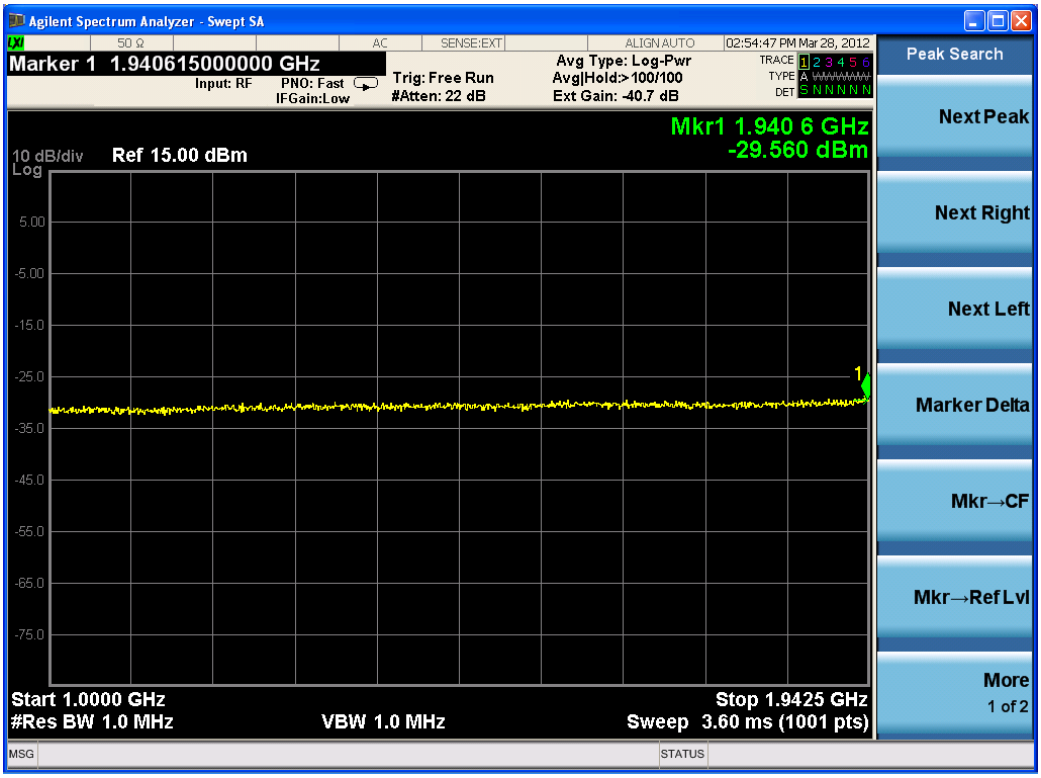
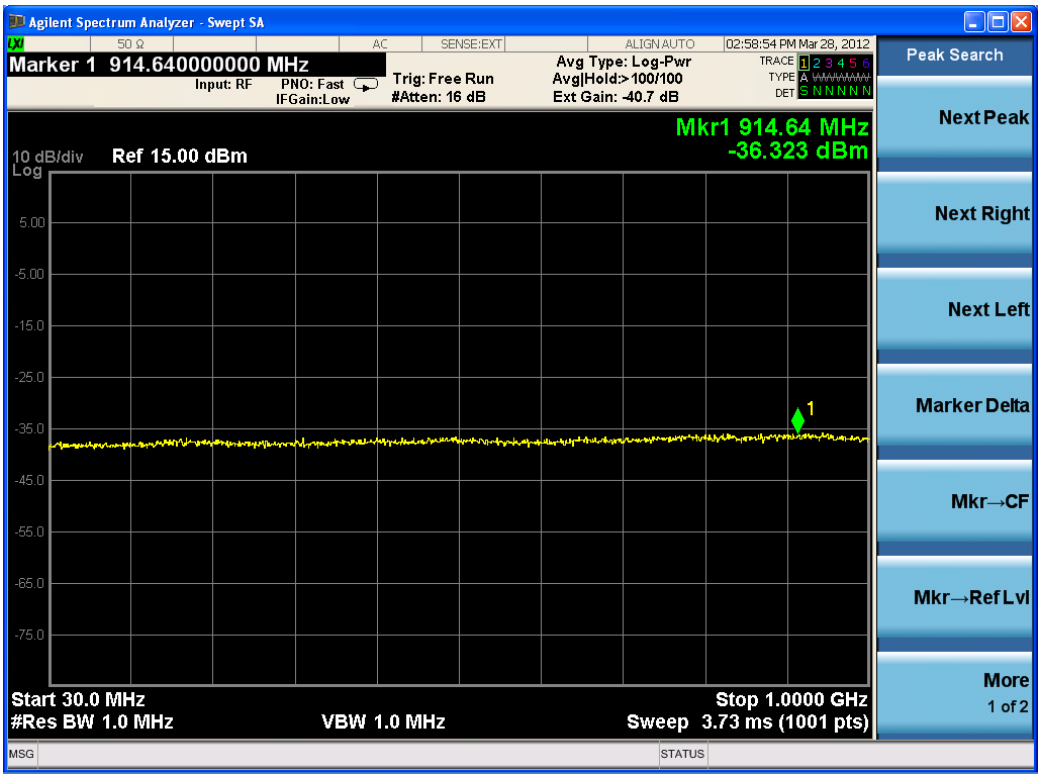
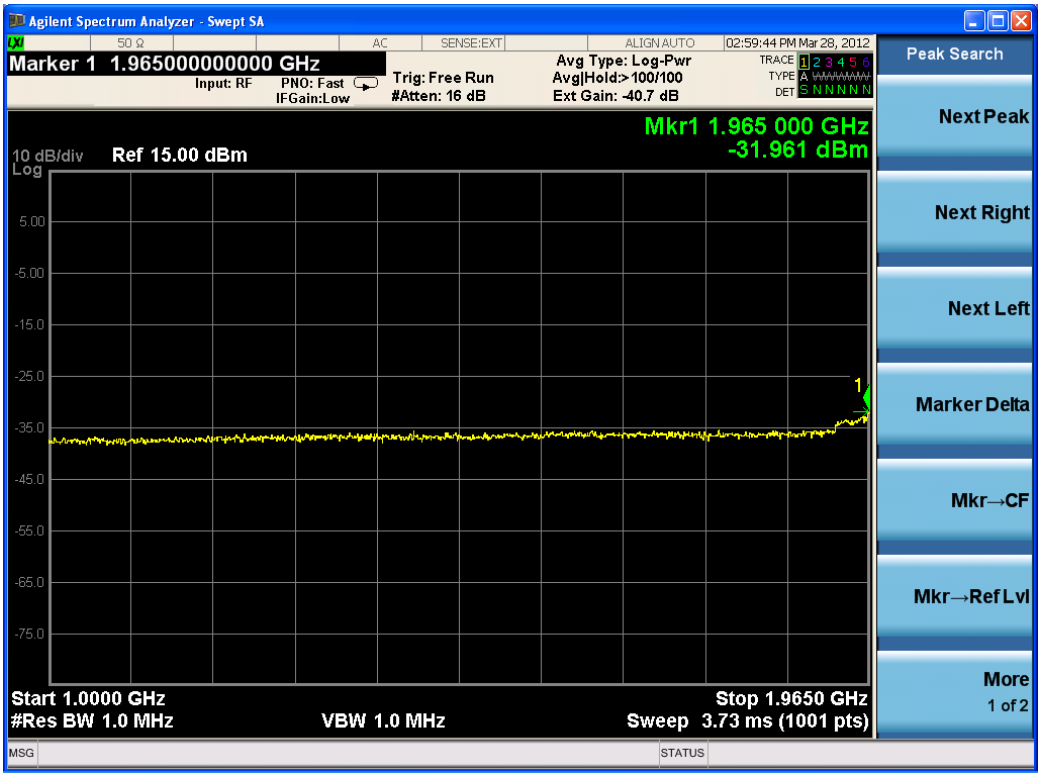

Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:EXT
ALIGN AUTO
02:54:47 PM Mar 28, 2012
Marker 1 1.940615000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -40.7 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 1.940 6 GHz
-29.560 dBm
10 dB/div
Log
Ref 15.00 dBm
5.00
-5.00
-15.0
-25.0
-35.0
-45.0
-55.0
-65.0
-75.0
1
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 1.9425 GHz
Sweep 3.60 ms (1001 pts)
Peak Search
Next Peak
Next Right
Next Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

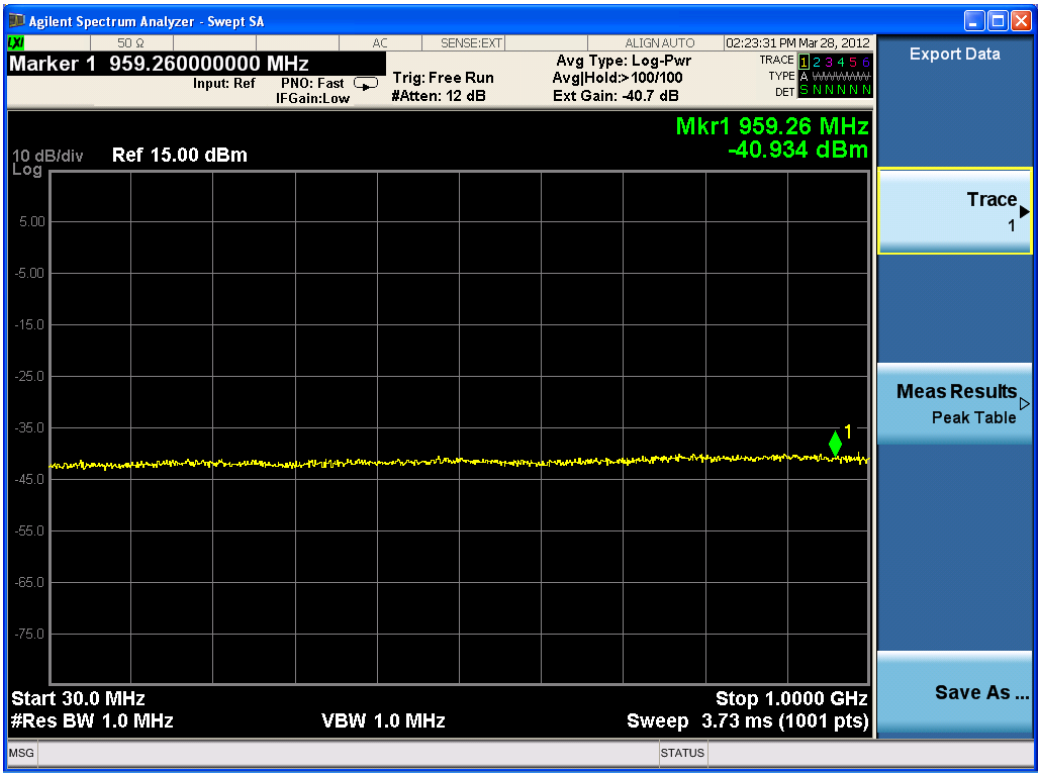

Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:EXT
ALIGN AUTO
02:55:18 PM Mar 28, 2012
Marker 1 18.702416000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 22 dB
Avg Type: Log-Pwr
Avg|Hold: 37/100
Ext Gain: -40.7 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 18.702 GHz
-22.928 dBm
10 dB/div
Log
Ref 15.00 dBm
5.00
-5.00
-15.0
-25.0
-35.0
-45.0
-55.0
-65.0
-75.0
1
Start 1.978 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 20.000 GHz
Sweep 68.7 ms (1001 pts)
Peak Search
Next Peak
Next Right
Next Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

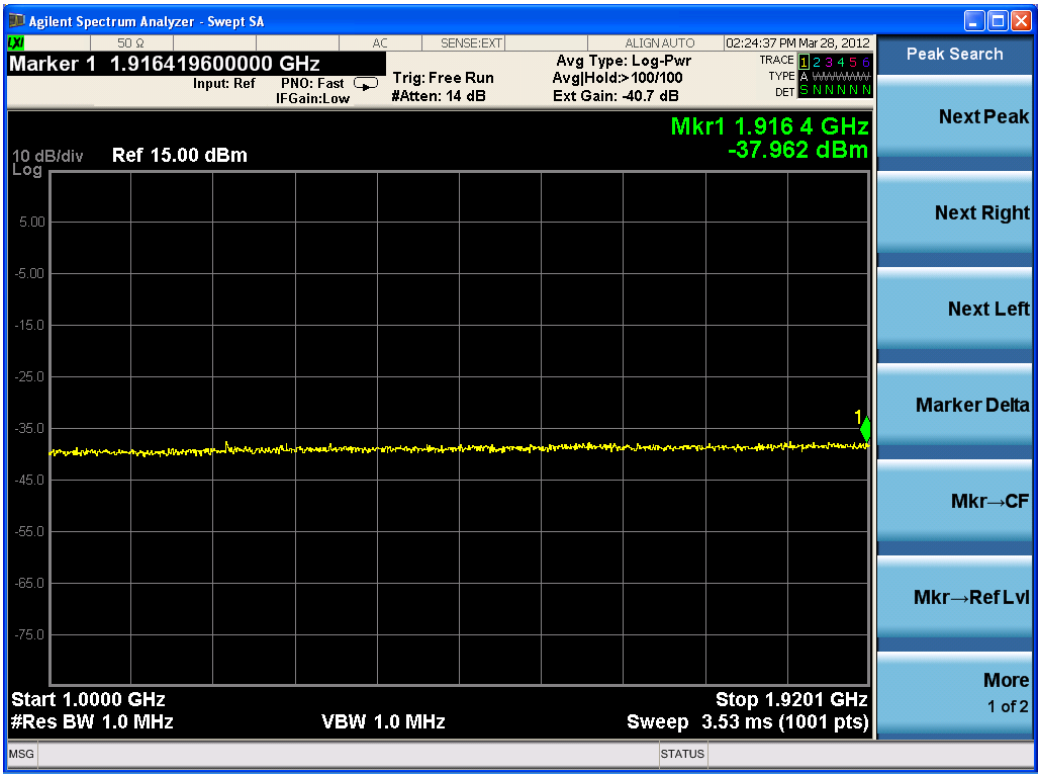
Three carriers (working in top frequency)

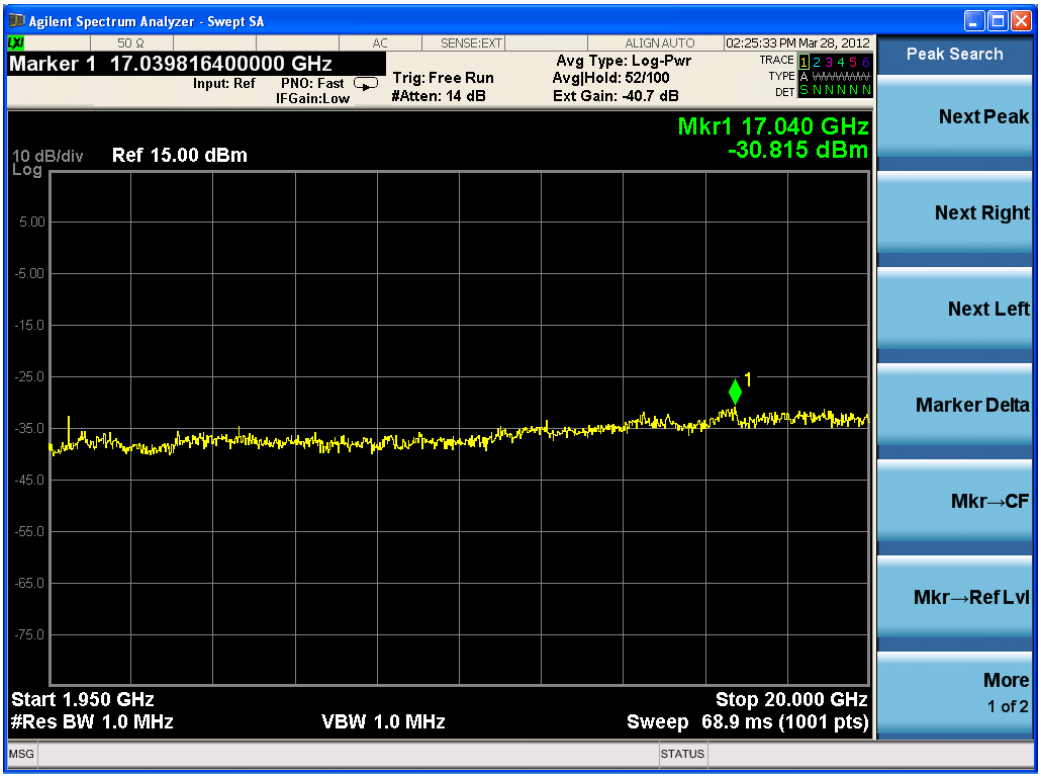




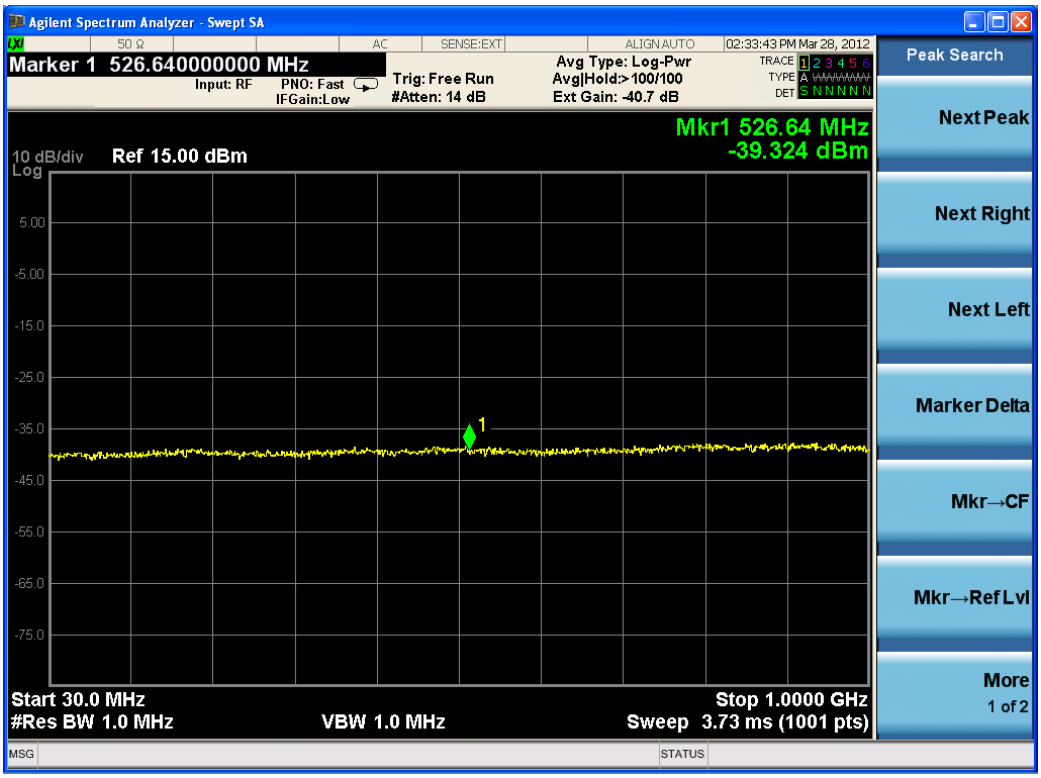
Two carrier (working in bottom frequency)

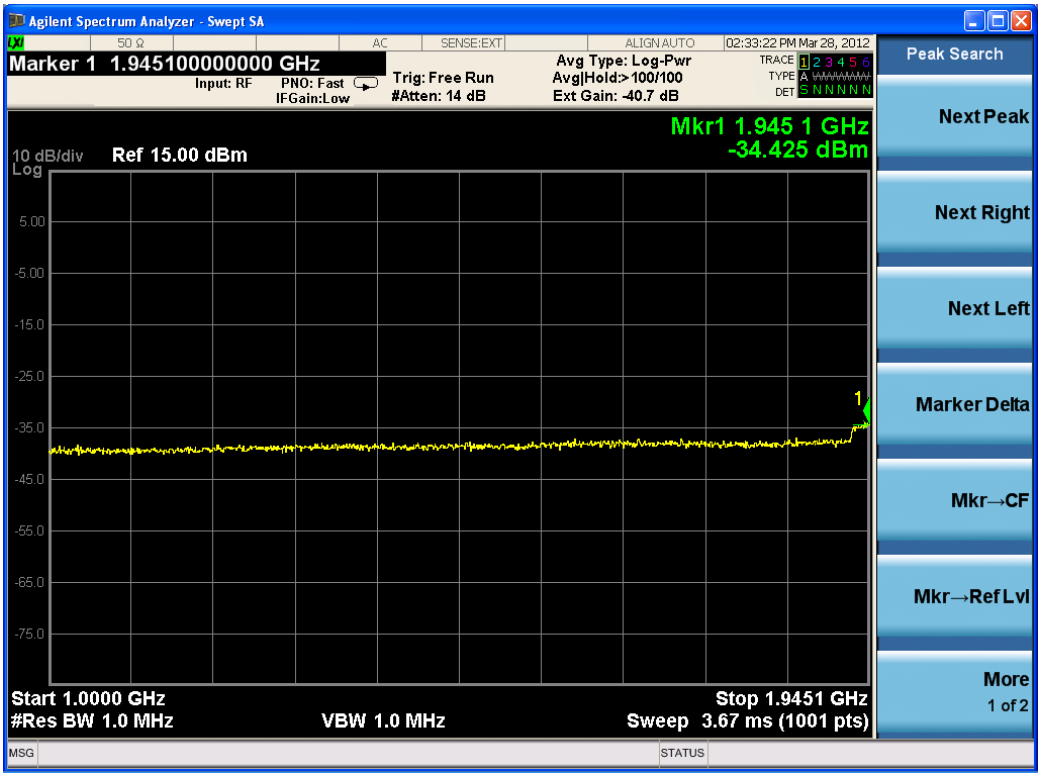



Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:EXT
ALIGN AUTO
02:24:37 PM Mar 28, 2012
Marker 1 1.916419600000 GHz
Input: Ref
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 14 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -40.7 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 1.916 4 GHz
-37.962 dBm
10 dB/div
Log
Ref 15.00 dBm
5.00
-5.00
-15.0
-25.0
-35.0
-45.0
-55.0
-65.0
-75.0
1
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 1.9201 GHz
Sweep 3.53 ms (1001 pts)
Peak Search
Next Peak
Next Right
Next Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

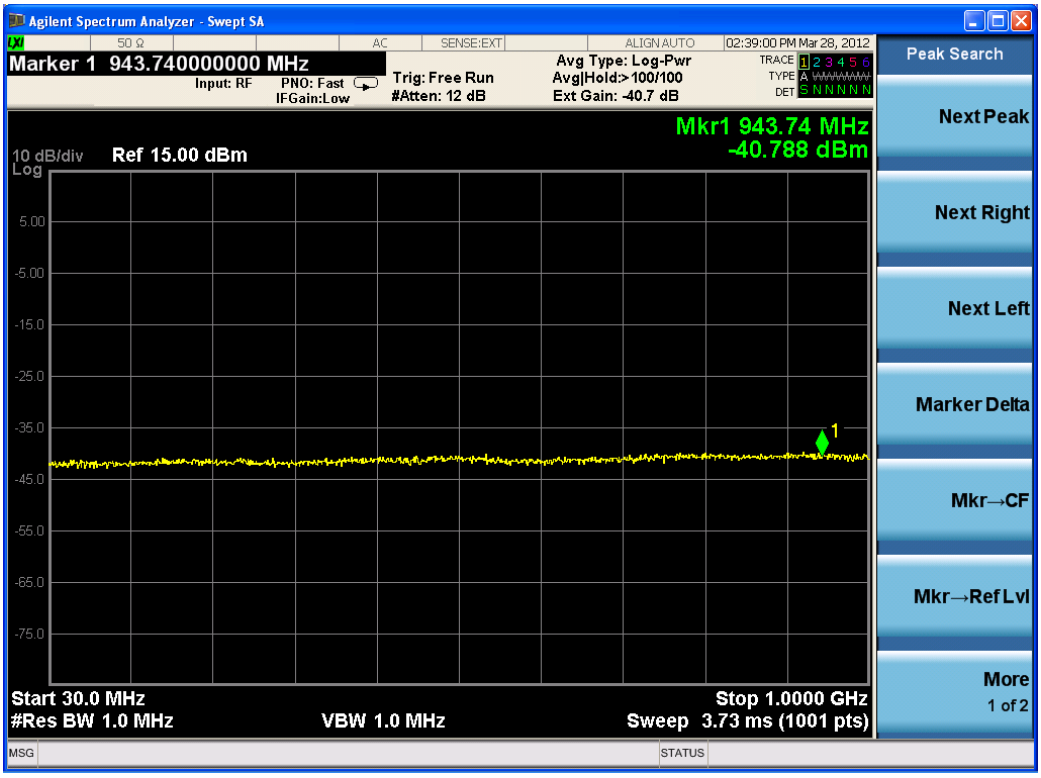

Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:EXT
ALIGN AUTO
02:25:33 PM Mar 28, 2012
Marker 1 17.039816400000 GHz
Input: Ref
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 14 dB
Avg Type: Log-Pwr
Avg|Hold: 52/100
Ext Gain: -40.7 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 17.040 GHz
-30.815 dBm
10 dB/div
Log
Ref 15.00 dBm
5.00
-5.00
-15.0
-25.0
-35.0
-45.0
-55.0
-65.0
-75.0
1
Start 1.950 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 20.000 GHz
Sweep 68.9 ms (1001 pts)
Peak Search
Next Peak
Next Right
Next Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

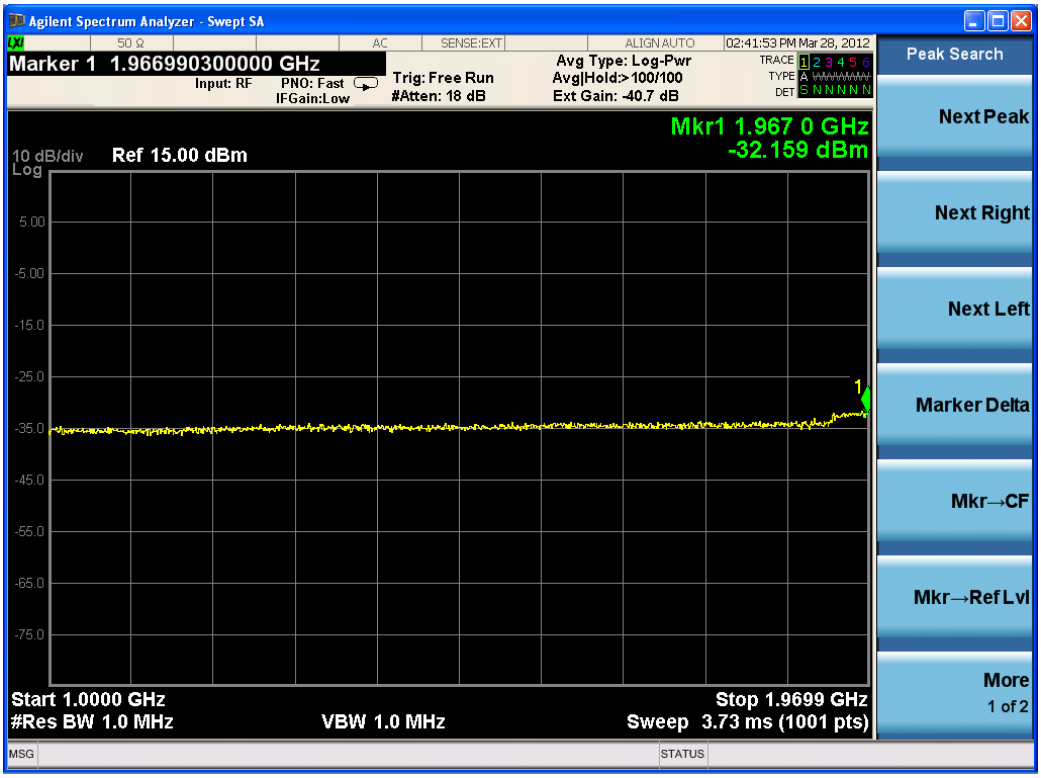
Two carriers (working in middle frequency)

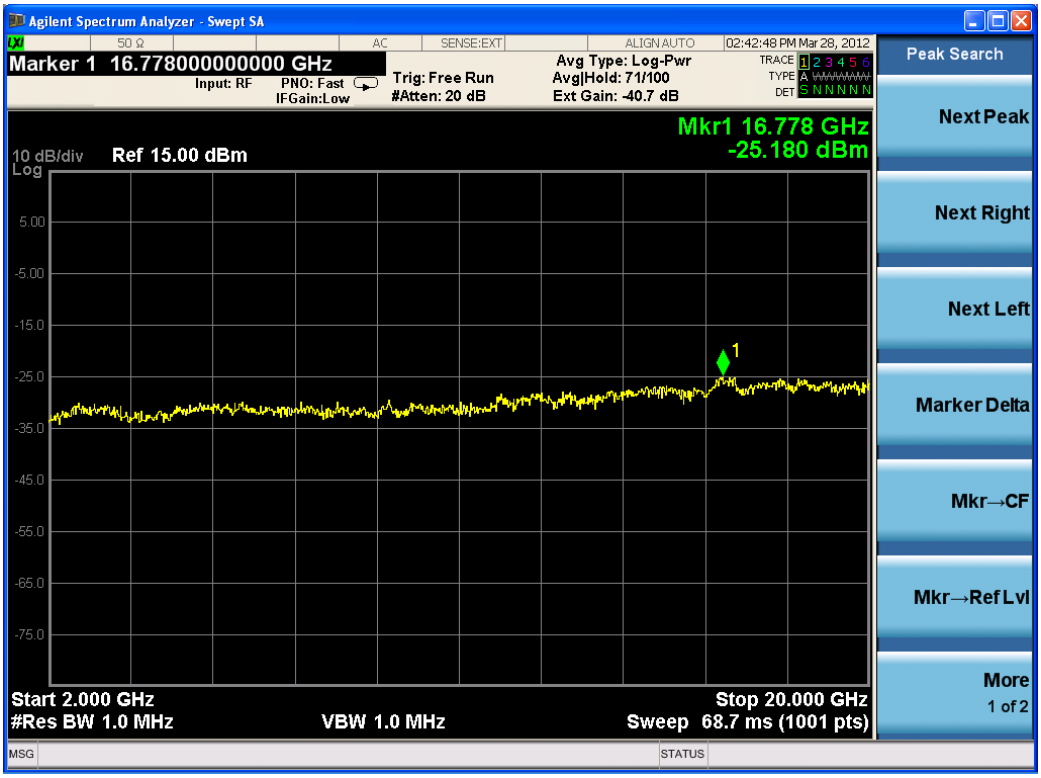




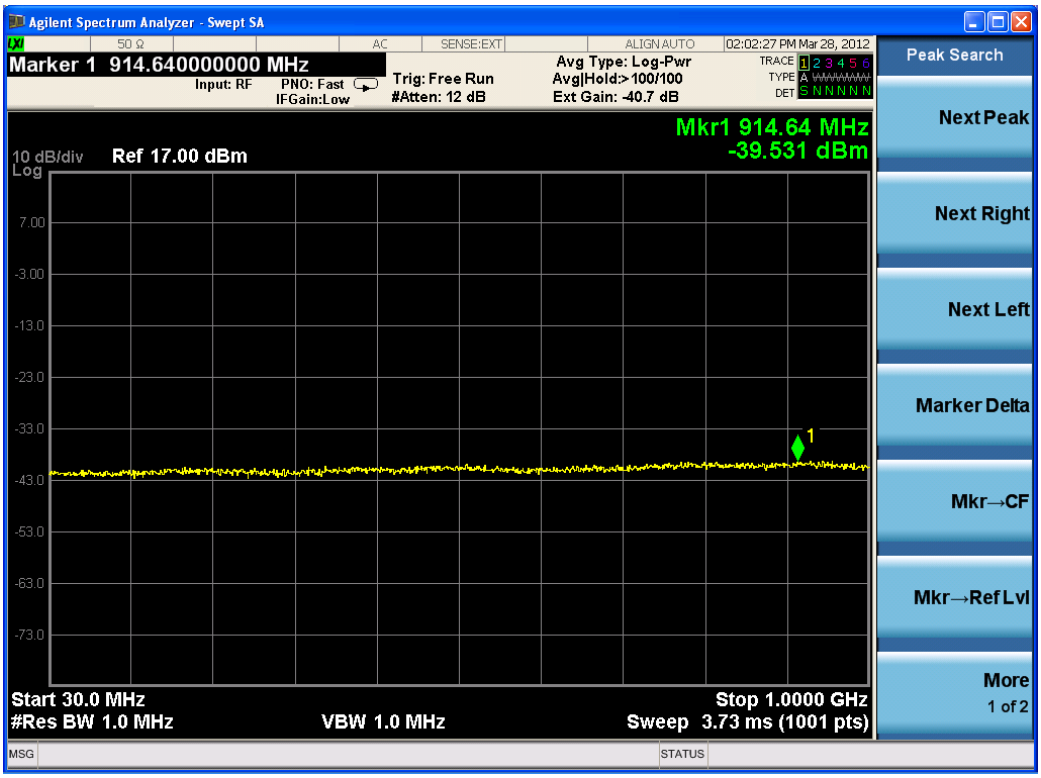
Two carriers (working in top frequency)

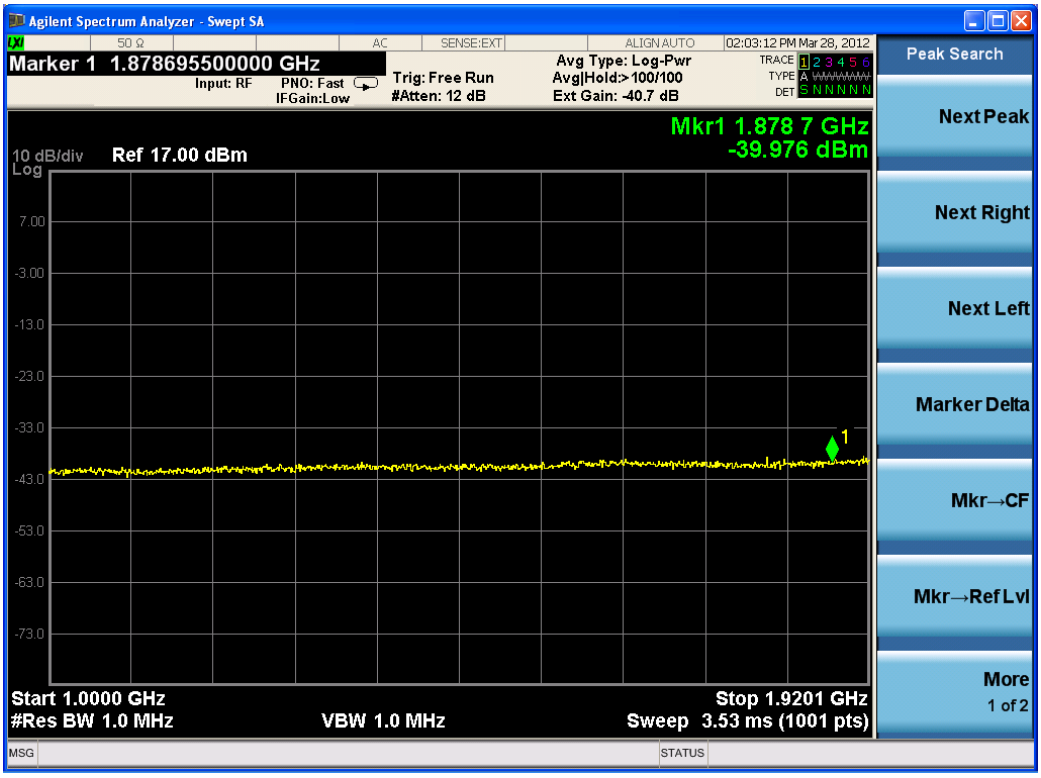


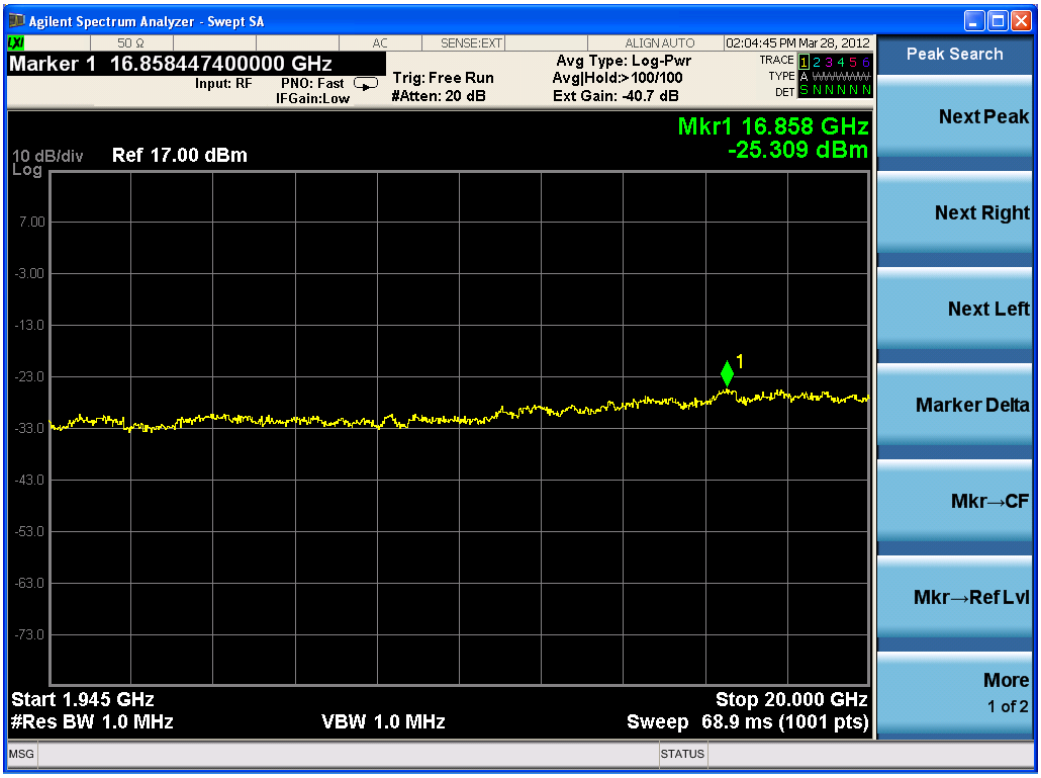

Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:EXT
ALIGN AUTO
02:41:53 PM Mar 28, 2012
Marker 1 1.966990300000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 18 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -40.7 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 1.967 0 GHz
-32.159 dBm
10 dB/div
Log
Ref 15.00 dBm
5.00
-5.00
-15.0
-25.0
-35.0
-45.0
-55.0
-65.0
-75.0
1
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 1.9699 GHz
Sweep 3.73 ms (1001 pts)
Peak Search
Next Peak
Next Right
Next Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:EXT
ALIGN AUTO
02:42:48 PM Mar 28, 2012
Marker 1 16.778000000000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 71/100
Ext Gain: -40.7 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 16.778 GHz
-25.180 dBm
10 dB/div
Log
Ref 15.00 dBm
5.00
-5.00
-15.0
-25.0
-35.0
-45.0
-55.0
-65.0
-75.0
1
Start 2.000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 20.000 GHz
Sweep 68.7 ms (1001 pts)
Peak Search
Next Peak
Next Right
Next Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

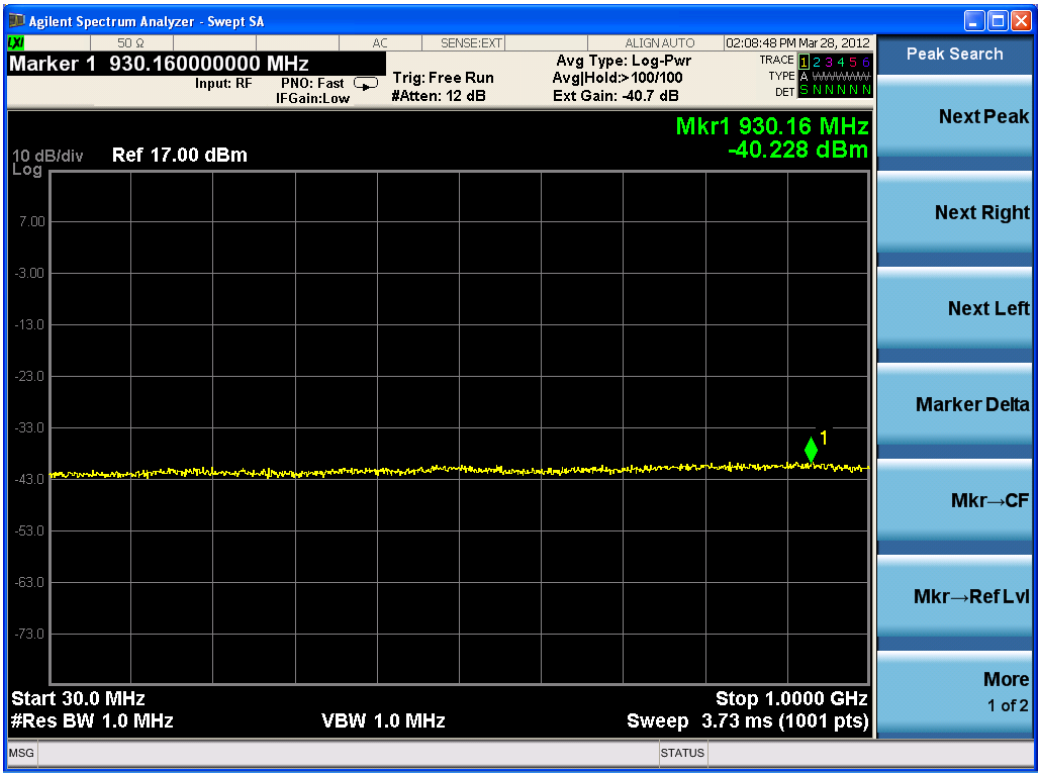
One carrier (working in bottom frequency)

