



MEASUREMENT REPORT

FCC PART 22,24


FCC ID: 2ACC5-GT500

APPLICANT: A Mobile Intelligent Corp.

Application Type: Certification

Product: 5" Rugged Android™ Handheld Device with LTE solution

Model No.: GT-500


Brand Name: 


FCC Classification: (PCE) PCS Licensed Transmitter held to ear

FCC Rule Part(s): Part 22H, Part 24E

Test Procedure(s): TIA 603-D 2010, KDB 971168 D01v02r02

Test Date: October 09 ~ November 23, 2016

Reviewed By : 
(Paddy Chen)

Approved By : 
(Chenz Ker)



The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in §2.947. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Taiwan) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
1609TW0105-U7	1.0	Original Report	2016.11.23	

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§2.1033 General Information

Applicant:	AMobile Intelligent Corp.
Applicant Address:	8F.-1, No.700, Zhongzheng Rd., Zhonghe Dist.,New Taipei City 235, Taiwan
Manufacturer:	MAKER TECHNOLOGY
Manufacturer Address:	12th Floor,NO.82 building,NO.1198 North QinzhouRoad,Xuhui District,Shanghai,China
Test Site:	MRT Technology (Taiwan) Co., Ltd
Test Site Address:	No. 38, Fuxing Second Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C)
MRT FCC Registration No.:	291082
FCC Rule Part(s):	Part 22H,Part 24E
Model No.:	GT-500
FCC ID:	2ACC5-GT500
Test Device Serial No.:	N/A <input type="checkbox"/> Production <input checked="" type="checkbox"/> Pre-Production <input type="checkbox"/> Engineering

Test Facility / Accreditations

1. MRT facility is a FCC registered (Reg. No. 291082) test facility with the site description report on file and is designated by the FCC as an Accredited Test Film.
2. MRT facility is an IC registered (MRT Reg. No. 21723-1) test laboratory with the site description on file at Industry Canada.
3. MRT Lab is accredited to ISO 17025 by the American Association for Laboratory Accreditation (TAF) under the American Association for Laboratory Accreditation Program (TAF Cert. No. 3261) in EMC, Telecommunications and Radio testing for FCC, Industry Taiwan, EU and TELEC Rules.

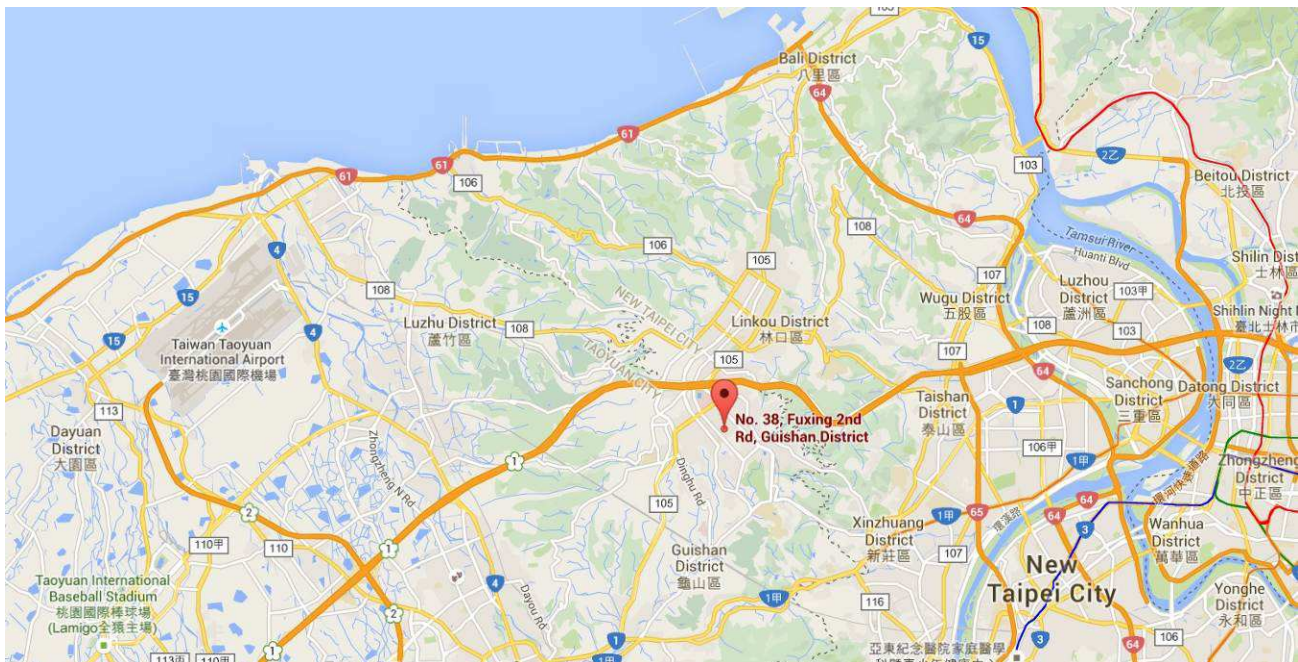
1. INTRODUCTION

1.1. Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Industry Canada Certification and Engineering Bureau.


1.2. MRT Test Location

The map below shows the location of the MRT LABORATORY, its proximity to the Taoyuan City. These measurement tests were conducted at the MRT Technology (Taiwan) Co., Ltd. Facility located at No.38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 33377, Taiwan (R.O.C).



2. PRODUCT INFORMATION

2.1. Feature of Equipment under Test

Product Name	5" Rugged Android™ Handheld Device with LTE solution
FCC ID	2ACC5-GT500
Model No.	GT500
Brand Name	
Supports Radios Spec.	WWAN : GSM/GPRS/EGPRS/WCDMA/HSPA/CDMA/EVDO/LTE WLAN : 2.4G : 802.11b/g/n-20/n-40; 5G : 802.11a/n-20/n-40 WPAN : Bluetooth/NFC
WWAN Specification	2G(GSM/GPRS/EDGE): 850/1900 3G(WCDMA): Band 2/5 3G(CDMA2000):BC0/BC1 4G(FDD/TDD): Band 2/4/5/7/12/13/17
Frequency Range	GSM 850/CDMA(EVDO)/WCDMA Band 5: 824~849MHz GSM 1900/CDMA(EVDO)/WCDMA Band 2: 1850~1910MHz

2.2. Equipment Description

Antenna Type	PCB
Antenna M/N	AP316-LTE-MAIN_V1 for GSM/WCDMA AP316-LTE-DRX_V1 for CDMA
Antenna Gain	AP316-LTE-MAIN_V1: 824~849: -3.94 dBi ;1850~1910: 3.31dBi AP316-LTE-DRX_V1: 824~849: -10.97 dBi ;1850~1910: -1.03dBi
Type of Modulation	GSM : GMSK/8PSK ; CDMA/WCDMA : QPSK

Note:

1. The test report has showed the worst test mode.
2. This EUT owns 2 SIM cards, one is for 2G and another one is for 2G/3G/4G . In 2G mode ,We have evaluated 2 SIM cards and showed the worst-case in this report.

2.3. Test Configuration

The **5" Rugged Android™ Handheld Device with LTE solution** was tested per the guidance of ANSI/TIA-603-D-2010 and KDB 971168 D01v02r02. See section 3.0 of this report for a description of the radiated and antenna port conducted emissions tests.

2.4. EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and no modifications were made during testing.

3. DESCRIPTION OF TEST

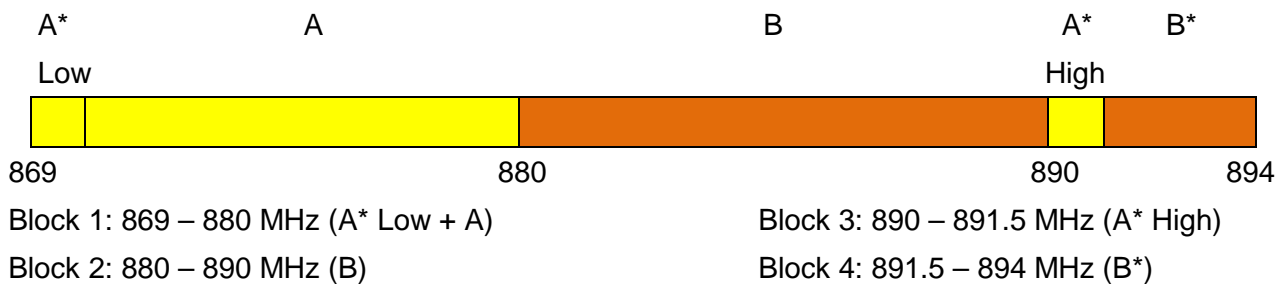
3.1. Evaluation Procedure

The measurement procedures described in the “Land Mobile FM or PM – Communications Equipment – Measurements and Performance Standards” (ANSI/TIA-603-D-2010) and “Procedures for Compliance Measurement of the Fundamental Emission Power of Licensed Wideband (> 1 MHz) Digital Transmission Systems” (KDB 971168) were used in the measurement of the **5” Rugged Android™ Handheld Device with LTE solution**

Deviation from measurement procedure.....None

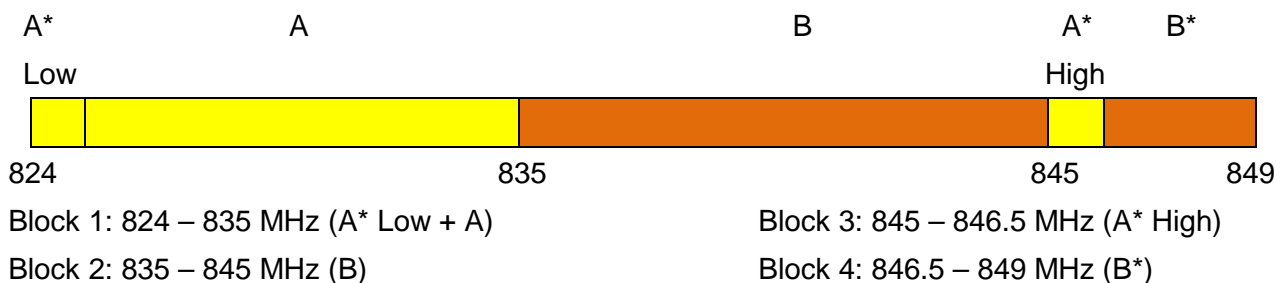
3.2. Cellular – Base Frequency Blocks

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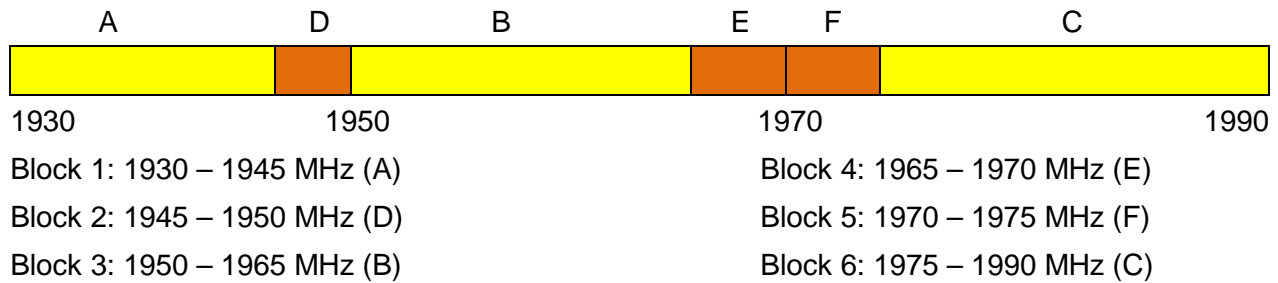
3.3. Cellular – Mobile Frequency Blocks

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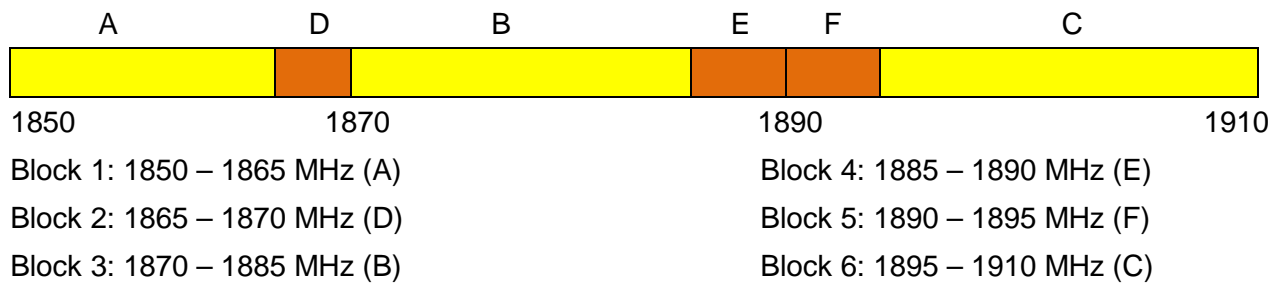
3.4. PCS – Base Frequency Blocks

§24.229



3.5. PCS – Mobile Frequency Blocks

§24.229



3.6. Occupied Bandwidth

§2.1049

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 spectrum analyzers' "occupied bandwidth" measurement function was used to record the occupied bandwidth in accordance with KDB 971168.

3.7. Spurious and Harmonic Emissions at Antenna Terminal

§2.1051 §22.917(a) §24.238(a)

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 10th 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 $43 + 10 \log_{10}(P)$ dB. Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater for Part 22. 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.

3.8. Power and Radiated Spurious Emissions

§2.1053 §22.913(a.2) §22.917(a) §24.232(c) §24.238(a)

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurement and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. For measurements above 1GHz absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1GHz, the absorbers are removed. A MF Model 210SS turntable is used for radiated measurement. It is a continuously rotatable, remote-controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. A 80cm high PVC support structure is placed on top of the turntable.

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 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. Radiated power levels are also investigated with the receive antenna horizontally and vertically polarized. The maximized power level is recorded using the spectrum analyzer "Channel Power" function with the integration band set to the emissions' occupied bandwidth, a RMS detector, RBW = 100kHz, VBW = 300kHz, and a 1 second sweep time over a minimum of 10 sweeps, per the guidelines of KDB 971168.

Per the guidance of ANSI/TIA-603-D-2010, 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:

$$P_d \text{ [dBm]} = P_g \text{ [dBm]} - \text{cable loss [dB]} + \text{antenna gain [dBd/dBi]}$$

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 $P_g \text{ [dBm]} - \text{cable loss [dB]}$.

The calculated P_d levels are then compared to the absolute spurious emission limit of -13dBm which is equivalent to the required minimum attenuation of $43 + 10\log_{10} (\text{Power [Watts]})$ specified in 22.917(a).

3.9. Peak-Average Ratio

§24.232(d)

A peak to average ratio measurement is performed at the conducted port of the EUT. 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 pulsed signals, the spectrum analyzer is set to use an internal “RF Burst” trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the “on time” of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power. For continuous signals, the trigger is set to “free run” in the CCDF measurement mode.

3.10. Frequency Stability / Temperature Variation

§2.1055 §22.355 §22.863 §22.905 §24.229 §24.235

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-D-2010. 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 End point 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 – For Part 22, the frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ (± 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.

