

FCC Part 22H

Measurement and Test Report

For

ECR Solutions Ltd.

Church House, Church Lane, Kings Langley, Hertfordshire, WD4 8JP, UK.

FCC ID: 2AKGOECRGO2

FCC Rules: FCC Part 22H

Product Description: Handheld Terminal

Tested Model: ECRGo2

Report No.: STR16118031I-1

Tested Date: 2016-10-25 to 2016-11-30

Issued Date: 2016-12-01

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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen SEM. Test Technology Co., Ltd.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: ECR Solutions Ltd.
Address of applicant: Church House, Church Lane, Kings Langley, Hertfordshire, WD4 8JP, UK.

Manufacturer: Maxpad Technology Co., Ltd.
Address of manufacturer: Room B04, 4/F, Bldg R2-B, No.20 Gaoxin Ave 7th, South, Hi-tech Industrial park, Nanshan, Shenzhen, China

General Description of EUT:	
Product Name:	Handheld Terminal
Brand Name:	ECR
Model No.:	ECRGo2
Adding Model:	MX3606
Rated Voltage:	Main Battery: DC 7.4V , Vice Battery: DC 3.7V
Battery Capacity:	Main Battery:2500mAh ,Vice Battery: 2400mAh
Power Adapter:	JY-090300 Input:100-240V 50/60Hz 1.5A; Output: 9V/3A
Software Version:	Windows 10 Enterprise 2016
Hardware Version:	VPOS3606-Main-V01.02
Device Category:	Portable Device
<i>Note: The test data is gathered from a production sample provided by the manufacturer. The appearance of others models listed in the report is different from main-test model ECRGo2, but the circuit and the electronic construction do not change, declared by the manufacturer.</i>	

Technical Characteristics of EUT:	
3G	
Support Networks:	WCDMA, HSDPA, HSUPA
Support Band:	WCDMA Band 5
Uplink Frequency:	WCDMA Band 5: 824~849MHz
Downlink Frequency:	WCDMA Band 5: 869~894MHz
RF Output Power:	WCDMA Band 5: 22.50dBm
Type of Emission:	WCDMA Band 5: 4M18F9W
Type of Modulation:	BPSK
Antenna Type:	Integral Antenna
Antenna Gain:	0dBi

1.2 Test Standards

The following report is prepared on behalf of the ECR Solutions Ltd. in accordance with FCC Part 2 subpart J, FCC Part 22 subpart H and FCC Part 24 subpart E of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 2 subpart J, FCC Part 22 subpart H and FCC Part 24 subpart E of the Federal Communication Commissions rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission, should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI/TIA-603-D: 2010 and ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz. The measurement guide KDB 971168 D01 Power Meas License Digital Systems v02r02 shall be performed also.

1.4 Test Facility

- **FCC – Registration No.: 934118**

Shenzhen SEM.Test Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files and the Registration is 934118.

- **Industry Canada (IC) Registration No.: 11464A**

The 3m Semi-anechoic chamber of Shenzhen SEM.Test Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

- **CNAS Registration No.: L4062**

Shenzhen SEM.Test Technology Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, P.R.C (518101)

1.5 EUT Setup and Test Mode

The EUT was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements. All testing shall be performed under maximum output power condition, and to measure its highest possible emissions level, more detailed description as follows:

Test Mode List		
Test Mode	Description	Remark
TM1	WCDMA Band 5	Low, Middle, High Channels
TM2	HSDPA Band 5	Low, Middle, High Channels
TM3	HSUPA Band 5	Low, Middle, High Channels

Testing Configure			
Support Band	Support Standard	Channel Frequency	Channel Number
WCDMA Band 5	WCDMA/HSDPA/HSUPA	826.4 MHz	4132
		836.6 MHz	4183
		846.6 MHz	4233
Note: the transmitter has been tested on the communications mode of WCDMA, HSDPA, HSUPA compliance test and record the worst case.			

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
/	/	/	/

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
/	/	/	/

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
/	/	/	/

1.6 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
RF Output Power	Conducted	$\pm 0.42\text{dB}$
Occupied Bandwidth	Conducted	$\pm 1.5\%$
Frequency Stability	Conducted	2.3%
Transmitter Spurious Emissions	Radiated	$\pm 5.1\text{dB}$
Transmitter Spurious Emissions	Conducted	$\pm 0.42\text{dB}$

1.7 Test Equipment List and Details

No.	Description	Manufacturer	Model	Serial No.	Cal Date	Due. Date
SEMT-1075	Communication Tester	Rohde & Schwarz	CMW500	148650	2016-06-04	2017-06-03
SEMT-1034	GSM Tester	Rohde & Schwarz	CMU200	104036	2016-06-04	2017-06-03
SEMT-1072	Spectrum Analyzer	Agilent	E4407B	MY41440400	2016-06-04	2017-06-03
SEMT-1079	Spectrum Analyzer	Agilent	N9020A	US47140102	2016-06-04	2017-06-03
SEMT-1080	Signal Generator	Agilent	83752A	3610A01453	2016-06-04	2017-06-03
SEMT-1081	Vector Signal Generator	Agilent	N5182A	MY47070202	2016-06-04	2017-06-03
SEMT-1028	Power Divider	Weinschel	1506A	PM204	2016-06-04	2017-06-03
SEMT-1082	Power Divider	RF-Lambda	RFLT4W5M18G	14110400027	2016-06-04	2017-06-03
SEMT-1031	Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2016-06-04	2017-06-03
SEMT-1007	EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2016-06-04	2017-06-03
SEMT-1008	Amplifier	Agilent	8447F	3113A06717	2016-06-04	2017-06-03
SEMT-1043	Amplifier	C&D	PAP-1G18	2002	2016-06-04	2017-06-03
SEMT-1069	Loop Antenna	Schwarz beck	FMZB 1516	9773	2016-06-04	2017-06-03
SEMT-1068	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2016-06-04	2017-06-03
SEMT-1042	Horn Antenna	ETS	3117	00086197	2016-06-04	2017-06-03
SEMT-1121	Horn Antenna	ETS	3116B	00088203	2016-06-04	2017-06-03

2. SUMMARY OF TEST RESULTS

FCC Rules	Description of Test Item	Result
§ 1.1307, § 2.1093	RF Exposure	Compliant
§ 22.913 (a), § 24.232 (c)	RF Output Power	Compliant
§ 24.51	Peak-to-average Ratio (PAR) of Transmitter	N/A
§ 22.917 (b), § 24.238 (b)	Emission Bandwidth	Compliant
§ 22.917 (a), § 24.238 (a)	Spurious Emissions at Antenna Terminal	Compliant
§ 22.917 (a), § 24.238 (a)	Spurious Radiation Emissions	Compliant
§ 22.917 (a), § 24.238 (a)	Out of Band Emissions	Compliant
§ 22.355, § 24.235	Frequency Stability	Compliant

N/A: not applicable

3. RF Exposure

3.1 Standard Applicable

According to § 1.1307 and § 2.1093, the portable transmitter must comply the RF exposure requirements.

3.2 Test Result

This product complied with the requirement of the RF exposure, please see the SAR report.

4. RF Output Power

4.1 Standard Applicable

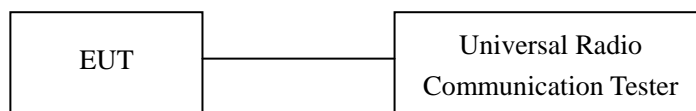
According to §22.913(a)(2), The ERP of mobile and portable stations transmitters and auxiliary test transmitters must not exceed 7 Watts.

According to §24.232 (c), Mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

According to §27.50(d)(4), Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

4.2 Test Procedure

Conducted output power test method:



Radiated power test method:

- 1.The setup of EUT is according with per ANSI/TIA Standard 603D and ANSI C63.4-2014 measurement procedure.
2. 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.
3. The frequency range up to tenth harmonic of the fundamental frequency was investigated.
4. 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.

4.3 Environmental Conditions

Temperature:	24 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

4.4 Summary of Test Results/Plots

Max. Radiated Power

ERP For WCDMA Mode Band 5

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 22H Limit
MHz	dBm	Meter	Degree	H / V	dB	dBd	dBm	dBm
Low Channel								
826.4	21.05	1.5	0	H	1.5	0	19.55	38.45
826.4	21.63	1.5	0	V	1.5	0	20.13	38.45
Middle Channel								
836.6	19.12	1.5	0	H	1.5	0	17.62	38.45
836.6	21.06	1.5	0	V	1.5	0	19.56	38.45
High Channel								
846.6	20.38	1.5	0	H	1.5	0	18.88	38.45
846.6	21.65	1.5	0	V	1.5	0	20.15	38.45

ERP For HSDPA Mode Band 5

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 22H Limit
MHz	dBm	Meter	Degree	H / V	dB	dBd	dBm	dBm
Low Channel								
826.4	20.4	1.5	0	H	1.5	0	18.9	38.45
826.4	21	1.5	0	V	1.5	0	19.5	38.45
Middle Channel								
836.6	18.99	1.5	0	H	1.5	0	17.49	38.45
836.6	19.86	1.5	0	V	1.5	0	18.36	38.45
High Channel								
846.6	20.36	1.5	0	H	1.5	0	18.86	38.45
846.6	21.6	1.5	0	V	1.5	0	20.1	38.45

ERP For HSUPA Mode Band 5

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 22H Limit
MHz	dBm	Meter	Degree	H / V	dB	dBd	dBm	dBm
Low Channel								
826.4	20.32	1.5	0	H	1.5	0	18.82	38.45
826.4	20.92	1.5	0	V	1.5	0	19.42	38.45
Middle Channel								
836.6	18.84	1.5	0	H	1.5	0	17.34	38.45
836.6	19.71	1.5	0	V	1.5	0	18.21	38.45
High Channel								
846.6	20.1	1.5	0	H	1.5	0	18.6	38.45
846.6	21.34	1.5	0	V	1.5	0	19.84	38.45

Note: Result = Substitute - Cable loss + Antenna Gain

Max. Conducted Output Power

For WCDMA Band 5

Test Mode	Channel	Frequency (MHz)	Average Power (dBm)	FCC Part 22.913 Limit (dBm)
WCDMA	Low Channel	826.4	22.29	38.45
	Middle Channel	836.6	22.50	38.45
	High Channel	846.6	22.46	38.45
HSDPA	Low Channel	826.4	22.04	38.45
	Middle Channel	836.6	21.94	38.45
	High Channel	846.6	22.07	38.45
HSUPA	Low Channel	826.4	21.54	38.45
	Middle Channel	836.6	21.53	38.45
	High Channel	846.6	21.71	38.45

5. Emission Bandwidth

5.1 Standard Applicable

According to §22.917(b), 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 emissions are attenuated at least 26 dB below the transmitter power.

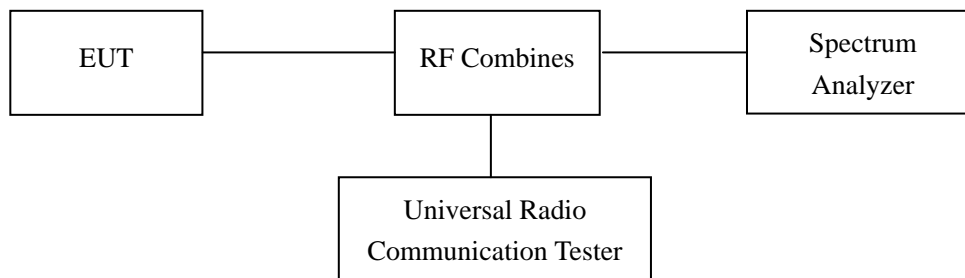
According to §24.238(b), The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

According to §27.53, 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 emissions are attenuated at least 26 dB below the transmitter power.

