

FCC PART 74 SUBPART H
CERTIFICATION TEST REPORT

For

Microphone

MODEL No.: HS-U1

FCC ID: 2AS6UHS-U1

Trade Mark: N/A

REPORT NO: ES190325941W

ISSUE DATE: April 29, 2019

Prepared for

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NO189,DONGXIN ROAD,DONGQIAO TOWN,NINGBO CITY,ZHEJIANG
PROVINCE,CHINA

Prepared by

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Table of Contents

1	TEST RESULT CERTIFICATION	3
2	EUT TECHNICAL DESCRIPTION	4
3	SUMMARY OF TEST RESULT.....	5
4	TEST METHODOLOGY	6
4.1	GENERAL DESCRIPTION OF APPLIED STANDARDS.....	6
4.2	MEASUREMENT EQUIPMENT USED.....	6
4.3	DESCRIPTION OF TEST MODES	7
5	FACILITIES AND ACCREDITATIONS	8
5.1	FACILITIES.....	8
5.2	LABORATORY ACCREDITATIONS AND LISTINGS.....	8
6	TEST SYSTEM UNCERTAINTY.....	9
7	SETUP OF EQUIPMENT UNDER TEST.....	10
7.1	RADIO FREQUENCY TEST SETUP 1	10
7.2	RADIO FREQUENCY TEST SETUP 2.....	10
7.3	BLOCK DIAGRAM CONFIGURATION OF TEST SYSTEM.....	12
7.4	SUPPORT EQUIPMENT	12
8	TEST REQUIREMENTS.....	13
8.1	RF OUTPUT POWER.....	13
8.2	MODULATION CHARACTERISTICS	15
8.3	OCCUPIED BANDWIDTH.....	17
8.4	RADIATED SPURIOUS EMISSION	21
8.5	SPURIOUS EMISSION AT ANTENNA TERMINAL.....	27
8.6	FREQUENCY STABILITY	30

1 TEST RESULT CERTIFICATION

Applicant : NINGBO HYSOUND ELECTRONIC CO.,LTD
 Address: NO189,DONGXIN ROAD,DONGQIAO TOWN,NINGBO CITY,ZHEJIANG PROVINCE,CHINA
 Applicant : NINGBO HYSOUND ELECTRONIC CO.,LTD
 Address: NO189,DONGXIN ROAD,DONGQIAO TOWN,NINGBO CITY,ZHEJIANG PROVINCE,CHINA
 EUT : Microphone
 Model Name : HS-U1
 Trademark : N/A

Measurement Procedure Used:

APPLICABLE STANDARDS	
STANDARD	TEST RESULT
FCC 47 CFR Part 74, Subpart H	PASS

The above equipment was tested by EMTEK (SHENZHEN) CO., LTD. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and ANSI/TIA-603-D: 2010 the energy emitted by the sample EUT tested as described in this report is in compliance with the requirements of Part 74 Subpart H

The test results of this report relate only to the tested sample identified in this report

Date of Test : April 20, 2019 to April 29, 2019

Prepared by : *Sewen Guo*
 Sewen Guo /Editor

Reviewer : *Joe Xia*
 Joe Xia/Editor

Approve & Authorized Signer : *[Signature]*
 Lisa Wang/Manager



2 EUT TECHNICAL DESCRIPTION

Characteristics	Description
Product	Microphone
Model Number	HS-U1
RF Output Power:	Max. 10.62dBm (Conducted)
Frequency Range:	600.85MHz – 606.025MHz
Modulation:	FM
Antenna Type:	Integral Antenna
Antenna Gain:	0 dBi
Power supply	<input checked="" type="checkbox"/> DC 3 V for Battery
	<input type="checkbox"/> Adapter:AC120V/60Hz
Temperature Range:	0°C ~ +40°C

Note: for more details, please refer to the User's manual of the EUT.

3 SUMMARY OF TEST RESULT

FCC Part Clause	Test Parameter	Verdict	Remark
§74.861(e)(1)(ii)	Output Power Measurement	PASS	
§74.861(e)(3)	Modulation Characteristics	PASS	
§74.861(e)(5)	Occupied Bandwidth Emission	PASS	
§74.861(e)(6)	Radiated Spurious Emission	PASS	
§2.1051	Spurious Emission at Antenna Port	PASS	
§74.86(e)(4)	Frequency Stability	PASS	
NOTE1: N/A (Not Applicable)			

RELATED SUBMITTAL(S) / GRANT(S):

This submittal(s) (test report) is intended for FCC ID: 2AS6UHS-U1 filing to comply with Section H of the FCC Part 74.

4 TEST METHODOLOGY

4.1 GENERAL DESCRIPTION OF APPLIED STANDARDS

According to its specifications, the EUT must comply with the requirements of the following standards:

FCC 47 CFR Part 74, Subpart H

4.2 MEASUREMENT EQUIPMENT USED

4.2.1 Radiated Emission Test Equipment

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	DUE CAL.
EMI Test Receiver	Rohde & Schwarz	ESU	1302.6005.26	05/16/2018	05/15/2019
Pre-Amplifier	HP	8447D	2944A07999	05/16/2018	05/15/2019
Bilog Antenna	Schwarzbeck	VULB9163	142	05/16/2018	05/15/2019
Loop Antenna	ARA	PLA-1030/B	1029	05/16/2018	05/15/2019
Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170399	05/16/2018	05/15/2019
Horn Antenna	Schwarzbeck	BBHA 9120	D143	05/16/2018	05/15/2019
Cable	Schwarzbeck	AK9513	ACRX1	05/16/2018	05/15/2019
Cable	Rosenberger	N/A	FP2RX2	05/16/2018	05/15/2019
Cable	Schwarzbeck	AK9513	CRPX1	05/16/2018	05/15/2019
Cable	Schwarzbeck	AK9513	CRRX2	05/16/2018	05/15/2019

4.2.2 Radio Frequency Test Equipment

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	DUE CAL.
Spectrum Analyzer	Agilent	E4407B	88156318	05/16/2018	05/15/2019
Signal Analyzer	Agilent	N9010A	My53470879	05/16/2018	05/15/2019
Power meter	Anritsu	ML2495A	0824006	05/16/2018	05/15/2019
Power sensor	Anritsu	MA2411B	0738172	05/16/2018	05/15/2019
Spectrum Analyzer	Rohde & Schwarz	FSV40	100967	05/16/2018	05/15/2019
Cell site test set	Hewlett packard	8921A	3524A02336	05/16/2018	05/15/2019

Remark: Each piece of equipment is scheduled for calibration once a year.

4.3 DESCRIPTION OF TEST MODES

The EUT has been tested under its typical operating condition.

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

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

Test of channel included the lowest and middle and highest frequency to perform the test, then record on this report.

Test Frequency :

Frequency (MHz)	Frequency (MHz)
600.85	606.025

Test Conditions:

	Normal	LTLV	LTHV	HTHV	HTLV
Temperature (°C)	25	0	0	40	40
Voltage (V)	3.0	2.6	3.4	2.6	3.4

5 FACILITIES AND ACCREDITATIONS

5.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

Bldg 69, Majialong Industry Zone District, Nanshan District, Shenzhen, China

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10 and CISPR Publication 22.

5.2 LABORATORY ACCREDITATIONS AND LISTINGS

Site Description

EMC Lab.

: Accredited by CNAS, 2016.10.24

The certificate is valid until 2022.10.28

The Laboratory has been assessed and proved to be in compliance with CNAS-CL01:2006 (identical to ISO/IEC 17025:2005)

The Certificate Registration Number is L2291.

Accredited by TUV Rheinland Shenzhen 2016.05.19

The Laboratory has been assessed according to the requirements ISO/IEC 17025.

Accredited by FCC, August 06, 2018

The certificate is valid until August 07, 2020

Designation Number: CN1204

Test Firm Registration Number: 882943

Accredited by Industry Canada, November 09, 2018

The Conformity Assessment Body Identifier is CN0008.

Name of Firm

: EMTEK (SHENZHEN) CO., LTD.

