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MEASUREMENT REPORT
FCC Part 22 & 24 / IC RSS-132/RSS-133

Applicant Name:
Samsung Electronics Co., Ltd.
416 Maetan 3-Dong, Yeongtong-gu
Suwon-si, Gyeonggi-do
443-742 , Republic of Korea

Date of Testing:
04/10/12 - 04/14/12
Test Site/Location:
PCTEST Lab., Columbia, MD, USA
Test Report Serial No.:
0Y1204090438.A3L

FCC ID:	**A3LSCHI705**
APPLICANT:	**SAMSUNG ELECTRONICS CO., LTD.**

Application Type:	Certification
Model(s):	SCH-I705
EUT Type:	Portable Tablet Computer
FCC Classification:	PCS Licensed Transmitter (PCB)
FCC Rule Part(s):	§2; §22(H), §24(E)
IC Specification(s):	RSS-132 Issue 2; RSS-133 Issue 5
Test Procedure(s):	ANSI/TIA-603-C-2004
Test Device Serial No.:	*identical prototype* [S/N: CDMA (EMC)]

Mode	Tx Frequency (MHz)	Emission Designator	ERP/EIRP	
			Max. Power (W)	Max. Power (dBm)
CDMA850	824.70 - 848.31	1M27F9W	0.185	22.67
CDMA1900	1851.25 - 1908.75	1M28F9W	0.254	24.06

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.

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

PCTEST certifies that no party to this application has been subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 862.

Randy Ortanez
President

ACCREDITED
TESTING LABORATORY
CERTIFICATE #2041.01

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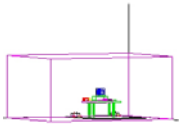
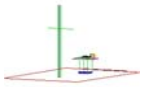


MEASUREMENT REPORT
FCC Part 22 & 24



§2.1033 General Information

APPLICANT:	Samsung Electronics Co., Ltd.
APPLICANT ADDRESS:	416 Maetan 3-Dong, Yeongtong-gu Suwon-si, Gyeonggi-do, 443-742 , Republic of Korea
TEST SITE:	PCTEST ENGINEERING LABORATORY, INC.
TEST SITE ADDRESS:	6660-B Dobbin Road, Columbia, MD 21045 USA
FCC RULE PART(S):	§2; §22(H), §24(E)
IC SPECIFICATION(S):	RSS-132 Issue 2; RSS-133 Issue 5
BASE MODEL:	SCH-I705
FCC ID:	A3LSCHI705
FCC CLASSIFICATION:	PCS Licensed Transmitter (PCB)
MODE:	CDMA / EvDO
FREQUENCY TOLERANCE:	±0.00025 % (2.5 ppm)
Test Device Serial No.:	CDMA (EMC) ☐ Production ☒ Pre-Production ☐ Engineering
DATE(S) OF TEST:	04/10/12 - 04/14/12
TEST REPORT S/N:	0Y1204090438.A3L

Test Facility / Accreditations

Measurements were performed at PCTEST Engineering Lab. located in Columbia, MD 21045, U.S.A.

- PCTEST facility is an FCC registered (PCTEST Reg. No. 90864) test facility with the site description report on file and has met all the requirements specified in Section 2.948 of the FCC Rules and Industry Canada (2451A-1).
- PCTEST Lab is accredited to ISO 17025 by U.S. National Institute of Standards and Technology (NIST) under the National Voluntary Laboratory Accreditation Program (NVLAP Lab code: 100431-0) in EMC, FCC and Telecommunications.
- PCTEST Lab is accredited to ISO 17025-2005 by the American Association for Laboratory Accreditation (A2LA) in Specific Absorption Rate (SAR) testing, Hearing Aid Compatibility (HAC) testing, CTIA Test Plans, and wireless testing for FCC and Industry Canada Rules.
- PCTEST Lab is a recognized U.S. Conformity Assessment Body (CAB) in EMC and R&TTE (n.b. 0982) under the U.S.-EU Mutual Recognition Agreement (MRA).
- PCTEST TCB is a Telecommunication Certification Body (TCB) accredited to ISO/IEC Guide 65 by the American National Standards Institute (ANSI) in all scopes of FCC Rules and Industry Canada Standards (RSS).
- PCTEST facility is an IC registered (2451A-1) test laboratory with the site description on file at Industry Canada.
- PCTEST is a CTIA Authorized Test Laboratory (CATL) for AMPS, CDMA, and EvDO wireless devices and for Over-the-Air (OTA) Antenna Performance testing for AMPS, CDMA, GSM, GPRS, EGPRS, UMTS (W-CDMA), CDMA 1xEVDO, and CDMA 1xRTT.

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1.0 INTRODUCTION

1.1 Scope

Measurement and determination of electromagnetic emissions (EME) 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 Testing Facility

The map below shows the location of the PCTEST LABORATORY, its proximity to the FCC Laboratory, the Columbia vicinity, the Baltimore-Washington Internt'l (BWI) airport, the city of Baltimore and the Washington, DC area. (*See Figure 1-1*).

These measurement tests were conducted at the PCTEST Engineering Laboratory, Inc. facility in New Concept Business Park, Guilford Industrial Park, Columbia, Maryland. The site address is 6660-B Dobbin Road, Columbia, MD 21045. The test site is one of the highest points in the Columbia area with an elevation of 390 feet above mean sea level. The site coordinates are 39° 11'15" N latitude and 76° 49'38" W longitude. The facility is 1.5 miles North of the FCC laboratory, and the ambient signal and ambient signal strength are approximately equal to those of the FCC laboratory. There are no FM or TV transmitters within 15 miles of the site. The detailed description of the measurement facility was found to be in compliance with the requirements of § 2.948 according to ANSI C63.4-2003 on January 10, 2012.

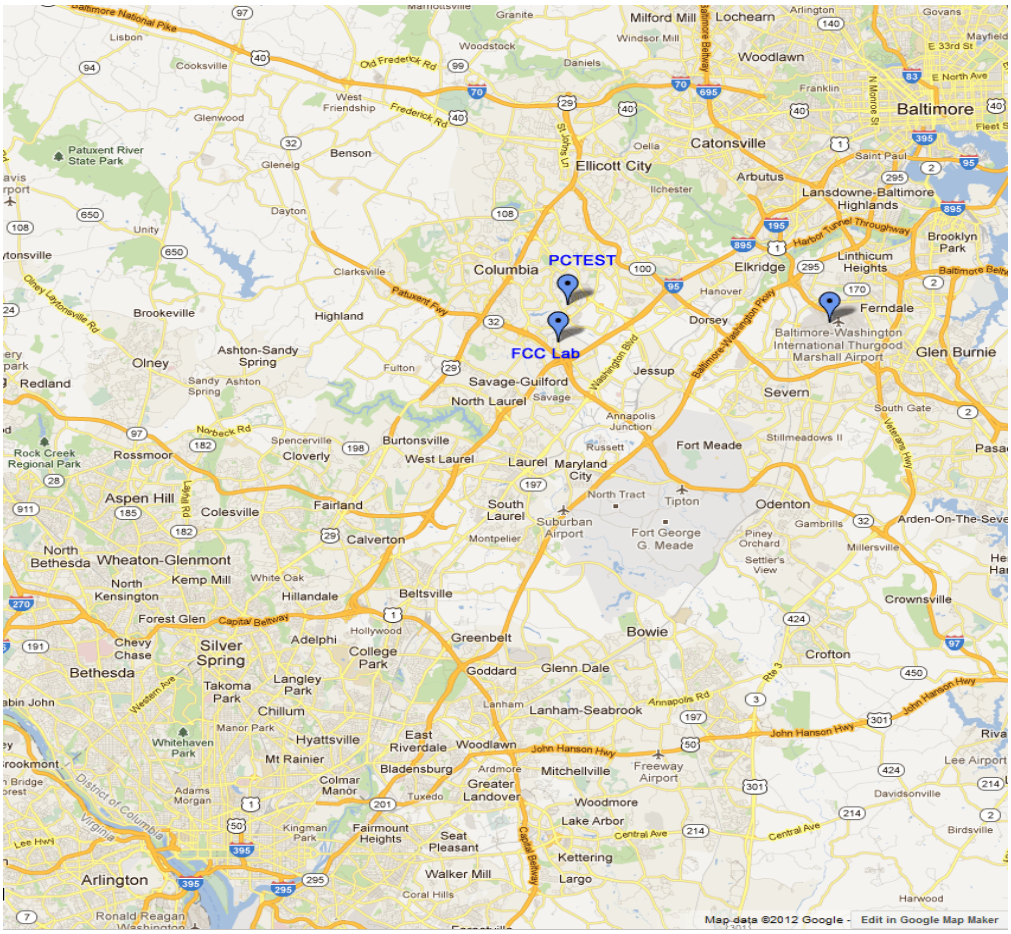

Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Portable Tablet Computer FCC ID: A3LSCHI705**. The test data contained in this report pertains only to the emissions due to the EUT's licensed transmitter.