5.2 Test Procedure

The RF output terminal of the transmitter was connected to the input of the spectrum analyzer via a suitable attenuation. The RBW of the spectrum analyzer was set to 10kHz for GSM mode and 100kHz for WCDMA mode, VBW shall be at least 3 times the RBW, and the 26dB bandwidth was recorded.

Test Configuration for the emission bandwidth testing:



5.3 Environmental Conditions

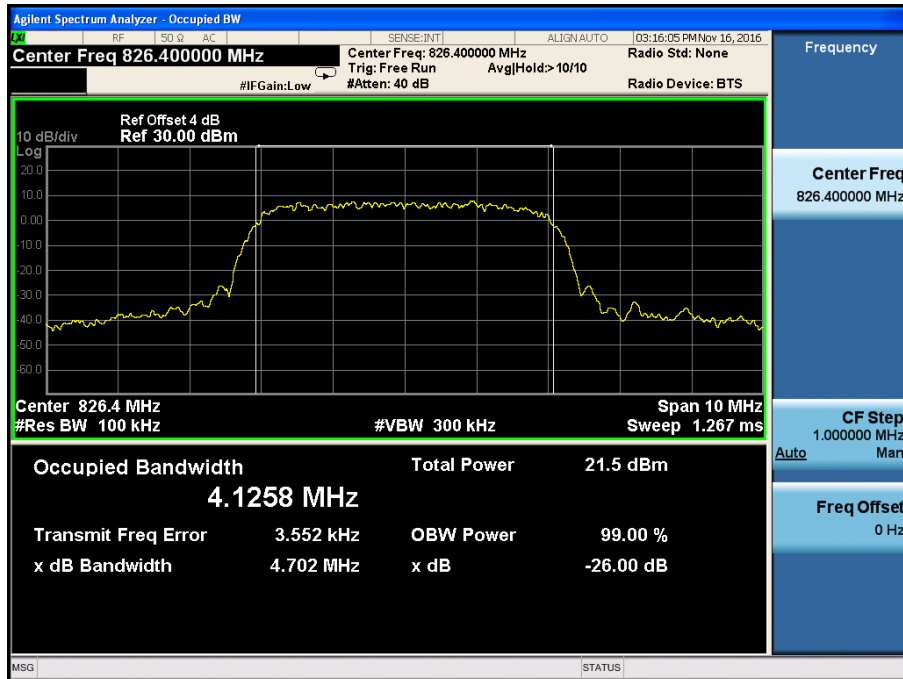
Temperature:	25 °C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

5.4 Summary of Test Results/Plots

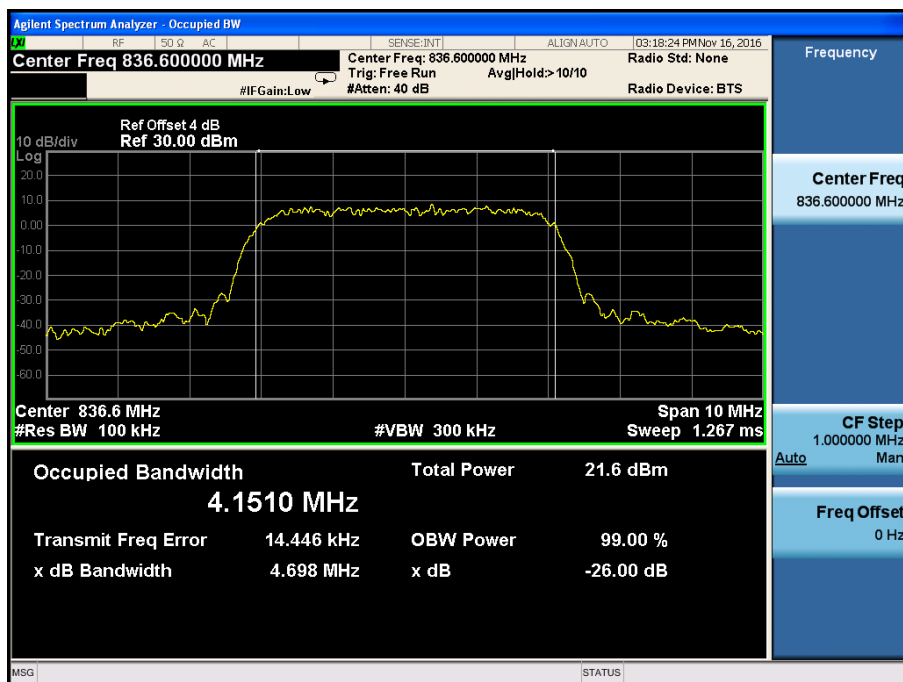
For Band 5

Test Mode	Channel	Frequency (MHz)	99% Emission Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
WCDMA	4132	826.4	4.1258	4.702
	4183	836.6	4.1510	4.698
	4233	846.6	4.1827	4.710
HSDPA	4132	826.4	4.1695	4.726
	4183	836.6	4.1717	4.728
	4233	846.6	4.1619	4.736
HSUPA	4132	826.4	4.1592	4.722
	4183	836.6	4.1475	4.706
	4233	846.6	4.1487	4.701

