FCC
RF Test Report

Product Name: WCDMA Mobile Phone

Model Number: SKY 4.5D

Report No: 1407FR27

FCC ID：2ABOSGC140601

A Test Lab Techno Corp.

No. 140-1, Changan Street, Bade City,

Taoyuan County 334, Taiwan R.O.C.

Tel：+886-3-2710188 / Fax：+886-3-2710190

Notice

1. The laboratory has Passed the accreditation by The American Association for Laboratory Accreditation (A2LA). The accreditation number is 3464.01.
2. The laboratory has been accredited by the US Federal Communications Commission.
3. The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 7381A.
4. The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
5. The test report is invalid if there is any evidence of erasure and/or falsification.
6. The test report is only valid for the test samples.
7. Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

Applicant:	Sky Phone LLC
Address:	1348 Washington Av., Miami Beach
Date of Receipt Sample:	2014-06-20
Start Date of Test:	2014-06-23
End Date of Test:	2014-07-23
Issue Date:	2014-08-01
Test Result:	Pass

Approved By :  Reviewed By : 

(Manager) (Murphy Wang) (Testing Engineer) (Fly Lv)

Revision History

Rev.	Issue Date	Revisions	Revised By
00	31July, 2014	Initial Issue	

CONTENT

1 General Information

1.1 Applied Standard

Applied Rules:	47 CFR FCC Part 02:2013 47 CFR FCC Part 22: 2013 47 CFR FCC Part 24: 2013 47 CFR FCC Part 27: 2013
Test Method:	FCC KDB 971168 D01 Power Meas License Digital Systems

1.2 Test Location

Test Location 1:	A Test Lab Techno Corp.
Address:	No. 140-1, Changan Street, Bade City, Taoyuan County 334, Taiwan R.O.C.

1.3 Test Environment Condition

Ambient Temperature:	19.5 to 25 °C
Ambient Relative Humidity:	40 to 55 %
Atmospheric Pressure:	Not applicable

2 Test Summary

2.1 Cellular Band (824-849 MHz paired with 869-894 MHz)

Test Item	FCC Rule No.	Requirements	Test Result	Verdict
Effective (Isotropic) Radiated Power Output Data	§2.1046, §22.913	FCC: ERP ≤ 7 W.	Appendix A	Pass
Modulation Characteristics	§2.1047	Digital modulation	Appendix C	Pass
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Appendix D	Pass
Band Edges Compliance	§2.1051, §22.917	≤ -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block.	Appendix E	Pass
Spurious Emission at Antenna Terminals	§2.1051, §22.917	FCC: ≤ -13 dBm/100 kHz, from 9 kHz to 10th harmonics but outside authorized operating frequency ranges.	Appendix F	Pass
Field Strength of Spurious Radiation	§2.1053, §22.917	FCC: ≤ -13 dBm/100 kHz.	Appendix G	Pass
Frequency Stability	§2.1055, §22.355	≤ ±2.5ppm.	Appendix H	Pass
NOTE 1: For the verdict, the “N/A” denotes “not applicable”, the “N/T” denotes “not tested”.				

2.2 PCS Band (1850-1915 MHz paired with 1930-1995 MHz)

Test Item	FCC Rule No.	Requirements	Test Result	Verdict (NOTE 1)
Effective (Isotropic) Radiated Power Output Data	§2.1046, §24.232	EIRP ≤ 2 W	Appendix A	Pass
Peak-Average Ratio	§2.1046, §24.232	FCC: Limit≤13 dB	Appendix B	Pass
Modulation Characteristics	§2.1047	Digital modulation	Appendix C	Pass
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Appendix D	Pass
Band Edges Compliance	§2.1051, §24.238	≤ -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block.	Appendix E	Pass
Spurious Emission at Antenna Terminals	§2.1051, §24.238	≤ -13 dBm/1 MHz, from 9 kHz to 10th harmonics but outside authorized operating frequency ranges.	Appendix F	Pass
Field Strength of Spurious Radiation	§2.1053, §24.238	≤ -13 dBm/1 MHz.	Appendix G	Pass
Frequency Stability	§2.1055, §24.235	FCC: within authorized frequency block.	Appendix H	Pass
NOTE 1: For the verdict, the “N/A” denotes “not applicable”, the “N/T” denotes “not tested”.				

2.3 AWS Band (1710-1755 MHz paired with 2110-2155 MHz)

Test Item	FCC Rule No.	Requirements	Test Result	Verdict
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(d)	EIRP ≤ 1 W;	Appendix A	Pass
Peak-Average Ratio	§2.1046, §27.50(d)	Limit≤13 dB	Appendix B	Pass
Modulation Characteristics	§2.1047	Digital modulation	Appendix C	Pass
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Appendix D	Pass
Band Edges Compliance	§2.1051, §27.53(h)	≤ -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block.	Appendix E	Pass
Spurious Emission at Antenna Terminals	§2.1051, §27.53(h)	≤ -13 dBm/1 MHz, from 9 kHz to 10th harmonics but outside authorized operating frequency ranges.	Appendix F	Pass
Frequency Stability	§2.1055, §27.54	Within authorized bands of operation/frequency block.	Appendix G	Pass
Radiated spurious emission	§2.1053, §27.53(h)	≤ -13 dBm/1 MHz.	Appendix H	Pass

3 Description of the Equipment under Test (EUT)

3.1 General Description

SKY 4.5D is subscriber equipment in the WCDMA/GSM system. The HSPA/UMTS frequency band is Band II, Band IV, and Band V, The GSM/GPRS/EDGE(EDGE downlink only) frequency band includes GSM850 and GSM900 and DCS1800 and PCS1900, but only Band IV and Band II and Band V and GSM850 and PCS1900 bands test data included in this report. The Mobile Phone implements such functions as RF signal receiving/transmitting, HSPA/UMTS and GSM/GPRS/EDGE protocol processing, voice, video MMS service, GPS, AGPS and WIFI etc. Externally it provides micro SD card interface, earphone port(to provide voice service) and SIM card interface. It also provides Bluetooth module to synchronize data between a PC and the phone, or to use the built-in modem of the phone to access the Internet with a PC, or to exchange data with other Bluetooth devices.

3.2 EUT Identity

IMEI No.	
SIM 1	868817019960135
SIM 2	868817019960093

NOTE: Unless otherwise noted in the report, the functional boards installed in the units shall be selected from the below list, but not means all the functional boards listed below shall be installed in one unit.

3.3 Technical Specification

Characteristics	Description	
Radio System Type	☒ GSM ☒ UMTS	
Supported Frequency Range	GSM850/ WCDMA850	Transmission (TX): 824 to 849 MHz
		Receiving (RX): 869 to 894 MHz
	GSM1900/ WCDMA1900	Transmission (TX): 1850 to 1910 MHz
		Receiving (RX): 1930 to 1990 MHz
	WCDMA1700	Transmission (TX): 1710 to 1755 MHz
		Receiving (RX): 2110 to 2155 MHz
TX and RX Antenna Ports	TX & RX port:	1
	TX-only port:	0
	RX-only port:	1
Target TX Output Power	GSM850: 32.40dBm UMTS 850: 22.71dBm GSM1900: 29.40dBm UMTS 1900: 22.22dBm UMTS1700: 22.25dBm	
Supported Channel Bandwidth	GSM system:	200 kHz
	UMTS system:	5 MHz
Designation of Emissions (Note: the necessary bandwidth of which is the worst value from the measured occupied bandwidths for each type of channel bandwidth configuration.)	GSM850:	250KGXW
	GSM1900:	247KGXW
	UMTS 850:	4M18F9W
	UMTS 1900:	4M20F9W
	UMTS1700:	4M18F9W

4 General Test Conditions / Configurations

4.1 Test Modes

NOTE: The test mode(s) are selected according to relevant radio technology specifications.

Test Mode	Test Modes Description
GSM/TM1	GSM system, GSM/GPRS, GMSK modulation
UMTS/TM1	WCDMA system, QPSK modulation
UMTS/TM2	HSDPA system, QPSK modulation
UMTS/TM3	HSUPA system, QPSK modulation

Note: This EUT owns two SIM cards, after we perform the pretest for these two SIM cards, we found the SIM 1 is the worst case, so its result is recorded in this report.

4.2 Test Environment

Environment Parameter	Selected Values During Tests	
Relative Humidity	Ambient	
Temperature	TN	Ambient
Voltage	VL	3.5V
	VN	3.7V
	VH	4.2V

NOTE: VL= lower extreme test voltage
VN= nominal voltage
VH= upper extreme test voltage
TN= normal temperature

4.3 Test Frequency

Test Mode	TX / RX	RF Channel		
		Low (L)	Middle (M)	High (H)
GSM850	TX	Channel 128	Channel 190	Channel 251
		824.2MHz	836.6MHz	848.8MHz
	RX	Channel 128	Channel 190	Channel 251
		869.2MHz	881.6MHz	893.8MHz
Test Mode	TX / RX	RF Channel		
		Low (L)	Middle (M)	High (H)
GSM1900	TX	Channel 512	Channel 661	Channel 810
		1850.2MHz	1880.0MHz	1909.8MHz
	RX	Channel 512	Channel 661	Channel 810
		1930.2 MHz	1960.0 MHz	1989.8 MHz
Test Mode	TX / RX	RF Channel		
		Low (L)	Middle (M)	High (H)
WCDMA850	TX	Channel 4132	Channel 4182	Channel 4233
		826.4MHz	836.4MHz	846.6MHz
	RX	Channel 4357	Channel 4407	Channel 4458
		871.4MHz	881.4MHz	891.6MHz
Test Mode	TX / RX	RF Channel		
		Low (L)	Middle (M)	High (H)
WCDMA1900	TX	Channel 9262	Channel9400	Channel9538
		1852.4MHz	1880.0MHz	1907.6MHz
		Channel 9662	Channel 9800	Channel 9938

	RX	1932.4 MHz	1960.0 MHz	1987.6 MHz
Test Mode	TX / RX	RF Channel		
		Low (L)	Middle (M)	High (H)
WCDMA1700	TX	Channel1312	Channel1413	Channel1513
		1712.4MHz	1732.6MHz	1752.6MHz
	RX	Channel 1537	Channel 1638	Channel 1738
		2112.4 MHz	2132.6 MHz	2152.6 MHz

4.4 DESCRIPTION OF TESTS

4.4.1 Radiated Power and Radiated Spurious Emissions

Radiated spurious emissions are investigated indoors in a semi-anechoic chamber to determine the frequencies producing the worst case emissions. Final measurements for radiated power and radiated spurious emissions are performed on the 3 meter OATS per the guidelines of ANSI/TIA-603-C-2004. The equipment under test was transmitting while connected to its integral antenna and is placed on a wooden turntable 80cm above the ground plane and 3 meters from the receive antenna. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. The receive antenna height is adjusted between 1 and 4 meter height, the turntable is rotated through 360 degrees, and the EUT is manipulated through all orthogonal planes representative of its typical use to achieve the highest reading on the receive spectrum analyzer. Emissions are also investigated with the receive antenna horizontally and vertically polarized.

A portable or small unlicensed wireless device shall be placed on a non-metallic test fixture or other non-metallic support during testing. The supporting fixture shall permit orientation of the EUT in each of three orthogonal (x, y, z) axis positions such that emissions from the EUT are maximized. Measure the EUT maximum RF power and record the result.

A half-wave dipole is then substituted in place of the EUT. For emissions above 1GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive spectrum analyzer level previously recorded from the spurious emission from the EUT. The power of the emission is calculated using the following formula:

$$P_{d\,[dBm]} = P_{g\,[dBm]} - \text{cable loss}_{\,[dB]} + \text{antenna gain}_{\,[dBd/dBi]}$$

Where, P_d is the dipole equivalent power, P_g is the generator output into the substitution antenna, and the antenna gain is the gain of the substitute antenna used relative to either a half-wave dipole (dBd) or an isotropic source (dBi). The substitute level is equal to Pg [dBm] – cable loss [dB].

The calculated Pd levels are then compared to the absolute spurious emission limit of -13dBm which is equivalent to the required minimum attenuation of $43 + 10\log_{10}(\text{Power}_{[\text{Watts}]})$.

Note: Reference test setup 3

4.4.2 Occupied Bandwidth

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts. The resolution bandwidth shall be set to as close to 1 percent of the selected span as is possible without being below 1 percent. The video bandwidth shall be set to 3 times the resolution bandwidth. Video averaging is not permitted. Where practical, a sampling detector shall be used since a peak or, peak hold, may produce a wider bandwidth than actual. The trace data points are recovered and are directly summed in linear terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 percent of the total is reached and that frequency recorded. The process is repeated for the highest frequency data points. This frequency is recorded. The span between the two recorded frequencies is the occupied bandwidth.
Note: Reference test setup 1.

4.4.3 Spurious and Harmonic Emissions at Antenna Terminal

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10^{th} harmonic. On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log(P) dB. Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.
Note: Reference test setup 1.

4.4.4 Peak-Average Ratio

A peak to average ratio measurement is performed at the conducted port of the EUT. For WCDMA signals, the spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level. For GSM signals, an average and a peak trace are used on a spectrum analyzer to determine the largest deviation between the average and the peak power of the EUT in a bandwidth greater than the emission bandwidth. The traces are generated with the spectrum analyzer set to zero span mode.
Note: Reference test setup 1.

4.4.5 Frequency Stability / Temperature Variation

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-C-2004. The frequency stability of the transmitter is measured by:

a.) **Temperature:** The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.

b.) **Primary Supply Voltage:** The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

Specification – The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5 ppm) of the center frequency.

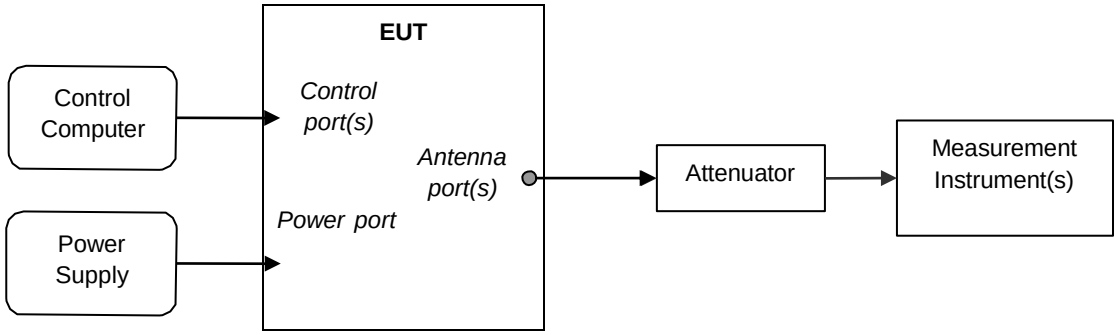
Time Period and Procedure:

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a "standby" condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

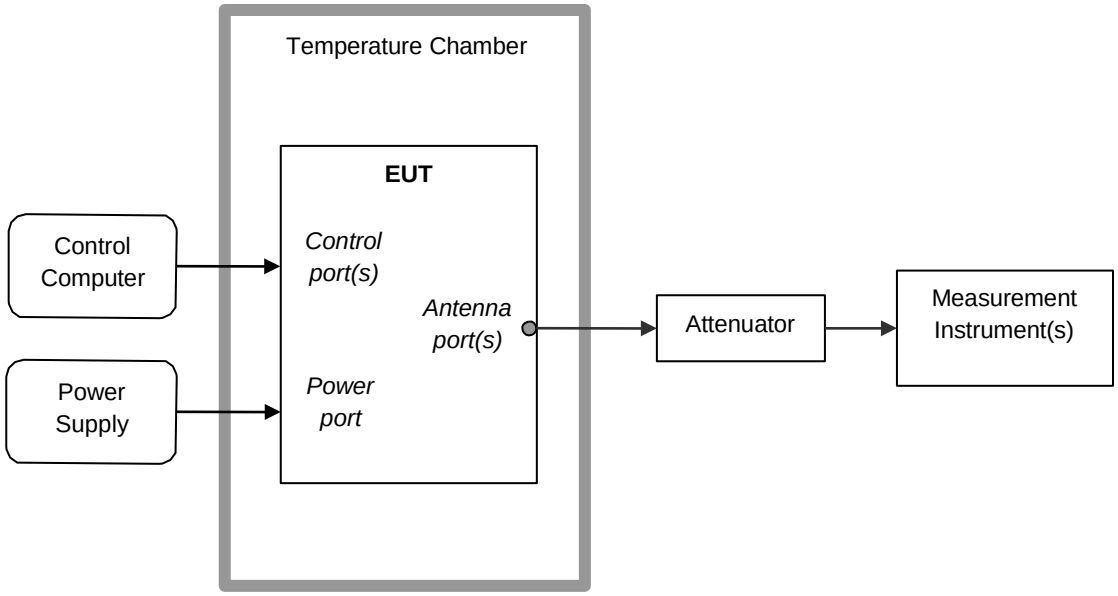
Note: Reference test setup 2.

4.5 Test Setups

4.5.1 Test Setup 1



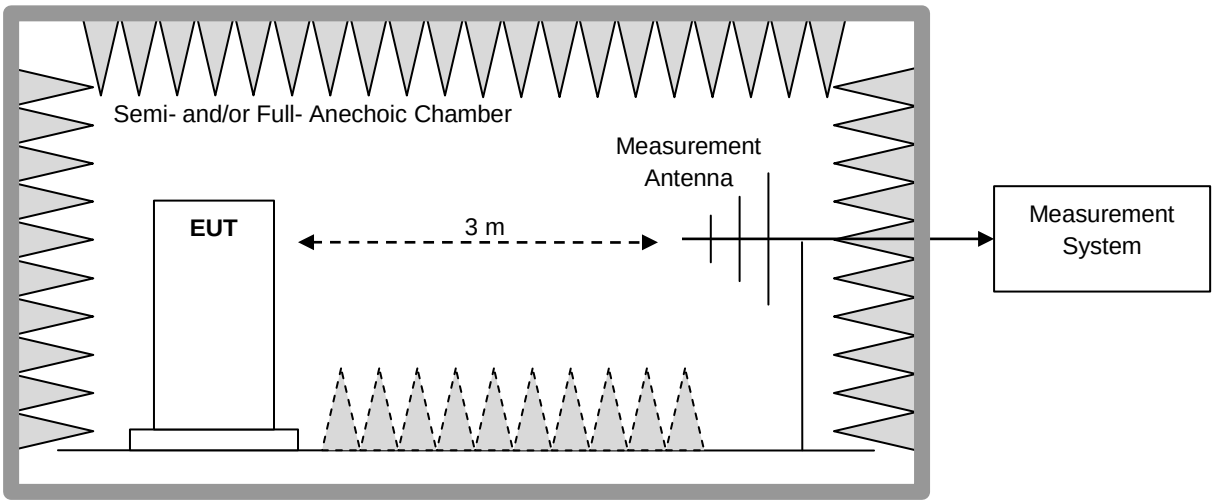
4.5.2 Test Setup 2



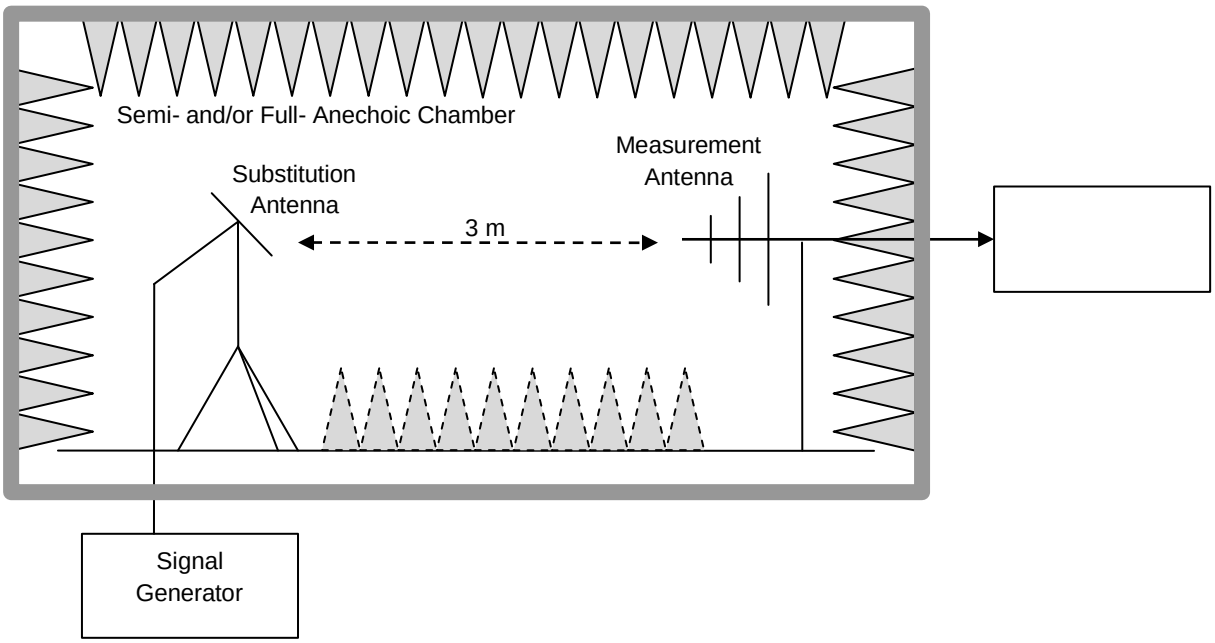
4.5.3 Test Setup 3

NOTE: Effective radiated power (ERP) refers to the radiation power output of the EUT, assuming all emissions are radiated from half-wave dipole antennas.

4.5.3.1 Step 1: Pre-test



4.5.3.2 Step 2: Substitution method to verify the maximum ERP



4.6 Test Conditions

Test Case		Test Conditions	
Transmit Output Power Data	Average Power, Total	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)
		Test Mode	GSM/TM1,UMTS/TM1
	Average Power, Spectral Density (if required)	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)
		Test Mode	GSM/TM1,UMTS/TM1
Peak-to-Average Ratio (if required)		Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)
		Test Mode	GSM/TM1,UMTS/TM1
Modulation Characteristics		Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		RF Channels (TX)	M (L= low channel, M= middle channel, H= high channel)
		Test Mode	GSM/TM1,UMTS/TM1
Bandwidth	Occupied Bandwidth	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)
		Test Mode	GSM/TM1,UMTS/TM1
	Emission Bandwidth (if required)	Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)
		Test Mode	GSM/TM1,UMTS/TM1
Band Edges Compliance		Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1
		RF Channels (TX)	L, H (L= low channel, M= middle channel, H= high channel)
		Test Mode	GSM/TM1,UMTS/TM1
Spurious Emission at Antenna		Test Env.	Ambient Climate & Rated Voltage
		Test Setup	Test Seup 1

Terminals	RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)
Test Case	Test Conditions	
	Test Mode	GSM/TM1,UMTS/TM1
Field Strength of Spurious Radiation	Test Env.	Ambient Climate & Rated Voltage
	Test Setup	Test Seup 3
	Test Mode	GSM/TM1,UMTS/TM1/TM2/TM3
	RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)
Frequency Stability	Test Env.	(1) -30 °C to +50 °C with step 10 °C at Rated Voltage; (2) VL, VN and VH of Rated Voltage at Ambient Climate.
	Test Setup	Test Seup 2
	RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)
	Test Mode	GSM/TM1,UMTS/TM1

5 Main Test Instruments

Equipment Name	Manufacturer	Model	Serial Number	Cal Date	Cal Period
Universal Radio Communication Tester	R & S	CMU200	109369	08/07/2013	1 year
Wideband Radio Communication Test	R & S	CMW500	103168	11/05/2013	1 year
Single Channel PK Power Sensor	Agilent	N1911A	MY45101619	12/21/2013	1 year
Wideband Power Meter	Agilent	N1921A	MY45241957	12/21/2013	1 year
MXA Signal Analyzer	Agilent	N9020A	MY53420615	05/12/2014	1 year
RF Pre-selector	Agilent	N9039A	MY46520256	01/10/2014	1 year
Spectrum Analyzer	Agilent	E4446A	MY46180578	01/10/2014	1 year
Pre Amplifier	Agilent	8449B	3008A02237	02/21/2014	1 year
Pre Amplifier	Agilent	8447D	2944A10961	02/21/2014	1 year
Broadband Antenna (30MHz~1GHz)	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	9163-270	07/16/2014	1 year
Horn Antenna (1~18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	06/10/2014	1 year
Horn Antenna (18~40GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	06/13/2014	1 year
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/16/2014	1 year
Amplifier	Mini-Circuits	ZKL-1R5+	N/A	05/29/2014	1 year
Amplifier	Mini-Circuits	ZVA-213-S+	N/A	05/29/2014	1 year
RF Pre-selector	Agilent	N9039A	MY46520255	05/10/2014	1 year
Trilog-Broadband Antenna	SCHWARZBECK MESS-ELEKTRONIK	SB AC VULB	9168-419	05/16/2014	1 year
Double-Ridged Waveguide Horn	ETS-Lindgren	3117	00128055	08/09/2014	1 year
Signal Generator	Rohde & Schwarz	SML03	126085	05/11/2014	1 year

6 Measurement Uncertainty

For a 95% confidence level (k = 2), the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 as following:

Test Item		Extended Uncertainty
Transmit Output Power Data	Power [dBm]	U = 1.2 dB
Bandwidth	Magnitude [%]	U = 0.2%
Band Edge Compliance	Disturbance Power [dBm]	U = 1.2 dB
Spurious Emissions, Conducted	Disturbance Power [dBm]	U = 1.2 dB
Field Strength of Spurious Radiation	ERP [dBm]	For 3 m Chamber: U = 4.6 dB (30 MHz to 1GHz) U = 3.0 dB (above 1 GHz) For 10 m Chamber: U = 4.6 dB (30 MHz to 1GHz) U = 3.0 dB (above 1 GHz)
Frequency Stability	Frequency Accuracy [ppm]	U = 0.21 ppm

END

Appendix A: RF Power Output

Test Results

Conducted Power

Test Band	Test Mode	Test Channel	Measured(dBm)	Limit (dBm)	Verdict
GSM850	GSM/TM1	LCH	32.30	38.5	PASS
		MCH	32.30	38.5	PASS
		HCH	32.40	38.5	PASS

Test Band	Test Mode	Test Channel	Measured(dBm)	Limit (dBm)	Verdict
GSM1900	GSM/TM1	LCH	29.40	33	PASS
		MCH	29.30	33	PASS
		HCH	29.20	33	PASS

Test Band	Test Mode	Test Channel	Measured(dBm)	Limit (dBm)	Verdict
WCDMA850	UMTS/TM1	LCH	21.78	38.5	PASS
		MCH	22.71	38.5	PASS
		HCH	21.67	38.5	PASS

Test Band	Test Mode	Test Channel	Measured(dBm)	Limit (dBm)	Verdict
WCDMA1700	UMTS/TM1	LCH	21.55	33	PASS
		MCH	22.25	33	PASS
		HCH	21.45	33	PASS

Test Band	Test Mode	Test Channel	Measured(dBm)	Limit (dBm)	Verdict
WCDMA1900	UMTS/TM1	LCH	21.75	33	PASS
		MCH	22.07	33	PASS
		HCH	22.22	33	PASS

Radiated Power(ERP/EIRP)

Test Band	Test Mode	Test Channel	Antenna Pol.	Measured(dBm)	Limit (dBm)	Verdict
GSM850	GSM/TM1/MCH	LCH	H	27.92	38.5	PASS
			V	29.46	38.5	PASS
		MCH	H	27.88	38.5	PASS
			V	29.48	38.5	PASS
		HCH	H	27.95	38.5	PASS
			V	29.56	38.5	PASS

Test Band	Test Mode	Test Channel	Antenna Pol.	Measured(dBm)	Limit (dBm)	Verdict
GSM1900	GSM/TM1/LCH	LCH	H	26.88	33	PASS
			V	28.57	33	PASS
		MCH	H	26.86	33	PASS
			V	28.49	33	PASS
		HCH	H	26.89	33	PASS
			V	28.52	33	PASS

Test Band	Test Mode	Test Channel	Antenna Pol.	Measured(dBm)	Limit (dBm)	Verdict
WCDMA850	UMTS/TM1/MCH	LCH	H	15.81	38.5	PASS
			V	18.44	38.5	PASS
		MCH	H	15.75	38.5	PASS
			V	18.68	38.5	PASS
		HCH	H	16.12	38.5	PASS
			H	18.54	38.5	PASS

Test Band	Test Mode	Test Channel	Antenna Pol.	Measured(dBm)	Limit (dBm)	Verdict
WCDMA1700	UMTS/TM1/MCH	LCH	H	17.34	33	PASS
			V	19.26	33	PASS
		MCH	H	17.39	33	PASS
			V	19.51	33	PASS
		HCH	H	17.66	33	PASS
			H	19.87	33	PASS

Test Band	Test Mode	Test Channel	Antenna Pol.	Measured(dBm)	Limit (dBm)	Verdict
WCDMA1900	UMTS/TM1/HCH	LCH	H	18.85	33	PASS
			V	20.32	33	PASS
		MCH	H	18.77	33	PASS
			V	20.68	33	PASS
		HCH	H	18.62	33	PASS
			H	20.64	33	PASS

Appendix B:Peak-to-Average Ratio

Test Results

Test Band	Test Mode	Test Channel	Measured (dBm)	Limit (dBm)	Verdict
GSM1900	GSM/TM1	LCH	0.13	13	PASS
		MCH	0.13	13	PASS
		HCH	0.12	13	PASS

Test Band	Test Mode	Test Channel	Measured (dBm)	Limit (dBm)	Verdict
WCDMA1700	UMTS/TM1	LCH	2.88	13	PASS
		MCH	3.33	13	PASS
		HCH	3.13	13	PASS

Test Band	Test Mode	Test Channel	Measured (dBm)	Limit (dBm)	Verdict
WCDMA1900	UMTS/TM1	LCH	3.08	13	PASS
		MCH	3.07	13	PASS
		HCH	2.34	13	PASS

