FCC

MEASUREMENT AND TEST REPORT

For

ZTE Corporation

ZTE Plaza, Hi-tech Park, Nanshan District,
Shenzhen, Guangdong, China 518057

FCC ID: Q78-RSUC869

Sep 10, 2010

This Report Concerns: ☒ Original Report	**Equipment Type:** CDMA Remote Radio Unit

Test Engineer: Jenine

Report No.: FCC-2010-003

Test Date: Jun ,19 – Aug,28, 2010

Reviewed By: Xie Yuming

Prepared By: ZTE Corporation

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Note: The test report is specially limited to the above company and this particular sample only. It may not be duplicated without prior written consent of ZTE Corporation. This report must not be used by the client to claim product certification 、approval 、or endorsement by any agency of the US Government.

TABLE OF CONTENTS

1 GENERAL INFORMATION 4
Product Description for Equipment Under Test (EUT) 4
Objective 5
Related Submittal(s)/Grant(s) 5
Test Methodology 5
Test Facility 5
2 SYSTEM TEST CONFIGURATION 6
Description of Test Configuration 6
3 SUMMARY OF TEST RESULTS 7
4 TRANSMITTER OUTPUT POWER 8
Applicable Standard 8
Test Equipment List and Details 8
Test Procedure 8
Environmental Conditions 9
Test Result 9
6 RF EXPLOSURE 17
Applicable standard 17
Test Data 17
7 MODULATION CHARACTERISTIC 18
Applicable Standard 18
Test Equipment List and Details 18
Test Procedure 18
Test Data Environmental Conditions 18
Test Result 19
8 SPURIOUS RADIATED EMISSIONS 21
Applicable Standard 21
FCC CFR 47, §2.1053 and IC RSS132 §4.5, RSS Gen §4.9 21
Test Equipment List and Details 21
Test Procedure 22
Test Results 23
Environmental Conditions 23
9 SPURIOUS EMISSIONS AT ANTENNA TERMINALS 25
Applicable Standard 25
Test Equipment List and Details 25
Test Procedure 25
Test Data Environmental Conditions 26
Test Result 26
10 OCCUPIED BANDWIDTH 62
Applicable Standard 62
Test Equipment List and Details 62
Test Procedure 62
Environmental Conditions 62
Test Result 62
11 BAND EDGES 70
Applicable Standard 70
Test Equipment List and Details 70

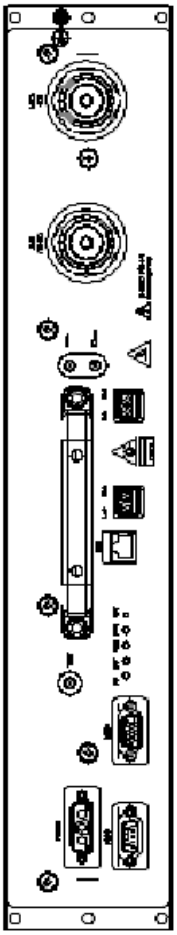
Test Procedure 70
Test Data Environmental Conditions 70
Test Result 70
12 FREQUENCY STABILITY 75
Applicable Standard 75
Test Equipment List and Details 75
Test Procedure 75
Test Data Environmental Conditions 76
Test Result 76

1 GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The ZTE Corporation's product, model number: ZXSDR RSUC869 or the "EUT" as referred to in this report is a CDMA Remote Radio Unit.

Technical specification:
Size: 400.5 mm × 72.7 mm × 455 mm (H x W x D)
Input voltage: -57 ~ - 40V_{DC}
Frequency range: 869MHz to 894MHz,
(Bottom frequency is about 869.64MHz, Middle frequency is about 881.49MHz,Top frequency is about 893.37MHz).
Max RF output power: 49dBm
Gain of the antenna: 11dBi
Modulation type of emission: CDMA
Appearance of EUT:



Objective

This Type approval report is prepared on behalf of ZTE Corporation in accordance with Part 2、Part 15、Part 22H of the Federal Communication Commissions rules and IC RSS-132 and RSS-Gen standards.

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. And IC standard RSS-Gen as well as the following parts:

FCC Part 22 PUBLIC MOBILE SERVICES
IC RSS-132 Cellular Telephones Employing New Technologies Operating in the Bands 824-849 MHz and 869-894 MHz

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

All radiated and conducted measurement was performed at ZTE Corporation Reliability Testing Center. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Test Facility

The Test site used by ZTE Corporation to collect test data is located in the ZTE Plaza, Hi-tech Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R. of China，Tel: +86-755-26770000，Fax: +86-755-26771999. Test site at ZTE Corporation 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.: 0007895832. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

2 SYSTEM TEST CONFIGURATION

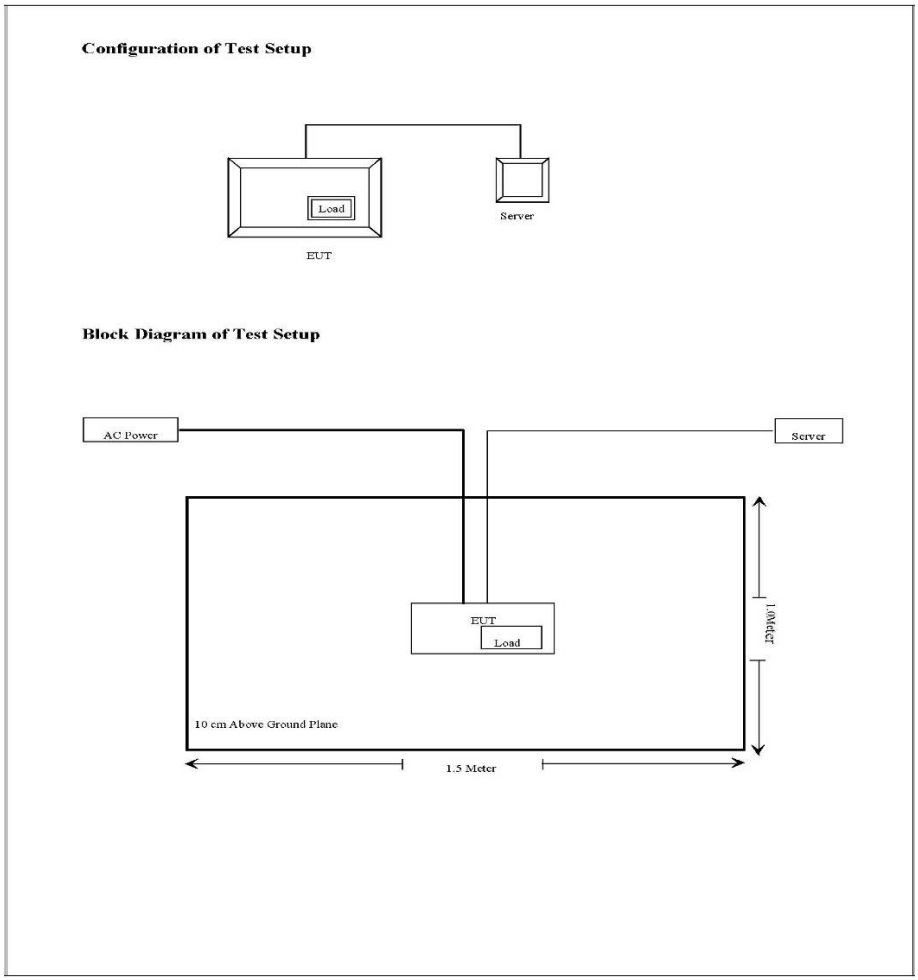
Description of Test Configuration

Justification

The EUT was configured for testing according to TIA/EIA-603C.
The final qualification test was performed with EUT operating at normal mode.

Equipment Modifications

ZTE Corporation has not done any modification on the EUT.



3 SUMMARY OF TEST RESULTS

FCC Rules	IC Rules	Description of Test	Results
§2.1046, §22.913	RSS-132 §4.4	Transmitter Output Power	Compliant
§2.1091, §1.1037	RSS-102 §2.5.2	RF Exposure	Compliant
§2.1047	RSS-132 §4.2	Modulation Characteristic	Compliant
§2.1053	RSS-132 §4.5, RSS-Gen §4.9	Spurious Radiated Emissions	Compliant
§2.1051, §22.917	RSS-132 §4.5	Spurious Emissions AT Antenna Terminals	Compliant
§2.1049, §22.905, §22.917	RSS-Gen §4.6.1	Occupied Bandwidth	Compliant
§22.917	RSS-132 §4.5.1	Band Edge	Compliant
§ 2.1055 § 22.355	RSS-132 §4.3, RSS-Gen §4.7	Frequency stability	Compliant

4 TRANSMITTER OUTPUT POWER

Applicable Standard

According to FCC §2.1046 &22.913, the ERP (equivalent radiated power) must not exceed 500 Watts.

According to RSS-132, SRSP 503 the ERP (equivalent radiated power) must not exceed 500 Watts for base station transmitters operating in the band of 869 MHz to 894 MHz.

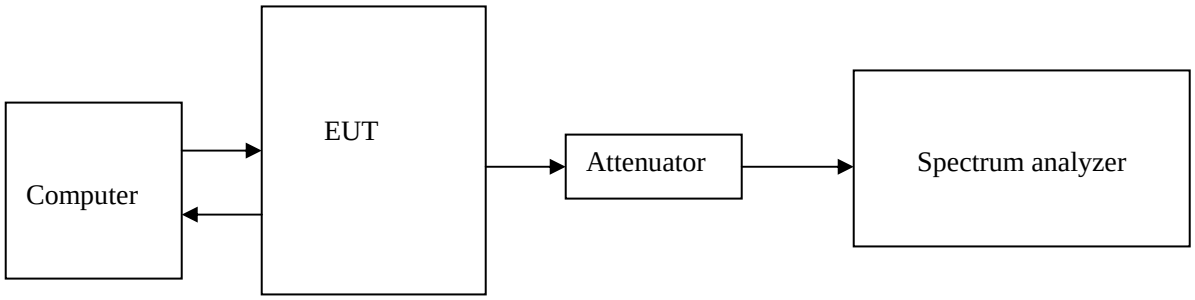
Note: ERP=output power +Antenna gain-cable loss-2.15

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2010-4-9	2011-4-9
DTS	DTS100 40dB Attenuator	DTS100-40dB-N	N/A	N/A	N/A
Hewlett Packard	RF Cable	8120-6192	01428251	N/A	N/A

***statement of traceability:** ZTE Corporation Reliability Testing Center attests that all calibration has been performed per the NVLAP requirements, traceable to NIST.

Test Procedure



The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation. External attenuation Loss is 40dB, Cable Loss is about 3dB

Environmental Conditions

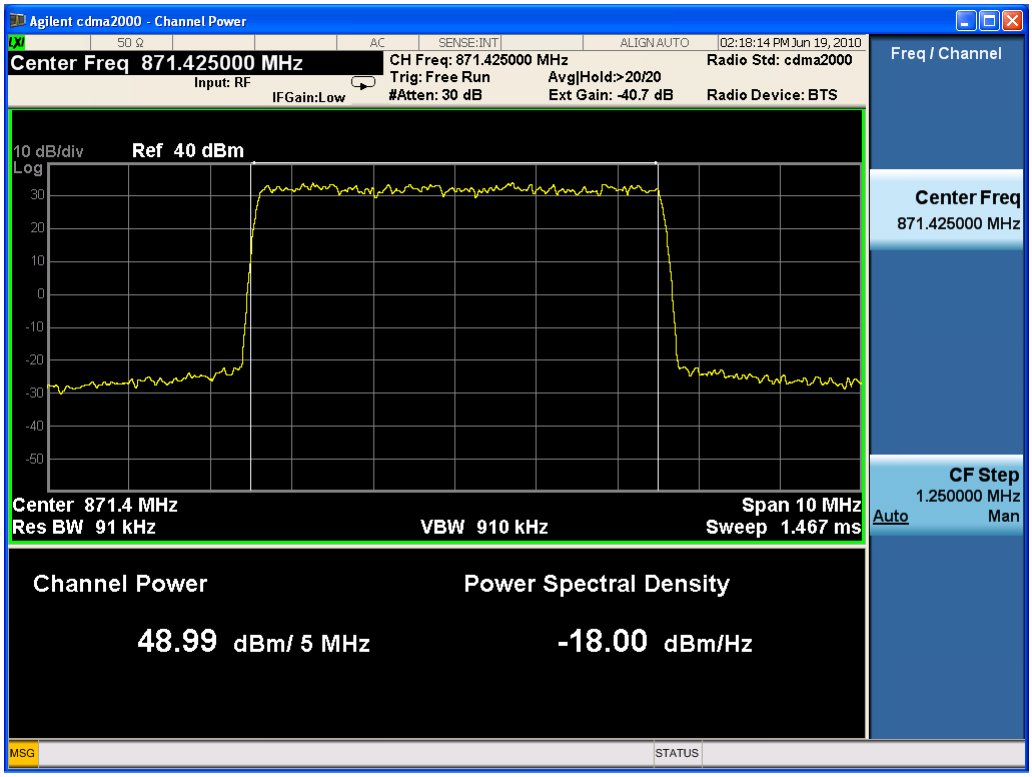
Temperature:	20 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

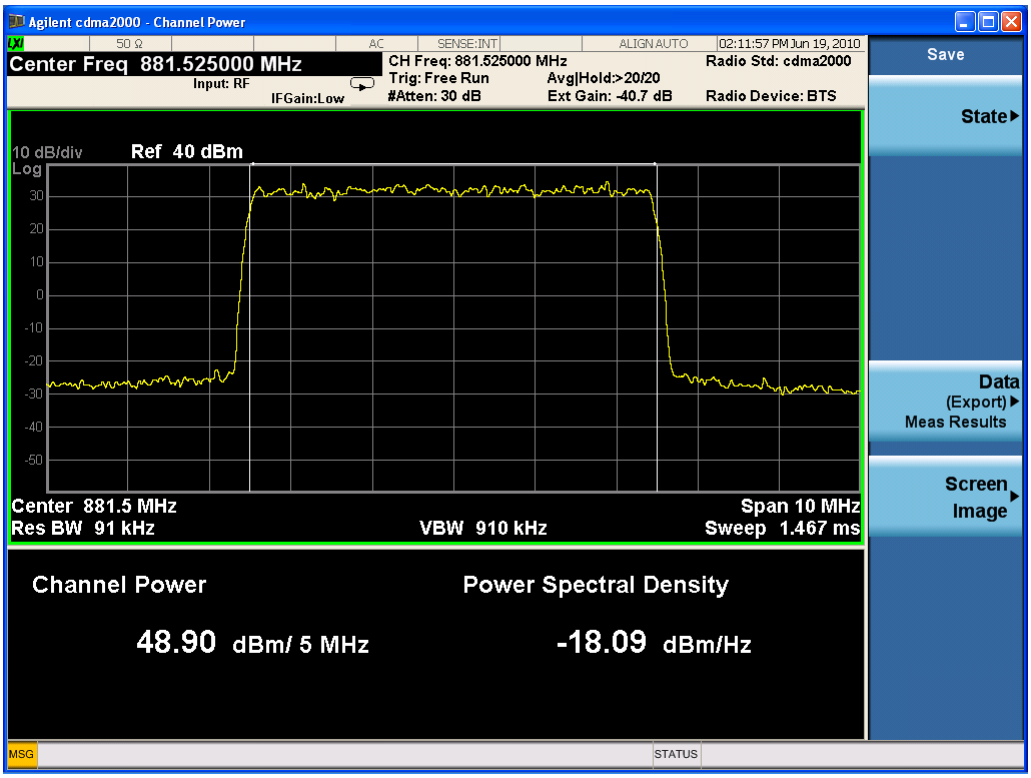
Test Result

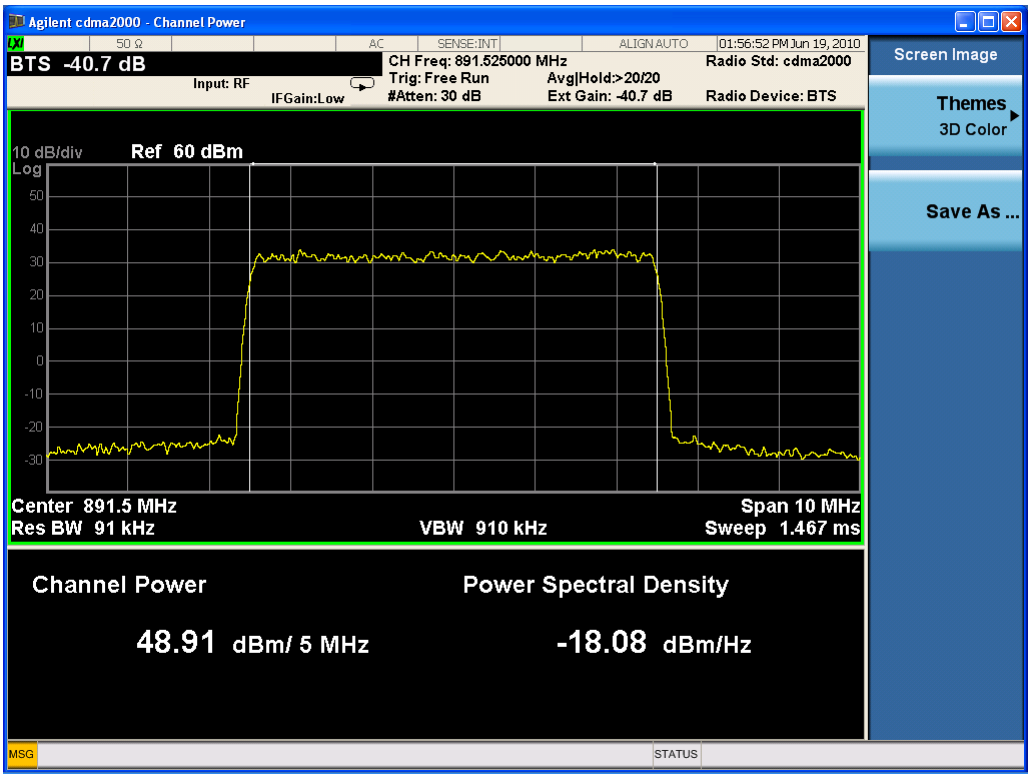
Test Mode: Transmitting CDMA

Four Carriers:

Center Freq. (MHz)	Frequency (MHz)	Max output Power In (dBm)	Antenna gain (dBi)	Cable Loss (dB)	Total Power ERP (Watts)
871.485	869.64/870.87/872.10/873.33	48.99	11	3	304.7895
881.505	879.6610/880.89/882.12/883.35	48.90	11	3	298.5383
891.525	889.68/890.91/892.14/893.37	48.91	11	3	299.2265

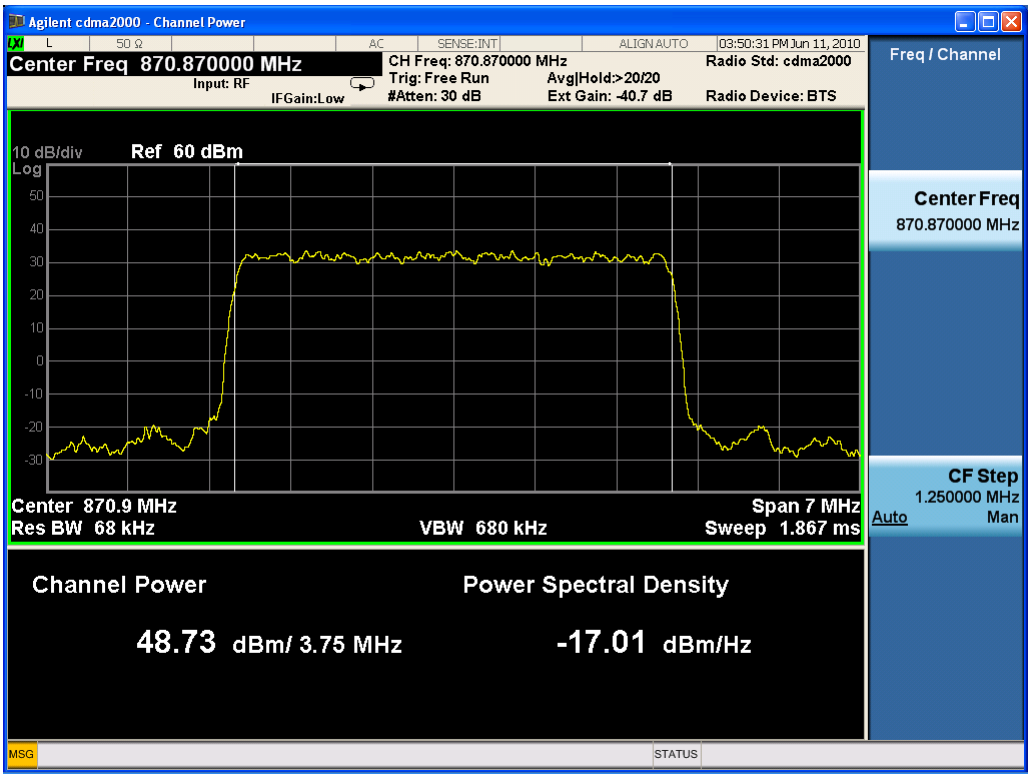


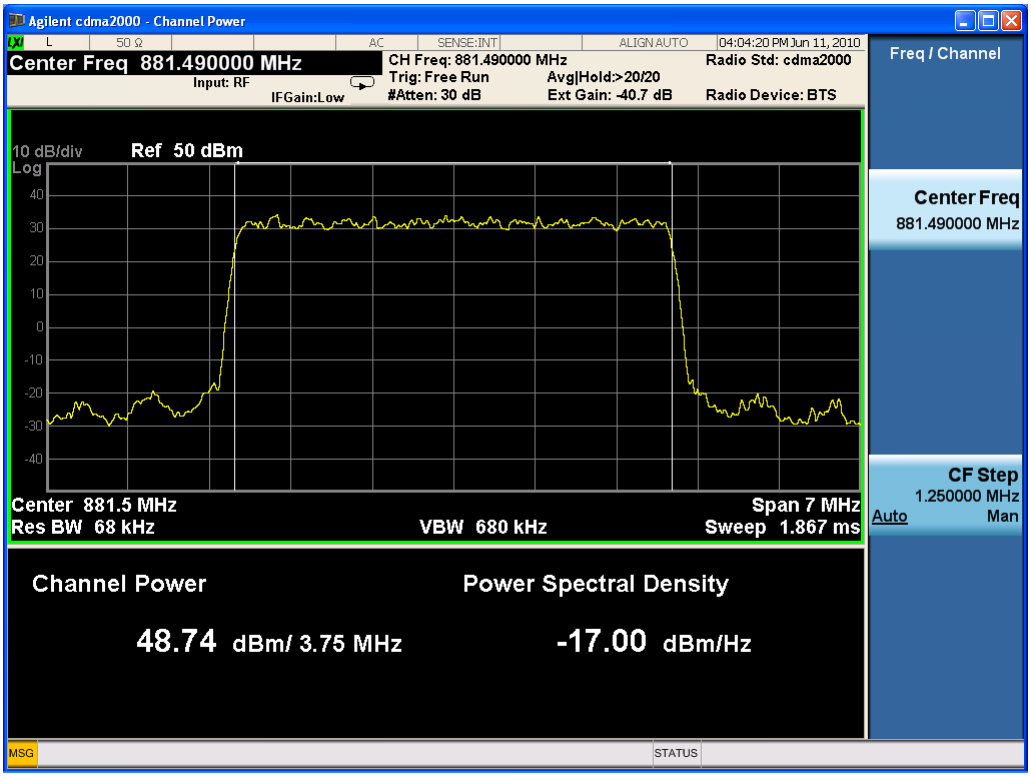

Agilent cdma2000 - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:11:57 PM Jun 19, 2010
Center Freq 881.525000 MHz
Input: RF
IFGain:Low
CH Freq: 881.525000 MHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>20/20
Ext Gain: -40.7 dB
Radio Std: cdma2000
Radio Device: BTS
Save
State
10 dB/div
Ref 40 dBm
Log
30
20
10
0
-10
-20
-30
-40
-50
Data
(Export)
Meas Results
Screen
Image
Center 881.5 MHz
Res BW 91 kHz
VBW 910 kHz
Span 10 MHz
Sweep 1.467 ms
Channel Power
48.90 dBm/ 5 MHz
Power Spectral Density
-18.09 dBm/Hz
MSG
STATUS

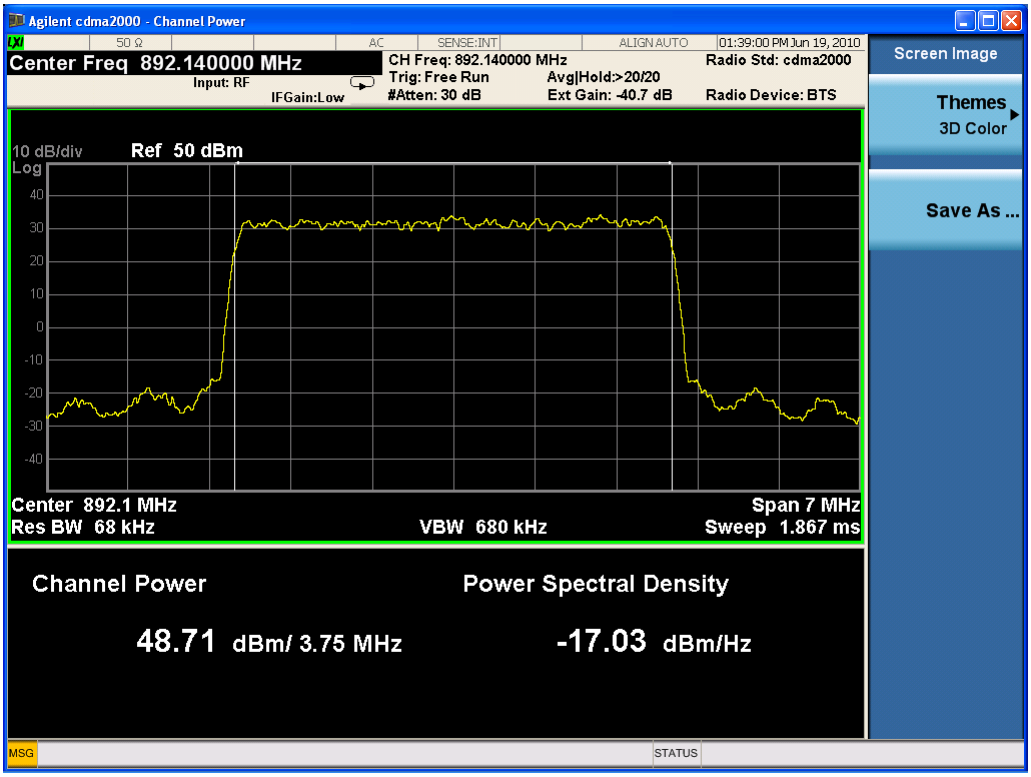

Agilent cdma2000 - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
01:56:52 PM Jun 19, 2010
BTS -40.7 dB
Input: RF
IFGain:Low
CH Freq: 891.525000 MHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>20/20
Ext Gain: -40.7 dB
Radio Std: cdma2000
Radio Device: BTS
Screen Image
Themes
3D Color
10 dB/div
Ref 60 dBm
Log
50
40
30
20
10
0
-10
-20
-30
Save As ...
Center 891.5 MHz
Res BW 91 kHz
VBW 910 kHz
Span 10 MHz
Sweep 1.467 ms
Channel Power
48.91 dBm/ 5 MHz
Power Spectral Density
-18.08 dBm/Hz
MSG
STATUS

Three carriers

Center Freq. (MHz)	Frequency (MHz)	Max output Power In (dBm)	Antenna gain (dBi)	Cable Loss (dB)	Total Power ERP (Watts)
870.87	869.64/870.87/872.10	48.73	11	3	287.0781
881.49	880.26/881.49/882.72	48.74	11	3	287.7398
892.14	890.91/892.14/893.37	48.71	11	3	285.7591

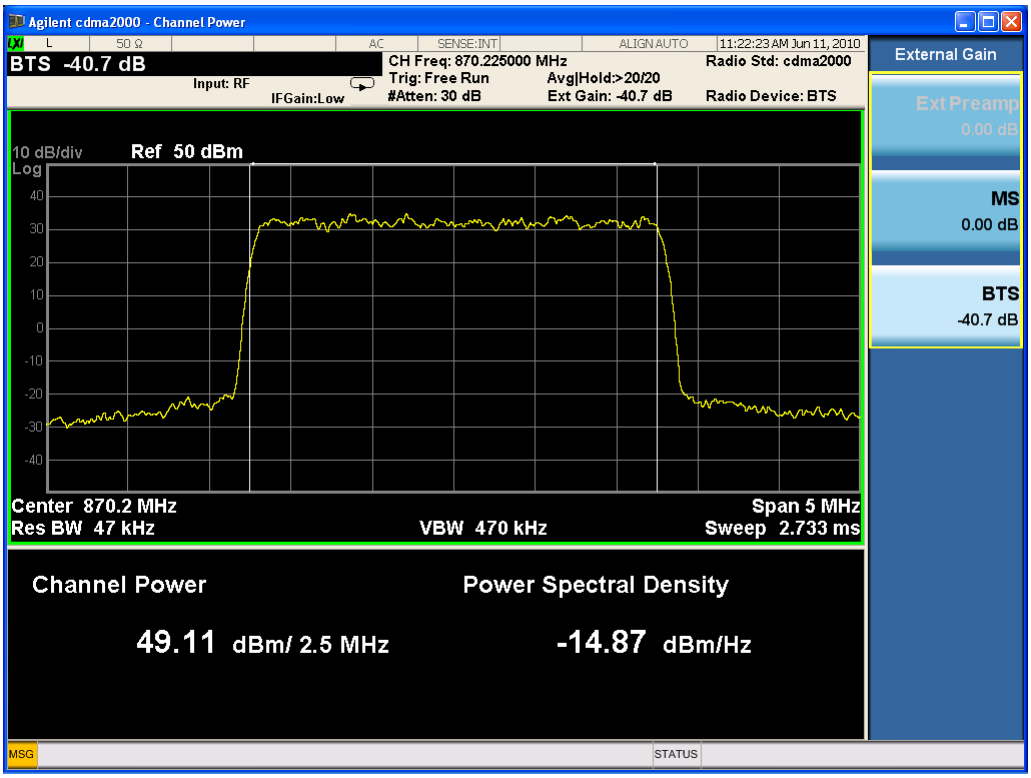


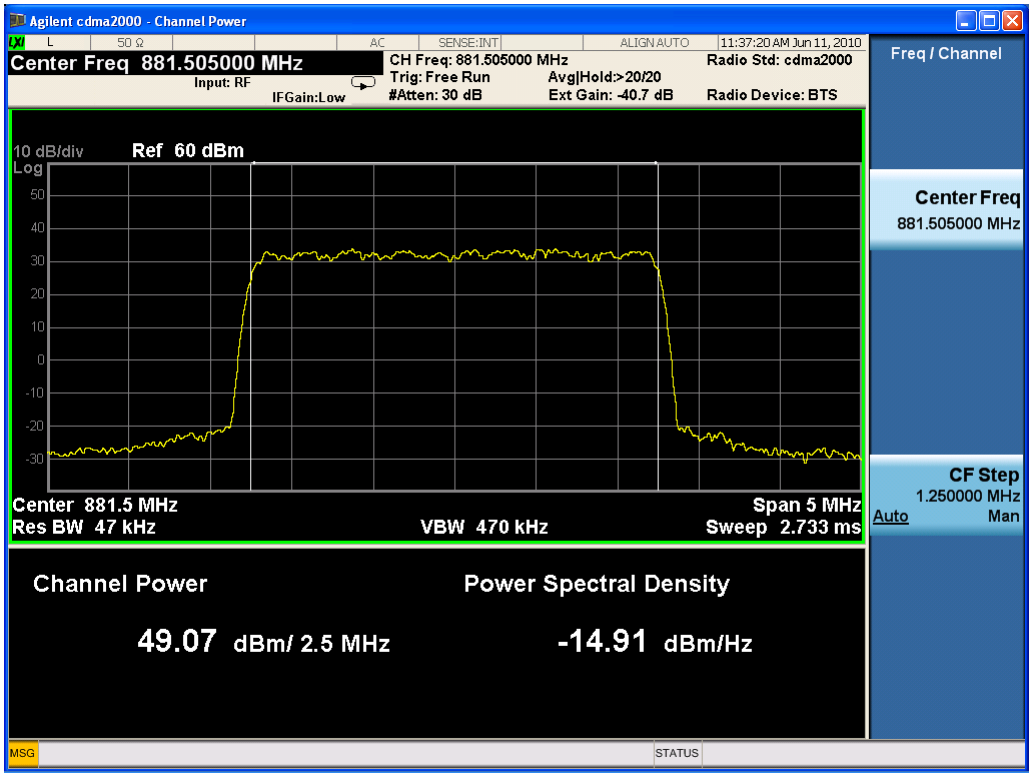

Agilent cdma2000 - Channel Power
Center Freq 881.490000 MHz
Input: RF
IFGain:Low
CH Freq: 881.490000 MHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>20/20
Ext Gain: -40.7 dB
Radio Std: cdma2000
Radio Device: BTS
04:04:20 PM Jun 11, 2010
Freq / Channel
Center Freq
881.490000 MHz
CF Step
1.250000 MHz
Auto
Man
10 dB/div
Ref 50 dBm
Center 881.5 MHz
Res BW 68 kHz
VBW 680 kHz
Span 7 MHz
Sweep 1.867 ms
Channel Power
48.74 dBm/ 3.75 MHz
Power Spectral Density
-17.00 dBm/Hz
MSG
STATUS

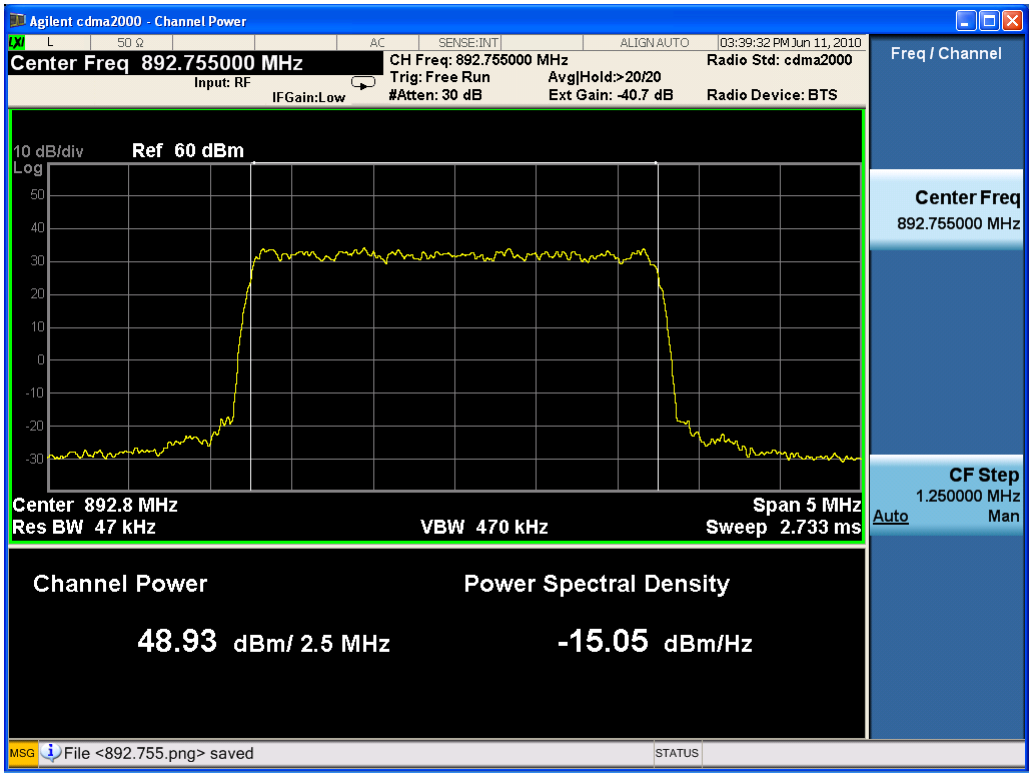

Agilent cdma2000 - Channel Power
Center Freq 892.140000 MHz
Input: RF
IFGain:Low
CH Freq: 892.140000 MHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>20/20
Ext Gain: -40.7 dB
Radio Std: cdma2000
Radio Device: BTS
01:39:00 PM Jun 19, 2010
Screen Image
Themes
3D Color
Save As ...
10 dB/div
Ref 50 dBm
Center 892.1 MHz
Res BW 68 kHz
VBW 680 kHz
Span 7 MHz
Sweep 1.867 ms
Channel Power
48.71 dBm/ 3.75 MHz
Power Spectral Density
-17.03 dBm/Hz
MSG
STATUS

