

TEST REPORT

Applicant	AfterShokz LLC
Address	3200 Gracie Kiltz Lane, 4th Floor, Austin, TX 78758

Manufacturer or Supplier	Shenzhen Voxtech Co., Ltd.
Address	Floors 1-4, Factory Building 26, Shancheng Industrial Park, Shiyan Street, Bao'an District, Shenzhen, Guangdong, China
Product	AW0879 Adaptor
Brand Name	AfterShokz
Model	AW0879
Additional Model & Model Difference	N/A
Date of tests	Apr. 17, 2020 ~ Jun. 10, 2020

the tests have been carried out according to the requirements of the following standards:

☒ FCC Part 15, Subpart C, Section 15.225

CONCLUSION: The submitted sample was found to COMPLY with the test requirement

Tested by Lucas Chen Project Engineer / EMC Department	Approved by Glyn He Assistant Manager / EMC Department
	
	Date: Jul. 14, 2020

This report is governed by, and incorporates by reference, CPS Conditions of Service as posted at the date of issuance of this report at <http://www.bureauveritas.com/home/about-us/our-business/cps/about-us/terms-conditions/> and is intended for your exclusive use. Any copying or replication of this report to or for any other person or entity, or use of our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Measurement uncertainty is only provided upon request for accredited tests. You have 60 days from date of issuance of this report to notify us of any material error or omission caused by our negligence or if you require measurement uncertainty; provided, however, that such notice shall be in writing and shall specifically address the issue you wish to raise. A failure to raise such issue within the prescribed time shall constitute your unqualified acceptance of the completeness of this report, the tests conducted and the correctness of the report contents.

TABLE OF CONTENTS

RELEASE CONTROL RECORD	4
1 SUMMARY OF TEST RESULTS.....	5
2 MEASUREMENT UNCERTAINTY	5
3 GENERAL INFORMATION	6
3.1 GENERAL DESCRIPTION OF EUT	6
3.2 DESCRIPTION OF TEST MODES	7
3.2.1. CONFIGURATION OF SYSTEM UNDER TEST	7
3.2.2. TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL.....	7
3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS	9
3.4 DESCRIPTION OF SUPPORT UNITS	9
4 TEST TYPES AND RESULTS.....	10
4.1. RADIATED EMISSION AND BANDEDGE MEASUREMENT	10
4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT	10
4.1.2 TEST INSTRUMENTS.....	11
4.1.3 TEST PROCEDURES	12
4.1.4 DEVIATION FROM TEST STANDARD	12
4.1.5 TEST SETUP.....	13
4.1.6 EUT OPERATING CONDITIONS	14
4.1.7 TEST RESULTS.....	14
4.2. FREQUENCY TOLERANCE	16
4.2.1. LIMIT OF FREQUENCY TOLERANCE	16
4.2.2. TEST INSTRUMENTS.....	16
4.2.3. TEST PROCEDURES	17
4.2.4. DEVIATION FROM TEST STANDARD	17
4.2.5. TEST SETUP.....	17
4.2.6. EUT OPERATING CONDITIONS	18
4.2.7. TEST RESULTS.....	18
4.3. 20DB BANDWIDTH.....	19
4.4.1 LIMITS OF 20DB BANDWIDTH	19
4.4.2 TEST INSTRUMENTS.....	19
4.4.3 TEST PROCEDURE	20
4.4.4 DEVIATION FROM TEST STANDARD	20
4.4.5 TEST SETUP.....	20
4.4.6 EUT OPERATING CONDITION.....	21



Test Report No.: RF200417N002-2

4.4.7	TEST RESULTS.....	21
5.	PHOTOGRAPHS OF THE TEST CONFIGURATION	22
6.	APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB	23



Test Report No.: RF200417N002-2

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF200417N002-2	Original release	Jul. 14, 2020

1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C			
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK
15.207	AC Power Conducted Emission	PASS	Power by Intercom
15.225 (a)&(b)&(c)	The field strength of any emissions within the band	PASS	Meet the requirement of limit.
15.225 (d)	The field strength of any emissions appearing outside of the 13.110-14.010 MHz band	PASS	Meet the requirement of limit.
15.225 (e)	Frequency tolerance	PASS	Meet the requirement of limit.
15.215 (c)	20dB Bandwidth	PASS	Meet the requirement of limit.
15.203	Antenna Requirement	PASS	No antenna connector is used.

