Lab Code: 200707-0

FCC PART 22 &24 TYPE APPROVAL

EMI MEASUREMENT AND TEST REPORT

For

ZTE Corporation

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

FCC ID: Q78-ZXG-BTS2

July 28, 2006

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

Test Engineer:	Merry Zhao
Report No.:	RSZ06062601
Test Date:	April 22- 26, 2006
Reviewed By:	Boni Baniqued
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: ZXG10-BTS or the "EUT" as referred to in this report is a GSM Base Transceiver Station. The EUT is measured approximately 160 cm L x 60 cmW x 55 cmH, rated input voltage: DC –48V.

** The test data gathered are from production sample, serial number: 0606049 provided by the manufacturer, we receive the EUT on 2006-6-26.*

Objective

This Type approval report is prepared on behalf of ZTE Corporation in accordance with Part 2, Subpart J, Part 22 Subpart H, 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 22 Subpart H - Public Mobile Services
Part 24 Subpart E - PCS

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

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 C 63.4-2003.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179 and Industrial Canada registration test site No.: 5500A. 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

SYSTEM TEST CONFIGURATION

Justification

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

EUT Exercise Software

EDGE-INSTECTOR

Special Accessories

The special accessories were provided by Manufacturer.

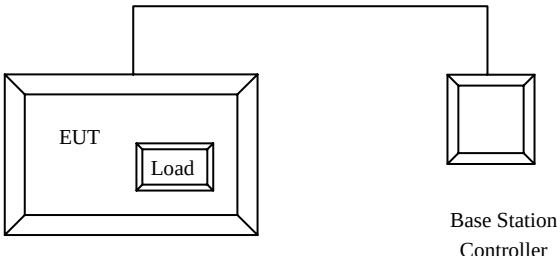
Schematics and Block Diagram

Please refer to the Exhibit D.

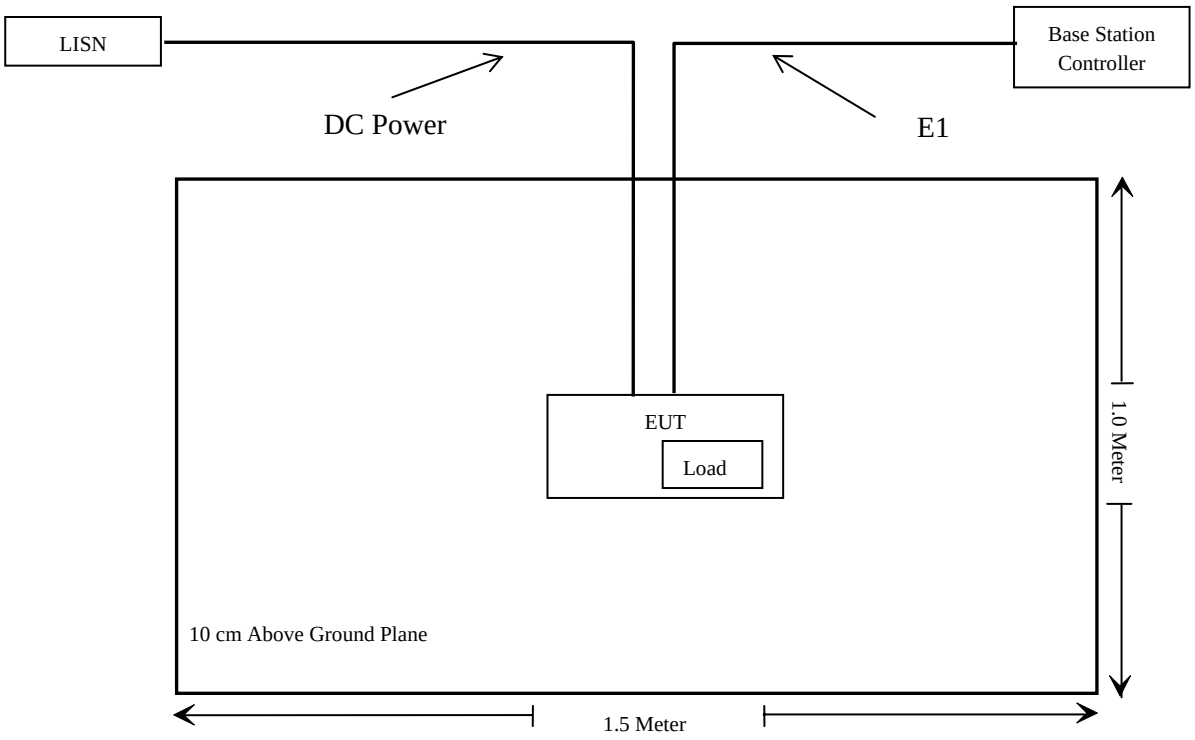
Equipment Modifications

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	RF Output Power	Compliant
§ 2.1091	RF Exposure	Compliant
§2.1047	Modulation characteristic	Compliant
§15.209(a)	Radiation Emissions	Compliant*
§2.1053	Spurious Radiated Emissions	Compliant
§2.1051, §22.917(a), §24.238(a)	Spurious Emissions At Antenna Terminals	Compliant
§2.1049 §22.917 §22.905, §24.238	Occupied Bandwidth	Compliant
§22.917, §24.238	Band Edge	Compliant
§ 2.1055 (a) § 2.1055 (d) § 22.355, § 24.235	Frequency stability	Compliant

* Within the measurement uncertainty

§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 §2.1091 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

For 850 MHz Band:

Maximum peak output power at antenna input terminal: 46.66(dBm)
Maximum peak output power at antenna input terminal: 46.344(Watt)
Prediction distance: 400 (cm)
Predication frequency: 881.6 (MHz)
Antenna Gain (typical): 17 (dBi)
Power density at predication frequency at 400 cm: 1.16 (mW/cm^2)
MPE limit for uncontrolled exposure at prediction frequency: 881.6/300=2.94 (mW/cm^2)

1.16 (mW/cm^2) < 2.94 (mW/cm^2)

For 1900 MHz Band:

Maximum peak output power at antenna input terminal: 45.77 (dBm)
Maximum peak output power at antenna input terminal: 37.757 (W)
Prediction distance: 300 (cm)
Predication frequency: 1960 (MHz)
Antenna Gain (typical): 17 (dBi)
Power density at predication frequency at 300 cm: 1.67 (mW/cm^2)
MPE limit for uncontrolled exposure at prediction frequency: 5 (mW/cm^2)

1.67 (mW/cm^2) < 5 (mW/cm^2)

Result: Compliant

§2.1046- RF OUTPUT POWER

Applicable Standard

According to FCC §2.1046(a), For transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in §2.1033(c)(8). The electrical characteristics of the radio frequency load attached to the output terminals when this test is made shall be stated.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
GW	Dual tracking with 5V fixed	GPC-0303D	PC303IPE	2005-10-26	2006-10-25
Agilent	Spectrum analyzer	E4445A	MY45300953	2006-02-20	2007-02-19
Shanghai Huaxiang	Attenuator	30dB	0302707	2005-11-04	2006-11-03

*** 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:	1009 mbar

The testing was performed by Merry Zhao on 2006-4-24, 2006-4-25.

Test Result: Pass

Test Mode: Transmitting

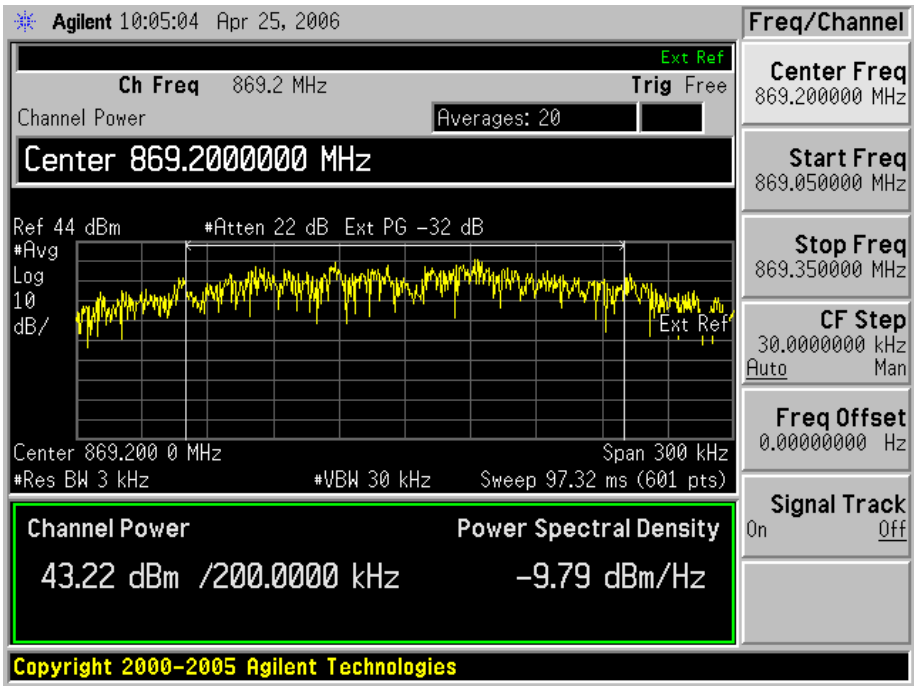
For 850 MHz

GSM Modulation

Channel	Frequency (MHz)	Single signal Output power (dBm)	Ant. Port Output Power (dBm)	Output power (W)
Channel 128	869.2	43.22	46.22	41.879
Channel 190	881.6	43.66	46.66	46.344
Channel 251	893.8	43.63	46.63	46.025

Note: There are two ways signals operation at antenna port at same time, so the maximum output power at the antenna port with internal combiner shall add 3 dB.

Channel 128



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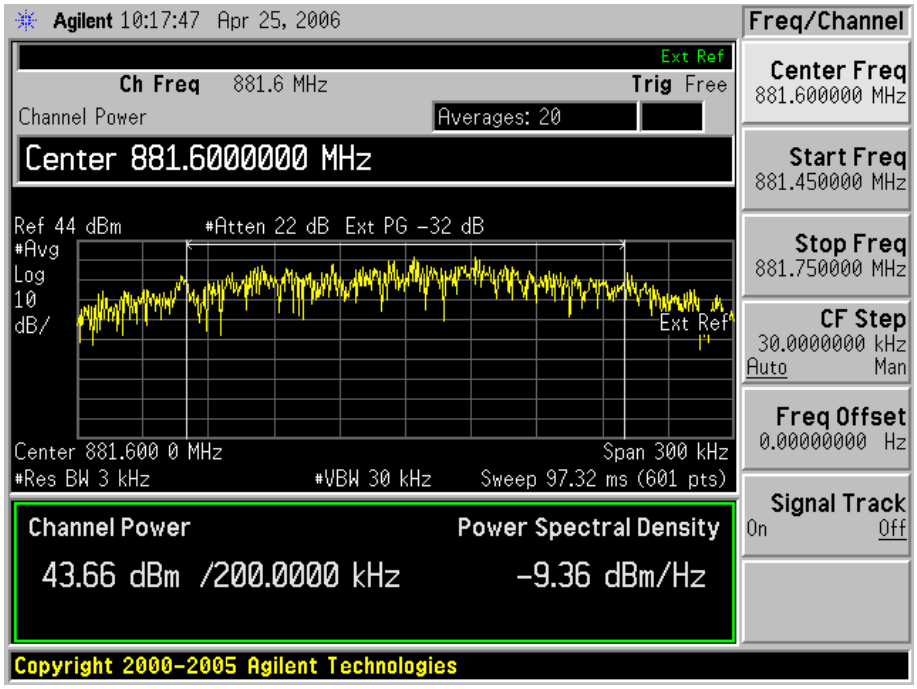
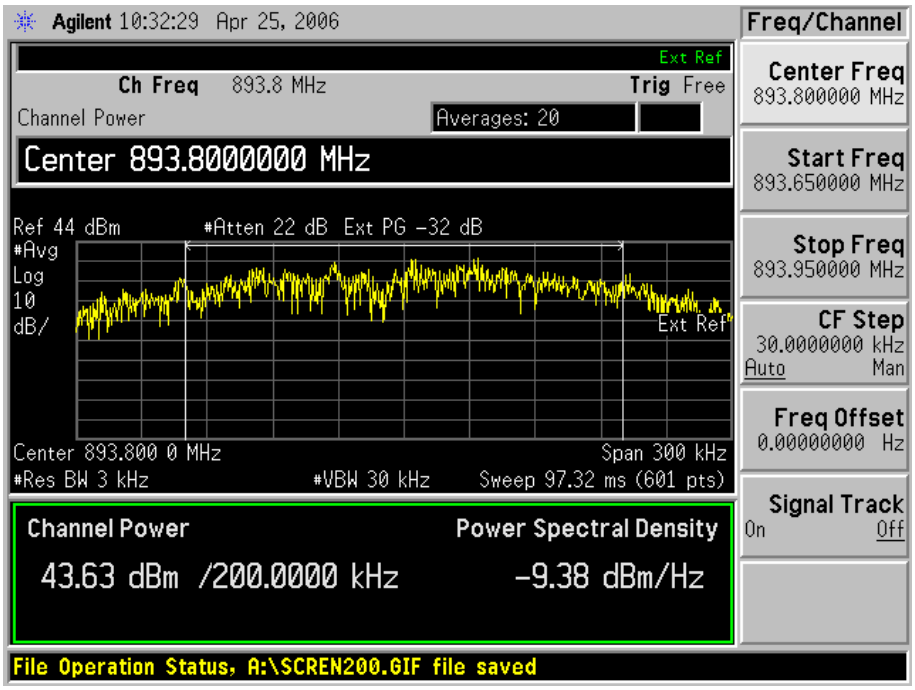


Channel 251

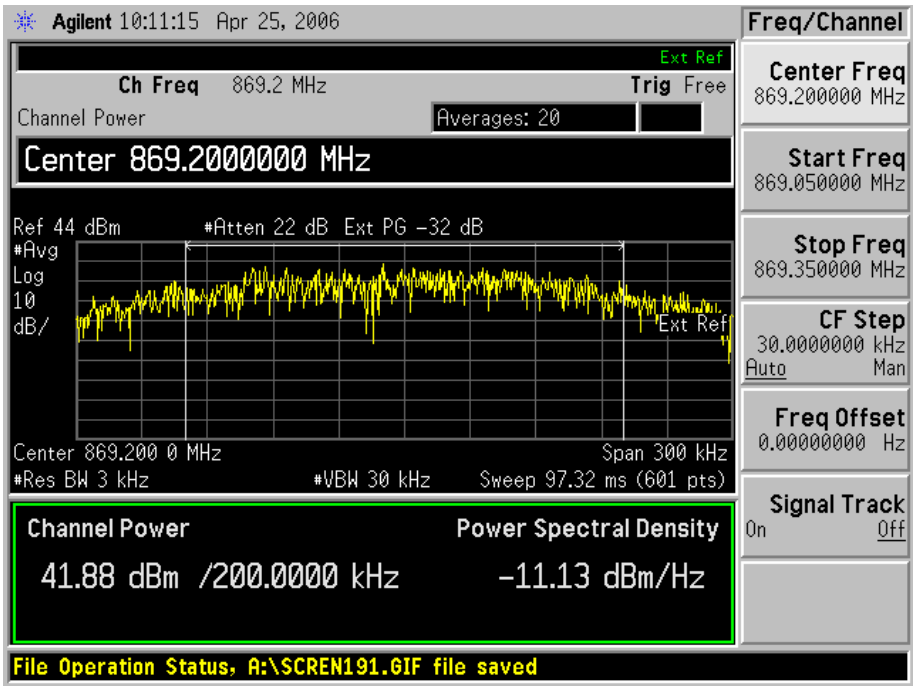


8PSK Modulation

Channel	Frequency (MHz)	Single signal Output power (dBm)	Ant. Port Output power (dBm)	Output power (W)
Channel 128	869.2	41.88	44.88	30.760
Channel 190	881.6	42.32	45.32	34.040
Channel 251	893.8	42.03	45.03	31.841

Note: There are two ways signals operation at antenna port at same time, so the maximum output power at the antenna port with internal combiner shall add 3 dB.

Channel 128:



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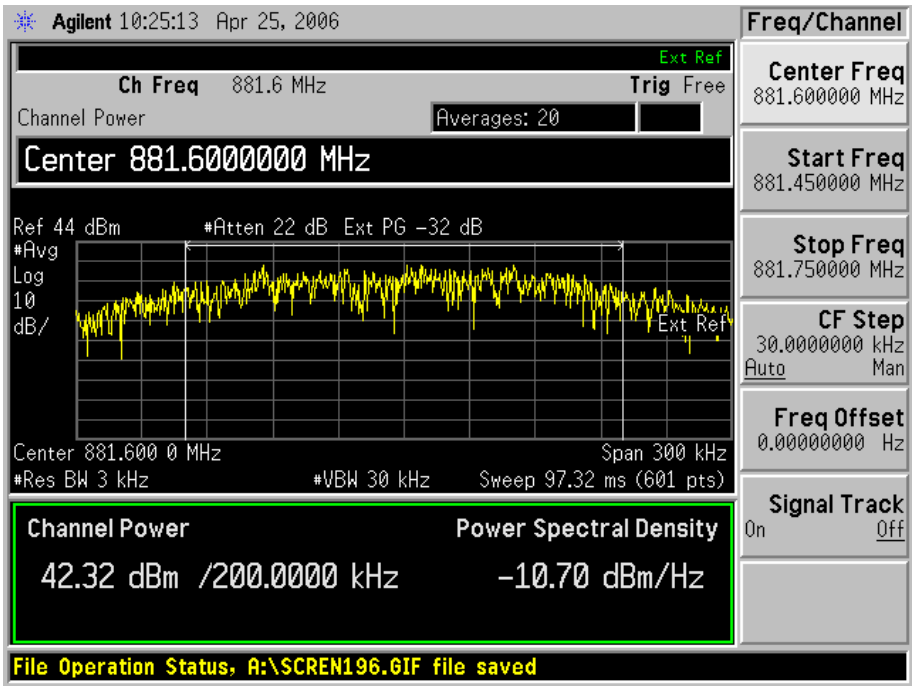

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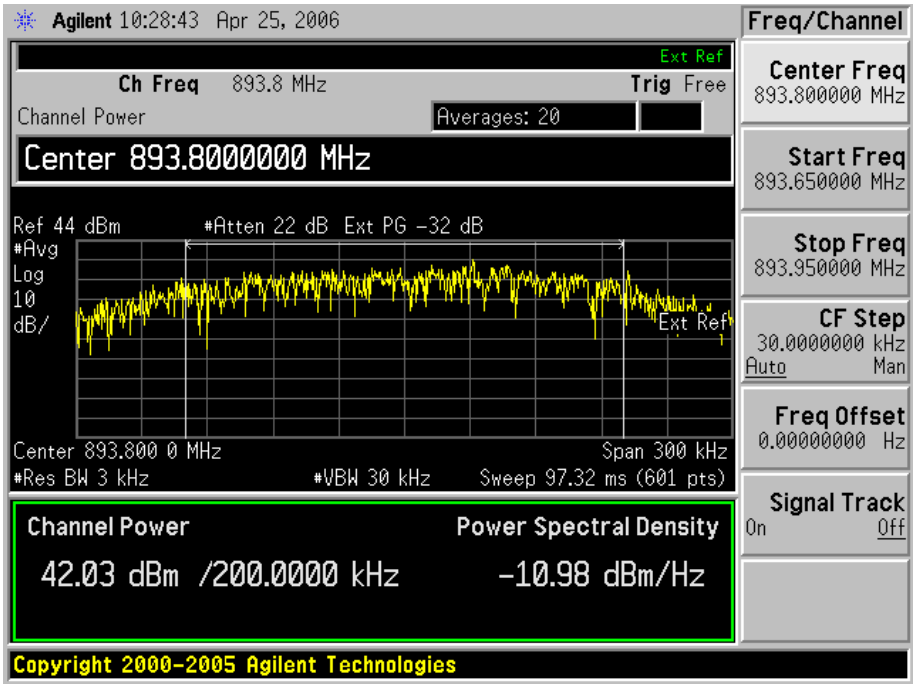


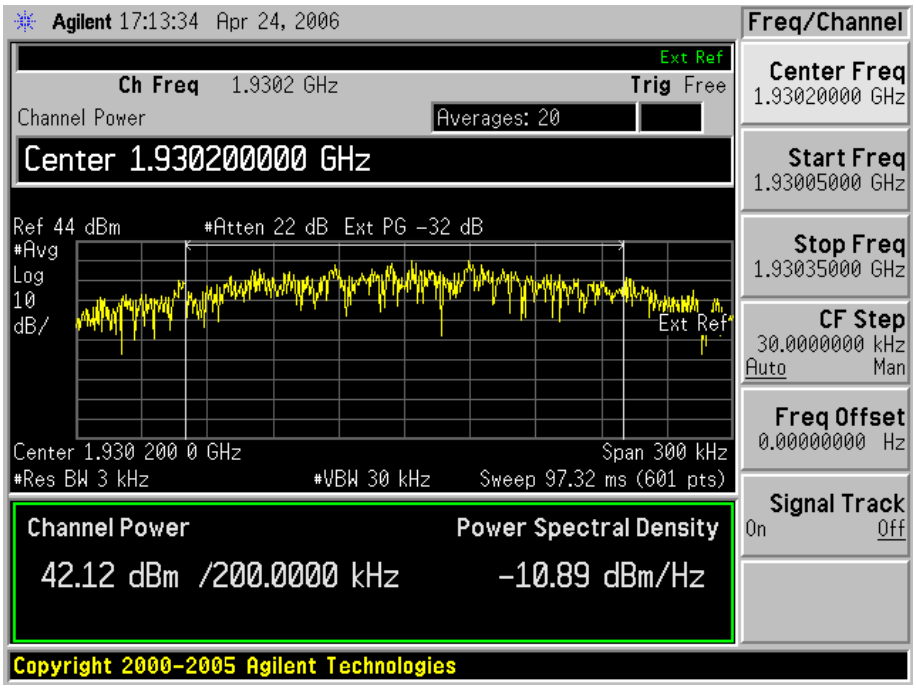
For 1900 MHz

GSM Modulation:

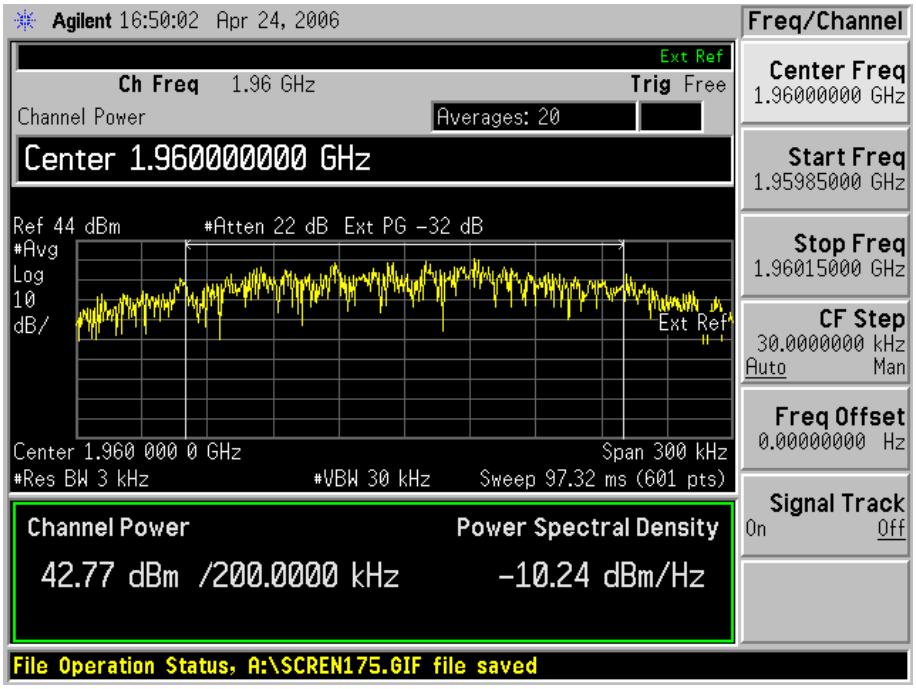
Channel	Frequency (MHz)	Single signal Output power (dBm)	Ant. Port Output Power (dBm)	Output power (W)
Channel 512	1930.2	42.12	45.12	32.508
Channel 661	1960.0	42.77	45.77	37.757
Channel 810	1989.8	42.30	45.30	33.884

Note: There are two ways signals operation at antenna port at same time, so the maximum output power at the antenna port with internal combiner shall add 3 dB.

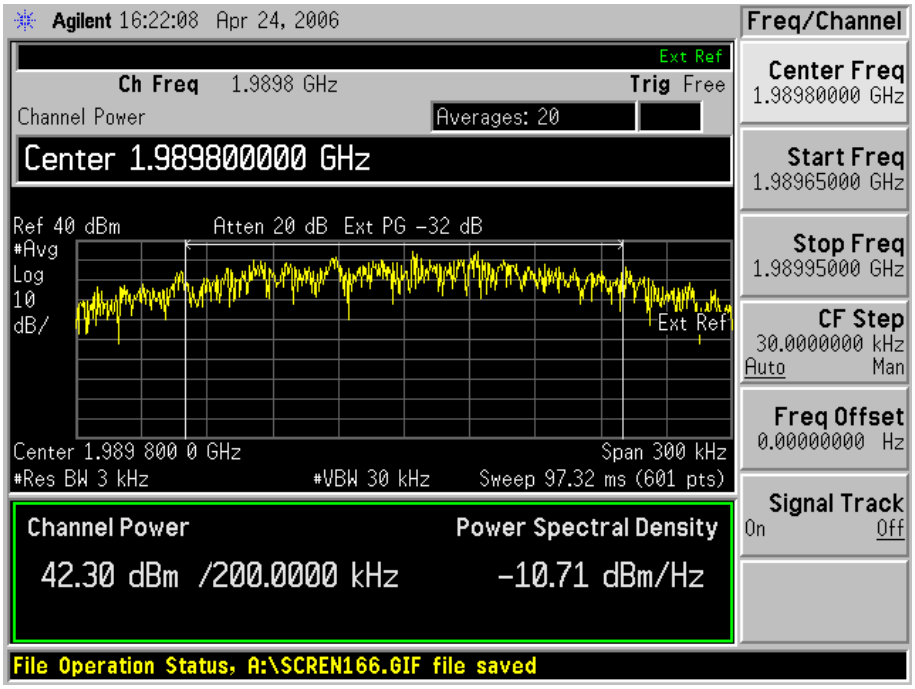
Channel 512:



Channel 661:



Channel 810:

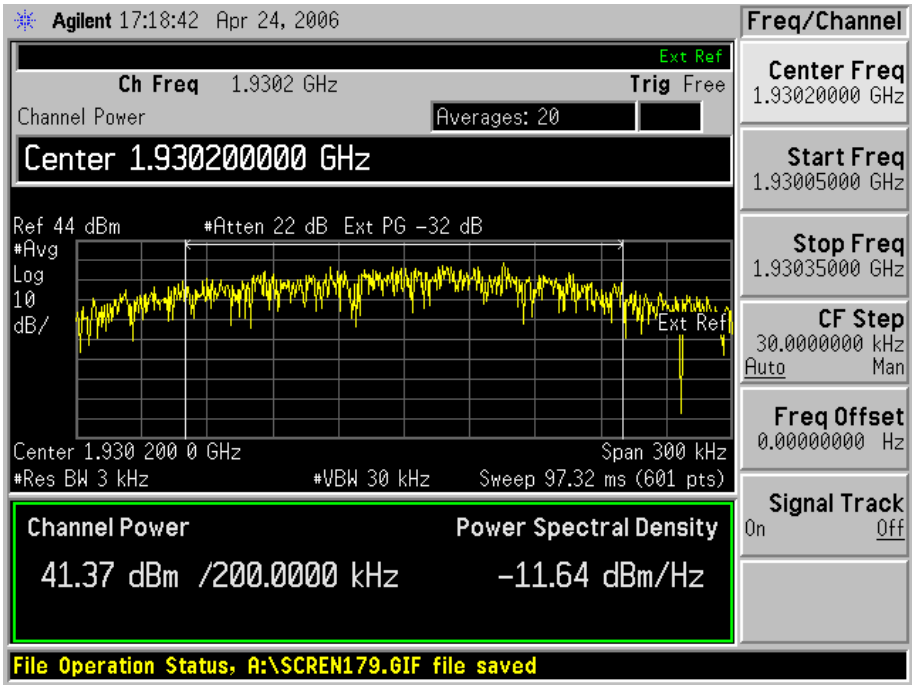


8PSK Modulation

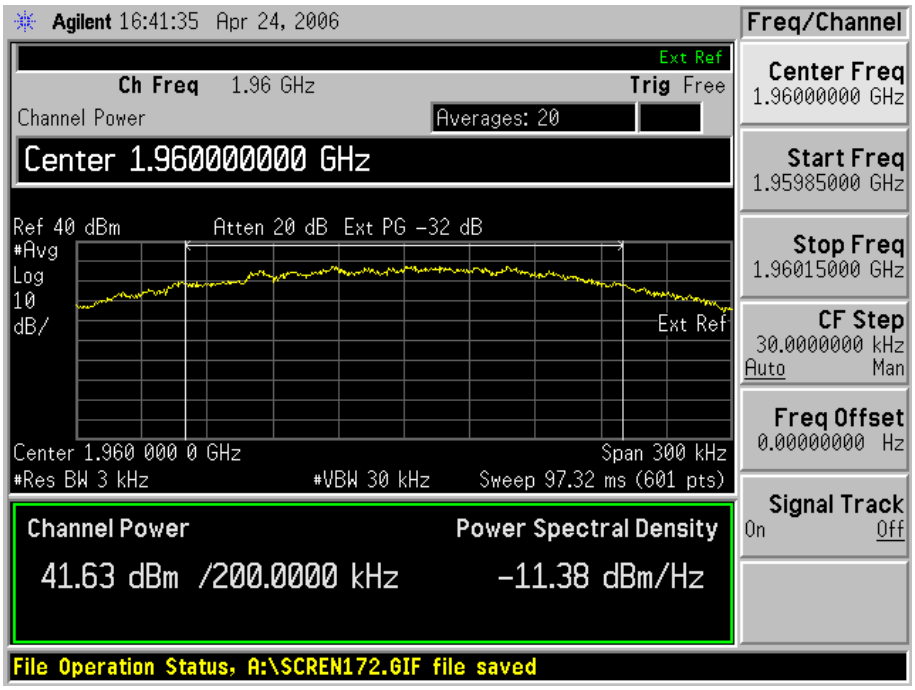
Channel	Frequency (MHz)	Single signal Output power (dBm)	Ant. Port Output power (dBm)	Output power (W)
Channel 512	1930.2	41.37	44.37	27.352
Channel 661	1960.0	41.63	44.63	29.040
Channel 810	1989.8	41.18	44.18	26.18

Note: There are two ways signals operation at antenna port at same time, so the maximum output power at the antenna port with internal combiner shall add 3 dB.

