FCC PART 74 MEASURMENT AND TEST REPORT

Applicant	:	Sam Ash Music Corporation
Address	:	262 Duffy Avenue Hicksville, NY 11801 United States
Manufacturer	:	Sam Ash Music Corporation
Address	:	262 Duffy Avenue Hicksville, NY 11801 United States
Factory	:	Dongguan Jingheng Electron Co., Ltd.
Address	:	Shenshan Industrial City, Hengli Town, Dongguan, Guangdong 523465, P.R.China
E.U.T.	:	Wireless Microphone UHF Transmitter
Brand Name	:	SAMSON
Model No.	:	AH8
Measurement Standard	:	FCC PART 74
FCC ID	:	CCRAH8
Date of Receiver :	:	March 10, 2016
Date of Test :	:	March 11, 2016 to June 15, 2016
Date of Report :	:	July 15, 2016

This Test Report is Issued Under the Authority of :

Prepared by

Approved & Authorized Signer

Bell / Engineer

Mike / Authorized Signatory

Note: This test report is for the customer shown above and their specific product only. It may not be duplicated or used in part without prior written consent from WH Technology Corp. The test results referenced from this report are relevant only to the sample tested.

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Revision History of This Test Report

Report Number	Description	Issued Date
CF16070922	Initial Issue	2016-07-15

1. GENERAL INFORMATION

1.1 Product Description for Equipment under Test

Product Name	:	Wireless Microphone UHF Transmitter
Model name	:	AH8
Model Difference Description	:	N/A
Power Supply	:	DC 3.6V 500mA Li-ion Battery
Hardware Version	:	AH8-HV01
Software Version	:	AH8-SV01
Frequency Range	:	470-494MHz, 542-566MHz
Modulation	:	FM (F3E)
Number of Channel	:	32
Antenna Type	:	Integral
Antenna Gain	:	1.94dBi
Peak Deviation	:	48KHz (Declaration by manufacturer)
Note	:	N/A

Channel List

470-494MHz		542-566MHz	
Channel	**Frequency MHz**	**Channel**	**Frequency MHz**
0	470.125	0	542.125
1	471.625	1	543.625
2	473.050	2	545.050
3	474.425	3	546.425
4	474.900	4	546.900
5	477.525	5	549.525
6	479.100	6	551.100
7	480.475	7	552.475
8	482.000	8	554.000
9	484.075	9	556.075
A	486.975	A	558.975
B	487.975	B	559.975
C	489.050	C	561.050
D	490.975	D	562.975
E	492.425	E	564.425
F	493.975	F	565.975

Note: The test channel and frequency see below:

470-494MHz		542-566MHz	
Channel	Frequency MHz	Channel	Frequency MHz
0	470.125	0	542.125
8	482.000	8	554.000
F	493.975	F	565.975

1.2 Related Submittal(s) / Grant (s)

N/A

1.3 Test Methodology

All measurements contained in this report were conducted in accordance with TIA 603-D Land Mobile FM or PM Communications Equipment Measurement and Performance Standards. ANSI C63.10-2013, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9kHz to 40GHz.

1.4 Equipment Modifications

Not available for this EUT intended for grant.

1.5 Support Device

None

1.6 Test Facility and Location

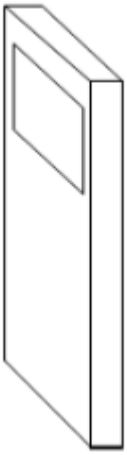
Certificated by FCC, USA via MRA
Registration No.: TW1083
Date of registration: April 07, 2015

WH Technology Corp.
7F., No.262, Sec. 3, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan (R.O.C.)
No. 120, In. 5, Hudong St., Xizhi Dist., New Taipei City 221, Taiwan (R.O.C.)

1.7 Summary of Test Results

FCC Rules	Description Of Test	Result
FCC §74.861(e)(1)	RF output power	Compliance
FCC §74.861(e)(3)	Modulation characteristics	Compliance
FCC §74.861(e)(5)(6)	Emission bandwidth & Emission Mask	Compliance
FCC §74.861(e)(6)	Spurious radiation at the Antenna Port	Compliance
FCC §74.861(e)(6)	Field strength of Spurious radiation	Compliance
FCC §74.861(e)(4)	Frequency stability	Compliance

Note: 1. The EUT has been tested as an independent unit. And Continual transmitting in maximum power (The new battery be used during test)
2. The EUT powered by battery and operating multiple positions, so the EUT shall be performed three orthogonal planes. The worst plane is Z.

X Plane	Y Plane	Z Plane
		

2. System Test Configuration

2.1 EUT Configuration

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.

2.2 Equipment Modifications

Conducted antenna port was enabled by adding additional RF cable from PCB.

2.3 Description of test modes

The EUT has been tested under continuous operating condition. The Lowest, middle and highest channel were chosen for testing, but only the worst case data is shown in this report.

2.4 Justification

The EUT was configured for testing according to TIA 603-D and ANSI C63.10-2013 Standards.

2.5 Environmental Conditions

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

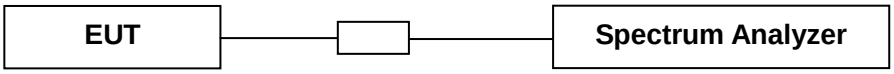
- Temperature: 15~35℃
- Humidity: 25~60%
- Atmospheric pressure: 86-106 kPa

2.6 Measurement Uncertainty (95% confidence levels)

Uncertainty for Radiated Emission :	±3.74dB (below 1GHz)
	±4.85dB (above 1GHz)
Uncertainty for RF Output power:	±0.84dB
Uncertainty for Conducted Emission:	±1.56dB
Uncertainty for Frequency Error (stability) :	±1*10-9
Uncertainty for Occupied Bandwidth:	±0.23%

3. Max Output Power

3.1 Test SET-UP (Block Diagram of Configuration)



3.2 Test Procedures

- **Connect the EUT to spectrum analyzer and set the spectrum analyzer as following:**

Frequency	:	Test Frequency
SPAN	:	3MHz
RBW	:	1MHz
VBW	:	3MHz
Sweep Time	:	Auto
Detector Mode	:	Peak

Max-hold the trace and record the peak value once the trace stabilized.

3.3 Limit

As per FCC §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:

Frequency (MHz)	Limit (mW)
54-72	50mW
76-88	
174-216	
470-608	250mW
614-698	

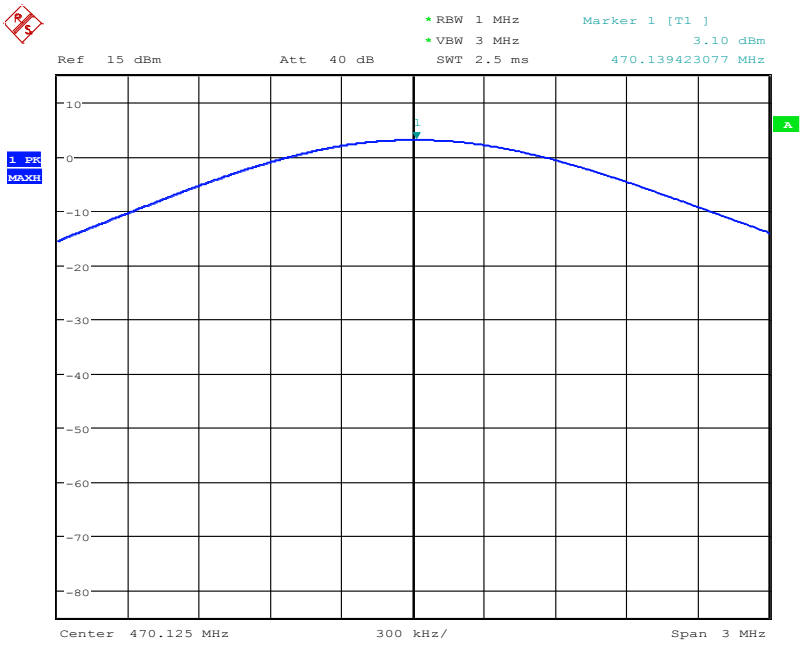
3.4 Measurement Results

Please refer to following tables and plots.

Temperature :	22 ℃	Humidity :	50 %
Test By:	Sance	Test Date :	June 03, 2016
Test Result:	PASS		
Channel	**Frequency (MHz)**	**Test Power (dBm)**	**Limit (dBm)**
0	470.125	3.10	24
8	482.000	0.68	24
F	493.975	3.65	24
0	542.125	2.12	24
8	554.000	2.08	24
F	565.975	2.66	24

Note: 1. The EUT was programmed in un-modulation mode.
2. The cable loss have been considered during the test.

Low Channel 470.125MHz



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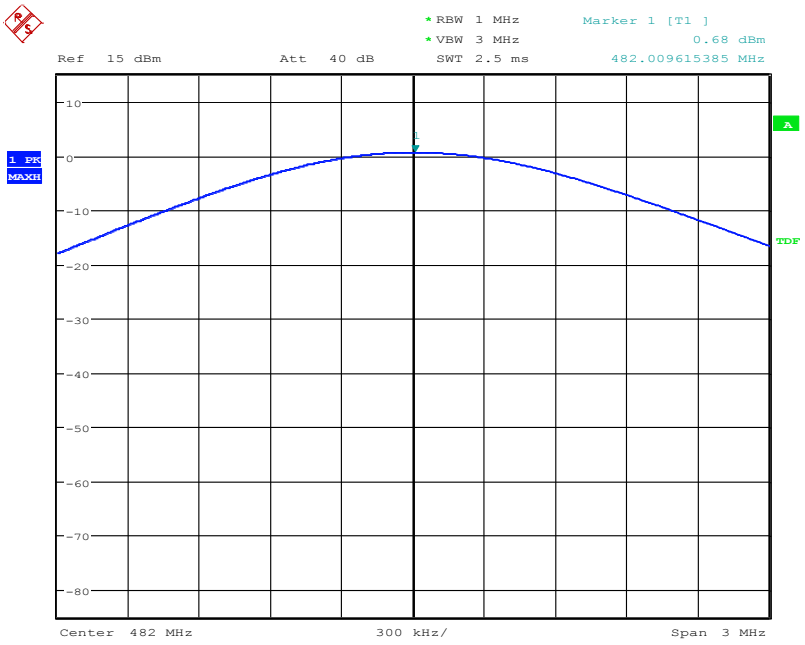
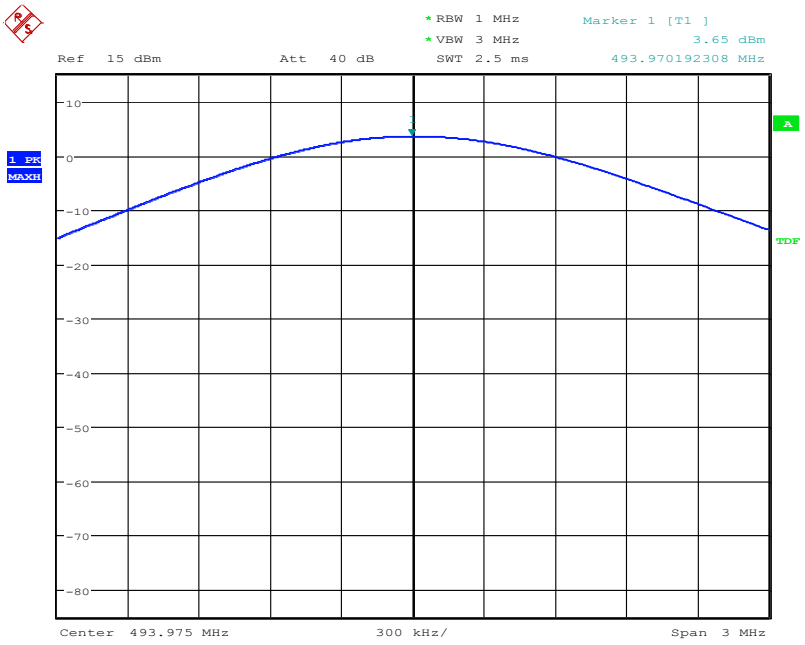
Mid Channel 482MHz



Date: 3.JUN.2016 13:53:19

FCC ID: CCRAH8

High Channel 493.975MHz



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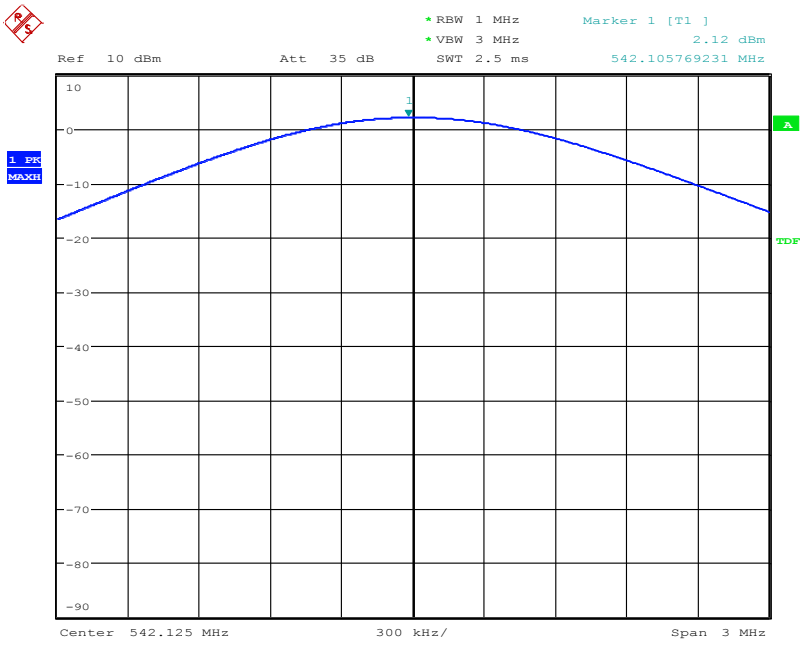
Low Channel 542.125MHz



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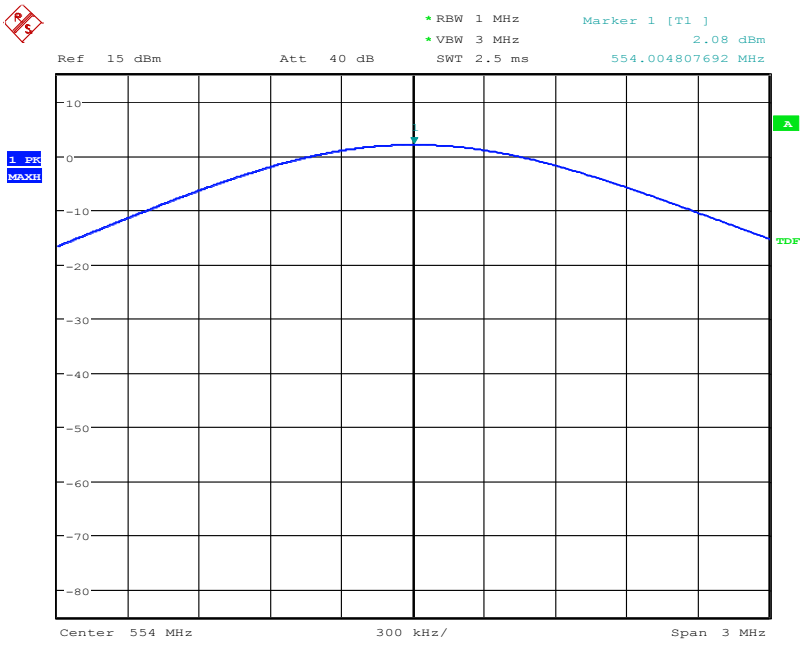
Mid Channel 554MHz



