FCC TEST REPORT
FCC ID: 2A4UQ-SW-MU-B

Report Number	ZKT-220222L0953
Date of Test	Feb. 18, 2022 -- Feb. 28, 2022
Date of issue	Feb . 28, 2022
Total number of pages	31
Test Result	PASS
Testing Laboratory	Shenzhen ZKT Technology Co., Ltd.
Address	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Applicant's name	Shenzhen Aiweiyi Technology Co., Ltd.
Address	3rd Floor, Building 3, Futai Industrial Park, Liukeng Third Industrial Zone, Baoyuan Community, Shiyan Street, Baoan District, Shenzhen
Manufacturer's name	Shenzhen Aiweiyi Technology Co., Ltd.
Address	3rd Floor, Building 3, Futai Industrial Park, Liukeng Third Industrial Zone, Baoyuan Community, Shiyan Street, Baoan District, Shenzhen
Test specification:	
Standard	FCC Rules and Regulations Part 15 Subpart C Section 15.236 ANSI C63.4: 2014
Test procedure	/
Non-standard test method	N/A
Test Report Form No.	TRF-EL-111_V0
Test Report Form(s) Originator	ZKT Testing
Master TRF	Dated: 2020-01-06

This device described above has been tested by ZKT, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.
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Product name	Wireless microphone
Trademark	SMARTSWORD
Model/Type reference	SW-MU-B, SW-M-B, SW-M-G, SW-M-B-1, SW-M-B-2, SW-M-B-3, SW-M-B-4, SW-M-B-5, SW-M-B-6
Ratings	DC 3V

Testing procedure and testing location:

Testing Laboratory..... :	**Shenzhen ZKT Technology Co., Ltd.**
Address..... :	1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China
Tested by (name + signature) ..... :	Alen He
Reviewer (name + signature)..... :	Joe Liu
Approved (name + signature) ..... :	Lake Xie

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1.VERSION

Report No.	Version	Description	Approved
ZKT-220222L0953	Rev.01	Initial issue of report	Feb. 28, 2022

2.1SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.249) , Subpart C			
Standard Section	Test Item	Judgment	Rem rk
FCC part 15.203	Antenna requirement	PASS	
FCC part 15.207	AC Power Line Conducted Emi sion	N/A	
FCC part 15.236(d)(1)	Conducted Peak Output Power	PASS	
FCC part 15.236(d)(2)	Radiated Spurious Emission Measurement	PASS	
FCC part 15.236(d)(2)	Spurious Emission at Antenna Port	PASS	
FCC part 15.236(f)(2)	Occupied Bandwidth Emission	PASS	
FCC part 15.236(f)(3)	Frequency Stability	PASS	

NOTE:

(1)” N/A” denotes test is not applicable in this Test Report

2.1 TEST FACILITY

Shenzhen ZKT Technology Co., Ltd.
Add. : 1/F, No. 101, Building B, No. 6, Tangwei Community Industrial Avenue, Fuhai Street, Bao'an District, Shenzhen, China

FCC Test Firm Registration Number: 692225
Designation Number: CN1299
IC Registered No.: 27033

2.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement y ± U，where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2，providing a level of confidence of approximately 95 %。

No.	Item	Uncertainty
1	Conducted Emission Test	±1.38dB
2	RF power conducted	±0.16dB
3	Spurious emissions conducted	±0.21dB
4	All emissions radiated(<1G)	±4.68dB
5	All emissions radiated(>1G)	±4.89dB
6	Temperature	±0.5°C
7	Humidity	±2%

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Product Name:	Wireless microphone
Model No.:	SW-MU-B
Model Different.:	The product has many models, only the model name & color is different, and the other parts such as the circuit principle, pcb and electrical structure are the same.
Serial No.:	SW-M-B, SW-M-G, SW-M-B-1, SW-M-B-2, SW-M-B-3, SW-M-B-4, SW-M-B-5, SW-M-B-6
Hardware Version:	V1.3
Software Version:	V1.0
Channel numbers:	32
Channel separation:	677.7MHz~696.3MHz
Modulation technology:	FM
Antenna Type:	PCB antenna
Antenna gain:	0 dBi
Power supply:	DC 3.0V from AA*2 Battery

The Applicant provides communication tools software to control the EUT for staying in continuous transmitting and receiving mode for testing.
The product has two modes A and B, each mode has 15 channels, the gray frequency is the representative of the selected test.
Operation Frequency:

A mode: Channel	Frequency (MHz)	B mode :Channel(B)	Frequency (MHz)
1	677.7	17	687.3
2	678.3	18	687.9
3	678.9	19	688.5
4	679.5	20	689.1
5	680.1	21	689.7
6	680.7	22	690.3
7	681.3	23	690.9
8	681.9	24	691.5
9	682.5	25	692.1
10	683.1	26	692.7
11	683.7	27	693.3
12	684.3	28	693.9
13	684.9	29	694.5
14	685.5	30	695.1
15	686.1	31	695.7
16	686.7	32	696.3

Note:
In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle

frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Test channel	Frequency
The lowest channel	677.7MHz
The middle channel	686.7MHz
The Highest channel	696.3MHz

3.2 DESCRIPTION OF TEST MODES

Transmitting mode	Keep the EUT in continuously transmitting mode
Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.	