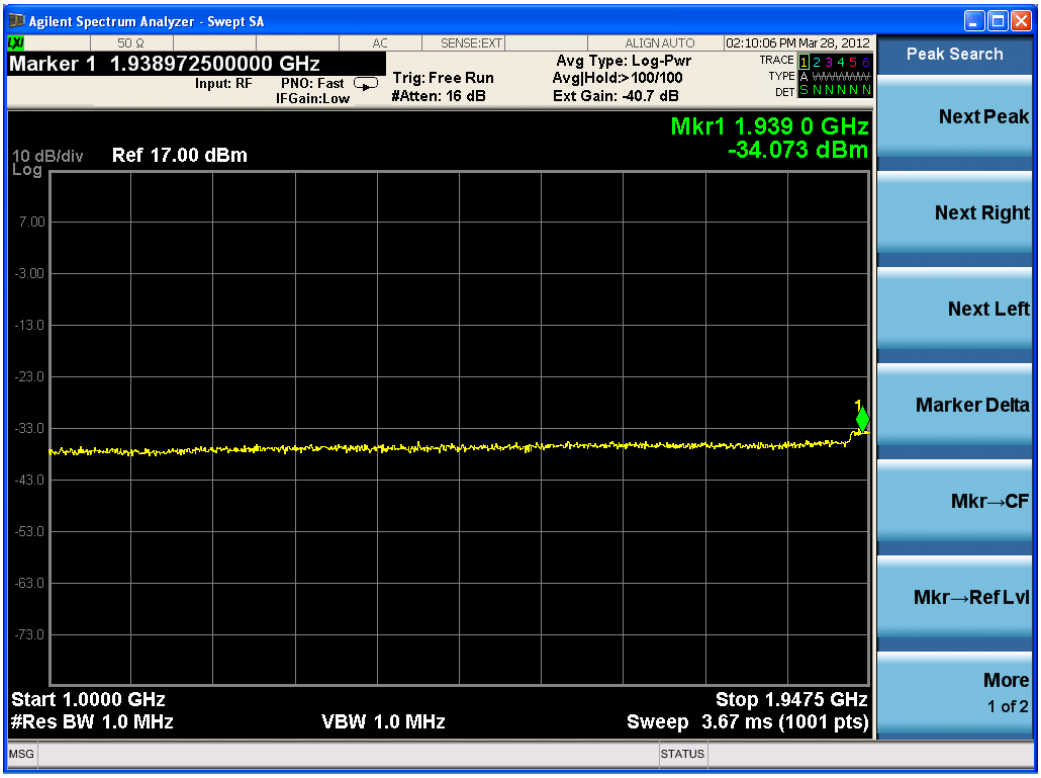


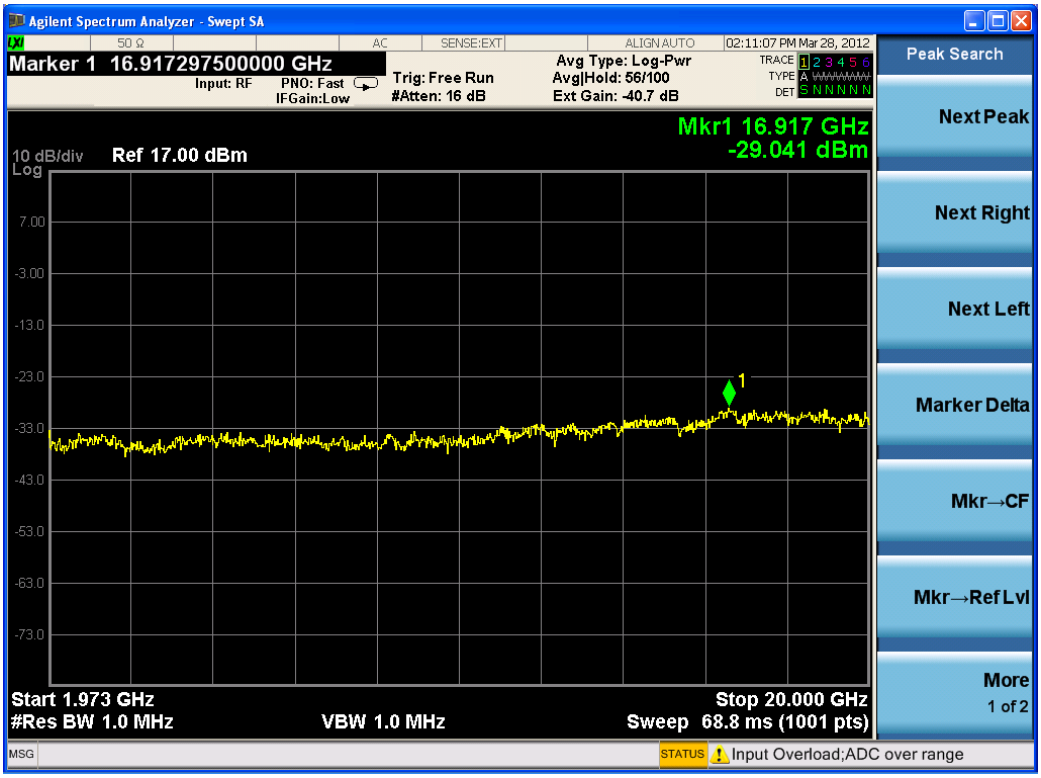




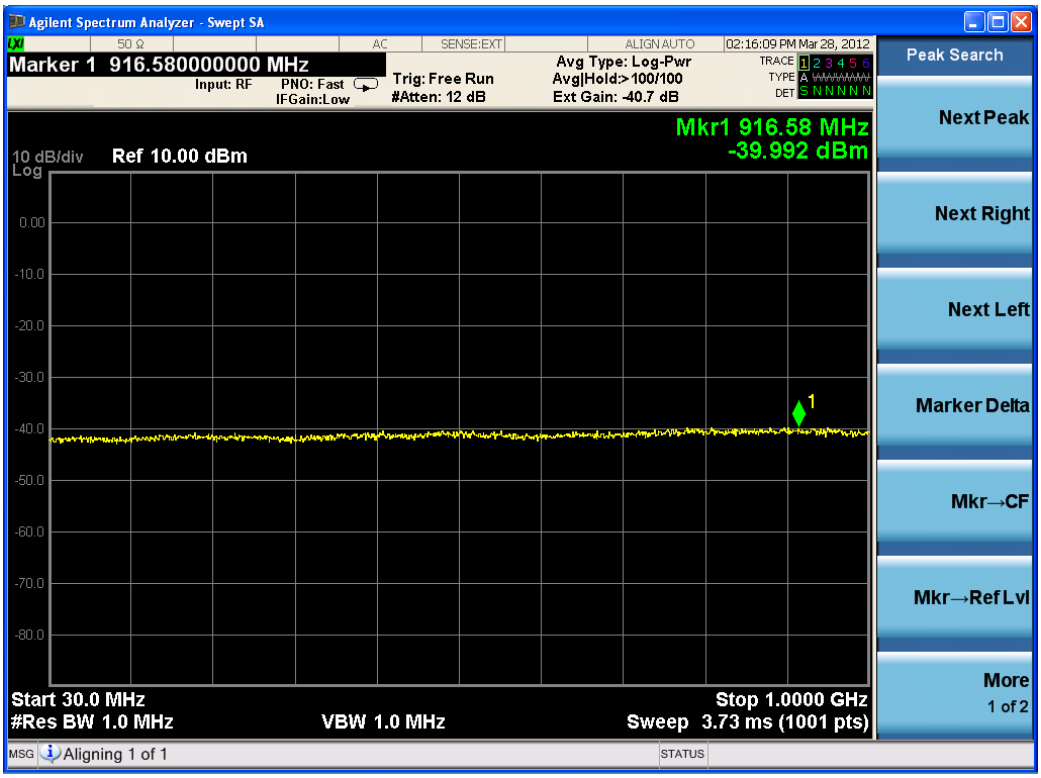
One carrier (working in middle frequency)

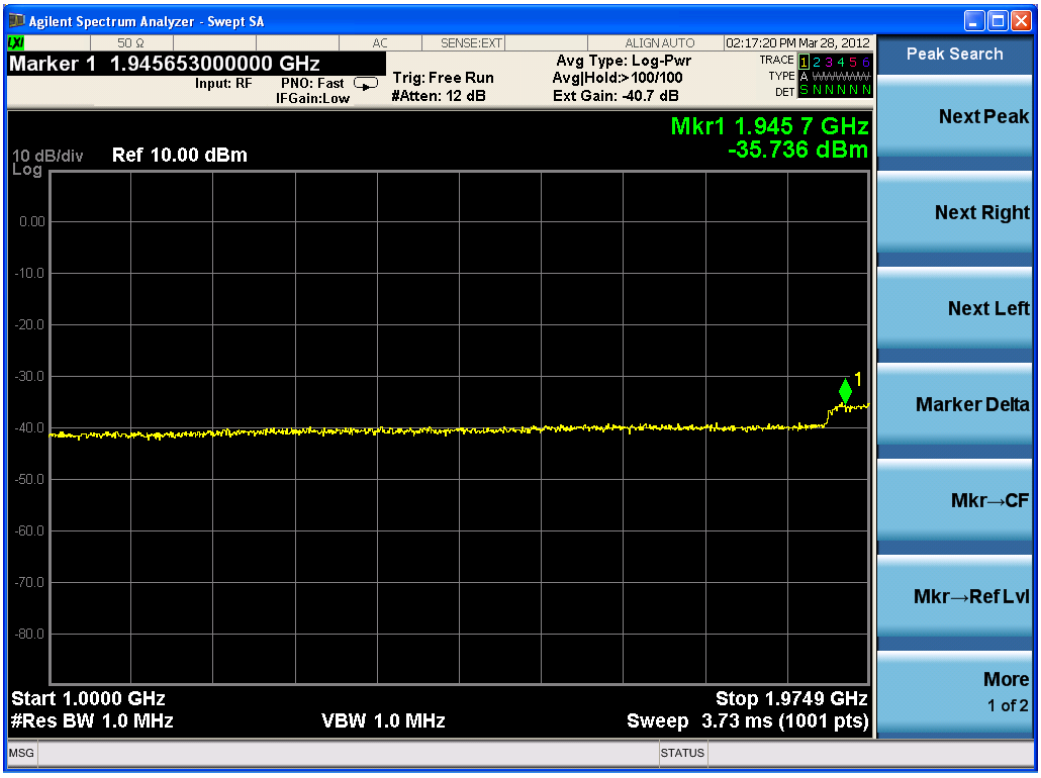


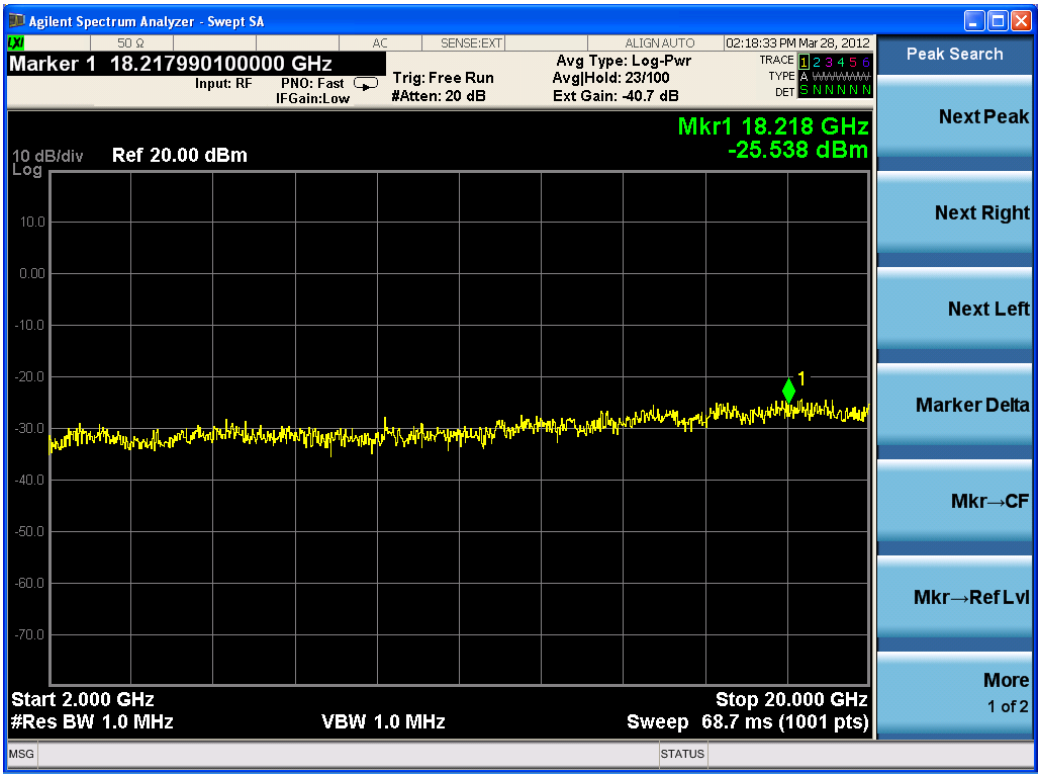

Agilent Spectrum Analyzer - Swept SA
Marker 1 1.938972500000 GHz
Input: RF PNO: Fast IFGain:Low
Trig: Free Run #Atten: 16 dB
Avg Type: Log-Pwr Avg|Hold:>100/100 Ext Gain: -40.7 dB
02:10:06 PM Mar 28, 2012
Mkr1 1.939 0 GHz -34.073 dBm
10 dB/div Log
Ref 17.00 dBm
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 1.9475 GHz
Sweep 3.67 ms (1001 pts)
Peak Search
Next Peak
Next Right
Next Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More 1 of 2


Agilent Spectrum Analyzer - Swept SA
Marker 1 16.917297500000 GHz
Input: RF PNO: Fast IFGain:Low
Trig: Free Run #Atten: 16 dB
Avg Type: Log-Pwr Avg|Hold: 56/100 Ext Gain: -40.7 dB
02:11:07 PM Mar 28, 2012
Mkr1 16.917 GHz -29.041 dBm
10 dB/div Log
Ref 17.00 dBm
Start 1.973 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 20.000 GHz
Sweep 68.8 ms (1001 pts)
Input Overload;ADC over range
Peak Search
Next Peak
Next Right
Next Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More 1 of 2

One carrier (working in top frequency)






Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:EXT
ALIGN AUTO
02:18:33 PM Mar 28, 2012
Marker 1 18.217990100000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold: 23/100
Ext Gain: -40.7 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 18.218 GHz
-25.538 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Start 2.000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 20.000 GHz
Sweep 68.7 ms (1001 pts)
Peak Search
Next Peak
Next Right
Next Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

4.6 OCCUPIED BANDWIDTH

Applicable Standard: FCC §2.1049 §24.229 §24.238

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2012-4-10	2013-4-9
Atten	40dB Attenuator	ATSI150-4-40	11300100204204	2011-7-11	2012-7-11
Forstar	Forstar RF Cable	002	1034	2012-4-9	2013-4-8

*__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. The resolution bandwidth of the spectrum analyzer was set at 1% of the span or higher and 99%Power bandwidth was recorded.

Environmental Conditions

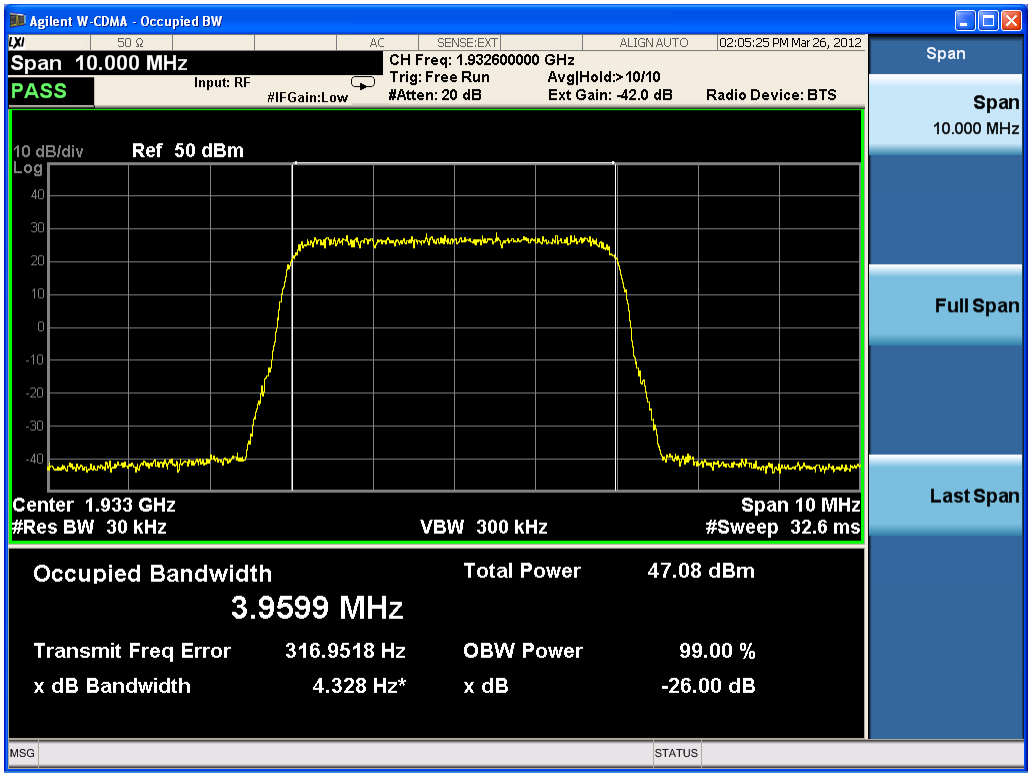
Temperature:	20 ° C
Relative Humidity:	53%
ATM Pressure:	1009mbar

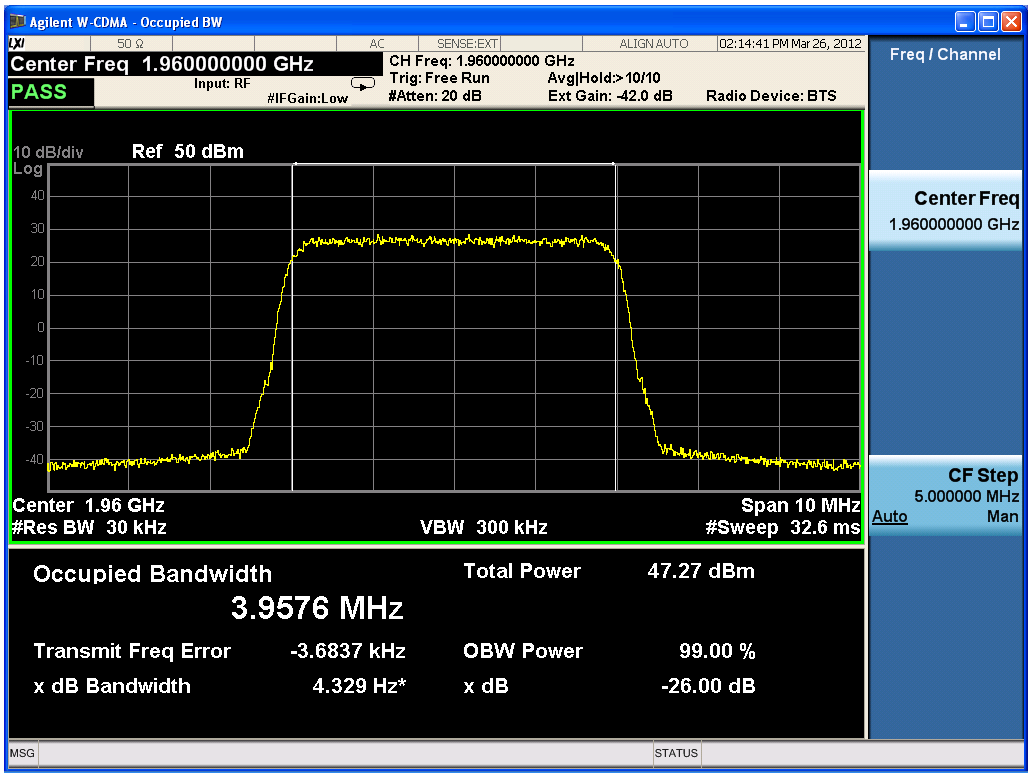
Test Result: Pass

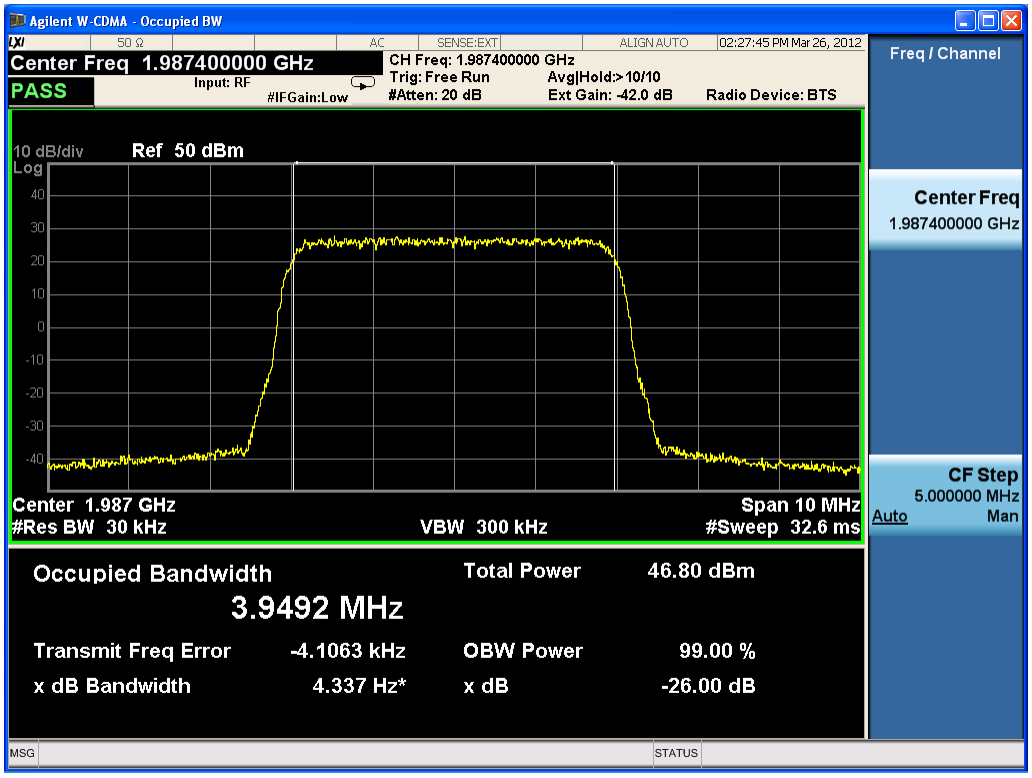
Test Mode: Transmitting UMTS

Test Data

Frequency (MHz)	99% Power Bandwidth (MHz)	Limit (MHz)
1932.6/1960/1987.4	3.9599/3.9576/3.9492	<4.2




Agilent W-CDMA - Occupied BW
50 Ω
AC
SENSE:EXT
ALIGN AUTO
02:14:41 PM Mar 26, 2012
Center Freq 1.960000000 GHz
PASS
Input: RF
#IFGain:Low
CH Freq: 1.960000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 20 dB
Ext Gain: -42.0 dB
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.960000000 GHz
CF Step
5.000000 MHz
Auto
Man
Center 1.96 GHz
#Res BW 30 kHz
VBW 300 kHz
Span 10 MHz
#Sweep 32.6 ms
Occupied Bandwidth
3.9576 MHz
Total Power 47.27 dBm
Transmit Freq Error -3.6837 kHz
OBW Power 99.00 %
x dB Bandwidth 4.329 Hz*
x dB -26.00 dB
MSG
STATUS


Agilent W-CDMA - Occupied BW
50 Ω
AC
SENSE:EXT
ALIGN AUTO
02:27:45 PM Mar 26, 2012
Center Freq 1.987400000 GHz
PASS
Input: RF
#IFGain:Low
CH Freq: 1.987400000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 20 dB
Ext Gain: -42.0 dB
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.987400000 GHz
CF Step
5.000000 MHz
Auto
Man
Center 1.987 GHz
#Res BW 30 kHz
VBW 300 kHz
Span 10 MHz
#Sweep 32.6 ms
Occupied Bandwidth
3.9492 MHz
Total Power 46.80 dBm
Transmit Freq Error -4.1063 kHz
OBW Power 99.00 %
x dB Bandwidth 4.337 Hz*
x dB -26.00 dB
MSG
STATUS

4.7 BAND EDGES

Applicable Standard: FCC §2.1051 §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+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	2012-4-10	2013-4-9
Atten	40dB Attenuator	ATSI150-4-40	11300100204204	2011-7-11	2012-7-11
Forstar	Forstar RF Cable	002	1034	2012-4-9	2013-4-8

*__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

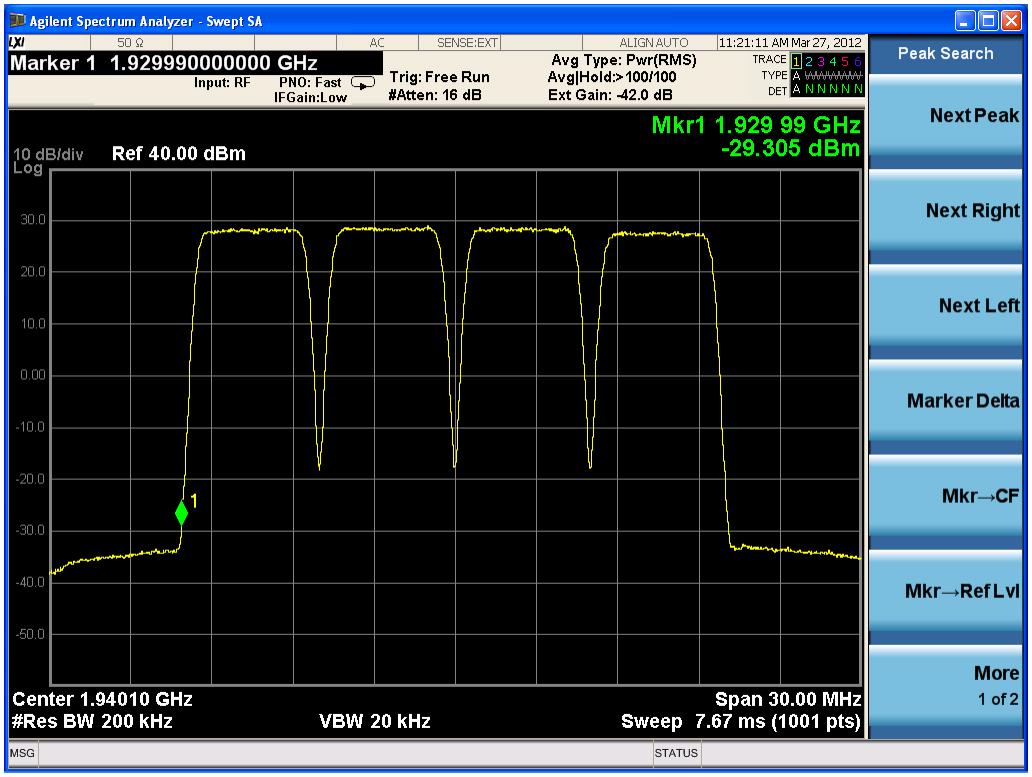
Test Result: Pass

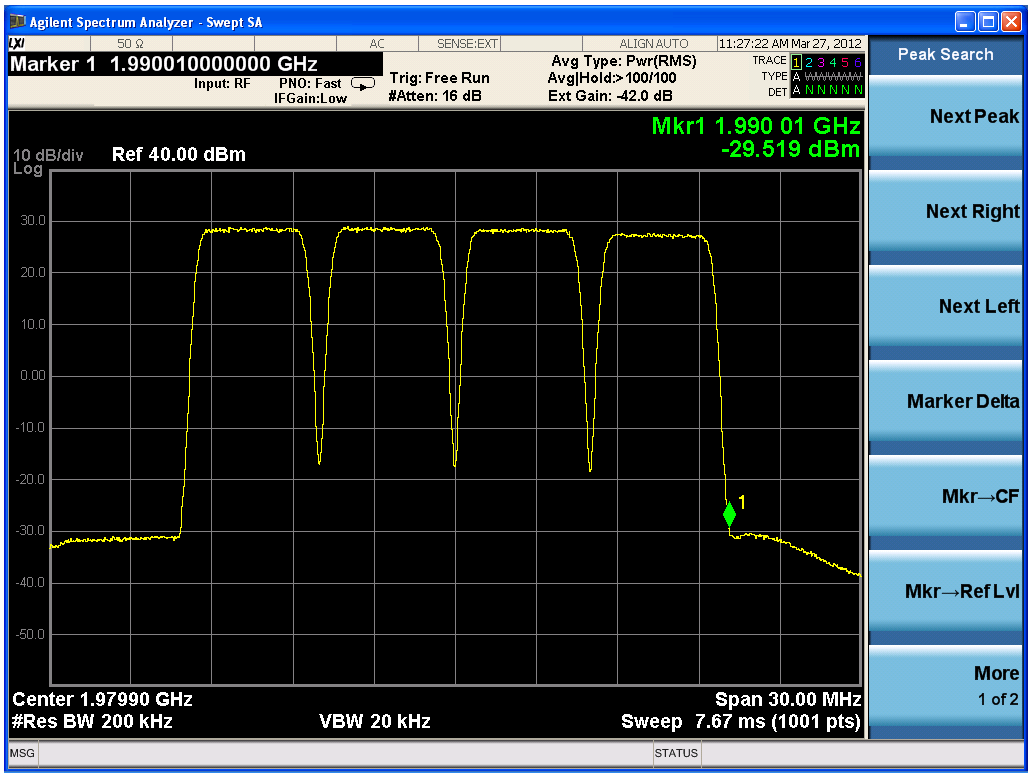
Test Mode: Transmitting UMTS

Test Data

Four carriers

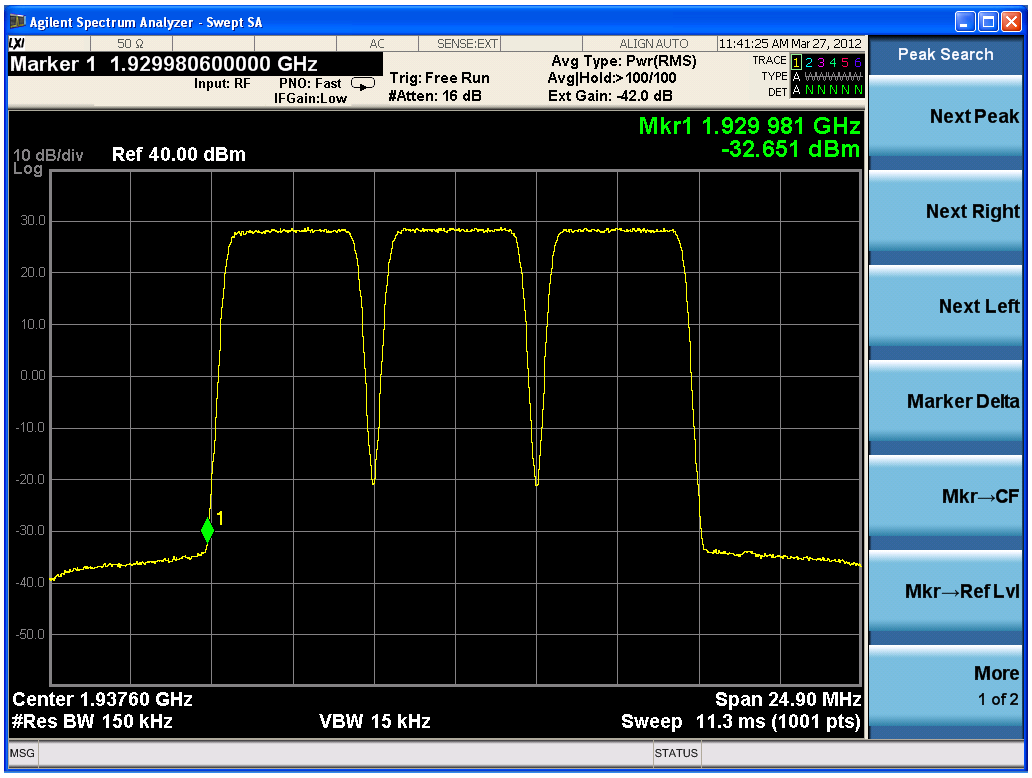
Frequency channel	Max bandedge Emission (dBm)	Limit (dBm)
1932.6/1937.6/1942.6/1947.6	-29.305	-13.00
1972.4/1977.4/1982.4/1987.4	-29.519	-13.00

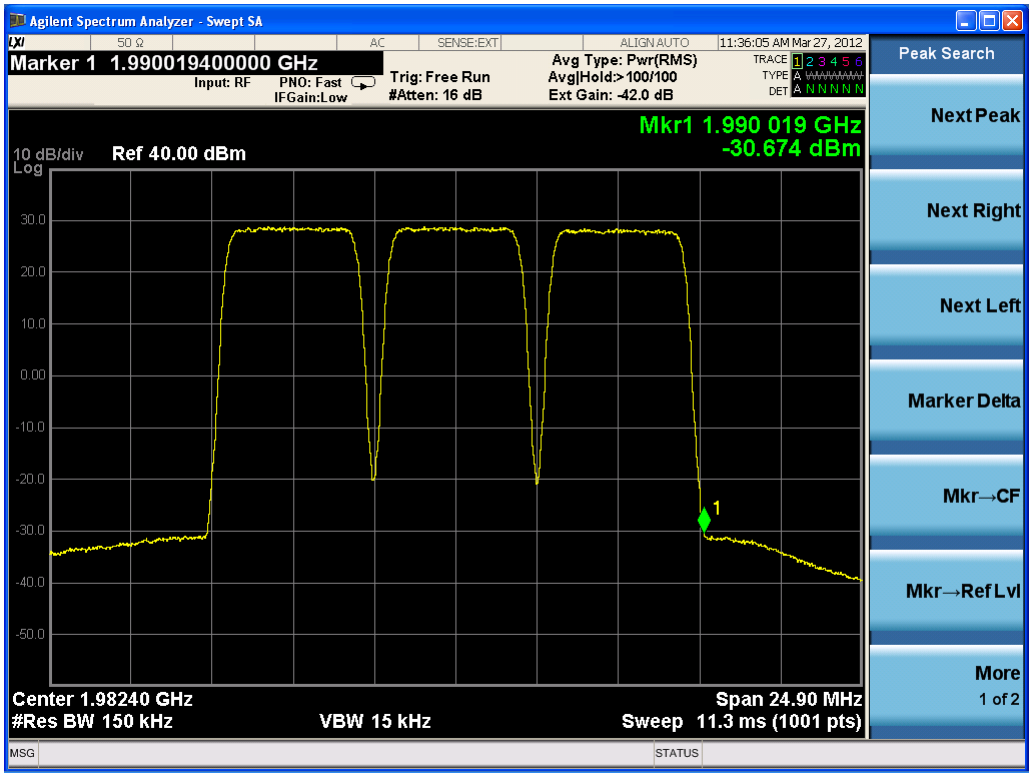




Three carriers

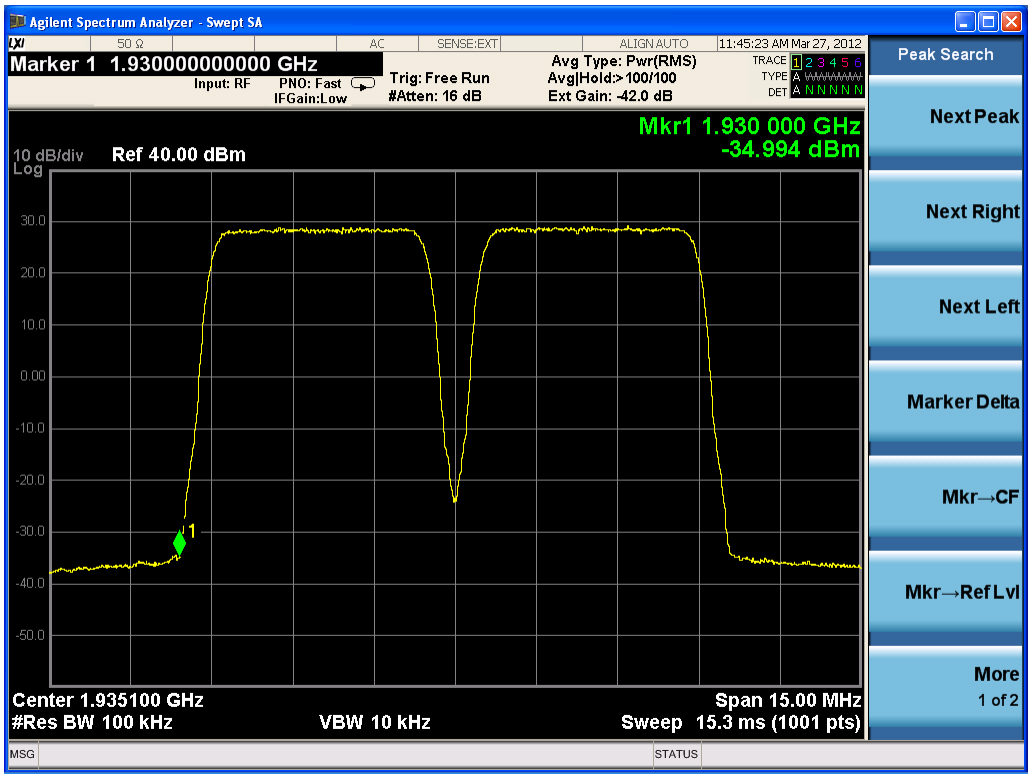
Frequency channel	Max bandedge Emission (dBm)	Limit (dBm)
1932.6/1937.6/1942.6	-32.651	-13.00
1972.4/1977.4/1982.4	-30.674	-13.00

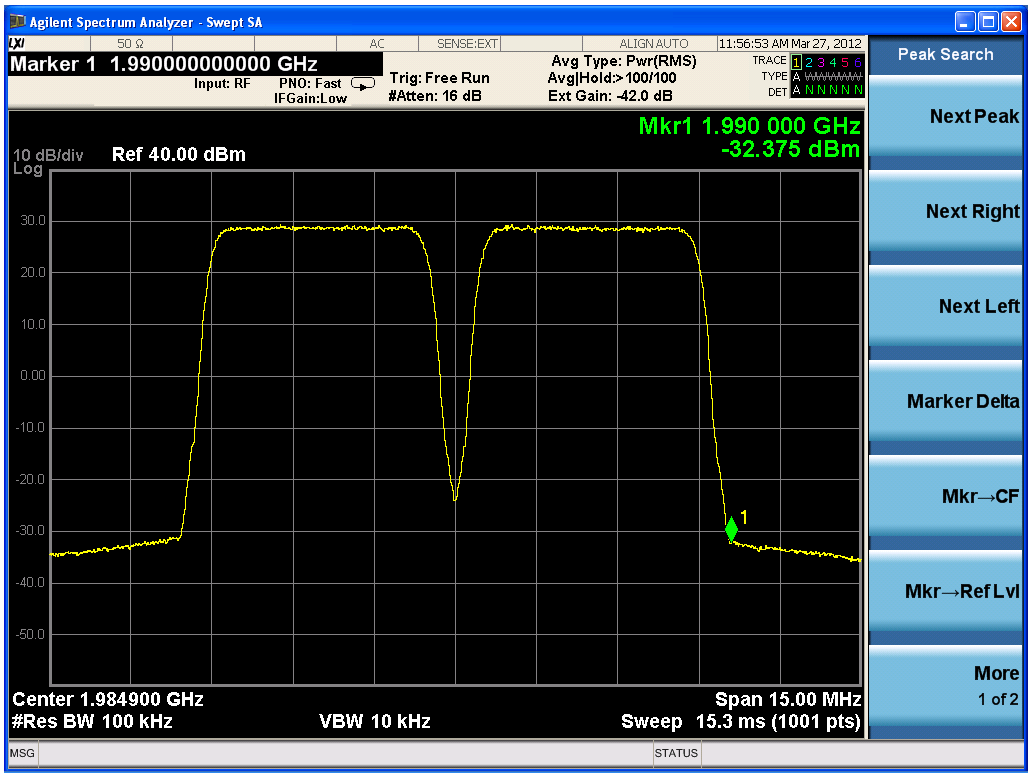

Agilent Spectrum Analyzer - Swept SA
Marker 1 1.929980600000 GHz
Input: RF PNO: Fast IFGain:Low
Trig: Free Run #Atten: 16 dB
Avg Type: Pwr(RMS) Avg|Hold:>100/100 Ext Gain: -42.0 dB
11:41:25 AM Mar 27, 2012
Mkr1 1.929 981 GHz -32.651 dBm
10 dB/div Log
Ref 40.00 dBm
Center 1.93760 GHz
#Res BW 150 kHz
VBW 15 kHz
Span 24.90 MHz
Sweep 11.3 ms (1001 pts)
Peak Search
Next Peak
Next Right
Next Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More 1 of 2


Agilent Spectrum Analyzer - Swept SA
Marker 1 1.990019400000 GHz
Input: RF PNO: Fast IFGain:Low
Trig: Free Run #Atten: 16 dB
Avg Type: Pwr(RMS) Avg|Hold:>100/100 Ext Gain: -42.0 dB
11:36:05 AM Mar 27, 2012
Mkr1 1.990 019 GHz -30.674 dBm
10 dB/div Log
Ref 40.00 dBm
Center 1.98240 GHz
#Res BW 150 kHz
VBW 15 kHz
Span 24.90 MHz
Sweep 11.3 ms (1001 pts)
Peak Search
Next Peak
Next Right
Next Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More 1 of 2