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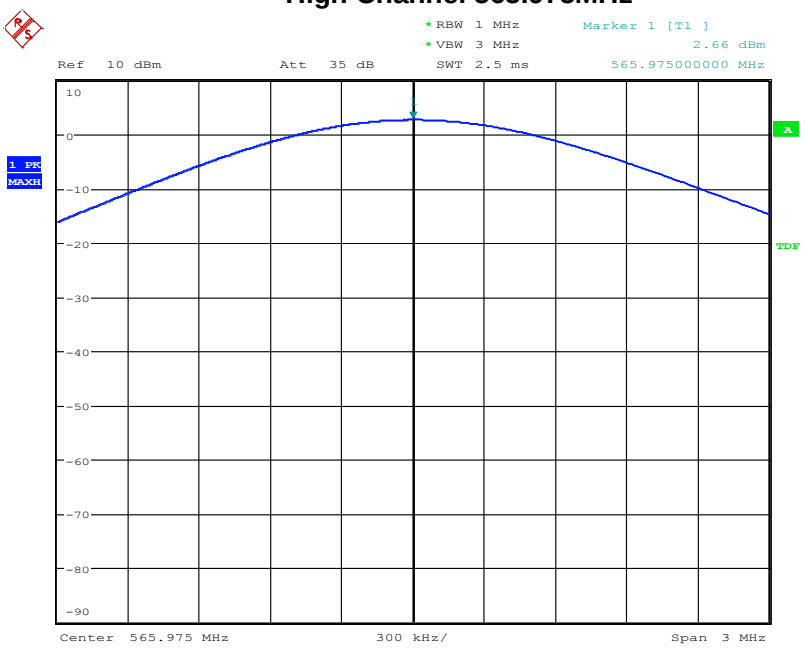
High Channel 565.975MHz



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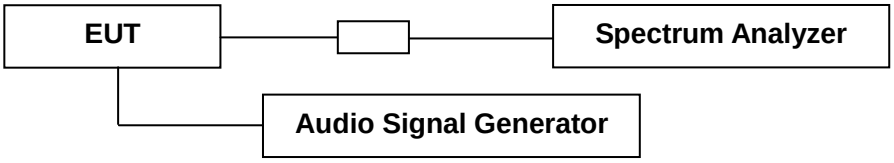
4. Emission Bandwidth & Mask

4.1 Test SET-UP (Block Diagram of Configuration)



4.2 Measurement Procedure

(1) The EUT was connected to the 50 ohm input of a spectrum analyzer through 20dB of attenuation; the reference offset of the spectrum analyzer was set to the measured value of the attenuation path.
(2) The unmodulated carrier signal level was recorded and used to set the reference level on the spectrum analyzer.
(3) The spectrum analyzer span was then set to 1.5 MHz and the resolution bandwidth set to 2 kHz (1% of Authorized BW).

(4) The emission limits were overlaid on the spectrum analyzer display and the trace was recorded.
(5) The test item was modulated with a 2500 Hz sine wave at an input level 16 dB greater than that necessary to produce 50% of the rated system deviation.

4.3 Limit

The operating bandwidth shall not exceed 200 kHz.

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 50 percent up to and including 100 percent of the authorized bandwidth: at least 25 dB;

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;

On any frequency removed from the operating frequency by more than 250 percent of

the authorized bandwidth: at least 43 + 10log (mean output power in watts) dB.

4.4 Measurement Results

Please refer to following tables and plots.

Temperature :	22 ℃	Humidity :	50 %
Test By:	Sance	Test Date :	June 03, 2016
Test Result:	PASS		
Channel	**Frequency (MHz)**	**99% Emission Bandwidth (KHz)**	**Limit (KHz)**
0	470.125	92.95	200
8	482.000	91.35	200
F	493.975	92.95	200
0	542.125	102.56	200
8	554.000	102.56	200
F	565.975	107.37	200

Note: The peak deviation is 48KHz.

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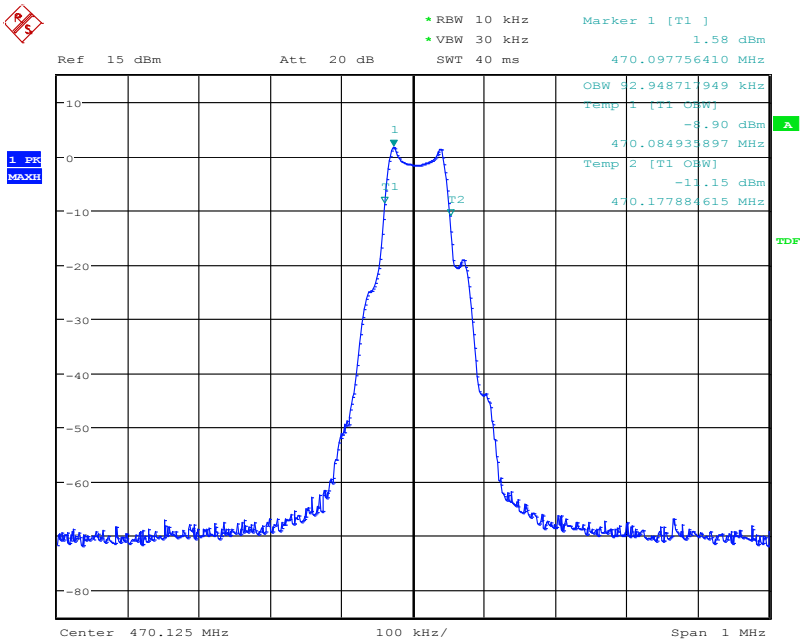
Low Channel 470.125MHz (2500Hz @16dB over 50% deviation)

Low Channel 470.125MHz (2500Hz @ 16dB over 50% deviation)



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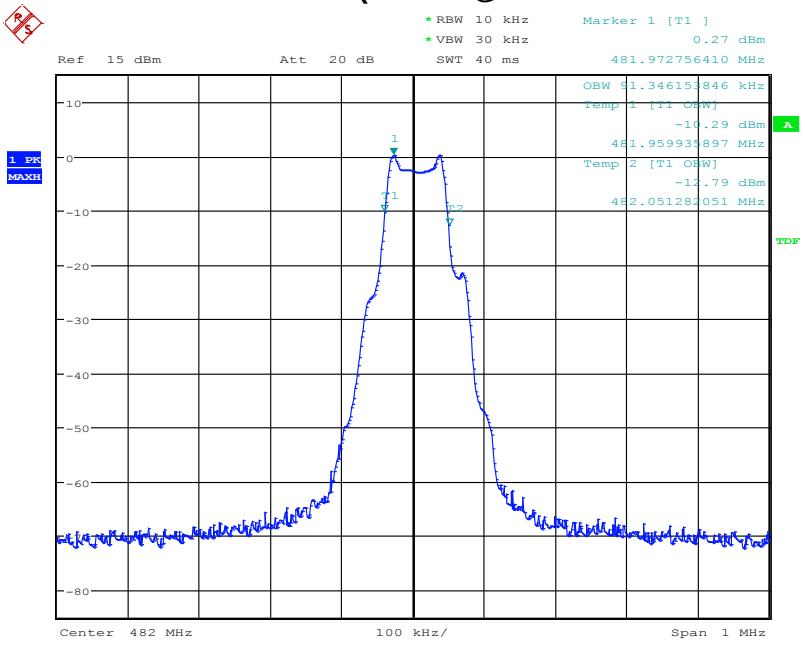
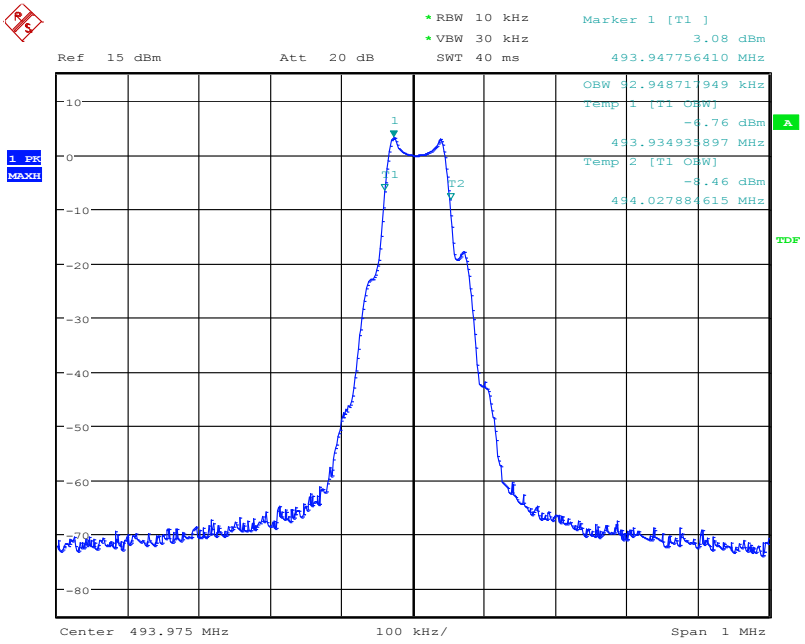
Mid Channel 482MHz (2500Hz @ 16dB over 50% deviation)



Date: 3.JUN.2016 13:55:04

FCC ID: CCRAH8

High Channel 493.975MHz (2500Hz @ 16dB over 50% deviation)



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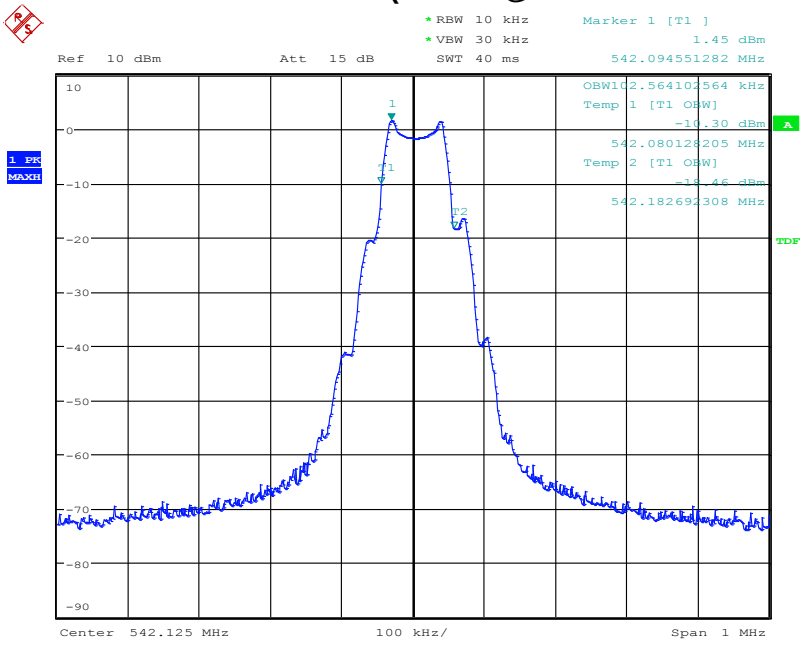
Low Channel 542.125MHz (2500Hz @ 16dB over 50% deviation)



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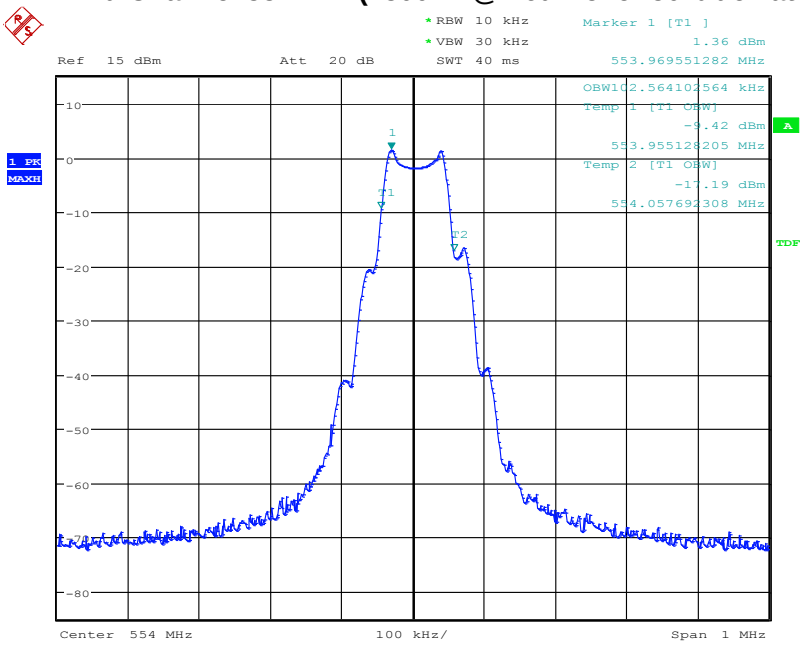
Mid Channel 554MHz (2500Hz @ 16dB over 50% deviation)



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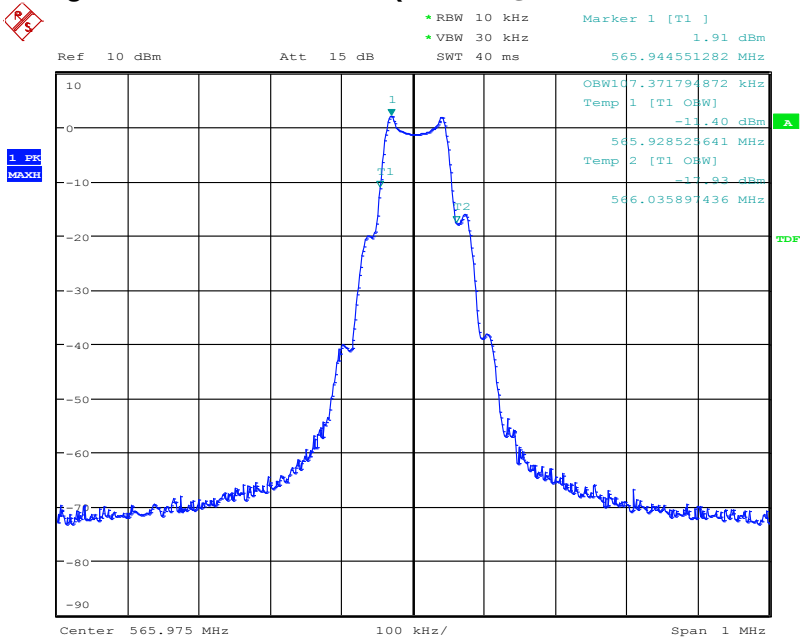
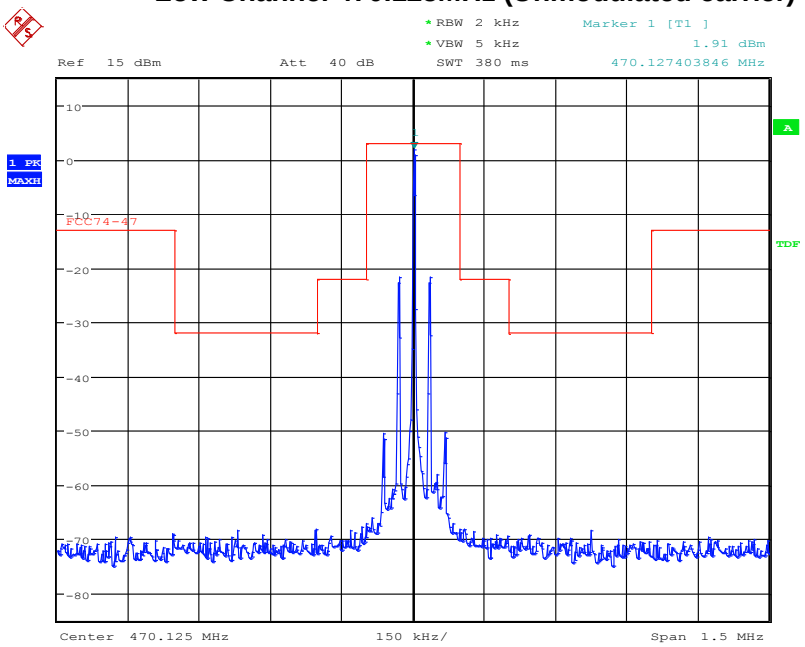
High Channel 565.975MHz (2500Hz @ 16dB over 50% deviation)



