

FCC MEASUREMENT AND TEST REPORT

For

ZTE Corporation

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

FCC ID: Q78-RSU82C

July 21, 2011

This Report Concerns: <input checked="" type="checkbox"/> Original Report	Equipment Type: CDMA Remote Radio Unit
Test Engineer:	
Report No.:	FCC-2011-045
Reviewed By:	
Prepared By:	ZTE Corporation. ZTE Plaza, Hi-tech Park, Nanshan District, Shenzhen, Guangdong, China 518057, P.R.China Tel: +86-755-26770000 Fax: +86-755-26771999

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.

1 TABLE OF CONTENTS

1	TABLE OF CONTENTS	2
2	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
3	SYSTEM TEST CONFIGURATION.....	6
	Description of Test Configuration	6
4	SUMMARY OF TEST RESULTS	7
5	TRANSMITTER OUTPUT POWER.....	8
	Applicable Standard: FCC §2.1046 §24.232	8
	Test Equipment List and Details.....	8
	Test Procedure.....	8
	Environmental Conditions	9
	Test Result: Pass.....	9
	Test Mode: Transmitting CDMA	9
	Test Data:.....	9
6	RF EXPLOSURE	18
	Applicable standard: FCC §2.1091 §1.1037	18
	Limit.....	18
	Test Data.....	18
7	MODULATION CHARACTERISTIC.....	19
	Applicable Standard: FCC §2.1047	19
	Test Equipmet List and Details	19
	Test Procedure.....	19
	Test Data Environmental Conditions	20
	Test Result: Pass.....	20
	Test Mode: Transmitting CDMA	20
	Test Data:.....	20
8	SPURIOUS RADIATED EMISSIONS	23
	Applicable Standard: FCC CFR 47, §2.1053	23
	Test Equipment List and Details.....	23
	Test Procedure.....	24
	Test Results Summary: PASS	24
	Environmental Conditions	24
9	SPURIOUS EMISSIONS AT ANTENNA TERMINALS	26
	Applicable Standard: FCC§2.1051, §24.238.....	26
	Test Equipment List and Details.....	26
	Test Procedure.....	26
	Test Data Environmental Conditions	27
	Test Result: Pass.....	27
	Test Mode: Transmitting CDMA	27
	Test Data:.....	27
10	OCCUPIED BANDWIDTH.....	46
	Applicable Standard: FCC §2.1049 §24.229 §24.2381	46
	Test Equipment List and Details	46
	Test Procedure.....	46

Environmental Conditions	46
Test Result: Pass.....	47
Test Mode: Transmitting CDMA	47
Test Data.....	47
11 BAND EDGES	54
Applicable Standard: FCC §24.238	54
Test Equipment List and Details.....	54
Test Procedure.....	54
Test Data Environmental Conditions	54
Test Result: Pass.....	55
Test Mode: Transmitting CDMA	55
Test Data.....	55
12 FREQUENCY STABILITY	60
Applicable Standard: FCC § 2.1055 § 24.235.....	60
Test Equipment List and Details.....	60
Test Procedure.....	60
Environmental Conditions	61
Test Result: Pass.....	61
Test Mode: Transmitting CDMA	61
Test Data.....	61
Frequency Stability Versus Temperature	61
Frequency Stability Versus Voltage	63

2 GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The ZTE Corporation's product, model number: ZXSDR RSU82C or the "EUT" as referred to in this report is a CDMA Remote Radio Unit.

Technical specification:

Size: 482.6(H) × 88 (W) × 360.0 (D)

Input voltage: -57 ~ -40Vdc

Frequency range: 1930MHz to1950MHz,

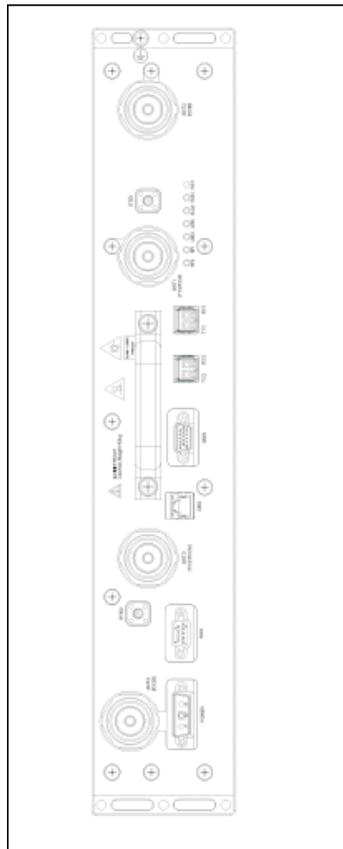
(Bottom frequency is about 1931.25MHz. Middle frequency is about 1940MHz. Top frequency is about 1948.75MHz).

Max RF output power: 47.83dBm

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 Hi-Tech industrial park, Tel: +86-755-26770000, 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 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. (FRN): 0009043175. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database with test firm number 373926.

3 SYSTEM TEST CONFIGURATION

Description of Test Configuration

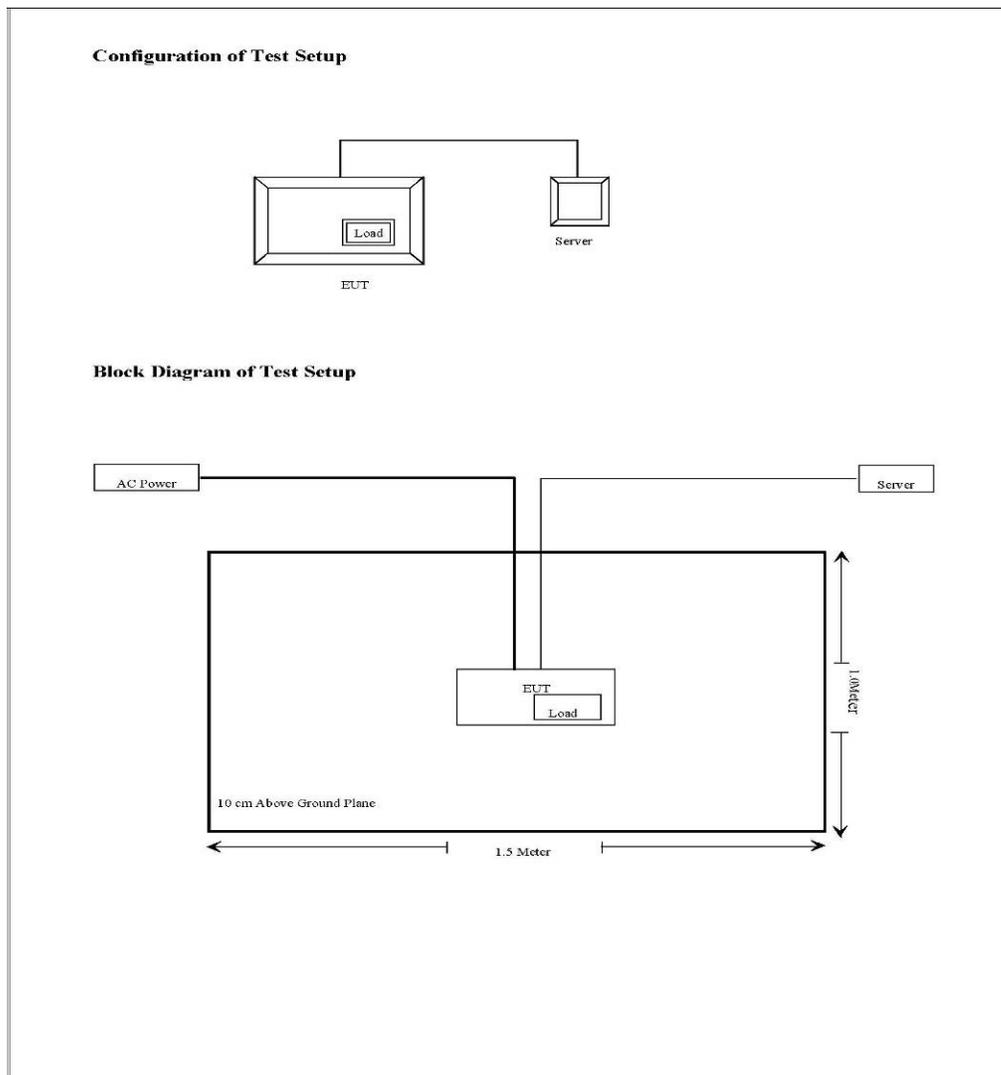
Justification

The EUT was configured for testing according to TIA/ELA-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.



4 SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§2.1046 §24.232	Transmitter output Power	Compliant
§2.1091 §1.1037	RF Exposure	Compliant
§2.1053	Spurious Radiated Emissions	Compliant
§2.1051, §24.238	Spurious Emissions AT Antenna Terminals	Compliant
§2.1049 §24.229 §24.238	Occupied Bandwidth	Compliant
§24.238	Band Edge	Compliant
§ 2.1055 § 24.235	Frequency stability	Compliant

5 TRANSMITTER OUTPUT POWER

Applicable Standard: FCC §2.1046 §24.232

According to FCC §2.1046 & 24.232, the EIRP (equivalent isotropically radiated power) must not exceed 1640 Watts.

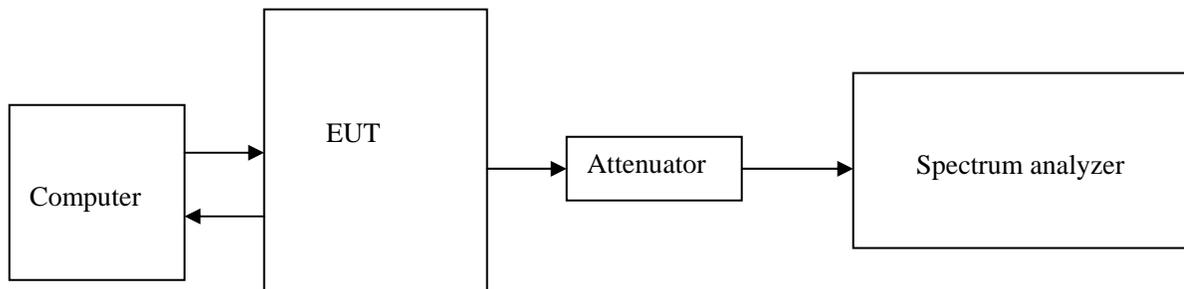
According to RSS-133, SRSP 510 5.1 the EIRP (equivalent isotropically radiated power) must not exceed 3280Watts/MHz for base station transmitters operating in the band of 1930 MHz to 1950MHz with the antenna height above average terrain up to 300 meters. If used in urban area ,the limit should be 1640Watts/MHz.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2009-4-10	2011-4-9
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 4.2dB

Environmental Conditions

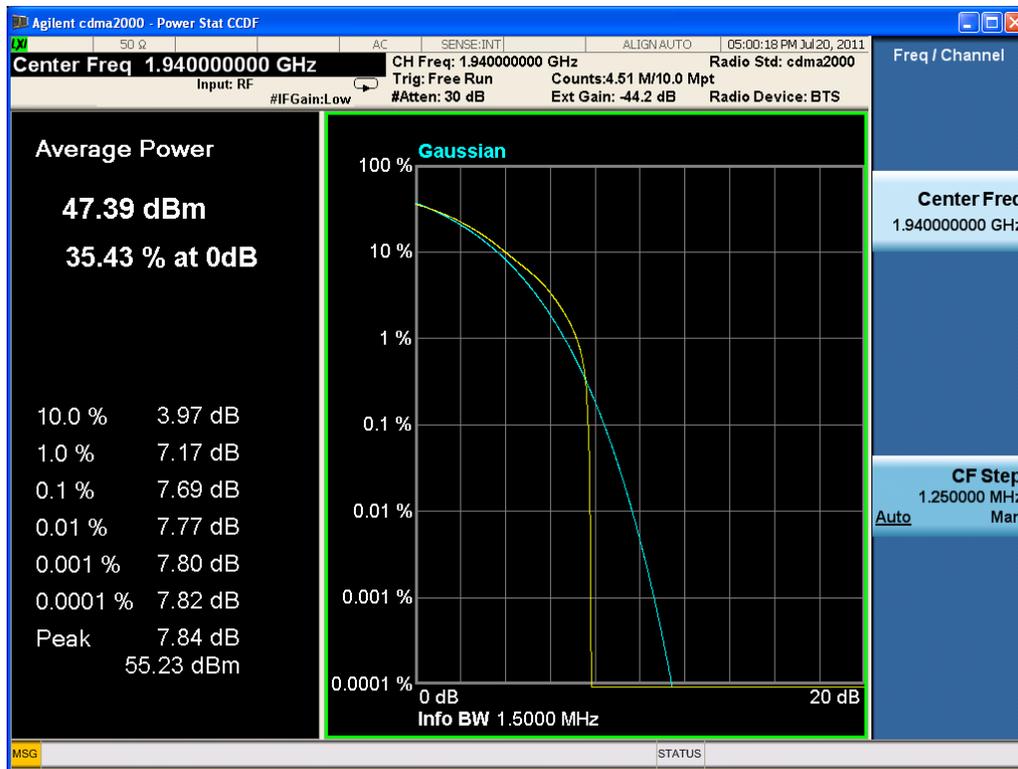
Temperature:	20 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

Test Result: Pass

Test Mode: Transmitting CDMA

Test Data:

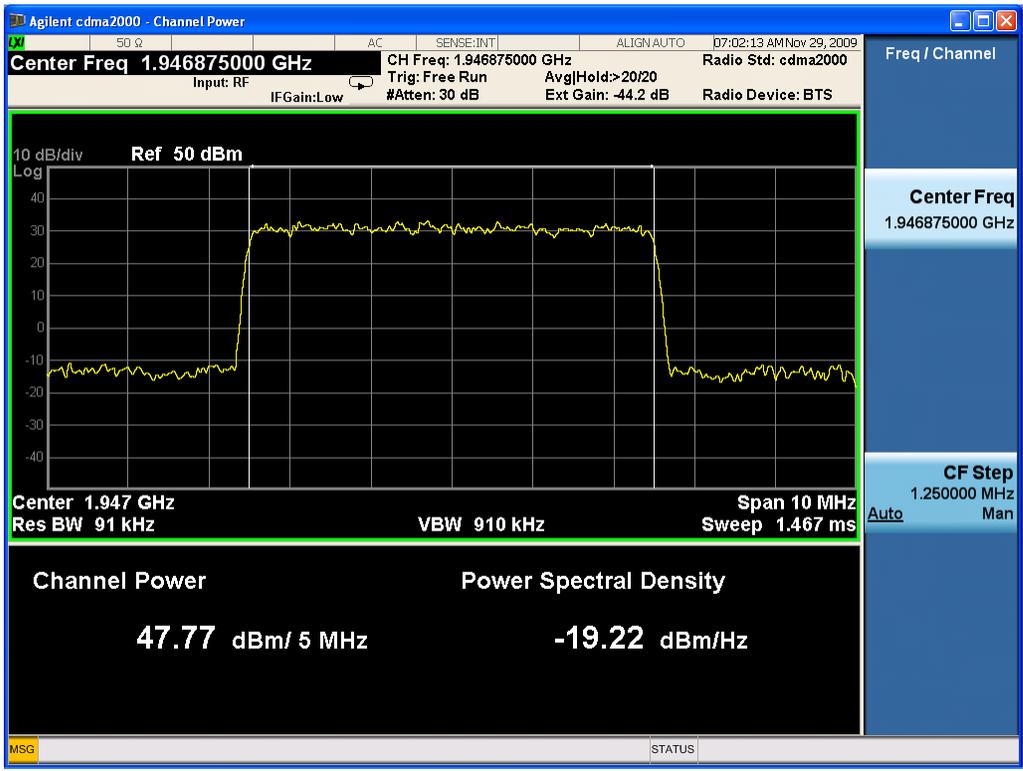
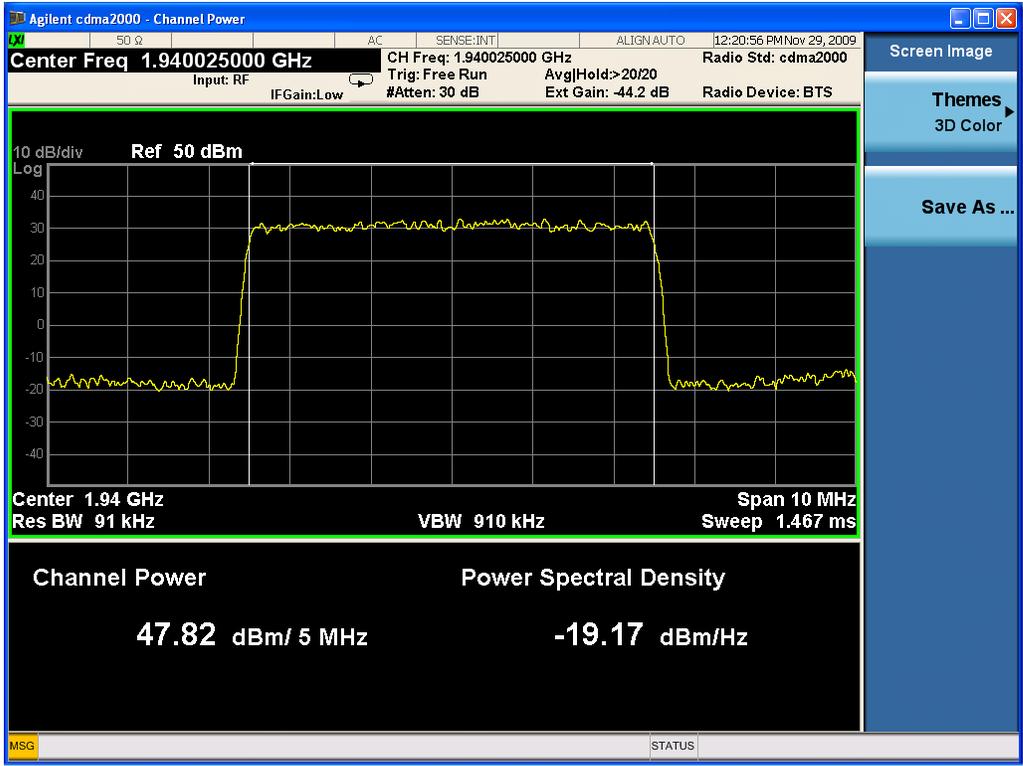
According to the CCDF as below, the peak-to-average ratio is 7.77dB less than 13 dB. So the average detector was used during the transmitter output power test.



