FCC
MEASUREMENT AND TEST REPORT
For
ZTE Corporation

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

FCC ID: Q78-C196
May 6, 2011

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

Test Engineer: Bloom

Report No.: FCC-2011-015

Test Date: Jun ,06 – Aug20, 2010

Reviewed By: Xie Yuming

Prepared By: ZTE Corporation.

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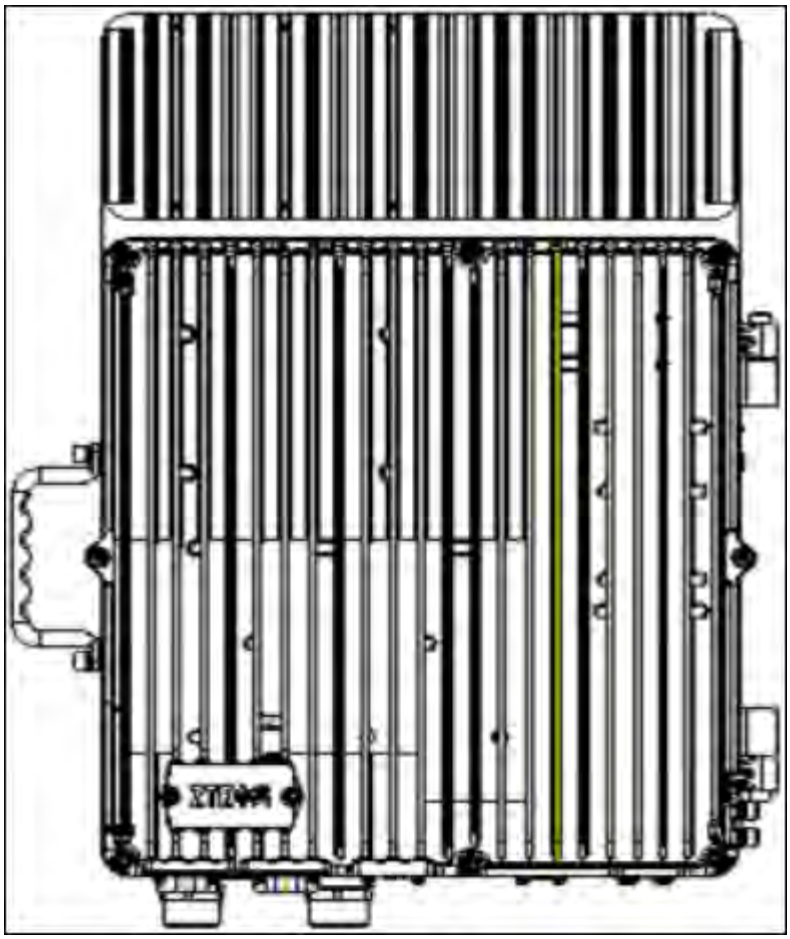
2 GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The ZTE Corporation's product, model number: ZXSDR R8860 C196or the "EUT" as referred to in this report is a CDMA Remote Radio Unit.

Technical specification:
Size: 500 mm × 320 mm × 172 mm(H x W x D)
Input voltage: -57 ~ - 40Vdc
Frequency range: 1930MHz to1995MHz
(Bottom frequency is about 1930.8MHz, Middle frequency is about 1962.50MHz, Top frequency is about 1994.2MHz).
Max RF output power: 47.8dBm
Gain of the antenna: 13dBi
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 24 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. as well as the following parts:
Part 24 Wireless Communication Services
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

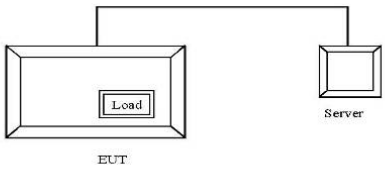
The Test site used by ZTE Corporation to collect test data is located in the 1/F,B2 Wing, ZTE Plaza, Keji Road South, Shenzhen, Guangdong, 518057, P.R.China，Tel: +86-755-26771609，Fax: +86-755-26770347. Test site at ZTE Corporation has been fully described in reports submitted to the Federal Communication 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. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.
The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 373926. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

3 SYSTEM TEST CONFIGURATION

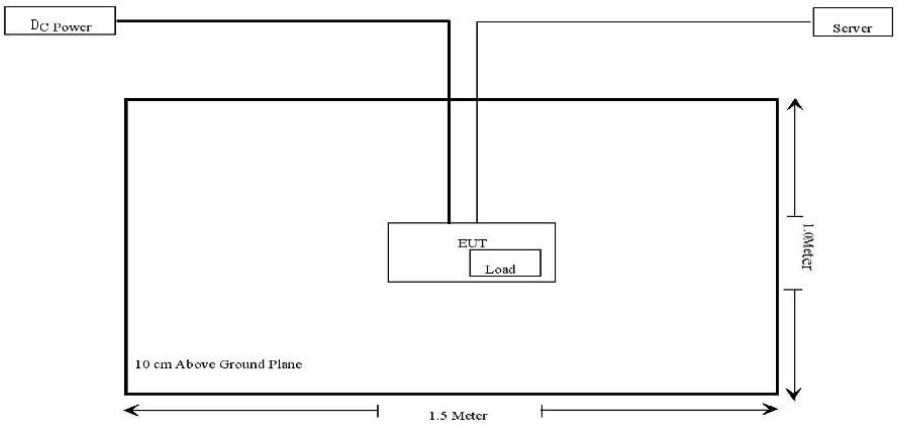
Description of Test Configuration

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.

Configuration of Test Setup



Block Diagram of Test Setup



4 SUMMARY OF TEST RESULTS

FCC RULES	IC RULES	DESCRIPTION OF TEST	RESULT
§2.1046 §24.232	RSS 133§6.4	Transmitter output Power	Compliant
§2.1091 §1.1037	§RSS 102 2.5.2	RF Exposure	Compliant
§2.1047	§RSS 133 6.2	Modulation Characteristic	Compliant
§2.1053	§RSS 133 6.2	Spurious Radiated Emissions	Compliant
§2.1051, §24.238	RSS 133 §6.5,Rss Gen§4.9	Spurious Emissions AT Antenna Terminals	Compliant
§2.1049 §24.229 §24.238	§RSS 133 4.6.1	Occupied Bandwidth	Compliant
§24.238	§RSS 133 6.5	Band Edge	Compliant
§ 2.1055 § 24.235	§RSS 133 6.3, §Rss Gen4.7	Frequency stability	Compliant

5 TRANSMITTER OUTPUT POWER

Applicable Standard： FCC §2.1046 §24.232, RSS 133§6.4

According to FCC §2.1046, §24.232, the EIRP(equivalent isotropically radiated power) must not exceed 1640 Watts.
According to RSS-133, SRSP 510 5.1.1the EIRP(equivalent isotropically radiated power) must not exceed 3280Watts/MHz for base station transmitters operating in the band of 1930 MHz to 1995MHz with the antenna height above average terrain up to 300 meters. If used in urban area, the limit should be 1640Watts/MHz.

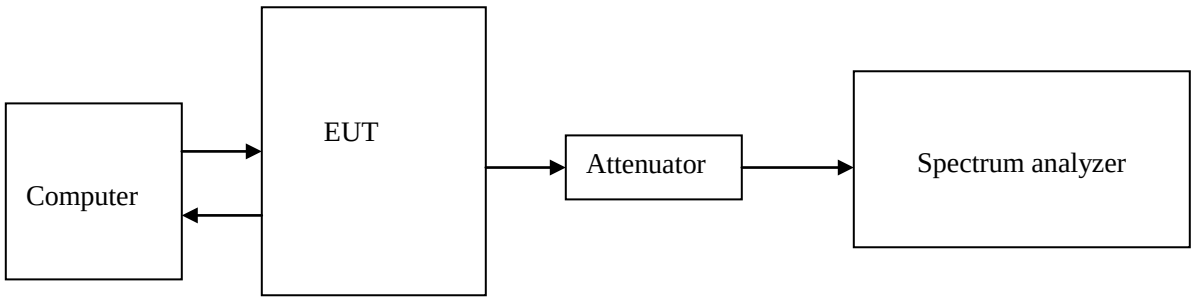
Note: EIRP= Max output Power+ Antenna gain- Cable Loss

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2011-4-8	2012-4-7
DTS	DTS100 40dB Attenuator	DTS100-40dB-N	N/A	N/A	N/A
Hewlett Packard	Hewlett Packard RF Cable	8120-6192	01428251	N/A	N/A

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

Test Procedure



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

Environmental Conditions

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

Test Result: Pass

Test Mode: Transmitting CDMA

Test Data:

Four Carriers (near top frequency and bottom frequency)

Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm	Antenna gain dBi	Cable Loss dB	EIRP(equivalent isotropically radiated power) dBm	Total Power in W
1932.675	1930.8/1932.05/1933.3 /1934.55	47.46	13	3	57.46	557
1962.50	1960.60/1961.85/1963. 10/1964.35	47.62	13	3	57.62	578
1992.325	1990.45/1991.7/1992.9 5/1994.2	47.47	13	3	57.47	558

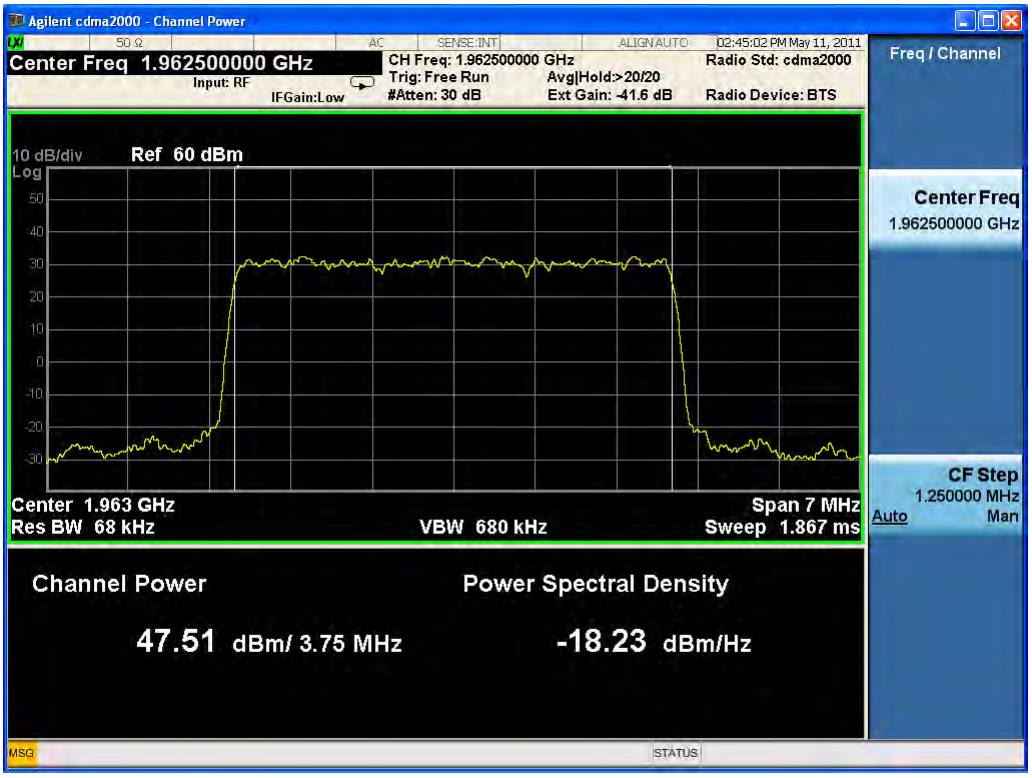

Agilent cdma2000 - Channel Power
Center Freq 1.932675000 GHz
Input: RF
IFGain:Low
CH Freq: 1.932675000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>20/20
Ext Gain: -41.6 dB
Radio Std: cdma2000
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 60 dBm
Center Freq
1.932675000 GHz
Center 1.933 GHz
Res BW 91 kHz
VBW 910 kHz
Span 10 MHz
Sweep 1.467 ms
CF Step
1.250000 MHz
Auto
Man
Channel Power
47.46 dBm/ 5 MHz
Power Spectral Density
-19.53 dBm/Hz


Agilent cdma2000 - Channel Power
Center Freq 1.962500000 GHz
Input: RF
IFGain:Low
CH Freq: 1.962500000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>20/20
Ext Gain: -41.6 dB
Radio Std: cdma2000
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 60 dBm
Center Freq
1.962500000 GHz
Center 1.963 GHz
Res BW 91 kHz
VBW 910 kHz
Span 10 MHz
Sweep 1.467 ms
CF Step
1.250000 MHz
Auto
Man
Channel Power
47.62 dBm/ 5 MHz
Power Spectral Density
-19.37 dBm/Hz
MSG
STATUS


Agilent cdma2000 - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:18:23 PM May 11, 2011
Center Freq 1.992325000 GHz
Input: RF
IFGain:Low
CH Freq: 1.992325000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>20/20
Ext Gain: -41.6 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
1.992325000 GHz
CF Step
1.250000 MHz
Auto
Man
Center 1.992 GHz
Res BW 91 kHz
VBW 910 kHz
Span 10 MHz
Sweep 1.467 ms
Channel Power
47.47 dBm/ 5 MHz
Power Spectral Density
-19.52 dBm/Hz
start
2:18 PM

Three carriers

Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm	Antenna gain dBi	Cable Loss dB	EIRP(equivalent isotropically radiated power) dBm	Total Power in W
1932.05	1930.8/1932.05/1933.3	47.57	13	3	57.57	571
1962.50	1961.25/1962.5/1963.75	47.51	13	3	57.51	564
1992.95	1991.7/1992.95/1994.2	47.49	13	3	57.49	561


Agilent cdma2000 - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:45:02 PM May 11, 2011
Center Freq 1.962500000 GHz
Input: RF
IFGain:Low
CH Freq: 1.962500000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>20/20
Ext Gain: -41.6 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
1.962500000 GHz
Center 1.963 GHz
Res BW 68 kHz
VBW 680 kHz
Span 7 MHz
Sweep 1.867 ms
CF Step
1.250000 MHz
Auto
Man
Channel Power
47.51 dBm/ 3.75 MHz
Power Spectral Density
-18.23 dBm/Hz
MSG
STATUS


Agilent cdma2000 - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:32:42 PM May 11, 2011
Center Freq 1.992950000 GHz
Input: RF
IFGain:Low
CH Freq: 1.992950000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>20/20
Ext Gain: -41.6 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
1.992950000 GHz
Center 1.993 GHz
Res BW 68 kHz
VBW 680 kHz
Span 7 MHz
Sweep 1.867 ms
CF Step
1.250000 MHz
Auto
Man
Channel Power
47.49 dBm/ 3.75 MHz
Power Spectral Density
-18.25 dBm/Hz
MSG
STATUS

Two carriers

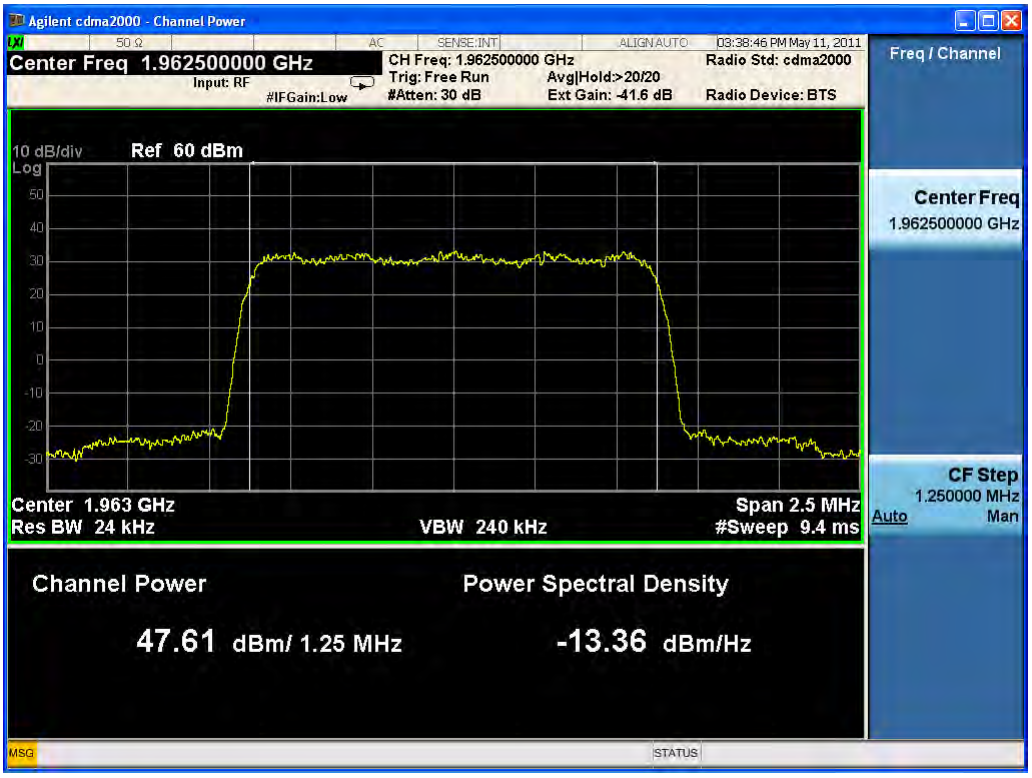
Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm	Antenna gain dBi	Cable Loss dB	EIRP(equivalent isotropically radiated power) dBm	Total Power in W
1931.425	1930.8/1932.05	47.30	13	3	57.30	537
1962.475	1.96185/1.96310	47.45	13	3	57.45	556
1993.575	1992.95/1994.2	47. 22	13	3	57.22	527

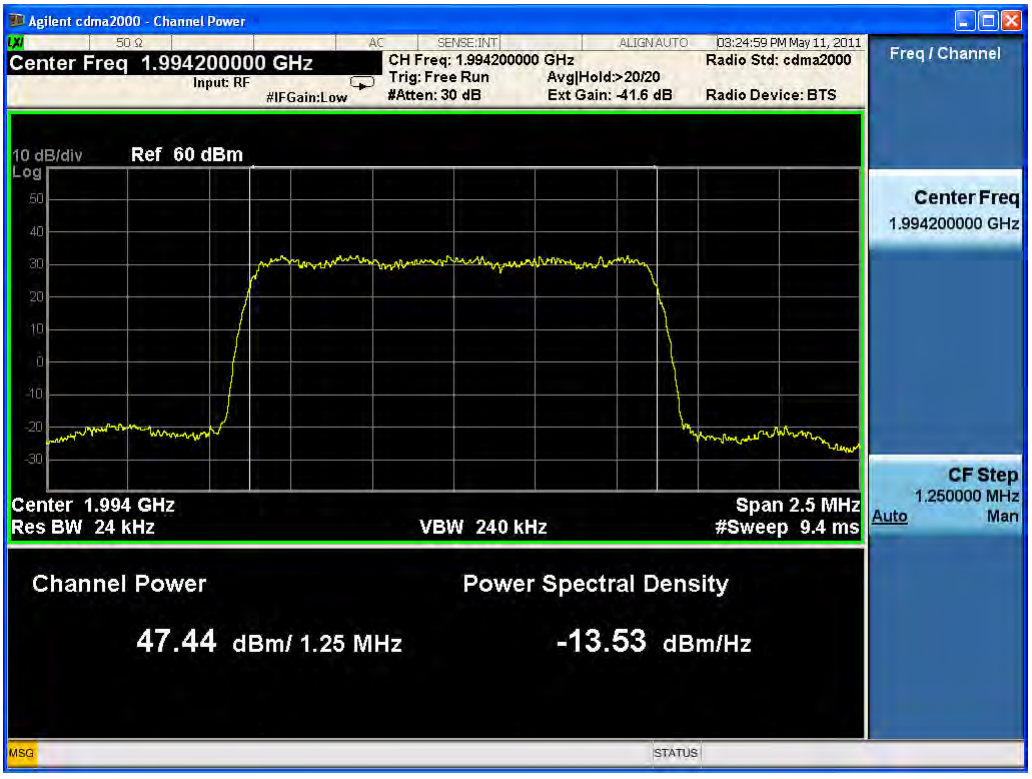

Agilent cdma2000 - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
03:10:13 PM May 11, 2011
Center Freq 1.962475000 GHz
Input: RF
IFGain:Low
CH Freq: 1.962475000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>20/20
Ext Gain: -41.6 dB
Radio Std: cdma2000
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 60 dBm
50
40
30
20
10
0
-10
-20
-30
Center Freq
1.962475000 GHz
Center 1.962 GHz
Res BW 47 kHz
VBW 470 kHz
Span 5 MHz
Sweep 2.733 ms
CF Step
1.250000 MHz
Auto
Man
Channel Power
47.45 dBm/ 2.5 MHz
Power Spectral Density
-16.53 dBm/Hz
MSG
STATUS