Two carriers

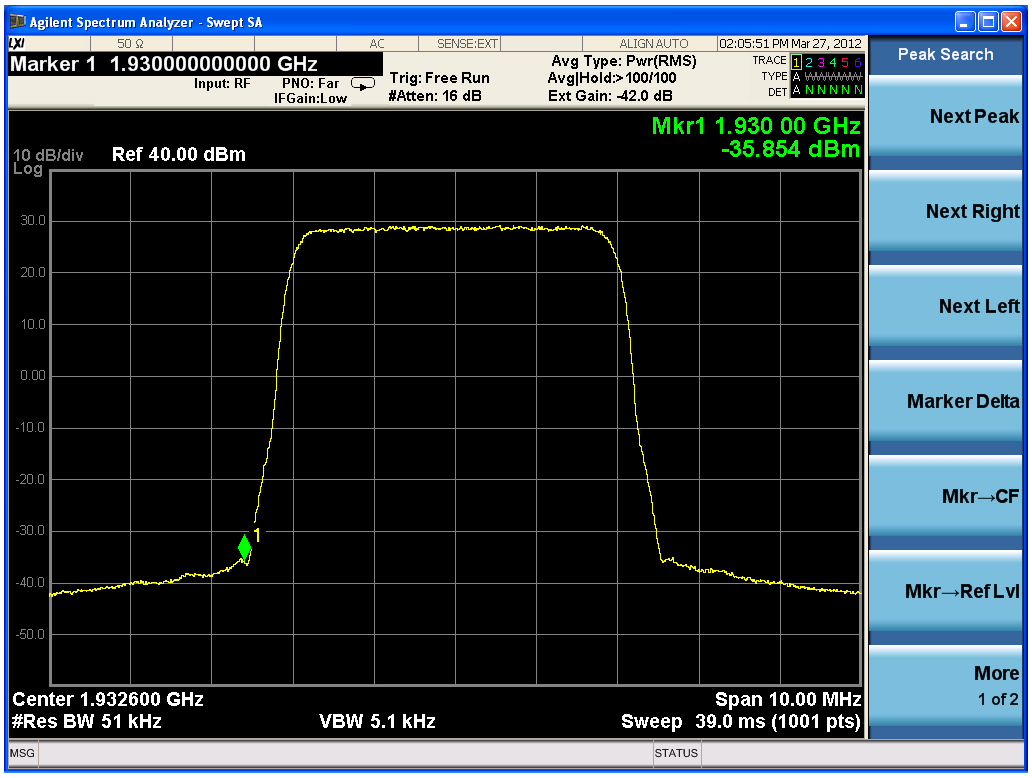
Frequency channel	Max bandedge Emission (dBm)	Limit (dBm)
1932.6/1937.6	-34.994	-13.00
1982.4/1987.4	-32.375	-13.00

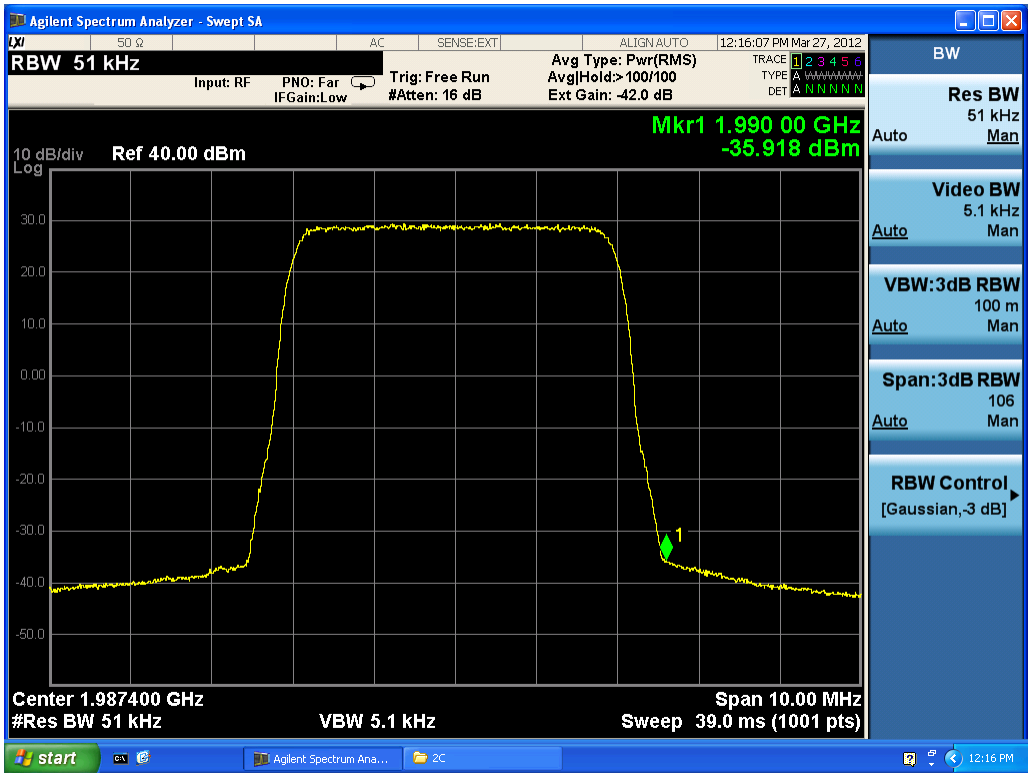




One carrier

Frequency channel	Max bandedge Emission (dBm)	Limit (dBm)
1932.6	-35.854	-13.00
1987.4	-35.918	-13.00


Agilent Spectrum Analyzer - Swept SA
Marker 1 1.930000000000 GHz
Input: RF
PNO: Far
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: Pwr(RMS)
Avg|Hold:>100/100
Ext Gain: -42.0 dB
02:05:51 PM Mar 27, 2012
Mkr1 1.930 00 GHz
-35.854 dBm
10 dB/div
Log
Ref 40.00 dBm
Center 1.932600 GHz
#Res BW 51 kHz
VBW 5.1 kHz
Span 10.00 MHz
Sweep 39.0 ms (1001 pts)
Peak Search
Next Peak
Next Right
Next Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2


Agilent Spectrum Analyzer - Swept SA
RBW 51 kHz
Input: RF
PNO: Far
IFGain:Low
Trig: Free Run
#Atten: 16 dB
Avg Type: Pwr(RMS)
Avg|Hold:>100/100
Ext Gain: -42.0 dB
12:16:07 PM Mar 27, 2012
Mkr1 1.990 00 GHz
-35.918 dBm
10 dB/div
Log
Ref 40.00 dBm
Center 1.987400 GHz
#Res BW 51 kHz
VBW 5.1 kHz
Span 10.00 MHz
Sweep 39.0 ms (1001 pts)
BW
Res BW
51 kHz
Auto
Man
Video BW
5.1 kHz
Auto
Man
VBW:3dB RBW
100 m
Auto
Man
Span:3dB RBW
106
Auto
Man
RBW Control
[Gaussian,-3 dB]
start
Agilent Spectrum Ana...
2C
12:16 PM

4.8 FREQUENCY STABILITY

Applicable Standard: FCC § 2.1055 § 24.235

Requirements: FCC § 2.1055 (a)(d) .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	2012-1-26	2013-1-26
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2012-4-10	2013-4-9
Atten	40dB Attenuator	ATSI150-4-40	11300100204204	2011-7-11	2012-7-11
Forstar	Forstar RF Cable	002	1034	2012-4-9	2013-4-8

***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 UMTS

Test Data

Frequency Stability Versus Temperature

Frequency Stability vs. Temperature					
Temperature ℃	**Power Supplied VDC**	**Frequency Measure Error Hz**	**Error ppm**	**Limit ppm**	**Result**
B(1932.6MHz)					
-40	-48	3.4	0.0018	0.02	PASS
-30	-48	-2.1	-0.0011	0.02	PASS
-20	-48	-4.3	-0.0022	0.02	PASS
-10	-48	3.8	0.0019	0.02	PASS
0	-48	-4.1	-0.0021	0.02	PASS
10	-48	3.7	0.0019	0.02	PASS
20	-48	4.2	0.0022	0.02	PASS
30	-48	3.8	0.0019	0.02	PASS
40	-48	-2.7	-0.0014	0.02	PASS
50	-48	-5.3	-0.0027	0.02	PASS
55	-48	5.2	0.00269	0.02	PASS
M(1960MHz)					
-40	-48	4.7	0.0024	0.02	PASS
-30	-48	3.2	0.0016	0.02	PASS
-20	-48	-3.3	-0.0017	0.02	PASS
-10	-48	5.1	0.0026	0.02	PASS
0	-48	-3.4	-0.0017	0.02	PASS
10	-48	5.2	0.0027	0.02	PASS

20	-48	-3.6	-0.0018	0.02	PASS
30	-48	-4.3	-0.0022	0.02	PASS
40	-48	-4.2	-0.0021	0.02	PASS
50	-48	5.4	0.0028	0.02	PASS
55	-48	5.1	0.0026	0.02	PASS
T (1987.4MHz)					
-40	-48	-5.6	-0.0028	0.02	PASS
-30	-48	-5.3	-0.0027	0.02	PASS
-20	-48	4.1	0.0021	0.02	PASS
-10	-48	4.1	0.0021	0.02	PASS
0	-48	3.6	0.0018	0.02	PASS
10	-48	3.7	0.0019	0.02	PASS
20	-48	-3.2	-0.0016	0.02	PASS
30	-48	-3.5	-0.0018	0.02	PASS
40	-48	3.7	0.0019	0.02	PASS
50	-48	5.3	0.0027	0.02	PASS
55	-48	4.2	0.0021	0.02	PASS

Frequency Stability Versus Voltage

Frequency Stability vs. Voltage					
Voltage Vac	**Temperature**	**Frequency Measure Error Hz**	**Error ppm**	**Limit ppm**	**Result**
B(1930.6M)					
40	20	3.6	0.0019		
44	20	-3.3	-0.0017		PASS
47	20	-4.7	-0.0024		PASS
50	20	-5.2	-0.0027		PASS
53	20	-4.6	-0.0024		PASS
56	20	-2.8	-0.0015		PASS
57	20	3.5	0.0018		PASS
M(1960M)					
40	20	3.7	0.0019		PASS
44	20	-3.8	-0.0019		PASS
47	20	-3.3	-0.0017		PASS
50	20	4.8	0.0024		PASS
53	20	-3.8	-0.0019		PASS
56	20	-4.9	-0.0025		PASS
57	20	5.6	0.0029		PASS
T(1987.4M)					
40	20	-3.5	-0.0018		PASS
44	20	4.2	0.0021		PASS
47	20	-3.7	-0.0019		PASS
50	20	2.9	0.0015		PASS
53	20	2.8	0.0014		PASS
56	20	-4.3	-0.0022		PASS
57	20	-3.1	-0.0016		PASS

5 GSM OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§2.1046 §24.232	Transmitter output Power	Compliant
§2.1091 §1.1037	RF Exposure	Compliant
§2.1047 §2.1053	Modulation Characteristic Spurious Radiated Emissions	Compliant Compliant
§2.1051, §24.238	Spurious Emissions AT Antenna Terminals	Compliant
§2.1049 §24.229 §24.238	Occupied Bandwidth	Compliant
§2.1051,§24.238	Band Edge	Compliant
§ 2.1055 § 24.235	Frequency stability	Compliant

5.1 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 5.1.1the 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.

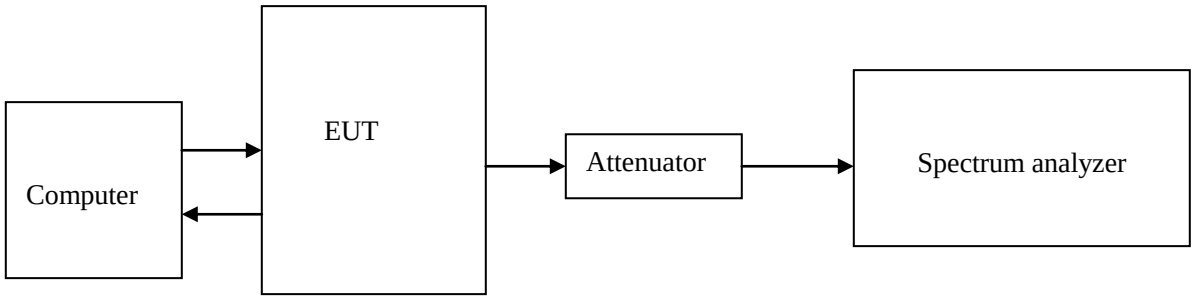
Note: EIRP= Max output Power+ Antenna gain- Cable Loss

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2012-4-10	2013-4-9
Atten	30dB Attenuator	ATSI150-4-30	11300110201221	2011-7-11	2012-7-11
Forstar	Forstar RF Cable	002	1034	2012-4-9	2013-4-8

***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 30dB, Cable Loss is about 2dB

Environmental Conditions

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

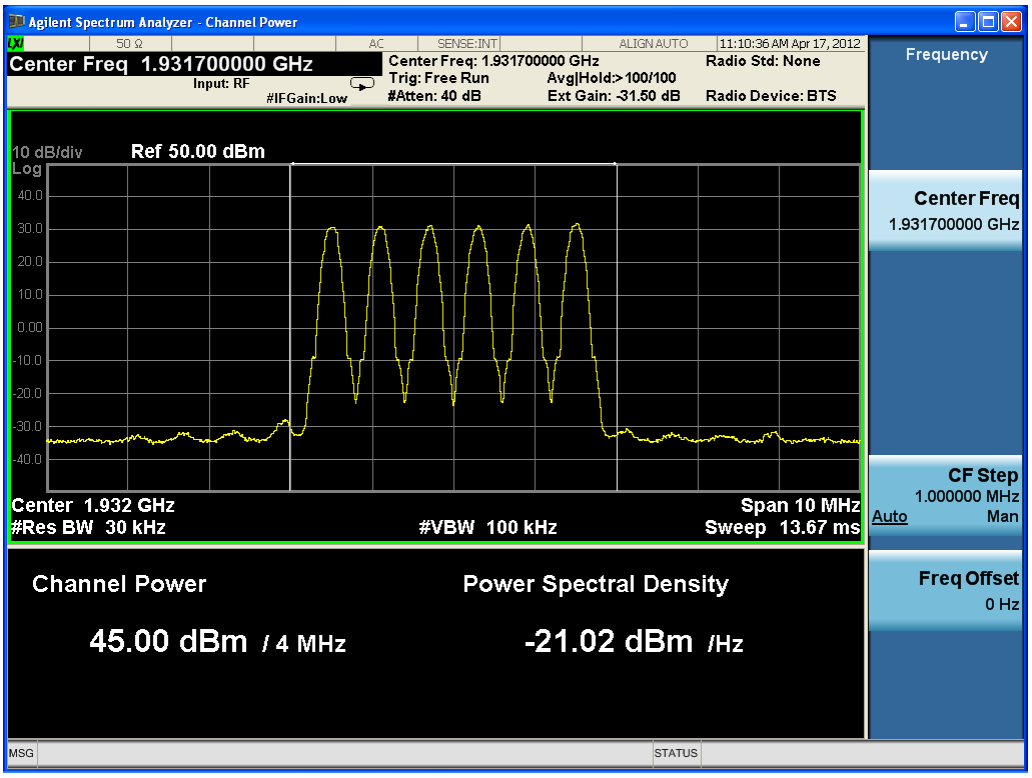
Test Result: Pass

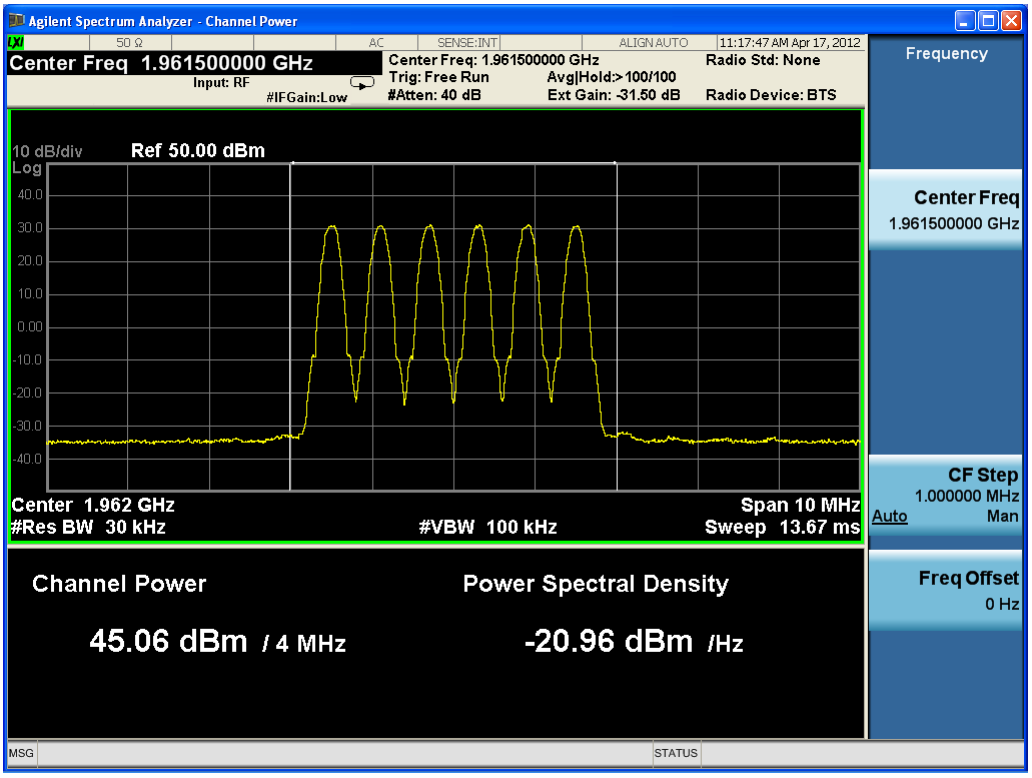
Test Mode: Transmitting GSM

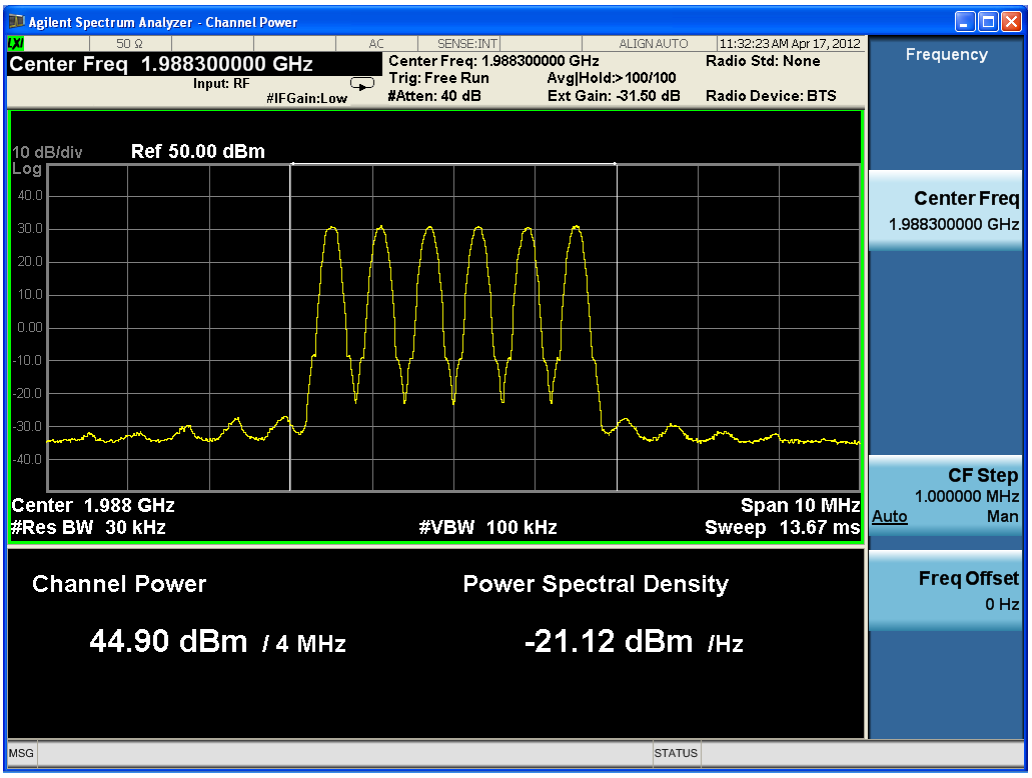
Test Data:

Six carriers

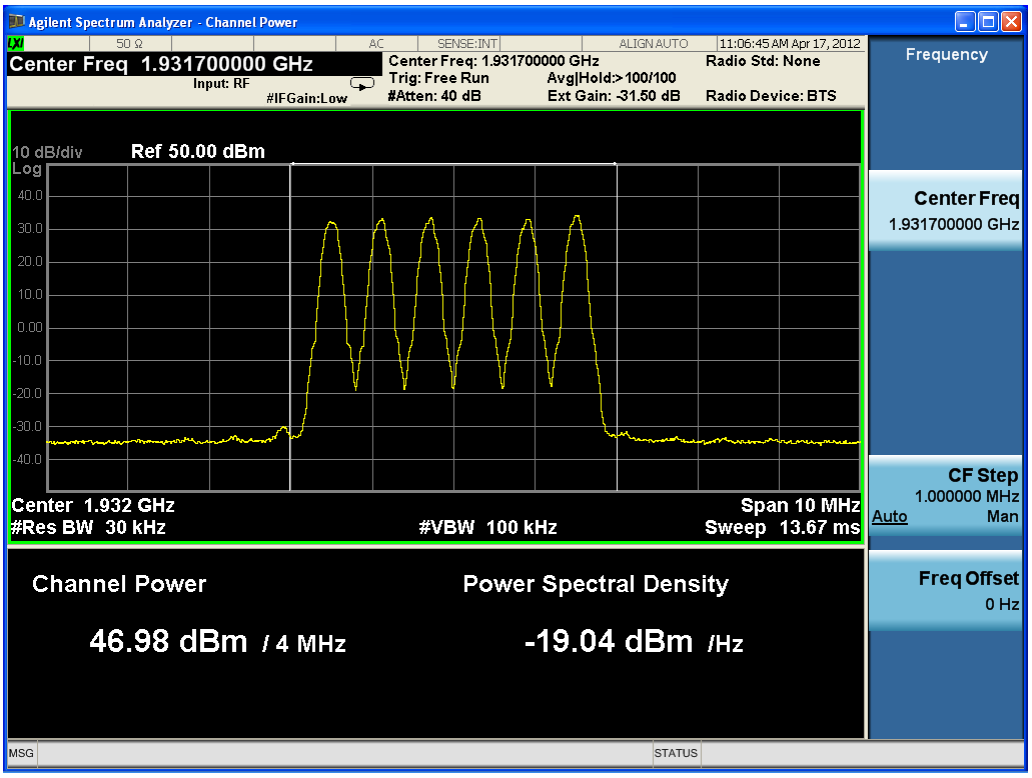
Modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
8PSK	1931.7	1930.2/1930.8/1931.4/1932/1932.6/1933.2	45.00
	1961.5	1960/1960.6/1961.2/1961.8/1962.4/1963	45.06
	1988.3	1986.8/1987.4/1988/1988.6/1989.2/1989.8	44.90

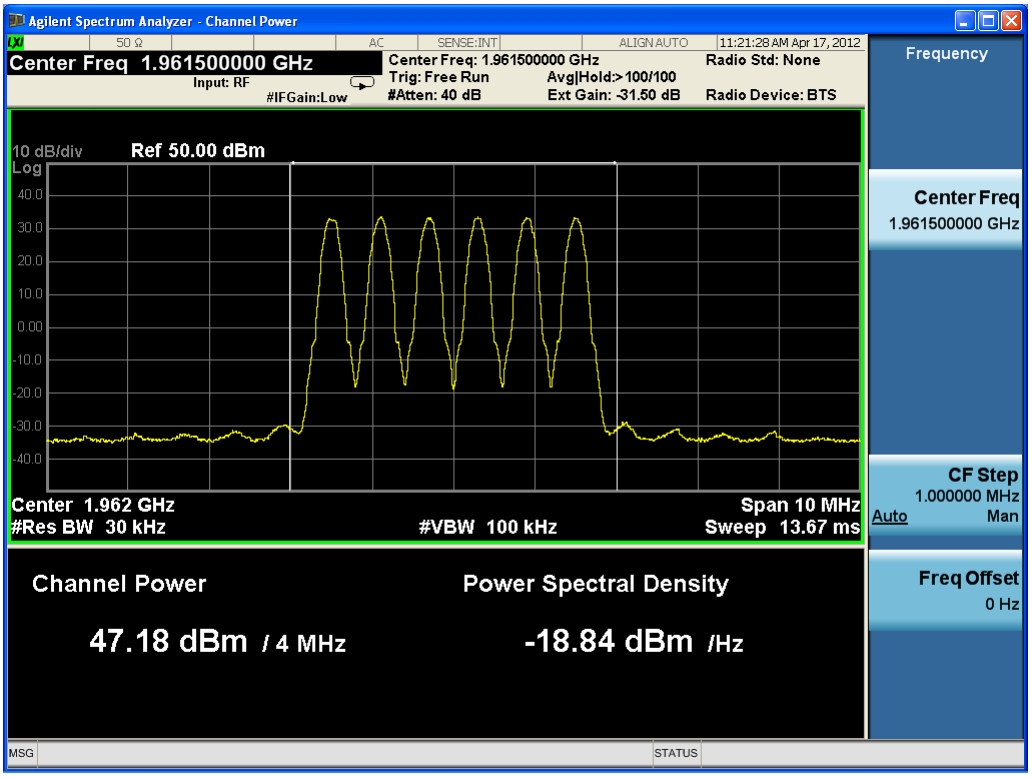

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
11:10:36 AM Apr 17, 2012
Center Freq 1.931700000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.931700000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.932 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 10 MHz
Sweep 13.67 ms
Channel Power
45.00 dBm / 4 MHz
Power Spectral Density
-21.02 dBm /Hz
Center Freq
1.931700000 GHz
CF Step
1.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

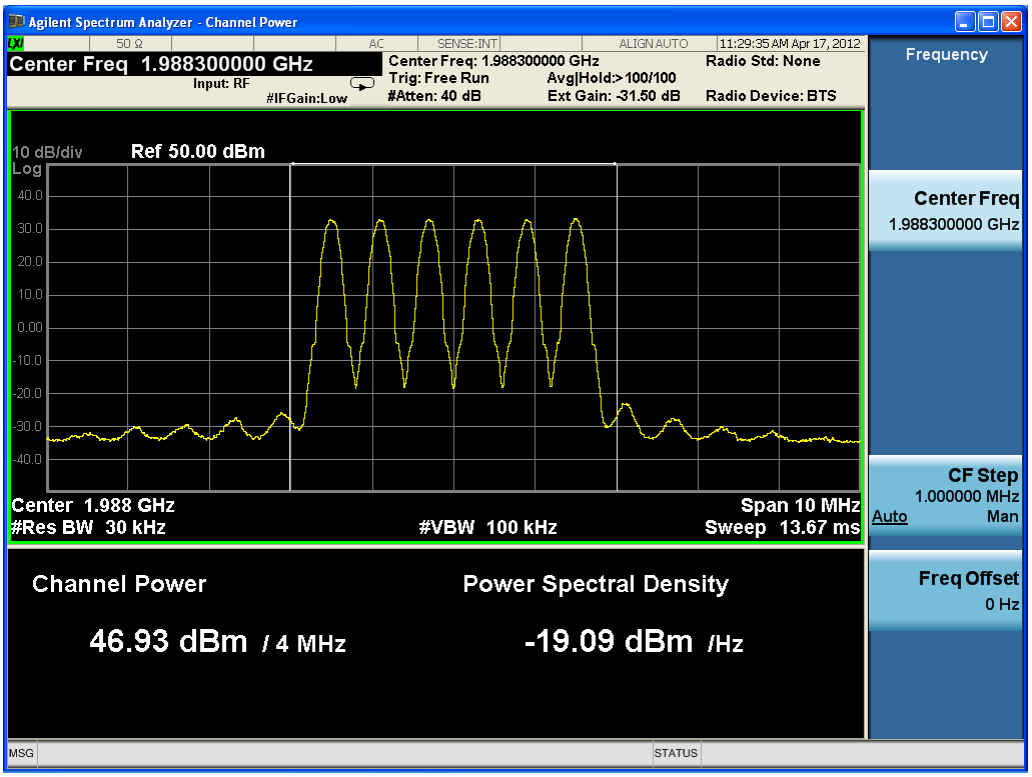

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
11:17:47 AM Apr 17, 2012
Center Freq 1.961500000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.961500000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.962 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 10 MHz
Sweep 13.67 ms
Channel Power
45.06 dBm / 4 MHz
Power Spectral Density
-20.96 dBm /Hz
Center Freq
1.961500000 GHz
CF Step
1.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS



Modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
GMSK	1931.7	1930.2/1930.8/1931.4/1932/1932.6/1933.2	46.98
	1961.5	1960/1960.6/1961.2/1961.8/1962.4/1963	47.18
	1988.3	1986.8/1987.4/1988/1988.6/1989.2/1989.8	46.93

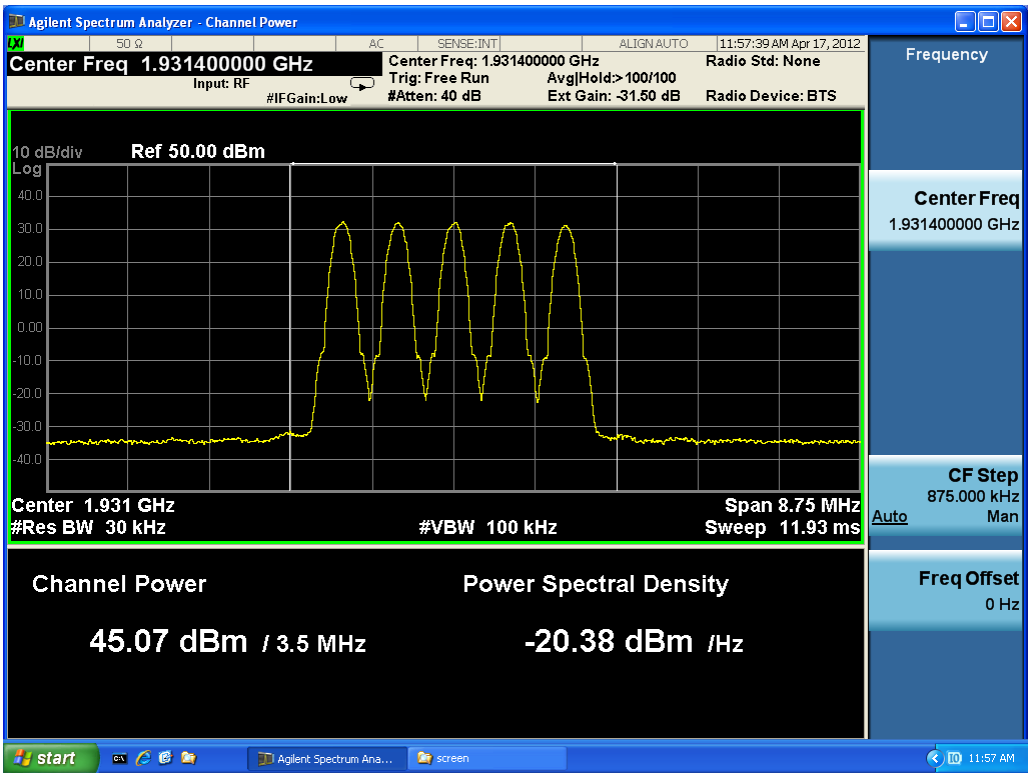

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
11:06:45 AM Apr 17, 2012
Center Freq 1.931700000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.931700000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.932 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 10 MHz
Sweep 13.67 ms
Center Freq
1.931700000 GHz
CF Step
1.000000 MHz
Auto
Man
Freq Offset
0 Hz
Channel Power
46.98 dBm / 4 MHz
Power Spectral Density
-19.04 dBm /Hz
MSG
STATUS

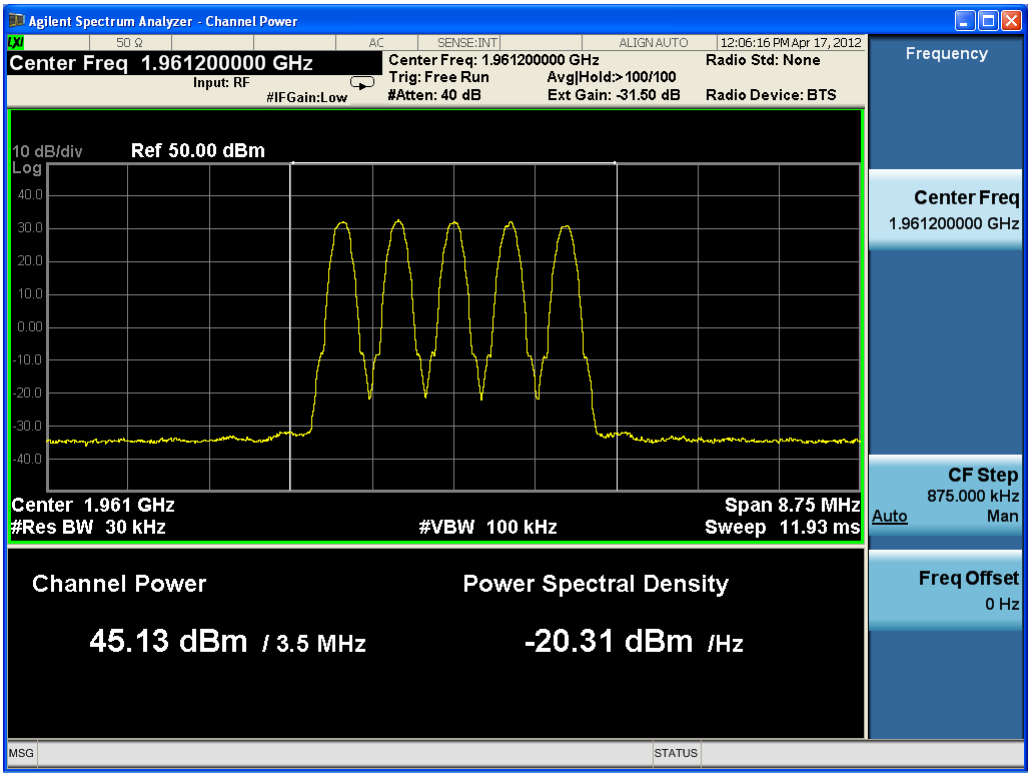

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
11:21:28 AM Apr 17, 2012
Center Freq 1.961500000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.961500000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.962 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 10 MHz
Sweep 13.67 ms
Center Freq
1.961500000 GHz
CF Step
1.000000 MHz
Auto
Man
Freq Offset
0 Hz
Channel Power
47.18 dBm / 4 MHz
Power Spectral Density
-18.84 dBm /Hz
MSG
STATUS

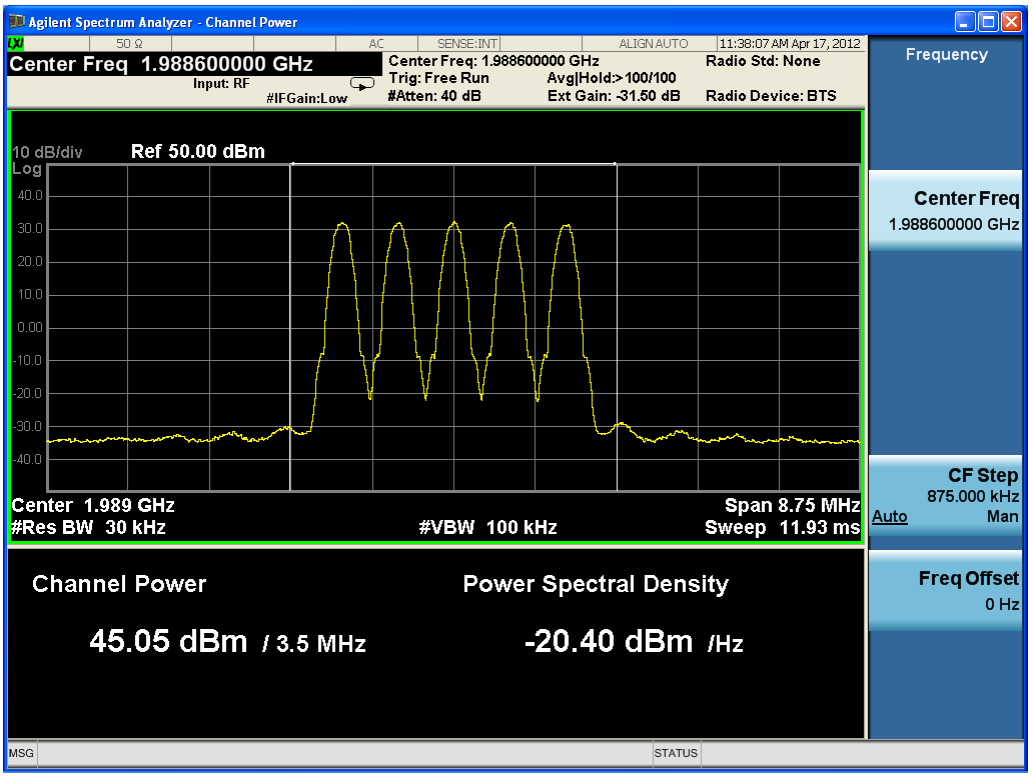


Five carriers

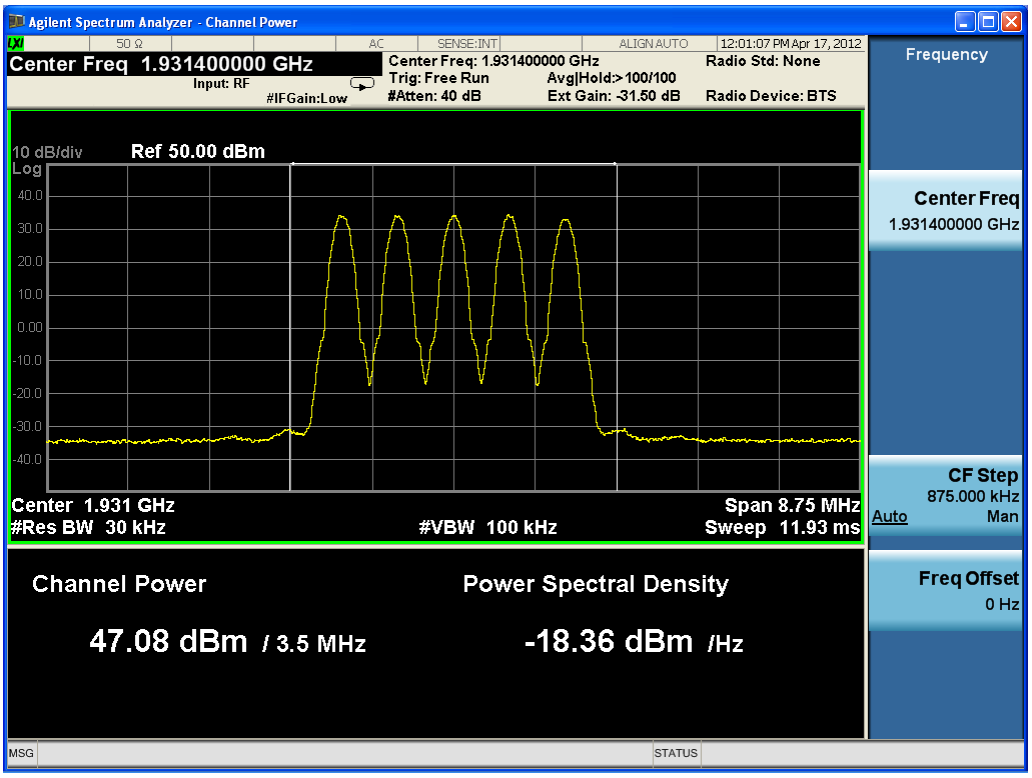
Modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
8PSK	1931.4	1930.2/1930.8/1931.4/1932/1932.6	45.07
	1961.2	1960/1960.6/1961.2/1961.8/1962.4	45.13
	1988.6	1987.4/1988/1988.6/1989.2/1989.8	45.05

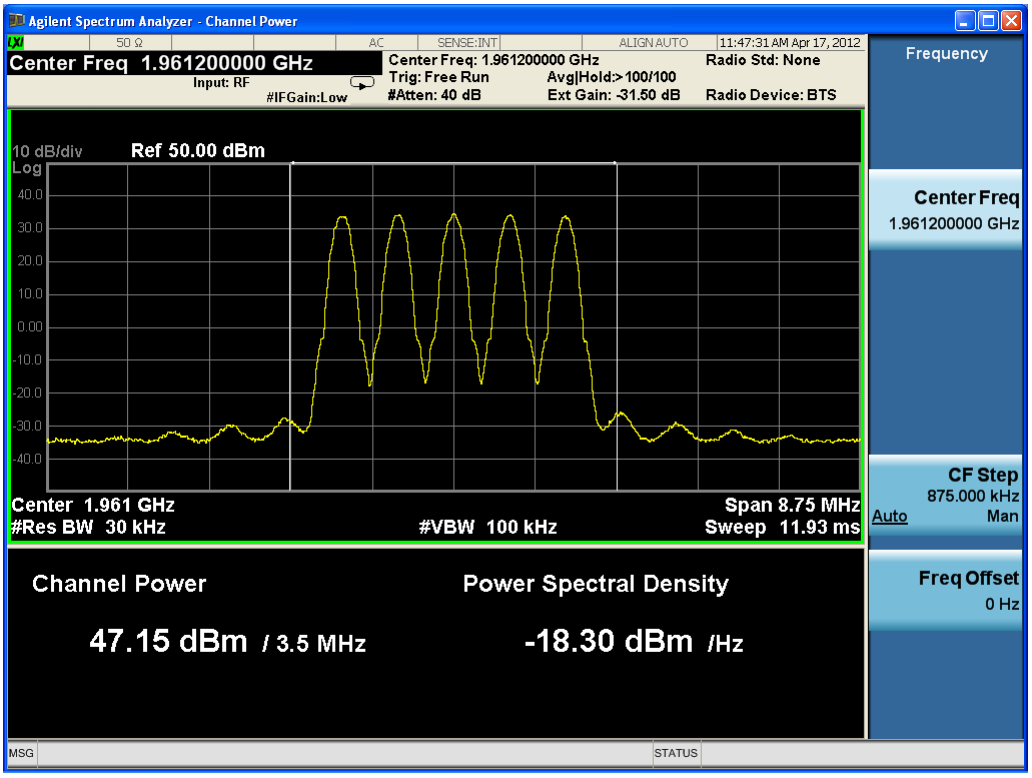

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
11:57:39 AM Apr 17, 2012
Center Freq 1.931400000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.931400000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 40 dB
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.931 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 8.75 MHz
Sweep 11.93 ms
Channel Power
45.07 dBm / 3.5 MHz
Power Spectral Density
-20.38 dBm /Hz
Center Freq
1.931400000 GHz
CF Step
875.000 kHz
Auto
Man
Freq Offset
0 Hz
start
Agilent Spectrum Ana...
screen
11:57 AM

