NVLAP Lab Code: 200167-0

FCC PART 22, 24 TYPE APPROVALS
EMI MEASUREMENT AND TEST REPORT

For

AnyDATA Corporation

18902 Bardeen Ave.
Irvine, CA 92612

FCC ID: P4M-DTG2000V2

This Report Concerns:	**Product Name:**
☒ Original Report	CDMA dual band data/voice module

Test Engineer:	James Ma
Report No.:	R0602284
Report Date:	2006-04-03
Reviewed By:	Daniel Deng
Prepared By:	Bay Area Compliance Laboratory Corporation (BACL) 230 Commercial Street Sunnyvale, CA 94085 Tel: (408) 732-9162 Fax: (408) 732 9164

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GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The *AnyDATA Corporation.'s* product, FCC ID: *P4M-DTG2000V2* or the "EUT" as referred to in this report is a CDMA Dual 800/1900. The CDMA Wireless Data Module is a complex consumer communications instrument that relies heavily on both digital and embedded processor technologies. The Wireless Data Modules manufactured by AnyDATA.NET support Code-Division Multiple Access (CDMA). This operates in both the cellular and PCS spectrum band.

Approximately measurement is: 37mmL x 37mmW x 3.0mmH.

** The test data gathered are from typical production sample, serial number: 0604K1995263, provided by the manufacturer. Please see EUT photos on page 35.*

EUT Photo:

Please see additional photos in Exhibit C

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 emission at antenna terminal, field strength of spurious radiation, frequency stability, band edge, and conducted and radiated margin.

Related Submittal(s)/Grant(s)

No Related Submittals

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
Part 24 Subpart E - PCS

Applicable Standards: TIA EIA 98-C, TIA603-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.

Test Facility

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

Test site at BACL Corp. has 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 test methods and procedures set forth in ANSI C63.4-2003& TIA/EIA-603.

The Federal Communications Commission and Voluntary Control Council for Interference has the reports on file and is listed under FCC registration number: 90464 and VCCI Registration No.: C-1298 and R-1234. The test site has been approved by the FCC 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 is attached hereinafter and can also be found at
http://ts.nist.gov/ts/htdocs/210/214/scopes/2001670.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
Agilent	Wireless communication test set	8960	GB 44051221
BK Precision	DC Power supply	1740	26502000233
Dell	Laptop	Inspiron 300M	CN-0X0024-36521-377-000F

Interface Ports and Cabling

Cable Description	Length (M)	From	To
Power cable	0.4	DC Power supply	EUT
Data cable	0.5	Laptop	EUT
RF Cable	0.4	Output of EUT Antenna	Spectrum Analyzer

SUMMARY OF TEST RESULTS

FCC RULE	DESCRIPTION OF TEST	RESULT
§ 2.1047	Modulation Characteristics	Compliant
§ 2.1053	Field Strength of Spurious Radiation	Compliant
§2.1093	RF Exposure	Compliant
§ 2.1046, § 22.912 (d) § 24.232	RF Output Power	Compliant
§ 2.1049 § 22.917 § 22.905 § 24.238	Out of Band Emission, Occupied Bandwidth	Compliant
§ 2.1051, § 22.917 § 24.238(a)	Spurious Emissions at Antenna Terminals	Compliant
§ 2.1055 (a) § 2.1055 (d) § 22.355 § 24.235	Frequency stability vs. temperature Frequency stability vs. voltage	Compliant
§ 22.917 §24.238	Band Edge	Compliant

§2.1047 - MODULATION CHARACTERISTIC

Applicable Standard

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

§2.1053 - SPURIOUS RADIATED EMISSIONS

Applicable Standard

Requirements: CFR 47, § 2.1053.

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 lg (TXpwr in Watts/0.001) – the absolute level

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

Environmental Conditions

Temperature:	18° C
Relative Humidity:	55%
ATM Pressure:	1020mbar

** The testing was performed by James Ma on 2006-03-28.*

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date
Agilent	Analyzer, Communications	E5515C	GB44051221	2005-08-08
Agilent	Analyzer, Spectrum	8565EC	3946A00131	2006-01-11
HP	Amplifier, Pre	8447D	2944A10198	2005-08-17
HP	Amplifier, Pre, Microwave	8449B	3147A00400	2005-08-10
Rohde & Schwarz	Generator, Signal	SMIQ03	849192/0085	2005-05-02
A. H. Systems	Antenna, Horn, DRG	SAS-200/571	261	2005-04-20
HP	Generator, Signal	83650B	3614A00276	2005-05-10
A.R.A.	Antenna, Horn	DRG-118/A	1132	2005-08-17

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

Test Result

Worst case reading as follows:

Cellular Band, Part22:

-29.0 dB at 1673.04 MHz

PCS Band, Part24:

-23.1 dB at 3760.00 MHz

Run # 1 : 30MHz -10GHz Cellular Band Mid Channel

Indicated		Table	Test Antenna		Substituted		Antenna	Cable	Absolute	Limit	Margin
Frequency MHz	Ampl. dBuV/m	Angle Degree	Height Meter	Polar H/V	Frequency MHz	Level dBm	Gain Correction	Loss dB	Level dBm	dBm	dB
1673.04	61.60	20	1.4	v	1673.04	-49.40	8.7	1.3	-42.0	-13	-29.0
1673.04	60.80	80	1.2	h	1673.04	-49.37	8.7	1.3	-42.0	-13	-29.0
3346.08	47.80	180	1.3	v	3346.08	-56.50	10.2	2.2	-48.5	-13	-35.5
2509.56	49.30	180	1.7	v	2509.56	-56.70	9.5	1.6	-48.8	-13	-35.8
2509.56	48.40	200	1.5	h	2509.56	-57.40	9.5	1.6	-49.5	-13	-36.5
3346.08	45.30	0	1.4	h	3346.08	-58.37	10.2	2.2	-50.4	-13	-37.4

Run # 2 : 30MHz -20GHz PCS Band Mid Channel

Indicated		Table	Test Antenna		Substituted		Antenna	Cable	Absolute	Limit	Margin
Frequency MHz	Ampl. dBuV/m	Angle Degree	Height Meter	Polar H/V	Frequency MHz	Level dBm	Gain Correction	Loss dB	Level dBm	dBm	dB
3760.00	59.20	90	1.0	v	3760.00	-44.30	10.5	2.3	-36.1	-13	-23.1
3760.00	58.40	90	2.0	h	3760.00	-45.20	10.5	2.3	-37.0	-13	-24.0
5640.00	48.20	100	2.0	v	5640.00	-51.80	10.4	3.1	-44.5	-13	-31.5
5640.00	45.30	140	2.0	h	5640.00	-54.03	10.4	3.1	-46.7	-13	-33.7

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

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 watt.