4. TEST EQUIPMENT CALIBRATION DATE

Conducted Emissions – SR2

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR3	MRTTWA00009	1 year	2017/03/16
Two-Line V-Network	R&S	ENV216	MRTTWA00019	1 year	2017/03/23
Two-Line V-Network	R&S	ENV216	MRTTWA00020	1 year	2017/03/23
Cable	Rosnol	N1C50-RG400-B1 C50-500CM	MRTTWE00013	1 year	2017/05/19

Radiated Emissions – AC1

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR3	MRTTWA00009	1 year	2017/03/16
Broadband TRILOG Antenna	Schwarzbeck	VULB 9162	MRTTWA00001	1 year	2017/04/05
Active Loop Antenna	Schwarzbeck	FMZB 1519B	MRTTWA00002	1 year	2017/04/05
Broadband Horn antenna	Schwarzbeck	BBHA 9120D	MRTTWA00003	1 year	2017/04/05
Broadband Horn antenna	Schwarzbeck	BBHA 9170	MRTTWA00004	1 year	2017/04/05
Broadband Preamplifier	Schwarzbeck	BBV 9718	MRTTWA00005	1 year	2017/04/05
Broadband Amplifier	Schwarzbeck	BBV 9721	MRTTWA00006	1 year	2017/04/05
Signal Analyzer	R&S	FSV40	MRTTWA00007	1 year	2017/03/02
Cable	HUBERSUH NER	SF106	MRTTWA00010	1 year	2017/05/19
Cable	Rosnol	K1K50-UP026 4-K1K50-4M	MRTTWA00012	1 year	2017/05/19

Conducted Test Equipment – SR2

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Spectrum Analyzer	KEYSIGHT	N9010A	MRTTWA00012	1 year	2017/07/10
Signal Analyzer	R&S	FSV40	MRTTWA00007	1 year	2017/03/02
USB Wideband Power Sensor	KEYSIGHT	U2021XA	MRTTWA00014	1 year	2017/03/17
DUALDIRECTIONAL COUPLER	KEYSIGHT	778D	MRTTWE00015	1 year	2017/06/02
DIRECTIONAL COUPLER	KEYSIGHT	87301D	MRTTWE00016	1 year	2017/04/10

Software	Version	Function
e3	9.160520a	EMI Test Software

5. SAMPLE CALCULATIONS

GSM Emission Designator

Emission Designator = 250KGXW

GSM BW = 250 kHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

EGPRS Emission Designator

Emission Designator = 250KG7W

GSM BW = 250 kHz

G = Phase Modulation

7 = Quantized/Digital Info

W = Combination (Audio/Data)

CDMA Emission Designator

Emission Designator = 1M25F9W

WCDMA BW = 1.25 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data)

WCDMA Emission Designator

Emission Designator = 5M00F9W

WCDMA BW = 5.00 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data)

Spurious Radiated Emission

Example: Spurious emission at 1688.10 MHz

The receive spectrum analyzer reading at 3 meters with the EUT on the turntable was -65.0dBm . The gain of the substituted antenna is 6.5dBi . The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of -65.0dBm on the spectrum analyzer. The loss of the cable between the signal generator and the terminals of the substituted antenna is 4.5 dB at 1688.1MHz . So 2 dB is added to the signal generator reading of -25dBm yielding -23dBm . The fundamental EIRP was 24.0dBm so this harmonic was $24.0\text{dBm} - (-23) = 47\text{dBc}$.

6. MEASUREMENT UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

AC Conducted Emission Measurement – SR2	
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 150kHz~30MHz: 2.42dB	
Conducted Measurement– SR1	
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): 1.3dB	
Radiated Emission Measurement – AC1	
Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$):	
Horizontal:	9K~30MHz: 4.14dB 30MHz~1GHz: 4.22dB 1GHz~40GHz: 4.05dB
Vertical:	9K~30MHz: 4.14dB 30MHz~1GHz: 3.37dB 1GHz~40GHz: 4.08dB

7. TEST RESULT

7.1. Summary

Company Name: 5" Rugged Android™ Handheld Device with LTE solution
FCC ID: 2ACC5-GT500
FCC Classification: (PCE) PCS Licensed Transmitter held to ear

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
Transmitter Mode(TX)					
2.1049	Occupied bandwidth	N/A	Conducted	Pass	Section 7.2
2.1051 22.917(a) 24.238(a)	Conducted Spurious Emissions	$> 43 + 10 \log_{10} (P[\text{Watts}])$ at for all out-of-band emissions		Pass	Section 7.3
2.1051 22.917(a) 24.232(c) 24.238(a)	Band Edge	$> 43 + 10 \log_{10} (P[\text{Watts}])$ at for all out-of-band emissions		Pass	Section 7.4
2.1046	Conducted Output Power	N/A		Pass	Section 7.5
22.913(a.2)	Radiated Output Power	$< 7 \text{ Watts max. ERP}$	Radiated	Pass	Section 7.5
24.232(c)	Radiated Output Power	$< 2 \text{ Watts max. ERP}$		Pass	
2.1053 22.917(a) 24.238(a)	Radiated Spurious Emissions	$> 43 + 10 \log_{10}(P[\text{Watts}])$ for all out-of-band emissions		Pass	
24.232(d)	Peak-Average Ratio	$< 13\text{dB}$		Pass	Section 7.6
2.1055 22.355 24.235	Frequency Stability	$< 2.5 \text{ ppm}$		Pass	Section 7.6

Notes:

- 1) All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.
- 2) All antenna port conducted emissions testing was performed on a test bench with the antenna port of the EUT connected to the spectrum analyzer through calibrated cables, attenuators, and couplers.

7.2. Occupied Bandwidth

7.2.1. Test Limit

N/A

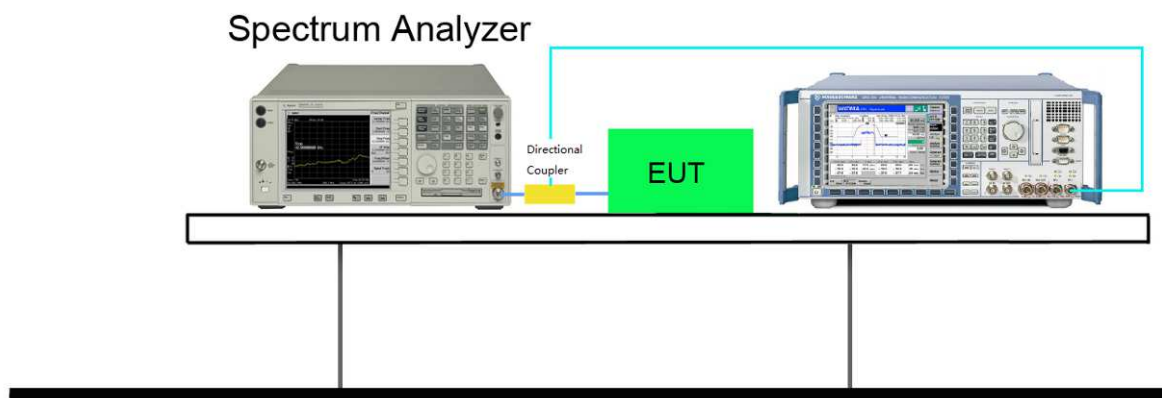
7.2.2. Test Procedure used

KDB 971168 D01v02r02 – Section 4.2 & ANSI/TIA-603-D-2010

7.2.3. Test Setting

1. The spectrum analyzer center frequency is set to the nominal EUT channel center frequency.
The span range for the spectrum analyzer shall be between two and five times the anticipated OBW.
2. The nominal resolution bandwidth (RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW. (RBW = approximately 1% of the emission bandwidth).
3. Set the detection mode to peak, and the trace mode to max hold.
4. Use the 99 % power bandwidth function of the spectrum analyzer (if available) and report the measured bandwidth.

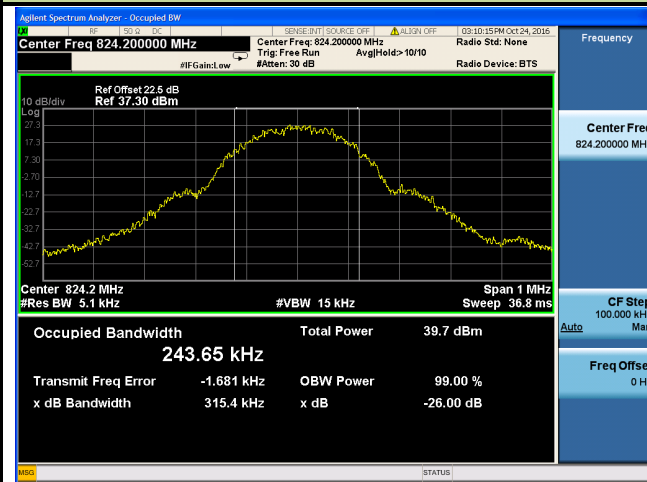
7.2.4. Test Setup



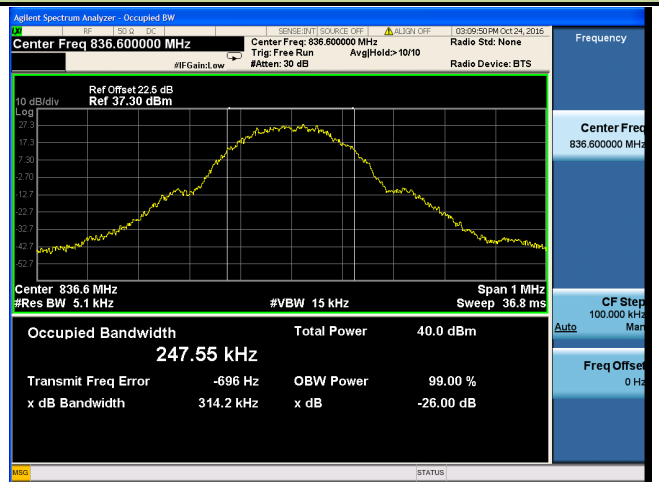
7.2.5. Test Result

Test Mode	Channel No.	Frequency (MHz)	99% Occupied Bandwidth (kHz)	-26dB Occupied Bandwidth (kHz)	Result
GPRS850	128	824.2	234.65	315.4	Pass
	190	836.6	247.55	314.2	Pass
	251	848.8	250.96	316.6	Pass
GPRS1900	512	1850.2	245.87	318.6	Pass
	661	1880.0	249.43	311.9	Pass
	810	1909.8	247.13	317.2	Pass
EGPRS850	128	824.2	248.57	318.2	Pass
	190	836.6	248.64	319.5	Pass
	251	848.8	249.09	313.8	Pass
EGPRS1900	512	1850.2	253.34	318.1	Pass
	661	1880.0	246.90	313.8	Pass
	810	1909.8	256.23	333.0	Pass
CDMA BC0 (850)	1013	824.7	1276.8	1435	Pass
	384	836.52	1269.9	1428	Pass
	777	848.31	1272.4	1430	Pass
CDMA BC1 (1900)	25	1851.25	1280.8	1459	Pass
	600	1880	1286.6	1505	Pass
	1175	1908.75	1285.9	1480	Pass
EVDO BC0 (850)	1013	824.7	1272.0	1435	Pass
	384	836.52	1284.8	1439	Pass
	777	848.31	1266.7	1432	Pass
EVDO BC1 (1900)	25	1851.25	1281.5	1592	Pass
	600	1880	1302.2	1875	Pass
	1175	1908.75	1296.6	1950	Pass
WCDMA Band II	9262	1852.4	4.2469	4946	Pass
	9400	1880.0	4.2727	4973	Pass
	9538	1907.6	4.2291	4940	Pass
WCDMA Band V	4132	826.4	4.2101	4878	Pass
	4182	836.4	4.2289	4867	Pass
	4233	846.6	4.2222	4856	Pass