Four Carriers

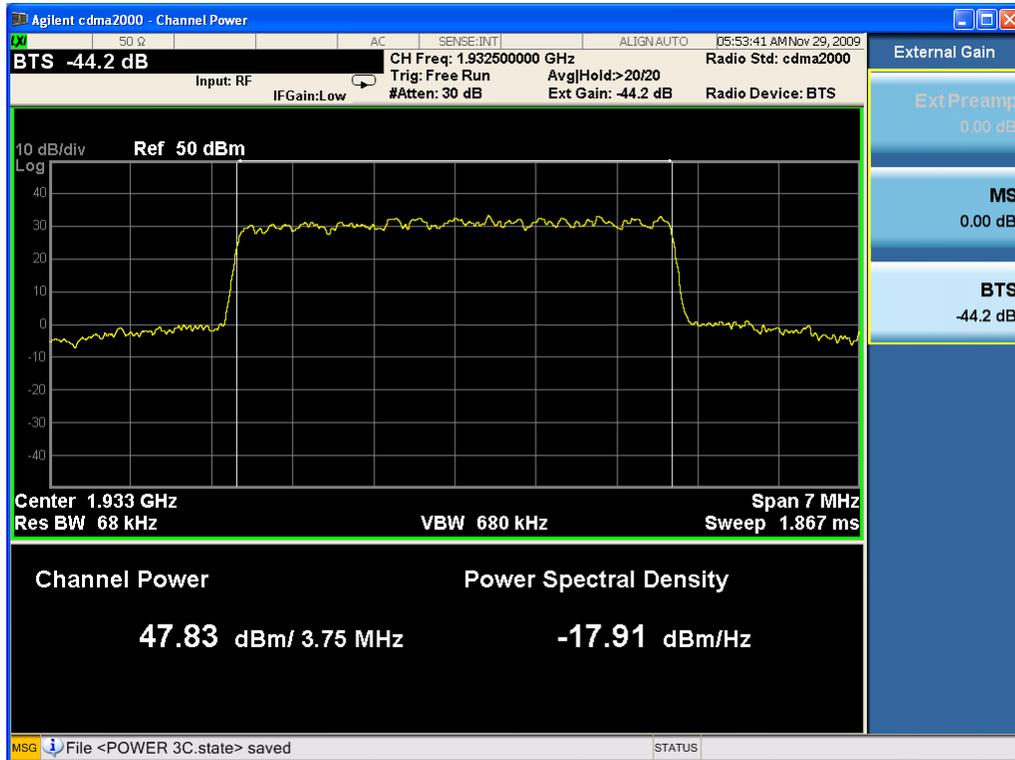
Center Freq. (MHz)	Max output Power in dBm	Typical Antenna gain dBi	Typical Cable loss dB	EIRP in W	EIRP (simultaneous transmission) in W
1933.125	47.66	13	3.4	532.1083	1064.217
1940.025	47.82	13	3.4	552.0774	1104.155
1946.875	47.77	13	3.4	545.7579	1091.516

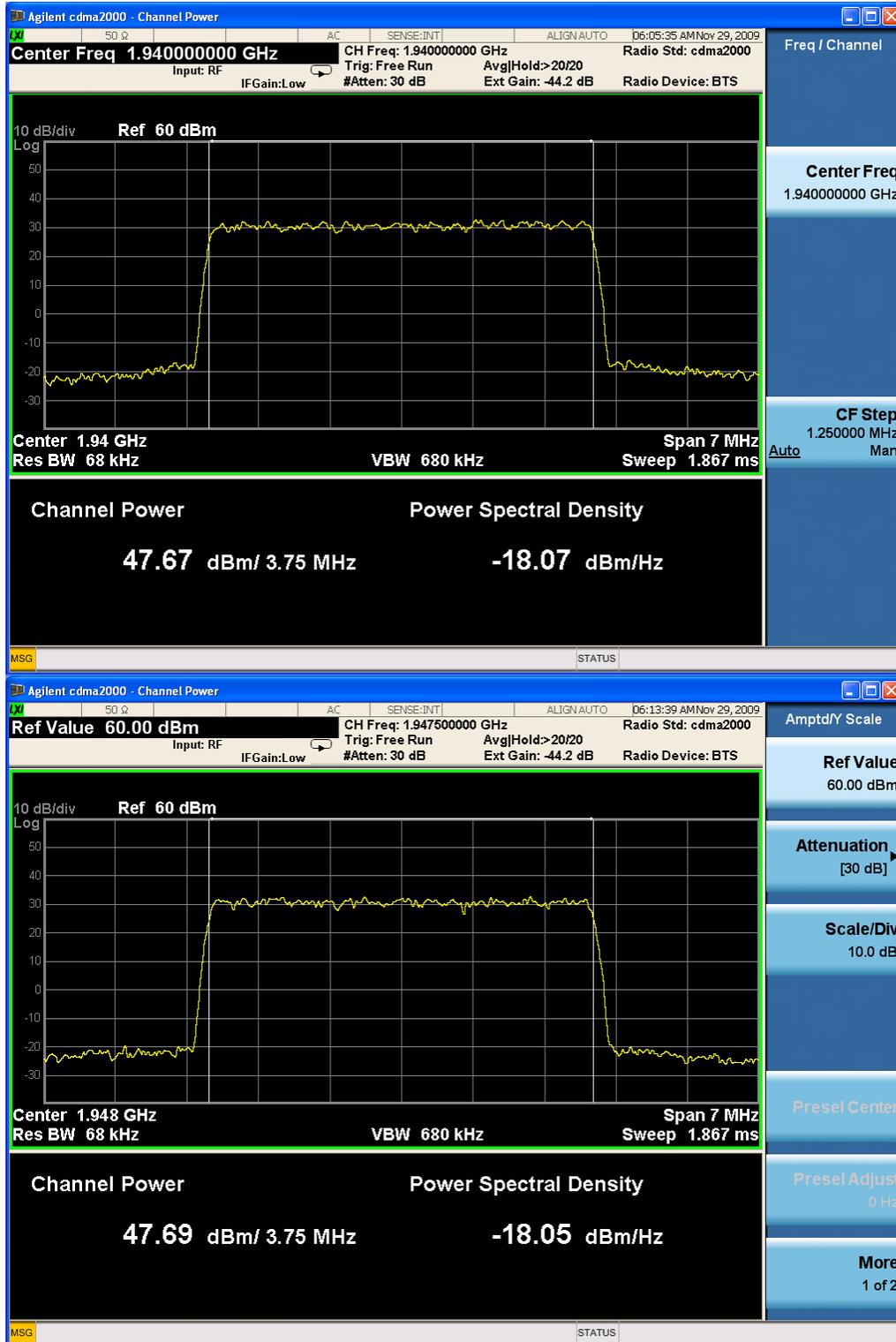




Three carriers

Center Freq. (MHz)	Max output Power in dBm	Typical Antenna gain dBi	Typical Cable loss dB	EIRP in W	EIRP (simultaneous transmission) in W
1932.5	47.83	13	3.4	553.3501	1106.7
1940	47.67	13	3.4	533.3349	1066.67
1947.5	47.69	13	3.4	535.7967	1071.593

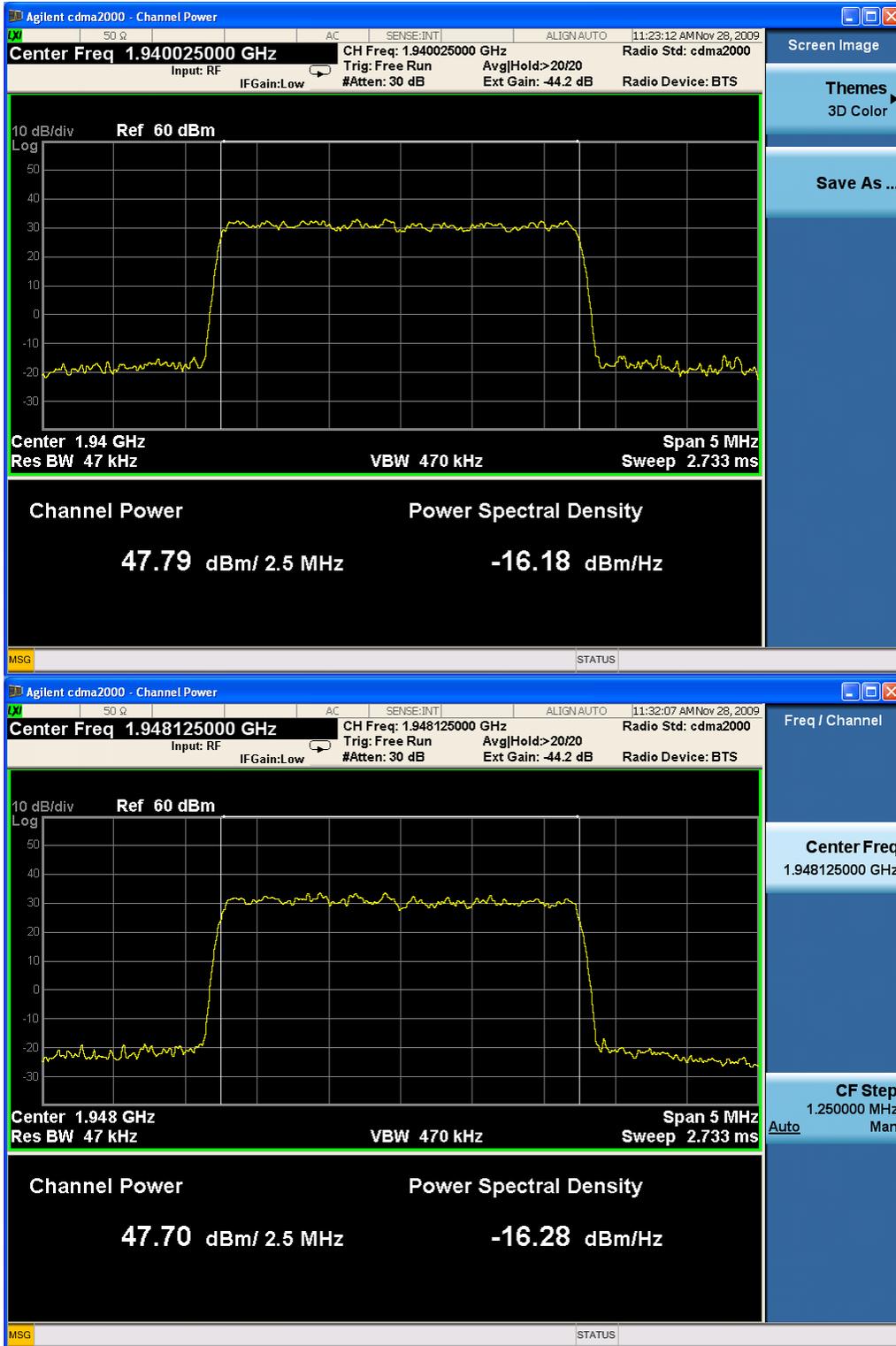




Two carriers

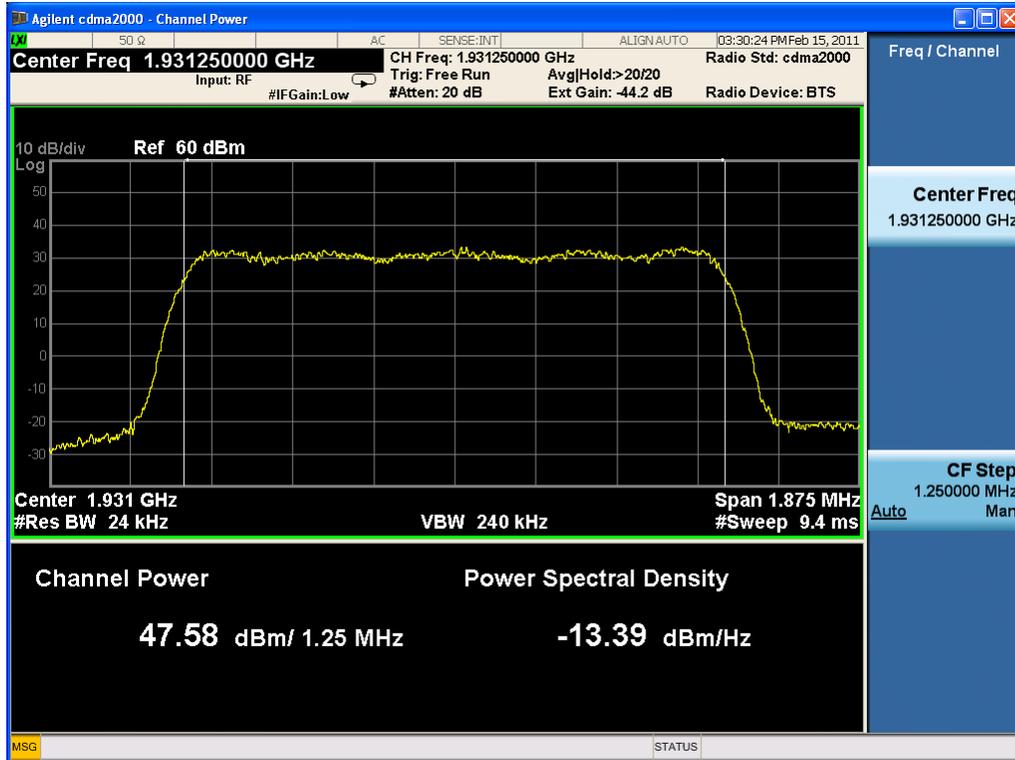
Center Freq. (MHz)	Max output Power in dBm	Typical Antenna gain dBi	Typical Cable loss dB	EIRP in W	EIRP (simultaneous transmission) in W
1931.875	47.83	13	3.4	553.3501	1106.7
1940.025	47.79	13	3.4	548.277	1096.554
1948.125	47.7	13	3.4	537.0318	1074.064

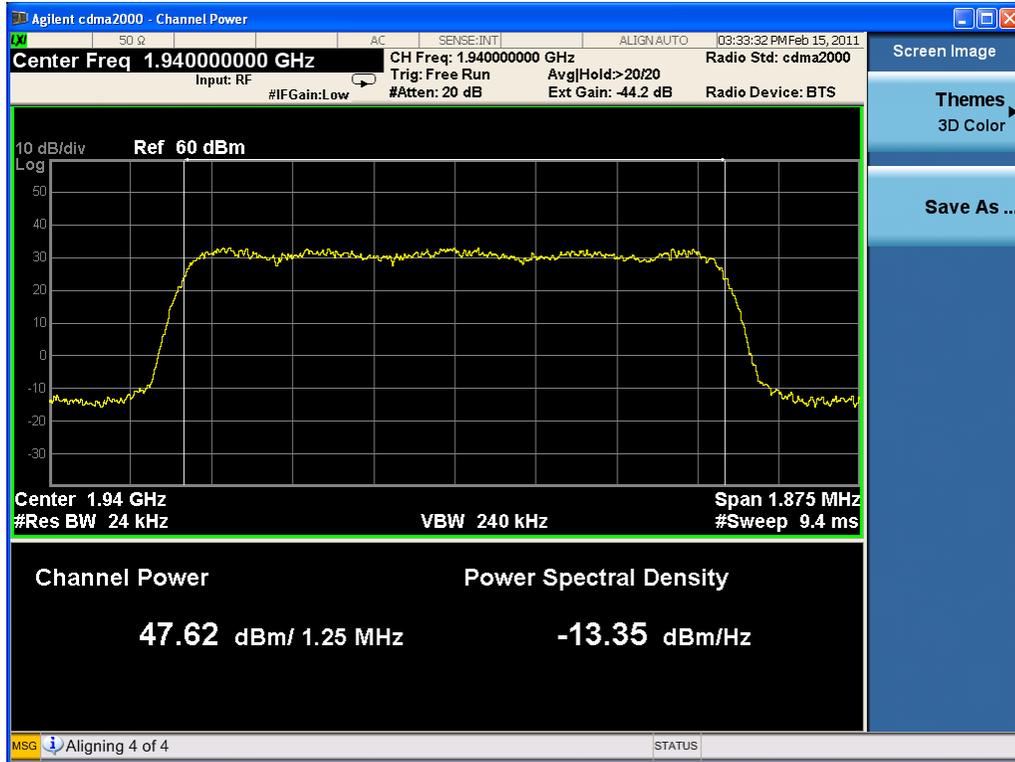




One carrier

Center Freq. (MHz)	Max output Power in dBm	Typical Antenna gain dBi	Typical Cable loss dB	EIRP in W	EIRP (simultaneous transmission) in W
1931.25	47.58	13	3.4	522.3962	1044.792
1940	47.62	13	3.4	527.2299	1054.46
1948.75	47.61	13	3.4	526.0173	1052.035





6 RF EXPOSURE

Applicable standard: FCC §2.1091 §1.1037

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

$$S = \text{EIRP} / 4\pi R^2$$

Where: S = power density

EIRP = equivalent (or effective) isotropically radiated power

R = distance to the center of radiation of the antenna

According to the chapter 5, the Maximum EIRP is 553.3501 W in 1932.5 MHz and the Maximum EIRP with simultaneous transmission is 1106.7 W in 1932.5 MHz

Prediction distance: 400 (cm)

Power density at predication frequency at 400 cm: 0.275 (mW/cm²)

Power density with simultaneous transmission at predication frequency at 400 cm: 0.55 (mW/cm²)

MPE limit for uncontrolled exposure at prediction frequency: 1.0 (mW/cm²)

Test Result: pass

7 MODULATION CHARACTERISTIC

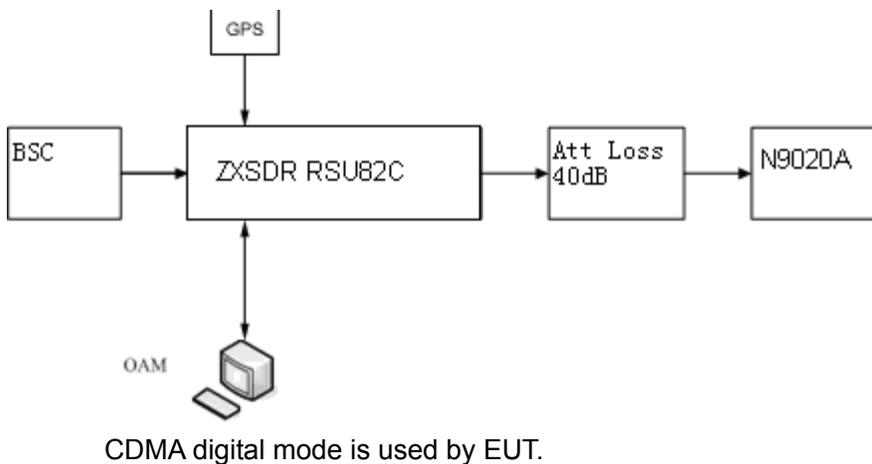
Applicable Standard: FCC §2.1047

Test Equipmet List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2009-4-10	2011-4-9
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