2.2 Device Capabilities

This device contains the following capabilities:

850/1900 CDMA/EvDO Rev0/A (BC0, BC1), Band 13 LTE, 802.11b/g/n WLAN, Bluetooth (1x,EDR)

2.3 Test Configuration

The Samsung Portable Tablet Computer FCC ID: A3LSCHI705 was tested per the guidance of ANSI/TIA-603-C-2004. See Section 3.0 of this test 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.

2.5 Labeling Requirements

Per 2.925

The FCC identifier shall be permanently affixed to the equipment and shall be readily visible to the purchaser at the time of purchase.

Per 15.19; Docket 95-19

In addition to this requirement, a device subject to certification shall be labeled as follows:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The label shall be permanently affixed at a conspicuous location on the device; instruction manual or pamphlet supplied to the user and be readily visible to the purchaser at the time of purchase. However, when the device is so small wherein placement of the label with specified statement is not practical, only the trade name and FCC ID must be displayed on the device per Section 15.19(b)(2).

Please see attachment for FCC ID label and label location.

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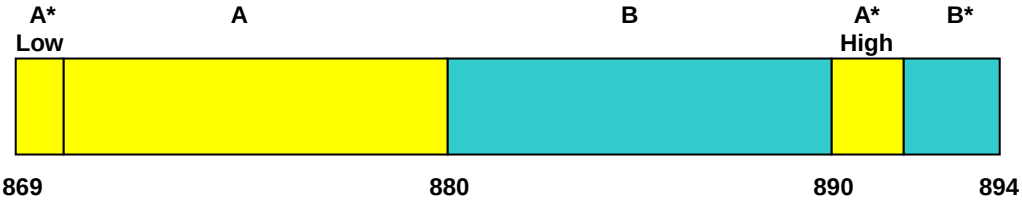
3.0 DESCRIPTION OF TESTS

3.1 Evaluation Procedure

The measurement procedures described in the document titled "Land Mobile FM or PM – Communications Equipment – Measurements and Performance Standards" (ANSI/TIA-603-C-2004) was used in the measurement of the measurement of the **Samsung Portable Tablet Computer FCC ID: A3LSCHI705.**

Deviation from Measurement Procedure……..None

3.2 Cellular - Base Frequency Blocks



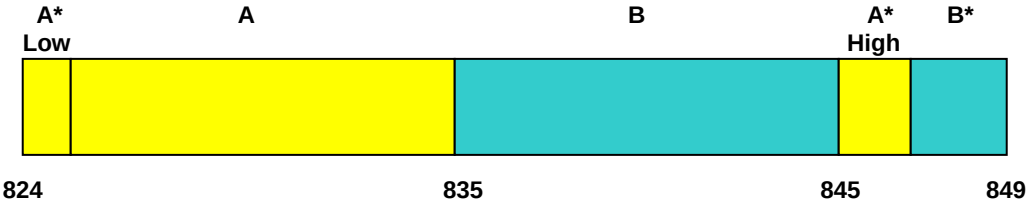
BLOCK 1: 869 – 880 MHz (A* Low + A)

BLOCK 2: 880 – 890 MHz (B)

BLOCK 3: 890 – 891.5 MHz (A* High)

BLOCK 4: 891.5 – 894 MHz (B*)

3.3 Cellular - Mobile Frequency Blocks



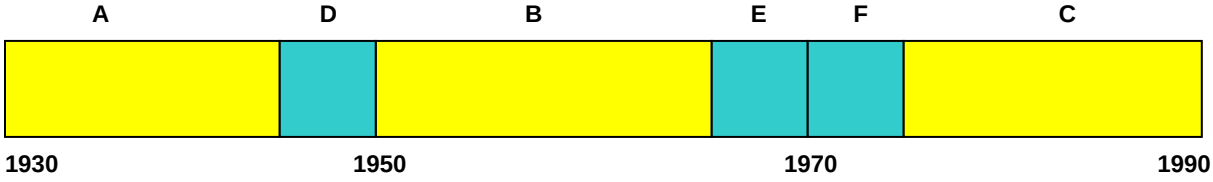
BLOCK 1: 824 – 835 MHz (A* Low + A)

BLOCK 2: 835 – 845 MHz (B)

BLOCK 3: 845 – 846.5 MHz (A* High)

BLOCK 4: 846.5 – 849 MHz (B*)

3.4 PCS - Base Frequency Blocks



BLOCK 1: 1930 – 1945 MHz (A)

BLOCK 2: 1945 – 1950 MHz (D)

BLOCK 3: 1950 – 1965 MHz (B)

BLOCK 4: 1965 – 1970 MHz (E)

BLOCK 5: 1970 – 1975 MHz (F)

BLOCK 6: 1975 – 1990 MHz (C)

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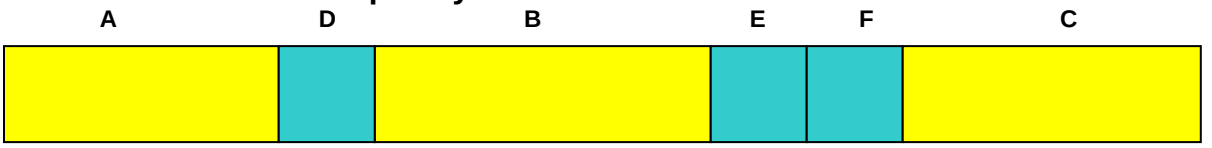
3.5 PCS - Mobile Frequency Blocks



BLOCK 1: 1850 – 1865 MHz (A)

BLOCK 2: 1865 – 1870 MHz (D)

BLOCK 3: 1870 – 1885 MHz (B)

BLOCK 4: 1885 – 1890 MHz (E)

BLOCK 5: 1890 – 1895 MHz (F)

BLOCK 6: 1895 – 1910 MHz (C)

3.6 Occupied Bandwidth

§2.1049, RSS-Gen (4.6.1)

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.

3.7 Spurious and Harmonic Emissions at Antenna Terminal

§2.1051, 22.917(a), 24.238(a)(b); RSS-132 (4.5.1), RSS-133 (6.5.1)

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.

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3.8 Radiated Power and Radiated Spurious Emissions

§22.913(a)(2), 22.917(a), 24.232(c), 24.238(a), RSS-132 (4.5.1.2), RSS-133 (6.5.1)

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 measurement area is situated on an 18 meter x 20 meter galvanized 1/2" hardware cloth as the conducting ground plane. This material is sewn together in sections 4 feet wide and 60 feet long. A total of eighteen sections are required to cover the entire measurement area. Sections are laid across the width of the pad, overlapped 1" and sewn and soldered together at intervals of 3" (7.6 cm.) The terrain of the test site is reasonably flat and level. Power and cable to the test site are buried 18" deep into the ground outside the perimeter of the site. An all-weather non-metallic housing is situated on a 2 x 3 meter area adjacent to the measurement area to house the test equipment. 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 10^{th} 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. The level of the maximized emission is recorded with the spectrum analyzer using a peak detector with RBW = 1MHz, VBW = 3MHz for emissions greater than 1GHz. For emissions below 1GHz, the spectrum analyzer is set to RBW = 100kHz and VBW = 300kHz.

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 $P_{g\ [dBm]}$ – 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 + $10\log_{10}$(Power $_{[Watts]}$) specified in 22.917(a) and 24.238(a).

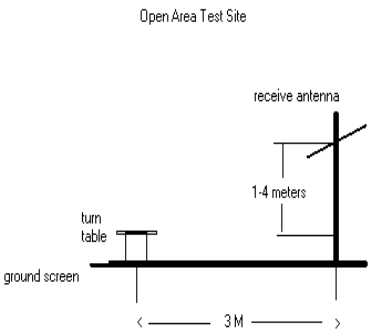

Figure 3-1. Diagram of 3-meter outdoor test range

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3.9 Peak-Average Ratio

§24.232(d), RSS-133 (6.4)

A peak to average ratio measurement is performed at the conducted port of the EUT. For CDMA 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.

3.10 Frequency Stability / Temperature Variation

§2.1055, 22.355, 24.235, RSS-132 (4.3), RSS-133 (6.3)

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 sufficient stabilization period at each temperature shall be used prior to each frequency requirement.

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4.0 TEST EQUIPMENT CALIBRATION DATA

Test Equipment Calibration is traceable to the National Institute of Standards and Technology (NIST).