2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Radiated emissions	9KHz ~ 30MHz	2.16dB
	30MHz ~ 1GMHz	3.99dB
	1GHz ~ 18GHz	4.62dB
	18GHz ~ 40GHz	5.00dB

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

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	AW0879 Adaptor
MODEL NO.	AW0879
ADDITIONAL MODELS	N/A
FCC ID	SHKAW0879
POWER SUPPLY	DC 7.5V from Intercom
MODULATION TECHNOLOGY	NFC
MODULATION TYPE	ASK
OPERATING FREQUENCY	13.56MHz
NUMBER OF CHANNEL	1
ANTENNA TYPE	Loop antenna
I/O PORTS	Refer to user's manual
CABLE SUPPLIED	N/A

NOTE:

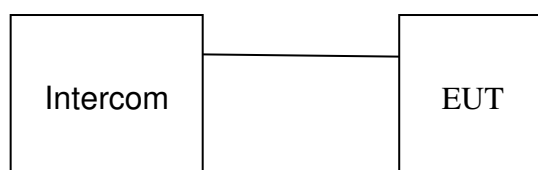
1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
2. For the test results, the EUT had been tested with all conditions. But only the worst case was shown in test report.
3. Please refer to the EUT photo document (Reference No.: 200417N002) for detailed product photo.

3.2 DESCRIPTION OF TEST MODES

The EUT only have one channel.

CHANNEL	FREQUENCY (MHz)
1	13.56

3.2.1. CONFIGURATION OF SYSTEM UNDER TEST



Please see section 5 photograph of the test configuration for reference.

3.2.2. TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports. The worst case was found when positioned on X axis for radiated emission. Following channel(s) was (were) selected for the final test as listed below:

EUT CONFIGURE MODE	APPLICABLE TO				DESCRIPTION
	RE	FT	PLC	BW	
A	√	√	√	√	DC 7.5V from Intercom with NFC

Where **RE:** Radiated Emission

FT: Frequency tolerance

PLC: Power Line Conducted Emission

BW: 20dB Bandwidth

NOTE: No need to concern of Conducted Emission due to the EUT is powered by DC 5V.

RADIATED EMISSION TEST:

- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, XYZ axis, antenna ports (if EUT with antenna diversity architecture) and packet type.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	TESTED CHANNEL	TESTED FREQUENCY (MHZ)	MODULATION TYPE	AXIS
A	1	13.56	ASK	X

FREQUENCY TOLERANCE:

- ☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, antenna ports (if EUT with antenna diversity architecture), and packet types.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	TESTED CHANNEL	TESTED FREQUENCY (MHZ)	MODULATION TYPE	AXIS
A	1	13.56	ASK	X

20dB BANDWIDTH:

- ☒ This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
- ☒ Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, antenna ports (if EUT with antenna diversity architecture), and packet types.
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	TESTED CHANNEL	TESTED FREQUENCY (MHZ)	MODULATION TYPE	AXIS
A	1	13.56	ASK	X

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	TEST VOLTAGE (SYSTEM)	TESTED BY
RE	21deg. C, 63%RH	DC 7.5V from Intercom	Hu
FT	25deg. C, 60%RH	DC 7.5V from Intercom	Daniel
PLC	-	-	-
BW	25deg. C, 60%RH	DC 7.5V from Intercom	Daniel

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF Product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C. Section 15.225
ANSI C63.10-2013

All test items have been performed and recorded as per the above standards.

3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as a dependent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Intercom	Hytera	PD780	N/A	N/A
2	Earphone	AfterShokz	ASC100	N/A	SHKASCP1B1

NO.	DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	N/A
2	N/A

4 TEST TYPES AND RESULTS

4.1. RADIATED EMISSION AND BANDEDGE MEASUREMENT

4.1.1 LIMITS OF RADIATED EMISSION AND BANDEDGE MEASUREMENT

The field strength of any emissions shall not exceed the following limits:

- (a) 15.848mV/m(84dBuV/m) at 30m, within the band 13.553-13.567 MHz;
- (b) 334uV/m(50.5dBuV/m) at 30m, within the band 13.410-13.553 MHz and 13.567-13.710MHz;
- (c) 106uV/m(40.5dBuV/m) at 30m, within the band 13.110-13.410 MHz and 13.710-14.010MHz;

The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in § 15.209.