Agilent cdma2000 - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
03:15:09 PM May 11, 2011
Center Freq 1.993575000 GHz
Input: RF
IFGain:Low
CH Freq: 1.993575000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>20/20
Ext Gain: -41.6 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
1.993575000 GHz
Center 1.994 GHz
Res BW 47 kHz
VBW 470 kHz
Span 5 MHz
Sweep 2.733 ms
CF Step
1.250000 MHz
Auto
Man
Channel Power
47.22 dBm/ 2.5 MHz
Power Spectral Density
-16.76 dBm/Hz
MSG
STATUS

One carrier

Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm	Antenna gain dBi	Cable Loss dB	EIRP(equivalent isotropically radiated power) dBm	Total Power in W
1930.8	1930.8	47.35	13	3	57.35	543
1962.50	1962.50	47.61	13	3	57.61	577
1994.2	1994.2	47.44	13	3	57.44	555


Agilent cdma2000 - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
03:38:46 PM May 11, 2011
Center Freq 1.962500000 GHz
Input: RF
#IFGain:Low
CH Freq: 1.962500000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>20/20
Ext Gain: -41.6 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
1.962500000 GHz
Center 1.963 GHz
Res BW 24 kHz
VBW 240 kHz
Span 2.5 MHz
#Sweep 9.4 ms
CF Step
1.250000 MHz
Auto
Man
Channel Power
47.61 dBm/ 1.25 MHz
Power Spectral Density
-13.36 dBm/Hz
MSG
STATUS


Agilent cdma2000 - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
03:24:59 PM May 11, 2011
Center Freq 1.994200000 GHz
Input: RF
#IFGain:Low
CH Freq: 1.994200000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>20/20
Ext Gain: -41.6 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
1.994200000 GHz
Center 1.994 GHz
Res BW 24 kHz
VBW 240 kHz
Span 2.5 MHz
#Sweep 9.4 ms
CF Step
1.250000 MHz
Auto
Man
Channel Power
47.44 dBm/ 1.25 MHz
Power Spectral Density
-13.53 dBm/Hz
MSG
STATUS

6 RF EXPOSURE

Applicable standard: FCC §2.1091 §1.1037 and IC §RSS 102 2.5.2

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)

(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

Test Data

Predication of MPE limit at a given distance
Equation from page 18 of OET Bulletin 65, Edition 97-01
$S = PG/ 4\pi R^2$
Where: S = power density
P = power input to antenna
G = power gain of the antenna in the direction of interest relative to an isotropic radiator
R = distance to the center of radiation of the antenna

Maximum peak output power at antenna input terminal: 47.62(dBm) Maximum peak output power at antenna input terminals: 57.8(W)
Prediction distance: 400 (cm)
Predication frequency: 1932.525 (MHz)
Antenna Gain (typical): 13 (dBi) / 20 (numeric)
Power density at predication frequency at 400 cm: 0.575 (mW/cm2)
MPE limit for uncontrolled exposure at prediction frequency: 1.0 (mW/cm2)

Test Result: pass

7 MODULATION CHARACTERISTIC

Applicable Standard: FCC §2.1047 and IC §RSS 133 6.2

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2011-4-8	2012-4-7
DTS	DTS100 40dB Attenuator	DTS100-40dB-N	N/A	N/A	N/A
Hewlett Packard	Hewlett Packard RF Cable	8120-6192	01428251	N/A	N/A

*__statement of traceability:__ ZTE Corporation Reliability Testing Center attest that all calibration have been performed per the NVLAP requirements, traceable to NIST.

Test Procedure

CDMA digital mode is used by EUT.

Test Data Environmental Conditions

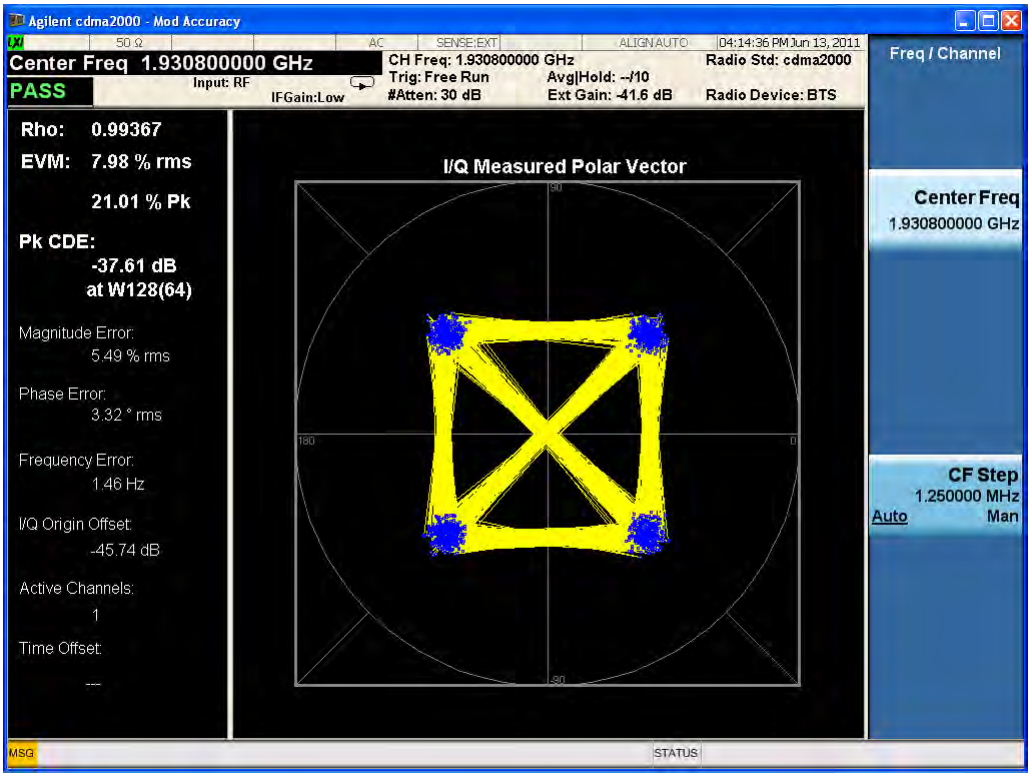
Temperature:	20 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

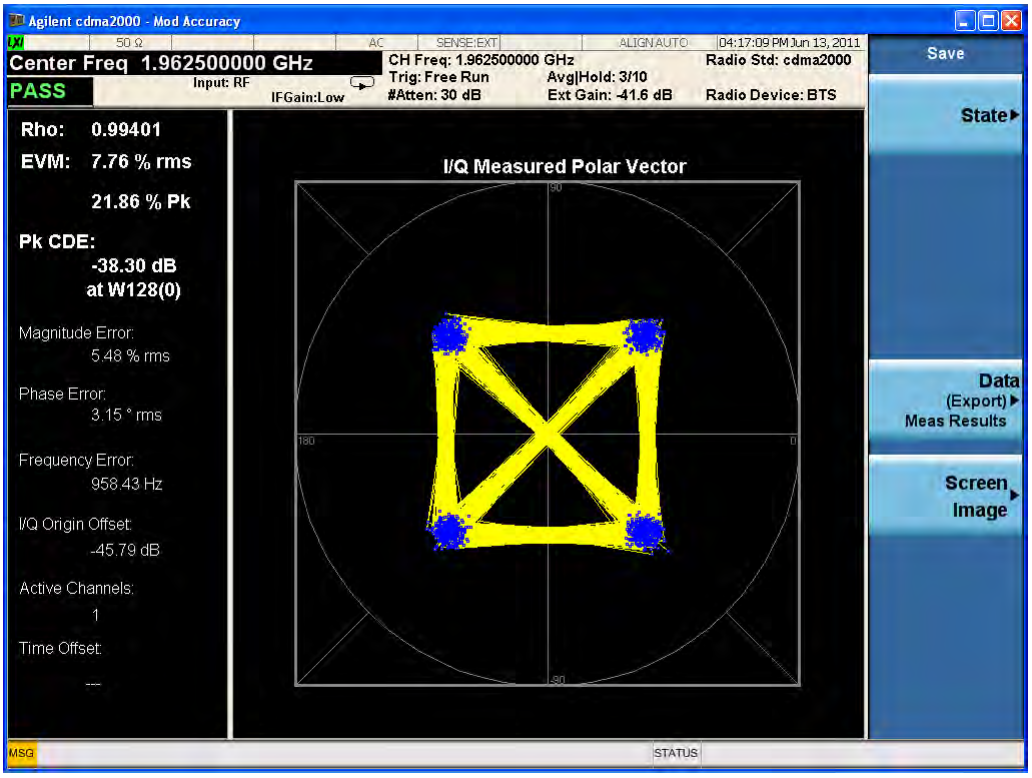
Test Result: Pass

Test Mode: Transmitting CDMA

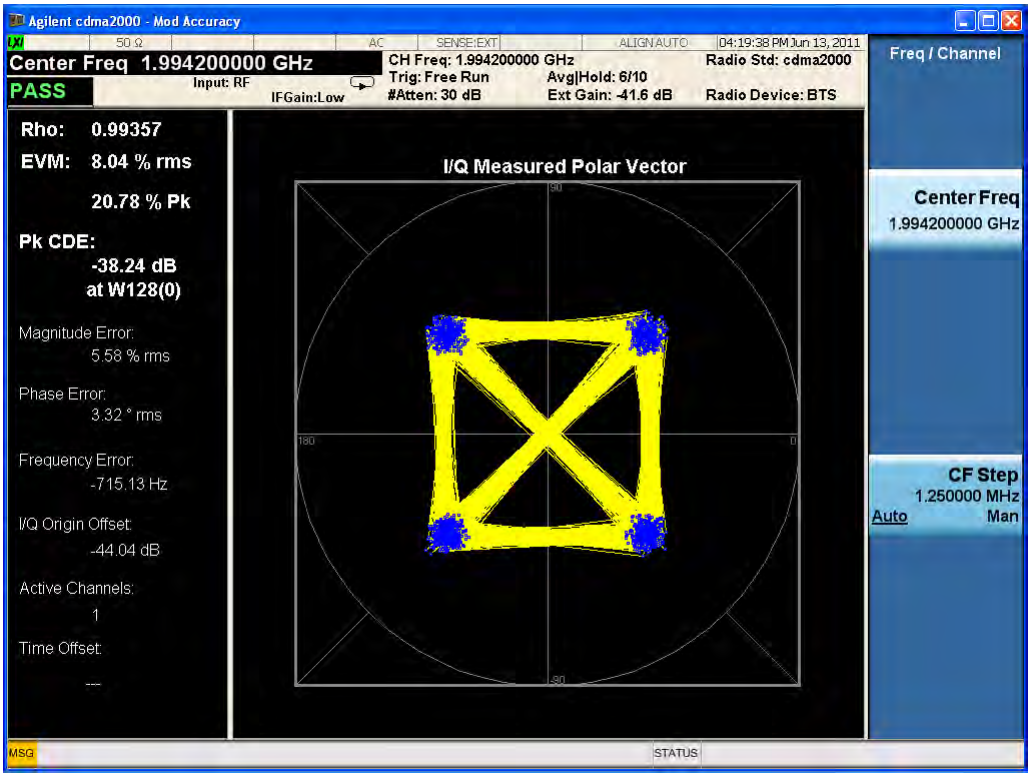
Test Data:

Frequency (MHz)	Rho
1930.8	0.99367
1.962.50	0.99401
1994.2	0.99357




Agilent cdma2000 - Mod Accuracy
50 Ω
AC
SENSE:EXT
ALIGN AUTO
04:17:09 PM Jun 13, 2011
Center Freq 1.962500000 GHz
PASS
Input: RF
IFGain:Low
CH Freq: 1.962500000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold: 3/10
Ext Gain: -41.6 dB
Radio Std: cdma2000
Radio Device: BTS
Save
State
Rho: 0.99401
EVM: 7.76 % rms
21.86 % Pk
Pk CDE:
-38.30 dB
at W128(0)
Magnitude Error:
5.48 % rms
Phase Error:
3.15 ° rms
Frequency Error:
958.43 Hz
I/Q Origin Offset:
-45.79 dB
Active Channels:
1
Time Offset:

I/Q Measured Polar Vector
Data
(Export)
Meas Results
Screen
Image
MSG
STATUS


Agilent cdma2000 - Mod Accuracy
50 Ω
AC
SENSE:EXT
ALIGN AUTO
04:19:38 PM Jun 13, 2011
Center Freq 1.994200000 GHz
PASS
Input: RF
IFGain:Low
CH Freq: 1.994200000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold: 6/10
Ext Gain: -41.6 dB
Radio Std: cdma2000
Radio Device: BTS
Freq / Channel
Rho: 0.99357
EVM: 8.04 % rms
20.78 % Pk
Pk CDE:
-38.24 dB
at W128(0)
Magnitude Error:
5.58 % rms
Phase Error:
3.32 ° rms
Frequency Error:
-715.13 Hz
I/Q Origin Offset:
-44.04 dB
Active Channels:
1
Time Offset:

I/Q Measured Polar Vector
Center Freq
1.994200000 GHz
CF Step
1.250000 MHz
Auto
Man
MSG
STATUS

8 SPURIOUS RADIATED EMISSIONS

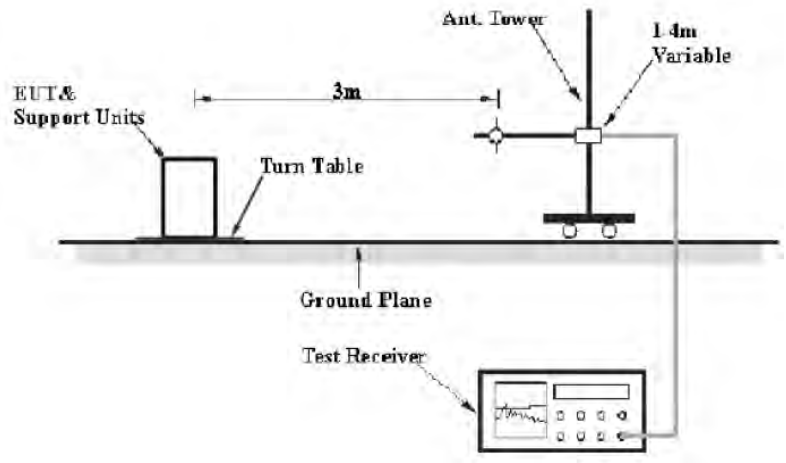
Applicable Standard: FCC CFR 47, §2.1053 and IC RSS133 §6.5, Rss Gen §4.9

Test Equipment List and Details

Manufacturer	Equipment	Model	Serial Number	Last Cal.	Cal. Interval
Albatross	Anechoic Chamber	3m Site	A00017354	2010-6-30	1 year
R&S	EMI Test Receiver	ESI26	100058	2010-10-29	1 year
R&S	Log periodic Antenna	HL562	100022	2010-8-5	1 year
R&S	Double-Ridged Waveguide Horn Antenna	HF906 TX	100032	2010-8-5	1 year

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. is 3.6dB.

EUT Setup



The radiated emission tests were performed in the 3-meter Chamber, using the setup accordance with the FCC part 2.1053.The specification used were the FCC 2.1053 limits and RSS 133 clause 6.5 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 1 percent as specified for 30MHz to 1GHz scaning, set at 1MHz for 1GHz to 20GHz scaning.