Manufacturer	Model	Description	Cal Date	Cal Interval	Cal Due	Serial Number
-	RE2	Radiated Emissions Cable Set (VHF/UHF)	2/13/2012	Annual	2/13/2013	N/A
-	LTx2	Licensed Transmitter Cable Set	2/17/2012	Annual	2/17/2013	N/A
Agilent	8447D	Broadband Amplifier	4/17/2011	Annual	4/17/2012	1937A03348
Agilent	8648D	(9kHz-4GHz) Signal Generator	10/10/2011	Annual	10/10/2012	3613A00315
Agilent	E4432B	ESG-D Series Signal Generator	3/15/2012	Annual	3/15/2013	US40053896
Agilent	N9020A	MXA Signal Analyzer	10/10/2011	Annual	10/10/2012	US46470561
Agilent	N9030A	PXA Signal Analyzer	2/23/2012	Annual	2/23/2013	MY49432391
Anritsu	MA2411B	Power Sensor	3/5/2012	Annual	3/5/2013	846215
Anritsu	ML2495A	Power Meter	10/13/2011	Annual	10/13/2012	1039008
Espec	ESX-2CA	Environmental Chamber	4/21/2011	Annual	4/21/2012	17620
ETS Lindgren	3117	1-18 GHz DRG Horn (Medium)	7/22/2011	Annual	7/22/2012	125518
ETS Lindgren	3164-08	Quad Ridge Horn Antenna	10/1/2010	Biennial	10/1/2012	128337
Gigatronics	80701A	(0.05-18GHz) Power Sensor	10/12/2011	Annual	10/12/2012	1833460
Mini-Circuits	VHF-1200+	High Pass Filter	1/15/2012	Annual	1/15/2013	30923
Mini-Circuits	VHF-3100+	High Pass Filter	1/15/2012	Annual	1/15/2013	30841
Pasternack	PE2208-6	Bidirectional Coupler	6/3/2011	Annual	6/3/2012	N/A
Rohde & Schwarz	CMU200	Base Station Simulator	4/19/2011	Annual	4/19/2012	107826
Rohde & Schwarz	RS-PR18	1-18 GHz Pre-Amplifier	6/9/2011	Annual	6/9/2012	100071
Rohde & Schwarz	ESU26	EMI Test Receiver	4/27/2011	Annual	4/27/2012	100342
Schwarzbeck	UHA 9105	Dipole Antenna (400 - 1GHz) Tx	10/3/2011	Biennial	10/3/2013	91052522TX
Schwarzbeck	UHA 9105	Dipole Antenna (400 - 1GHz) Rx	10/3/2011	Biennial	10/3/2013	91052523RX
Seekonk	NC-100	Torque Wrench (8" lb)	3/5/2012	Triennial	3/5/2015	N/A
Sunol	JB5	Bi-Log Antenna (30M - 5GHz)	1/26/2012	Biennial	1/26/2014	A051107

Table 4-1. Test Equipment

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5.0 SAMPLE CALCULATIONS

Emission Designator

Emission Designator = 1M25F9W

CDMA BW = 1.25 MHz
F = Frequency Modulation
9 = Composite Digital Info
W = Combination (Audio/Data) (Measured at the 99.75% power bandwidth)

Spurious Radiated Emission - PCS Band

Example: Channel 25 PCS Mode 2nd Harmonic (3702.50 MHz)

The receive spectrum analyzer reading at 3 meters with the EUT on the turntable was –81.0 dBm. The gain of the substituted antenna is 8.1 dBi. The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of –81.0 dBm on the spectrum analyzer. The loss of the cable between the signal generator and the terminals of the substituted antenna is 2.0 dB at 3702.50 MHz. So 6.1 dB is added to the signal generator reading of –30.9 dBm yielding –24.80 dBm. The fundamental EIRP was 25.50 dBm so this harmonic was 25.50 dBm – (-24.80) = 50.3 dBc.

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6.0 TEST RESULTS

6.1 Summary

Company Name: Samsung Electronics Co., Ltd.

FCC ID: A3LSCHI705

FCC Classification: PCS Licensed Transmitter (PCB)

Mode(s): CDMA / EvDO

FCC Part Section(s)	RSS Sections	Test Description	Test Limit	Test Condition	Test Result	Reference
TRANSMITTER MODE (TX)						
2.1049, 22.917(a), 24.238(a)	RSS-Gen (4.6.1) RSS-133 (2.3)	Occupied Bandwidth	N/A	CONDUCTED	PASS	Section 7.0
2.1051, 22.917(a), 24.238(a)	RSS-132 (4.5.1.2) RSS-133 (6.5.1)	Band Edge / Conducted Spurious Emissions	< 43 + 10log$_{10}$ (P[Watts]) at Band Edge and for all out-of-band emissions		PASS	Section 7.0
24.232(d)	RSS-133 (6.4)	Peak-Average Ratio	< 13 dB		PASS	Section 7.0
2.1046	RSS-132 (4.4) RSS-133 (4.1)	Transmitter Conducted Output Power	N/A		PASS	RF Exposure Report
22.913(a)(2)	RSS-132 (4.4)	Effective Radiated Power	< 7 Watts max. ERP	RADIATED	PASS	Section 6.2
24.232(c)	RSS-133 (6.4) [SRSP-510 (5.1.2)]	Equivalent Isotropic Radiated Power	< 2 Watts max. EIRP		PASS	Section 6.3
2.1053, 22.917(a), 24.238(a)	RSS-132 (4.5.1.2) RSS-133 (6.5.1)	Undesirable Emissions	< 43 + 10log$_{10}$ (P[Watts]) for all out-of-band emissions		PASS	Sections 6.4, 6.5
2.1055, 22.355, 24.235	RSS-132 (4.3) RSS-133 (6.3)	Frequency Stability	< 2.5 ppm		PASS	Sections 6.6, 6.7
RECEIVER MODE (RX) / DIGITAL EMISSIONS						
N/A	RSS-132 (4.6) RSS-133 (6.6)	Receiver Spurious Emissions Limits	< RSS-Gen limits [Section 6; Table 1]	RADIATED	PASS	Section 6.8

Table 6-1. Summary of Test Results

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) The analyzer plots shown in Section 7.0 were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables, directional couplers, and attenuators used as part of the system to maintain a link between the call box and the EUT at all frequencies of interest.
3) 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.

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6.2 Effective Radiated Power Output Data

§22.913(a)(2), RSS-132 (4.4)

Frequency [MHz]	Mode	Battery Type	Substitute Level [dBm]	Antenna Gain [dBd]	Pol [H/V]	ERP [dBm]	ERP [Watts]	ERP Limit [dBm]	Margin [dB]
824.70	CDMA850	Standard	22.67	0.00	H	22.67	0.185	38.45	-15.78
836.52	CDMA850	Standard	22.26	0.00	H	22.26	0.168	38.45	-16.19
848.31	CDMA850	Standard	22.02	0.00	H	22.02	0.159	38.45	-16.43

Table 6-2. Effective Radiated Power Output Data

6.3 Equivalent Isotropic Radiated Power Output Data

§24.232(c), RSS-133 (6.4) [SRSP-510 (5.1.2)]

Frequency [MHz]	Mode	Battery Type	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]	EIRP Limit [dBm]	Margin [dB]
1851.25	CDMA1900	Standard	14.66	8.56	H	23.22	0.210	33.01	-9.79
1880.00	CDMA1900	Standard	15.51	8.55	H	24.06	0.254	33.01	-8.95
1908.75	CDMA1900	Standard	13.73	8.53	H	22.26	0.168	33.01	-10.75

Table 6-3. Equivalent Isotropic Radiated Power Output Data

NOTES:

1. This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits.

2. This unit was tested with its standard battery.

3. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the horizontal configuration. The data reported in the table above was measured in this test setup.

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6.4 Cellular CDMA Radiated Measurements

§2.1053, 22.917(a), RSS-132 (4.5.1.2)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	824.70	MHz		
CHANNEL:	1013			
MEASURED OUTPUT POWER:	22.67	dBm	=	0.185 W
MODULATION SIGNAL:	CDMA			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	35.67	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1649.40	-35.93	2.59	-33.34	H	56.0
2474.10	-55.52	2.89	-52.63	H	75.3
3298.80	-58.88	5.45	-53.43	H	76.1
4123.50	-59.38	7.05	-52.33	H	75.0
4948.20	-92.75	7.87	-84.89	H	107.6

Table 6-4. Radiated Spurious Data (Cellular CDMA Mode – Ch. 1013)

NOTES:

1. This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits.

2. This unit was tested with its standard battery.

3. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the horizontal configuration. The data reported in the table above was measured in this test setup.

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Cellular CDMA Radiated Measurements (Cont'd)

§2.1053, 22.917(a), RSS-132 (4.5.1.2)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	836.52	MHz		
CHANNEL:	384			
MEASURED OUTPUT POWER:	22.26	dBm	=	0.168 W
MODULATION SIGNAL:	CDMA			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	35.26	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1673.04	-37.82	2.34	-35.48	H	57.7
2509.56	-55.45	2.84	-52.62	H	74.9
3346.08	-57.98	5.64	-52.34	H	74.6
4182.60	-59.65	7.14	-52.51	H	74.8
5019.12	-92.74	7.97	-84.77	H	107.0

Table 6-5. Radiated Spurious Data (Cellular CDMA Mode – Ch. 384)

NOTES:

1. This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits.

2. This unit was tested with its standard battery.

3. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the horizontal configuration. The data reported in the table above was measured in this test setup.

