TEST REPORT

Reference No.	:	WTS18S12133823-8W
FCC ID	:	2AC88-ELTS18A02
Applicant	:	HONGKONG UCLOUDLINK NETWORK TECHNOLOGY LIMITED
Address	:	Suite 603, 6/F, Laws Commercial Plaza, 788 Cheung Sha Wan Road, Kowloon, Hong Kong
Manufacturer	:	The same as above
Address	:	The same as above
Product	:	Smart Phone
Model(s)	:	ELTS18A02
Brand	:	GlocalMe
Standards	:	FCC CFR47 Part 15 Section 15.225: 2018
Date of Receipt sample	:	2018-12-25
Date of Test	:	2018-12-26 to 2019-03-20
Date of Issue	:	2019-03-21
Test Result	:	**Pass**

Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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Approved by:

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2 Laboratories Introduction

Waltek Services (Shenzhen) Co., Ltd is a professional third-party testing and certification laboratory with multi-year product testing and certification experience, established strictly in accordance with ISO/IEC 17025 requirements, and accredited by ILAC (International Laboratory Accreditation Cooperation) member. A2LA (American Association for Laboratory Accreditation, the certification number is 4243.01) of USA, CNAS (China National Accreditation Service for Conformity Assessment, the registration number is L3110) of China. Meanwhile, Waltek has got recognition as registration and accreditation laboratory from EMSD (Electrical and Mechanical Services Department), and American Energy star, FCC (The Federal Communications Commission), CEC (California energy efficiency), ISED (Innovation, Science and Economic Development Canada). It's the strategic partner and data recognition laboratory of international authoritative organizations, such as Intertek (ETL-SEMKO), TÜV Rheinland, TÜV SÜD, etc.

Waltek Services (Shenzhen) Co., Ltd is one of the largest and the most comprehensive third party testing laboratory in China. Our test capability covered four large fields: safety test. Electro Magnetic Compatibility (EMC), and energy performance, wireless radio. As a professional, comprehensive, justice international test organization, we still keep the scientific and rigorous work attitude to help each client satisfy the international standards and assist their product enter into globe market smoothly.

Test Facility:

A. Accreditations for Conformity Assessment (International)

Country/Region	Scope Covered By	Scope	Note
USA	ISO/IEC 17025	FCC ID \ DOC \ VOC	1
Canada		IC ID \ VOC	2
Japan		MIC-T \ MIC-R	-
Europe		EMCD \ RED	-
Taiwan		NCC	-
Hong Kong		OFCA	-
Australia		RCM	-
India		WPC	-
Thailand		NTC	-
Singapore		IDA	-

Note:

1. FCC Designation No.: CN1201. Test Firm Registration No.: 523476.
2. ISED CAB identifier: CN0013

B. TCBs and Notify Bodies Recognized Testing Laboratory.

Recognized Testing Laboratory of …	Notify body number
TUV Rheinland	Optional.
Intertek	
TUV SUD	
SGS	
Phoenix Testlab GmbH	0700
Element Materials Technology Warwick Ltd	0891
Timco Engineering, Inc.	1177
Eurofins Product Service GmbH	0681

2 Contents

3 Revision History

Test report No.	Date of Receipt sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTS18S12133823-8W	2018-12-25	2018-12-26 to 2019-03-20	2019-03-21	original	-	Valid

4 General Information

4.1 General Description of E.U.T.

Product:	Smart Phone
Model(s):	ELTS18A02
Model Description:	N/A
GSM Band(s):	GSM 850/900/1800/1900MHz
GPRS/EGPRS Class:	12
WCDMA Band(s):	FDD Band I/II/IV/V/VIII
CDMA Band(s):	BC0/ BC1
LTE Band(s):	FDD Band 2/4/5/7/12/13/17/26 TDD Band 41
Wi-Fi Specification:	2.4G-802.11b/g/n HT20/n HT40 5G-802.11a/ n(HT20/40)/ac(HT20/40/80)
Bluetooth Version:	Bluetooth v4.1 with BLE
GPS:	Support
NFC:	Support
Hardware Version:	S20i_M_VB
Software Version:	S20iQ19_C00_TSV1.4001.001.190226 userdebug release-keys
Highest frequency (Exclude Radio):	1.8GHz
Storage Location:	Internal Storage
Note:	N/A

4.2 Details of E.U.T.

Operation Frequency:	NFC:13.56MHz
Ratings:	Battery DC 3.85V, 2000mAh DC 5V, 2.0A charging from adapter 1 (Adapter Input: 100-240V~50/60Hz 0.3A) DC 5V, 2.0A charging from adapter 2 (Adapter Input: 100-240V~50/60Hz MAX 0.35A)
Adapter 1:	Manufacturer: ShenZhen HuaJin Electronics CO.,LTD Model No.: HJ-0502000W2-US
Adapter 2:	Manufacturer: Shenzhen Flypower Technology Co., Ltd. Model No.: PS10J050K2000UU

4.3 Test Mode

All test mode(s) and condition(s) mentioned were considered and evaluated respectively by performing full tests; the worst data were recorded and reported.