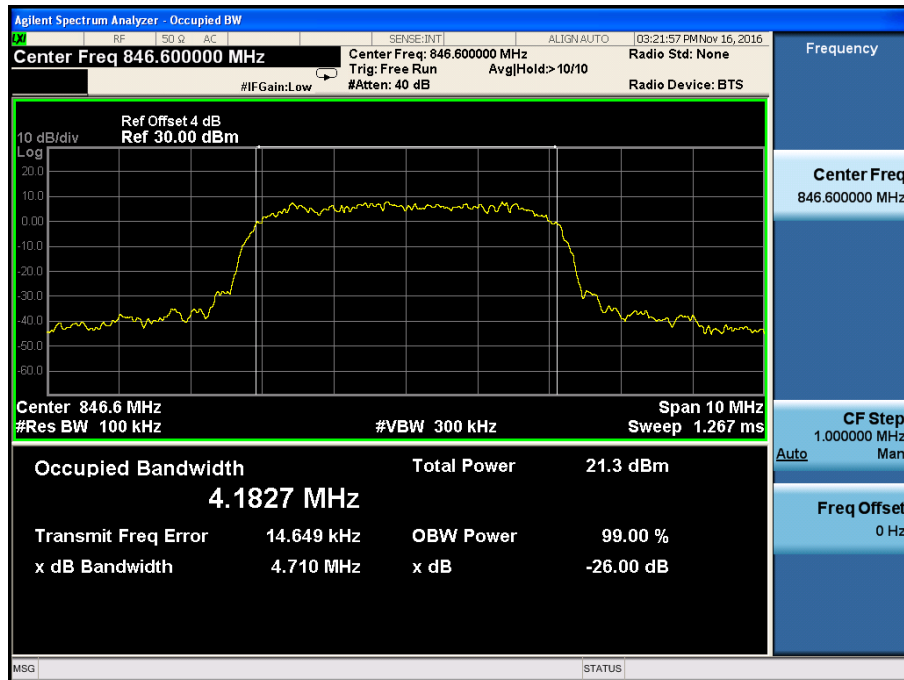
For Band V
WCDMA Low Channel



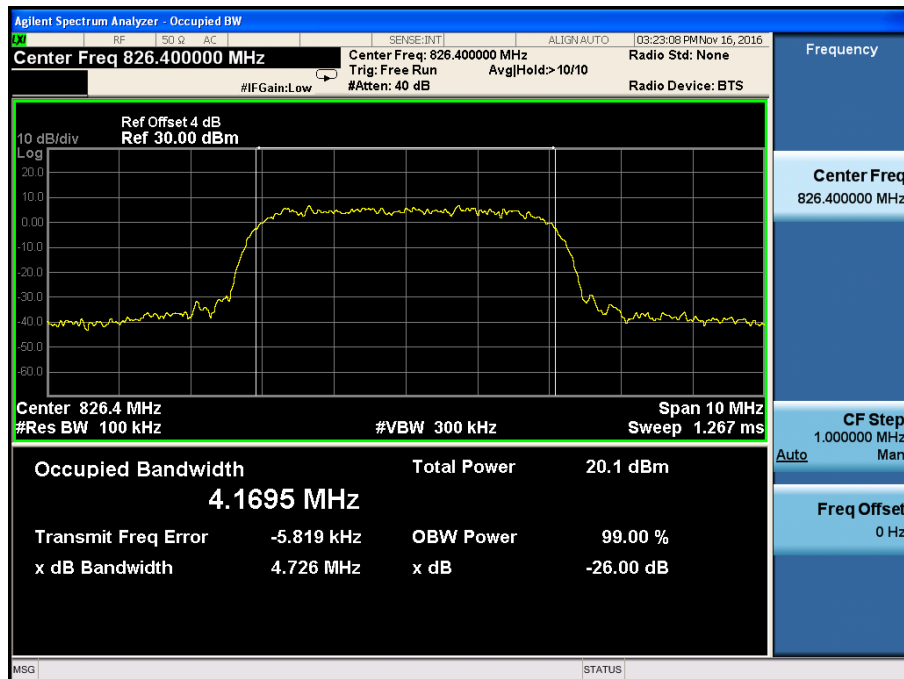
WCDMA Middle Channel



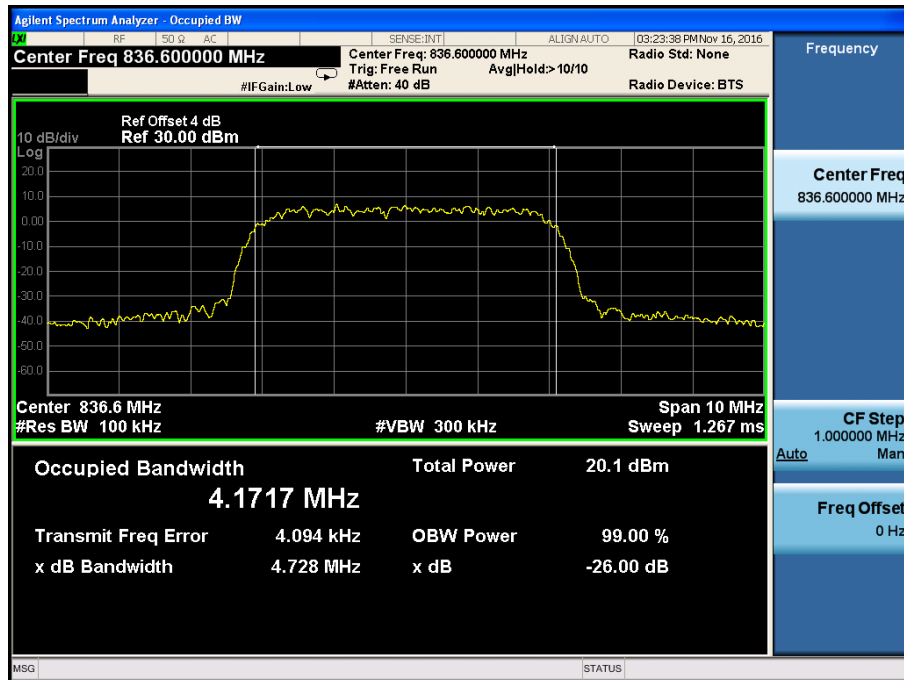
WCDMA High Channel



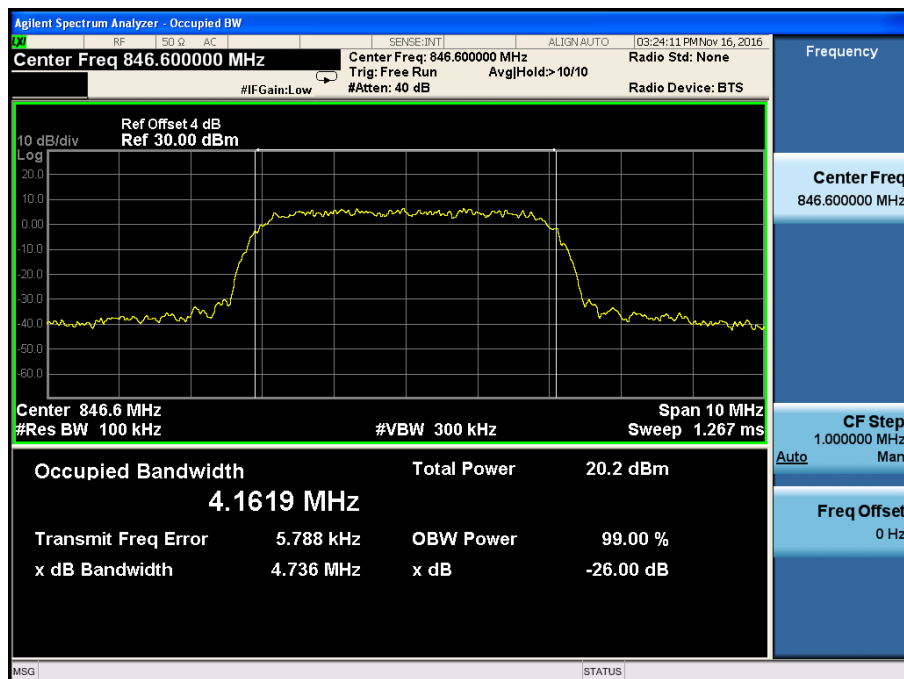
HSDPA Low Channel



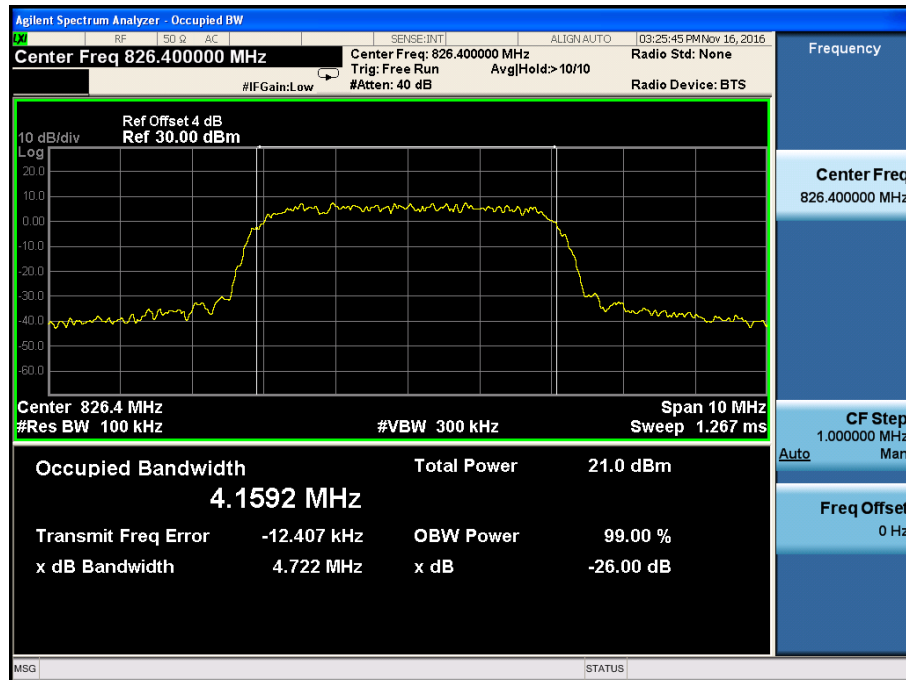
HSDPA Middle Channel



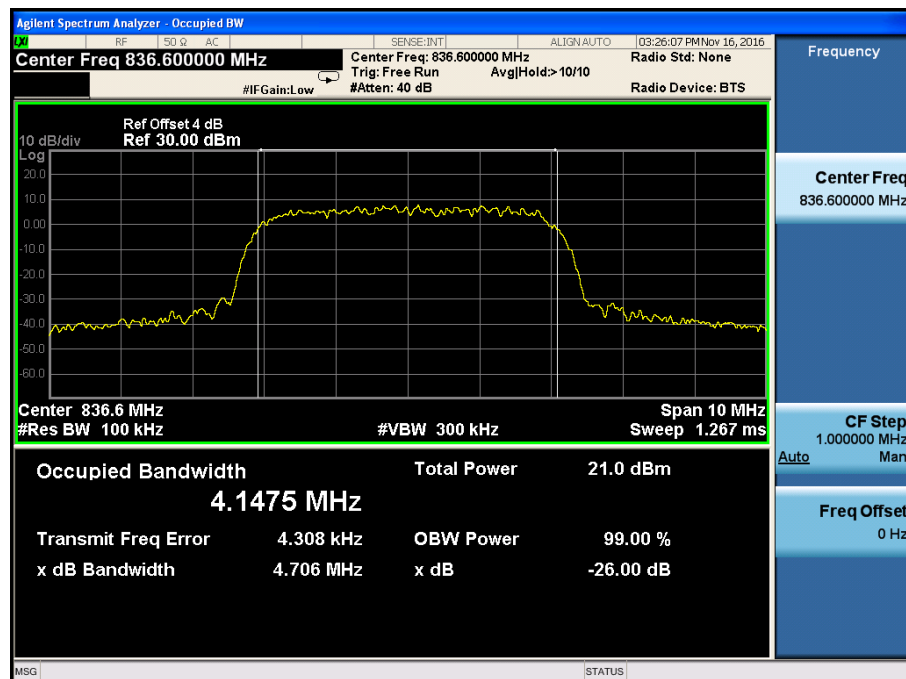
HSDPA High Channel



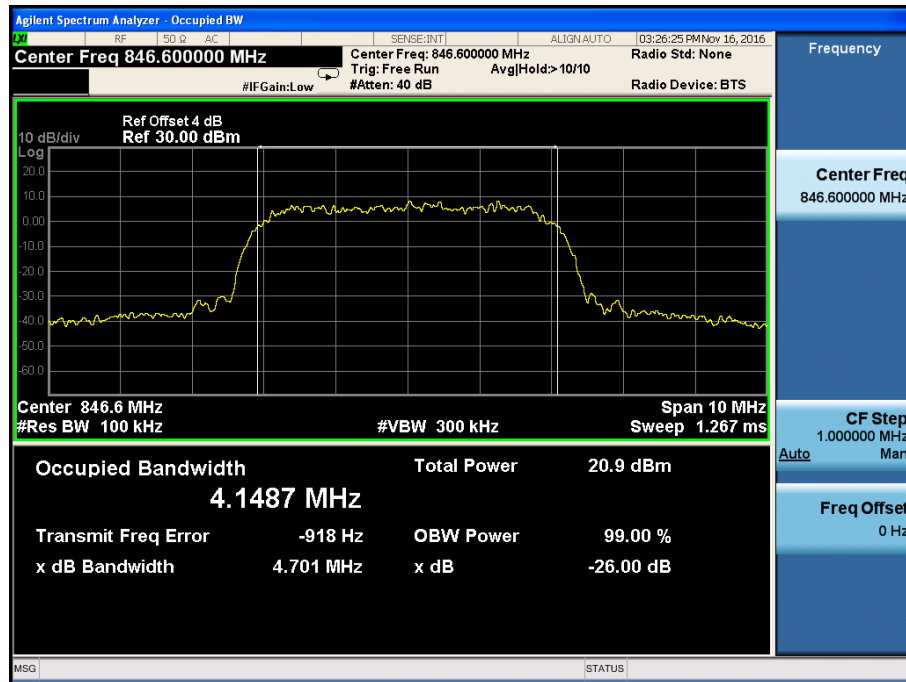
HSUPA Low Channel



HSUPA Middle Channel



HSUPA High Channel



6. Out of Band Emissions at Antenna Terminal

6.1 Standard Applicable

According to §22.917(a), the power of any emissions 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.

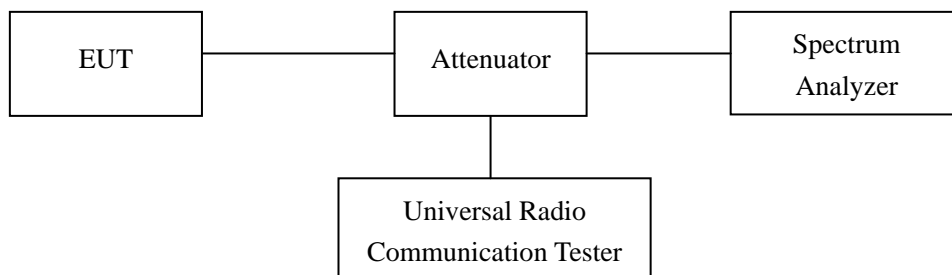
According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

According to §27.53 (h), the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.

6.2 Test Procedure

The RF output terminal of the transmitter was connected to the input of the spectrum analyzer via a suitable attenuation. The RBW of the spectrum analyzer was set to 100kHz and 1MHz for the scan frequency from 30MHz to 1GHz and the scan frequency from 1GHz to up to 10th harmonic.

