Lab Code: 200167-0

FCC PART 22H, 24E
TEST AND MEASUREMENT REPORT

For

AnyDATA Corporation

5 Oldfield, Irvine, CA 92618, USA

FCC ID: P4M-APT220D

Report Type:	**Product Type:**
Original Report	CDMA Tracker System

Test Engineer:	Kevin Li
Report Number:	R1106011-2224
Report Date:	2011-07-15
Reviewed By:	Victor Zhang EMC/RF Lead
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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	R1106011-2224	Initial Report	2011-07-15
A	R1106011-2224	Updated ERP, EIRP claculation	2015-01-20

TABLE OF CONTENTS

1 GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

This test and measurement report has been compiled on behalf of the company *AnyDATA Corporation* and their product, model: APT220-D, with *FCC ID: P4M-APT220D*, which will henceforth in this report be referred to as the EUT. The EUT is a CDMA tracker system.

Description	Specification
Frequency Band	Cellular Band: 824-849 MHz (TX) 869-894 MHz (RX) PCS Band: 1850~1910 MHz (TX) 1930~1990 MHz (RX)
CDMA Protocol	CDMA 1XRTT

1.2 Mechanical Description

The EUT measures approximately 74mm (L) x 40mm (W) x 16 mm (H), and weighs approximately 50 g.

The test data gathered are from typical production sample, serial number: 4834779 provided by the manufacturer.

1.3 Objective

This type approval report is prepared on behalf of *AnyDATA Corporation* in accordance with Part 2, Subpart J, Part 22 Subpart H, and Part 24 Subpart E of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC rules for RF output power, modulation characteristic, occupied bandwidth, spurious emissions at antenna terminal, field strength of spurious radiation, frequency stability, band edge, and conducted and radiated margin.

This measurement and test report only pertains to the CDMA 1xRTT 850/1900 MHz portion of the EUT.

1.4 Related Submittal(s)/Grant(s)

N/A

1.5 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 – Cellular Radiotelephone Service
Part 24 Subpart E – PCS

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

All radiated and conducted emissions measurement was performed at Bay Area Compliance Laboratory, Corp. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

1.6 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in the field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the values ranging from $\pm$2.0 dB for Conducted Emissions tests and $\pm$4.0 dB for Radiated Emissions tests are the most accurate estimates pertaining to uncertainty of EMC measurements at BACL Corp.

Detailed instrumentation measurement uncertainties can be found in BACL Corp. report QAP-018.

1.7 Test Facility

The test site used by BACL Corp. to collect radiated and conducted emissions measurement data is located at its facility in Sunnyvale, California, USA.

The test sites at BACL have been fully described in reports submitted to the Federal Communication Commission (FCC) and Voluntary Control Council for Interference (VCCI). The details of these reports has been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 11 and December 10, 1997 and Article 8 of the VCCI regulations on December 25, 1997. 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, Industry Canada, and Voluntary Control Council for Interference has the reports on file and is listed under FCC registration number: 90464, IC registration number: 3062A, and VCCI Registration Number: C-2463 and R-2698. The test site has been approved by the FCC, IC, and VCCI for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, BACL is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200167-0). The current scope of accreditations can be found at http://ts.nist.gov/ts/htdocs/210/214/scopes/2001670.htm

2 SYSTEM TEST CONFIGURATION

2.1 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.

2.2 EUT Exercise Software

Agilent 8960 (HP E5155C) Wireless Communication test set was used to activate the EUT.
CDMA 2000

2.3 Special Accessories

N/A

2.4 Equipment Modifications

No modifications were made to the EUT

2.5 Remote Support Equipment

N/A

2.6 Internal Configuration

Manufacturer	Description	Model	Serial Number
AnyData	PCB	APT-220-D V0.3	-

2.7 Power Supply and Line Filters

Manufacturer	Description	Model	Serial Number
DVE	USB Adapter	DSC-4WU-05 FCH 050065	LM801
Trump	Switching Adapter	ZWS005FU0500100	-

2.8 Interface Ports and Cabling

N/A

3 SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§2.1046 §22.913; §24.232	RF Output Power	Compliant
§2.1047	Modulation Characteristics	N/A[1]
§2.1049 §22.917; §24.238	Out of Band Emissions, Occupied Bandwidth	Compliant
§2.1051, §22.917; §24.238 (a)	Spurious Emissions at Antenna Terminals	Compliant
§2.1053 §22.917 (a); §24.238 (a)	Field Strength of Spurious Radiation	Compliant
§22.917; §24.238	Band Edge	Compliant
§2.1055 (a); §2.1055 (d) §22.355; §24.235	Frequency stability vs. temperature Frequency stability vs. voltage	Compliant
§2.1093	RF Exposure Information (SAR)	Compliant[2]

Note: [1] According to FCC §2.1047(d), Part 22H & 24E there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

[2] According to §1.1310 and §2.1093 SAR Evaluation is required, please refer to SAR report R1106011-SAR.

4 FCC §2.1046, §22.913(a) & §24.232 – RF OUTPUT POWER

4.1 Applicable Standard

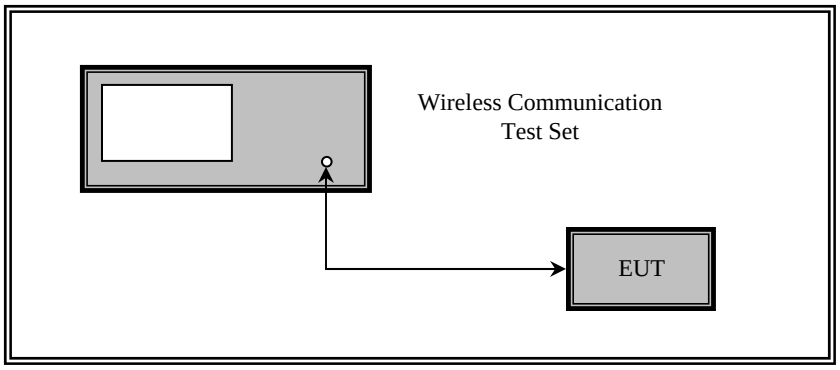
According to FCC §2.1046 and §22.913 (a), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC §2.1046 and §24.232 (a), in no case may the peak output power of a base station transmitter exceed 2 watts.

4.2 Test Procedure

Conducted:

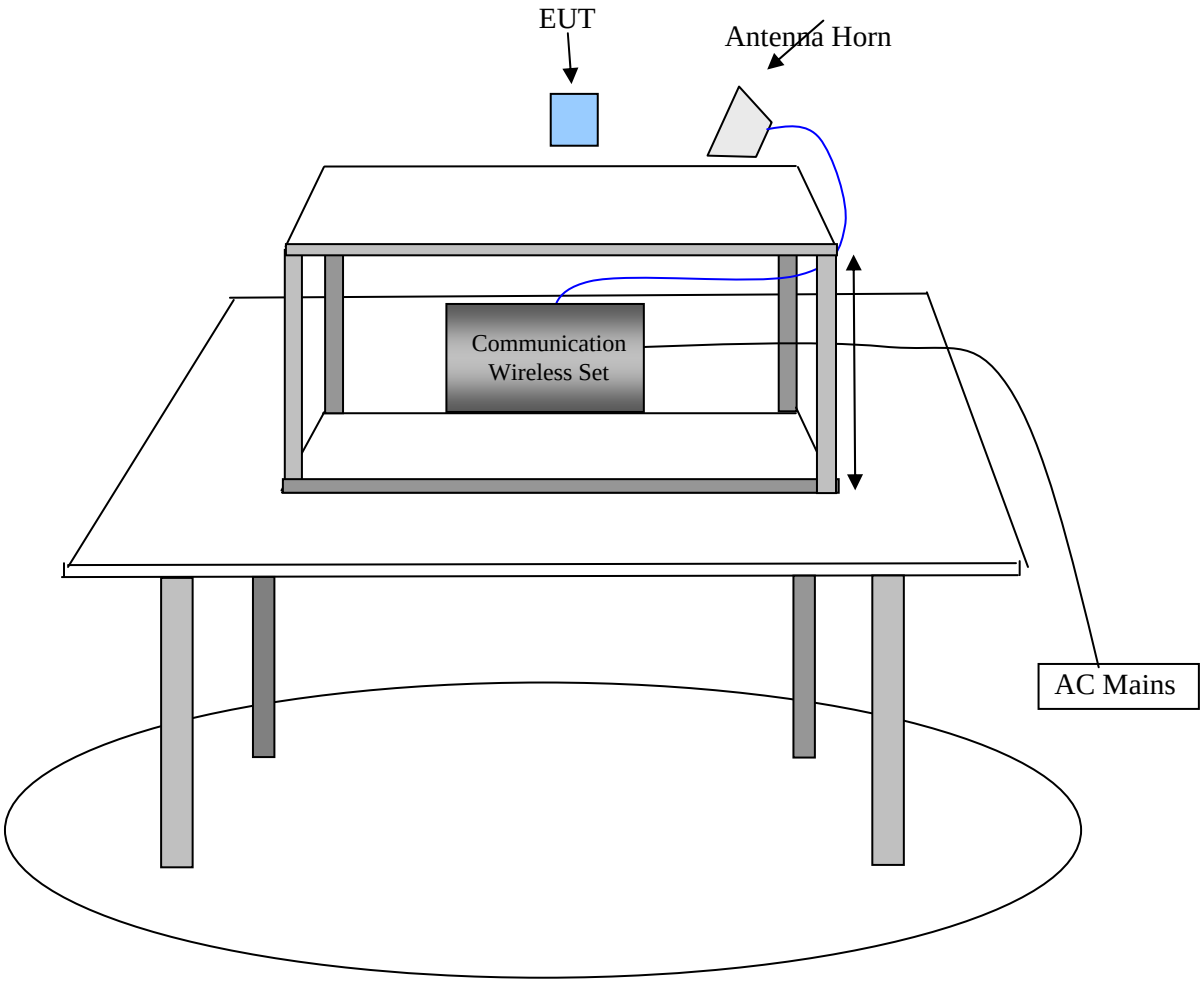
The RF output of the transmitter was connected to the simulator and the spectrum analyzer through sufficient attenuation.