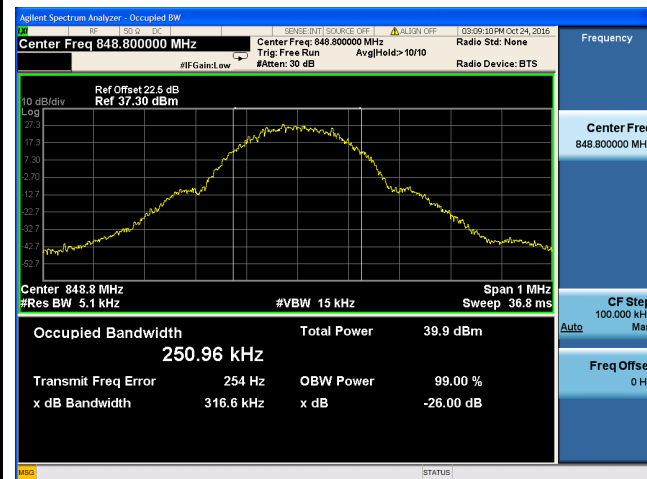
GPRS850-CH128



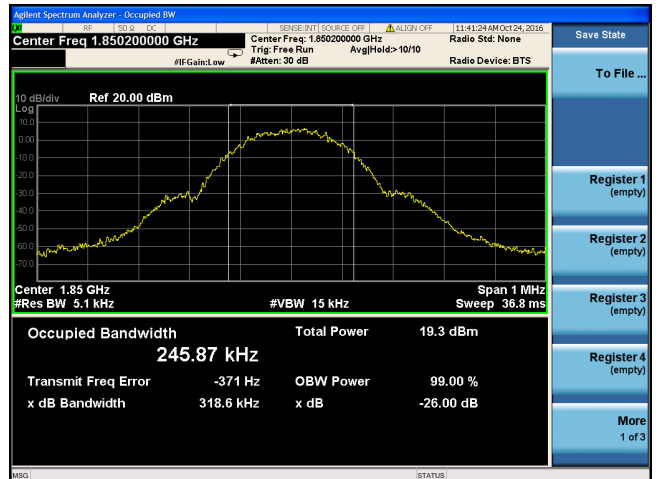
GPRS850-CH189



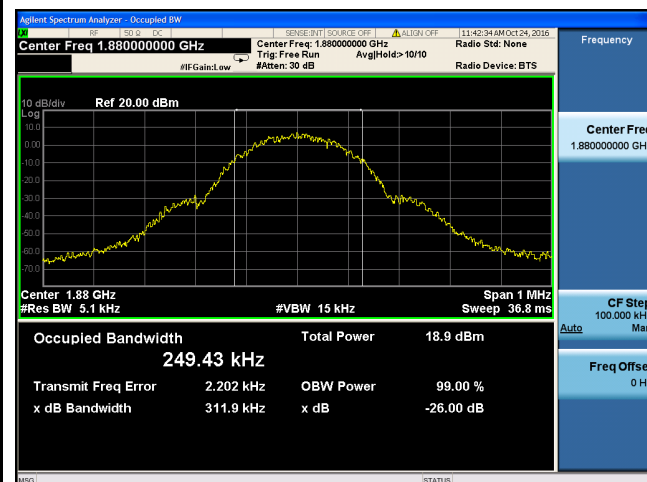
GPRS850-CH251



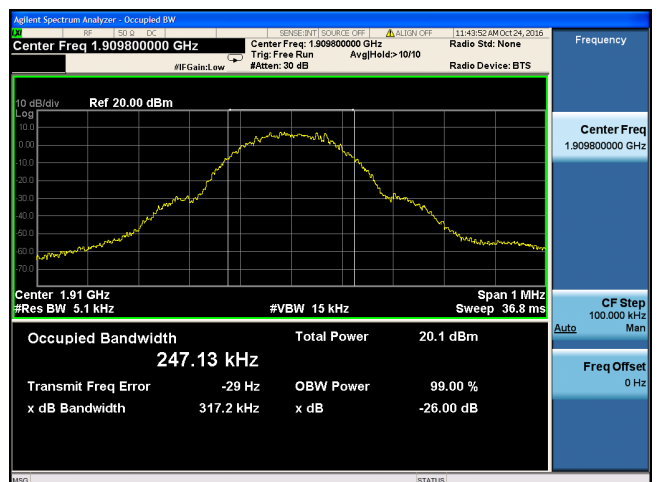
GPRS1900-CH512



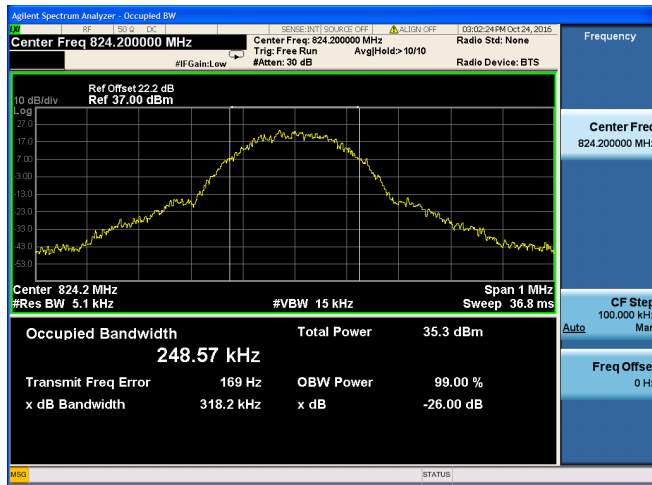
GPRS1900-CH661



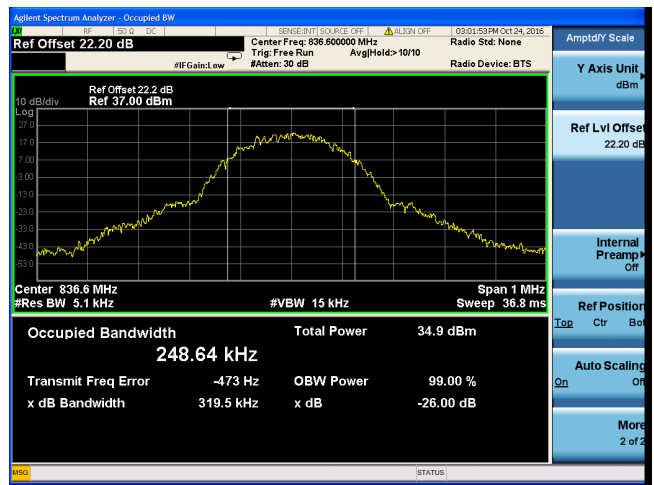
GPRS1900-CH810



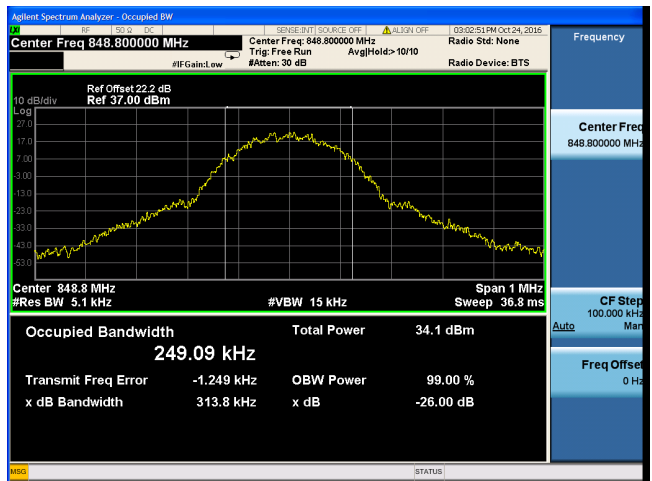
EGPRS850-CH128



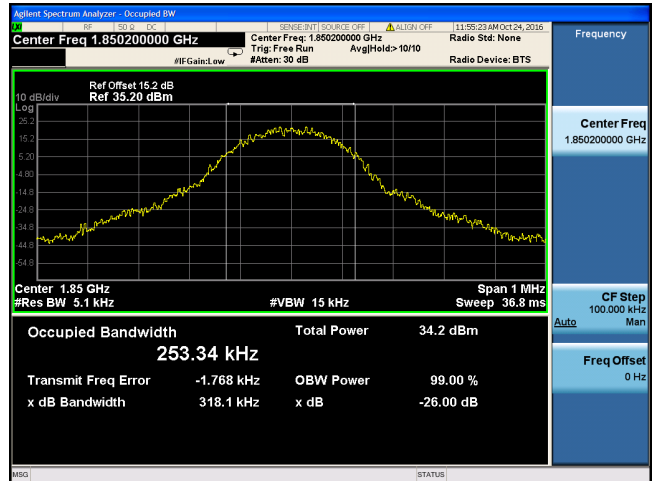
EGPRS850-CH189



EGPRS850-CH251



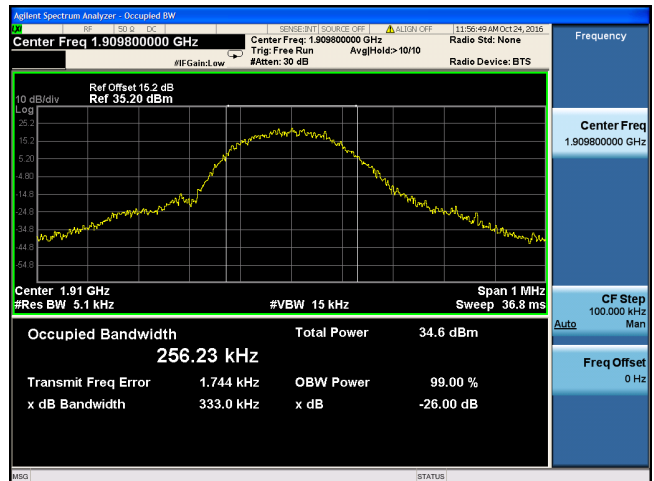
EGPRS1900-CH512



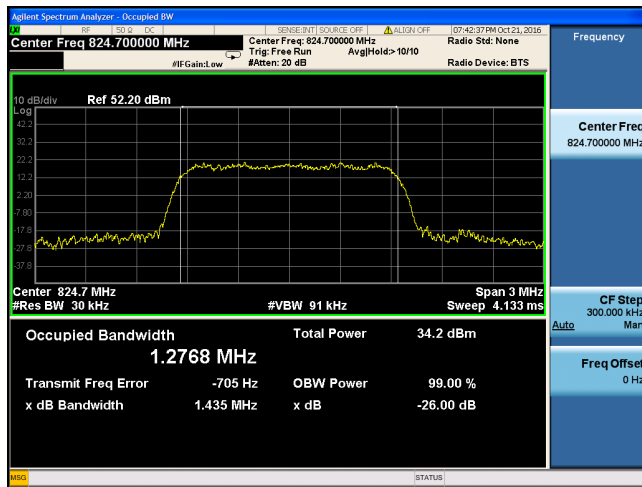
EGPRS1900-CH661



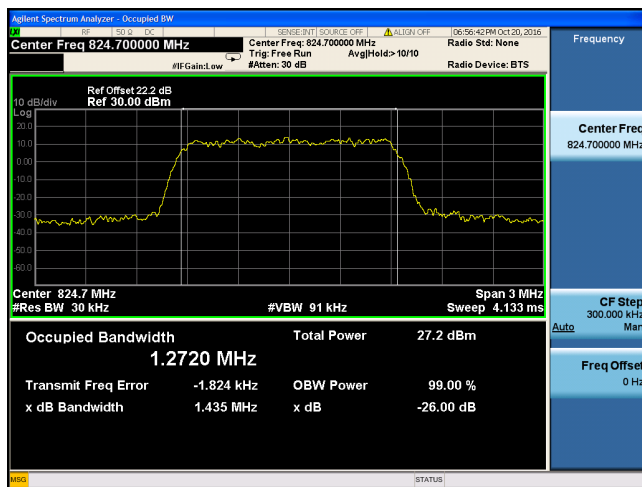
EGPRS1900-CH810



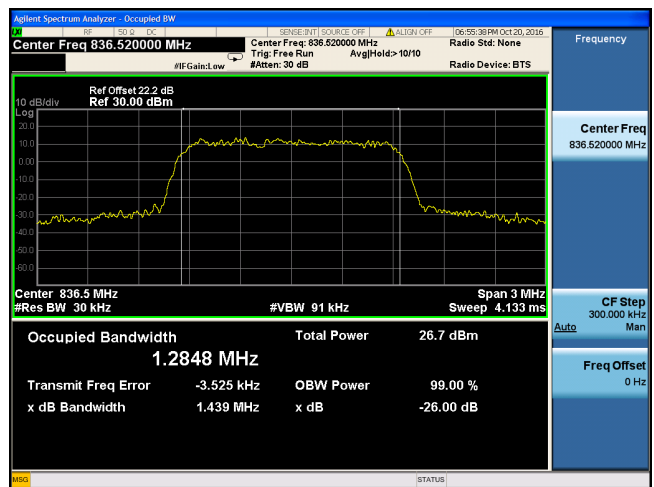
CDMA BC0(850) -CH1013



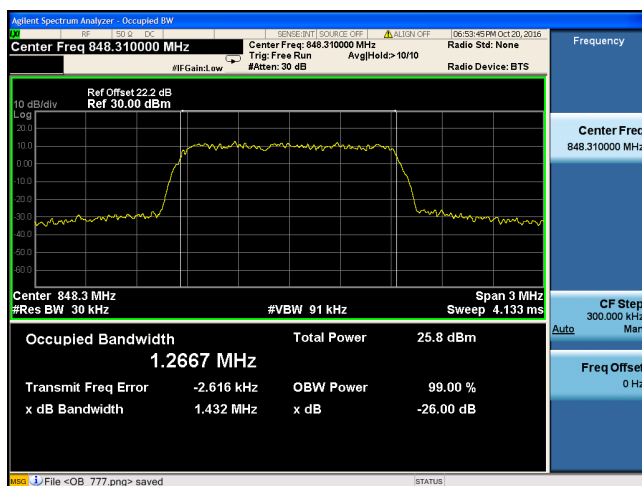
EVDO BC0(850)-CH1013



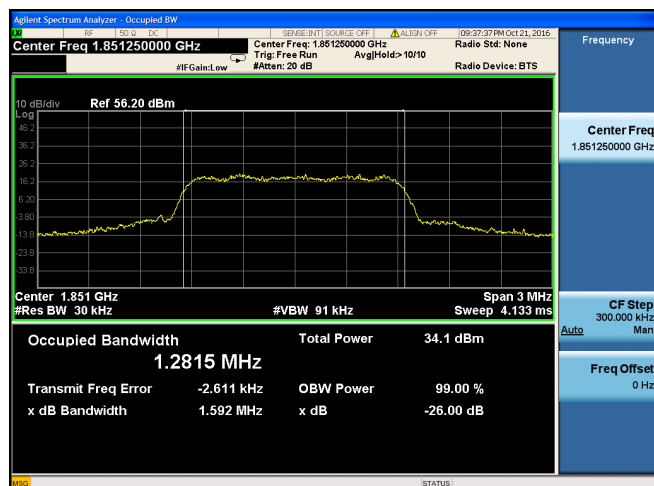
EVDO BC0(850)-CH384



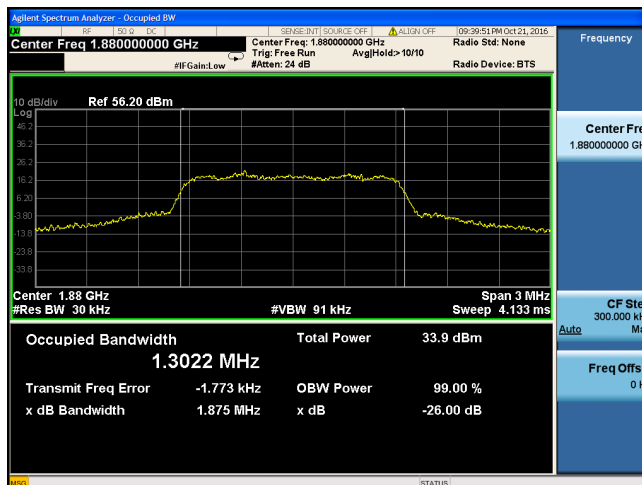
EVDO BC0(850)-CH777



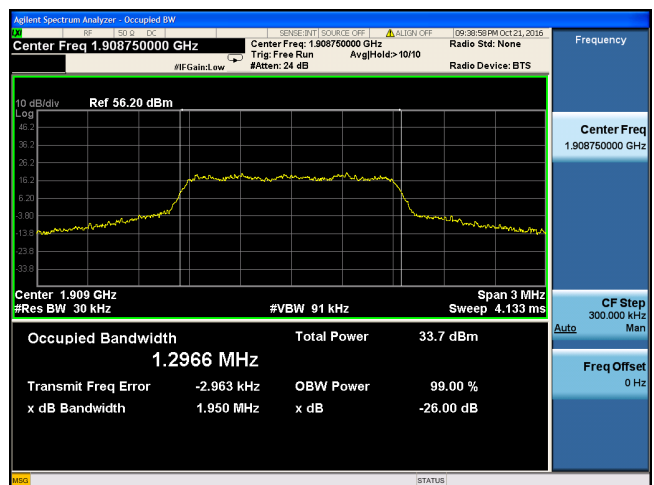
EVDO BC1(1900)-CH25



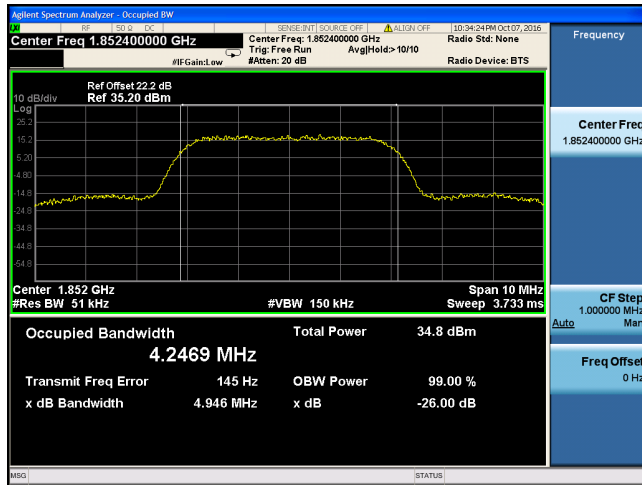
EVDO BC1(1900)-CH600



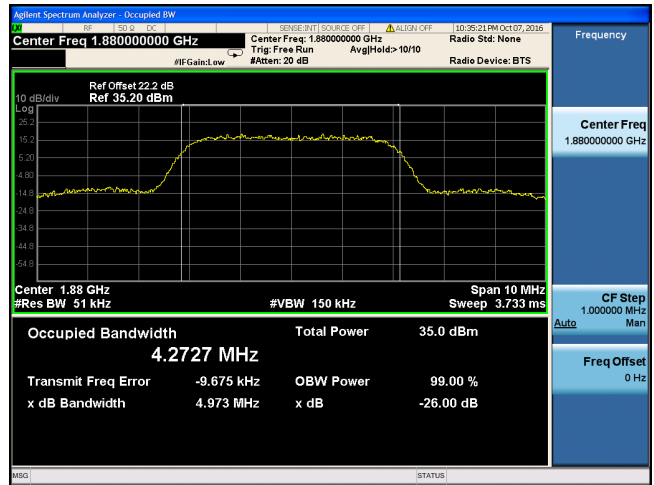
EVDO BC1(1900)-CH1175



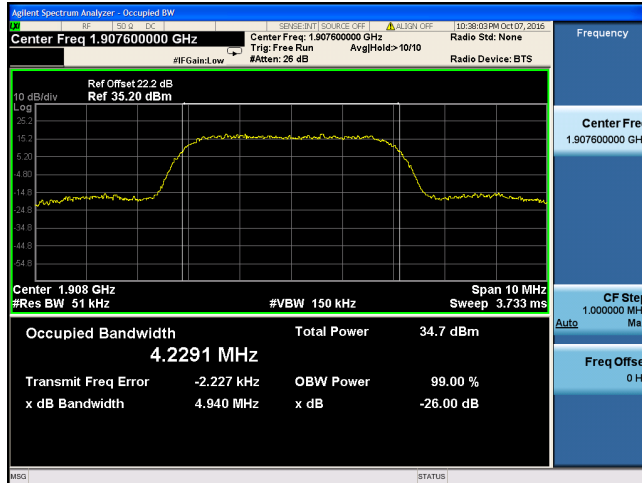
WCDMA Band II -CH9262



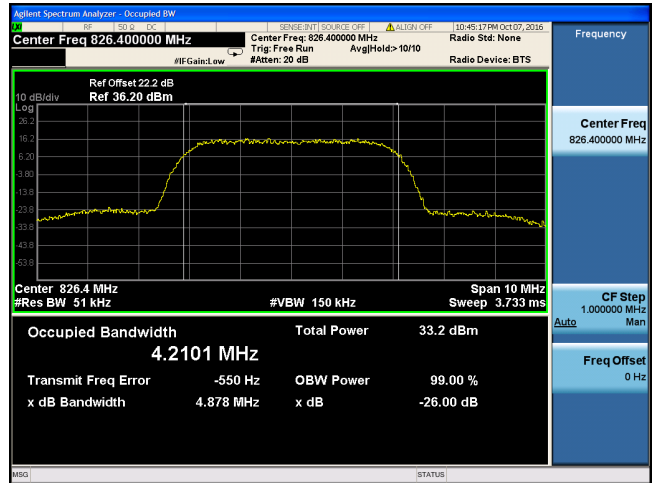
WCDMA Band II -CH9400



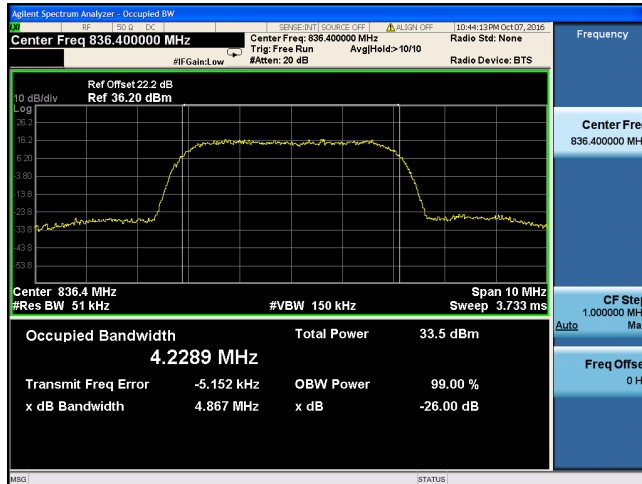
WCDMA Band II -CH9538



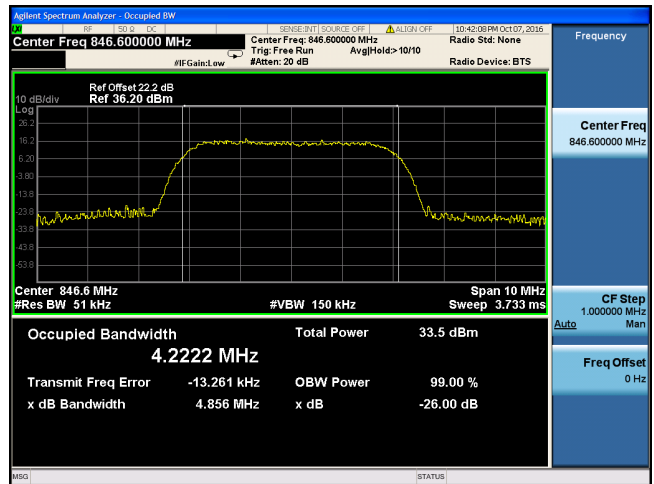
WCDMA Band V -CH4132



WCDMA Band V -CH4182



WCDMA Band V -CH4233



7.3. Conducted Spurious Emissions

7.3.1. Test Limit

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10\log_{10}(P)$ dB.

