FCC TEST REPORT

FOR

Speedata Group LTD

Handheld terminal

Test Model: KT40

Additional Model: KT40-S, KT40-N43, KT40-N63

Prepared for	:	Speedata Group LTD
Address	:	Room 2-308, building No.25, No.9 Anningzhuang Road West, Haidian district, Beijing, China

Prepared by	:	Shenzhen LCS Compliance Testing Laboratory Ltd.
Address	:	1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue, Bao'an District, Shenzhen, Guangdong, China
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Date of receipt of test sample	:	May 06, 2017
Number of tested samples	:	1
Serial number	:	Prototype
Date of Test	:	May 06, 2017~May 26, 2017
Date of Report	:	May 26, 2017

FCC TEST REPORT
FCC CFR 47 PART 15 C (15.225)

Report Reference No.	**:**	**LCS170506015AE**
Date of Issue	:	May 26, 2017
Testing Laboratory Name.....	**:**	**Shenzhen LCS Compliance Testing Laboratory Ltd.**
Address	:	1/F., Xingyuan Industrial Park, Tongda Road, Bao'an Avenue, Bao'an District, Shenzhen, Guangdong, China
Testing Location/ Procedure.....	:	Full application of Harmonised standards ■ Partial application of Harmonised standards □ Other standard testing method □
Applicant's Name	**:**	**Speedata Group LTD**
Address	:	Room 2-308, building No.25, No.9 Anningzhuang Road West, Haidian district, Beijing, China
Test Specification		
Standard	:	FCC CFR 47 PART 15 C(15.225)
Test Report Form No.....	**:**	LCSEMC-1.0
TRF Originator	:	Shenzhen LCS Compliance Testing Laboratory Ltd.
Master TRF.....	:	Dated 2011-03

Test Item Description.	**:**	**Handheld terminal**
Trade Mark	:	SPEEDATA®
Test Model.....	:	KT40
Ratings.....	:	DC 3.8V, 4300mAh Charging parameter: Input: 100~240V AC, 50/60Hz, 0.25A; Output: DC 5V, 1.2A
Result	**:**	**Positive**

Compiled by:	**Supervised by:**	**Approved by:**
Calvin Weng		
Calvin Weng/ Administrators	Glin Lu/ Technique principal	Gavin Liang/ Manager

FCC -- TEST REPORT

Test Report No. : LCS170506015AE	May 26, 2017 Date of issue

Test Model.....	: KT40
EUT.....	: Handheld terminal
Applicant.....	**: Speedata Group LTD**
Address.....	: Room 2-308, building No.25, No.9 Anningzhuang Road West, Haidian district, Beijing, China
Telephone.....	:
Fax.....	:
Manufacturer.....	**: Beijing Speedata Technology Co.,Ltd**
Address.....	: Room 2-308, building No.25, No.9 Anningzhuang Road West, Haidian district, Beijing, China
Telephone.....	:
Fax.....	:
Factory.....	: **Beijing Speedata Technology Co.,Ltd**
Address.....	: Room 2-308, building No.25, No.9 Anningzhuang Road West, Haidian district, Beijing, China
Telephone.....	:
Fax.....	:

Test Result	**Positive**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Revision History

Revision	Issue Date	Revisions	Revised By
00	May 26, 2017	Initial Issue	Gavin Liang

TABLE OF CONTENTS

1. GENERAL INFORMATION

1.1 Description of Device (EUT)

Name of EUT	Handheld terminal
Model Number	KT40, KT40-S, KT40-N43, KT40-N63
Modulation Type	GMSK for GSM/GPRS, 8-PSK for EDGE,QPSK for UMTS, QPSK, 16QAM for LTE
Antenna Gain	2.0dBi (max.) For GSM 850; 2.0dBi (max.) For GSM 900 1.8dBi (max.) For DCS 1800; 1.8dBi (max.) For PCS 1900 1.8dBi (max.) For WCDMA Band II 2.0dBi (max.) For WCDMA Band V 1.8dBi (max.) For LTE FDD Band 7 2.0dBi (max.) For BT and WLAN 3.0dBi (max.) For NFC
Hardware version	rev.B1
Software version	2017_05_22
GSM/EDGE/GPRS Operation Frequency Band	GSM850/PCS1900/GPRS850/GPRS1900/EDGE850/EDGE1900
UMTS Operation Frequency Band	UMTS FDD Band II/V
LTE Operation Frequency Band	LTE FDD band 7
GSM/EDGE/GPRS	Supported GSM/GPRS/EDGE
GSM Release Version	R99
GSM/EDGE/GPRS Power Class	GSM850:Power Class 4/ PCS1900:Power Class 1
GPRS/EDGE Multislot Class	GPRS/EDGE: Multi-slot Class 12
GPRS operation mode	Class B
WCDMA Release Version	R99
HSDPA Release Version	Release 8
HSUPA Release Version	Release 6
DC-HSUPA Release Version	Not Support
LTE Release Version	R8
LTE/UMTS Power Class	Class 3
WLAN FCC Modulation Type	IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK) IEEE 802.11n HT40: OFDM (64QAM, 16QAM, QPSK,BPSK)
WLAN FCC Operation frequency	IEEE 802.11b:2412-2462MHz IEEE 802.11g:2412-2462MHz IEEE 802.11n HT20:2412-2462MHz IEEE 802.11n HT40:2422-2452MHz
Antenna Type	PIFA Antenna
BT Modulation Type	GFSK,8-DPSK,π/4-DQPSK(BT V4.1)
Extreme temp. Tolerance	-30°C to +50°C
GPS function	Support and only RX
NFC Function	Support
Extreme vol. Limits	3.40VDC to 4.2VDC (nominal: 3.80VDC)

1.2 Host System Configuration List and Details

Manufacturer	Description	Model	Serial Number	Certificate
SHEN ZHEN KEYU SUPPLY TECHNOLOGY Co.,Ltd	Power Adapter	KA25-0501200 US	---	FCC VoC

1.3 External I/O

I/O Port Description	Quantity	Cable
---	---	---

1.4 Description of Test Facility

CNAS Registration Number is L4595.

