

## FCC PART 90

## TEST REPORT

For

### Hytera Communications Corporation Ltd.

HYT Tower, Hi-Tech Industrial Park North, Nanshan District, Shenzhen, Guangdong, China

**FCC ID: YAMTC-508V**

<b>Report Type:</b> Original Report	<b>Product Type:</b> Two-way Radio
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<b>Report Number:</b> R1DG120824008-00	
<b>Report Date:</b> 2013-01-29	
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**Note:** This test report is prepared for the customer shown above and for the equipment described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. This report **must not** be used by the customer to claim product certification, approval, or endorsement by NVLAP\*, NIST, or any agency of the Federal Government.

\* This report may contain data that are not covered by the NVLAP accreditation and shall be marked with an asterisk "★"

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## GENERAL INFORMATION

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### Product Description for Equipment under Test (EUT)

The *Hytera Communications Corporation Ltd.*'s product, model number: *TC-508V (FCC ID: YAMTC-508V)* (the "EUT") in this report was a *Two-way Radio*, which was measured approximately: 125 mm (L, without antenna) x 54 mm (W) x 45 mm (H), rated input voltage: DC 7.4 V Li-ion battery .

*\* All measurement and test data in this report was gathered from production sample serial number: 120824008 (Assigned by BACL, Shenzhen). The EUT was received on 2012-08-24.*

### Objective

This test report is prepared on behalf of *Hytera Communications Corporation Ltd.* in accordance with Part 2 and Part 90 of the Federal Communication Commissions rules.

### Related Submittal(s)/Grant(s)

No related submittal(s).

### Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of federal Regulations Title 47 Part 2, Sub-part J as well as the following individual parts:

Part 90 – Private Land Mobile Radio Service

Applicable Standards: TIA 603-D and ANSI 63.4-2009.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

### Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on December 06, 2010. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Shenzhen) is an ISO/IEC 17025 accredited laboratory, and is accredited by National Voluntary Laboratory Accredited Program (Lab Code 200707-0).



The current scope of accreditations can be found at <http://ts.nist.gov/Standards/scopes/2007070.htm>.

## SYSTEM TEST CONFIGURATION

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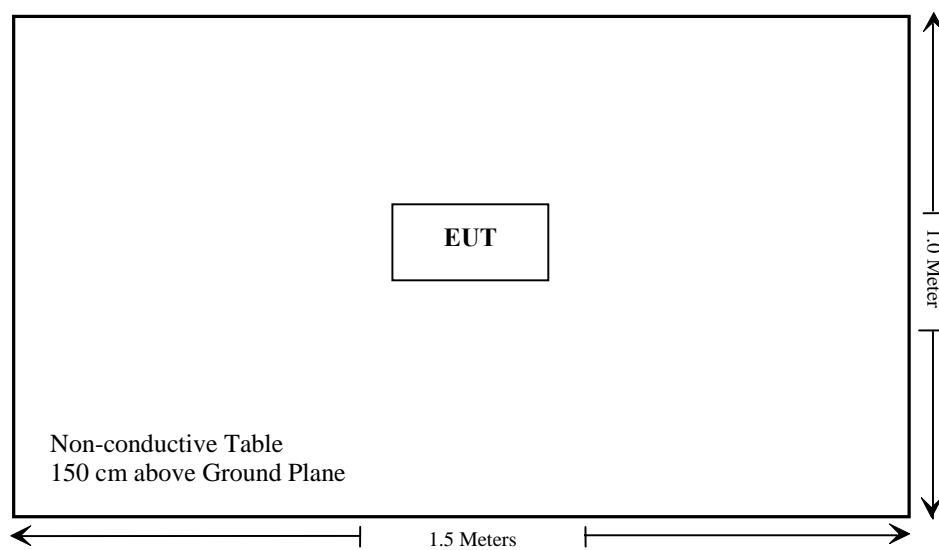
### Description of Test Configuration

The system was configured for testing in a test mode which has been done in the factory.

### Equipment Modifications

No modification was made to the EUT tested.

### Block Diagram of Test Setup



**SUMMARY OF TEST RESULTS**

FCC Rules	Description of Test	Results
§1.1307 (b); §2.1093	RF Exposure	Compliance
§2.1046; §90.205	RF Output Power	Compliance
§2.1047; §90.207	Modulation Characteristic	Compliance
§2.1049; §90.209; §90.210	Occupied Bandwidth & Emission Mask	Compliance
§2.1051; §90.210	Spurious Emission at Antenna Terminal	Compliance
§2.1053; §90.210	Spurious Radiated Emissions	Compliance
§2.1055; §90.213	Frequency Stability	Compliance
§90.214	Transient Frequency Behavior	Compliance

Note: The uncertainty of any RF tests which use conducted method measurement is 0.96 dB.

The uncertainty of any radiation emissions measurement is 4.0 dB.

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## **FCC §1.1307(b) & §2.1093 - RF EXPOSURE**

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### **Applicable Standard**

According to FCC §1.1307(b) and §2.1093, portable device operates Part 90 should be subjected to routine environmental evaluation for RF exposure prior or equipment authorization or use.

**Result:** Compliance.

Please refer to SAR Report Number: R1208309-FCC-SAR.



## FCC §2.1046 & §90.205- RF OUTPUT POWER

### Applicable Standard

FCC §2.1046 and §90.205.

### Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2011-11-24	2012-11-23

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

### Test Procedure

Conducted RF Output Power:

TIA-603-D section 2.2.1

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

### Test Data

#### Environmental Conditions

Temperature:	22~25 °C
Relative Humidity:	50~56%
ATM Pressure:	100.1 kPa

*The testing was performed by Eric Lee on 2012-08-19 and 2012-11-22.*

*Test Mode: Transmitting*

**Conducted output power:****Test Result:** Compliance. Please refer to following table.

Frequency (MHz)	Output Power (dBm)	Output Power (Watt)	Comments
136.5	33.19	2.08	Low Power
	36.98	4.99	High Power
150.5	33.25	2.11	Low Power
	37.04	5.06	High Power
155.5	33.30	2.14	Low Power
	37.04	5.06	High Power
162.5	33.11	2.05	Low Power
	36.91	4.91	High Power
173.5	33.35	2.16	Low Power
	37.03	5.05	High Power

**Radiated output power (Measured with Max.conducted output power channel):**

Frequency (MHz)	Receiver Reading (dBμV)	Turn Table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Channel Spacing (kHz)	Comments
			Height (m)	Polar (H / V)	SG Level (dBm)	Cable loss(dB)	Antenna Gain(dB)			
155.5	107.21	136	1.5	V	37.2	0.5	0.0	36.7	12.5	High power
155.5	103.29	145	1.5	H	33.3	0.5	0.0	32.8	12.5	Low power

**FCC §2.1047 & §90.207 - MODULATION CHARACTERISTIC****Applicable Standard**

FCC§2.1047 &amp; §90.207:

- (a) Equipment which utilizes voice modulated communication shall show the frequency response of the audio modulating circuit over a range of 100 to 5000 Hz. for equipment which is required to have a low pass filter, the frequency response of the filter, or all of the circuitry installed between the modulation limited and the modulated stage shall be supplied.
- (b) Equipment which employs modulation limiting, a curve showing the percentage of modulation versus the modulation input voltage shall be supplied.