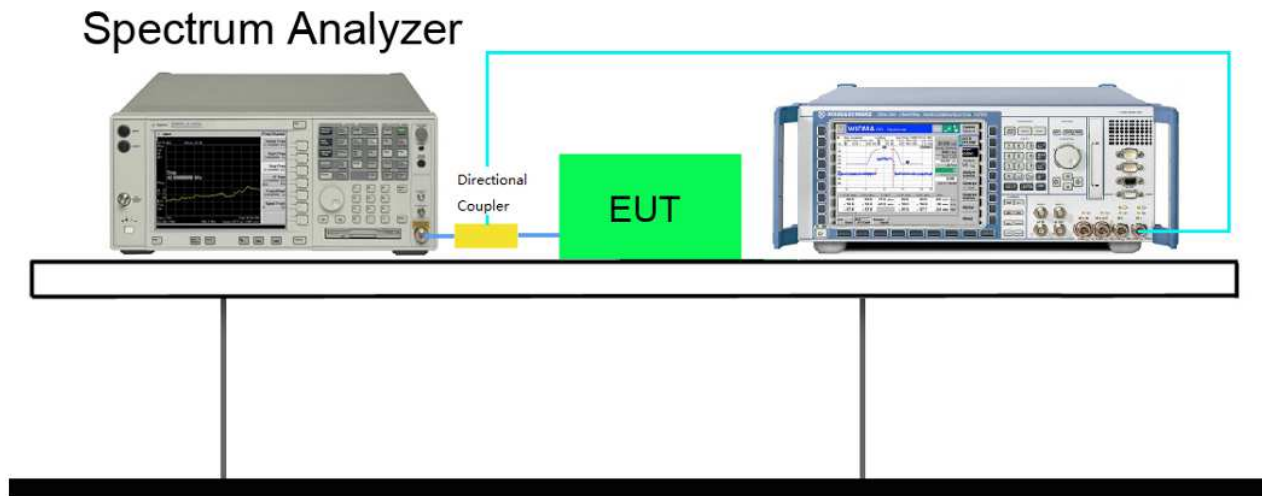
7.3.2. Test Procedure Used

KDB 971168 D01v02r02 – Section 6.0 & ANSI/TIA-603-D-2010

7.3.3. Test Setting

Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz is at or below 1GHz and 1MHz is above 1GHz, If any, up to 10th harmonic.

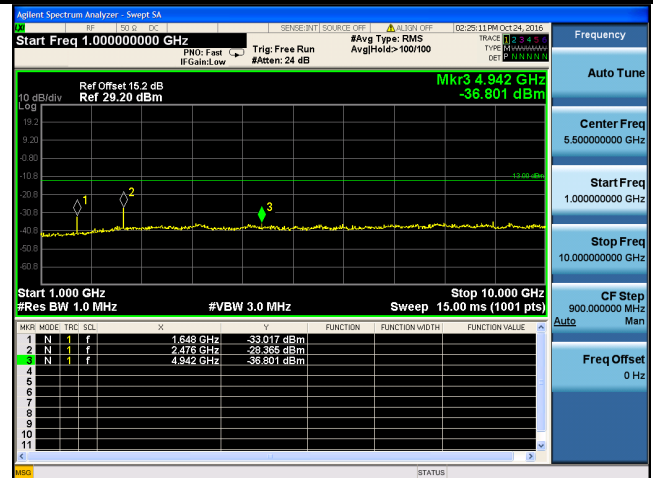
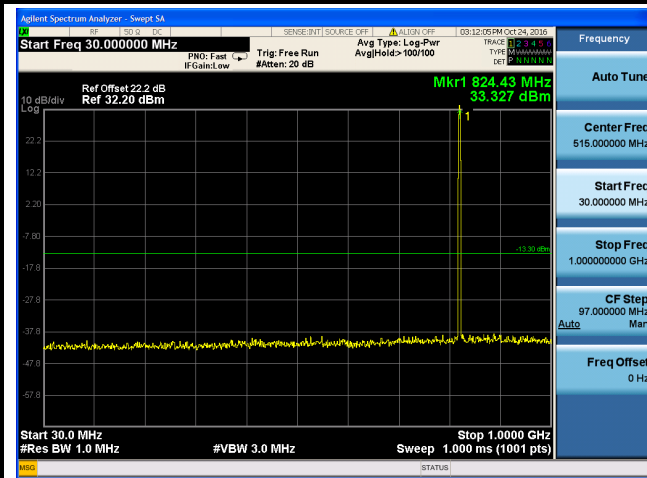
7.3.4. Test Setup



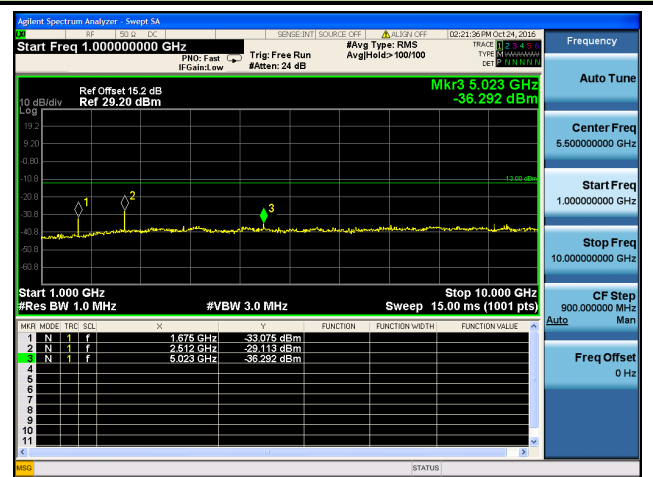
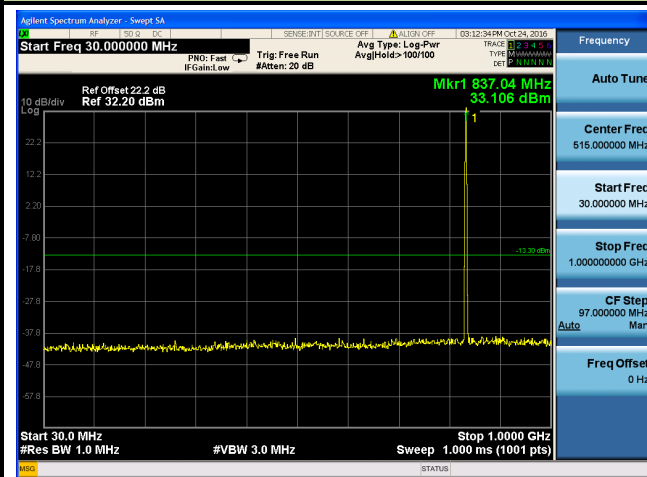
7.3.5. Test Result

Mode	Channel No.	Frequency (MHz)	Modulation	Test Result
GSM850	128	824.20	GMSK	Pass
GSM850	190	836.60	GMSK	Pass
GSM850	251	848.80	GMSK	Pass
PCS1900	512	1850.20	GMSK	Pass
PCS1900	661	1880.00	GMSK	Pass
PCS1900	810	1909.80	GMSK	Pass
EGPRS850	128	824.20	8PSK	Pass
EGPRS850	190	836.60	8PSK	Pass
EGPRS850	251	848.80	8PSK	Pass
EGPRS1900	512	1850.20	8PSK	Pass
EGPRS1900	661	1880.00	8PSK	Pass
EGPRS1900	810	1909.80	8PSK	Pass
CDMA 850	1013	824.7	QPSK	Pass
CDMA 850	384	836.52	QPSK	Pass
CDMA 850	777	848.31	QPSK	Pass
CDMA 1900	25	1851.25	QPSK	Pass
CDMA 1900	600	1880.00	QPSK	Pass
CDMA 1900	1175	1908.75	QPSK	Pass
EVDO 850	1013	824.7	QPSK	Pass
EVDO 850	384	836.52	QPSK	Pass
EVDO 850	777	848.31	QPSK	Pass
EVDO 1900	25	1851.25	QPSK	Pass
EVDO 1900	600	1880.00	QPSK	Pass
EVDO 1900	1175	1908.75	QPSK	Pass
WCDMA Band II	9262	1852.4	QPSK	Pass
WCDMA Band II	9400	1880.0	QPSK	Pass
WCDMA Band II	9538	1907.6	QPSK	Pass
WCDMA Band V	4132	826.40	QPSK	Pass
WCDMA Band V	4182	836.40	QPSK	Pass
WCDMA Band V	4233	846.60	QPSK	Pass

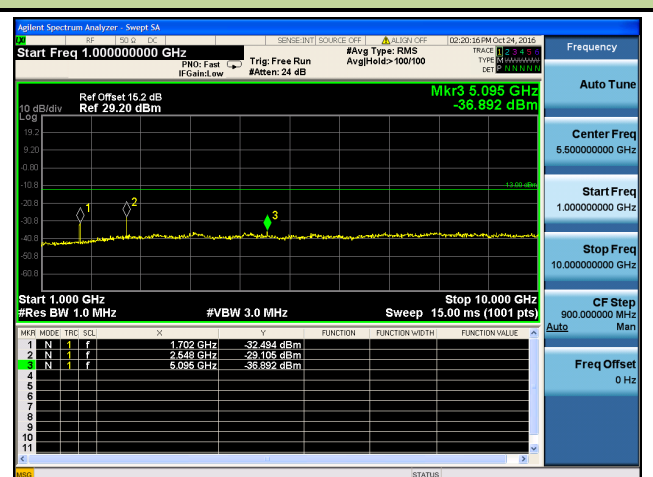
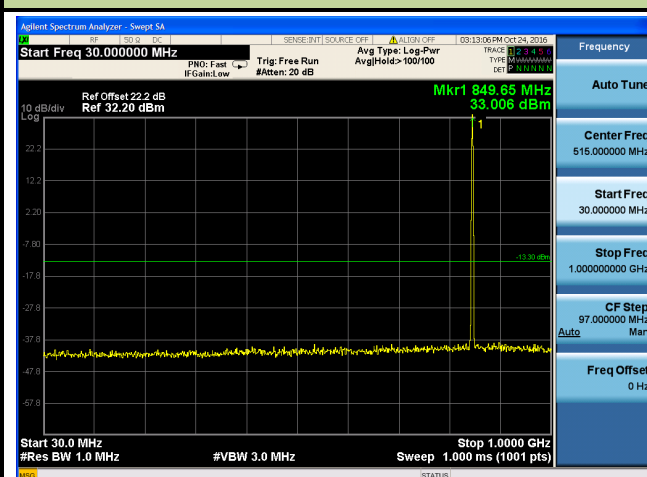
GPRS850-CH128 (824.2MHz)



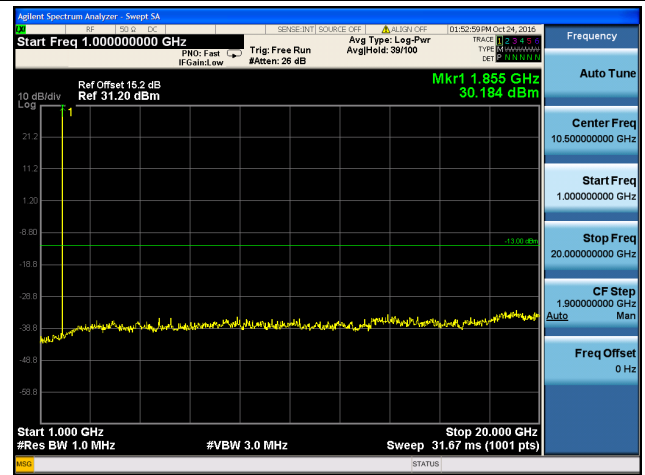
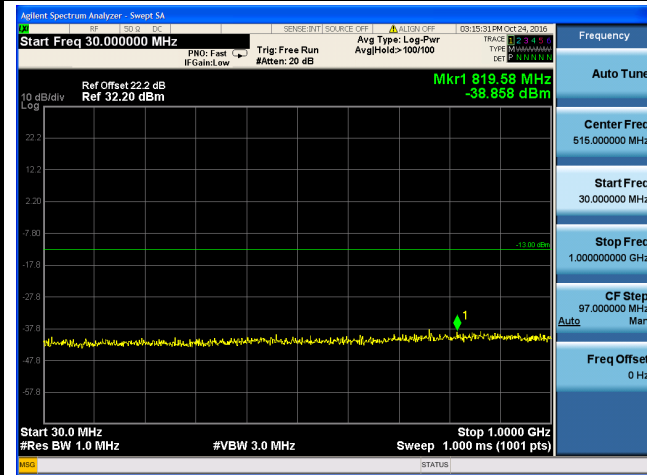
GPRS850-CH190 (836.6MHz)



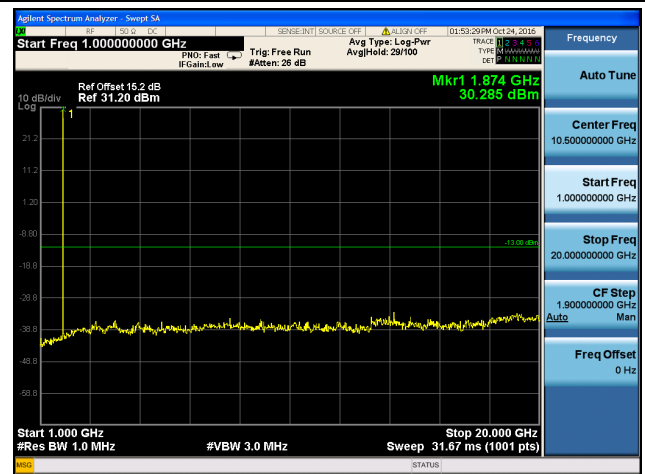
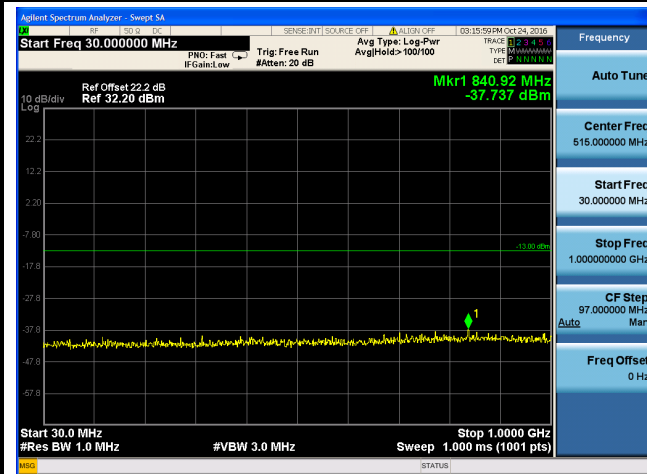
GPRS850-CH251 (848.8MHz)



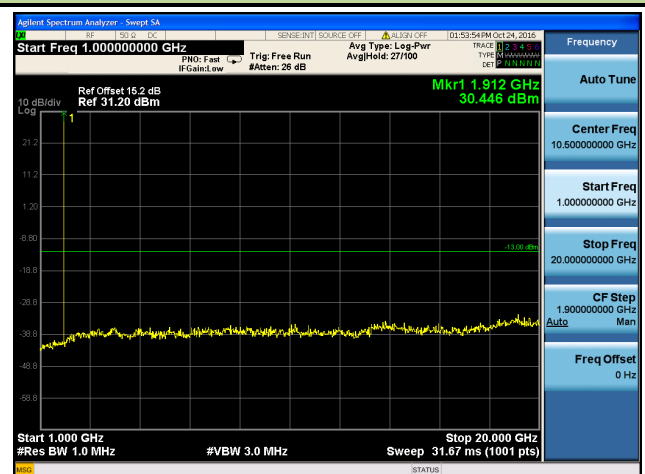
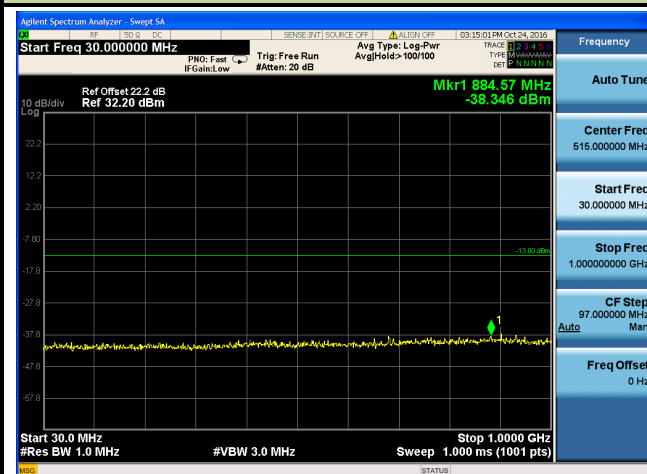
GPRS1900-CH512 (1850.2MHz)



