FCC PART 22 TYPE APPROVAL

EMI MEASUREMENT AND TEST REPORT

For

ZTE (H.K.) LIMITED

Room 2906, China Recources Bldg.26 Harbour Road, Wanchai, HongKong

FCC ID: TXC-BTSBI208

January 12, 2006

This Report Concerns:	**Equipment Type:**
☒ Original Report	CDMA2000 Base Transceiver Sation-I2

Test Engineer:	Sam Lin
Report No.:	RSZ06011102
Test Date:	May 30, 2005
Reviewed By:	Chris Zeng
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 *ZTE (H.K.) LIMITED*'s product, model number: ZXC10 BTSB I28A or the "EUT" as referred to in this report is a CDMA2000 Base Transceiver Sation-I2. The EUT is measured approximately 70.0 cm L x 60.0cmW x 180.0cmH, rated input voltage: DC -48 V.

** The test data gathered are from production sample, serial number:051018705060059, provided by the manufacturer.*

Objective

This Type approval report is prepared on behalf of ZTE (H.K.) LIMITED in accordance with Part 2, Subpart J and Part 22 Subpart H 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 parts:

Part 22 Subpart H - Public Mobile Services

Applicable Standards: TIA EIA 137-A, TIA EIA 97-D, TIA/EIA 603-B, Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.

Test Facility

The Open Area Test site used by BACL Corp. to collect radiated and conducted emission measurement data is located in the back parking lot of the building at 230 Commercial Street, 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 radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission and Voluntary Control Council for Interference has the reports on file and is listed under FCC file 31040/SIT 1300F2 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 scope of the accreditation covers the FCC Method - 47 CFR Part 15 - Digital Devices, CISPR 22: 1997, Electromagnetic Interference - Limits and Methods of Measurement of Information Technology Equipment test methods.

External I/O Cable

Cable Description	Length (M)	From/Port	To
Unshielded Detachable DC Power Cable	2.8	EUT	DC Power

SYSTEM TEST CONFIGURATION

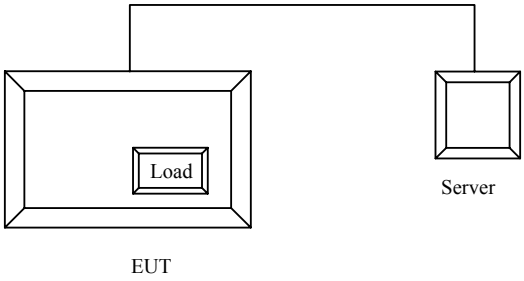
Description of Test Configuration

The system was configured for testing in a typical fashion (as normally used by a typical user).

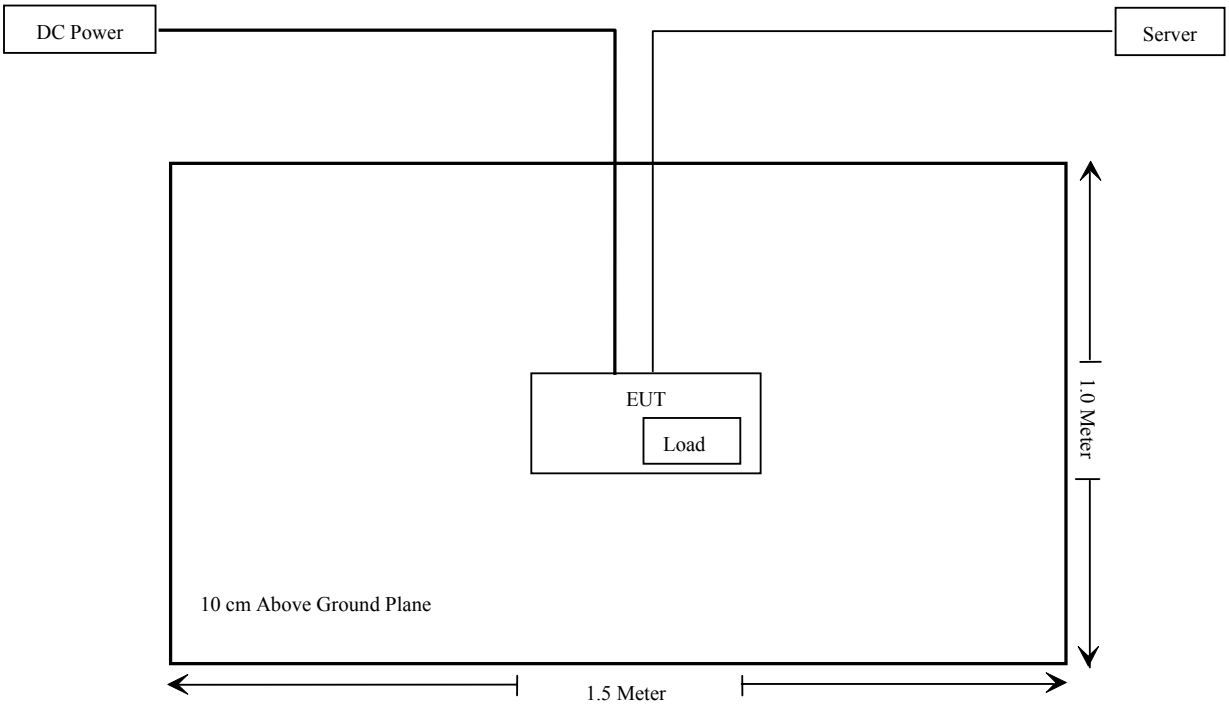
Equipment Modifications

Bay Area Compliance Lab Corp. has not done any modification on the EUT.

Configuration of Test Setup



Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§2.1046, §22.913(a)	Effective radiated power	Compliant
§ 2.1091	RF Exposure	Compliant
§2.1047	Modulation characteristic	Compliant
§15.109(a)	Radiation Emission	Compliant
§2.1053	Spurious Radiated Emissions	Compliant
§2.1051, §22.917	Spurious Emissions AT Antenna Terminals	Compliant
§22.1049 §22.917 §22.905	Occupied Bandwidth	Compliant
§22.917	Band Edge	Compliant
§ 2.1055 (a) § 2.1055 (d) § 22.355	Frequency stability	Compliant

§2.1091 - RF EXPOSURE

Limit

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to §1.1310 and §2.1093 RF exposure is calculated.

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time (minute)
Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f\2\)	6
30-300.	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	5	6

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

Test Data

Predication of MPE limit at a given distance

Equation from page 18 of OET Bulletin 65, Edition 97-01

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

Where: S = power density
P = power input to antenna
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna

Maximum peak output power at antenna input terminal: 44.65 (dBm)
Maximum peak output power at antenna input terminal: 29.17 (W)
Prediction distance: 220 (cm)
Predication frequency: 869.7 (MHz)
Antenna Gain (typical): 17 (dBi)
Power density at predication frequency at 220 cm: 2.404 (mW/cm^2)
MPE limit for uncontrolled exposure at prediction frequency: 2.899 (mW/cm^2)

Test Result: Pass

§2.1046, §22.913(a) - EFFECTIVE RADIATED POWER

Applicable Standard

According to FCC §2.1046 and §22.913 (a), the ERP of transmitters and cellular repeaters must not exceed 500 Watts.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	PSA Spectrum Analyzer	E4445A	MY44300451	2004-11-5	2005-11-4

*** Statement of Tractability:** Bay Area Compliance Lab Corp. attests that all calibrations have been performed per the NVLAP requirements, traceable to NIST.