FCC Registration Number is 899208.

Industry Canada Registration Number is 9642A-1.

ESMD Registration Number is ARCB0108.

UL Registration Number is 100571-492.

TUV SUD Registration Number is SCN1081.

TUV RH Registration Number is UA 50296516-001

The 3m-Semi anechoic test site fulfils CISPR 16-1-4 according to ANSI C63.4:2014 and CISPR 16-1-4:2010 SVSWR requirement for radiated emission above 1GHz.

1.5 Statement of the Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the LCS quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

1.6 Measurement Uncertainty

Test Item		Frequency Range	Uncertainty	Note
Radiation Uncertainty	:	9KHz~30MHz	3.10dB	(1)
		30MHz~200MHz	2.96dB	(1)
		200MHz~1000MHz	3.10dB	(1)
		1GHz~26.5GHz	3.80dB	(1)
		26.5GHz~40GHz	3.90dB	(1)
Conduction Uncertainty	:	150kHz~30MHz	1.63dB	(1)
Power disturbance	:	30MHz~300MHz	1.60dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately 95% confidence level using a coverage factor of k=2.

1.7 Description of Test Modes

The EUT was operated in the engineering mode. All X, Y, Z axis had been tested and the worst case(X axis) was record.

Worst-case mode and channel used for 150 KHz-30 MHz power line conducted emissions was the mode and channel with the highest output power that was determined to be TX;

AC conducted emission pre-test at both at AC 120V/60Hz and AC 240V/50Hz modes, recorded worst cases;

AC conducted emission pre-test at both at power adapter and power from PC modes, recorded worst case;

The EUT works in the X-axis, Y-axis, Z-axis. The following operating modes were applied for the related test items.

1.8 Summary of Test Result

Test Items	FCC Rules	Result
Line Conducted Emissions	15.207	PASS
Field Strength of Fundamental Emissions	15.225(a)(b)(c)	PASS
Radiated Emissions	15.225(d) & 15.209	PASS
20dB Bandwidth	2.1049	PASS
Frequency Stability	15.225(e)	PASS
Antenna Requirement	15.203	PASS

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10: 2013, FCC CFR PART 15C 15.225.

2.1 EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT Exercise

The EUT was operated in the engineering mode to fix the TX frequency that was for the purpose of the measurements.

According to its specifications, the EUT must comply with the requirements of the Section 15.225 under the FCC Rules Part 15 Subpart C.

2.3 General Test Procedures

2.3.1 Conducted Emissions

According to the requirements in Section 6.2 of ANSI C63.10: 2013, AC power-line conducted emissions shall be measured in the frequency range between 0.15 MHz and 30MHz using Quasi-peak and average detector modes.

2.3.2 Radiated Emissions

The EUT is placed on a turn table and the turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 6.3 of ANSI C63.10: 2013

3. SYSTEM TEST CONFIGURATION

3.1 Justification

The system was configured for testing in a continuous transmits condition.

3.2 EUT Exercise Software

The sample will be controlled by dialing *#*#3646633#*#* to enter RF test mode to control sample change channel, modulation and so on;

3.3 Special Accessories

No.	Equipment	Manufacturer	Model No.	Serial No.	Length	shielded/ unshielded	Notes
1	PC	Lenovo	Ideapad	A131101550	/	/	DOC
2	Power adapter	Lenovo	CPA-A090	36200414	1.00m	unshielded	DOC

3.4 Block Diagram/Schematics

Please refer to the related document.

3.5 Equipment Modifications

Shenzhen LCS Compliance Testing Laboratory Ltd. has not done any modification on the EUT.

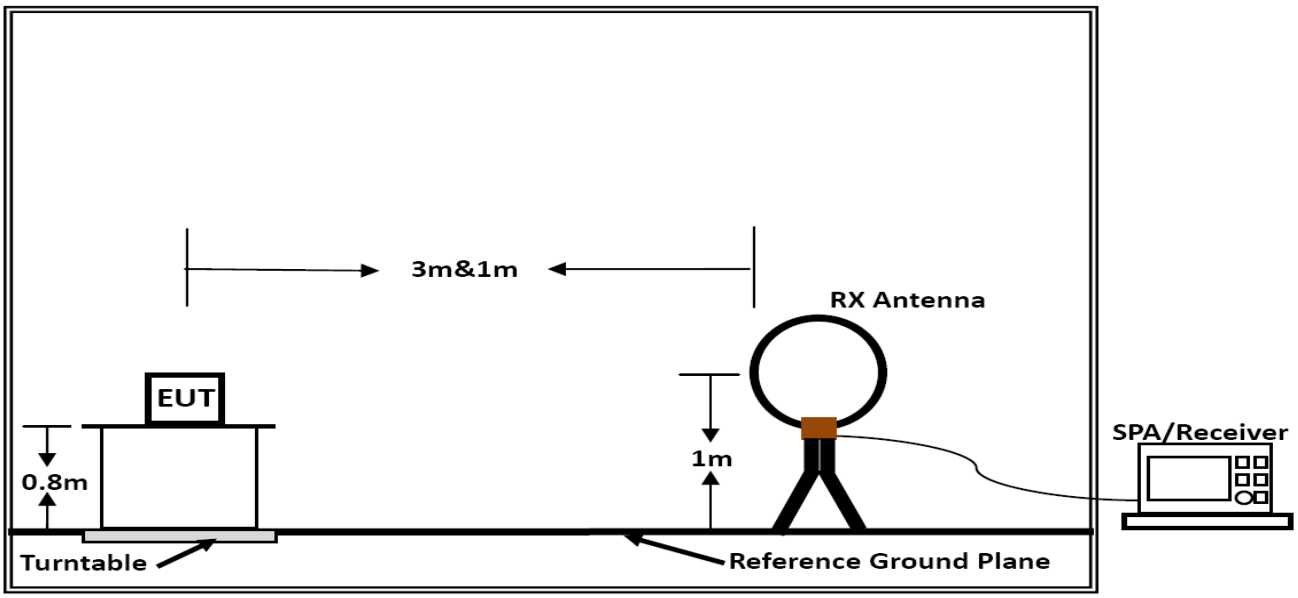
3.6 Test Setup

Please refer to the test setup photo.

