NVLAP LAB CODE 200707-0

FCC PART 22H

MEASUREMENT AND TEST REPORT

For

JDTECK INC

107 South Hoagland Blvd,

Kissimmee, FL 34741, USA

FCC ID: SQX-JD60-8-850

Report Type:	**Product Type:**
Original Report	Wireless Cellular Repeater

Test Engineer:	Bruce Zhang
Report Number:	RSZ10051807-22H
Report Date:	2010-06-29
Reviewed By:	Merry Zhao EMC Engineer
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008

TABLE OF CONTENTS

GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The *JDTECK INC*'s product, model number: *JD60-8-850 (FCC ID: SQX-JD60-8-850)* or the "EUT" as referred to in this report is a *Wireless Cellular Repeater*, which measures approximately: 25.0 cm L x 22.0 cm W x 5.3 cm H, rated input voltage: DC 12Vadapter.

Adapter information:
Model: GM601-120300;
Input: 100-240VAC 50/60Hz 2.0A;
Output: 12VDC 3.0A

Frequency Range:

Cellular Band: 824-849 MHz (Uplink), 869-894 MHz (Downlink)

Transmitter Output Power:

Cellular Band: 20 dBm (Uplink), 27 dBm (Downlink)

Note: All measurements are conducted setting the device to maximum gain by dip switch adjust.

** All measurement and test data in this report was gathered from production sample serial number: 1005041 (Assigned by Shenzhen BACL). The EUT was received on 2010-05-18*

EUT Photo

Please see additional photos in Exhibit B & C

Objective

This type approval report is prepared on behalf of *JDTECK INC* in accordance with Part 2, Subpart J, Part 22 Subpart H of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC rules for output power, modulation characteristic, occupied bandwidth, and spurious emission at antenna terminal, spurious radiated emission, frequency stability, band edge and radiated margin.

Related Submittal(s)/Grant(s)

N/A

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 parts:

Part 22 Subpart H - Public Mobile Services

Applicable Standards: TIA/EIA 603-C, ANSI C63.4-2003.

All radiated and conducted emissions measurements were performed at Bay Area Compliance Laboratories Corp. 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 in 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 November 21, 2007. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

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 a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200707-0).

NVLAP LAB CODE 200707-0

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

SYSTEM TEST CONFIGURATION

Justification

The EUT was configured for testing according to TIA/EIA-603-C.

The final qualification test was performed with the EUT operating at normal mode.

Equipment Modifications

No modifications were made to the EUT.

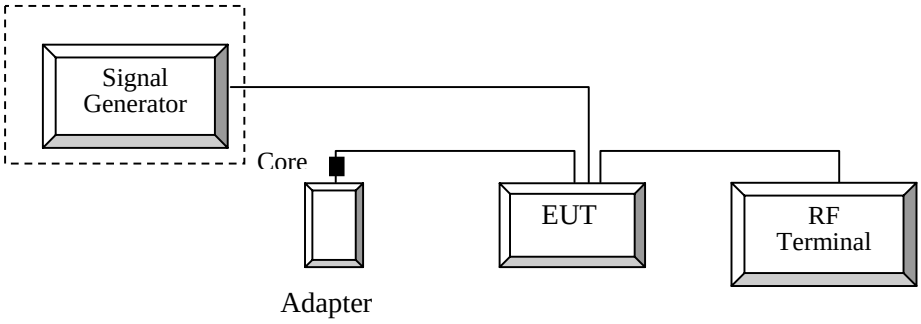
Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number	FCC ID
R & S	Universal Radio commutation tester	CMU200	1100 0008.02	DoC

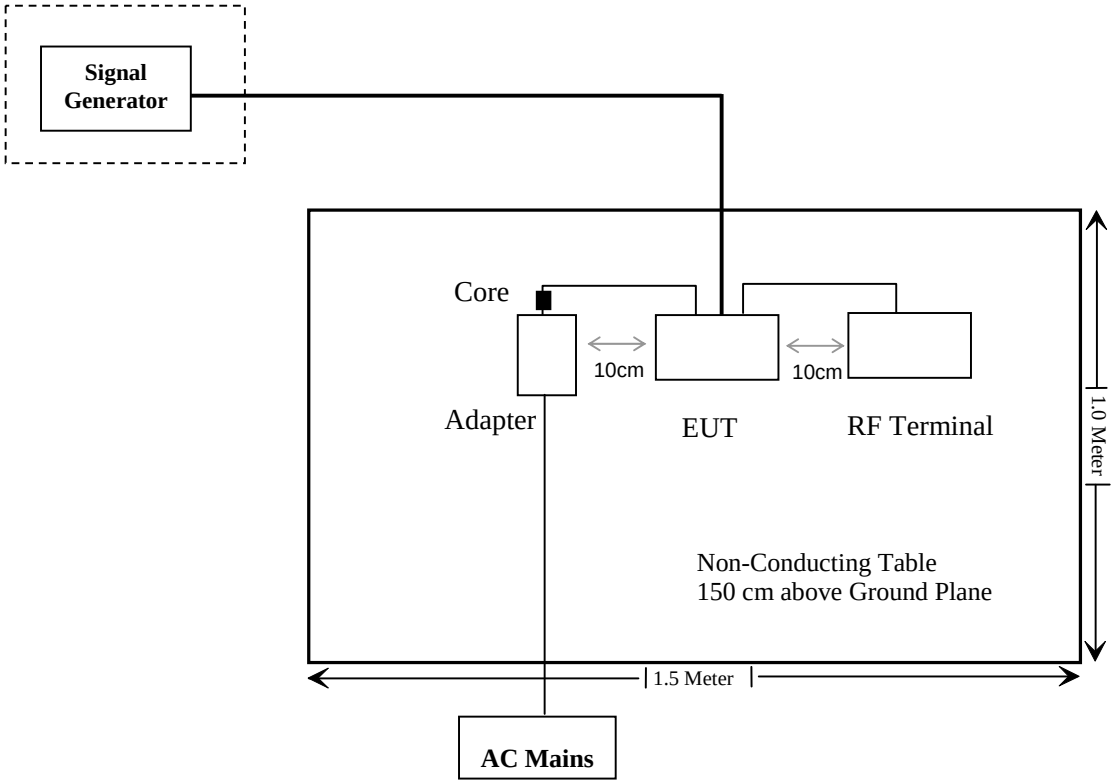
External I/O Cable

Cable Description	Length (m)	From/Port	To
Unshielded Detachable Power Line with a Core	1.2	Adapter	EUT
Unshielded Detachable Power Line	1.9	AC Power	Adapter

Configuration of Test Setup



Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307 (b)(1), §2.1091	Maximum Permissible exposure (MPE)	Compliant
§2.1046, §22.913 (a)	RF Output Power	Compliant
§2.1047	Modulation Characteristics	N/A
§2.1049; §22.905 § 22.917	99% & -26 dB Occupied Bandwidth	Compliant
§2.1051, §22.917 (a)	Spurious Emissions at Antenna Terminal	Compliant
§2.1053, §22.917 (a)	Field Strength of Spurious Radiation	Compliant
§22.917 (a)	Out of band emission, Band Edge	Compliant
§2.1055, §22.355	Frequency stability vs. temperature Frequency stability vs. voltage	N/A*

N/A*: There is no frequency translation or oscillator circuit included in this device.

