S T S L A B

FCC TEST REPORT

Report No: STS1612078F01

Issued for

Enping YouXing Audio Equipment Factory

Enping City, Guangdong Province, China

Product Name:	YouXing®Wireless Microphone
Brand Name:	YouXing ®
Model Name:	U-778
Series Model:	U-718, U-758, U775, U-828, U-838
FCC ID:	2AKM5U-778
Test Standard:	FCC Part 74 Rules

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Shenzhen STS Test Services Co., Ltd.
1/F, Building B, Zhuoke Science Park, No.190,Chongqing Road,
Fuyong Street, Bao'an District, Shenzhen, Guangdong,China
TEL: +86-755 3688 6288 FAX: +86-755 3688 6277 E-mail:sts@stsapp.com

TEST RESULT CERTIFICATION

Applicant's name .....: Enping YouXing Audio Equipment Factory

Address.....: Enping City, Guangdong Province, China

Manufacture's Name .....: Enping YouXing Audio Equipment Factory

Address.....: Enping City, Guangdong Province, China

Product description

Product name.....: YouXing®Wireless Microphone

Brand name .....: YouXing ®

Model and/or type reference ..: U-778

Series Model U-718, U-758, U775, U-828, U-838

Standards .....: FCC Part 74 Rules

Test procedure ..... TIA/EIA 603

This device described above has been tested by STS, 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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Date of Test.....

Date of performance of tests ..... 12 Dec. 2016 ~27 Dec. 2016

Date of Issue..... 28 Dec. 2016

Test Result ..... Pass

Testing Engineer : Chris chen

(Chris chen)

Technical Manager : Jun

(Tony liu)

Authorized Signatory : Bovey Yang

(Bovey Yang)

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Revision History

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	28 Dec. 2016	STS1612078F01	ALL	Initial Issue

1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:
The EUT has been tested according to FCC CFR 47:
Part 2: Frequency Allocations and Radio Treaty Matters: General Rules and Regulations (10-1-05 Edition)
Part 74: Experimental Radio, Auxiliary, Special Broadcast and other program distributional services

Emission			
Standard	Item	Limit	Result
FCC 2.1053; 74.861(e)(b)	Radiated Spurious Emission	Refer to 74.861e(6)	PASS
FCC 2.1046 (a), 74.861(e)(1)	RF Output Power	250 mW	PASS
FCC 2.1047 (b), 74.861(e)(3)	Modulation Deviation	Refer to 74.861e(2)	PASS
FCC 2.1047 (a)	Audio Frequency Response	Refer to 2.1047(a)	PASS
FCC 74.861 (e)(5)	Occupied Bandwidth	< 200 KHz	PASS
FCC 74.861 (e)(6)(i) (ii); FCC 2.1049	Emission Mask	Refer to 74.861e(6)	PASS
2.1055(b); 74.861 e(4)	Frequency Stability vs. Temperature	Refer to 74.861e(4)	PASS
2.1055(a)(1); 74.861 e(4)	Frequency Stability vs. Voltage	Refer to 74.861e(4)	PASS

NOTE:
(1)" N/A" denotes test is not applicable in this Test Report

1.1 TEST FACTORY

Shenzhen STS Test Services Co., Ltd.
Add.: 1/F., Building B, Zhuoke Science Park, No.190, Chongqing Road,
Fuyong Street, Bao'an District, Shenzhen, Guangdong, China
FCC Registration No.: 842334;
IC Registration No.: 12108A-1

1.2 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	RF power,conducted	±0.70dB
2	Spurious emissions,conducted	±1.19dB
3	Spurious emissions,radiated((>1G)	±2.83dB
4	Spurious emissions,radiated(<1G)	±3.01dB
5	Temperature	±0.5°C
6	Humidity	±2%

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product:	YouXing®Wireless Microphone
Brand Name:	YouXing ®
Model Number:	U-778
Series Model Name:	U-718, U-758, U775, U-828, U-838
Series Model Difference description:	Only different in model name
Emission Bandwidth:	76KHz
Battery	Rated Voltage: 3 V
Operation Frequency Range	627.19 MHz-682.49 MHz
Maximum Transmitter Power:	0.001914W(2.819dBm)
Modulation mode / type:	FSK
Frequency Tolerance	0.00045%
Temperature Range:	-30℃-50℃
Test frequency list	See Note 6
Software version number	N/A
Hardware version number	N/A

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. Note: The product has the same digital working characters when operating in both two digitized voice/data mode. So only one set of test results for digital modulation modes are provided in this test report.
3. Please refer to Appendix B for the photographs of the EUT. For more details, please refer to the User's manual of the EUT.

4.

Channel List	
Channel	Frequency (MHz)
01	627.19
02	657.89
03	682.49

Note:the frequency of a total of 3CH

5. Table for Filed Antenna

Ant	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	YouXing ®	U-778	PCB Antenna	NA	2	Antenna

The EUT antenna is PCB Antenna. no antenna other than that furnished by the responsible party shall be used with the device.

6. Test frequency list

Test Channel List		
Test Channel	EUT Channel	Test Frequency (MHz)
lowest	CH01	627.19
middle	CH02	657.89
highest	CH03	682.49

Note:
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,please see the above listed frequency for testing.

New battery is used during all test

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	Low Channel
Mode 2	Middle Channel
Mode 3	High Channel
Mode 4	Link Mode

For Radiated Emission	
Final Test Mode	Description
Mode 1	Low Channel
Mode 2	Middle Channel
Mode 3	High Channel
Mode 4	Link Mode

Note:

(1) Due to the different configuration and test, in this list only some worse mode. The worst test data of the worse modeis reported by this report.

2.3 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

E-1
EUT

2.4 DESCRIPTION OF SUPPORT UNITS

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.	Serial No.	Note
E-1	YouXing®Wireless Microphone	YouXing ®	U-778	N/A	EUT

Item	Shielded Type	Ferrite Core	Length	Note
N/A	N/A	N/A	N/A	N/A

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) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

2.5 EQUIPMENTS LIST FOR ALL TEST ITEMS

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.

2.6 TEST EQUIPMENT

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Signal Analyzer	Agilent	N9020A	MY49100060	2016.10.23	2017.10.22
Signal Generator	Agilent	N5182A	MY46240556	2016.10.23	2017.10.22
Audio Generator	TRONSON	TAG-101	20030212	2016.10.23	2017.10.22
Spectrum Analyzer	Agilent	E4407B	MY50140340	2016.10.23	2017.10.22
Test Receiver	R&S	ESCI	101427	2016.10.23	2017.10.22
Bilog Antenna	TESEQ	CBL6111D	34678	2014.11.24	2017.11.23
Horn Antenna	Schwarzbeck	BBHA 9120D(1201)	9120D-1343	2015.03.05	2018.03.04
Horn Antenna	Schwarzbeck	BBHA 9170	9170-0741	2016.03.06	2019.03.05
50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2016.10.23	2017.10.22
PreAmplifier	Agilent	8449B	60538	2016.10.23	2017.10.22
Loop Antenna	EMCO	6502	9003-2485	2016.03.06	2019.03.05
Attenuator	HP	215-05-20	DC-3G	2016.10.23	2017.10.22
RF Communications	HP	8920A	3438A05658	2016.10.23	2017.10.22
DC Power source	Zhaoxin	RXN-605D	20140807176	N.C.R	N.C.R
AC Power Source	APC	KDF-11010G	F214050035	N.C.R	N.C.R

3.TEST METHODOLOGY

3.1 GENERAL TEST PROCEDURES

Conducted Emissions

The EUT is placed on the turntable, which is 0.8 m above ground plane. According to the requirement of TIA/EIA 603. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-peak and average detector modes.
Not Applicable (Since the EUT is powered by battery)

Radiated Emissions

The EUT is placed on a turn table, which is 0.8 m above ground plane. 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 TIA/EIA 603.

3.2 DESCRIPTION OF TEST MODES

The EUT has been tested under engineering test mode condition and the EUT staying in continuous transmitting mode.

4. FCC PART 74 REQUIREMENTS

4.1 RADIATED SPURIOUS EMISSION

TEST LIMITS

According to CFR 47 section 74.861 e (6)(iii), the mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:
The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.
It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

= P(W) - [43 + 10log(P)] (dB)

= [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)

= -13dBm.

