FCC
MEASUREMENT AND TEST REPORT
For
ZTE Corporation

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

FCC ID: Q78-R8881S1900H

Jan 1, 2015

This Report Concerns: ☒ Original Report	**Equipment Type:** Macro Radio Remote Unit
Test Engineer:	Bloom
Report No.:	RF20150053RP-2
Test Date:	Jan 4 – Jan 31, 2015
Reviewed By:	Xie Yuming
Prepared By:	ZTE Corporation.
ZTE Plaza, Hi-tech Park, Nanshan District, Shenzhen, Guangdong, China 518057, P.R.China Tel: +86-755-26770000 Fax: +86-755-26771999	

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

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1 GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The ZTE Corporation's product, model number: ZXSDR R8881 S1900 or the "EUT" as referred to in this report is a dual-mode RF remote unit. It adopts the multi-carrier technology as its core technology and supports two radio systems: GSM and UMTS.R8881 S1900 can be used as an independent RRU for GSM or an independent RRU for UMTS, and it works with BBU to form the dual-mode base station.

Technical specification:
Size: 370 mm × 320 mm × 170 mm (H x W x D)
Input voltage: -48VDC
Frequency range: 1950MHz to 1990MHz,
Max RF output power: 49dBm, except GSM (8PSK modulation) :47dBm
Gain of the antenna: 18dBi
Modulation type of emission: UMTS is QPSK,16QAM,64QAM; GSM is GMSK ,8PSK
Appearance of EUT:

Objective

This Type approval report is prepared on behalf of ZTE Corporation in accordance with Part 2、Part 15、Part 24 of the Federal Communication Commissions rules.

Related Submittal(s)/Grant(s)

No related submittal(s).

Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of federal Regulations Title 47 Part 2. as well as the following parts:
Part 24 Wireless Communication Services
Applicable Standards: TIA EIA 137-A, TIA EIA 97-D, TIA/EIA 603-C, Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.
All radiated and conducted measurement was performed at ZTE Corporation Reliability Testing Center. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Test Facility

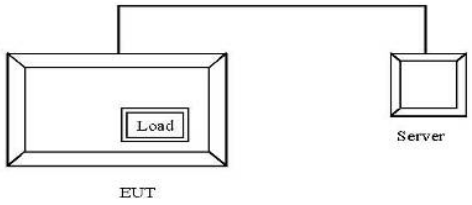
The Test site used by Shenzhen ZTE Technology Service Co., Ltd to collect test data is located in the ZTE Plaza, Hi-tech Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China，Tel: +86-755-26770000，Fax: +86-755-26771999. Test site at ZTETS Corporation has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on November 04, 2004. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.
The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 0007895832. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

2 SYSTEM TEST CONFIGURATION

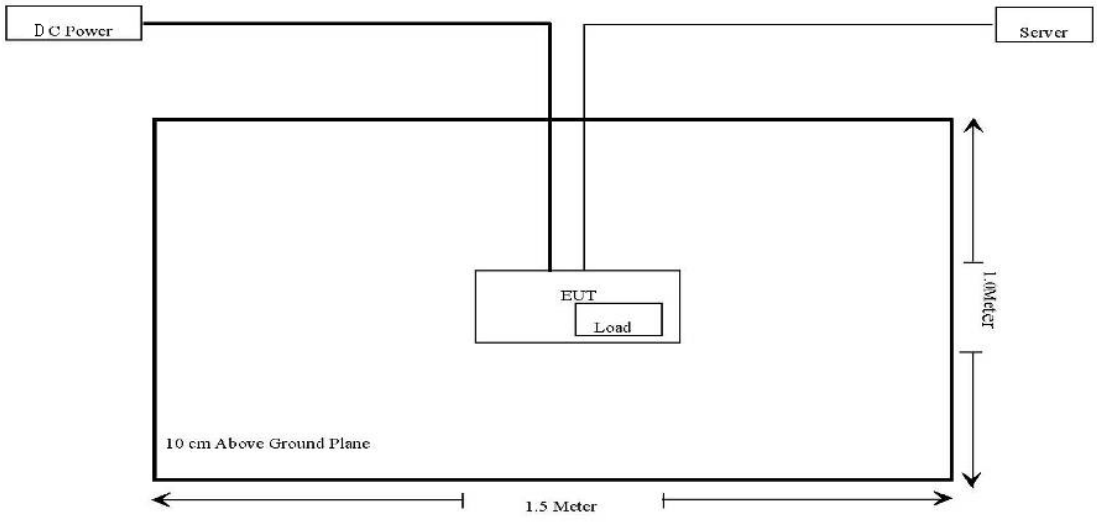
Description of Test Configuration

Justification
The EUT was configured for testing according to TIA/EIA-603C.
The final qualification test was performed with EUT operating at normal mode.
Equipment Modifications
ZTE Corporation has not done any modification on the EUT.

Configuration of Test Setup



Block Diagram of Test Setup



3 UMTS 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

3.1 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.

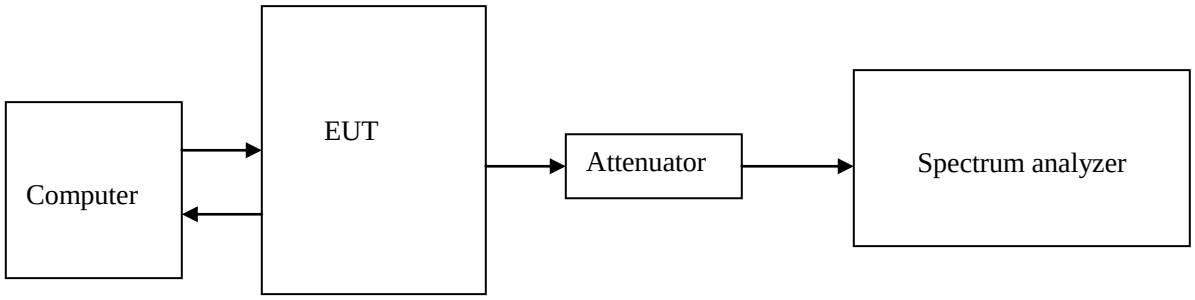
Note: EIRP= Max output Power+ Antenna gain- Cable Loss

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY51160170	2014-6-16	2015-6-16
Atten	50dB Attenuator	ATSI150-4-40	11300100204204	2014-4-8	2015-4-8
Forstar	Forstar RF Cable	002	1034	2014-4-8	2015-4-8

*__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 50dB, Cable Loss is about 4dB.

Environmental Conditions

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

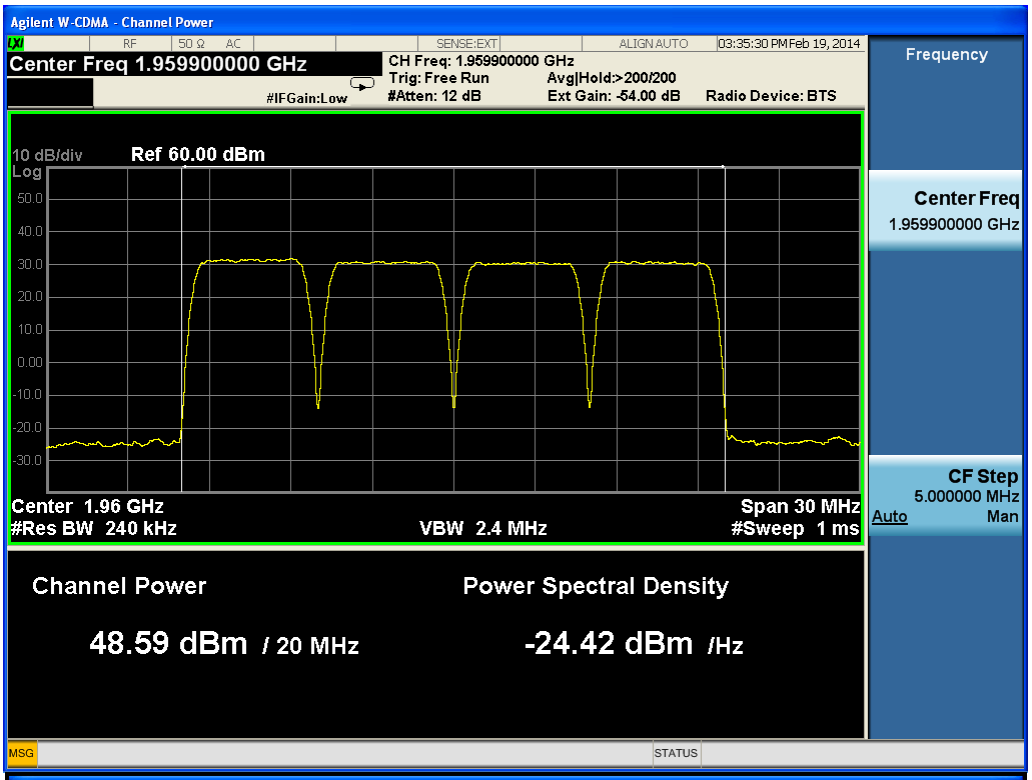
Test Result: Pass

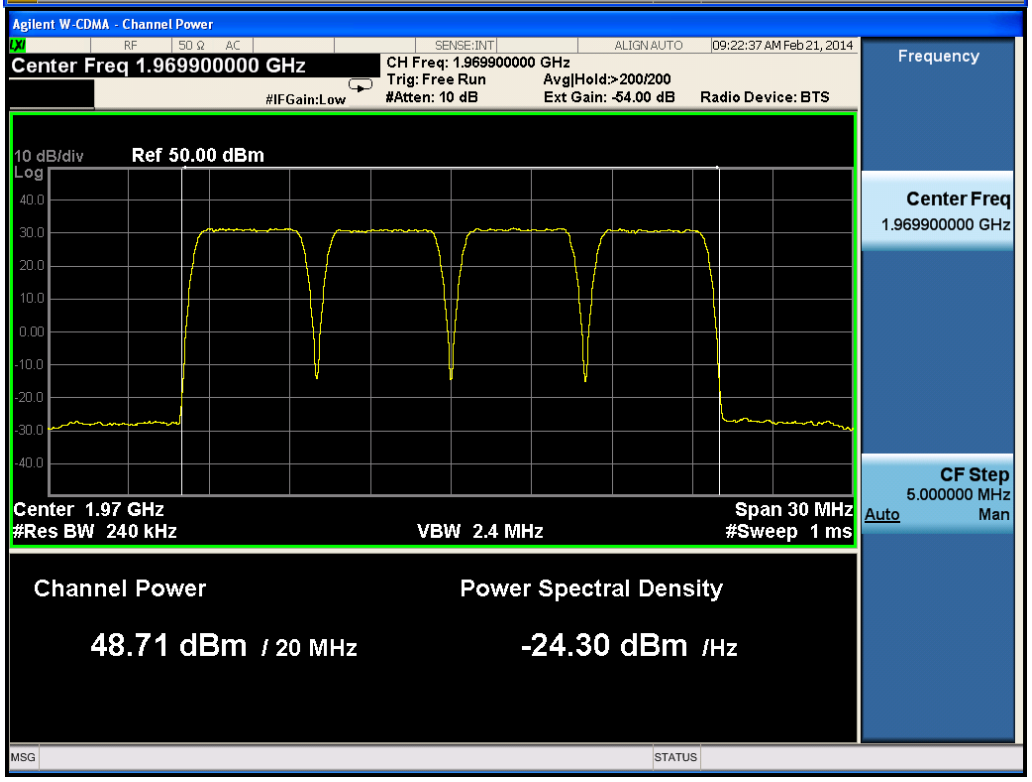
Test Mode: Transmitting UMTS

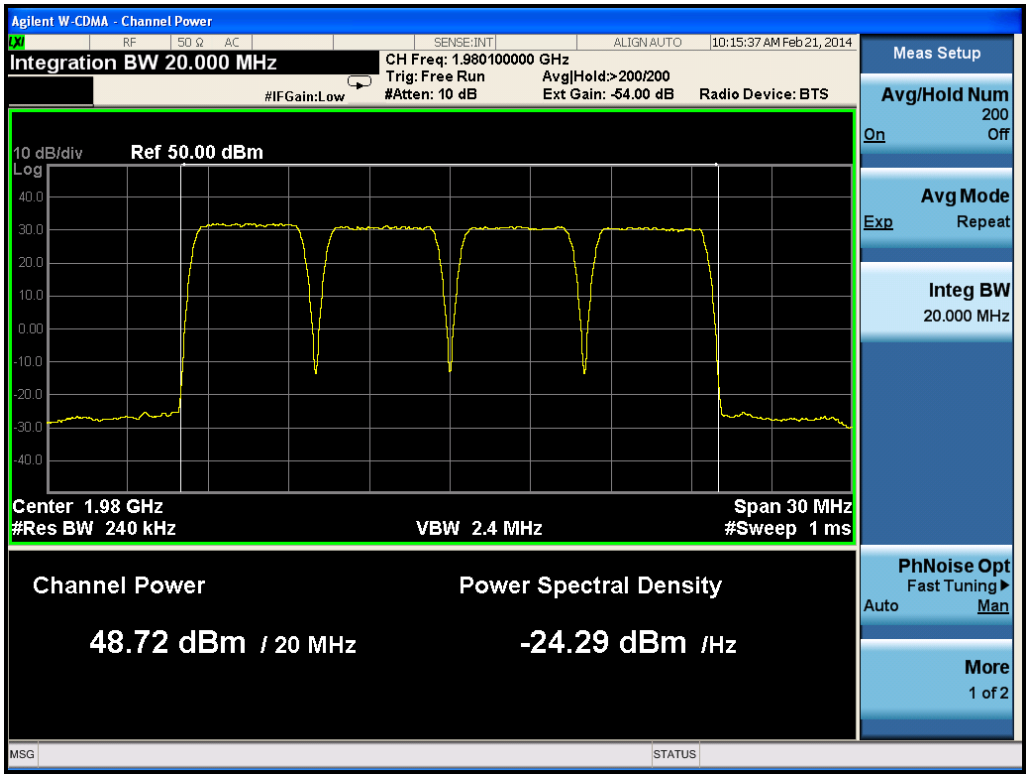
Test Data:

Four carriers

Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
1959.9	1952.4/1957.4/1962.4/1967.4	48.59
1969.9	1962.4/1967.4/1972.4/1977.4	48.71
1980.1	1972.6/1977.6/1982.6/1987.6	48.72

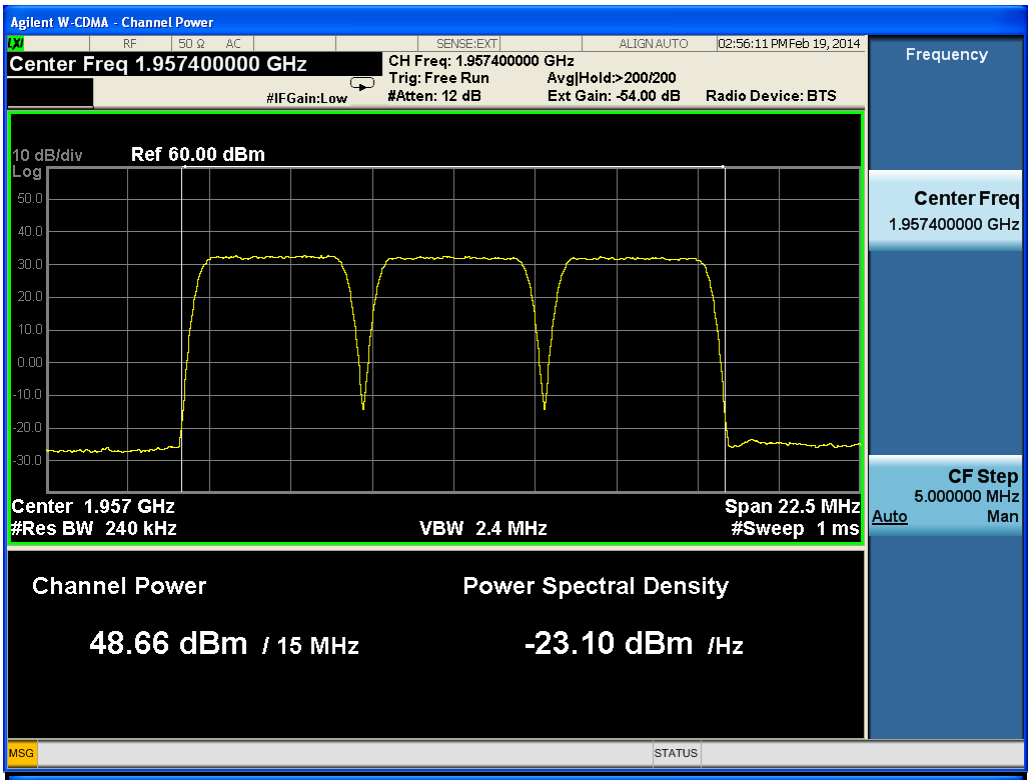

Agilent W-CDMA - Channel Power
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
03:35:30 PM Feb 19, 2014
Center Freq 1.959900000 GHz
#IFGain:Low
CH Freq: 1.959900000 GHz
Trig: Free Run
Avg|Hold:>200/200
#Atten: 12 dB
Ext Gain: -54.00 dB
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 60.00 dBm
50.0
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
Center Freq
1.959900000 GHz
Center 1.96 GHz
#Res BW 240 kHz
VBW 2.4 MHz
Span 30 MHz
#Sweep 1 ms
CF Step
5.000000 MHz
Auto
Man
Channel Power
48.59 dBm / 20 MHz
Power Spectral Density
-24.42 dBm /Hz
MSG
STATUS

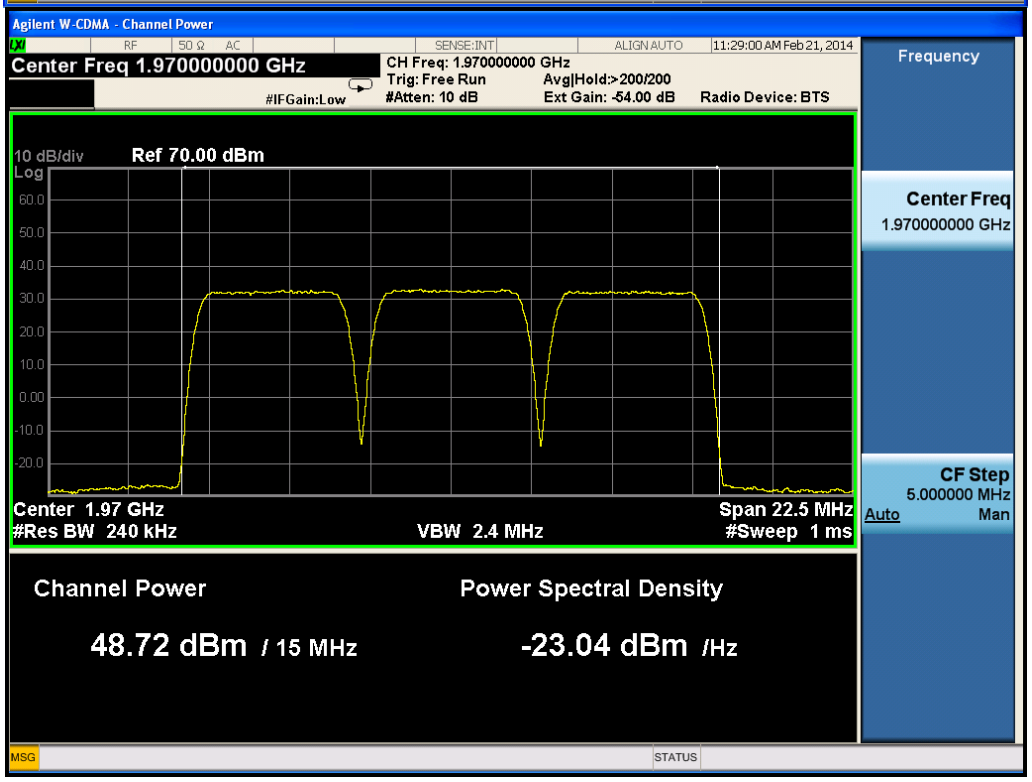

Agilent W-CDMA - Channel Power
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
09:22:37 AM Feb 21, 2014
Center Freq 1.969900000 GHz
#IFGain:Low
CH Freq: 1.969900000 GHz
Trig: Free Run
Avg|Hold:>200/200
#Atten: 10 dB
Ext Gain: -54.00 dB
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center Freq
1.969900000 GHz
Center 1.97 GHz
#Res BW 240 kHz
VBW 2.4 MHz
Span 30 MHz
#Sweep 1 ms
CF Step
5.000000 MHz
Auto
Man
Channel Power
48.71 dBm / 20 MHz
Power Spectral Density
-24.30 dBm /Hz
MSG
STATUS

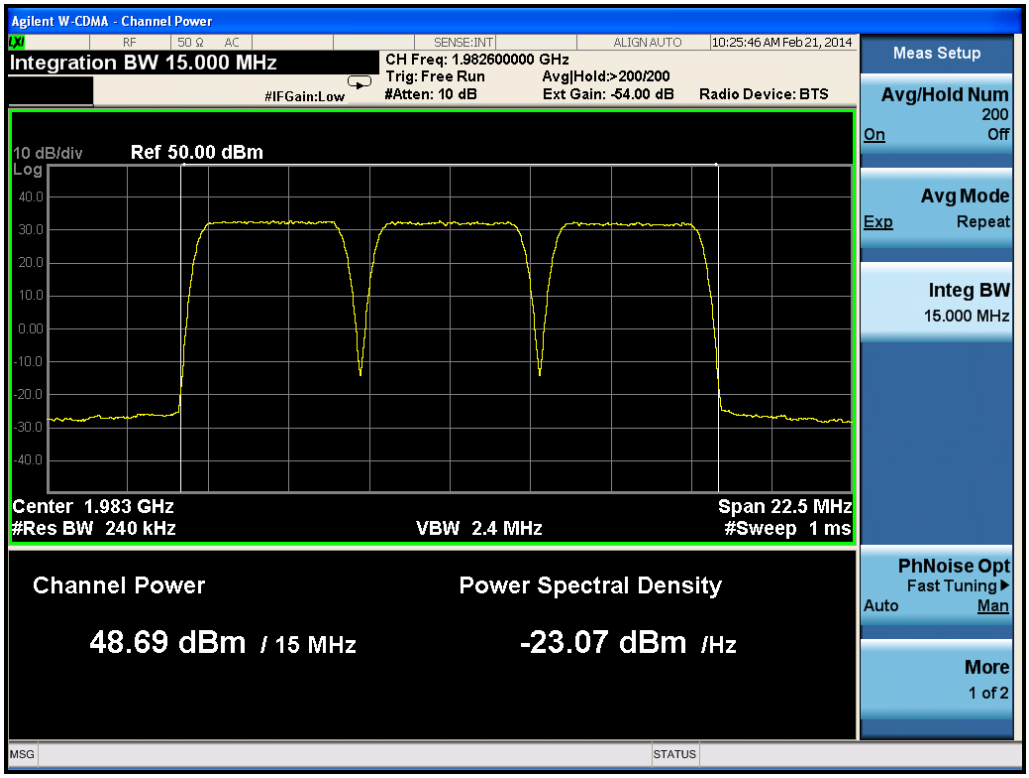


Three carriers

Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
1957.4	1952.4/1957.4/1962.4	48.66
1970	1965/1970/1975	48.72
1982.6	1977.6/1982.6/1987.6	48.69

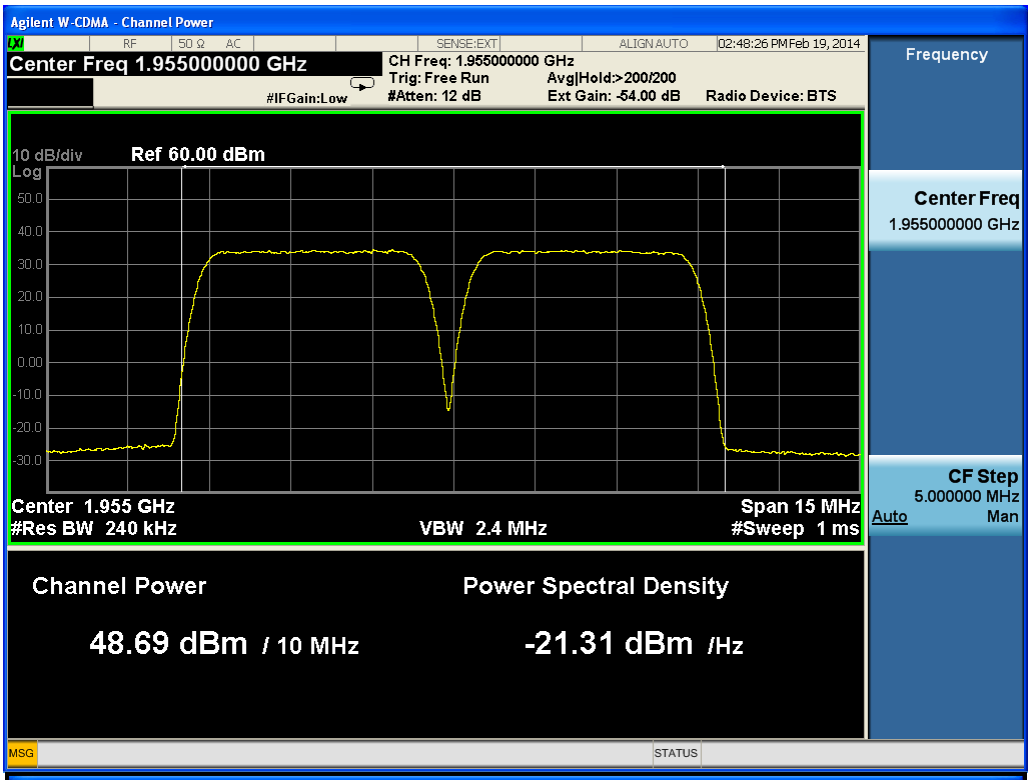

Agilent W-CDMA - Channel Power
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
02:56:11 PM Feb 19, 2014
Center Freq 1.957400000 GHz
#IFGain:Low
CH Freq: 1.957400000 GHz
Trig: Free Run
Avg|Hold:>200/200
#Atten: 12 dB
Ext Gain: -54.00 dB
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 60.00 dBm
50.0
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
Center Freq
1.957400000 GHz
Center 1.957 GHz
#Res BW 240 kHz
VBW 2.4 MHz
Span 22.5 MHz
#Sweep 1 ms
CF Step
5.000000 MHz
Auto
Man
Channel Power
48.66 dBm / 15 MHz
Power Spectral Density
-23.10 dBm /Hz
MSG
STATUS

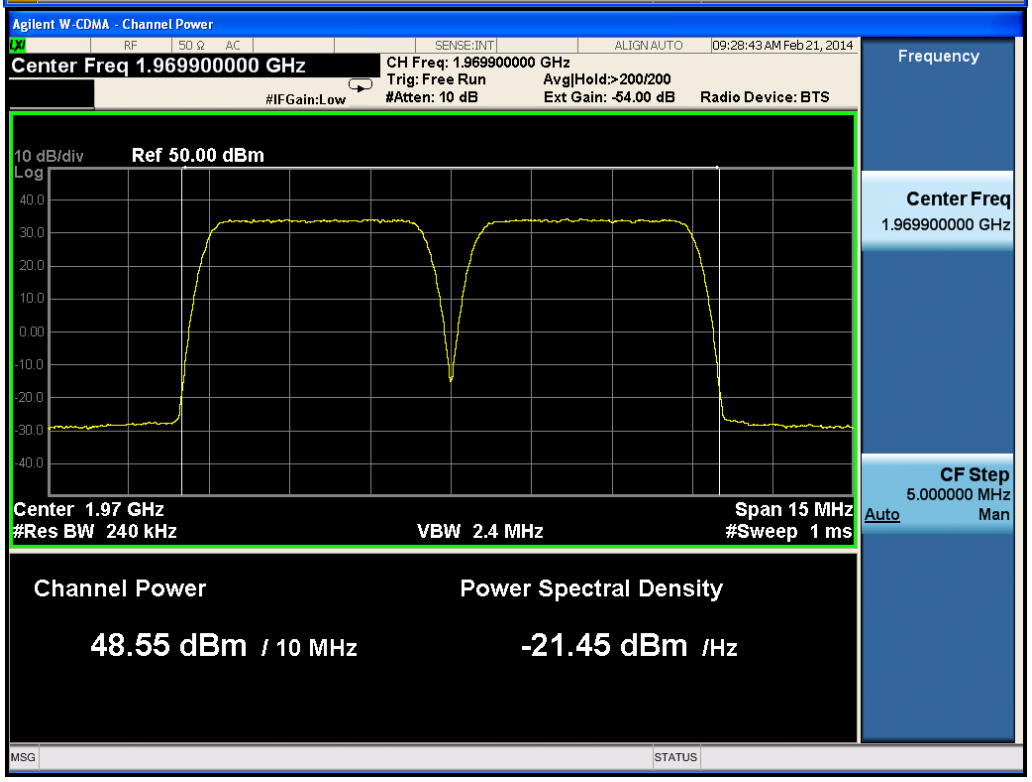

Agilent W-CDMA - Channel Power
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
11:29:00 AM Feb 21, 2014
Center Freq 1.970000000 GHz
#IFGain:Low
CH Freq: 1.970000000 GHz
Trig: Free Run
Avg|Hold:>200/200
#Atten: 10 dB
Ext Gain: -54.00 dB
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 70.00 dBm
60.0
50.0
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
Center Freq
1.970000000 GHz
Center 1.97 GHz
#Res BW 240 kHz
VBW 2.4 MHz
Span 22.5 MHz
#Sweep 1 ms
CF Step
5.000000 MHz
Auto
Man
Channel Power
48.72 dBm / 15 MHz
Power Spectral Density
-23.04 dBm /Hz
MSG
STATUS

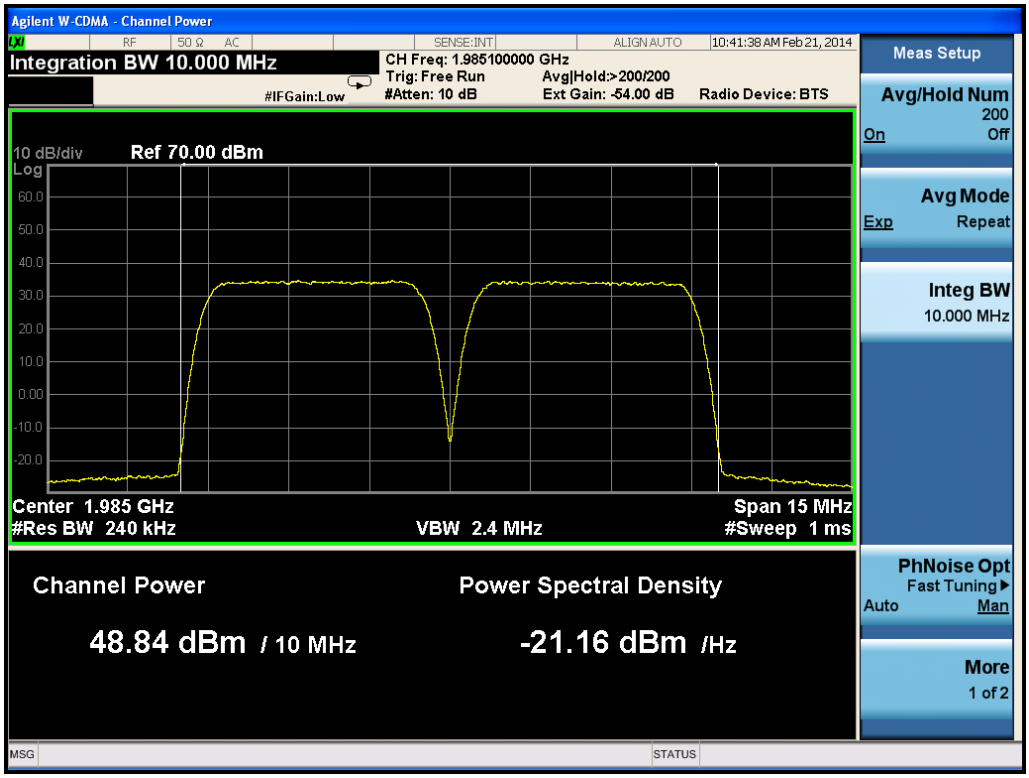


Two carriers

Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
1954.9	1952.4/1957.4	48.69
1969.9	1967.4/1972.4	48.55
1985.1	1982.6/1987.6	48.84

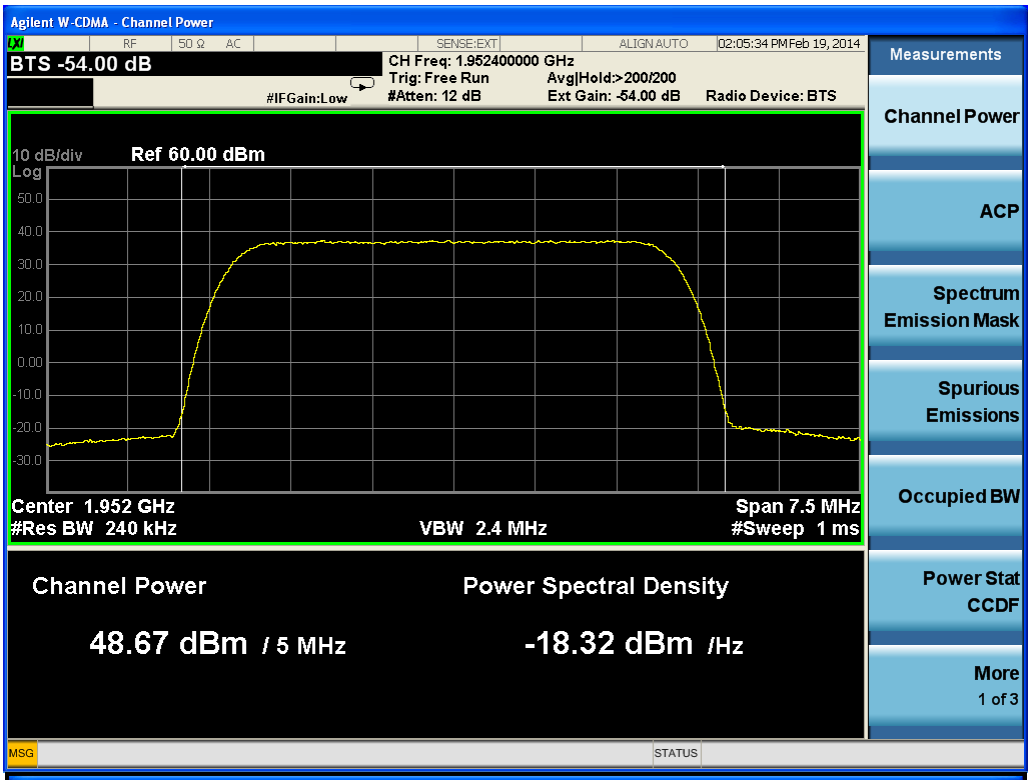

Agilent W-CDMA - Channel Power
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
02:48:26 PM Feb 19, 2014
Center Freq 1.955000000 GHz
#IFGain:Low
CH Freq: 1.955000000 GHz
Trig: Free Run
Avg|Hold:>200/200
#Atten: 12 dB
Ext Gain: -54.00 dB
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 60.00 dBm
50.0
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
Center 1.955 GHz
#Res BW 240 kHz
VBW 2.4 MHz
Span 15 MHz
#Sweep 1 ms
Center Freq
1.955000000 GHz
CF Step
5.000000 MHz
Auto
Man
Channel Power
48.69 dBm / 10 MHz
Power Spectral Density
-21.31 dBm /Hz
MSG
STATUS

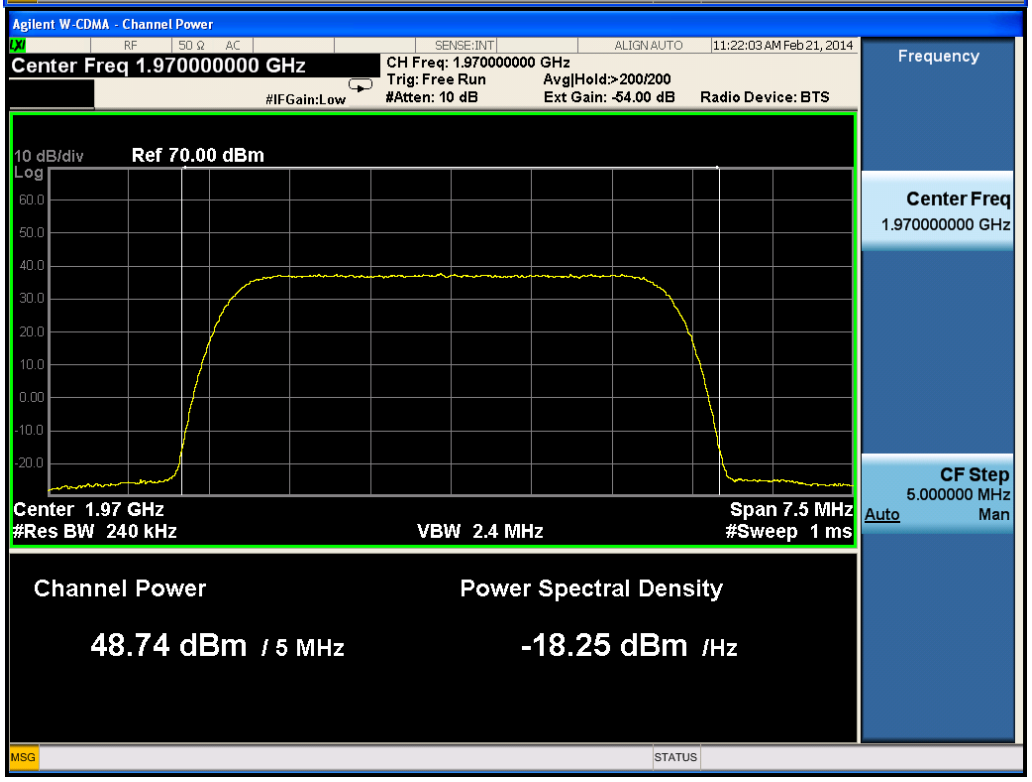

Agilent W-CDMA - Channel Power
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
09:28:43 AM Feb 21, 2014
Center Freq 1.969900000 GHz
#IFGain:Low
CH Freq: 1.969900000 GHz
Trig: Free Run
Avg|Hold:>200/200
#Atten: 10 dB
Ext Gain: -54.00 dB
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 50.00 dBm
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
Center 1.97 GHz
#Res BW 240 kHz
VBW 2.4 MHz
Span 15 MHz
#Sweep 1 ms
Center Freq
1.969900000 GHz
CF Step
5.000000 MHz
Auto
Man
Channel Power
48.55 dBm / 10 MHz
Power Spectral Density
-21.45 dBm /Hz
MSG
STATUS

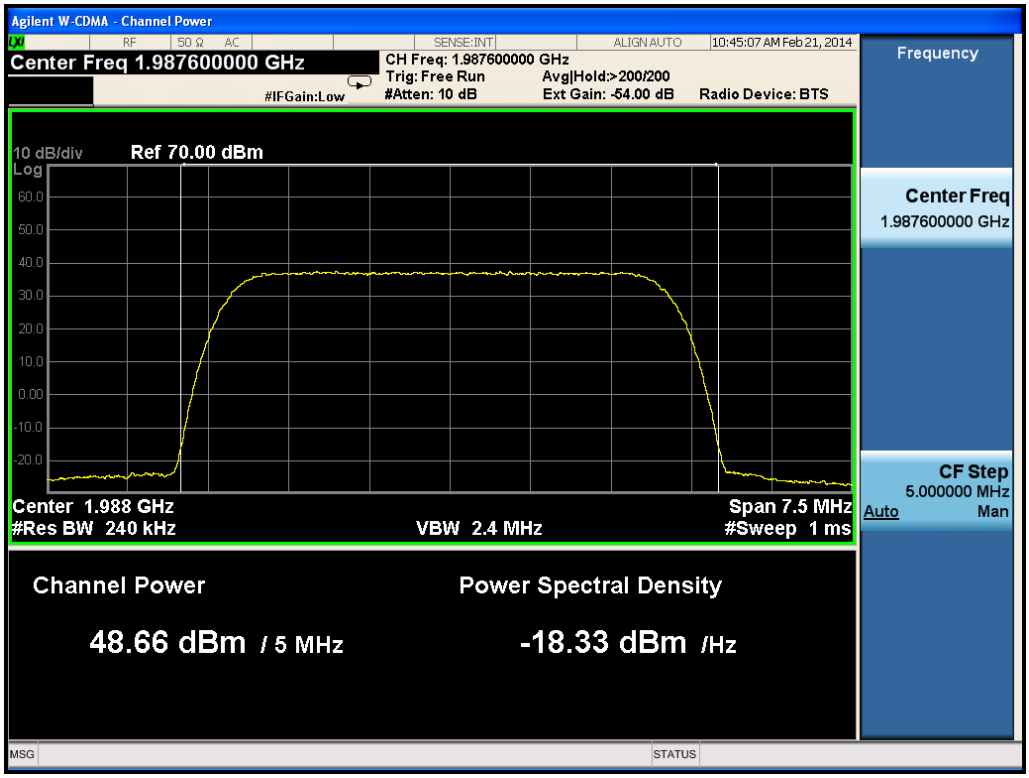


One carrier

Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
1952.4	1952.4	48.67
1970	1970	48.74
1987.6	1987.6	48.66


Agilent W-CDMA - Channel Power
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
02:05:34 PM Feb 19, 2014
BTS -54.00 dB
#IFGain:Low
CH Freq: 1.952400000 GHz
Trig: Free Run
Avg|Hold:>200/200
#Atten: 12 dB
Ext Gain: -54.00 dB
Radio Device: BTS
Measurements
Channel Power
ACP
Spectrum Emission Mask
Spurious Emissions
Occupied BW
Power Stat CCDF
More 1 of 3
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 1.952 GHz
#Res BW 240 kHz
VBW 2.4 MHz
Span 7.5 MHz
#Sweep 1 ms
Channel Power
48.67 dBm / 5 MHz
Power Spectral Density
-18.32 dBm /Hz
MSG
STATUS


Agilent W-CDMA - Channel Power
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
11:22:03 AM Feb 21, 2014
Center Freq 1.970000000 GHz
#IFGain:Low
CH Freq: 1.970000000 GHz
Trig: Free Run
Avg|Hold:>200/200
#Atten: 10 dB
Ext Gain: -54.00 dB
Radio Device: BTS
Frequency
Center Freq 1.970000000 GHz
CF Step 5.000000 MHz
Auto
Man
10 dB/div
Log
Ref 70.00 dBm
60.0
50.0
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
Center 1.97 GHz
#Res BW 240 kHz
VBW 2.4 MHz
Span 7.5 MHz
#Sweep 1 ms
Channel Power
48.74 dBm / 5 MHz
Power Spectral Density
-18.25 dBm /Hz
MSG
STATUS


Agilent W-CDMA - Channel Power
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:45:07 AM Feb 21, 2014
Center Freq 1.987600000 GHz
CH Freq: 1.987600000 GHz
Trig: Free Run
Avg|Hold:>200/200
#IFGain:Low
#Atten: 10 dB
Ext Gain: -54.00 dB
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 70.00 dBm
60.0
50.0
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
Center Freq
1.987600000 GHz
CF Step
5.000000 MHz
Auto
Man
Center 1.988 GHz
#Res BW 240 kHz
VBW 2.4 MHz
Span 7.5 MHz
#Sweep 1 ms
Channel Power
48.66 dBm / 5 MHz
Power Spectral Density
-18.33 dBm /Hz
MSG
STATUS

3.2 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=$[(ERP+2.15\ dB)/ 4\pi S]^{1/2}$

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 100,000MHz, and the Maximum $S=1.0mW/cm^2$, so R=3.61m.
This equipment should be installed and operated with minimum distance 3.61m between the radiator& your body.