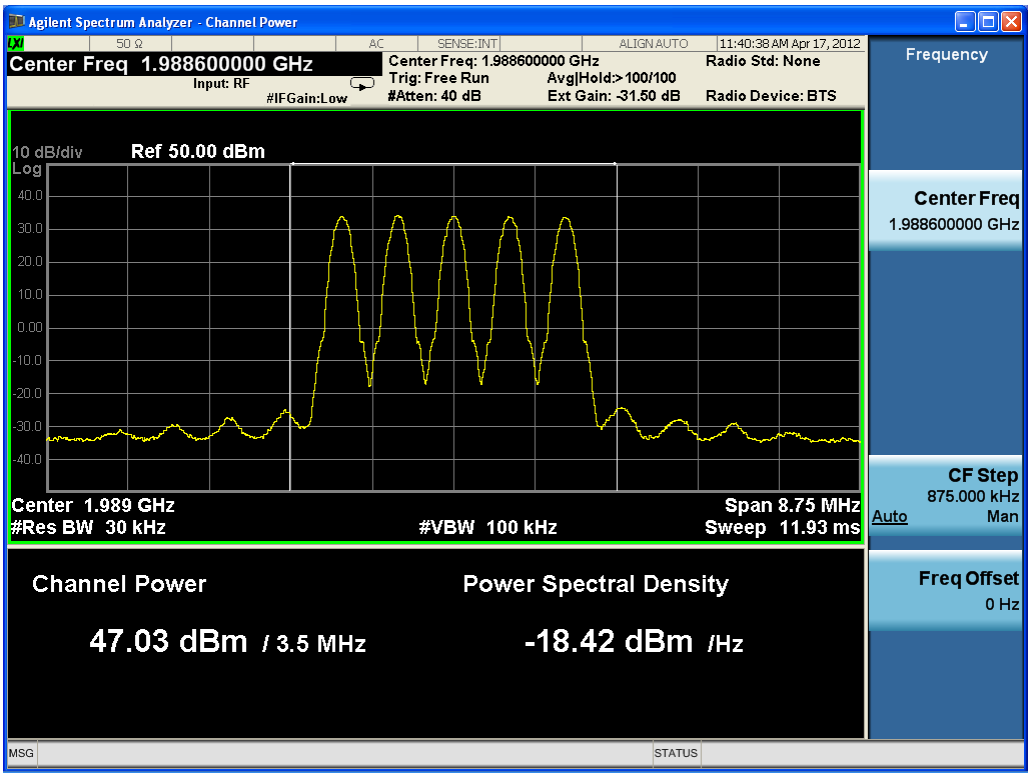

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
12:06:16 PM Apr 17, 2012
Center Freq 1.961200000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.961200000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 40 dB
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.961 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 8.75 MHz
Sweep 11.93 ms
Channel Power
45.13 dBm / 3.5 MHz
Power Spectral Density
-20.31 dBm /Hz
Center Freq
1.961200000 GHz
CF Step
875.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS



Modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
GMSK	1931.4	1930.2/1930.8/1931.4/1932/1932.6	47.08
	1961.2	1960/1960.6/1961.2/1961.8/1962.4	47.15
	1988.6	1987.4/1988/1988.6/1989.2/1989.8	47.03

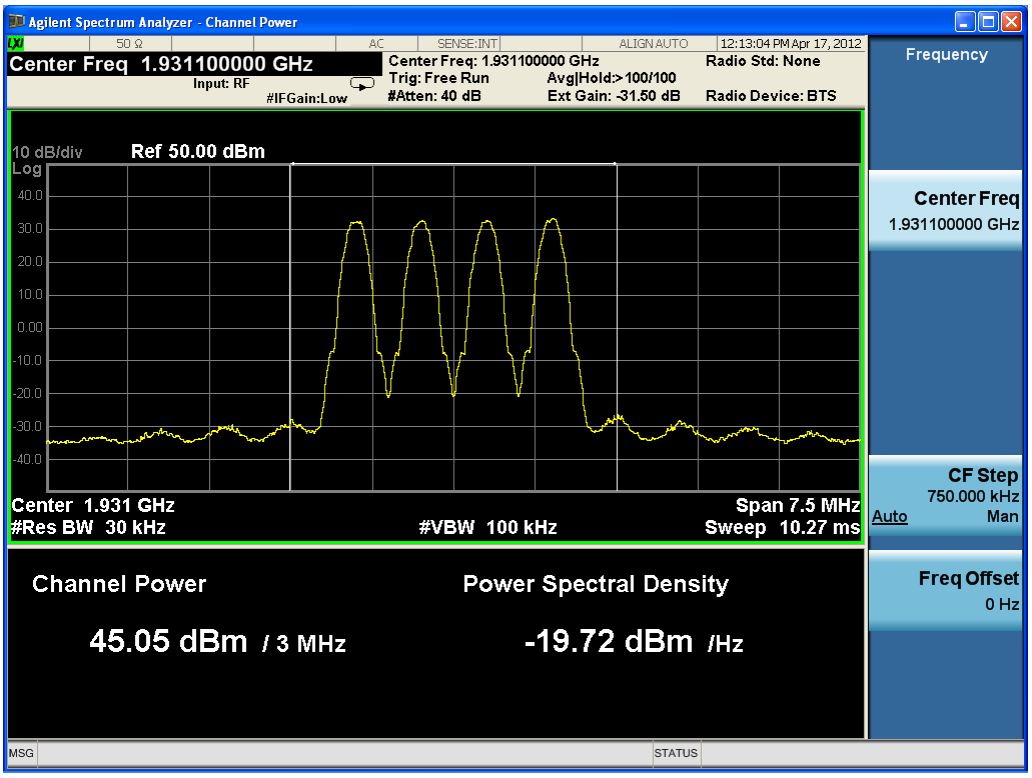

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
12:01:07 PM Apr 17, 2012
Center Freq 1.931400000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.931400000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.931 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 8.75 MHz
Sweep 11.93 ms
Channel Power
47.08 dBm / 3.5 MHz
Power Spectral Density
-18.36 dBm /Hz
Center Freq
1.931400000 GHz
CF Step
875.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

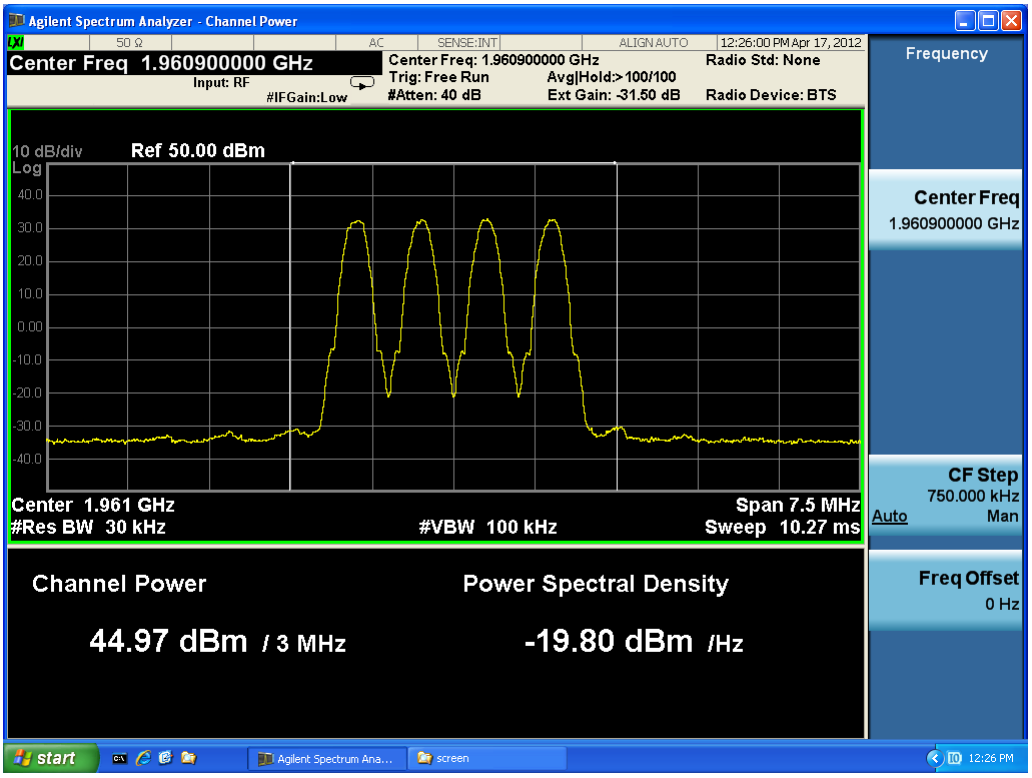

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
11:47:31 AM Apr 17, 2012
Center Freq 1.961200000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.961200000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.961 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 8.75 MHz
Sweep 11.93 ms
Channel Power
47.15 dBm / 3.5 MHz
Power Spectral Density
-18.30 dBm /Hz
Center Freq
1.961200000 GHz
CF Step
875.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

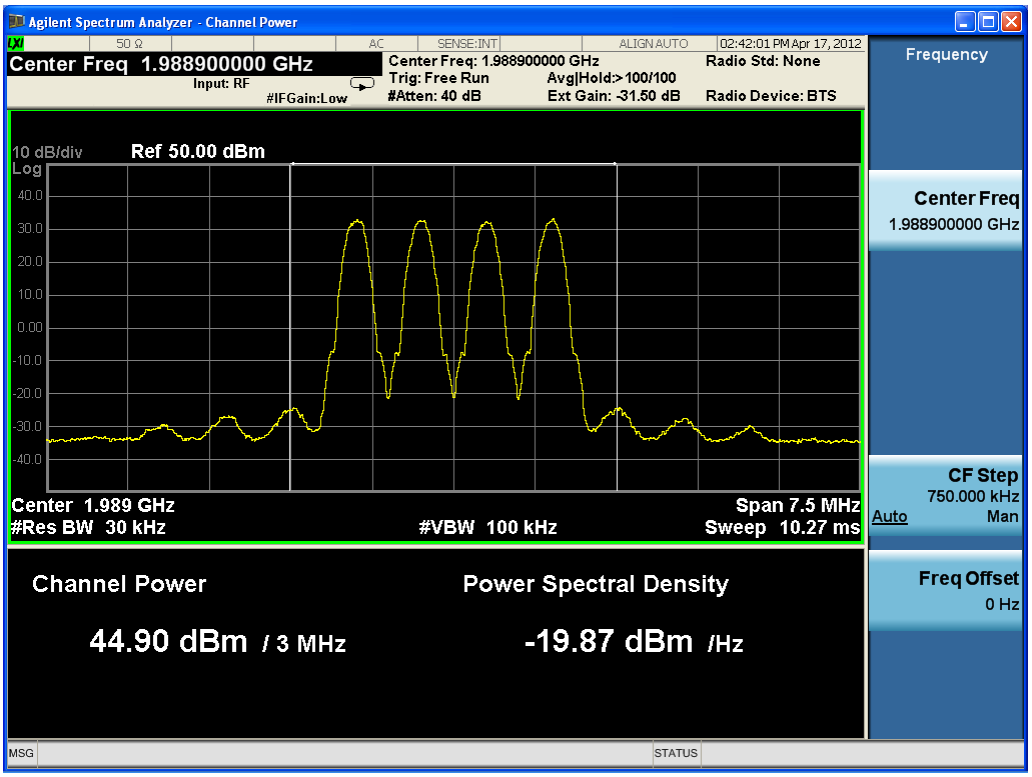


Four carriers

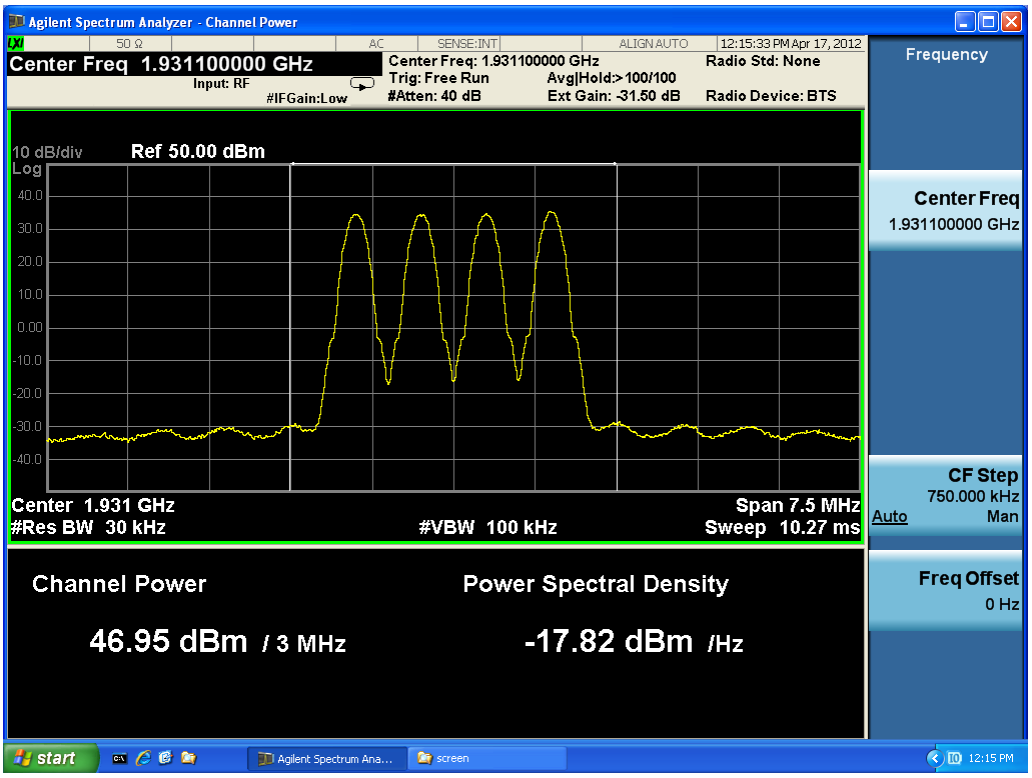
Modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
8PSK	1931.1	1930.2/1930.8/1931.4/1932	45.05
	1960.9	1960/1960.6/1961.2/1961.8	44.97
	1988.9	1988/1988.6/1989.2/1989.8	44.90

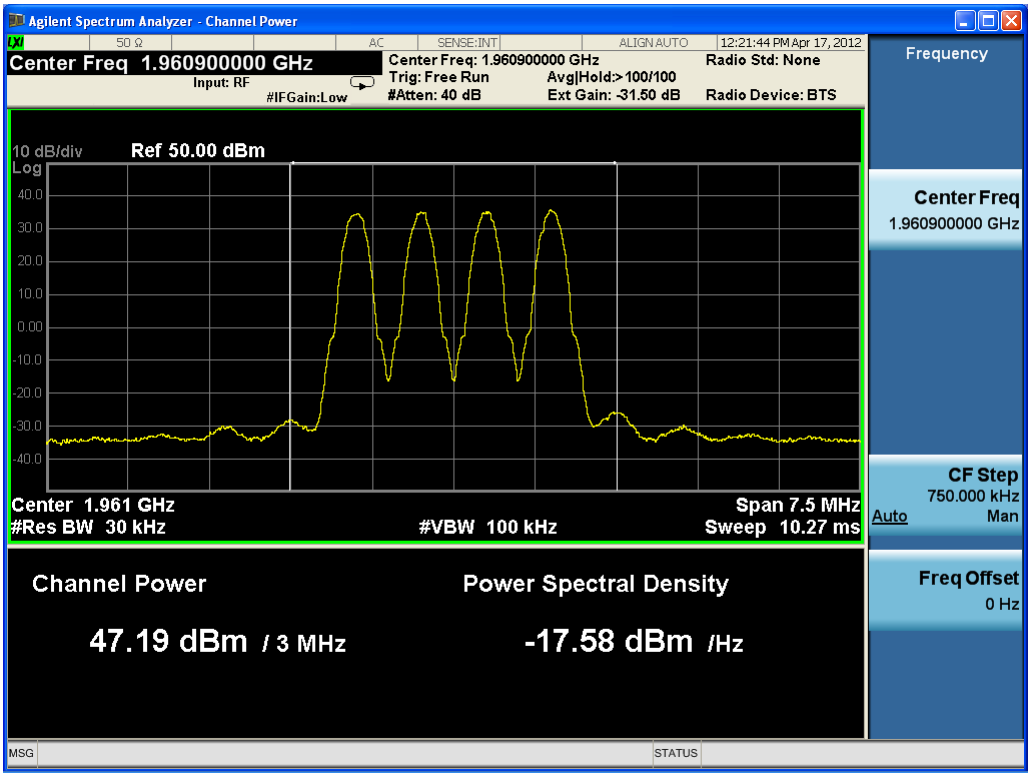

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
12:13:04 PM Apr 17, 2012
Center Freq 1.931100000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.931100000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.931 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 7.5 MHz
Sweep 10.27 ms
Channel Power
45.05 dBm / 3 MHz
Power Spectral Density
-19.72 dBm /Hz
Center Freq
1.931100000 GHz
CF Step
750.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

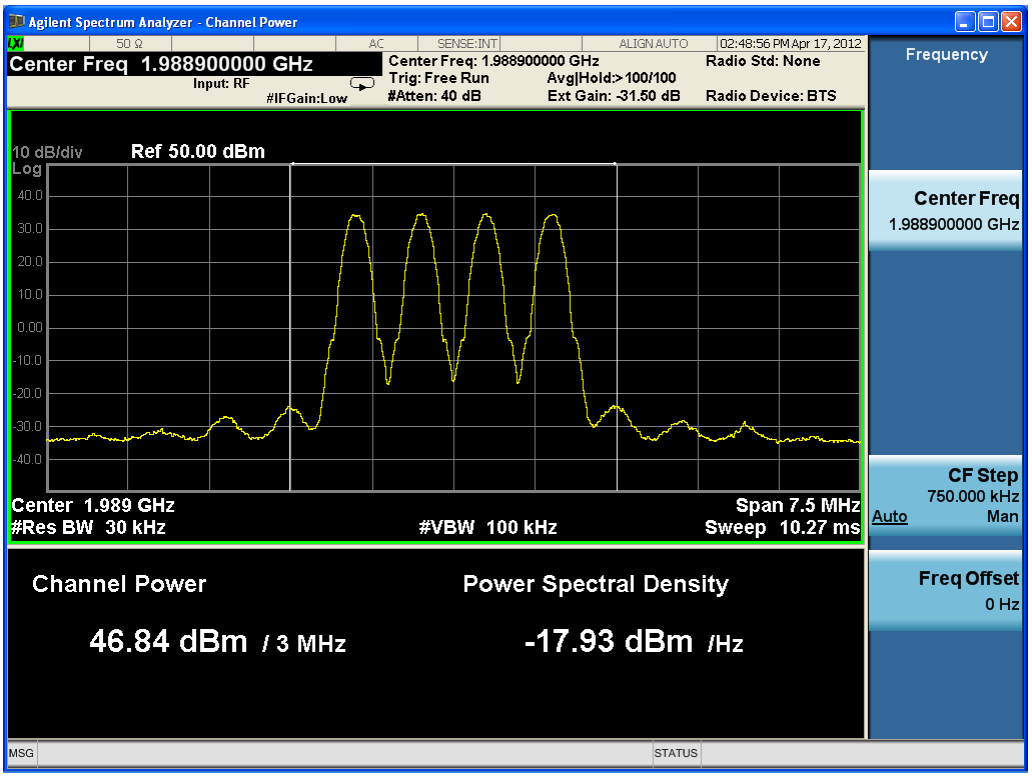

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
12:26:00 PM Apr 17, 2012
Center Freq 1.960900000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.960900000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.961 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 7.5 MHz
Sweep 10.27 ms
Channel Power
44.97 dBm / 3 MHz
Power Spectral Density
-19.80 dBm /Hz
Center Freq
1.960900000 GHz
CF Step
750.000 kHz
Auto
Man
Freq Offset
0 Hz
start
Agilent Spectrum Ana...
screen
12:26 PM



Modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
GMSK	1931.1	1930.2/1930.8/1931.4/1932	46.95
	1960.9	1960/1960.6/1961.2/1961.8	47.19
	1988.9	1988/1988.6/1989.2/1989.8	46.84

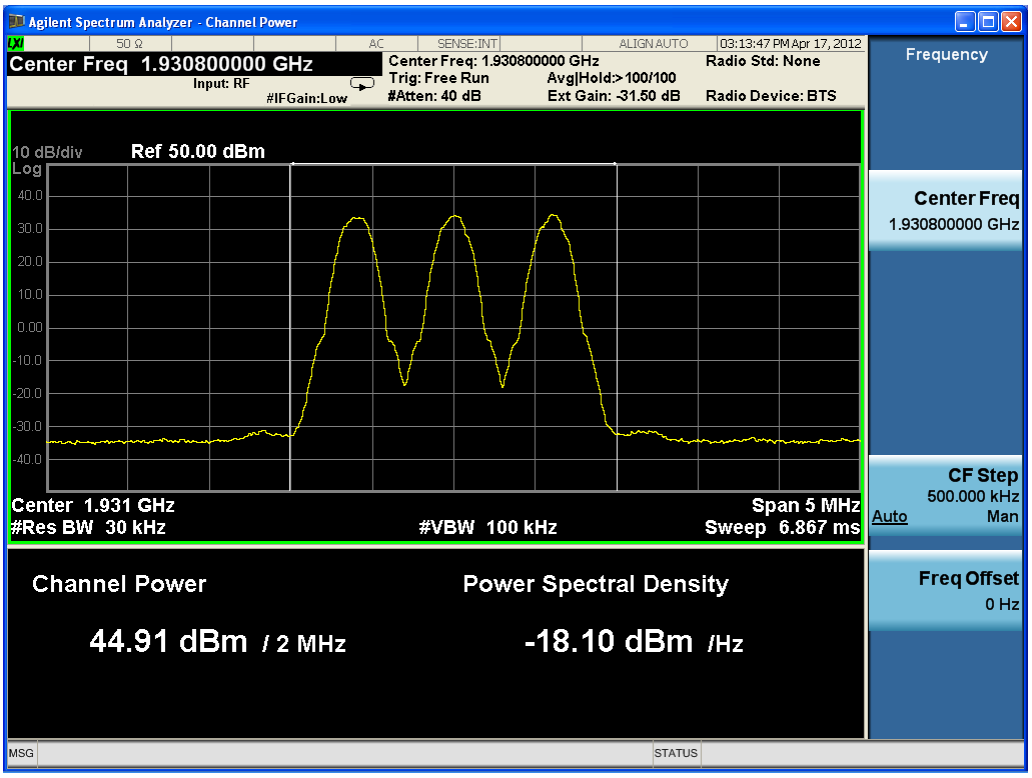

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
12:15:33 PM Apr 17, 2012
Center Freq 1.931100000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.931100000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 40 dB
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.931 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 7.5 MHz
Sweep 10.27 ms
Channel Power
46.95 dBm / 3 MHz
Power Spectral Density
-17.82 dBm /Hz
Center Freq
1.931100000 GHz
CF Step
750.000 kHz
Auto
Man
Freq Offset
0 Hz
start
Agilent Spectrum Ana...
screen
12:15 PM

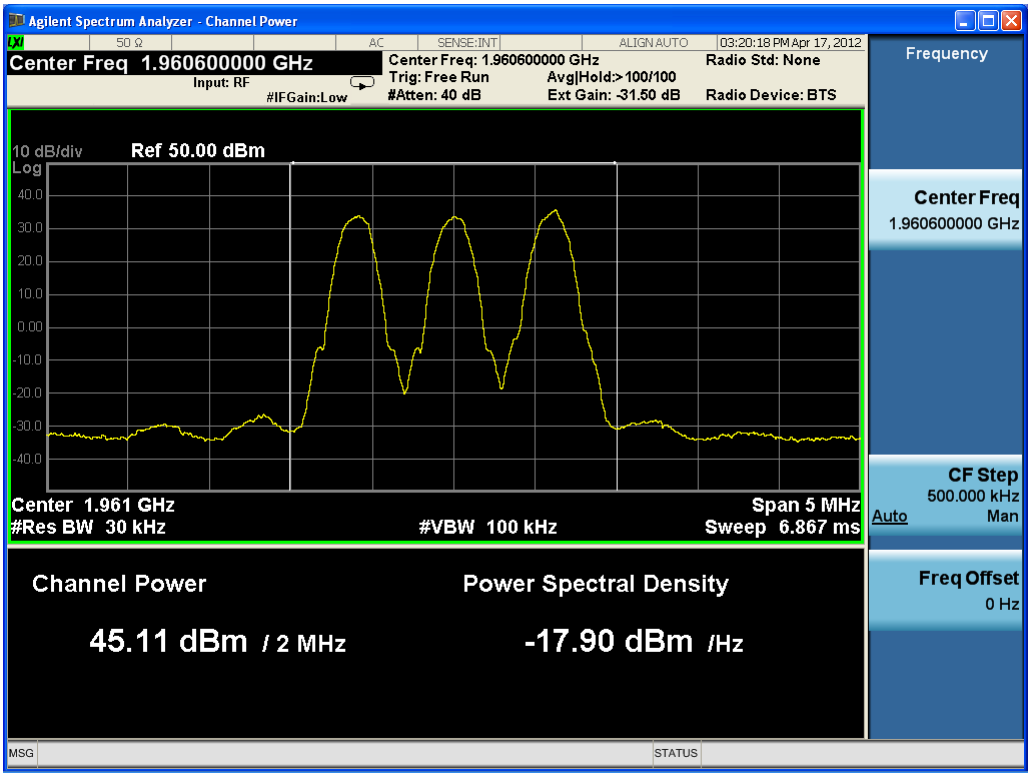

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
12:21:44 PM Apr 17, 2012
Center Freq 1.960900000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.960900000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 40 dB
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.961 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 7.5 MHz
Sweep 10.27 ms
Channel Power
47.19 dBm / 3 MHz
Power Spectral Density
-17.58 dBm /Hz
Center Freq
1.960900000 GHz
CF Step
750.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

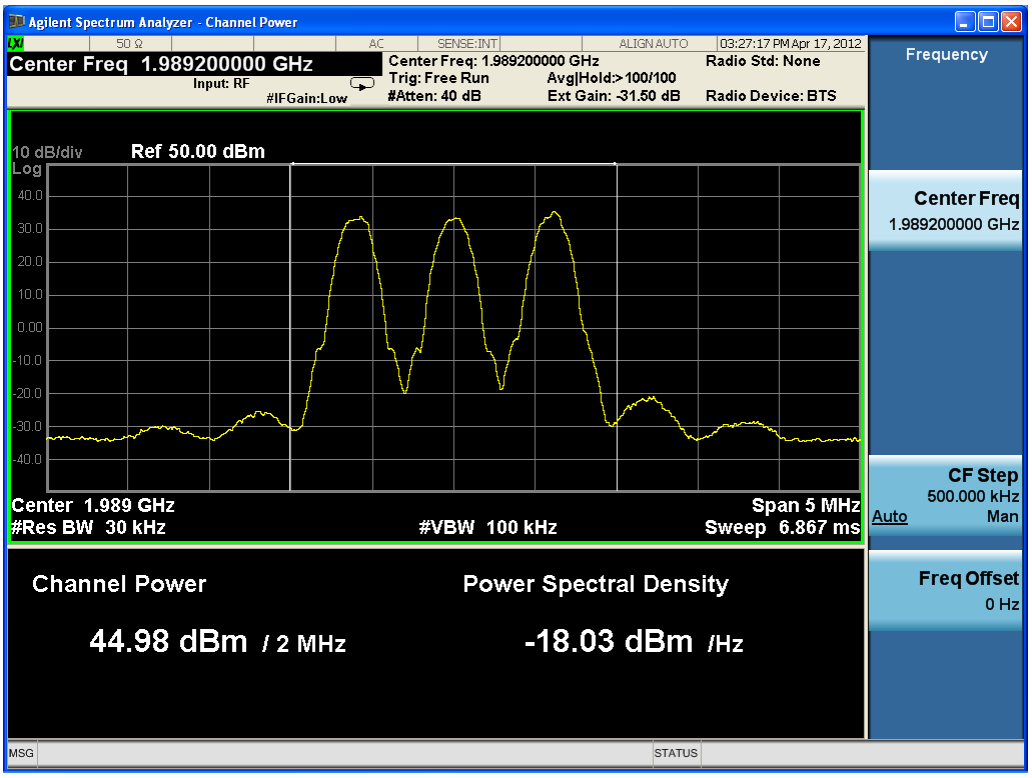


Three carriers

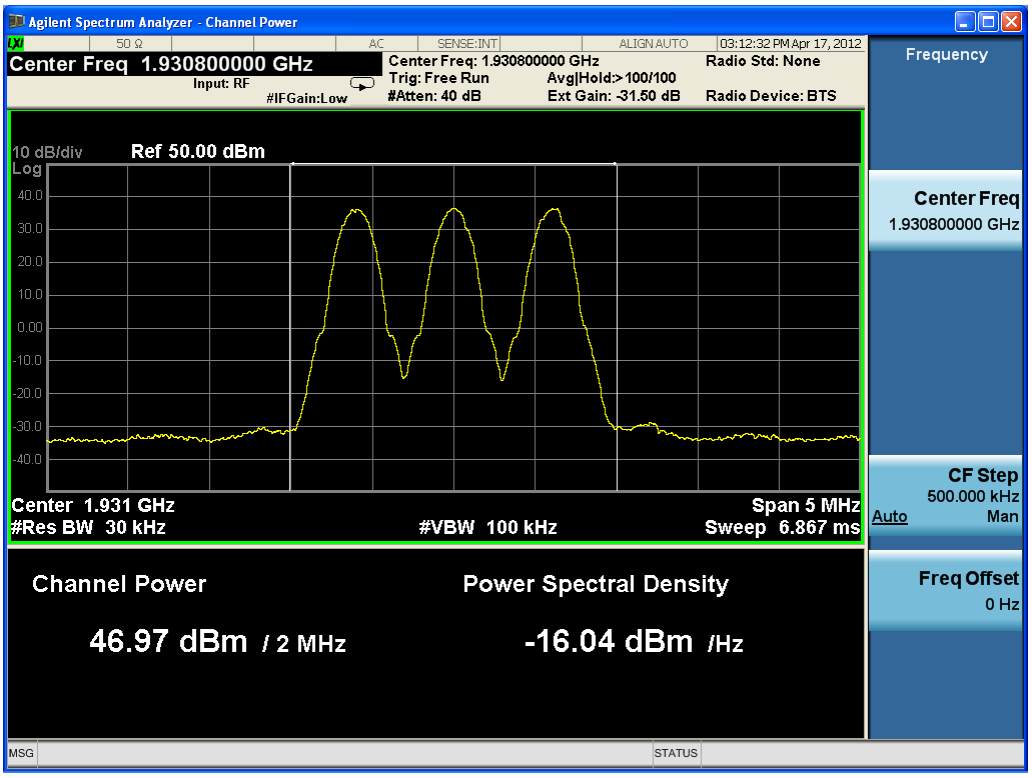
Modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
8PSK	1930.8	1930.2/1930.8/1931.4	44.91
	1960.6	1960/1960.6/1961.2	45.11
	1989.2	1988.6/1989.2/1989.8	44.98

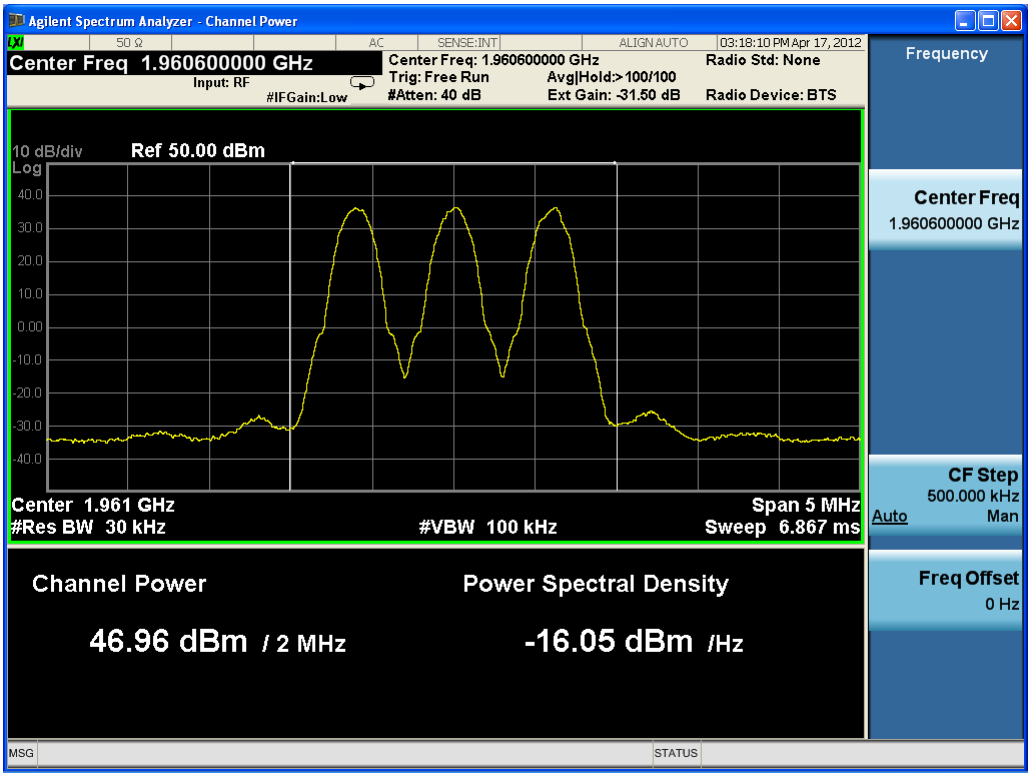

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
03:13:47 PM Apr 17, 2012
Center Freq 1.930800000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.930800000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.931 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
Sweep 6.867 ms
Channel Power
44.91 dBm / 2 MHz
Power Spectral Density
-18.10 dBm /Hz
Center Freq
1.930800000 GHz
CF Step
500.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

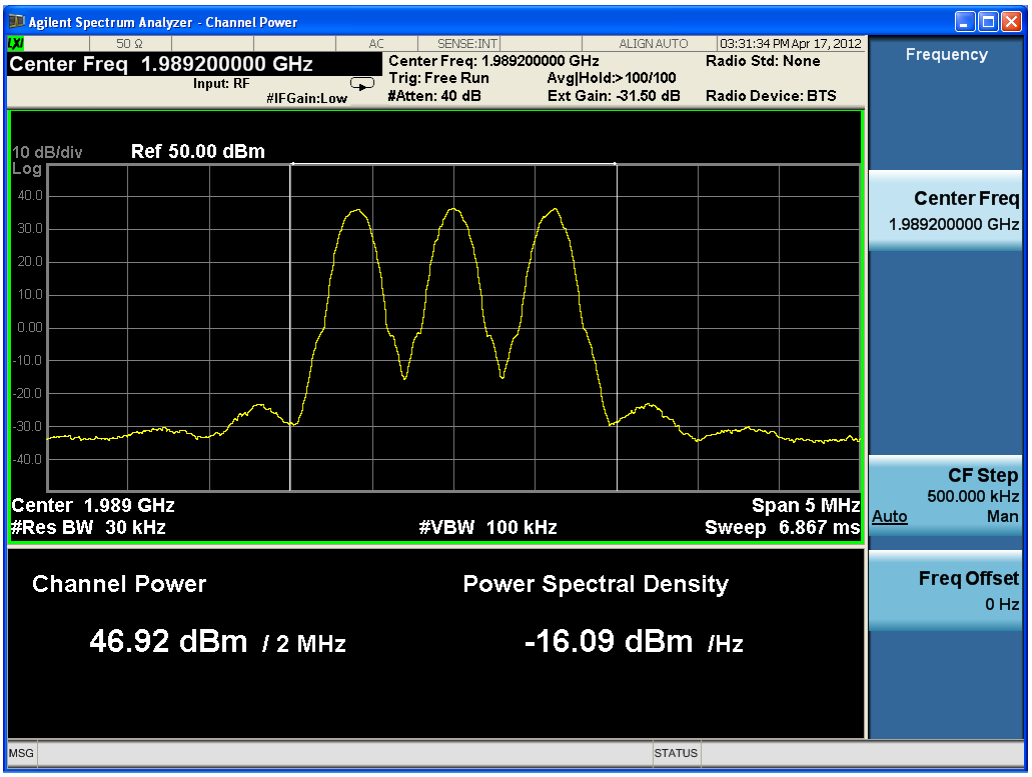

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
03:20:18 PM Apr 17, 2012
Center Freq 1.960600000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.960600000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.961 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
Sweep 6.867 ms
Channel Power
45.11 dBm / 2 MHz
Power Spectral Density
-17.90 dBm /Hz
Center Freq
1.960600000 GHz
CF Step
500.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS



Modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
GMSK	1930.8	1930.2/1930.8/1931.4	46.97
	1960.6	1960/1960.6/1961.2	46.96
	1989.2	1988.6/1989.2/1989.8	46.92

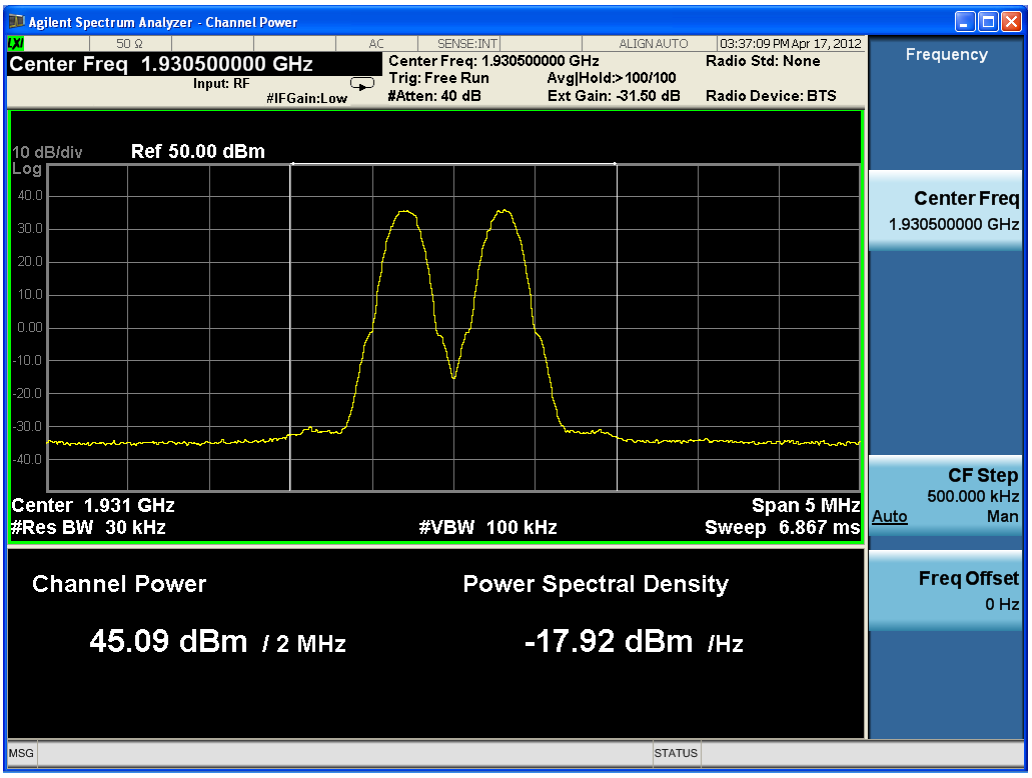

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
03:12:32 PM Apr 17, 2012
Center Freq 1.930800000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.930800000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.931 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
Sweep 6.867 ms
Channel Power
46.97 dBm / 2 MHz
Power Spectral Density
-16.04 dBm /Hz
Center Freq
1.930800000 GHz
CF Step
500.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

