FCC
MEASUREMENT AND TEST REPORT
For
ZTE Corporation

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

FCC ID: Q78-R8881S1900L

Jan 1, 2015

This Report Concerns: ☒ Original Report	**Equipment Type:** Macro Radio Remote Unit
Test Engineer:	Bloom
Report No.:	RF20150053RP-1
Test Date:	Jan 4 – Jan 28, 2015
Reviewed By:	Xie Yuming
Prepared By:	ZTE Corporation.
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Note: The test report is specially limited to the above company and this particular sample only. It may not be duplicated without prior written consent of ZTE Corporation. This report must not be used by the client to claim product certification 、approval 、or endorsement by any agency of the US Government.

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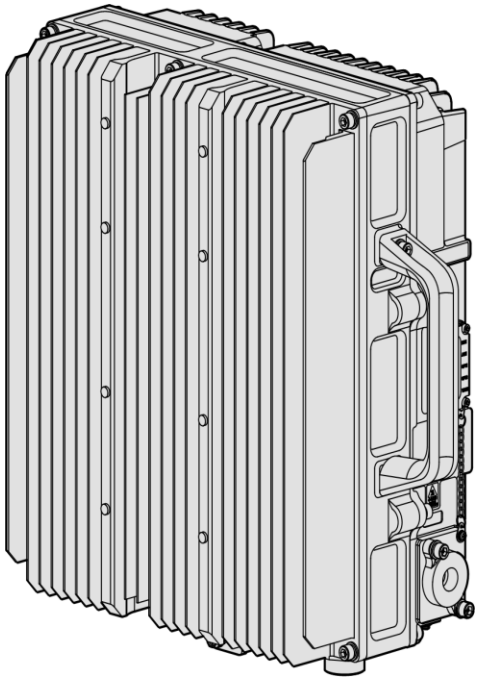
1 GENERAL INFORMATION

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: 1930MHz to 1970MHz,
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 1、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

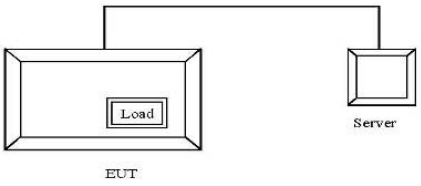
The Test site used by Shenzhen ZTE Technology Service Co., Ltd to collect test data is located in the ZTE Plaza, Hi-tech Park, Nanshan District, Shenzhen, Guangdong, 518057, P.R.China，Tel: +86-755-26770000，Fax: +86-755-26771999. Test site at ZTETS Corporation has been fully described in reports submitted 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

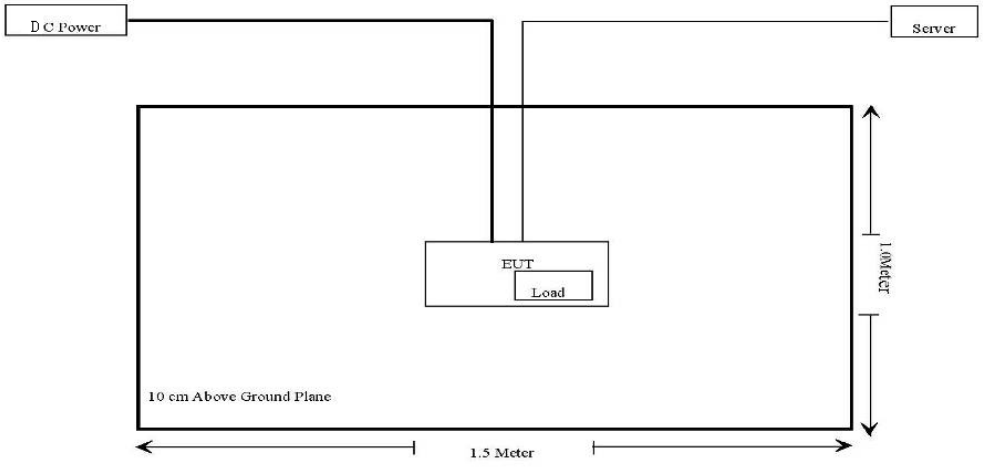
Description of Test Configuration

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

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 1970MHz with the antenna height above average terrain up to 300 meters. If used in urban area, the limit should be 1640Watts/MHz.

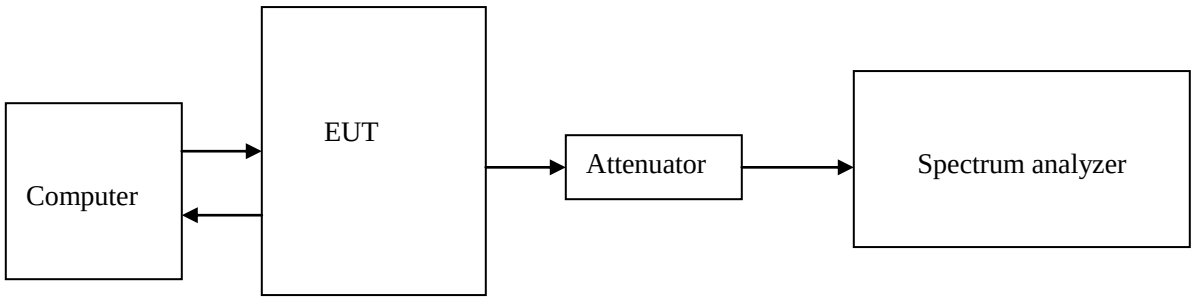
Note: EIRP= Max output Power+ Antenna gain- Cable Loss

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

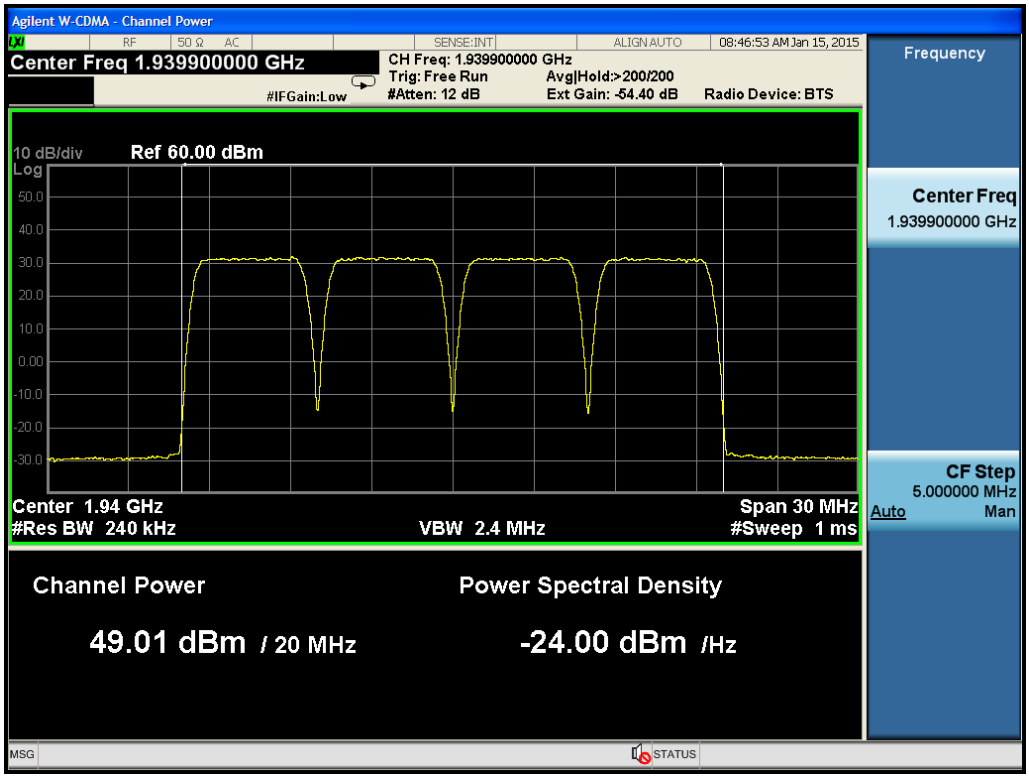
Test Result: Pass

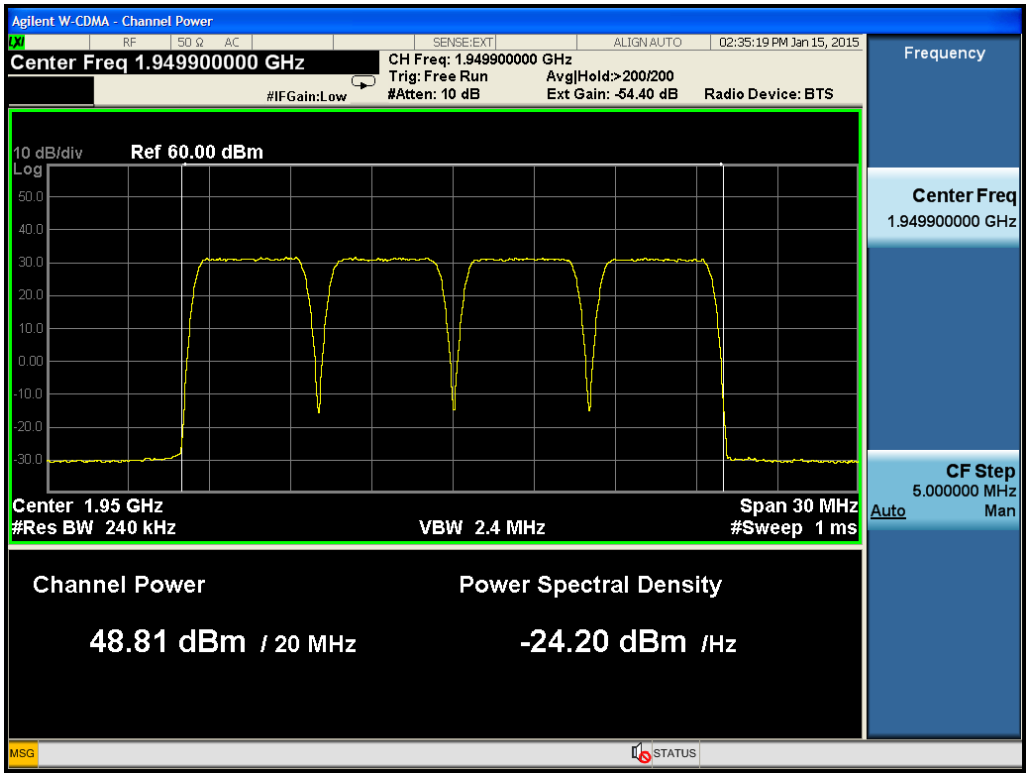
Test Mode: Transmitting UMTS

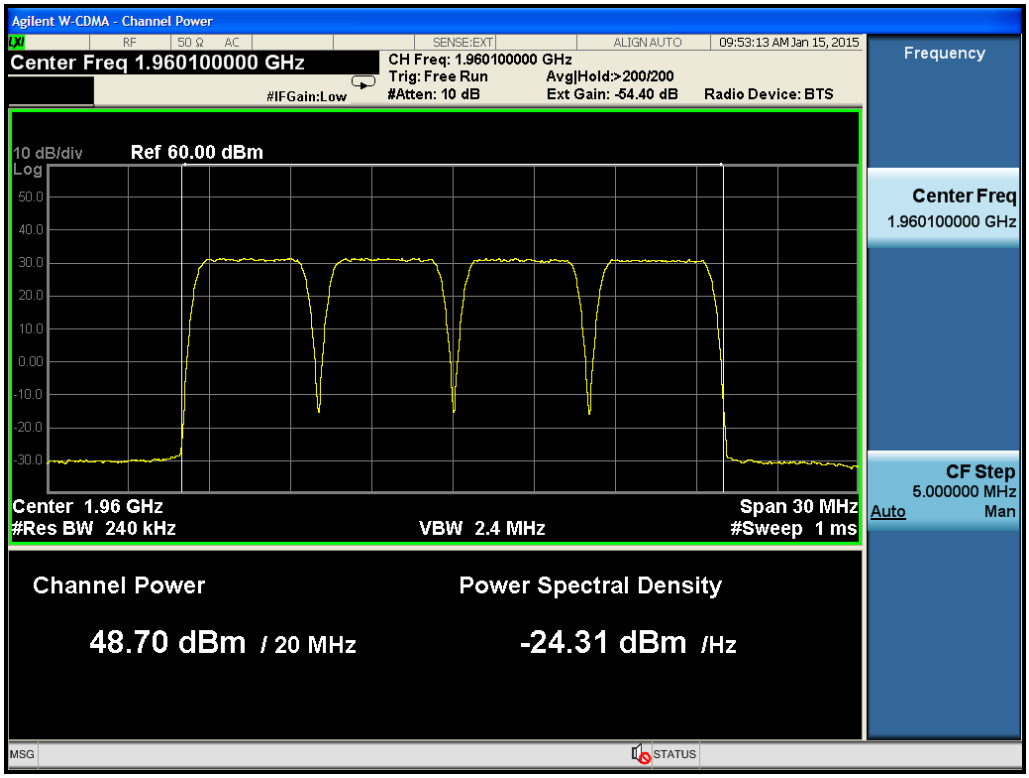
Test Data:

Four carriers

Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
1939.9	1932.4/1937.4/1942.4/1947.4	49.01
1949.9	1942.4/1947.4/1952.4/1957.4	48.81
1960.1	1952.6/1957.6/1962.6/1967.6	48.70

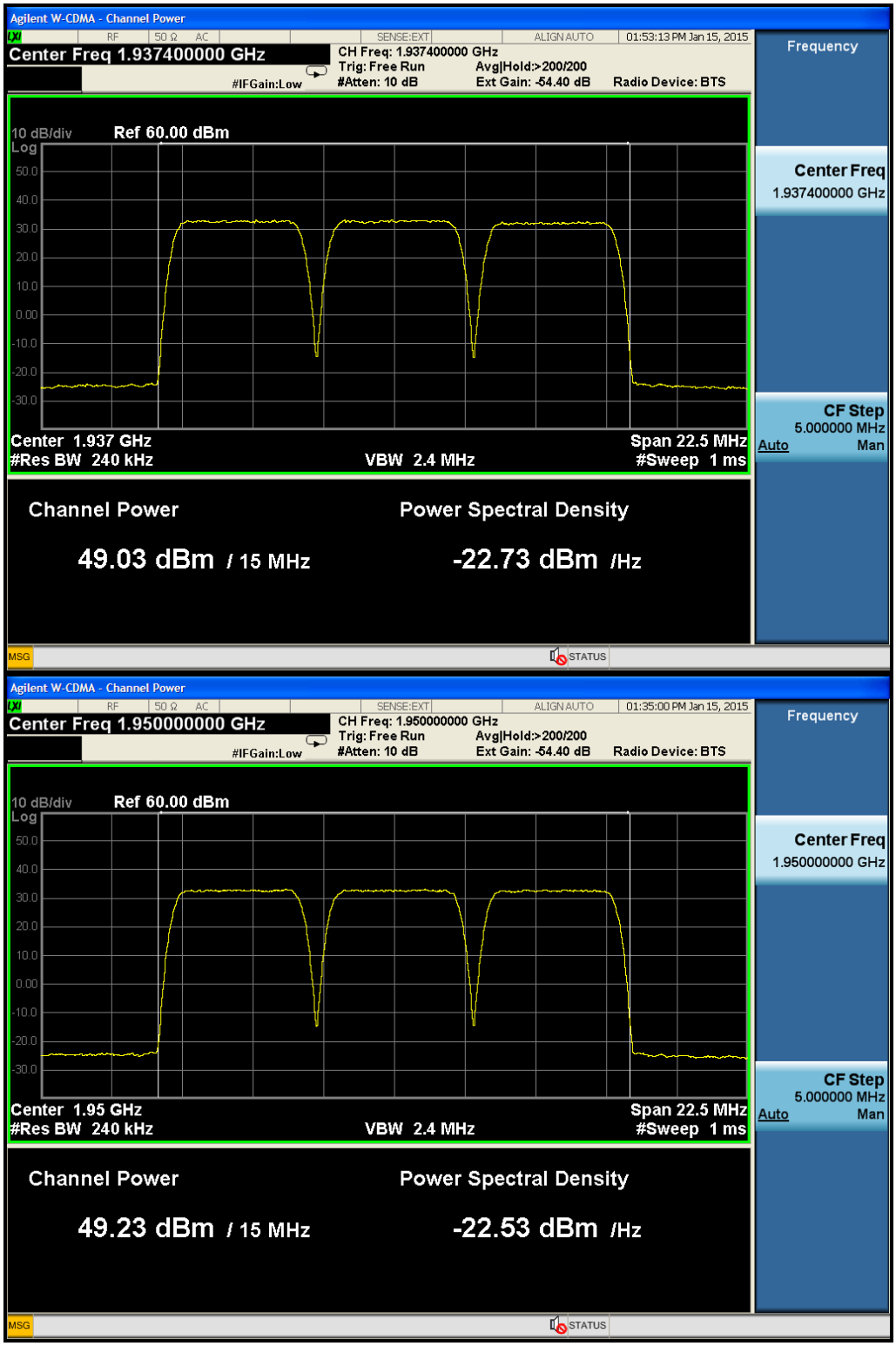

Agilent W-CDMA - Channel Power
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
08:46:53 AM Jan 15, 2015
Center Freq 1.939900000 GHz
#IFGain:Low
CH Freq: 1.939900000 GHz
Trig: Free Run
Avg|Hold:>200/200
#Atten: 12 dB
Ext Gain: -54.40 dB
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 60.00 dBm
50.0
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
Center Freq
1.939900000 GHz
Center 1.94 GHz
#Res BW 240 kHz
VBW 2.4 MHz
Span 30 MHz
#Sweep 1 ms
CF Step
5.000000 MHz
Auto
Man
Channel Power
49.01 dBm / 20 MHz
Power Spectral Density
-24.00 dBm /Hz
MSG
STATUS

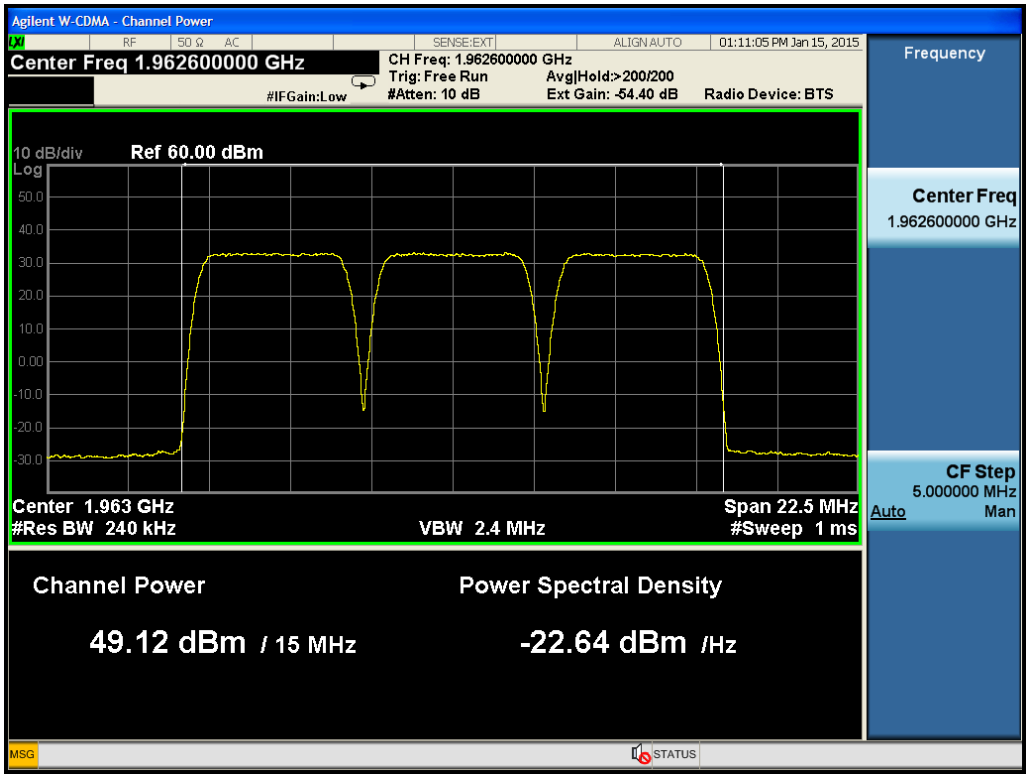

Agilent W-CDMA - Channel Power
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
02:35:19 PM Jan 15, 2015
Center Freq 1.949900000 GHz
#IFGain:Low
CH Freq: 1.949900000 GHz
Trig: Free Run
Avg|Hold:>200/200
#Atten: 10 dB
Ext Gain: -54.40 dB
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 60.00 dBm
50.0
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
Center Freq
1.949900000 GHz
Center 1.95 GHz
#Res BW 240 kHz
VBW 2.4 MHz
Span 30 MHz
#Sweep 1 ms
CF Step
5.000000 MHz
Auto
Man
Channel Power
48.81 dBm / 20 MHz
Power Spectral Density
-24.20 dBm /Hz
MSG
STATUS



Three carriers

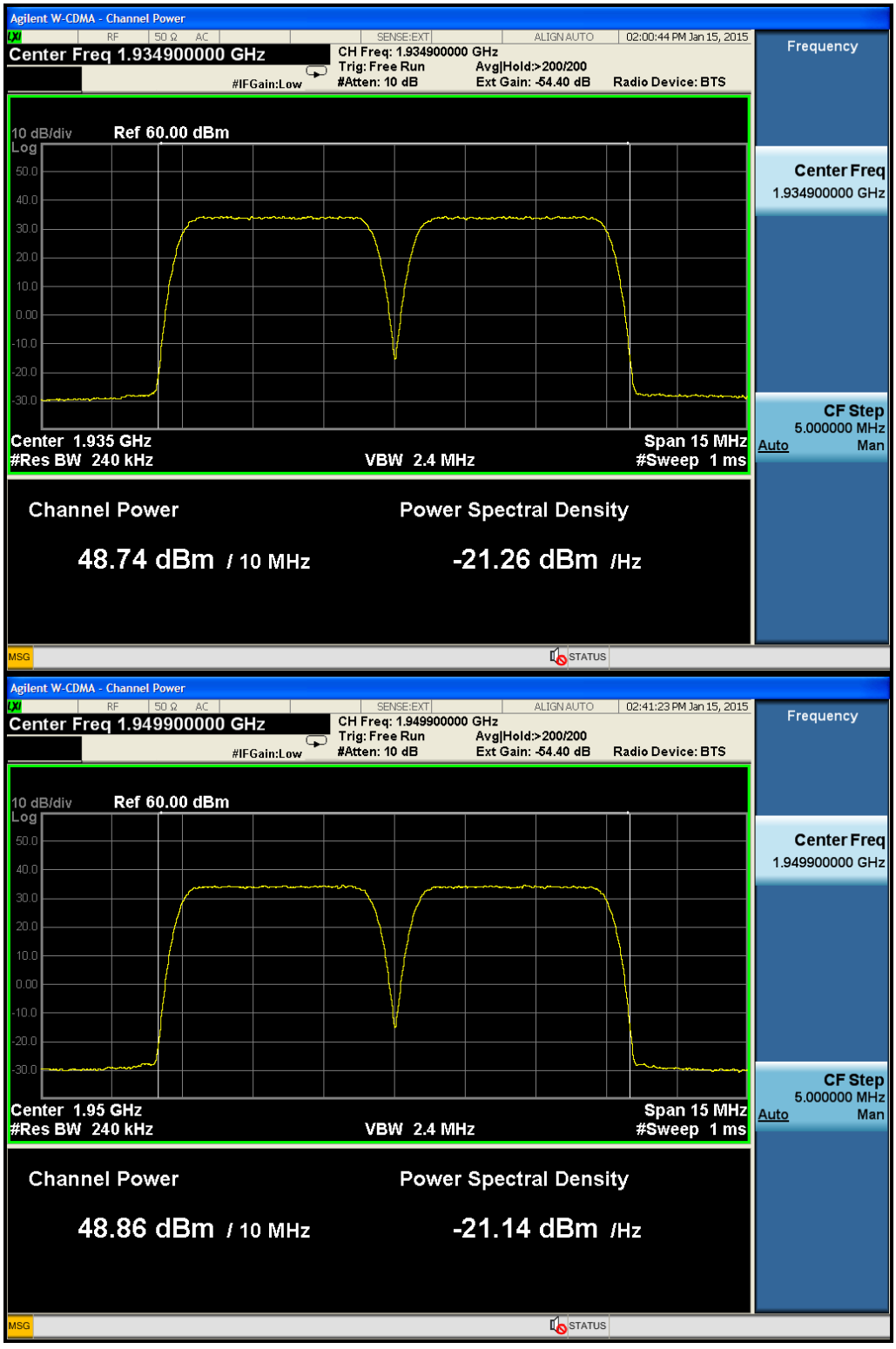
Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
1937.4	1932.4/1937.4/1942.4	49.03
1950	1945/1950/1955	49.23
1962.6	1957.6/1962.6/1967.6	49.12

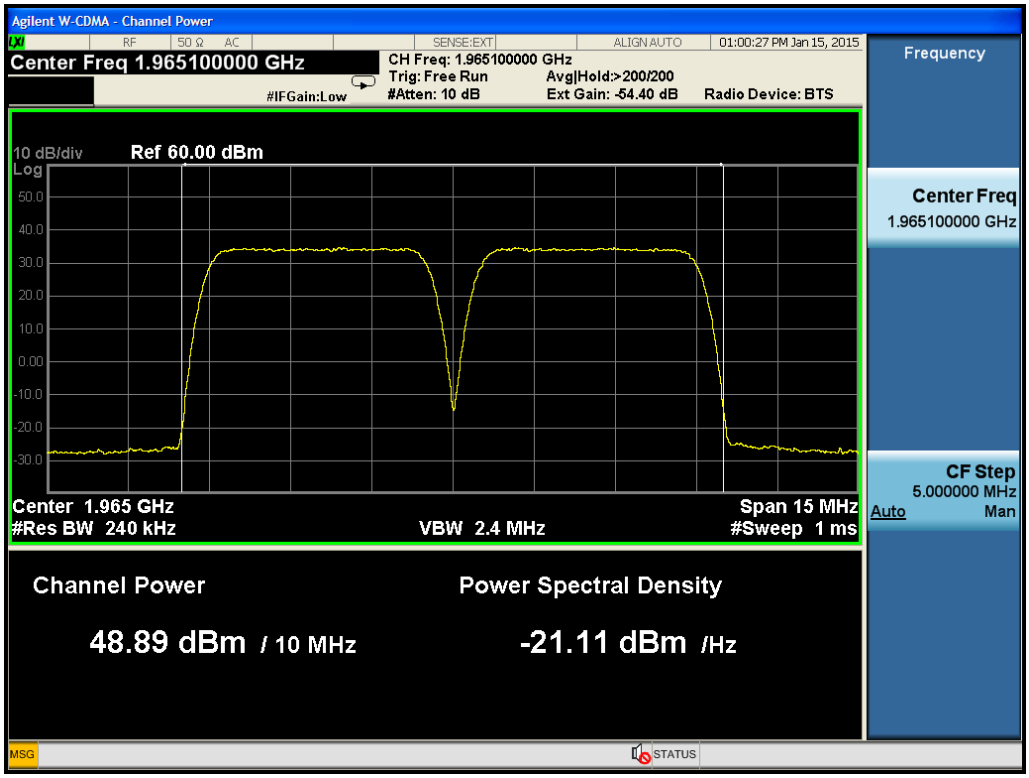

Agilent W-CDMA - Channel Power
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
01:53:13 PM Jan 15, 2015
Center Freq 1.937400000 GHz
#IFGain:Low
CH Freq: 1.937400000 GHz
Trig: Free Run
Avg|Hold:>200/200
#Atten: 10 dB
Ext Gain: -54.40 dB
Radio Device: BTS
Frequency
10 dB/div
Ref 60.00 dBm
Log
50.0
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
Center Freq
1.937400000 GHz
Center 1.937 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
49.03 dBm / 15 MHz
Power Spectral Density
-22.73 dBm /Hz
MSG
STATUS
Agilent W-CDMA - Channel Power
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
01:35:00 PM Jan 15, 2015
Center Freq 1.950000000 GHz
#IFGain:Low
CH Freq: 1.950000000 GHz
Trig: Free Run
Avg|Hold:>200/200
#Atten: 10 dB
Ext Gain: -54.40 dB
Radio Device: BTS
Frequency
10 dB/div
Ref 60.00 dBm
Log
50.0
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
Center Freq
1.950000000 GHz
Center 1.95 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
49.23 dBm / 15 MHz
Power Spectral Density
-22.53 dBm /Hz
MSG
STATUS



Two carriers

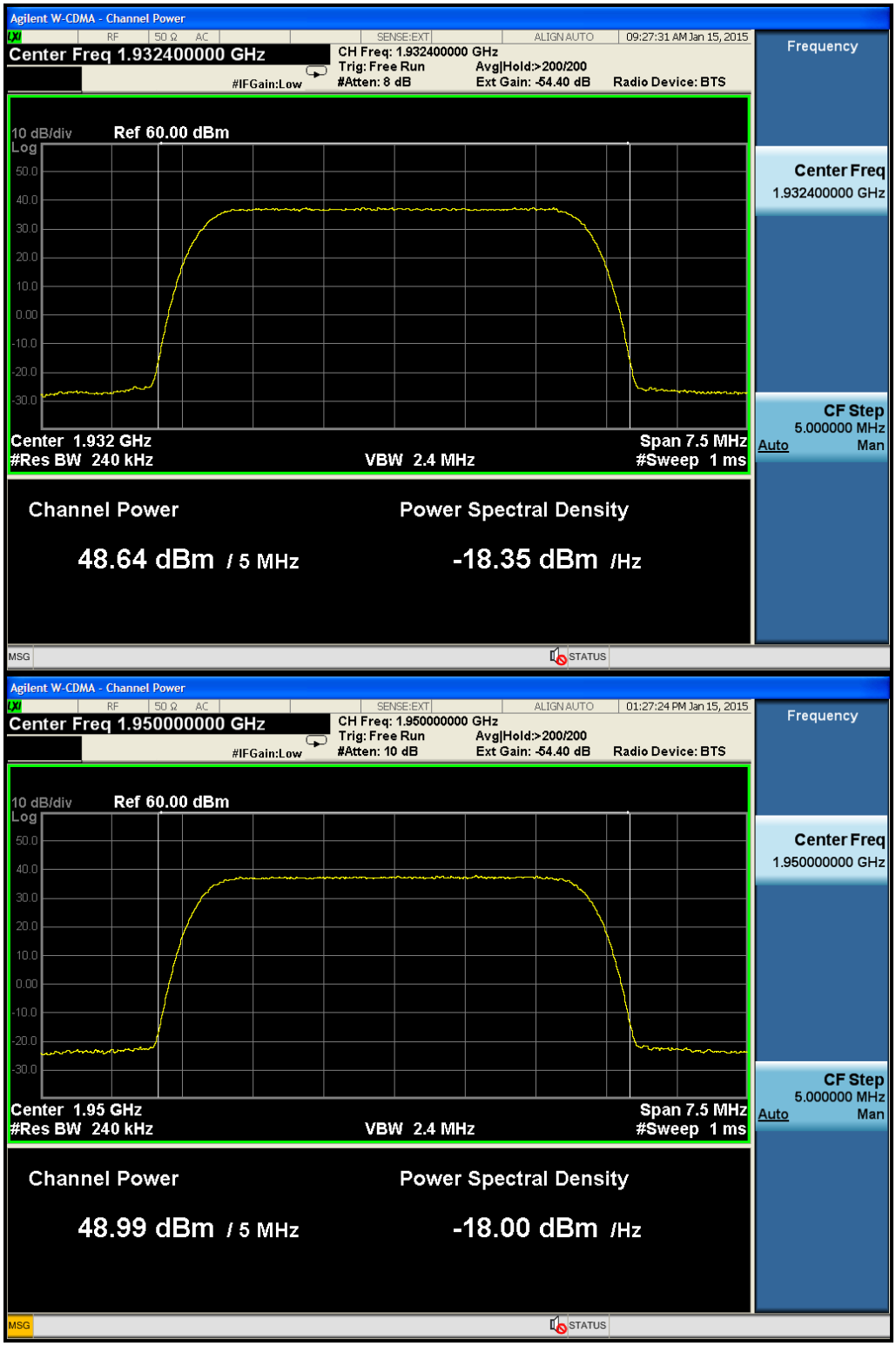
Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
1934.9	1932.4/1937.4	48.74
1949.9	1947.4/1952.4	48.86
1965.1	1962.6/1967.6	48.89

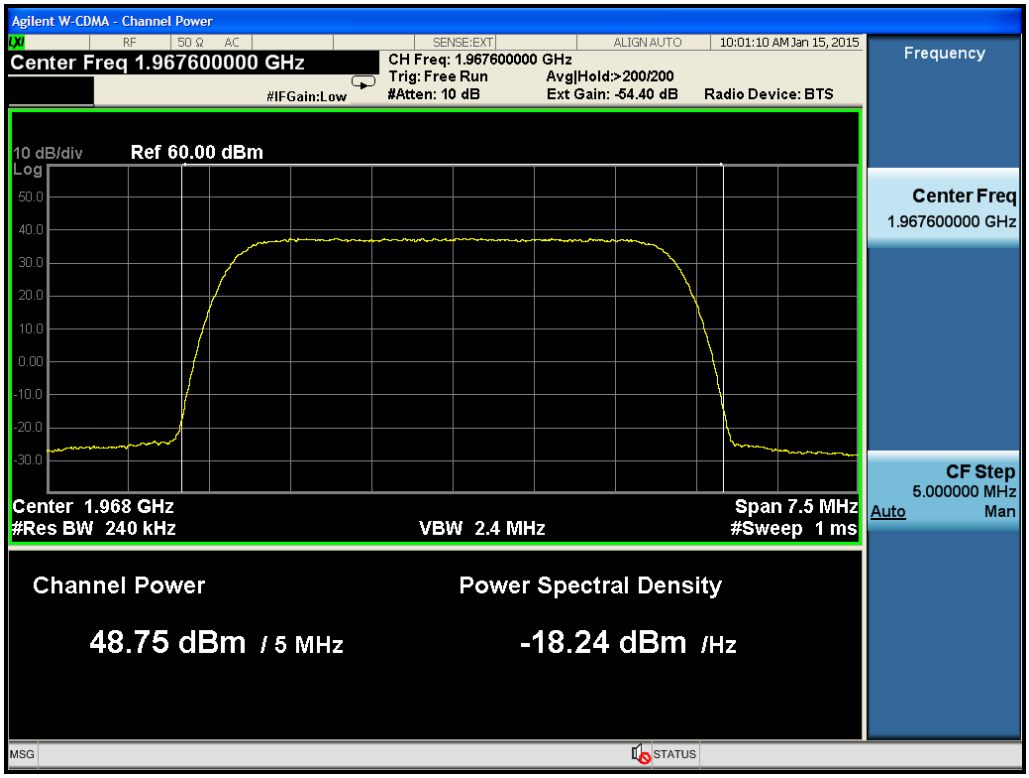

Agilent W-CDMA - Channel Power
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
02:00:44 PM Jan 15, 2015
Center Freq 1.934900000 GHz
#IFGain:Low
CH Freq: 1.934900000 GHz
Trig: Free Run
Avg|Hold:>200/200
#Atten: 10 dB
Ext Gain: -54.40 dB
Radio Device: BTS
Frequency
10 dB/div
Ref 60.00 dBm
Log
50.0
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
Center Freq
1.934900000 GHz
Center 1.935 GHz
#Res BW 240 kHz
VBW 2.4 MHz
Span 15 MHz
#Sweep 1 ms
CF Step
5.000000 MHz
Auto
Man
Channel Power
48.74 dBm / 10 MHz
Power Spectral Density
-21.26 dBm /Hz
MSG
STATUS
Agilent W-CDMA - Channel Power
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
02:41:23 PM Jan 15, 2015
Center Freq 1.949900000 GHz
#IFGain:Low
CH Freq: 1.949900000 GHz
Trig: Free Run
Avg|Hold:>200/200
#Atten: 10 dB
Ext Gain: -54.40 dB
Radio Device: BTS
Frequency
10 dB/div
Ref 60.00 dBm
Log
50.0
40.0
30.0
20.0
10.0
0.00
-10.0
-20.0
-30.0
Center Freq
1.949900000 GHz
Center 1.95 GHz
#Res BW 240 kHz
VBW 2.4 MHz
Span 15 MHz
#Sweep 1 ms
CF Step
5.000000 MHz
Auto
Man
Channel Power
48.86 dBm / 10 MHz
Power Spectral Density
-21.14 dBm /Hz
MSG
STATUS



One carrier

Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
1932.4	1932.4	48.64
1950	1950	48.99
1967.6	1967.6	48.75


Agilent W-CDMA - Channel Power
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
09:27:31 AM Jan 15, 2015
Center Freq 1.932400000 GHz
#IFGain:Low
CH Freq: 1.932400000 GHz
Trig: Free Run
Avg|Hold:>200/200
#Atten: 8 dB
Ext Gain: -54.40 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
1.932400000 GHz
Center 1.932 GHz
#Res BW 240 kHz
VBW 2.4 MHz
Span 7.5 MHz
#Sweep 1 ms
CF Step
5.000000 MHz
Auto
Man
Channel Power
48.64 dBm / 5 MHz
Power Spectral Density
-18.35 dBm /Hz
MSG
STATUS
Agilent W-CDMA - Channel Power
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
01:27:24 PM Jan 15, 2015
Center Freq 1.950000000 GHz
#IFGain:Low
CH Freq: 1.950000000 GHz
Trig: Free Run
Avg|Hold:>200/200
#Atten: 10 dB
Ext Gain: -54.40 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
1.950000000 GHz
Center 1.95 GHz
#Res BW 240 kHz
VBW 2.4 MHz
Span 7.5 MHz
#Sweep 1 ms
CF Step
5.000000 MHz
Auto
Man
Channel Power
48.99 dBm / 5 MHz
Power Spectral Density
-18.00 dBm /Hz
MSG
STATUS


Agilent W-CDMA - Channel Power
RF
50 Ω AC
SENSE:EXT
ALIGN AUTO
10:01:10 AM Jan 15, 2015
Center Freq 1.967600000 GHz
CH Freq: 1.967600000 GHz
Trig: Free Run
Avg|Hold:>200/200
#IFGain:Low
#Atten: 10 dB
Ext Gain: -54.40 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
1.967600000 GHz
CF Step
5.000000 MHz
Auto
Man
Center 1.968 GHz
#Res BW 240 kHz
VBW 2.4 MHz
Span 7.5 MHz
#Sweep 1 ms
Channel Power
48.75 dBm / 5 MHz
Power Spectral Density
-18.24 dBm /Hz
MSG
STATUS

3.2 RF EXPOSURE

Applicable standard: FCC §2.1091 and §1.1310

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

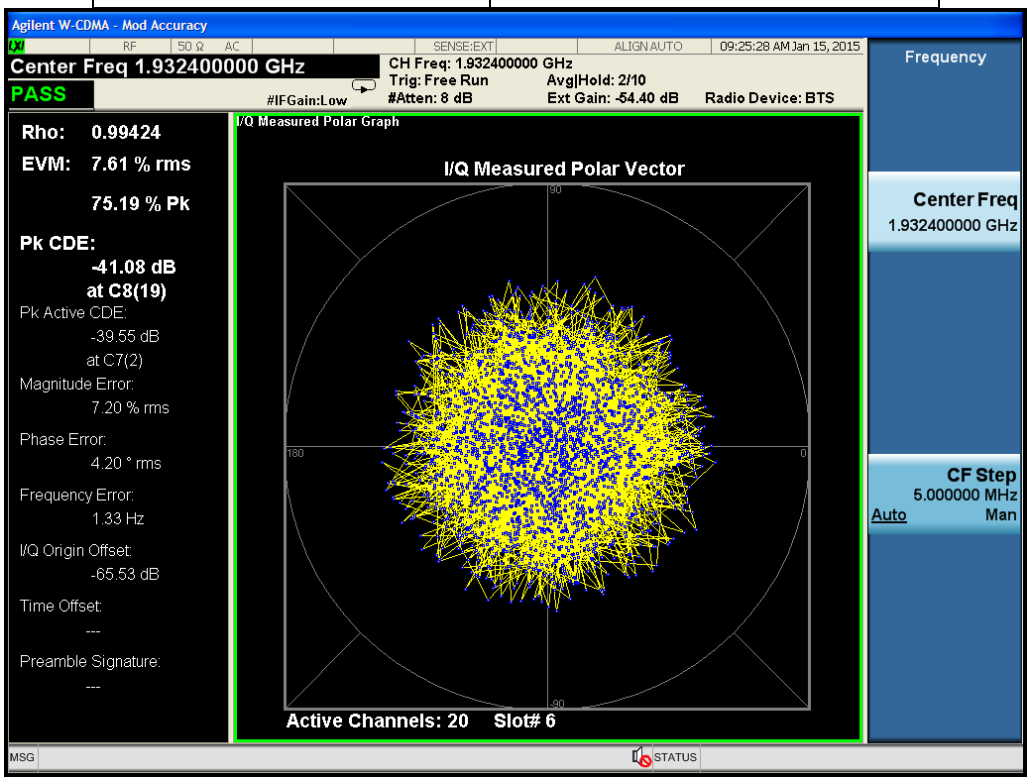
Temperature:	20 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