Two carriers

Center Freq. (MHz)	Frequency (MHz)	Max output Power In (dBm)	Antenna gain (dBi)	Cable Loss (dB)	Total Power ERP (Watts)
870.225	869.64/870.87	49.11	11	3	313.3286
881.505	880.89/882.12	49.07	11	3	310.456
892.755	892.14/893.37	48.93	11	3	300.6076

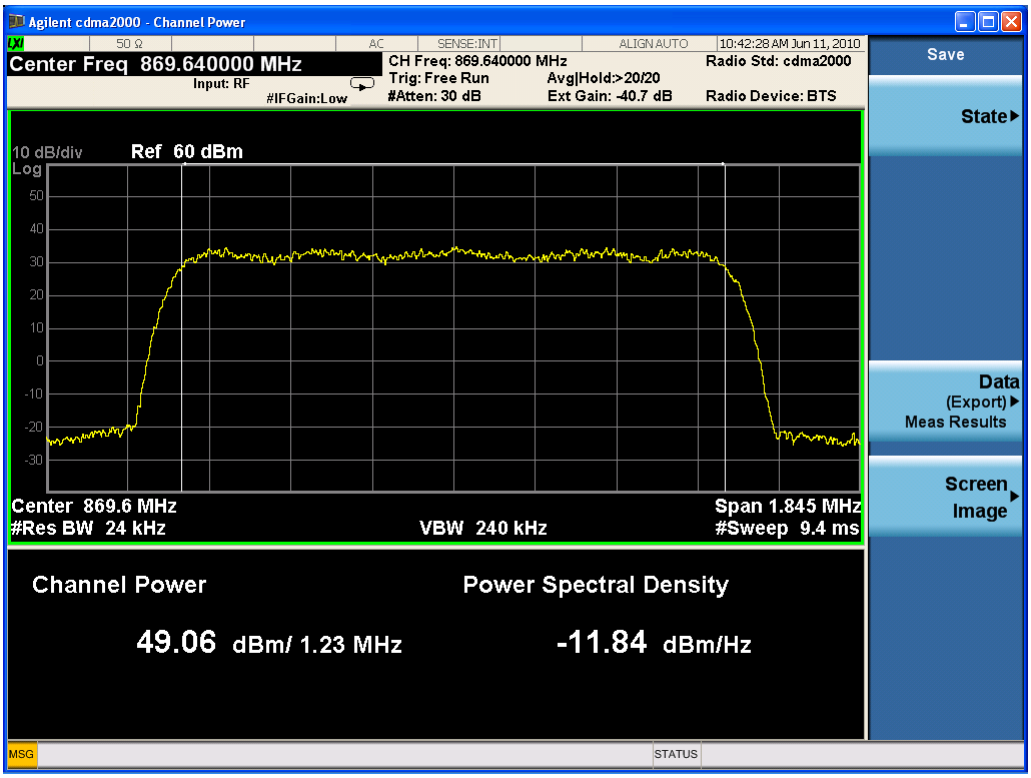


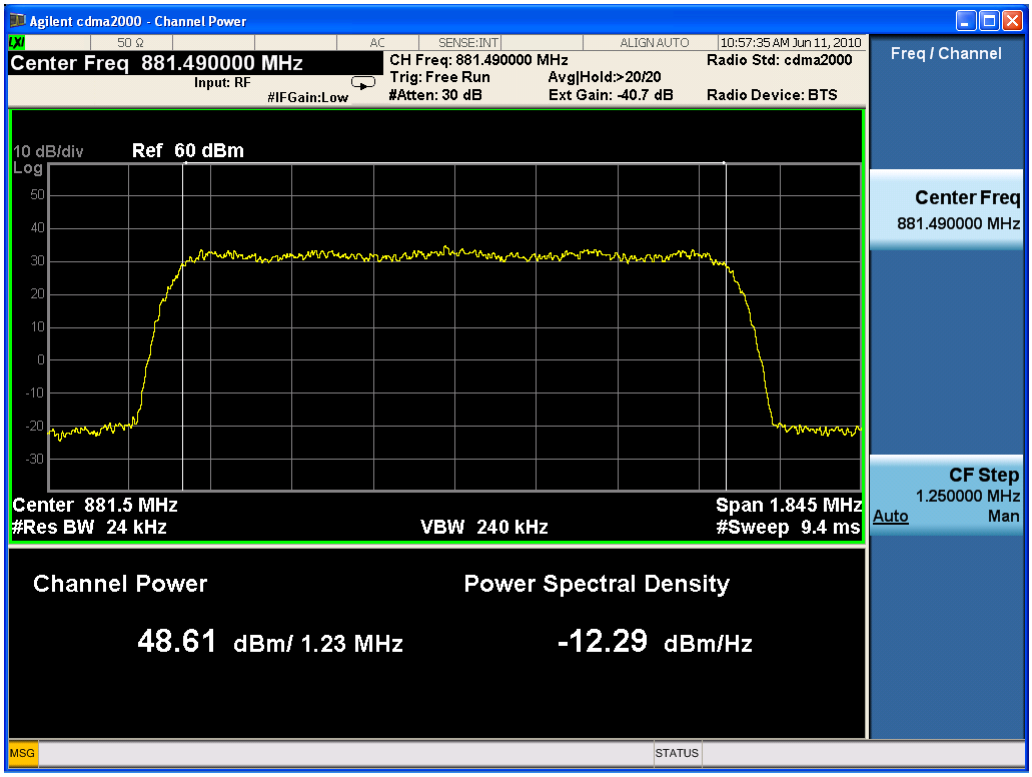

Agilent cdma2000 - Channel Power
L
50 Ω
AC
SENSE:INT
ALIGN AUTO
11:37:20 AM Jun 11, 2010
Center Freq 881.505000 MHz
Input: RF
IFGain:Low
CH Freq: 881.505000 MHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>20/20
Ext Gain: -40.7 dB
Radio Std: cdma2000
Radio Device: BTS
Freq / Channel
10 dB/div
Ref 60 dBm
Log
50
40
30
20
10
0
-10
-20
-30
Center Freq
881.505000 MHz
Center 881.5 MHz
Res BW 47 kHz
VBW 470 kHz
Span 5 MHz
Sweep 2.733 ms
CF Step
1.250000 MHz
Auto
Man
Channel Power
49.07 dBm/ 2.5 MHz
Power Spectral Density
-14.91 dBm/Hz
MSG
STATUS

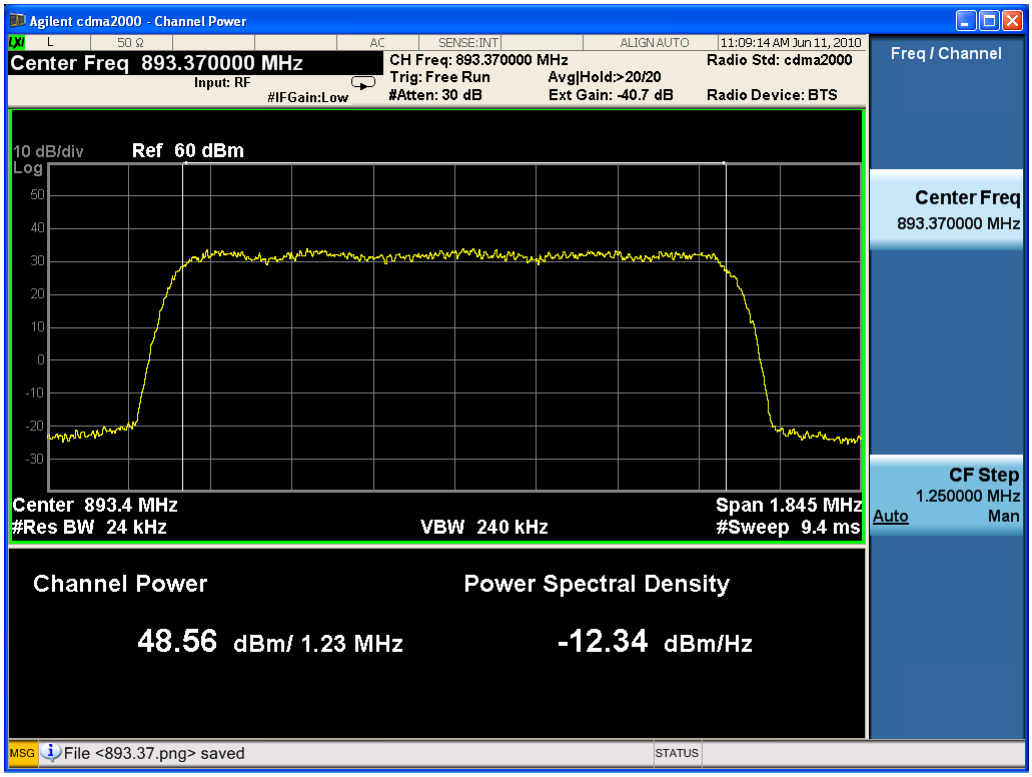

Agilent cdma2000 - Channel Power
L
50 Ω
AC
SENSE:INT
ALIGN AUTO
03:39:32 PM Jun 11, 2010
Center Freq 892.755000 MHz
Input: RF
IFGain:Low
CH Freq: 892.755000 MHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>20/20
Ext Gain: -40.7 dB
Radio Std: cdma2000
Radio Device: BTS
Freq / Channel
10 dB/div
Ref 60 dBm
Log
50
40
30
20
10
0
-10
-20
-30
Center Freq
892.755000 MHz
Center 892.8 MHz
Res BW 47 kHz
VBW 470 kHz
Span 5 MHz
Sweep 2.733 ms
CF Step
1.250000 MHz
Auto
Man
Channel Power
48.93 dBm/ 2.5 MHz
Power Spectral Density
-15.05 dBm/Hz
MSG
File <892.755.png> saved
STATUS

One carrier

Center Freq. (MHz)	Frequency (MHz)	Max output Power In (dBm)	Antenna gain (dBi)	Cable Loss (dB)	Total Power ERP (Watts)
869.64	869.64	49.06	11	3	309.7419
881.49	881.49	48.61	11	3	279.2544
893.37	893.37	48.56	11	3	276.0578




Agilent cdma2000 - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:57:35 AM Jun 11, 2010
Center Freq 881.490000 MHz
Input: RF
#IFGain:Low
CH Freq: 881.490000 MHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>20/20
Ext Gain: -40.7 dB
Radio Std: cdma2000
Radio Device: BTS
Freq / Channel
10 dB/div
Ref 60 dBm
Log
50
40
30
20
10
0
-10
-20
-30
Center Freq
881.490000 MHz
Center 881.5 MHz
#Res BW 24 kHz
VBW 240 kHz
Span 1.845 MHz
#Sweep 9.4 ms
CF Step
1.250000 MHz
Auto
Man
Channel Power
48.61 dBm/ 1.23 MHz
Power Spectral Density
-12.29 dBm/Hz
MSG
STATUS


Agilent cdma2000 - Channel Power
L
50 Ω
AC
SENSE:INT
ALIGN AUTO
11:09:14 AM Jun 11, 2010
Center Freq 893.370000 MHz
Input: RF
#IFGain:Low
CH Freq: 893.370000 MHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>20/20
Ext Gain: -40.7 dB
Radio Std: cdma2000
Radio Device: BTS
Freq / Channel
10 dB/div
Ref 60 dBm
Log
50
40
30
20
10
0
-10
-20
-30
Center Freq
893.370000 MHz
Center 893.4 MHz
#Res BW 24 kHz
VBW 240 kHz
Span 1.845 MHz
#Sweep 9.4 ms
CF Step
1.250000 MHz
Auto
Man
Channel Power
48.56 dBm/ 1.23 MHz
Power Spectral Density
-12.34 dBm/Hz
MSG
File <893.37.png> saved
STATUS

6 RF EXPLOSURE

Applicable standard

FCC §2.1091 §1.1037 and IC RSS 102 §2.5.2

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)

(B) Limits for General Population/Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm^2)	Averaging Time $\|E\|^2$, $\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	f/1500	30
1500-100,000	--	--	1.0	30

Note: f = frequency in MHz

Test Data

Predication of MPE limit at a given distance, Equation from 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: 49.11 (dBm)
Maximum peak output power at antenna input terminals: 80 (W)
Cable loss is 3 dB.
Prediction distance: 400 (cm)
Predication frequency: 870.225 (MHz)
Antenna Gain (typical): 12.58（11dBi）
Power density at predication frequency at 400 cm: 0.26 (mW/cm^2)
MPE limit for uncontrolled exposure at prediction frequency: 0.58 (mW/cm^2)

Test Result: pass

7 MODULATION CHARACTERISTIC

Applicable Standard

FCC §2.1047 and IC RSS 132 §4.2

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2010-4-9	2011-4-9
DTS	DTS100 40dB Attenuator	DTS100-40dB-N	N/A	N/A	N/A
Hewlett Packard	RF Cable	8120-6192	01428251	N/A	N/A

***statement of traceability:** ZTE Corporation Reliability Testing Center attests that all calibration has been performed per the NVLAP requirements, traceable to NIST.

Test Procedure

CDMA digital mode is used by EUT.

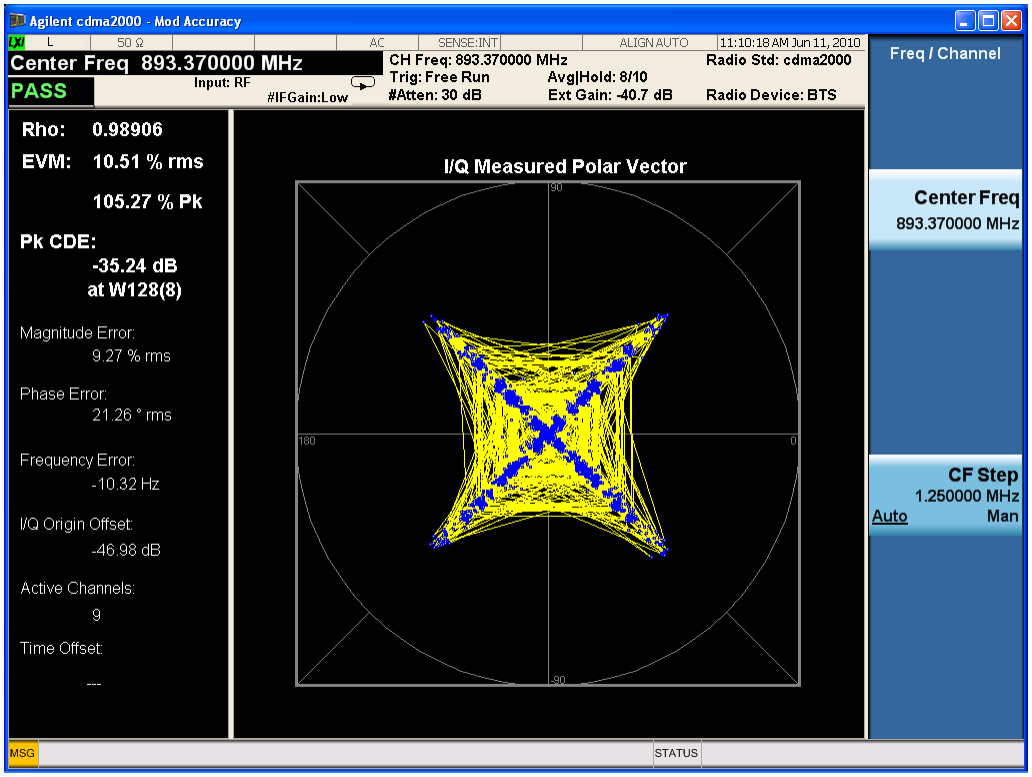
Test Data Environmental Conditions

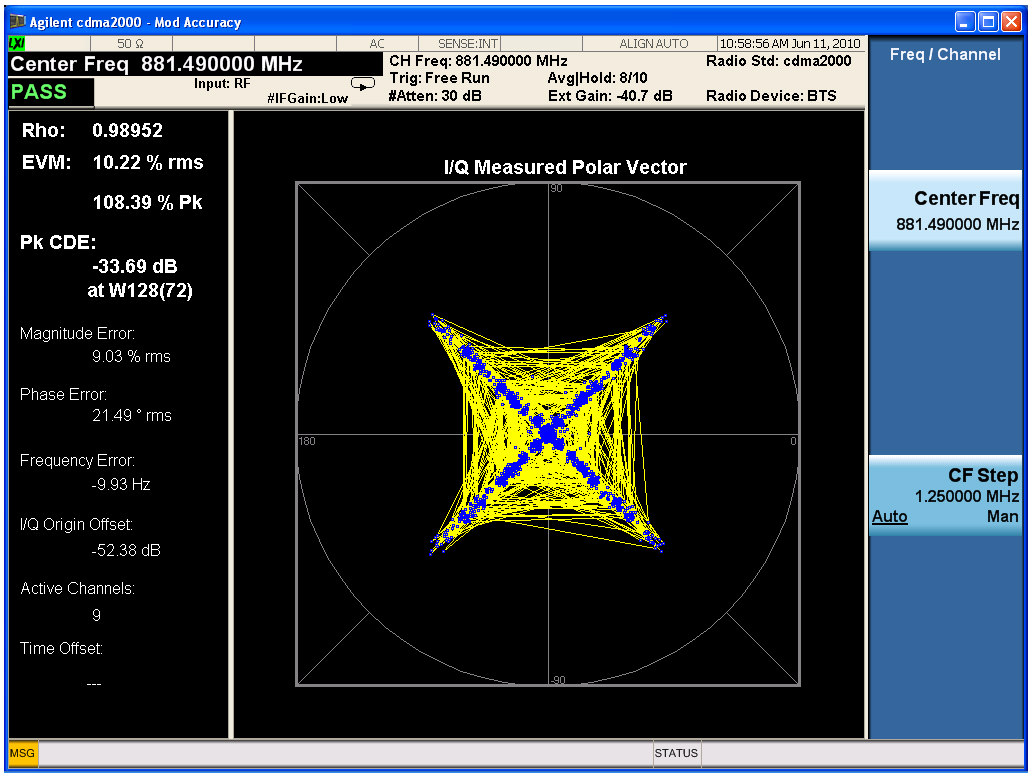
Temperature:	20 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

Test Result

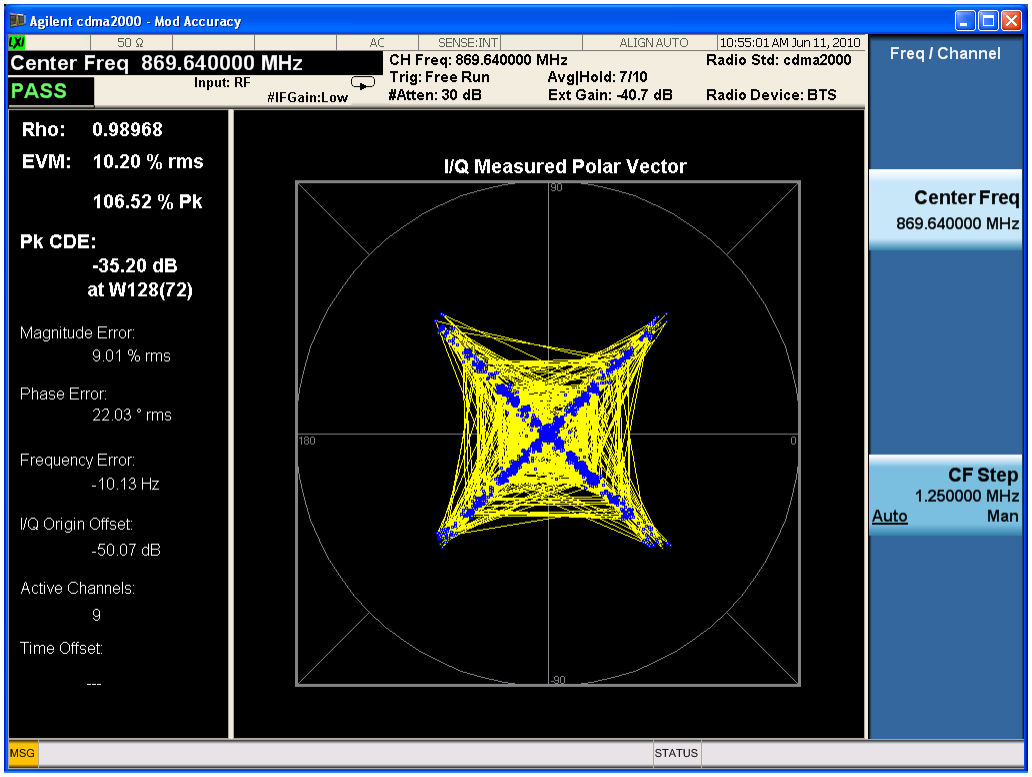
Test Mode: Transmitting CDMA

Frequency (MHz)	Rho
893.37	0.98906
881.49	0.98952
869.64	0.98968




Agilent cdma2000 - Mod Accuracy
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:58:56 AM Jun 11, 2010
Center Freq 881.490000 MHz
CH Freq: 881.490000 MHz
Radio Std: cdma2000
Trig: Free Run
Avg|Hold: 8/10
PASS
Input: RF
#IFGain:Low
#Atten: 30 dB
Ext Gain: -40.7 dB
Radio Device: BTS
Freq / Channel
Rho: 0.98952
EVM: 10.22 % rms
108.39 % Pk
Pk CDE:
-33.69 dB
at W128(72)
Magnitude Error:
9.03 % rms
Phase Error:
21.49 ° rms
Frequency Error:
-9.93 Hz
I/Q Origin Offset:
-52.38 dB
Active Channels:
9
Time Offset:

I/Q Measured Polar Vector
90
180
0
-90
Center Freq
881.490000 MHz
CF Step
1.250000 MHz
Auto
Man
MSG
STATUS


Agilent cdma2000 - Mod Accuracy
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:55:01 AM Jun 11, 2010
Center Freq 869.640000 MHz
CH Freq: 869.640000 MHz
Radio Std: cdma2000
Trig: Free Run
Avg|Hold: 7/10
PASS
Input: RF
#IFGain:Low
#Atten: 30 dB
Ext Gain: -40.7 dB
Radio Device: BTS
Freq / Channel
Rho: 0.98968
EVM: 10.20 % rms
106.52 % Pk
Pk CDE:
-35.20 dB
at W128(72)
Magnitude Error:
9.01 % rms
Phase Error:
22.03 ° rms
Frequency Error:
-10.13 Hz
I/Q Origin Offset:
-50.07 dB
Active Channels:
9
Time Offset:

I/Q Measured Polar Vector
90
180
0
-90
Center Freq
869.640000 MHz
CF Step
1.250000 MHz
Auto
Man
MSG
STATUS

8 SPURIOUS RADIATED EMISSIONS

Applicable Standard

FCC CFR 47, §2.1053 and IC RSS132 §4.5, RSS Gen §4.9

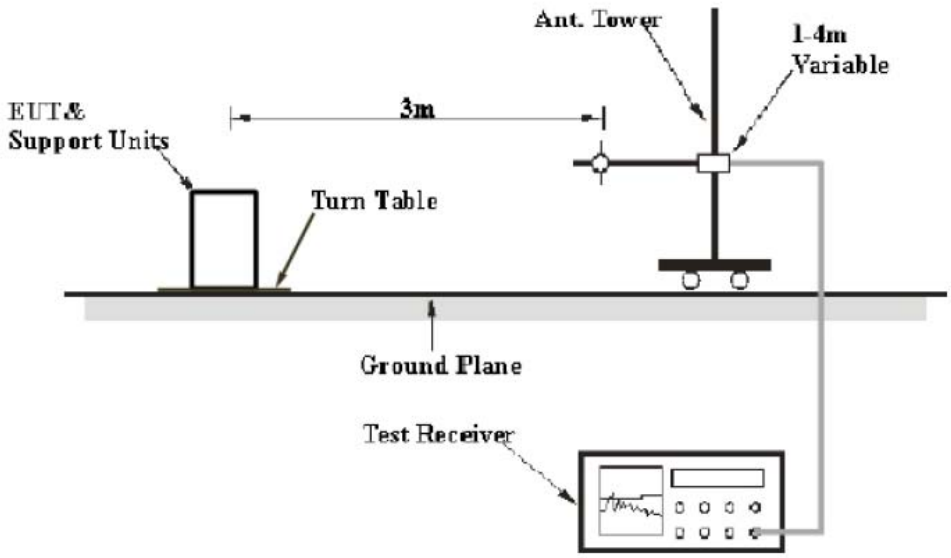
Test Equipment List and Details

Manufacturer	Equipment	Model	Serial Number	Last Cal.	Cal. Interval
Rohde & Schwarz	Log periodic Antenna	HL5628	100022	2010-08-05	1 Year
Rohde & Schwarz	Double-Ridged Waveguide Horn Antenna	HF906 RX	100446	2010-08-05	1 Year
Rohde & Schwarz	EMI Test Receiver	ES126	100058	2010-10-29	1 Year
Rohde & Schwarz	Signal Generator	SMR20	100098	2010-10-29	1 Year
Compliance direction systems Inc.	Pre-amplifier	PAM-0204	173	2010-06-02	1 Year
SCHWARZBECK	VHF-UHF Broad band Antenna	VUBA 9117	SB3174	2010-08-05	1 Year
Rohde & Schwarz	Double-Ridged Waveguide Horn Antenna	HF906 TX	100032	2010-08-05	1 Year

***statement of traceability:** ZTE Corporation Testing lab attests that all calibration has been performed per the NVLAP requirements, traceable to NIST.

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 radiated emissions measurement at the EMC lab of ZTE Corp. is 3.6dB.

EUT Setup



The radiated emission tests were performed in the 3-meter Chamber, using the setup accordance with the TIA-603-C. The specifications used were the FCC Part 22H and RSS-132 limits.

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 (TX pwr in Watts/0.001)-the absolute level
Spurious attenuation limit in dB =43+10 Lg P (power out in Watts)
The resolution bandwidth of the spectrum analyzer was set at 100KHz for 30MHz to 1GHz scanning, set at 1MHz or 3MHz for 1GHz to 20GHz scanning.

Test Results

Environmental Conditions

Temperature:	26°C
Relative Humidity:	60 %
ATM Pressure:	1009 mbar

Indicated		Table Angle Degree	Test Antenna		Substitution			Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Frequency (MHz)	Amp. (dBuV)		Height (m)	Polar (H/V)	Frequency (MHz)	Level (dBm)	Ant. Gain Cord.				
63.046092	27.36	86.90	2	V	63.046092	-39.84	-27.24	0.6	-67.68	-13	54.68
64.98998	31.7	86.90	2	V	64.98998	-35.5	-27.24	0.6	-63.34	-13	50.34
199.118236	31.84	162.10	1	V	199.118236	-63.31	0.35	1.1	-64.06	-13	51.06
605.390782	27.32	328.60	2	V	605.390782	-69.37	-1.39	2	-72.76	-13	59.76
891.142285	76.51	162.10	1	V	891.142285	-20.68	-1.54	2.5	-24.72	-13	11.72
2983.96794	55.01	342.30	1	V	2983.96794	-46.73	7.95	4.6	-43.38	-13	30.38
66.933868	20.94	84.00	2	H	66.933868	-49.87	-25.3	0.6	-75.77	-13	62.77
133.026052	22.06	265.70	1	H	133.026052	-64.1	-9.59	0.8	-74.49	-13	61.49
210.781563	36.49	145.40	1	H	210.781563	-62.76	1.23	1.2	-62.73	-13	49.73
644.268537	28.11	84.00	2	H	644.268537	-72.78	-1.09	2.1	-75.97	-13	62.97
891.142285	83.58	85.60	1	H	891.142285	-13.51	-1.54	2.5	-17.55	-13	4.55
2679.35872	55.71	328.80	2	H	2679.35872	-49.03	7.95	4.4	-45.48	-13	32.48

Radiation emission spurious below 3 GHz

Indicated		Table Angle Degree	Test Antenna		Substitution			Cable Loss (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Frequency (MHz)	Amp. (dBuV)		Height (m)	Polar (H/V)	Frequency (MHz)	Level (dBm)	Ant. Gain Cord.				
3569.13828	54.33	328.40	2	V	3569.13828	-52.06	7.75	5	-49.31	-13	36.31
6935.87174	50.55	117.80	2	V	6935.87174	-57.62	9.25	7.3	-55.67	-13	42.67
7599.1984	51.09	360.00	1	V	7599.1984	-61.26	9.25	7.8	-59.81	-13	46.81
10178.3567	57.63	183.20	1	V	10178.3567	-51.19	11.35	8.9	-48.74	-13	35.74
13617.2345	61.58	65.70	2	V	13617.2345	-51.88	10.45	10.3	-51.73	-13	38.73
19947.8958	76.32	117.80	2	V	19947.8958	-25.42	6.45	12.2	-31.17	-13	18.17
3569.13828	52.67	341.60	1	H	3569.13828	-50.59	7.75	5	-47.84	-13	34.84
4466.93387	51.05	289.60	1	H	4466.93387	-52.38	7.95	5.6	-50.03	-13	37.03
6254.50902	51.12	341.60	1	H	6254.50902	-50.68	9.05	6.9	-48.53	-13	35.53
10204.4088	57.24	222.70	2	H	10204.4088	-51.7	11.35	8.9	-49.25	-13	36.25
14398.7976	62.66	80.00	1	H	14398.7976	-42.66	9.65	10.8	-43.81	-13	30.81
19895.7916	76.15	132.50	1	H	19895.7916	-21.7	6.45	12.2	-27.45	-13	14.45

Radiation emission spurious above 3 GHz

9 SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Applicable Standard

FCC§2.1051, §22.917 and IC RSS-132 §4.5

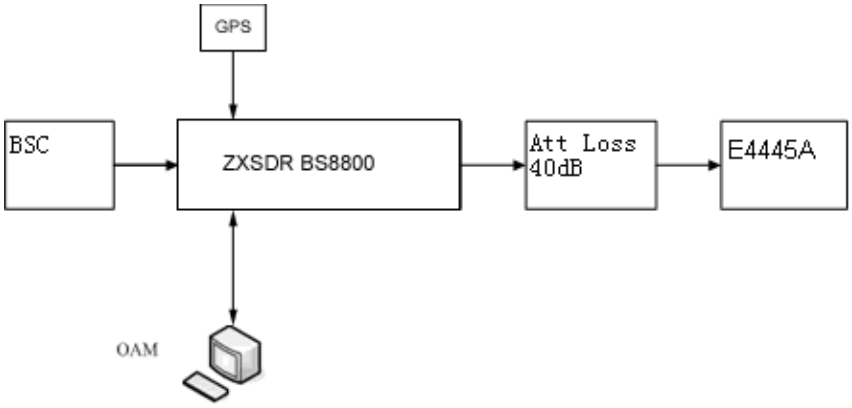
The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2010-4-9	2011-4-9
DST	DST100 40dB Attenuator	DTS100-40dB-N	N/A	N/A	N/A
Hewlett Packard	RF Cable	8120-6192	01428251	N/A	N/A

***statement of traceability:** ZTE Corporation Reliability Testing Center attests that all calibration has been performed per the NVLAP requirements, traceable to NIST.

Test Procedure



REMARKS: Attenuator loss (dB) =40 dB, Cable Loss (dB) =3 dB.

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 1 kHz for 9 kHz to 150 kHz band, set at 10KHz for 150KHz to 30MHz band, set at 100KHz for 30MHz to 1GHz band, set at 1MHz or 3MHz for 1GHz to 10GHz band. Sufficient scans were taken to show any out of band emissions up to 10th harmonic.