Date: 3.JUN.2016 10:46:59

FCC ID: CCRAH8

Low Channel 470.125MHz (Unmodulated carrier)



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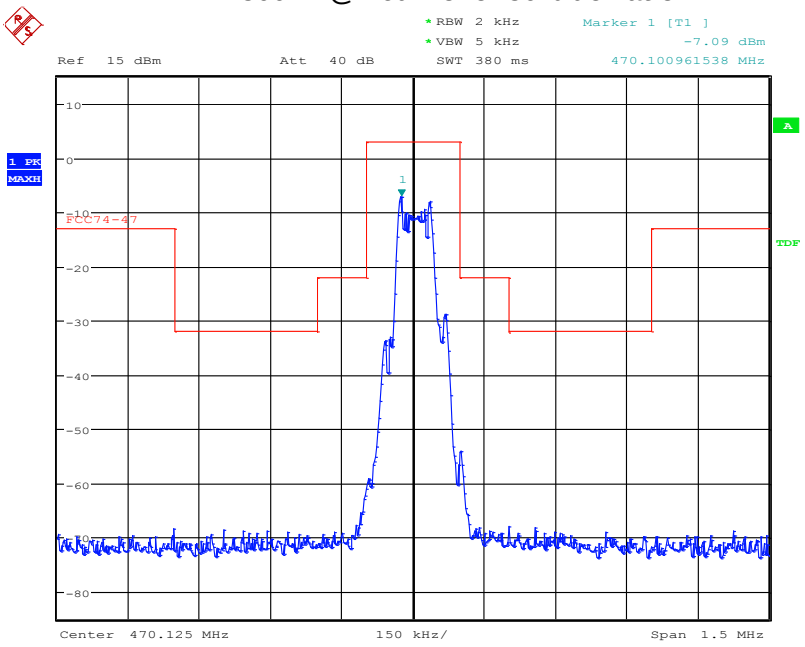
2500Hz @ 16dB over 50% deviation



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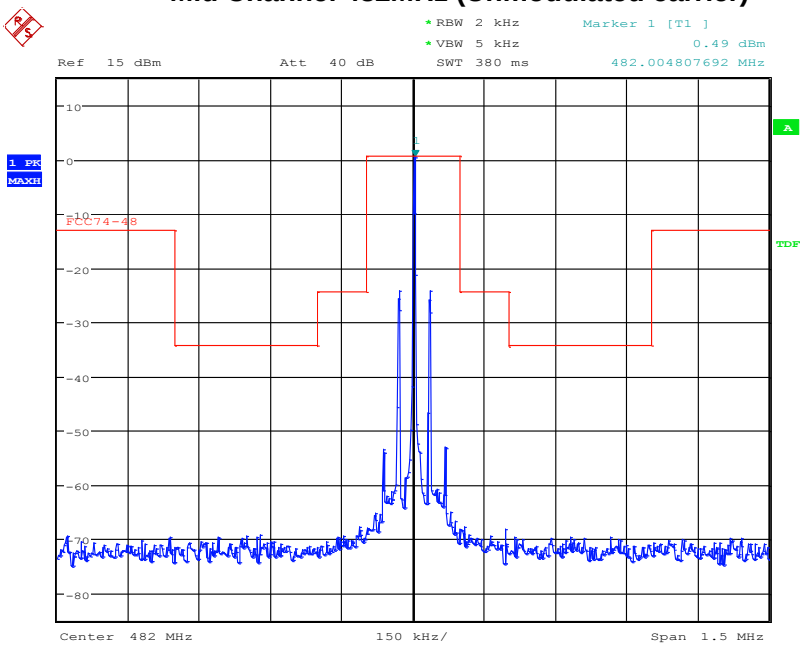
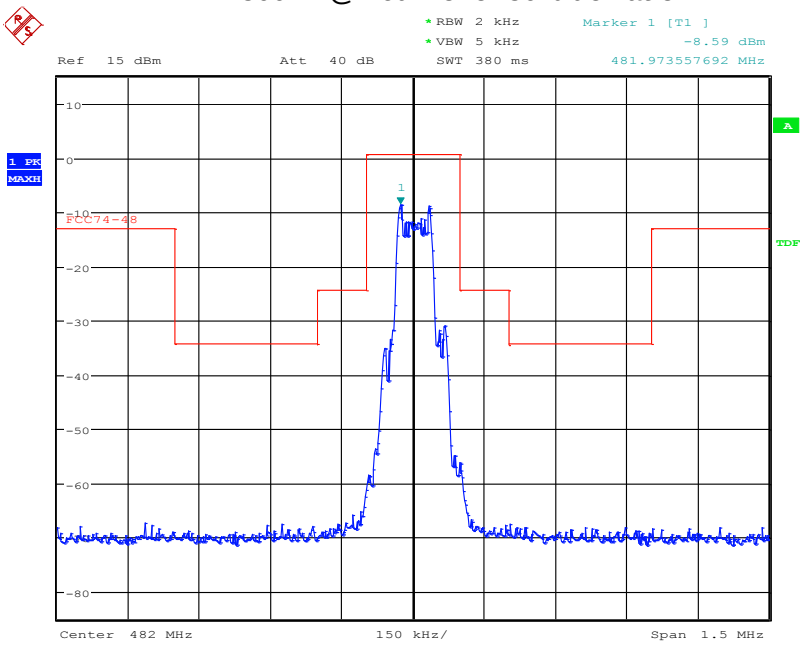
Mid Channel 482MHz (Unmodulated carrier)



Date: 3.JUN.2016 13:55:42

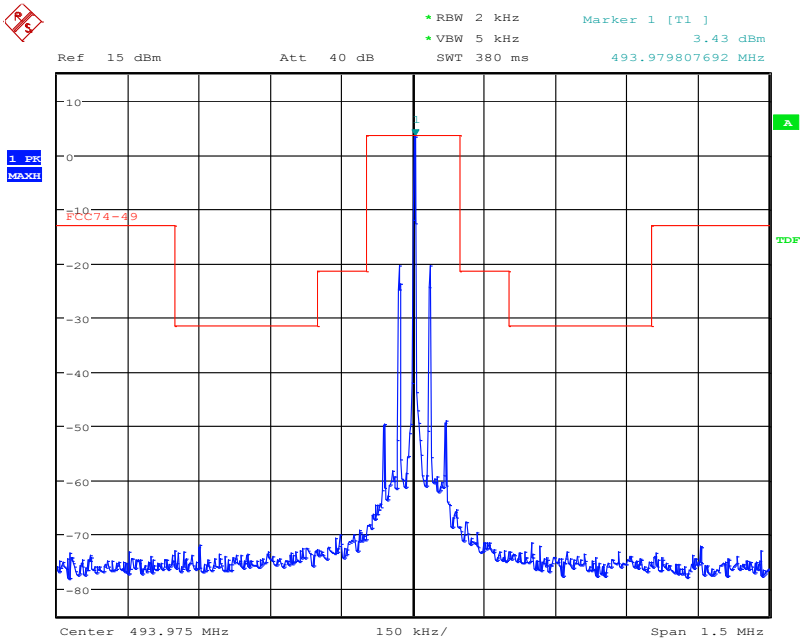
2500Hz @ 16dB over 50% deviation



Date: 3.JUN.2016 13:58:17

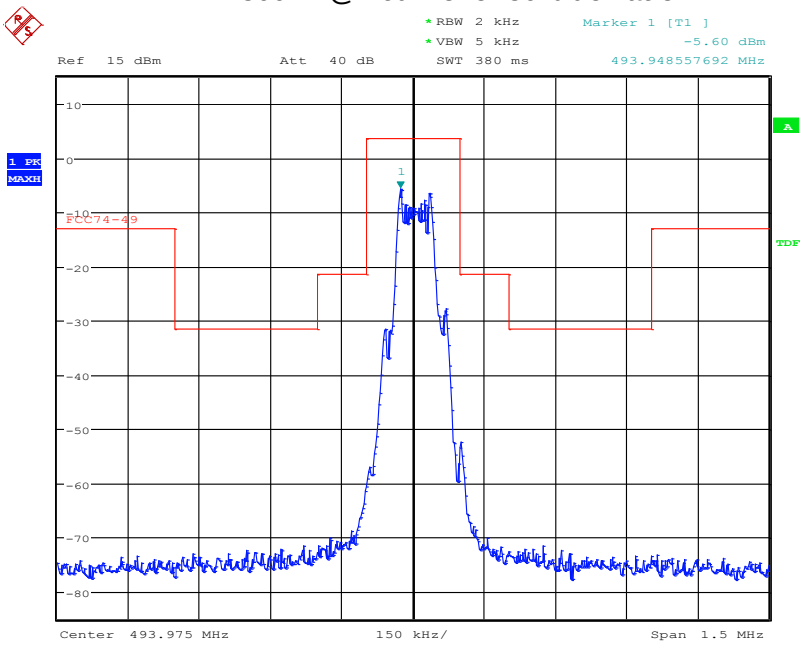
FCC ID: CCRAH8

High Channel 493.975MHz (Unmodulated carrier)



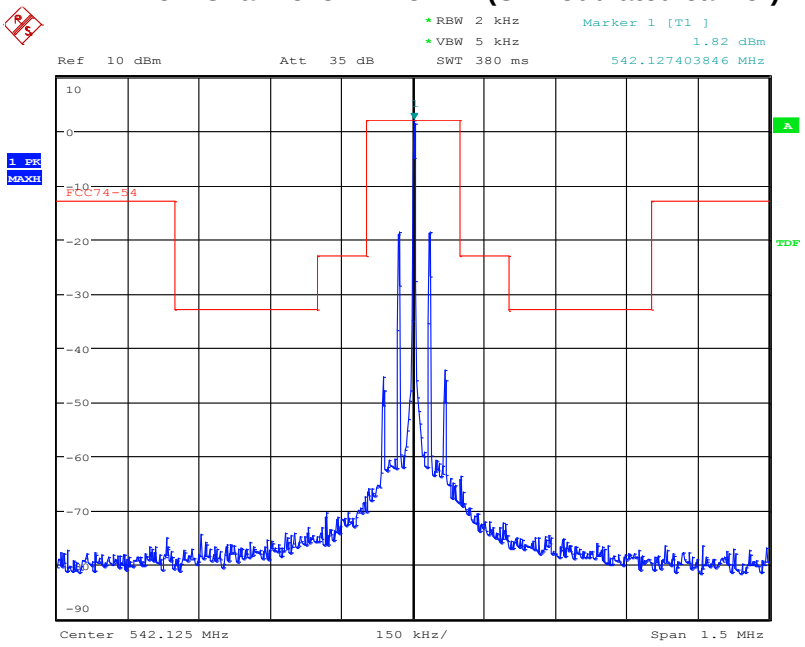
Date: 3.JUN.2016 14:05:04

2500Hz @ 16dB over 50% deviation



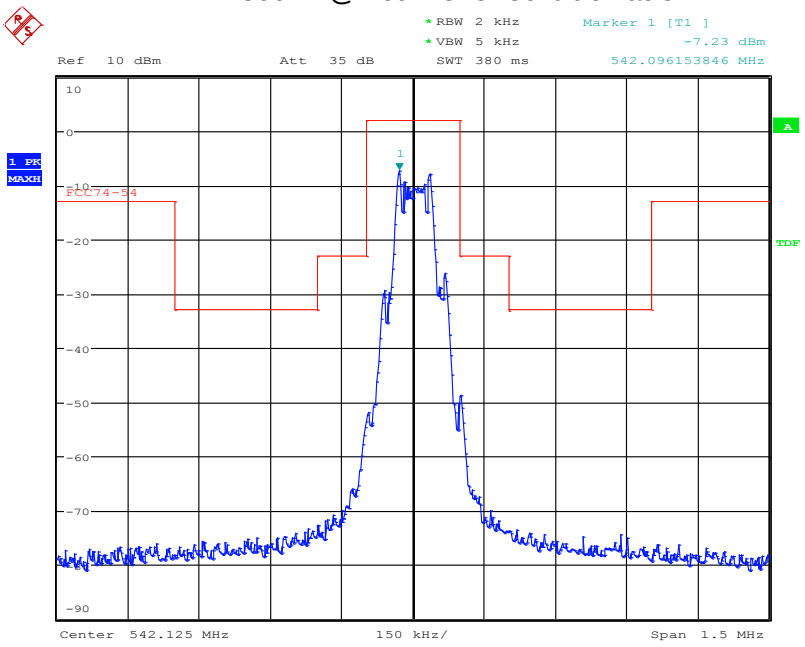
Date: 3.JUN.2016 14:05:26

Low Channel 542.125MHz (Unmodulated carrier)



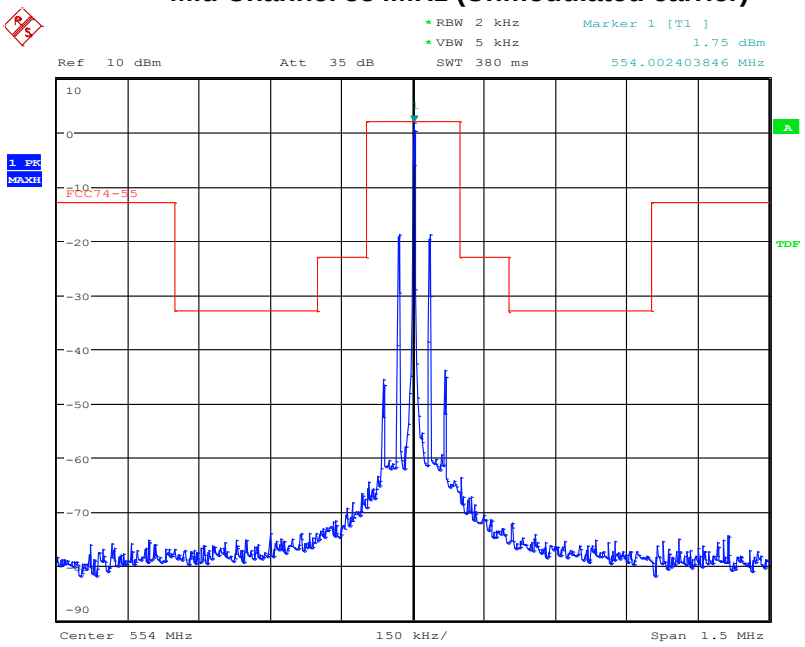
Date: 3.JUN.2016 10:58:17

2500Hz @ 16dB over 50% deviation



Date: 3.JUN.2016 10:58:51

Mid Channel 554MHz (Unmodulated carrier)



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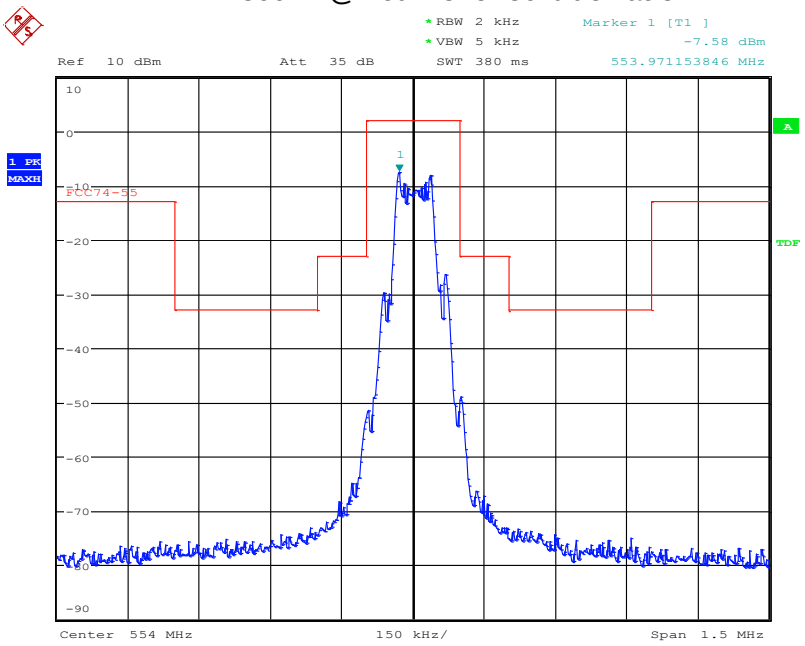
2500Hz @ 16dB over 50% deviation



