TEST REPORT

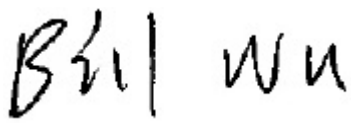
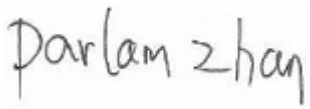
Application No.:	SHEM2007006155CR
FCC ID:	2AP42-WH12018
Applicant:	WWZN Information Technology Company Limited
Address of Applicant:	Room -101, B1 Floor, Building 1, No.42, Gaoliangqiao Xiejie, Haidian District, Beijing, China
Manufacturer:	WWZN Information Technology Company Limited
Address of Manufacturer:	Room -101, B1 Floor, Building 1, No.42, Gaoliangqiao Xiejie, Haidian District, Beijing, China
Factory:	Luxshare Electronic Technology(Kunshan) Co.,Ltd.
Address of Factory:	Kunshan City, Jiangsu, China
Equipment Under Test (EUT):	
EUT Name:	Smart watch
Model No.:	WH12018
Trade mark:	Mobvoi
Standard(s) :	47 CFR Part 15, Subpart B
Date of Receipt:	2020-07-23
Date of Test:	2020-07-28 to 2020-07-30
Date of Issue:	2020-08-11
Test Result:	**Pass***

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

Parlam Zhan
E&E Section Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

Revision Record			
Version	**Description**	**Date**	**Remark**
00	Original	2020-08-11	/

Authorized for issue by:				
				
		Bill Wu / Project Engineer		
				
		Parlam Zhan / Reviewer		

2 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

InternalSource	UpperFrequency
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

3 Contents

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4 General Information

4.1 Details of E.U.T.

Power supply: Rechargeable Li-ion Battery(DC 3.8V 577mAh)
Test voltage: AC 120V 60Hz
Cable: DC charging cable 1m
Hardware version: DVT2
Software version: Rubyfish-userdebug 9 nightly-200713 126 dev-keys
S/N: A101X06230001
Firmware Version: PYDA.200427.018

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
2.4 G Router	CISCO	RV110W	/
iPad mini	Apple	A1490	/
Laptop	LENOVO	R400	/
AC Adapter	Apple	A1357	/

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Conducted Emission at mains port using AMN	2.6dB (9kHz to 150kHz)
		2.4dB (150kHz to 30MHz)
2	Conducted Emission at mains port using VP	1.8 dB (9kHz to 30MHz)
3	Conducted Emission at telecommunication port using AAN	4.2 dB (150kHz to 30MHz)
4	Radiated Power	3.2dB
5	Radiated Emission	4.5dB (30MHz-1GHz)
		5.1dB (1GHz-6GHz)
		5.4dB (6GHz-18GHz)
6	Radiated Disturbance (disturbance current in a LLAS)	2.4dB (9kHz to 30MHz)

Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd. Shanghai Branch

588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China

Tel: +86 21 6191 5666 Fax: +86 21 6191 5678

No tests were sub-contracted.

4.5 Test Facility

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

• CNAS (No. CNAS L0599)

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• NVLAP (LAB CODE: 201034-0)

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

• FCC (Designation Number: CN5033)

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been recognized as an accredited testing laboratory.

• ISED (CAB Identifier: CN0020)

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. EMC Laboratory has been recognized by Innovation, Science and Economic Development Canada (ISED) as an accredited testing laboratory.

• VCCI (Member No.: 3061)

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-13868, C-14336, T-12221, G-10830 respectively.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

5 Equipment List

Conducted Emissions at Mains Terminals (150kHz-30MHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
EMI test receiver	Rohde & Schwarz	ESR7	SHEM162-1	2019-12-20	2020-12-19
Line impedance stabilization network	SCHWARZBECK	NSLK8127	SHEM061-1	2019-12-20	2020-12-19
Line impedance stabilization network	EMCO	3816/2	SHEM019-1	2019-12-20	2020-12-19
Pulse limiter	Rohde & Schwarz	ESH3-Z2	SHEM029-1	2019-12-20	2020-12-19
Shielding Room	ZHONGYU	8*4*3M	SHEM079-2	2017-12-20	2020-12-19
CE test Cable	/	/	CE01	2019-12-26	2020-12-25

