



TEST REPORT

Application No: HR/2021/50005
Applicant: HUAWEI DEVICE CO., LTD.
Address of Applicant: Huawei Device Co., Ltd.
No.2 of Xincheng Road, Songshan Lake Zone, Dongguan, Guangdong
523808, People's Republic of China
Manufacturer: HUAWEI DEVICE CO., LTD.
Address of Manufacturer: Huawei Device Co., Ltd.
No.2 of Xincheng Road, Songshan Lake Zone, Dongguan, Guangdong
523808, People's Republic of China
EUT Description: Smart Band
Model No.: FRA-B19
Trade Mark: HUAWEI
FCC ID: 2ATEYFRA-B19
Standard(s) : 47 CFR Part 15, Subpart B
Date of Receipt: 2021/1/20
Date of Test: 2021/1/20 to 2021/1/31
Date of Issue: 2021/5/19

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

Authorized Signature:

Simon Ling

Wireless Laboratory Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2021/5/19		Original

Authorized for issue by:	
Prepared By	 (Leah Chen) / Engineer
Checked By	 (Daniel Wang) /Reviewer



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



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Remark for report XHR/2021/5000502:

Model No.: FRA-B19

The model FRA-B19 was only tested in report HR/2021/1001102.

This report was an additional report copied from the report HR/2021/1001102, just added the FCC ID.

Therefore original data were kept in this report.



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1 General Information

Product Name:	Smart Band		
Model No.(EUT):	FRA-B19		
Trade Mark:	HUAWEI		
Hardware Version:	FD188		
Software Version:	11.1.0.2		
Frequency Bands:	Band	Tx (MHz)	Rx (MHz)
	Bluetooth	2400~2483.5	2400~2483.5

Accessory:

Battery			
Battery1	HUAWEI DEVICE CO., LTD. (Manufacturer:Tianjin lishen battery joint-stock.,LTD.)	HB351731EFW	Li-ion Polymer Battery Capacity:180mAh Rated Voltage:3.87V Cutoff Voltage:4.45V DischargeVoltage:3.0V
Battery2	HUAWEI DEVICE CO., LTD. (Manufacturer: Dongguan NVT Technology Co.,Ltd.)	HB351731EFW	Li-ion Polymer Battery Capacity:180mAh Rated Voltage:3.87V Cutoff Voltage:4.45V DischargeVoltage:3.0V
Battery3	HUAWEI DEVICE CO., LTD. (Manufacturer: Huizhou Desay Battery Co.,Ltd.)	HB351731EFW	Li-ion Polymer Battery Capacity:180mAh Rated Voltage:3.87V Cutoff Voltage:4.45V DischargeVoltage:3.0V
Battery4	HUAWEI DEVICE CO., LTD. (Manufacturer: Zhuhai CosMX Power Jinwan Subsidiary Co., Ltd.)	HB351731EFW	Li-ion Polymer Battery Capacity:180mAh Rated Voltage:3.87V Cutoff Voltage:4.45V DischargeVoltage:3.0V
Charging dock			
Charging dock	/	POWER-CA010	/



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1.1 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Laptop	Lenovo	T430u	REF. No.SEA1800
Mouse	Lenovo	M-U0025-O	REF. No.:SEA2400
Router	NETGEAR	DGN2200	REF. No.SEA2200

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:	710000

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:

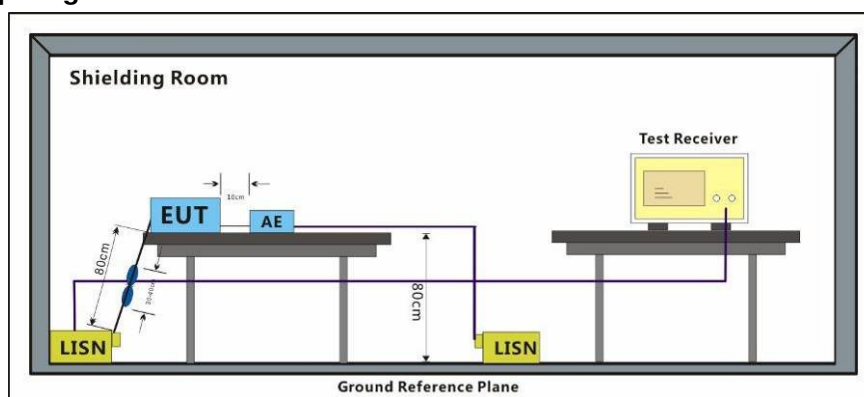
Temperature: 18.9 °C Humidity: 55.1 % RH Atmospheric Pressure: 1000 mbar