4.2 EMISSION MASK I

TEST LIMITS

a. - According to CFR 47 section 74.861 e (6), the mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:
(1) On any frequency removed from the operating frequency by more than 50 percent up to and including 100 percent of the authorized bandwidth: at least 25 dB;
(2) On any frequency removed from the operating frequency by more than 100 percent up to and including 250 percent of the authorized bandwidth: at least 35 dB;
(3) On any frequency removed from the operating frequency by more than 250 percent of the authorized bandwidth: at least 43+10log 10 *(mean output power in watts) dB;

4.3 EMISSION MASK II

TEST LIMITS

- According to ETSI EN 300 422-1 V1.5.1 Clause 8.3.1.2,

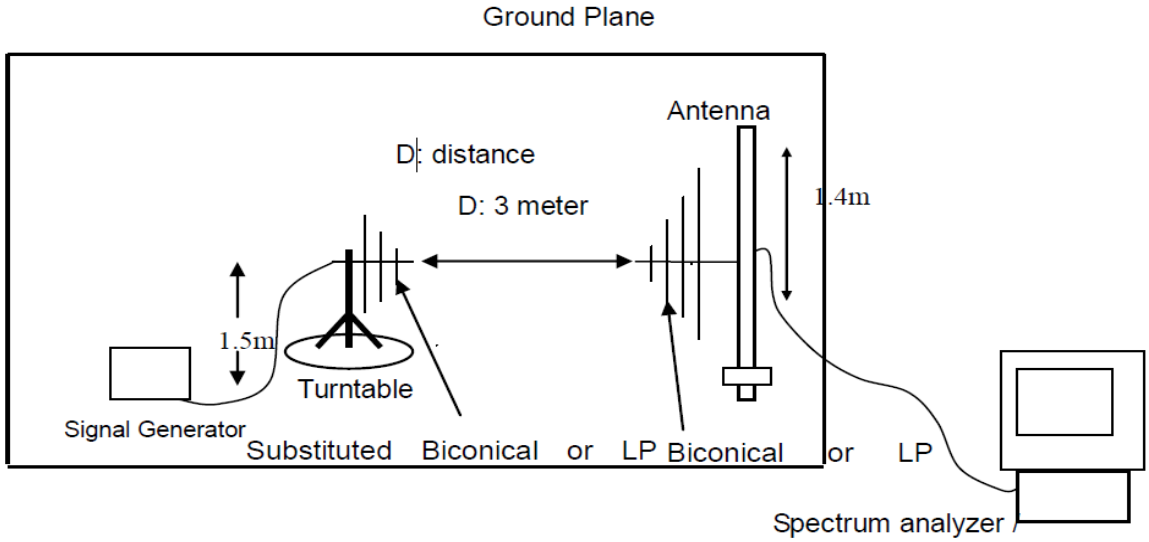
a. The transmitter output spectrum shall be within the mask defined in figure 3 where B is the declared channel bandwidth

TEST PROCEDURE

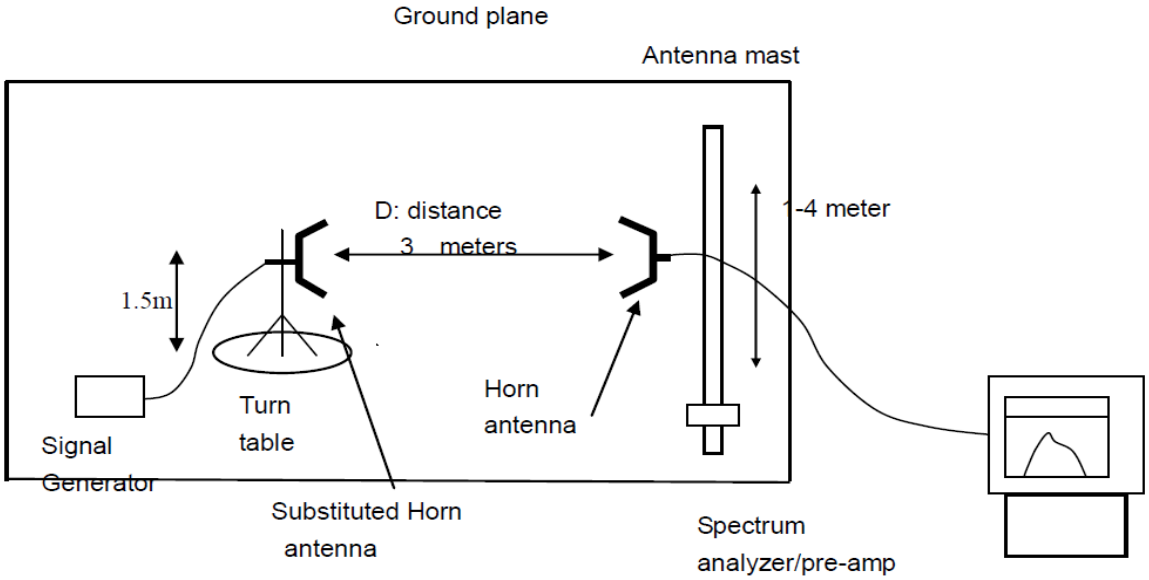
a. On a test site, the EUT shall be placed on a turntable and in the position closest to the normal use as declared by the user.
b. The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
c. The output of the antenna shall be connected to the measuring receiver and either a peak or quasi-peak detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.
d. The transmitter shall be switched on; if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.
e. The test antenna shall be raised and lowered through the specified range of height until the measuring receiver detects a maximum signal level.
f. The transmitter shall than be rotated through 360°in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
g The test antenna shall be raised and lowered again through the specified range of height until the measuring receiver detects a maximum signal level.
h The maximum signal level detected by the measuring receiver shall be noted.
i The measurement shall be repeated with the test antenna set to horizontal polarization.
j Replace the antenna with a proper Antenna (substitution antenna).
k The substitution antenna shall be oriented for vertical polarization and, if necessary, the length of the substitution antenna shall be adjusted to correspond to the frequency of transmitting.
l The substitution antenna shall be connected to a calibrated signal generator.
m If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
n The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.
o The input signal to substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.
p The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.
q The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.