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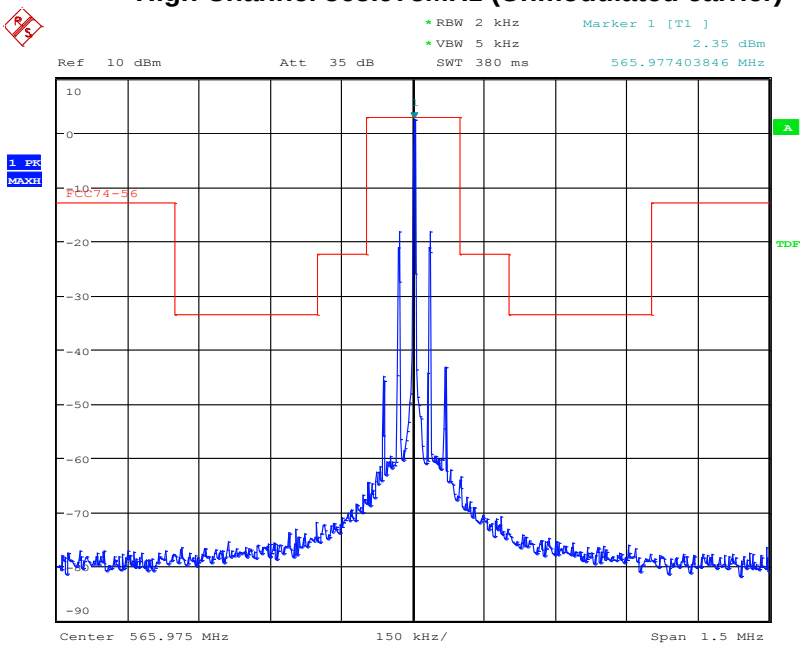
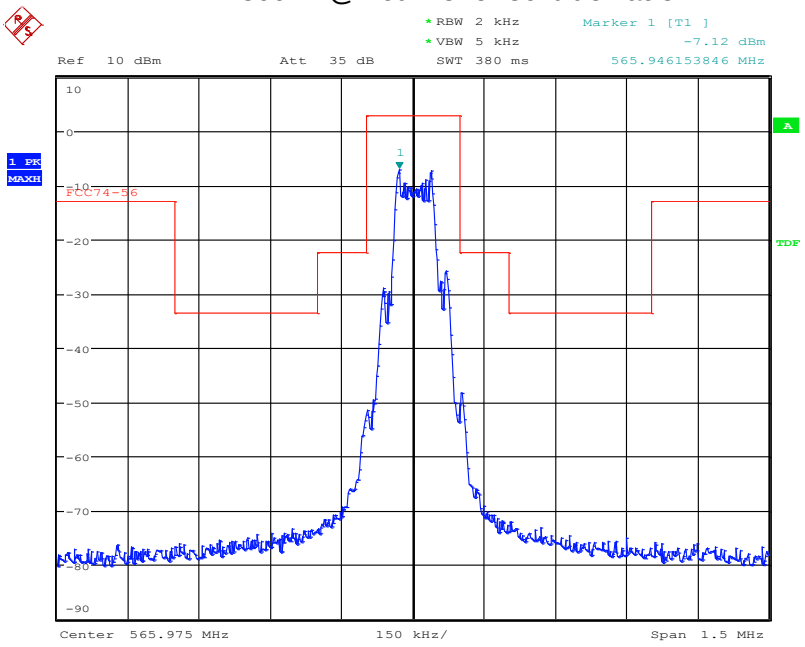
High Channel 565.975MHz (Unmodulated carrier)



Date: 3.JUN.2016 10:48:17

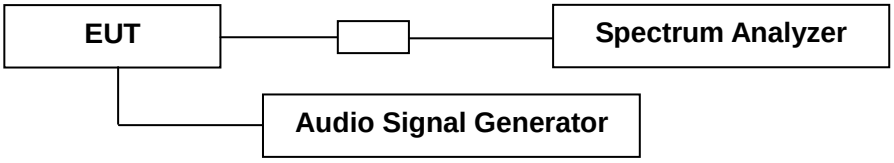
2500Hz @ 16dB over 50% deviation



Date: 3.JUN.2016 10:48:55

5. Spurious Emissions at Antenna Port

5.1 Test SET-UP (Block Diagram of Configuration)



5.2 Measurement Procedure

According to ANSI/TIA-603-D 2010 section 2.2.13, conducted spurious emissions are emissions at the antenna terminals on a frequency or frequencies that are outside a band sufficient to ensure transmission of information of required quality for the class of communication desired. The method of measurement is as following:
Set the center frequency of the spectrum analyzer to the assigned transmitter frequency, key the transmitter, and set the level of the carrier to the full scale reference line.
Modulate the transmitter with a 2500 Hz sine wave at an input level 16 dB greater than that necessary to produce 50% of rated system deviation. The input level shall be established at the frequency of maximum response of the audio modulating circuit.
Adjust the spectrum analyzer for the following setting:
Resolution bandwidth = 200Hz/10/100 kHz for spurious emissions below 1 GHz, and 1 MHz for spurious emissions above 1 GHz.
Video bandwidth $\geqslant$ 3 times the resolution bandwidth.
Detector mode = peak.
Record the frequencies and levels of spurious emissions.
In measuring unwanted emissions, the spectrum shall be investigated from 30 MHz or the lowest radio frequency signal generated in the equipment, whichever is lower, without going below 9 kHz, up to at least the frequency given in (a) and (b):

(a) If the equipment operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
(b) If the equipment operates at or above 10 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.

Particular attention should be paid to harmonics and sub-harmonics of the carrier frequency, as well as to those frequencies removed from the carrier by multiple of the oscillator frequency. Radiation at the frequencies of multiplier stages should also be checked.
The amplitude of spurious emissions attenuated more than 20 dB below the permissible value need not be reported.

When limits are expressed in absolute terms, compliance with the emission limits shall be demonstrated using a CISPR quasi-peak detector and the related measurement bandwidth for emissions below 1000 MHz. as an alternative to CISPR quasi-peak measurement, compliance with the emission limits can be demonstrated using measuring equipment employing a peak detector function properly adjusted for factors such as pulse desensitization as required, with an equal or greater measurement bandwidth relative to the applicable CISPR quasi-peak bandwidth.

Above 1000 MHz, compliance with the emission limits shall be demonstrated using an average detector with a minimum resolution bandwidth of 1 MHz.

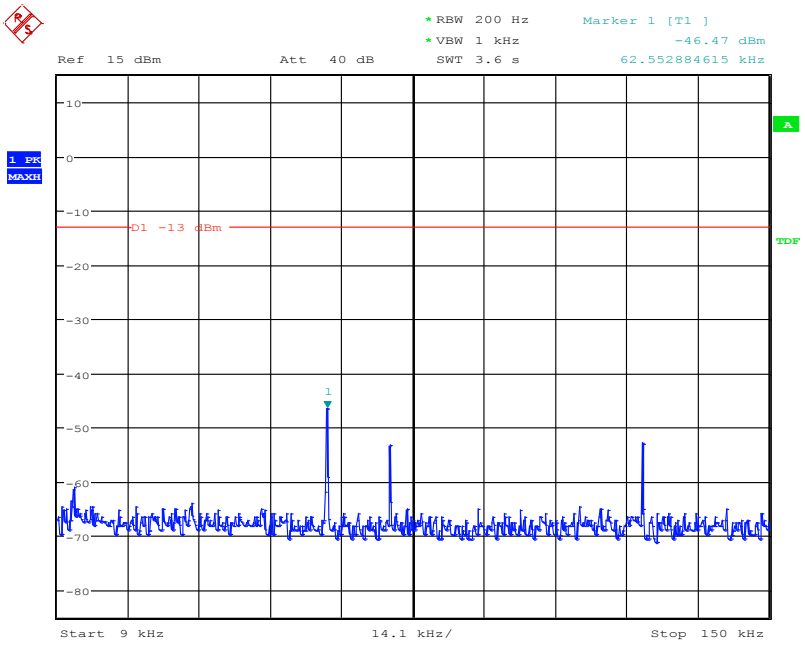
5.3 Limit

On any frequency removed from the operating frequency by more than 250 percent of the authorized bandwidth: at least 43 + 10log (mean output power in watts) dB.

5.4 Measurement Results

Please refer to following plots.

Low Channel 470.125MHz



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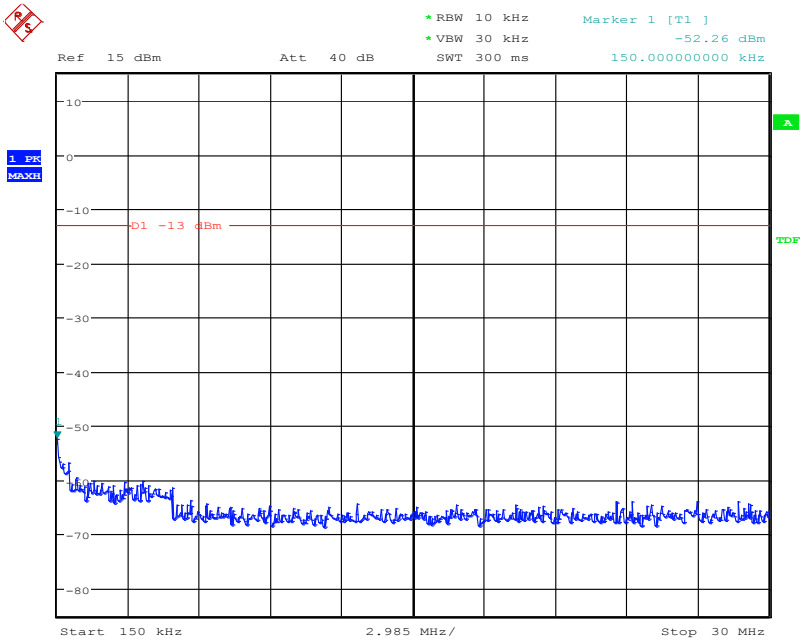

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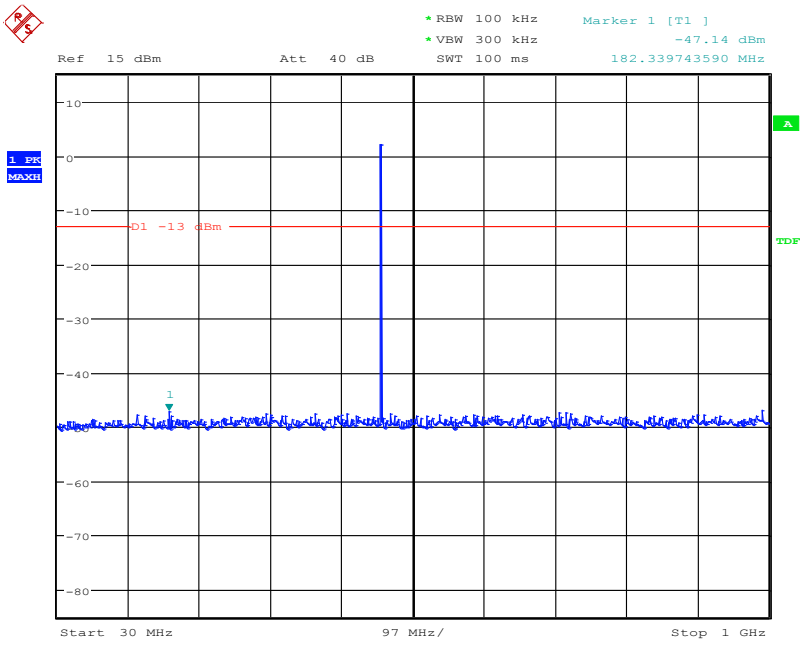

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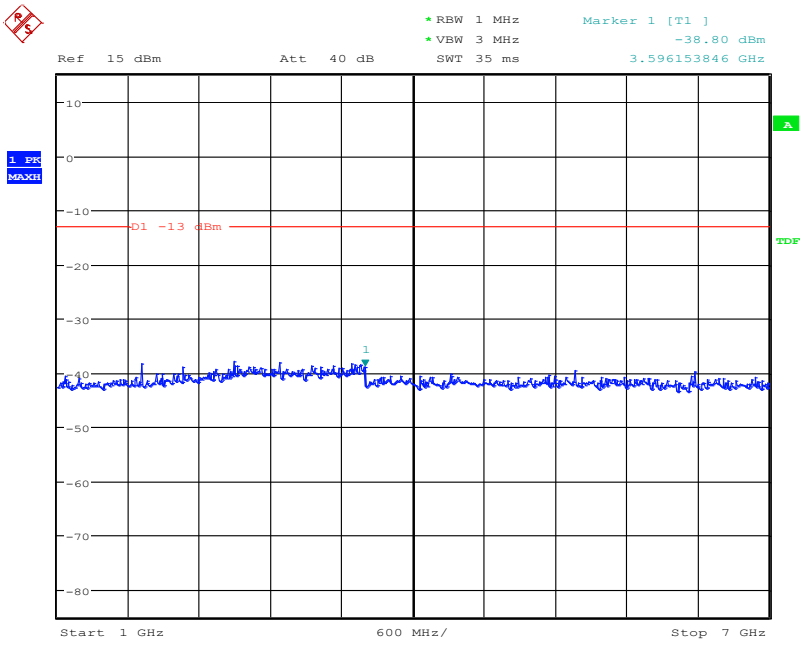

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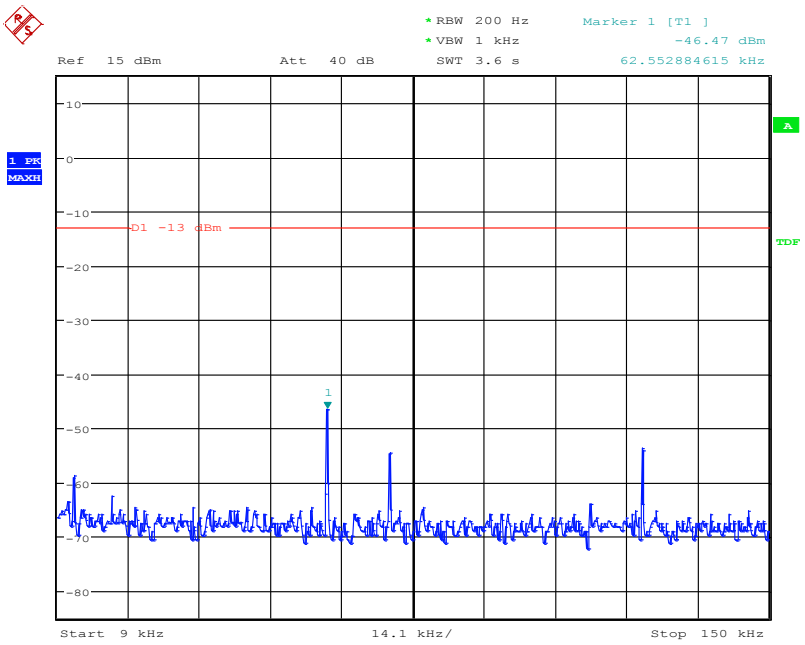
Mid Channel 482MHz