Test Procedure

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

Test Data

Environmental Conditions

Temperature:	18 °C
Relative Humidity:	53 %
ATM Pressure:	1015 mbar

The testing was performed by Sam Lin on 2005-5-30

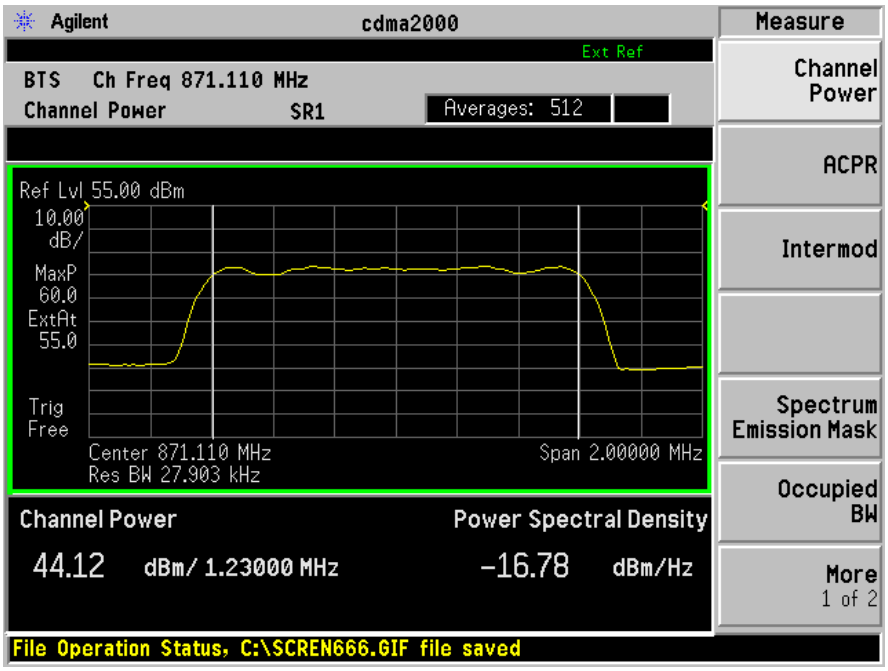
Test Result: Pass

Test Mode: Transmitting

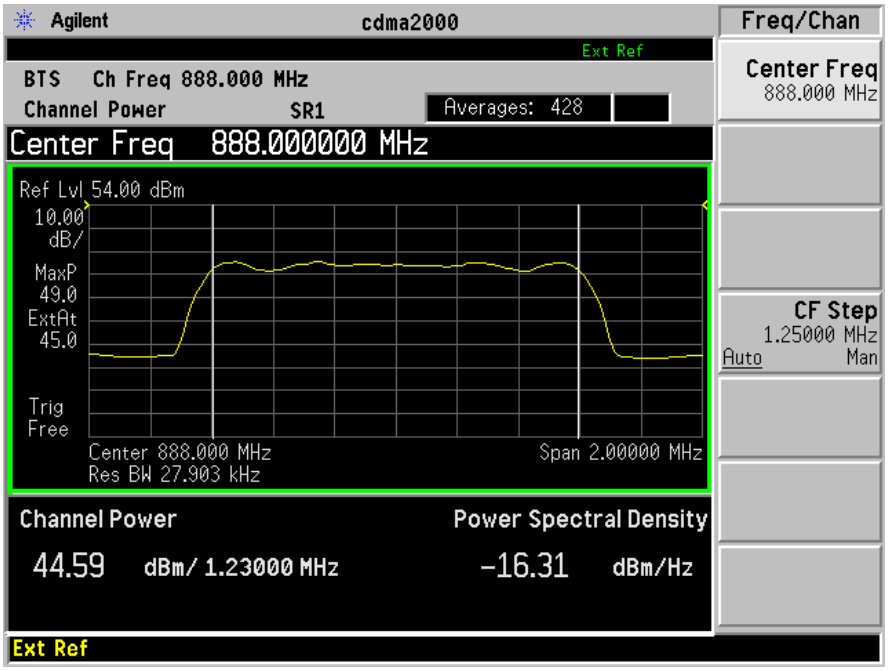
The result has been complied with the §2.1046, §22.913(a), see the following plot:

Channel	Frequency (MHz)	Output Power in dBm	Output Power in W	Limit in W
Channel 37	871.11	44.12	25.82	500
Channel 600	888.00	44.59	28.77	500
Channel 1013	869.70	44.65	29.17	500

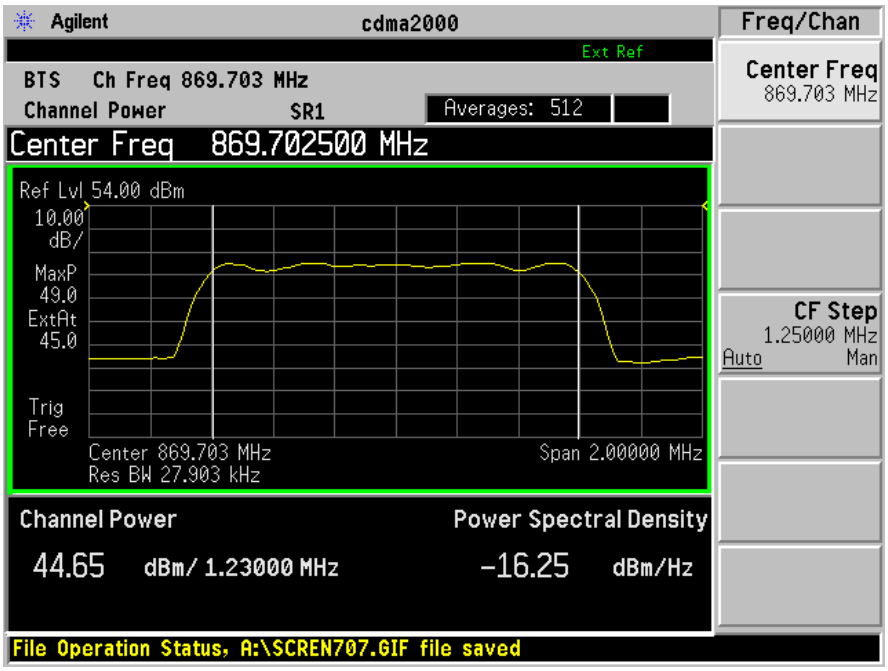
Channel 37



Channel 600



Channel 1013



§2.1047- MODULATION CHARACTERISTIC

Applicable Standard

Requirement: §2.1047.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	PSA Spectrum Analyzer	E4445A	MY44300451	2004-11-5	2005-11-4

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

Test Procedure

CDMA digital mode is used by EUT.

Test Data

Environmental Conditions

Temperature:	18 °C
Relative Humidity:	53 %
ATM Pressure:	1015 mbar

The testing was performed by Sam Lin on 2005-5-30

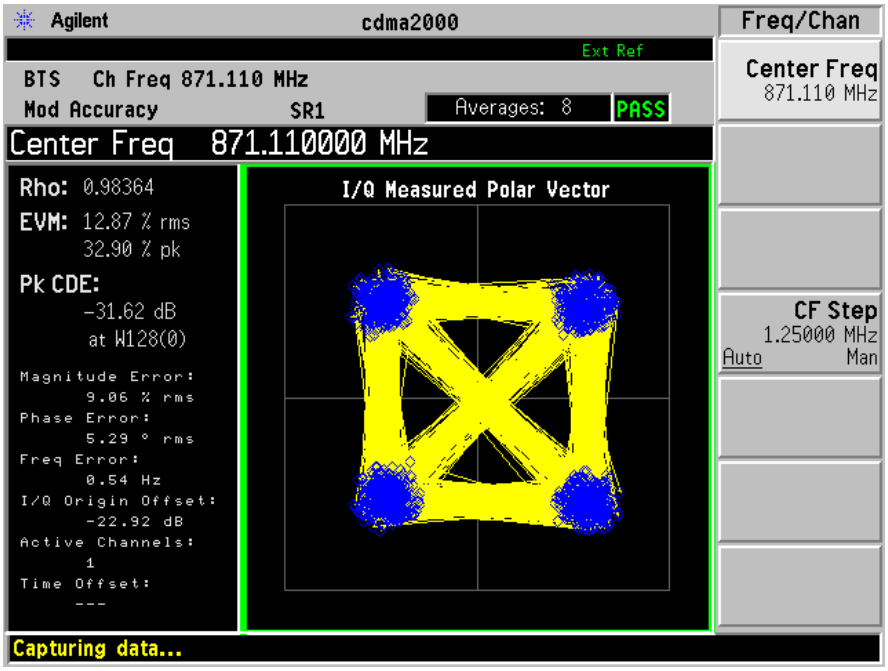
Test Result: Pass

Test Mode: Transmitting

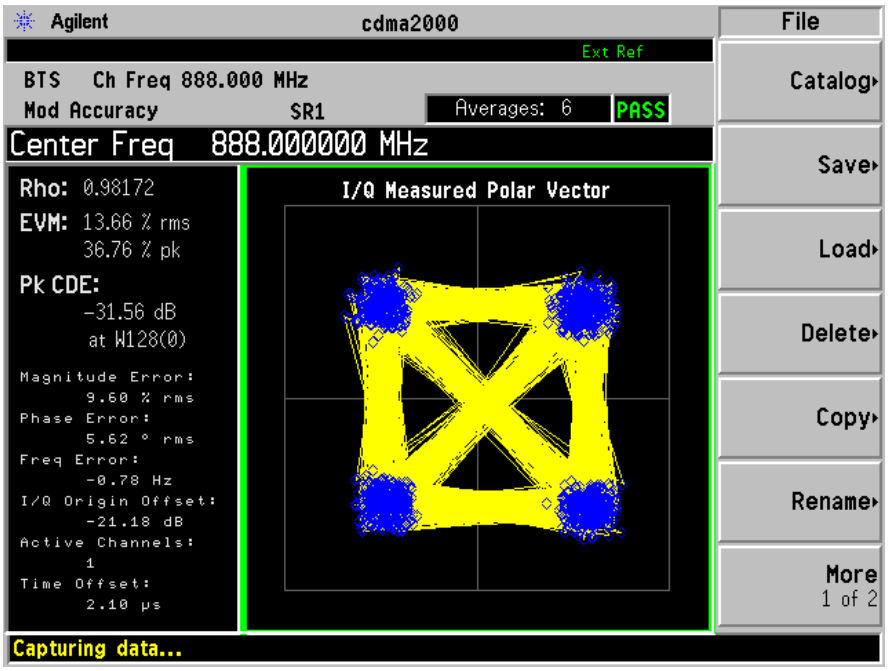
The result has been complied with the §2.1047, see the following plot:

Channel	Frequency (MHz)	Rho
Channel 37	871.11	0.98364
Channel 600	888.00	0.98172
Channel 1013	869.70	0.98186