Pretest these modes to find the worst case:

- a: BT+ battery1+Charging dock
- b: BT+ battery2+Charging dock(worst)
- c: BT+ battery3+Charging dock(worst)
- d: BT+ battery4+Charging dock(worst)

The worst case for final test: b: BT+ battery2+Charging dock(worst)

2.1.2 Test Setup Diagram



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.

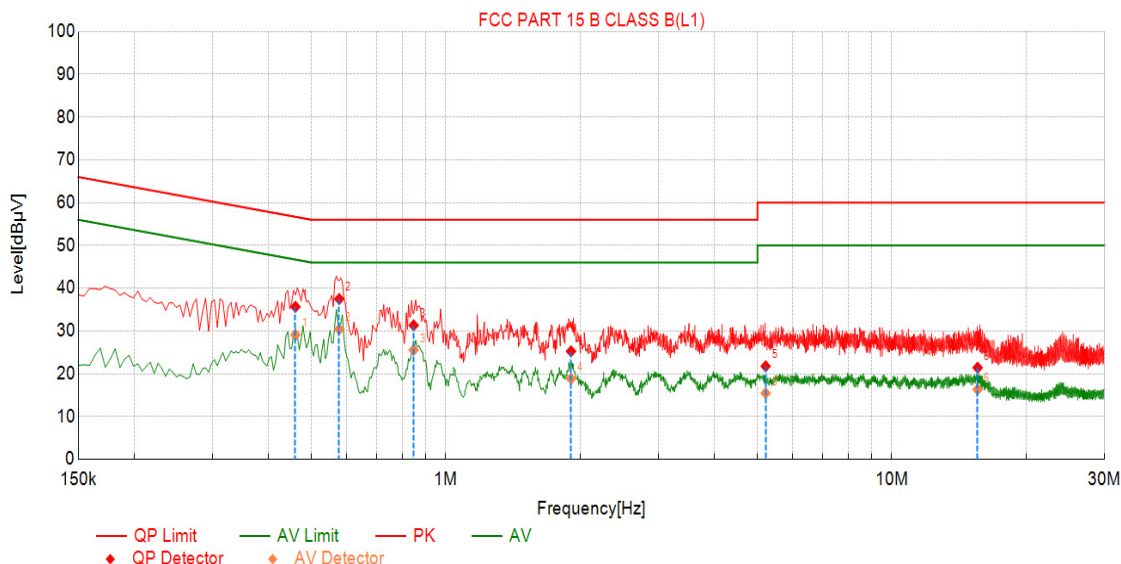


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Mode:b; Line:Live Line



Test Graph

Final Data List

NO.	Freq. [MHz]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Type
1	0.4603	35.65	56.69	21.04	29.11	46.69	17.58	L1
2	0.5770	37.48	56.00	18.52	30.39	46.00	15.61	L1
3	0.8472	31.32	56.00	24.68	25.57	46.00	20.43	L1
4	1.9095	25.25	56.00	30.75	18.83	46.00	27.17	L1
5	5.2144	21.76	60.00	38.24	15.44	50.00	34.56	L1
6	15.5757	21.41	60.00	38.59	16.32	50.00	33.68	L1