Site Location

: Bldg 69, Majialong Industry Zone,
Nanshan District, Shenzhen, Guangdong, China

6 TEST SYSTEM UNCERTAINTY

The following measurement uncertainty levels have been estimated for tests performed on the apparatus:

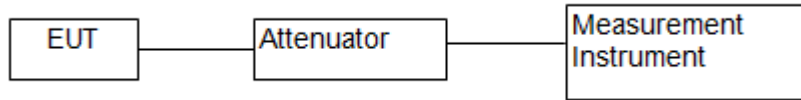
Parameter	Uncertainty
Radio Frequency	$\pm 1 \times 10^{-5}$
Maximum Peak Output Power Test	$\pm 1.0\text{dB}$
Conducted Emissions Test	$\pm 2.0\text{dB}$
Radiated Emission Test	$\pm 2.0\text{dB}$
Occupied Bandwidth Test	$\pm 1.0\text{dB}$
Band Edge Test	$\pm 3\text{dB}$
All emission, radiated	$\pm 3\text{dB}$
Antenna Port Emission	$\pm 3\text{dB}$
Temperature	$\pm 0.5^{\circ}\text{C}$
Humidity	$\pm 3\%$

Measurement Uncertainty for a level of Confidence of 95%

7 SETUP OF EQUIPMENT UNDER TEST

7.1 RADIO FREQUENCY TEST SETUP 1

The component's antenna ports(s) of the EUT are connected to the measurement instrument per an appropriate attenuator. The EUT is controlled by PC/software to emit the specified signals for the purpose of measurements.



7.2 RADIO FREQUENCY TEST SETUP 2

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10. The test distance is 3m. The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 and CAN/CSA-CEI/IEC CISPR 22.

Below 30MHz:

The EUT is placed on a turntable 0.8meters above the ground in the chamber, 3 meter away from the antenna (loop antenna). The Antenna should be positioned with its plane vertical at the specified distance from the EUT and rotated about its vertical axis for maximum response at each azimuth about the EUT. The center of the loop shall be 1 m above the ground. For certain applications, the loop antenna plane may also need to be positioned horizontally at the specified distance from the EUT.

Above 30MHz:

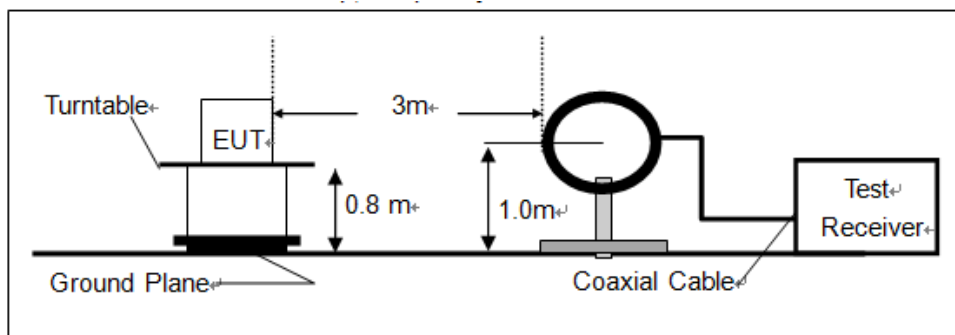
The EUT is placed on a turntable 1.5meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).

Above 1GHz:

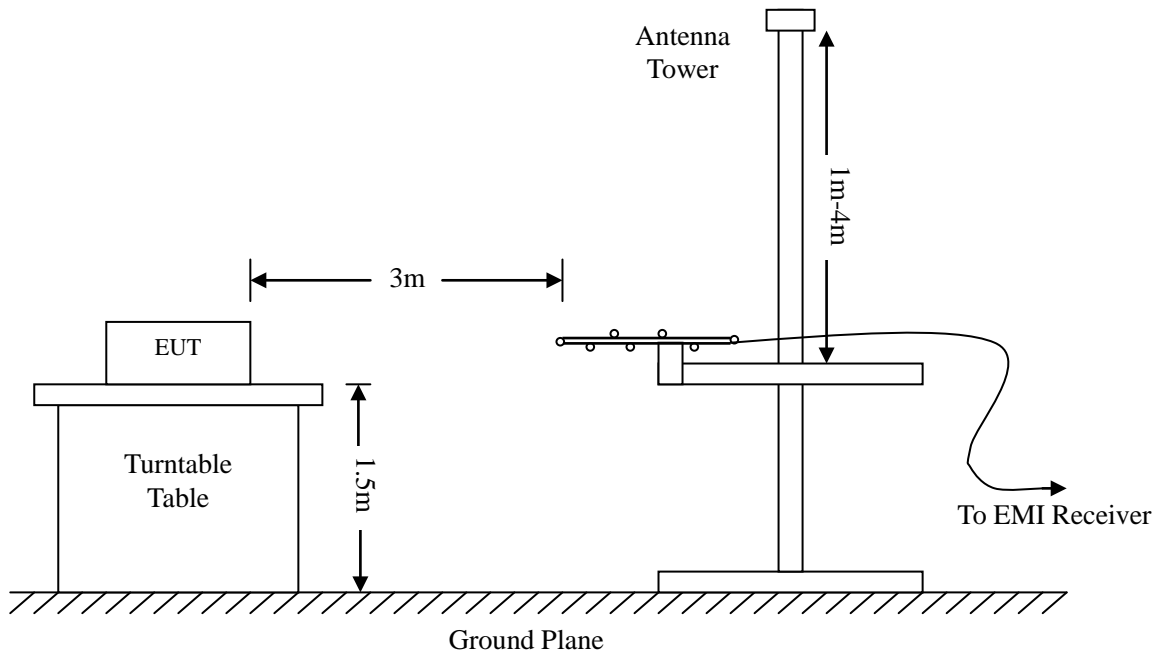
(Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.)

The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).

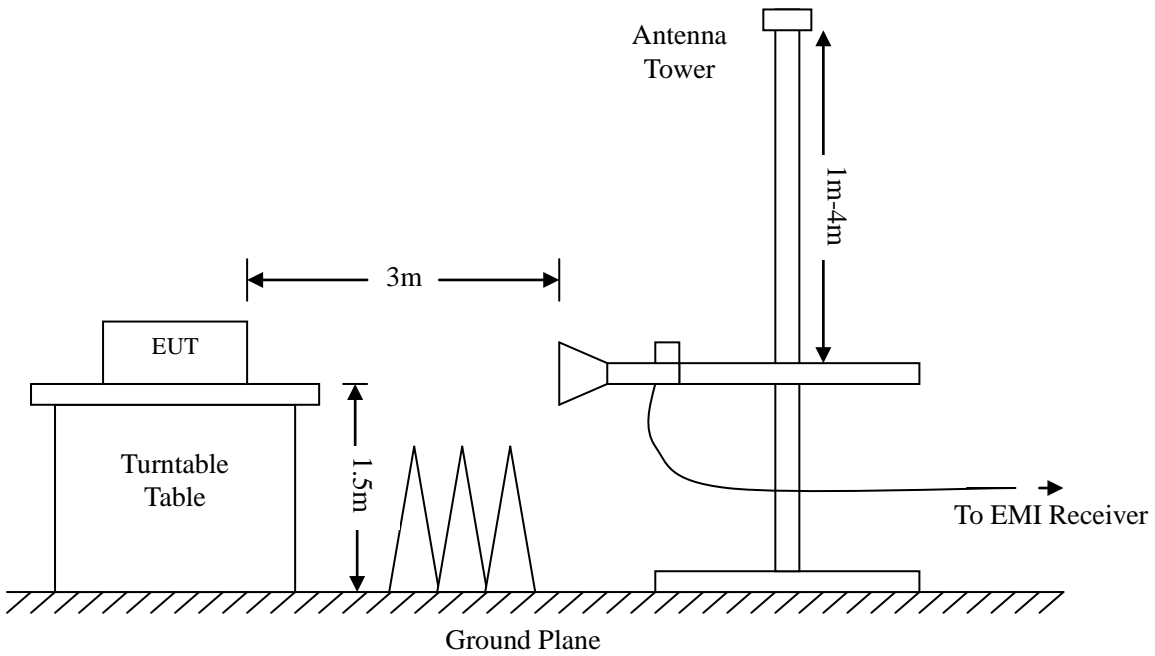
(a) Radiated Emission Test Set-Up, Frequency Below 30MHz



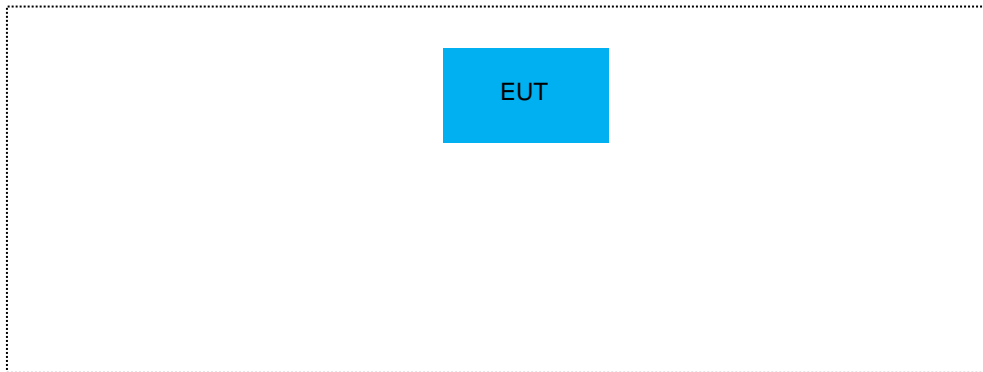
(b) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(c) Radiated Emission Test Set-Up, Frequency above 1000MHz



7.3 BLOCK DIAGRAM CONFIGURATION OF TEST SYSTEM



7.4 SUPPORT EQUIPMENT

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Auxiliary Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
/	/	/	/

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

8 TEST REQUIREMENTS

8.1 RF OUTPUT POWER

8.1.1 Applicable Standard

According to FCC 74.861(e)(1)(ii)

8.1.2 Conformance Limit

For low power auxiliary station operating in the 470-608, and 614-698 MHz bands, the power of the measured unmodulated carrier power and the output of the transmitter power amplifier (antenna input power) may not exceed 250mW.