Test mode	Channel
Transmitting	13.56MHz

5 Test Summary

Test Items	Test Requirement	Result
Conducted Emissions	15.207	PASS
Radiated Emission	15.205(a) 15.209 15.225	PASS
Frequency Tolerance	15.225	PASS
20dB Bandwidth	15.215(c)	PASS
Antenna Requirement	15.203	PASS
Note: C=Compliance; NC=Not Compliance; NT=Not Tested; N/A=Not Applicable.		

6 Equipment Used during Test

6.1 Equipments List

Conducted Emissions Test Site 1#						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1.	EMI Test Receiver	R&S	ESCI	100947	2018-09-12	2019-09-11
2.	LISN	R&S	ENV216	101215	2018-09-12	2019-09-11
3.	Cable	Top	TYPE16(3.5M)	-	2018-09-12	2019-09-11
Conducted Emissions Test Site 2#						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1.	EMI Test Receiver	R&S	ESCI	101155	2018-09-12	2019-09-11
2.	LISN	SCHWARZBECK	NSLK 8128	8128-289	2018-09-12	2019-09-11
3.	Limiter	York	MTS-IMP-136	261115-001-0024	2018-09-12	2019-09-11
4.	Cable	LARGE	RF300	-	2018-09-12	2019-09-11
3m Semi-anechoic Chamber for Radiation Emissions Test site 1#						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1	Spectrum Analyzer	R&S	FSP	100091	2018-04-29	2019-04-28
2	Amplifier	Agilent	8447D	2944A10178	2018-01-13	2019-01-12
3	Active Loop Antenna	Beijing Dazhi	ZN30900A	0703	2017-10-17	2018-10-16
4	Trilog Broadband Antenna	SCHWARZBECK	VULB9163	33 6	2018-04-29	2019-04-28
5	Coaxial Cable (below 1GHz)	Top	TYPE16(13M)	-	2018-09-12	2019-09-11
6	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120 D	667	2018-04-29	2019-04-28
7	Broadband Preamplifier	COMPLIANCE DIRECTION	PAP-1G18	2004	2018-04-13	2019-04-12
8	Coaxial Cable (above 1GHz)	Top	1GHz-18GHz	EW02014-7	2018-04-13	2019-04-12
3m Semi-anechoic Chamber for Radiation Emissions Test site 2#						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No**	**Last Calibration Date**	**Calibration Due Date**
1	Test Receiver	R&S	ESCI	101296	2018-04-13	2019-04-12
2	Trilog Broadband Antenna	SCHWARZBECK	VULB9160	9160-3325	2018-04-29	2019-04-28
3	Amplifier	ANRITSU	MH648A	M43381	2018-04-13	2019-04-12
4	Cable	HUBER+SUHNER	CBL2	525178	2018-04-13	2019-04-12

RF Conducted Testing						
Item	**Equipment**	**Manufacturer**	**Model No.**	**Serial No.**	**Last Calibration Date**	**Calibration Due Date**
1.	EMC Analyzer (9k~26.5GHz)	Agilent	E7405A	MY45114943	2018-09-12	2019-09-11
2.	Spectrum Analyzer (9k-6GHz)	R&S	FSL6	100959	2018-09-12	2019-09-11
3.	Signal Analyzer (9k~26.5GHz)	Agilent	N9010A	MY50520207	2018-09-12	2019-09-11

6.2 Measurement Uncertainty

Parameter	Uncertainty
Radio Frequency	± 1 x 10^{-6}
RF Power	± 1.0 dB
RF Power Density	± 2.2 dB
Radiated Spurious Emissions test	± 5.03 dB (Bilog antenna 30M~1000MHz)
	± 5.47 dB (Horn antenna 1000M~25000MHz)
Confidence interval：95%. Confidence factor:k=2	

6.3 Test Equipment Calibration

All the test equipments used are valid and calibrated by CEPREI Certification Body that address is No.110 Dongguan Zhuang RD. Guangzhou, P.R.China.

7 Conducted Emission

Test Requirement: FCC CFR 47 Part 15 Section 15.207

Test Method: ANSI C63.10:2013

Test Result: PASS

Frequency Range: 150kHz to 30MHz

Class/Severity: Class B

Limit:

Frequency (MHz)	Limit (dBμV)	
	Qua i-peak	Average
0.15 to 0.5	66 to *	56 t 46*
0.5 to	56	60
5 to 30	60	50