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

NOTES:

- The lower limit shall apply at the transition frequencies.
- Emission level (dBuV/m) = 20 log Emission level (uV/m).
- As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.
- The measured field strength was extrapolated to distance 30 meters, using the formula that the limit of field strength varies as the inverse distance square (40dB per decade of distance)

Example:

$$\begin{aligned}
 13.56\text{MHz} &= 15848\text{uV/m} & 30\text{m} \\
 &= 84\text{dBuV/m} & 30\text{m} \\
 &= 84+20\log(30/3)^2 & 3\text{m} \\
 &= 124\text{dBuV/m}
 \end{aligned}$$

4.1.2 TEST INSTRUMENTS

9KHz~30MHz

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESR7	101564	Mar. 18,20	Mar. 17,21
Active Loop Antenna	SCHWARZBECK	FMZB 1519B	1519B-045	May 28,20	May 27,21
Amplifier	Burgeon	BPA-530	100210	Mar. 15,20	Mar. 14,21
Test Software	ADT	ADT_Radiated V8.7.07	N/A	N/A	N/A

- NOTES:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
2. The test was performed in 10m Chamber
3. The FCC Site Registration No. is 749762.

30MHz~1GHz

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESU40	100449	Mar. 18,20	Mar. 17,21
Bilog Antenna	Teseq	CBL 6111D	30643	Jun. 23,19	Jun. 22,20
Amplifier	Burgeon	BPA-530	100220	Mar. 15,20	Mar. 14,21
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	Apr. 21,20	Apr. 20,21
Test software	ADT	ADT_Radiated V7.6.15.9.2	N/A	N/A	N/A

- NOTES:**
1. The test was performed in 966 Chamber (a 3m Semi-anechoic chamber).
2. The calibration interval of the above test instruments are 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.
3. The horn antenna is used only for the measurement of emission frequency above 1GHz if tested.
4. The FCC Site Registration No. is 749762.

4.1.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3&10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, For battery operated equipment, the equipment tests shall be perform using fresh batteries. The turntable was rotated to maximize the emission level.
- g. For below 30MHz, a loop antenna with its vertical plane is place 3m from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. And the centre of the loop shall be 1m above the ground.

NOTE:

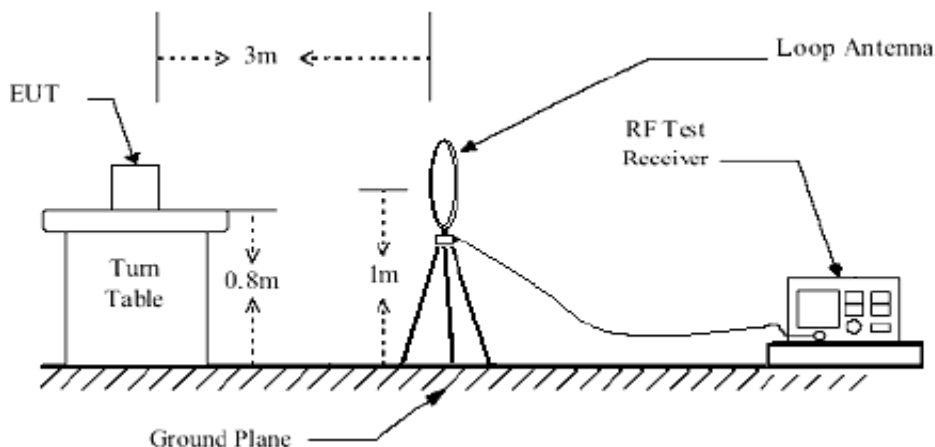
1. The resolution bandwidth of test receiver/spectrum analyzer is 100kHz for peak detection (PK) at fundamental frequency below 1GHz; The resolution bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at radiated spurious emission frequency below 1GHz.
2. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
3. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
4. Margin value = Emission level – Limit value.
5. Fundamental AV value =PK Emission +AV factor.