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Cellular CDMA Radiated Measurements (Cont'd)

§2.1053, 22.917(a), RSS-132 (4.5.1.2)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	848.31	MHz		
CHANNEL:	777			
MEASURED OUTPUT POWER:	22.02	dBm	=	0.159 W
MODULATION SIGNAL:	CDMA			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	35.02	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
1696.62	-37.73	2.09	-35.64	H	57.7
2544.93	-55.92	3.16	-52.76	H	74.8
3393.24	-59.31	5.83	-53.48	H	75.5
4241.55	-58.87	7.24	-51.63	H	73.6
5089.86	-92.59	8.02	-84.57	H	106.6

Table 6-6. Radiated Spurious Data (Cellular CDMA Mode – Ch. 777)

NOTES:

1. This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits.

2. This unit was tested with its standard battery.

3. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the horizontal configuration. The data reported in the table above was measured in this test setup.

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6.5 PCS CDMA Radiated Measurements

§2.1053, 24.238(a), RSS-133 (6.5.1)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1851.25	MHz		
CHANNEL:	25			
MEASURED OUTPUT POWER:	23.22	dBm	=	0.210 W
MODULATION SIGNAL:	CDMA			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	36.22	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3702.50	-52.52	8.40	-44.12	H	67.3
5553.75	-59.02	10.62	-48.40	H	71.6
7405.00	-92.61	11.82	-80.78	H	104.0
9256.25	-92.07	13.30	-78.78	H	102.0
11107.50	-89.92	13.50	-76.42	H	99.6

Table 6-7. Radiated Spurious Data (PCS CDMA Mode – Ch. 25)

NOTES:

1. This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits.

2. This unit was tested with its standard battery.

3. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the horizontal configuration. The data reported in the table above was measured in this test setup.

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PCS CDMA Radiated Measurements (Cont'd)

§2.1053, 24.238(a), RSS-133 (6.5.1)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1880.00	MHz		
CHANNEL:	600			
MEASURED OUTPUT POWER:	24.06	dBm	=	0.254 W
MODULATION SIGNAL:	CDMA			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	37.06	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3760.00	-38.42	8.42	-30.00	H	54.1
5640.00	-58.11	10.66	-47.46	H	71.5
7520.00	-92.59	11.92	-80.66	H	104.7
9400.00	-91.89	13.24	-78.65	H	102.7
11280.00	-89.56	13.49	-76.07	H	100.1

Table 6-8. Radiated Spurious Data (PCS CDMA Mode – Ch. 600)

NOTES:

1. This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits.

2. This unit was tested with its standard battery.

3. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the horizontal configuration. The data reported in the table above was measured in this test setup.

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PCS CDMA Radiated Measurements (Cont'd)

§2.1053, 24.238(a), RSS-133 (6.5.1)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY:	1908.75	MHz		
CHANNEL:	1175			
MEASURED OUTPUT POWER:	22.26	dBm	=	0.168 W
MODULATION SIGNAL:	CDMA			
DISTANCE:	3	meters		
LIMIT:	43 + 10 $\log_{10}$ (W) =	35.26	dBc	

FREQUENCY (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	SPURIOUS EMISSION LEVEL (dBm)	POL (H/V)	(dBc)
3817.50	-37.60	8.57	-29.04	H	51.3
5726.25	-57.65	10.69	-46.96	H	69.2
7635.00	-92.64	12.06	-80.58	H	102.8
9543.75	-91.62	13.20	-78.42	H	100.7
11452.50	-89.12	13.42	-75.70	H	98.0

Table 6-9. Radiated Spurious Data (PCS CDMA Mode – Ch. 1175)

NOTES:

1. This device was tested under all R.C.s and S.O.s and the worst case is reported with RC3/SO55 with "All Up" power control bits.

2. This unit was tested with its standard battery.

3. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst case test configuration was found in the horizontal configuration. The data reported in the table above was measured in this test setup.

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6.6 Cellular CDMA Frequency Stability Measurements

§2.1055, 22.355, RSS-132 (4.3)

OPERATING FREQUENCY: 836,520,000 Hz

CHANNEL: 384

REFERENCE VOLTAGE: 3.7 VDC

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.70	+ 20 (Ref)	836,519,987	-13	-0.0000016
100 %		- 30	836,519,984	-16	-0.0000019
100 %		- 20	836,519,989	-11	-0.0000013
100 %		- 10	836,519,998	-2	-0.0000002
100 %		0	836,519,998	-2	-0.0000002
100 %		+ 10	836,519,996	-4	-0.0000005
100 %		+ 20	836,519,992	-8	-0.0000010
100 %		+ 30	836,519,985	-15	-0.0000018
100 %		+ 40	836,519,984	-16	-0.0000019
100 %		+ 50	836,519,986	-14	-0.0000017
115 %	4.26	+ 20	836,519,989	-11	-0.0000013
BATT. ENDPOINT	3.40	+ 20	836,519,991	-9	-0.0000011

Table 6-10. Frequency Stability Data (Cellular CDMA Mode – Ch. 384)

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Cellular CDMA Frequency Stability Measurements (Cont'd)

§2.1055, 22.355, RSS-132 (4.3)

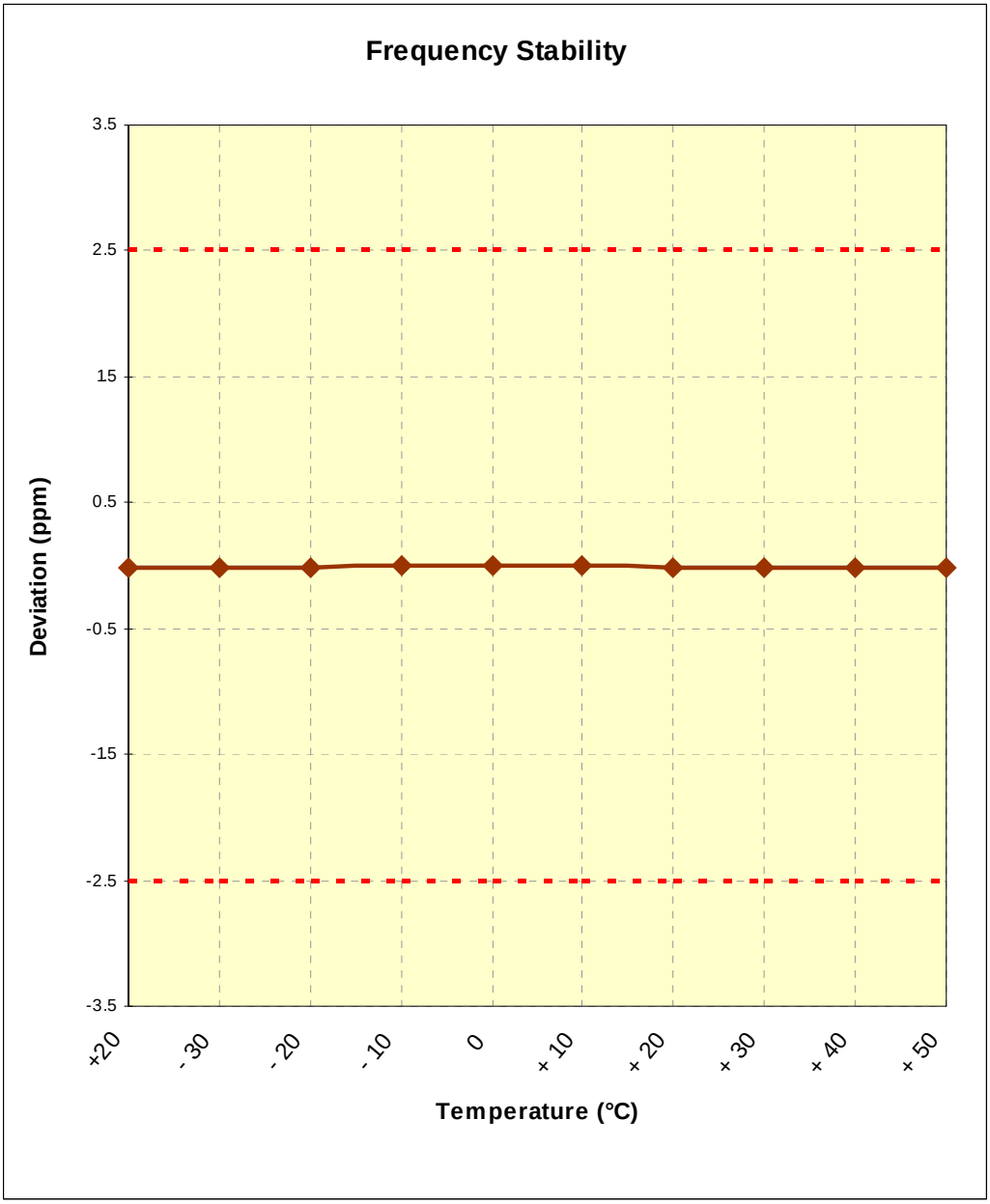

Figure 6-1. Frequency Stability Graph (Cellular CDMA Mode – Ch. 384)