Test Procedure

Conducted:

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

Environmental Conditions

Temperature:	19° C
Relative Humidity:	58%
ATM Pressure:	1018mbar

** The testing was performed by James Ma on 2006-03-28.*

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date
Agilent	Analyzer, Communications	E5515C	GB44051221	2005-08-08
Agilent	Analyzer, Spectrum	E4446A	US44300386	2006-03-06

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

Test Results

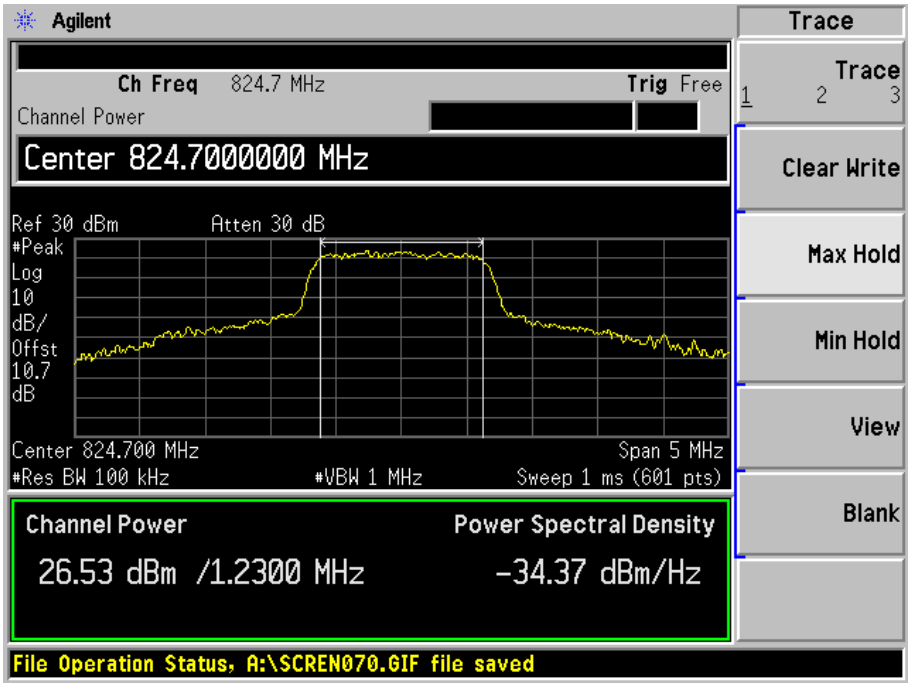
Cellular band, Part22:

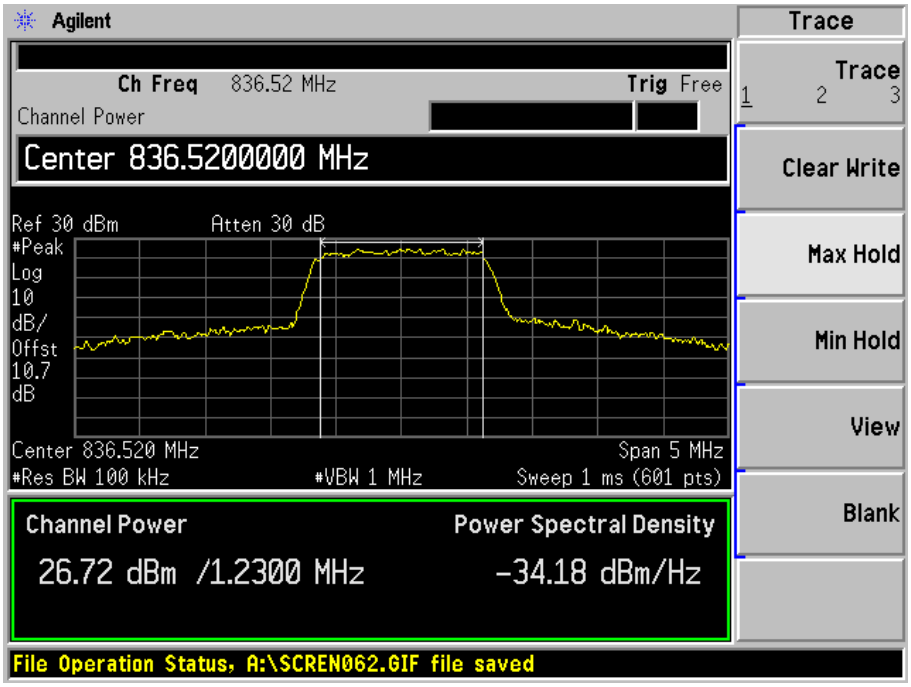
Channel	Frequency (MHz)	Output Power in dBm	Output Power in W	Antenna in dBi	Limit in W
LOW	824.70	26.53	0.449	1	7
MIDDLE	836.52	26.72	0.469	1	7
HIGH	848.30	26.94	0.494	1	7

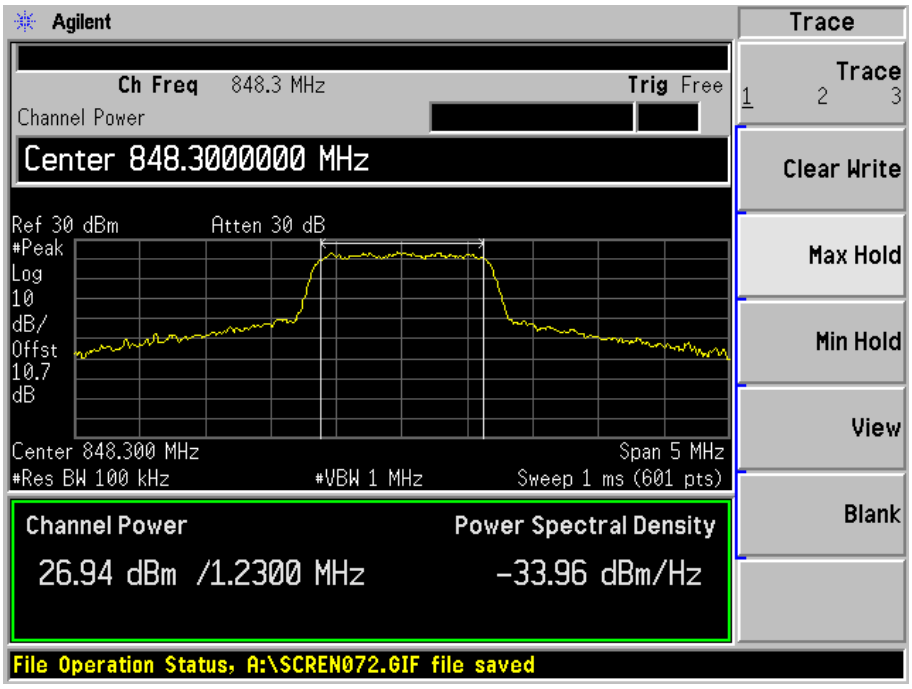
PCS band, Part24:

Channel	Frequency (MHz)	Output Power in dBm	Output Power in W	Limit in W
LOW	1851.25	26.45	0.442	2
MIDDLE	1880.00	27.13	0.516	2
HIGH	1908.75	26.59	0.456	2