Appendix C:Modulation Characteristics

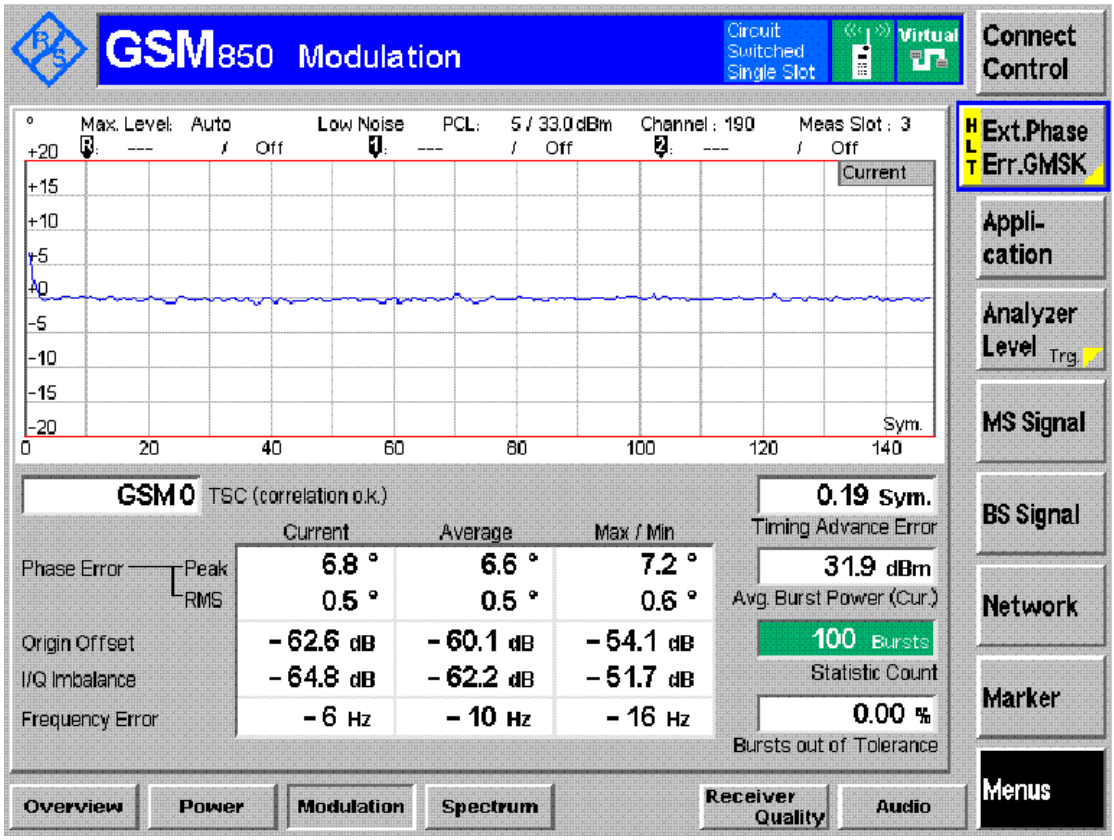
Test Results

For GSM

Test Band=GSM850

Test Mode=GSM/TM1

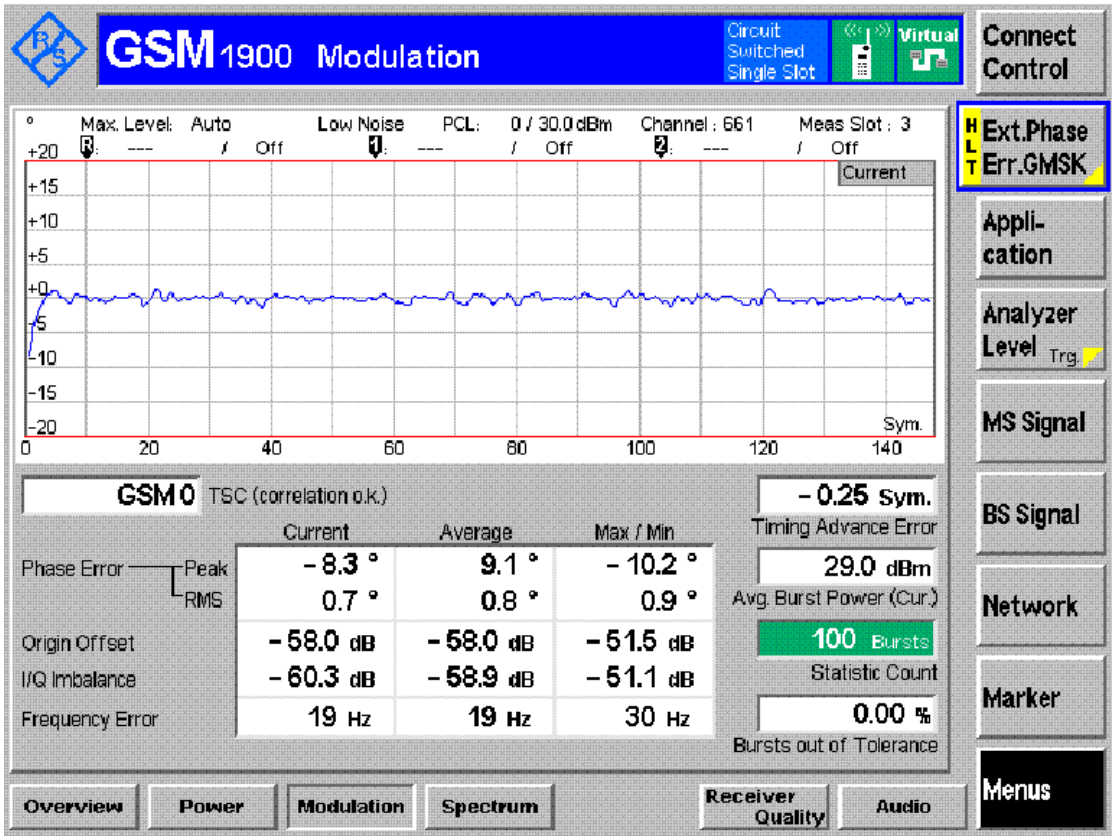
Test Channel=MCH



Test Band=GSM1900

Test Mode=GSM/TM1

Test Channel=MCH

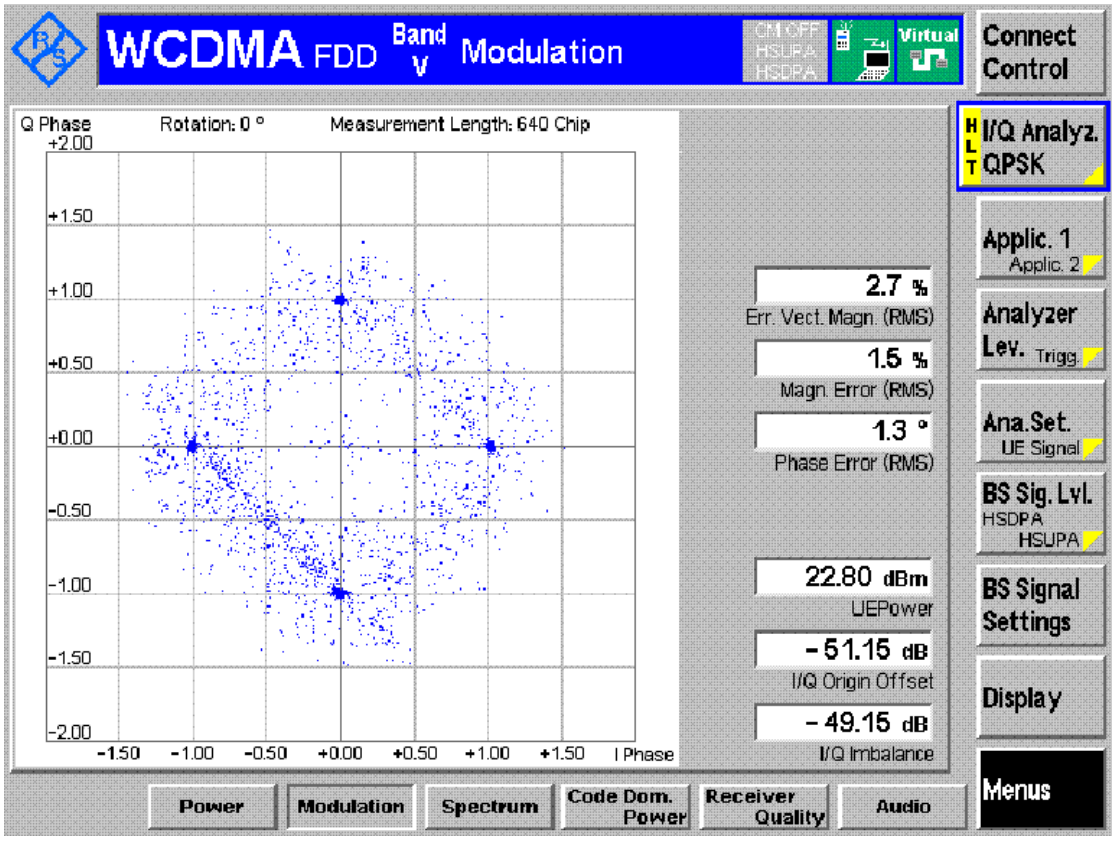


For WCDMA

Test Band=WCDMA850

Test Mode=UMTS/TM1

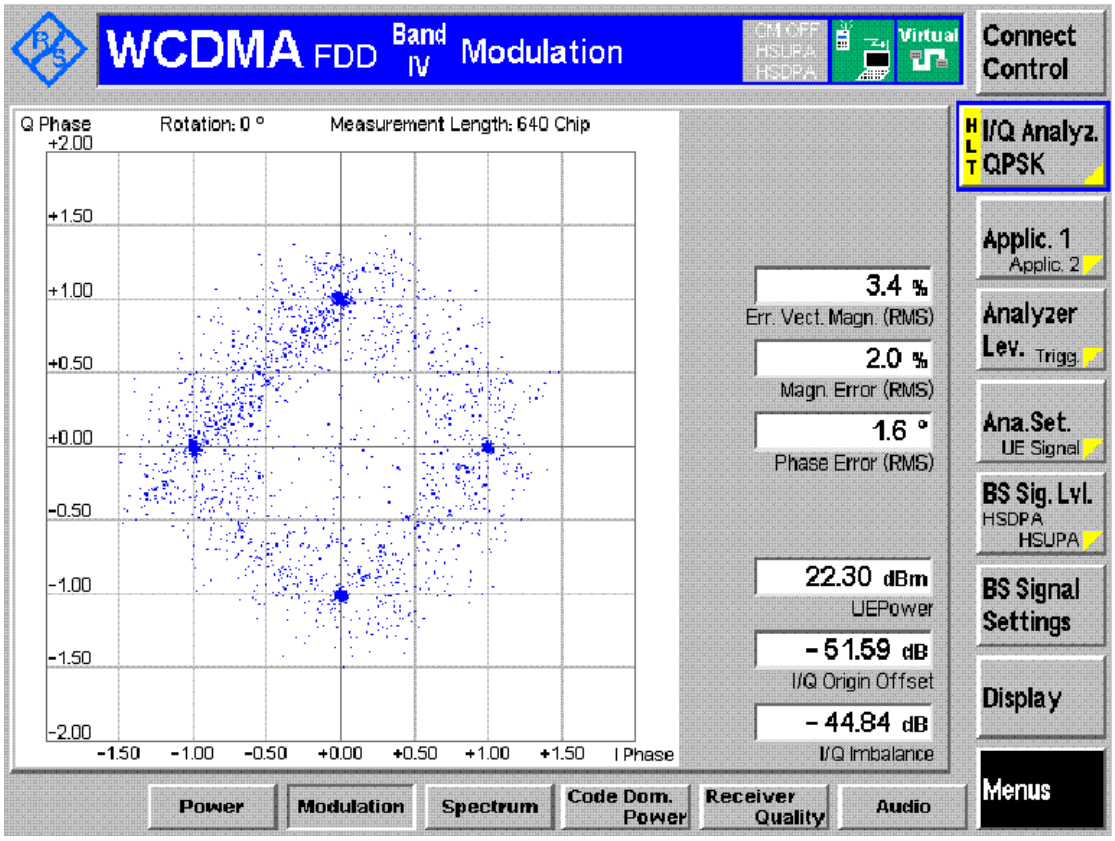
Test Channel=MCH



Test Band=WCDMA1700

Test Mode=UMTS/TM1

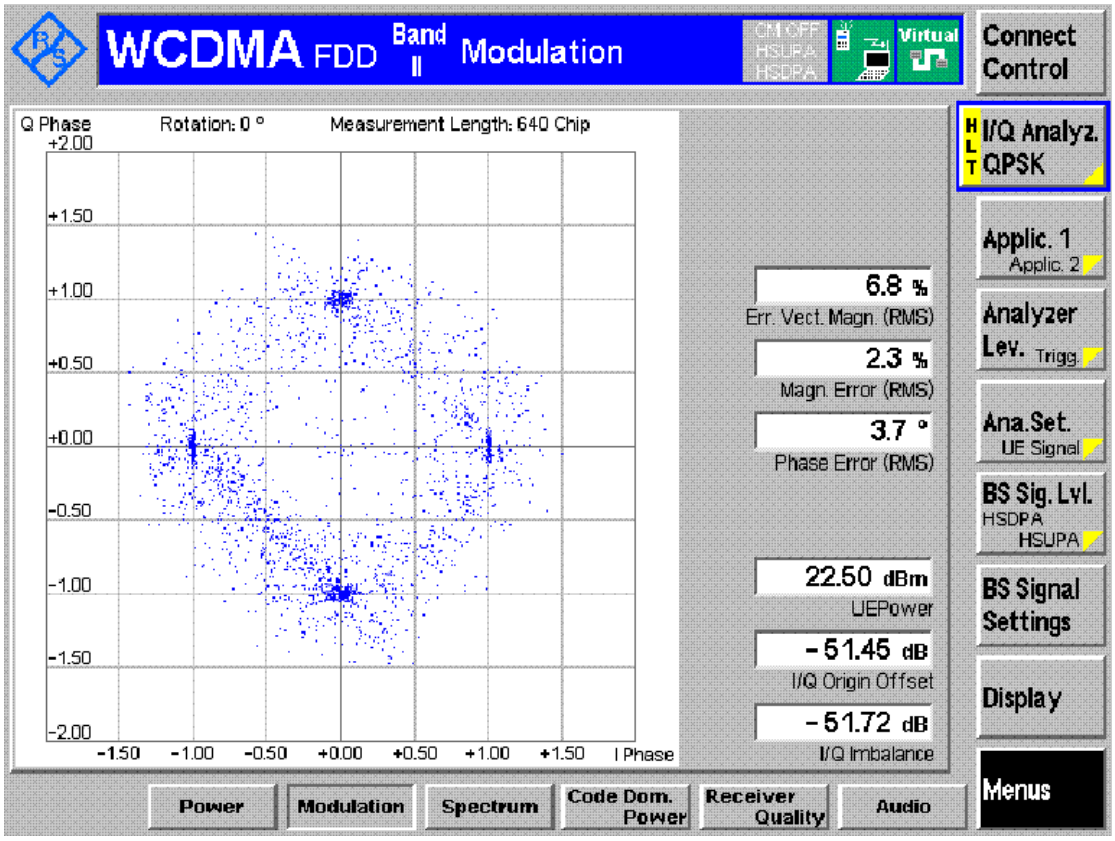
Test Channel=MCH



Test Band=WCDMA1900

Test Mode=UMTS/TM1

Test Channel=MCH



Appendix D:BandWidth

Test Results

Test Band	Test Mode	Test Channel	Occupied Bandwidth (KHZ)	Emission Bandwidth (KHZ)	Verdict
GSM850	GSM/TM1	LCH	245.00	315.6	PASS
		MCH	249.56	314.8	PASS
		HCH	245.93	317.0	PASS

Test Band	Test Mode	Test Channel	Occupied Bandwidth (KHZ)	Emission Bandwidth (KHZ)	Verdict
GSM1900	GSM/TM1	LCH	245.90	315.4	PASS
		MCH	246.87	316.6	PASS
		HCH	245.57	314.8	PASS

Test Band	Test Mode	Test Channel	Occupied Bandwidth (KHZ)	Emission Bandwidth (KHZ)	Verdict
WCDMA850	UMTS/TM1	LCH	4174.7	4701	PASS
		MCH	4176.6	4690	PASS
		HCH	4172.1	4683	PASS

Test Band	Test Mode	Test Channel	Occupied Bandwidth (KHZ)	Emission Bandwidth (KHZ)	Verdict
WCDMA1700	UMTS/TM1	LCH	4178.2	4721	PASS
		MCH	4171.5	4696	PASS
		HCH	4171.6	4697	PASS

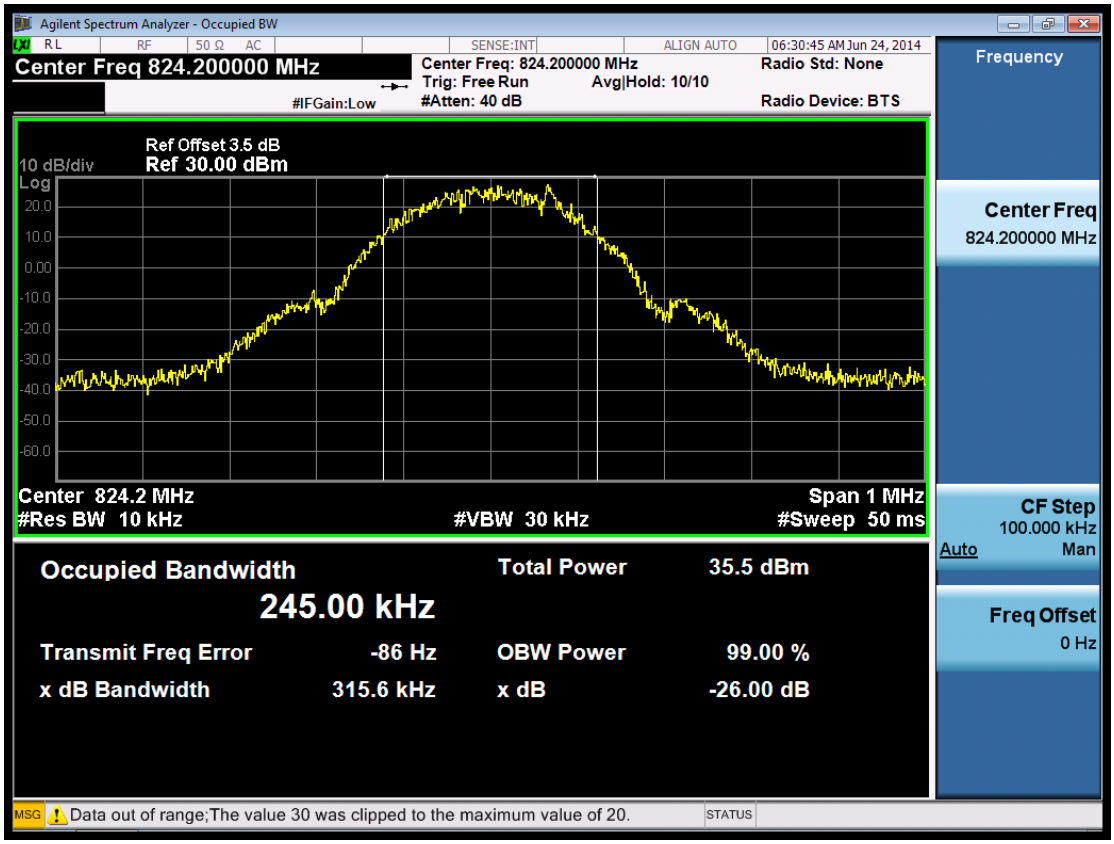
Test Band	Test Mode	Test Channel	Occupied Bandwidth (KHZ)	Emission Bandwidth (KHZ)	Verdict
WCDMA1900	UMTS/TM1	LCH	4174.4	4714	PASS
		MCH	4173.0	4705	PASS
		HCH	4196.2	4740	PASS