Test method	Key combination
Power level setup	<10dBm

3.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Conducted Emission

N/A (not applicable to this device, which is powered by dry battery)

Radiated Emission

EUT PC

Conducted Spurious
/

3.4 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

The EUT has been tested as an independent 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.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note

Note:

(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

3.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	KEYSIGHT	9020A	MY45109572	Sep. 21, 2021	Sep. 20, 2022
2	Spectrum Analyzer (1GHz-40GHz)	Agilent	E4446A	100363	Sep. 21, 2021	Sep. 20, 2022
3	Test Receiver (9kHz-7GHz)	R&S	ESCI7	101169	Sep. 21, 2021	Sep. 20, 2022
4	Bilog Antenna (30MHz-1400MHz)	Schwarzbeck	VULB9168	00877	Sep. 21, 2021	Sep. 20, 2022
5	Horn Antenna (1GHz-18GHz)	SCHWARZBECK	BBHA9120D	1541	Sep. 21, 2021	Sep. 20, 2022
6	Horn Antenna (18GHz-40GHz)	A.H. System	SAS-574	588	Sep. 21, 2021	Sep. 20, 2022
7	Amplifier (30-1000MHz)	EM Electronics	EM330 Amplifier	N/A	Sep. 21, 2021	Sep. 20, 2022
8	Amplifier (1GHz-40GHz)	QUANJUDA	DLE-161	097	Sep. 21, 2021	Sep. 20, 2022
9	Loop Antenna (9KHz-30MHz)	SCHWARZBECK	FMZB1519B	014	Sep. 21, 2021	Sep. 20, 2022
10	RF cables1 (9kHz-30MHz)	N/A	9kHz-30MHz	N/A	Sep. 21, 2021	Sep. 20, 2022
11	RF cables2 (30MHz-1GHz)	N/A	30MHz-1GHz	N/A	Sep. 21, 2021	Sep. 20, 2022
12	RF cables3 (1GHz-40GHz)	N/A	1GHz-40GHz	N/A	Sep. 21, 2021	Sep. 20, 2022
13	CMW500 Test	R&S	CMW500	106504	Sep. 21, 2021	Sep. 20, 2022
14	ESG Signal Generator	Agilent	E4421B	GB40051203	Sep. 21, 2021	Sep. 20, 2022
15	Signal Generator	Agilent	N5182A	MY47420215	Sep. 21, 2021	Sep. 20, 2022
16	D.C. Power Supply	LongWei	TPR-6405D	\	\	\
17	Software	Frad	EZ-EMC	FA-03A2 RE	\	\

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	LISN	R&S	ENV216	101471	Sep. 21, 2021	Sep. 20, 2022
2	LISN	CYBERTEK	EM5040A	E1850400149	Sep. 21, 2021	Sep. 20, 2022
3	Test Cable	N/A	C01	N/A	Sep. 21, 2021	Sep. 20, 2022
4	Test Cable	N/A	C02	N/A	Sep. 21, 2021	Sep. 20, 2022
5	EMI Test Receiver	R&S	ESRP3	101946	Sep. 21, 2021	Sep. 20, 2022
6	Absorbing Clamp	DZ	ZN23201	N/A	Sep. 21, 2021	Sep. 20, 2022

4. EMC EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

Test Requirement:	FCC Part15 C Section 15.207
Test Method:	ANSI C63.4: 2014
Test Frequency Range:	150KHz to 30MHz
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto

4.1.1 POWER LINE CONDUCTED EMISSION Limits

FREQUENCY (MHz)	Limit (dBuV)		Standard
	Quas -peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:

(1) *Decreases with the logarithm of the frequency.

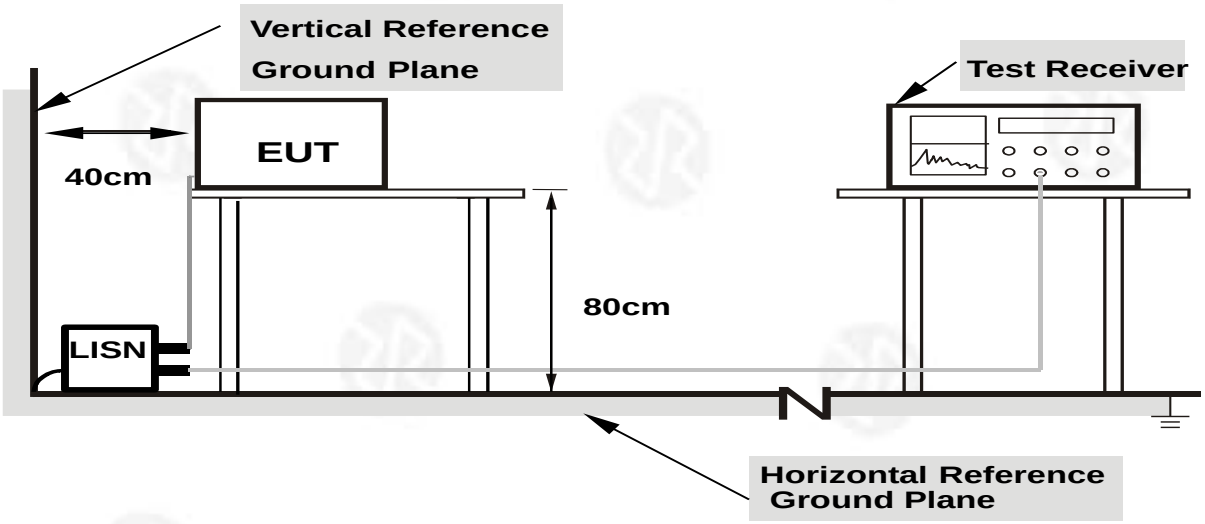
4.1.2 TEST PROCEDURE

a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.1.3 DEVIATION FROM TEST STANDARD