FCC §1.1307 (b)(1) & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Standard Applicable

According to FCC §1.1307 (b)(1) and §2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (minutes)**
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*($180/f^2$)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz
* = Plane-wave equivalent power density

Test Data

Predication of MPE limit at a given distance

$$S = PG/4\pi R^2$$

Where:

S = power density (in appropriate units, e.g. mW/cm^2)
P = power input to the antenna (in appropriate units, e.g., mW).
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally ***numeric*** gain.
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

Frequency Band	**Frequency (MHz)**	**Antenna Gain**		**Conducted Power**		**Evaluation Distance (cm)**	**Power Density (mW/cm^2)**	**MPE Limit (mW/cm^2)**
		(dBi)	**(numeric)**	**(dBm)**	**(mW)**			
Uplink	836	14	25.12	19.97	99.31	20	0.497	0.557
Downlink	881	7	5.01	26.96	496.59	20	0.495	0.587

Result: Compliant

The predicted power density level at 20 cm is 0.497 mw/cm^2 for uplink, which is below the ordinary/controlled exposure limit of 0.497 mw/cm^2, and the predicted power density level at 20 cm is 0.495 mw/cm^2 for downlink, which is below the ordinary/controlled exposure limit of 0.495 mw/cm^2, The EUT is used at least 20 cm away from user's body. It is determined as mobile equipment and complies with the MPE limit.

FCC §2.1047 - MODULATION CHARACTERISTIC

According to FCC §2.1047(d), Part 22H there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

FCC §2.1046, §22.913 (a) - RF OUTPUT POWER

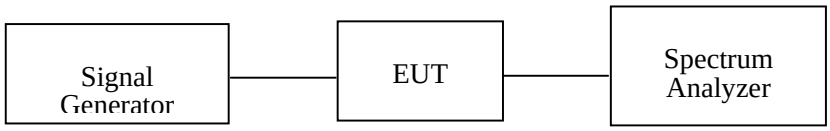
Applicable Standard

According to FCC §2.1046 and §22.913 (a), the ERP of base transmitter and cellular repeater must not exceed 500 watts.

Test Procedure

Conducted method:

The RF output of the transmitter was connected to the wireless test set and the spectrum analyzer through sufficient attenuation.



Radiated method:

TIA 603-C section 2.2.17

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	PSA Series Spectrum Analyzer	E4443A	MY45300749	2010-01-07	2011-01-07
Agilent	ESG-D Series Signal Generator	E4432B	GB40051703	2009-11-20	2010-11-20

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0kPa

The testing was performed by Bruce Zhang on 2010-06-07

Test mode: Transmitting

Frequency Band	Channel	Frequency (MHz)	Output Power (dBm)
Uplink	Low	824.2	19.86
	Middle	836.0	19.97
	High	848.8	19.58
Downlink	Low	869.2	26.83
	Middle	881.0	26.96
	High	893.8	26.46

FCC §2.1049, §22.917 & §22.905 - OCCUPIED BANDWIDTH

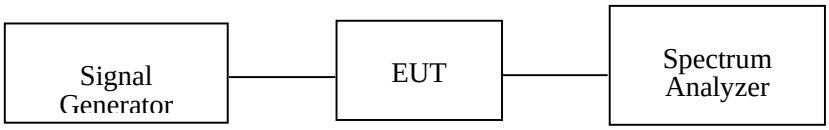
Applicable Standards

FCC §2.1049, §22.917 and §22.905.

Test Procedure

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

The resolution bandwidth of the spectrum analyzer was set at least 1% of the bandwidth (Cellular /PCS) and the 26 dB & 99% bandwidth were recorded.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	PSA Series Spectrum Analyzer	E4443A	MY45300749	2010-01-07	2011-01-07
Rohde & Schwarz	EMI Test Receiver	ESCI	100224	2009-11-24	2010-11-23

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0kPa

The testing was performed by Bruce Zhang on 2010-06-13 and 2010-06-29

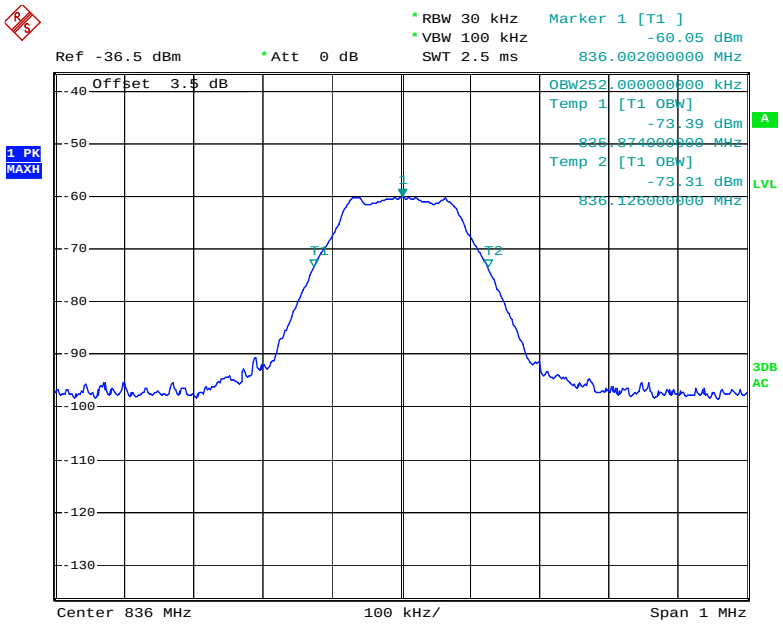
Channel	Frequency (MHz)	99% Bandwidth (kHz)	26 dB Bandwidth (kHz)
Uplink (824-849 MHz)			
Middle	836.0	248.0	332.0
Downlink (869-894 MHz)			
Middle	881.0	248.0	334.0

Note: Input signal level:-60 dBm, gain: 80 dB for Uplink, -53 dBm, gain: 80 dB for Downlink

Please refer to the following plots.