Test Results Summary: PASS

Environmental Conditions

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

Test data

Indicated		Table	Test Antenna		Substituted		Cable Loss (dB)	Effective radiated power （dBm）	Dipole Antenna	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Frequency (GHz)	Amp. (dBuV)	Angle Degree	Height(M)	Polar H/V	Level (dBm)	Antenna Gain Correction						
35.831663	28.28	261.10	1	V	-36.11	-39.76	0.5	-76.37	2.15	-78.52	-13	65.52
133.026052	31.58	98.50	2	V	-54.22	-9.59	0.8	-64.61	2.15	-66.76	-13	53.76
982.50501	33.57	155.70	1	V	-62.54	-4.1	2.6	-69.24	2.15	-71.39	-13	58.39
1384.76954	46.76	1.70	2	V	-57.03	4.25	3.1	-55.88	2.15	-58.03	-13	45.03
1961.92385	85.11	49.50	1	V	-22.25	6.55	3.8	-19.5	2.15	-21.65	-13	8.65
2927.85571	59.6	155.70	1	V	-42.14	7.95	4.6	-38.79	2.15	-40.94	-13	27.94
133.026052	32.02	98.70	2	H	-54.14	-9.59	0.8	-64.53	2.15	-66.68	-13	53.68
191.342685	28.64	204.30	2	H	-70.75	-0.03	1.1	-71.88	2.15	-74.03	-13	61.03
1000	33.3	204.30	2	H	-58.7	4.25	2.7	-57.15	2.15	-59.3	-13	46.3
1384.76954	47.12	1.80	2	H	-58.98	4.25	3.1	-57.83	2.15	-59.98	-13	46.98
1961.92385	80	49.30	1	H	-26.6	6.55	3.8	-23.85	2.15	-26	-13	13
2775.5511	59.49	360.0	1	H	-48.91	7.95	4.4	-45.36	2.15	-47.51	-13	34.51

Radiation emission spurious below 3GHz

Indicated		Table	Test Antenna		Substituted		Cable Loss (dB)	Effective radiated power （dBm）	Dipole Antenna	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Frequency (MHz)	Amp. (dBuV)	Angle Degree	Height(M)	Polar H/V	Level (dBm)	Antenna Gain Correction						
3753.50701	41.31	99.20	1	V	-66.7	7.75	5.1	-64.05	2.15	-66.2	-13	53.2
3857.71543	45.2	30.80	1	V	-59.96	7.75	5.2	-57.41	2.15	-59.56	-13	46.56
5797.59519	55.7	30.80	1	V	-47.78	9.05	6.5	-45.23	2.15	-47.38	-13	34.38
7714.42886	52.79	327.20	2	V	-59.56	9.25	7.7	-58.01	2.15	-60.16	-13	47.16
9846.19239	55.18	259.50	2	V	-53.64	9.95	8.9	-52.59	2.15	-54.74	-13	41.74
12623.2465	56.23	30.80	1	V	-53.47	12.15	9.9	-51.22	2.15	-53.37	-13	40.37
3617.23447	41.77	232.80	1	H	-61.49	7.75	5	-58.74	2.15	-60.89	-13	47.89
3857.71543	49.17	30.10	1	H	-52.39	7.75	5.2	-49.84	2.15	-51.99	-13	38.99
5797.59519	55.35	30.10	1	H	-43.26	9.05	6.5	-40.71	2.15	-42.86	-13	29.86
7725.9519	55.68	360.00	1	H	-52.95	9.25	7.7	-51.4	2.15	-53.55	-13	40.55
9661.82365	56.88	30.10	1	H	-52.06	9.95	8.8	-50.91	2.15	-53.06	-13	40.06
11828.1563	56.28	232.80	1	H	-49.92	11.85	9.7	-47.77	2.15	-49.92	-13	36.92

Radiation emission spurious above 3GHz

9 SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Applicable Standard: FCC§2.1051, §24.238 IC §RSS 133 6.5

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

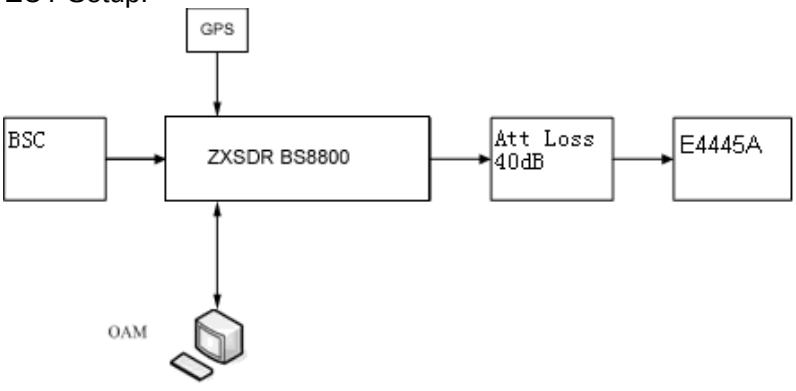
Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2011-4-8	2012-4-7
DST	DST100 40dB Attenuator	DTS100-40dB-N	N/A	N/A	N/A
Hewlett Packard	Hewlett Packard RF Cable	8120-6192	01428251	N/A	N/A

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

Test Procedure

EUT Setup:



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

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 9KHz to 150KHZ scaning, set at 10KHz for 150KHz to 30MHz scaning, set at 1MHz or 30MHz for 1GHz to 20GHz scaning. Sufficient scans were taken to show any out of band emissions up

to 10th harmonic.

Test Data Environmental Conditions

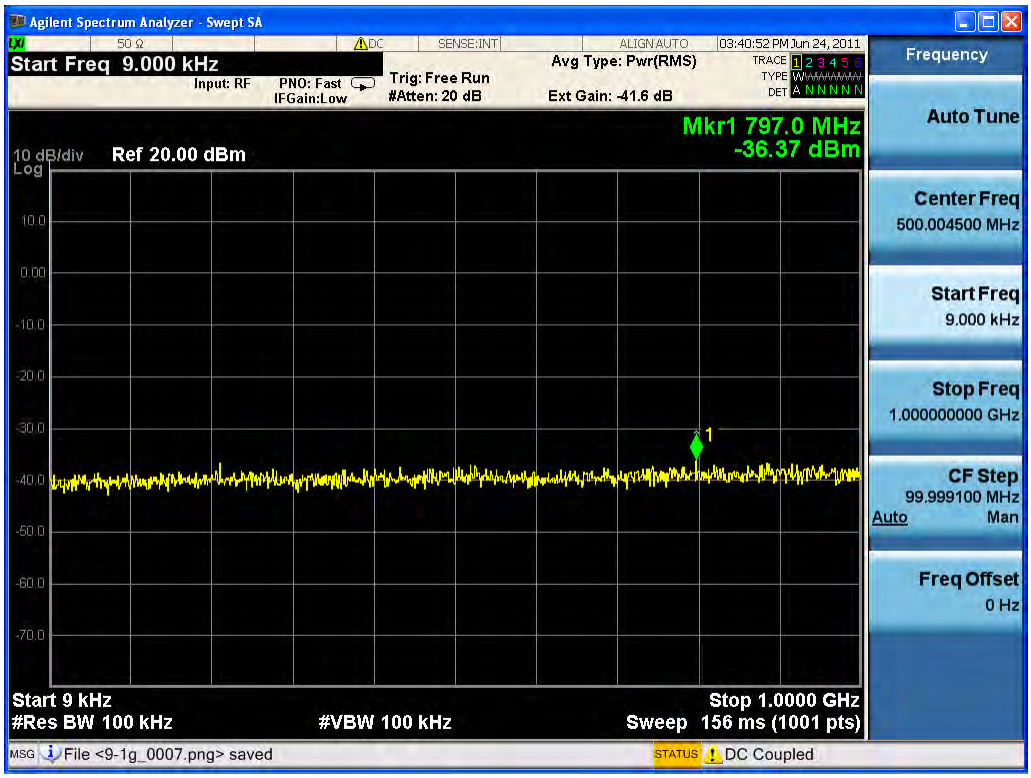
Temperature:	20 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

Test Result: Pass

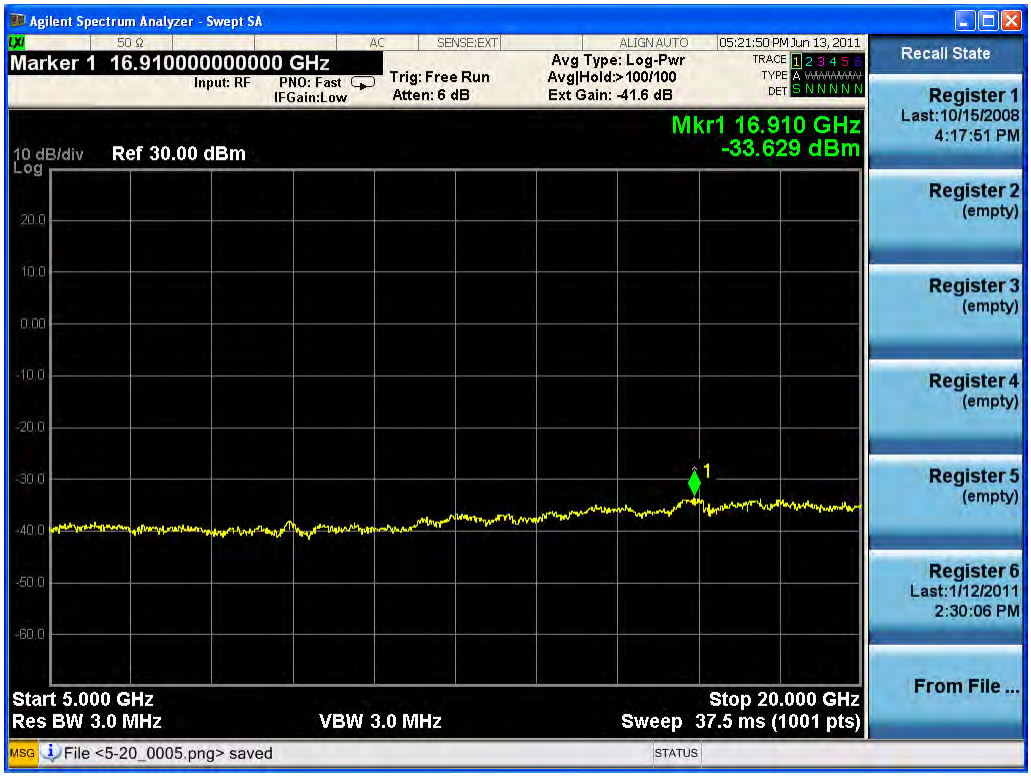
Test Mode: Transmitting CDMA

Test Data:

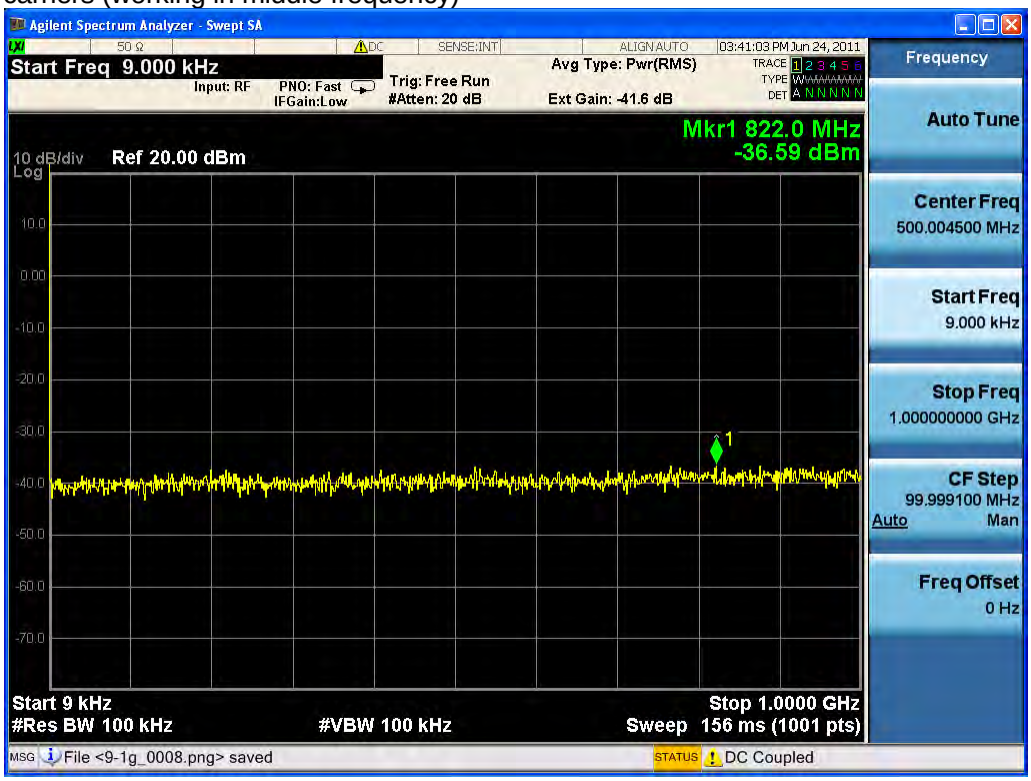
Four Carriers (working in bottom frequency)

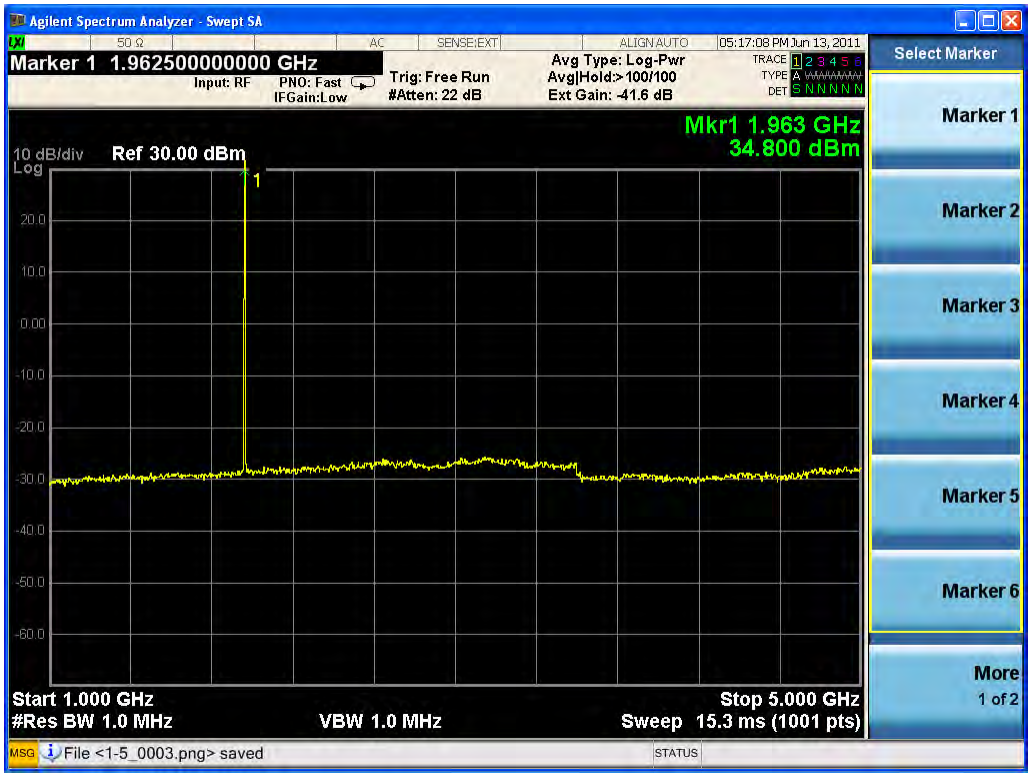


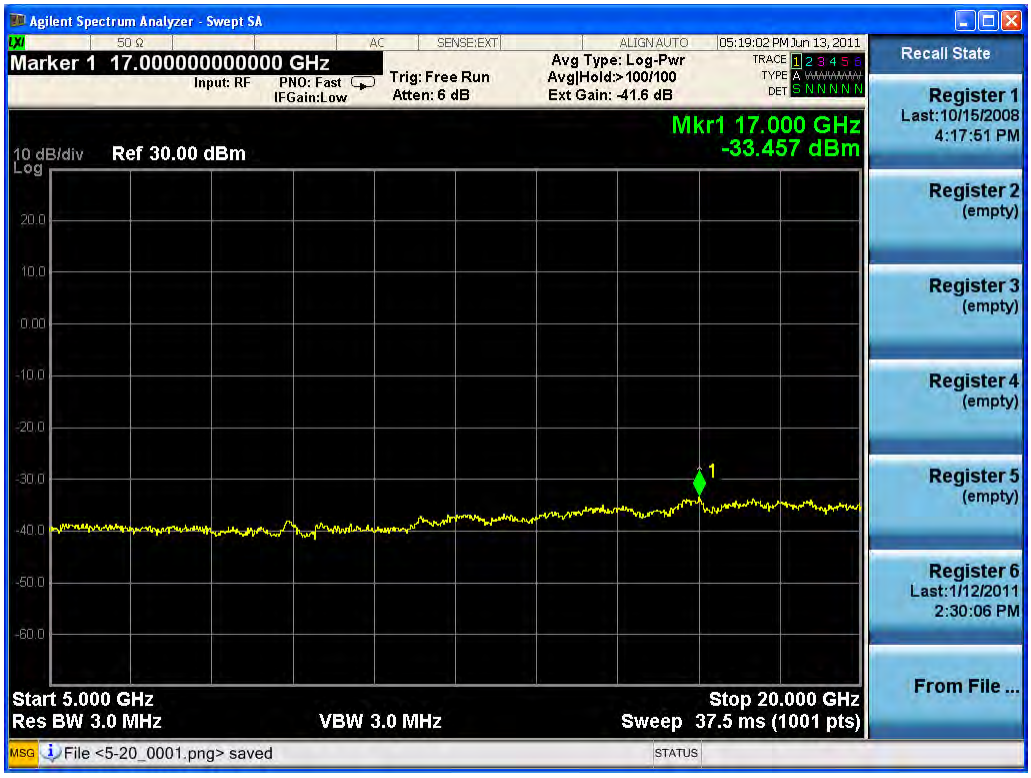

Agilent Spectrum Analyzer - Swept SA
Marker 1 1.931000000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -41.6 dB
05:23:08 PM Jun 13, 2011
Mkr1 1.931 GHz
39.857 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 1.000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 5.000 GHz
Sweep 15.3 ms (1001 pts)
File <1-5_0001.png> saved
Recall State
Register 1
Last:10/15/2008
4:17:51 PM
Register 2
(empty)
Register 3
(empty)
Register 4
(empty)
Register 5
(empty)
Register 6
Last:1/12/2011
2:30:06 PM
From File ...


Agilent Spectrum Analyzer - Swept SA
Marker 1 16.910000000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -41.6 dB
05:21:50 PM Jun 13, 2011
Mkr1 16.910 GHz
-33.629 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 5.000 GHz
Res BW 3.0 MHz
VBW 3.0 MHz
Stop 20.000 GHz
Sweep 37.5 ms (1001 pts)
File <5-20_0005.png> saved
Recall State
Register 1
Last:10/15/2008
4:17:51 PM
Register 2
(empty)
Register 3
(empty)
Register 4
(empty)
Register 5
(empty)
Register 6
Last:1/12/2011
2:30:06 PM
From File ...