**Test Procedure**

Test Method: TIA/EIA-603 2.2.3

**Test Equipment List and Details**

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Due Date
HP	RF Communication Test Set	8920	3438A05201	2012-06-14	2013-06-13
LEADER	MILLIVOLTMETER	LMV-181A	6041126	2012-05-09	2013-05-08

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

**Test Data****Environmental Conditions**

Temperature:	23-25 °C
Relative Humidity:	46-50%
ATM Pressure:	100.1 kPa

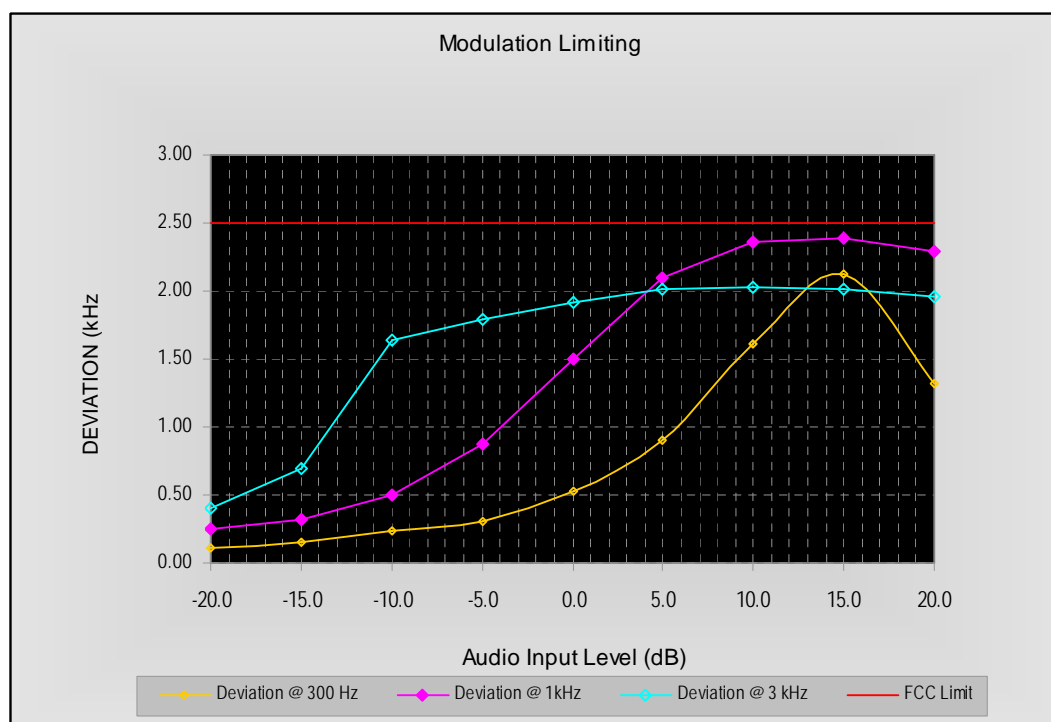
*The testing was performed by Eric Lee on 2012-08-19 and 2013-01-25*

*Test Mode: Transmitting*

**MODULATION LIMITING**

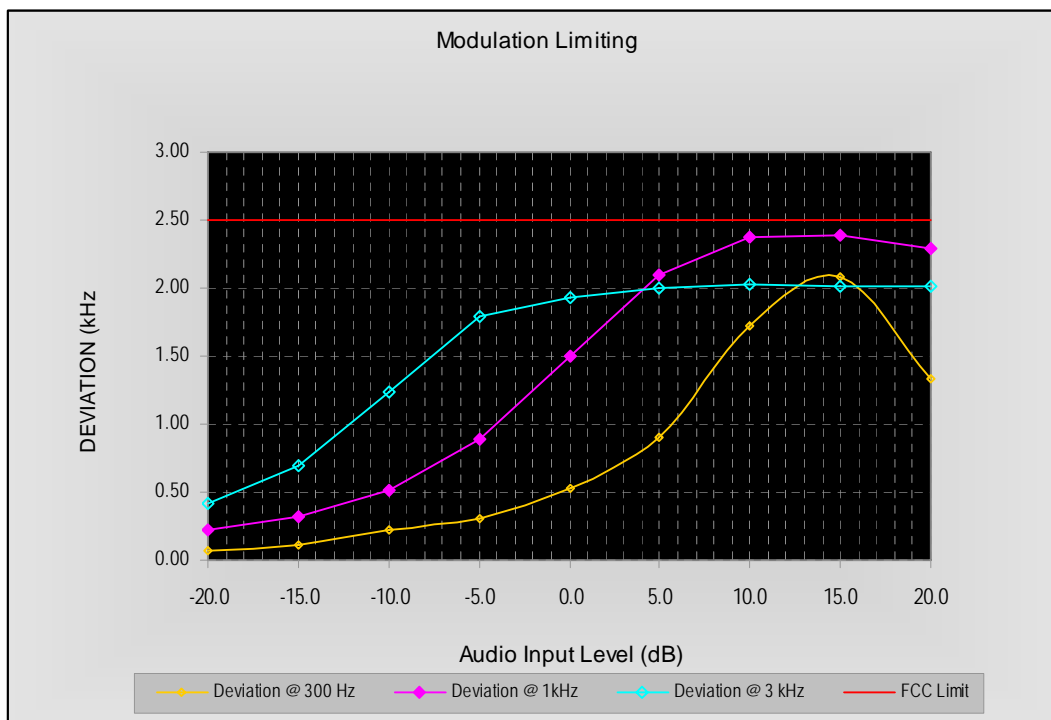
Carrier Frequency: 155.5 MHz, Channel Separation=12.5 kHz, Low Power

Audio Input Level (dB)	Frequency Deviation (kHz)			FCC Limit (kHz)
	@ 300 Hz	@ 1kHz	@ 3 kHz	
20.0	1.33	2.29	1.97	2.5
15.0	2.12	2.39	2.01	2.5
10.0	1.61	2.36	2.02	2.5
5.0	0.91	2.10	2.01	2.5
0.0	0.53	1.50	1.91	2.5
-5.0	0.30	0.88	1.80	2.5
-10.0	0.24	0.50	1.64	2.5
-15.0	0.15	0.32	0.69	2.5
-20.0	0.11	0.25	0.40	2.5