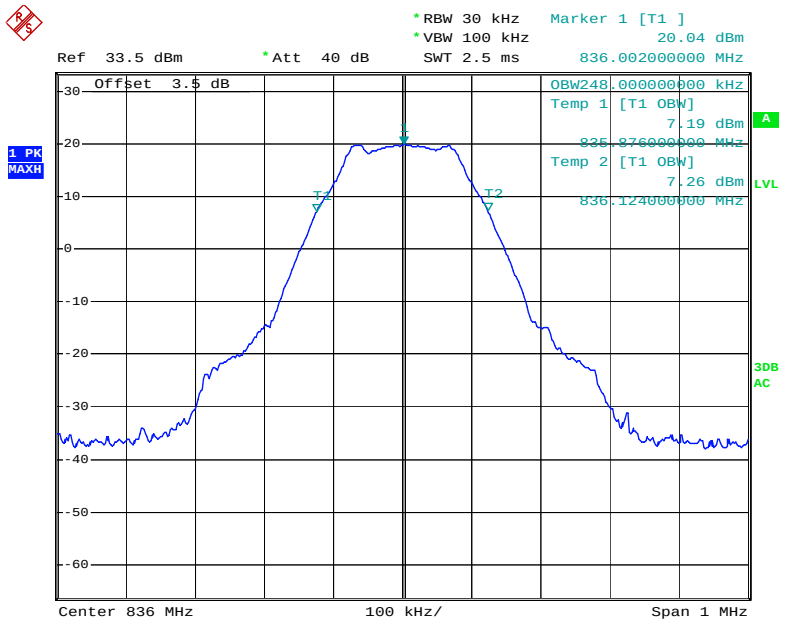
Uplink:

Input

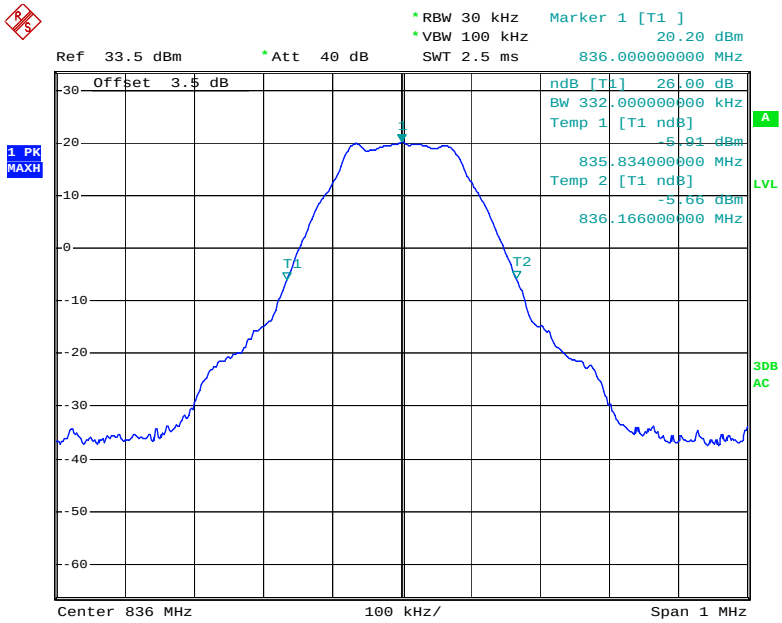


Date: 29.JUN.2010 16:42:31

99% Occupied Bandwidth, Middle Channel

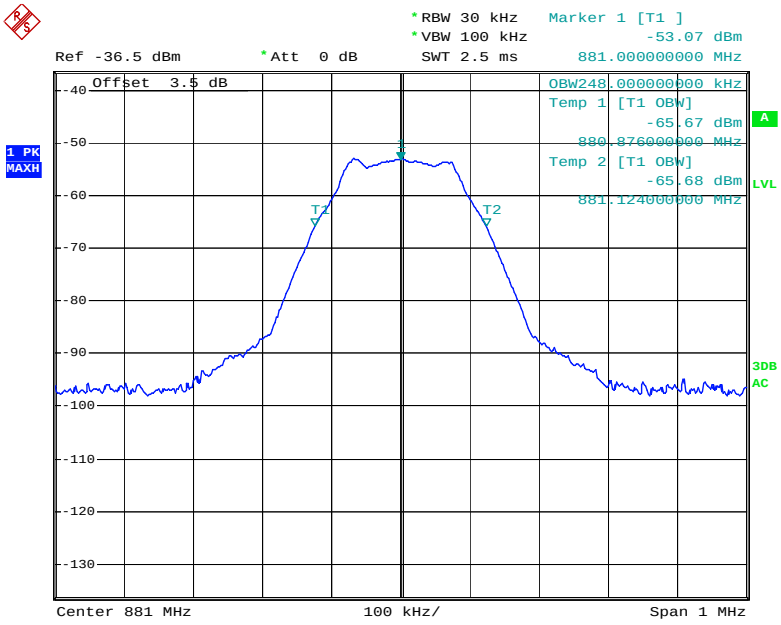


26 dB Occupied Bandwidth, Middle Channel



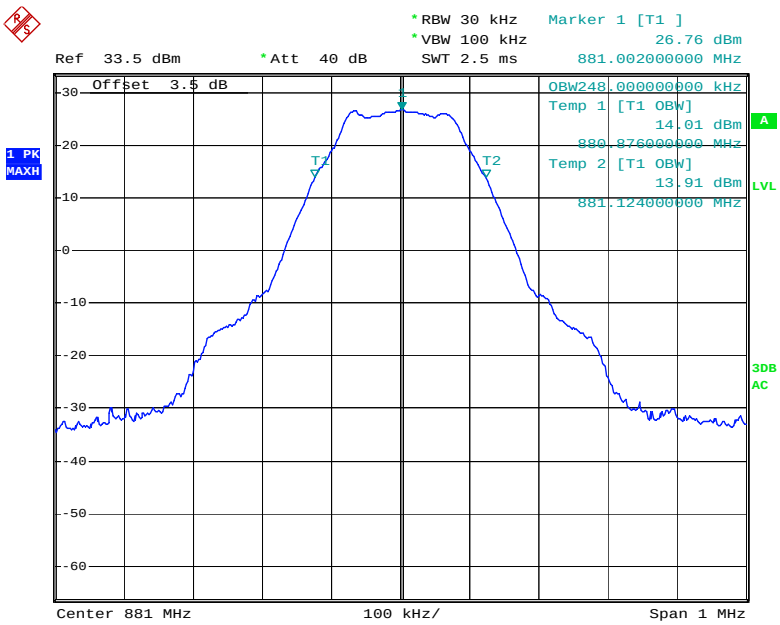
Downlink:

Input

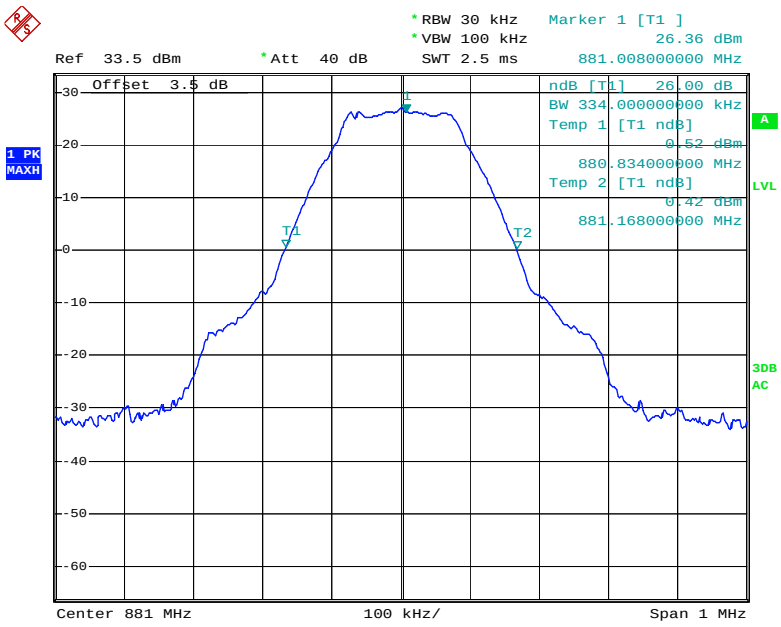


Date: 29.JUN.2010 16:41:37

99% Occupied Bandwidth, Middle Channel



26 dB Occupied Bandwidth, Middle Channel



FCC §2.1051, §22.917(a) - SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Applicable Standards

FCC §2.1051 and §22.917(a).

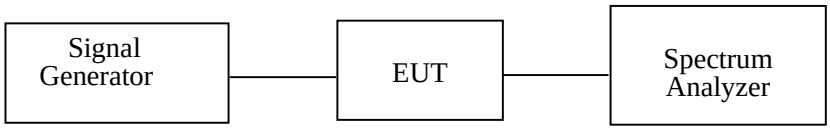
The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified in FCC §2.1051.

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB

Test Procedure

The RF output of the EUT system was connected to a spectrum analyzer and simulator through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at as following table. Sufficient scans were taken to show any out of band emissions up to 10th harmonic.

Frequency	RBW	VBW
9 kHz ~ 150 kHz	1 kHz	3 kHz
150 kHz ~ 30 MHz	10 kHz	30 kHz
30 MHz ~ 1 GHz	100 kHz	300 kHz
Above 1GHz	1 MHz	3 MHz



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2009-07-08	2010-07-07
Agilent	ESG-D Series Signal Generator	E4432B	MY45300749	2009-11-20	2010-11-20
Agilent	PSA Series Spectrum Analyzer	E4443A	GB40051703	2010-01-07	2011-01-07

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Data

Environmental Conditions

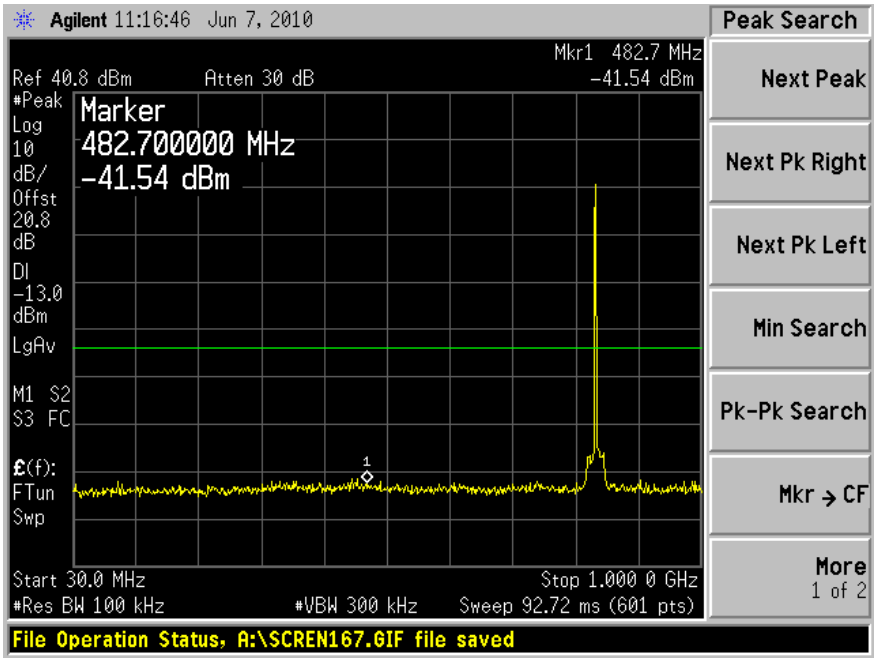
Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0kPa

The testing was performed by Bruce Zhang on 2010-06-07.

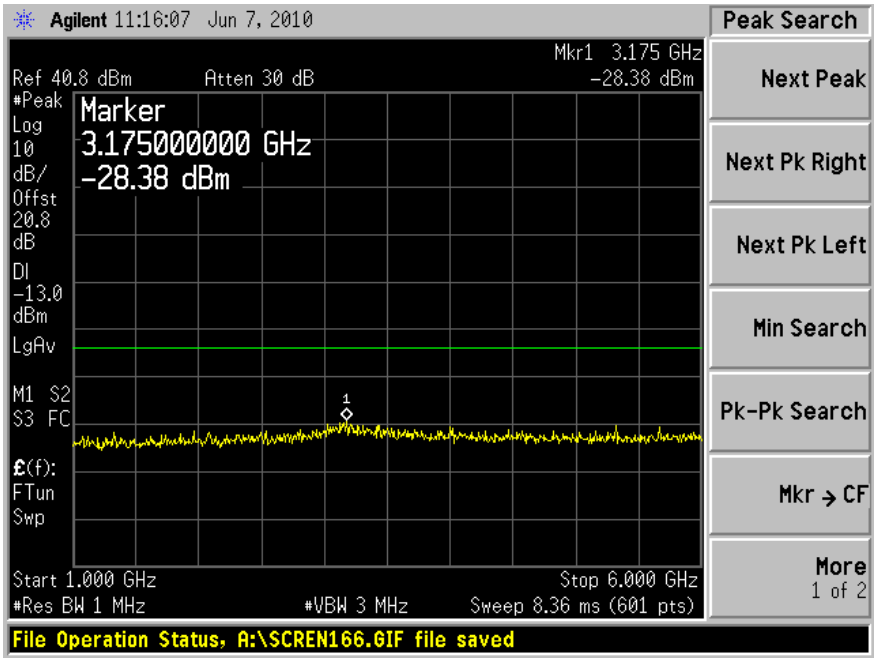
Please refer to the following plots.