Test Data Environmental Conditions

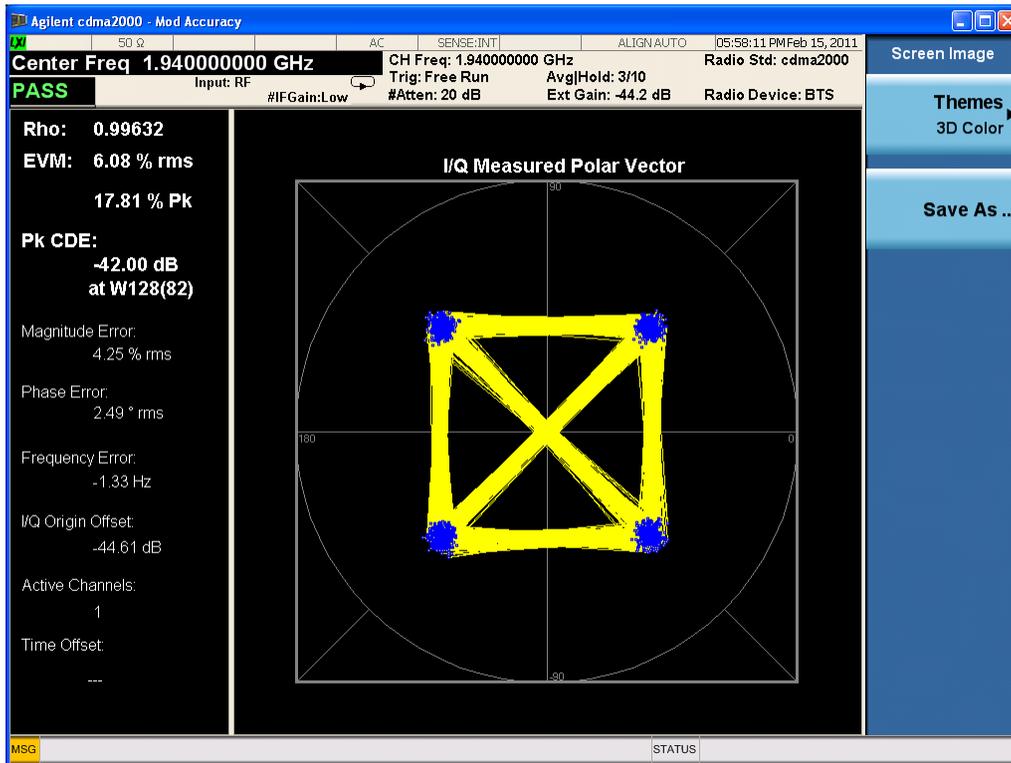
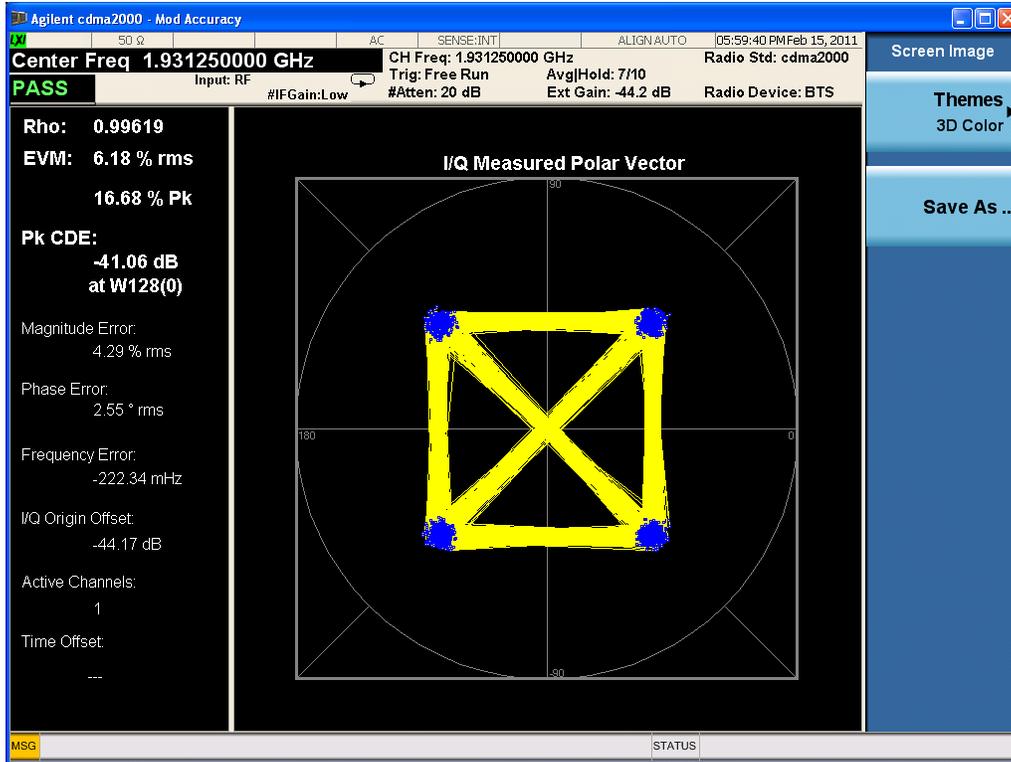
Temperature:	20 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

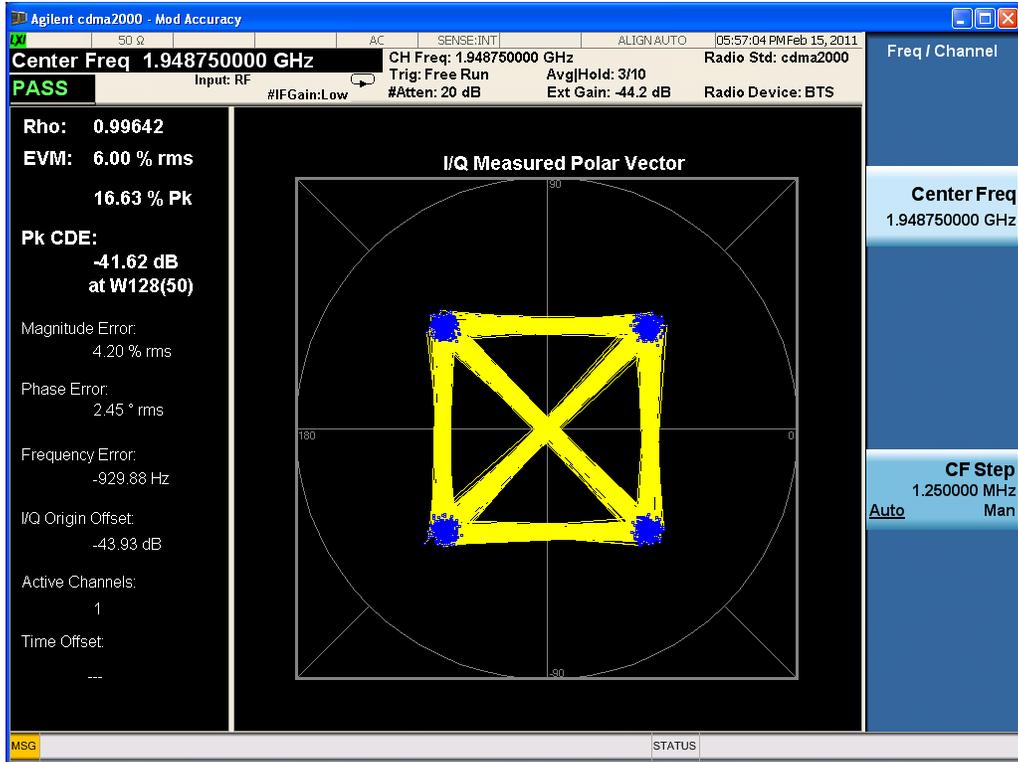
Test Result: Pass

Test Mode: Transmitting CDMA

Test Data:

Frequency (MHz)	Rho
1931.25	0.99619
1940	0.99632
1948.75	0.99642





8 SPURIOUS RADIATED EMISSIONS

Applicable Standard: FCC CFR 47, §2.1053

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

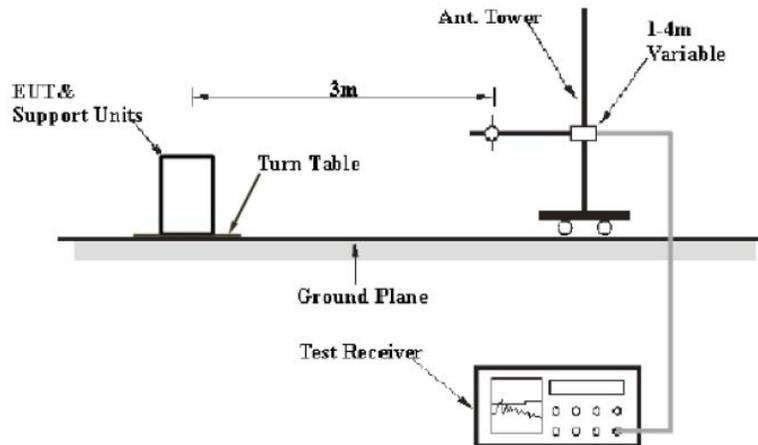
***statement of traceability:** ZTE Corporation Testing lab attest that all calibration have been performed per the NVLAP requirements , traceable to NIST.

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 spurious emission tests were performed in the 3-meter Chamber.

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 tenth 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.

Absolute value EIRP= **Substituted level + antenna gain – cable loss**

Test Results Summary: PASS

Environmental Conditions

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

Test data

Indicated		Table	Test Antenna		Substituted			Absolute Level EIRP (dBm)	Limit (dBm)	Margin (dB)
Frequency (MHz)	Amp. (dBuV/m)	Angle Degree	Height (M)	Polar H/V	Level (dBm)	Antenna Gain Correction	Cable Loss dB			
86.372745	41.25	259	1.0	V	-36.13	-19.65	0.8	-56.58	-13	43.58
181.623246	34.23	310	1.0	V	-59.81	-0.97	1.1	-61.88	-13	48.88
984.448898	36.19	359	1.0	V	-59.92	-4.1	2.6	-66.62	-13	53.62
1228.45691	57.58	146	1.5	V	-48.07	4.25	2.9	-46.72	-13	33.72
2979.95992	57.92	359	1.0	V	-43.82	7.95	4.6	-40.47	-13	27.47
179.679359	50.91	83	1.0	H	-64.22	-1.65	1.1	-66.97	-13	53.97
212.725451	49.98	180	1.0	H	-68.03	1.23	1.2	-68	-13	55
904.749499	60.62	148	1.0	H	-59.7	-1.77	2.5	-63.97	-13	50.97
1228.45691	57.51	83	1.5	H	-58.73	4.25	2.9	-57.38	-13	44.38
2927.85571	77.37	212	1.0	H	-46.67	7.95	4.6	-43.32	-13	30.32

Radiation emission spurious below 3GHz (Low channel 1931MHz of EUT)

Indicated		Table	Test Antenna		Substituted			Absolute Level EIRP (dBm)	Limit (dBm)	Margin (dB)
Frequency (MHz)	Amp. (dBuV/m)	Angle Degree	Height (M)	Polar H/V	Level (dBm)	Antenna Gain Correction	Cable Loss dB			
3416.83367	48.46	182	1	V	-59.08	7.75	4.9	-56.23	-13	43.23
3857.71543	58.69	118	2	V	-46.47	7.75	5.2	-43.92	-13	30.92
5797.59519	59.06	275	2	V	-44.42	9.05	6.5	-41.87	-13	28.87
10230.4609	57.43	130	1	V	-51.39	11.35	8.9	-48.94	-13	35.94
14372.7455	62.17	130	1	V	-47.35	9.65	10.8	-48.5	-13	35.5
19973.9479	76.07	25	1	V	-31.46	6.45	12.2	-37.21	-13	24.21
3416.83367	50.91	117	2	H	-52.35	7.75	4.9	-49.5	-13	36.5
3857.71543	49.98	117	2	H	-51.58	7.75	5.2	-49.03	-13	36.03
5797.59519	60.62	328	2	H	-37.99	9.05	6.5	-35.44	-13	22.44
10256.513	57.51	339	1	H	-51.43	11.35	8.9	-48.98	-13	35.98

Radiation emission spurious above 3GHz (Low channel 1931MHz of EUT)

When simultaneous transmission is considered, the worst case is that EIRP will be added 3dBm to EIRP in single transmission. It will be under limit.

9 SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Applicable Standard: FCC§2.1051, §24.238

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

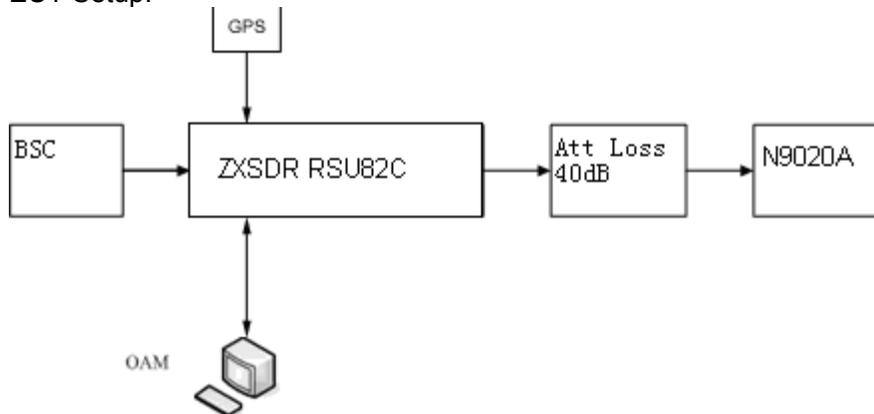
Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2009-4-10	2012-4-9
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 attests that all calibrations have been performed per the NVLAP requirements, traceable to NIST.

Test Procedure

EUT Setup:



REMARKS: Attenuator loss (dB)=40dB, Cable Loss (dB)=4.2dB.

The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 100 kHz for 9KHz to 1GHZ scanning, set at 1MHz for 1GHz to 20GHz scanning. The average detector was used for the test. 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

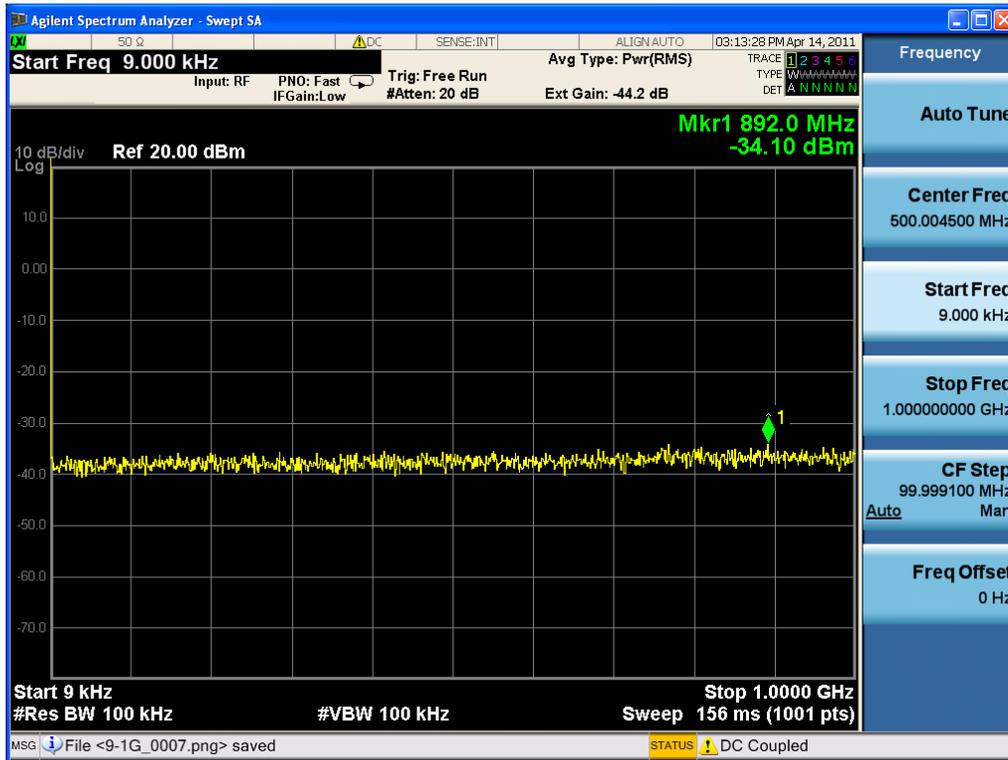
Test Mode: Transmitting CDMA

Test Data:

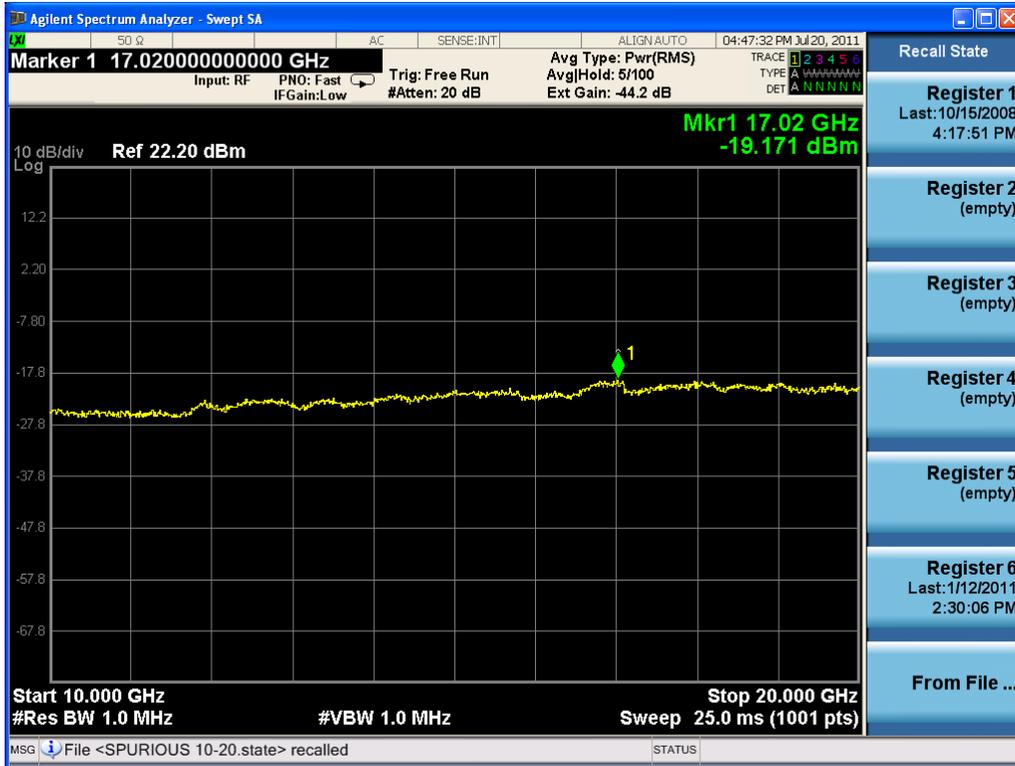
Numbers of carriers		9KHz-1G	1-10G	10-20G
1C	B	-34.14	-23	-19.54
	M	-34.56	-23	-19.45
	T	-34.33	-23	-19.756
2C	B	-34.76	-23	-19.628
	M	-34.4	-23	-19.352
	T	-33.66	-23	-19.34
3C	B	-34.41	-23	-19.61
	M	-34.1	-23	-19.711
	T	-34.4	-23	-19.576
4C	B	-34.1	-23	-19.171
	M	-34.4	-23	-19.763
	T	-34.04	-23	-19.397

When simultaneous transmission is considered, the worst case is transmitter power will be added 3dBm. It will be under limit.