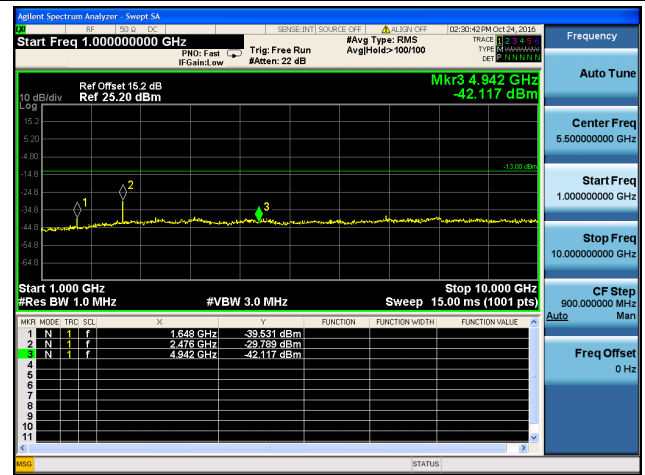
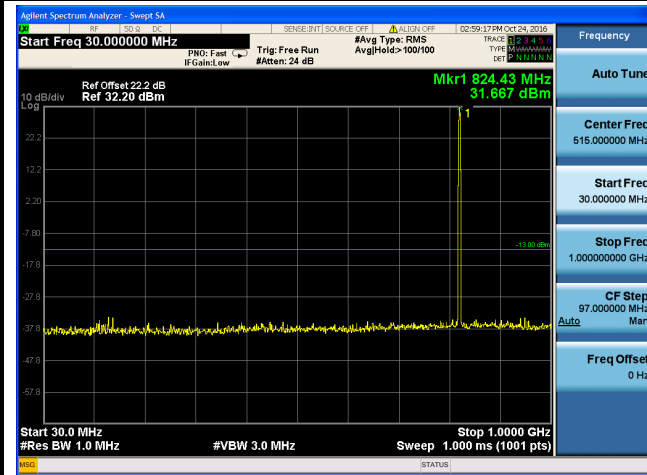
GPRS1900-CH661 (1880.0MHz)



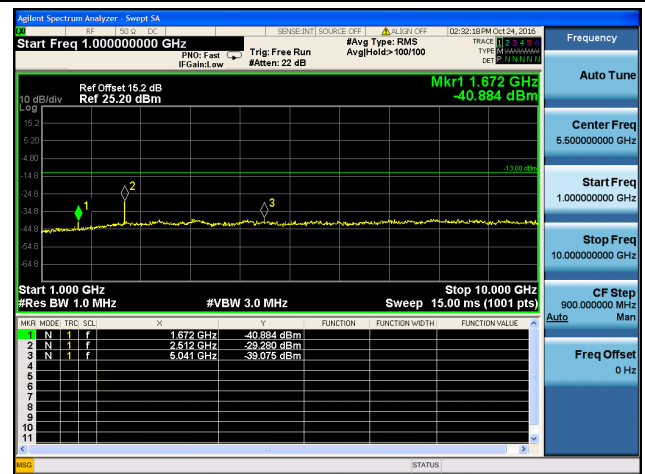
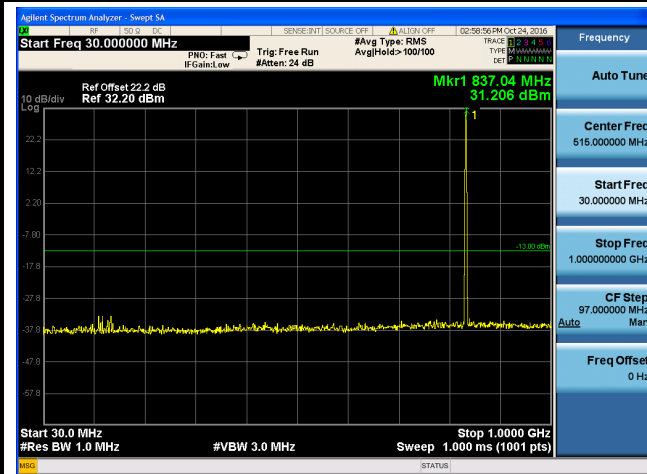
GPRS1900-CH810 (1909.8MHz)



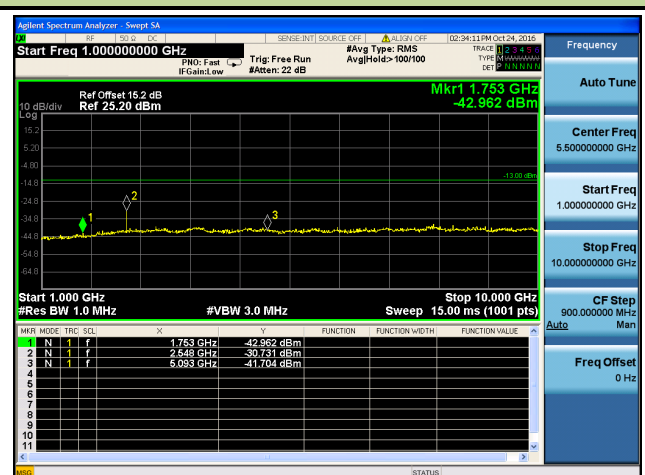
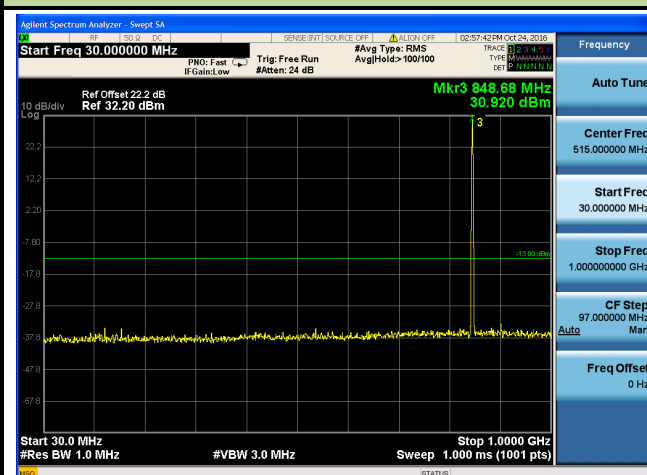
EGPRS850-CH128 (824.2MHz)



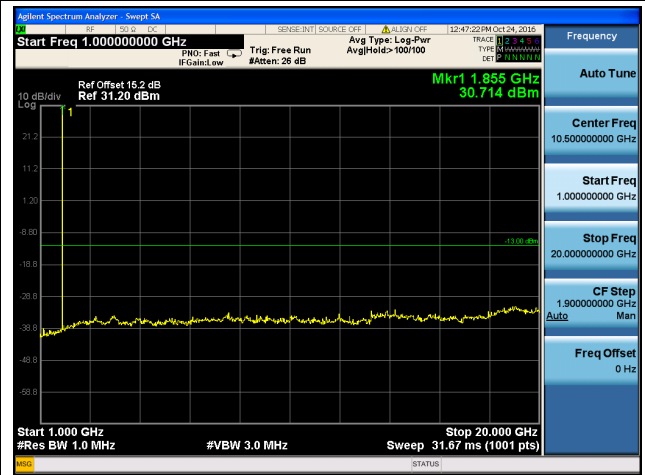
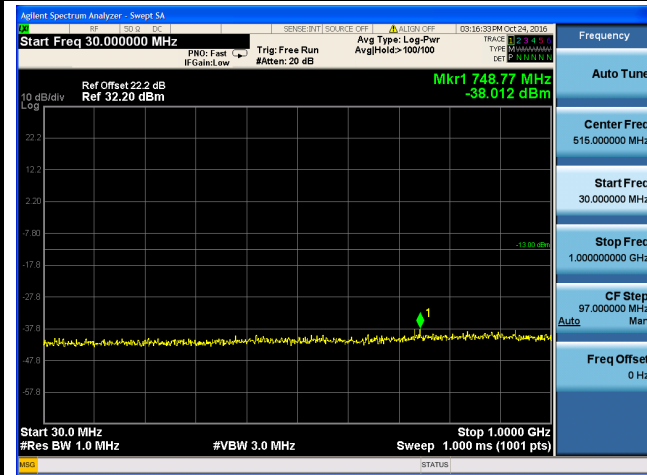
EGPRS850-CH190 (836.6MHz)



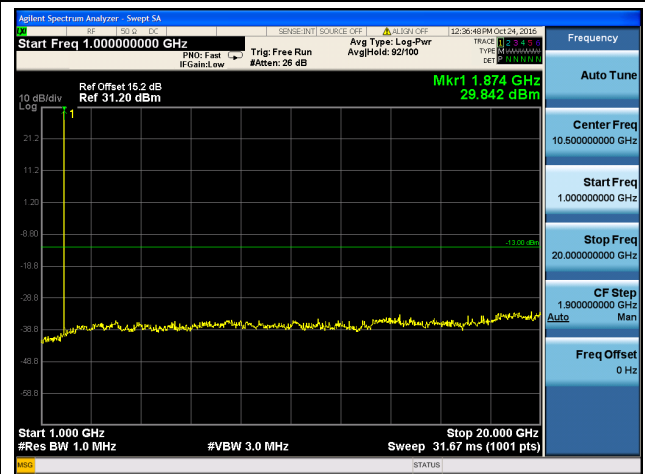
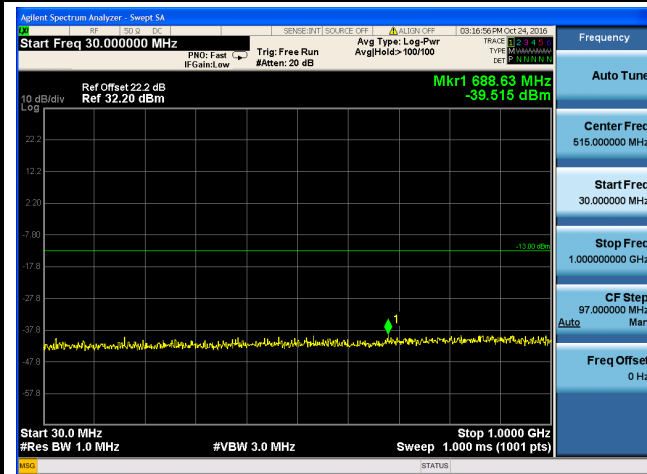
EGPRS850-CH251 (848.8MHz)



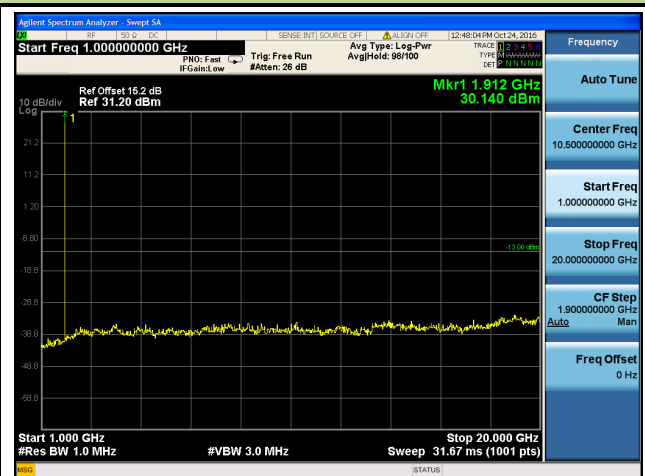
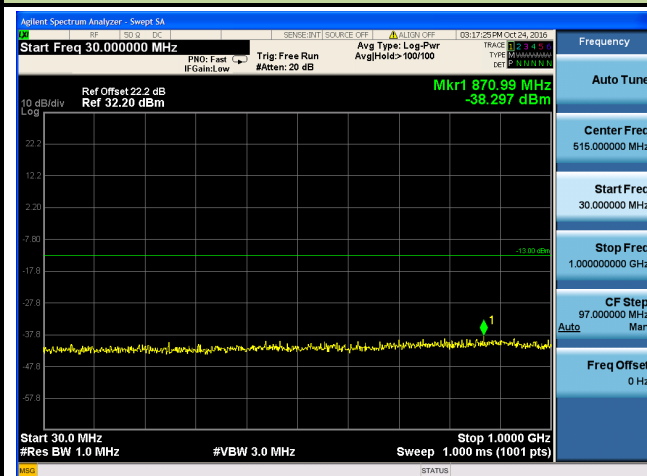
EGPRS1900-CH512 (1850.2MHz)



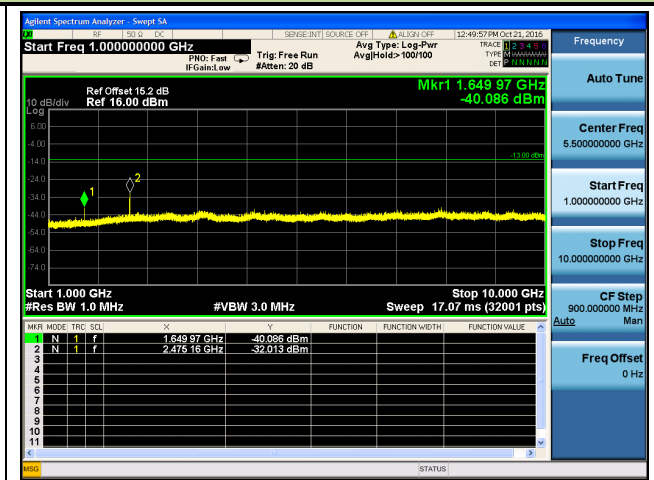
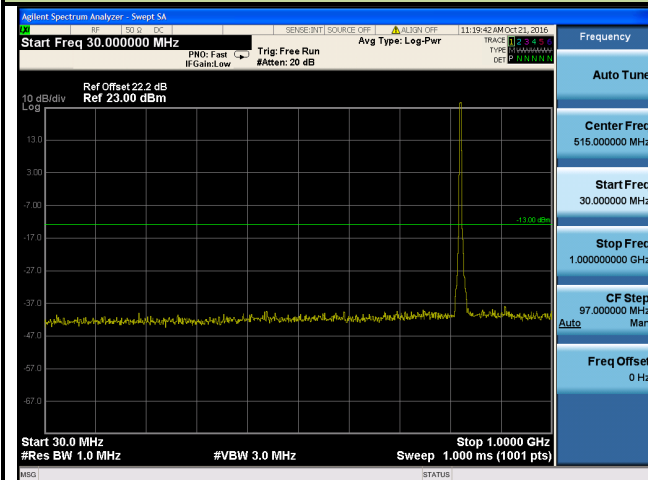
EGPRS1900-CH661 (1880.0MHz)



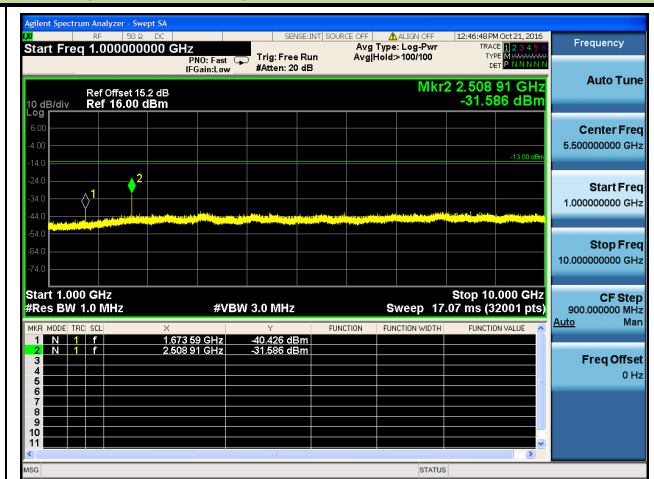
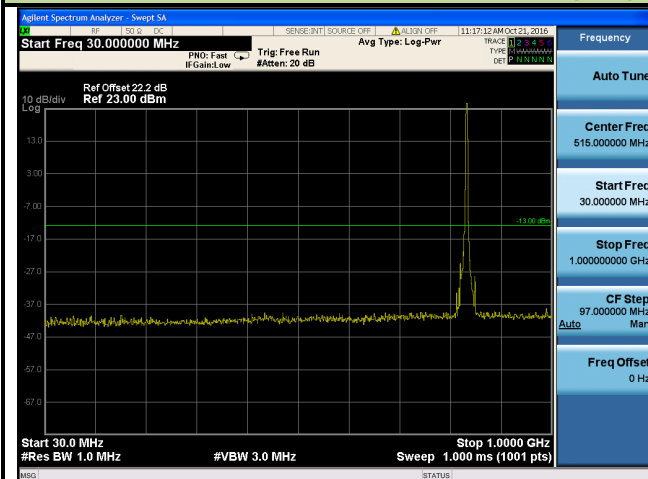
EGPRS1900-CH810 (1909.8MHz)