Radiated (ERP and EIRP):

TIA-603-C §2.2.17

4.3 Test setup Block Diagram



4.4 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date
Agilent	Spectrum Analyzer	E4446A	US44300386	2011-05-10
Agilent	Analyzer, Communications	E5155C	GB44051221	2010-06-11
Sunol Sciences	Antenna	JB1	A020106-1	2011-05-11
A.R.A	Horn Antenna	DRG-118/A	1132	2010-11-29
A. H. Systems	Antenna, Horn	3115	9511-4627	2010-08-09
Mini Circuits	Pre-Amplifier	ZVA-183-S	570400946	2011-05-09
HP	Pre-Amplifier	8447D	2944A06639	2010-06-18

Statement of Traceability: BACL Corp. attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.

4.5 Test Environmental Conditions

Temperature:	20 °C ~ 23 °C
Relative Humidity:	40 % ~ 45 %
ATM Pressure:	101.1kPa ~ 101.2kPa

Testing was performed by Kevin Li from 2011-06-07 to 2011-06-08 in 5 meter chamber 3.

4.6 Test Results

Conducted Power:

Cellular Band Part 22H

Mode	FED	REV	Low CH (824.7 MHz)	Middle CH (836.52 MHz)	High CH (848.31MHz)	Part 22H Limit (dBm)
CDMA2000 1xRTT	RC1	RC1(S02)	23.94	24.30	24.01	38.45
	RC1	RC1(S055)	24.09	24.33	24.03	38.45
	RC2	RC2(S09)	24.02	24.32	24.01	38.45
	RC2	RC2(S055)	24.03	24.34	24.02	38.45
	RC3	RC3(S02)	24.02	24.38	23.99	38.45
	RC3	RC3(S055)	24.05	24.43	24.10	38.45
	RC4	RC3(S02)	24.01	24.39	24.05	38.45
	RC4	RC3(S055)	24.03	24.38	24.06	38.45
	RC5	RC4(S09)	24.02	24.42	24.06	38.45
	RC5	RC4(S055)	24.01	24.41	24.07	38.45

PCS Band Part 24E

Mode	FED	REV	Low CH (1851.25 MHz)	Middle CH (1880.00 MHz)	High CH (1908.75 MHz)	Part 24E Limit (dBm)
CDMA2000 1xRTT	RC1	RC1(S02)	24.11	24.22	24.12	33
	RC1	RC1(S055)	24.15	24.28	24.20	33
	RC2	RC2(S09)	24.14	24.32	24.18	33
	RC2	RC2(S055)	24.10	24.30	24.18	33
	RC3	RC3(S02)	24.24	24.36	24.29	33
	RC3	RC3(S055)	24.26	24.40	24.32	33
	RC4	RC3(S02)	24.22	24.38	24.29	33
	RC4	RC3(S055)	24.24	24.39	24.30	33
	RC5	RC4(S09)	24.25	24.38	24.30	33
	RC5	RC4(S055)	24.23	24.36	24.25	33

Note: Part 22H Limit = 7 Watts = 38.45 dBm, Part 24E Limit =2 Watts = 33 dBm

Radiated Power (ERP and EIRP)

ERP: Cellular Band Part 22H

Indicated		Turntable Azimuth (degree)	Test Antenna		Substituted				Absolute Level (dBm)	Part 22H	
Freq. (MHz)	Amp. (dBuV)		Height (cm)	Polar (H/V)	Freq. (MHz)	Level (dBm)	Antenna Gain (dBd)	Cable Loss (dB)		Limit (dBm)	Margin (dB)
824.7	116.37	127	114	V	824.7	21.51	0	0.5	21.01	38.45	-17.44
824.7	118.86	220	100	H	824.7	21.86	0	0.5	21.36	38.45	-17.09
836.52	117.04	313	114	V	836.52	22.18	0	0.5	21.68	38.45	-16.77
836.52	119.92	110	194	H	836.52	22.92	0	0.5	22.42	38.45	-16.03
848.31	116.98	127	113	V	848.31	22.12	0	0.5	21.62	38.45	-16.83
848.31	119.01	220	100	H	848.31	22.01	0	0.5	21.51	38.45	-16.94

EIRP: PCS Band Part 24E

Indicated		Turntable Azimuth (degree)	Test Antenna		Substituted				Absolute Level (dBm)	Part 24E	
Freq. (MHz)	Amp. (dBuV)		Height (cm)	Polar (H/V)	Freq. (MHz)	Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)		Limit (dBm)	Margin (dB)
1851.25	112.01	182	150	V	1851.25	14.71	9.5	1.0	23.21	33	-9.79
1851.25	112.98	220	100	H	1851.25	14.61	9.5	1.0	23.11	33	-7.76
1880	113.8	68	125	V	1880	16.5	8.23	1.0	23.73	33	-9.27
1880	113.69	355	100	H	1880	15.32	8.23	1.0	22.55	33	-10.45
1908.75	112.75	182	150	V	1908.75	15.45	9	1.0	23.45	33	-8.11
1908.75	112.38	220	100	H	1908.75	14.01	9	1.0	22.01	33	-8.4

Note: According to TIA-603-C Section 2.2.17,

ERP (dBm) = Output Power (dBm) – Losses (dB) + Antenna Gain (dBd)
EIRP (dBm) = Output Power (dBm) – Losses (dB) + Antenna Gain (dBi)

Where: dBd refer to gain relative to an ideal dipole
dBi refer to gain relative to an isotropic antenna.
Output power: Output power from Signal generator
Losses: Path loss

5 FCC §2.1047 - MODULATION CHARACTERISTIC

5.1 Applicable Standard

According to FCC §2.1047(d), Part 22H & 24E there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

6 FCC §2.1049, §22.917, §22.905 & §24.238 - OCCUPIED BANDWIDTH

6.1 Applicable Standard

Requirements: FCC §2.1049, §22.901, §22.917 and §24.238.

6.2 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 3 kHz (Cellular /PCS) and the -26 dB bandwidth was recorded.

6.3 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date
Agilent	Spectrum Analyzer	E4446A	US44300386	2011-05-10
Agilent	Analyzer, Communications	E5155C	GB44051221	2010-06-11

Statement of Traceability: BACL Corp. attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.

6.4 Test Environmental Conditions

Temperature:	20 °C ~ 23 °C
Relative Humidity:	40 % ~ 45 %
ATM Pressure:	101.1kPa ~ 101.2kPa

Testing was performed by Kevin Li on 2011-06-08 in RF Site.

6.5 Test Results & Plots

Please refer to the following tables and plots.

Cellular Band Part 22H:

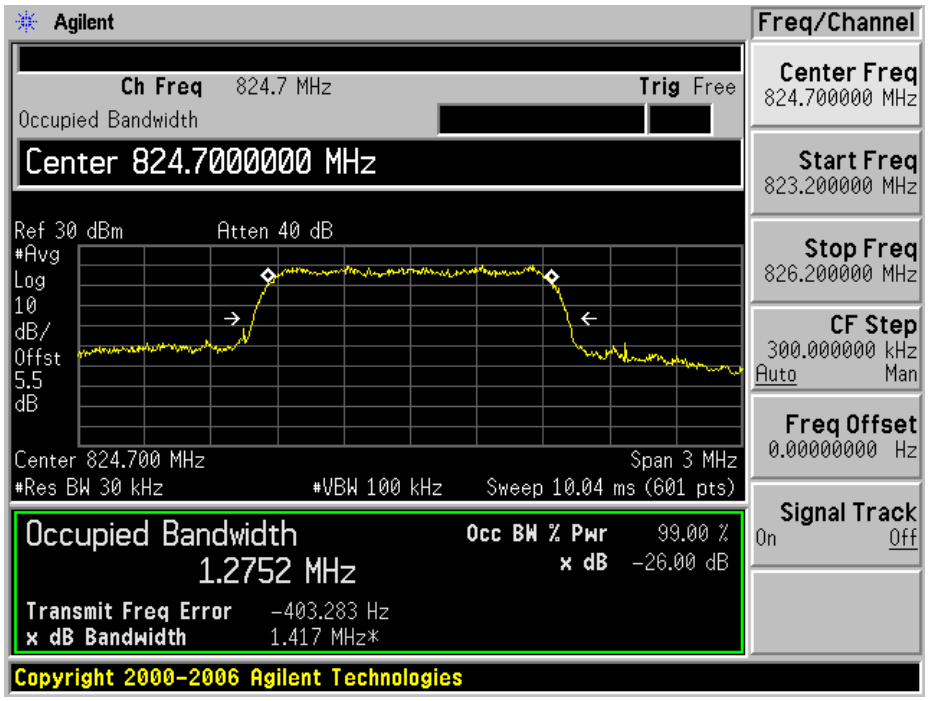
Channel	Frequency (MHz)	26 dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
CDMA 1xRTT			
Low	824.7	1.42	1.28
Middle	836.52	1.41	1.28
High	848.31	1.42	1.27