For GSM

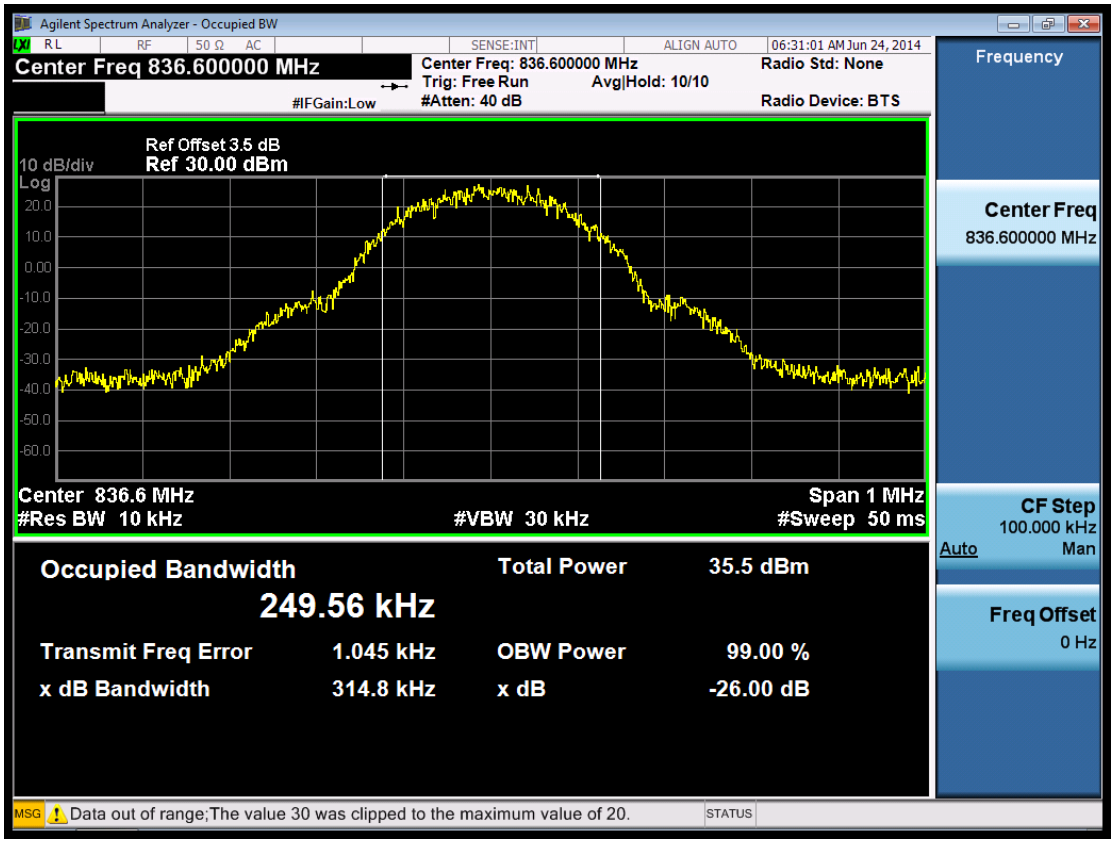
Test Band=GSM850

Test Mode=GSM/TM1

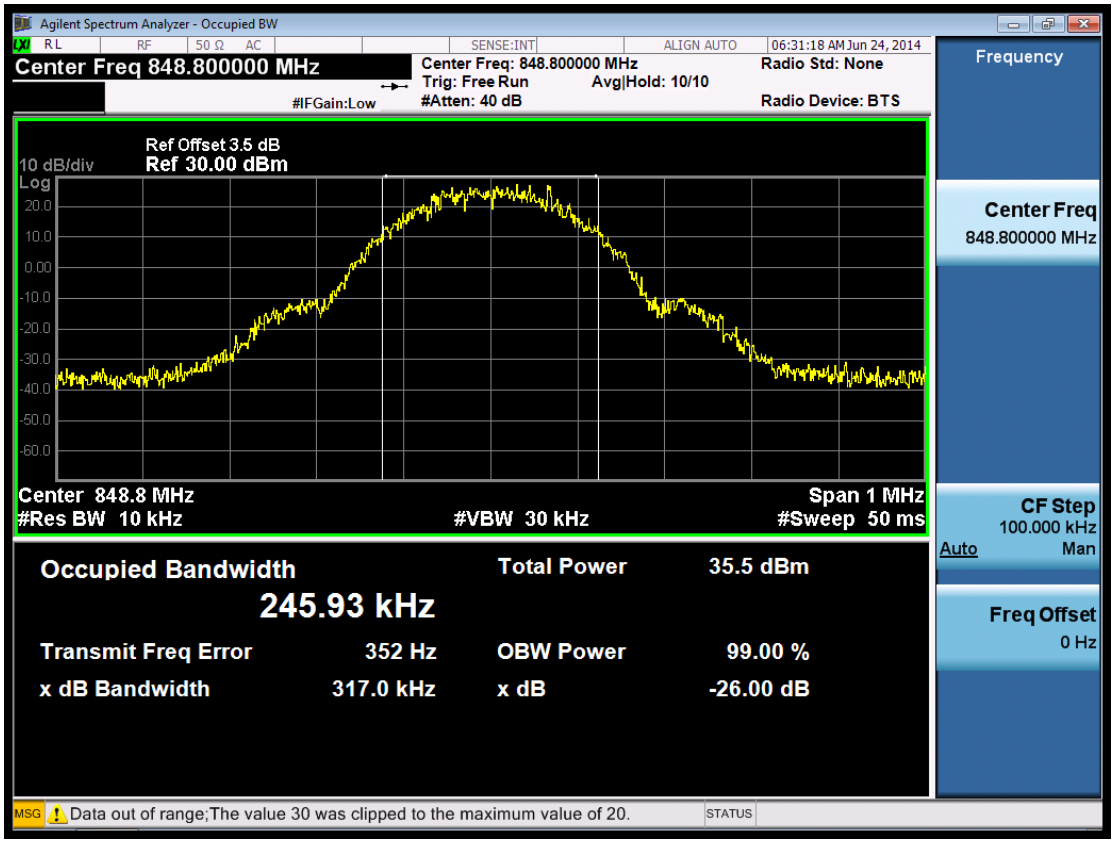
Test Channel=LCH



Test Channel=MCH



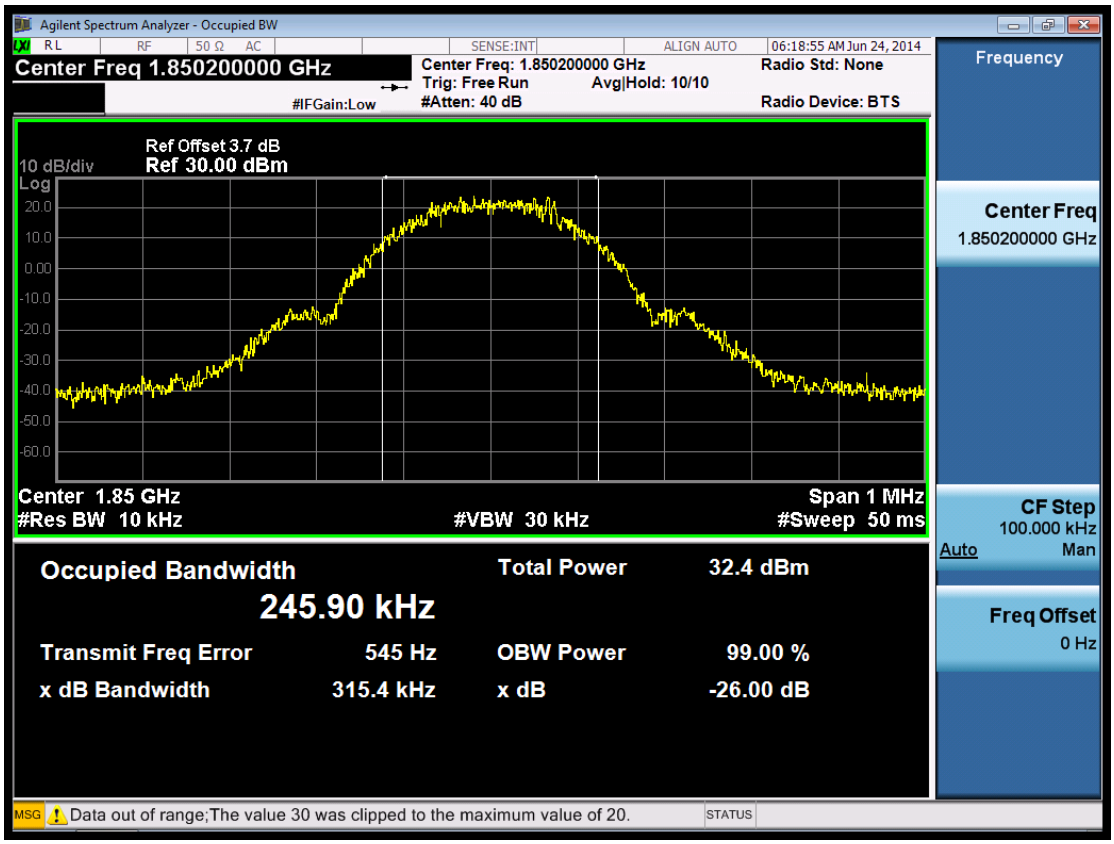
Test Channel=HCH



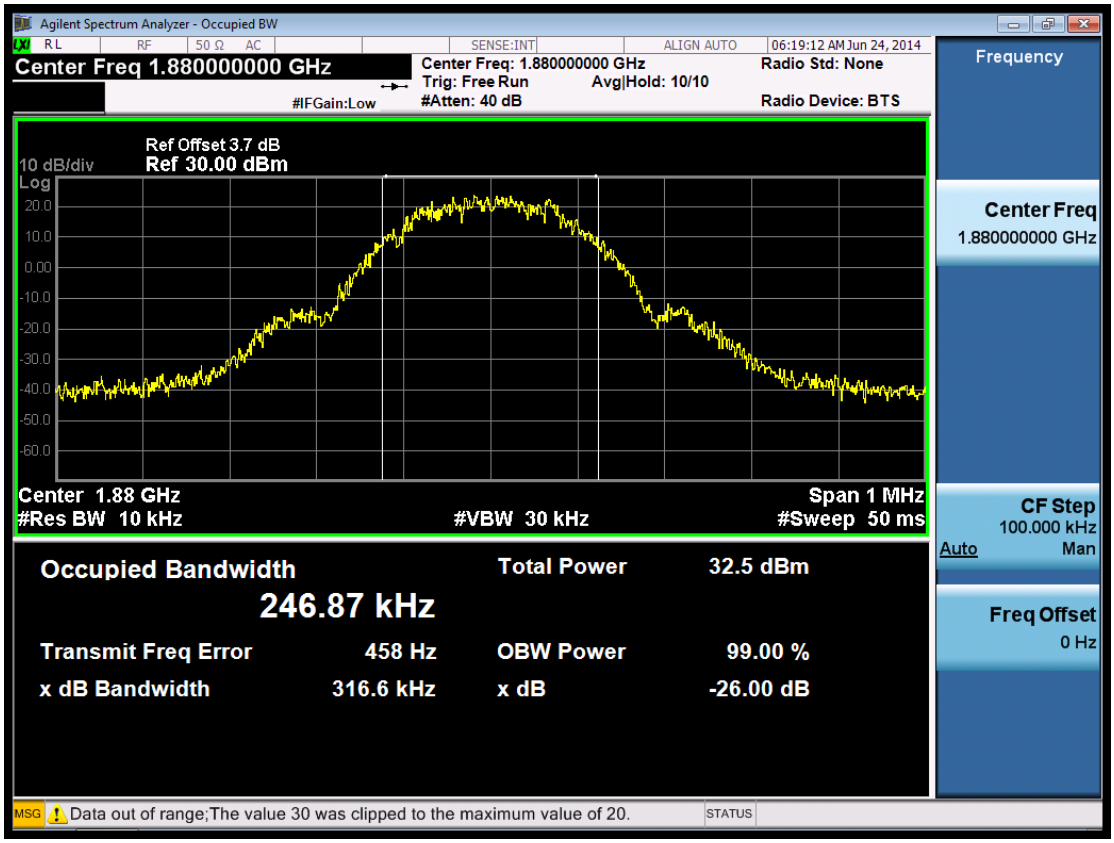
Test Band=GSM1900

Test Mode=GSM/TM1

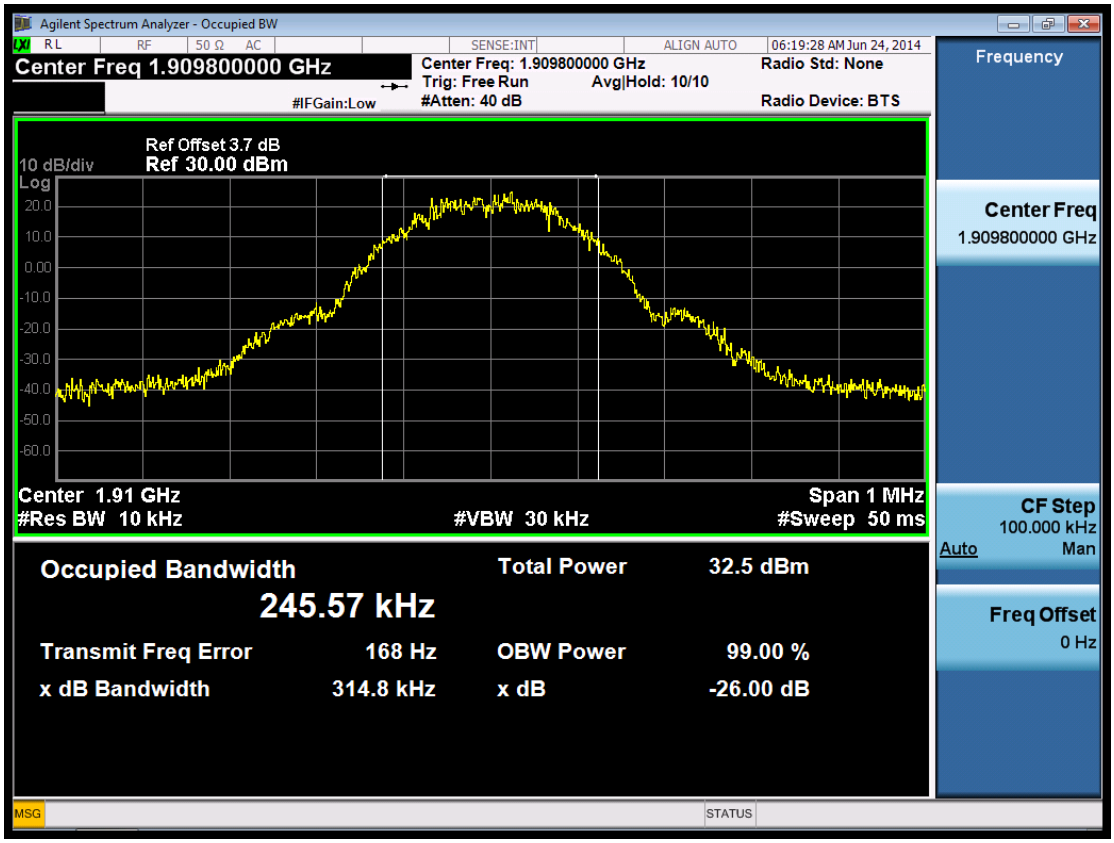
Test Channel=LCH



Test Channel=MCH



Test Channel=HCH

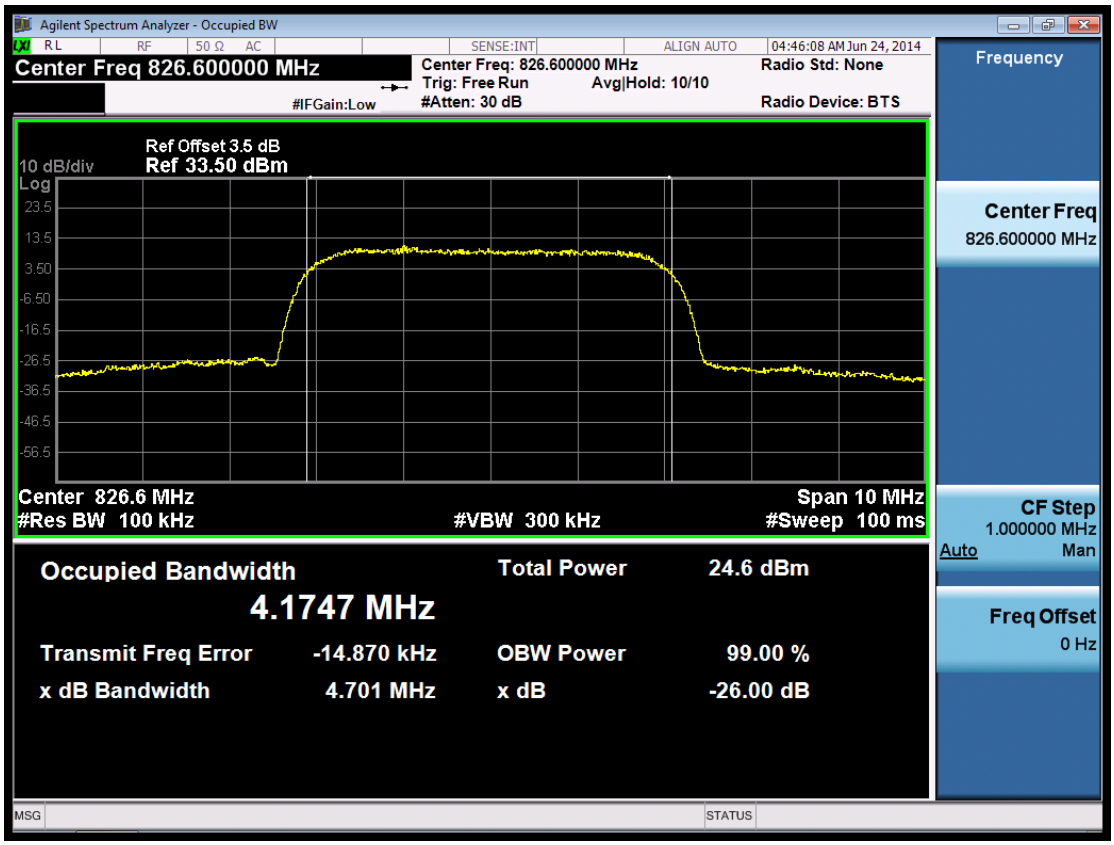


For WCDMA

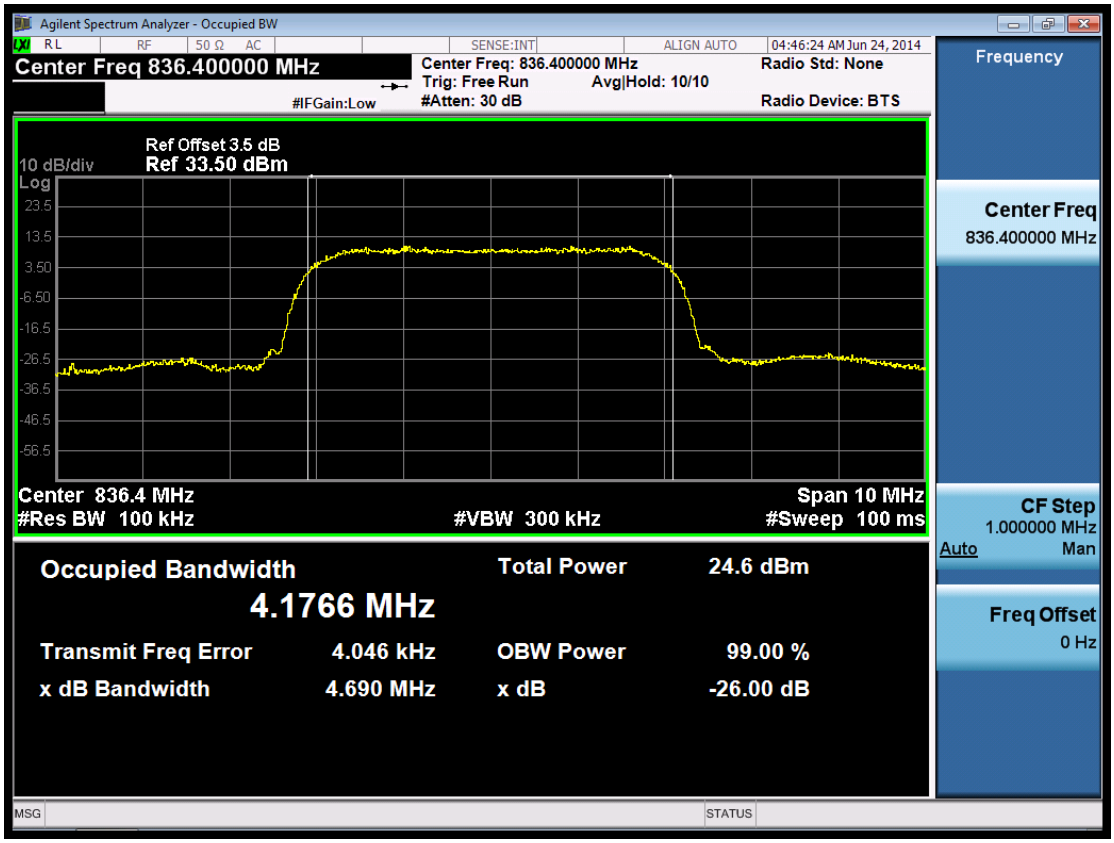
Test Band=WCDMA850

Test Mode=UMTS/TM1

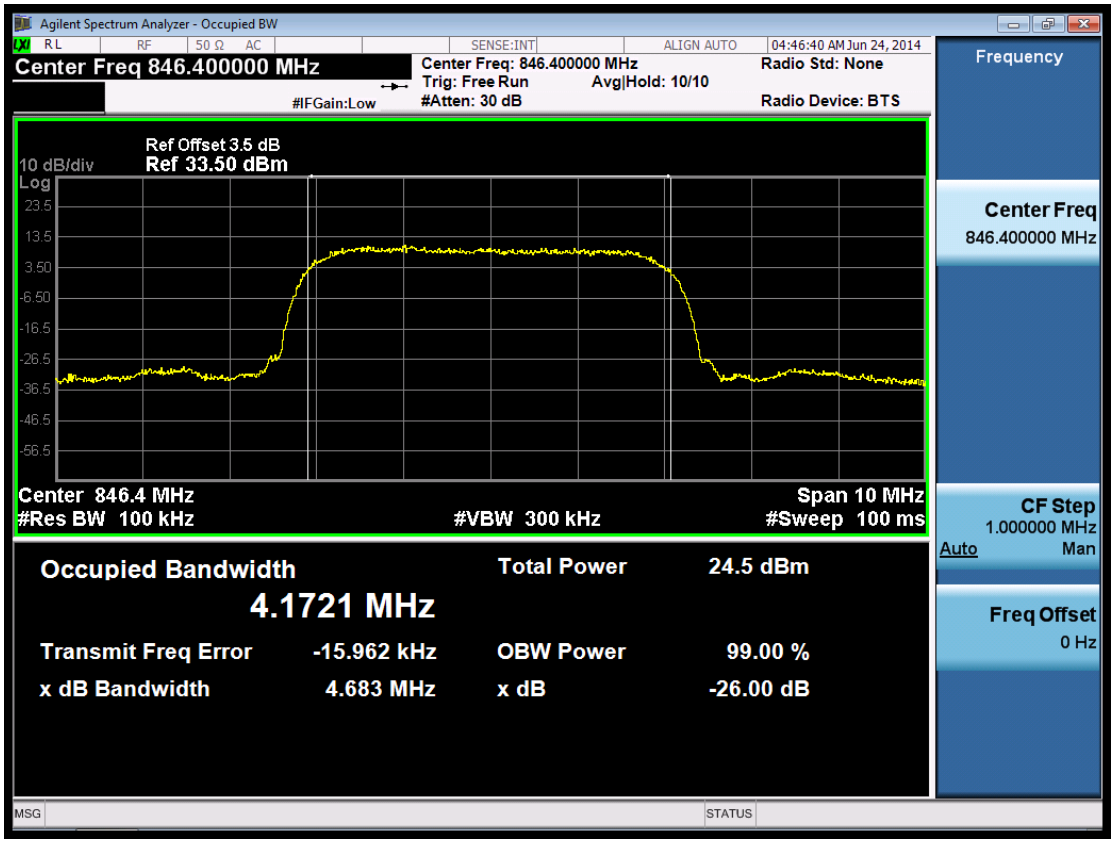
Test Channel=LCH



Test Channel=MCH



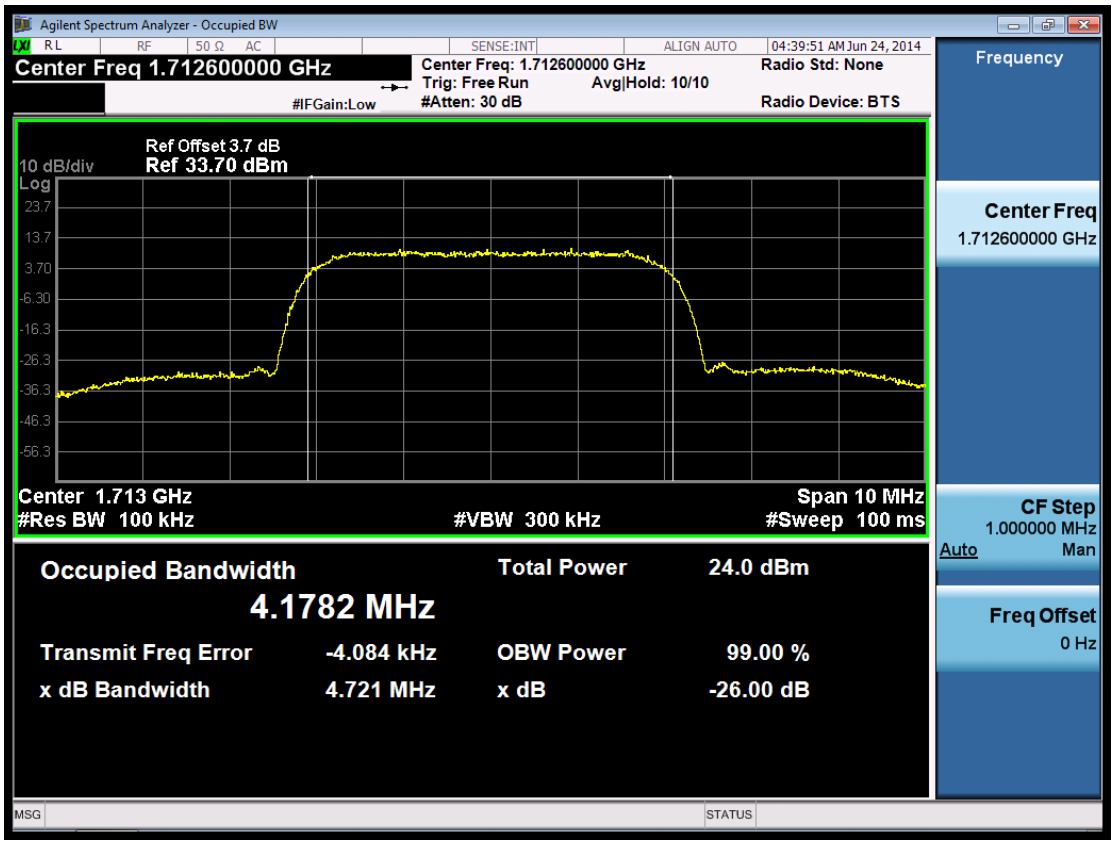
Test Channel=HCH



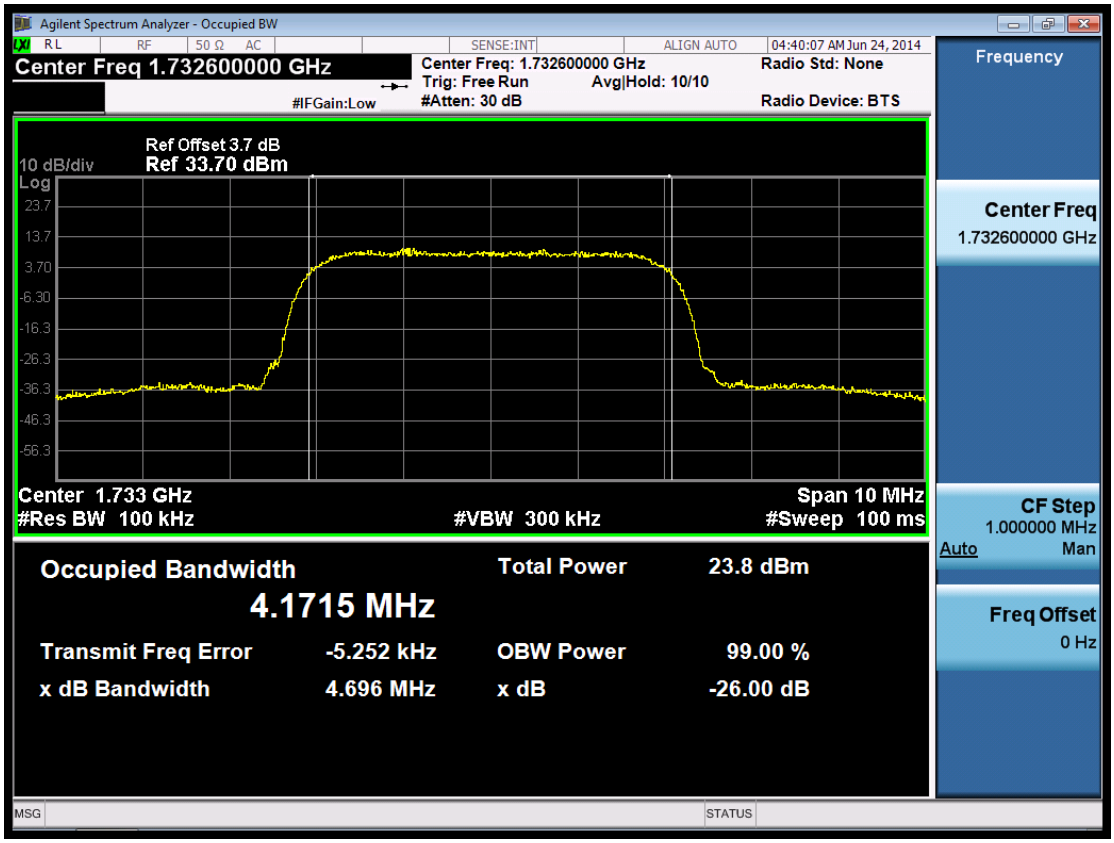
Test Band=WCDMA1700

Test Mode=UMTS/TM1

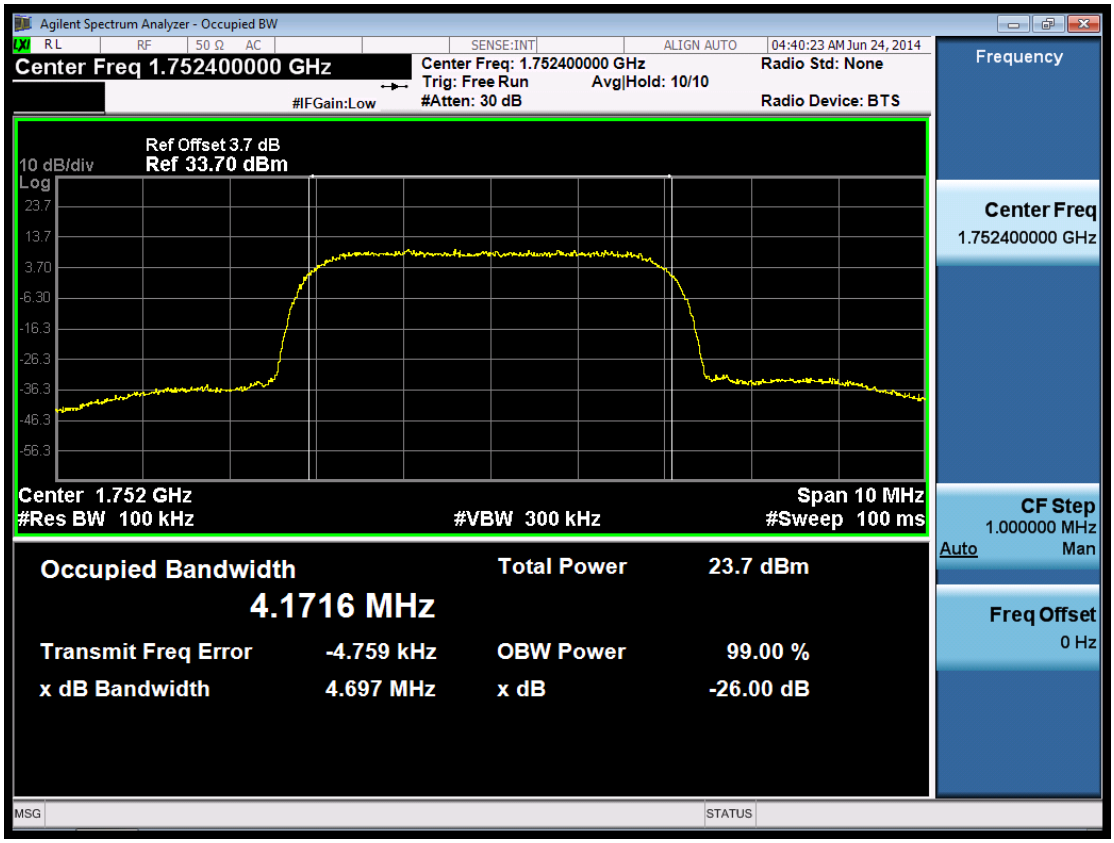
Test Channel=LCH



Test Channel=MCH



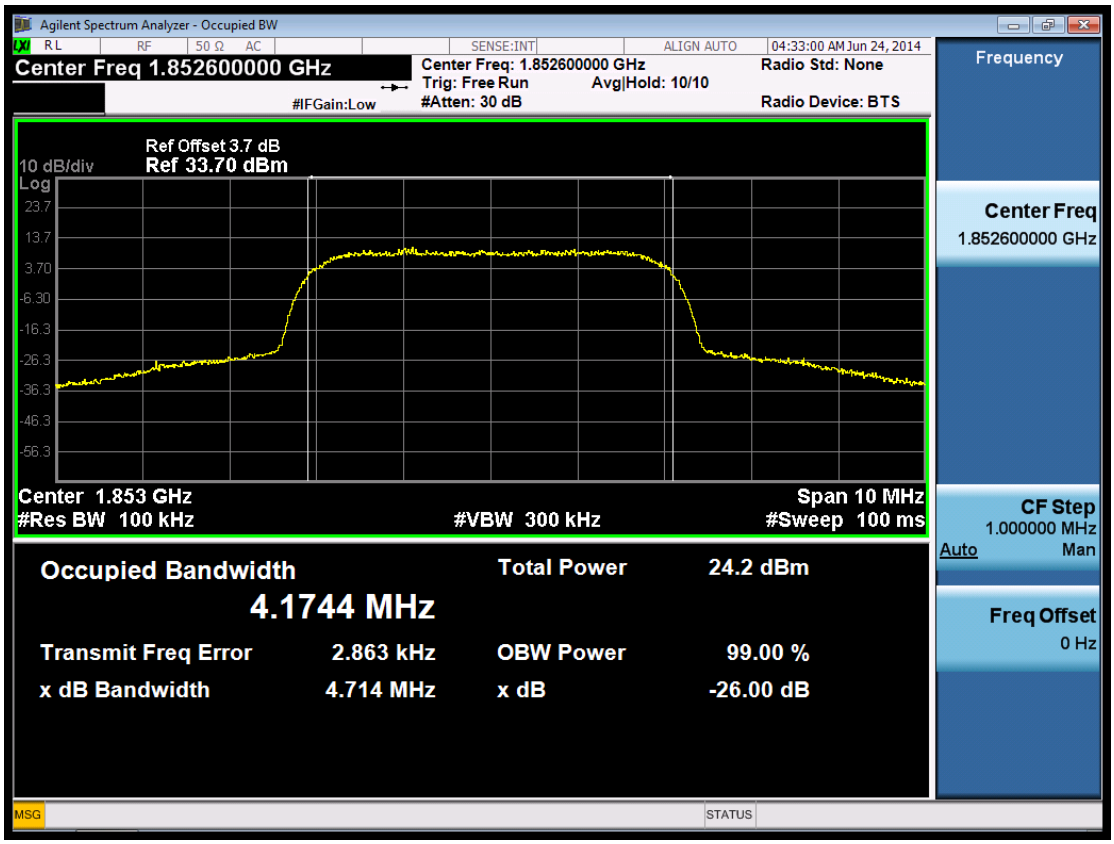
Test Channel=HCH



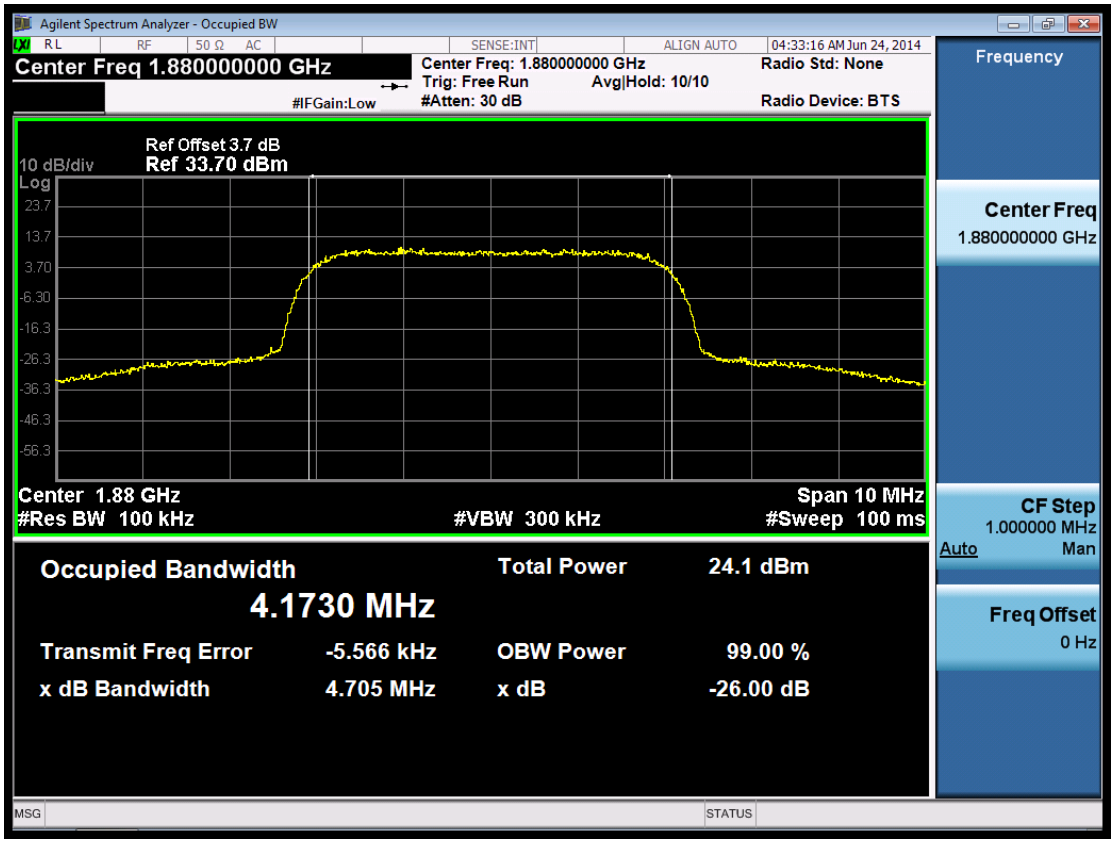
Test Band=WCDMA1900

Test Mode=UMTS/TM1

