FCC PART 24 TYPE APPROVAL

EMI MEASUREMENT AND TEST REPORT

For

ZTE Corporation

ZTE Plaza, Hi-tech Park, Nanshan District, Shenzhen, Guangdong, China

FCC ID: Q78-BTSBI219

June 16, 2005

This Report Concerns: ☒ Original Report	**Equipment Type:** cdma2000 Base Transceiver Station

Test Engineer:	Sam Lin
Report No.:	RSZ05052702
Test Date:	May 19-27, 2005
Reviewed By:	Chris Zeng
Prepared By:	Bay Area Compliance Lab Corp. (ShenZhen) 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone, ShenZhen, Guangdong 518038, P.R.China Tel: +86-755-33320018 Fax: +86-755-33320008

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GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The *ZTE Corporation*'s product, model number: ZXC10 BTSB I219 or the "EUT" as referred to in this report is a cdma2000 Base Transceiver Station. 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:051018705060060, provided by the manufacturer.*

Objective

This Type approval report is prepared on behalf of ZTE Corporation in accordance with Part 2, Subpart J, and Part 24 Subpart E 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 24 Subpart E - PCS

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 Test site used by Bay Area Compliance Lab 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 518038, P.R.China.

Test site at Bay Area Compliance Lab 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 04, 2004. 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 Lab Corp. (ShenZhen) is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200707-0). The current scope of accreditations can be found at http://ts.nist.gov/ts/htdocs/210/214/scopes/2007070.htm

External I/O Cable

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

SYSTEM TEST CONFIGURATION

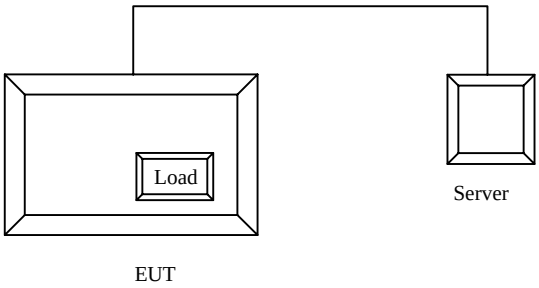
Description of Test Configuration

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

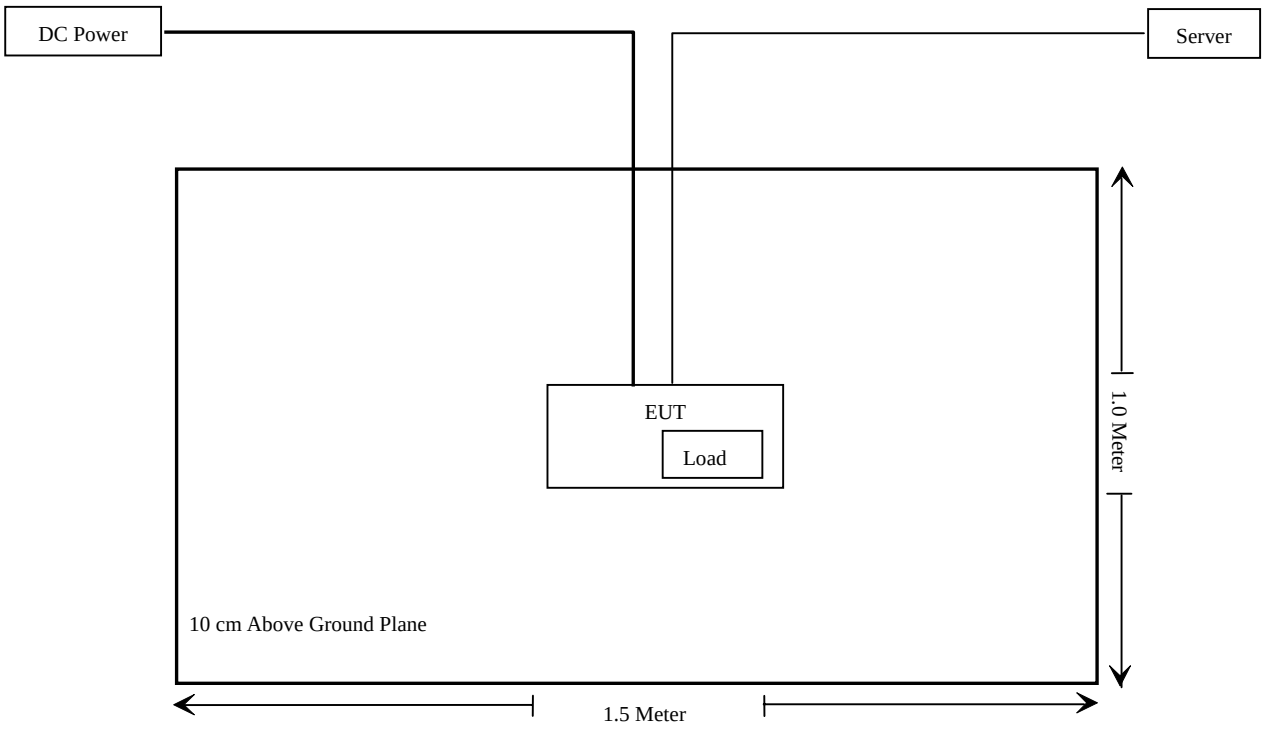
Equipment Modifications

Bay Area Compliance Lab Corp. (ShenZhen) 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, §24.232	Conducted Output 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, §24.238(a)	Spurious Emissions AT Antenna Terminals	Compliant
§2.1049, §24.238	Occupied Bandwidth	Compliant
§24.238	Band Edge	Compliant
§ 2.1055 (a) § 2.1055 (d) § 24.235	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: 43.15 (dBm)
Maximum peak output power at antenna input terminal: 20.65 (W)
Prediction distance: 150 (cm)
Predication frequency: 1988.75 (MHz)
Antenna Gain (typical): 17 (dBi)
Power density at predication frequency at 150 cm: 3.66 (mW/cm^2)
MPE limit for uncontrolled exposure at prediction frequency: 5 (mW/cm^2)

Test Result: Pass

§2.1046, §24.232- CONDUCTED OUTPUT POWER

Applicable Standard

According to FCC §2.1046 and §24.232(a), in no case may the peak output power of a base station transmitter exceed 100 watt.

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. (ShenZhen) 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.

Test Data

Environmental Conditions

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

The testing was performed by Sam Lin on 2005-5-27

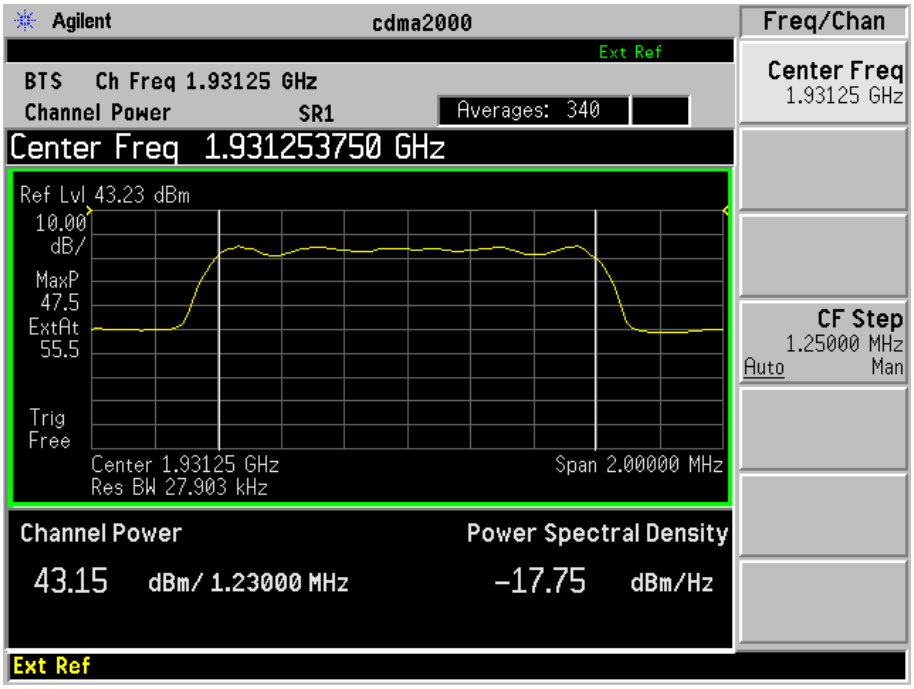
Test Result: Pass

Test Mode: Transmitting

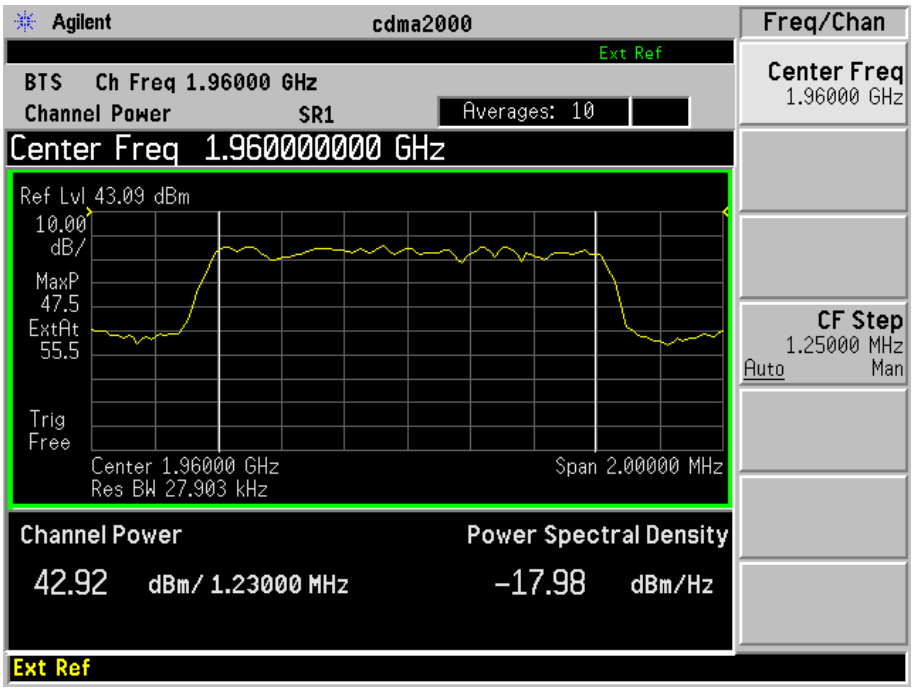
The result has been complied with the §2.1046, §24.232, see the following plot:

Channel	Frequency (MHz)	Output Power in dBm	Output Power in W	Limit in W
Channel 25	1931.25	43.15	20.65	100
Channel 600	1960.00	42.92	19.59	100
Channel 1175	1988.75	42.89	19.45	100

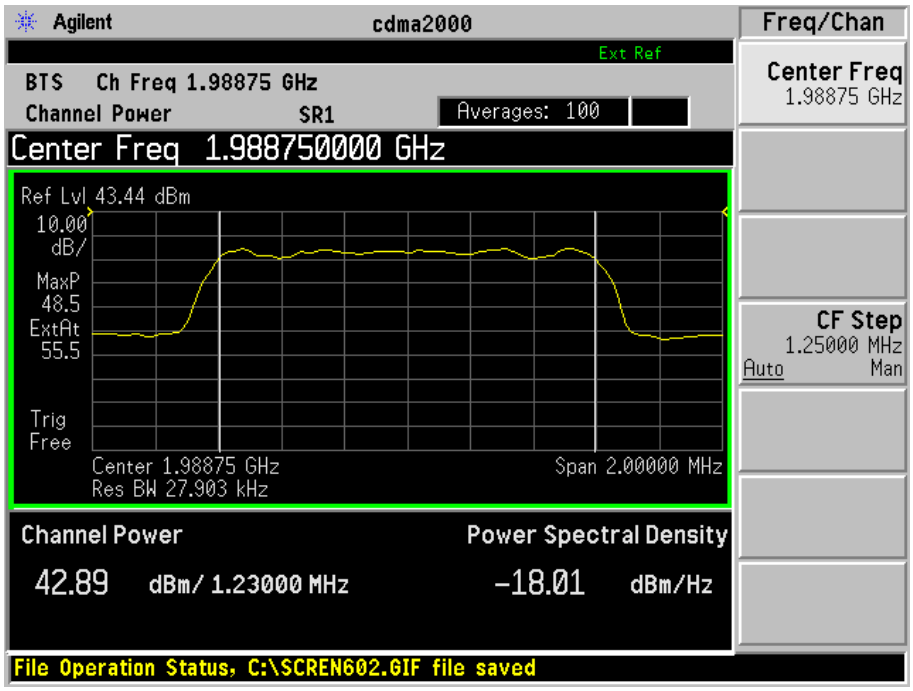
Channel 25



Channel 600



Channel 1175



§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. (ShenZhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the 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 2005-5-19

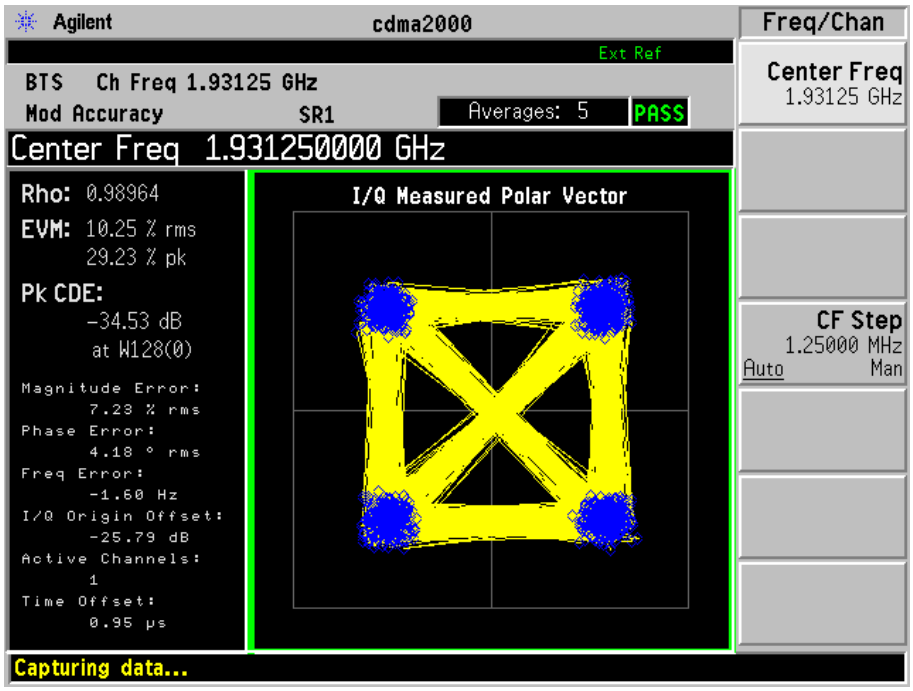
Test Result: Pass

Test Mode: Transmitting

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

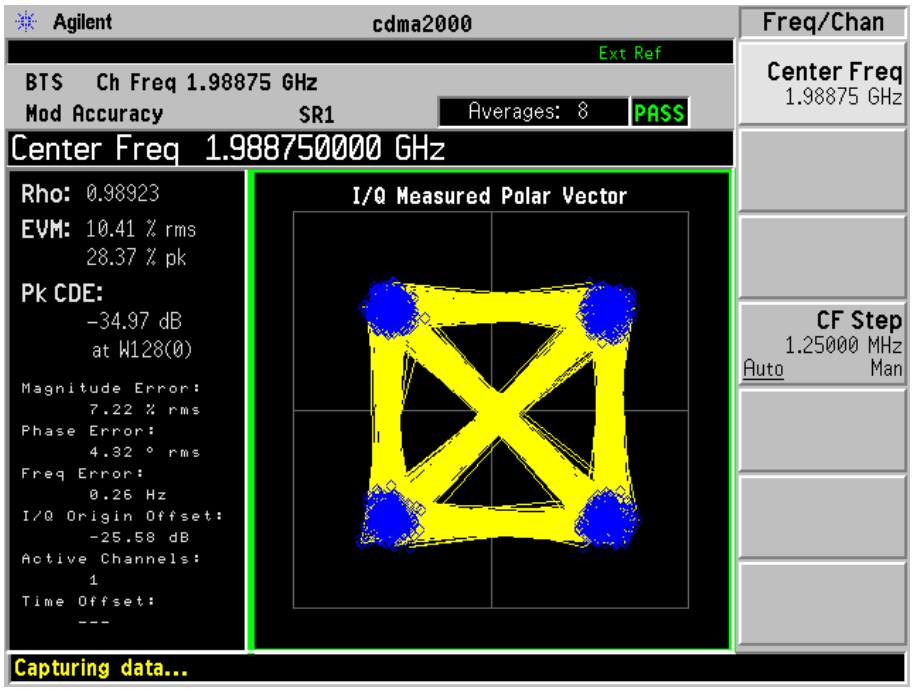
Channel	Frequency (MHz)	Rho
Channel 25	1931.25	0.98964
Channel 600	1960.00	0.98975
Channel 1175	1988.75	0.98923