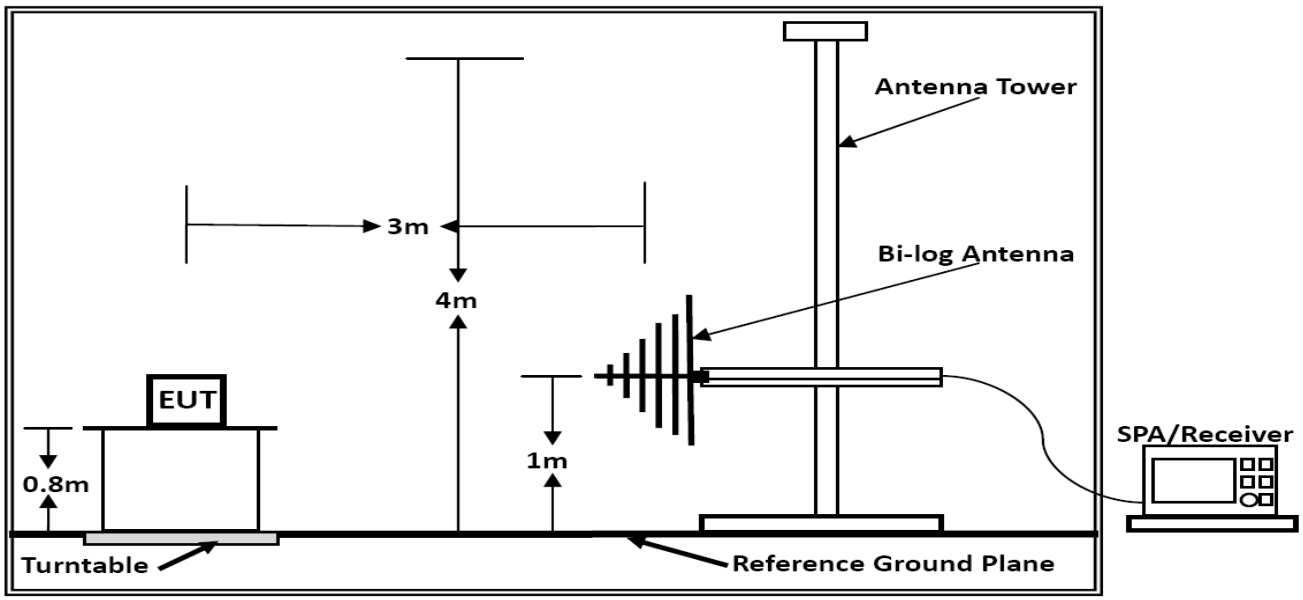
4. RADIATED MEASUREMENT

4.1 Radiated Emission

4.1.1 Block Diagram of Test Setup



Below 30MHz



Below 1GHz

4.1.2 Radiated Emission Limit

15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
\1\ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293.	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(\2\)
13.36-13.41			

\1\ Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

\2\ Above 38.6

Part 15.205 (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector.

According to Part 15.225 (a), the field strength of any emissions which appear outside of 13.553 ~ 13.567MHz band shall not exceed the general radiated emissions limits.

Frequencies (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Limit calculation and transfer to 3m distance as showed in the following table:

Frequency (MHz)	Limit (dBuV/m)	Distance (m)
0.009-0.490	20log(2400/F(KHz))+40lg(300/3)	3
0.490-1.705	20log(24000/F(KHz))+40lg(30/3)	3
1.705-30.0	69.5	3
30-88	40.0	3
88-216	43.5	3
216-960	46.0	3
Above 960	54.0	3

4.1.2 Test Procedures

1) Sequence of testing 9 kHz to 30 MHz

Setup:

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a rotatable table with 0.8 m height is used.

--- If the EUT is a floor standing device, it is placed on the ground.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions.

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

Premeasurement:

--- The turntable rotates from 0° to 315° using 45° steps.

--- The antenna height is 0.8 meter.

--- At each turntable position the analyzer sweeps with peak detection to find the maximum of all emissions

Final measurement:

--- Identified emissions during the premeasurement the software maximizes by rotating the turntable position (0° to 360°) and by rotating the elevation axes (0° to 360°).

--- The final measurement will be done in the position (turntable and elevation) causing the highest emissions with QPK detector.

--- The final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement and the limit will be stored.

2) Sequence of testing 30 MHz to 1 GHz

Setup:

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a table with 0.8 m height is used, which is placed on the ground plane.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

--- The AC power port of the EUT (if available) is connected to a power outlet below the turntable.

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

Premeasurement:

--- The turntable rotates from 0° to 315° using 45° steps.

--- The antenna is polarized vertical and horizontal.

--- The antenna height changes from 1 to 3 meter.

--- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

Final measurement:

--- The final measurement will be performed with minimum the six highest peaks.

--- According to the maximum antenna and turntable positions of premeasurement the software maximize the peaks by changing turntable position (± 45°) and antenna movement between 1 and 4 meter.

--- The final measurement will be done with QP detector with an EMI receiver.

--- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the premeasurement with marked maximum final measurements and the limit will be stored.

4.1.4 Test Results

PASS.

The test data please refer to following page:

9 KHz ~ 30MHz

Note: Only recorded the worst test result.