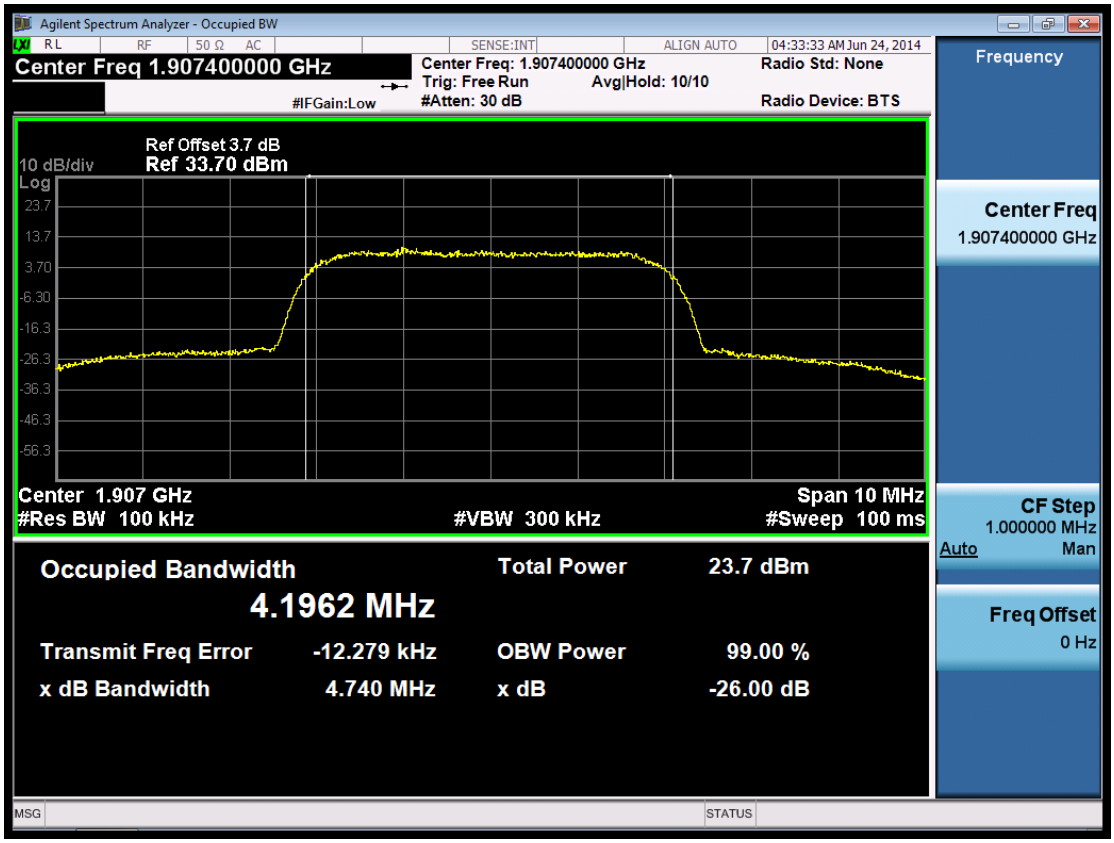
Test Channel=LCH



Test Channel=MCH



Test Channel=HCH



Appendix E:Band Edges Compliance

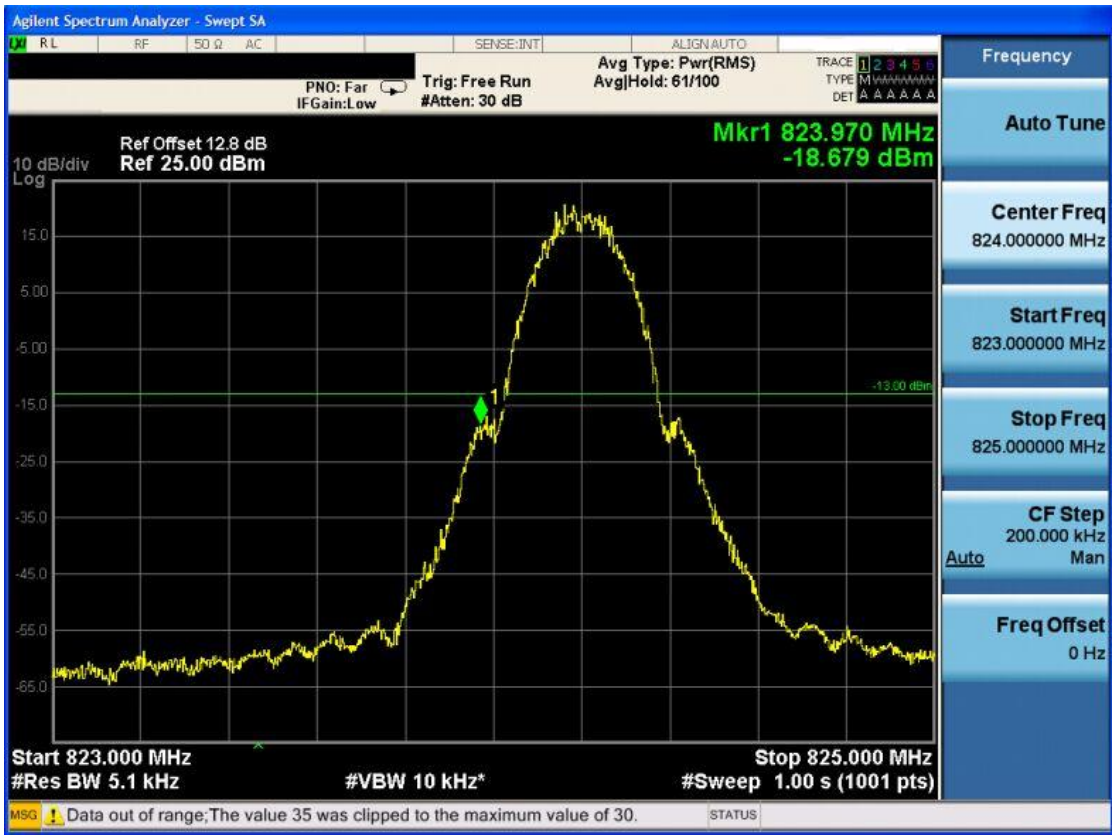
Test Results

For GSM

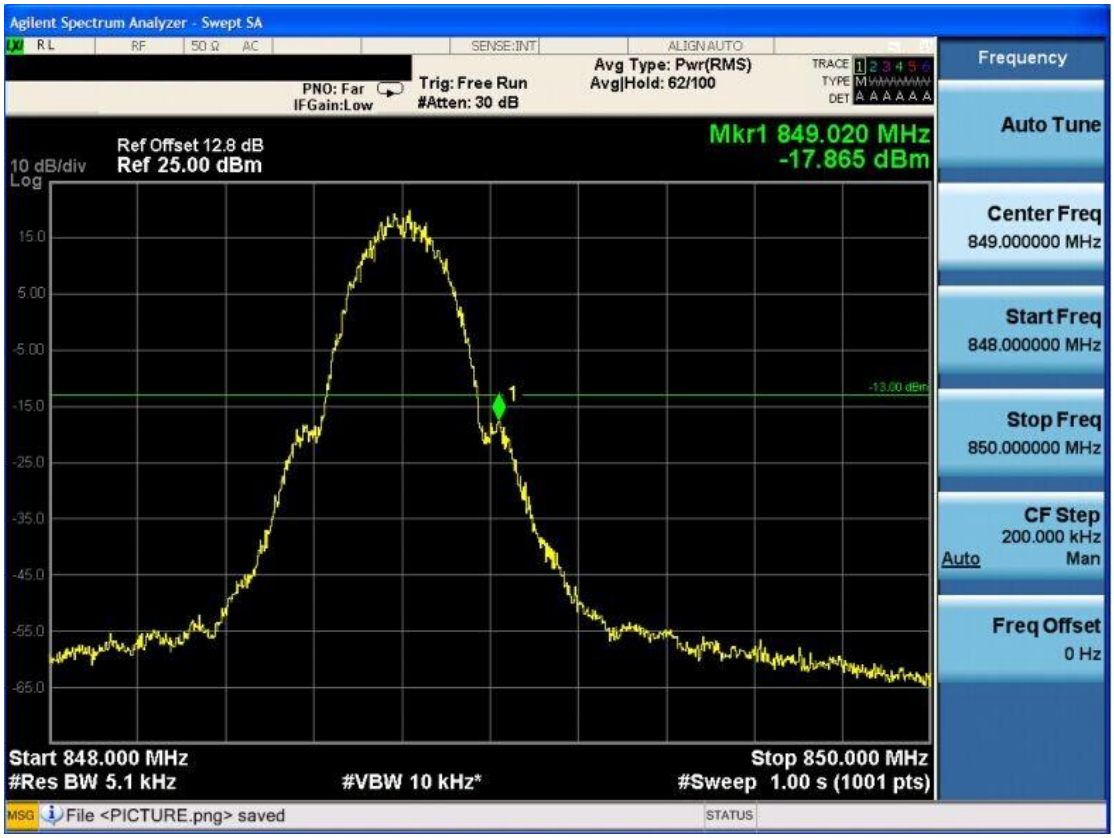
Test Band=GSM850

Test Mode=GSM/TM1

Test Channel=LCH



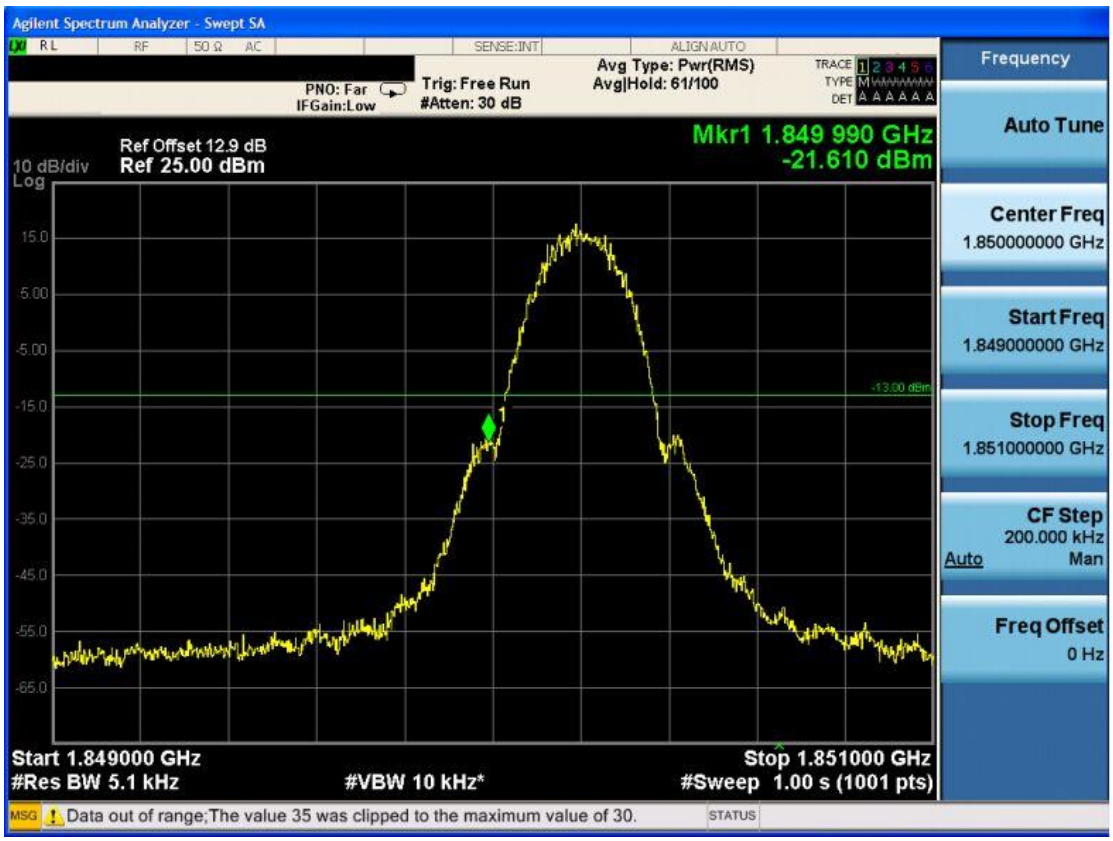
Test Channel=HCH



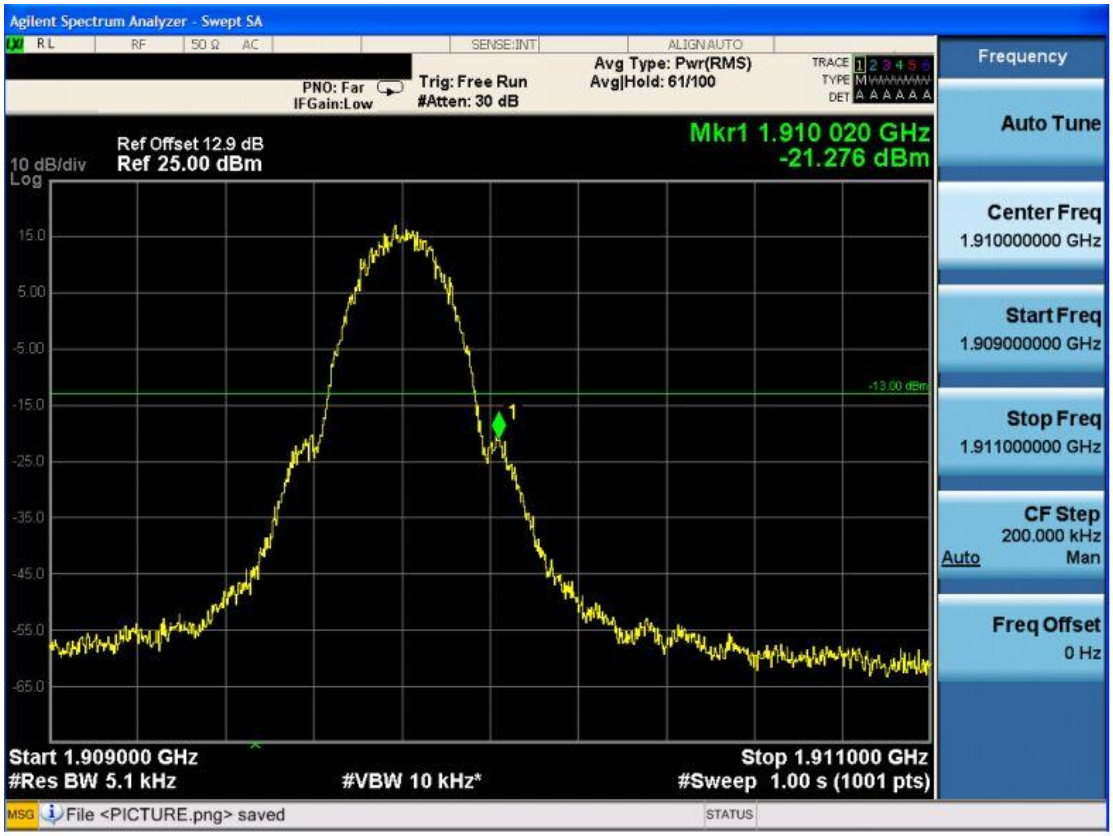
Test Band=GSM1900

Test Mode=GSM/TM1

Test Channel=LCH



Test Channel=HCH



For WCDMA

Test Band=WCDMA850

Test Mode=UMTS/TM1

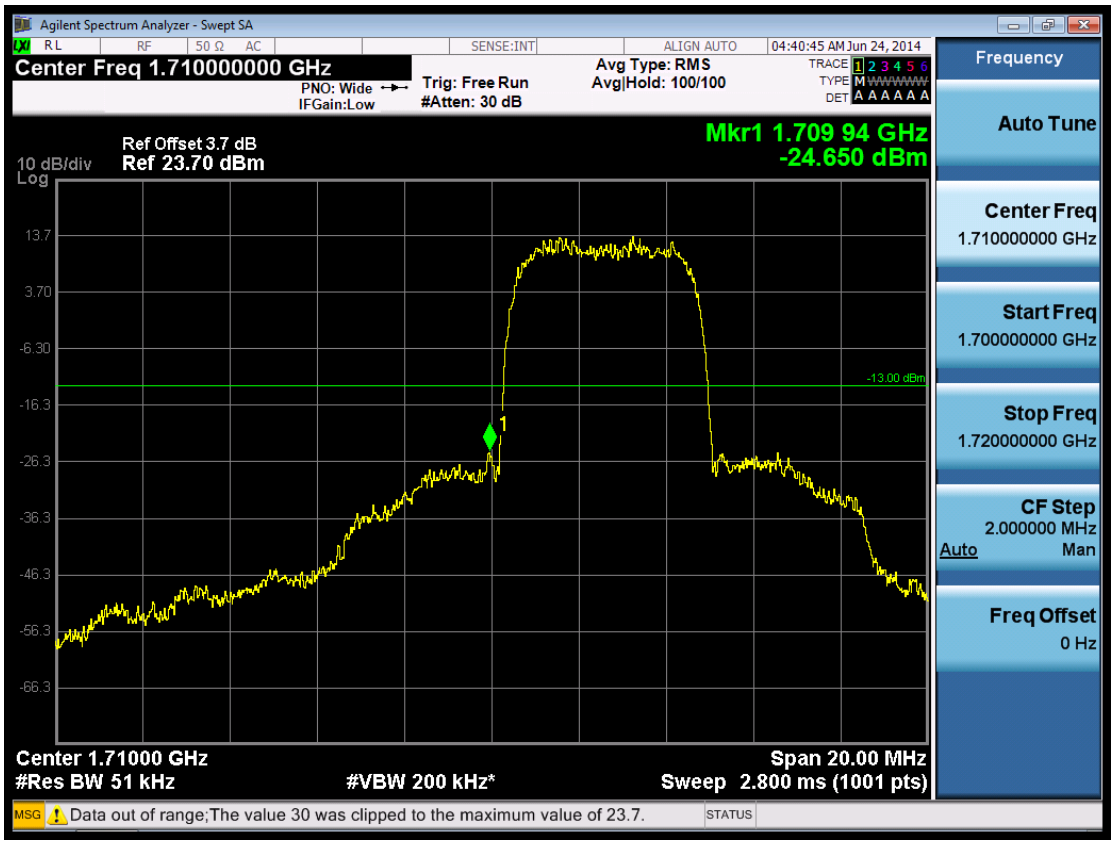
Test Channel=LCH

Test Channel=HCH

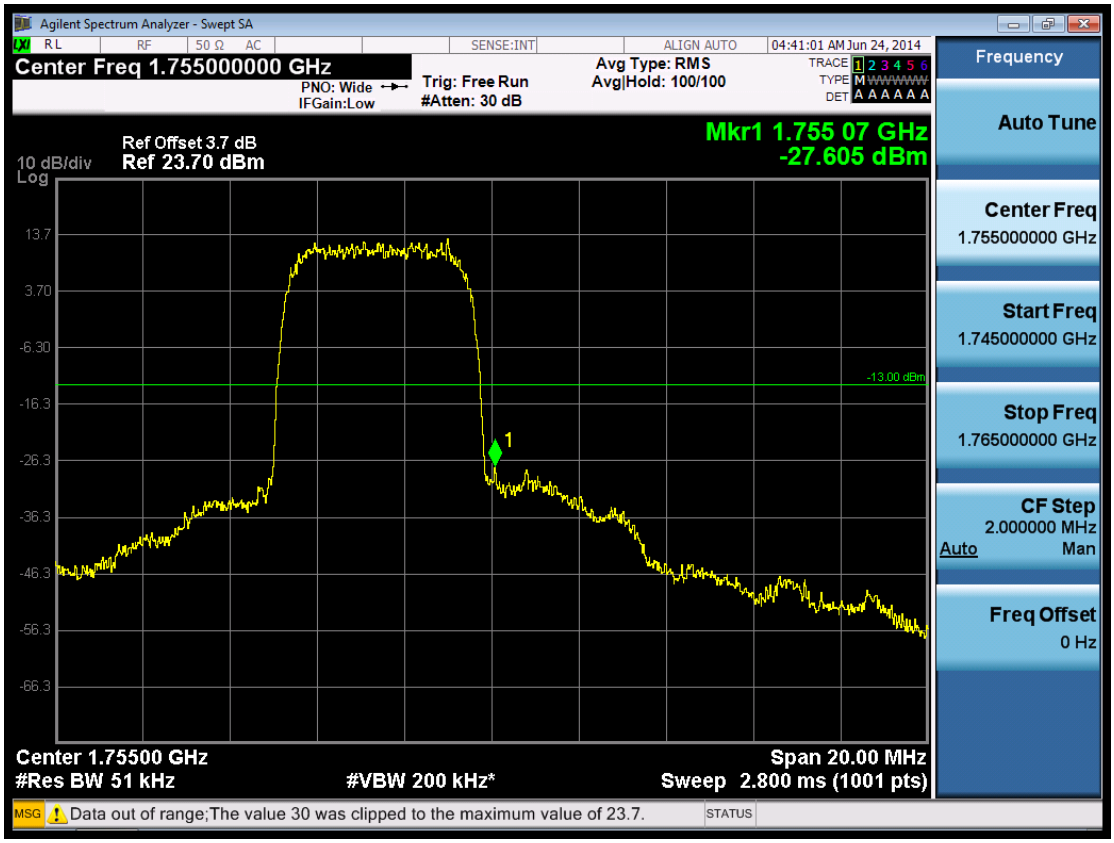
Test Band=WCDMA1700

Test Mode=UMTS/TM1

Test Channel=LCH



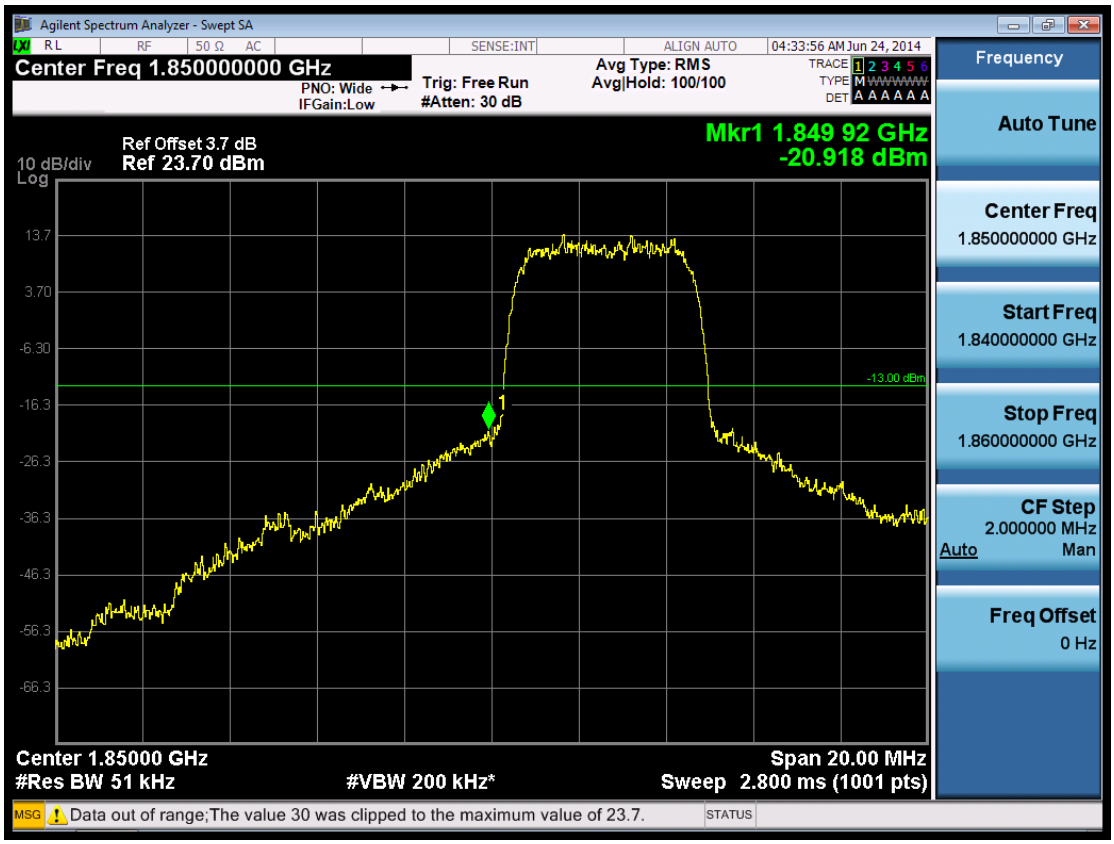
Test Channel=HCH



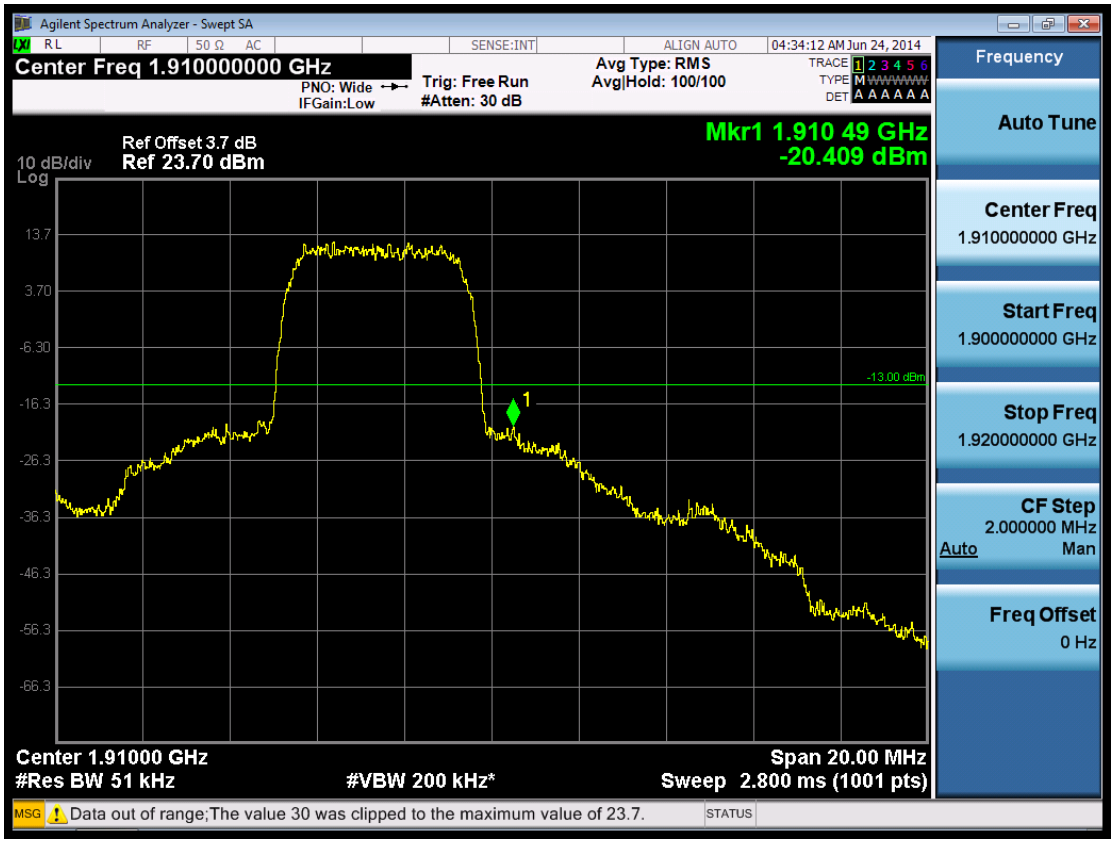
Test Band=WCDMA1900

Test Mode=UMTSTM1

Test Channel=LCH



Test Channel=HCH



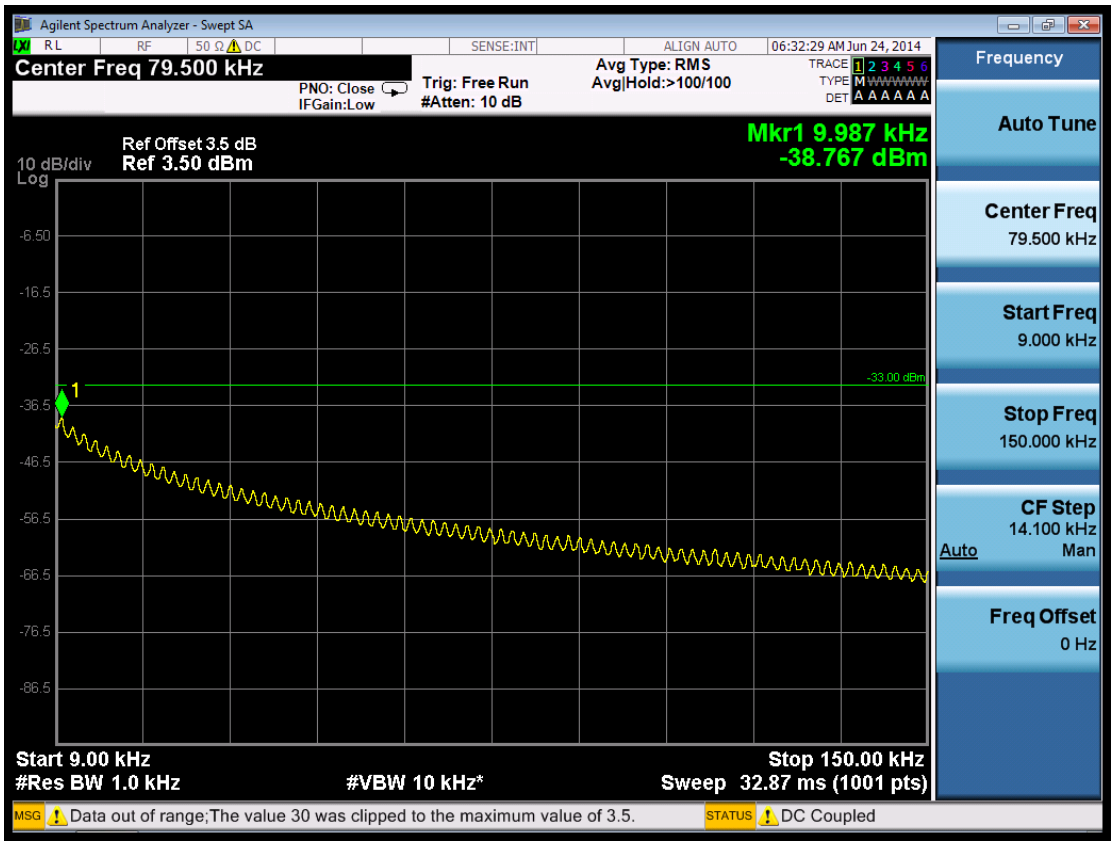
Appendix F: Spurious Emission at Antenna Terminal