No deviation

4.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

4.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

4.1.6 TEST RESULTS

N/A

（The product is powered by AAA batteries. This test item is not applicable）

4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMIT

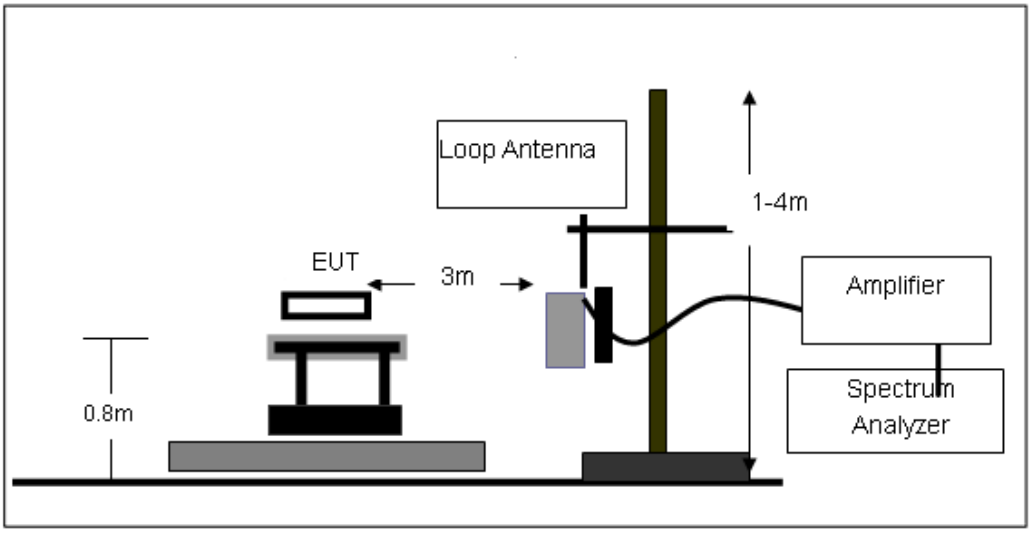
According to 15.236(d)(2), In the 600 MHz guard band and the 600 MHz duplex gap: 20 mW EIRP

4.2.3 DEVIATION FROM TEST STANDARD

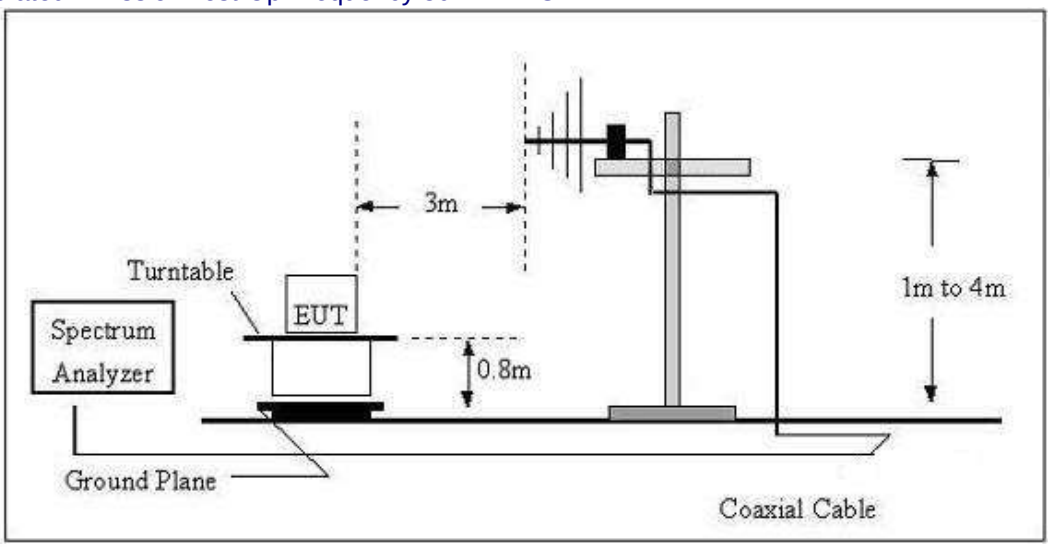
No deviation

4.2.4 TEST SETUP

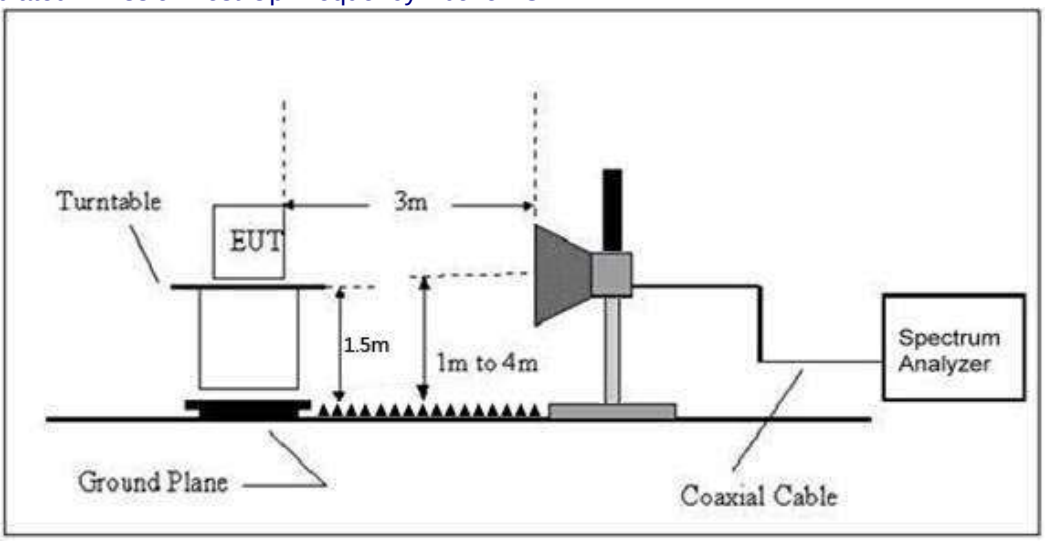
（A）Radiated Emission Test-Up Frequency Below 30MHz



（B）Radiated Emission Test-Up Frequency 30MHz~1GHz



（C）Radiated Emission Test-Up Frequency Above 1GHz



Frequency :9kHz-30MHz
RBW=10KHz,
VBW =30KHz
Sweep time= Auto
Trace = max hold
Detector function = peak

Frequency :30MHz-1GHz
RBW=120KHz,
VBW=300KHz
Sweep time= Auto
Trace = max hold
Detector function = peak

Frequency :Above 1GHz
RBW=1MHz,
VBW=3MHz(Peak), 10Hz(AV)
Sweep time= Auto
Trace = max hold
QP Detector function = peak, AV