Carrier Frequency: 155.5 MHz, Channel Separation=12.5 kHz, High Power

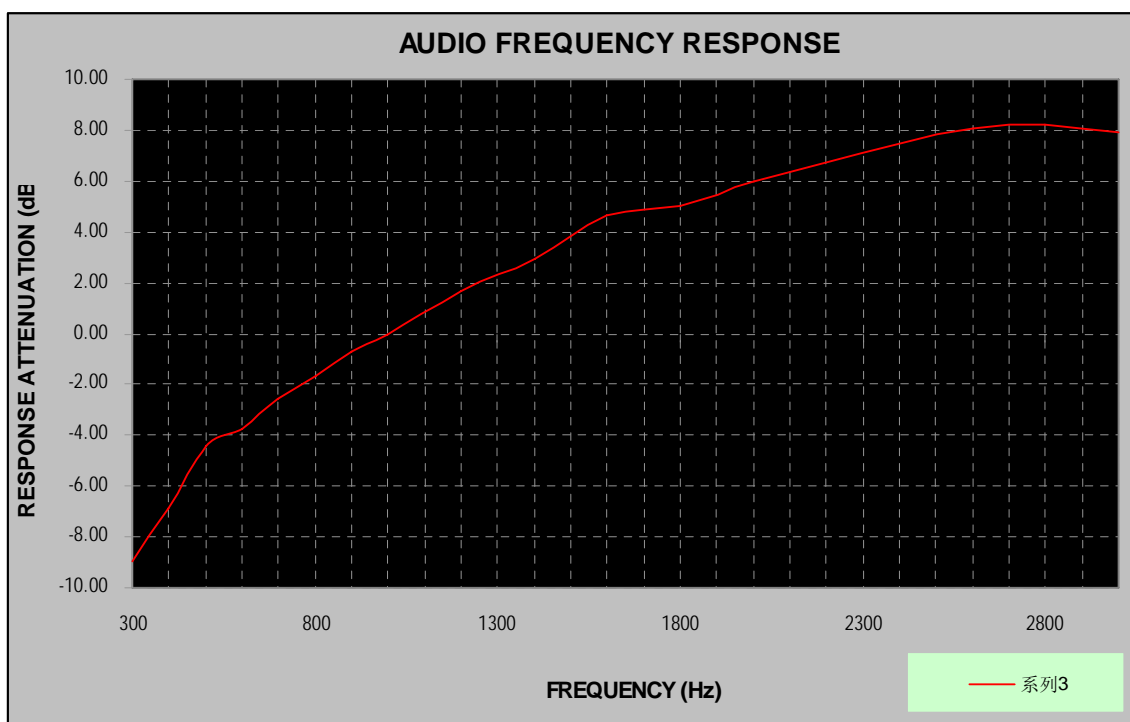
Audio Input Level (dB)	Frequency Deviation (kHz)			FCC Limit (kHz)
	@ 300 Hz	@ 1kHz	@ 3 kHz	
20.0	1.33	2.30	2.01	2.5
15.0	2.09	2.40	2.02	2.5
10.0	1.72	2.37	2.03	2.5
5.0	0.91	2.10	2.00	2.5
0.0	0.53	1.50	1.94	2.5
-5.0	0.31	0.89	1.79	2.5
-10.0	0.22	0.52	1.24	2.5
-15.0	0.12	0.32	0.70	2.5
-20.0	0.08	0.22	0.41	2.5



**Audio Frequency Response**

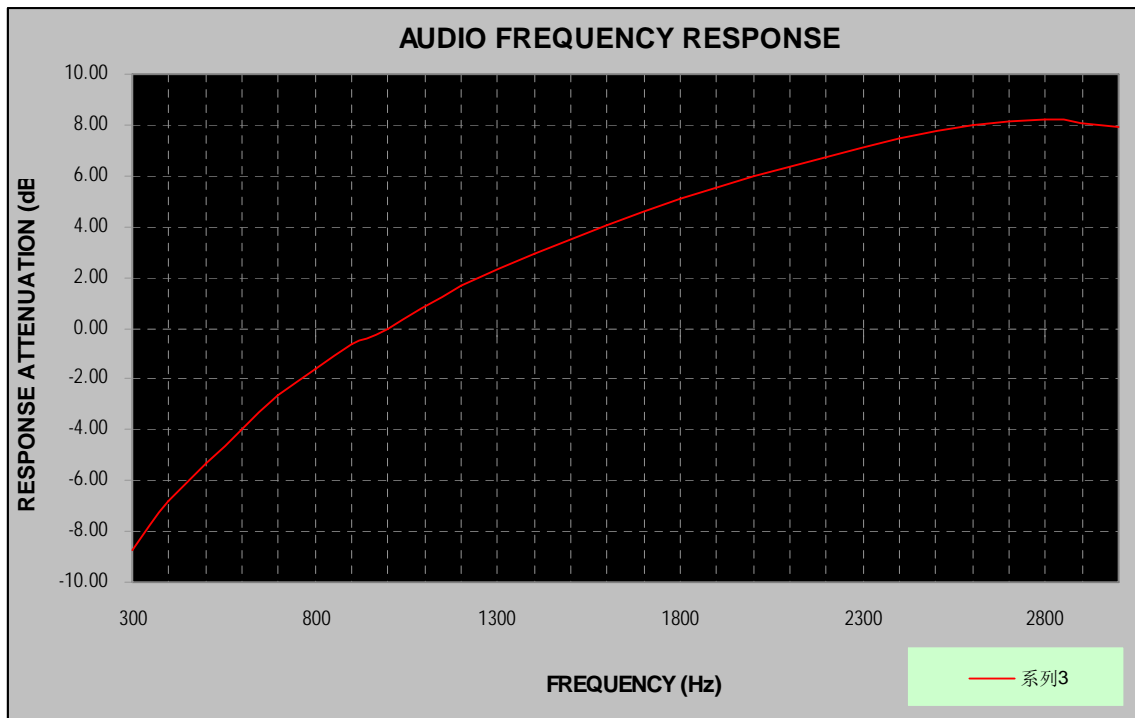
Carrier Frequency: 155.5 MHz, Channel Separation=12.5 kHz, Low Power

Audio Frequency (Hz)	Response Attenuation (dB)
300	-8.92
400	-6.90
500	-4.41
600	-3.77
700	-2.57
800	-1.66
900	-0.74
1000	0.00
1200	1.68
1400	2.95
1600	4.63
1800	5.05
2000	5.99
2200	6.75
2400	7.46
2600	8.03
2800	8.23
3000	7.89