Test Configuration for the out of band emissions testing:



6.3 Environmental Conditions

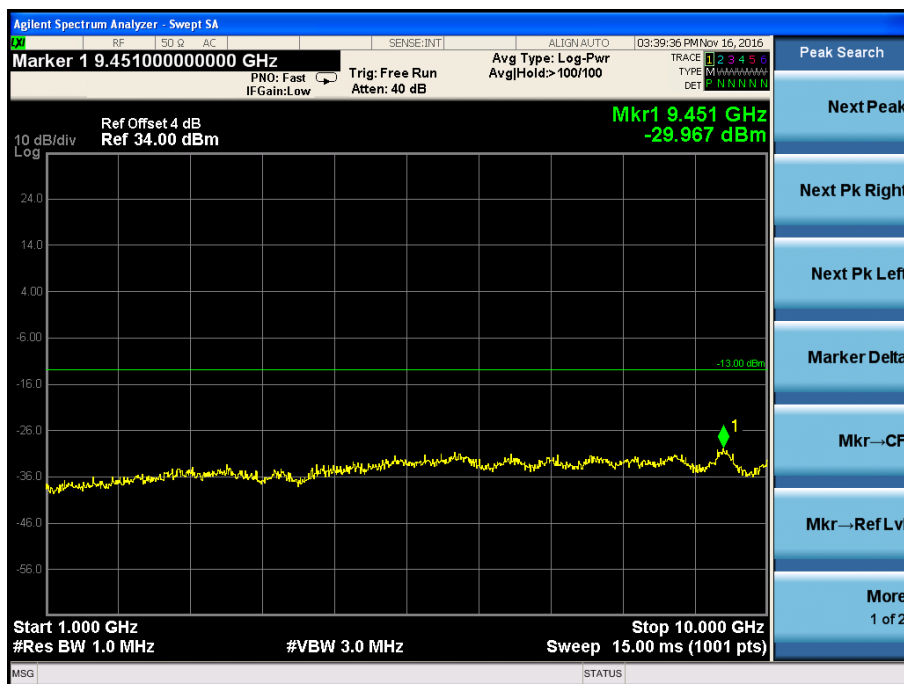
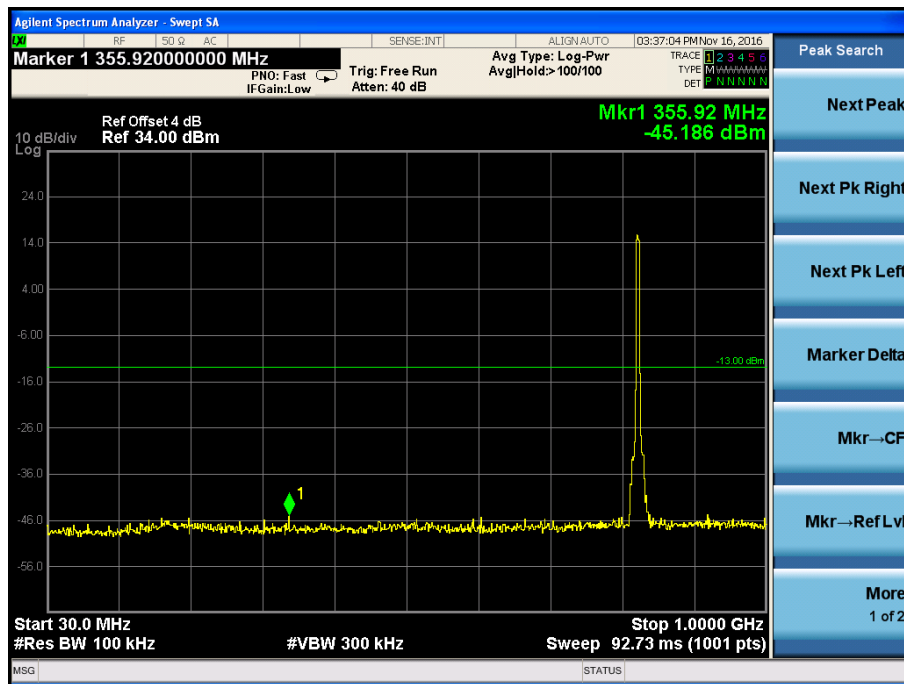
Temperature:	25 °C
Relative Humidity:	53%
ATM Pressure:	1018 mbar

6.4 Summary of Test Results/Plots

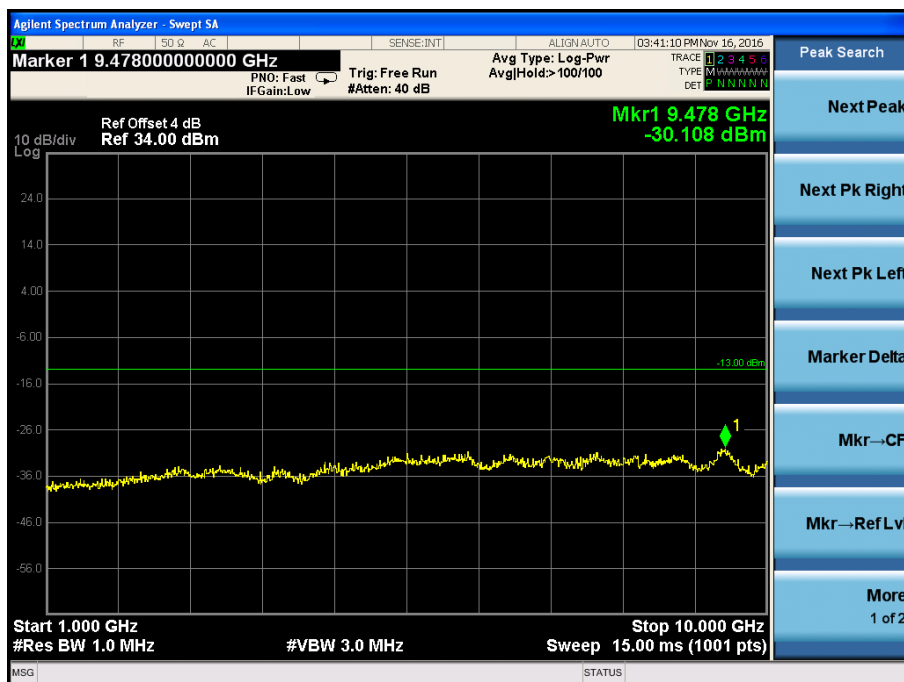
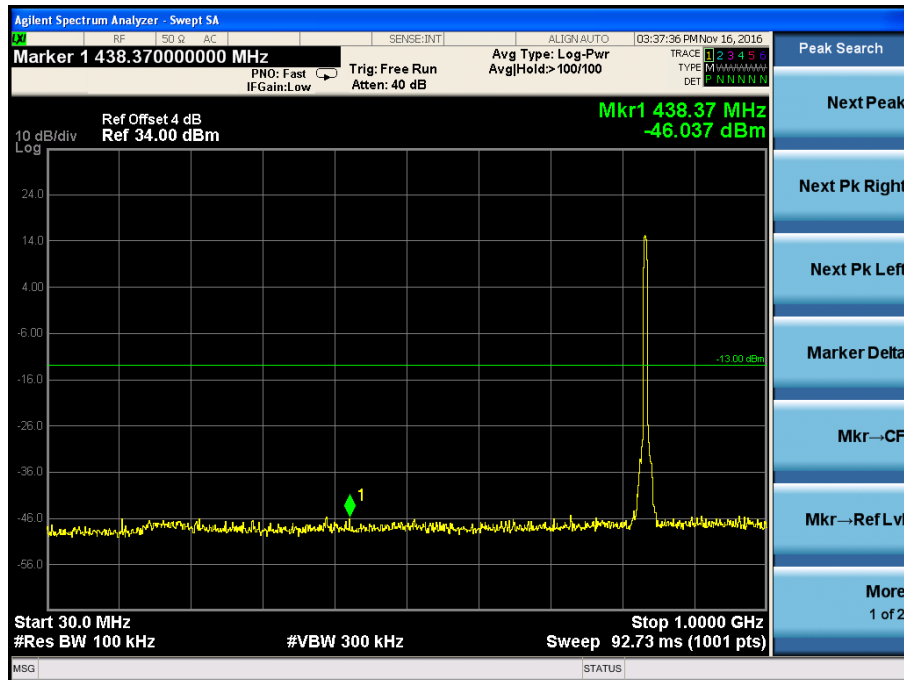
Please refer to the following test plots For Cellular Band

For Band V

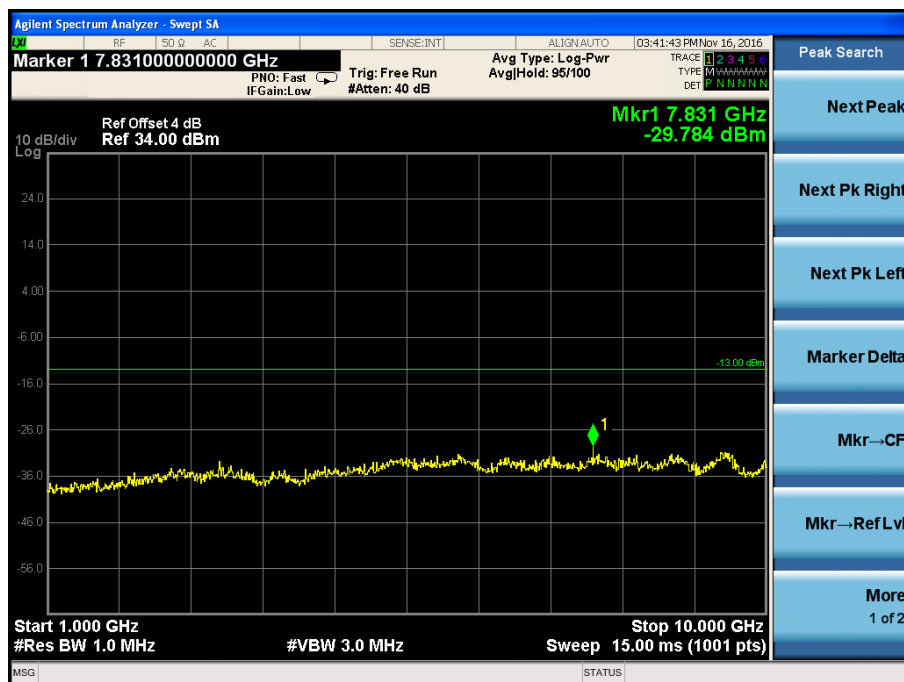
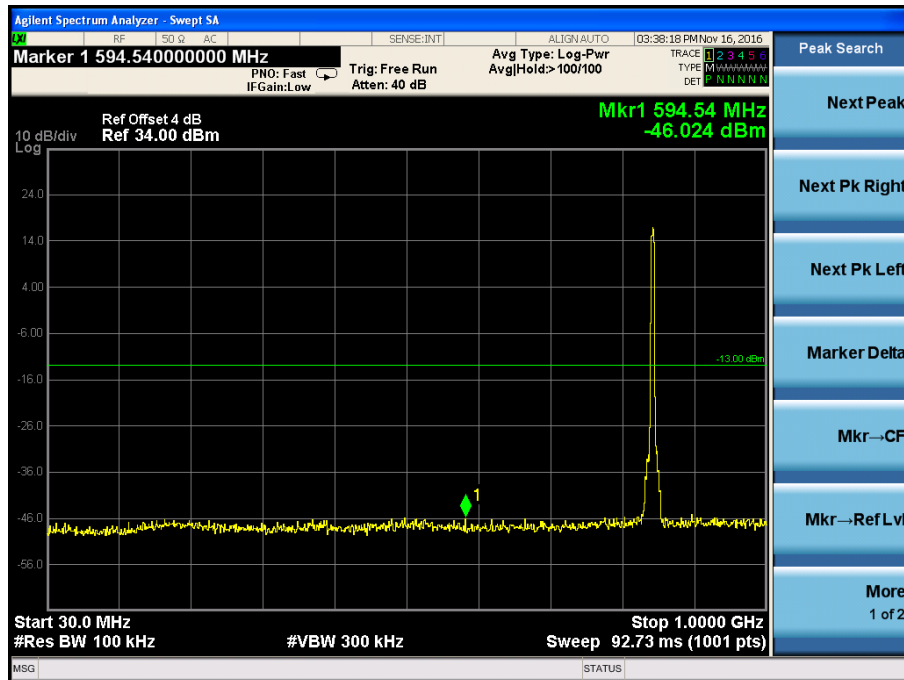
WCDMA Low Channel