PCS Band Part 24E:

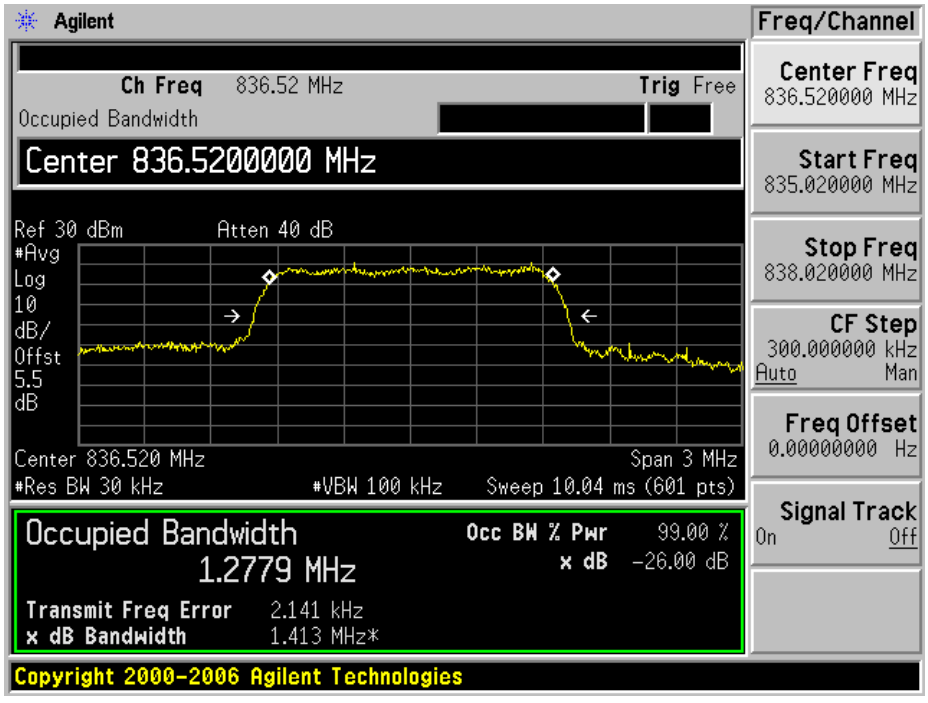
Channel	Frequency (MHz)	26 dB Occupied Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
CDMA 1xRTT			
Low	1851.25	1.42	1.27
Middle	1880.00	1.42	1.27
High	1908.75	1.42	1.28