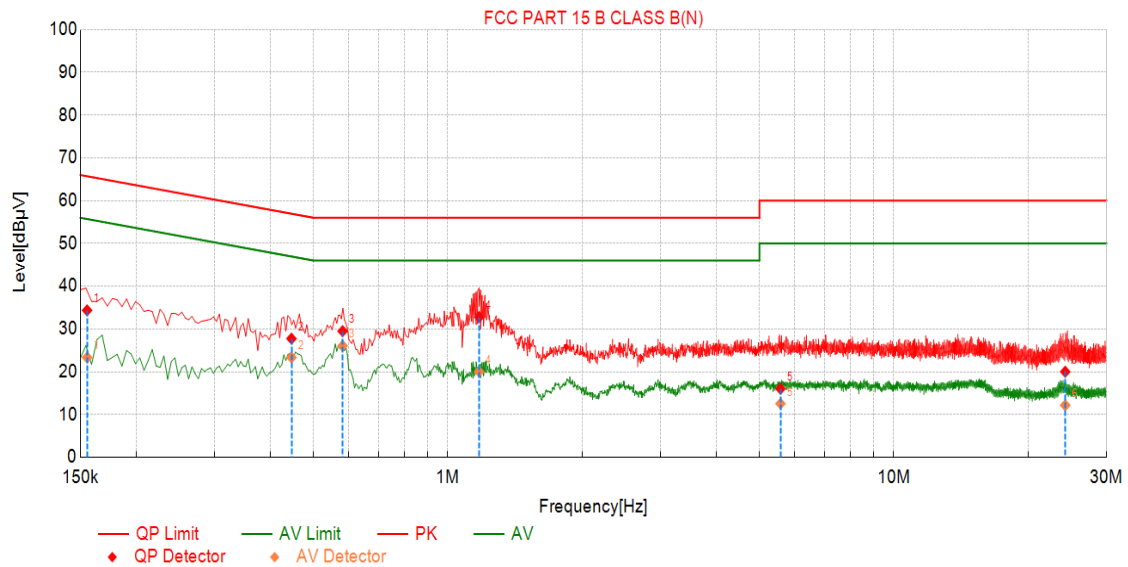
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Mode:b; Line:Neutral Line



Test Graph

Final Data List								
NO.	Freq. [MHz]	QP Value [dBμV]	QP Limit [dBμV]	QP Margin [dB]	AV Value [dBμV]	AV Limit [dBμV]	AV Margin [dB]	Type
1	0.1554	34.36	65.71	31.35	23.35	55.71	32.36	N
2	0.4463	27.74	56.94	29.20	23.36	46.94	23.58	N
3	0.5811	29.50	56.00	26.50	26.07	46.00	19.93	N
4	1.1757	32.80	56.00	23.20	20.02	46.00	25.98	N
5	5.5718	16.03	60.00	43.97	12.54	50.00	37.46	N
6	24.2293	20.02	60.00	39.98	12.18	50.00	37.82	N



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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

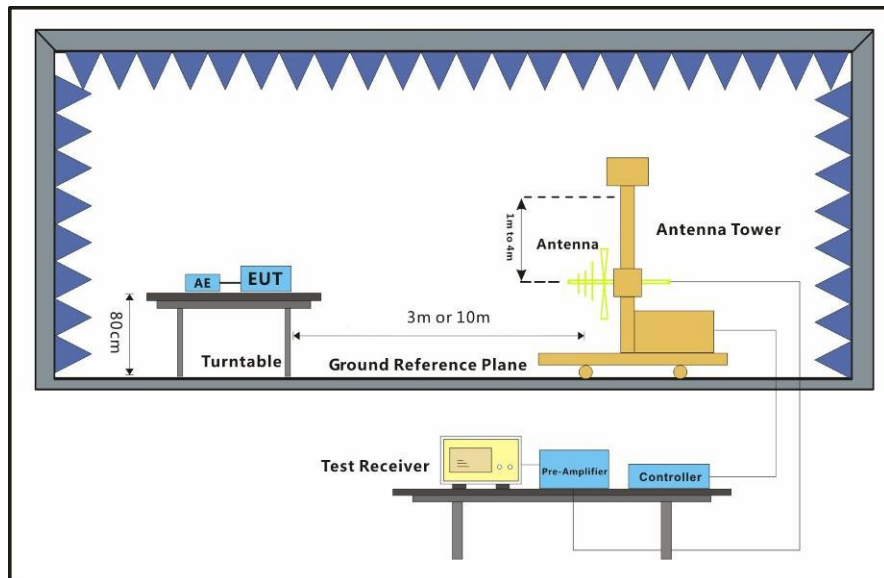
2.1.4 E.U.T. Operation

Operating Environment:

Temperature:	25 °C	Humidity:	66.5 % RH	Atmospheric Pressure:	1010 mbar
Pretest these modes to find the worst case:	a: BT+ battery1+Charging dock b: BT+ battery2+Charging dock(worst) c: BT+ battery3+Charging dock(worst) d: BT+ battery4+Charging dock(worst)				

The worst case for final test: a: BT+ battery1+Charging dock

2.1.5 Test Setup Diagram





2.1.6 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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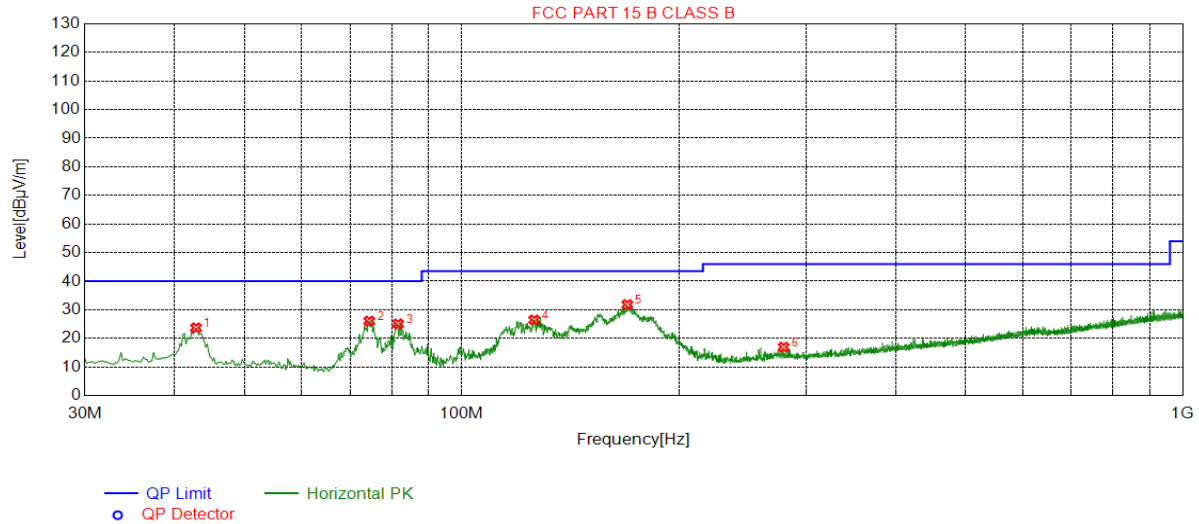
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Mode:a; Polarization:Horizontal



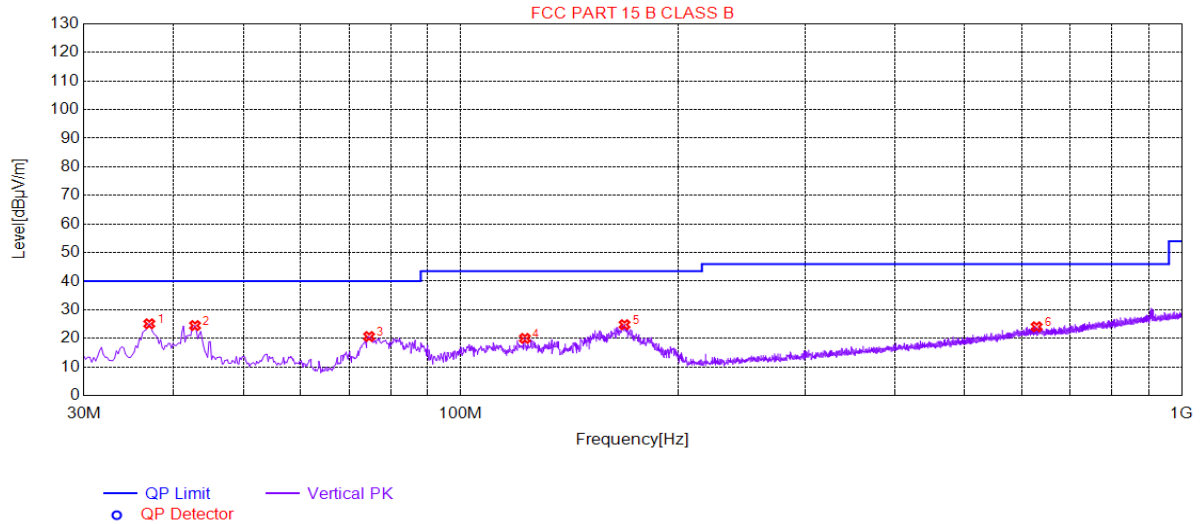
Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	42.8066	23.71	-29.51	40.00	16.29	213	231	Horizontal
2	74.4349	26.07	-35.15	40.00	13.93	233	291	Horizontal
3	81.6143	25.09	-35.76	40.00	14.91	209	277	Horizontal
4	126.049	26.48	-34.48	43.50	17.02	256	260	Horizontal
5	169.707	31.84	-34.06	43.50	11.66	189	256	Horizontal
6	279.533	16.96	-29.00	46.00	29.04	177	128	Horizontal