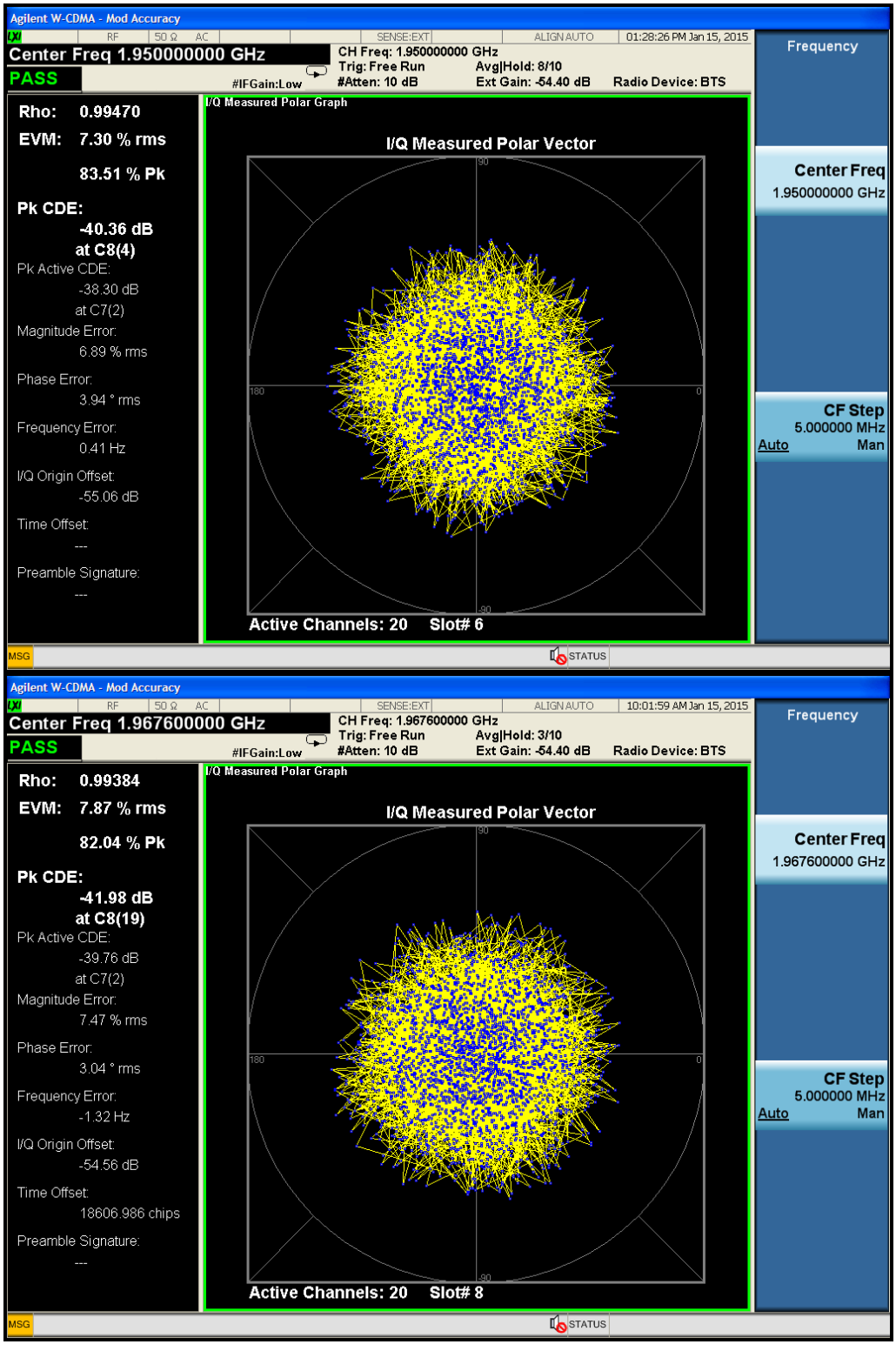
Test Result: Pass

Test Mode: Transmitting UMTS

Test Data:

Frequency (MHz)	EVM(%rms)
1932.4	7.61
1950	7.30
1967.6	7.87




Agilent W-CDMA - Mod Accuracy
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
01:28:26 PM Jan 15, 2015
Center Freq 1.950000000 GHz
PASS
#IFGain:Low
CH Freq: 1.950000000 GHz
Trig: Free Run
Avg|Hold: 8/10
#Atten: 10 dB
Ext Gain: -54.40 dB
Radio Device: BTS
Frequency
Rho: 0.99470
EVM: 7.30 % rms
83.51 % Pk
Pk CDE:
-40.36 dB
at C8(4)
Pk Active CDE:
-38.30 dB
at C7(2)
Magnitude Error:
6.89 % rms
Phase Error:
3.94 ° rms
Frequency Error:
0.41 Hz
I/Q Origin Offset:
-55.06 dB
Time Offset:

Preamble Signature:

I/Q Measured Polar Graph
I/Q Measured Polar Vector
90
180
0
-90
Active Channels: 20 Slot# 6
Center Freq
1.950000000 GHz
CF Step
5.000000 MHz
Auto
Man
MSG
STATUS
Agilent W-CDMA - Mod Accuracy
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
10:01:59 AM Jan 15, 2015
Center Freq 1.967600000 GHz
PASS
#IFGain:Low
CH Freq: 1.967600000 GHz
Trig: Free Run
Avg|Hold: 3/10
#Atten: 10 dB
Ext Gain: -54.40 dB
Radio Device: BTS
Frequency
Rho: 0.99384
EVM: 7.87 % rms
82.04 % Pk
Pk CDE:
-41.98 dB
at C8(19)
Pk Active CDE:
-39.76 dB
at C7(2)
Magnitude Error:
7.47 % rms
Phase Error:
3.04 ° rms
Frequency Error:
-1.32 Hz
I/Q Origin Offset:
-54.56 dB
Time Offset:
18606.986 chips
Preamble Signature:

I/Q Measured Polar Graph
I/Q Measured Polar Vector
90
180
0
-90
Active Channels: 20 Slot# 8
Center Freq
1.967600000 GHz
CF Step
5.000000 MHz
Auto
Man
MSG
STATUS

3.4 SPURIOUS RADIATED EMISSIONS

Applicable Standard: FCC CFR 47, §2.1053

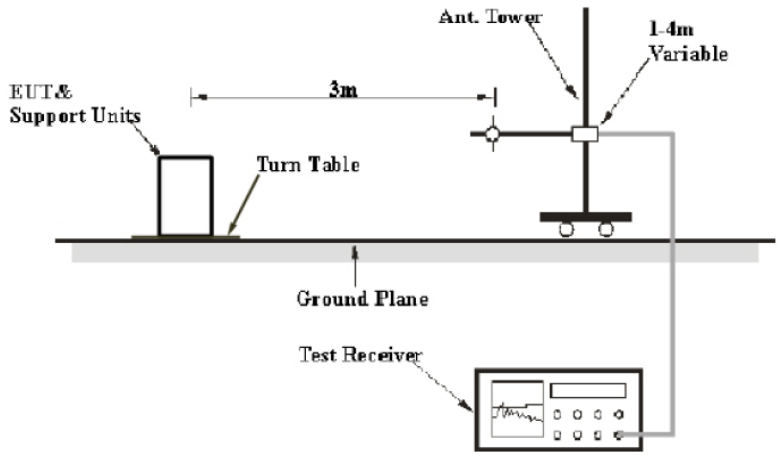
Test Equipment List and Details

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.

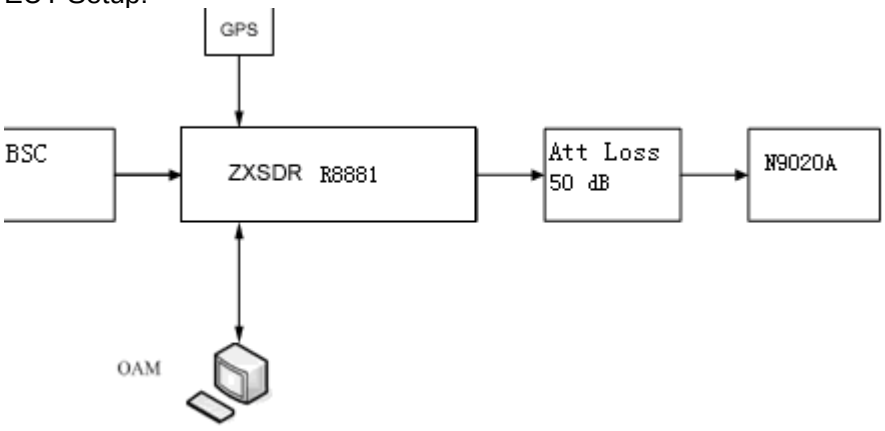
Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Agilent	MXA Series Spectrum Analyzer	N9020A	MY51160170	2014-6-20	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

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

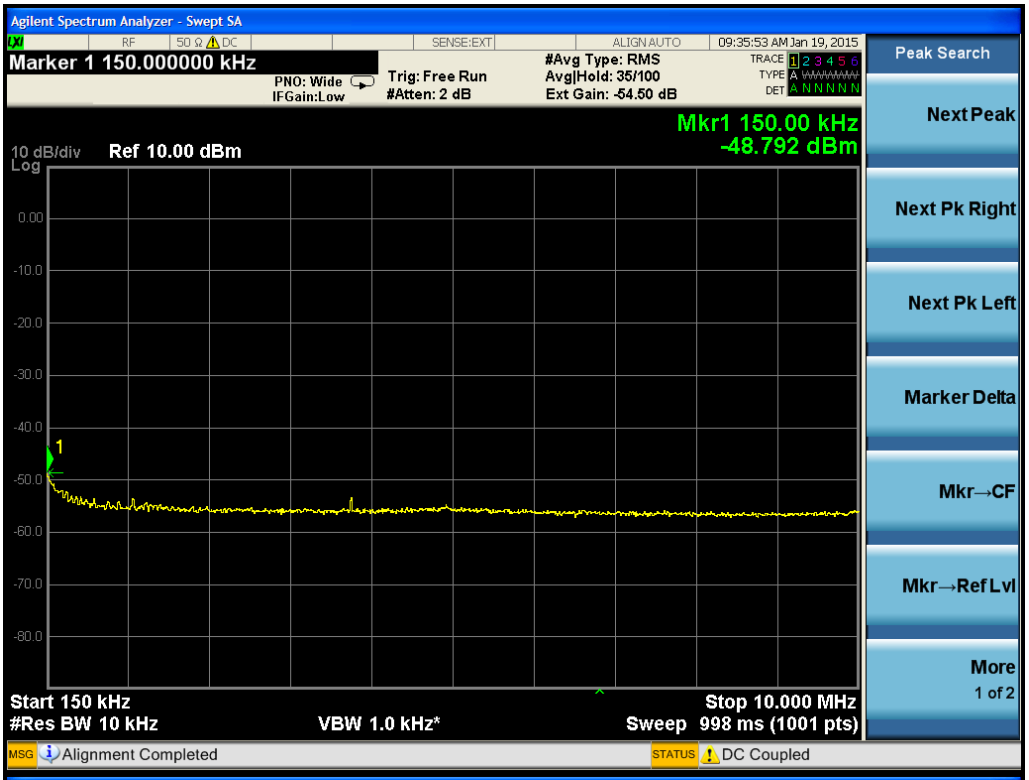
Temperature:	20 °C
Relative Humidity:	53 %
ATM Pressure:	1009 mbar

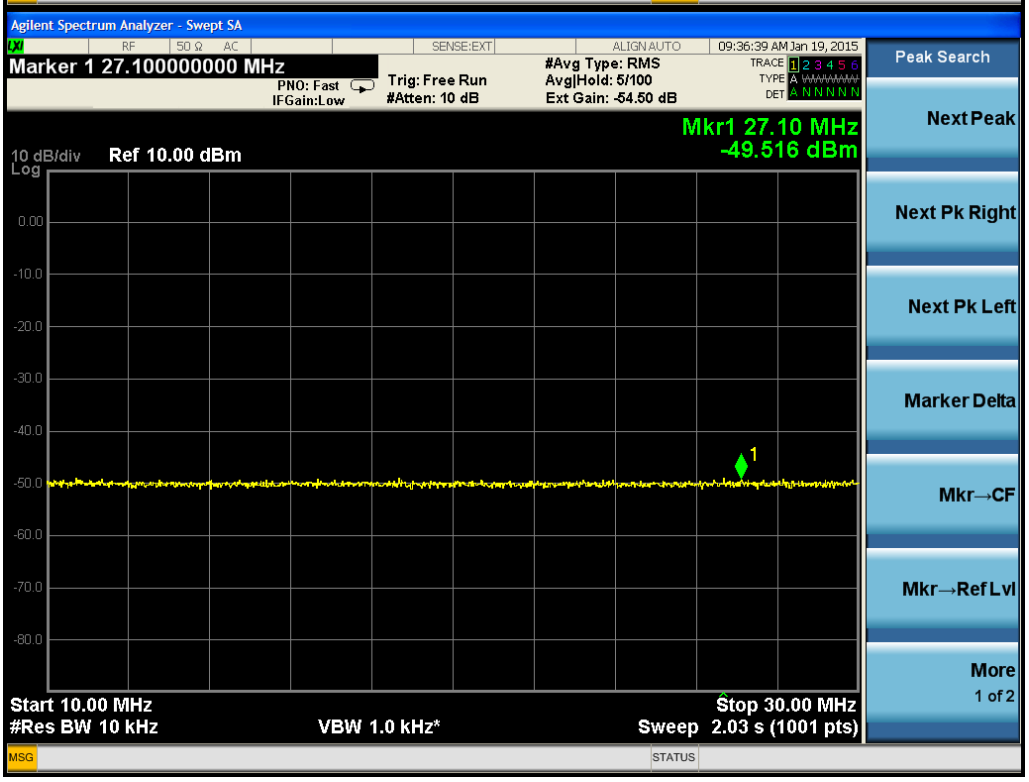
Test Result: Pass

Test Mode: Transmitting UMTS

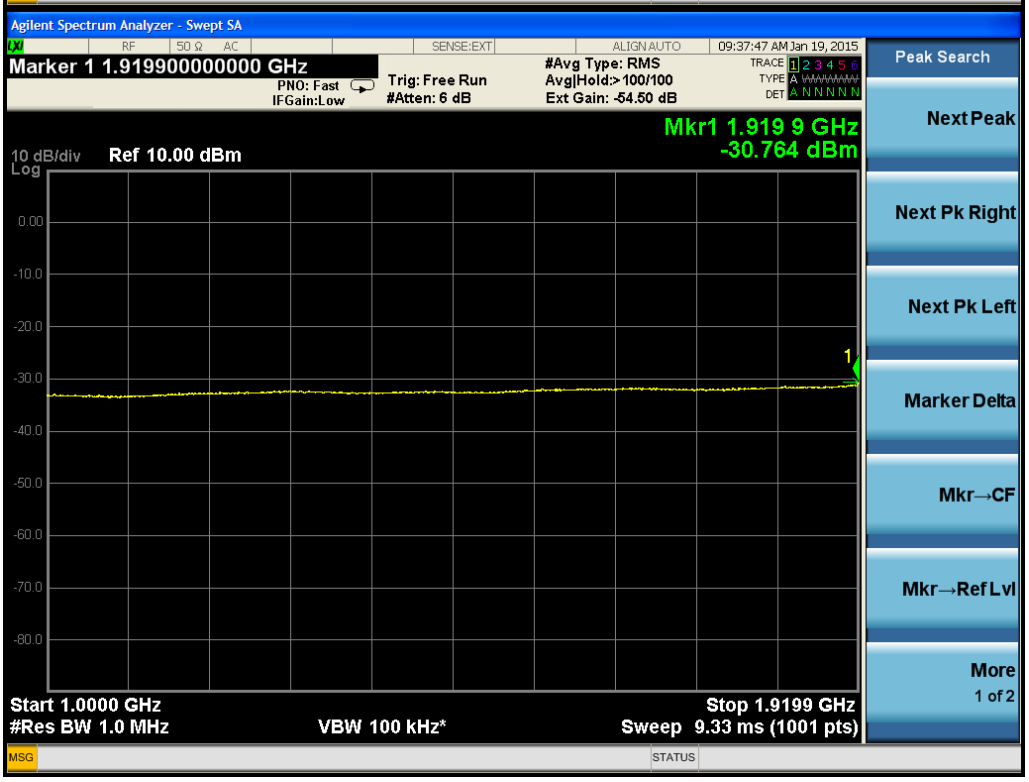
Test Data:

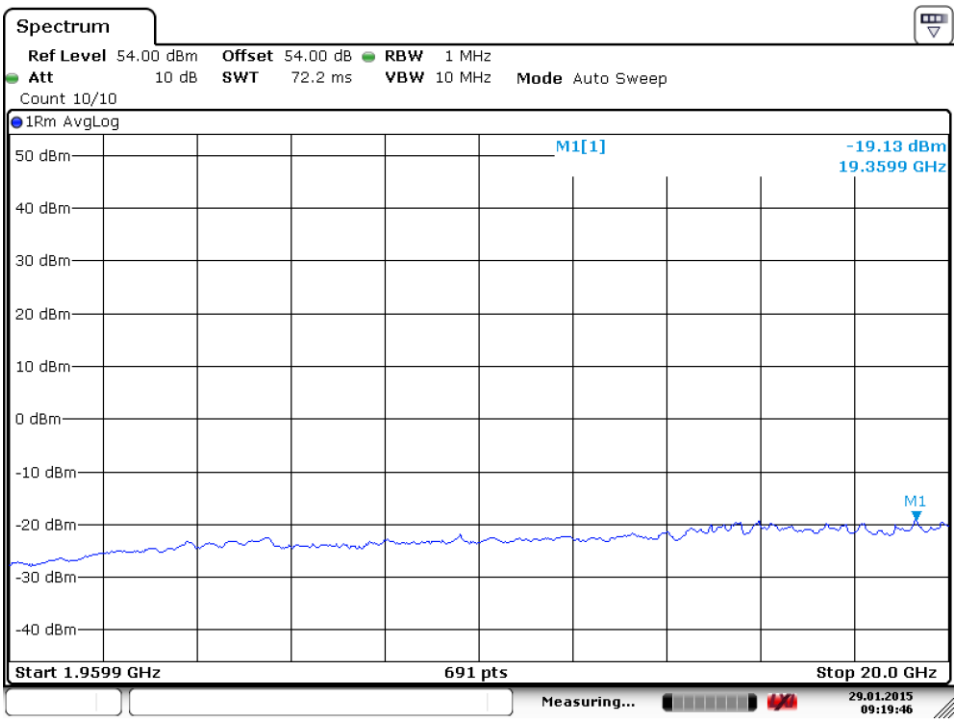
Four Carriers (working in bottom frequency)


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω DC
SENSE:EXT
ALIGN AUTO
09:35:53 AM Jan 19, 2015
Marker 1 150.000000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 2 dB
#Avg Type: RMS
Avg|Hold: 35/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 150.00 kHz
-48.792 dBm
10 dB/div
Log
Ref 10.00 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
1
Start 150 kHz
#Res BW 10 kHz
VBW 1.0 kHz*
Stop 10.000 MHz
Sweep 998 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
Alignment Completed
STATUS
DC Coupled


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:EXT
ALIGN AUTO
09:36:39 AM Jan 19, 2015
Marker 1 27.100000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: RMS
Avg|Hold: 5/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 27.10 MHz
-49.516 dBm
10 dB/div
Log
Ref 10.00 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
1
Start 10.00 MHz
#Res BW 10 kHz
VBW 1.0 kHz*
Stop 30.00 MHz
Sweep 2.03 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

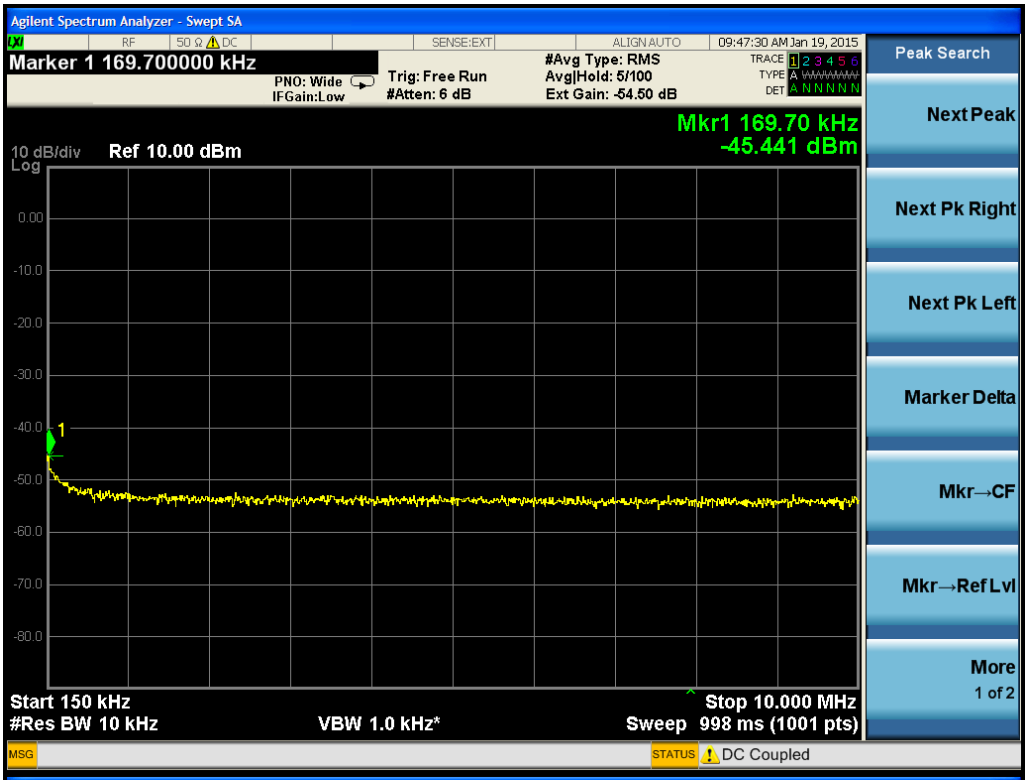

Agilent Spectrum Analyzer - Swept SA
Marker 1 879.720000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 6 dB
#Avg Type: RMS
Avg|Hold: 6/100
Ext Gain: -54.50 dB
09:37:17 AM Jan 19, 2015
Mkr1 879.72 MHz
-42.000 dBm
10 dB/div
Log
Ref 10.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
VBW 10 kHz*
Stop 1.0000 GHz
Sweep 983 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

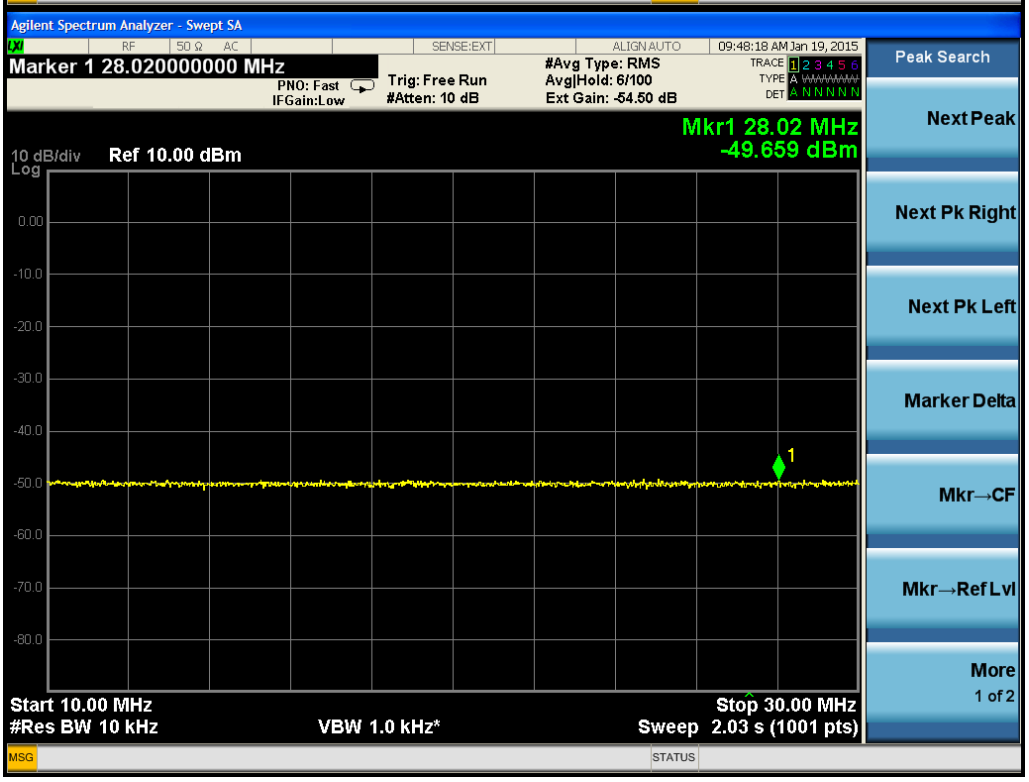

Agilent Spectrum Analyzer - Swept SA
Marker 1 1.919900000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 6 dB
#Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -54.50 dB
09:37:47 AM Jan 19, 2015
Mkr1 1.919 9 GHz
-30.764 dBm
10 dB/div
Log
Ref 10.00 dBm
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 100 kHz*
Stop 1.9199 GHz
Sweep 9.33 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2



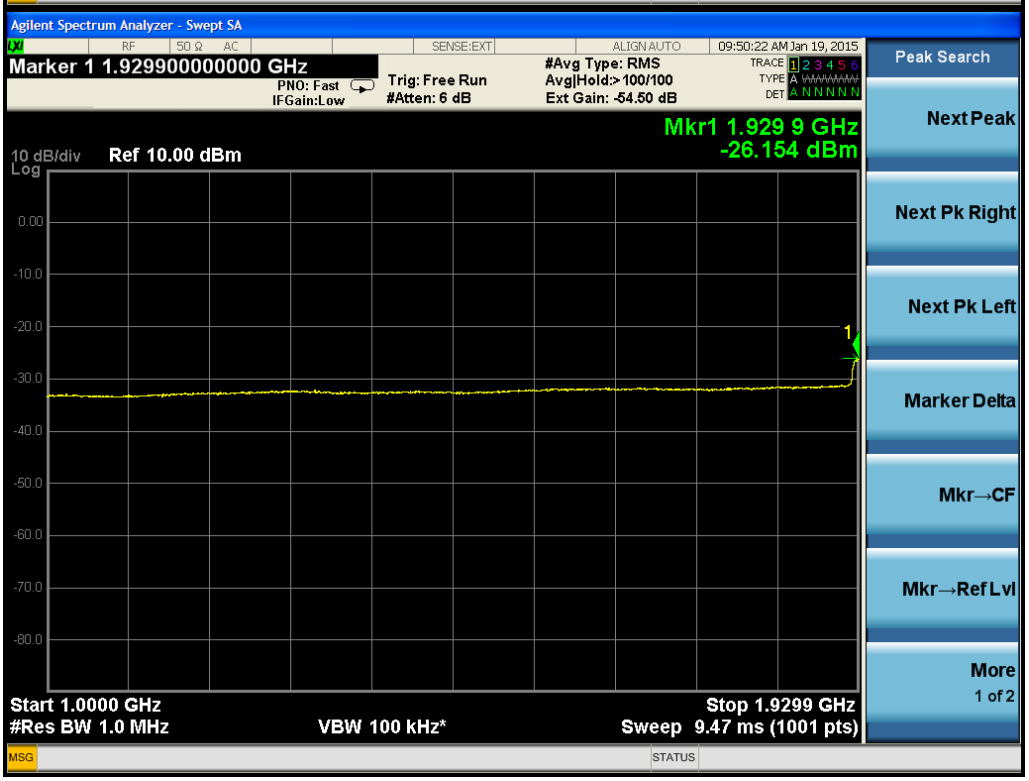
Date: 29.JAN.2015 09:19:47

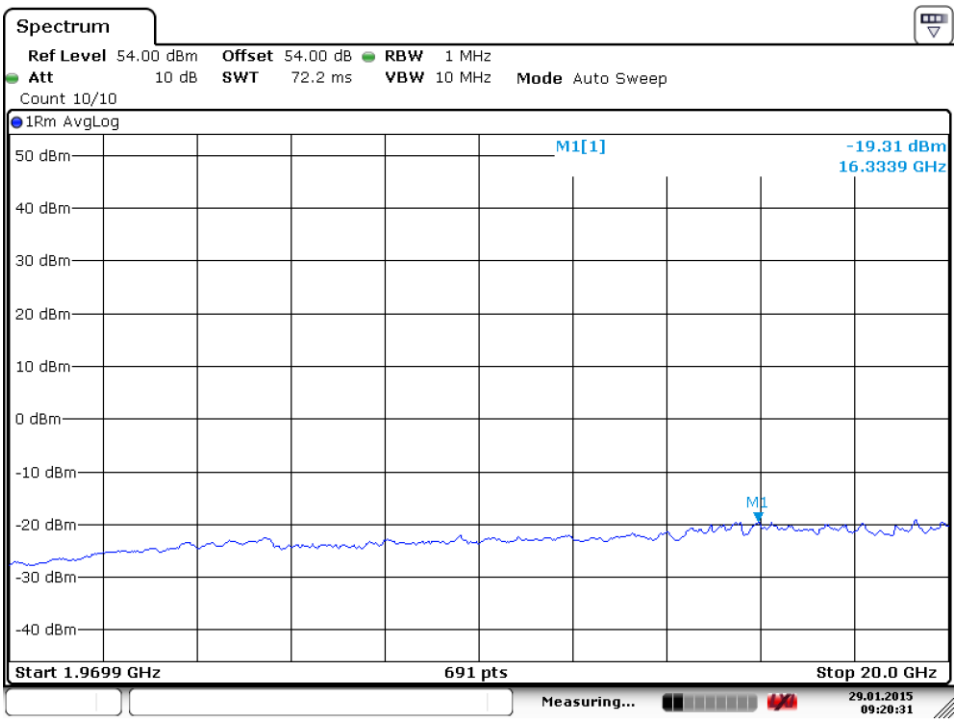
Four carriers (working in middle frequency)


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω DC
SENSE:EXT
ALIGN AUTO
09:47:30 AM Jan 19, 2015
Marker 1 169.700000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 6 dB
#Avg Type: RMS
Avg|Hold: 5/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 169.70 kHz
-45.441 dBm
10 dB/div
Log
Ref 10.00 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
1
Start 150 kHz
#Res BW 10 kHz
VBW 1.0 kHz*
Stop 10.000 MHz
Sweep 998 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
09:48:18 AM Jan 19, 2015
Marker 1 28.020000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: RMS
Avg|Hold: 6/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 28.02 MHz
-49.659 dBm
10 dB/div
Log
Ref 10.00 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
1
Start 10.00 MHz
#Res BW 10 kHz
VBW 1.0 kHz*
Stop 30.00 MHz
Sweep 2.03 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

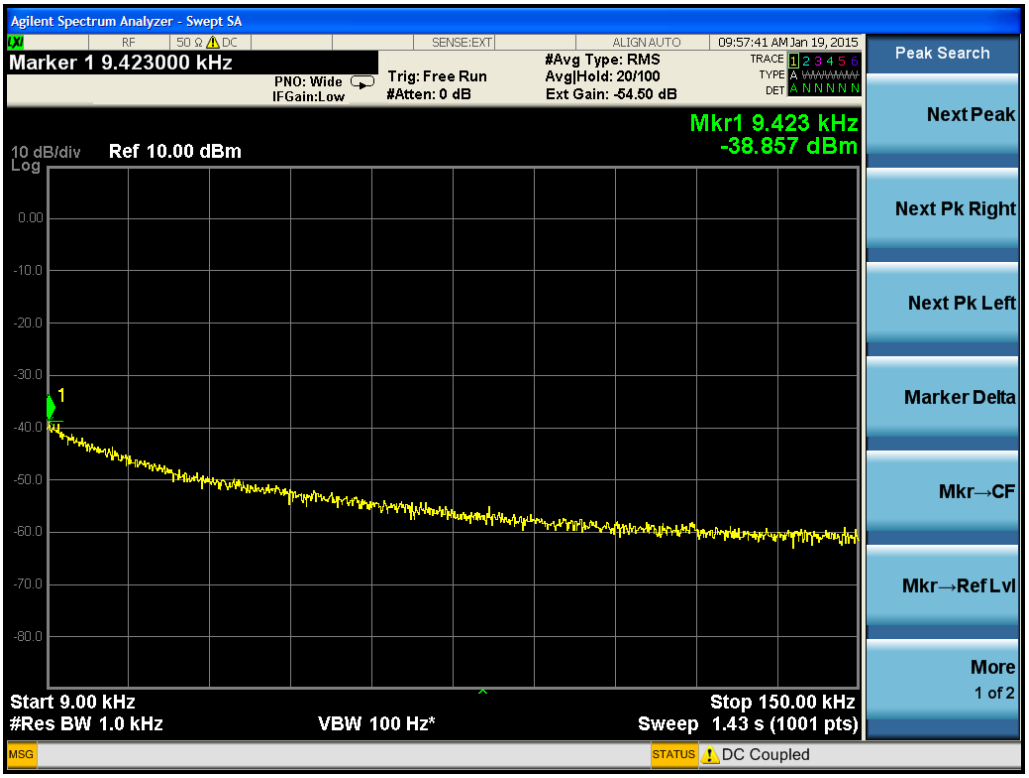

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
09:49:07 AM Jan 19, 2015
Marker 1 840.920000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 6 dB
#Avg Type: RMS
Avg|Hold: 5/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 840.92 MHz
-41.987 dBm
10 dB/div
Log
Ref 10.00 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
1
Start 30.0 MHz
#Res BW 100 kHz
VBW 10 kHz*
Stop 1.0000 GHz
Sweep 983 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

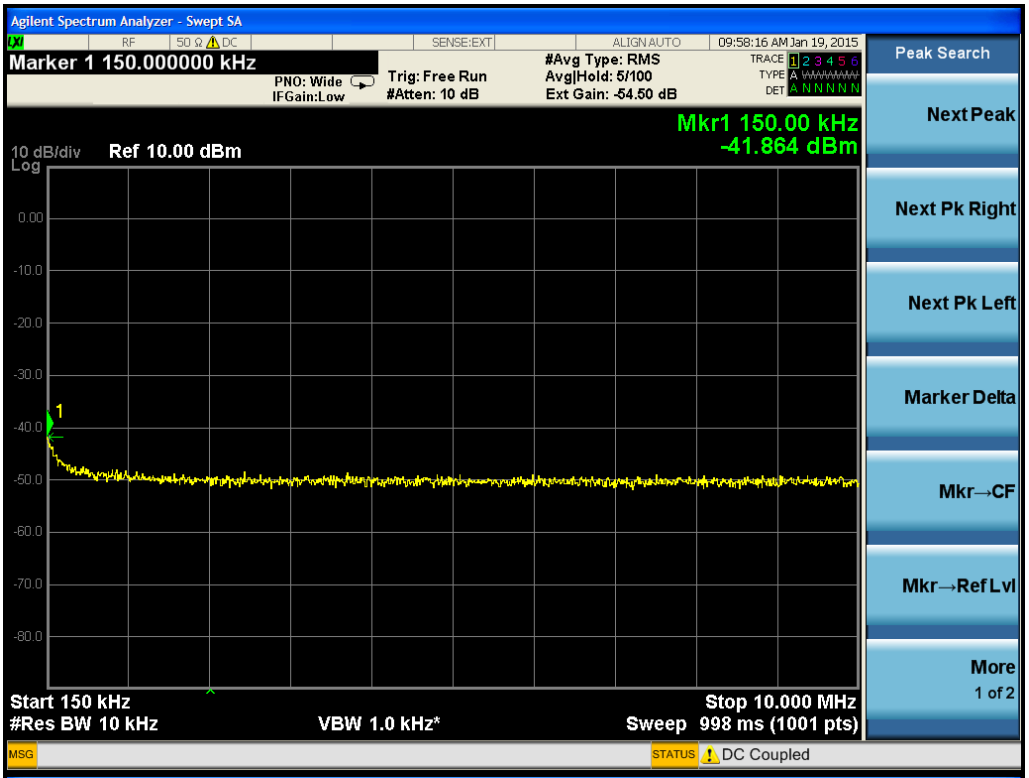

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
09:50:22 AM Jan 19, 2015
Marker 1 1.929900000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 6 dB
#Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 1.929 9 GHz
-26.154 dBm
10 dB/div
Log
Ref 10.00 dBm
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-80.0
1
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 100 kHz*
Stop 1.9299 GHz
Sweep 9.47 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

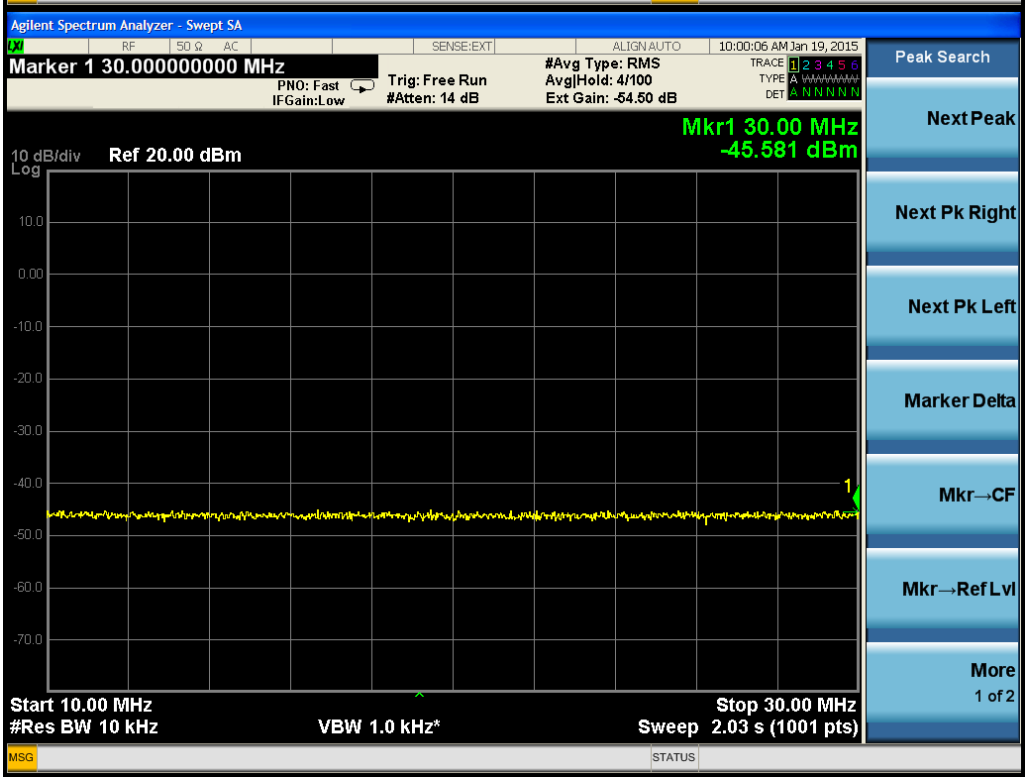


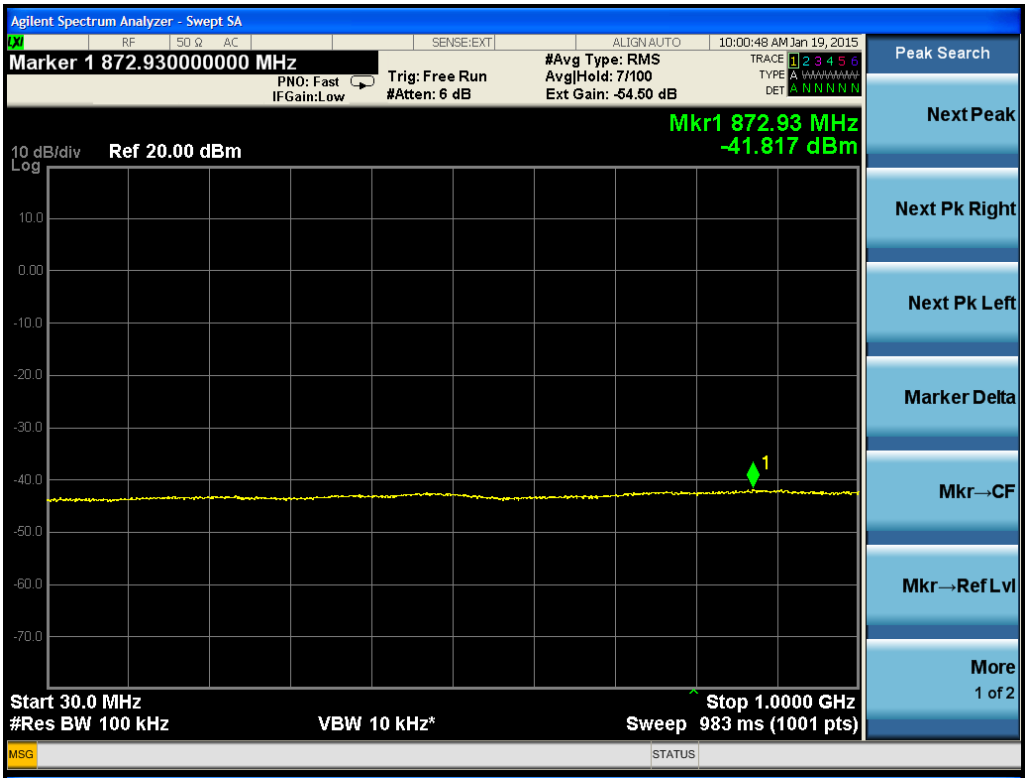
Date: 29.JAN.2015 09:20:31

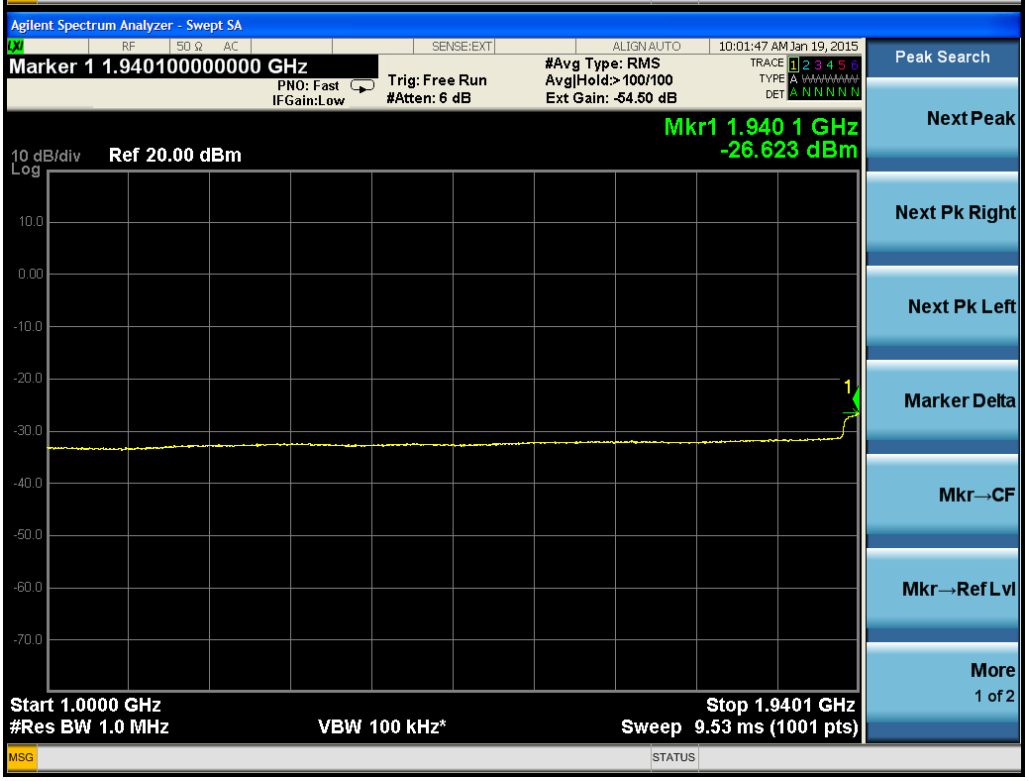
Four Carriers (working in top frequency)