TEST CONFIGURATION

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



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

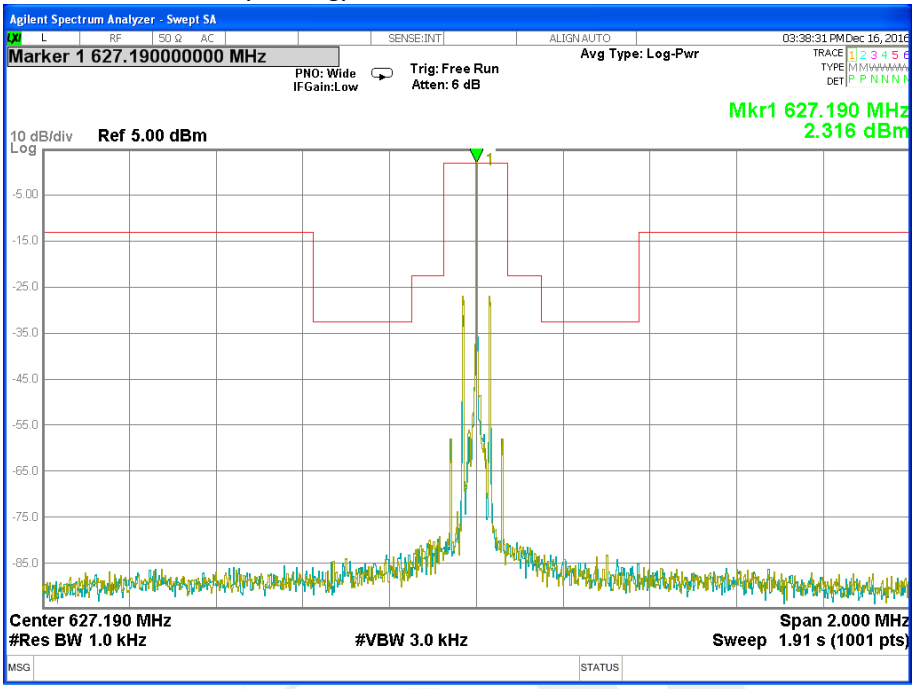


TEST RESULTS

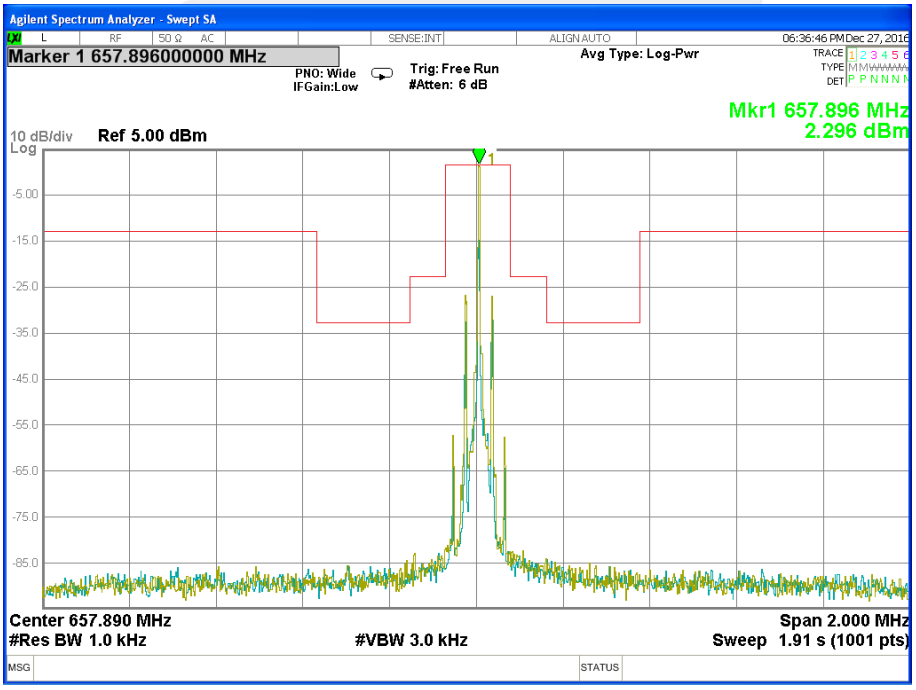
(30-6000)MHz							
Low Channel 627.19 MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
1254.33	-40.88	6.88	4.72	-38.72	-13.00	-25.72	H
1881.40	-39.23	10.13	8.32	-37.42	-13.00	-24.42	H
2508.73	-30.17	9.65	11.72	-32.24	-13.00	-19.24	H
1254.11	-43.85	6.88	4.72	-41.69	-13.00	-28.69	V
1881.26	-43.81	10.13	8.32	-42.00	-13.00	-29.00	V
2508.58	-42.36	9.65	11.72	-44.43	-13.00	-31.43	V
Middle Channel 657.89 MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
1315.52	-36.54	6.88	4.72	-34.38	-13.00	-21.38	H
1973.32	-43.35	10.13	8.32	-41.54	-13.00	-28.54	H
2631.38	-38.16	9.65	11.72	-40.23	-13.00	-27.23	H
1315.63	-37.67	6.88	4.72	-35.51	-13.00	-22.51	V
1973.39	-31.34	10.13	8.32	-29.53	-13.00	-16.53	V
2631.39	-36.29	9.65	11.72	-38.36	-13.00	-25.36	V
High Channel 682.49 MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
1364.92	-36.76	6.88	4.72	-34.60	-13.00	-21.60	H
2047.46	-43.11	10.13	8.32	-41.30	-13.00	-28.30	H
2729.93	-38.89	9.65	11.72	-40.96	-13.00	-27.96	H
1364.95	-37.83	6.88	4.72	-35.67	-13.00	-22.67	V
2047.42	-31.36	10.13	8.32	-29.55	-13.00	-16.55	V