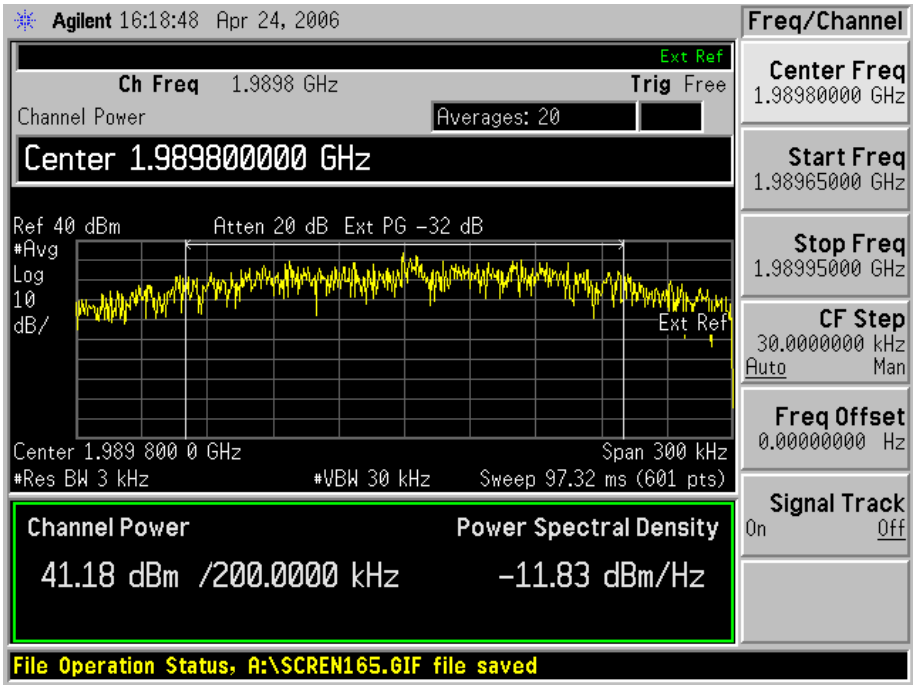
Channel 512:



Channel 661:



Channel 810:



§2.1047- MODULATION CHARACTERISTIC

Applicable Standard

Requirement: §2.1047.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
GW	Dual tracking with 5V fixed	GPC-0303D	PC303IPE	2005-10-26	2006-10-25
Agilent	Spectrum analyzer	E4445A	MY45300953	2006-02-20	2007-02-19
Shanghai Huaxiang	Attenuator	30dB	0302707	2005-11-04	2006-11-03

*** 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:	1009 mbar

The testing was performed by Merry Zhao on 2006-4-24.

Test Result: Pass

Test Mode: Transmitting

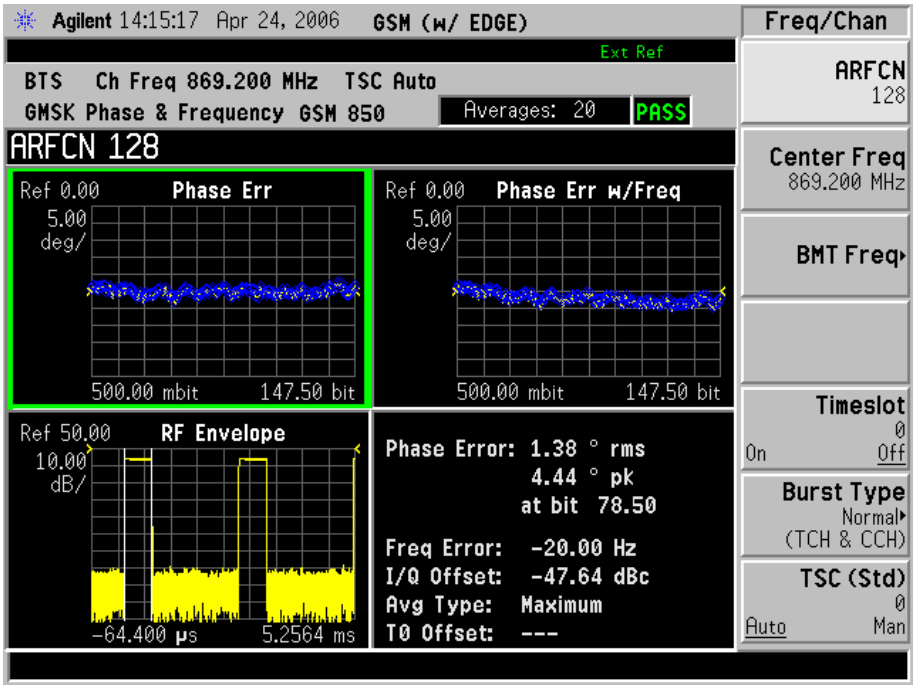
For 850 MHz

Modulation characteristic:

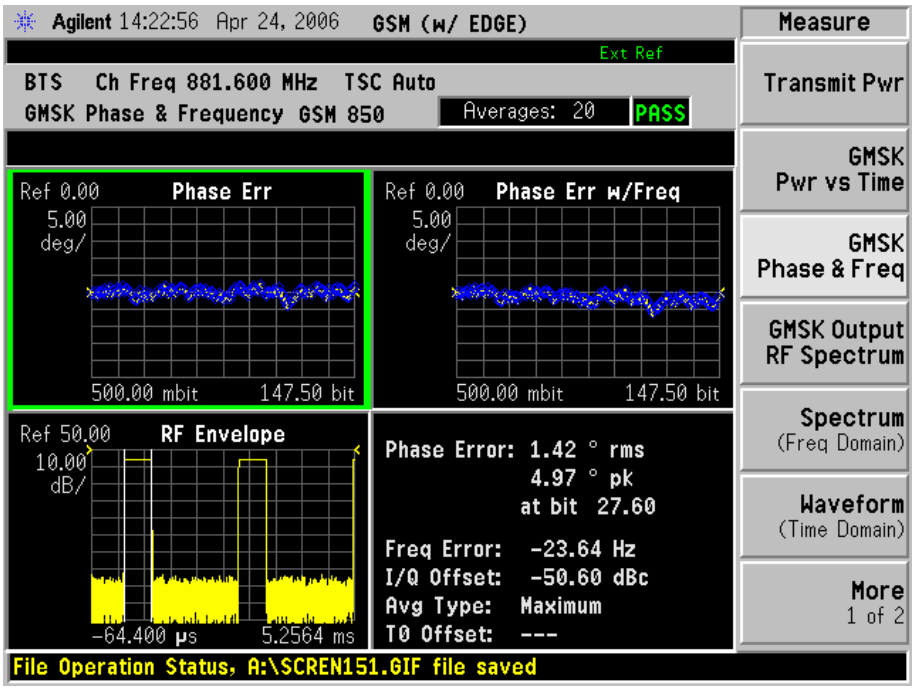
GSMK modulation:

Channel	Frequency (MHz)	Phase error		Frequency error (Hz)	I/Q offset (dBc)
		rms (°)	peak (°)		
Channel 128	869.2	1.38	4.44	-20	-47.64
Channel 190	881.6	1.42	4.97	-23.64	-50.60
Channel 251	893.8	1.57	4.74	-28.82	-47.75

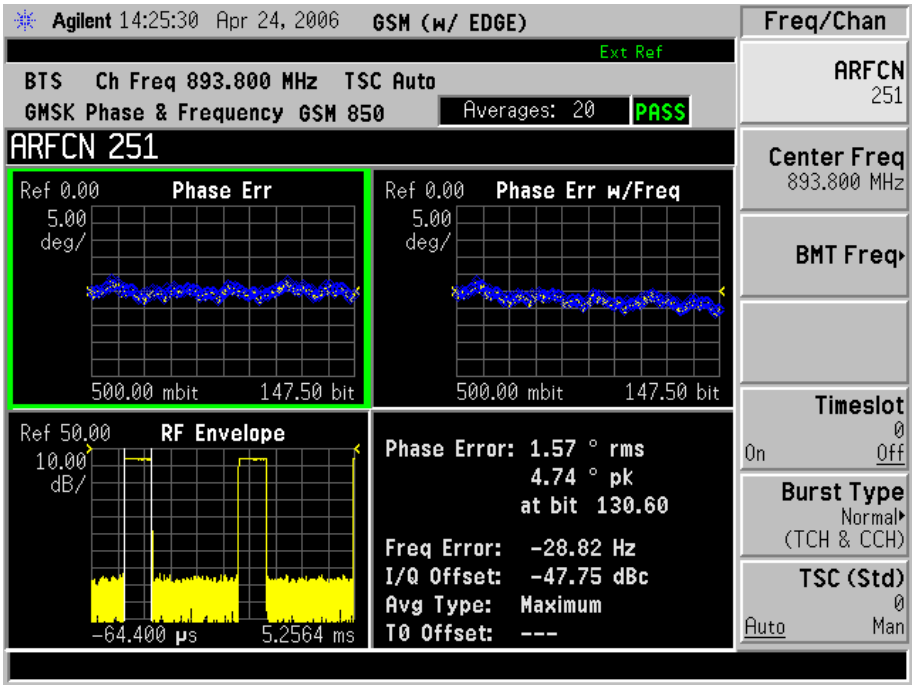
Channel 128



Channel 190:



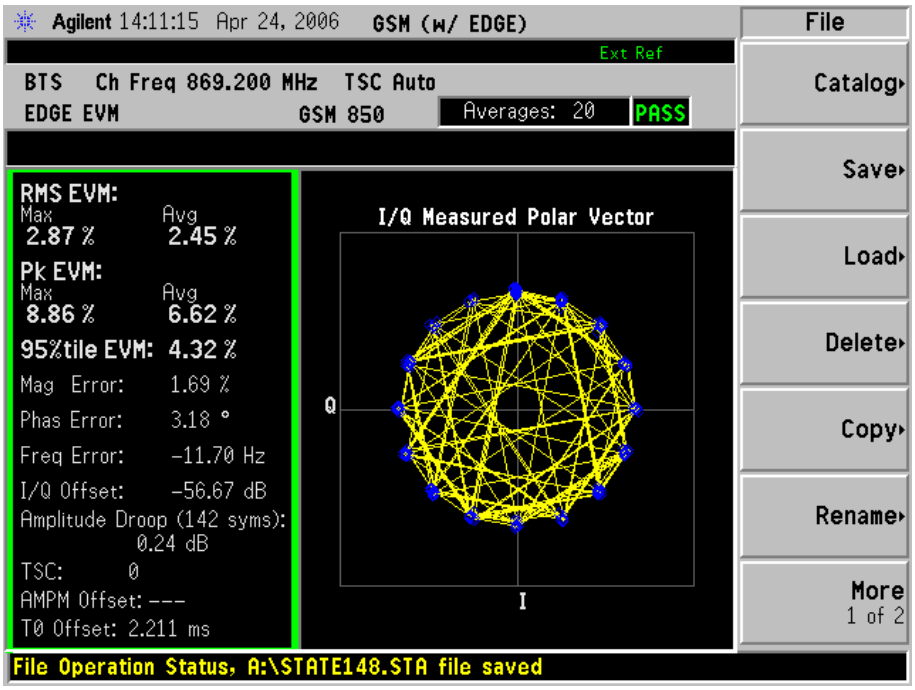
Channel 251:



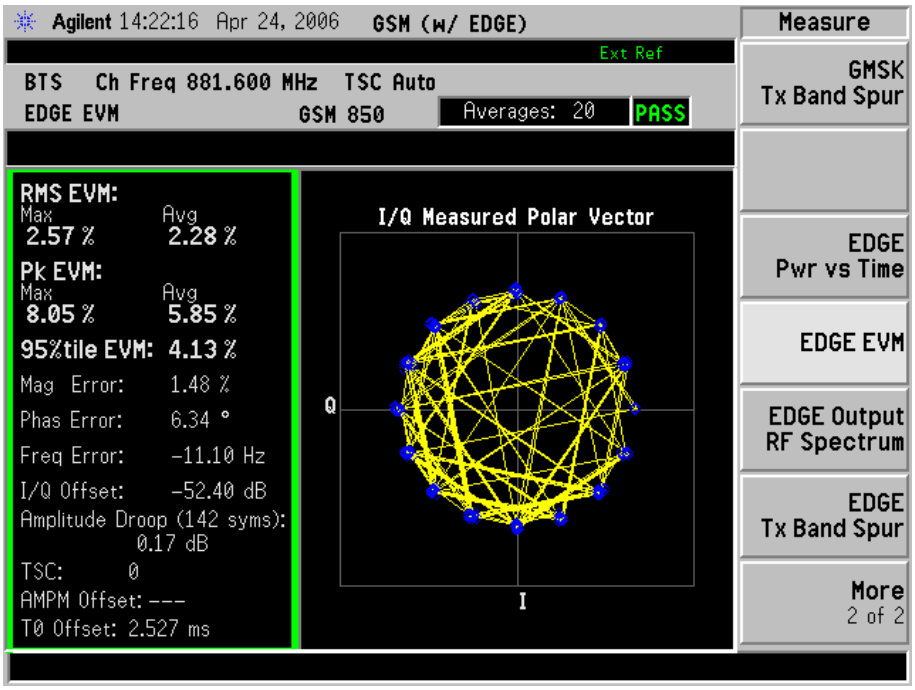
8PSK modulation:

Channel	Frequency (MHz)	RMS EVM		PK EVM		95% title EVM (%)
		Max (%)	Avg (%)	Max (%)	Avg (%)	
Channel 128	869.2	2.87	2.45	8.86	6.62	4.32
Channel 190	881.6	2.57	2.28	8.05	5.85	4.13
Channel 251	893.8	2.68	2.27	9.02	6.10	4.15

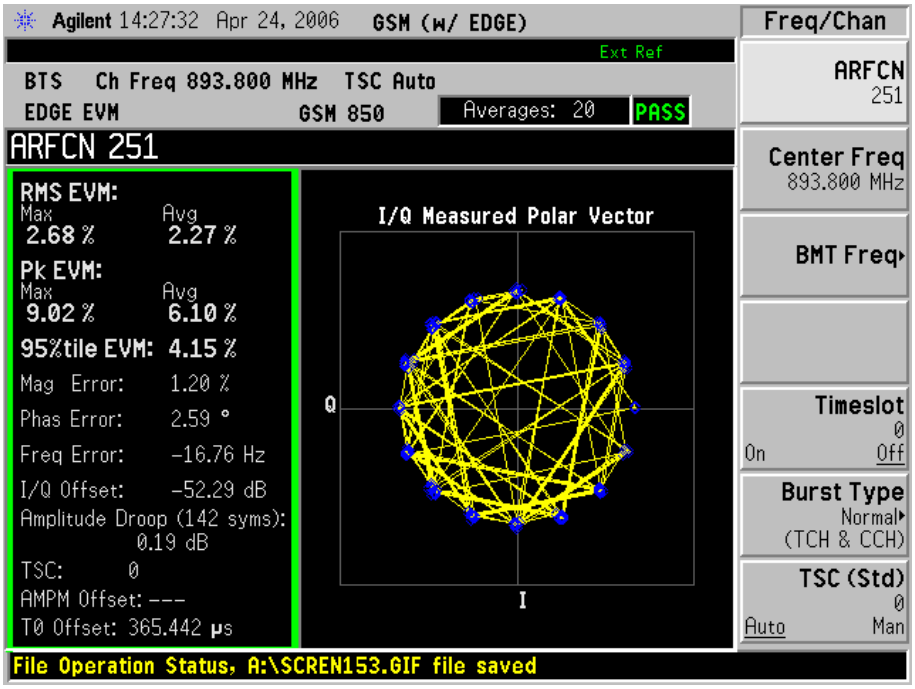
Channel 128:



Channel 190:



Channel 251:



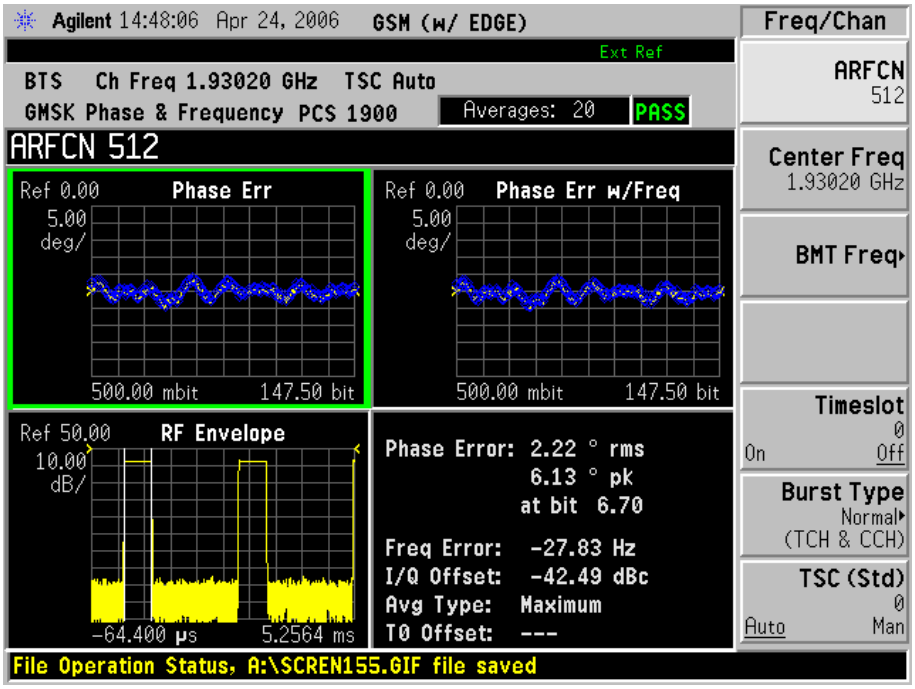
For1900 MHz

Modulation characteristic:

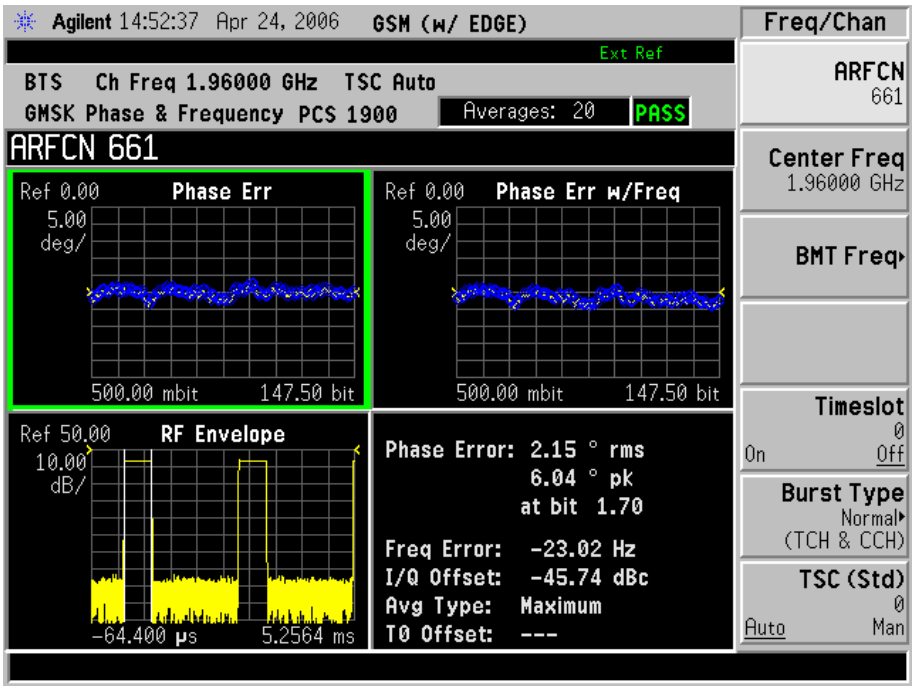
GSMK modulation:

Channel	Frequency (MHz)	Phase error		Frequency error (Hz)	I/Q offset (dBc)
		rms (°)	peak (°)		
Channel 512	1930.2	2.22	6.13	-27.83	-42.49
Channel 661	1960.0	2.15	6.04	-23.02	-45.74
Channel 810	1989.8	2.22	6.10	-26.97	-41.91

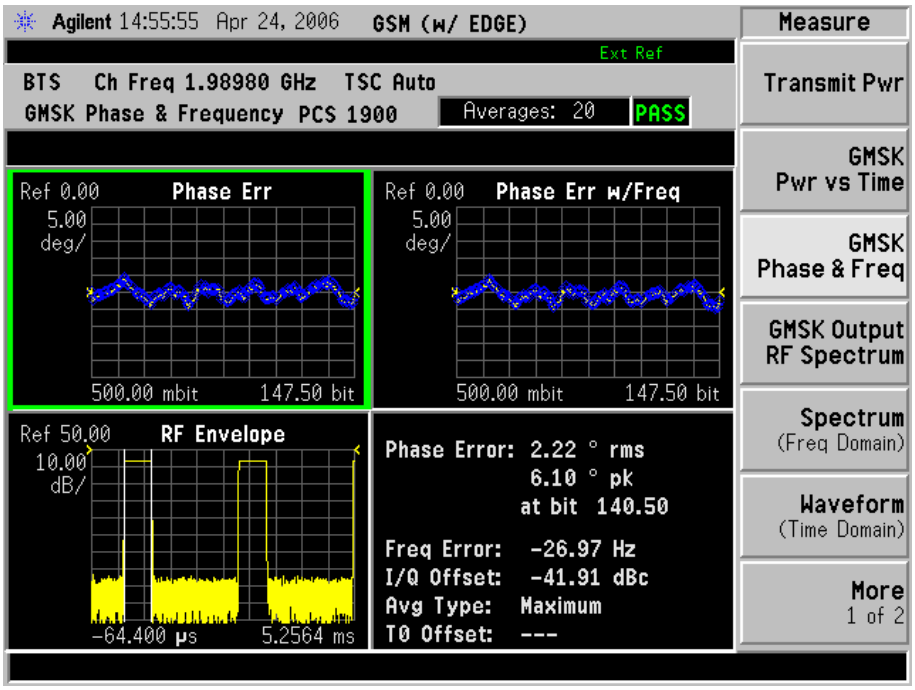
Channel 512



Channel 661:



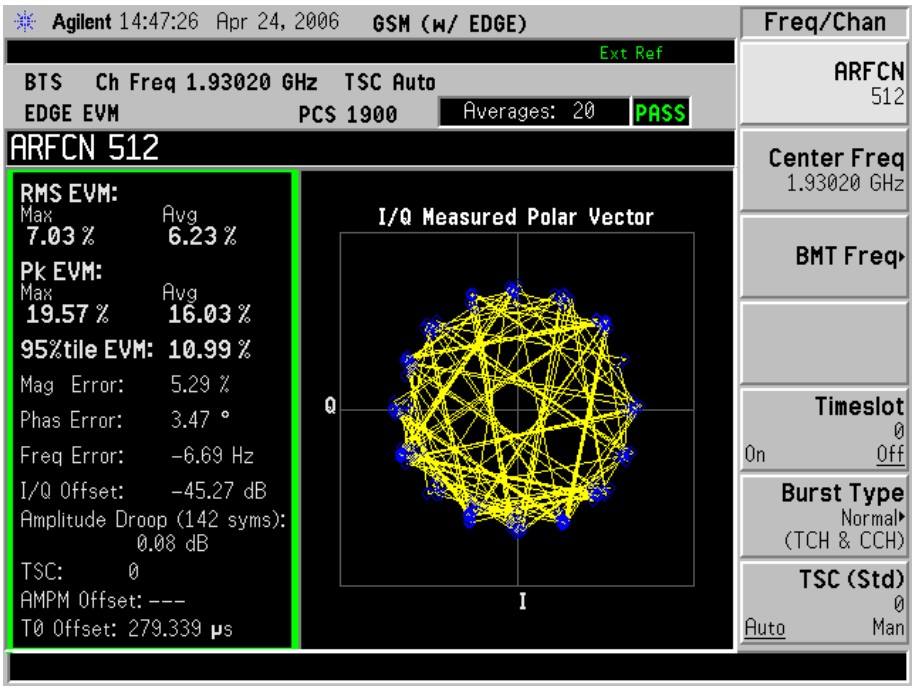
Channel 810:



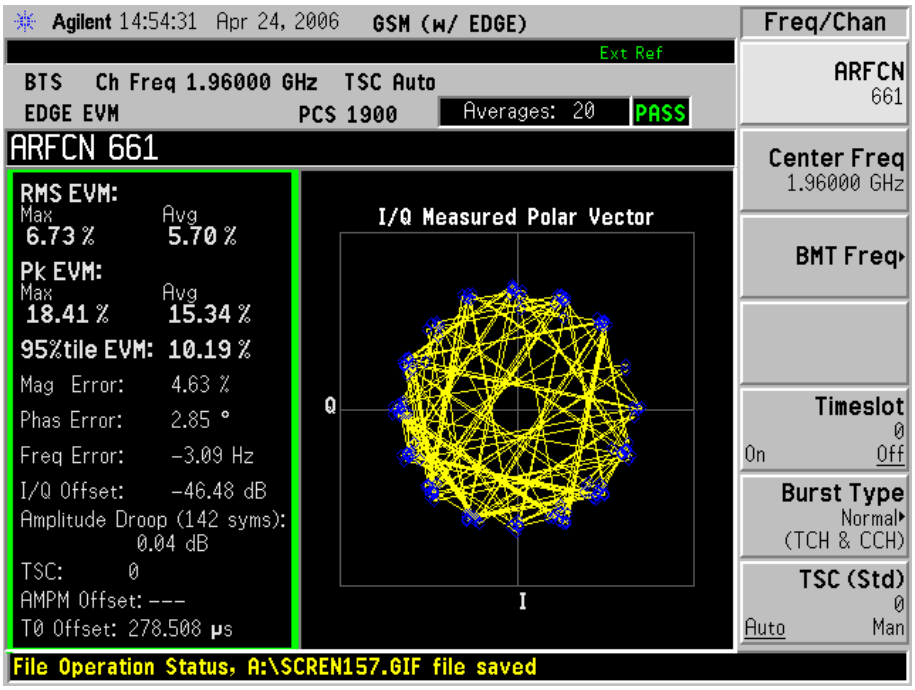
8PSK modulation:

Channel	Frequency (MHz)	RMS EVM		PK EVM		95% title EVM (%)
		Max (%)	Avg (%)	Max (%)	Avg (%)	
Channel 512	1930.2	7.03	6.23	19.57	16.03	10.99
Channel 661	1960.0	6.73	5.70	18.41	15.34	10.19
Channel 810	1989.8	6.24	5.70	16.87	14.15	10.05

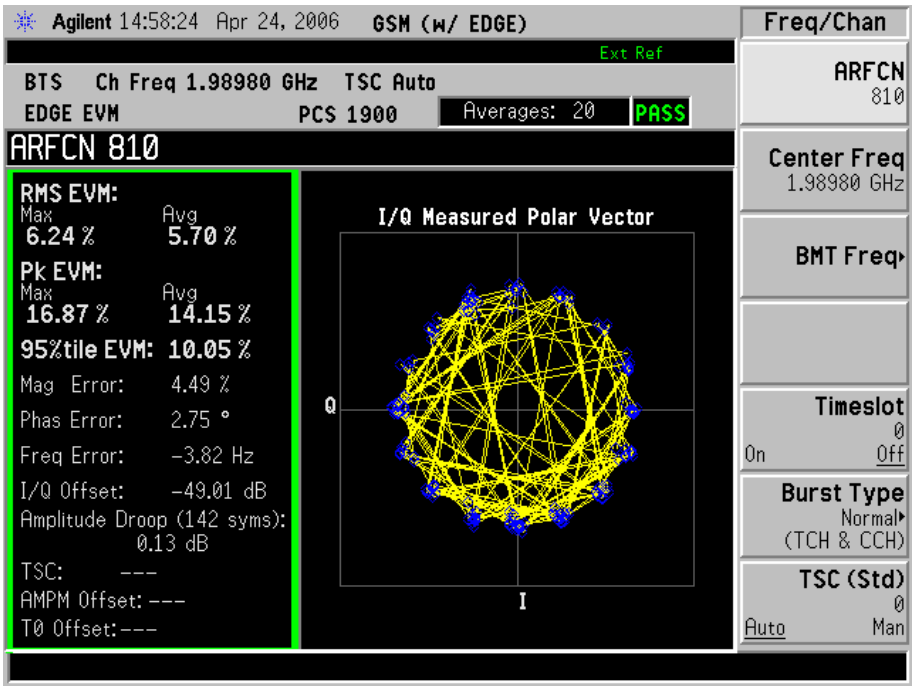
Channel 512



Channel 661:



Channel 810:



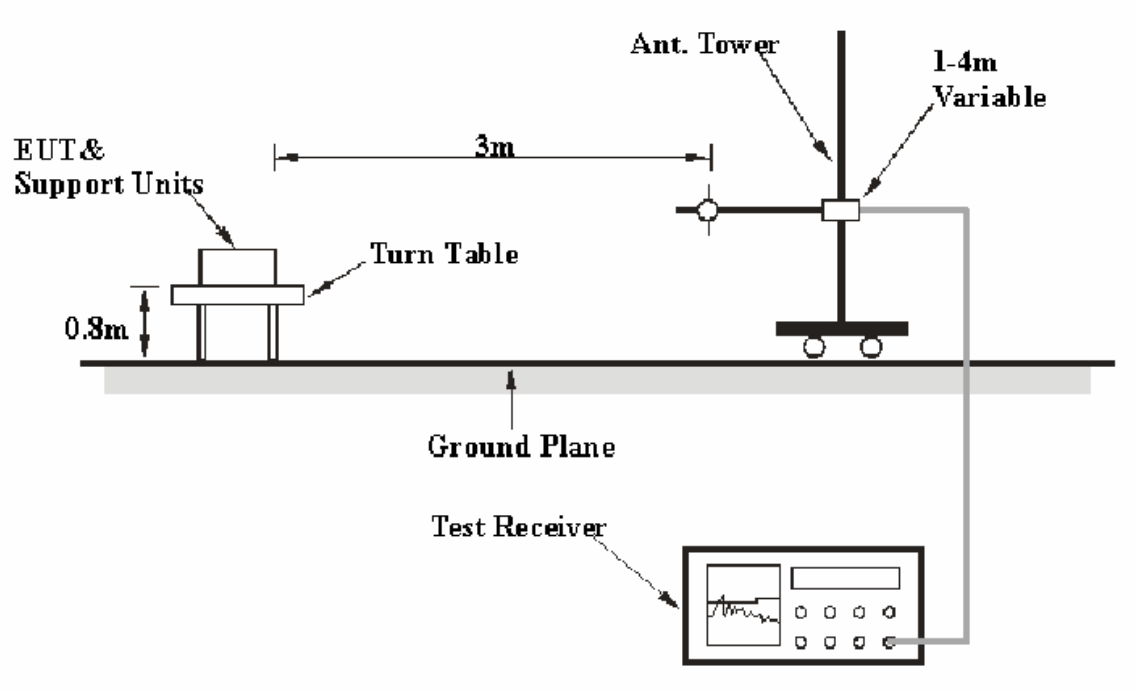
§15.209(a)- RADIATED EMISSIONS

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 15.209(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	300kHz	120kHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESI26	100058	2005-10-17	2006-10-16
R&S	Ultra Broadband Antenna	HL562	100022	2003-03-07	2008-03-06
R&S	Filters	TS-FILT	N/A	N/A	N/A
R&S	Cable Set	RE Cable	N/A	2005-10-17	2006-10-16

*** 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 Loss and Cable Loss, and subtracting the Amplifier Gain from the Meter 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 limit. 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 15.209(a), with the worst margin reading of:

For 850 MHz

-1.26 dB at **867.8156 MHz** in the **Horizontal** polarization, B Channel
-10.16 dB at **30.0000 MHz** in the **Vertical** polarization, M Channel
-9.52 dB at **203.0060 MHz** in the **Horizontal** polarization, T Channel.