Channel 25



Channel 600

Channel 1175



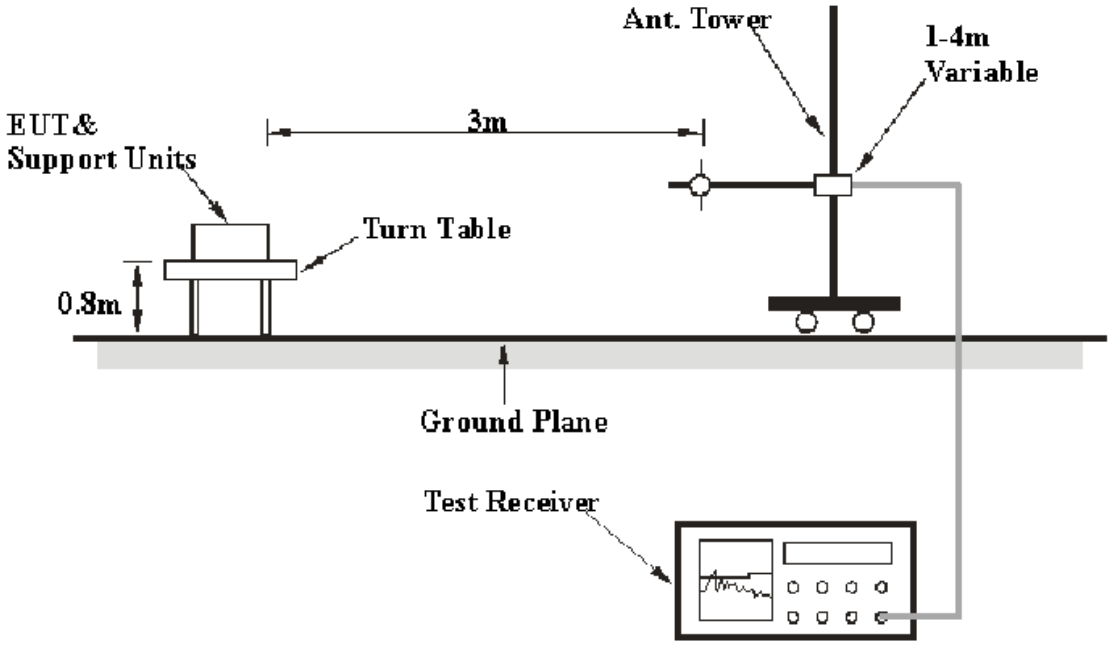
§15.109(a)- RADIATED EMISSION

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. (ShenZhen) 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. (ShenZhen) 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:

-10.2 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 2005-5-27, and the data were only for unintentional radiator and be subjected to verification

Test Mode: Transmitting

INDICATED		TABLE	ANTENNA		CORRECTION FACTOR			CORRECTEI AMPLITUDI	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	51.0	60	1.2	H	18.3	2.7	26.15	45.8	56.0	-10.2
235.60	51.5	45	1.2	H	11.9	1.5	25.32	39.6	56.0	-16.4
462.04	45.3	0	1.0	H	17.4	2.6	26.31	38.9	56.0	-17.1
294.92	47.0	180	1.2	H	13.8	2.5	25.25	38.1	56.0	-17.9
67.84	47.1	60	1.0	V	8.5	1.5	26.32	30.7	49.5	-18.8
255.60	48.0	90	1.2	H	12.4	2.1	25.35	37.2	56.0	-18.8
49.16	43.1	35	3.8	H	10.8	1.4	26.36	28.9	49.5	-20.6
528.00	40.2	45	1.0	V	18.3	2.7	26.15	35.0	56.0	-21.0
137.64	41.2	35	3.8	H	14.2	1.5	26.03	30.9	54.0	-23.1
127.80	40.7	60	1.0	V	14.4	1.5	25.98	30.6	54.0	-23.4
49.16	39.6	289	1.0	V	10.8	1.4	26.36	25.4	49.5	-24.1
294.92	38.8	180	1.2	V	13.8	2.5	25.25	29.9	56.0	-26.1
255.60	39.7	45	1.2	V	12.4	2.1	25.35	28.9	56.0	-27.1

§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. (ShenZhen) 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 25: -32.90 dB at 11587.50 MHz
Channel 600: -29.90 dB at 11759.97 MHz
Channel 1175: -33.0 dB at 11932.52 MHz

Test Data

Environmental Conditions

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

The testing was performed by Sam Lin on 2005-5-27

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 25 f=1931.25MHz												
11587.50	42.6	336	1.0	V	11587.5	-46.9	V	11.3	10.3	-45.9	-13	-32.90
11587.50	42.41	251	1.2	H	11587.5	-48.7	H	11.3	10.3	-47.7	-13	-34.70
9656.25	44.00	103	1.0	H	9656.25	-53.6	H	11.7	8.9	-50.8	-13	-37.80
3862.50	43.75	146	1.2	H	3862.5	-56.4	H	9.0	5.3	-52.7	-13	-39.70
9656.25	43.53	76	1.0	V	9656.25	-55.7	V	11.7	8.9	-52.9	-13	-39.90
5793.75	44.05	301	1.0	H	5793.75	-58.6	H	10.4	6.2	-54.4	-13	-41.40
5793.75	43.34	180	1.0	V	5793.75	-60.1	V	10.4	6.2	-55.9	-13	-42.90
3862.50	44.77	193	1.0	V	3862.5	-60.3	V	9.0	5.3	-56.6	-13	-43.60
7725.00	43.31	156	1.0	V	7725.0	-60.5	V	10.3	7.5	-57.7	-13	-44.70
7725.01	43.02	237	1.2	H	7725.01	-62.1	H	10.3	7.5	-59.3	-13	-46.30
Channel 600 f=1960.00MHz												
11759.97	43.24	214	1.2	V	11759.97	-43.7	V	11.3	10.5	-42.9	-13	-29.90
11760.05	43.01	198	1.0	H	11760.05	-45.1	H	11.3	10.5	-44.3	-13	-31.30
7840.02	43.04	248	1.0	H	7840.02	-51.0	H	10.3	7.8	-48.5	-13	-35.50
9800.01	44.25	125	1.2	H	9800.01	-52.3	H	11.7	9.1	-49.7	-13	-36.70
3920.02	44.88	352	1.2	H	3920.02	-54.6	H	8.8	5.6	-51.4	-13	-38.40
5880.08	43.76	108	1.0	H	5880.08	-55.8	H	10.4	6.4	-51.8	-13	-38.80
5880.01	43.20	223	1.0	V	5880.01	-57.2	V	10.4	6.4	-53.2	-13	-40.20
7840.11	43.29	97	1.2	V	7840.11	-56.1	V	10.3	7.8	-53.6	-13	-40.60
9800.09	43.58	300	1.0	V	9800.09	-56.9	V	11.7	9.1	-54.3	-13	-41.30
3920.03	44.39	115	1.0	V	3920.03	-60.3	V	8.8	5.6	-57.1	-13	-44.10
Channel 1175 f=1988.75MHz												
11932.52	43.17	132	1.0	V	11932.52	-46.2	V	10.9	10.7	-46.0	-13	-33.00
11932.51	42.85	208	1.0	H	11932.51	-48.9	H	10.9	10.7	-48.7	-13	-35.70
9943.75	43.70	329	1.0	V	9943.75	-53.3	V	11.6	9.2	-50.9	-13	-37.90
7955.02	44.46	96	1.0	H	7955.02	-55.7	H	11.0	8.0	-52.7	-13	-39.70
9943.79	43.22	146	1.0	H	9943.79	-56.9	H	11.6	9.2	-54.5	-13	-41.50
7955.06	42.79	144	1.2	V	7955.06	-59.4	V	11.0	8.0	-56.4	-13	-43.40
5966.25	43.15	263	1.2	V	5966.25	-60.5	V	10.5	6.6	-56.6	-13	-43.60
3977.52	43.53	125	1.0	H	3977.52	-60.1	H	8.8	5.8	-57.1	-13	-44.10
5966.27	43.22	108	1.0	H	5966.27	-61.2	H	10.5	6.6	-57.3	-13	-44.30
3977.48	44.13	153	1.0	V	3977.48	-60.8	V	8.8	5.8	-57.8	-13	-44.80

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

Applicable Standard

Requirements: CFR 47§ 2.1051 & §24.238(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. (ShenZhen) 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

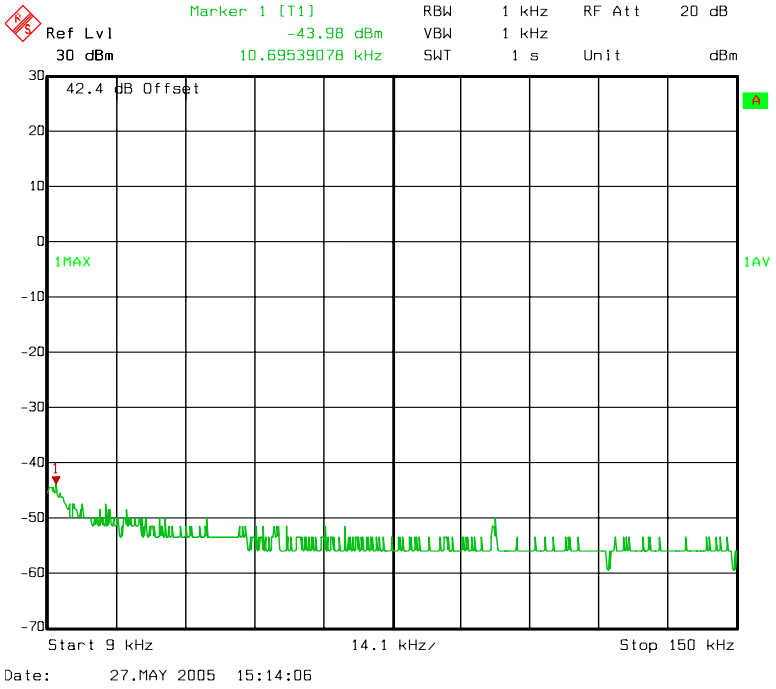
Temperature:	18 °C
Relative Humidity:	53 %
ATM Pressure:	1015 mbar