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	36.9854	25.13	-29.32	40.00	14.87	187	335	Vertical
2	42.8066	24.51	-29.51	40.00	15.49	165	312	Vertical
3	74.6289	20.67	-35.19	40.00	19.33	176	329	Vertical
4	122.750	20.02	-33.99	43.50	23.48	245	307	Vertical
5	168.737	24.82	-34.11	43.50	18.68	236	165	Vertical
6	629.191	24.08	-20.28	46.00	21.92	189	250	Vertical



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(dBμV/m) peak, 54(dBμV/m) average
 Detector: Peak for pre-scan (1000kHz resolution bandwidth) 1000M to18000MHz

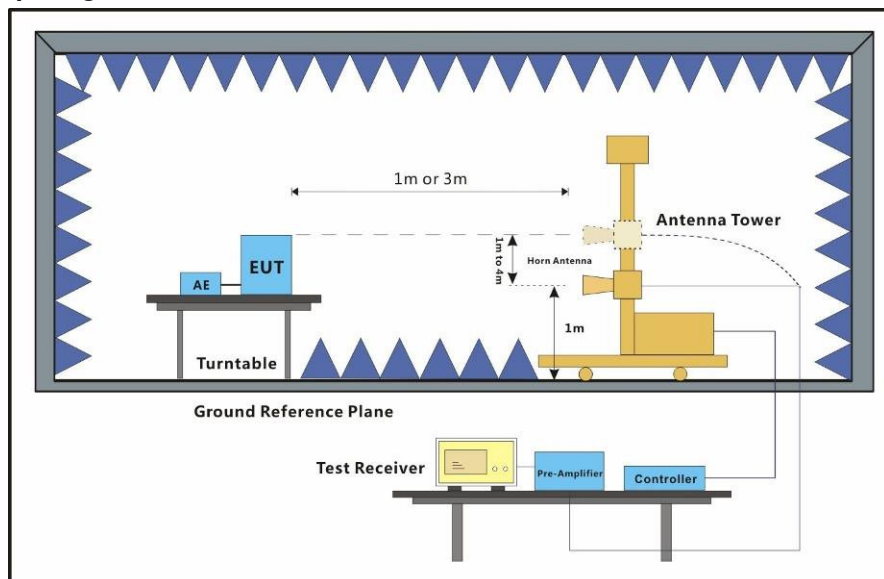
2.1.7 E.U.T. Operation

Operating Environment:

Temperature: 21.7 °C Humidity: 56.4 % RH Atmospheric Pressure: 1010 mbar
 Pretest these modes to find the worst case:
 a: BT+ battery1+Charging dock
 b: BT+ battery2+Charging dock(worst)
 c: BT+ battery3+Charging dock(worst)
 d: BT+ battery4+Charging dock(worst)

The worst case for final test: b: BT+ battery2+Charging dock(worst)

2.1.8 Test Setup Diagram



2.1.9 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.