Carrier Frequency: 155.5 MHz, Channel Separation=12.5 kHz, High Power

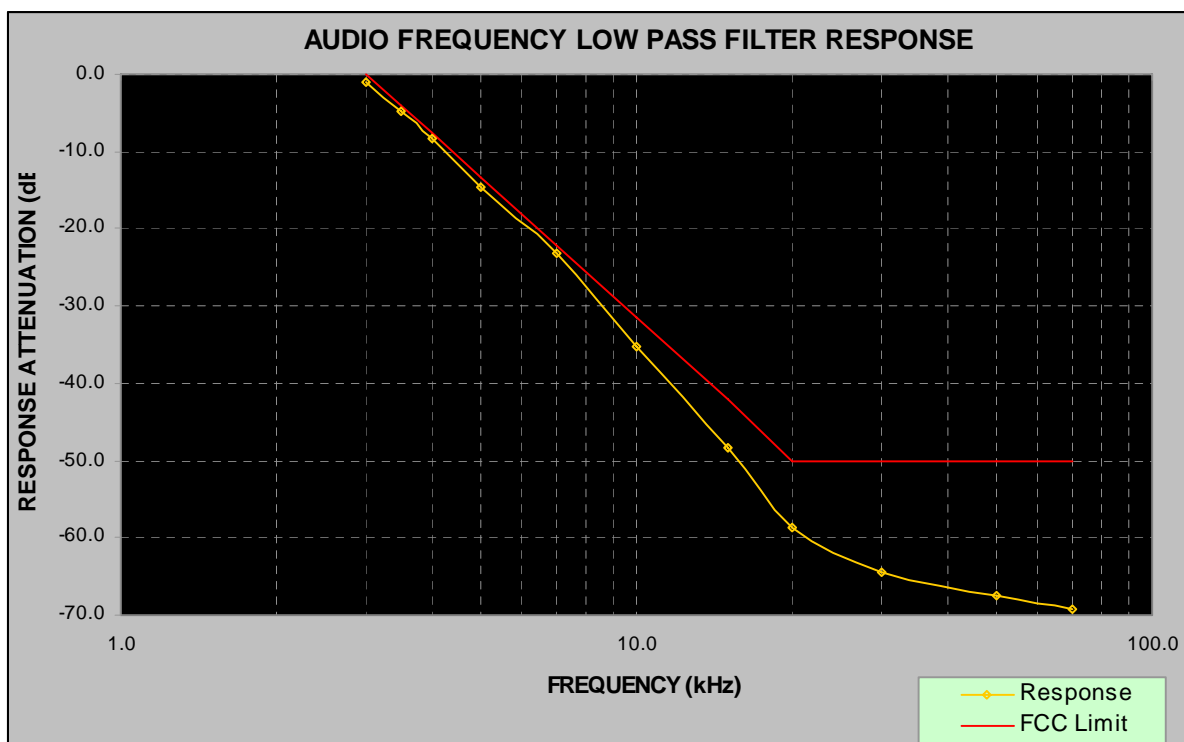
Audio Frequency (Hz)	Response Attenuation (dB)
300	-8.73
400	-6.82
500	-5.32
600	-3.96
700	-2.64
800	-1.60
900	-0.63
1000	0.00
1200	1.68
1400	2.95
1600	4.06
1800	5.07
2000	5.95
2200	6.74
2400	7.45
2600	8.00
2800	8.23
3000	7.93



**Audio Frequency Low Pass Filter Response**

Carrier Frequency: 155.5 MHz, Channel Separation=12.5 kHz

Audio Frequency (kHz)	Response Attenuation (dB)	FCC Limit (dB)
3.0	-1.1	0.0
3.5	-4.7	-4.0
4.0	-8.2	-7.5
5.0	-14.7	-13.3
7.0	-23.2	-22.1
10.0	-35.2	-31.4
15.0	-48.3	-42.0
20.0	-58.6	-50.0
30.0	-64.5	-50.0
50.0	-67.5	-50.0
70.0	-69.2	-50.0





## FCC §2.1049, §90.209 & §90.210 – OCCUPIED BANDWIDTH & EMISSION MASK

### Applicable Standard

FCC §2.1049, §90.209 and §90.210

Emission Mask D—12.5 kHz channel bandwidth equipment. For transmitters designed to operate with a 12.5 kHz channel bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows:

1) For any frequency removed from the center of the authorized bandwidth  $f_0$  to 5.625 kHz removed from  $f_0$ , 0dB.

2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency ( $f_d$  in kHz) of more than 5.626 kHz but no more than 12.5 kHz, at least 7.27 ( $f_d - 2.88$  kHz) dB.

3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency ( $f_d$  in kHz) of more than 12.5 kHz at least:

$$50+10\log P=50+10 \log (1.574) = 51.97 \text{ dB}$$

Emission Mask B. For transmitters that are equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as follows:

1) For any frequency removed from the center of the assigned channel 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 center of the assigned channel by more than 100 percent up to and including 250 percent, at least 35 dB.

3) On any frequency removed from the center of the assigned channel by more than 250 percent at least:

$$43+10\log P=43+10\log (1.622) = 45.10 \text{ dB}$$

The resolution bandwidth was 300 Hz or greater for measuring up to 250 kHz from the edge of the authorized frequency segment, and 30 kHz or greater for measuring more than 250 kHz from the authorized frequency segment.

### Test Procedure

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

The resolution bandwidth of the spectrum analyzer was set at 100 Hz and the spectrum was recorded in the frequency band  $\pm 35$  kHz from the carrier frequency.

**Test Equipment List and Details**

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	101122	2011-11-17	2012-11-16
HP	RF Communication Test Set	8920	3438A05201	2012-06-14	2013-06-13

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

**Test Data****Environmental Conditions**

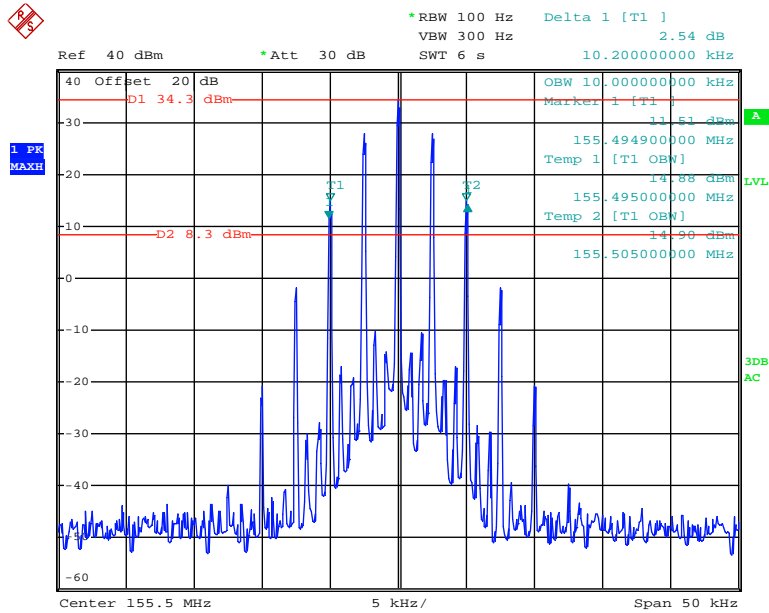
<b>Temperature:</b>	25 °C
<b>Relative Humidity:</b>	56%
<b>ATM Pressure:</b>	100.0 kPa