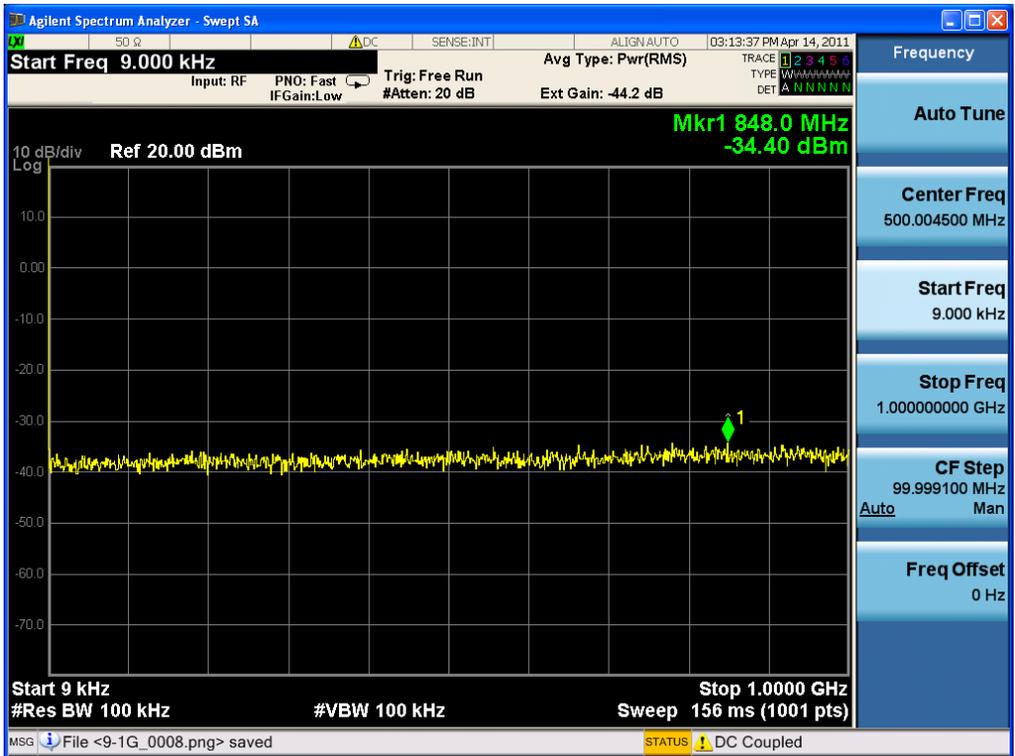
Four Carriers (working in bottom frequency)

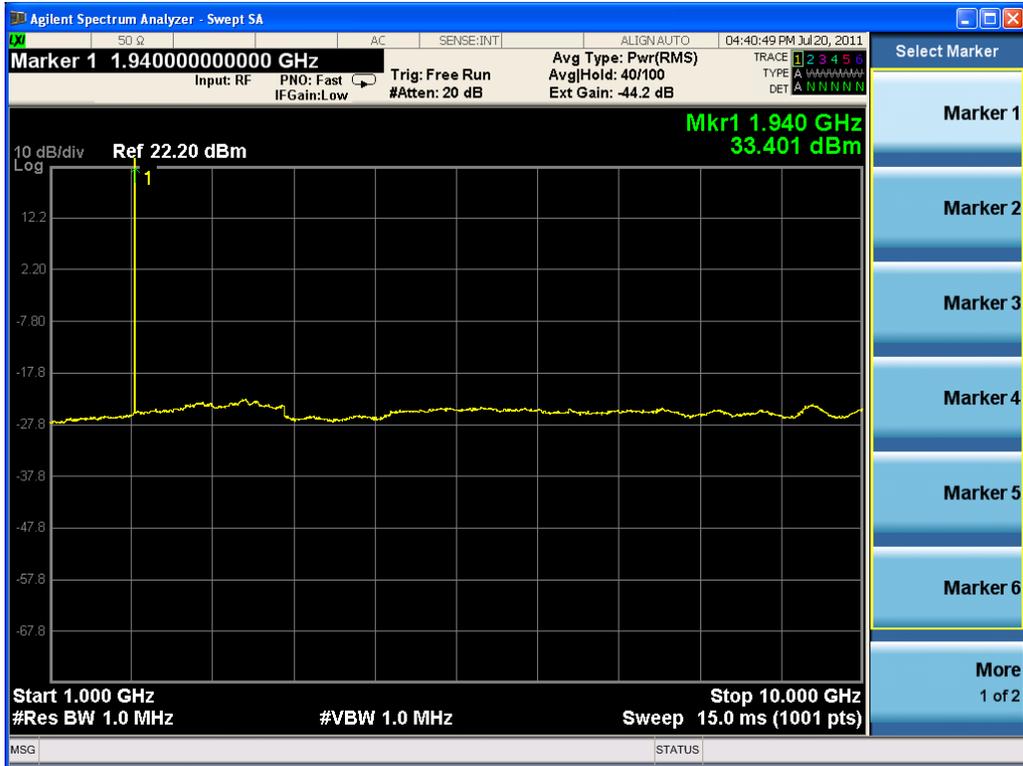


* The highest point is in working frequency block



Four carriers (working in top frequency)

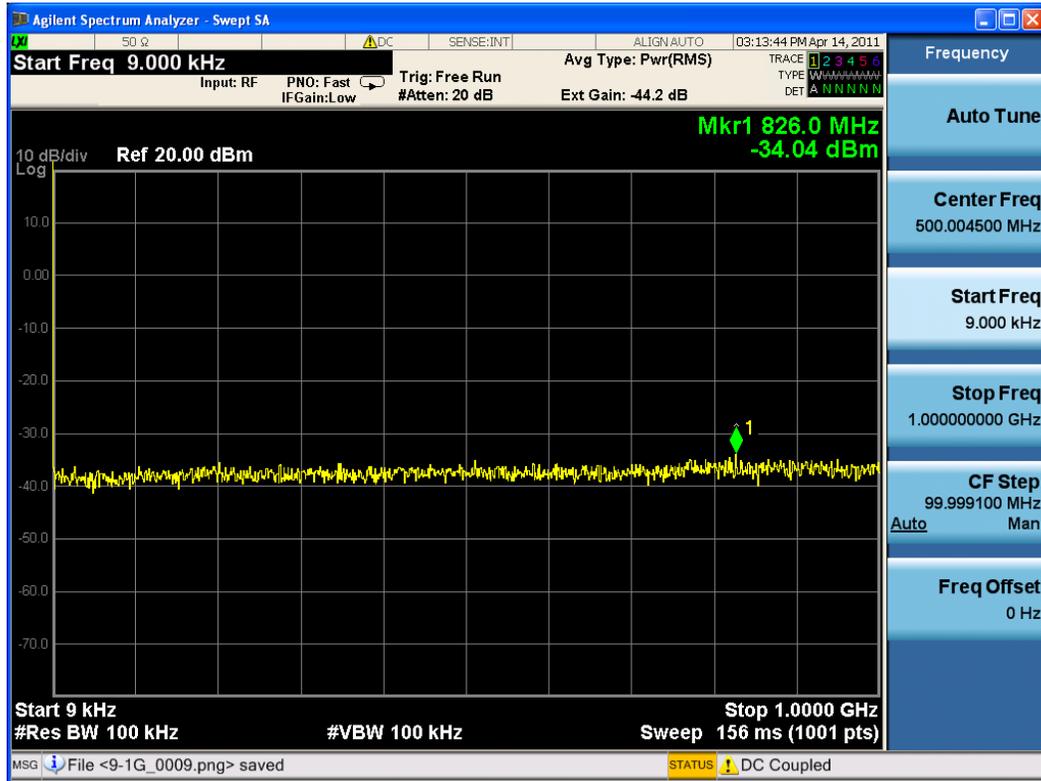




* The highest point is in working frequency block



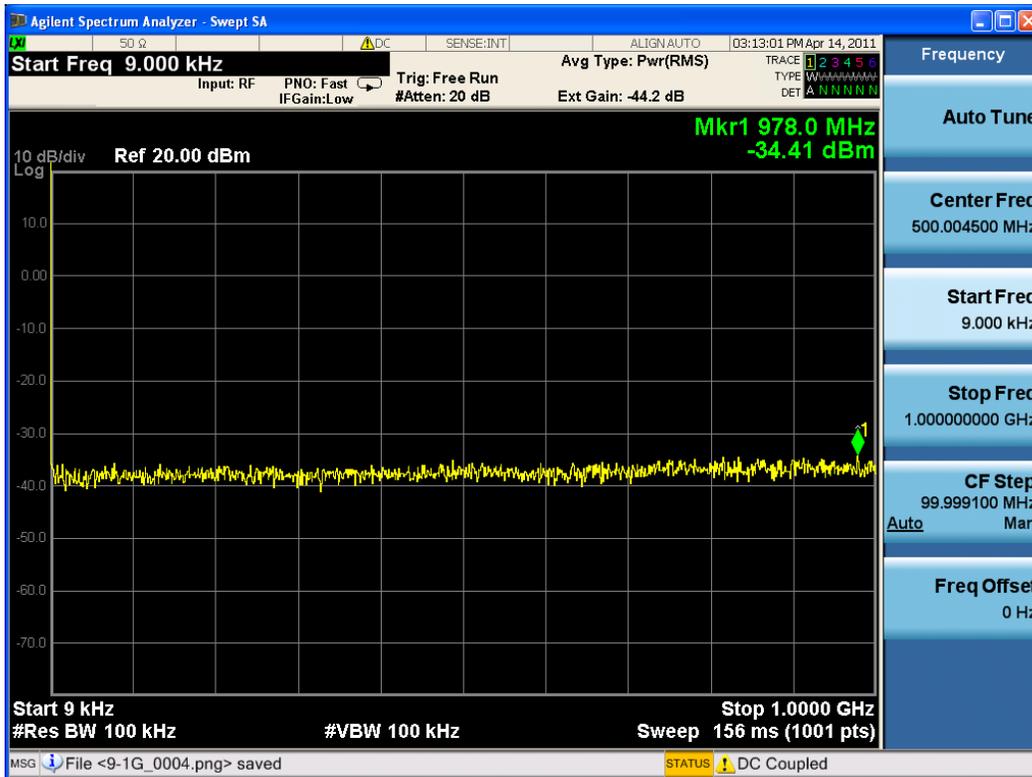
Four carriers (working in middle frequency)

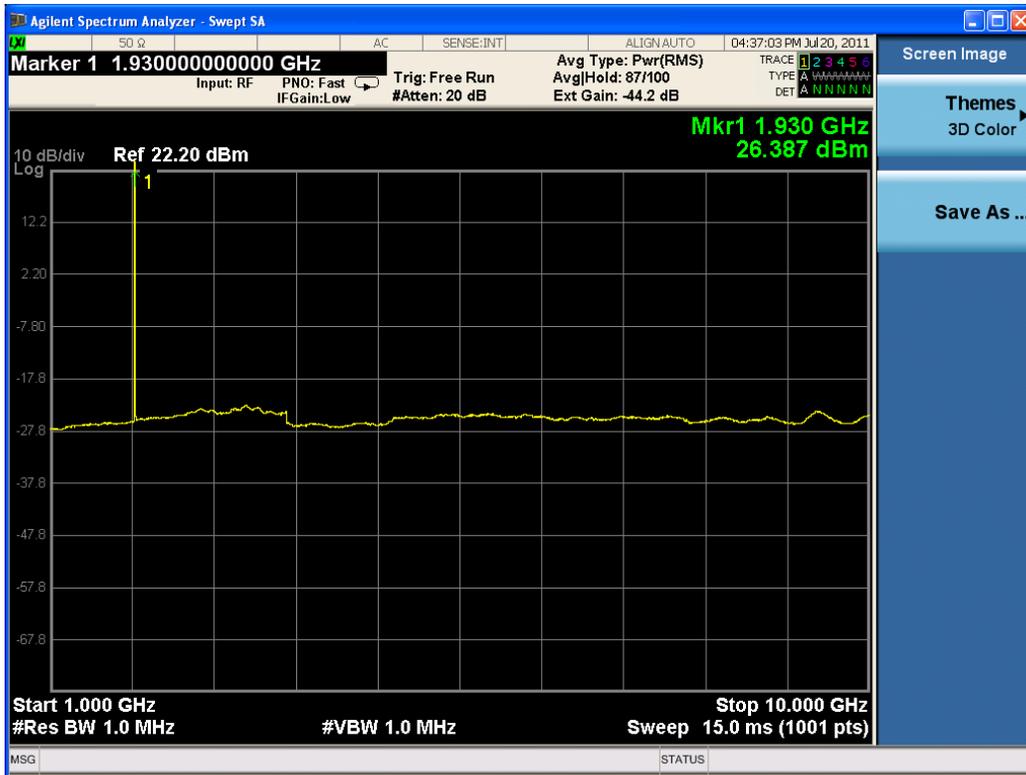


* The highest point is in working frequency block

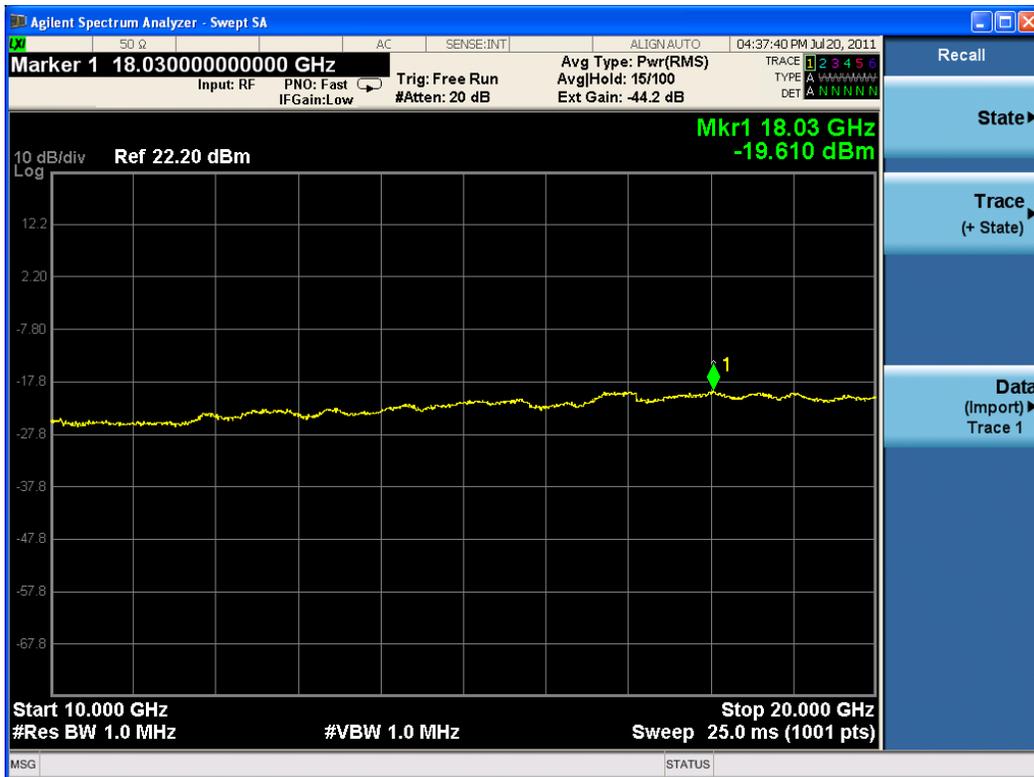


Three carriers (working in bottom frequency)

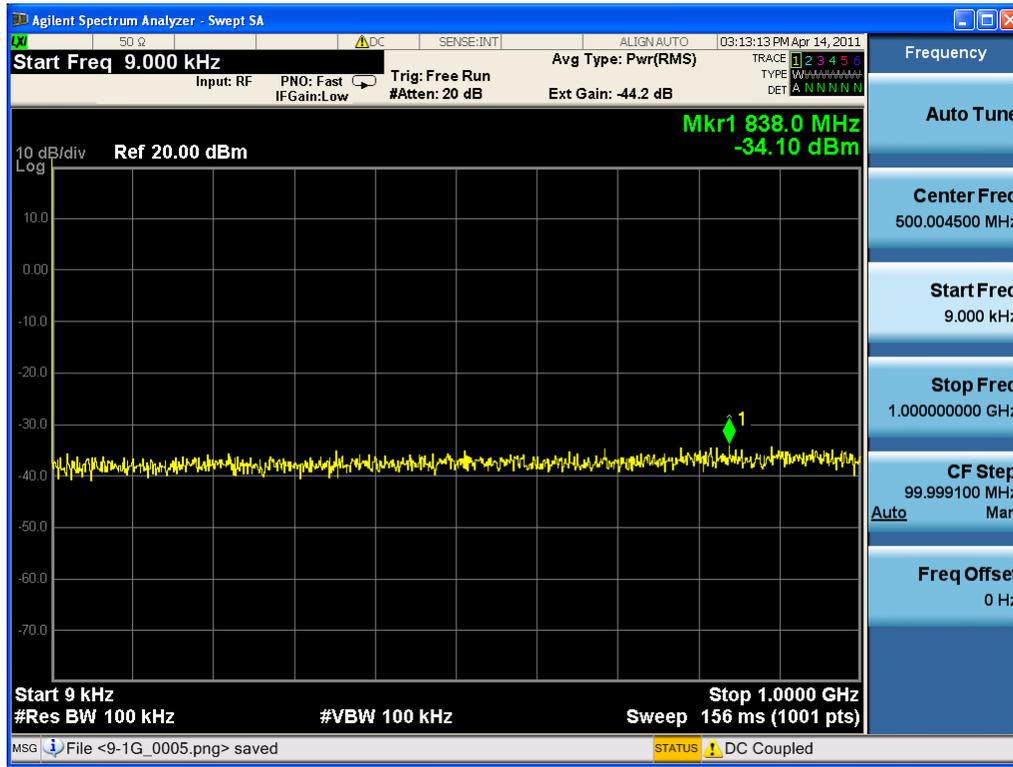




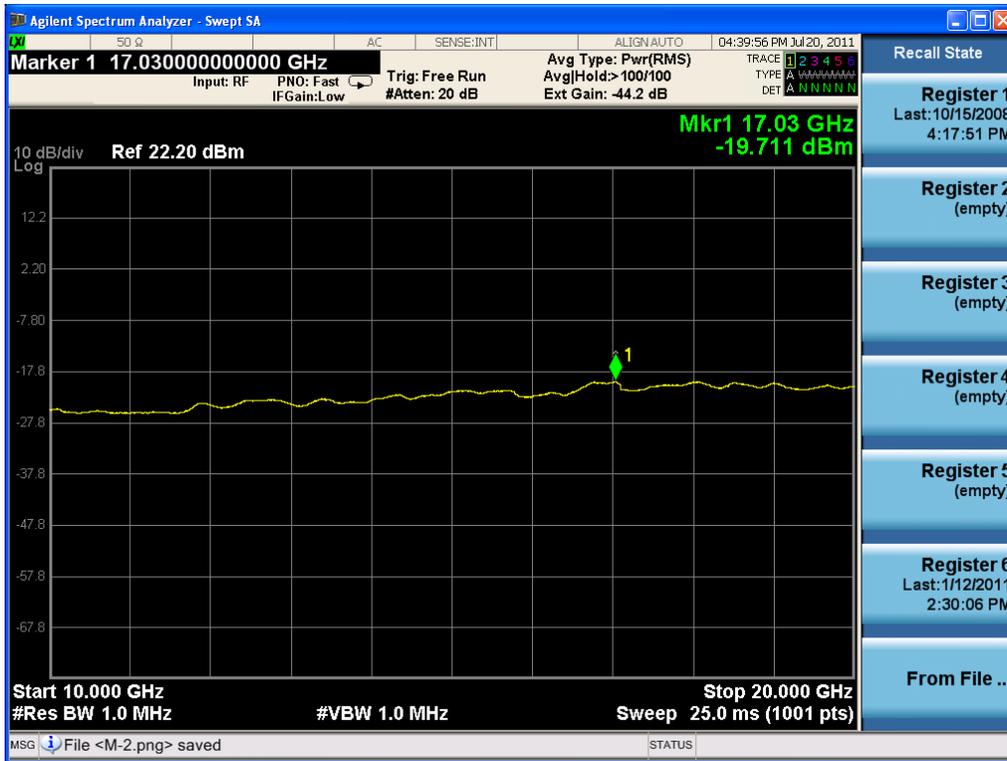
* The highest point is in working frequency block



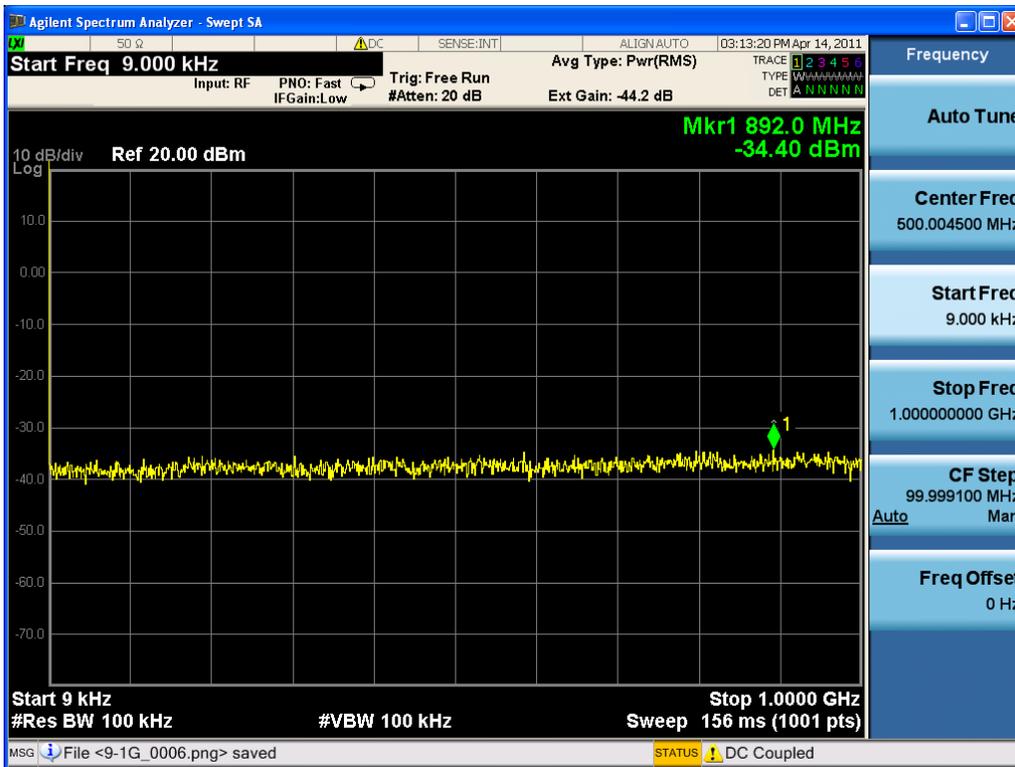
Three carriers (working in Middle frequency)