Radiated Emissions (30MHz-1GHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
EMI test receiver	Rohde & Schwarz	ESU40	SHEM051-1	2019-12-20	2020-12-19
CONTROLLER	INNCO	CO200	SHEM047-1	N/A	N/A
ANTENNA MAST	INNCO	MA400-EP	SHEM047-2	N/A	N/A
TURN DEVICE	INNCO	DE 3600-RH	SHEM047-3	N/A	N/A
Broadband UHF-VHF ANTENNA	SCHWARZBECK	VULB9168	SHEM048-1	2019-10-14	2021-10-13
Semi/Fully Anechoic	ST	11*6*6M	SHEM078-2	2020-05-25	2023-05-24
Low Amplifier	CLAVIIO	BDLNA-0001-412010	SHEM164-1	2019-08-13	2020-08-12

Radiated Emissions (above 1GHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
EMI test receiver	Rohde & Schwarz	ESU40	SHEM051-1	2019-12-20	2020-12-19
CONTROLLER	INNCO	CO200	SHEM047-1	N/A	N/A
ANTENNA MAST	INNCO	MA400-EP	SHEM047-2	N/A	N/A
TURN DEVICE	INNCO	DE 3600-RH	SHEM047-3	N/A	N/A
Double ridged broadband horn ANTENNA	SCHWARZBECK	BBHA9120D	SHEM050-1	2019-10-14	2021-10-13
High-amplifier	SCHWARZBECK	SCU-F0118-G40-BZ4-CS	SHEM050-2	2019-12-20	2020-12-19
Semi/Fully Anechoic	ST	11*6*6M	SHEM078-2	2020-05-25	2023-05-24
High Amplifier	CLAVIIO	BDLNA-0118-352810	SHEM165-1	2019-08-13	2020-08-12

General used equipment					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Digital pressure meter	YONGZHI	DYM3-01	SHEM082-1	2018-01-25	2021-01-24
Temperature&humidity recorder	ShangHai weather meter work	ZJ 1-2B	SHEM042-1~6	2019-09-16	2020-09-15
Digital Multimeter	FLUKE	17B	SHEM043-3	2019-09-02	2020-09-01
Autoformer regulator	Guangzhou bao de	TDGC2-5KVA	SHEM150-1	N/A	N/A
Multi-purpose tong tester	FLUKE	316	SHEM001-1	2019-12-20	2020-12-19

6 Emission Test Results

6.1 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

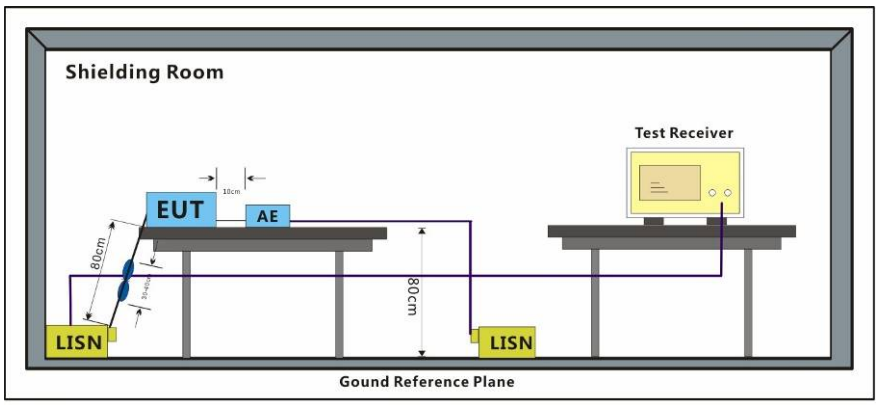
6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1020 mbar

