Shenzhen CTL Testing Technology Co., Ltd.
Tel: +86-755-89486194 Fax: +86-755-26636041

FCC PART 74H Test Report

FCC ID: 2AGRXMTG-100

Report Reference No.....:	**CTL1511103241-WF**
Compiled by (position+printed name+signature)..:	File administrators Jacky Chen
Name of the organization performing the tests (position+printed name+signature)..:	Test Engineer Tracy Qi
Approved by (position+printed name+signature)..:	Manager Tracy Qi
Date of issue.....:	Nov. 23, 2015
Testing Laboratory Name .....:	**Shenzhen CTL Testing Technology Co., Ltd.**
Address.....:	Floor 1-A, Baisha Technology Park, No.3011, Shahexi Road, Nanshan District, Shenzhen, China 518055
Applicant's name.....:	**Shenzhen ANLEON Electronic Co.,LTD**
Address.....:	HuiLongYuan 1-2-303, Minzhi, Longhua, Shenzhen, China
Test specification:	
Standard .....:	**FCC Part 74 Subpart H—Low Power Auxiliary Stations**
TRF Originator.....:	Shenzhen CTL Testing Technology Co., Ltd.
Master TRF.....:	Dated 2011-01

Test item description ..... :	Wireless acoustic Transmission System
Trade Mark .....:	ANLEON
Model/Type reference.....:	MTG-100
Modulation……:	FM
Channel Separation.....	200KHz
Power Supply……:	DC 3.0V from battery(2*AA)
Operating Frequency Range…….:	From 650 MHz to 680 MHz
Result.....:	**Positive**

TEST REPORT

Test Report No. :	CTL1511103241-WF	Nov. 23, 2015 Date of issue

Equipment under Test	:	Wireless acoustic Transmission System
Model /Type	:	MTG-100
Applicant	:	**Shenzhen ANLEON Electronic Co.,LTD**
Address	:	HuiLongYuan 1-2-303, Minzhi, Longhua, Shenzhen, China
Manufacture	:	**Shenzhen ANLEON Electronic Co.,LTD**
Address	:	HuiLongYuan 1-2-303, Minzhi, Longhua, Shenzhen, China

Test Result according to the standards on page 4:	**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.

Contents

1. TEST STANDARDS

The tests were performed according to following standards:

FCC Part 74 Subpart H—Low Power Auxiliary Stations

TIA-603-C(2004)-Land Mobile FM or PM Communications Equipment Measurement and Performance Standsrds

FCC Part 2: FREQUENCY ALLOCA-TIONS AND RADIO TREATY MAT-TERS; GENERAL RULES AND REG-ULATIONS

ANSI C63.10-2013

ANSI C63.4-2014

2. SUMMARY

2.1. General Remarks

Date of receipt of test sample	:	Nov. 10, 2015
Testing commenced on	:	Nov. 10, 2015
Testing concluded on	:	Nov. 23, 2015

2.2. Equipment Under Test

Power supply system utilised

Power supply voltage	:	○	120V / 60 Hz	○	115V / 60Hz
		○	12 V DC	○	24 V DC
		●	Other (specified in blank below)		

DC 3.0 V from battery (2*AA)

2.3. Short description of the Equipment under Test (EUT)

The Two-Way Radio/Transceiver, Model: LS-A8 VHF or the "EUT" as referred to in this report; more general information as follows, for more details, refer to the user's manual of the EUT.

Name of EUT	Wireless acoustic Transmission System
Model Number	MTG-100
FCC ID	**2AGRXMTG-100**
Modilation Type	FM
Channel Separation	200KHz
Antenna Type	External
Frequency Range	From 652.5 MHz to 677.5 MHz

Channel list

Channel	Frequency (MHz)
1	652.5
2	657.5
3	662.5
4	667.5
5	672.5
6	677.5

Test frequency list

Channel	Frequency (MHz)
Low	652.5
Middle	667.5
High	677.5

2.4. EUT operation mode

The EUT has been tested under typical operating condition.

2.5. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

● - supplied by the manufacturer

○ - supplied by the lab

2.6. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: **2AGRXMTG-100** filing to comply with the FCC Part 74H Rules.

2.7. Modifications

No modifications were implemented to meet testing criteria.

3. TEST ENVIRONMENT

3.1. Address of the test laboratory

Shenzhen CTL Testing Technology Co., Ltd.
Floor 1-A, Baisha Technology Park, No. 3011, Shahexi Road, Nanshan, Shenzhen 518055 China

There is one 3m semi-anechoic chamber and two line conducted labs for final test. The Test Sites meet the requirements in documents ANSI C63.4 and CISPR 22/EN 55022 requirements.

3.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

IC Registration No.: 9618B

The 3m alternate test site of Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered by Certification and Engineer Bureau of Industry Canada for the performance of with Registration No.: 9618B on November 13, 2013.

FCC-Registration No.: 970318

Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 970318, December 19, 2013.

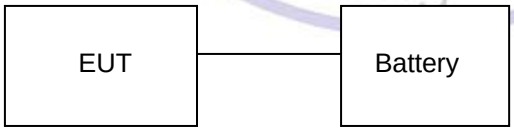
3.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15-35 ° C
Humidity:	30-60 %
Atmospheric pressure:	950-1050mbar

3.4. Configuration of Tested System

Fig. 2-1 Configuration of Tested System



3.5. 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 Shenzhen CTL Electromagnetic Technology Co., Ltd. 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.

Hereafter the best measurement capability for CTL laboratory is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.10dB	(1)
Radiated Emission	1~12.75GHz	4.32dB	(1)
Conducted Disturbance	0.15~30MHz	3.20dB	(1)

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

3.6. Equipments Used during the Test

Test Equipment	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Due Date
ULTRA-ROADBAND ANTENNA	Sunol Sciences Corp.	JB1	A061713	2015/06/02	2016/06/01
EMI Test Receiver	R&S	ESCI	103710	2015/06/02	2016/06/01
Spectrum Analyzer	Agilent	E4407B	MY41440676	2015/05/21	2016/05/20
Controller	EM Electronics	Controller EM 1000	N/A	2015/05/21	2016/05/20
Horn Antenna	Sunol Sciences Corp.	DRH-118	A062013	2015/05/19	2016/05/18
Active Loop Antenna	Daze	ZN30900A	N/A	2015/05/19	2016/05/18
LISN	R&S	ENV216	3560.6550.12	2015/06/02	2016/06/01
LISN	R&S	ESH2-Z5	860014/010	2015/06/02	2016/06/01
ISN	FCC	F-071115-1057-1-09	11229	2015/05/19	2016/05/18
Amplifier	Agilent	8349B	3008A02306	2015/05/19	2016/05/18
Amplifier	Agilent	8447D	2944A10176	2015/05/19	2016/05/18
Transient Limiter	SCHWARZCECK	VTSD 9561F	9666	2015/06/02	2016/06/01
Radio Communication Tester	R&S	CMU200	115419	2015/05/22	2016/05/21
Temperature/Humidity Meter	Gangxing	CTH-608	02	2015/05/20	2016/05/19
SIGNAL GENERATOR	Agilent	E4421B	US40051744	2015/05/20	2016/05/19
Wideband Peak Power Meter	Anritsu	ML2495A	220.23.35	2015/05/20	2016/05/19
Climate Chamber	ESPEC	EL-10KA	A20120523	2015/05/20	2016/05/19
High-Pass Filter	K&L	9SH10-2700/X12750-O/O	N/A	2015/05/20	2016/05/19
High-Pass Filter	K&L	41H10-1375/U12750-O/O	N/A	2015/05/20	2016/05/19

3.7. General Technical Requirements and Summary of Test Results

FCC Rules	Description of Test	Test Result
FCC section 74.861(e)(1), FCC part 2, section 2.1046	RF Output Power	Complies
FCC section 74.861(e)(3) , FCC part 2, section 2.1047	Modulation Characteristic	Complies
FCC section 74.861(e)(5) , FCC part 2, section 2.1049	Emission Bandwidth	Complies
FCC section 74.861(e)(6) , FCC part 2, section 2.1051	Spurious Emission at Antenna Terminals	Complies
FCC section 74.861(e)(6) , FCC part 2, section 2.1053	Field Strength of Spurious Emission	Complies
Frequency Stability	FCC section 74.861(e)(4) , FCC part 2, section 2.1055	Complies