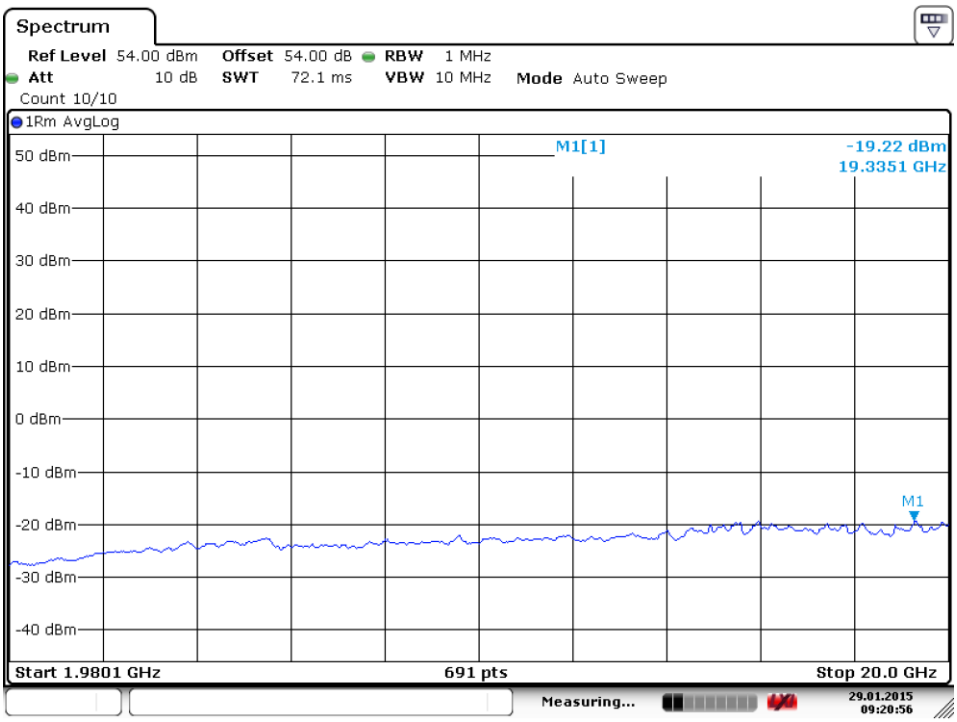



Agilent Spectrum Analyzer - Swept SA
Marker 1 150.000000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: RMS
Avg|Hold: 5/100
Ext Gain: -54.50 dB
09:58:16 AM Jan 19, 2015
Mkr1 150.00 kHz
-41.864 dBm
10 dB/div
Log
Ref 10.00 dBm
Start 150 kHz
#Res BW 10 kHz
VBW 1.0 kHz*
Stop 10.000 MHz
Sweep 998 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 30.000000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 14 dB
#Avg Type: RMS
Avg|Hold: 4/100
Ext Gain: -54.50 dB
10:00:06 AM Jan 19, 2015
Mkr1 30.00 MHz
-45.581 dBm
10 dB/div
Log
Ref 20.00 dBm
Start 10.00 MHz
#Res BW 10 kHz
VBW 1.0 kHz*
Stop 30.00 MHz
Sweep 2.03 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

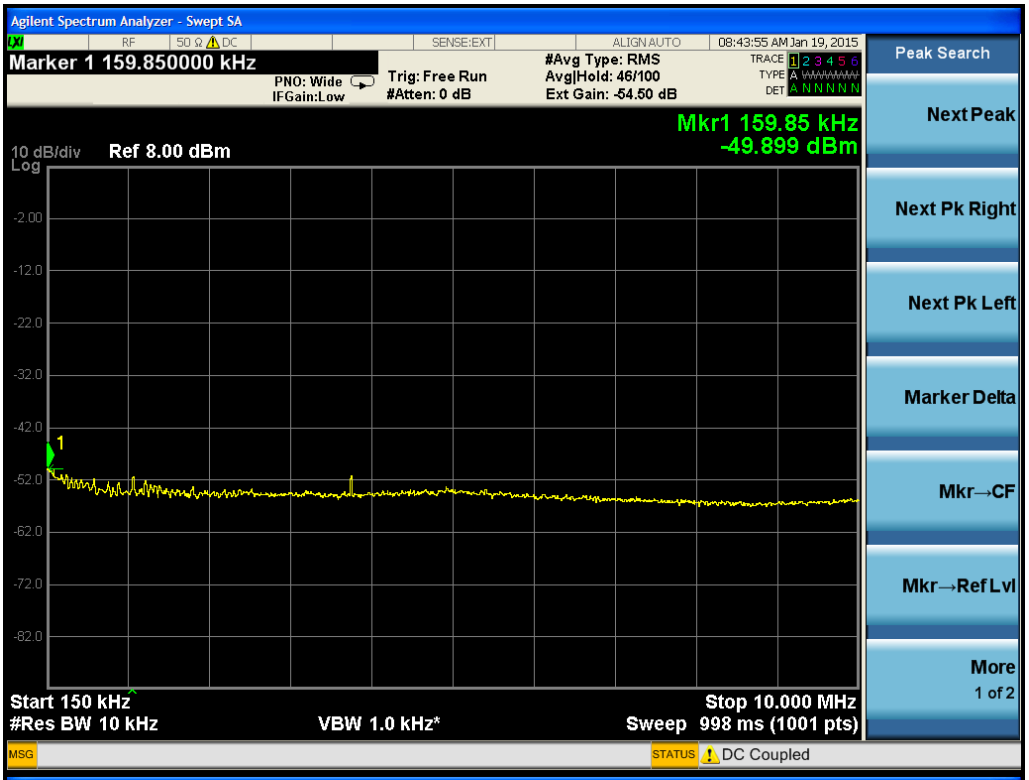

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
10:00:48 AM Jan 19, 2015
Marker 1 872.930000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 6 dB
#Avg Type: RMS
Avg|Hold: 7/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 872.93 MHz
-41.817 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Start 30.0 MHz
#Res BW 100 kHz
VBW 10 kHz*
Stop 1.0000 GHz
Sweep 983 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

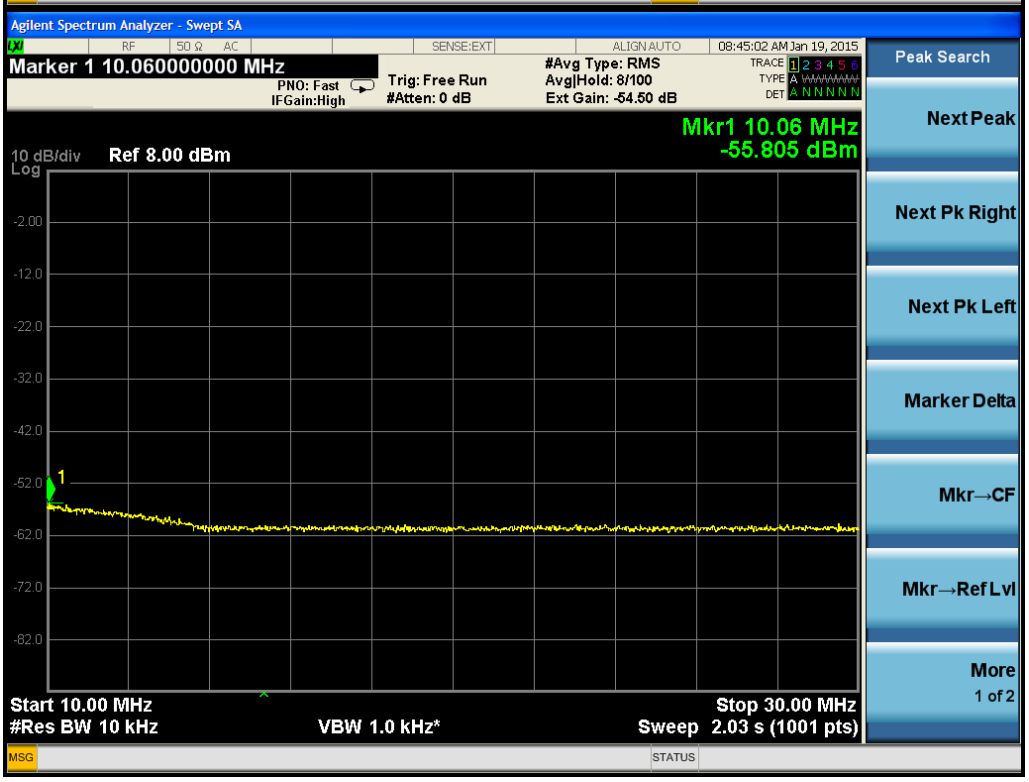

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
10:01:47 AM Jan 19, 2015
Marker 1 1.940100000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 6 dB
#Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 1.940 1 GHz
-26.623 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 100 kHz*
Stop 1.9401 GHz
Sweep 9.53 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

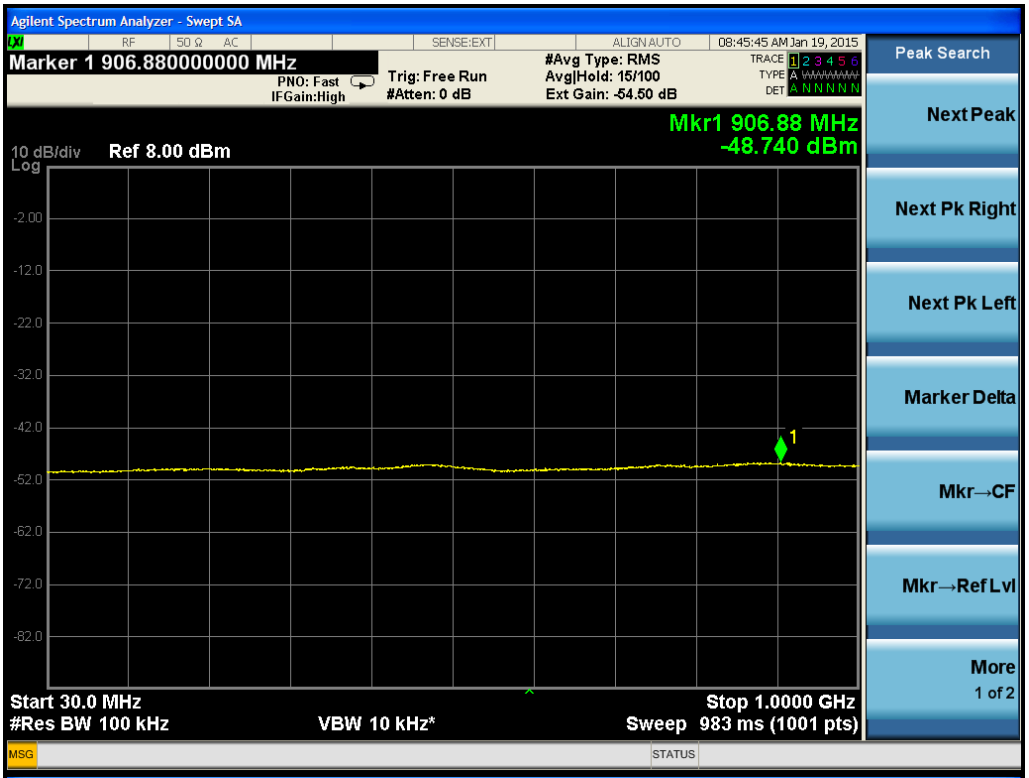


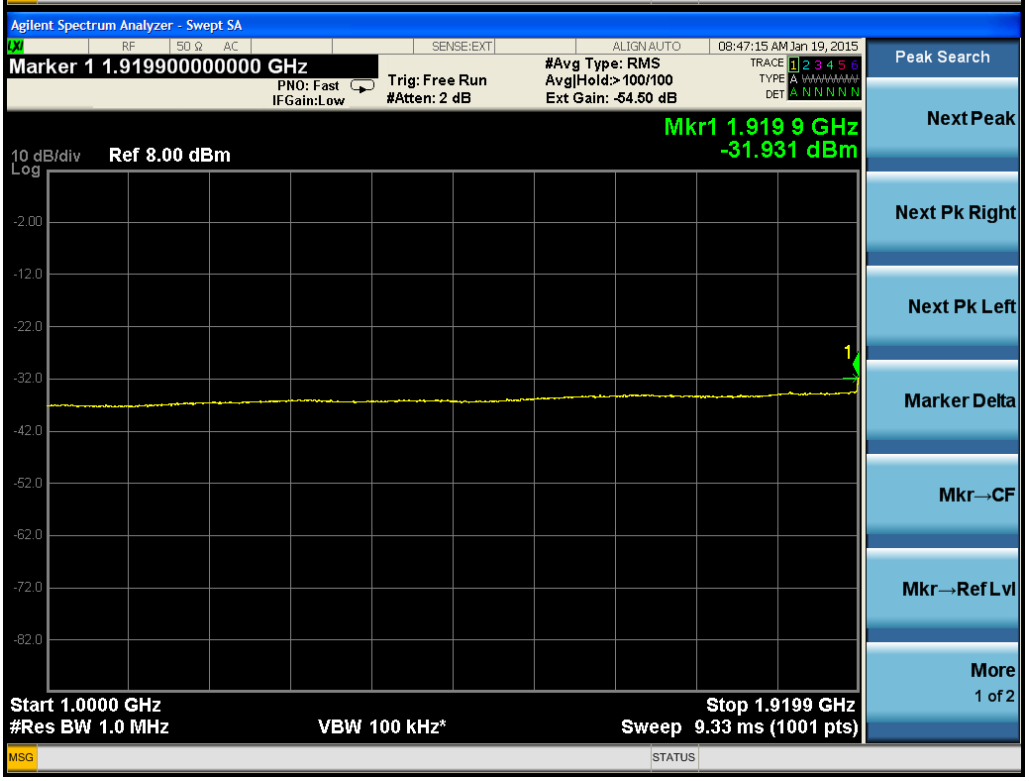
Date: 29.JAN.2015 09:20:57

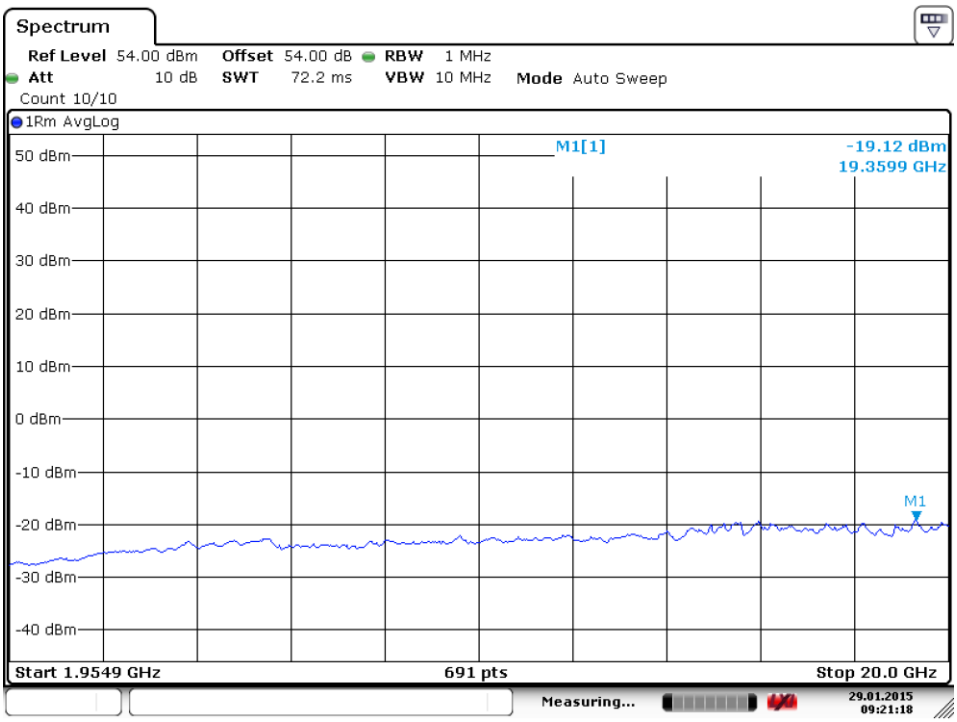
Three carriers (working in bottom frequency)


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω DC
SENSE:EXT
ALIGN AUTO
08:43:55 AM Jan 19, 2015
Marker 1 159.850000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 0 dB
#Avg Type: RMS
Avg|Hold: 46/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 159.85 kHz
-49.899 dBm
10 dB/div
Log
Ref 8.00 dBm
-2.00
-12.0
-22.0
-32.0
-42.0
-52.0
-62.0
-72.0
-82.0
1
Start 150 kHz
#Res BW 10 kHz
VBW 1.0 kHz*
Stop 10.000 MHz
Sweep 998 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
08:45:02 AM Jan 19, 2015
Marker 1 10.060000000 MHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
#Avg Type: RMS
Avg|Hold: 8/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 10.06 MHz
-55.805 dBm
10 dB/div
Log
Ref 8.00 dBm
-2.00
-12.0
-22.0
-32.0
-42.0
-52.0
-62.0
-72.0
-82.0
1
Start 10.00 MHz
#Res BW 10 kHz
VBW 1.0 kHz*
Stop 30.00 MHz
Sweep 2.03 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

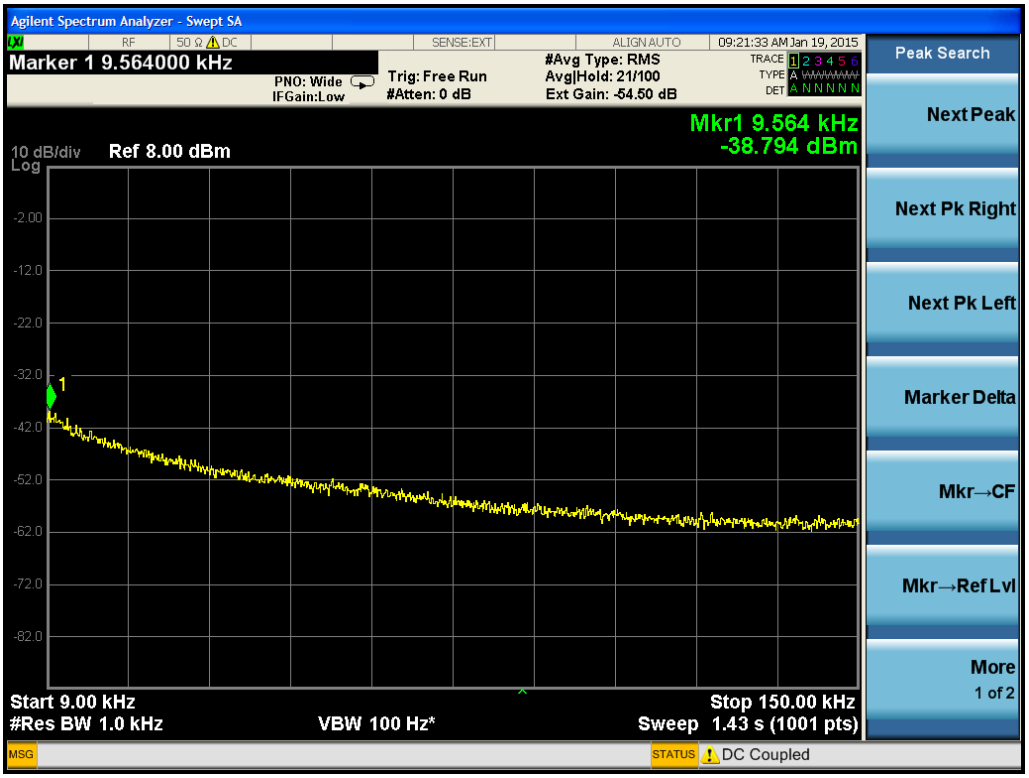

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
08:45:45 AM Jan 19, 2015
Marker 1 906.880000000 MHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
#Avg Type: RMS
Avg|Hold: 15/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 906.88 MHz
-48.740 dBm
10 dB/div
Log
Ref 8.00 dBm
-2.00
-12.0
-22.0
-32.0
-42.0
-52.0
-62.0
-72.0
-82.0
1
Start 30.0 MHz
#Res BW 100 kHz
VBW 10 kHz*
Stop 1.0000 GHz
Sweep 983 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

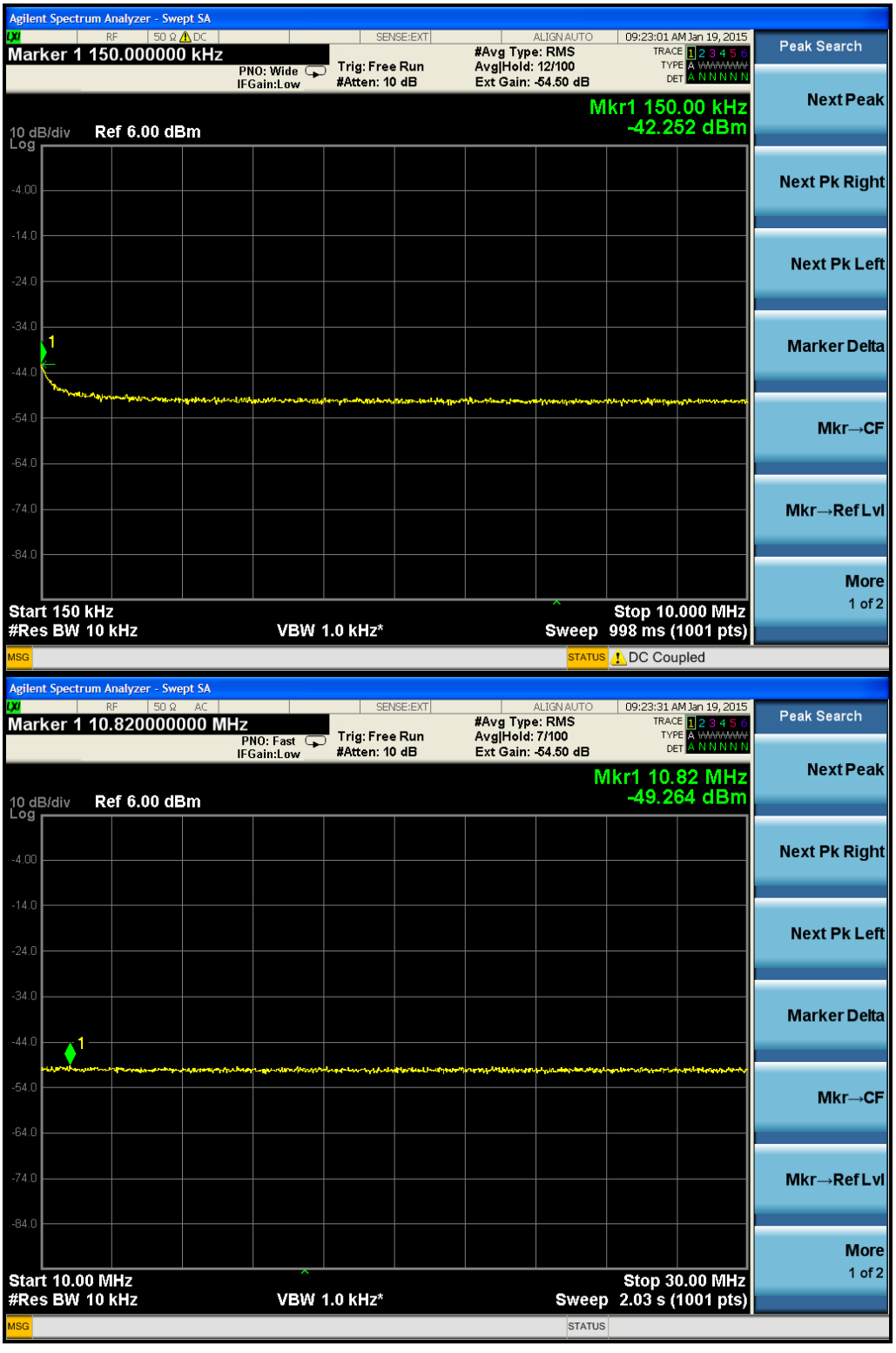

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
08:47:15 AM Jan 19, 2015
Marker 1 1.919900000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 2 dB
#Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 1.919 9 GHz
-31.931 dBm
10 dB/div
Log
Ref 8.00 dBm
-2.00
-12.0
-22.0
-32.0
-42.0
-52.0
-62.0
-72.0
-82.0
1
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 100 kHz*
Stop 1.9199 GHz
Sweep 9.33 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

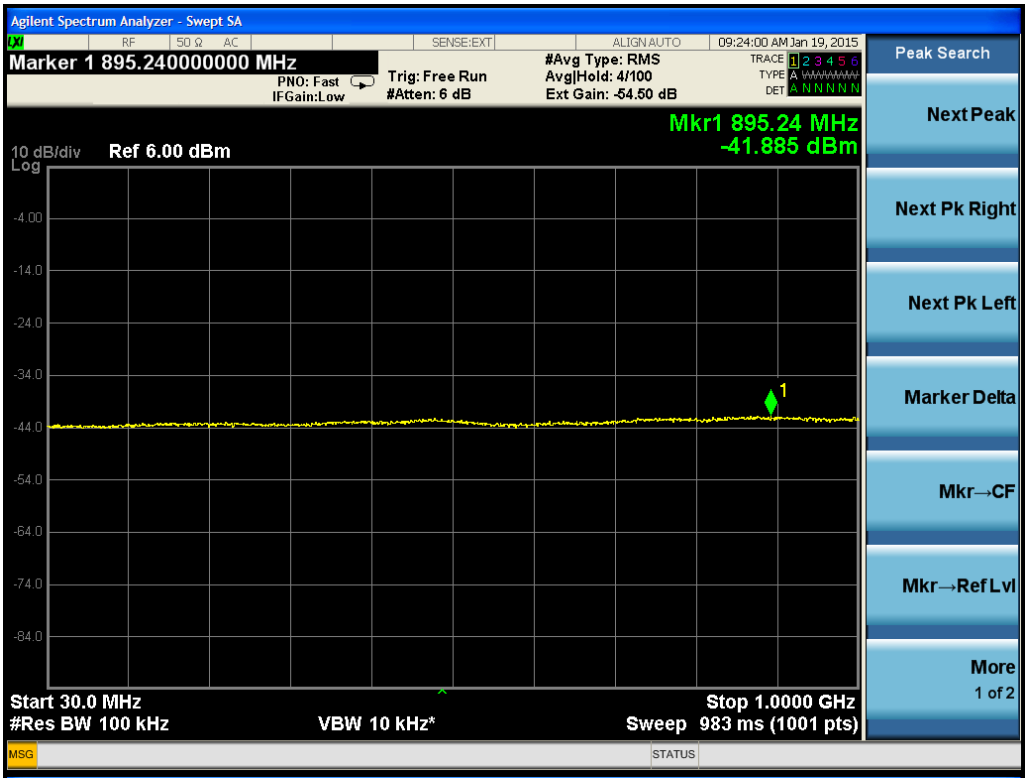


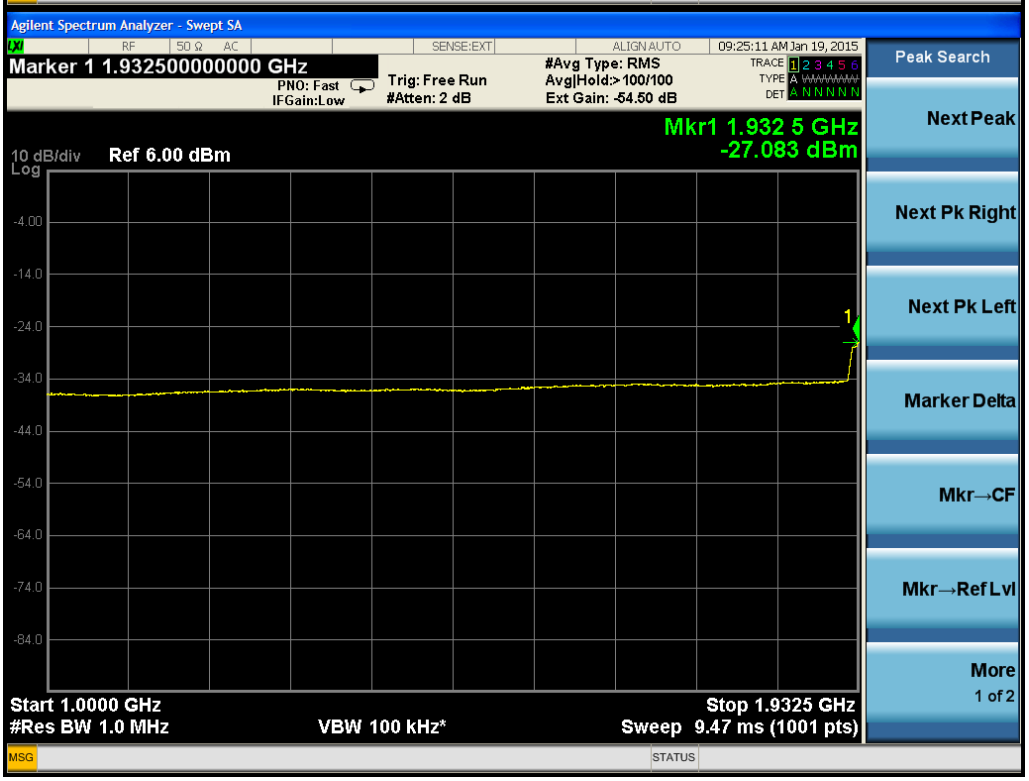
Date: 29.JAN.2015 09:21:18

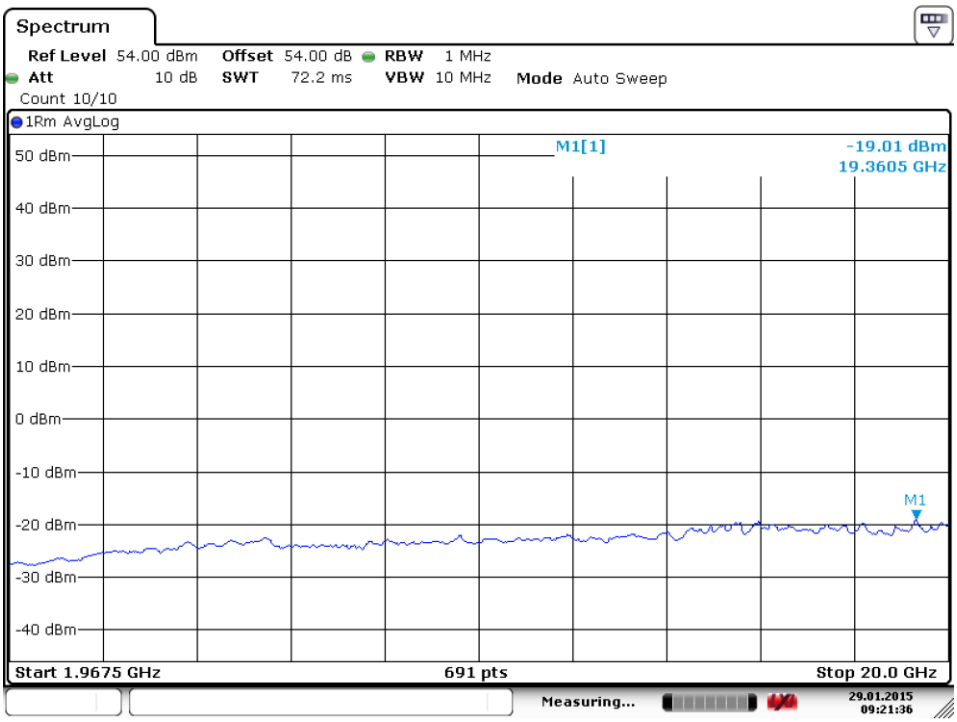
Three carriers (working in middle frequency)




Agilent Spectrum Analyzer - Swept SA
RF
50 Ω DC
SENSE:EXT
ALIGN AUTO
09:23:01 AM Jan 19, 2015
Marker 1 150.000000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: RMS
Avg|Hold: 12/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 150.00 kHz
-42.252 dBm
10 dB/div
Log
Ref 6.00 dBm
-4.00
-14.0
-24.0
-34.0
-44.0
-54.0
-64.0
-74.0
-84.0
Start 150 kHz
#Res BW 10 kHz
VBW 1.0 kHz*
Stop 10.000 MHz
Sweep 998 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
09:23:31 AM Jan 19, 2015
Marker 1 10.820000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: RMS
Avg|Hold: 7/100
Ext Gain: -54.50 dB
Mkr1 10.82 MHz
-49.264 dBm
10 dB/div
Log
Ref 6.00 dBm
Start 10.00 MHz
#Res BW 10 kHz
VBW 1.0 kHz*
Stop 30.00 MHz
Sweep 2.03 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
09:24:00 AM Jan 19, 2015
Marker 1 895.240000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 6 dB
#Avg Type: RMS
Avg|Hold: 4/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 895.24 MHz
-41.885 dBm
10 dB/div
Log
Ref 6.00 dBm
-4.00
-14.0
-24.0
-34.0
-44.0
-54.0
-64.0
-74.0
-84.0
Start 30.0 MHz
#Res BW 100 kHz
VBW 10 kHz*
Stop 1.0000 GHz
Sweep 983 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

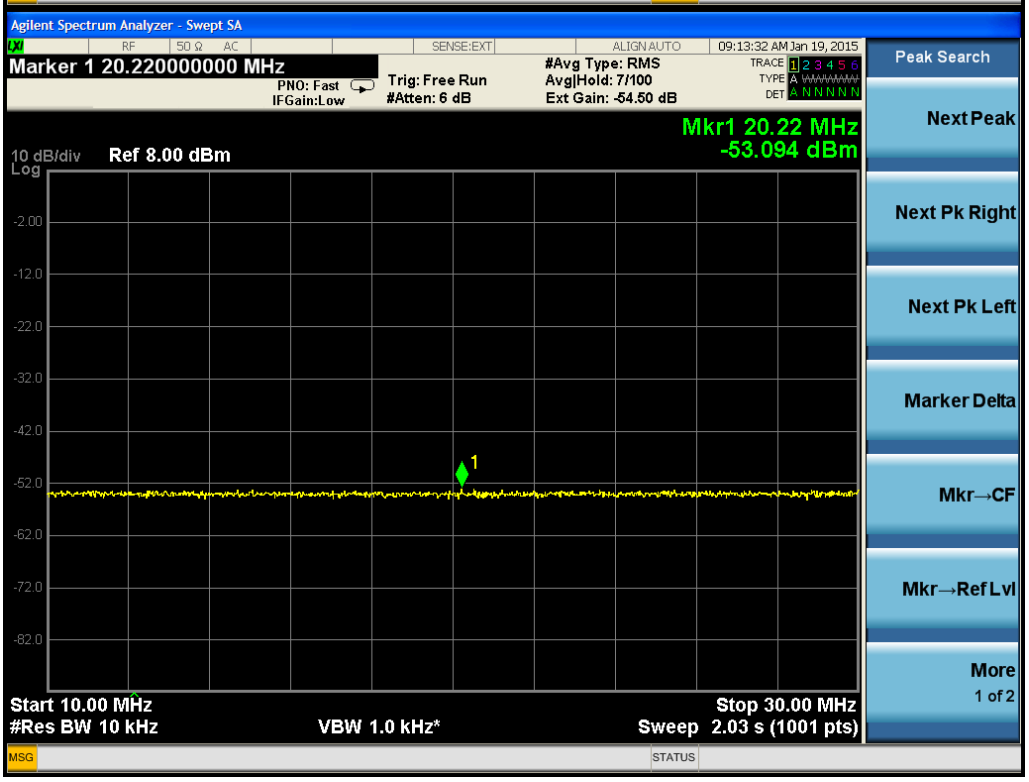

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
09:25:11 AM Jan 19, 2015
Marker 1 1.932500000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 2 dB
#Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 1.932 5 GHz
-27.083 dBm
10 dB/div
Log
Ref 6.00 dBm
-4.00
-14.0
-24.0
-34.0
-44.0
-54.0
-64.0
-74.0
-84.0
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 100 kHz*
Stop 1.9325 GHz
Sweep 9.47 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