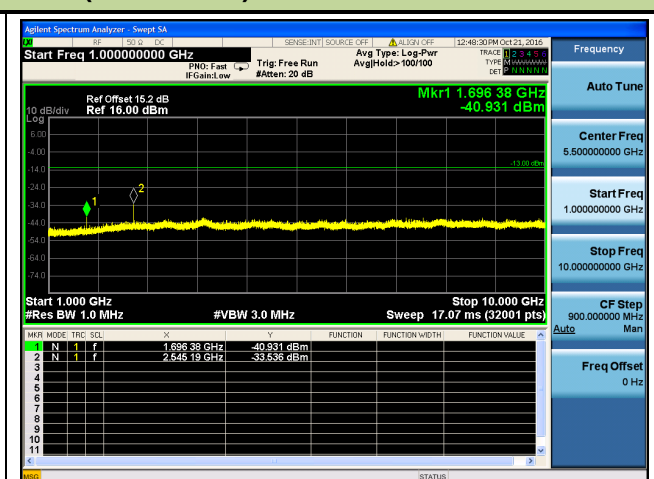
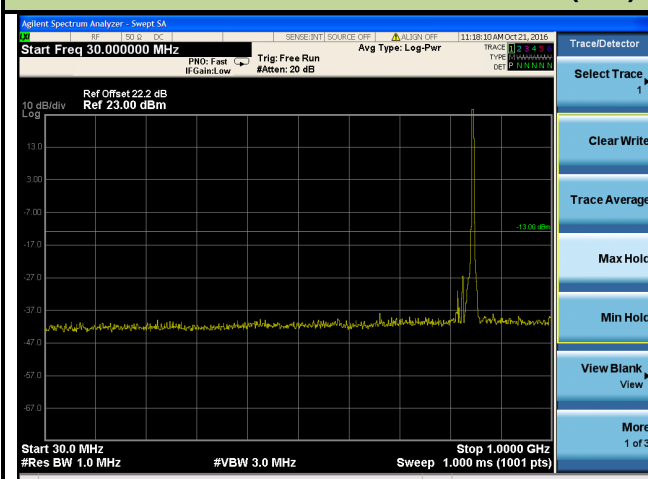
CDMA BC0(850)-CH1013 (824.7MHz)



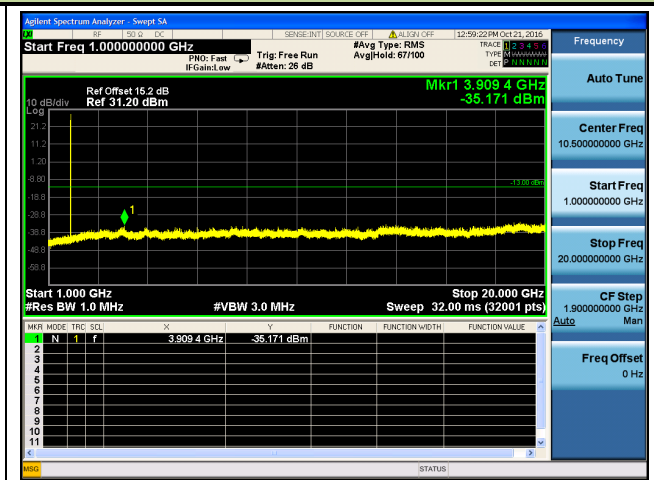
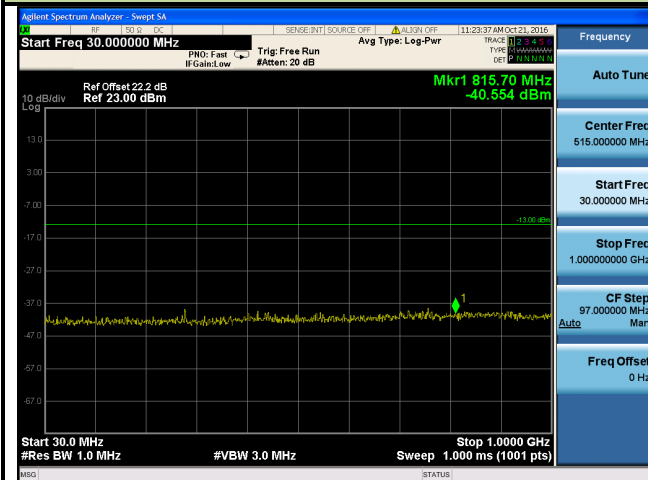
CDMA BC0(850)-CH384 (836.52MHz)



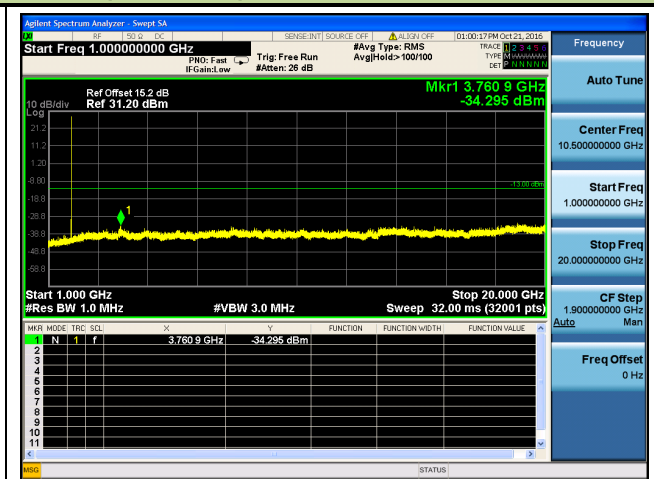
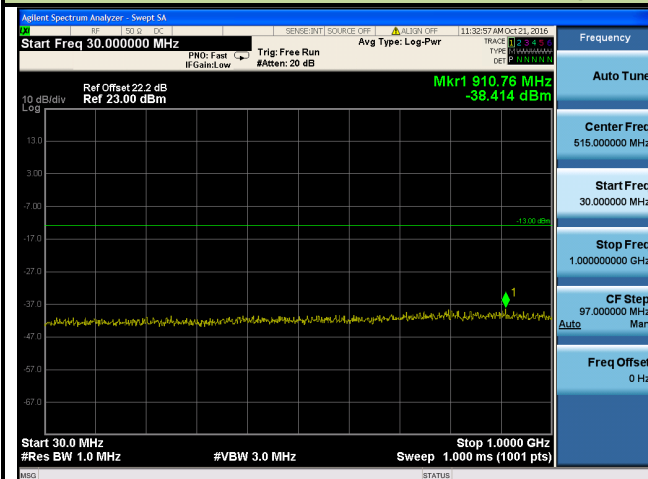
CDMA BC0(850)-CH777 (848.31MHz)



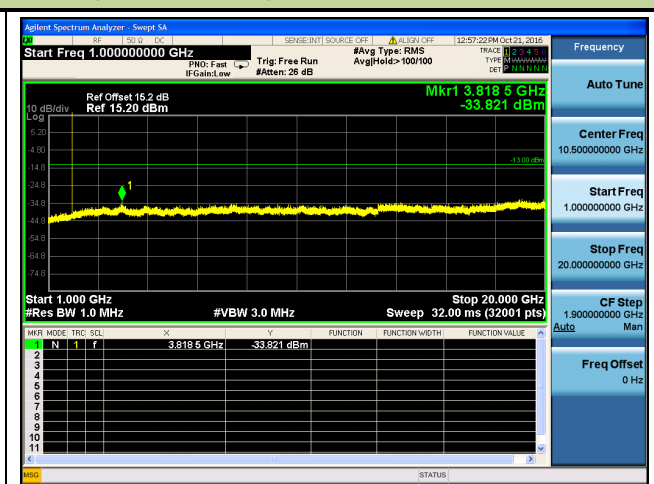
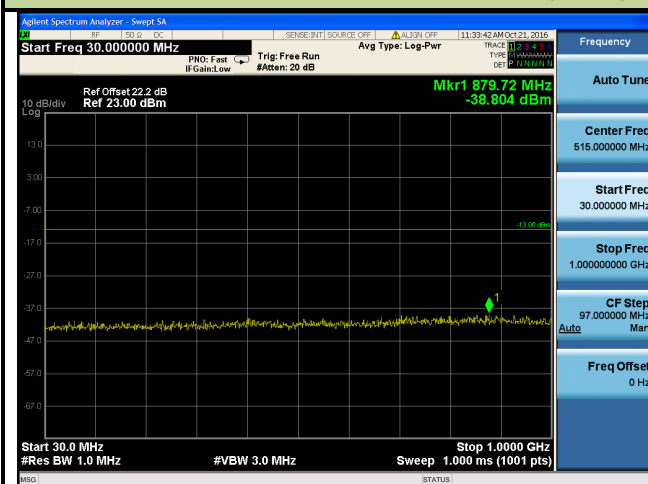
CDMA BC1(1900)-CH25 (1851.25MHz)



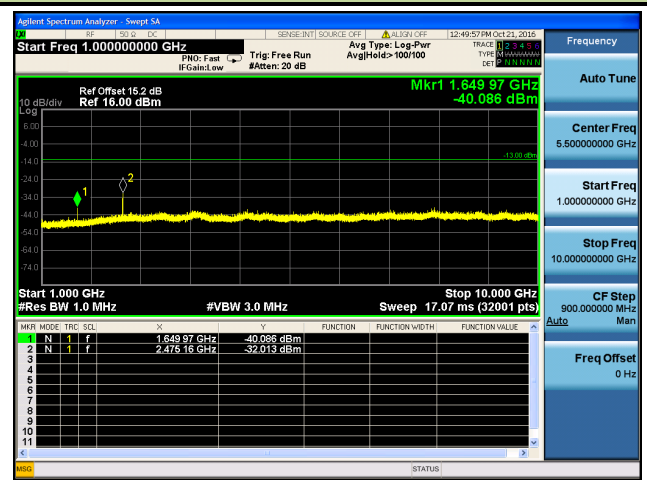
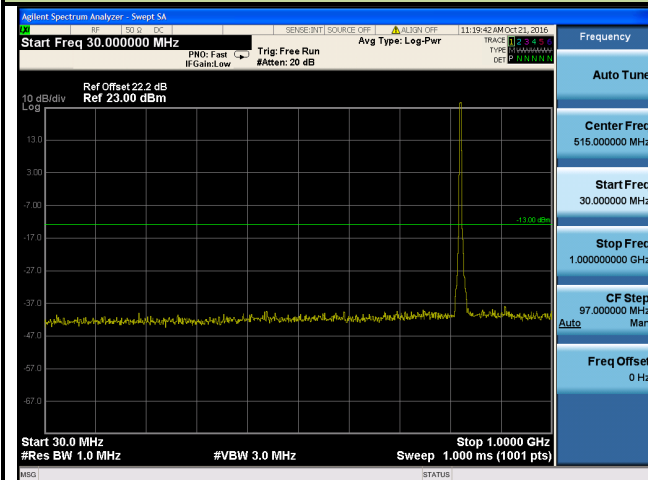
CDMA BC1(1900)-CH600 (1880MHz)



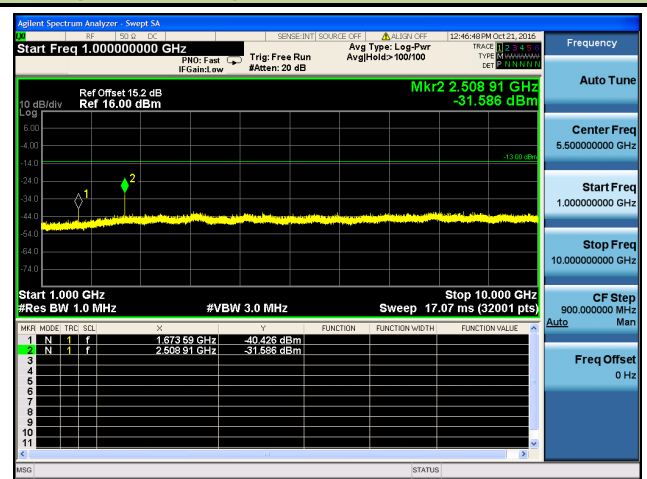
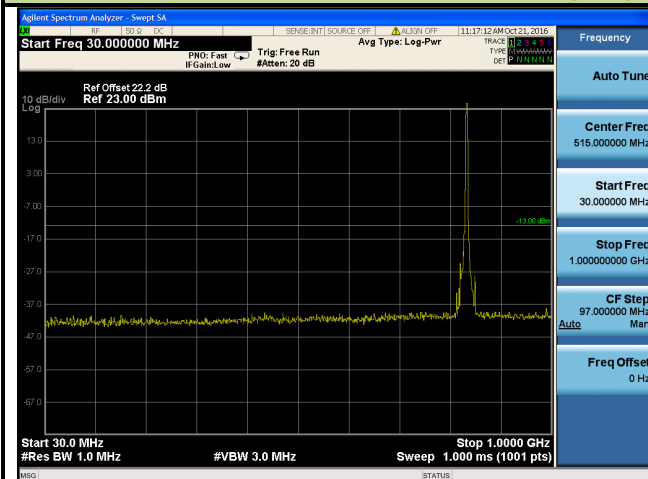
CDMA BC1(1900)-CH1175 (1908.75MHz)



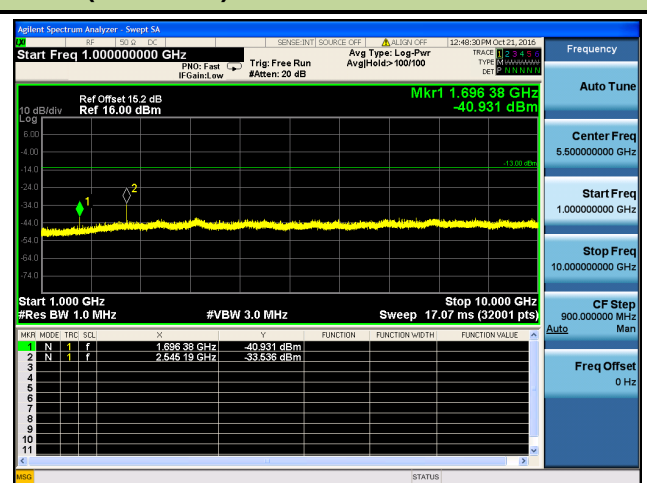
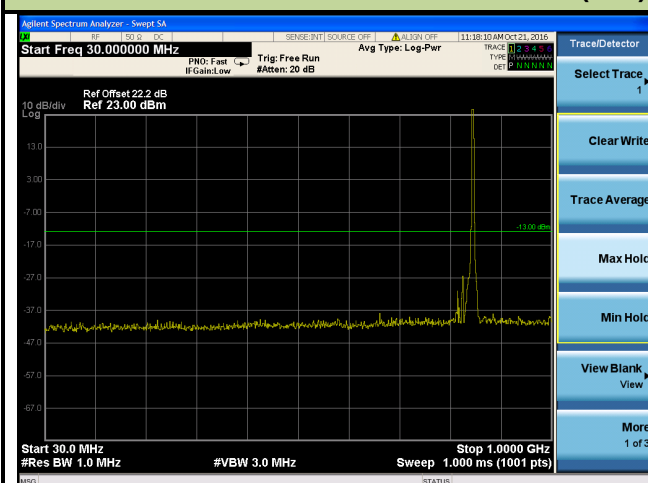
EVDO BC0(850)-CH1013 (824.7MHz)