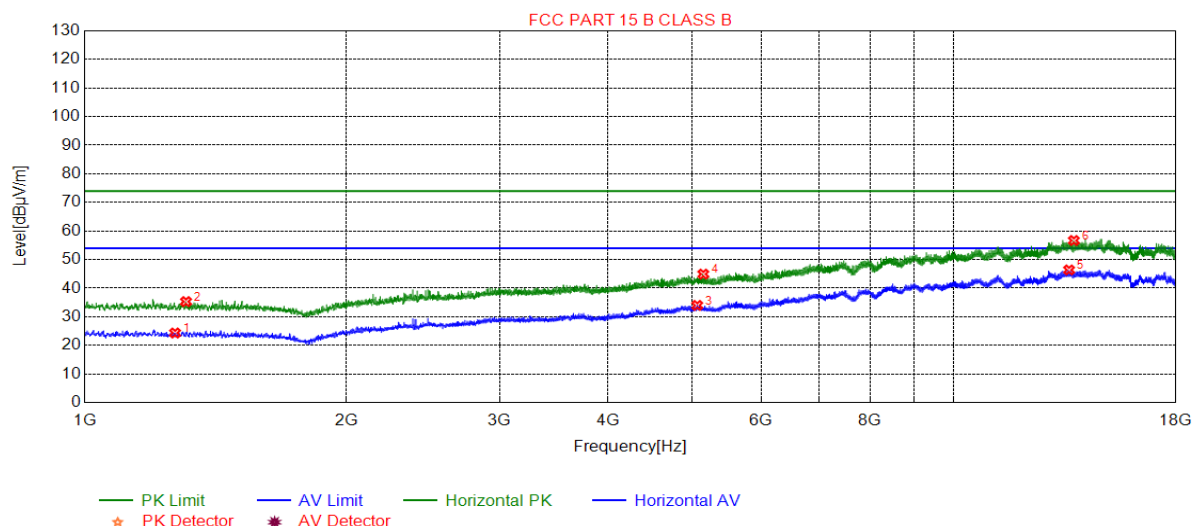
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Mode:b; Polarization:Horizontal