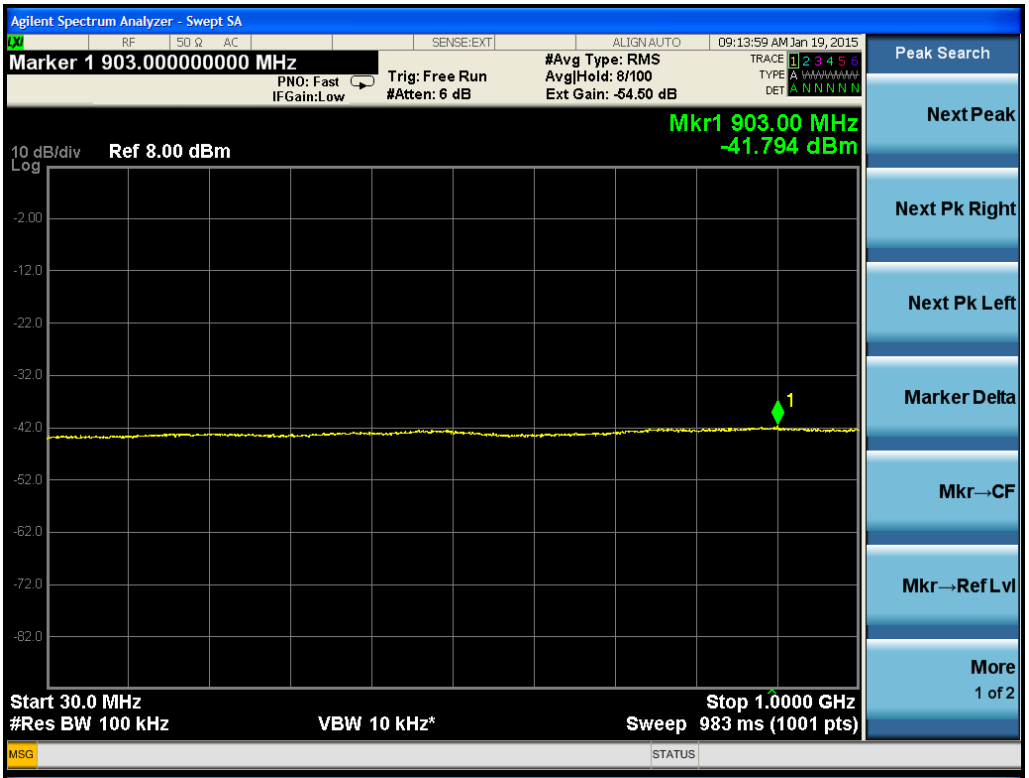


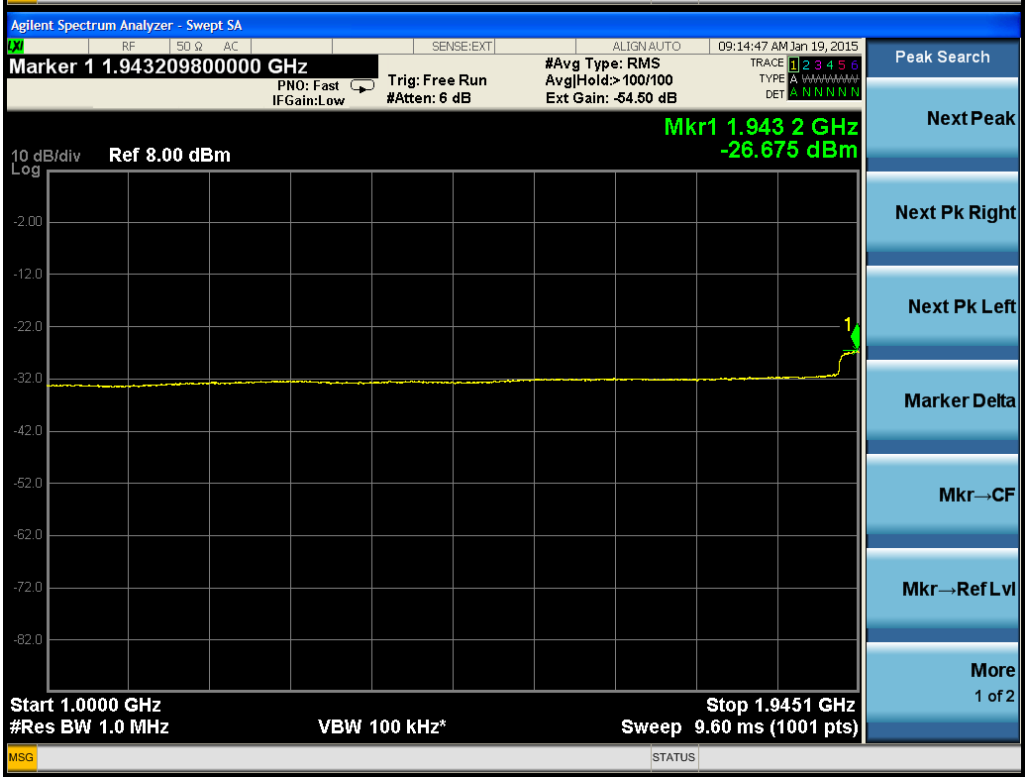
Date: 29.JAN.2015 09:21:36

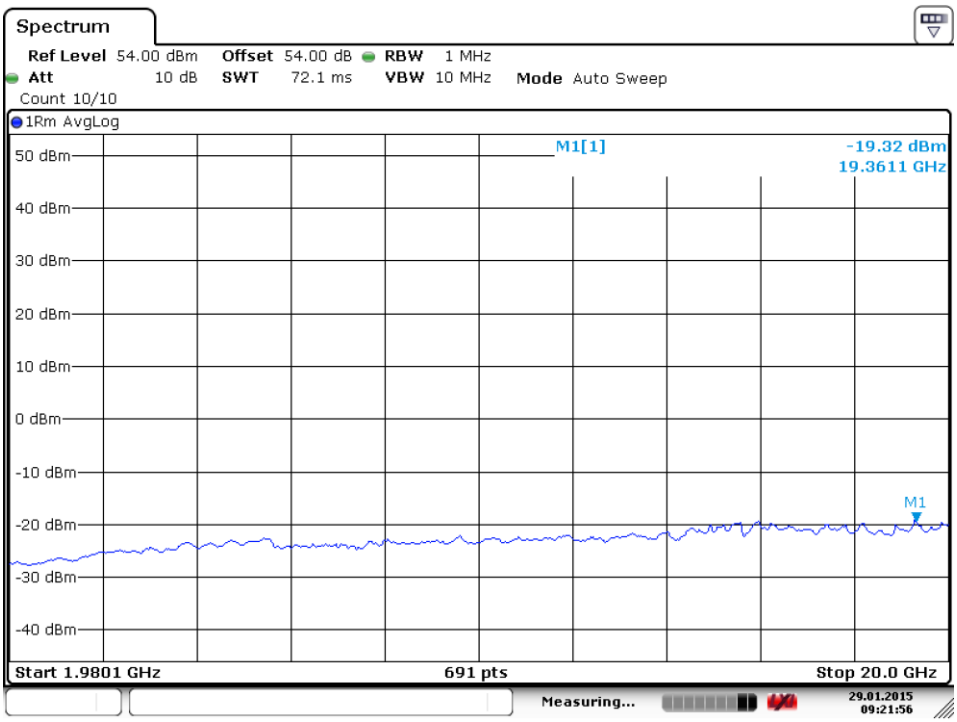
Three carriers (working in top frequency)


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω DC
SENSE:EXT
ALIGN AUTO
09:08:12 AM Jan 19, 2015
Marker 1 199.250000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 0 dB
#Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 199.25 kHz
-50.192 dBm
10 dB/div
Log
Ref 8.00 dBm
-2.00
-12.0
-22.0
-32.0
-42.0
-52.0
-62.0
-72.0
-82.0
1
Start 150 kHz
#Res BW 10 kHz
VBW 1.0 kHz*
Stop 10.000 MHz
Sweep 998 ms (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
09:13:32 AM Jan 19, 2015
Marker 1 20.220000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 6 dB
#Avg Type: RMS
Avg|Hold: 7/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 20.22 MHz
-53.094 dBm
10 dB/div
Log
Ref 8.00 dBm
-2.00
-12.0
-22.0
-32.0
-42.0
-52.0
-62.0
-72.0
-82.0
1
Start 10.00 MHz
#Res BW 10 kHz
VBW 1.0 kHz*
Stop 30.00 MHz
Sweep 2.03 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
09:13:59 AM Jan 19, 2015
Marker 1 903.000000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 6 dB
#Avg Type: RMS
Avg|Hold: 8/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 903.00 MHz
-41.794 dBm
10 dB/div
Log
Ref 8.00 dBm
-2.00
-12.0
-22.0
-32.0
-42.0
-52.0
-62.0
-72.0
-82.0
1
Start 30.0 MHz
#Res BW 100 kHz
VBW 10 kHz*
Stop 1.0000 GHz
Sweep 983 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

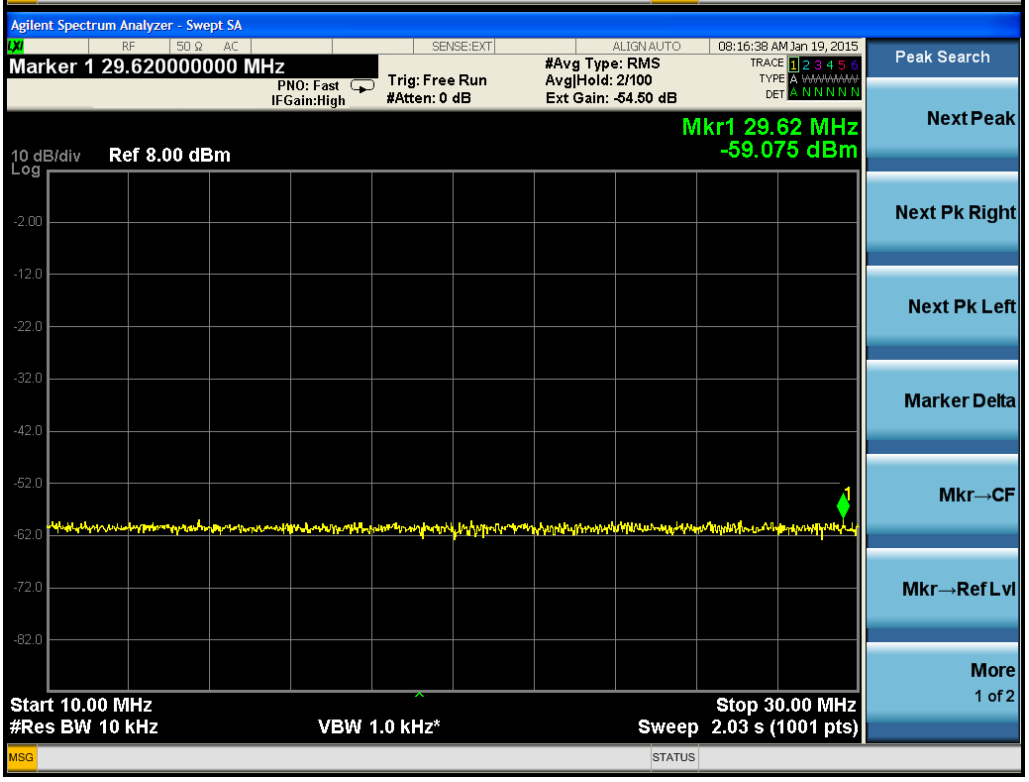

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
09:14:47 AM Jan 19, 2015
Marker 1 1.943209800000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 6 dB
#Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 1.943 2 GHz
-26.675 dBm
10 dB/div
Log
Ref 8.00 dBm
-2.00
-12.0
-22.0
-32.0
-42.0
-52.0
-62.0
-72.0
-82.0
1
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 100 kHz*
Stop 1.9451 GHz
Sweep 9.60 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

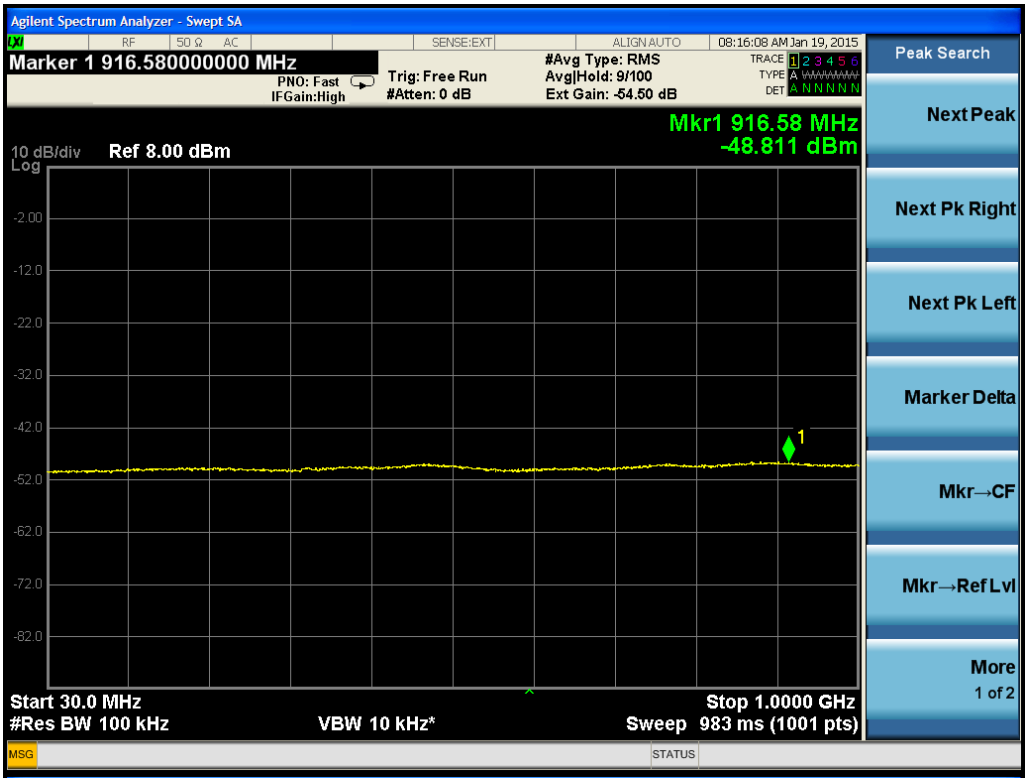


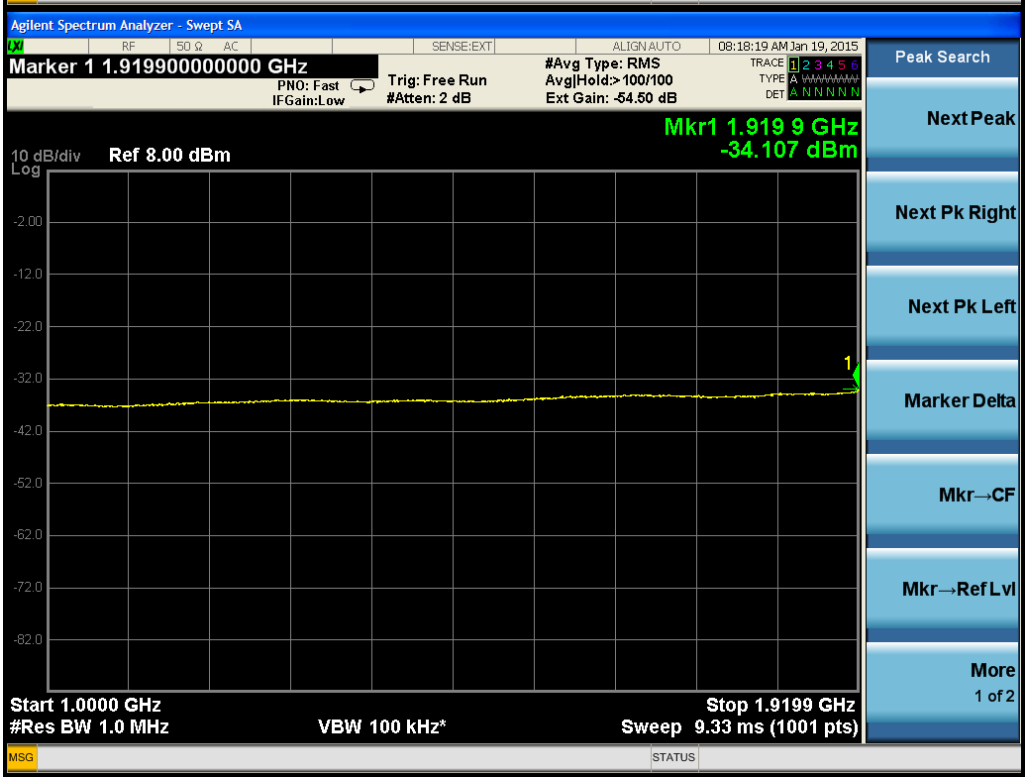
Date: 29.JAN.2015 09:21:57

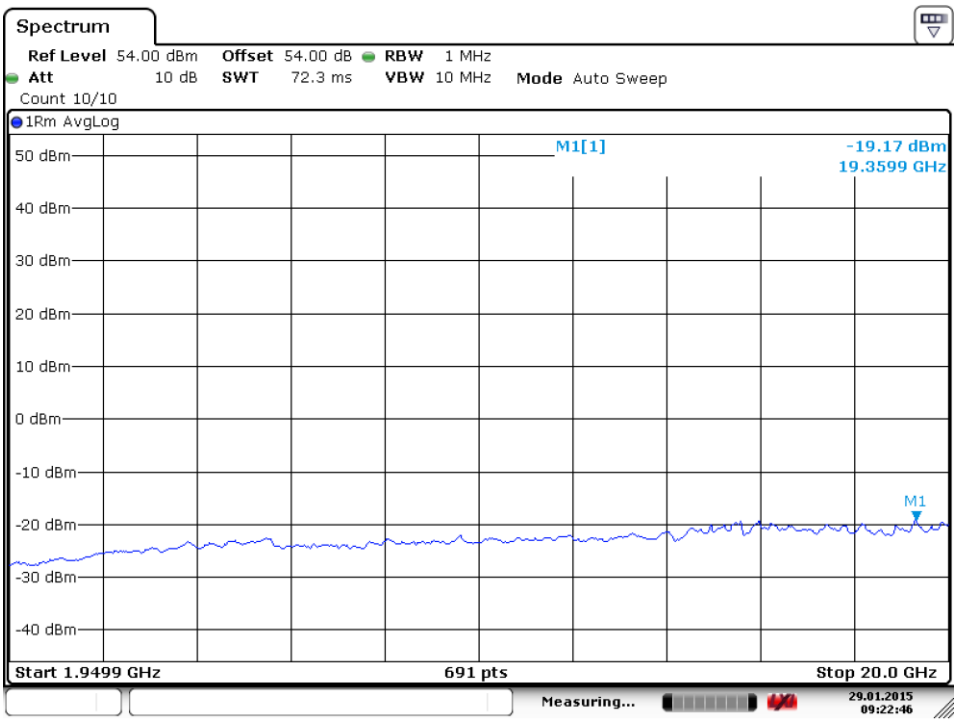
Two carrier (working in bottom frequency)


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω DC
SENSE:EXT
ALIGN AUTO
08:15:02 AM Jan 19, 2015
Marker 1 150.000000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 0 dB
#Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 150.00 kHz
-50.668 dBm
10 dB/div
Log
Ref 8.00 dBm
-2.00
-12.0
-22.0
-32.0
-42.0
-52.0
-62.0
-72.0
-82.0
1
Start 150 kHz
#Res BW 10 kHz
VBW 1.0 kHz*
Stop 10.000 MHz
Sweep 998 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
08:16:38 AM Jan 19, 2015
Marker 1 29.620000000 MHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
#Avg Type: RMS
Avg|Hold: 2/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 29.62 MHz
-59.075 dBm
10 dB/div
Log
Ref 8.00 dBm
-2.00
-12.0
-22.0
-32.0
-42.0
-52.0
-62.0
-72.0
-82.0
1
Start 10.00 MHz
#Res BW 10 kHz
VBW 1.0 kHz*
Stop 30.00 MHz
Sweep 2.03 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

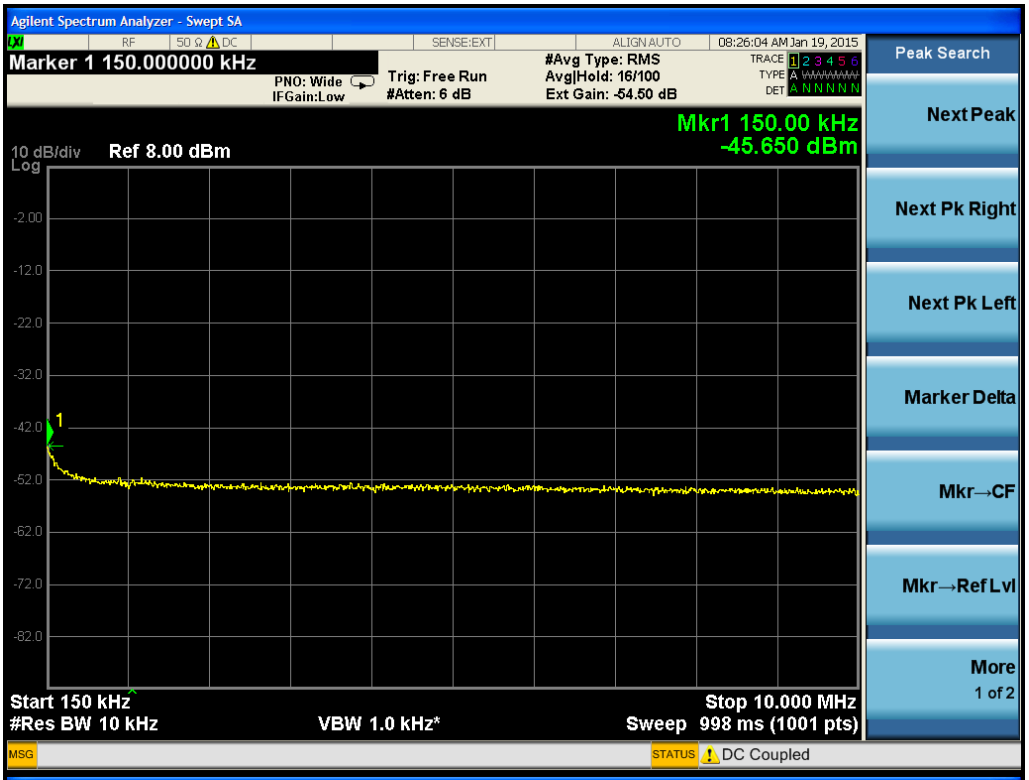

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
08:16:08 AM Jan 19, 2015
Marker 1 916.580000000 MHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
#Avg Type: RMS
Avg|Hold: 9/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 916.58 MHz
-48.811 dBm
10 dB/div
Log
Ref 8.00 dBm
-2.00
-12.0
-22.0
-32.0
-42.0
-52.0
-62.0
-72.0
-82.0
Start 30.0 MHz
#Res BW 100 kHz
VBW 10 kHz*
Stop 1.0000 GHz
Sweep 983 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

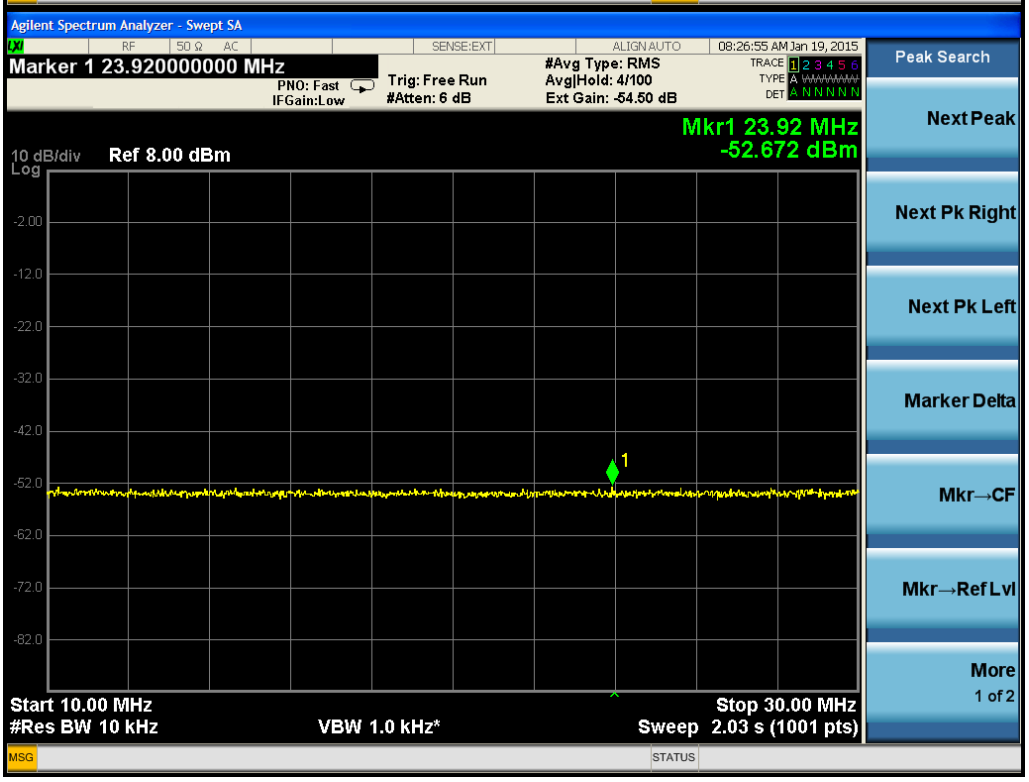

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
08:18:19 AM Jan 19, 2015
Marker 1 1.919900000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 2 dB
#Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 1.919 9 GHz
-34.107 dBm
10 dB/div
Log
Ref 8.00 dBm
-2.00
-12.0
-22.0
-32.0
-42.0
-52.0
-62.0
-72.0
-82.0
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 100 kHz*
Stop 1.9199 GHz
Sweep 9.33 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

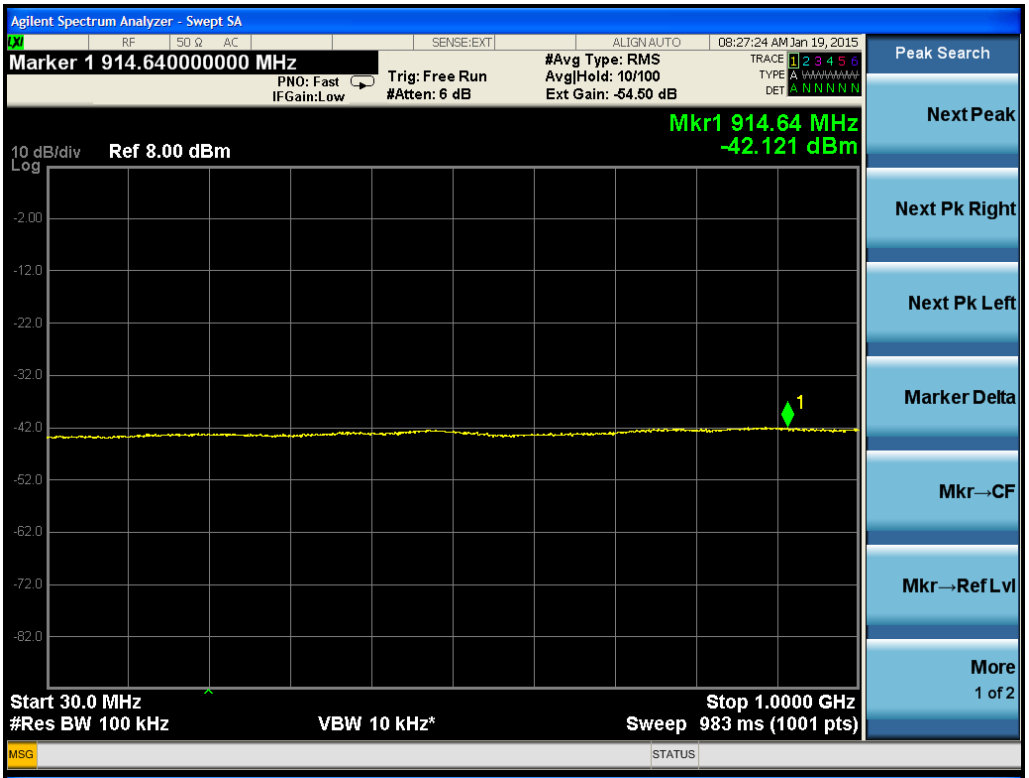


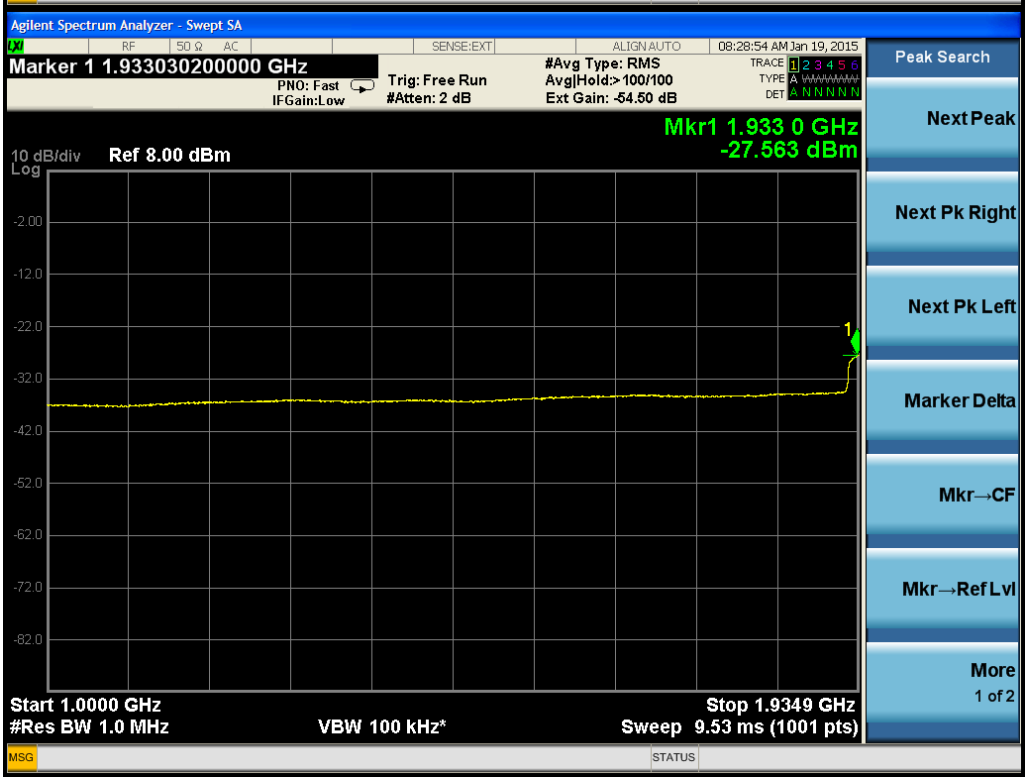
Date: 29.JAN.2015 09:22:46

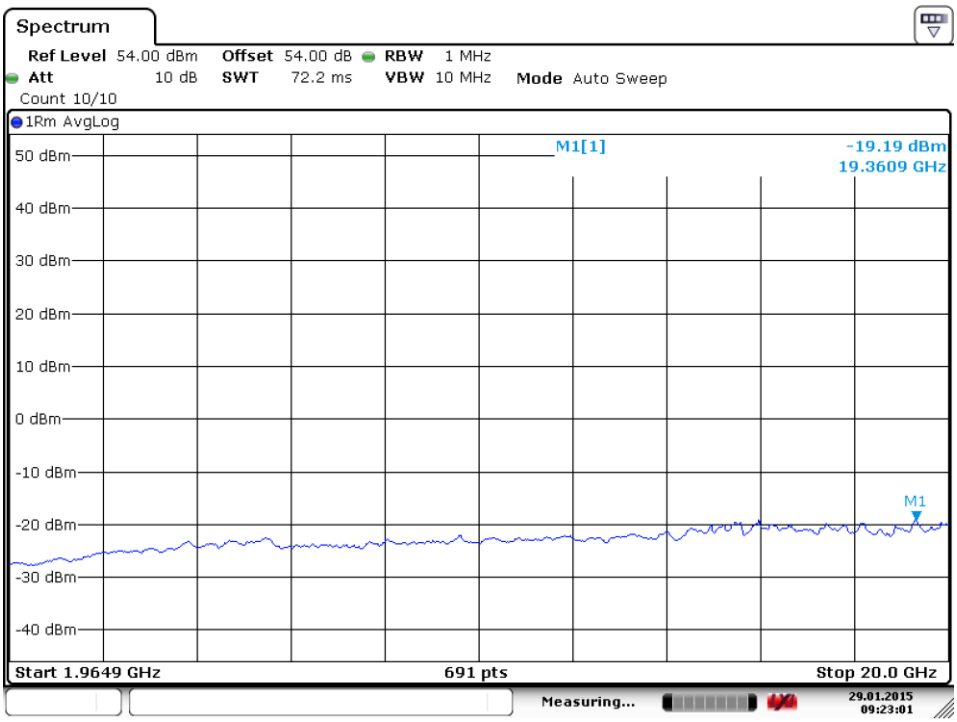
Two carriers (working in middle frequency)


Agilent Spectrum Analyzer - Swept SA
Marker 1 150.000000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 6 dB
#Avg Type: RMS
Avg|Hold: 16/100
Ext Gain: -54.50 dB
08:26:04 AM Jan 19, 2015
Mkr1 150.00 kHz
-45.650 dBm
10 dB/div
Log
Ref 8.00 dBm
Start 150 kHz
#Res BW 10 kHz
VBW 1.0 kHz*
Stop 10.000 MHz
Sweep 998 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 23.920000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 6 dB
#Avg Type: RMS
Avg|Hold: 4/100
Ext Gain: -54.50 dB
08:26:55 AM Jan 19, 2015
Mkr1 23.92 MHz
-52.672 dBm
10 dB/div
Log
Ref 8.00 dBm
Start 10.00 MHz
#Res BW 10 kHz
VBW 1.0 kHz*
Stop 30.00 MHz
Sweep 2.03 s (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

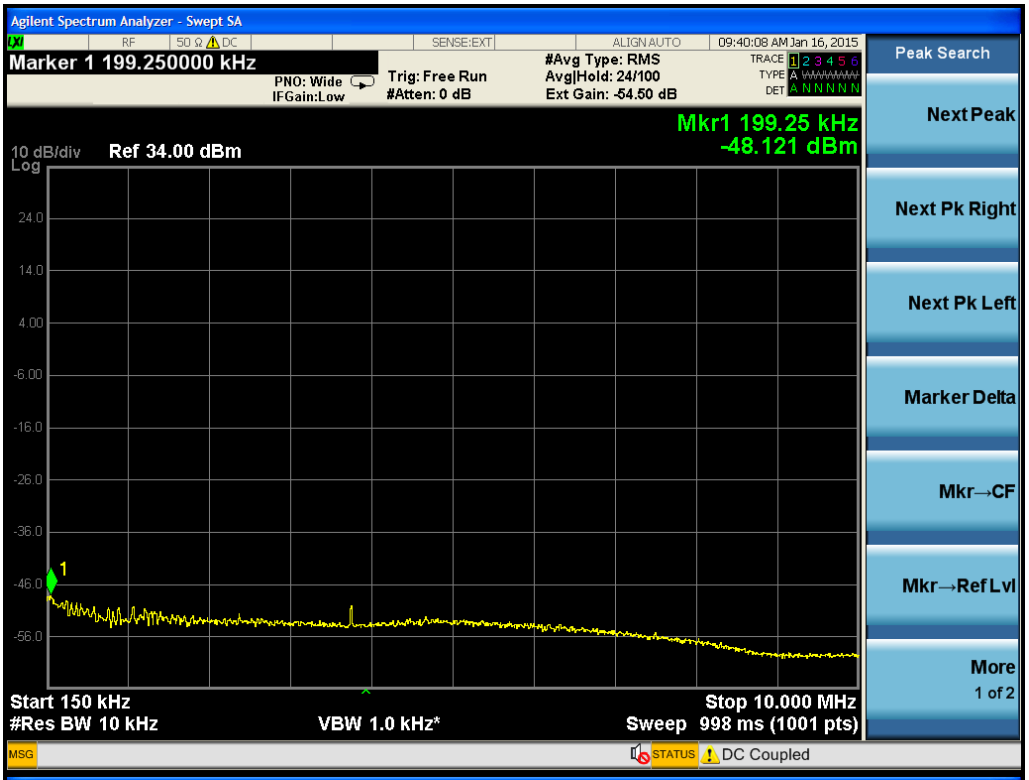

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
08:27:24 AM Jan 19, 2015
Marker 1 914.640000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 6 dB
#Avg Type: RMS
Avg|Hold: 10/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 914.64 MHz
-42.121 dBm
10 dB/div
Log
Ref 8.00 dBm
-2.00
-12.0
-22.0
-32.0
-42.0
-52.0
-62.0
-72.0
-82.0
1
Start 30.0 MHz
#Res BW 100 kHz
VBW 10 kHz*
Stop 1.0000 GHz
Sweep 983 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

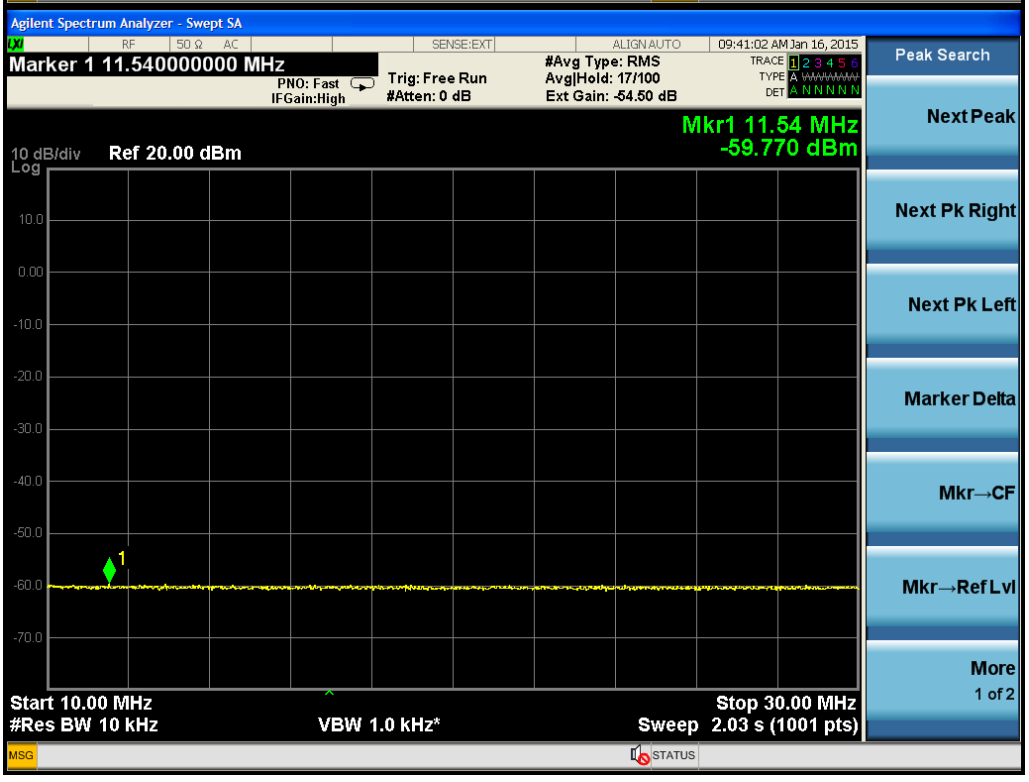

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
08:28:54 AM Jan 19, 2015
Marker 1 1.933030200000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 2 dB
#Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 1.933 0 GHz
-27.563 dBm
10 dB/div
Log
Ref 8.00 dBm
-2.00
-12.0
-22.0
-32.0
-42.0
-52.0
-62.0
-72.0
-82.0
1
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 100 kHz*
Stop 1.9349 GHz
Sweep 9.53 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