8.1.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 1

8.1.4 Test Procedure

1. The maximum peak output power was measured with a Spectrum Analyzer connected to the antenna terminal while 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. The Spectrum 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 to measure final RF Stage supply voltage. Then the voltage v.s. current of the final RF Stage can be showed.

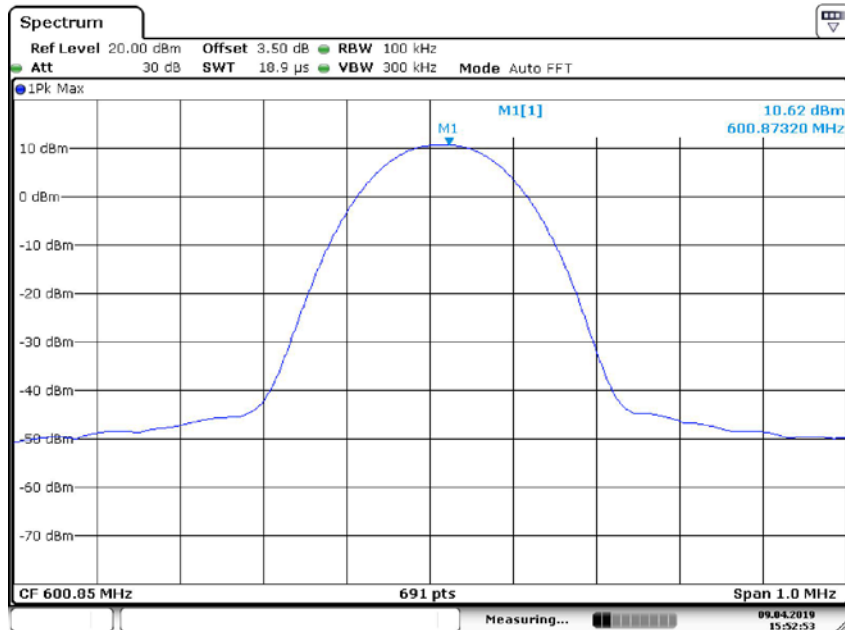
Measure and record the results in the test report.

8.1.5 Test Results

Temperature:	26° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

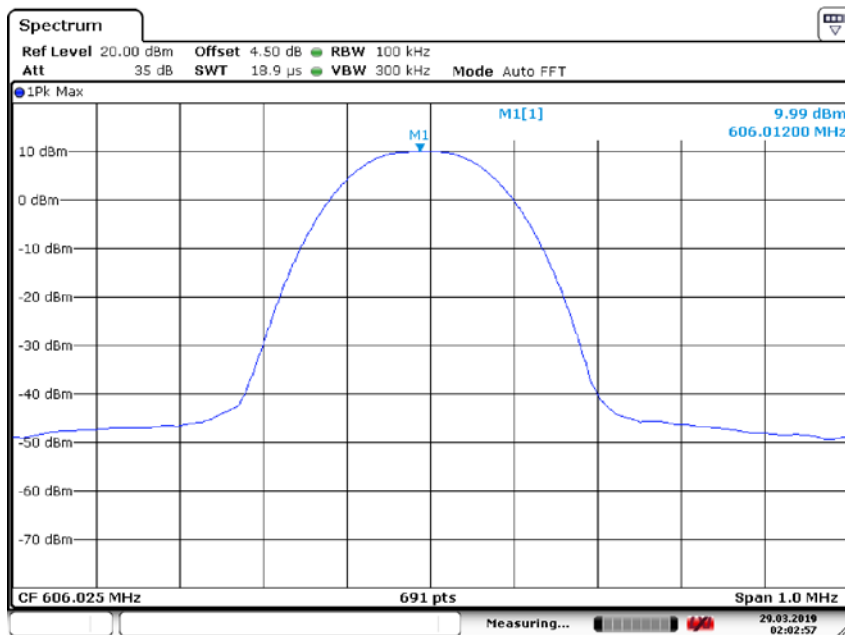
Frequency (MHz)	RF Stage Voltage (Vdc)	Collected Current (mA)	Output Power (dBm)	Limit (dBm)
600.85	3.00	0.35	10.62	24
606.025	3.00	0.35	9.99	24

Channel (600.85MHz)



Date: 9.APR.2019 15:52:53

Channel (606.025MHz)



Date: 29.MAR.2019 02:02:57

8.2 MODULATION CHARACTERISTICS

8.2.1 Applicable Standard

According to FCC Part 74.861(e)(3) and 2.1047 (a)

8.2.2 Conformance Limit

For Voice Modulated Communication Equipment, the frequency response of the audio modulating circuit over a range of 100Hz to 5000Hz shall be measured. For equipment required to have an audio low-pass filter, the frequency response of the filter or of all circuitry installed between the modulation limiter and the modulated stage shall be measured.

Any form of modulation may be used. A maximum deviation of ± 75 kHz is permitted when frequency modulation is employed.

8.2.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 1

8.2.4 Test Procedure

1 Position the EUT as shown in figure 1, 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.

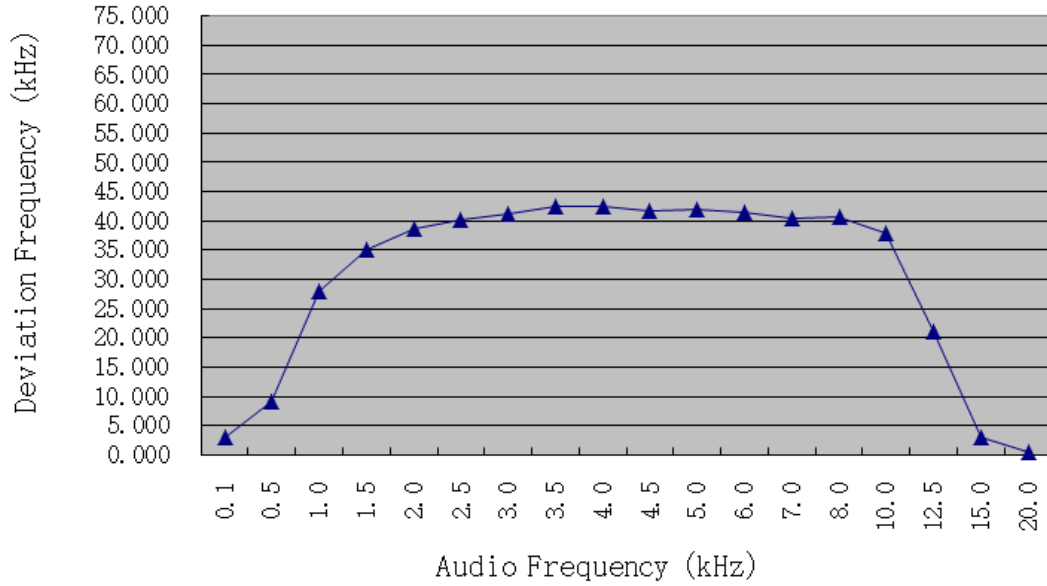
2 Repeat step 1 with changing the input frequency for 100, 300, 1000, 2500 and 3000 Hz in sequence.