Emission Mask I

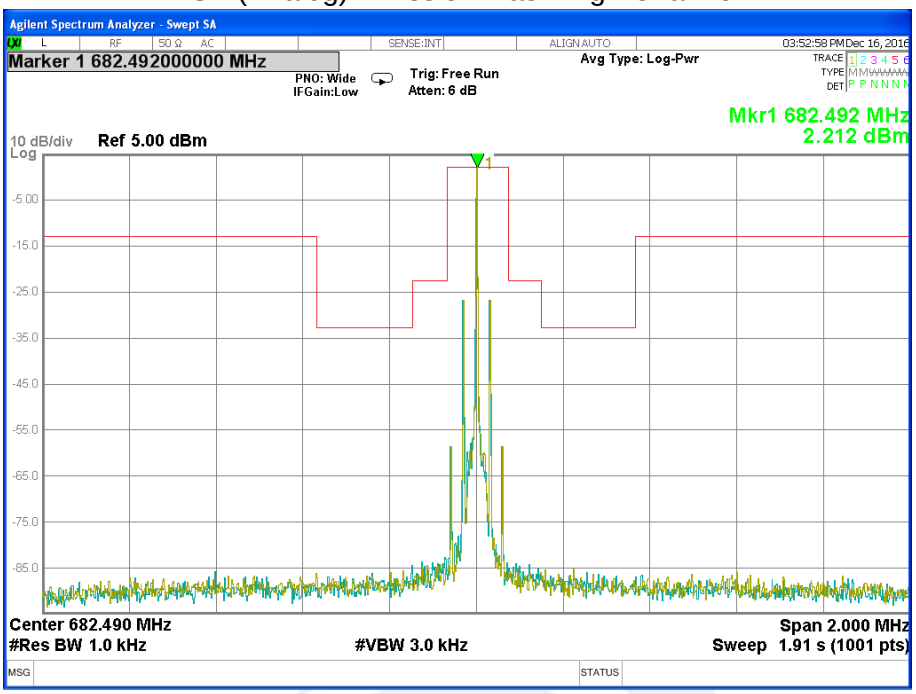
FSK (Analog) Emission Mask Low Channel



FSK (Analog) Emission Mask middle Channel



FSK (Analog) Emission Mask High Channel

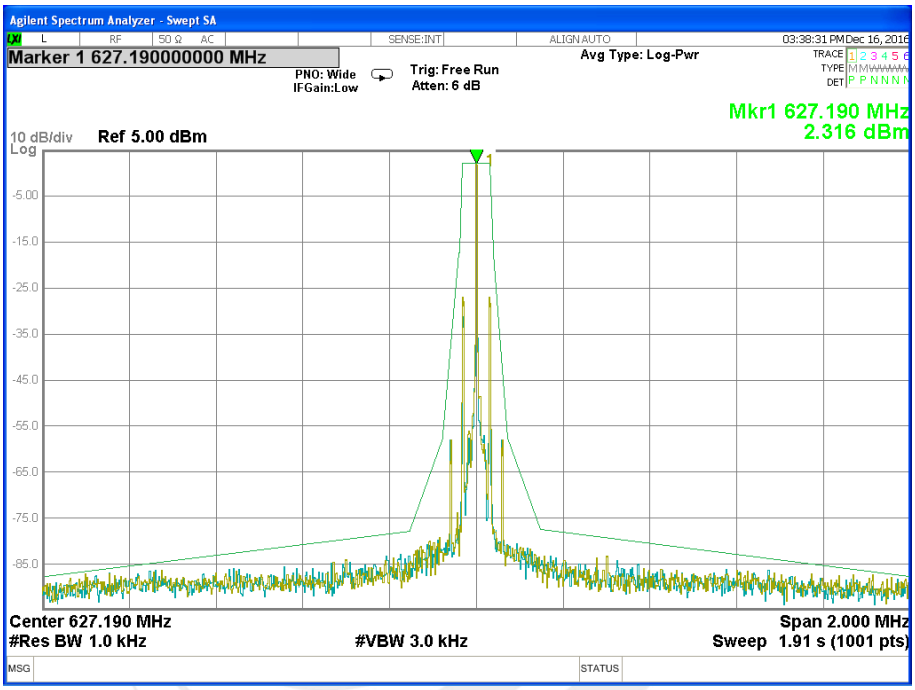


Emission Mask II

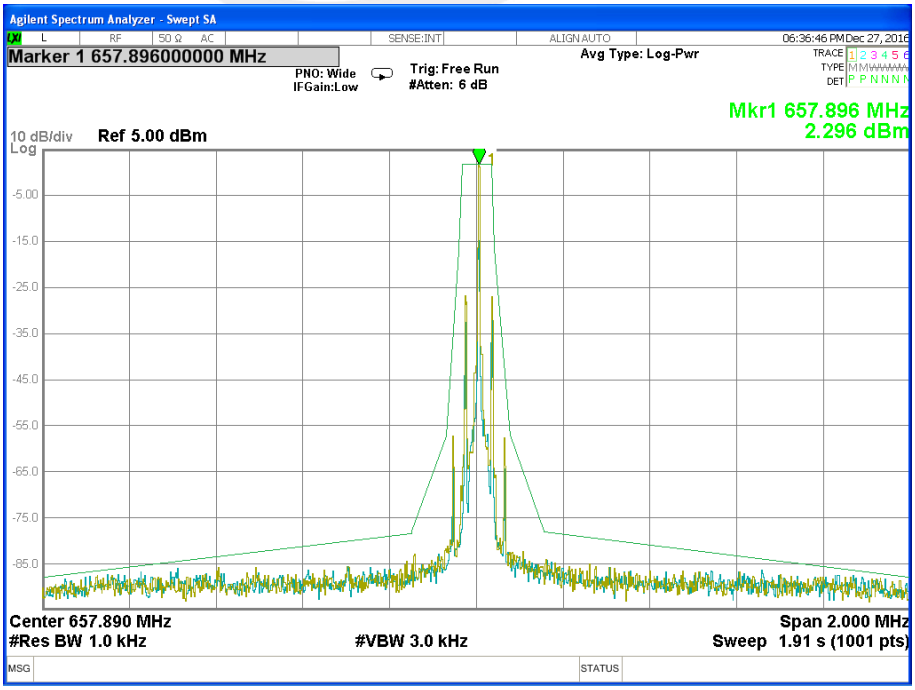
ETSI EN 300 422-1 V1.5.1 Clause 8.3.1.2 The Maximum Measurement of Necessary Bandwidth
Test Plot:

Frequency	Declared Bandwidth	B/2	0.35B
627.19 MHz	100K	50K	35K
657.89 MHz	100K	50K	35K
682.49 MHz	100K	50K	35K

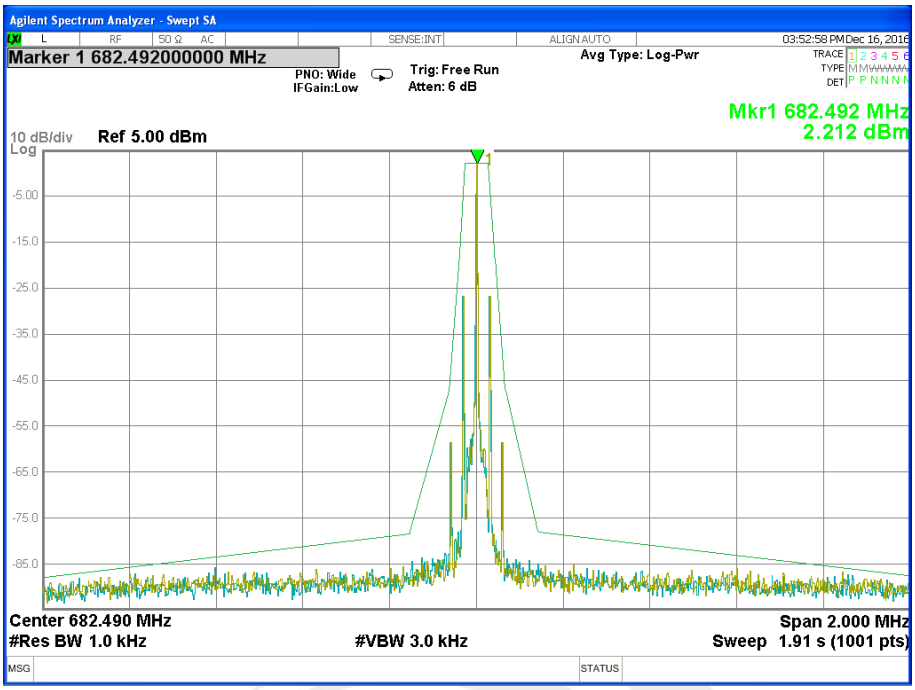
Low CH



Middle CH



High CH

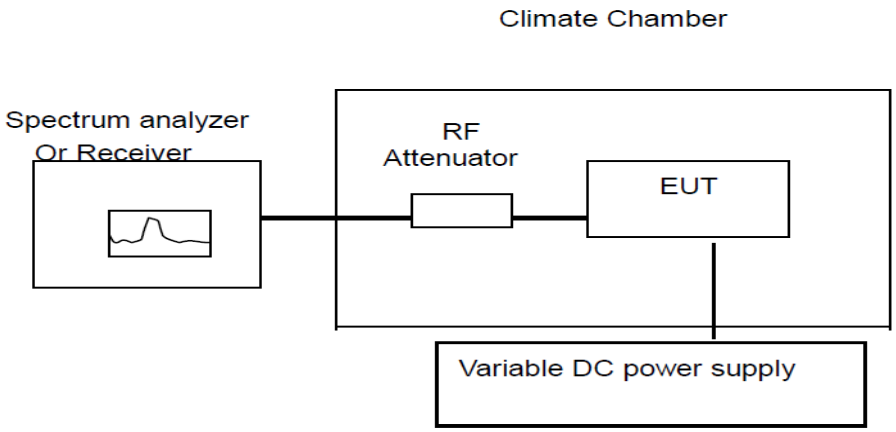

Agilent Spectrum Analyzer - Swept SA
Marker 1 682.492000000 MHz
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
03:52:58 PM Dec 16, 2016
Mkr1 682.492 MHz
2.212 dBm
10 dB/div
Log
Ref 5.00 dBm
-5.00
-15.0
-25.0
-35.0
-45.0
-55.0
-65.0
-75.0
-85.0
Center 682.490 MHz
#Res BW 1.0 kHz
#VBW 3.0 kHz
Span 2.000 MHz
Sweep 1.91 s (1001 pts)

4.4 FREQUENCY STABILITY VS. TEMPERATURE & VOLTAGE

TEST LIMIT

According to CFR 47 section 74.861 e (4), the frequency tolerance of the transmitter shall be 0.005 percent.

TEST CONFIGURATION



TEST PROCEDURE

a The EUT was connected to an external DC power supply and the RF output was connected to a frequency counter via feed through attenuators. The EUT was placed inside the temperature chamber. The DC leads and the RF output cable, exited the chamber through an opening made for that purpose.
After the temperature stabilized the frequency output was recorded form the counter.

b. An external variable DC power supply was connected to the battery terminals of the equipment under test.
For hand carried, battery powered equipment primary supply voltage was reduced to the battery operating end point as specified by the manufacturer. The output frequency was recorded for each battery voltage.

TEST RESULTS

(1) Frequency stability versus input voltage (Supply Nominal voltage is DC 3.3V)
(2) Frequency stability versus input voltage (Supply battery operating end point which shall be specified by the manufacturer DC 2.7V)

Reference Frequency: 627.19MHz			
Power Supply	Environment Temperature (ºC)	Frequency Error (Hz)	Frequency Error (%)
2.7V, DC	20	2251	0.000359
3.0V, DC	20	2255	0.000360
3.3V, DC	20	2257	0.000360
END	20	2256	0.000360

Reference Frequency: 627.19MHz				
Environment Temperature(ºC)	Frequency Deviation measured with time Elapse(30 minutes)			
	Frequency Error (Hz)	Frequency Error (%)	Limit (%)	Results
50	2257	0.000360	0.00500	PASS
40	2258	0.000360		
30	2257	0.000360		
20	2255	0.000360		
10	2253	0.000359		
0	2256	0.000360		
-10	2258	0.000360		
-20	2259	0.000360		
-30	2258	0.000360		

Reference Frequency: 657.89MHz			
Power Supply	Environment Temperature (ºC)	Frequency Error (Hz)	Frequency Error (%)
2.7V, DC	20	2952	0.000449
3.0V, DC	20	2955	0.000449
3.3V, DC	20	2958	0.000450
END	20	2957	0.000449

Reference Frequency: 657.89MHz				
Environment Temperature(ºC)	Frequency Deviation measured with time Elapse(30 minutes)			
	Frequency Error (Hz)	Frequency Error (%)	Limit (%)	Results
50	2959	0.000450	0.00500	PASS
40	2957	0.000449		
30	2954	0.000449		
20	2955	0.000449		
10	2956	0.000449		
0	2953	0.000449		
-10	2954	0.000449		
-20	2952	0.000449		
-30	2951	0.000449		

Reference Frequency: 682.49MHz			
Power Supply	Environment Temperature (ºC)	Frequency Error (Hz)	Frequency Error (%)
2.7V, DC	20	2251	0.000330
3.0V, DC	20	2255	0.000330
3.3V, DC	20	2257	0.000331
END	20	2256	0.000331