Test Result: pass

3.3 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	MY51160170	2014-6-16	2015-6-16
Atten	40dB Attenuator	ATSI150-4-40	11300100204204	2014-4-8	2015-4-8
Forstar	Forstar RF Cable	002	1034	2014-4-8	2015-4-8

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

Test Procedure

UMTS digital mode is used by EUT.

Test Data Environmental Conditions

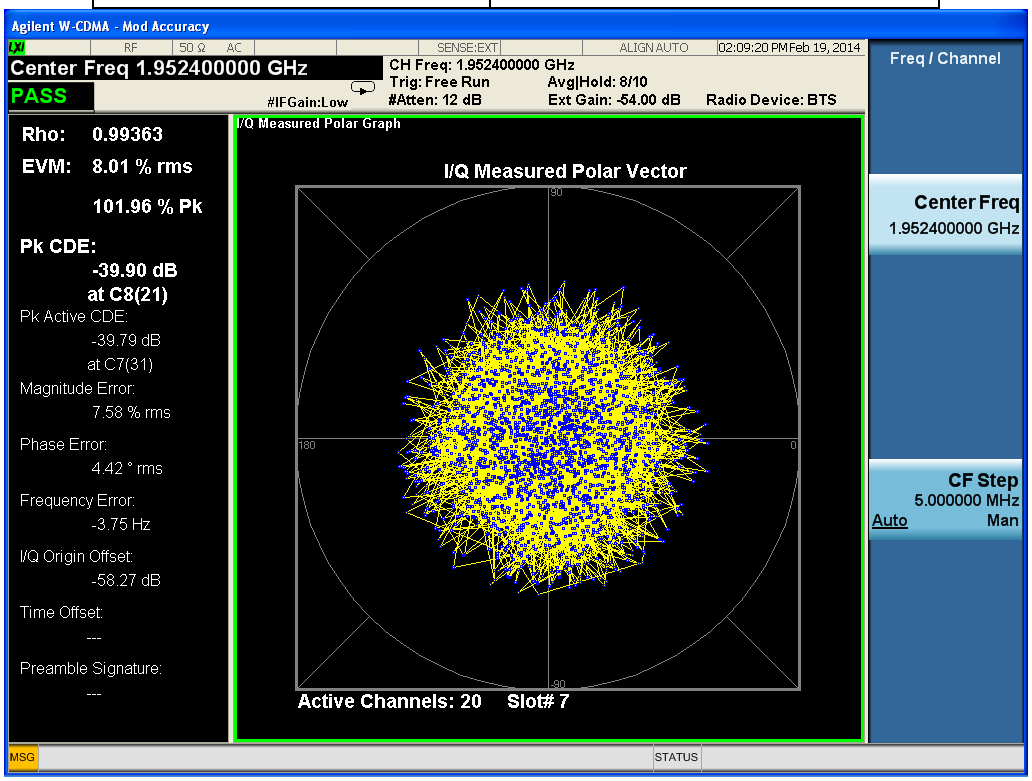
Temperature:	20 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

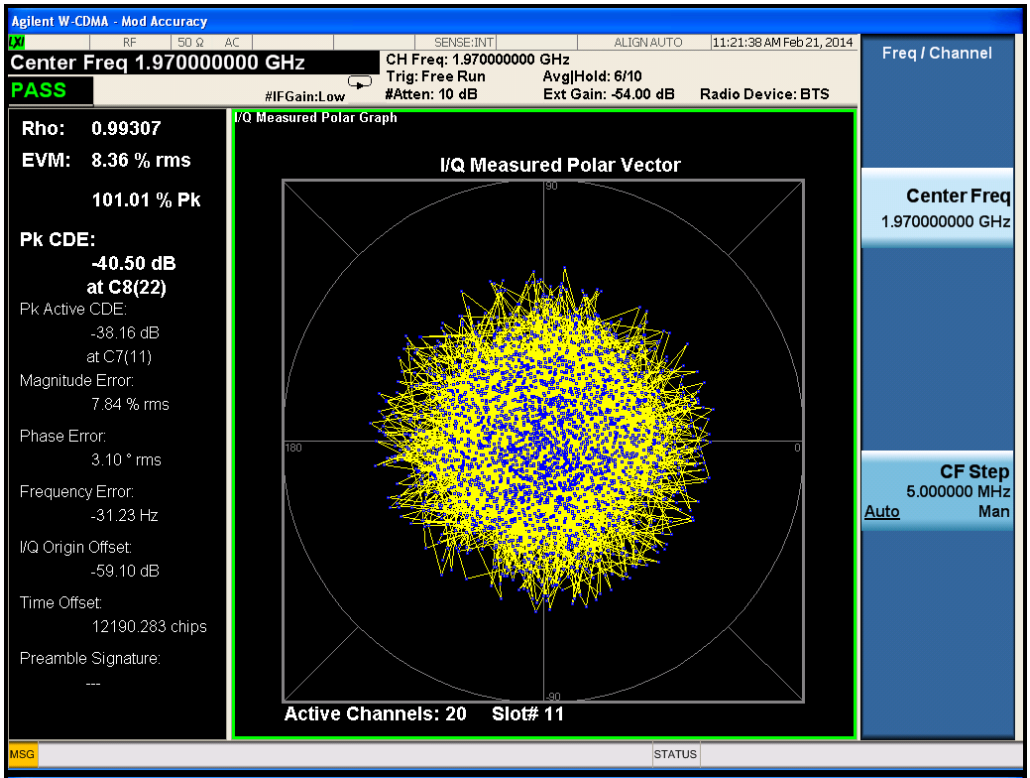
Test Result: Pass

Test Mode: Transmitting UMTS

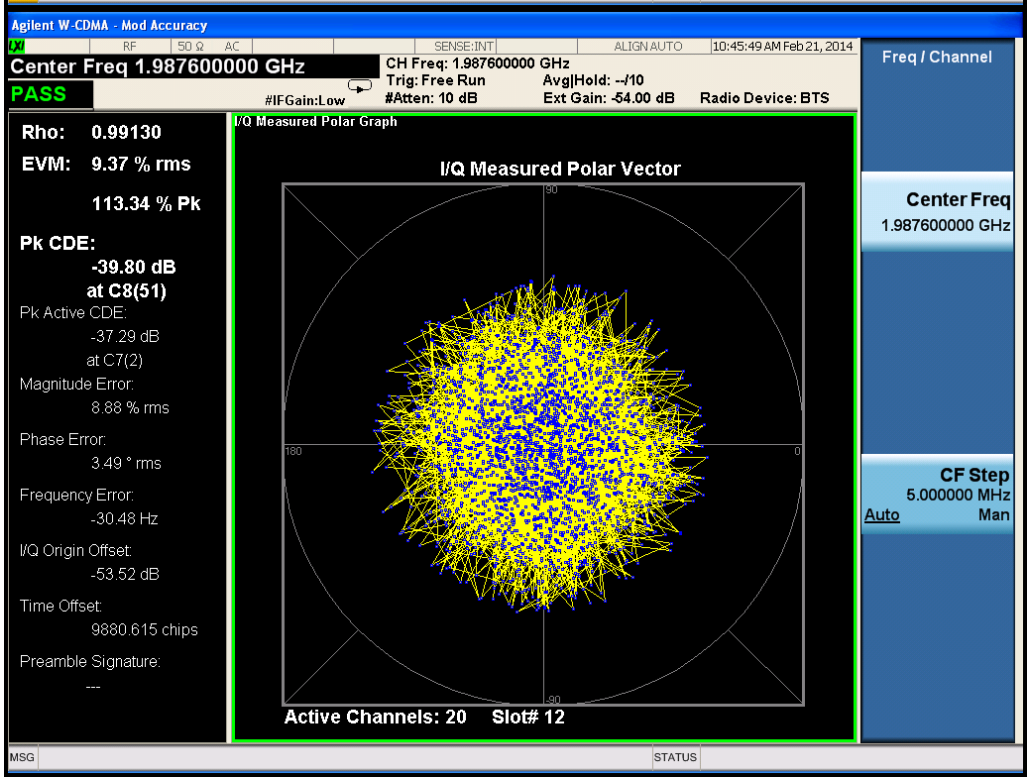
Test Data:

Frequency (MHz)	EVM(%rms)
1952.4	8.01
1970	8.36
1987.6	9.37




Agilent W-CDMA - Mod Accuracy
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
11:21:38 AM Feb 21, 2014
Center Freq 1.970000000 GHz
PASS
#IFGain:Low
CH Freq: 1.970000000 GHz
Trig: Free Run
Avg|Hold: 6/10
#Atten: 10 dB
Ext Gain: -54.00 dB
Radio Device: BTS
Freq / Channel
Rho: 0.99307
EVM: 8.36 % rms
101.01 % Pk
Pk CDE:
-40.50 dB
at C8(22)
Pk Active CDE:
-38.16 dB
at C7(11)
Magnitude Error:
7.84 % rms
Phase Error:
3.10 ° rms
Frequency Error:
-31.23 Hz
I/Q Origin Offset:
-59.10 dB
Time Offset:
12190.283 chips
Preamble Signature:

I/Q Measured Polar Graph
I/Q Measured Polar Vector
Active Channels: 20 Slot# 11
Center Freq
1.970000000 GHz
CF Step
5.000000 MHz
Auto Man
MSG
STATUS


Agilent W-CDMA - Mod Accuracy
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
10:45:49 AM Feb 21, 2014
Center Freq 1.987600000 GHz
PASS
#IFGain:Low
CH Freq: 1.987600000 GHz
Trig: Free Run
Avg|Hold: --/10
#Atten: 10 dB
Ext Gain: -54.00 dB
Radio Device: BTS
Freq / Channel
Rho: 0.99130
EVM: 9.37 % rms
113.34 % Pk
Pk CDE:
-39.80 dB
at C8(51)
Pk Active CDE:
-37.29 dB
at C7(2)
Magnitude Error:
8.88 % rms
Phase Error:
3.49 ° rms
Frequency Error:
-30.48 Hz
I/Q Origin Offset:
-53.52 dB
Time Offset:
9880.615 chips
Preamble Signature:

I/Q Measured Polar Graph
I/Q Measured Polar Vector
Active Channels: 20 Slot# 12
Center Freq
1.987600000 GHz
CF Step
5.000000 MHz
Auto Man
MSG
STATUS

3.4 SPURIOUS RADIATED EMISSIONS

Applicable Standard: FCC CFR 47, §2.1053

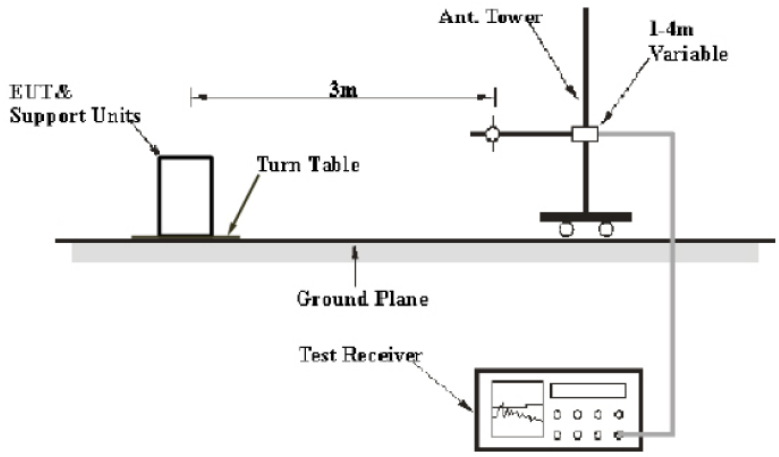
Test Equipment List and Details

Manufacturer	Equipment	Model	Serial Number	Last Cal.	Cal. Interval
R&S	SIGNAL GENERATOR	SMR20	A00017351	2014-09-09	1 year
Albatross	Anechoic Chamber	3m Site	A00017354	2014-12-01	1 year
R&S	EMI Test Receiver	ESIB26	100058	2014-10-13	1 year
R&S	Ultra Breitband Antennas	HL562	100022	2014-07-29	1 year
R&S	Double-Ridged Waveguide Horn Antenna	HF906	100032	2014-07-14	1 year
R&S	Double-Ridged Waveguide Horn Antenna	HF906	100446	2014-07-14	1 year
SCHWARZ-BECK	Biconical Antenna	VUBA9117	9117-122	2014-07-14	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

Frequency (GHz)	Polar H/V	Corr. (dB)	Effective radiated power （dBm）	Dipole Antenna	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
55.270541	V	-79.2	-76.6	2.15	-78.75	-13	65.75
57.214429	V	-80.1	-77.1	2.15	-79.25	-13	66.25
92.204409	V	-81.3	-77.4	2.15	-79.55	-13	66.55
142.745491	V	-85.4	-73.7	2.15	-75.85	-13	62.85
271.042084	V	-82.8	-74.1	2.15	-76.25	-13	63.25
731.743487	V	-74.2	-69.6	2.15	-71.75	-13	58.75
996.112224	V	-70.9	-65.6	2.15	-67.75	-13	54.75
1300.601202	V	-67.8	-52.7	2.15	-54.85	-13	41.85
1949.899800	V	-63.3	-29.9	2.15	-32.05	-13	19.05
2983.967936	V	-55.7	-39.5	2.15	-41.65	-13	28.65
5825.651303	V	-94.1	-50.2	2.15	-52.35	-13	39.35
17969.939880	V	-67.3	-34.9	2.15	-37.05	-13	24.05
55.270541	H	-80.6	-77.6	2.15	-79.75	-13	66.75
57.214429	H	-81.9	-78.8	2.15	-80.95	-13	67.95
138.857715	H	-89.4	-72.0	2.15	-74.15	-13	61.15
199.118236	H	-84.6	-72.0	2.15	-74.15	-13	61.15
220.501002	H	-84.5	-73.8	2.15	-75.95	-13	62.95
593.727455	H	-75.3	-70.6	2.15	-72.75	-13	59.75
968.897796	H	-69.0	-64.2	2.15	-66.35	-13	53.35
1372.745491	H	-67.0	-52.6	2.15	-54.75	-13	41.75
1949.899800	H	-63.5	-22.8	2.15	-24.95	-13	11.95
2987.975952	H	-55.9	-39.3	2.15	-41.45	-13	28.45
3871.743487	H	-97.5	-52.4	2.15	-54.55	-13	41.55
5825.651303	H	-94.5	-50.9	2.15	-53.05	-13	40.05
6937.875752	H	-90.7	-50.5	2.15	-52.65	-13	39.65
17519.038076	H	-66.9	-35.5	2.15	-37.65	-13	24.65

Radiation emission spurious

3.5 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.

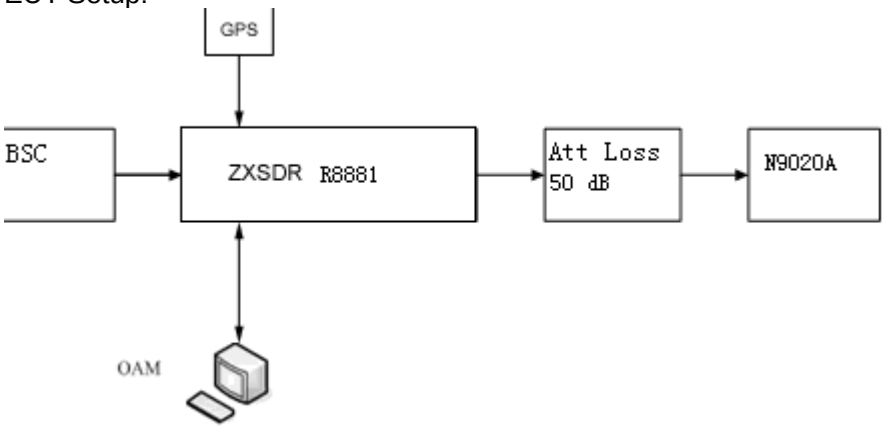
Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY51160170	2014-6-16	2015-6-16
Atten	40dB Attenuator	ATSI150-4-40	11300100204204	2014-4-8	2015-4-8
Forstar	Forstar RF Cable	002	1034	2014-4-8	2015-4-8

*__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)=50dB, Cable Loss (dB)=4dB.

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

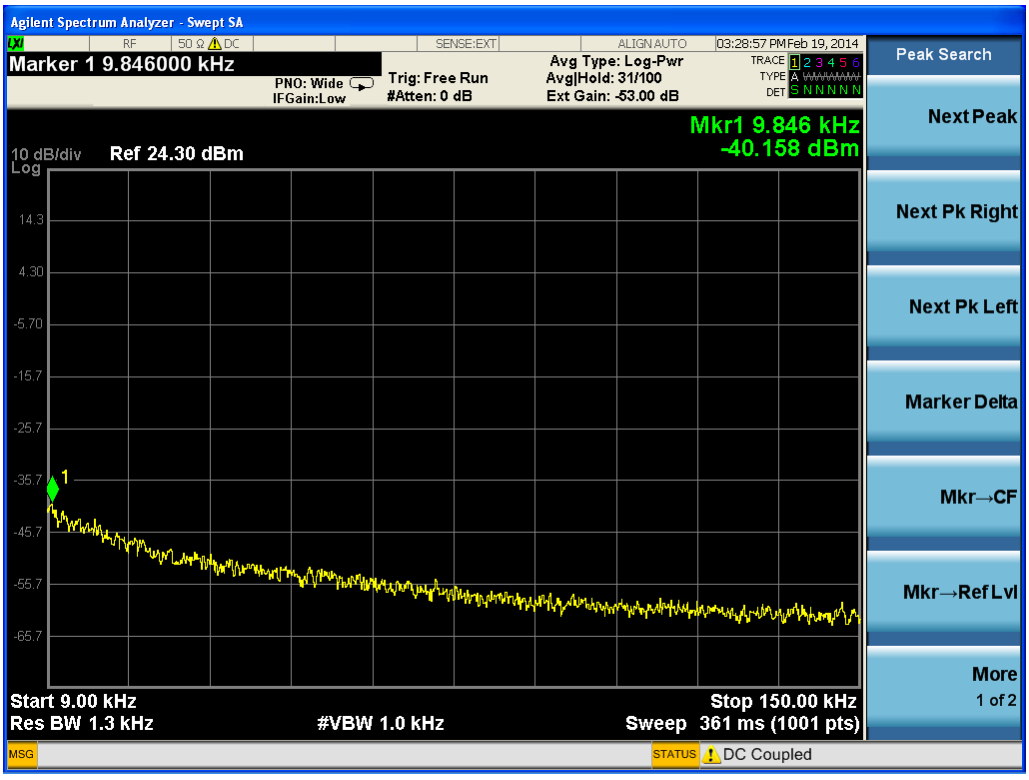
Temperature:	20 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

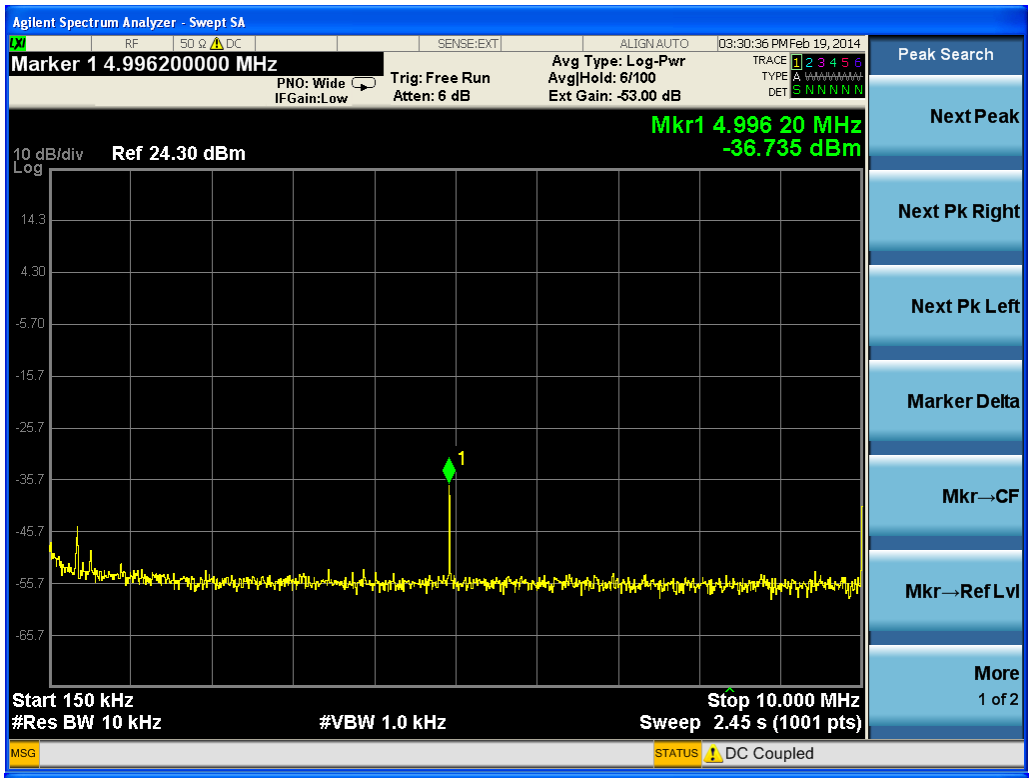
Test Result: Pass

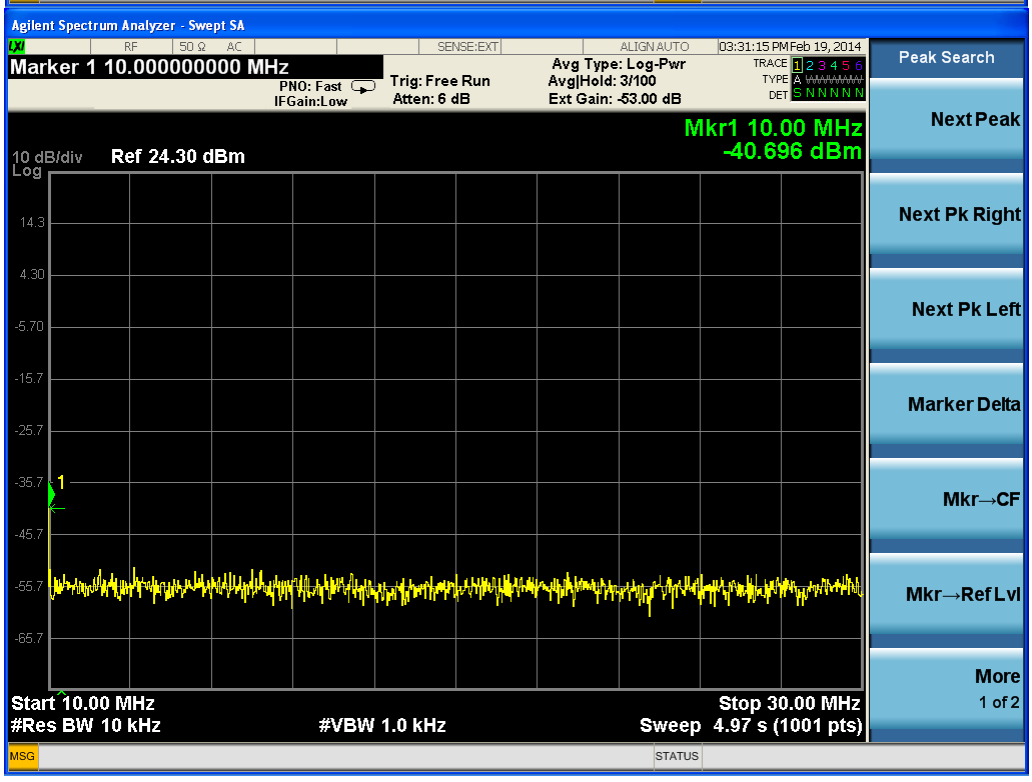
Test Mode: Transmitting UMTS

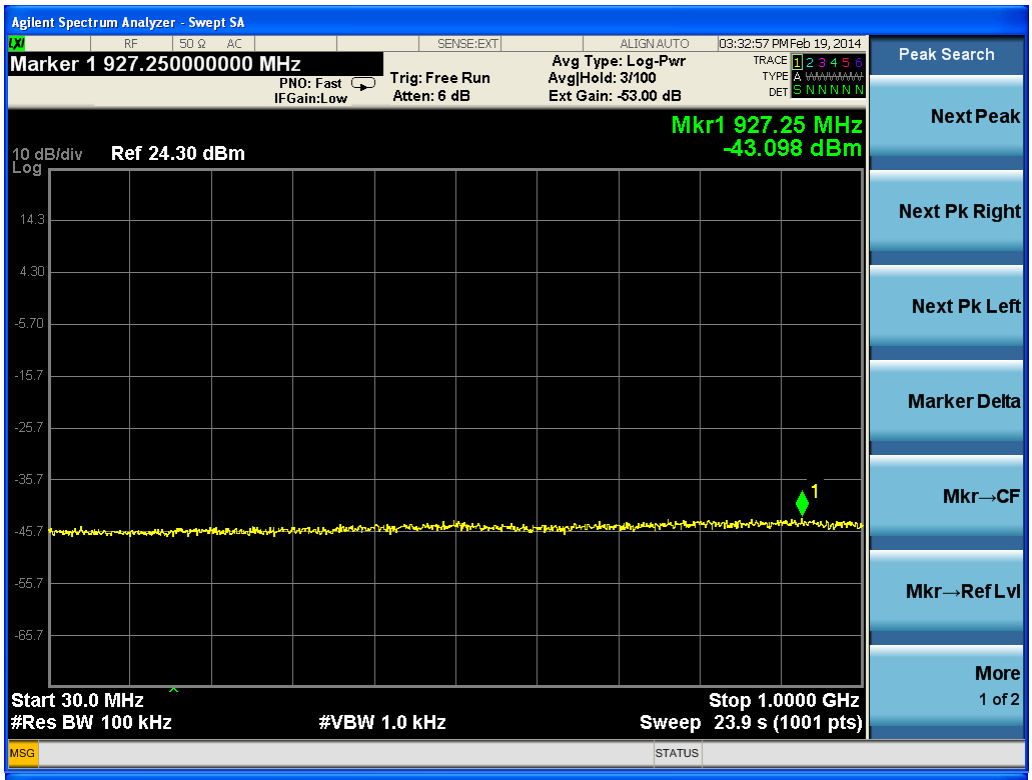
Test Data:

Four Carriers (working in bottom frequency)

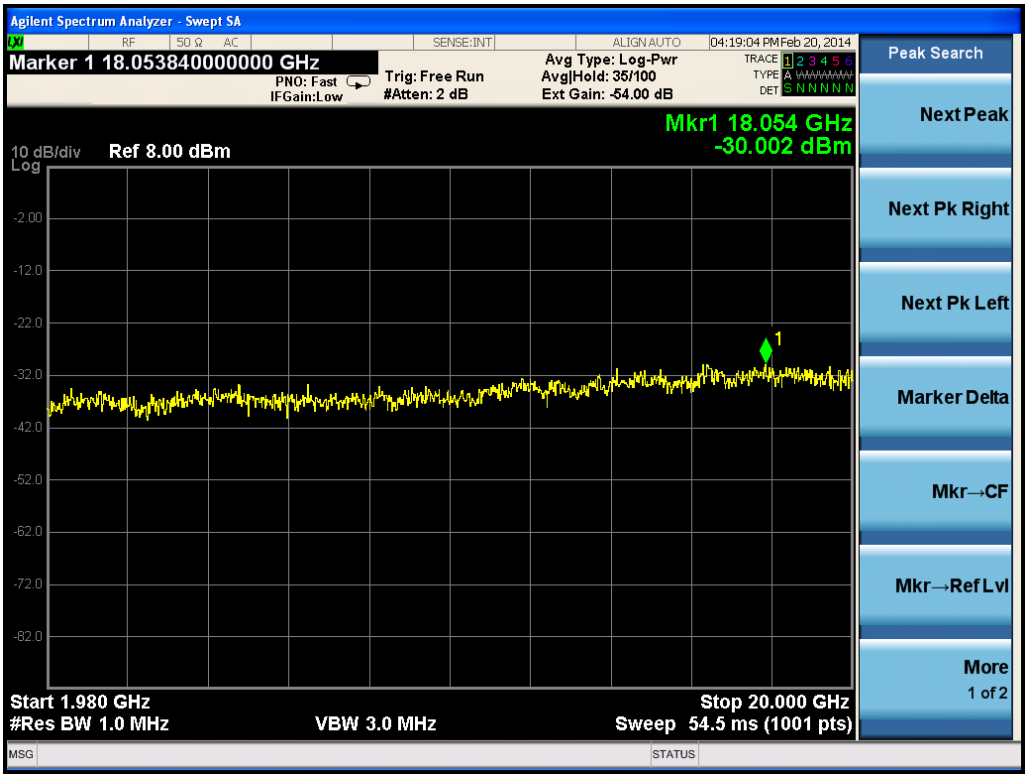



Agilent Spectrum Analyzer - Swept SA
RF
50 Ω DC
SENSE:EXT
ALIGN AUTO
03:30:36 PM Feb 19, 2014
Marker 1 4.996200000 MHz
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 6/100
Ext Gain: -53.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 4.996 20 MHz
-36.735 dBm
10 dB/div
Log
Ref 24.30 dBm
14.3
4.30
-5.70
-15.7
-25.7
-35.7
-45.7
-55.7
-65.7
Start 150 kHz
#Res BW 10 kHz
#VBW 1.0 kHz
Stop 10.000 MHz
Sweep 2.45 s (1001 pts)
MSG
STATUS
DC Coupled
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

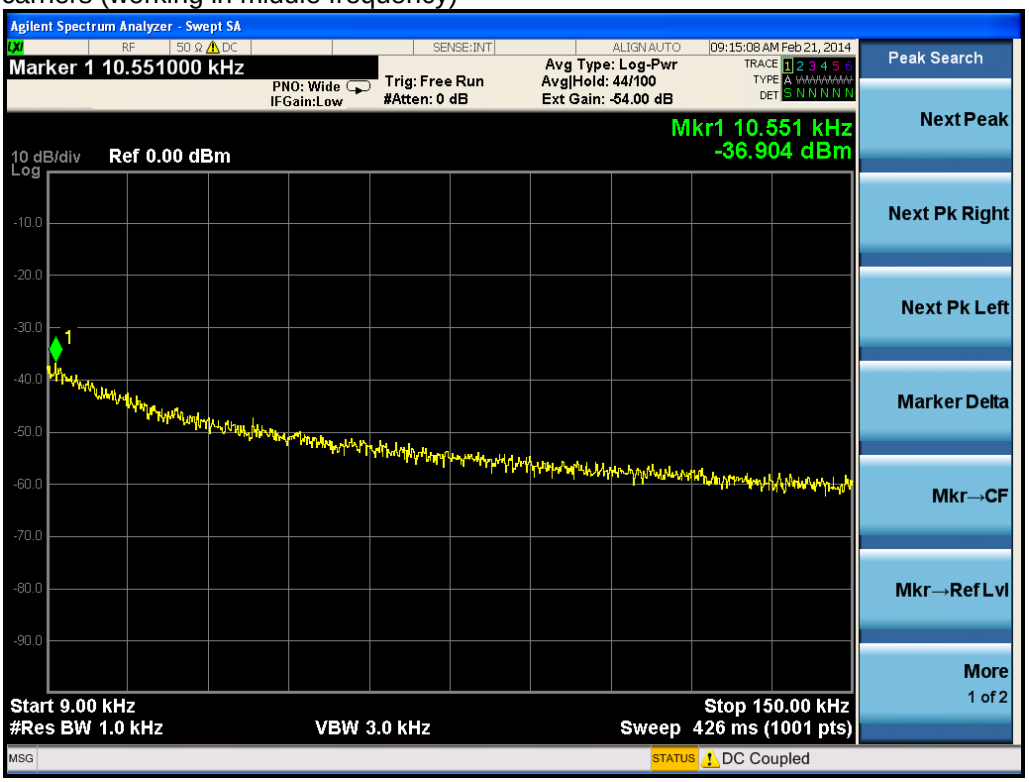

Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:EXT
ALIGN AUTO
03:31:15 PM Feb 19, 2014
Marker 1 10.000000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 3/100
Ext Gain: -53.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 10.00 MHz
-40.696 dBm
10 dB/div
Log
Ref 24.30 dBm
14.3
4.30
-5.70
-15.7
-25.7
-35.7
-45.7
-55.7
-65.7
Start 10.00 MHz
#Res BW 10 kHz
#VBW 1.0 kHz
Stop 30.00 MHz
Sweep 4.97 s (1001 pts)
MSG
STATUS
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

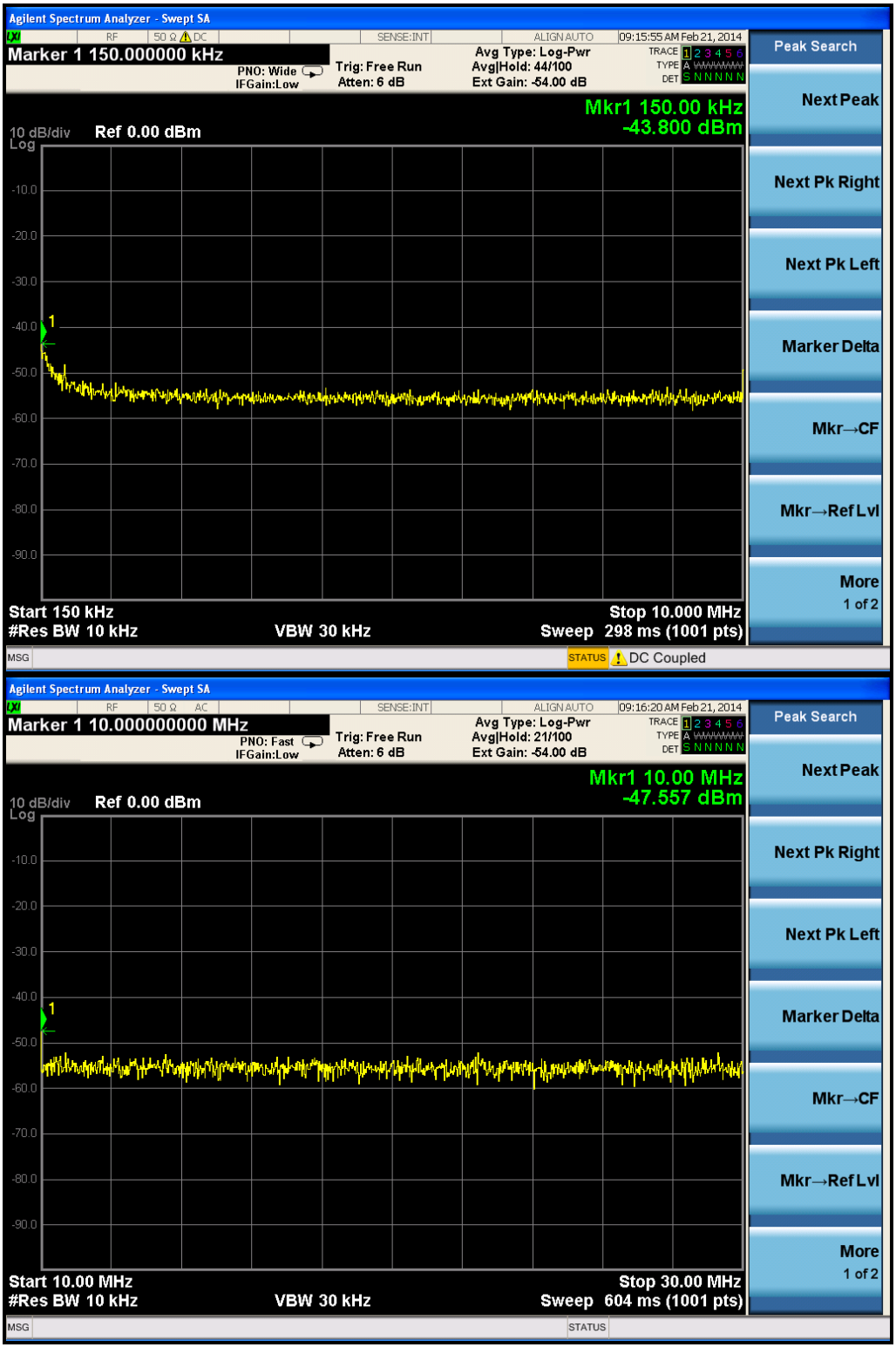

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
03:32:57 PM Feb 19, 2014
Marker 1 927.250000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 3/100
Ext Gain: -53.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 927.25 MHz
-43.098 dBm
10 dB/div
Log
Ref 24.30 dBm
14.3
4.30
-5.70
-15.7
-25.7
-35.7
-45.7
-55.7
-65.7
Start 30.0 MHz
#Res BW 100 kHz
#VBW 1.0 kHz
Stop 1.0000 GHz
Sweep 23.9 s (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

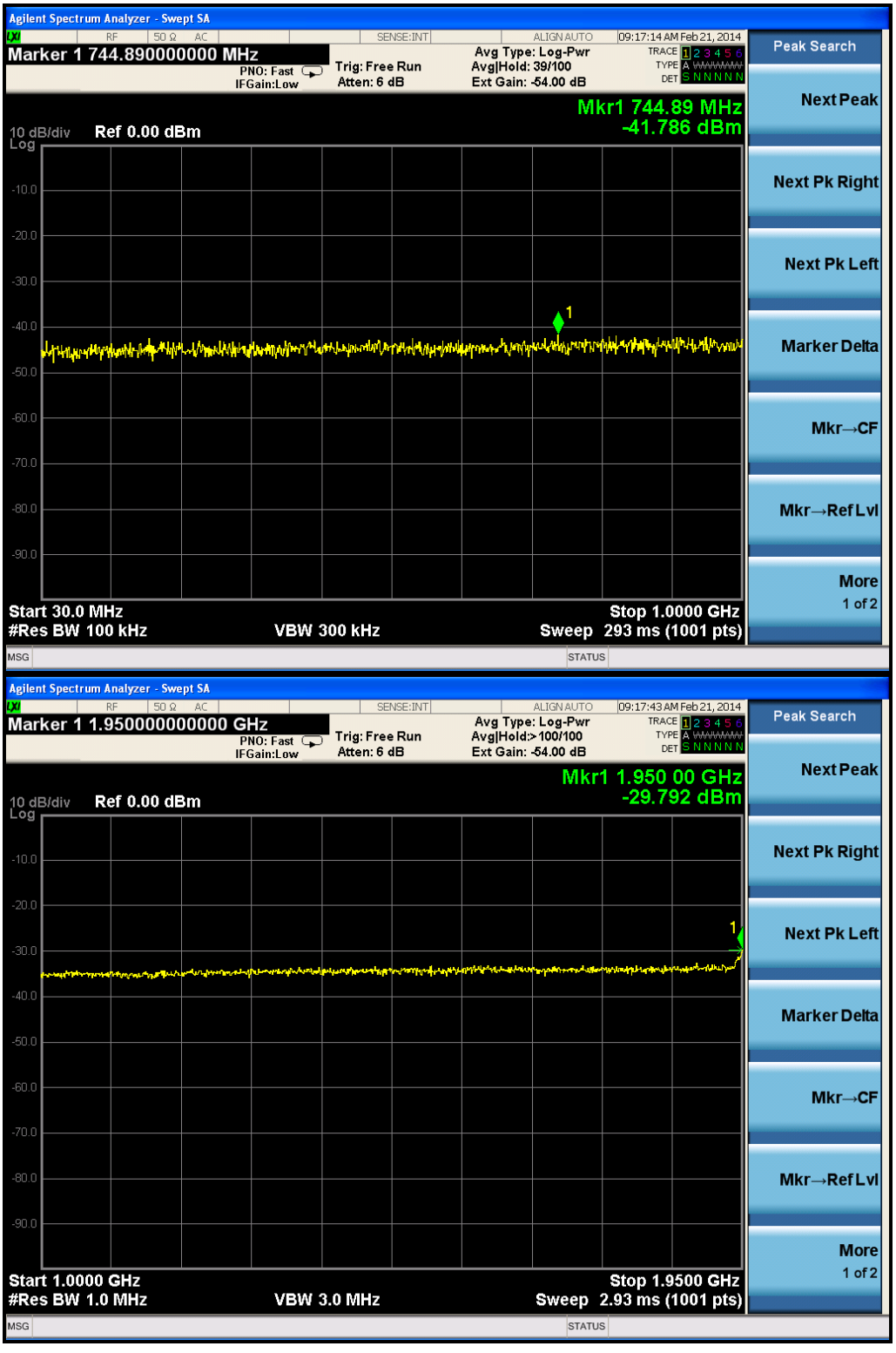

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
03:33:30 PM Feb 19, 2014
Marker 1 1.940000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 5/100
Ext Gain: -53.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 1.940 00 GHz
-28.250 dBm
10 dB/div
Log
Ref 24.30 dBm
14.3
4.30
-5.70
-15.7
-25.7
-35.7
-45.7
-55.7
-65.7
Start 1.0000 GHz
#Res BW 1.0 MHz
#VBW 1.0 kHz
Stop 1.9400 GHz
Sweep 2.32 s (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

