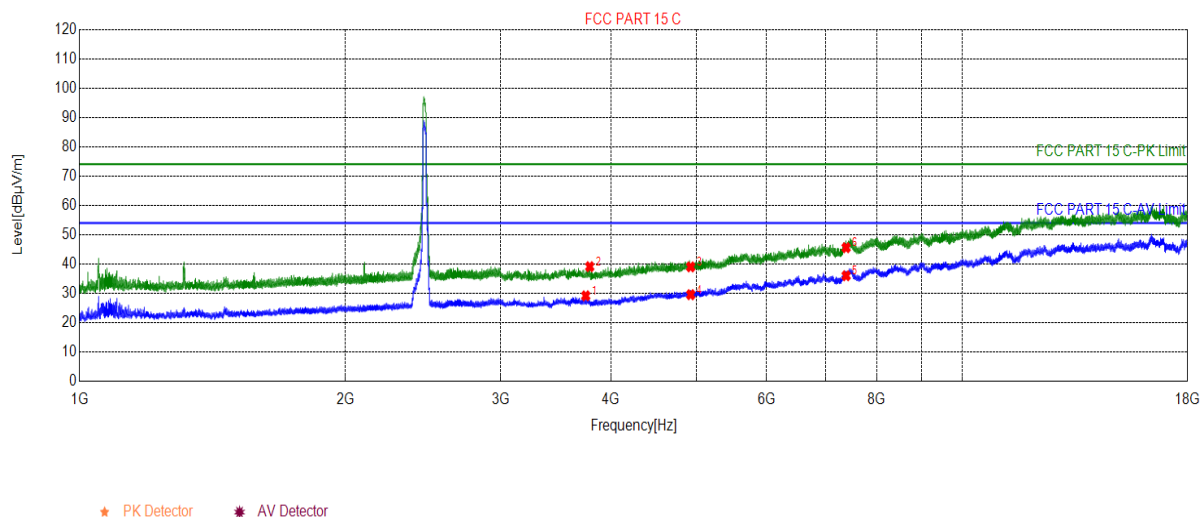
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Humi: 57%

802.11g Channel 11

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3745.22	29.16	-22.28	54.00	24.84	196	243	Horizontal
2	3784.23	39.09	-22.30	74.00	34.91	184	301	Horizontal
3	4924.00	39.01	-17.70	74.00	34.99	174	113	Horizontal
4	4924.00	29.54	-17.70	54.00	24.46	123	171	Horizontal
5	7386.00	35.99	-9.56	54.00	18.01	262	113	Horizontal
6	7386.00	45.56	-9.56	74.00	28.44	219	128	Horizontal

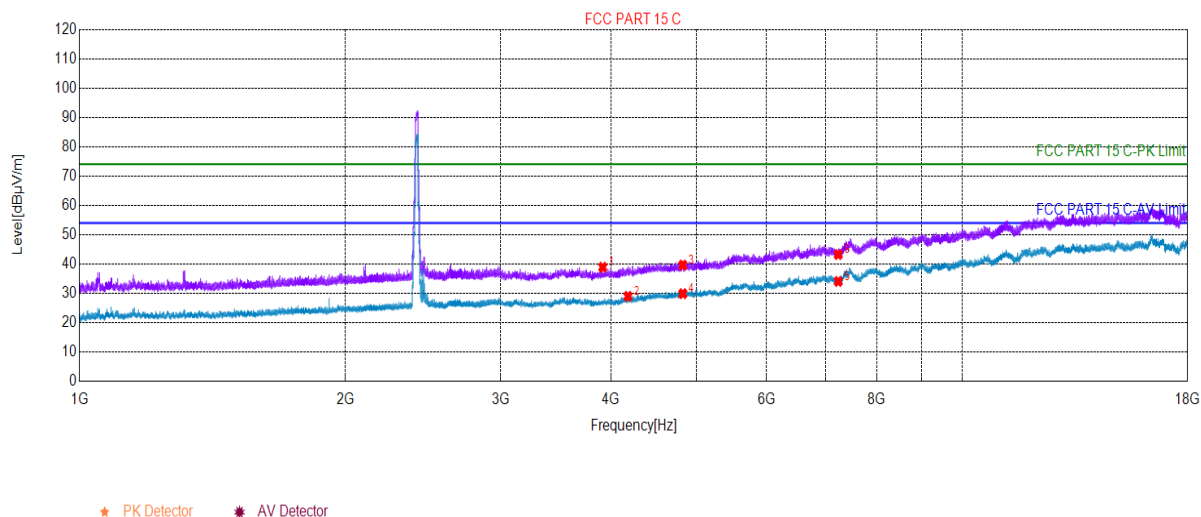
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11n20 Channel 1