* The highest point is in working frequency block

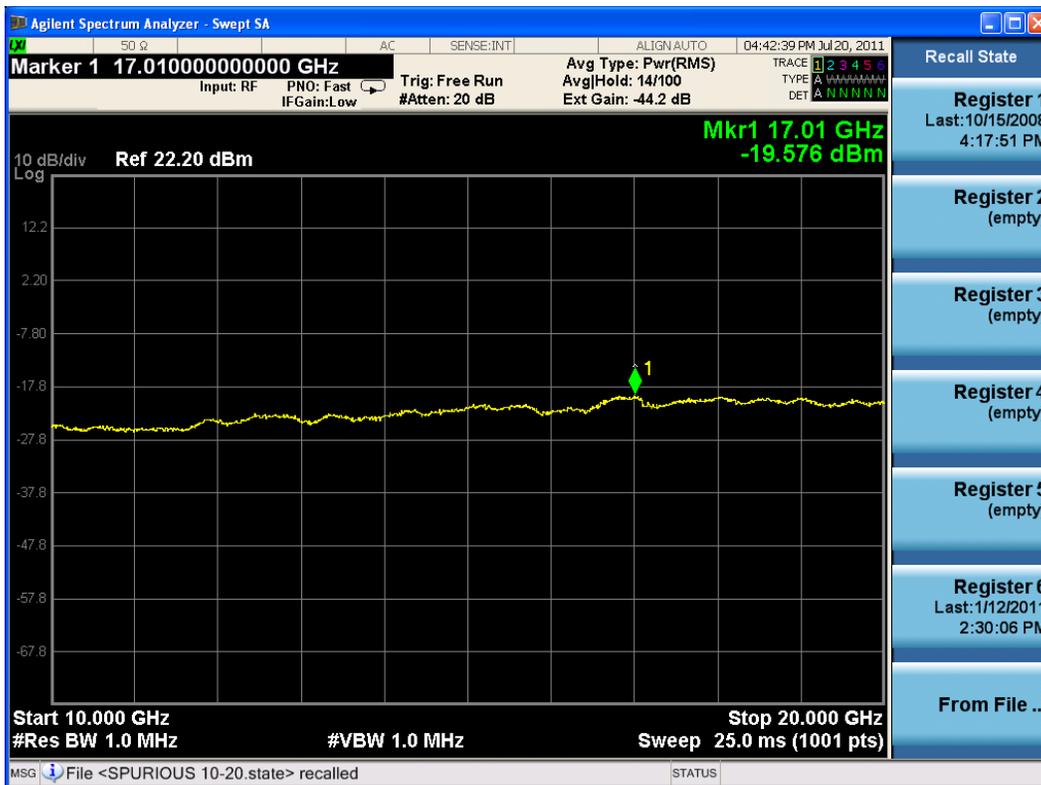


Three carriers (working in Top frequency)

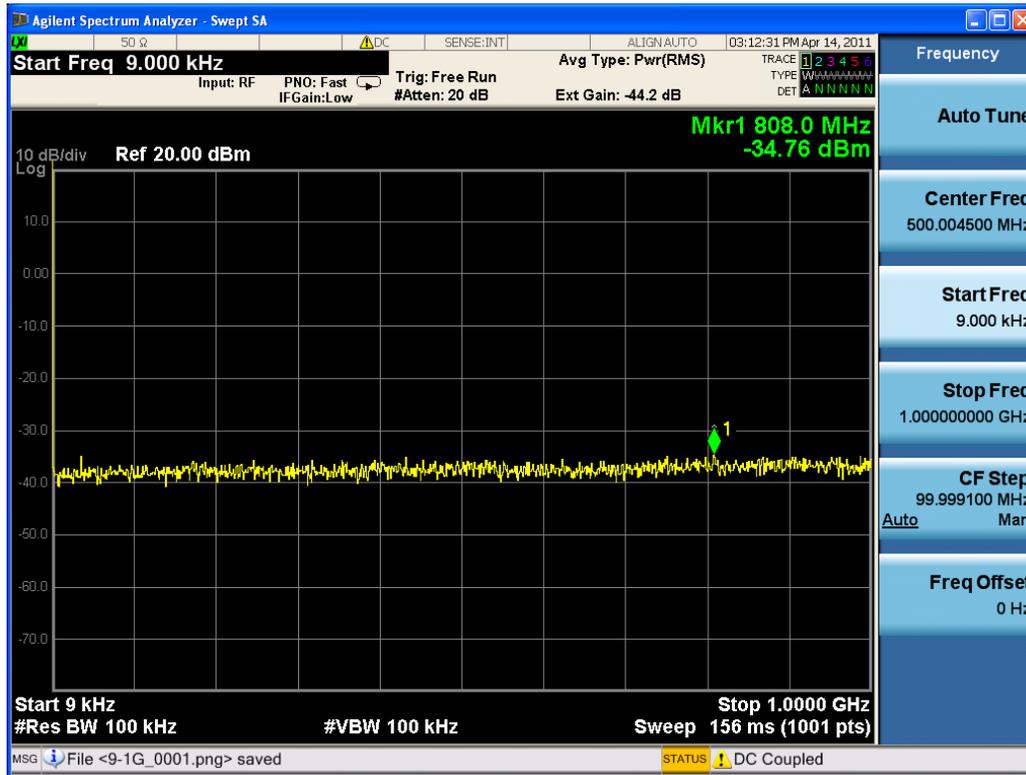




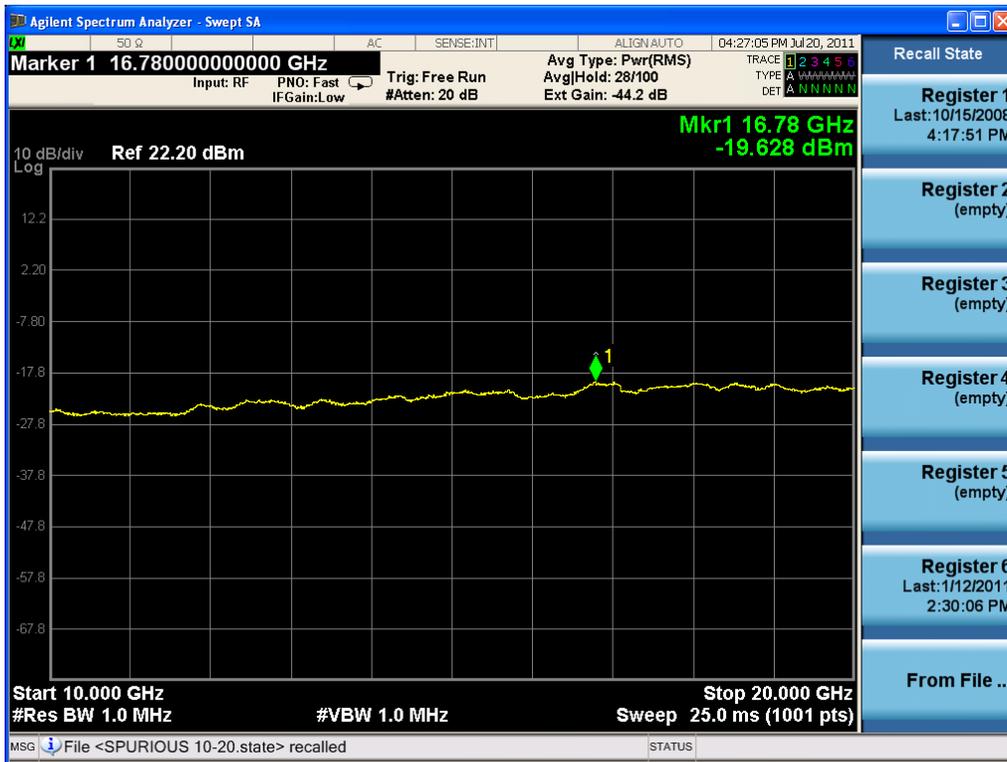
* The highest point is in working frequency block



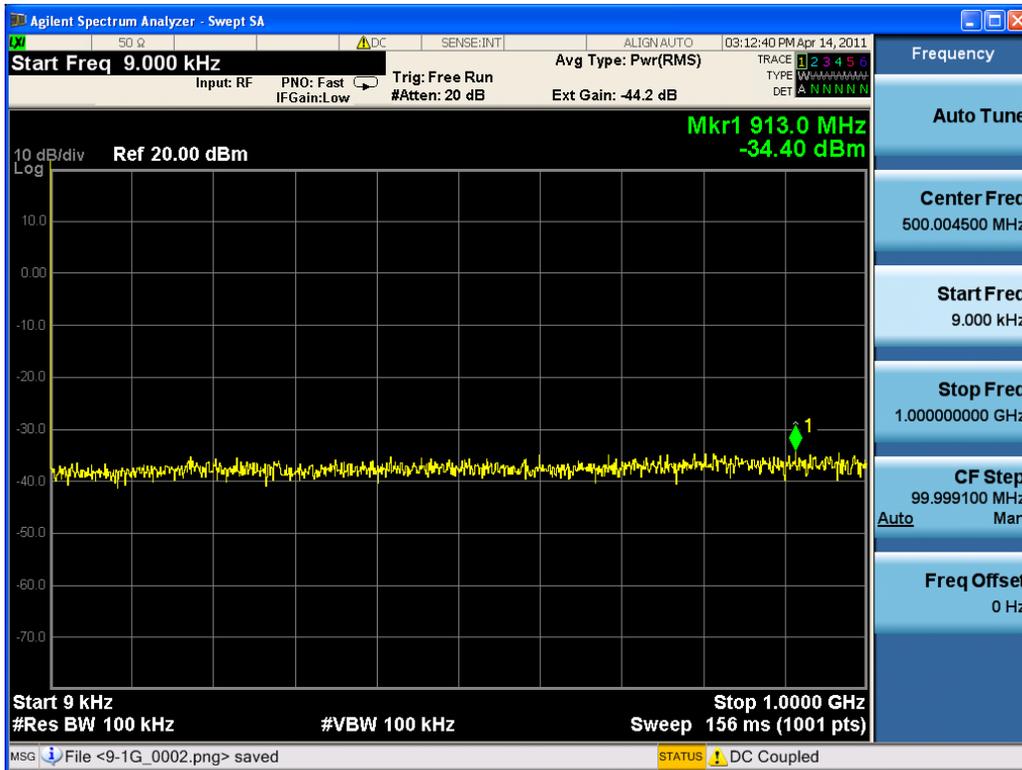
Two carriers (working in bottom frequency)



* The highest point is in working frequency block



Two carriers (working in Middle frequency)

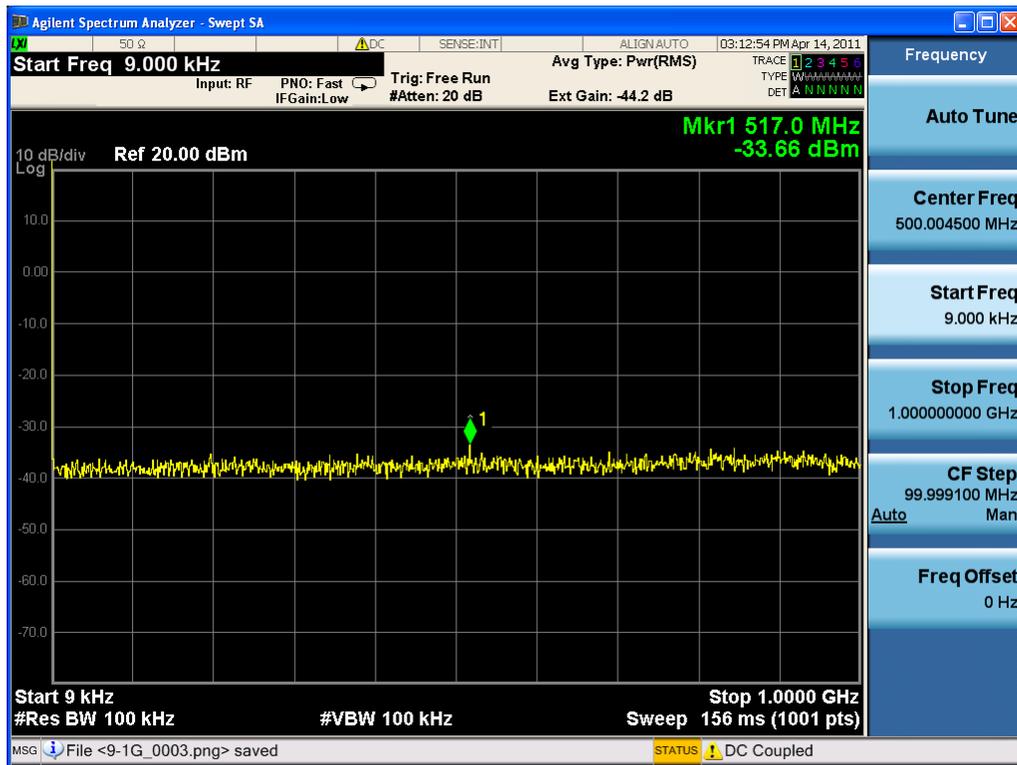




* The highest point is in working frequency block



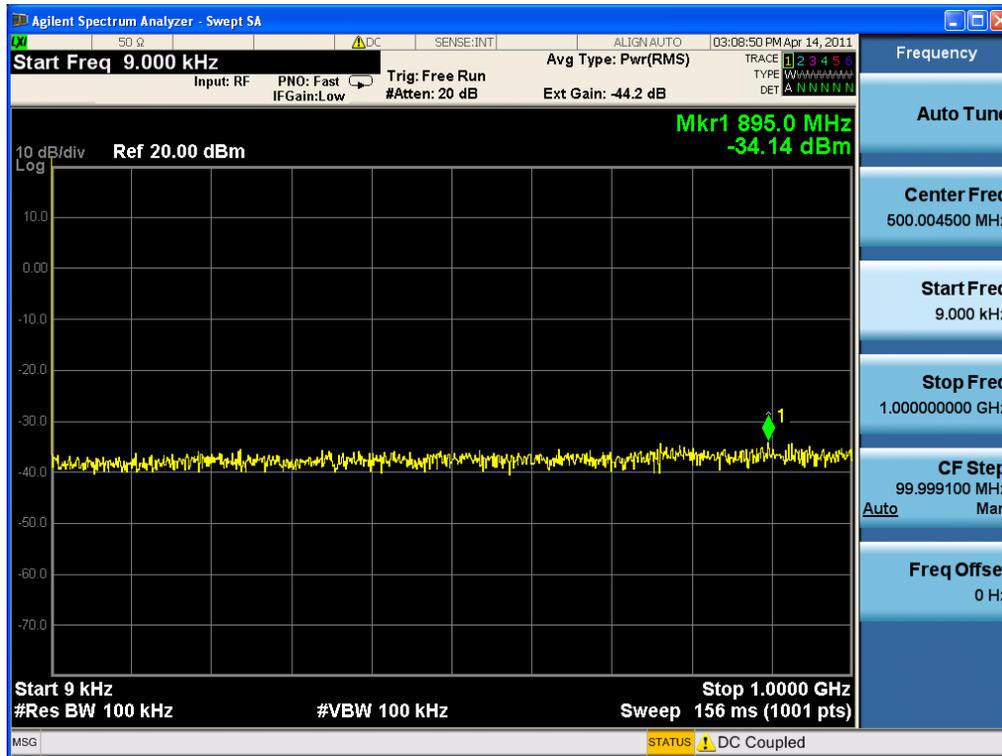
Two carriers (working in Top frequency)



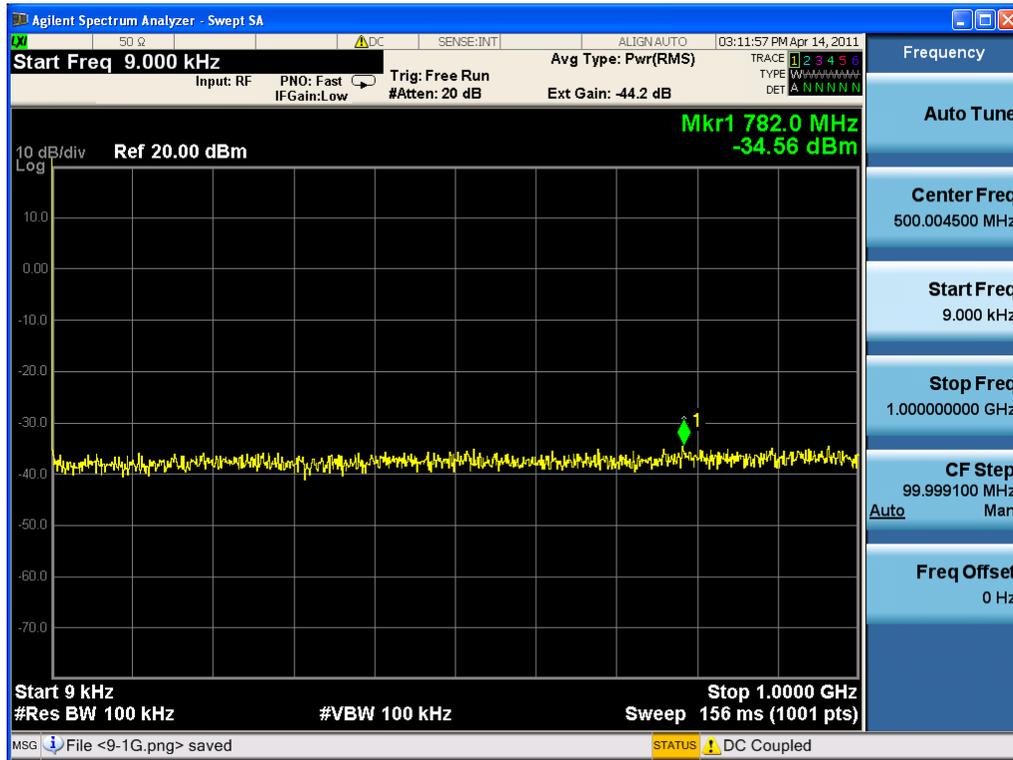
* The highest point is in working frequency block