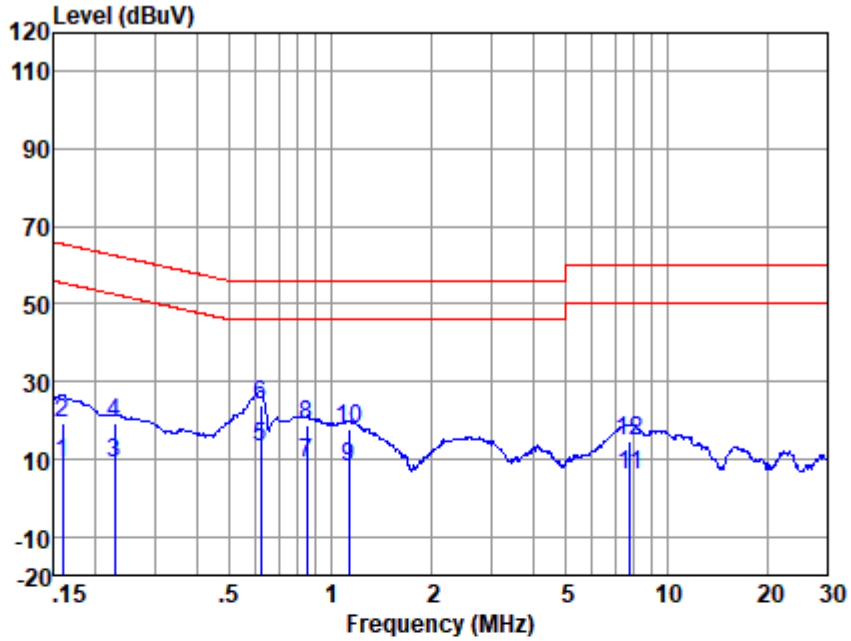
Pretest these mode to find the worst case: a:Charging mode_Keep EUT charging by USB port.

6.1.2 Test Setup Diagram



6.1.3 Measurement Data

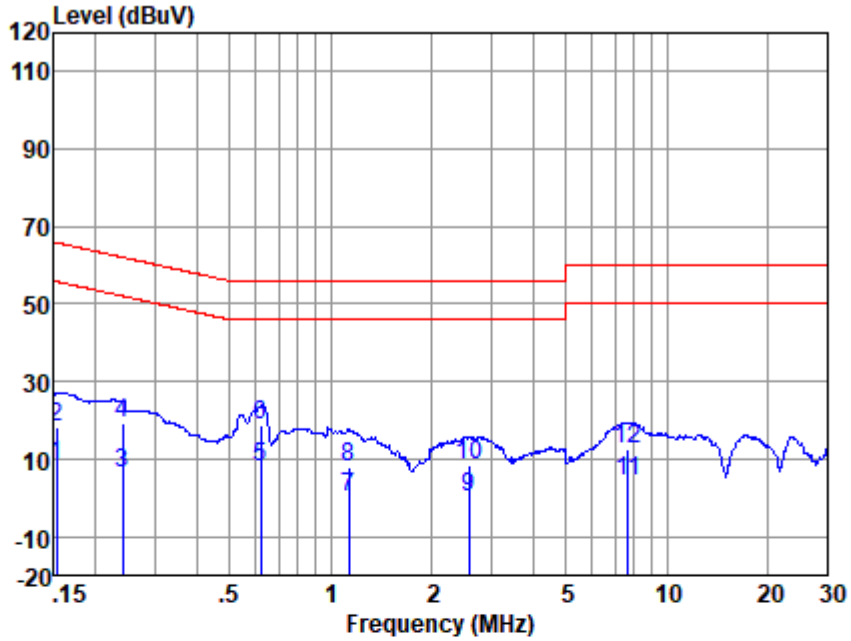
An initial pre-scan was performed with peak detector.Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.



LISN : LINE
EUT/Project No : 6155CR
Test Mode : a

	Freq (MHz)	Read level (dBuV)	LISN Factor (dB)	Cable Loss (dB)	Emission Level (dBuV)	Limit (dBuV)	Over Limit (dB)	Remark
1	0.16	-1.03	0.08	9.97	9.02	55.52	-46.50	Average
2	0.16	9.22	0.08	9.97	19.27	65.52	-46.25	QP
3	0.23	-1.16	0.07	10.01	8.92	52.57	-43.65	Average
4	0.23	9.23	0.07	10.01	19.31	62.57	-43.26	QP
5	0.62	2.71	0.08	10.07	12.86	46.00	-33.14	Average
6	0.62	13.70	0.08	10.07	23.85	56.00	-32.15	QP
7	0.85	-1.25	0.09	10.09	8.93	46.00	-37.07	Average
8	0.85	8.42	0.09	10.09	18.60	56.00	-37.40	QP
9	1.13	-2.12	0.10	10.11	8.09	46.00	-37.91	Average
10	1.13	7.31	0.10	10.11	17.52	56.00	-38.48	QP
11	7.77	-4.63	0.21	10.36	5.94	50.00	-44.06	Average
12	7.77	3.93	0.21	10.36	14.50	60.00	-45.50	QP