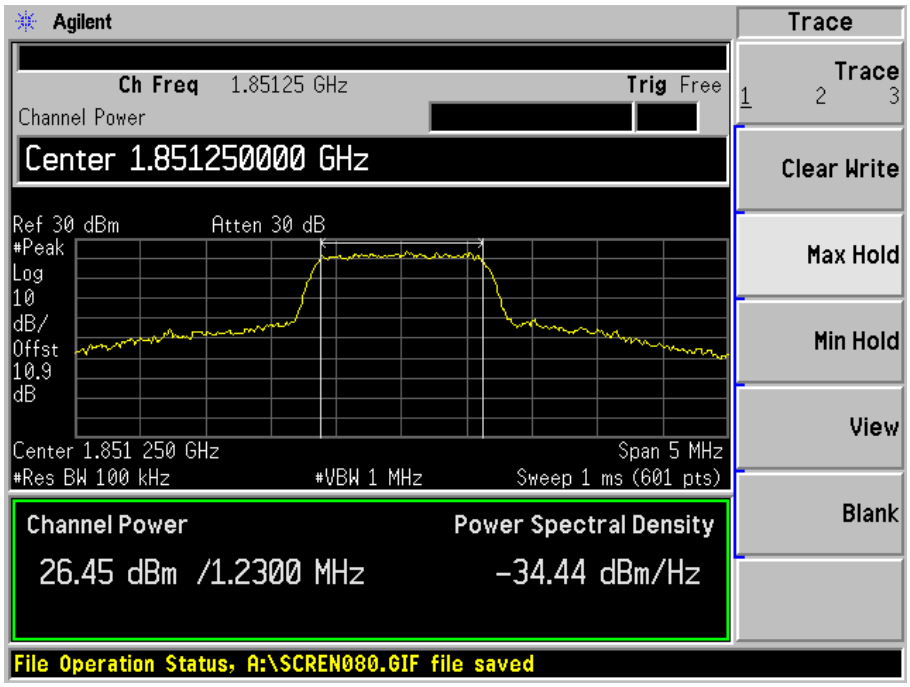
Plots of Conducted Output Power for Part 22

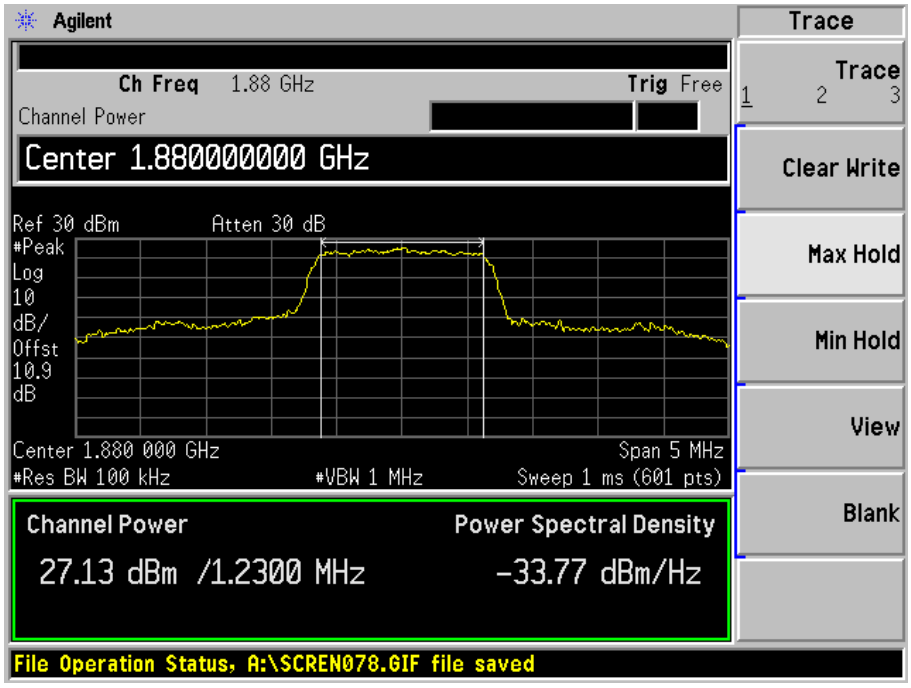


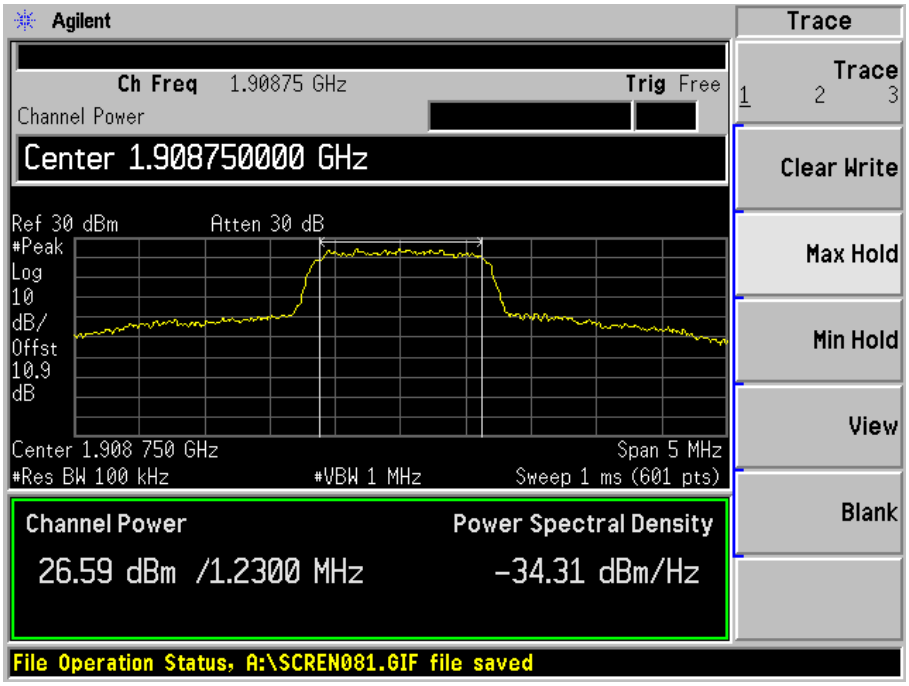




Plots of Conducted Output Power for Part24




Agilent
Trace
Ch Freq 1.88 GHz
Trig Free
Channel Power
Center 1.880000000 GHz
Ref 30 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
10.9
dB
Center 1.880 000 GHz
Span 5 MHz
#Res BW 100 kHz
#VBW 1 MHz
Sweep 1 ms (601 pts)
Channel Power
27.13 dBm /1.2300 MHz
Power Spectral Density
-33.77 dBm/Hz
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
File Operation Status, A:\SCREN078.GIF file saved


Agilent
Trace
Ch Freq 1.90875 GHz
Trig Free
Channel Power
Center 1.908750000 GHz
Ref 30 dBm
Atten 30 dB
#Peak
Log
10
dB/
Offst
10.9
dB
Center 1.908 750 GHz
Span 5 MHz
#Res BW 100 kHz
#VBW 1 MHz
Sweep 1 ms (601 pts)
Channel Power
26.59 dBm /1.2300 MHz
Power Spectral Density
-34.31 dBm/Hz
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
File Operation Status, A:\SCREN081.GIF file saved

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

Applicable Standard

Requirements: CFR 47, Section 2.1049, Section 22.901, Section 22.917 and Section 24.238.

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 30/47 kHz(Cellular /PCS) and the 26 dB & 99% bandwidth was recorded.