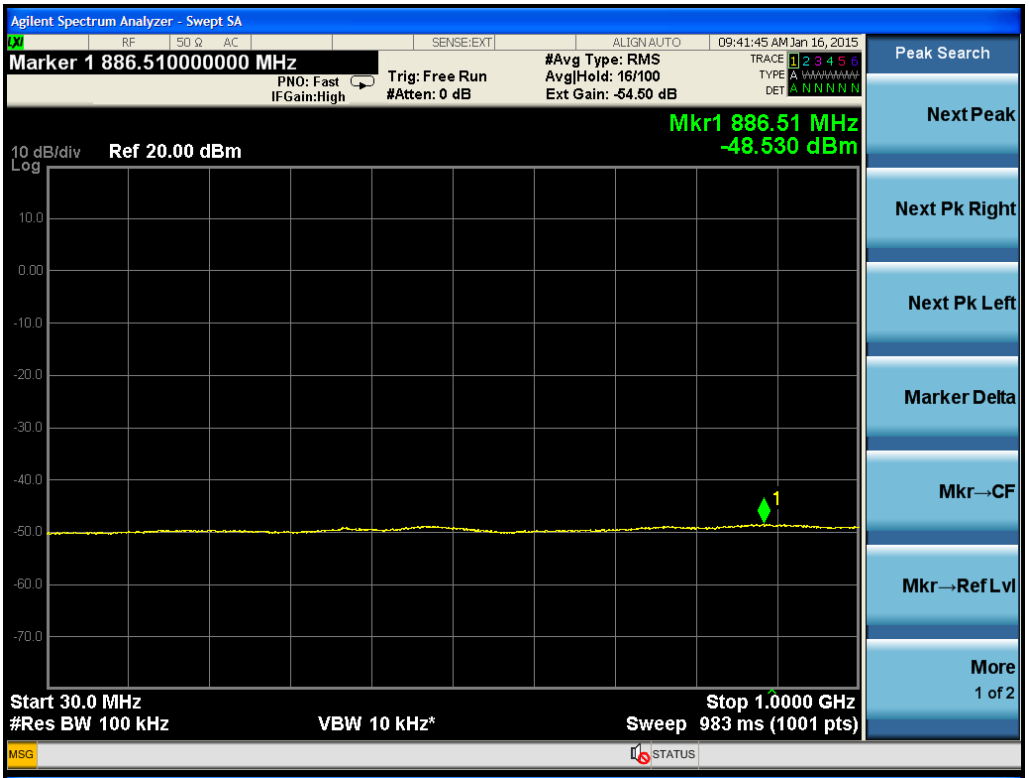


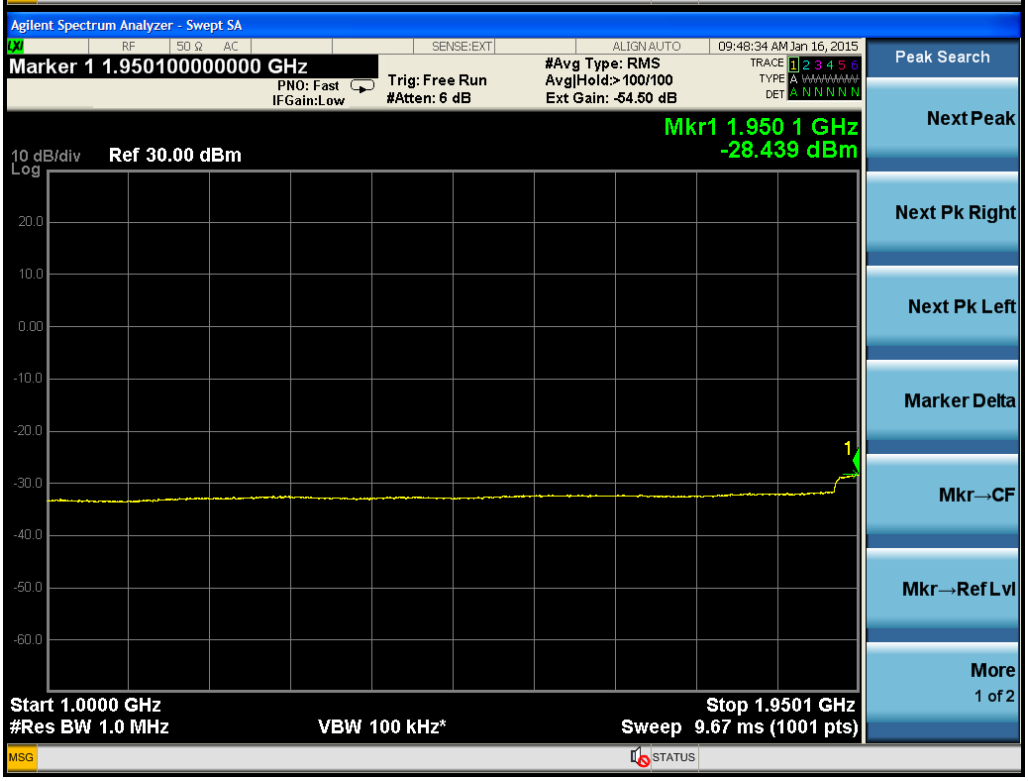
Date: 29.JAN.2015 09:23:01

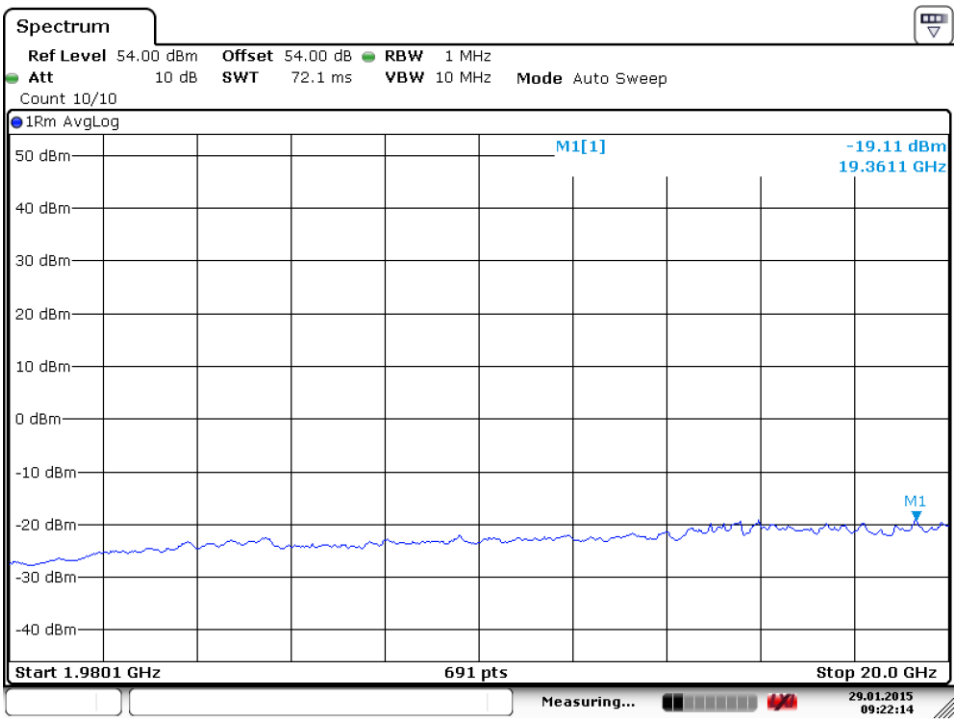
Two carriers (working in top frequency)


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω DC
SENSE:EXT
ALIGN AUTO
09:40:08 AM Jan 16, 2015
Marker 1 199.250000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 0 dB
#Avg Type: RMS
Avg|Hold: 24/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 199.25 kHz
-48.121 dBm
10 dB/div
Log
Ref 34.00 dBm
24.0
14.0
4.00
-6.00
-16.0
-26.0
-36.0
-46.0
-56.0
Start 150 kHz
#Res BW 10 kHz
VBW 1.0 kHz*
Stop 10.000 MHz
Sweep 998 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
09:41:02 AM Jan 16, 2015
Marker 1 11.540000000 MHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
#Avg Type: RMS
Avg|Hold: 17/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 11.54 MHz
-59.770 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Start 10.00 MHz
#Res BW 10 kHz
VBW 1.0 kHz*
Stop 30.00 MHz
Sweep 2.03 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
09:41:45 AM Jan 16, 2015
Marker 1 886.510000000 MHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
#Avg Type: RMS
Avg|Hold: 16/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 886.51 MHz
-48.530 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Start 30.0 MHz
#Res BW 100 kHz
VBW 10 kHz*
Stop 1.0000 GHz
Sweep 983 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

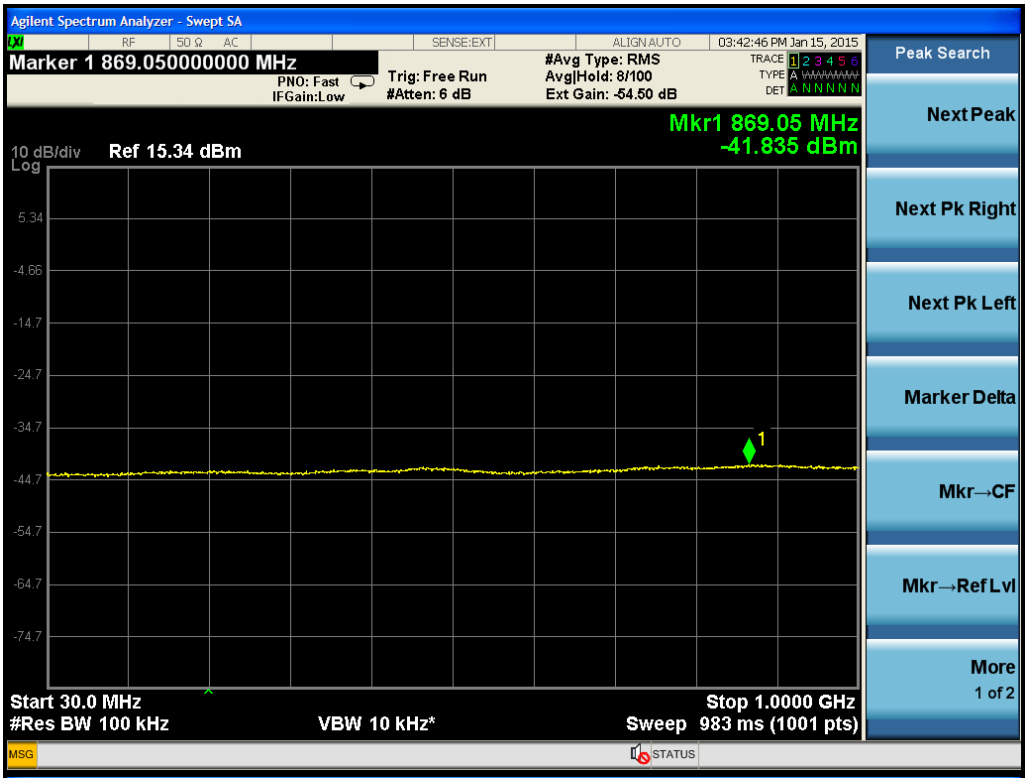

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
09:48:34 AM Jan 16, 2015
Marker 1 1.950100000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 6 dB
#Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 1.950 1 GHz
-28.439 dBm
10 dB/div
Log
Ref 30.00 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
1
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 100 kHz*
Stop 1.9501 GHz
Sweep 9.67 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

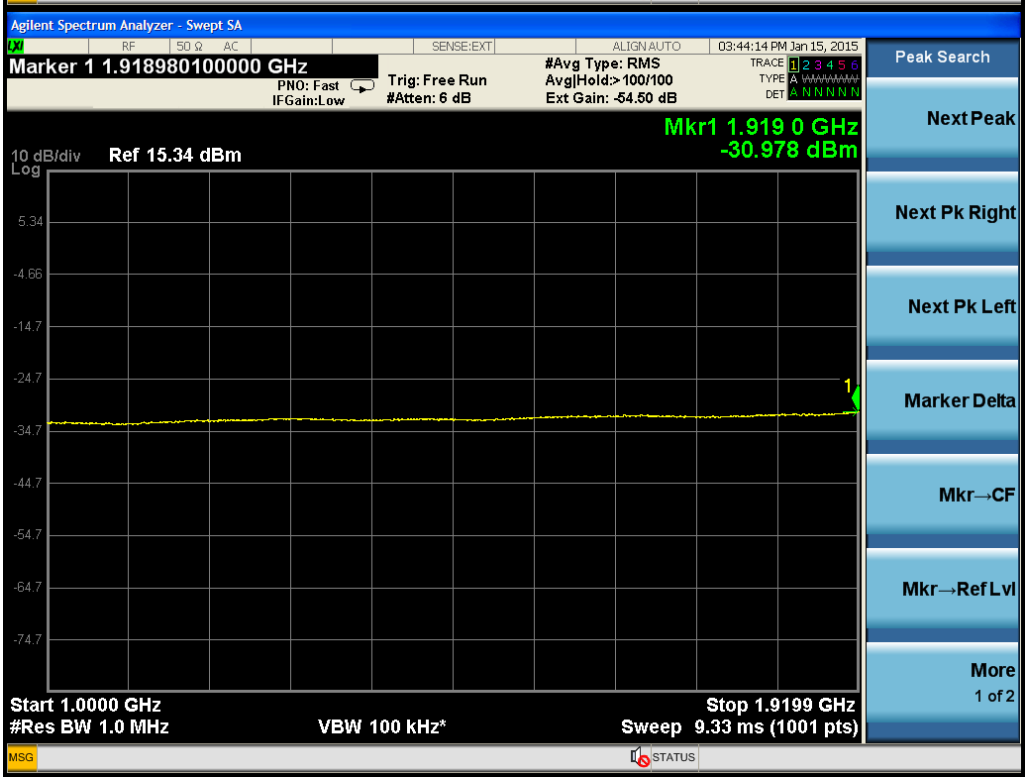


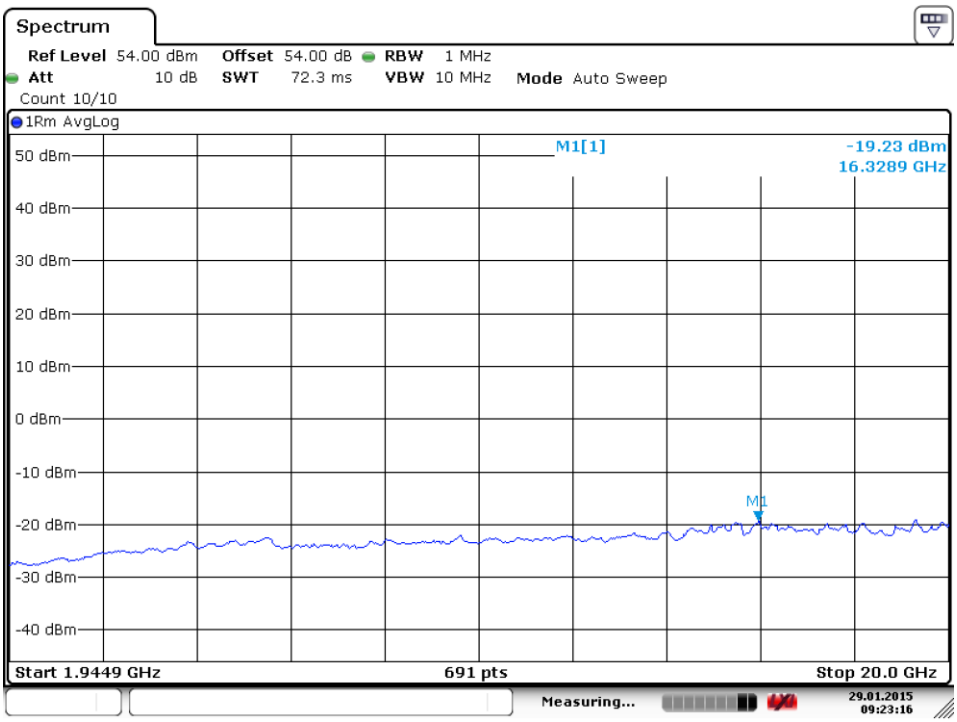
Date: 29.JAN.2015 09:22:15

One carrier (working in bottom frequency)


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω DC
SENSE:EXT
ALIGN AUTO
03:41:06 PM Jan 15, 2015
Marker 1 209.100000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 0 dB
#Avg Type: RMS
Avg|Hold: 27/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 209.10 kHz
-46.330 dBm
10 dB/div
Log
Ref 15.34 dBm
5.34
-4.66
-14.7
-24.7
-34.7
-44.7
-54.7
-64.7
-74.7
Start 150 kHz
#Res BW 10 kHz
VBW 1.0 kHz*
Stop 10.000 MHz
Sweep 998 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
03:41:38 PM Jan 15, 2015
Marker 1 28.280000000 MHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
#Avg Type: RMS
Avg|Hold: 5/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 28.28 MHz
-60.593 dBm
10 dB/div
Log
Ref 15.34 dBm
5.34
-4.66
-14.7
-24.7
-34.7
-44.7
-54.7
-64.7
-74.7
Start 10.00 MHz
#Res BW 10 kHz
VBW 1.0 kHz*
Stop 30.00 MHz
Sweep 2.03 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
DC Coupled


Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
03:42:46 PM Jan 15, 2015
Marker 1 869.050000000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 6 dB
#Avg Type: RMS
Avg|Hold: 8/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 869.05 MHz
-41.835 dBm
10 dB/div
Log
Ref 15.34 dBm
5.34
-4.66
-14.7
-24.7
-34.7
-44.7
-54.7
-64.7
-74.7
Start 30.0 MHz
#Res BW 100 kHz
VBW 10 kHz*
Stop 1.0000 GHz
Sweep 983 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
03:44:14 PM Jan 15, 2015
Marker 1 1.918980100000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 6 dB
#Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 1.919 0 GHz
-30.978 dBm
10 dB/div
Log
Ref 15.34 dBm
5.34
-4.66
-14.7
-24.7
-34.7
-44.7
-54.7
-64.7
-74.7
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 100 kHz*
Stop 1.9199 GHz
Sweep 9.33 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

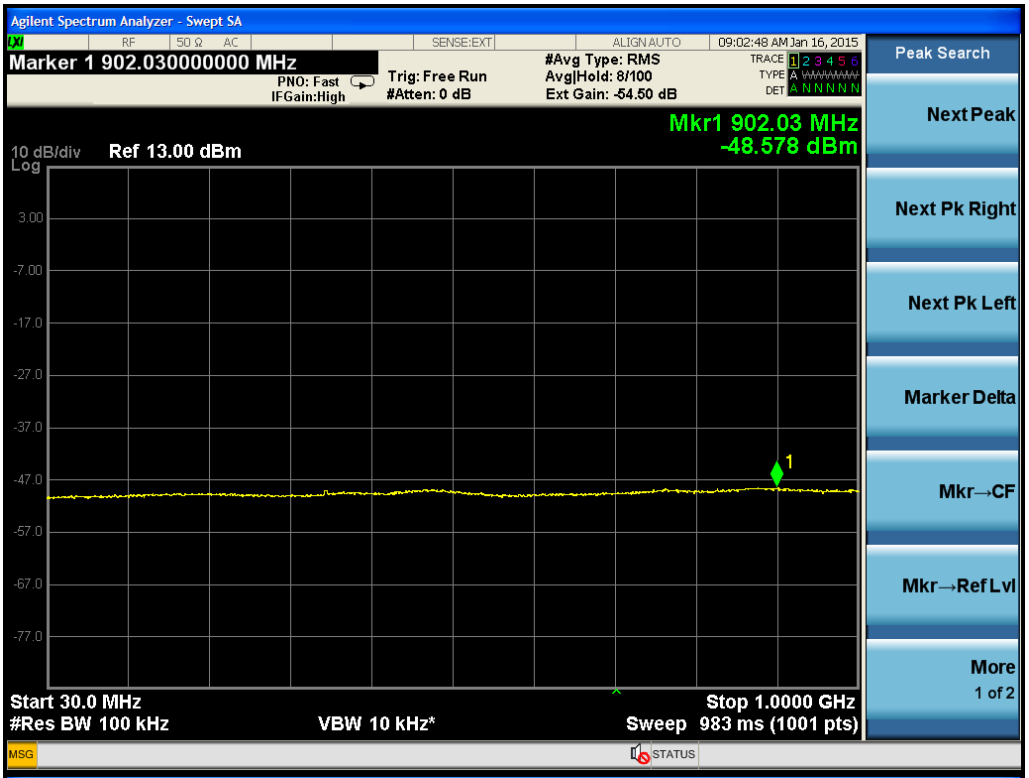


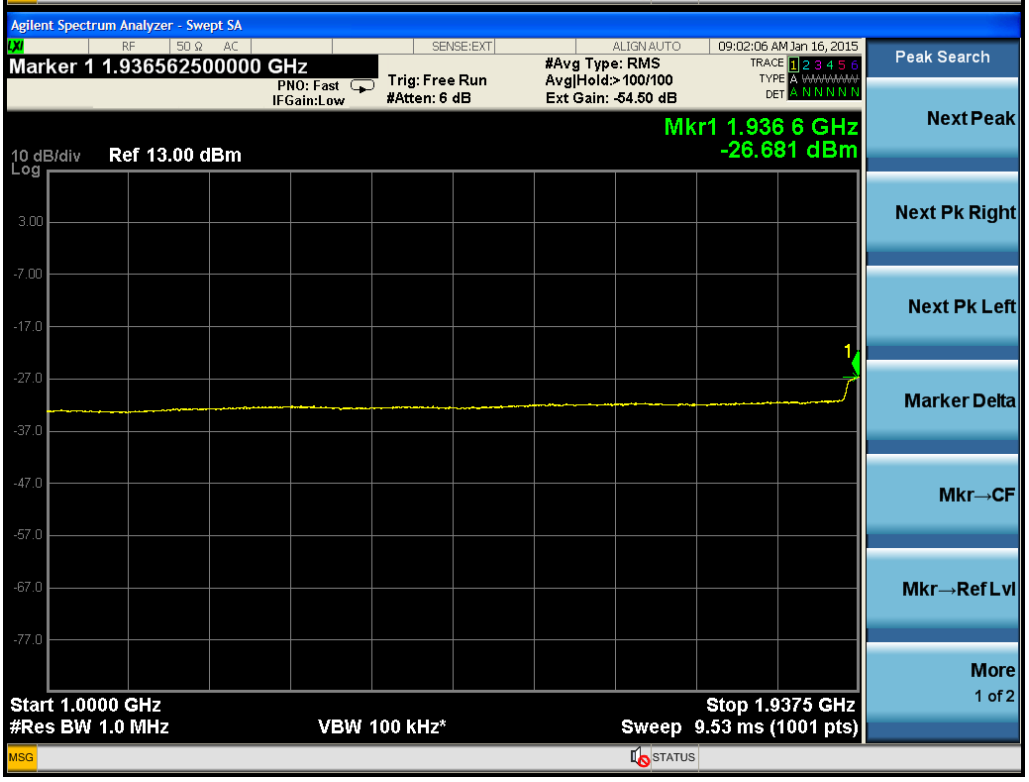
Date: 29.JAN.2015 09:23:17

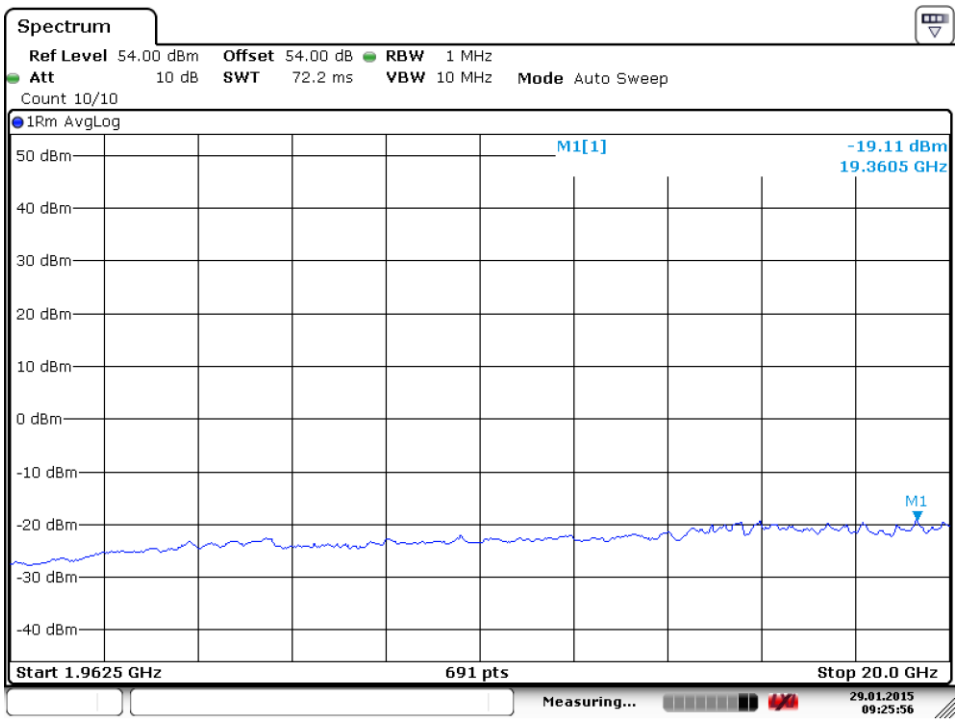
One carrier (working in middle frequency)


Agilent Spectrum Analyzer - Swept SA
RF 50 Ω DC
SENSE:EXT
ALIGN AUTO
08:56:04 AM Jan 16, 2015
Marker 1 150.000000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 6 dB
#Avg Type: RMS
Avg|Hold: 7/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 150.00 kHz
-45.095 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
1
Start 150 kHz
#Res BW 10 kHz
VBW 1.0 kHz*
Stop 10.000 MHz
Sweep 998 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
09:03:57 AM Jan 16, 2015
Marker 1 18.140000000 MHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
#Avg Type: RMS
Avg|Hold: 7/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 18.14 MHz
-59.627 dBm
10 dB/div
Log
Ref 13.00 dBm
3.00
-7.00
-17.0
-27.0
-37.0
-47.0
-57.0
-67.0
-77.0
1
Start 10.00 MHz
#Res BW 10 kHz
VBW 1.0 kHz*
Stop 30.00 MHz
Sweep 2.03 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

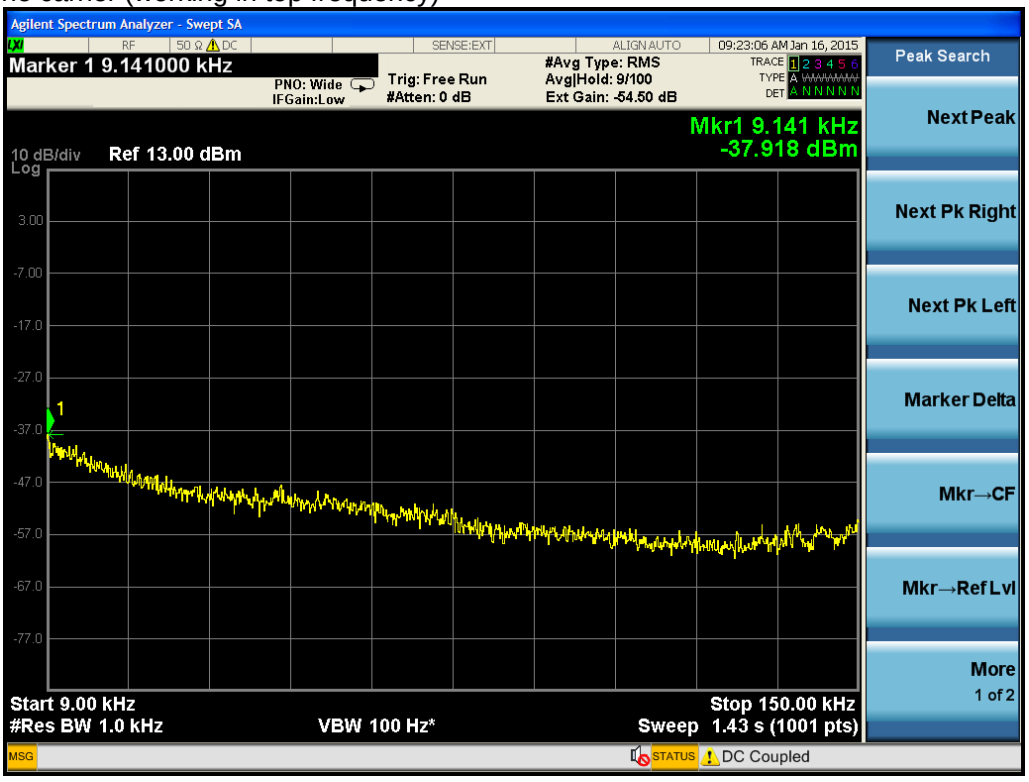

Agilent Spectrum Analyzer - Swept SA
Marker 1 902.030000000 MHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
#Avg Type: RMS
Avg|Hold: 8/100
Ext Gain: -54.50 dB
09:02:48 AM Jan 16, 2015
Mkr1 902.03 MHz
-48.578 dBm
10 dB/div
Log
Ref 13.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
VBW 10 kHz*
Stop 1.0000 GHz
Sweep 983 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 1.936562500000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 6 dB
#Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -54.50 dB
09:02:06 AM Jan 16, 2015
Mkr1 1.936 6 GHz
-26.681 dBm
10 dB/div
Log
Ref 13.00 dBm
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 100 kHz*
Stop 1.9375 GHz
Sweep 9.53 ms (1001 pts)
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

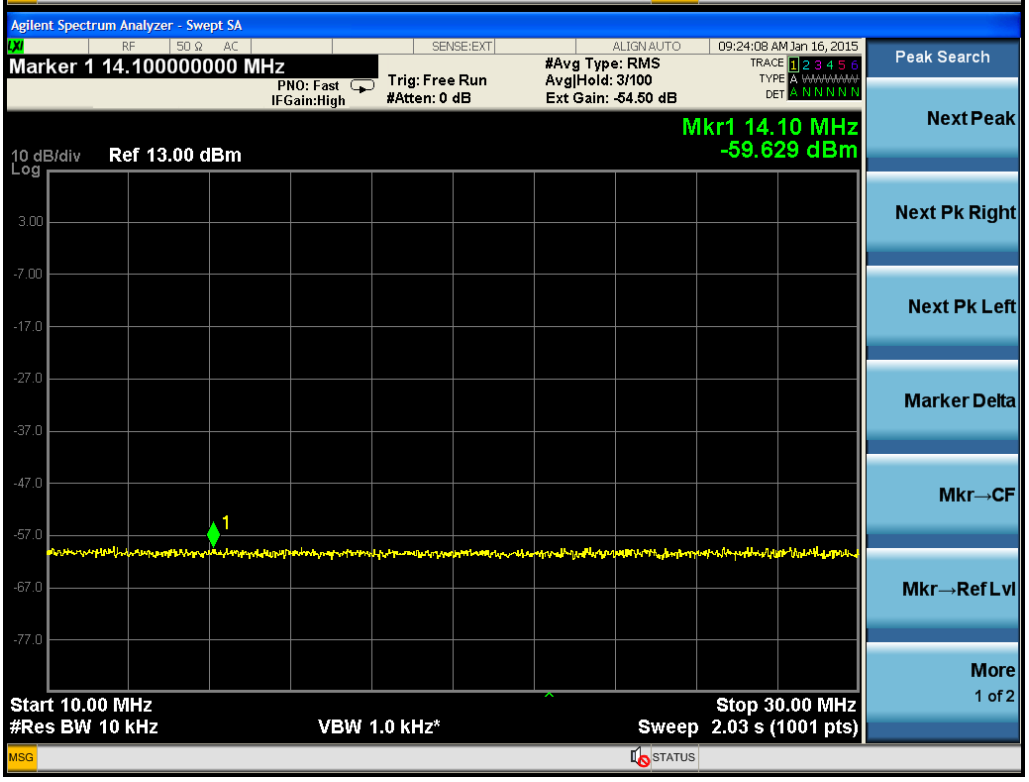


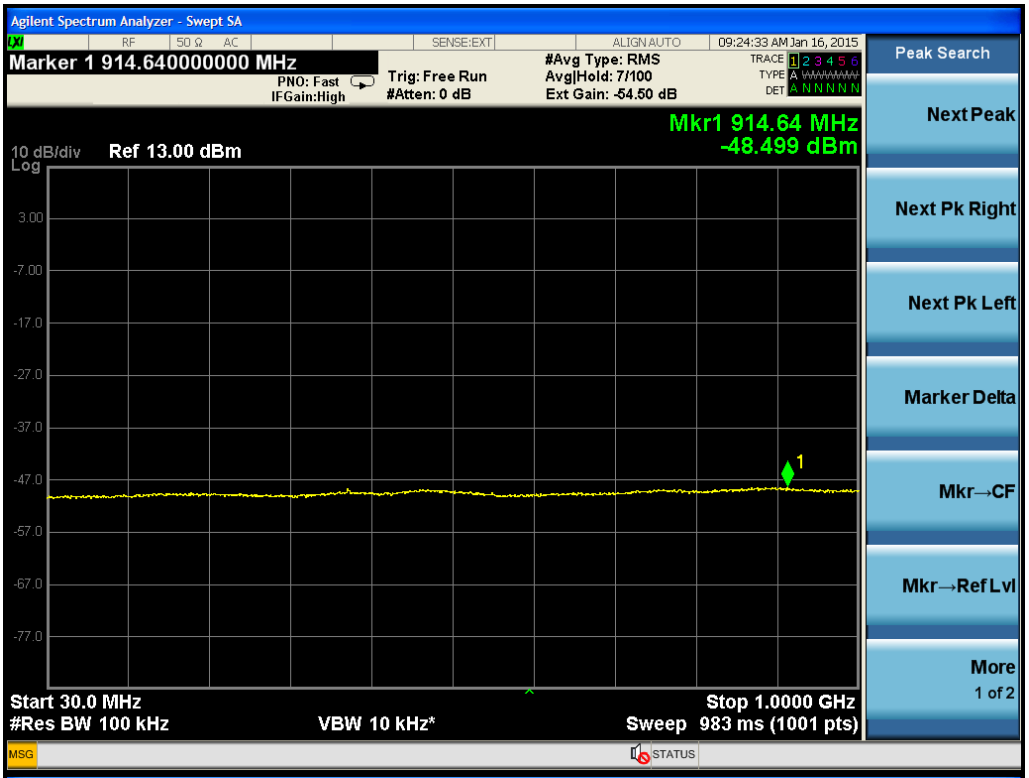
Date: 29.JAN.2015 09:25:56

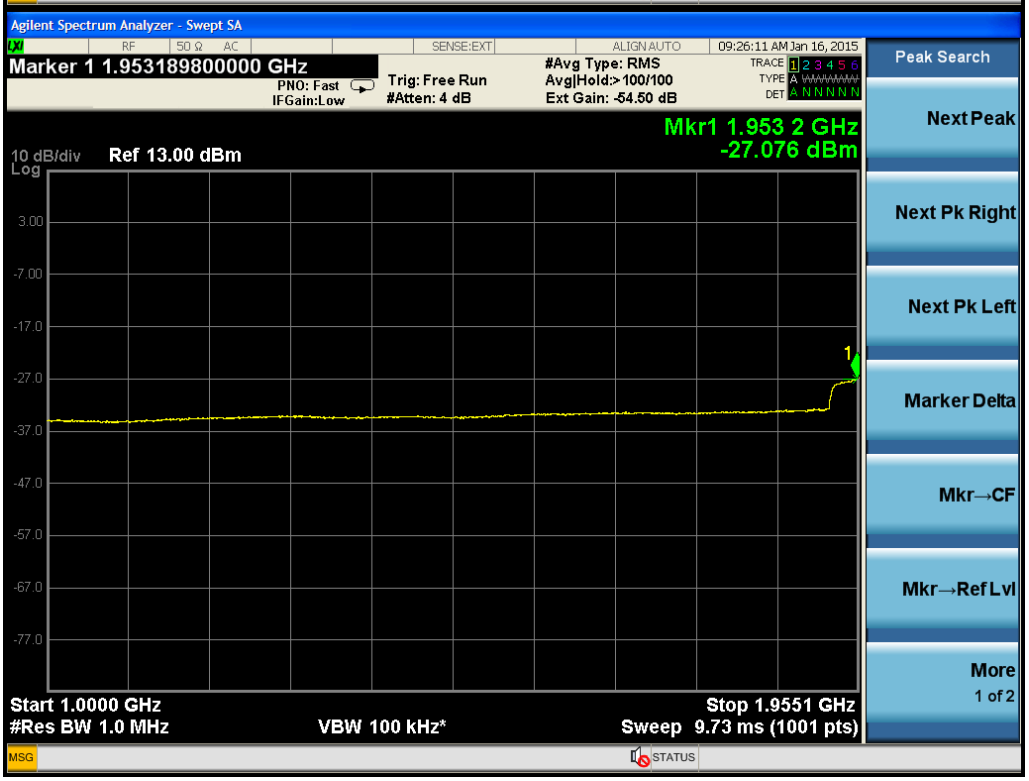
One carrier (working in top frequency)

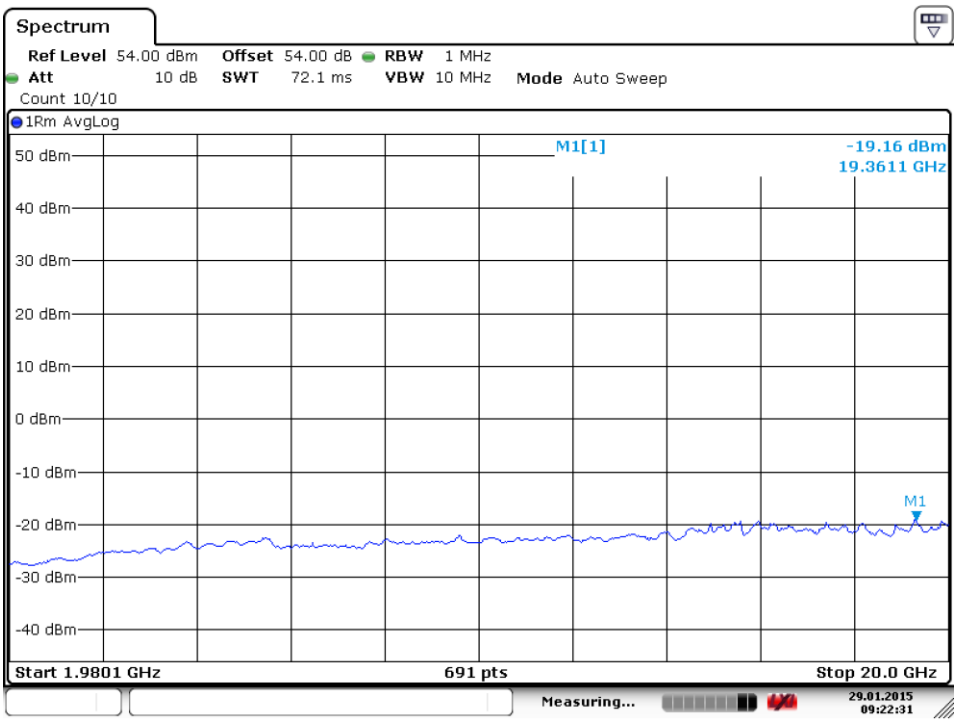



Agilent Spectrum Analyzer - Swept SA
Marker 1 248.500000 kHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 0 dB
#Avg Type: RMS
Avg|Hold: 9/100
Ext Gain: -54.50 dB
09:23:42 AM Jan 16, 2015
Mkr1 248.50 kHz
-47.041 dBm
10 dB/div
Log
Ref 13.00 dBm
3.00
-7.00
-17.0
-27.0
-37.0
-47.0
-57.0
-67.0
-77.0
Start 150 kHz
#Res BW 10 kHz
VBW 1.0 kHz*
Stop 10.000 MHz
Sweep 998 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 14.100000000 MHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
#Avg Type: RMS
Avg|Hold: 3/100
Ext Gain: -54.50 dB
09:24:08 AM Jan 16, 2015
Mkr1 14.10 MHz
-59.629 dBm
10 dB/div
Log
Ref 13.00 dBm
3.00
-7.00
-17.0
-27.0
-37.0
-47.0
-57.0
-67.0
-77.0
Start 10.00 MHz
#Res BW 10 kHz
VBW 1.0 kHz*
Stop 30.00 MHz
Sweep 2.03 s (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:EXT
ALIGN AUTO
09:24:33 AM Jan 16, 2015
Marker 1 914.640000000 MHz
PNO: Fast
IFGain:High
Trig: Free Run
#Atten: 0 dB
#Avg Type: RMS
Avg|Hold: 7/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 914.64 MHz
-48.499 dBm
10 dB/div
Log
Ref 13.00 dBm
3.00
-7.00
-17.0
-27.0
-37.0
-47.0
-57.0
-67.0
-77.0
1
Start 30.0 MHz
#Res BW 100 kHz
VBW 10 kHz*
Stop 1.0000 GHz
Sweep 983 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
09:26:11 AM Jan 16, 2015
Marker 1 1.953189800000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 4 dB
#Avg Type: RMS
Avg|Hold:>100/100
Ext Gain: -54.50 dB
TRACE 1 2 3 4 5 6
TYPE A
DET A N N N N N
Mkr1 1.953 2 GHz
-27.076 dBm
10 dB/div
Log
Ref 13.00 dBm
3.00
-7.00
-17.0
-27.0
-37.0
-47.0
-57.0
-67.0
-77.0
1
Start 1.0000 GHz
#Res BW 1.0 MHz
VBW 100 kHz*
Stop 1.9551 GHz
Sweep 9.73 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



Date: 29.JAN.2015 09:22:31

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

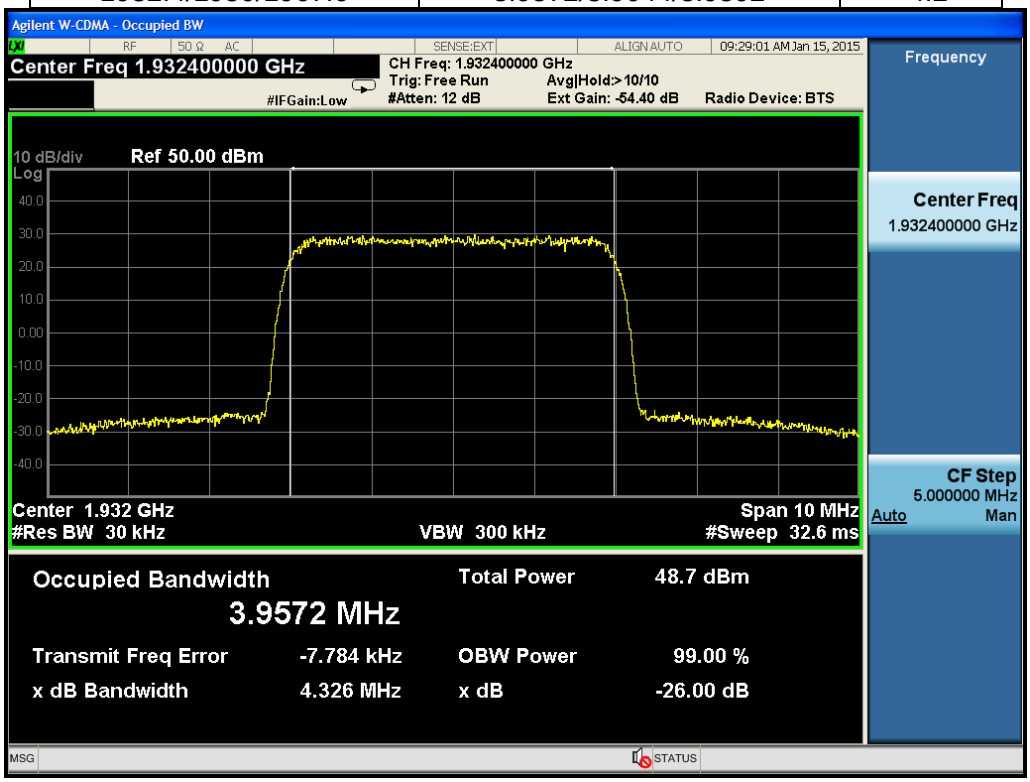
Temperature:	20 ° C
Relative Humidity:	53%
ATM Pressure:	1009mbar