8.2.5 Test Results

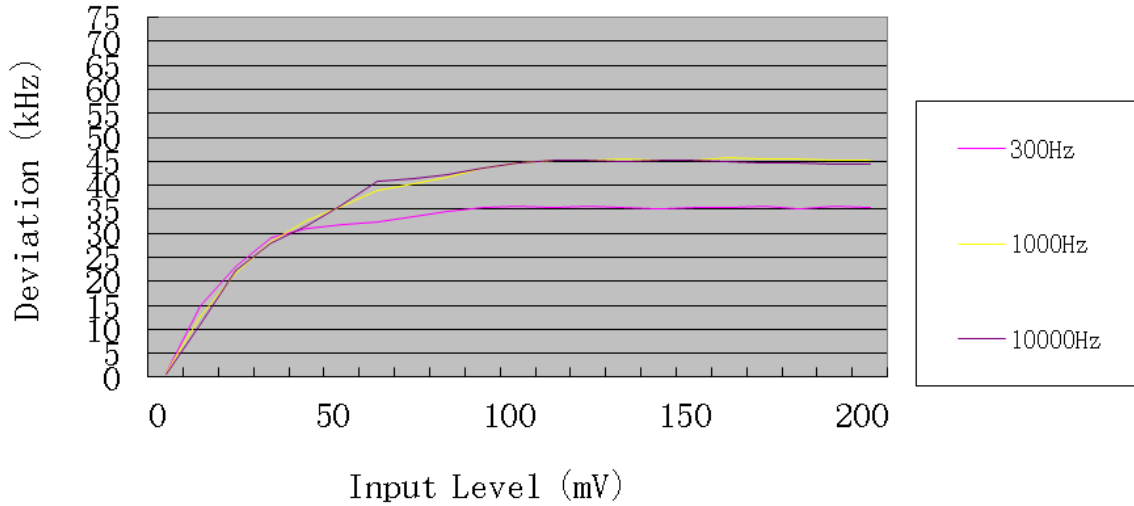
Temperature:	26° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

Channel (600.85MHz)

Frequency Response



Modulation Limit



8.3 OCCUPIED BANDWIDTH

8.3.1 Applicable Standard

According to 74.861(e)(5) and FCC 2.1049 (c) (1)

8.3.2 Conformance Limit

According to FCC 2.1049 (c) (1), for radiotelephone transmitter, other than single sideband or independent sideband transmitter, when modulated by a 2.5 kHz tone at an input level 16 dB greater than that necessary to produce 50 percent modulation.

According to §74.861(e)(5), the operating bandwidth shall not exceed 200 kHz.

According to FCC 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 up to and the authorized bandwidth shall be attenuated below the un-modulated carrier by at least 43 plus 10 Log (output power in watts) dB.

8.3.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 1

8.3.4 Test Procedure

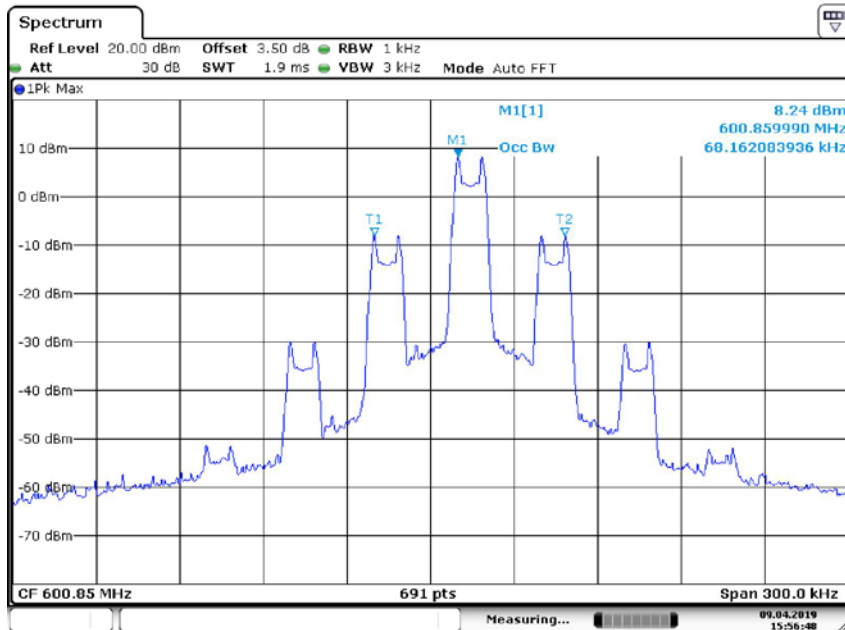
According to TIA-603 for additional Test Set-Up procedures, the occupied bandwidth of emission was measured with a Spectrum Analyzer connected to the antenna terminal while EUT was operating in 2.5kHz tone at an input level 16 dB greater than that necessary to produce 50 percent modulation. Then mark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

8.3.5 Test Results

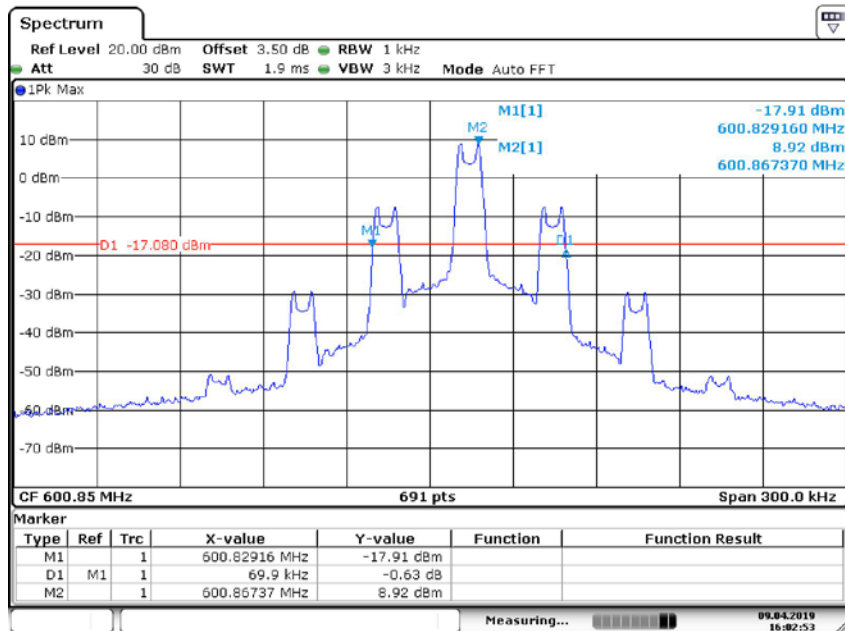
Temperature:	26° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

Frequency (MHz)	-26dB Bandwidth (kHz)	99% Bandwidth (kHz)	Limit (kHz)
600.85	69.90	68.162	200
606.025	70.77	65.991	200

Channel (600.85MHz)