Environmental Conditions

Temperature:	19° C
Relative Humidity:	58%
ATM Pressure:	1018 mbar

** The testing was performed by James Ma on 2006-3-28.*

Test Equipment List and Details

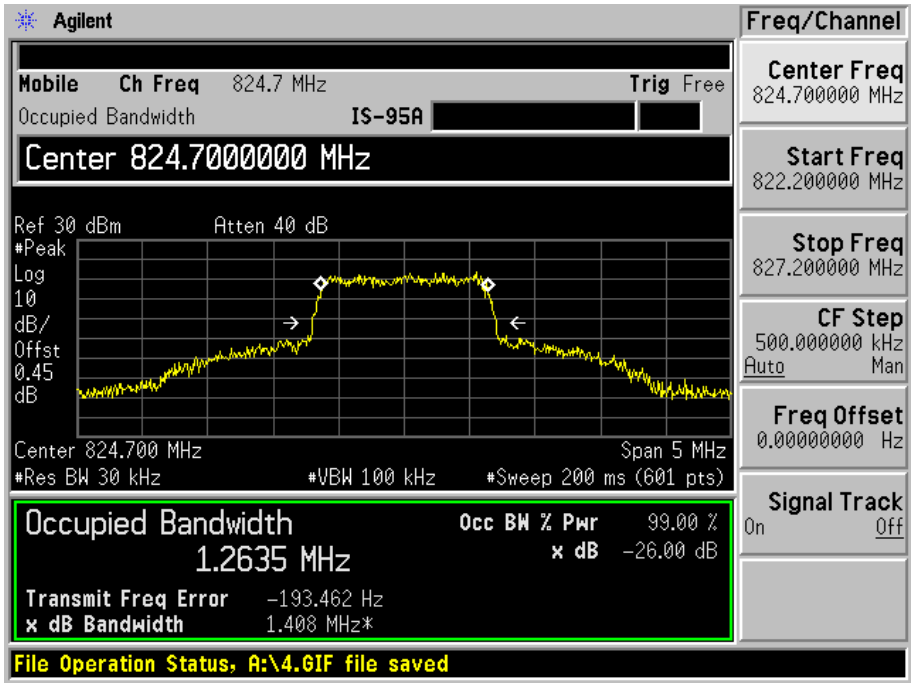
Manufacturer	Description	Model	Serial Number	Cal. Date
Agilent	Analyzer, Communications	E5515C	GB44051221	2005-08-08
Agilent	Analyzer, Spectrum	E4446A	US44300386	2006-03-06

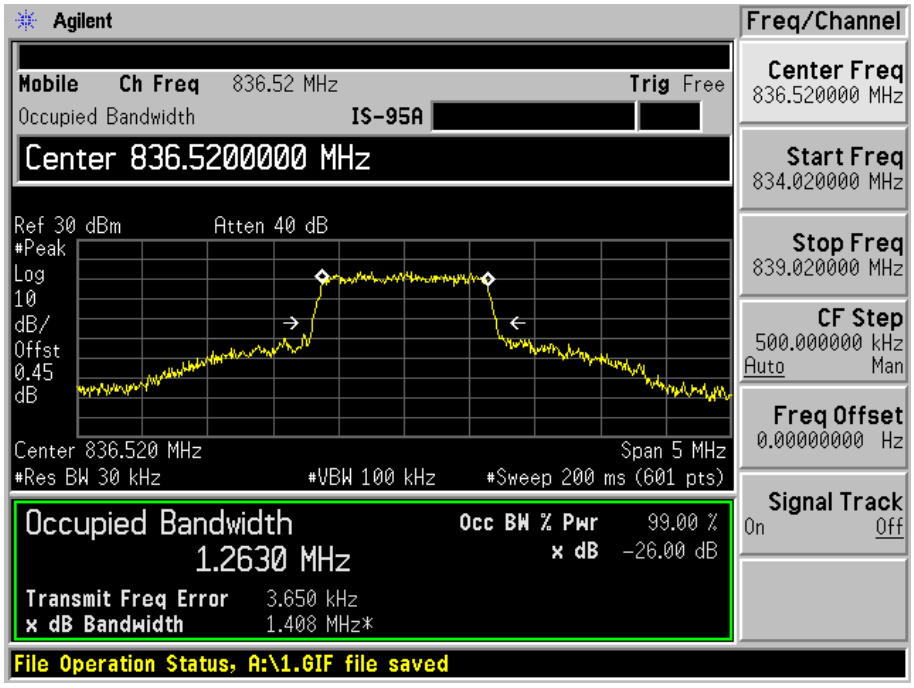
*** Statement of Traceability: BACL Corp.** attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.

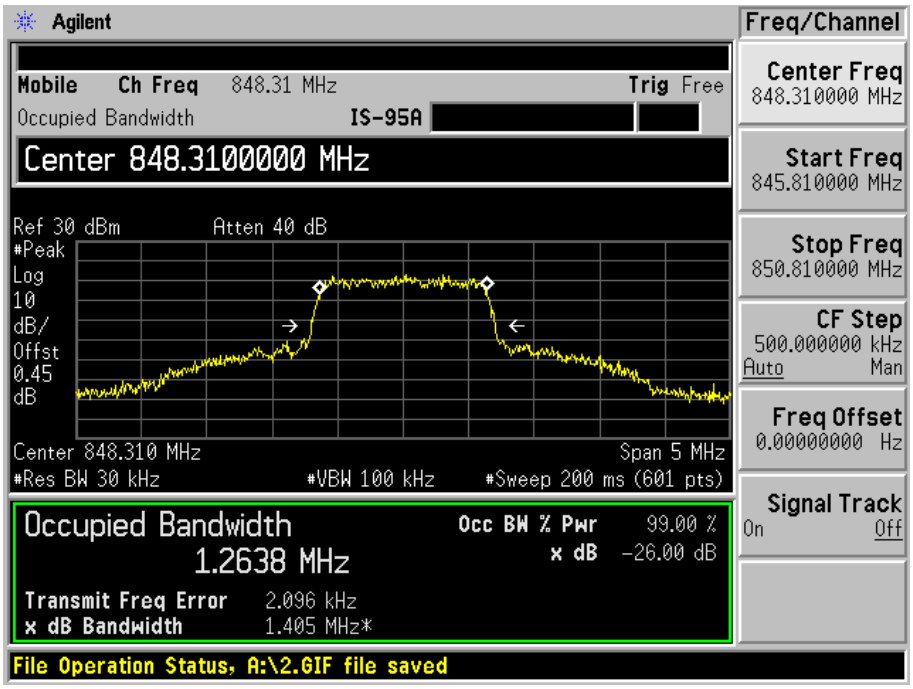
Test Results

Please refer to the following plots.