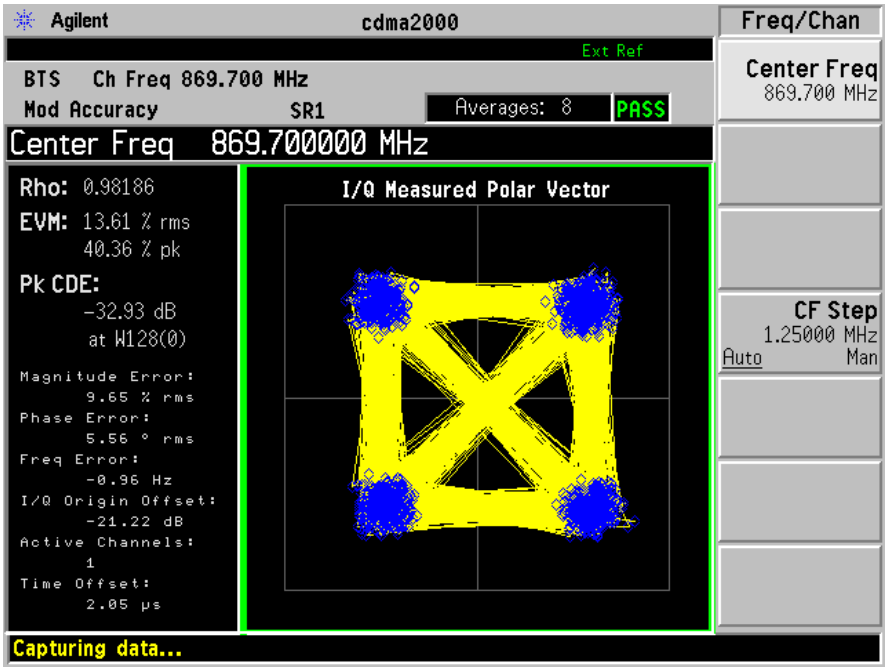
Channel 37



Channel 600



Channel 1013



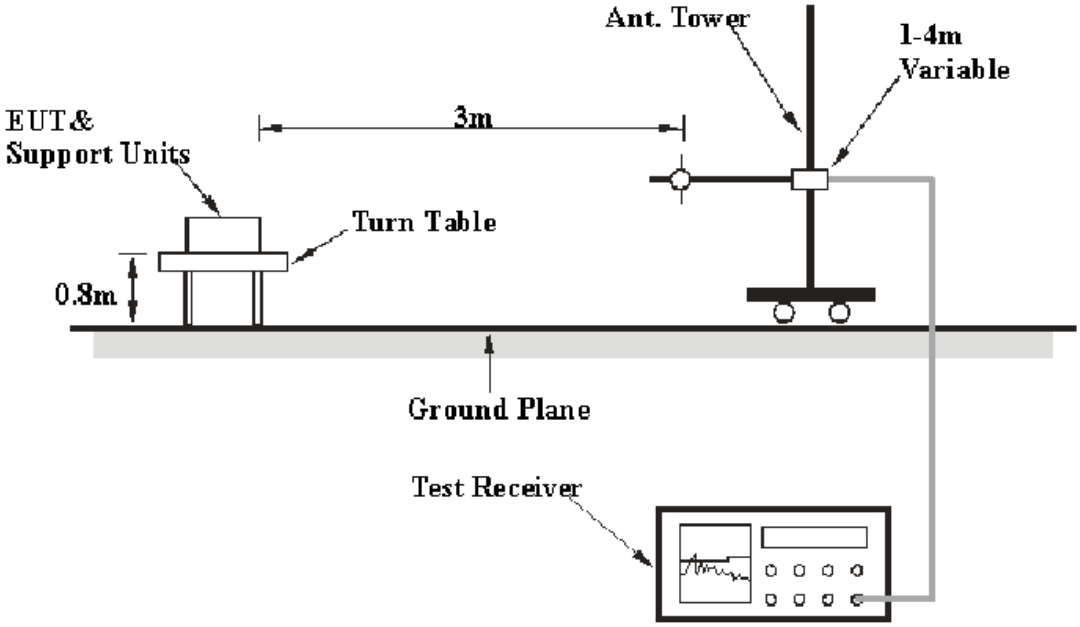
§15.109(a)- RADIATED EMISSION

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in 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 best estimate of the uncertainty of a radiation emissions measurement at Bay Area Compliance Lab Corp. is ±4.0 dB.

EUT Setup



The radiated emission tests were performed in the 3-meter Chamber B, using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC 15.109(a) limits.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 1000 MHz.

During the radiated emission test, the EMI Test Receiver was set with the following configurations:

Frequency Range	*RBW*	*Video B/W*	*IF B/W*
30 – 1000 MHz	100 kHz	100 kHz	120kHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	8447D	2994A09795	2004-9-1	2005-8-31
Rohde & Schwarz	EMI Test Receiver	ESCI	100028	2004-9-15	2005-9-15
Sunol Sciences	Bilog Antenna	JB1	A040904-1	2005-4-28	2006-4-28

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

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

All data was recorded in the PK detection mode.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. =Meter Reading + Antenna Loss+ Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the maximum limit for Class B. The equation for margin calculation is as follows:

Margin = Corr. Ampl. –Limit

Test Results Summary

According to the data in the following table, the EUT complied with the FCC Part 15.109(a), with the worst margin reading of:

-9.0 dB at **528.00 MHz** in the **Horizontal** polarization.

Test Data

Environmental Conditions

Temperature:	26 °C
Relative Humidity:	47 %
ATM Pressure:	1015 mbar

The testing was performed by Sam Lin on 2005-5-30, and the data were only for unintentional radiator and be subjected to verification

Test Mode: Transmitting

INDICATED		TABLE	ANTENNA		CORRECTION FACTOR			CORRECTED AMPLITUDE	FCC Part 15.109(a)	
Frequency	Meter Reading	Angle	Height	Polar	Antenna Loss	Cable Loss	Amplifier Gain	Corr. Ampl.	Limit	Margin
MHz	dBμV/m	Degree	Meter	H/ V	dB/m	dB	dB	dBμV/m	dBμV/m	dB
528.00	52.2	90	1.2	H	18.3	2.7	26.15	47.0	56.0	-9.00
68.80	51.8	60	1.0	V	8.5	1.5	26.32	35.5	49.5	-14.00
462.00	47.2	45	1.2	H	17.4	2.6	26.31	40.8	56.0	-15.20
235.92	50.6	35	3.8	H	11.9	1.5	25.32	38.7	56.0	-17.30
528.00	42.9	45	1.0	V	18.3	2.7	26.15	37.7	56.0	-18.30
49.16	43.7	45	1.0	H	10.8	1.4	26.36	29.6	49.5	-19.90
176.96	46.0	35	3.8	H	11.9	1.8	25.69	34.0	54.0	-20.00
33.20	30.0	289	1.0	V	24.1	1.4	26.44	29.0	49.5	-20.50
49.16	41.1	289	1.0	V	10.8	1.4	26.36	26.9	49.5	-22.60
137.64	41.1	60	1.2	H	14.2	1.5	26.03	30.8	54.0	-23.20
255.60	40.1	180	1.2	V	12.4	2.1	25.35	29.2	56.0	-26.80
127.80	36.3	45	1.2	V	14.4	1.5	25.98	26.2	54.0	-27.80

§2.1053- SPURIOUS RADIATED EMISSIONS

Applicable Standard

Requirements: CFR 47, §2.1053

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	8449B	3008A00277	2004-9-1	2005-8-31
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2004-11-10	2005-11-10
SUNOL SCIENCES	Horn Antenna	DRH-118	A052604	2005-6-2	2006-6-2
A.H. System	Horn Antenna	SAS-200/571	135	2005-4-28	2006-4-28
Giga-tronics	Signal Generator	1026	270801	2005-2-28	2006-2-28

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

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 1g (TXpwr in Watts/0.001)-the absolute level

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

Test Results Summary

Channel 37: -37.10 dB at 1742.22 MHz
Channel 600: -39.80 dB at 1776.01 MHz
Channel 1013: -37.60 dB at 1739.40 MHz