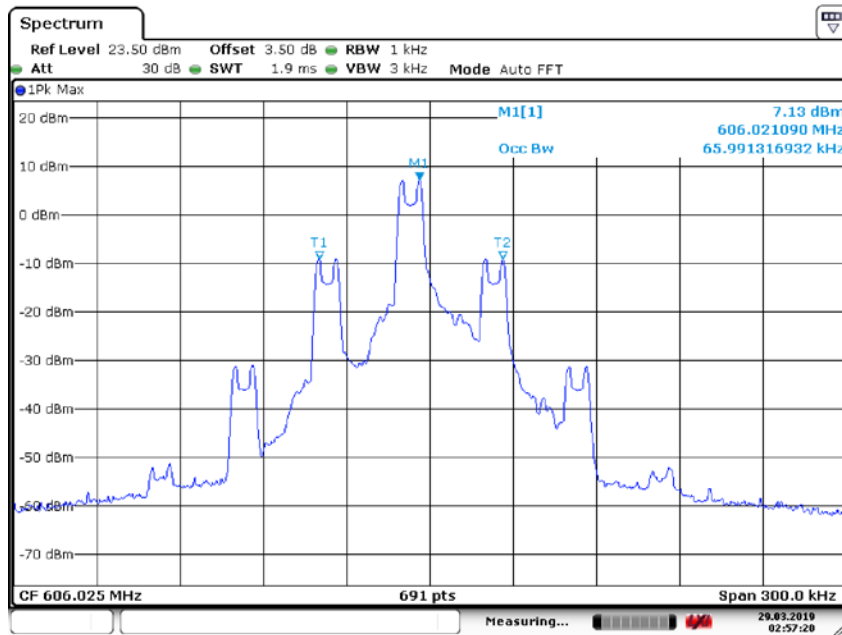


Date: 9.APR.2019 15:56:49

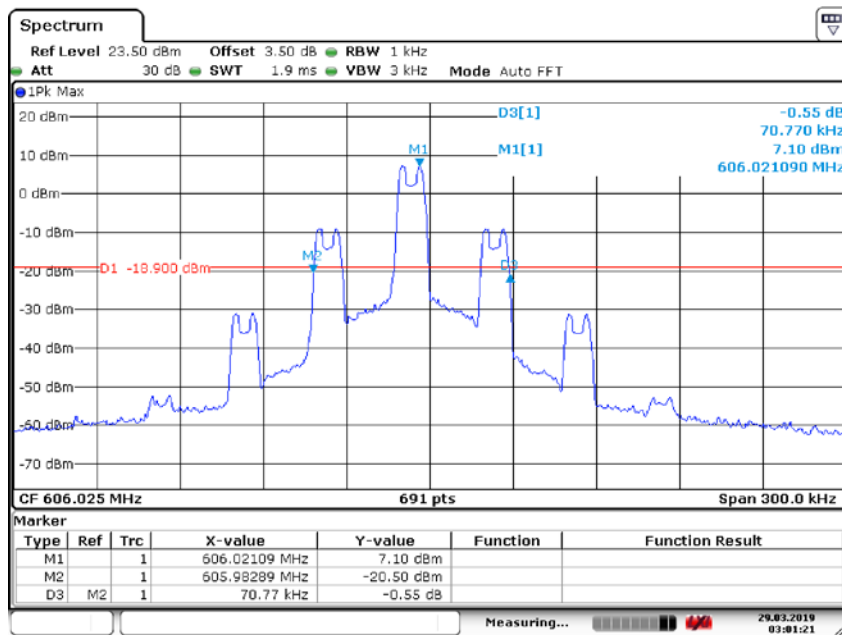


Date: 9.APR.2019 16:02:53

Channel (606.025MHz)

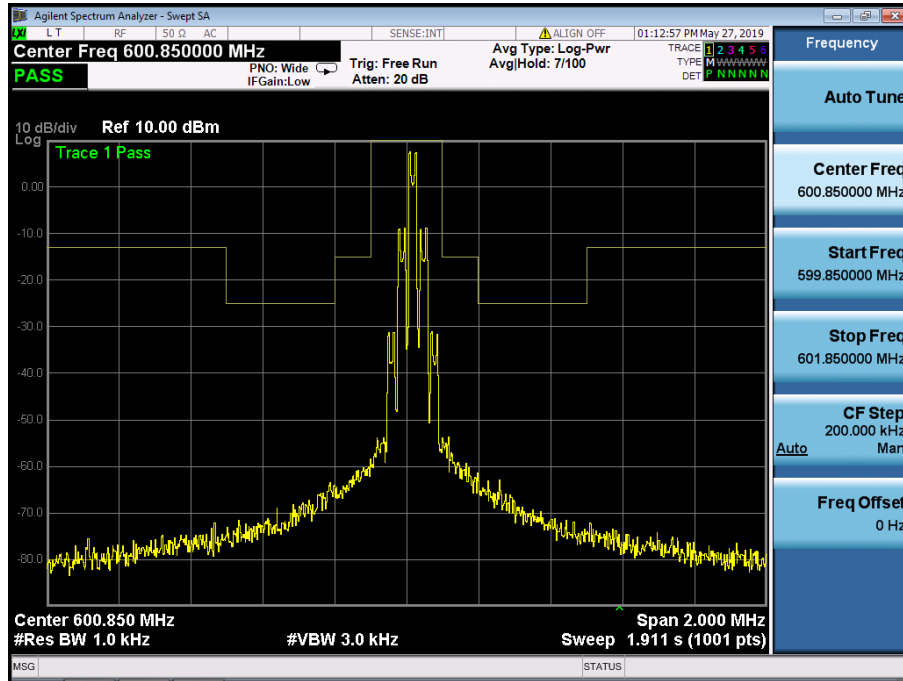


Date: 29.MAR.2019 02:57:20

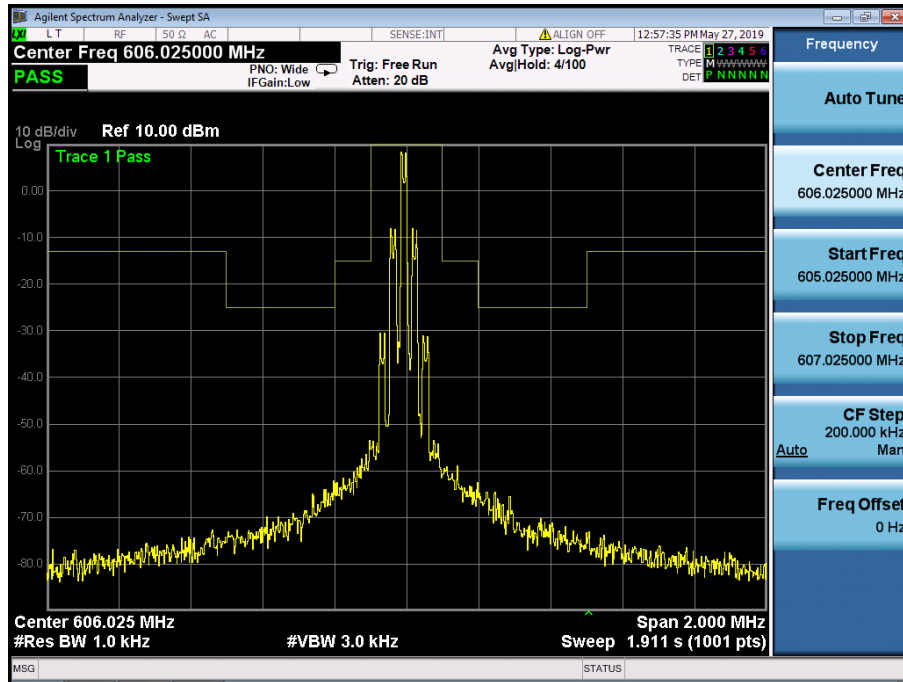


Date: 29.MAR.2019 03:01:22

Emission Mask (600.85MHz)



Emission Mask (606.025MHz)



8.4 RADIATED SPURIOUS EMISSION

8.4.1 Applicable Standard

According to FCC74.861 (e)(6) and FCC 2.1053

8.4.2 Conformance Limit

According to FCC 2.1053, measurements shall be made to detect spurious emission that may be radiated directly from the cabinet, control circuits, power leads, or intermediated 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 FCC74.861 (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 up to and the authorized bandwidth shall be attenuated below the un-modulated carrier by at least 43 plus 10 Log (output power in watts) dB

8.4.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 2

8.4.4 Test Procedure

The setup of EUT is according with per TIA/EIA Standard 603 and ANSI C63.4-2014 measurement procedure.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

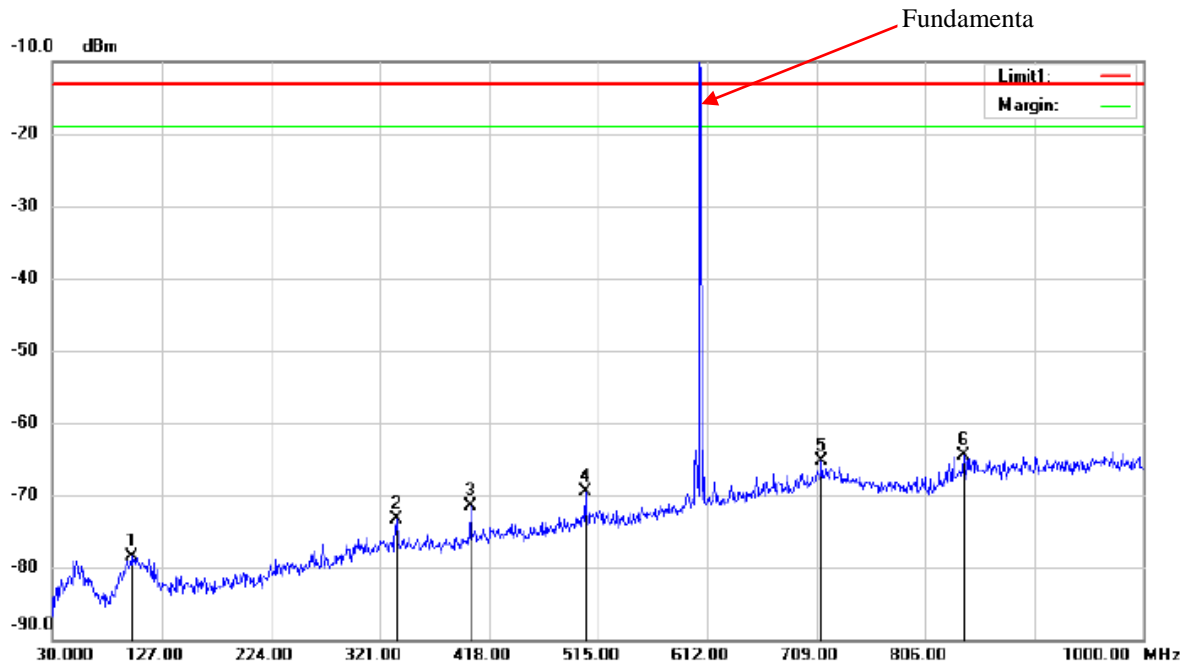
Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious attenuation limit in dB = 43 + 10 Log10 (power in Watts)