Plots of Occupied Bandwidth for Part 22H

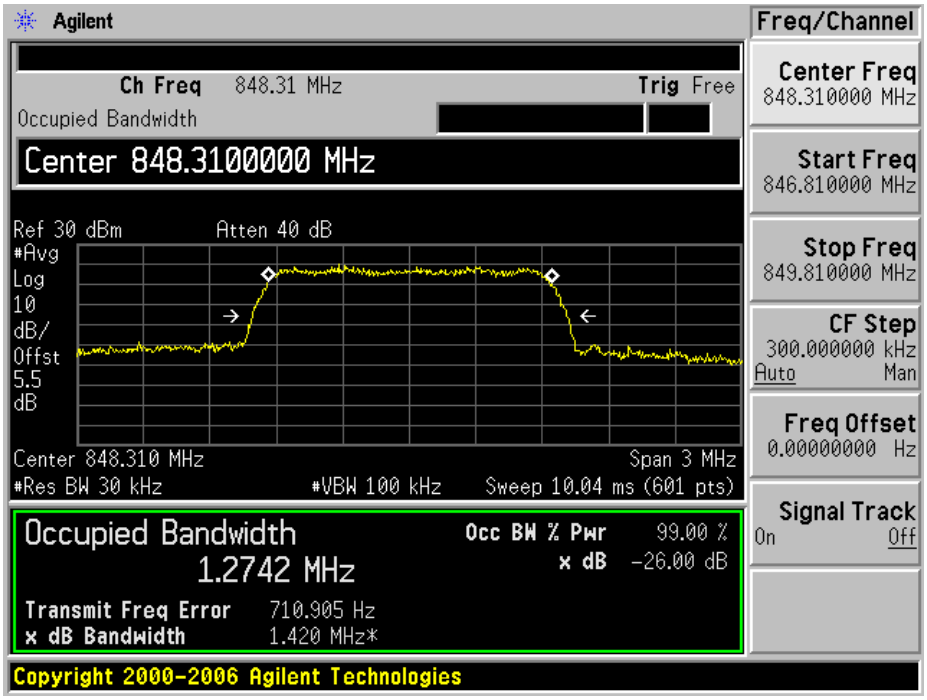
Low Channel



Middle Channel

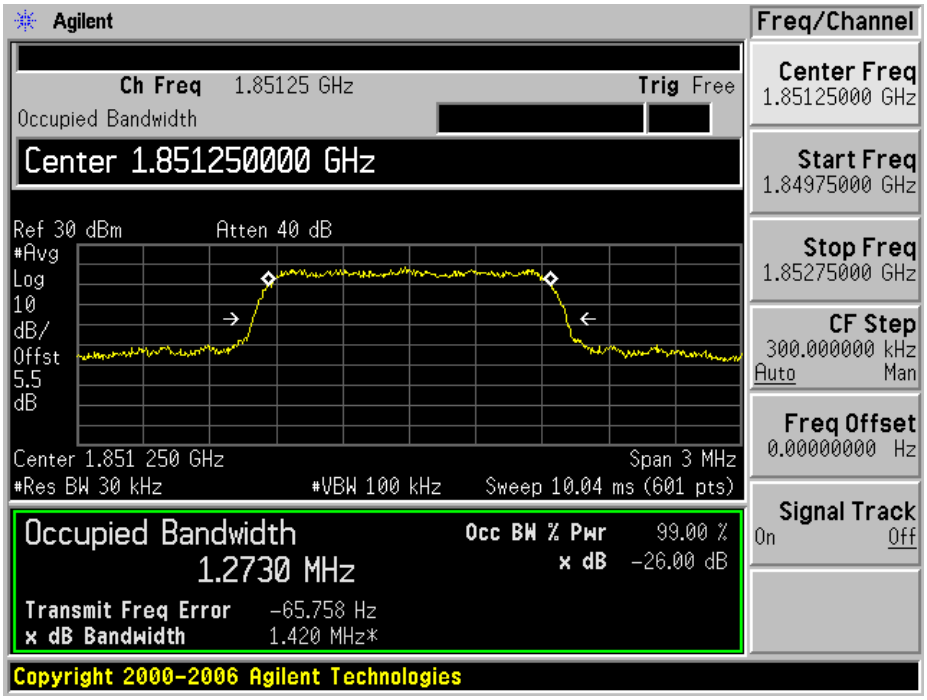


High Channel

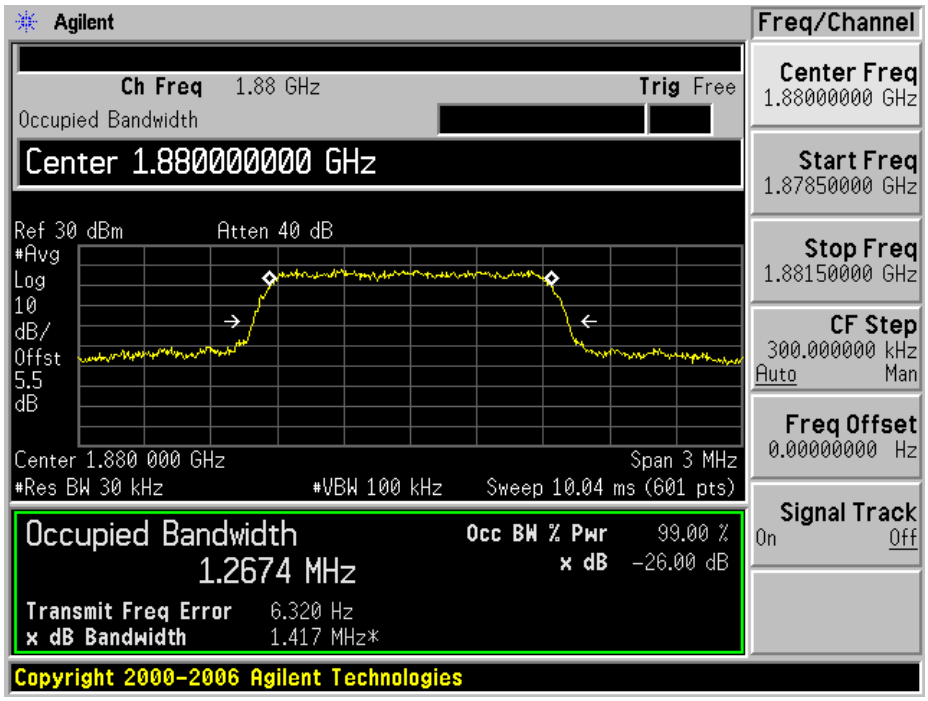


Plots of Occupied Bandwidth for Part 24E

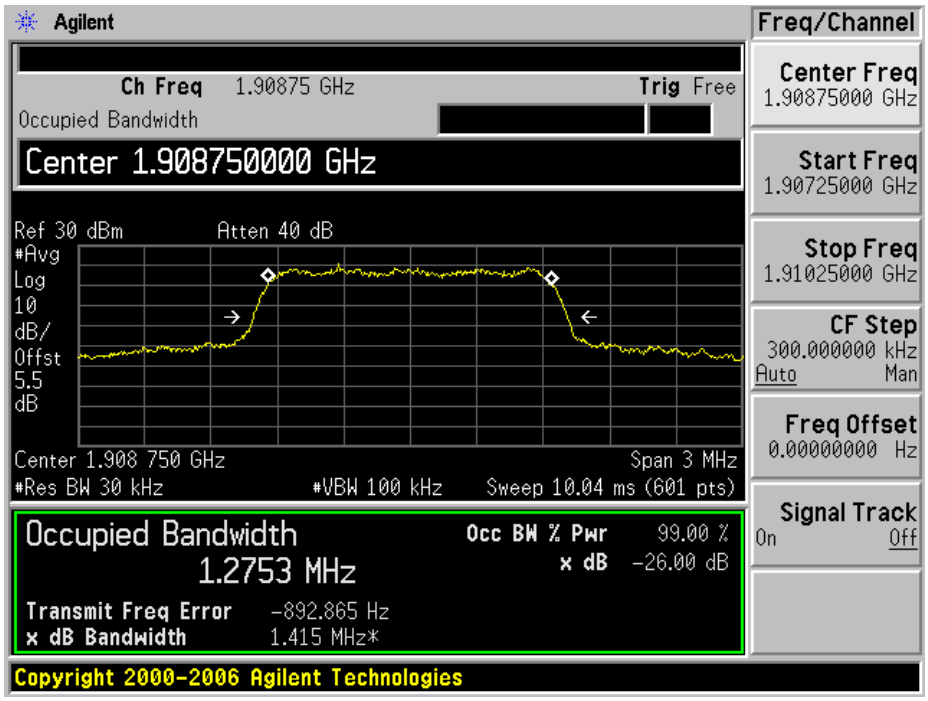
Low Channel



Middle Channel



High Channel



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7 FCC §2.1051, §22.917 & §24.238(a) - SPURIOUS EMISSIONS AT ANTENNA TERMINALS

7.1 Applicable Standard

Requirements: FCC §2.1051. §22.917 & §24.238(a).

The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified in § 2.1057.

7.2 Test Procedure

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 100 kHz. Sufficient scans were taken to show any out of band emissions up to 10^{th} harmonic.

7.3 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date
Agilent	Spectrum Analyzer	E4446A	US44300386	2011-05-10
Agilent	Analyzer, Communications	E5155C	GB44051221	2010-06-11

Statement of Traceability: BACL Corp. attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.

7.4 Test Environmental Conditions

Temperature:	20 °C ~ 23 °C
Relative Humidity:	40 % ~ 45 %
ATM Pressure:	101.1kPa ~ 101.2kPa

Testing was performed by Kevin Li on 2011-06-08 in RF Site.

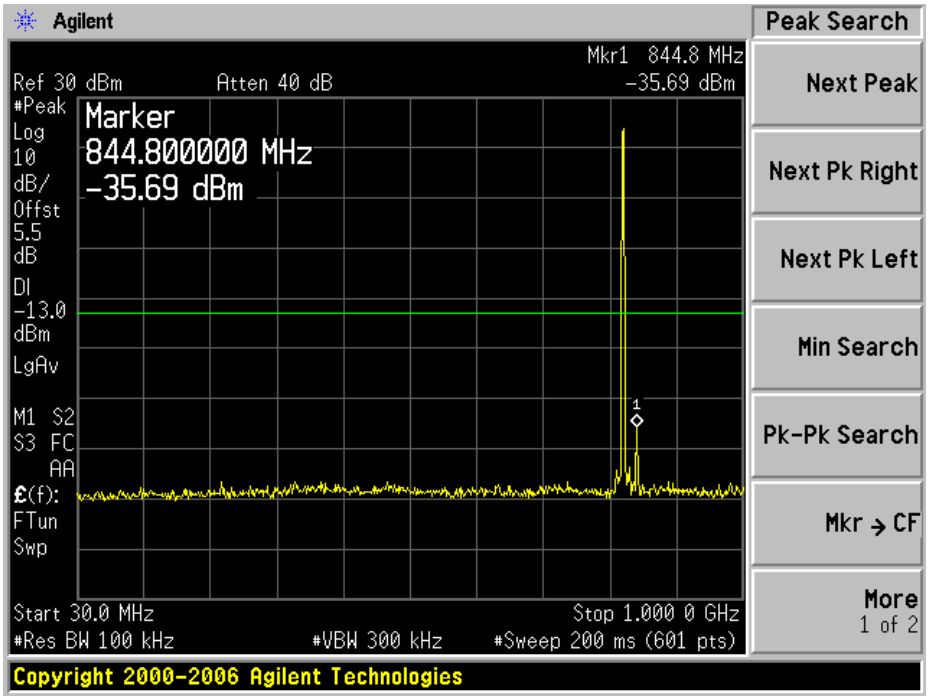
7.5 Test Results & Plots

Please refer to the following plots.

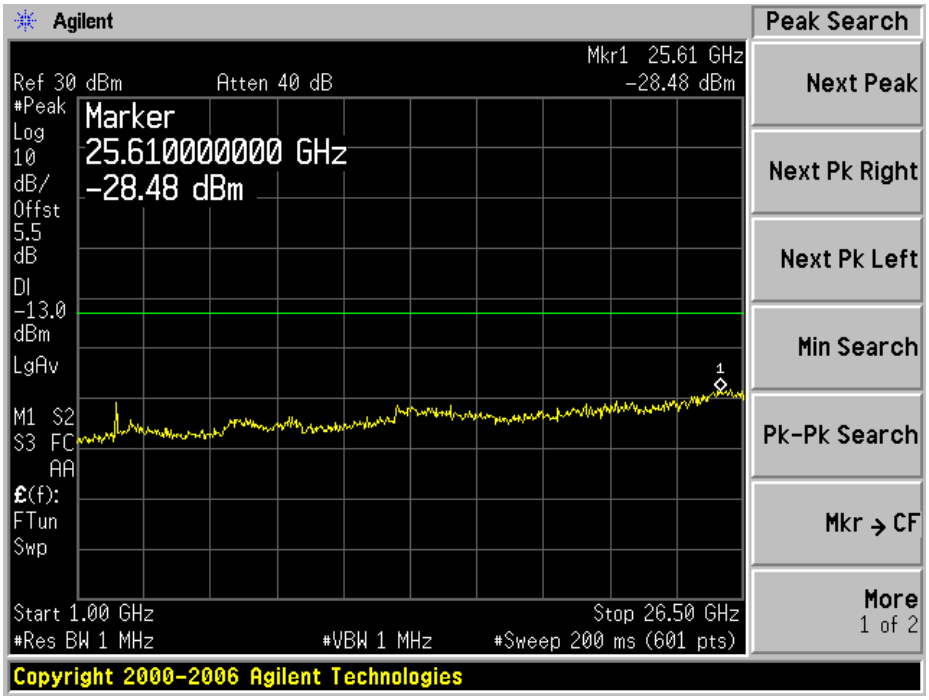
Plots of Spurious Emissions for Part 22H

Low Channel (f = 824.7 MHz)