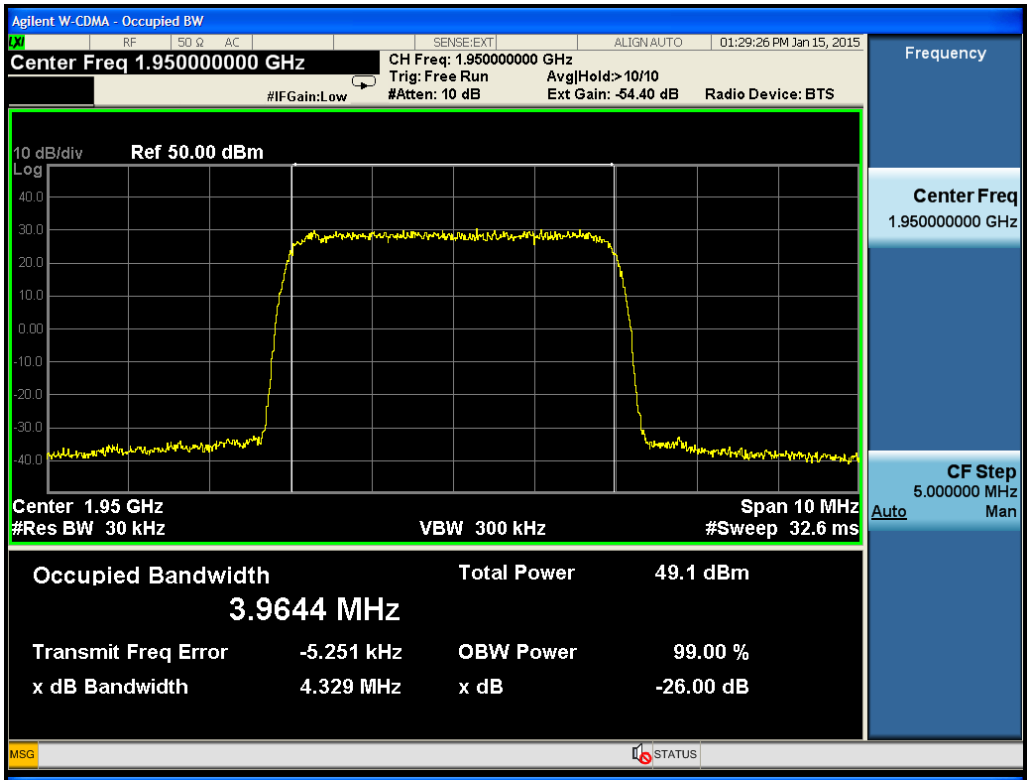
Test Result: Pass

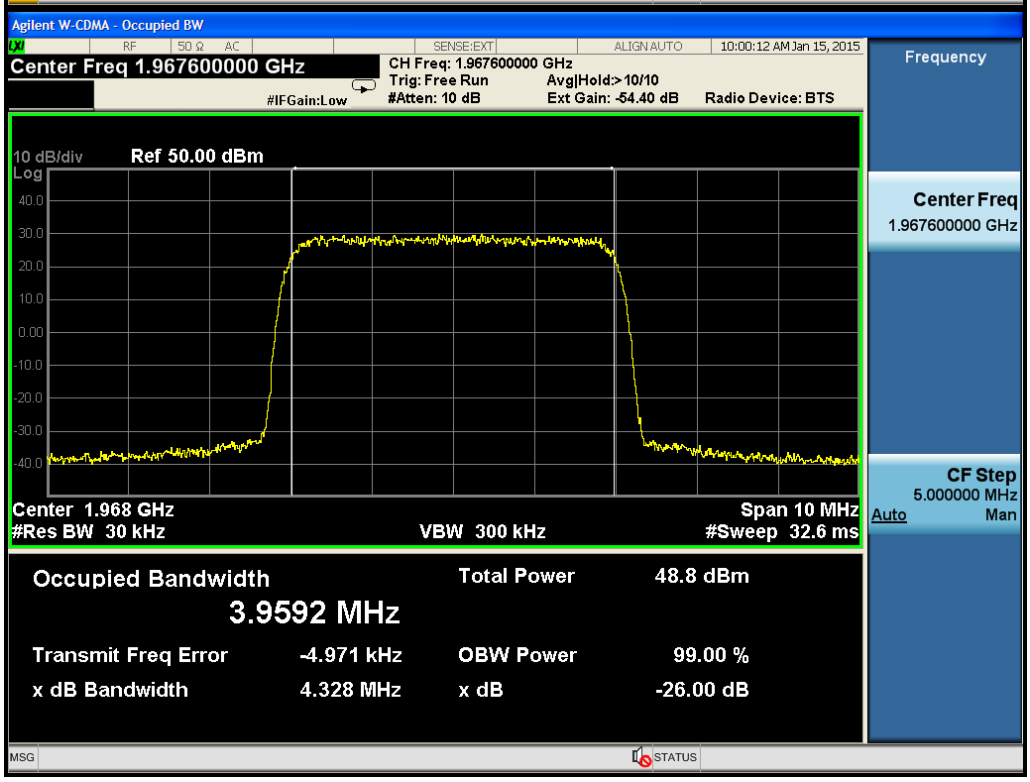
Test Mode: Transmitting UMTS

Test Data

Frequency (MHz)	99% Power Bandwidth (MHz)	Limit (MHz)
1932.4/1950/1967.6	3.9572/3.9644/3.9592	<4.2




Agilent W-CDMA - Occupied BW
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
01:29:26 PM Jan 15, 2015
Center Freq 1.950000000 GHz
#IFGain:Low
CH Freq: 1.950000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 10 dB
Ext Gain: -54.40 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
1.950000000 GHz
Center 1.95 GHz
#Res BW 30 kHz
VBW 300 kHz
Span 10 MHz
#Sweep 32.6 ms
CF Step
5.000000 MHz
Auto
Man
Occupied Bandwidth
3.9644 MHz
Total Power
49.1 dBm
Transmit Freq Error
-5.251 kHz
OBW Power
99.00 %
x dB Bandwidth
4.329 MHz
x dB
-26.00 dB
MSG
STATUS


Agilent W-CDMA - Occupied BW
RF 50 Ω AC
SENSE:EXT
ALIGN AUTO
10:00:12 AM Jan 15, 2015
Center Freq 1.967600000 GHz
#IFGain:Low
CH Freq: 1.967600000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 10 dB
Ext Gain: -54.40 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
1.967600000 GHz
Center 1.968 GHz
#Res BW 30 kHz
VBW 300 kHz
Span 10 MHz
#Sweep 32.6 ms
CF Step
5.000000 MHz
Auto
Man
Occupied Bandwidth
3.9592 MHz
Total Power
48.8 dBm
Transmit Freq Error
-4.971 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

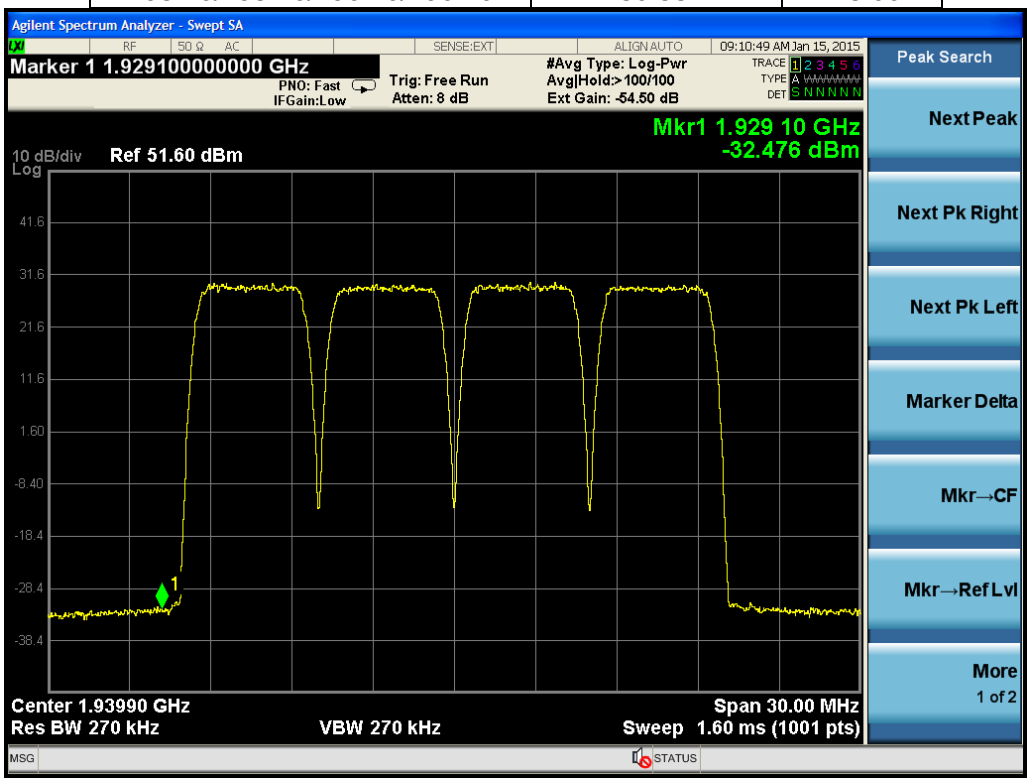
Test Result: Pass

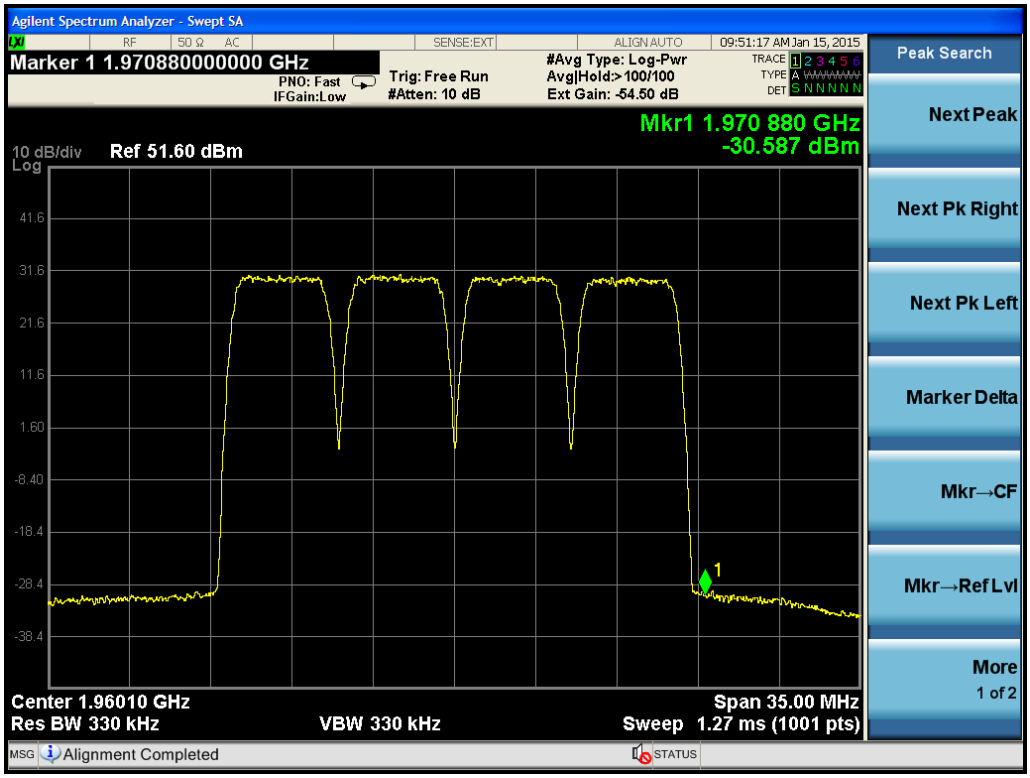
Test Mode: Transmitting UMTS

Test Data

Four carriers

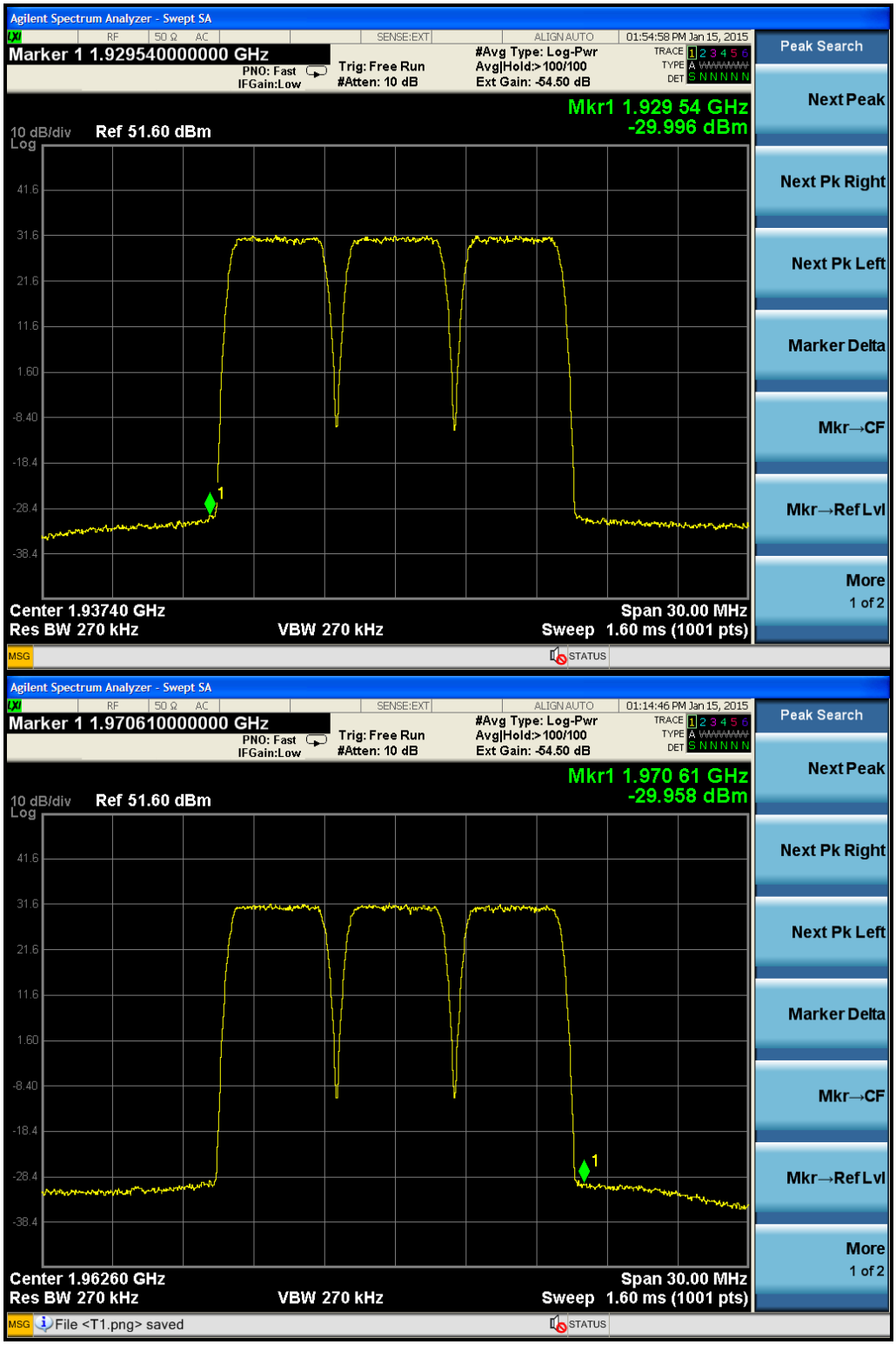
Frequency channel	Max bandedge Emission (dBm)	Limit (dBm)
1932.4/1937.4/1942.4/1947.4	-32.476	-13.00
1952.6/1957.6/1962.6/1967.6	-30.587	-13.00





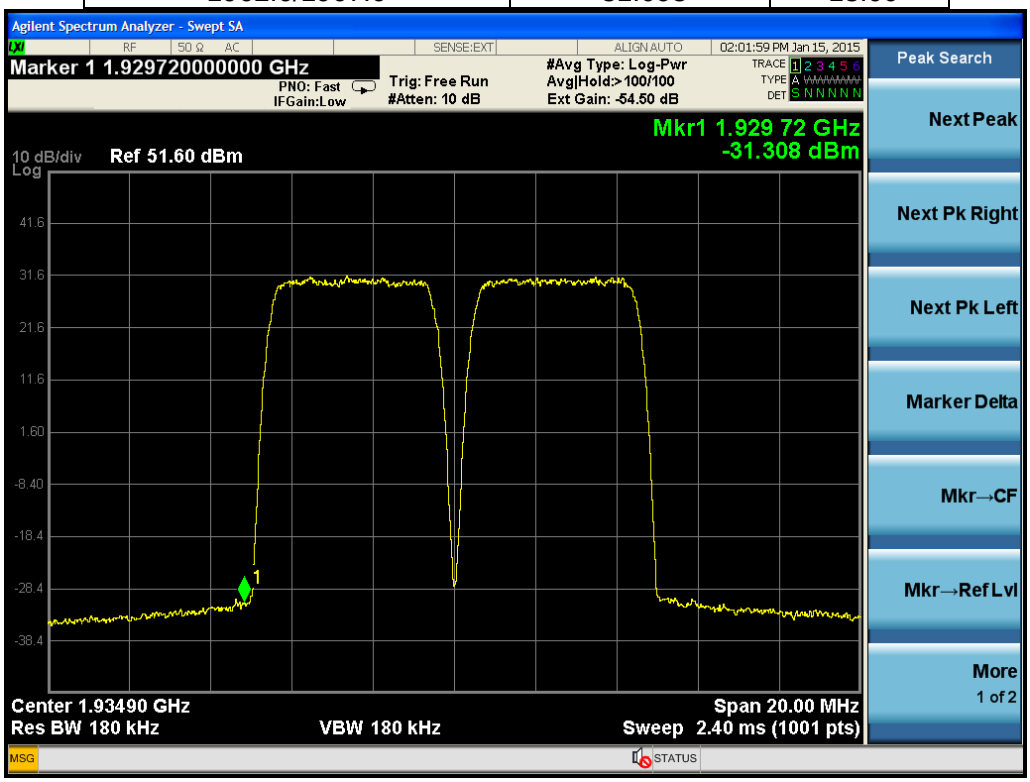
Three carriers

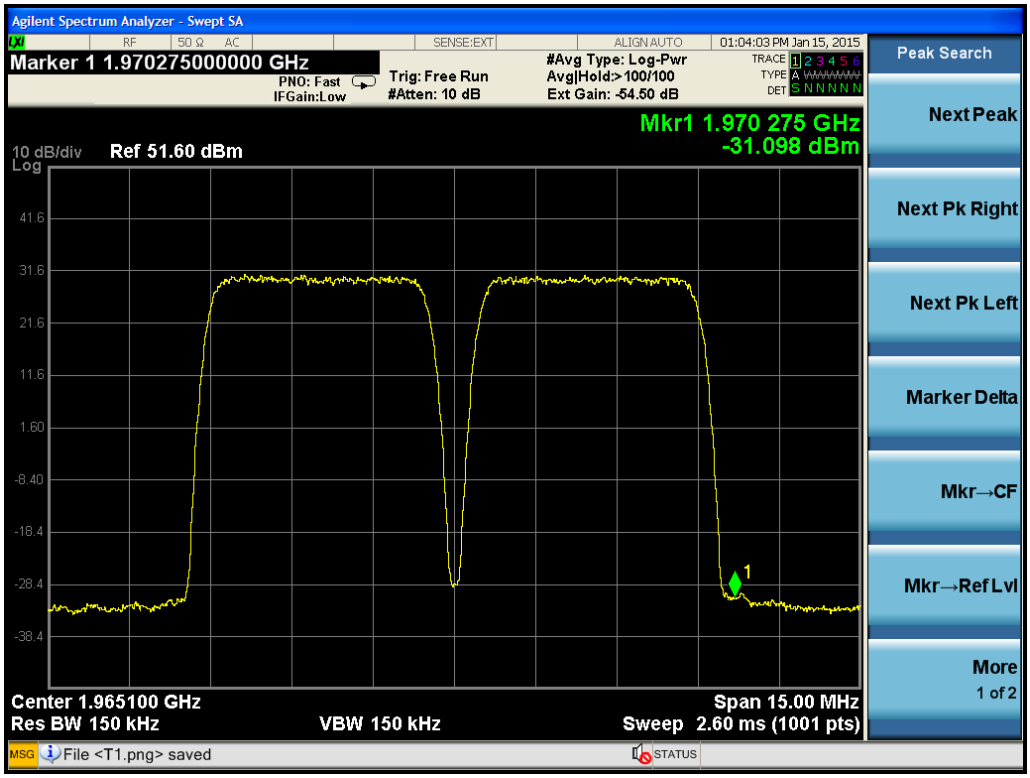
Frequency channel	Max bandedge Emission (dBm)	Limit (dBm)
1932.4/1937.4/1942.4	-29.996	-13.00
1957.6/1962.6/1967.6	-29.958	-13.00


Agilent Spectrum Analyzer - Swept SA
Marker 1 1.929540000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -54.50 dB
01:54:58 PM Jan 15, 2015
Mkr1 1.929 54 GHz
-29.996 dBm
10 dB/div
Log
Ref 51.60 dBm
Center 1.93740 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
Agilent Spectrum Analyzer - Swept SA
Marker 1 1.970610000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -54.50 dB
01:14:46 PM Jan 15, 2015
Mkr1 1.970 61 GHz
-29.958 dBm
10 dB/div
Log
Ref 51.60 dBm
Center 1.96260 GHz
Res BW 270 kHz
VBW 270 kHz
Span 30.00 MHz
Sweep 1.60 ms (1001 pts)
File <T1.png> saved
Peak Search
Next Peak
Next Pk Right
Next Pk Left
Marker Delta
Mkr→CF
Mkr→Ref Lvl
More
1 of 2

Two carriers

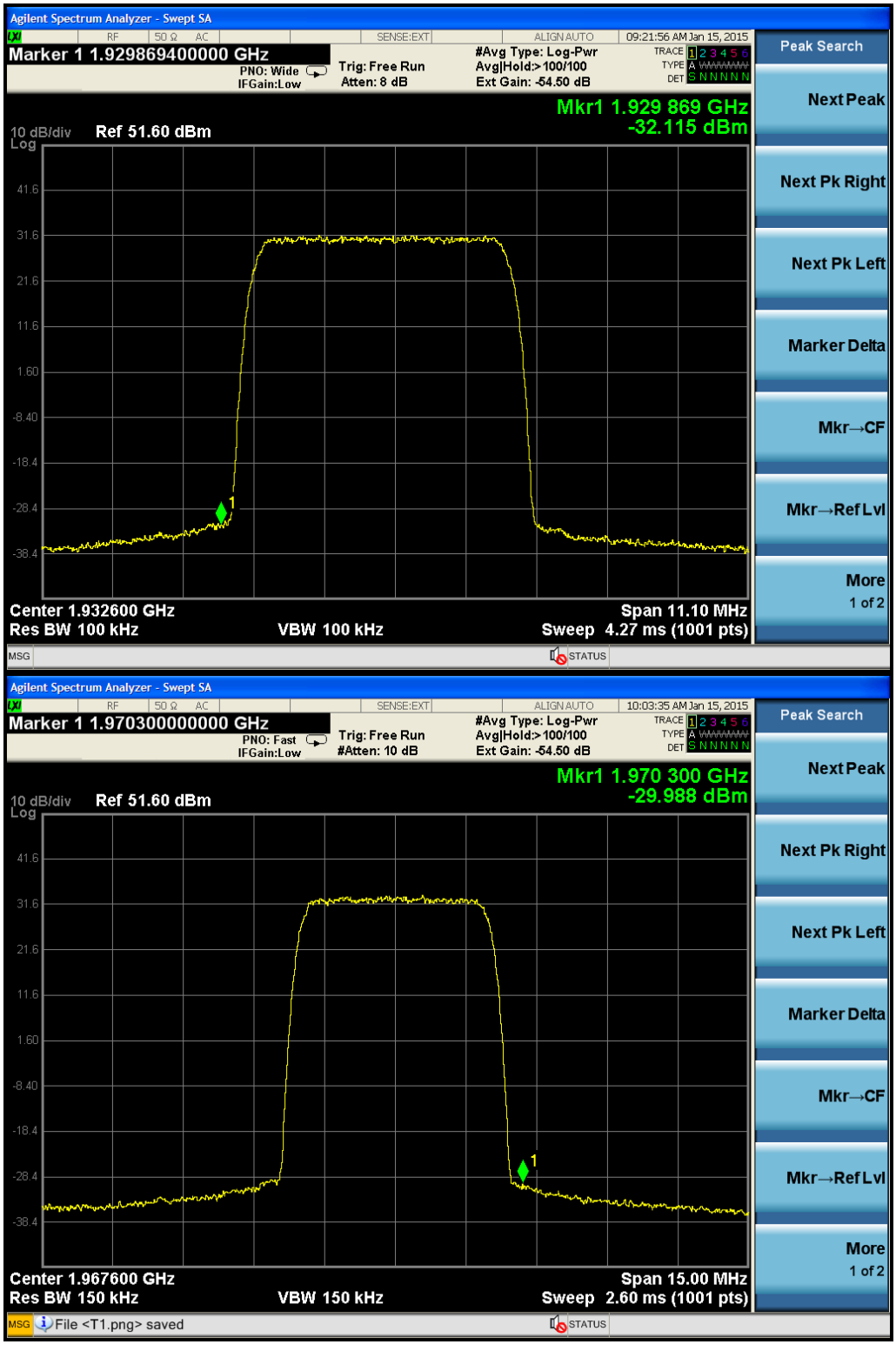
Frequency channel	Max bandedge Emission (dBm)	Limit (dBm)
1932.4/1937.4	-31.308	-13.00
1962.6/1967.6	-31.098	-13.00





One carrier

Frequency channel	Max bandedge Emission (dBm)	Limit (dBm)
1932.4	-32.115	-13.00
1987.6	-29.988	-13.00


Agilent Spectrum Analyzer - Swept SA
Marker 1 1.929869400000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
Atten: 8 dB
#Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -54.50 dB
09:21:56 AM Jan 15, 2015
Mkr1 1.929 869 GHz
-32.115 dBm
10 dB/div
Log
Ref 51.60 dBm
41.6
31.6
21.6
11.6
1.60
-8.40
-18.4
-28.4
-38.4
Center 1.932600 GHz
Res BW 100 kHz
VBW 100 kHz
Span 11.10 MHz
Sweep 4.27 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 1.970300000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
#Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -54.50 dB
10:03:35 AM Jan 15, 2015
Mkr1 1.970 300 GHz
-29.988 dBm
10 dB/div
Log
Ref 51.60 dBm
41.6
31.6
21.6
11.6
1.60
-8.40
-18.4
-28.4
-38.4
Center 1.967600 GHz
Res BW 150 kHz
VBW 150 kHz
Span 15.00 MHz
Sweep 2.60 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
File <T1.png> saved
STATUS

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(1932.4MHz)					
-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(1950MHz)					
-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 (1967.4MHz)					
-40	-48	-5.6	-0.0028	0.02	PASS

-30	-48	-5.3	-0.0027	0.02	PASS
-20	-48	4.1	0.0021	0.02	PASS
-10	-48	4.1	0.0021	0.02	PASS
0	-48	3.6	0.0018	0.02	PASS
10	-48	3.7	0.0019	0.02	PASS
20	-48	-3.2	-0.0016	0.02	PASS
30	-48	-3.5	-0.0018	0.02	PASS
40	-48	3.7	0.0019	0.02	PASS
50	-48	5.3	0.0027	0.02	PASS
55	-48	4.2	0.0021	0.02	PASS

Frequency Stability Versus Voltage

Frequency Stability vs. Voltage					
Voltage Vac	**Temperature**	**Frequency Measure Error Hz**	**Error ppm**	**Limit ppm**	**Result**
B(1932.4M)					
40	20	3.6	0.0019	0.02	PASS
44	20	-3.3	-0.0017	0.02	PASS
47	20	-4.7	-0.0024	0.02	PASS
50	20	-5.2	-0.0027	0.02	PASS
53	20	-4.6	-0.0024	0.02	PASS
56	20	-2.8	-0.0015	0.02	PASS
57	20	3.5	0.0018	0.02	PASS
M(1950M)					
40	20	3.7	0.0019	0.02	PASS
44	20	-3.8	-0.0019	0.02	PASS
47	20	-3.3	-0.0017	0.02	PASS
50	20	4.8	0.0024	0.02	PASS
53	20	-3.8	-0.0019	0.02	PASS
56	20	-4.9	-0.0025	0.02	PASS
57	20	5.6	0.0029	0.02	PASS
T(1967.4M)					
40	20	-3.5	-0.0018	0.02	PASS
44	20	4.2	0.0021	0.02	PASS
47	20	-3.7	-0.0019	0.02	PASS
50	20	2.9	0.0015	0.02	PASS
53	20	2.8	0.0014	0.02	PASS
56	20	-4.3	-0.0022	0.02	PASS
57	20	-3.1	-0.0016	0.02	PASS

4 GSM OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§2.1046 §24.232	Transmitter output Power	Compliant
§2.1091 §1.1310	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 1930 MHz to 1970MHz with the antenna height above average terrain up to 300 meters. If used in urban area, the limit should be 1640Watts/MHz.

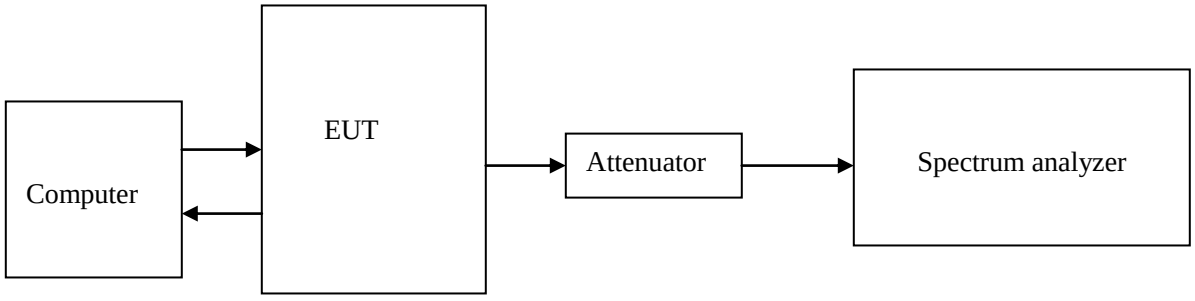
Note: EIRP= Max output Power+ Antenna gain- Cable Loss

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	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



The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation. External attenuation Loss is 30dB, Cable Loss is about 2dB

Environmental Conditions

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

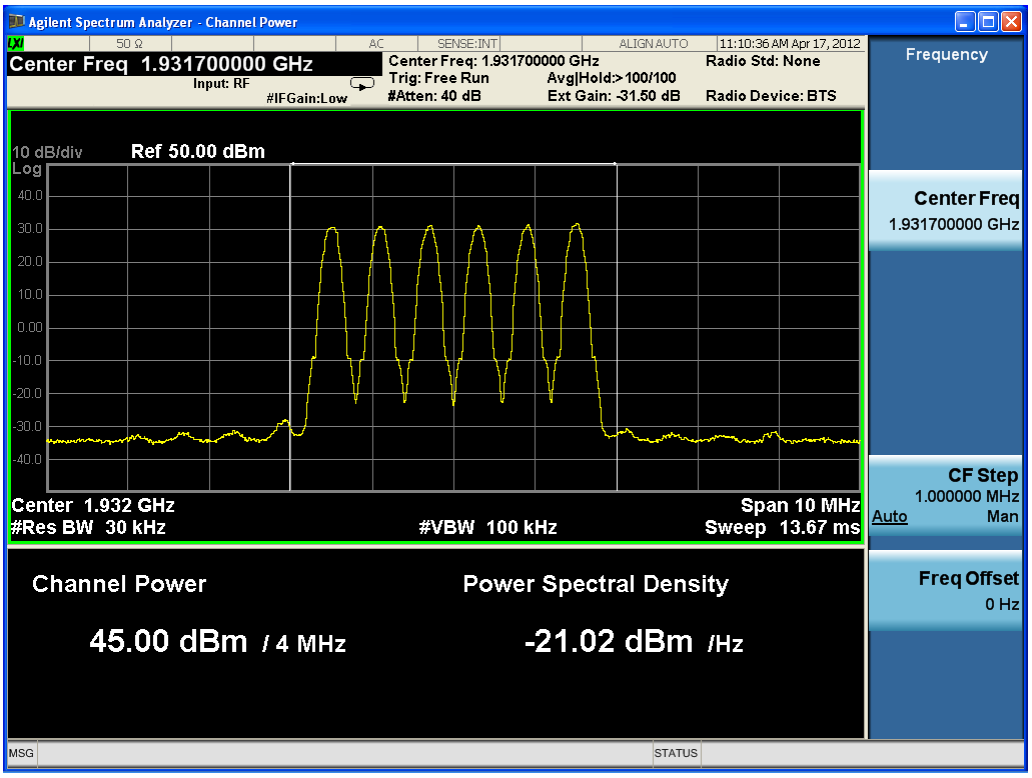
Test Result: Pass

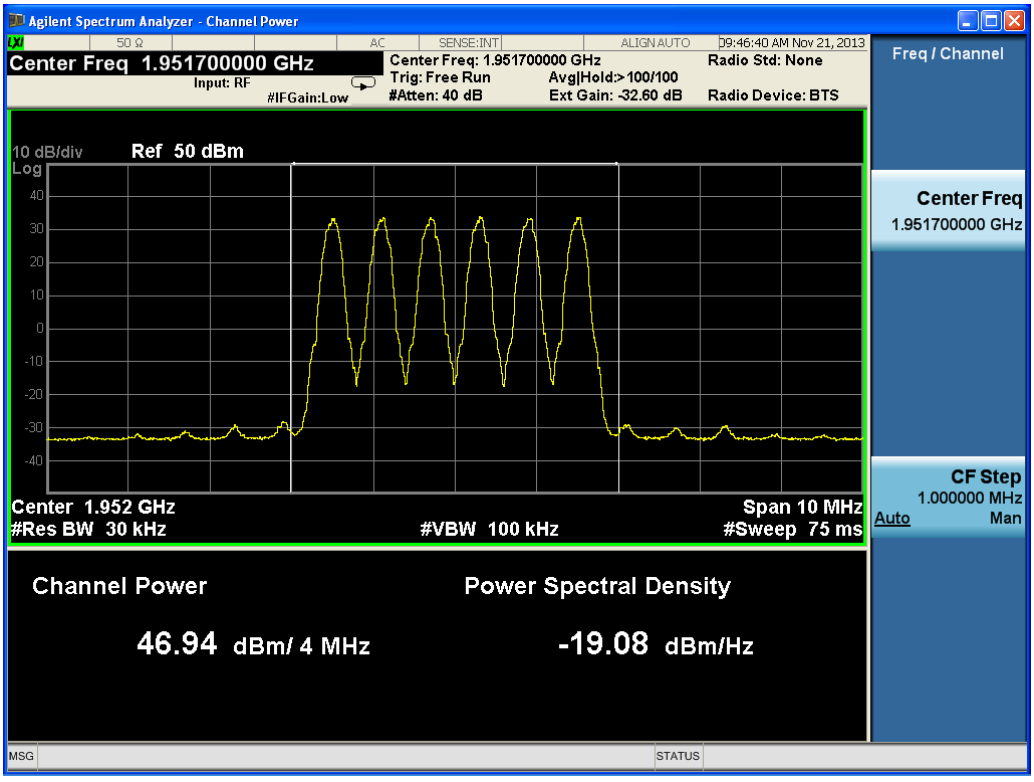
Test Mode: Transmitting GSM

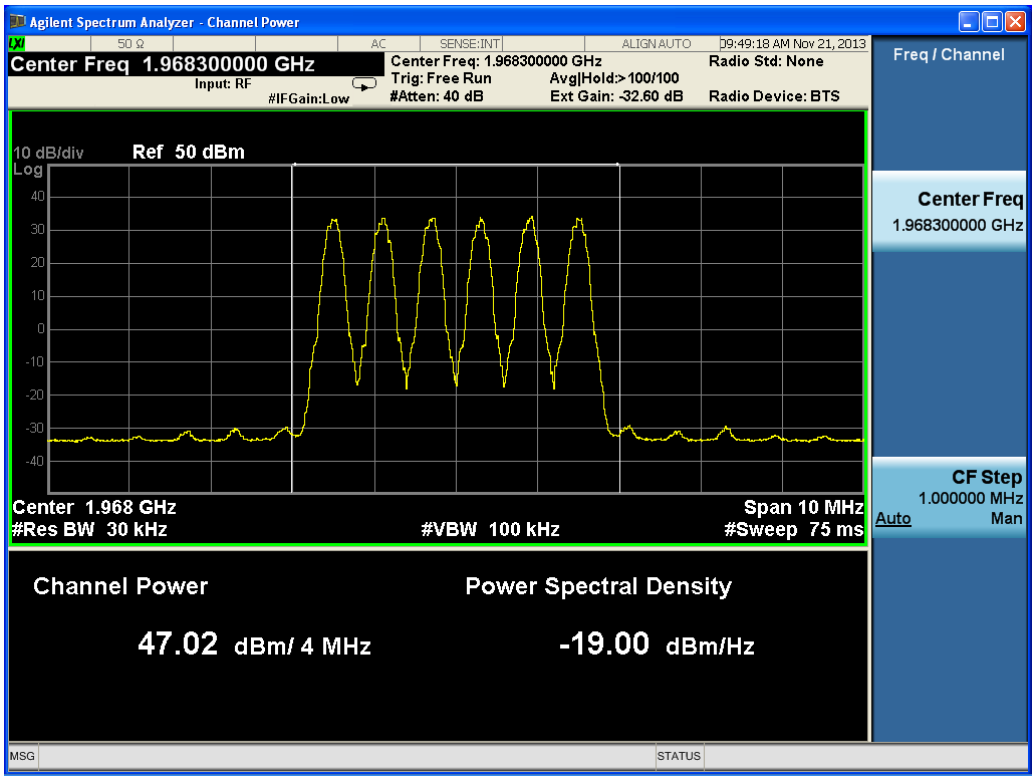
Test Data:

Six carriers

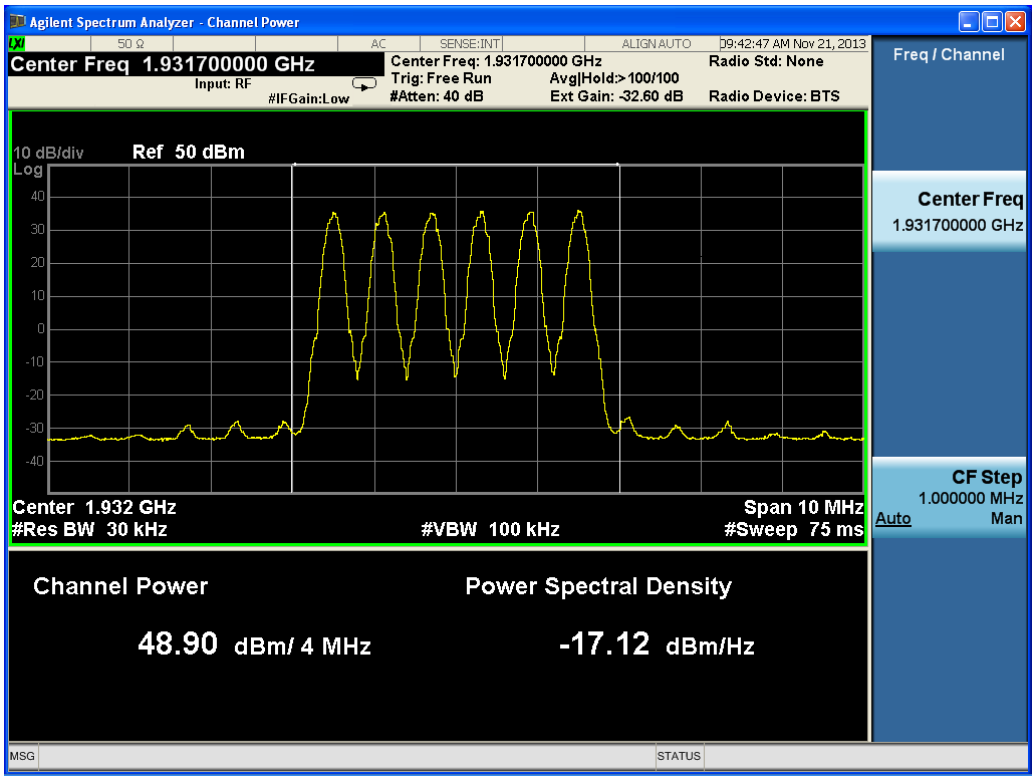
Modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
8PSK	1931.7	1930.2/1930.8/1931.4/1932/1932.6/1933.2	45.00
	1951.7	1950.2/1950.8/1951.4/1952/1952.6/1953.2	46.94
	1968.6	1966.8/1967.4/1968/1968.6/1969.2/1969.8	47.02

