

TEST REPORT

Application No: HR/2021/10014
Applicant: Honor Device Co., Ltd.
Address of Applicant: Suite 3401, Unit A, Building 6, Shum Yip Sky Park, No.8089, Hongli West Road, Xiangmihu Street, Futian District, Shenzhen, , Guangdong 518040, People's Republic of China
Manufacturer: Honor Device Co., Ltd.
Address of Manufacturer: Suite 3401, Unit A, Building 6, Shum Yip Sky Park, No.8089, Hongli West Road, Xiangmihu Street, Futian District, Shenzhen, , Guangdong 518040, People's Republic of China
EUT Description: Smart Phone
Model No.: NTN-LX3
Trade Mark: HONOR
FCC ID: 2AYGCNTN-LX3
Standard(s) : 47 CFR Part 15, Subpart B
Date of Receipt: 2021/1/28
Date of Test: 2021/1/28 to 2021/2/19
Date of Issue: 2021/3/10

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Derek Yang

Wireless Laboratory Manager



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<i>Revision Record</i>				
<i>Version</i>	<i>Chapter</i>	<i>Date</i>	<i>Modifier</i>	<i>Remark</i>
01		2021/3/10		Original



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Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at Mains Terminals (150kHz-30MHz)	47 CFR Part 15, Subpart B	ANSI C63.4:2014	Class B	Pass
Radiated Emissions (30MHz-1GHz)	47 CFR Part 15, Subpart B	ANSI C63.4:2014	Class B	Pass
Radiated Emissions (above 1GHz)	47 CFR Part 15, Subpart B	ANSI C63.4:2014	Class B	Pass

Internal Source	Upper Frequency
Below 1.705MHz	30MHz
1.705MHz to 108MHz	1GHz
108MHz to 500MHz	2GHz
500MHz to 1GHz	5GHz
Above 1GHz	5th harmonic of the highest frequency or 40GHz, whichever is lower

Checked By



Jimmy Zhu
Reviewer

Test By



Ben Huang
Project Engineer



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1 General Information

Product Name:	Smart Phone		
Model No.(EUT):	NTN-LX3		
Trade Mark:	HONOR		
Hardware Version:	HL1NTNM		
Software Version:	5.0.0.74(C900E74R1P2)		
Frequency Bands:	Band	Tx (MHz)	Rx (MHz)
	GSM850	824~849	869~894
	GSM1900	1850~1910	1930~1990
	WCDMA Band II	1850~1910	1930~1990
	WCDMA Band IV	1710~1755	2110~2155
	WCDMA Band V	824~849	869~894
	LTE Band 2	1850~1910	1930~1990
	LTE Band 4	1710~1755	2110~2155
	LTE Band 5	824~849	869~894
	LTE Band 7	2500~2570	2620~2690
	LTE Band 12	699~716	729~746
	LTE Band 17	704~716	734~746
	LTE Band 26	814~849	859~894
	LTE Band 66	1710~1780	2110~2200
	Wi-Fi 2.4G	2400~2483.5	2400~2483.5
	Bluetooth	2400~2483.5	2400~2483.5
	Wi-Fi 5G	5150~5850	5150~5850
FM	88-108		
GNSS(GPS/Glonass/Beidou)	1559~1610		



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Accessory:

Adapter no.	Model no.	Manufacturer
1	HW-110600E00	HONOR DEVICE CO.,LTD
2	HW-110600E02	HONOR DEVICE CO.,LTD
3	HW-110600U00	HONOR DEVICE CO.,LTD
4	HW-110600A00	HONOR DEVICE CO.,LTD
5	HW-110600B00	HONOR DEVICE CO.,LTD
6	HW-110600B02	HONOR DEVICE CO.,LTD
7	HW-110600U02	HONOR DEVICE CO.,LTD
8	HW-110600A02	HONOR DEVICE CO.,LTD

Remark: Adapter 3, 4 and 5 are same as 1; number 6, 7 and 8 are same as 2.
Both number 1 & 2 are selected to conducted test in this report.