Plot 1a: 30 MHz – 1 GHz

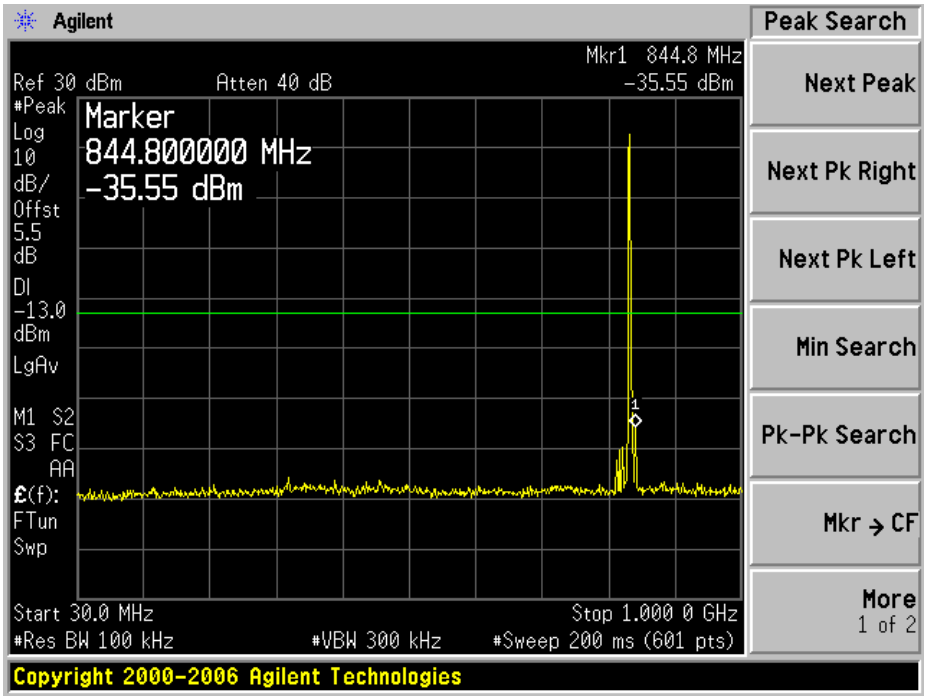


Plot 2a: 1 GHz – 26.5 GHz

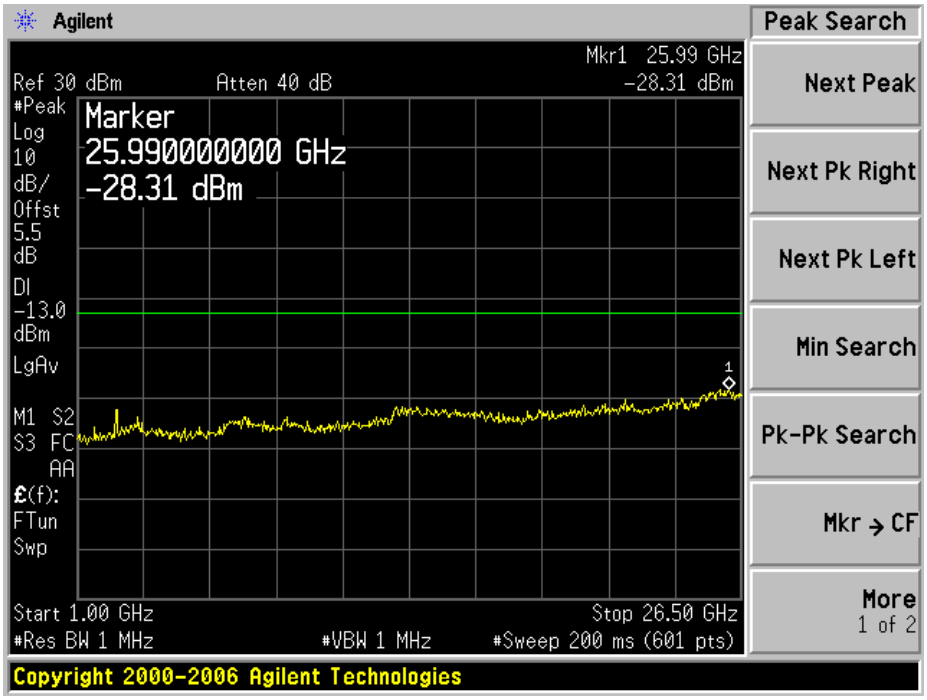


Middle Channel (f = 836.52 MHz)

Plot 1b: 30 MHz – 1 GHz

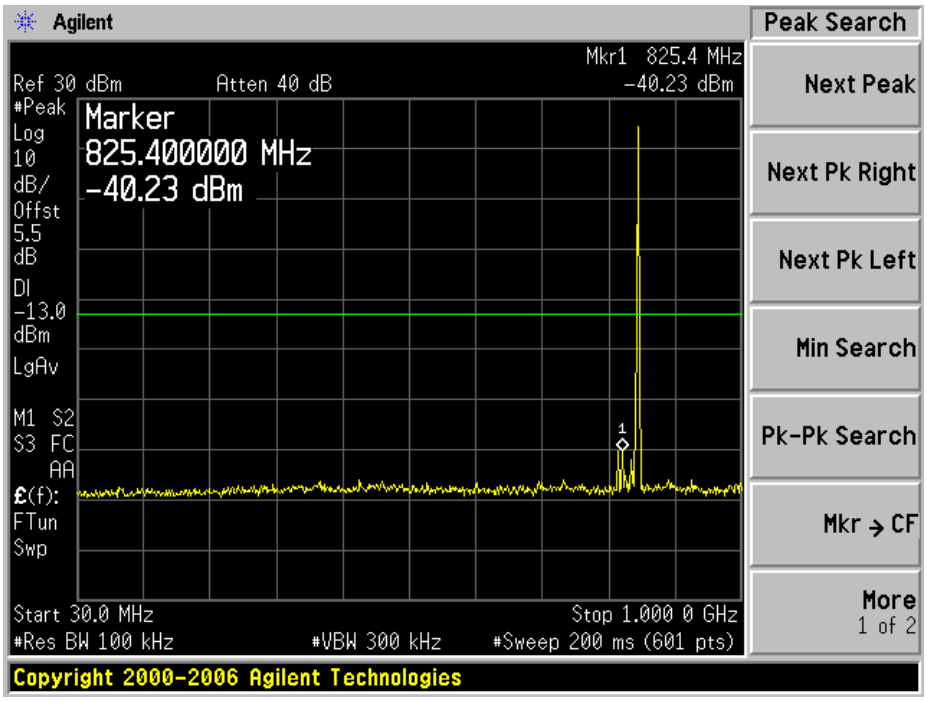


Plot 2b: 1 GHz – 26.5 GHz

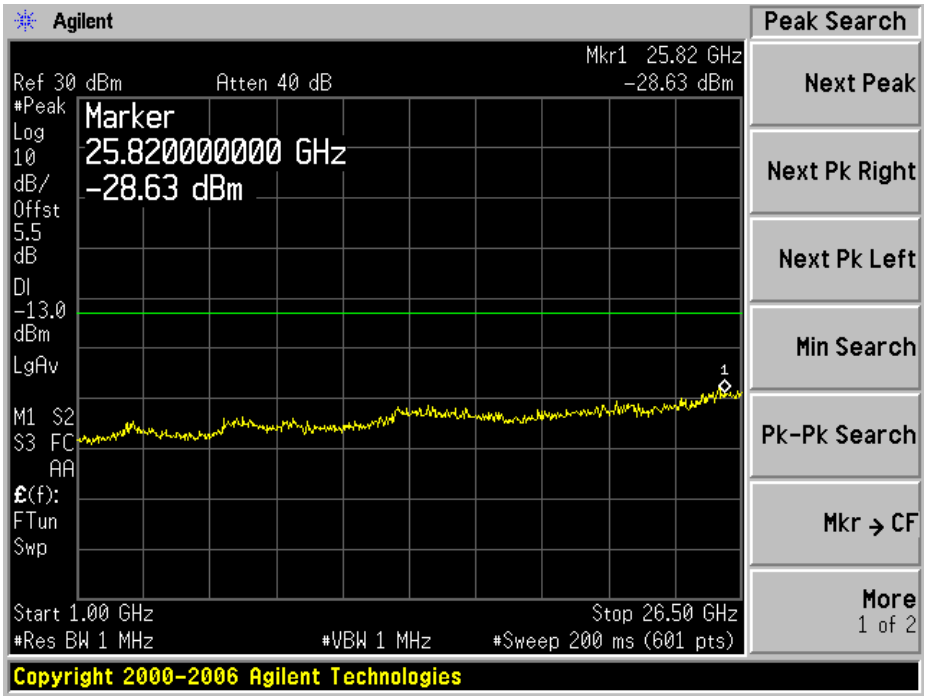


High Channel (f = 848.31 MHz)