Test Data

Environmental Conditions

Temperature:	18 °C
Relative Humidity:	53 %
ATM Pressure:	1015 mbar

The testing was performed by Sam Lin on 2005-5-30

Test Mode: Transmitting

Indicated		Table	Test Antenna		Substituted			Antenna	Cable	Absolute		
Frequency MHz	Meter Reading dBuV/m	Angle Degree	Height Meter	Polar H/V	Frequency MHz	Level dBm	Polar H/V	Gain Correction	Loss dB	Level dBm	Limit dBm	Margin dB
Channel 37 f=871.11MHz												
1742.22	46.25	283	113	H	1742.22	-55.3	H	8.4	3.2	-50.1	-13	-37.10
4355.56	45.14	256	100	V	4355.56	-56.7	V	10.7	5.4	-51.4	-13	-38.40
1742.22	45.25	48	100	V	1742.22	-57.1	V	8.4	3.2	-51.9	-13	-38.90
2613.33	45.86	95	100	V	2613.33	-56.8	V	9.0	4.5	-52.3	-13	-39.30
3484.45	44.60	330	100	H	3484.45	-58.0	H	9.0	5.0	-54	-13	-41.00
2613.33	44.14	131	129	H	2613.33	-58.9	H	9.0	4.5	-54.4	-13	-41.40
5226.68	44.06	79	100	H	5226.68	-59.3	H	10.4	6.0	-54.9	-13	-41.90
4355.58	43.36	175	125	H	4355.58	-60.4	H	10.7	5.4	-55.1	-13	-42.10
3484.45	44.24	270	120	V	3484.45	-59.2	V	9.0	5.0	-55.2	-13	-42.20
5226.66	43.96	150	122	V	5226.66	-60.8	V	10.4	6.0	-56.4	-13	-43.40
Channel 600 f=888.00MHz												
1776.01	45.33	247	100	V	1776.01	-57.8	V	8.4	3.4	-52.8	-13	-39.80
4440.02	43.15	248	120	V	4440.02	-58.6	V	10.7	5.5	-53.4	-13	-40.40
1775.99	44.94	184	120	H	1775.99	-58.6	H	8.4	3.4	-53.6	-13	-40.60
2664.01	44.45	134	110	H	2664.01	-59.2	H	9.0	4.6	-54.8	-13	-41.80
4439.99	43.07	112	100	H	4439.99	-60.1	H	10.7	5.5	-54.9	-13	-41.90
2664.01	43.46	216	100	V	2664.01	-60.3	V	9.0	4.6	-55.9	-13	-42.90
5328.02	42.68	103	100	H	5328.02	-60.2	H	10.4	6.2	-56	-13	-43.00
3552.02	42.69	202	100	V	3552.02	-61.1	V	9.0	5.1	-57.2	-13	-44.20
5328.01	42.75	272	111	V	5328.01	-61.5	V	10.4	6.2	-57.3	-13	-44.30
3552.01	42.61	187	105	H	3552.01	-63.2	H	9.0	5.1	-59.3	-13	-46.30
Channel 1013 f=869.70MHz												
1739.4	46.45	300	100	H	1739.4	-55.8	H	8.4	3.2	-50.6	-13	-37.60
1739.4	45.41	180	110	V	1739.4	-56.9	V	8.4	3.2	-51.7	-13	-38.70
2609.1	44.73	97	120	V	2609.1	-57.3	V	9.0	4.5	-52.8	-13	-39.80
4348.49	43.47	175	100	V	4348.49	-59.4	V	10.7	5.4	-54.1	-13	-41.10
2609.1	44.07	241	100	H	2609.1	-59.0	H	9.0	4.5	-54.5	-13	-41.50
3478.8	43.47	220	110	H	3478.8	-58.6	H	9.0	5.0	-54.6	-13	-41.60
4348.51	43.72	93	123	H	4348.51	-60.9	H	10.7	5.4	-55.6	-13	-42.60
3478.8	43.52	176	120	V	3478.8	-60.1	V	9.0	5.0	-56.1	-13	-43.10
5218.19	42.07	321	100	V	5218.19	-61.2	V	10.4	6.0	-56.8	-13	-43.80
5218.2	42.54	280	100	H	5218.2	-62.3	H	10.4	6.0	-57.9	-13	-44.90

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

Applicable Standard

Requirements: CFR 47§ 2.1051. §22.917(a)

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

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2004-11-10	2005-11-10

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

Test Procedure

The RF output of the transceiver was connected to a spectrum analyzer 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 10th harmonic.

Test Data

Environmental Conditions

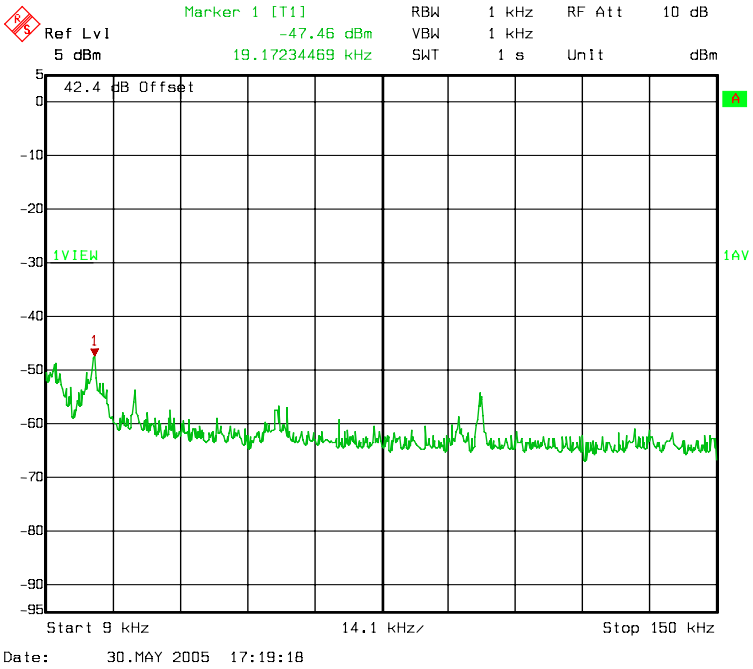
Temperature:	18 °C
Relative Humidity:	53 %
ATM Pressure:	1015 mbar