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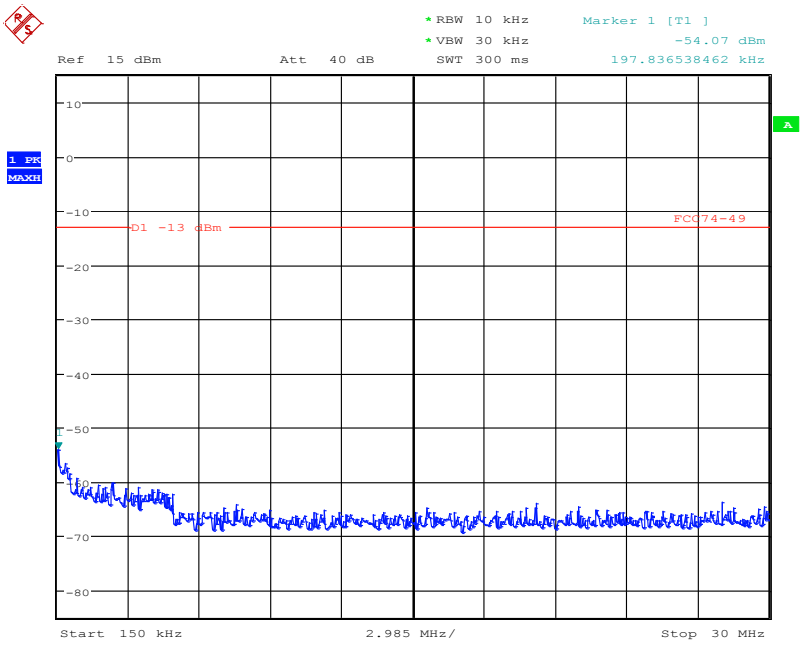

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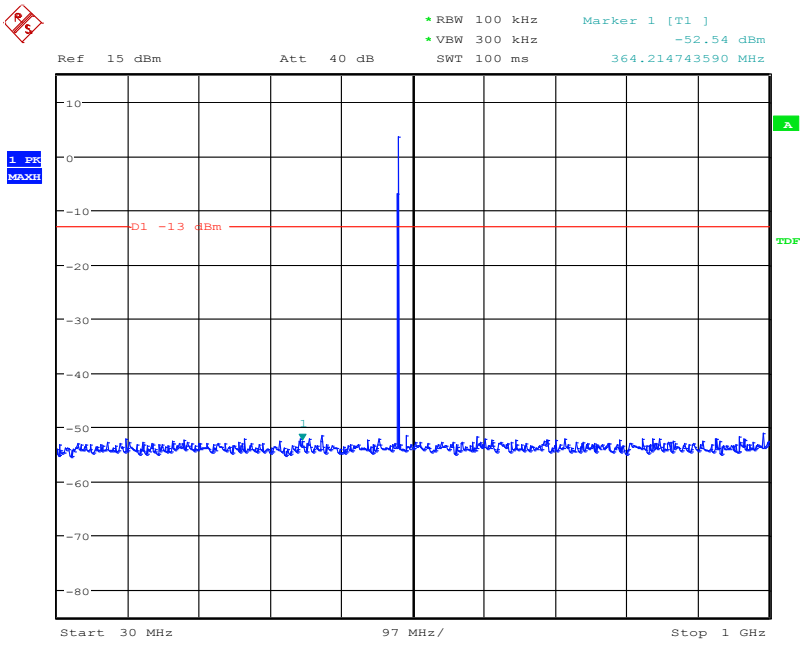

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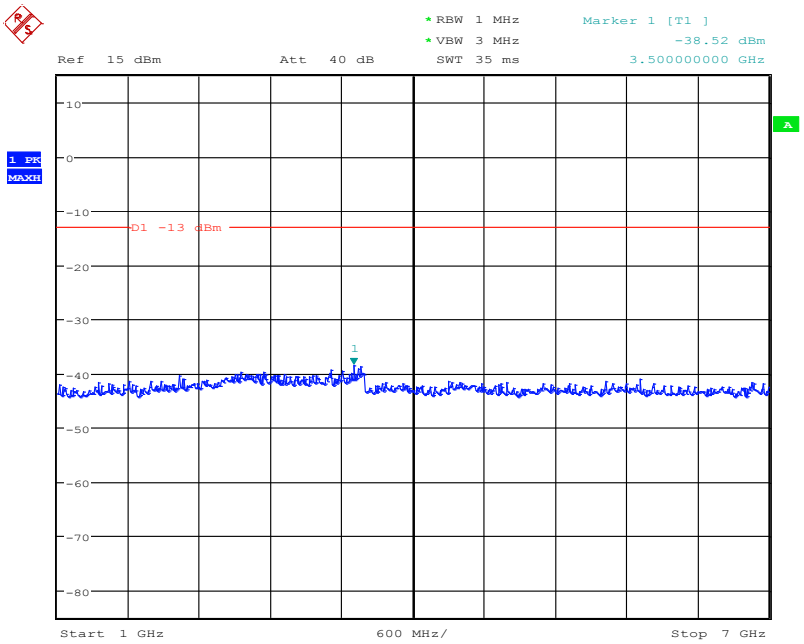
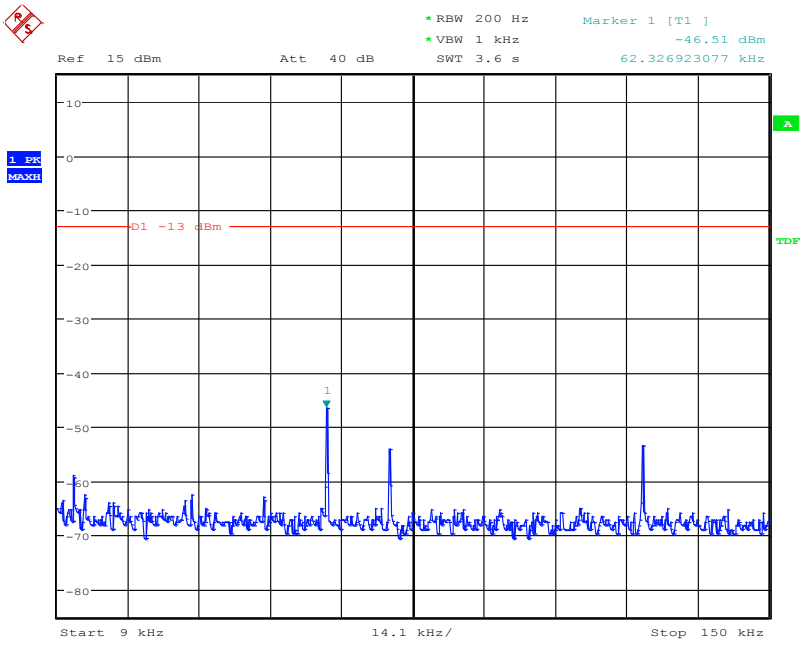
FCC ID: CCRAH8



Date: 3.JUN.2016 14:07:05

FCC ID: CCRAH8

High Channel 493.975MHz



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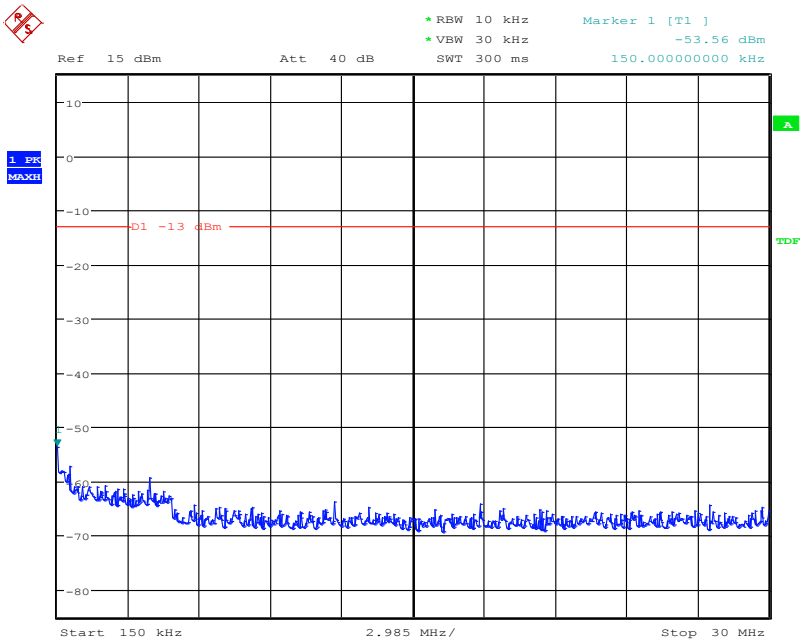

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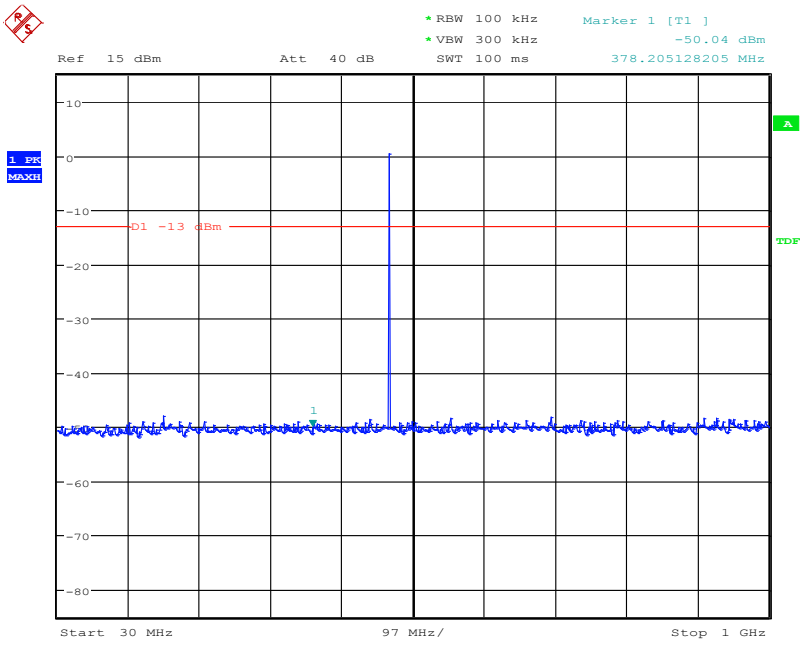

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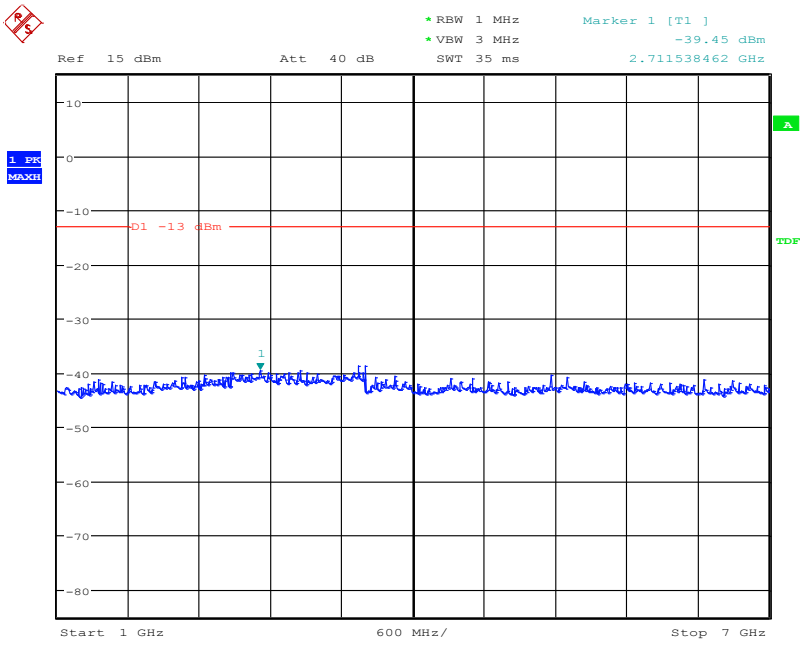

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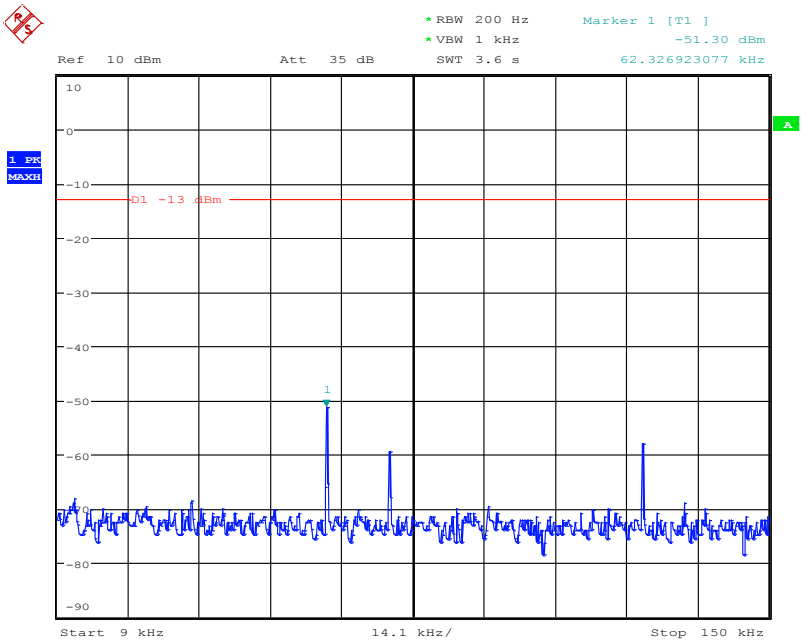
Low Channel 542.125MHz



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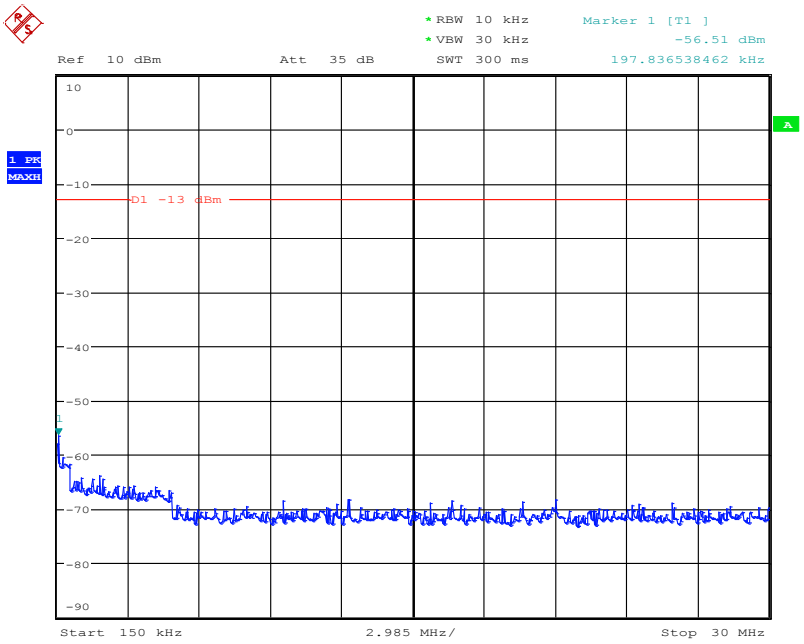

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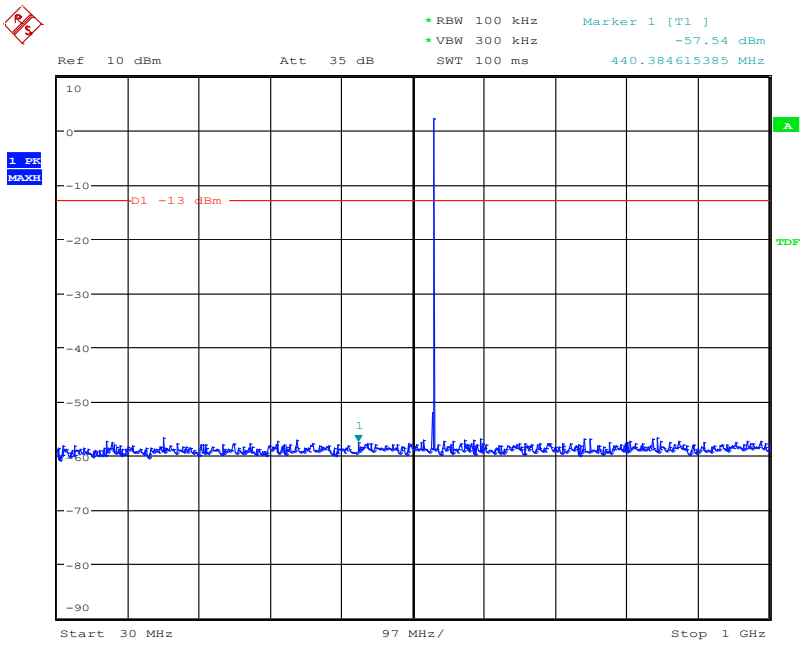