4.2.5 TEST PROCEDURE

1.The setup of EUT is according with per TIA/EIA Standard 603 and ANSI C63.4-2014 measurement procedure.
2.The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna heightand polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from theEUT. The test was performed by placing the EUT on 3-orthogonal axis.
3.The frequency range up to tenth harmonic of the fundamental frequency was investigated.
4.Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution
antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.
Spurious attenuation limit in dB = 43 + 10 Log10 (power in Watts)

4.2.6 TEST RESULTS

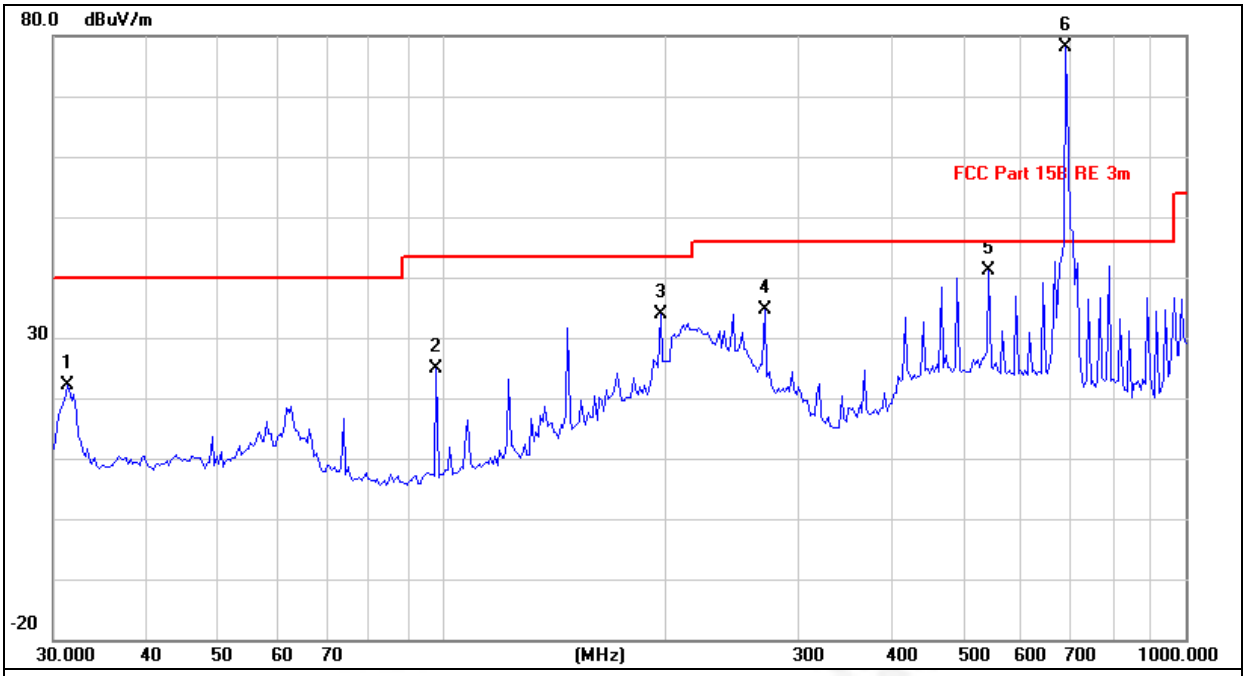
Below 30MHz Test Results:

FREQUENCY (MHZ)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dBm)	Polarity
--	--	--	--	--	--	--
--	--	--	--	--	--	--

NOTE: Radiated emission test from 9KHz to 10th harmonic of fundamental was verified, and no emission found except system noise floor (more than 20dB below the limit) in 9KHz to 30MHz and not recorded in this report.