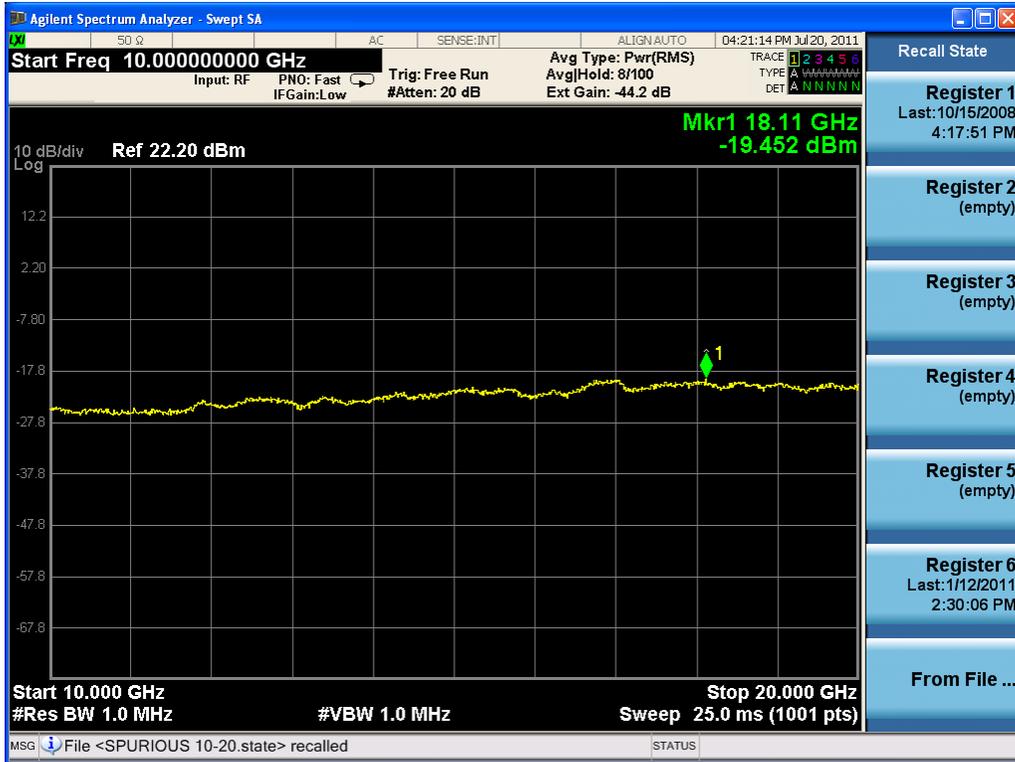
One carrier (working in bottom frequency)



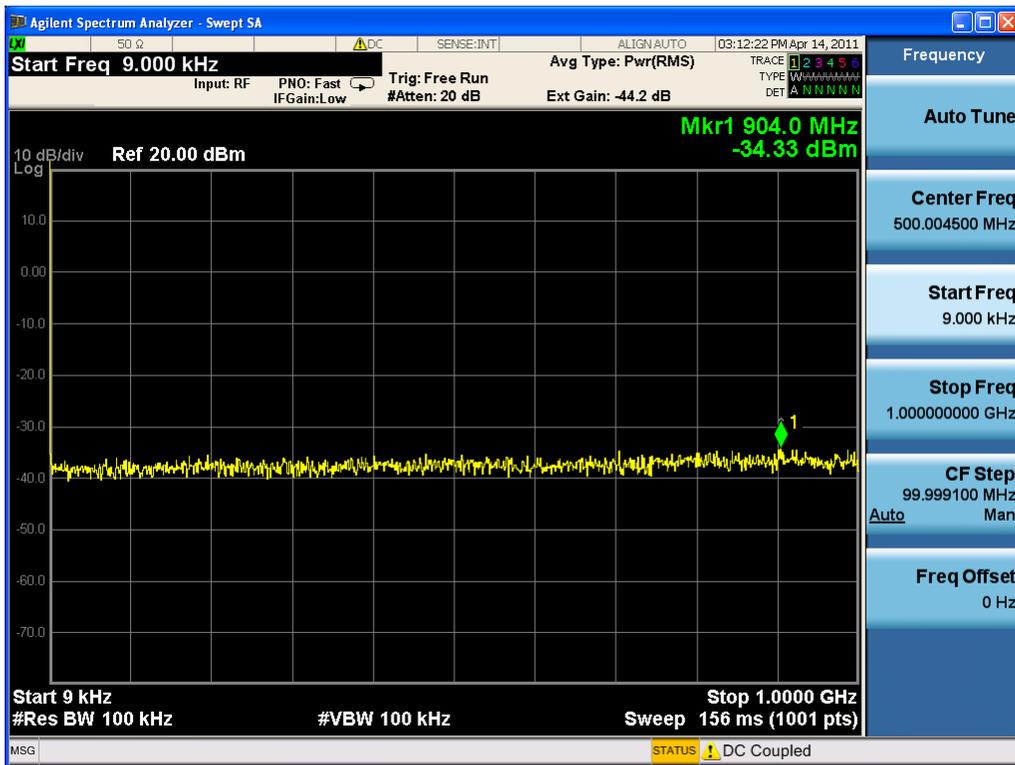
One carrier (working in middle frequency)



* The highest point is in working frequency block

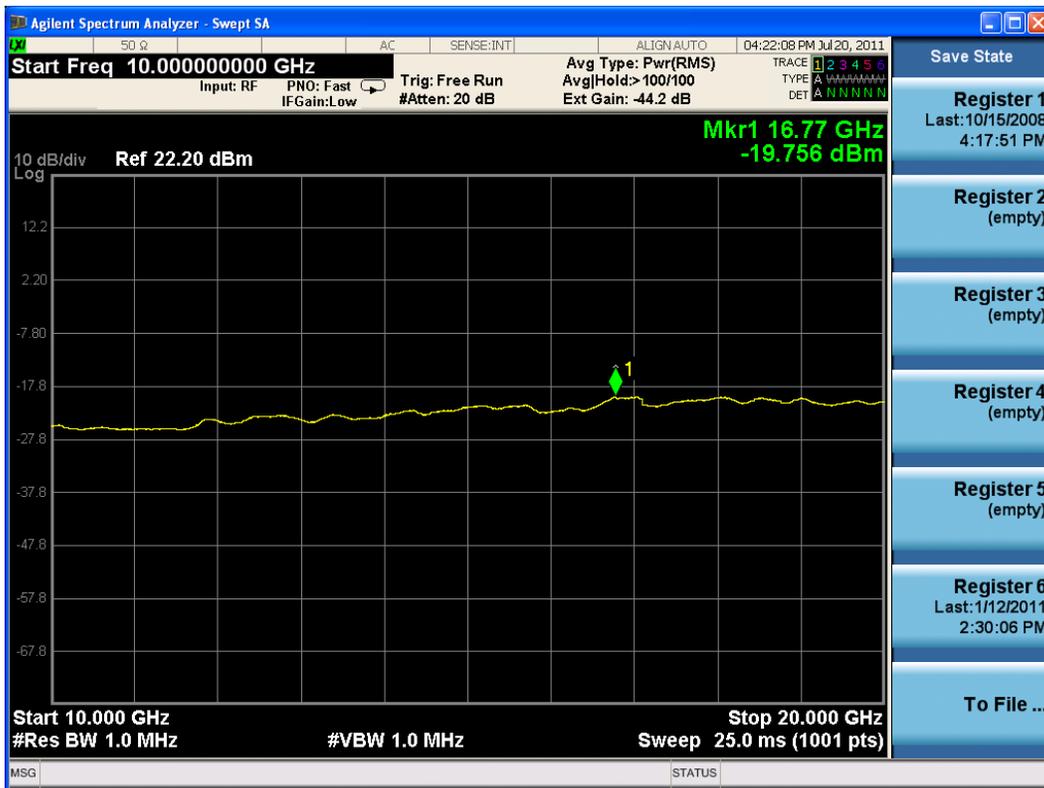


One carrier (working in top frequency)





* The highest point is in working frequency block



10 OCCUPIED BANDWIDTH

Applicable Standard: FCC §2.1049 §24.229 §24.2381

Test Equipment List and Details :

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2009-4-10	2011-4-9
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.

Environmental Conditions

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

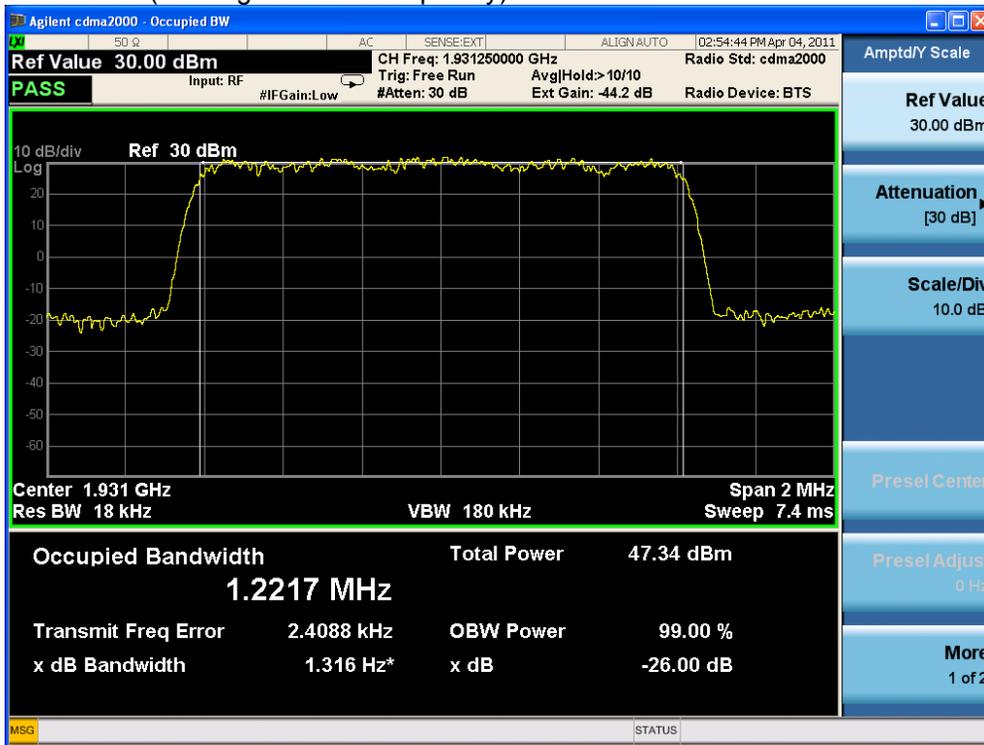
Test Result: Pass

Test Mode: Transmitting CDMA

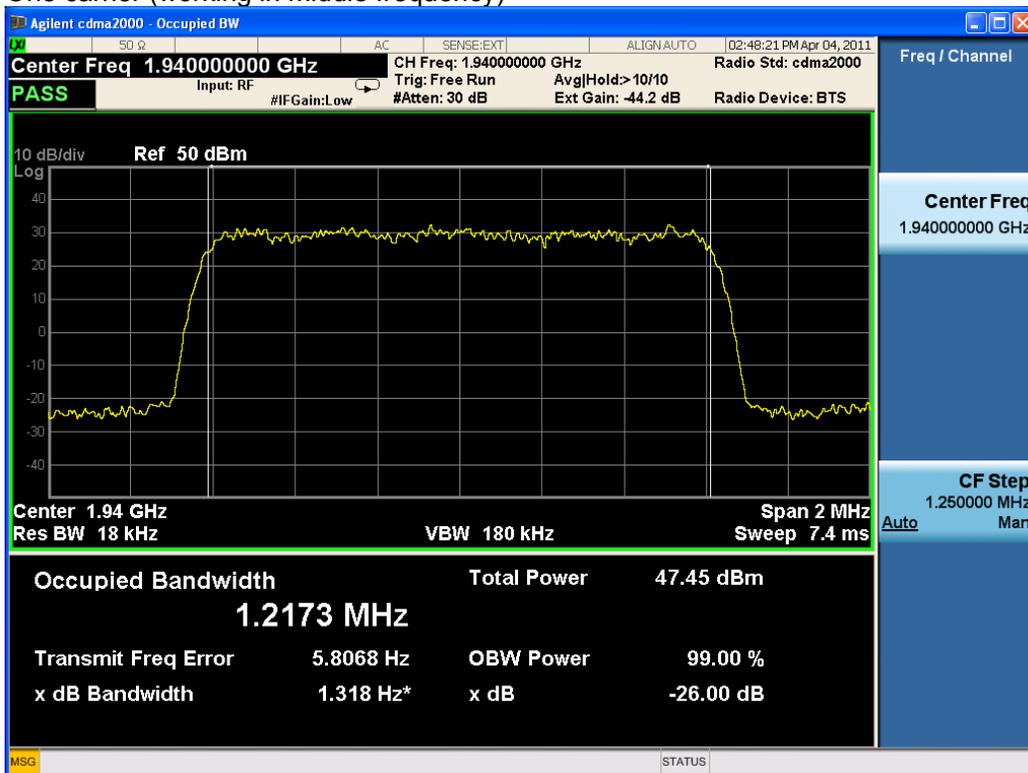
Test Data

	Frequency (MHz)	99% Power Bandwidth (MHz)	Limit (MHz)
1 Carrier	1931.25	1.2217	1.25
	1940	1.2173	1.25
	1948.75	1.2213	1.25
2 Carrier	1931.875	2.4505	2.5
	1940.025	2.4623	2.5
	1948.125	2.4561	2.5
3 Carrier	1932.5	3.7089	3.75
	1940	3.6983	3.75
	1947.5	3.6952	3.75
4 Carrier	1933.125	4.9521	5
	1940.025	4.9281	5
	1946.875	4.9222	5

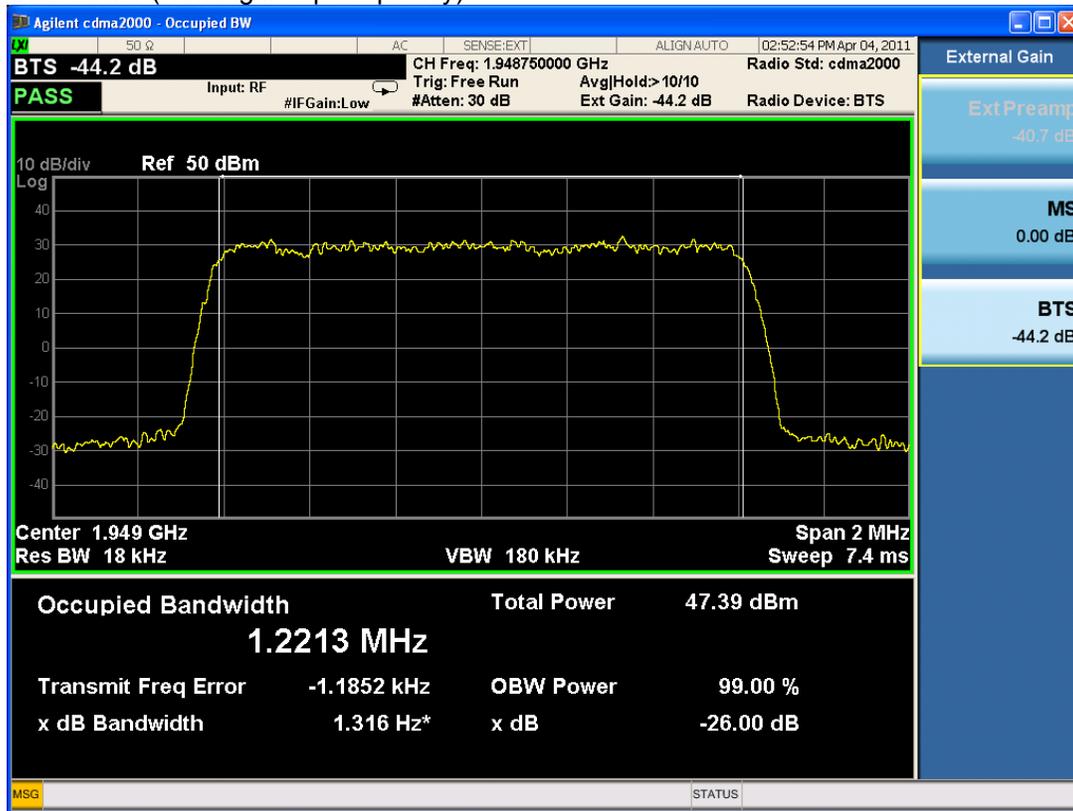
One carrier (working in bottom frequency)



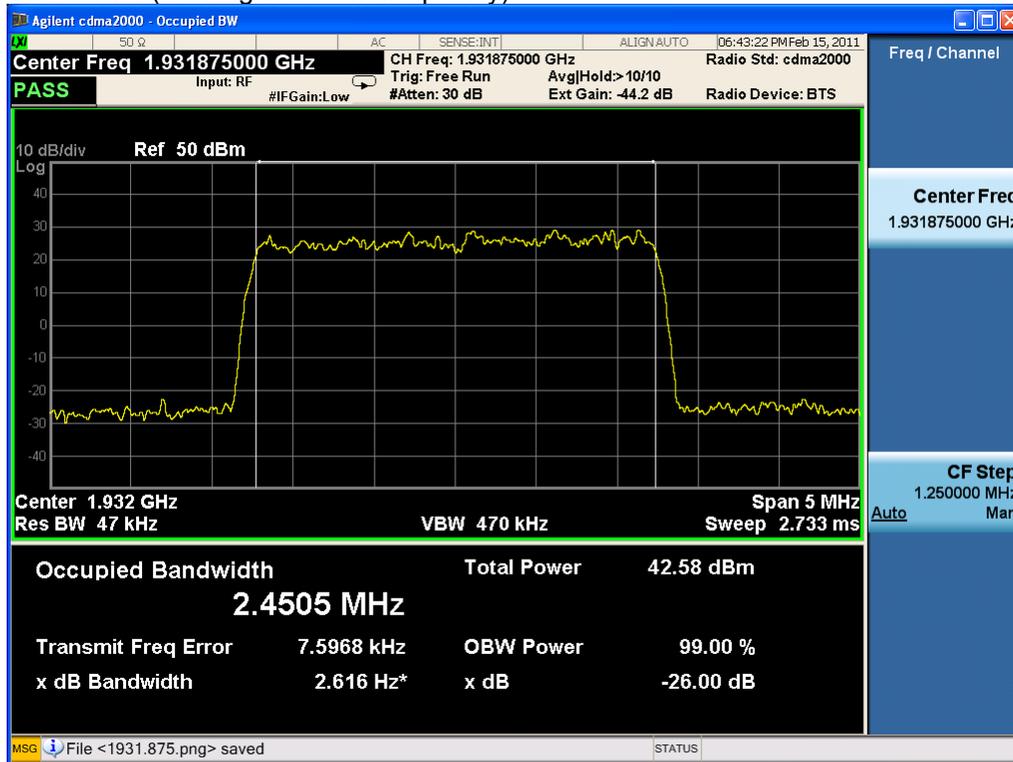
One carrier (working in middle frequency)



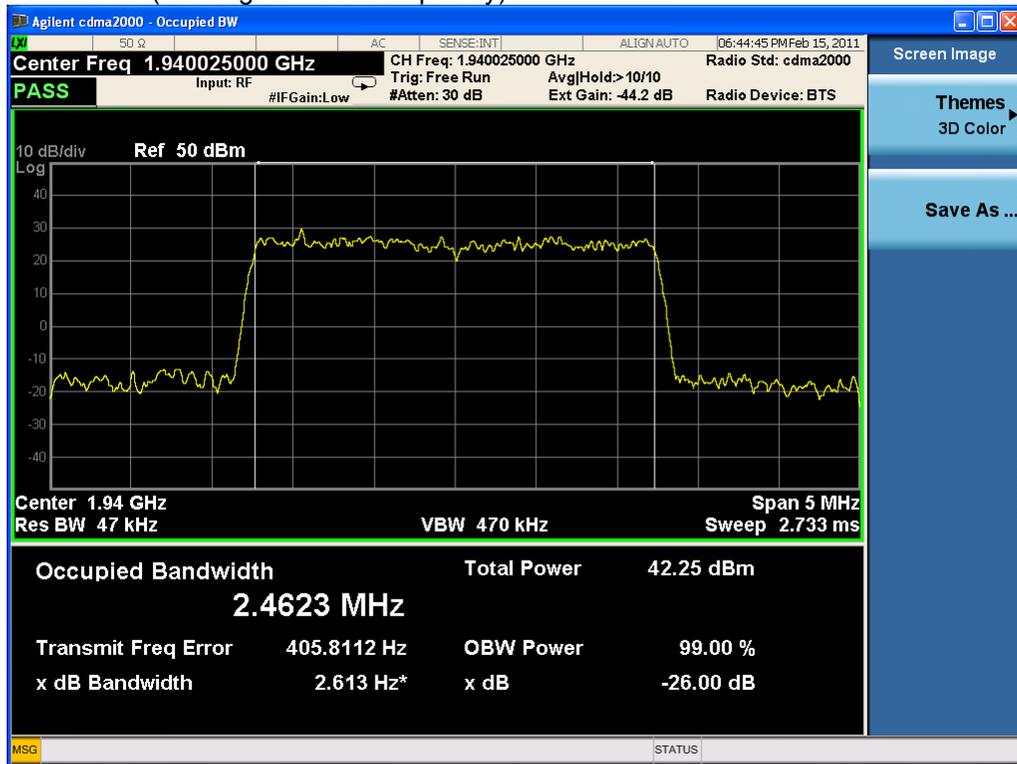
One carrier (working in top frequency)