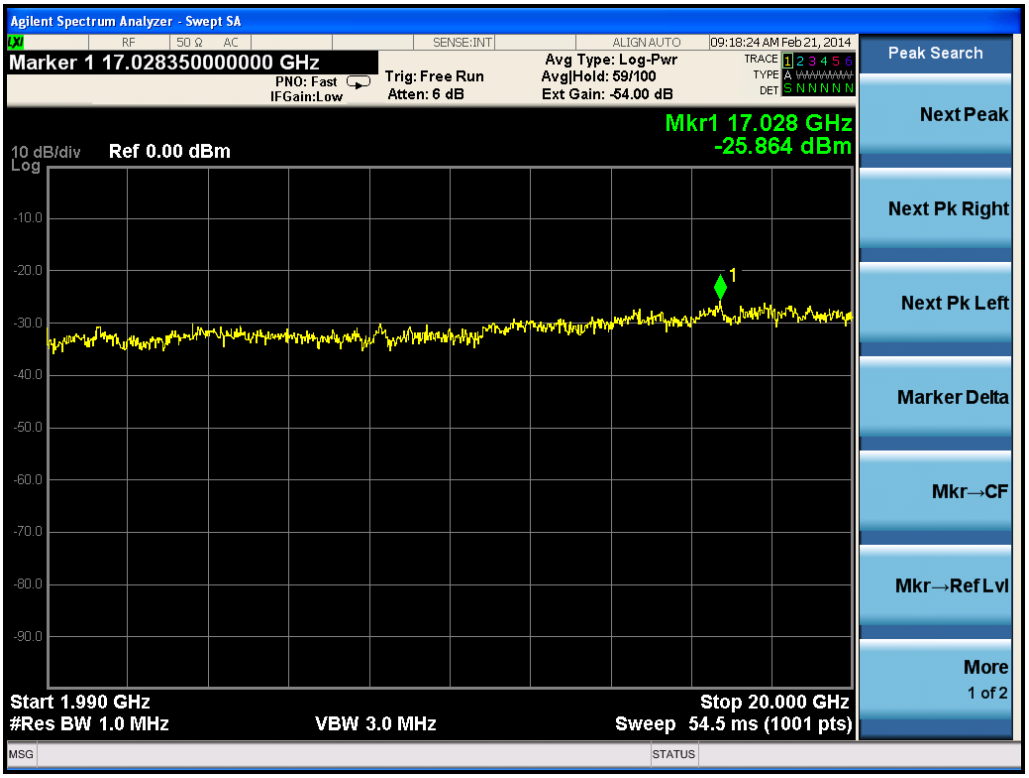


Four carriers (working in middle frequency)

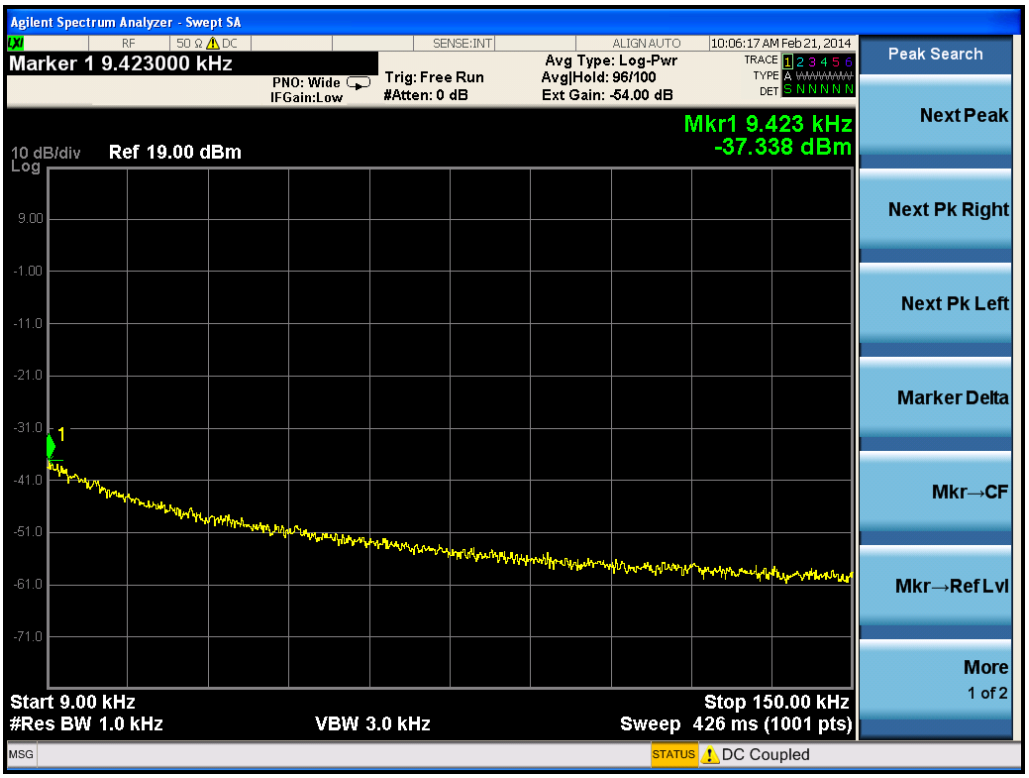


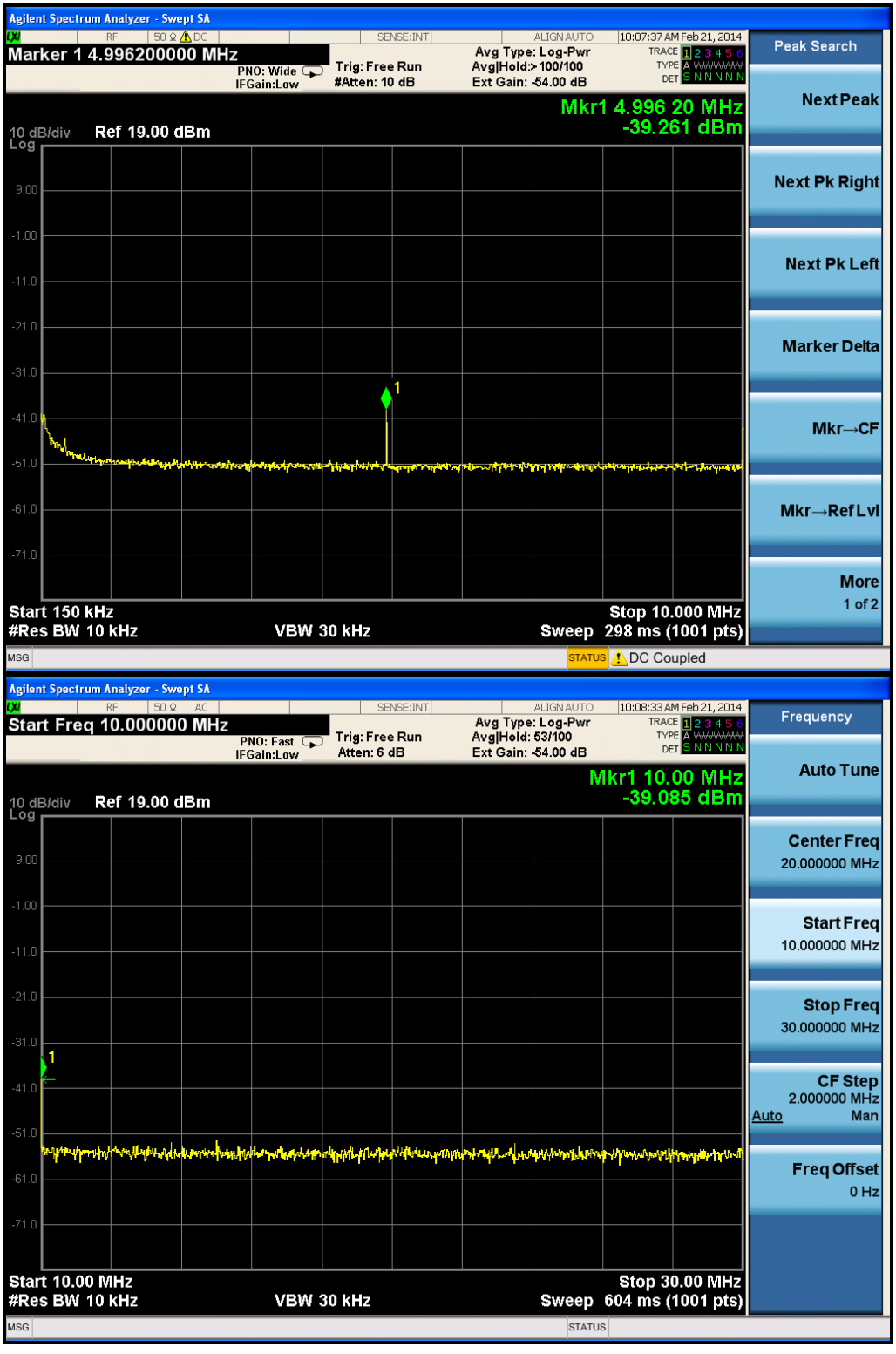

Agilent Spectrum Analyzer - Swept SA
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
09:15:55 AM Feb 21, 2014
Marker 1 150.000000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 44/100
Ext Gain: -54.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 150.00 kHz
-43.800 dBm
10 dB/div
Log
Ref 0.00 dBm
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
1
Start 150 kHz
#Res BW 10 kHz
VBW 30 kHz
Stop 10.000 MHz
Sweep 298 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
DC Coupled
Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
09:16:20 AM Feb 21, 2014
Marker 1 10.000000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 21/100
Ext Gain: -54.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 10.00 MHz
-47.557 dBm
10 dB/div
Log
Ref 0.00 dBm
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
1
Start 10.00 MHz
#Res BW 10 kHz
VBW 30 kHz
Stop 30.00 MHz
Sweep 604 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

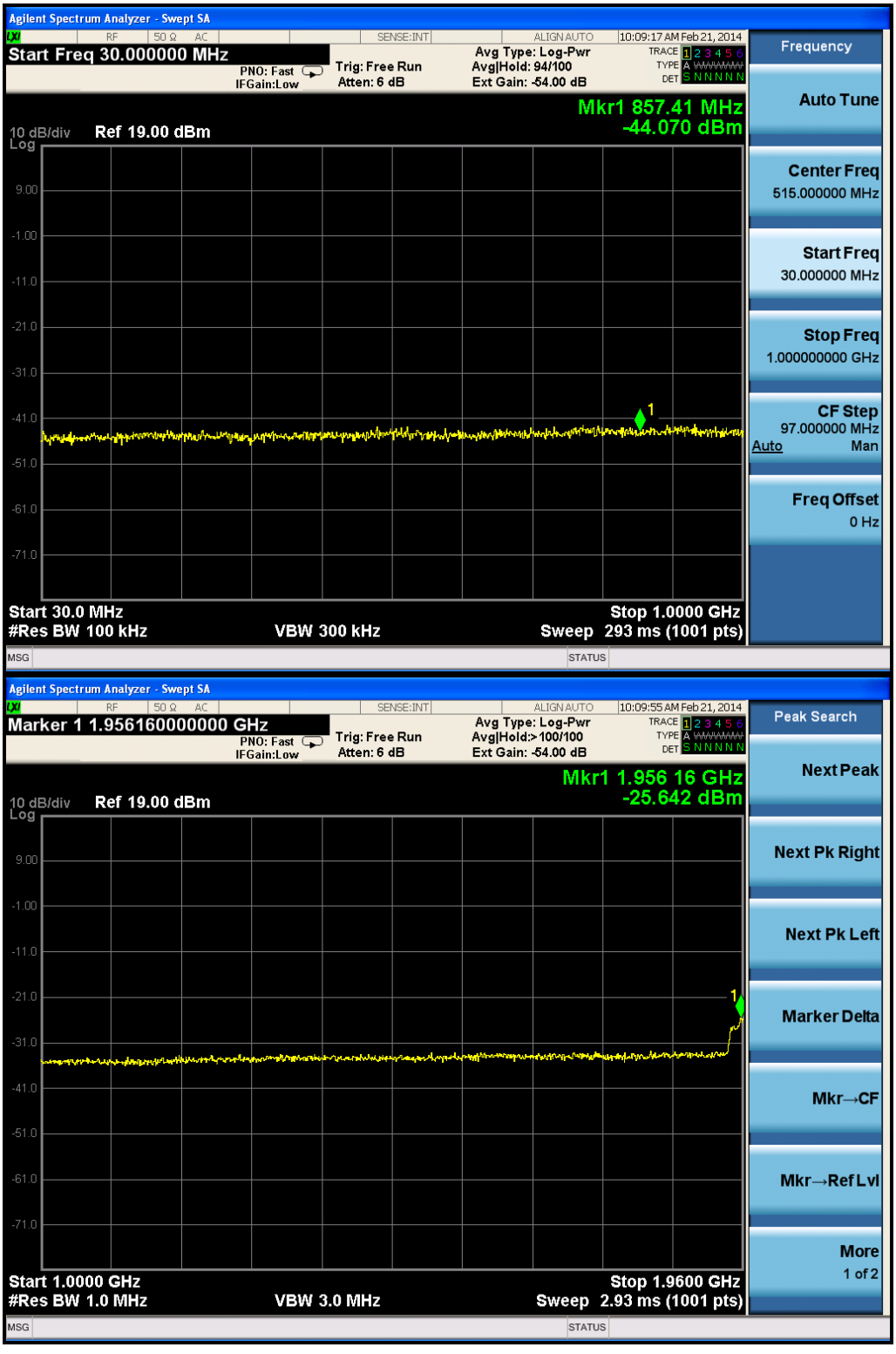

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
09:17:14 AM Feb 21, 2014
Marker 1 744.890000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 39/100
Ext Gain: -54.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 744.89 MHz
-41.786 dBm
10 dB/div
Log
Ref 0.00 dBm
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
1
Start 30.0 MHz
#Res BW 100 kHz
VBW 300 kHz
Stop 1.0000 GHz
Sweep 293 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
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
09:17:43 AM Feb 21, 2014
Marker 1 1.950000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -54.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 1.950 00 GHz
-29.792 dBm
10 dB/div
Log
Ref 0.00 dBm
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
-90.0
1
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 3.0 MHz
Stop 1.9500 GHz
Sweep 2.93 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

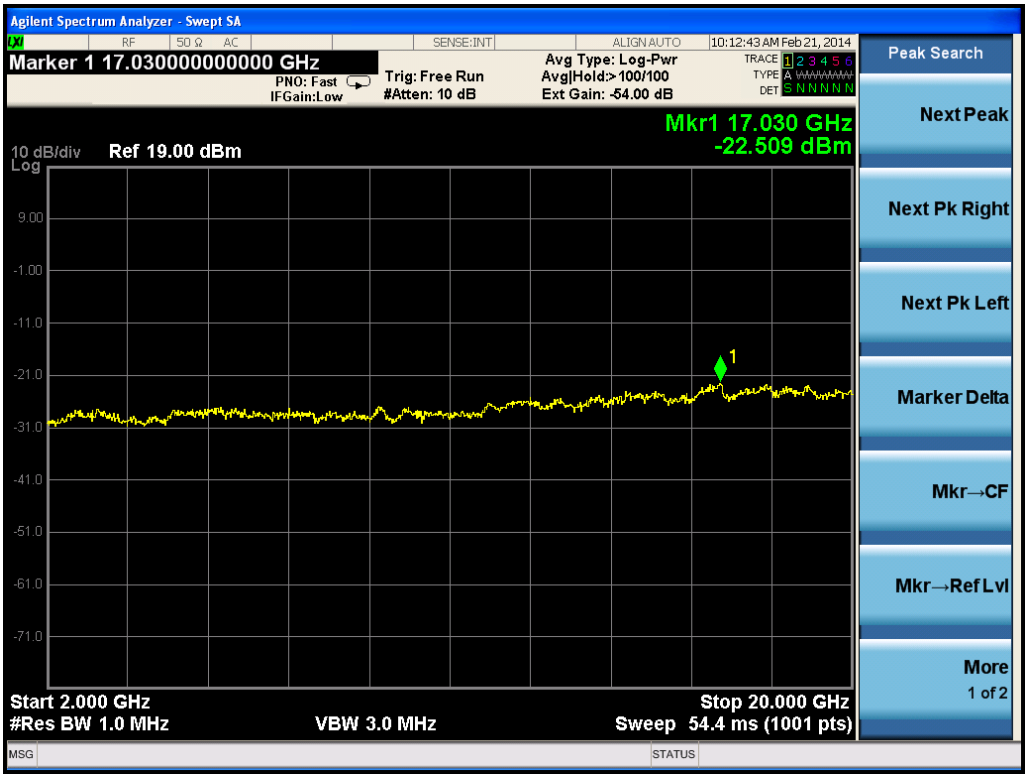


Four Carriers (working in top frequency)

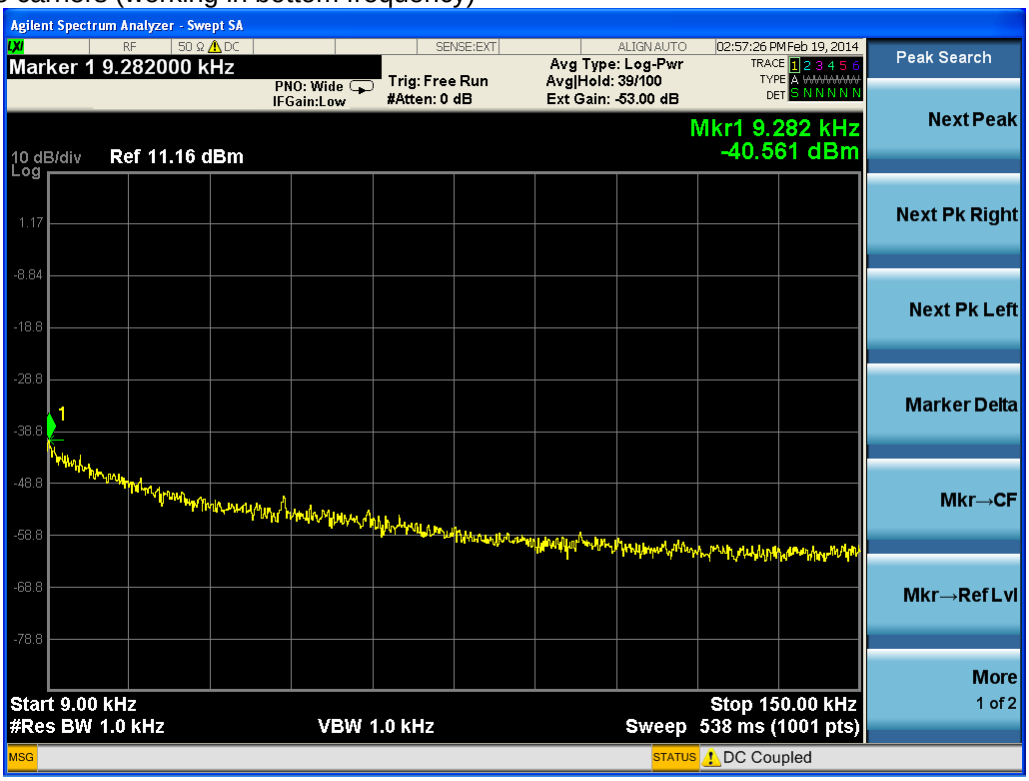


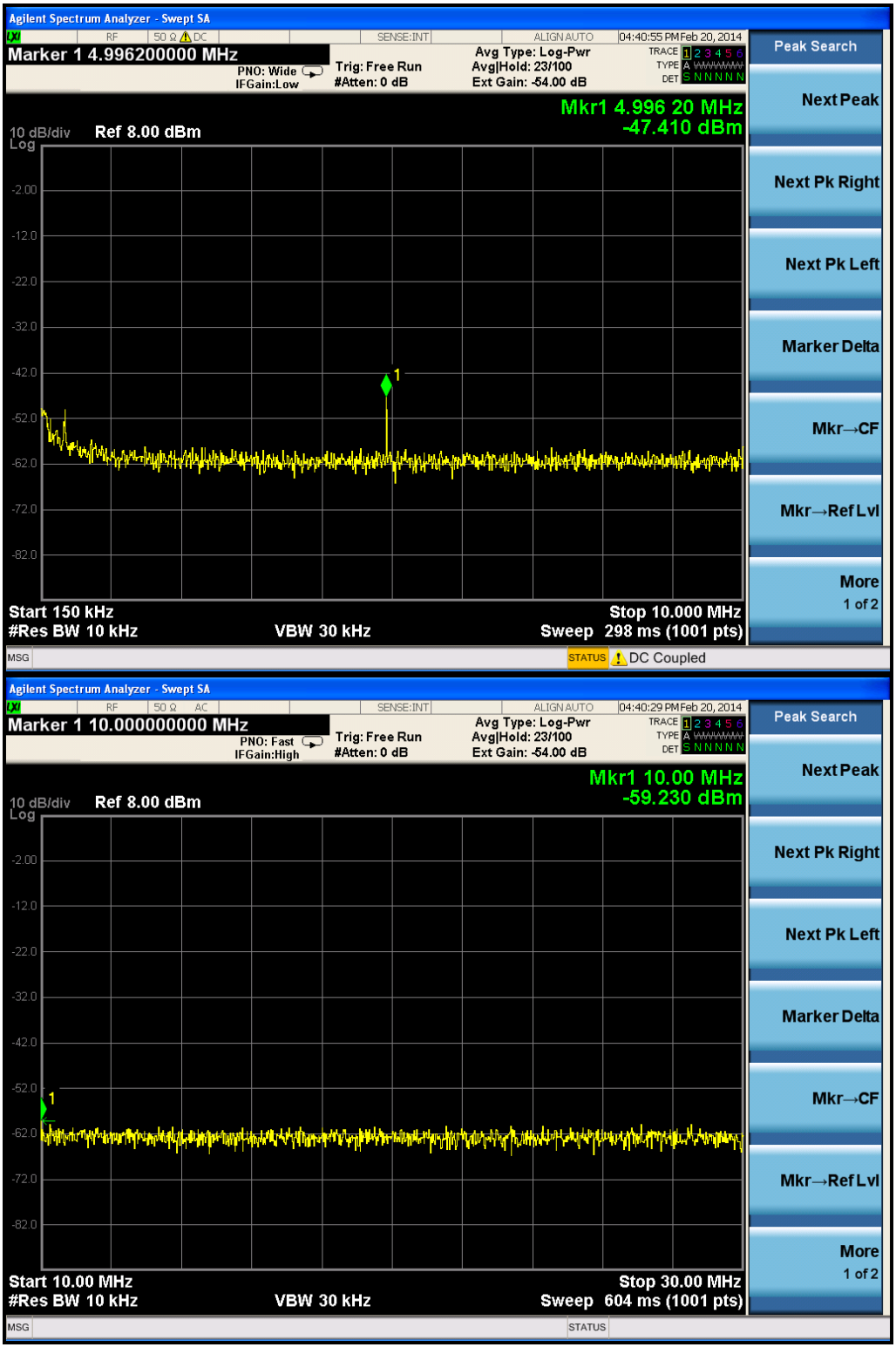

Agilent Spectrum Analyzer - Swept SA
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
10:07:37 AM Feb 21, 2014
Marker 1 4.996200000 MHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -54.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 4.996 20 MHz
-39.261 dBm
10 dB/div
Log
Ref 19.00 dBm
9.00
-1.00
-11.0
-21.0
-31.0
-41.0
-51.0
-61.0
-71.0
1
Start 150 kHz
#Res BW 10 kHz
VBW 30 kHz
Stop 10.000 MHz
Sweep 298 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
DC Coupled
Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:08:33 AM Feb 21, 2014
Start Freq 10.000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 53/100
Ext Gain: -54.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 10.00 MHz
-39.085 dBm
10 dB/div
Log
Ref 19.00 dBm
9.00
-1.00
-11.0
-21.0
-31.0
-41.0
-51.0
-61.0
-71.0
1
Start 10.00 MHz
#Res BW 10 kHz
VBW 30 kHz
Stop 30.00 MHz
Sweep 604 ms (1001 pts)
Frequency
Auto Tune
Center Freq
20.000000 MHz
Start Freq
10.000000 MHz
Stop Freq
30.000000 MHz
CF Step
2.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

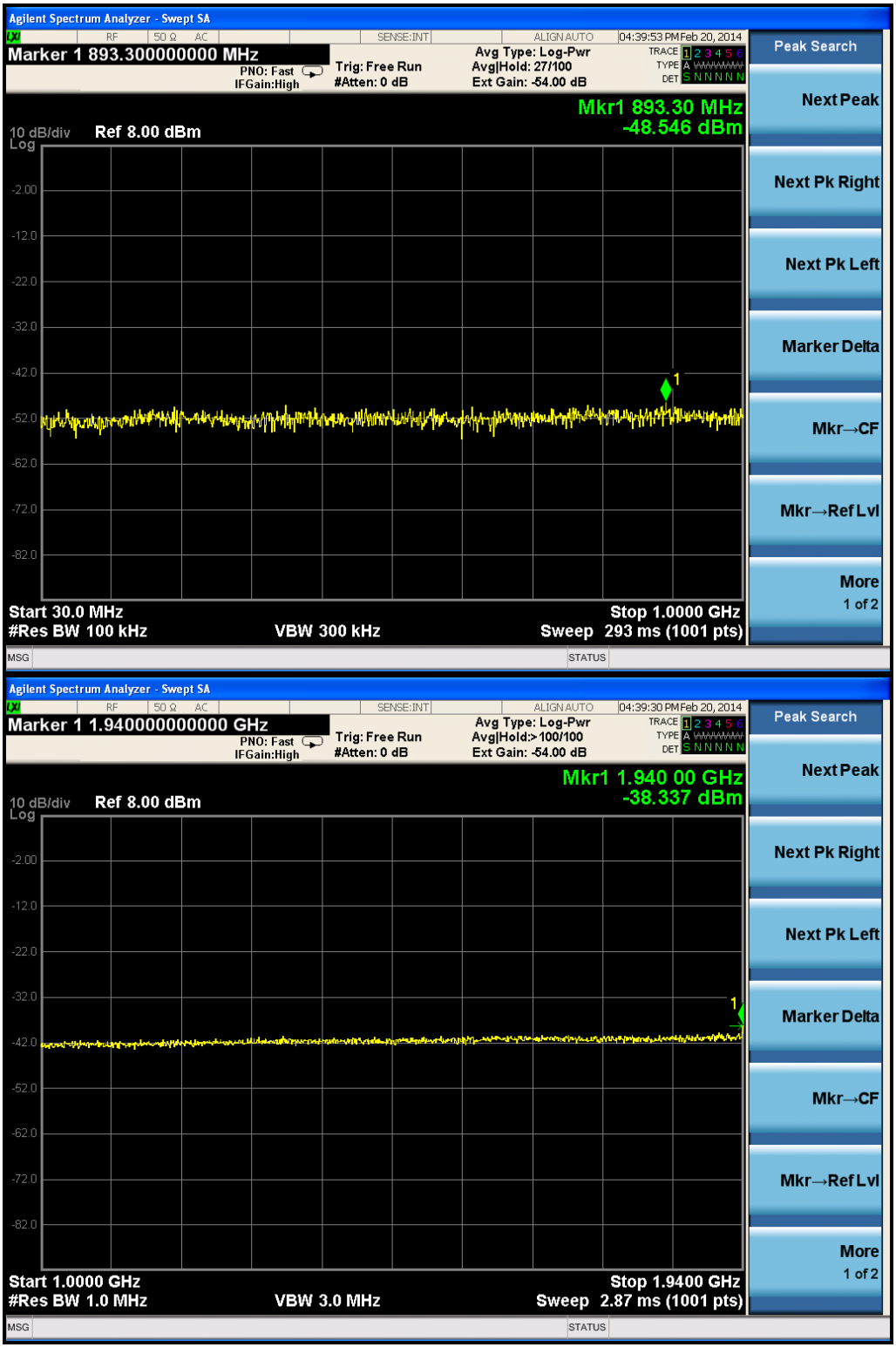

Agilent Spectrum Analyzer - Swept SA
Start Freq 30.000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 94/100
Ext Gain: -54.00 dB
10:09:17 AM Feb 21, 2014
Mkr1 857.41 MHz
-44.070 dBm
10 dB/div
Log
Ref 19.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
VBW 300 kHz
Stop 1.0000 GHz
Sweep 293 ms (1001 pts)
Frequency
Auto Tune
Center Freq
515.000000 MHz
Start Freq
30.000000 MHz
Stop Freq
1.000000000 GHz
CF Step
97.000000 MHz
Auto
Man
Freq Offset
0 Hz
Agilent Spectrum Analyzer - Swept SA
Marker 1 1.956160000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -54.00 dB
10:09:55 AM Feb 21, 2014
Mkr1 1.956 16 GHz
-25.642 dBm
10 dB/div
Log
Ref 19.00 dBm
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 3.0 MHz
Stop 1.9600 GHz
Sweep 2.93 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2



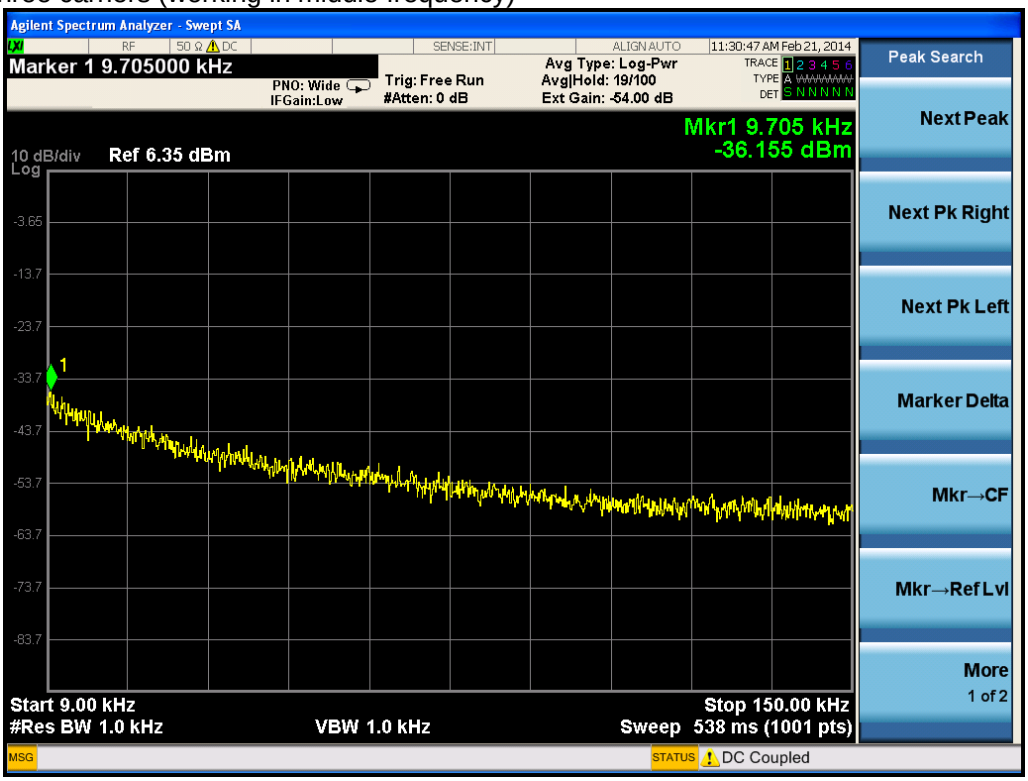
Three carriers (working in bottom frequency)

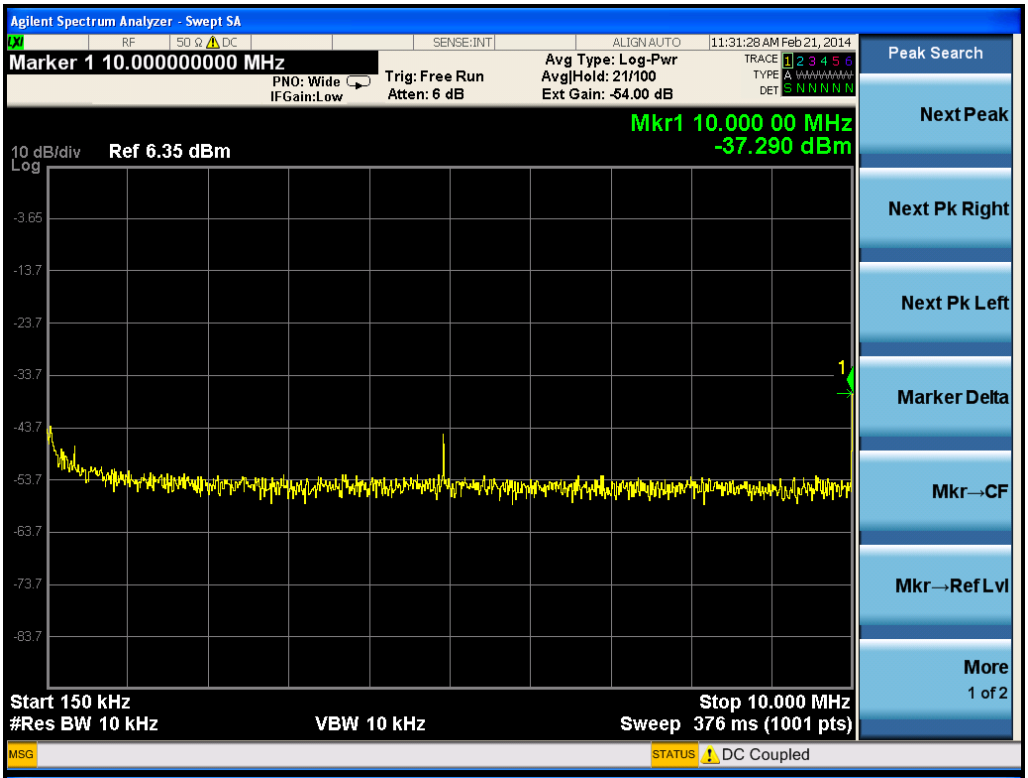


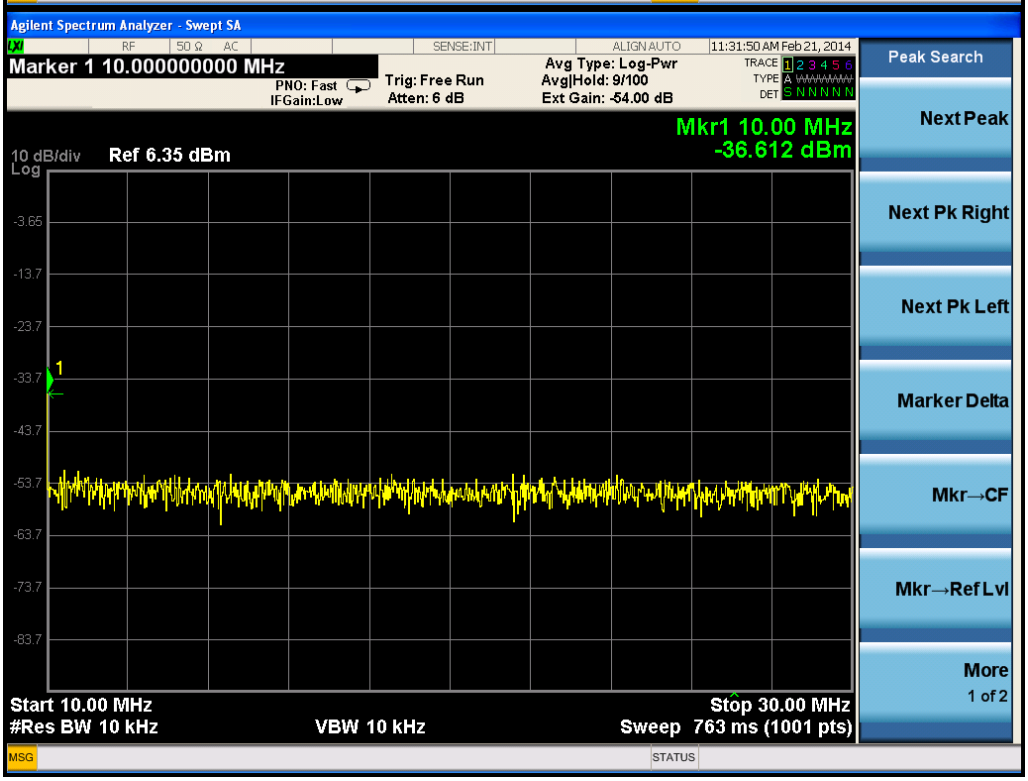

Agilent Spectrum Analyzer - Swept SA
Marker 1 4.996200000 MHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 23/100
Ext Gain: -54.00 dB
04:40:55 PM Feb 20, 2014
Mkr1 4.996 20 MHz
-47.410 dBm
10 dB/div
Log
Ref 8.00 dBm
Start 150 kHz
#Res BW 10 kHz
VBW 30 kHz
Stop 10.000 MHz
Sweep 298 ms (1001 pts)
DC Coupled
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Agilent Spectrum Analyzer - Swept SA
Marker 1 10.000000000 MHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 23/100
Ext Gain: -54.00 dB
04:40:29 PM Feb 20, 2014
Mkr1 10.00 MHz
-59.230 dBm
10 dB/div
Log
Ref 8.00 dBm
Start 10.00 MHz
#Res BW 10 kHz
VBW 30 kHz
Stop 30.00 MHz
Sweep 604 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

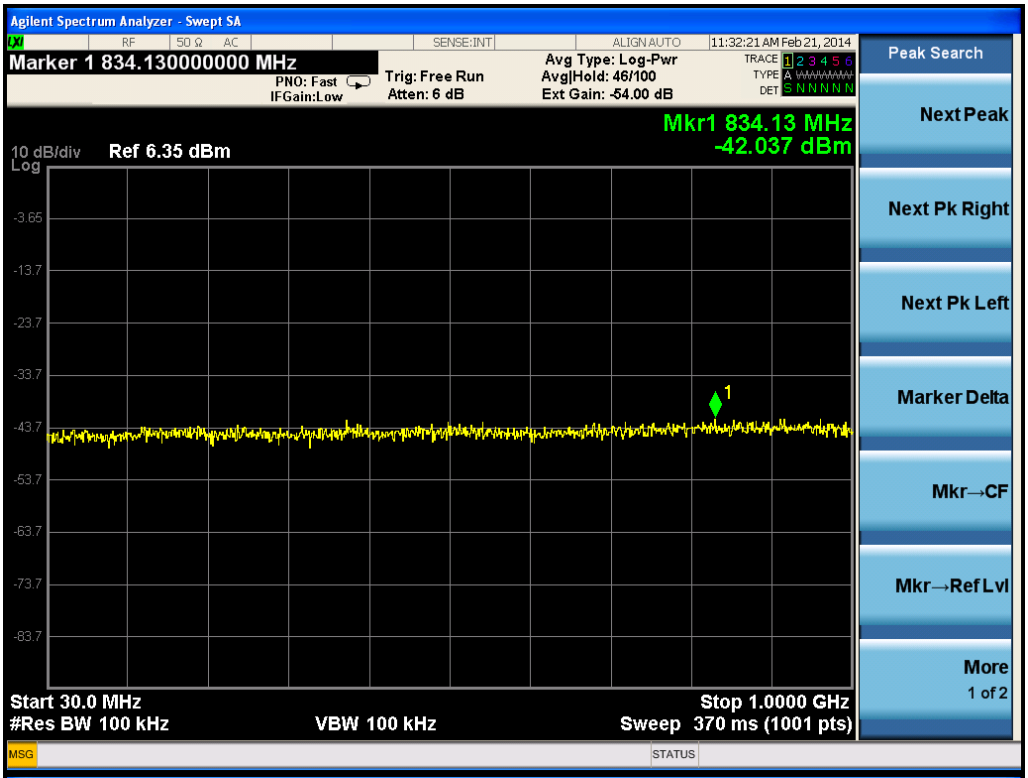

Agilent Spectrum Analyzer - Swept SA
Marker 1 893.300000000 MHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 27/100
Ext Gain: -54.00 dB
04:39:53 PM Feb 20, 2014
Mkr1 893.30 MHz
-48.546 dBm
10 dB/div
Log
Ref 8.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
VBW 300 kHz
Stop 1.0000 GHz
Sweep 293 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Agilent Spectrum Analyzer - Swept SA
Marker 1 1.940000000000 GHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -54.00 dB
04:39:30 PM Feb 20, 2014
Mkr1 1.940 00 GHz
-38.337 dBm
10 dB/div
Log
Ref 8.00 dBm
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 3.0 MHz
Stop 1.9400 GHz
Sweep 2.87 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

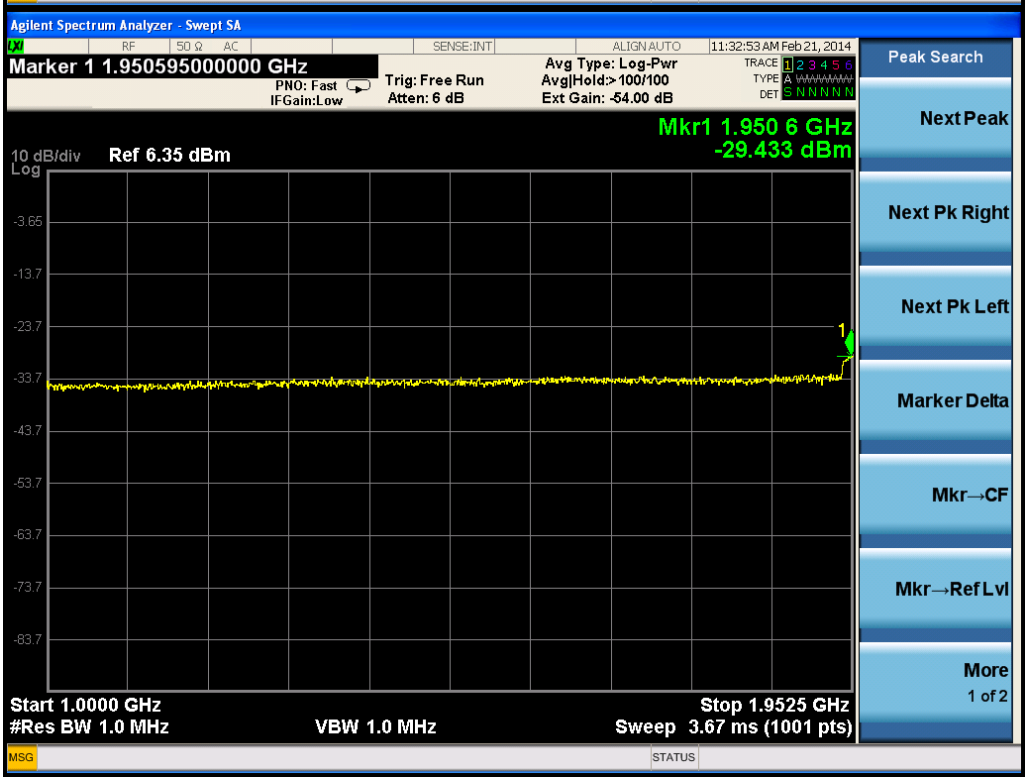
Three carriers (working in middle frequency)