The testing was performed by Sam Lin on 2005-5-27

Test Result: Pass

Test Mode: Transmitting

Channel 25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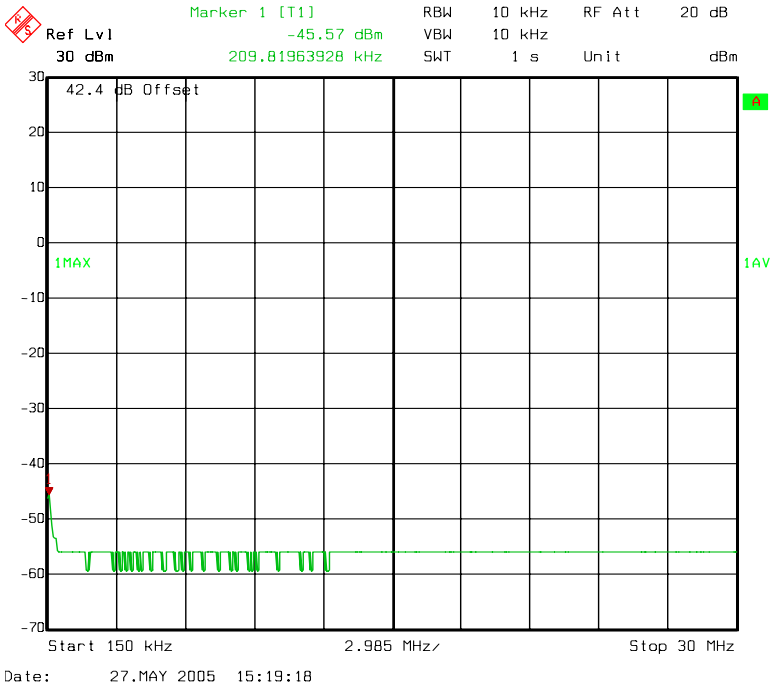
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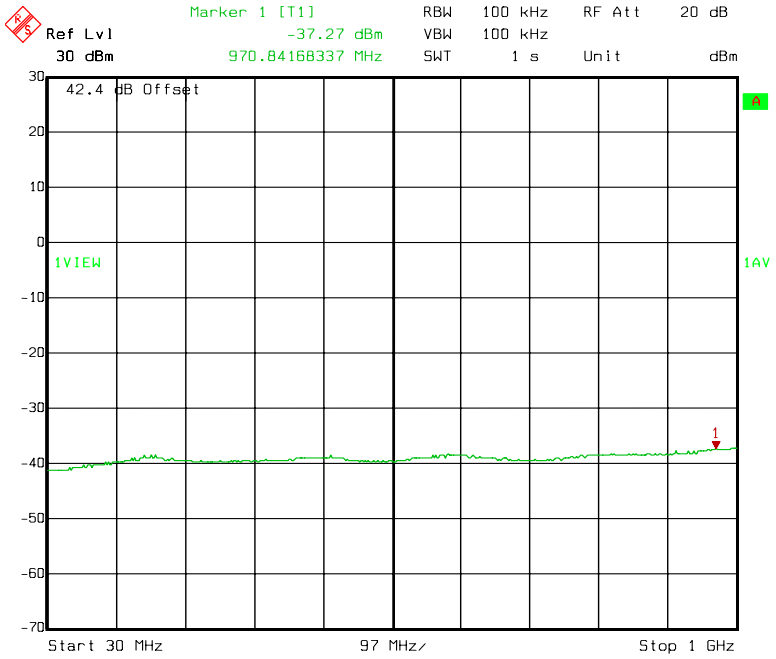
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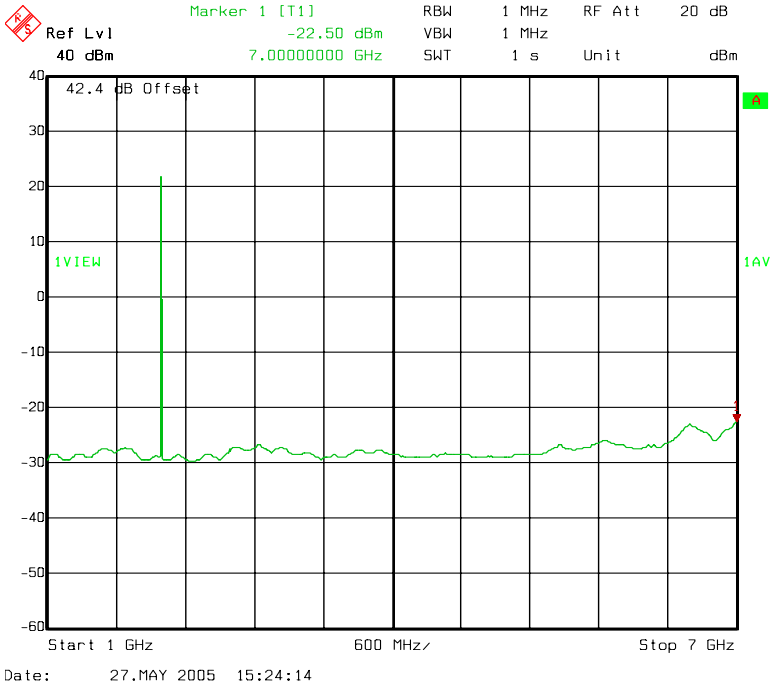
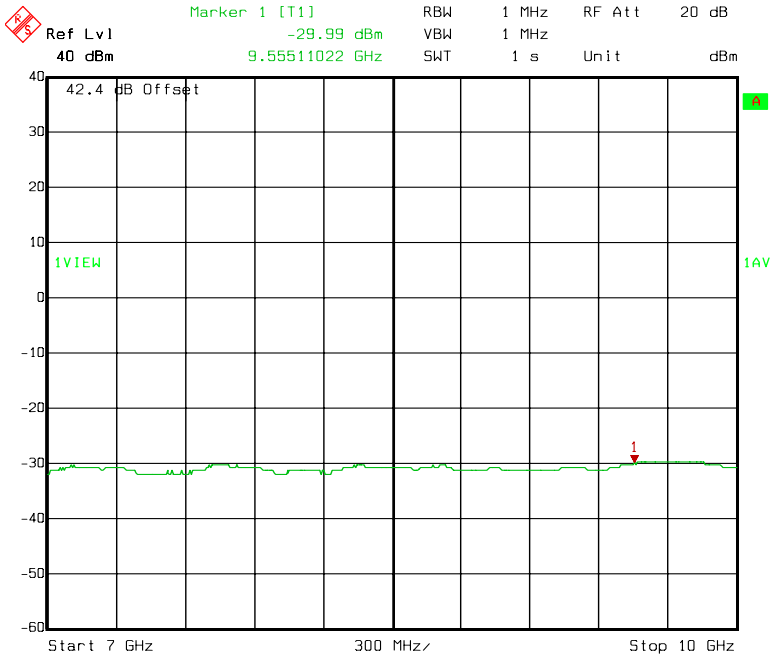
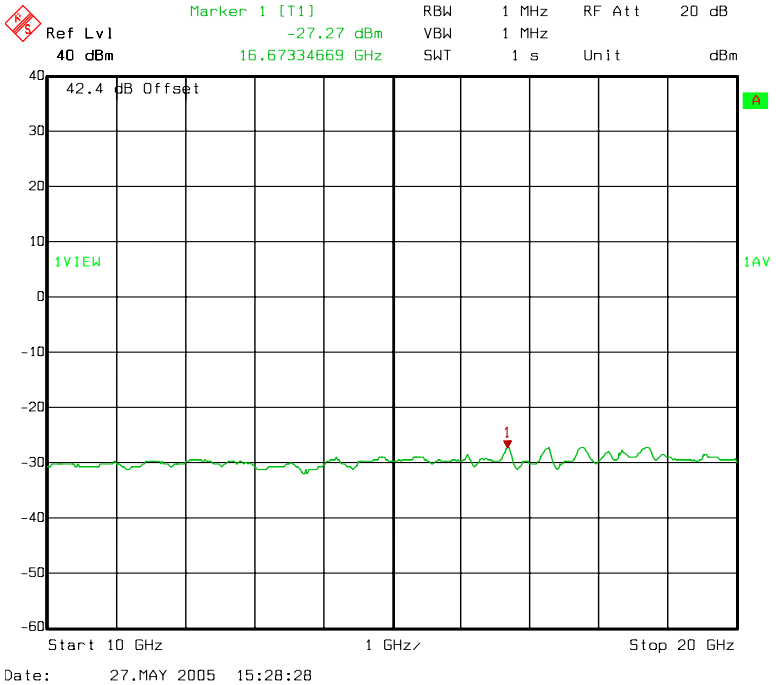
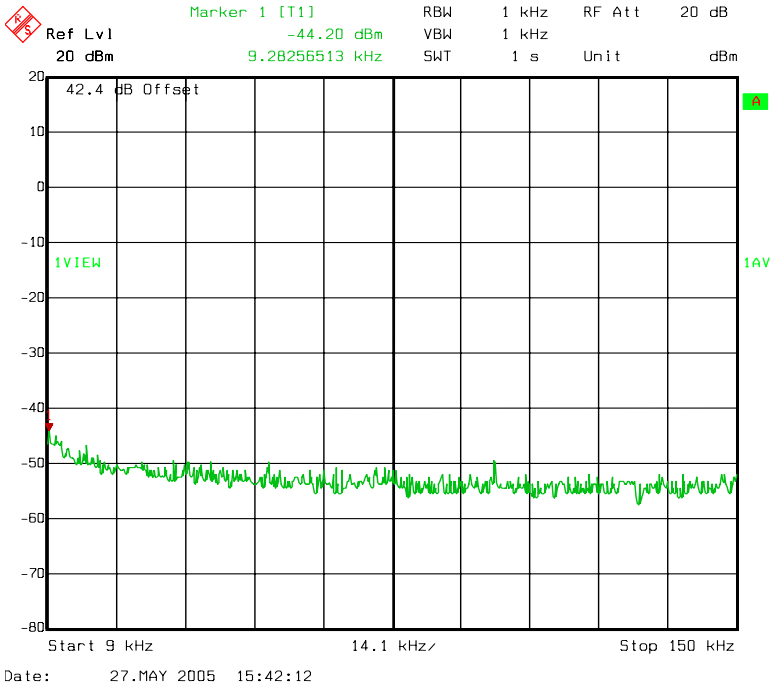
Stop 1 GHz
Date: 27.MAY 2005 15:21:43