4. TEST CONDITIONS AND RESULTS

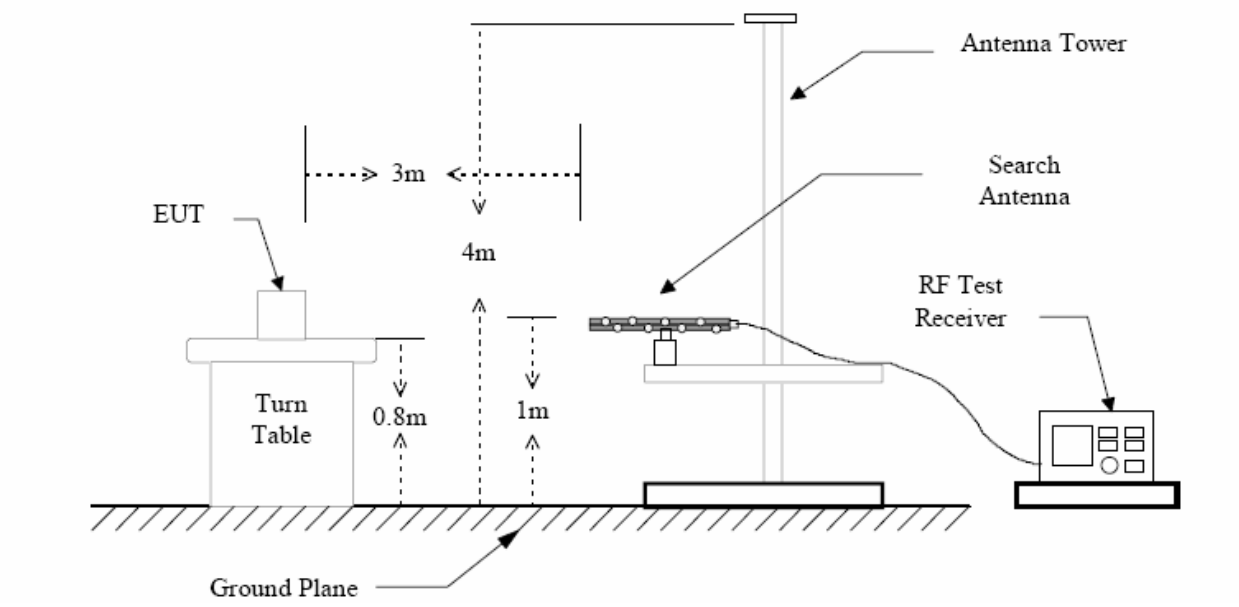
4.1. OUTPUT POWER MEASUREMENT

Measurement Procedure

1. Setup the configuration per figure 1 and 2 for frequencies measured below and above 1 GHz respectively, adjusting the input voltage to produce the maximum power.
2. Adjust the analyzer for each frequency measured on a 1 MHz frequency span and 1MHz resolution bandwidth.
3. The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from 0。 to 360 。, and record the highest value indicated on spectrum analyzer as reference value.
4. Repeat step 3 until all frequencies need to be measured were complete.
5. Repeat step 4 with search antenna in vertical polarized orientations.
6. Replace the EUT with a tuned dipole antenna (horn antenna for above 1 GHz) relative to each frequency in horizontally polarized orientation and as the same polarized orientation with search antenna. Connect the tuned dipole antenna to a standard signal generator (SG) via a low loss cable. Power on the SG and tune the right frequency in measuring as well as set SG at a appreciated output level. Rise and lower the search antenna to get the highest value on spectrum analyzer, and then hold this position. Adjust the SG output to get a identical value derived from step 3 on spectrum analyzer. Record this value for result calculated.
7. Repeat step 6 until all frequencies need to be measured were complete.
8. Repeat step 7 with both dipole antenna (horn antenna for above 1 GHz) and search antenna in vertical polarized orientations.

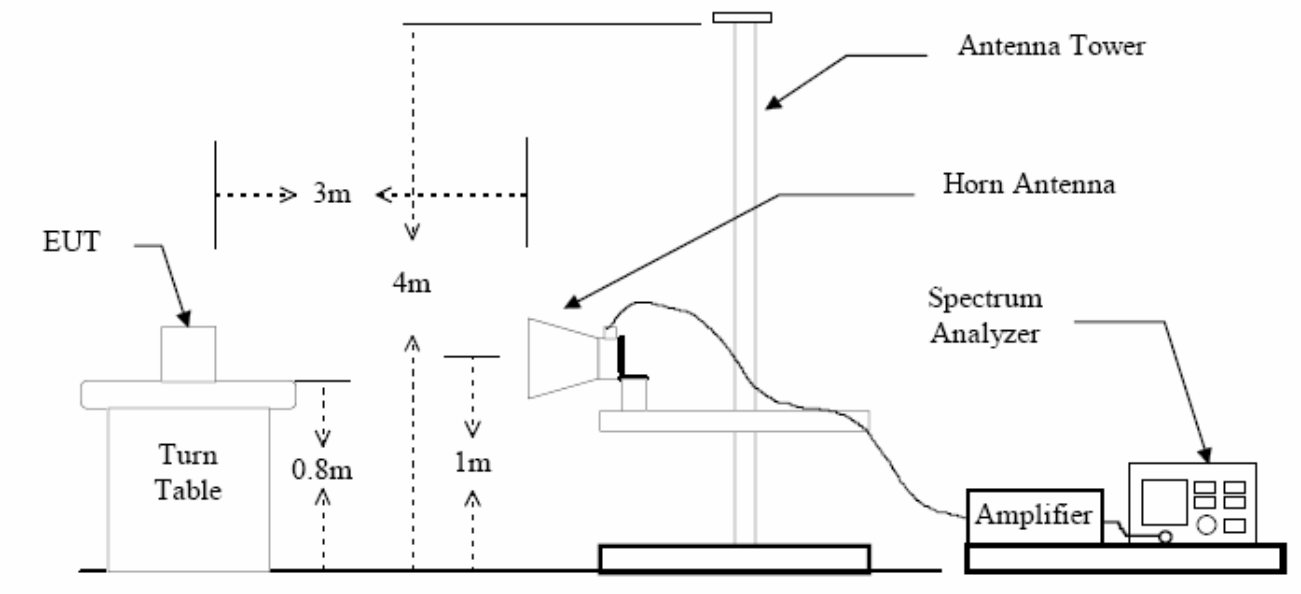
Test Configuration

Figure 1 : Frequencies measured below 1 GHz configuration



Note: For substitution method, replace the EUT with a tuned dipole antenna relative to each frequency and connect to a standard signal generator (SG) via a low loss cable.

Figure 2 : Frequencies measured above 1 GHz configuration



Note: For substitution method, replace the EUT with a horn antenna and connect to a standard signal generator (SG) via a low loss cable.

Limit

According to §74.861(e)(1)(ii), the output power shall not exceed 250 milliwatts.

TEST RESULTS

Frequency(MHz)	Meter Reading (dBμV/m)	SG Reading(dBm)	Cable Loss(dB)	Antenna Gain	Result(dBm)	Output Power (mW)	Limit (mW)
652.5	102.34	6.84	2.20	----	9.04	8.02	250

Frequency(MHz)	Meter Reading (dBμV/m)	SG Reading(dBm)	Cable Loss(dB)	Antenna Gain	Result(dBm)	Output Power (mW)	Limit (mW)
667.5	103.96	6.26	2.20	----	8.46	7.01	250

Frequency(MHz)	Meter Reading (dBμV/m)	SG Reading(dBm)	Cable Loss(dB)	Antenna Gain	Result(dBm)	Output Power (mW)	Limit (mW)
677.5	103.05	6.67	2.20	----	8.87	7.71	250

Note: For measured frequency below 1GHz, a tuned dipole antenna is used.

Result calculation is as following : Result = SG Reading +Cable Loss +Antenna Gain Corrected Antenna Gain Corrected : is used for antenna other than dipole to convert radiated power to ERP.

4.2. MODULATION CHARACTERISTICS

Measurement Procedure

A) Modulation Limit

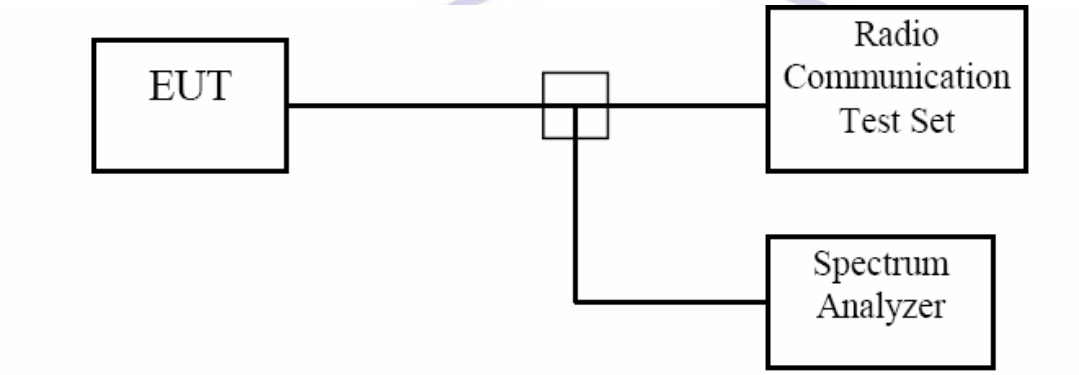
1. Position the EUT as shown in figure 3, adjust the audio input frequency to 100 Hz and the input level from 0V to maximum permitted input voltage with recording each carrier frequency deviation responding to respective input level.
2. Repeat step 1 with changing the input frequency for 200, 500, 1000, 3000, and 5000 Hz in sequence.

B) Frequency response of all circuits

1. Position the EUT as shown in figure 3.
2. Vary the modulating frequency from 100 Hz to 15000 Hz with constant input voltage (derived from 5.4(a) of this test report), and observe the change in output.

Test Configuration

Figure 3: Modulation characteristic measurement configuration



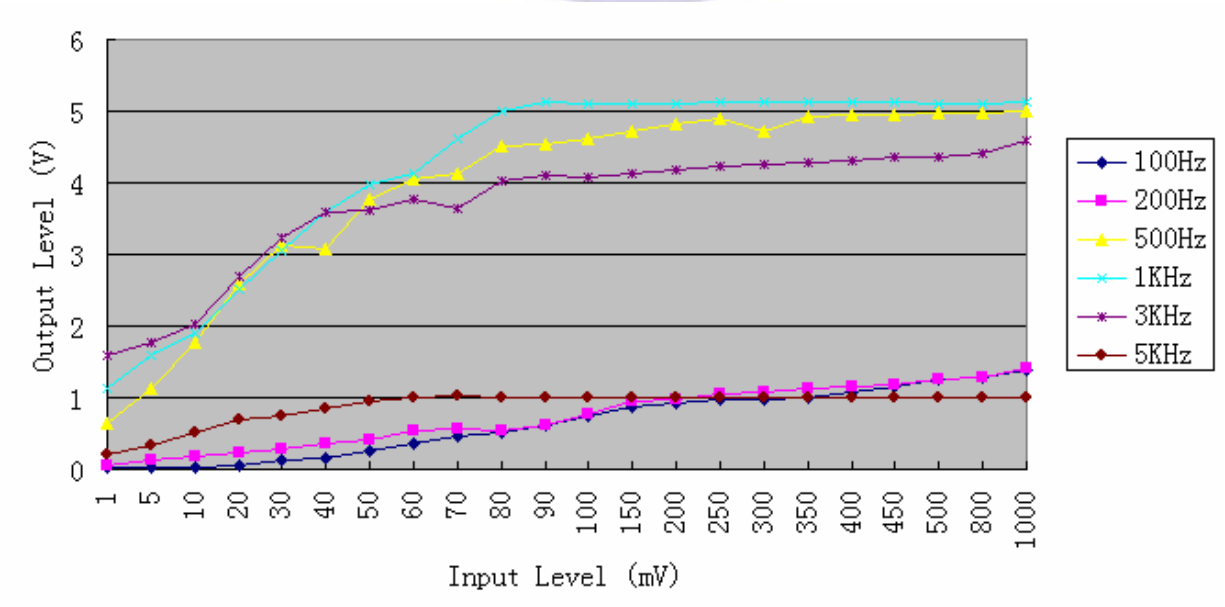
Limit

According to §2.1047 (a), for Voice Modulated Communication Equipment, the frequency response of the audio modulating circuit over a range of 100 to 5000 Hz shall be measured.