8.4.5 Test Results

Temperature:	26° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

■ Spurious Emission below 1GHz (30MHz to 1GHz)



Site: 3m Chamber #1

Polarization: **Vertical**

Temperature: 29.5 C

Limit: (RE) FCC Part 74

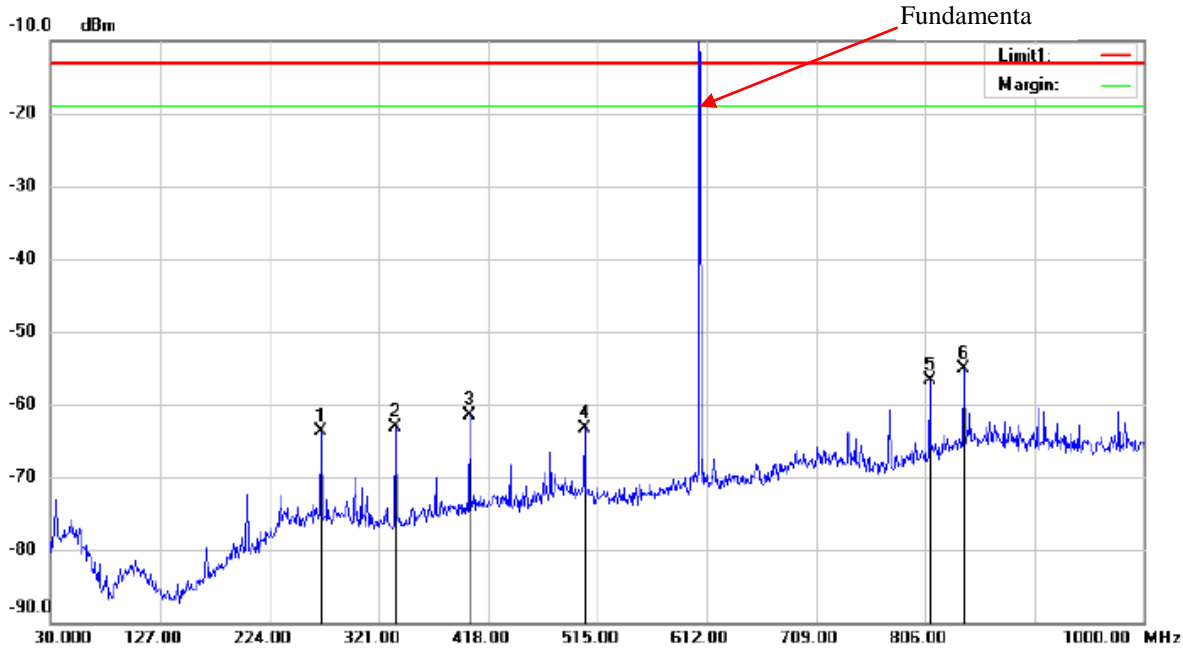
Power: DC3V

Humidity: 48 %

Mode: 600.85MHz

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree	Detector	Comment
1		100.4462	-79.49	1.06	-78.43	-13.00	-65.43			peak	
2		336.0350	-77.16	3.83	-73.33	-13.00	-60.33			peak	
3		401.9950	-75.71	4.30	-71.41	-13.00	-58.41			peak	
4		503.9662	-76.24	6.72	-69.52	-13.00	-56.52			peak	
5		713.8500	-76.60	11.26	-65.34	-13.00	-52.34			peak	
6	*	840.0712	-77.13	12.62	-64.51	-13.00	-51.51			peak	

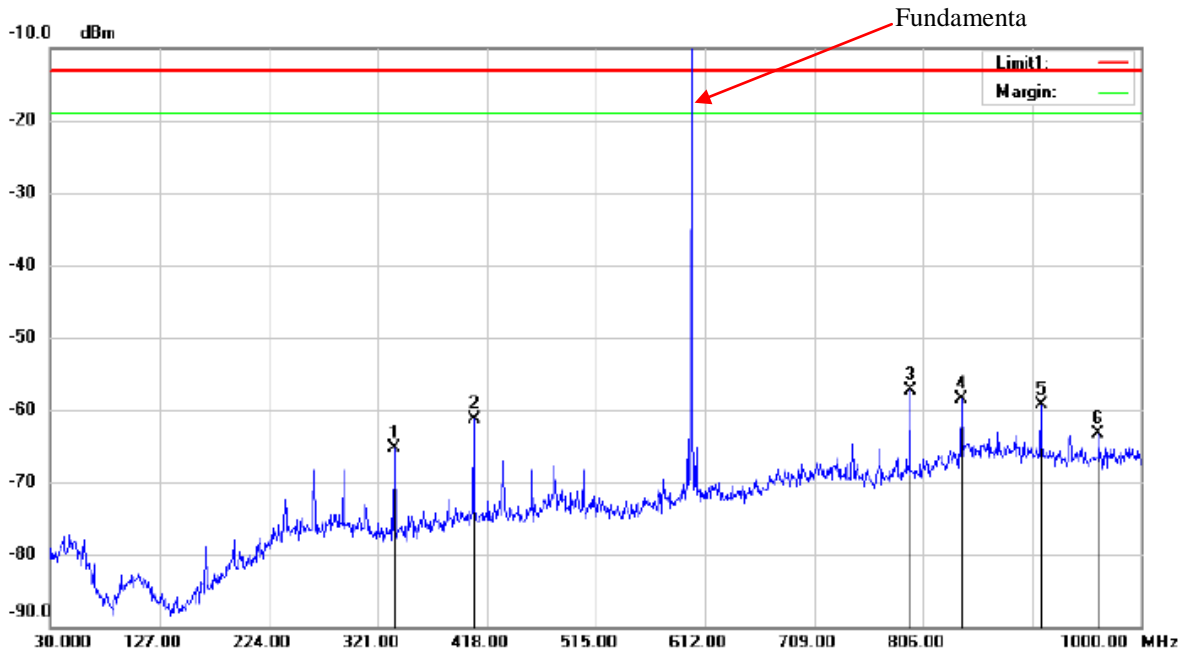


Site: 3m Chamber #1 Polarization: *Horizontal* Temperature: 29.5 C
 Limit: (RE) FCC Part 74 Power: DC3V Humidity: 48 %

Mode: 600.85MHz

Note:

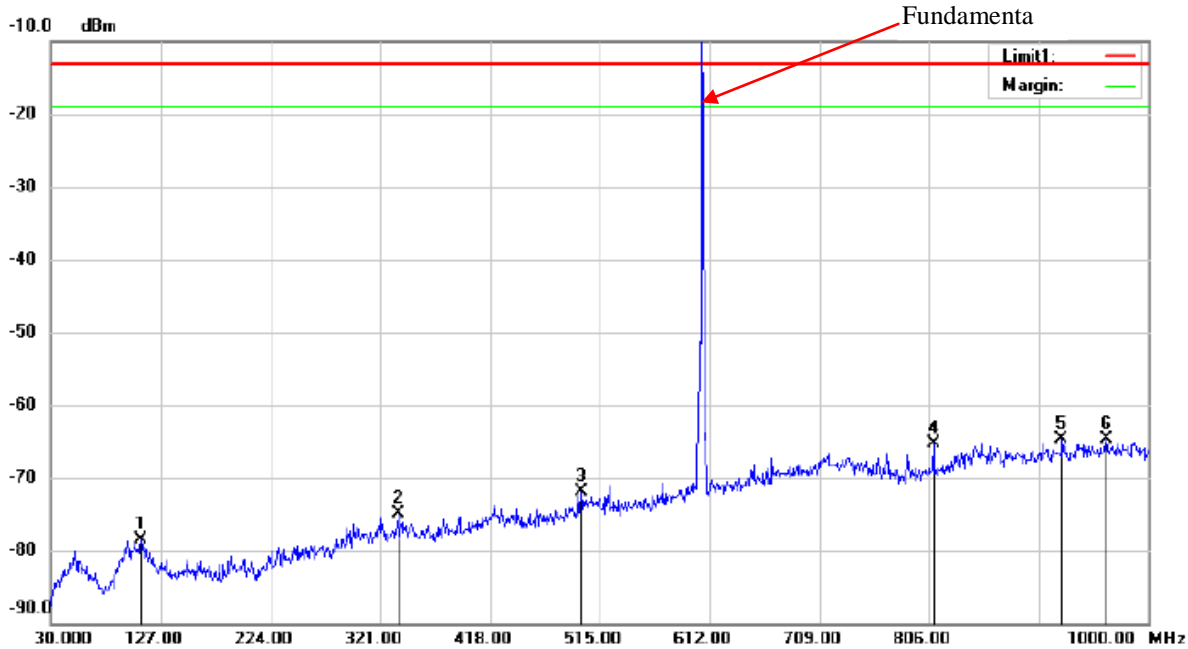
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1		269.9538	-67.69	4.07	-63.62	-13.00	-50.62	peak		
2		336.0350	-66.24	3.17	-63.07	-13.00	-50.07	peak		
3		401.9950	-66.78	5.38	-61.40	-13.00	-48.40	peak		
4		503.9663	-71.06	7.72	-63.34	-13.00	-50.34	peak		
5		810.1225	-68.01	11.30	-56.71	-13.00	-43.71	peak		
6	*	840.0712	-67.94	12.90	-55.04	-13.00	-42.04	peak		