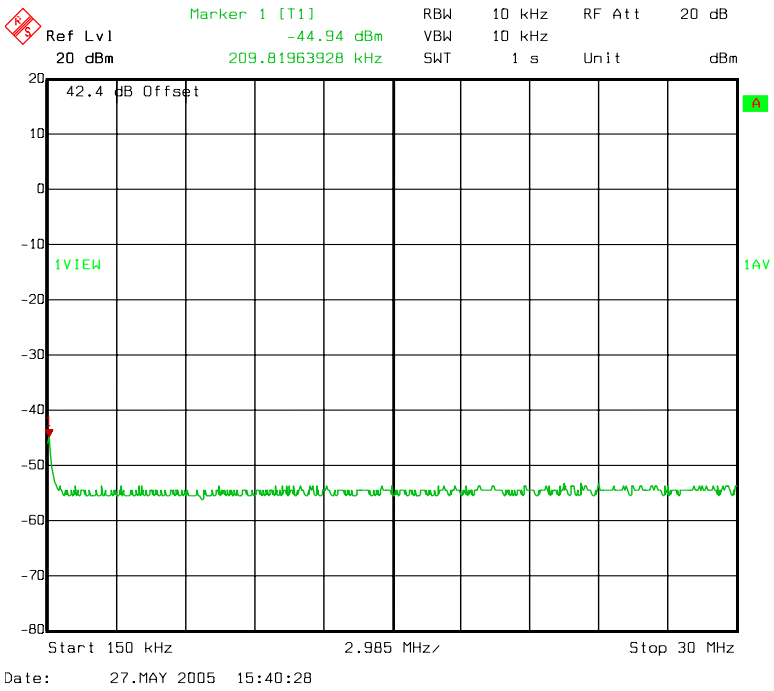

Marker 1 [T1]
Ref Lvl
40 dBm
-22.50 dBm
7.00000000 GHz
RBW 1 MHz
VBW 1 MHz
SWT 1 s
RF Att 20 dB
Unit dBm
42.4 dB Offset
1VIEW
1AV
Start 1 GHz
600 MHz/
Stop 7 GHz
Date: 27.MAY 2005 15:24:14

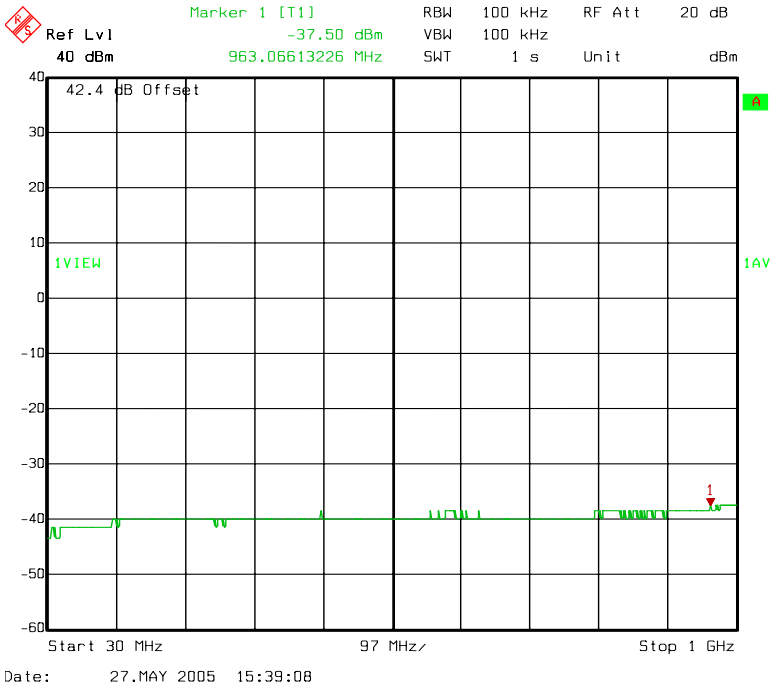

Marker 1 [T1]
RBW 1 MHz
RF Att 20 dB
Ref Lvl
-29.99 dBm
VBW 1 MHz
40 dBm
9.55511022 GHz
SWT 1 s
Unit dBm
42.4 dB Offset
A
1VIEW
1AV
Start 7 GHz
300 MHz/
Stop 10 GHz
Date: 27.MAY 2005 15:26:56

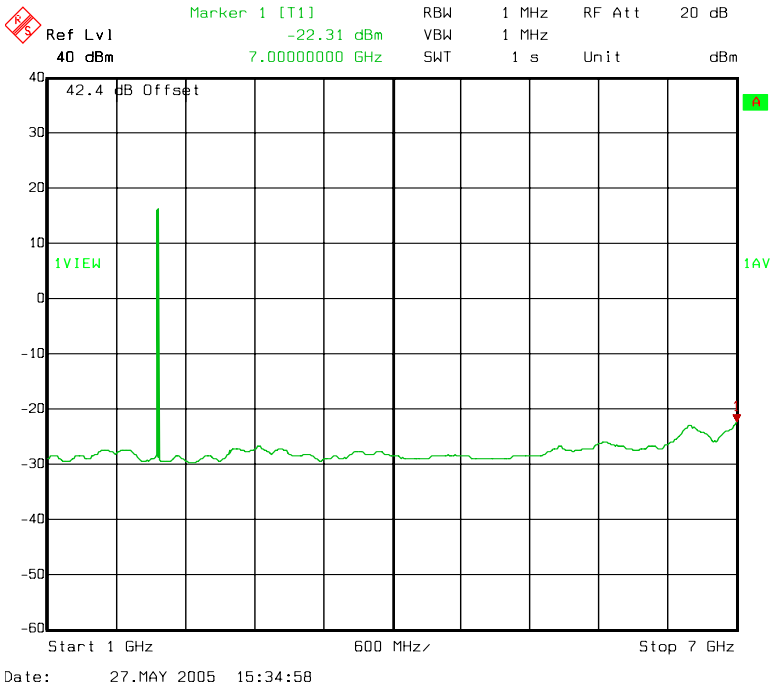

Marker 1 [T1]
RBW 1 MHz
RF Att 20 dB
Ref Lvl
-27.27 dBm
VBW 1 MHz
40 dBm
16.67334669 GHz
SWT 1 s
Unit dBm
42.4 dB Offset
A
1VIEW
1AV
Start 10 GHz
1 GHz/
Stop 20 GHz
Date: 27.MAY 2005 15:28:28