*The testing was performed by Eric Lee on 2012-09-03.*

99% Occupied Bandwidth (kHz)	26 dB Bandwidth (kHz)
10.00	10.20

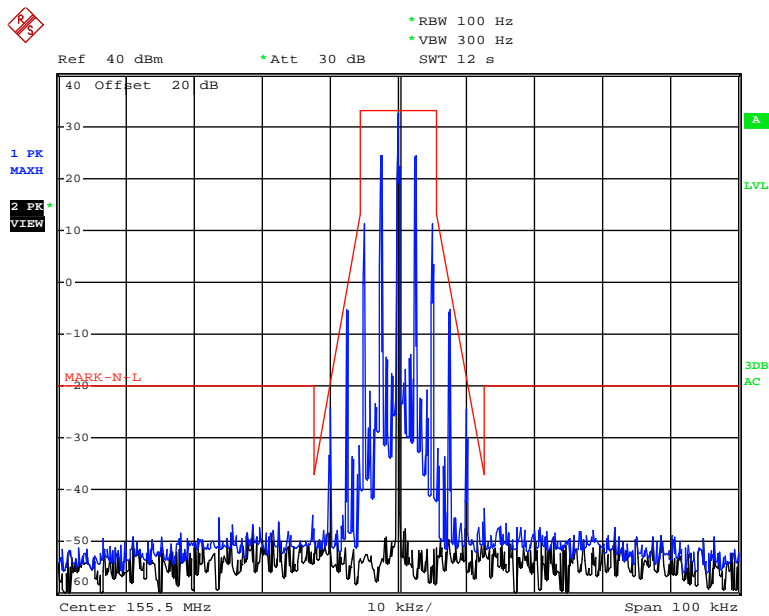
Please refer to the emission mask hereinafter plots.

### Occupied Bandwidth (99% & 26dB Bandwidth)



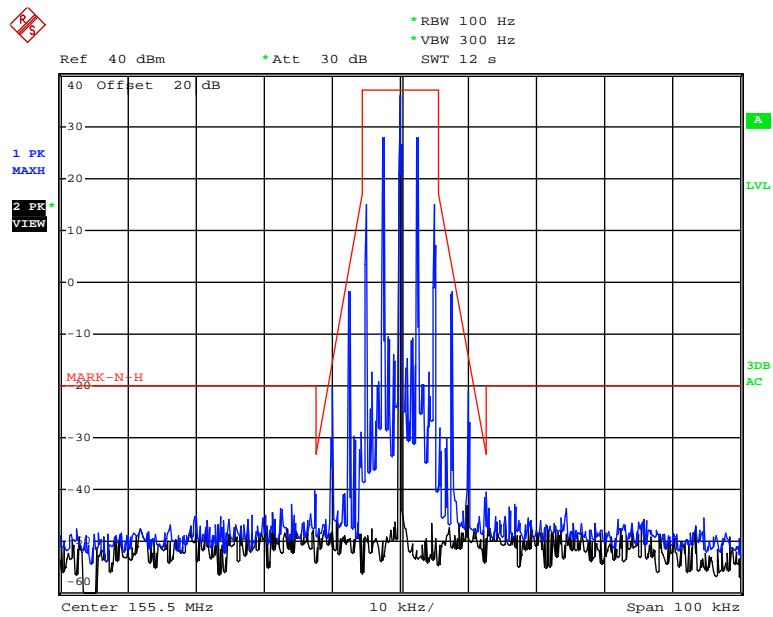
Date: 3.SEP.2012 08:45:15

### Emission Mask (Low Power)



Date: 3.SEP.2012 08:57:57

# Emission Mask (High Power)



Date: 3.SEP.2012 08:55:41

## **FCC §2.1051 & §90.210 - SPURIOUS EMISSIONS AT ANTENNA TERMINALS**

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### **Applicable Standard**

Emission Mask D—12.5 kHz channel bandwidth equipment. For transmitters designed to operate with a 12.5 kHz channel bandwidth, any emission must be attenuated below the power (P) of the highest emission contained within the authorized bandwidth as follows:

- 1) For any frequency removed from the center of the authorized bandwidth  $f_0$  to 5.625 kHz removed from  $f_0$ , 0 dB.
- 2) On any frequency removed from the center of the authorized bandwidth by a displacement frequency ( $f_d$  in kHz) of more than 5.626 kHz but no more than 12.5 kHz, at least  $7.27 (f_d - 2.88 \text{ kHz})$  dB.
- 3) On any frequency removed from the center of the authorized bandwidth by a displacement frequency ( $f_d$  in kHz) of more than 12.5 kHz at least:

$$50 + 10 \log P = 50 + 10 \log (P) \text{ dB}$$

### **Test Procedure**

The RF output of the EUT was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz. Sufficient scans were taken to show any out of band emissions up to  $10^{\text{th}}$  harmonic.

## Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2011-11-24	2012-11-23

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

## Test Data

### Environmental Conditions

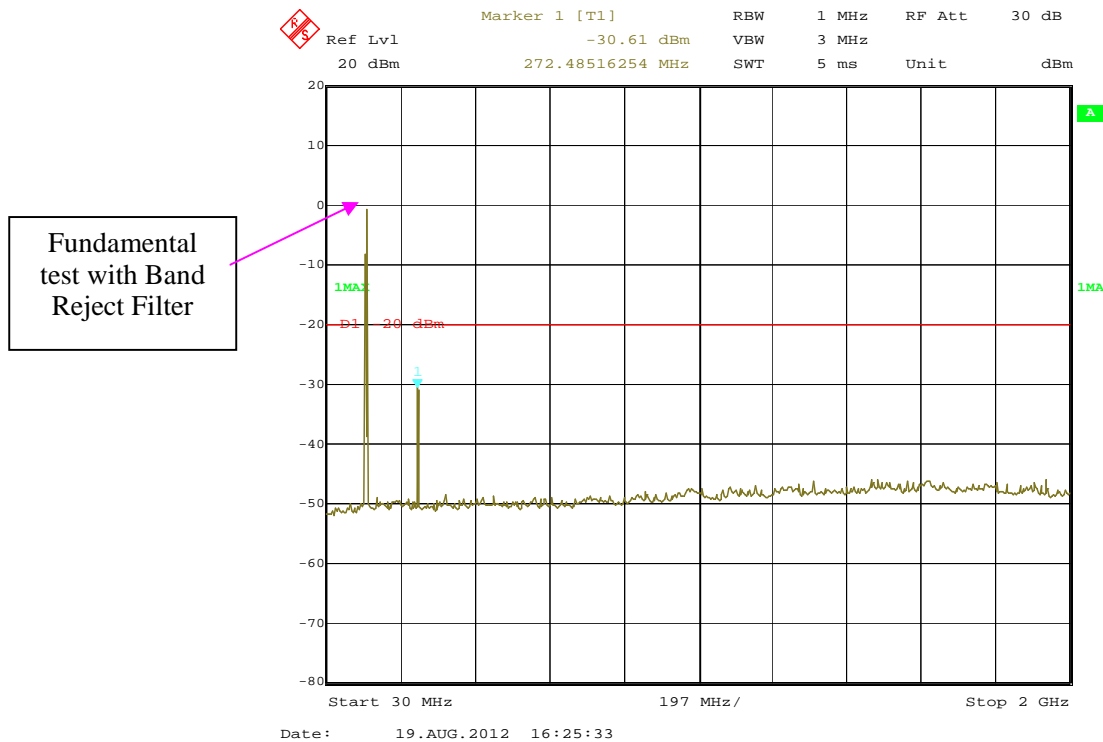
Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.1 kPa

The testing was performed by Eric Lee on 2012-08-19.

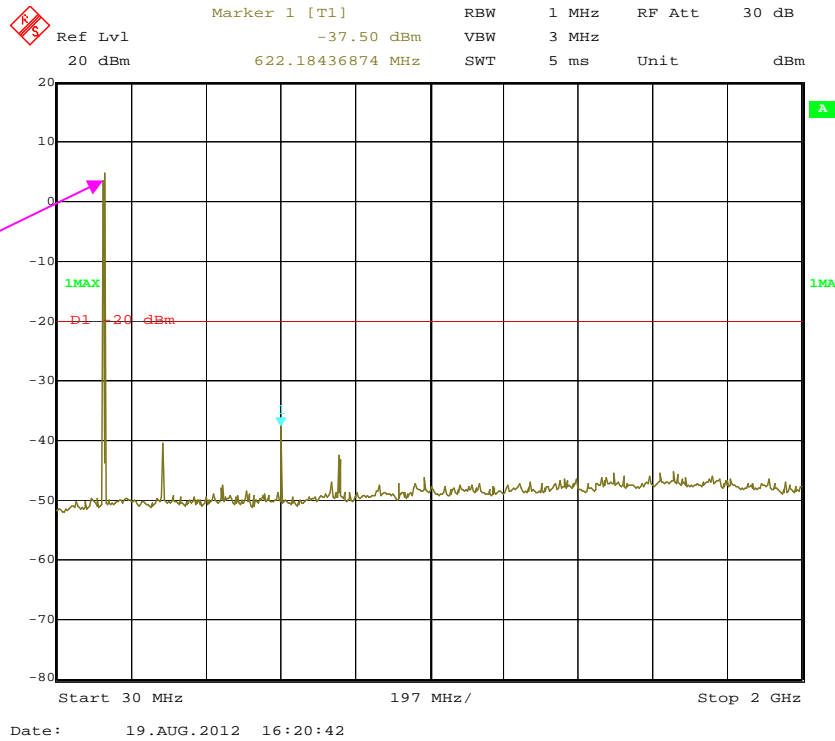
Test Mode: Transmitting

Please refer to the following plots.

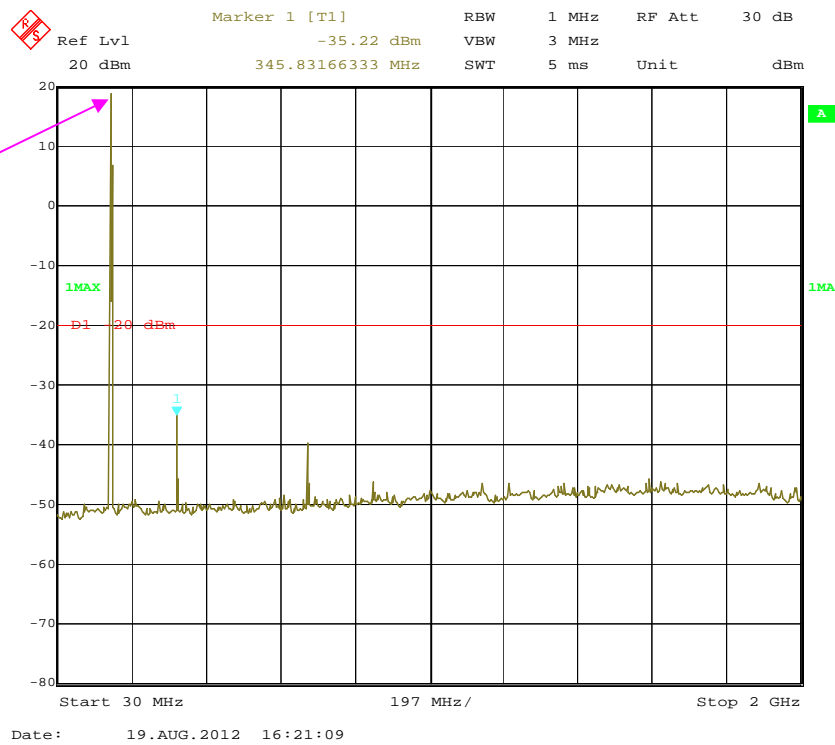
### 30 MHz - 2 GHz (Low Channel: 136.5 MHz)



### 30 MHz - 2 GHz (Middle Channel: 155.5 MHz)



### 30 MHz - 2 GHz (High Channel: 173.5 MHz)



## FCC §2.1053 & §90.210 - RADIATED SPURIOUS EMISSIONS

### Applicable Standard

FCC §2.1053 and §90.210

### Test Procedure

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load, which was also placed on the turntable.

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 teeth 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 emissions in dB = 10 lg (TXpwr in Watts/0.001)-the absolute level

Spurious attenuation limit in dB = 50 + 10 Log<sub>10</sub> (power out in Watts) for EUT with a 12.5 kHz channel bandwidth.

### Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Due Date
Sunol Sciences	Horn Antenna	DRH-118	A052304	2011-12-01	2012-11-30
Sunol Sciences	Broadband Antenna	JB1	A040904-2	2011-11-28	2012-11-27
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2011-11-24	2012-11-23
HP	Signal Generator	8657A	3217A04699	2011-12-19	2012-12-18
A.H. System	Horn Antenna	SAS-200/571	135	2012-02-11	2013-02-10
HP	Synthesized Sweeper	8341B	2624A00116	2012-05-17	2013-05-16

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

### Test Data

#### Environmental Conditions

Temperature:	25 °C
Relative Humidity:	56%
ATM Pressure:	100.1 kPa

*The testing was performed by Eric Lee on 2012-08-19.*



Test Mode: Transmitting

30MHz-2 GHz:

Frequency (MHz)	Receiver Reading (dBμV)	TurnTable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 90	
			Height (m)	Polar (H / V)	SG Level (dBm)	Cable loss(dB)	Antenna Gain(dB)		Limit (dBm)	Margin (dB)
Frequency:136.5MHz, Channel spacing:12.5 kHz										
273	24.72	135	1.5	V	-72.3	0.34	0.0	-72.64	-20	52.64
273	24.60	150	1.8	H	-72.4	0.34	0.0	-72.74	-20	52.74
409.5	39.07	115	1.9	V	-57.9	0.44	0.0	-58.34	-20	38.34
409.5	33.89	210	1.5	H	-63.1	0.44	0.0	-63.54	-20	43.54
546	34.60	125	1.6	V	-62.4	0.54	0.0	-62.94	-20	42.94
546	44.65	26	1.8	H	-52.4	0.54	0.0	-52.94	-20	32.94
682.5	33.15	148	1.9	V	-63.9	0.61	0.0	-64.51	-20	44.51
682.5	38.30	248	1.7	H	-58.7	0.61	0.0	-59.31	-20	39.31
Frequency:155.5MHz, Channel spacing: 12.5 kHz										
311	26.99	169	1.9	V	-70.0	0.37	0.0	-70.37	-20	50.37
311	23.19	59	1.6	H	-73.8	0.37	0.0	-74.17	-20	54.17
466.5	49.25	168	1.6	V	-47.8	0.48	0.0	-48.28	-20	28.28
466.5	30.55	287	1.8	H	-66.5	0.48	0.0	-66.98	-20	46.98
622	52.65	48	1.7	V	-44.4	0.58	0.0	-44.98	-20	24.98
622	40.88	26	1.8	H	-56.1	0.58	0.0	-56.68	-20	36.68
777.5	45.72	136	1.6	V	-51.3	0.66	0.0	-51.96	-20	31.96
777.5	35.43	147	1.5	H	-61.6	0.66	0.0	-62.26	-20	42.26
Frequency:173.5MHz, Channel spacing: 12.5 kHz										
347	28.43	65	1.8	V	-68.6	0.40	0.0	-69.00	-20	49.00
347	29.79	48	1.6	H	-67.2	0.40	0.0	-67.60	-20	47.60
520.5	42.15	159	1.6	V	-54.9	0.52	0.0	-55.42	-20	35.42
520.5	33.23	134	1.6	H	-63.8	0.52	0.0	-64.32	-20	44.32
694	38.36	29	1.7	V	-58.6	0.62	0.0	-59.22	-20	39.22
694	38.65	59	1.8	H	-58.4	0.62	0.0	-59.02	-20	39.02
867.5	40.65	148	1.8	V	-56.4	0.70	0.0	-57.10	-20	37.10
867.5	28.65	126	1.6	H	-68.4	0.70	0.0	-69.10	-20	49.10

Remark:	
(1)	Absolute level (dBm) = Substituted SG level -Cable loss + Antenna Gain
(2)	Measuring frequencies from 30 MHz to the 2 GHz.
(3)	Margin=Limit-Absolute Level

## **FCC §2.1055 & §90.213- FREQUENCY STABILITY**

### **Applicable Standard**

FCC §2.1055 & §90.213

### **Test Procedure**

Frequency Stability vs. Temperature: The equipment under test was connected to an external DC power supply and the RF output was connected to a frequency counter via feed-through attenuators. The EUT was placed inside the temperature chamber. The DC leads and RF output cable exited the chamber through an opening made for the purpose.

After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the counter.

### **Test Equipment List and Details**

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Due Date
Hewlett-Packard	Frequency Counter	5343A	2232A00827	2012-04-15	2013-04-14
ESPEC	Temperature & Humidity Chamber	EL-10KA	09107726	2011-11-24	2012-11-23

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

**Test Data****Environmental Conditions**

<b>Temperature:</b>	20 °C
<b>Relative Humidity:</b>	56%
<b>ATM Pressure:</b>	100.1 kPa

The testing was performed by Eric Lee on 2012-08-19 and 2013-01-25.

Test Mode: Transmitting

Reference Frequency: 155.5 MHz, Limit: $\pm 5$ ppm			
Test Environment		Frequency Measure with Time Elapsed	
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	Measured Frequency error (MHz)	Frequency Error (ppm)
Frequency Stability versus Input Temperature			
50	7.4	155.5000136	0.087
40	7.4	155.5000071	0.046
30	7.4	155.5000102	0.066
20	7.4	155.5000080	0.051
10	7.4	155.5000120	0.077
0	7.4	155.5000054	0.035
-10	7.4	155.5000103	0.066
-20	7.4	155.5000059	0.038
-30	7.4	155.5000088	0.057
Frequency Stability versus Input Voltage			
20	7.14	155.5000112	0.072
20	6.30	155.5000125	0.080