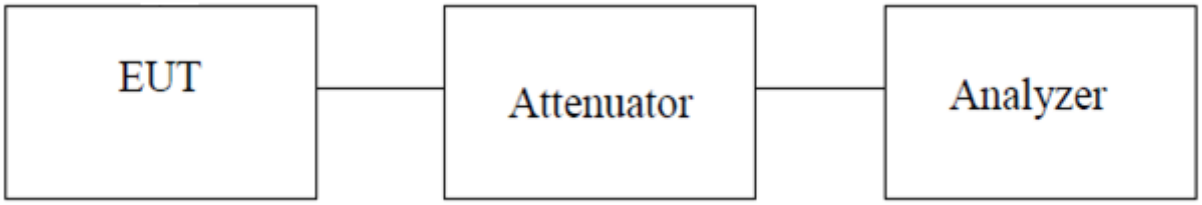
Reference Frequency: 682.49MHz				
Environment Temperature(ºC)	Frequency Deviation measured with time Elapse(30 minutes)			
	Frequency Error (Hz)	Frequency Error (%)	Limit (%)	Results
50	2619	0.000384	0.00500	PASS
40	2618	0.000384		
30	2613	0.000383		
20	2616	0.000383		
10	2615	0.000383		
0	2617	0.000383		
-10	2612	0.000383		
-20	2611	0.000383		
-30	2613	0.000383		

4.5 OCCUPIED BANDWIDTH

TEST LIMIT

According to CFR 47 section 74.861 e (5), the operating bandwidth shall no exceed 200 KHz. Near the carrier an emission mask is defined by the standard.

TEST CONFIGURATION



TEST PROCEDURE

a. The RF output of the transceiver was connected to the input of the spectrum analyzer through sufficient attenuation.
Set Occupied Bandwidth was measured with a occupied bandwidth function of the analyzer.

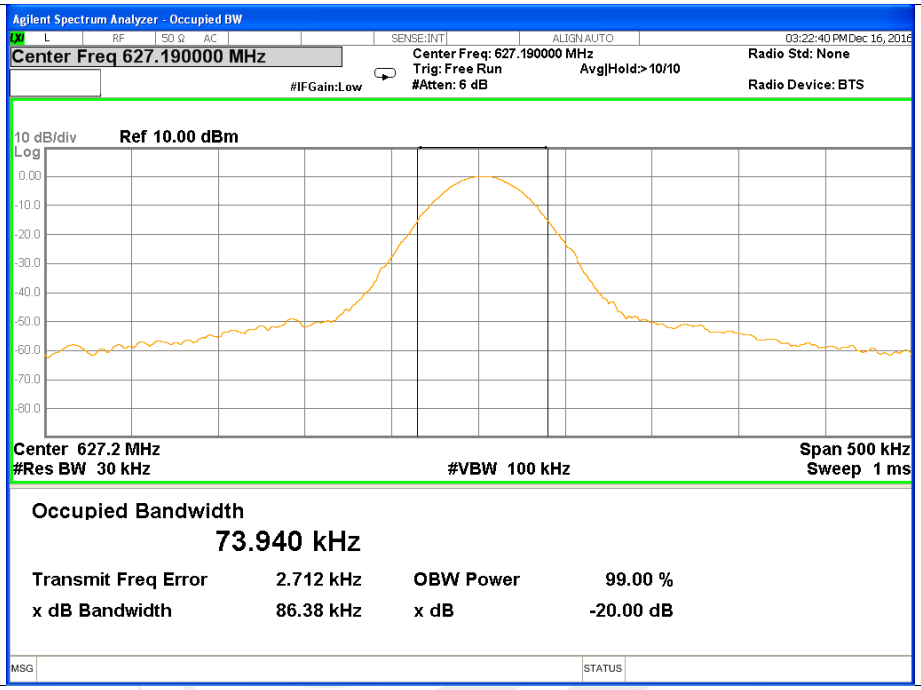
b. The near the carrier emissions are measured by normal power measurement function of the analyzer.

c. Set SPA Max hold. Mark peak, 99%.

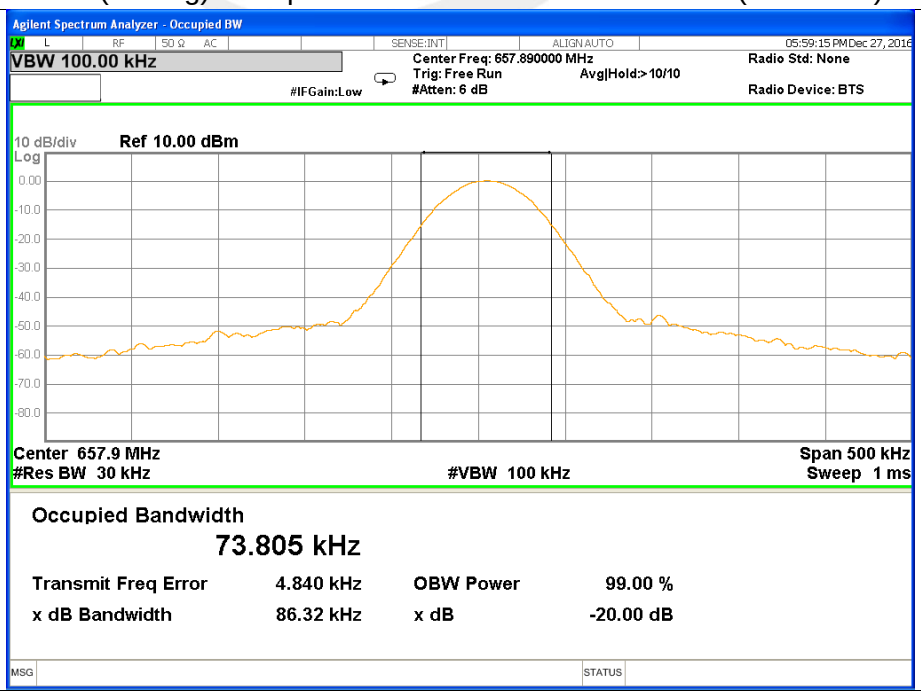
TEST RESULT

Frequency(MHz)	Occupied Bandwidth(KHz)	Limit(KHz)
627.19	73.940	200
657.89	73.805	200
682.49	76.083	200

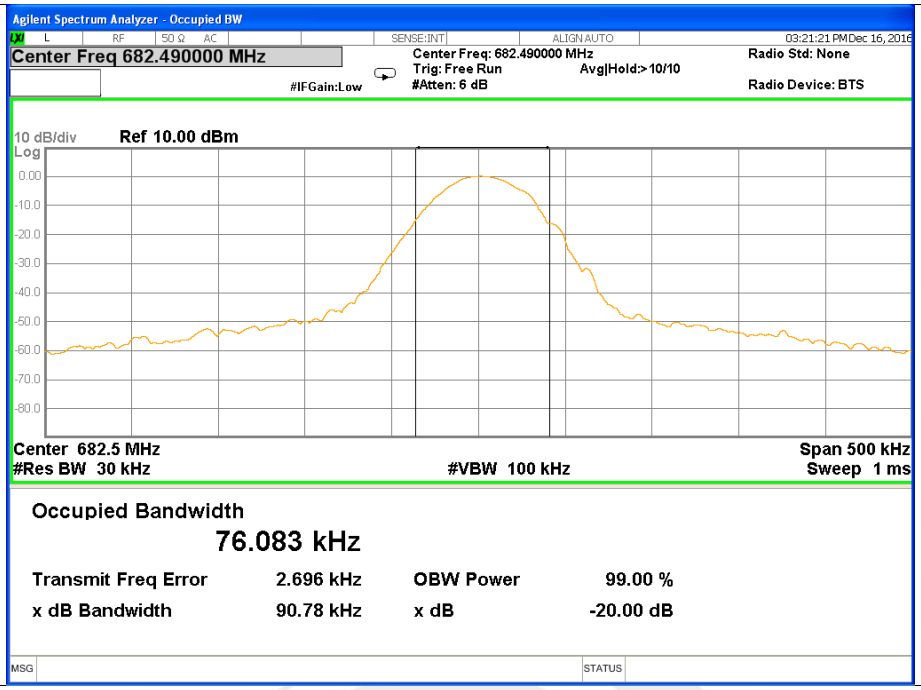
FSK(Analog) Occupied bandwidth of Low Channel (Maximum)