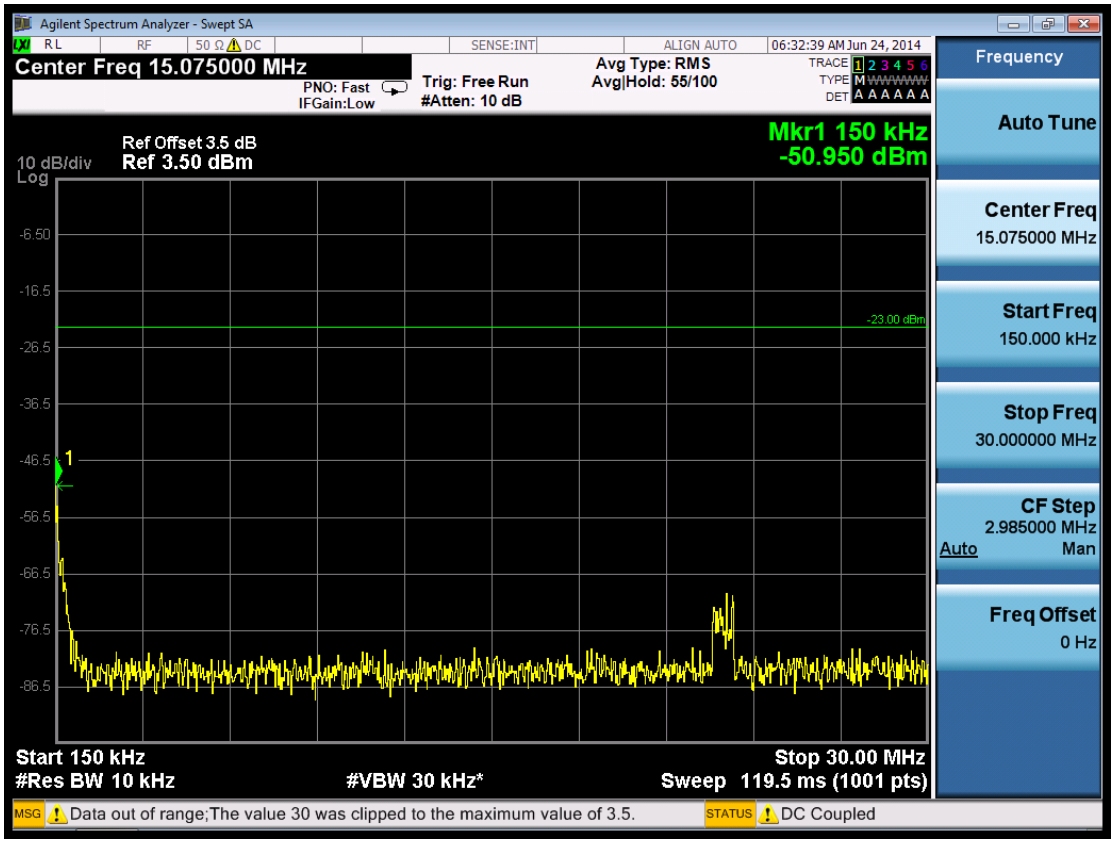
Test Results

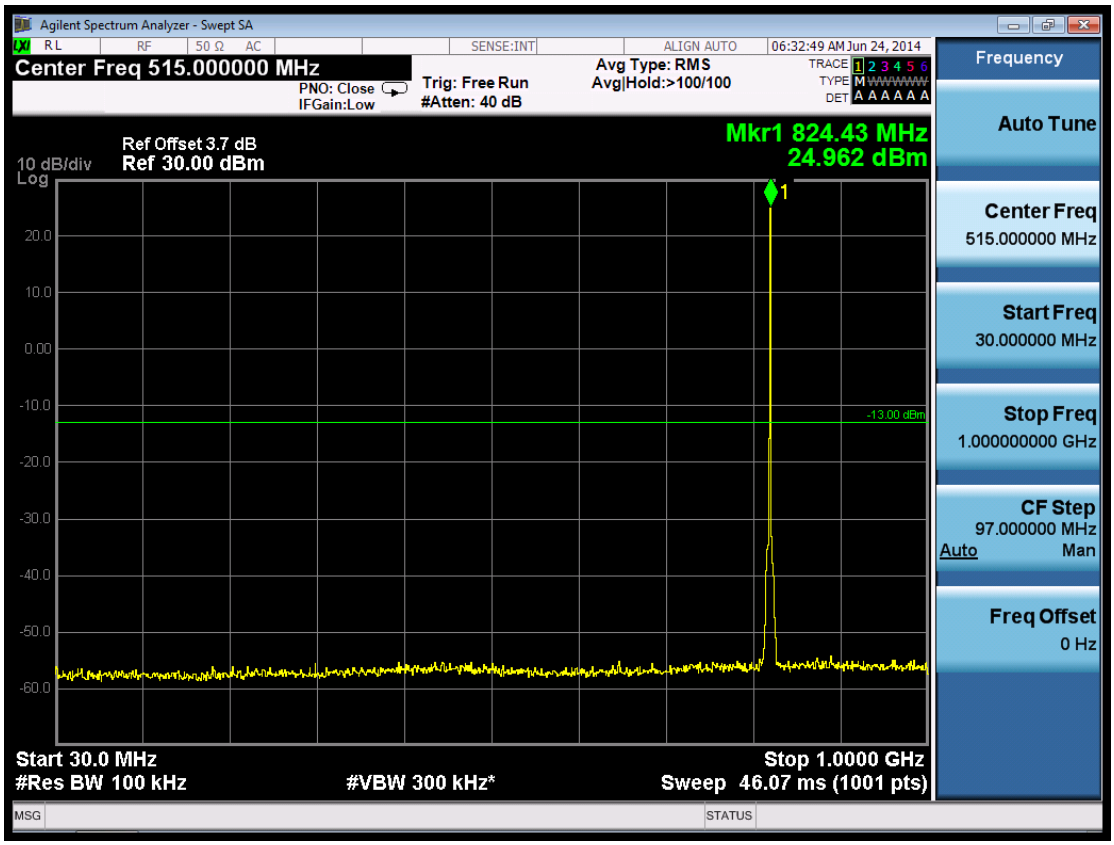
Test Band=GSM850

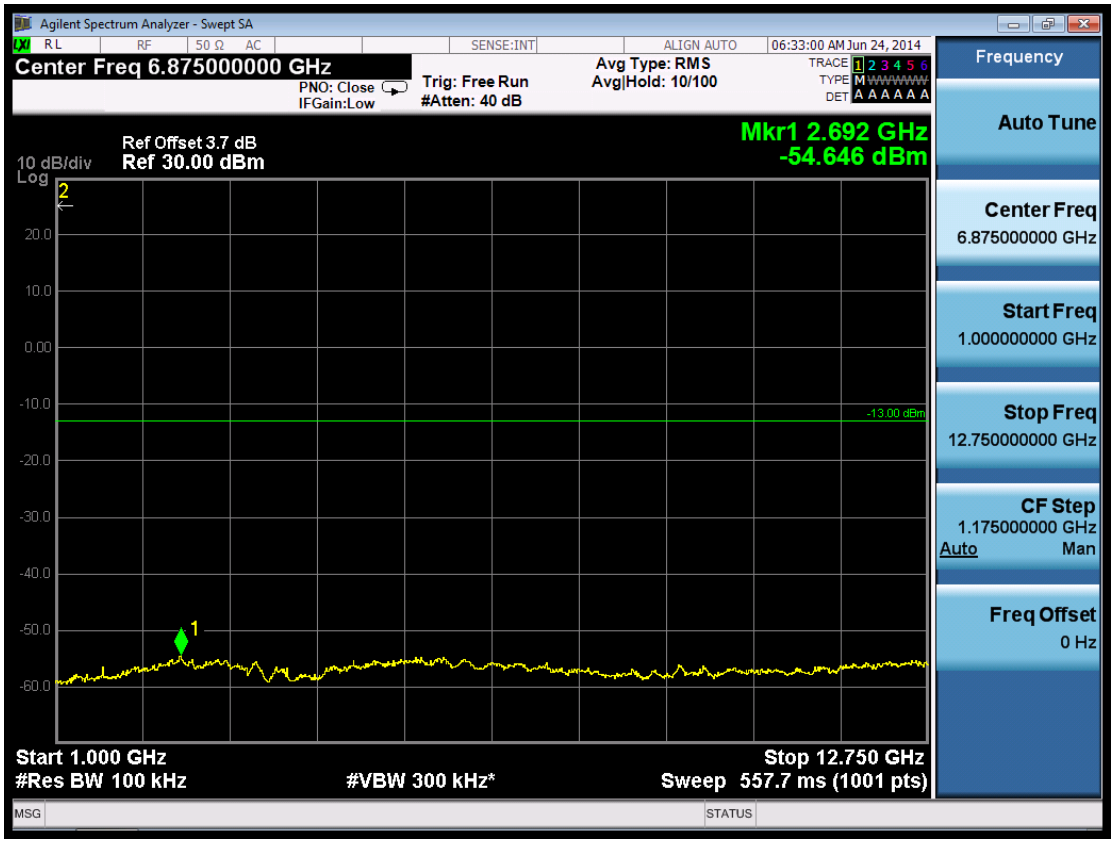
Test Mode=GSM/TM1

Test Channel=LCH

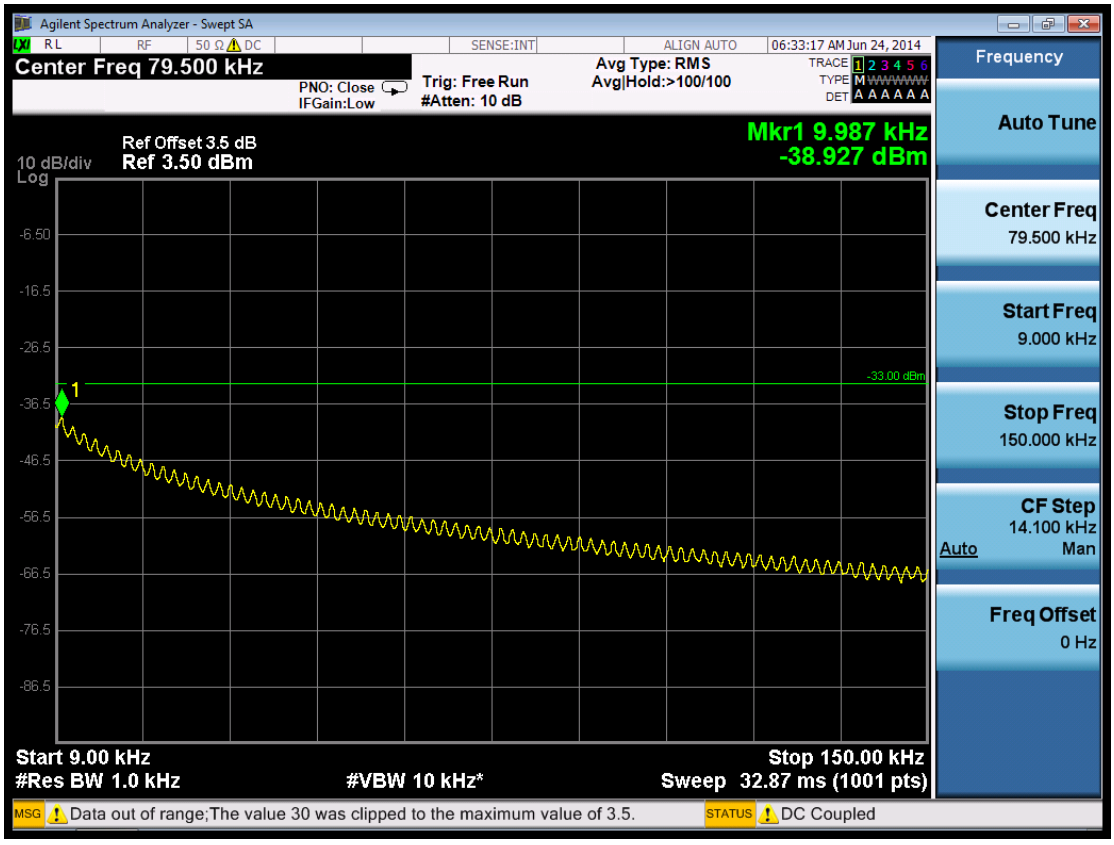


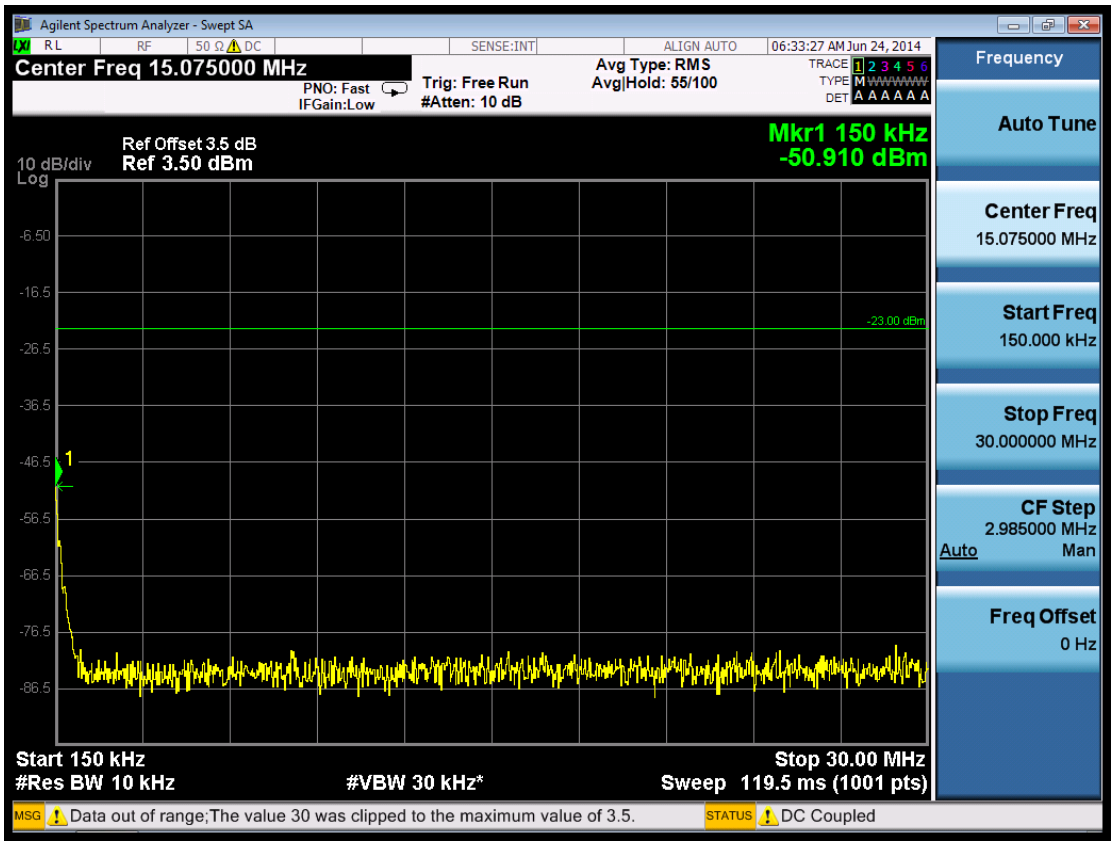

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
06:32:39 AM Jun 24, 2014
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 55/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.5 dB
10 dB/div
Log
Ref 3.50 dBm
Mkr1 150 kHz
-50.950 dBm
-6.50
-16.5
-23.00 dBm
-26.5
-36.5
-46.5
-56.5
-66.5
-76.5
-86.5
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 119.5 ms (1001 pts)
MSG
Data out of range;The value 30 was clipped to the maximum value of 3.5.
STATUS
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz

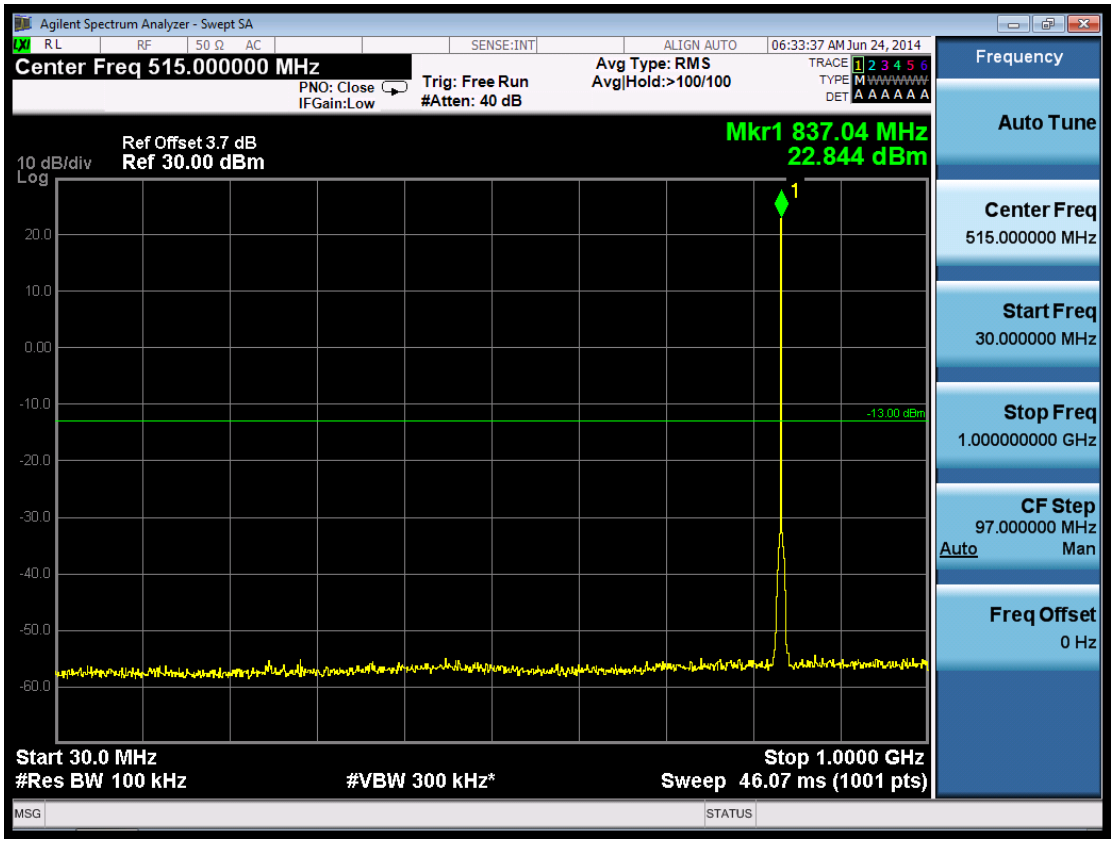

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
06:32:49 AM Jun 24, 2014
Center Freq 515.000000 MHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold:>100/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.7 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr1 824.43 MHz
24.962 dBm
20.0
10.0
0.00
-10.0
-13.00 dBm
-20.0
-30.0
-40.0
-50.0
-60.0
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz*
Stop 1.0000 GHz
Sweep 46.07 ms (1001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
515.000000 MHz
Start Freq
30.000000 MHz
Stop Freq
1.000000000 GHz
CF Step
97.000000 MHz
Auto
Man
Freq Offset
0 Hz

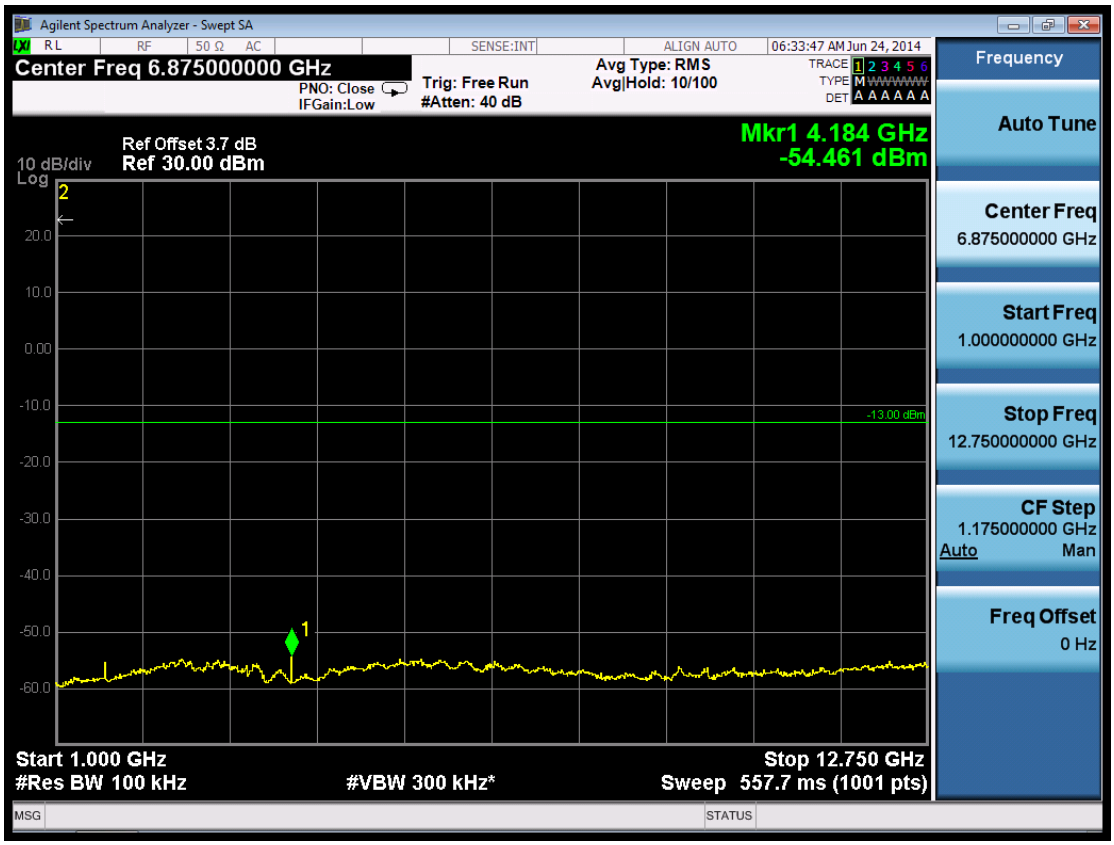

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
06:33:00 AM Jun 24, 2014
Center Freq 6.875000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 10/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.7 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr1 2.692 GHz
-54.646 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-13.00 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 300 kHz*
Stop 12.750 GHz
Sweep 557.7 ms (1001 pts)
Frequency
Auto Tune
Center Freq
6.875000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
12.750000000 GHz
CF Step
1.175000000 GHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

Test Channel=MCH

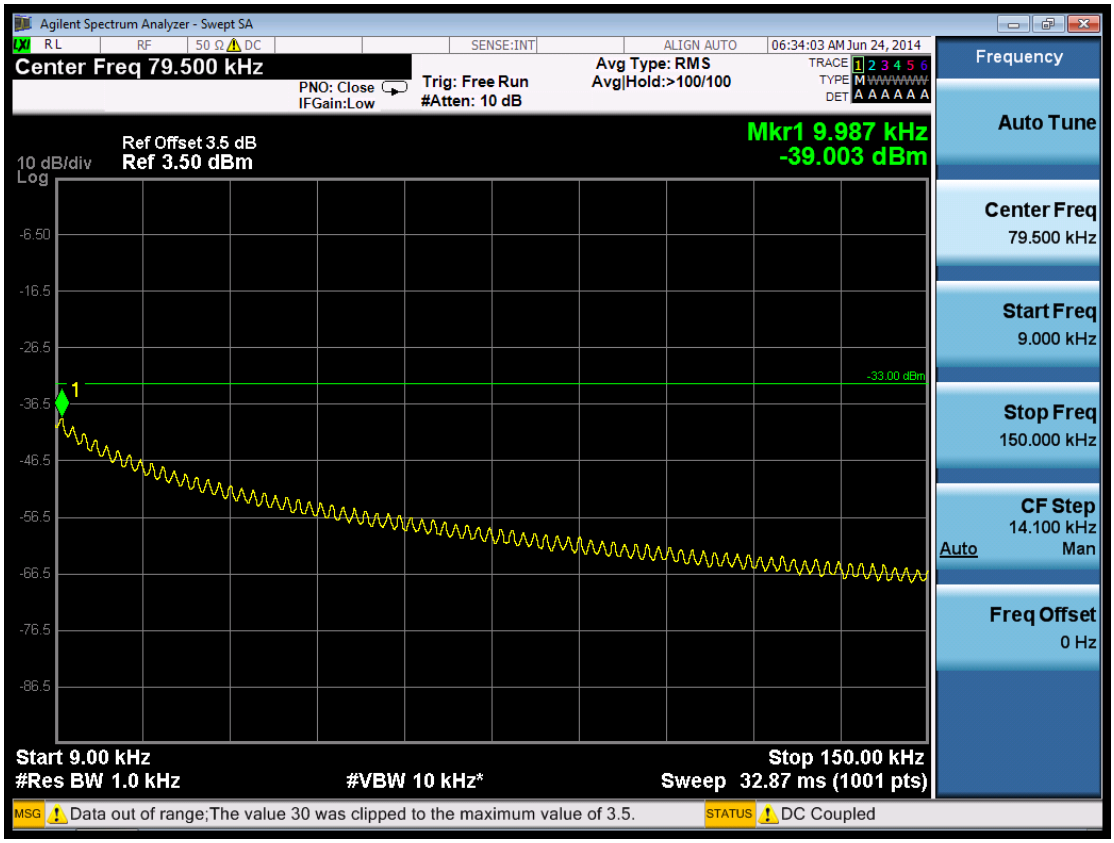


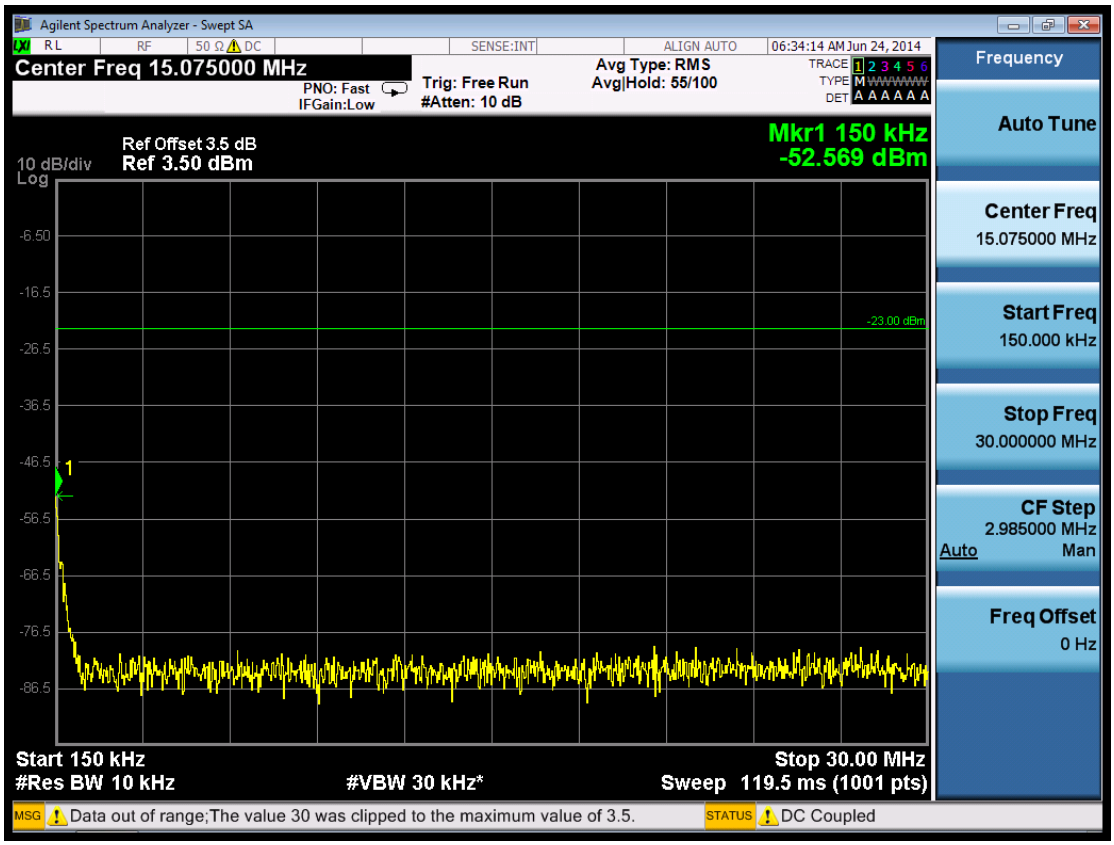


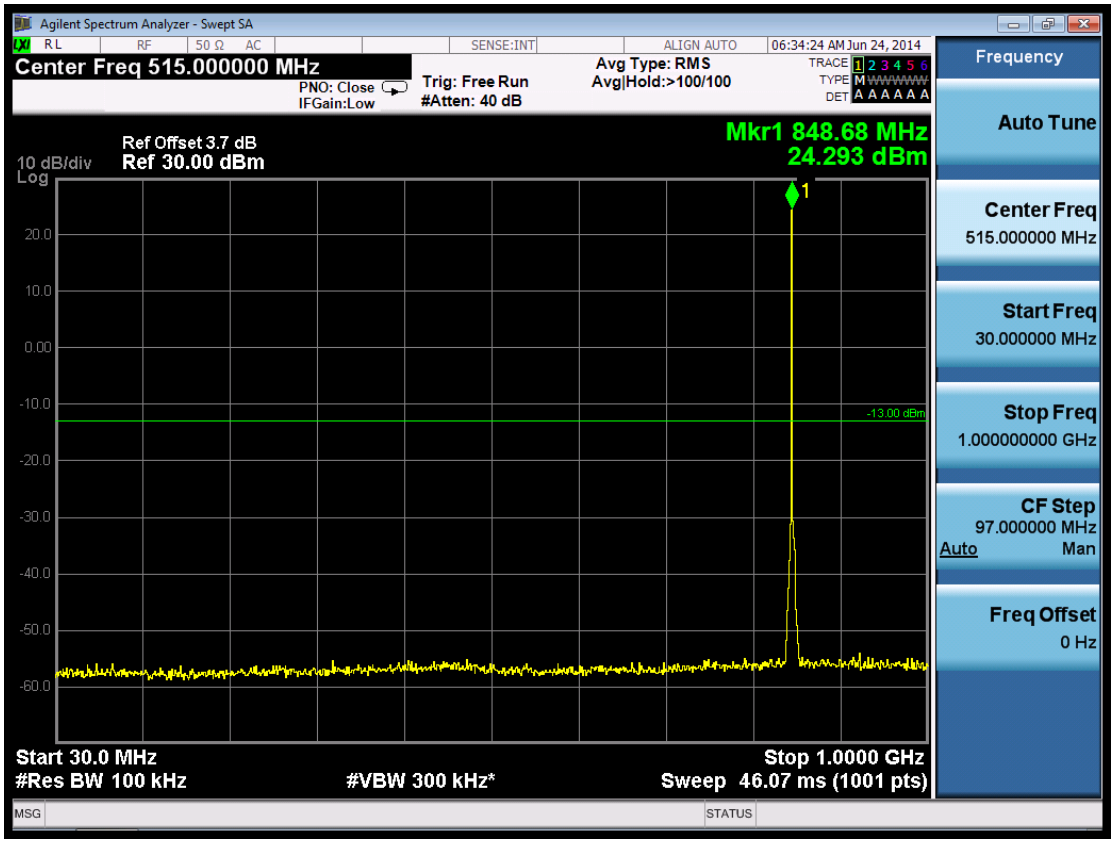


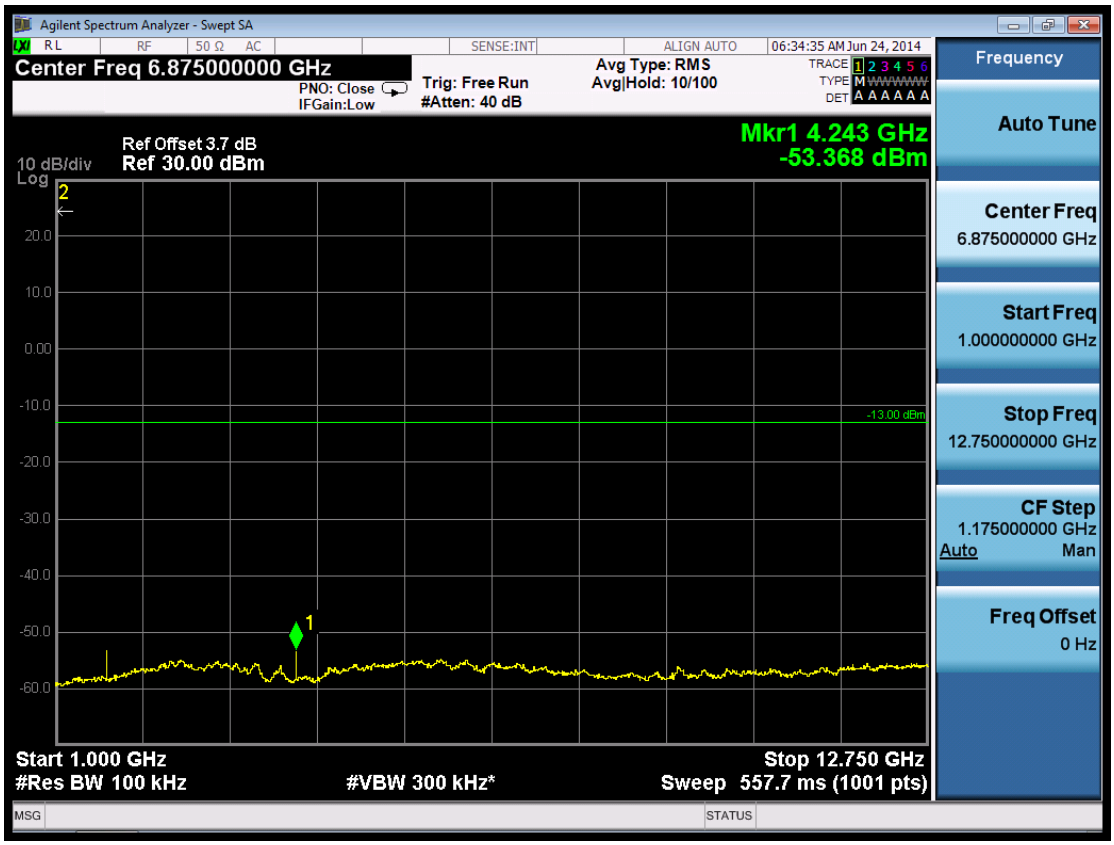


Test Channel=HCH


Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
06:34:03 AM Jun 24, 2014
Center Freq 79.500 kHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold:>100/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.5 dB
10 dB/div
Log
Ref 3.50 dBm
Mkr1 9.987 kHz
-39.003 dBm
-6.50
-16.5
-26.5
-33.00 dBm
-36.5
-46.5
-56.5
-66.5
-76.5
-86.5
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 10 kHz*
Stop 150.00 kHz
Sweep 32.87 ms (1001 pts)
MSG
Data out of range;The value 30 was clipped to the maximum value of 3.5.
STATUS
DC Coupled
Frequency
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
06:34:14 AM Jun 24, 2014
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 55/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.5 dB
10 dB/div
Log
Ref 3.50 dBm
Mkr1 150 kHz
-52.569 dBm
-6.50
-16.5
-23.00 dBm
-26.5
-36.5
-46.5
-56.5
-66.5
-76.5
-86.5
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 119.5 ms (1001 pts)
MSG
Data out of range;The value 30 was clipped to the maximum value of 3.5.
STATUS
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz

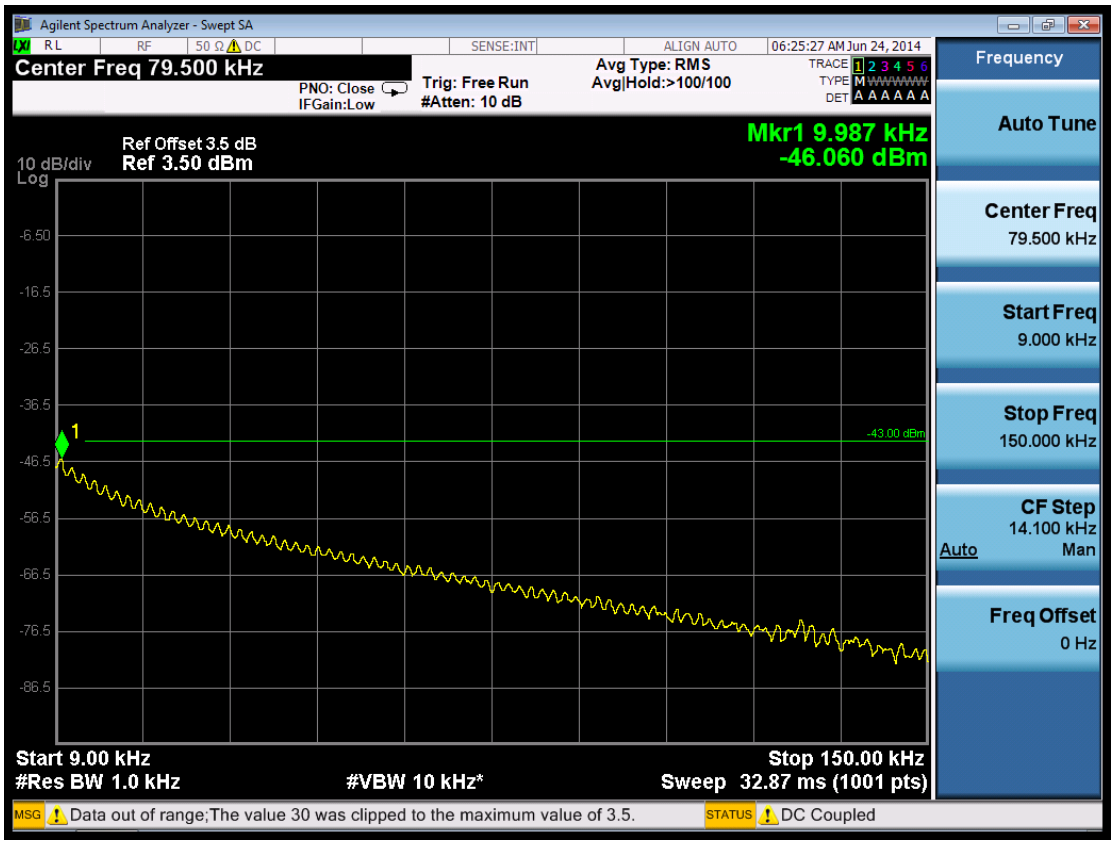

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
06:34:24 AM Jun 24, 2014
Center Freq 515.000000 MHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold:>100/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.7 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr1 848.68 MHz
24.293 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-13.00 dBm
Start 30.0 MHz
#Res BW 100 kHz
#VBW 300 kHz*
Stop 1.0000 GHz
Sweep 46.07 ms (1001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
515.000000 MHz
Start Freq
30.000000 MHz
Stop Freq
1.000000000 GHz
CF Step
97.000000 MHz
Auto
Man
Freq Offset
0 Hz