Earphone no.	Model no.	Manufacturer
1	1293-3283-3.5mm-339	Boluo County Quancheng Electronic Co., Ltd.
2	EPAB542-2WH05-DH	FOXCONN INTERCONNECT TECHNOLOGY LIMITED.
3	MEND1532B528A11	Jiangxi Lianchuang Hongsheng Electronic Co. ,LTD

USB cable no.	Model no.	Manufacturer
1	213-01011-0	MING JI ELECTRONICS CO., LTD.
2	L99UC139-CS-H	Luxshare Precision industry Co.,Ltd

Battery no.	EUT no.	Model no.	Manufacturer
1	EUT1	HB466589EFW	Honor Device Co., Ltd. (Manufacturer: Sunwoda)
2	EUT2	HB466589EFW	Honor Device Co., Ltd. (Manufacturer: SCUD)



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1.1 Description of Support Units

Description	Manufacturer	Model No.
Laptop	Lenovo	L480
Mouse	Lenovo	3D Optical Mouse
Router	NETGEAR	R6020

1.2 Test Location

All tests were performed at:

Company:	SGS-CSTC STANDARDS TECHNICAL SERVICES (XI 'AN) CO., LTD.
Address:	1/F, Unit D, Building 1, Kanghong Orange Technology Park, No.137, Keyuan 3rd Road, Fengdong New City, Xi'an, Shaanxi China
Post code:	710086

No tests were sub-contracted.

1.3 Test Facility

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

- **A2LA (Certificate No. 4854.01)**

SGS-CSTC STANDARDS TECHNICAL SERVICES (XI 'AN) CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4854.01.

Test Site No.:	SGS Xian Site No.		FCC Designation No.
	CO01-XA	03CH01-XA	CN1271

1.4 Deviation from Standards

None

1.5 Abnormalities from Standard Conditions

None



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2 Emission Test Results

2.1 Conducted Emissions at Mains Terminals (150kHz-30MHz)

Test Requirement:	47 CFR Part 15, Subpart B
Test Method:	ANSI C63.4:2014
Frequency Range:	150kHz to 30MHz
Limit:	
0.15M-0.5MHz	66dB(μV)-56dB(μV) quasi-peak, 56dB(μV)-46dB(μV) average
0.5M-5MHz	56dB(μV) quasi-peak, 46dB(μV) average
5M-30MHz	60dB(μV) quasi-peak, 50dB(μV) average
Detector:	Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

2.1.1 E.U.T. Operation

Operating Environment:

Temperature: 18.9 °C Humidity: 55.1 % RH Atmospheric Pressure: 1000 mbar

Pretest these modes to find the worst case:

- a: Transfer data between the EUT and the PC+USB cable1
- b: Transfer data between the EUT and the PC+USB cable2
- c: GSM 850 Idle+BT+2.4G WLAN +GPS Rx+playing MP4+earphone1+battery1+Cable(worst)+adapter1
- d: WCDMA Band V Idle+BT+5G WLAN +GPS Rx+playing MP4+earphone2+battery2+ Cable(worst)+adapter2
- e: LTE Band 5 Idle+BT+5G WLAN +GPS Rx+ camera (Front)+earphone3+battery(worst)+ Cable(worst)+adapter(worst)
- f: LTE Band 7 Idle+BT+2.4G WLAN +GPS Rx+ camera (Back)+earphone(worst)+battery(worst)+ Cable(worst)+adapter(worst)
- g: LTE Band 12 Idle+ BT+5G WLAN +GPS Rx+FM+earphone(worst)+battery(worst)+ Cable(worst)+adapter(worst)

The worst case for final test:

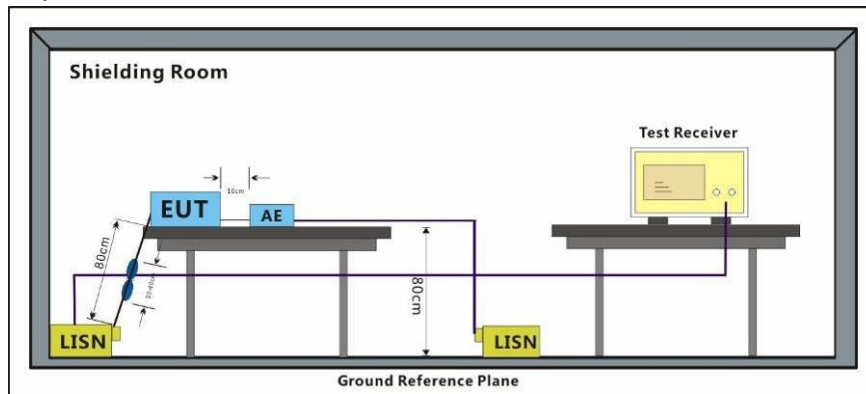
- e: LTE Band 5 Idle+BT+5G WLAN +GPS Rx+ camera (Front)+earphone3+battery(worst)+ Cable(worst)+adapter(worst)



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2.1.2 Test Setup Procedures

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.