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3914.43	38.90	-21.67	74.00	35.10	274	191	Vertical
2	4180.84	28.97	-20.51	54.00	25.03	285	348	Vertical
3	4824.00	39.62	-18.20	74.00	34.38	296	15	Vertical
4	4824.00	29.89	-18.20	54.00	24.11	231	162	Vertical
5	7236.00	34.06	-10.83	54.00	19.94	261	321	Vertical
6	7236.00	43.23	-10.83	74.00	30.77	159	87	Vertical

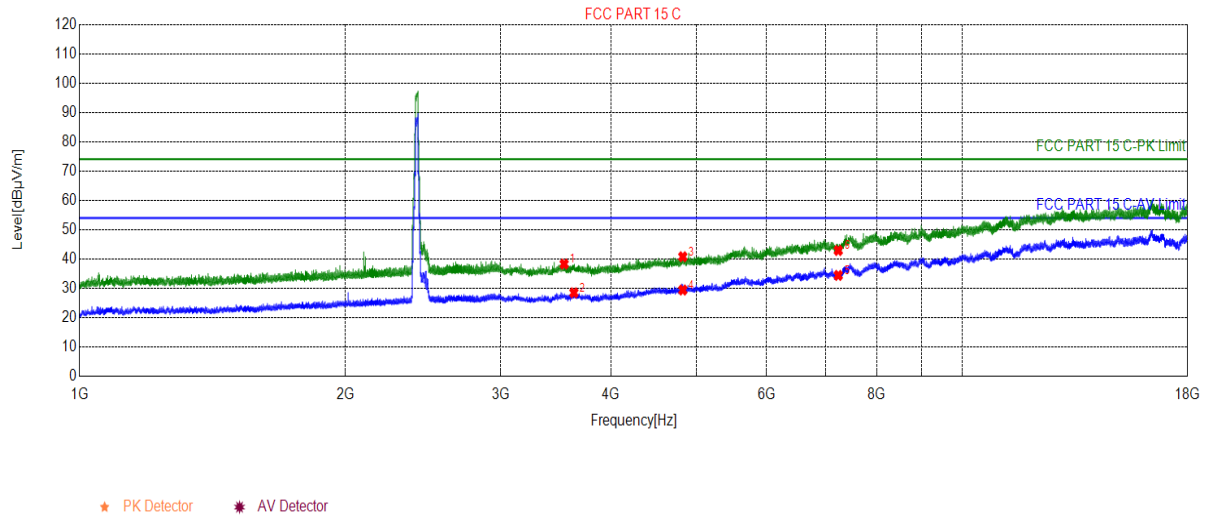
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Humi: 57%

802.11n20 Channel 1

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3540.02	38.27	-22.71	74.00	35.73	174	3	Horizontal
2	3631.22	28.48	-22.34	54.00	25.52	185	89	Horizontal
3	4824.00	40.78	-18.20	74.00	33.22	196	349	Horizontal
4	4824.00	29.43	-18.20	54.00	24.57	231	4	Horizontal
5	7236.00	34.41	-10.83	54.00	19.59	262	349	Horizontal
6	7236.00	42.92	-10.83	74.00	31.08	291	203	Horizontal