4.1.4 DEVIATION FROM TEST STANDARD

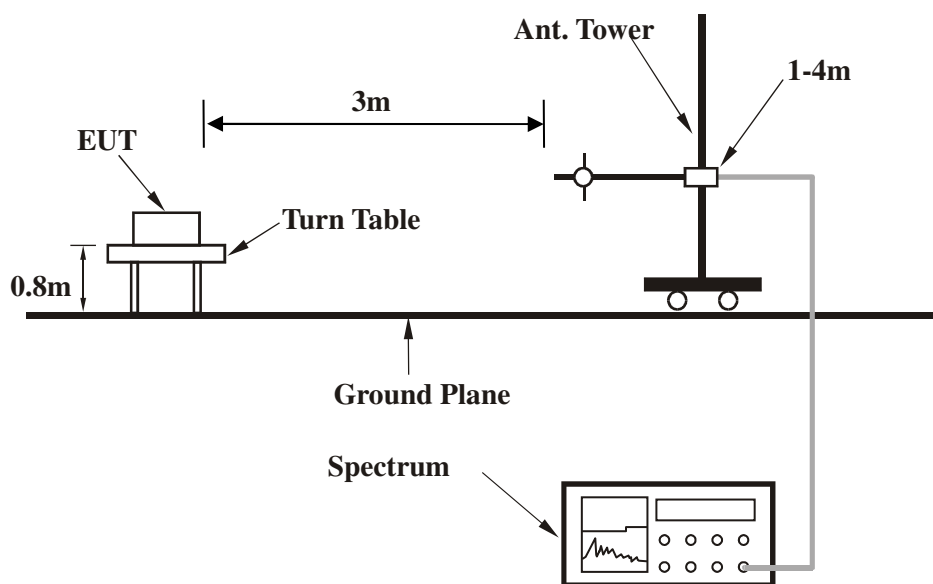
No deviation.

4.1.5 TEST SETUP

Below 30MHz test setup



Below 1GHz test setup



Note: For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.1.6 EUT OPERATING CONDITIONS

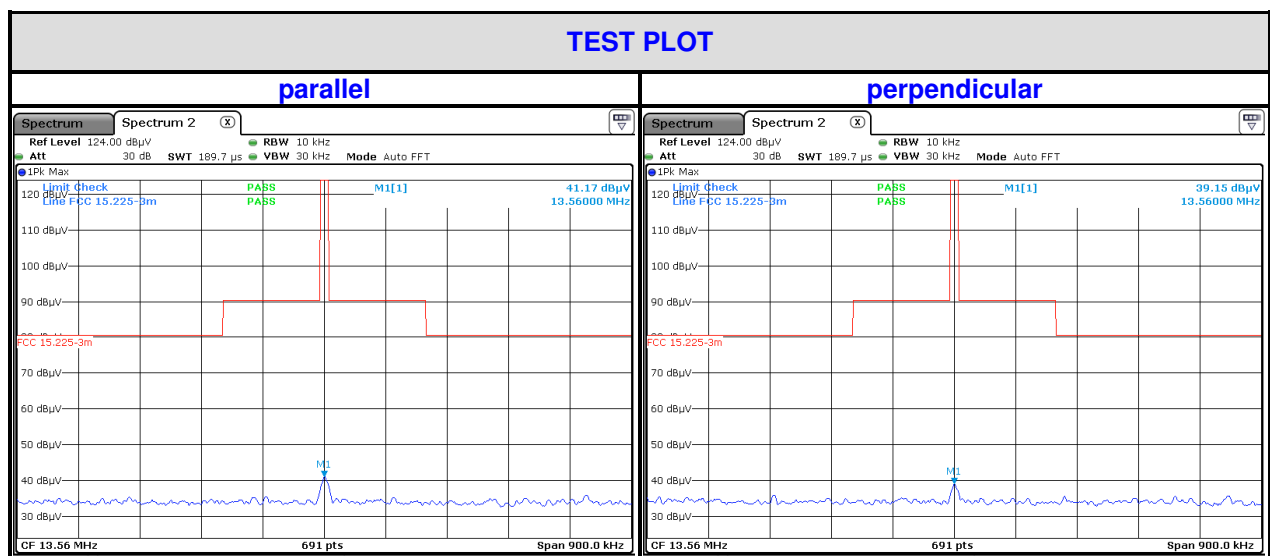
Set the EUT under transmission condition continuously at specific channel frequency.

4.1.7 TEST RESULTS

FIELD STRENGTH (BELOW 30MHz AT 3M)

No.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value (dBuV)	Emission Level (dBuV/m)	Polarity	Limit (dBuV/m)	Margin (dB)
1	*13.56(QP)	-9.97	51.14	41.17	parallel	124.0	-82.83
2	27.12(QP)	-10.13	40.75	30.62	parallel	69.5	-38.88
3	*13.56(QP)	-9.97	49.12	39.15	perpendicular	124.0	-84.85
4	27.12(QP)	-10.13	40.05	29.92	perpendicular	69.5	-39.58

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. " * " : Fundamental frequency.
 6. All three antenna orientations(parallel, perpendicular, and ground-parallel) testing. But the worst orientation showed in report only.