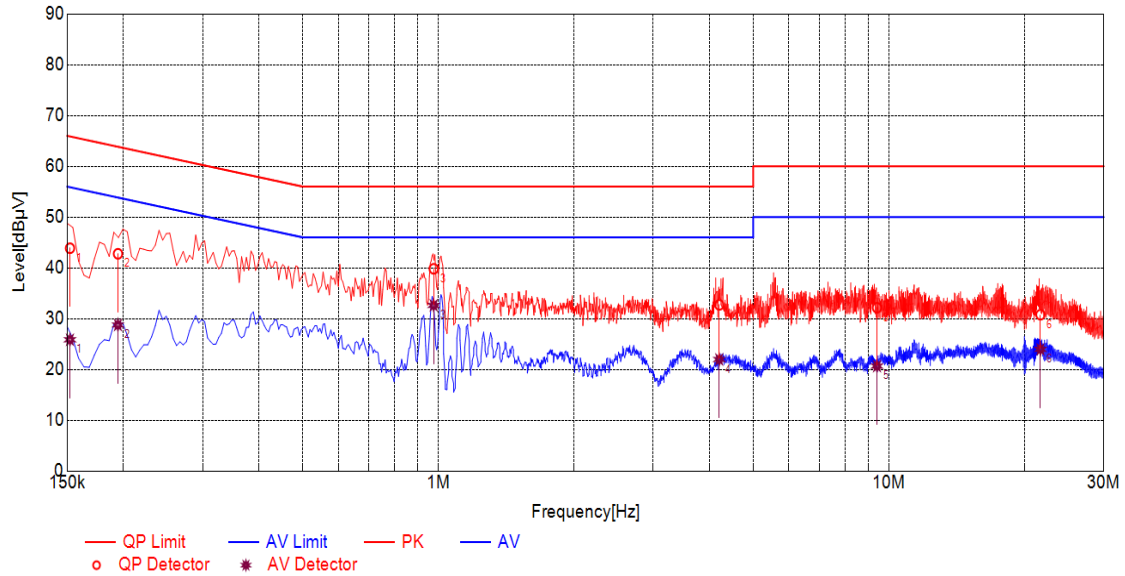
2.1.3 Measurement Data

An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.



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Mode:e; Line:Live Line



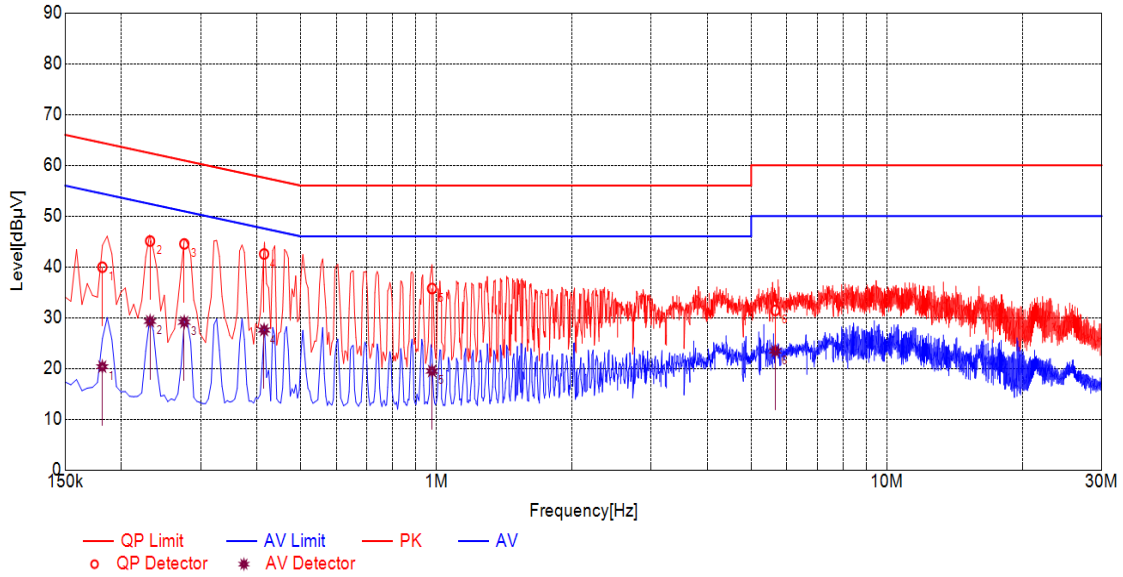
Test Graph

Final Data List								
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]
1	0.1522	10.10	43.87	65.88	22.01	25.85	55.88	30.03
2	0.1945	10.10	42.78	63.84	21.06	28.75	53.84	25.09
3	0.9766	10.10	39.82	56.00	16.18	32.61	46.00	13.39
4	4.2032	10.10	32.73	56.00	23.27	21.96	46.00	24.04
5	9.4122	10.10	32.15	60.00	27.85	20.65	50.00	29.35
6	21.7030	10.11	30.78	60.00	29.22	23.96	50.00	26.04