For 1900 MHz

-8.75 dB at **30.0000 MHz** in the **Horizontal** polarization, B Channel
-10.58 dB at **206.8938 MHz** in the **Horizontal** polarization, M Channel
-9.76 dB at **206.8938 MHz** in the **Horizontal** polarization, T Channel.

Test Data

Environmental Conditions

Temperature:	26 °C
Relative Humidity:	47 %
ATM Pressure:	1000 mbar

The testing was performed by Merry Zhao on 2006-4-21, and the data were only for unintentional radiator and be subjected to verification

Test Mode: Transmitting

For 850 MHz

B Channel

INDICATED		TABLE	ANTENNA		TRANSDUCER	FCC Part 15.209(a)	
Frequency MHz	Meter Reading dBμV/m	Angle Degree	Height Meter	Polar H/ V	dB	Limit dBμV/m	Margin dB
867.8156	44.74	139	3	H	0.4	46.0	-1.26*
31.9439	30.42	36	1	V	-6.4	40.0	-9.58
59.1583	27.79	357	1	V	-20.8	40.0	-12.21
203.0060	31.22	90	3	H	-15.6	43.5	-12.28
30.0000	27.38	200	3	H	-5.4	40.0	-12.62
335.1904	31.68	102	3	H	-10.2	46.0	-14.32
220.5010	29.97	16	2	V	-14.7	46.0	-16.03
239.9399	29.33	36	1	V	-13.7	46.0	-16.67
335.1904	27.99	201	1	V	-10.2	46.0	-18.01
325.4709	27.47	48	1	V	-10.5	46.0	-18.53
57.2144	21.18	308	2	H	-20.7	40.0	-18.82
103.8677	24.32	308	2	H	-14.9	43.5	-19.18

M Channel

INDICATED		TABLE	ANTENNA		TRANSDUCER	FCC Part 15.209(a)	
Frequency MHz	Meter Reading dBμV/m	Angle Degree	Height Meter	Polar H/ V	dB	Limit dBμV/m	Margin dB
30.0000	29.84	36	1	V	-5.4	40.0	-10.16
203.006	31.27	308	2	H	-15.6	43.5	-12.23
55.2705	27.51	357	1	V	-20.0	40.0	-12.49
30.0000	27.21	200	3	H	-5.4	40.0	-12.79
335.1904	31.45	139	3	H	-10.2	46.0	-14.55
203.0060	28.69	16	2	V	-15.6	43.5	-14.81
220.5010	29.05	36	1	V	-14.7	46.0	-16.95
59.1583	22.99	308	2	H	-20.8	40.0	-17.01
228.2766	28.32	48	1	V	-14.2	46.0	-17.48
239.9399	27.58	201	1	V	-13.7	46.0	-18.42
253.5471	26.86	90	3	H	-13.3	43.5	-19.14
311.8637	26.58	102	3	H	-10.8	46.0	-19.42

T Channel

INDICATED		TABLE	ANTENNA		TRANSDUCER	FCC Part 15.209(a)	
Frequency MHz	Meter Reading dBμV/m	Angle Degree	Height Meter	Polar H/ V	dB	Limit dBμV/m	Margin dB
203.0060	33.98	266	1	H	-15.6	43.5	-9.52
61.1022	30.28	109	1	V	-20.6	40.0	-9.72
30.0000	30.1	186	1	V	-5.4	40.0	-9.90
30.0000	27.28	234	3	H	-5.4	40.0	-12.72
203.0060	29.23	43	1	V	-15.6	43.5	-14.27
335.1904	30.57	266	1	H	-10.2	46.0	-15.43
220.5010	29.58	174	1	V	-14.7	46.0	-16.42
239.9399	28.89	201	1	V	-13.7	46.0	-17.11
103.8677	25.69	20	2	V	-14.9	43.5	-17.81
311.8637	27.97	242	1	H	-10.8	46.0	-18.03
239.9399	27	315	1	H	-13.7	46.0	-19.0
59.1583	19.96	271	3	H	-20.8	40.0	-20.04

For 1900 MHz

B Channel

INDICATED		TABLE	ANTENNA		TRANSDUCER	FCC Part 15.209(a)	
Frequency MHz	Meter Reading dBμV/m	Angle Degree	Height Meter	Polar H/ V	dB	Limit dBμV/m	Margin dB
30.0000	21.25	35	1	H	-5.4	40.0	-8.75
206.89379	32.9	74	2	H	-15.5	43.5	-10.6
203.00601	31.28	120	3	H	-15.6	43.5	-12.22
206.893788	29.09	29	2	V	-15.5	43.5	-14.41
335.19038	29.86	27	2	H	-10.2	46.0	-16.14
924.18838	29.53	10	1	H	1.6	46.0	-16.47
261.322645	28.17	330	1	V	-12.9	46.0	-17.83
220.501002	28.12	24	1	V	-14.7	46.0	-17.88
76.653307	19.63	49	1	V	-16.4	40.0	-20.37
955.290581	29.20	232	1	V	-1.8	46.0	-20.80
59.158317	17.68	0	3	H	-20.8	40.0	-22.32
30.0000	23.39	85	3	V	-5.4	40.0	-25.61

M Channel

INDICATED		TABLE	ANTENNA		TRANSDUCER	FCC Part 15.209(a)	
Frequency MHz	Meter Reading dBμV/m	Angle Degree	Height Meter	Polar H/ V	dB	Limit dBμV/m	Margin dB
206.8938	31.92	166	1	H	-15.5	43.5	-10.58
59.1583	27.32	89	2	V	-20.8	40.0	-12.68
30.0000	26.26	314	1	V	-5.4	40.0	-13.73
335.1904	29.91	202	1	H	-10.2	46.0	-16.09
239.9399	28.94	287	1	V	-13.7	46.0	-17.06
76.6533	22.57	53	2	V	-16.4	40.0	-17.43
206.8938	25.71	249	1	V	-15.5	43.5	-17.79
30.0000	20.40	161	2	H	-5.4	40.0	-19.60
239.9398	25.91	312	1	H	-13.7	46.0	-20.09
142.7455	22.91	66	2	V	-15.8	43.5	-20.59
59.1583	16.70	4	3	H	-20.8	40.0	-23.30
142.7455	20.11	100	3	H	-15.8	43.5	-23.39

T Channel

INDICATED		TABLE	ANTENNA		TRANSDUCER	FCC Part 15.209(a)	
Frequency MHz	Meter Reading dBμV/m	Angle Degree	Height Meter	Polar H/ V	dB	Limit dBμV/m	Margin dB
206.8938	33.74	291	1	H	-15.5	43.5	-9.76
30.0000	28.61	241	1	V	-5.4	40.0	-11.39
59.1583	26.3	28	2	V	-20.8	40.0	-13.70
335.1904	31.42	196	1	H	-10.2	46.0	-14.58
76.6533	23.58	3	2	V	-16.4	40.0	-16.42
253.5471	29.24	217	1	V	-13.3	46.0	-16.76
206.8938	26.16	253	1	V	-15.5	43.5	-17.34
30.0000	20.96	303	1	H	-5.4	40.0	-19.04
142.7455	21.94	106	1	V	-15.8	43.5	-21.56
61.1022	15.98	169	3	H	-20.6	40.0	-24.02
76.6533	15.87	205	3	H	-16.4	40.0	-24.13
389.6192	21.36	120	2	H	-8.5	46.0	-24.63

* Within the measurement uncertainty

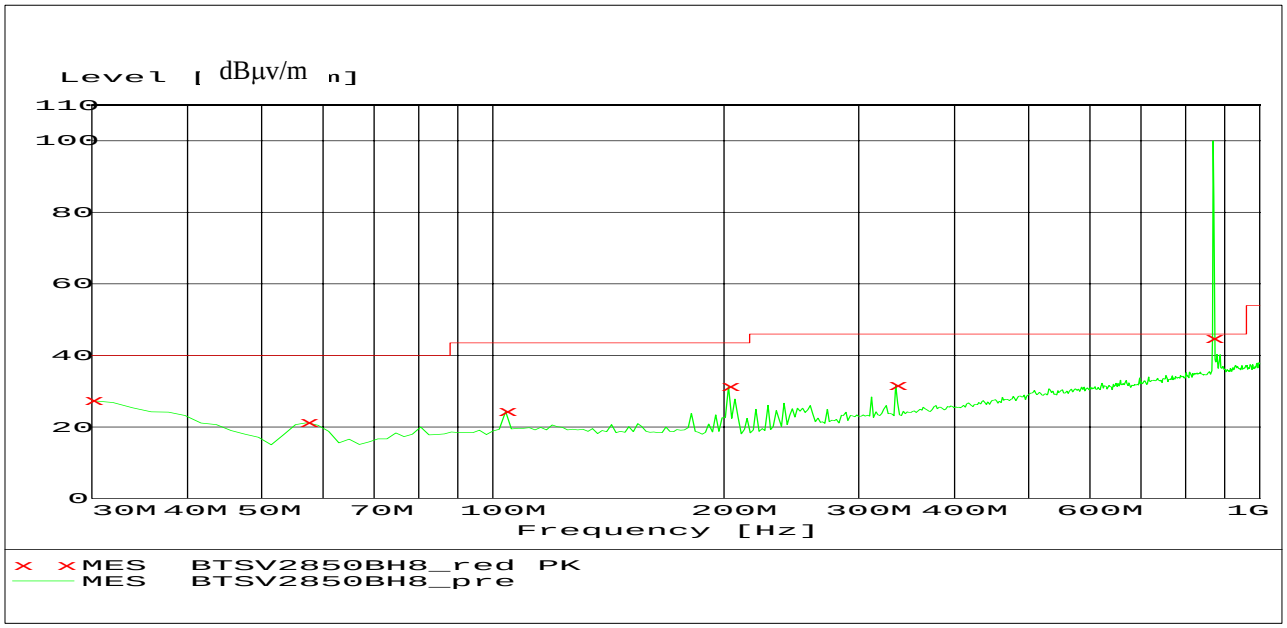
Plot(s) of Test Data

Plot(s) of Test Data is presented hereinafter as reference.

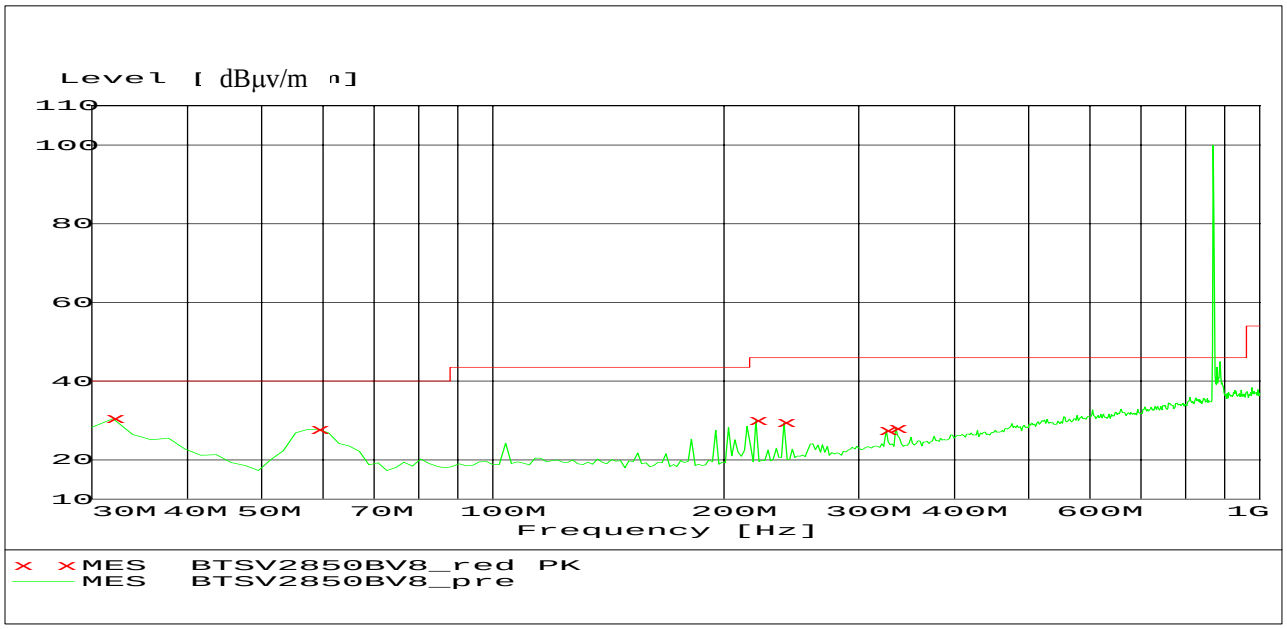
For 850 MHz

B Channel

Horizontal

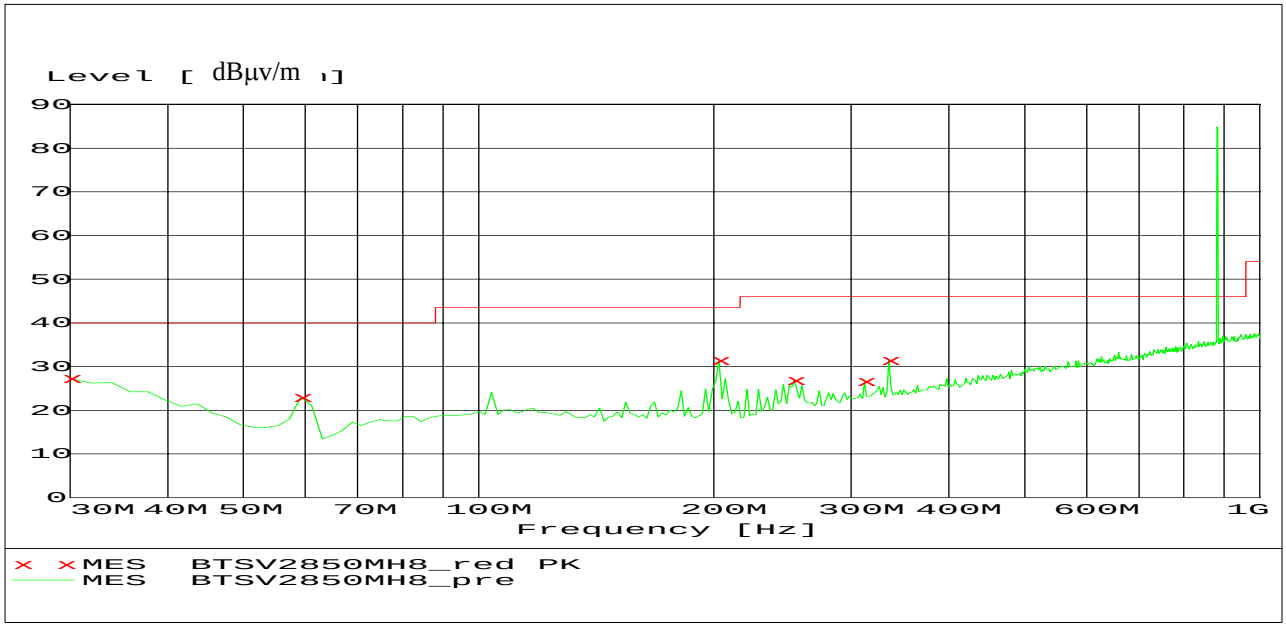


Vertical



M Channel

Horizontal



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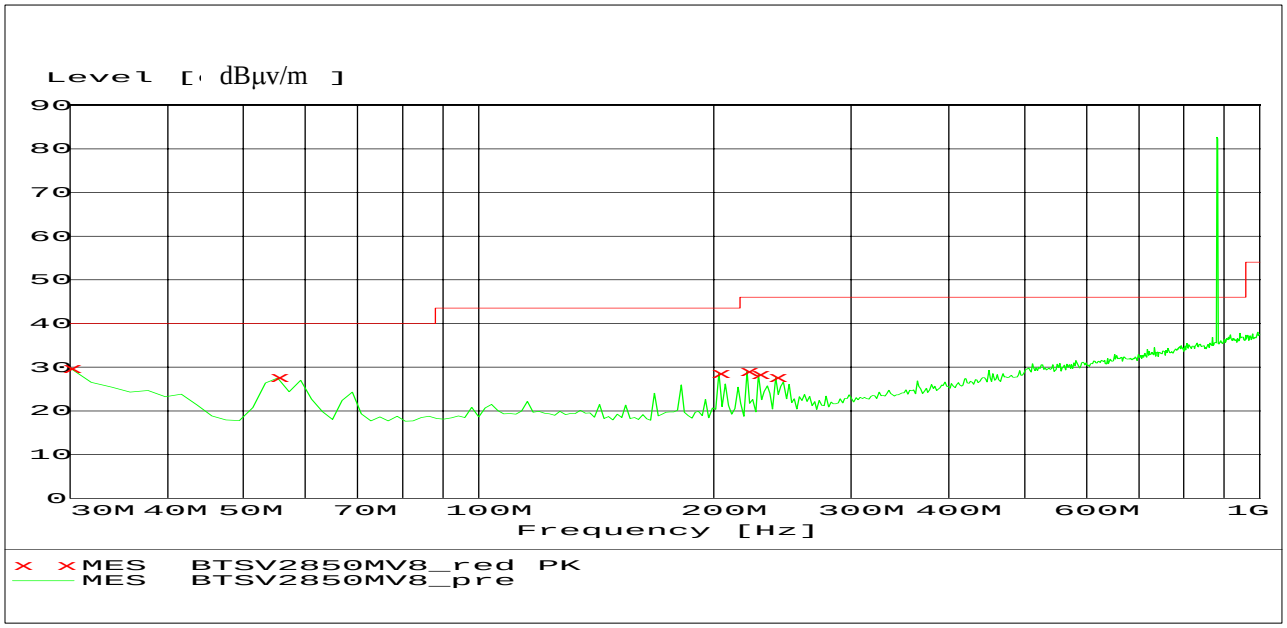
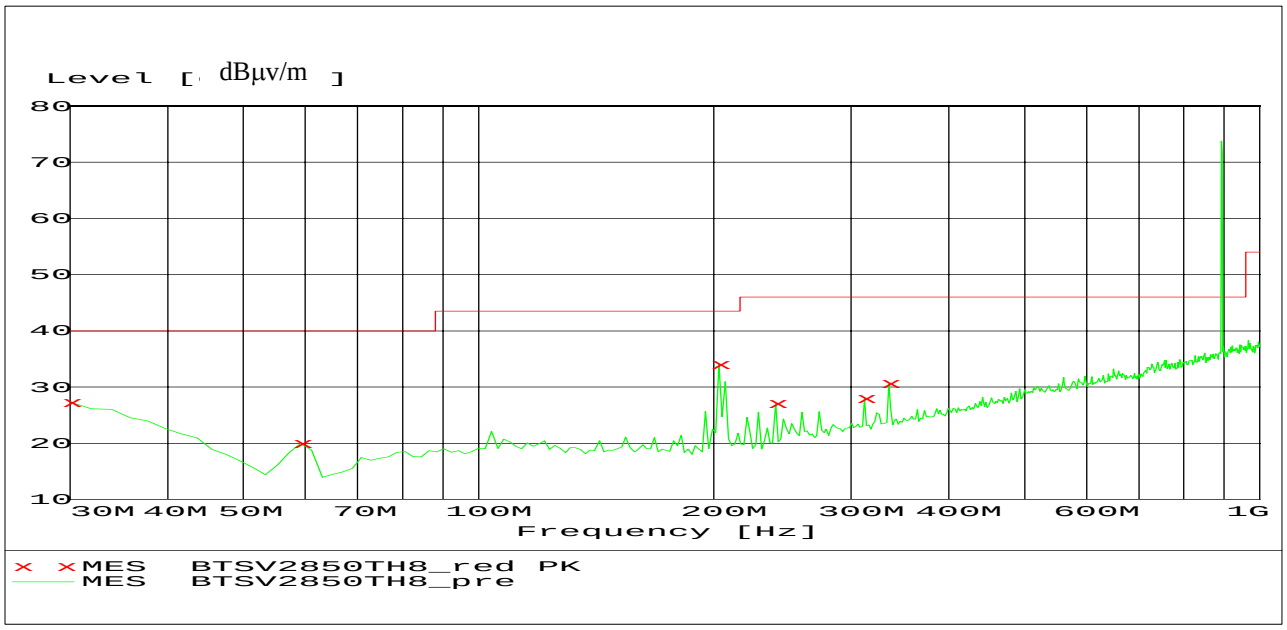


T Channel

Horizontal



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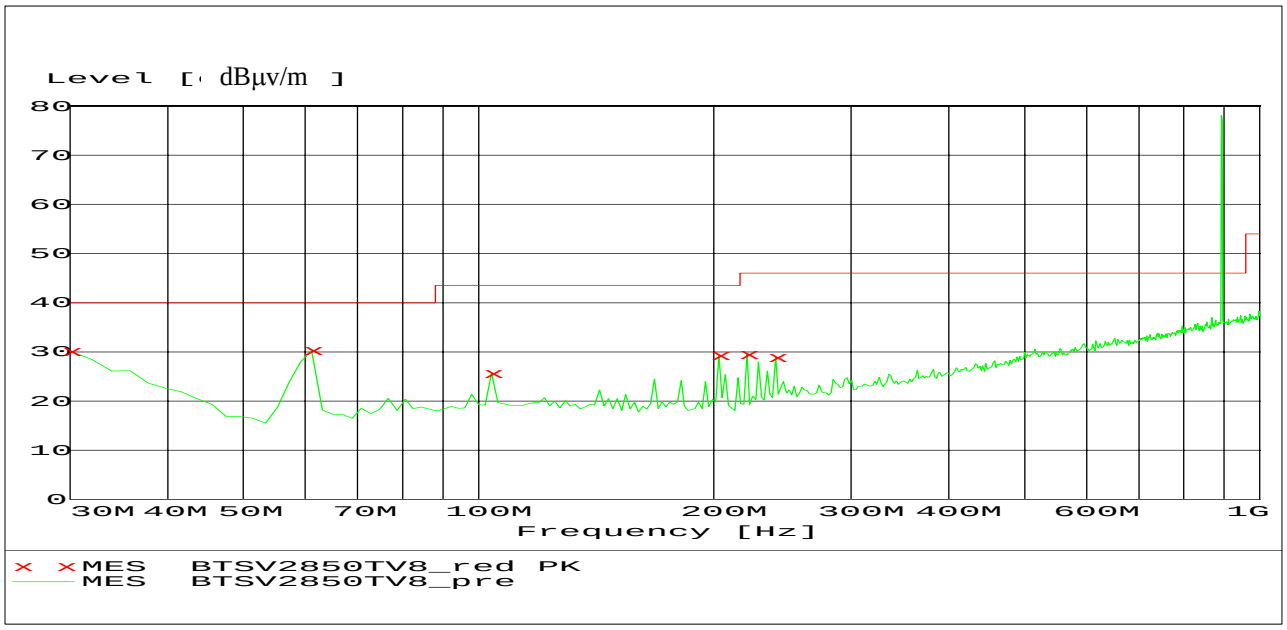
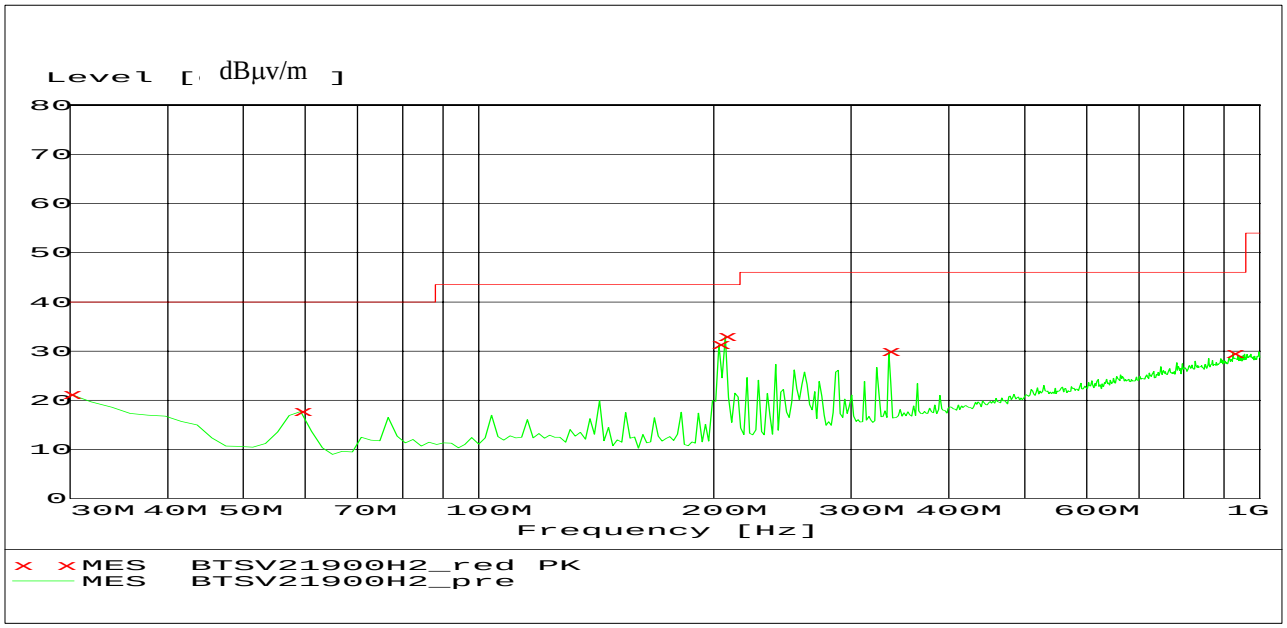