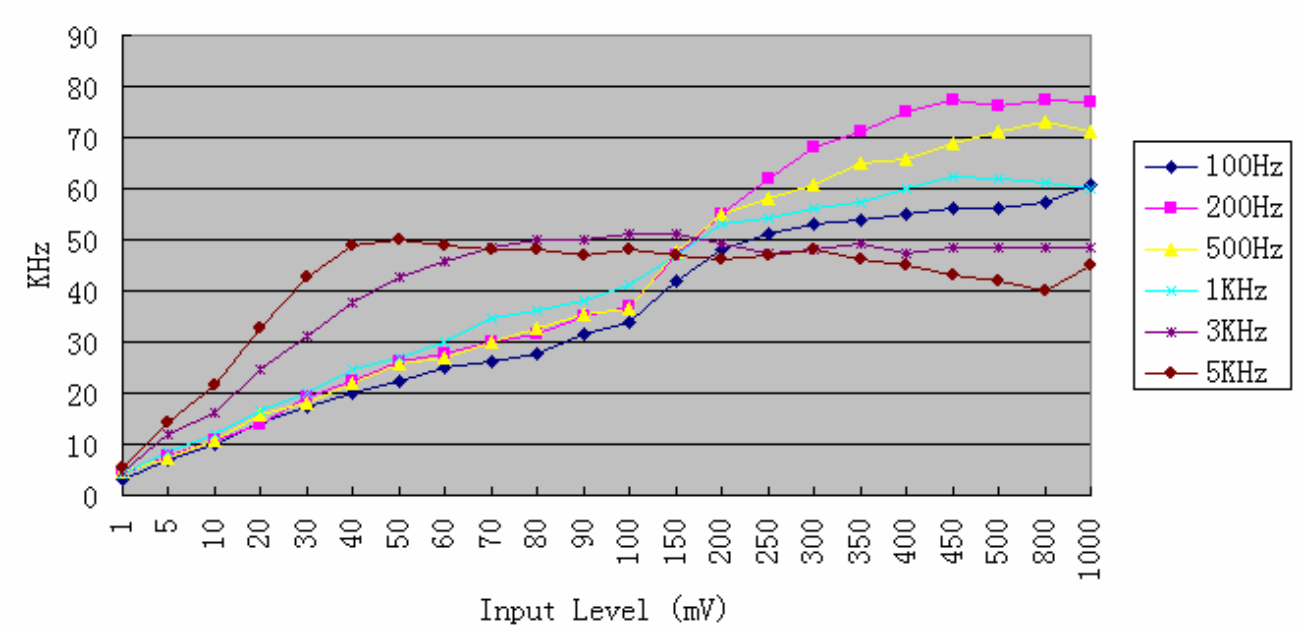
TEST RESULTS

RF Frequency: 652.500MHz

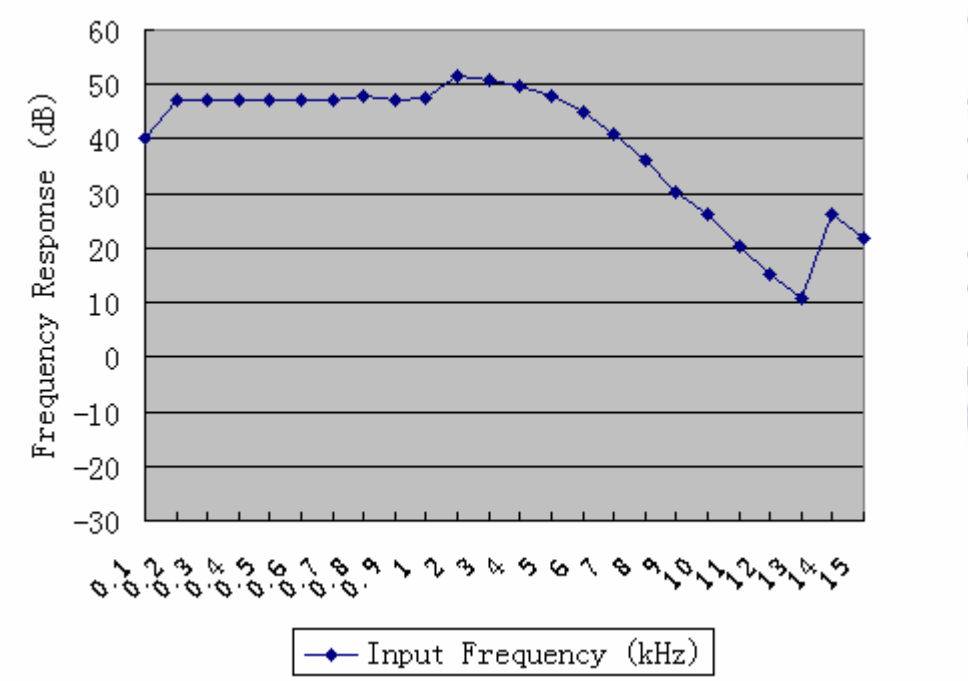
Frequency response:



Modulation Limit:



Frequency response of all circuits:



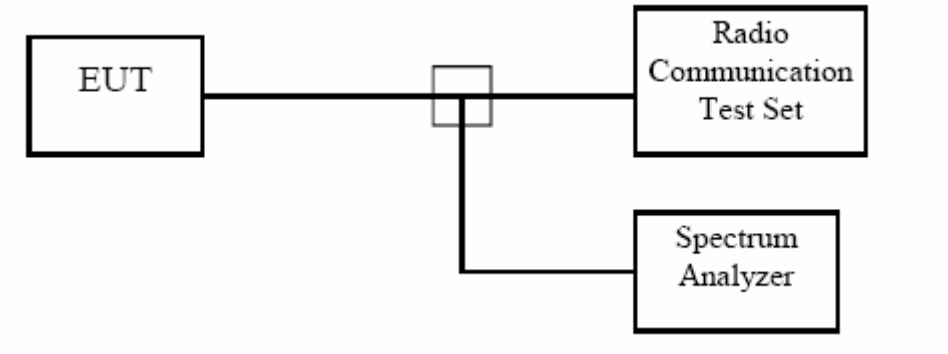
4.3. OCCUPIED BANDWIDTH OF EMISSION

Measurement Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT as shown in figure 4, and Install new batteries in the EUT. Turn on the EUT ant 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.
3. Apply a 2.5 kHz modulation signal to EUT and measure the frequencies of the modulated signal from the EUT where it is the specified number of dB below the reference level set in step 2. This is the occupied bandwidth specified.

Test Configuration

Figure 4: Occupied bandwidth measurement configuration



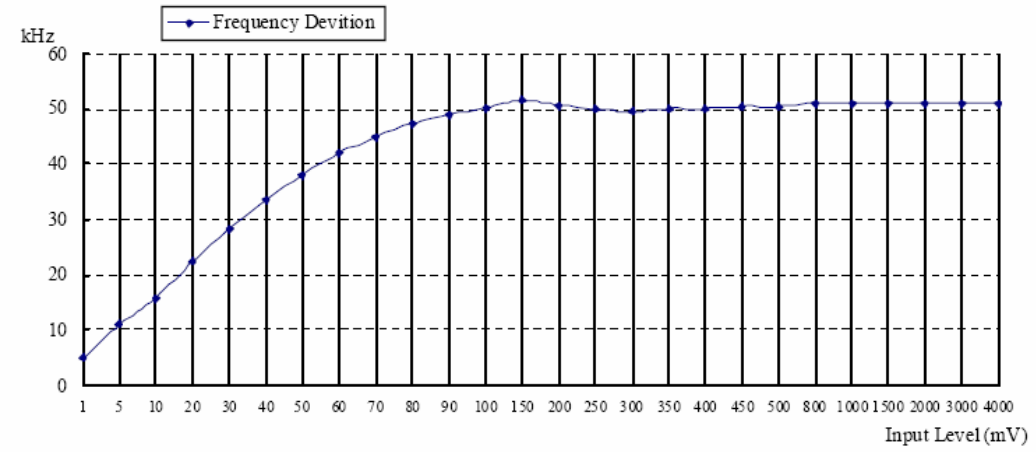
Limit

According to §2.1049 (c)(1), For radiotelephone transmitter, other than single sideband or indenpent sideband transmitter, when modulateed by a 2.5kHz tone at an input level 16 dB greater than that necessary to produce 50 percent modulation. According to §74.861(e)(5), the frequency emission bandwidth shall not exceed 200 kHz.

TEST RESULTS

RF Frequency : 652.500MHz

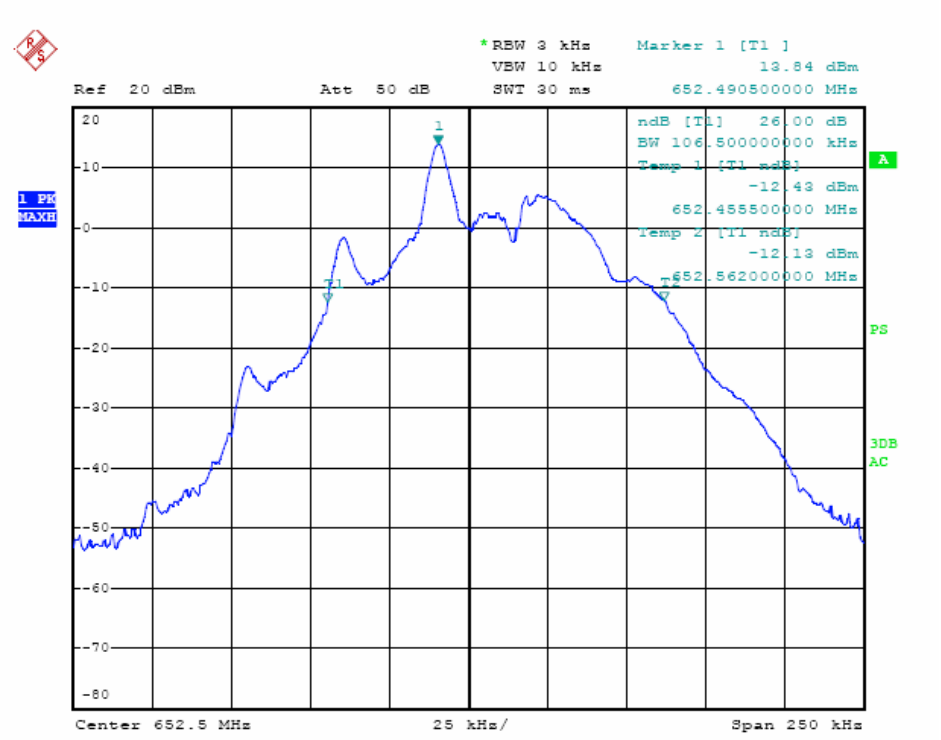
Input Audio Frequency : 2.5 kHz, Sine Wave