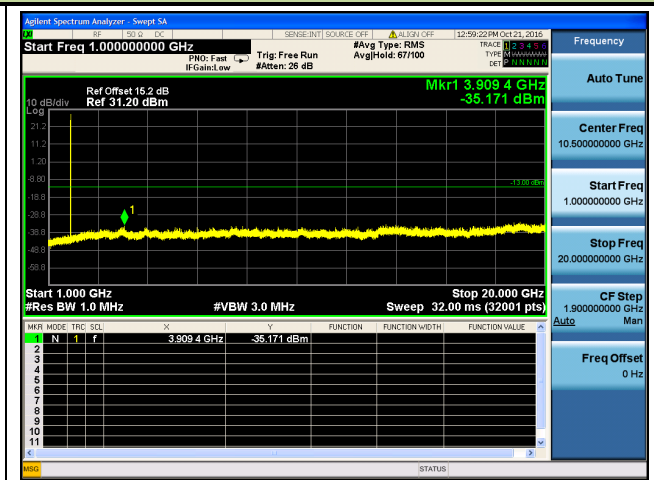
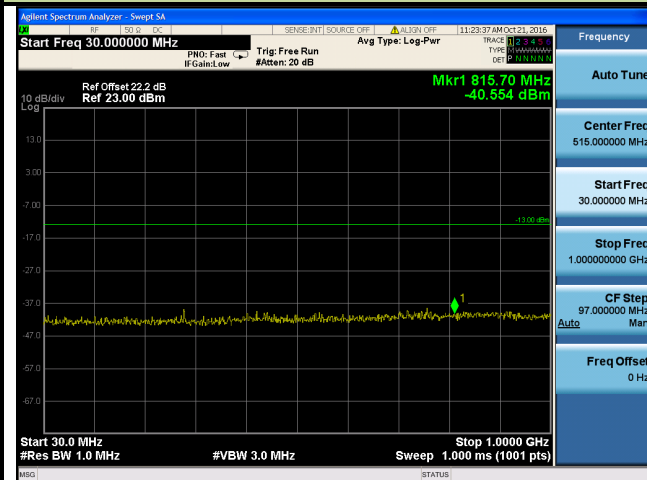
EVDO BC0(850)-CH384 (836.52MHz)



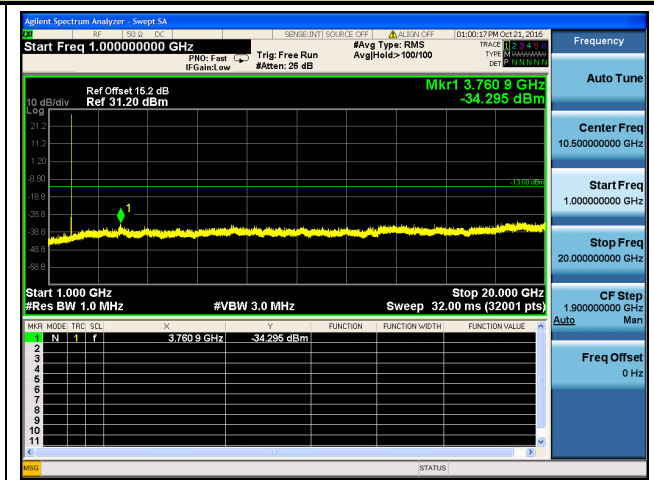
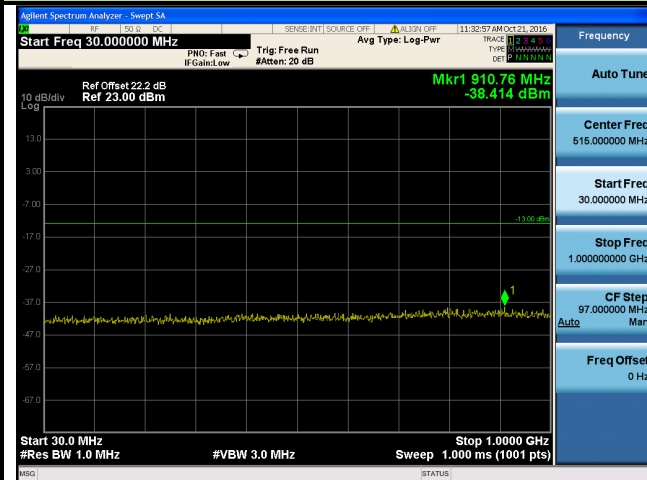
EVDO BC0(850)-CH777 (848.31Hz)



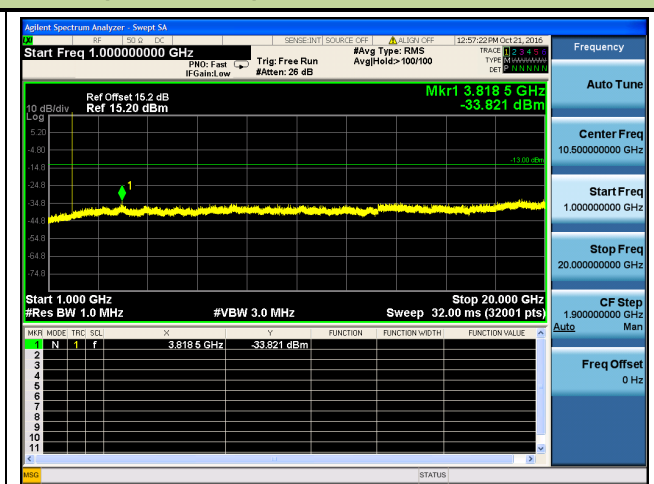
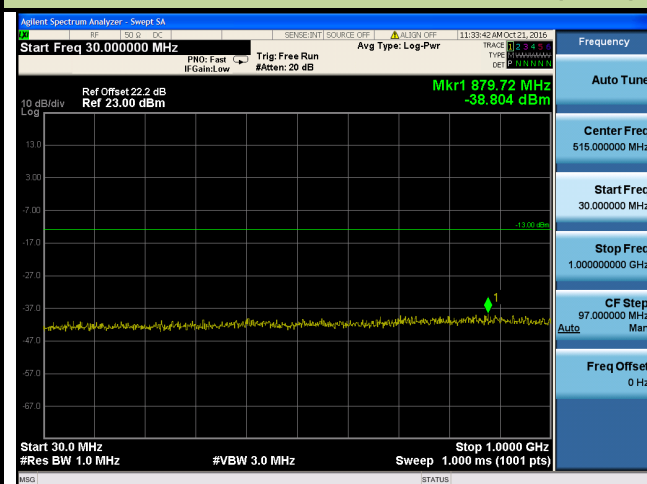
EVDO BC1(1900)-CH25 (1851.25Hz)



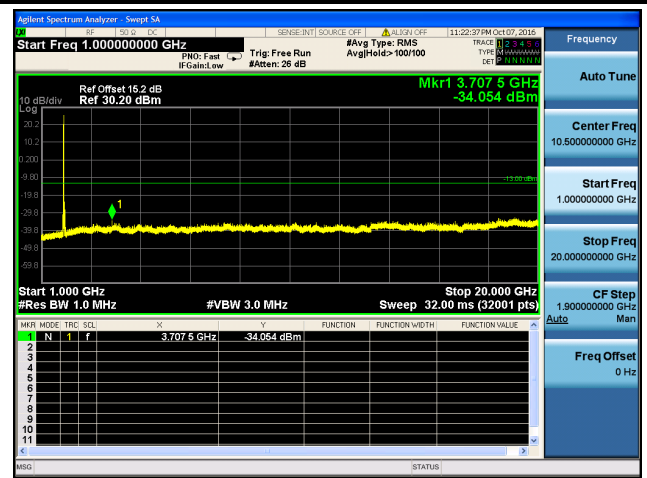
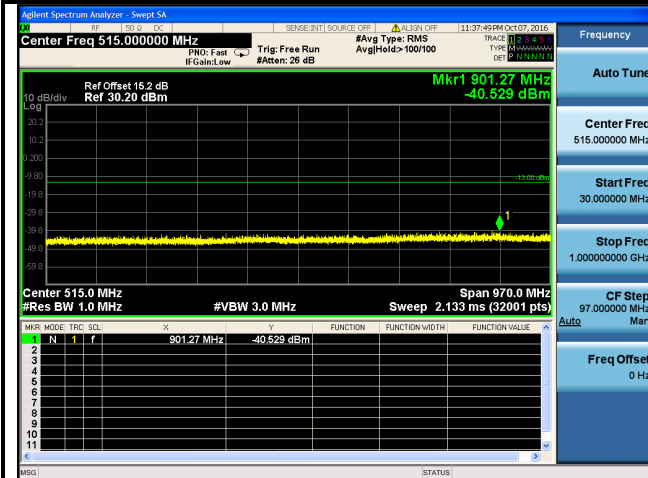
EVDO BC1(1900)-CH600 (1880Hz)



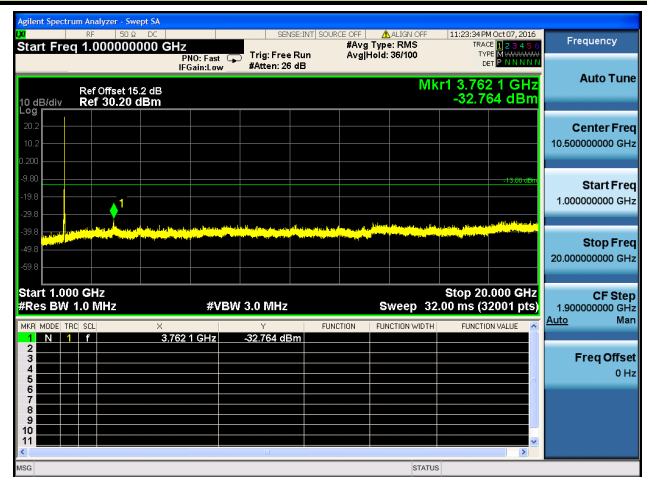
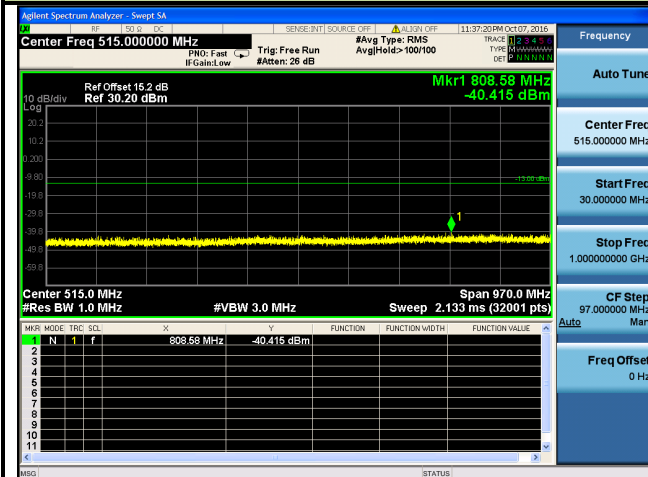
EVDO BC1(1900)-CH1175 (1908.75Hz)



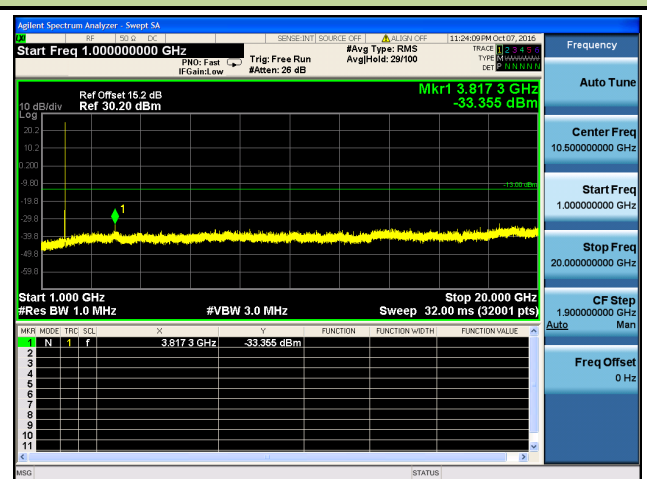
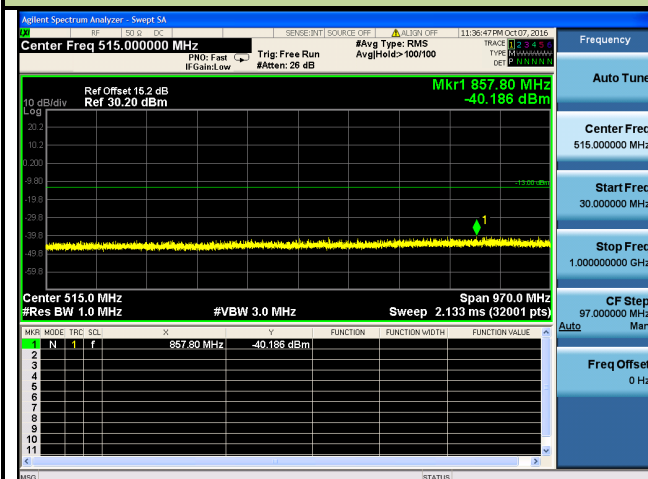
WCDMA Band II-CH9262 (1852.4Hz)



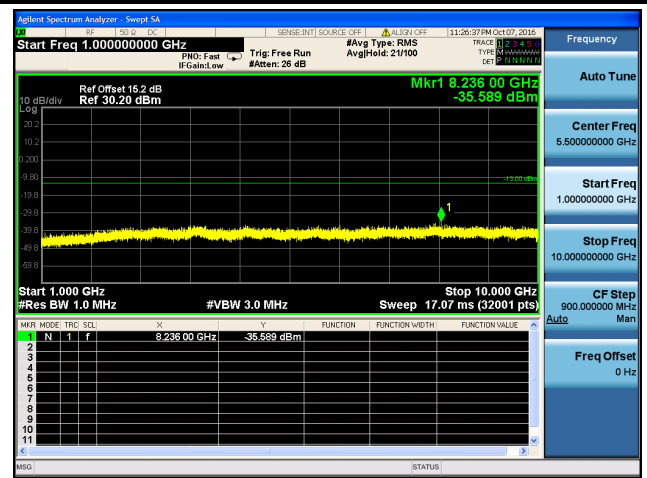
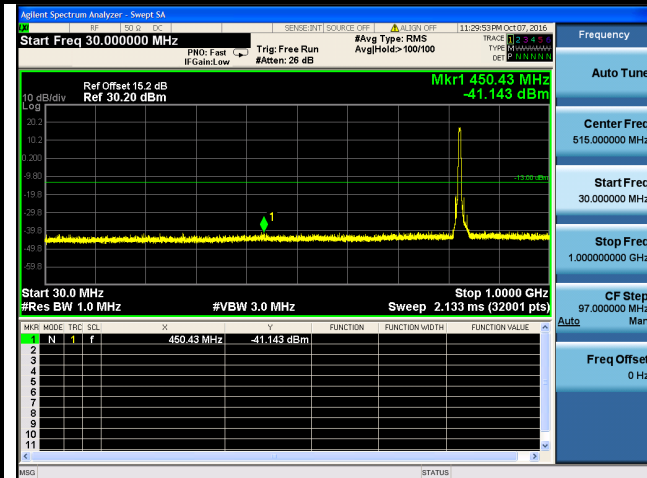
WCDMA Band II-CH9400 (1880.0Hz)



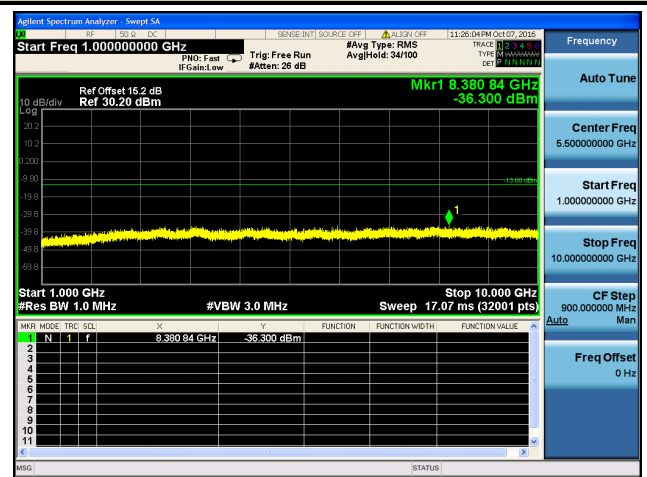
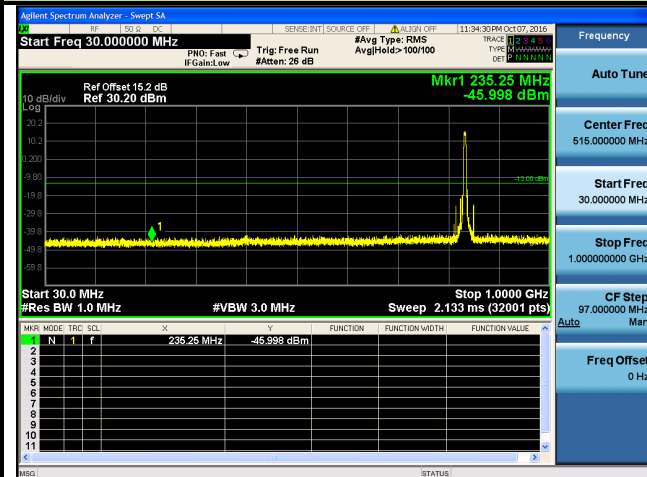
WCDMA Band II-CH9538 (1907.6Hz)