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6.7 PCS CDMA Frequency Stability Measurements

§2.1055, 24.235, RSS-133 (6.3)

OPERATING FREQUENCY: 1,880,000,000 Hz

CHANNEL: 600

REFERENCE VOLTAGE: 3.7 VDC

DEVIATION LIMIT: ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (°C)	FREQUENCY (Hz)	Freq. Dev. (Hz)	Deviation (%)
100 %	3.70	+ 20 (Ref)	1,879,999,995	-5	-0.0000003
100 %		- 30	1,879,999,987	-13	-0.0000007
100 %		- 20	1,879,999,992	-8	-0.0000004
100 %		- 10	1,879,999,998	-2	-0.0000001
100 %		0	1,879,999,997	-3	-0.0000002
100 %		+ 10	1,880,000,002	2	0.0000001
100 %		+ 20	1,879,999,993	-7	-0.0000004
100 %		+ 30	1,879,999,996	-4	-0.0000002
100 %		+ 40	1,879,999,981	-19	-0.0000010
100 %		+ 50	1,879,999,994	-6	-0.0000003
115 %	4.26	+ 20	1,879,999,991	-9	-0.0000005
BATT. ENDPOINT	3.40	+ 20	1,879,999,982	-18	-0.0000010

Table 6-11. Frequency Stability Data (PCS CDMA Mode – Ch. 600)

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PCS CDMA Frequency Stability Measurements (Cont'd)

§2.1055, 24.235, RSS-133 (6.3)

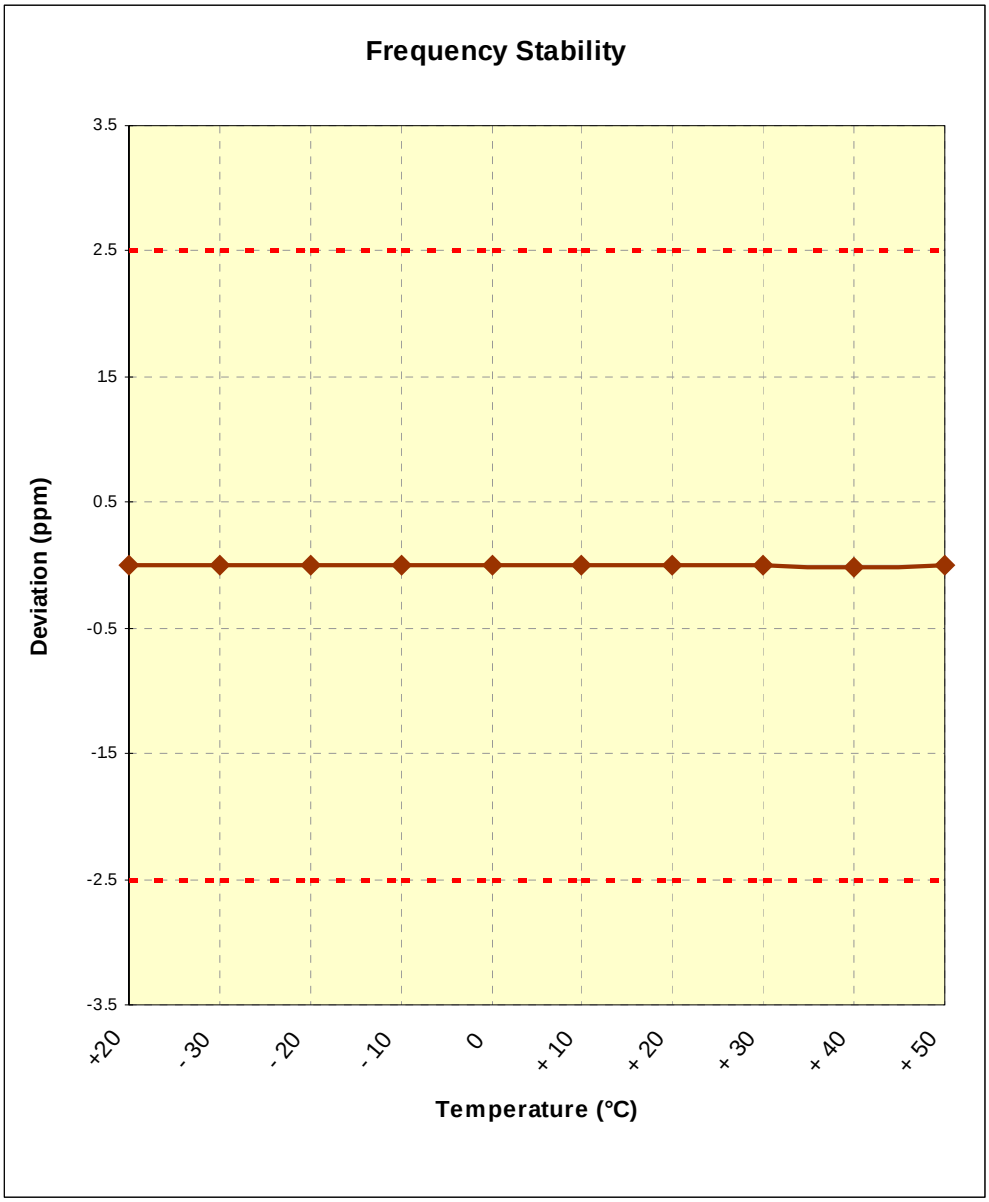

Figure 6-2. Frequency Stability Graph (PCS CDMA Mode – Ch. 600)

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6.8 Receiver Spurious Emissions

RSS-132 (4.6), RSS-133 (6.6)

Frequency [MHz]	Level [dBm]	AFCL [dB/m]	Pol [H/V]	Height [m]	Azimuth [degrees]	Field Strength [dBµV/m]	Limit [dBµV/m]	Margin [dB]
153.84	-111.88	13.91	H	1.2	329	9.03	43.52	-34.49
224.16	-109.36	13.83	H	1.2	297	11.47	46.02	-34.56
458.52	-107.60	19.38	H	1.4	314	18.78	46.02	-27.24
596.87	-108.48	21.87	H	1.3	301	20.39	46.02	-25.63
705.68	-106.52	23.53	H	1.3	323	24.00	46.02	-22.02
983.00	-106.82	26.89	V	1.8	192	27.07	53.98	-26.91

Table 6-12. Radiated Measurements at 3-meters

NOTES:

1. All modes of operation were investigated and the worst-case emissions are reported.
2. Radiated emissions were measured from 30MHz – 6000MHz to ensure that the provisions of 15.33(b)(1) are satisfied with respect to the upper frequency scanning range.
3. The radiated limits for unintentional radiators at a distance of 3 meters are used in the table above, as specified in 15.109(a).
4. All readings are calibrated by a signal generator with accuracy traceable to the National Institute of Standards and Technology (NIST).
5. AFCL (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB)
6. Level (dBµV/m) = Analyzer Reading (dBm) + AFCL (dB/m) + 107
7. Margin (dB) = Field strength (dBµV/m) – Limit (dBµV/m)
8. Measurements are made using a CISPR quasi-peak detector with a 100kHz resolution bandwidth. Above 1GHz, peak measurements are made using a peak detector with a resolution bandwidth of 1MHz and a video bandwidth of 3MHz and average measurements are made with a peak detector using a resolution bandwidth of 1MHz and a video bandwidth of 10Hz.
9. Calibrated linearly polarized broadband and horn antennas were used for measurements below and above 1GHz, respectively. For measurements made below 1GHz, the results recorded using the broadband antenna are known to correlate with the results obtained by using a tuned dipole with an acceptable degree of accuracy.
10. Calibrated low-loss microwaves cables and broadband amplifiers are used.