Plot 1c: 30 MHz – 1 GHz



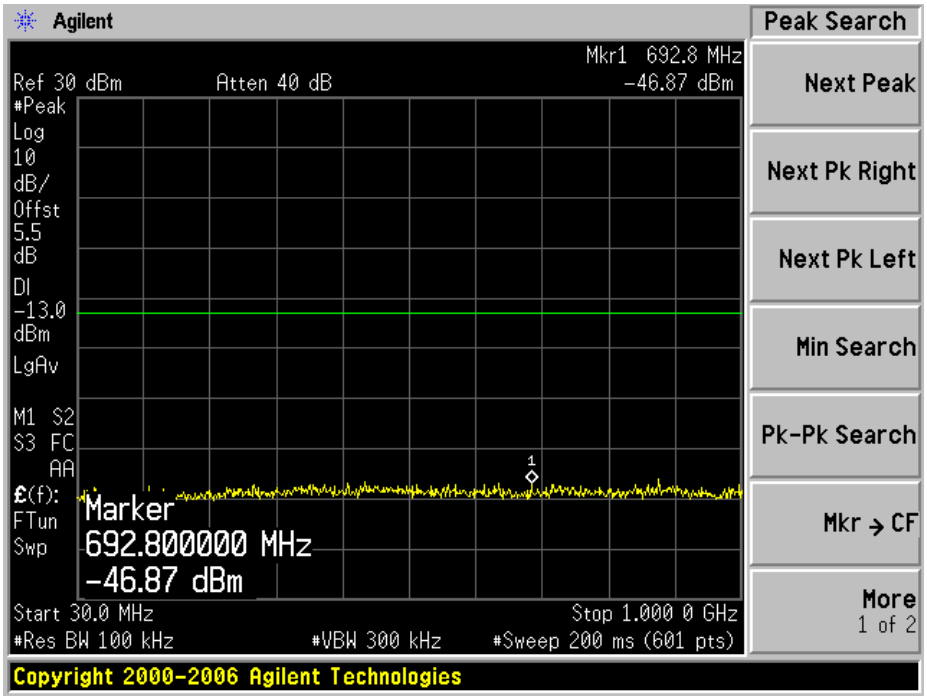
Plot 2c: 1 GHz – 26.5 GHz



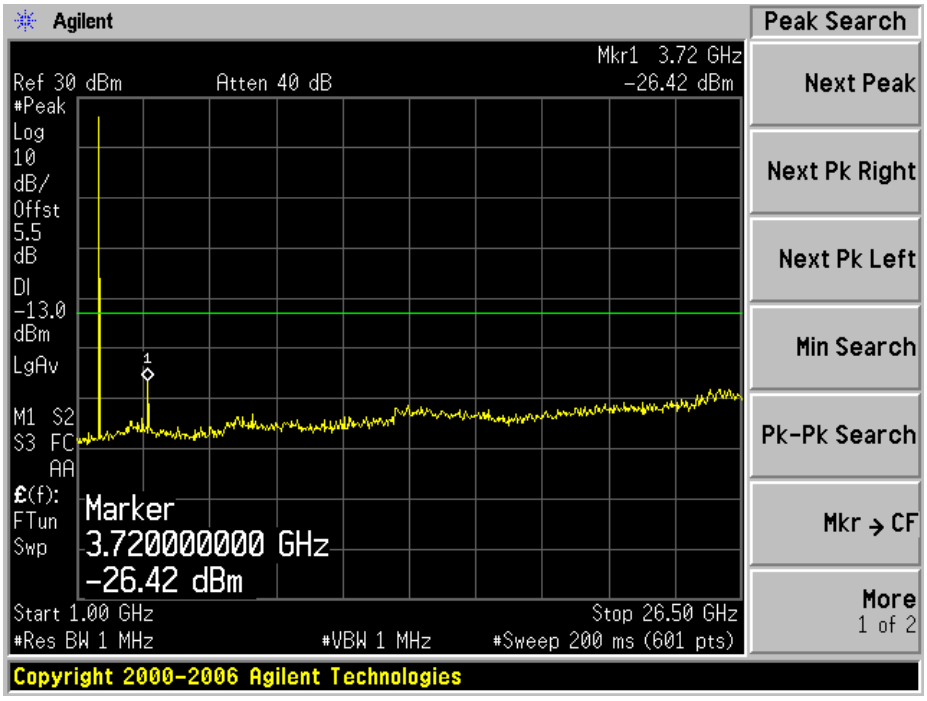
Plots of Spurious Emissions for Part 24E

Low Channel (f = 1851.25 MHz)

Plot 1d: 30 MHz – 1 GHz

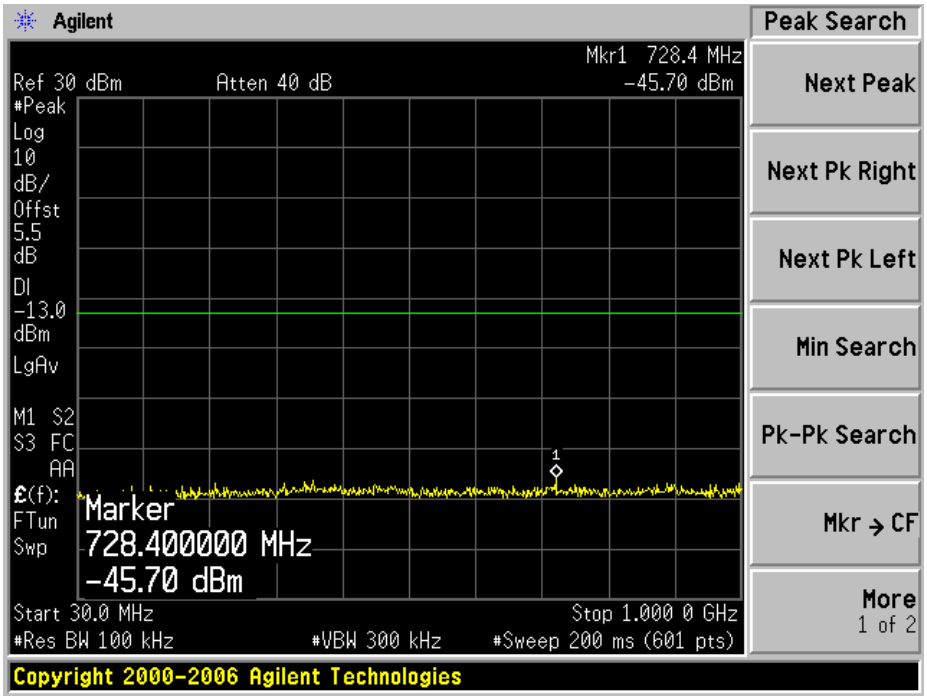


Plot 2d: 1 GHz –26.5 GHz

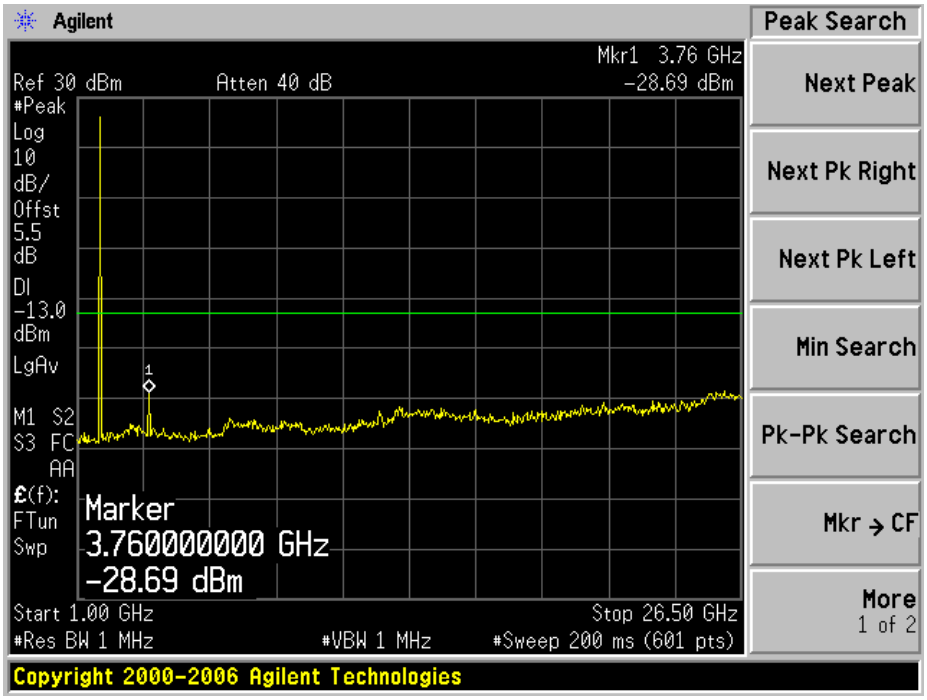


Middle Channel (f = 1880 MHz)