Uplink:

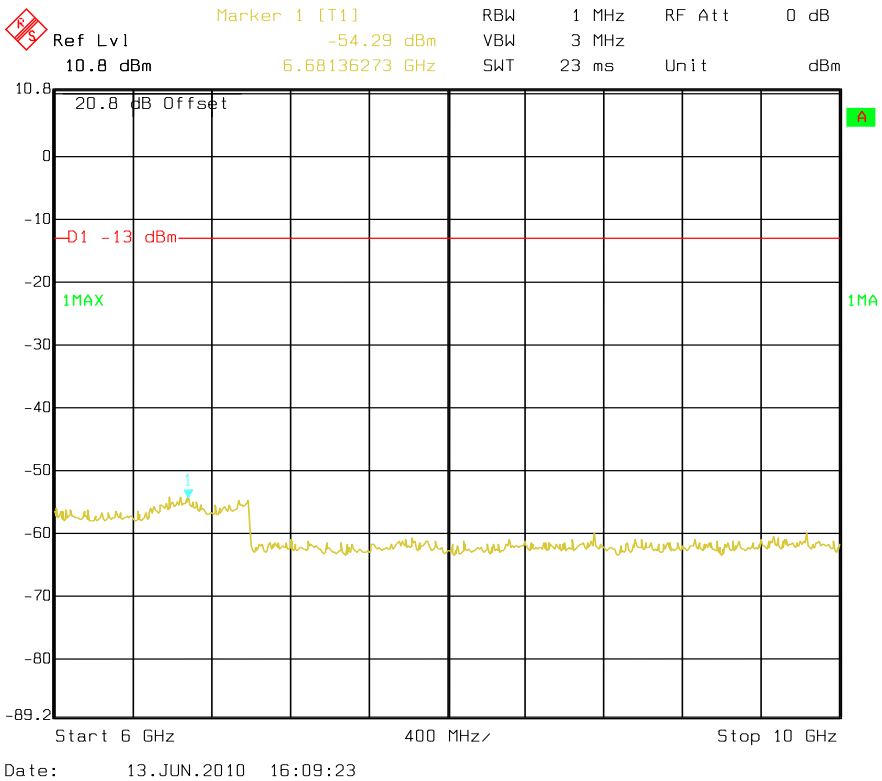
30-1000 MHz- Middle Channel



1-6 GHz- Middle Channel

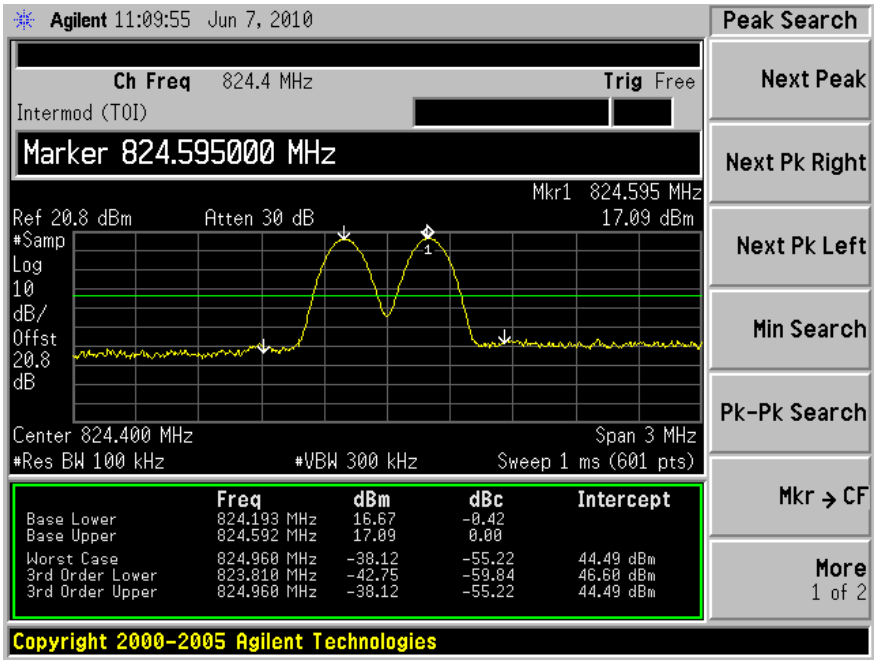


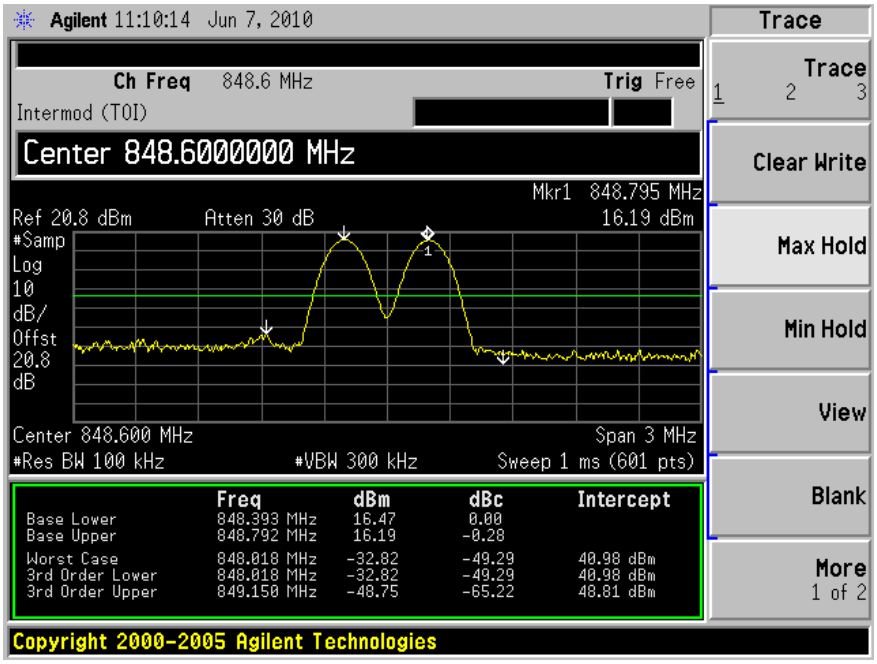
6-10 GHz - Middle Channel



Inter-modulation

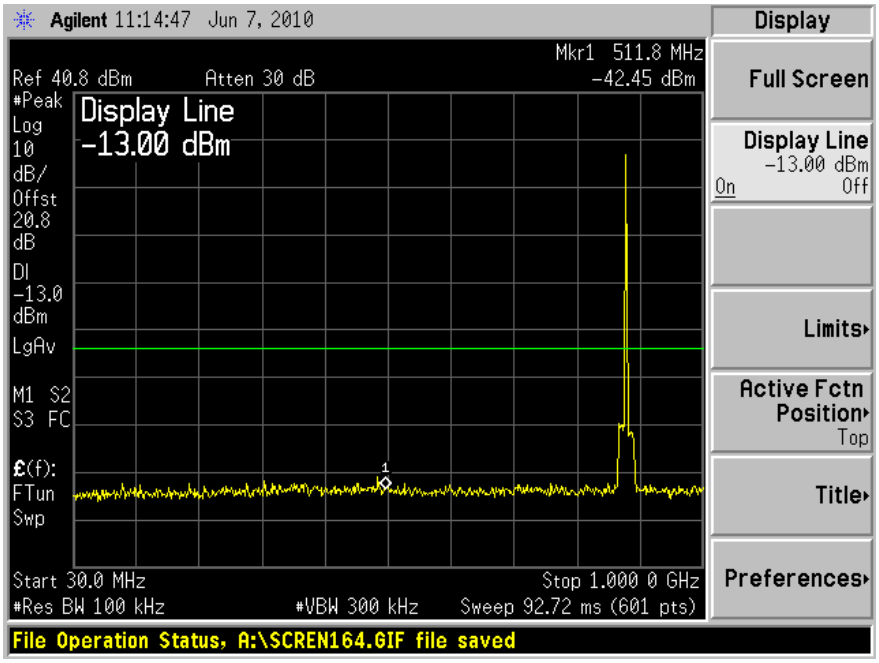
In the band 824-849 MHz, inter-modulation products levels as following and the max level are less than -13 dBm;



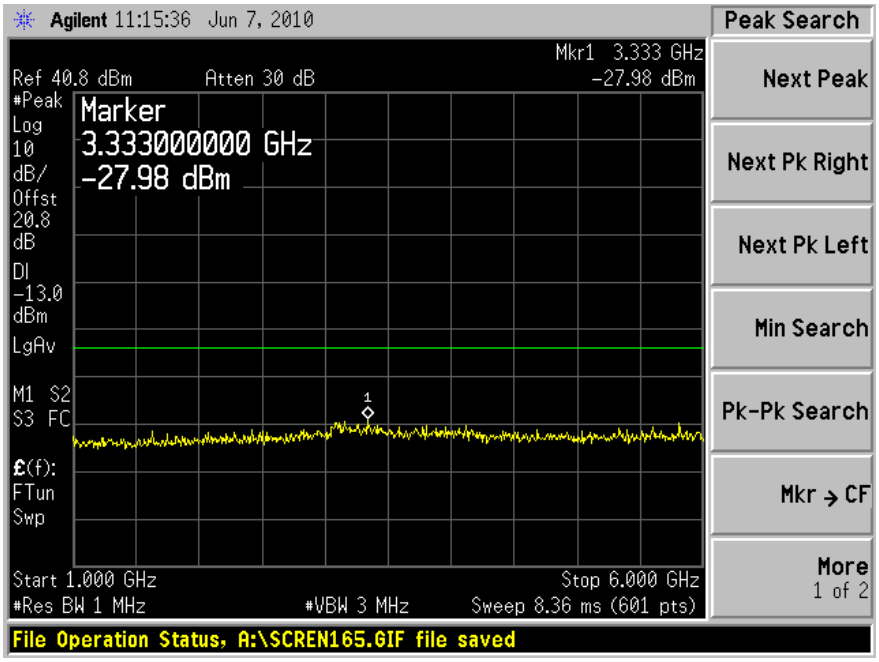


Downlink:

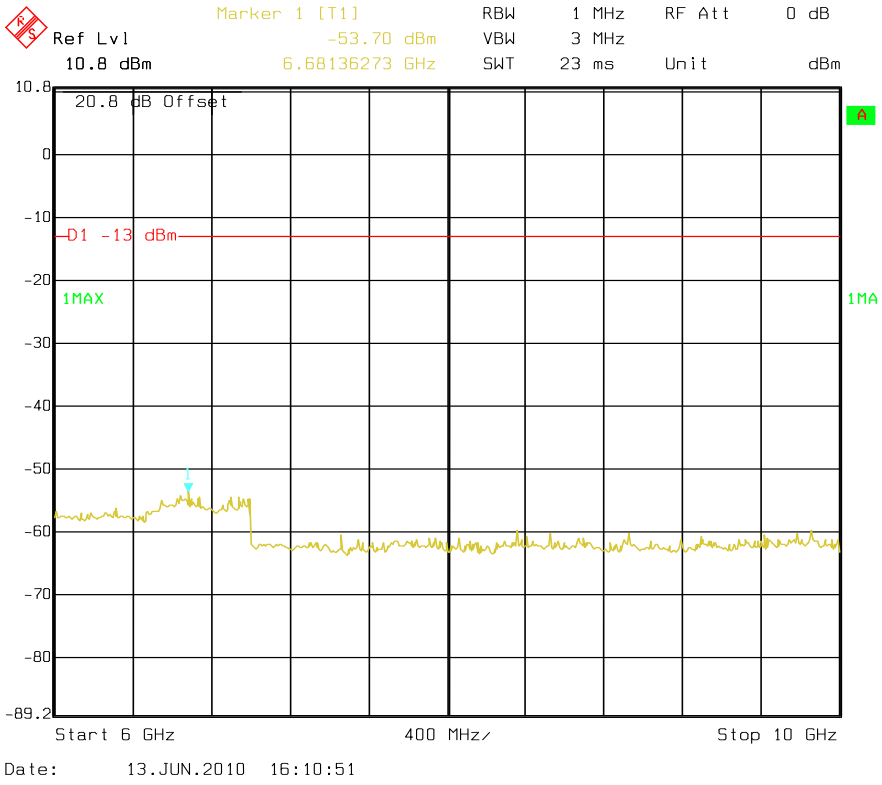
30-1000 MHz- Middle Channel



1-6 GHz- Middle Channel

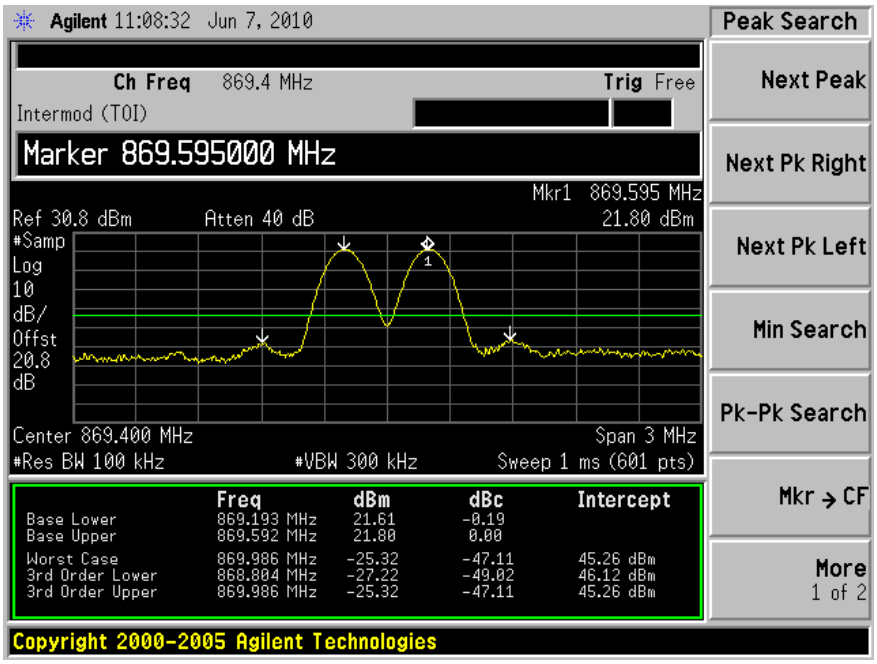


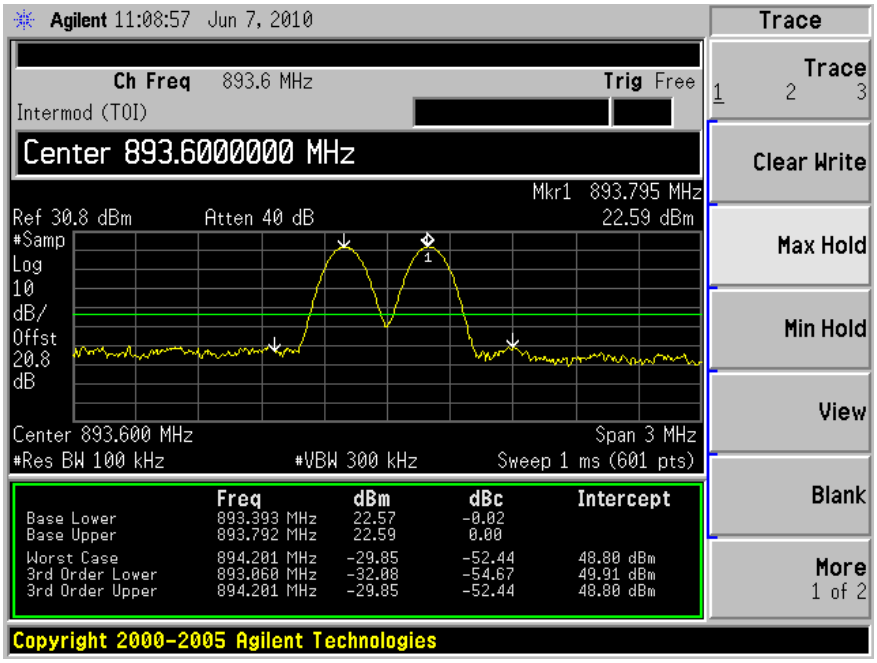
6-10 GHz - Middle Channel



Inter-modulation

In the band 869-894 MHz, inter-modulation products levels as following and the max level are less than -13 dBm.





FCC §2.1053 & §22.917 - SPURIOUS RADIATED EMISSIONS

Applicable Standards

FCC § 2.1053 and §22.917.

Test Procedure

The EUT system 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 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 emissions in dB = 10 lg (TXpwr in Watts/0.001) – the absolute level
Spurious attenuation limit in dB = 43 + 10 Log_{10} (power out in Watts)

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Sunol Sciences	Horn Antenna	DRH-118	A052604	2010-05-05	2011-05-04
Amplifier Research	Biconilog Antenna	AT1080	301902	2010-03-11	2011-03-11
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2009-07-08	2010-07-07
HP	Amplifier	2VA-213+	T-E27H	2010-03-08	2011-03-08
HP	Signal Generator	HP8657A	2849U00982	2009-10-28	2010-10-27
HP	Amplifier	HP8447D	2944A09795	2009-08-02	2010-08-02
HP	Synthesized Sweeper	8341B	2624A00116	2009-11-07	2010-11-06
COM POWER	Dipole Antenna	AD-100	041000	2009-09-25	2010-09-25
A.H. System	Horn Antenna	SAS-200/571	135	2010-05-17	2011-05-17

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0kPa

The testing was performed by Bruce Zhang on 2010-06-18.

Test mode: Transmitting

Indicated		Table Angle Degree	Test Antenna		Substituted				Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Frequency (MHz)	S.A. Reading (dBµV)		Height (m)	Polar (H/V)	Frequency (MHz)	Level (dBm)	Ant. Gain (dBi)	Cable Loss (dB)			