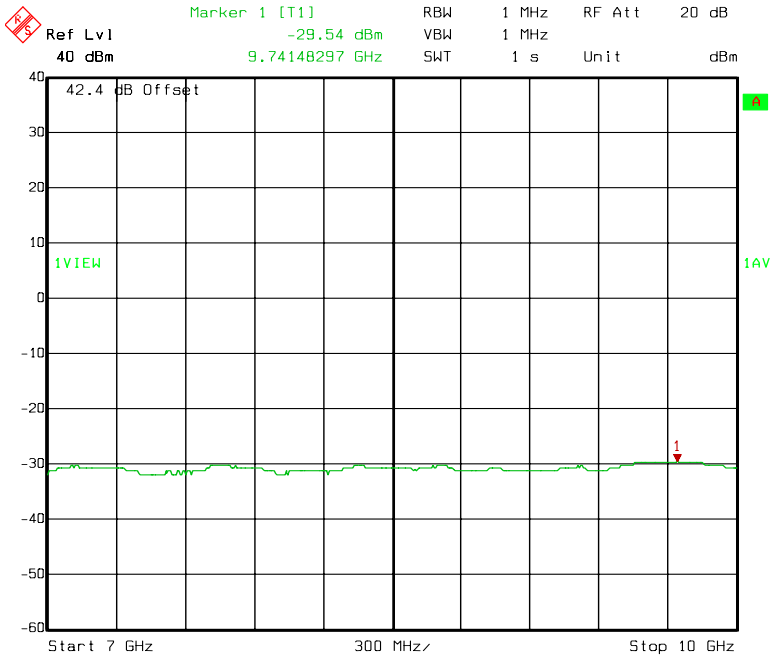
Channel 600

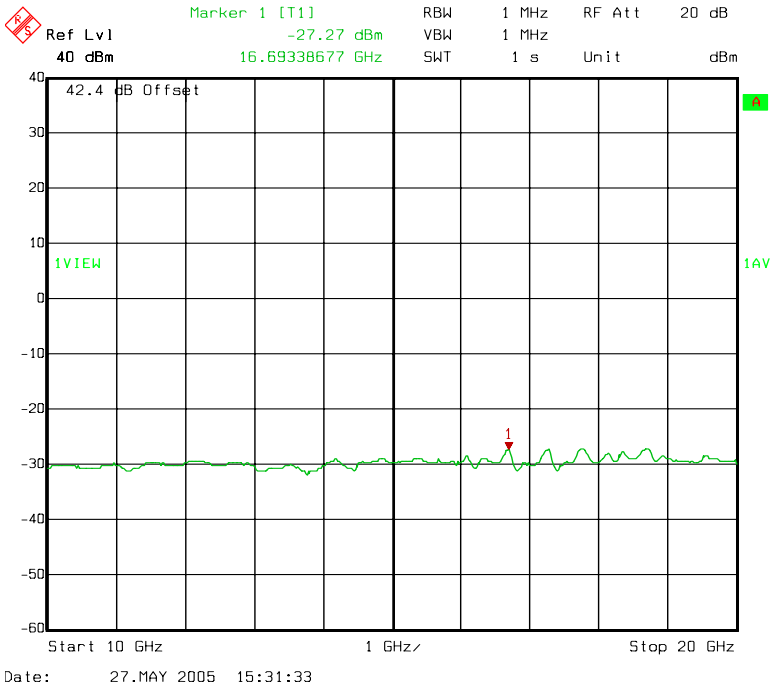

Marker 1 [T1]
Ref Lvl
20 dBm
-44.20 dBm
9.28256513 kHz
RBW 1 kHz
VBW 1 kHz
SWT 1 s
RF Att 20 dB
Unit dBm
42.4 dB Offset
1VIEW
1AV
A
Start 9 kHz
14.1 kHz/
Stop 150 kHz
Date: 27.MAY 2005 15:42:12


Marker 1 [T1]
Ref Lvl
20 dBm
-44.94 dBm
209.81963928 kHz
RBW 10 kHz
VBW 10 kHz
SWT 1 s
RF Att 20 dB
Unit dBm
42.4 dB Offset
1VIEW
1AV
A
Start 150 kHz
2.985 MHz/
Stop 30 MHz
Date: 27.MAY 2005 15:40:28

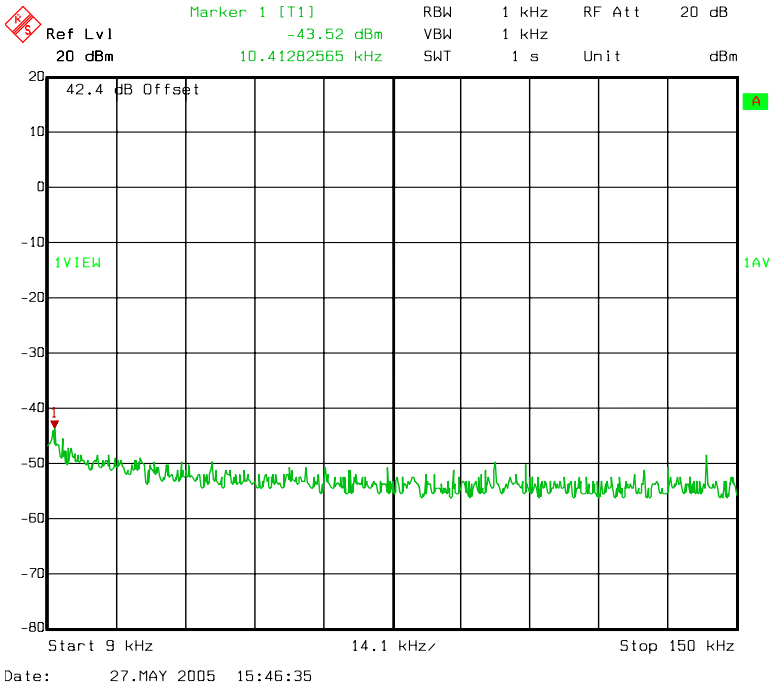

Marker 1 [T1]
Ref Lvl
-37.50 dBm
40 dBm
963.06613226 MHz
RBW 100 kHz
VBW 100 kHz
SWT 1 s
RF Att 20 dB
Unit dBm
42.4 dB Offset
1VIEW
1AV
A
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 27.MAY 2005 15:39:08

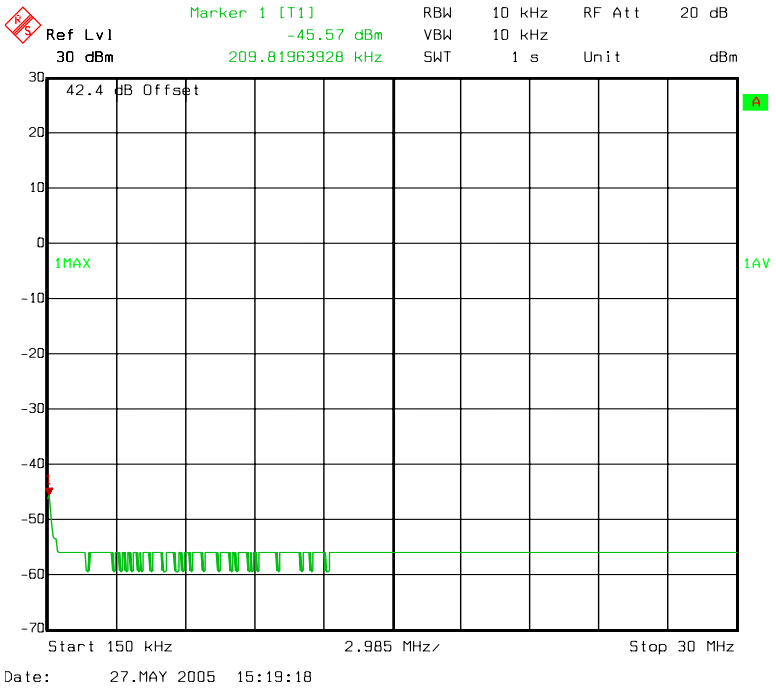

Marker 1 [T1]
Ref Lvl
-22.31 dBm
40 dBm
7.00000000 GHz
RBW 1 MHz
VBW 1 MHz
SWT 1 s
RF Att 20 dB
Unit dBm
42.4 dB Offset
1VIEW
1AV
A
Start 1 GHz
600 MHz/
Stop 7 GHz
Date: 27.MAY 2005 15:34:58

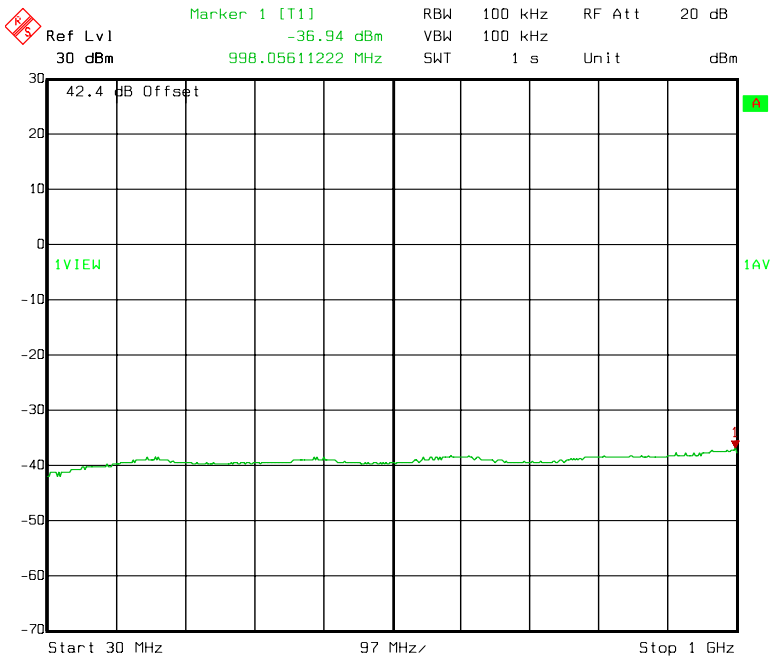

Marker 1 [T1]
Ref Lvl
40 dBm
-29.54 dBm
9.74148297 GHz
RBW 1 MHz
VBW 1 MHz
SWT 1 s
RF Att 20 dB
Unit dBm
42.4 dB Offset
1VIEW
1AV
A
Start 7 GHz
300 MHz/
Stop 10 GHz
Date: 27.MAY 2005 15:33:00


Marker 1 [T1]
Ref Lvl
40 dBm
-27.27 dBm
16.69338677 GHz
RBW 1 MHz
VBW 1 MHz
SWT 1 s
RF Att 20 dB
Unit dBm
42.4 dB Offset
1VIEW
1AV
A
Start 10 GHz
1 GHz/
Stop 20 GHz
Date: 27.MAY 2005 15:31:33