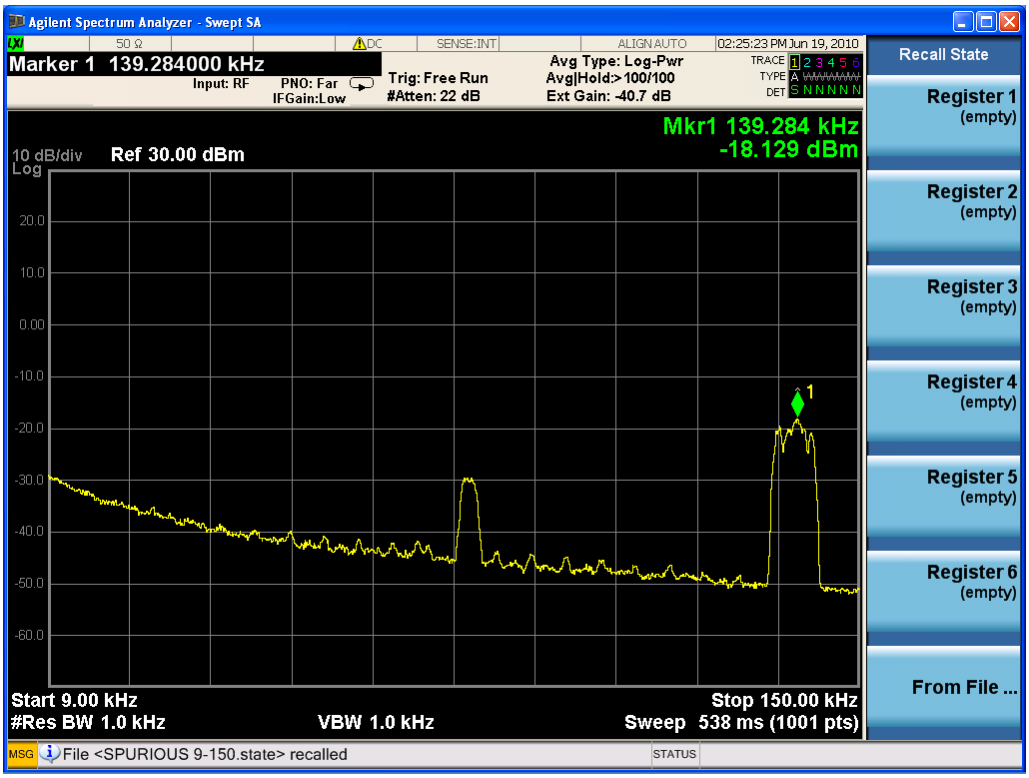
Test Data Environmental Conditions

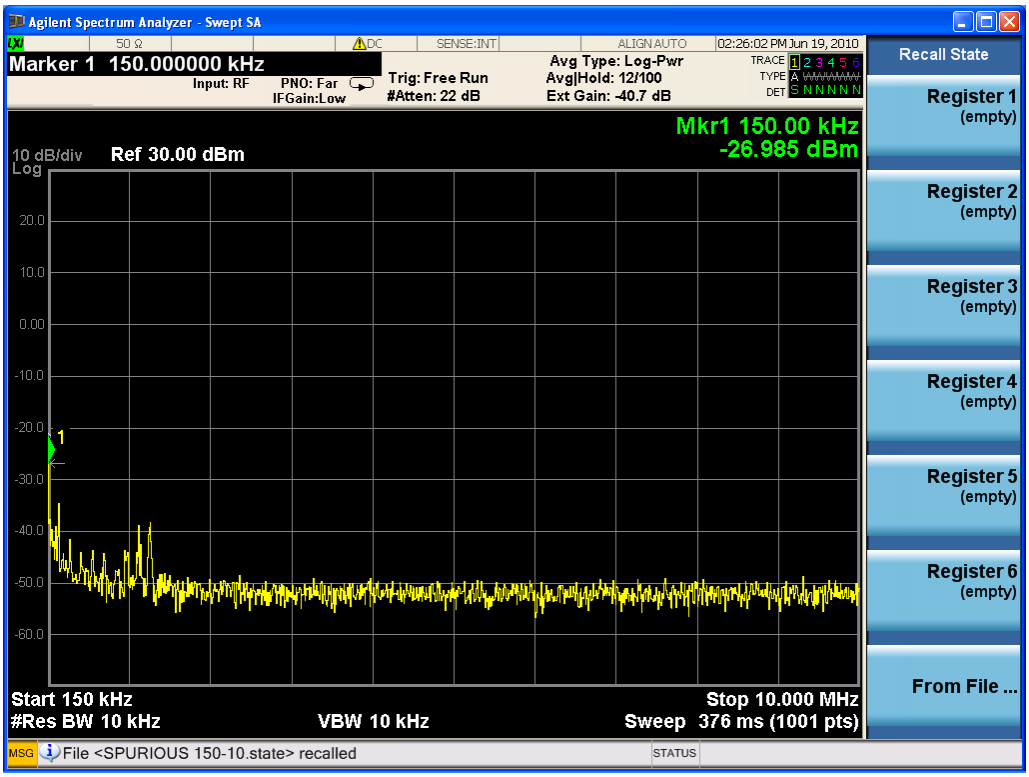
Temperature:	20 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

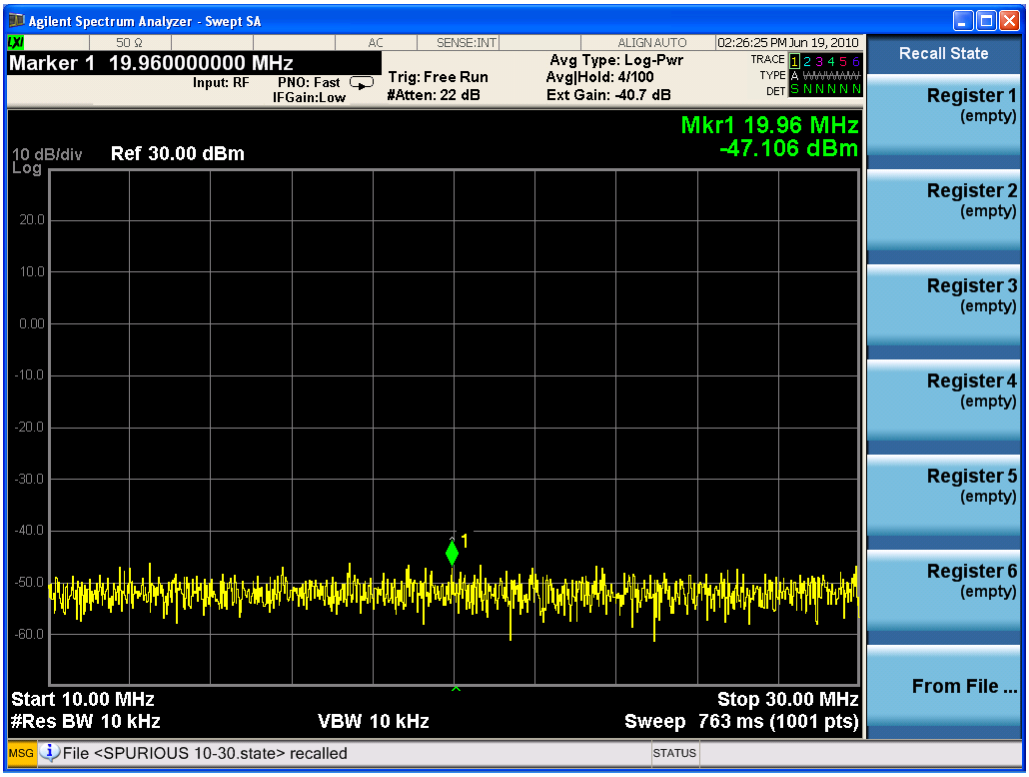
Test Result

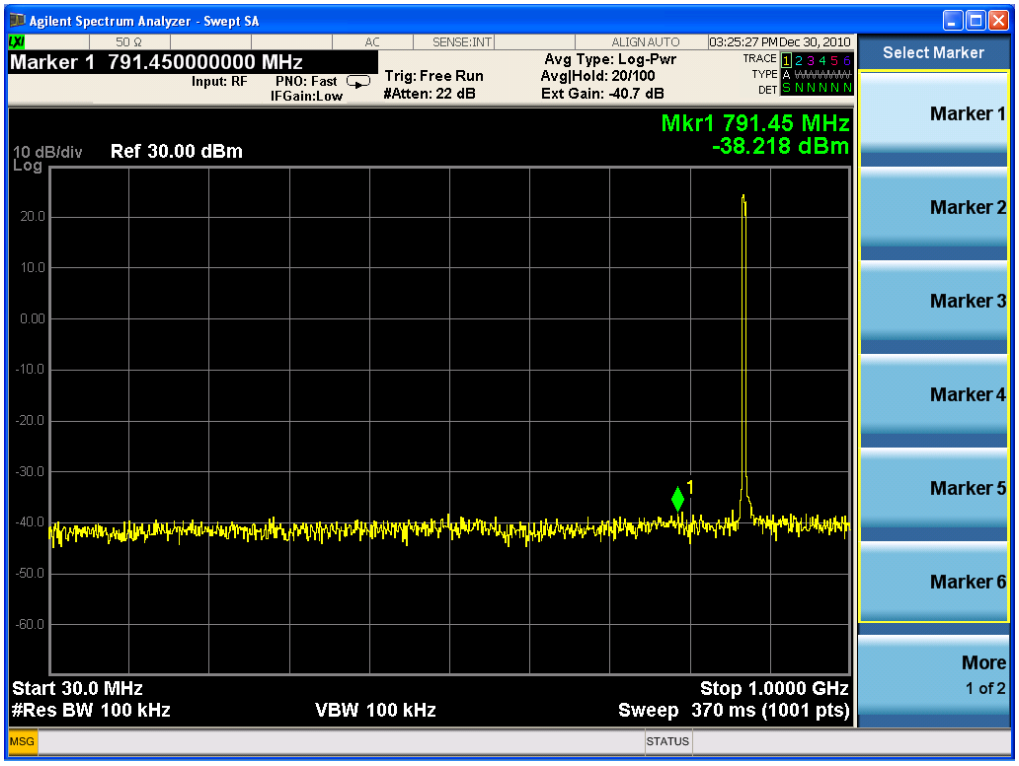
Test Mode: Transmitting CDMA

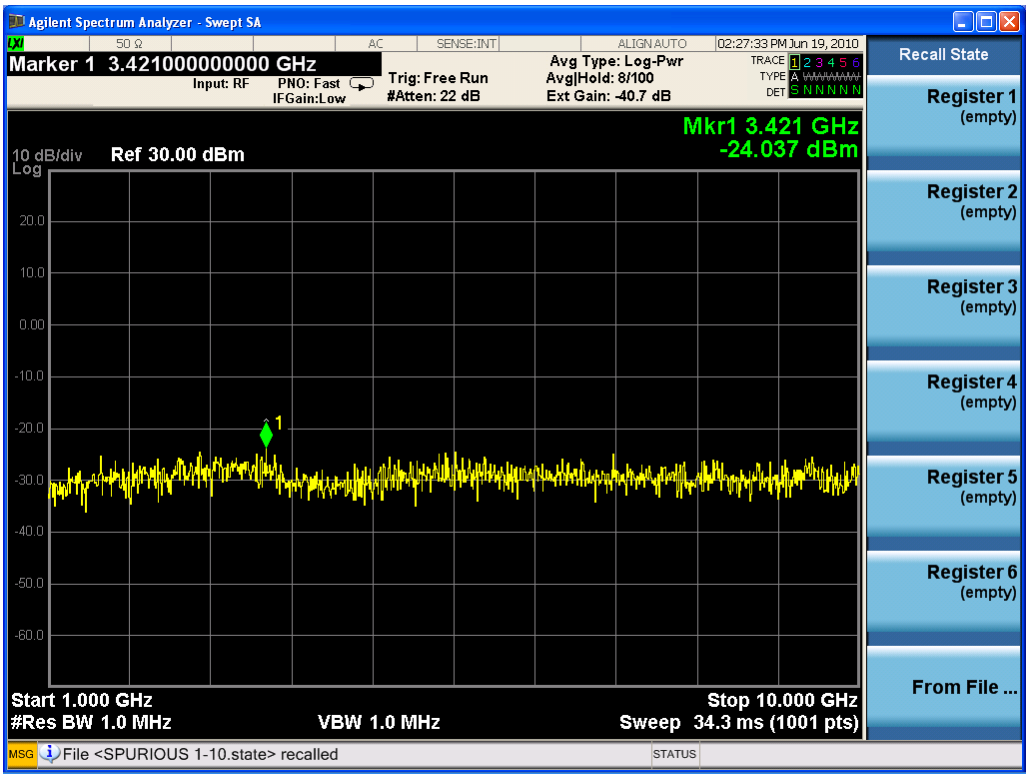
Four Carriers (working in bottom frequency)



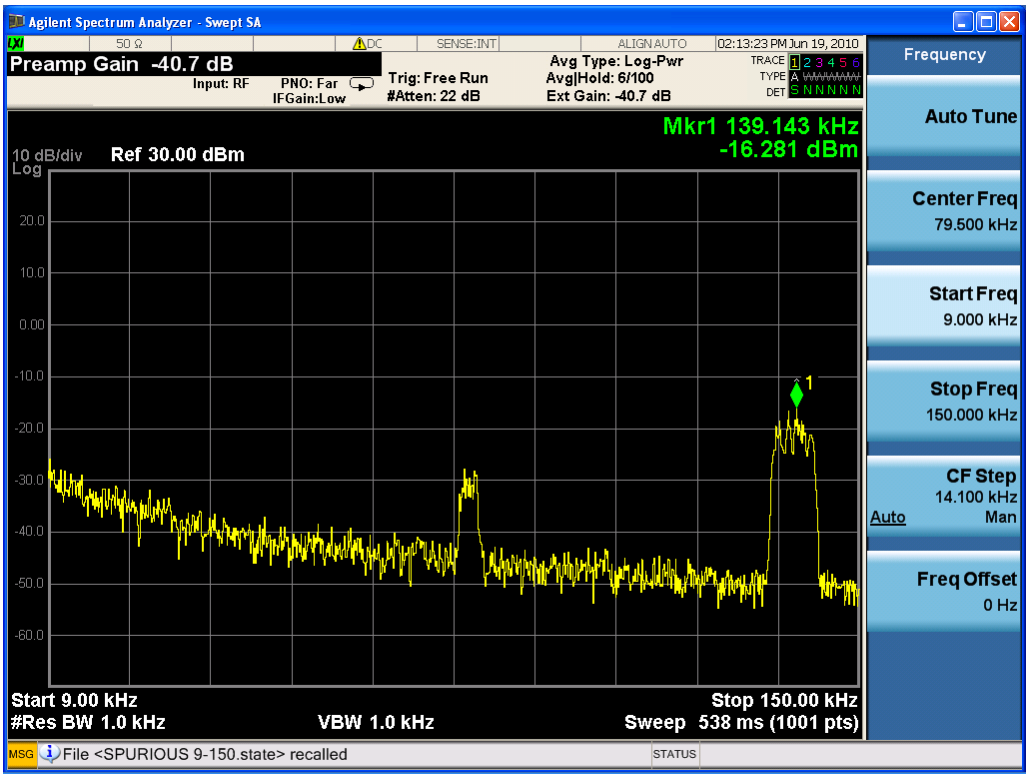

Agilent Spectrum Analyzer - Swept SA
Marker 1 150.000000 kHz
Input: RF
PNO: Far
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 12/100
Ext Gain: -40.7 dB
02:26:02 PM Jun 19, 2010
Mkr1 150.00 kHz
-26.985 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 150 kHz
#Res BW 10 kHz
VBW 10 kHz
Stop 10.000 MHz
Sweep 376 ms (1001 pts)
File <SPURIOUS 150-10.state> recalled
Recall State
Register 1 (empty)
Register 2 (empty)
Register 3 (empty)
Register 4 (empty)
Register 5 (empty)
Register 6 (empty)
From File ...

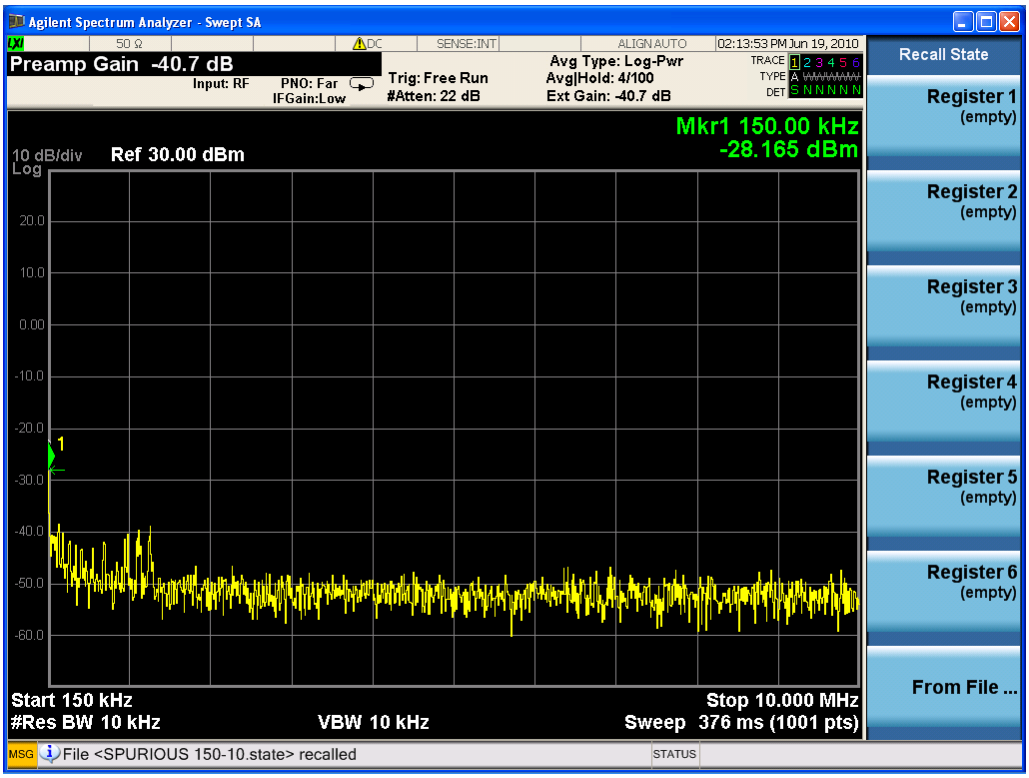

Agilent Spectrum Analyzer - Swept SA
Marker 1 19.960000000 MHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 4/100
Ext Gain: -40.7 dB
02:26:25 PM Jun 19, 2010
Mkr1 19.96 MHz
-47.106 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 10.00 MHz
#Res BW 10 kHz
VBW 10 kHz
Stop 30.00 MHz
Sweep 763 ms (1001 pts)
File <SPURIOUS 10-30.state> recalled
Recall State
Register 1 (empty)
Register 2 (empty)
Register 3 (empty)
Register 4 (empty)
Register 5 (empty)
Register 6 (empty)
From File ...

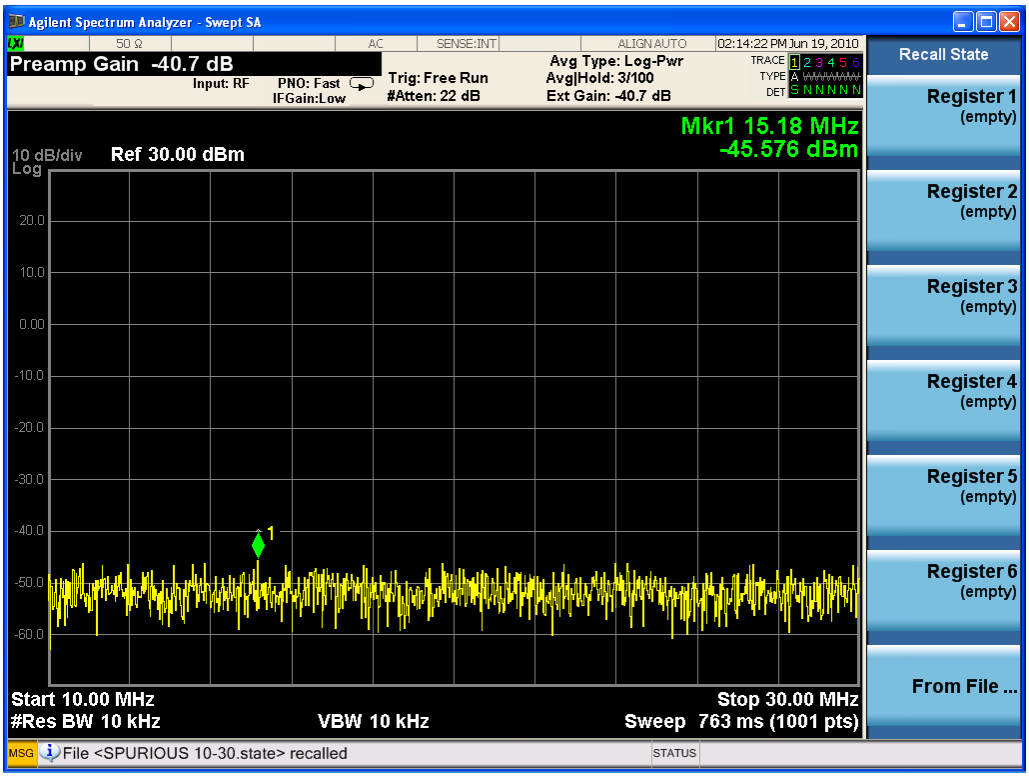

Agilent Spectrum Analyzer - Swept SA
Marker 1 791.450000000 MHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 20/100
Ext Gain: -40.7 dB
03:25:27 PM Dec 30, 2010
Mkr1 791.45 MHz
-38.218 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
VBW 100 kHz
Stop 1.0000 GHz
Sweep 370 ms (1001 pts)
Select Marker
Marker 1
Marker 2
Marker 3
Marker 4
Marker 5
Marker 6
More
1 of 2

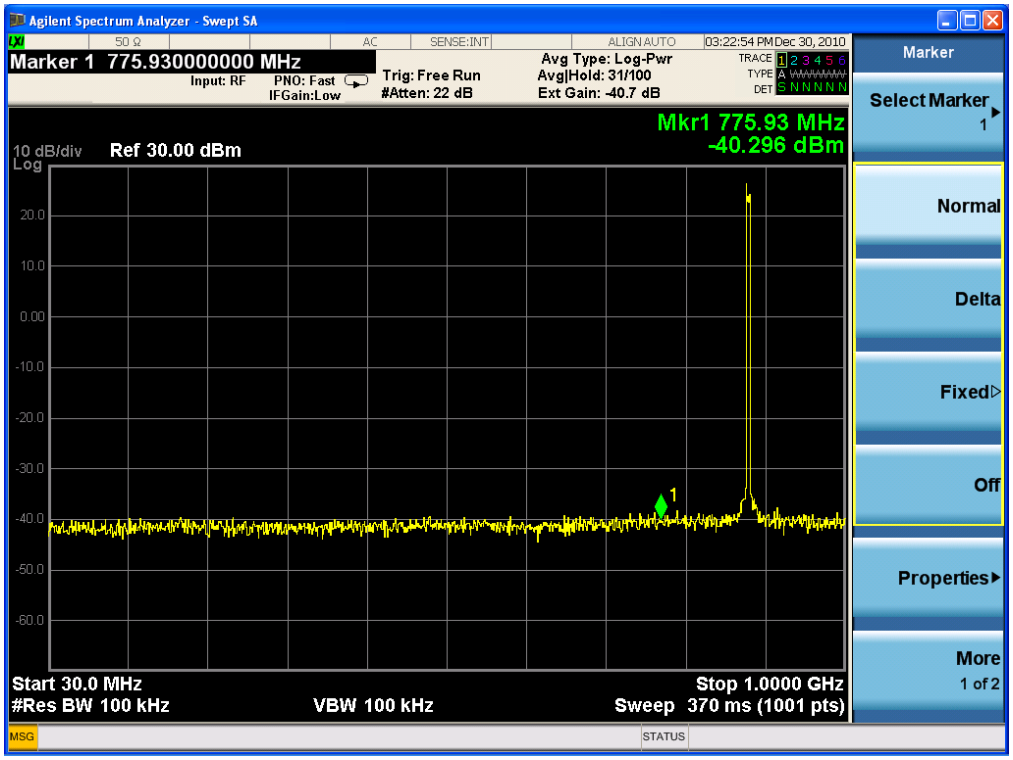

Agilent Spectrum Analyzer - Swept SA
Marker 1 3.421000000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 8/100
Ext Gain: -40.7 dB
02:27:33 PM Jun 19, 2010
Mkr1 3.421 GHz
-24.037 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 1.000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 10.000 GHz
Sweep 34.3 ms (1001 pts)
File <SPURIOUS 1-10.state> recalled
Recall State
Register 1 (empty)
Register 2 (empty)
Register 3 (empty)
Register 4 (empty)
Register 5 (empty)
Register 6 (empty)
From File ...

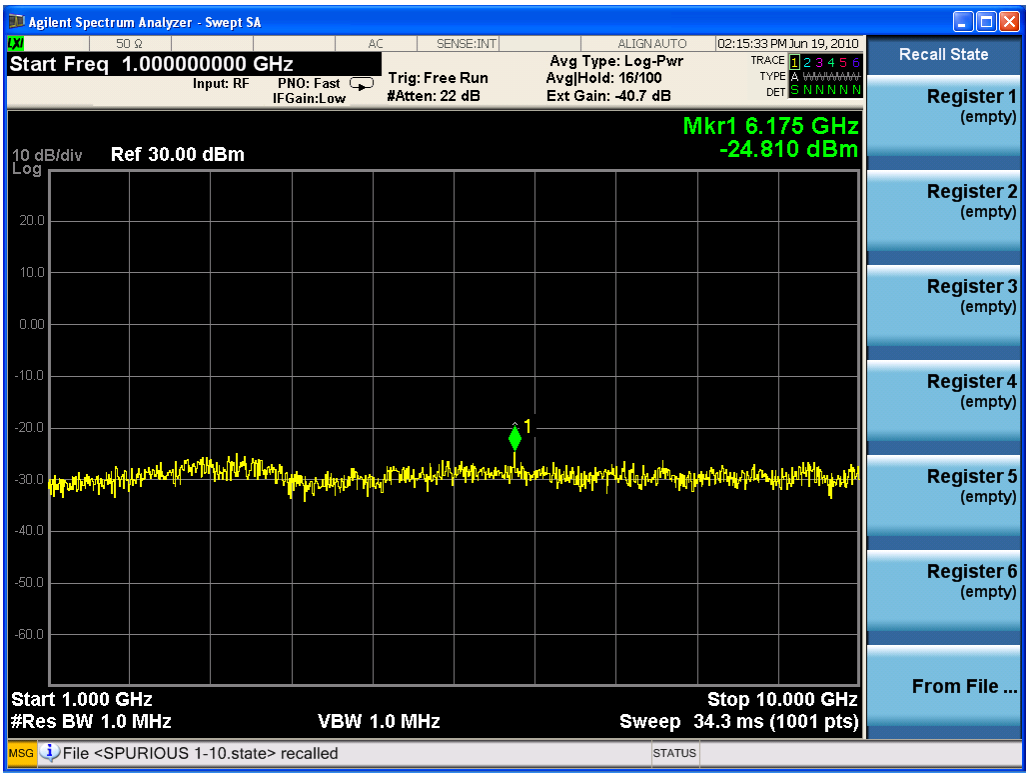
Four carriers (working in middle frequency)



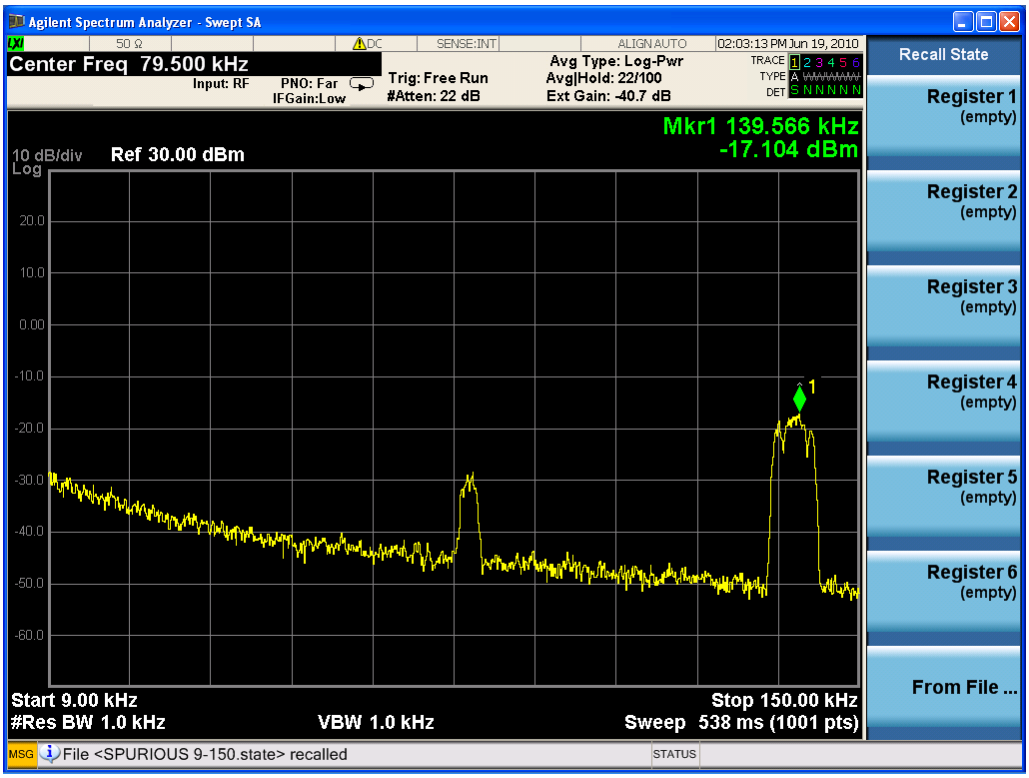


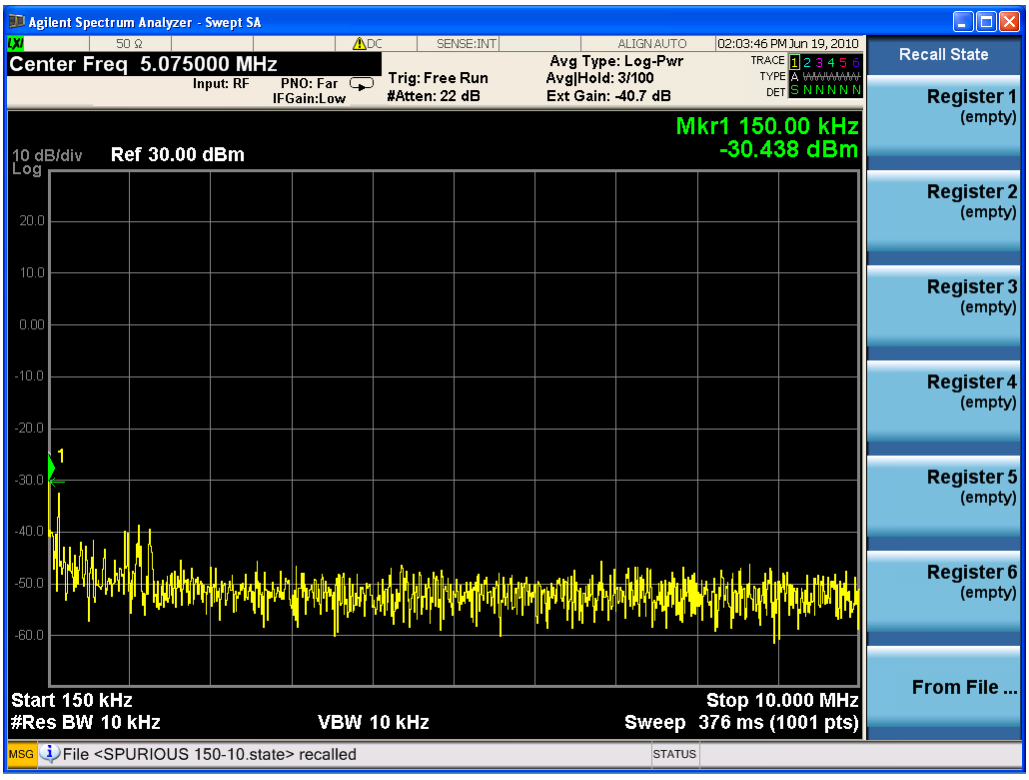

Agilent Spectrum Analyzer - Swept SA
Preamp Gain -40.7 dB
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 3/100
Ext Gain: -40.7 dB
02:14:22 PM Jun 19, 2010
Mkr1 15.18 MHz
-45.576 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 10.00 MHz
#Res BW 10 kHz
VBW 10 kHz
Stop 30.00 MHz
Sweep 763 ms (1001 pts)
File <SPURIOUS 10-30.state> recalled
Recall State
Register 1 (empty)
Register 2 (empty)
Register 3 (empty)
Register 4 (empty)
Register 5 (empty)
Register 6 (empty)
From File ...