BELOW 1GHz WORST-CASE DATA:

CHANNEL	Channel 1	DETECTOR FUNCTION	Quasi-Peak (QP)
FREQUENCY RANGE	9KHz ~ 1GHz		

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.00	16.03QP	40.00	-23.97	1.00 H	209	27.85	-11.82
2	162.13	14.31QP	43.50	-29.19	1.00 H	271	33.04	-18.73
3	347.12	13.36QP	46.00	-32.64	1.00 H	344	27.13	-13.77
4	417.07	15.58QP	46.00	-30.42	1.00 H	345	27.66	-12.08
5	482.36	15.25QP	46.00	-30.75	1.00 H	202	26.94	-11.69
6	563.19	17.80QP	46.00	-28.20	1.00 H	342	27.07	-9.27
ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
NO.	FREQ. (MHz)	EMISSION LEVEL (dBuV/m)	LIMIT (dBuV/m)	MARGIN (dB)	ANTENNA HEIGHT (m)	TABLE ANGLE (Degree)	RAW VALUE (dBuV)	CORRECTION FACTOR (dB/m)
1	30.00	17.16QP	40.00	-22.84	2.00 V	348	28.98	-11.82
2	93.73	19.36QP	43.50	-24.14	2.00 V	119	39.40	-20.04
3	235.19	12.18QP	46.00	-33.82	2.00 V	250	30.67	-18.49
4	367.32	15.27QP	46.00	-30.73	2.00 V	356	28.74	-13.47
5	448.16	18.06QP	46.00	-27.94	2.00 V	103	29.75	-11.69
6	563.19	19.84QP	46.00	-26.16	2.00 V	286	29.11	-9.27

REMARKS:

1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m).
2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB).
3. The emission levels of other frequencies were greater than 20dB margin.
4. 9KHz~30MHz have been test and test data more than 20dB margin.
5. Margin value = Emission level – Limit value.

4.2. FREQUENCY TOLERANCE

4.2.1. LIMIT OF FREQUENCY TOLERANCE

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.

4.2.2. TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Power Sensor	Keysight	U2021XA	MY55060016	May 22,20	May 21,21
Power Sensor	Keysight	U2021XA	MY55060018	May 22,20	May 21,21
Power Meter	Anritsu	ML2495A	1139001	Mar. 12,20	Mar. 11,21
Power Sensor	Anritsu	MA2411B	1531155	Mar. 12,20	Mar. 11,21
Digital Multimeter	FLUKE	15B	A1220010DG	Oct. 17, 19	Oct.16, 20
Humid & Temp Programmable Tester	Haida	HD-2257	110807201	Nov.15,19	Nov. 14,20
Oscilloscope	Agilent	DSO9254A	MY51260160	Sep. 18,19	Sep. 17,20
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV40	101094	Mar. 13,20	Mar. 12,21
Signal Generator	Agilent	N5183A	MY50140980	Sep. 19,19	Sep. 18,20
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY56200288	Sep. 12,19	Sep. 11,20
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	May 20,20	May 19,21
Attenuator	MINI	BW-S10W2+	S130129FGE2	N/A	N/A
DC Source	Keysight	E3642A	MY56146098	N/A	N/A

NOTES:

1. The test was performed in RF Oven room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

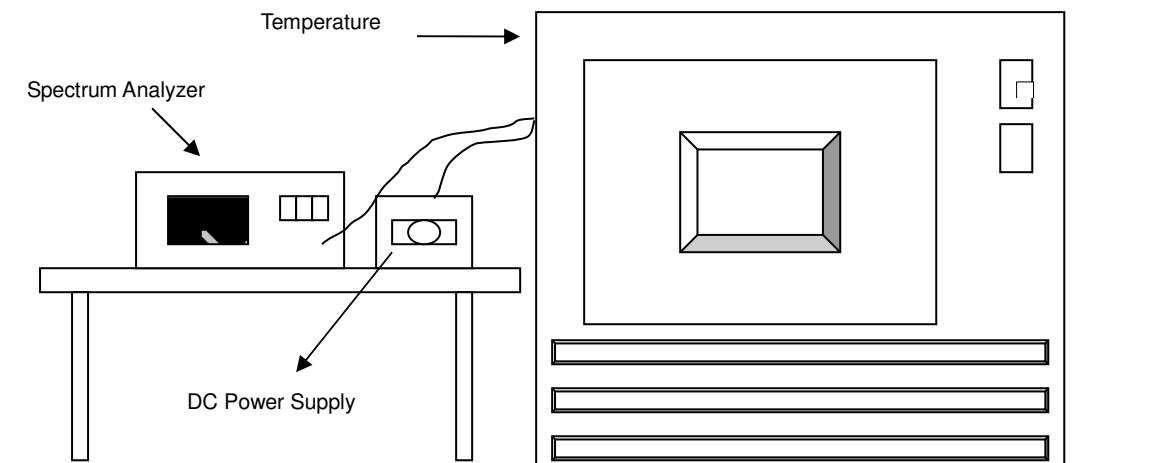
4.2.3. TEST PROCEDURES

- a) The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
- b) Turn the EUT on and couple its output to a spectrum analyzer.
- c) Turn the EUT off and set the chamber to the highest temperature specified.
- d) Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
- e) Repeat step c) and d) with the temperature chamber set to the lowest temperature.
- f) The test chamber was allowed to stabilize at +20 degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.2.4. DEVIATION FROM TEST STANDARD

No deviation.

4.2.5. TEST SETUP



4.2.6. EUT OPERATING CONDITIONS

Set the EUT under transmission condition continuously at specific channel frequency.

4.2.7. TEST RESULTS

FREQUENCY STABILITY VERSUS TEMP.									
TEMP. (°C)	POWER SUPPLY (V)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift
		(MHz)	%	(MHz)	%	(MHz)	%	(MHz)	%
50	5	13.55999	-0.00007	13.55998	-0.00015	13.55998	-0.00015	13.55998	-0.00015
40	5	13.56	0.00000	13.56001	0.00007	13.56	0.00000	13.56001	0.00007
30	5	13.56004	0.00029	13.56006	0.00044	13.56005	0.00037	13.56005	0.00037
20	5	13.56002	0.00015	13.56002	0.00015	13.56002	0.00015	13.56003	0.00022
10	5	13.56001	0.00007	13.56001	0.00007	13.56001	0.00007	13.56001	0.00007
0	5	13.56003	0.00022	13.56003	0.00022	13.56003	0.00022	13.56003	0.00022
-10	5	13.55998	-0.00015	13.55997	-0.00022	13.55998	-0.00015	13.55999	-0.00007
-20	5	13.55994	-0.00044	13.55994	-0.00044	13.55994	-0.00044	13.55994	-0.00044
-30	5	13.56006	0.00044	13.56006	0.00044	13.56006	0.00044	13.56006	0.00044

FREQUENCY STABILITY VERSUS VOLTAGE									
TEMP. (°C)	POWER SUPPLY (V)	0 MINUTE		2 MINUTE		5 MINUTE		10 MINUTE	
		Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift	Measured Frequency	Frequency Drift
		(MHz)	%	(MHz)	%	(MHz)	%	(MHz)	%
20	5	13.56002	0.00015	13.56002	0.00015	13.56002	0.00015	13.56003	0.00022
	5	13.56002	0.00015	13.56002	0.00015	13.56002	0.00015	13.56003	0.00022
	4.25	13.56002	0.00015	13.56002	0.00015	13.56002	0.00015	13.56003	0.00022

4.3. 20dB BANDWIDTH

4.4.1 LIMITS OF 20dB BANDWIDTH

The 20dB bandwidth shall be specified in operating frequency band.(13.11MHz – 14.01MHz)

4.4.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Power Sensor	Keysight	U2021XA	MY55060016	May 22,20	May 21,21
Power Sensor	Keysight	U2021XA	MY55060018	May 22,20	May 21,21
Power Meter	Anritsu	ML2495A	1139001	Mar. 12,20	Mar. 11,21
Power Sensor	Anritsu	MA2411B	1531155	Mar. 12,20	Mar. 11,21
Digital Multimeter	FLUKE	15B	A1220010DG	Oct. 17, 19	Oct.16, 20
Humid & Temp Programmable Tester	Haida	HD-2257	110807201	Nov.15,19	Nov. 14,20
Oscilloscope	Agilent	DSO9254A	MY51260160	Sep. 18,19	Sep. 17,20
Signal and Spectrum Analyzer	Rohde&Schwarz	FSV40	101094	Mar. 13,20	Mar. 12,21
Signal Generator	Agilent	N5183A	MY50140980	Sep. 19,19	Sep. 18,20
MXG-B RF Vector Signal Generator	Keysight	N5182B	MY56200288	Sep. 12,19	Sep. 11,20
BLUETOOTH TESTER	Rohde&Schwarz	CBT32	100811	May 20,20	May 19,21
Attenuator	MINI	BW-S10W2+	S130129FGE2	N/A	N/A
DC Source	Keysight	E3642A	MY56146098	N/A	N/A