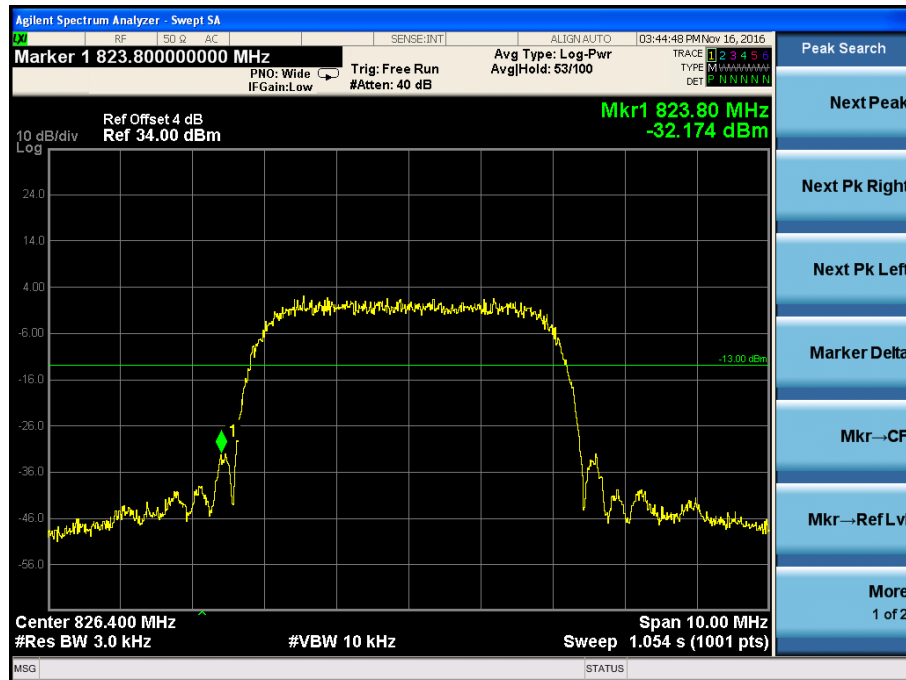
WCDMA Middle Channel



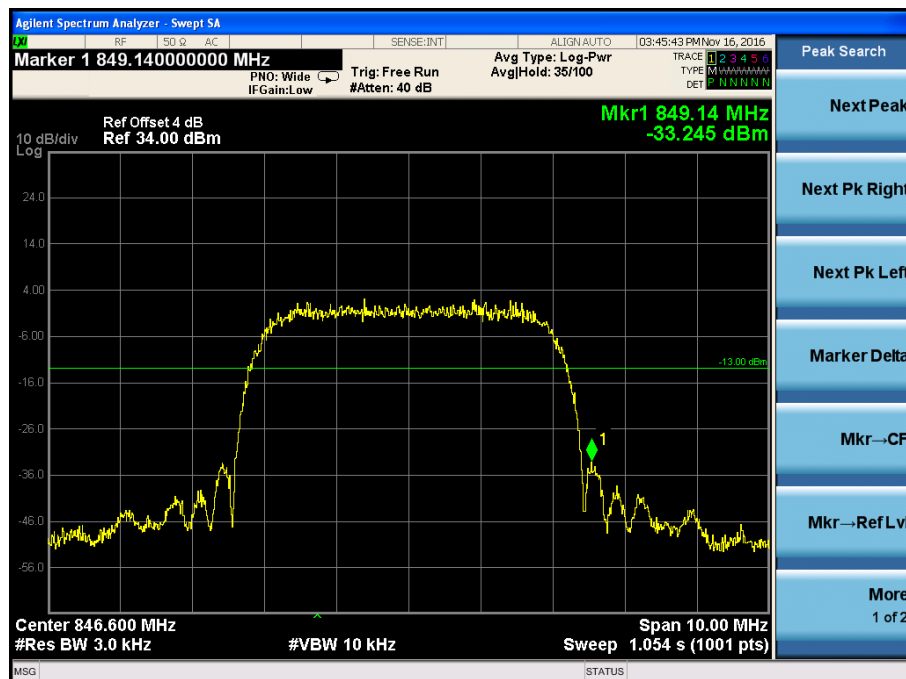
WCDMA High Channel



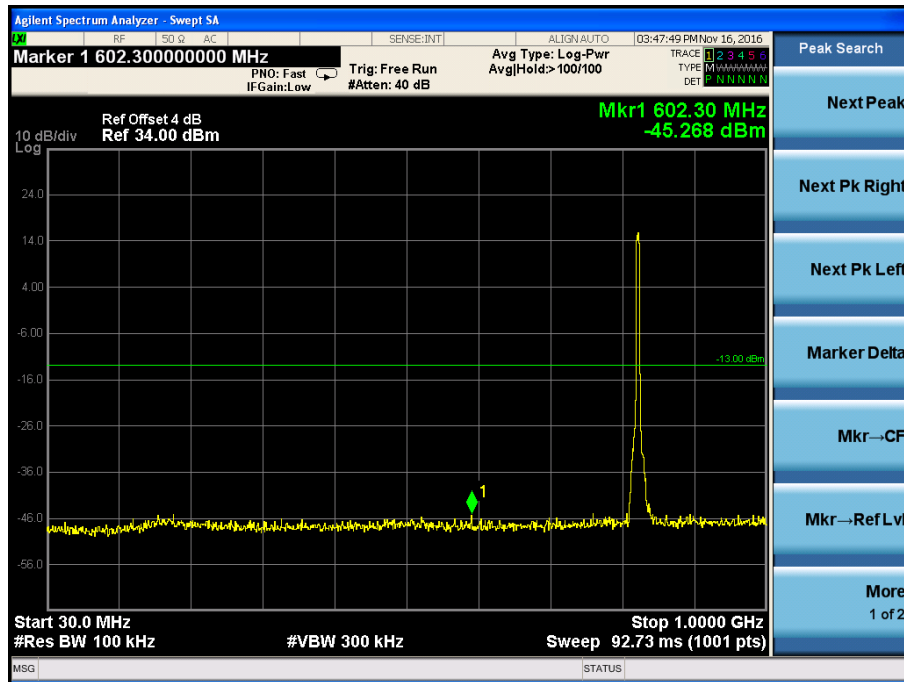
WCDMA Low Band Spurious Emission



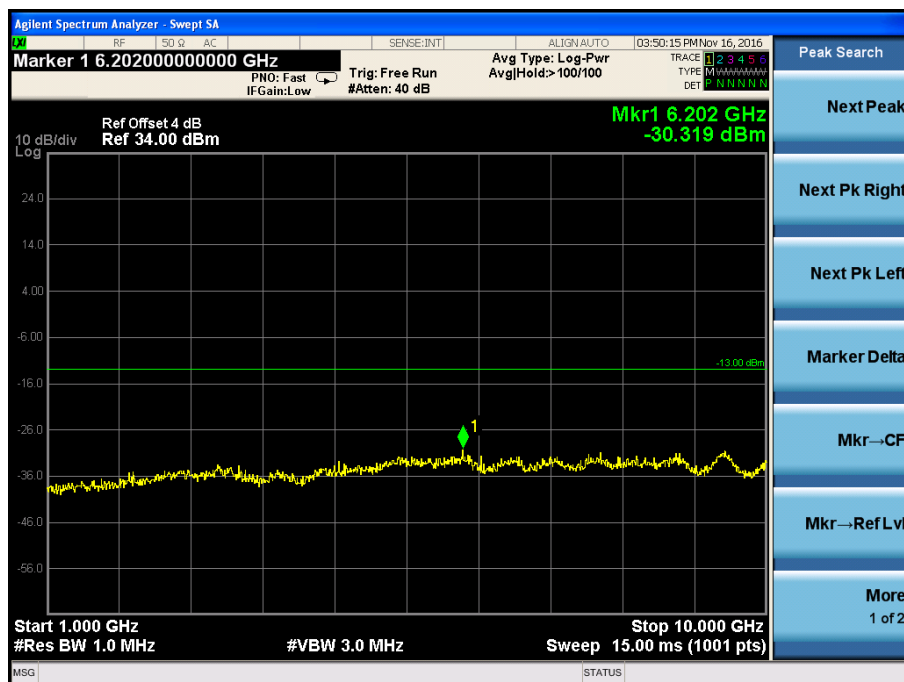
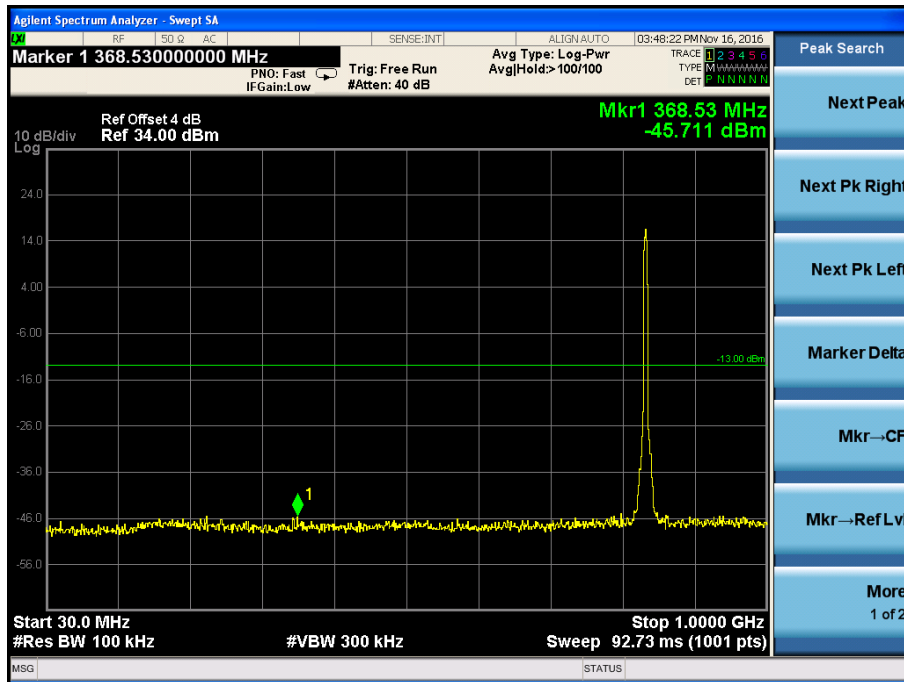
WCDMA High Band Spurious Emission