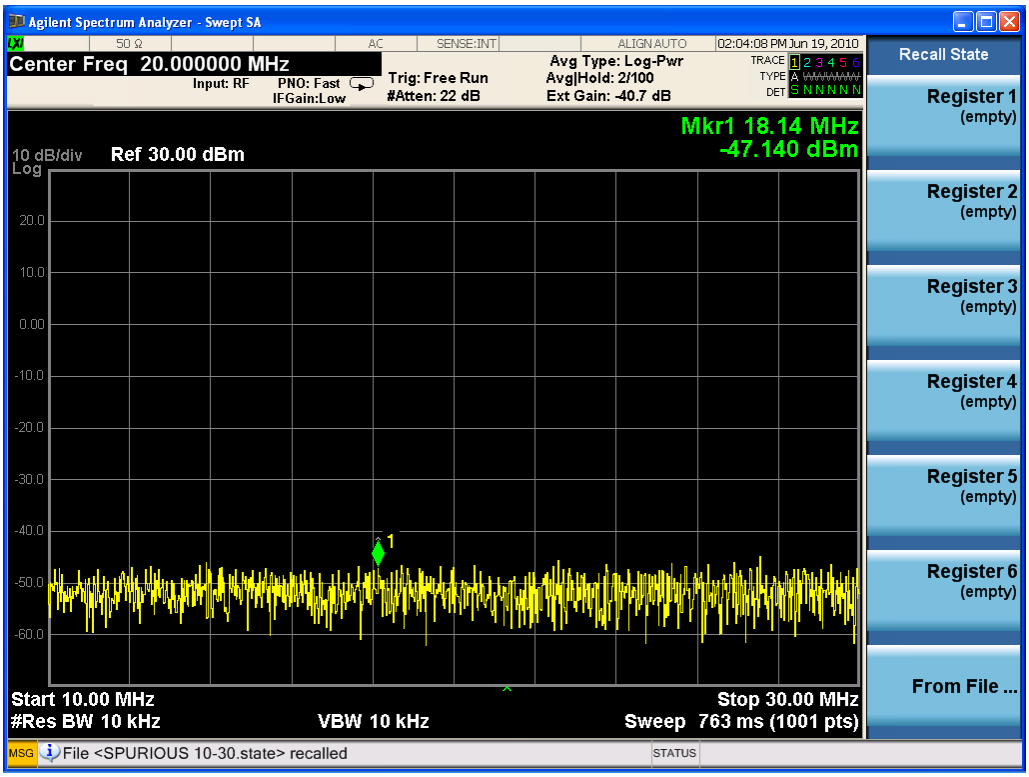

Agilent Spectrum Analyzer - Swept SA
Marker 1 775.930000000 MHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 31/100
Ext Gain: -40.7 dB
03:22:54 PM Dec 30, 2010
Mkr1 775.93 MHz
-40.296 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
VBW 100 kHz
Stop 1.0000 GHz
Sweep 370 ms (1001 pts)
Marker
Select Marker 1
Normal
Delta
Fixed
Off
Properties
More 1 of 2

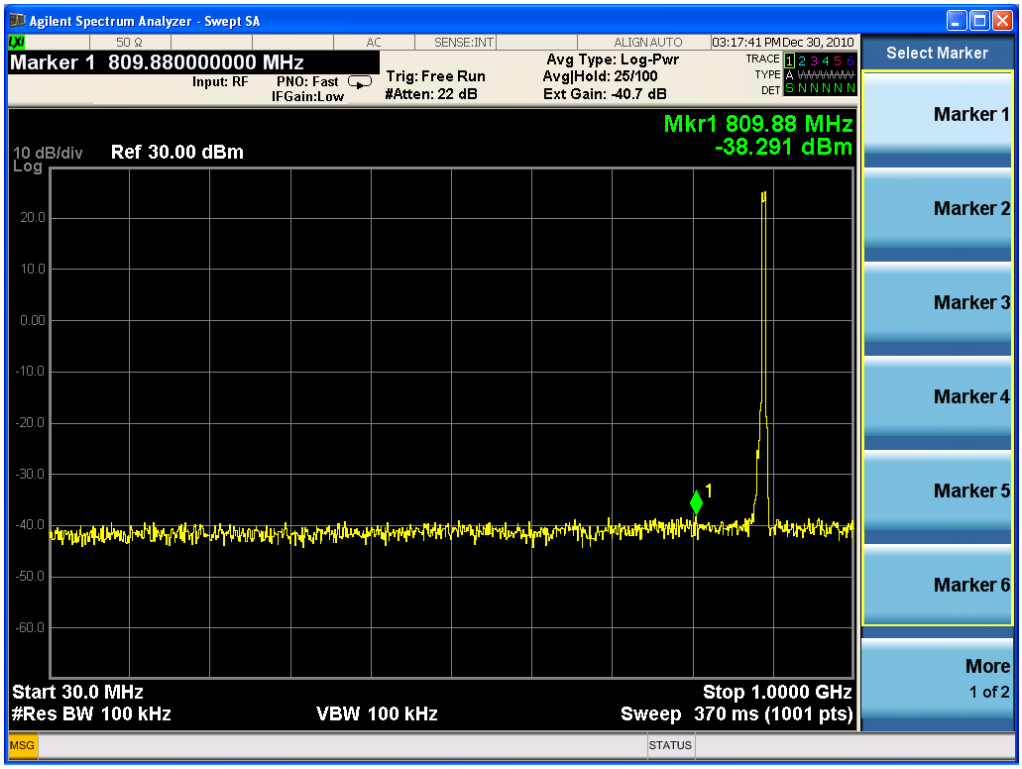

Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:15:33 PM Jun 19, 2010
Start Freq 1.000000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 16/100
Ext Gain: -40.7 dB
TRACE 1 2 3 4 5 6
TYPE A
DET S N N N N N
Mkr1 6.175 GHz
-24.810 dBm
10 dB/div
Log
Ref 30.00 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
1
Start 1.000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 10.000 GHz
Sweep 34.3 ms (1001 pts)
Recall State
Register 1
(empty)
Register 2
(empty)
Register 3
(empty)
Register 4
(empty)
Register 5
(empty)
Register 6
(empty)
From File ...
MSG
File <SPURIOUS 1-10.state> recalled
STATUS

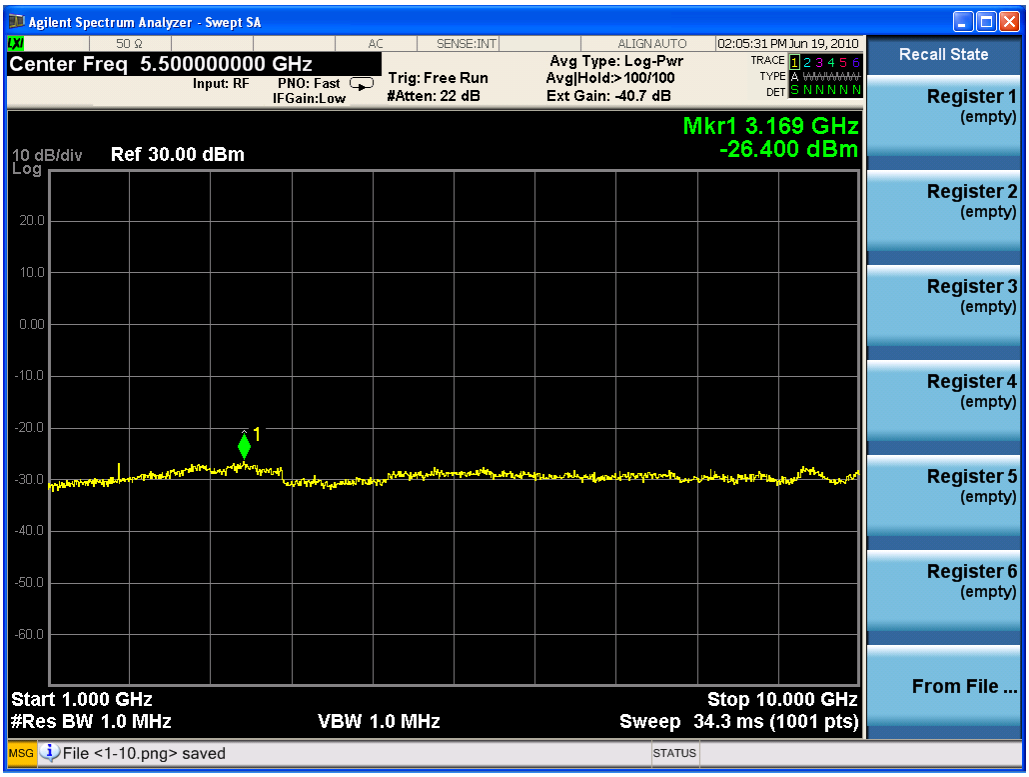
Four carriers (working in top frequency)



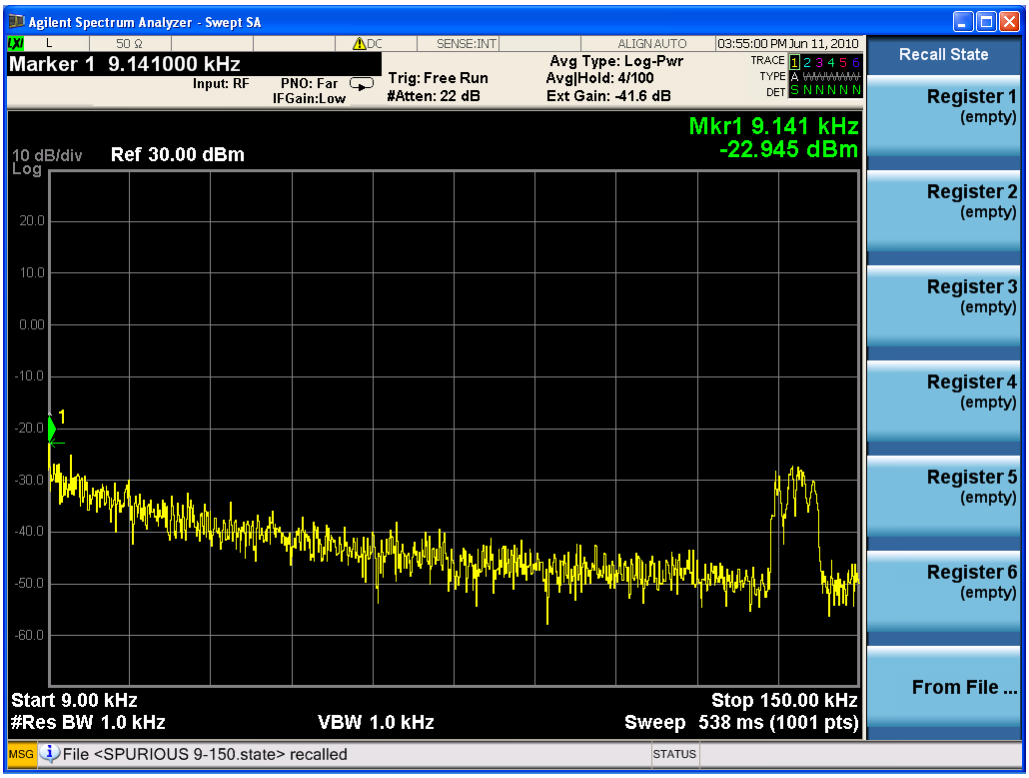


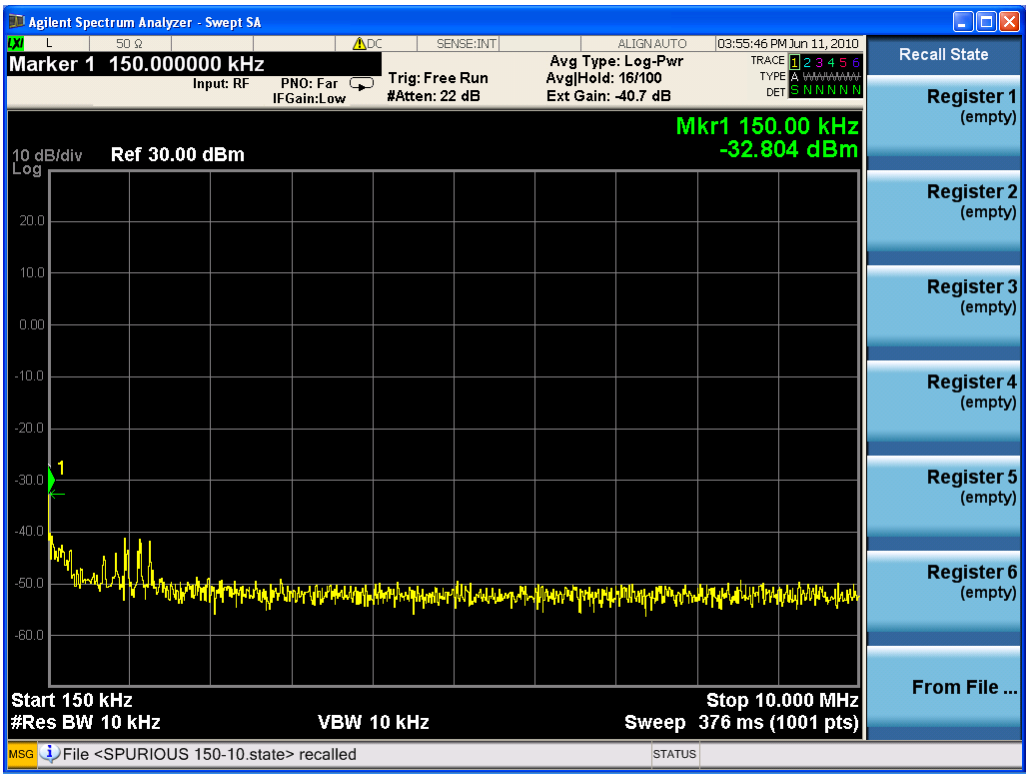

Agilent Spectrum Analyzer - Swept SA
Center Freq 20.000000 MHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 2/100
Ext Gain: -40.7 dB
02:04:08 PM Jun 19, 2010
Mkr1 18.14 MHz
-47.140 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 10.00 MHz
#Res BW 10 kHz
VBW 10 kHz
Stop 30.00 MHz
Sweep 763 ms (1001 pts)
File <SPURIOUS 10-30.state> recalled
Recall State
Register 1 (empty)
Register 2 (empty)
Register 3 (empty)
Register 4 (empty)
Register 5 (empty)
Register 6 (empty)
From File ...

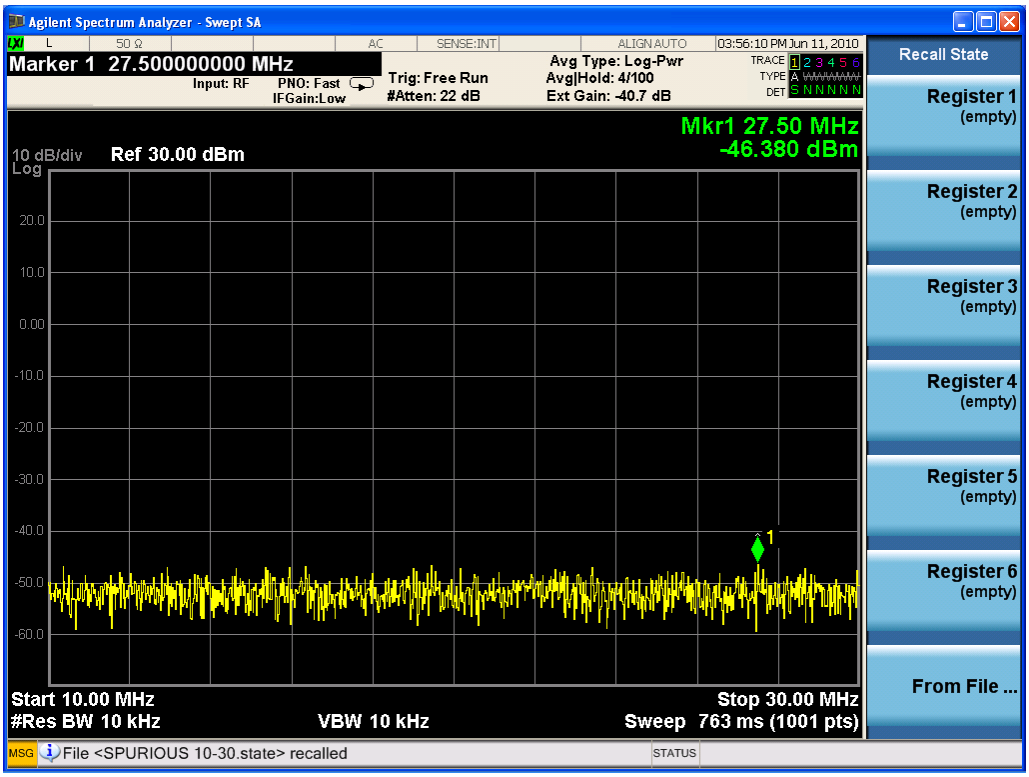

Agilent Spectrum Analyzer - Swept SA
Marker 1 809.880000000 MHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 25/100
Ext Gain: -40.7 dB
03:17:41 PM Dec 30, 2010
Mkr1 809.88 MHz
-38.291 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
VBW 100 kHz
Stop 1.0000 GHz
Sweep 370 ms (1001 pts)
Select Marker
Marker 1
Marker 2
Marker 3
Marker 4
Marker 5
Marker 6
More
1 of 2

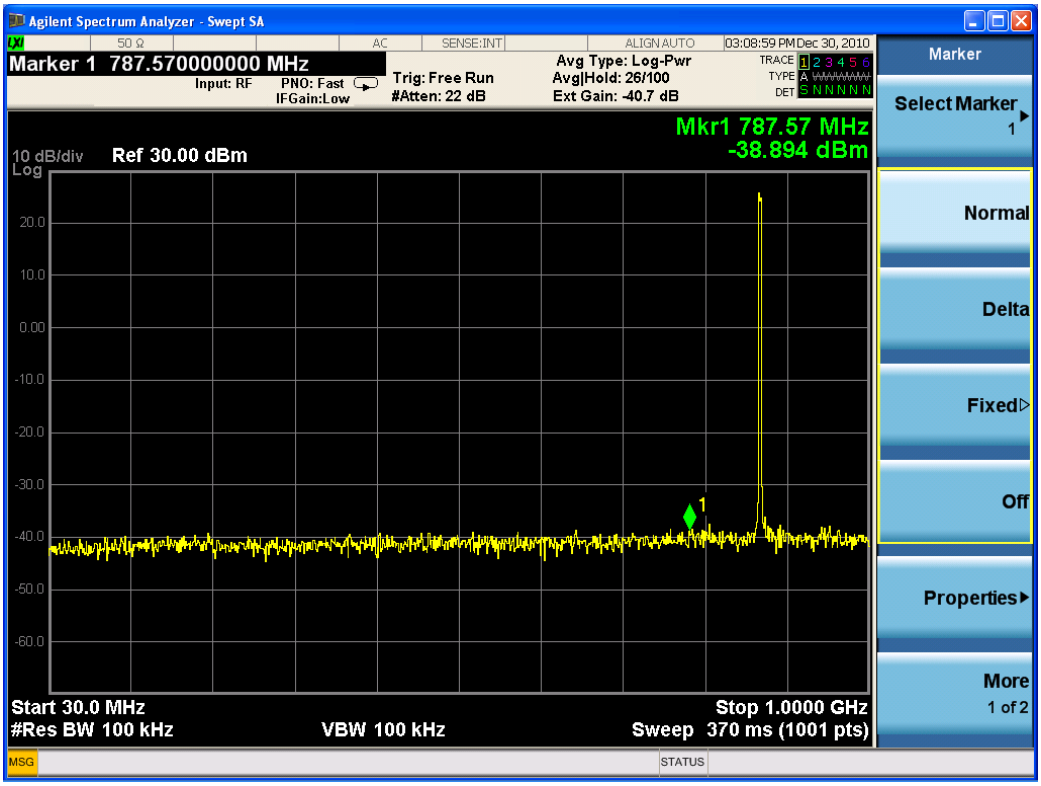

Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:05:31 PM Jun 19, 2010
Center Freq 5.500000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -40.7 dB
TRACE 1 2 3 4 5 6
TYPE A
DET S N N N N N
Recall State
Register 1 (empty)
Register 2 (empty)
Register 3 (empty)
Register 4 (empty)
Register 5 (empty)
Register 6 (empty)
From File ...
Mkr1 3.169 GHz
-26.400 dBm
10 dB/div
Log
Ref 30.00 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
1
Start 1.000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 10.000 GHz
Sweep 34.3 ms (1001 pts)
MSG
File <1-10.png> saved
STATUS

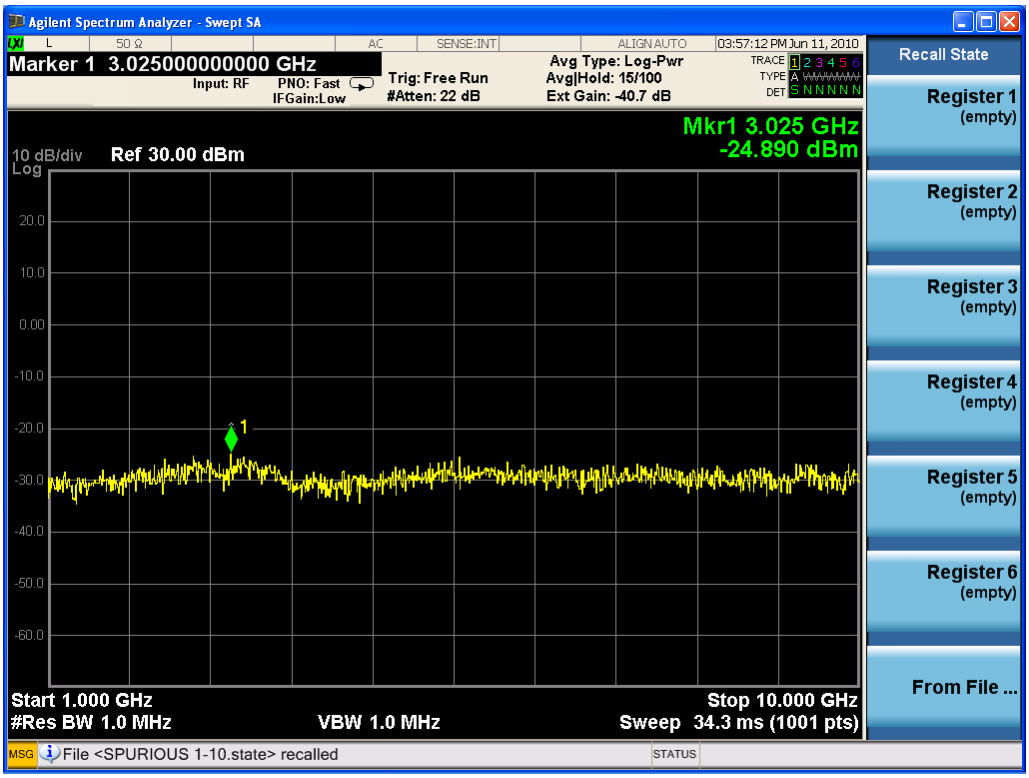
Three carriers (working in bottom frequency)



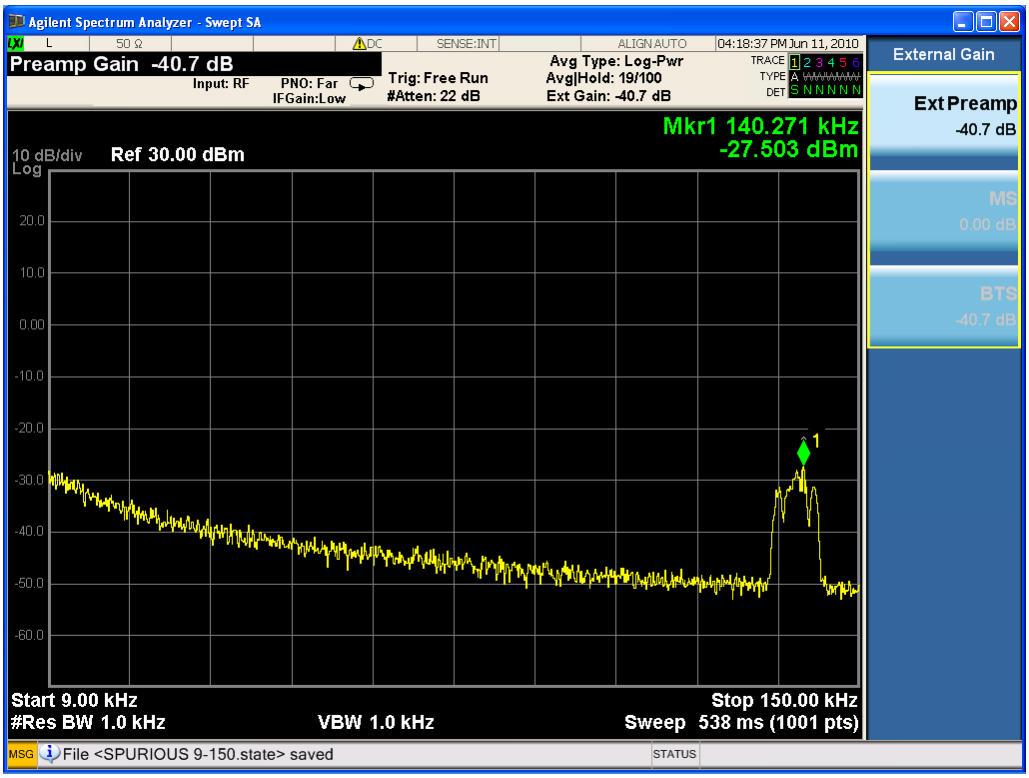


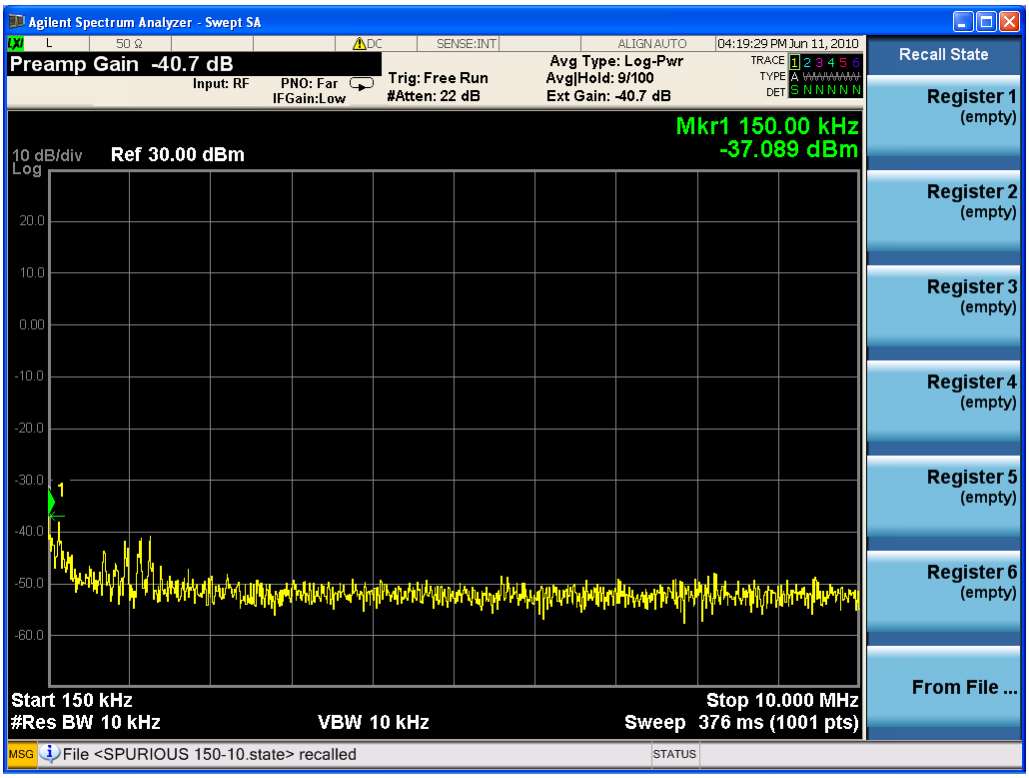

Agilent Spectrum Analyzer - Swept SA
Marker 1 27.500000000 MHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 4/100
Ext Gain: -40.7 dB
03:56:10 PM Jun 11, 2010
Mkr1 27.50 MHz
-46.380 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 10.00 MHz
#Res BW 10 kHz
VBW 10 kHz
Stop 30.00 MHz
Sweep 763 ms (1001 pts)
Recall State
Register 1 (empty)
Register 2 (empty)
Register 3 (empty)
Register 4 (empty)
Register 5 (empty)
Register 6 (empty)
From File ...
File <SPURIOUS 10-30.state> recalled

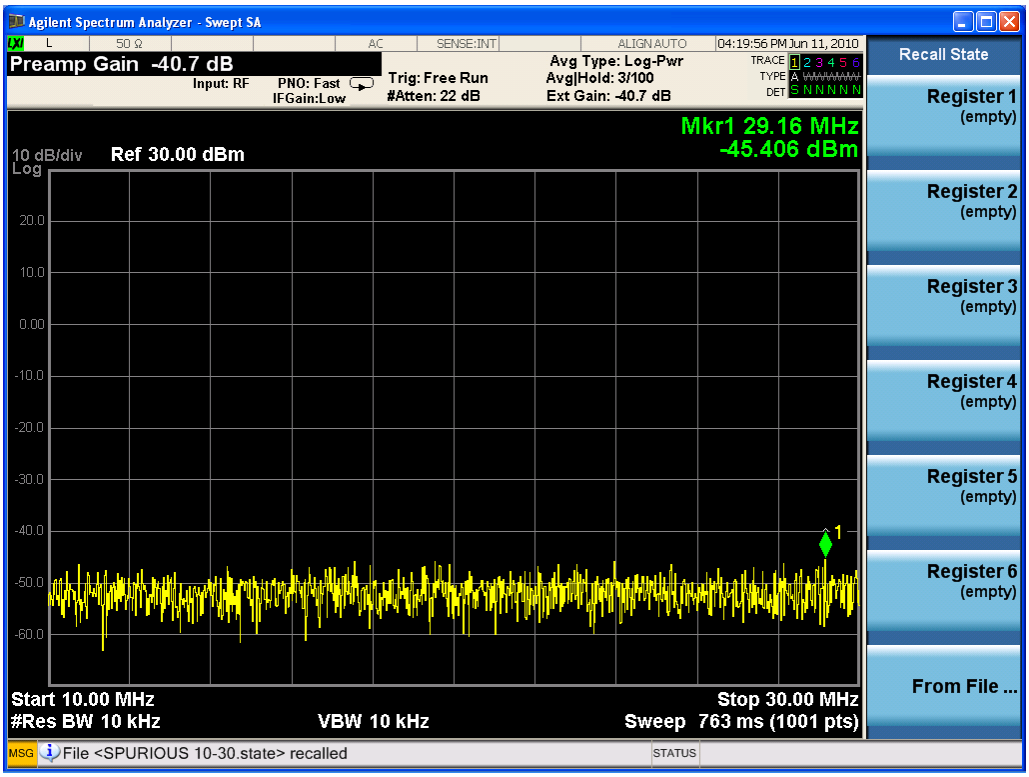

Agilent Spectrum Analyzer - Swept SA
Marker 1 787.570000000 MHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 26/100
Ext Gain: -40.7 dB
03:08:59 PM Dec 30, 2010
Mkr1 787.57 MHz
-38.894 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
VBW 100 kHz
Stop 1.0000 GHz
Sweep 370 ms (1001 pts)
Marker
Select Marker 1
Normal
Delta
Fixed
Off
Properties
More 1 of 2

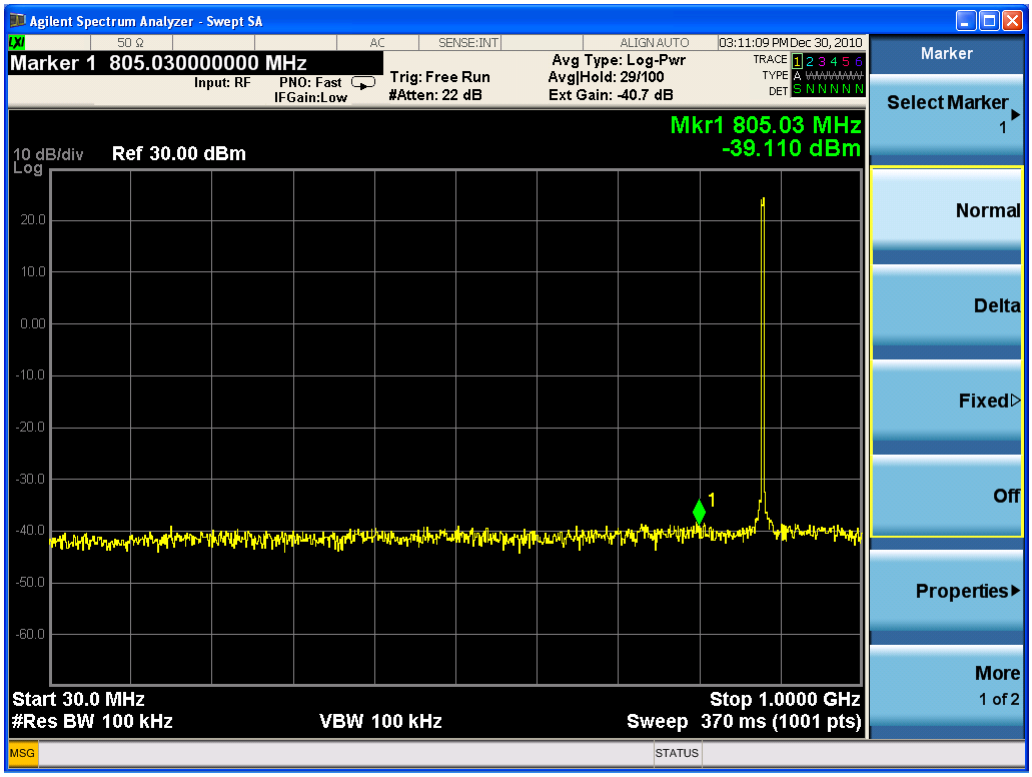

Agilent Spectrum Analyzer - Swept SA
Marker 1 3.025000000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 15/100
Ext Gain: -40.7 dB
03:57:12 PM Jun 11, 2010
Mkr1 3.025 GHz
-24.890 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 1.000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 10.000 GHz
Sweep 34.3 ms (1001 pts)
File <SPURIOUS 1-10.state> recalled
Recall State
Register 1 (empty)
Register 2 (empty)
Register 3 (empty)
Register 4 (empty)
Register 5 (empty)
Register 6 (empty)
From File ...

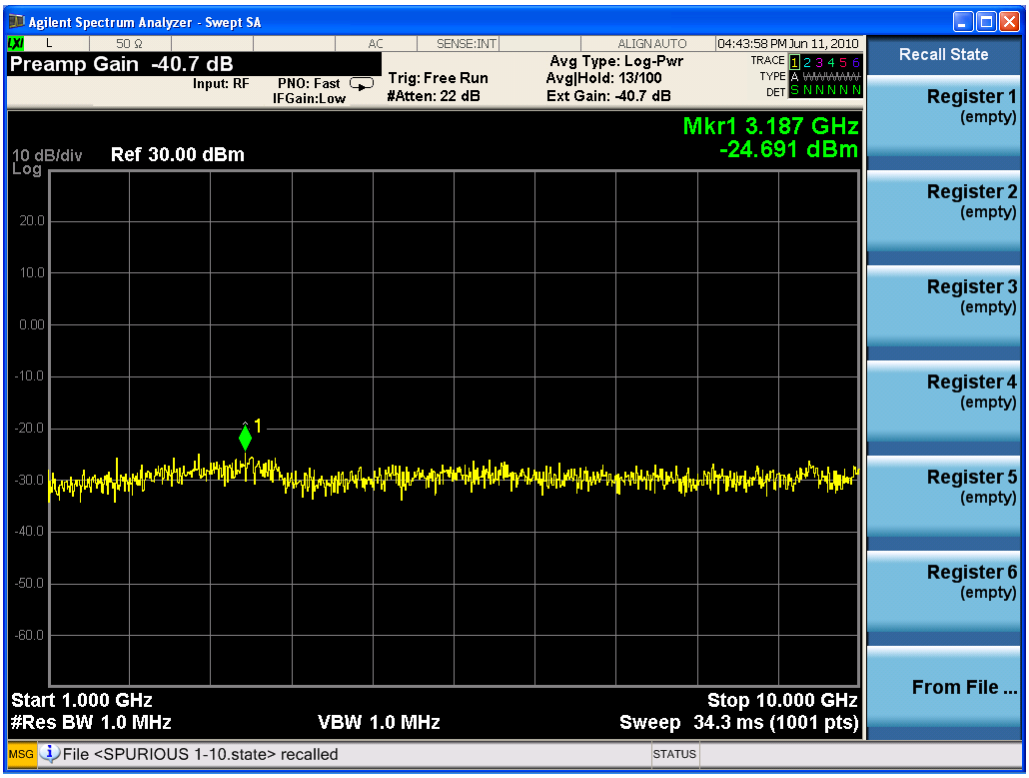
Three carriers (working in middle frequency)



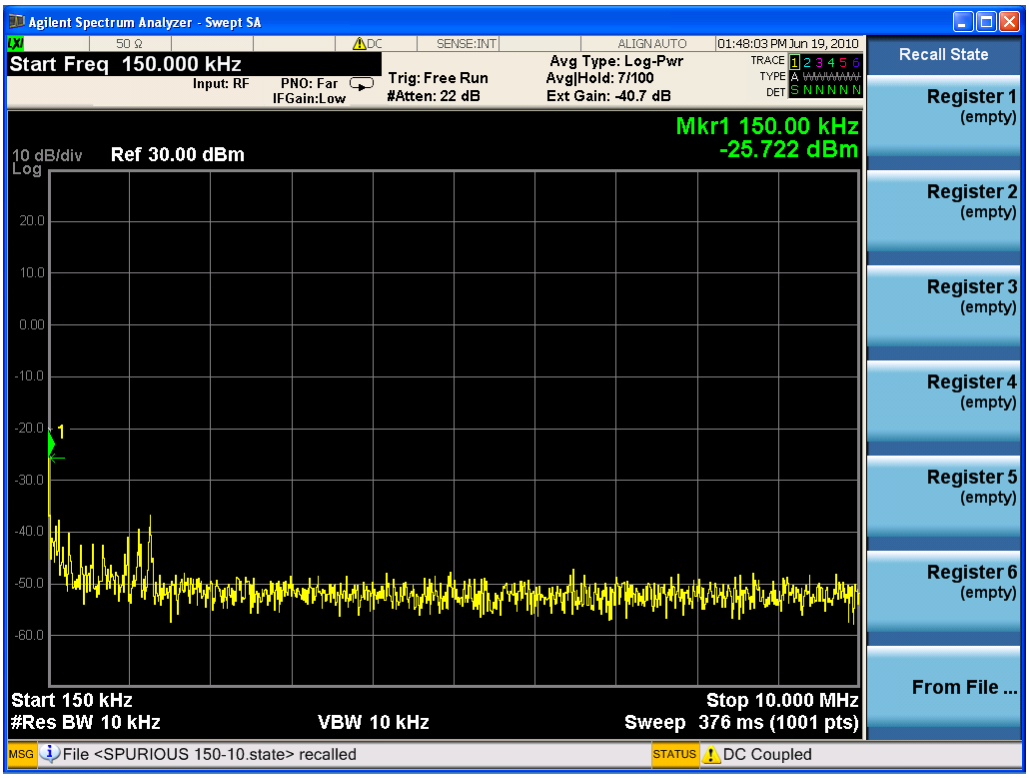


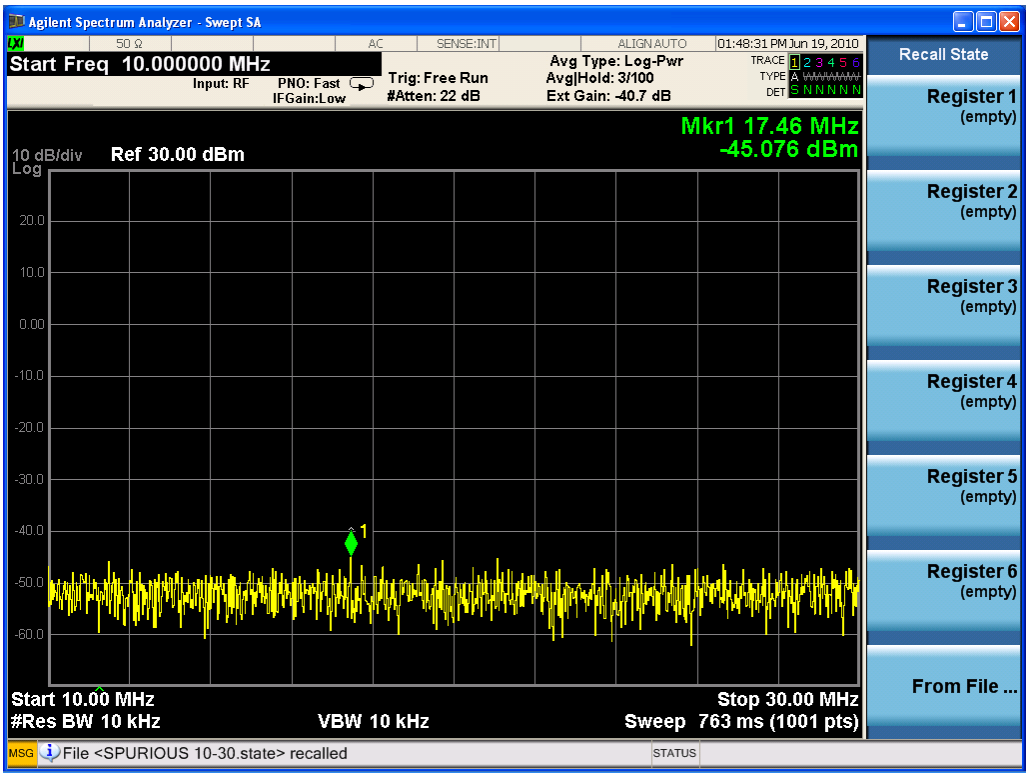

Agilent Spectrum Analyzer - Swept SA
Preamp Gain -40.7 dB
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 3/100
Ext Gain: -40.7 dB
04:19:56 PM Jun 11, 2010
Mkr1 29.16 MHz
-45.406 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 10.00 MHz
#Res BW 10 kHz
VBW 10 kHz
Stop 30.00 MHz
Sweep 763 ms (1001 pts)
File <SPURIOUS 10-30.state> recalled
Recall State
Register 1 (empty)
Register 2 (empty)
Register 3 (empty)
Register 4 (empty)
Register 5 (empty)
Register 6 (empty)
From File ...