Plot 1e: 30 MHz – 1 GHz

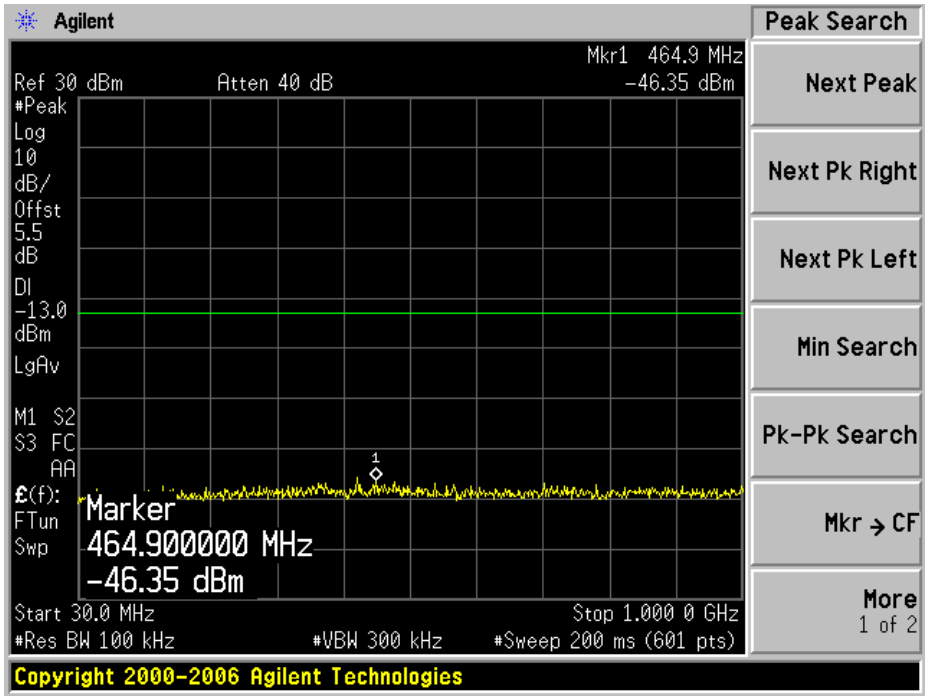


Plot 2e: 1 GHz –26.5 GHz

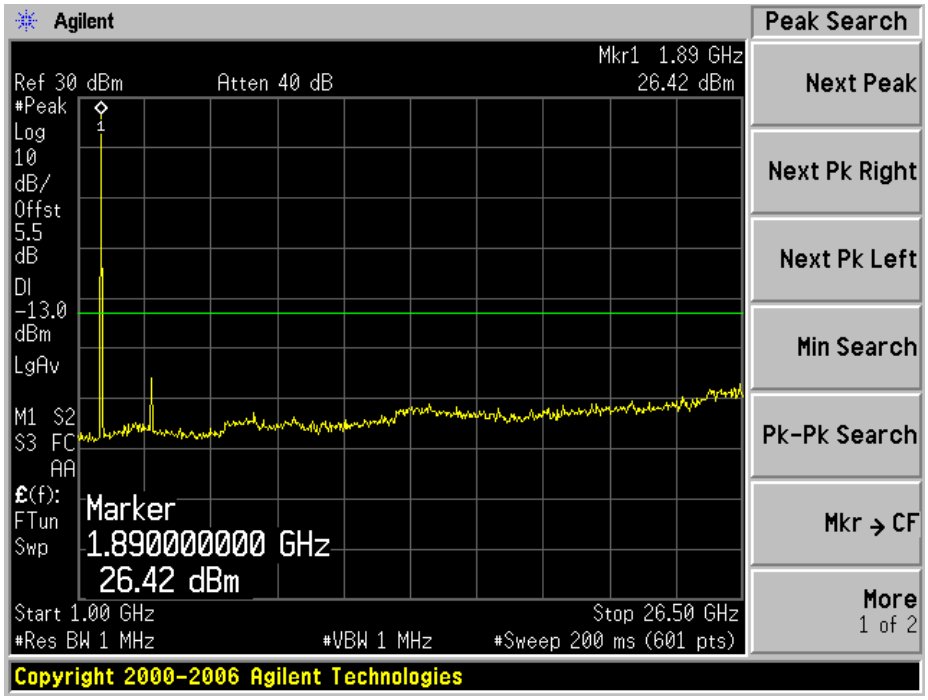


High Channel (f = 1908.75 MHz)

Plot 1f: 30 MHz – 1 GHz



Plot 2f: 1 GHz –26.5 GHz



8 FCC §2.1053 - RADIATED SPURIOUS EMISSIONS

8.1 Applicable Standard

Requirements: FCC §2.1053, §22.917, §24.238.

8.2 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 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 log (TX Power in Watts/0.001) – the absolute level

Spurious attenuation limit in dB = 43 + 10 Log_{10} (power out in Watts)

8.3 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date
Agilent	Spectrum Analyzer	E4446A	US44300386	2011-05-10
Agilent	Analyzer, Communications	E5155C	GB44051221	2010-06-11
Sunol Sciences	Antenna	JB1	A020106-1	2011-05-11
A.R.A	Horn Antenna	DRG-118/A	1132	2010-11-29
A. H. Systems	Antenna, Horn	3115	9511-4627	2010-08-09
Mini Circuits	Pre-Amplifier	ZVA-183-S	570400946	2011-05-09
HP	Pre-Amplifier	8447D	2944A06639	2010-06-18

Statement of Traceability: BACL Corp. attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.

8.4 Test Environmental Conditions

Temperature:	20 °C ~ 23 °C
Relative Humidity:	40 % ~ 45 %
ATM Pressure:	101.1kPa ~ 101.2kPa

Testing was performed by Kevin Li from 06-06-2011 to 06-07-2011 in 5 meter chamber 3.

8.5 Test Results

Cellular Band, Part 22H:

30 MHz -10 GHz Radiated Emission at 3-meter (Middle Channel, 836.52 MHz)

Indicated		Turntable Azimuth (degree)	Test Antenna		Substituted				Absolute Level (dBm)	Part 22H	
Frequency (MHz)	S.A. Amp. (dBuV)		Height (cm)	Polar (H/V)	Frequency (MHz)	S.G. Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)		Limit (dBm)	Margin (dB)
1673	47.11	285	100	V	1673	-52.39	8.88	1	-44.51	-13	-31.51
1673	48.53	105	205	H	1673	-51.22	8.88	1	-43.34	-13	-30.34
2509.5	58.23	295	128	V	2509.5	-35.71	9.63	1	-27.08	-13	-14.08
2509.5	56.9	59	100	H	2509.5	-37.99	9.63	1	-29.36	-13	-16.36

PCS Band, Part 24E:

30 MHz -20 GHz Radiated Emission at 3-meter (Middle Channel, 1880 MHz)

Indicated		Turntable Azimuth (degree)	Test Antenna		Substituted				Absolute Level (dBm)	Part 24E	
Frequency (MHz)	S.A. Amp. (dBuV)		Height (cm)	Polar (H/V)	Frequency (MHz)	S.G. Level (dBm)	Antenna Gain (dBi)	Cable Loss (dB)		Limit (dBm)	Margin (dB)
-	-	-	-	-	-	-	-	-	-	-	-

Note[1]: "-"Emissions levels are at the noise floor

Note[2]:

Note: According to TIA-603-C Section 2.2.12,

ERP (dBm) = Output Power (dBm) – Losses (dB) + Antenna Gain (dBd)
EIRP (dBm) = Output Power (dBm) – Losses (dB) + Antenna Gain (dBi)

Where: dBd refer to gain relative to an ideal dipole
dBi refer to gain relative to an isotropic antenna.
Output power: Output power from Signal generator
Losses: Path loss

9 FCC §22.917 & §24.238 – BAND EDGE

9.1 Applicable Standard

According to FCC §22.917, 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.

According to FCC §24.238, 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.

9.2 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 10 kHz.

9.3 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date
Agilent	Spectrum Analyzer	E4446A	US44300386	2011-05-10
Agilent	Analyzer, Communications	E5155C	GB44051221	2010-06-11

Statement of Traceability: BACL Corp. *attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.*

9.4 Test Environmental Conditions

Temperature:	20 °C ~ 23 °C
Relative Humidity:	40 % ~ 45 %
ATM Pressure:	101.1kPa ~ 101.2kPa

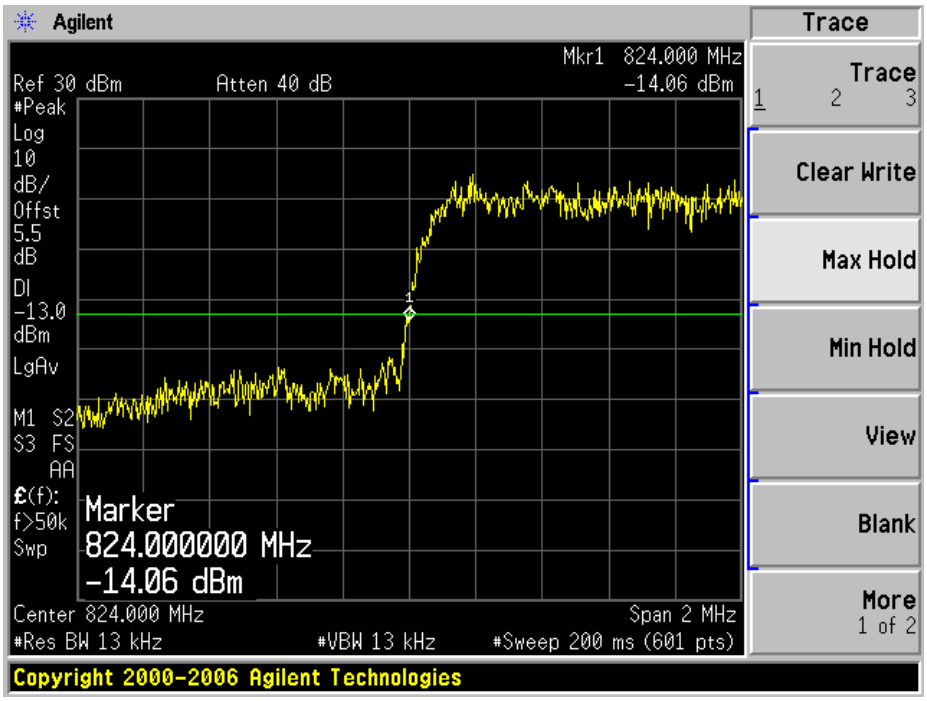
Testing was performed by Kevin Li on 06-08-2011 in RF Site.