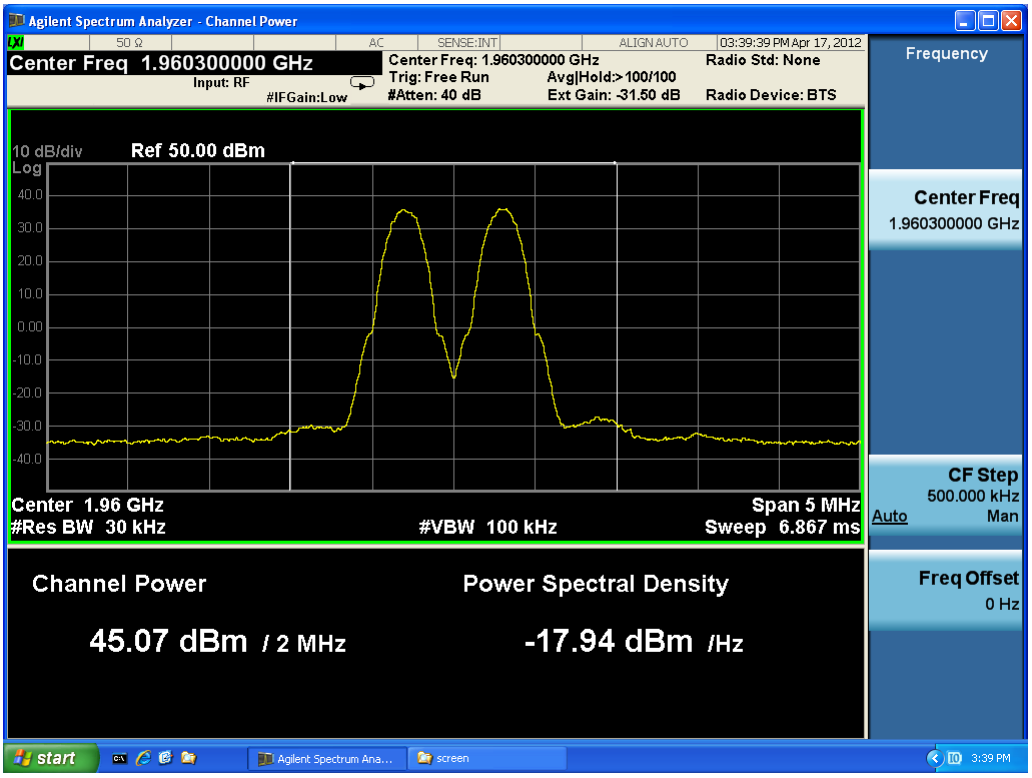

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
03:18:10 PM Apr 17, 2012
Center Freq 1.960600000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.960600000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.961 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
Sweep 6.867 ms
Channel Power
46.96 dBm / 2 MHz
Power Spectral Density
-16.05 dBm /Hz
Center Freq
1.960600000 GHz
CF Step
500.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

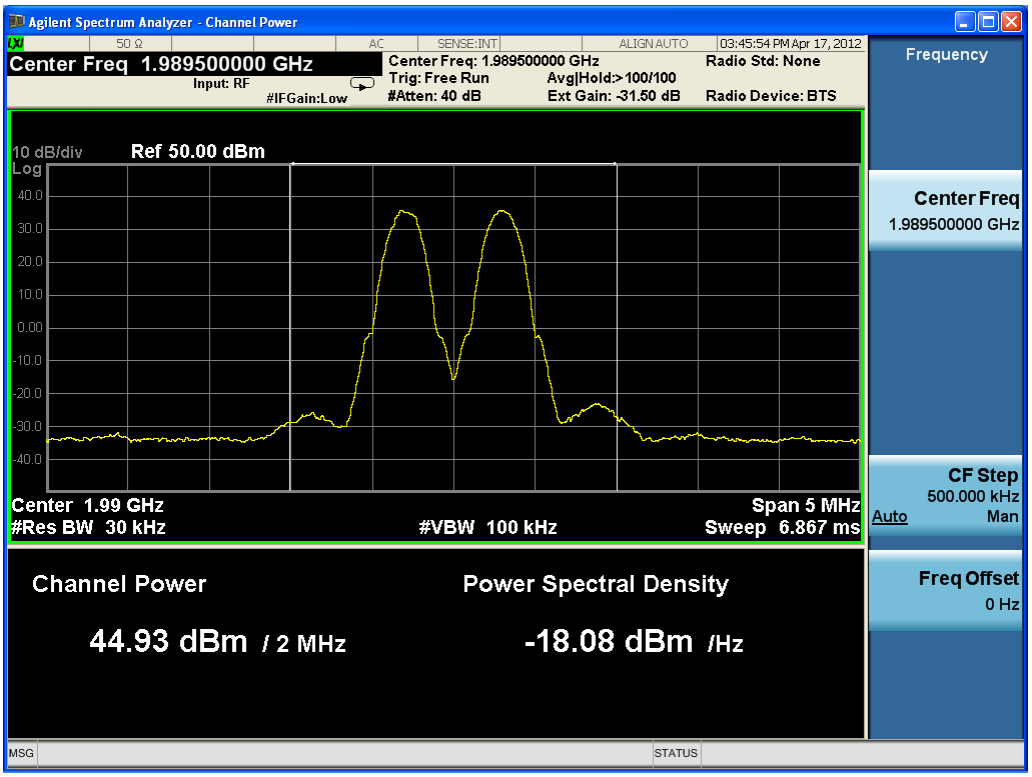


Two carriers

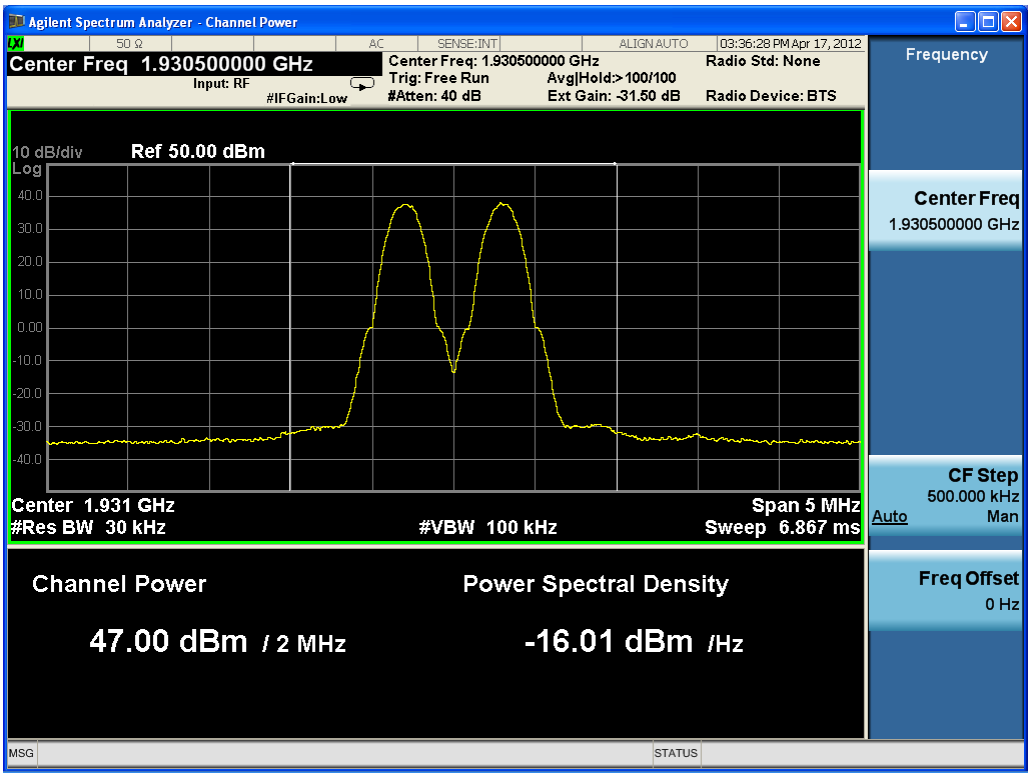
Modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
8PSK	1930.5	1930.2/1930.8	45.09
	1960.3	1960/1960.6	45.07
	1989.5	1989.2/1989.8	44.93

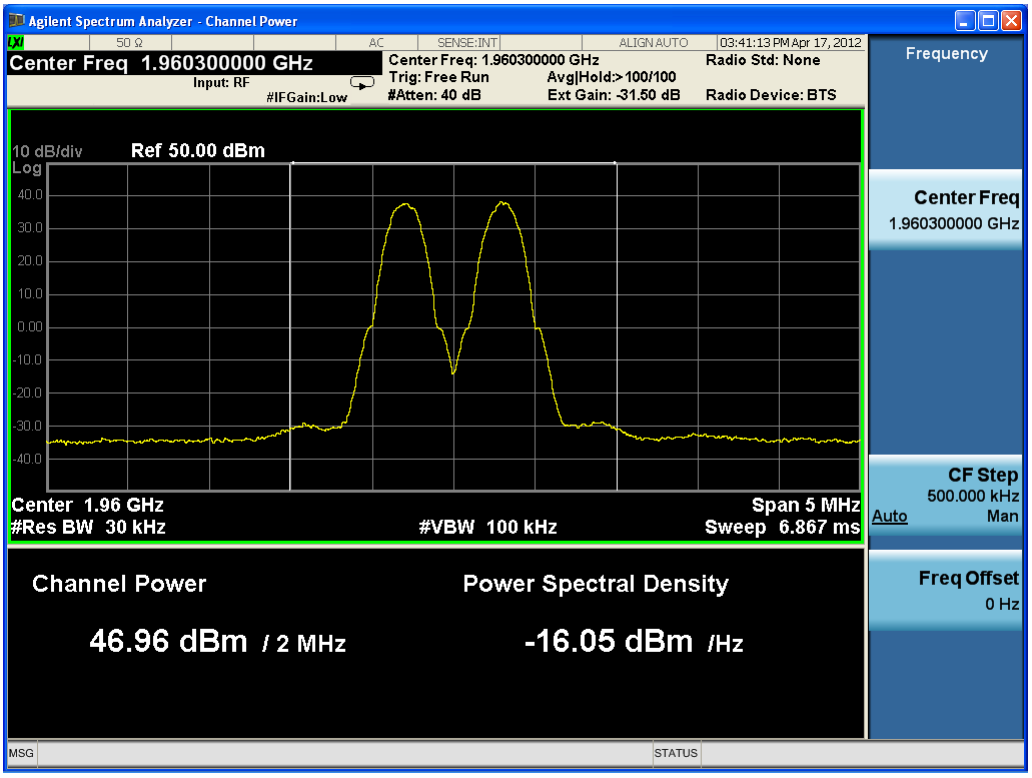

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
03:37:09 PM Apr 17, 2012
Center Freq 1.930500000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.930500000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.931 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
Sweep 6.867 ms
Channel Power
45.09 dBm / 2 MHz
Power Spectral Density
-17.92 dBm /Hz
Center Freq
1.930500000 GHz
CF Step
500.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

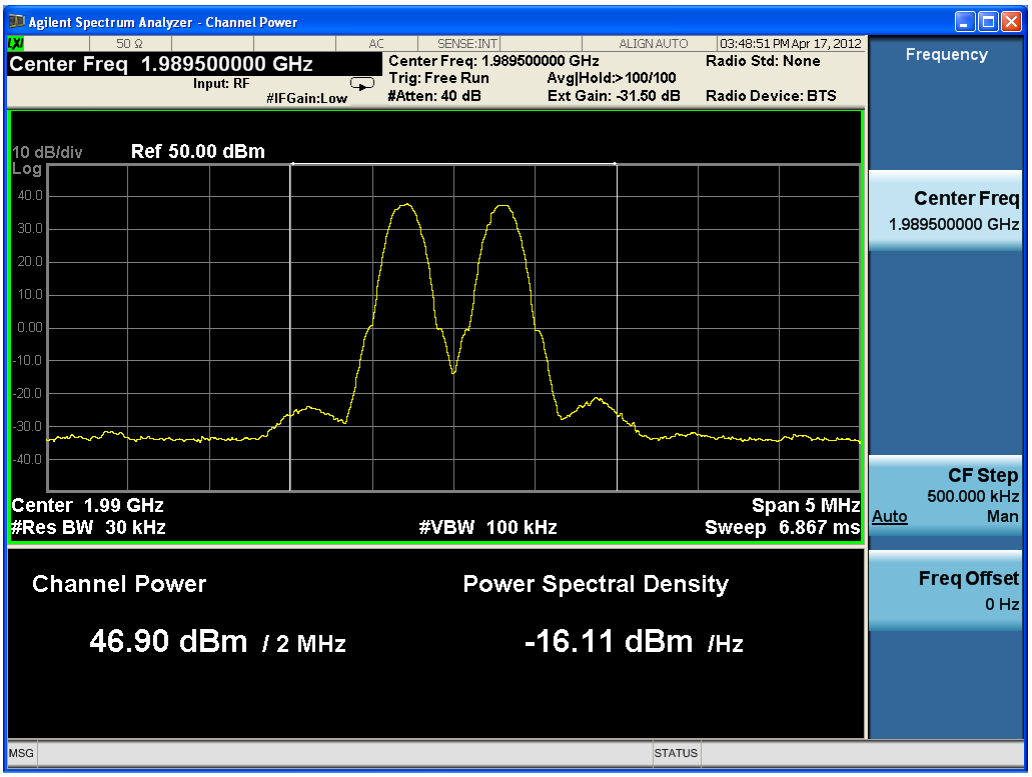

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
03:39:39 PM Apr 17, 2012
Center Freq 1.960300000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.960300000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.96 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
Sweep 6.867 ms
Channel Power
45.07 dBm / 2 MHz
Power Spectral Density
-17.94 dBm /Hz
Center Freq
1.960300000 GHz
CF Step
500.000 kHz
Auto
Man
Freq Offset
0 Hz
start
Agilent Spectrum Ana...
screen
3:39 PM



Modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
GMSK	1930.5	1930.2/1930.8	47.00
	1960.3	1960/1960.6	46.96
	1989.5	1989.2/1989.8	46.90

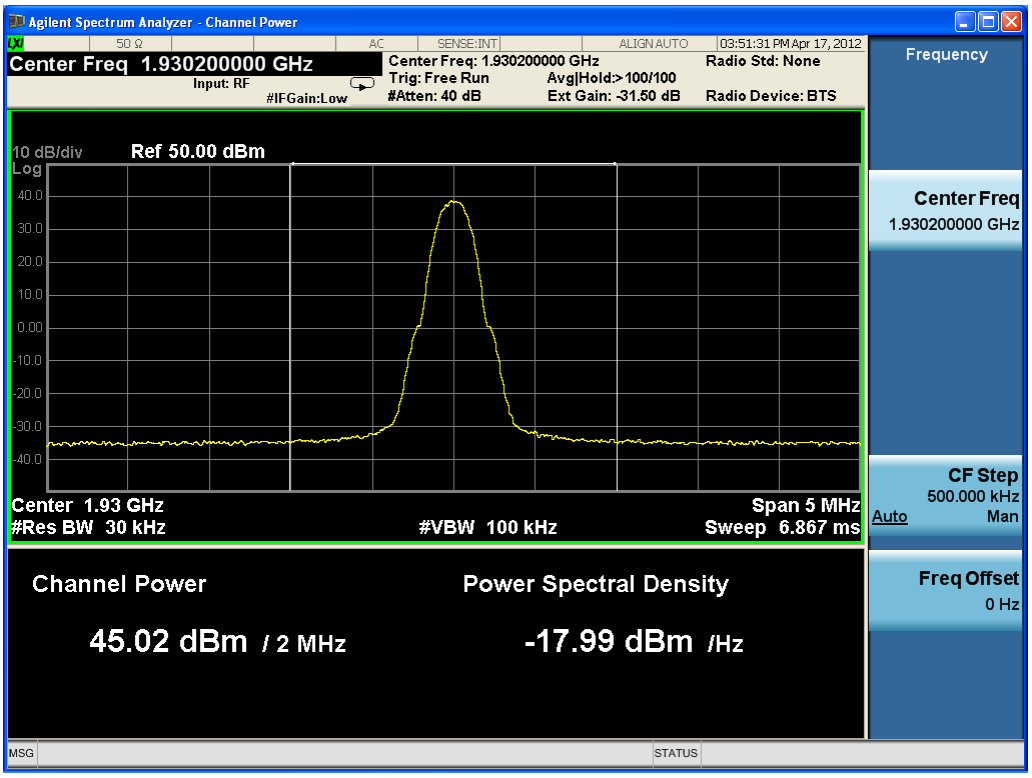

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
03:36:28 PM Apr 17, 2012
Center Freq 1.930500000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.930500000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.931 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
Sweep 6.867 ms
Channel Power
47.00 dBm / 2 MHz
Power Spectral Density
-16.01 dBm /Hz
Center Freq
1.930500000 GHz
CF Step
500.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

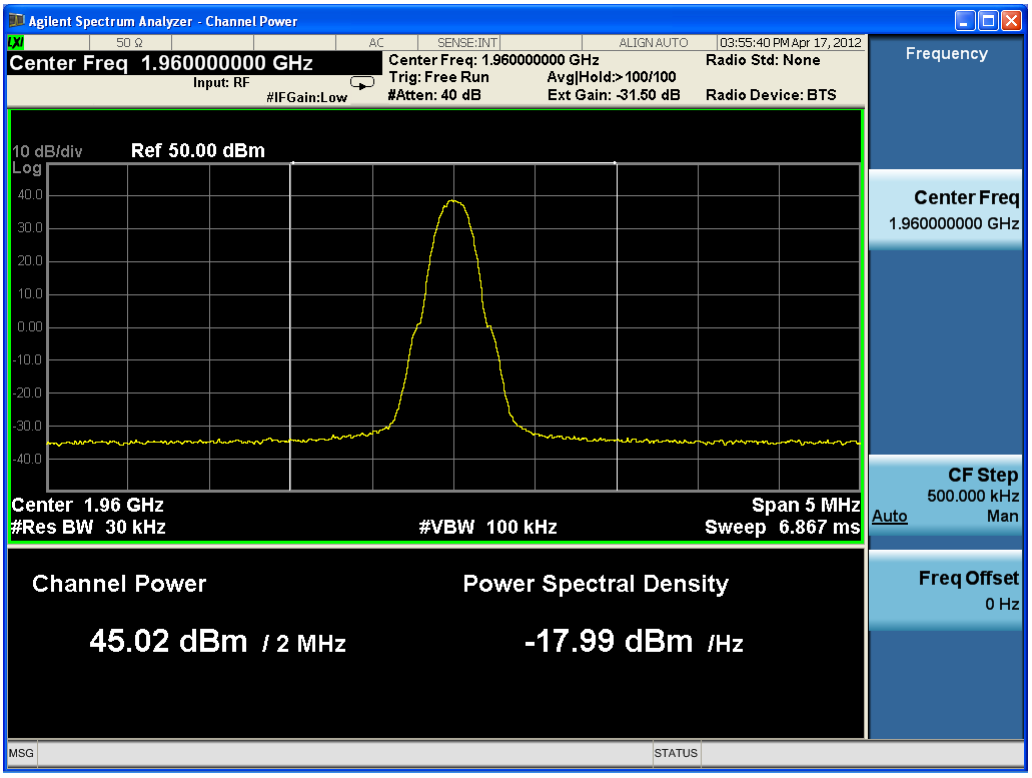

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
03:41:13 PM Apr 17, 2012
Center Freq 1.960300000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.960300000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.96 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
Sweep 6.867 ms
Channel Power
46.96 dBm / 2 MHz
Power Spectral Density
-16.05 dBm /Hz
Center Freq
1.960300000 GHz
CF Step
500.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

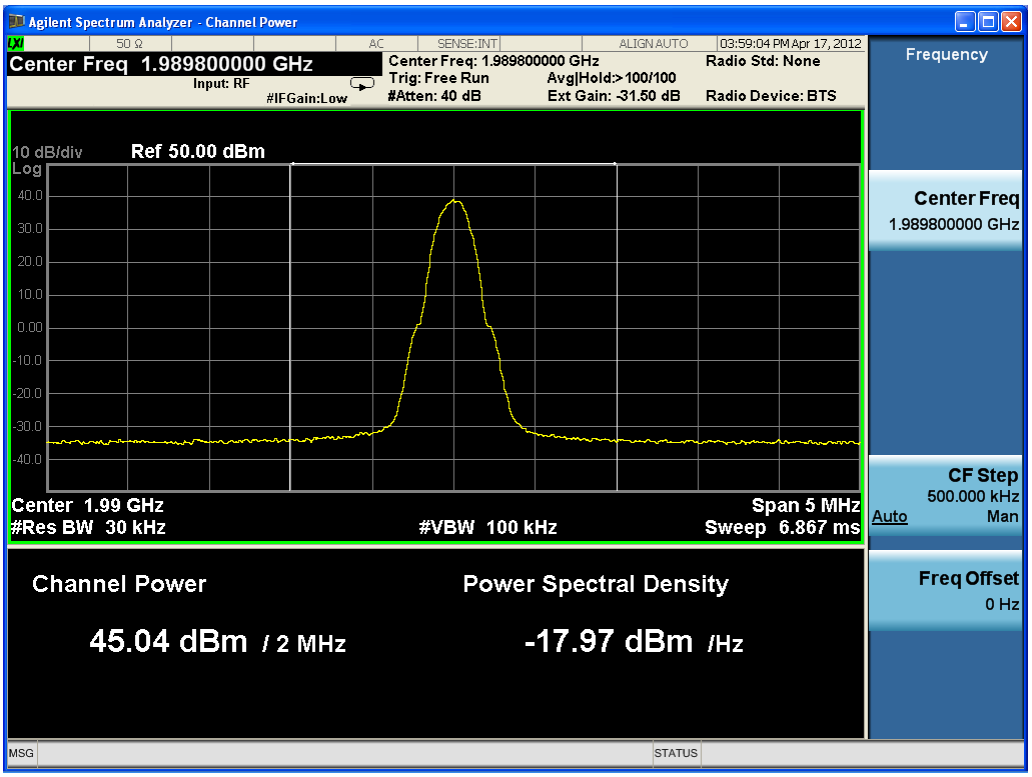


One carrier

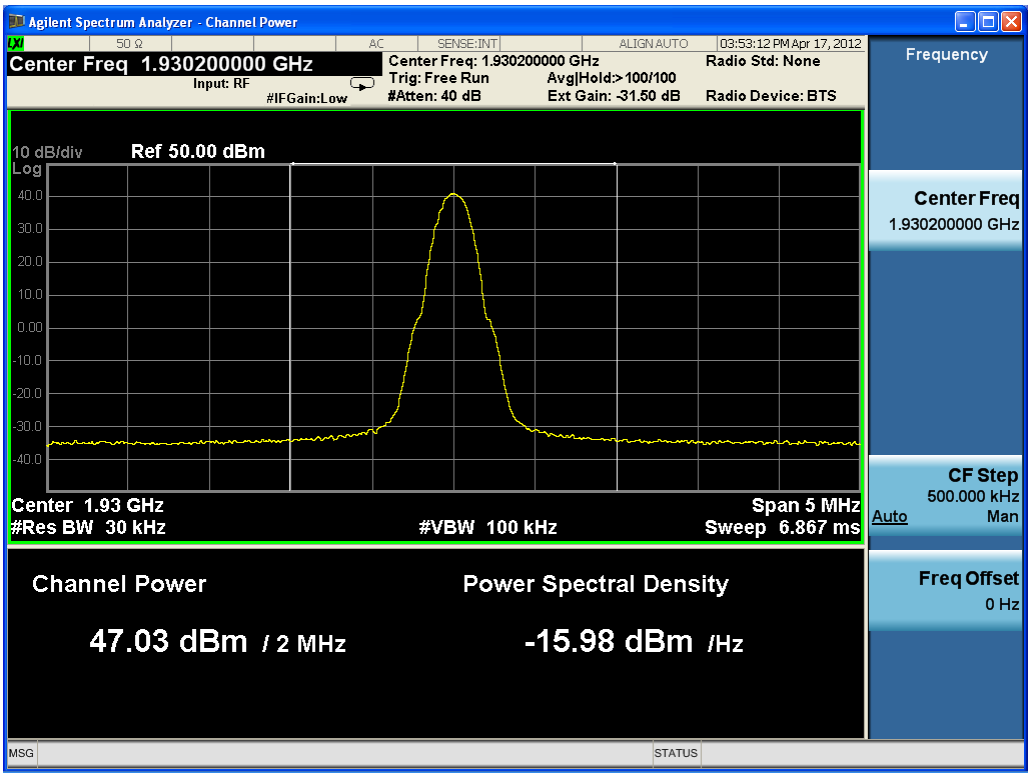
Modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
8PSK	1930.2	1930.2	45.02
	1960	1960	45.02
	1989.8	1989.8	45.04


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
03:51:31 PM Apr 17, 2012
Center Freq 1.930200000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.930200000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.93 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
Sweep 6.867 ms
Channel Power
45.02 dBm / 2 MHz
Power Spectral Density
-17.99 dBm /Hz
Center Freq
1.930200000 GHz
CF Step
500.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

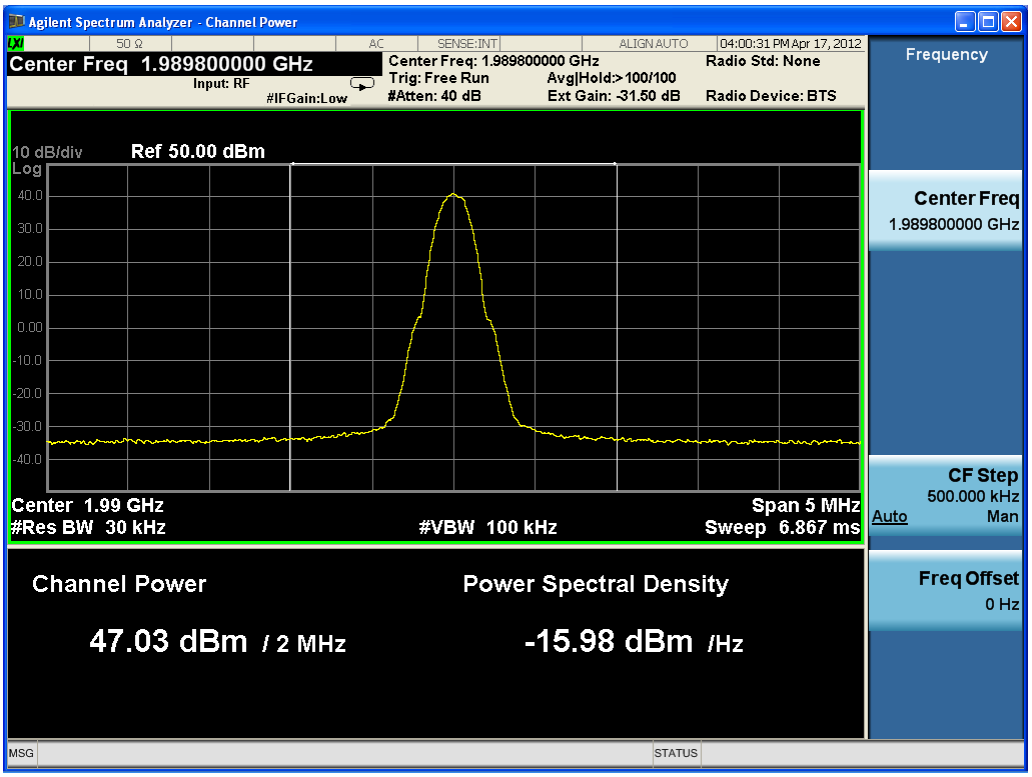

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
03:55:40 PM Apr 17, 2012
Center Freq 1.960000000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.960000000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.96 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
Sweep 6.867 ms
Channel Power
45.02 dBm / 2 MHz
Power Spectral Density
-17.99 dBm /Hz
Center Freq
1.960000000 GHz
CF Step
500.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS



Modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
8PSK	1930.2	1930.2	47.03
	1960	1960	47.04
	1989.8	1989.8	47.03


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
03:53:12 PM Apr 17, 2012
Center Freq 1.930200000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.930200000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.93 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
Sweep 6.867 ms
Channel Power
47.03 dBm / 2 MHz
Power Spectral Density
-15.98 dBm /Hz
Center Freq
1.930200000 GHz
CF Step
500.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
03:56:36 PM Apr 17, 2012
Center Freq 1.960000000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.960000000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.96 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
Sweep 6.867 ms
Channel Power
47.04 dBm / 2 MHz
Power Spectral Density
-15.97 dBm /Hz
Center Freq
1.960000000 GHz
CF Step
500.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
04:00:31 PM Apr 17, 2012
Center Freq 1.989800000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.989800000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.99 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
Sweep 6.867 ms
Channel Power
47.03 dBm / 2 MHz
Power Spectral Density
-15.98 dBm /Hz
Center Freq
1.989800000 GHz
CF Step
500.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

5.2 RF EXPOSURE

Applicable standard: FCC §2.1091 and §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
$S = EIRP/ 4\pi R^2$
Where: S = power density
EIRP= equivalent isotropically radiated power=ERP+2.15dB
R = distance to the center of radiation of the antenna= $[(ERP+2.15dB)/4\pi S]^{1/2}$

Maximum EIRP, In general, the equivalent isotropically radiated power (EIRP) of base transmitters and cellular repeaters must not exceed 1640 Watts.
Frequency is between 1500MHz and 100000MHz, and the Maximum $S=1.0mW/cm^2$
R=3.61m.
This equipment should be installed and operated with minimum distance 3.61m between the radiator& your body .

Test Result: pass

5.3 MODULATION CHARACTERISTIC

Applicable Standard: FCC §2.1047

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2012-4-9	2013-4-8
Atten	30dB Attenuator	ATSI150-4-30	11300110201221	2011-7-11	2012-7-11
Forstar	Forstar RF Cable	002	1034	2012-4-9	2013-4-8

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

Test Procedure

GSM digital mode is used by EUT.

Test Data Environmental Conditions

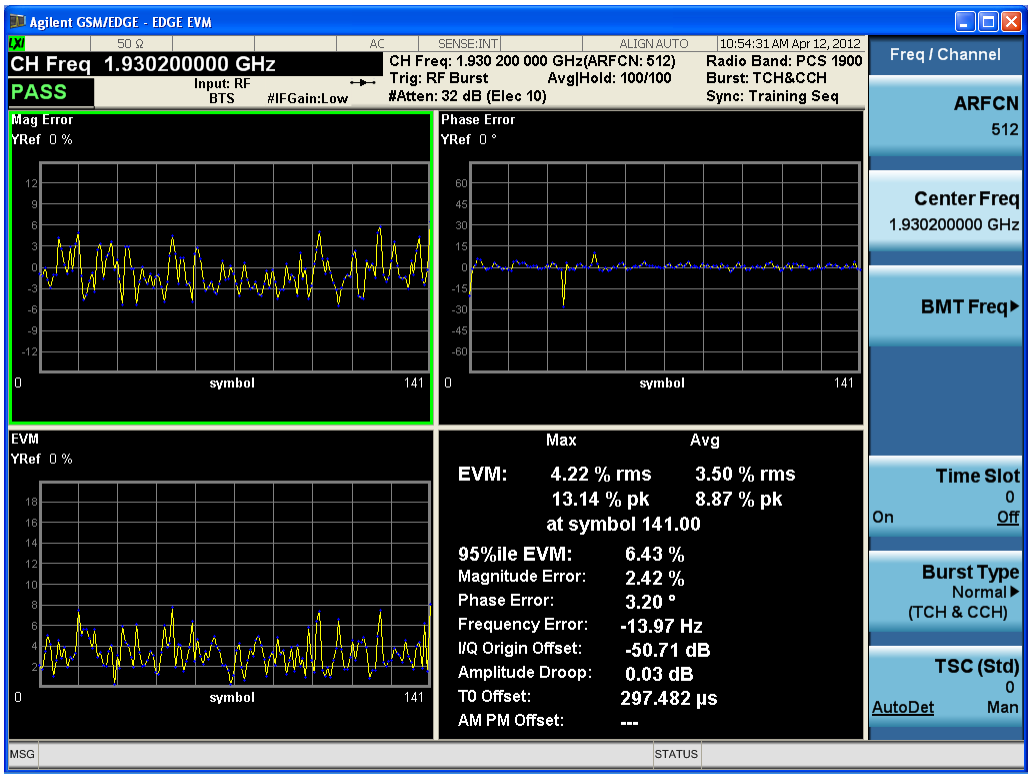
Temperature:	20 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

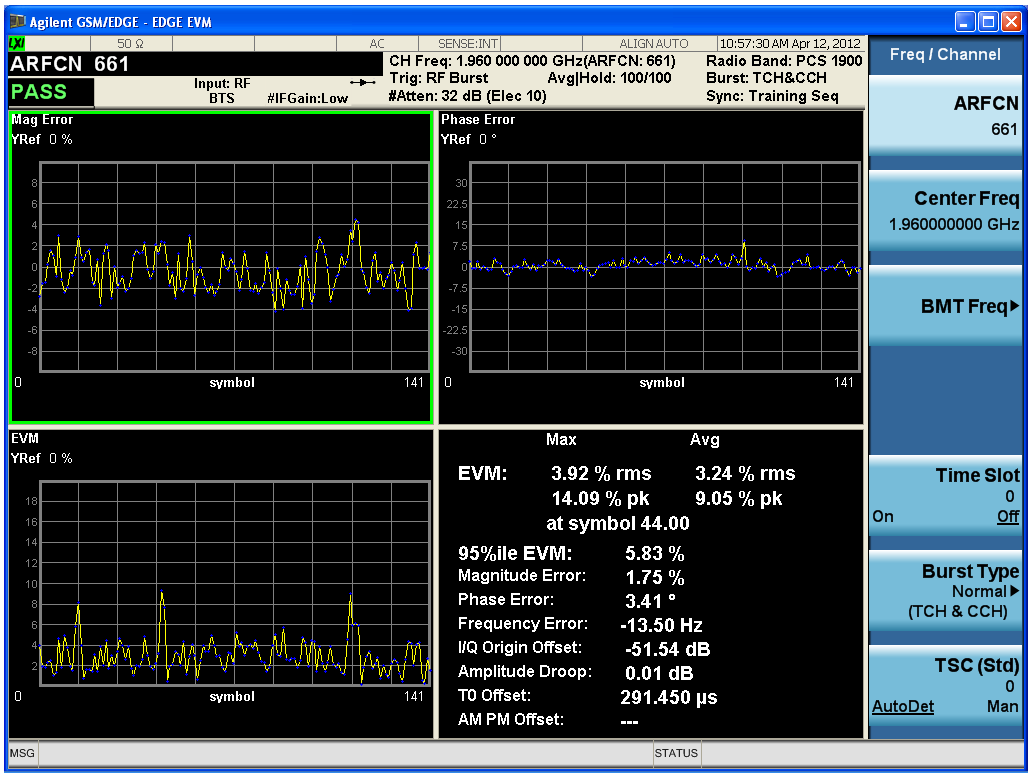
Test Result: Pass

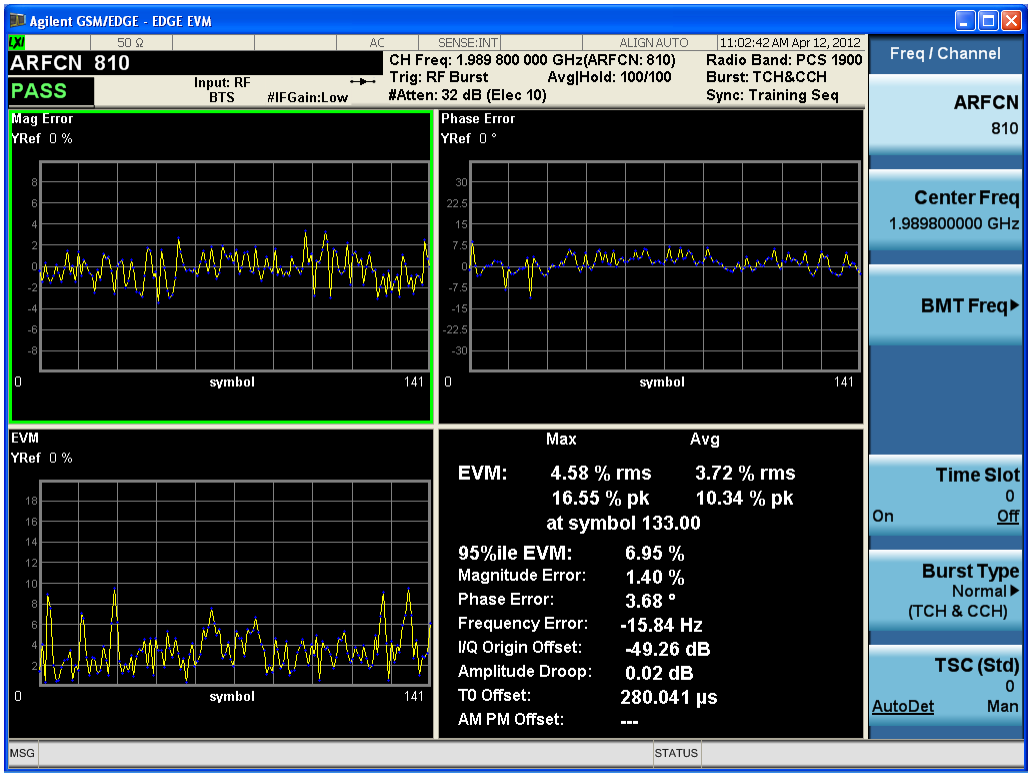
Test Mode: Transmitting GSM

Test Data:

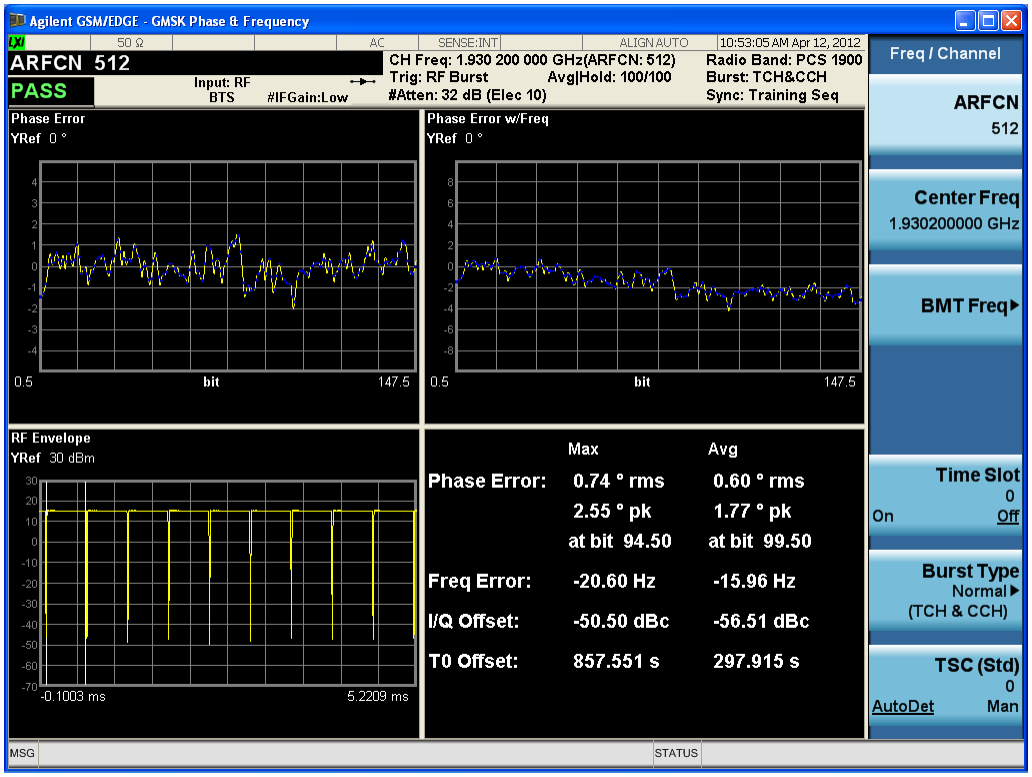
Modulation	Frequency (MHz)	Phase Error(°)	Frequency Error(Hz)
8PSK	1930.2	3.20	-13.97
	1960	3.41	-13.50
	1989.8	3.68	-15.84