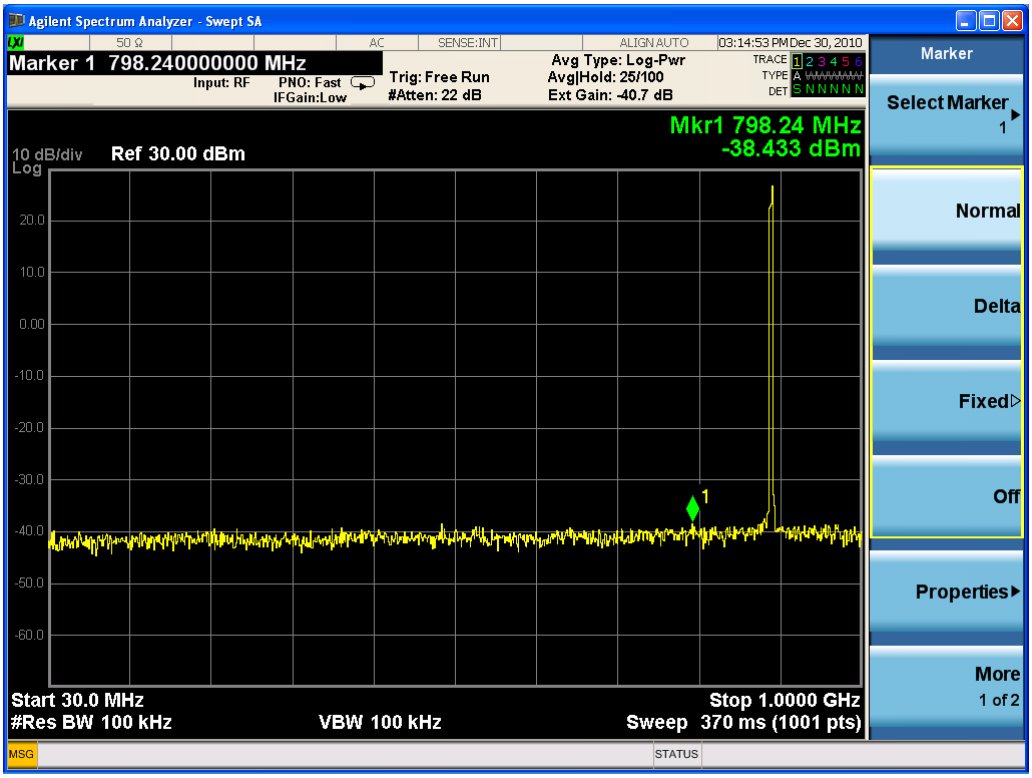

Agilent Spectrum Analyzer - Swept SA
Marker 1 805.030000000 MHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 29/100
Ext Gain: -40.7 dB
03:11:09 PM Dec 30, 2010
Mkr1 805.03 MHz
-39.110 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
VBW 100 kHz
Stop 1.0000 GHz
Sweep 370 ms (1001 pts)
Marker
Select Marker 1
Normal
Delta
Fixed
Off
Properties
More 1 of 2

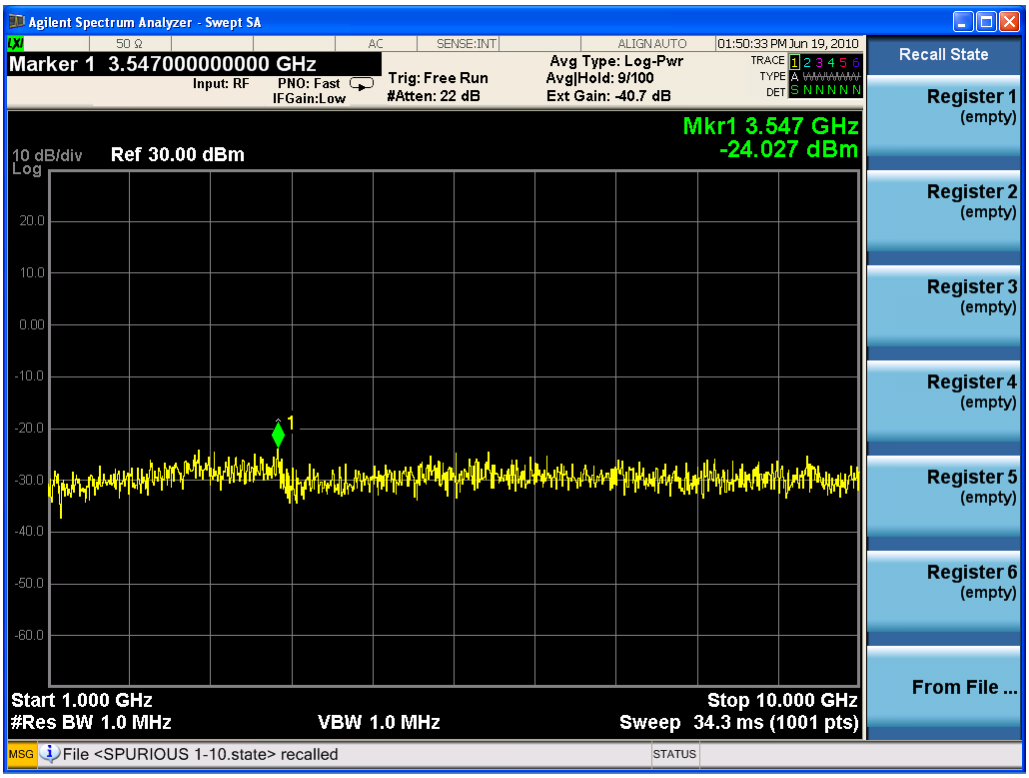

Agilent Spectrum Analyzer - Swept SA
Preamp Gain -40.7 dB
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 13/100
Ext Gain: -40.7 dB
04:43:58 PM Jun 11, 2010
Mkr1 3.187 GHz
-24.691 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 1.000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 10.000 GHz
Sweep 34.3 ms (1001 pts)
File <SPURIOUS 1-10.state> recalled
Recall State
Register 1 (empty)
Register 2 (empty)
Register 3 (empty)
Register 4 (empty)
Register 5 (empty)
Register 6 (empty)
From File ...

Three carriers (working in top frequency)

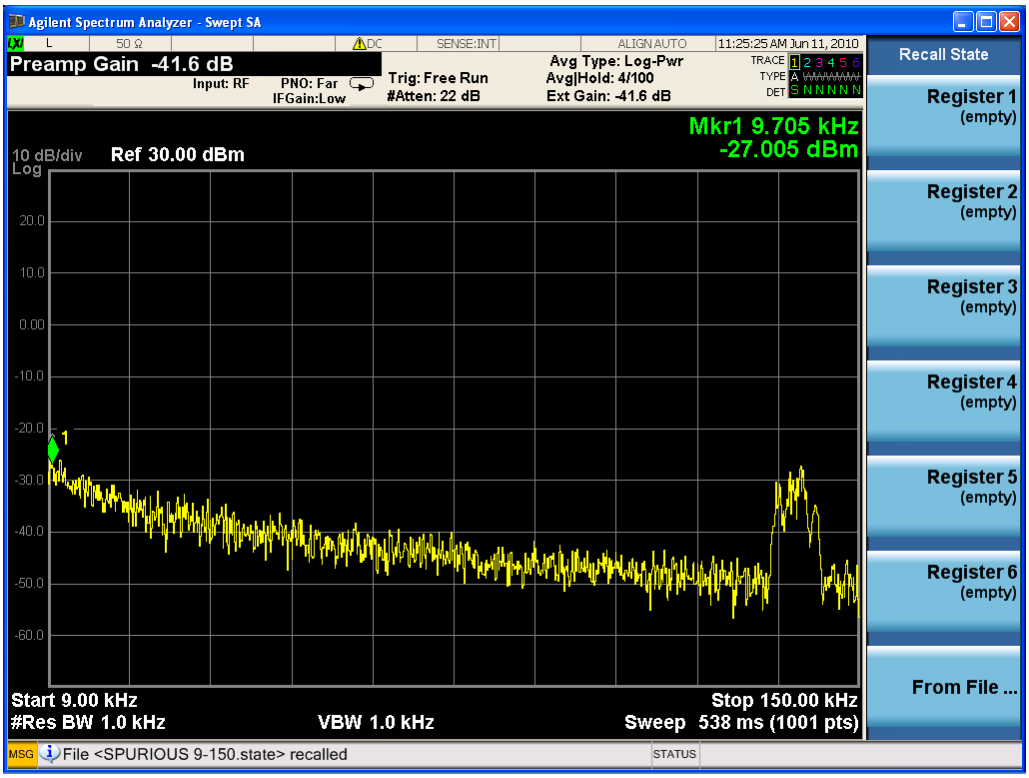


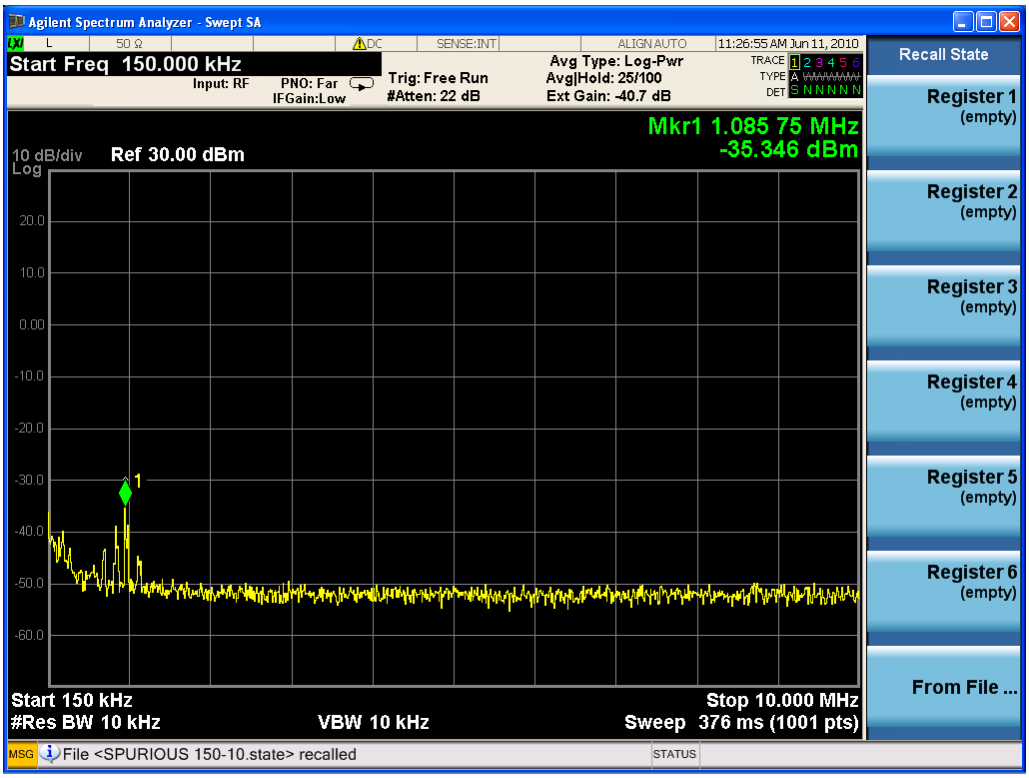

Agilent Spectrum Analyzer - Swept SA
Start Freq 10.000000 MHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 3/100
Ext Gain: -40.7 dB
01:48:31 PM Jun 19, 2010
Mkr1 17.46 MHz
-45.076 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 10.00 MHz
#Res BW 10 kHz
VBW 10 kHz
Stop 30.00 MHz
Sweep 763 ms (1001 pts)
File <SPURIOUS 10-30.state> recalled
Recall State
Register 1 (empty)
Register 2 (empty)
Register 3 (empty)
Register 4 (empty)
Register 5 (empty)
Register 6 (empty)
From File ...

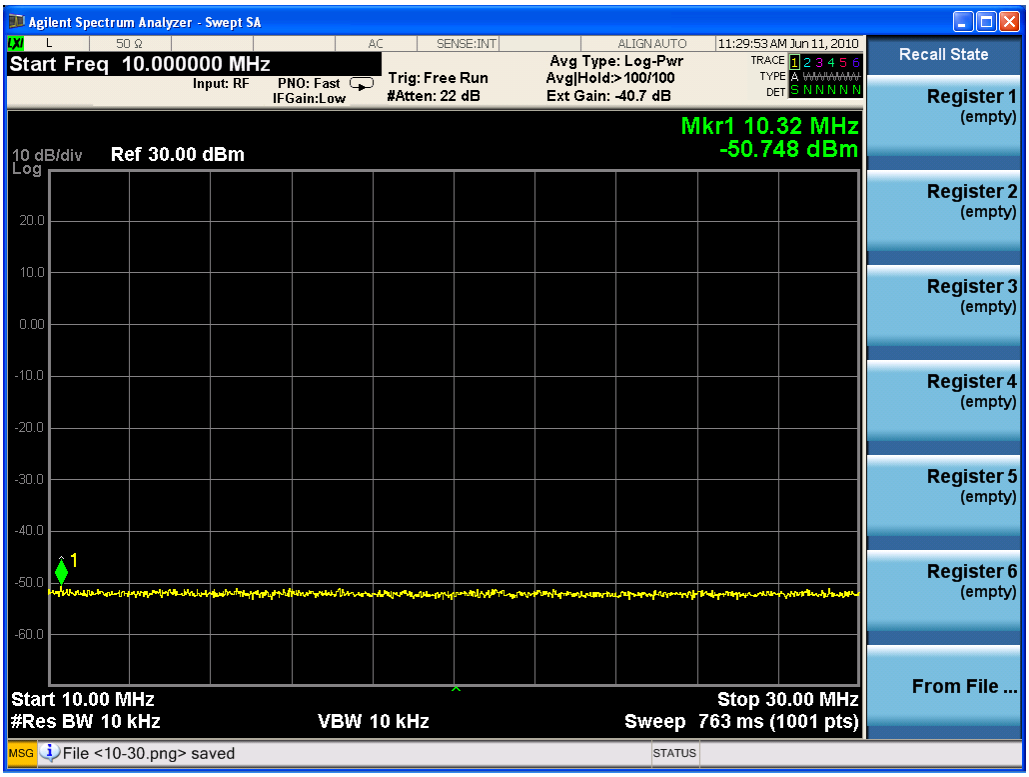

Agilent Spectrum Analyzer - Swept SA
Marker 1 798.240000000 MHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 25/100
Ext Gain: -40.7 dB
03:14:53 PM Dec 30, 2010
Mkr1 798.24 MHz
-38.433 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
VBW 100 kHz
Stop 1.0000 GHz
Sweep 370 ms (1001 pts)
Marker
Select Marker 1
Normal
Delta
Fixed
Off
Properties
More 1 of 2

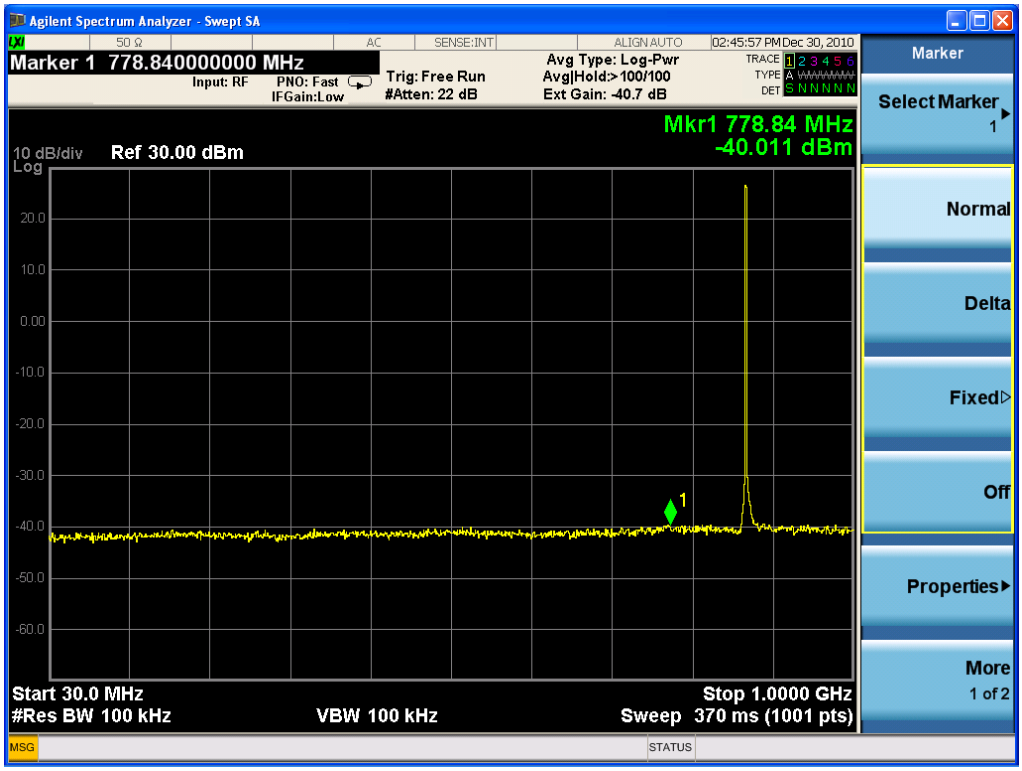

Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
01:50:33 PM Jun 19, 2010
Marker 1 3.547000000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 9/100
Ext Gain: -40.7 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWWWW
DET S N N N N N
Mkr1 3.547 GHz
-24.027 dBm
10 dB/div
Log
Ref 30.00 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
1
Start 1.000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 10.000 GHz
Sweep 34.3 ms (1001 pts)
Recall State
Register 1
(empty)
Register 2
(empty)
Register 3
(empty)
Register 4
(empty)
Register 5
(empty)
Register 6
(empty)
From File ...
MSG
File <SPURIOUS 1-10.state> recalled
STATUS

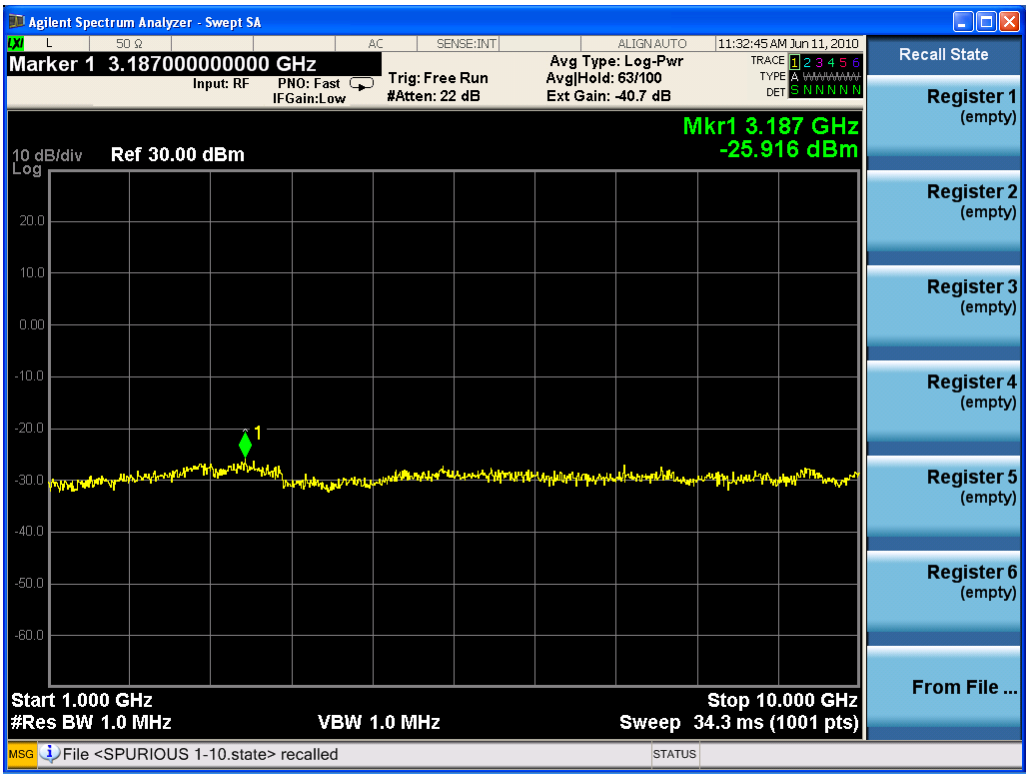
Two carriers (working in bottom frequency)



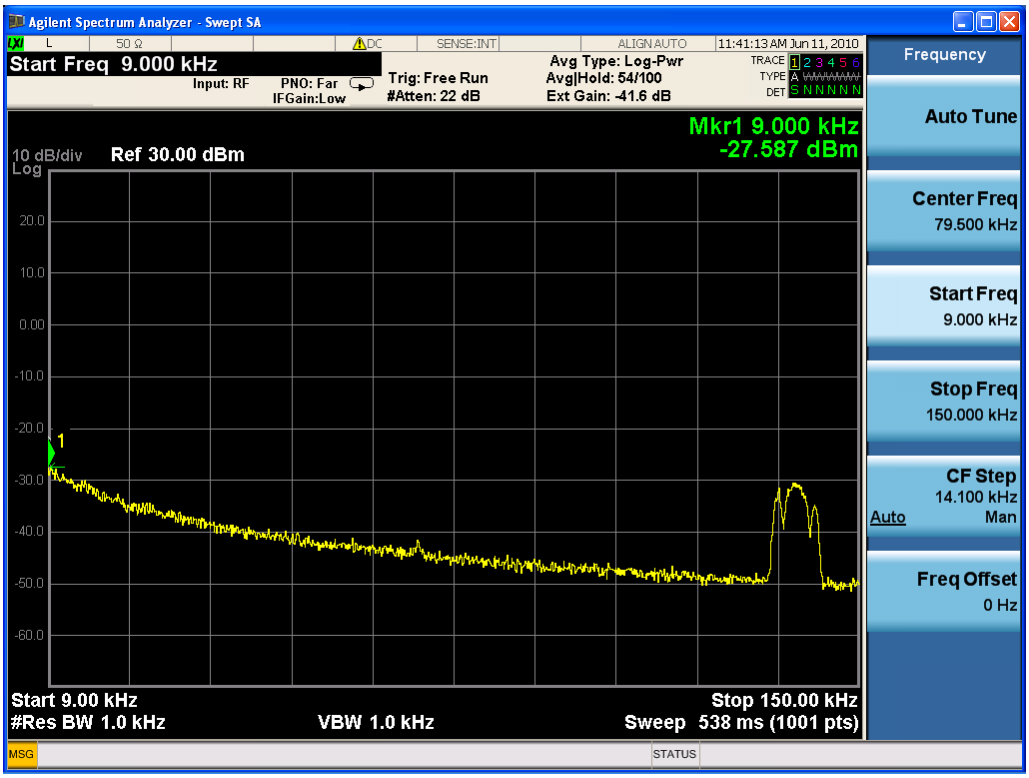


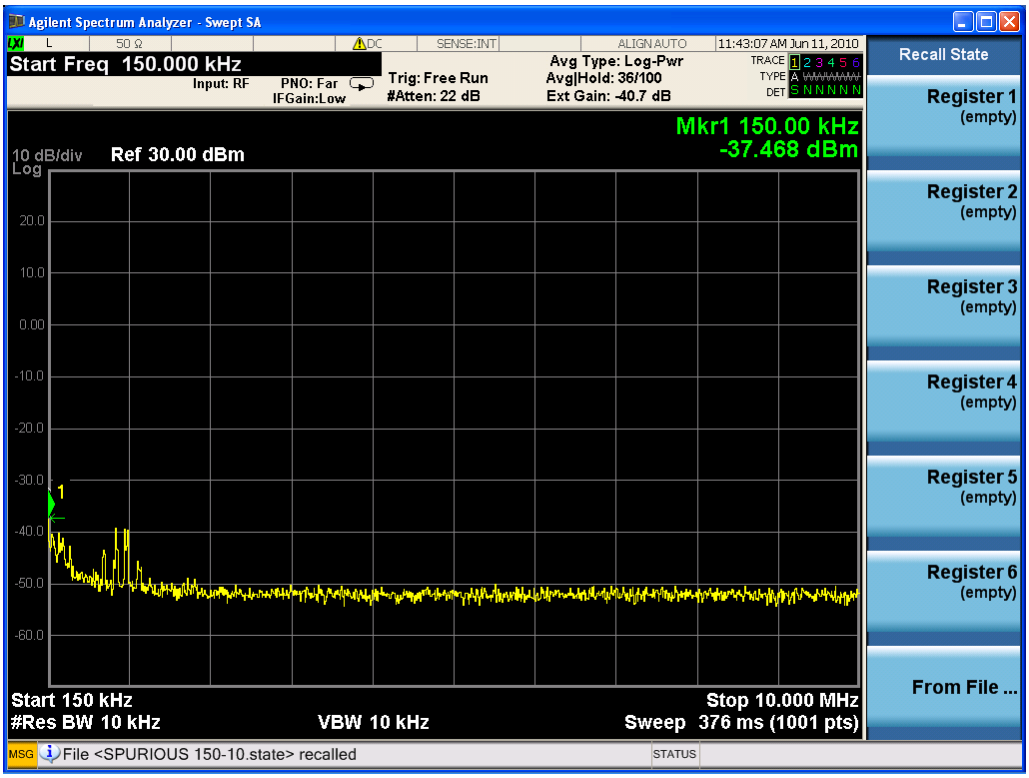

Agilent Spectrum Analyzer - Swept SA
Start Freq 10.000000 MHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -40.7 dB
11:29:53 AM Jun 11, 2010
Mkr1 10.32 MHz
-50.748 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 10.00 MHz
#Res BW 10 kHz
VBW 10 kHz
Stop 30.00 MHz
Sweep 763 ms (1001 pts)
File <10-30.png> saved
Recall State
Register 1 (empty)
Register 2 (empty)
Register 3 (empty)
Register 4 (empty)
Register 5 (empty)
Register 6 (empty)
From File ...

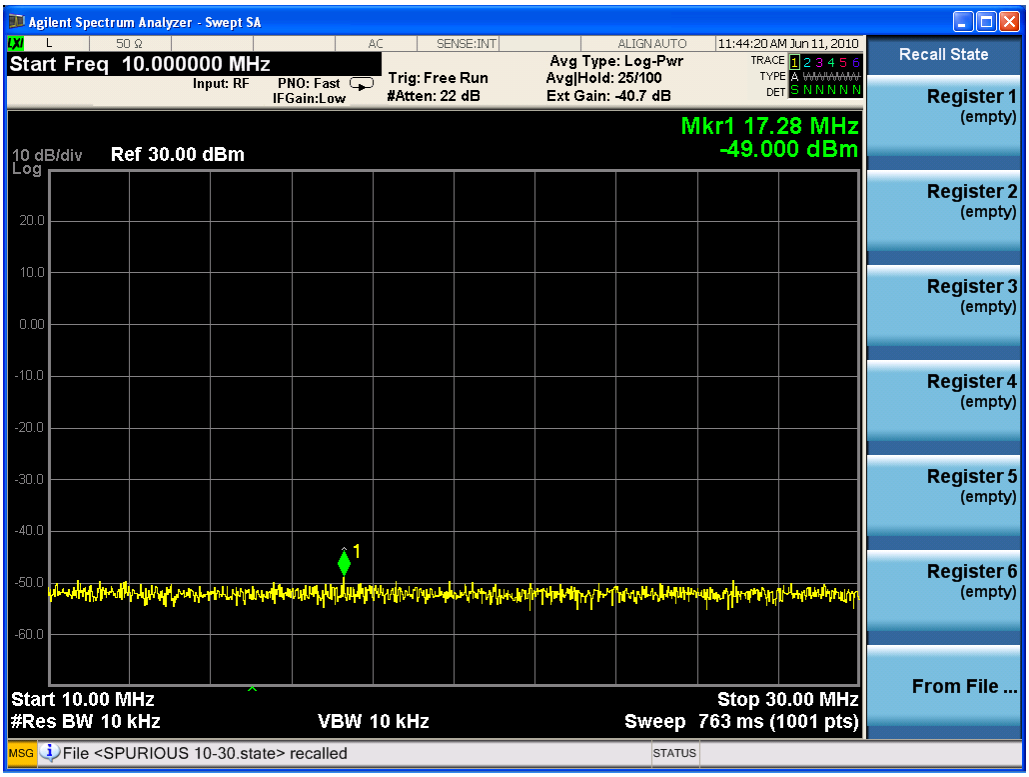

Agilent Spectrum Analyzer - Swept SA
Marker 1 778.840000000 MHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -40.7 dB
02:45:57 PM Dec 30, 2010
Mkr1 778.84 MHz
-40.011 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
VBW 100 kHz
Stop 1.0000 GHz
Sweep 370 ms (1001 pts)
Marker
Select Marker 1
Normal
Delta
Fixed
Off
Properties
More 1 of 2

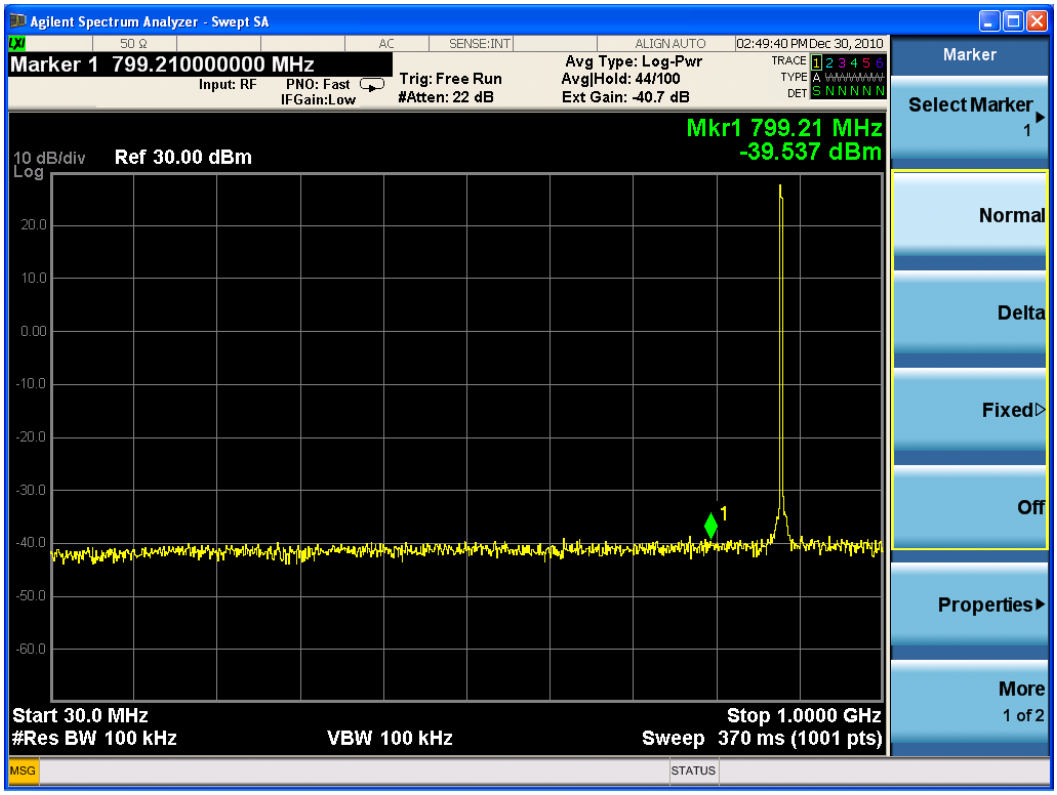

Agilent Spectrum Analyzer - Swept SA
Marker 1 3.187000000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 63/100
Ext Gain: -40.7 dB
11:32:45 AM Jun 11, 2010
Mkr1 3.187 GHz
-25.916 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 1.000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 10.000 GHz
Sweep 34.3 ms (1001 pts)
Recall State
Register 1 (empty)
Register 2 (empty)
Register 3 (empty)
Register 4 (empty)
Register 5 (empty)
Register 6 (empty)
From File ...
File <SPURIOUS 1-10.state> recalled

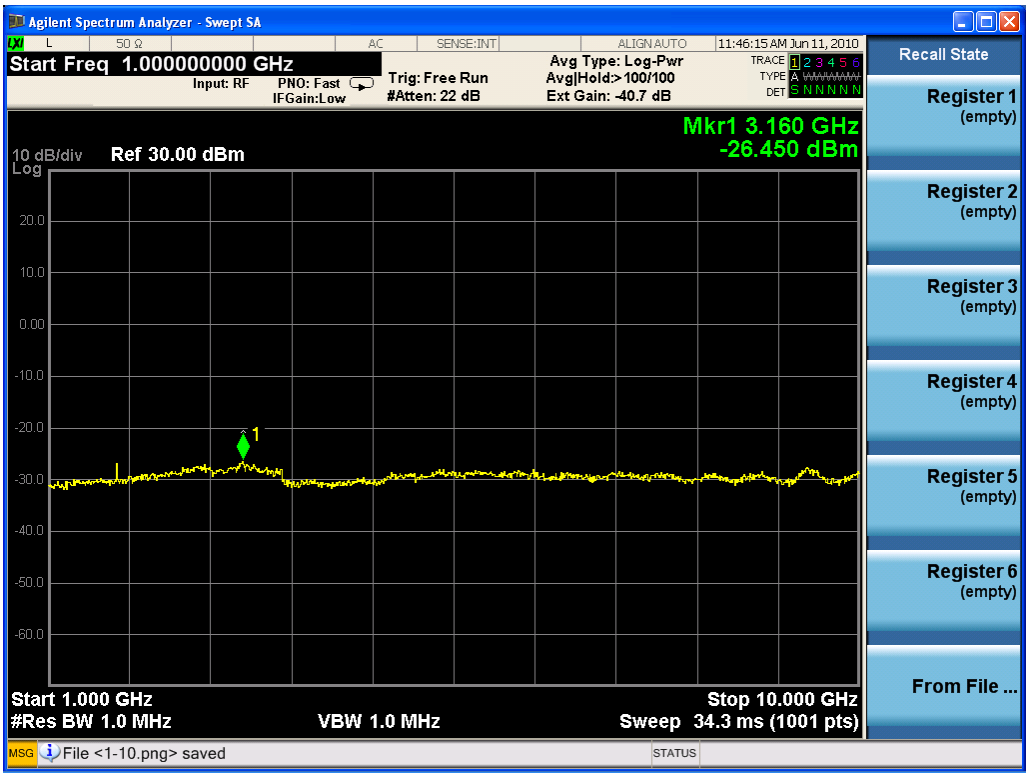
Two carriers (working in middle frequency)