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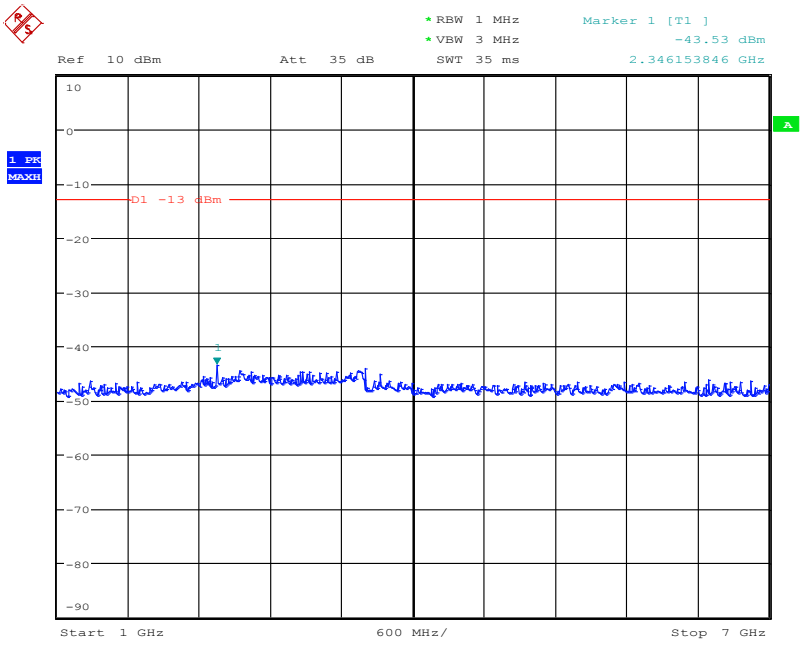

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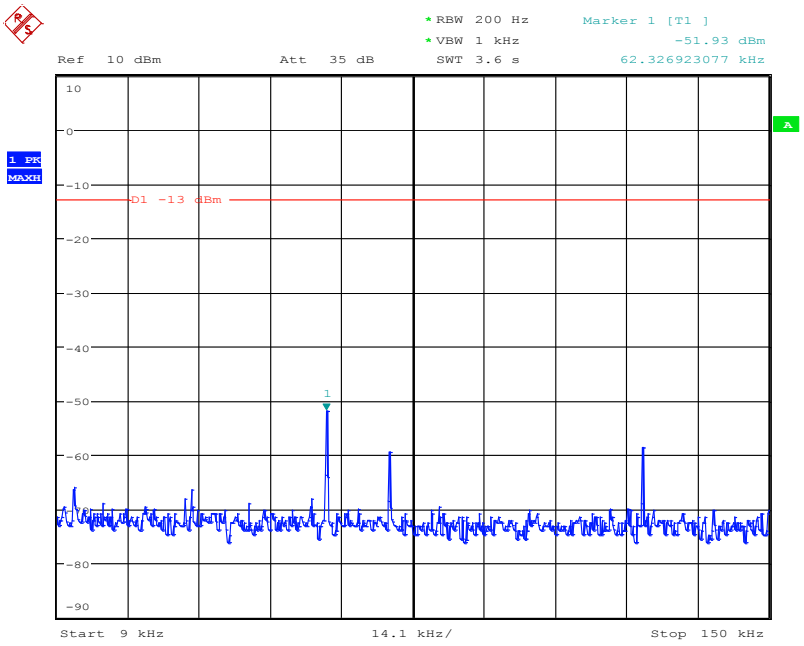
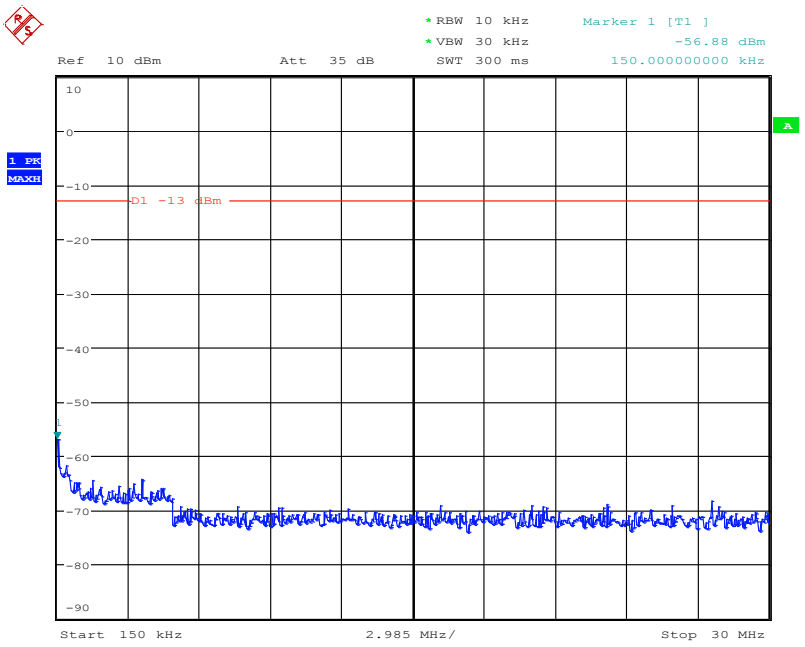
Mid Channel 554MHz





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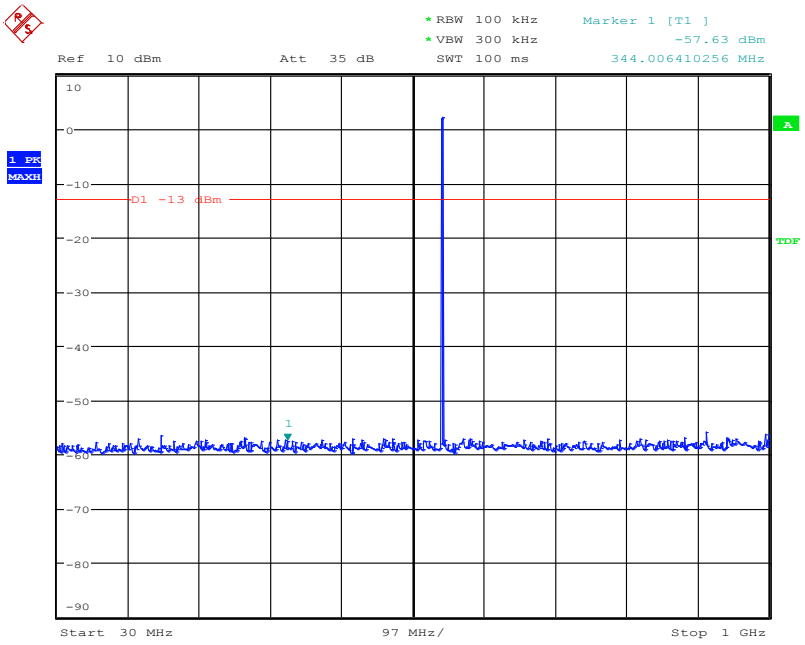

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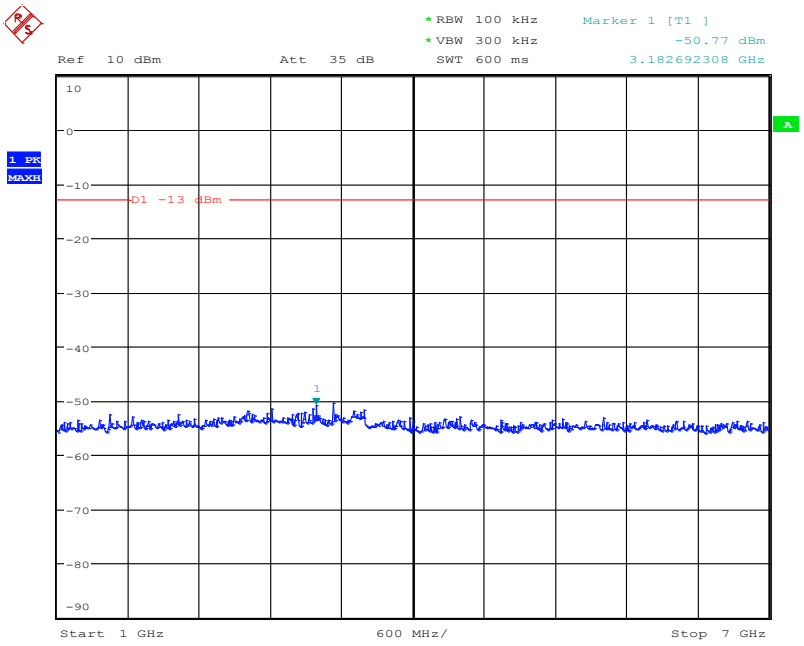
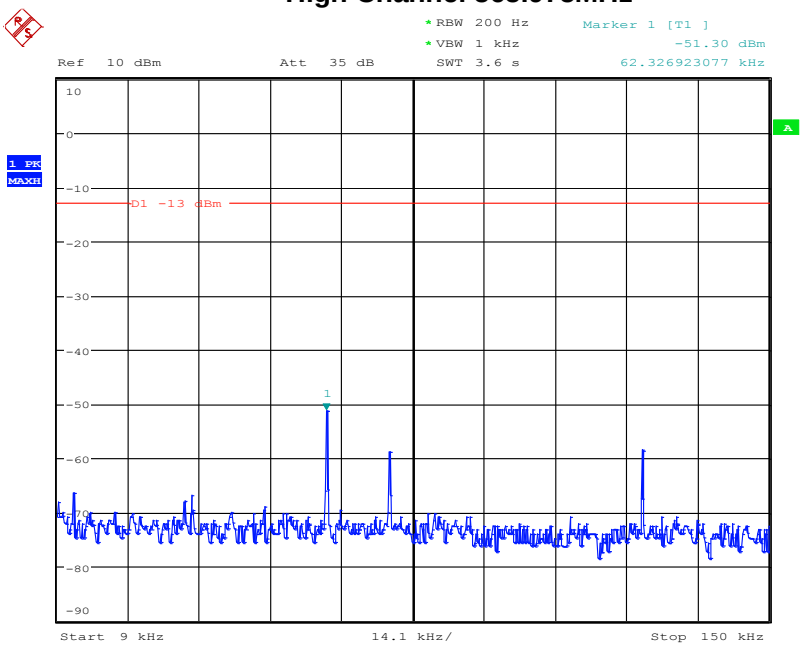
FCC ID: CCRAH8



Date: 3.JUN.2016 10:40:51

High Channel 565.975MHz



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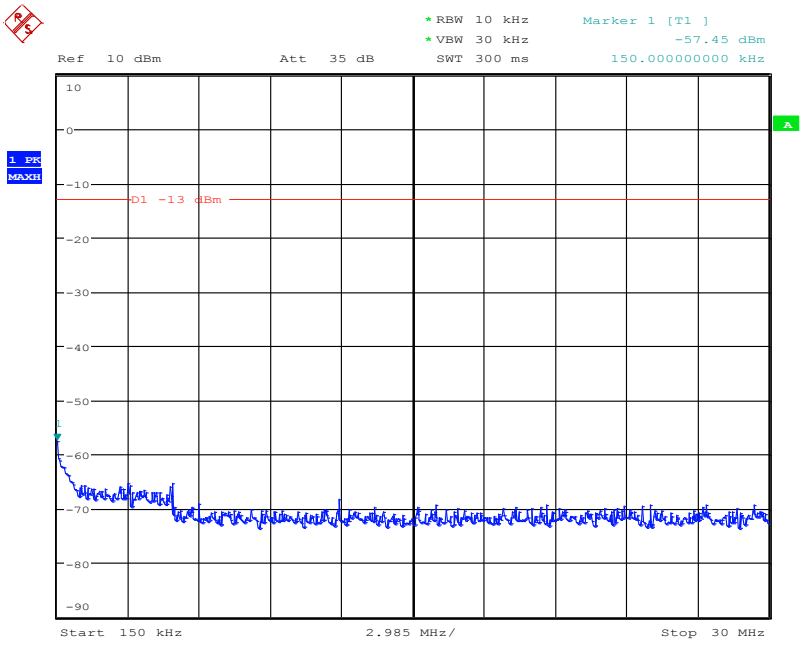

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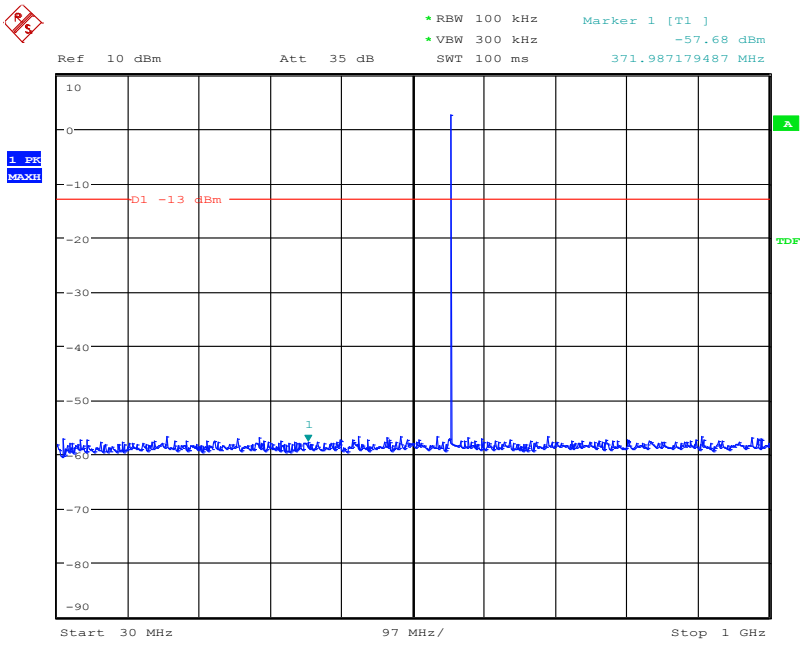

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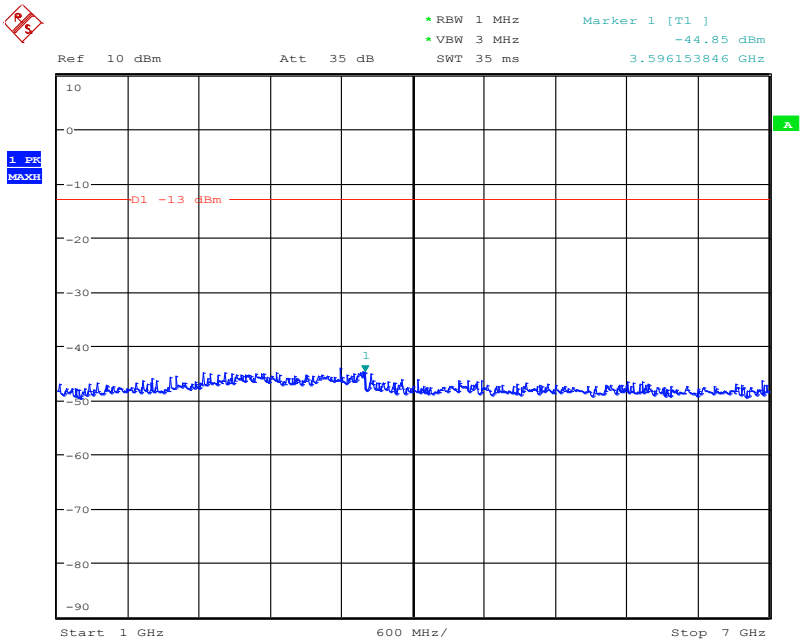