The testing was performed by Sam Lin on 2005-5-30

Test Result: Pass

Test Mode: Transmitting

Channel 37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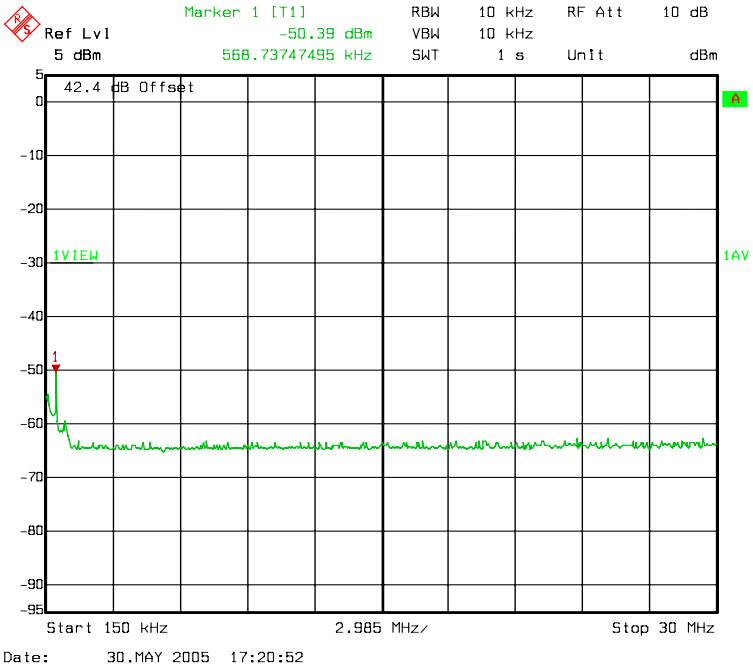
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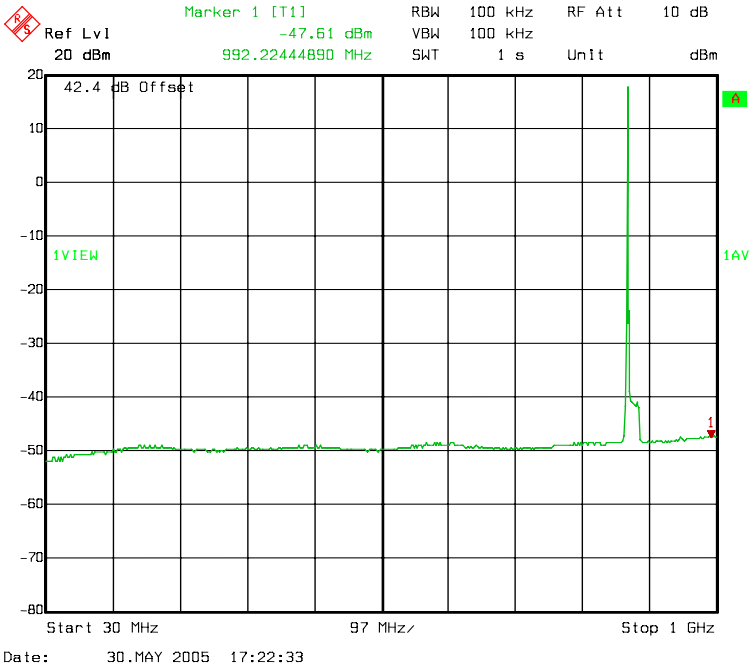
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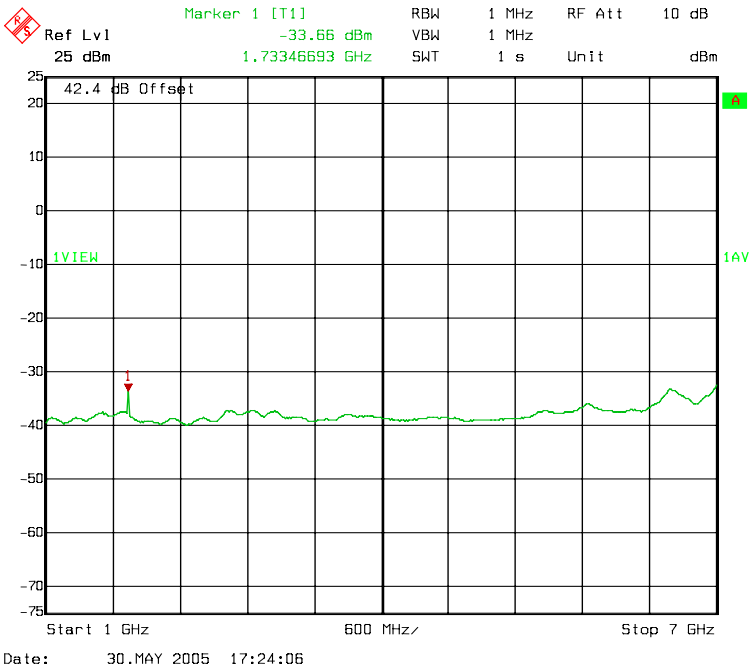
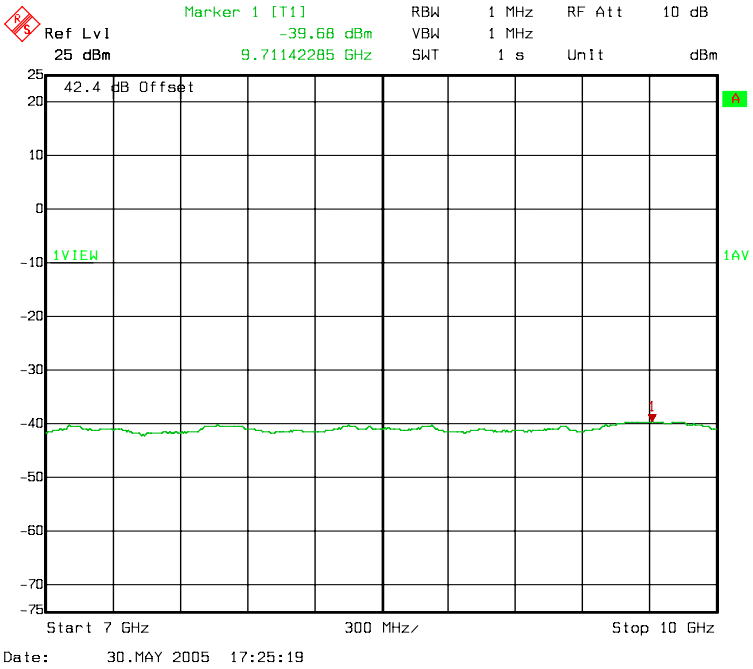
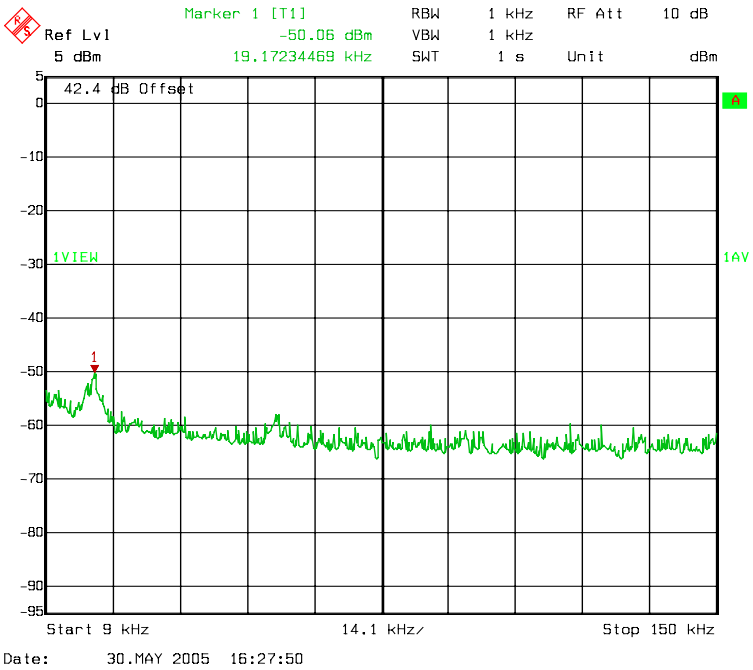
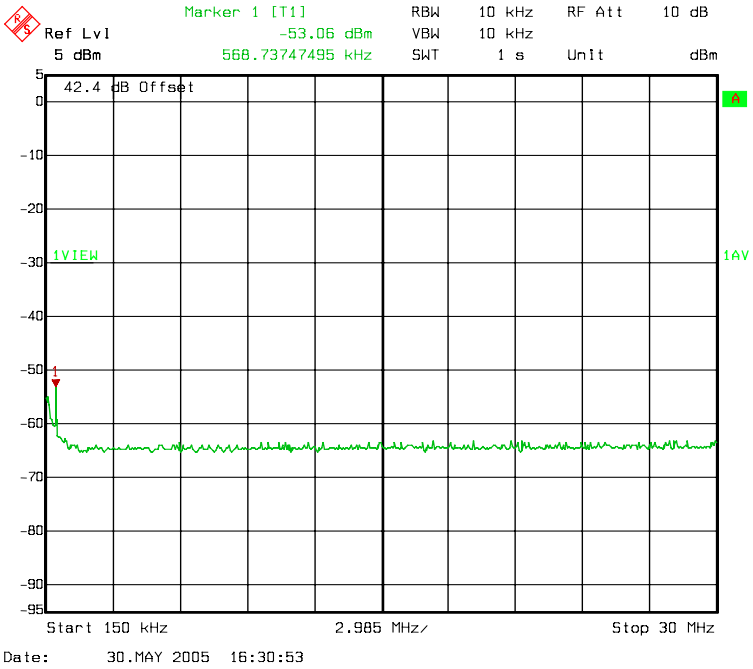
Stop 1 GHz
Date: 30.MAY 2005 17:22:33

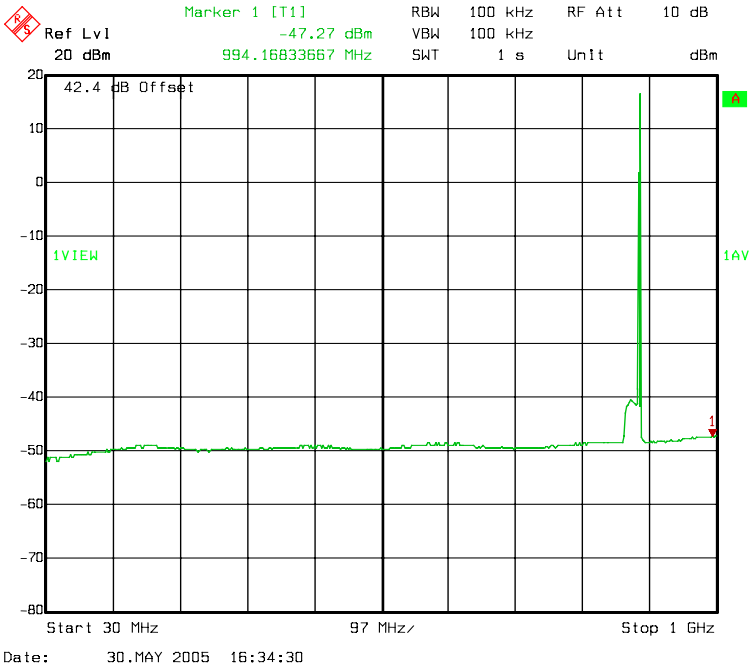

Marker 1 [T1]
Ref Lvl
25 dBm
-33.66 dBm
1.73346693 GHz
RBW 1 MHz
VBW 1 MHz
SWT 1 s
RF Att 10 dB
Unit dBm
42.4 dB Offset
1VIEW
1AV
Start 1 GHz
600 MHz/
Stop 7 GHz
Date: 30.MAY 2005 17:24:06

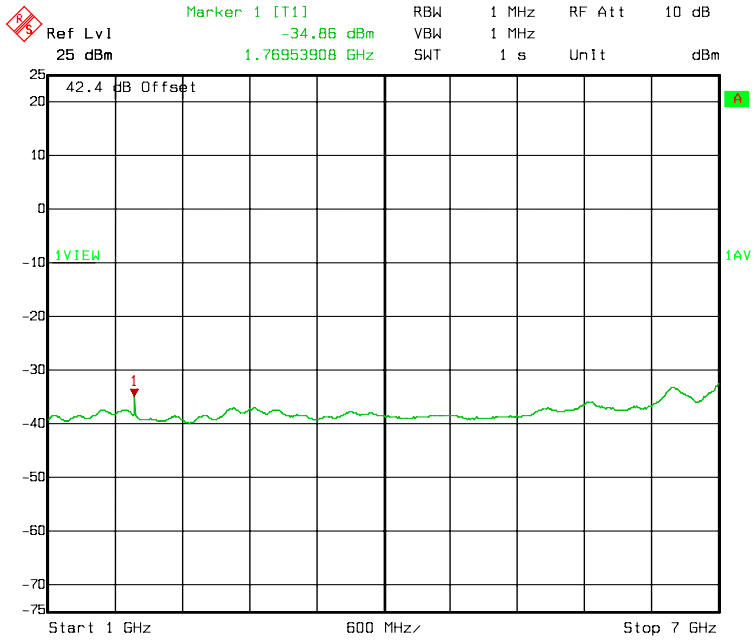

Marker 1 [T1]
Ref Lvl
25 dBm
-39.68 dBm
9.71142285 GHz
RBW 1 MHz
VBW 1 MHz
SWT 1 s
RF Att 10 dB
Unit dBm
42.4 dB Offset
1VIEW
1AV
Start 7 GHz
300 MHz/
Stop 10 GHz
Date: 30.MAY 2005 17:25:19