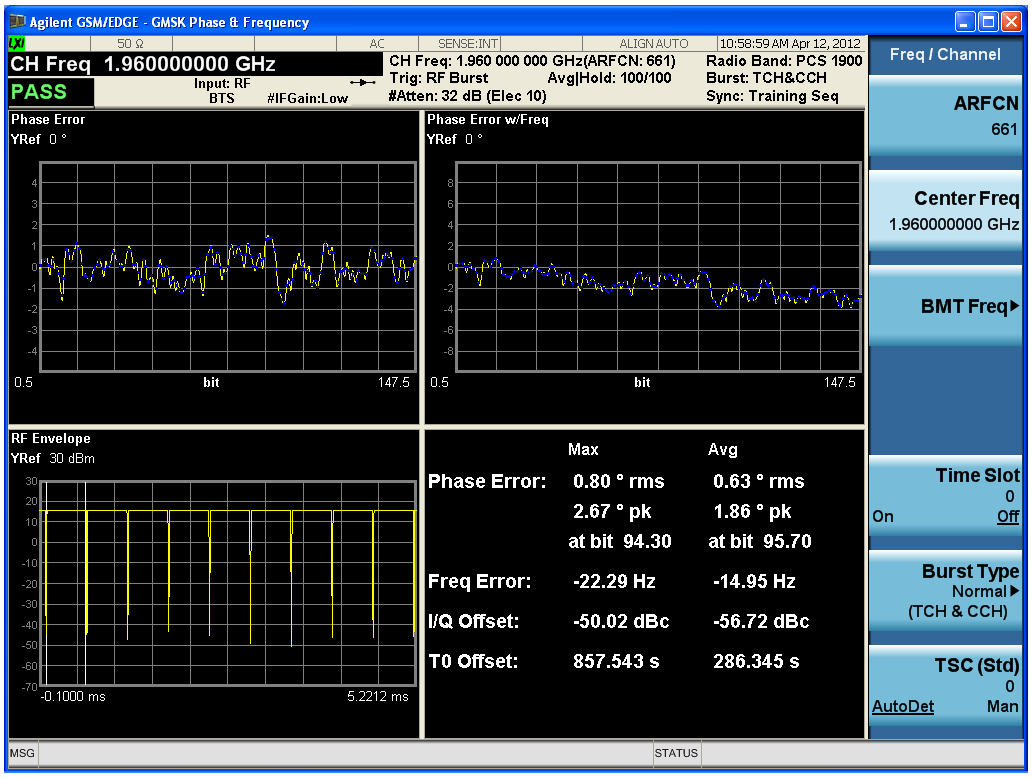


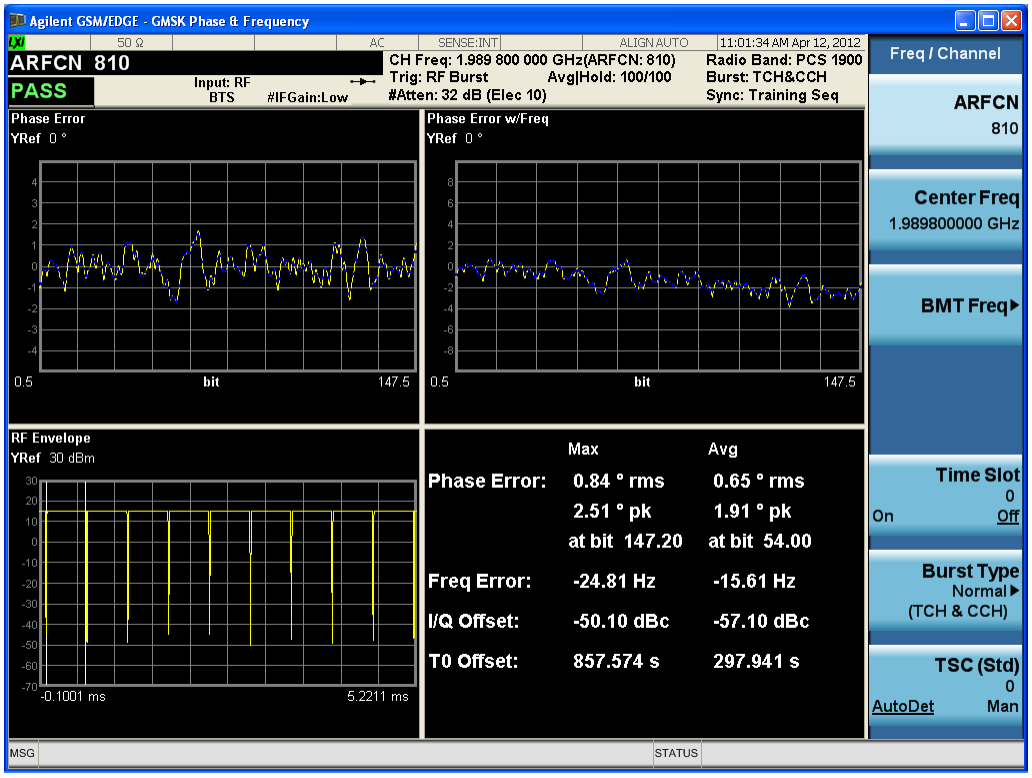

Agilent GSM/EDGE - EDGE EVM
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:57:30 AM Apr 12, 2012
ARFCN 661
PASS
Input: RF
BTS
#IFGain:Low
CH Freq: 1.960 000 000 GHz(ARFCN: 661)
Trig: RF Burst
Avg|Hold: 100/100
#Atten: 32 dB (Elec 10)
Radio Band: PCS 1900
Burst: TCH&CCH
Sync: Training Seq
Mag Error
YRef 0 %
Phase Error
YRef 0 °
symbol
EVM
YRef 0 %
Max
Avg
EVM: 3.92 % rms 3.24 % rms
14.09 % pk 9.05 % pk
at symbol 44.00
95%ile EVM: 5.83 %
Magnitude Error: 1.75 %
Phase Error: 3.41 °
Frequency Error: -13.50 Hz
I/Q Origin Offset: -51.54 dB
Amplitude Droop: 0.01 dB
T0 Offset: 291.450 µs
AM PM Offset: ---
Freq / Channel
ARFCN 661
Center Freq 1.960000000 GHz
BMT Freq
Time Slot 0
On Off
Burst Type Normal (TCH & CCH)
TSC (Std) 0
AutoDet Man
MSG
STATUS


Agilent GSM/EDGE - EDGE EVM
50 Ω
AC
SENSE:INT
ALIGN AUTO
11:02:42 AM Apr 12, 2012
ARFCN 810
PASS
Input: RF
BTS
#IFGain:Low
CH Freq: 1.989 800 000 GHz(ARFCN: 810)
Trig: RF Burst
Avg|Hold: 100/100
#Atten: 32 dB (Elec 10)
Radio Band: PCS 1900
Burst: TCH&CCH
Sync: Training Seq
Mag Error
YRef 0 %
Phase Error
YRef 0 °
symbol
EVM
YRef 0 %
Max
Avg
EVM: 4.58 % rms 3.72 % rms
16.55 % pk 10.34 % pk
at symbol 133.00
95%ile EVM: 6.95 %
Magnitude Error: 1.40 %
Phase Error: 3.68 °
Frequency Error: -15.84 Hz
I/Q Origin Offset: -49.26 dB
Amplitude Droop: 0.02 dB
T0 Offset: 280.041 µs
AM PM Offset: ---
Freq / Channel
ARFCN 810
Center Freq 1.989800000 GHz
BMT Freq
Time Slot 0
On Off
Burst Type Normal (TCH & CCH)
TSC (Std) 0
AutoDet Man
MSG
STATUS

Modulation	Frequency (MHz)	Phase Error(°)	Frequency Error(Hz)
GMSK	1930.2	0.60	-15.96
	1960	0.63	-14.95
	1989.8	0.65	-15.61




Agilent GSM/EDGE - GMSK Phase & Frequency
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:58:59 AM Apr 12, 2012
CH Freq 1.960000000 GHz
PASS
Input: RF
BTS
#IFGain:Low
CH Freq: 1.960 000 000 GHz(ARFCN: 661)
Trig: RF Burst
Avg|Hold: 100/100
#Atten: 32 dB (Elec 10)
Radio Band: PCS 1900
Burst: TCH&CCH
Sync: Training Seq
Freq / Channel
ARFCN
661
Center Freq
1.960000000 GHz
BMT Freq
Phase Error
YRef 0 °
Phase Error w/Freq
YRef 0 °
0.5
bit
147.5
RF Envelope
YRef 30 dBm
-0.1000 ms
5.2212 ms
Max
Avg
Phase Error:
0.80 ° rms
0.63 ° rms
2.67 ° pk
1.86 ° pk
at bit 94.30
at bit 95.70
Freq Error:
-22.29 Hz
-14.95 Hz
I/Q Offset:
-50.02 dBc
-56.72 dBc
T0 Offset:
857.543 s
286.345 s
Time Slot
0
On
Off
Burst Type
Normal
(TCH & CCH)
TSC (Std)
0
AutoDet
Man
MSG
STATUS


Agilent GSM/EDGE - GMSK Phase & Frequency
50 Ω
AC
SENSE:INT
ALIGN AUTO
11:01:34 AM Apr 12, 2012
ARFCN 810
PASS
Input: RF
BTS
#IFGain:Low
CH Freq: 1.989 800 000 GHz(ARFCN: 810)
Trig: RF Burst
Avg|Hold: 100/100
#Atten: 32 dB (Elec 10)
Radio Band: PCS 1900
Burst: TCH&CCH
Sync: Training Seq
Freq / Channel
ARFCN
810
Center Freq
1.989800000 GHz
BMT Freq
Phase Error
YRef 0 °
Phase Error w/Freq
YRef 0 °
0.5
bit
147.5
RF Envelope
YRef 30 dBm
-0.1001 ms
5.2211 ms
Max
Avg
Phase Error:
0.84 ° rms
0.65 ° rms
2.51 ° pk
1.91 ° pk
at bit 147.20
at bit 54.00
Freq Error:
-24.81 Hz
-15.61 Hz
I/Q Offset:
-50.10 dBc
-57.10 dBc
T0 Offset:
857.574 s
297.941 s
Time Slot
0
On
Off
Burst Type
Normal
(TCH & CCH)
TSC (Std)
0
AutoDet
Man
MSG
STATUS

5.4 SPURIOUS RADIATED EMISSIONS

Applicable Standard: FCC CFR 47, §2.1053

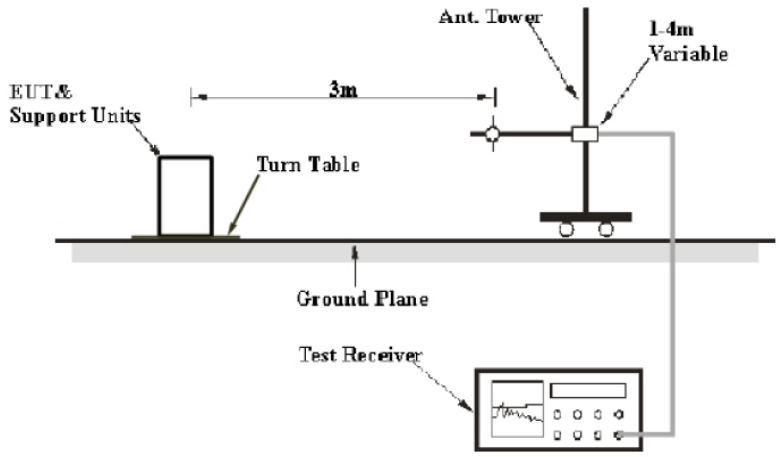
Test Equipment List and Details

Manufacturer	Equipment	Model	Serial Number	Last Cal.	Cal. Interval
R&S	SIGNAL GENERATOR	SMR20	A00017351	2011-9-26	1 year
Albatross	Anechoic Chamber	3m Site	A00017354	2011-11-2	1 year
R&S	EMI Test Receiver	ESIB26	100058	2011-10-29	1 year
R&S	Ultra Breitband Antennas	HL562	100022	2011-7-29	1 year
R&S	Double-Ridged Waveguide Horn Antenna	HF906	100032	2011-7-29	1 year
R&S	Double-Ridged Waveguide Horn Antenna	HF906	100446	2011-7-29	1 year
SCHWARZ-BECK	Biconical Antenna	VUBA9117	9117-122	2011-7-29	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 emission tests were performed in the 3-meter Chamber, using the setup accordance with the FCC part 2.1053.The specification used was the FCC 2.1053 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 Summary: PASS

Environmental Conditions

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

Test data

Indicated		Test Antenna	Substituted		Cable Loss(dB)	Effective radiated power（dBm）	Dipole Antenna	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Frequency (GHz)	Amp. (dB μ V)	Polar H/V	Level (dBm)	Antenna Gain Correction						
63.046092	26.01	V	-70.11	-27.24	0.6	-97.95	2.15	-100.1	-13	87.1
634.549098	26.43	V	-69.98	-1.09	2.1	-73.17	2.15	-75.32	-13	62.32
974.729459	31.16	V	-71.53	-2.82	2.6	-76.95	2.15	-79.1	-13	66.1
1384.76954	46.62	V	-60.29	4.25	3.1	-59.14	2.15	-61.29	-13	48.29
2991.98397	58.48	V	-51.69	7.95	4.6	-48.34	2.15	-50.49	-13	37.49
169.95992	23.09	H	-80.47	-3.24	1.1	-84.81	2.15	-86.96	-13	73.96
607.334669	27.78	H	-73.42	-1.39	2	-76.81	2.15	-78.96	-13	65.96
992.224449	31.09	H	-72.38	-2.59	2.7	-77.67	2.15	-79.82	-13	66.82
1388.77756	46.41	H	-63.62	4.25	3.1	-62.47	2.15	-64.62	-13	51.62
1981.96393	90.64	H	-18.63	6.55	3.8	-15.88	2.15	-18.03	-13	5.03
2963.92786	57.49	H	-48.77	7.95	4.6	-45.42	2.15	-47.57	-13	34.57

Radiation emission spurious below 3GHz

Indicated		Test Antenna	Substituted		Cable Loss(dB)	Effective radiated power（dBm）	Dipole Antenna	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Frequency (GHz)	Amp. (dB μ V)	Polar H/V	Level (dBm)	Antenna Gain Correction						
3953.90782	49.47	V	-46.44	7.75	5.3	-43.99	2.15	-46.14	-13	33.14
5276.55311	45.53	V	-51.65	8.55	6.2	-49.3	2.15	-51.45	-13	38.45
5941.88377	58.8	V	-45.69	9.05	6.6	-43.24	2.15	-45.39	-13	32.39
9755.51102	54.47	V	-54.65	9.95	9	-53.7	2.15	-55.85	-13	42.85
13282.5651	59.36	V	-42.18	11.85	10.2	-40.53	2.15	-42.68	-13	29.68
17933.8677	72.31	V	-39.36	8.95	12.2	-42.61	2.15	-44.76	-13	31.76
3961.92385	50.92	H	-52.24	7.75	5.3	-49.79	2.15	-51.94	-13	38.94
5268.53707	45.53	H	-55.87	8.55	6.2	-53.52	2.15	-55.67	-13	42.67
5941.88377	54.63	H	-49.66	9.05	6.6	-47.21	2.15	-49.36	-13	36.36
9843.68738	53.43	H	-55.72	9.95	8.9	-54.67	2.15	-56.82	-13	43.82
13348.6974	58.86	H	-53.58	11.85	10.2	-51.93	2.15	-54.08	-13	41.08
17867.7355	72.1	H	-34.59	8.95	12.2	-37.84	2.15	-39.99	-13	26.99

Radiation emission spurious above 3GHz

5.5 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 .

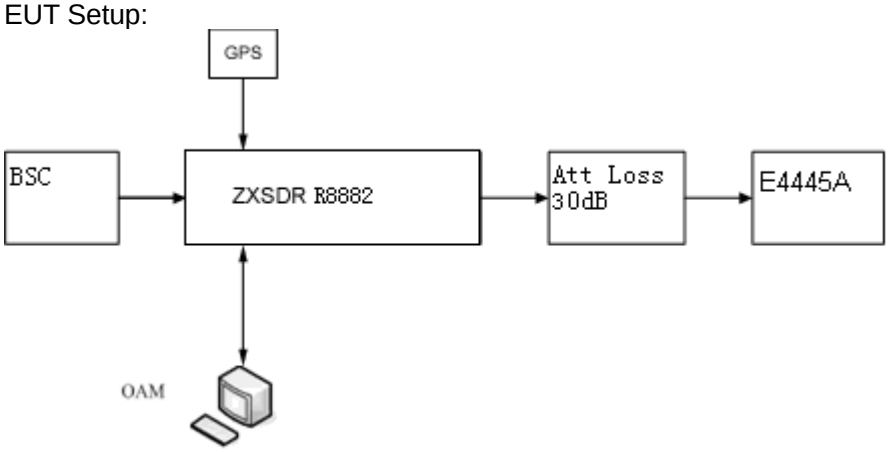
Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2012-4-9	2013-4-8
Atten	30dB Attenuator	ATSI150-4-30	11300110201221	2011-7-11	2012-7-11
Forstar	Forstar RF Cable	002	1034	2012-4-9	2013-4-8

*__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)=30dB, Cable Loss (dB)=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 1MHz for 30MHz to 1GHz scaning, set at 1MHz for 1GHz to 20GHz scaning. Sufficient scans were taken to

show any out of band emissions up to 10th harmonic.

Test Data Environmental Conditions

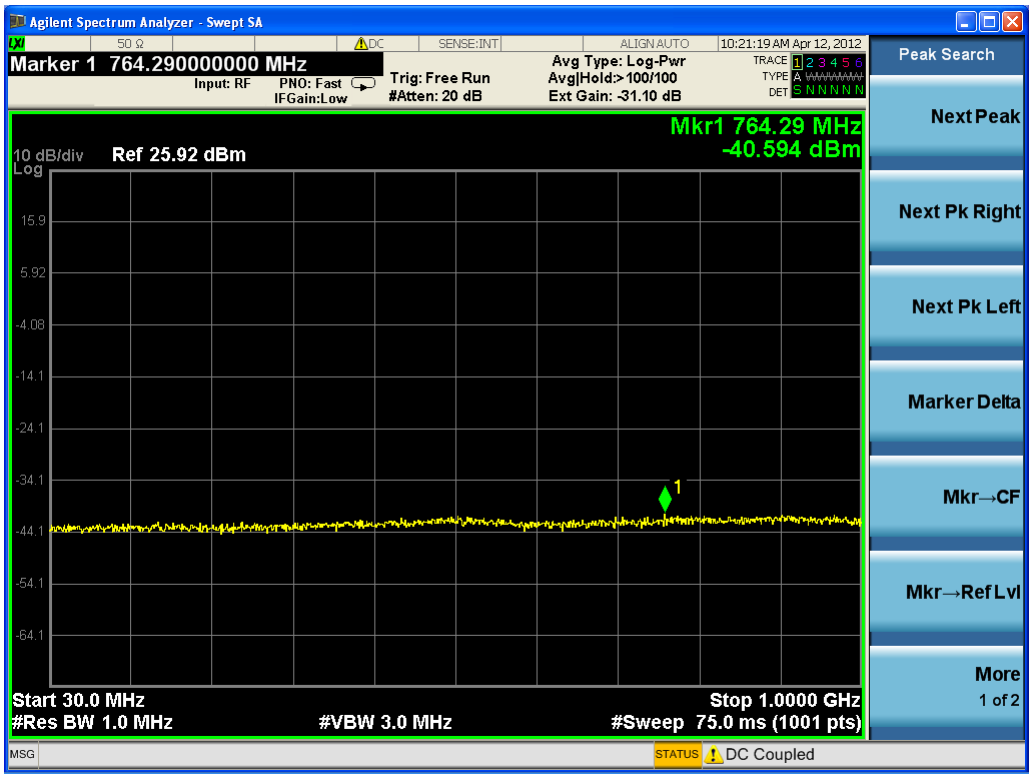
Temperature:	20 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

Test Result: Pass

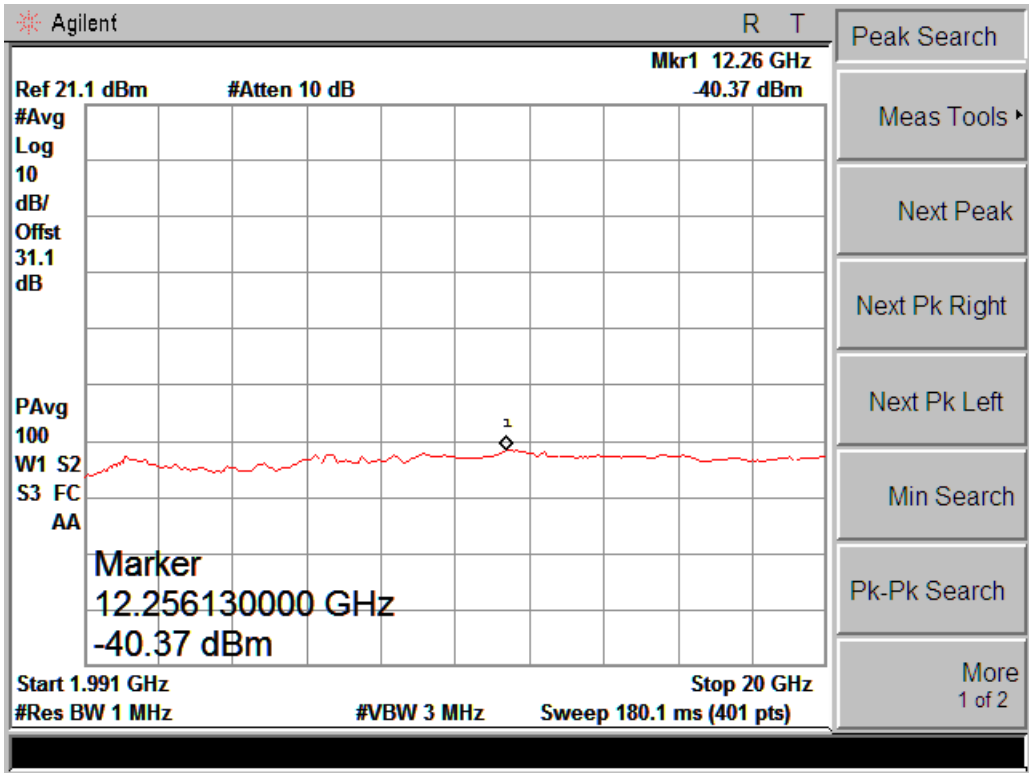
Test Mode: Transmitting GSM

Test Data:

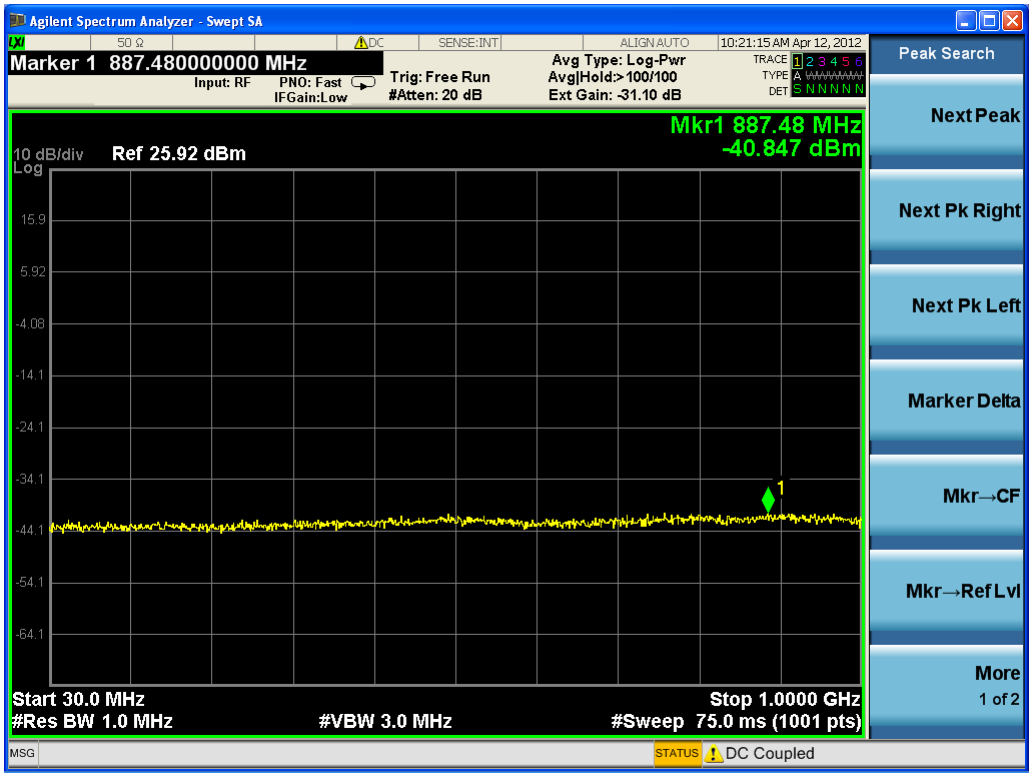
Six Carriers

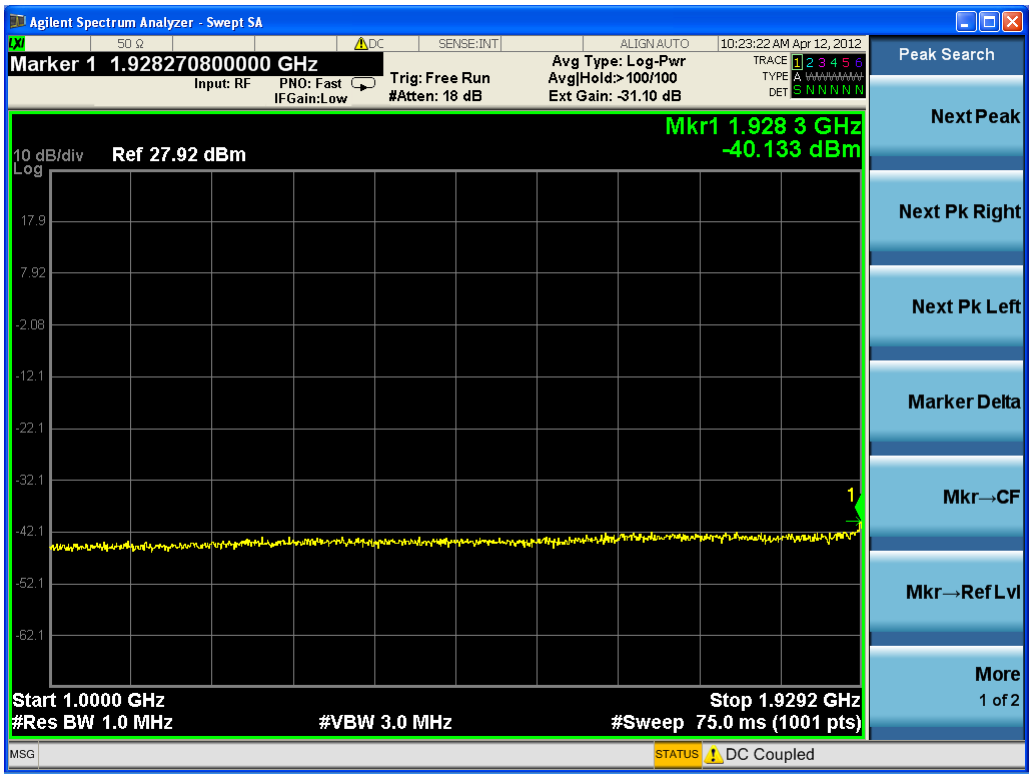


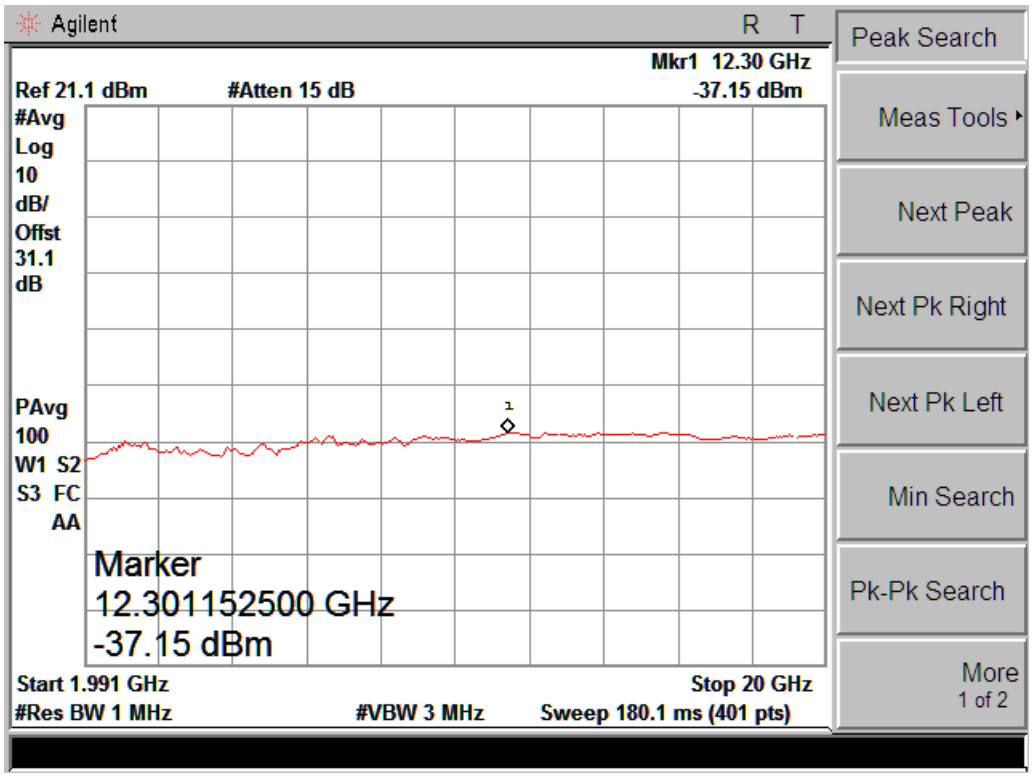

Agilent Spectrum Analyzer - Swept SA
Marker 1 1.928270800000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 18 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -31.10 dB
10:23:24 AM Apr 12, 2012
Mkr1 1.928 3 GHz
-40.123 dBm
10 dB/div
Log
Ref 27.92 dBm
17.9
7.92
-2.08
-12.1
-22.1
-32.1
-42.1
-52.1
-62.1
Start 1.0000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 1.9292 GHz
#Sweep 75.0 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
DC Coupled


Agilent
Mkr1 12.26 GHz
-40.37 dBm
Ref 21.1 dBm
#Atten 10 dB
#Avg
Log
10
dB/
Offst
31.1
dB
PAvg
100
W1 S2
S3 FC
AA
Marker
12.256130000 GHz
-40.37 dBm
Start 1.991 GHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 20 GHz
Sweep 180.1 ms (401 pts)
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

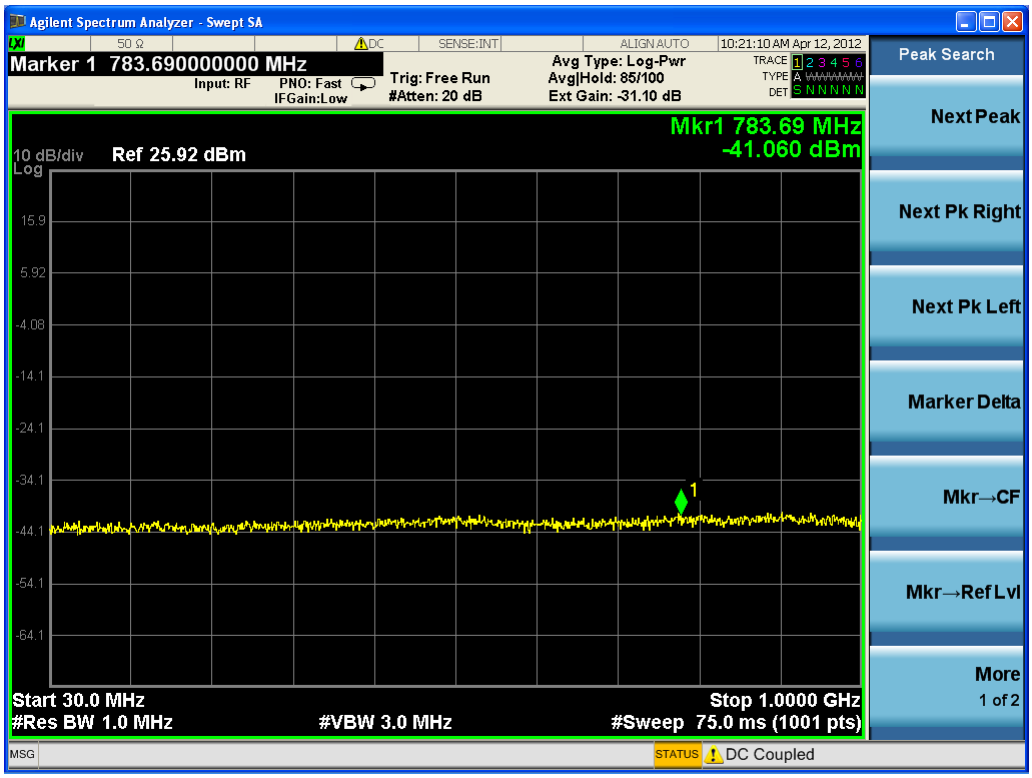
Five carriers

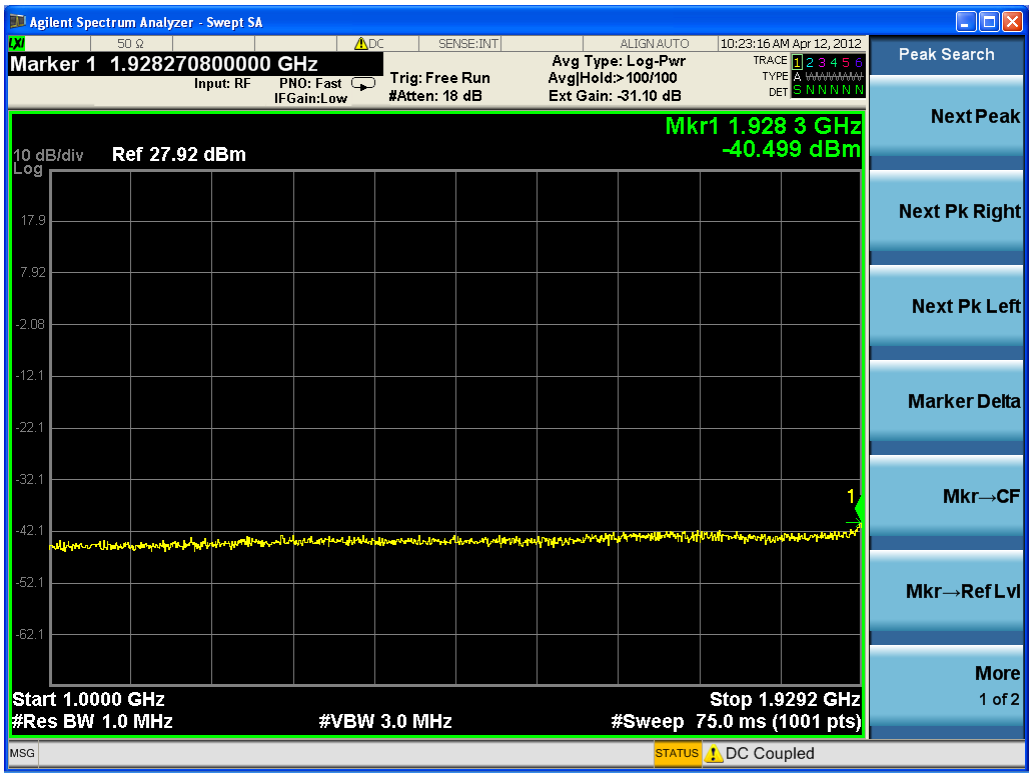


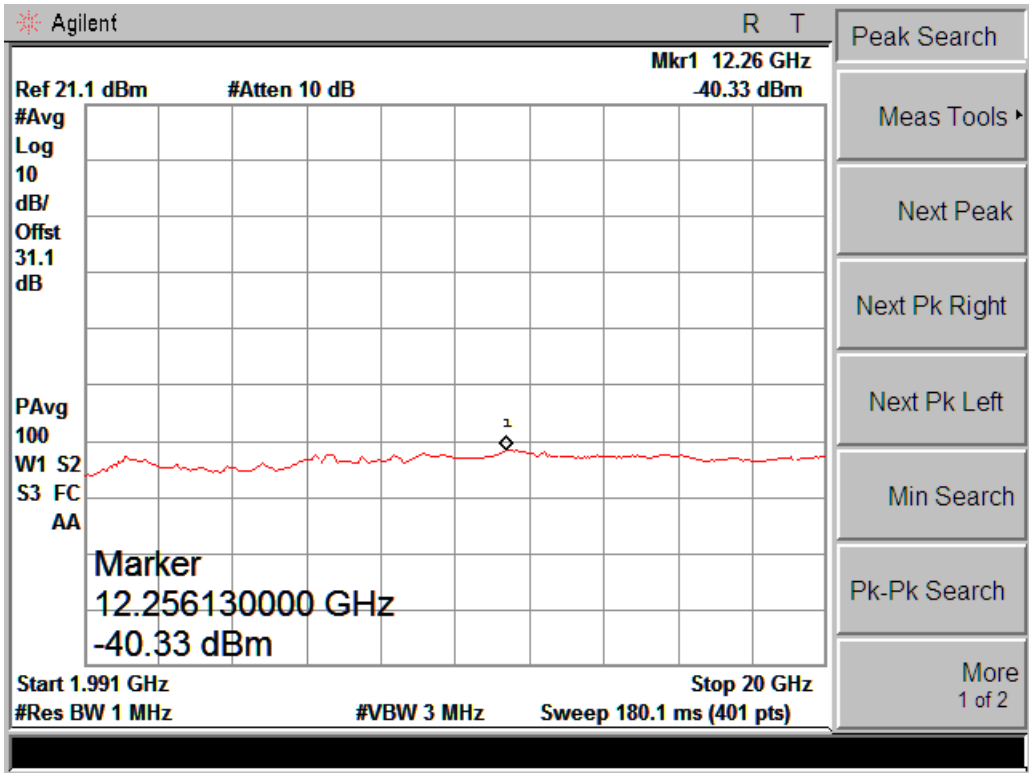




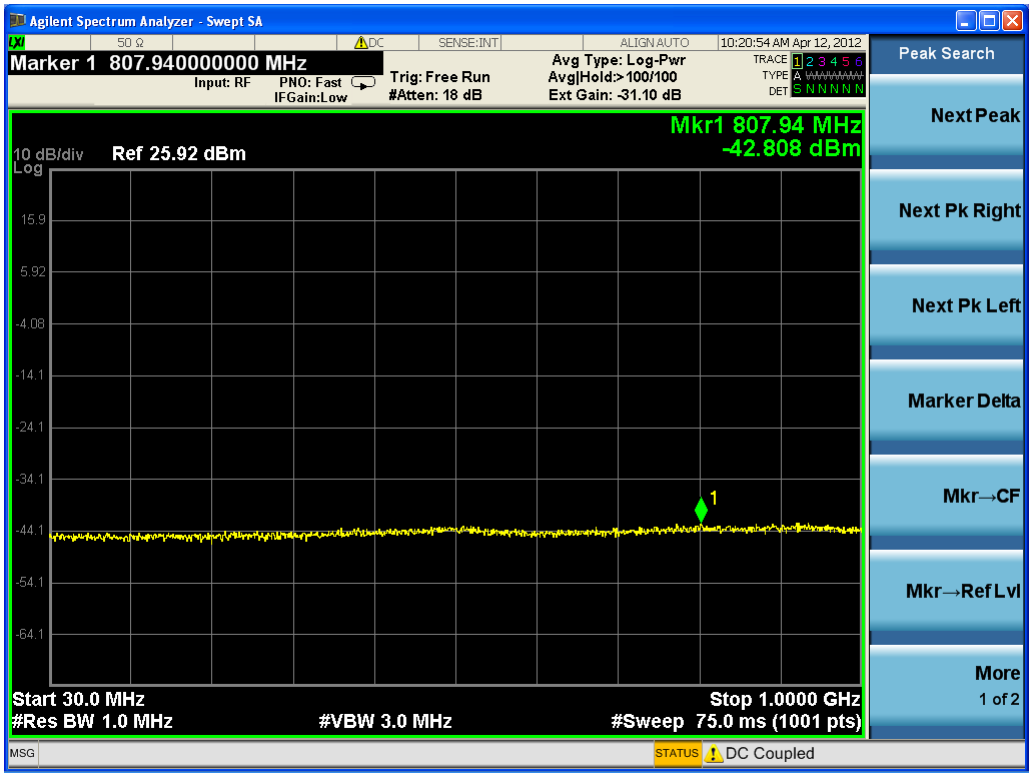
Four Carriers

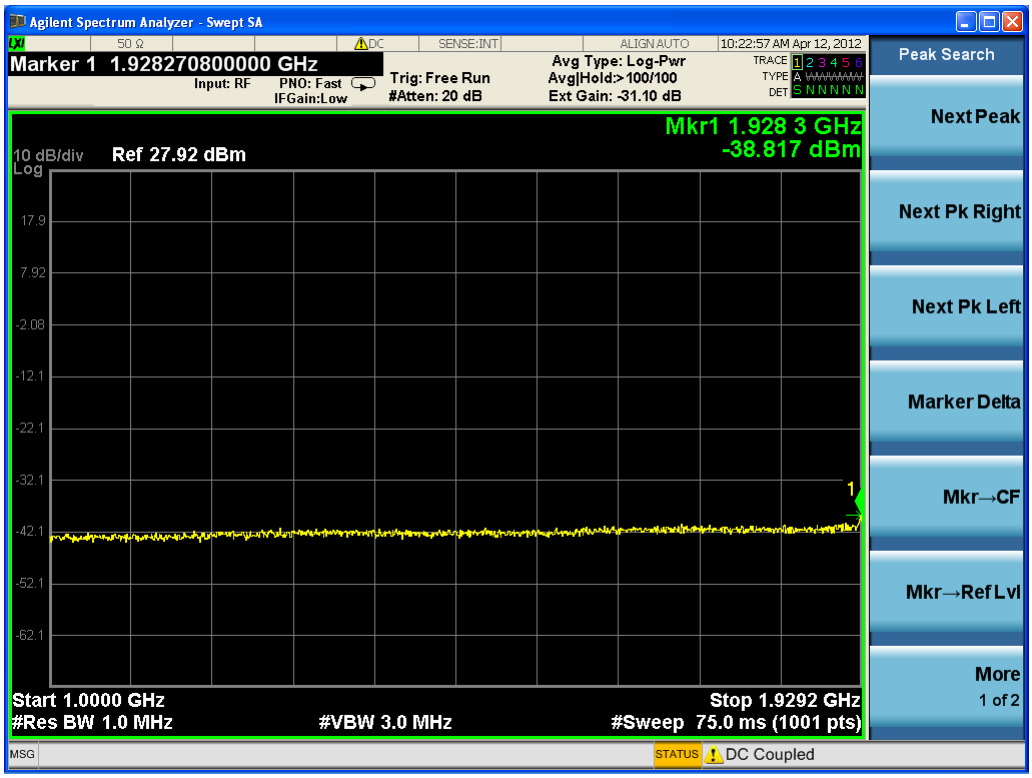


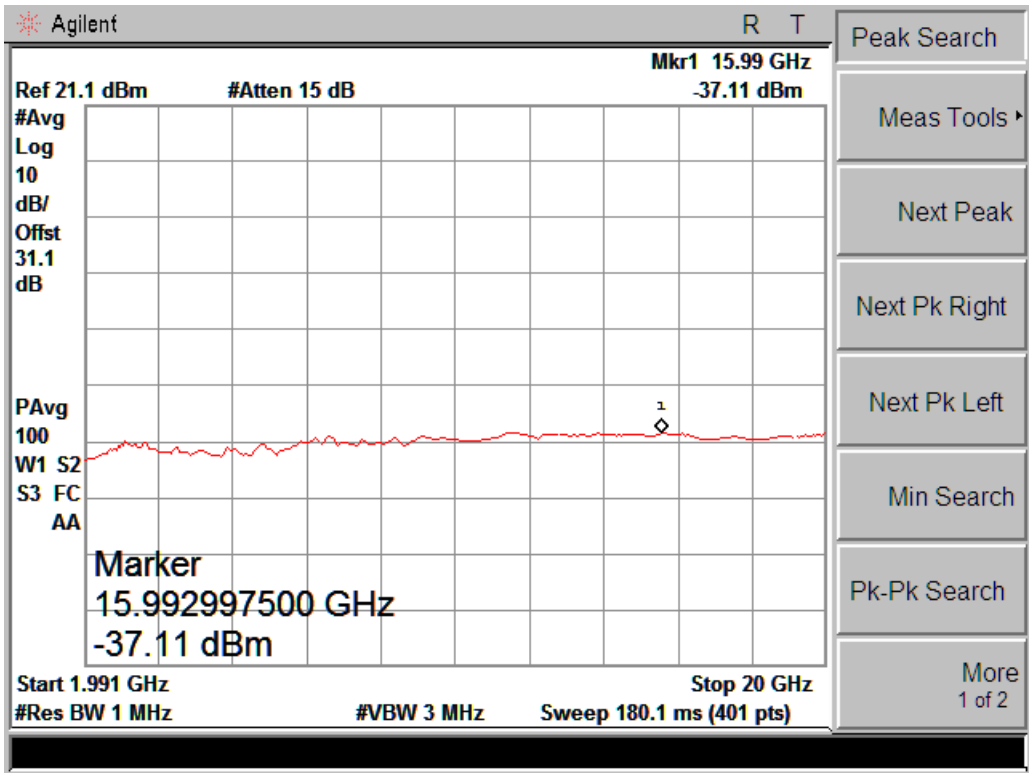

Agilent Spectrum Analyzer - Swept SA
Marker 1 1.928270800000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 18 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -31.10 dB
10:23:16 AM Apr 12, 2012
Mkr1 1.928 3 GHz
-40.499 dBm
10 dB/div
Log
Ref 27.92 dBm
17.9
7.92
-2.08
-12.1
-22.1
-32.1
-42.1
-52.1
-62.1
Start 1.0000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 1.9292 GHz
#Sweep 75.0 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
DC Coupled