7.1 E.U.T. Operation

Operating Environment **:**

Temperature: 25.5 °C

Humidity: 51 % RH

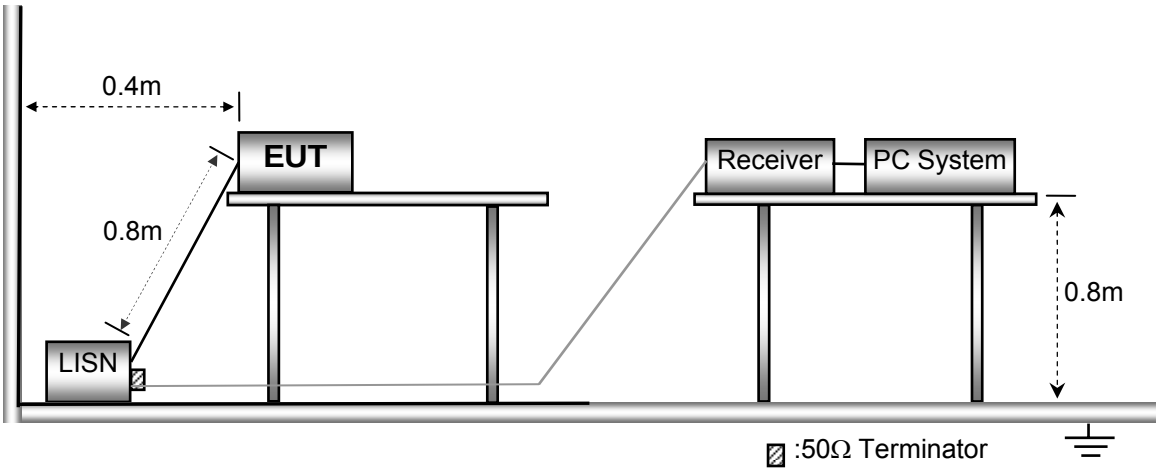
Atmospheric Pressure: 101.2kPa

EUT Operation **:**

The test was performed in transmitting mode, the test data were shown in the report.

7.2 EUT Setup

The conducted emission tests were performed using the setup accordance with the ANSI C63.10:2013