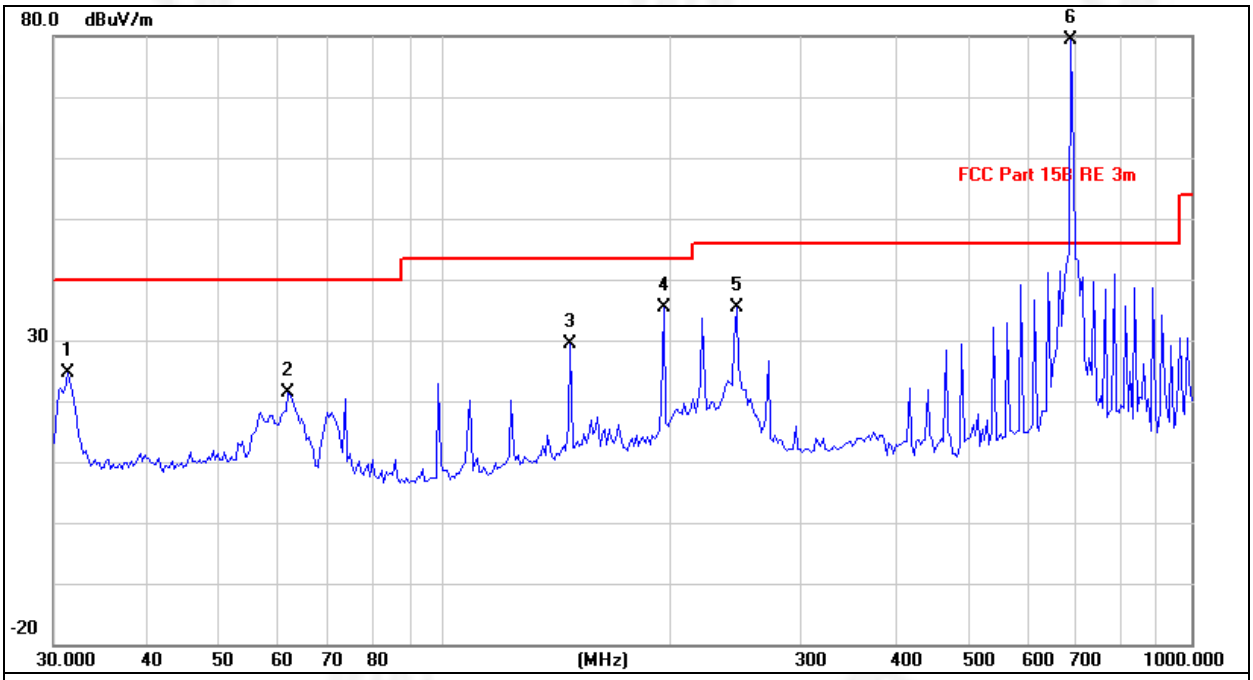
Between 30MHz – 1GHz

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Horizontal
Test Voltage:	DC 3.0V		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		31.2892	39.22	-17.11	22.11	40.00	-17.89	QP	100	360	
2		98.1418	45.02	-20.03	24.99	43.50	-18.51	QP	100	360	
3		196.5098	53.11	-19.12	33.99	43.50	-9.51	QP	100	360	
4		271.3245	51.04	-16.50	34.54	46.00	-11.46	QP	100	360	
5		543.2742	50.63	-9.48	41.15	46.00	-4.85	QP	100	360	
6	*	689.5644	84.82	-6.62	78.20	46.00	32.20	QP	100	360	

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Vertical
Test Voltage:	DC 3.0V		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		31.2892	41.85	-17.11	24.74	40.00	-15.26	QP	100	360	
2		61.7780	38.65	-17.31	21.34	40.00	-18.66	QP	100	360	
3		147.4036	45.58	-16.15	29.43	43.50	-14.07	QP	100	360	
4		196.5098	54.53	-19.12	35.41	43.50	-8.09	QP	100	360	
5		245.9509	52.97	-17.52	35.45	46.00	-10.55	QP	100	360	
6	*	689.5644	86.12	-6.62	79.50	46.00	33.50	QP	100	360	

Remarks:
1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2.The emission levels of other frequencies are very lower than the limit and not show in test report.

Above 1GHz Test Results:

FREQUENCY (MHZ)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dBm)	Polarity
1379.125	-44.12	7.88	-36.24	-30	6.24	H
2069.247	-43.64	3.43	-40.21	-30	10.21	H
2759.698	-41.31	-1.83	-43.14	-30	13.14	H
1379.125	-42.56	6.31	-36.25	-30	6.25	V
2069.247	-41.38	3.03	-38.35	-30	8.35	V
2759.698	-38.75	-3.46	-42.21	-30	12.21	V

(1) Measuring frequencies from 9 KHz to the 1 GHz, Radiated emission test from 9KHz to 30MHz was verified, and no any emission was found except system noise floor.
(2) * denotes emission frequency which appearing within the Restricted Bands specified in provision of 15.205, then the general radiated emission limits in 15.209 apply.
(3) The IF bandwidth of EMI Test Receiver between 30MHz to 1GHz was 120KHz, 1 MHz for measuring above 1 GHz, below 30MHz was 10KHz.

Standby mode:

FREQUENCY (MHZ)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dBm)	Polarity
--	--	--	--	--	--	--
--	--	--	--	--	--	--
--	--	--	--	--	--	--

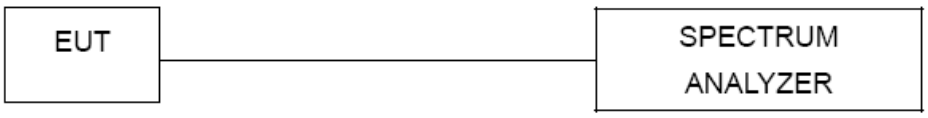
NOTE:
Radiated emission test from 30MHz to 10th harmonic of fundamental was verified, and no emission found except system noise floor (more than 20dB below the limit) in 30MHz to 8GHz and not recorded in this report.

5.CONDUCTED OUTPUT POWER

5.1 LIMIT

ACCORDING TO FCC 15.236(D)(1), FOR LOW POWER AUXILIARY STATION OPERATING IN THE 470-608, AND 614-698 MHZBANDS, IN THE BANDS ALLOCATED AND ASSIGNED FOR BROADCAST TELEVISION AND IN THE 600 MHZ SERVICE BAND: 50 MW EIRP

5.2 TEST SETUP



5.3 **TEST PROCEDURE:**

1. THE MAXIMUM PEAK OUTPUT POWER WAS MEASURED WITH A SPECTRUM ANALYZER CONNECTED TO THE ANTENNA TERMINALWHILE EUT WAS OPERATING IN UNMODULATED SITUATION.
2. POWER WAS SUPPLIED TO THE BATTERY INPUT CONNECTOR A POWER SUPPLY. THE POWER SUPPLY WAS SET FOR +3.0VDC. THESPECTRUM ANALYZER WAS CONNECTED AT ANTENNA TERMINAL TO MEASURE RF POWER OF THE CARRIER.
3. A MULTIMETER WAS CONNECTED IN SERIES WITH FINAL RF STAGE TO MEASURE THE CURRENT; A MULTIMETER WAS USED TOMEASURE FINAL RF STAGE SUPPLY VOLTAGE. THEN THE VOLTAGE V.S. CURRENT OF THE FINAL RF STAGE CAN BE SHOWED.