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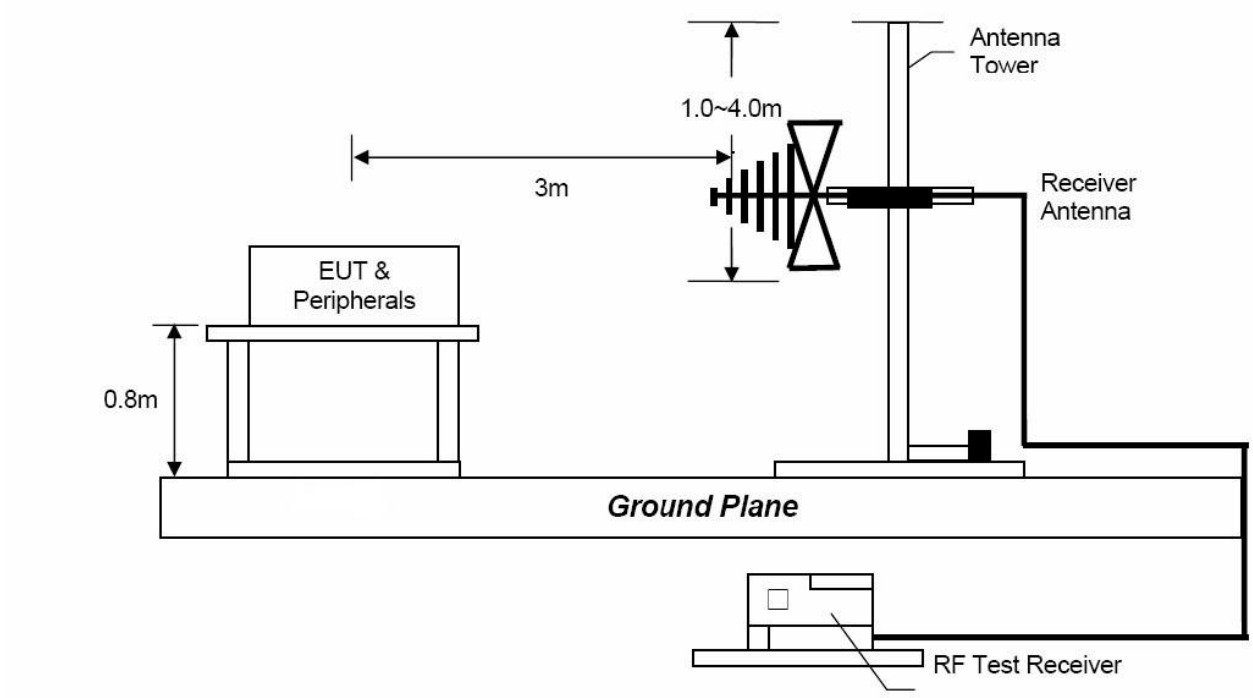
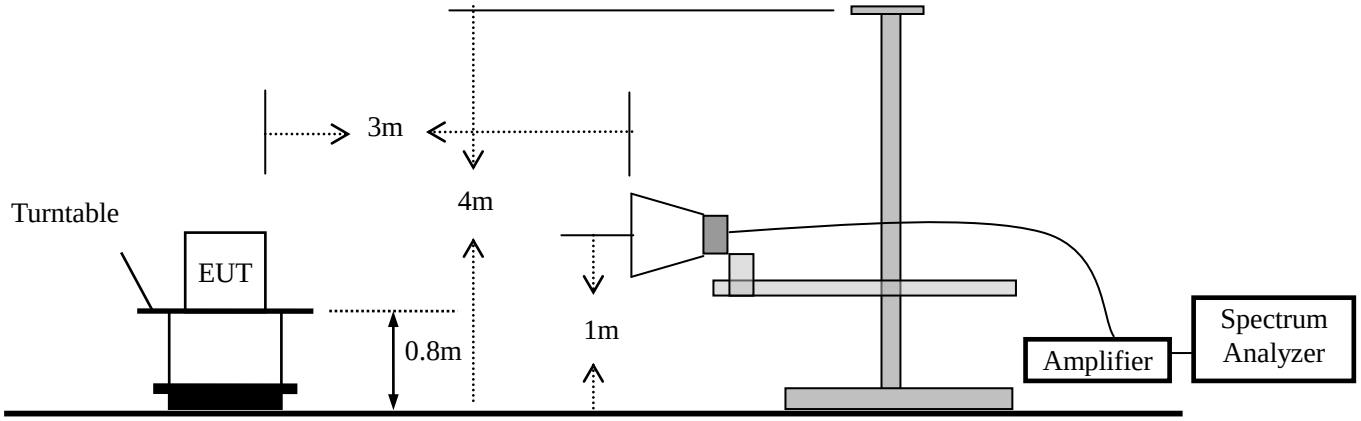
6. Spurious Emission Intensity

6.1 Test SET-UP (Block Diagram of Configuration)

6.1.1 Radiated Emission Test Set-Up, Frequency Below 1GHz



6.1.2 Radiated Emission Test Set-Up, Frequency above 1GHz



6.2 Measurement Procedure

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi- anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. The test-receiver system was set to peak detect function and specified bandwidth with maximum hold mode.

e. A Quasi-peak measurement was then made for that frequency point for below 1GHz test. PK and AV for above 1GHz emission test.
For 30MHz to 1GHz:
Sept the spectrum analyzer as: RBW=120kHz, VBW=300kHz, Detector=Quasi-Peak
For Above 1GHz:
Set the spectrum analyzer as: RBW=1MHz, VBW=3MHz, Detector=Peak.

f. Replace the EUT with a tuned dipole antenna (horn antenna for above 1 GHz) relative to each frequency. 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.

g. Repeat step f until all frequencies need to be measured were complete.

h. Repeat step g with both dipole antenna (horn antenna for above 1 GHz) and search antenna in vertical polarized orientations.

6.3 Limit

On any frequency removed from the operating frequency by more than 250 percent of the authorized bandwidth: at least 43 + 10log (mean output power in watts) dB.

6.4 Measurement Results

Please refer to following table and plots.

470-494MHz Band							
Humidity :		50 %	Temperature :			22 ℃	
Test Result:		PASS	Test By:			Sance	
Channel	**Frequency (MHz)**	**Substituted level (dBm)**	**Polarization (H/V) Antenna**	**Gain Correction (dBi)**	**Cable Loss (dB)**	**Absolute Level (dBm)**	**Limit (dBm)**
0	**940.53**	**-58.49**	**H**	**8.16**	**2.84**	**-53.72**	**-13.00**
	940.24	**-60.23**	**V**	**8.16**	**2.84**	**-56.96**	**-13.00**

8	**964.40**	**-59.12**	**H**	**8.17**	**2.84**	**-56.49**	**-13.00**
	964.37	**-61.65**	**V**	**8.17**	**2.84**	**-58.77**	**-13.00**

F	**987.25**	**-55.76**	**H**	**8.19**	**2.85**	**-51.39**	**-13.00**
	987.60	**-58.98**	**V**	**8.19**	**2.85**	**-54.22**	**-13.00**

Note: Data of measurement within this frequency range shown " ---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits.

542-566MHz Band							
Humidity :		50 %	Temperature :			22 ℃	
Test Result:		PASS	Test By:			Sance	
Channel	**Frequency (MHz)**	**Substituted level (dBm)**	**Polarization (H/V) Antenna**	**Gain Correction (dBi)**	**Cable Loss (dB)**	**Absolute Level (dBm)**	**Limit (dBm)**
0	**1084.77**	**-64.32**	**H**	**7.92**	**0.79**	**-60.81**	**-13.00**
	1084.69	**-67.69**	**V**	**7.92**	**0.79**	**-64.94**	**-13.00**

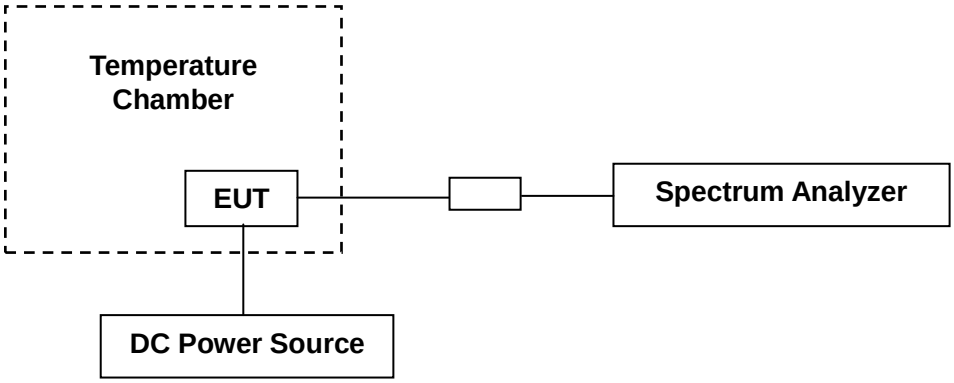
8	**1107.95**	**-65.75**	**H**	**7.90**	**0.79**	**-62.03**	**-13.00**
	1108.04	**-67.30**	**V**	**7.90**	**0.79**	**-64.12**	**-13.00**

F	**1132.13**	**-64.79**	**H**	**7.89**	**0.80**	**-61.03**	**-13.00**
	1132.58	**-67.14**	**V**	**7.89**	**0.80**	**-63.76**	**-13.00**

Note: Data of measurement within this frequency range shown " ---" in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits.

7. Frequency Stability

7.1 Test SET-UP (Block Diagram of Configuration)



7.2 Measurement Procedure

According to ANSI/TIA603-D 2010 section 2.2.2, the carrier frequency stability is the ability of the transmitter to maintain an assigned carrier frequency.

(1)The antenna port of the EUT was connected to the 50 Ohm input of a spectrum analyzer.

(2)The EUT was allowed to soak for ~15 minutes after the temperature chamber reached the set temperature.

(3)The EUT was then powered on and allowed to stabilize for ~ 1 minute.

(4)The measured frequency of the transmitter was plotted with the screen capture function of the spectrum analyzer.

(5)Steps a. through d. were repeated at -20C through +50C in ten degree increments for representative low, mid and high frequencies within the EUTs operational band.

7.3 Limit

As per FCC §74.861(e) (4): The frequency tolerance of the transmitter shall be 0.005 percent.

7.4 Measurement Results

Please refer to following tables.

FCC ID: CCRAH8

Humidity :	50 %	Temperature :	22 ℃
Test Result:	PASS	Test By:	Sance

Temperature (℃)	Measured (MHz)	Channel Frequency (MHz)	Frequency Tolerance (ppm)	Limit (ppm)
Low channel				
-20	470.1282423	470.125	6.89668	50
-10	470.1286413	470.125	7.74539	50
0	470.1285209	470.125	7.48928	50
10	470.1264525	470.125	3.08960	50
20	470.1264472	470.125	3.07833	50
30	470.1267041	470.125	3.62478	50
40	470.1284510	470.125	7.34060	50
50	470.1280798	470.125	6.55102	50
Middle channel				
-20	482.0048461	482.000	10.0541	50
-10	482.0039415	482.000	8.17739	50
0	482.0042468	482.000	8.81079	50
10	482.0042448	482.000	8.80664	50
20	482.0048327	482.000	10.0263	50
30	482.0042750	482.000	8.86929	50
40	482.0048360	482.000	10.0332	50
50	482.0038632	482.000	8.01494	50
High channel				
-20	493.9782301	493.975	6.53899	50
-10	493.9786314	493.975	7.35138	50
0	493.9763043	493.975	2.64042	50
10	493.9762205	493.975	2.47077	50
20	493.9781470	493.975	6.37077	50
30	493.9783091	493.975	6.69892	50
40	493.9768405	493.975	3.72590	50
50	493.9782217	493.975	6.52199	50

Humidity :	50 %	Temperature :	22 ℃
Test Result:	PASS	Test By:	Sance

Temperature (℃)	Measured (MHz)	Channel Frequency (MHz)	Frequency Tolerance (ppm)	Limit (ppm)
Low channel				
-20	542.1282051	542.125	5.91211	50
-10	542.1283346	542.125	6.15098	50
0	542.1284750	542.125	6.40996	50
10	542.1283646	542.125	6.20632	50
20	542.1267049	542.125	3.14485	50
30	542.1282347	542.125	5.96671	50
40	542.1266125	542.125	2.97441	50
50	542.1268012	542.125	3.32248	50
Middle channel				
-20	554.0032051	554.000	5.78538	50
-10	554.0048077	554.000	8.67816	50
0	554.0044056	554.000	7.95235	50
10	554.0030049	554.000	5.42401	50
20	554.0032054	554.000	5.78592	50
30	554.0046056	554.000	8.31336	50
40	554.0048051	554.000	8.67347	50
50	554.0048019	554.000	8.66769	50
High channel				
-20	565.9782051	565.975	5.66297	50
-10	565.9784623	565.975	6.11741	50
0	565.9753495	565.975	0.61752	50
10	565.9761252	565.975	1.98807	50
20	565.9784435	565.975	6.08419	50
30	565.9764407	565.975	2.54552	50
40	565.9765614	565.975	2.75878	50
50	565.9782208	565.975	5.69071	50

Humidity :	50 %	Temperature :	22 ℃
Test Result:	PASS	Test By:	Sance

Voltage & Temperature (℃)	Measured (MHz)	Channel Frequency (MHz)	Frequency Tolerance (ppm)	Limit (ppm)
Low channel				
3.6V at 20℃	470.1285507	470.125	7.55267	50
3.2V at 20℃	470.1284625	470.125	7.36506	50
4.0V at 20℃	470.1285142	470.125	7.47503	50
Middle channel				
3.6V at 20℃	482.0048114	482.000	9.98216	50
3.2V at 20℃	482.0048336	482.000	10.0282	50
4.0V at 20℃	482.0048441	482.000	10.0500	50
High channel				
3.6V at 20℃	493.9781535	493.975	6.38393	50
3.2V at 20℃	493.9781792	493.975	6.43595	50
4.0V at 20℃	493.9782036	493.975	6.48535	50
Low channel				
3.6V at 20℃	542.1284013	542.125	6.27401	50
3.2V at 20℃	542.1283799	542.125	6.23454	50
4.0V at 20℃	542.1284368	542.125	6.33950	50
Middle channel				
3.6V at 20℃	554.0032196	554.000	5.81155	50
3.2V at 20℃	554.0032862	554.000	5.93177	50
4.0V at 20℃	554.0032851	554.000	5.92978	50
High channel				
3.6V at 20℃	565.9787010	565.975	6.53916	50
3.2V at 20℃	565.9787369	565.975	6.60259	50
4.0V at 20℃	565.9786425	565.975	6.43580	50

8. Modulation Characteristics Measurement

8.1 Test SET-UP (Block Diagram of Configuration)

8.2 Measurement Procedure

According to ANSI/TIA603-D 2010 section 2.2.3, modulation limiting is the transmitter circuit's ability to limit the transmitter from producing deviation in excess of a rated system deviation.
Connect the modulation analyzer to EUT and EUT to test receiver.
Apply a 1000Hz modulating signal to the transmitter from the modulation analyzer, and adjust the level to obtain 60% of full rated system deviation. Apply a 15KHz modulating signal to the transmitter from the modulation analyzer, and adjust the level to obtain 20% of full rated system deviation.
Increase the level from the modulation analyzer by 5dB in one step, record the deviation obtained from the receiver.
Decrease the level from the modulation analyzer by 5dB in one step, record the deviation obtained from the receiver.
With the level from the modulation analyzer held constant at each level, vary frequency from 300Hz to 15000Hz Record the deviation.