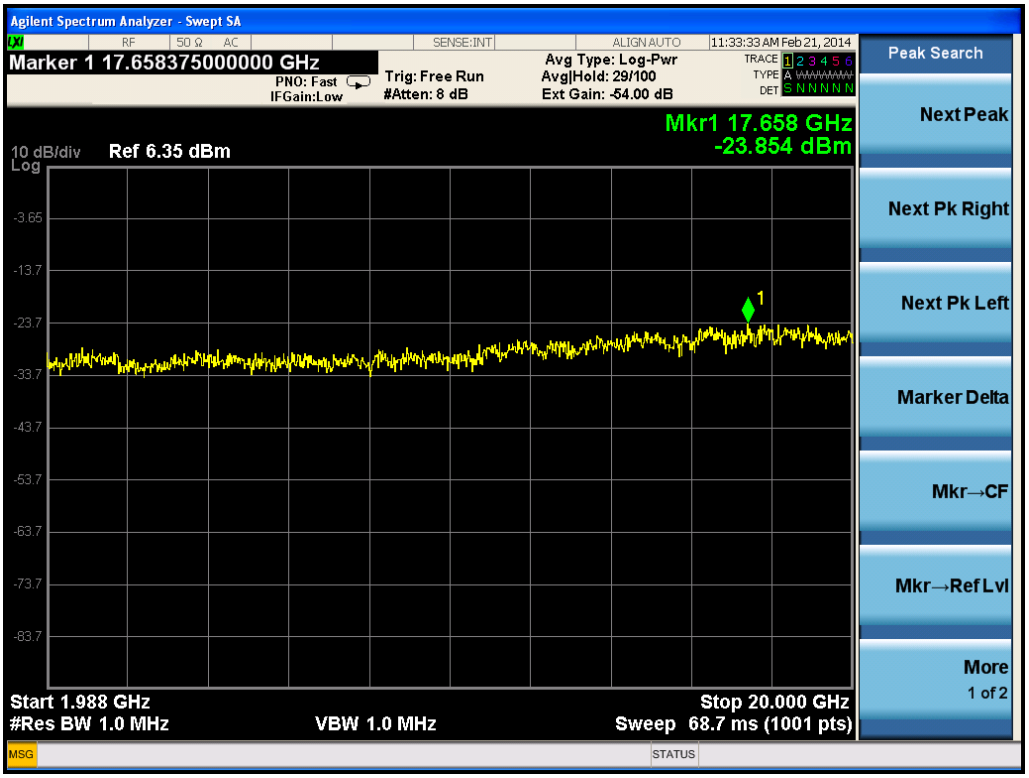



Agilent Spectrum Analyzer - Swept SA
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
11:31:28 AM Feb 21, 2014
Marker 1 10.000000000 MHz
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 21/100
Ext Gain: -54.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 10.000 00 MHz
-37.290 dBm
10 dB/div
Log
Ref 6.35 dBm
-3.65
-13.7
-23.7
-33.7
-43.7
-53.7
-63.7
-73.7
-83.7
1
Start 150 kHz
#Res BW 10 kHz
VBW 10 kHz
Stop 10.000 MHz
Sweep 376 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
DC Coupled

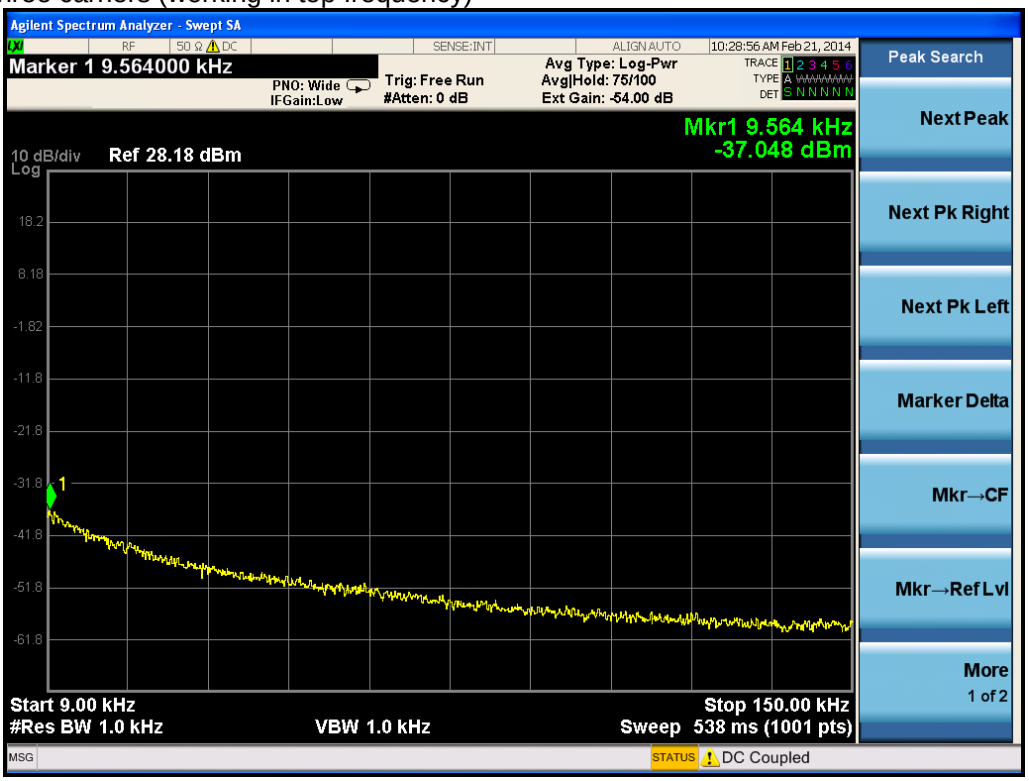

Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
11:31:50 AM Feb 21, 2014
Marker 1 10.000000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 9/100
Ext Gain: -54.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 10.00 MHz
-36.612 dBm
10 dB/div
Log
Ref 6.35 dBm
-3.65
-13.7
-23.7
-33.7
-43.7
-53.7
-63.7
-73.7
-83.7
1
Start 10.00 MHz
#Res BW 10 kHz
VBW 10 kHz
Stop 30.00 MHz
Sweep 763 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

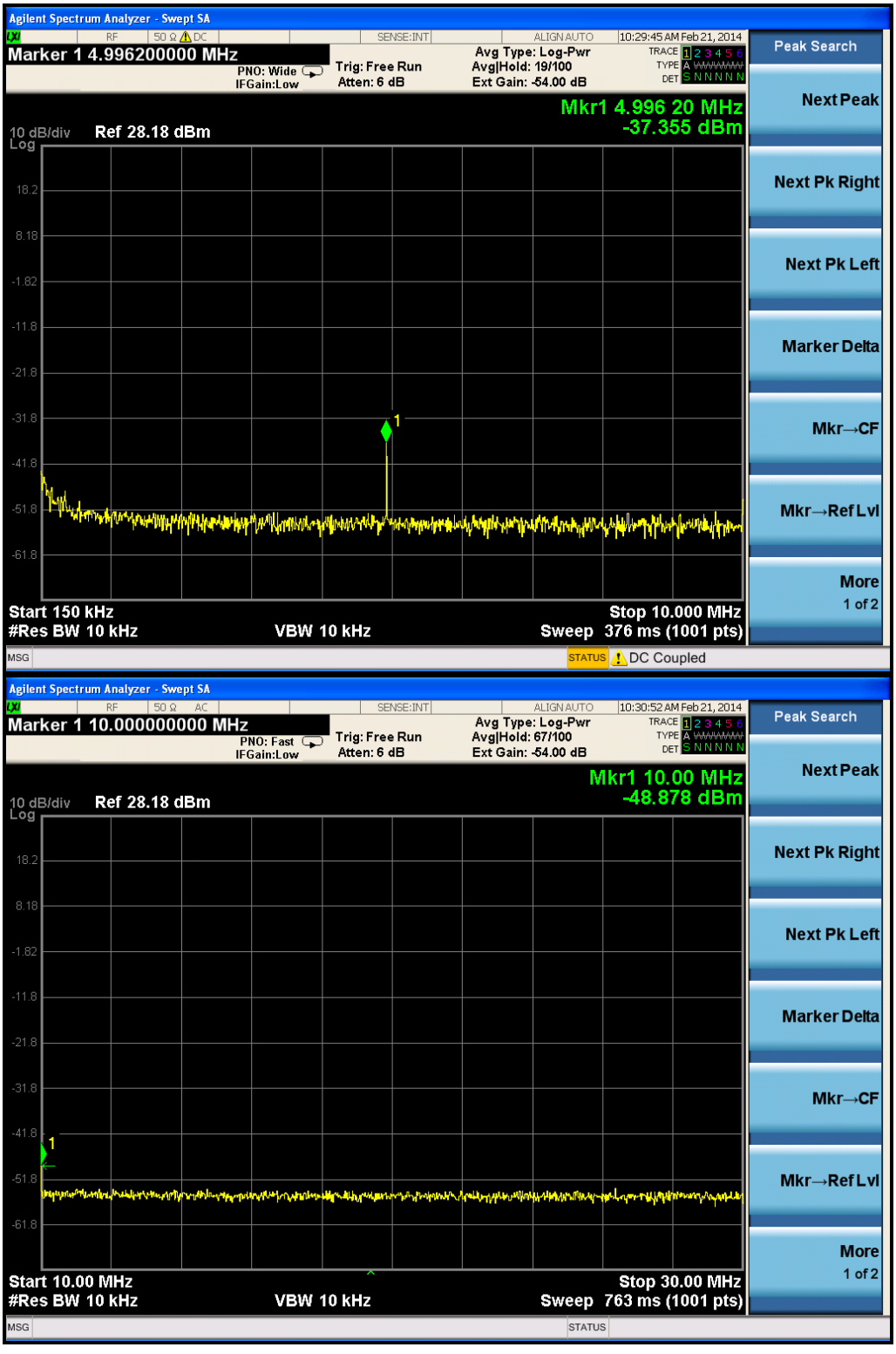

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
11:32:21 AM Feb 21, 2014
Marker 1 834.130000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 46/100
Ext Gain: -54.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 834.13 MHz
-42.037 dBm
10 dB/div
Log
Ref 6.35 dBm
-3.65
-13.7
-23.7
-33.7
-43.7
-53.7
-63.7
-73.7
-83.7
1
Start 30.0 MHz
#Res BW 100 kHz
VBW 100 kHz
Stop 1.0000 GHz
Sweep 370 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
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
11:32:53 AM Feb 21, 2014
Marker 1 1.950595000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -54.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 1.950 6 GHz
-29.433 dBm
10 dB/div
Log
Ref 6.35 dBm
-3.65
-13.7
-23.7
-33.7
-43.7
-53.7
-63.7
-73.7
-83.7
1
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 1.9525 GHz
Sweep 3.67 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



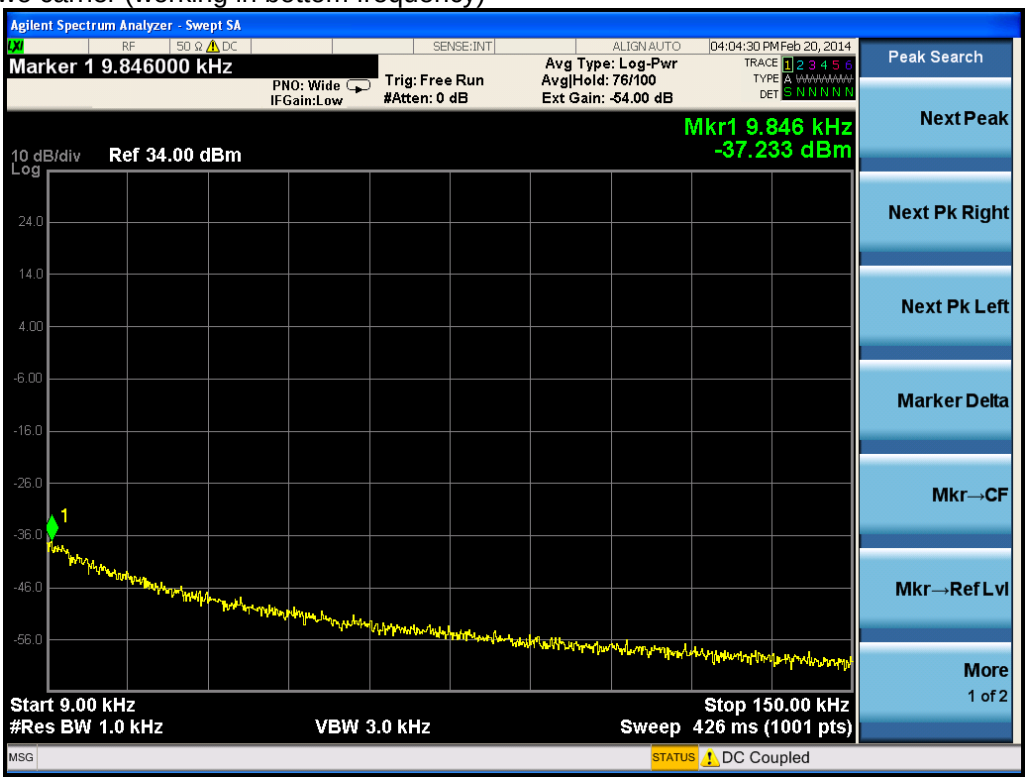
Three carriers (working in top frequency)

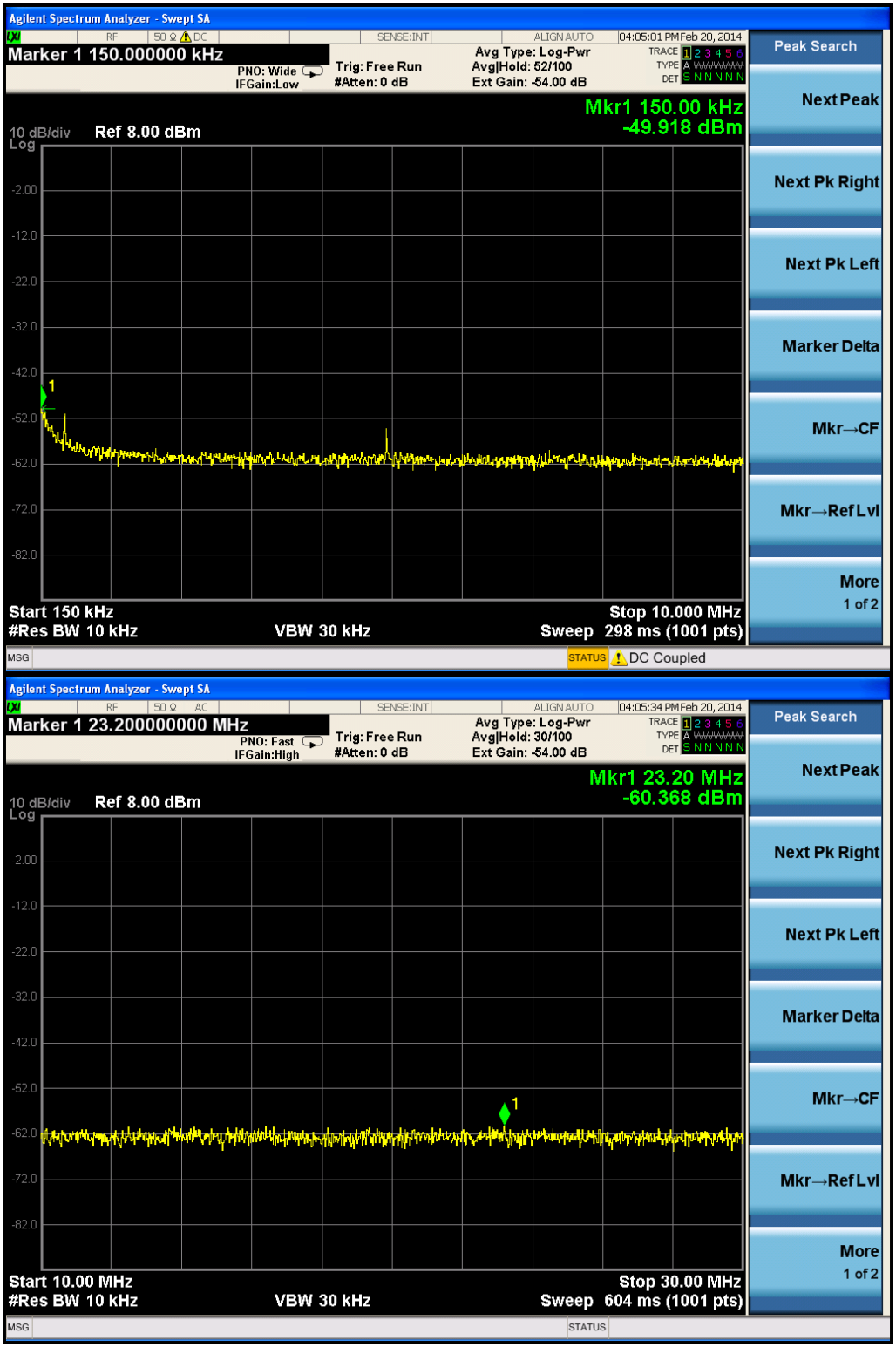


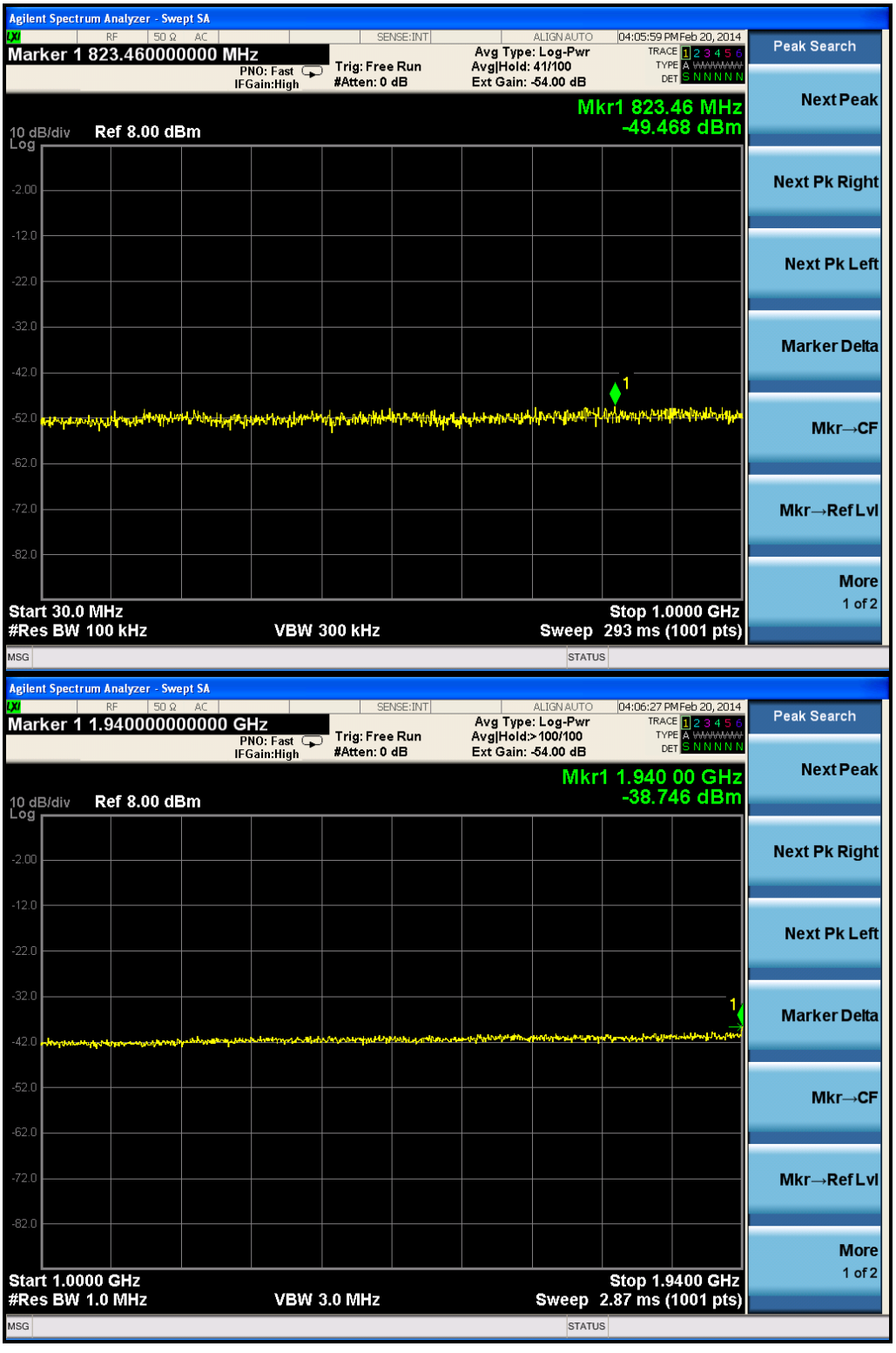

Agilent Spectrum Analyzer - Swept SA
Marker 1 4.996200000 MHz
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 19/100
Ext Gain: -54.00 dB
10:29:45 AM Feb 21, 2014
Mkr1 4.996 20 MHz
-37.355 dBm
10 dB/div
Log
Ref 28.18 dBm
18.2
8.18
-1.82
-11.8
-21.8
-31.8
-41.8
-51.8
-61.8
Start 150 kHz
#Res BW 10 kHz
VBW 10 kHz
Stop 10.000 MHz
Sweep 376 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 10.000000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 67/100
Ext Gain: -54.00 dB
10:30:52 AM Feb 21, 2014
Mkr1 10.00 MHz
-48.878 dBm
10 dB/div
Log
Ref 28.18 dBm
Start 10.00 MHz
#Res BW 10 kHz
VBW 10 kHz
Stop 30.00 MHz
Sweep 763 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

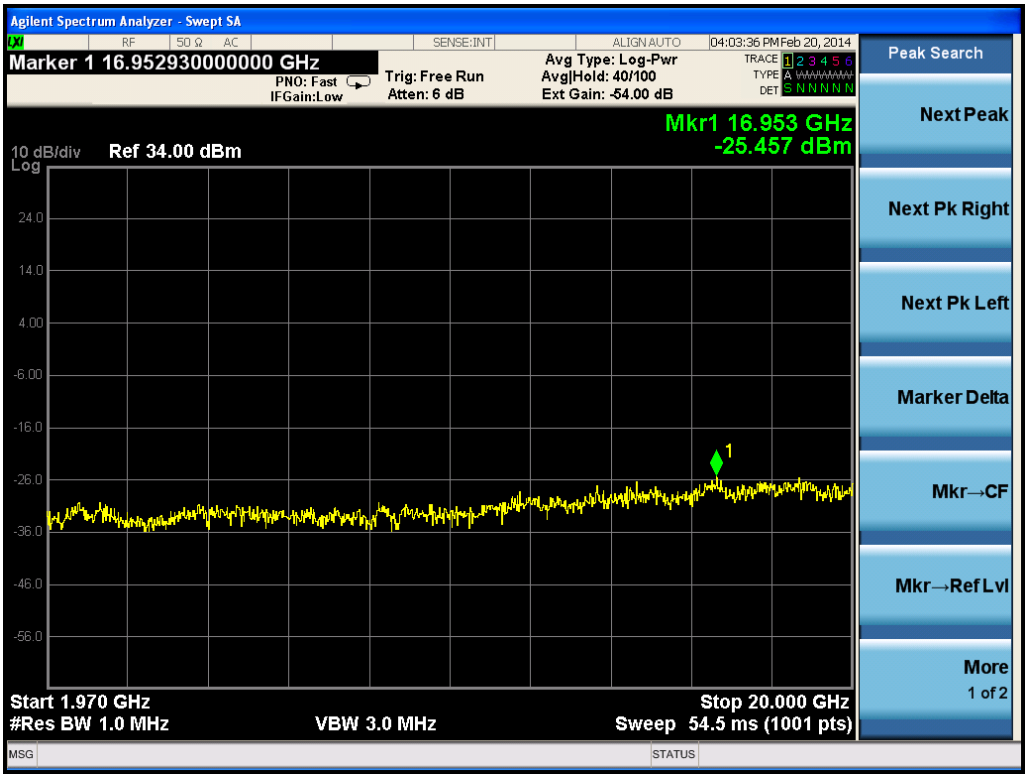

Agilent Spectrum Analyzer - Swept SA
Marker 1 767.200000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 26/100
Ext Gain: -54.00 dB
10:31:21 AM Feb 21, 2014
Mkr1 767.20 MHz
-41.521 dBm
10 dB/div
Log
Ref 28.18 dBm
18.2
8.18
-1.82
-11.8
-21.8
-31.8
-41.8
-51.8
-61.8
Start 30.0 MHz
#Res BW 100 kHz
VBW 100 kHz
Stop 1.0000 GHz
Sweep 370 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
Marker 1 1.955350000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -54.00 dB
10:31:59 AM Feb 21, 2014
Mkr1 1.955 350 GHz
-27.639 dBm
10 dB/div
Log
Ref 28.18 dBm
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 1.9650 GHz
Sweep 3.73 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 carrier (working in bottom frequency)

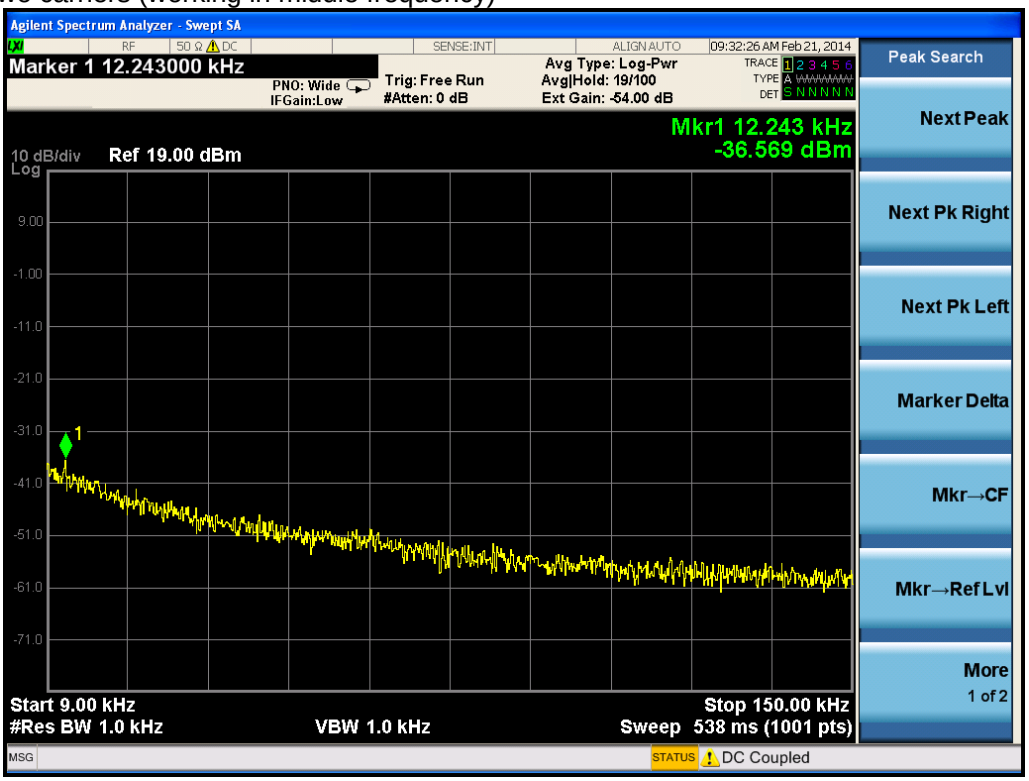


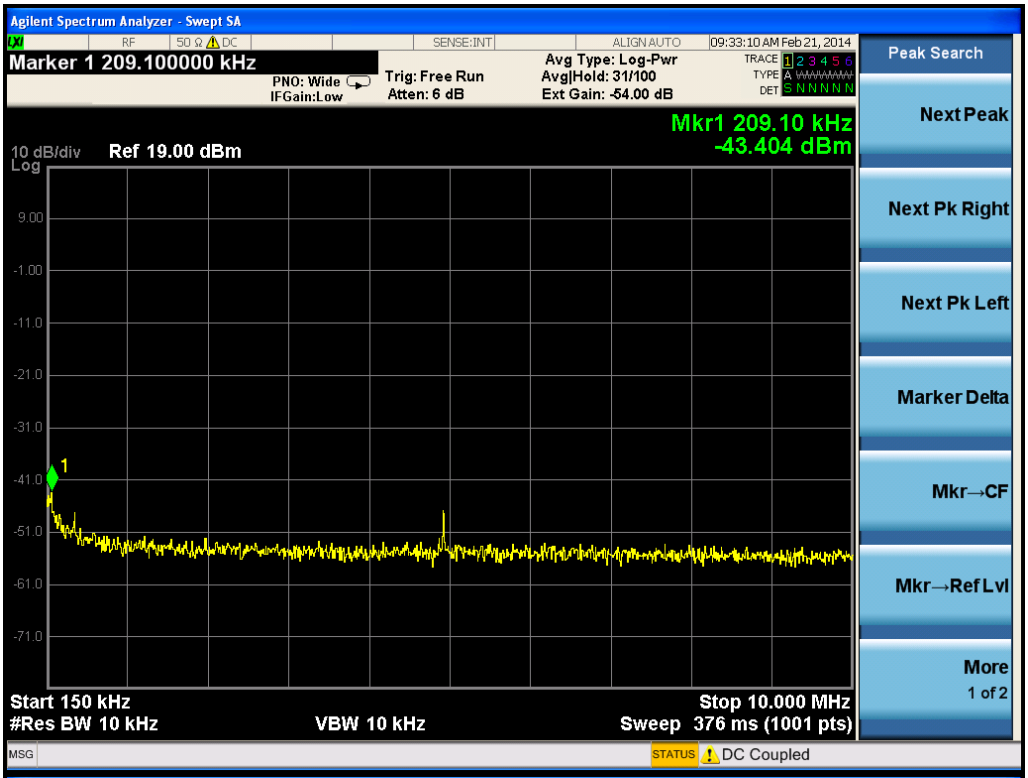

Agilent Spectrum Analyzer - Swept SA
Marker 1 150.000000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 52/100
Ext Gain: -54.00 dB
04:05:01 PM Feb 20, 2014
Mkr1 150.00 kHz
-49.918 dBm
10 dB/div
Log
Ref 8.00 dBm
Start 150 kHz
#Res BW 10 kHz
VBW 30 kHz
Stop 10.000 MHz
Sweep 298 ms (1001 pts)
DC Coupled
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Agilent Spectrum Analyzer - Swept SA
Marker 1 23.200000000 MHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 30/100
Ext Gain: -54.00 dB
04:05:34 PM Feb 20, 2014
Mkr1 23.20 MHz
-60.368 dBm
10 dB/div
Log
Ref 8.00 dBm
Start 10.00 MHz
#Res BW 10 kHz
VBW 30 kHz
Stop 30.00 MHz
Sweep 604 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

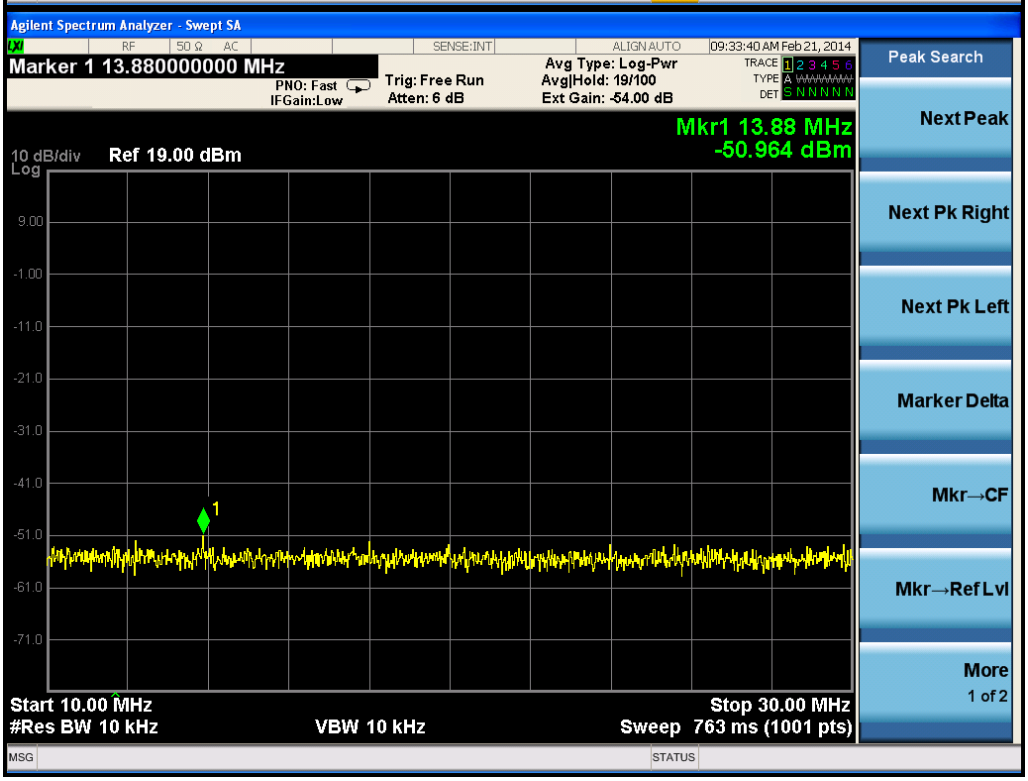

Agilent Spectrum Analyzer - Swept SA
Marker 1 823.460000000 MHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 41/100
Ext Gain: -54.00 dB
04:05:59 PM Feb 20, 2014
Mkr1 823.46 MHz
-49.468 dBm
10 dB/div
Log
Ref 8.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
VBW 300 kHz
Stop 1.0000 GHz
Sweep 293 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Agilent Spectrum Analyzer - Swept SA
Marker 1 1.940000000000 GHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -54.00 dB
04:06:27 PM Feb 20, 2014
Mkr1 1.940 00 GHz
-38.746 dBm
10 dB/div
Log
Ref 8.00 dBm
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 3.0 MHz
Stop 1.9400 GHz
Sweep 2.87 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

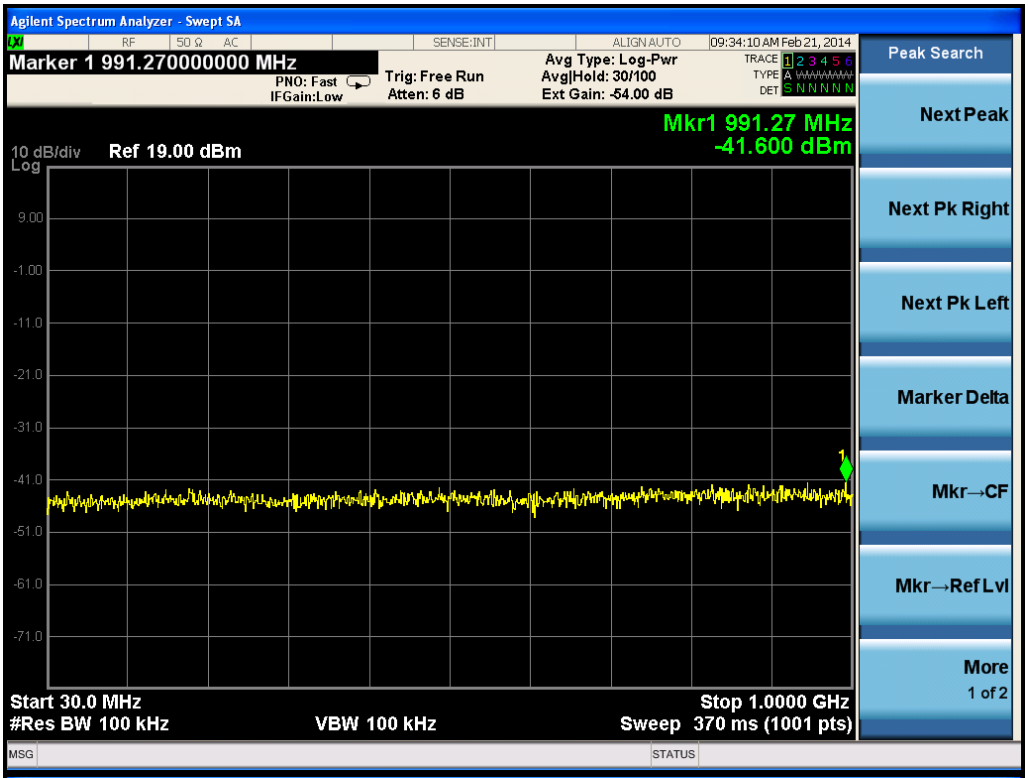


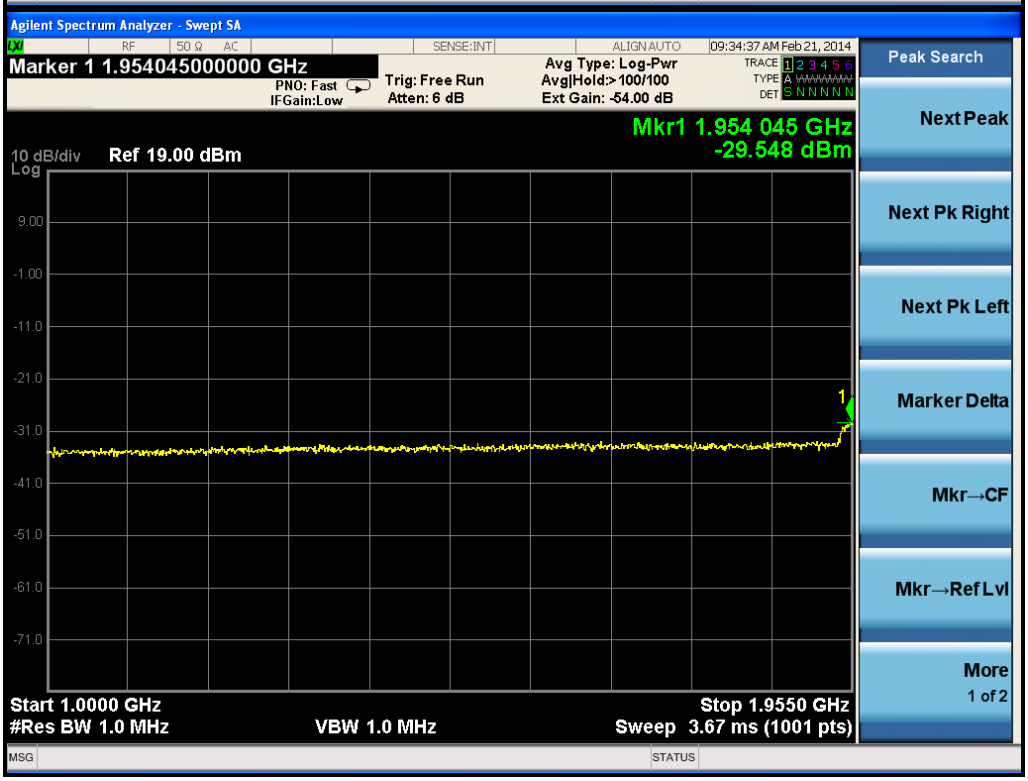
Two carriers (working in middle frequency)

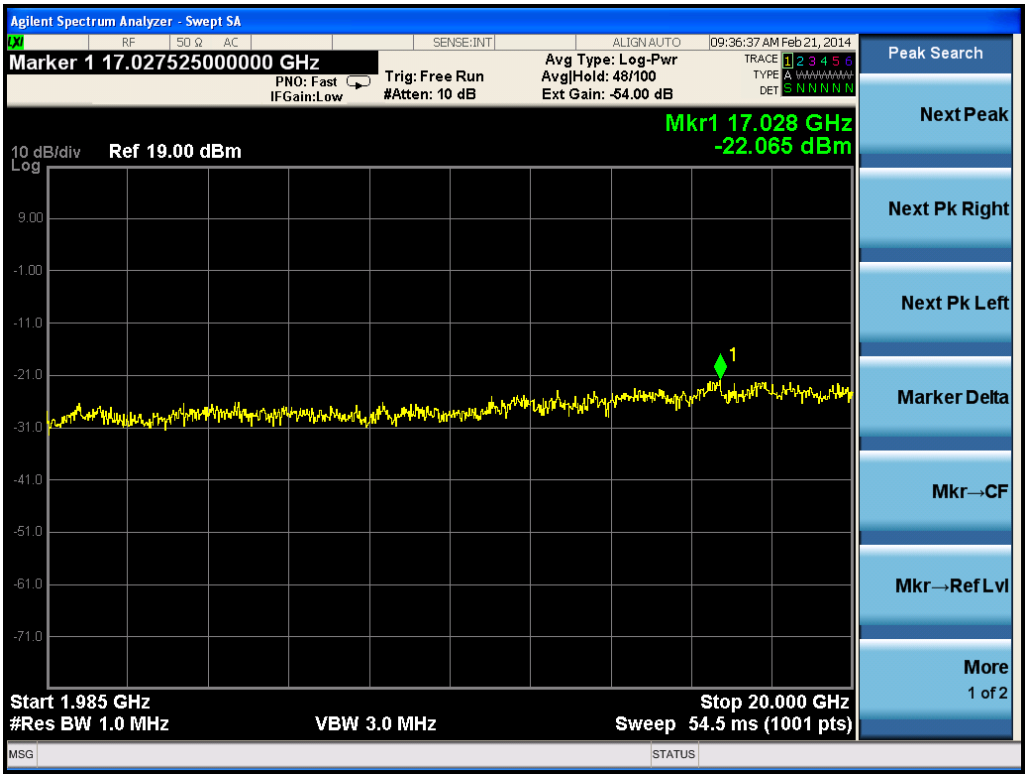



Agilent Spectrum Analyzer - Swept SA
Marker 1 209.100000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 31/100
Ext Gain: -54.00 dB
09:33:10 AM Feb 21, 2014
Mkr1 209.10 kHz
-43.404 dBm
10 dB/div
Log
Ref 19.00 dBm
Start 150 kHz
#Res BW 10 kHz
VBW 10 kHz
Stop 10.000 MHz
Sweep 376 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