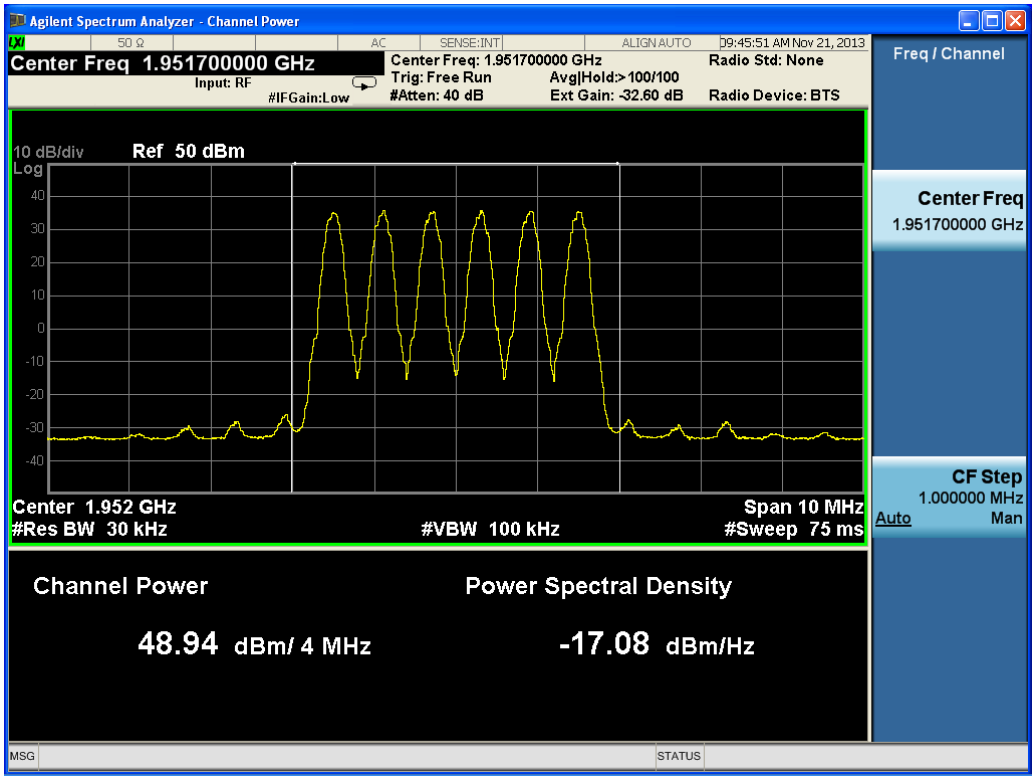

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
11:10:36 AM Apr 17, 2012
Center Freq 1.931700000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.931700000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref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

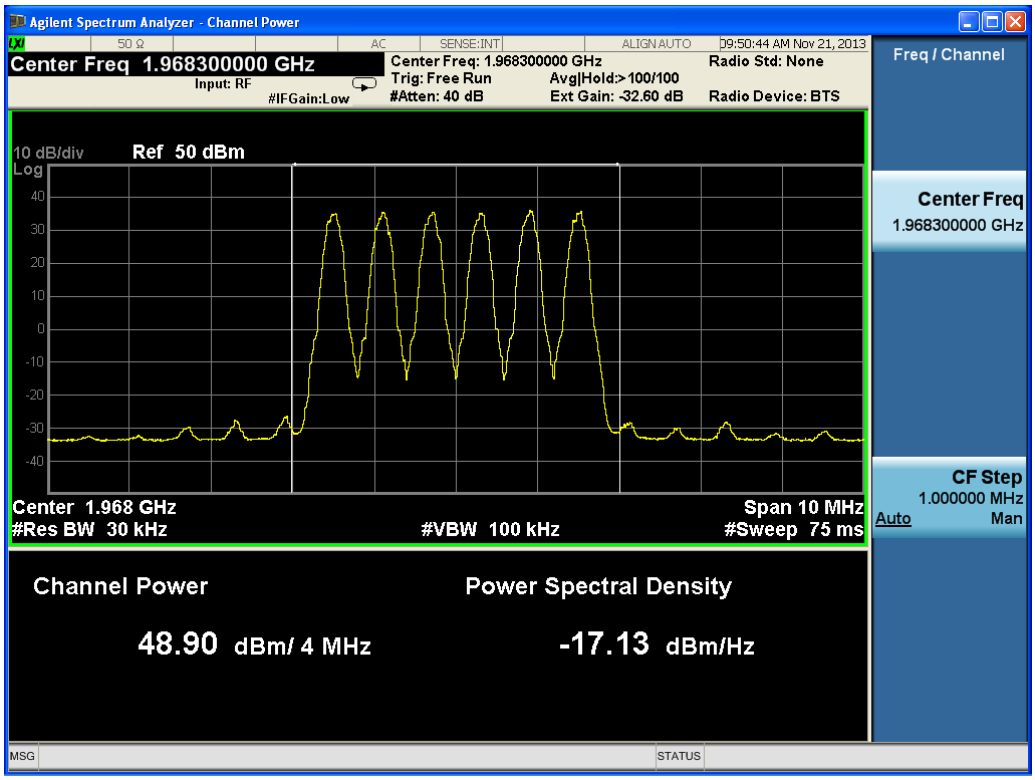

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:46:40 AM Nov 21, 2013
Center Freq 1.951700000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.951700000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center 1.952 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 10 MHz
#Sweep 75 ms
Center Freq
1.951700000 GHz
CF Step
1.000000 MHz
Auto
Man
Channel Power
46.94 dBm/ 4 MHz
Power Spectral Density
-19.08 dBm/Hz
MSG
STATUS



Modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
GMSK	1931.7	1930.2/1930.8/1931.4/1932/1932.6/1933.2	48.90
	1951.7	1950.2/1950.8/1951.4/1952/1952.6/1953.2	48.94
	1968.3	1966.8/1967.4/1968/1968.6/1969.2/1969.8	48.90

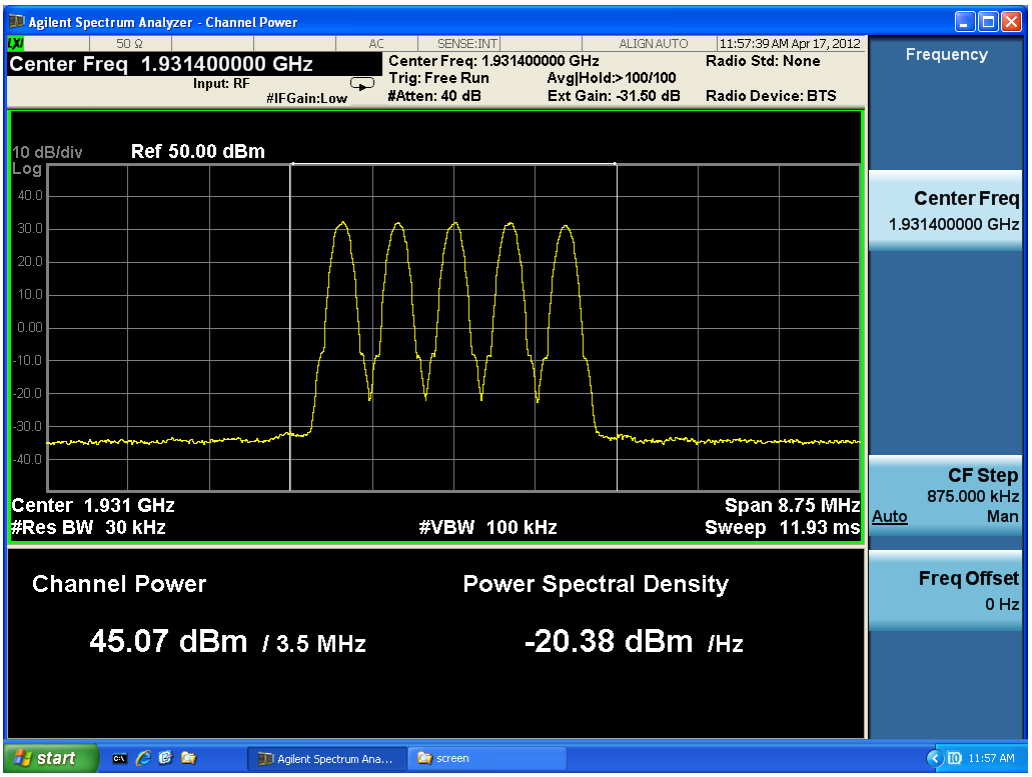

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:42:47 AM Nov 21, 2013
Center Freq 1.931700000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.931700000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.931700000 GHz
Center 1.932 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 10 MHz
#Sweep 75 ms
CF Step
1.000000 MHz
Auto
Man
Channel Power
48.90 dBm/ 4 MHz
Power Spectral Density
-17.12 dBm/Hz
MSG
STATUS

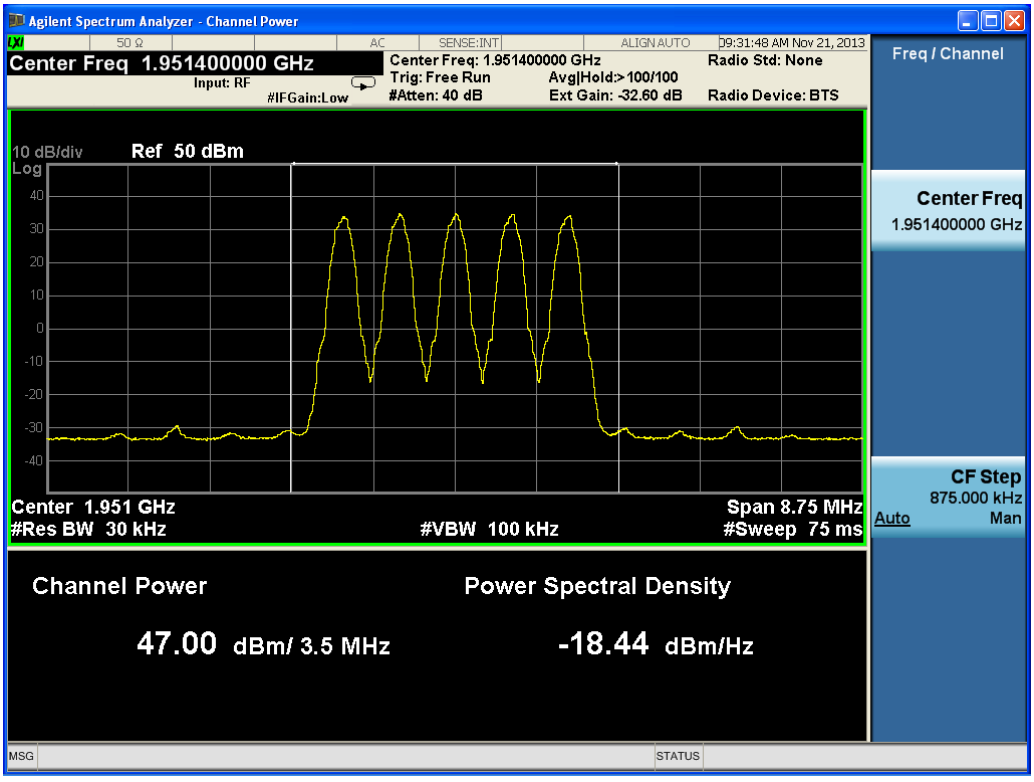

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:45:51 AM Nov 21, 2013
Center Freq 1.951700000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.951700000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
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
48.94 dBm/ 4 MHz
Power Spectral Density
-17.08 dBm/Hz
MSG
STATUS

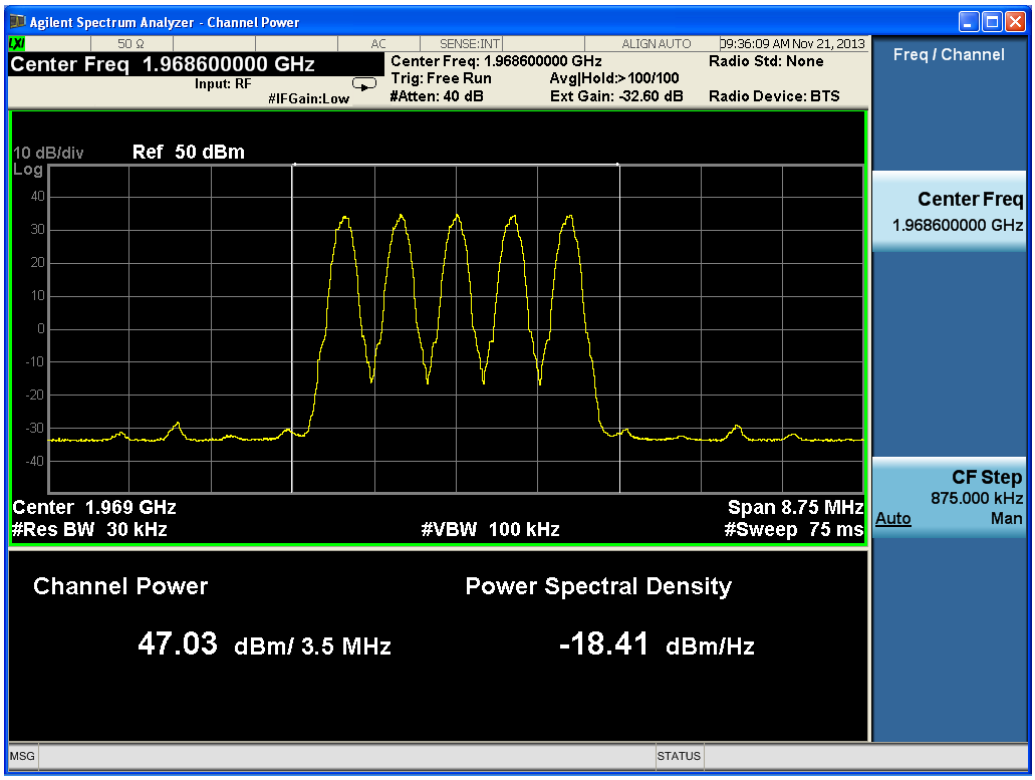


Five carriers

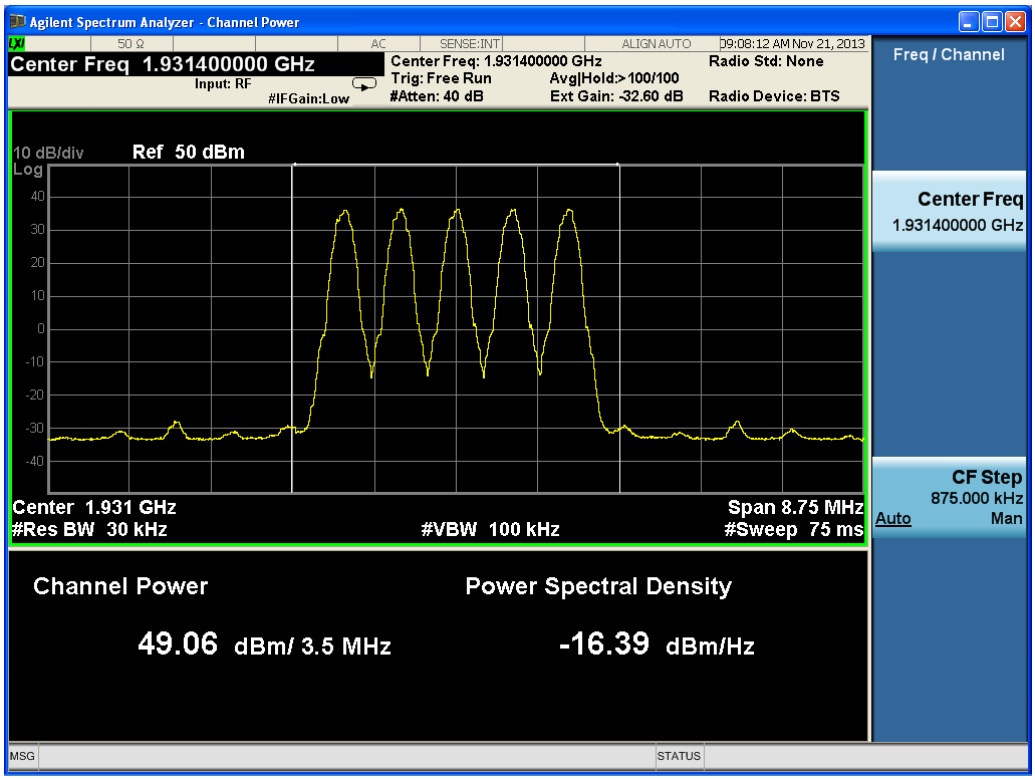
Modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
8PSK	1931.4	1930.2/1930.8/1931.4/1932/1932.6	45.07
	1951.4	1950.2/1950.8/1951.4/1952/1952.6	47.00
	1968.6	1967.4/1968/1968.6/1969.2/1969.8	47.03

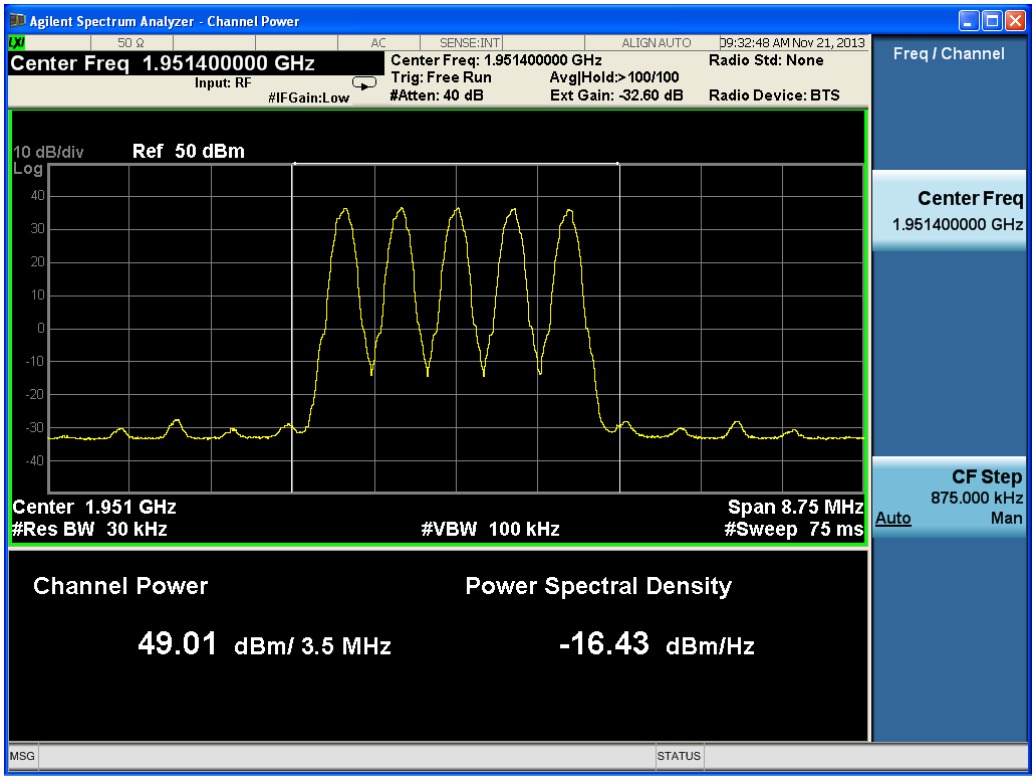

Agilent Spectrum Analyzer - Channel Power
Center Freq 1.931400000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.931400000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -31.50 dB
Radio Std: None
Radio Device: BTS
11:57:39 AM Apr 17, 2012
Frequency
10 dB/div
Log
Ref 50.00 dBm
Center 1.931 GHz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

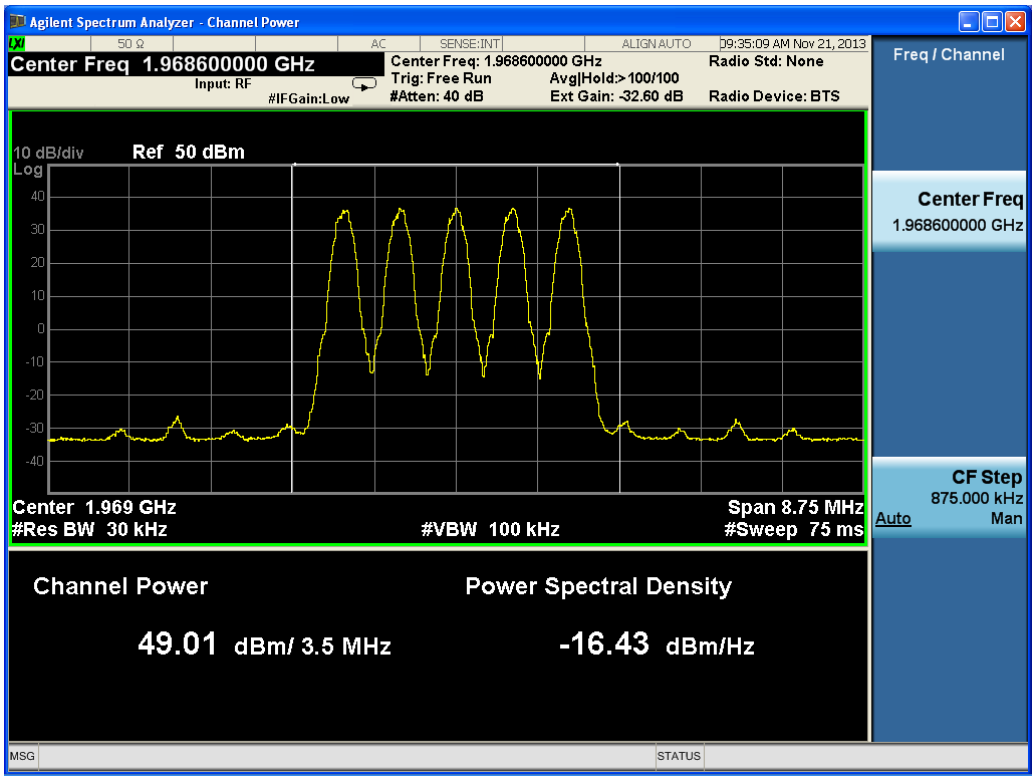

Agilent Spectrum Analyzer - Channel Power
Center Freq 1.951400000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.951400000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
09:31:48 AM Nov 21, 2013
Freq / Channel
10 dB/div
Log
Ref 50 dBm
Center 1.951 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 8.75 MHz
#Sweep 75 ms
Channel Power
47.00 dBm/ 3.5 MHz
Power Spectral Density
-18.44 dBm/Hz
Center Freq
1.951400000 GHz
CF Step
875.000 kHz
Auto
Man
MSG
STATUS



Modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
GMSK	1931.4	1930.2/1930.8/1931.4/1932/1932.6	49.06
	1951.4	1950.2/1950.8/1951.4/1952/1952.6	49.01
	1986.6	1967.4/1968/1968.6/1969.2/1969.8	49.01

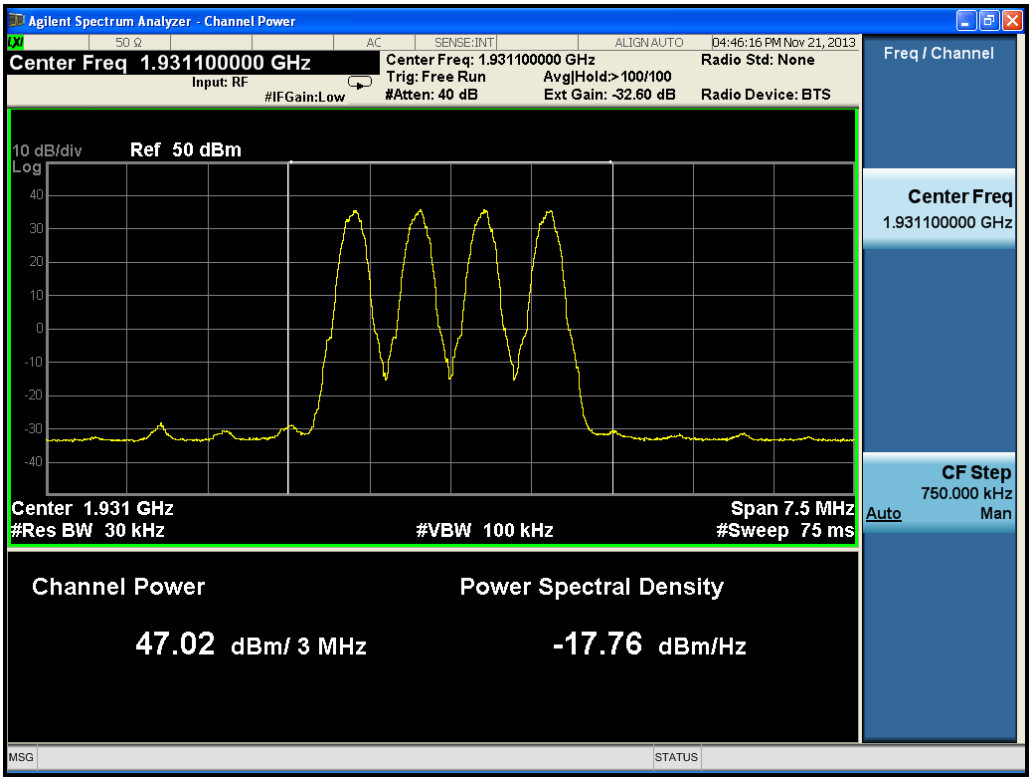

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:08:12 AM Nov 21, 2013
Center Freq 1.931400000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.931400000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.931400000 GHz
Center 1.931 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 8.75 MHz
#Sweep 75 ms
CF Step
875.000 kHz
Auto
Man
Channel Power
49.06 dBm/ 3.5 MHz
Power Spectral Density
-16.39 dBm/Hz
MSG
STATUS

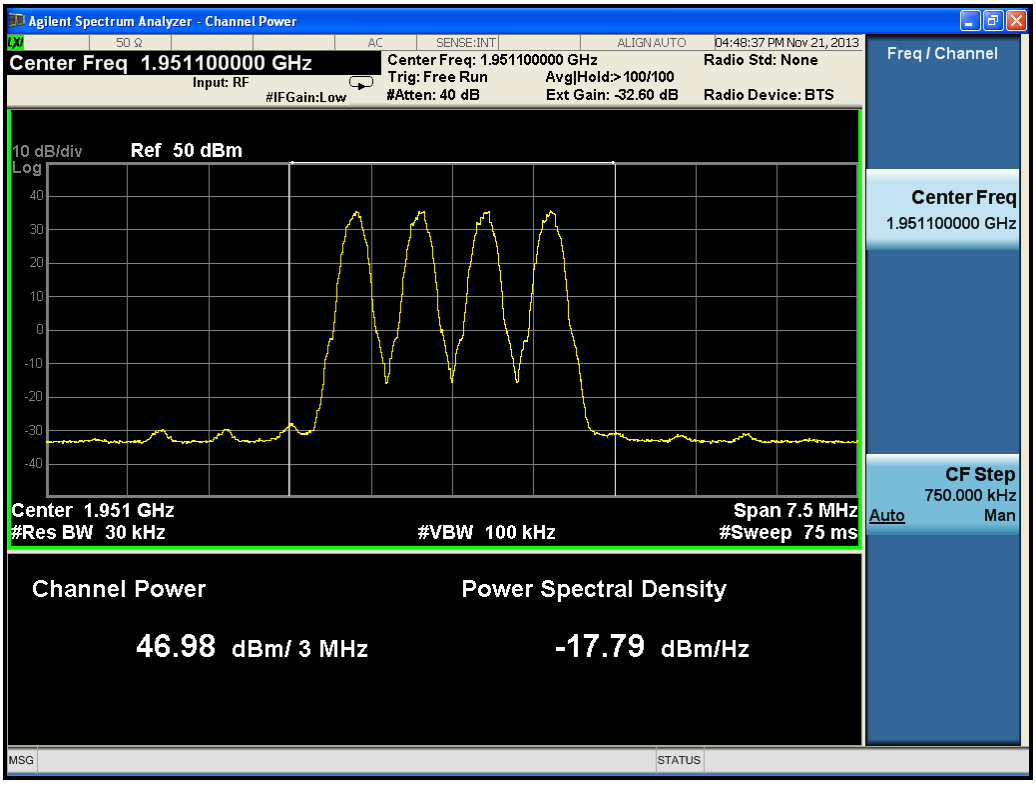

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
09:32:48 AM Nov 21, 2013
Center Freq 1.951400000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.951400000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
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
49.01 dBm/ 3.5 MHz
Power Spectral Density
-16.43 dBm/Hz
MSG
STATUS

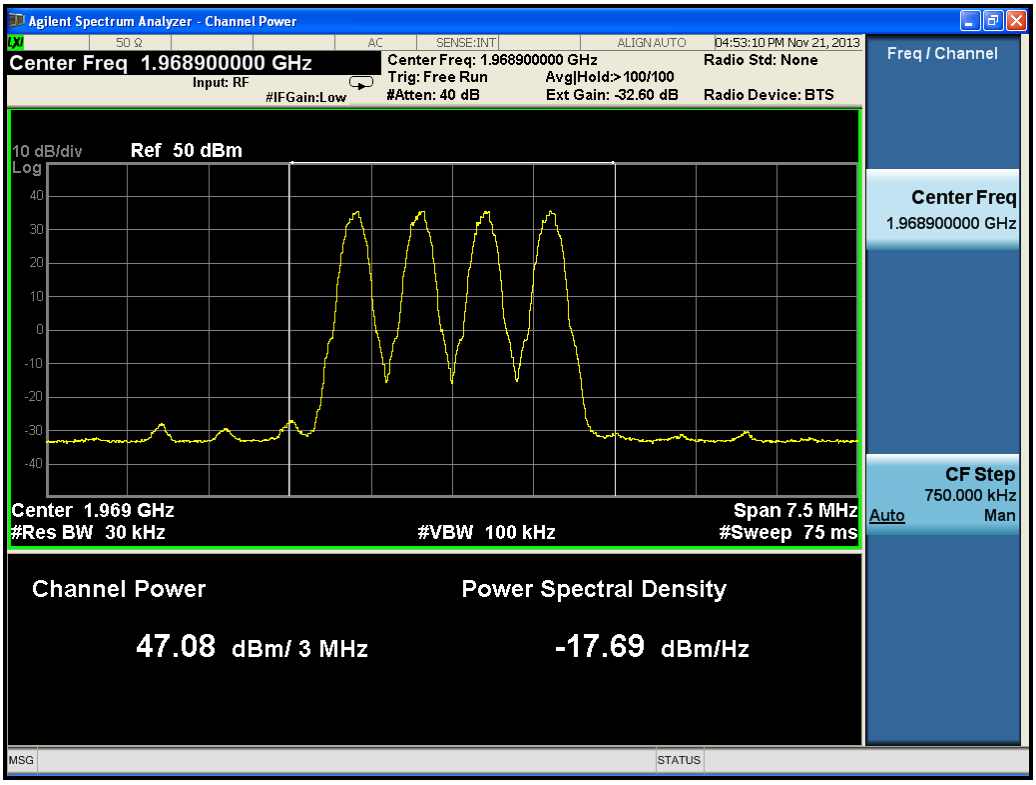


Four carriers

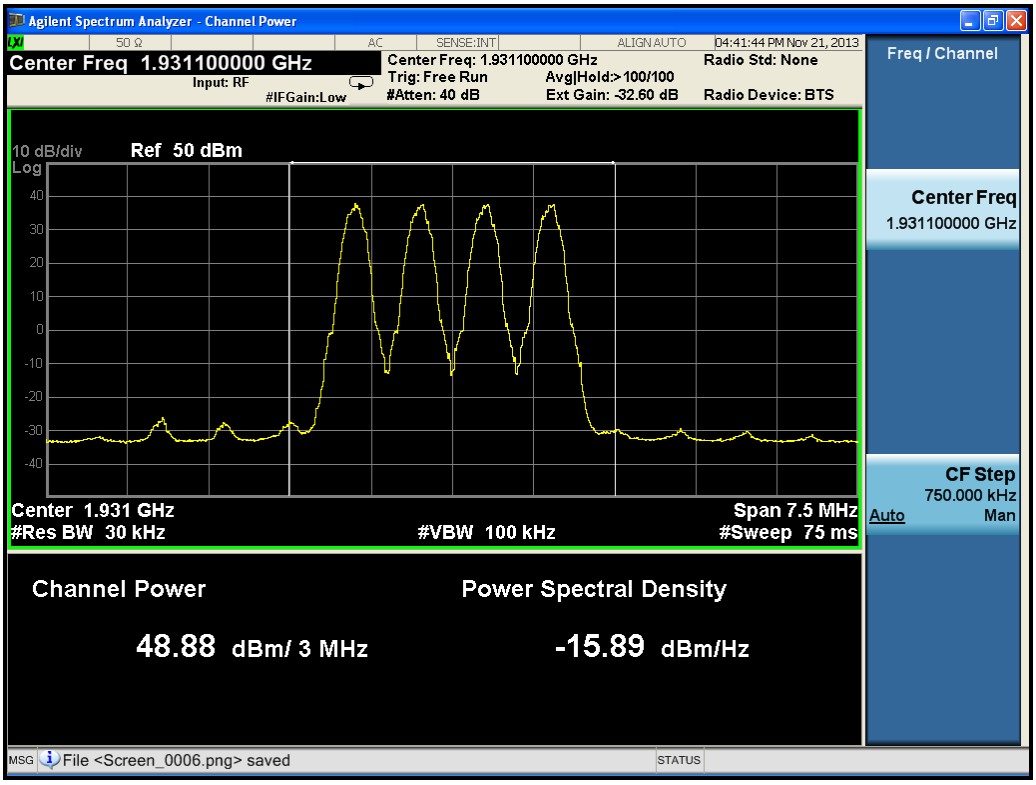
Modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
8PSK	1931.1	1930.2/1930.8/1931.4/1932	47.02
	1951.1	1950.2/1950.8/1951.4/1952	46.98
	1968.9	1968/1968.6/1969.2/1969.8	47.08

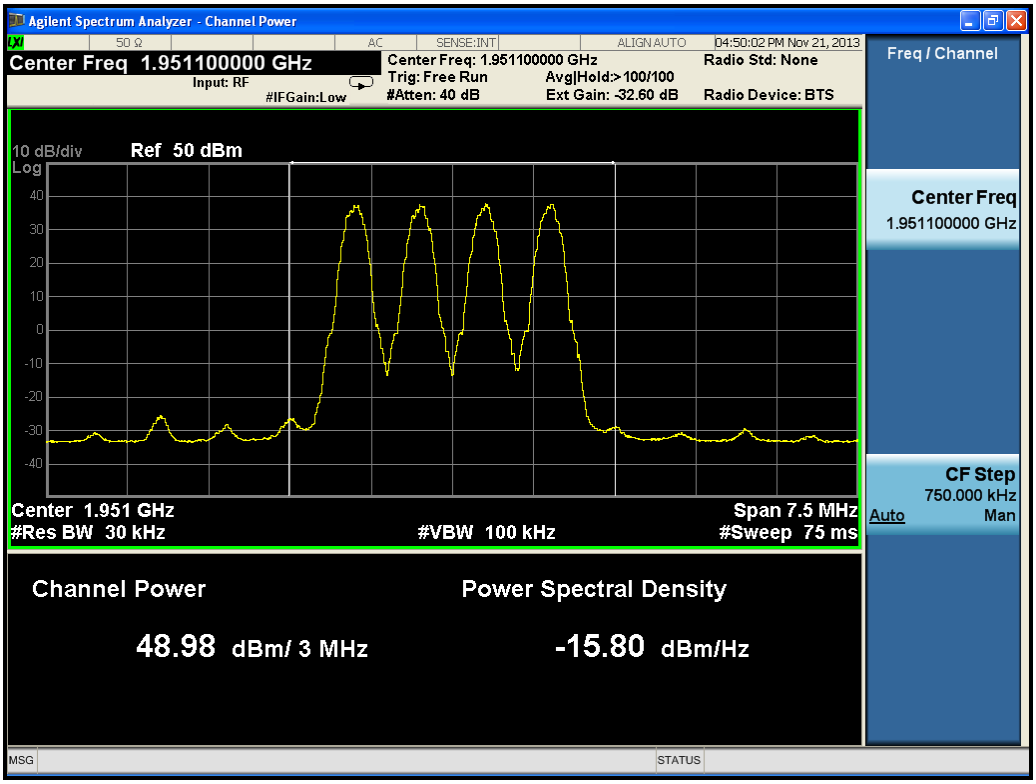

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
04:46:16 PM Nov 21, 2013
Center Freq 1.931100000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.931100000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 40 dB
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center 1.931 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 7.5 MHz
#Sweep 75 ms
Center Freq
1.931100000 GHz
CF Step
750.000 kHz
Auto
Man
Channel Power
47.02 dBm/ 3 MHz
Power Spectral Density
-17.76 dBm/Hz
MSG
STATUS

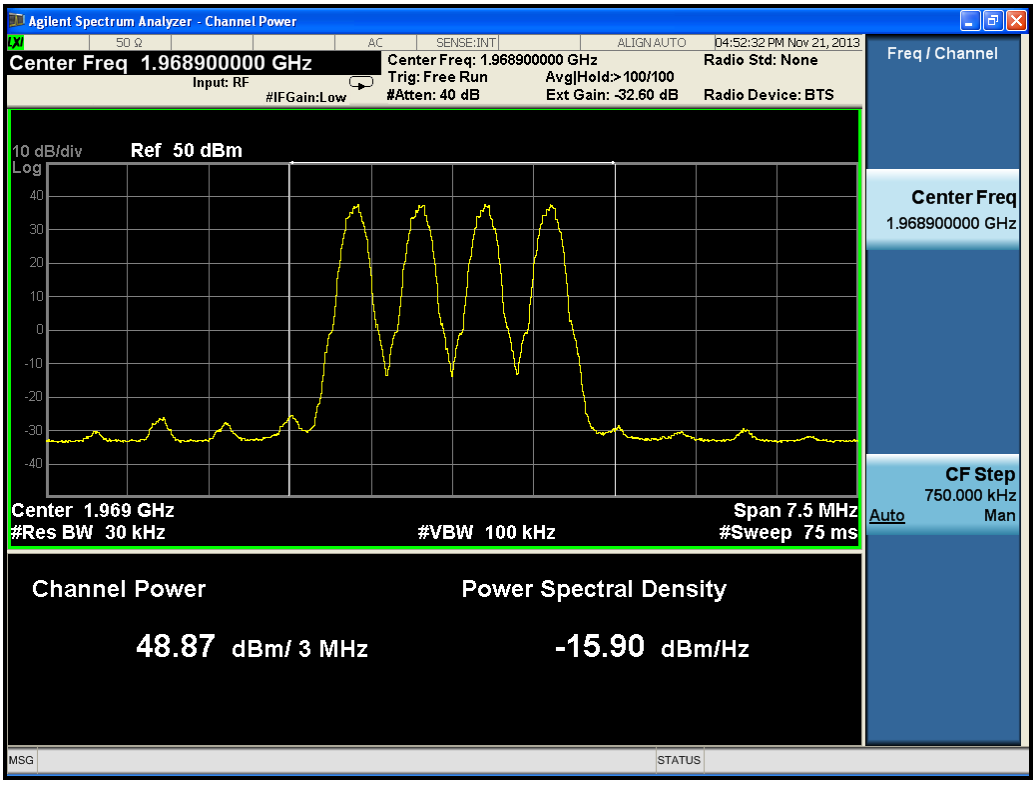

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
04:48:37 PM Nov 21, 2013
Center Freq 1.951100000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.951100000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 40 dB
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
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 7.5 MHz
#Sweep 75 ms
Center Freq
1.951100000 GHz
CF Step
750.000 kHz
Auto
Man
Channel Power
46.98 dBm/ 3 MHz
Power Spectral Density
-17.79 dBm/Hz
MSG
STATUS



Modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
GMSK	1931.1	1930.2/1930.8/1931.4/1932	48.88
	1951.1	1950.2/1950.8/1951.4/1952	48.98
	1968.9	1968/1968.6/1969.2/1969.8	48.87