## FCC §90.214 - TRANSIENT FREQUENCY BEHAVIOR

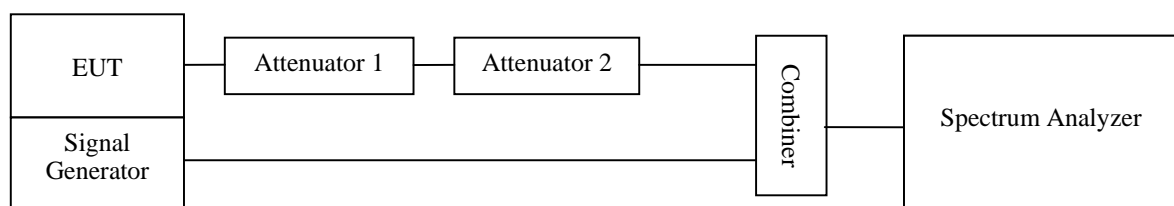
### Applicable Standard

Regulations: FCC §90.214

Test method: ANSI/TIA-603-D 2010, section 2.2.19.3

### Test Procedure

- Connect the EUT and test equipment as shown on the following block diagram.
- Set the Spectrum Analyzer to measure FM deviation, and tune the RF frequency to the transmitter assigned frequency.
- Set the signal generator to the assigned transmitter frequency and modulate it with a 1 kHz tone at  $\pm 12.5$  kHz deviation and set its output level to -100dBm.
- Turn on the transmitter.
- Supply sufficient attenuation via the RF attenuator to provide an input level to the Spectrum Analyzer that is 40 dB below the maximum allowed input power when the transmitter is operating at its rated power level. Note this power level on the Spectrum Analyzer as  $P_0$ .
- Turn off the transmitter.
- Adjust the RF level of the signal generator to provide RF power equal to  $P_0$ . This signal generator RF level shall be maintained throughout the rest of the measurement.
- Remove the attenuation 1, so the input power to the Spectrum Analyzer is increased by 30 dB when the transmitter is turned on.
- Adjust the vertical amplitude control of the spectrum analyzer to display the 1000 Hz at  $\pm 4$  divisions vertically centered on the display. Set trigger mode of the Spectrum Analyzer to "Video", and tune the "trigger level" on suitable level. Then set the "trigger offset" to -10ms for turn on and -15ms for turn off.
- Turn on the transmitter and the transient wave will be captured on the screen of Spectrum Analyzer. Observe the stored display. The instant when the 1 kHz test signal is completely suppressed is considered to be  $t_{on}$ . The trace should be maintained within the allowed divisions during the period  $t_1$  and  $t_2$ .
- Then turn off the transmitter, and another transient wave will be captured on the screen of Spectrum Analyzer. The trace should be maintained within the allowed divisions during the period  $t_3$ .



### Test Equipment List and Details

Manufacturer	Description	Model No.	Serial No.	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	8386001028	2011-11-24	2012-11-23
HP	RF Communication Test Set	8920	3438A05201	2012-06-14	2013-06-13

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

**Test Data****Environmental Conditions**

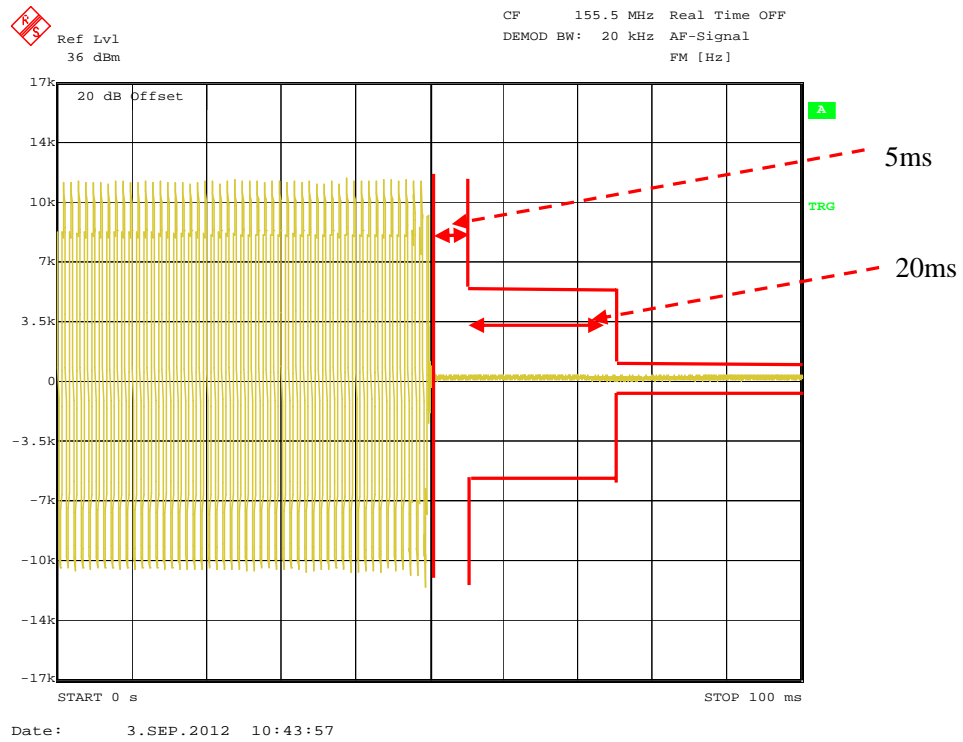
<b>Temperature:</b>	25 °C
<b>Relative Humidity:</b>	56%
<b>ATM Pressure:</b>	100.1 kPa

*The testing was performed by Eric Lee on 2012-08-19.*

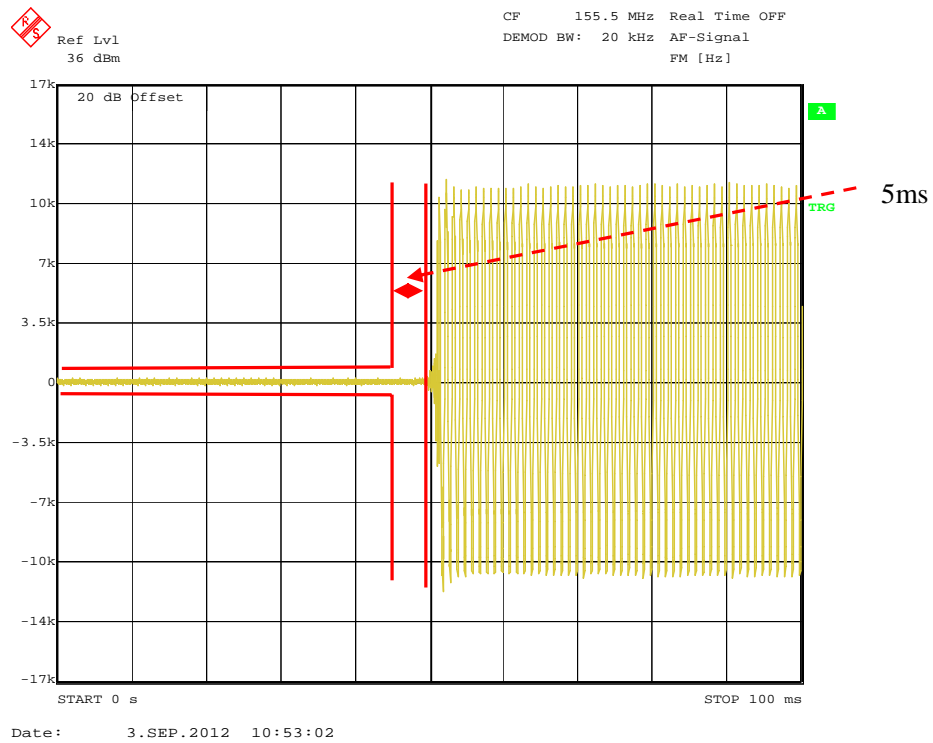
<b>Channel Separation (kHz)</b>	<b>Transient Period (ms)</b>	<b>Transient Frequency</b>	<b>Result</b>
12.5	<5 (t1)	+/-12.5 kHz	Pass
	<20 (t2)	+/-6.25 kHz	
	<5 (t3)	+/-12.5 kHz	

Please refer to the following plots.

### Turn on



### Turn off



\*\*\*\*\* END OF REPORT \*\*\*\*\*