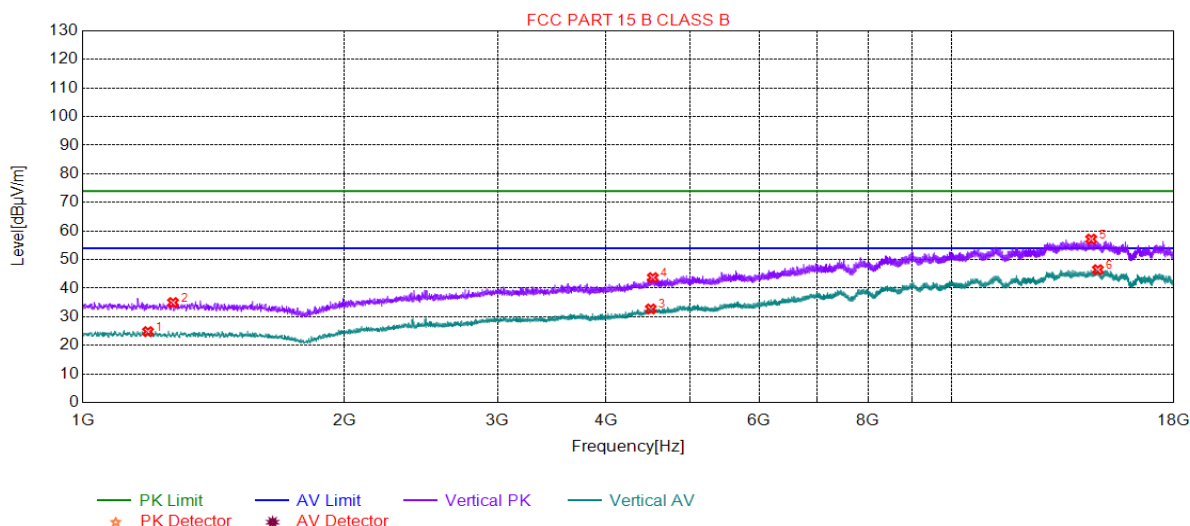


Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1270.31	24.35	-30.00	54.00	29.65	198	323	Horizontal
2	1307.71	35.32	-29.96	74.00	38.68	204	276	Horizontal
3	5064.90	33.99	-16.20	54.00	20.01	223	319	Horizontal
4	5147.35	44.94	-16.14	74.00	29.06	167	169	Horizontal
5	13561.0	46.40	0.67	54.00	7.60	173	191	Horizontal
6	13734.4	56.68	0.83	74.00	17.32	186	235	Horizontal



Mode:b; Polarization:Vertical



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1188.70	24.82	-30.08	54.00	29.18	195	344	Vertical
2	1270.31	34.99	-30.00	74.00	39.01	213	189	Vertical
3	4503.02	32.76	-18.31	54.00	21.24	207	297	Vertical
4	4526.82	43.70	-18.23	74.00	30.30	154	20	Vertical
5	14456.1	57.17	0.65	74.00	16.83	234	146	Vertical
6	14714.5	46.48	0.80	54.00	7.52	134	193	Vertical



3 Equipment List

CE Test System					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Shielding Room	Brilliant-emc	N/A	XAW03-35-01	2019-09-11	2022-09-10
Test receiver	ROHDE&SCHWARZ	ESR	XAW01-08-01	2020-09-11	2021-09-10
Artificial network	ROHDE&SCHWARZ	ENV216	XAW01-04-01	2020-08-04	2021-08-03
5G UXM	Keysight	E7515B	XAW01-19-02	2020-09-11	2021-09-10
Temperature and humidity meter	MingGao	TH101B	XAW01-01-01	2020-11-06	2021-11-05
Measurement Software	Tonscend	TS+ CE V2.5	XAW02-05-02	NCR	NCR



RE Test System					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Semi-Anechoic Chamber	Brilliant-emc	N/A	XAW03-35-01	2019-09-11	2022-09-10
MXA signal analyzer	Keysight	N9020A	XAW01-06-01	2020-04-02	2021-04-01
Spectrum Analyzer	Keysight	N9020B	XAW01-11-03	2020-04-15	2021-04-14
Radio communication analyzer	ROHDE&SCHWARZ	CMW 500	XAW01-03-02	2020-04-02	2021-04-01
Test receiver	ROHDE&SCHWARZ	ESR	XAW01-08-01	2020-09-11	2021-09-10
Receiving antenna (30MHz-3GHz)	Schwarzbeck	VULB 9163	XAW01-09-01	2019-10-13	2021-10-12
Receiving antenna (1GHz~18GHz)	Schwarzbeck	BBHA 9120D	XAW01-09-02	2019-10-13	2021-10-12
Receiving antenna (15GHz~40GHz)	Schwarzbeck	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
Amplifier	Tonscend	TAP00903040	XAW01-41-01	2020-10-26	2021-10-25
Amplifier	Tonscend	TAP01018048	XAW01-41-02	2020-10-26	2021-10-25
Amplifier	Tonscend	TAP18040048	XAW01-41-03	2020-10-27	2021-10-26
Amplifier	Shanghai Steed	YX28980930	XAW01-41-06	2020-10-26	2021-10-25
5G UXM	Keysight	E7515B	XAW01-04-01	2020-09-11	2021-09-10
Temperature and humidity meter	MingGao	TH101B	XAW01-01-01	2020-11-06	2021-11-05
Measurement Software	Tonscend	TS+ RE V3.0.0.2	XAW02-05-01	NCR	NCR



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4 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Conduction Emission	$\pm 3.0\text{dB}$ (150kHz to 30MHz)
2	Radiated Emission	$\pm 4.8\text{dB}$ (Below 1GHz)
		$\pm 4.8\text{dB}$ (1GHz to 6GHz)
		$\pm 4.5\text{dB}$ (6GHz to 18GHz)
		$\pm 5.02\text{dB}$ (Above 18GHz)



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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 -



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