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Mode:e; Line:Neutral Line



Test Graph

Final Data List								
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]
1	0.1814	10.10	39.94	64.42	24.48	20.34	54.42	34.08
2	0.2316	10.10	45.08	62.39	17.31	29.30	52.39	23.09
3	0.2758	10.10	44.52	60.94	16.42	29.13	50.94	21.81
4	0.4147	10.10	42.54	57.55	15.01	27.56	47.55	19.99
5	0.9782	10.10	35.73	56.00	20.27	19.49	46.00	26.51
6	5.6537	10.10	31.43	60.00	28.57	23.43	50.00	26.57



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2.2 Radiated Emissions (30MHz-1GHz)

Test Requirement:	47 CFR Part 15, Subpart B
Test Method:	ANSI C63.4:2014
Frequency Range:	30MHz to 1GHz
Measurement Distance:	3m
Limit:	
30MHz -88MHz	40.0(dBμV/m) quasi-peak
88MHz-216MHz	43.5(dBμV/m) quasi-peak
216MHz-960MHz	46.0(dBμV/m) quasi-peak
960MHz-1000MHz	54.0(dBμV/m) quasi-peak
Detector:	Peak for pre-scan (120kHz resolution bandwidth) 30M to1000MHz

2.2.1 E.U.T. Operation

Operating Environment:

Temperature: 25 °C Humidity: 66.5 % RH Atmospheric Pressure: 1010 mbar

Pretest these modes to find the worst case:

- a: Transfer data between the EUT and the PC+USB cable1
- b: Transfer data between the EUT and the PC+USB cable2
- c: GSM 850 Idle+BT+2.4G WLAN +GPS Rx+playing MP4+earphone1+battery1+Cable(worst)+adapter1
- d: WCDMA Band V Idle+BT+5G WLAN +GPS Rx+playing MP4 +earphone2+battery2+ Cable(worst)+adapter2
- e: LTE Band 5 Idle+BT+5G WLAN +GPS Rx+ camera (Front) +earphone3+battery(worst)+ Cable(worst)+adapter(worst)
- f: LTE Band 7 Idle+BT+2.4G WLAN +GPS Rx+ camera (Back) +earphone(worst)+ battery(worst)+ Cable(worst)+adapter(worst)
- g: LTE Band 12 Idle+ BT+5G WLAN +GPS Rx+FM +earphone(worst)+battery(worst)+ Cable(worst)+adapter(worst)

The worst case for final test:

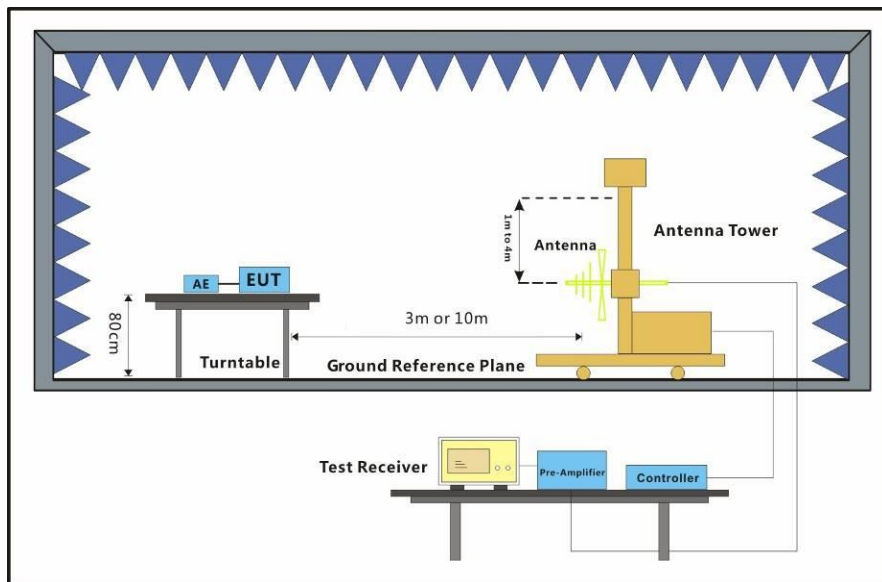
- a: Transfer data between the EUT and the PC+USB cable1