Site: 3m Chamber #1 Polarization: *Horizontal* Temperature: 29.5 C
 Limit: (RE) FCC Part 74 Power: DC3V Humidity: 48 %

Mode: 606.025MHz
 Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree	Comment
1		336.0350	-68.50	3.17	-65.33	-13.00	-52.33	peak			
2		407.0875	-66.80	5.53	-61.27	-13.00	-48.27	peak			
3	*	794.6025	-68.03	10.79	-57.24	-13.00	-44.24	peak			
4		840.0712	-71.45	12.90	-58.55	-13.00	-45.55	peak			
5		911.2450	-72.77	13.47	-59.30	-13.00	-46.30	peak			
6		962.6550	-76.83	13.47	-63.36	-13.00	-50.36	peak			



Site: 3m Chamber #1

Polarization: *Vertical*

Temperature: 29.5 C

Limit: (RE) FCC Part 74

Power: DC3V

Humidity: 48 %

Mode: 606.025MHz

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree	Comment
1		109.9037	-79.60	1.04	-78.56	-13.00	-65.56	peak			
2		337.0050	-78.72	3.85	-74.87	-13.00	-61.87	peak			
3		498.9950	-78.26	6.45	-71.81	-13.00	-58.81	peak			
4		810.1224	-75.78	10.43	-65.35	-13.00	-52.35	peak			
5	*	924.2187	-77.89	13.20	-64.69	-13.00	-51.69	peak			
6		963.3825	-78.73	13.98	-64.77	-13.00	-51.77	peak			

Spurious Emission Above 1GHz

Frequency MHz	Ant.Pol(H/V)	Result dBm	Limit dBm	Margin dB
Channel (600.85MHz)				
1201.60	V	-24.91	-13	-11.91
1802.50	V	-28.40	-13	-15.4
3404.30	V	-32.80	-13	-19.8
3605.20	V	-28.38	-13	-15.38
4206.10	V	-24.03	-13	-11.03
4807.00	V	-30.99	-13	-17.99
1201.60	H	-15.27	-13	-2.27
1802.50	H	-16.14	-13	-3.14
3404.30	H	-21.16	-13	-8.16
3605.20	H	-18.65	-13	-5.65
4206.10	H	-15.29	-13	-2.29
4807.00	H	-23.28	-13	-10.28
Channel (606.025MHz)				
1211.80	V	-19.90	-13	-6.90
1818.10	V	-26.85	-13	-13.85
3030.10	V	-28.73	-13	-15.73
3636.10	V	-28.61	-13	-15.61
4242.10	V	-19.58	-13	-6.58
4848.40	V	29.86	-13	42.86
1212.10	H	-15.42	-13	-2.42
1818.10	H	-16.77	-13	-3.77
2424.10	H	-21.53	-13	-8.53
3030.10	H	-18.51	-13	-5.51
3636.10	H	-18.07	-13	-5.07
4242.10	H	-16.17	-13	-3.17

Note: Testing is carried out with frequency rang 30MHz to the tenth harmonics, which above 8th Harmonics are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

8.5 SPURIOUS EMISSION AT ANTENNA TERMINAL

8.5.1 Applicable Standard

According to FCC74.861 (e)(6)

8.5.2 Conformance Limit

According to §2.1051, the radio frequency voltage or powers generated within the equipment and appearing on a spurious frequency shall be checked at the equipment output terminals when properly loaded with a suitable artificial antenna. Curves or equivalent data shall show the magnitude of each harmonic and other spurious emission that can be detected when the equipment is operated under the conditions specified in §2.1049 as appropriate.

According to FCC74.861 (e)(6), the mean power of emissions shall be attenuated below the mean output power of the transmitter in accordance with the following schedule:
On any frequency removed from the operating frequency by more than 250 percent up to and the authorized bandwidth shall be attenuated below the un-modulated carrier by at least 43 plus 10 Log (output power in watts) dB.

8.5.3 Test Configuration

Test according to clause 7.1 radio frequency test setup 1

8.5.4 Test Procedure

The transmitter output (antenna port) was connected to the spectrum analyzer

■ Reference level measurement

Establish a reference level by using the following procedure:

Set instrument center frequency to EUT center frequency.

Set Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel.

Set the RBW = 100 kHz. Set the VBW $\geq 3 \times$ RBW.

Set Detector = peak. Set Sweep time = auto couple.

Set Trace mode = max hold. Allow trace to fully stabilize.

Use the peak marker function to determine the maximum Maximum conducted level.

Note that the channel found to contain the maximum conducted level can be used to establish the reference level.

■ Conducted Spurious RF Conducted Emission

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the in-band emission and all spurious emissions (e.g., harmonics) from the lowest frequency generated in the EUT up through the 10th harmonic.(30MHz to 25GHz).

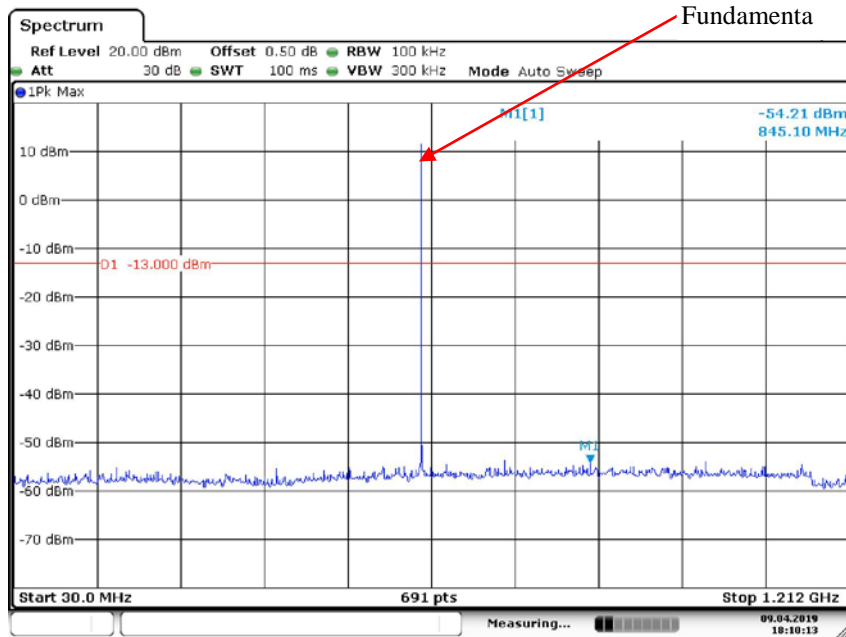
Set RBW = 100 kHz (above 1GHz Set RBW = 1 MHz) Set VBW \geq RBW