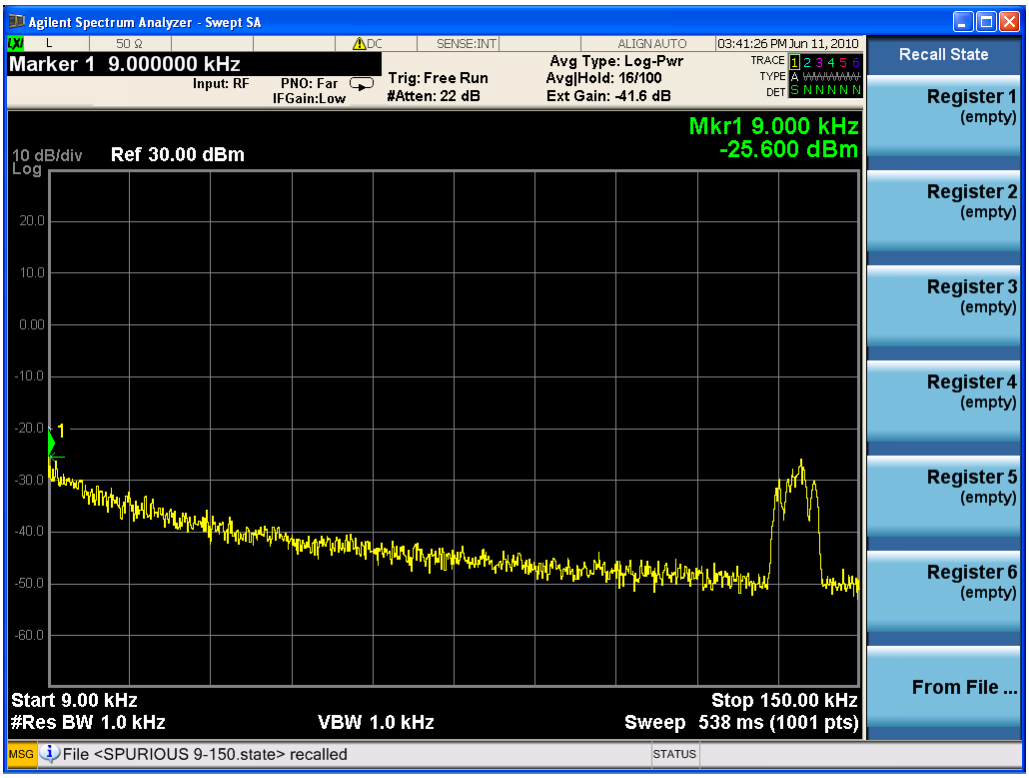


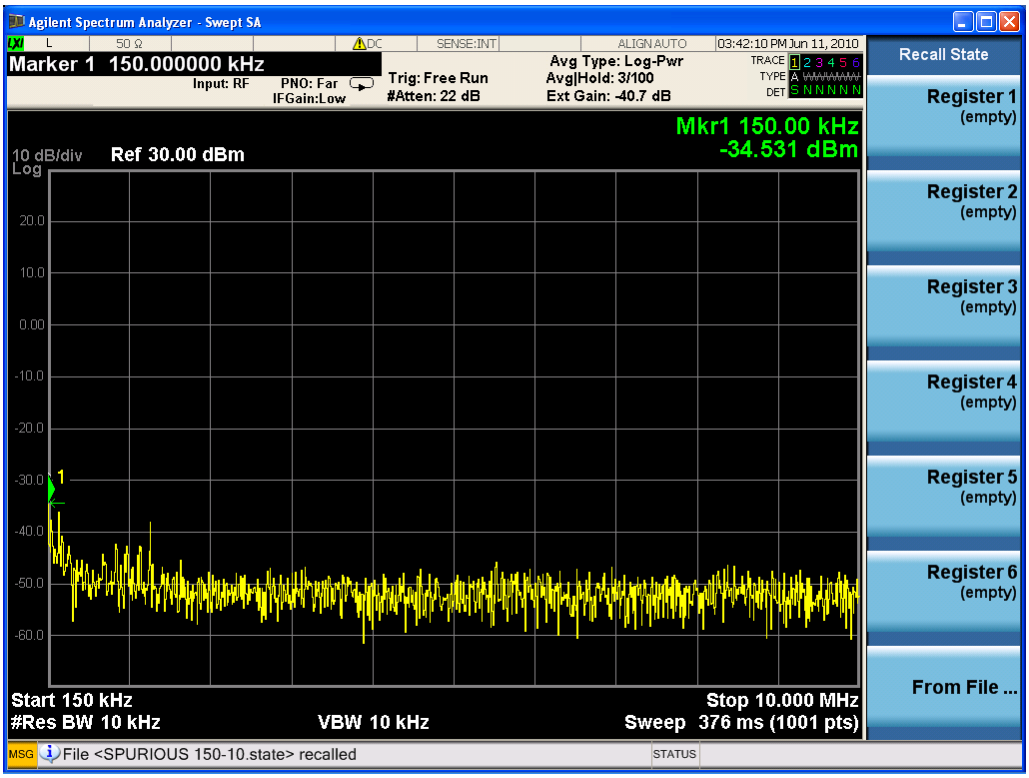

Agilent Spectrum Analyzer - Swept SA
Start Freq 10.000000 MHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 25/100
Ext Gain: -40.7 dB
11:44:20 AM Jun 11, 2010
Mkr1 17.28 MHz
-49.000 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 10.00 MHz
#Res BW 10 kHz
VBW 10 kHz
Stop 30.00 MHz
Sweep 763 ms (1001 pts)
File <SPURIOUS 10-30.state> recalled
Recall State
Register 1 (empty)
Register 2 (empty)
Register 3 (empty)
Register 4 (empty)
Register 5 (empty)
Register 6 (empty)
From File ...

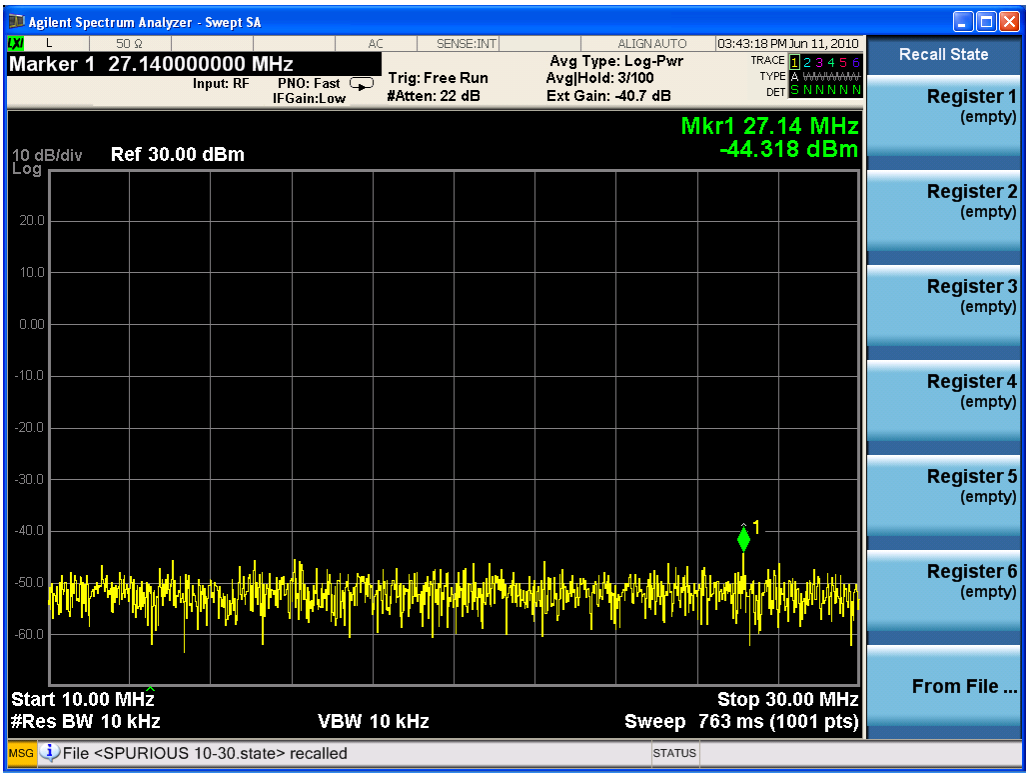

Agilent Spectrum Analyzer - Swept SA
Marker 1 799.210000000 MHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 44/100
Ext Gain: -40.7 dB
02:49:40 PM Dec 30, 2010
Mkr1 799.21 MHz
-39.537 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
VBW 100 kHz
Stop 1.0000 GHz
Sweep 370 ms (1001 pts)
Marker
Select Marker 1
Normal
Delta
Fixed
Off
Properties
More 1 of 2

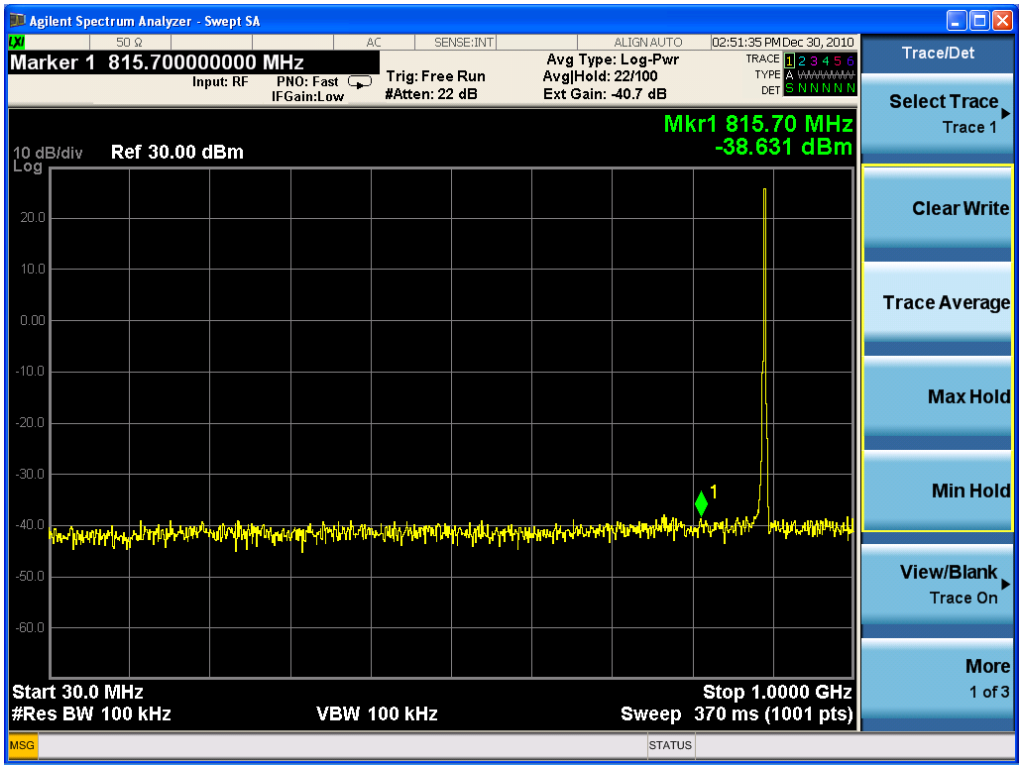

Agilent Spectrum Analyzer - Swept SA
Start Freq 1.000000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -40.7 dB
11:46:15 AM Jun 11, 2010
Mkr1 3.160 GHz
-26.450 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 1.000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 10.000 GHz
Sweep 34.3 ms (1001 pts)
Recall State
Register 1 (empty)
Register 2 (empty)
Register 3 (empty)
Register 4 (empty)
Register 5 (empty)
Register 6 (empty)
From File ...
File <1-10.png> saved

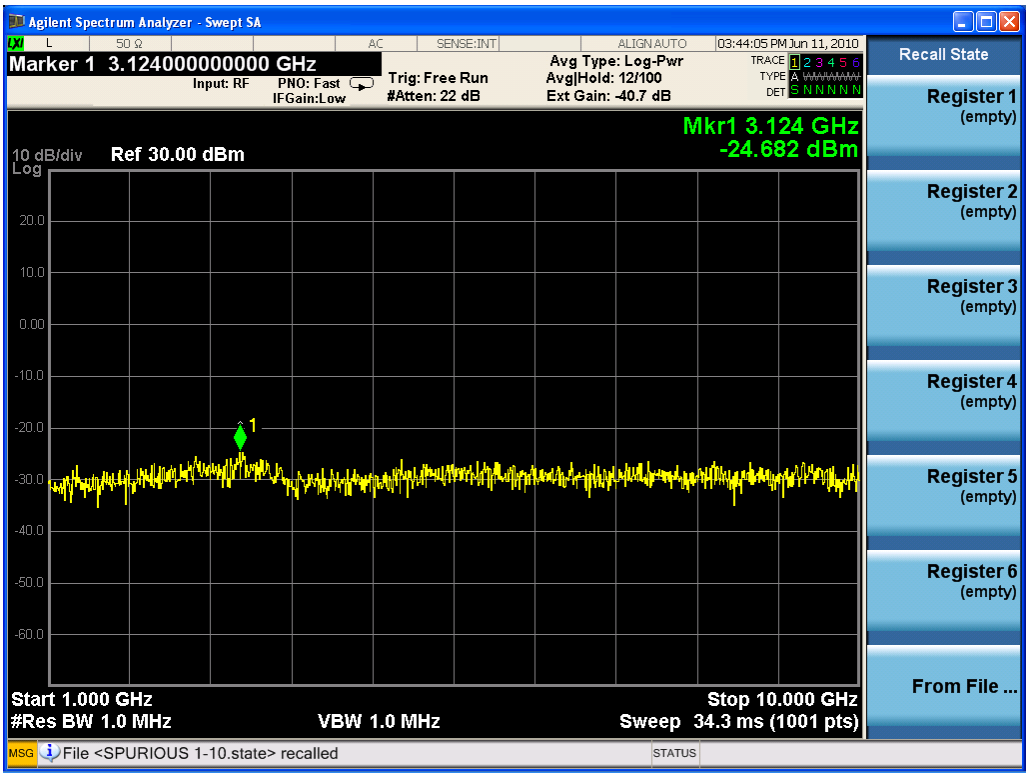
Two carriers (working in top frequency)



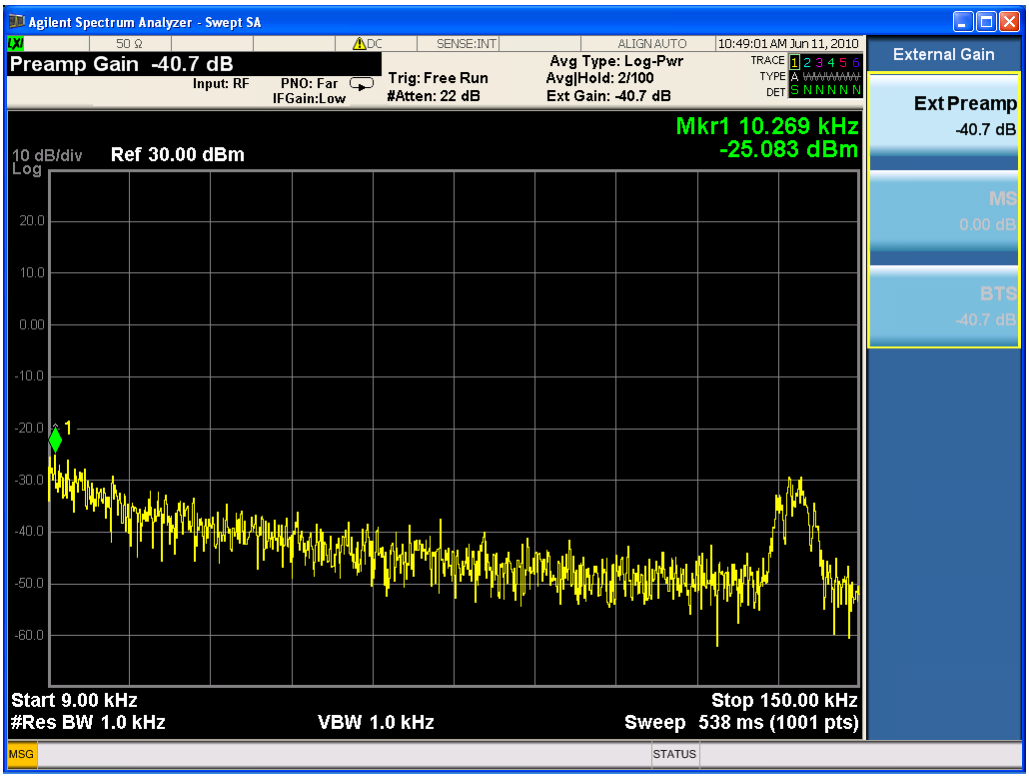


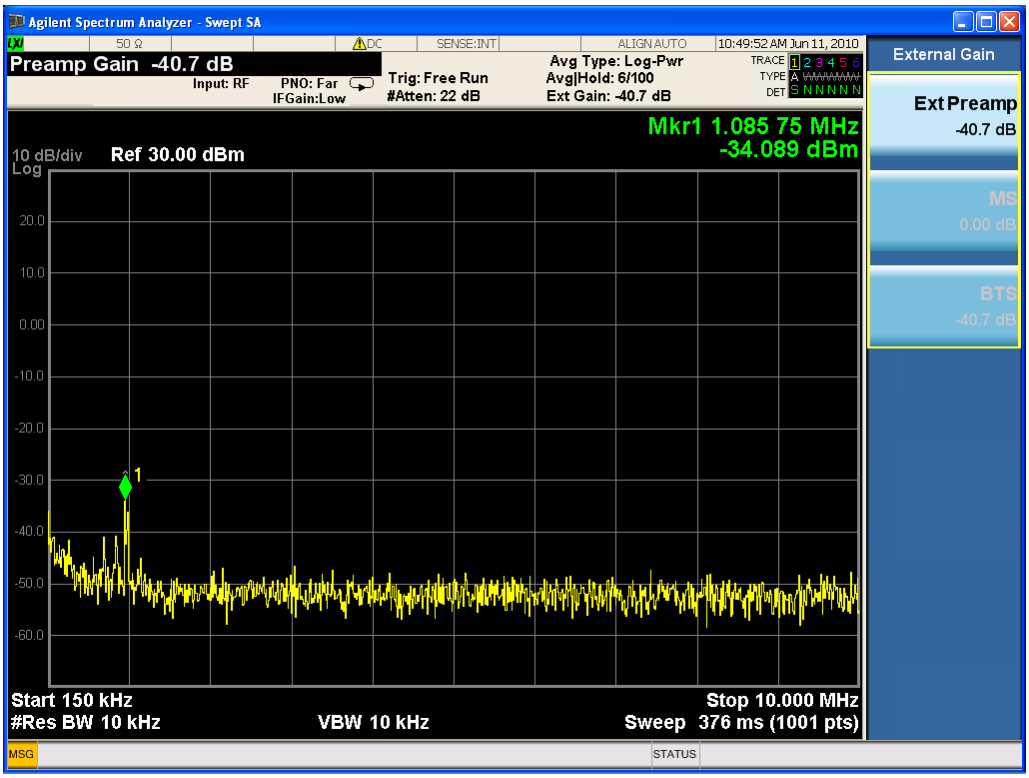

Agilent Spectrum Analyzer - Swept SA
Marker 1 27.140000000 MHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 3/100
Ext Gain: -40.7 dB
03:43:18 PM Jun 11, 2010
Mkr1 27.14 MHz
-44.318 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 10.00 MHz
#Res BW 10 kHz
VBW 10 kHz
Stop 30.00 MHz
Sweep 763 ms (1001 pts)
File <SPURIOUS 10-30.state> recalled
Recall State
Register 1 (empty)
Register 2 (empty)
Register 3 (empty)
Register 4 (empty)
Register 5 (empty)
Register 6 (empty)
From File ...

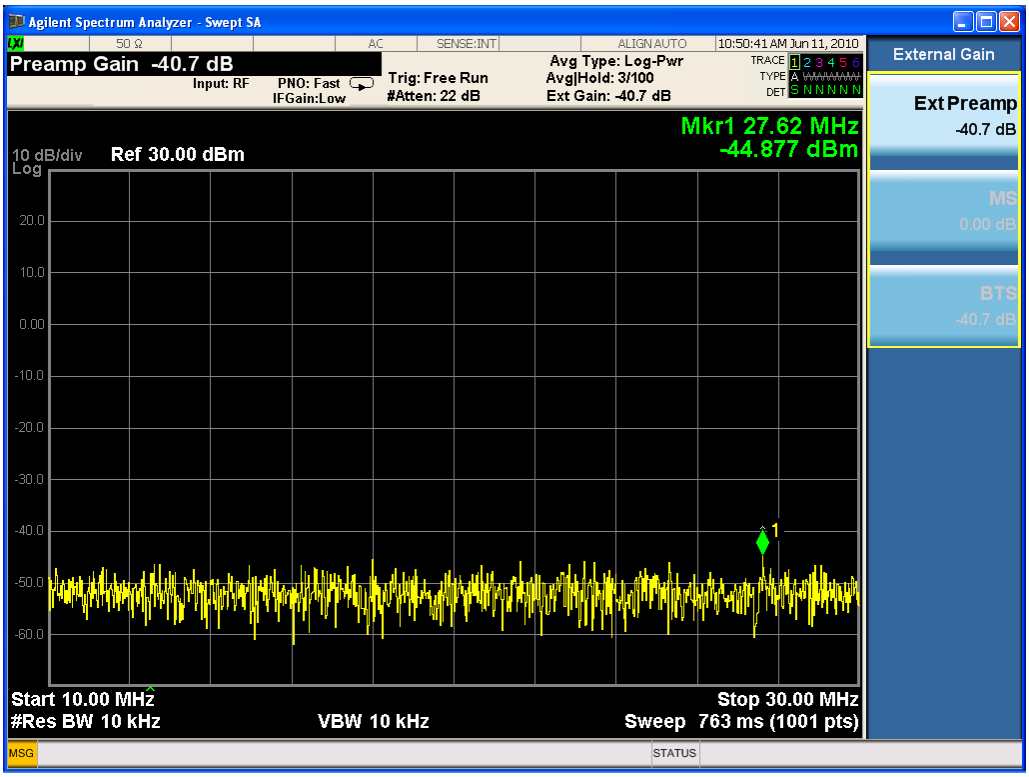

Agilent Spectrum Analyzer - Swept SA
Marker 1 815.700000000 MHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 22/100
Ext Gain: -40.7 dB
02:51:35 PM Dec 30, 2010
Mkr1 815.70 MHz
-38.631 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
VBW 100 kHz
Stop 1.0000 GHz
Sweep 370 ms (1001 pts)
Trace/Det
Select Trace
Trace 1
Clear Write
Trace Average
Max Hold
Min Hold
View/Blank
Trace On
More
1 of 3

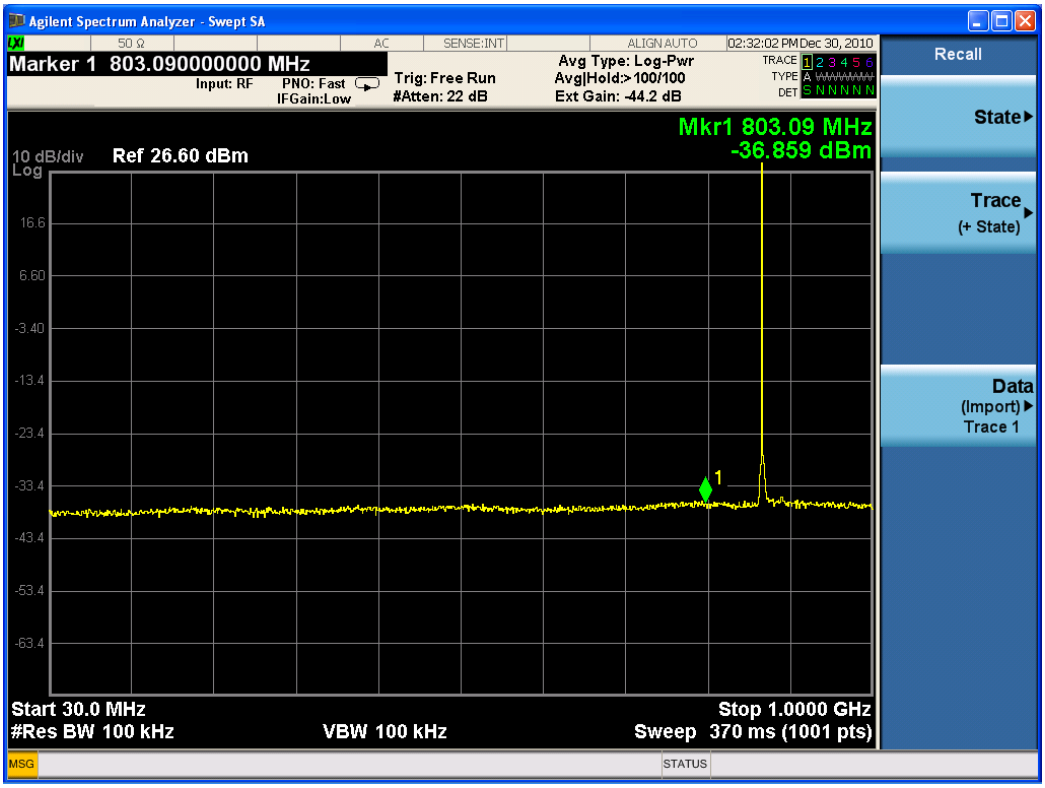

Agilent Spectrum Analyzer - Swept SA
Marker 1 3.124000000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 12/100
Ext Gain: -40.7 dB
03:44:05 PM Jun 11, 2010
Mkr1 3.124 GHz
-24.682 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 1.000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 10.000 GHz
Sweep 34.3 ms (1001 pts)
File <SPURIOUS 1-10.state> recalled
Recall State
Register 1 (empty)
Register 2 (empty)
Register 3 (empty)
Register 4 (empty)
Register 5 (empty)
Register 6 (empty)
From File ...

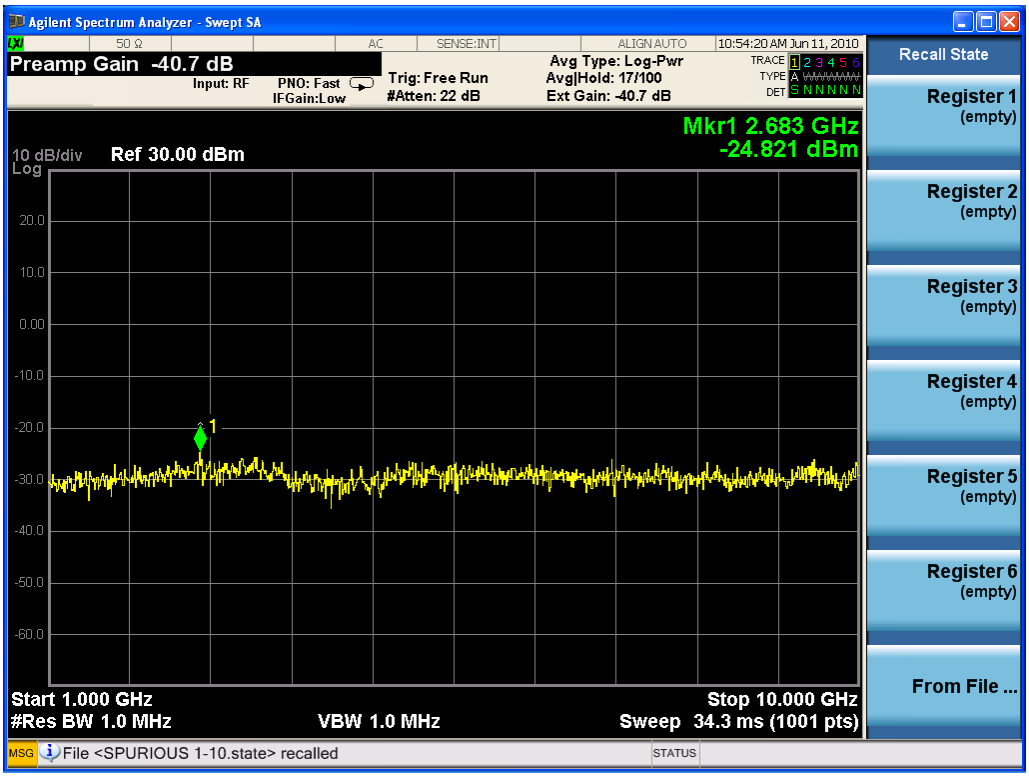
One carrier (working in bottom frequency)



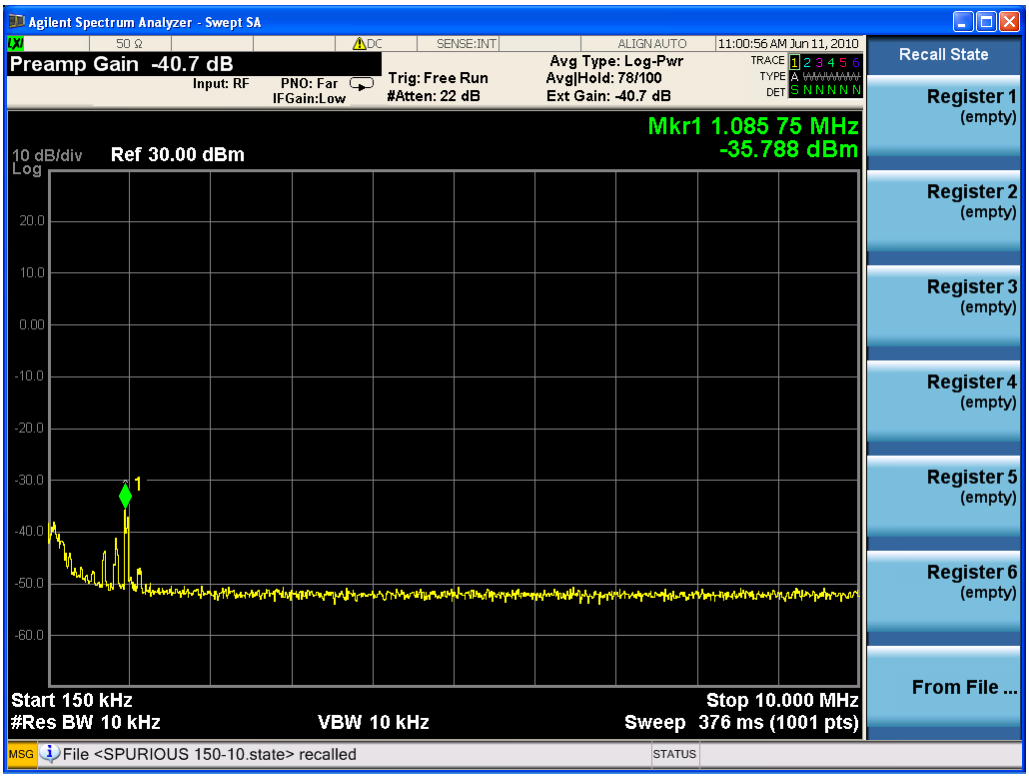


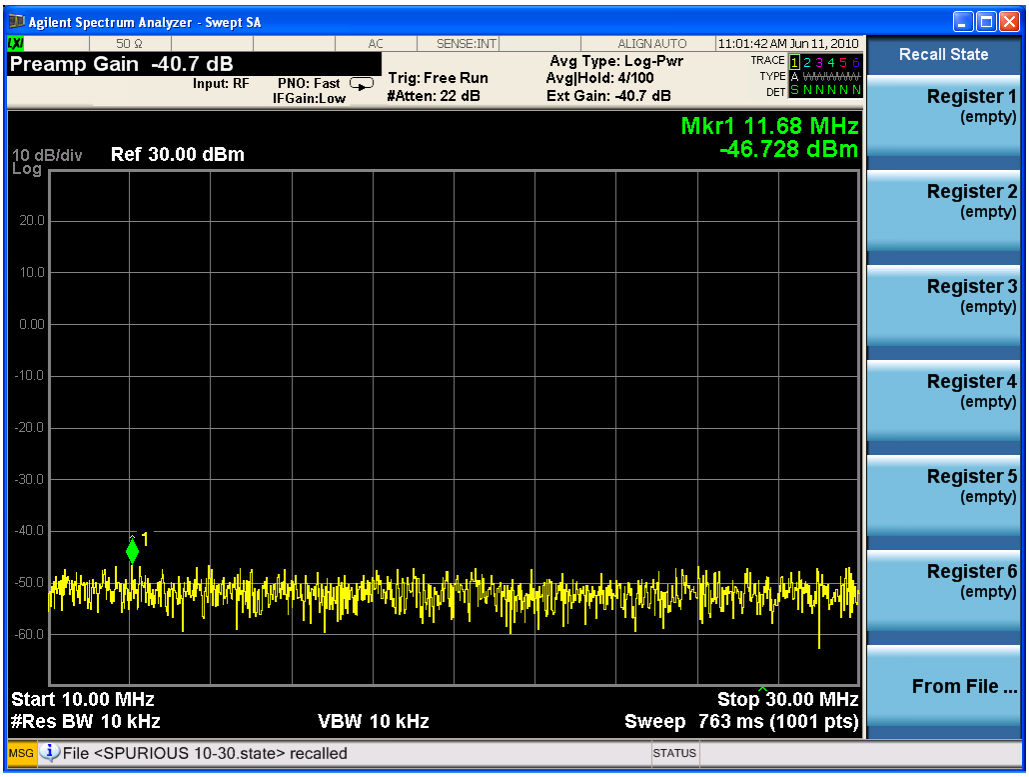

Agilent Spectrum Analyzer - Swept SA
Preamp Gain -40.7 dB
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 3/100
Ext Gain: -40.7 dB
10:50:41 AM Jun 11, 2010
External Gain
Ext Preamp
-40.7 dB
MS
0.00 dB
BTS
-40.7 dB
Mkr1 27.62 MHz
-44.877 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 10.00 MHz
#Res BW 10 kHz
VBW 10 kHz
Stop 30.00 MHz
Sweep 763 ms (1001 pts)