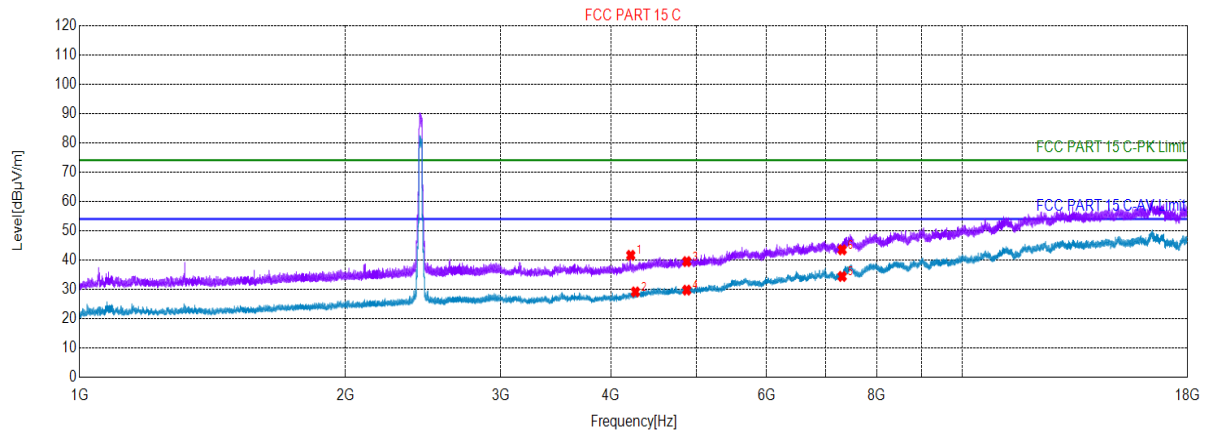
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11n20 Channel 6

Test Graph



★ PK Detector ✱ AV Detector

Suspected List

Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4211.44	41.60	-20.43	74.00	32.40	226	205	Vertical
2	4263.05	29.13	-20.34	54.00	24.87	291	205	Vertical
3	4874.00	39.48	-18.02	74.00	34.52	248	75	Vertical
4	4874.00	29.74	-18.02	54.00	24.26	174	233	Vertical
5	7311.00	34.40	-10.82	54.00	19.60	185	156	Vertical
6	7311.00	43.48	-10.82	74.00	30.52	196	257	Vertical

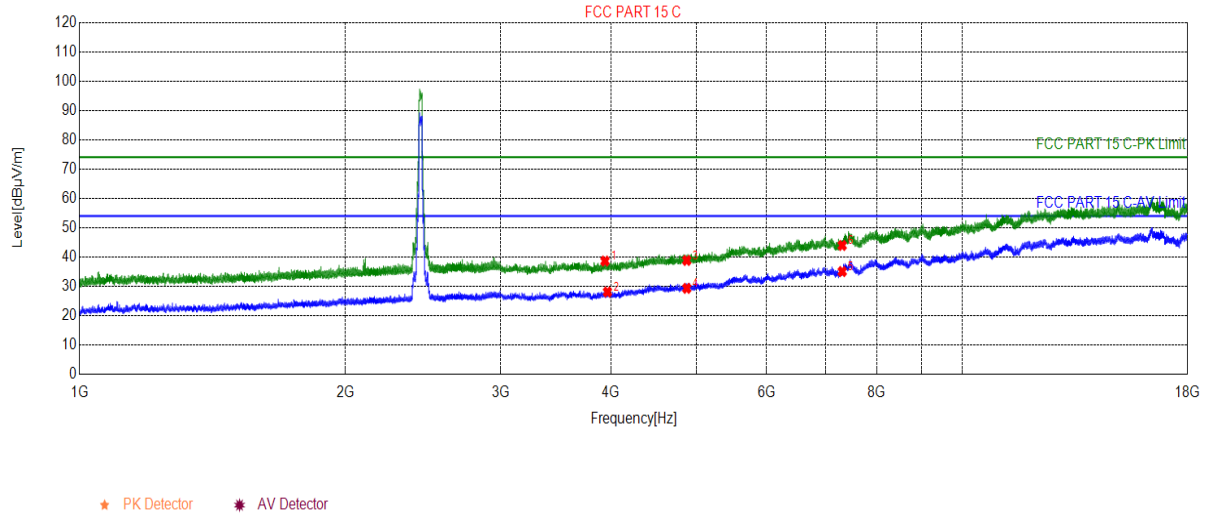
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Humi: 57%

802.11n20 Channel 6

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3937.83	38.62	-21.67	74.00	35.38	174	184	Horizontal
2	3963.03	28.08	-21.64	54.00	25.92	185	318	Horizontal
3	4874.00	38.82	-18.02	74.00	35.18	213	212	Horizontal
4	4874.00	29.32	-18.02	54.00	24.68	262	233	Horizontal
5	7311.00	35.04	-10.82	54.00	18.96	291	108	Horizontal
6	7311.00	43.94	-10.82	74.00	30.06	156	198	Horizontal