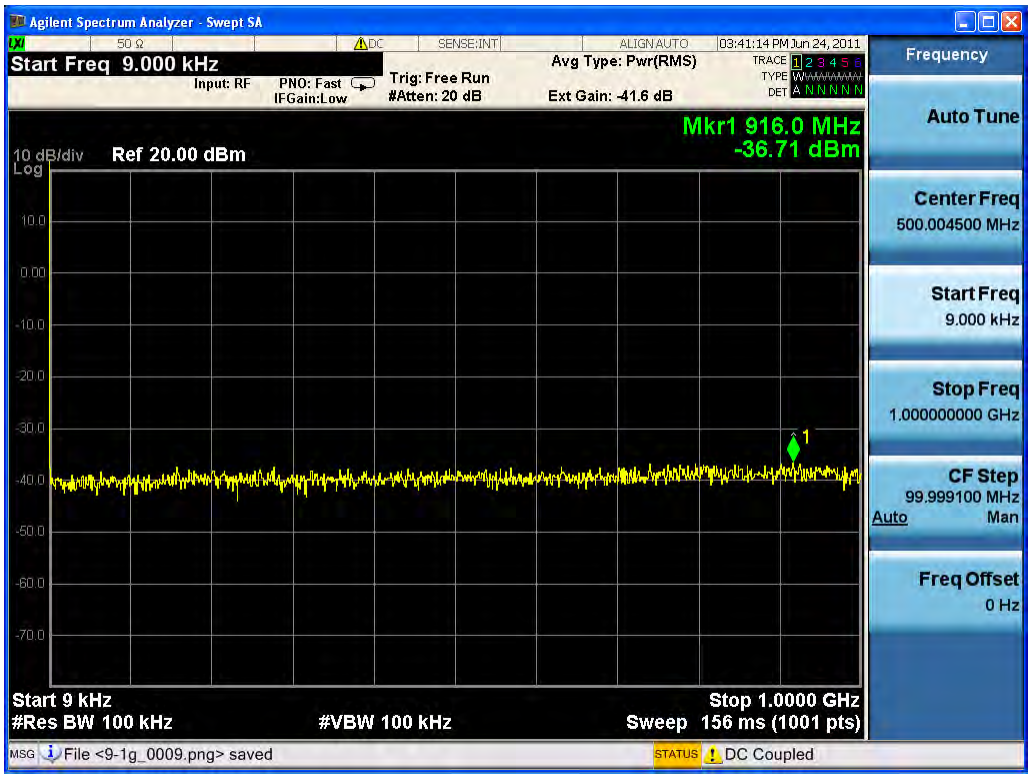
Four carriers (working in middle frequency)

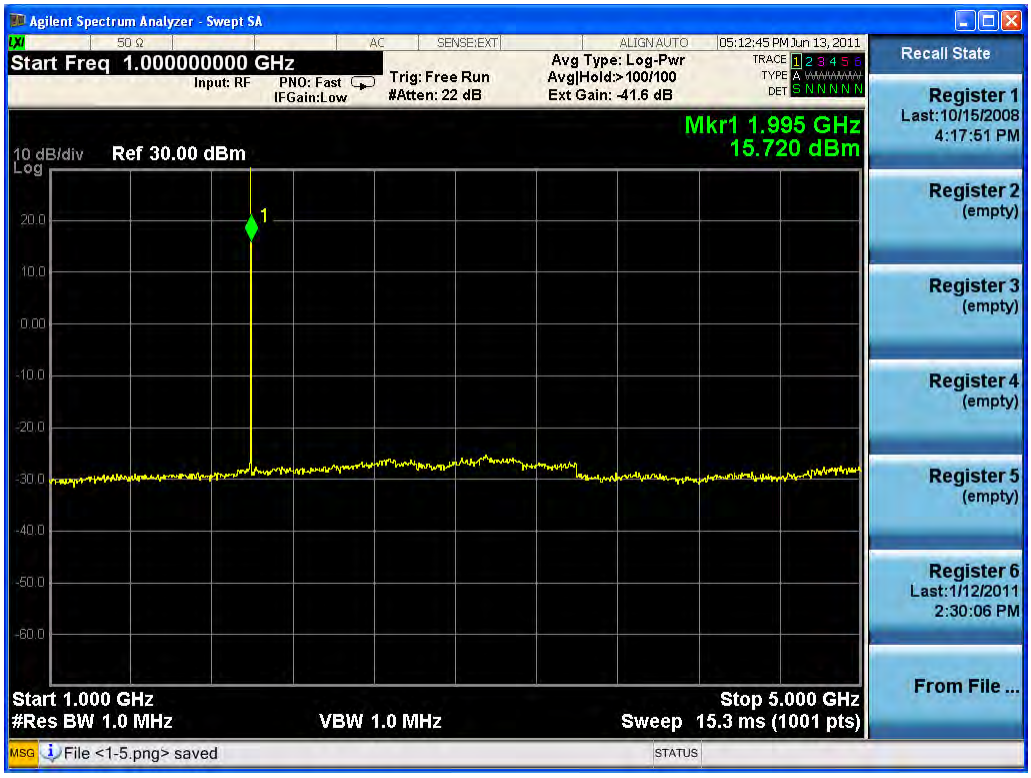


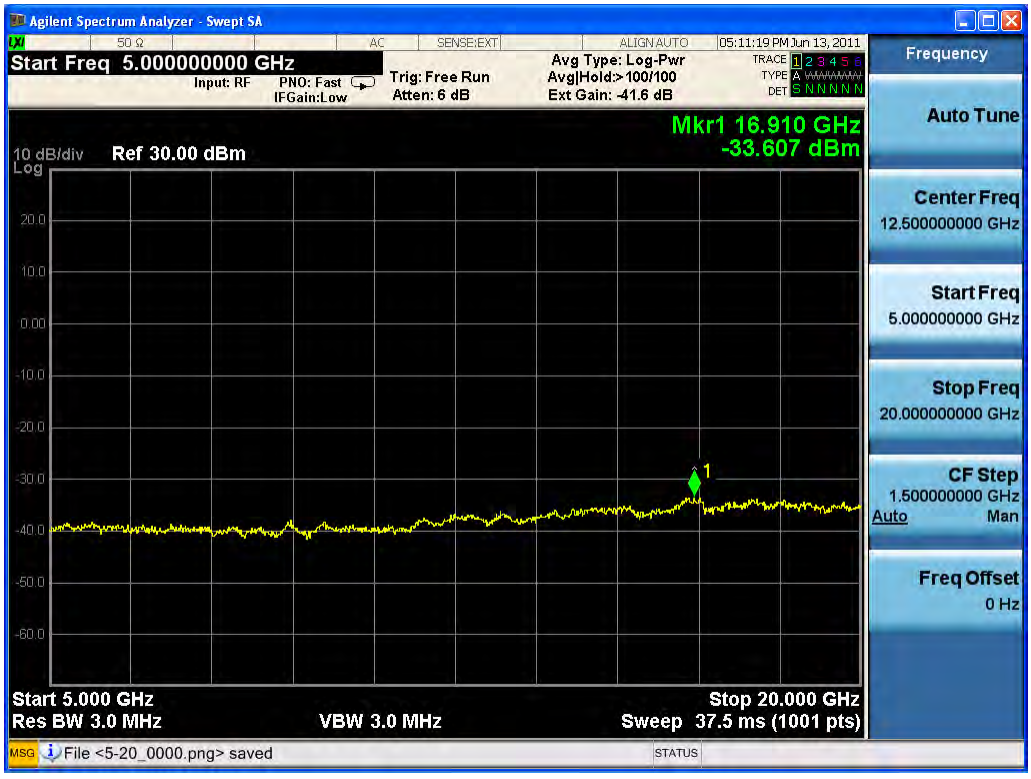




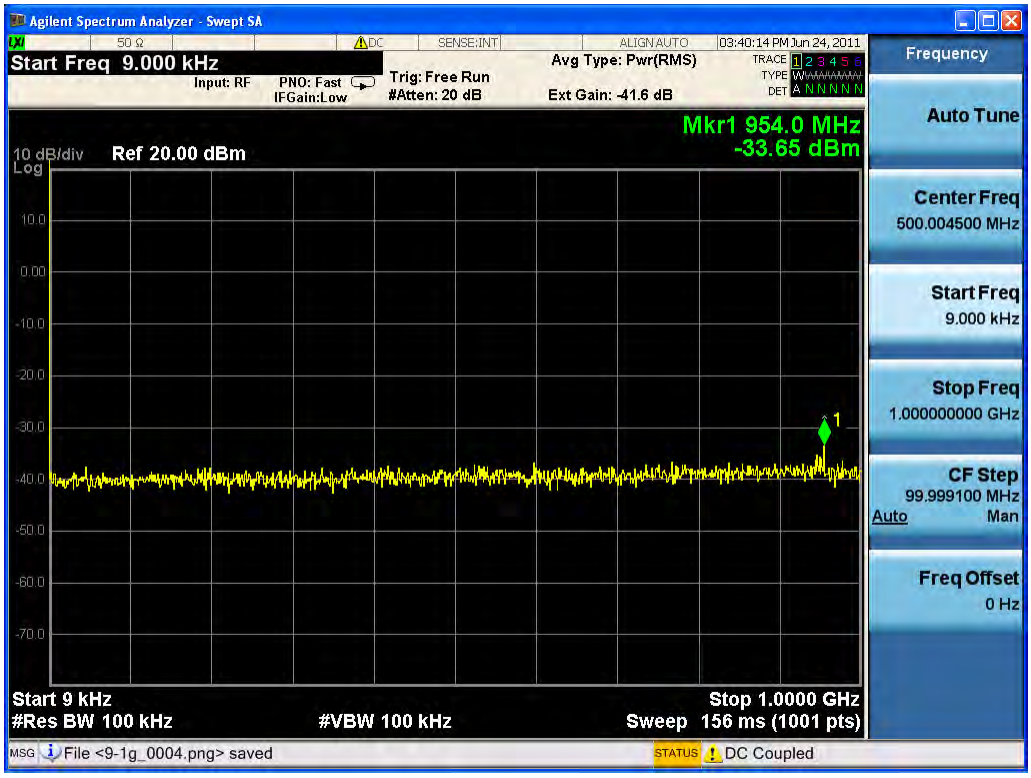
Four carriers (working in top frequency)

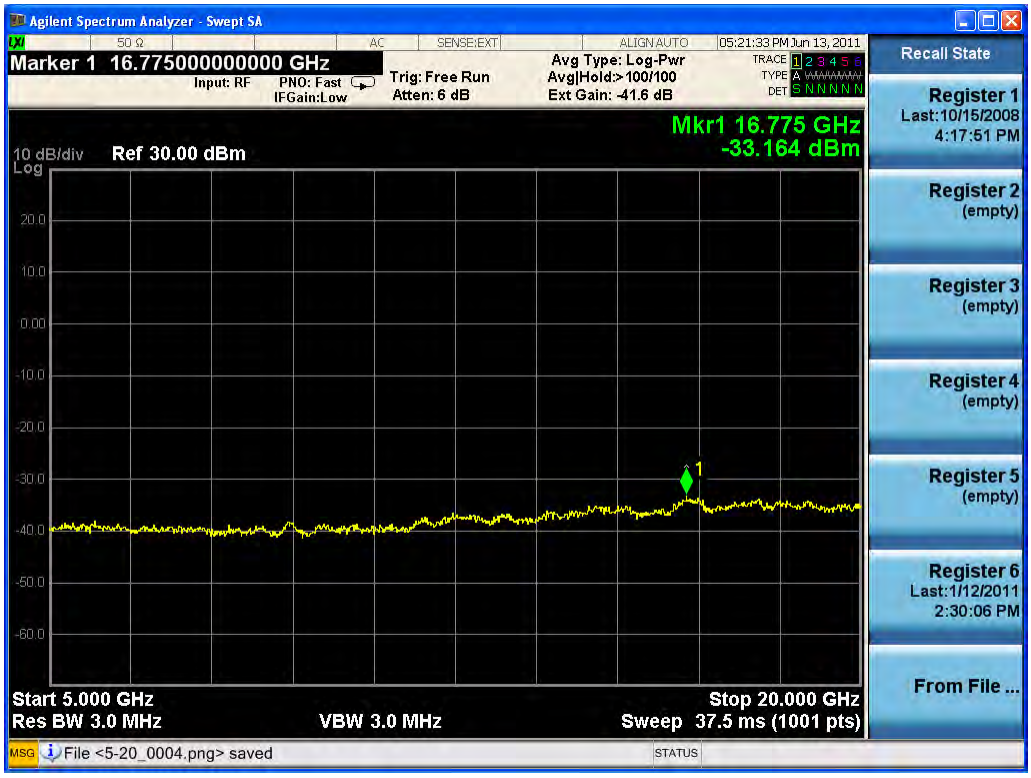



Agilent Spectrum Analyzer - Swept SA
Start Freq 1.000000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -41.6 dB
05:12:45 PM Jun 13, 2011
Mkr1 1.995 GHz
15.720 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 1.000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 5.000 GHz
Sweep 15.3 ms (1001 pts)
File <1-5.png> saved
Recall State
Register 1
Last:10/15/2008
4:17:51 PM
Register 2
(empty)
Register 3
(empty)
Register 4
(empty)
Register 5
(empty)
Register 6
Last:1/12/2011
2:30:06 PM
From File ...

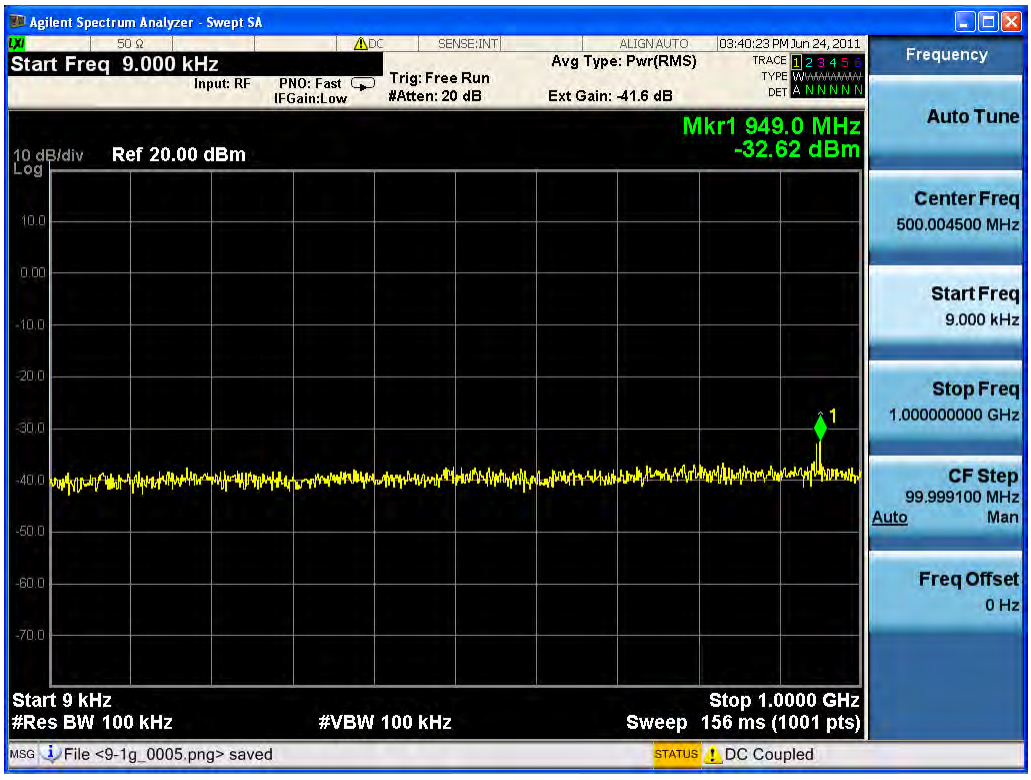

Agilent Spectrum Analyzer - Swept SA
Start Freq 5.000000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -41.6 dB
05:11:19 PM Jun 13, 2011
Mkr1 16.910 GHz
-33.607 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 5.000 GHz
Res BW 3.0 MHz
VBW 3.0 MHz
Stop 20.000 GHz
Sweep 37.5 ms (1001 pts)
File <5-20_0000.png> saved
Frequency
Auto Tune
Center Freq
12.500000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
20.000000000 GHz
CF Step
1.500000000 GHz
Auto
Man
Freq Offset
0 Hz

Three carriers (working in bottom frequency)

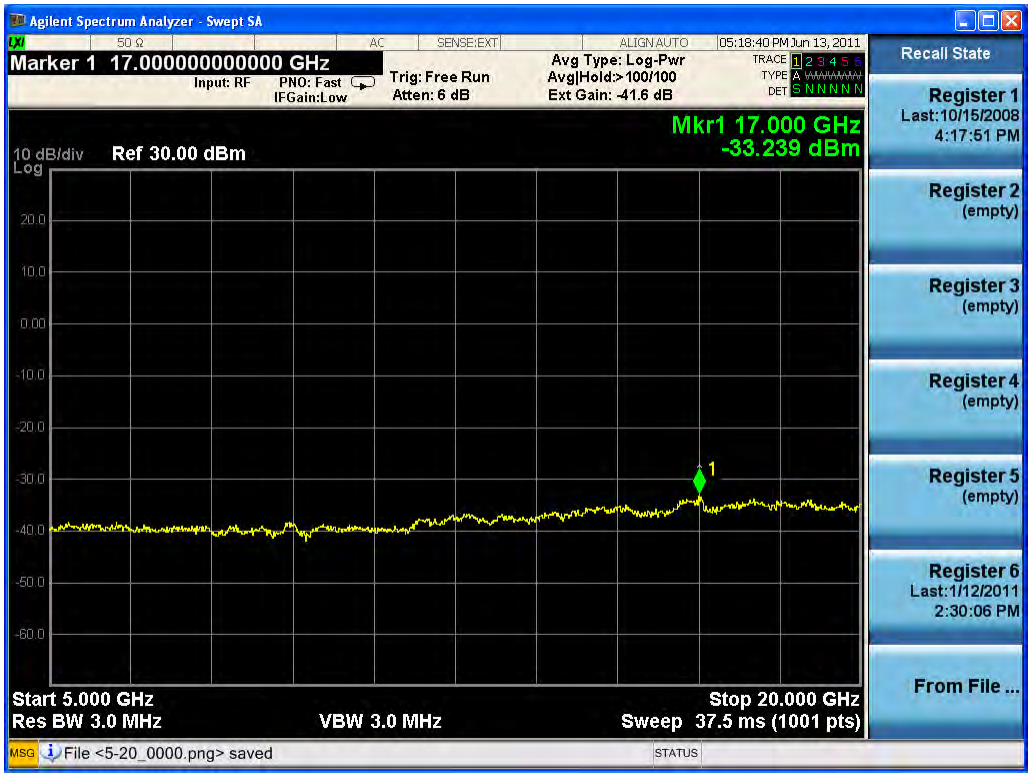




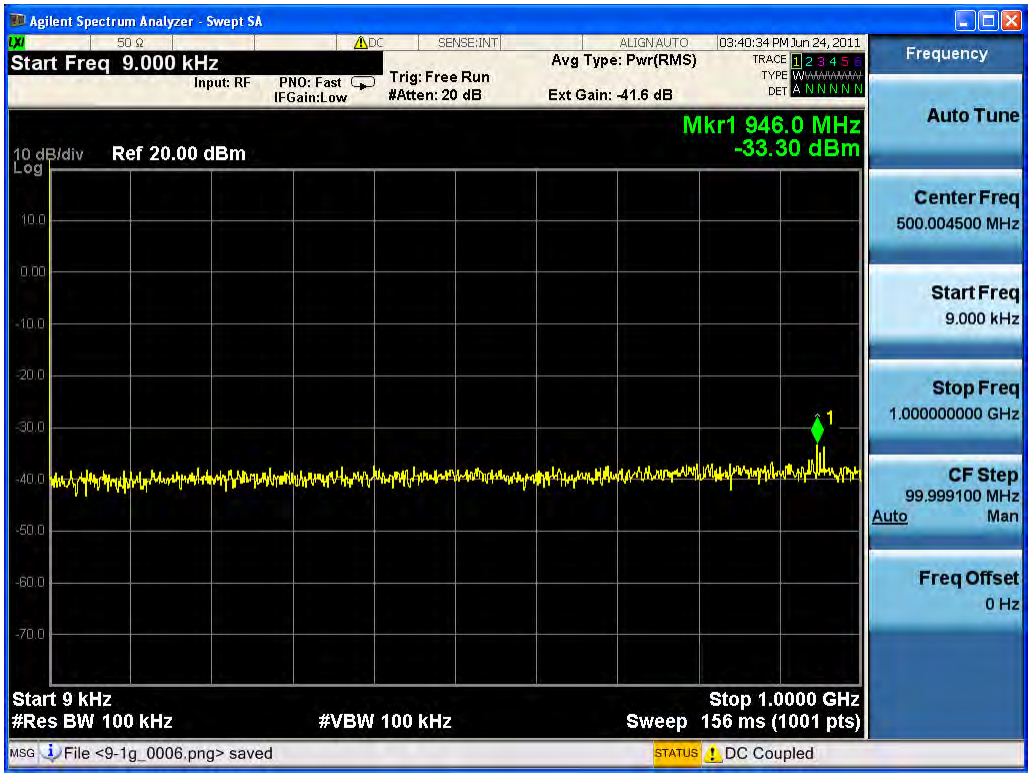
Three carriers (working in middle frequency)