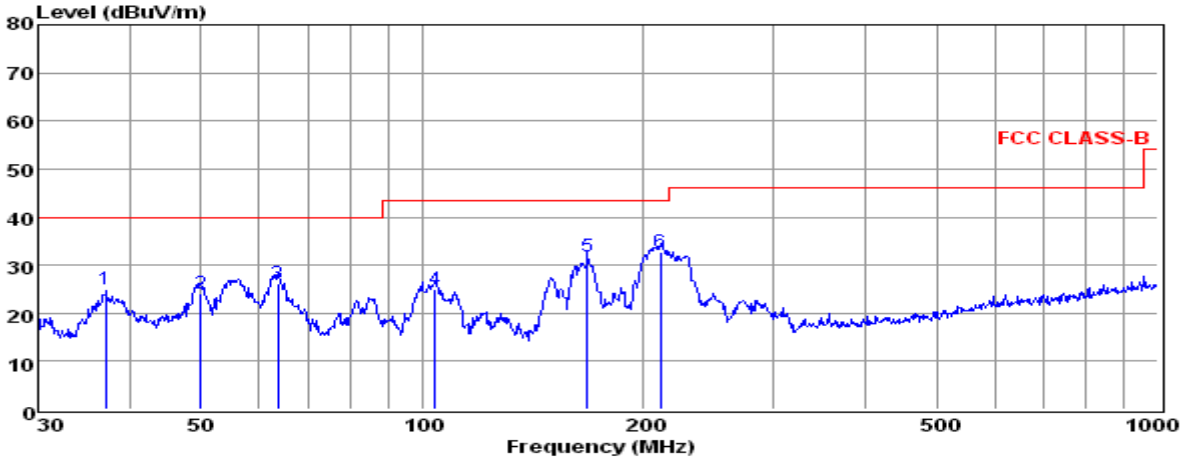
Freq. MHz	Reading dBuV	Factor dB	Measured dBuV/m	Limit dBuV/m	Margin dB	Remark
0.35	--	--	--	96.70	--	--
0.65	--	--	--	71.32	--	--
2.47	33.89	20.30	54.19	69.5	-15.31	QP
9.42	33.21	20.32	53.53	69.5	-15.97	QP
13.56	36.15	20.18	56.33	124	-67.67	QP
16.25	33.49	20.12	53.61	69.5	-15.89	QP
23.94	31.50	19.94	51.44	69.5	-18.06	QP
23.85	30.79	19.95	50.74	69.5	-18.76	QP

*Note: Emission Level= Reading Level + Antenna Factor + Cable Loss

"--" means noise floor.

30MHz ~ 1GHz

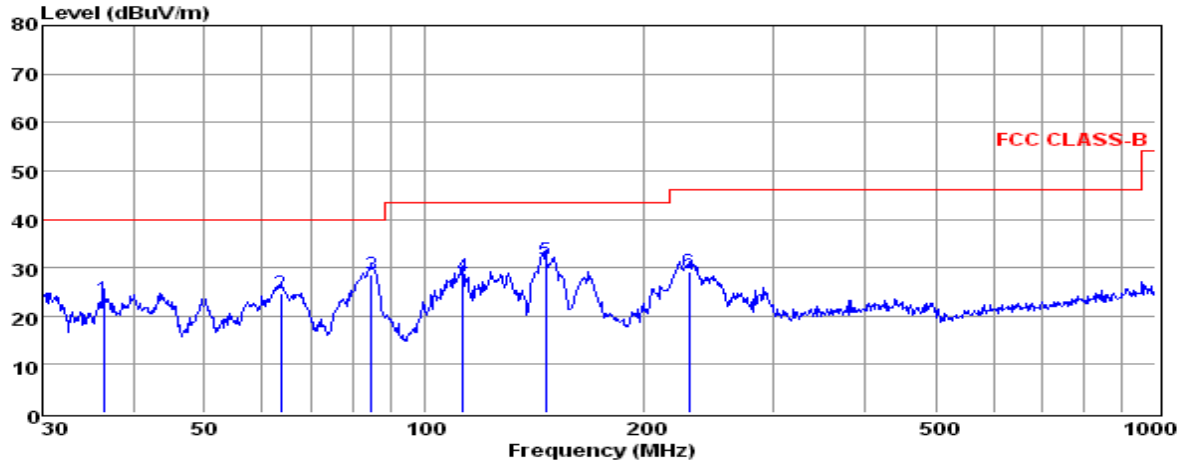
Horizontal:



	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	37.02	11.60	0.41	12.82	24.83	40.00	-15.17	QP
2	49.88	10.33	0.54	13.26	24.13	40.00	-15.87	QP
3	63.54	14.40	0.48	11.29	26.17	40.00	-13.83	QP
4	104.17	11.48	0.61	12.78	24.87	43.50	-18.63	QP
5	167.82	22.14	0.77	8.90	31.81	43.50	-11.69	QP
6	210.79	20.73	0.93	10.91	32.57	43.50	-10.93	QP

Note: 1. All readings are Quasi-peak values.
2. Measured= Reading + Antenna Factor + Cable Loss
3. The emission that ate 20db blow the offficial limit are not reported

Vertical:

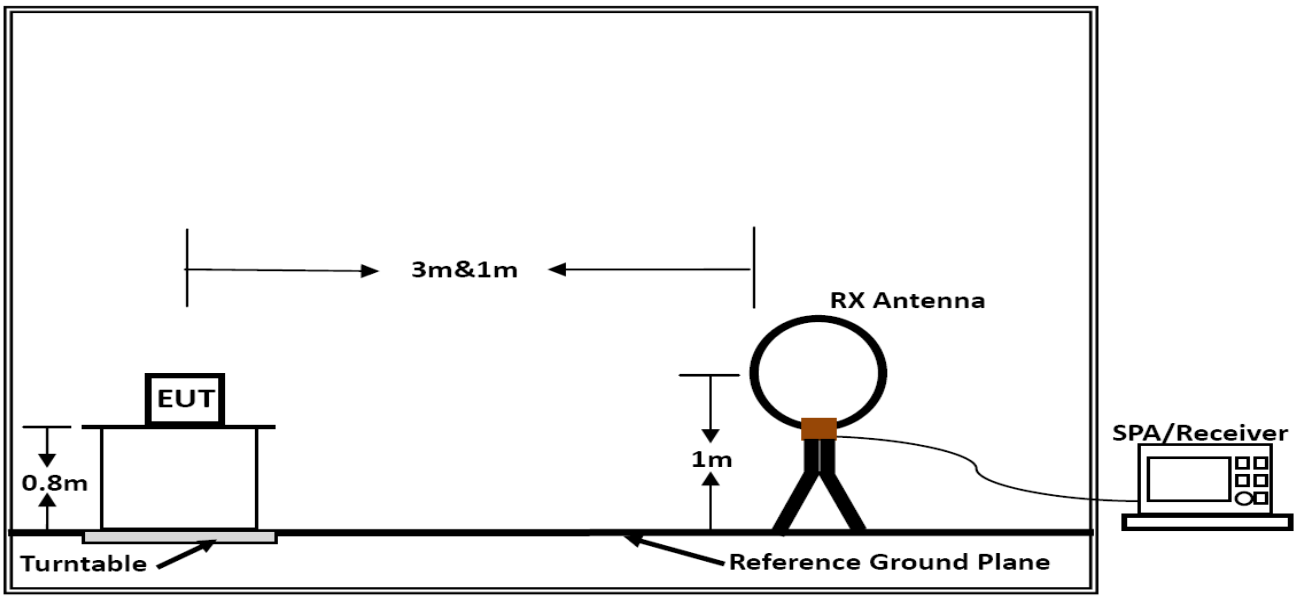


	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	36.38	10.46	0.41	12.65	23.52	40.00	-16.48	QP
2	63.54	12.88	0.48	11.29	24.65	40.00	-15.35	QP
3	84.70	17.79	0.54	10.20	28.53	40.00	-11.47	QP
4	112.92	15.81	0.65	11.73	28.19	43.50	-15.31	QP
5	146.37	22.47	0.77	8.23	31.47	43.50	-12.03	QP
6	230.10	16.59	0.93	11.65	29.17	46.00	-16.83	QP

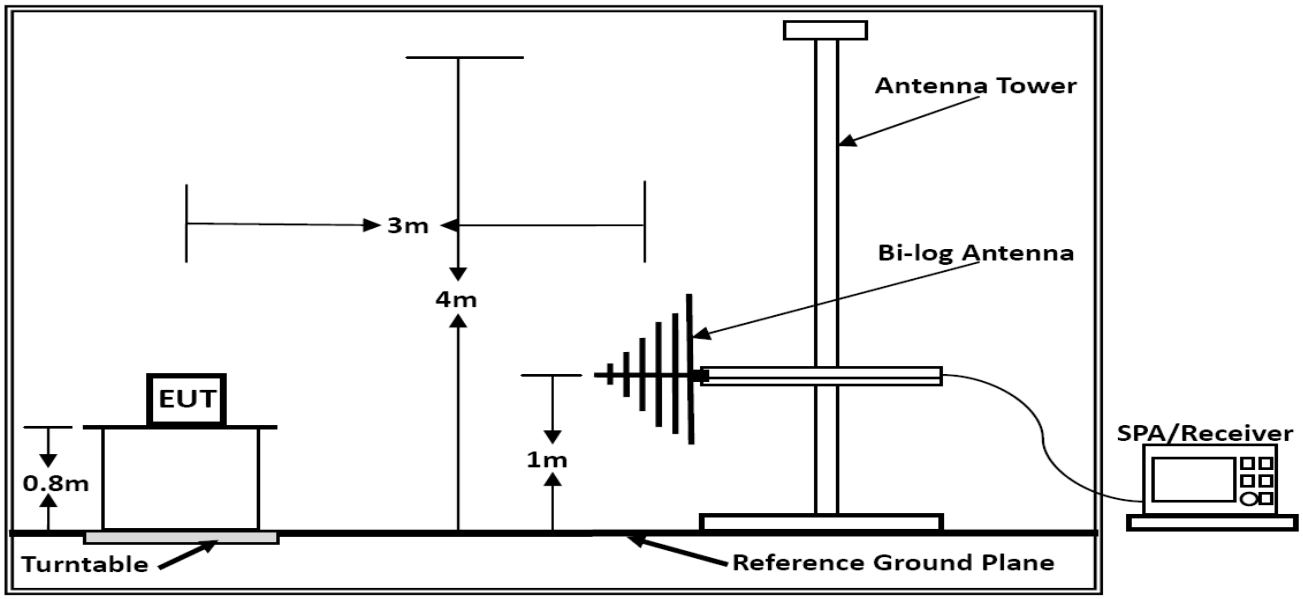
Note: 1. All readings are Quasi-peak values.
2. Measured= Reading + Antenna Factor + Cable Loss
3. The emission that ate 20db blow the offficial limit are not reported

4.2 Field Strength of Fundamental Emissions and Mask Measurement

4.2.1 Block Diagram of Test Setup



Below 30MHz



Below 1GHz

4.2.2 Field strength of fundamental emissions limit and Mask limit

The field strength of fundamental emissions shall not exceed 15848 microvolts/meter at 30 meters. The emissions limit in this paragraph is based on measurement instrumentation employing a QP detector.