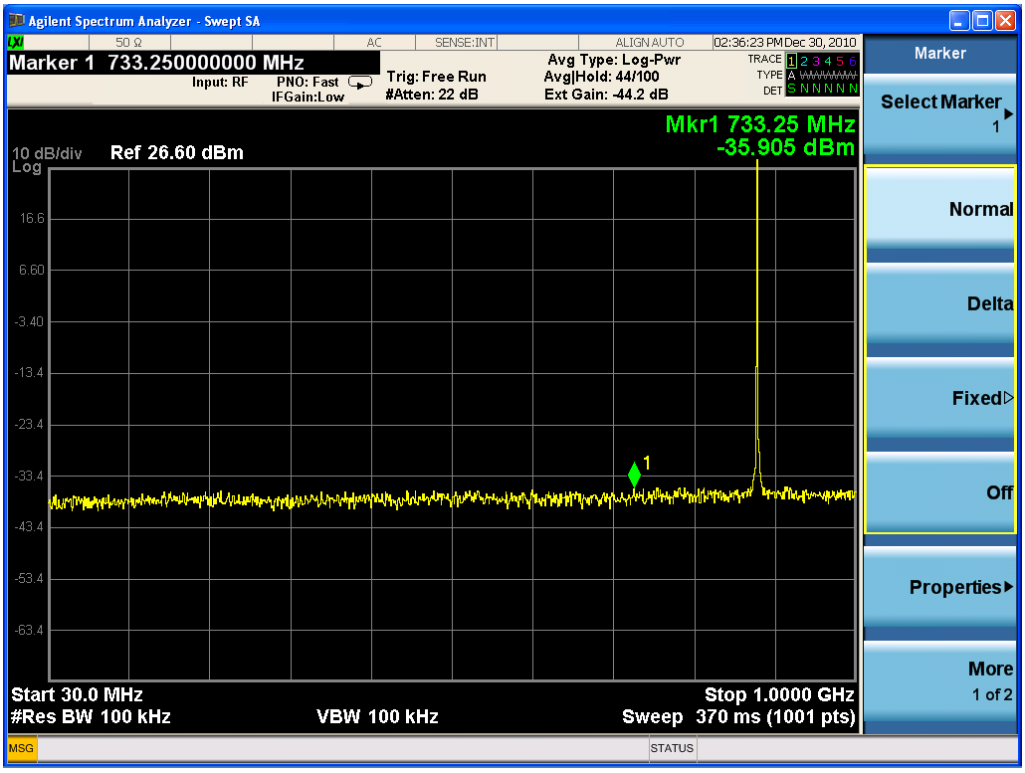

Agilent Spectrum Analyzer - Swept SA
Marker 1 803.090000000 MHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -44.2 dB
02:32:02 PM Dec 30, 2010
Recall
State
Trace
(+ State)
Data
(Import)
Trace 1
Mkr1 803.09 MHz
-36.859 dBm
10 dB/div
Log
Ref 26.60 dBm
Start 30.0 MHz
#Res BW 100 kHz
VBW 100 kHz
Stop 1.0000 GHz
Sweep 370 ms (1001 pts)

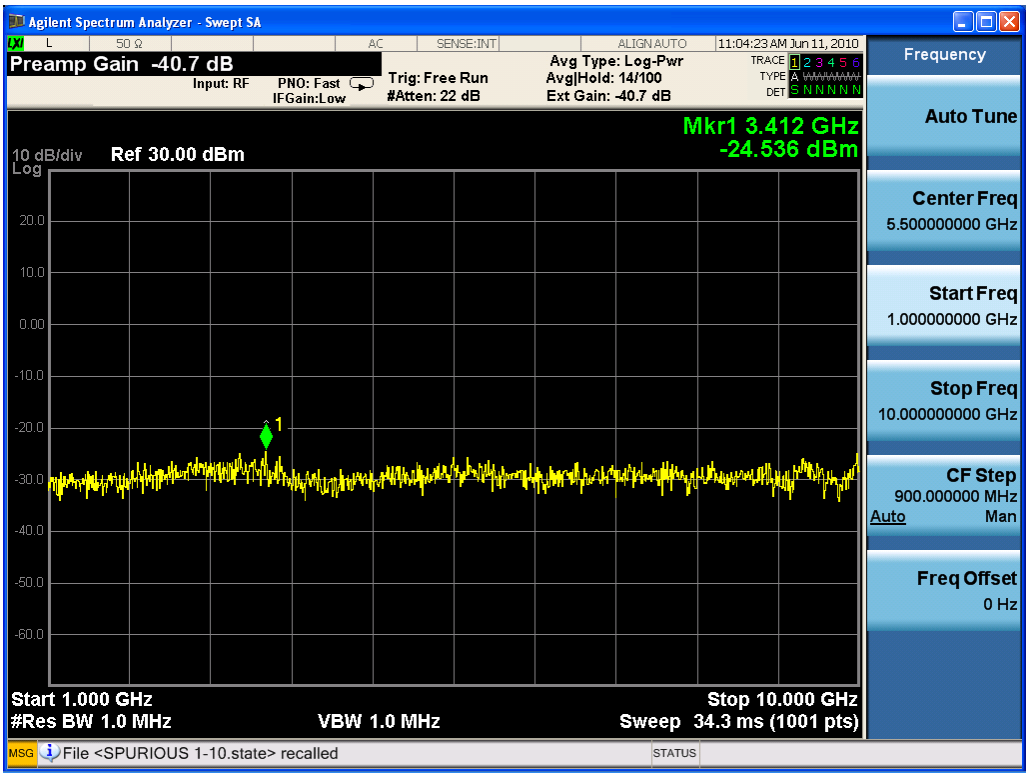

Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:54:20 AM Jun 11, 2010
Preamp Gain -40.7 dB
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 17/100
Ext Gain: -40.7 dB
TRACE 1 2 3 4 5 6
TYPE A
DET S N N N N N
Mkr1 2.683 GHz
-24.821 dBm
10 dB/div
Log
Ref 30.00 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
1
Start 1.000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 10.000 GHz
Sweep 34.3 ms (1001 pts)
Recall State
Register 1
(empty)
Register 2
(empty)
Register 3
(empty)
Register 4
(empty)
Register 5
(empty)
Register 6
(empty)
From File ...
MSG
File <SPURIOUS 1-10.state> recalled
STATUS

One carrier (working in middle frequency)

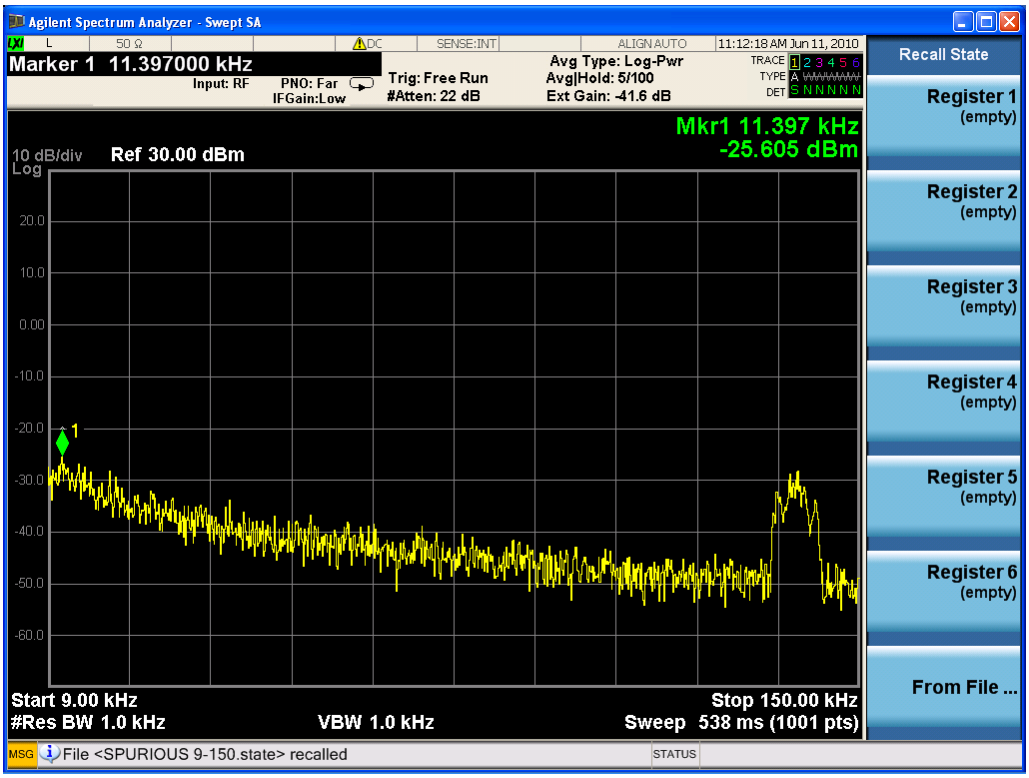


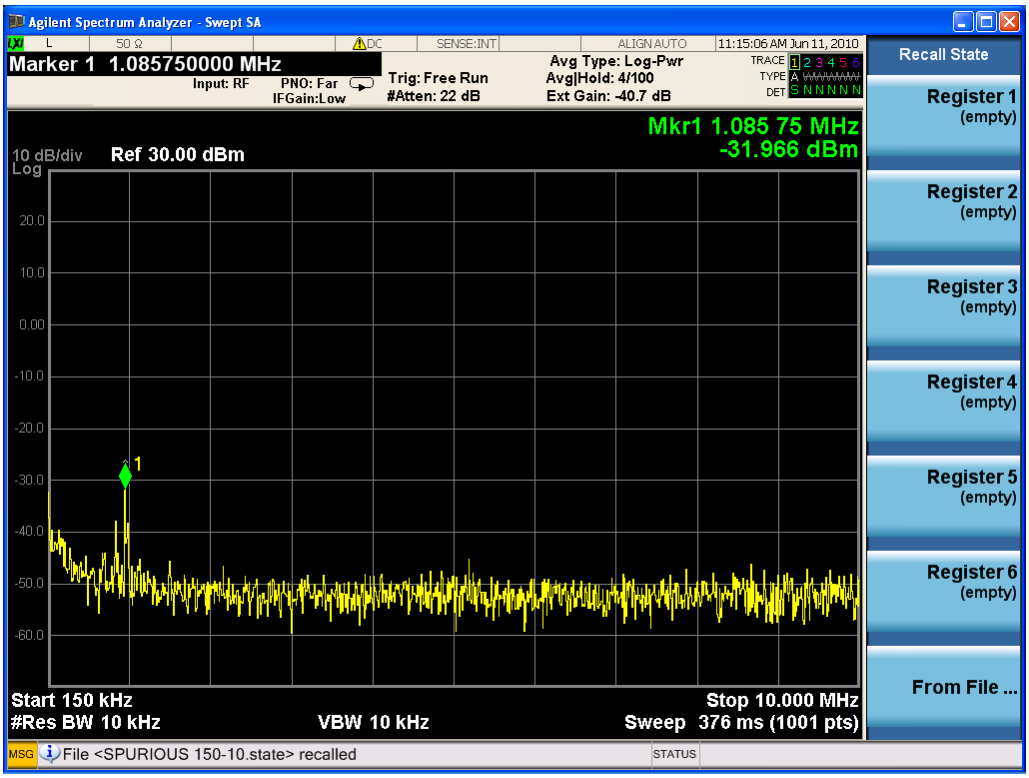

Agilent Spectrum Analyzer - Swept SA
Preamp Gain -40.7 dB
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 4/100
Ext Gain: -40.7 dB
11:01:42 AM Jun 11, 2010
Mkr1 11.68 MHz
-46.728 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 10.00 MHz
#Res BW 10 kHz
VBW 10 kHz
Stop 30.00 MHz
Sweep 763 ms (1001 pts)
File <SPURIOUS 10-30.state> recalled
Recall State
Register 1 (empty)
Register 2 (empty)
Register 3 (empty)
Register 4 (empty)
Register 5 (empty)
Register 6 (empty)
From File ...

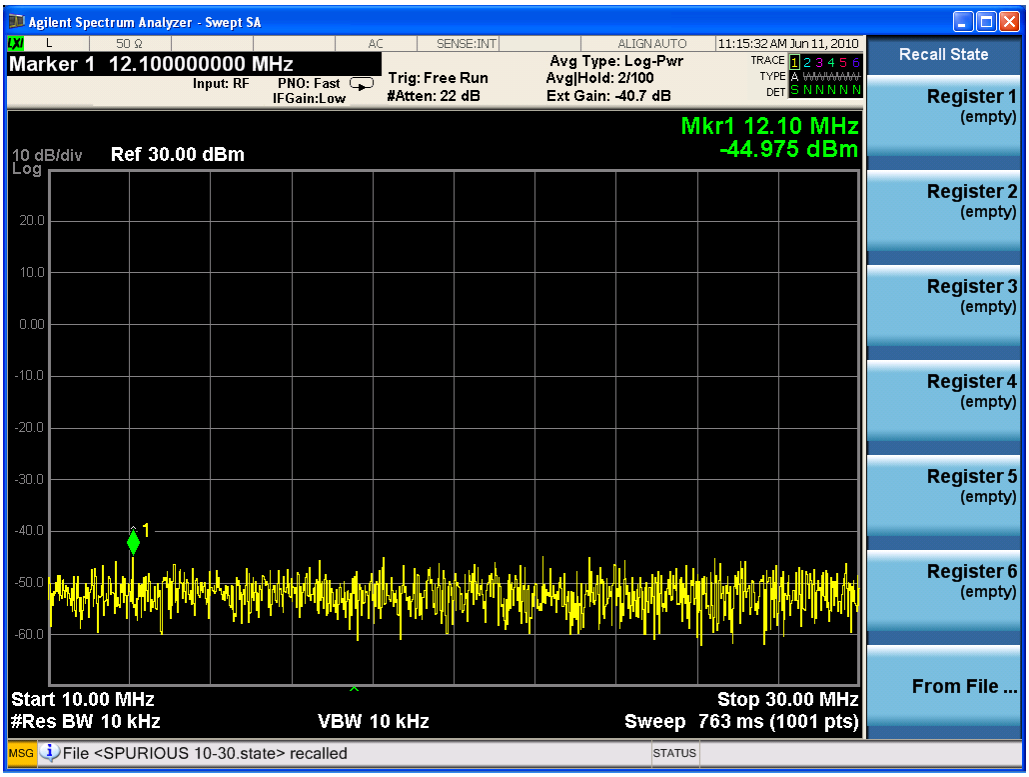

Agilent Spectrum Analyzer - Swept SA
Marker 1 733.250000000 MHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 44/100
Ext Gain: -44.2 dB
02:36:23 PM Dec 30, 2010
Mkr1 733.25 MHz
-35.905 dBm
10 dB/div
Log
Ref 26.60 dBm
Start 30.0 MHz
#Res BW 100 kHz
VBW 100 kHz
Stop 1.0000 GHz
Sweep 370 ms (1001 pts)
Marker
Select Marker 1
Normal
Delta
Fixed
Off
Properties
More 1 of 2

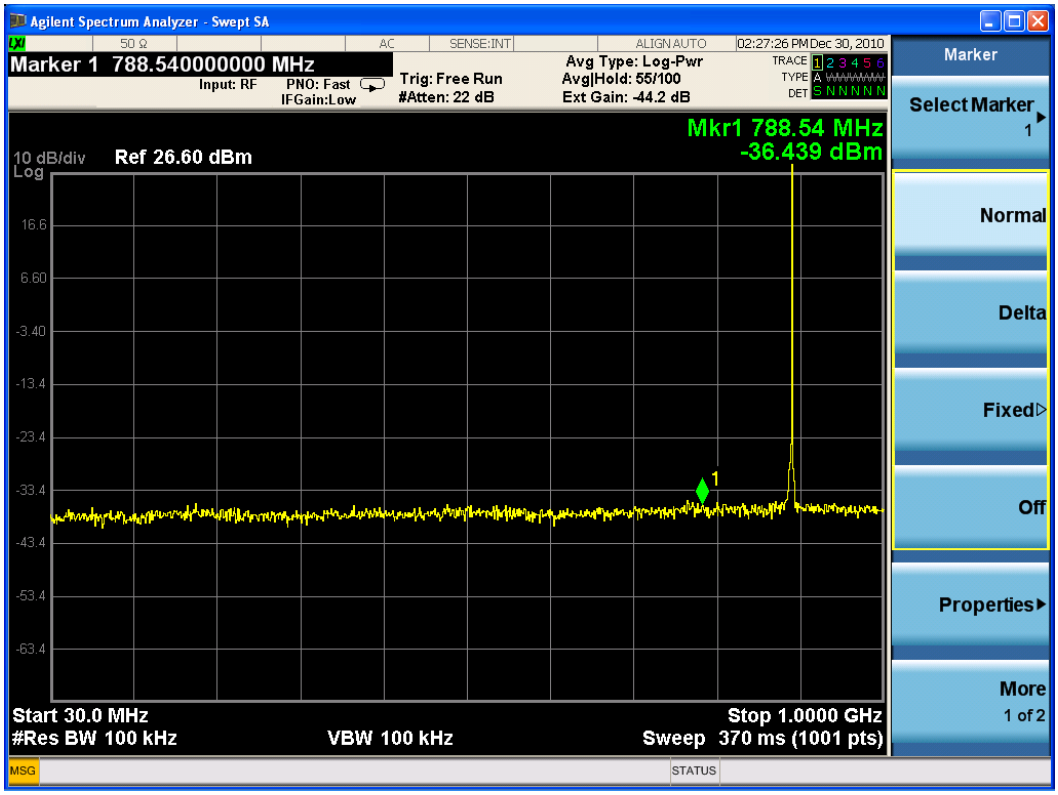

Agilent Spectrum Analyzer - Swept SA
Preamp Gain -40.7 dB
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 14/100
Ext Gain: -40.7 dB
11:04:23 AM Jun 11, 2010
Mkr1 3.412 GHz
-24.536 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 1.000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 10.000 GHz
Sweep 34.3 ms (1001 pts)
File <SPURIOUS 1-10.state> recalled
Frequency
Auto Tune
Center Freq
5.500000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
10.000000000 GHz
CF Step
900.000000 MHz
Auto
Man
Freq Offset
0 Hz

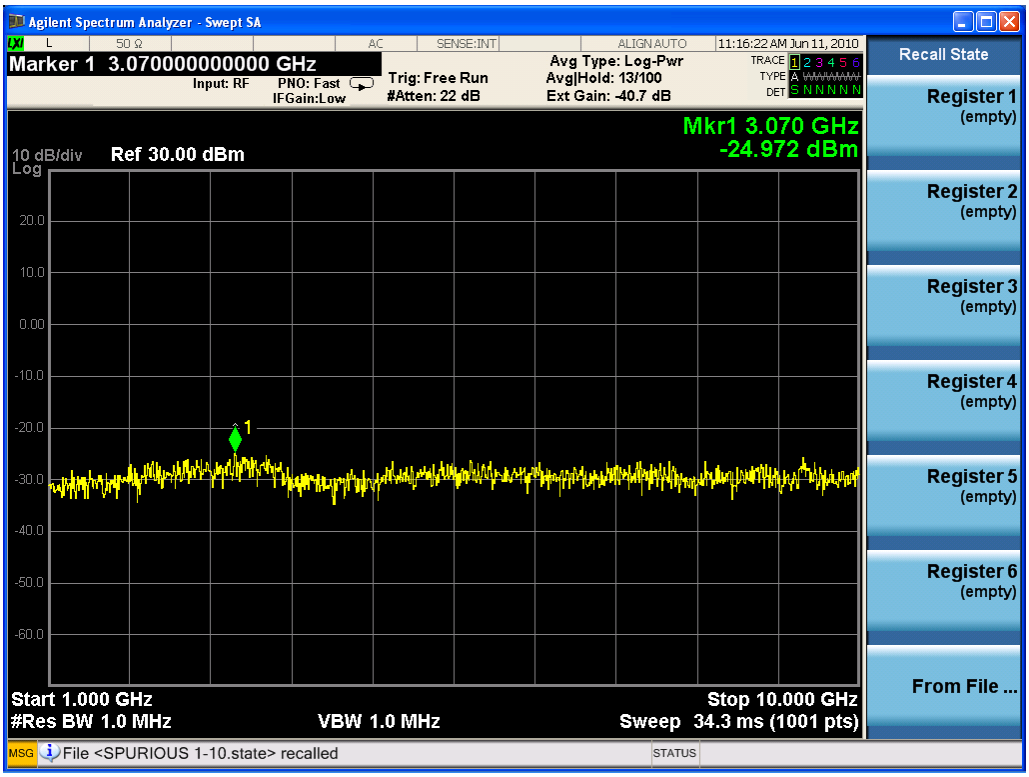
One carrier (working in top frequency)






Agilent Spectrum Analyzer - Swept SA
Marker 1 12.100000000 MHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 2/100
Ext Gain: -40.7 dB
11:15:32 AM Jun 11, 2010
Mkr1 12.10 MHz
-44.975 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 10.00 MHz
#Res BW 10 kHz
VBW 10 kHz
Stop 30.00 MHz
Sweep 763 ms (1001 pts)
File <SPURIOUS 10-30.state> recalled
Recall State
Register 1 (empty)
Register 2 (empty)
Register 3 (empty)
Register 4 (empty)
Register 5 (empty)
Register 6 (empty)
From File ...


Agilent Spectrum Analyzer - Swept SA
Marker 1 788.540000000 MHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 55/100
Ext Gain: -44.2 dB
02:27:26 PM Dec 30, 2010
Mkr1 788.54 MHz
-36.439 dBm
10 dB/div
Log
Ref 26.60 dBm
Start 30.0 MHz
#Res BW 100 kHz
VBW 100 kHz
Stop 1.0000 GHz
Sweep 370 ms (1001 pts)
Marker
Select Marker 1
Normal
Delta
Fixed
Off
Properties
More 1 of 2


Agilent Spectrum Analyzer - Swept SA
Marker 1 3.070000000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 13/100
Ext Gain: -40.7 dB
11:16:22 AM Jun 11, 2010
Mkr1 3.070 GHz
-24.972 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 1.000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 10.000 GHz
Sweep 34.3 ms (1001 pts)
File <SPURIOUS 1-10.state> recalled
Recall State
Register 1 (empty)
Register 2 (empty)
Register 3 (empty)
Register 4 (empty)
Register 5 (empty)
Register 6 (empty)
From File ...

10 OCCUPIED BANDWIDTH

Applicable Standard

FCC §2.1049 §22.905 §22.917 and IC RSS Gen §4.6.1

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2010-4-9	2011-4-9
DST	DST100 40dB Attenuator	DTS100-40dB-N	N/A	N/A	N/A
Hewlett Packard	RF Cable	8120-6192	01428251	N/A	N/A

***statement of traceability:** ZTE Corporation Reliability Testing Center attests that all calibration has been performed per the NVLAP requirements, traceable to 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 1% of the span or higher and 99% Power bandwidth was recorded.

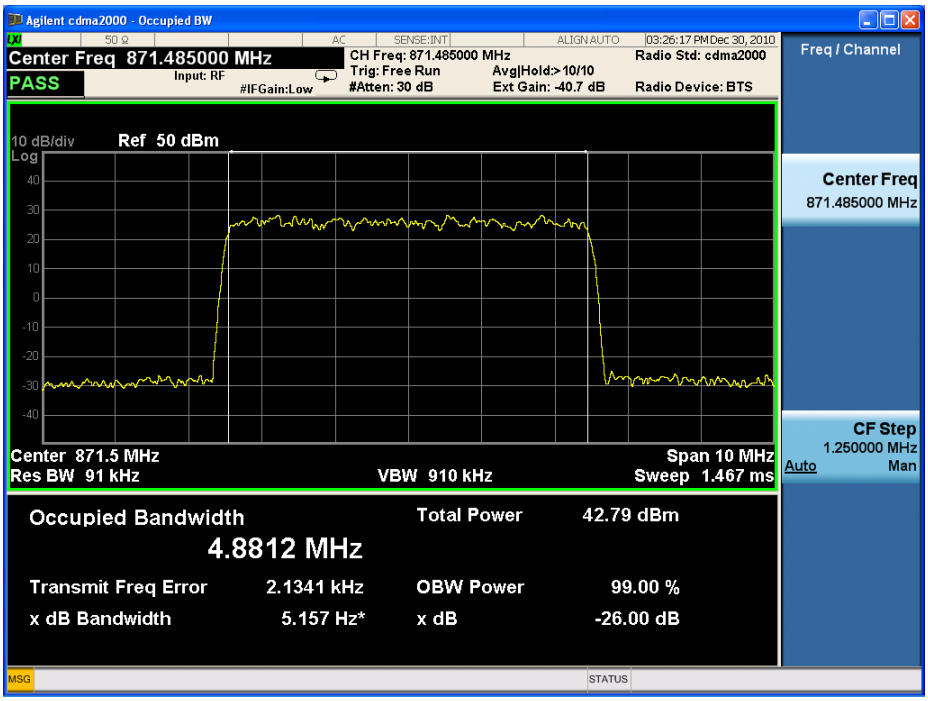
Environmental Conditions

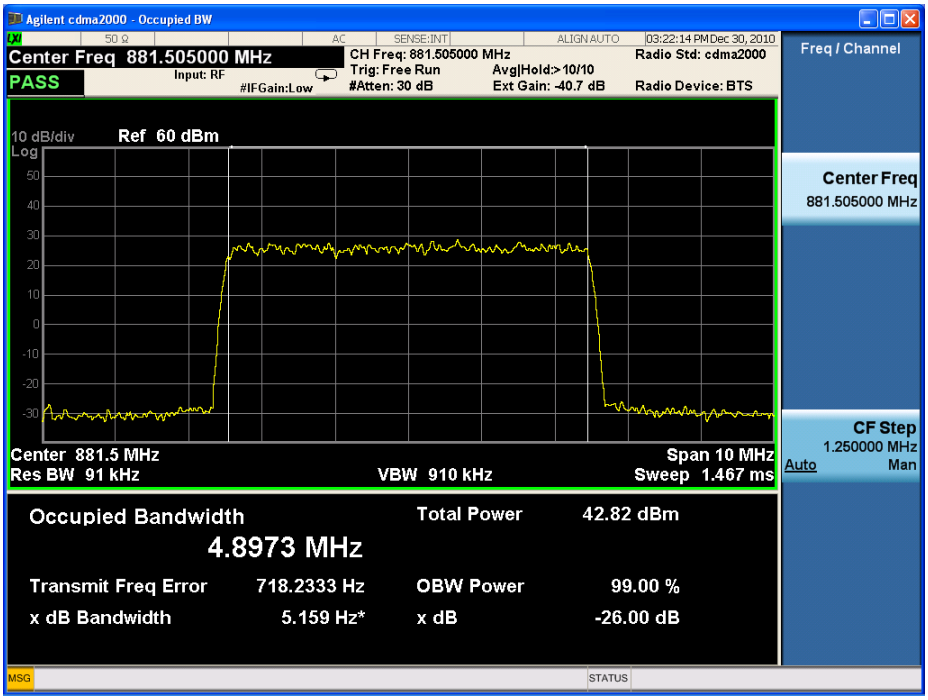
Temperature:	20 ° C
Relative Humidity:	53%
ATM Pressure:	1009mbar

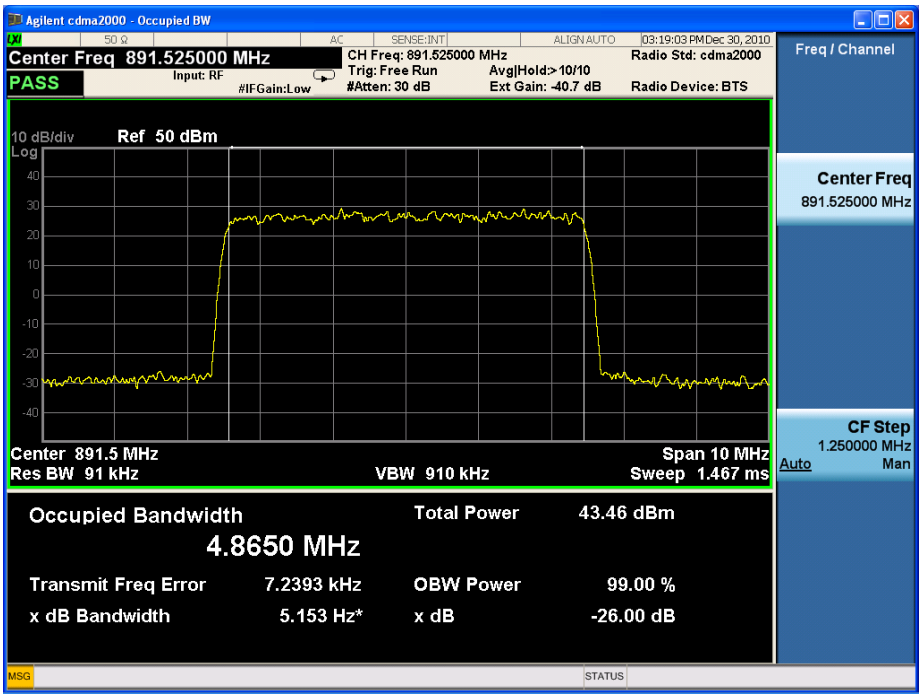
Test Result

Test Mode: Transmitting CDMA

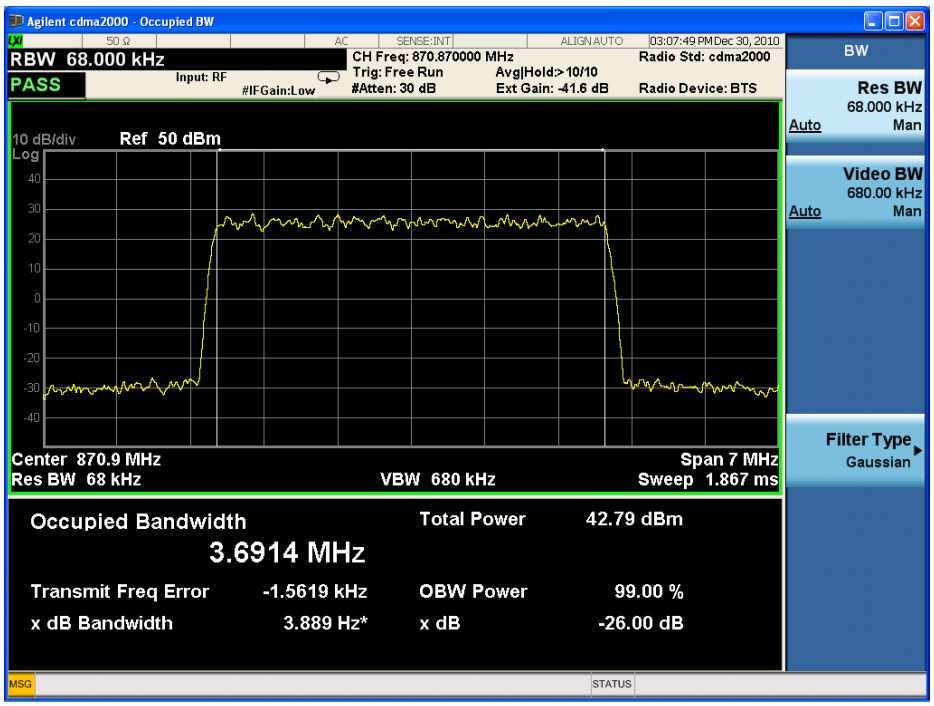
Frequency (MHz)	Channel	99% Power Bandwidth (MHz)	Limit (MHz)
871.485	1011/29/70/111	4.8812	<5.00
881.505	322/363/404/445	4.8973	<5.00
891.525	656/697/738/779	4.8650	<5.00

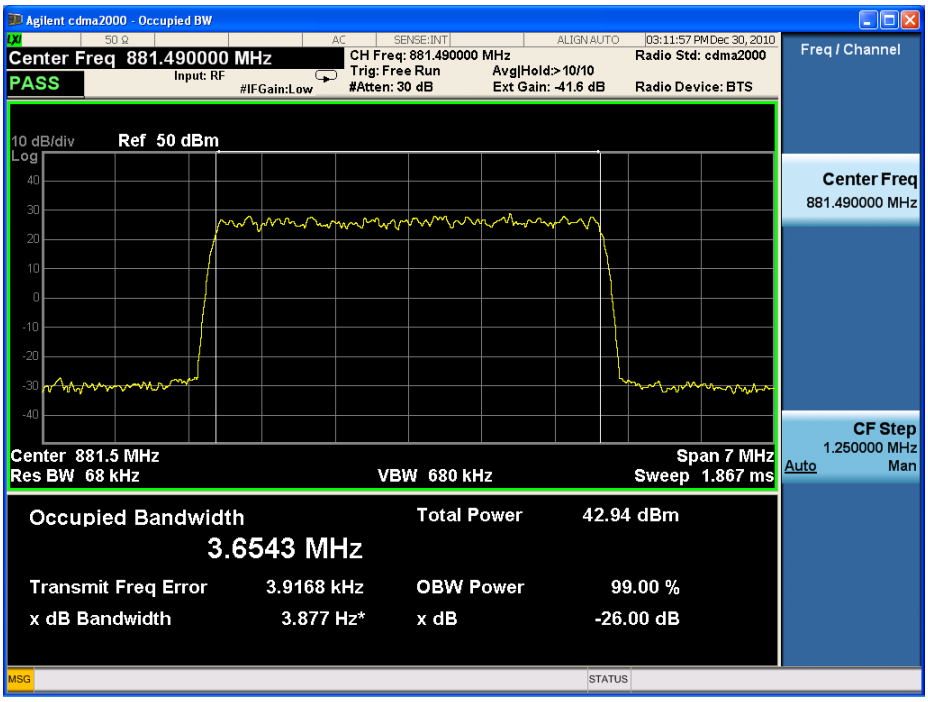


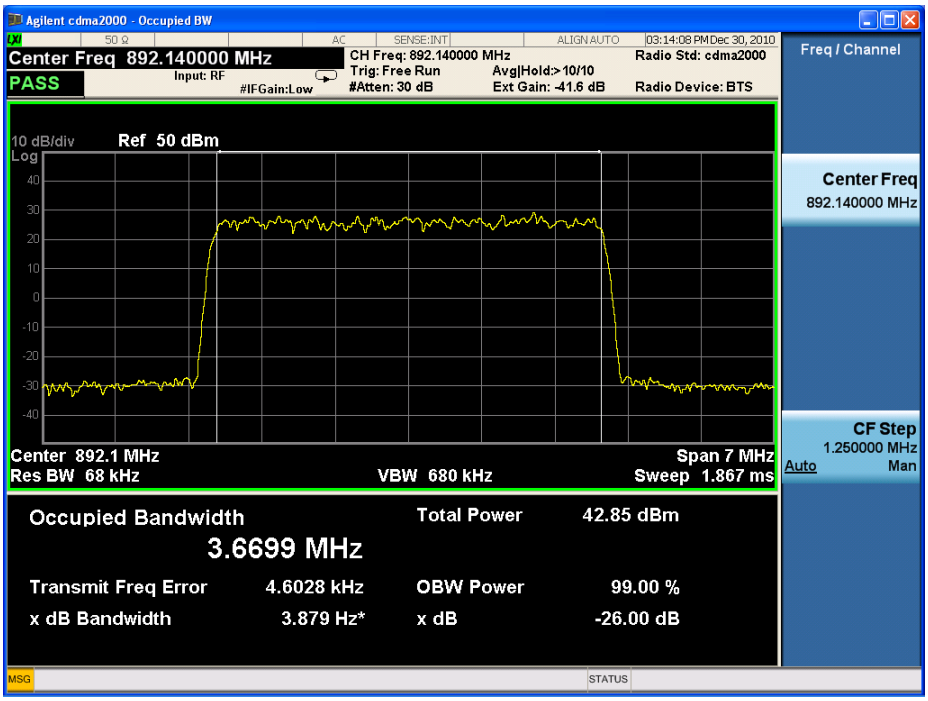




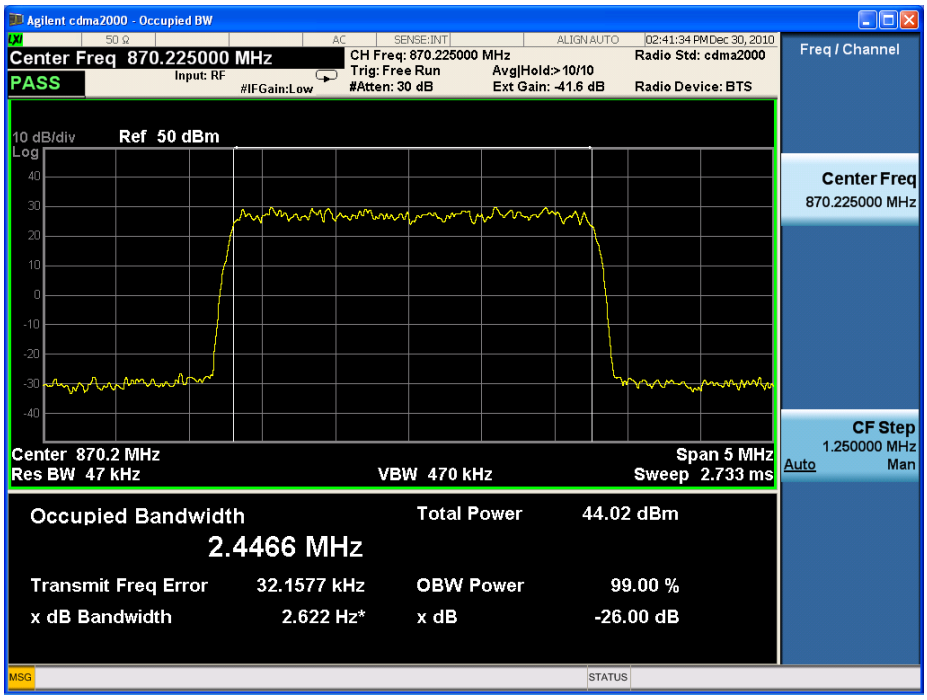
Frequency (MHz)	Channel	99% Power Bandwidth (MHz)	Limit (MHz)
870.87	1011/29/70	3.6914	<3.75
881.49	342/383/424	3.6543	<3.75
892.14	697/738/779	3.6699	<3.75