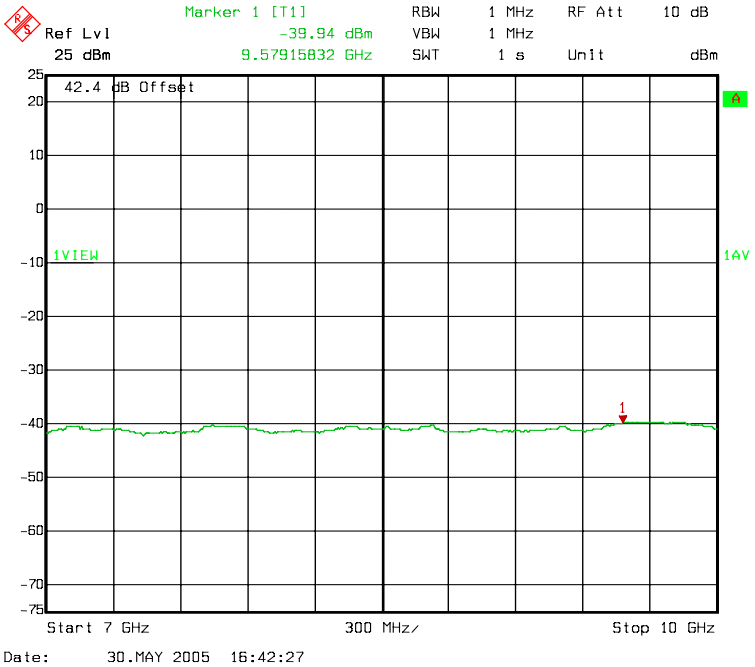
Channel 600


Marker 1 [T1]
Ref Lvl
5 dBm
-50.06 dBm
19.17234469 kHz
RBW 1 kHz
VBW 1 kHz
SWT 1 s
RF Att 10 dB
Unit dBm
42.4 dB Offset
1VIEW
1AV
Start 9 kHz
14.1 kHz/
Stop 150 kHz
Date: 30.MAY 2005 16:27:50

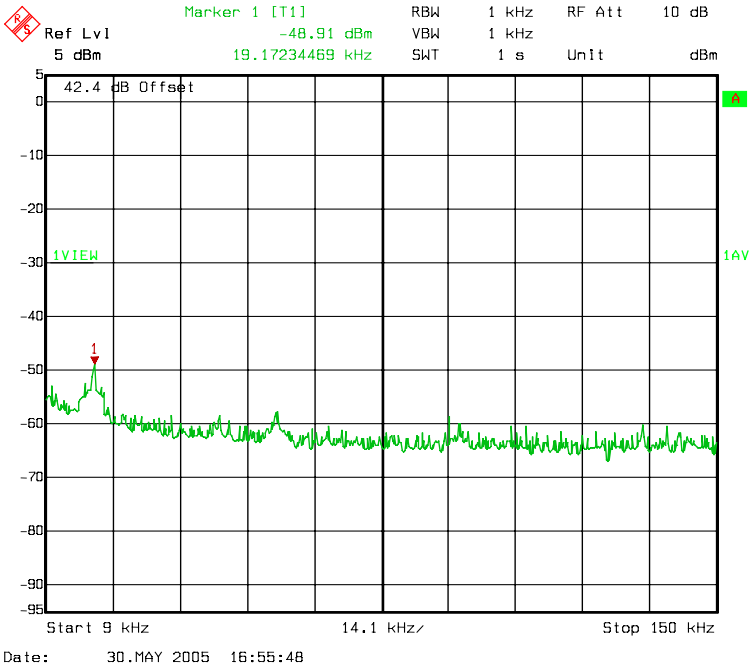

Marker 1 [T1]
Ref Lvl
-53.06 dBm
5 dBm
568.73747495 kHz
RBW 10 kHz
VBW 10 kHz
SWT 1 s
RF Att 10 dB
Unit dBm
42.4 dB Offset
1VIEW
1AV
Start 150 kHz
2.985 MHz/
Stop 30 MHz
Date: 30.MAY 2005 16:30:53

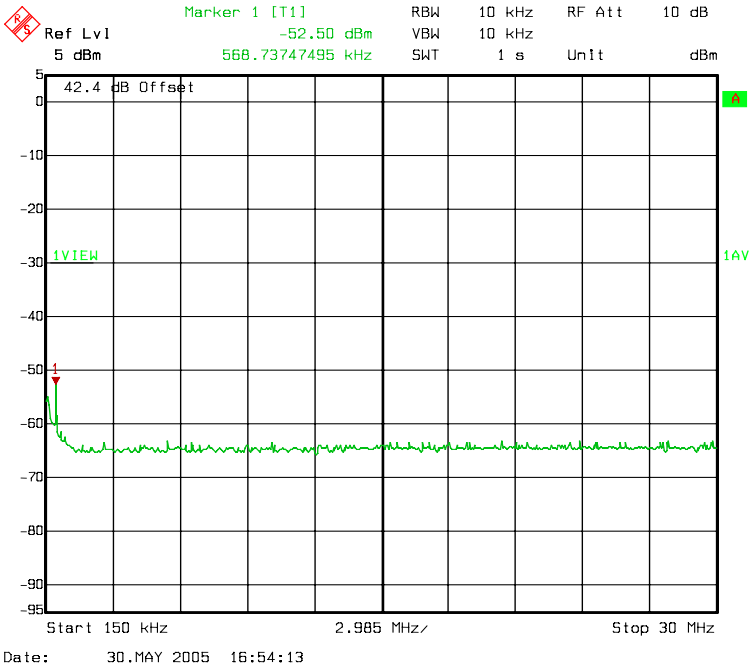

Marker 1 [T1]
Ref Lvl
-47.27 dBm
20 dBm
994.16833667 MHz
RBW 100 kHz
VBW 100 kHz
SWT 1 s
RF Att 10 dB
Unit dBm
42.4 dB Offset
1VIEW
1AV
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 30.MAY 2005 16:34:30

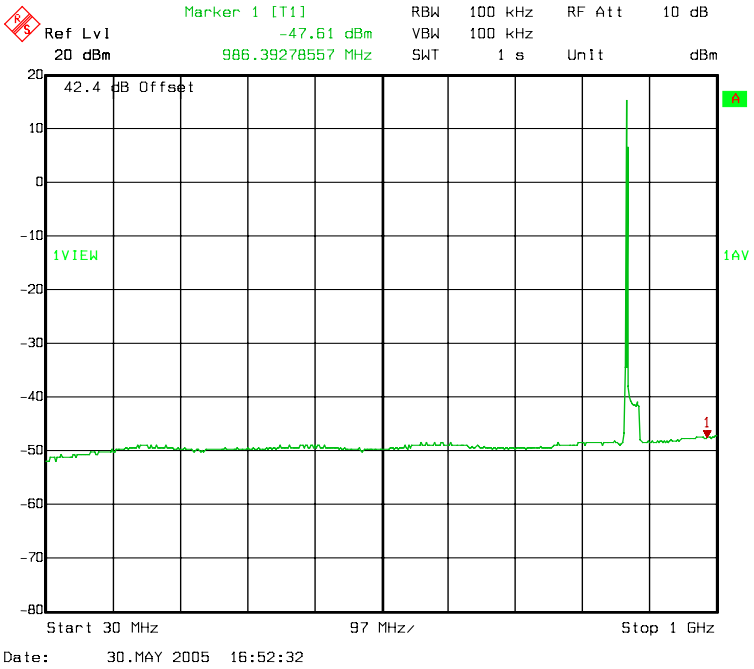

Marker 1 [T1]
Ref Lvl
25 dBm
-34.86 dBm
1.76953908 GHz
RBW 1 MHz
VBW 1 MHz
SWT 1 s
RF Att 10 dB
Unit dBm
42.4 dB Offset
1VIEW
1AV
Start 1 GHz
600 MHz/
Stop 7 GHz
Date: 30.MAY 2005 16:41:18

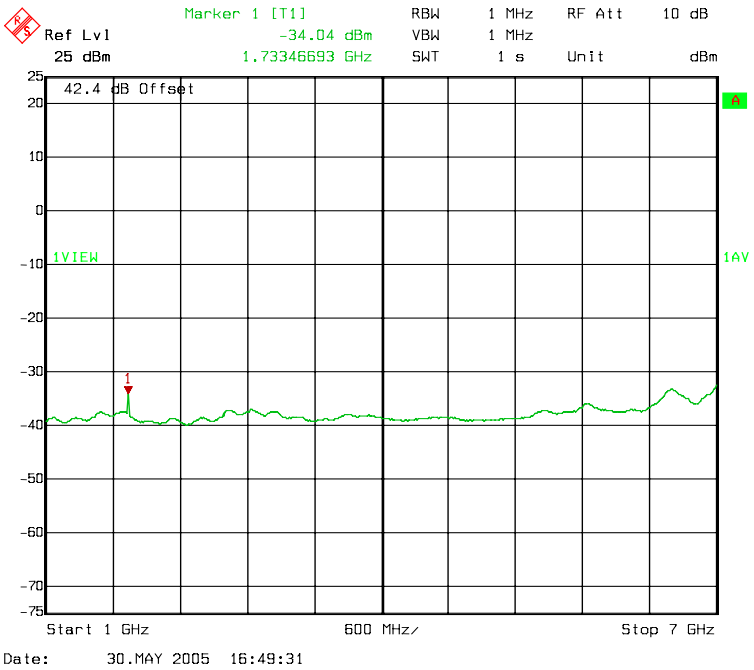

Marker 1 [T1]
Ref Lvl
25 dBm
-39.94 dBm
9.57915832 GHz
RBW 1 MHz
VBW 1 MHz
SWT 1 s
RF Att 10 dB
Unit dBm
42.4 dB Offset
1VIEW
1AV
Start 7 GHz
300 MHz/
Stop 10 GHz
Date: 30.MAY 2005 16:42:27