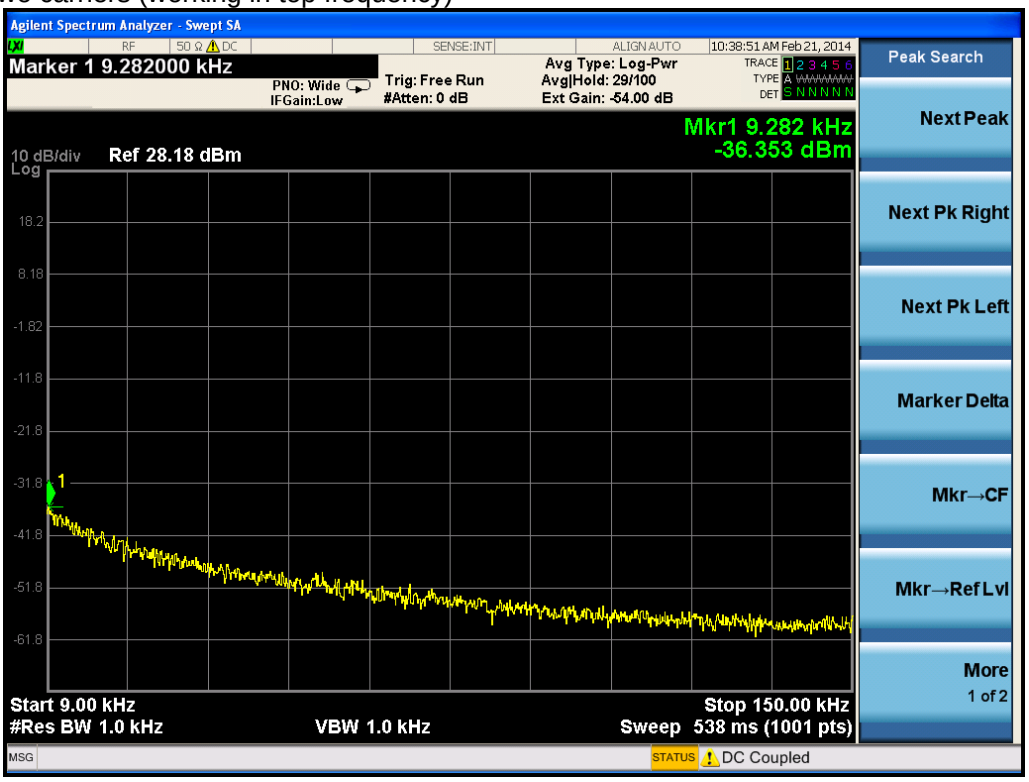

Agilent Spectrum Analyzer - Swept SA
Marker 1 13.880000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 19/100
Ext Gain: -54.00 dB
09:33:40 AM Feb 21, 2014
Mkr1 13.88 MHz
-50.964 dBm
10 dB/div
Log
Ref 19.00 dBm
Start 10.00 MHz
#Res BW 10 kHz
VBW 10 kHz
Stop 30.00 MHz
Sweep 763 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

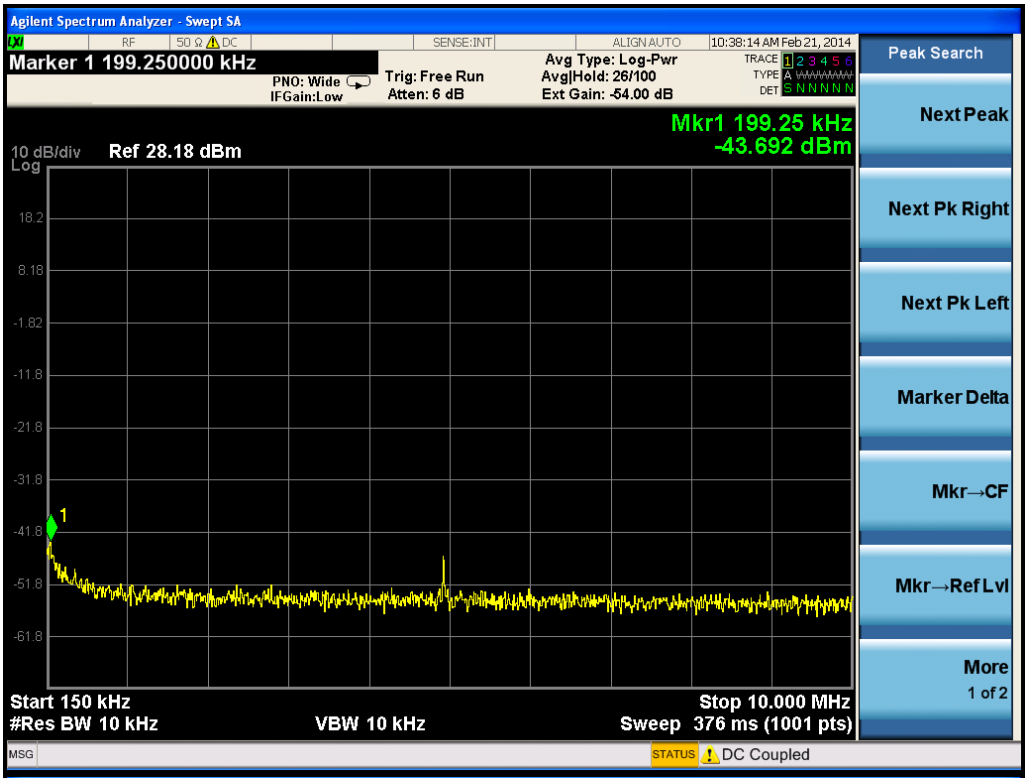

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
09:34:10 AM Feb 21, 2014
Marker 1 991.270000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 30/100
Ext Gain: -54.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 991.27 MHz
-41.600 dBm
10 dB/div
Log
Ref 19.00 dBm
9.00
-1.00
-11.0
-21.0
-31.0
-41.0
-51.0
-61.0
-71.0
Start 30.0 MHz
#Res BW 100 kHz
VBW 100 kHz
Stop 1.0000 GHz
Sweep 370 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

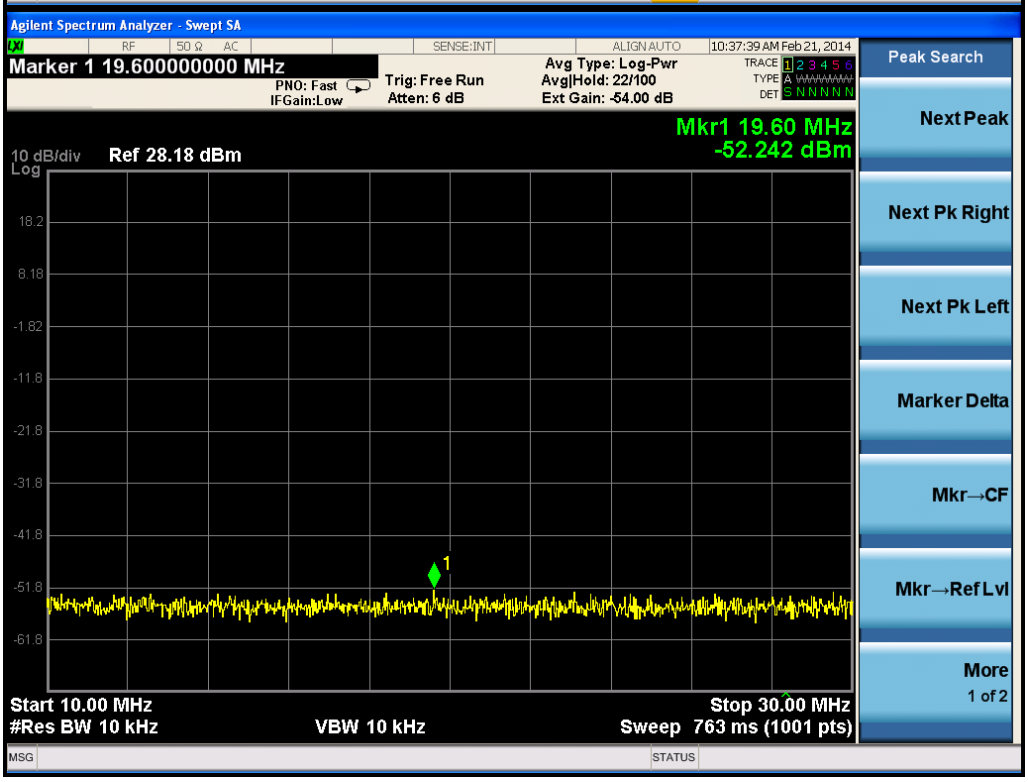

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
09:34:37 AM Feb 21, 2014
Marker 1 1.954045000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -54.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 1.954 045 GHz
-29.548 dBm
10 dB/div
Log
Ref 19.00 dBm
9.00
-1.00
-11.0
-21.0
-31.0
-41.0
-51.0
-61.0
-71.0
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 1.9550 GHz
Sweep 3.67 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

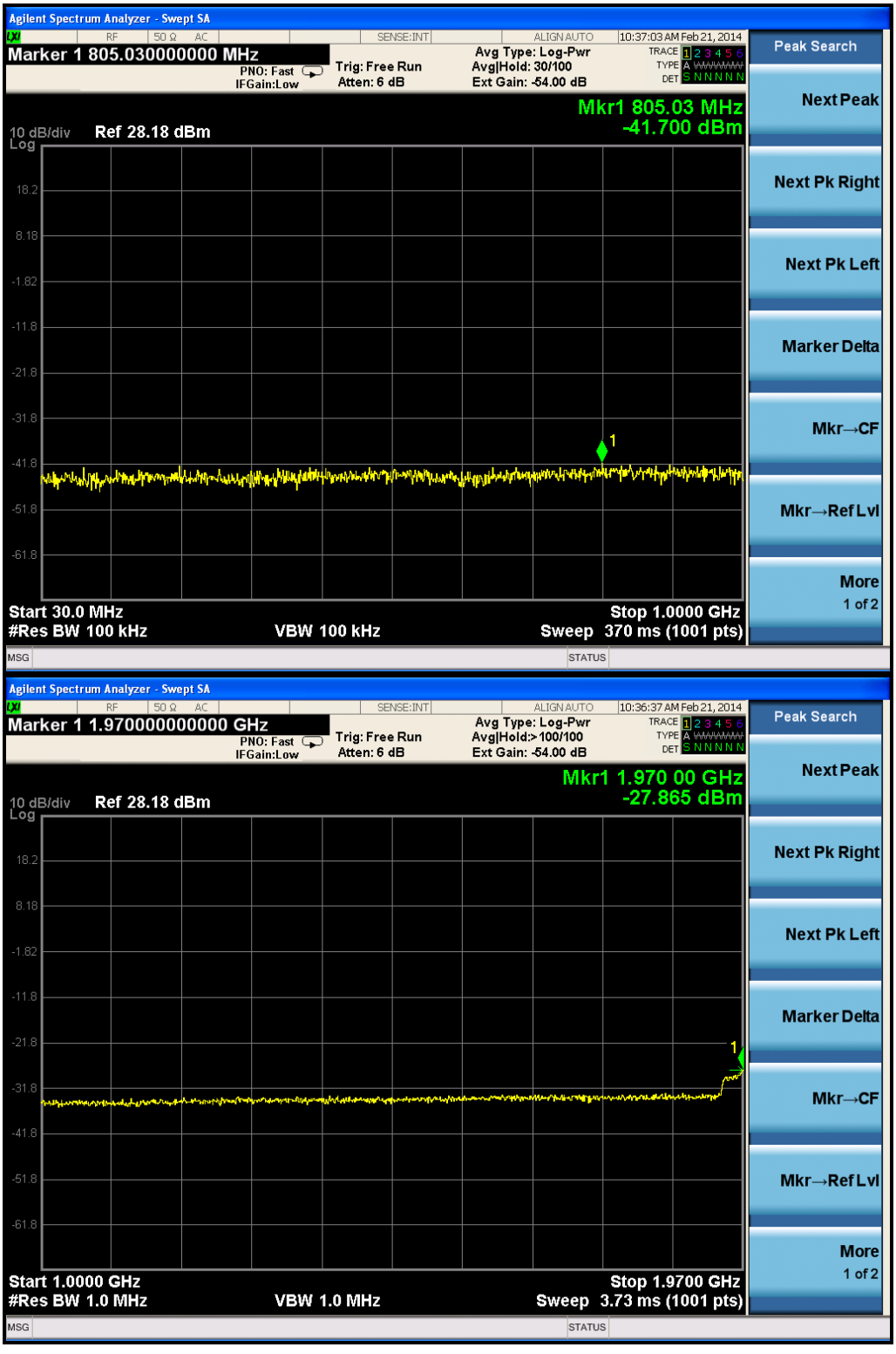


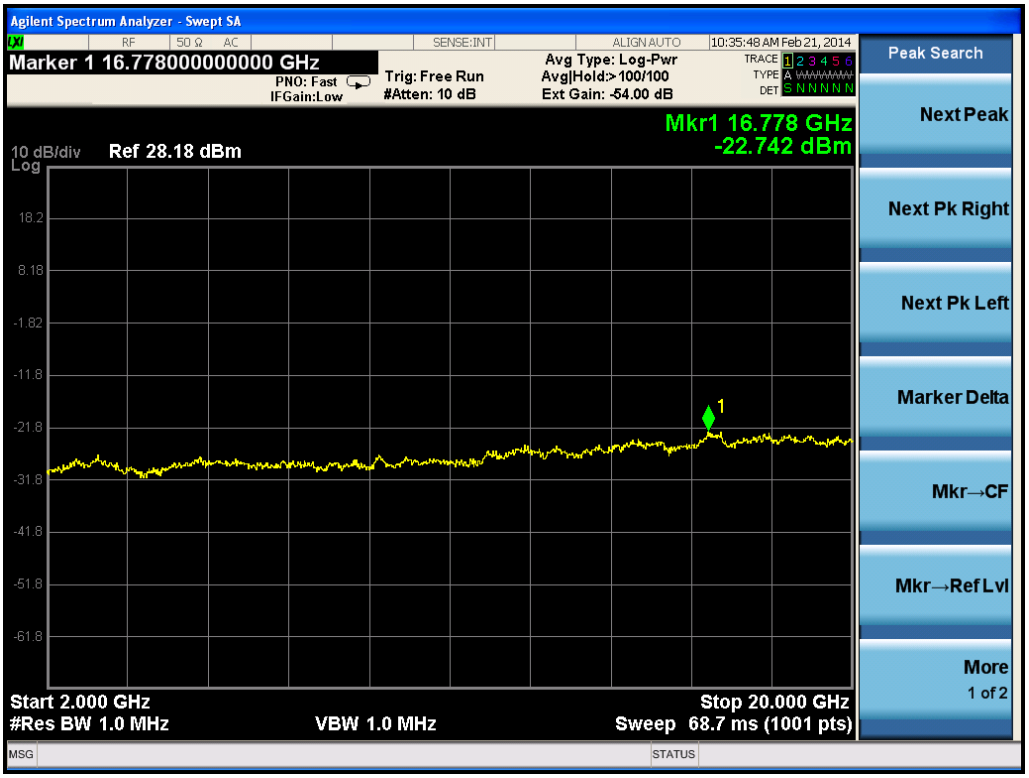
Two carriers (working in top frequency)



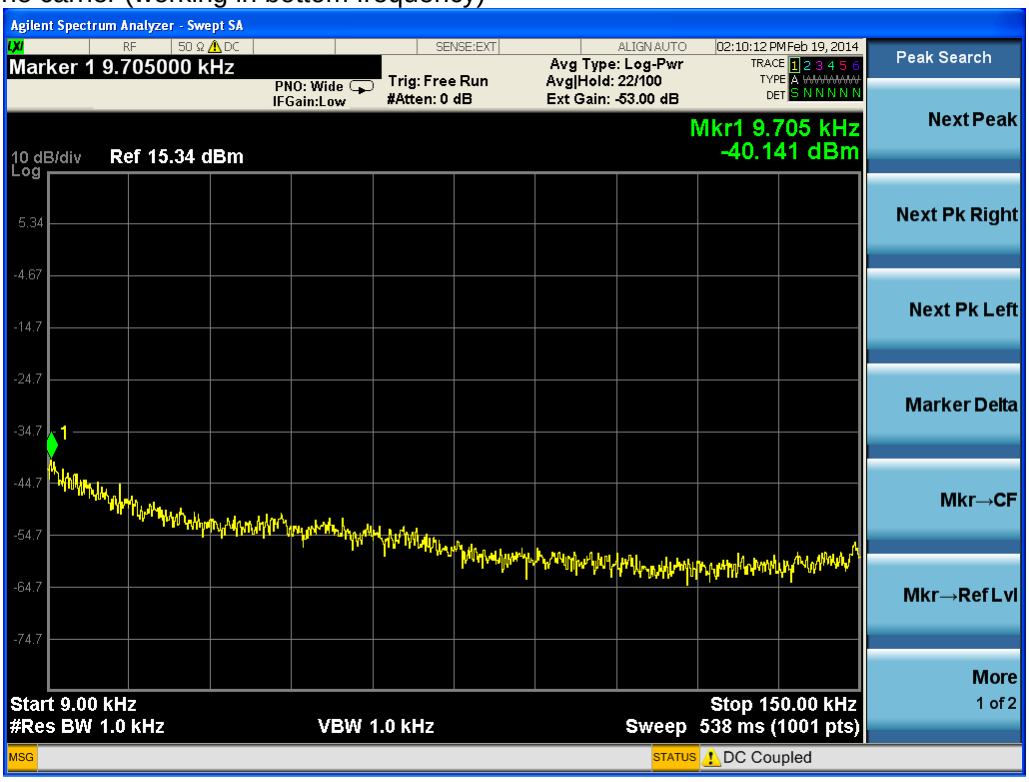

Agilent Spectrum Analyzer - Swept SA
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
10:38:14 AM Feb 21, 2014
Marker 1 199.250000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 26/100
Ext Gain: -54.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 199.25 kHz
-43.692 dBm
10 dB/div
Log
Ref 28.18 dBm
18.2
8.18
-1.82
-11.8
-21.8
-31.8
-41.8
-51.8
-61.8
1
Start 150 kHz
#Res BW 10 kHz
VBW 10 kHz
Stop 10.000 MHz
Sweep 376 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
DC Coupled

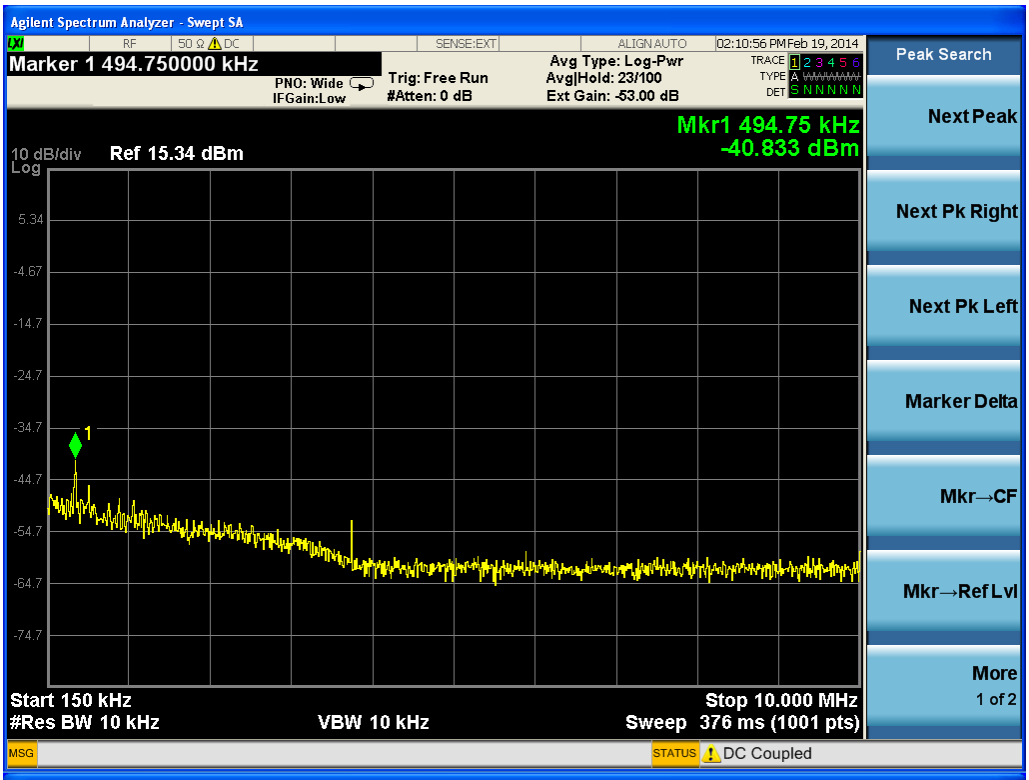

Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:37:39 AM Feb 21, 2014
Marker 1 19.600000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 22/100
Ext Gain: -54.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 19.60 MHz
-52.242 dBm
10 dB/div
Log
Ref 28.18 dBm
18.2
8.18
-1.82
-11.8
-21.8
-31.8
-41.8
-51.8
-61.8
1
Start 10.00 MHz
#Res BW 10 kHz
VBW 10 kHz
Stop 30.00 MHz
Sweep 763 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

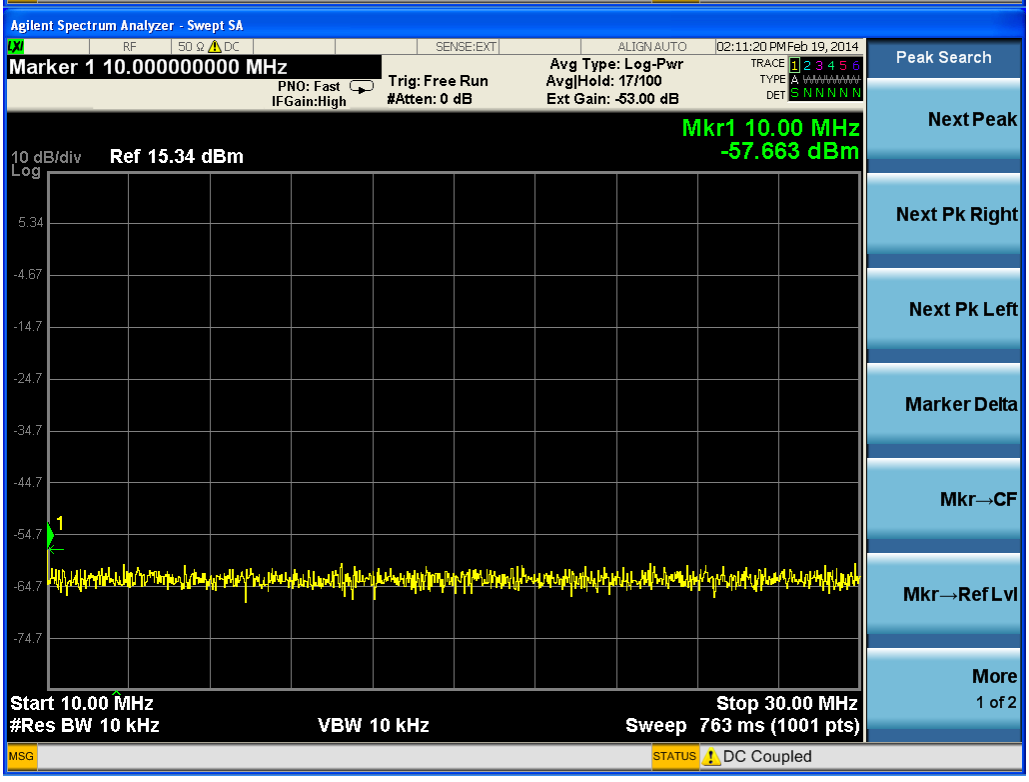

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
10:37:03 AM Feb 21, 2014
Marker 1 805.030000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 30/100
Ext Gain: -54.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 805.03 MHz
-41.700 dBm
10 dB/div
Log
Ref 28.18 dBm
18.2
8.18
-1.82
-11.8
-21.8
-31.8
-41.8
-51.8
-61.8
1
Start 30.0 MHz
#Res BW 100 kHz
VBW 100 kHz
Stop 1.0000 GHz
Sweep 370 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
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
10:36:37 AM Feb 21, 2014
Marker 1 1.970000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -54.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 1.970 00 GHz
-27.865 dBm
10 dB/div
Log
Ref 28.18 dBm
18.2
8.18
-1.82
-11.8
-21.8
-31.8
-41.8
-51.8
-61.8
1
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 1.9700 GHz
Sweep 3.73 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

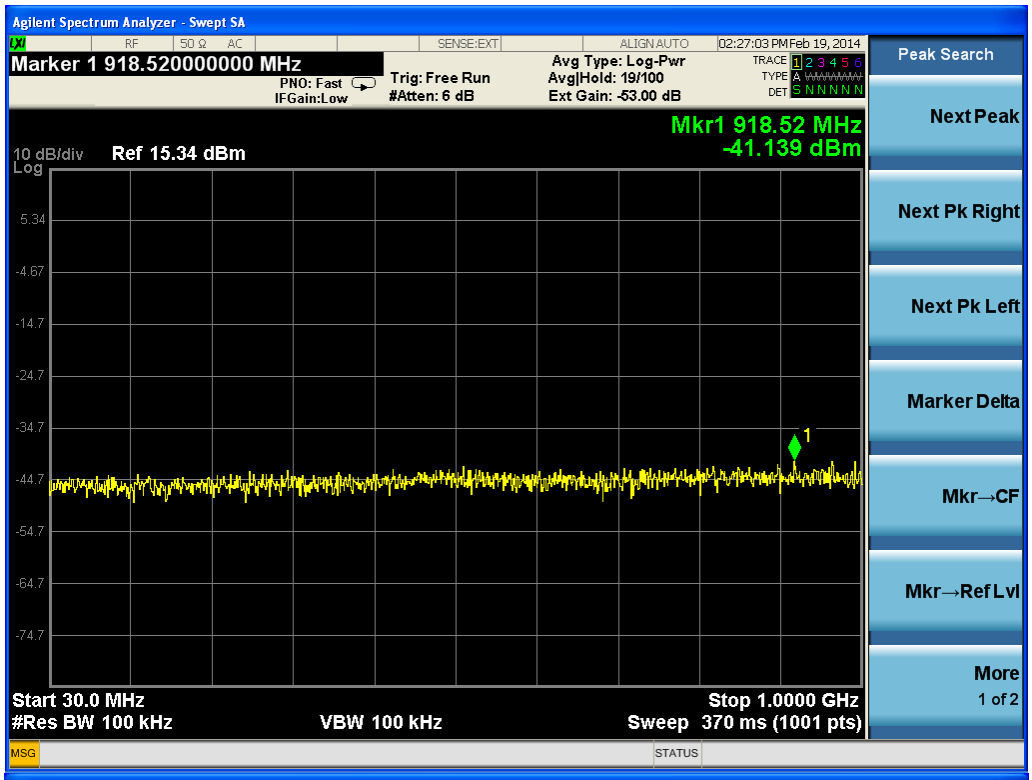


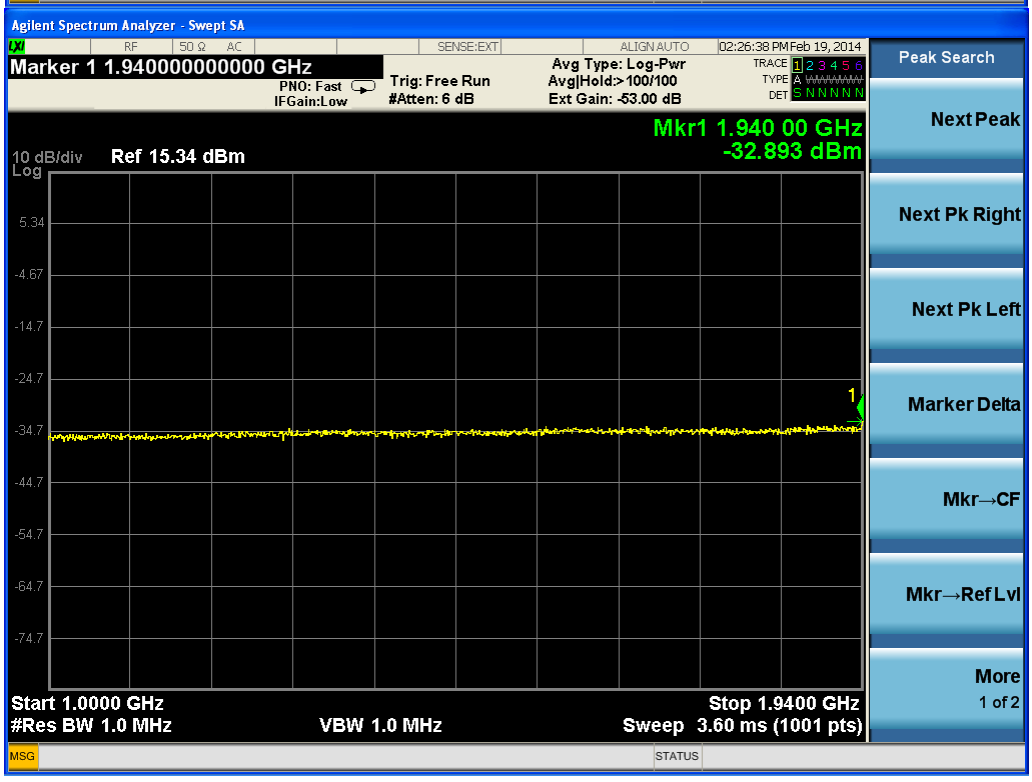
One carrier (working in bottom frequency)

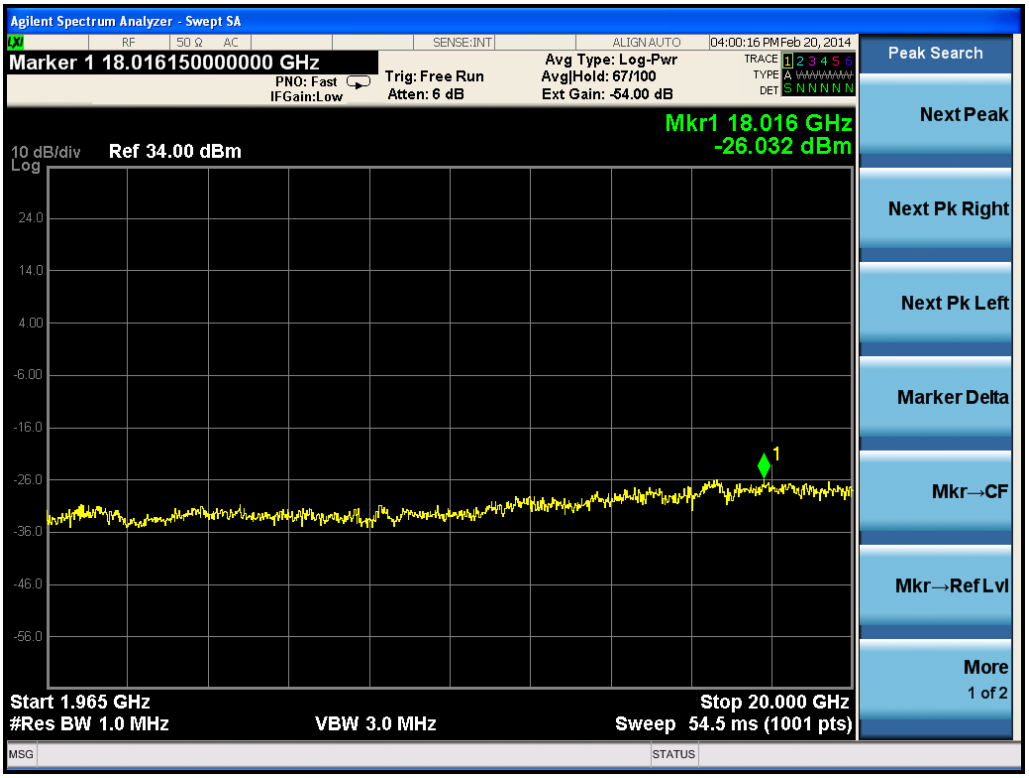



Agilent Spectrum Analyzer - Swept SA
RF
50 Ω DC
SENSE:EXT
ALIGN AUTO
02:10:56 PM Feb 19, 2014
Marker 1 494.750000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 23/100
Ext Gain: -53.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 494.75 kHz
-40.833 dBm
10 dB/div
Log
Ref 15.34 dBm
5.34
-4.67
-14.7
-24.7
-34.7
-44.7
-54.7
-64.7
-74.7
Start 150 kHz
#Res BW 10 kHz
VBW 10 kHz
Stop 10.000 MHz
Sweep 376 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
DC Coupled

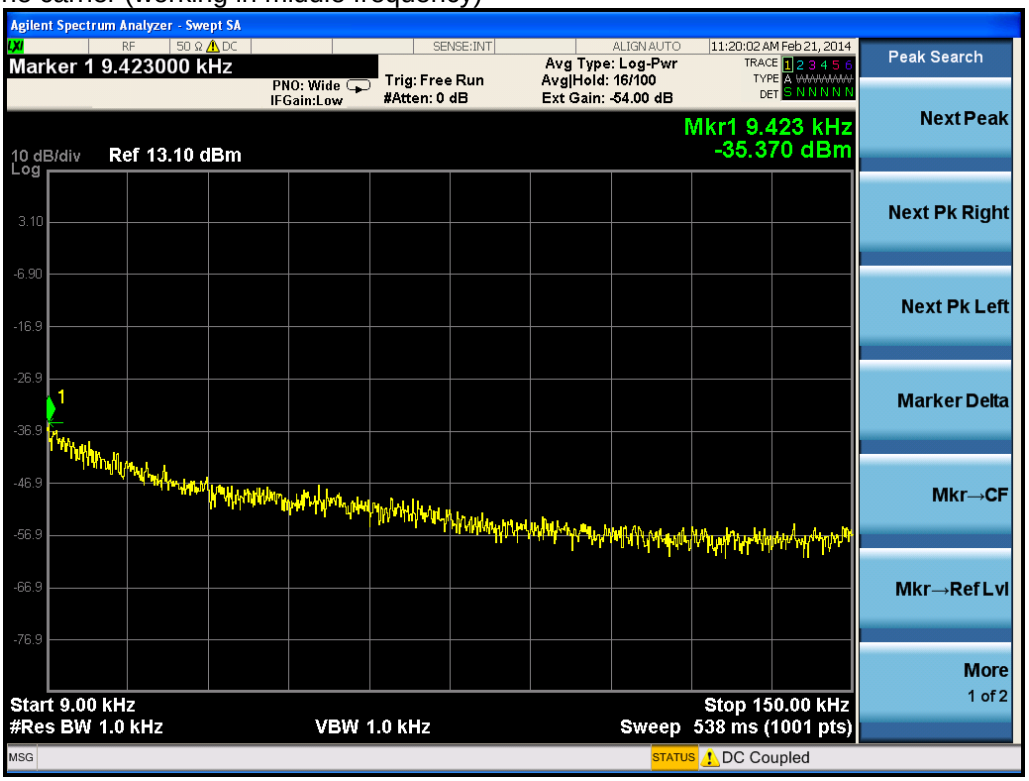

Agilent Spectrum Analyzer - Swept SA
RF
50 Ω DC
SENSE:EXT
ALIGN AUTO
02:11:20 PM Feb 19, 2014
Marker 1 10.000000000 MHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 17/100
Ext Gain: -53.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 10.00 MHz
-57.663 dBm
10 dB/div
Log
Ref 15.34 dBm
5.34
-4.67
-14.7
-24.7
-34.7
-44.7
-54.7
-64.7
-74.7
Start 10.00 MHz
#Res BW 10 kHz
VBW 10 kHz
Stop 30.00 MHz
Sweep 763 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
DC Coupled


Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
02:27:03 PM Feb 19, 2014
Marker 1 918.520000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold: 19/100
Ext Gain: -53.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 918.52 MHz
-41.139 dBm
10 dB/div
Log
Ref 15.34 dBm
5.34
-4.67
-14.7
-24.7
-34.7
-44.7
-54.7
-64.7
-74.7
1
Start 30.0 MHz
#Res BW 100 kHz
VBW 100 kHz
Stop 1.0000 GHz
Sweep 370 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
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
02:26:38 PM Feb 19, 2014
Marker 1 1.940000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -53.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 1.940 00 GHz
-32.893 dBm
10 dB/div
Log
Ref 15.34 dBm
5.34
-4.67
-14.7
-24.7
-34.7
-44.7
-54.7
-64.7
-74.7
1
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 1.9400 GHz
Sweep 3.60 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

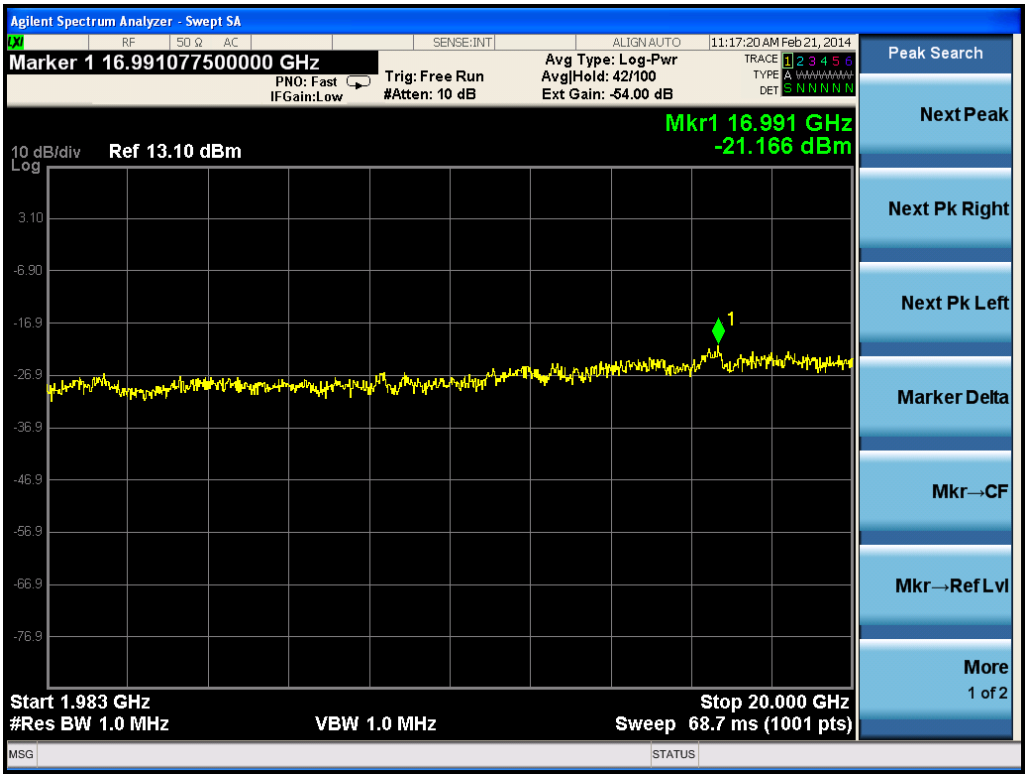


One carrier (working in middle frequency)

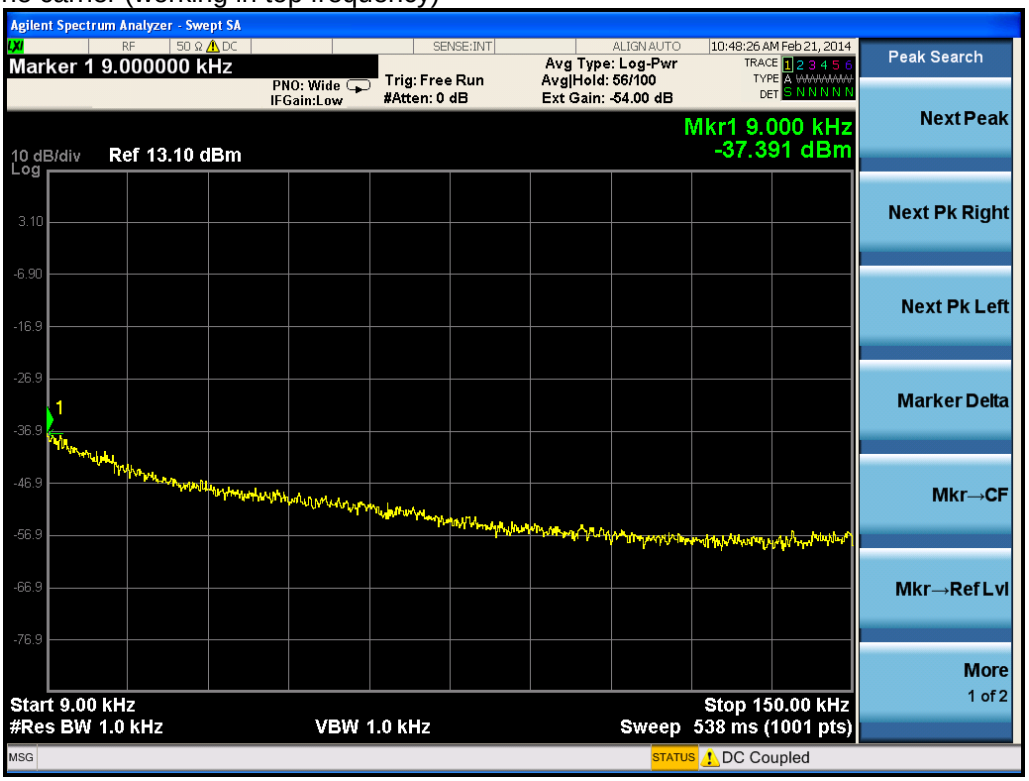



Agilent Spectrum Analyzer - Swept SA
Marker 1 455.350000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 20/100
Ext Gain: -54.00 dB
11:19:39 AM Feb 21, 2014
Mkr1 455.35 kHz
-45.484 dBm
10 dB/div
Log
Ref 13.10 dBm
3.10
-6.90
-16.9
-26.9
-36.9
-46.9
-56.9
-66.9
-76.9
Start 150 kHz
#Res BW 10 kHz
VBW 10 kHz
Stop 10.000 MHz
Sweep 376 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
DC Coupled
Agilent Spectrum Analyzer - Swept SA
Marker 1 28.940000000 MHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 15/100
Ext Gain: -54.00 dB
11:19:02 AM Feb 21, 2014
Mkr1 28.94 MHz
-59.296 dBm
10 dB/div
Log
Ref 13.10 dBm
Start 10.00 MHz
#Res BW 10 kHz
VBW 10 kHz
Stop 30.00 MHz
Sweep 763 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
Marker 1 497.540000000 MHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 19/100
Ext Gain: -54.00 dB
11:18:36 AM Feb 21, 2014
Mkr1 497.54 MHz
-49.091 dBm
10 dB/div
Log
Ref 13.10 dBm
3.10
-6.90
-16.9
-26.9
-36.9
-46.9
-56.9
-66.9
-76.9
Start 30.0 MHz
#Res BW 100 kHz
VBW 100 kHz
Stop 1.0000 GHz
Sweep 370 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
Marker 1 1.957500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 6 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -54.00 dB
11:18:02 AM Feb 21, 2014
Mkr1 1.957 5 GHz
-29.416 dBm
10 dB/div
Log
Ref 13.10 dBm
3.10
-6.90
-16.9
-26.9
-36.9
-46.9
-56.9
-66.9
-76.9
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 1.9575 GHz
Sweep 3.67 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