Notes: Emission Level = Read Level +LISN Factor + Cable loss



LISN : NEUTRAL
EUT/Project No : 6155CR
Test Mode : a

	Freq (MHz)	Read level (dBuV)	LISN Factor (dB)	Cable Loss (dB)	Emission Level (dBuV)	Limit (dBuV)	Over Limit (dB)	Remark
1	0.15	-1.48	0.07	9.97	8.56	55.87	-47.31	Average
2	0.15	8.32	0.07	9.97	18.36	65.87	-47.51	QP
3	0.24	-3.62	0.06	10.01	6.45	52.08	-45.63	Average
4	0.24	9.36	0.06	10.01	19.43	62.08	-42.65	QP
5	0.62	-2.49	0.07	10.07	7.65	46.00	-38.35	Average
6	0.62	8.37	0.07	10.07	18.51	56.00	-37.49	QP
7	1.13	-9.89	0.08	10.11	0.30	46.00	-45.70	Average
8	1.13	-2.18	0.08	10.11	8.01	56.00	-47.99	QP
9	2.58	-10.29	0.11	10.19	0.01	46.00	-45.99	Average
10	2.58	-1.98	0.11	10.19	8.32	56.00	-47.68	QP
11	7.69	-6.47	0.16	10.36	4.05	50.00	-45.95	Average
12	7.69	2.21	0.16	10.36	12.73	60.00	-47.27	QP

Notes: Emission Level = Read Level +LISN Factor + Cable loss

6.2 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

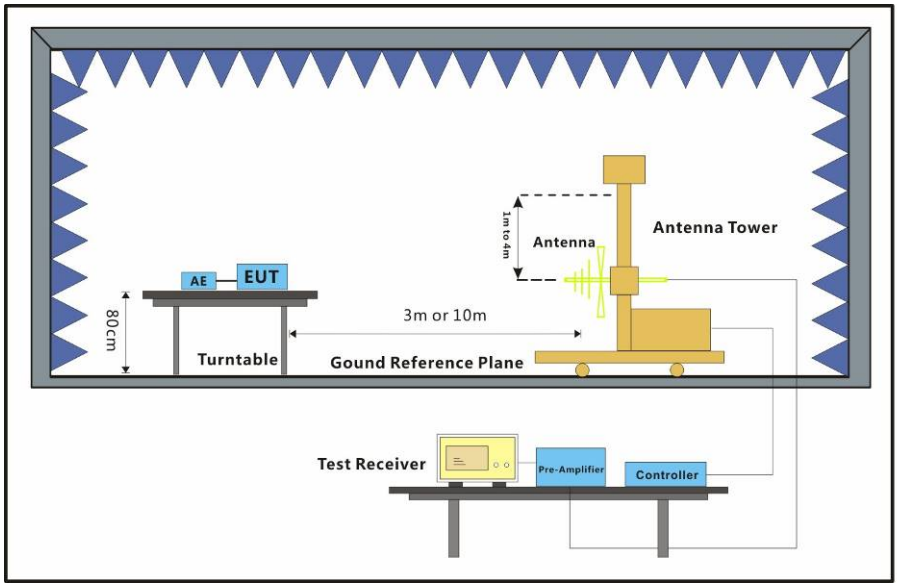
6.2.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1020 mbar

Pretest these mode to find the worst case:	a:Charging mode_Keep EUT charging by USB port b:Data transmission: keep EUT transfer data from PC by usb port. c:Operation(BT)_Pair the device with Smartphone via Bluetooth and keep the music playing. d:Operation(WiFi)_Establish communication between EUT and router via WiFi function, and then keep EUT update.
The worst case for final test:	a:Charging mode_Keep EUT charging by USB port