9.5 Test Results & Plots

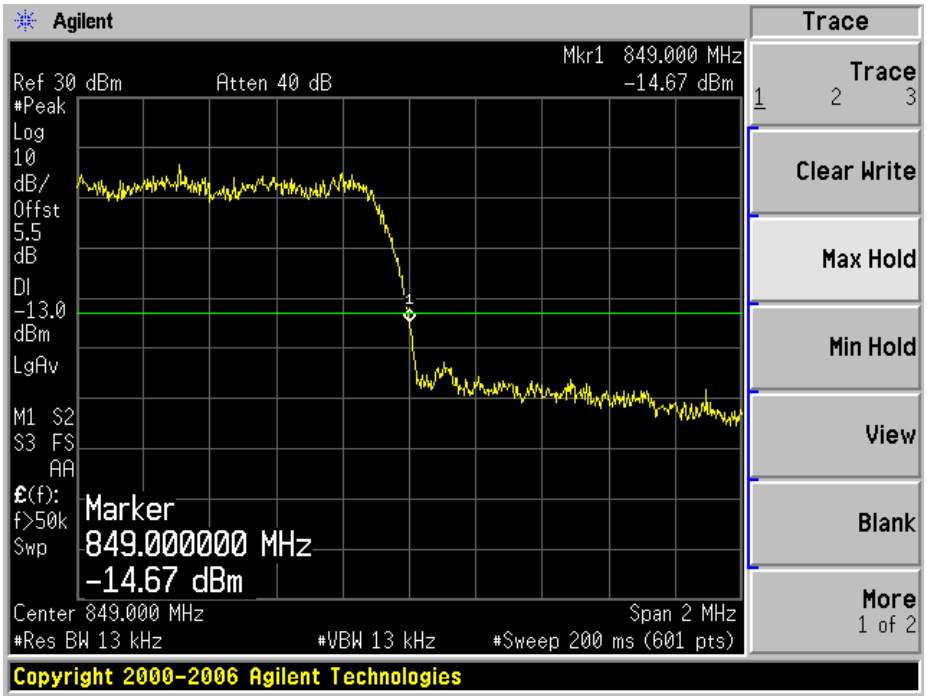
Please refer to the following plots.

Plots of Band Edge for Part 22H

Lowest Channel

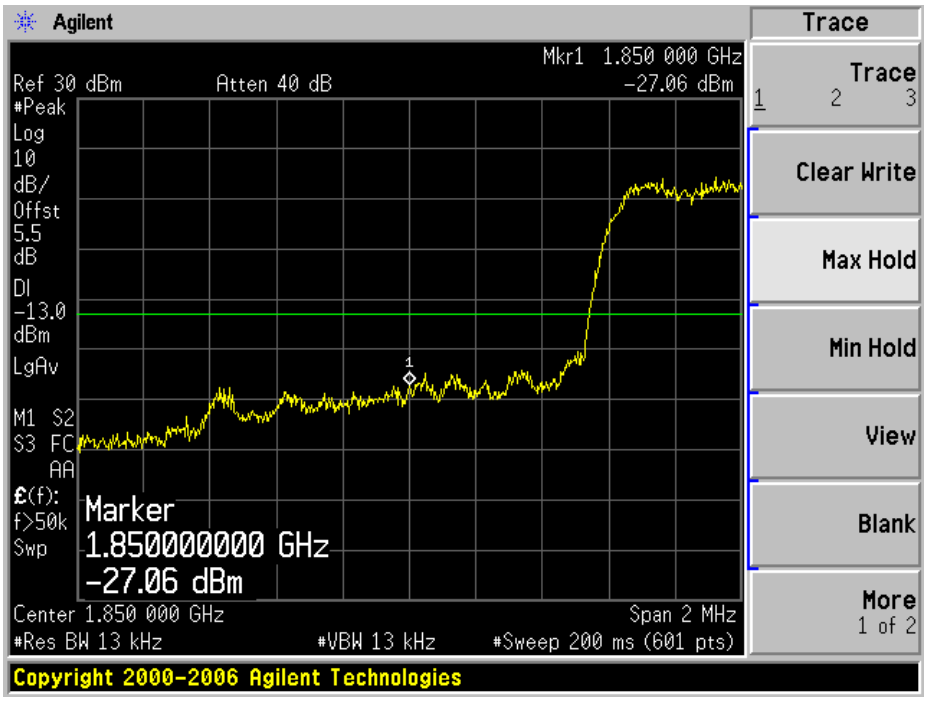


Highest Channel

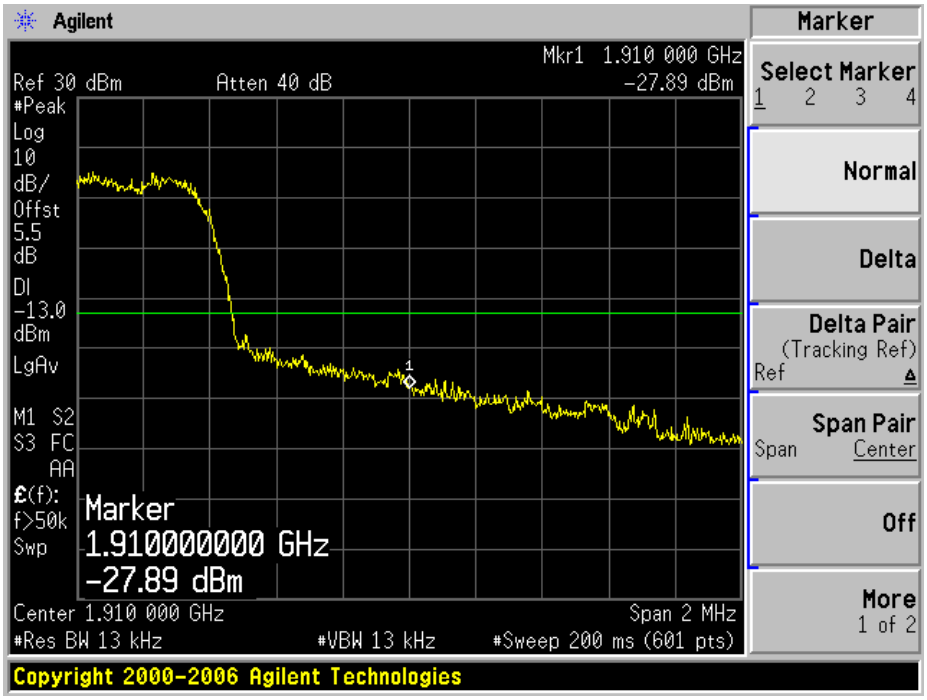


Plots of Band Edge for Part 24E

Lowest Channel



Highest Channel



10 FCC §2.1055, §22.355 & §24.235 - FREQUENCY STABILITY

10.1 Applicable Standard

Requirements: FCC §2.1055 (a), §2.1055 (d) & following:

According to FCC §22.355, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table C-1 of this section.

Frequency Tolerance for Transmitters in the Public Mobile Services

Frequency Range (MHz)	Base, fixed (ppm)	Mobile ≤ 3 watts (ppm)	Mobile ≤ 3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929.	5.0	N/A	N/A
929 to 960.	1.5	N/A	N/A
2110 to 2220	10.0	N/A	N/A

According to FCC §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

10.2 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 communication test set 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 communication test set.

Frequency Stability vs. Voltage: An external variable DC power supply was connected to the battery terminals of the equipment under test. The voltage was set to 115% of the nominal value and was then decreased until the transmitter light no longer illuminated; i.e., the battery end point. The output frequency was recorded for each battery voltage.

10.3 Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Due Date
Tenney	Temperature oven	Versa Tenn	12.431-8	2010-06-28
Agilent	Spectrum Analyzer	E4446A	US44300386	2011-05-10
Agilent	Analyzer, Communications	E5155C	GB44051221	2010-06-11

Statement of Traceability: BACL Corp. attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.

10.4 Test Environmental Conditions

Temperature:	20 °C ~ 23 °C
Relative Humidity:	40 % ~ 45 %
ATM Pressure:	101.1kPa ~ 101.2kPa

Testing was performed by Kevin Li on 06-07-2011 in RF Site.

10.5 Test Results

Cellular Band, Part 22H:

Reference Frequency: 836.52 MHz, Limit: 2.5 ppm				
Test Environment		Frequency Measure with Time Elapsed		
Temperature (°C)	Power Supplied (Vdc)	Measured Frequency (Hz)	Frequency Error (ppm)	Limit (ppm)
Frequency Stability versus Temperature				
50	3.7	836.520089	0.106393	2.5
40	3.7	836.520071	0.084875	2.5
30	3.7	836.520052	0.062162	2.5
20	3.7	836.520038	0.045426	2.5
0	3.7	836.520029	0.034667	2.5
-20	3.7	836.520066	0.078898	2.5
-30	3.7	836.520047	0.056185	2.5
Frequency Stability versus Voltage				
20	3.4	836.520076	0.090853	2.5
20	3.7	836.520058	0.069335	2.5

PCS Band, Part 24E:

Reference Frequency: 1880.0 MHz				
Test Environment		**Frequency Measure with Time Elapsed**		
Temperature (°C)	**Power Supplied (Vdc)**	**Measured Frequency (Hz)**	**Frequency Error (ppm)**	**Result**
Frequency Stability versus Temperature				
50	3.7	1880.000011572	0.006155	Pass
40	3.7	1880.0000124180	0.006605	Pass
30	3.7	1880.000005386	0.002865	Pass
20	3.7	1880.000002915	0.001551	Pass
0	3.7	1880.000004772	0.002538	Pass
-20	3.7	1880.000005650	0.003005	Pass
-30	3.7	1879.999988472	-0.00613	Pass
Frequency Stability versus Voltage				
20	3.4	1879.999998261	-0.00093	Pass
20	3.7	1880.000002579	0.001372	Pass

11 FCC §1.1307(b) (1) & §2.1093 - RF EXPOSURE INFORMATION

11.1 Applicable Standard

According to FCC §1.1310 and §2.1093 SAR Evaluation is required.

11.2 Test Result

Please refer to SAR Report R1106011-SAR.