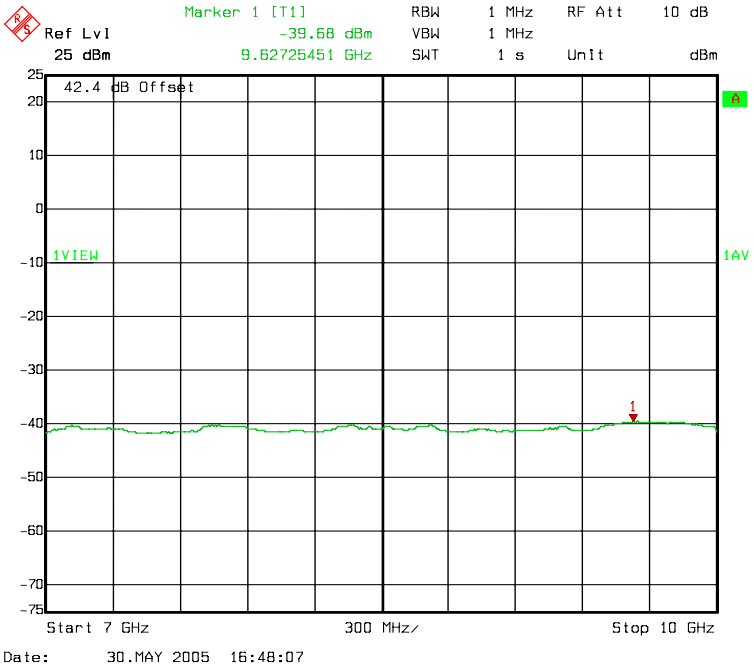
Channel 1013






Marker 1 [T1]
Ref Lvl
20 dBm
-47.61 dBm
986.39278557 MHz
RBW 100 kHz
VBW 100 kHz
SWT 1 s
RF Att 10 dB
Unit dBm
42.4 dB Offset
1VIEW
1AV
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 30.MAY 2005 16:52:32


Marker 1 [T1]
Ref Lvl
25 dBm
-34.04 dBm
1.73346693 GHz
RBW 1 MHz
VBW 1 MHz
SWT 1 s
RF Att 10 dB
Unit dBm
42.4 dB Offset
1VIEW
1AV
Start 1 GHz
600 MHz/
Stop 7 GHz
Date: 30.MAY 2005 16:49:31


Marker 1 [T1]
Ref Lvl
25 dBm
-39.68 dBm
9.62725451 GHz
RBW 1 MHz
VBW 1 MHz
SWT 1 s
RF Att 10 dB
Unit dBm
42.4 dB Offset
1VIEW
1AV
Start 7 GHz
300 MHz/
Stop 10 GHz
Date: 30.MAY 2005 16:48:07

§2.1049, §22.917, §22.905 -OCCUPIED BANDWIDTH

Applicable Standard

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

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	PSA Spectrum Analyzer	E4445A	MY44300451	2004-11-5	2005-11-4

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

Test Procedure

The RF out 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 30 kHz and the 26 dB and 99%Power bandwidth was recorded.

Test Data

Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	50%
ATM Pressure:	1032mbar

The testing was performed by Sam Lin on 2005-5-30

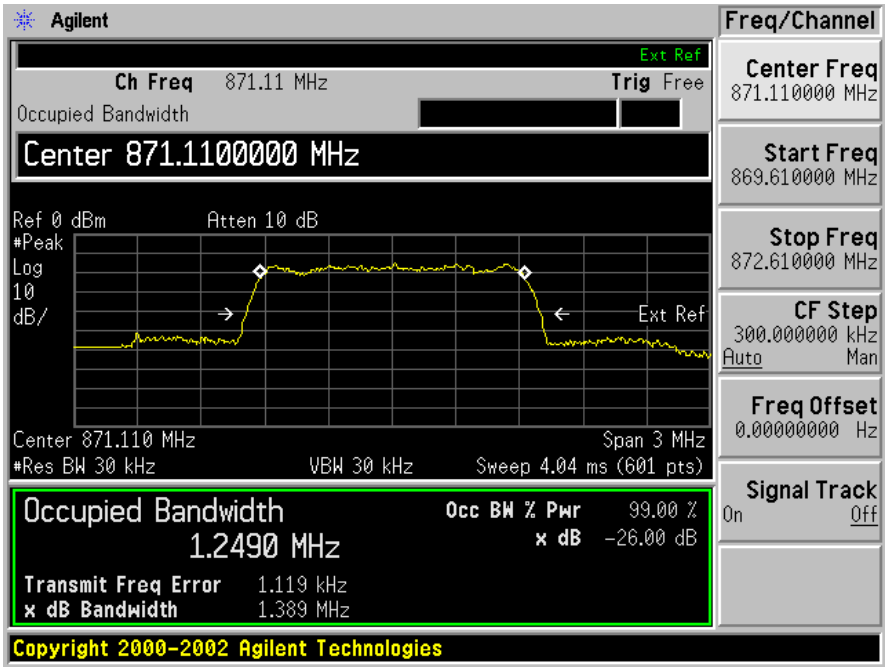
Test Result: Pass

Test Mode: Transmitting

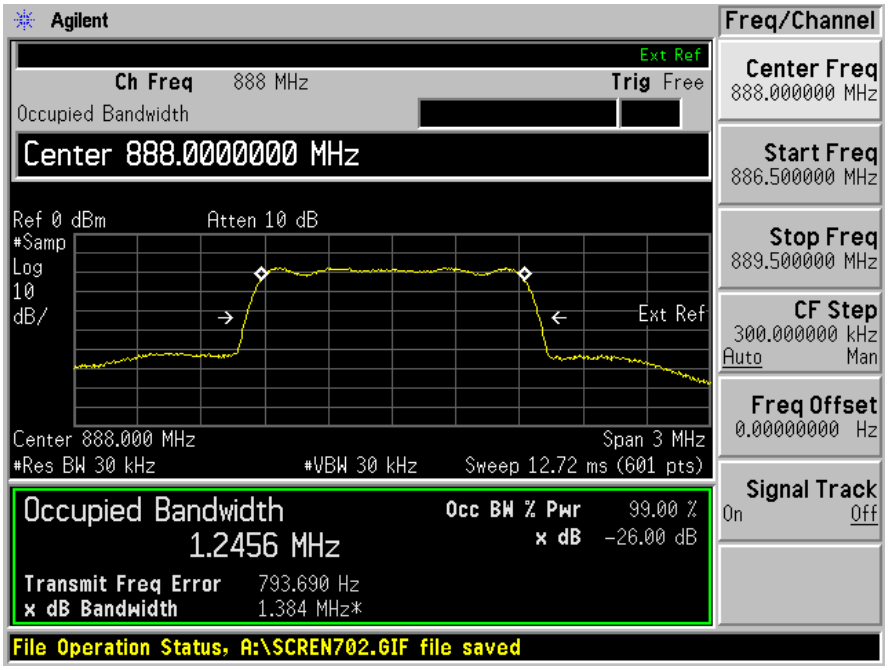
The result has been complied with the §2.1049, §22.917, and §22.905, see the following plot:

Channel	Channel frequency (MHz)	99% Power Bandwidth (MHz)
Channel 37	871.11	1.2490
Channel 600	800.00	1.2456
Channel 1013	869.70	1.2467

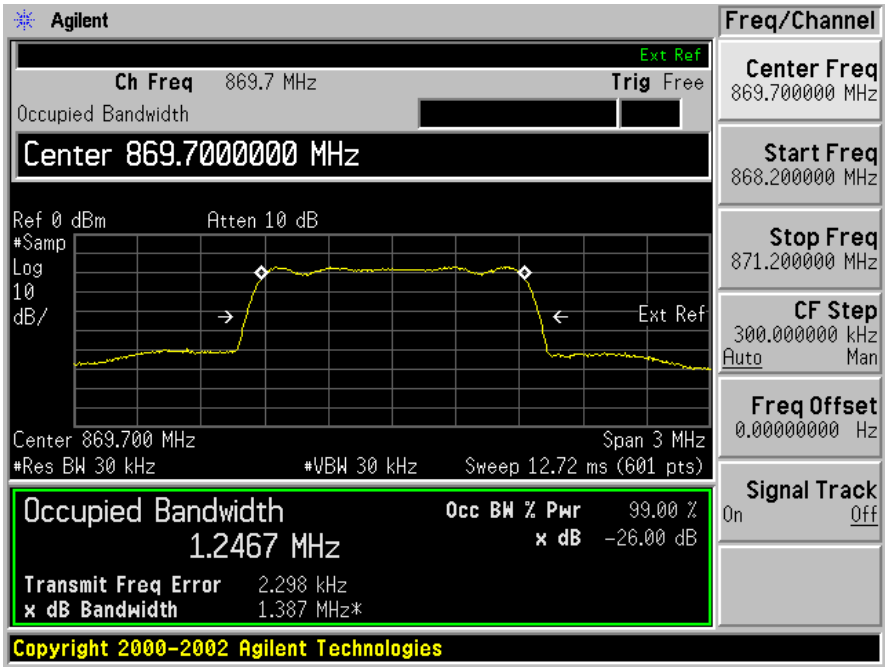
Channel 37



Channel 600



Channel 1013



§22.917- BAND EDGES

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.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2004-11-10	2005-11-10

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

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 30 kHz.