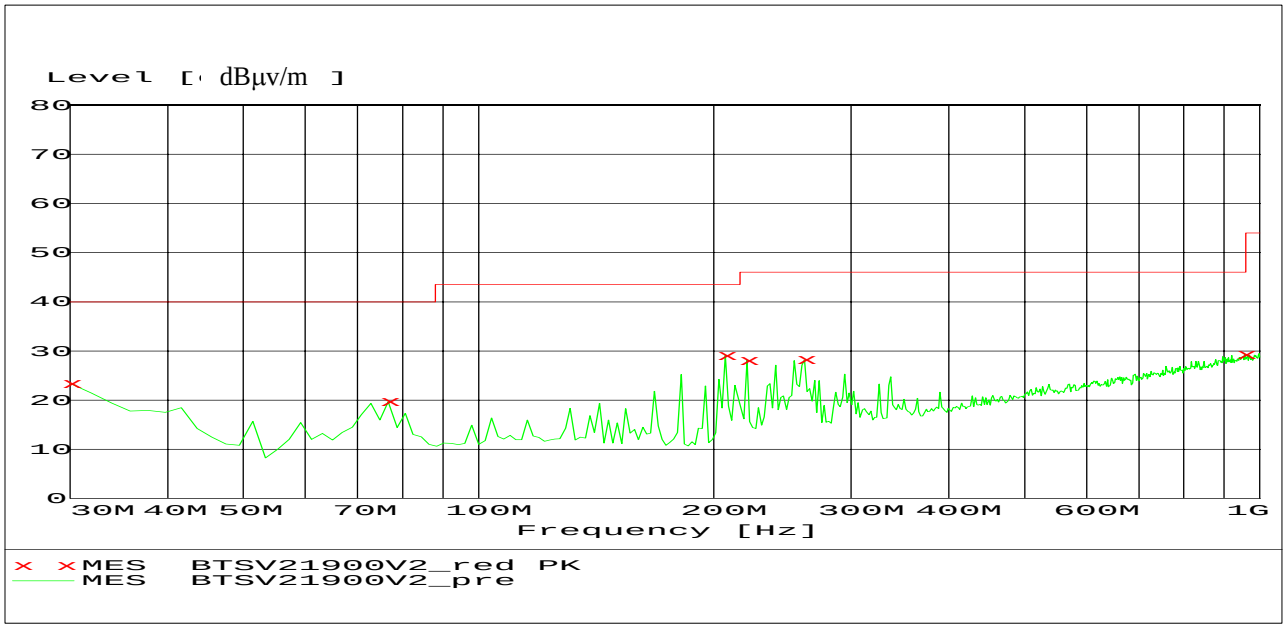
For 1900 MHz

B Channel

Horizontal

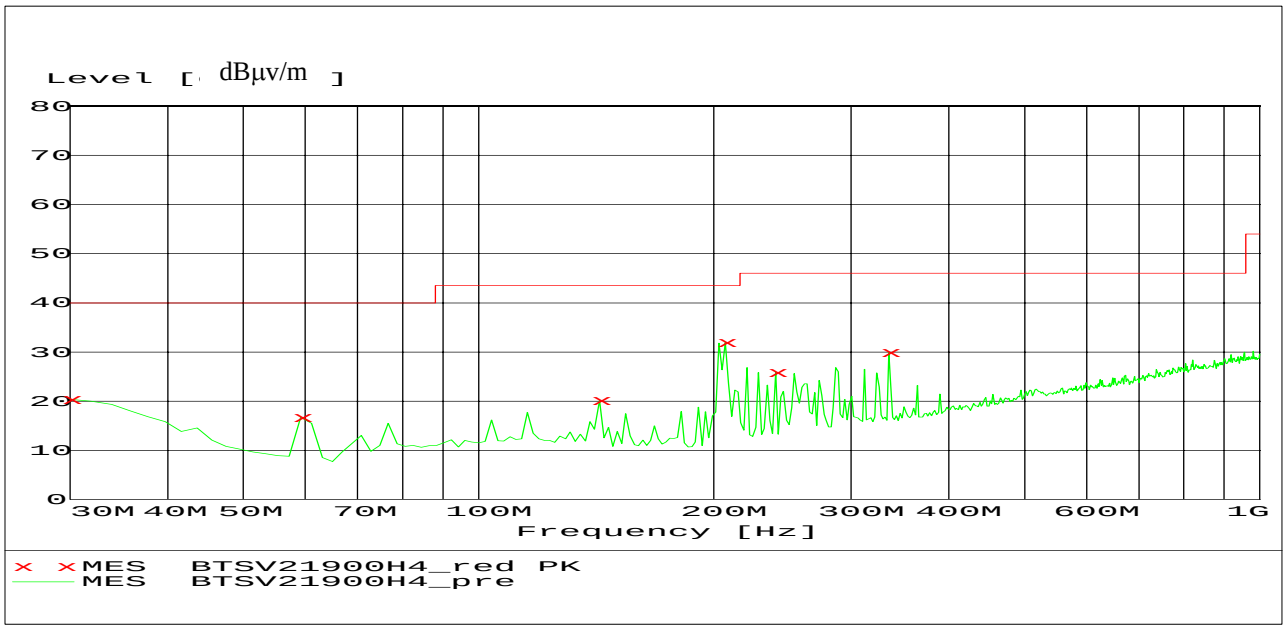


Vertical



M Channel

Horizontal



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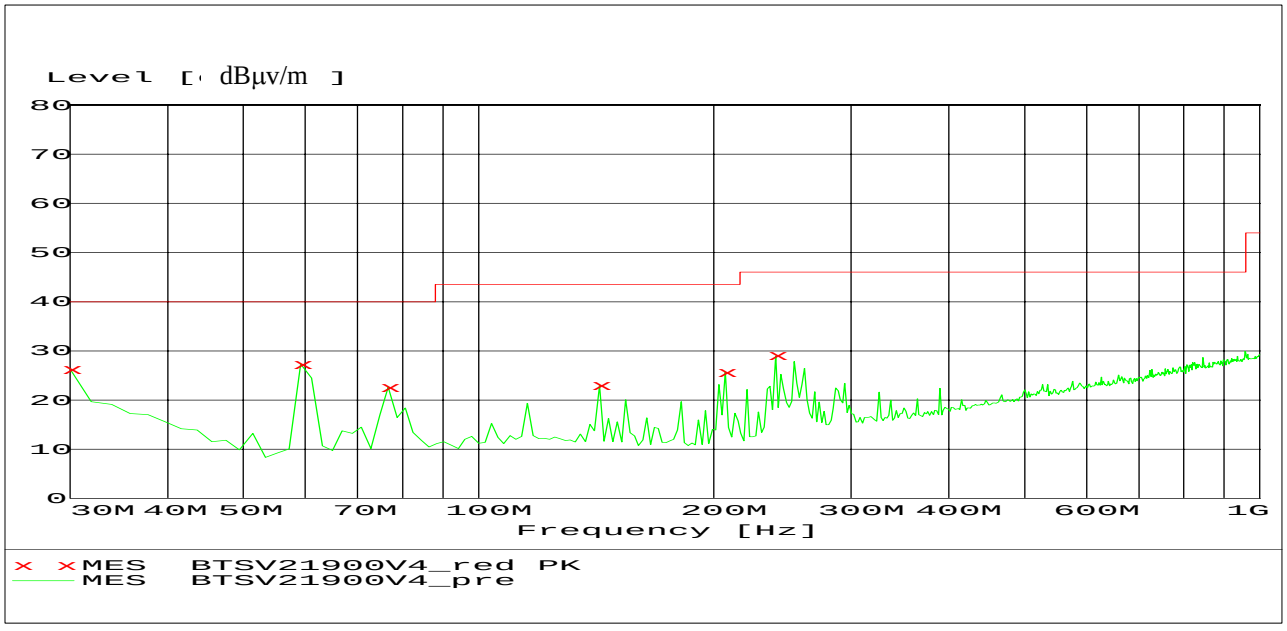
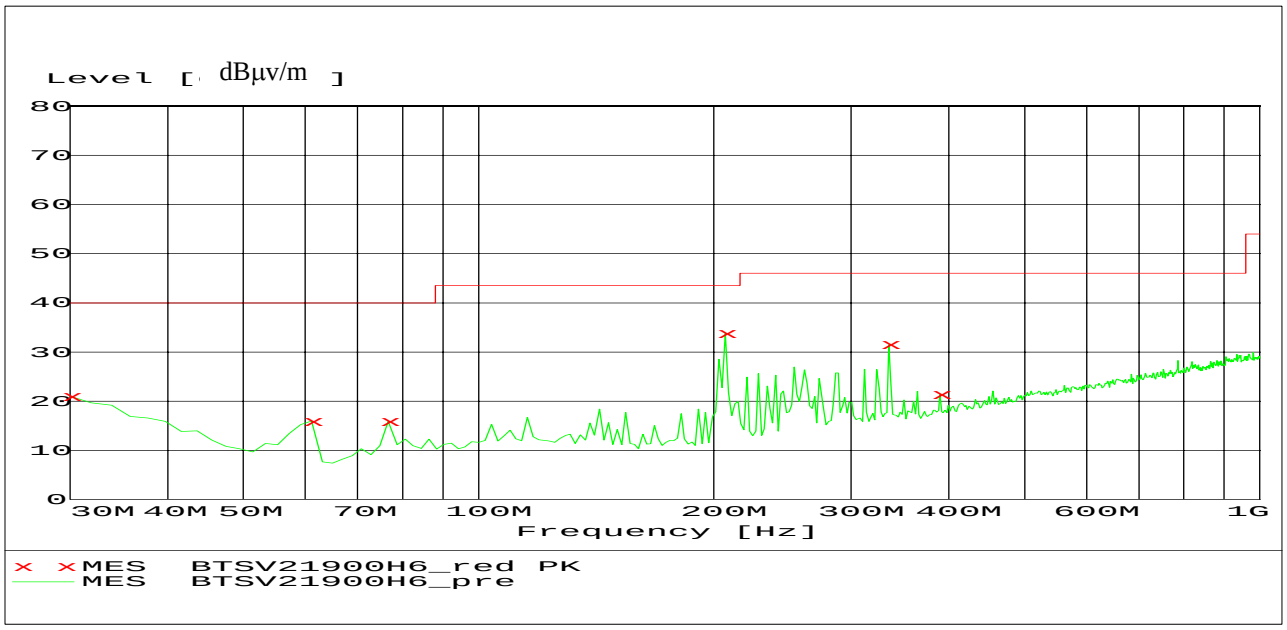
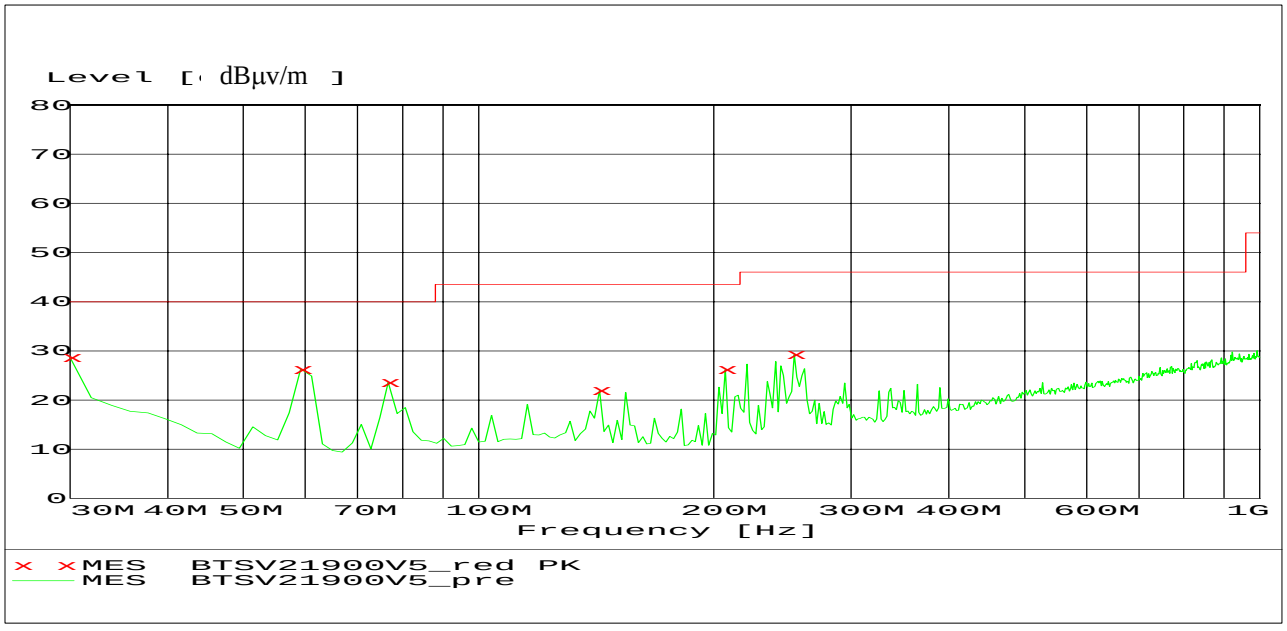


T Channel

Horizontal



Vertical



§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
R&S	EMI Test Receiver	ESI26	100058	2005-10-17	2006-10-16
R&S	Double-Ridged Waveguide Horn Antenna	HF906	100032	2004-10-10	2009-10-9
R&S	Filters	TS-FILT	N/A	N/A	N/A
R&S	Cable Set	RE Cable	N/A	2005-10-17	2006-10-16
Albatross	Anechoic Chamber	3m Site	N/A	2005-07-15	2008-07-14
R&S	Software	ES-K1	N/A	N/A	N/A
R&S	Signal Generator	SMR20	100098	2005-10-17	2006-10-16
R&S	Double-Ridged Waveguide Horn Antenna	HF906	100013	2004-01-31	2007-01-30

*** 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

For 850 MHz

Bottom Channel: -28.56 dB at 12484.97 MHz
Middle Channel: -28.07 dB at 12404.309 MHz
Top Channel: -37.95 dB at 5436.8737 MHz

For 1900 MHz

Bottom Channel: -24.75 dB at 19661.323 MHz
Middle Channel: -28.85 dB at 18436.874 MHz
Top Channel: -24.72 dB at 19947.896 MHz

Test Data

Environmental Conditions

Temperature:	18 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

The testing was performed by Merry Zhao on 2006-4-24

Test Mode: Transmitting

For 850 MHz

Indicated		Table	Test Antenna		Substituted			Antenna	Cable	Absolute	Limit	Margin
Frequency MHz	Meter Reading dBuV/m	Angle Degree	Height Meter	Polar H/V	Frequency MHz	Level dBm	Polar H/V	Gain Correction dBi	Loss dB	Level dBm	dBm	dB
Bottom Channel												
12484.97	57.4	180	1.2	V	12484.97	-43.71	V	12.05	9.9	-41.56	-13.00	-28.56
6158.3166	51.56	60	1.2	H	6158.3166	-51.83	H	9.05	6.9	-49.68	-13.00	-36.68
10618.236	55.92	45	1.0	H	10618.236	-53.18	H	11.75	9.1	-50.53	-13.00	-37.53
1733.4669	38.66	0	1.0	V	1733.4669	-57.94	V	6.55	3.5	-54.89	-13.00	-41.89
8705.4108	53.8	270	1.0	V	8705.4108	-57.22	V	9.65	8.3	-55.87	-13.00	-42.87
3645.2906	44.34	45	1.2	V	3645.2906	-60.49	V	7.75	5	-57.74	-13.00	-44.74
3152.3046	42.67	45	1.2	H	3152.3046	-61.44	H	7.75	4.7	-58.39	-13.00	-45.39
1649.2986	37.27	180	1.2	H	1649.2986	-68.05	H	6.55	3.4	-64.9	-13.00	-51.90
1144.2886	35.31	90	1.2	H	1144.2886	-70.49	H	4.25	2.8	-69.04	-13.00	-56.04
1264.5291	35.2	45	1.0	V	1264.5291	-70.45	V	4.25	3	-69.2	-13.00	-56.2
Middle Channel												
12404.309	57.89	270	1.2	V	12404.309	-43.22	V	12.05	9.9	-41.07	-13.00	-28.07
6134.2685	51.67	238	1.0	H	6134.2685	-51.72	H	9.05	6.8	-49.47	-13.00	-36.47
3525.0501	45.92	60	1.0	H	3525.0501	-57.34	H	7.75	5	-54.59	-13.00	-41.59
6182.3647	51.79	115	1.0	V	6182.3647	-57.26	V	9.05	6.9	-55.11	-13.00	-42.11
2310.6212	39.37	300	1.0	V	2310.6212	-63.85	V	7.05	4.1	-60.9	-13.00	-47.90
2334.6693	39.97	220	1.0	H	2334.6693	-65.23	H	7.05	4.1	-62.28	-13.00	-49.28
1625.2505	36.88	125	1.2	V	1625.2505	-70.99	V	6.55	3.4	-67.84	-13.00	-54.84
1661.3226	37.01	158	1.2	H	1661.3226	-74.56	H	6.55	3.4	-71.41	-13.00	-58.41
Top Channel												
5436.8737	47.7	263	1.2	H	5436.8737	-53.2	H	8.55	6.3	-50.95	-13.00	-37.95
10445.391	55.21	124	1.2	H	10445.391	-53.73	H	11.35	9.1	-51.48	-13.00	-38.48
8705.4108	53.82	120	1.0	H	8705.4108	-54.15	H	9.65	8.3	-52.8	-13.00	-39.80
8728.4569	54.1	168	1.0	V	8728.4569	-55.28	V	9.65	8.3	-53.93	-13.00	-40.93
6158.3166	51.05	309	1.0	V	6158.3166	-56.42	V	9.05	6.9	-54.27	-13.00	-41.27
4559.1182	44.59	162	1.0	H	4559.1182	-58.84	H	9.15	5.7	-55.39	-13.00	-42.39
3140.2806	42.33	125	1.0	V	3140.2806	-58.64	V	7.75	4.7	-55.59	-13.00	-42.59
5400.8016	47.59	321	1.0	V	5400.8016	-59.04	V	8.55	6.3	-56.79	-13.00	-43.79
2671.3427	41.44	238	1.2	H	2671.3427	-63.3	H	7.95	4.4	-59.75	-13.00	-46.75
2659.3186	40.94	98	1.0	V	2659.3186	-66.59	V	7.95	4.3	-62.94	-13.00	-49.94
1637.2745	37.25	47	2.0	V	1637.2745	-70.62	V	6.55	3.4	-67.47	-13.00	-54.47

For 1900 MHz

Indicated		Table	Test Antenna		Substituted			Antenna	Cable	Absolute	Limit	Margin
Frequency MHz	Meter Reading dBuV/m	Angle Degree	Height Meter	Polar H/V	Frequency MHz	Level dBm	Polar H/V	Gain Correction dBi	Loss dB	Level dBm	dBm	dB
Bottom Channel												
19661.323	70.02	45	1.0	H	19661.323	-32	H	6.45	12.2	-37.75	-13.00	-24.75
18098.196	70.43	270	1.0	V	18098.196	-38	V	6.45	12.2	-43.70	-13.00	-30.70
14529.058	64.95	45	1.0	H	14529.058	-42.3	H	9.15	11	-44.15	-13.00	-31.15
6158.3166	52.57	60	1.2	H	6158.3166	-50.82	H	9.05	6.9	-48.67	-13.00	-35.67
14555.11	64.3	45	1.2	V	14555.11	-47.16	V	9.15	11	-49.01	-13.00	-36.01
6158.3166	53.03	0	1.0	V	6158.3166	-54.44	V	9.05	6.9	-52.29	-13.00	-39.29
2647.2946	41.42	45	1.2	H	2647.2946	-63.8	H	7.95	4.3	-60.15	-13.00	-47.15
1805.6112	38.66	180	1.2	H	1805.6112	-64.67	H	6.55	3.6	-61.72	-13.00	-47.72
1817.6353	38.61	45	1.0	V	1817.6353	-67.91	V	6.55	3.6	-64.96	-13.00	-51.96
1372.7455	36.11	90	1.2	H	1372.7455	-69.99	H	4.25	3.1	-68.84	-13.00	-55.84
Middle Channel												
18436.874	69.8	97	1.2	H	18436.874	-36.1	H	6.45	12.2	-41.85	-13.00	-28.85
5965.9319	51.58	60	1.0	H	5965.9319	-47.03	H	9.05	6.7	-44.68	-13.00	-31.68
18254.509	69.88	180	1.0	V	18254.509	-40.2	V	6.45	12.2	45.95	-13.00	-32.95
13382.766	60.85	238	1.0	H	13382.766	-50.6	H	11.85	10.2	-48.95	-13.00	-35.95
14555.11	63.96	90	1.0	V	14555.11	-47.5	V	9.15	11	-49.35	-13.00	-36.35
3296.5932	43.11	270	1.2	V	3296.5932	-57.86	V	7.75	4.8	-54.91	-13.00	-41.91
1733.4669	38.09	300	1.0	V	1733.4669	-58.51	V	6.55	3.5	-55.46	-13.00	-42.46
2659.3186	41.36	220	1.0	H	2659.3186	-63.38	H	7.95	4.3	-59.73	-13.00	-46.73
2635.2705	41.86	115	1.0	V	2635.2705	-65.67	V	7.95	4.3	-62.12	-13.00	-49.12
1709.4188	38.65	158	1.2	H	1709.4188	-66.58	H	6.55	3.5	-63.53	-13.00	-50.53
1444.8898	36.46	125	1.2	V	1444.8898	-77.03	V	4.25	3.2	-75.98	-13.00	-62.98
Top Channel												
19947.896	70.05	228	1.0	H	19947.896	-31.97	H	6.45	12.2	-37.72	-13.00	-24.72
18150.301	70.08	168	1.0	V	18150.301	-40	V	6.45	12.2	-45.75	-13.00	-32.75
14633.267	64.02	124	1.2	H	14633.267	-44.89	H	9.15	11	-46.74	-13.00	-33.74
14633.267	64.56	309	1.0	V	14633.267	-45.9	V	9.15	11	-47.75	-13.00	-34.75
3200.4008	42.84	321	1.0	V	3200.4008	-58.13	V	7.75	4.8	-55.35	-13.00	-42.35
3224.4489	43.67	120	1.0	H	3224.4489	-60.44	H	7.75	4.8	-57.49	-13.00	-44.49
2683.3667	41.64	263	1.2	H	2683.3667	-63.1	H	7.95	4.4	-59.55	-13.00	-46.55
2647.2946	41.86	125	1.0	V	2647.2946	-65.67	V	7.95	4.3	-62.02	-13.00	-49.02
1769.5391	38.88	98	1.0	V	1769.5391	-67.64	V	6.55	3.5	-64.59	-13.00	-51.59
1432.8657	36.06	238	1.2	H	1432.8657	-70.04	H	4.25	3.2	-68.99	-13.00	-55.99
1661.3226	38.36	162	1.0	H	1661.3226	-73.21	H	6.55	3.4	-70.06	-13.00	-57.06
1456.9138	36.62	47	2.0	V	1456.9138	-76.87	V	4.25	3.2	-75.82	-13.00	-62.82

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

Applicable Standard

Requirements: CFR 47§ 2.1051, §22.917(a), and §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
Agilent	Spectrum analyzer	E4445A	MY45300953	2006-02-20	2007-02-19
GW	Dual tracking with 5V fixed	GPC-0303D	PC303IPE	2005-10-26	2006-10-25
Shanghai Huaxiang	Attenuator	30dB	0302707	2005-11-04	2006-11-03
R & S	Spectrum analyzer	FSU26/FS-K76/K40	200209/026	2006-05-30	2007-05-30

*** 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 10^{th} harmonic.

Test Data

Environmental Conditions

Temperature:	18 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

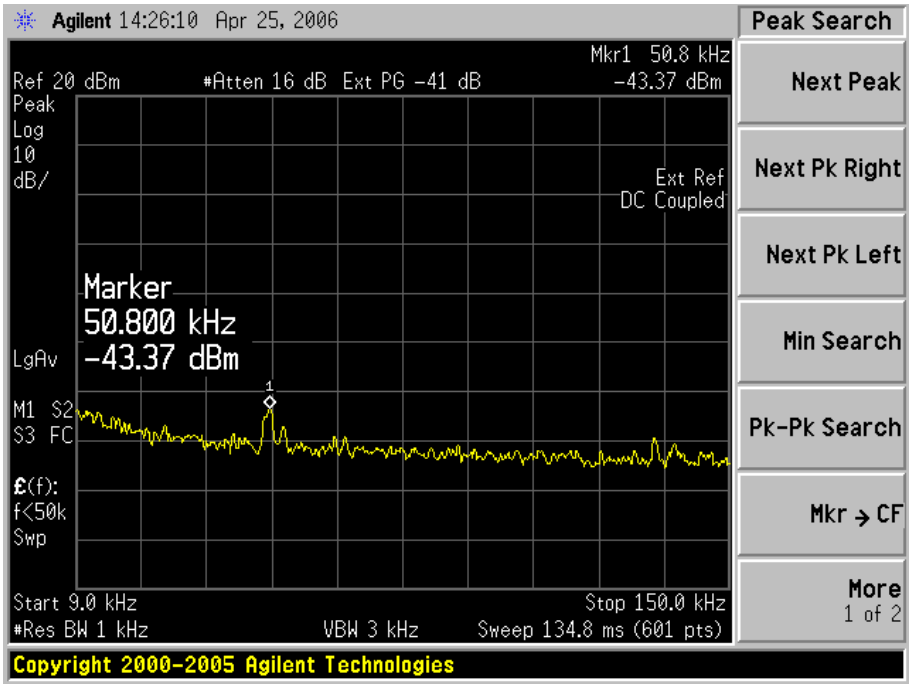
The testing was performed by Merry Zhao on 2006-4-25, 2006-7-26.