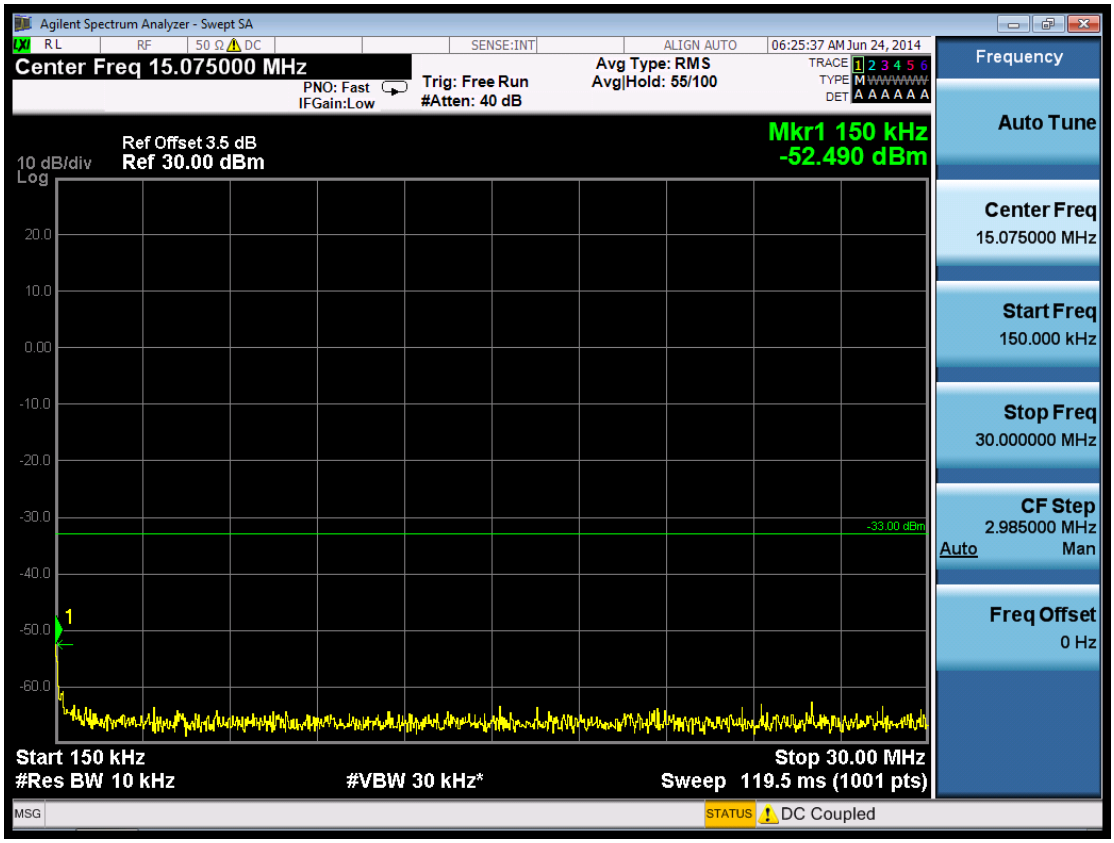

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
06:34:35 AM Jun 24, 2014
Center Freq 6.875000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 10/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.7 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr1 4.243 GHz
-53.368 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-13.00 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 300 kHz*
Stop 12.750 GHz
Sweep 557.7 ms (1001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
6.875000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
12.750000000 GHz
CF Step
1.175000000 GHz
Auto
Man
Freq Offset
0 Hz

Test Band=GSM1900

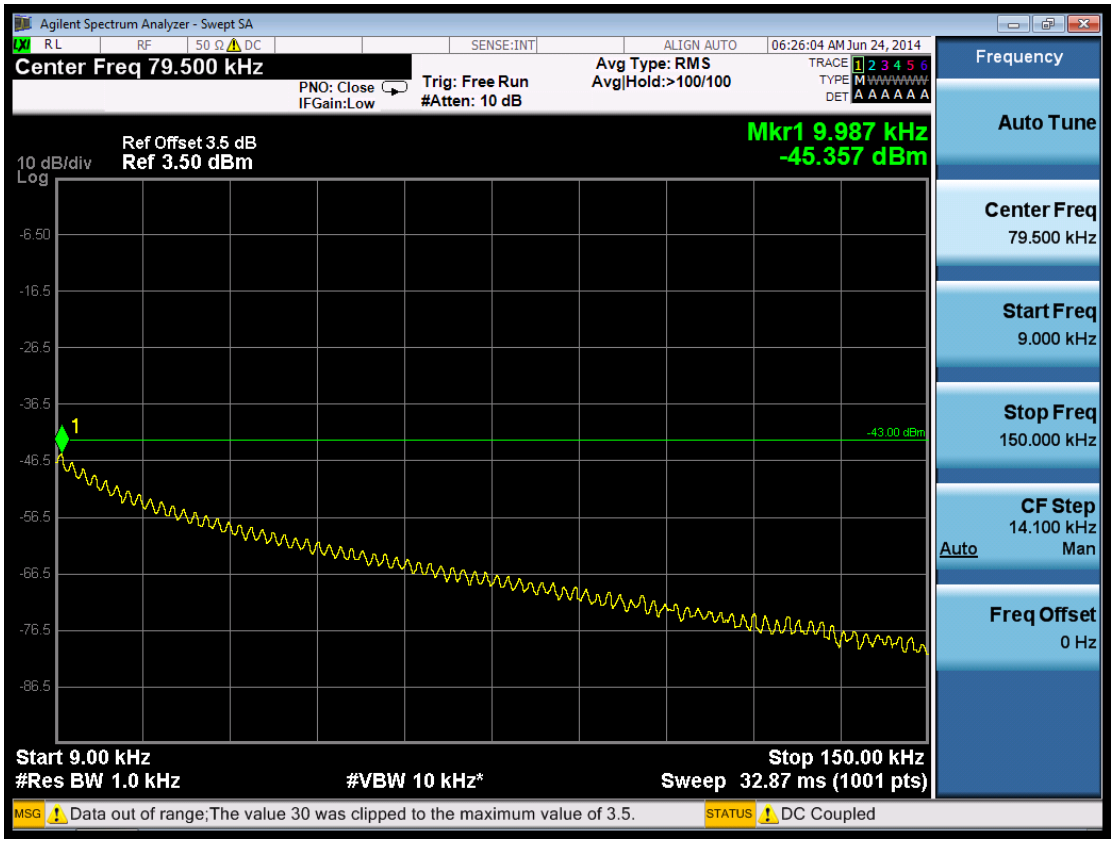
Test Mode=GSM/TM1

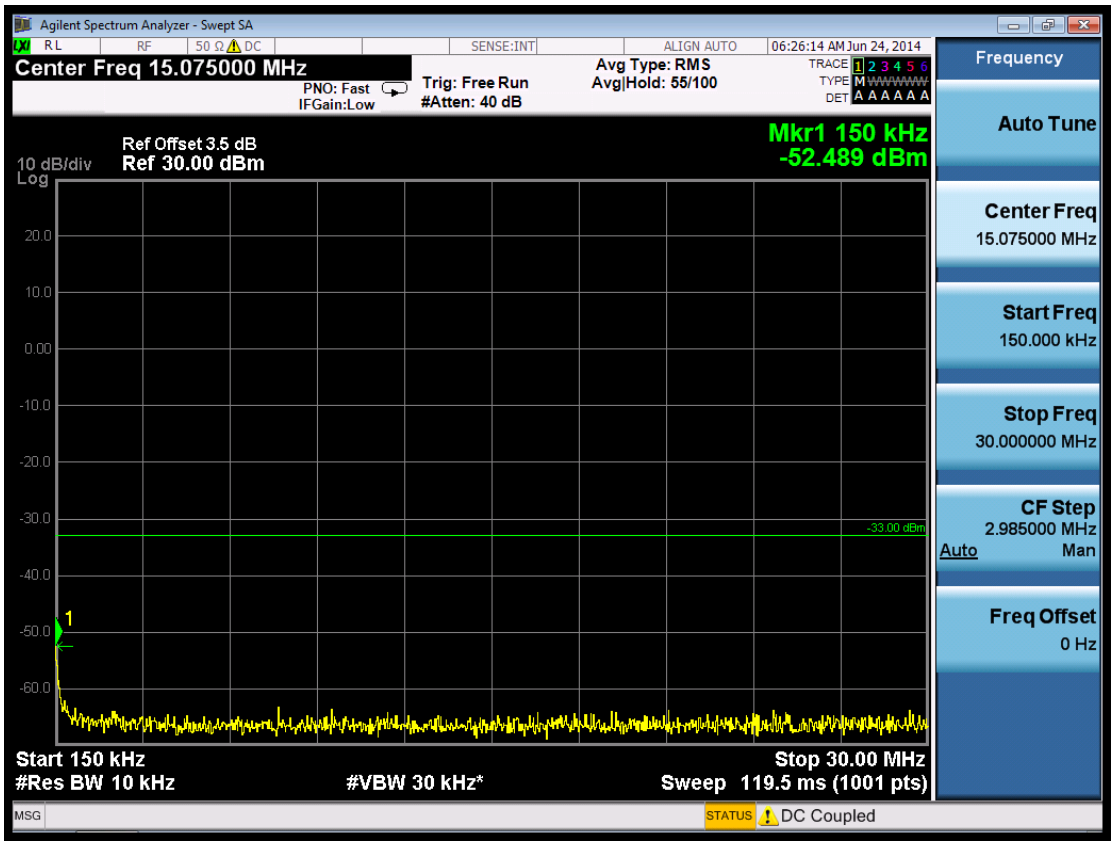
Test Channel=LCH





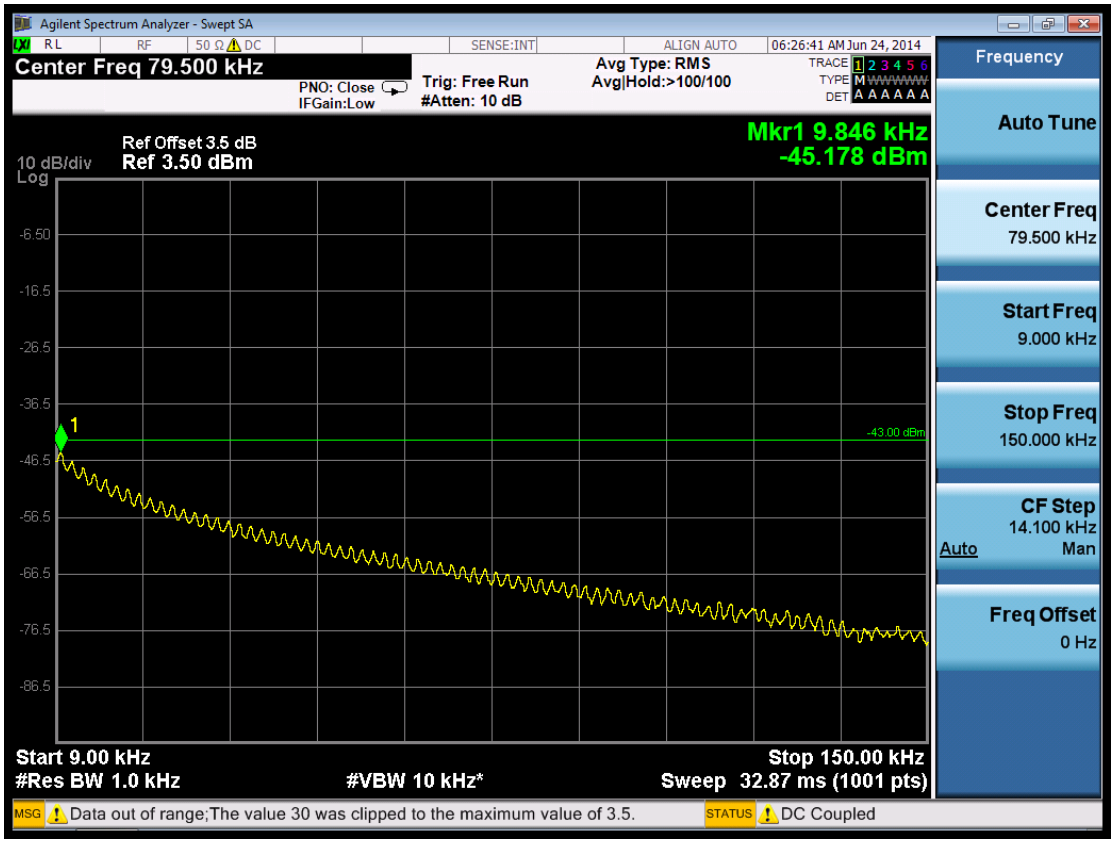
Test Channel=MCH

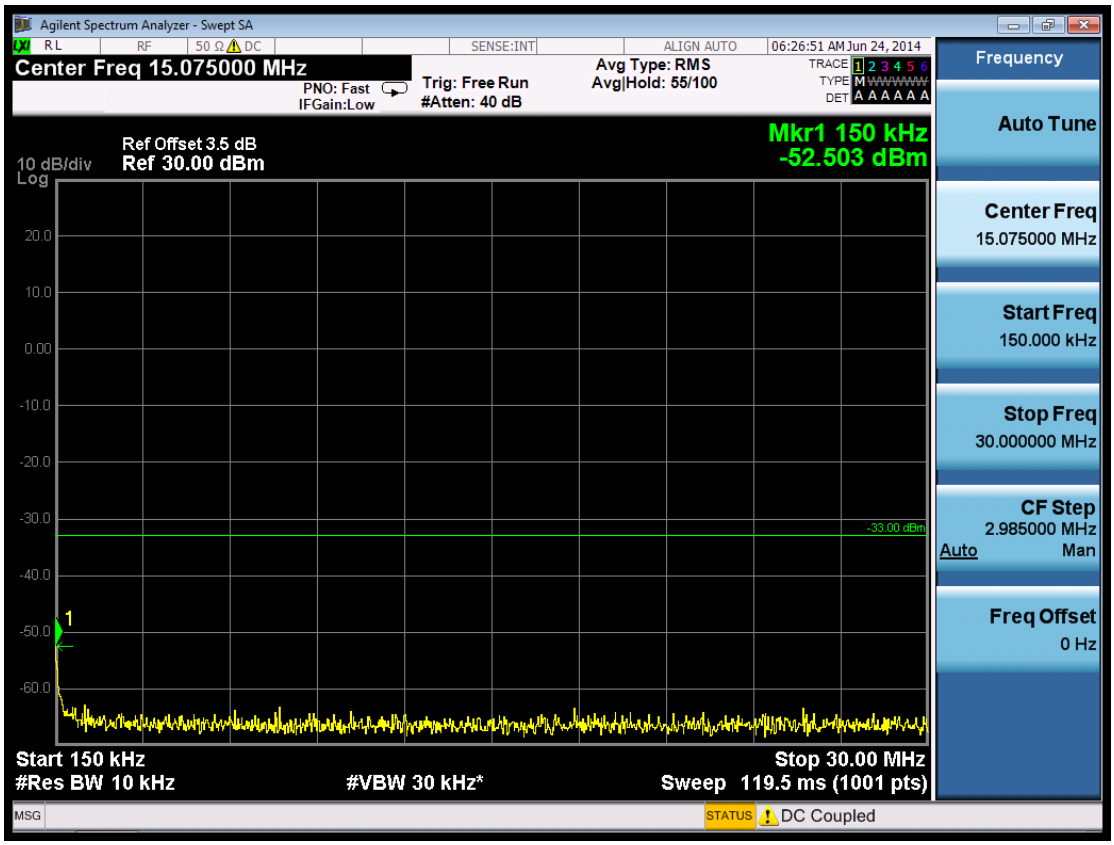

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
06:26:04 AM Jun 24, 2014
Center Freq 79.500 kHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold:>100/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.5 dB
10 dB/div
Log
Ref 3.50 dBm
Mkr1 9.987 kHz
-45.357 dBm
-6.50
-16.5
-26.5
-36.5
-46.5
-56.5
-66.5
-76.5
-86.5
1
-43.00 dBm
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 10 kHz*
Stop 150.00 kHz
Sweep 32.87 ms (1001 pts)
MSG
Data out of range;The value 30 was clipped to the maximum value of 3.5.
STATUS
DC Coupled
Frequency
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
06:26:14 AM Jun 24, 2014
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 55/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.5 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr1 150 kHz
-52.489 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
1
-33.00 dBm
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 119.5 ms (1001 pts)
MSG
STATUS
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
06:26:24 AM Jun 24, 2014
Center Freq 10.015000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 38/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Frequency
Auto Tune
Center Freq
10.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
20.000000000 GHz
CF Step
1.997000000 GHz
Auto
Man
Freq Offset
0 Hz
Ref Offset 3.7 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr1 1.887 GHz
15.825 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-13.00 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 20.000 GHz
Sweep 49.93 ms (1001 pts)
MSG
STATUS

Test Channel=HCH



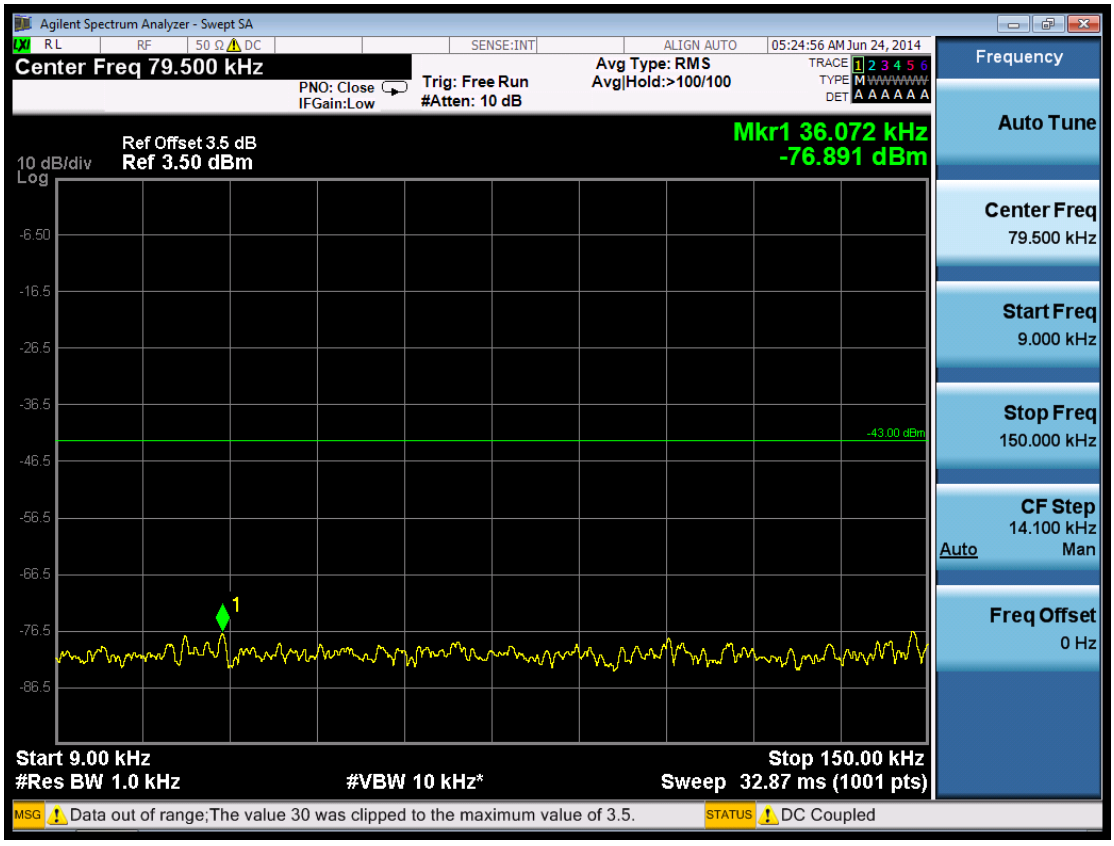



Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
06:27:02 AM Jun 24, 2014
Center Freq 10.015000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 38/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.7 dB
10 dB/div
Log
Ref 30.00 dBm
Mkr1 1.907 GHz
15.457 dBm
20.0
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-13.00 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 20.000 GHz
Sweep 49.93 ms (1001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
10.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
20.000000000 GHz
CF Step
1.997000000 GHz
Auto
Man
Freq Offset
0 Hz

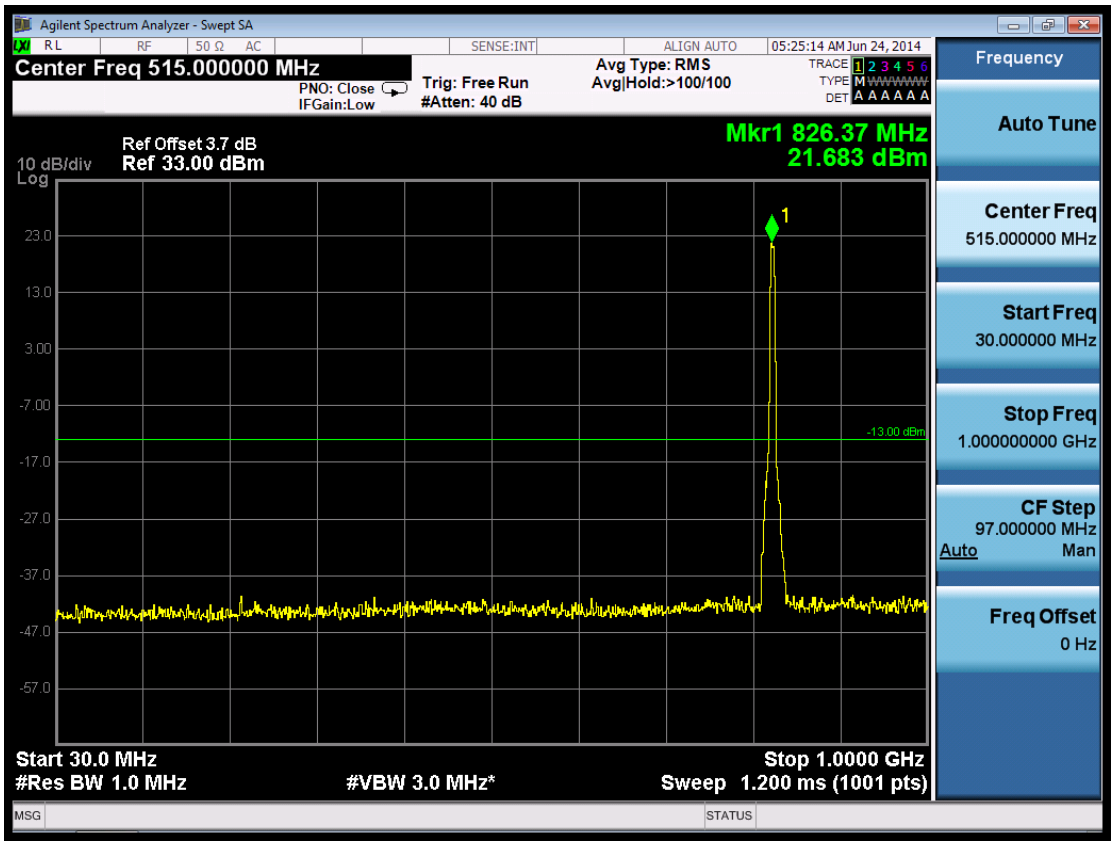
Test Band=WCDMA850

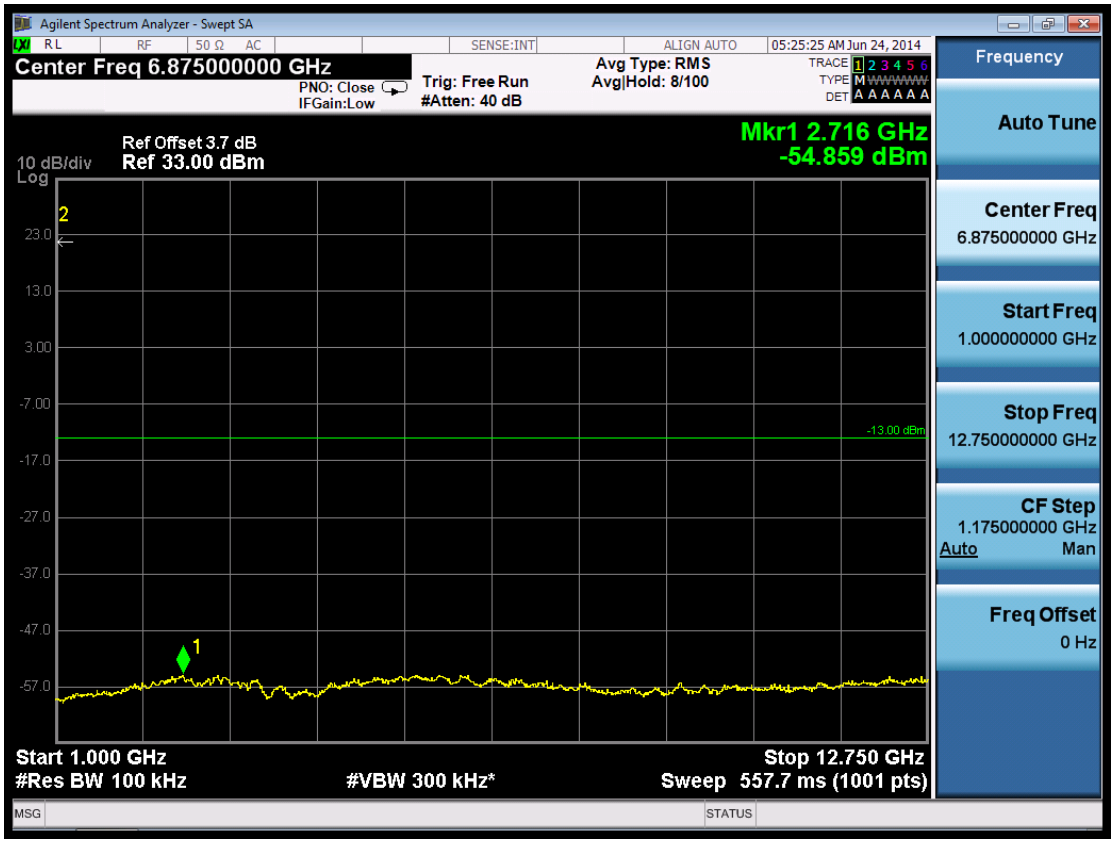
Test Mode=UMTS/TM1

Test Channel=LCH

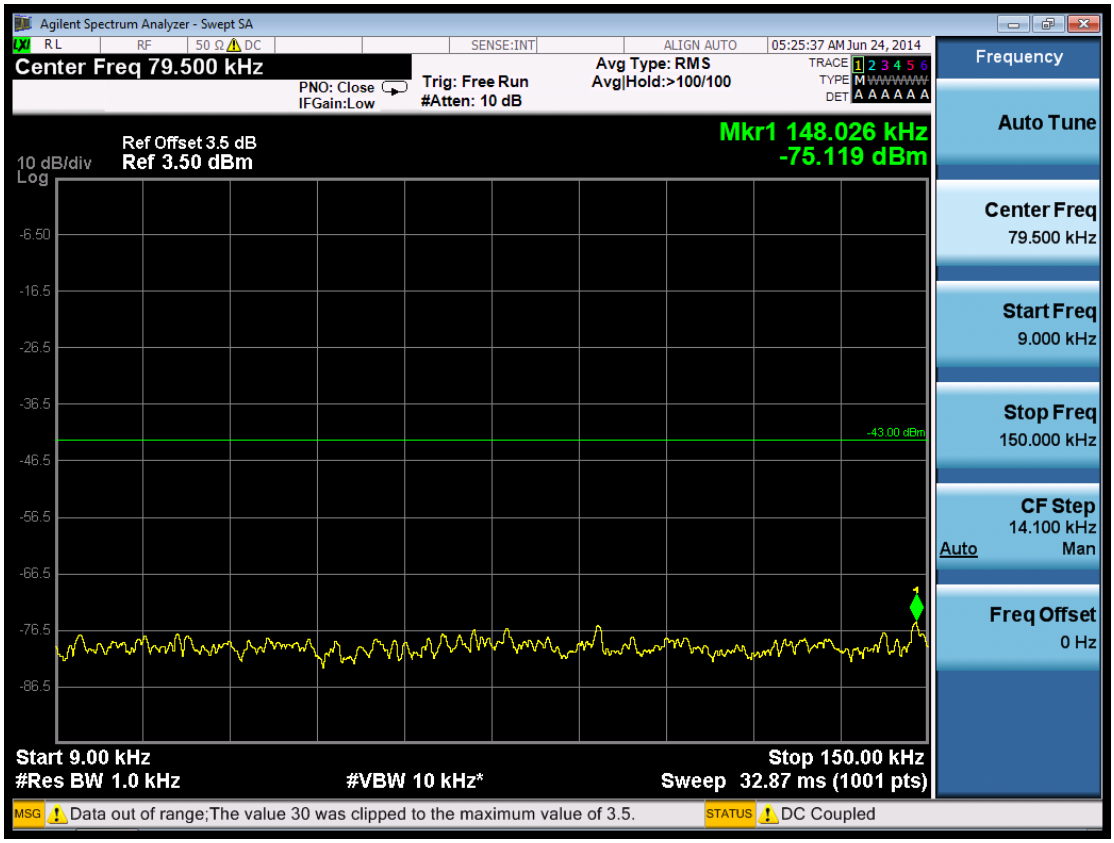



Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
05:25:05 AM Jun 24, 2014
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 47/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.5 dB
10 dB/div
Log
Ref 3.50 dBm
Mkr1 3.851 MHz
-58.488 dBm
-6.50
-16.5
-26.5
-33.00 dBm
-36.5
-46.5
-56.5
-66.5
-76.5
-86.5
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 119.5 ms (1001 pts)
MSG
Data out of range;The value 30 was clipped to the maximum value of 3.5.
STATUS
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz

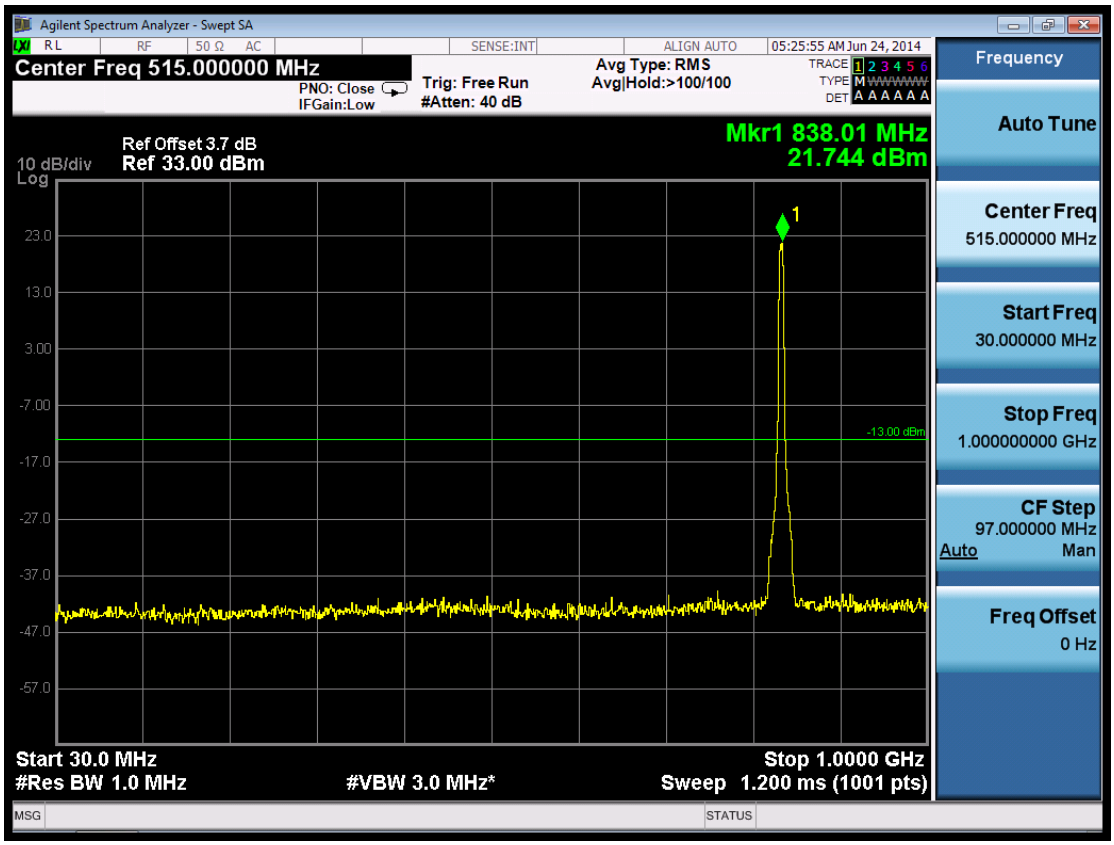

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:25:14 AM Jun 24, 2014
Center Freq 515.000000 MHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold:>100/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.7 dB
10 dB/div
Log
Ref 33.00 dBm
Mkr1 826.37 MHz
21.683 dBm
23.0
13.0
3.00
-7.00
-13.00 dBm
-17.0
-27.0
-37.0
-47.0
-57.0
Start 30.0 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 1.0000 GHz
Sweep 1.200 ms (1001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
515.000000 MHz
Start Freq
30.000000 MHz
Stop Freq
1.000000000 GHz
CF Step
97.000000 MHz
Auto
Man
Freq Offset
0 Hz

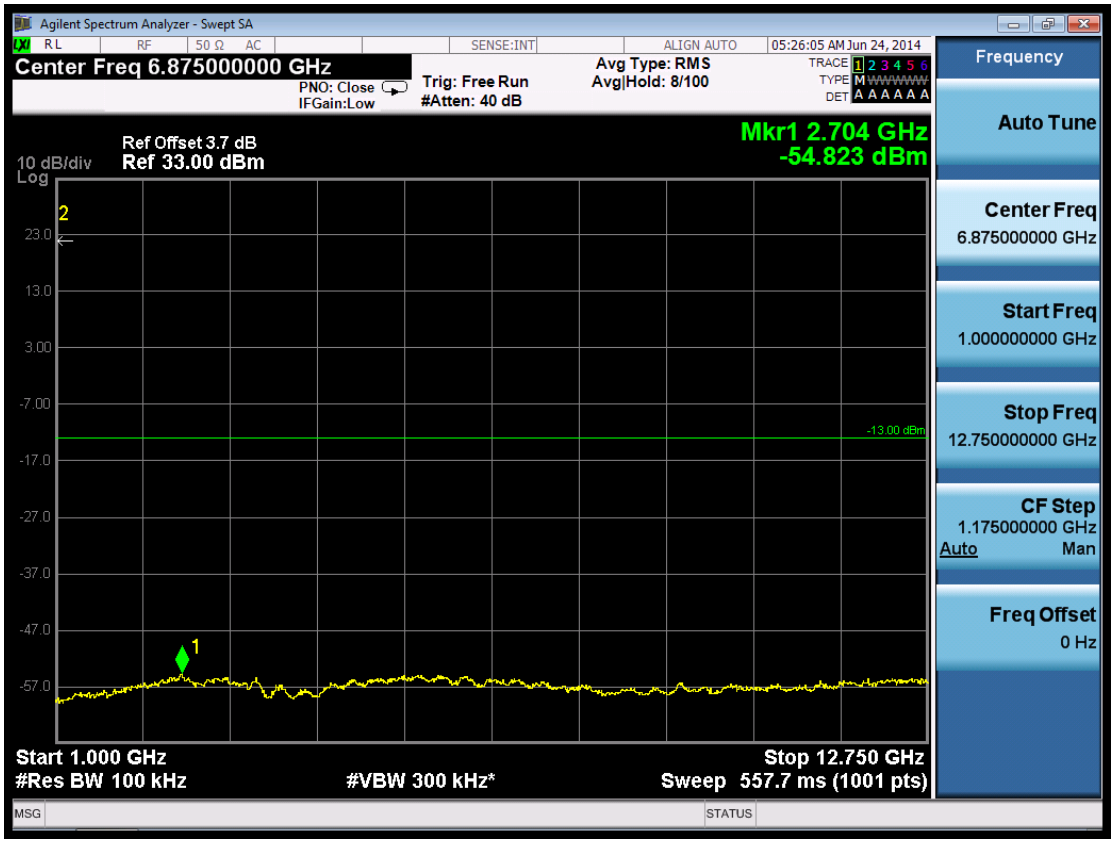


Test Channel=MCH

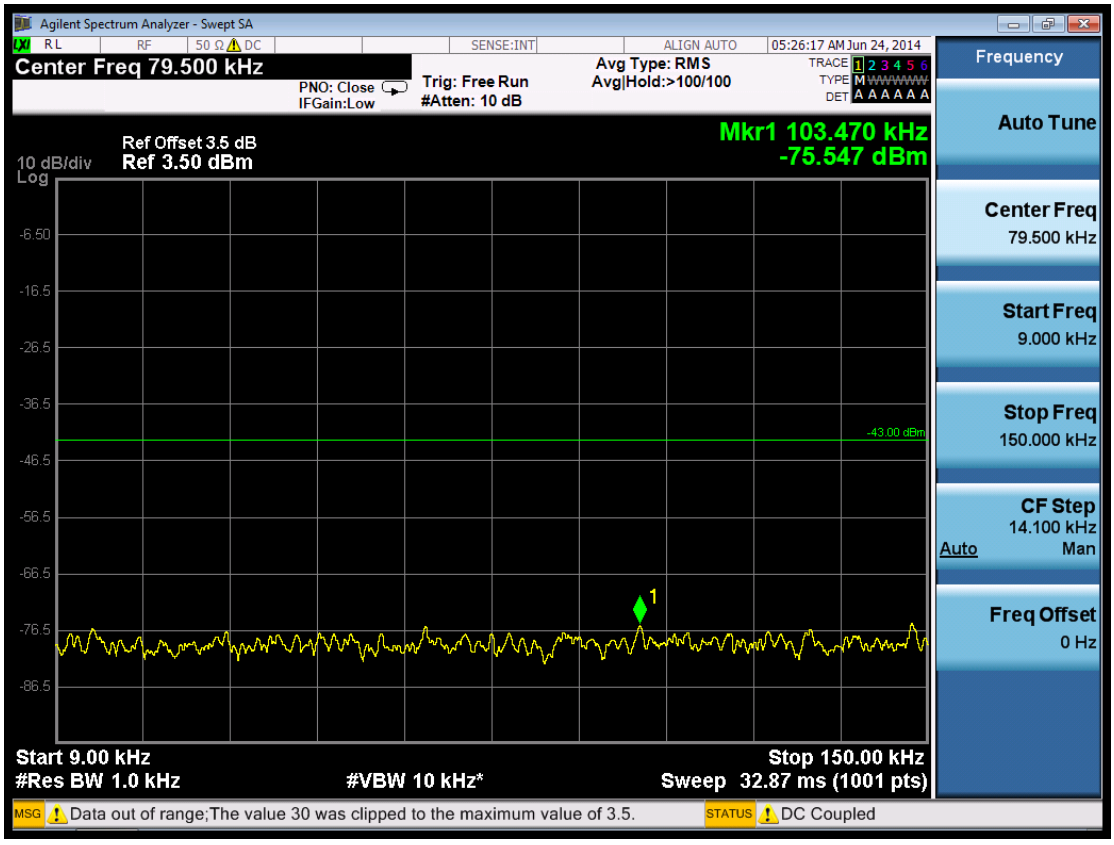


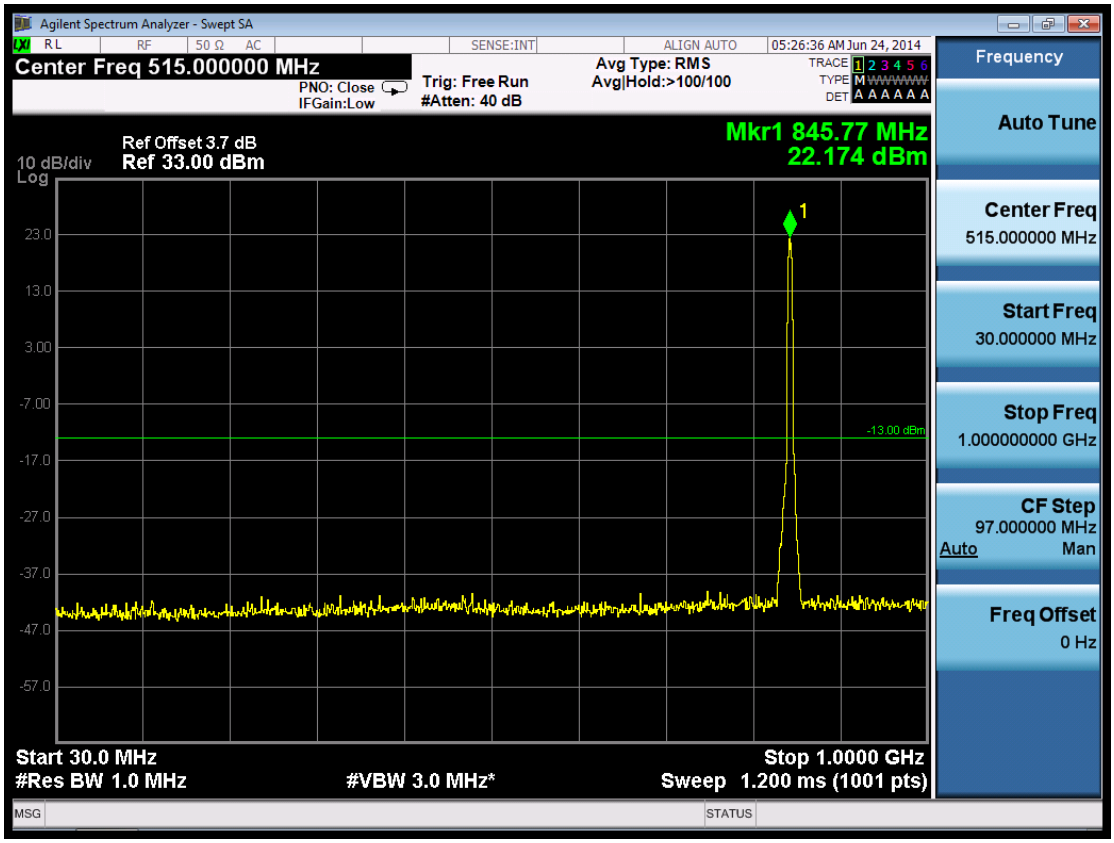

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
05:25:46 AM Jun 24, 2014
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 47/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.5 dB
10 dB/div
Log
Ref 3.50 dBm
Mkr1 3.851 MHz
-57.748 dBm
-6.50
-16.5
-26.5
-33.00 dBm
-36.5
-46.5
-56.5
-66.5
-76.5
-86.5
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 119.5 ms (1001 pts)
MSG
Data out of range;The value 30 was clipped to the maximum value of 3.5.
STATUS
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz

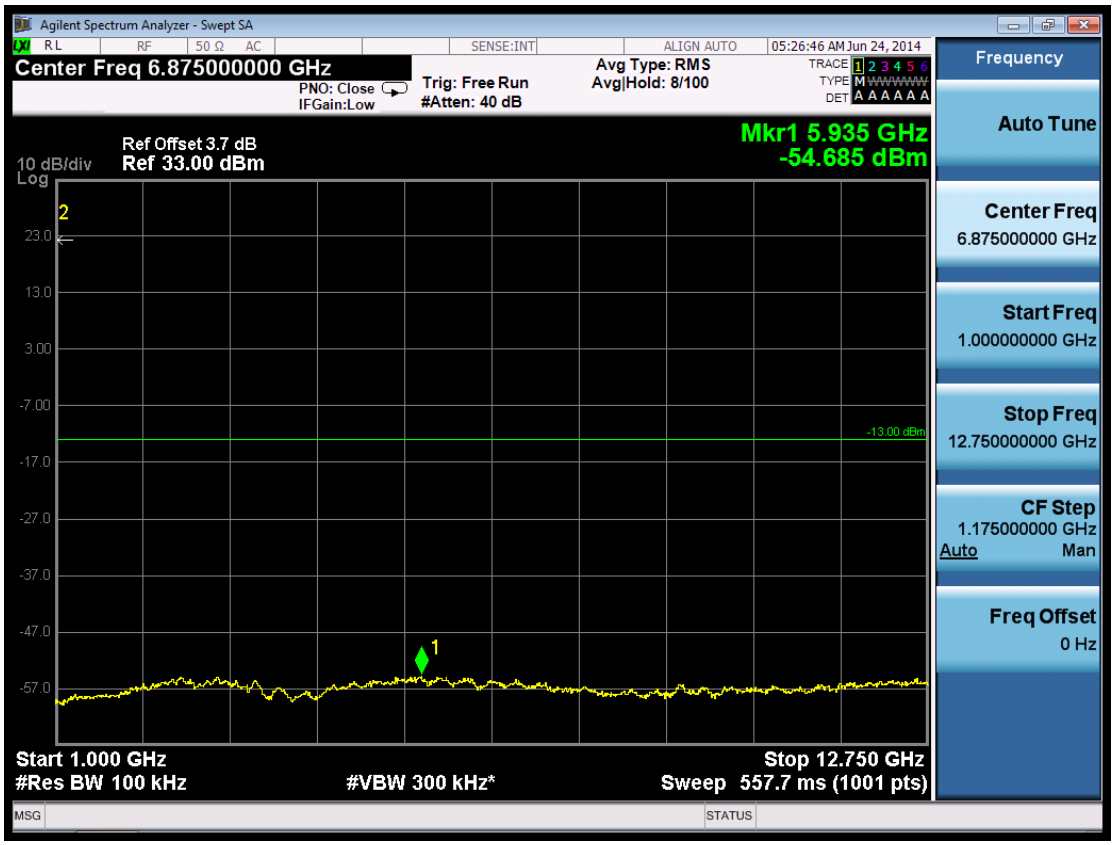

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:25:55 AM Jun 24, 2014
Center Freq 515.000000 MHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold:>100/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.7 dB
10 dB/div
Log
Ref 33.00 dBm
Mkr1 838.01 MHz
21.744 dBm
23.0
13.0
3.00
-7.00
-13.00 dBm
-17.0
-27.0
-37.0
-47.0
-57.0
Start 30.0 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 1.0000 GHz
Sweep 1.200 ms (1001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
515.000000 MHz
Start Freq
30.000000 MHz
Stop Freq
1.000000000 GHz
CF Step
97.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:26:05 AM Jun 24, 2014
Center Freq 6.875000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 8/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.7 dB
10 dB/div
Log
Ref 33.00 dBm
Mkr1 2.704 GHz
-54.823 dBm
23.0
13.0
3.00
-7.00
-17.0
-27.0
-37.0
-47.0
-57.0
-13.00 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 300 kHz*
Stop 12.750 GHz
Sweep 557.7 ms (1001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
6.875000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
12.750000000 GHz
CF Step
1.175000000 GHz
Auto
Man
Freq Offset
0 Hz

Test Channel=HCH



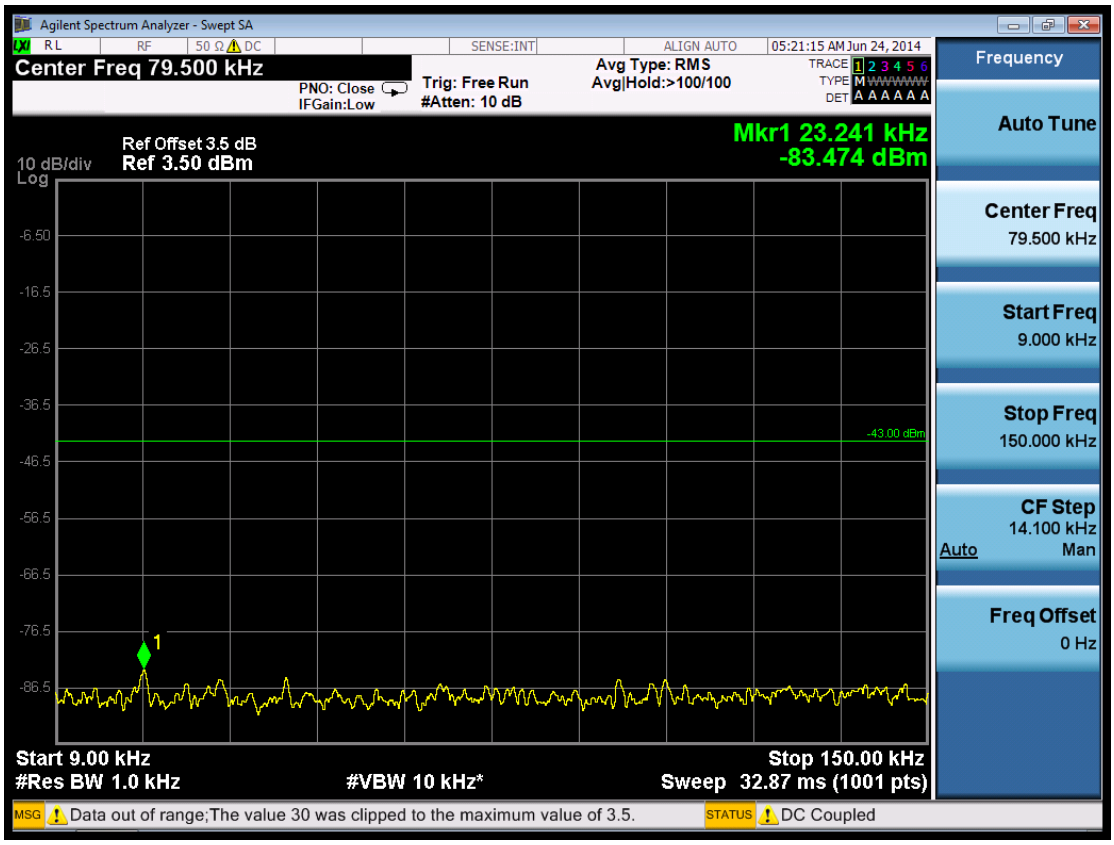

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:26:36 AM Jun 24, 2014
Center Freq 515.000000 MHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold:>100/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.7 dB
10 dB/div
Log
Ref 33.00 dBm
Mkr1 845.77 MHz
22.174 dBm
23.0
13.0
3.00
-7.00
-17.0
-27.0
-37.0
-47.0
-57.0
-13.00 dBm
Start 30.0 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 1.0000 GHz
Sweep 1.200 ms (1001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
515.000000 MHz
Start Freq
30.000000 MHz
Stop Freq
1.000000000 GHz
CF Step
97.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:26:46 AM Jun 24, 2014
Center Freq 6.875000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 8/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.7 dB
10 dB/div
Log
Ref 33.00 dBm
Mkr1 5.935 GHz
-54.685 dBm
23.0
13.0
3.00
-7.00
-17.0
-27.0
-37.0
-47.0
-57.0
-13.00 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 300 kHz*
Stop 12.750 GHz
Sweep 557.7 ms (1001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
6.875000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
12.750000000 GHz
CF Step
1.175000000 GHz
Auto
Man
Freq Offset
0 Hz