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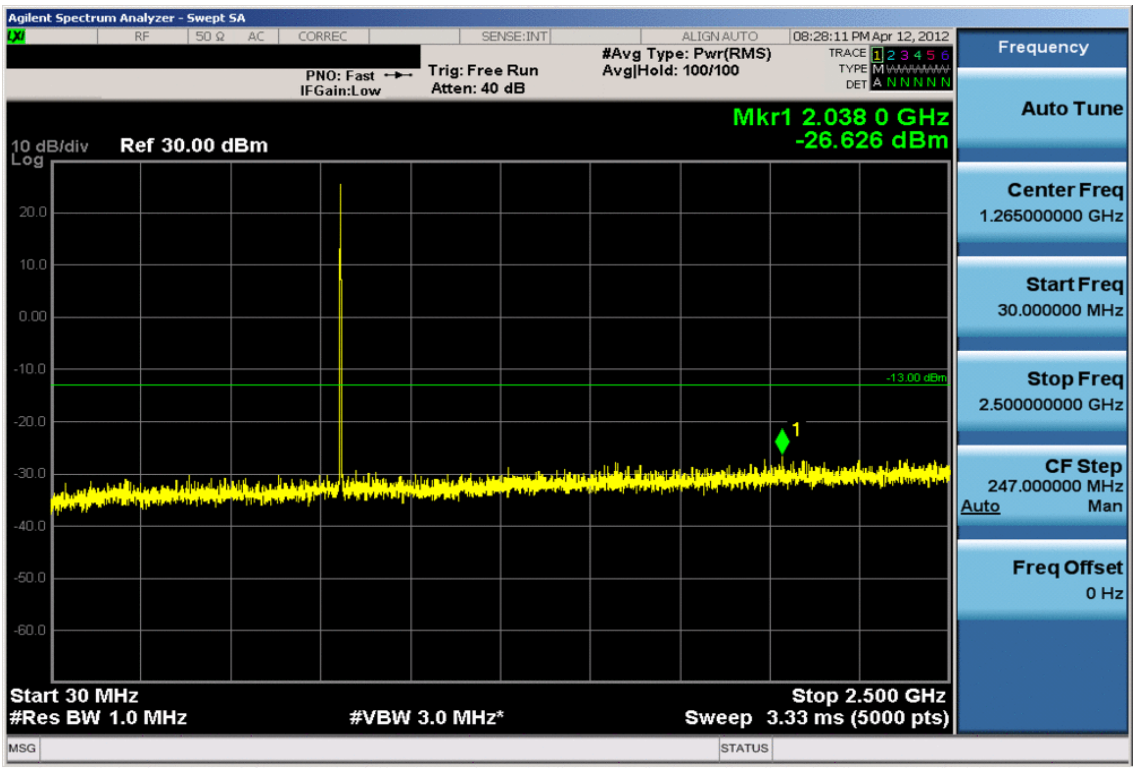
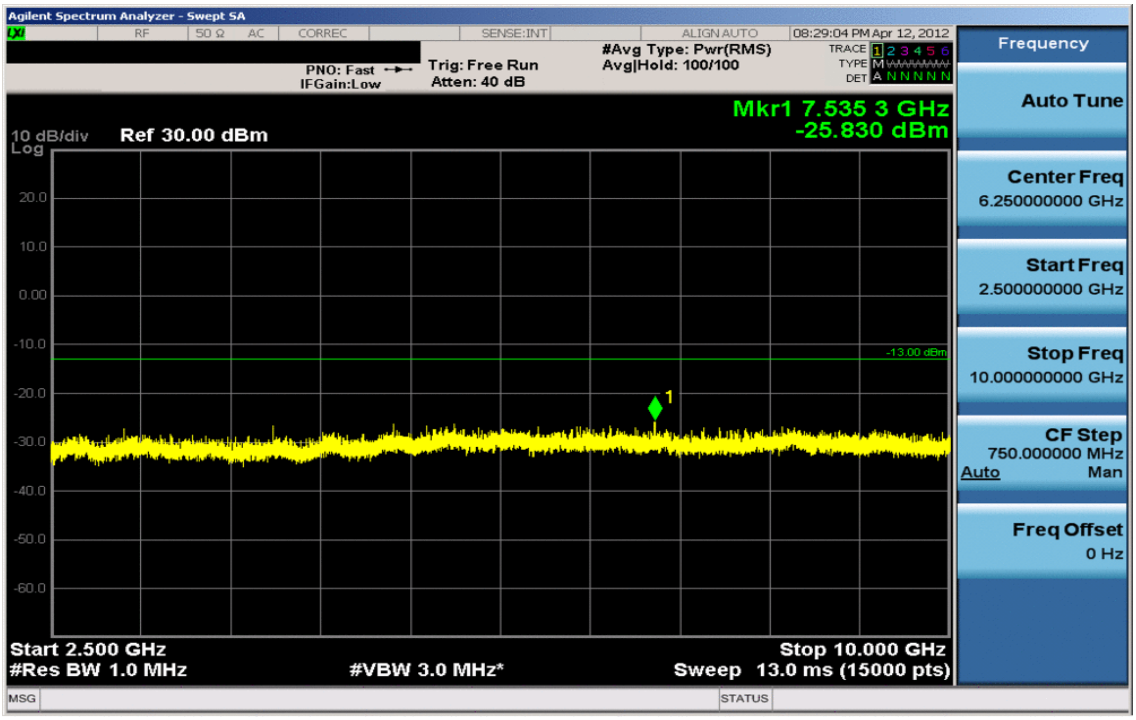
7.0 PLOT(S) OF EMISSIONS



Plot 7-1. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 1013)



Plot 7-2. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 1013)

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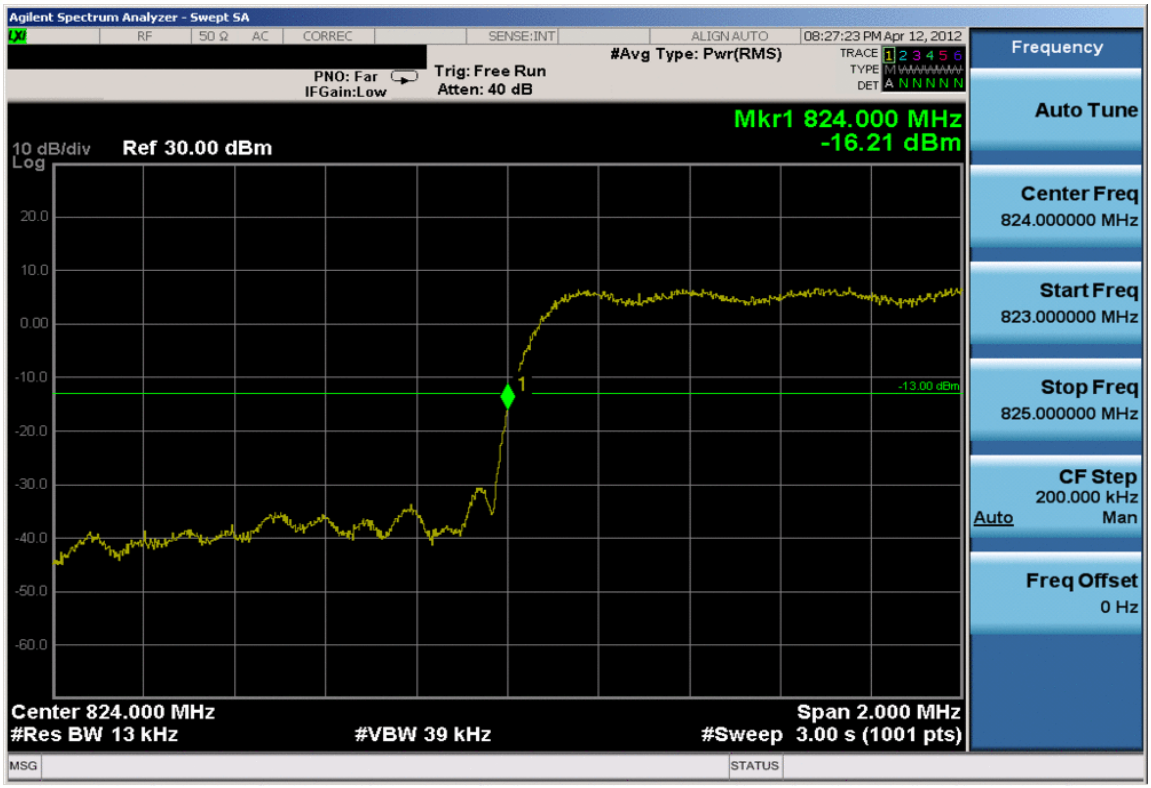
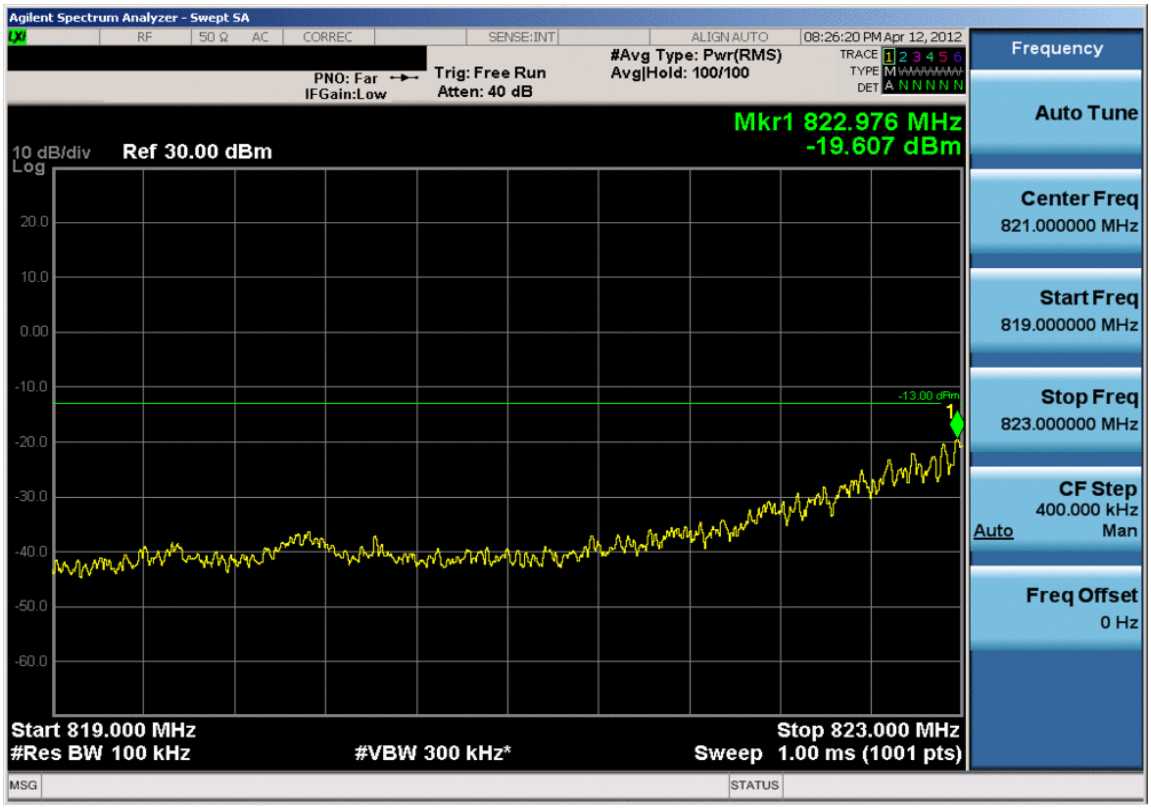