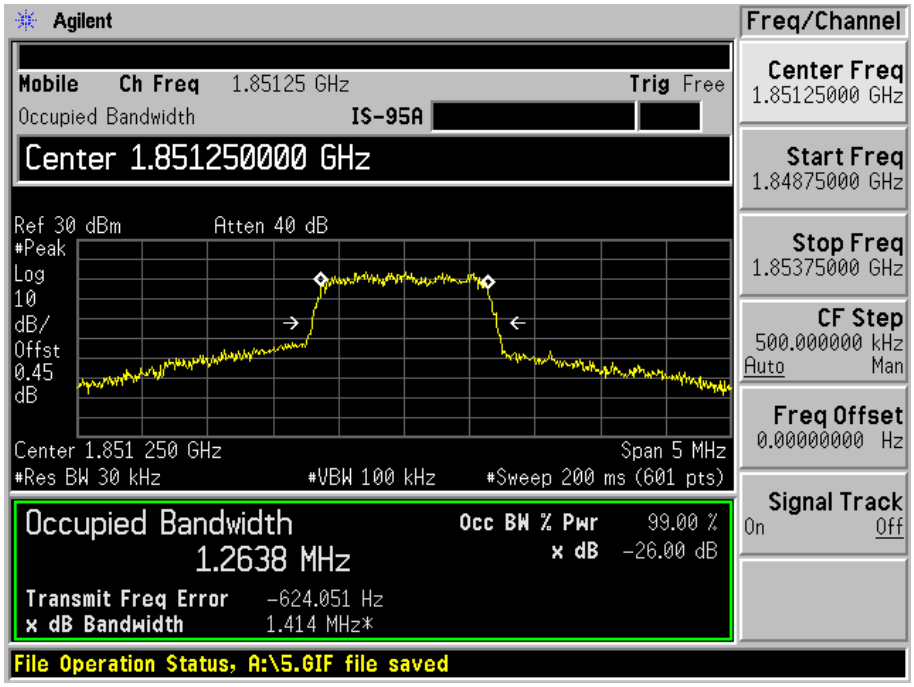
Plots of Occupied Bandwidth for Part22

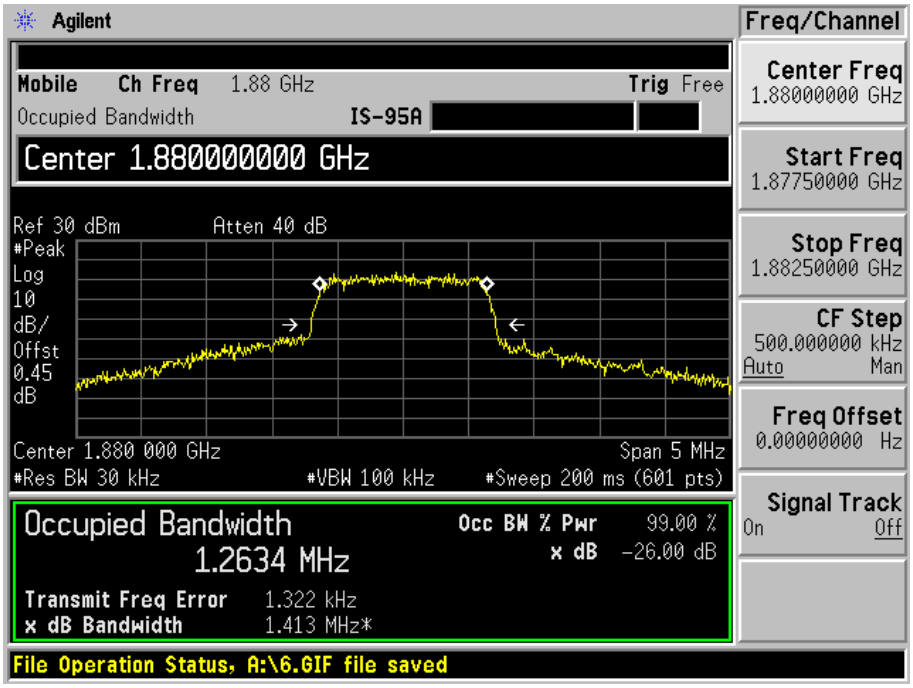


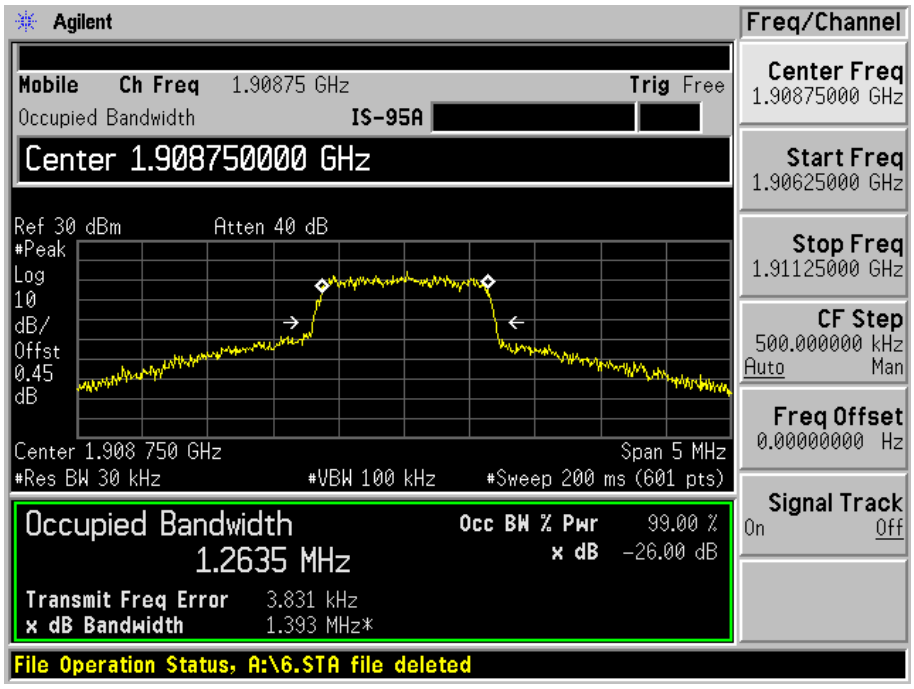




Plots of Occupied Bandwidth for Part24




Agilent
Freq/Channel
Mobile Ch Freq 1.88 GHz
Trig Free
Occupied Bandwidth
IS-95A
Center 1.880000000 GHz
Ref 30 dBm
Atten 40 dB
#Peak
Log
10
dB/
Offst
0.45
dB
Center 1.880 000 GHz
Span 5 MHz
#Res BW 30 kHz
#VBW 100 kHz
#Sweep 200 ms (601 pts)
Occupied Bandwidth
1.2634 MHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB
Transmit Freq Error 1.322 kHz
x dB Bandwidth 1.413 MHz*
File Operation Status, A:\6.GIF file saved
Center Freq
1.88000000 GHz
Start Freq
1.87750000 GHz
Stop Freq
1.88250000 GHz
CF Step
500.000000 kHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off


Agilent
Freq/Channel
Mobile Ch Freq 1.90875 GHz
Trig Free
Occupied Bandwidth
IS-95A
Center 1.908750000 GHz
Ref 30 dBm
Atten 40 dB
#Peak
Log
10
dB/
Offst
0.45
dB
Center 1.908 750 GHz
Span 5 MHz
#Res BW 30 kHz
#VBW 100 kHz
#Sweep 200 ms (601 pts)
Occupied Bandwidth
1.2635 MHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB
Transmit Freq Error 3.831 kHz
x dB Bandwidth 1.393 MHz*
File Operation Status, A:\6.STA file deleted
Center Freq
1.90875000 GHz
Start Freq
1.90625000 GHz
Stop Freq
1.91125000 GHz
CF Step
500.000000 kHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off

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

Applicable Standard

Requirements: CFR 47, § 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.