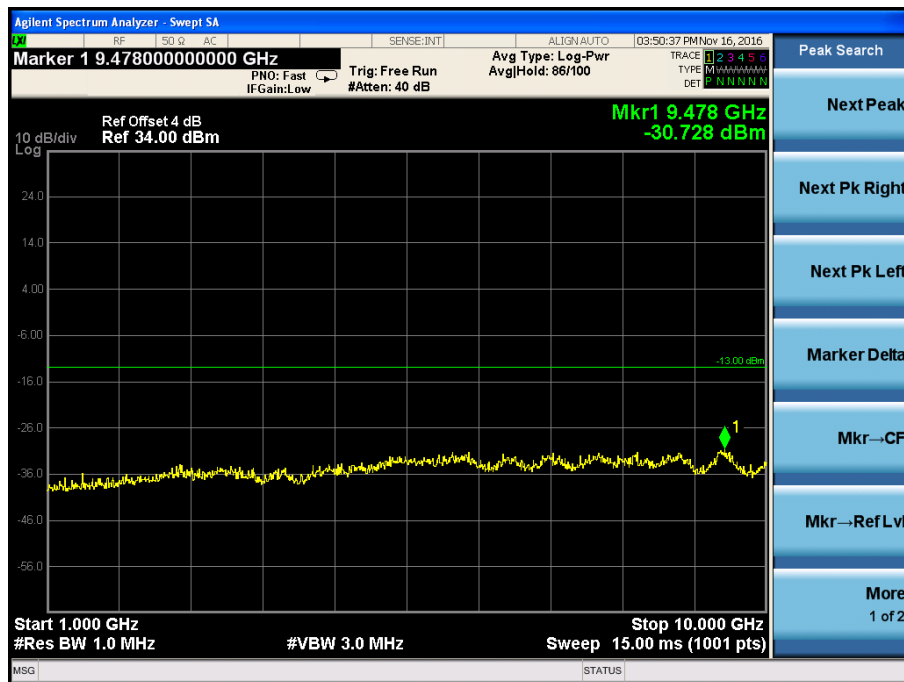
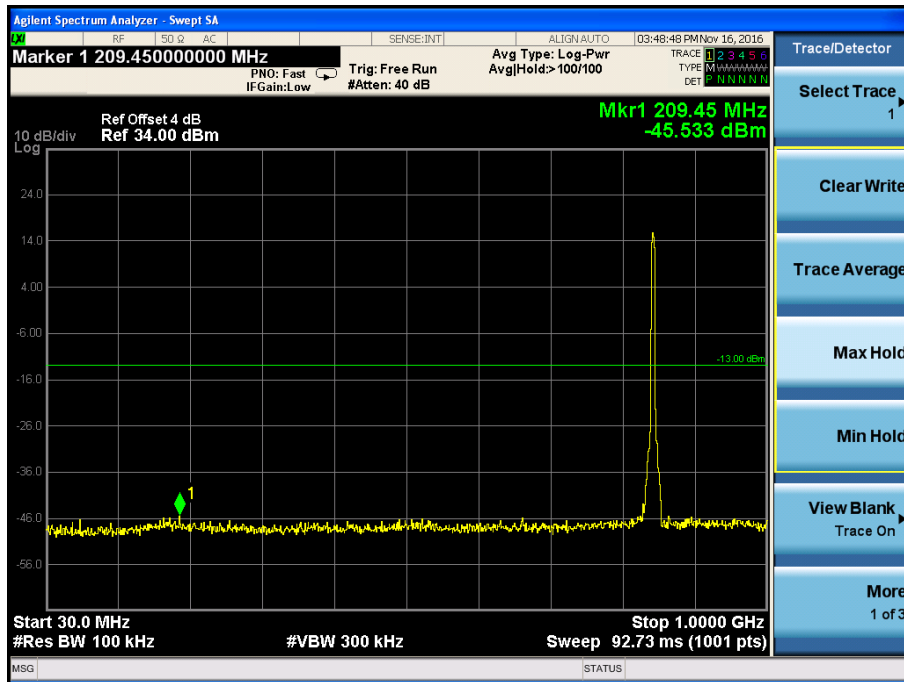
HSDPA Low Channel



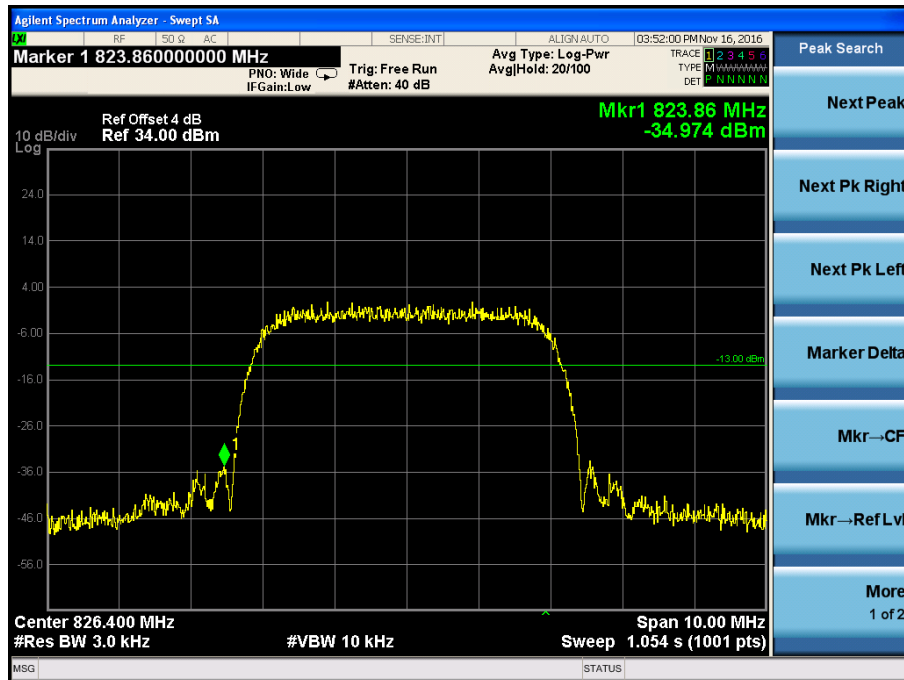
HSDPA Middle Channel



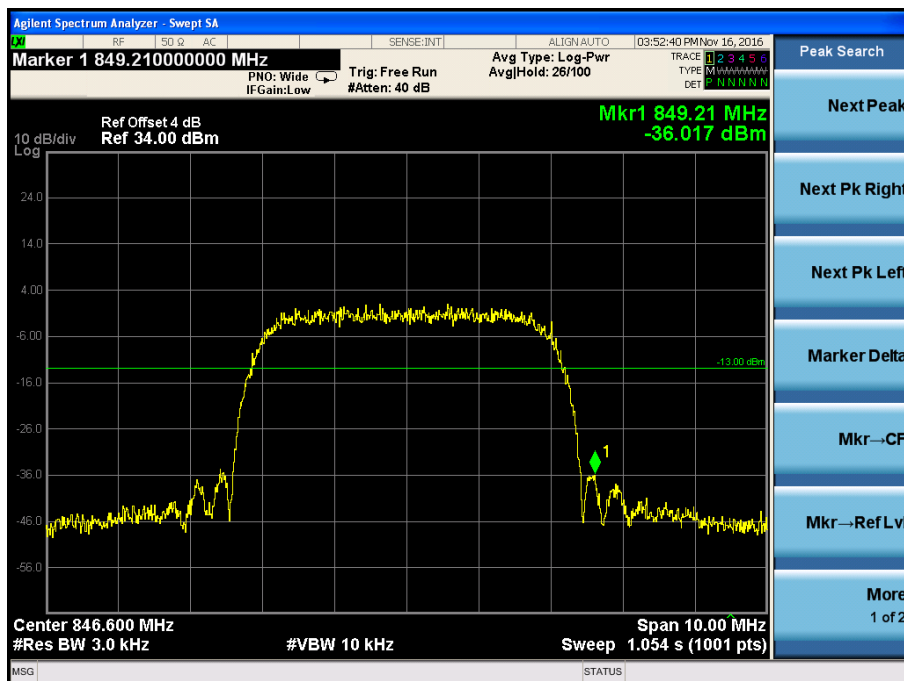
HSDPA High Channel



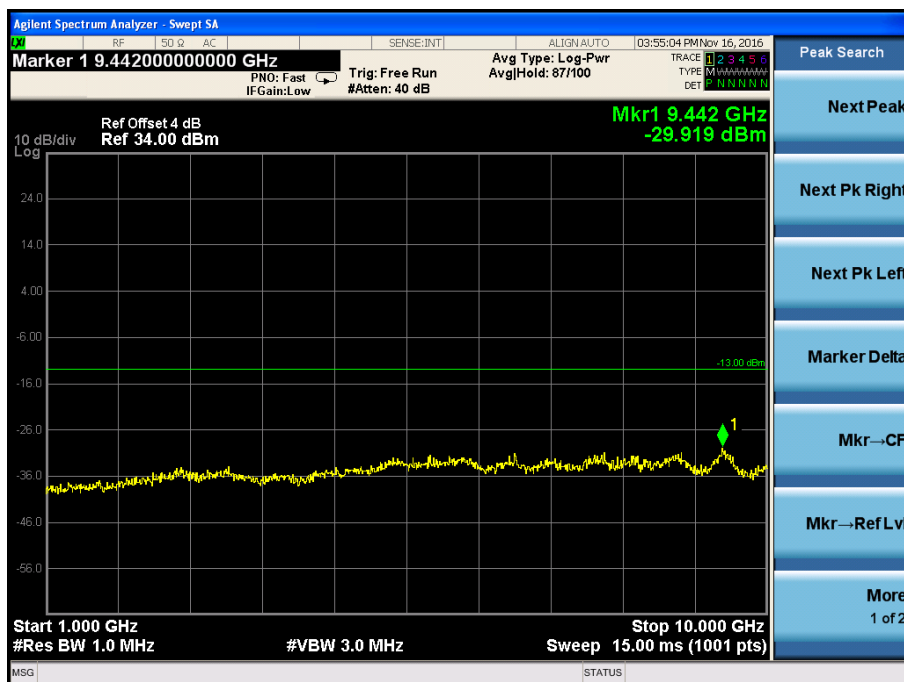
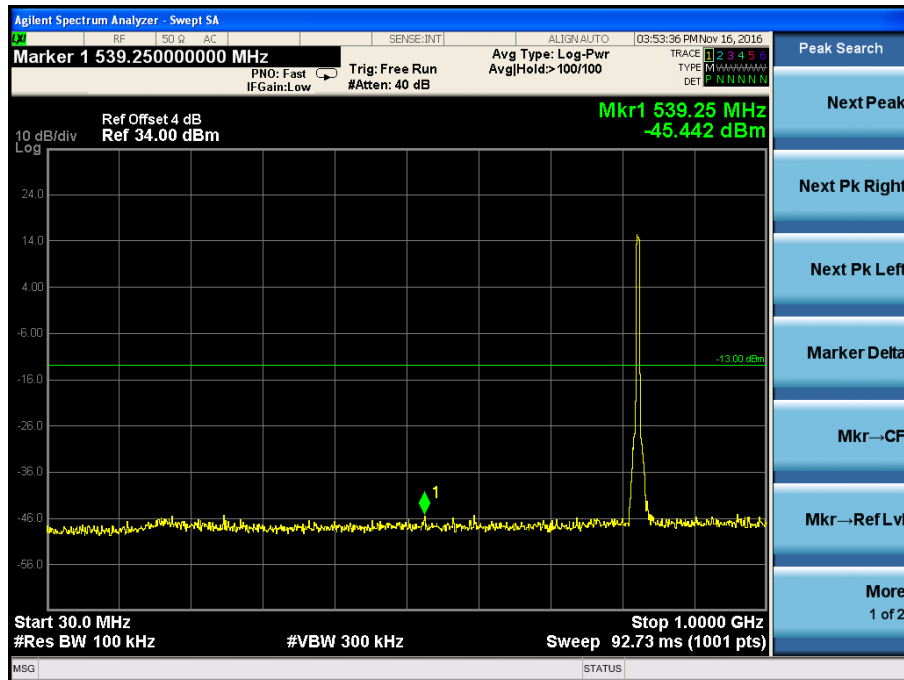
HSDPA Low Band Spurious Emission