FSK (Analog) Occupied bandwidth of Middle Channel (Maximum)



FSK (Analog) Occupied bandwidth of High Channel (Maximum)



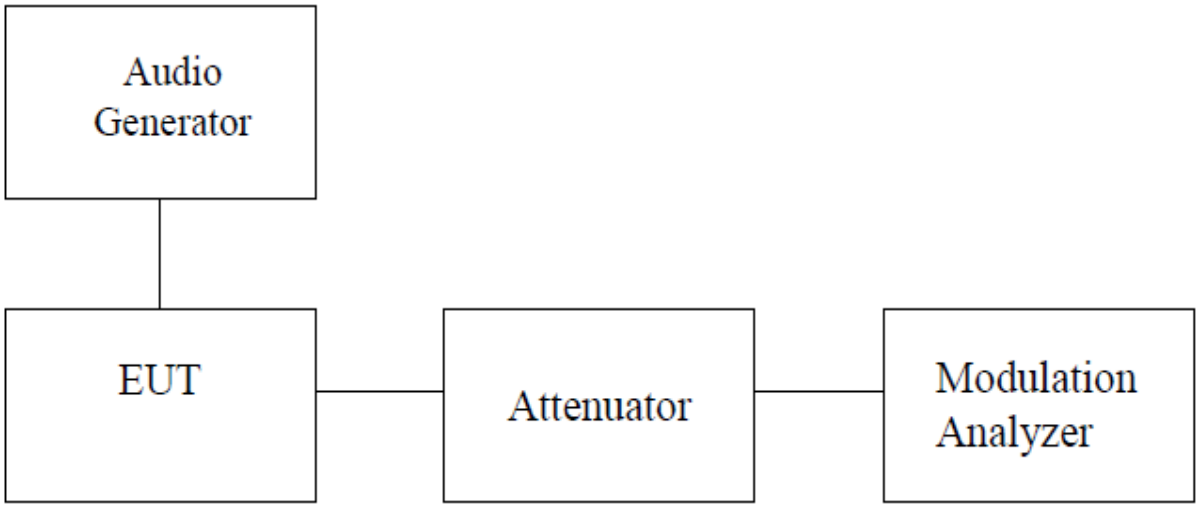
4.6 AUDIO FREQUENCY RESPONSE

TEST LIMIT

The audio frequency response is the degree of closeness to which the frequency deviation of the transmitter follows a prescribed characteristic.The frequency response of the audio modulation part is measured over a frequency range of 100 Hz to 5000 Hz.

According to CFR 47 section 74.861 e (1), any form of modulation may be used. A maximum deviation of ±75 KHz is permitted when frequency modulation is employed.

TEST CONFIGURATION



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TEST PROCEDURE

a. The audio frequency response is the degree of the closeness to which the frequency deviation of the transmitter follows prescribed characteristics.

b. The frequency response of the audio modulation part is measured over a frequency range of 100Hz to 5000 Hz.

c. For 1000 Hz tone reference signal the audio generator level is adjusted to get 20% of the rated system deviation.

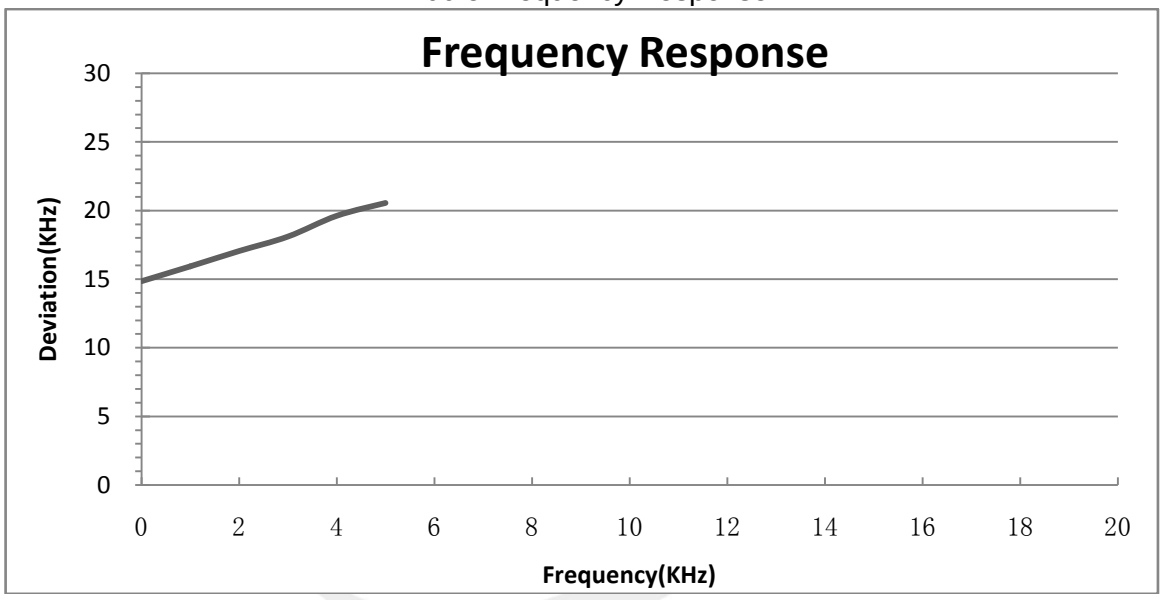
d. The deviations obtained over the frequency range from 100 HZ to 5000 Hz are recorded and compared with the reference deviation as follows:
Audio Frequency Response= 20 log (DEV freq/ Dev ref)

TEST RESULT

Audio Frequency Response:

Frequency(KHz)	Deviation(KHz)
0.01	14.86
1	15.93
2	17.04
3	18.09
4	19.62
5	20.55

Middle Frequency Response



NOTE:ONLY WORSE CASE IS REPORTED

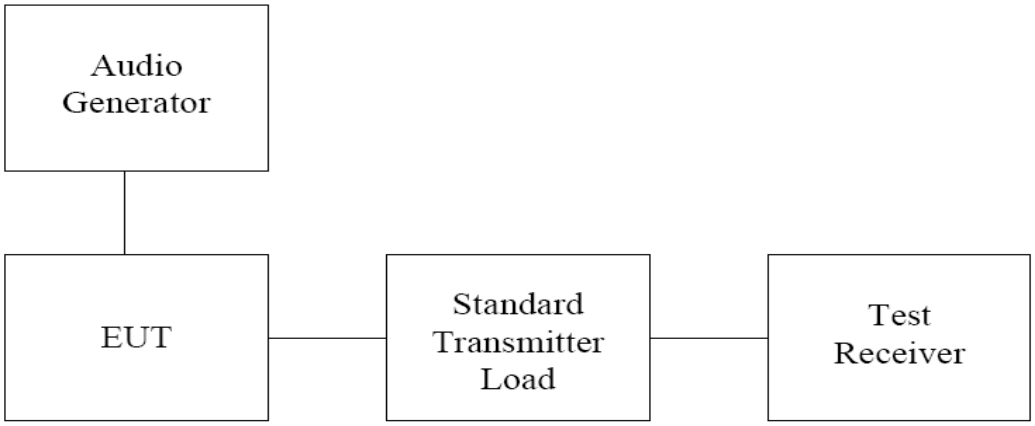
4.7 MODULATION DEVIATION

TEST LIMIT

According to CFR 47 section 2.1047 a, for Voice modulation communication equipment, the frequency response of the audio modulation circuit over a range of 100 to 5000 Hz shall be measured.

According to CFR 47 section 74.861 e (3), any form of modulation may be used. A maximum deviation of ±75 KHz is permitted when frequency modulation is employed.

TEST CONFIGURATION



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TEST PROCEDURE

a. Modulation limits is the transmitter circuit's ability to limit the transmitter form producing deviations in excess of rated system deviation.

b. The audio signal generator is connected to the audio input of the EUT with its full rating.

c. The modulation response is measured at certain modulation frequencies, related to 1000 Hz reference signal.