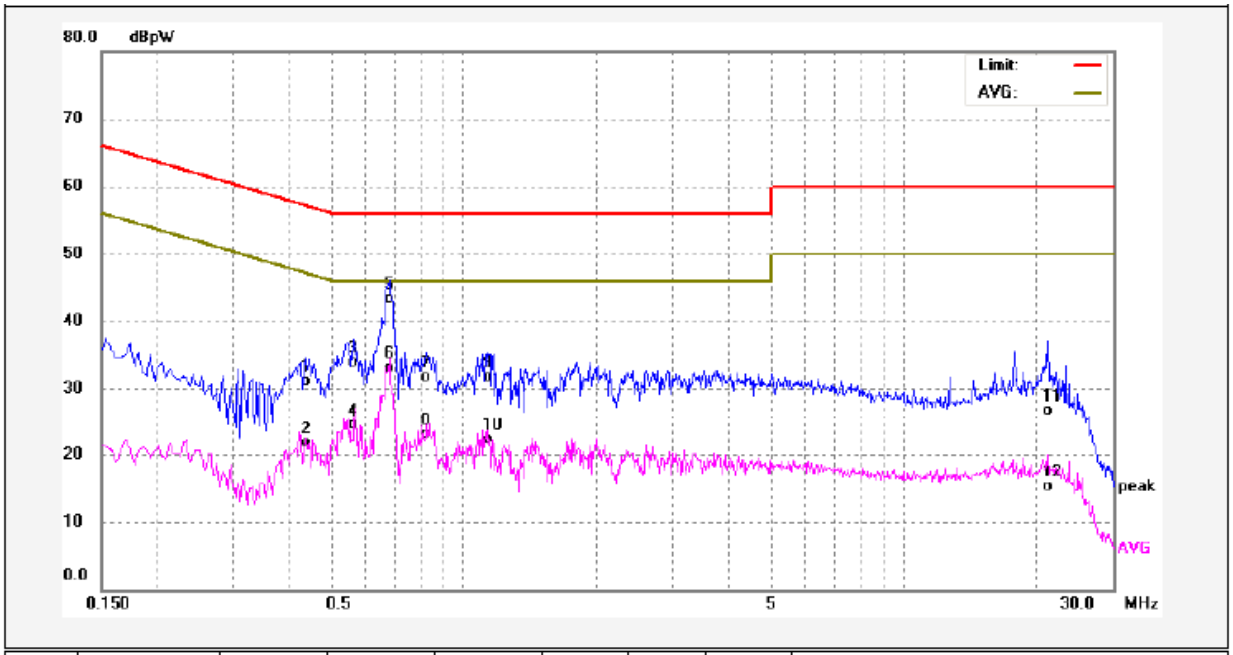
7.3 Measurement Description

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

7.4 Test Result

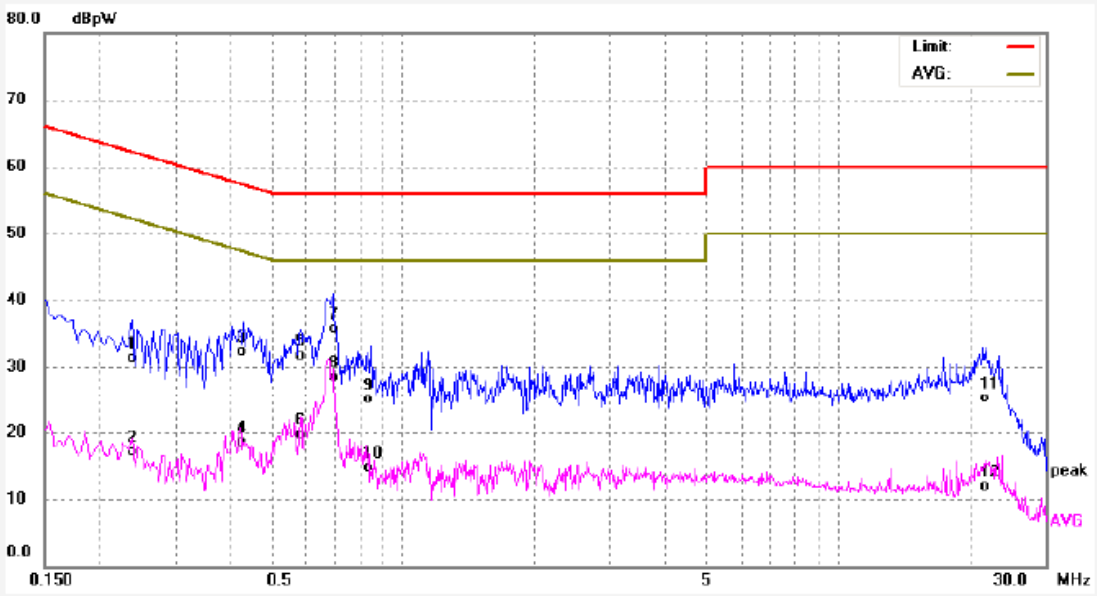
Adapter 1

Live line:



No.	Freq. (MHz)	Reading (dBpW)	Factor (dB)	Result (dBpW)	Limit dBpW	Margin (dB)	Detector	Remark
1	0.4380	21.22	9.82	31.04	57.10	-26.06	QP	
2	0.4380	11.82	9.82	21.64	47.10	-25.46	AVG	
3	0.5620	24.16	9.83	33.99	56.00	-22.01	QP	
4	0.5620	14.64	9.83	24.47	46.00	-21.53	AVG	
5	0.6780	33.39	9.83	43.22	56.00	-12.78	QP	
6	0.6780	23.20	9.83	33.03	46.00	-12.97	AVG	
7	0.8180	21.85	9.86	31.71	56.00	-24.29	QP	
8	0.8180	13.27	9.86	23.13	46.00	-22.87	AVG	
9	1.1380	21.86	9.89	31.75	56.00	-24.25	QP	
10	1.1380	12.35	9.89	22.24	46.00	-23.76	AVG	
11	21.3060	16.39	10.30	26.69	60.00	-33.31	QP	
12	21.3060	4.99	10.30	15.29	50.00	-34.71	AVG	

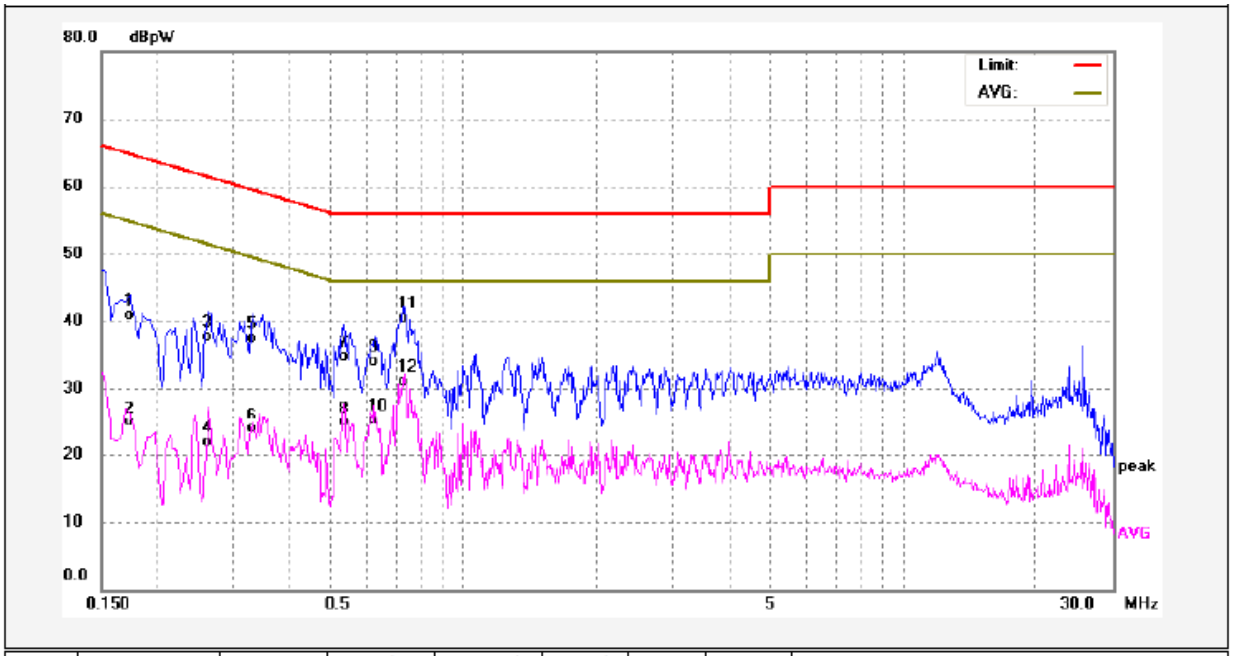
Neutral line:



No.	Freq. (MHz)	Reading (dBpW)	Factor (dB)	Result (dBpW)	Limit dBpW	Margin (dB)	Detector	Remark
1	0.2380	21.56	9.76	31.32	62.16	-30.84	QP	
2	0.2380	7.31	9.76	17.07	52.16	-35.09	AVG	
3	0.4300	22.53	9.82	32.35	57.25	-24.90	QP	
4	0.4300	8.78	9.82	18.60	47.25	-28.65	AVG	
5	0.5820	21.92	9.83	31.75	56.00	-24.25	QP	
6	0.5820	9.83	9.83	19.66	46.00	-26.34	AVG	
7	0.6900	25.84	9.83	35.67	56.00	-20.33	QP	
8	0.6900	18.64	9.83	28.47	46.00	-17.53	AVG	
9	0.8460	15.21	9.86	25.07	56.00	-30.93	QP	
10	0.8460	4.84	9.86	14.70	46.00	-31.30	AVG	
11	21.9020	14.93	10.31	25.24	60.00	-34.76	QP	
12	21.9020	1.65	10.31	11.96	50.00	-38.04	AVG	

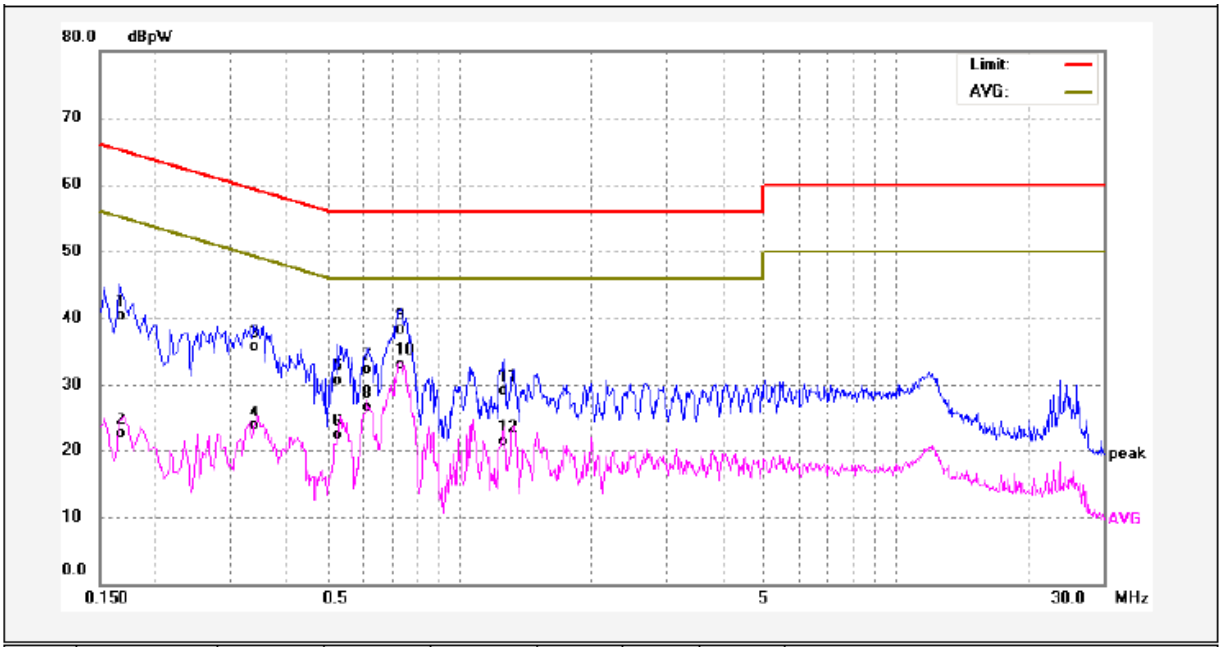
Adapter 2

Live line:



No.	Freq. (MHz)	Reading (dBpW)	Factor (dB)	Result (dBpW)	Limit dBpW	Margin (dB)	Detector	Remark
1	0.1740	31.18	9.78	40.96	64.76	-23.80	QP	
2	0.1740	15.21	9.78	24.99	54.76	-29.77	AVG	
3	0.2620	27.87	9.77	37.64	61.36	-23.72	QP	
4	0.2620	12.22	9.77	21.99	51.36	-29.37	AVG	
5	0.3300	27.65	9.81	37.46	59.45	-21.99	QP	
6	0.3300	14.13	9.81	23.94	49.45	-25.51	AVG	
7	0.5340	24.97	9.82	34.79	56.00	-21.21	QP	
8	0.5340	15.06	9.82	24.88	46.00	-21.12	AVG	
9	0.6300	24.22	9.84	34.06	56.00	-21.94	QP	
10	0.6300	15.44	9.84	25.28	46.00	-20.72	AVG	
11	0.7300	30.58	9.84	40.42	56.00	-15.58	QP	
12	0.7300	21.21	9.84	31.05	46.00	-14.95	AVG	

Neutral line:



No.	Freq. (MHz)	Reading (dBpW)	Factor (dB)	Result (dBpW)	Limit dBpW	Margin (dB)	Detector	Remark
1	0.1660	30.44	9.77	40.21	65.15	-24.94	QP	
2	0.1660	12.66	9.77	22.43	55.15	-32.72	AVG	
3	0.3379	25.99	9.80	35.79	59.25	-23.46	QP	
4	0.3379	13.93	9.80	23.73	49.25	-25.52	AVG	
5	0.5260	20.81	9.82	30.63	56.00	-25.37	QP	
6	0.5260	12.49	9.82	22.31	46.00	-23.69	AVG	
7	0.6180	22.42	9.84	32.26	56.00	-23.74	QP	
8	0.6180	16.94	9.84	26.78	46.00	-19.22	AVG	
9	0.7340	28.51	9.84	38.35	56.00	-17.65	QP	
10	0.7340	23.23	9.84	33.07	46.00	-12.93	AVG	
11	1.2660	19.20	9.90	29.10	56.00	-26.90	QP	
12	1.2660	11.40	9.90	21.30	46.00	-24.70	AVG	

8 Radiated Spurious Emissions

Test Requirement: FCC CFR47 Part 15 Section 15.209

Test Method: ANSI C63.10

Test Result: PASS

Measurement Distance: 3m

Limit:

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	$20\log^{(2400/F(kHz))} + 80$
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	$20\log^{(24000/F(kHz))} + 40$
1.705 ~ 30	30	30	100 * 30	$20\log^{(30)} + 40$
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

8.1 EUT Operation

Operating Environment **:**

Temperature: 23.5 °C

Humidity: 51.1 % RH

Atmospheric Pressure: 101.2kPa

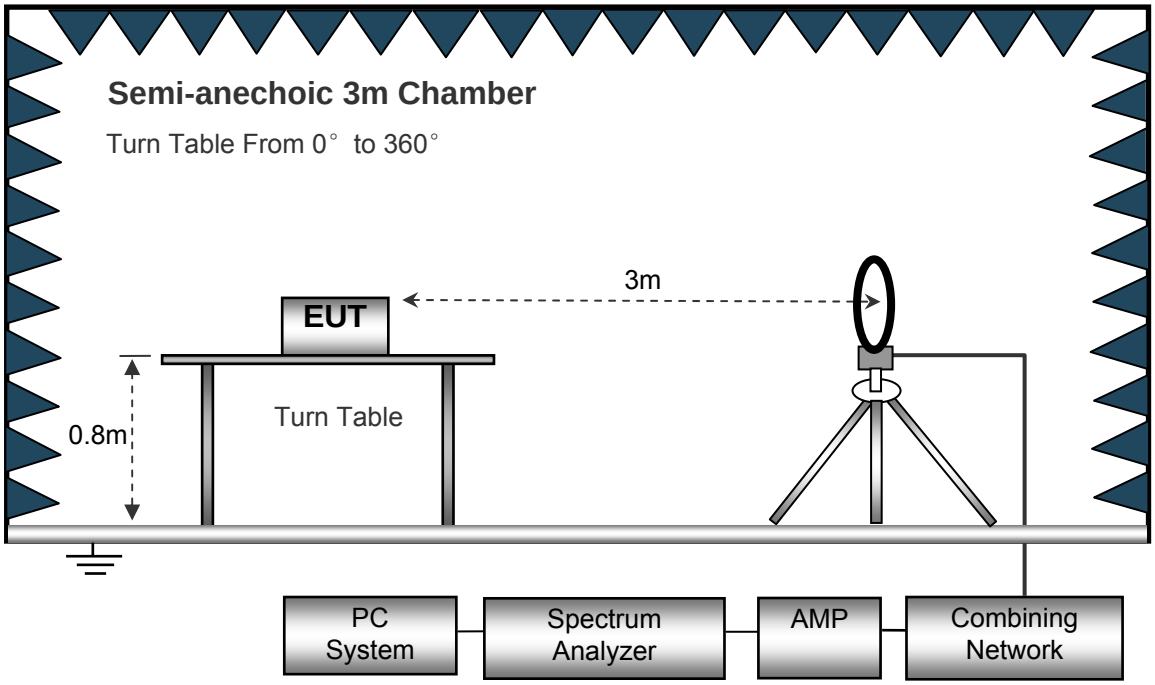
EUT Operation **:**

The test was performed in transmitting mode, the test data were shown in the report.