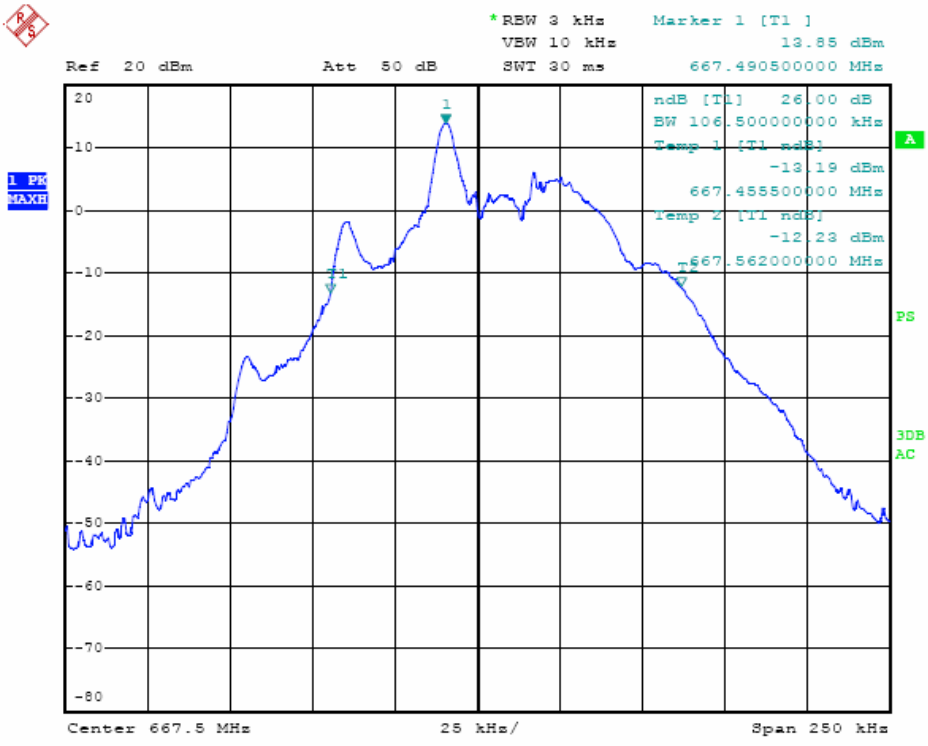
The Level input to produce 50％modulation is 30 mV, therefore the magnitude 16 dB greater than it is 189.2 mV.

RF Frequency (MHz)	26 dB Bandwidth (kHz)
652.5	106.500
667.5	106.500
677.5	106.500

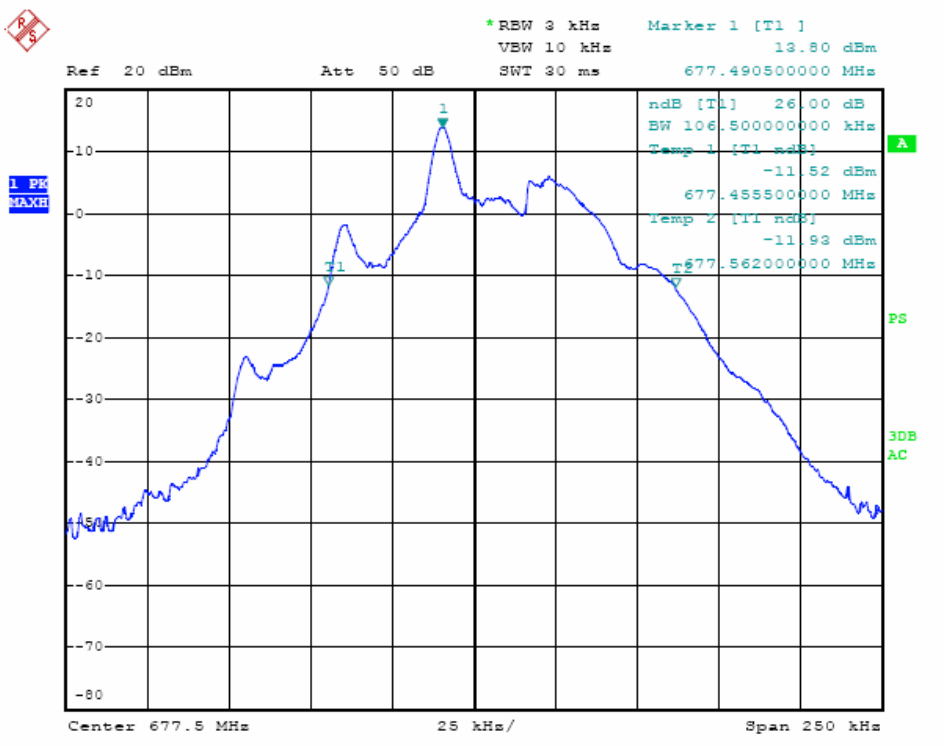
652.5MHz



667.5MHz



677.5MHz



4.4. FIELD STRENGTH OF EMISSION

Measurement Procedure

1. Setup the configuration per figure 1 and 2 for frequencies measured below and above 1 GHz respectively, adjusting the input voltage to produce the maximum power as measured in chapter 3.
2. Adjust the analyzer for each frequency measured in chapter 6 on a 1 MHz frequency span and 1MHz resolution bandwidth.
3. The search antenna is to be raised and lowered over a range from 1 to 4 meters in horizontally polarized orientation. Position the highness when the highest value is indicated on spectrum analyzer, then change the orientation of EUT on test table over a range from 0。 to 360 。, and record the highest value indicated on spectrum analyzer as reference value.
4. Repeat step 3 until all frequencies need to be measured were complete.
5. Repeat step 4 with search antenna in vertical polarized orientations.
6. Replace the EUT with a tuned dipole antenna (horn antenna for above 1 GHz) relative to each frequency in horizontally polarized orientation and as the same polarized orientation with search antenna. Connect the tuned dipole antenna to a standard signal generator (SG) via a low loss cable. Power on the SG and tune the right frequency in measuring as well as set SG at a appreciated output level. Rise and lower the search antenna to get the highest value on spectrum analyzer, and then hold this position. Adjust the SG output to get a identical value derived from step 3 on spectrum analyzer. Record this value for result calculated.
7. Repeat step 6 until all frequencies need to be measured were complete.
8. Repeat step 7 with both dipole antenna (horn antenna for above 1 GHz) and search antenna in vertical polarized orientations.

Measuring instrument setup in frequency band measured is as following :

Frequency Band (MHz)	Instrument	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	Spectrum Analyzer	Peak	100 kHz	100 kHz
Above 1000	Spectrum Analyzer	Peak	1 MHz	1 MHz

Test Configuration

Same as Figure 1 and Figure 2

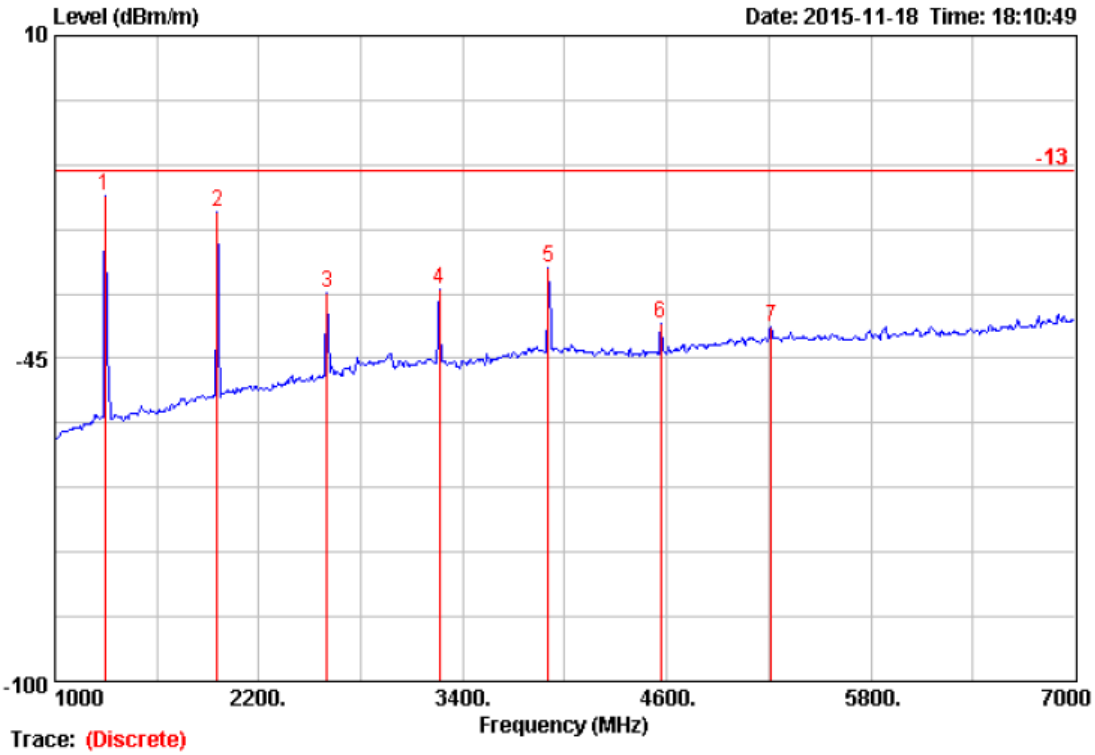
Limit

According to §2.1053, measurements shall be made to detect spurious emission that may be radiated directly from the cabinet, control circuits, power leads, or intermediate circuit elements under normal condition of installation and operation. Information submitted shall include the relative radiated power of spurious emission with reference to the rated power output of the transmitter, assuming all emissions are radiated from a halfwave dipole antenna.
According to §74.861(e)(6), the mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the follwing sceedule: (i) 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. (ii) 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. (iii) on any frequency removed from the operating frequency by more than 250 percent of the authorized bandwidth shall be attenuated below the unmodulated carrier by at least 43 plus 10 Log(output power in watts) dB.