5.4 TEST RESULTS:

FREQUENCY (MHZ)	CONDUCTED OUTPUT POWER (DBM)	ANT GAIN (DBI)	EIRP (DBM)	LIMIT (DBM)	RESULT
677.7	-4.657	0	-4.657	17	PASS
686.7	-3.775	0	-3.775		PASS
696.3	0.285	0	0.285		PASS

677.7MHZ

686.7MHZ

696.3MHZ


6. CHANNEL BANDWIDTH

Test Requirement:	FCC Part15 C Section 15. 236(f)(2)
Test Method:	ANSI C63.4: 2014

6.1 APPLIED PROCEDURES / LIMIT

According to FCC 15.236(f)(2), The operating frequency within a permissible band of operation as defined inparagraph (c) must comply with the following requirements.
(1) The frequency selection shall be offset from the upper or lower band limits by 25 kHz or an integral multiple thereof.
(2) One or more adjacent 25 kHz segments within the assignable frequencies may be combined to form a channel whose maximum bandwidth shall not exceed 200 kHz. The operating bandwidth shall not exceed 200kHz.
Emissions within the band from one megahertz below to one megahertz above the carrier frequency shall comply with the emission mask in Section 8.3 of ETSI EN 300 422-1 V1.4.2 (2011-08) (incorporated by reference, see §15.38). Emissions outside this band shall comply with the limit specified at the edges of the ETSI mask

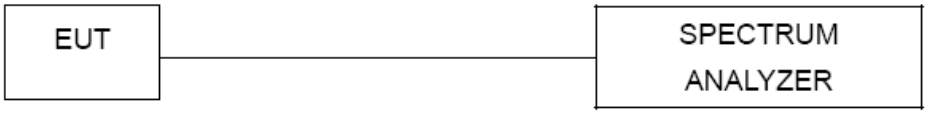
6.2 TEST PROCEDURE

According to TIA-603 for additional Test Set-Up procedures, the occupied bandwidth of emission was measuredwith a Spectrum Analyzer connected to the antenna terminal while EUT was operating in 2.5kHz tone at an inputlevel 16 dB greater than that necessary to produce 50 percent modulation. Then mark the -26dB Bandwidth andrecord it.

6.3 DEVIATION FROM STANDARD

No deviation.

6.4 TEST SETUP



6.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

6.6 TEST RESULTS

Temperature：	26℃	Relative Humidity：	54%
Test Mode ：	FM	Test Voltage ：	DC 3.0V

Test channel	20dB bandwidth (MHz)	99%Bandwidth (kHz)	Limit (kHz)	Result
Lowest	0.1779	102.21	200	Pass
Middle	0.1330	123.63		
Highest	0.1298	123.33		

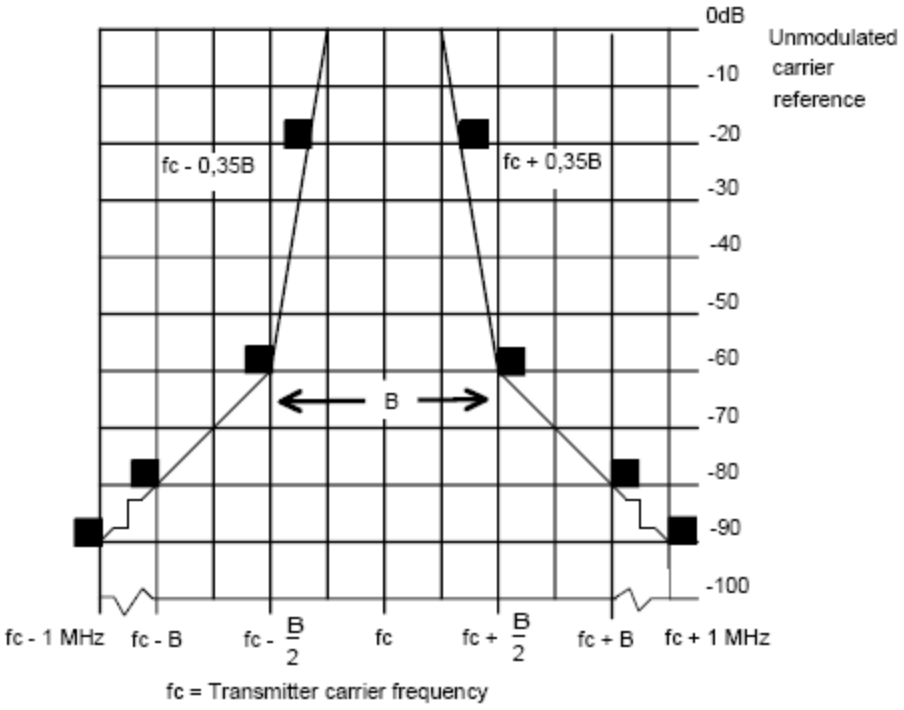
CH 01-677.7MHz

CH16-686.7MHz

CH32-696.3MHz


7.Necessary bandwidth

7.1LIMIT

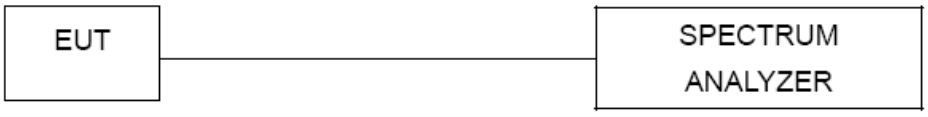


Standard Applicable

According to §15.236 (g) Emissions within the band from one megahertz below to one megahertz above thecarrier frequency shall comply with the emission mask in §8.3 of ETSI EN 300 422-1 V1.4.2 (2011-08),Electromagnetic compatibility and Radio spectrum Matters (ERM); Wireless microphones in the 25 MHz to 3GHz frequency range; Part 1: Technical characteristics and methods of measurement. Emissions outside of thisband shall comply with the limits specified in section 8.4 of ETSI EN 300 422-1 V1.4.2 (2011-08).

According to ETSI EN 300 422-2 V2.1.1 section 8.3, the transmitter output spectrum shall be within the maskdefined in the following figure.