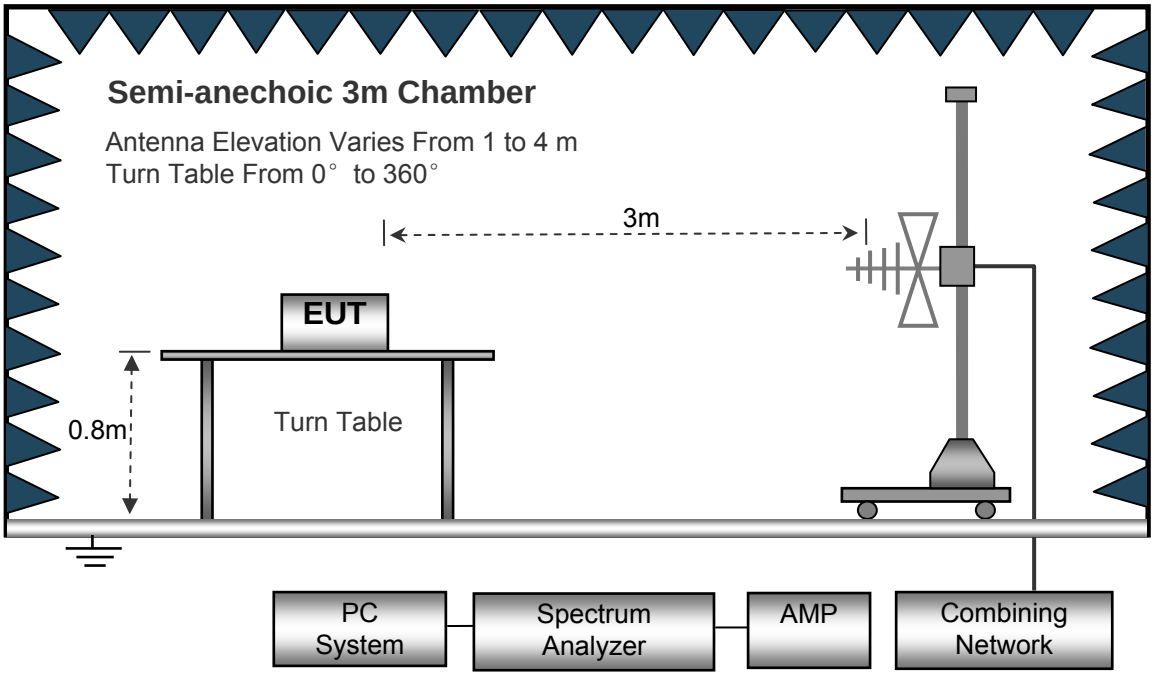
8.2 Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.10: 2013

The test setup for emission measurement below 30MHz.



The test setup for emission measurement from 30 MHz to 1 GHz.



8.3 Spectrum Analyzer Setup

Below 30MHz

Sweep Speed .....Auto
IF Bandwidth.....10kHz
Video Bandwidth.....10kHz

Resolution Bandwidth.....10kHz

30MHz ~ 1GHz

Sweep Speed .....Auto
Detector .....PK
Resolution Bandwidth.....100kHz
Video Bandwidth.....300kHz

8.4 Test Procedure

1. The EUT is placed on a turntable, which is 0.8m above ground plane for below 1GHz
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions. The spectrum was investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.
7. The radiation measurements are tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the Z position. So the data shown was the Z position only.

8.5 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading + Antenna Factor + Cable Factor - Amplifier Gain

The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the maximum limit for Class B. The equation for margin calculation is as follows:

Margin = Corr. Ampl. – Limit

8.6 Summary of Test Results

Test Frequency: 9 kHz ~ 30MHz Note: Correct factor = Cable loss + Antenna factor

Frequency	Receiver Reading (PK)	Turn table Angle	RX Antenna		Corrected Factor	Corrected Amplitude (PK)	FCC Part 15.225	
			Height	Polar			Limit	Margin
(MHz)	(dBμV) @3m	Degree	(m)	(H/V)	(dB/m)	(dBμV/m) @3m	(dBμV/ m)@3m	(dB)
13.56	43.51	123	1.9	H	19.68	63.19	124	-60.81
13.56	34.50	316	1.5	V	19.68	54.18	124	-69.82

Frequency (MHz)	Receiver Reading	Detector	Correct factor	Extrapolation factor	Measurement results (calculated)	Limits	Margin
	dBμV @3m	QP	dB/m	dB	dBμV/m @30m	dBμV/m @30m	dB
4.259	32.64	QP	20.20	40.00	12.84	29.54	-16.70
11.437	35.38	QP	19.90	40.00	15.28	29.54	-14.26

Frequency Range (MHz)	Frequency (MHz)	Maximum Reading	Detector	Correct factor	Extrapolation factor	Measurement results (calculated)	Limits	Margin
		dBμV @3m	QP	dB/m	dB	dBμV/m @30m	dBμV/m @30m	dB
13.110~ 13.41	13.401	40.12	QP	21.55	40	21.67	40.51	-18.84
13.410~ 13.553	13.546	48.65	QP	21.55	40	30.20	50.47	-20.27
13.567~ 13.71	13.587	48.05	QP	21.55	40	29.60	50.47	-20.87
13.710~ 14.01	13.719	37.65	QP	21.55	40	19.20	40.51	-21.31

Test Frequency: 30MHz ~ 1GHz

Frequency	Receiver Reading	Detector	Turn table Angle	RX Antenna		Correcte d Factor	Corrected Amplitude	FCC Part 15.225/209/205	
				Height	Polar			Limit	Margin
(MHz)	(dBμV) @3m	(QP)	Degree	(m)	(H/V)	(dB)	(dBμV/m) @3m	(dBμV/m) @3m	(dB)
32.59	31.41	QP	150	1.2	H	-14.30	17.11	40.00	-22.89
32.59	32.96	QP	206	2.0	V	-14.30	18.66	40.00	-21.34
223.45	36.12	QP	51	1.8	H	-13.58	22.54	46.00	-23.46
223.45	40.81	QP	117	1.6	V	-13.58	27.23	46.00	-18.77
517.98	39.25	QP	192	1.7	H	-5.63	33.62	46.00	-12.38
517.98	40.13	QP	173	1.6	V	-5.63	34.50	46.00	-11.50

9 Frequency Tolerance

Test Requirement: FCC Part15.225

Test Method: ANSI C63.10: 2013

Limit The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% of the operating frequency over a temperature variation of –20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

9.1 Test Procedure

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Set EUT as normal operation
3. Set SPA Centre Frequency = fundamental frequency, RBW=30 Hz, VBW= 100 Hz, Span =3 kHz.
4. Set SPA Max hold. Mark peak.