Uplink											
1384.8	45.28	130	1.0	V	1384.8	-55.7	6.4	0.88	-50.18	-13	37.18
2635.3	40.76	250	1.8	V	2635.3	-57.3	7.2	1.21	-51.31	-13	38.31
1384.8	42.13	225	1.1	H	1384.8	-57.5	6.4	0.88	-51.98	-13	38.98
2643.3	39.85	220	1.5	H	2643.3	-58.3	7.2	1.21	-52.31	-13	39.31
33.9	40.02	175	1.0	V	33.9	-55.4	0	0.24	-55.64	-13	42.64
1672	38.77	280	1.8	V	1672	-61.6	6.2	0.98	-56.38	-13	43.38
1672	36.31	210	1.0	H	1672	-63.4	6.2	0.98	-58.18	-13	45.18
34.3	32.55	340	1.0	H	34.3	-60.6	0	0.24	-60.84	-13	47.84
Downlink											
1384.8	46.05	130	1.0	V	1384.8	-54.4	6.4	0.88	-48.88	-13	35.88
2635.3	41.47	250	1.8	V	2635.3	-56.5	7.2	1.21	-50.51	-13	37.51
1384.8	42.32	225	1.1	H	1384.8	-57.1	6.4	0.88	-51.58	-13	38.58
2643.3	40.28	220	1.5	H	2643.3	-58.3	7.2	1.21	-52.31	-13	39.31
33.9	40.33	175	1.0	V	33.9	-54.7	0	0.24	-54.94	-13	41.94
1762	39.30	240	1.8	V	1762	-60.5	6.2	0.98	-55.28	-13	42.28
1762	37.24	200	1.9	H	1762	-62.6	6.2	0.98	-57.38	-13	44.38
34.3	32.45	340	1.0	H	34.3	-59.6	0	0.24	-59.84	-13	46.84

FCC §22.917(a) - BAND EDGES

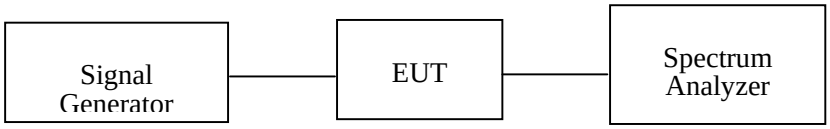
Applicable Standards

According to FCC §22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

Test Procedure

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

The center of the spectrum analyzer was set to block edge frequency, RBW set to 3 kHz.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	PSA Series Spectrum Analyzer	E4443A	MY45300749	2010-01-07	2011-01-07
Rohde & Schwarz	EMI Test Receiver	ESCI	100224	2009-11-24	2010-11-23