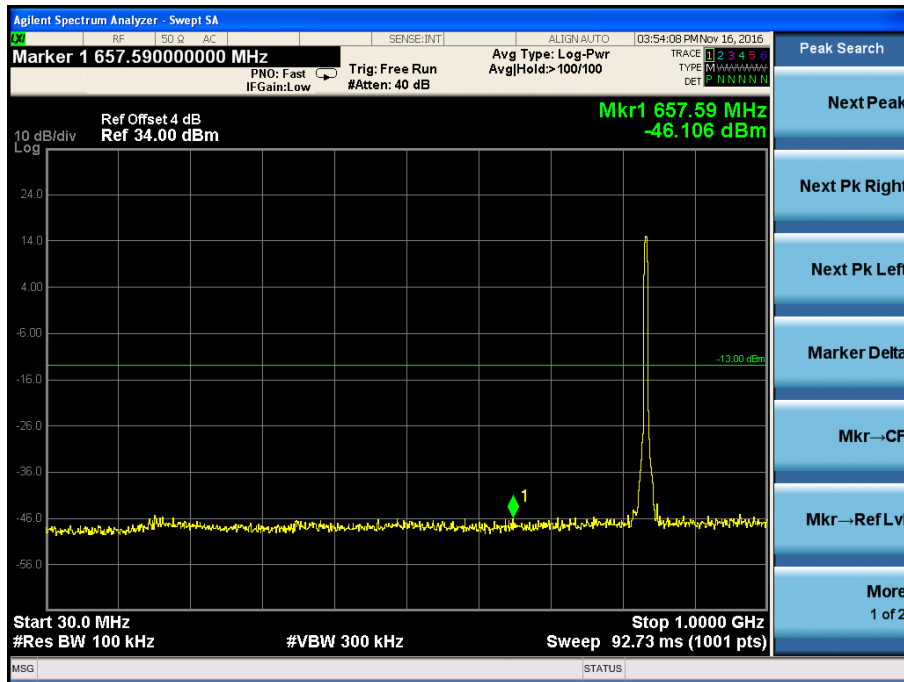
HSDPA High Band Spurious Emission



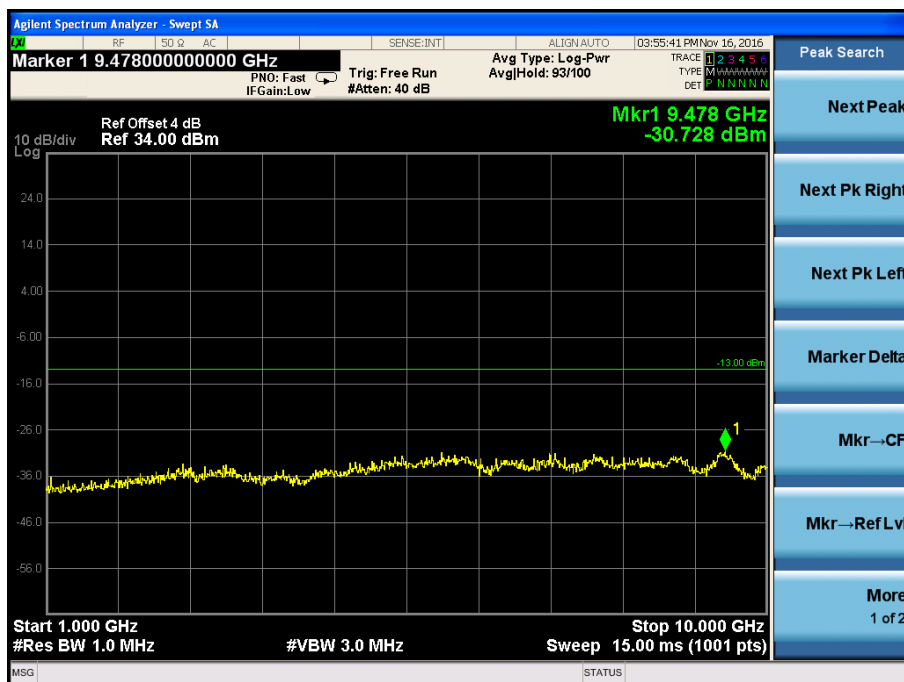
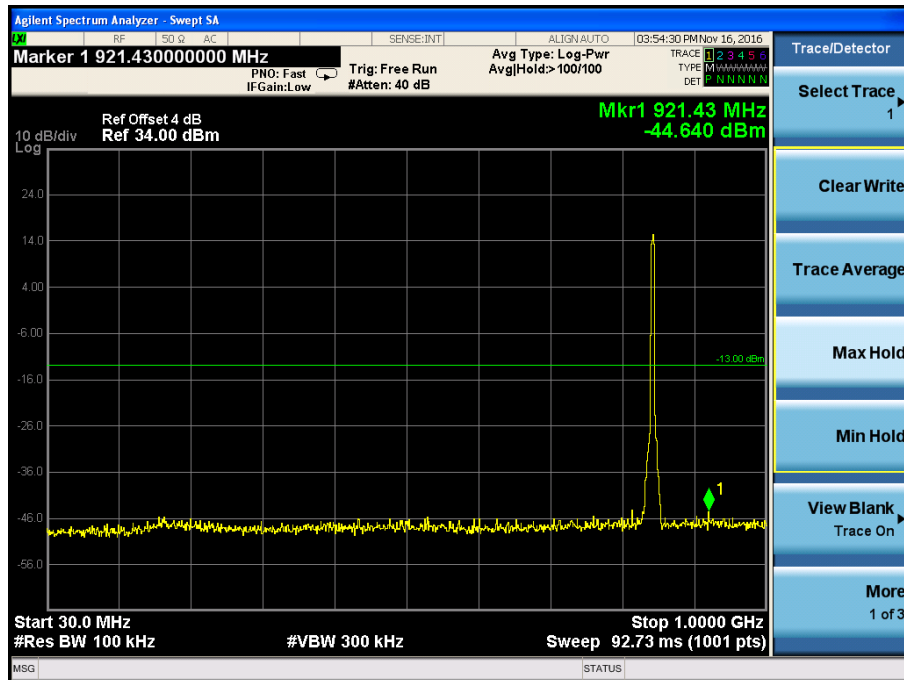
HSUPA Low Channel



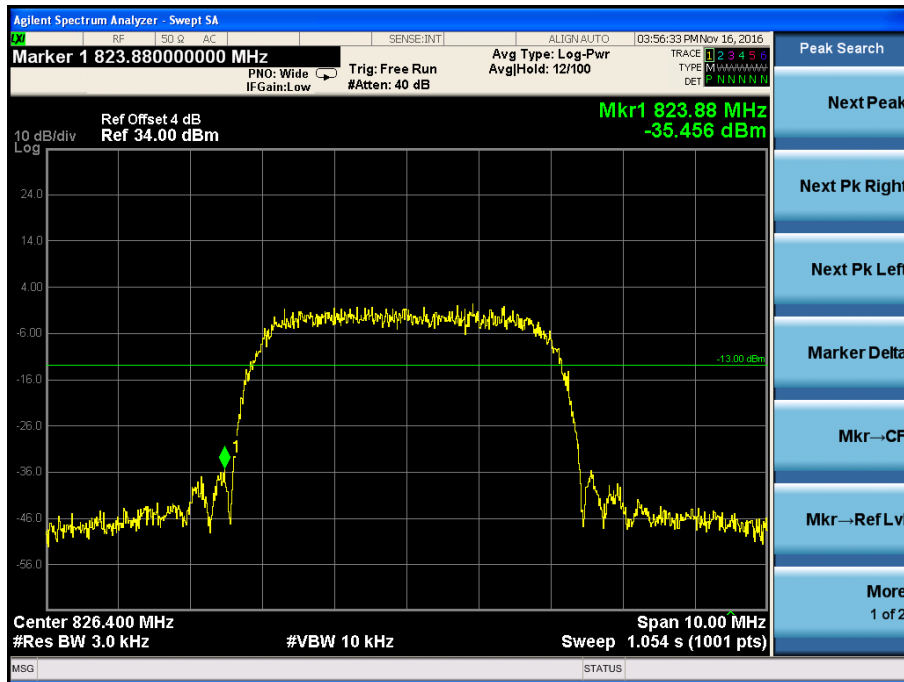
HSUPA Middle Channel



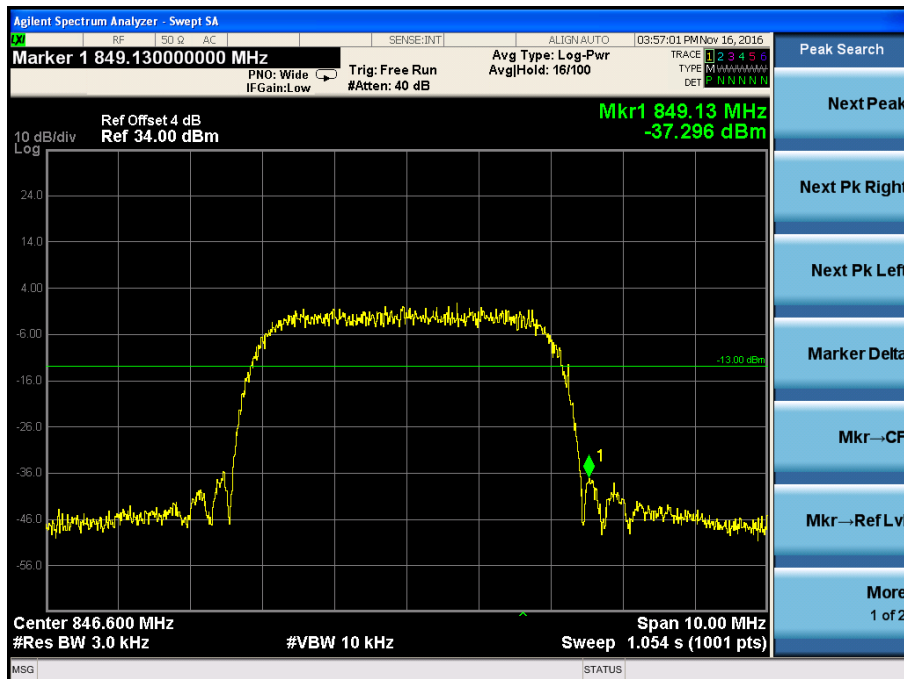
HSUPA High Channel



HSUPA Low Band Spurious Emission



HSUPA High Band Spurious Emission



7. Spurious Radiated Emissions

7.1 Standard Applicable

According to §22.917(a), the power of any emissions 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.

According to §24.238(a), the power of any emissions 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.

According to §27.53 (h), the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.