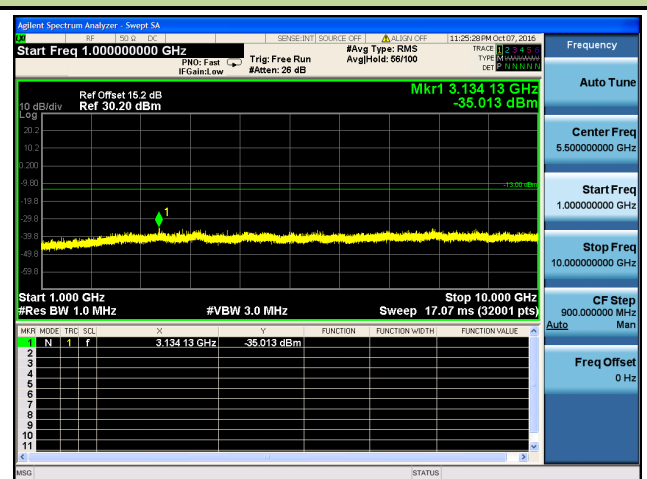
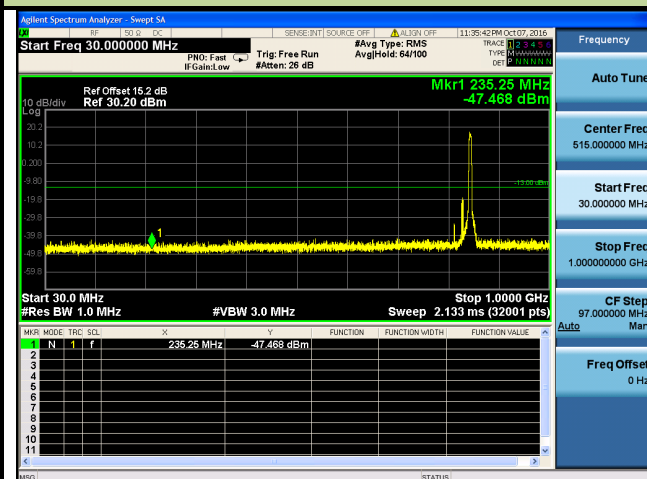
WCDMA Band V-CH4132 (826.4Hz)



WCDMA Band V-CH4182 (836.4Hz)



WCDMA Band V-CH4233 (846.6Hz)



7.4. Band Edge at Antenna Terminal

7.4.1. Test Limit

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10\log_{10}(P)$ dB.

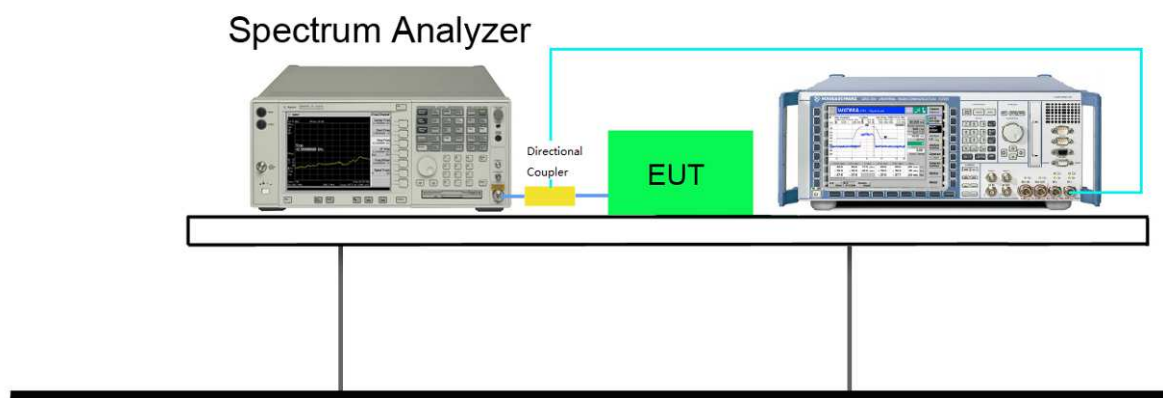
7.4.2. Test Procedure Used

KDB 971168 D01v02r02 – Section 6.0 & ANSI/TIA-603-D-2010

7.4.3. Test Setting

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. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified). 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.

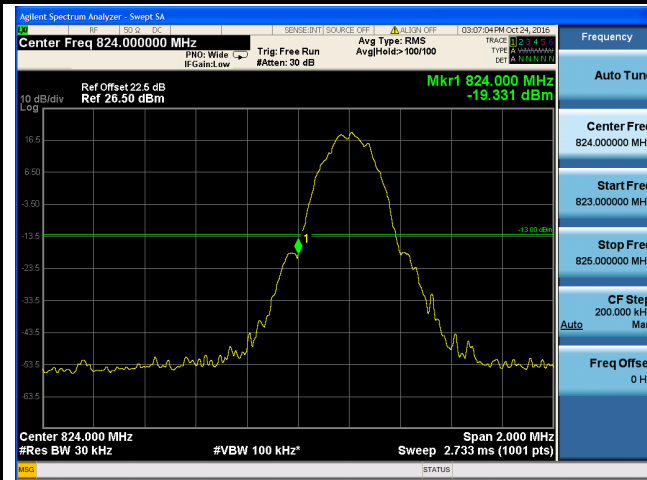
7.4.4. Test Setup



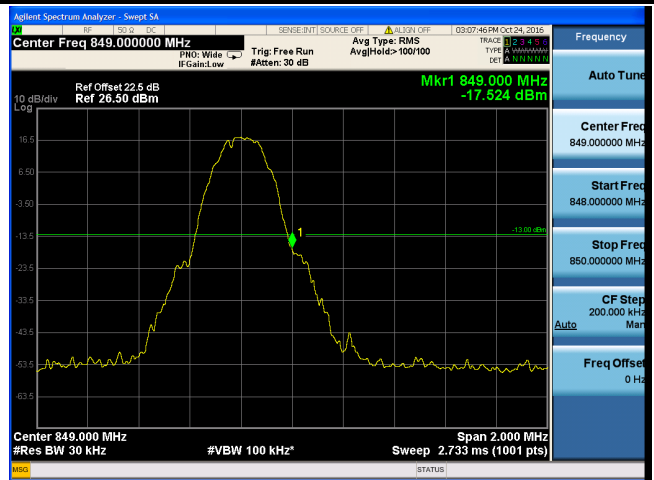
7.4.5. Test Result

Mode	Channel No.	Frequency (MHz)	Modulation	Test Result
GSM850	128	824.20	GMSK	Pass
GSM850	251	848.80	GMSK	Pass
PCS1900	512	1850.20	GMSK	Pass
PCS1900	810	1909.80	GMSK	Pass
EGPRS850	128	824.20	8PSK	Pass
EGPRS850	251	848.80	8PSK	Pass
EGPRS1900	512	1850.20	8PSK	Pass
EGPRS1900	810	1909.80	8PSK	Pass
CDMA 850	1013	824.7	QPSK	Pass
CDMA 850	777	848.31	QPSK	Pass
CDMA 1900	25	1851.25	QPSK	Pass
CDMA 1900	1175	1908.75	QPSK	Pass
EVDO 850	1013	824.7	QPSK	Pass
EVDO 850	777	848.31	QPSK	Pass
EVDO 1900	25	1851.25	QPSK	Pass
EVDO 1900	1175	1908.75	QPSK	Pass
WCDMA Band II	9262	1852.4	QPSK	Pass
WCDMA Band II	9538	1907.6	QPSK	Pass
WCDMA Band V	4132	826.40	QPSK	Pass
WCDMA Band V	4233	846.60	QPSK	Pass

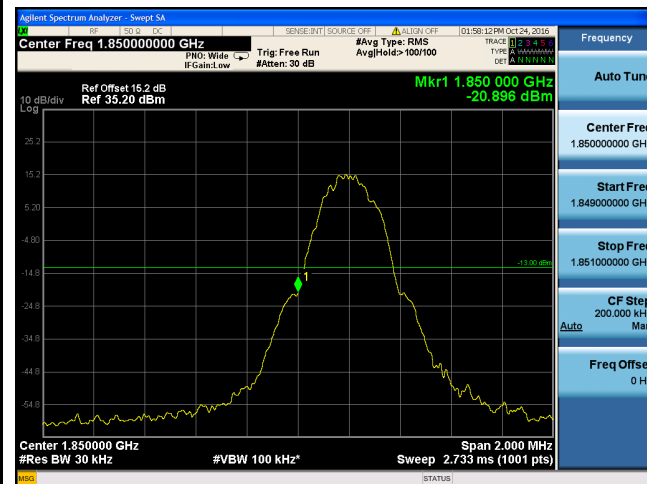
GPRS 850-CH128



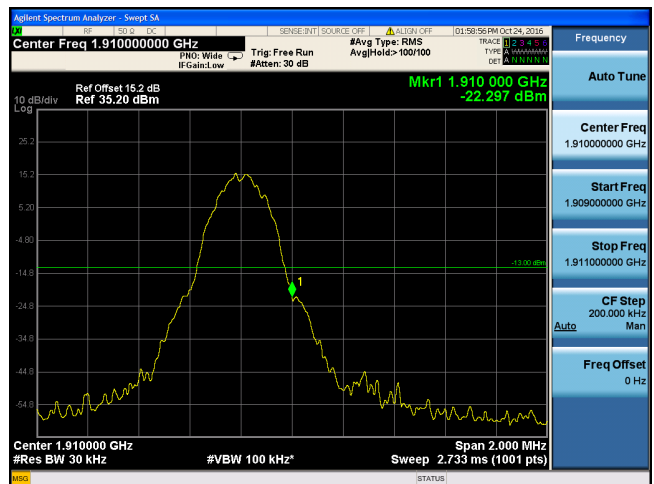
GPRS 850-CH251



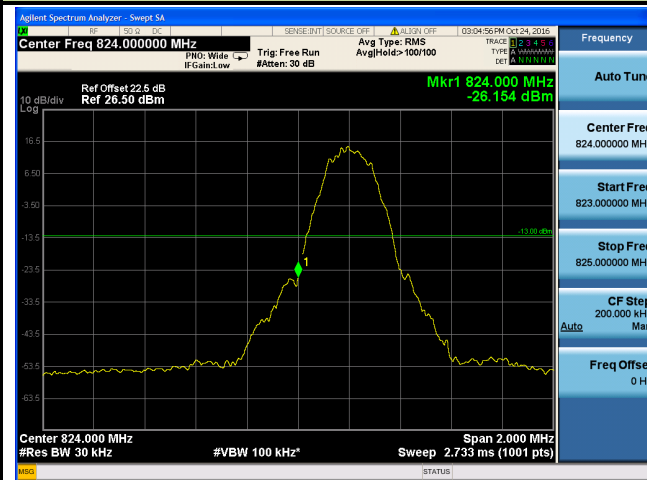
PCS 1900-CH512



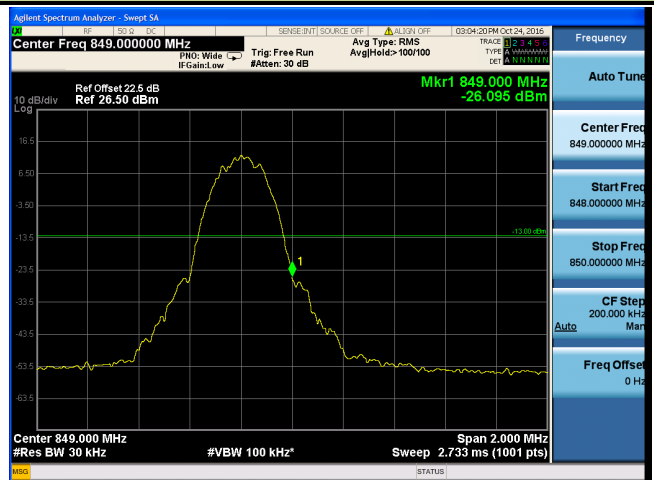
PCS 1900-CH810



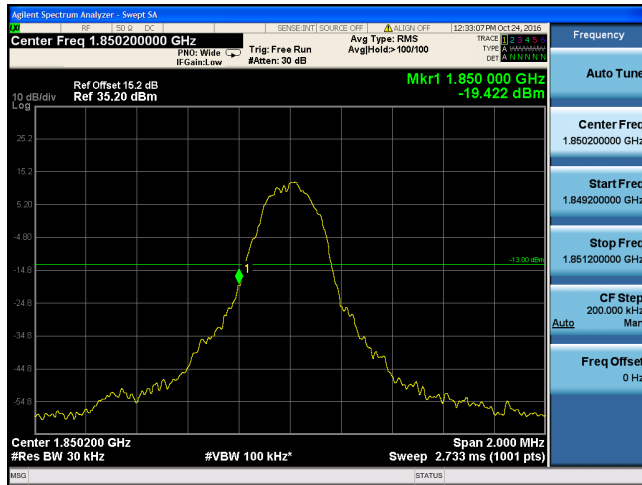
EGPRS 850-CH128



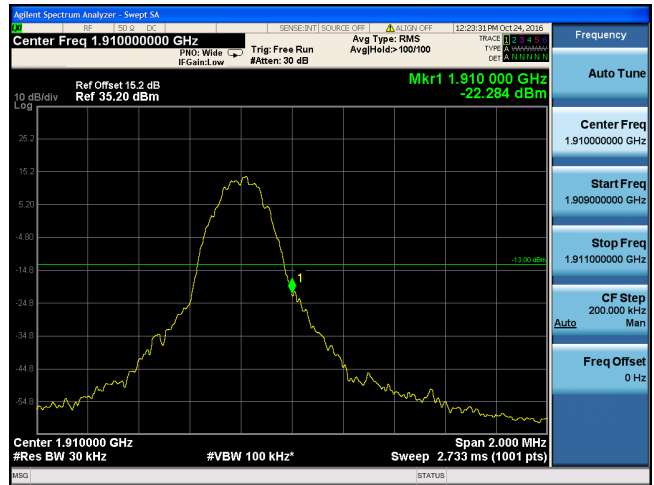
EGPRS 850-CH251



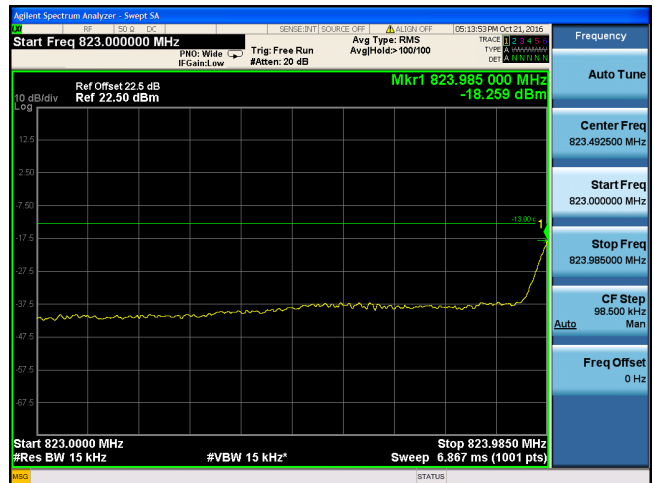
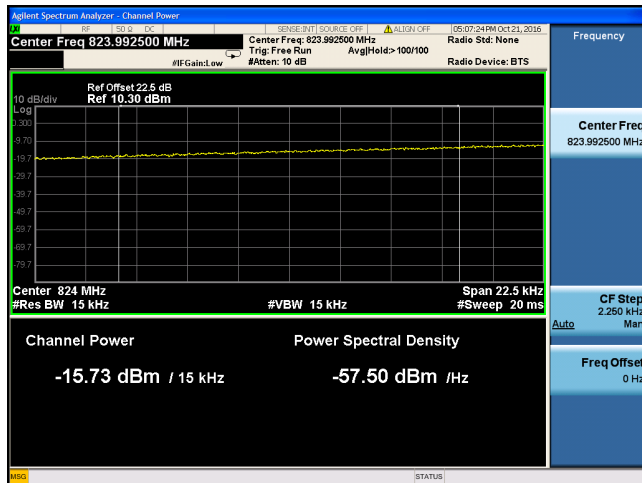
EGPRS 1900-CH512



EGPRS 1900-CH810



CDMA 850-CH1013



CDMA 850-CH777