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2.1.4 Test Setup Procedures

1. The EUT was placed in a semi Anechoic Chamber as show below
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna height is adjusted between 1 to 4 meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak Detect Function with specified bandwidth with Maximum Hold Mode, and the trace was allowed to stabilize.
7. If the emission level of the EUT in peak mode was 6 dB lower than the limit specified, peak values of EUT will be reported. Otherwise, the emission will be repeated by using the quasi-peak method and reported.



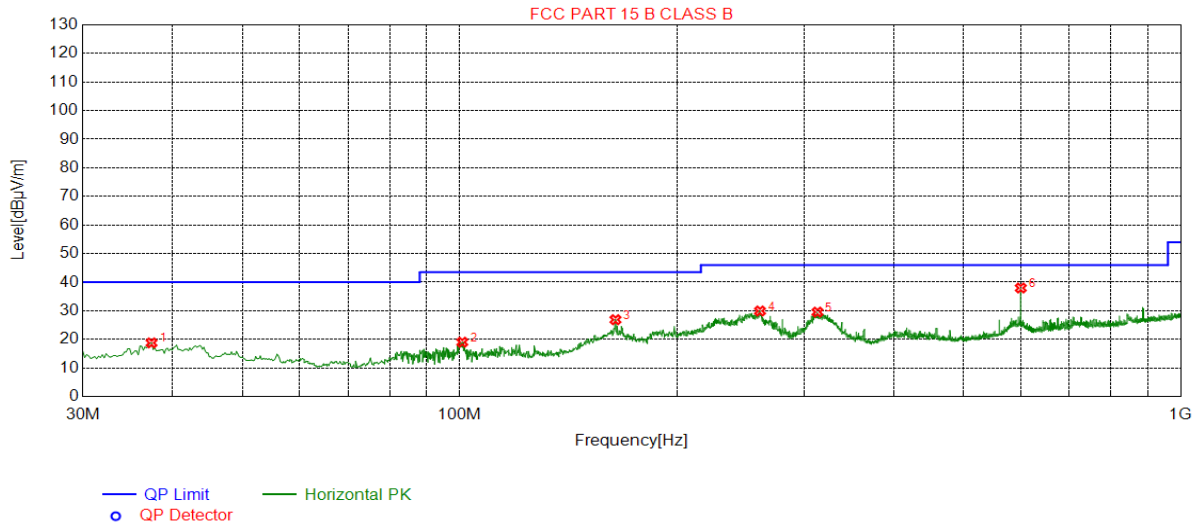
2.1.5 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.



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Mode:a; Polarization:Horizontal



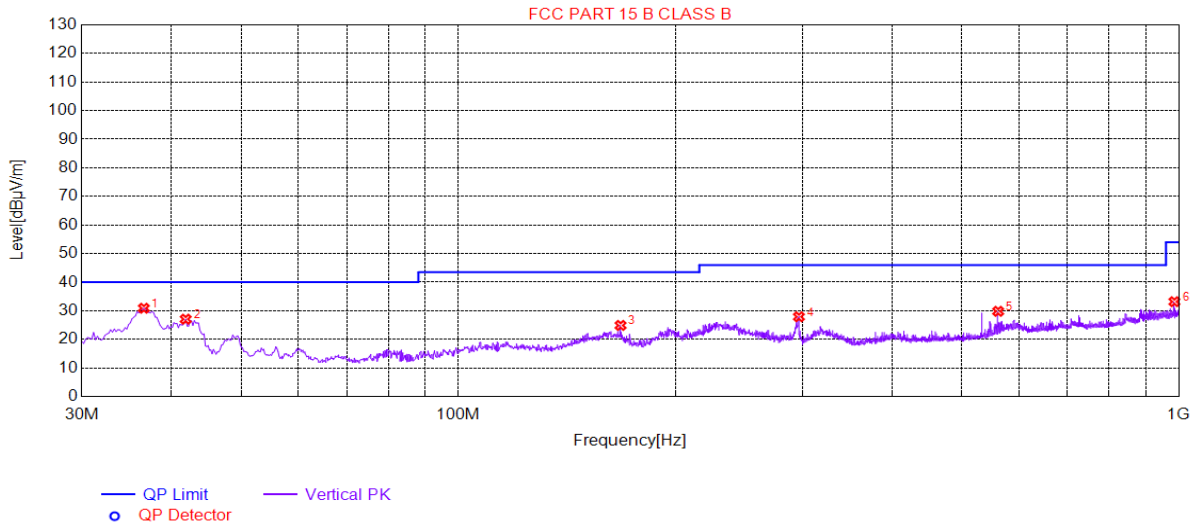
Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	37.3735	18.79	-29.19	40.00	21.21	400	281	Horizontal
2	100.824	19.04	-32.00	43.50	24.46	200	85	Horizontal
3	164.468	26.90	-34.37	43.50	16.60	200	149	Horizontal
4	260.906	29.94	-29.35	46.00	16.06	100	72	Horizontal
5	313.490	29.56	-27.88	46.00	16.44	100	63	Horizontal
6	600.086	37.98	-20.63	46.00	8.02	200	303	Horizontal