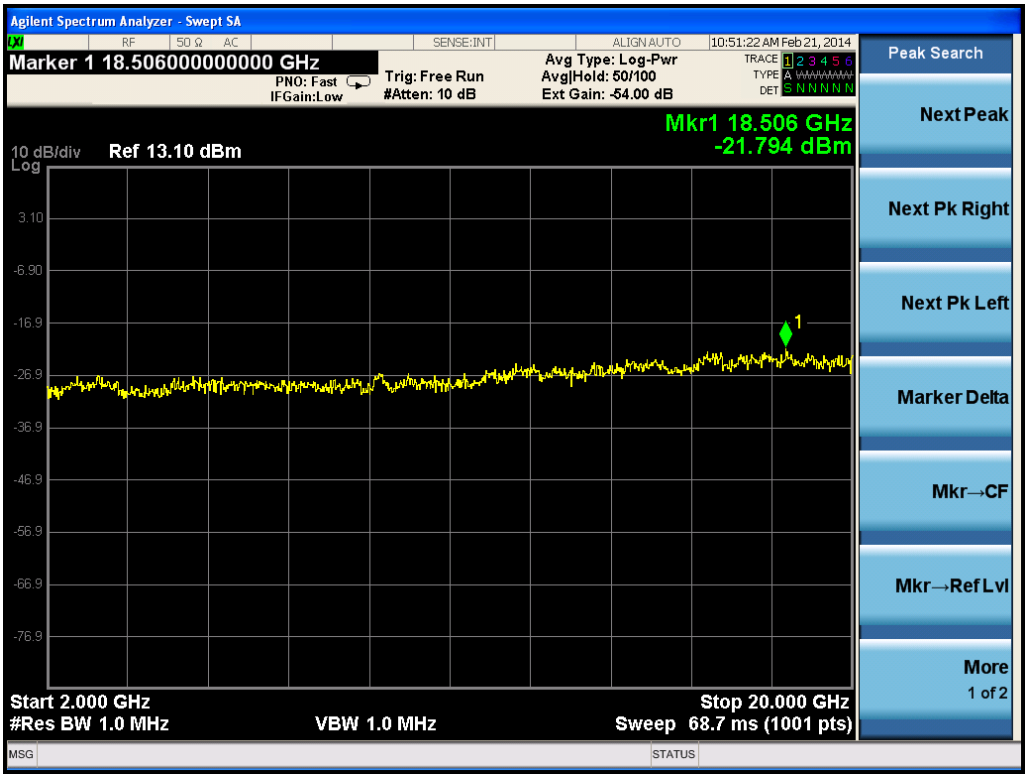


One carrier (working in top frequency)




Agilent Spectrum Analyzer - Swept SA
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
10:49:08 AM Feb 21, 2014
Marker 1 179.550000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 33/100
Ext Gain: -54.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Mkr1 179.55 kHz
-46.579 dBm
10 dB/div
Log
Ref 13.10 dBm
3.10
-6.90
-16.9
-26.9
-36.9
-46.9
-56.9
-66.9
-76.9
Start 150 kHz
#Res BW 10 kHz
VBW 10 kHz
Stop 10.000 MHz
Sweep 376 ms (1001 pts)
MSG
STATUS
DC Coupled
Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:49:38 AM Feb 21, 2014
Marker 1 22.800000000 MHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 15/100
Ext Gain: -54.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2
Mkr1 22.80 MHz
-59.545 dBm
10 dB/div
Log
Ref 13.10 dBm
3.10
-6.90
-16.9
-26.9
-36.9
-46.9
-56.9
-66.9
-76.9
Start 10.00 MHz
#Res BW 10 kHz
VBW 10 kHz
Stop 30.00 MHz
Sweep 763 ms (1001 pts)
MSG
STATUS


Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
10:50:09 AM Feb 21, 2014
Marker 1 794.360000000 MHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold: 38/100
Ext Gain: -54.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 794.36 MHz
-48.940 dBm
10 dB/div
Log
Ref 13.10 dBm
3.10
-6.90
-16.9
-26.9
-36.9
-46.9
-56.9
-66.9
-76.9
Start 30.0 MHz
#Res BW 100 kHz
VBW 100 kHz
Stop 1.0000 GHz
Sweep 370 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
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
10:50:50 AM Feb 21, 2014
Marker 1 1.972075000000 GHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -54.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 1.972 075 GHz
-31.068 dBm
10 dB/div
Log
Ref 13.10 dBm
3.10
-6.90
-16.9
-26.9
-36.9
-46.9
-56.9
-66.9
-76.9
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 1.9750 GHz
Sweep 3.73 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
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:51:22 AM Feb 21, 2014
Marker 1 18.506000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: Log-Pwr
Avg|Hold: 50/100
Ext Gain: -54.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 18.506 GHz
-21.794 dBm
10 dB/div
Log
Ref 13.10 dBm
3.10
-6.90
-16.9
-26.9
-36.9
-46.9
-56.9
-66.9
-76.9
1
Start 2.000 GHz
#Res BW 1.0 MHz
VBW 1.0 MHz
Stop 20.000 GHz
Sweep 68.7 ms (1001 pts)
MSG
STATUS
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

3.6 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	MY51160170	2014-6-16	2015-6-16
Atten	50dB Attenuator	ATSI150-4-40	11300100204204	2014-4-8	2015-4-8
Forstar	Forstar RF Cable	002	1034	2014-4-8	2015-4-8

*__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

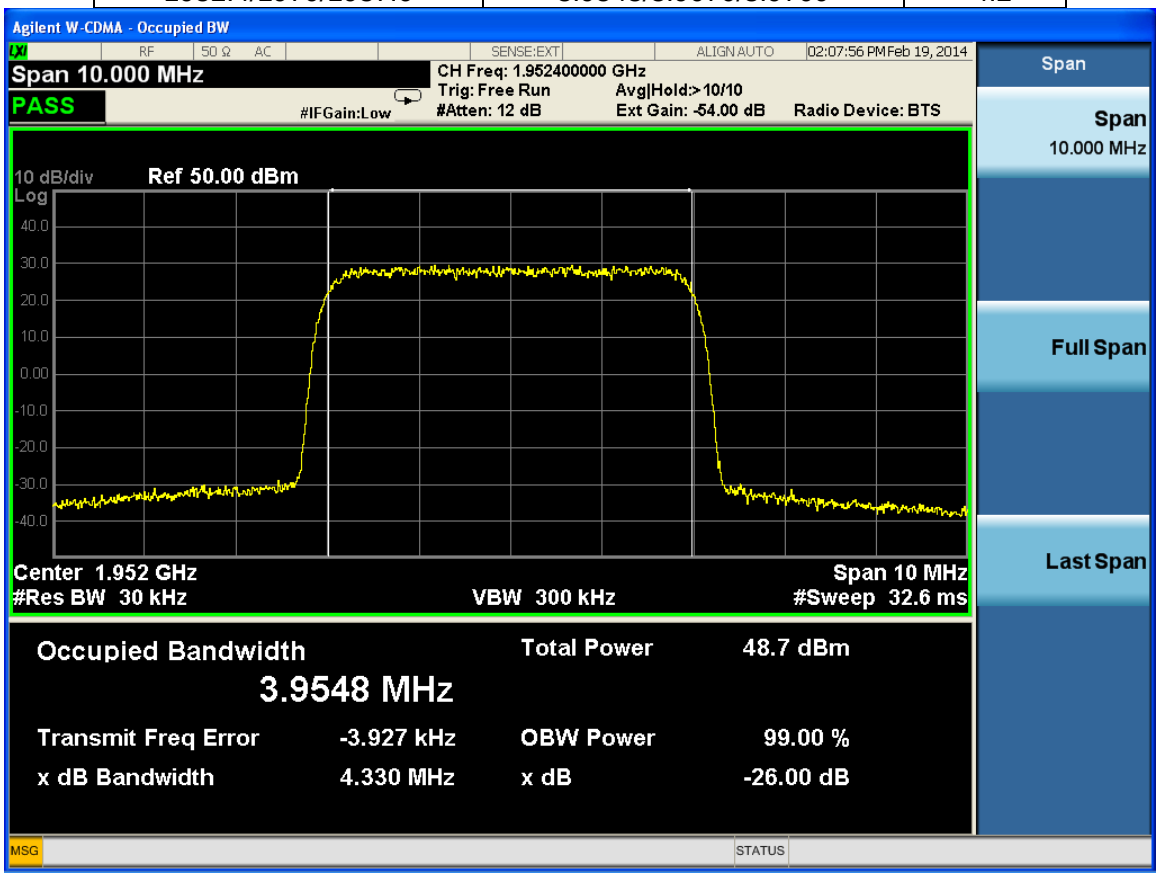
Temperature:	20 ° C
Relative Humidity:	53%
ATM Pressure:	1009mbar

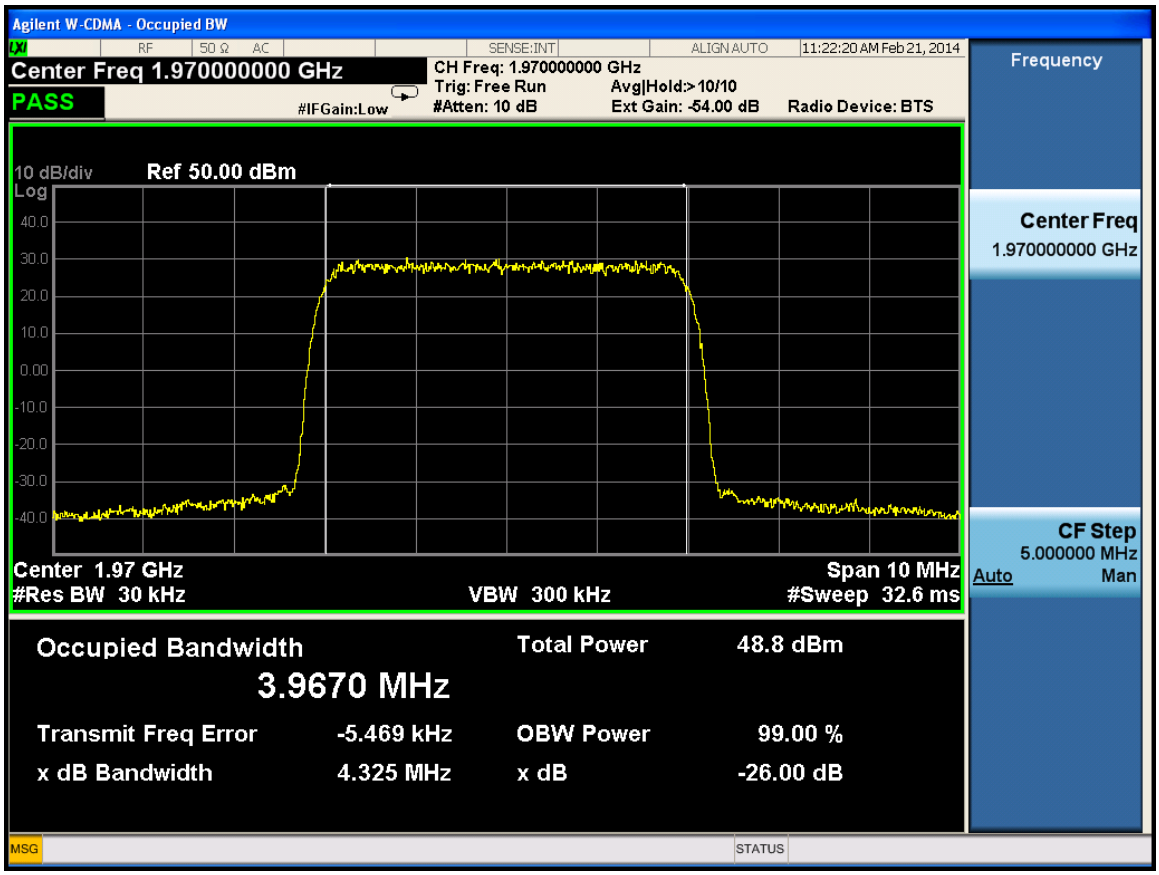
Test Result: Pass

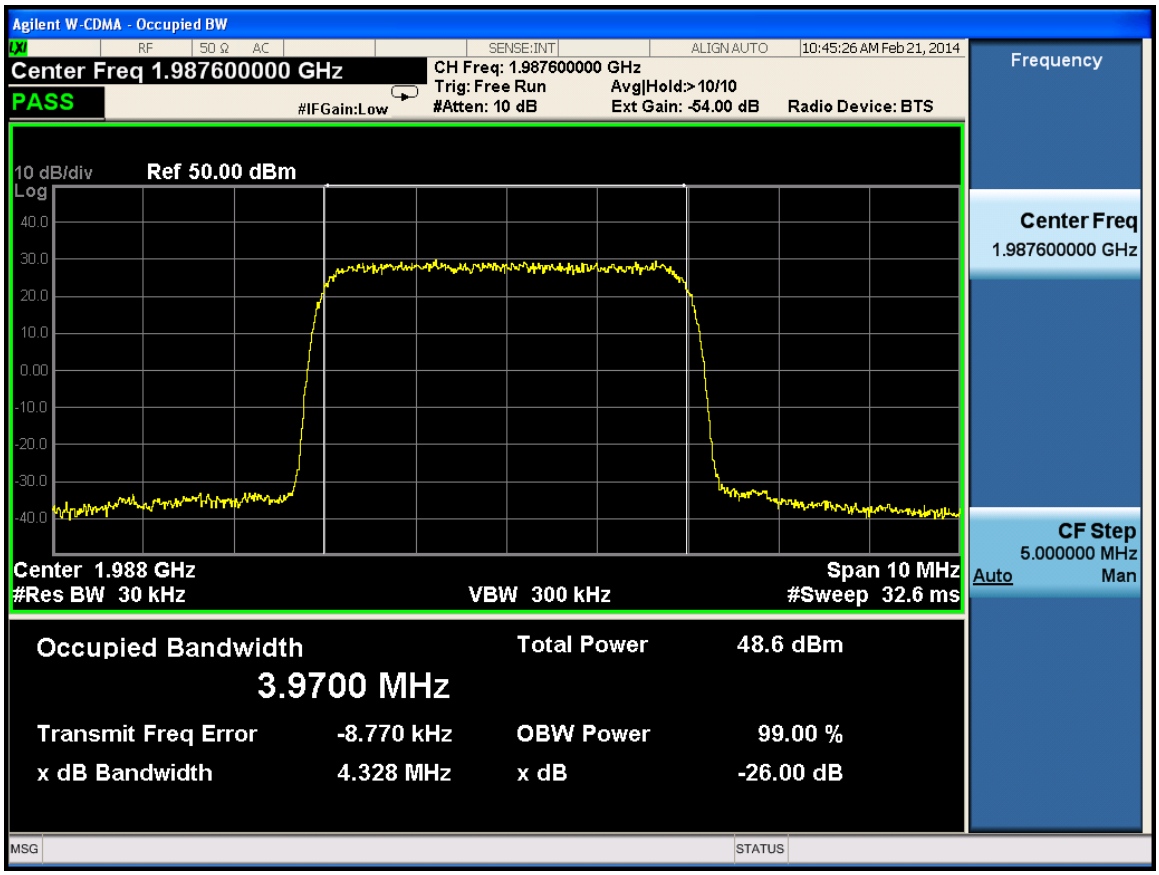
Test Mode: Transmitting UMTS

Test Data

Frequency (MHz)	99% Power Bandwidth (MHz)	Limit (MHz)
1952.4/1970/1987.6	3.9548/3.9670/3.9700	<4.2




Agilent W-CDMA - Occupied BW
RF
50 Ω
AC
SENSE:INT
ALIGN AUTO
11:22:20 AM Feb 21, 2014
Center Freq 1.970000000 GHz
PASS
#IFGain:Low
CH Freq: 1.970000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 10 dB
Ext Gain: -54.00 dB
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 Freq
1.970000000 GHz
CF Step
5.000000 MHz
Auto
Man
Center 1.97 GHz
#Res BW 30 kHz
VBW 300 kHz
Span 10 MHz
#Sweep 32.6 ms
Occupied Bandwidth
3.9670 MHz
Total Power
48.8 dBm
Transmit Freq Error
-5.469 kHz
OBW Power
99.00 %
x dB Bandwidth
4.325 MHz
x dB
-26.00 dB
MSG
STATUS


Agilent W-CDMA - Occupied BW
RF
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:45:26 AM Feb 21, 2014
Center Freq 1.987600000 GHz
PASS
#IFGain:Low
CH Freq: 1.987600000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 10 dB
Ext Gain: -54.00 dB
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 Freq
1.987600000 GHz
CF Step
5.000000 MHz
Auto
Man
Center 1.988 GHz
#Res BW 30 kHz
VBW 300 kHz
Span 10 MHz
#Sweep 32.6 ms
Occupied Bandwidth
3.9700 MHz
Total Power
48.6 dBm
Transmit Freq Error
-8.770 kHz
OBW Power
99.00 %
x dB Bandwidth
4.328 MHz
x dB
-26.00 dB
MSG
STATUS

3.7 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	MY51160170	2014-6-16	2015-6-16
Atten	50dB Attenuator	ATSI150-4-40	11300100204204	2014-4-8	2015-4-8
Forstar	Forstar RF Cable	002	1034	2014-4-8	2015-4-8

*__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

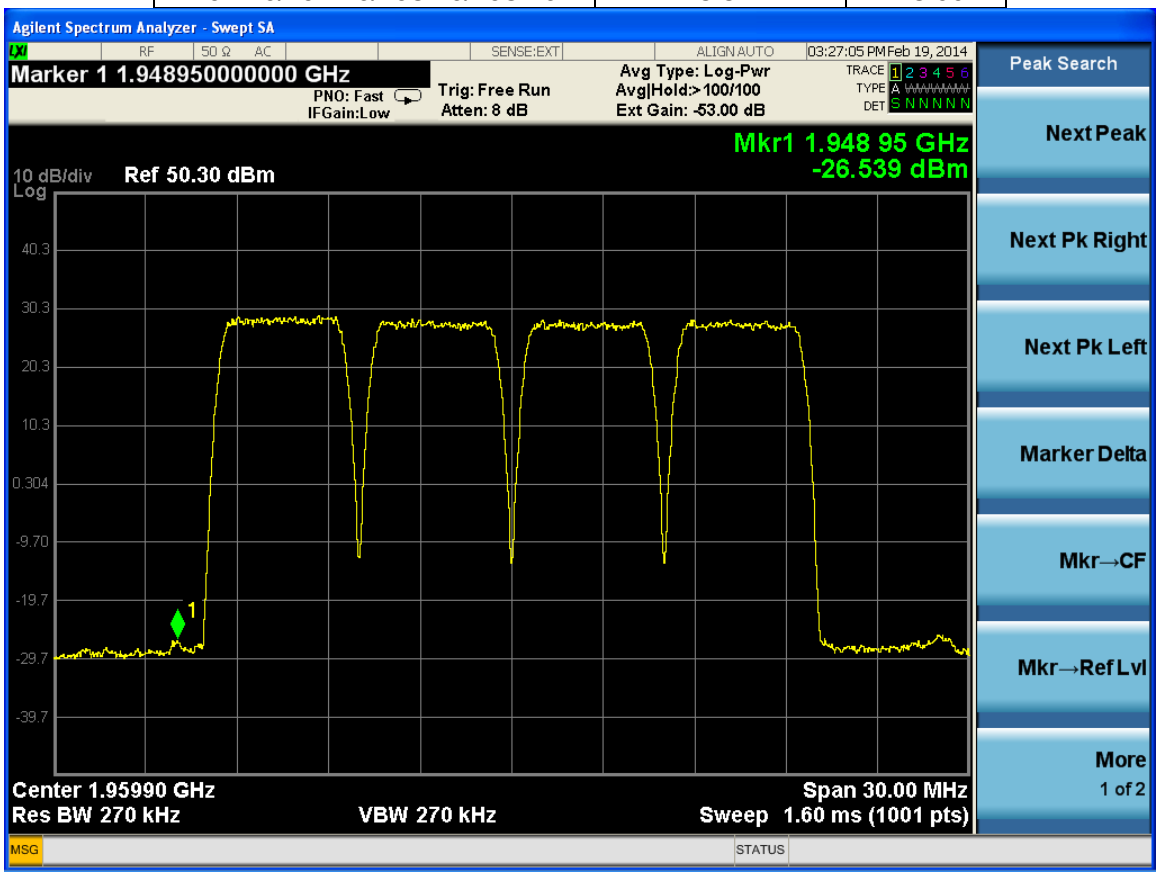
Test Result: Pass

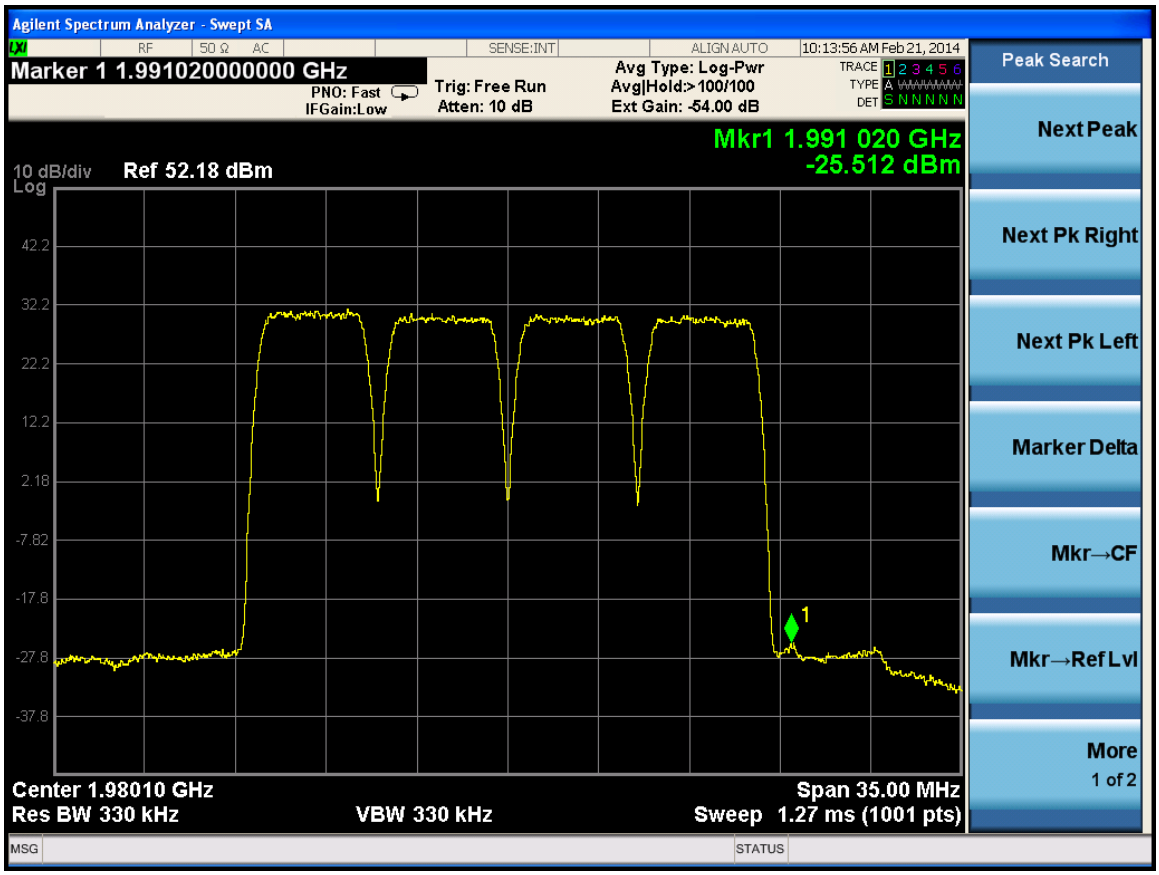
Test Mode: Transmitting UMTS

Test Data

Four carriers

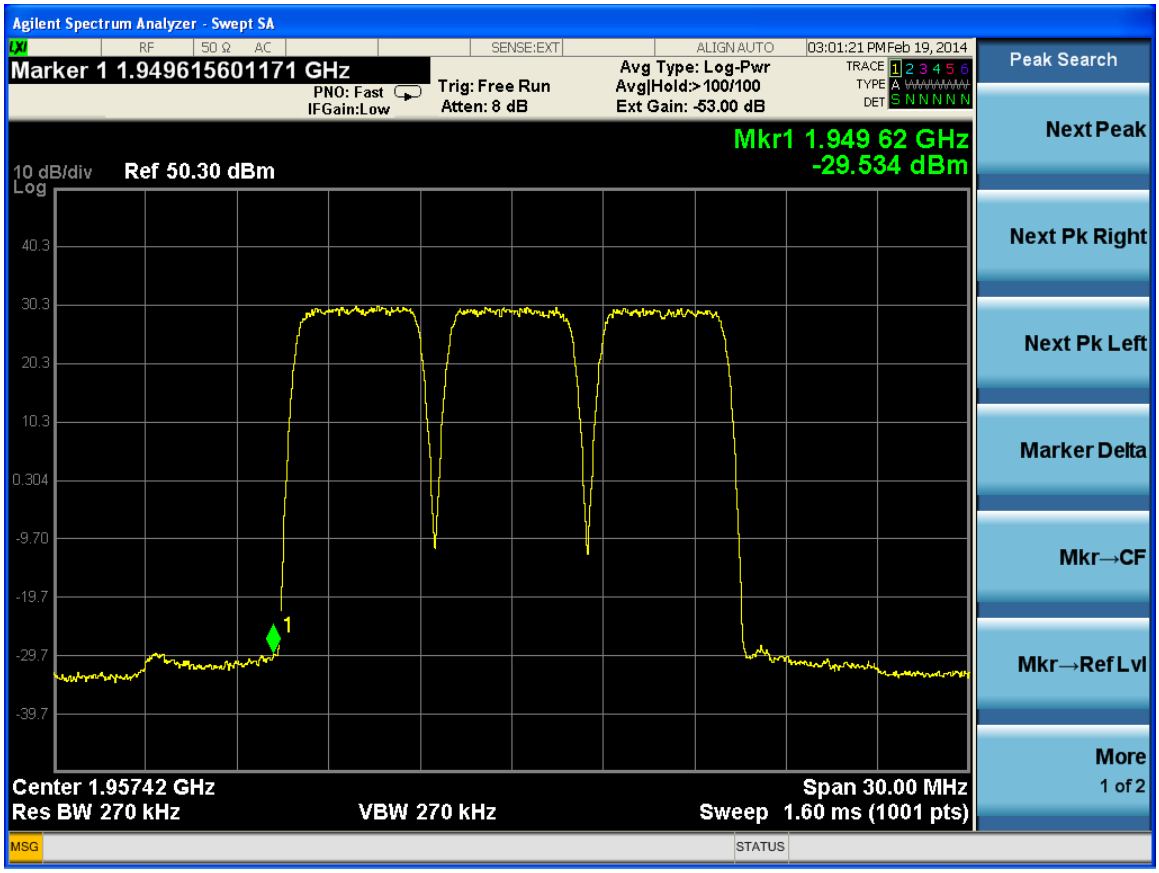
Frequency channel	Max bandedge Emission (dBm)	Limit (dBm)
1952.4/1957.4/1962.4/1967.4	-26.539	-13.00
1972.6/1977.6/1982.6/1987.6	-25.512	-13.00

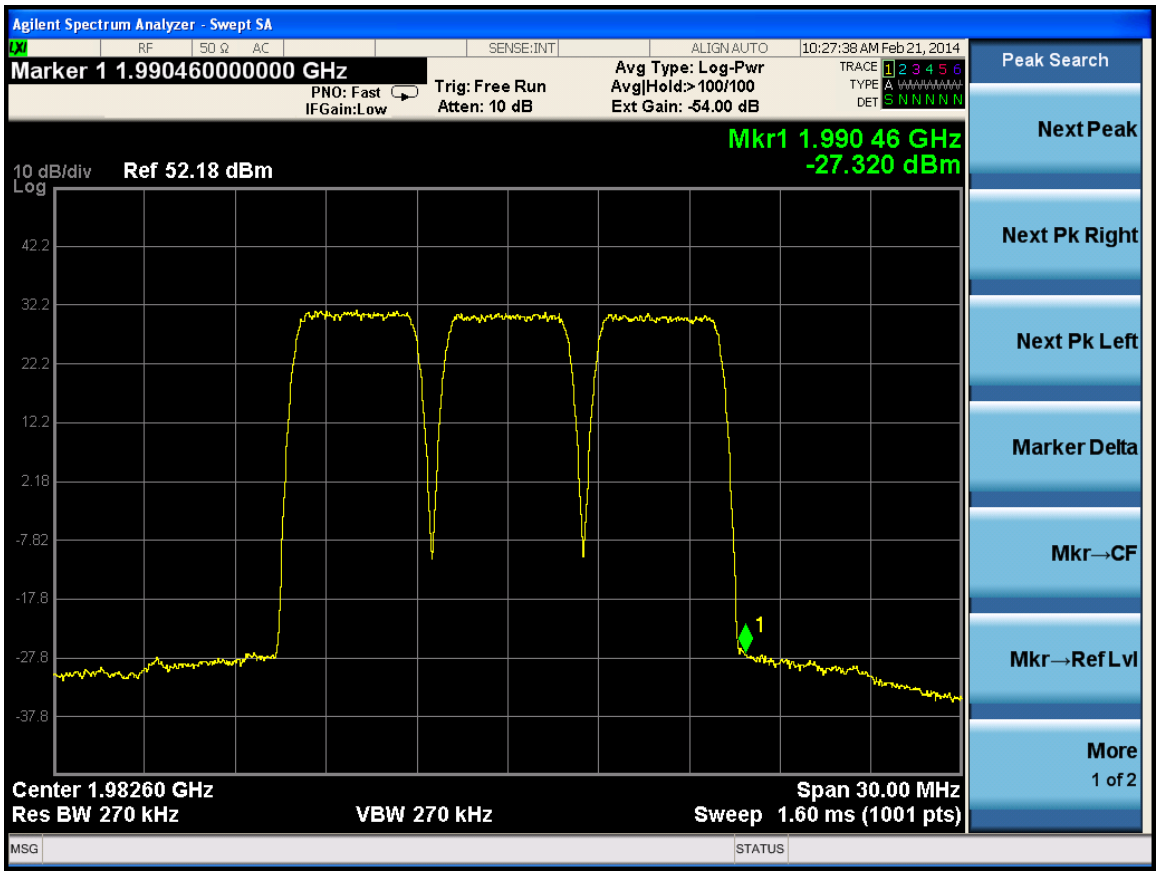




Three carriers

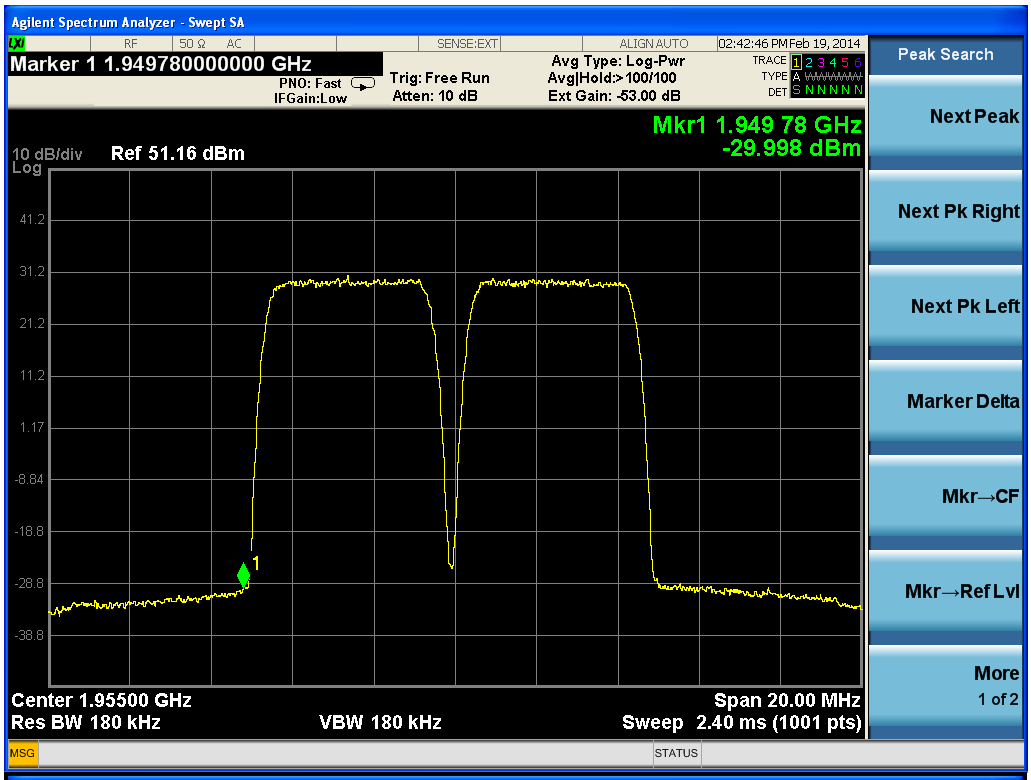
Frequency channel	Max bandedge Emission (dBm)	Limit (dBm)
1952.4/1957.4/1962.4	-29.534	-13.00
1977.6/1982.6/1987.6	-27.320	-13.00

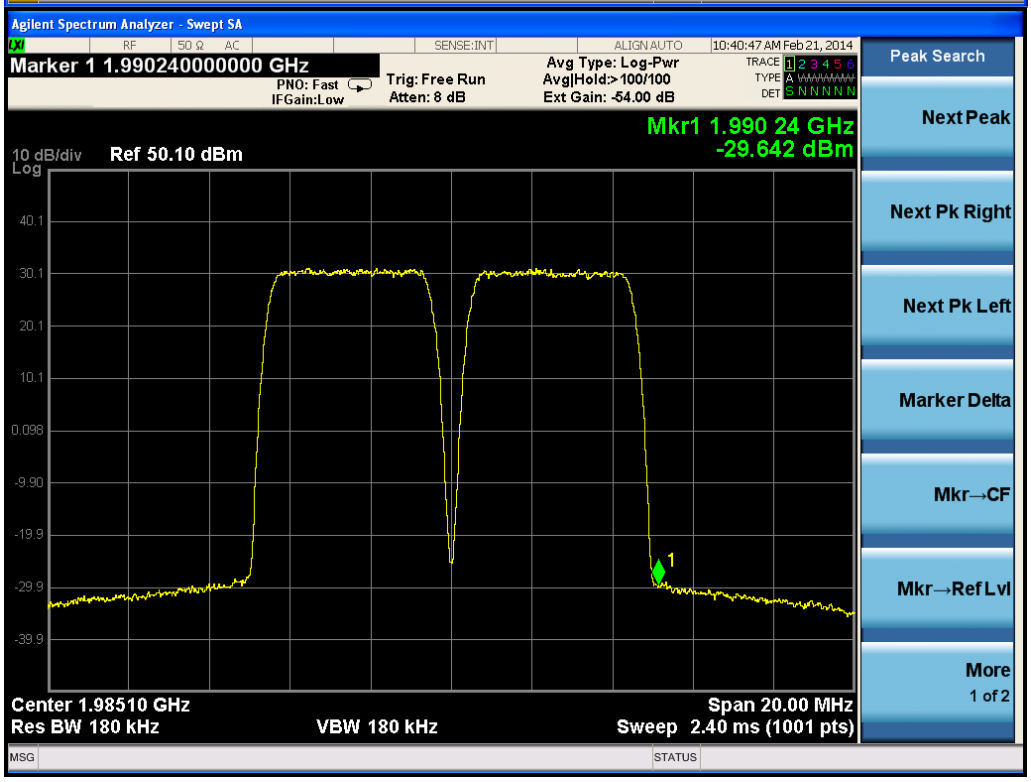

Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:EXT
ALIGN AUTO
03:01:21 PM Feb 19, 2014
Marker 1 1.949615601171 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 8 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -53.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 1.949 62 GHz
-29.534 dBm
10 dB/div
Log
Ref 50.30 dBm
40.3
30.3
20.3
10.3
0.304
-9.70
-19.7
-29.7
-39.7
1
Center 1.95742 GHz
Res BW 270 kHz
VBW 270 kHz
Span 30.00 MHz
Sweep 1.60 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

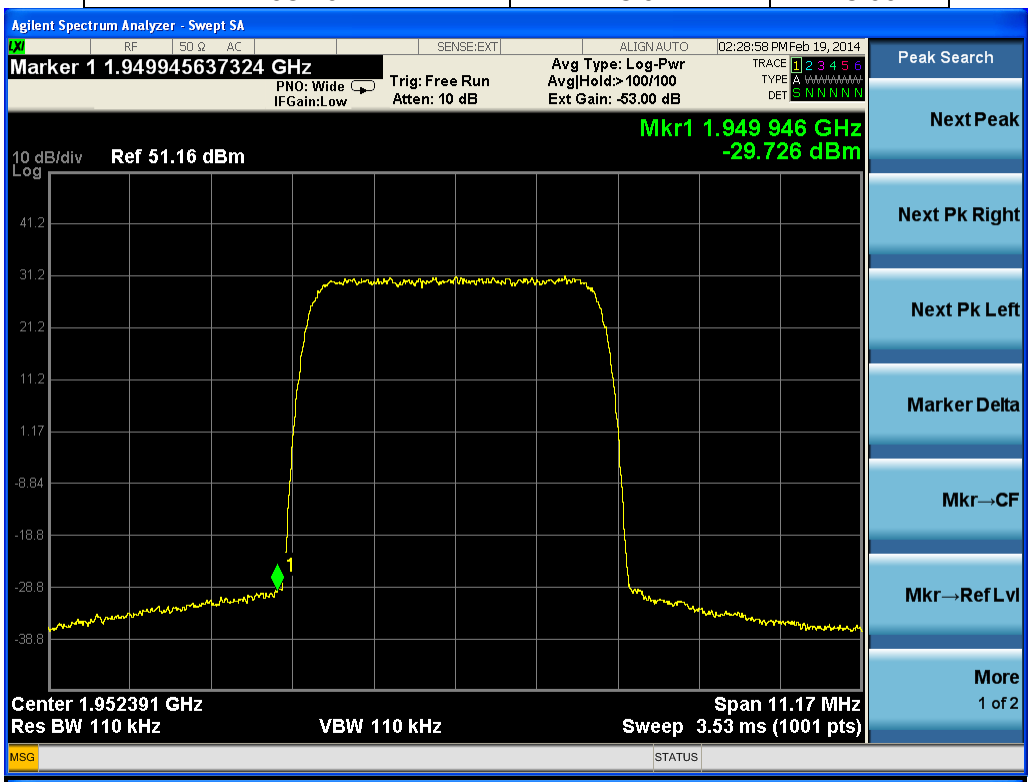
Frequency channel	Max bandedge Emission (dBm)	Limit (dBm)
1952.4/1957.4	-29.998	-13.00
1982.6/1987.6	-29.642	-13.00

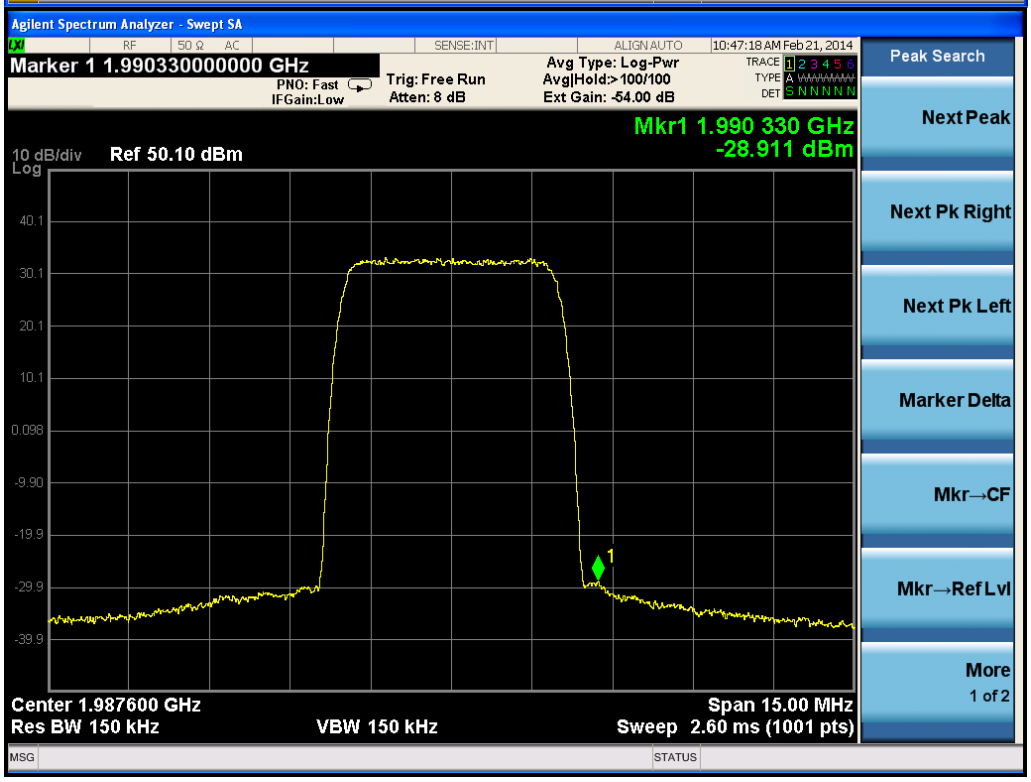

Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:EXT
ALIGN AUTO
02:42:46 PM Feb 19, 2014
Marker 1 1.949780000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 10 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -53.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 1.949 78 GHz
-29.998 dBm
10 dB/div
Log
Ref 51.16 dBm
41.2
31.2
21.2
11.2
1.17
-8.84
-18.8
-28.8
-38.8
Center 1.95500 GHz
Res BW 180 kHz
VBW 180 kHz
Span 20.00 MHz
Sweep 2.40 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
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:40:47 AM Feb 21, 2014
Marker 1 1.990240000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
Atten: 8 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -54.00 dB
TRACE 1 2 3 4 5 6
TYPE A WWWWW
DET S N N N N N
Mkr1 1.990 24 GHz
-29.642 dBm
10 dB/div
Log
Ref 50.10 dBm
40.1
30.1
20.1
10.1
0.098
-9.90
-19.9
-29.9
-39.9
Center 1.98510 GHz
Res BW 180 kHz
VBW 180 kHz
Span 20.00 MHz
Sweep 2.40 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

One carrier

Frequency channel	Max bandedge Emission (dBm)	Limit (dBm)
1952.4	-29.726	-13.00
1987.6	-28.911	-13.00





3.8 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	2014-6-25	2015-6-25
Agilent	MXA Series Spectrum Analyzer	N9020A	MY51160170	2014-6-16	2015-6-16
Atten	50dB Attenuator	ATSI150-4-40	11300100204204	2014-4-8	2015-4-8
Forstar	Forstar RF Cable	002	1034	2014-4-8	2015-4-8

*__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(1952.4MHz)					
-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(1970MHz)					
-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 (1987.6MHz)					
-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(1952.4M)					
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(1970M)					
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(1987.6M)					
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

4 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

4.1 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 1950 MHz to 1990MHz with the antenna height above average terrain up to 300 meters. If used in urban area, the limit should be 1640Watts/MHz.