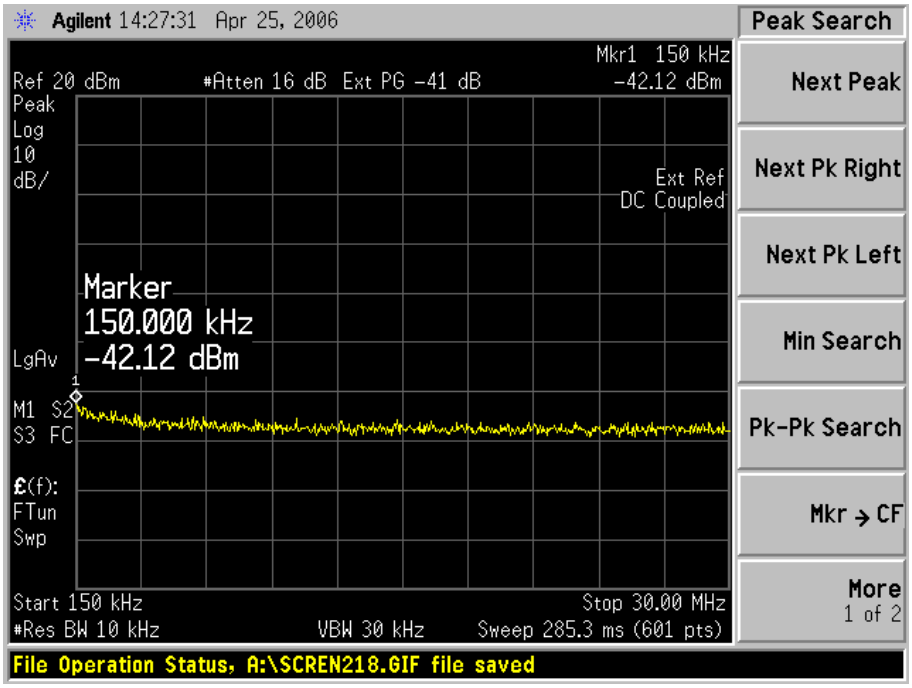
Test Result: Pass

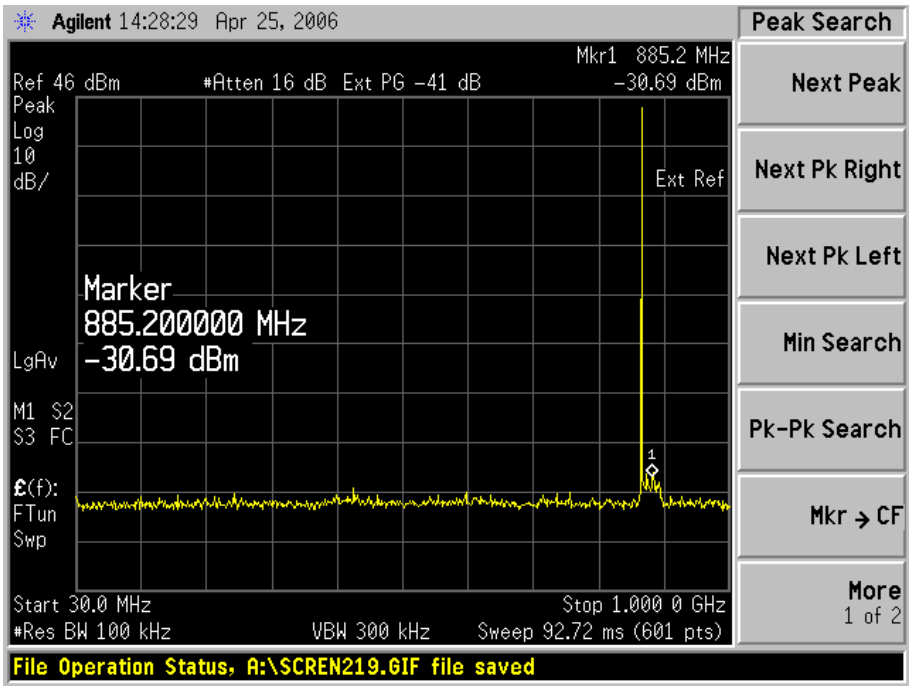
Test Mode: Transmitting

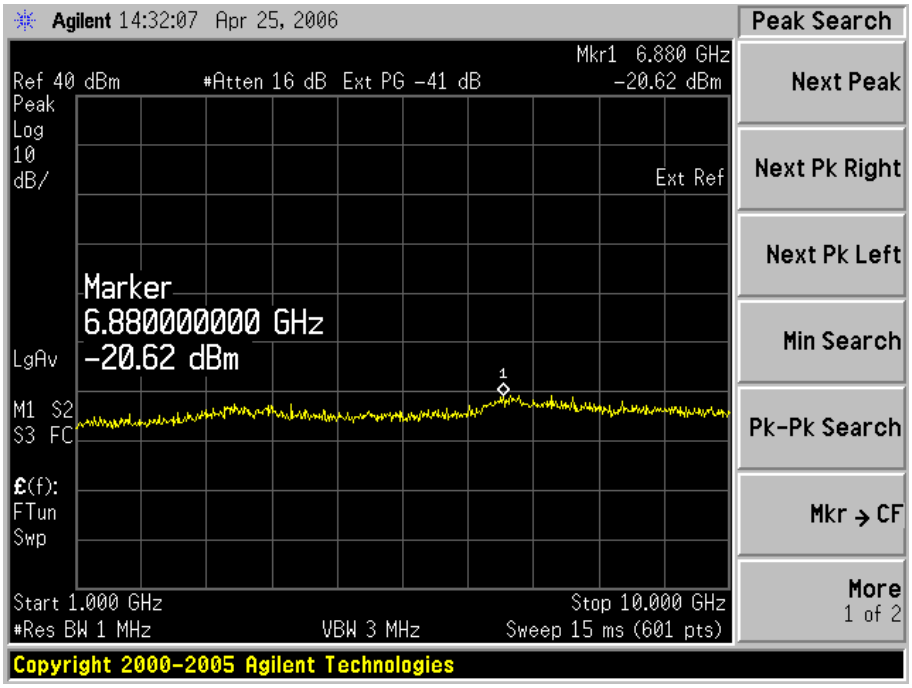
For 850 MHz

Channel 128

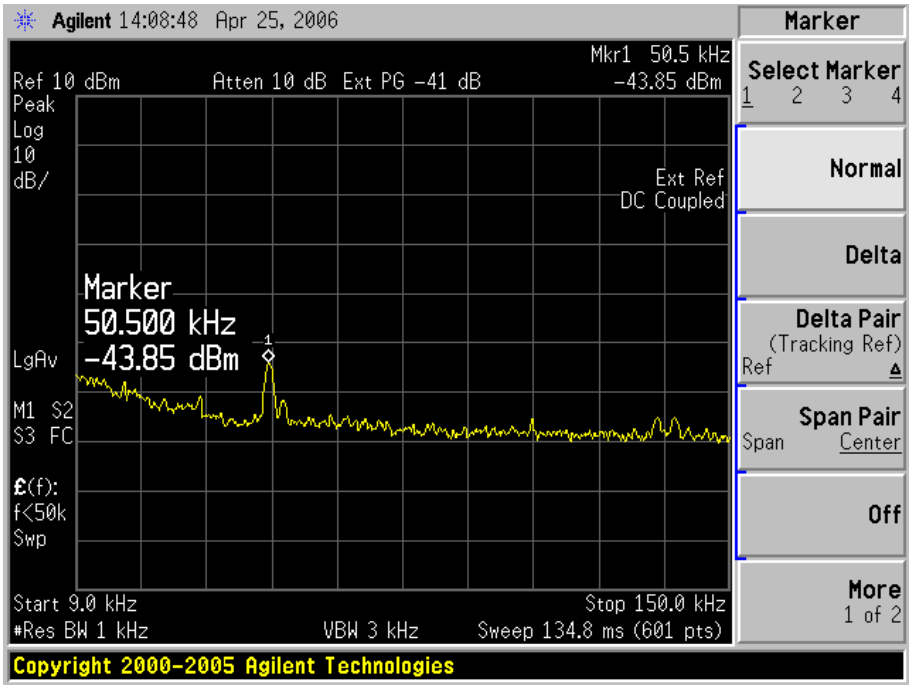


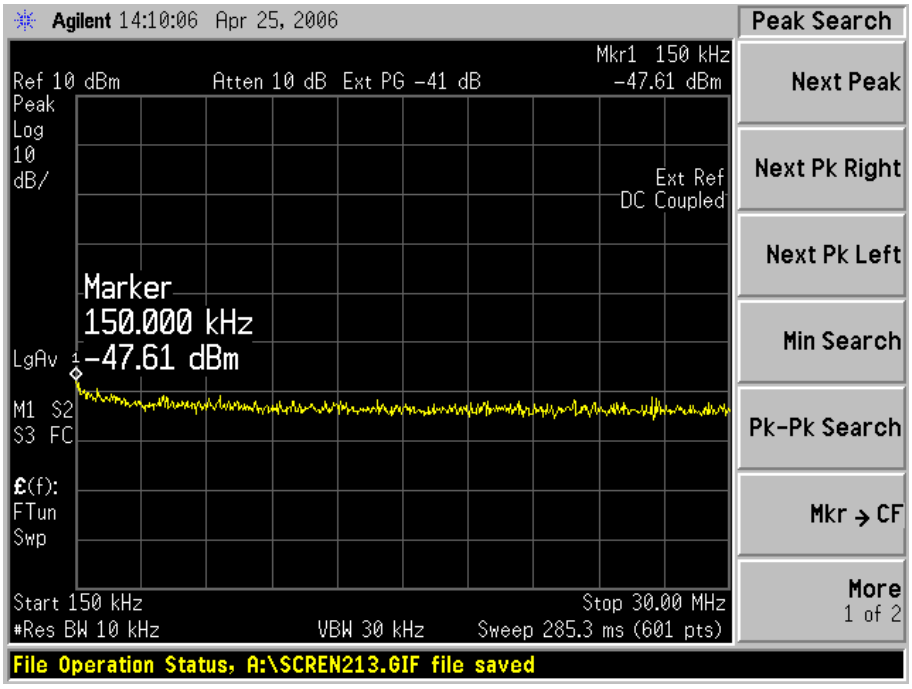


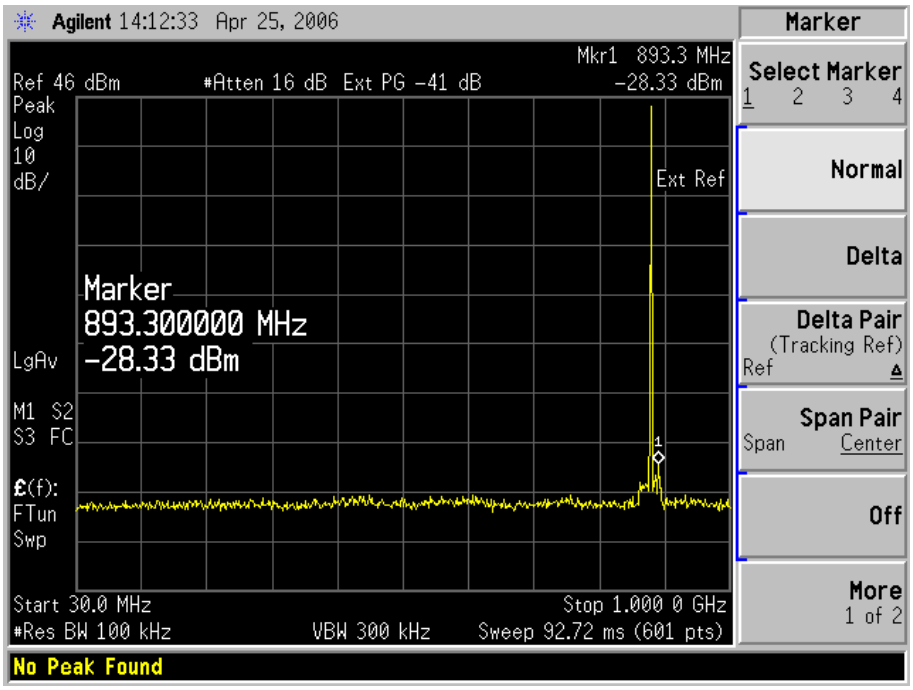

Agilent 14:28:29 Apr 25, 2006
Peak Search
Mkr1 885.2 MHz
Ref 46 dBm
#Atten 16 dB Ext PG -41 dB
-30.69 dBm
Peak
Log
10
dB/
Ext Ref
Marker
885.200000 MHz
-30.69 dBm
LgAv
M1 S2
S3 FC
£(f):
FTun
Swp
Start 30.0 MHz
Stop 1.000 0 GHz
#Res BW 100 kHz
VBW 300 kHz
Sweep 92.72 ms (601 pts)
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2
File Operation Status, A:\SCREN219.GIF file saved

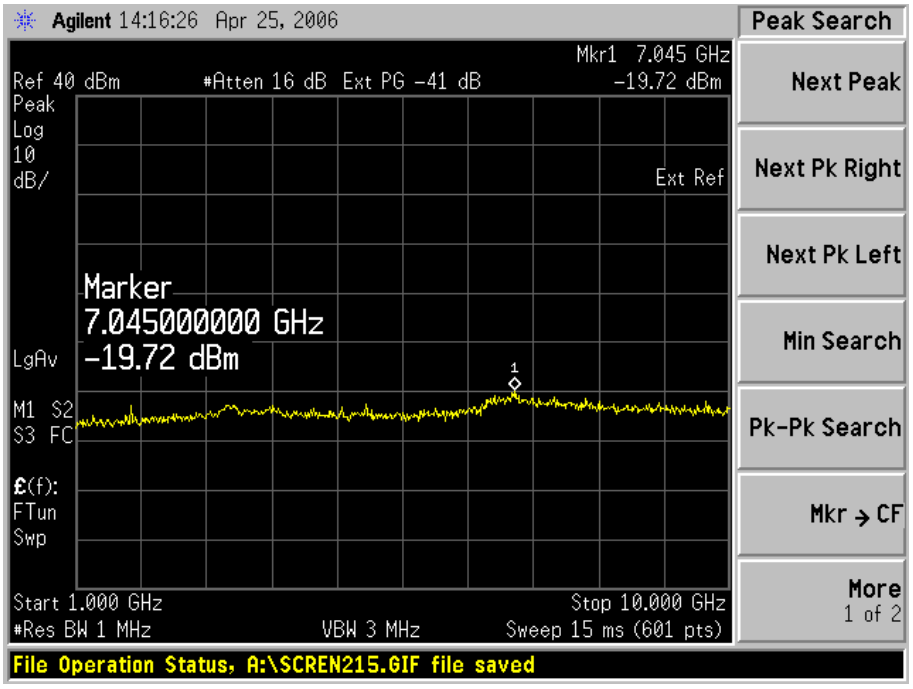

Agilent 14:32:07 Apr 25, 2006
Peak Search
Mkr1 6.880 GHz
Ref 40 dBm
#Atten 16 dB Ext PG -41 dB
-20.62 dBm
Peak
Log
10
dB/
Ext Ref
Marker
6.880000000 GHz
-20.62 dBm
LgAv
M1 S2
S3 FC
£(f):
FTun
Swp
Start 1.000 GHz
Stop 10.000 GHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 15 ms (601 pts)
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2
Copyright 2000-2005 Agilent Technologies

Channel 190

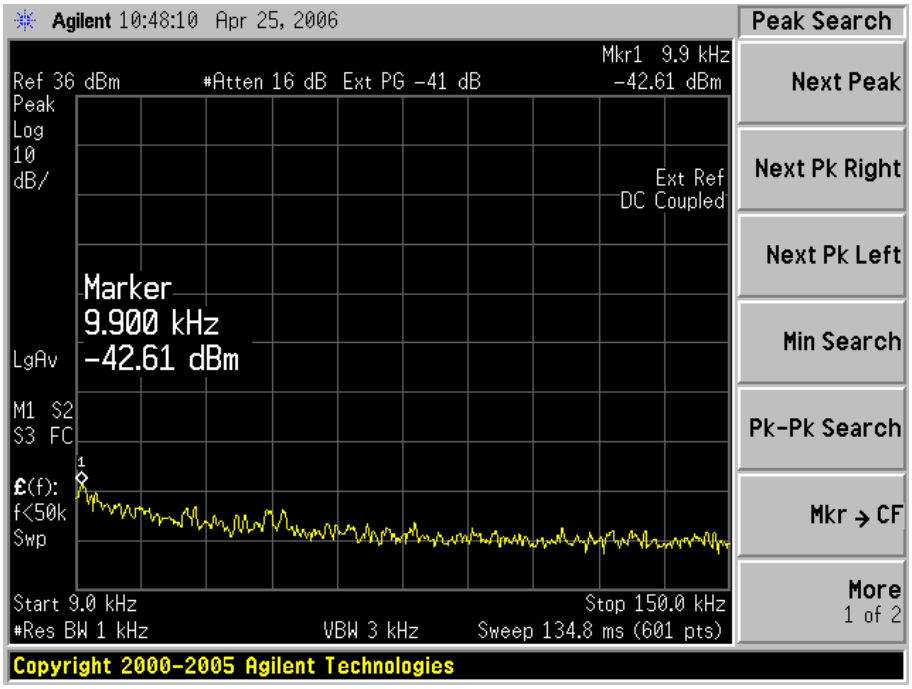

Agilent 14:08:48 Apr 25, 2006
Marker
Mkr1 50.5 kHz
Ref 10 dBm
Atten 10 dB Ext PG -41 dB
-43.85 dBm
Peak
Log
10
dB/
Ext Ref
DC Coupled
Marker
50.500 kHz
-43.85 dBm
LgAv
M1 S2
S3 FC
£(f):
f<50k
Swp
Start 9.0 kHz
Stop 150.0 kHz
#Res BW 1 kHz
VBW 3 kHz
Sweep 134.8 ms (601 pts)
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
Copyright 2000-2005 Agilent Technologies


Agilent 14:10:06 Apr 25, 2006
Peak Search
Mkr1 150 kHz
Ref 10 dBm
Atten 10 dB Ext PG -41 dB
-47.61 dBm
Peak
Log
10
dB/
Ext Ref
DC Coupled
Marker
150.000 kHz
-47.61 dBm
LgAv
M1 S2
S3 FC
£(f):
FTun
Swp
Start 150 kHz
Stop 30.00 MHz
#Res BW 10 kHz
VBW 30 kHz
Sweep 285.3 ms (601 pts)
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2
File Operation Status, A:\SCREN213.GIF file saved


Agilent 14:12:33 Apr 25, 2006
Mkr1 893.3 MHz
Ref 46 dBm
#Atten 16 dB Ext PG -41 dB
-28.33 dBm
Peak
Log
10
dB/
Ext Ref
Marker
893.300000 MHz
-28.33 dBm
LgAv
M1 S2
S3 FC
£(f):
FTun
Swp
Start 30.0 MHz
Stop 1.000 0 GHz
#Res BW 100 kHz
VBW 300 kHz
Sweep 92.72 ms (601 pts)
No Peak Found
Marker
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2


Agilent 14:16:26 Apr 25, 2006
Mkr1 7.045 GHz
Ref 40 dBm
#Atten 16 dB Ext PG -41 dB
-19.72 dBm
Peak
Log
10
dB/
Ext Ref
Marker
7.045000000 GHz
-19.72 dBm
LgAv
M1 S2
S3 FC
£(f):
FTun
Swp
Start 1.000 GHz
Stop 10.000 GHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 15 ms (601 pts)
File Operation Status, A:\SCREN215.GIF file saved
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2

Channel 251


Agilent 10:48:10 Apr 25, 2006
Peak Search
Mkr1 9.9 kHz
Ref 36 dBm
#Atten 16 dB Ext PG -41 dB
-42.61 dBm
Peak
Log
10
dB/
Ext Ref
DC Coupled
Marker
9.900 kHz
-42.61 dBm
LgAv
M1 S2
S3 FC
£(f):
f<50k
Swp
Start 9.0 kHz
Stop 150.0 kHz
#Res BW 1 kHz
VBW 3 kHz
Sweep 134.8 ms (601 pts)
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2
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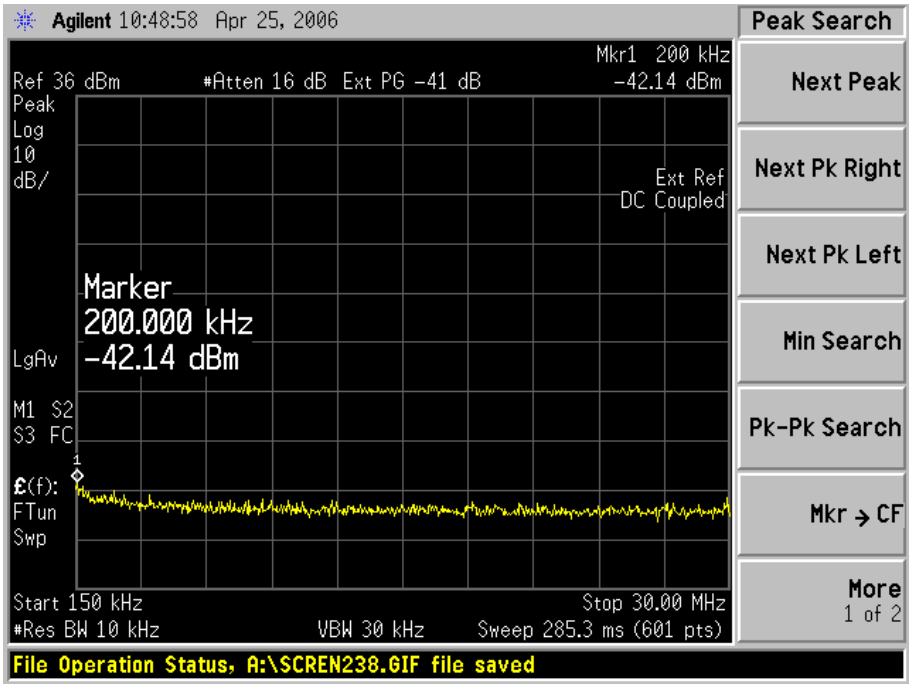
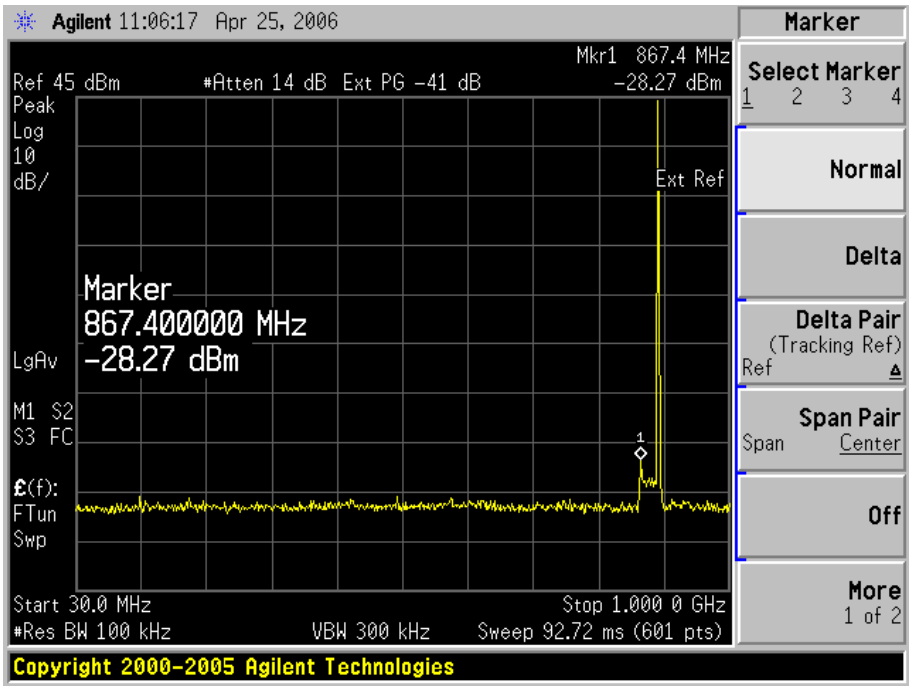
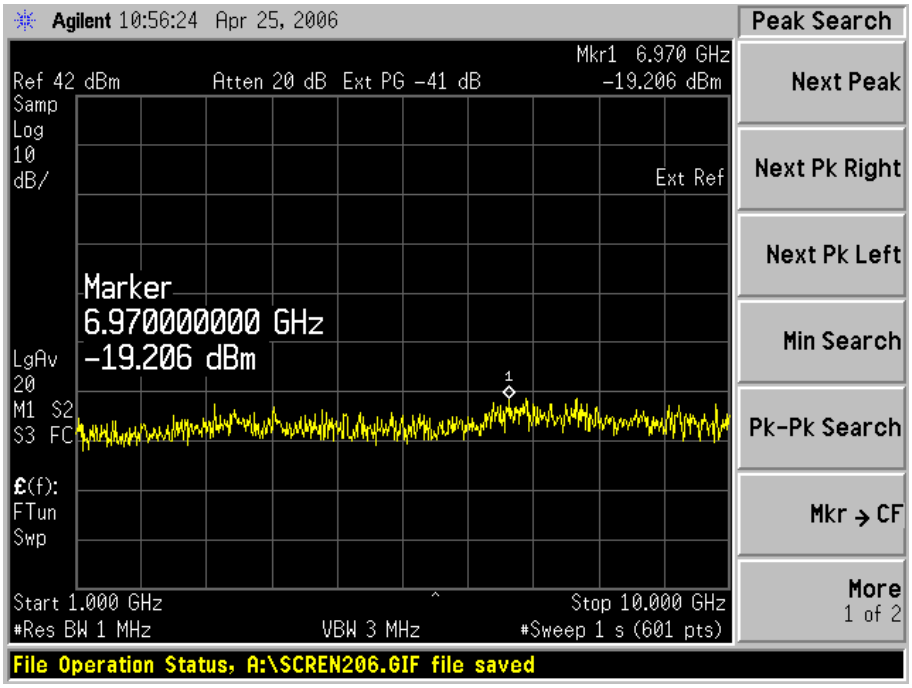
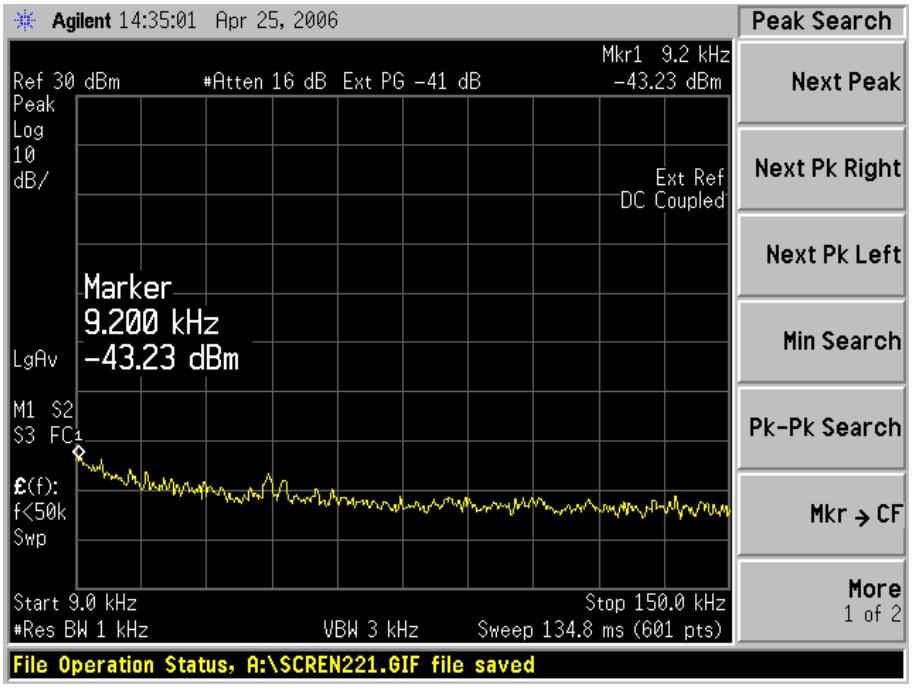

Agilent 10:48:58 Apr 25, 2006
Peak Search
Mkr1 200 kHz
Ref 36 dBm
#Atten 16 dB Ext PG -41 dB
-42.14 dBm
Peak
Log
10
dB/
Ext Ref
DC Coupled
Marker
200.000 kHz
-42.14 dBm
LgAv
M1 S2
S3 FC
£(f):
FTun
Swp
Start 150 kHz
Stop 30.00 MHz
#Res BW 10 kHz
VBW 30 kHz
Sweep 285.3 ms (601 pts)
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2
File Operation Status, A:\SCREN238.GIF file saved

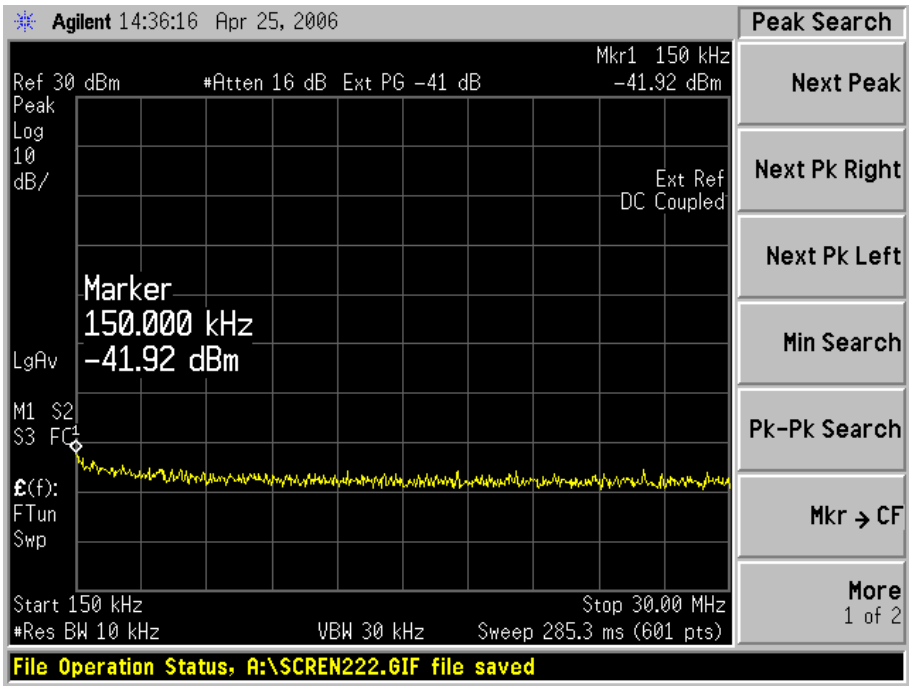

Agilent 11:06:17 Apr 25, 2006
Marker
Mkr1 867.4 MHz
Ref 45 dBm
#Atten 14 dB Ext PG -41 dB
-28.27 dBm
Peak
Log
10
dB/
Ext Ref
Marker
867.400000 MHz
-28.27 dBm
LgAv
M1 S2
S3 FC
£(f):
FTun
Swp
Start 30.0 MHz
Stop 1.000 0 GHz
#Res BW 100 kHz
VBW 300 kHz
Sweep 92.72 ms (601 pts)
Select Marker
1 2 3 4
Normal
Delta
Delta Pair
(Tracking Ref)
Ref
Span Pair
Span Center
Off
More
1 of 2
Copyright 2000-2005 Agilent Technologies