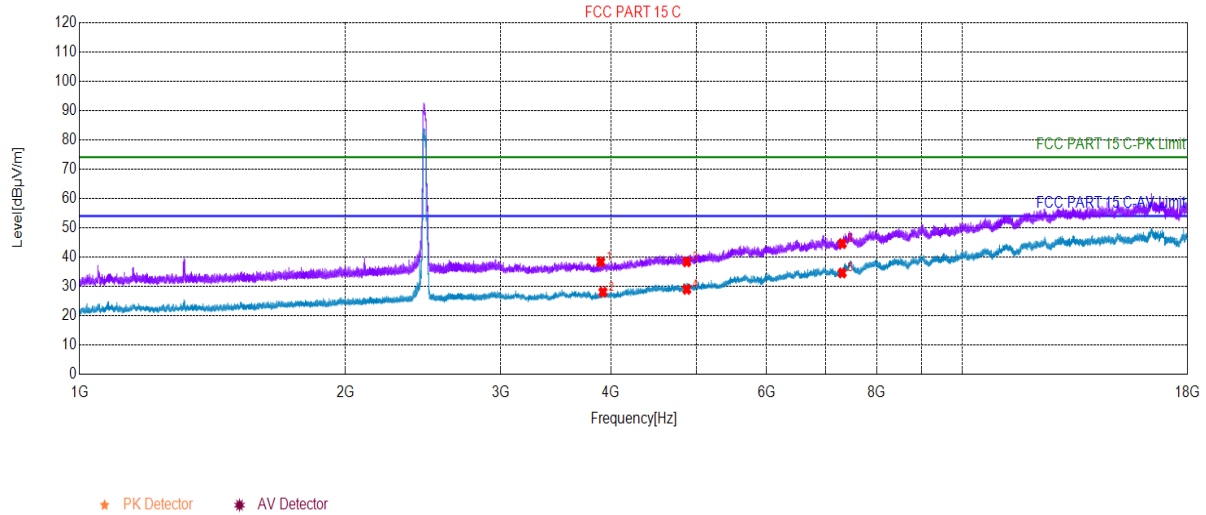
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11n20 Channel 11

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3894.03	38.30	-21.76	74.00	35.70	174	349	Vertical
2	3916.83	28.04	-21.67	54.00	25.96	185	233	Vertical
3	4874.00	38.36	-18.02	74.00	35.64	196	261	Vertical
4	4874.00	28.97	-18.02	54.00	25.03	231	304	Vertical
5	7311.00	34.55	-10.82	54.00	19.45	262	44	Vertical
6	7311.00	44.57	-10.82	74.00	29.43	248	203	Vertical

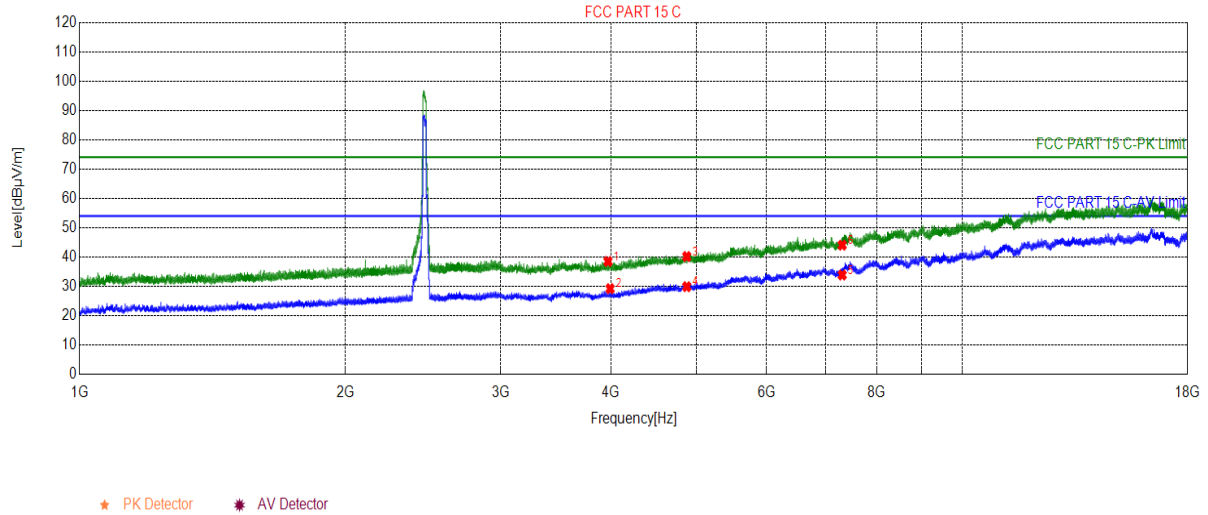
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11n20 Channel 11