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Mode:a; Polarization:Vertical



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	36.5973	30.91	-29.44	40.00	9.09	100	14	Vertical
2	41.8364	27.09	-29.11	40.00	12.91	100	334	Vertical
3	167.961	24.90	-34.16	43.50	18.60	100	124	Vertical
4	296.997	27.93	-28.38	46.00	18.07	200	335	Vertical
5	561.472	29.83	-21.72	46.00	16.17	100	316	Vertical
6	986.223	33.20	-14.98	54.00	20.80	100	359	Vertical



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2.3 Radiated Emissions (above 1GHz)

Test Requirement:	47 CFR Part 15, Subpart B
Test Method:	ANSI C63.4:2014
Frequency Range:	Above 1GHz
Measurement Distance:	3m
Limit:	
Above 1GHz	74(dB μ V/m) peak, 54(dB μ V/m) average
Detector:	Peak for pre-scan (1000kHz resolution bandwidth) 100M to18000MHz

2.3.1 E.U.T. Operation

Operating Environment:

Temperature: 21.7 °C Humidity: 56.4 % RH Atmospheric Pressure: 1010 mbar

Pretest these modes to find the worst case:

- a: Transfer data between the EUT and the PC+USB cable1
- b: Transfer data between the EUT and the PC+USB cable2
- c: GSM 850 Idle+BT+2.4G WLAN +GPS Rx+playing MP4+earphone1+battery1+Cable(worst)+adapter1
- d: WCDMA Band V Idle+BT+5G WLAN +GPS Rx+playing MP4 +earphone2+battery2+ Cable(worst)+adapter2
- e: LTE Band 5 Idle+BT+5G WLAN +GPS Rx+ camera (Front) +earphone3+battery(worst)+ Cable(worst)+adapter(worst)
- f: LTE Band 7 Idle+BT+2.4G WLAN +GPS Rx+ camera (Back) +earphone(worst)+ battery(worst)+ Cable(worst)+adapter(worst)
- g: LTE Band 12 Idle+ BT+5G WLAN +GPS Rx+FM +earphone(worst)+battery(worst)+ Cable(worst)+adapter(worst)

The worst case for final test:

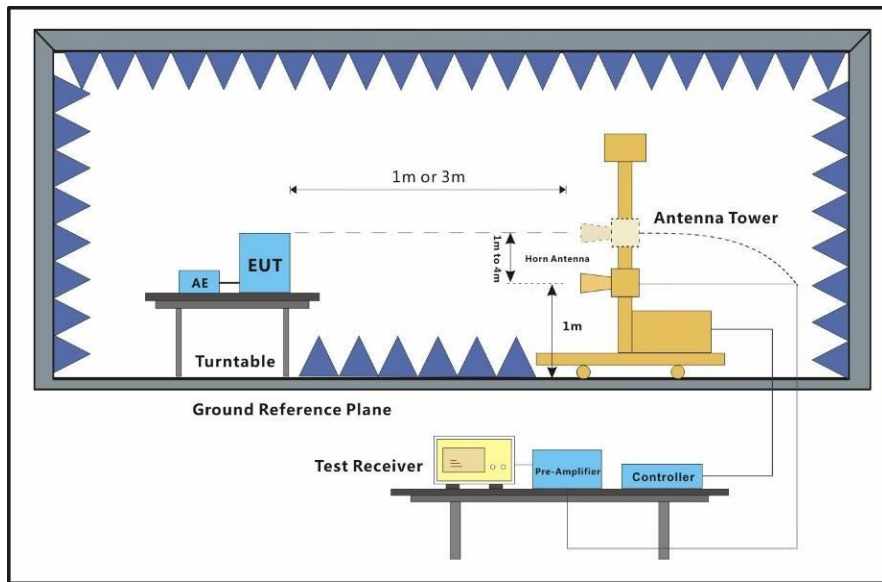
- g: LTE Band 12 Idle+BT+WLAN +GPS Rx+camera (Front) +earphone(worst)+battery(worst)+ Cable(worst)+adapter(worst)