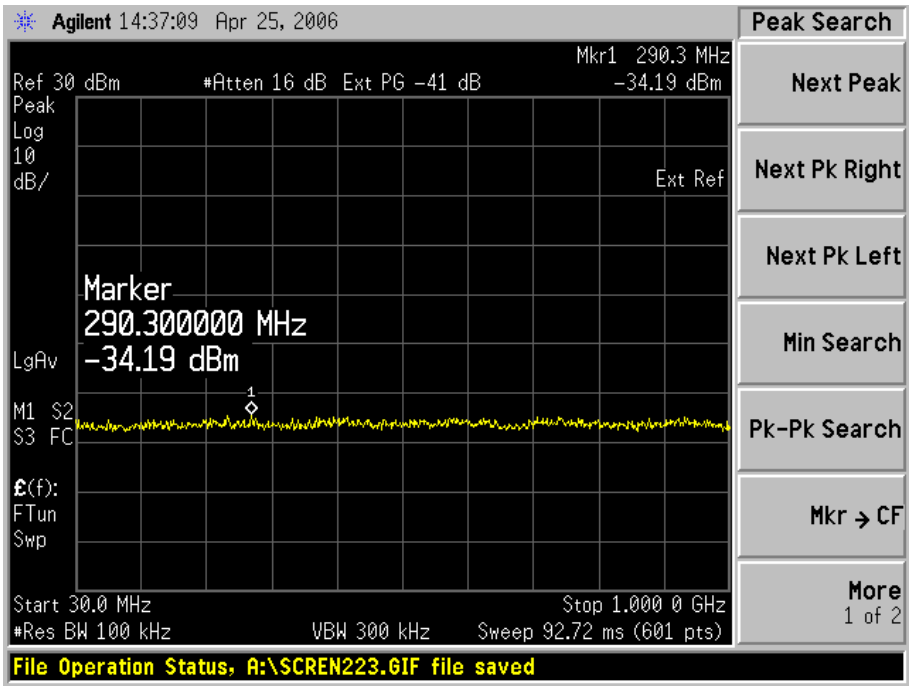

Agilent 10:56:24 Apr 25, 2006
Peak Search
Mkr1 6.970 GHz
Ref 42 dBm
Atten 20 dB Ext PG -41 dB
-19.206 dBm
Samp
Log
10
dB/
Ext Ref
Marker
6.970000000 GHz
-19.206 dBm
LgAv
20
M1 S2
S3 FC
£(f):
FTun
Swp
Start 1.000 GHz
Stop 10.000 GHz
#Res BW 1 MHz
VBW 3 MHz
#Sweep 1 s (601 pts)
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2
File Operation Status, A:\SCREN206.GIF file saved

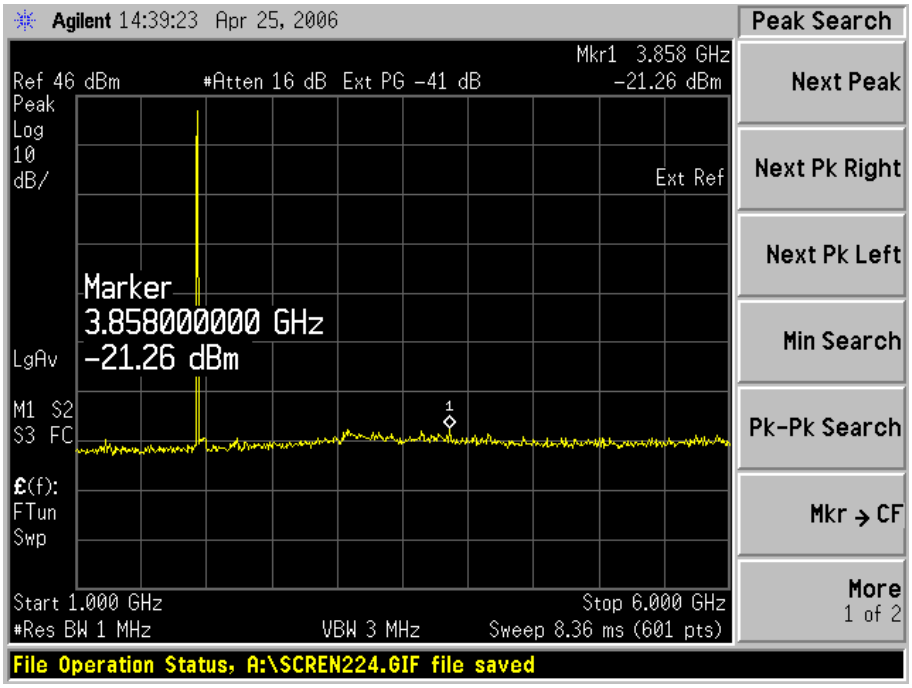
For 1900 MHz

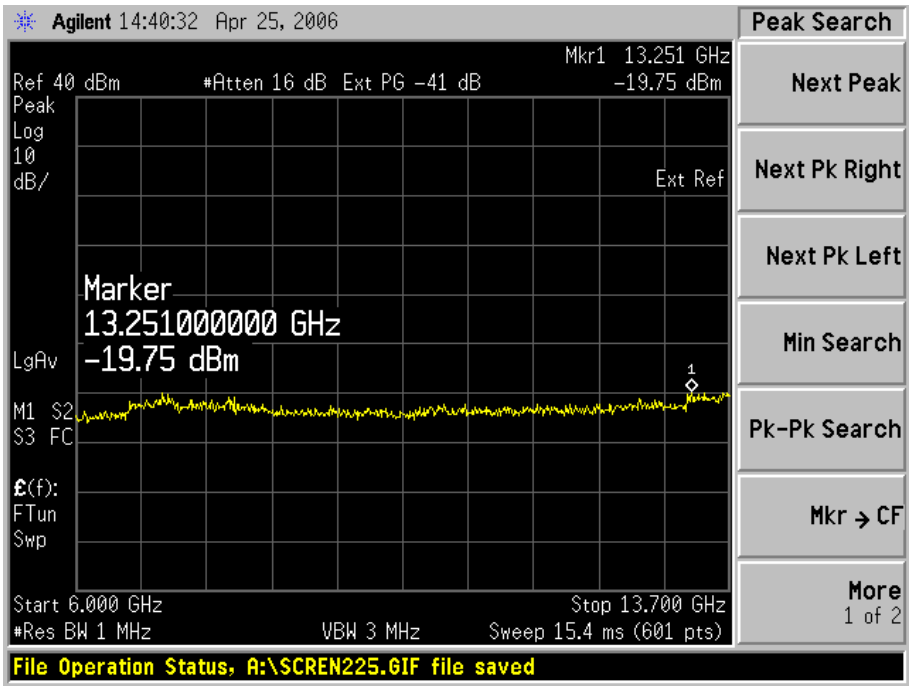
Channel 512

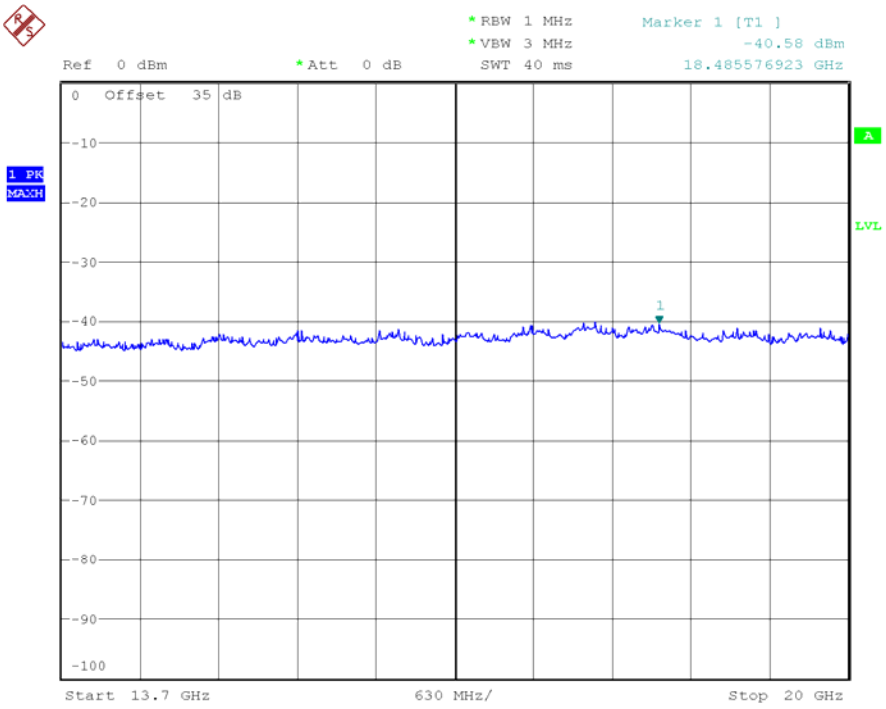





Agilent 14:37:09 Apr 25, 2006
Peak Search
Mkr1 290.3 MHz
Ref 30 dBm
#Atten 16 dB Ext PG -41 dB
-34.19 dBm
Peak
Log
10
dB/
Ext Ref
Marker
290.300000 MHz
-34.19 dBm
LgAv
M1 S2
S3 FC
£(f):
FTun
Swp
Start 30.0 MHz
Stop 1.000 0 GHz
#Res BW 100 kHz
VBW 300 kHz
Sweep 92.72 ms (601 pts)
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2
File Operation Status, A:\SCREN223.GIF file saved

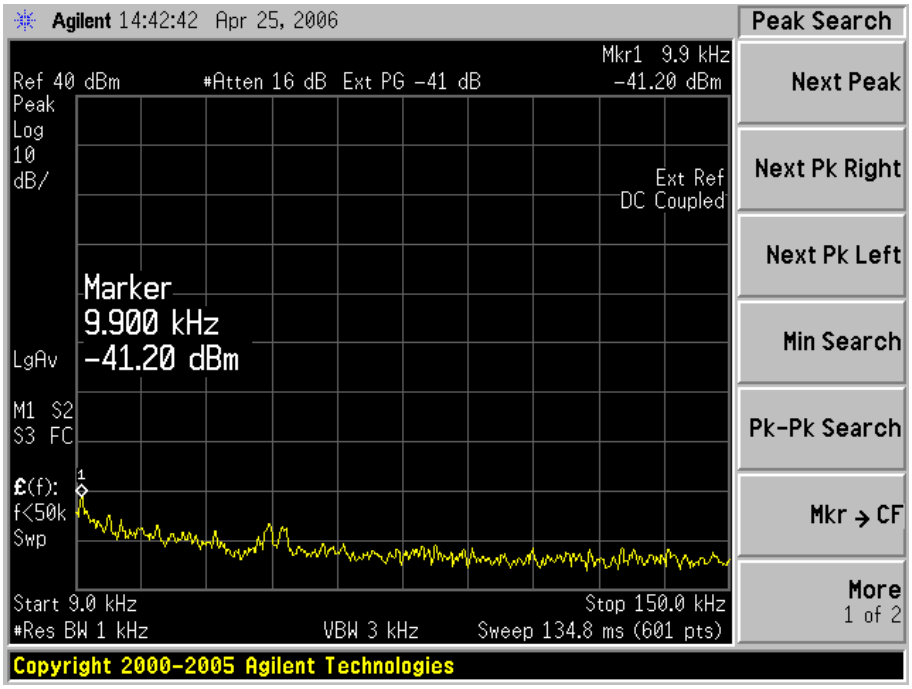

Agilent 14:39:23 Apr 25, 2006
Peak Search
Mkr1 3.858 GHz
Ref 46 dBm
#Atten 16 dB Ext PG -41 dB
-21.26 dBm
Peak
Log
10
dB/
Ext Ref
Marker
3.858000000 GHz
-21.26 dBm
LgAv
M1 S2
S3 FC
£(f):
FTun
Swp
Start 1.000 GHz
Stop 6.000 GHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 8.36 ms (601 pts)
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2
File Operation Status, A:\SCREN224.GIF file saved





Date: 26.JUL.2006 11:31:28

Channel 661


Agilent 14:42:42 Apr 25, 2006
Peak Search
Mkr1 9.9 kHz
Ref 40 dBm
#Atten 16 dB Ext PG -41 dB
-41.20 dBm
Next Peak
Peak
Log
10
dB/
Next Pk Right
Ext Ref
DC Coupled
Next Pk Left
Marker
9.900 kHz
-41.20 dBm
Min Search
LgAv
M1 S2
S3 FC
Pk-Pk Search
£(f):
f<50k
Swp
Mkr → CF
Start 9.0 kHz
Stop 150.0 kHz
More
1 of 2
#Res BW 1 kHz
VBW 3 kHz
Sweep 134.8 ms (601 pts)
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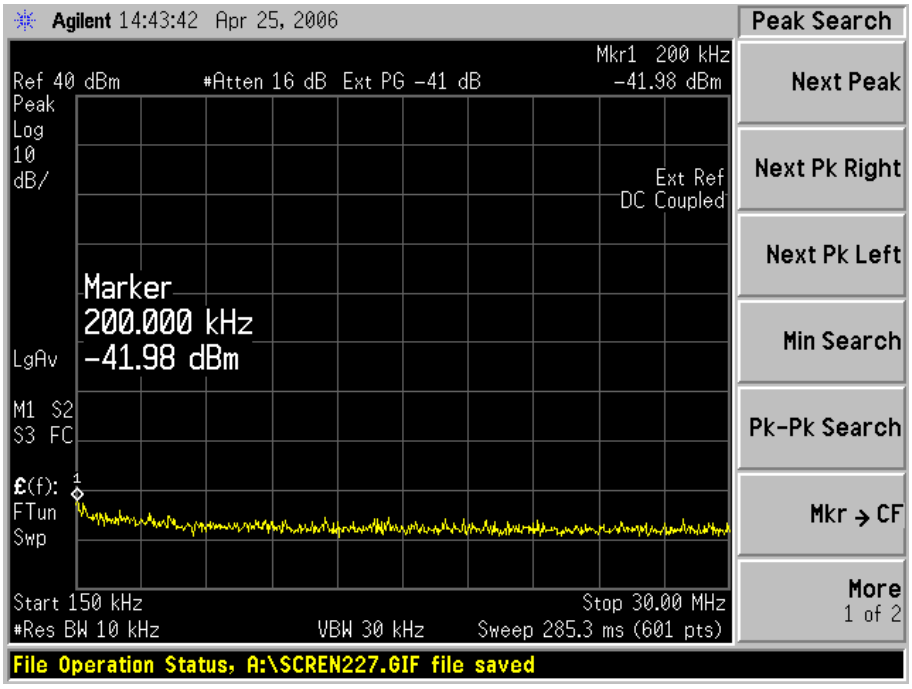
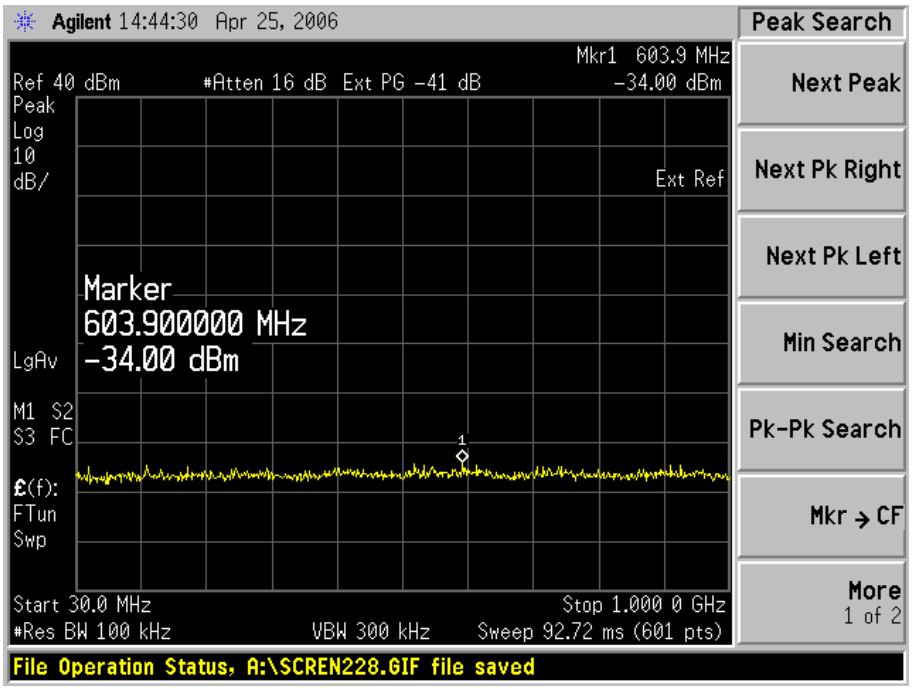
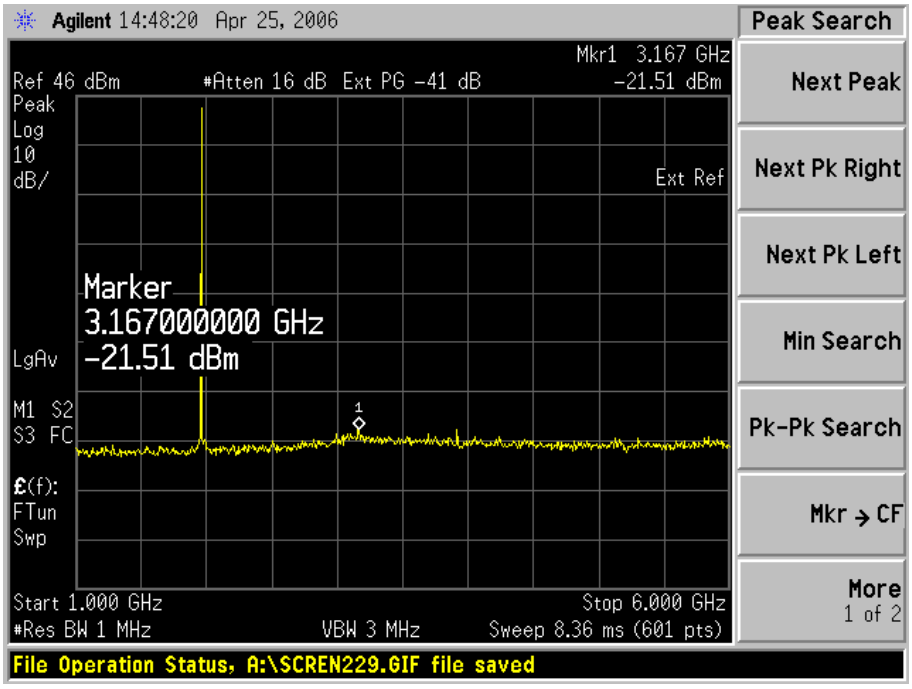
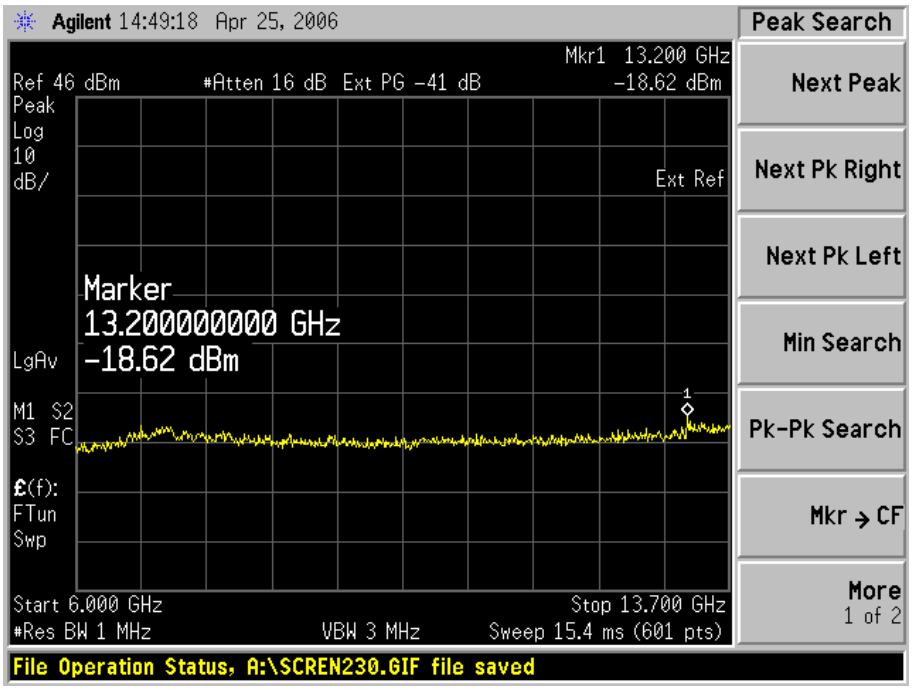
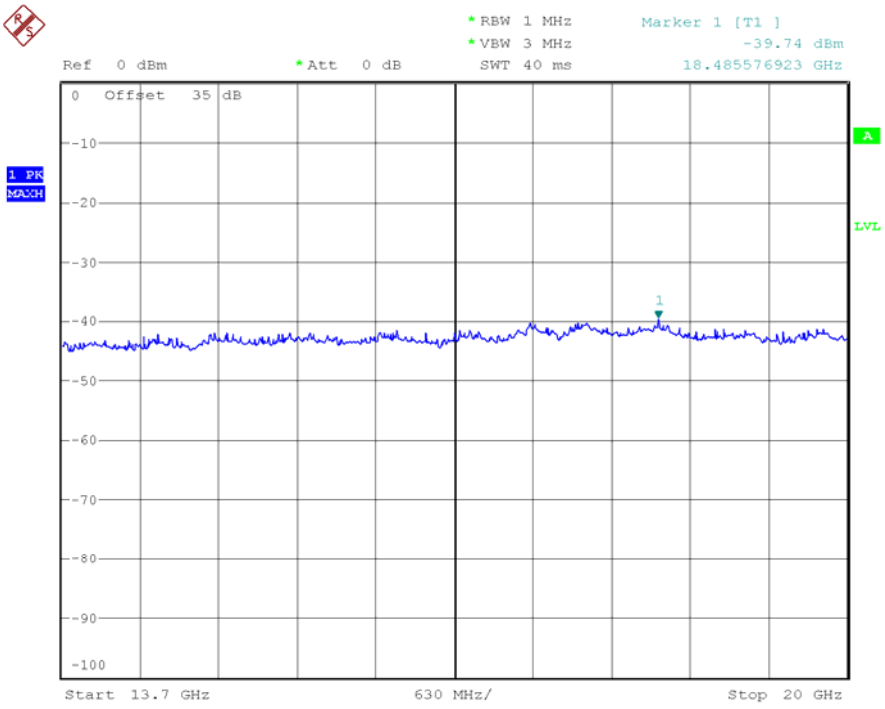

Agilent 14:43:42 Apr 25, 2006
Peak Search
Mkr1 200 kHz
Ref 40 dBm
#Atten 16 dB Ext PG -41 dB
-41.98 dBm
Next Peak
Peak
Log
10
dB/
Next Pk Right
Ext Ref
DC Coupled
Next Pk Left
Marker
200.000 kHz
-41.98 dBm
Min Search
LgAv
M1 S2
S3 FC
Pk-Pk Search
£(f):
FTun
Swp
Mkr → CF
Start 150 kHz
Stop 30.00 MHz
More
1 of 2
#Res BW 10 kHz
VBW 30 kHz
Sweep 285.3 ms (601 pts)
File Operation Status, A:\SCREN227.GIF file saved


Agilent 14:44:30 Apr 25, 2006
Peak Search
Mkr1 603.9 MHz
Ref 40 dBm
#Atten 16 dB Ext PG -41 dB
-34.00 dBm
Peak
Log
10
dB/
Ext Ref
Marker
603.900000 MHz
-34.00 dBm
LgAv
M1 S2
S3 FC
£(f):
FTun
Swp
Start 30.0 MHz
Stop 1.000 0 GHz
#Res BW 100 kHz
VBW 300 kHz
Sweep 92.72 ms (601 pts)
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2
File Operation Status, A:\SCREN228.GIF file saved

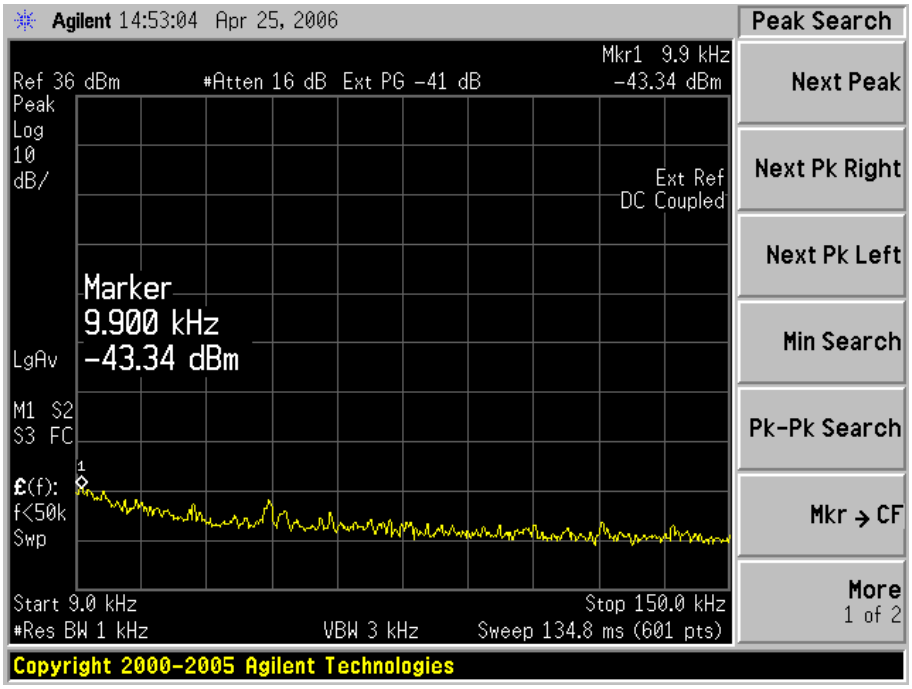

Agilent 14:48:20 Apr 25, 2006
Peak Search
Mkr1 3.167 GHz
Ref 46 dBm
#Atten 16 dB Ext PG -41 dB
-21.51 dBm
Peak
Log
10
dB/
Ext Ref
Marker
3.167000000 GHz
-21.51 dBm
LgAv
M1 S2
S3 FC
£(f):
FTun
Swp
Start 1.000 GHz
Stop 6.000 GHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 8.36 ms (601 pts)
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2
File Operation Status, A:\SCREN229.GIF file saved