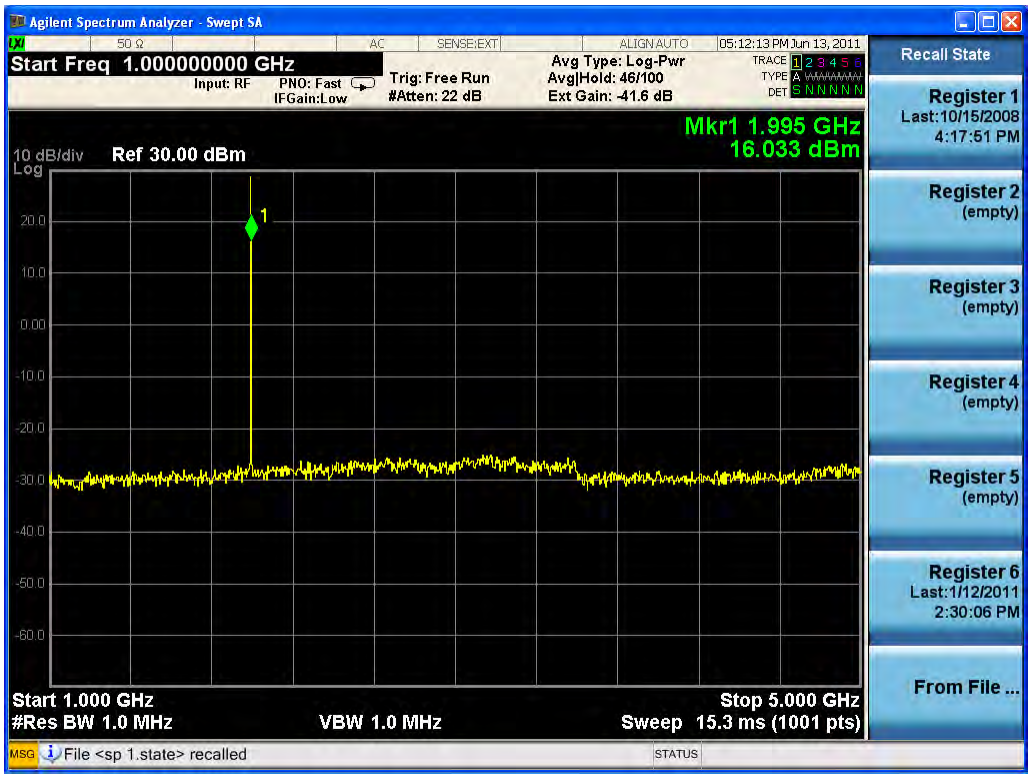



Agilent Spectrum Analyzer - Swept SA
Marker 1 1.962500000000 GHz
Input: RF PNO: Fast IFGain:Low
Trig: Free Run #Atten: 22 dB
Avg Type: Log-Pwr Avg|Hold:>100/100 Ext Gain: -41.6 dB
05:16:59 PM Jun 13, 2011
Mkr1 1.963 GHz 34.533 dBm
10 dB/div Log
Ref 30.00 dBm
Start 1.000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 5.000 GHz
Sweep 15.3 ms (1001 pts)
File <1-5_0002.png> saved
Select Marker
Marker 1
Marker 2
Marker 3
Marker 4
Marker 5
Marker 6
More 1 of 2

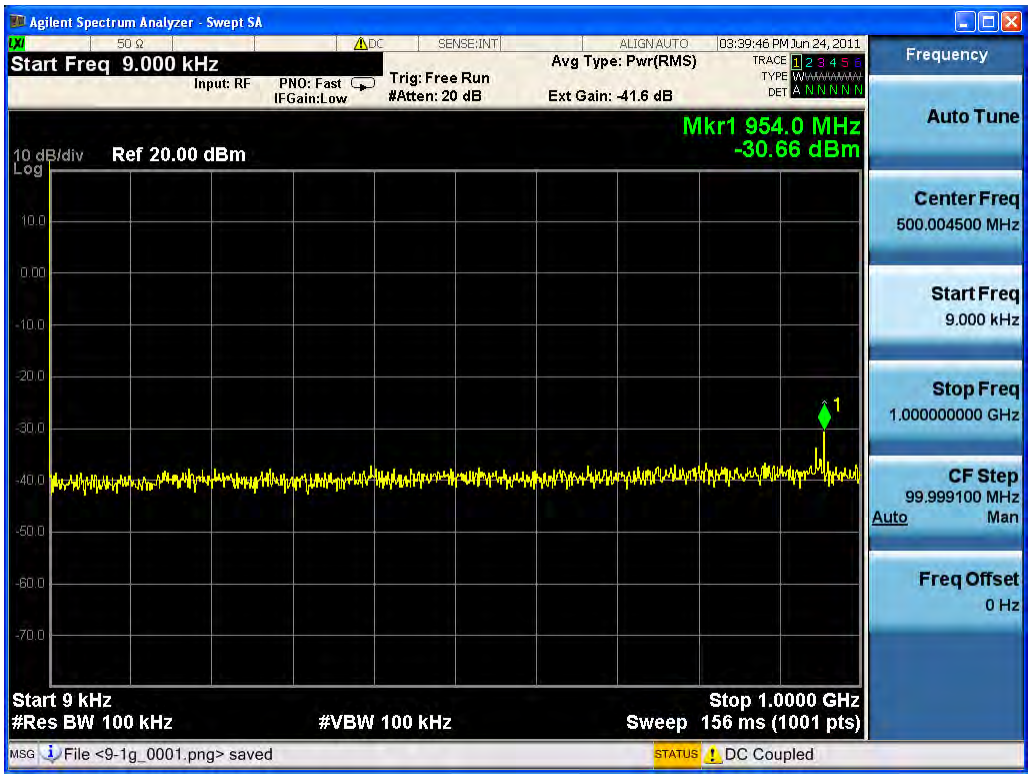

Agilent Spectrum Analyzer - Swept SA
Marker 1 17.000000000000 GHz
Input: RF PNO: Fast IFGain:Low
Trig: Free Run Atten: 6 dB
Avg Type: Log-Pwr Avg|Hold:>100/100 Ext Gain: -41.6 dB
05:18:40 PM Jun 13, 2011
Mkr1 17.000 GHz -33.239 dBm
10 dB/div Log
Ref 30.00 dBm
Start 5.000 GHz
Res BW 3.0 MHz
VBW 3.0 MHz
Stop 20.000 GHz
Sweep 37.5 ms (1001 pts)
File <5-20_0000.png> saved
Recall State
Register 1 Last:10/15/2008 4:17:51 PM
Register 2 (empty)
Register 3 (empty)
Register 4 (empty)
Register 5 (empty)
Register 6 Last:1/12/2011 2:30:06 PM
From File ...

Three carriers (working in top frequency)





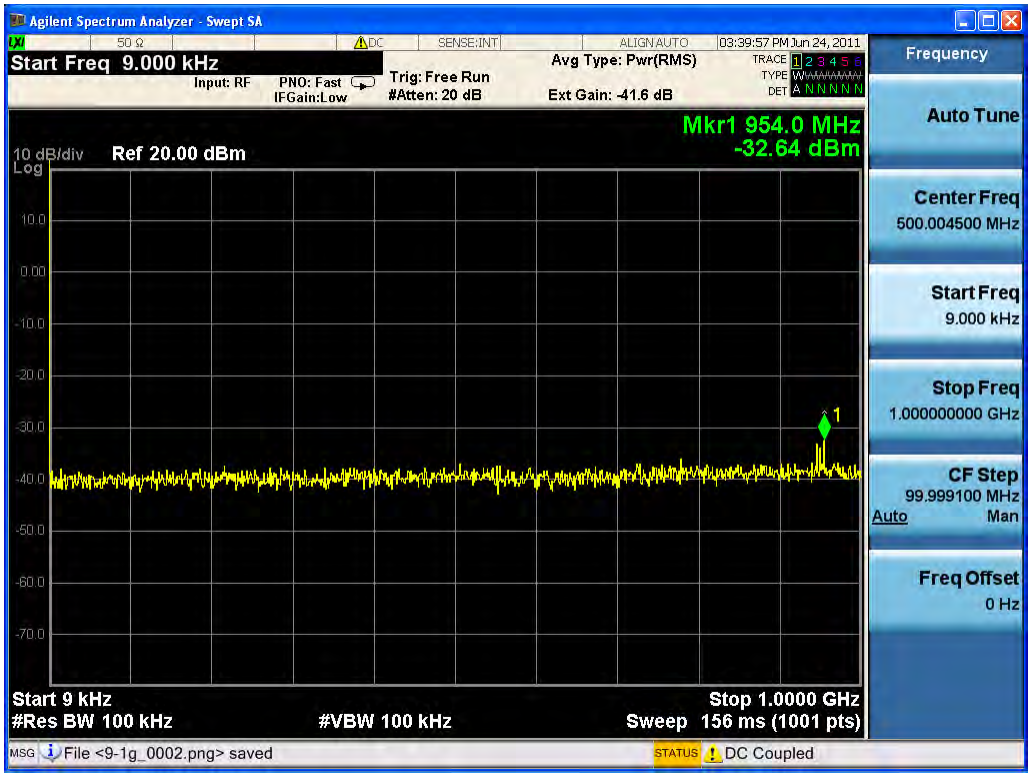
Two carriers (working in bottom frequency)

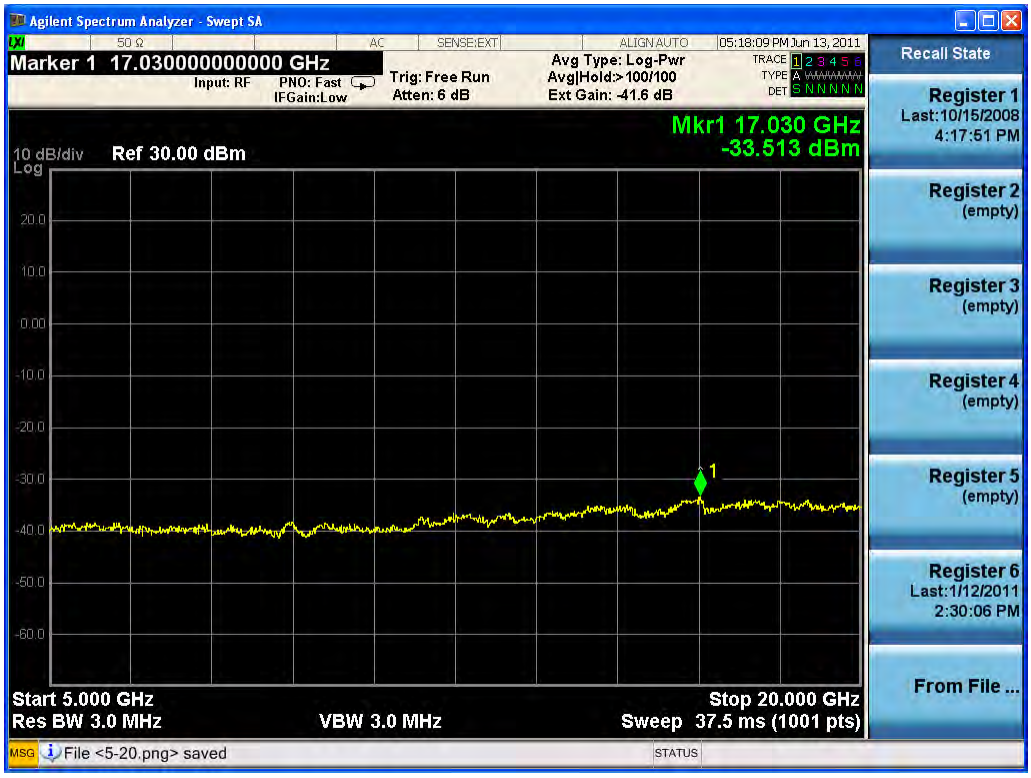



Agilent Spectrum Analyzer - Swept SA
Marker 1 1.931000000000 GHz
Input: RF PNO: Fast IFGain:Low
Trig: Free Run #Atten: 22 dB
Avg Type: Log-Pwr Avg|Hold:>100/100 Ext Gain: -41.6 dB
05:22:42 PM Jun 13, 2011
Mkr1 1.931 GHz 39.957 dBm
10 dB/div Log
Ref 30.00 dBm
Start 1.000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 5.000 GHz
Sweep 15.3 ms (1001 pts)
File <1-5.png> saved
Recall State
Register 1 Last:10/15/2008 4:17:51 PM
Register 2 (empty)
Register 3 (empty)
Register 4 (empty)
Register 5 (empty)
Register 6 Last:1/12/2011 2:30:06 PM
From File ...

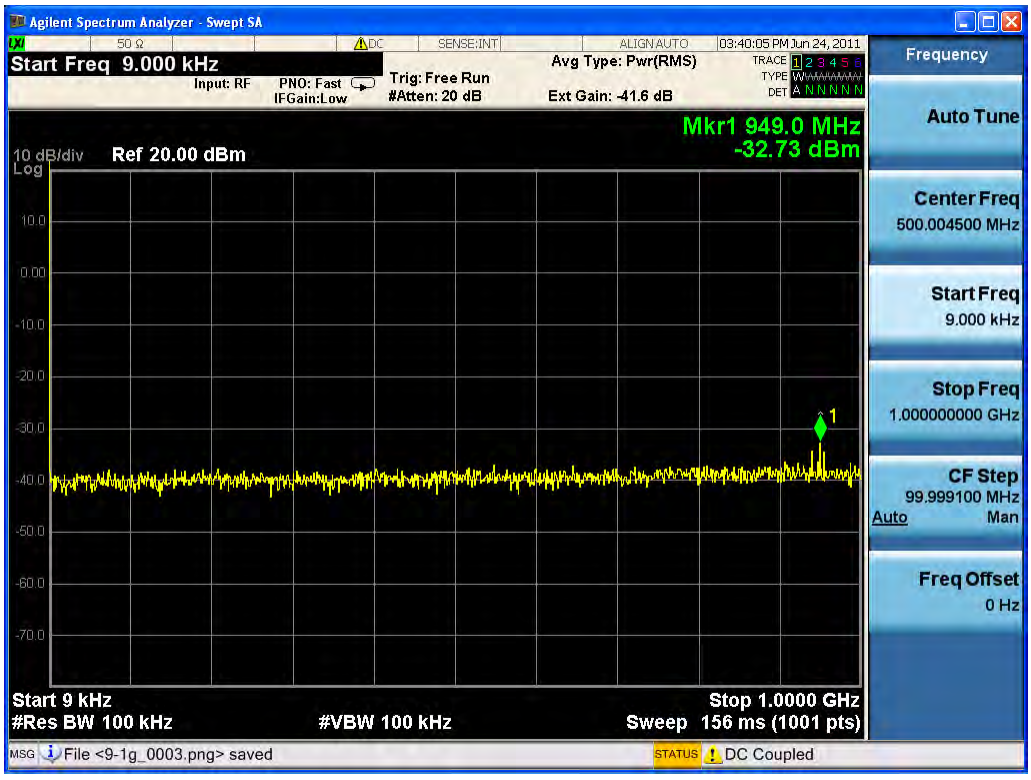

Agilent Spectrum Analyzer - Swept SA
Marker 1 16.775000000000 GHz
Input: RF PNO: Fast IFGain:Low
Trig: Free Run Atten: 6 dB
Avg Type: Log-Pwr Avg|Hold:>100/100 Ext Gain: -41.6 dB
05:21:18 PM Jun 13, 2011
Mkr1 16.775 GHz -33.487 dBm
10 dB/div Log
Ref 30.00 dBm
Start 5.000 GHz
Res BW 3.0 MHz
VBW 3.0 MHz
Stop 20.000 GHz
Sweep 37.5 ms (1001 pts)
File <5-20_0003.png> saved
Recall State
Register 1 Last:10/15/2008 4:17:51 PM
Register 2 (empty)
Register 3 (empty)
Register 4 (empty)
Register 5 (empty)
Register 6 Last:1/12/2011 2:30:06 PM
From File ...

Two carriers (working in middle frequency)

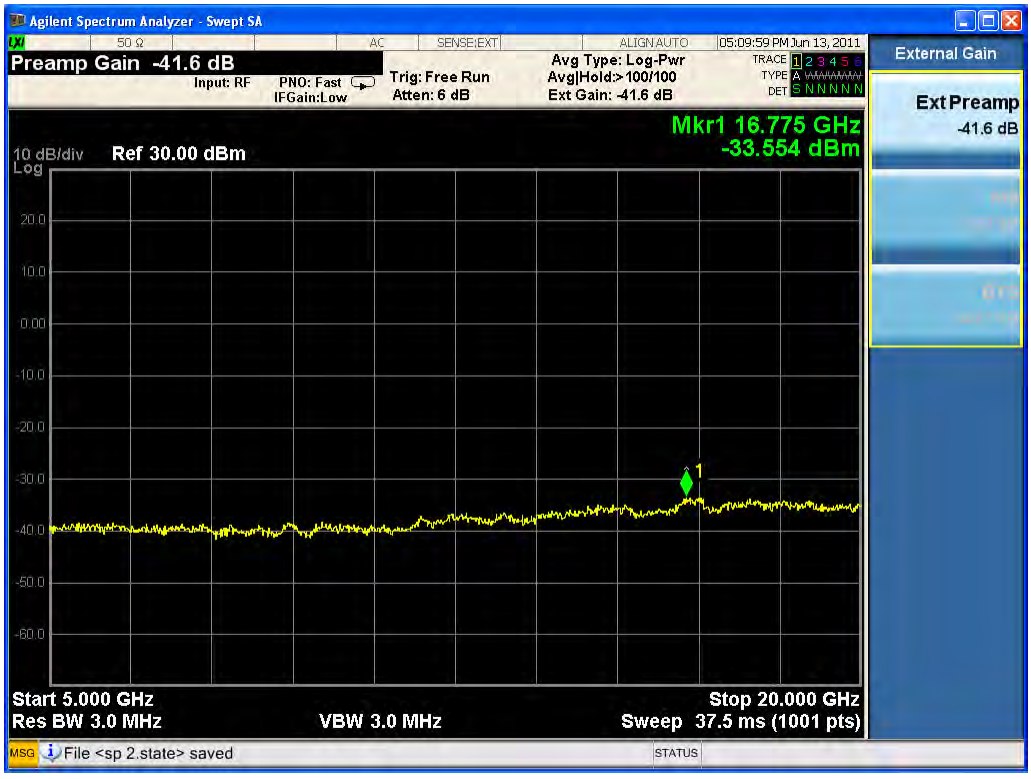




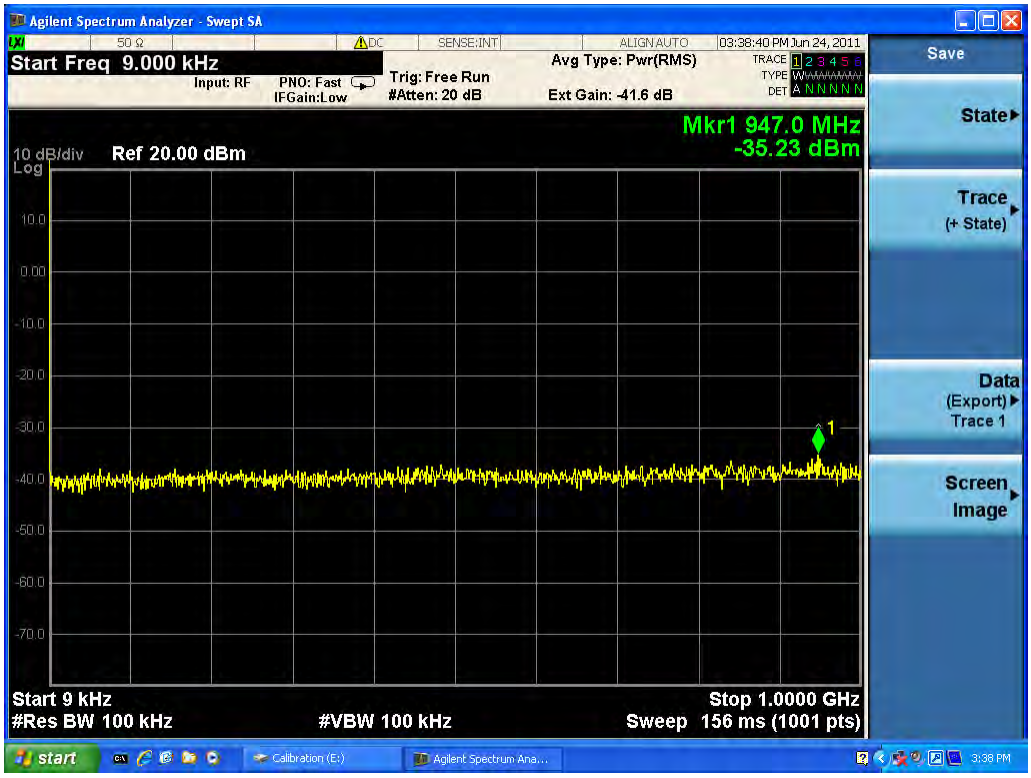
Two carriers (working in top frequency)