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2.1.6 Test Setup Procedures

1. The EUT was placed in a full Anechoic Chamber as show below
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna height is adjusted between 1 to 4 meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak and AV Detect Function with specified bandwidth with Maximum Hold Mode, and the trace was allowed to stabilize.



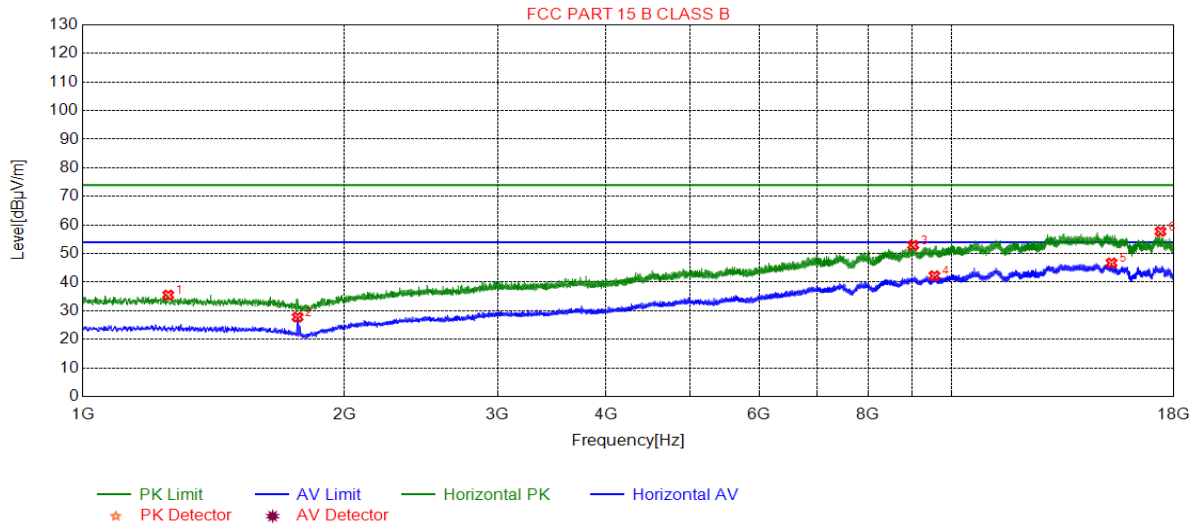
2.1.7 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Average measurements were conducted based on the peak sweep graph. The EUT was measured by Horn antenna with 2 orthogonal polarities.



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Mode:g; Polarization:Horizontal



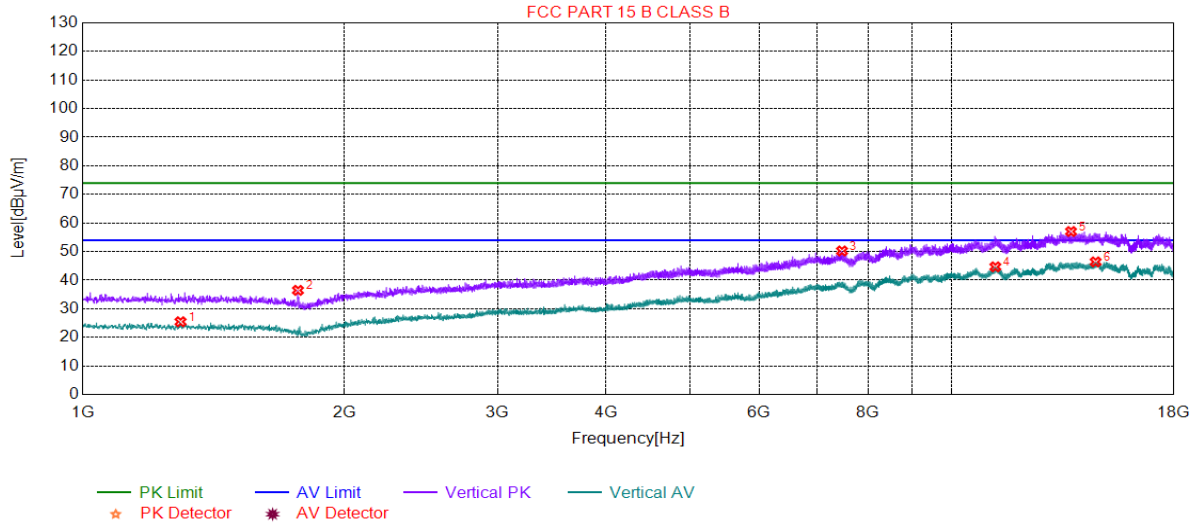
Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1254.16	35.53	-30.01	74.00	38.47	100	344	Horizontal
2	1766.73	27.82	-31.78	54.00	26.18	100	151	Horizontal
3	9021.85	52.94	-6.12	74.00	21.06	100	173	Horizontal
4	9543.77	42.26	-5.22	54.00	11.74	100	194	Horizontal
5	15254.3	46.75	0.63	54.00	7.25	100	323	Horizontal
6	17370.1	57.75	-2.65	74.00	16.25	100	194	Horizontal