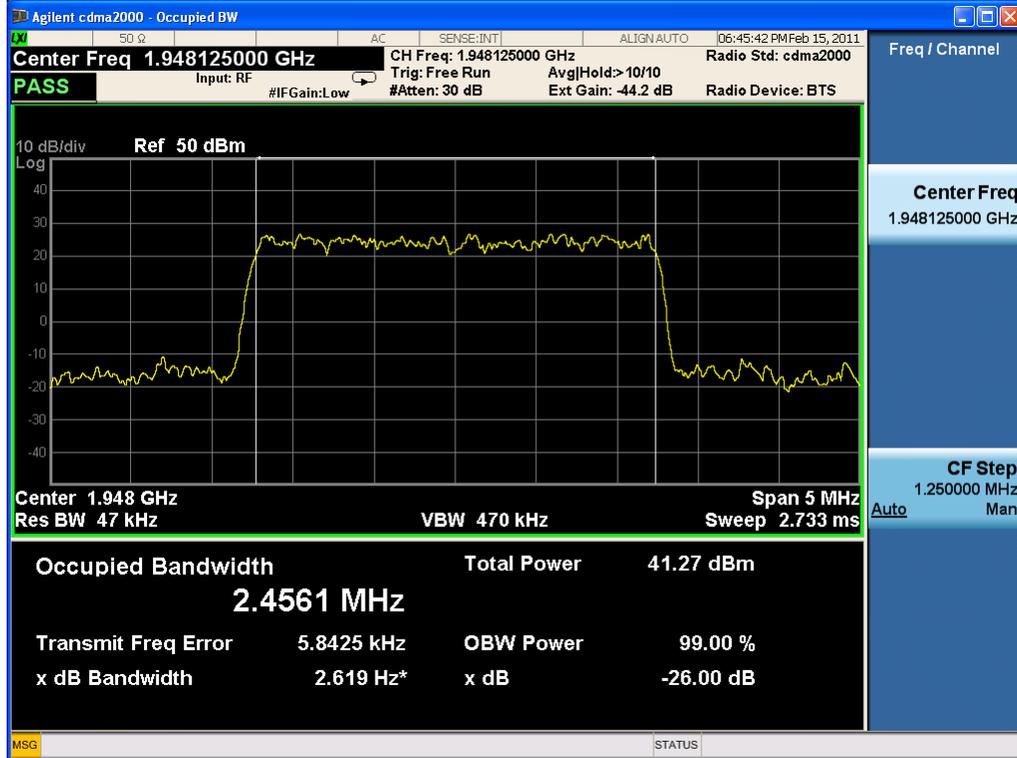
Two carrier (working in bottom frequency)



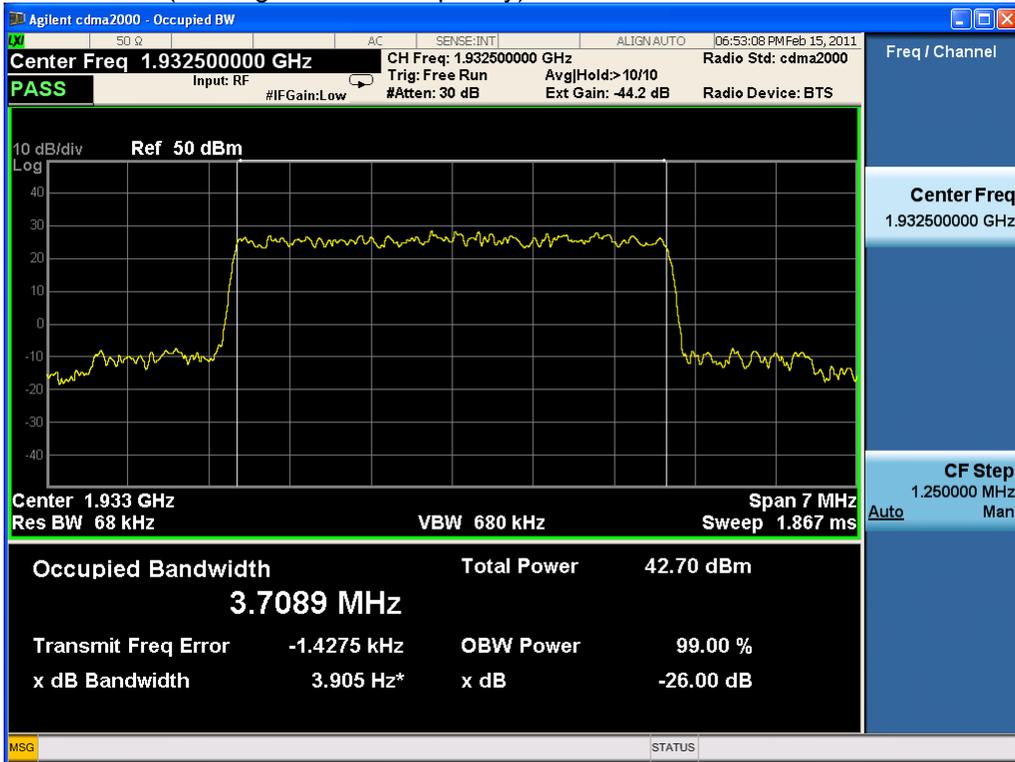
Two carrier (working in middle frequency)



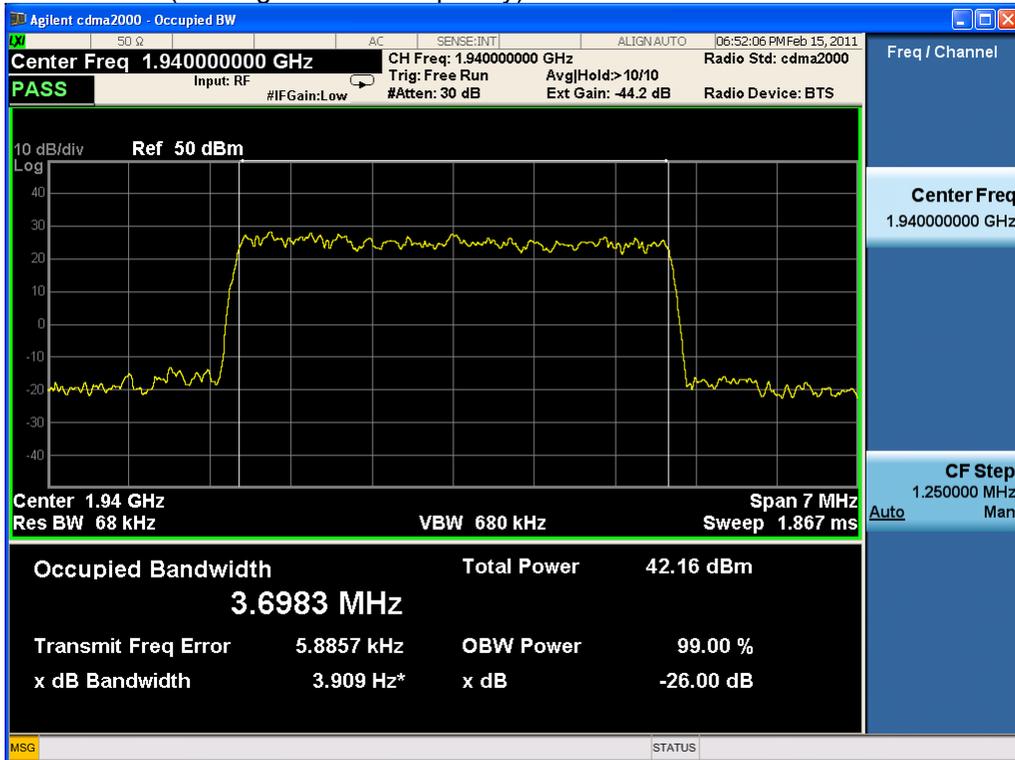
Two carrier (working in top frequency)



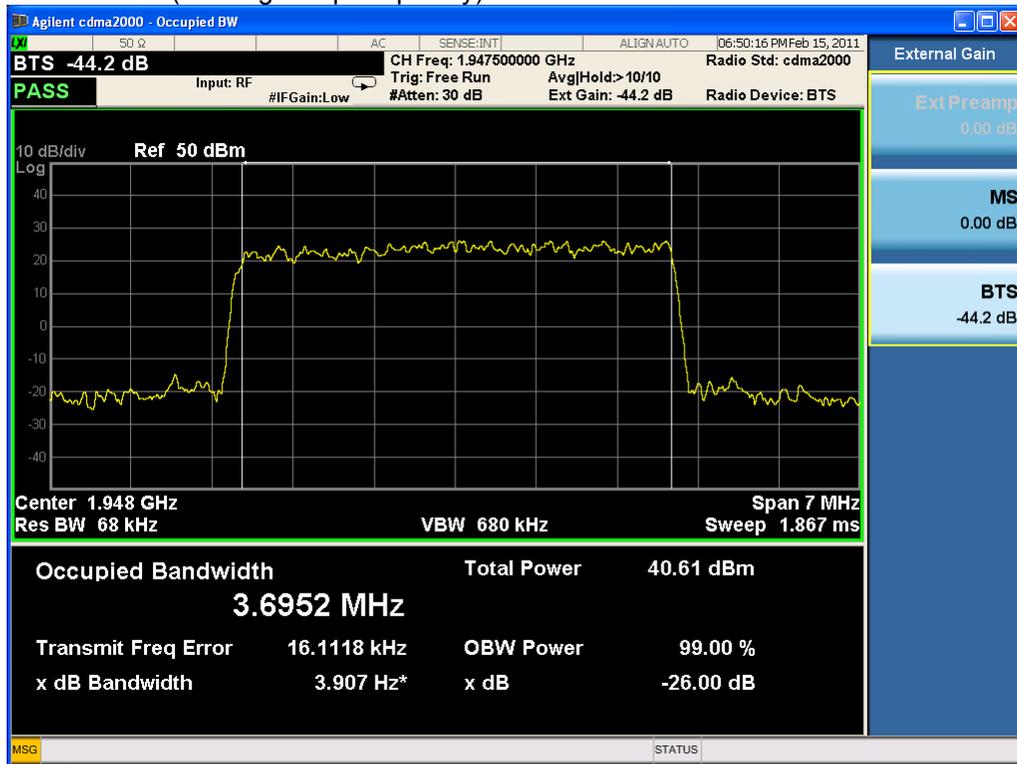
Three carrier (working in bottom frequency)



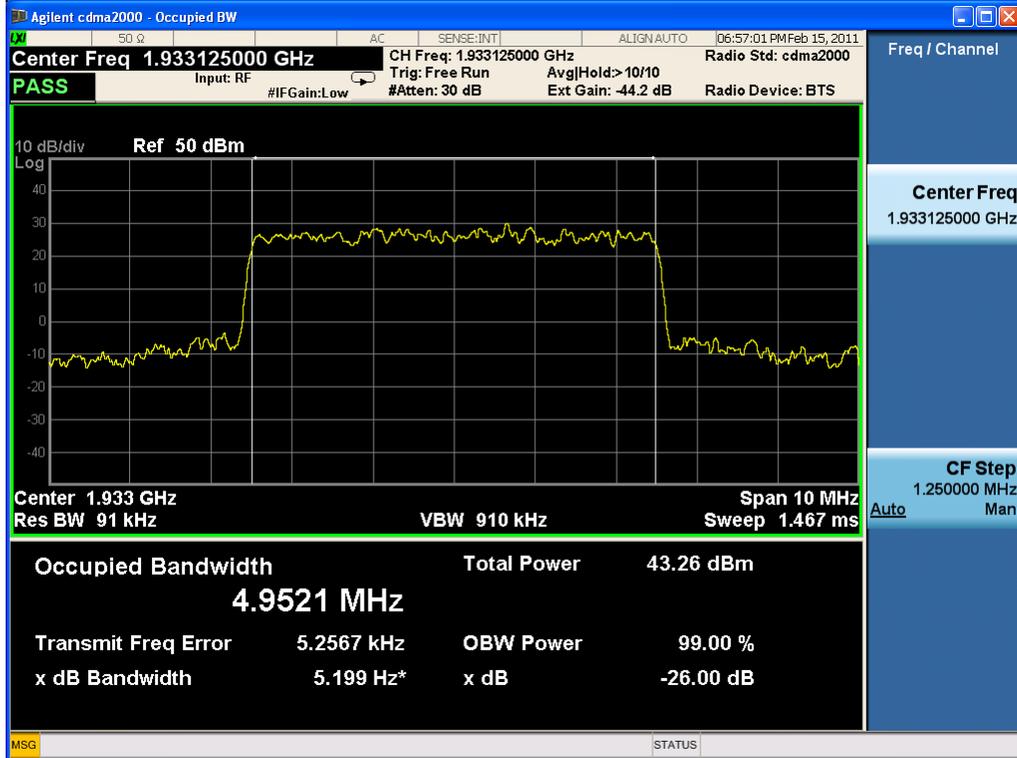
Three carrier (working in middle frequency)



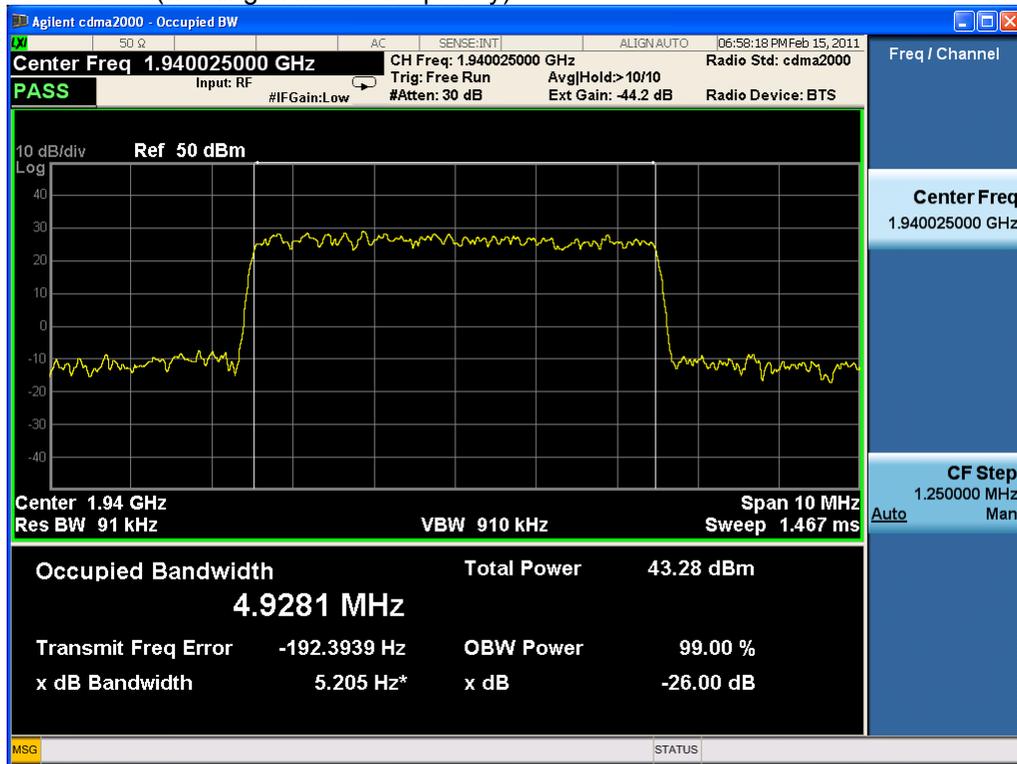
Three carrier (working in top frequency)



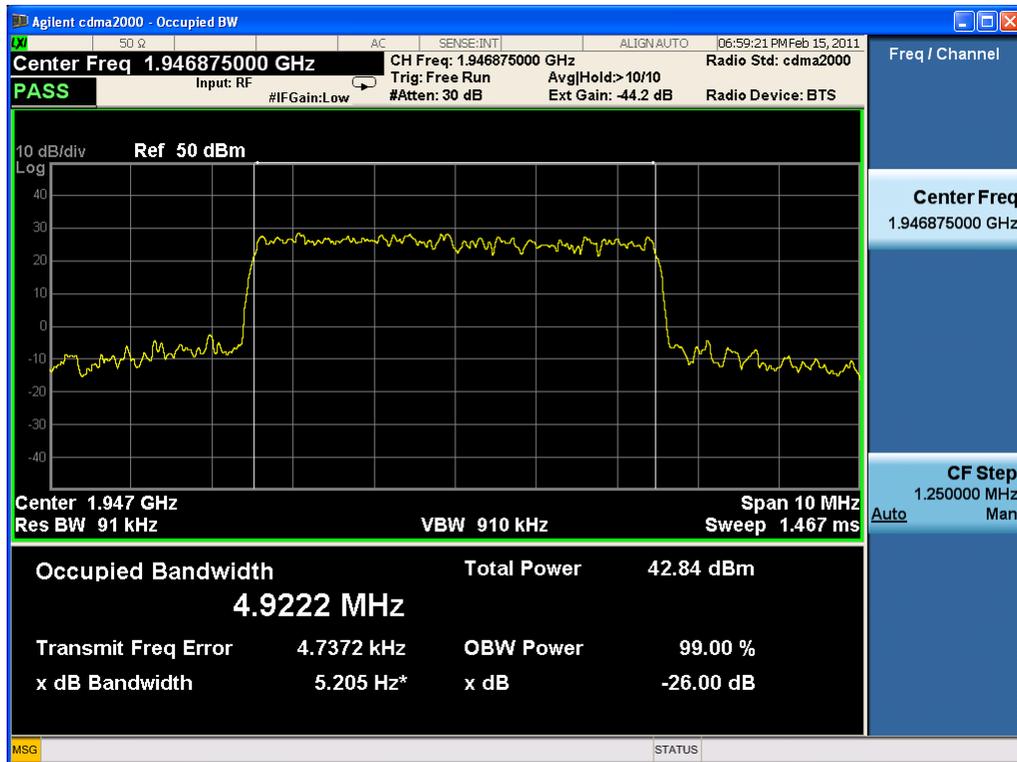
Four carrier (working in bottom frequency)



Four carrier (working in middle frequency)



Four carrier (working in top frequency)



11 BAND EDGES

Applicable Standard: FCC §24.238

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 $< P - (43 + 10 \log(P)) = -13 \text{dBm}$.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2009-4-10	2012-4-9
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