Set Sweep = auto Set Detector function = peak Set Trace = max hold

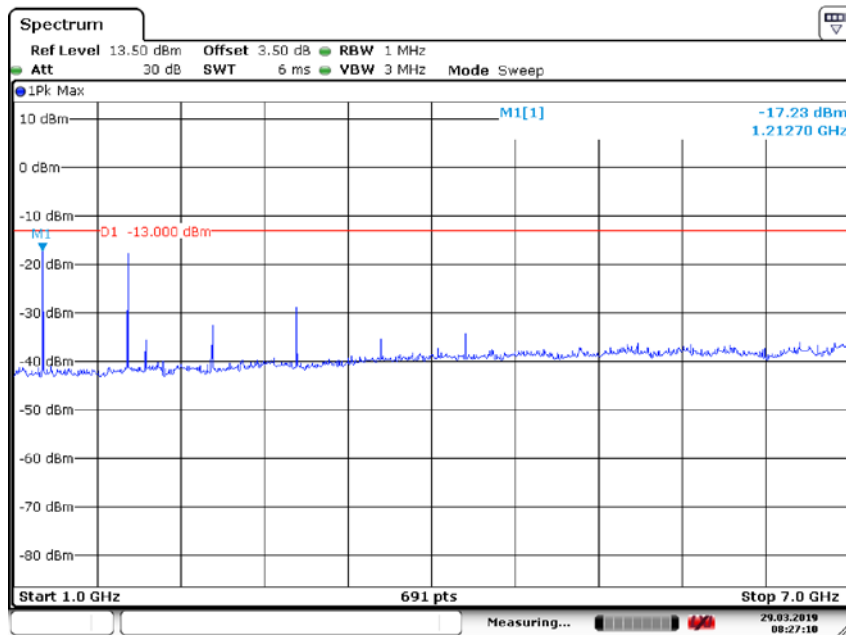
Allow the trace to stabilize. Set the marker on the peak of any spurious emission recorded. The level displayed must comply with the limit specified in this Section.

8.5.5 Test Results

Channel (600.85MHz)

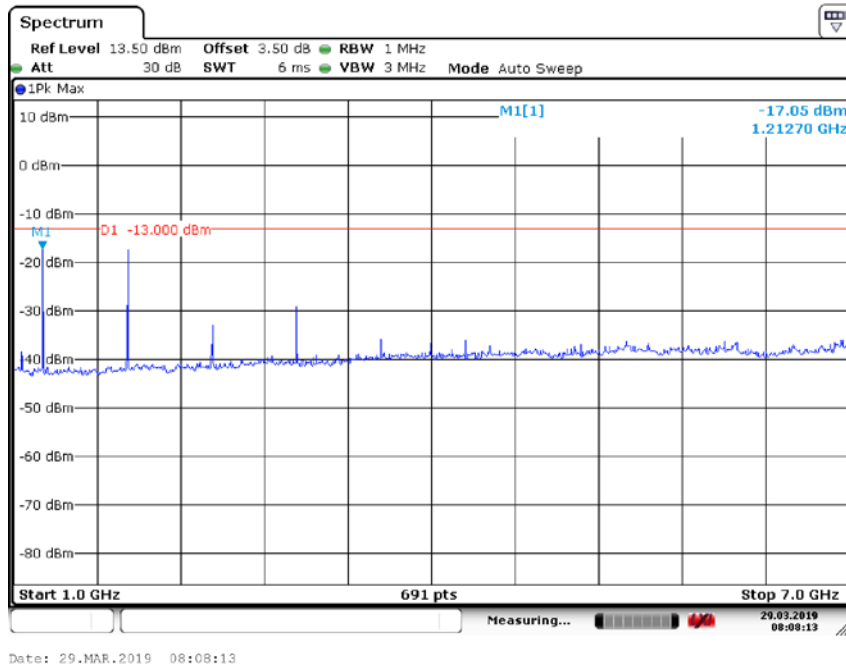
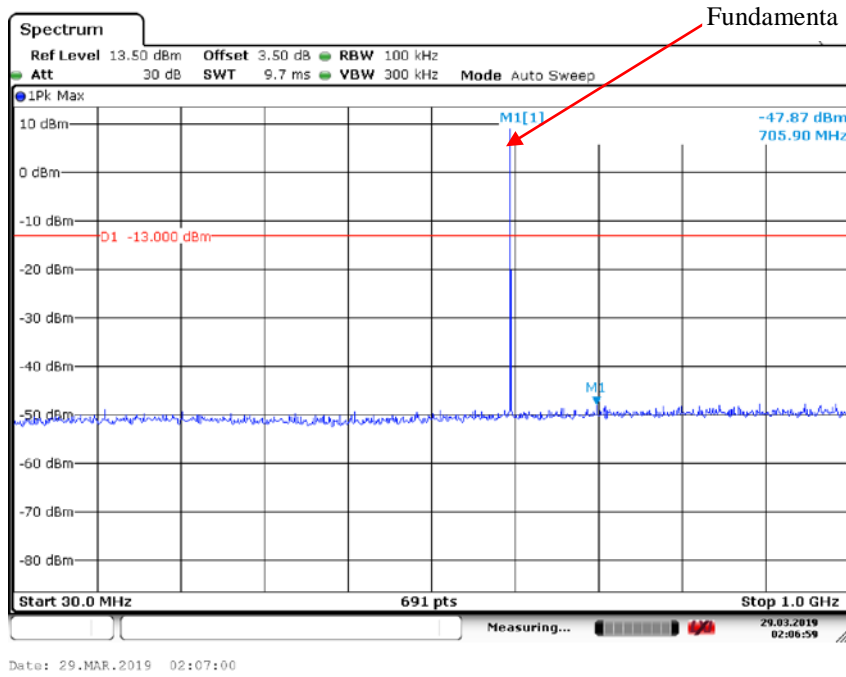


Date: 9.APR.2019 18:10:13



Date: 29.MAR.2019 08:27:10

Channel (606.025MHz)



8.6 FREQUENCY STABILITY

8.6.1 Applicable Standard

According to FCC 74.861

8.6.2 Conformance Limit

According to FCC 2.1055(a)(1), the frequency stability shall be measure with variation of ambient temperature from -30°C to $+50^{\circ}\text{C}$, and according to FCC 2.1055(d)(2), the frequency stability shall be measured with reducing primary supply voltage to the battery operating end point which is specified by the manufacturer.

According to FCC 74.861, the frequency tolerance of the transmitter shall be 0.005 percent.

8.6.3 Test Configuration

Test according to clause 7.2 radio frequency test setup 1

8.6.4 Test Procedure

1 Setup the configuration of the ambient temperature form -30°C to 50°C with sufficient time. And measure the 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 measured.

8.6.5 Test Results

Temperature:	26° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

Test conditions		Frequency Error	
		600.85 MHz	606.025 MHz
T _{min} (0°C)	V _{min} (2.6V)	600.8452	606.0243
	V _{max} (3.4V)	600.8421	606.0299
T(0°C)	V _{nom} (3.0V)	600.8418	606.0294
T(10°C)	V _{nom} (3.0V)	600.8447	606.0258
T _{nom} (25°C)	V _{nom} (3.0V)	600.8469	606.0294
T(30°C)	V _{nom} (3.0V)	600.8488	606.0273
T(40°C)	V _{nom} (3.0V)	600.8415	606.026
T _{max} (40°C)	V _{min} (2.6V)	600.8425	606.0306
	V _{max} (3.4V)	600.8414	606.0268
Max. frequency error (ppm)		-14.31	9.24
Limit (ppm)		±50ppm	
End Point		DC 3.0V	

Detail of factor for radiated emission

Frequency(MHz)	Ant_F(dB)	Cab_L(dB)	Preamp(dB)	Correct Factor(dB)
0.009	20.6	0.03	\	20.63
0.15	20.7	0.1	\	20.8
1	20.9	0.15	\	21.05
10	20.1	0.28	\	20.38
30	18.8	0.45	\	19.25
30	11.7	0.62	27.9	-15.58
100	12.5	1.02	27.8	-14.28
300	12.9	1.91	27.5	-12.69
600	19.2	2.92	27	-4.88
800	21.1	3.54	26.6	-1.96
1000	22.3	4.17	26.2	0.27
1000	25.6	1.76	41.4	-14.04
3000	28.9	3.27	43.2	-11.03
5000	31.1	4.2	44.6	-9.3
8000	36.2	5.95	44.7	-2.55
10000	38.4	6.3	43.9	0.8
12000	38.5	7.14	42.3	3.34
15000	40.2	8.15	41.4	6.95
18000	45.4	9.02	41.3	13.12
18000	37.9	1.81	47.9	-8.19
21000	37.9	1.95	48.7	-8.85
25000	39.3	2.01	42.8	-1.49
28000	39.6	2.16	46.0	-4.24
31000	41.2	2.24	44.5	-1.06
34000	41.5	2.29	46.6	-2.81
37000	43.8	2.30	46.4	-0.3
40000	43.2	2.50	42.2	3.5

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