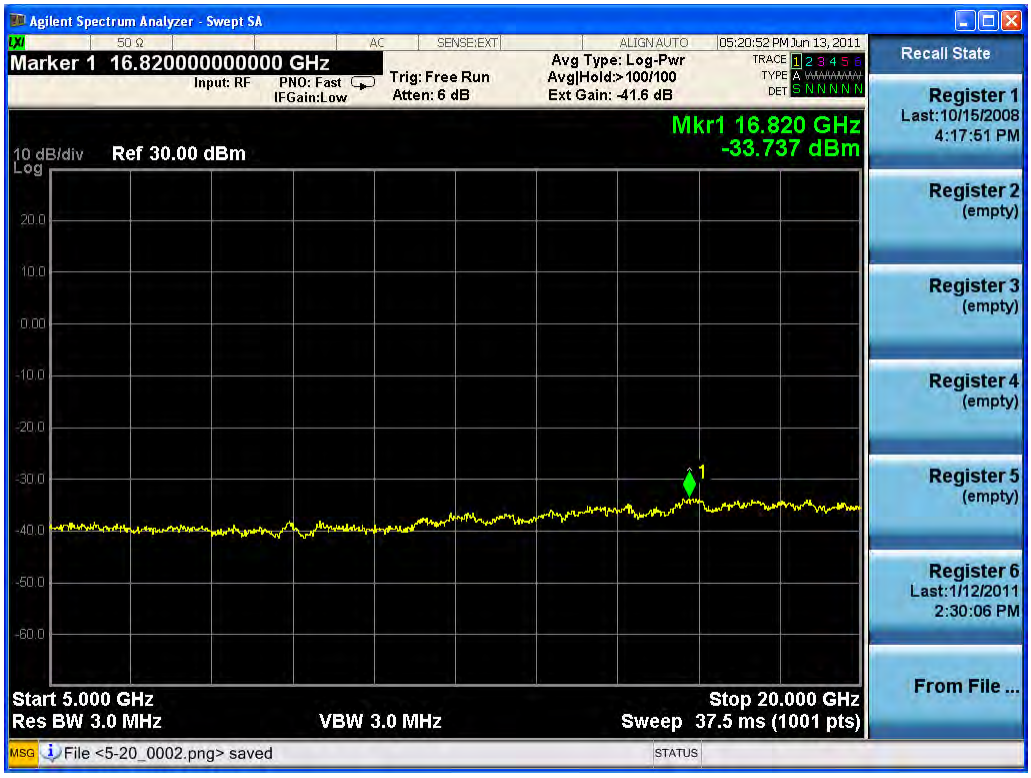



Agilent Spectrum Analyzer - Swept SA
Input Mech Atten 22 dB
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 77/100
Ext Gain: -41.6 dB
05:09:07 PM Jun 13, 2011
Mkr1 1.995 GHz
16.974 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 1.000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 5.000 GHz
Sweep 15.3 ms (1001 pts)
File <sp 1.state> recalled
Recall State
Register 1
Last:10/15/2008
4:17:51 PM
Register 2
(empty)
Register 3
(empty)
Register 4
(empty)
Register 5
(empty)
Register 6
Last:1/12/2011
2:30:06 PM
From File ...

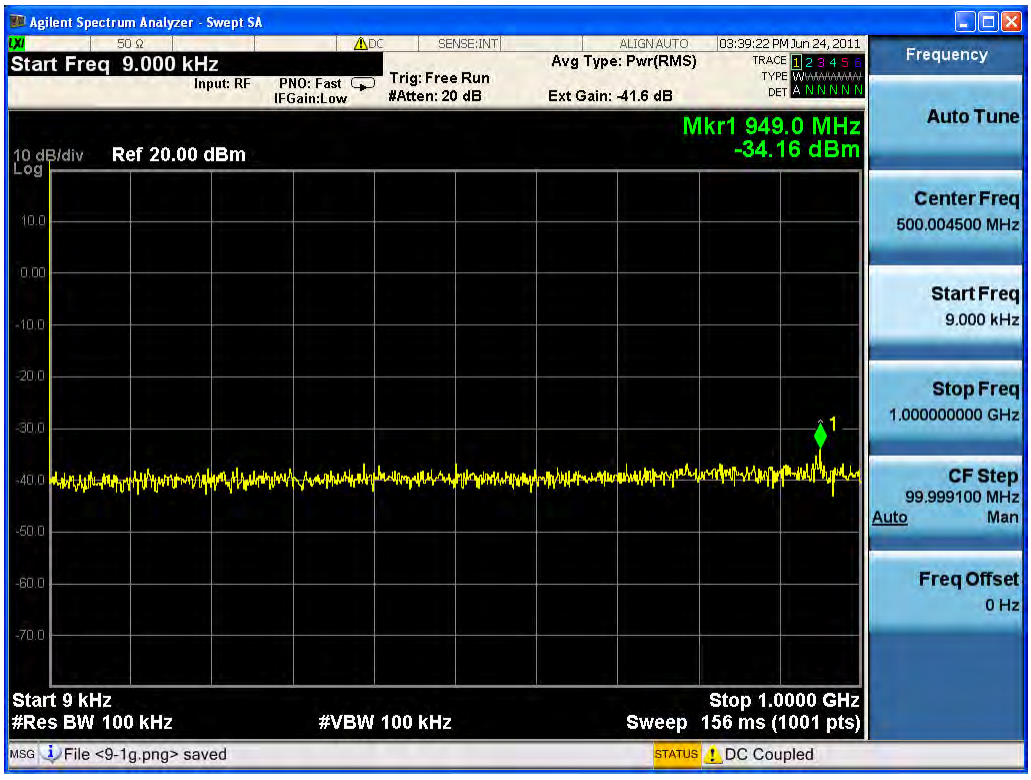

Agilent Spectrum Analyzer - Swept SA
Preamp Gain -41.6 dB
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -41.6 dB
05:09:59 PM Jun 13, 2011
Mkr1 16.775 GHz
-33.554 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 5.000 GHz
Res BW 3.0 MHz
VBW 3.0 MHz
Stop 20.000 GHz
Sweep 37.5 ms (1001 pts)
File <sp 2.state> saved
External Gain
Ext Preamp
-41.6 dB

One carrier (working in bottom frequency)

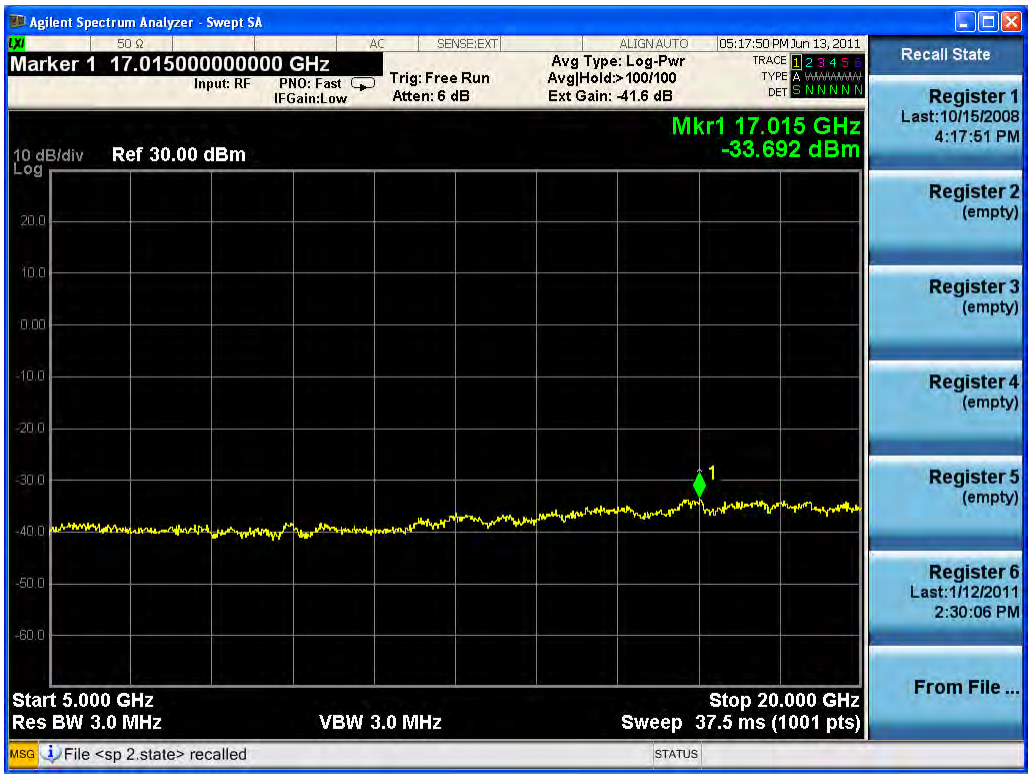




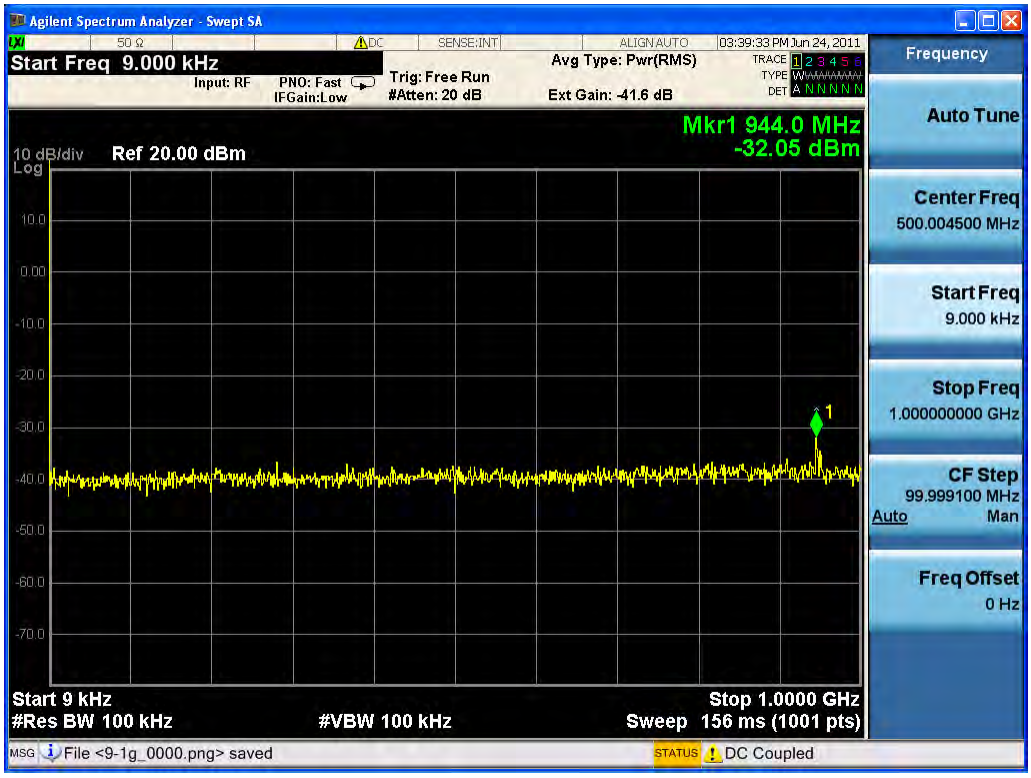
One carrier (working in middle frequency)

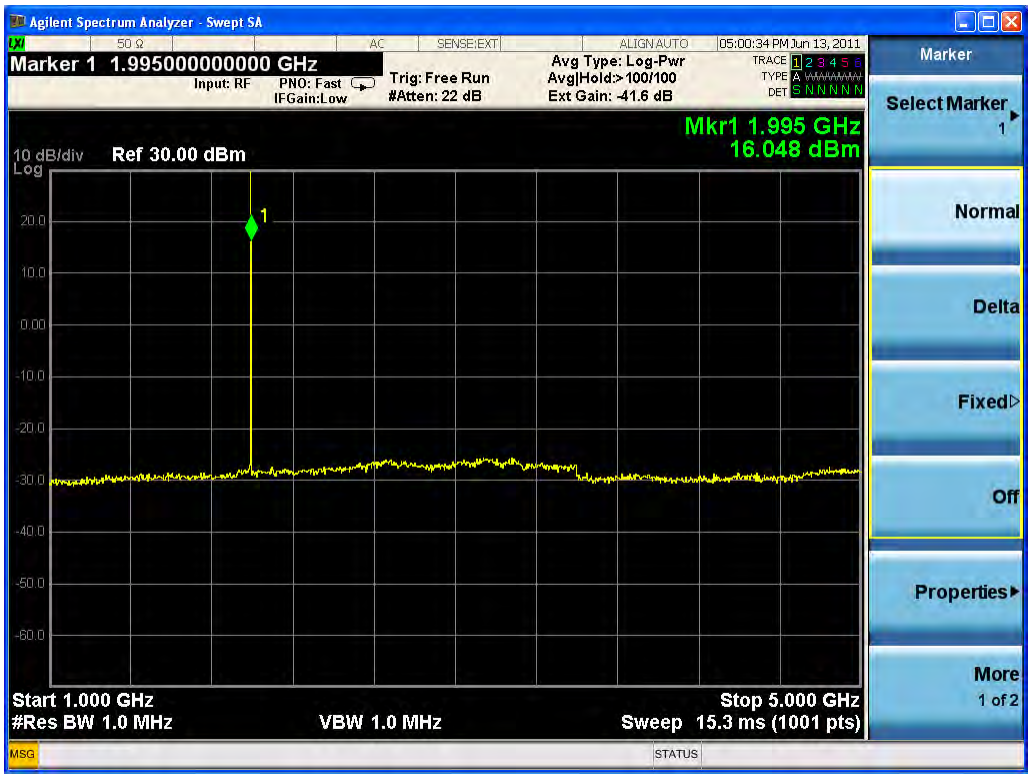


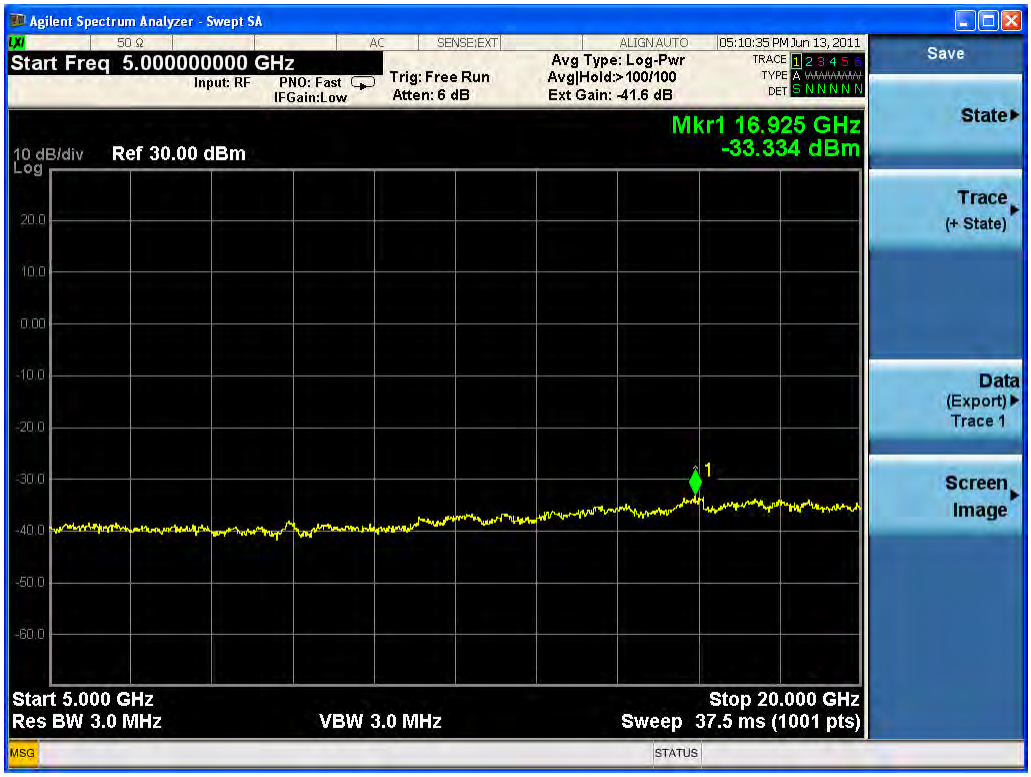

Agilent Spectrum Analyzer - Swept SA
Marker 1 1.962500000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -41.6 dB
05:16:28 PM Jun 13, 2011
Mkr1 1.963 GHz
34.440 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 1.000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 5.000 GHz
Sweep 15.3 ms (1001 pts)
Select Marker
Marker 1
Marker 2
Marker 3
Marker 4
Marker 5
Marker 6
More
1 of 2
MSG
STATUS


Agilent Spectrum Analyzer - Swept SA
Marker 1 17.015000000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -41.6 dB
05:17:50 PM Jun 13, 2011
Mkr1 17.015 GHz
-33.692 dBm
10 dB/div
Log
Ref 30.00 dBm
Start 5.000 GHz
Res BW 3.0 MHz
VBW 3.0 MHz
Stop 20.000 GHz
Sweep 37.5 ms (1001 pts)
Recall State
Register 1
Last:10/15/2008
4:17:51 PM
Register 2
(empty)
Register 3
(empty)
Register 4
(empty)
Register 5
(empty)
Register 6
Last:1/12/2011
2:30:06 PM
From File ...
File <sp 2.state> recalled
MSG
STATUS

One carrier (working in top frequency)






Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:EXT
ALIGN AUTO
05:10:35 PM Jun 13, 2011
Start Freq 5.000000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -41.6 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 16.925 GHz
-33.334 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 5.000 GHz
Res BW 3.0 MHz
VBW 3.0 MHz
Stop 20.000 GHz
Sweep 37.5 ms (1001 pts)
MSG
STATUS
Save
State
Trace
(+ State)
Data
(Export)
Trace 1
Screen
Image

10 OCCUPIED BANDWIDTH

Applicable Standard: FCC §2.1049 §24.229 §24.238 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	2011-4-8	2012-4-7
DST	DST100 40dB Attenuator	DTS100-40dB-N	N/A	N/A	N/A
Hewlett Packard	Hewlett Packard RF Cable	8120-6192	01428251	N/A	N/A

*__statement of traceability:__ ZTE Corporation Reliability Testing Center attest that all calibration have 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. 99%Power bandwidth was recorded.