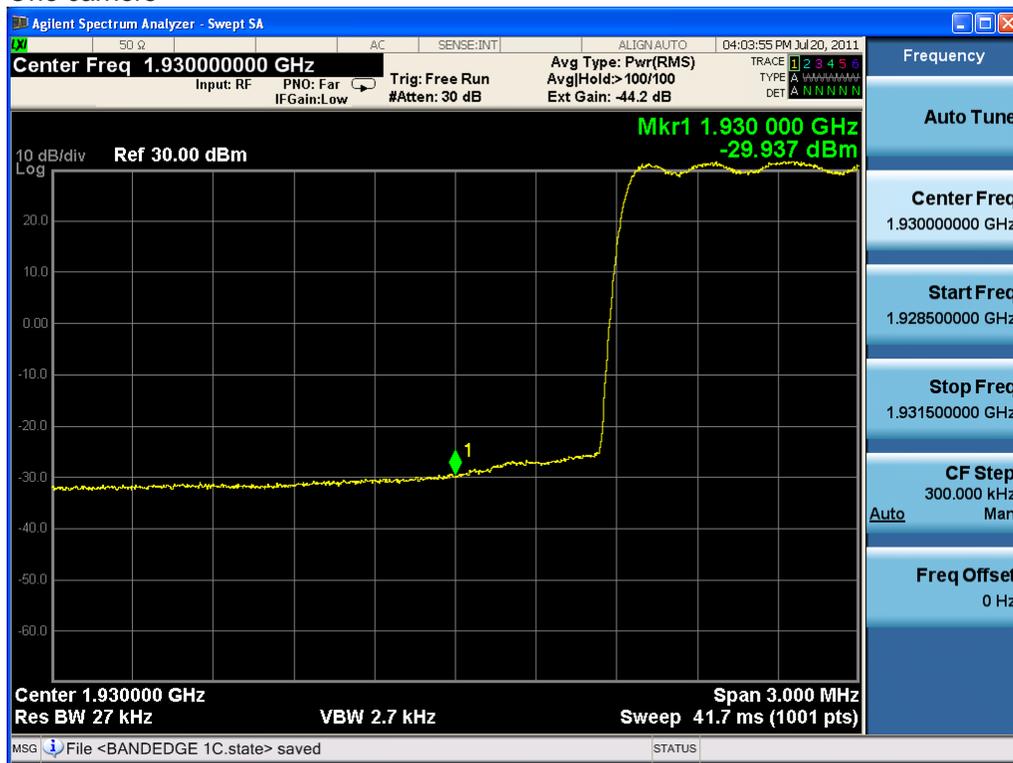
Test Mode: Transmitting CDMA

Test Data

	Frequency channel	Max bandedge Emission (dBm)	Limit (dBm)
1 Carrier	bottom	-29.937	-13.00
	Top	-30.63	-13.00
2 Carriers	bottom	-28.286	-13.00
	Top	-28.372	-13.00
3 Carriers	bottom	-26.498	-13.00
	Top	-27.947	-13.00
4 Carriers	bottom	-25.337	-13.00
	Top	-27.134	-13.00

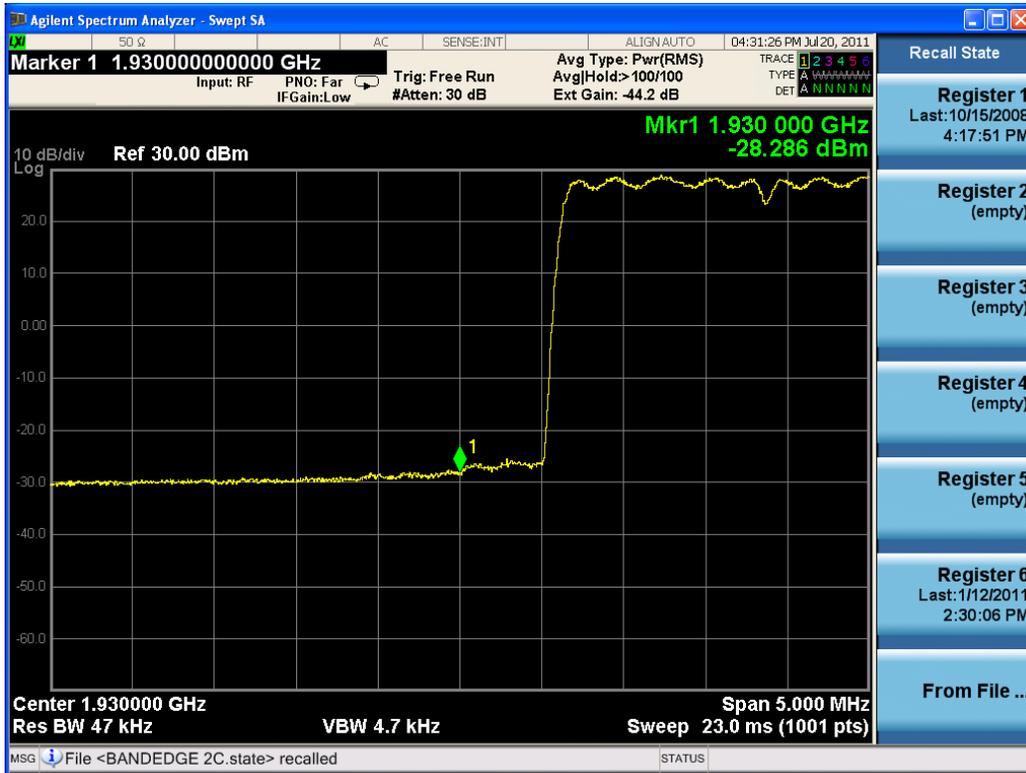
When simultaneous transmission is considered, the worst case is that bandedge emission power will be added 3dBm to that in single transmission. It will be under limit.

One carriers



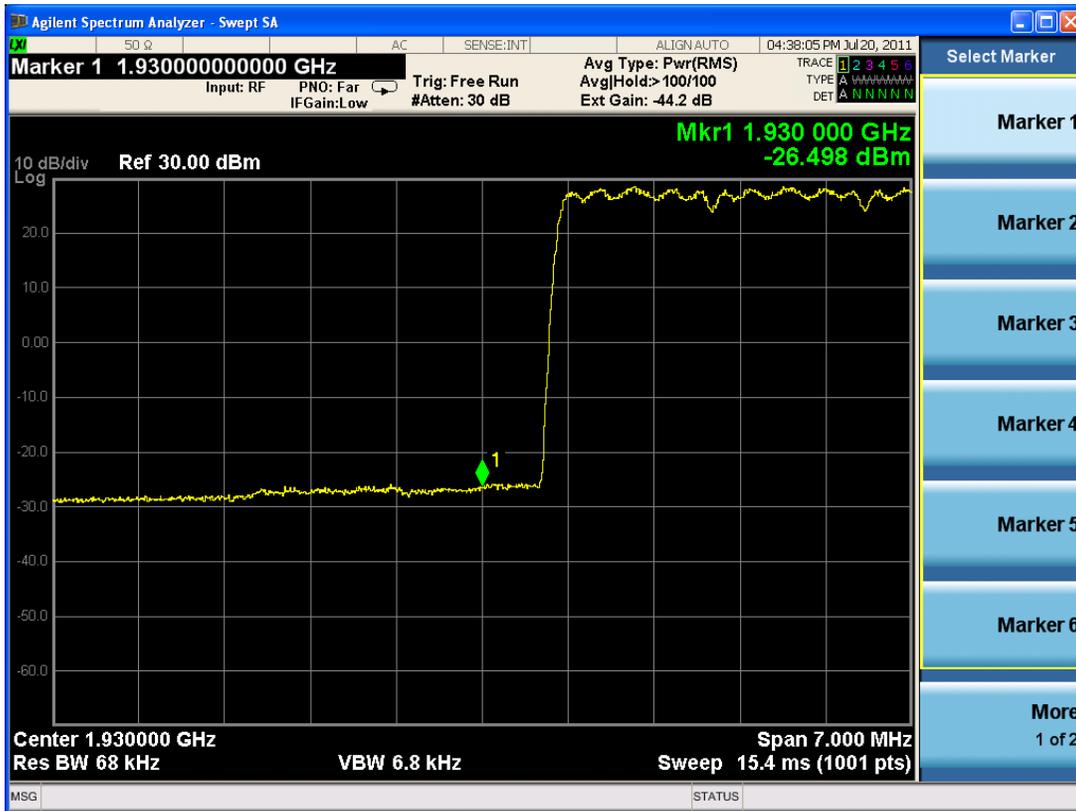


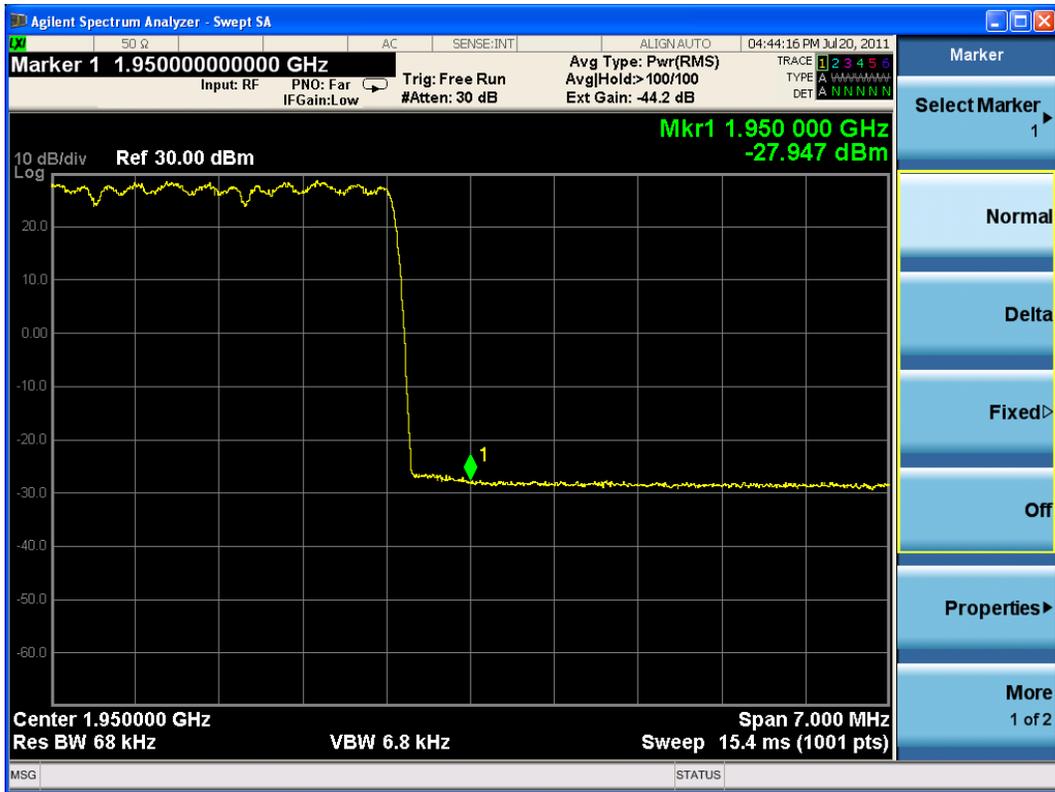
Two carriers



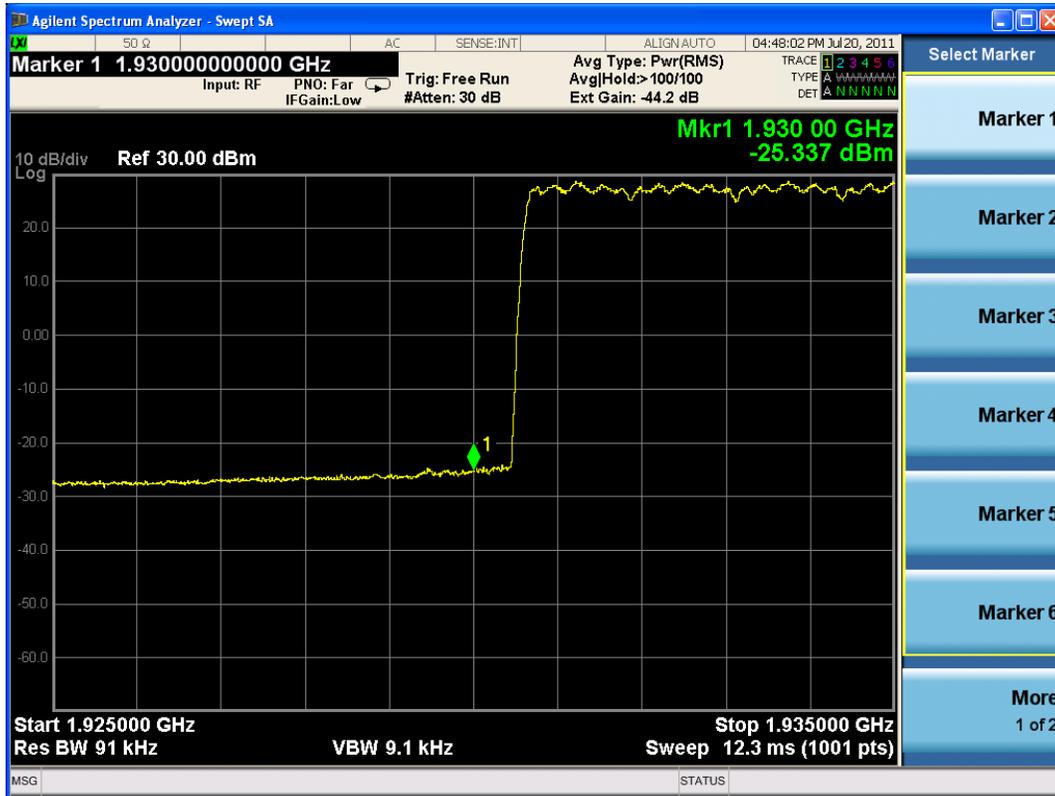


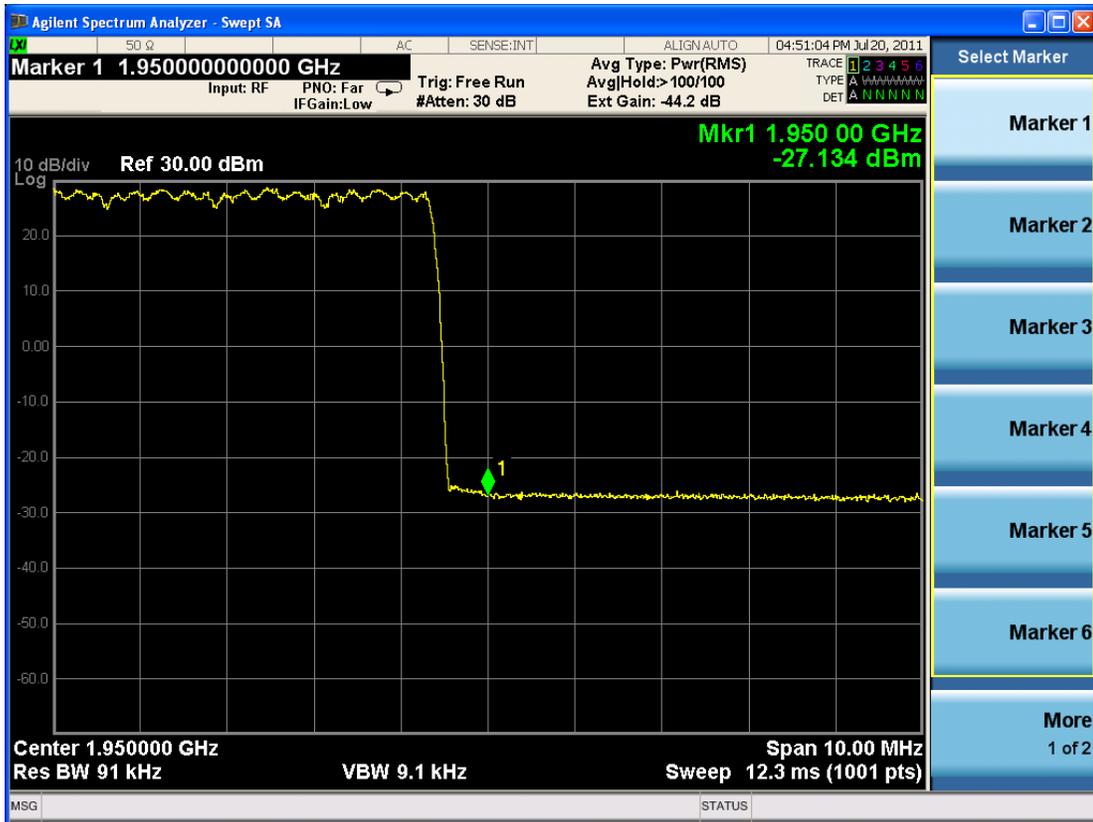
Three carriers





Four carriers





12 FREQUENCY STABILITY

Applicable Standard: FCC § 2.1055 § 24.235

Requirements: FCC § 2.1055 (a)(d), Part 24.235

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	2009-3-8	2011-3-7
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2009-4-10	2011-4-9
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 °C	Power Supplied Vdc	Frequency Measure Error Hz	Error ppm	Limit 0.02ppm
f=1931.25MHz				
-40	-48	-14.24	-0.007	PASS
-30	-48	-16.23	-0.008	PASS
-20	-48	-14.53	-0.008	PASS
-10	-48	-16.47	-0.009	PASS
0	-48	-13.89	-0.007	PASS
10	-48	-13.56	-0.007	PASS
20	-48	-15.36	-0.008	PASS
30	-48	-16.45	-0.009	PASS
40	-48	-18.45	-0.010	PASS
50	-48	-19.34	-0.010	PASS
55	-48	-16.51	-0.009	PASS
f=1940MHz				
-40	-48	-15.48	-0.008	PASS
-30	-48	-17.04	-0.009	PASS
-20	-48	-16.83	-0.009	PASS
-10	-48	-13.39	-0.007	PASS

0	-48	-14.05	-0.007	PASS
10	-48	-17.92	-0.009	PASS
20	-48	-18.92	-0.010	PASS
30	-48	-16.7	-0.009	PASS
40	-48	-15.74	-0.008	PASS
50	-48	-14.31	-0.007	PASS
55	-48	-18.04	-0.009	PASS
f=1948.75MHz				
-40	-48	-15.23	-0.008	PASS
-30	-48	-16.28	-0.008	PASS
-20	-48	-13.34	-0.007	PASS
-10	-48	-13.33	-0.007	PASS
0	-48	-15.63	-0.008	PASS
10	-48	-14.42	-0.007	PASS
20	-48	-16.23	-0.008	PASS
30	-48	-14.56	-0.007	PASS
40	-48	-16.39	-0.008	PASS
50	-48	-15.32	-0.008	PASS
55	-48	-18.14	-0.009	PASS

Frequency Stability Versus Voltage

Frequency Stability vs. Voltage				
VoltageVdc	Temperature °C	Frequency Measure Error Hz	Error ppm	Limit 0.02ppm
f=1931.25MHz				
-40	20	-13.42	-0.007	PASS
-44	20	-13.33	-0.007	PASS
-47	20	-12.53	-0.006	PASS
-50	20	-17.42	-0.009	PASS
-53	20	-13.23	-0.007	PASS
-56	20	-15.23	-0.008	PASS
-57	20	-13.42	-0.007	PASS
f=1940MHz				
-40	20	-13.45	-0.007	PASS
-44	20	-14.76	-0.008	PASS
-47	20	-13.32	-0.007	PASS
-50	20	-15.75	-0.008	PASS
-53	20	-14.52	-0.007	PASS
-56	20	-14.14	-0.007	PASS
-57	20	-13.45	-0.007	PASS
f=1948.75MHz				
-40	20	-13.52	-0.007	PASS
-44	20	-14.74	-0.008	PASS
-47	20	-13.34	-0.007	PASS
-50	20	-15.66	-0.008	PASS
-53	20	-15.68	-0.008	PASS
-56	20	-16.23	-0.008	PASS
-57	20	-13.52	-0.007	PASS