Frequencies (MHz)	Field Strength (microvolts/meter)	Field Strength (dBμV/m) at 10m	Field Strength (dBμV/m) at 3m
13.553 ~ 13.567MHz	15848 at 30m	103.08 (QP)	124 (QP)

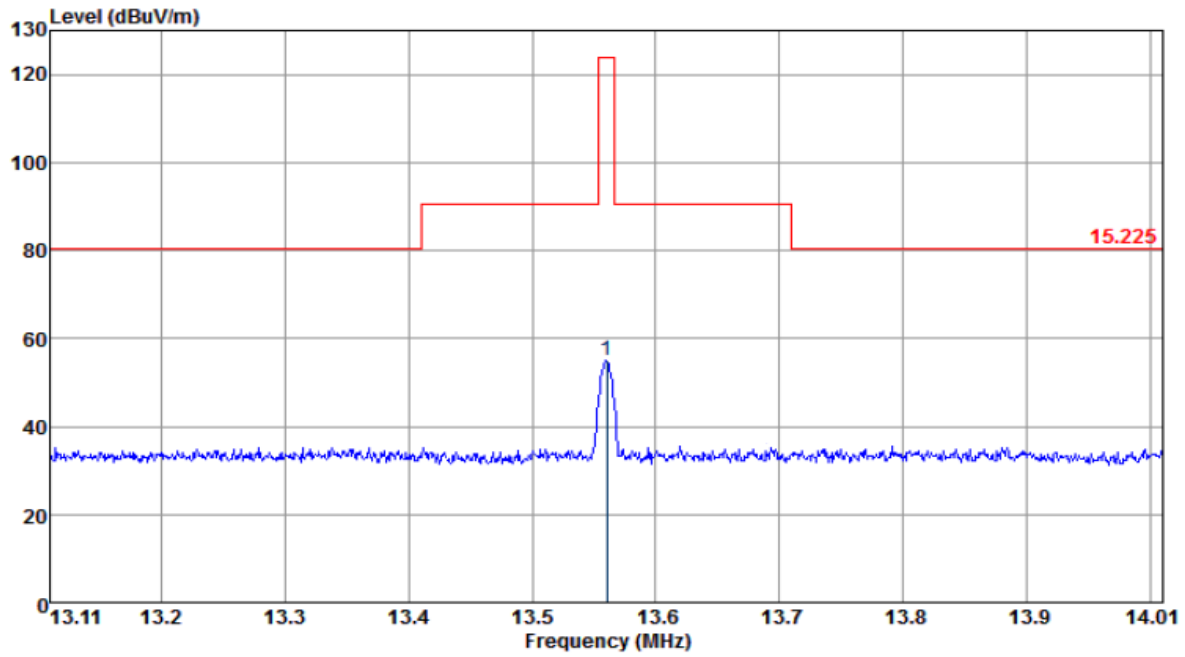
Mask Limit:

Frequency (MHz)	**Limit (dBuV/m)**	**Distance (m)**
1.705-13.110	69.5	3
13.110-13.410	80.5	3
13.410-13.553	90.5	3
13.553-13.567	124.0	3
13.567-13.710	90.5	3
13.710-14.010	80.5	3
14.010-30.000	69.5	3

4.2.3 Test Results

PASS.

The test data please refer to following page:



	Freq.(MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Remark
1	13.56	36.03	20.18	56.21	124	QP

*Note: Factor= Antenna Factor + Cable Loss

Emission level (dBμV/m) = 20 log Emission level (μV/m).

Measured distance is 3m.

All emissions emit from non-NFC function of digital unintentional emissions. All NFC's spurious emissions are below 20dB of limits.

5. BANDWIDTH OF THE OPERATING FREQUENCY

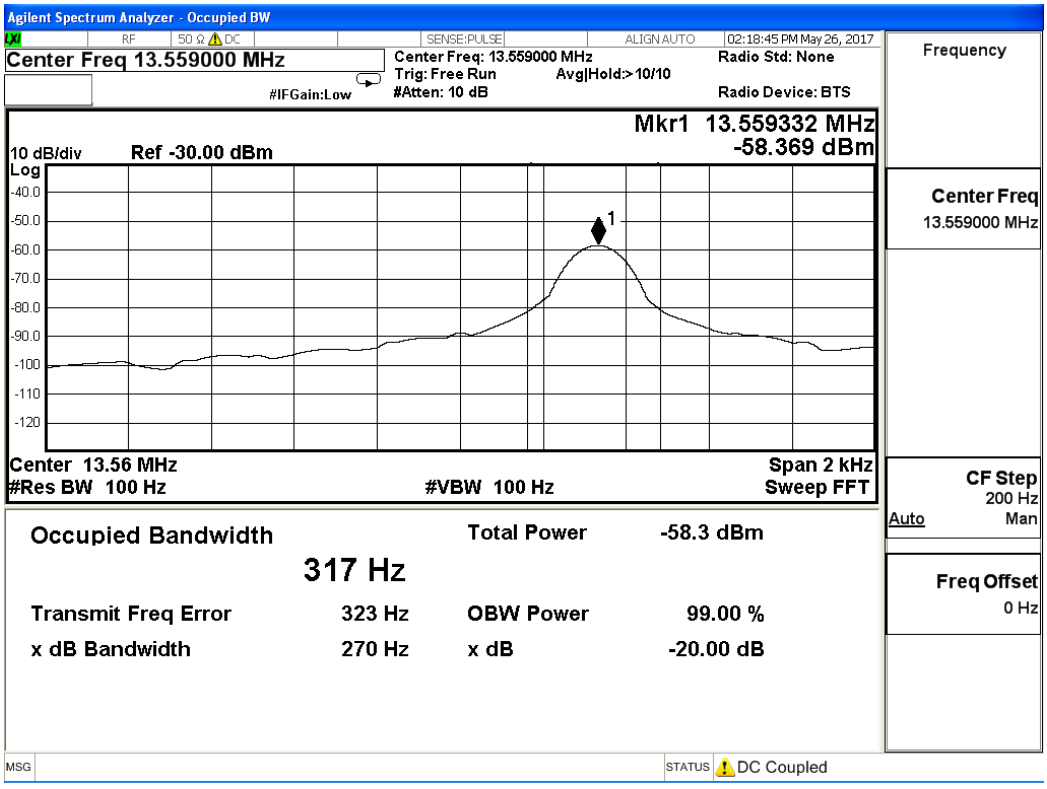
5.1 Standard Applicable

Intentional radiators must be designed to ensure that the 20 dB bandwidth of the emissions in the specific band (13.553 ~ 13.567MHz).