Unmodulated carrier output power is 17.68 dBm , or 58.61mW (ERP). The limit of spurious or harmonics is calculated as following : 17.68-[43+10log(carrier output power in W)], or -13dBm

Emission Test Data:

The Radiated Measurement are performed to the three channels (the top channel, the middle channel and the bottom channel), the datum recorded below is the worst case (bottom channel).

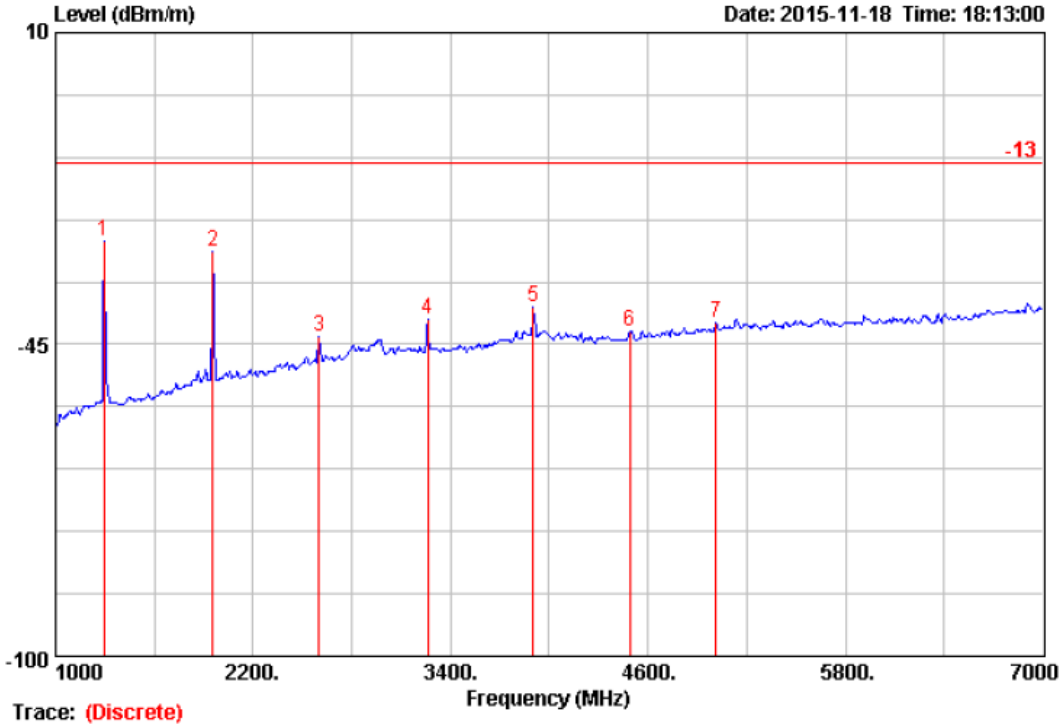


Site no. : 3m Chamber
Dis. / Ant. : 3m DRH-118
Limit : -13
Env. / Ins. : dui jiang ji
Engineer : CTL
EUT : TX
Power : CTL 3m Chamber
M/N : Nice
Test Mode : /
1

Data no. : 160
Ant. pol. : HORIZONTAL

	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBm)	Site Loss (dB)	Emission Level (dBm)	Limits (dBm)	Margin (dB)
1	1294.00	25.64	3.55	35.93	-10.42	0.00	-17.16	-13.00	4.16
2	1954.00	27.69	4.14	35.31	-16.63	0.00	-20.11	-13.00	7.11
3	2602.00	29.28	4.82	35.40	-32.58	0.00	-33.88	-13.00	20.88
4	3262.00	31.43	5.55	35.31	-34.86	0.00	-33.19	-13.00	20.19
5	3904.00	33.29	6.29	34.87	-34.28	0.00	-29.57	-13.00	16.57
6	4564.00	32.96	6.76	34.48	-44.33	0.00	-39.09	-13.00	26.09
7	5212.00	34.55	7.15	34.31	-46.97	0.00	-39.58	-13.00	26.58

Remarks: 1. Emission Level= Reading+Antenna Factor+Cable Loss-Amp Factor+Site Loss
2. The emission levels that are 20dB below the official limit are not reported.



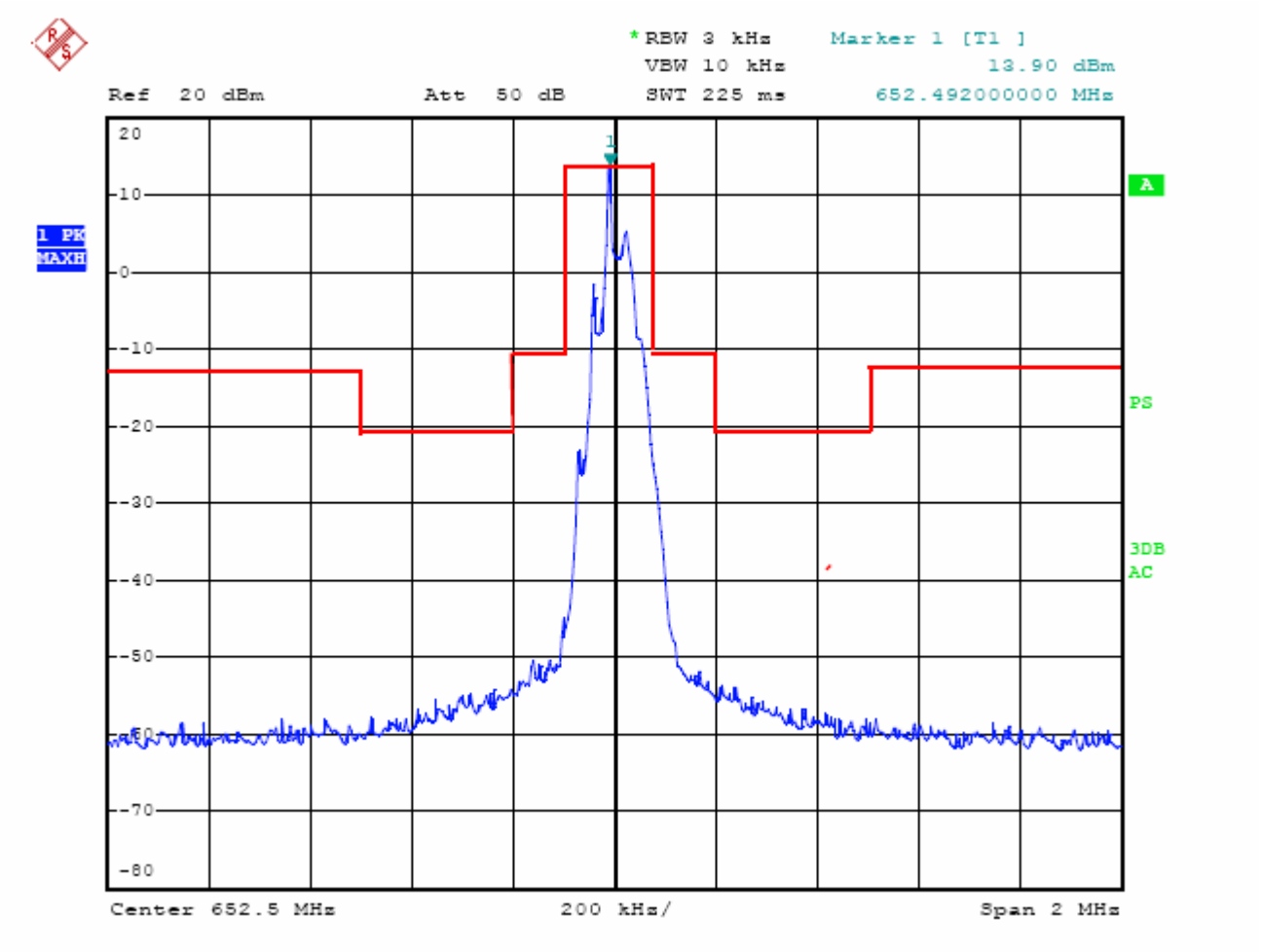
Site no. : 3m Chamber
Dis. / Ant. : 3m DRH-118
Limit : -13
Env. / Ins. : dui jiang ji
Engineer : CTL
EUT : TX
Power : CTL 3m Chamber
M/N : Nice
Test Mode : /
1