NOTES:

1. The test was performed in RF Oven room.
2. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA, GRGT/CHINA and NIM/CHINA.

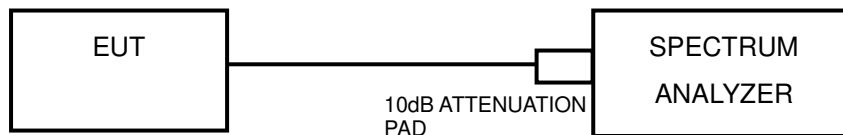
4.4.3 TEST PROCEDURE

- a. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
- c. Measure the frequency difference of two frequencies that were attenuated 20dB from the reference level. Record the frequency difference as the emission bandwidth.
- d. Repeat above procedures until all frequencies measured were complete.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation.

4.4.5 TEST SETUP



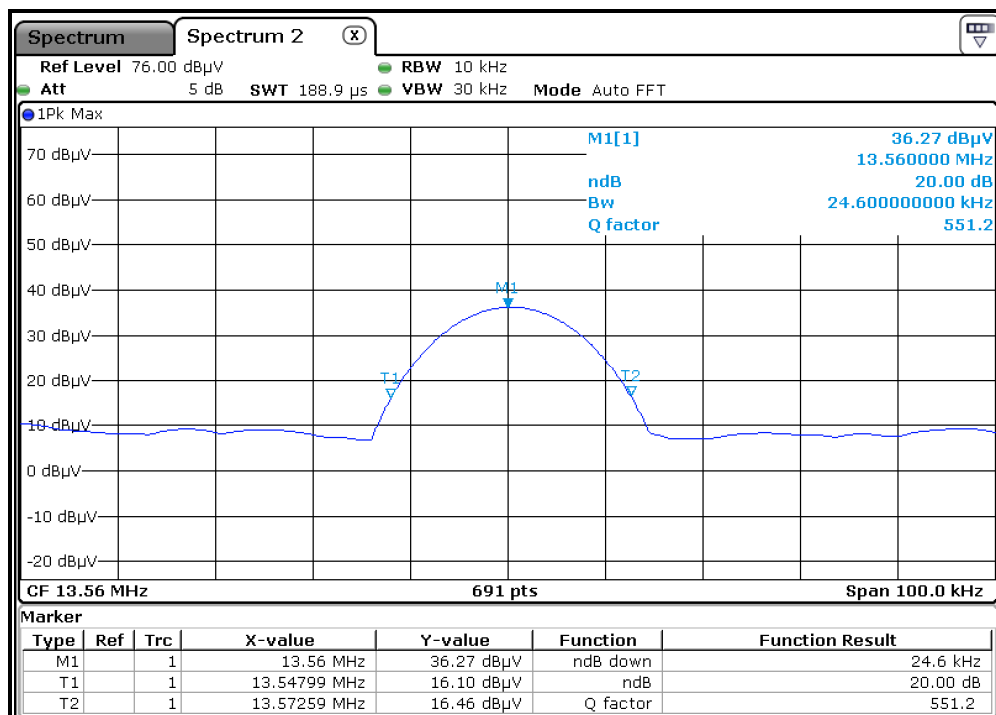
4.4.6 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously.

4.4.7 TEST RESULTS

CHANNEL	CHANNEL FREQUENCY (MHz)	20dB BANDWIDTH (KHz)
1	13.56	24.60

Lower & Upper Test Frequency Point (MHz)	Test Frequency (MHz)	P/F
Lower	13.5480	PASS
Upper	13.5726	PASS





Test Report No.: RF200417N002-2

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to the attached file (Test Setup Photo).



Test Report No.: RF200417N002-2

6. APPENDIX A - MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.

---END---