7.2 Test Procedure

1. The setup of EUT is according with per ANSI/TIA Standard 603D and ANSI C63.4-2014 measurement procedure.
2. 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.
3. The frequency range up to tenth harmonic of the fundamental frequency was investigated.
4. 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 attenuation limit in dB = $43 + 10 \log_{10}(\text{power out in Watts})$

7.3 Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52%
ATM Pressure:	1012 mbar

7.4 Summary of Test Results/Plots

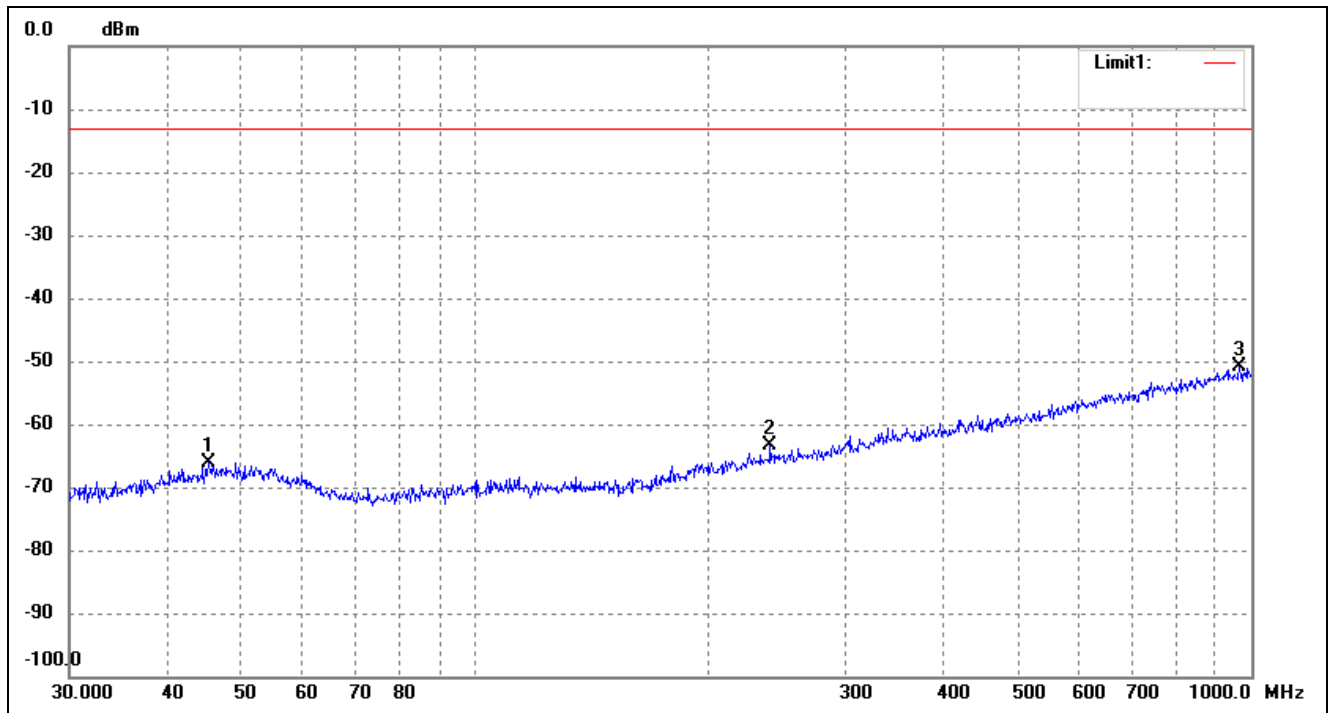
According to the data below, the FCC Part 22.917 and 24.238 standards, and had the worst margin of:

Note: this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

Spurious Emission From 30MHz to 1GHz

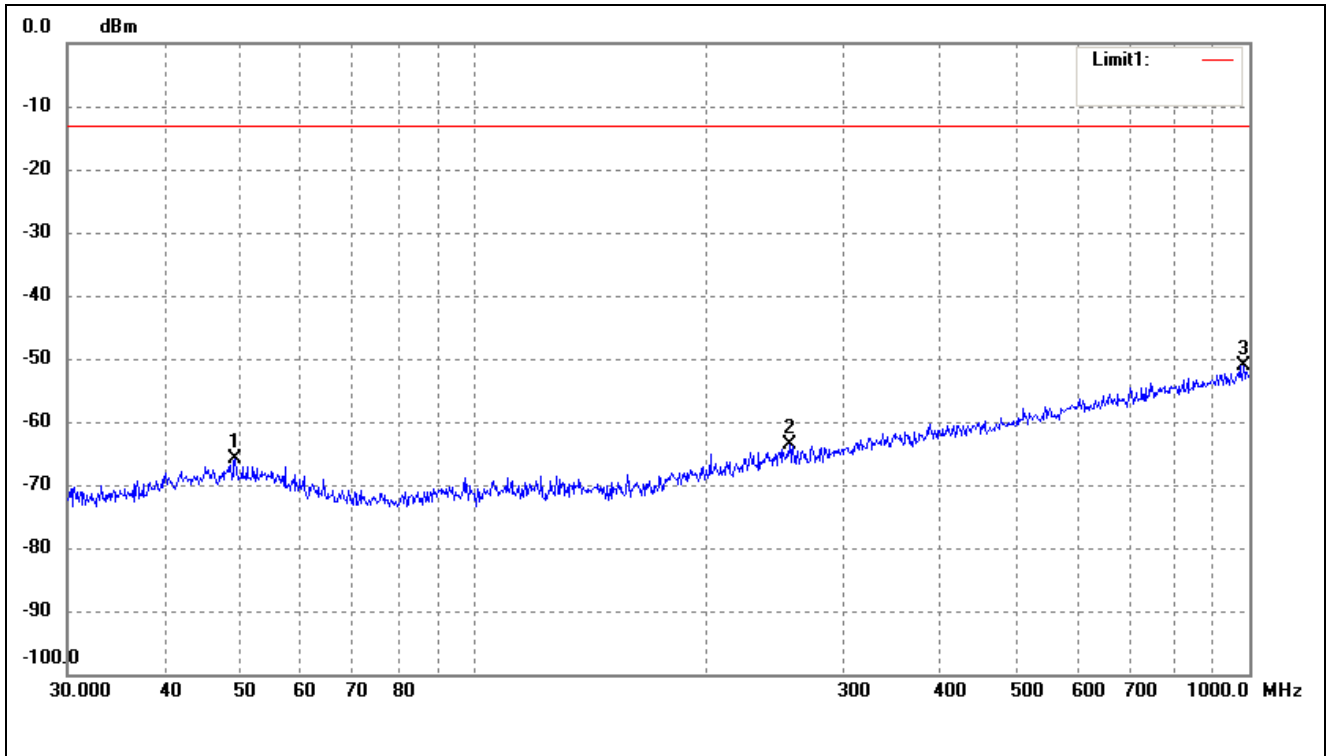
For band 5 Mode

Horizontal:



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBm)	Factor(dB)	(dBm)	(dBm)	(dB)	
1	45.3755	-68.93	2.76	-66.17	-13.00	-53.17	ERP
2	239.9874	-68.60	5.34	-63.26	-13.00	-50.26	ERP
3	965.5421	-68.71	17.90	-50.81	-13.00	-37.81	ERP

Vertical:



No.	Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Remark
1	49.3594	-69.20	3.35	-65.85	-13.00	-52.85	ERP
2	255.6231	-69.42	5.68	-63.74	-13.00	-50.74	ERP
3	982.6200	-69.18	18.08	-51.10	-13.00	-38.10	ERP

Note: Margin= (Reading+ Correct)- Limit

Spurious Emissions Above 1GHz

For Band 5 Mode

Frequency	Reading	Correct	Result	Limit	Margin	Polar
(MHz)	(dBm)	dB	(dBm)	(dBm)	(dB)	H/V
Low Channel (826.4MHz)						
1652.8	-48.59	4.94	-43.65	-13	-30.65	H
2479.2	-49.11	8.46	-40.65	-13	-27.65	H
1652.8	-47.56	4.94	-42.62	-13	-29.62	V
2479.2	-48.79	8.46	-40.33	-13	-27.33	V
Middle Channel (836.6MHz)						
1672.8	-47.82	5.11	-42.71	-13	-29.71	H
2509.2	-48.31	8.54	-39.77	-13	-26.77	H
1672.8	-48.77	5.11	-43.66	-13	-30.66	V
2509.2	-49.80	8.54	-41.26	-13	-28.26	V
High Channel (846.6MHz)						
1693.2	-46.90	5.29	-41.61	-13	-28.61	H
2539.8	-49.92	8.59	-41.33	-13	-28.33	H
1693.2	-47.40	5.29	-42.11	-13	-29.11	V
2539.8	-48.84	8.59	-40.25	-13	-27.25	V

Note: Result=Reading+ Correct, Margin= Result- Limit

Testing is carried out with frequency rang 9kHz to 20GHz, which above 3th Harmonics are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured, so the data is not display.

8. Frequency Stability

8.1 Standard Applicable

According to §22.355, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table below:

Frequency Tolerance for Cellular Band

Frequency range (MHz)	Base, fixed (ppm)	Mobile >3 watts (ppm)	Mobile ≤3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929	5.0	N/A	N/A
929 to 960	1.5	N/A	N/A
2110 to 2220	10.0	N/A	N/A

According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

According to §27.54 The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

8.2 Test Procedure

According to §2.1055, the following test procedure was performed.

The Frequency Stability is measured directly with a Frequency Domain Analyzer. Frequency Deviation in ppm is calculated from the measured peak to peak value.

The Carrier Frequency Stability over Power Supply Voltage and over Temperature is measured with a Frequency Domain Analyzer in histogram mode

Temperature:	Supply Voltage
20°C	DC 6.0-8.4V declared by manufacturer
-30°C to +50°C	Normal

8.3 Environmental Conditions

Temperature:	20°C
Relative Humidity:	54%
ATM Pressure:	1011 mbar

8.4 Summary of Test Results/Plots

For WCDMA Band 5 Mode

Reference Frequency(Middle Channel): 836.6 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	7.4	72	0.0861
40	7.4	58	0.0693
30	7.4	48	0.0574
20	7.4	42	0.0502
10	7.4	38	0.0454
0	7.4	34	0.0406
-10	7.4	38	0.0454
-20	7.4	42	0.0502
-30	7.4	48	0.0574

For HSDPA Band 5 Mode

Reference Frequency(Middle Channel): 836.6 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	7.4	62	0.0741
40	7.4	58	0.0693
30	7.4	47	0.0562
20	7.4	40	0.0478
10	7.4	36	0.0430
0	7.4	32	0.0383
-10	7.4	36	0.0430
-20	7.4	44	0.0526
-30	7.4	48	0.0574

For HSUPA Band 5 Mode

Reference Frequency(Middle Channel): 836.6 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	7.4	71	0.0849
40	7.4	57	0.0681
30	7.4	47	0.0562
20	7.4	42	0.0502
10	7.4	36	0.0430
0	7.4	29	0.0347
-10	7.4	35	0.0418
-20	7.4	39	0.0466
-30	7.4	43	0.0514

So, Frequency Stability Versus Input Voltage is:

Reference Frequency(Middle Channel): WCDMA 836.6MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	6.0	30	0.0359
	7.4	42	0.0502
	8.4	38	0.0454
Reference Frequency(Middle Channel): HSDPA 836.6MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	6.0	33	0.0394
	7.4	40	0.0478
	8.4	33	0.0394
Reference Frequency(Middle Channel): HSUPA 836.6MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	6.0	40	0.0478
	7.4	42	0.0502
	8.4	42	0.0502

***** END OF REPORT *****