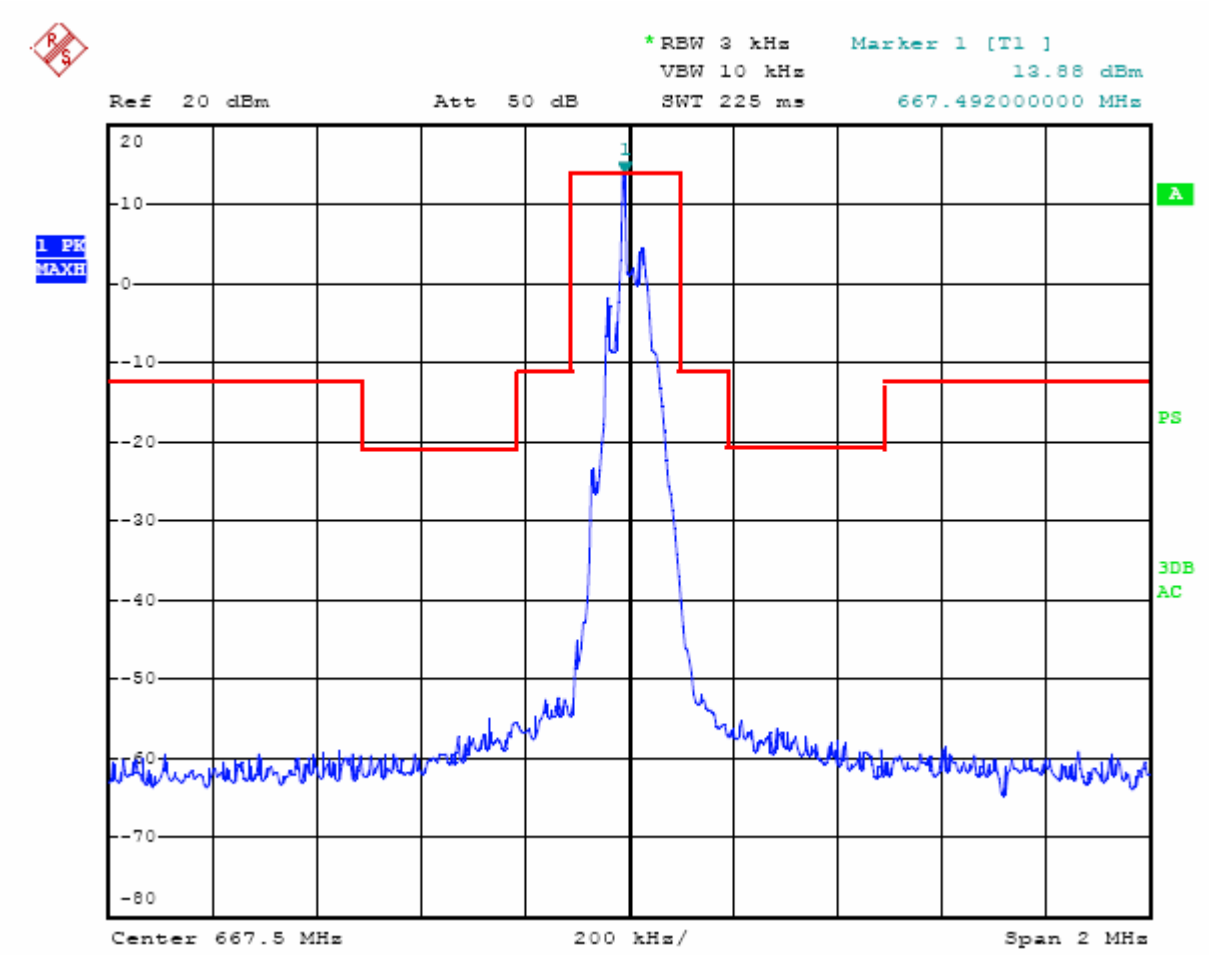
Data no. : 161
Ant. pol. : VERTICAL

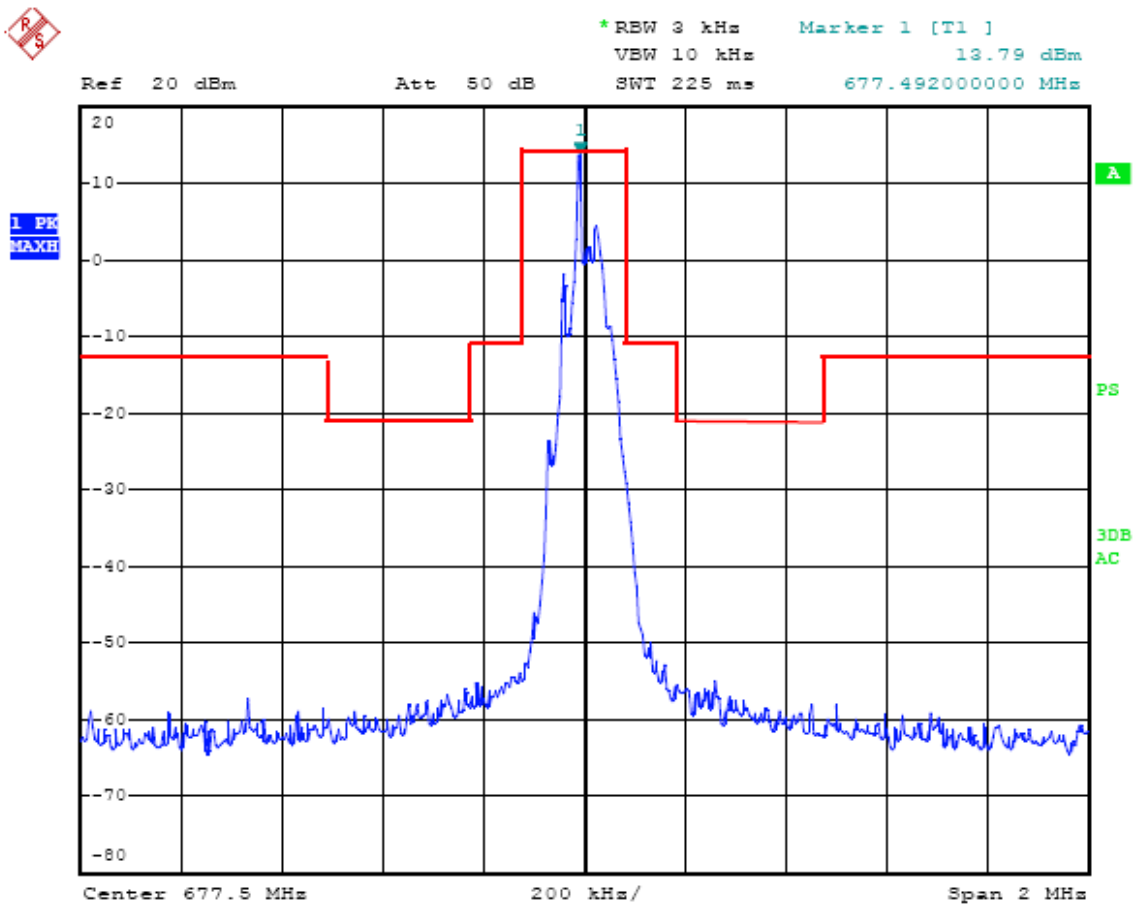
	Freq. (MHz)	Ant. Factor (dB)	Cable Loss (dB)	Amp Factor (dB)	Reading (dBm)	Site Loss (dB)	Emission Level (dBm)	Limits (dBm)	Margin (dB)
1	1294.00	25.64	3.55	35.93	-20.17	0.00	-26.91	-13.00	13.91
2	1954.00	27.69	4.14	35.31	-25.00	0.00	-28.48	-13.00	15.48
3	2602.00	29.28	4.82	35.40	-42.28	0.00	-43.58	-13.00	30.58
4	3262.00	31.43	5.55	35.31	-42.30	0.00	-40.63	-13.00	27.63
5	3904.00	33.29	6.29	34.87	-43.25	0.00	-38.54	-13.00	25.54
6	4492.00	32.86	6.70	34.52	-47.67	0.00	-42.63	-13.00	29.63
7	5014.00	34.03	7.04	34.24	-47.85	0.00	-41.02	-13.00	28.02

Remarks: 1. Emission Level= Reading+Antenna Factor+Cable Loss-Amp Factor+Site Loss
2. The emission levels that are 20dB below the official limit are not reported.

Emission mask plots:




*RBW 3 kHz
VBW 10 kHz
SWT 225 ms
Marker 1 [T1]
13.88 dBm
667.492000000 MHz
Ref 20 dBm
Att 50 dB
1 PK
MAXH
A
PS
3DB
AC
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 667.5 MHz
200 kHz/
Span 2 MHz

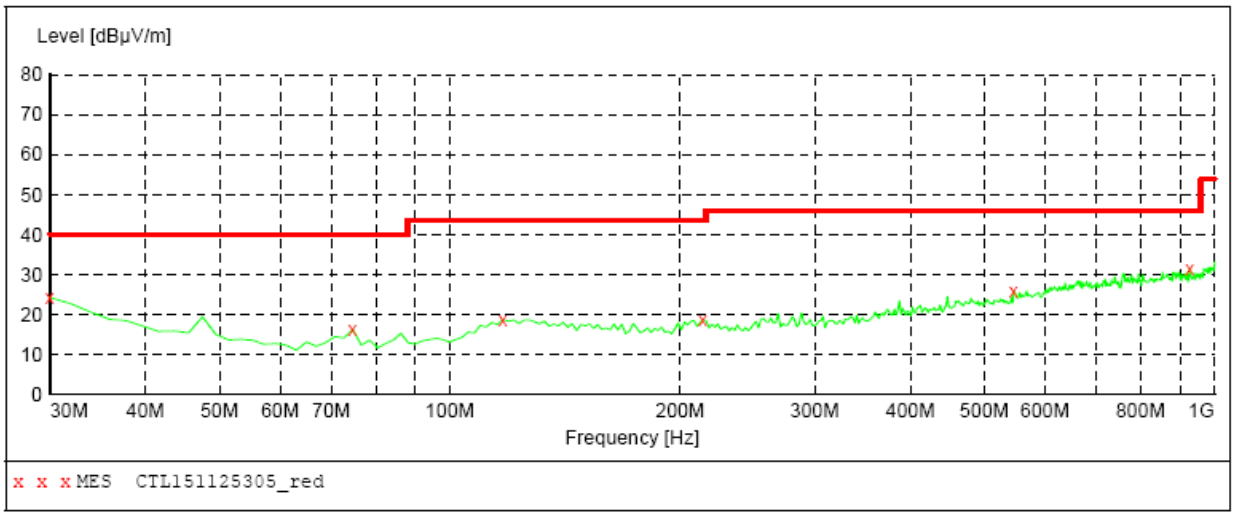

*RBW 3 kHz
VBW 10 kHz
SWT 225 ms
Marker 1 [T1]
13.79 dBm
677.492000000 MHz
Ref 20 dBm
Att 50 dB
1 PK
MAXH
A
PS
3DB
AC
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 677.5 MHz
200 kHz/
Span 2 MHz

Other Emission:

Emission frequencies below 1 GHz

SWEEP TABLE: "test (30M-1G)"

Short Description:			Field Strength		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	300.0 ms	120 kHz	JB1