Environmental Conditions

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

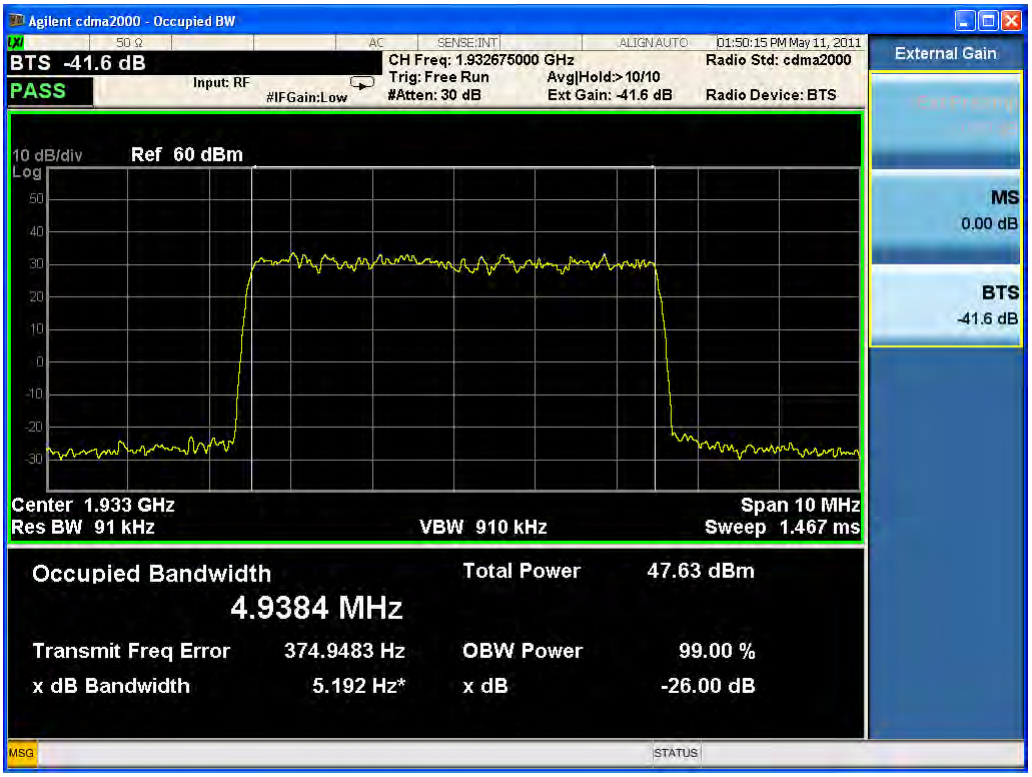
Test Result: Pass

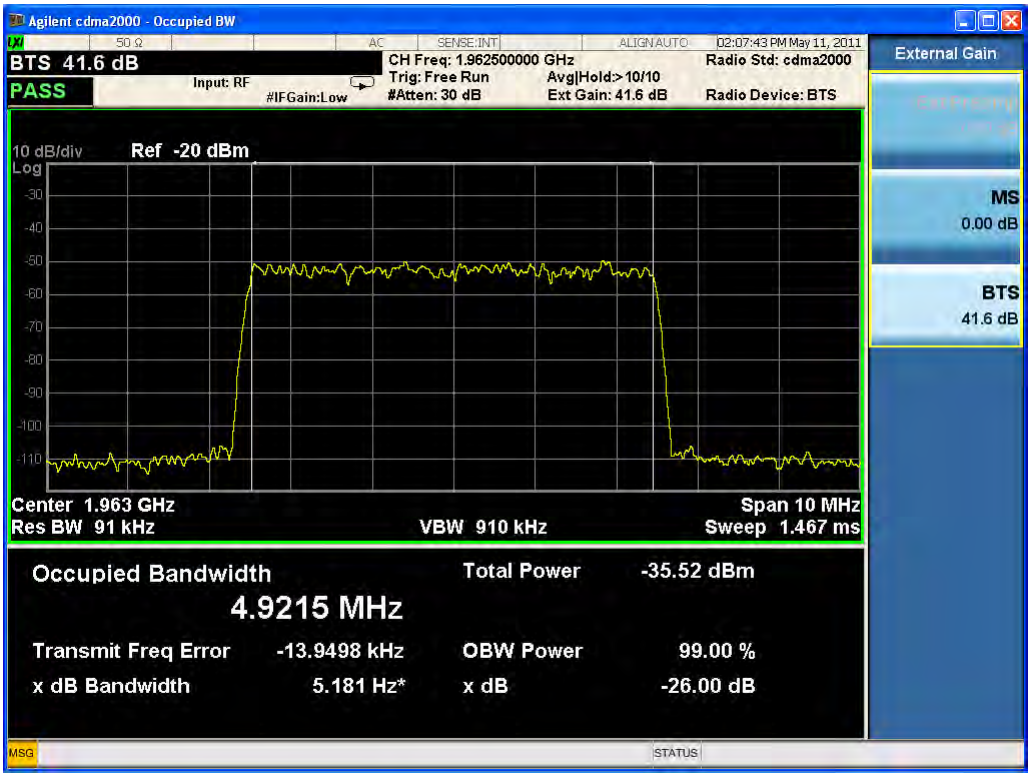
Test Mode: Transmitting CDMA

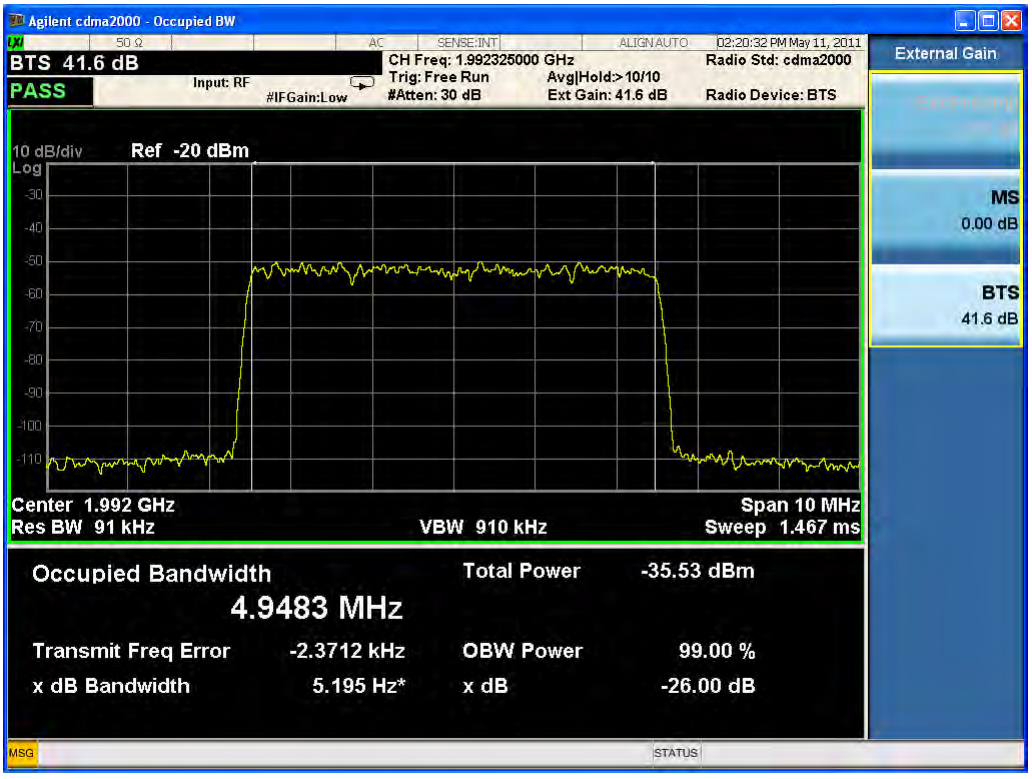
Test Data

four carries

Frequency (MHz)	99% Power Bandwidth (MHz)	Limit (MHz)
1932.675	4.9384	<5.00
1962.50	4.9215	<5.00
1992.325	4.9483	<5.00

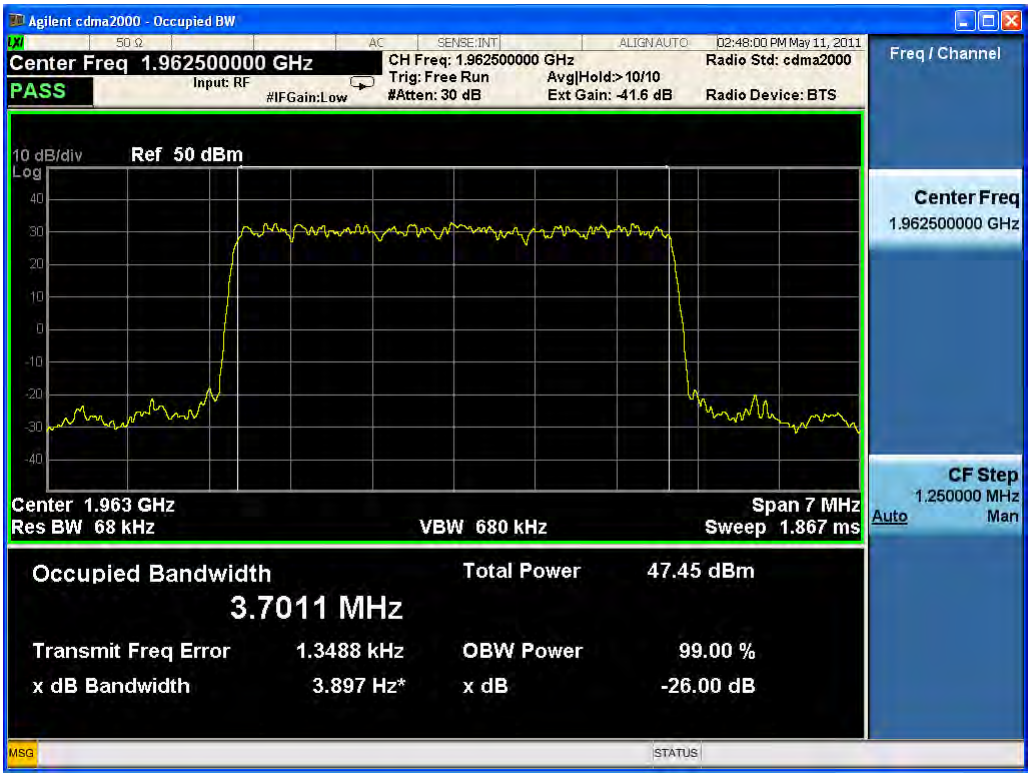



Agilent cdma2000 - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:07:43 PM May 11, 2011
BTS 41.6 dB
PASS
Input: RF
#IFGain:Low
CH Freq: 1.962500000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>10/10
Ext Gain: 41.6 dB
Radio Std: cdma2000
Radio Device: BTS
External Gain
MS
0.00 dB
BTS
41.6 dB
10 dB/div
Log
Ref -20 dBm
-30
-40
-50
-60
-70
-80
-90
-100
-110
Center 1.963 GHz
Res BW 91 kHz
VBW 910 kHz
Span 10 MHz
Sweep 1.467 ms
Occupied Bandwidth
4.9215 MHz
Total Power
-35.52 dBm
Transmit Freq Error
-13.9498 kHz
OBW Power
99.00 %
x dB Bandwidth
5.181 Hz*
x dB
-26.00 dB
MSG
STATUS


Agilent cdma2000 - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:20:32 PM May 11, 2011
BTS 41.6 dB
PASS
Input: RF
#IFGain:Low
CH Freq: 1.992325000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>10/10
Ext Gain: 41.6 dB
Radio Std: cdma2000
Radio Device: BTS
External Gain
MS
0.00 dB
BTS
41.6 dB
10 dB/div
Log
Ref -20 dBm
-30
-40
-50
-60
-70
-80
-90
-100
-110
Center 1.992 GHz
Res BW 91 kHz
VBW 910 kHz
Span 10 MHz
Sweep 1.467 ms
Occupied Bandwidth
4.9483 MHz
Total Power
-35.53 dBm
Transmit Freq Error
-2.3712 kHz
OBW Power
99.00 %
x dB Bandwidth
5.195 Hz*
x dB
-26.00 dB
MSG
STATUS

three carries

Frequency (MHz)	99% Power Bandwidth (MHz)	Limit (MHz)
1932.05	3.6948	<3.75
1962.50	3.7011	<3.75
1992.95	3.6907	<3.75

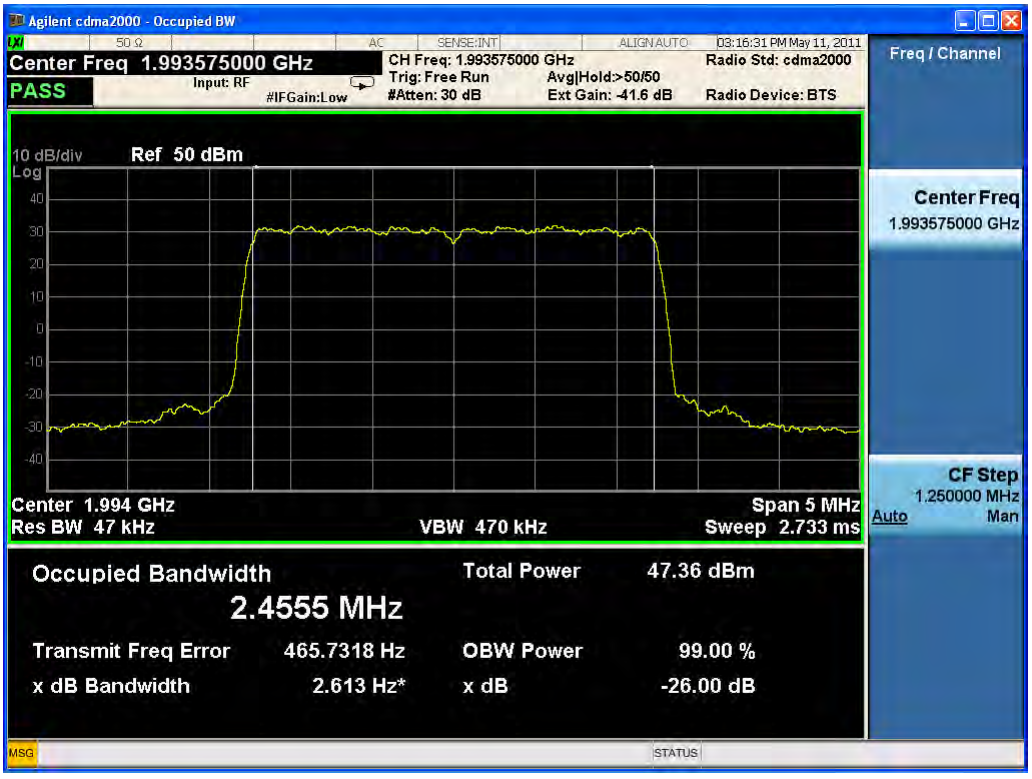

Agilent cdma2000 - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:48:00 PM May 11, 2011
Center Freq 1.962500000 GHz
PASS
Input: RF
#IFGain:Low
CH Freq: 1.962500000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>10/10
Ext Gain: -41.6 dB
Radio Std: cdma2000
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.962500000 GHz
Center 1.963 GHz
Res BW 68 kHz
VBW 680 kHz
Span 7 MHz
Sweep 1.867 ms
CF Step
1.250000 MHz
Auto
Man
Occupied Bandwidth
3.7011 MHz
Total Power
47.45 dBm
Transmit Freq Error
1.3488 kHz
OBW Power
99.00 %
x dB Bandwidth
3.897 Hz*
x dB
-26.00 dB
MSG
STATUS


Agilent cdma2000 - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
02:34:26 PM May 11, 2011
Center Freq 1.992950000 GHz
PASS
Input: RF
#IFGain:Low
CH Freq: 1.992950000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>10/10
Ext Gain: -41.6 dB
Radio Std: cdma2000
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.992950000 GHz
Center 1.993 GHz
Res BW 68 kHz
VBW 680 kHz
Span 7 MHz
Sweep 1.867 ms
CF Step
1.250000 MHz
Auto
Man
Occupied Bandwidth
3.6907 MHz
Total Power
47.43 dBm
Transmit Freq Error
1.8187 kHz
OBW Power
99.00 %
x dB Bandwidth
3.893 Hz*
x dB
-26.00 dB
MSG
STATUS

two carries

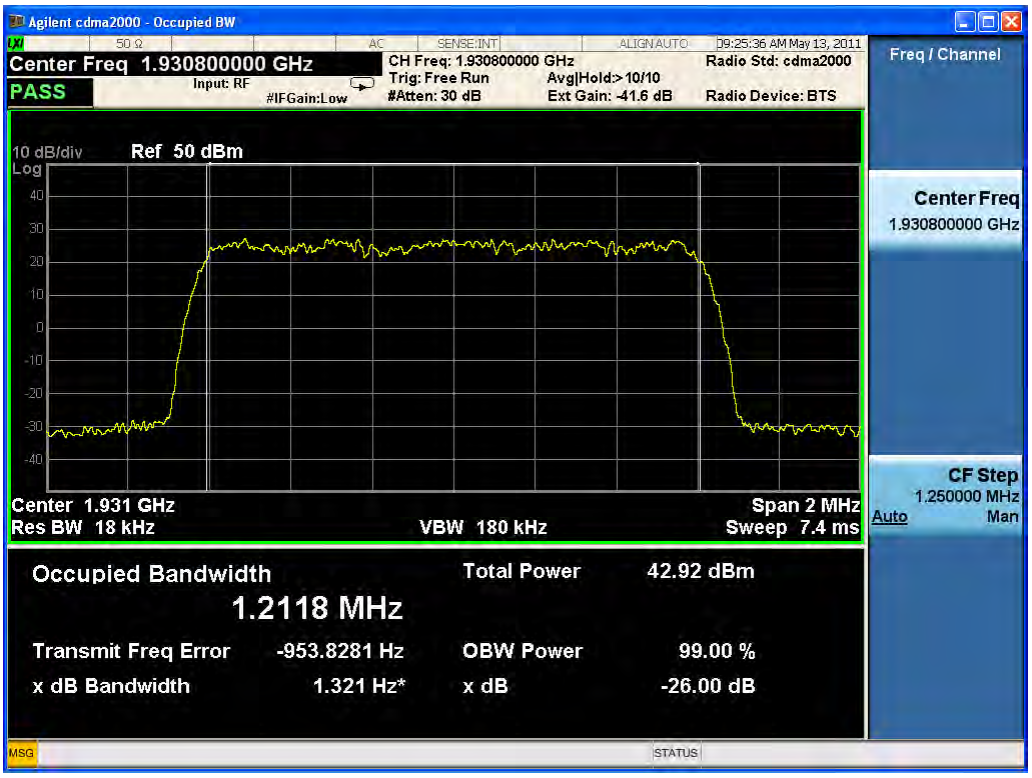
Frequency (MHz)	99% Power Bandwidth (MHz)	Limit (MHz)
1931.425	2.4565	<2.50
1962.475	2.4596	<2.50
1993.575	2.4555	<2.50