8.3 Limit

According to FCC §74.861(e) (3):
Any form of modulation may be used. A maximum deviation of ±75kHz is permitted when frequency modulation is employed.

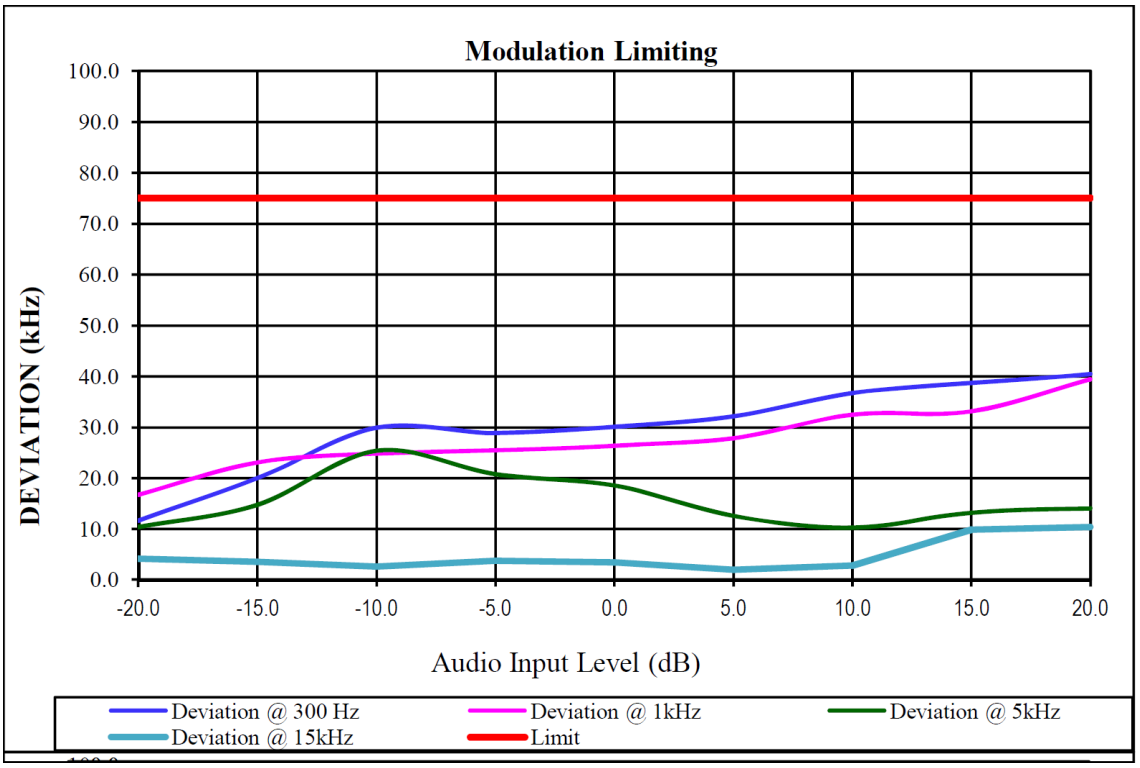
8.4 Measurement Results

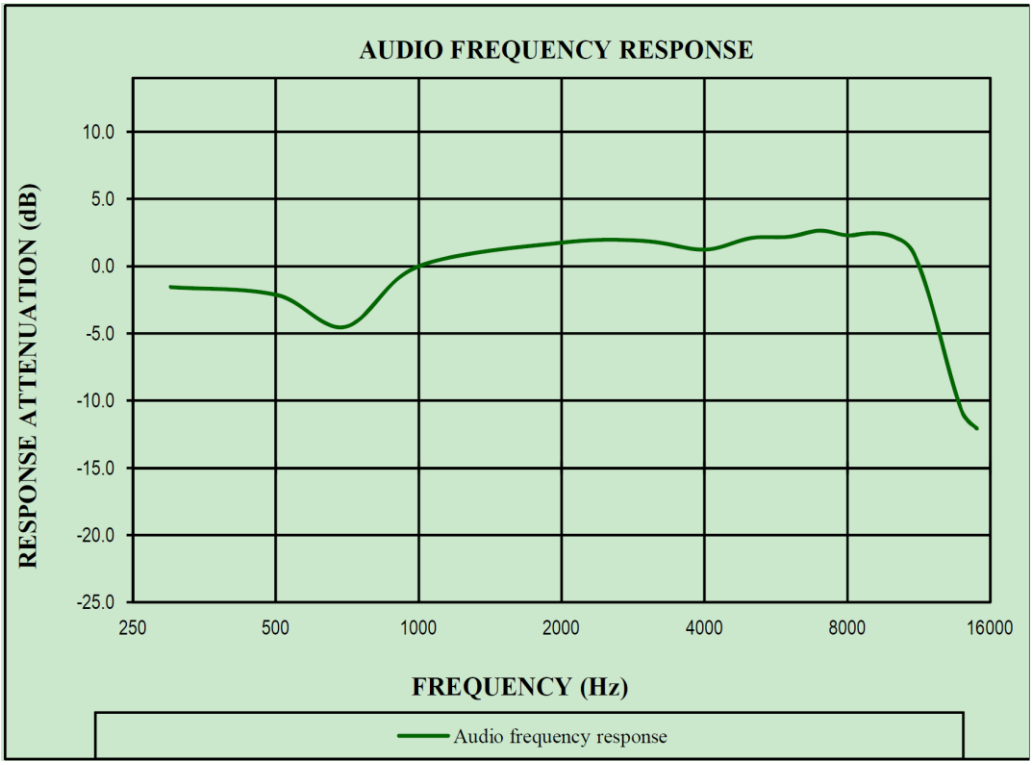
Please refer to following table and plots.

Temperature :	21 ℃	Humidity :	52 %
Test By:	Sance	Test Date :	June 08, 2016
Test Result:	PASS		

AF level (dBm)	AF Frequency(Hz) Peak Deviation(kHz)				Limit (kHz)
	300Hz	1000Hz	5000Hz	15000Hz	
470-494MHz Band (Mid Channel)					
20.0	40.43	39.41	14.09	10.43	75
15.0	38.65	33.13	13.23	9.87	75
10.0	36.70	32.45	10.32	2.87	75
5.0	32.13	27.87	12.63	1.98	75
0.0	30.12	26.43	18.54	3.51	75
-5.0	28.87	25.45	20.78	3.81	75
-10.0	29.87	24.85	25.34	2.65	75
-15.0	20.01	23.12	14.77	3.53	75
-20.0	11.68	16.77	10.43	4.16	75

Note: The worst case mid channel was recorded.

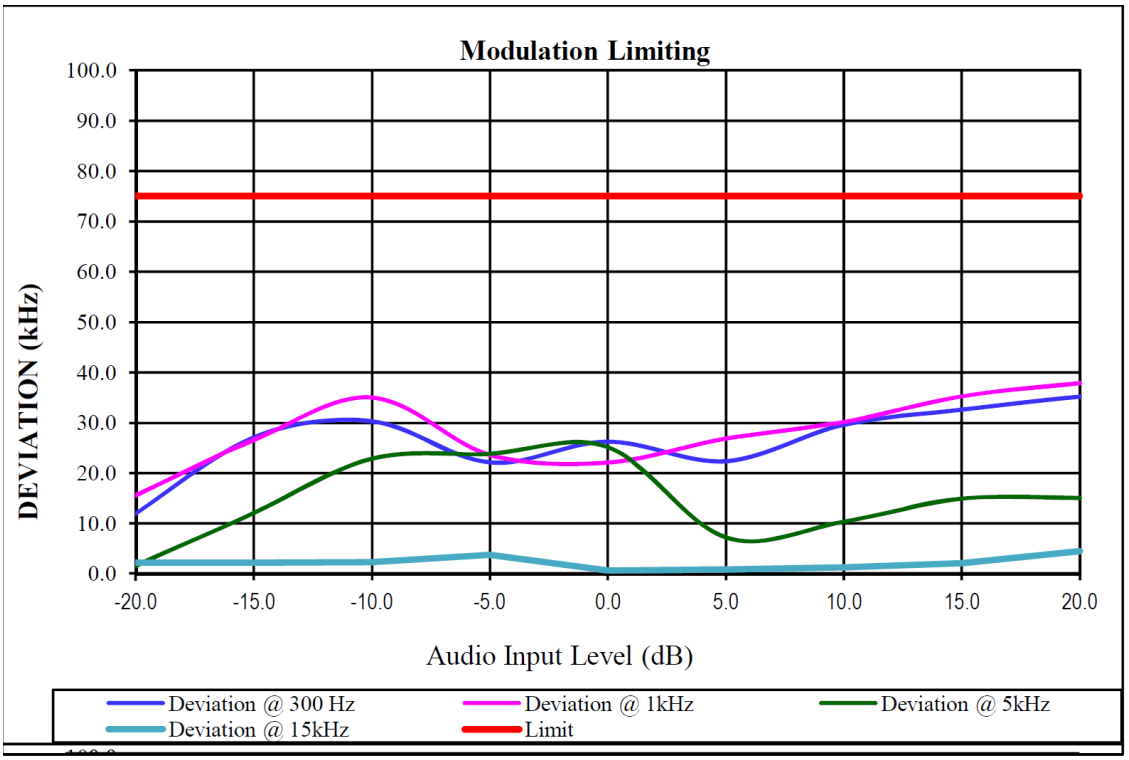

Modulation Limiting
DEVIATION (kHz)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-20.0
-15.0
-10.0
-5.0
0.0
5.0
10.0
15.0
20.0
Audio Input Level (dB)
Deviation @ 300 Hz
Deviation @ 1kHz
Deviation @ 5kHz
Deviation @ 15kHz
Limit

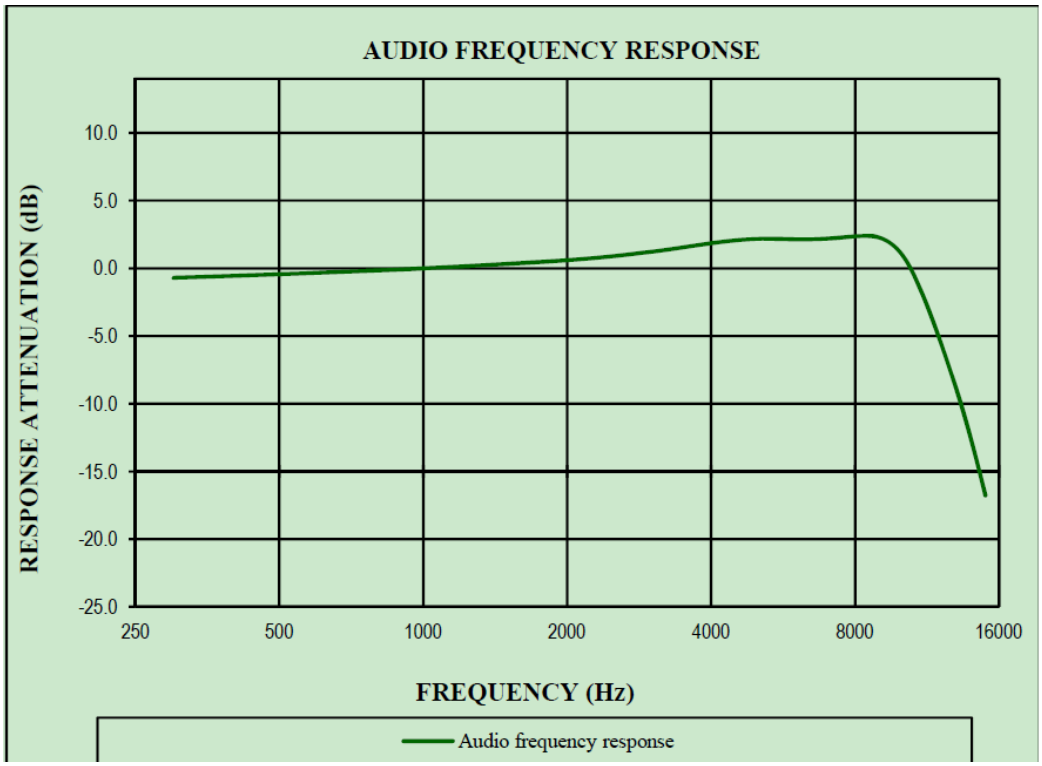

AUDIO FREQUENCY RESPONSE
RESPONSE ATTENUATION (dB)
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
250
500
1000
2000
4000
8000
16000
FREQUENCY (Hz)
Audio frequency response

Temperature :	21 ℃	Humidity :	52 %		
Test By:	Sance	Test Date :	June 08, 2016		
Test Result:	PASS				

AF level (dBm)	AF Frequency(Hz) Peak Deviation(kHz)				Limit (kHz)
	300Hz	1000Hz	5000Hz	15000Hz	
542-566MHz Band (Mid Channel)					
20.0	35.14	37.85	15.06	4.46	75
15.0	32.59	35.22	14.90	2.13	75
10.0	29.58	30.15	10.32	1.32	75
5.0	22.39	26.85	7.21	0.88	75
0.0	26.25	22.15	25.13	0.65	75
-5.0	22.15	23.69	23.82	3.81	75
-10.0	30.28	35.02	22.82	2.34	75
-15.0	27.07	26.58	12.08	2.27	75
-20.0	12.02	15.64	1.56	2.23	75

Note: The worst case mid channel was recorded.


Modulation Limiting
DEVIATION (kHz)
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
-20.0
-15.0
-10.0
-5.0
0.0
5.0
10.0
15.0
20.0
Audio Input Level (dB)
Deviation @ 300 Hz
Deviation @ 1kHz
Deviation @ 5kHz
Deviation @ 15kHz
Limit


AUDIO FREQUENCY RESPONSE
RESPONSE ATTENUATION (dB)
10.0
5.0
0.0
-5.0
-10.0
-15.0
-20.0
-25.0
250
500
1000
2000
4000
8000
16000
FREQUENCY (Hz)
Audio frequency response

9. Test Equipment List

Description	Manufacturer	Model Number	Serial Number	Calibration Date	Calibration Due Date
Test Receiver	Rohde & Schwarz	ESCI7	100837	Mar. 07, 2016	Mar. 06, 2017
Antenna	Schwarzbeck	VULB9162	9162-010	Mar. 24, 2016	Mar. 23, 2017
Cable	Huber+Suhner	CBL2-NN-1M	22390001	Mar. 07, 2016	Mar. 06, 2017
Antenna	Teseq	CBL 6111D	27086	Mar. 24, 2016	Mar. 23, 2017
Power Amplifier	HP	HP 8447D	1145A00203	Mar. 07, 2016	Mar. 06, 2017
Horn Antenna	Schwarzbeck	BBHA9170	9170-372	Mar. 24, 2016	Mar. 23, 2017
Horn Antenna	Com-Power	AH-118	071078	Mar. 24, 2016	Mar. 23, 2017
Analyzer Modulation	HP	8901A	2026A00847	Dec. 24, 2015	Dec. 23, 2016
Spectrum Analyzer	Rohde & Schwarz	FSU26	200409/026	Mar. 07, 2016	Mar. 06, 2017
Pre-Amplifier	Agilent	8449B	3008A02964	Mar. 07, 2016	Mar. 06, 2017
SMA Cable	REBES	A46-NMNM	N/A	Mar. 07, 2016	Mar. 06, 2017
Temperature & Humidity Chamber	BELL	BE-TH-408	N/A	Dec. 24, 2015	Dec. 23, 2016
DC Source	HUAYI	HY5003-2	N/A	Dec. 24, 2015	Dec. 23, 2016
Audio Signal Generator	LONGWEI	TAG-101	N/A	Mar. 07, 2016	Mar. 06, 2017
Signal Generator	Agilent	N5182A	MY48180739	Mar. 07, 2016	Mar. 06, 2017

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