Agilent
Mkr1 12.26 GHz
-40.33 dBm
Ref 21.1 dBm
#Atten 10 dB
#Avg
Log
10
dB/
Offst
31.1
dB
PAvg
100
W1 S2
S3 FC
AA
Marker
12.256130000 GHz
-40.33 dBm
Start 1.991 GHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 20 GHz
Sweep 180.1 ms (401 pts)
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

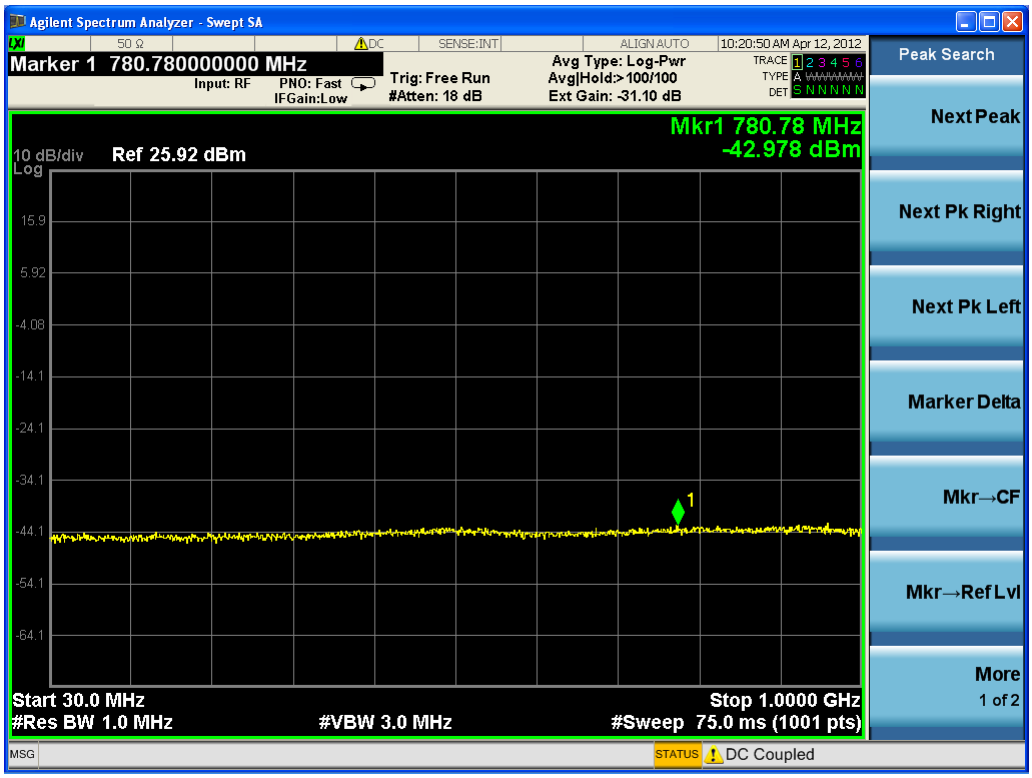
Three carriers

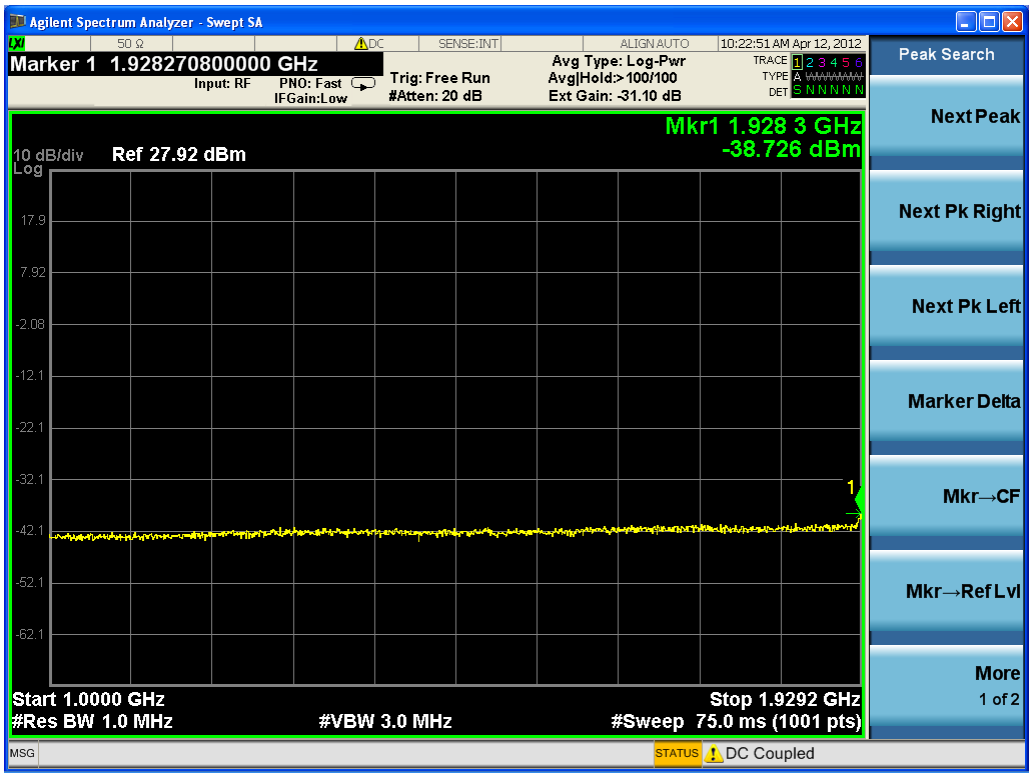


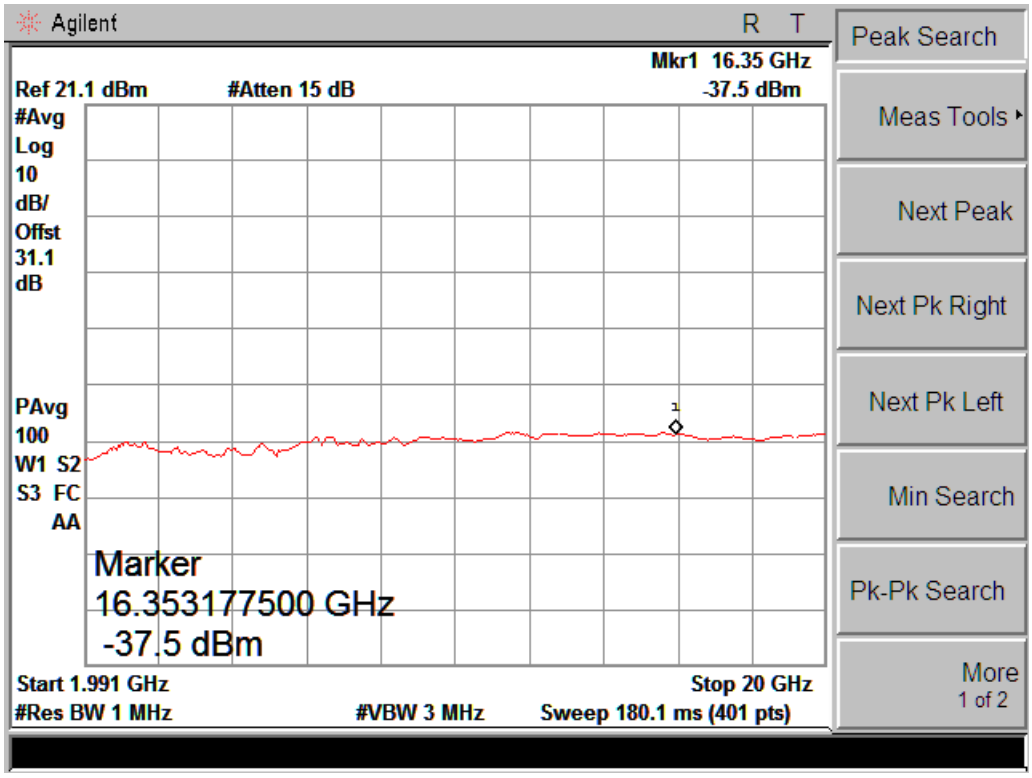




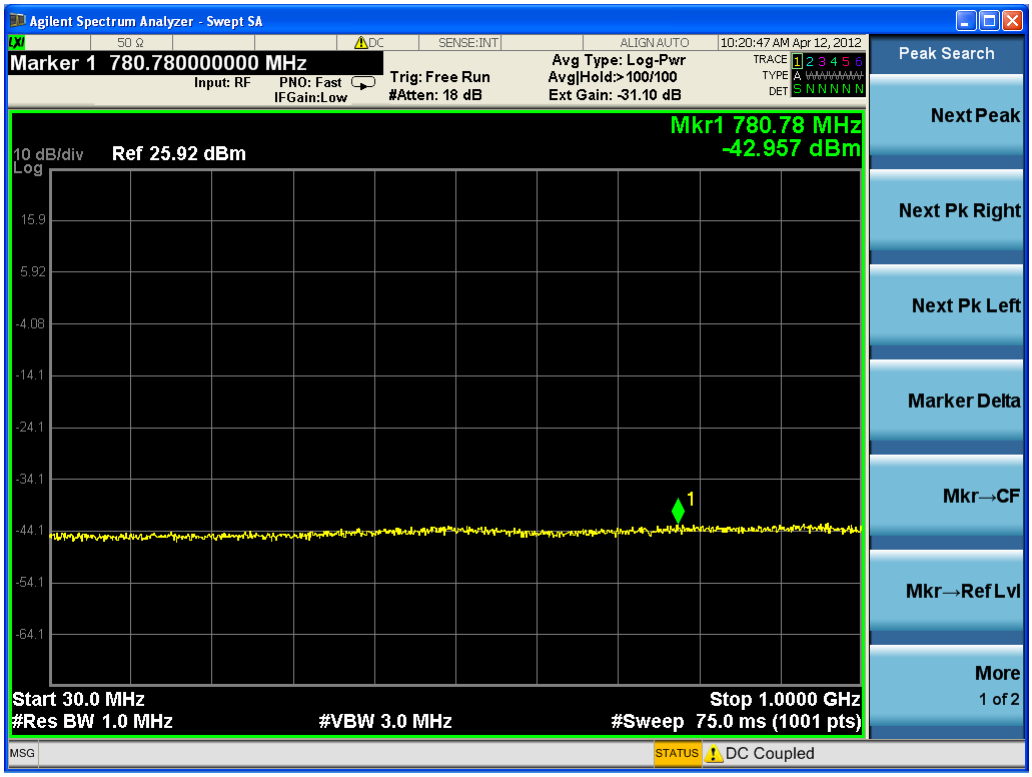
Two carriers

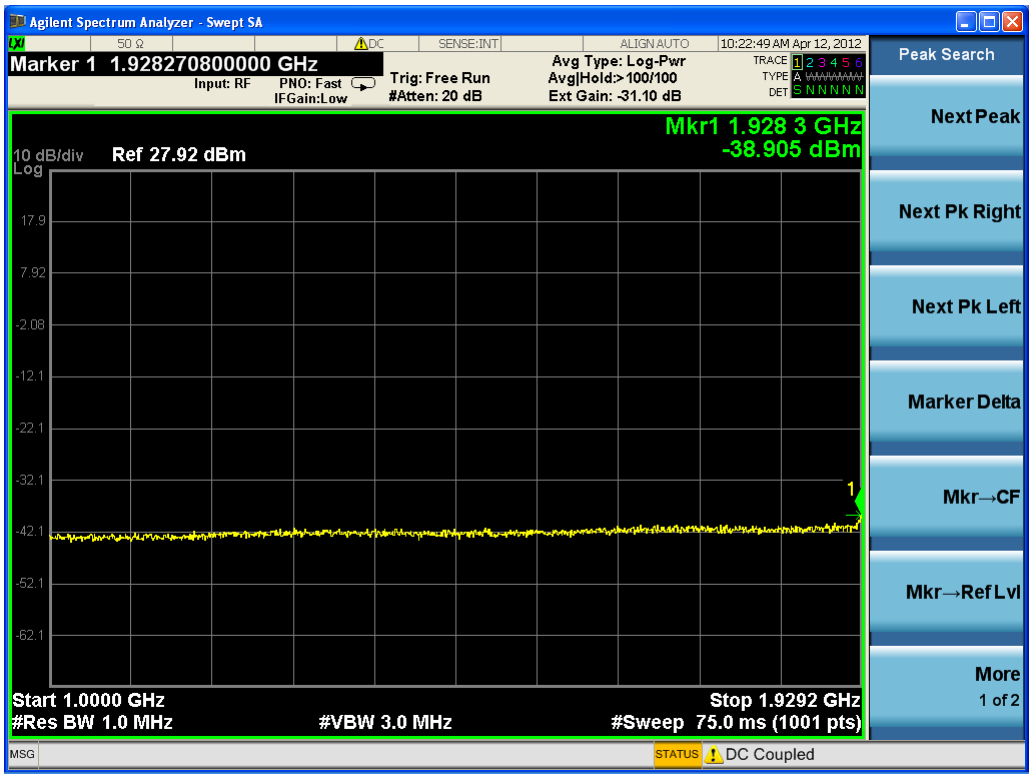


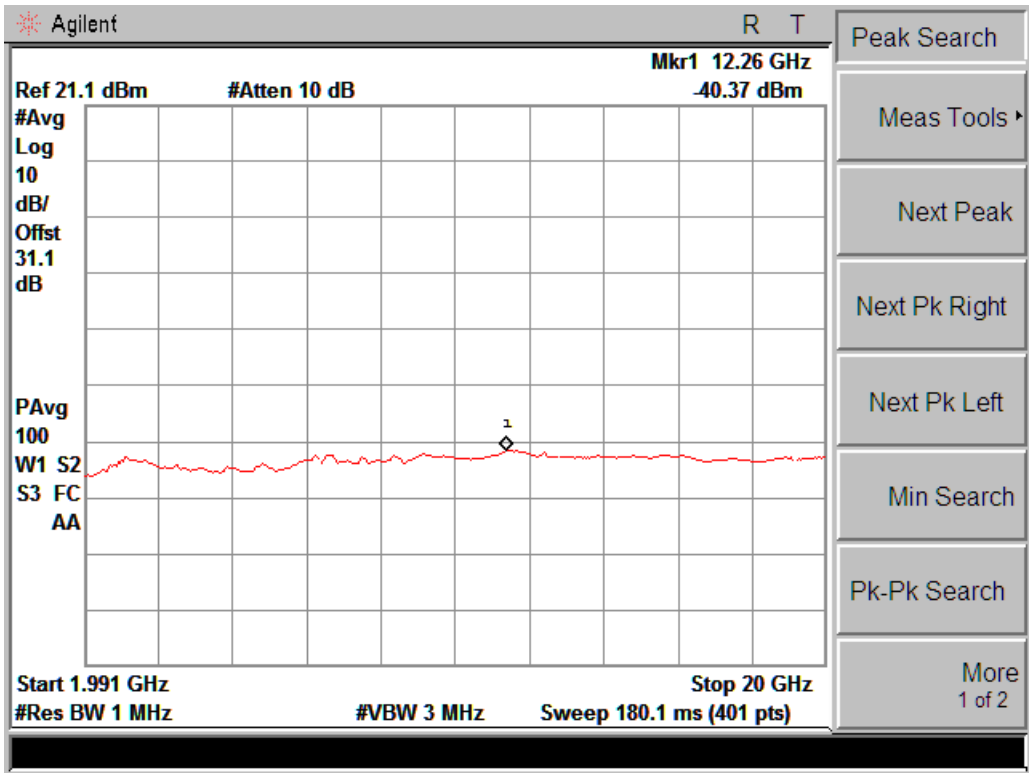

Agilent Spectrum Analyzer - Swept SA
Marker 1 1.928270800000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -31.10 dB
10:22:51 AM Apr 12, 2012
Mkr1 1.928 3 GHz
-38.726 dBm
10 dB/div
Log
Ref 27.92 dBm
17.9
7.92
-2.08
-12.1
-22.1
-32.1
-42.1
-52.1
-62.1
Start 1.0000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 1.9292 GHz
#Sweep 75.0 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
DC Coupled


Agilent
Mkr1 16.35 GHz
-37.5 dBm
Ref 21.1 dBm
#Atten 15 dB
#Avg
Log
10
dB/
Offst
31.1
dB
PAvg
100
W1 S2
S3 FC
AA
Marker
16.353177500 GHz
-37.5 dBm
Start 1.991 GHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 20 GHz
Sweep 180.1 ms (401 pts)
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

One carrier


Agilent Spectrum Analyzer - Swept SA
Marker 1 780.780000000 MHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 18 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -31.10 dB
10:20:47 AM Apr 12, 2012
Mkr1 780.78 MHz
-42.957 dBm
10 dB/div
Log
Ref 25.92 dBm
15.9
5.92
-4.08
-14.1
-24.1
-34.1
-44.1
-54.1
-64.1
Start 30.0 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 1.0000 GHz
#Sweep 75.0 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
DC Coupled


Agilent Spectrum Analyzer - Swept SA
Marker 1 1.928270800000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -31.10 dB
10:22:49 AM Apr 12, 2012
Mkr1 1.928 3 GHz
-38.905 dBm
10 dB/div
Log
Ref 27.92 dBm
17.9
7.92
-2.08
-12.1
-22.1
-32.1
-42.1
-52.1
-62.1
Start 1.0000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 1.9292 GHz
#Sweep 75.0 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
DC Coupled


Agilent
R T
Mkr1 12.26 GHz
Ref 21.1 dBm
#Atten 10 dB
-40.37 dBm
#Avg
Log
10
dB/
Offst
31.1
dB
PAvg
100
W1 S2
S3 FC
AA
Start 1.991 GHz
Stop 20 GHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 180.1 ms (401 pts)
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

5.6 OCCUPIED BANDWIDTH

Applicable Standard: FCC§2.1049, §24.229, §24.238

Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2012-4-9	2013-4-8
Atten	30dB Attenuator	ATSI150-4-30	11300110201221	2011-7-11	2012-7-11
Forstar	Forstar RF Cable	002	1034	2012-4-9	2013-4-8

*__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. The resolution bandwidth of the spectrum analyzer was set at 1% of the span or higher and 99%Power bandwidth was recorded.

Environmental Conditions

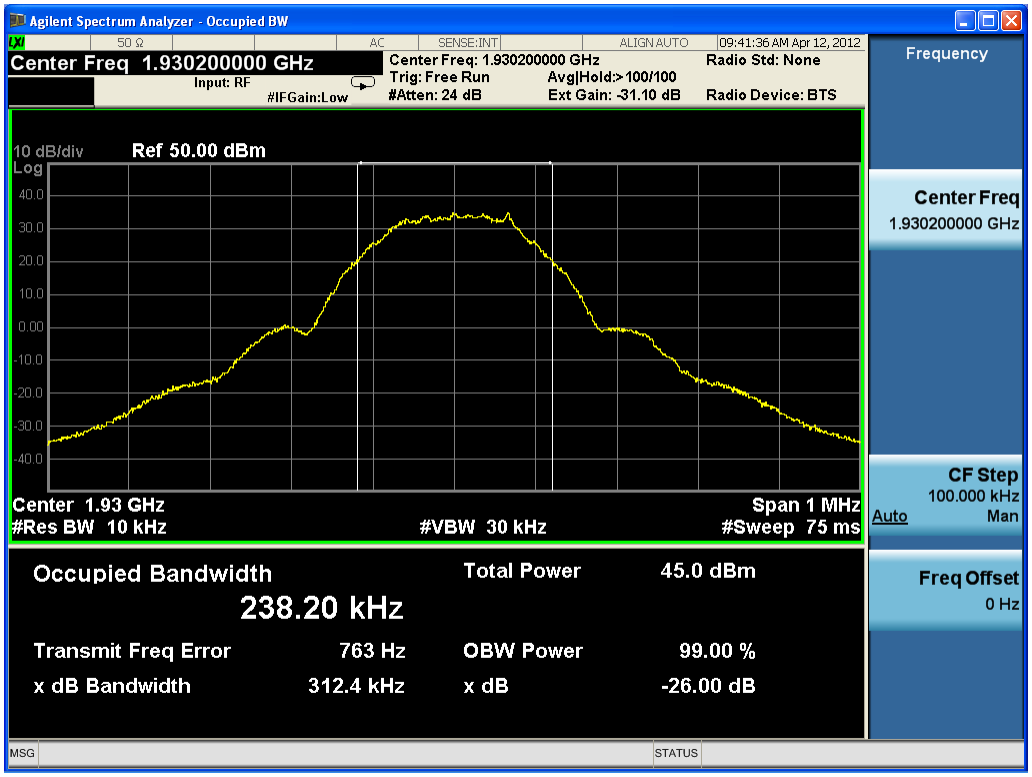
Temperature:	20 ° C
Relative Humidity:	53%
ATM Pressure:	1009mbar

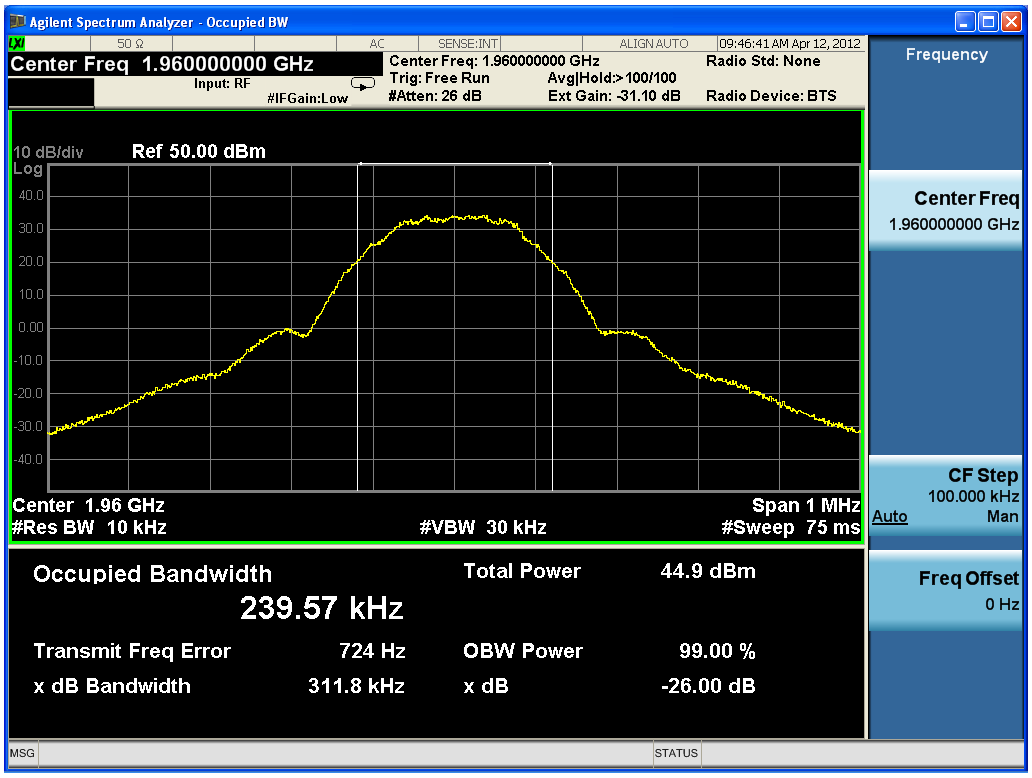
Test Result: Pass

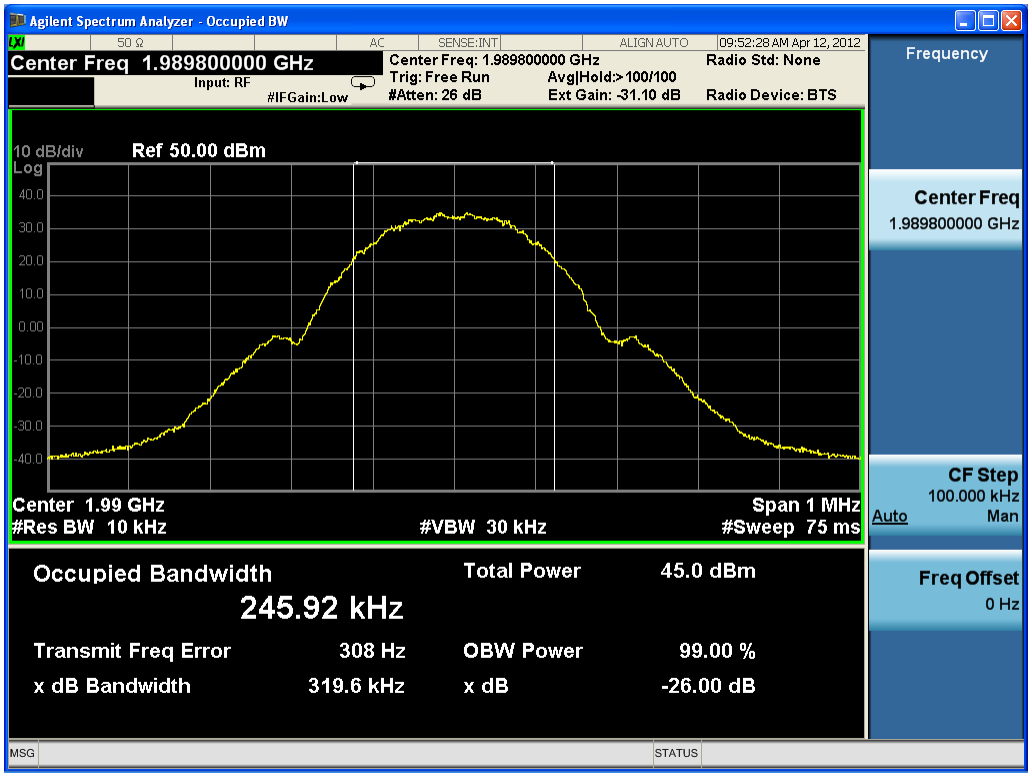
Test Mode: Transmitting GSM

Test Data

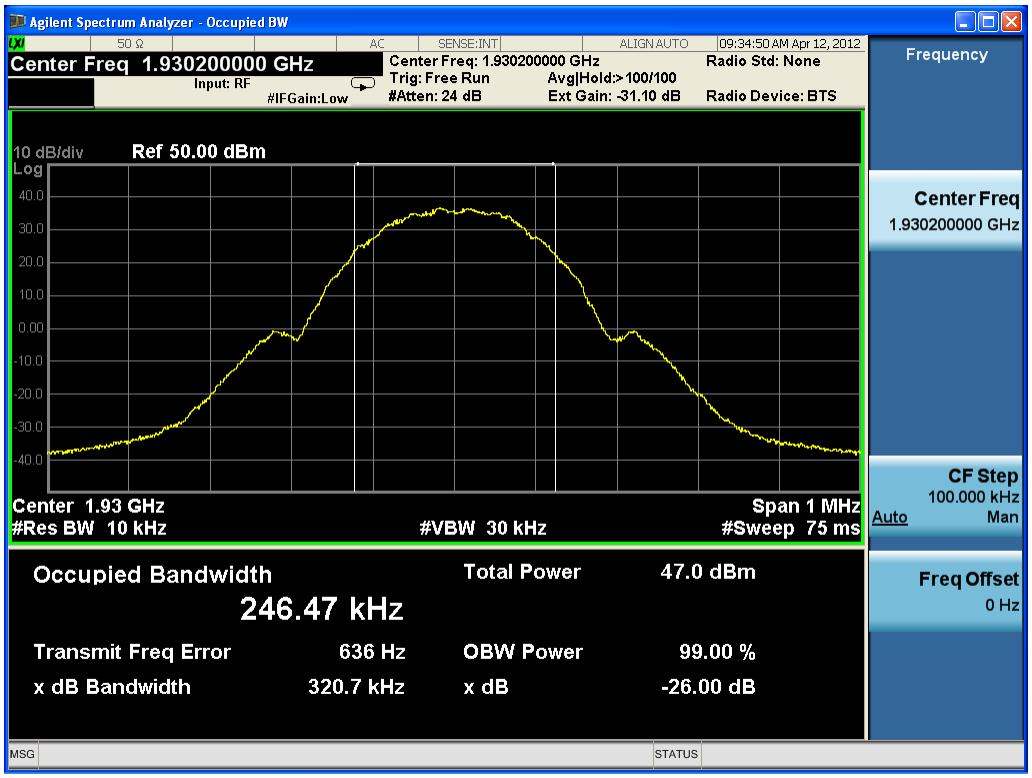
Modulation	Frequency (MHz)	99% Power Bandwidth (kHz)	Limit (kHz)
8PSK	1930.2/1960/1989.8	238.20/239.57/245.92	250

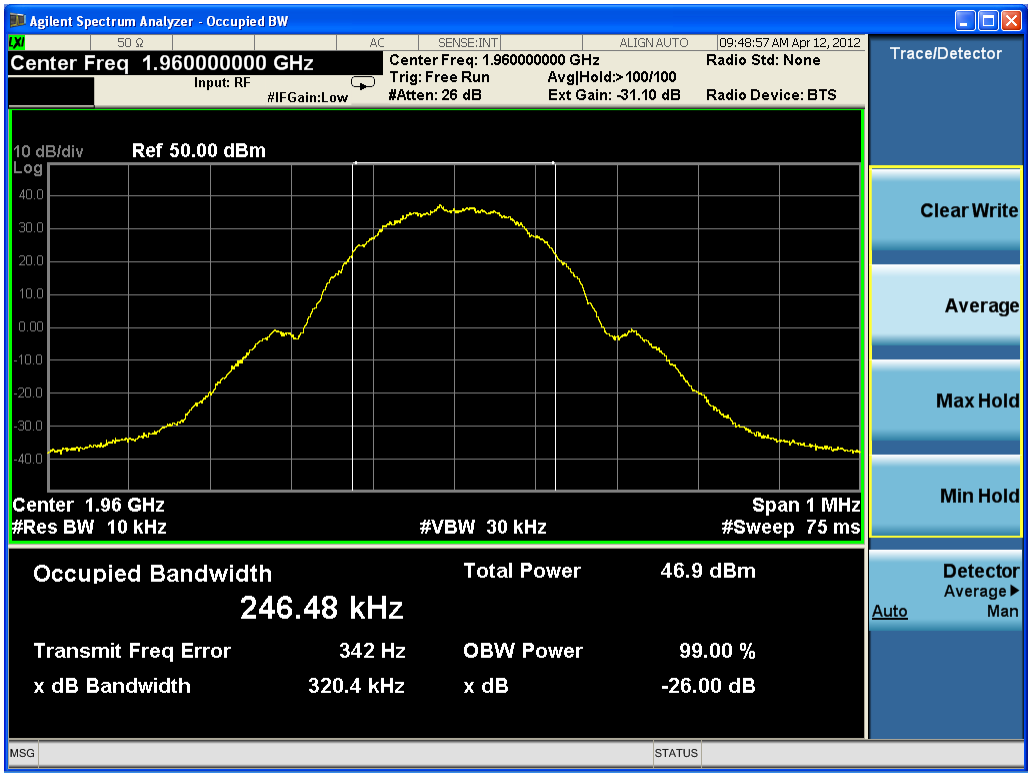


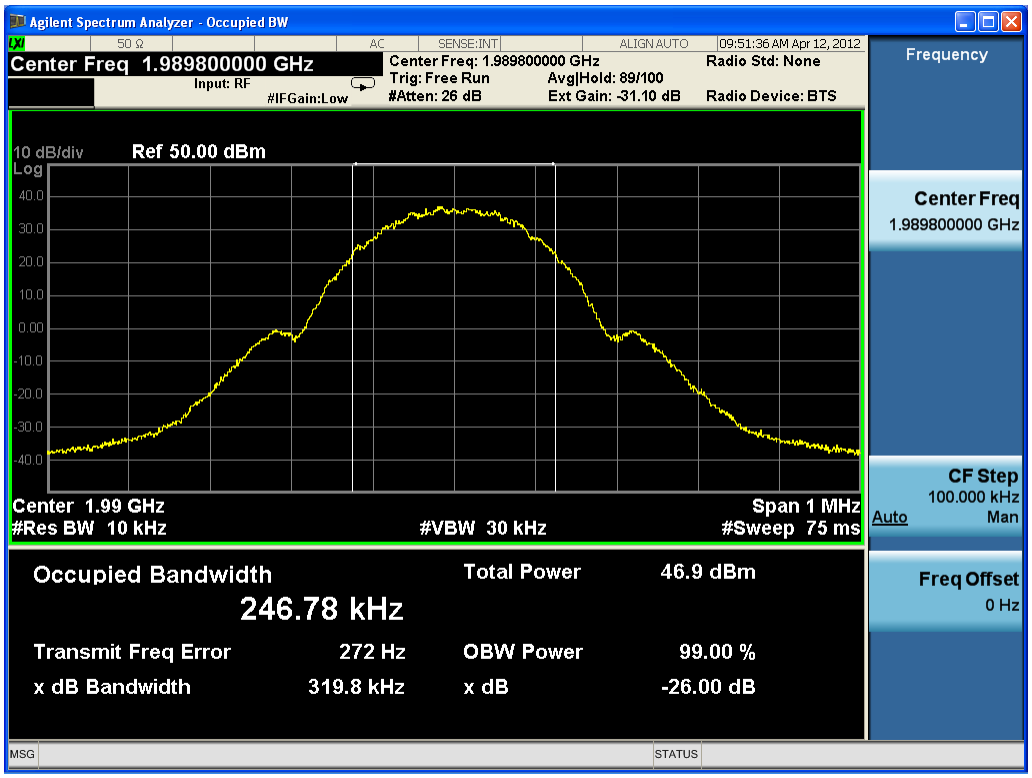

Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:46:41 AM Apr 12, 2012
Center Freq 1.960000000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.960000000 GHz
Trig: Free Run
#Atten: 26 dB
Avg|Hold:>100/100
Ext Gain: -31.10 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.96 GHz
#Res BW 10 kHz
#VBW 30 kHz
Span 1 MHz
#Sweep 75 ms
Occupied Bandwidth
239.57 kHz
Total Power 44.9 dBm
Transmit Freq Error 724 Hz
OBW Power 99.00 %
x dB Bandwidth 311.8 kHz
x dB -26.00 dB
Center Freq
1.960000000 GHz
CF Step
100.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS


Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:52:28 AM Apr 12, 2012
Center Freq 1.989800000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.989800000 GHz
Trig: Free Run
#Atten: 26 dB
Avg|Hold:>100/100
Ext Gain: -31.10 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.99 GHz
#Res BW 10 kHz
#VBW 30 kHz
Span 1 MHz
#Sweep 75 ms
Occupied Bandwidth
245.92 kHz
Total Power 45.0 dBm
Transmit Freq Error 308 Hz
OBW Power 99.00 %
x dB Bandwidth 319.6 kHz
x dB -26.00 dB
Center Freq
1.989800000 GHz
CF Step
100.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

Modulation	Frequency (MHz)	99% Power Bandwidth (kHz)	Limit (kHz)
GMSK	1930.2/1960/1989.8	246.47/246.48/246.78	250






Agilent Spectrum Analyzer - Occupied BW
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:51:36 AM Apr 12, 2012
Center Freq 1.989800000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.989800000 GHz
Trig: Free Run
#Atten: 26 dB
Avg|Hold: 89/100
Ext Gain: -31.10 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.99 GHz
#Res BW 10 kHz
#VBW 30 kHz
Span 1 MHz
#Sweep 75 ms
Occupied Bandwidth
246.78 kHz
Total Power
46.9 dBm
Transmit Freq Error
272 Hz
OBW Power
99.00 %
x dB Bandwidth
319.8 kHz
x dB
-26.00 dB
Center Freq
1.989800000 GHz
CF Step
100.000 kHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

5.7 BAND EDGES

Applicable Standard: FCC §2.1051 §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+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	2012-4-9	2013-4-8
Atten	30dB Attenuator	ATSI150-4-30	11300110201221	2011-7-11	2012-7-11
Forstar	Forstar RF Cable	002	1034	2012-4-9	2013-4-8

*__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 GSM

Test Data

Six carriers

Frequency channel	Max bandedge Emission (dBm)	Limit (dBm)
1930.2/1930.8/1931.4/1932/1932.6/1933.2	-14.961	-13.00
1986.8/1987.4/1988/1988.6/1989.2/1989.8	-15.699	-13.00

Five carriers

Frequency channel	Max bandedge Emission (dBm)	Limit (dBm)
1930.2/1930.8/1931.4/1932/1932.6	-15.425	-13.00
1987.4/1988/1988.6/1989.2/1989.8	-16.277	-13.00


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
11:17:05 AM Apr 12, 2012
Marker 1 1.929978000000 GHz
Input: RF
PNO: Far
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -31.10 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 1.929 978 GHz
-15.425 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
Start 1.9290000 GHz
#Res BW 9.1 kHz
#VBW 10 kHz
Stop 1.9300000 GHz
#Sweep 75.0 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
11:21:13 AM Apr 12, 2012
Marker 1 1.990016000000 GHz
Input: RF
PNO: Far
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -31.10 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 1.990 016 GHz
-16.277 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
Start 1.9900000 GHz
#Res BW 9.1 kHz
#VBW 10 kHz
Stop 1.9910000 GHz
#Sweep 75.0 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

Four carriers

Frequency channel	Max bandedge Emission (dBm)	Limit (dBm)
1930.2/1930.8/1931.4/1932	-13.928	-13.00
1988/1988.6/1989.2/1989.8	-15.890	-13.00

Three carriers

Frequency channel	Max bandedge Emission (dBm)	Limit (dBm)
1930.2/1930.8/1931.4	-14.118	-13.00
1988.6/1989.2/1989.8	-15.661	-13.00


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
11:16:53 AM Apr 12, 2012
Marker 1 1.929981000000 GHz
Input: RF
PNO: Far
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -31.10 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 1.929 981 GHz
-14.118 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
Start 1.9290000 GHz
#Res BW 9.1 kHz
#VBW 10 kHz
Stop 1.9300000 GHz
#Sweep 75.0 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
11:21:07 AM Apr 12, 2012
Marker 1 1.990016000000 GHz
Input: RF
PNO: Far
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -31.10 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 1.990 016 GHz
-15.661 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
Start 1.9900000 GHz
#Res BW 9.1 kHz
#VBW 10 kHz
Stop 1.9910000 GHz
#Sweep 75.0 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

Two carriers

Frequency channel	Max bandedge Emission (dBm)	Limit (dBm)
1930.2/1930.8	-14.202	-13.00
1989.2/1989.8	-16.951	-13.00

One carrier

Frequency channel	Max bandedge Emission (dBm)	Limit (dBm)
1930.2	-14.514	-13.00
1989.8	-17.049	-13.00


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
11:16:09 AM Apr 12, 2012
Marker 1 1.929981000000 GHz
Input: RF
PNO: Far
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -31.10 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 1.929 981 GHz
-14.514 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
Start 1.9290000 GHz
#Res BW 9.1 kHz
#VBW 10 kHz
Stop 1.9300000 GHz
#Sweep 75.0 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
11:21:00 AM Apr 12, 2012
Marker 1 1.990018000000 GHz
Input: RF
PNO: Far
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -31.10 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 1.990 018 GHz
-17.049 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
Start 1.9900000 GHz
#Res BW 9.1 kHz
#VBW 10 kHz
Stop 1.9910000 GHz
#Sweep 75.0 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

5.8 FREQUENCY STABILITY

Applicable Standard: FCC § 2.1055

Requirements: FCC § 2.1055 (a)(d), 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	2012-1-26	2013-1-26
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2012-4-10	2013-4-9
Atten	40dB Attenuator	ATSI150-4-30	11300110201221	2011-7-11	2012-7-11
Forstar	Forstar RF Cable	002	1034	2012-4-9	2013-4-8

*__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 GSM

Test Data

Frequency Stability Versus Temperature

Frequency Stability vs. Temperature					
B(1930.2M)					
Temperature	**Power Supplied Vdc**	**Frequency Measure Error Hz**	**Error ppm**	**Limit ppm**	**Result**
-40	-48	-0.39	-0.00020	0.02	PASS
-30	-48	1.07	0.00055	0.02	PASS
-20	-48	-0.26	-0.00013	0.02	PASS
-10	-48	-0.54	-0.00028	0.02	PASS
0	-48	-0.21	-0.00011	0.02	PASS
10	-48	0.88	0.00046	0.02	PASS
20	-48	0.75	0.00039	0.02	PASS
30	-48	0.68	0.00035	0.02	PASS
40	-48	-0.46	-0.00024	0.02	PASS
50	-48	-1.15	-0.00060	0.02	PASS
55	-48	-0.86	-0.00045	0.02	PASS
M(1960M)					
-40	-48	0.78	0.00040	0.02	PASS
-30	-48	0.96	0.00049	0.02	PASS
-20	-48	-0.59	-0.00030	0.02	PASS
-10	-48	0.15	0.00008	0.02	PASS
0	-48	-1.12	-0.00057	0.02	PASS
10	-48	1.88	0.00096	0.02	PASS
20	-48	0.68	0.00035	0.02	PASS
30	-48	-1.55	-0.00079	0.02	PASS

40	-48	-0.36	-0.00018	0.02	PASS
50	-48	2.16	0.00110	0.02	PASS
55	-48	2.23	0.00114	0.02	PASS
T(1989.8M)					
-40	-48	0.99	0.00050	0.02	PASS
-30	-48	0.87	0.00044	0.02	PASS
-20	-48	-0.58	-0.00029	0.02	PASS
-10	-48	-0.45	-0.00023	0.02	PASS
0	-48	1.48	0.00074	0.02	PASS
10	-48	-1.11	-0.00056	0.02	PASS
20	-48	-0.13	-0.00007	0.02	PASS
30	-48	0.77	0.00039	0.02	PASS
40	-48	-0.47	-0.00024	0.02	PASS
50	-48	0.94	0.00047	0.02	PASS
55	-48	0.92	0.00046	0.02	PASS

Frequency Stability Versus Voltage

Frequency Stability vs. Voltage					
B(1930.2M)					
Voltage Vdc	**Temperature**	**Frequency Measure Error Hz**	**Error ppm**	**Limit ppm**	**Result**
-37	20	0.76	0.00039	0.02	PASS
-39	20	-0.48	-0.00025	0.02	PASS
-41	20	0.84	0.00044	0.02	PASS
-43	20	-1.38	-0.00071	0.02	PASS
-45	20	-0.66	-0.00034	0.02	PASS
-47	20	-0.23	-0.00012	0.02	PASS
-49	20	-1.21	-0.00063	0.02	PASS
-51	20	-0.47	-0.00024	0.02	PASS
-53	20	-0.28	-0.00015	0.02	PASS
-55	20	1.76	0.00091	0.02	PASS
-57	20	0.99	0.00051	0.02	PASS
-59	20	-0.18	-0.00009	0.02	PASS
-61	20	-0.58	-0.00030	0.02	PASS
-62	20	-0.21	-0.00011	0.02	PASS
M(1960M)					
-37	20	-1.69	-0.00086	0.02	PASS
-39	20	1.86	0.00095	0.02	PASS
-41	20	-1.59	-0.00081	0.02	PASS

-43	20	-1.15	-0.00059	0.02	PASS
-45	20	-1.06	-0.00054	0.02	PASS
-47	20	1.98	0.00101	0.02	PASS
-49	20	1.86	0.00095	0.02	PASS
-51	20	0.88	0.00045	0.02	PASS
-53	20	1.26	0.00064	0.02	PASS
-55	20	-1.39	-0.00071	0.02	PASS
-57	20	-1.64	-0.00084	0.02	PASS
-59	20	-1.48	-0.00076	0.02	PASS
-61	20	0.95	0.00048	0.02	PASS
-62	20	-1.51	-0.00077	0.02	PASS
T(1989.8M)					
-37	20	0.75	0.00038	0.02	PASS
-39	20	-0.26	-0.00013	0.02	PASS
-41	20	-0.39	-0.00020	0.02	PASS
-43	20	1.52	0.00076	0.02	PASS
-45	20	-0.05	-0.00003	0.02	PASS
-47	20	-0.19	-0.00010	0.02	PASS
-49	20	-0.39	-0.00020	0.02	PASS
-51	20	1.35	0.00068	0.02	PASS
-53	20	-0.38	-0.00019	0.02	PASS
-55	20	-0.53	-0.00027	0.02	PASS
-57	20	-0.61	-0.00031	0.02	PASS
-59	20	1.58	0.00079	0.02	PASS
-61	20	1.04	0.00052	0.02	PASS
-62	20	-0.38	-0.00019	0.02	PASS

6 DUAL-MODE 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
§2.1051, §24.238	Band edges	Compliant
§2.1049 §24.229 §24.238	Occupied Bandwidth	Compliant

6.1 TRANSMITTER OUTPUT POWER

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.