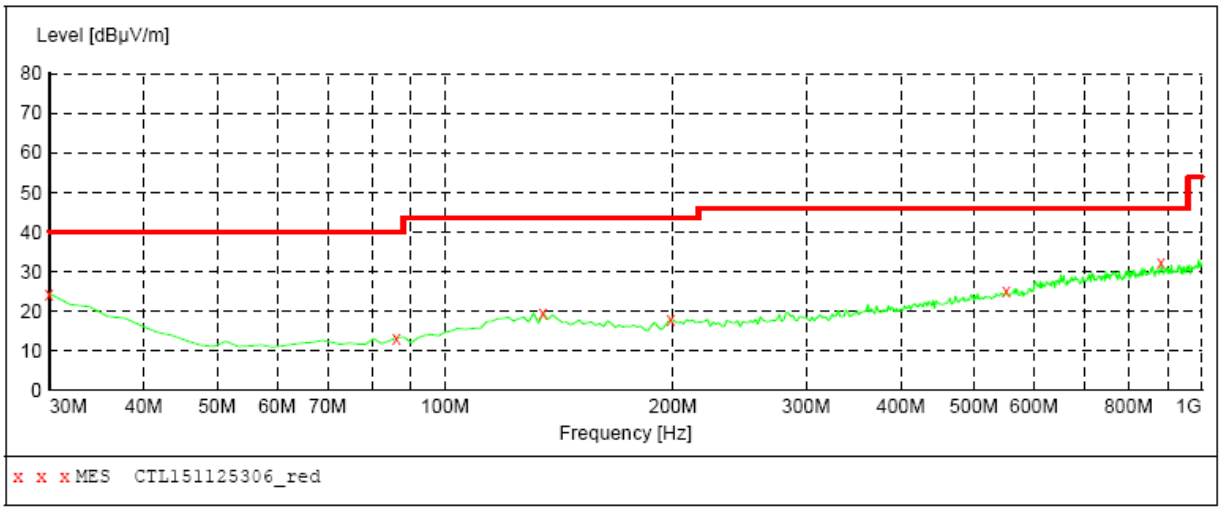
MEASUREMENT RESULT: "CTL151125305_red"

11/25/2015 2:00PM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.000000	24.20	20.8	40.0	15.8	---	0.0	0.00	VERTICAL
74.620000	16.30	8.3	40.0	23.7	---	0.0	0.00	VERTICAL
117.300000	18.70	14.7	43.5	24.8	---	0.0	0.00	VERTICAL
214.300000	18.70	14.0	43.5	24.8	---	0.0	0.00	VERTICAL
546.040000	25.90	20.8	46.0	20.1	---	0.0	0.00	VERTICAL
928.220000	31.60	26.2	46.0	14.4	---	0.0	0.00	VERTICAL

SWEEP TABLE: "test (30M-1G)"

Short Description:			Field Strength		
Start Frequency	Stop Frequency	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	MaxPeak	300.0 ms	120 kHz	JB1



MEASUREMENT RESULT: "CTL151125306_red"

11/25/2015 2:01PM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.000000	24.40	20.8	40.0	15.6	---	0.0	0.00	HORIZONTAL
86.260000	13.20	9.0	40.0	26.8	---	0.0	0.00	HORIZONTAL
134.760000	19.50	14.4	43.5	24.0	---	0.0	0.00	HORIZONTAL
198.780000	18.00	13.9	43.5	25.5	---	0.0	0.00	HORIZONTAL
551.860000	24.90	21.0	46.0	21.1	---	0.0	0.00	HORIZONTAL
883.600000	32.10	25.6	46.0	13.9	---	0.0	0.00	HORIZONTAL

Emission frequencies above 1 GHz:

Radiated emission frequencies above 1 GHz to 25 GHz were too low to be measured with a pre-amplifier of 35 dB.

4.5. FREQUENCY STABILITY MEASUREMENT

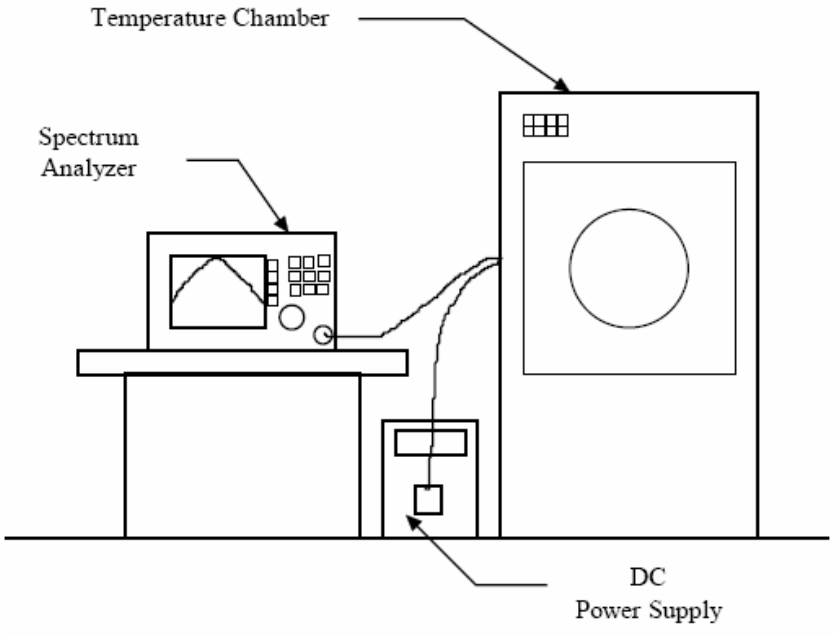
Measurement Procedure

A) Frequency stability versus environmental temperature
1. Setup the configuration per figure 5 for frequencies measured at ambient temperature if it is within 15℃to 25℃. Otherwise, an environmental chamber set for a temperature of 20℃shall be used.
2. Turn on EUT and set SA center frequency to the right frequency needs to be measured. Then set SA RBW to 30 kHz, VBW to 100kHz and frequency span to 500 kHz. Record this frequency to be a reference.
3. Set the temperature of chamber to 50℃. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize. While maintaining a constant temperature inside the chamber, turn the EUT on and measure the EUT operating frequency.
4. Repeat step 2 with a 10℃decreased per stage until the lowest temperature -30℃is measured, record all measurement frequencies.

B) Frequency stability versus input voltage
1. Setup the configuration per figure 7 for frequencies measured at ambient temperature if it is within 15℃to 25℃. Otherwise, an environmental chamber set for a temperature of 20℃shall be used. Install new batteries in the EUT.
2. Set SA center frequency to the right frequency needs to be measured. Then set SA RBW to 30 kHz, VBW to 100kHz and frequency span to 500 kHz. Record this frequency to be a reference.
3. For non hand carried, battery operated device, supply the EUT primary voltage with 85 and 115 percent of the nominal value and record the frequency.

Test Configuration

Figure 5 : Frequency stability measurement configuration



TEST RESULTS

A. Tx Frequency 652.50MHz
A1. Frequency stability versus enviroment tempture

Reference Frequency :652.50 MHz Limit：0.005%							
Enviroment	Power	Frequency measured with time elapsed					
Tempture	Supplied	2 minutes		5 minutes		10 minutes	
(℃)	(Vdc)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	3.00	652.5199	0.003050	652.5194	0.002973	652.5063	0.000966
40		652.5155	0.002375	652.5135	0.002069	652.5119	0.001824
30		652.5117	0.001793	652.5112	0.001716	652.5012	0.000184
20		652.5102	0.001563	652.5082	0.001257	652.5176	0.002697
10		652.5149	0.002284	652.5145	0.002222	652.5116	0.001778
0		652.5099	0.001517	652.5200	0.003065	652.5194	0.002973
-10		652.5185	0.002835	652.5169	0.002590	652.5167	0.002559
-20		652.5168	0.002575	652.5189	0.002897	652.5175	0.002682
-30		652.5117	0.001793	652.5016	0.000245	652.5108	0.001655

A2. Frequency stability versus supplied voltage (85% - 115%)

Reference Frequency : 652.50 MHz Limit：0.005%							
Enviroment	Power	Frequency measured with time elapsed					
Tempture	Supplied	2 minutes		5 minutes		10 minutes	
(℃)	(Vdc)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
25	2.55	652.5066	0.00101149	652.5597	0.0091494	652.5618	0.0094713
25	3.45	652.5186	0.00285057	652.5610	0.0093487	652.5602	0.0092261

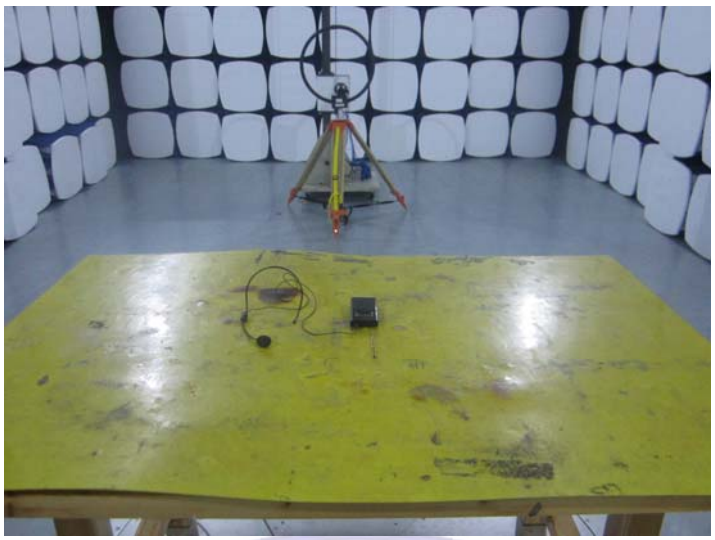
B. Tx Frequency 677.500MHz
B1. Frequency stability versus enviroment tempture

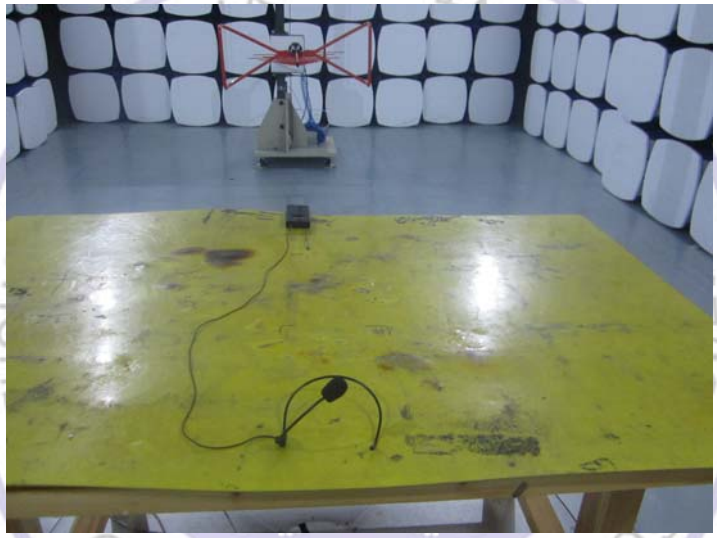
Reference Frequency :677.50 MHz Limit：0.005%							
Enviroment	Power	Frequency measured with time elapsed					
Tempture	Supplied	2 minutes		5 minutes		10 minutes	
(℃)	(Vdc)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	3.00	677.5028	0.000413	677.5086	0.001269	677.5071	0.001048
40		677.5114	0.001683	677.5103	0.001520	677.5122	0.001801
30		677.5109	0.001609	677.5227	0.003351	677.5129	0.001904
20		677.5112	0.001653	677.5095	0.001402	677.5104	0.001535
10		677.5128	0.001889	677.5058	0.000856	677.5117	0.001727
0		677.5073	0.001077	677.5214	0.003159	677.5126	0.001860
-10		677.5069	0.001018	677.5151	0.002229	677.5087	0.001284
-20		677.5143	0.002111	677.5176	0.002598	677.5219	0.003232
-30		677.5109	0.001609	677.5027	0.000399	677.5021	0.000310