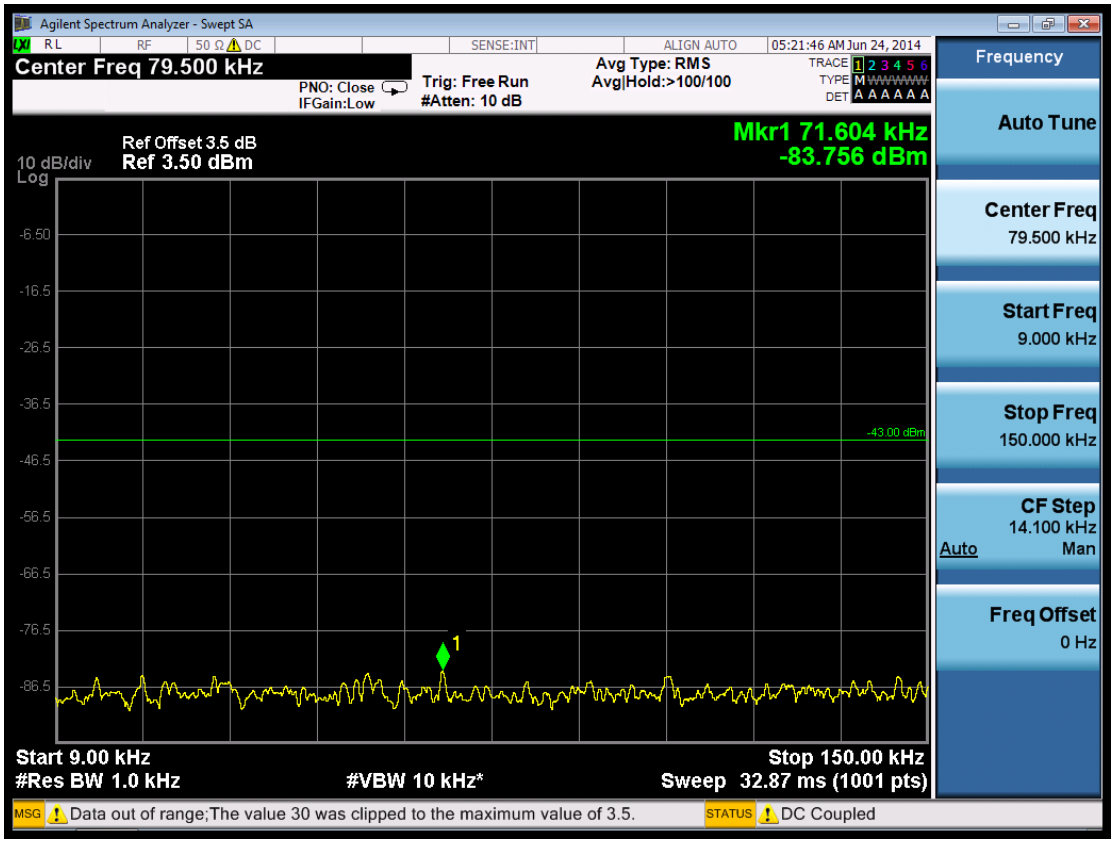
Test Band=WCDMA1700

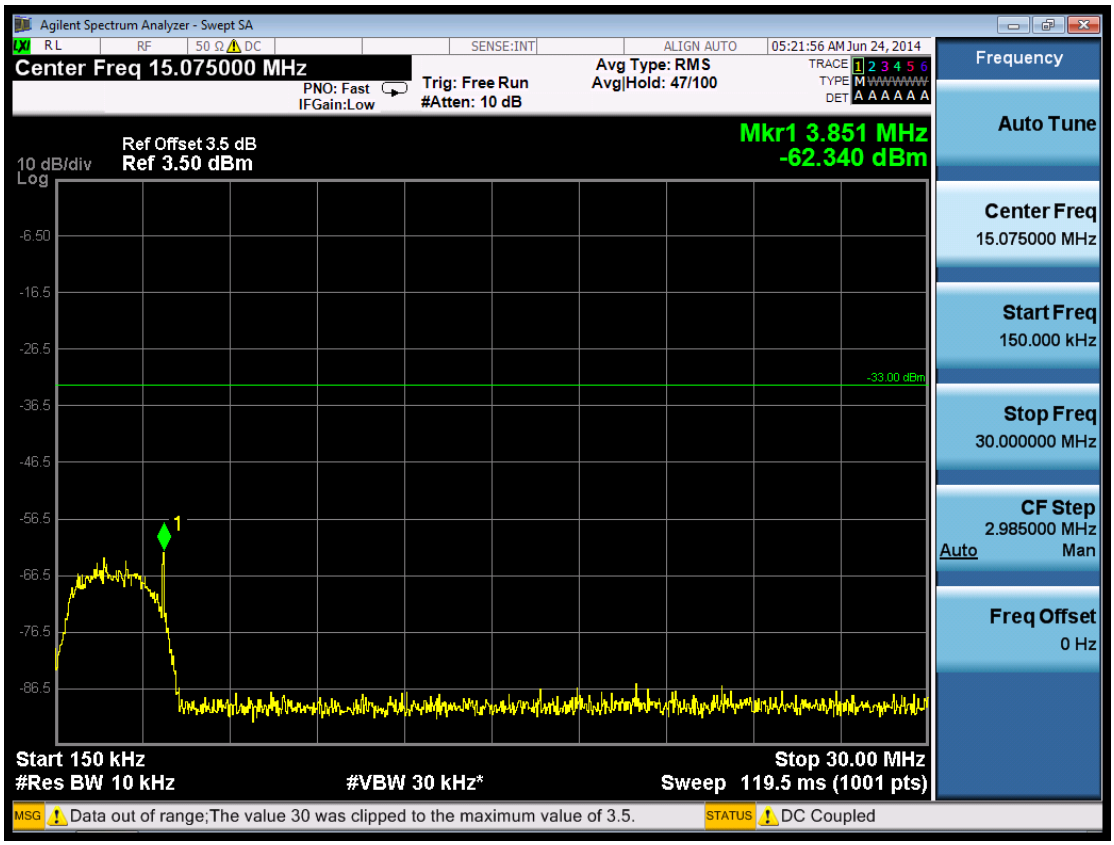
Test Mode=UMTS/TM1

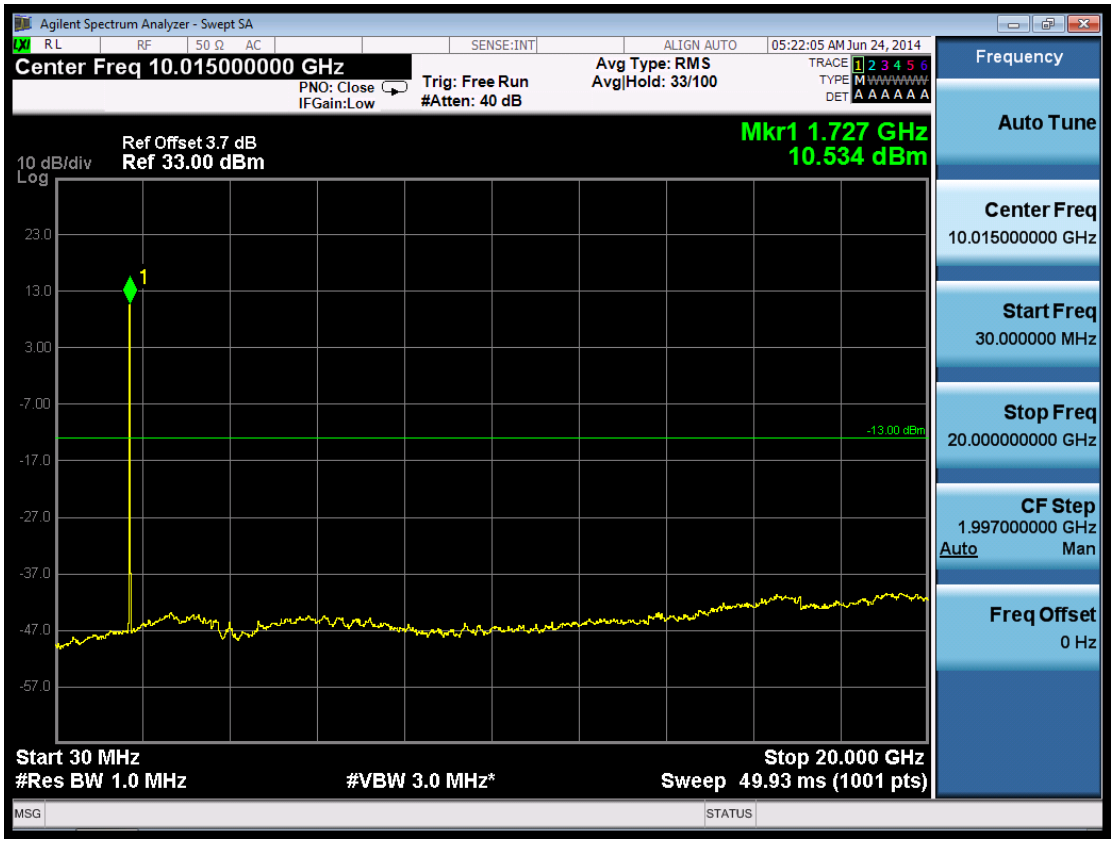
Test Channel=LCH



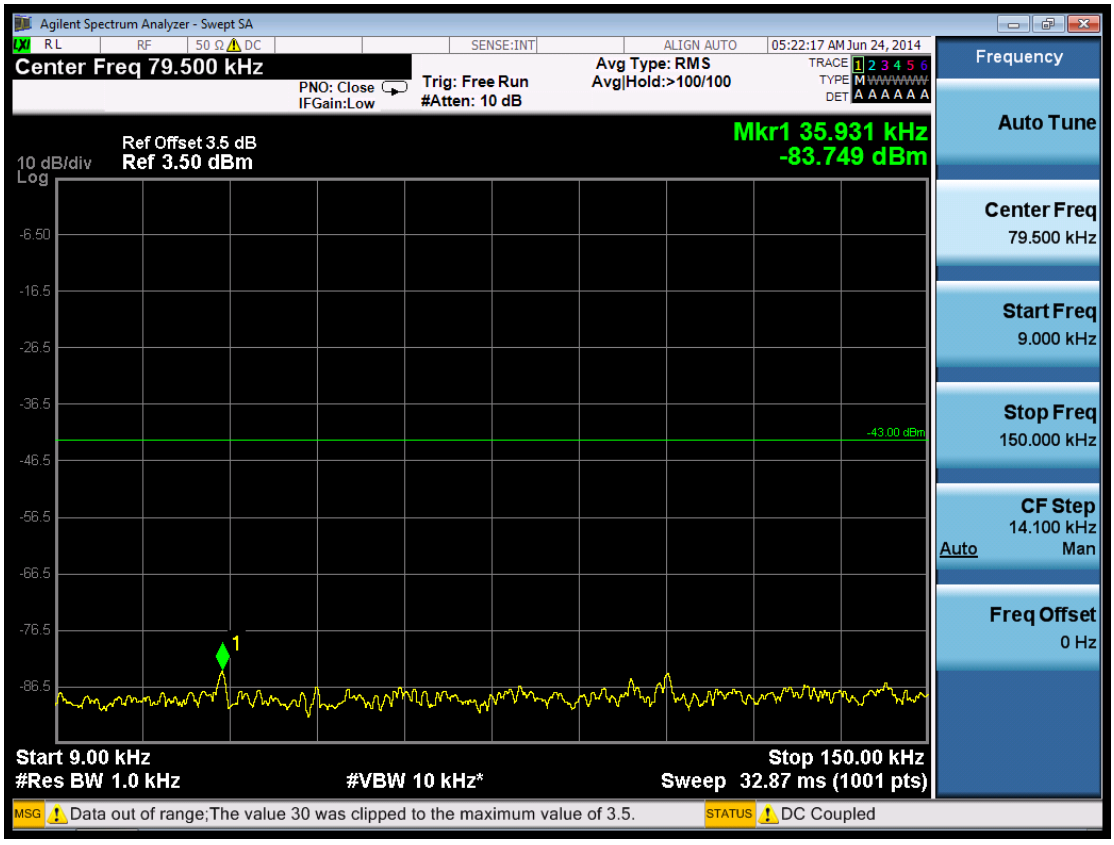
Test Channel=MCH

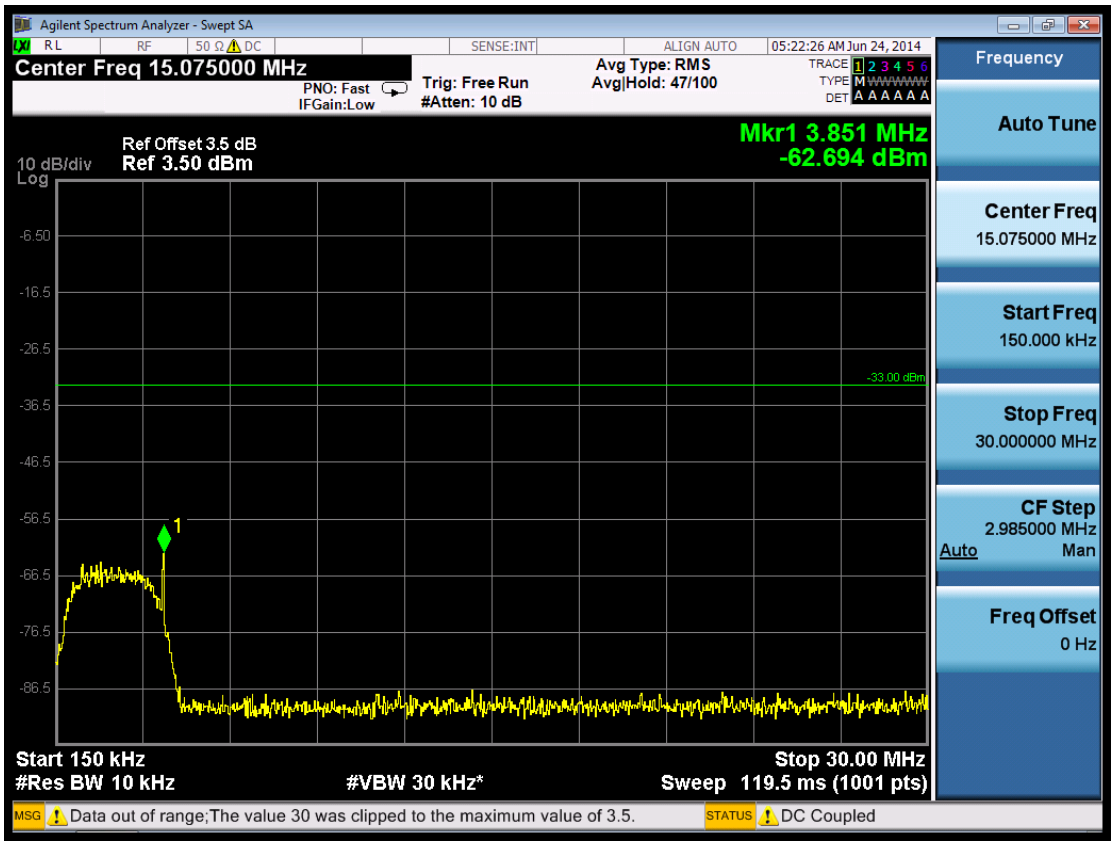

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
05:21:46 AM Jun 24, 2014
Center Freq 79.500 kHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold:>100/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.5 dB
10 dB/div
Log
Ref 3.50 dBm
Mkr1 71.604 kHz
-83.756 dBm
-6.50
-16.5
-26.5
-36.5
-43.00 dBm
-46.5
-56.5
-66.5
-76.5
-86.5
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 10 kHz*
Stop 150.00 kHz
Sweep 32.87 ms (1001 pts)
MSG
Data out of range;The value 30 was clipped to the maximum value of 3.5.
STATUS
DC Coupled
Frequency
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
05:21:56 AM Jun 24, 2014
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 47/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.5 dB
10 dB/div
Log
Ref 3.50 dBm
Mkr1 3.851 MHz
-62.340 dBm
-6.50
-16.5
-26.5
-33.00 dBm
-36.5
-46.5
-56.5
-66.5
-76.5
-86.5
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 119.5 ms (1001 pts)
MSG
Data out of range;The value 30 was clipped to the maximum value of 3.5.
STATUS
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:22:05 AM Jun 24, 2014
Center Freq 10.015000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 33/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.7 dB
10 dB/div
Log
Ref 33.00 dBm
Mkr1 1.727 GHz
10.534 dBm
23.0
13.0
3.00
-7.00
-17.0
-27.0
-37.0
-47.0
-57.0
-13.00 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 20.000 GHz
Sweep 49.93 ms (1001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
10.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
20.000000000 GHz
CF Step
1.997000000 GHz
Auto
Man
Freq Offset
0 Hz

Test Channel=HCH



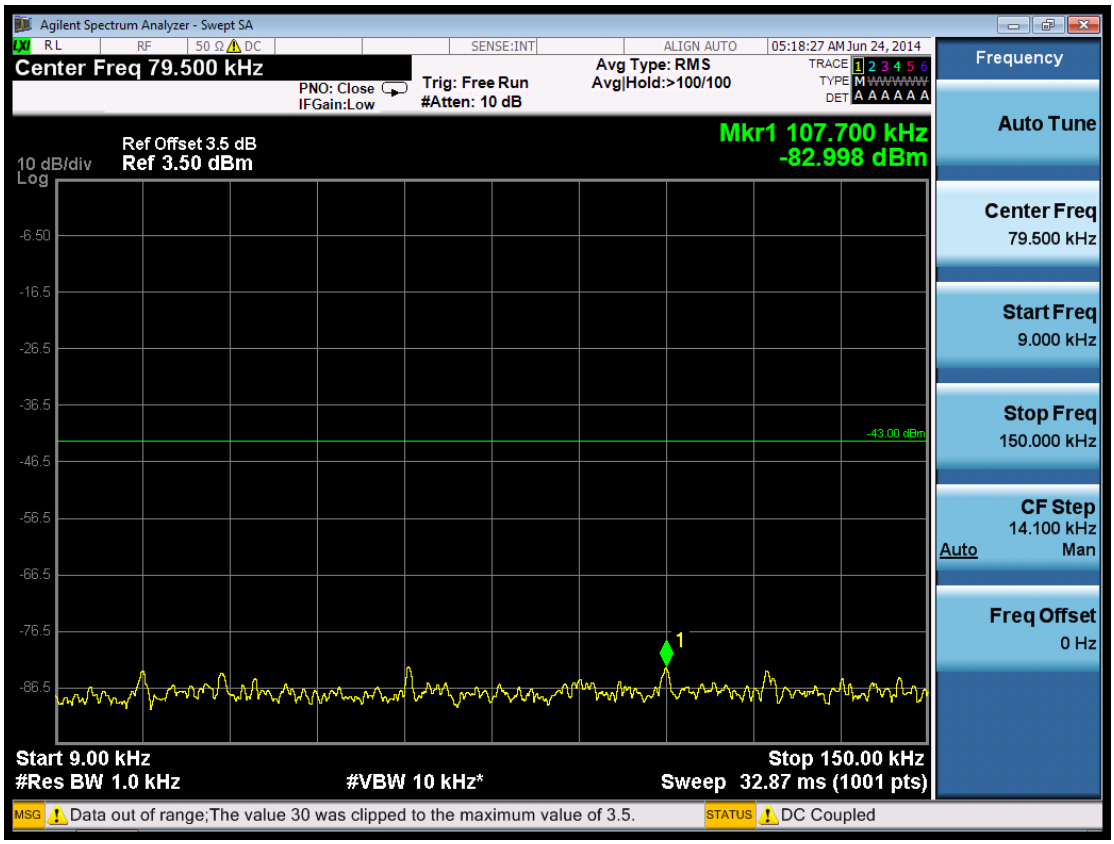



Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:22:36 AM Jun 24, 2014
Center Freq 10.015000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 33/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.7 dB
10 dB/div
Log
Ref 33.00 dBm
Mkr1 1.747 GHz
10.388 dBm
23.0
13.0
3.00
-7.00
-17.0
-27.0
-37.0
-47.0
-57.0
-13.00 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 20.000 GHz
Sweep 49.93 ms (1001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
10.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
20.000000000 GHz
CF Step
1.997000000 GHz
Auto
Man
Freq Offset
0 Hz

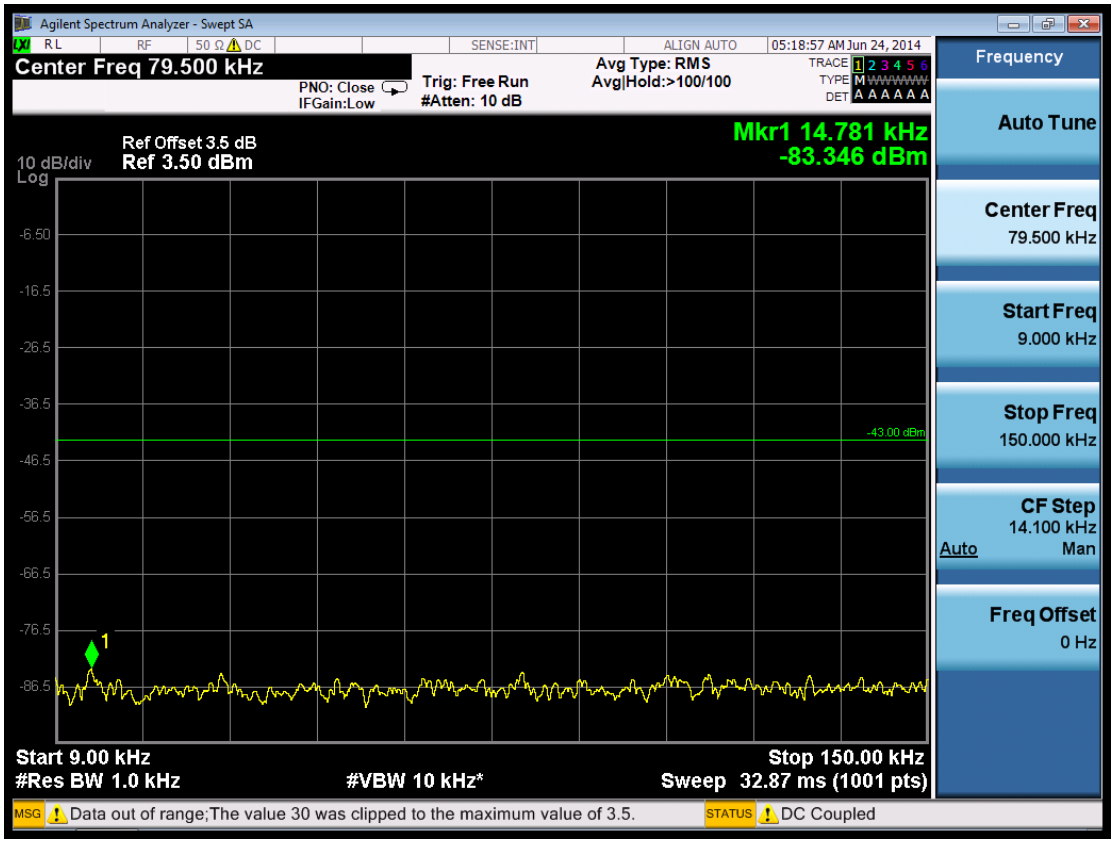
Test Band=WCDMA1900

Test Mode=UMTS/TM1

Test Channel=LCH



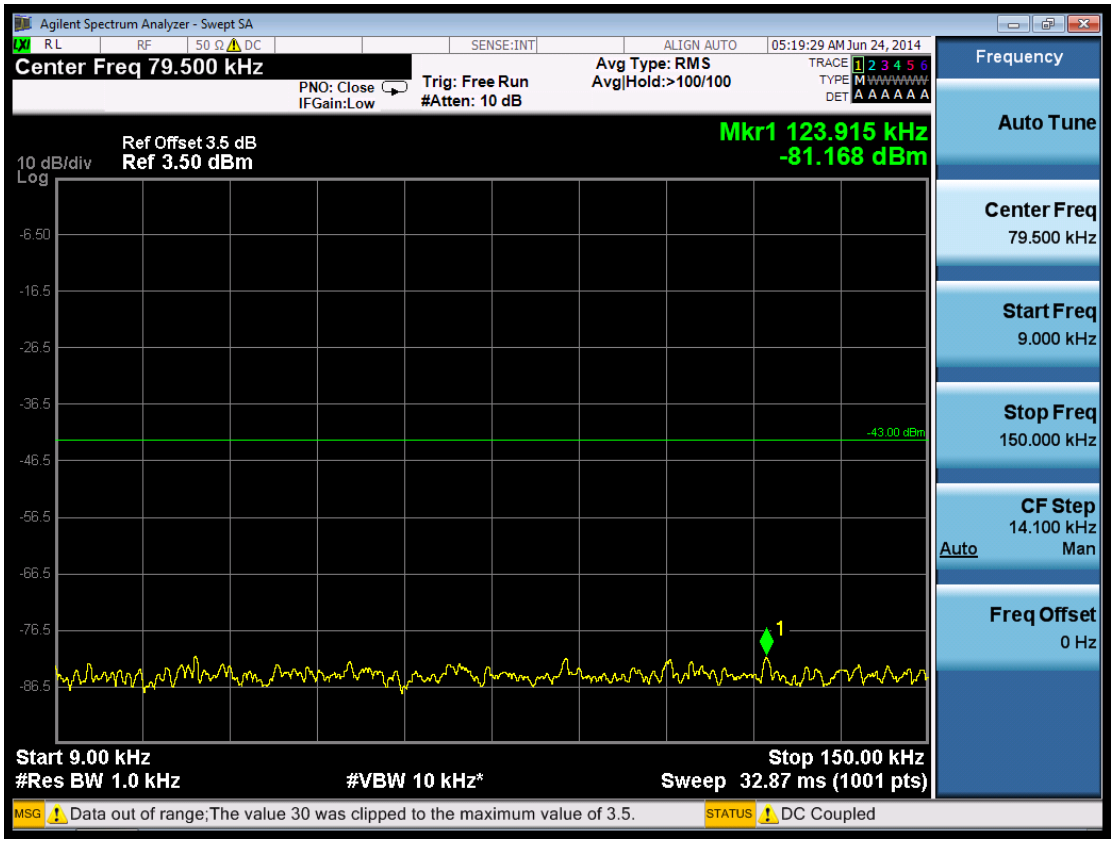
Test Channel=MCH


Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
05:18:57 AM Jun 24, 2014
Center Freq 79.500 kHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold:>100/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.5 dB
10 dB/div
Log
Ref 3.50 dBm
Mkr1 14.781 kHz
-83.346 dBm
-6.50
-16.5
-26.5
-36.5
-43.00 dBm
-46.5
-56.5
-66.5
-76.5
-86.5
Start 9.00 kHz
#Res BW 1.0 kHz
#VBW 10 kHz*
Stop 150.00 kHz
Sweep 32.87 ms (1001 pts)
MSG
Data out of range;The value 30 was clipped to the maximum value of 3.5.
STATUS
DC Coupled
Frequency
Auto Tune
Center Freq
79.500 kHz
Start Freq
9.000 kHz
Stop Freq
150.000 kHz
CF Step
14.100 kHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω DC
SENSE:INT
ALIGN AUTO
05:19:07 AM Jun 24, 2014
Center Freq 15.075000 MHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 10 dB
Avg Type: RMS
Avg|Hold: 47/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.5 dB
10 dB/div
Log
Ref 3.50 dBm
Mkr1 3.851 MHz
-58.533 dBm
-6.50
-16.5
-26.5
-33.00 dBm
-36.5
-46.5
-56.5
-66.5
-76.5
-86.5
Start 150 kHz
#Res BW 10 kHz
#VBW 30 kHz*
Stop 30.00 MHz
Sweep 119.5 ms (1001 pts)
MSG
Data out of range;The value 30 was clipped to the maximum value of 3.5.
STATUS
DC Coupled
Frequency
Auto Tune
Center Freq
15.075000 MHz
Start Freq
150.000 kHz
Stop Freq
30.000000 MHz
CF Step
2.985000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:19:16 AM Jun 24, 2014
Center Freq 10.015000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 33/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.7 dB
10 dB/div
Log
Ref 33.00 dBm
Mkr1 1.887 GHz
10.436 dBm
23.0
13.0
3.00
-7.00
-17.0
-27.0
-37.0
-47.0
-57.0
-13.00 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 20.000 GHz
Sweep 49.93 ms (1001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
10.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
20.000000000 GHz
CF Step
1.997000000 GHz
Auto
Man
Freq Offset
0 Hz

Test Channel=HCH




Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
05:19:48 AM Jun 24, 2014
Center Freq 10.015000000 GHz
PNO: Close
IFGain:Low
Trig: Free Run
#Atten: 40 dB
Avg Type: RMS
Avg|Hold: 33/100
TRACE 1 2 3 4 5 6
TYPE M
DET A A A A A
Ref Offset 3.7 dB
10 dB/div
Log
Ref 33.00 dBm
Mkr1 1.907 GHz
10.504 dBm
23.0
13.0
3.00
-7.00
-17.0
-27.0
-37.0
-47.0
-57.0
-13.00 dBm
Start 30 MHz
#Res BW 1.0 MHz
#VBW 3.0 MHz*
Stop 20.000 GHz
Sweep 49.93 ms (1001 pts)
MSG
STATUS
Frequency
Auto Tune
Center Freq
10.015000000 GHz
Start Freq
30.000000 MHz
Stop Freq
20.000000000 GHz
CF Step
1.997000000 GHz
Auto
Man
Freq Offset
0 Hz

Appendix G:Frequency Stability

Test Results

Frequency Error vs. Voltage:

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM850	TM1	LCH	TN	VL	-18.14	-0.02	±2.5	PASS
			TN	VN	-18.27	-0.02	±2.5	PASS
			TN	VH	-18.83	-0.02	±2.5	PASS
		MCH	TN	VL	-19.19	-0.02	±2.5	PASS
			TN	VN	-19.37	-0.02	±2.5	PASS
			TN	VH	-18.57	-0.02	±2.5	PASS
		HCH	TN	VL	-10.33	-0.01	±2.5	PASS
			TN	VN	-16.98	-0.02	±2.5	PASS
			TN	VH	-18.41	-0.02	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM1900	TM1	LCH	TN	VL	33.65	0.02	±2.5	PASS
			TN	VN	31.19	0.02	±2.5	PASS
			TN	VH	31.71	0.02	±2.5	PASS
		MCH	TN	VL	39.15	0.02	±2.5	PASS
			TN	VN	37.26	0.02	±2.5	PASS
			TN	VH	36.94	0.02	±2.5	PASS
		HCH	TN	VL	43.66	0.02	±2.5	PASS
			TN	VN	41.78	0.02	±2.5	PASS
			TN	VH	38.90	0.02	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA850	TM1	LCH	TN	VL	22.89	0.03	±2.5	PASS
			TN	VN	22.76	0.03	±2.5	PASS
			TN	VH	21.77	0.03	±2.5	PASS
		MCH	TN	VL	22.89	0.03	±2.5	PASS
			TN	VN	22.59	0.03	±2.5	PASS
			TN	VH	24.02	0.03	±2.5	PASS
		HCH	TN	VL	22.89	0.03	±2.5	PASS
			TN	VN	20.76	0.02	±2.5	PASS
			TN	VH	22.74	0.03	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA1700	TM1	LCH	TN	VL	22.66	0.01	±2.5	PASS
			TN	VN	24.11	0.01	±2.5	PASS
			TN	VH	23.55	0.01	±2.5	PASS
		MCH	TN	VL	28.43	0.02	±2.5	PASS
			TN	VN	30.35	0.02	±2.5	PASS
			TN	VH	27.98	0.02	±2.5	PASS
		HCH	TN	VL	24.25	0.01	±2.5	PASS
			TN	VN	23.46	0.01	±2.5	PASS
			TN	VH	22.47	0.01	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA1900	TM1	LCH	TN	VL	44.40	0.02	±2.5	PASS
			TN	VN	42.59	0.02	±2.5	PASS
			TN	VH	43.72	0.02	±2.5	PASS
		MCH	TN	VL	35.68	0.02	±2.5	PASS
			TN	VN	36.52	0.02	±2.5	PASS
			TN	VH	37.35	0.02	±2.5	PASS
		HCH	TN	VL	46.78	0.02	±2.5	PASS
			TN	VN	44.81	0.02	±2.5	PASS
			TN	VH	41.97	0.02	±2.5	PASS

Frequency Error vs. Temperature:

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM850	TM1	LCH	VN	-30	-18.59	-0.02	±2.5	PASS
			VN	-20	-19.90	-0.02	±2.5	PASS
			VN	-10	-20.45	-0.02	±2.5	PASS
			VN	0	-19.97	-0.02	±2.5	PASS
			VN	10	-20.64	-0.03	±2.5	PASS
			VN	20	-22.45	-0.03	±2.5	PASS
			VN	30	-22.28	-0.03	±2.5	PASS
			VN	40	-18.80	-0.02	±2.5	PASS
			VN	50	-16.05	-0.02	±2.5	PASS
GSM850	TM1	MCH	VN	-30	-19.04	-0.02	±2.5	PASS
			VN	-20	-18.41	-0.02	±2.5	PASS
			VN	-10	-18.93	-0.02	±2.5	PASS
			VN	0	-20.11	-0.02	±2.5	PASS
			VN	10	-20.79	-0.02	±2.5	PASS
			VN	20	-20.36	-0.02	±2.5	PASS
			VN	30	-21.36	-0.03	±2.5	PASS
			VN	40	-18.61	-0.02	±2.5	PASS
			VN	50	-18.33	-0.02	±2.5	PASS
GSM850	TM1	HCH	VN	-30	-17.02	-0.02	±2.5	PASS
			VN	-20	-15.06	-0.02	±2.5	PASS
			VN	-10	-15.39	-0.02	±2.5	PASS
			VN	0	-14.60	-0.02	±2.5	PASS
			VN	10	-17.17	-0.02	±2.5	PASS
			VN	20	-17.53	-0.02	±2.5	PASS
			VN	30	-19.27	-0.02	±2.5	PASS
			VN	40	-21.65	-0.03	±2.5	PASS
			VN	50	-23.45	-0.03	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM1900	TM1	LCH	VN	-30	30.12	0.02	±2.5	PASS
			VN	-20	28.57	0.02	±2.5	PASS
			VN	-10	30.11	0.02	±2.5	PASS
			VN	0	30.41	0.02	±2.5	PASS
			VN	10	30.90	0.02	±2.5	PASS
			VN	20	33.25	0.02	±2.5	PASS
			VN	30	34.90	0.02	±2.5	PASS
			VN	40	36.92	0.02	±2.5	PASS
			VN	50	37.27	0.02	±2.5	PASS
GSM1900	TM1	MCH	VN	-30	36.73	0.02	±2.5	PASS
			VN	-20	38.36	0.02	±2.5	PASS
			VN	-10	37.89	0.02	±2.5	PASS
			VN	0	37.56	0.02	±2.5	PASS
			VN	10	37.46	0.02	±2.5	PASS
			VN	20	36.04	0.02	±2.5	PASS
			VN	30	36.34	0.02	±2.5	PASS
			VN	40	35.38	0.02	±2.5	PASS
			VN	50	34.03	0.02	±2.5	PASS
GSM1900	TM1	HCH	VN	-30	42.33	0.02	±2.5	PASS
			VN	-20	43.12	0.02	±2.5	PASS
			VN	-10	43.78	0.02	±2.5	PASS
			VN	0	44.34	0.02	±2.5	PASS
			VN	10	45.09	0.02	±2.5	PASS
			VN	20	44.57	0.02	±2.5	PASS
			VN	30	44.11	0.02	±2.5	PASS
			VN	40	44.96	0.02	±2.5	PASS
			VN	50	43.60	0.02	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA850	TM1	LCH	VN	-30	22.34	0.03	±2.5	PASS
			VN	-20	22.82	0.03	±2.5	PASS
			VN	-10	22.73	0.03	±2.5	PASS
			VN	0	21.91	0.03	±2.5	PASS
			VN	10	22.48	0.03	±2.5	PASS
			VN	20	25.11	0.03	±2.5	PASS
			VN	30	23.64	0.03	±2.5	PASS
			VN	40	21.67	0.03	±2.5	PASS
			VN	50	21.88	0.03	±2.5	PASS
WCDMA850	TM1	MCH	VN	-30	22.02	0.03	±2.5	PASS
			VN	-20	22.31	0.03	±2.5	PASS
			VN	-10	24.75	0.03	±2.5	PASS
			VN	0	24.26	0.03	±2.5	PASS
			VN	10	24.94	0.03	±2.5	PASS
			VN	20	24.14	0.03	±2.5	PASS
			VN	30	23.46	0.03	±2.5	PASS
			VN	40	22.25	0.03	±2.5	PASS
			VN	50	24.12	0.03	±2.5	PASS
WCDMA850	TM1	HCH	VN	-30	22.25	0.03	±2.5	PASS
			VN	-20	20.31	0.02	±2.5	PASS
			VN	-10	19.40	0.02	±2.5	PASS
			VN	0	19.75	0.02	±2.5	PASS
			VN	10	18.36	0.02	±2.5	PASS
			VN	20	20.02	0.02	±2.5	PASS
			VN	30	18.47	0.02	±2.5	PASS
			VN	40	19.07	0.02	±2.5	PASS
			VN	50	20.78	0.02	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA1700	TM1	LCH	VN	-30	22.86	0.01	±2.5	PASS
			VN	-20	23.78	0.01	±2.5	PASS
			VN	-10	23.65	0.01	±2.5	PASS
			VN	0	21.51	0.01	±2.5	PASS
			VN	10	22.77	0.01	±2.5	PASS
			VN	20	23.50	0.01	±2.5	PASS
			VN	30	23.27	0.01	±2.5	PASS
			VN	40	24.88	0.01	±2.5	PASS
			VN	50	25.89	0.02	±2.5	PASS
WCDMA1700	TM1	MCH	VN	-30	27.67	0.02	±2.5	PASS
			VN	-20	26.26	0.02	±2.5	PASS
			VN	-10	24.89	0.01	±2.5	PASS
			VN	0	22.95	0.01	±2.5	PASS
			VN	10	23.30	0.01	±2.5	PASS
			VN	20	22.47	0.01	±2.5	PASS
			VN	30	22.05	0.01	±2.5	PASS
			VN	40	23.45	0.01	±2.5	PASS
			VN	50	21.93	0.01	±2.5	PASS
WCDMA1700	TM1	HCH	VN	-30	23.20	0.01	±2.5	PASS
			VN	-20	23.12	0.01	±2.5	PASS
			VN	-10	21.35	0.01	±2.5	PASS
			VN	0	23.79	0.01	±2.5	PASS
			VN	10	23.45	0.01	±2.5	PASS
			VN	20	22.07	0.01	±2.5	PASS
			VN	30	22.35	0.01	±2.5	PASS
			VN	40	23.32	0.01	±2.5	PASS
			VN	50	25.70	0.01	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA1900	TM1	LCH	VN	-30	46.45	0.03	±2.5	PASS
			VN	-20	46.55	0.03	±2.5	PASS
			VN	-10	46.23	0.02	±2.5	PASS
			VN	0	44.64	0.02	±2.5	PASS
			VN	10	48.54	0.03	±2.5	PASS
			VN	20	49.31	0.03	±2.5	PASS
			VN	30	51.43	0.03	±2.5	PASS
			VN	40	50.85	0.03	±2.5	PASS
			VN	50	54.67	0.03	±2.5	PASS
WCDMA1900	TM1	MCH	VN	-30	39.07	0.02	±2.5	PASS
			VN	-20	37.98	0.02	±2.5	PASS
			VN	-10	38.85	0.02	±2.5	PASS
			VN	0	38.67	0.02	±2.5	PASS
			VN	10	40.06	0.02	±2.5	PASS
			VN	20	41.15	0.02	±2.5	PASS
			VN	30	40.95	0.02	±2.5	PASS
			VN	40	37.91	0.02	±2.5	PASS
			VN	50	36.63	0.02	±2.5	PASS
WCDMA1900	TM1	HCH	VN	-30	46.43	0.02	±2.5	PASS
			VN	-20	43.23	0.02	±2.5	PASS
			VN	-10	43.85	0.02	±2.5	PASS
			VN	0	41.87	0.02	±2.5	PASS
			VN	10	44.94	0.02	±2.5	PASS
			VN	20	44.90	0.02	±2.5	PASS
			VN	30	44.29	0.02	±2.5	PASS
			VN	40	48.00	0.03	±2.5	PASS
			VN	50	46.49	0.02	±2.5	PASS

Appendix H: Radiated spurious emission

GSM 850

Test Frequency Range: 30MHz-10GHz

MCH

Frequency (MHz)	Amp. Level (dBm)	Limit (dBm)	Margin (dB)	polarity
1698	-54.6	-13	41.6	H
4245	-45.5	-13	32.5	H
7643	-32.8	-13	19.8	H
1698	-47.2	-13	34.2	V
7643	-36.2	-13	23.2	V

Remark: No outstanding emissions can be detected.

GSM 1900

Test Frequency Range: 30MHz-20GHz

MCH

Frequency (MHz)	Amp. Level (dBm)	Limit (dBm)	Margin (dB)	polarity
3565	-52.3	-13	39.3	H
8950	-35.8	-13	22.8	H
1845	-61.6	-13	48.6	V
10560	-29.3	-13	16.3	V

Remark: No outstanding emissions can be detected.

WCDMA Band Ⅱ

Test Frequency Range: 30MHz-20GHz

MCH

Frequency (MHz)	Amp. Level (dBm)	Limit (dBm)	Margin (dB)	polarity
245	-71.5	-13	58.5	H
245	-66.8	-13	53.8	V
8441	-34.9	-13	21.9	H
8927	-34.4	-13	21.4	V

Remark: No outstanding emissions can be detected.

WCDMA Band Ⅳ

Test Frequency Range: 30MHz-18GHz

MCH

Frequency (MHz)	Amp. Level (dBm)	Limit (dBm)	Margin (dB)	polarity
5138	-42.9	-13	29.9	H
3428	-46.9	-13	33.9	V
5138	-40.4	-13	27.4	V

Remark: No outstanding emissions can be detected.

WCDMA Band V

Test Frequency Range: 30MHz-10GHz

MCH

Frequency (MHz)	Amp. Level (dBm)	Limit (dBm)	Margin (dB)	polarity
3864	-48.6	-13	35.6	H
8441	-33.6	-13	20.6	H
4234	-48.8	-13	35.8	V
8441	-34.7	-13	21.7	V

Remark: No outstanding emissions can be detected.