Test Data

Environmental Conditions

Temperature:	24 °C
Relative Humidity:	59%
ATM Pressure:	1178mbar

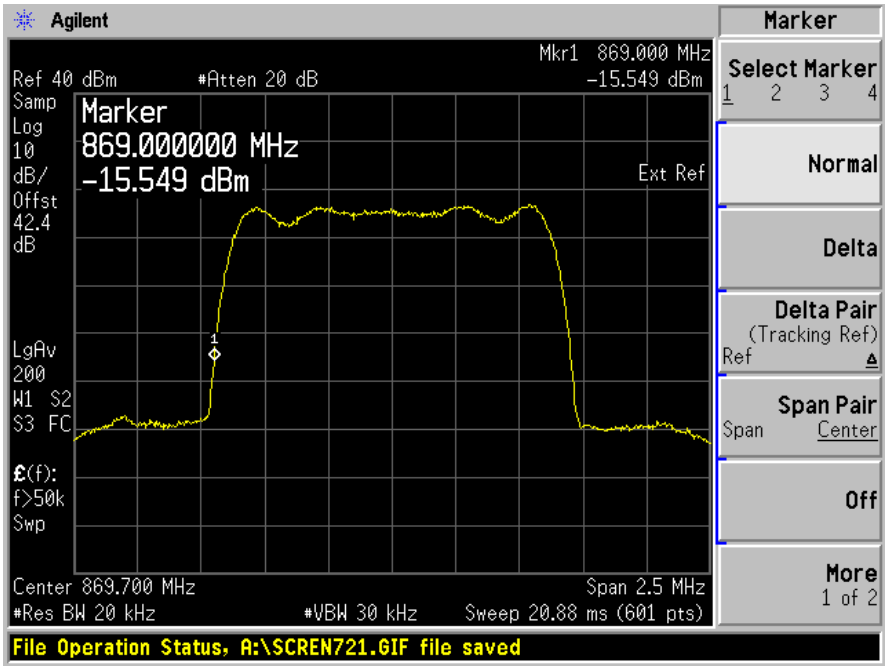
The testing was performed by Sam Lin on 2005-5-30

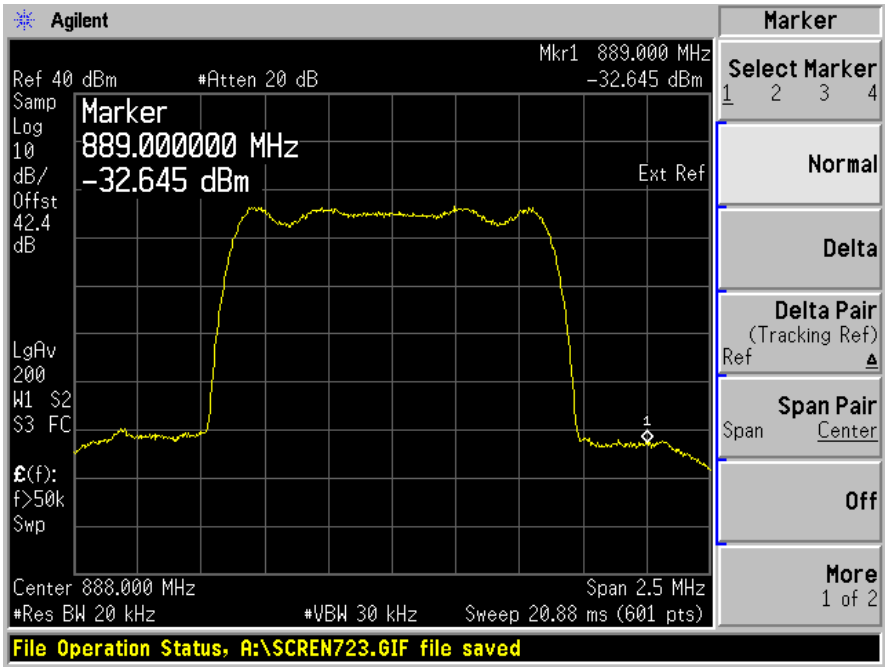
Test Result: Pass

Test Mode: Transmitting

The result has been complied with the§22.917, see the following plot:

Frequency MHz	Emission dBm	Limit dBm
869.00	-15.549	-13.00
889.00	-32.645	-13.00


Agilent
Marker
Mkr1 869.000 MHz
Ref 40 dBm
#Atten 20 dB
-15.549 dBm
Samp
Log
10
dB/
Offst
42.4
dB
Marker
869.000000 MHz
-15.549 dBm
Ext Ref
LgAv
200
W1 S2
S3 FC
£(f):
f>50k
Swp
Center 869.700 MHz
Span 2.5 MHz
#Res BW 20 kHz
#VBW 30 kHz
Sweep 20.88 ms (601 pts)
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
File Operation Status, A:\SCREN721.GIF file saved


Agilent
Marker
Mkr1 889.000 MHz
Ref 40 dBm
#Atten 20 dB
-32.645 dBm
Samp
Log
10
dB/
Offst
42.4
dB
Marker
889.000000 MHz
-32.645 dBm
Ext Ref
LgAv
200
W1 S2
S3 FC
£(f):
f>50k
Swp
Center 888.000 MHz
Span 2.5 MHz
#Res BW 20 kHz
#VBW 30 kHz
Sweep 20.88 ms (601 pts)
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
File Operation Status, A:\SCREN723.GIF file saved

§2.1055 (a), §2.1055 (d), §22.355 - 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

Frequency range (MHz)	Base, fixed (ppm)	Mobile [SU][le][/ SU]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

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	PSA Spectrum Analyzer	E4445A	MY44300451	2004-11-5	2005-11-4
GZ-ESPEC	Temperature Chamber	GRW-120	00020268	2005-3-8	2006-3-8

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

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 f Spectrum Analyzer 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 Spectrum Analyzer.

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

Test Data

Environmental Conditions

Temperature:	20° C
Relative Humidity:	49%
ATM Pressure:	1011 mbar

The testing was performed by Sam Lin on 2005-5-30.

Test Result: Pass

Test Mode: Transmitting

Frequency Stability Versus Temperature

Frequency Stability Versus Temperature				
Temperature ℃	Power Supplied Vac	Frequency Measure Error Hz	Error ppm	Limit 1.5ppm
Channel 37 f=871.11MHz				
-10	-48	1.06	0.00122	1.5
0	-48	0.53	0.00061	1.5
10	-48	1.90	0.00218	1.5
20	-48	0.54	0.00062	1.5
30	-48	0.04	0.00005	1.5
40	-48	0.90	0.00103	1.5
50	-48	4.35	0.00499	1.5
Channel 600 f=888.00MHz				
-10	-48	0.69	0.000777	1.5
0	-48	0.61	0.000686	1.5
10	-48	0.74	0.000833	1.5
20	-48	0.72	0.000810	1.5
30	-48	0.91	0.001024	1.5
40	-48	0.87	0.000979	1.5
50	-48	0.89	0.001002	1.5
Channel 1013 f=869.7MHz				
-10	-48	0.67	0.000770	1.5
0	-48	0.87	0.001000	1.5
10	-48	0.43	0.000494	1.5
20	-48	0.78	0.000896	1.5
30	-48	0.72	0.000827	1.5
40	-48	0.74	0.000850	1.5
50	-48	0.75	0.000862	1.5

Frequency Stability Versus Voltage

Frequency Stability Versus Voltage				
Voltage Vac	Temperature ℃	Frequency Measure Error Hz	Error ppm	Limit 1.5ppm
Channel 37 f=871.11MHz				
-40	20	0.31	0.000355	1.5
-44	20	0.14	0.000160	1.5
-48	20	0.99	0.001136	1.5
-52	20	1.09	0.001251	1.5
-57	20	0.42	0.000482	1.5
Channel 600 f=888.0MHz				
-40	20	0.57	0.000641	1.5
-44	20	1.02	0.001148	1.5
-48	20	0.69	0.000777	1.5
-52	20	0.39	0.000439	1.5
-57	20	0.58	0.000653	1.5
Channel 1013 f=869.7MHz				
-40	20	1.06	0.001218	1.5
-44	20	0.53	0.000609	1.5
-48	20	0.99	0.001138	1.5
-52	20	0.71	0.000816	1.5
-57	20	1.58	0.001816	1.5