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.

Environmental Conditions

Temperature:	19° C
Relative Humidity:	58%
ATM Pressure:	1018 mbar

** The testing was performed by James Ma on 2006-3-31*

Test Equipment List and Details

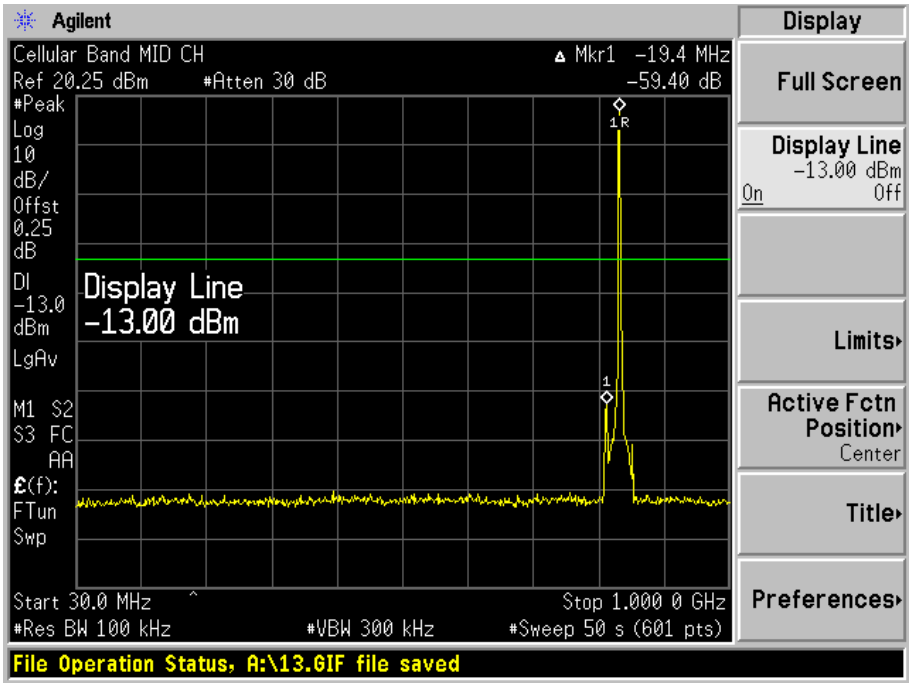
Manufacturer	Description	Model	Serial Number	Cal. Date
Agilent	Analyzer, Communications	E5515C	GB44051221	2005-08-08
Agilent	Analyzer, Spectrum	E4446A	US44300386	2006-03-06

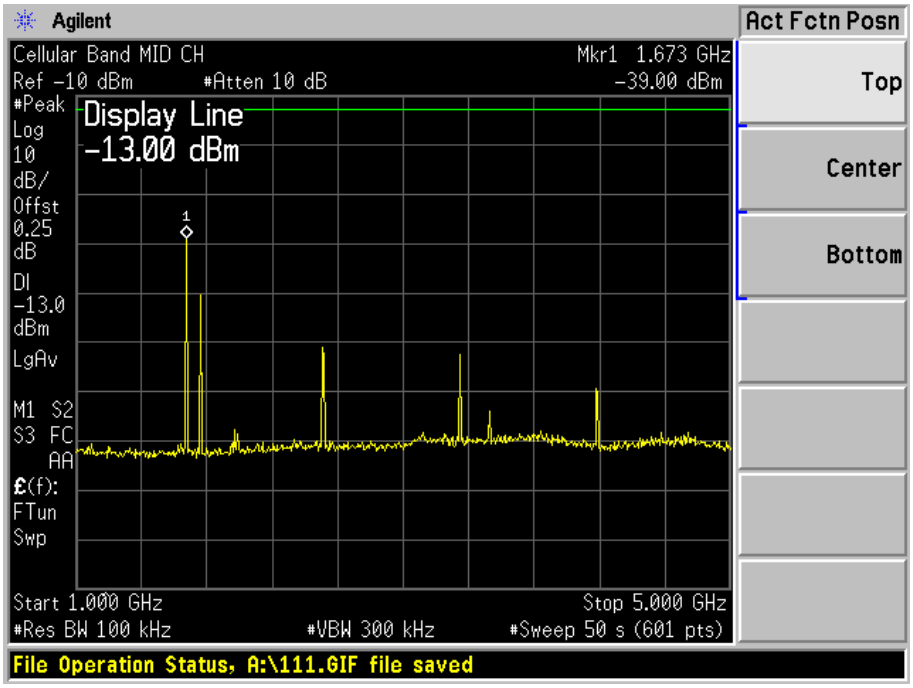
*** Statement of Traceability: BACL Corp.** attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.

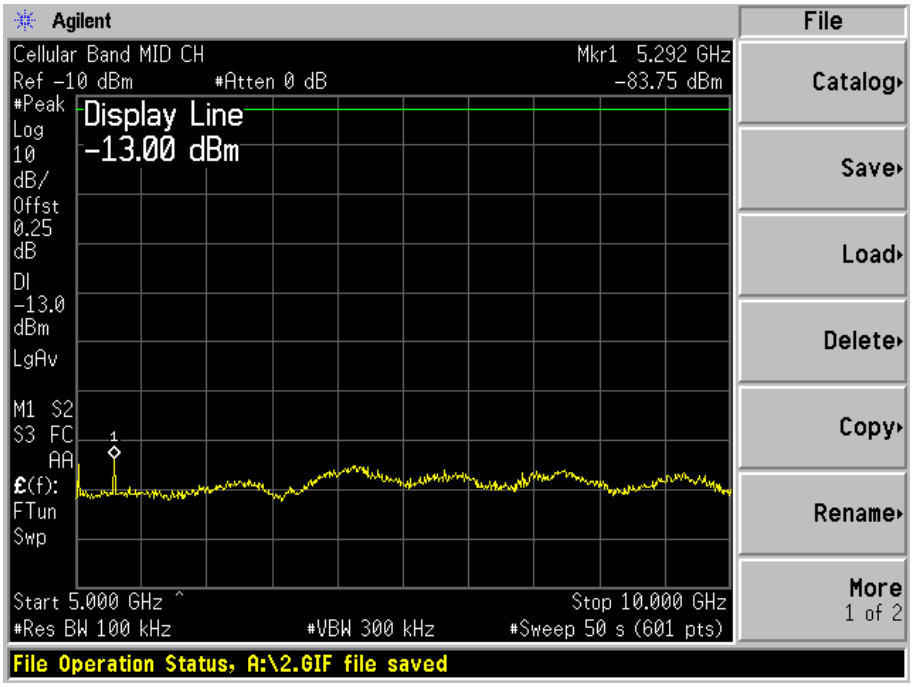
Test Results

Please refer to the hereinafter plots.