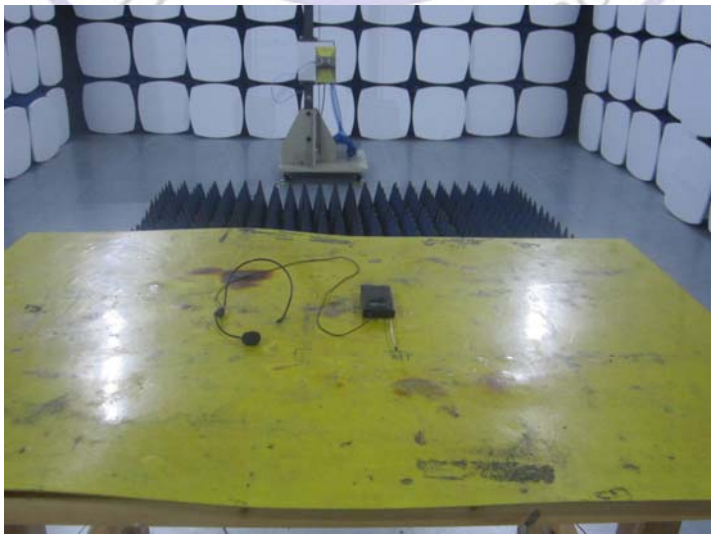
B2. Frequency stability versus supplied voltage (85% - 115%)

Reference Frequency : 677.50 MHz Limit：0.005%							
Enviroment	Power	Frequency measured with time elapsed					
Tempture	Supplied	2 minutes		5 minutes		10 minutes	
(℃)	(Vdc)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
25	2.55	677.5107	0.00157934	677.5163	0.0024059	677.5178	0.0026273
25	3.45	677.5098	0.00144649	677.5091	0.0013432	677.5117	0.0017269

5. Test Setup Photos of the EUT

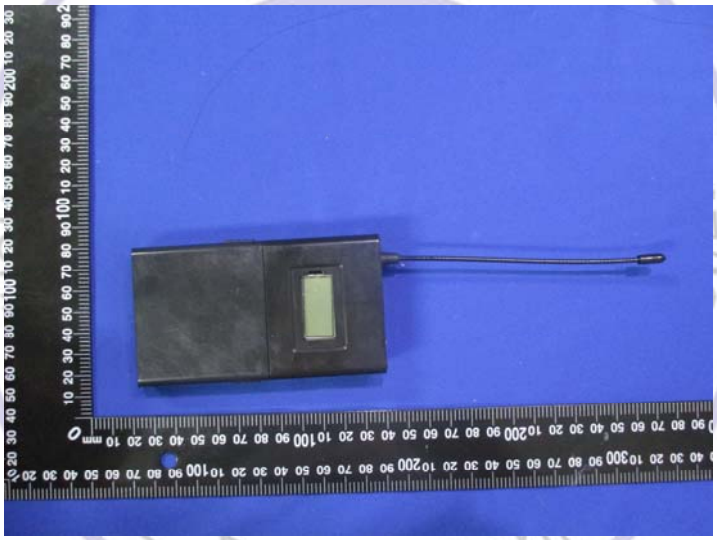




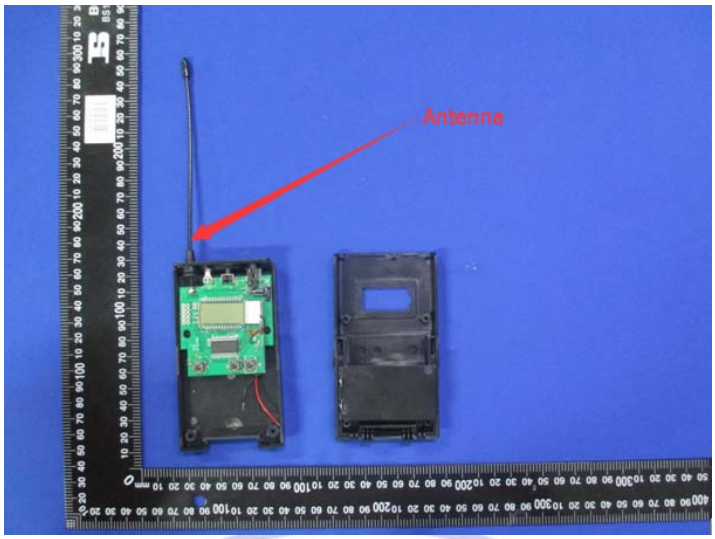


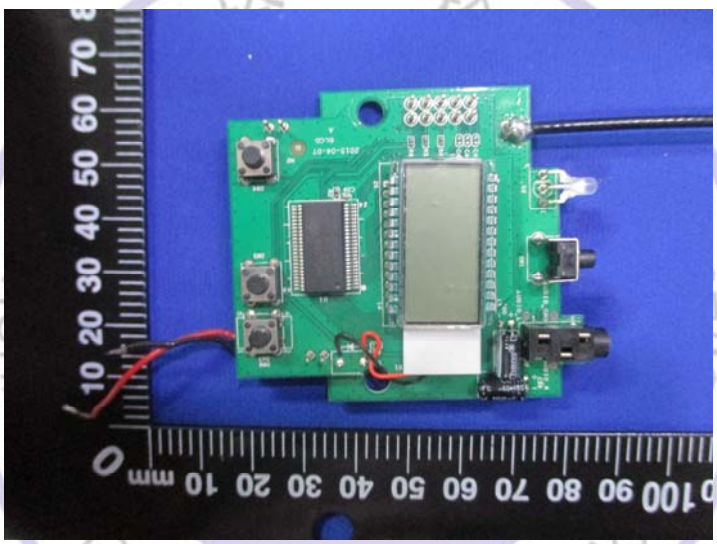
6. External and Internal Photos of the EUT

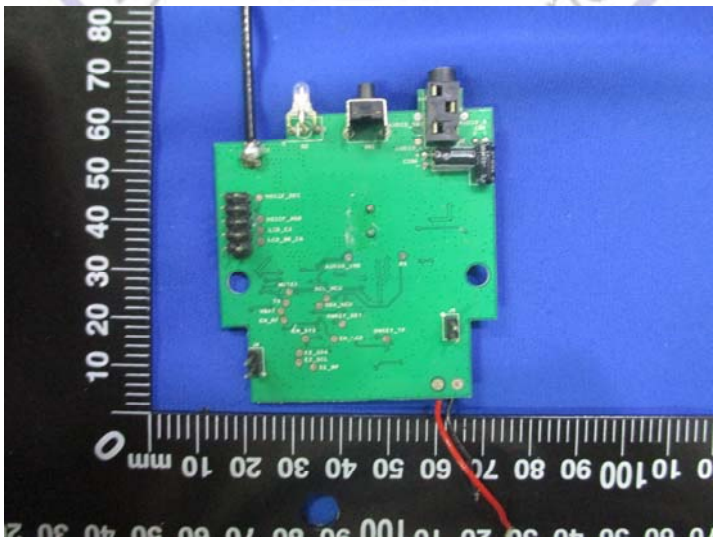
External Photos

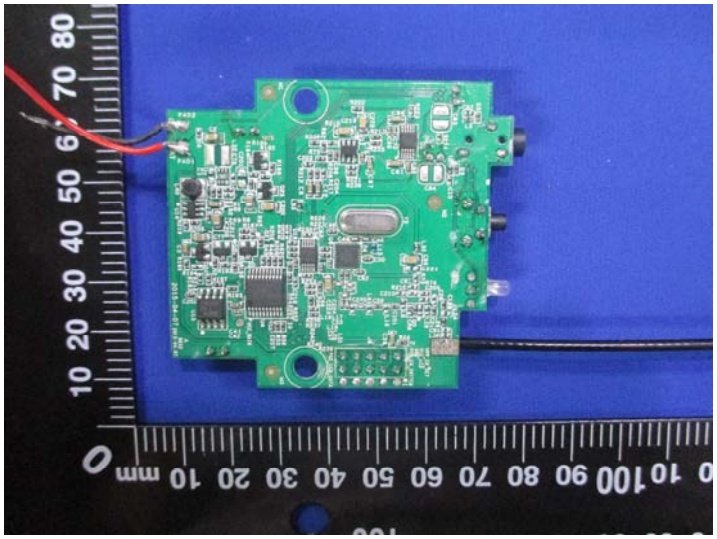


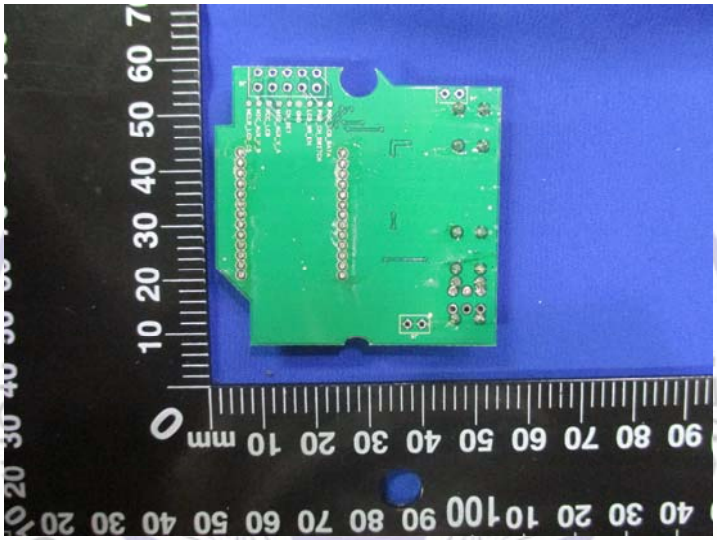
Internal Photos











.....End of Report.....