Plot 7-3. Band Edge Plot (Cellular CDMA Mode – Ch. 1013)



Plot 7-4. 4MHz Span Plot (Cellular CDMA Mode – Ch. 1013)

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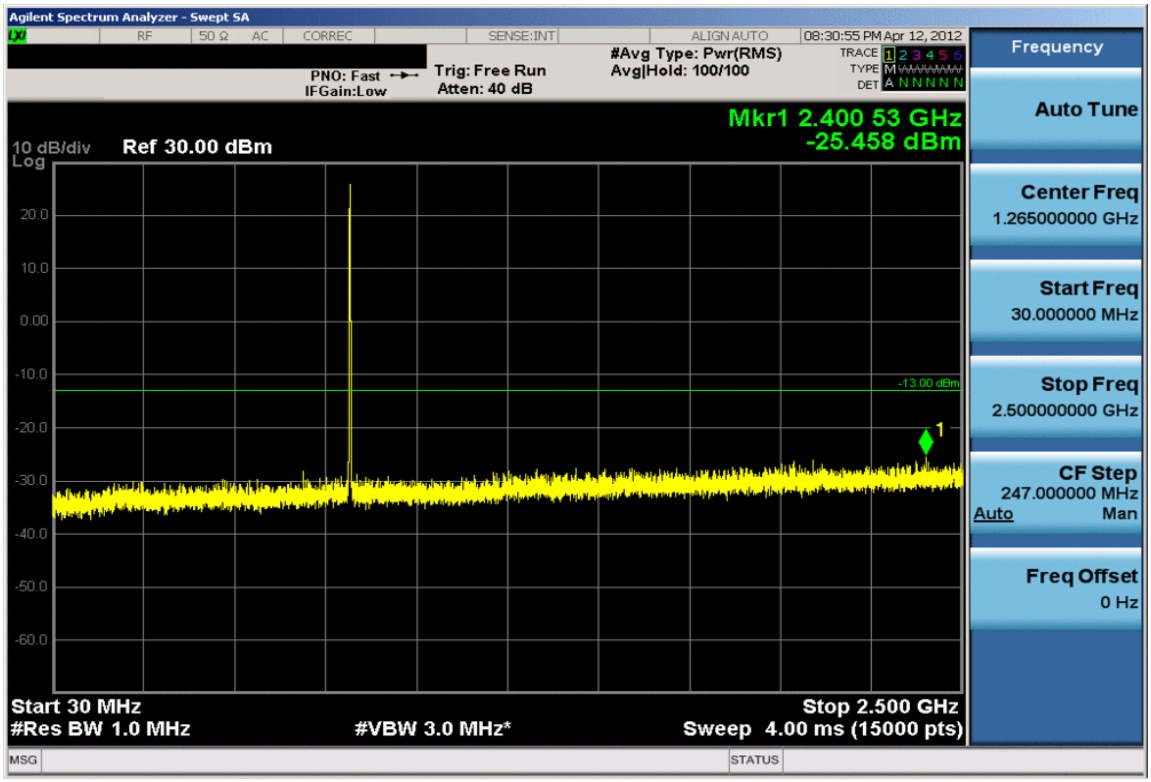
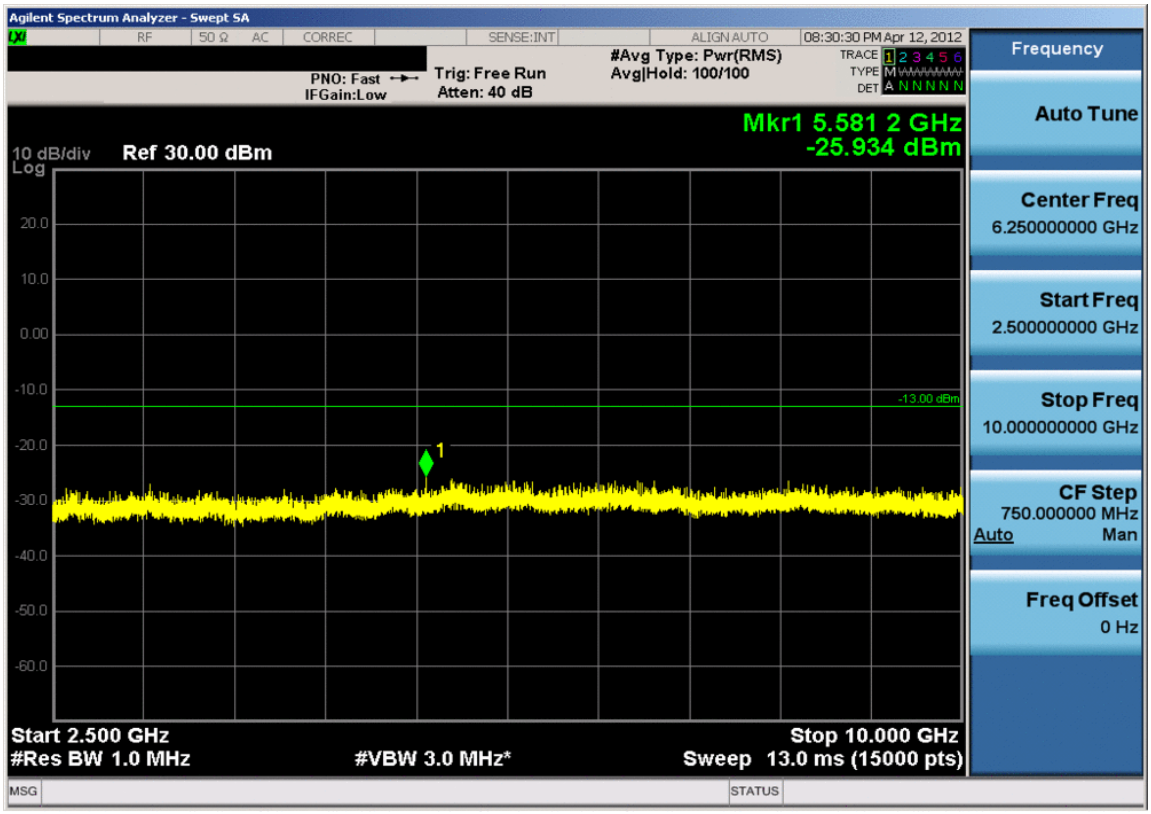


Plot 7-5. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 384)



Plot 7-6. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 384)