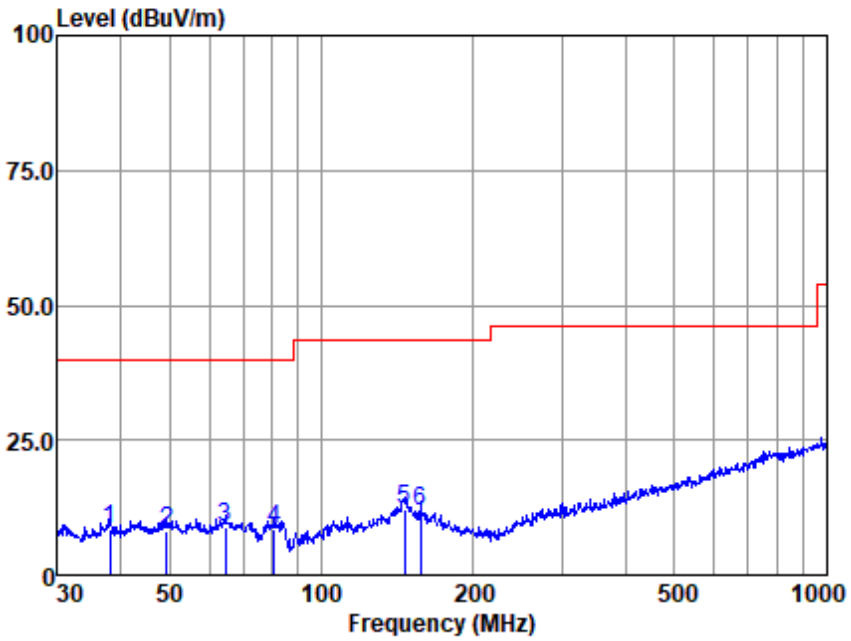
6.2.2 Test Setup Diagram



6.2.3 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.

Mode:a; Polarization:Horizontal

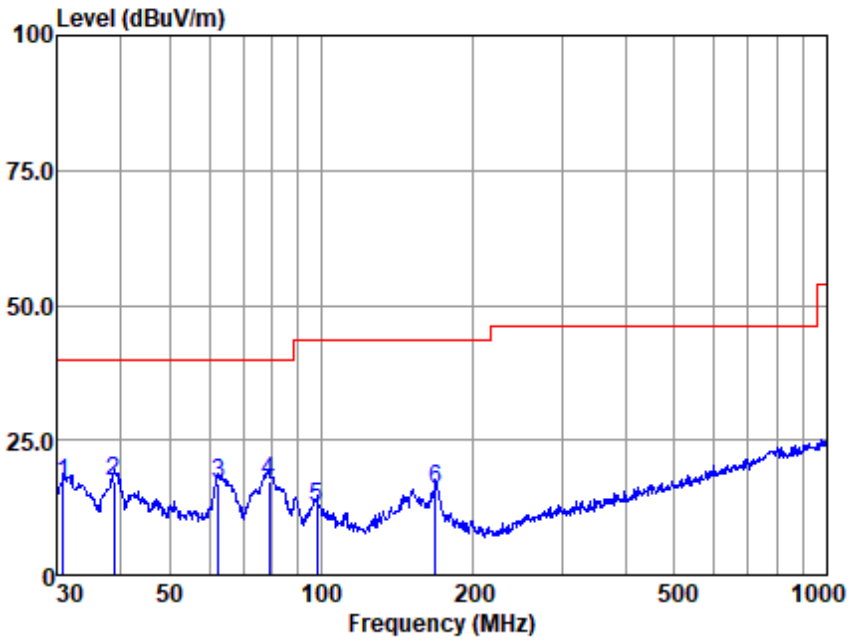


Antenna Polarity :HORIZONTAL
EUT/Project :6155CR
Test mode :a

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	38.078	36.88	12.91	0.94	42.34	8.39	40.00	-31.61	QP
2	49.359	35.84	13.67	1.03	42.33	8.21	40.00	-31.79	QP
3	64.659	37.77	12.43	1.14	42.30	9.04	40.00	-30.96	QP
4	80.644	40.27	9.11	1.22	42.27	8.33	40.00	-31.67	QP
5	145.861	40.17	12.74	1.68	42.24	12.35	43.50	-31.15	QP
6	157.007	39.17	13.12	1.75	42.22	11.82	43.50	-31.68	QP

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Mode:a; Polarization:Vertical



Antenna Polarity :VERTICAL
EUT/Project :6155CR
Test mode :a

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	30.853	46.28	12.24	0.85	42.37	17.00	40.00	-23.00	QP
2	38.888	45.76	13.03	0.94	42.33	17.40	40.00	-22.60	QP
3	62.431	45.38	12.75	1.13	42.31	16.95	40.00	-23.05	QP
4	78.689	48.77	9.53	1.22	42.27	17.25	40.00	-22.75	QP
5	97.798	45.09	8.50	1.31	42.31	12.59	43.50	-30.91	QP
6	167.824	43.26	12.89	1.83	42.21	15.77	43.50	-27.73	QP