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.0kPa

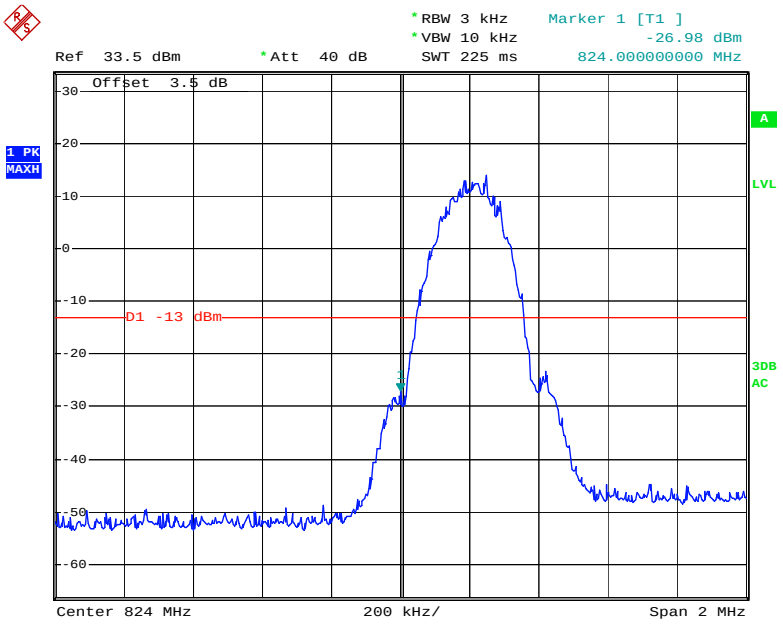
The testing was performed by Bruce Zhang on 2010-06-13.

Please refer to the following tables and plots.

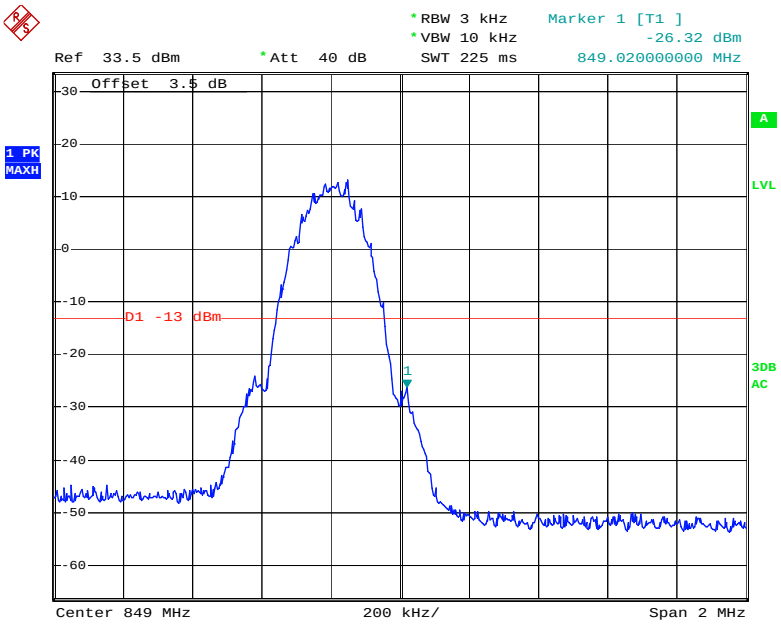
Frequency Band	Frequency (MHz)	Emission (dBm)	Limit (dBm)
Uplink	824.0	-26.98	-13
	849.0	-26.32	-13
Downlink	869.0	-22.65	-13
	894.0	-20.16	-13

Uplink:

Lowest Channel

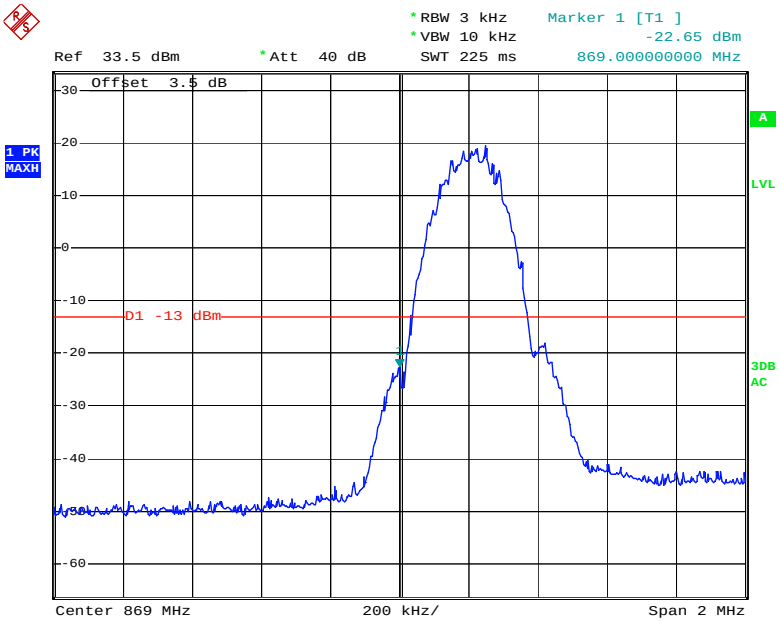


Highest Channel

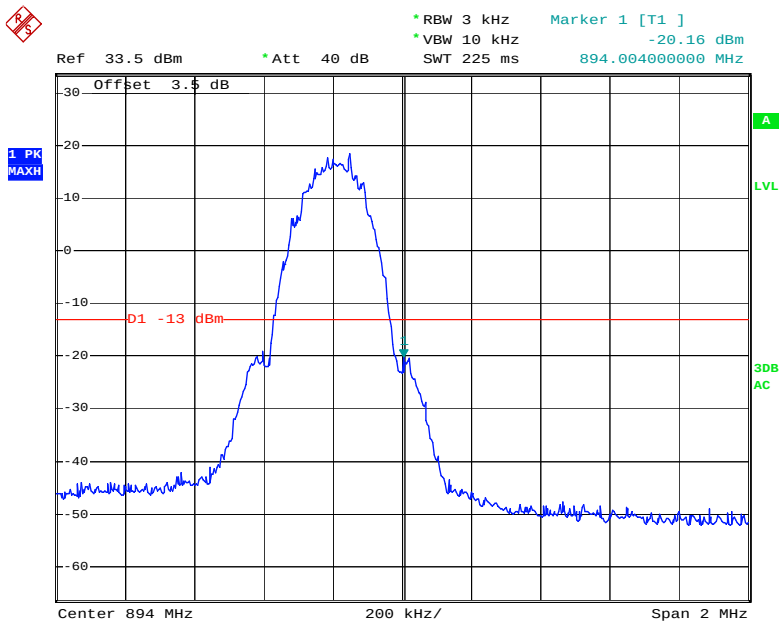


Downlink:

Lowest Channel



Highest Channel



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