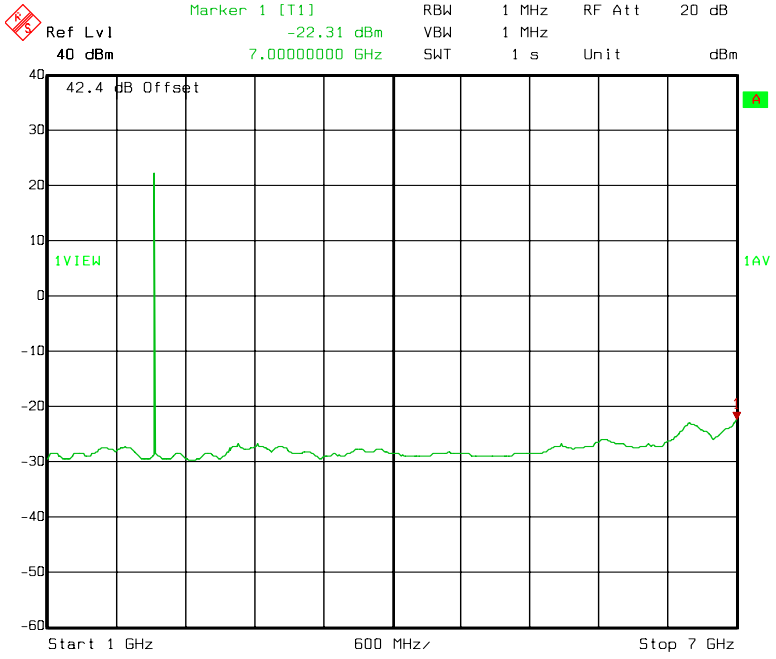
Channel 1175



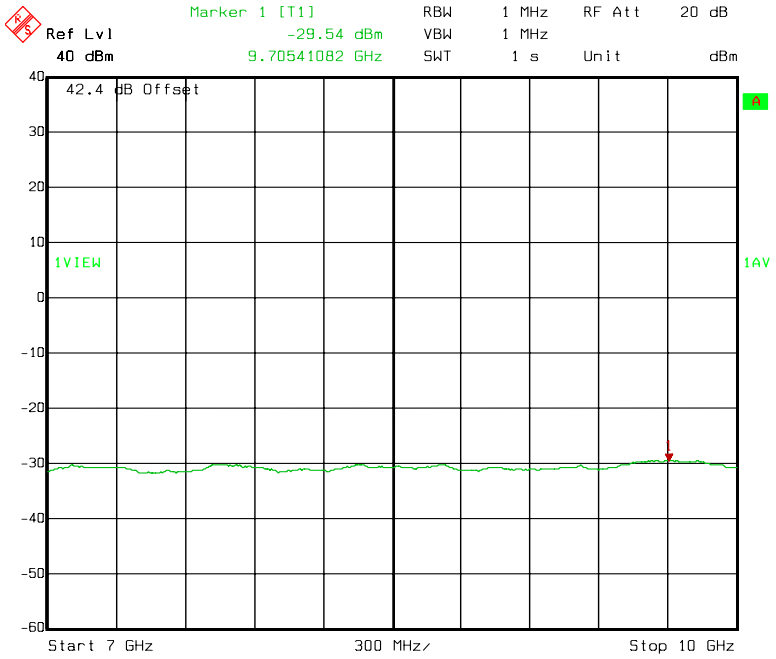




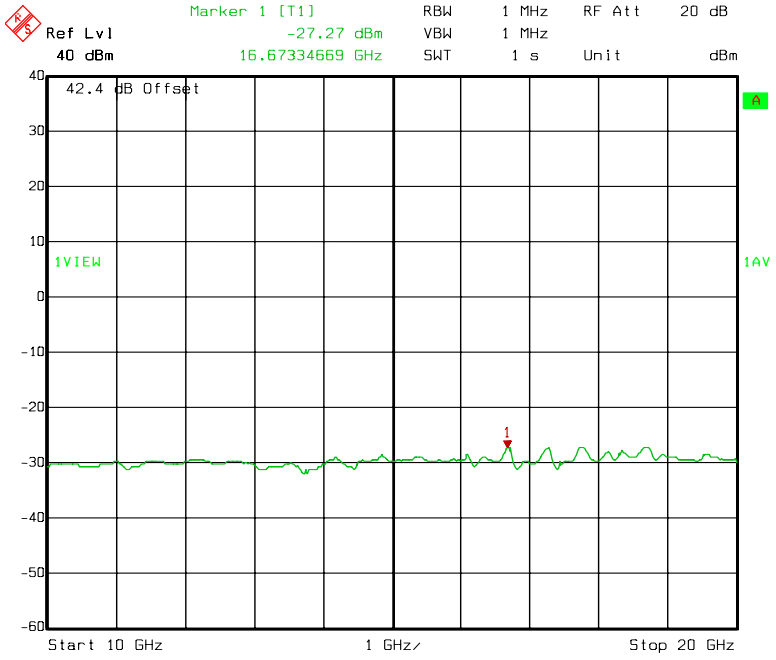
Date: 27.MAY 2005 15:52:05



Date: 27.MAY 2005 15:57:00



Date: 27.MAY 2005 15:58:38



Date: 27.MAY 2005 16:01:20

§2.1049& §24.238-OCCUPIED BANDWIDTH

Applicable Standard

Requirements: CFR 47, Section 2.1049 and Section 24.238.

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. (ShenZhen) 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 2005-5-20

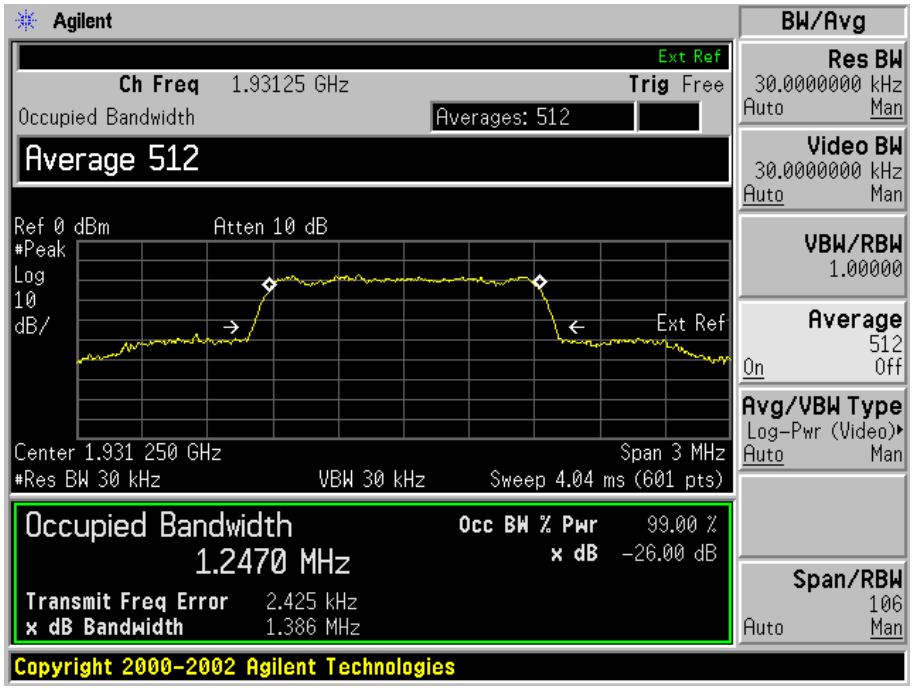
Test Result: Pass

Test Mode: Transmitting

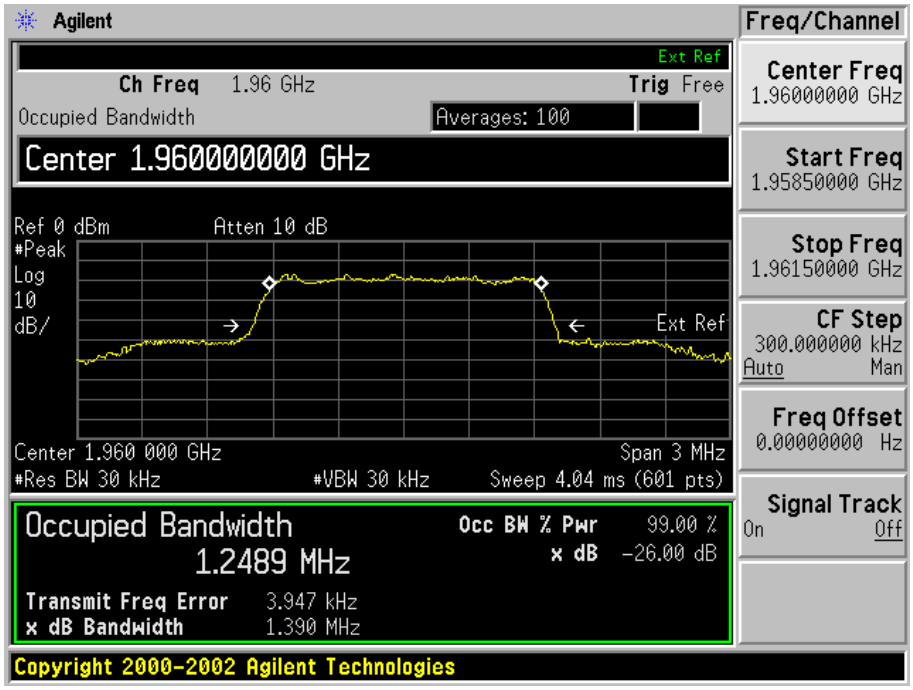
The result has been complied with the §2.1049 & §24.238, see the following plot:

Channel	Channel frequency (MHz)	99% Power Bandwidth (MHz)
Channel 25	1931.25	1.2470
Channel 600	1960.00	1.2489
Channel 1175	1988.75	1.2491

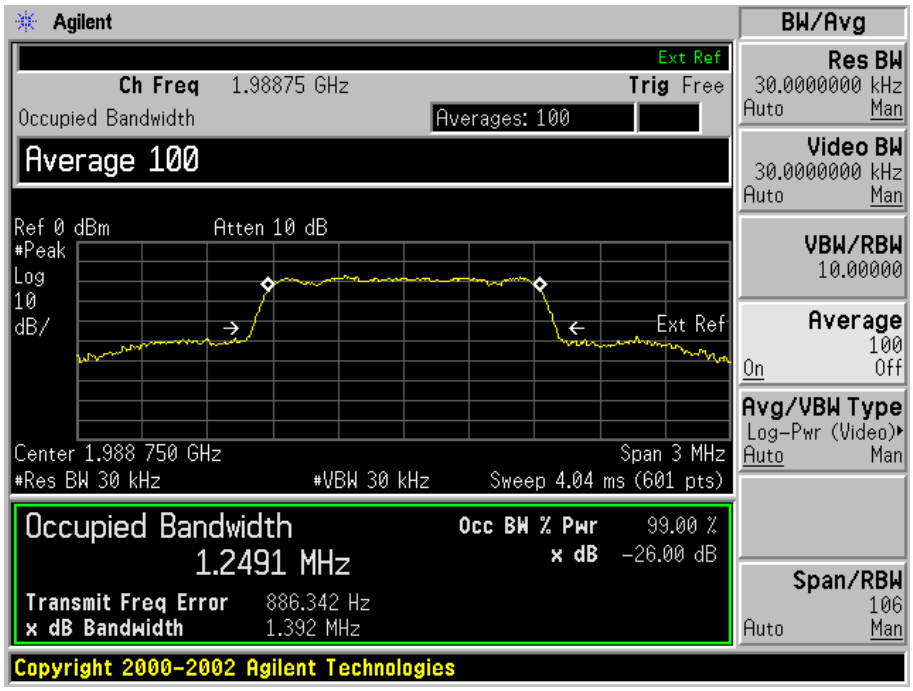
Channel 25



Channel 600



Channel 1175



§24.238- BAND EDGES

Applicable Standard

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 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. (ShenZhen) 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

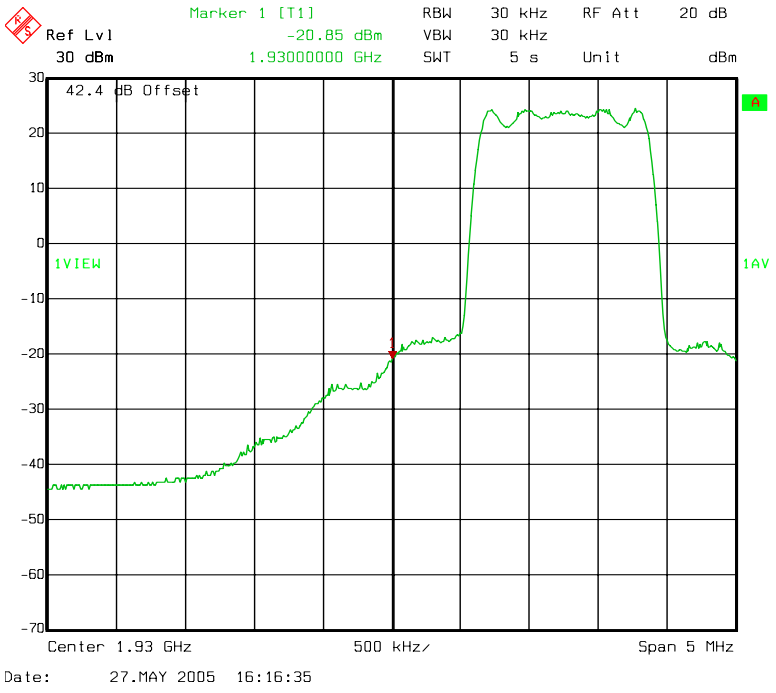
The testing was performed by Sam Lin on 2005-5-27

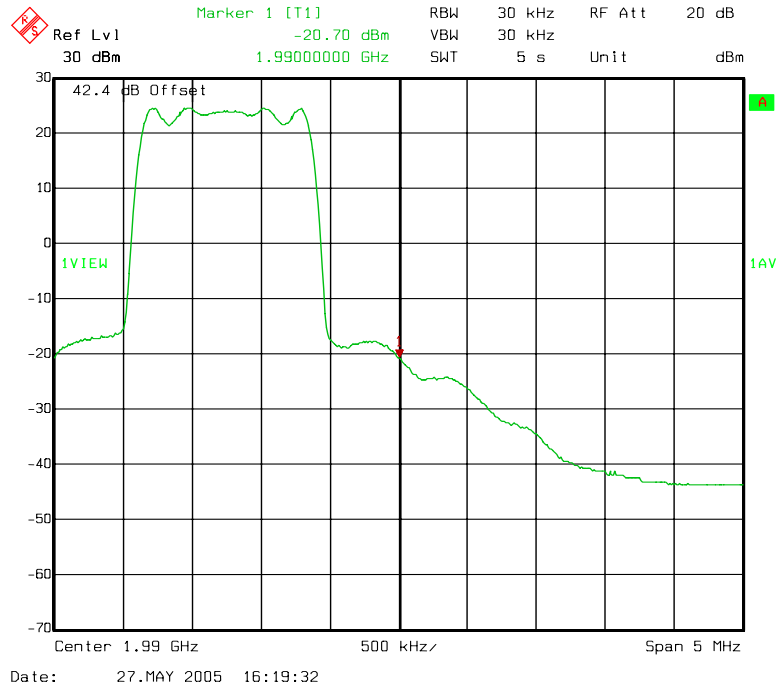
Test Result: Pass

Test Mode: Transmitting

The result has been complied with the §24.238, see the following plot:

Frequency MHz	Emission dBm	Limit dBm
1930.00	-20.85	-13
1990.00	-20.70	-13


Marker 1 [T1]
RBW 30 kHz
RF Att 20 dB
Ref Lvl
-20.85 dBm
VBW 30 kHz
30 dBm
1.93000000 GHz
SWT 5 s
Unit dBm
42.4 dB Offset
1VIEW
1AV
Center 1.93 GHz
500 kHz/
Span 5 MHz
Date: 27.MAY 2005 16:16:35


Marker 1 [T1]
RBW 30 kHz
RF Att 20 dB
Ref Lvl
-20.70 dBm
VBW 30 kHz
30 dBm
1.99000000 GHz
SWT 5 s
Unit dBm
42.4 dB Offset
1VIEW
1AV
Center 1.99 GHz
500 kHz/
Span 5 MHz
Date: 27.MAY 2005 16:19:32

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

Applicable Standard

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

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

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. (ShenZhen) 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 2005-5-19.

Test Result: Pass

Test Mode: Transmitting

Frequency Stability Versus Temperature

Frequency Stability Versus Temperature				
Temperature ℃	Power Supplied Vdc	Frequency Measure Error Hz	Error ppm	Result
Channel 25 f=1931.25MHz				
-10	-48	0.44	0.00023	Pass
0	-48	0.73	0.00038	Pass
10	-48	0.88	0.00046	Pass
20	-48	1.60	0.00083	Pass
30	-48	1.16	0.00060	Pass
40	-48	1.76	0.00091	Pass
50	-48	2.57	0.00133	Pass
Channel 600 f=1960.00MHz				
-10	-48	3.72	0.00190	Pass
0	-48	0.13	0.00007	Pass
10	-48	1.41	0.00072	Pass
20	-48	0.89	0.00045	Pass
30	-48	1.07	0.00055	Pass
40	-48	1.35	0.00069	Pass
50	-48	1.05	0.00054	Pass
Channel 1175 f=1988.75MHz				
-10	-48	0.06	0.00003	Pass
0	-48	1.14	0.00057	Pass
10	-48	1.46	0.00073	Pass
20	-48	1.20	0.00060	Pass
30	-48	1.65	0.00083	Pass
40	-48	0.62	0.00031	Pass
50	-48	1.02	0.00051	Pass

Frequency Stability Versus Voltage

Frequency Stability Versus Voltage				
Voltage Vdc	Temperature ℃	Frequency Measure Error Hz	Error ppm	Result
Channel 25 f=1931.25MHz				
-40	20	0.55	0.00028	Pass
-44	20	0.43	0.00022	Pass
-48	20	0.91	0.00047	Pass
-52	20	0.56	0.00029	Pass
-57	20	0.18	0.00009	Pass
Channel 600 f=1960.00MHz				
-40	20	0.64	0.00033	Pass
-44	20	0.34	0.00017	Pass
-48	20	0.29	0.00015	Pass
-52	20	0.11	0.00006	Pass
-57	20	0.55	0.00028	Pass
Channel 1175 f=1988.75MHz				
-40	20	0.79	0.00040	Pass
-44	20	0.58	0.00029	Pass
-48	20	0.26	0.00013	Pass
-52	20	0.43	0.00022	Pass
-57	20	0.24	0.00013	Pass