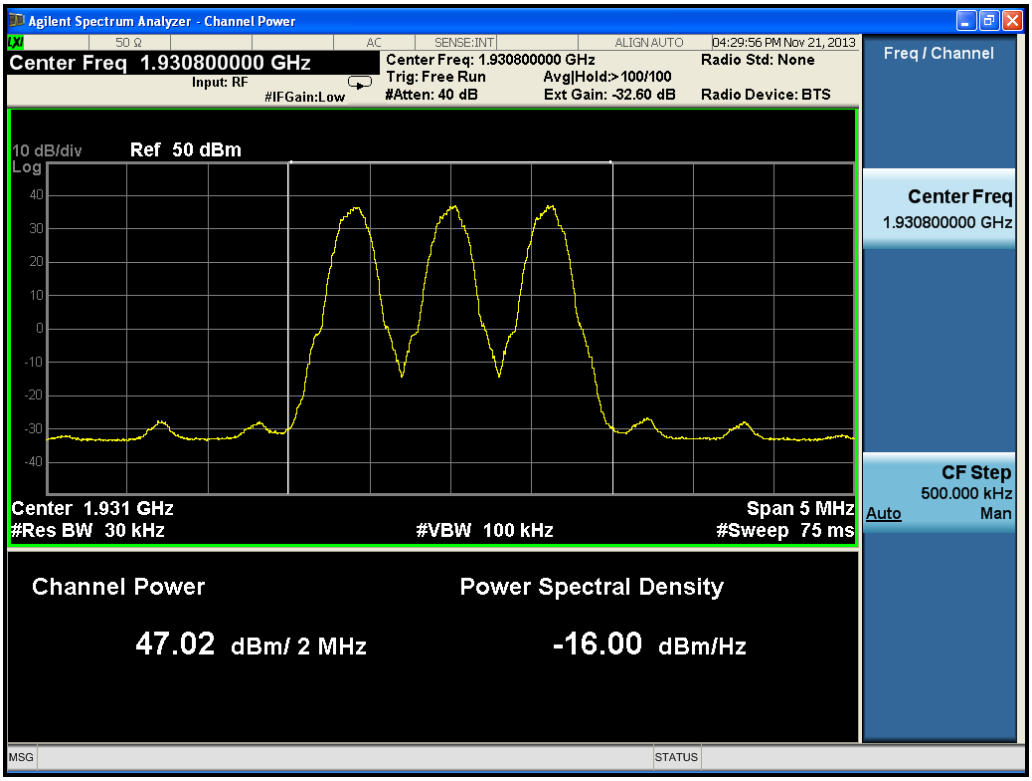

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
04:41:44 PM Nov 21, 2013
Center Freq 1.931100000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.931100000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 40 dB
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.931100000 GHz
Center 1.931 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 7.5 MHz
#Sweep 75 ms
CF Step
750.000 kHz
Auto
Man
Channel Power
48.88 dBm/ 3 MHz
Power Spectral Density
-15.89 dBm/Hz
MSG
File <Screen_0006.png> saved
STATUS

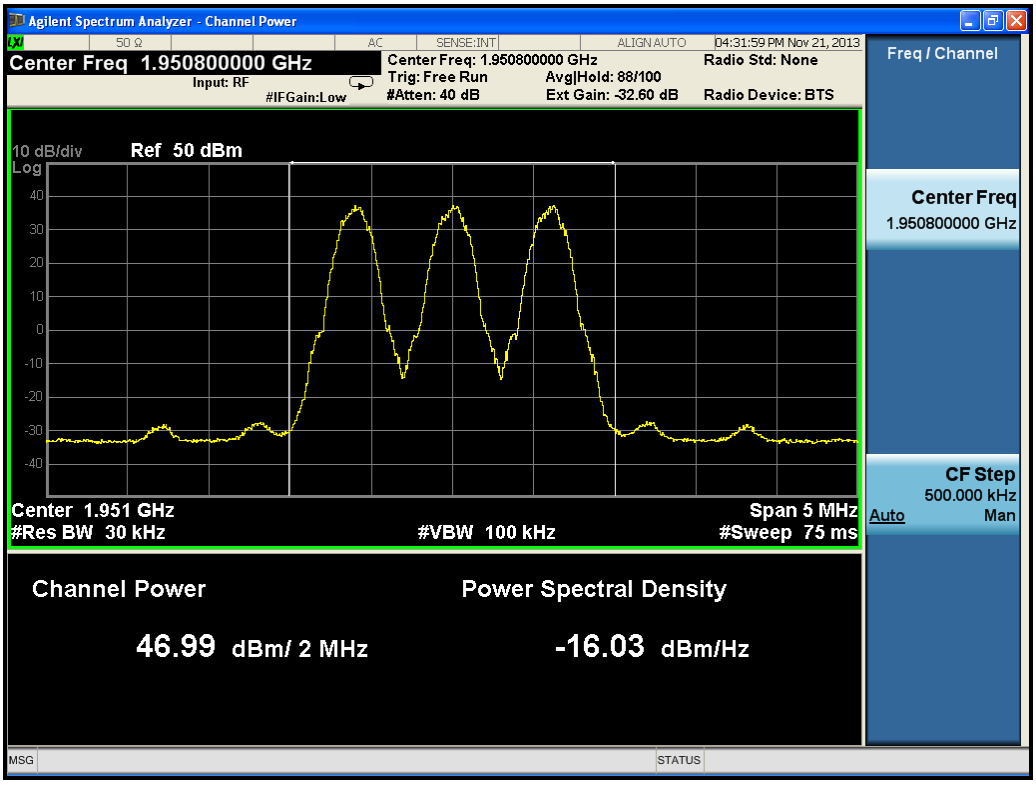

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
04:50:02 PM Nov 21, 2013
Center Freq 1.951100000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.951100000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 40 dB
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
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
48.98 dBm/ 3 MHz
Power Spectral Density
-15.80 dBm/Hz
MSG
STATUS

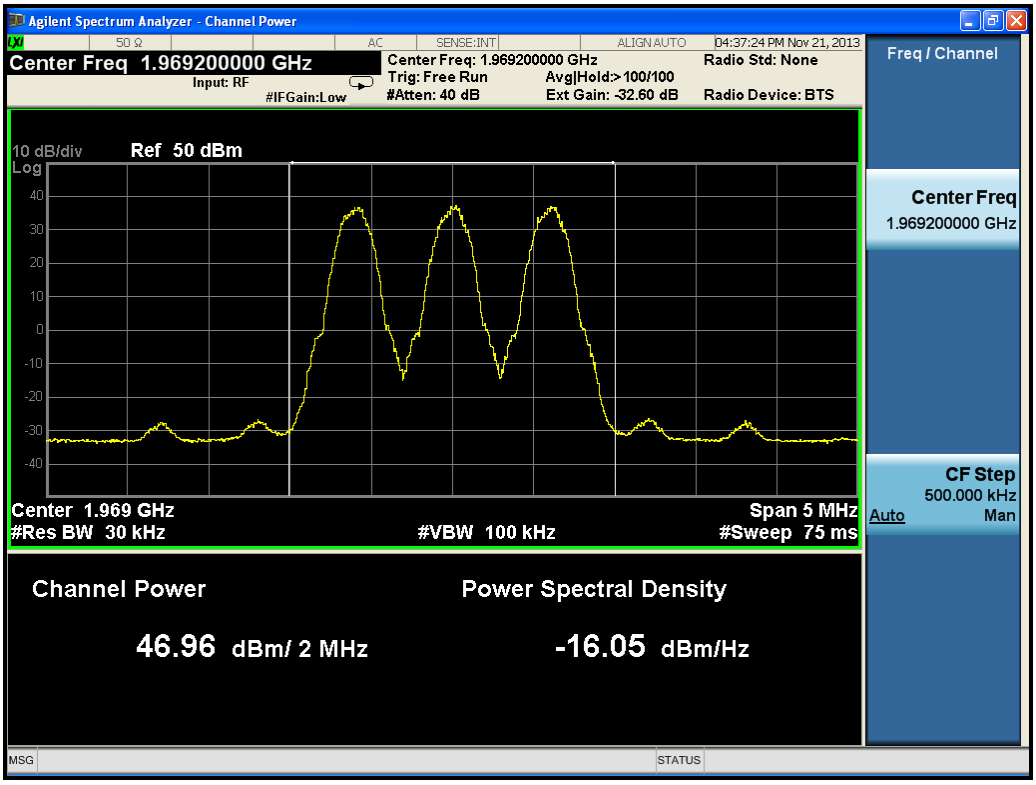


Three carriers

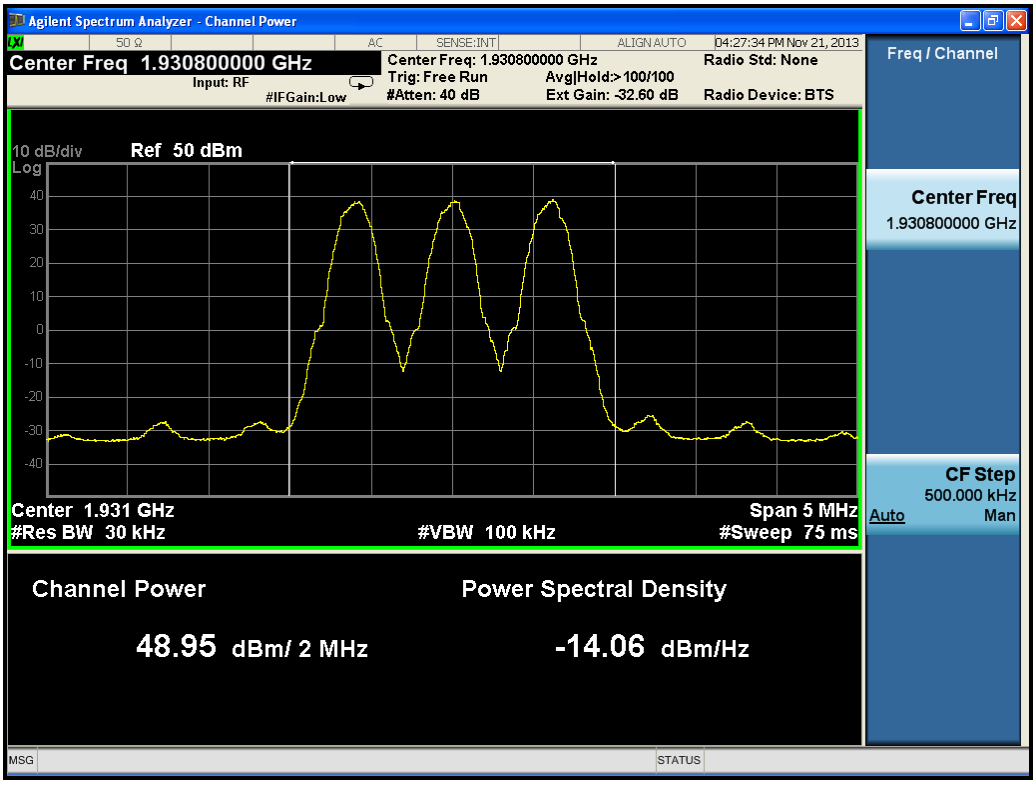
Modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
8PSK	1930.8	1930.2/1930.8/1931.4	47.02
	1950.8	1950.2/1950.8/1951.4	46.99
	1969.2	1968.6/1969.2/1969.8	46.96

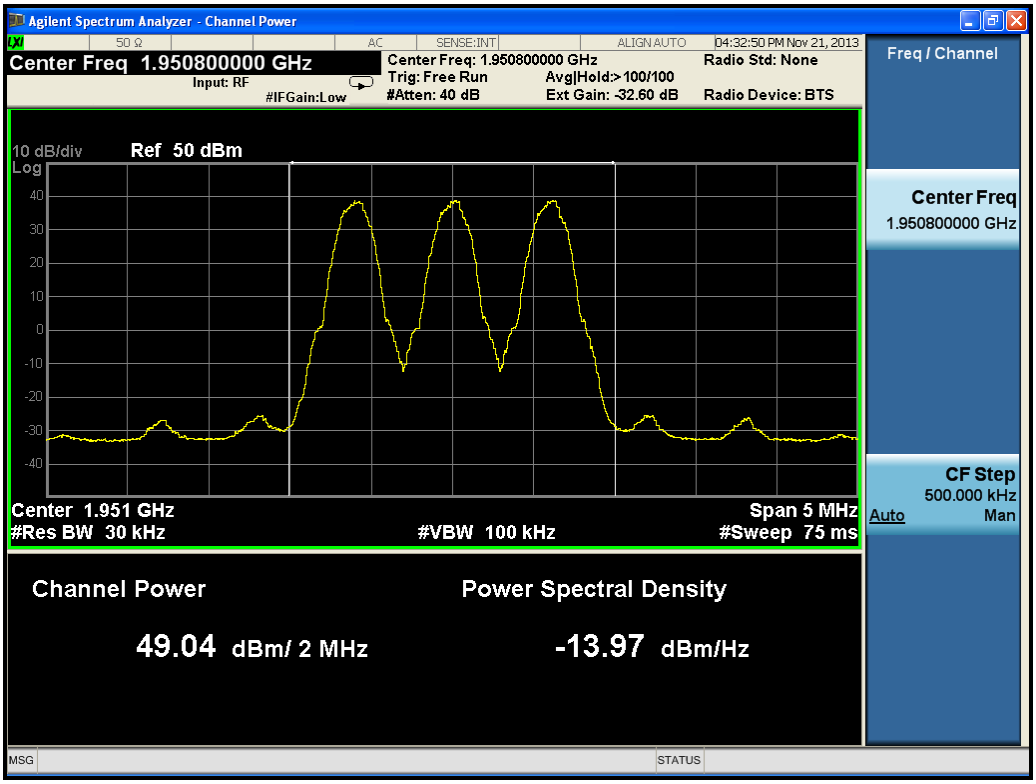

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
04:29:56 PM Nov 21, 2013
Center Freq 1.930800000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.930800000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 40 dB
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center 1.931 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
#Sweep 75 ms
Center Freq
1.930800000 GHz
CF Step
500.000 kHz
Auto
Man
Channel Power
47.02 dBm/ 2 MHz
Power Spectral Density
-16.00 dBm/Hz
MSG
STATUS

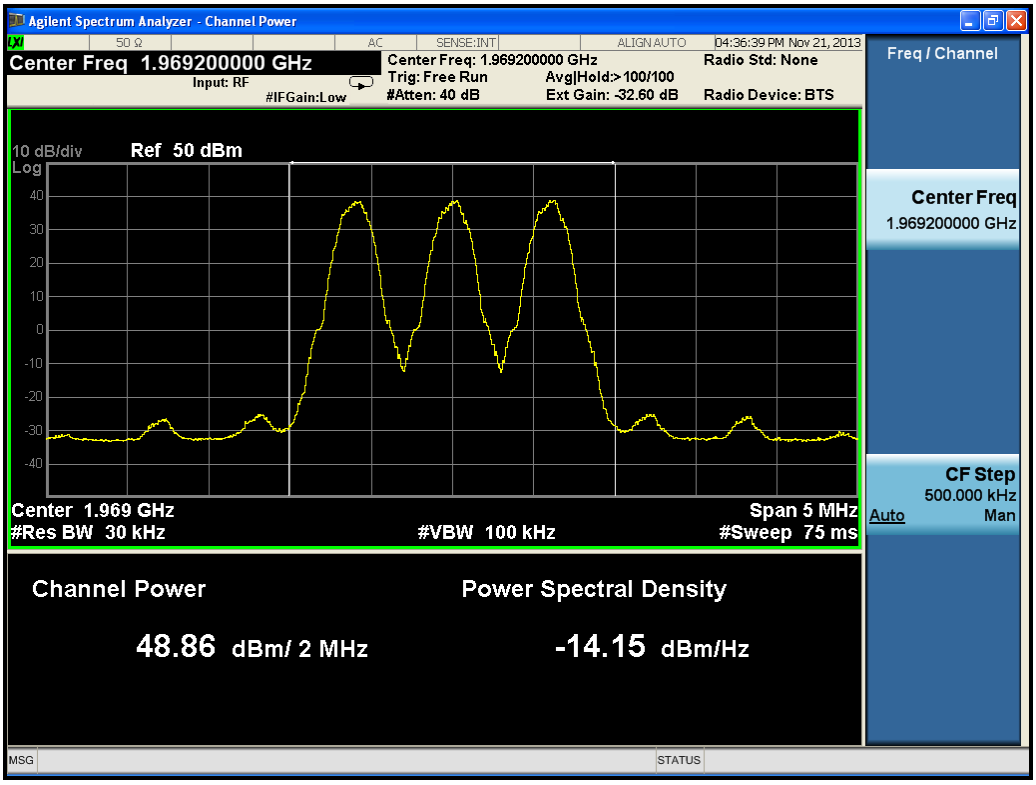

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
04:31:59 PM Nov 21, 2013
Center Freq 1.950800000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.950800000 GHz
Trig: Free Run
Avg|Hold: 88/100
#Atten: 40 dB
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
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
1.950800000 GHz
CF Step
500.000 kHz
Auto
Man
Channel Power
46.99 dBm/ 2 MHz
Power Spectral Density
-16.03 dBm/Hz
MSG
STATUS



Modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
GMSK	1930.8	1930.2/1930.8/1931.4	48.95
	1950.8	1950.2/1950.8/1951.4	49.04
	1969.2	1968.6/1969.2/1969.8	48.86

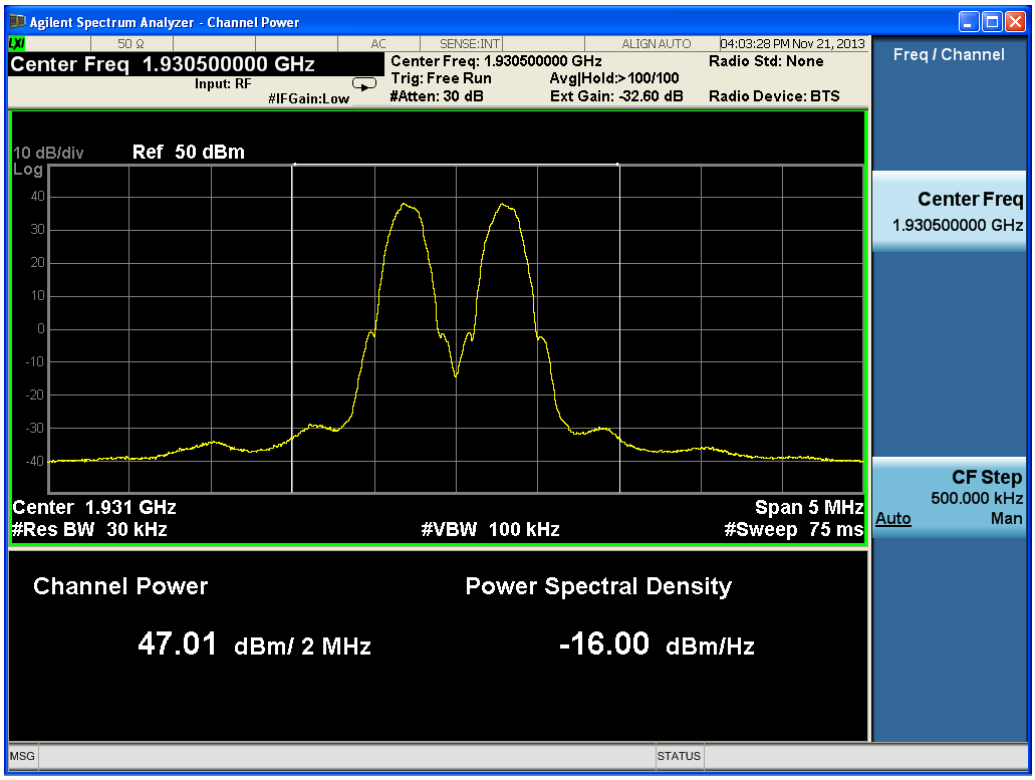

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
04:27:34 PM Nov 21, 2013
Center Freq 1.930800000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.930800000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 40 dB
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.930800000 GHz
Center 1.931 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
#Sweep 75 ms
CF Step
500.000 kHz
Auto
Man
Channel Power
48.95 dBm/ 2 MHz
Power Spectral Density
-14.06 dBm/Hz
MSG
STATUS

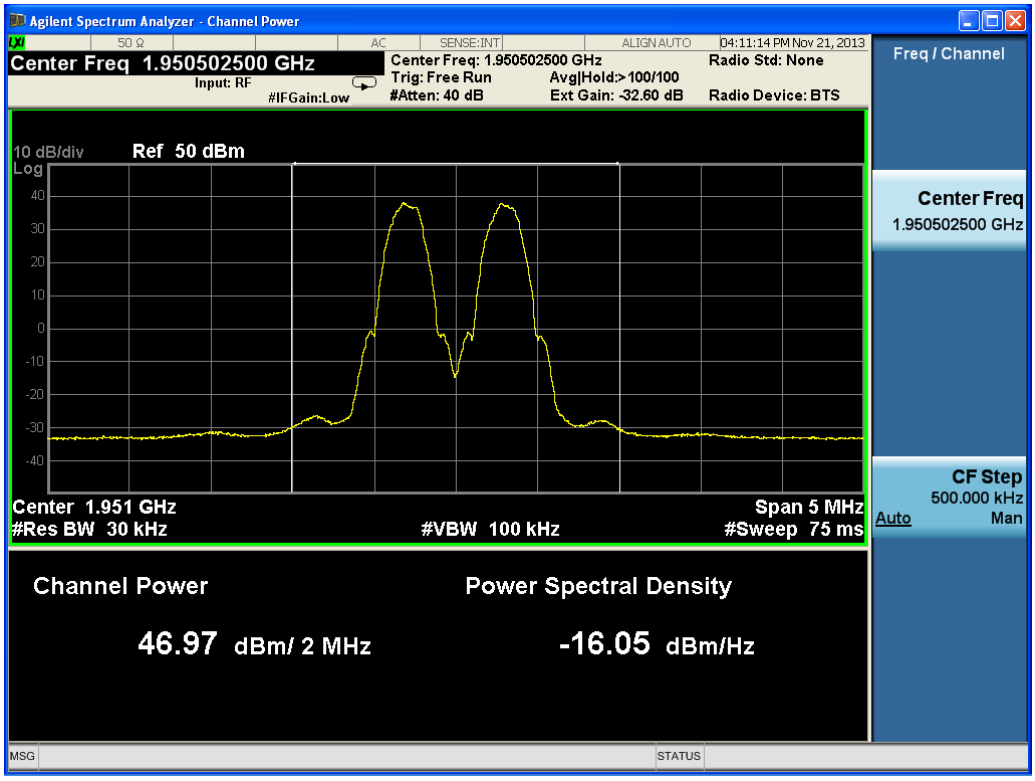

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
04:32:50 PM Nov 21, 2013
Center Freq 1.950800000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.950800000 GHz
Trig: Free Run
Avg|Hold:>100/100
#Atten: 40 dB
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.950800000 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
49.04 dBm/ 2 MHz
Power Spectral Density
-13.97 dBm/Hz
MSG
STATUS

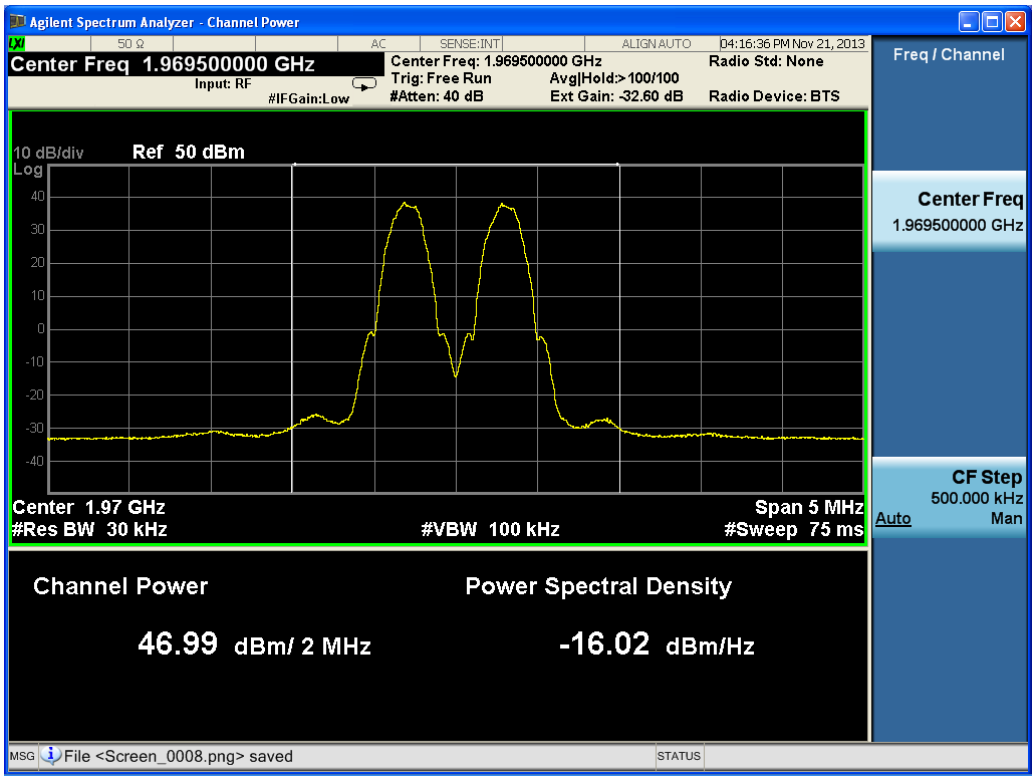


Two carriers

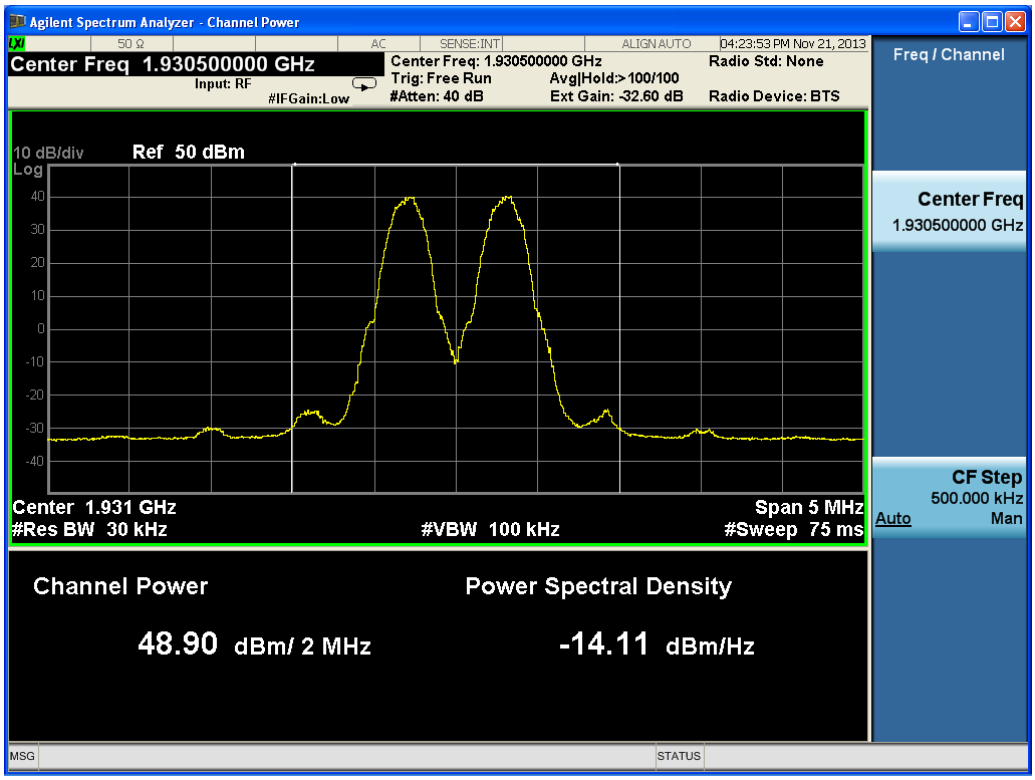
Modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
8PSK	1930.5	1930.2/1930.8	47.01
	1950.5	1950.2/1950.8	46.97
	1969.5	1969.2/1969.8	46.99

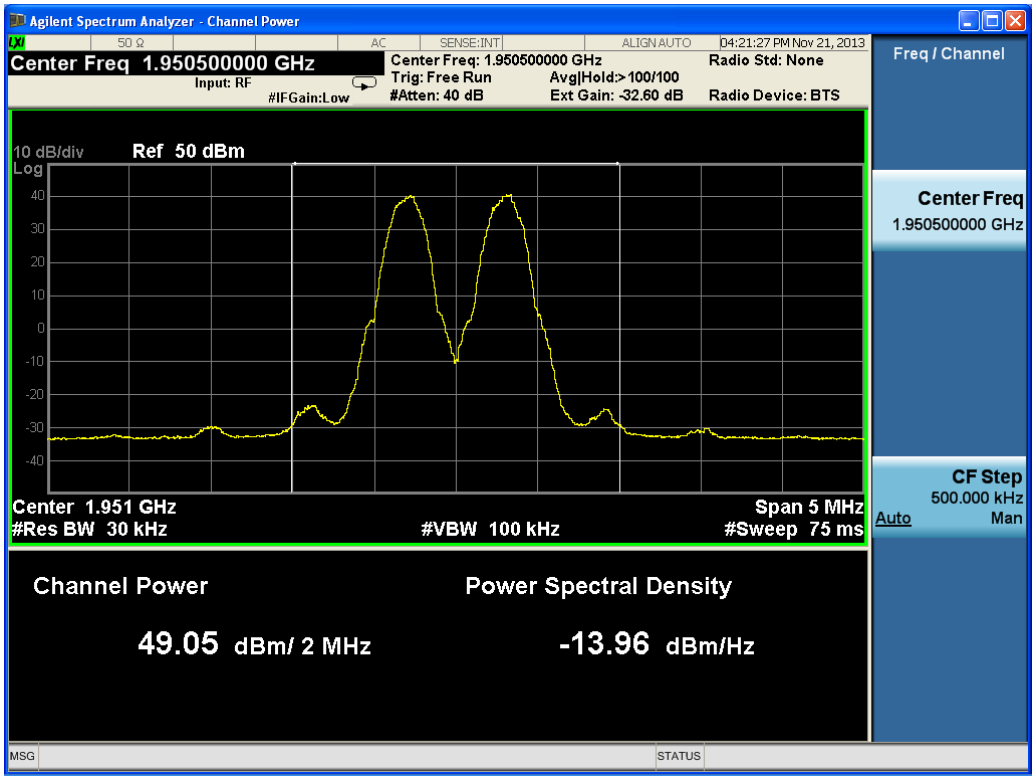

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
04:03:28 PM Nov 21, 2013
Center Freq 1.930500000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.930500000 GHz
Trig: Free Run
#Atten: 30 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.930500000 GHz
Center 1.931 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
#Sweep 75 ms
CF Step
500.000 kHz
Auto
Man
Channel Power
47.01 dBm/ 2 MHz
Power Spectral Density
-16.00 dBm/Hz
MSG
STATUS

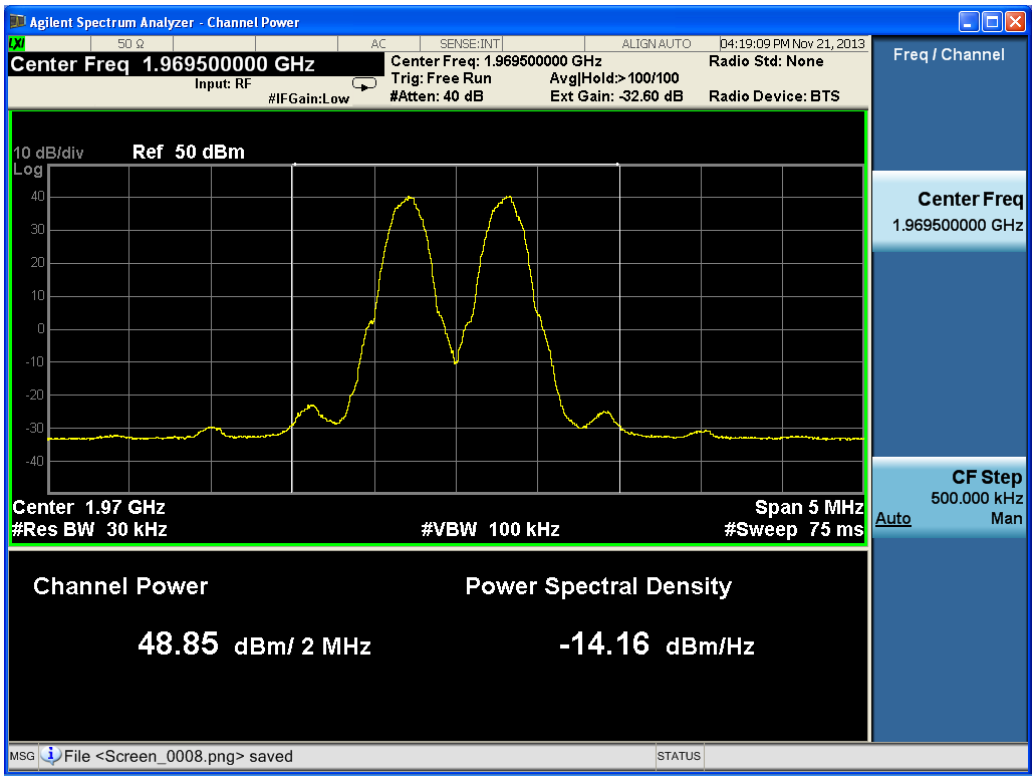

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
04:11:14 PM Nov 21, 2013
Center Freq 1.950502500 GHz
Input: RF
#IFGain:Low
Center Freq: 1.950502500 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center Freq
1.950502500 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
46.97 dBm/ 2 MHz
Power Spectral Density
-16.05 dBm/Hz
MSG
STATUS



Modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
GMSK	1930.5	1930.2/1930.8	48.90
	1950.5	1950.2/1950.8	49.05
	1969.5	1969.2/1969.8	48.85

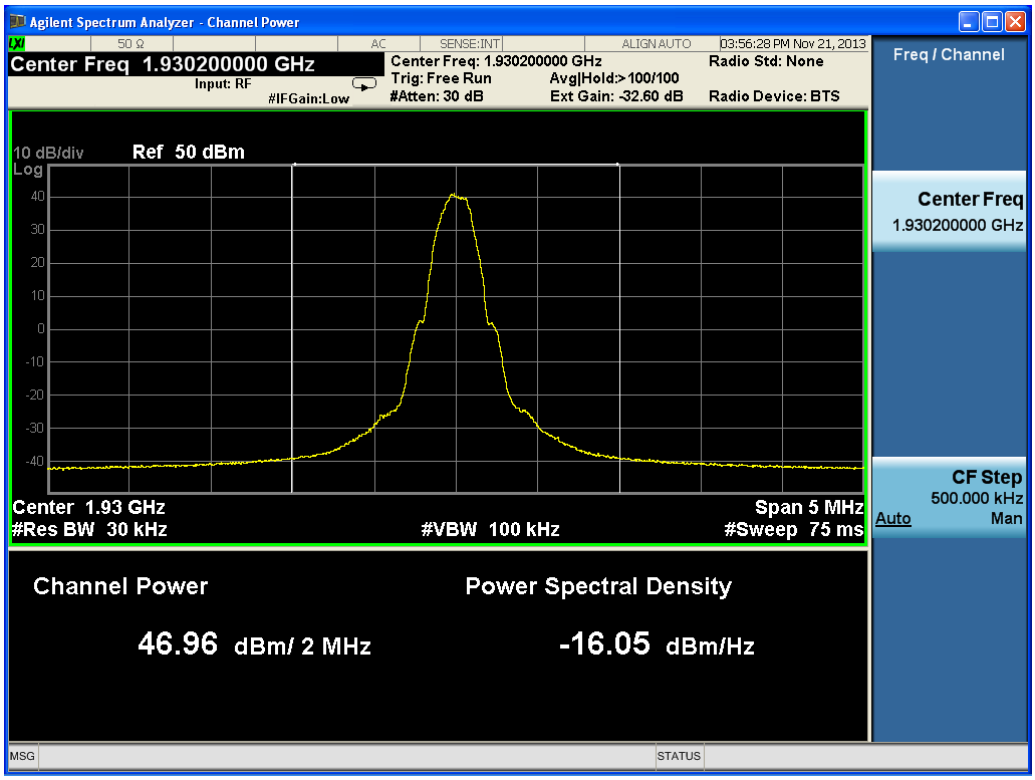

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
04:23:53 PM Nov 21, 2013
Center Freq 1.930500000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.930500000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center 1.931 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
#Sweep 75 ms
Center Freq
1.930500000 GHz
CF Step
500.000 kHz
Auto
Man
Channel Power
48.90 dBm/ 2 MHz
Power Spectral Density
-14.11 dBm/Hz
MSG
STATUS

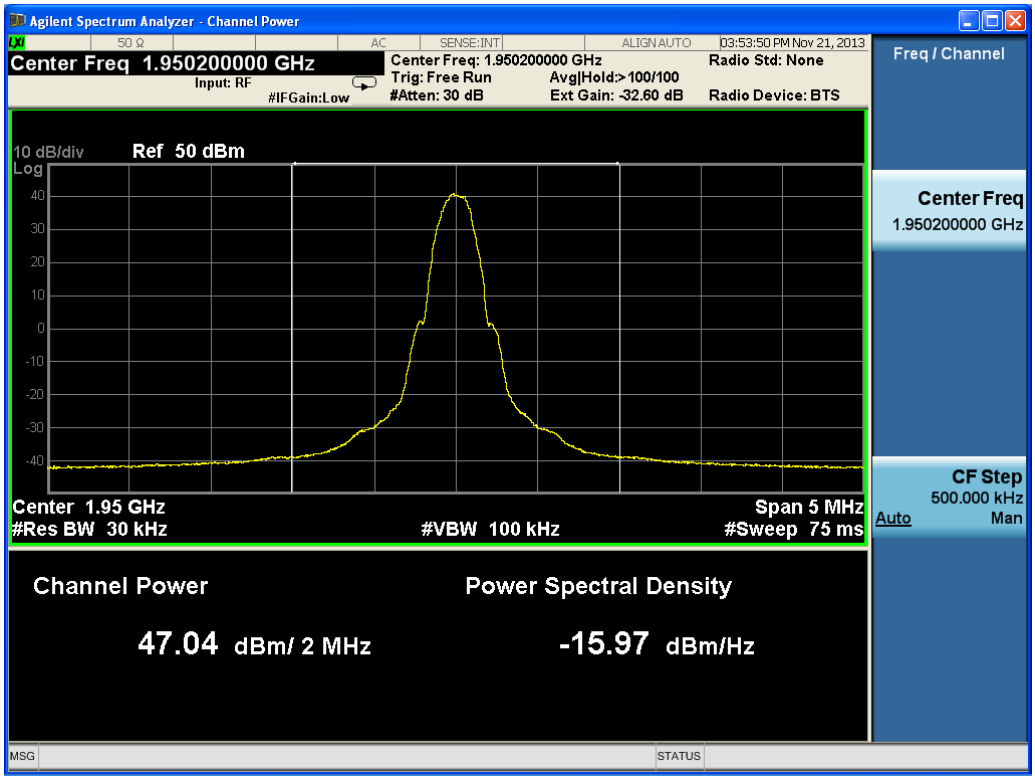

Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
04:21:27 PM Nov 21, 2013
Center Freq 1.950500000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.950500000 GHz
Trig: Free Run
#Atten: 40 dB
Avg|Hold:>100/100
Ext Gain: -32.60 dB
Radio Std: None
Radio Device: BTS
Freq / Channel
10 dB/div
Log
Ref 50 dBm
40
30
20
10
0
-10
-20
-30
-40
Center 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
49.05 dBm/ 2 MHz
Power Spectral Density
-13.96 dBm/Hz
MSG
STATUS



One carrier

Modulation	Center Freq. (MHz)	Frequency (MHz)	Max output Power in dBm
8PSK	1930.2	1930.2	46.96
	1950.2	1950.2	47.04
	1969.8	1969.8	46.99


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
03:56:28 PM Nov 21, 2013
Center Freq 1.930200000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.930200000 GHz
Trig: Free Run
#Atten: 30 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 1.93 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
#Sweep 75 ms
Center Freq
1.930200000 GHz
CF Step
500.000 kHz
Auto
Man
Channel Power
46.96 dBm/ 2 MHz
Power Spectral Density
-16.05 dBm/Hz
MSG
STATUS


Agilent Spectrum Analyzer - Channel Power
50 Ω
AC
SENSE:INT
ALIGN AUTO
03:53:50 PM Nov 21, 2013
Center Freq 1.950200000 GHz
Input: RF
#IFGain:Low
Center Freq: 1.950200000 GHz
Trig: Free Run
#Atten: 30 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 1.95 GHz
#Res BW 30 kHz
#VBW 100 kHz
Span 5 MHz
#Sweep 75 ms
Center Freq
1.950200000 GHz
CF Step
500.000 kHz
Auto
Man
Channel Power
47.04 dBm/ 2 MHz
Power Spectral Density
-15.97 dBm/Hz
MSG
STATUS