9.2 Test Result

Power Supply	Temperature (℃)	Measured Frequency (MHz)	Frequency Error	Part 15.225 Limit
DC 3.85V	-20	13.5612	0.0091%	±0.01%
	-10	13.5606	0.0043%	±0.01%
	0	13.5598	-0.0018%	±0.01%
	+10	13.5595	-0.0035%	±0.01%
	+20	13.5608	0.0059%	±0.01%
	+30	13.5592	-0.0058%	±0.01%
	+40	13.5593	-0.0053%	±0.01%
	+50	13.5605	0.0037%	±0.01%
DC 3.29 V	-20	13.5607	0.0052%	±0.01%
	-10	13.5602	0.0016%	±0.01%
	0	13.5597	-0.0022%	±0.01%

	+10	13.5608	0.0061%	±0.01%
	+20	13.5609	0.0066%	±0.01%
	+30	13.5611	0.0083%	±0.01%
	+40	13.5594	-0.0044%	±0.01%
	+50	13.5609	0.0070%	±0.01%
DC4.43V	-20	13.5604	0.0029%	±0.01%
	-10	13.5601	0.0076%	±0.01%
	0	13.5596	-0.0032%	±0.01%
	+10	13.5601	0.0006%	±0.01%
	+20	13.5600	0.0001%	±0.01%
	+30	13.5593	-0.0055%	±0.01%
	+40	13.5606	0.0046%	±0.01%
	+50	13.5603	0.0024%	±0.01%

10 20dB Bandwidth

Test Requirement: FCC Part15.215(C)

Test Method: ANSI C63.10: 2013

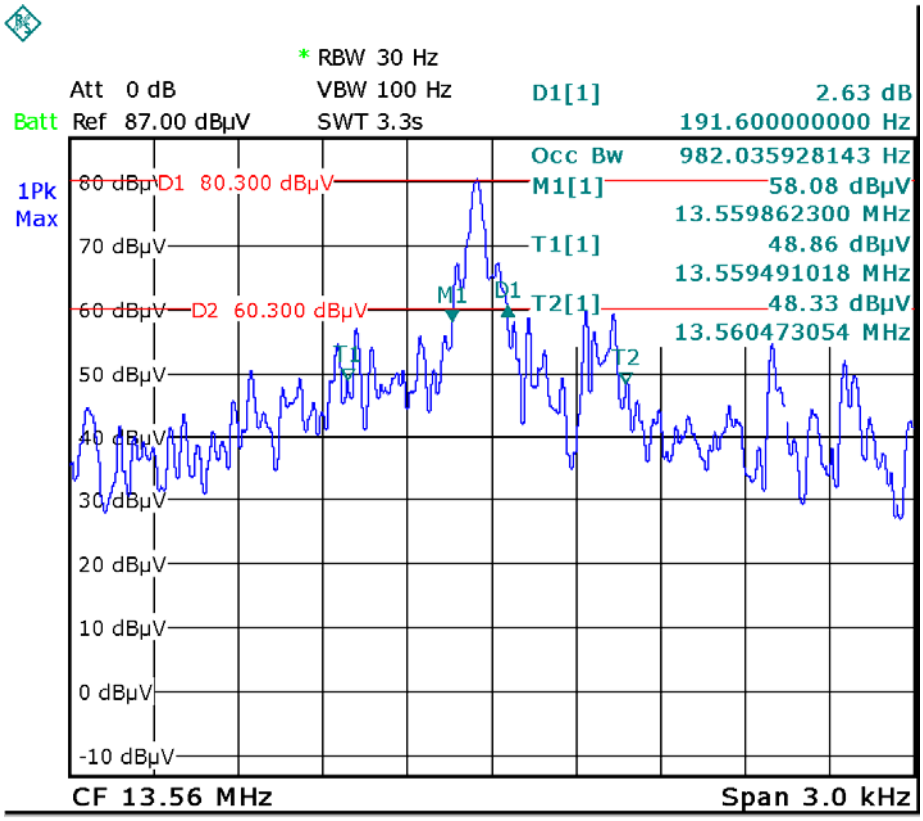
10.1 Test Procedure

1. The transmitter output (antenna port) was connected to the spectrum analyzer in peak mode.
2. 20dB Bandwidth the resolution bandwidth of 30 Hz and the video bandwidth of 100 Hz were used.
3. Measured the spectrum width with power higher than 20dB below carrier.

10.2 Test Result

Frequency(MHz)	Bandwidth Emission(Hz)
13.56	191.60

Test Plot



11 Antenna Requirement

According to the FCC Part 15 Paragraph 15.203, 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. This product has an Loop antenna, fulfil the requirement of this section.

12 RF Exposure

Remark: refer to SAR test report: WTS18S12133823-1W.

13 Photographs of EUT.

Note: Please refer to appendix: WTS18S12133823W_Photo.

======End of Report======