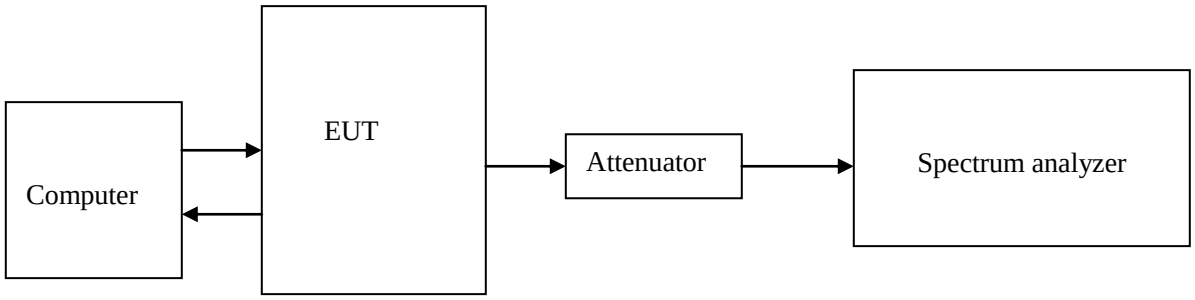
Note: EIRP= Max output Power+ Antenna gain- Cable Loss

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY48011941	2014-4-10	2015-4-9
Atten	30dB Attenuator	ATSI150-4-30	11300110201221	2014-4-8	2015-4-8
Forstar	Forstar RF Cable	002	1034	2014-4-9	2015-4-8

*__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

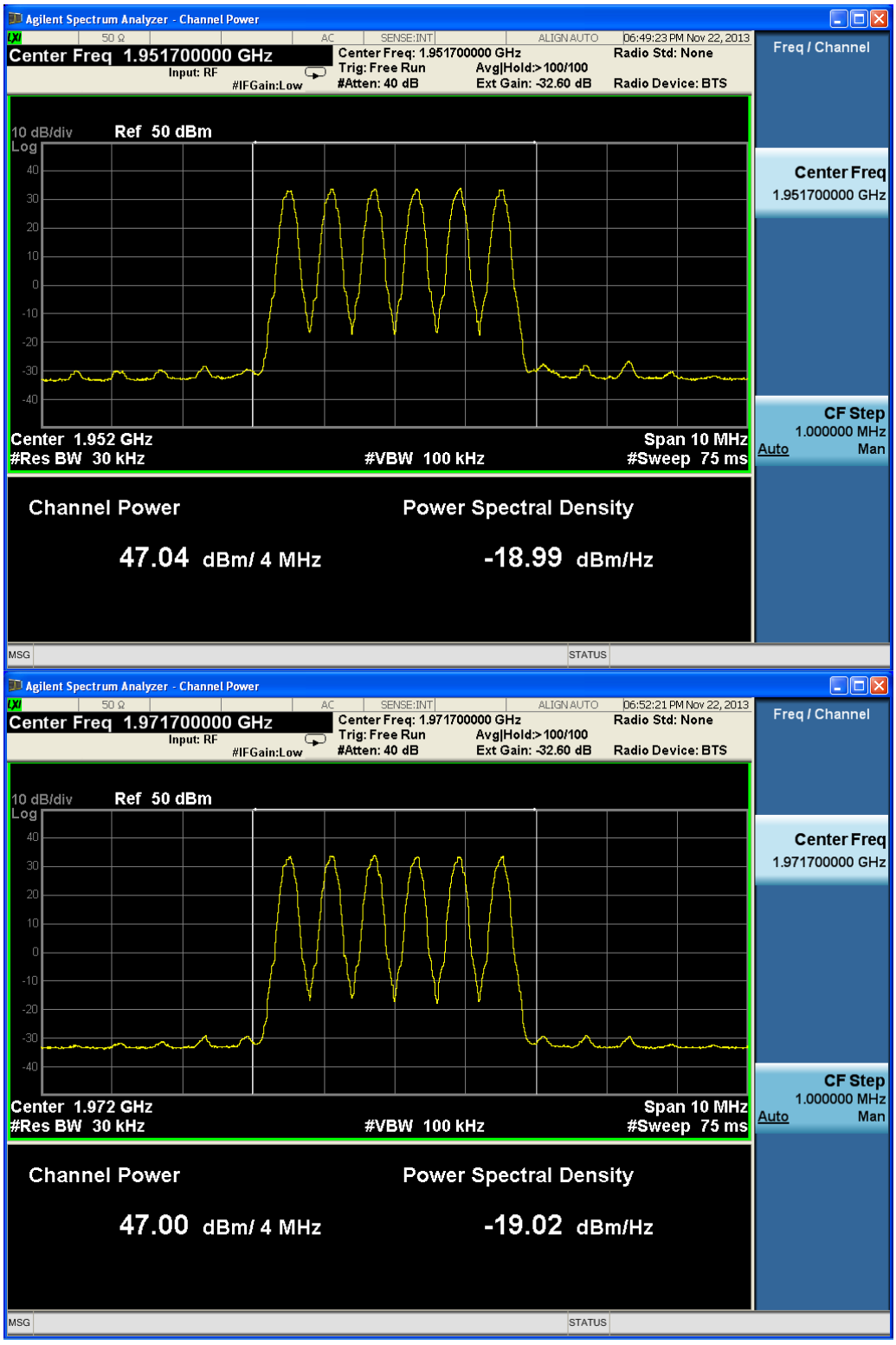
Test Result: Pass

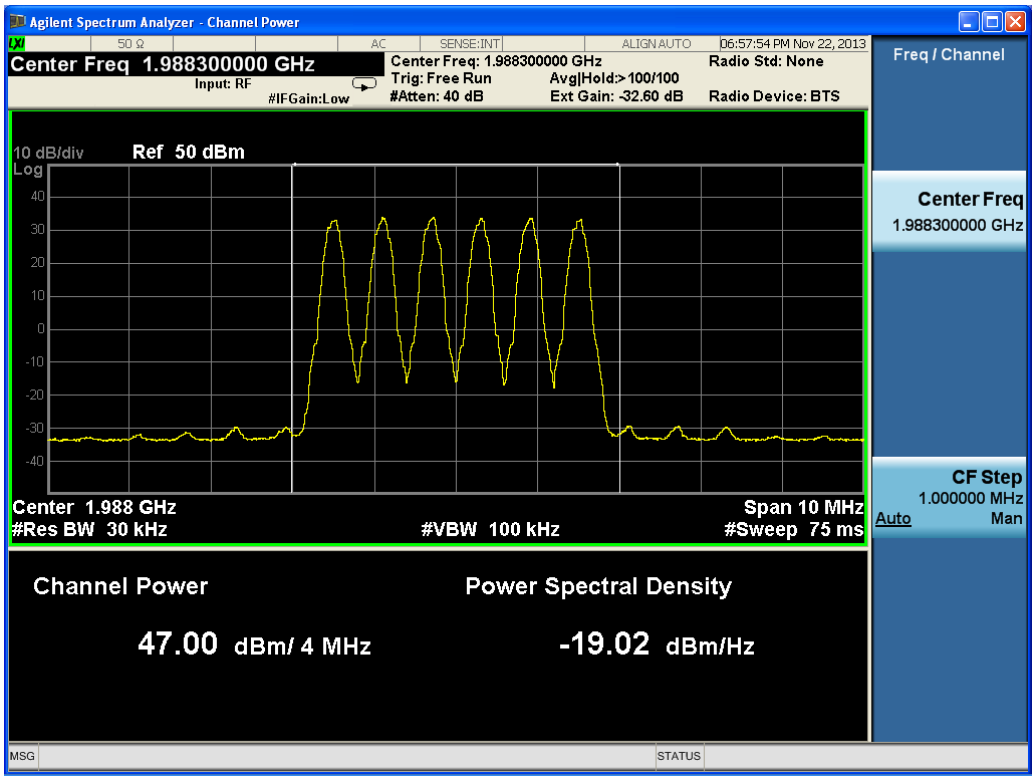
Test Mode: Transmitting GSM

Test Data:

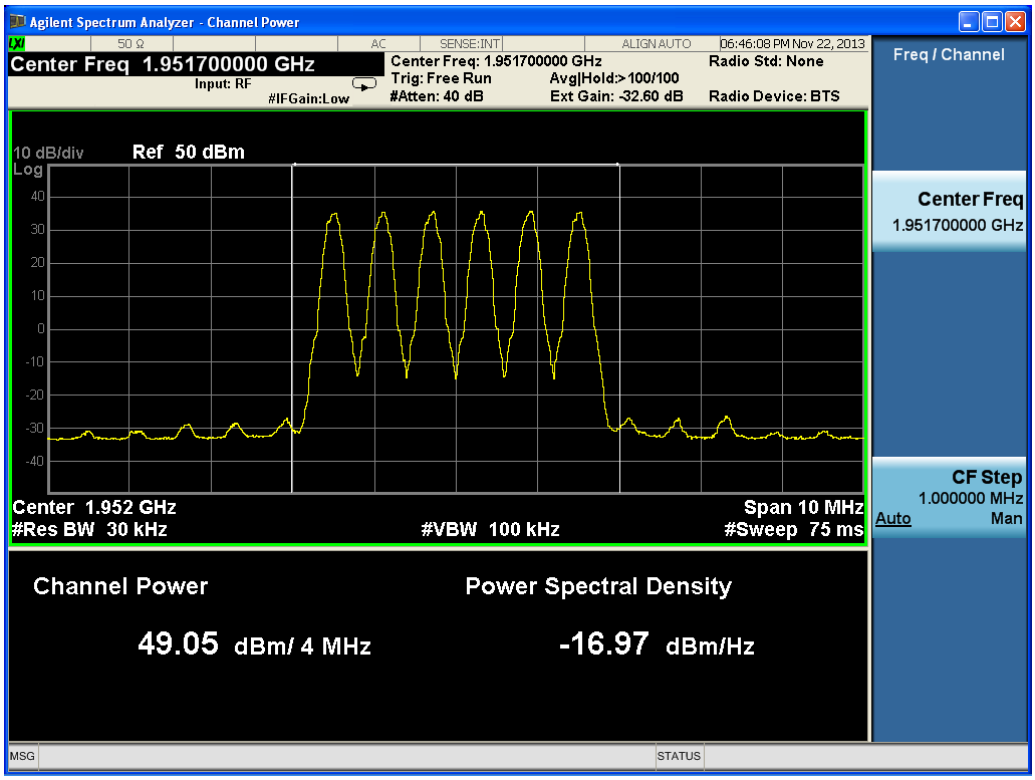
Six carriers

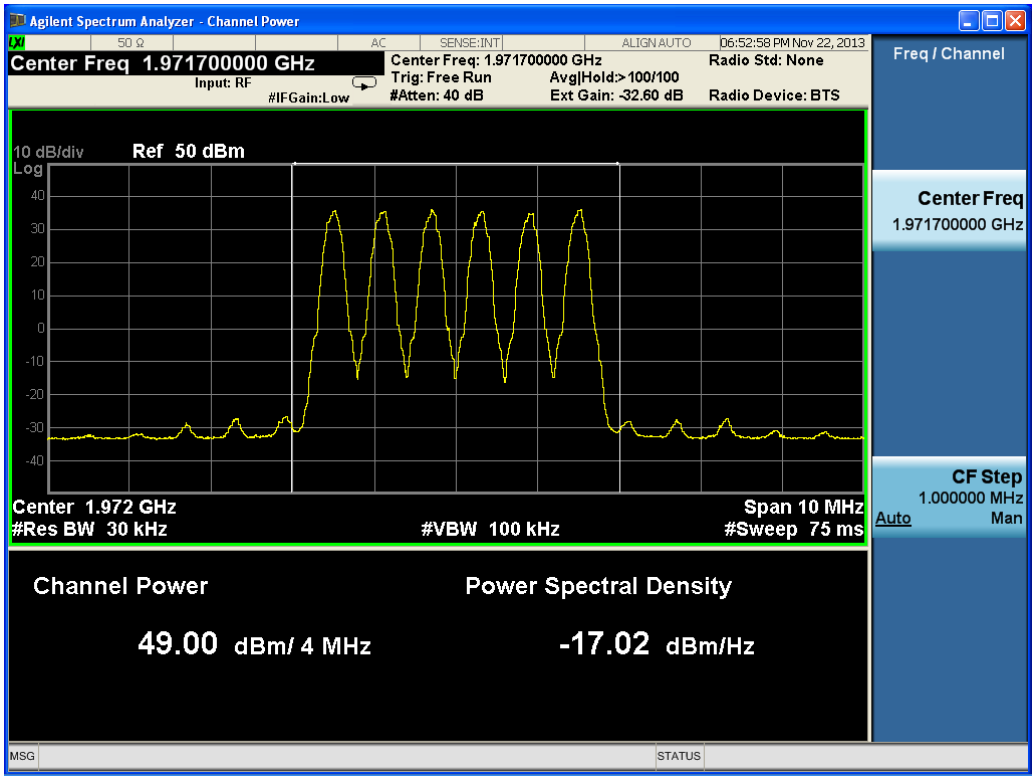
modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
8PSK	1951.7	1950.2/1950.8/1951.4/1952/1952.6/1953.2	47.04
	1971.7	1970.2/1970.8/1971.4/1972/1972.6/1973.2	47.00
	1988.3	1986.8/1987.4/1988/1988.6/1989.2/1989.8	47.00

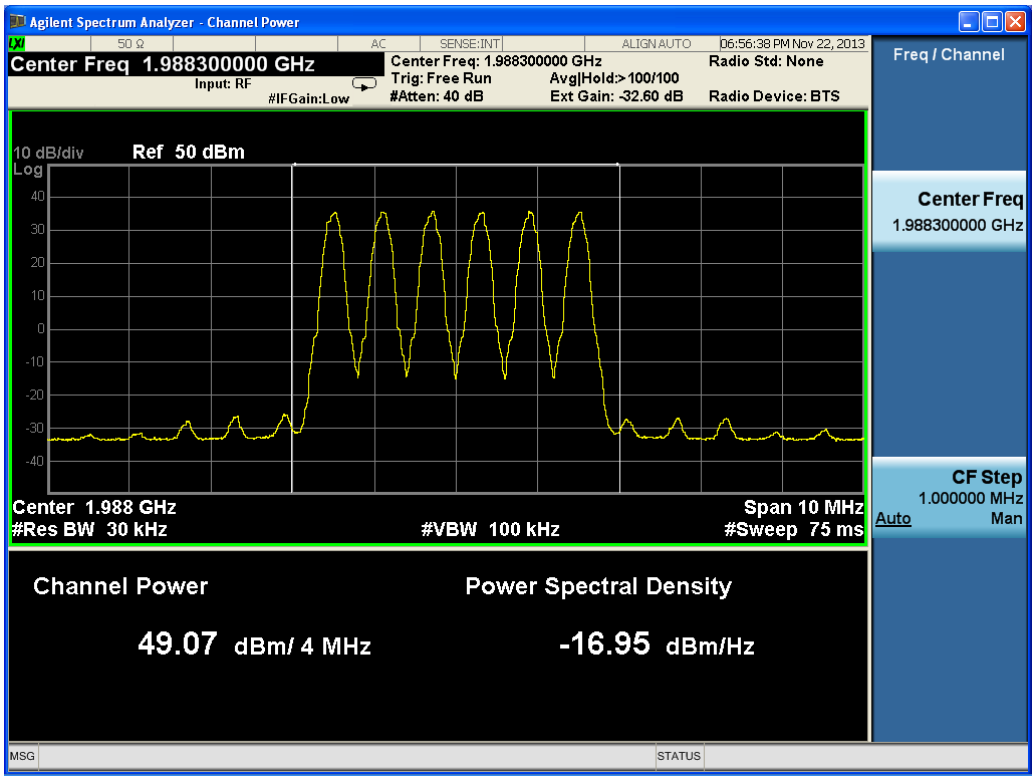

Agilent Spectrum Analyzer - Channel Power
Center Freq 1.951700000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.951700000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
06:49:23 PM Nov 22, 2013
Freq / Channel
10 dB/div
Log
Ref 50 dBm
Center Freq
1.951700000 GHz
Center 1.952 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 10 MHz
#Sweep 75 ms
CF Step
1.000000 MHz
Auto
Man
Channel Power
47.04 dBm/ 4 MHz
Power Spectral Density
-18.99 dBm/Hz
MSG
STATUS
Agilent Spectrum Analyzer - Channel Power
Center Freq 1.971700000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.971700000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
06:52:21 PM Nov 22, 2013
Freq / Channel
10 dB/div
Log
Ref 50 dBm
Center Freq
1.971700000 GHz
Center 1.972 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 10 MHz
#Sweep 75 ms
CF Step
1.000000 MHz
Auto
Man
Channel Power
47.00 dBm/ 4 MHz
Power Spectral Density
-19.02 dBm/Hz
MSG
STATUS



modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
GMSK	1951.7	1950.2/1950.8/1951.4/1952/1952.6/1953.2	49.05
	1971.7	1970.2/1970.8/1971.4/1972/1972.6/1973.2	49.00
	1988.3	1986.8/1987.4/1988/1988.6/1989.2/1989.8	49.07

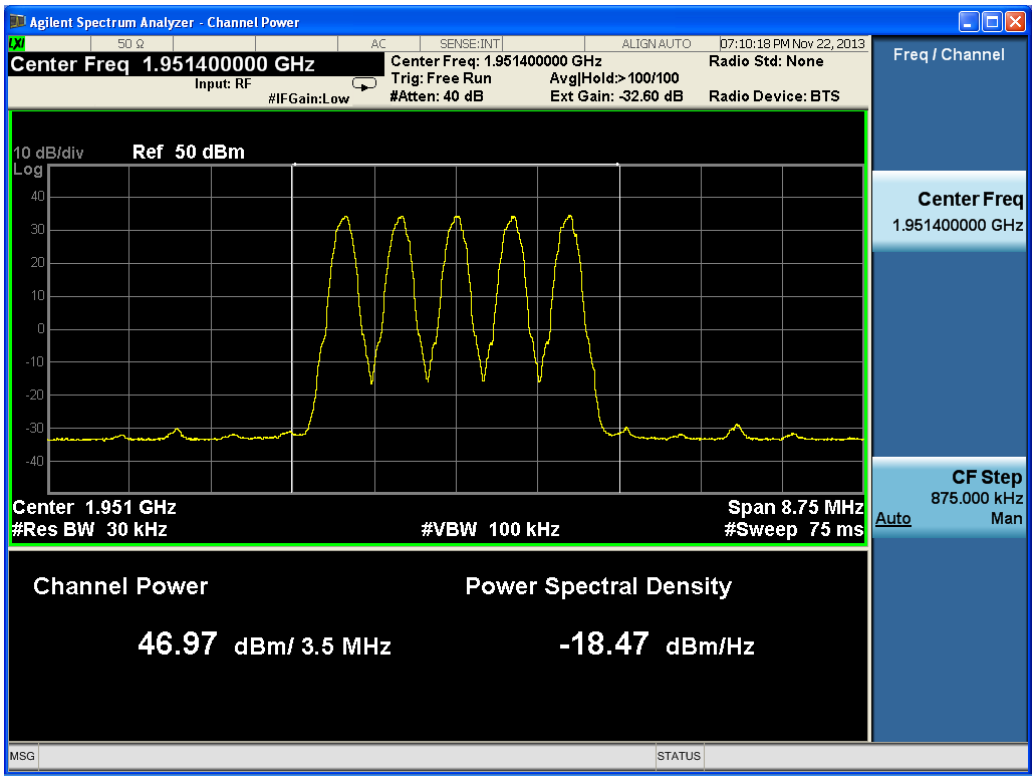

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
06:46:08 PM Nov 22, 2013
Center Freq 1.951700000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.951700000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.951700000 GHz
Center 1.952 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 10 MHz
#Sweep 75 ms
CF Step
1.000000 MHz
Auto
Man
Channel Power
49.05 dBm/ 4 MHz
Power Spectral Density
-16.97 dBm/Hz
MSG
STATUS

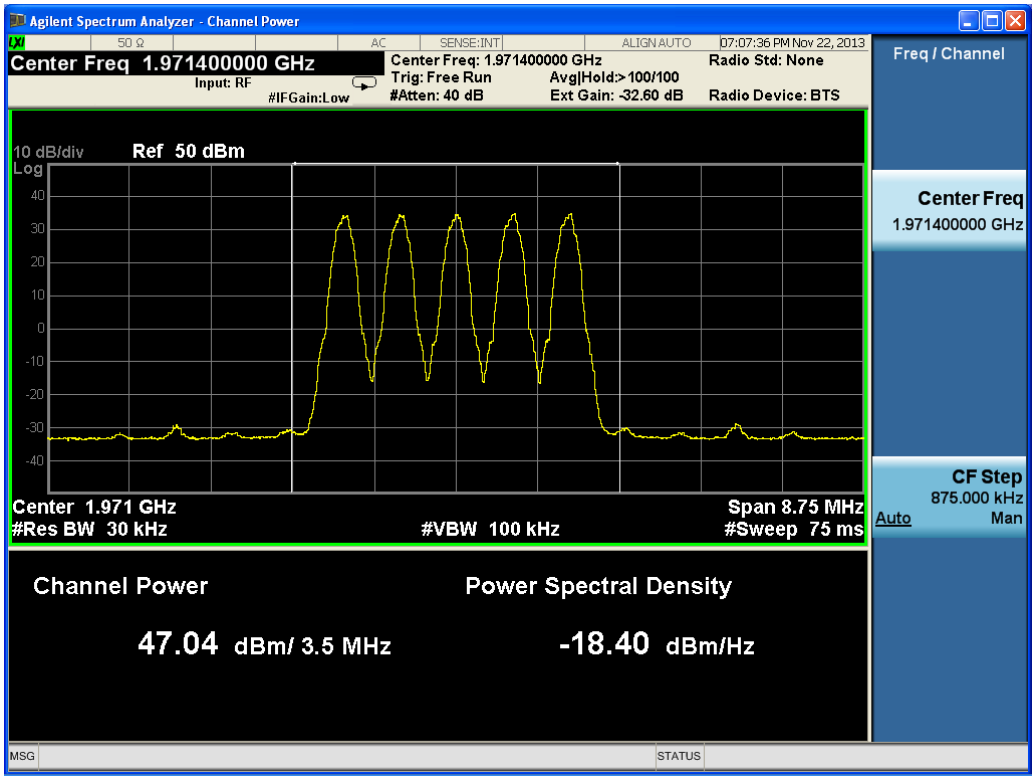

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
06:52:58 PM Nov 22, 2013
Center Freq 1.971700000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.971700000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.971700000 GHz
Center 1.972 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 10 MHz
#Sweep 75 ms
CF Step
1.000000 MHz
Auto
Man
Channel Power
49.00 dBm/ 4 MHz
Power Spectral Density
-17.02 dBm/Hz
MSG
STATUS

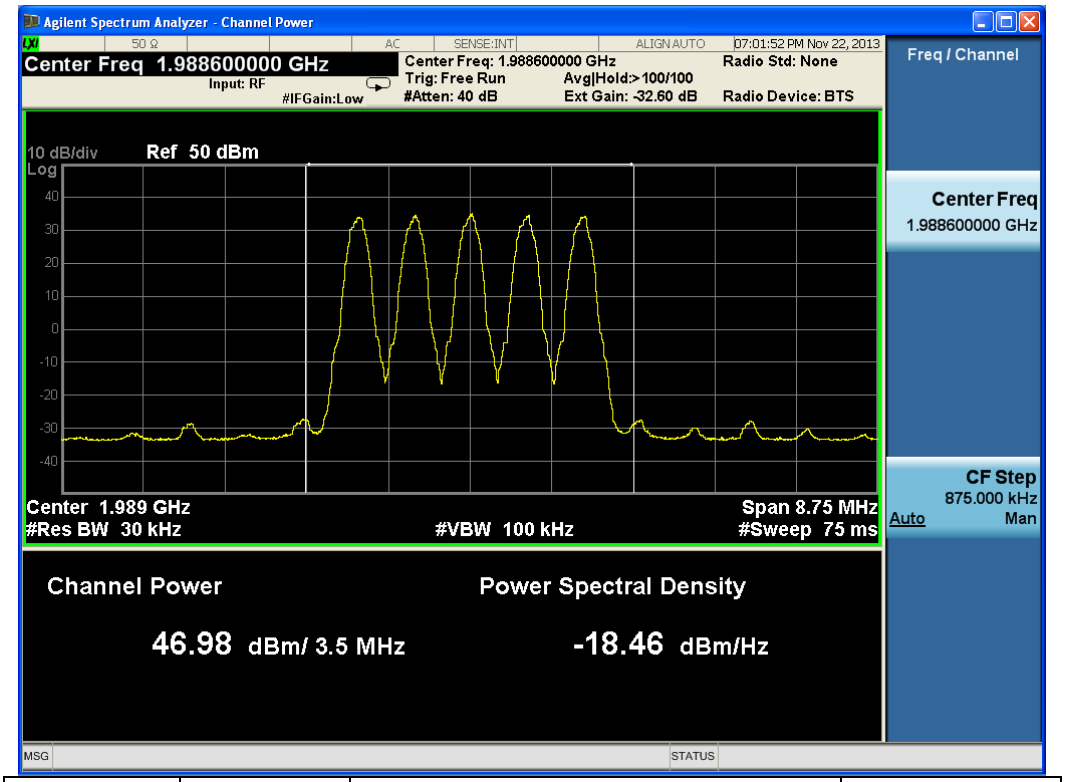


Five carriers

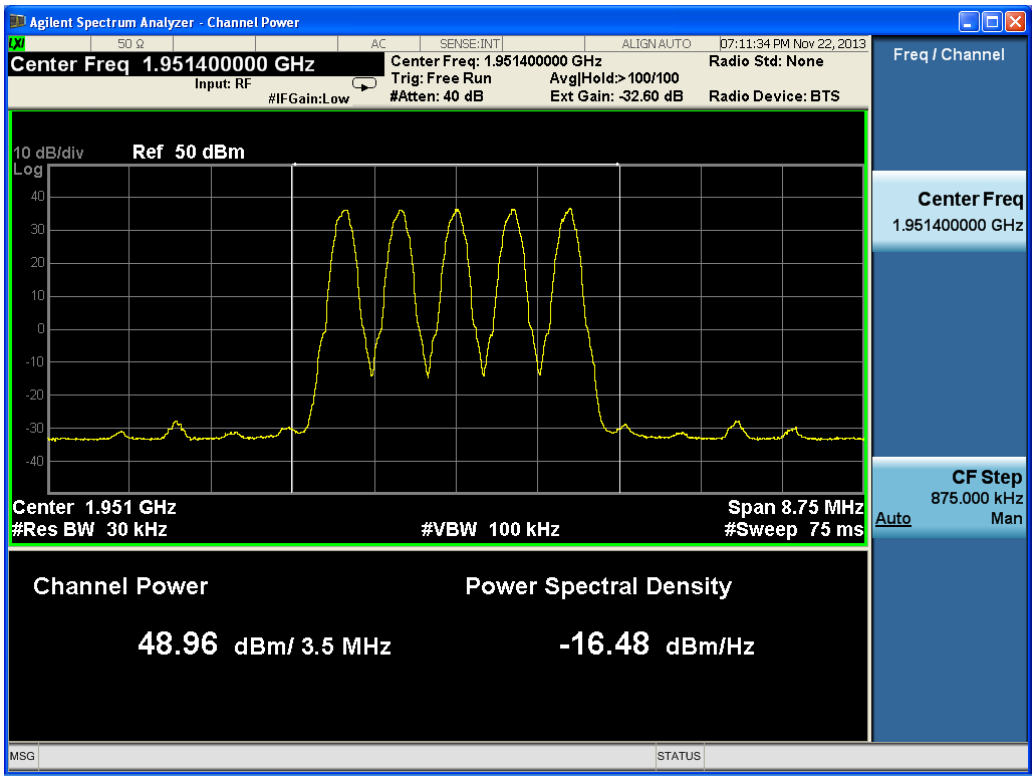
modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
8PSK	1951.4	1950.2/1950.8/1951.4/1952/1952.6	46.97
	1971.4	1970.2/1970.8/1971.4/1972/1972.6	47.04
	1988.6	1987.4/1988/1988.6/1989.2/1989.8	46.98

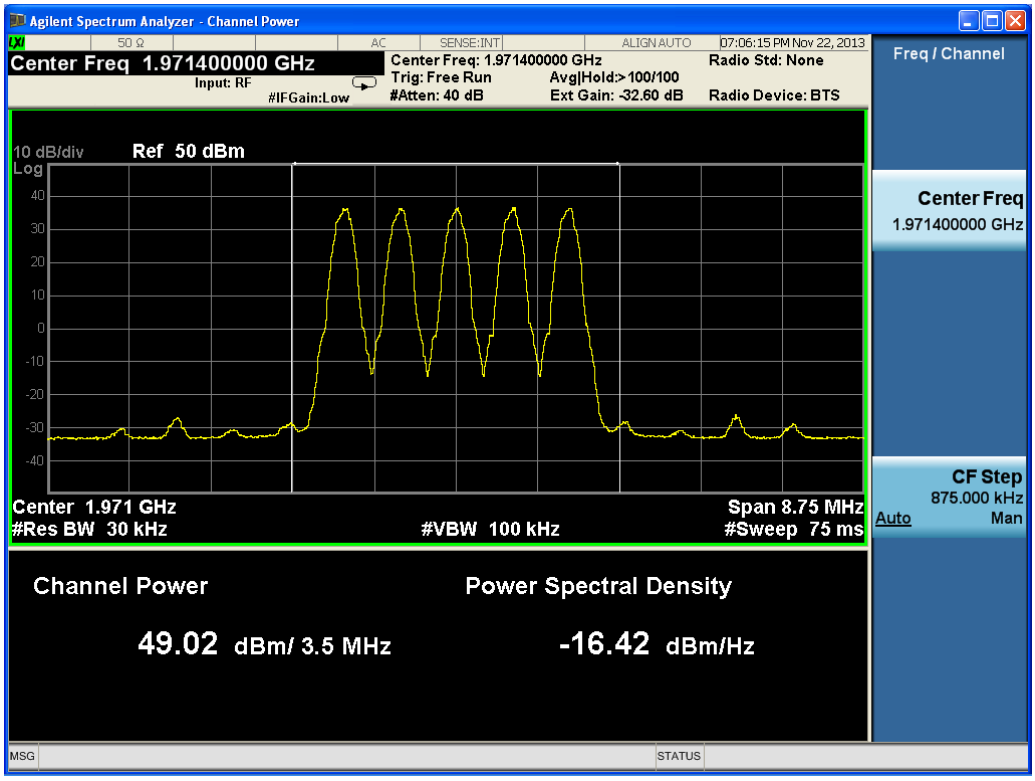

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:10:18 PM Nov 22, 2013
Center Freq 1.951400000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.951400000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.951400000 GHz
Center 1.951 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 8.75 MHz
#Sweep 75 ms
CF Step
875.000 kHz
Auto
Man
Channel Power
46.97 dBm/ 3.5 MHz
Power Spectral Density
-18.47 dBm/Hz
MSG
STATUS

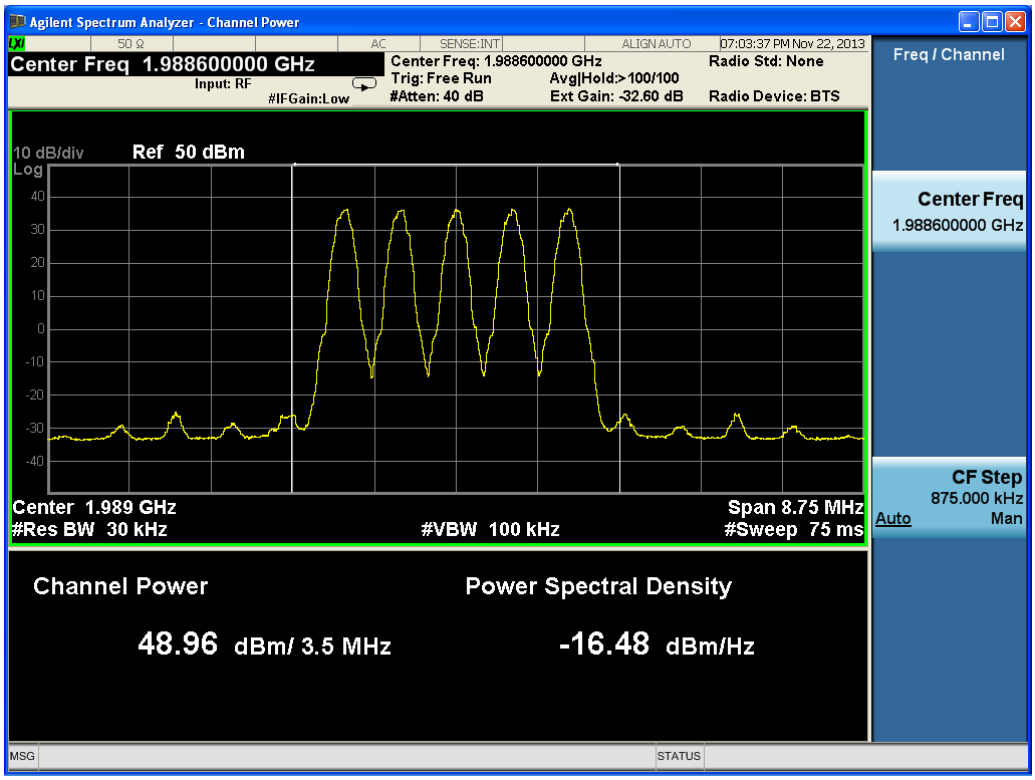

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:07:36 PM Nov 22, 2013
Center Freq 1.971400000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.971400000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.971400000 GHz
Center 1.971 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 8.75 MHz
#Sweep 75 ms
CF Step
875.000 kHz
Auto
Man
Channel Power
47.04 dBm/ 3.5 MHz
Power Spectral Density
-18.40 dBm/Hz
MSG
STATUS



modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
GMSK	1951.4	1950.2/1950.8/1951.4/1952/1952.6	48.96
	1971.4	1970.2/1970.8/1971.4/1972/1972.6	49.02
	1988.6	1987.4/1988/1988.6/1989.2/1989.8	48.96

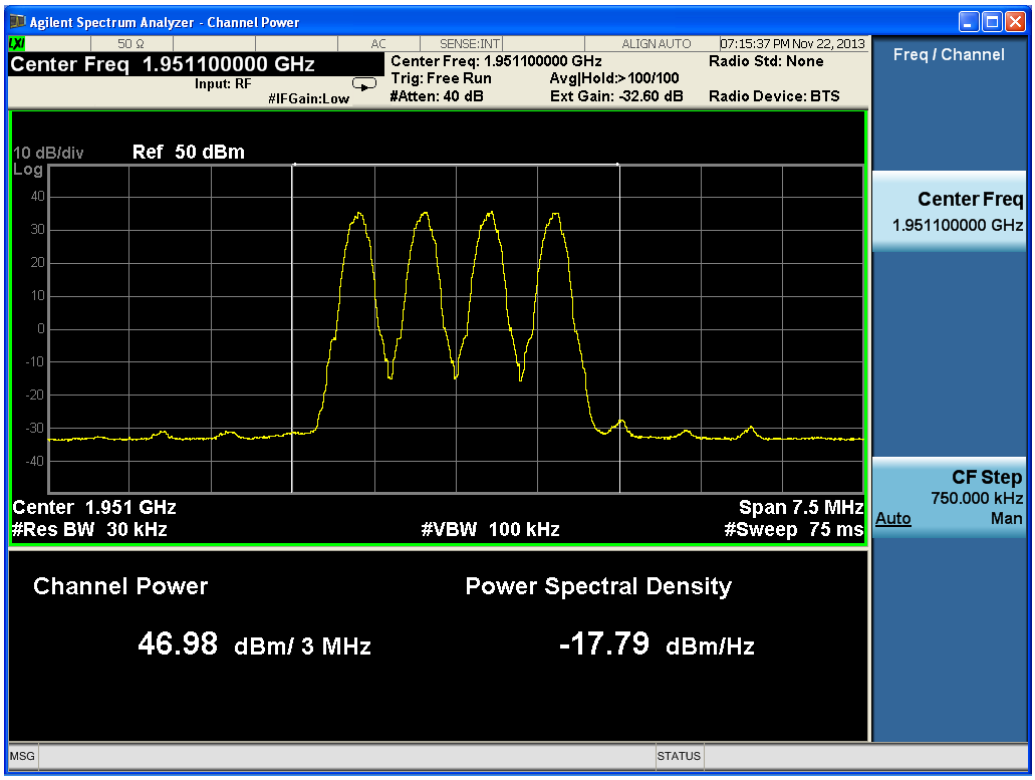

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:11:34 PM Nov 22, 2013
Center Freq 1.951400000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.951400000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.951400000 GHz
Center 1.951 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 8.75 MHz
#Sweep 75 ms
CF Step
875.000 kHz
Auto
Man
Channel Power
48.96 dBm/ 3.5 MHz
Power Spectral Density
-16.48 dBm/Hz
MSG
STATUS

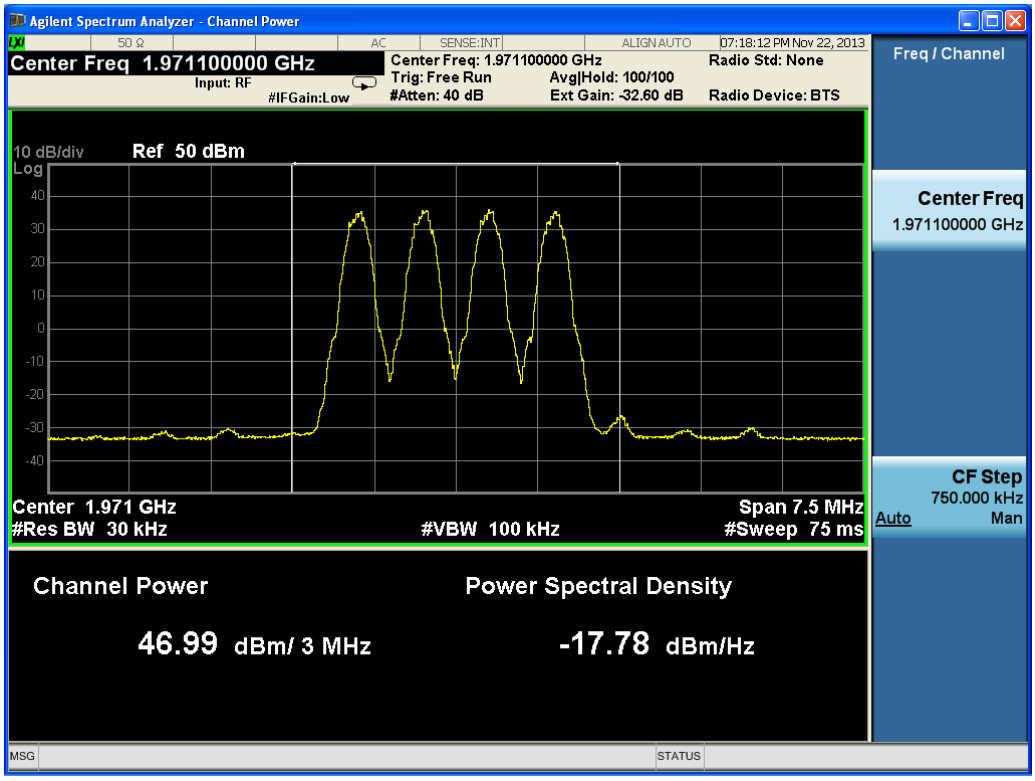

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:06:15 PM Nov 22, 2013
Center Freq 1.971400000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.971400000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.971400000 GHz
Center 1.971 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 8.75 MHz
#Sweep 75 ms
CF Step
875.000 kHz
Auto
Man
Channel Power
49.02 dBm/ 3.5 MHz
Power Spectral Density
-16.42 dBm/Hz
MSG
STATUS