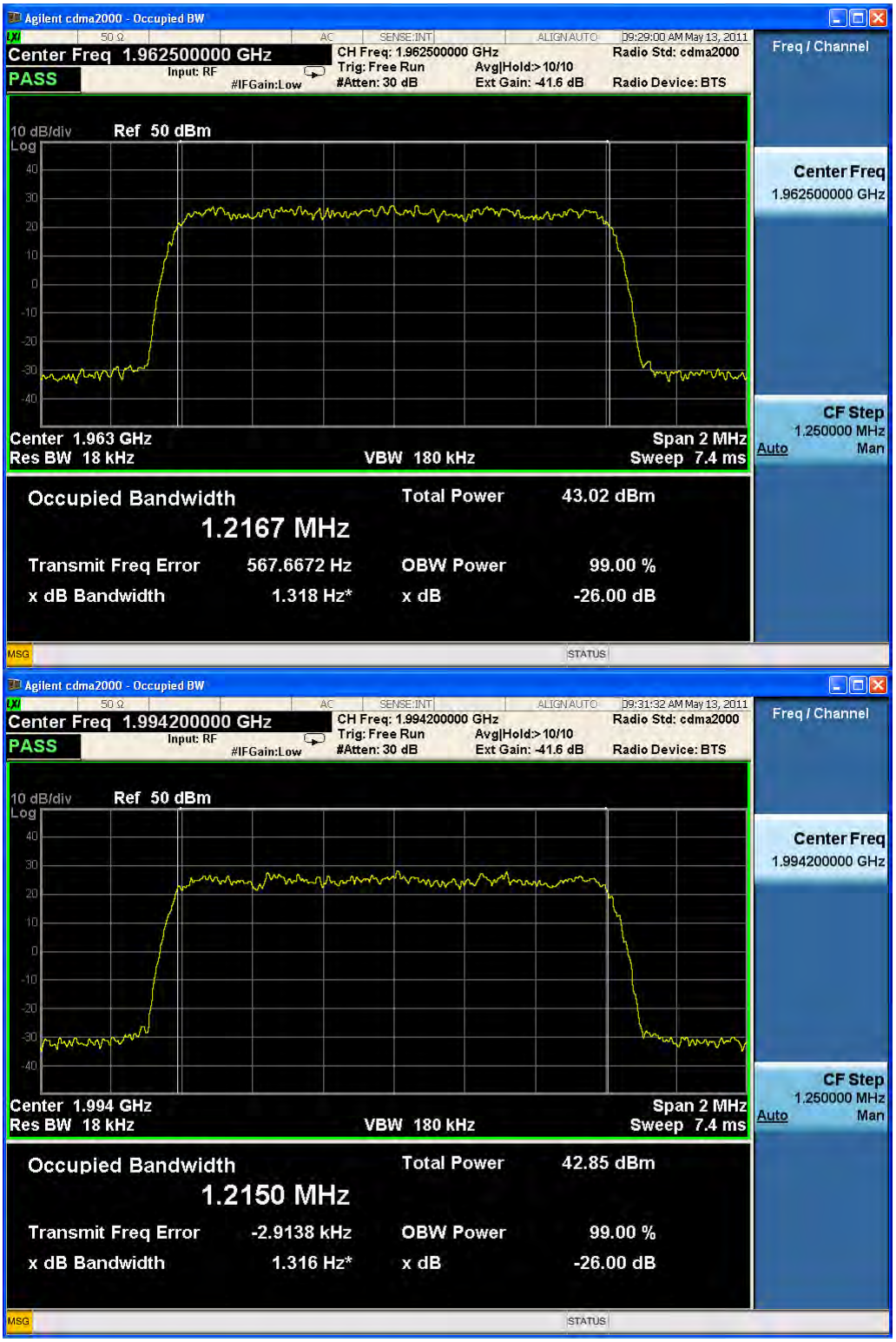

Agilent cdma2000 - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
03:11:30 PM May 11, 2011
Center Freq 1.962475000 GHz
PASS
Input: RF
#IFGain:Low
CH Freq: 1.962475000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>50/50
Ext Gain: -41.6 dB
Radio Std: cdma2000
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.962475000 GHz
Center 1.962 GHz
Res BW 47 kHz
VBW 470 kHz
Span 5 MHz
Sweep 2.733 ms
CF Step
1.250000 MHz
Auto
Man
Occupied Bandwidth
2.4596 MHz
Total Power
47.48 dBm
Transmit Freq Error
2.2055 kHz
OBW Power
99.00 %
x dB Bandwidth
2.615 Hz*
x dB
-26.00 dB
MSG
STATUS


Agilent cdma2000 - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
03:16:31 PM May 11, 2011
Center Freq 1.993575000 GHz
PASS
Input: RF
#IFGain:Low
CH Freq: 1.993575000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>50/50
Ext Gain: -41.6 dB
Radio Std: cdma2000
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.993575000 GHz
Center 1.994 GHz
Res BW 47 kHz
VBW 470 kHz
Span 5 MHz
Sweep 2.733 ms
CF Step
1.250000 MHz
Auto
Man
Occupied Bandwidth
2.4555 MHz
Total Power
47.36 dBm
Transmit Freq Error
465.7318 Hz
OBW Power
99.00 %
x dB Bandwidth
2.613 Hz*
x dB
-26.00 dB
MSG
STATUS

one carrier

Frequency (MHz)	99% Power Bandwidth (MHz)	Limit (MHz)
1930.80/1962.50/1994.20	1.2118/1.2167/1.2150	<1.25




Agilent cdma2000 - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:29:00 AM May 13, 2011
Center Freq 1.962500000 GHz
PASS
Input: RF
#IFGain:Low
CH Freq: 1.962500000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>10/10
Ext Gain: -41.6 dB
Radio Std: cdma2000
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.962500000 GHz
Center 1.963 GHz
Res BW 18 kHz
VBW 180 kHz
Span 2 MHz
Sweep 7.4 ms
CF Step
1.250000 MHz
Auto
Man
Occupied Bandwidth
1.2167 MHz
Total Power
43.02 dBm
Transmit Freq Error
567.6672 Hz
OBW Power
99.00 %
x dB Bandwidth
1.318 Hz*
x dB
-26.00 dB
MSG
STATUS
Agilent cdma2000 - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:31:32 AM May 13, 2011
Center Freq 1.994200000 GHz
PASS
Input: RF
#IFGain:Low
CH Freq: 1.994200000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>10/10
Ext Gain: -41.6 dB
Radio Std: cdma2000
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.994200000 GHz
Center 1.994 GHz
Res BW 18 kHz
VBW 180 kHz
Span 2 MHz
Sweep 7.4 ms
CF Step
1.250000 MHz
Auto
Man
Occupied Bandwidth
1.2150 MHz
Total Power
42.85 dBm
Transmit Freq Error
-2.9138 kHz
OBW Power
99.00 %
x dB Bandwidth
1.316 Hz*
x dB
-26.00 dB
MSG
STATUS

11 BAND EDGES

Applicable Standard: FCC §2.1051,§24.238 ,IC §RSS 133 6.5

According to §2.1051 and §24.238, the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (p) by a factor of at least 43 + 10 log (p) dB. 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	2011-4-8	2012-4-7
DST	DST100 40dB Attenuator	DTS100-40dB-N	N/A	N/A	N/A
Hewlett Packard	Hewlett Packard RF Cable	8120-6192	01428251	N/A	N/A

*__statement of traceability:__ ZTE Corporation Reliability Testing Center attest that all calibration have been performed per the NVLAP requirements , traceable to NIST.

Test Procedure

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

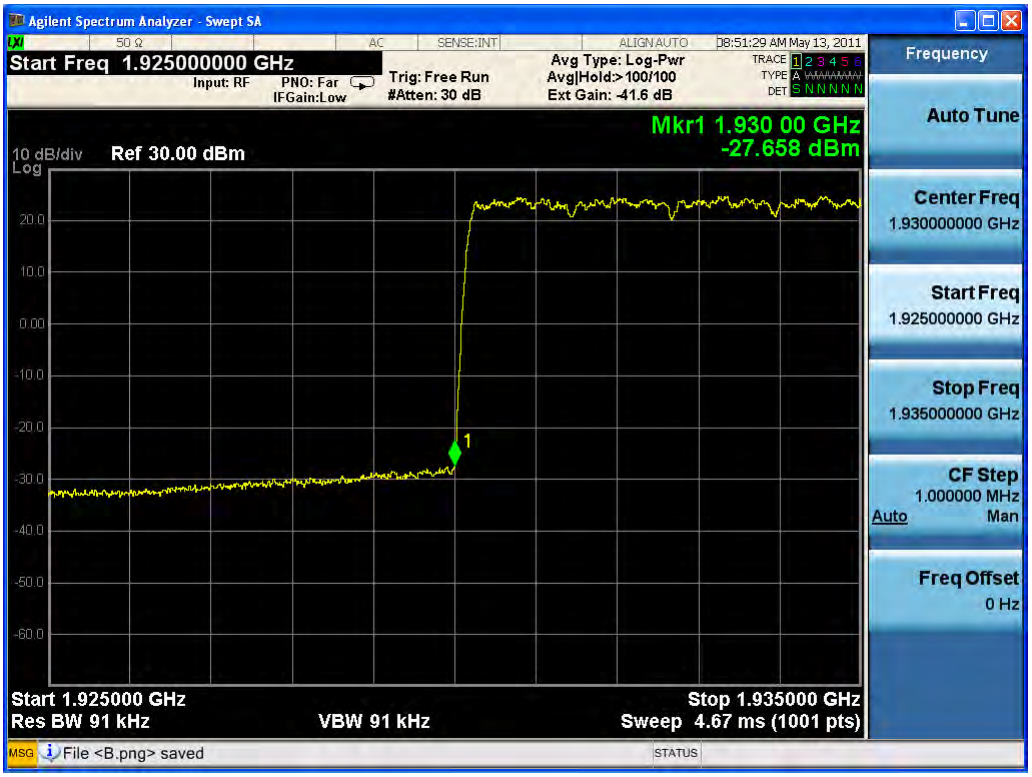
Test Result: Pass

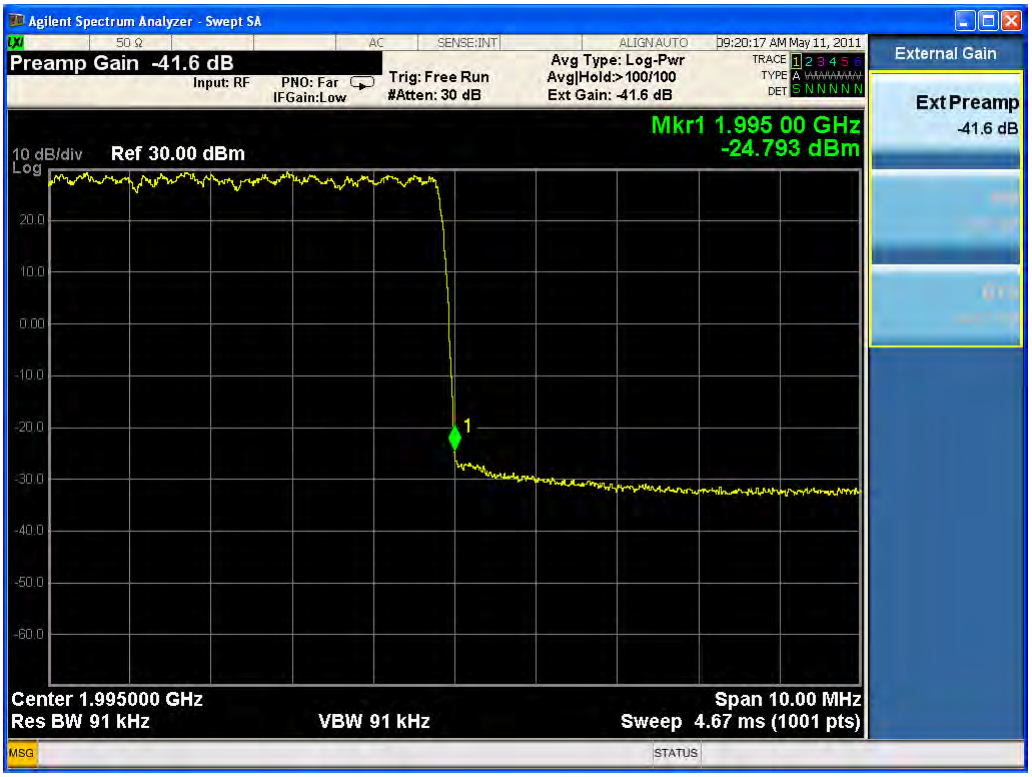
Test Mode: Transmitting CDMA

Test Data

four carriers

Frequency channel (MHz)	Max bandedge Emission (dBm)	Limit (dBm)
1930.8/1932.05/1933.3/1934.55	-27.658	-13.00
1990.45/1991.7/1992.95/1994.2	-24.739	-13.00





three carriers

Frequency channel (MHz)	Max bandedge Emission (dBm)	Limit (dBm)
1930.8/1932.05/1933.3	-24.374	-13.00
1991.7/1992.95/1994.2	-24.396	-13.00


Agilent Spectrum Analyzer - Swept SA
Marker 1 1.930000000000 GHz
Input: RF PNO: Far IFGain:Low
Trig: Free Run #Atten: 30 dB
Avg Type: Log-Pwr Avg|Hold:>100/100 Ext Gain: -41.6 dB
02:55:40 PM May 11, 2011
Mkr1 1.930 000 GHz -24.374 dBm
10 dB/div Log
Ref 30.00 dBm
Center 1.930000 GHz
Res BW 68 kHz
VBW 68 kHz
Span 7.000 MHz
Sweep 5.80 ms (1001 pts)
Marker
Select Marker
Normal
Delta
Fixed
Off
Properties
More
1 of 2
MSG
STATUS


Agilent Spectrum Analyzer - Swept SA
Marker 1 1.995000000000 GHz
Input: RF PNO: Far IFGain:Low
Trig: Free Run #Atten: 30 dB
Avg Type: Log-Pwr Avg|Hold:>100/100 Ext Gain: -41.6 dB
02:36:11 PM May 11, 2011
Mkr1 1.995 000 GHz -24.396 dBm
10 dB/div Log
Ref 30.00 dBm
Center 1.995000 GHz
Res BW 68 kHz
VBW 68 kHz
Span 7.000 MHz
Sweep 5.80 ms (1001 pts)
Marker
Select Marker
Normal
Delta
Fixed
Off
Properties
More
1 of 2
MSG
STATUS

two carriers

Frequency channel (MHz)	Max bandedge Emission (dBm)	Limit (dBm)
1930.8/1932.05	-24.249	-13.00
1992.95/1994.2	-24.754	-13.00

One carrier

Frequency channel (MHz)	Max bandedge Emission (dBm)	Limit (dBm)
1930.8	-25.566	-13.00
1994.2	-27.399	-13.00

12 FREQUENCY STABILITY

Applicable Standard: FCC § 2.1055 § 24.235 IC §RSS 133 6.3 §RSS Gen 4.7

Requirements: FCC § 2.1055 (a)(d), Part24.235 and IC RSS 133 §6.3, 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	EW0470	06113028	2011-1-26	2012-1-26
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2011-4-8	2012-4-7
DST	DST100 40dB Attenuator	DTS100-40dB-N	N/A	N/A	N/A
Hewlett Packard	Hewlett Packard RF Cable	8120-6192	01428251	N/A	N/A

*__statement of traceability:__ ZTE Corporation Reliability Testing Center attest that all calibration have 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.

Environmental Conditions

Normal condition:	25° C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

Test Result: Pass

Test Mode: Transmitting CDMA

Test Data

Frequency Stability Versus Temperature

Frequency Stability vs. Temperature					
Temperature ℃	**Power Supplied Vdc**	**Frequency Measure Error Hz**	**Error ppm**	**Limit ppm**	**Result**
f=1930.8MHz					
-40	-48	-16.03	-0.008	0.02	PASS
-30	-48	-16.97	-0.009	0.02	PASS
-20	-48	-15.8	-0.008	0.02	PASS
-10	-48	-16.27	-0.008	0.02	PASS
0	-48	-15.79	-0.008	0.02	PASS
10	-48	-14.96	-0.008	0.02	PASS
20	-48	-16.3	-0.008	0.02	PASS
30	-48	-16.23	-0.008	0.02	PASS
40	-48	-14.12	-0.007	0.02	PASS
50	-48	-16.45	-0.009	0.02	PASS
55	-48	-14.51	-0.008	0.02	PASS
f=1962.5MHz					
-40	-48	-17.48	-0.009	0.02	PASS
-30	-48	-16.04	-0.008	0.02	PASS

-20	-48	-14.83	-0.008	0.02	PASS
-10	-48	-16.39	-0.008	0.02	PASS
0	-48	-15.05	-0.008	0.02	PASS
10	-48	-14.92	-0.008	0.02	PASS
20	-48	-14.92	-0.008	0.02	PASS
30	-48	-15.7	-0.008	0.02	PASS
40	-48	-17.74	-0.009	0.02	PASS
50	-48	-16.31	-0.008	0.02	PASS
55	-48	-16.04	-0.008	0.02	PASS
f=1994.2MHz					
-40	-48	-16.2	-0.008	0.02	PASS
-30	-48	-16.38	-0.008	0.02	PASS
-20	-48	-15.52	-0.008	0.02	PASS
-10	-48	-15.82	-0.008	0.02	PASS
0	-48	-15.93	-0.008	0.02	PASS
10	-48	-15.95	-0.008	0.02	PASS
20	-48	-17.01	-0.009	0.02	PASS
30	-48	-15.25	-0.008	0.02	PASS
40	-48	-15.09	-0.008	0.02	PASS
50	-48	-17.02	-0.009	0.02	PASS
55	-48	-17.09	-0.009	0.02	PASS

Frequency Stability Versus Voltage

Frequency Stability vs. Voltage					
VoltageVac	**Temperature ℃**	**Frequency Measure Error Hz**	**Error ppm**	**Limit ppm**	**Result**
f=1930.8MHz					
40	20	-15.27	-0.008	0.02	PASS
44	20	-15.18	-0.008	0.02	PASS
47	20	-15.23	-0.008	0.02	PASS
50	20	-14.53	-0.008	0.02	PASS
53	20	-16.04	-0.008	0.02	PASS
56	20	-15.6	-0.008	0.02	PASS
57	20	-15.27	-0.008	0.02	PASS
f=1962.5MHz					
40	20	-16.11	-0.008	0.02	PASS
44	20	-14.93	-0.008	0.02	PASS

47	20	-15.05	-0.008	0.02	PASS
50	20	-16.95	-0.009	0.02	PASS
53	20	-16.49	-0.008	0.02	PASS
56	20	-15.08	-0.008	0.02	PASS
57	20	-16.11	-0.008	0.02	PASS
f=1994.2MHz					
40	20	-16.53	-0.008	0.02	PASS
44	20	-16.01	-0.008	0.02	PASS
47	20	-16.7	-0.008	0.02	PASS
50	20	-16.41	-0.008	0.02	PASS
53	20	-14.63	-0.007	0.02	PASS
56	20	-16.01	-0.008	0.02	PASS
57	20	-16.53	-0.008	0.02	PASS