7.2 TEST SETUP



7.3 TEST PROCEDURE:

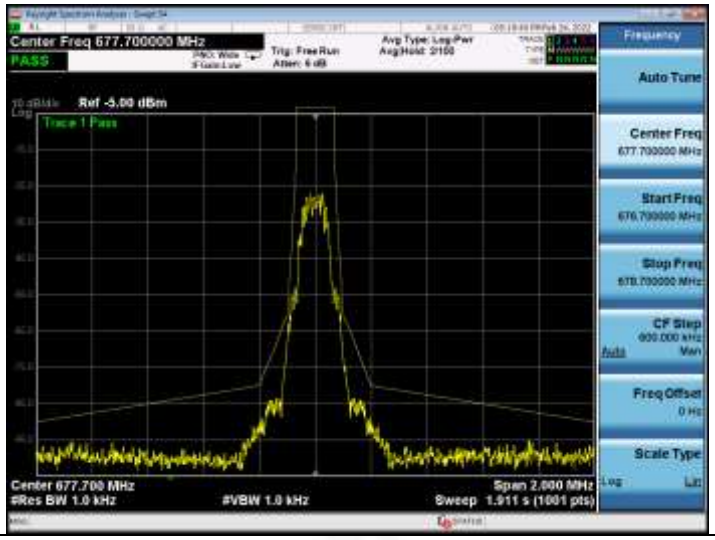
The arrangement of test equipment as shown in figure B.1 shall be used. Note that the noise meter conforms to (quasipeak) without weighting filter (flat).
With the Low Frequency (LF) audio signal generator set to 500 Hz, the audio input level to the DUT shall be adjustedto 8 dB below the limiting threshold (-8 dB (lim)) as declared by the manufacturer.
The corresponding audio output level from the demodulator shall be measured and recorded.
The input impedance of the noise meter shall be sufficiently high to avoid more than 0,1 dB change in input level whenthe meter is switched between input and output.
The audio input level shall be increased by 20 dB, i.e. to +12 dB (lim), and the corresponding change in output levelshall be measured.
It shall be checked that the audio output level has increased by ≤ 10 dB.

If this condition is not met, the initial audio input level shall be increased from -8 dB (lim) in 1 dB steps until the abovecondition is fulfilled, and the input level recorded in the test report. This level replaces the value derived from themanufacturer's declaration and is defined as -8 dB (lim).
Measure the input level at the transmitter required to give +12 dB (lim).
The LF generator shall be replaced with the weighted noise source to Recommendation ITU-R BS.559-2 [i.3], band-limited to 15 kHz as described in IEC 60244-13 [2], and the level shall be adjusted such that the measured input tothe transmitter corresponds to +12 dB (lim).
If the transmitter incorporates any ancillary coding or signalling channels (e.g. pilot-tones), these shall be enabled priorto any spectral measurements.
If the transmitter incorporates more than one audio input, e.g. stereo systems, the second and subsequent channels shallbe simultaneously driven from the same noise source, attenuated to a level of -6 dB (lim).

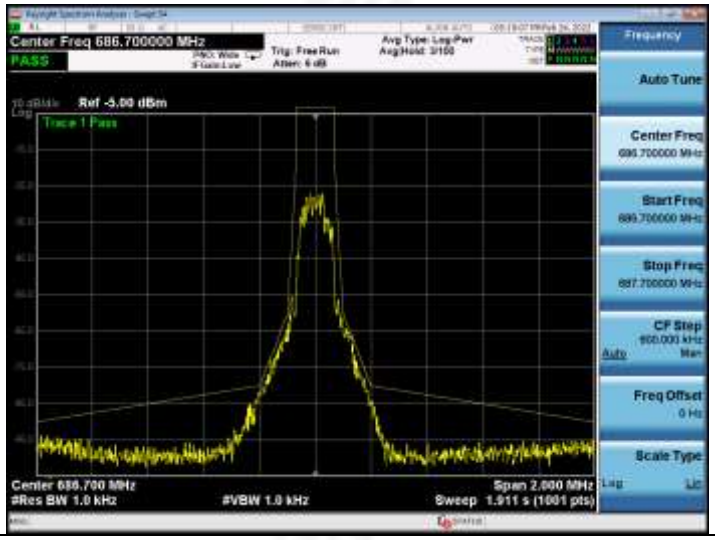
- centre frequency: fc: Transmitter (Tx) nominal frequency;
- dispersion (Span): fc - 1 MHz to fc + 1 MHz;
- Resolution BandWidth (RBW):1 kHz;
- Video BandWidth (VBW): 1 kHz;
- detector: Peak hold.