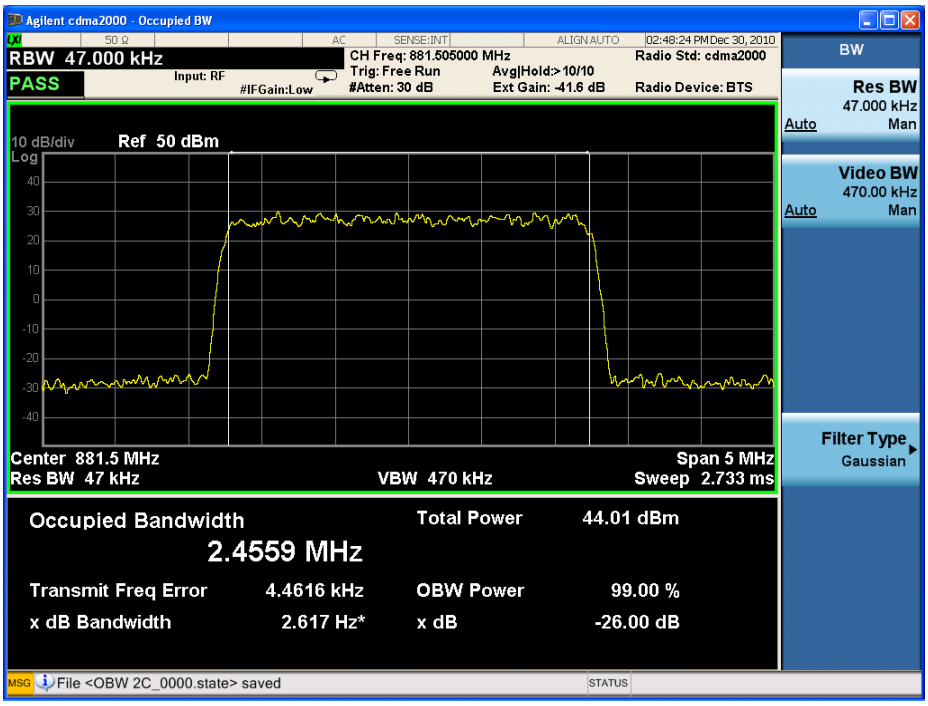


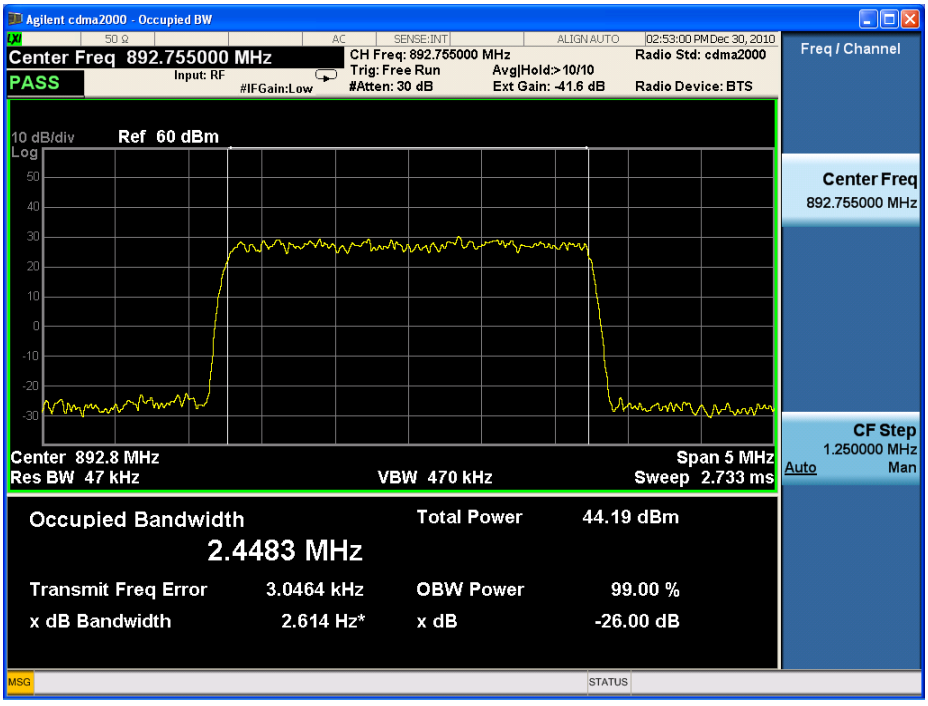

Agilent cdma2000 - Occupied BW
Center Freq 881.490000 MHz
PASS
Input: RF
#IFGain:Low
CH Freq: 881.490000 MHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>10/10
Ext Gain: -41.6 dB
Radio Std: cdma2000
Radio Device: BTS
03:11:57 PM Dec 30, 2010
Freq / Channel
10 dB/div
Ref 50 dBm
Center Freq
881.490000 MHz
Center 881.5 MHz
Res BW 68 kHz
VBW 680 kHz
Span 7 MHz
Sweep 1.867 ms
CF Step
1.250000 MHz
Auto
Man
Occupied Bandwidth
3.6543 MHz
Total Power 42.94 dBm
Transmit Freq Error 3.9168 kHz
OBW Power 99.00 %
x dB Bandwidth 3.877 Hz*
x dB -26.00 dB
MSG
STATUS


Agilent cdma2000 - Occupied BW
Center Freq 892.140000 MHz
PASS
Input: RF
#IFGain:Low
CH Freq: 892.140000 MHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>10/10
Ext Gain: -41.6 dB
Radio Std: cdma2000
Radio Device: BTS
03:14:08 PM Dec 30, 2010
Freq / Channel
10 dB/div
Ref 50 dBm
Center Freq
892.140000 MHz
Center 892.1 MHz
Res BW 68 kHz
VBW 680 kHz
Span 7 MHz
Sweep 1.867 ms
CF Step
1.250000 MHz
Auto
Man
Occupied Bandwidth
3.6699 MHz
Total Power 42.85 dBm
Transmit Freq Error 4.6028 kHz
OBW Power 99.00 %
x dB Bandwidth 3.879 Hz*
x dB -26.00 dB
MSG
STATUS

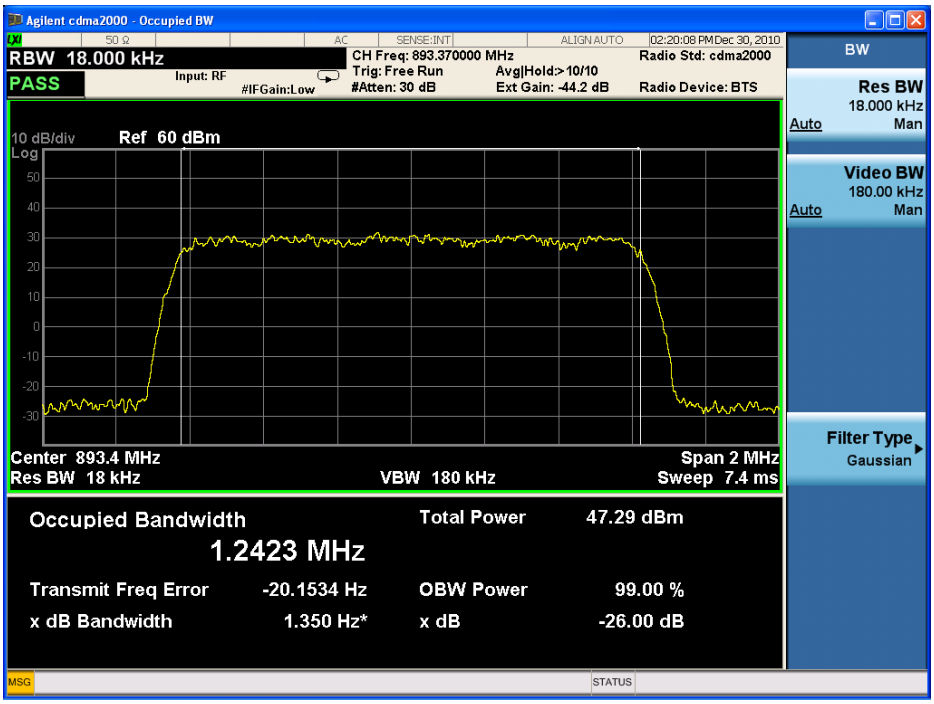
Frequency (MHz)	Channel	99% Power Bandwidth (MHz)	Limit (MHz)
870.225	1011/29	2.4466	<2.50
881.505	363/404	2.4559	<2.50
892.755	738/779	2.4483	<2.50

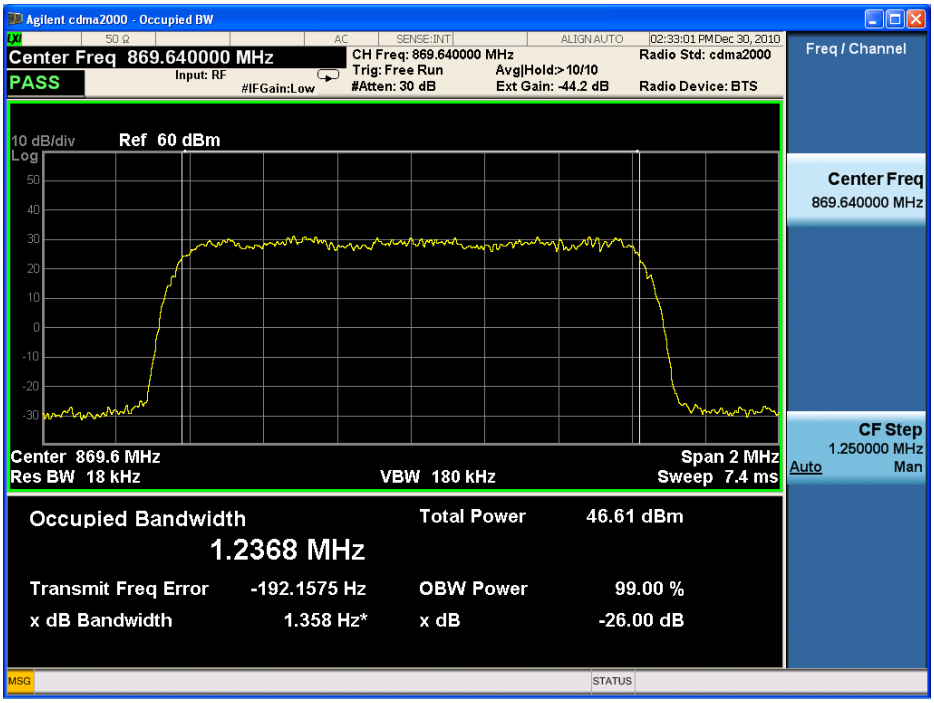


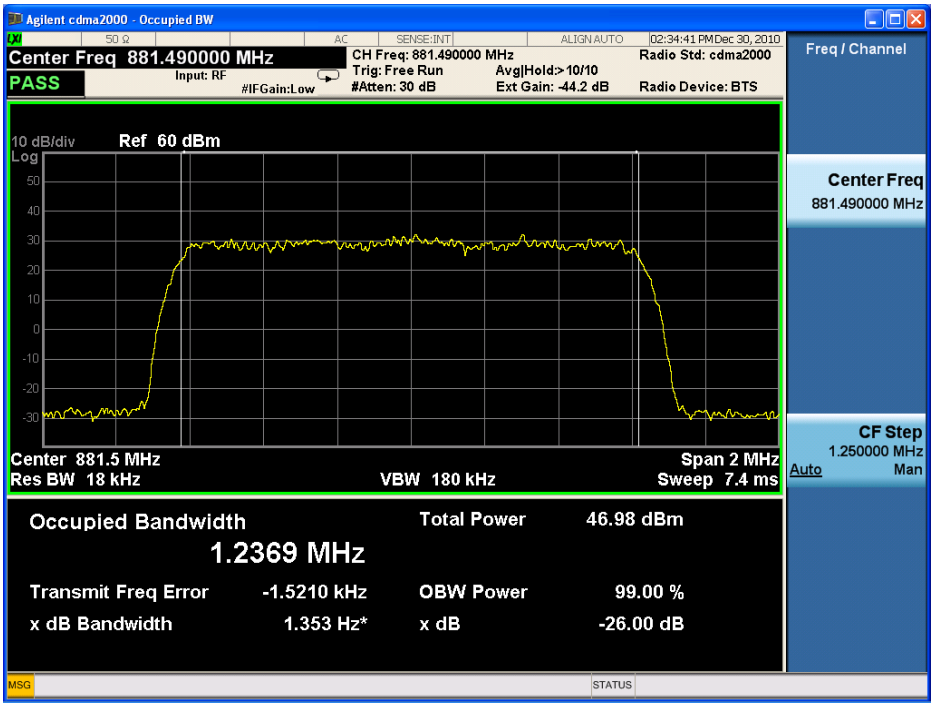

Agilent cdma2000 - Occupied BW
RBW 47.000 kHz
PASS
Input: RF
#IFGain:Low
CH Freq: 881.505000 MHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>10/10
Ext Gain: -41.6 dB
Radio Std: cdma2000
Radio Device: BTS
02:48:24 PM Dec 30, 2010
BW
Res BW
47.000 kHz
Auto
Man
Video BW
470.00 kHz
Auto
Man
Filter Type
Gaussian
10 dB/div
Ref 50 dBm
Log
Center 881.5 MHz
Res BW 47 kHz
VBW 470 kHz
Span 5 MHz
Sweep 2.733 ms
Occupied Bandwidth
2.4559 MHz
Total Power 44.01 dBm
Transmit Freq Error 4.4616 kHz
OBW Power 99.00 %
x dB Bandwidth 2.617 Hz*
x dB -26.00 dB
File <OBW 2C_0000.state> saved
STATUS


Agilent cdma2000 - Occupied BW
Center Freq 892.755000 MHz
PASS
Input: RF
#IFGain:Low
CH Freq: 892.755000 MHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>10/10
Ext Gain: -41.6 dB
Radio Std: cdma2000
Radio Device: BTS
02:53:00 PM Dec 30, 2010
Freq / Channel
Center Freq
892.755000 MHz
CF Step
1.250000 MHz
Auto
Man
10 dB/div
Ref 60 dBm
Log
Center 892.8 MHz
Res BW 47 kHz
VBW 470 kHz
Span 5 MHz
Sweep 2.733 ms
Occupied Bandwidth
2.4483 MHz
Total Power 44.19 dBm
Transmit Freq Error 3.0464 kHz
OBW Power 99.00 %
x dB Bandwidth 2.614 Hz*
x dB -26.00 dB
STATUS

Frequency (MHz)	Channel	99% Power Bandwidth (MHz)	Limit (MHz)
869.64	1011	1.2423	<1.25
881.49	383	1.2368	<1.25
893.37	779	1.2369	<1.25






Agilent cdma2000 - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:34:41 PM Dec 30, 2010
Center Freq 881.490000 MHz
PASS
Input: RF
#IFGain:Low
CH Freq: 881.490000 MHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>10/10
Ext Gain: -44.2 dB
Radio Std: cdma2000
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 60 dBm
50
40
30
20
10
0
-10
-20
-30
Center Freq
881.490000 MHz
Center 881.5 MHz
Res BW 18 kHz
VBW 180 kHz
Span 2 MHz
Sweep 7.4 ms
CF Step
1.250000 MHz
Auto
Man
Occupied Bandwidth
1.2369 MHz
Total Power 46.98 dBm
Transmit Freq Error -1.5210 kHz
OBW Power 99.00 %
x dB Bandwidth 1.353 Hz*
x dB -26.00 dB
MSG
STATUS

11 BAND EDGES

Applicable Standard

FCC §22.917 and IC RSS 132 §4.5.1

According to §2.1051 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. The limit (dBm) should < P–(43+10log(P)) = -13dBm.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2010-4-10	2011-4-9
DST	DST100 40dB Attenuator	DTS100-40dB-N	N/A	N/A	N/A
Hewlett Packard	RF Cable	8120-6192	01428251	N/A	N/A

***statement of traceability:** ZTE Corporation Reliability Testing Center attests that all calibration has been performed per the NVLAP requirements, traceable to NIST.

Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation. The center of the spectrum analyzer was set to block edge frequency.

Test Data Environmental Conditions

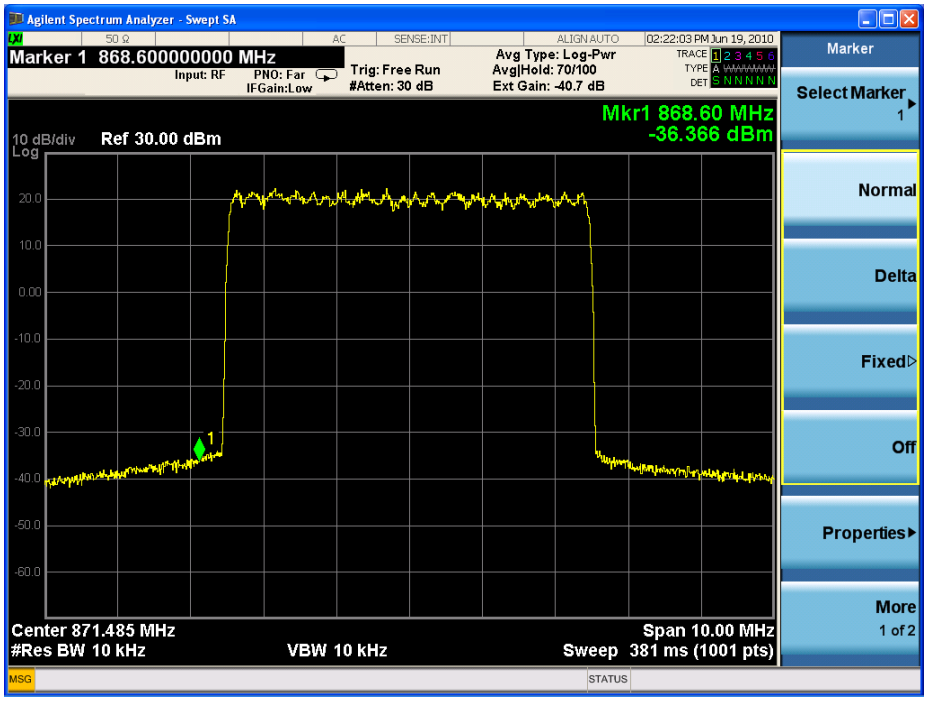
Temperature:	20 °C
Relative Humidity:	53%
ATM Pressure:	1009mbar

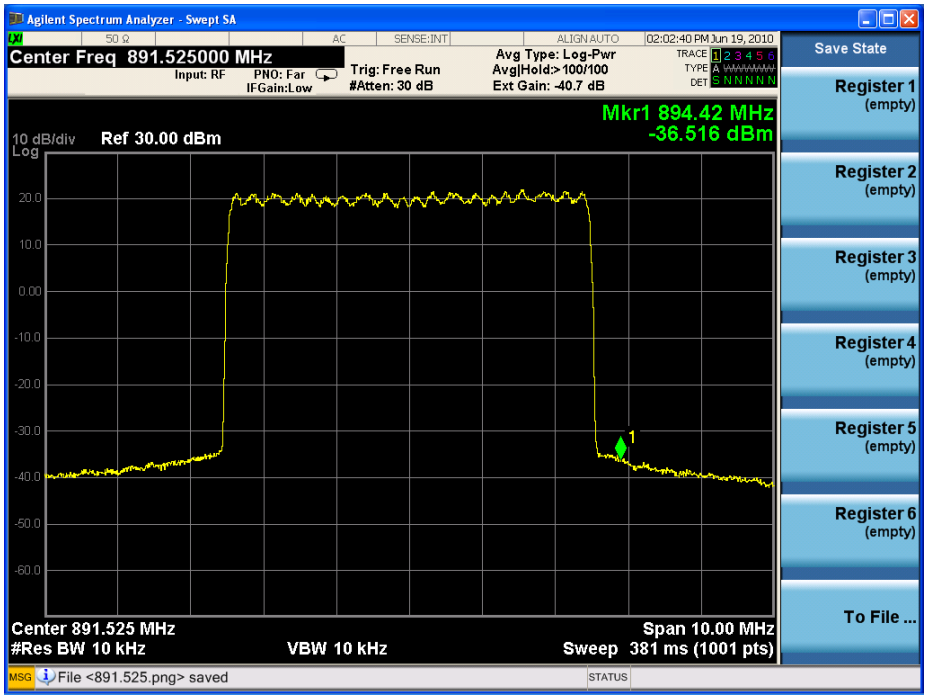
Test Result

Test Mode: Transmitting CDMA

Four carriers

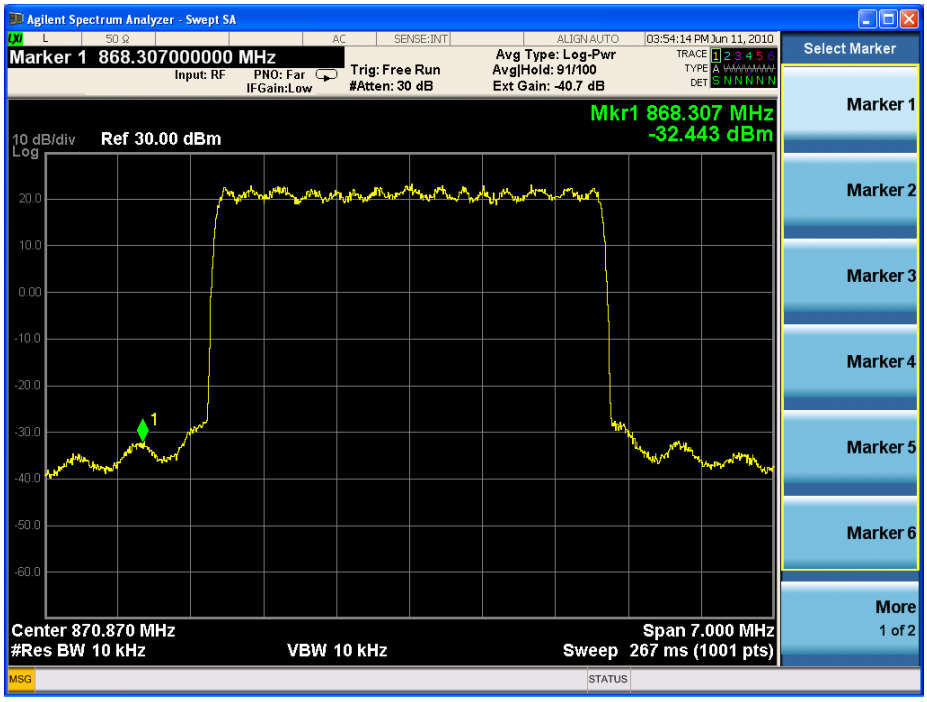
Frequency Channel	Max band edge Emission (dBm)	Limit (dBm)
869.64/870.87/872.10/873.33	-36.366	-13.00
889.68/890.91/892.14/893.37	-36.516	-13.00





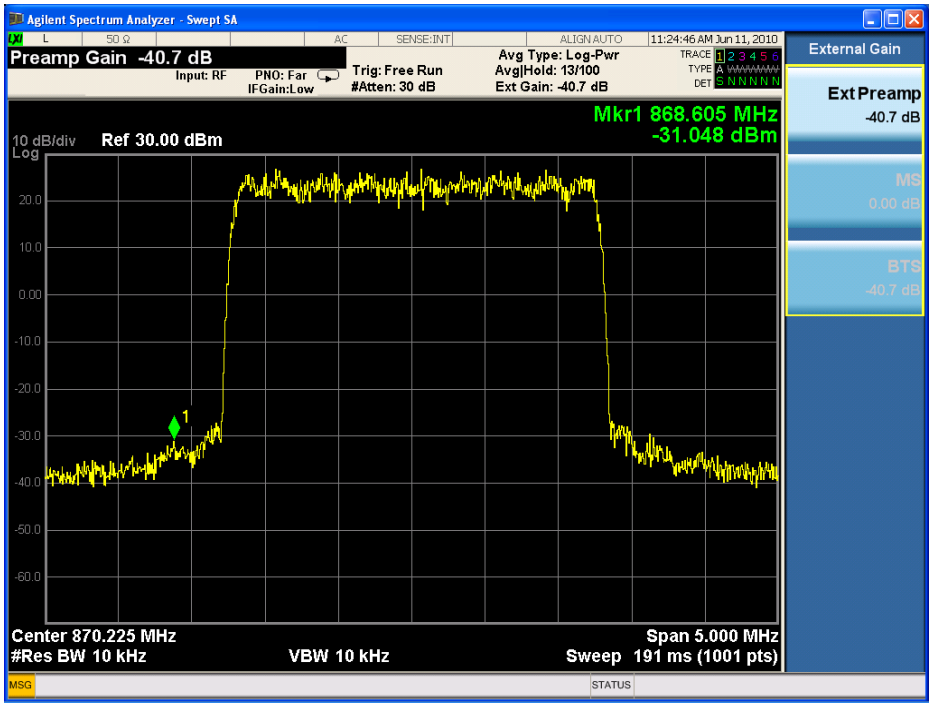
Three carriers

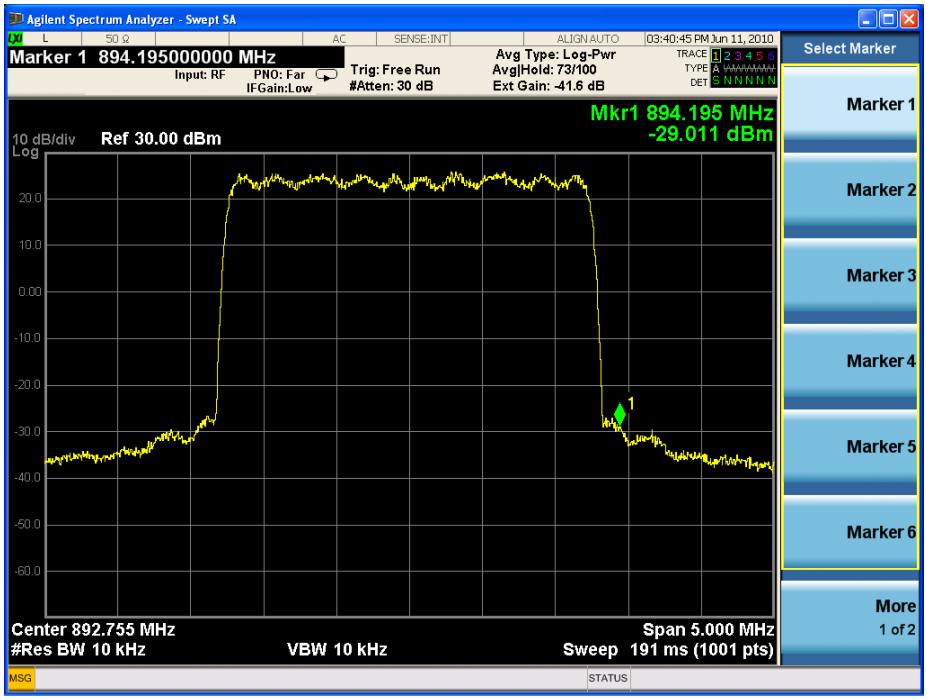
Frequency Channel	Max band edge Emission (dBm)	Limit (dBm)
869.64/870.87/872.10	-32.443	-13.00
890.91/892.14/893.37	-30.586	-13.00



Two carriers

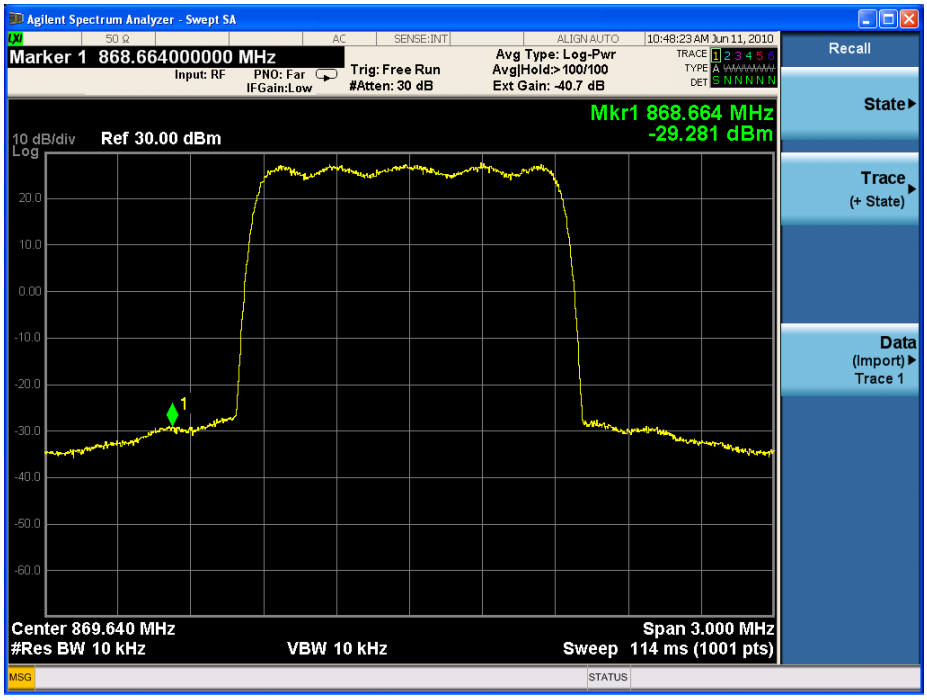
Frequency Channel	Max band edge Emission (dBm)	Limit (dBm)
869.64/870.87	-31.048	-13.00
892.14/893.37	-29.011	-13.00

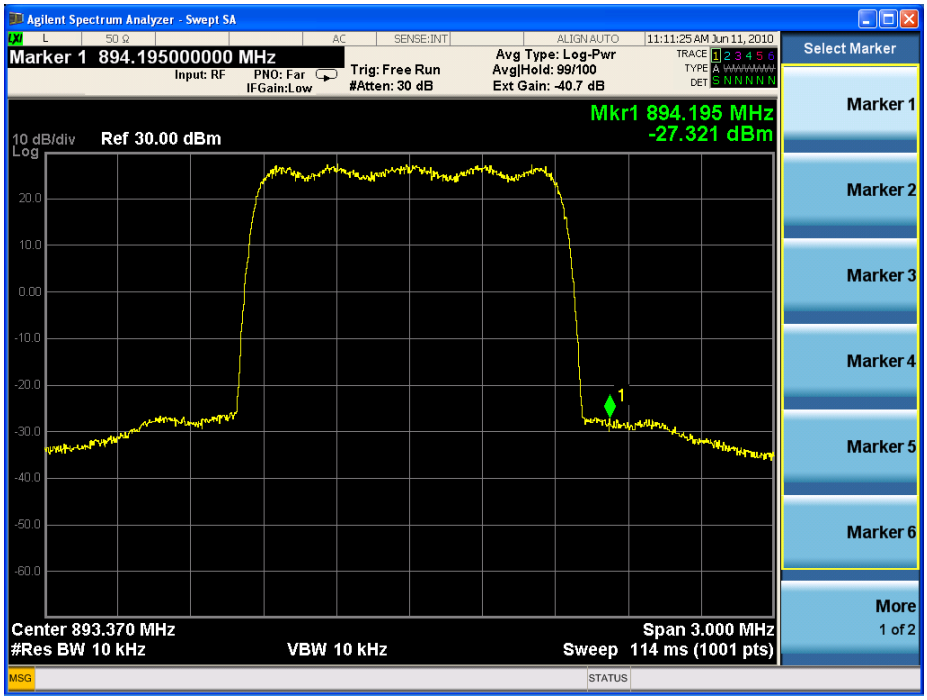




One carrier

Frequency Channel	Max band edge Emission (dBm)	Limit (dBm)
869.64	-29.281	-13.00
893.37	-27.321	-13.00





12 FREQUENCY STABILITY

Applicable Standard

FCC § 2.1055, §22.355 and IC RSS-132 § 4.3，RSS-Gen §4.7

Requirements: FCC §2.1055 (a)(d), Part 22.355 and IC RSS-132 §4.3, RSS-Gen §4.7
The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
GZ-ESPEC	Temperature Chamber	GRW-120	00020268	2010-1-22	2011-1-22
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2010-4-9	2011-4-9
DST	DST100 40dB Attenuator	DTS100-40dB-N	N/A	N/A	N/A
Hewlett Packard	RF Cable	8120-6192	01428251	N/A	N/A

***statement of traceability:** ZTE Corporation Reliability Testing Center attests that all calibration has been performed per the NVLAP requirements, traceable to 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 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 150 minutes, the frequency output was recorded from the counter.
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:	25 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

Test Result

Test Mode: Transmitting CDMA

F = 881.49 MHz（Middle frequency）				
Temperature (^{O}C)	**Power Supplied (Vdc)**	**Frequency Measure Error (Hz)**	**Error (ppm)**	**Limit (ppm)**
Frequency Stability vs. Temperature				
-40	-48	-8.43	-0.010	1.5
-30	-48	-8.92	-0.010	1.5
-20	-48	-9.07	-0.010	1.5
-10	-48	-10.02	-0.011	1.5
0	-48	-9.46	-0.011	1.5
10	-48	-9.2	-0.010	1.5
20	-48	-9.05	-0.010	1.5
30	-48	-9.4	-0.011	1.5
40	-48	-8.9	-0.010	1.5
50	-48	-9.94	-0.011	1.5
55	-48	-9.41	-0.011	1.5
Frequency Stability vs. Voltage				
20	-40	-9.95	-0.011	1.5
20	-57	-9.95	-0.011	1.5

******* END OF REPORT *******