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

6.3 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

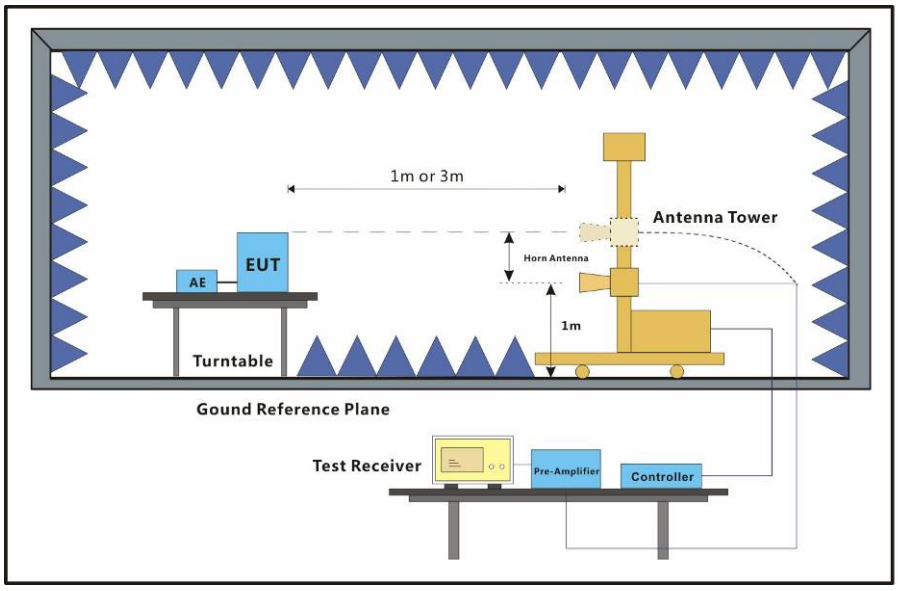
6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1020 mbar

Pretest these mode to find the worst case:	a:Charging mode_Keep EUT charging by USB port b:Data transmission: keep EUT transfer data from PC by usb port. c:Operation(BT)_Pair the device with Smartphone via Bluetooth and keep the music playing. d:Operation(WiFi)_Establish communication between EUT and router via WiFi function, and then keep EUT update.
The worst case for final test:	a:Charging mode_Keep EUT charging by USB port

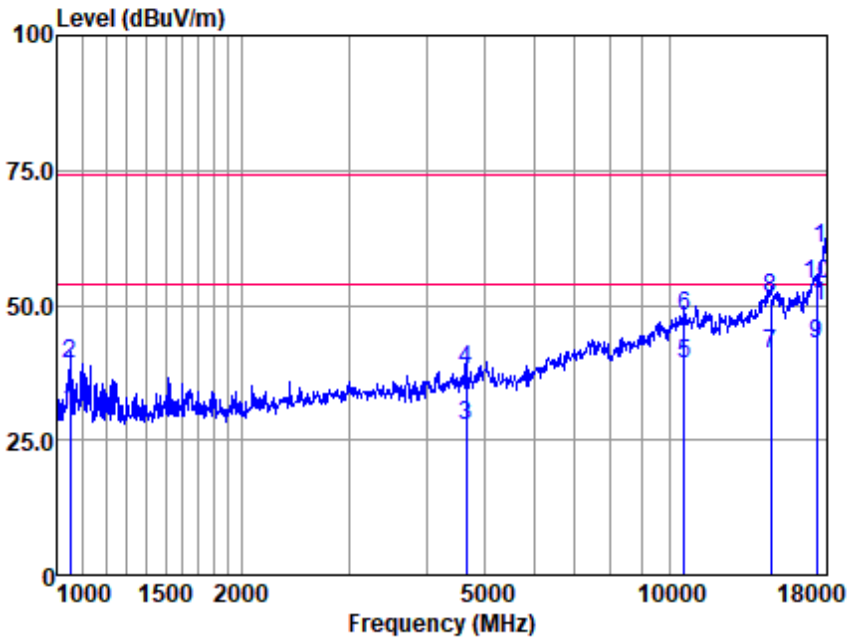
6.3.2 Test Setup Diagram



6.3.3 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.