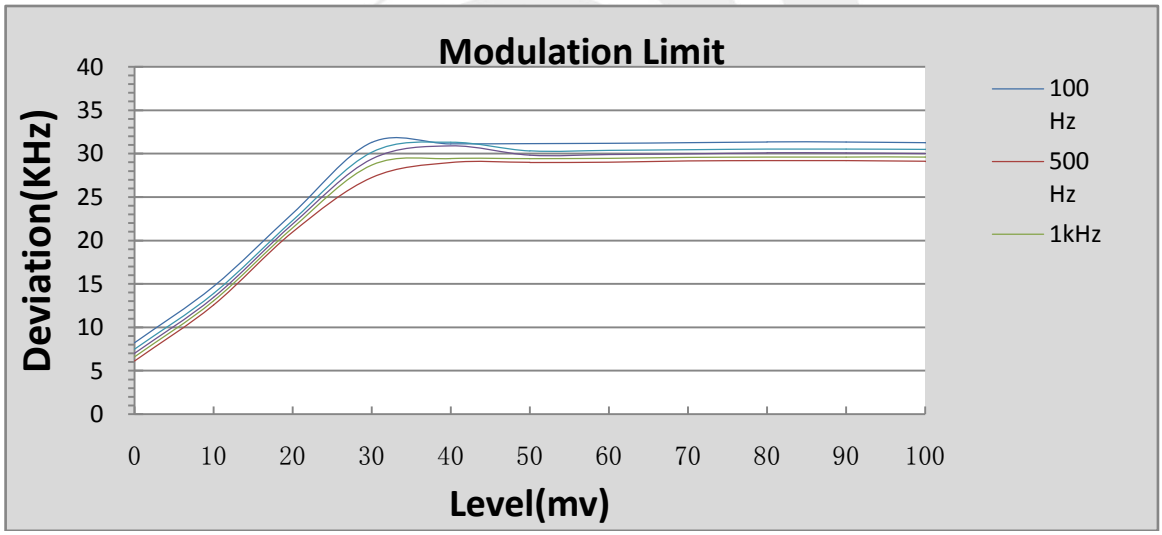
d. Tests are performed for positive and negative modulation.

TEST RESULT

Modulation Deviation

Level(mv)	100Hz	500Hz	1kHz	2.5kHz	5kHz
0	8.25	6.14	6.62	7.02	7.49
10	14.73	12.60	13.05	13.46	13.92
20	23.13	21.00	21.48	21.92	22.33
30	31.31	27.26	28.69	29.40	30.18
40	31.14	28.98	29.44	30.92	31.33
50	31.18	29.00	29.43	29.84	30.33
60	31.21	29.03	29.49	29.91	30.38
70	31.27	29.16	29.57	29.97	30.45
80	31.37	29.20	29.62	30.11	30.53
90	31.36	29.22	29.63	30.09	30.54
100	31.27	29.13	29.63	30.04	30.51
110	31.25	29.15	29.58	29.99	30.48

Middle Modulation Deviation



NOTE:ONLY WORSE CASE IS REPORTED

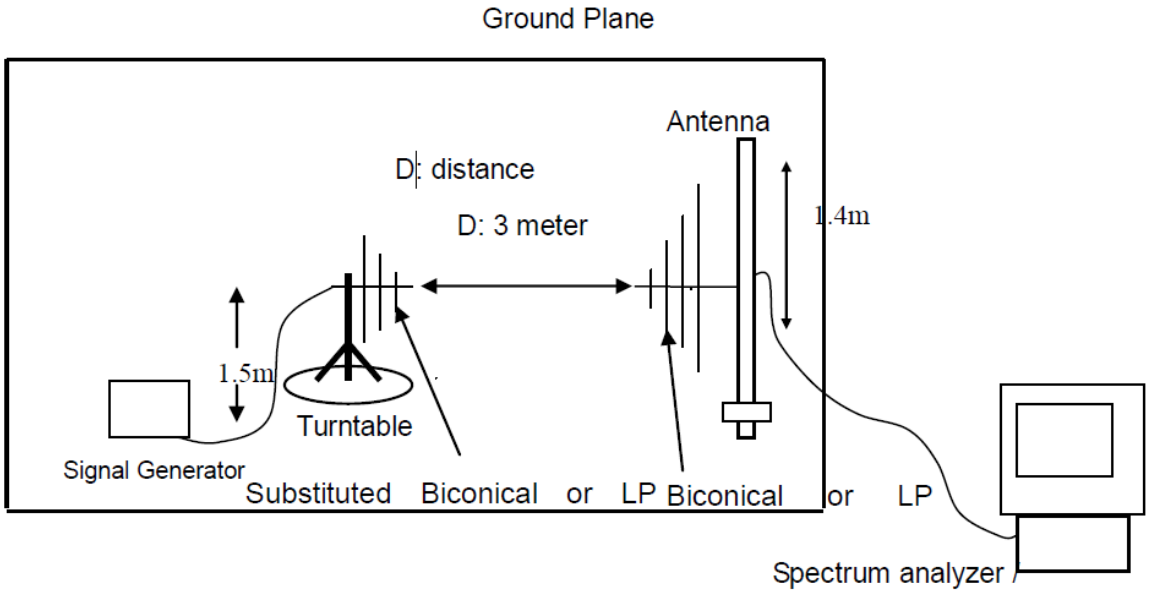
4.8 RF OUTPUT POWER

TEST LIMIT

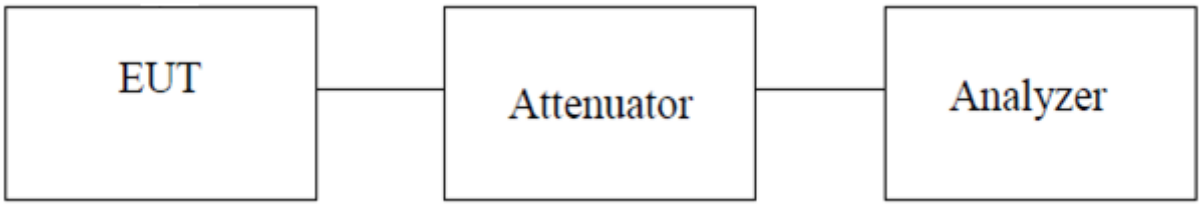
According to CFR 47 section 74.861 e (1), the power of the measured unmodulated carrier power at the output of the transmitter power amplifier (antenna input power) may not exceed the following:
(i) 54-72, 76-88, and 174-216 MHz bands: 50 mW EIRP
(ii) 470-608 and 614-698: 250 mW conducted power
(iii) 600 MHz duplex gap: 20 mW EIRP

TEST CONFIGURATION

Radiation



Conduction



TEST PROCEDURE(Radiation)

a. On a test site, the EUT shall be placed on a turntable and in the position closest to the normal use as declared by the user.
b. The test antenna shall be oriented initially for vertical polarization located 3m from the EUT to correspond to the transmitter.
c. The output of the antenna shall be connected to the measuring receiver and either a peak or quasi-peak detector was used for the measurement as indicated on the report. The detector selection is based on how close the emission level was approaching the limit.
d. The transmitter shall be switched on; if possible, without the modulation and the measurement receiver shall be tuned to the frequency of the transmitter under test.
e. The test antenna shall be raised and lowered through the specified range of height until the measuring receiver detects a maximum signal level.
f. The transmitter shall than be rotated through 360°in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
g The test antenna shall be raised and lowered again through the specified range of height until the measuring receiver detects a maximum signal level.

h The maximum signal level detected by the measuring receiver shall be noted.

i The measurement shall be repeated with the test antenna set to horizontal polarization.

j Replace the antenna with a proper Antenna (substitution antenna).

k The substitution antenna shall be oriented for vertical polarization and, if necessary, the length of the substitution antenna shall be adjusted to correspond to the frequency of transmitting.

l The substitution antenna shall be connected to a calibrated signal generator.

m If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.

n The test antenna shall be raised and lowered through the specified range of the height to ensure that the maximum signal is received.

o The input signal to substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuation setting of the measuring receiver.

p The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.

q The measurement shall be repeated with the test antenna and the substitution antenna oriented for horizontal polarization.

TEST PROCEDURE (Conduction)

a. The RF output of the transceiver was connected to the input of the spectrum analyzer through sufficient attenuation.

b. Set the RBW >20BW,VBW>3xRBW.

c. Detector = peak.

d Sweep time = auto couple.

e Trace mode = max hold.