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3968.43	38.48	-21.63	74.00	35.52	278	58	Horizontal
2	3990.63	29.21	-21.58	54.00	24.79	123	58	Horizontal
3	4874.00	40.17	-18.02	74.00	33.83	155	217	Horizontal
4	4874.00	29.88	-18.02	54.00	24.12	159	247	Horizontal
5	7311.00	33.85	-10.82	54.00	20.15	196	28	Horizontal
6	7311.00	44.04	-10.82	74.00	29.96	213	333	Horizontal

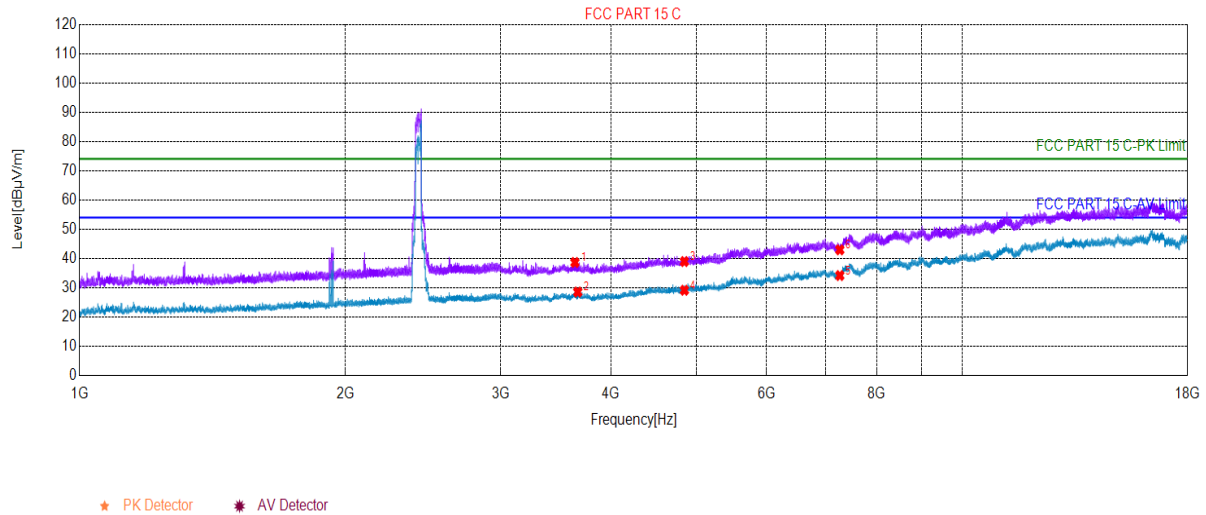
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11n40 Channel 3

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3640.82	38.65	-22.23	74.00	35.35	294	248	Vertical
2	3667.82	28.55	-22.42	54.00	25.45	184	116	Vertical
3	4844.00	38.97	-18.11	74.00	35.03	175	44	Vertical
4	4844.00	29.15	-18.11	54.00	24.85	123	333	Vertical
5	7266.00	34.18	-11.00	54.00	19.82	261	320	Vertical
6	7266.00	42.96	-11.00	74.00	31.04	191	16	Vertical