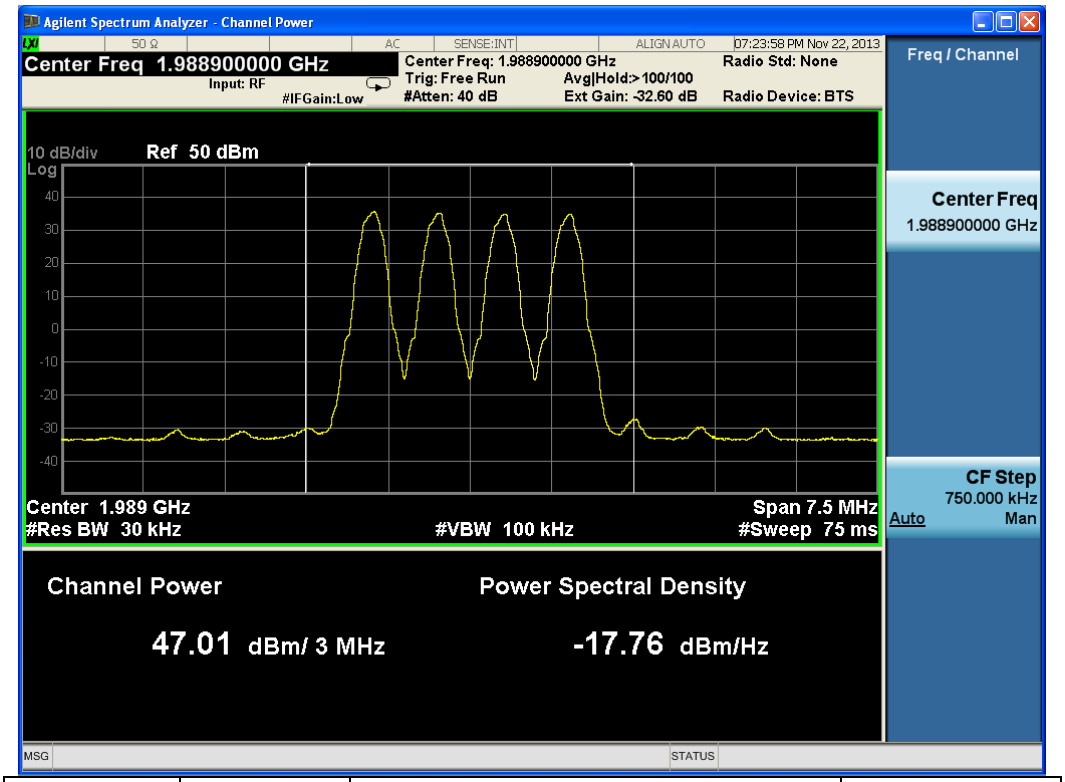


Four carriers

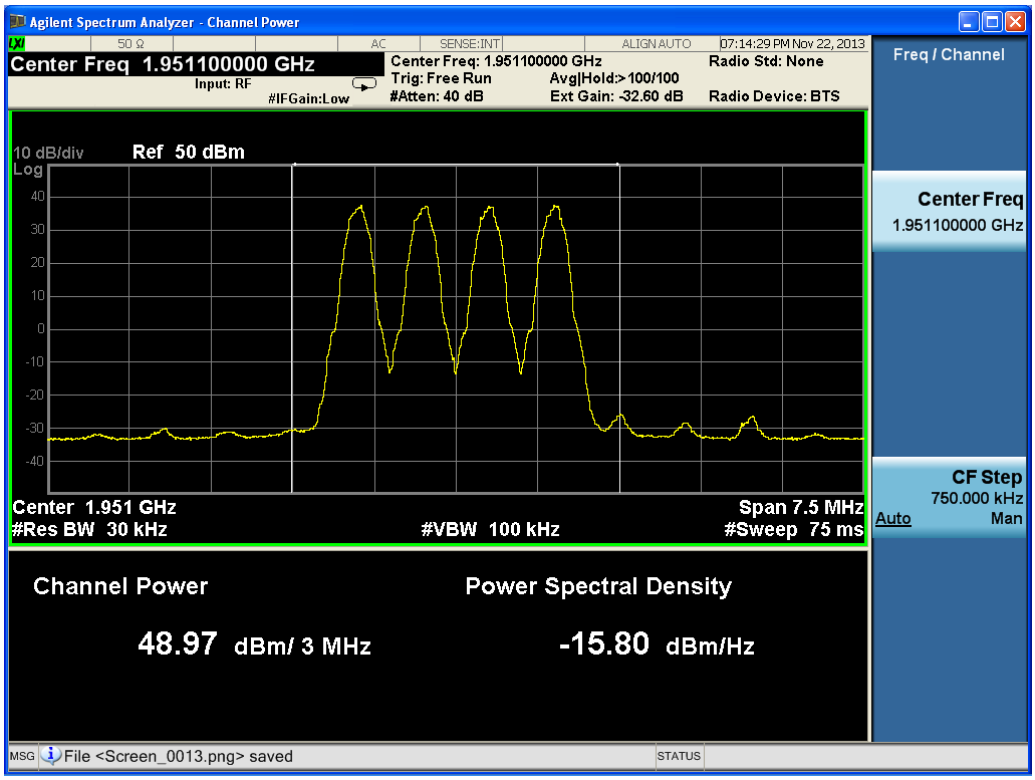
modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
8PSK	1951.1	1950.2/1950.8/1951.4/1952	46.98
	1971.1	1970.2/1970.8/1971.4/1972	46.99
	1988.9	1988/1988.6/1989.2/1989.8	47.01

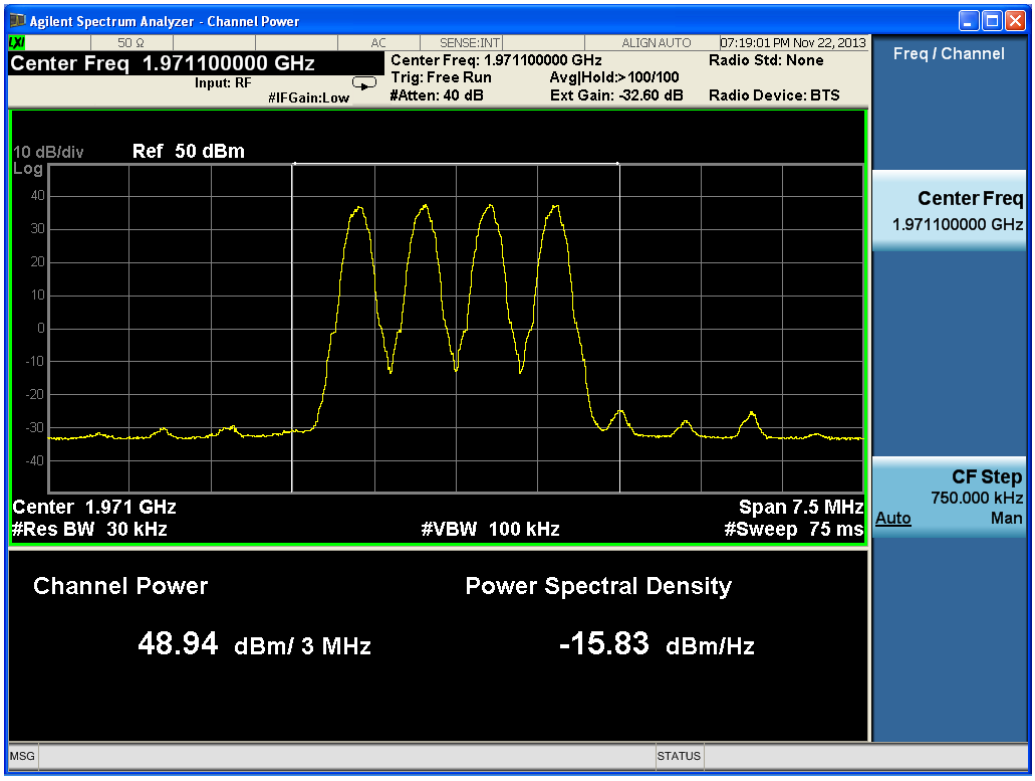

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:15:37 PM Nov 22, 2013
Center Freq 1.951100000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.951100000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.951100000 GHz
Center 1.951 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 7.5 MHz
#Sweep 75 ms
CF Step
750.000 kHz
Auto
Man
Channel Power
46.98 dBm/ 3 MHz
Power Spectral Density
-17.79 dBm/Hz
MSG
STATUS

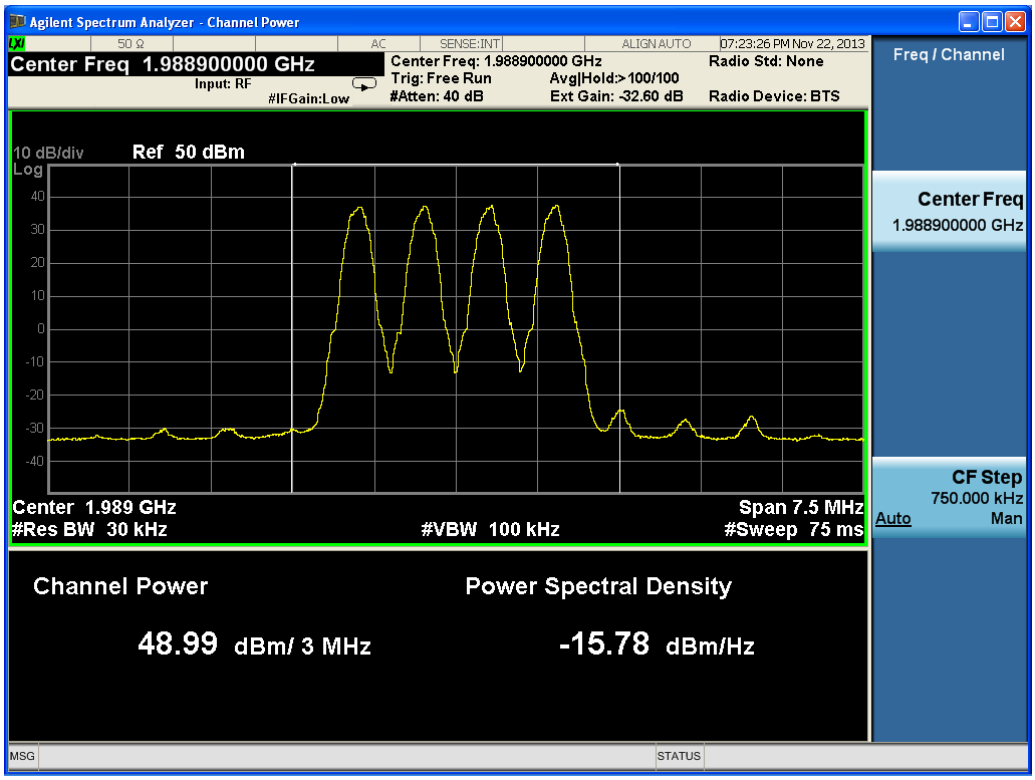

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:18:12 PM Nov 22, 2013
Center Freq 1.971100000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.971100000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold: 100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.971100000 GHz
Center 1.971 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 7.5 MHz
#Sweep 75 ms
CF Step
750.000 kHz
Auto
Man
Channel Power
46.99 dBm/ 3 MHz
Power Spectral Density
-17.78 dBm/Hz
MSG
STATUS



modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
GMSK	1951.1	1950.2/1950.8/1951.4/1952	48.97
	1971.1	1970.2/1970.8/1971.4/1972	48.94
	1988.9	1988/1988.6/1989.2/1989.8	48.99

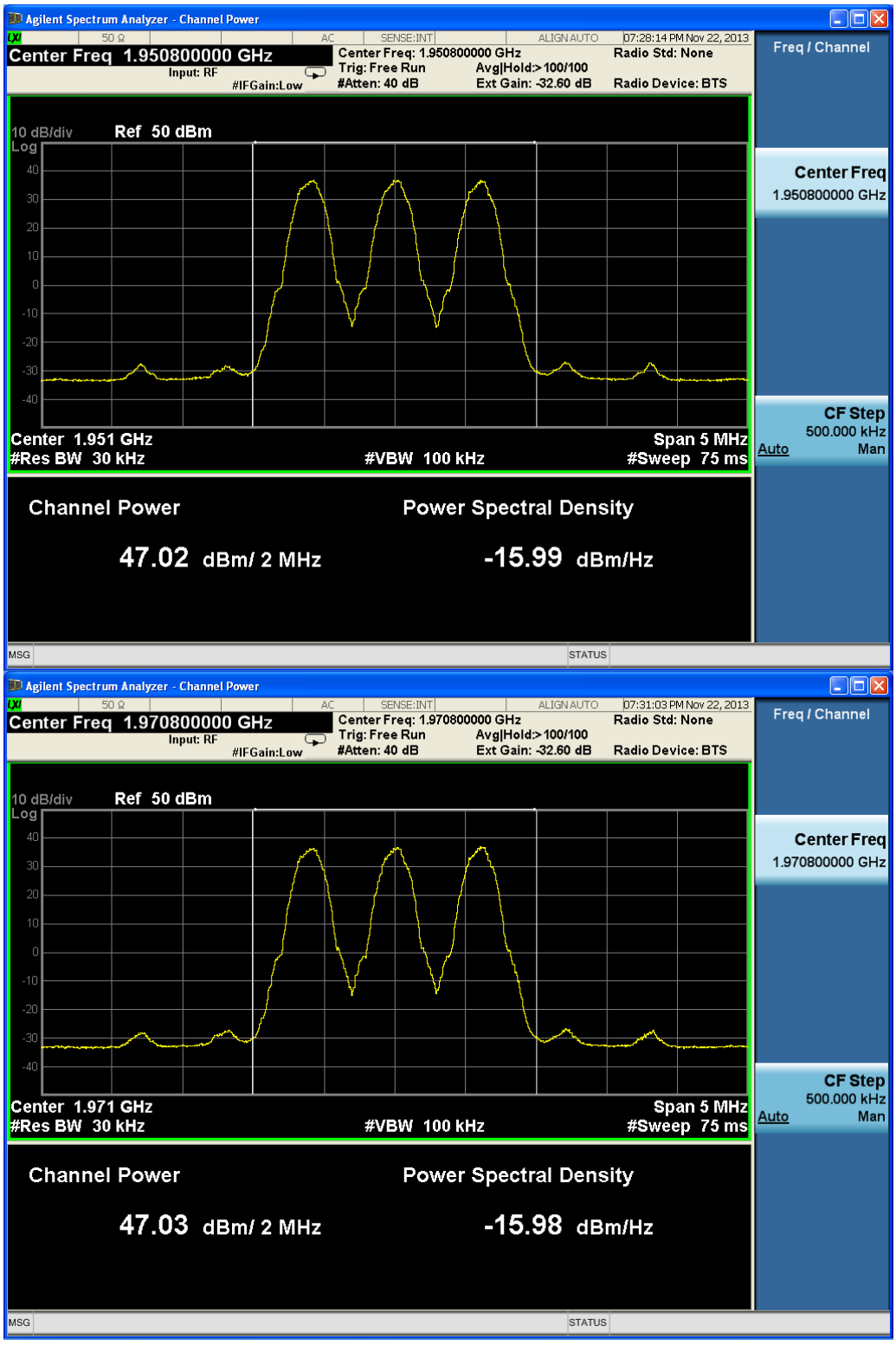

Agilent Spectrum Analyzer - Channel Power
Center Freq 1.951100000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.951100000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
07:14:29 PM Nov 22, 2013
Freq / Channel
10 dB/div
Log
Ref 50 dBm
Center 1.951 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 7.5 MHz
#Sweep 75 ms
Channel Power
48.97 dBm/ 3 MHz
Power Spectral Density
-15.80 dBm/Hz
Center Freq
1.951100000 GHz
CF Step
750.000 kHz
Auto
Man
File <Screen_0013.png> saved

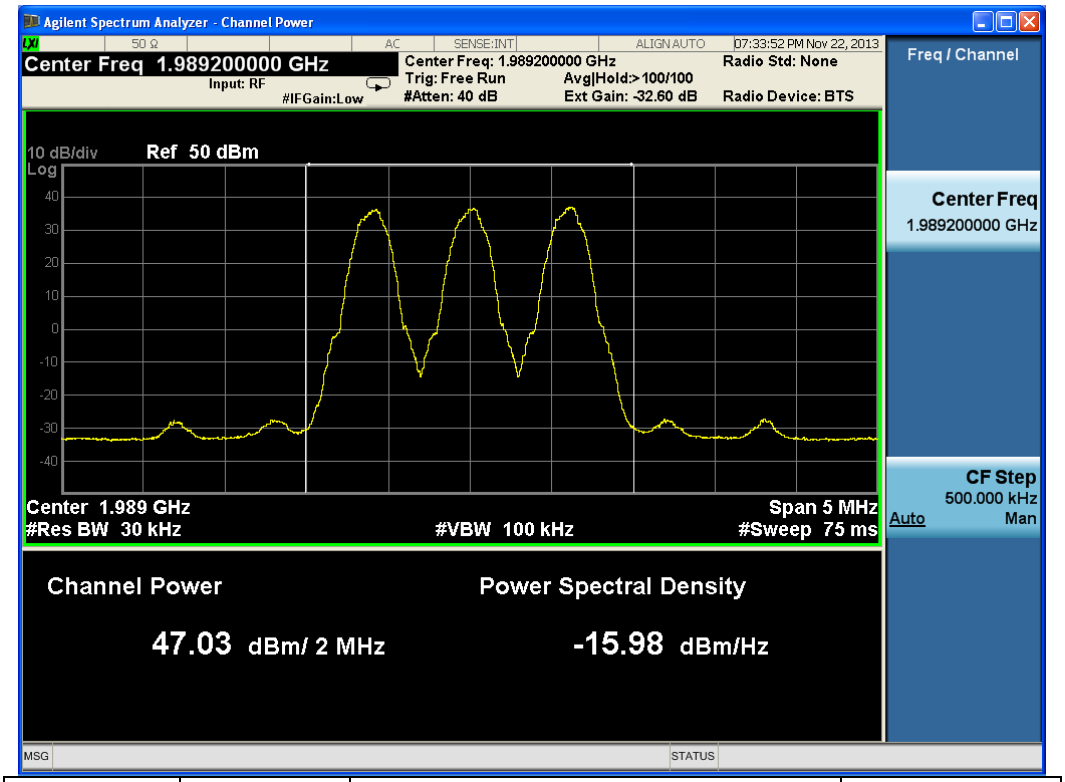

Agilent Spectrum Analyzer - Channel Power
Center Freq 1.971100000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.971100000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
07:19:01 PM Nov 22, 2013
Freq / Channel
10 dB/div
Log
Ref 50 dBm
Center 1.971 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 7.5 MHz
#Sweep 75 ms
Channel Power
48.94 dBm/ 3 MHz
Power Spectral Density
-15.83 dBm/Hz
Center Freq
1.971100000 GHz
CF Step
750.000 kHz
Auto
Man



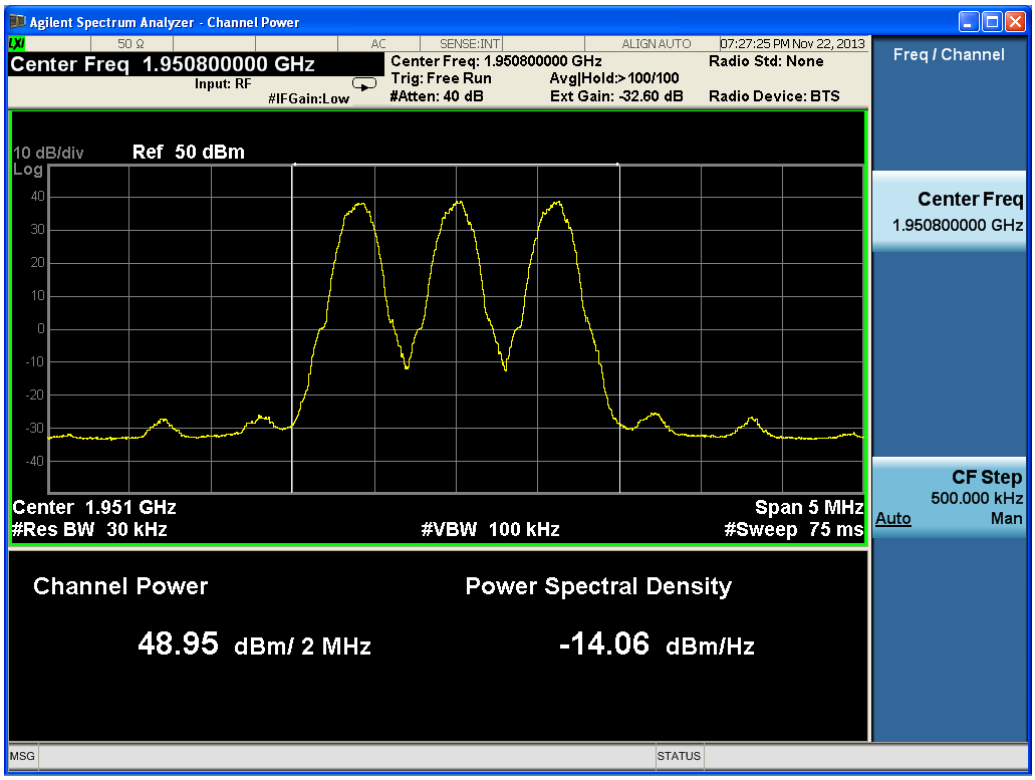
Three carriers

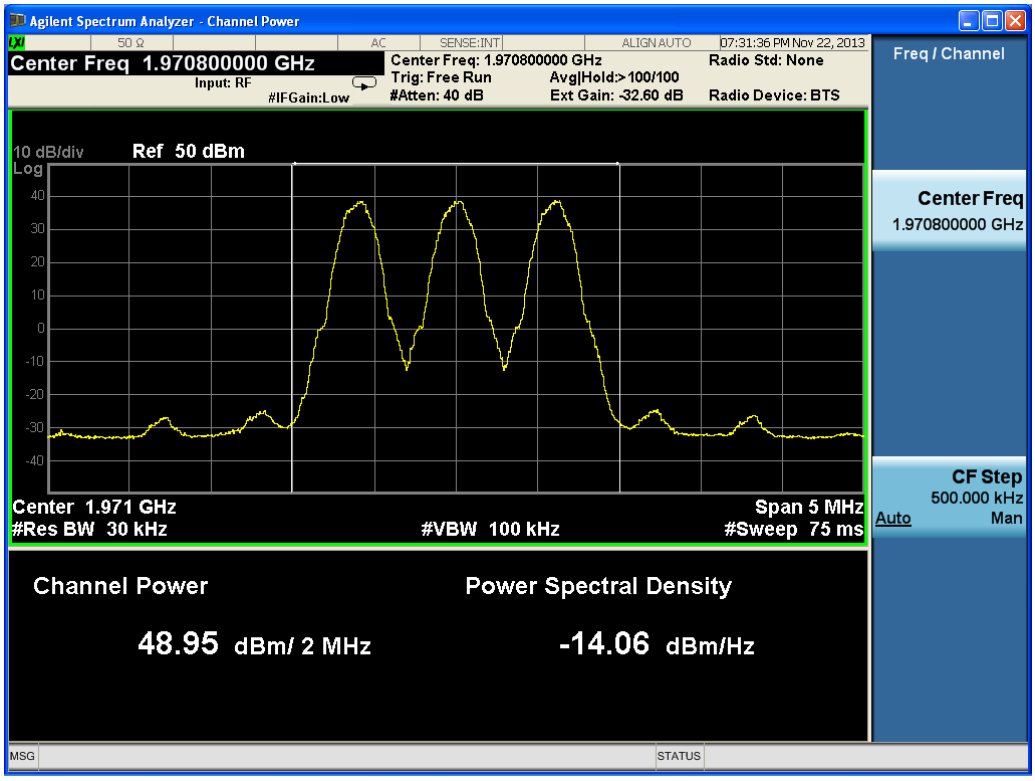
modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
8PSK	1950.8	1950.2/1950.8/1951.4	47.02
	1970.8	1970.2/1970.8/1971.4	47.03
	1989.2	1988.6/1989.2/1989.8	47.03

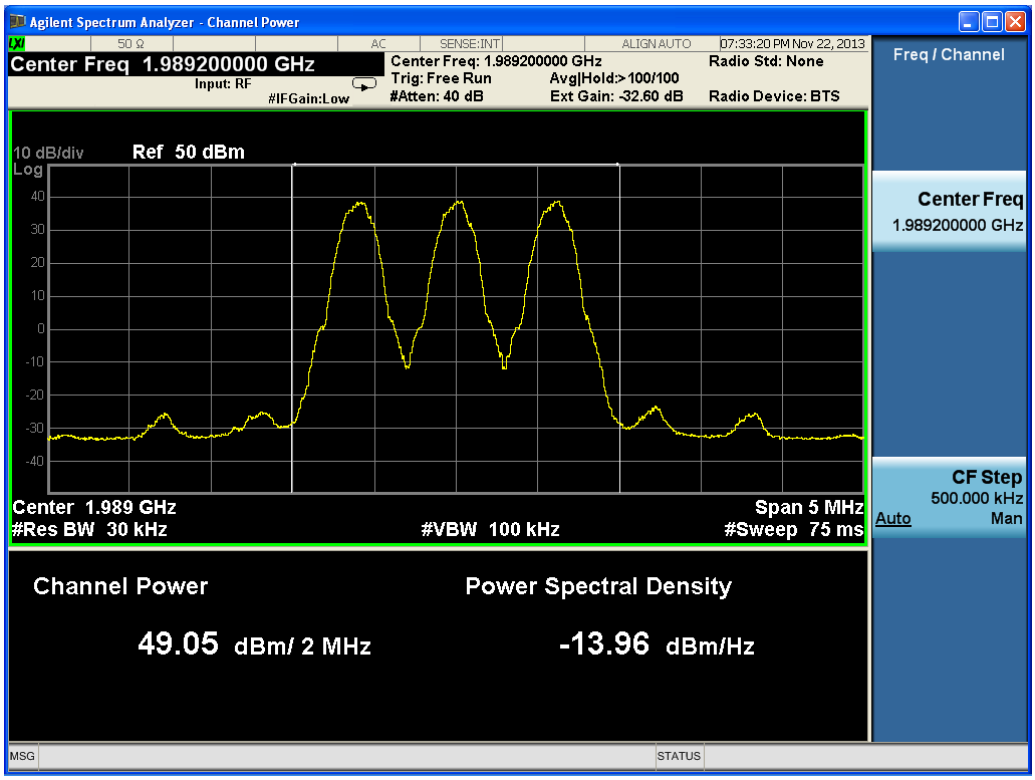

Agilent Spectrum Analyzer - Channel Power
Center Freq 1.950800000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.950800000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
07:28:14 PM Nov 22, 2013
Freq / Channel
10 dB/div
Log
Ref 50 dBm
Center Freq
1.950800000 GHz
Center 1.951 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
#Sweep 75 ms
CF Step
500.000 kHz
Auto
Man
Channel Power
47.02 dBm/ 2 MHz
Power Spectral Density
-15.99 dBm/Hz
MSG
STATUS
Agilent Spectrum Analyzer - Channel Power
Center Freq 1.970800000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.970800000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
07:31:03 PM Nov 22, 2013
Freq / Channel
10 dB/div
Log
Ref 50 dBm
Center Freq
1.970800000 GHz
Center 1.971 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
#Sweep 75 ms
CF Step
500.000 kHz
Auto
Man
Channel Power
47.03 dBm/ 2 MHz
Power Spectral Density
-15.98 dBm/Hz
MSG
STATUS



modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
GMSK	1950.8	1950.2/1950.8/1951.4	48.95
	1970.8	1970.2/1970.8/1971.4	48.95
	1989.2	1988.6/1989.2/1989.8	49.05

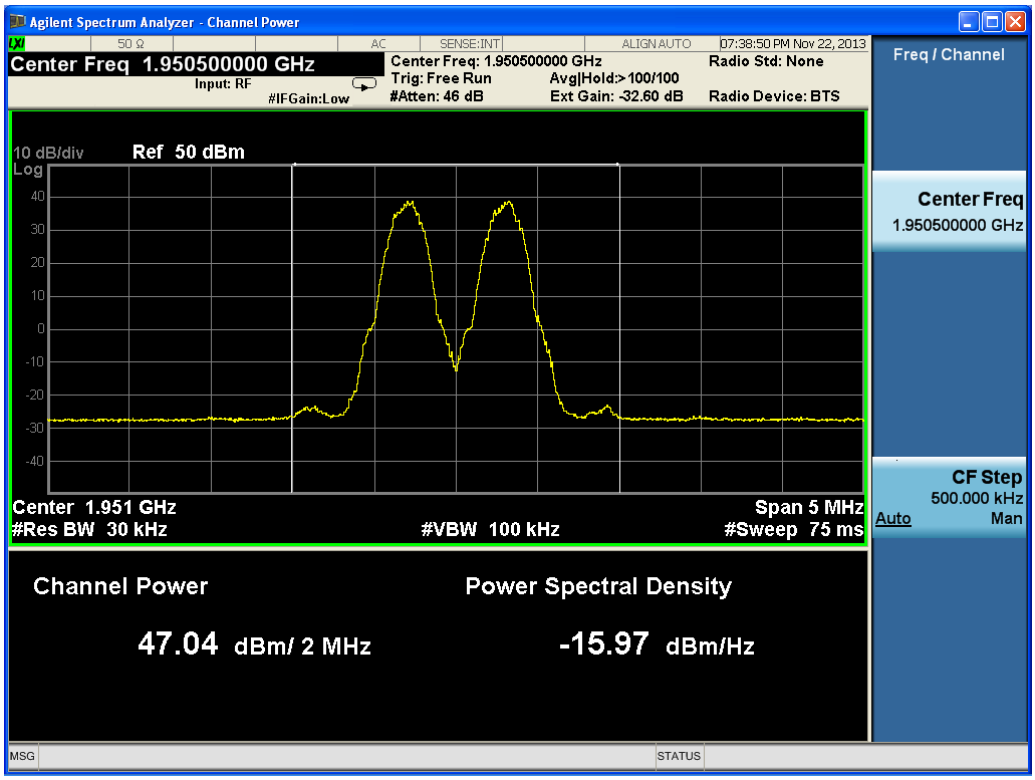

Agilent Spectrum Analyzer - Channel Power
Center Freq 1.950800000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.950800000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
07:27:25 PM Nov 22, 2013
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
Center 1.951 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
#Sweep 75 ms
Center Freq
1.950800000 GHz
CF Step
500.000 kHz
Auto
Man
Channel Power
48.95 dBm/ 2 MHz
Power Spectral Density
-14.06 dBm/Hz
MSG
STATUS

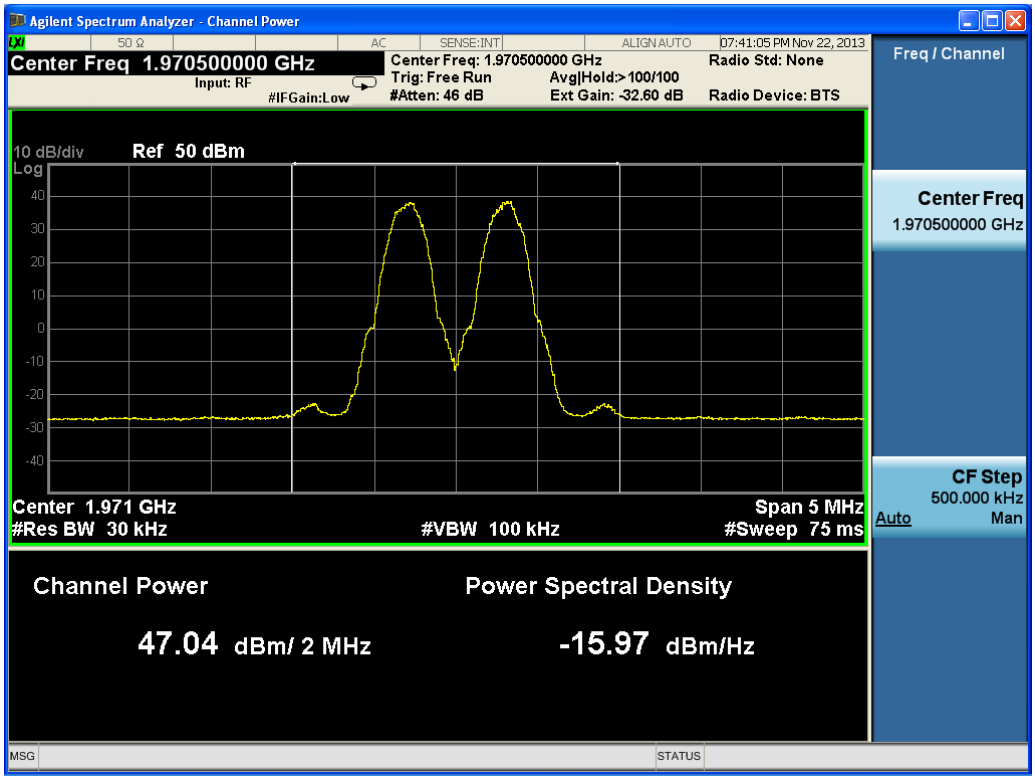

Agilent Spectrum Analyzer - Channel Power
Center Freq 1.970800000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.970800000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
07:31:36 PM Nov 22, 2013
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
Center 1.971 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
#Sweep 75 ms
Center Freq
1.970800000 GHz
CF Step
500.000 kHz
Auto
Man
Channel Power
48.95 dBm/ 2 MHz
Power Spectral Density
-14.06 dBm/Hz
MSG
STATUS

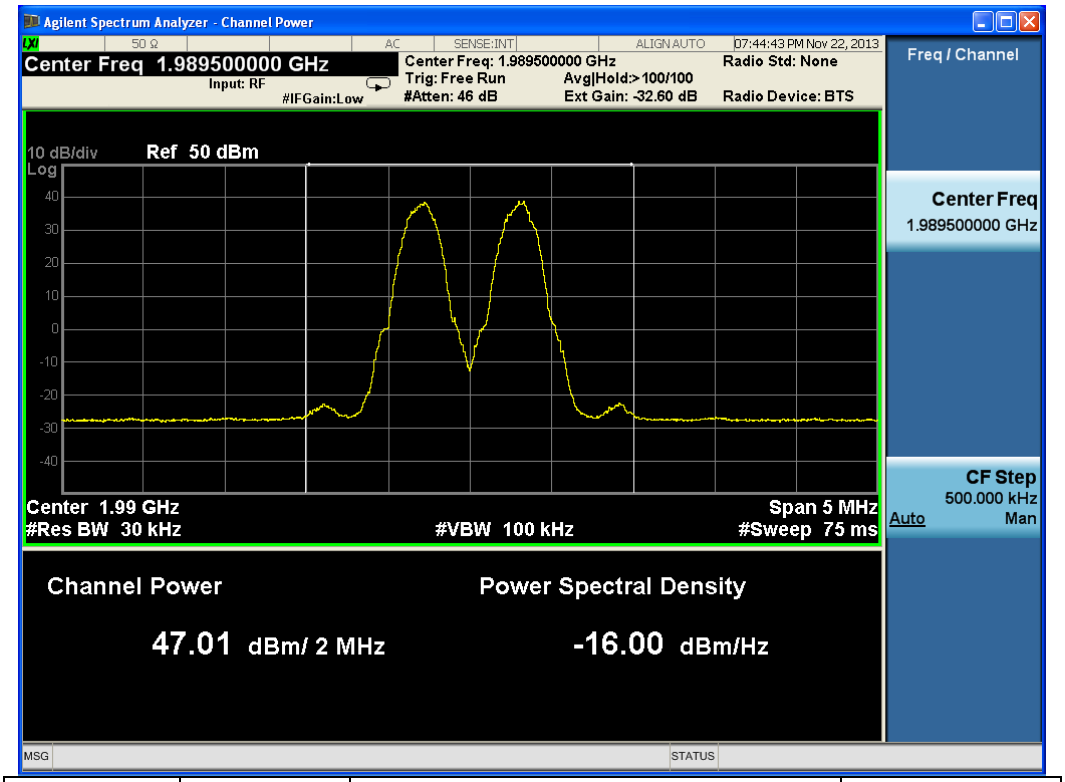


Two carriers

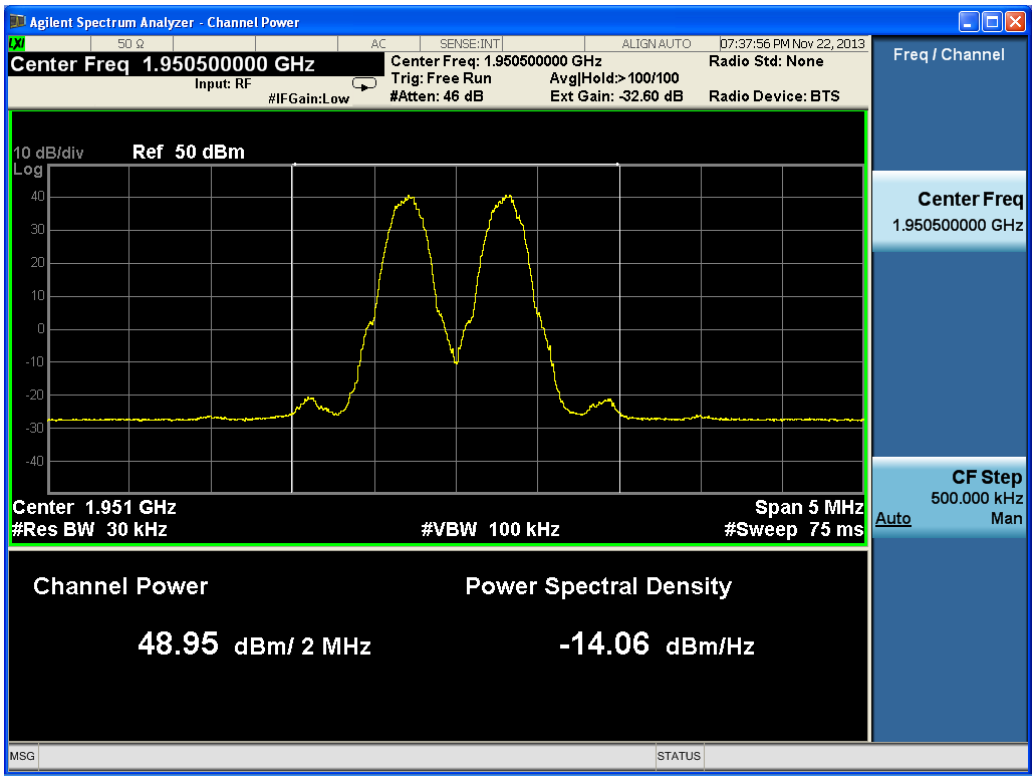
modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
8PSK	1950.5	1950.2/1950.8	47.04
	1970.5	1970.2/1970.8	47.04
	1989.5	1989.2/1989.8	47.01

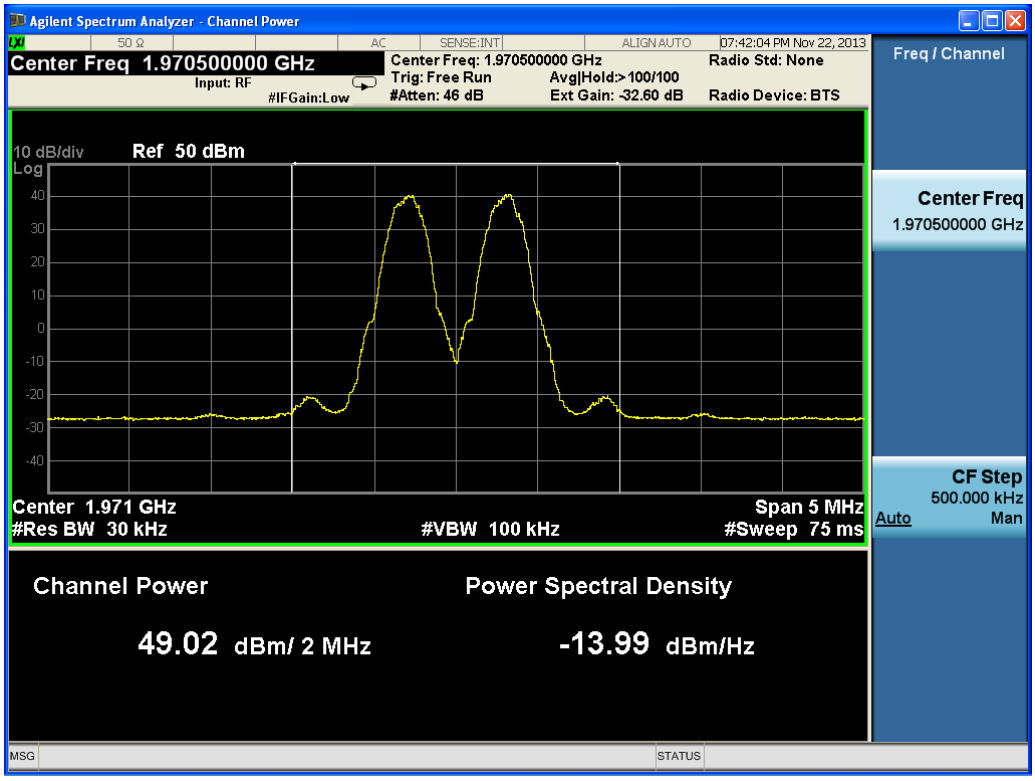

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:38:50 PM Nov 22, 2013
Center Freq 1.950500000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.950500000 GHz
Trig: Free Run
#Atten: 46 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.950500000 GHz
Center 1.951 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
#Sweep 75 ms
CF Step
500.000 kHz
Auto
Man
Channel Power
47.04 dBm/ 2 MHz
Power Spectral Density
-15.97 dBm/Hz
MSG
STATUS


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:41:05 PM Nov 22, 2013
Center Freq 1.970500000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.970500000 GHz
Trig: Free Run
#Atten: 46 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.970500000 GHz
Center 1.971 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
#Sweep 75 ms
CF Step
500.000 kHz
Auto
Man
Channel Power
47.04 dBm/ 2 MHz
Power Spectral Density
-15.97 dBm/Hz
MSG
STATUS



modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
GMSK	1950.5	1950.2/1950.8	48.95
	1970.5	1970.2/1970.8	49.02
	1989.5	1989.2/1989.8	49.02


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:37:56 PM Nov 22, 2013
Center Freq 1.950500000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.950500000 GHz
Trig: Free Run
#Atten: 46 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center 1.951 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
#Sweep 75 ms
Center Freq
1.950500000 GHz
CF Step
500.000 kHz
Auto
Man
Channel Power
48.95 dBm/ 2 MHz
Power Spectral Density
-14.06 dBm/Hz
MSG
STATUS


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
07:42:04 PM Nov 22, 2013
Center Freq 1.970500000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.970500000 GHz
Trig: Free Run
#Atten: 46 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center 1.971 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
#Sweep 75 ms
Center Freq
1.970500000 GHz
CF Step
500.000 kHz
Auto
Man
Channel Power
49.02 dBm/ 2 MHz
Power Spectral Density
-13.99 dBm/Hz
MSG
STATUS