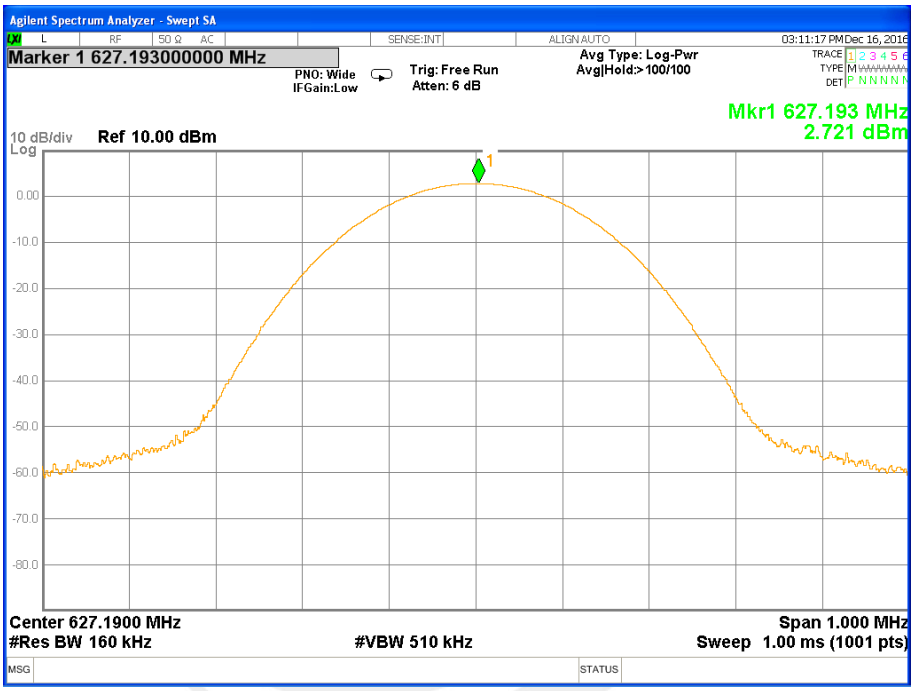
f Allow trace to fully stabilize.

g Use the peak marker function to determine the maximum amplitude level.

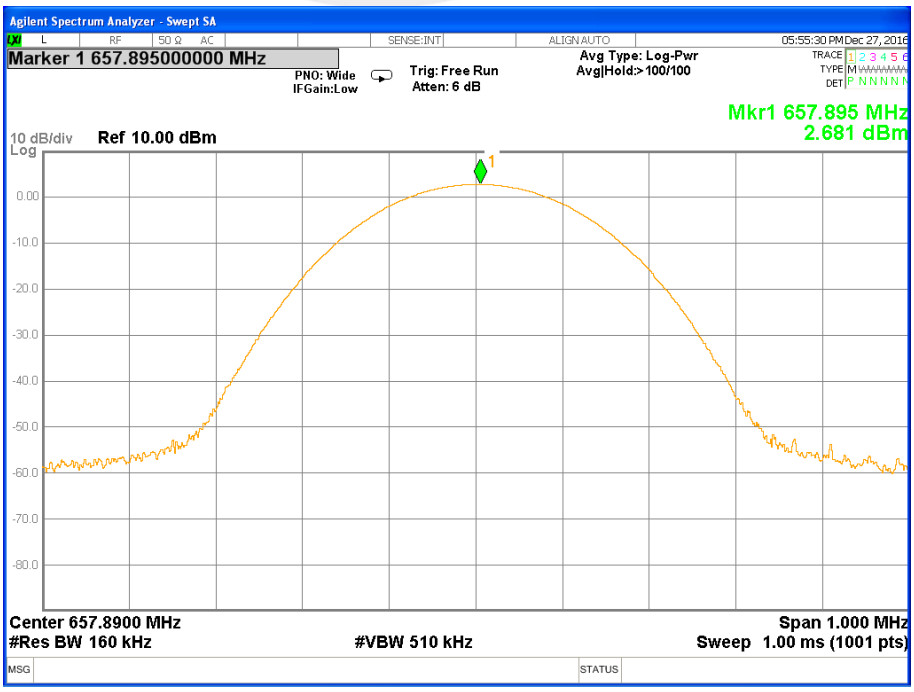
TEST RESULT

Frequency Channel (MHz)	Peak Output Power (dBm)	Transmitter Power (mW)	Limits (mW)
627.19	2.721	1.871	250
657.89	2.681	1.854	250
682.49	2.819	1.914	250

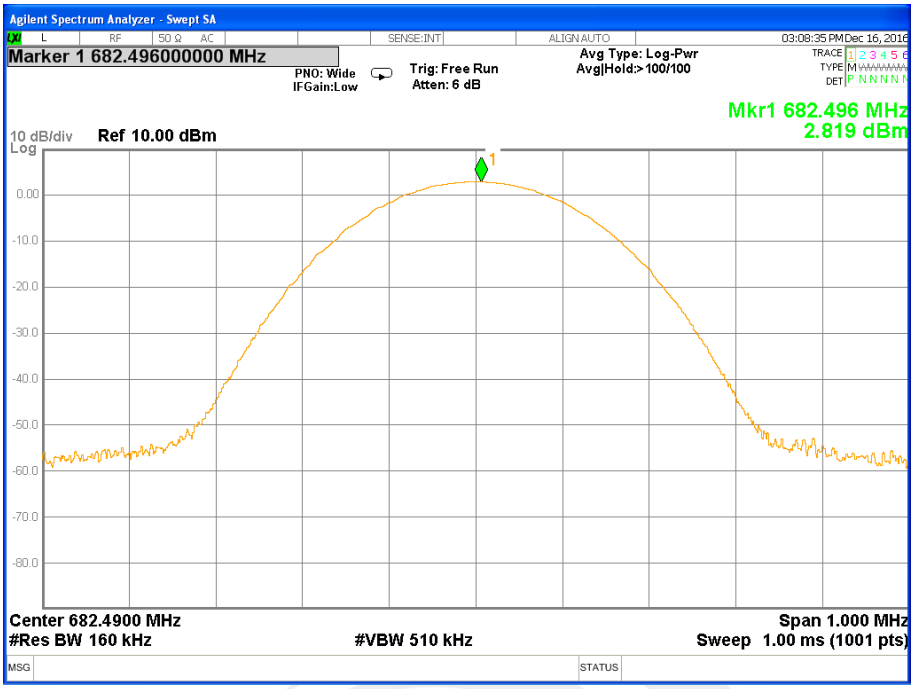
Low Channel



Middle Channel

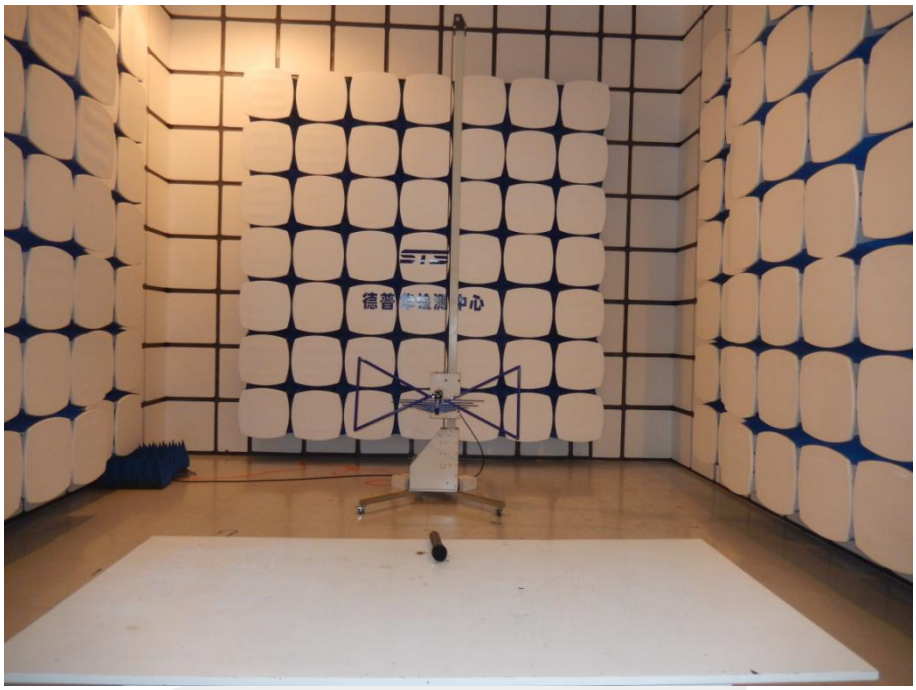


High Channel



PHOTOS OF TEST SETUP

Radiated Measurement Photos
30MHz- 1GHz



Above 1GHz

※※※※※END OF THE REPORT※※※※※