5.2 Test Result

EUT	Handheld terminal
RBW	100Hz
VBW	100Hz
SPAN	500Hz
Carrier Freq. (MHz)	20dBBandwidth (KHz)
13.56	0.270

Please refer to the test plot:



6. FREQUENCY STABILITY MEASUREMENT

6.1 Standard Applicable

The frequency tolerance of the carrier signal shall be maintained within +/- 0.01% (100ppm) 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.

6.2 Test Result

Voltage vs. Frequency Stability

Voltage(V)	Measurement Frequency (MHz)
DC 3.40V	13.56046
DC 3.80V	13.56039
DC 4.20V	13.56042
Max. Deviation (MHz)	0.00046
Max. Deviation (ppm)	33.9233

Temperature vs. Frequency Stability

Temperature (℃)	Measurement Frequency (MHz)
-20	13.56051
-10	13.56048
0	13.56045
10	13.56043
20	13.56039
30	13.56041
40	13.56049
50	13.56055
Max. Deviation (MHz)	0.00055
Max. Deviation (ppm)	40.5605

7. LINE CONDUCTED EMISSIONS

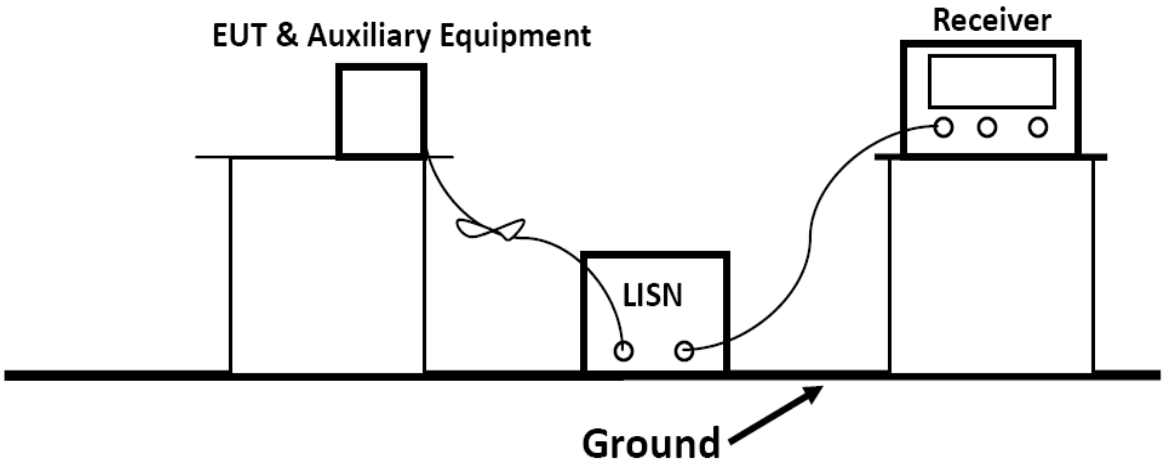
7.1 Standard Applicable

According to §15.207 (a): For an intentional radiator which is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed 250 microvolts (The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz). The limits at specific frequency range are listed as follows:

Frequency Range (MHz)	Limits (dBμV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50

* Decreasing linearly with the logarithm of the frequency

7.2 Block Diagram of Test Setup



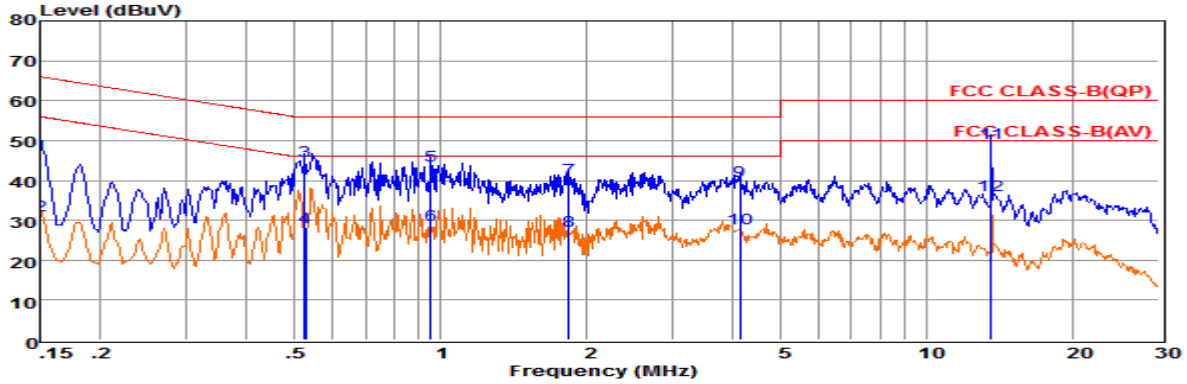
7.3 Test Results

PASS.

The test data please refer to following page.

AC Conducted Emission of power adapter @ AC 120V/60Hz @ NFC (worst case)

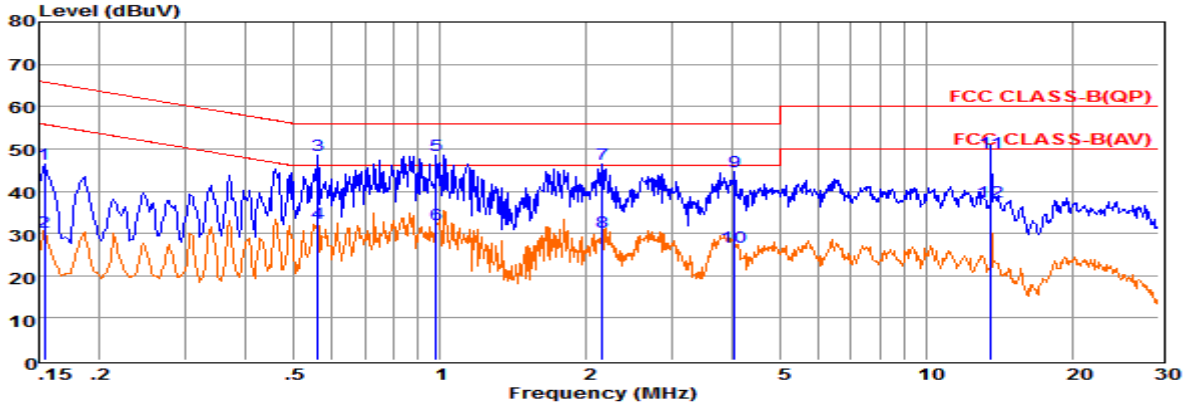
Line:



	Freq	Reading	LISNFac	CabLos	Aux2Fac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dB	dBuV	dBuV	dB
1	0.15	26.95	9.57	0.02	10.00	46.54	66.00	-19.46	QP
2	0.15	11.54	9.57	0.02	10.00	31.13	55.99	-24.86	Average
3	0.53	25.12	9.62	0.04	10.00	44.78	56.00	-11.22	QP
4	0.53	8.58	9.62	0.04	10.00	28.24	46.00	-17.76	Average
5	0.95	23.98	9.63	0.05	10.00	43.66	56.00	-12.34	QP
6	0.95	9.27	9.63	0.05	10.00	28.95	46.00	-17.05	Average
7	1.84	20.75	9.64	0.05	10.00	40.44	56.00	-15.56	QP
8	1.84	7.78	9.64	0.05	10.00	27.47	46.00	-18.53	Average
9	4.14	20.11	9.65	0.06	10.00	39.82	56.00	-16.18	QP
10	4.14	8.15	9.65	0.06	10.00	27.86	46.00	-18.14	Average
11	13.55	29.64	9.71	0.10	10.00	49.45	60.00	-10.55	QP
12	13.55	16.46	9.71	0.10	10.00	36.27	50.00	-13.73	Average

Remarks: 1. Measured = Reading +Cable Loss +Aux2 Fac.
2. The emission levels that are 20dB below the official limit are not reported.

Neutral:



	Freq	Reading	LISNFac	CabLos	Aux2Fac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dB	dBuV	dBuV	dB
1	0.15	26.77	9.69	0.02	10.00	46.48	65.78	-19.30	QP
2	0.15	10.54	9.69	0.02	10.00	30.25	55.77	-25.52	Average
3	0.56	28.84	9.62	0.04	10.00	48.50	56.00	-7.50	QP
4	0.56	12.80	9.62	0.04	10.00	32.46	46.00	-13.54	Average
5	0.98	28.84	9.63	0.05	10.00	48.52	56.00	-7.48	QP
6	0.98	12.29	9.63	0.05	10.00	31.97	46.00	-14.03	Average
7	2.16	26.58	9.63	0.05	10.00	46.26	56.00	-9.74	QP
8	2.16	10.65	9.63	0.05	10.00	30.33	46.00	-15.67	Average
9	4.03	25.01	9.65	0.06	10.00	44.72	56.00	-11.28	QP
10	4.03	7.17	9.65	0.06	10.00	26.88	46.00	-19.12	Average
11	13.55	29.10	9.74	0.10	10.00	48.94	60.00	-11.06	QP
12	13.55	17.61	9.74	0.10	10.00	37.45	50.00	-12.55	Average

Remarks: 1. Measured = Reading +Cable Loss +Aux2 Fac.
2. The emission levels that are 20dB below the official limit are not reported.

****Note: Pre-scan all modes and recorded the worst case results in this report;*

8. ANTENNA REQUIREMENT

8.1 Standard Applicable

According to § 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. 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.

8.2 Antenna Connected Construction

The directional gains of antenna used for transmitting is 3dBi, and the antenna is a PIFA antenna connect to PCB board and no consideration of replacement. Please see EUT photo for details.

9. PHOTOGRAPHS OF TEST SETUP

Please refer to separated files for Test Setup Photos of the EUT.

10. PHOTOGRAPHS OF EUT

Please refer to separated files for External Photos of the EUT.

11. LIST OF MEASURING EQUIPMENTS

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1	Power Sensor	R&S	NRV-Z51	100458	2016-06-18	2017-06-17
2	Power Sensor	R&S	NRV-Z32	10057	2016-06-18	2017-06-17
3	Power Meter	R&S	NRVS	100444	2016-06-18	2017-06-17
4	DC Filter	MPE	23872C	N/A	2016-06-18	2017-06-17
5	RF Cable	Harbour Industries	1452	N/A	2016-06-18	2017-06-17
6	SMA Connector	Harbour Industries	9625	N/A	2016-06-18	2017-06-17
7	Spectrum Analyzer	Agilent	N9020A	MY50510140	2016-10-27	2017-10-26
8	Signal analyzer	Agilent	E4448A(External mixers to 40GHz)	US44300469	2016-06-16	2017-06-15
9	RF Cable	Hubersuhne	Sucoflex104	FP2RX2	2016-06-18	2017-06-17
10	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2016-06-18	2017-06-17
11	Amplifier	SCHAFFNER	COA9231A	18667	2017-04-18	2018-04-17
12	Amplifier	Agilent	8449B	3008A02120	2017-04-18	2018-04-17
13	Amplifier	MITEQ	AMF-6F-260400	9121372	2017-04-18	2018-04-17
14	Loop Antenna	R&S	HFH2-Z2	860004/001	2017-04-18	2018-04-17
15	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2017-04-18	2018-04-17
16	Horn Antenna	EMCO	3115	6741	2017-04-18	2018-04-17
17	Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	2017-04-18	2018-04-17
18	RF Cable-R03m	Jye Bao	RG142	CB021	2016-06-18	2017-06-17
19	RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	2016-06-18	2017-06-17
20	EMI Test Receiver	R&S	ESCI	101142	2016-06-18	2017-06-17
21	Artificial Mains	R&S	ENV216	101288	2016-06-18	2017-06-17
22	EMI Test Software	AUDIX	E3	N/A	2016-06-18	2017-06-17

----------THE END OF REPORT----------