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Mode:g; Polarization:Vertical



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1295.81	25.48	-29.97	54.00	28.52	100	337	Vertical
2	1768.43	36.46	-31.80	74.00	37.54	100	294	Vertical
3	7471.37	50.23	-9.63	74.00	23.77	100	316	Vertical
4	11214.9	44.68	-3.25	54.00	9.32	100	16	Vertical
5	13703.8	57.03	0.84	74.00	16.97	100	37	Vertical
6	14626.1	46.41	0.67	54.00	7.59	100	251	Vertical

Remark:

1) Scan from 1GHz to 40GHz, The disturbance between 18GHz to 40GHz was very low, so only 1GHz to 18GHz test data had been displayed. The amplitude of emissions from the Eut which are attenuated more than 20dB below the limit need not be reported .



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3 Equipment List

Chamber					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date	Cal.Due date
				(yyyy-mm-dd)	(yyyy-mm-dd)
Semi-Anechoic Chamber	Brilliant-emc	966	XAW03-35-01	NCR	NCR
MXA signal analyzer	Keysight	N9020A	XAW01-06-01	2020/4/2	2021/4/2
Radio communication analyzer	ROHDE&SCHWARZ	CMW 500	XAW01-03-02	2020/4/2	2021/4/2
Test receiver	ROHDE&SCHWARZ	ESR	XAW01-08-01	2020/9/7	2021/9/6
Receiving antenna	Rosenberger	VULB 9163	XAW01-09-01	2019/10/13	2021/10/12
Receiving antenna	Rosenberger	BBHA 9120D	XAW01-09-02	2019/10/13	2021/10/12
Receiving antenna	Rosenberger	BBHA 9170	XAW01-09-03	2019/10/13	2021/10/12
Directional antenna rack controller	Max-Full	MF-7802BS	XAW03-03-01	NCR	NCR
High-speed antenna rack controller	Max-Full	MF-7802	XAW03-04-01	NCR	NCR
Filter bank	Tonscend	JS0806-F	XAW03-05-01	NCR	NCR
Filter bank	Tonscend	JS0806s	XAW03-05-02	NCR	NCR
Amplifier	Tonscend	TAP00903040	XAW01-41-01	2020/11/18	2021/11/18
Amplifier	Tonscend	TAP01018048	XAW01-41-02	2020/11/18	2021/11/18
Amplifier	Tonscend	TAP18040048	XAW01-41-03	2020/12/3	2021/12/3
Amplifier	Brilliant-emc	YX28980930	XAW01-41-06	2020/11/18	2021/11/18
Artificial network	ROHDE&SCHWARZ	ENV216	XAW01-19-02	2020/9/16	2021/9/15



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4 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Conduction Emission	± 3.4dB (150kHz to 30MHz)
2	Radiated Emission	± 4.8dB (30MHz-1GHz)
		± 5.2dB (1GHz-6GHz)
		± 5.5dB (6GHz-18GHz)
		± 5.02dB (18GHz-40GHz)



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5 Photographs

5.1 Test Setup

Refer to Appendix A JBP Setup Photos.

5.2 EUT Constructional Details (EUT Photos)

Refer to Photographs of EUT Constructional Details

- End of the Report -