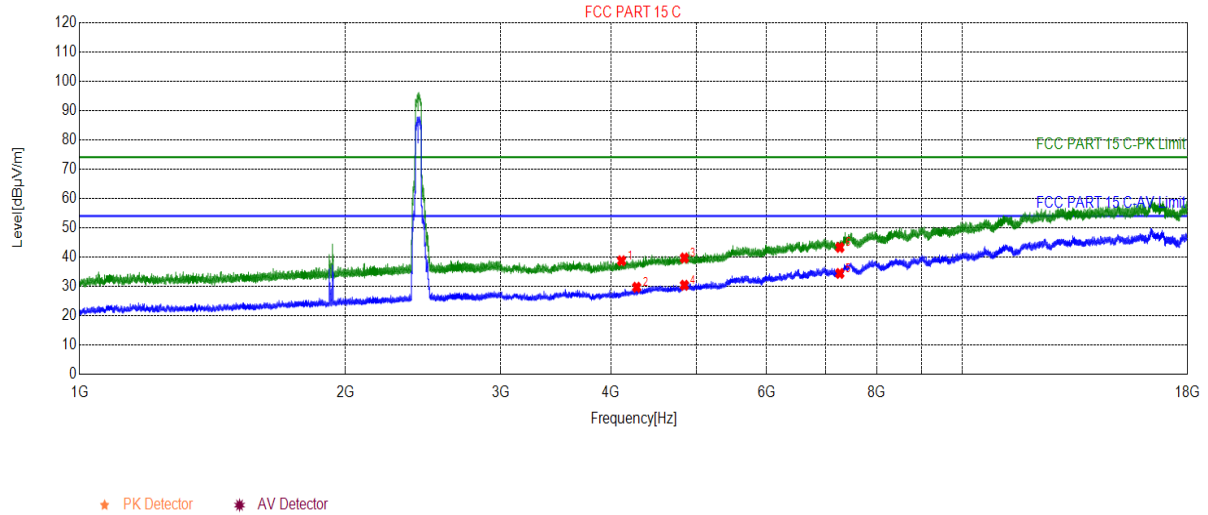
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Humi: 57%

802.11n40 Channel 3

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4111.84	38.72	-21.23	74.00	35.28	174	233	Horizontal
2	4276.85	29.68	-20.39	54.00	24.32	185	248	Horizontal
3	4844.00	39.66	-18.11	74.00	34.34	151	262	Horizontal
4	4844.00	30.38	-18.11	54.00	23.62	213	45	Horizontal
5	7266.00	34.39	-11.00	54.00	19.61	261	262	Horizontal
6	7266.00	43.27	-11.00	74.00	30.73	191	262	Horizontal

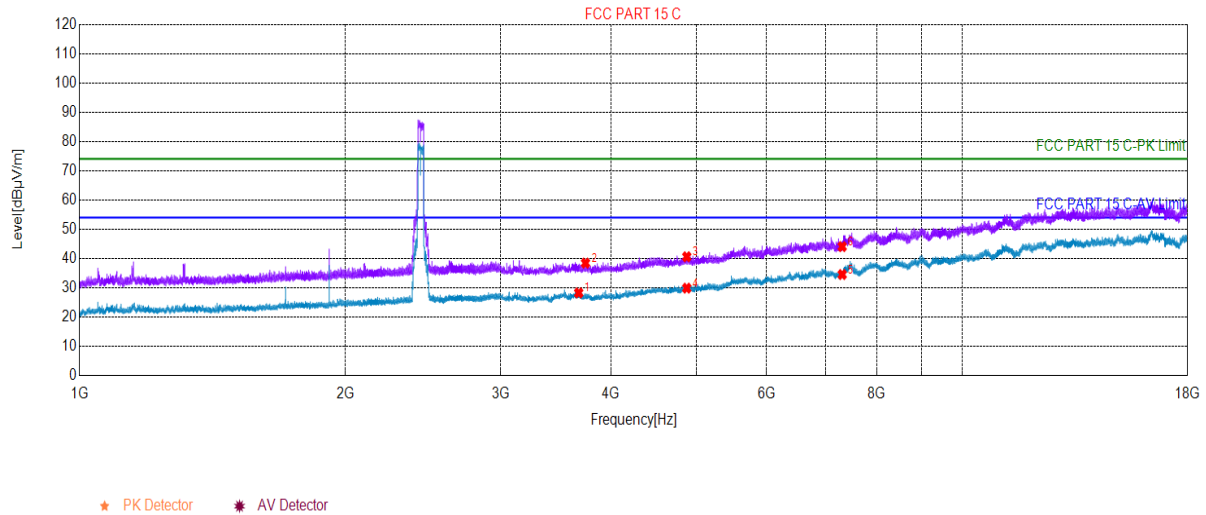
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11n40 Channel 6

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3676.82	28.24	-22.57	54.00	25.76	129	2	Vertical
2	3742.82	38.43	-22.32	74.00	35.57	231	248	Vertical
3	4874.00	40.60	-18.02	74.00	33.40	258	132	Vertical
4	4874.00	29.87	-18.02	54.00	24.13	191	4	Vertical
5	7311.00	34.53	-10.82	54.00	19.47	256	261	Vertical
6	7311.00	44.06	-10.82	74.00	29.94	261	130	Vertical