7.4 TEST RESULT:

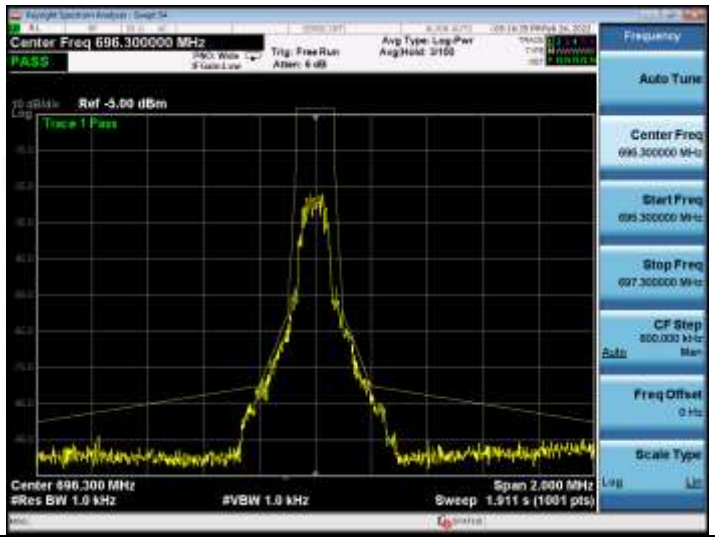
CH 01-677.7MHz



CH16-686.7MHz

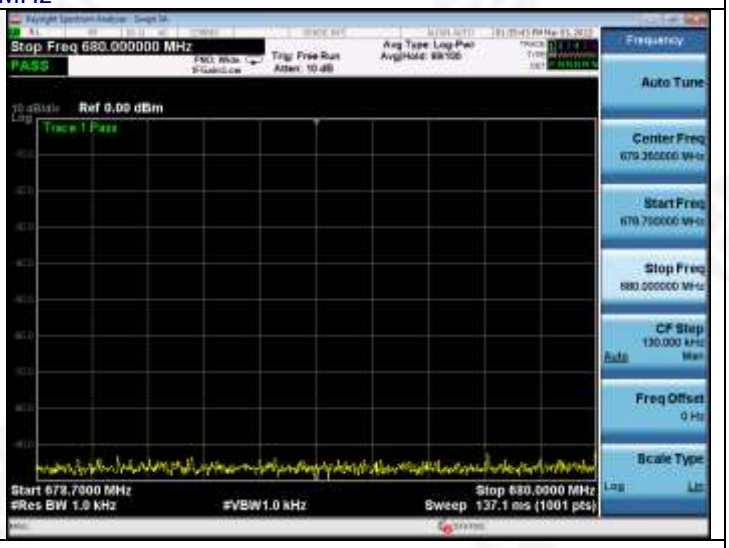


CH32-696.3MHz

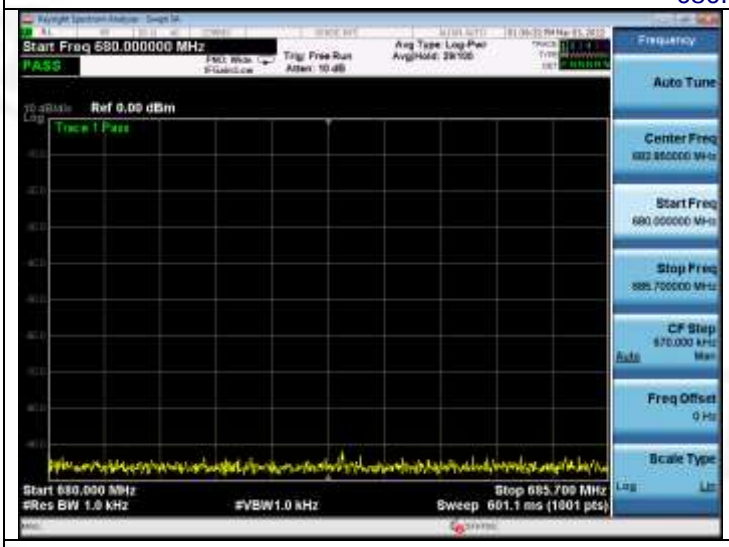


-90 dBc point test result:

677.7MHz



686.7MHz



696.3MHz

8.FREQUENCY STABILITY

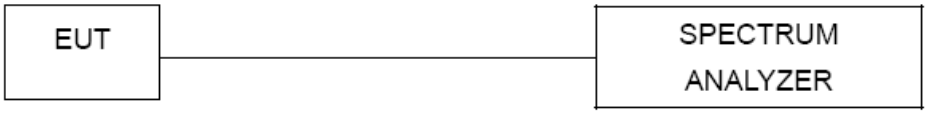
8.1 Limit

±50ppm

8.2 Standard Applicable

According to FCC 15.236(f)(3), The frequency tolerance of the carrier signal shall be maintained within ±0.005%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 temperatureof 20 degrees C. Battery operated equipment shall be tested using a new battery

8.3 TEST SETUP



8.4 Test Procedure

1. Setup the configuration of the ambient temperature form -20ºC to 50ºC with sufficient time. And measurethe different power of the EUT with an artificial power from highest to end point voltage.
2. Set frequency counter center frequency to the right frequency needs to be measuredband.

8.5 Test Result

Test frequency	Test Conditions		Measure Frequency	Frequency Error		Limit	Result
(MHz)	Voltage (V)	Temperature (ºC)	(MHz)	(MHz)	ppm	ppm	
677.7MHz	N	N	677.6983	-0.0017	-2.56	±50ppm	PASS
		L	677.6798	-0.0202	-29.78		
		H	677.6890	-0.0110	-16.22		
	L	N	677.6887	-0.0113	-16.73		
		L	677.6874	-0.0126	-18.52		
		H	677.6789	-0.0211	-31.10		
	H	N	677.6886	-0.0114	-16.89		
		L	677.6911	-0.0089	-13.19		
		H	677.6924	-0.0076	-11.23		

Test frequency	Test Conditions		Measure Frequency	Frequency Error		Limit	Result
(MHz)	Voltage (V)	Temperature (ºC)	(MHz)	(MHz)	ppm	ppm	
686.7MHz	N	N	686.6978	-0.0022	-3.14	±50ppm	PASS
		L	686.6802	-0.0198	-28.77		
		H	686.6891	-0.0109	-15.86		
	L	N	686.6885	-0.0115	-16.73		
		L	686.6868	-0.0132	-19.20		
		H	686.6791	-0.0209	-30.47		
	H	N	686.6883	-0.0117	-17.08		
		L	686.6911	-0.0089	-12.92		
		H	686.6923	-0.0077	-11.14		

Test frequency	Test Conditions		Measure Frequency	Frequency Error		Limit	Result
(MHz)	Voltage (V)	Temperature (ºC)	(MHz)	(MHz)	ppm	ppm	
696.3MHz	N	N	696.2979	-0.0021	-3.04	±50ppm	PASS
		L	696.2797	-0.0203	-29.14		
		H	696.2891	-0.0109	-15.66		
	L	N	696.2885	-0.0115	-16.55		
		L	696.2870	-0.0130	-18.68		
		H	696.2792	-0.0208	-29.87		
	H	N	696.2882	-0.0118	-16.99		
		L	696.2912	-0.0088	-12.67		
		H	696.2920	-0.0080	-11.49		

9. ANTENNA REQUIREMENT

Standard requirement:	FCC Part15 C Section 15.203

15.203 requirement:

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, 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.

EUT Antenna:

The antennas is PCB antenna, the best case gain of the antennas are 0 dBi Max, reference to the internal photos

10. TEST SETUP PHOTO

11. EUT CONSTRUCTIONAL DETAILS

Please refer to the external photos file and internal photos file

※※※※※ END OF REPORT ※※※※※