Mode:a; Polarization:Horizontal

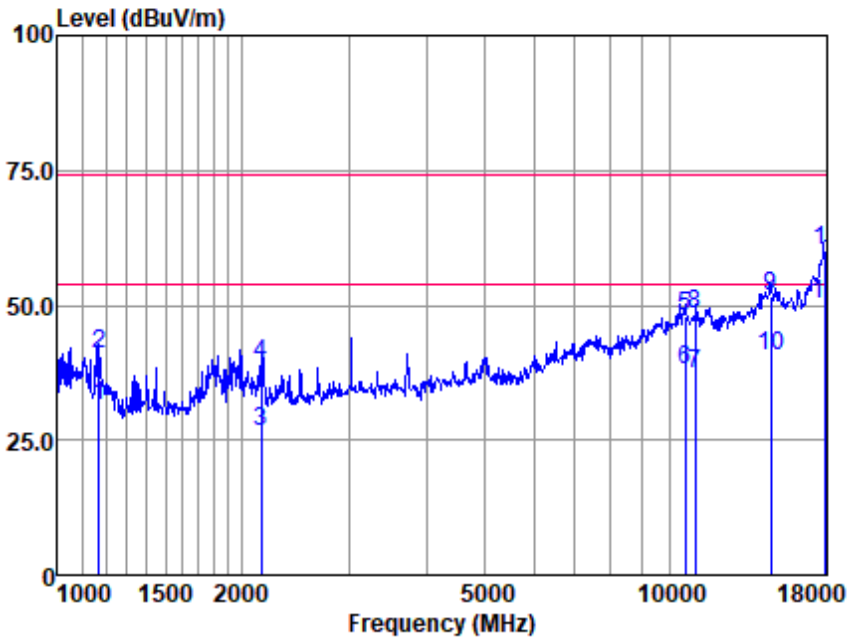


Antenna Polarity :HORIZONTAL
EUT/Project :6155CR
Test mode :a

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1047.332	44.55	24.04	4.21	42.49	30.31	54.00	-23.69	Average
2	1047.332	53.51	24.04	4.21	42.49	39.27	74.00	-34.73	Peak
3	4653.771	29.58	30.92	9.52	42.47	27.55	54.00	-26.45	Average
4	4653.771	39.97	30.92	9.52	42.47	37.94	74.00	-36.06	Peak
5	10545.010	26.66	39.73	14.89	42.29	38.99	54.00	-15.01	Average
6	10545.010	35.46	39.73	14.89	42.29	47.79	74.00	-26.21	Peak
7	14618.170	23.44	41.60	17.55	41.72	40.87	54.00	-13.13	Average
8	14618.170	33.93	41.60	17.55	41.72	51.36	74.00	-22.64	Peak
9	17336.200	22.65	42.00	18.83	40.60	42.88	54.00	-11.12	Average
10	17336.200	33.61	42.00	18.83	40.60	53.84	74.00	-20.16	Peak
11	18000.000	21.05	50.80	18.62	40.80	49.67	54.00	-4.33	Average
12	18000.000	31.94	50.80	18.62	40.80	60.56	74.00	-13.44	Peak

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

Mode:a; Polarization:Vertical



Antenna Polarity :VERTICAL
EUT/Project :6155CR
Test mode :a

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1168.920	44.92	24.36	4.50	42.47	31.31	54.00	-22.69	Average
2	1168.920	54.48	24.36	4.50	42.47	40.87	74.00	-33.13	Peak
3	2151.034	36.55	26.38	6.11	42.36	26.68	54.00	-27.32	Average
4	2151.034	48.81	26.38	6.11	42.36	38.94	74.00	-35.06	Peak
5	10606.150	35.64	39.78	14.99	42.26	48.15	74.00	-25.85	Peak
6	10606.150	25.36	39.78	14.99	42.26	37.87	54.00	-16.13	Average
7	11012.250	24.09	40.10	15.30	42.10	37.39	54.00	-16.61	Average
8	11012.250	34.99	40.10	15.30	42.10	48.29	74.00	-25.71	Peak
9	14618.170	34.40	41.60	17.55	41.72	51.83	74.00	-22.17	Peak
10	14618.170	23.09	41.60	17.55	41.72	40.52	54.00	-13.48	Average
11	17948.050	32.31	50.01	18.62	40.78	60.16	74.00	-13.84	Peak
12	17948.050	22.32	50.01	18.62	40.78	50.17	54.00	-3.83	Average

Note:Emission Level=Read Level+Antenna Factor+Cable loss-Preamp Factor

7 Photographs

7.1 Conducted Emissions at Mains Terminals (150kHz-30MHz) Test Setup

7.2 Radiated Emissions (30MHz-1GHz) Test Setup

7.3 Radiated Emissions (above 1GHz) Test Setup

7.4 EUT Constructional Details (EUT Photos)

Refer to the < External Photos > & < Internal Photos >.

- End of the Report -