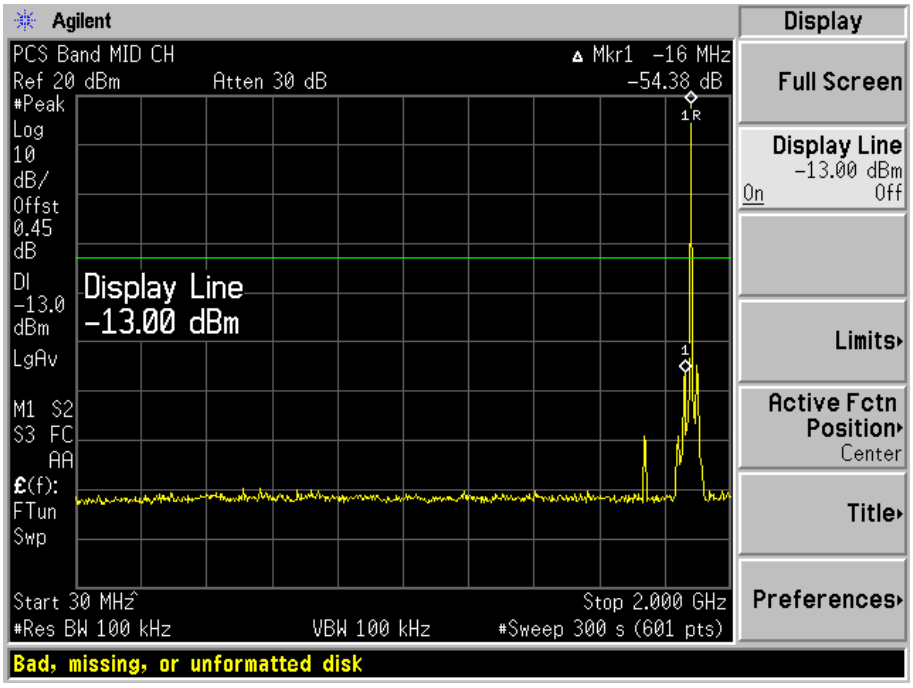
Plots of Spurious Emission for Part22

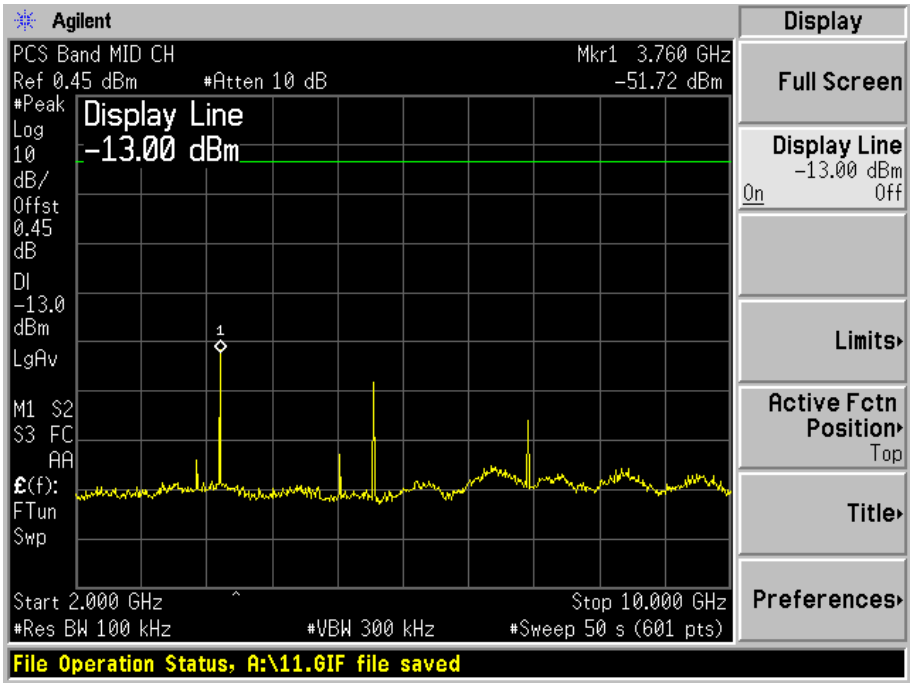


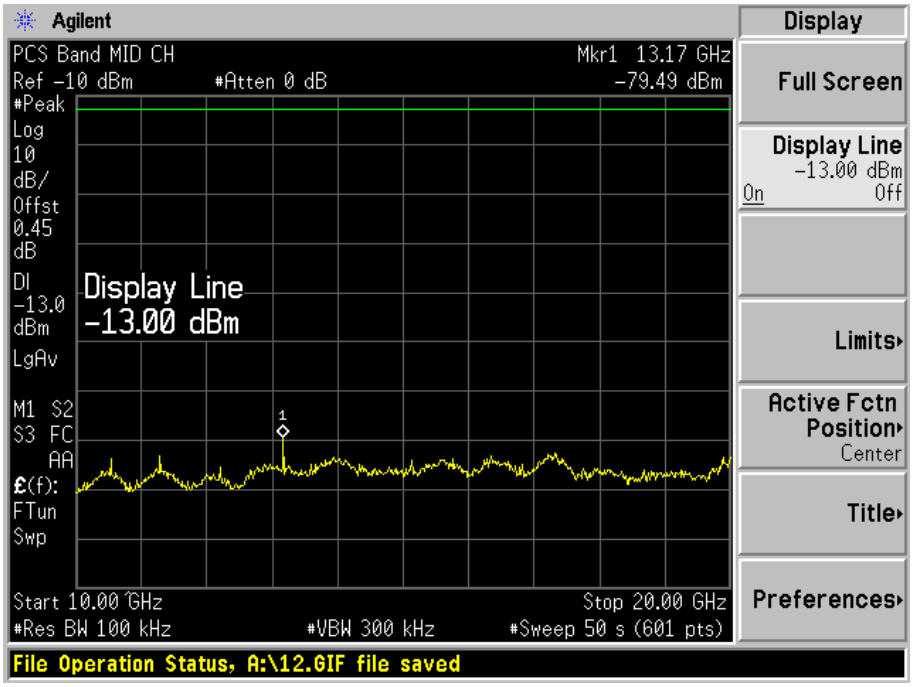




Plots of Spurious Emission for Part24




Agilent
Display
PCS Band MID CH
Ref 0.45 dBm
#Atten 10 dB
Mkr1 3.760 GHz
-51.72 dBm
#Peak
Log
10
dB/
Offst
0.45
dB
Dl
-13.0
dBm
LgAv
M1 S2
S3 FC
AA
£(f):
FTun
Swp
Display Line
-13.00 dBm
Start 2.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 10.000 GHz
#Sweep 50 s (601 pts)
Full Screen
Display Line
-13.00 dBm
On Off
Limits
Active Fctn
Position
Top
Title
Preferences
File Operation Status, A:\11.GIF file saved


Agilent
Display
PCS Band MID CH
Ref -10 dBm
#Atten 0 dB
Mkr1 13.17 GHz
-79.49 dBm
#Peak
Log
10
dB/
Offst
0.45
dB
Dl
-13.0
dBm
LgAv
M1 S2
S3 FC
AA
£(f):
FTun
Swp
Display Line
-13.00 dBm
Start 10.00 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 20.00 GHz
#Sweep 50 s (601 pts)
Full Screen
Display Line
-13.00 dBm
On Off
Limits
Active Fctn
Position
Center
Title
Preferences
File Operation Status, A:\12.GIF file saved

§2.1055 (a), §2.1055 (d), §22.355, & §24.235 - FREQUENCY STABILITY

Applicable Standard

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

According to §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.