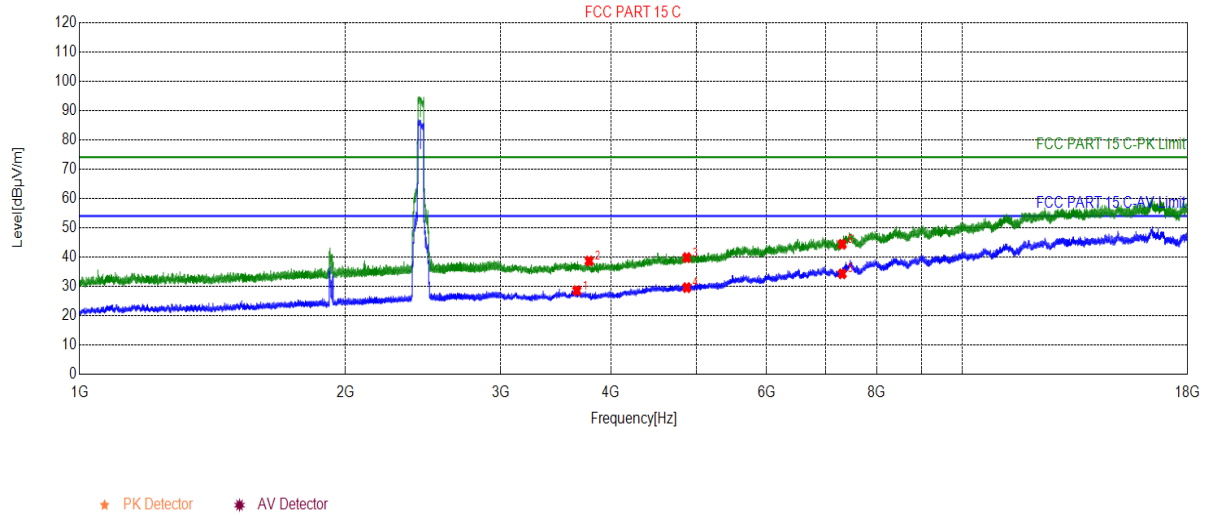
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11n40 Channel 6

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3658.82	28.53	-22.27	54.00	25.47	188	59	Horizontal
2	3778.83	38.63	-22.28	74.00	35.37	196	232	Horizontal
3	4874.00	39.80	-18.02	74.00	34.20	123	102	Horizontal
4	4874.00	29.55	-18.02	54.00	24.45	262	45	Horizontal
5	7311.00	34.27	-10.82	54.00	19.73	291	247	Horizontal
6	7311.00	44.33	-10.82	74.00	29.67	112	46	Horizontal

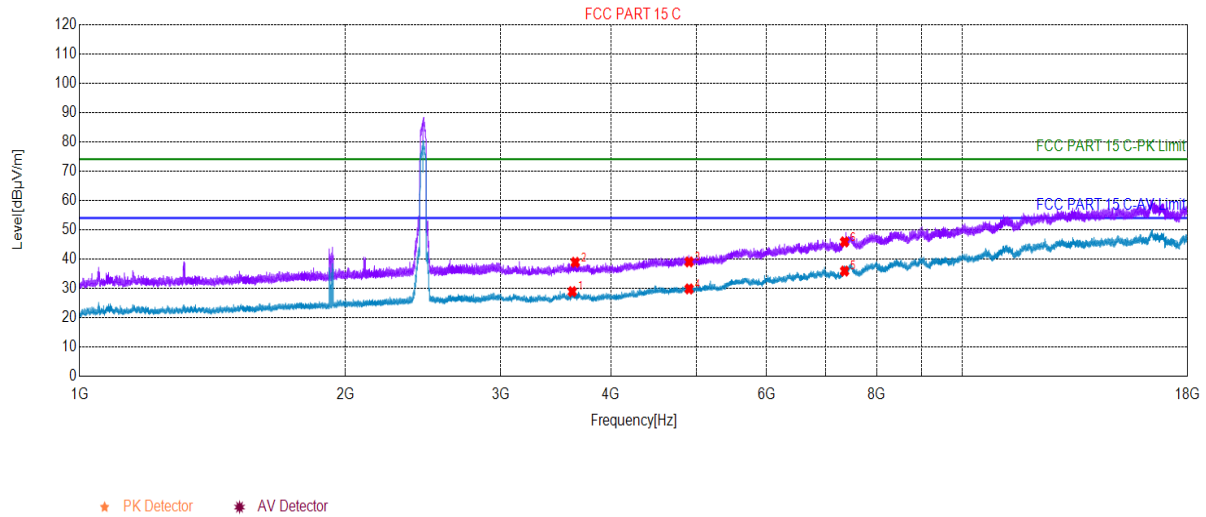
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11n40 Channel 9