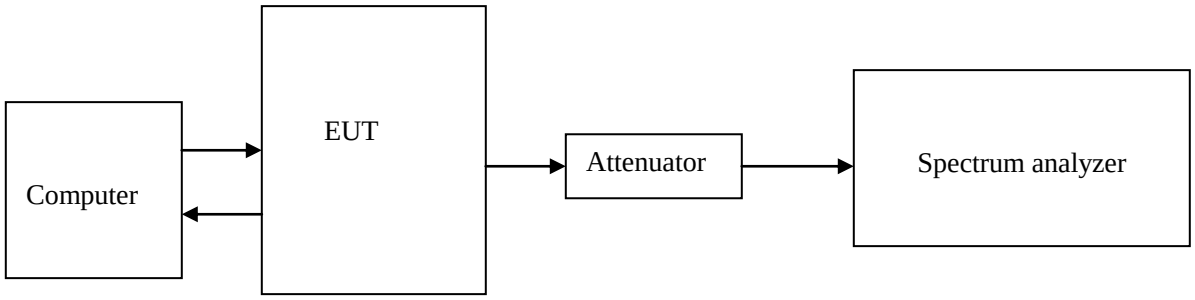
Applicable Standard： FCC §2.1046 §24.232

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2012-4-9	2013-4-8
Atten	30dB Attenuator	ATSI150-4-30	11300110201221	2011-7-11	2012-7-11
Forstar	Forstar RF Cable	002	1034	2012-4-9	2013-4-8

***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 30dB, Cable Loss is about 2dB

Environmental Conditions

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

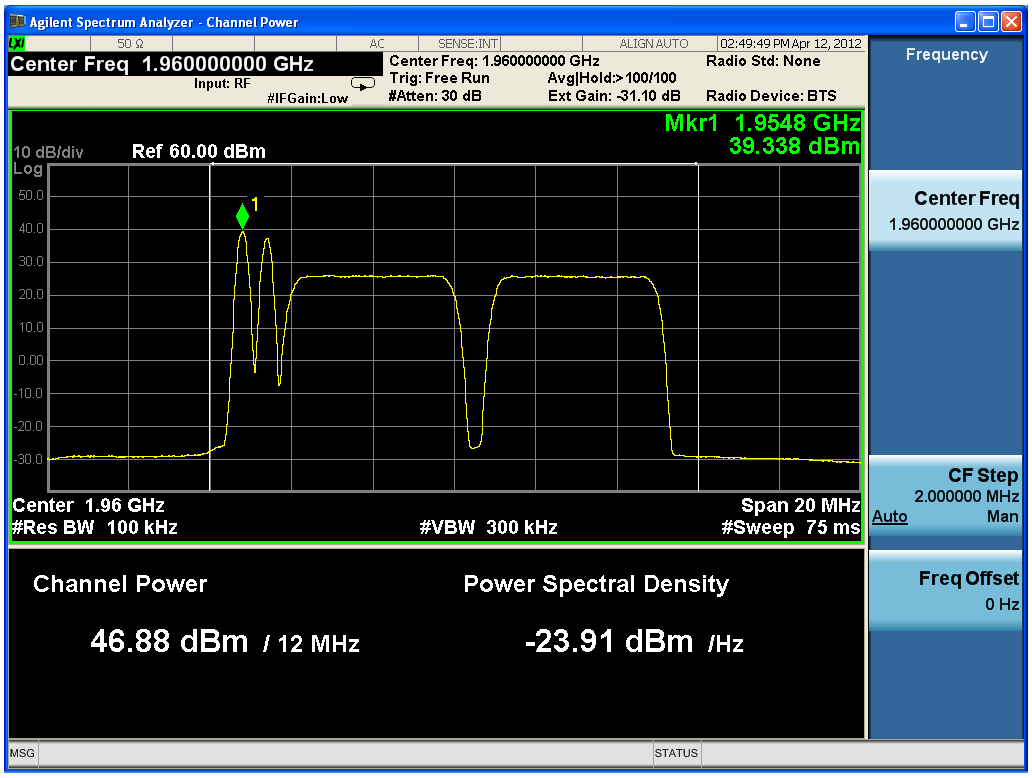
Test Result: Pass

Test Mode: Transmitting 2GSMTRX and 2UMTS carriers and 4GSM TRX and 1UMTS carriers

Test Data:

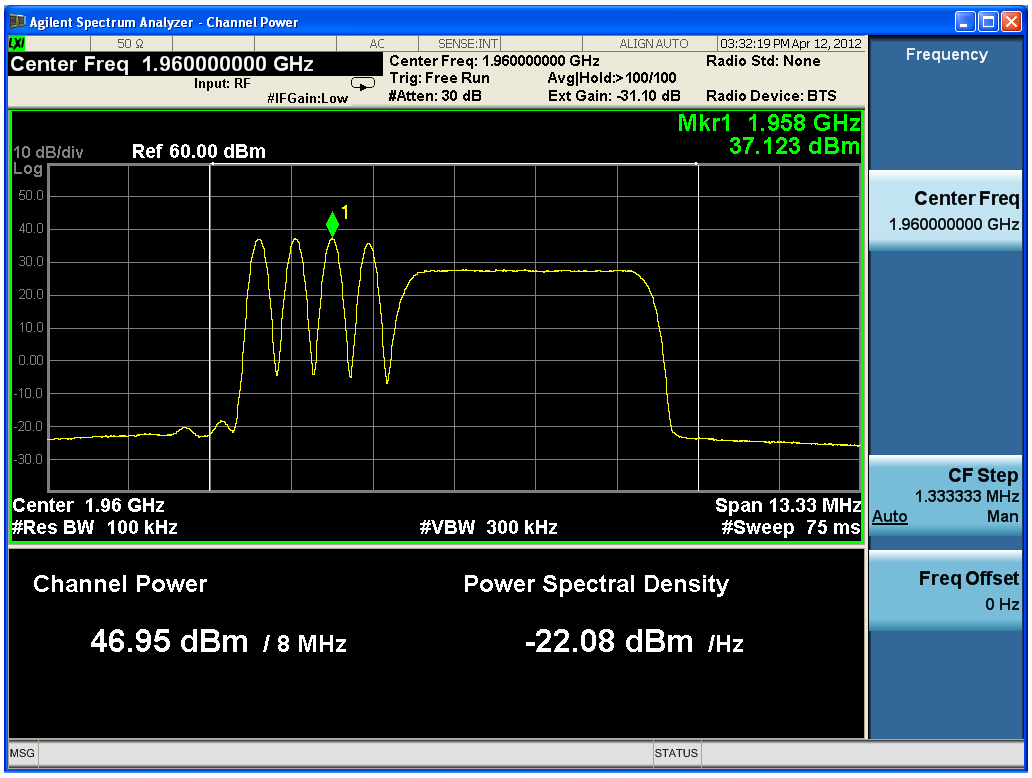
2GSMTRX and 2UMTS carriers

Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
1960	1960	46.88



4GSM TRX and 1UMTS carriers

Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
1960	1960	46.95


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
03:32:19 PM Apr 12, 2012
Center Freq 1.960000000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.960000000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>100/100
Ext Gain: -31.10 dB
Radio Std: None
Radio Device: BTS
Frequency
Mkr1 1.958 GHz
37.123 dBm
10 dB/div
Log
Ref 60.00 dBm
50.0
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
Center Freq
1.960000000 GHz
CF Step
1.333333 MHz
Auto
Man
Center 1.96 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 13.33 MHz
#Sweep 75 ms
Channel Power
46.95 dBm / 8 MHz
Power Spectral Density
-22.08 dBm /Hz
Freq Offset
0 Hz
MSG
STATUS

5.2 RF EXPOSURE

Applicable standard: FCC §2.1091 and §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
$S = EIRP/ 4\pi R^2$
Where: S = power density
EIRP= equivalent isotropically radiated power=ERP+2.15dB
R = distance to the center of radiation of the antenna= $[(ERP+2.15dB)/4\pi S]^{1/2}$

Maximum EIRP, In general, the equivalent isotropically radiated power (EIRP) of base transmitters and cellular repeaters must not exceed 1640 Watts.
Frequency is between 1500MHz and 100000MHz, and the Maximum $S=1.0mW/cm^2$
R=3.61m.
This equipment should be installed and operated with minimum distance 3.61m between the radiator& your body.

Test Result: pass

5.3 SPURIOUS RADIATED EMISSIONS

Applicable Standard: FCC CFR 47, §2.1053

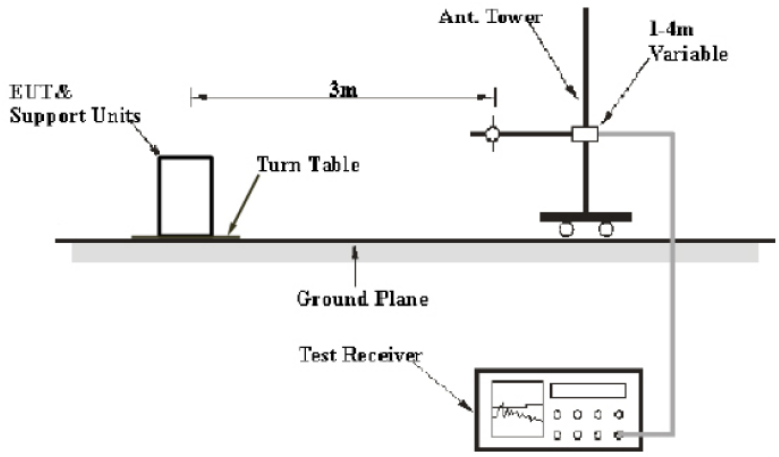
Test Equipment List and Details

Manufacturer	Equipment	Model	Serial Number	Last Cal.	Cal. Interval
R&S	SIGNAL GENERATOR	SMR20	A00017351	2011-9-26	1 year
Albatross	Anechoic Chamber	3m Site	A00017354	2011-11-2	1 year
R&S	EMI Test Receiver	ESIB26	100058	2011-10-29	1 year
R&S	Ultra Breitband Antennas	HL562	100022	2011-7-29	1 year
R&S	Double-Ridged Waveguide Horn Antenna	HF906	100032	2011-7-29	1 year
R&S	Double-Ridged Waveguide Horn Antenna	HF906	100446	2011-7-29	1 year
SCHWARZ-BECK	Biconical Antenna	VUBA9117	9117-122	2011-7-29	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 emission tests were performed in the 3-meter Chamber, using the setup accordance with the FCC part 2.1053.The specification used was the FCC 2.1053 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 Summary: PASS

Environmental Conditions

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

Test data

Indicated		Test Antenna	Substituted		Cable Loss(dB)	Effective radiated power（dBm）	Dipole Antenna	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Frequency (GHz)	Amp. (dB μ V)	Polar H/V	Level (dBm)	Antenna Gain Correction						
63.046092	26.01	V	-70.18	-27.24	0.6	-98.02	2.15	-100.17	-13	87.17
634.549098	26.43	V	-70.08	-1.09	2.1	-73.27	2.15	-75.42	-13	62.42
974.729459	31.16	V	-70.73	-2.82	2.6	-76.15	2.15	-78.3	-13	65.3
1384.76954	46.62	V	-61.34	4.25	3.1	-60.19	2.15	-62.34	-13	49.34
2991.98397	58.48	V	-52.49	7.95	4.6	-49.14	2.15	-51.29	-13	38.29
169.95992	23.09	H	-81.07	-3.24	1.1	-85.41	2.15	-87.56	-13	74.56
607.334669	27.78	H	-73.62	-1.39	2	-77.01	2.15	-79.16	-13	66.16
992.224449	31.09	H	-72.58	-2.59	2.7	-77.87	2.15	-80.02	-13	67.02
1388.77756	46.41	H	-64.12	4.25	3.1	-62.97	2.15	-65.12	-13	52.12
1981.96393	90.64	H	-18.93	6.55	3.8	-16.18	2.15	-18.33	-13	5.33
2963.92786	57.49	H	-47.97	7.95	4.6	-44.62	2.15	-46.77	-13	33.77

Radiation emission spurious below 3GHz

Indicated		Test Antenna	Substituted		Cable Loss(dB)	Effective radiated power（dBm）	Dipole Antenna	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
Frequency (GHz)	Amp. (dB μ V)	Polar H/V	Level (dBm)	Antenna Gain Correction						
3953.90782	49.47	V	-46.39	7.75	5.3	-43.94	2.15	-46.09	-13	33.09
5276.55311	45.53	V	-52.05	8.55	6.2	-49.7	2.15	-51.85	-13	38.85
5941.88377	58.8	V	-46.04	9.05	6.6	-43.59	2.15	-45.74	-13	32.74
9755.51102	54.47	V	-54.37	9.95	9	-53.42	2.15	-55.57	-13	42.57
13282.5651	59.36	V	-41.87	11.85	10.2	-40.22	2.15	-42.37	-13	29.37
17933.8677	72.31	V	-39.56	8.95	12.2	-42.81	2.15	-44.96	-13	31.96
3961.92385	50.92	H	-51.89	7.75	5.3	-49.44	2.15	-51.59	-13	38.59
5268.53707	45.53	H	-54.97	8.55	6.2	-52.62	2.15	-54.77	-13	41.77
5941.88377	54.63	H	-50.01	9.05	6.6	-47.56	2.15	-49.71	-13	36.71
9843.68738	53.43	H	-55.98	9.95	8.9	-54.93	2.15	-57.08	-13	44.08
13348.6974	58.86	H	-53.49	11.85	10.2	-51.84	2.15	-53.99	-13	40.99
17867.7355	72.1	H	-35.07	8.95	12.2	-38.32	2.15	-40.47	-13	27.47

Radiation emission spurious above 3GHz

5.4 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 .

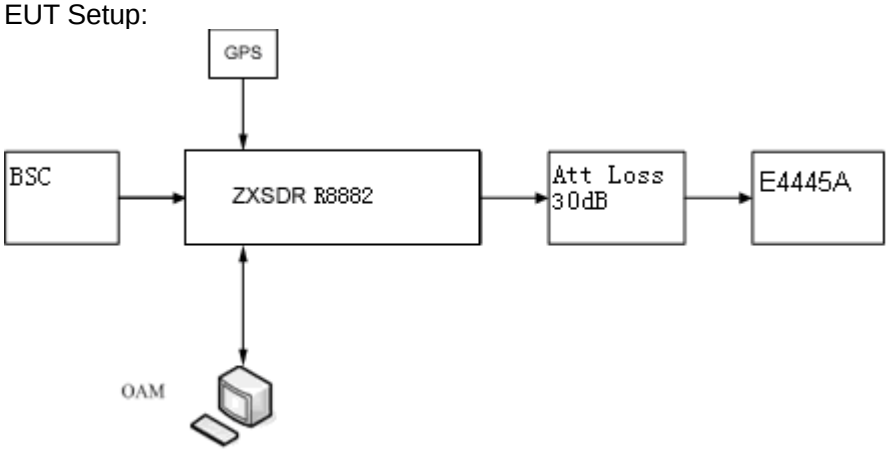
Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2012-4-9	2013-4-8
Atten	30dB Attenuator	ATSI150-4-30	11300110201221	2011-7-11	2012-7-11
Forstar	Forstar RF Cable	002	1034	2012-4-9	2013-4-8

***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)=30dB, Cable Loss (dB)=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 1MHz for 30MHz to 1GHz scaning, set at 1MHz for 1GHz to 20GHz scaning. Sufficient scans were taken to

show any out of band emissions up to 10th harmonic.

Test Data Environmental Conditions

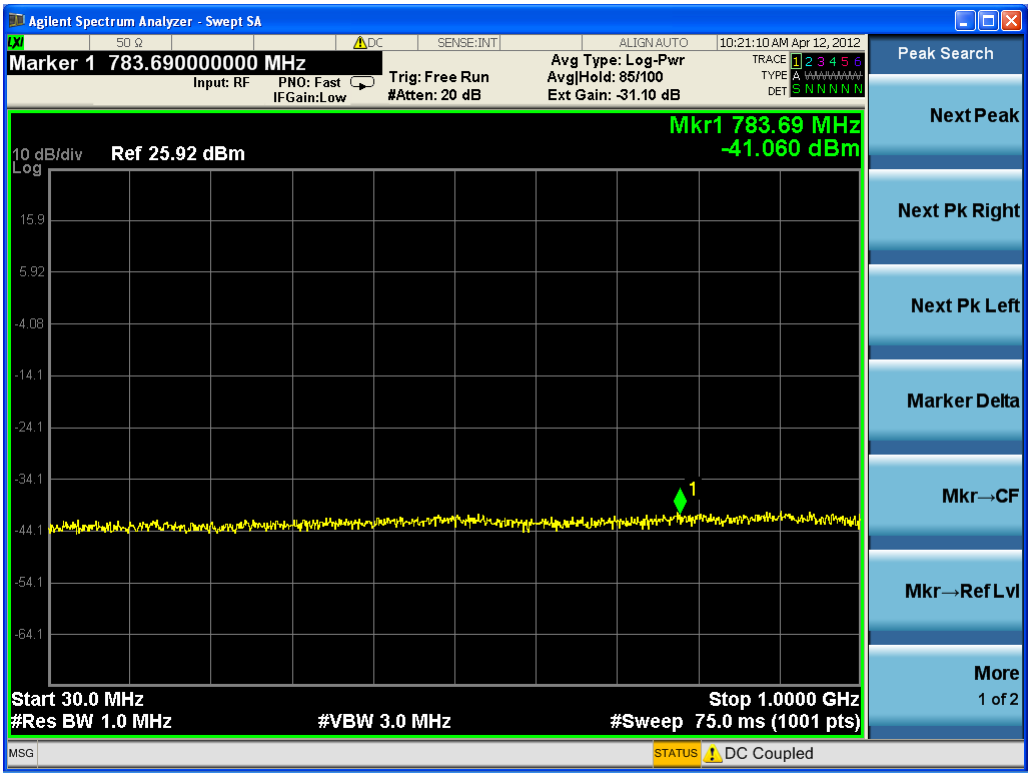
Temperature:	20 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

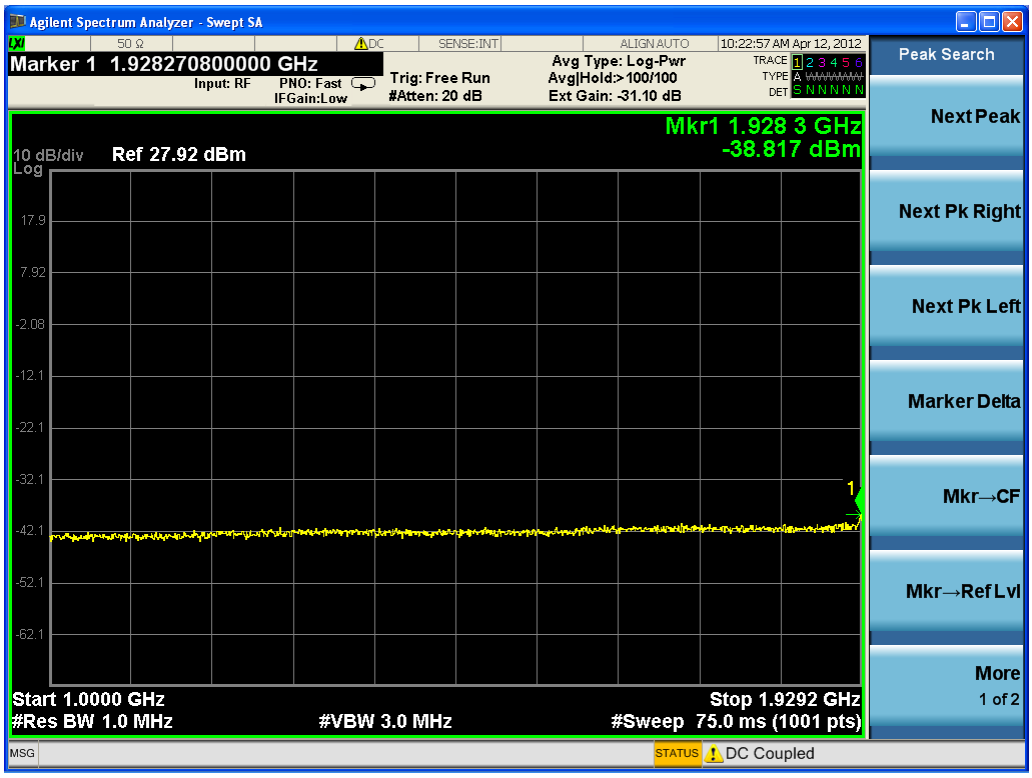
Test Result: Pass

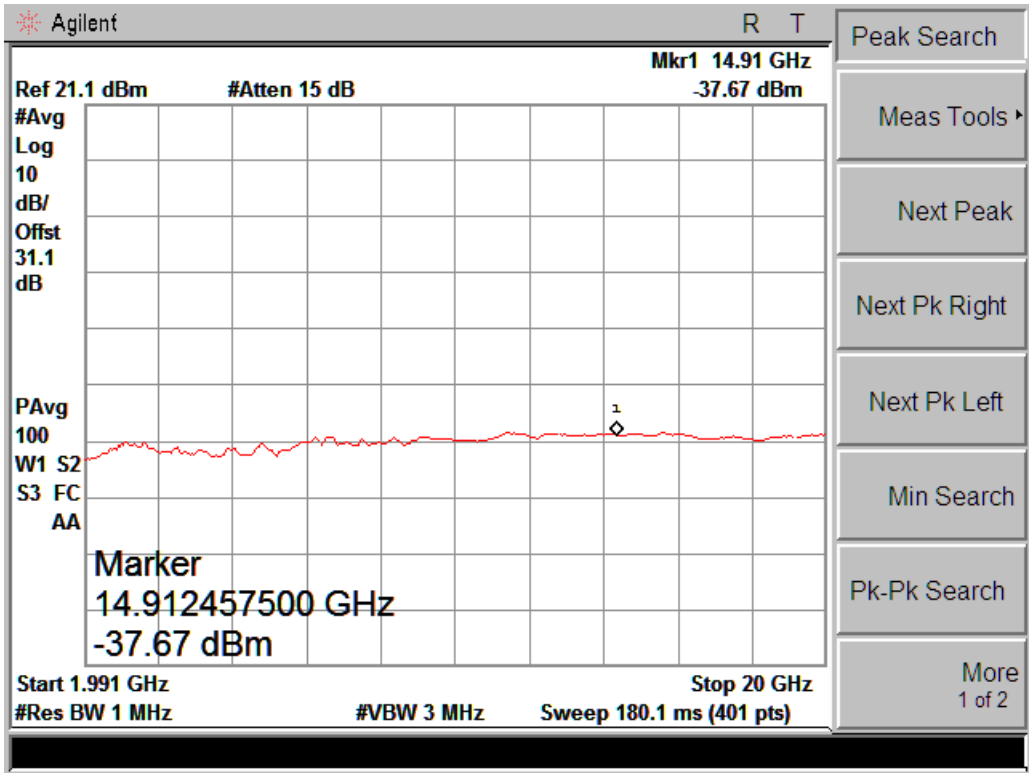
Test Mode: Transmitting 2GSMTRX and 2UMTS carriers and 4GSM TRX and 1UMTS carriers

Test Data:

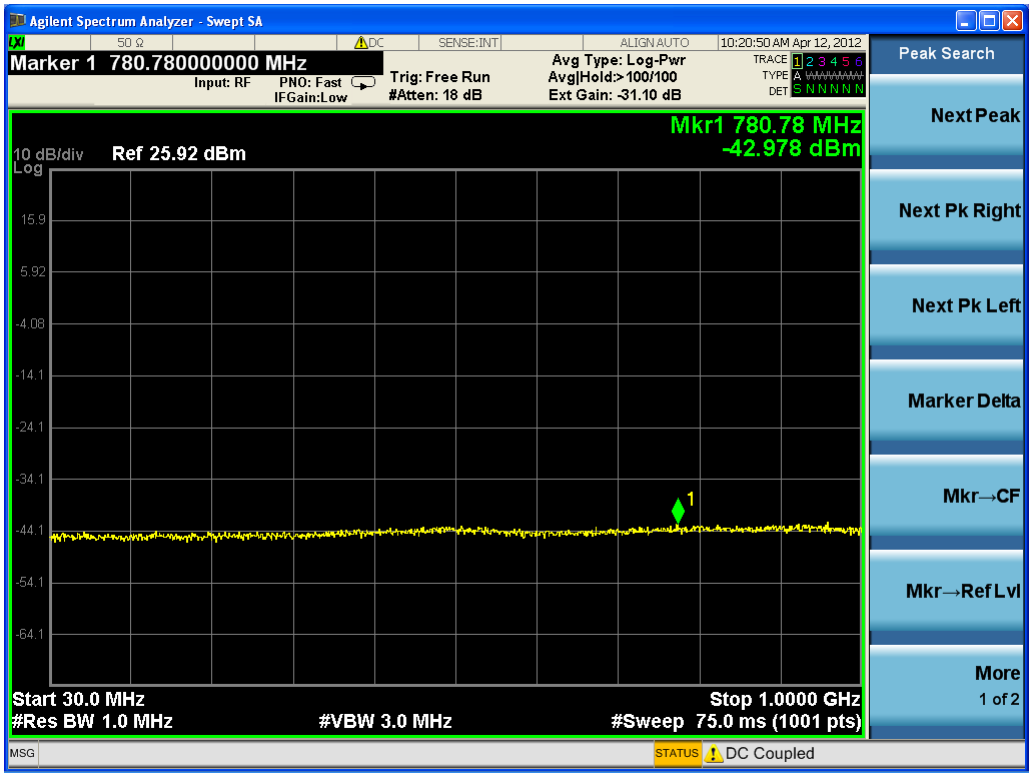
2GSMTRX and 2UMTS carriers

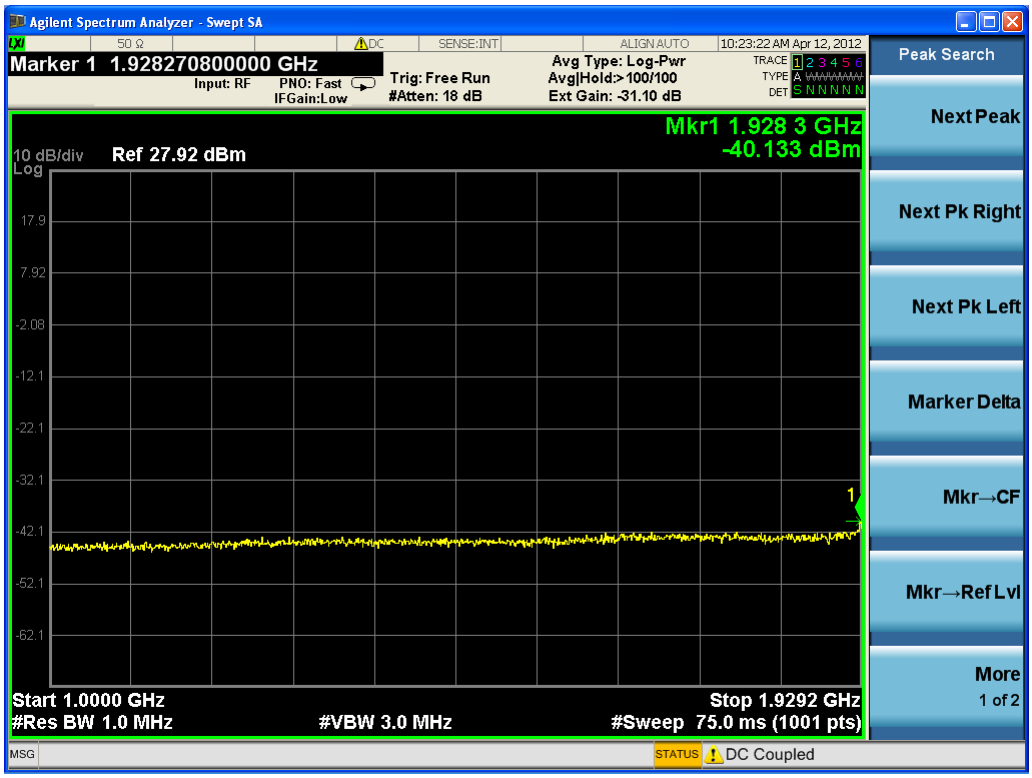


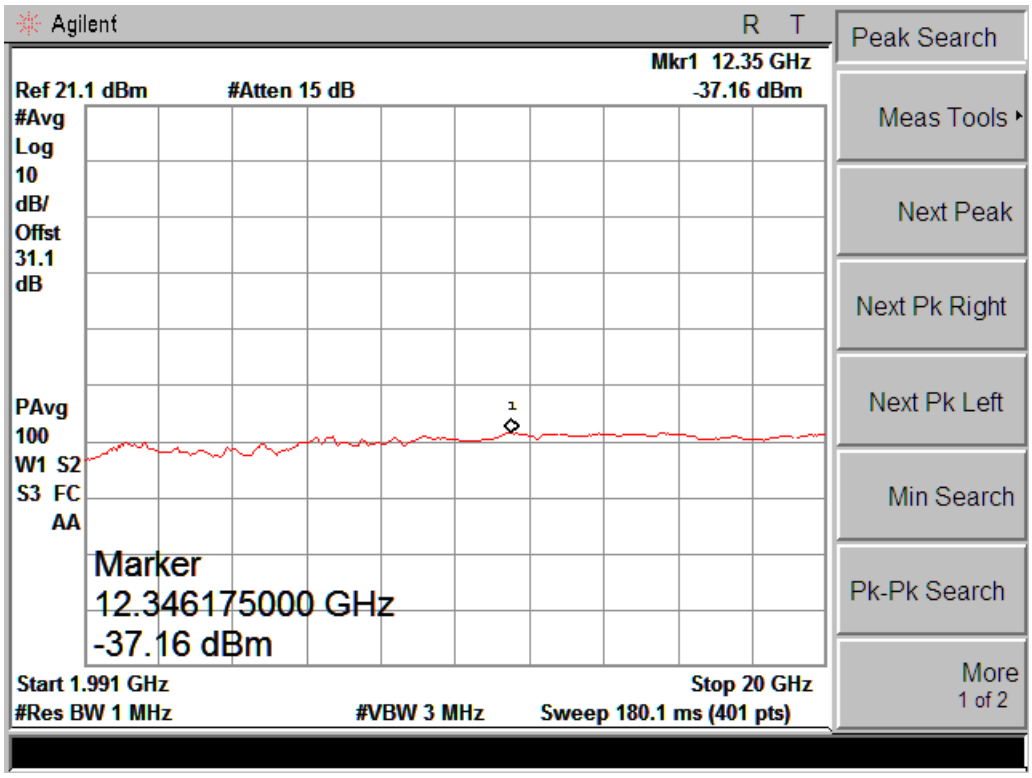

Agilent Spectrum Analyzer - Swept SA
Marker 1 1.928270800000 GHz
Input: RF
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 20 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -31.10 dB
10:22:57 AM Apr 12, 2012
Mkr1 1.928 3 GHz
-38.817 dBm
10 dB/div
Log
Ref 27.92 dBm
17.9
7.92
-2.08
-12.1
-22.1
-32.1
-42.1
-52.1
-62.1
Start 1.0000 GHz
#Res BW 1.0 MHz
#VBW 3.0 MHz
Stop 1.9292 GHz
#Sweep 75.0 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
DC Coupled


Agilent
Mkr1 14.91 GHz
-37.67 dBm
Ref 21.1 dBm
#Atten 15 dB
#Avg
Log
10
dB/
Offst
31.1
dB
PAvg
100
W1 S2
S3 FC
AA
Marker
14.912457500 GHz
-37.67 dBm
Start 1.991 GHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 20 GHz
Sweep 180.1 ms (401 pts)
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

4GSM TRX and 1UMTS carriers






Agilent
R T
Mkr1 12.35 GHz
Ref 21.1 dBm
#Atten 15 dB
-37.16 dBm
#Avg
Log
10
dB/
Offst
31.1
dB
PAvg
100
W1 S2
S3 FC
AA
Marker
12.346175000 GHz
-37.16 dBm
Start 1.991 GHz
Stop 20 GHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 180.1 ms (401 pts)
Peak Search
Meas Tools
Next Peak
Next Pk Right
Next Pk Left
Min Search
Pk-Pk Search
More
1 of 2

5.5 BAND EDGES

Applicable Standard: FCC §2.1051, §24.238

According to §2.1051, 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	2012-4-9	2013-4-8
Atten	30dB Attenuator	ATSI150-4-30	11300110201221	2011-7-11	2012-7-11
Forstar	Forstar RF Cable	002	1034	2012-4-9	2013-4-8

*__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 2GSMTRX and 2UMTS carriers and 4GSM TRX and 1UMTS carriers

Test Data

2GSMTRX and 2UMTS carriers

Frequency channel	Max bandedge Emission (dBm)	Limit (dBm)
1929-1930	-13.628	-13.00
1990-1991	-15.380	-13.00

4GSM TRX and 1UMTS carriers

Frequency	Max bandedge Emission (dBm)	Limit (dBm)
1929-1930	-14.348	-13.00
1990-1991	-16.858	-13.00


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
11:16:19 AM Apr 12, 2012
Marker 1 1.929981000000 GHz
Input: RF
PNO: Far
IFGain:Low
Trig: Free Run
#Atten: 24 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -31.10 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 1.929 981 GHz
-14.348 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
Start 1.9290000 GHz
#Res BW 9.1 kHz
#VBW 10 kHz
Stop 1.9300000 GHz
#Sweep 75.0 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS


Agilent Spectrum Analyzer - Swept SA
50 Ω
AC
SENSE:INT
ALIGN AUTO
11:21:02 AM Apr 12, 2012
Marker 1 1.990018000000 GHz
Input: RF
PNO: Far
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -31.10 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 1.990 018 GHz
-16.858 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
Start 1.9900000 GHz
#Res BW 9.1 kHz
#VBW 10 kHz
Stop 1.9910000 GHz
#Sweep 75.0 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
MSG
STATUS

5.6 OCCUPIED BANDWIDTH

Applicable Standard: FCC §2.1049 §24.229 §24.238

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
Atten	30dB Attenuator	ATSI150-4-30	11300110201221	2011-7-11	2012-7-11
Forstar	Forstar RF Cable	002	1034	2012-4-9	2013-4-8

*__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. 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

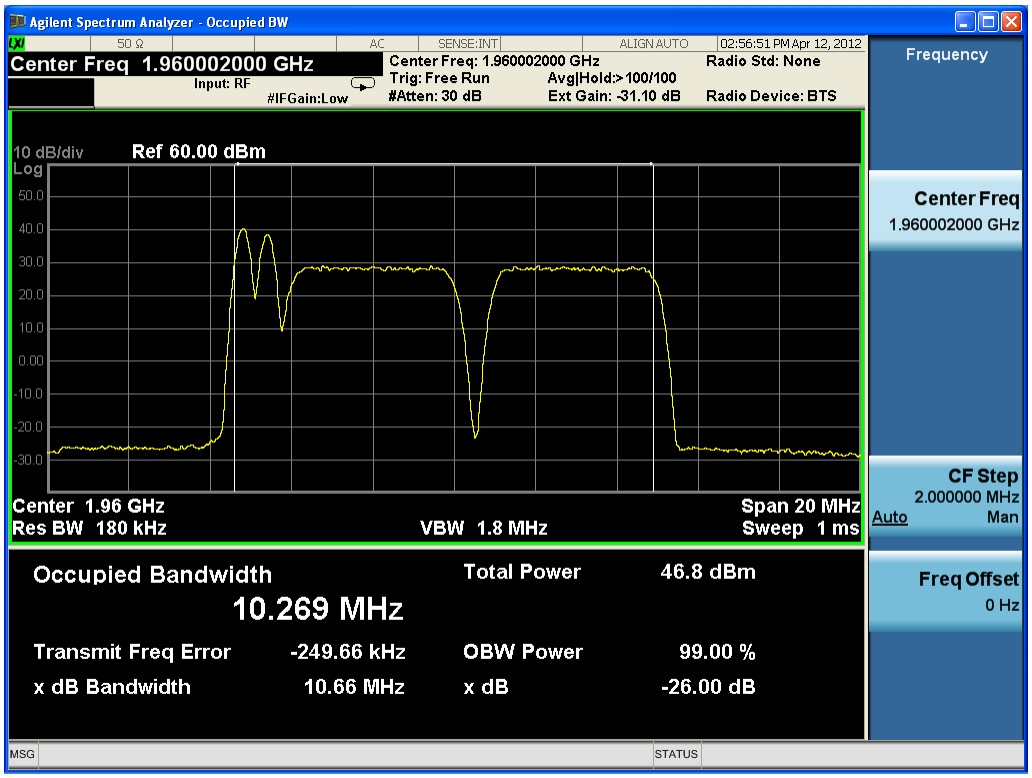
Test Result: Pass

Test Mode: Transmitting 2GSMTRX and 2UMTS carriers and 4GSM TRX and 1UMTS carriers

Test Data

2GSMTRX and 2UMTS carriers

Frequency (MHz)	99% Power Bandwidth (MHz)
1960	10.269



4GSM TRX and 1UMTS carriers

Frequency (MHz)	99% Power Bandwidth (MHz)
1960	6.4756