Table C-1_Frequency Tolerance for Transmitters in the Public Mobile Services

Table C-1_Frequency Tolerance for Transmitters in the Public Mobile Services

Frequency range (MHz)	Base, fixed (ppm)	Mobile [le]3 watts (ppm)	Mobile [le]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 §24.235, The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

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.

Environmental Conditions

Temperature:	19° C
Relative Humidity:	58%
ATM Pressure:	1018 mbar

** The testing was performed by James Ma on 2006-3-31*

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date
Agilent	Analyzer, Communications	E5515C	GB44051221	2005-08-08
Agilent	Analyzer, Spectrum	E4446A	US44300386	2006-03-06
Tenney	Oven, Temperature	VersaTenn	12.222-193	2005-06-27

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

Test Results

Cellular Band

Reference Frequency: 836.52 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency error (HZ)	PPM Error
50	4.5	836.520041	0.049156
40	4.5	836.520038	0.045426
30	4.5	836.520037	0.044231
20	4.5	836.520037	0.043753
10	4.5	836.520037	0.043992
0	4.5	836.520036	0.043275
-10	4.5	836.519966	-0.040645
-20	4.5	836.519963	-0.043992
-30	4.5	836.519960	-0.047459

Frequency Stability Versus Voltage

Reference Frequency: 836.52 MHz, Limit: 2.5ppm			
Power Supplied (VDC)	Environment Temperature (°C)	Frequency error (HZ)	PPM Error
4.0	20	836.520040	0.047817

PCS Band

Frequency Stability Versus Temperature

Reference Frequency: 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency error (HZ)	PPM Error
50	4.5	1880.000462	0.245745
40	4.5	1880.000782	0.415957
30	4.5	1880.000501	0.266489
20	4.5	1880.000358	0.190426
10	4.5	1880.000490	0.260638
0	4.5	1880.000540	0.287234
-10	4.5	1880.000467	0.248404
-20	4.5	1879.999494	-0.269149
-30	4.5	1879.999564	-0.231915

Frequency Stability Versus Voltage

Reference Frequency: 1880 MHz, Limit: 2.5ppm			
Power Supplied (VDC)	Environment Temperature (°C)	Frequency error (HZ)	PPM Error
4.0	20	1880.000441	0.234574

§22.917 & §24.238 – BAND EDGE

Applicable Standard

According to § 22.917, 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.

According to §24.238, 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 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.

Environmental Conditions

Temperature:	19° C
Relative Humidity:	58%
ATM Pressure:	1018 mbar

** The testing was performed by James Ma on 2006-03-28.*

Test Equipment List and Details

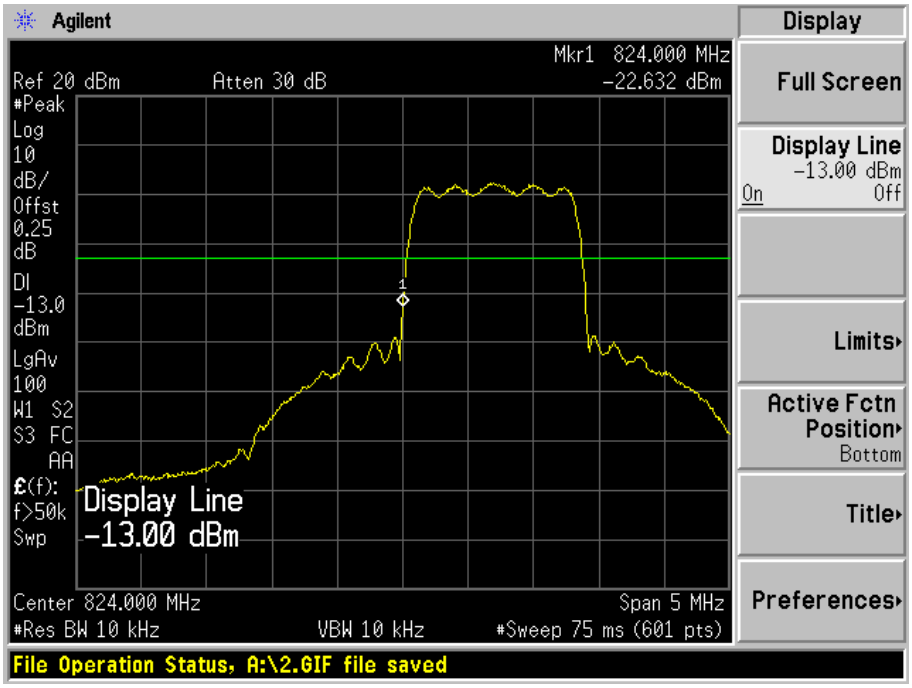
Manufacturer	Description	Model	Serial Number	Cal. Date
Agilent	Analyzer, Communications	E5515C	GB44051221	2005-08-08
Agilent	Analyzer, Spectrum	E4446A	US44300386	2006-03-06

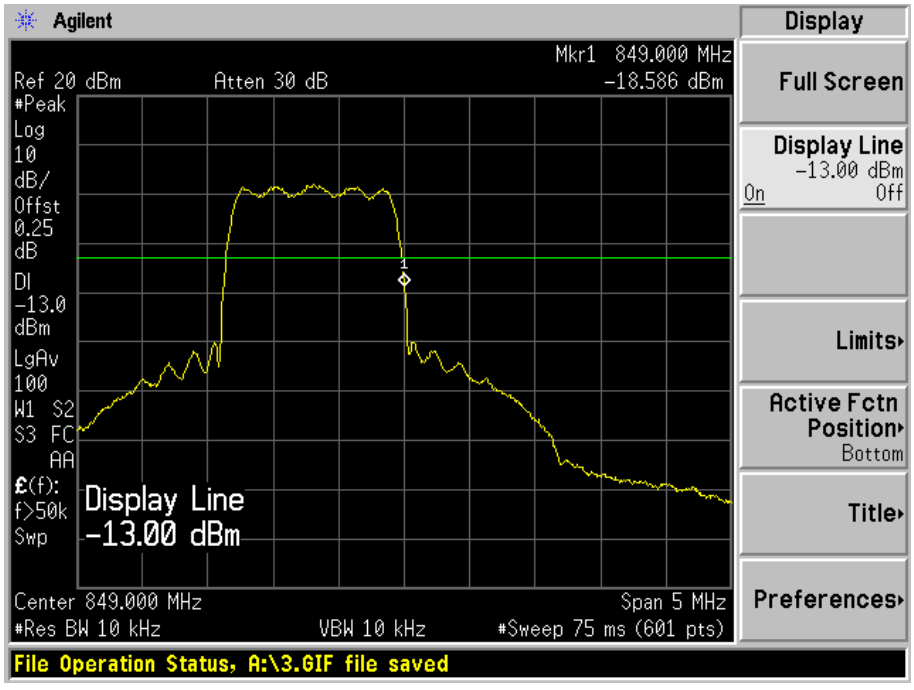
*** Statement of Traceability: BACL Corp.** attests that all calibrations have been performed per the NVLAP requirements, traceable to the NIST.

Test Results

Please refer to the following plots.

Plots of Band Edge for Part 22





Plots of Band Edge for Part 24