Test Graph



Suspected List

Suspected List

NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3615.62	28.88	-22.52	54.00	25.12	177	46	Vertical
2	3643.82	38.85	-22.20	74.00	35.15	188	217	Vertical
3	4904.00	39.01	-17.90	74.00	34.99	284	3	Vertical
4	4904.00	29.80	-17.90	54.00	24.20	261	0	Vertical
5	7356.00	35.88	-9.50	54.00	18.12	213	44	Vertical
6	7356.00	45.84	-9.50	74.00	28.16	162	334	Vertical

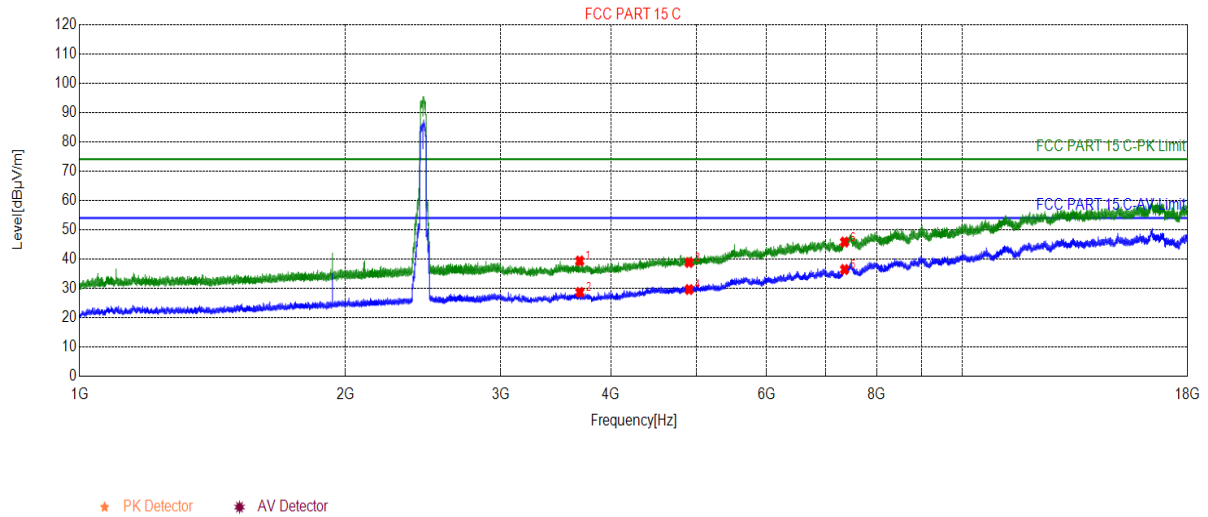
Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Product Name:	Smart Phone	Product Model:	TA-1390
Test By:	Mike	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz	Environment:	Temp: 24℃ Huni: 57%

802.11n40 Channel 9

Test Graph



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3686.42	39.32	-22.73	74.00	34.68	174	248	Horizontal
2	3687.62	28.64	-22.75	54.00	25.36	181	103	Horizontal
3	4904.00	38.79	-17.90	74.00	35.21	213	262	Horizontal
4	4904.00	29.59	-17.90	54.00	24.41	321	3	Horizontal
5	7356.00	36.42	-9.50	54.00	17.58	259	262	Horizontal
6	7356.00	45.78	-9.50	74.00	28.22	191	74	Horizontal

Remark:

- Final Level = Receiver Read level + Factor (Antenna Factor + Cable Loss – Preamplifier Factor).
- The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

7 Test Setup Photo

Reference to the test setup photos:: BT & Wi-Fi & NII Setup Photos.

8 EUT Constructional Details

Reference to the External photo and Internal photo.

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