Date: 26.JUL.2006 11:27:15

Channel 810


Agilent 14:53:04 Apr 25, 2006
Peak Search
Mkr1 9.9 kHz
Ref 36 dBm
#Atten 16 dB Ext PG -41 dB
-43.34 dBm
Next Peak
Peak
Log
10
dB/
Next Pk Right
Ext Ref
DC Coupled
Next Pk Left
Marker
9.900 kHz
-43.34 dBm
Min Search
LgAv
M1 S2
S3 FC
Pk-Pk Search
£(f):
f<50k
Swp
Mkr → CF
Start 9.0 kHz
Stop 150.0 kHz
More
1 of 2
#Res BW 1 kHz
VBW 3 kHz
Sweep 134.8 ms (601 pts)
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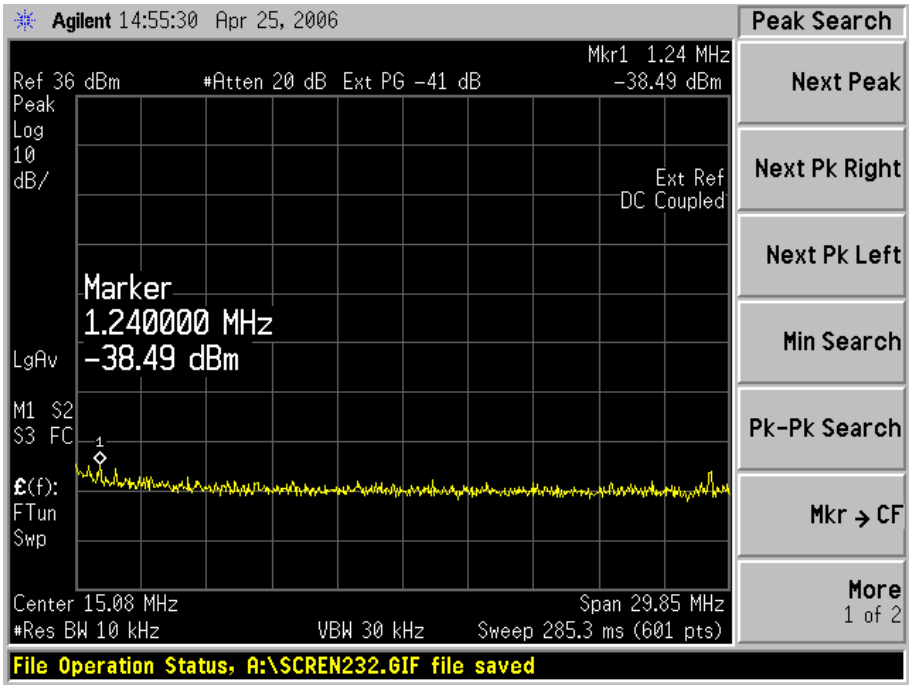
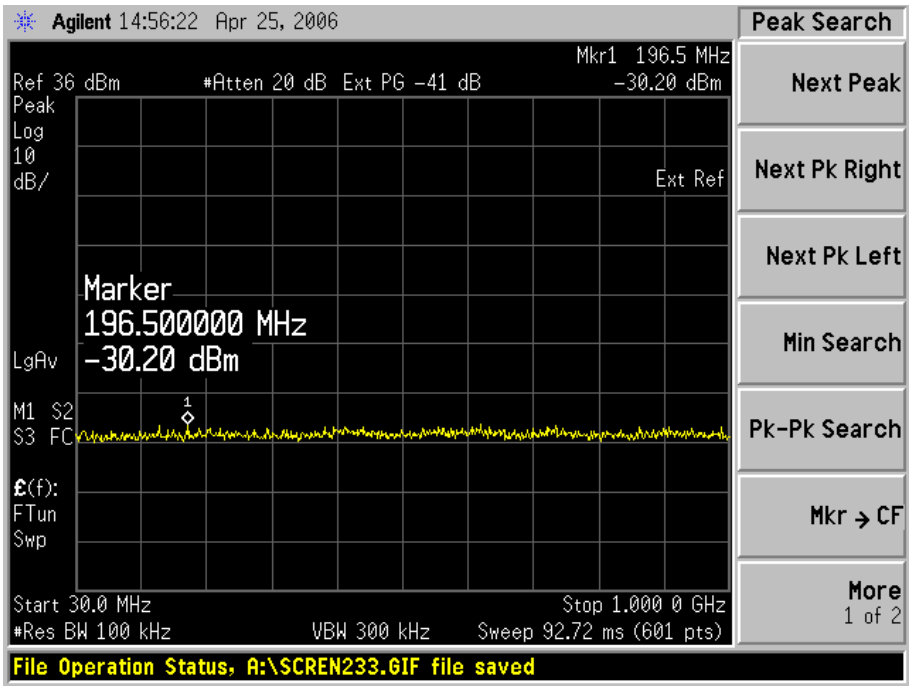
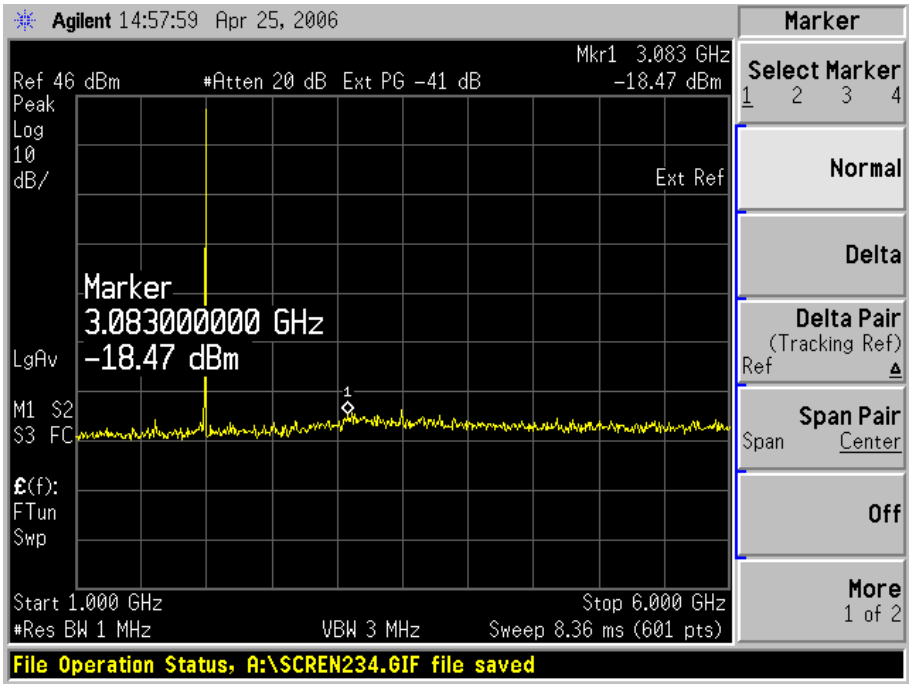
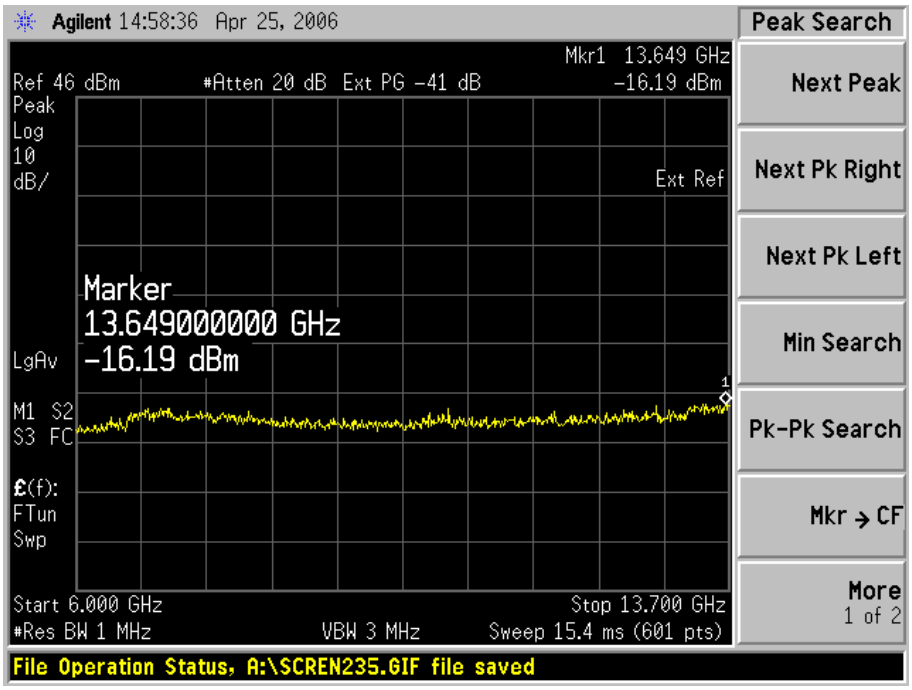
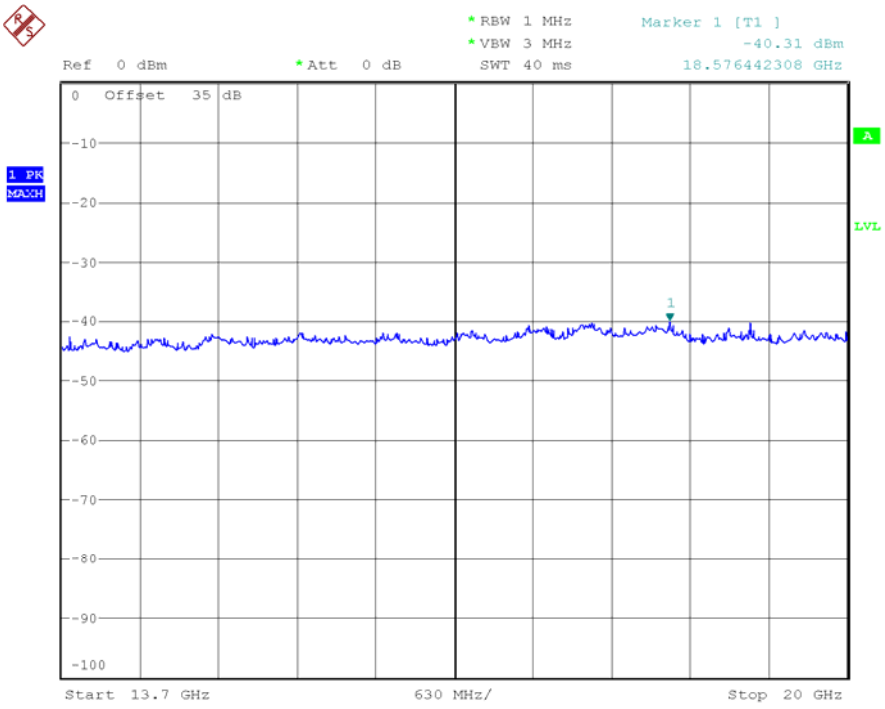

Agilent 14:55:30 Apr 25, 2006
Peak Search
Mkr1 1.24 MHz
Ref 36 dBm
#Atten 20 dB Ext PG -41 dB
-38.49 dBm
Next Peak
Peak
Log
10
dB/
Next Pk Right
Ext Ref
DC Coupled
Next Pk Left
Marker
1.240000 MHz
-38.49 dBm
Min Search
LgAv
M1 S2
S3 FC
Pk-Pk Search
£(f):
FTun
Swp
Mkr → CF
Center 15.08 MHz
Span 29.85 MHz
More
1 of 2
#Res BW 10 kHz
VBW 30 kHz
Sweep 285.3 ms (601 pts)
File Operation Status, A:\SCREN232.GIF file saved


Agilent 14:56:22 Apr 25, 2006
Peak Search
Mkr1 196.5 MHz
Ref 36 dBm
#Atten 20 dB Ext PG -41 dB
-30.20 dBm
Peak
Log
10
dB/
Ext Ref
Marker
196.500000 MHz
-30.20 dBm
LgAv
M1 S2
S3 FC
£(f):
FTun
Swp
Start 30.0 MHz
Stop 1.000 0 GHz
#Res BW 100 kHz
VBW 300 kHz
Sweep 92.72 ms (601 pts)
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
Mkr → CF
More
1 of 2
File Operation Status, A:\SCREN233.GIF file saved


Agilent 14:57:59 Apr 25, 2006
Marker
Mkr1 3.083 GHz
Ref 46 dBm
#Atten 20 dB Ext PG -41 dB
-18.47 dBm
Peak
Log
10
dB/
Ext Ref
Marker
3.083000000 GHz
-18.47 dBm
LgAv
M1 S2
S3 FC
£(f):
FTun
Swp
Start 1.000 GHz
Stop 6.000 GHz
#Res BW 1 MHz
VBW 3 MHz
Sweep 8.36 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:\SCREN234.GIF file saved





Date: 26.JUL.2006 11:37:42

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

Applicable Standard

Requirements: CFR 47, § 2.1049, § 22.905 and § 22.917and § 24.238.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	Spectrum analyzer	E4445A	MY45300953	2006-02-20	2007-02-19
GW	Dual tracking with 5V fixed	GPC-0303D	PC303IPE	2005-10-26	2006-10-25
Shanghai Huaxiang	Attenuator	30dB	0302707	2005-11-04	2006-11-03

*** 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:	1009mbar

The testing was performed by Merry Zhao on 2006-4-25.

Test Result: Pass

Test Mode: Transmitting

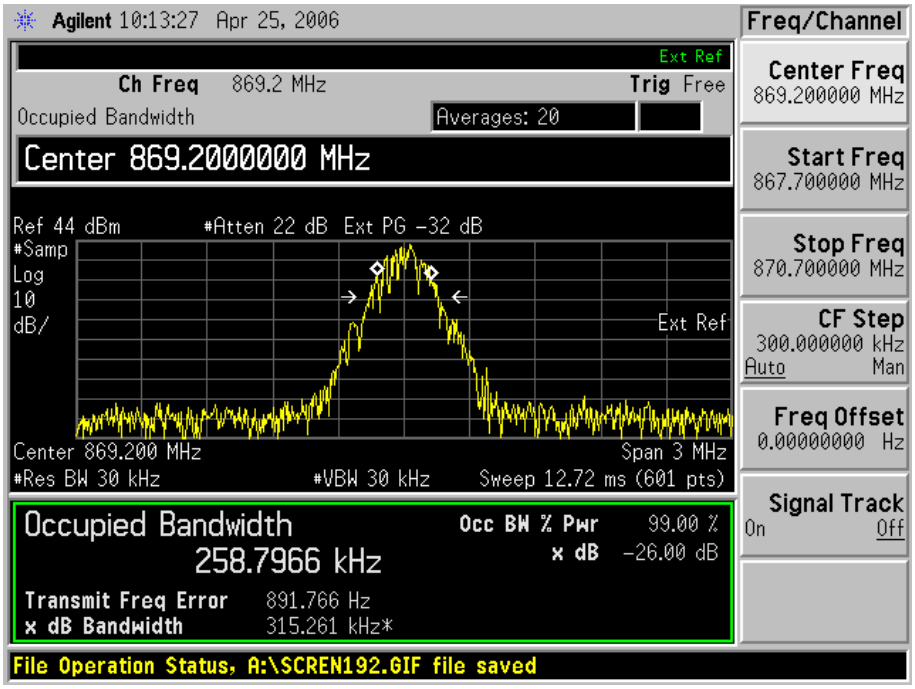
For 850 MHz

Occupied Bandwidth

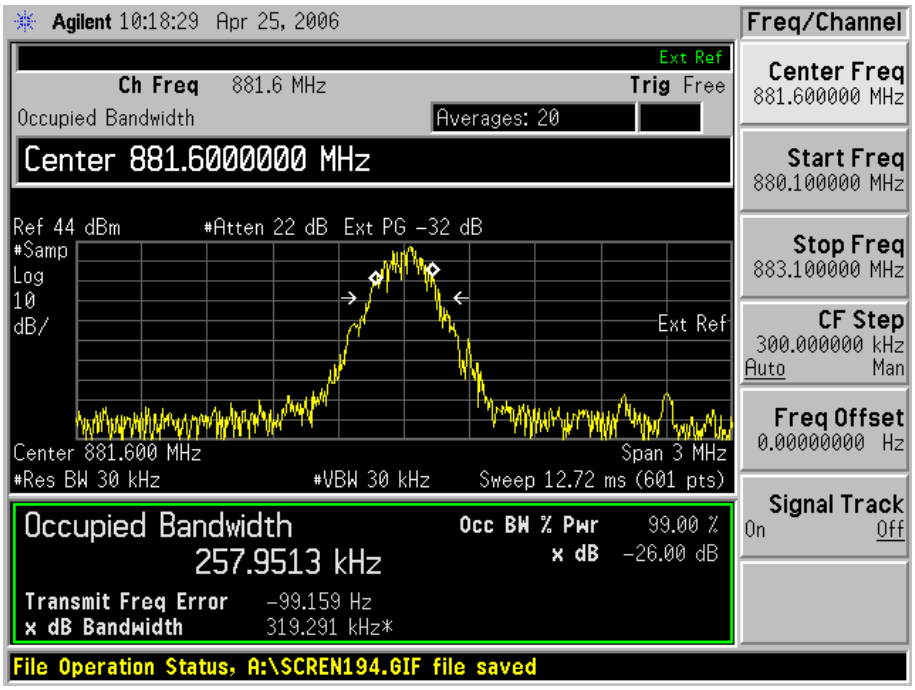
GMSK modulation:

Channel	Channel frequency (MHz))	99% Power Bandwidth (kHz)	26dB Bandwidth (kHz)
Channel 128	869.20	258.7966	315.261
Channel 190	881.6	257.9513	319.291
Channel 251	893.8	259.1787	315.514

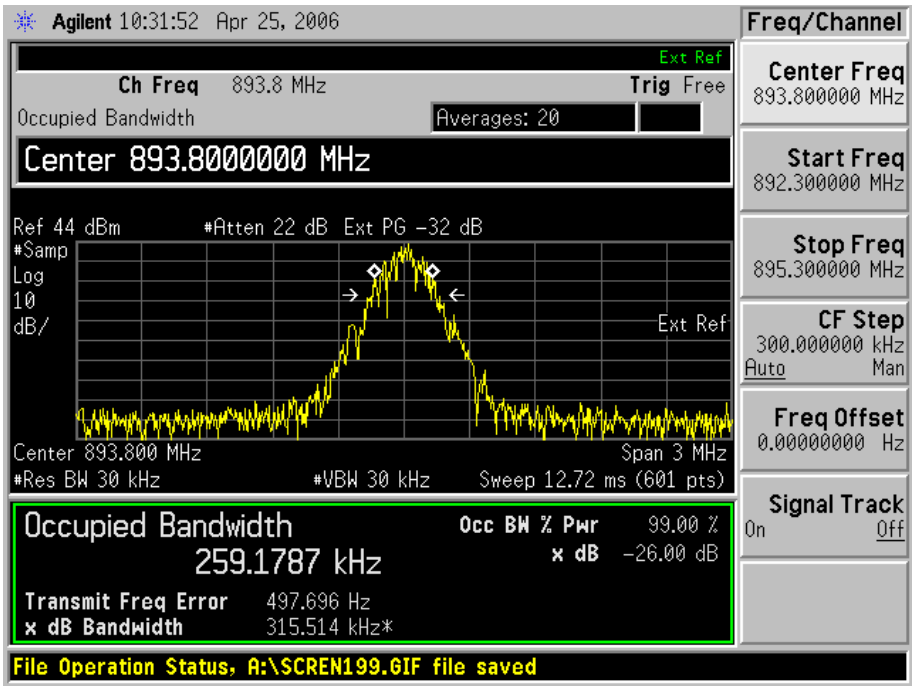
Channel 128:



Channel 190



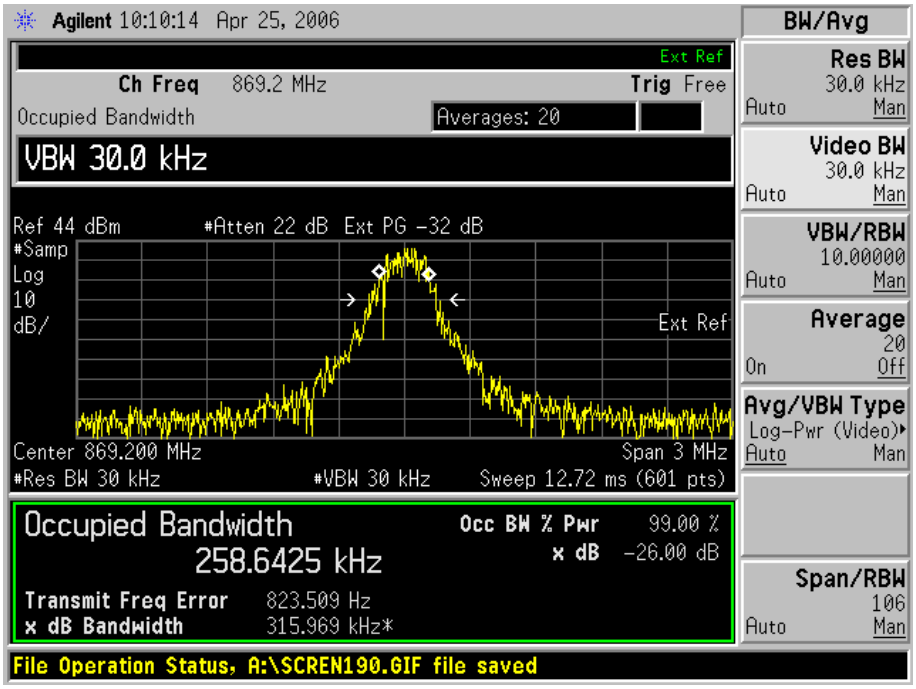
Channel 251:



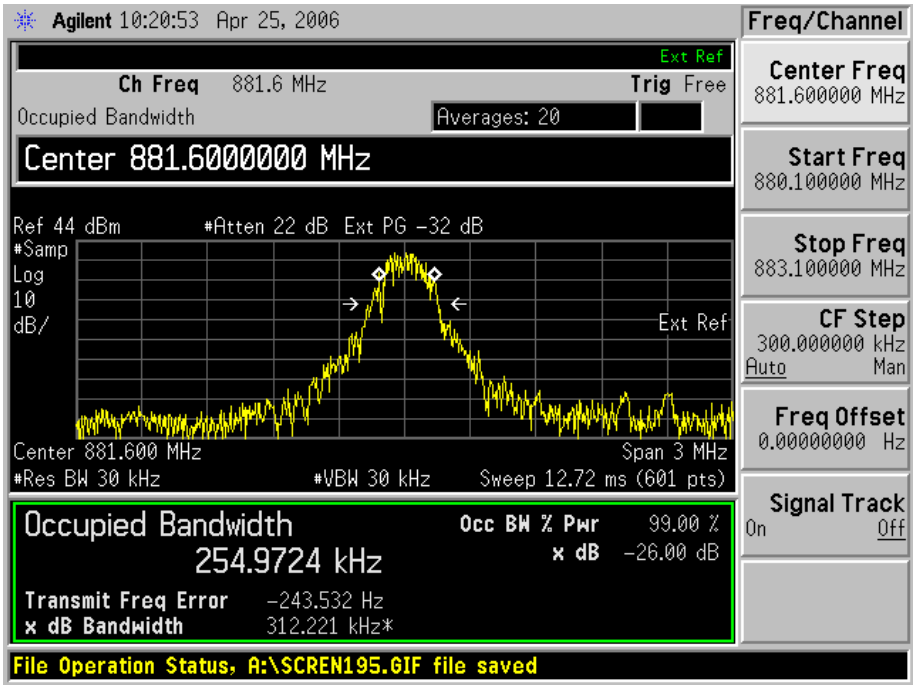
8PSK modulation:

Channel	Channel frequency (MHz))	99% Power Bandwidth (MHz)	26dB Bandwidth
Channel 128	869.2	258.6425	315.969
Channel 190	881.6	254.9724	312.221
Channel 251	893.8	228.6259	314.604

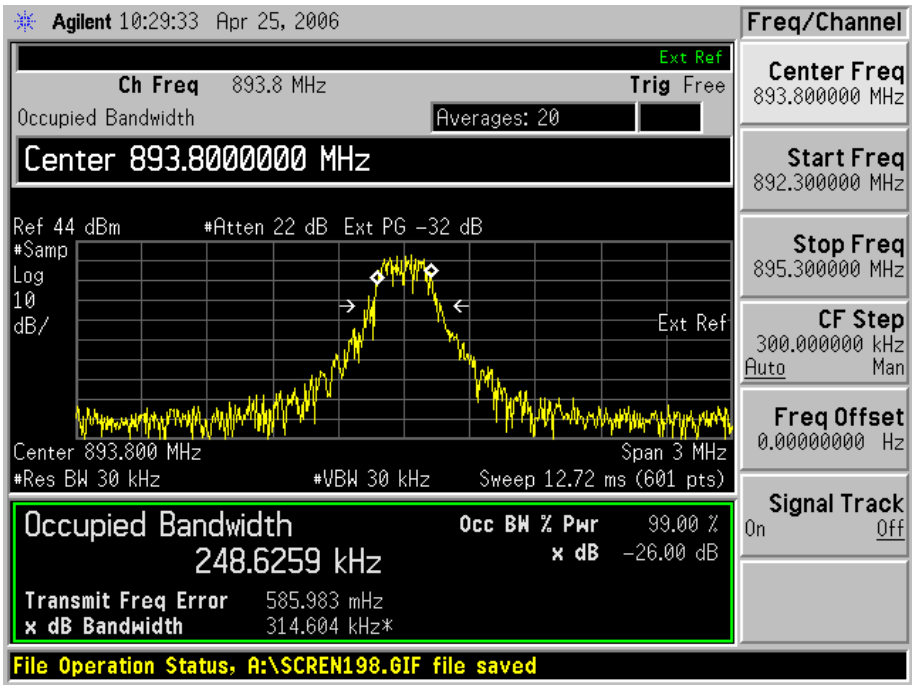
Channel 128:



Channel 190:



Channel 251:



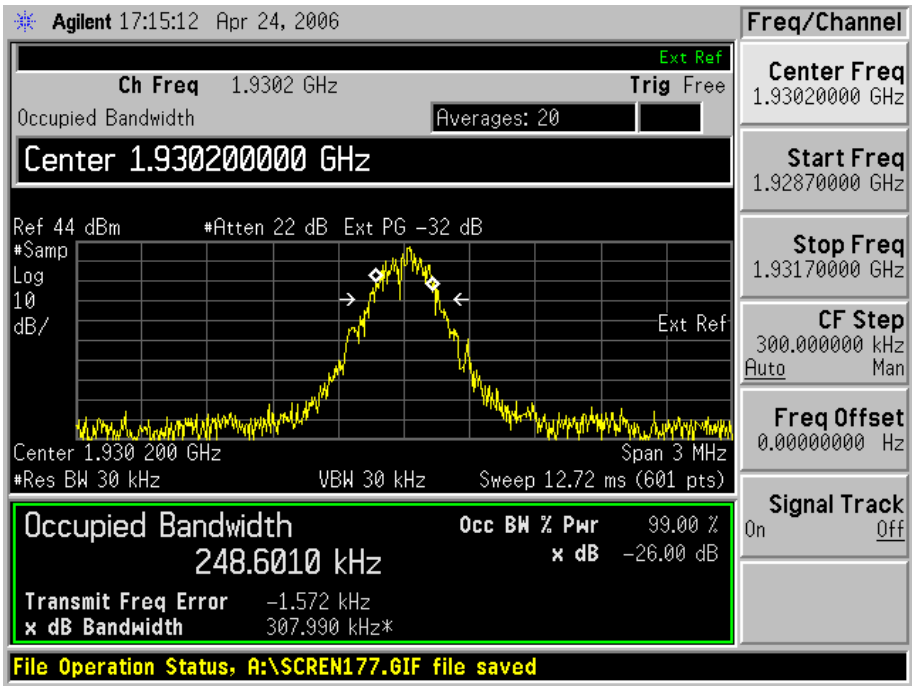
For 1900 MHz

Occupied Bandwidth

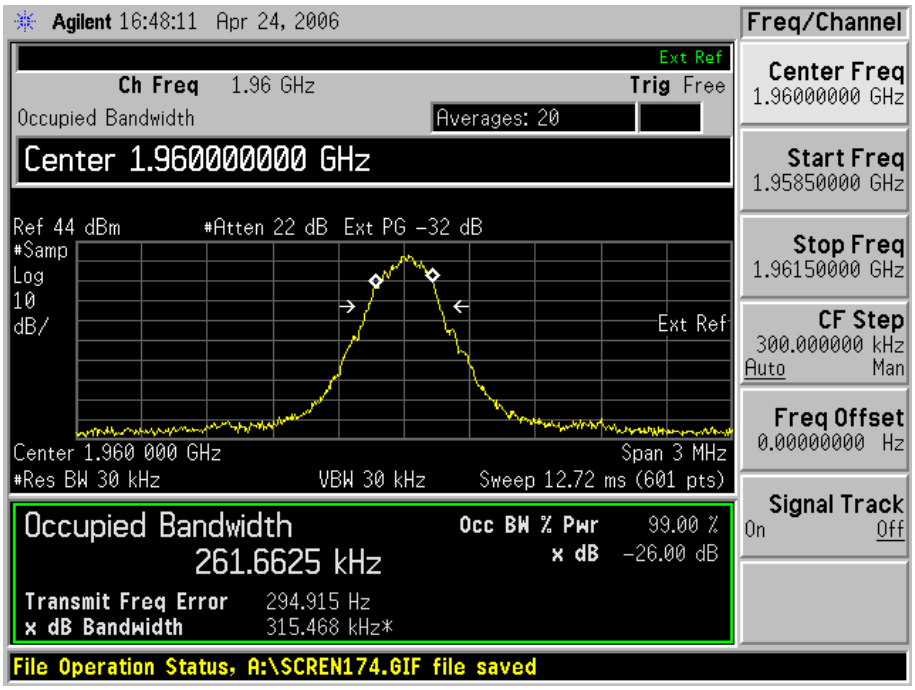
GMSK modulation:

Channel	Channel frequency(MHz))	99% Power Bandwidth (kHz)	26dB Bandwidth (kHz)
Channel 512	1930.2	248.6010	307.990
Channel 661	1960	261.6625	315.468
Channel 810	1989.8	255.8725	316.265

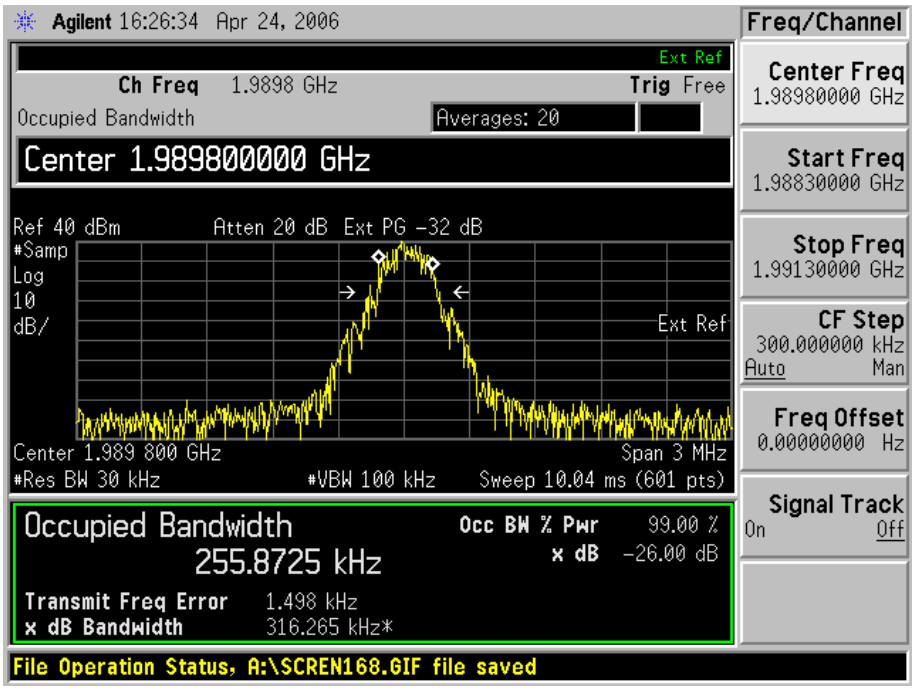
Channel 512:



Channel 661



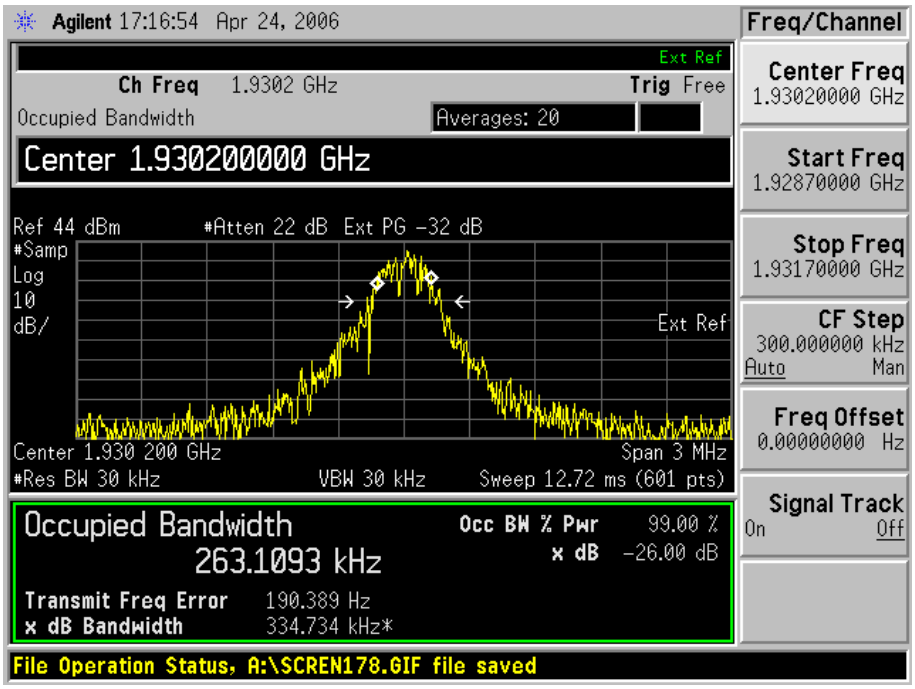
Channel 810:



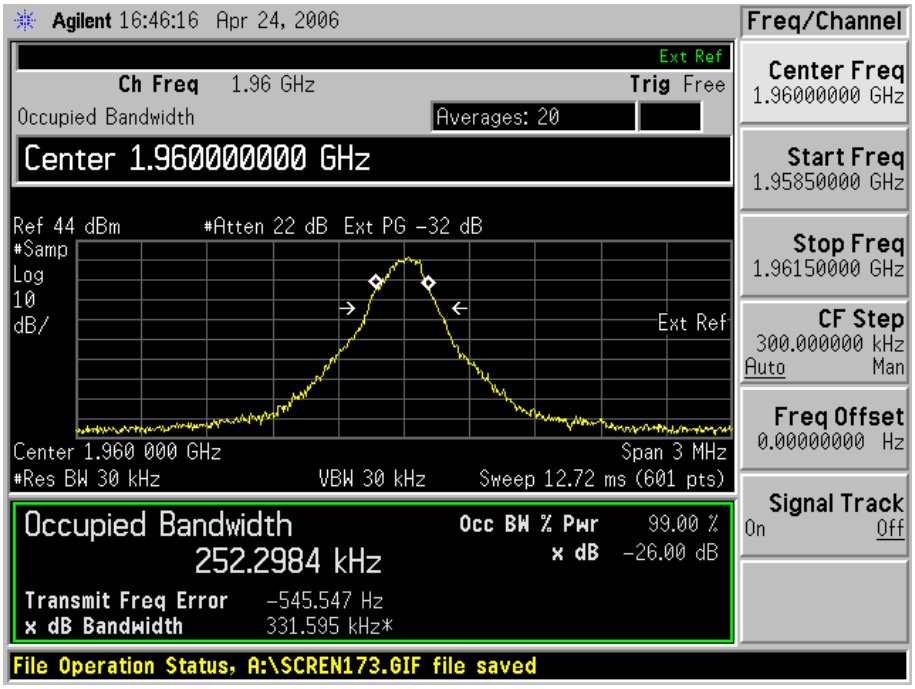
8PSK modulation:

Channel	Channel frequency (MHz))	99% Power Bandwidth (MHz)	26dB Bandwidth
Channel 512	1930.2	263.1093	334.734
Channel 661	1960	252.2984	331.595
Channel 810	1989.8	260.1433	323.282

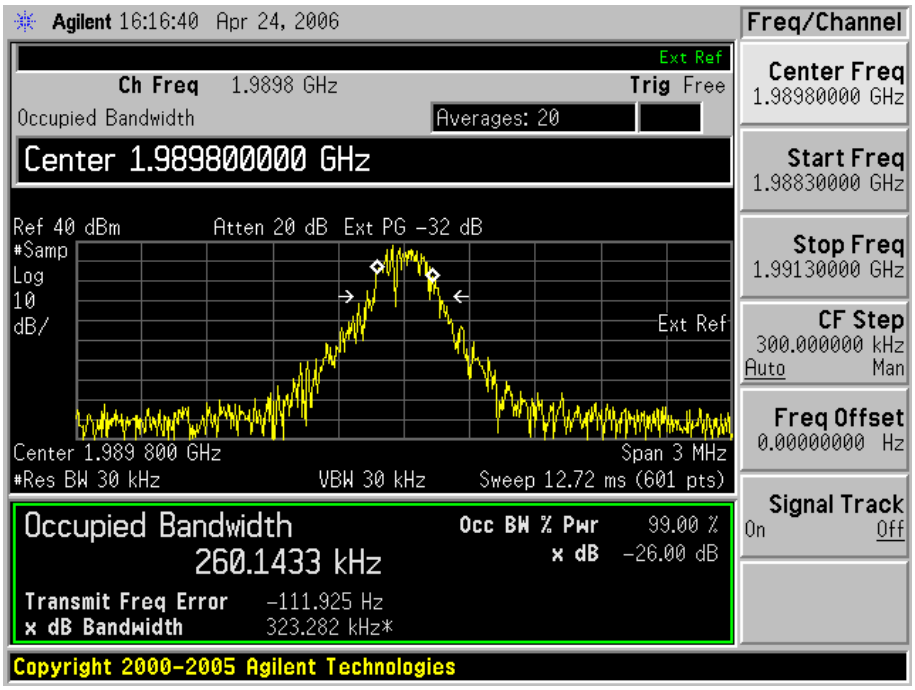
Channel 512:



Channel 661:



Channel 810:



§24.238- BAND EDGES

Applicable Standard

According to §24.238 and §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
Agilent	Spectrum analyzer	E4445A	MY45300953	2006-02-20	2007-02-19
GW	Dual tracking with 5V fixed	GPC-0303D	PC303IPE	2005-10-26	2006-10-25
Shanghai Huaxiang	Attenuator	30dB	0302707	2005-11-04	2006-11-03

*** 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:	1009 mbar

The testing was performed by Merry Zhao on 2006-4-24.

Test Result: Pass

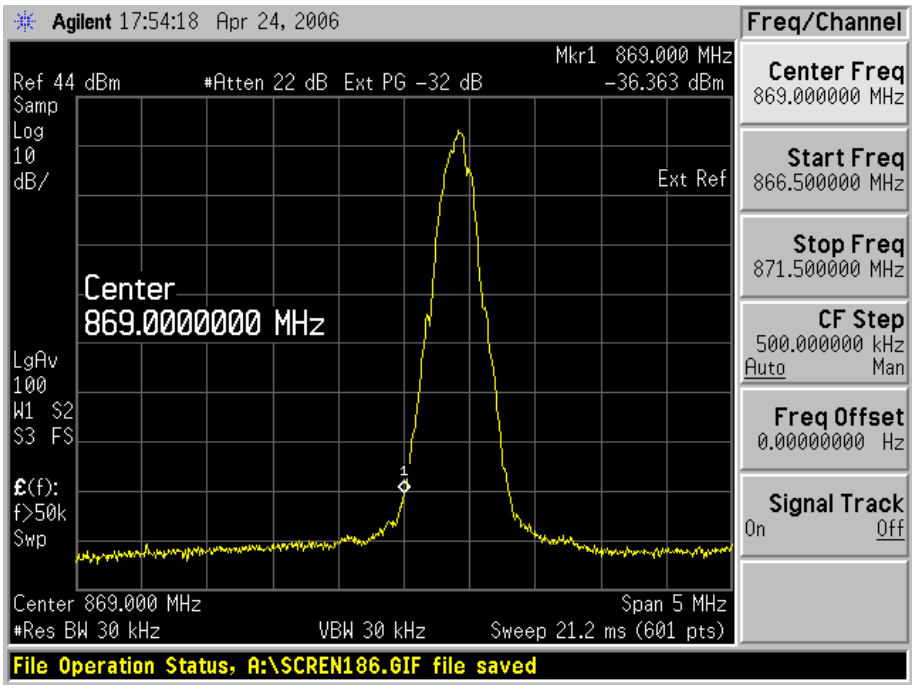
Test Mode: Transmitting

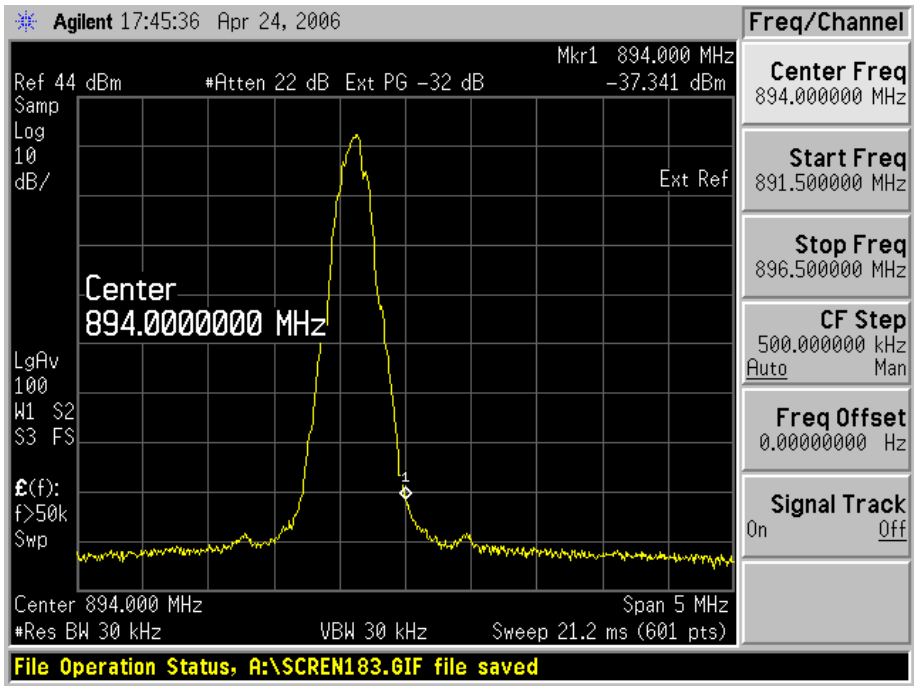
For 850 MHz

BAND EDGES

GMSK modulation:

Frequency (MHz)	Emission	Limit(dBm)
869.0	-36.363	-13
894.0	-37.341	-13

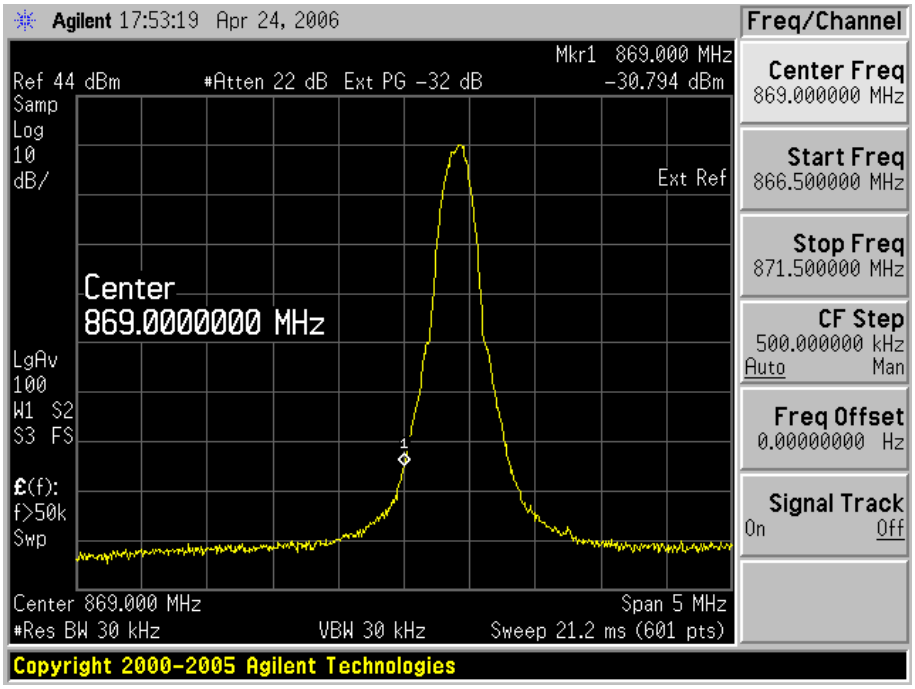


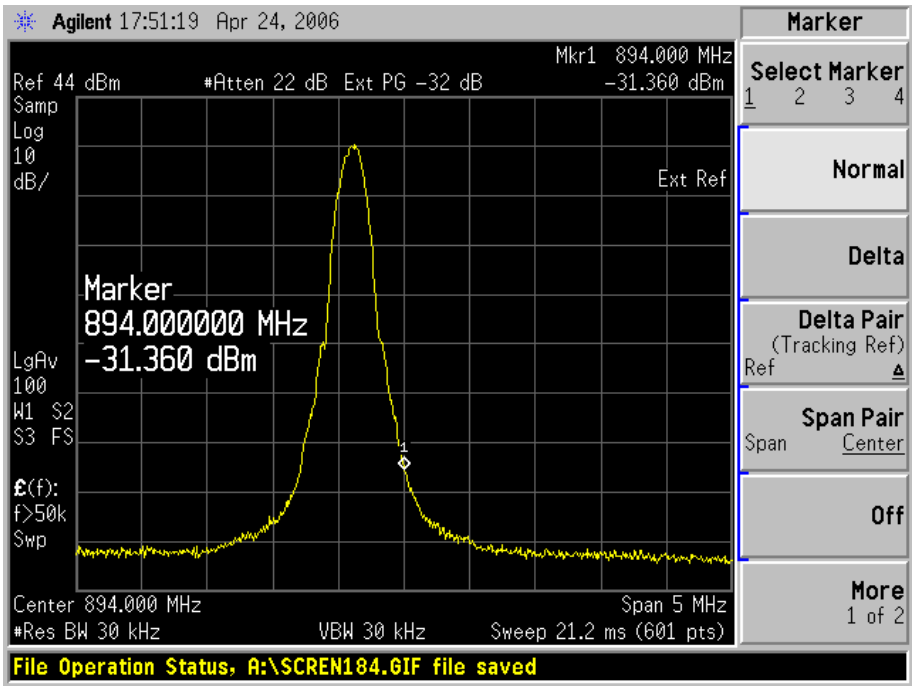


8PSK modulation:

GMSK modulation:

Frequency (MHz)	Emission	Limit(dBm)
869.0	-30.794	-13
894.0	-31.360	-13



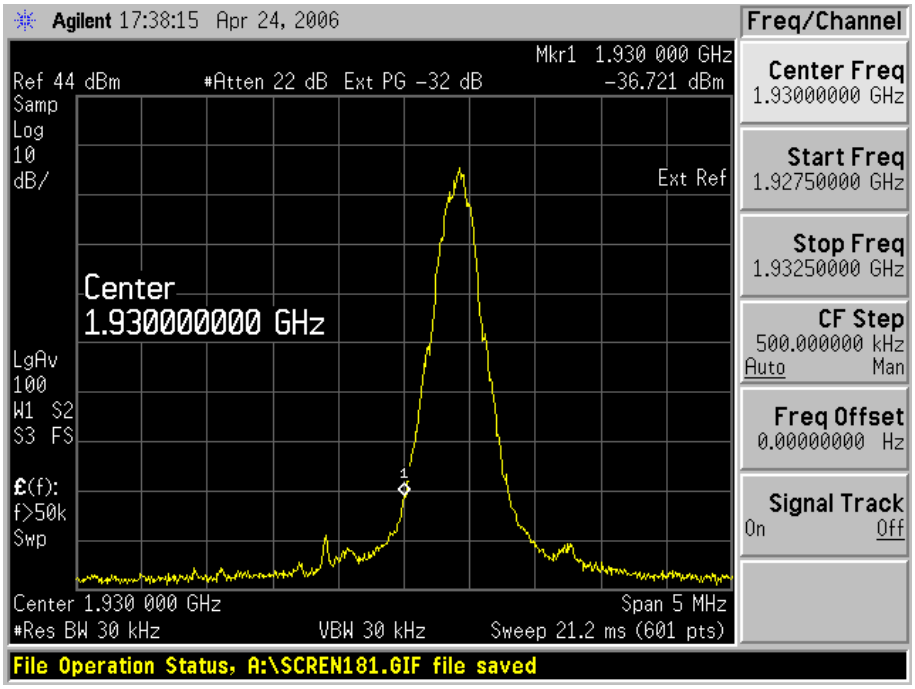


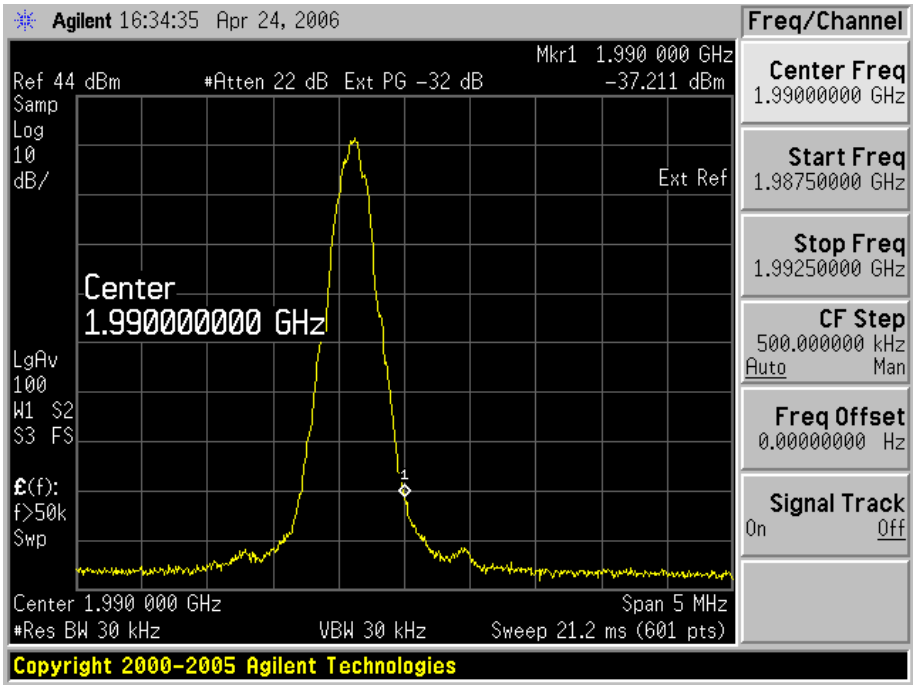
For 1900 MHz

BAND EDGES:

GMSK modulation:

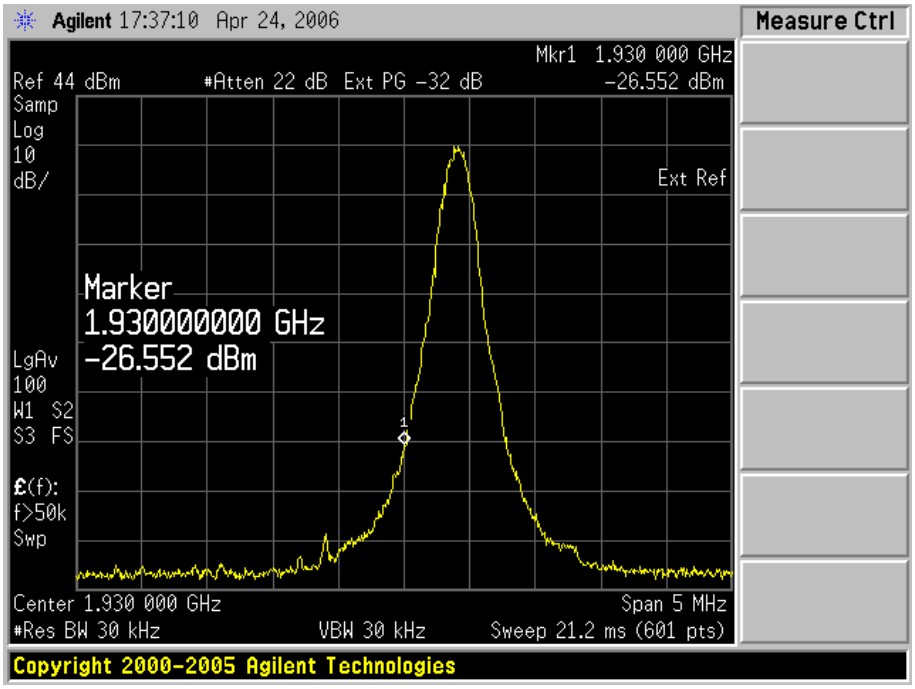
Frequency (MHz)	Emission (dBm)	Limit (dBm)
1930	-36.721	-13
1990	-37.211	-13

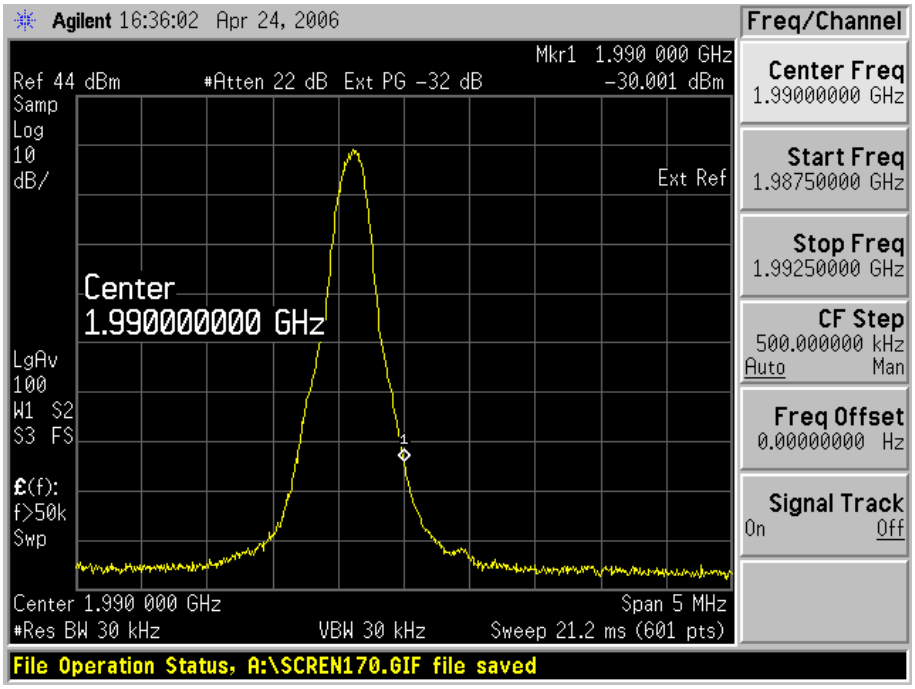




8PSK modulation:

Frequency (MHz)	Emission (dBm)	Limit (dBm)
1930	-26.552	-13
1990	-30.001	-13





§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

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

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
R&S	Universal radio communication tester	CMU300	100207	2005-12-13	2006-12-12
GW	Dual tracking with 5V fixed	GPC-0303D	PC303IPE	2005-10-26	2006-10-25
KSON	Digital Temperature Cell	ATH-EHL100	2152	2006-02-28	2007-02-27
Shanghai Huaxiang	Attenuator	30dB	0302707	2005-11-04	2006-11-03

*** 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:	1009 mbar

The testing was performed by Merry Zhao on 2006-4-24, 2006-4-25.

Test Result: Pass

Test Mode: Transmitting

For 850 MHz

Frequency Stability vs. Temperature				
Bottom Channel: 128 f = 869.2MHz				
Temperature (℃)	Power Supply V_{dc} (V)	Frequency Measure Error (Hz)	Error (ppm)	Limit (ppm)
-5	-40	-13.54	-0.01558	1.5
	-48	-15.68	-0.01804	1.5
	-57	-13.48	-0.01551	1.5
+5	-40	13.91	0.01600	1.5
	-48	-16.22	-0.01866	1.5
	-57	13.22	0.01521	1.5
+15	-40	12.43	0.01430	1.5
	-48	-14.98	-0.01723	1.5
	-57	-12.91	-0.01485	1.5
+25	-40	15.10	0.01737	1.5
	-48	-12.71	-0.01462	1.5
	-57	-17.33	-0.01994	1.5
+35	-40	-19.36	-0.02227	1.5
	-48	-15.41	-0.01773	1.5
	-57	-19.55	-0.02249	1.5
+45	-40	-15.98	-0.01838	1.5
	-48	-15.94	-0.01834	1.5
	-57	-16.89	-0.01943	1.5
Middle Channel: 190 f = 881.6MHz				
-5	-40	-12.03	-0.01365	1.5
	-48	-10.82	-0.01227	1.5
	-57	-14.41	-0.01635	1.5
+5	-40	-15.24	-0.01729	1.5
	-48	-14.95	-0.01696	1.5
	-57	-17.08	-0.01937	1.5
+15	-40	-19.00	-0.02155	1.5
	-48	-14.03	-0.01591	1.5
	-57	-14.82	-0.01681	1.5
+25	-40	-15.80	-0.01792	1.5
	-48	-14.79	-0.01678	1.5
	-57	-21.57	-0.02447	1.5
+35	-40	-17.44	-0.01978	1.5
	-48	-18.64	-0.02114	1.5
	-57	-17.10	-0.01940	1.5
+45	-40	-18.68	-0.02119	1.5
	-48	-15.34	-0.01740	1.5
	-57	-15.54	-0.01763	1.5

Top Channel: 251 f = 893.8MHz				
-5	-40	-10.30	-0.01152	1.5
	-48	-17.22	-0.01927	1.5
	-57	11.19	0.01252	1.5
+5	-40	-14.51	-0.01623	1.5
	-48	-15.00	-0.01678	1.5
	-57	-13.89	-0.01554	1.5
+15	-40	-16.41	-0.01836	1.5
	-48	-11.81	-0.01321	1.5
	-57	-14.51	-0.01623	1.5
+25	-40	-17.42	-0.01949	1.5
	-48	-25.85	-0.02892	1.5
	-57	-19.19	-0.02147	1.5
+35	-40	-19.77	-0.02212	1.5
	-48	-18.84	-0.02108	1.5
	-57	-19.82	-0.02217	1.5
+45	-40	-21.5	-0.02405	1.5
	-48	-23.95	-0.02680	1.5
	-57	-16.71	-0.01870	1.5

For 1900 MHz

Frequency Stability vs. Temperature				
Bottom Channel: 512 f = 1930.2MHz				
Temperature (℃)	Power Supply V_{dc} (V)	Frequency Measure Error (Hz)	Error (ppm)	Result
-5	-40	16.81	0.00871	PASS
	-48	22.03	0.01141	PASS
	-57	-21.53	-0.01115	PASS
+5	-40	-21.00	-0.01088	PASS
	-48	-18.34	-0.00950	PASS
	-57	-22.39	-0.01160	PASS
+15	-40	-22.05	-0.01142	PASS
	-48	-21.18	-0.01097	PASS
	-57	18.90	0.00979	PASS
+25	-40	23.59	0.01222	PASS
	-48	-19.52	-0.01011	PASS
	-57	-22.93	-0.01188	PASS
+35	-40	-20.75	-0.01075	PASS
	-48	-19.13	-0.00991	PASS
	-57	19.83	0.01027	PASS
+45	-40	-29.54	-0.01530	PASS
	-48	-22.31	-0.01156	PASS
	-57	23.61	0.01223	PASS

Middle Channel: 661 f = 1960.0MHz				
-5	-40	22.36	0.01141	PASS
	-48	17.60	0.00898	PASS
	-57	-19.39	-0.00989	PASS
+5	-40	17.97	0.00917	PASS
	-48	-18.32	-0.00935	PASS
	-57	-20.85	-0.01064	PASS
+15	-40	-21.81	-0.01113	PASS
	-48	-26.33	-0.01343	PASS
	-57	-18.39	-0.00938	PASS
+25	-40	-23.68	-0.01208	PASS
	-48	18.87	0.00963	PASS
	-57	-20.65	-0.01054	PASS
+35	-40	-21.66	-0.01105	PASS
	-48	19.55	0.00997	PASS
	-57	-24.48	-0.01249	PASS
+45	-40	21.51	0.01097	PASS
	-48	26.62	0.01358	PASS
	-57	-26.68	-0.01361	PASS
Top Channel: 810 f = 1989.8MHz				
-5	-40	-30.24	-0.01520	PASS
	-48	-20.04	-0.01007	PASS
	-57	-22.19	-0.01115	PASS
+5	-40	29.46	0.01481	PASS
	-48	-23.03	-0.01157	PASS
	-57	-22.74	-0.01143	PASS
+15	-40	28.36	0.01425	PASS
	-48	-18.90	-0.00950	PASS
	-57	21.63	0.01087	PASS
+25	-40	33.56	0.01687	PASS
	-48	-28.19	-0.01417	PASS
	-57	-24.73	-0.01243	PASS
+35	-40	-19.00	-0.00955	PASS
	-48	-22.58	-0.01135	PASS
	-57	-20.93	-0.01052	PASS
+45	-40	27.85	0.01400	PASS
	-48	-34.42	-0.01730	PASS
	-57	-25.56	-0.01285	PASS