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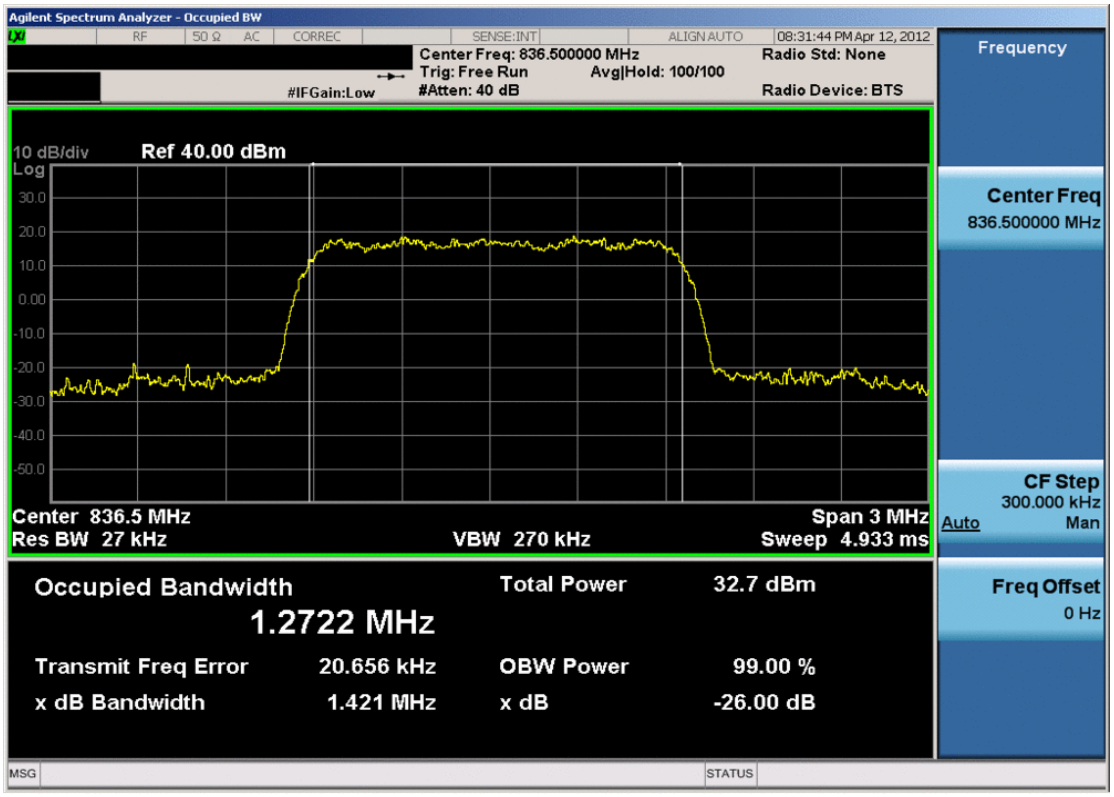
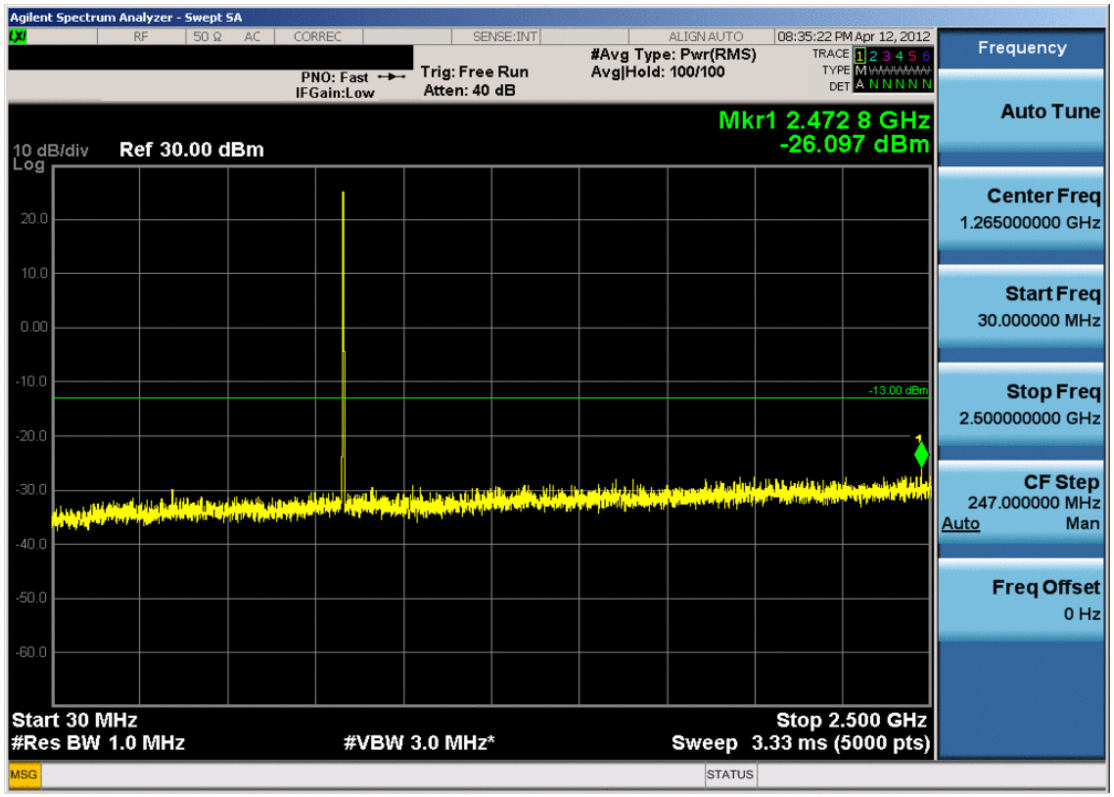


Plot 7-7. Occupied Bandwidth Plot (Cellular CDMA Mode – Ch. 384)



Plot 7-8. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 777)

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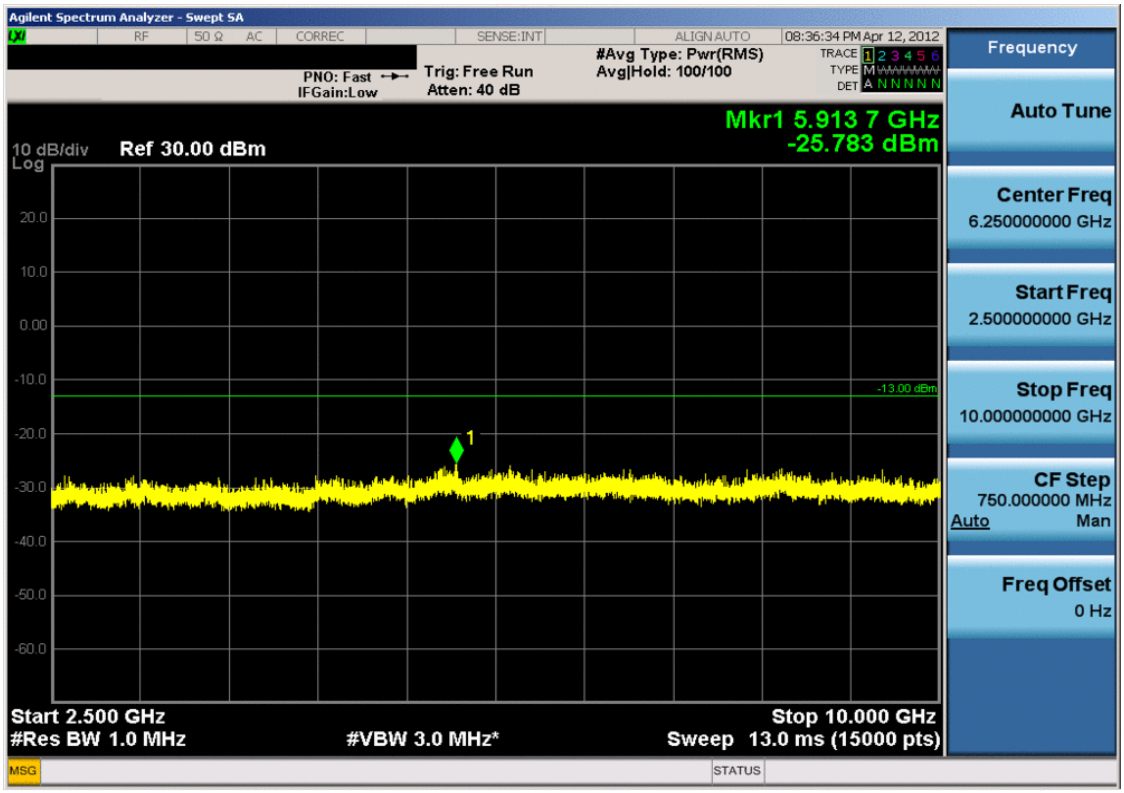

Plot 7-9. Conducted Spurious Plot (Cellular CDMA Mode – Ch. 777)

Plot 7-10. Band Edge Plot (Cellular CDMA Mode – Ch. 777)

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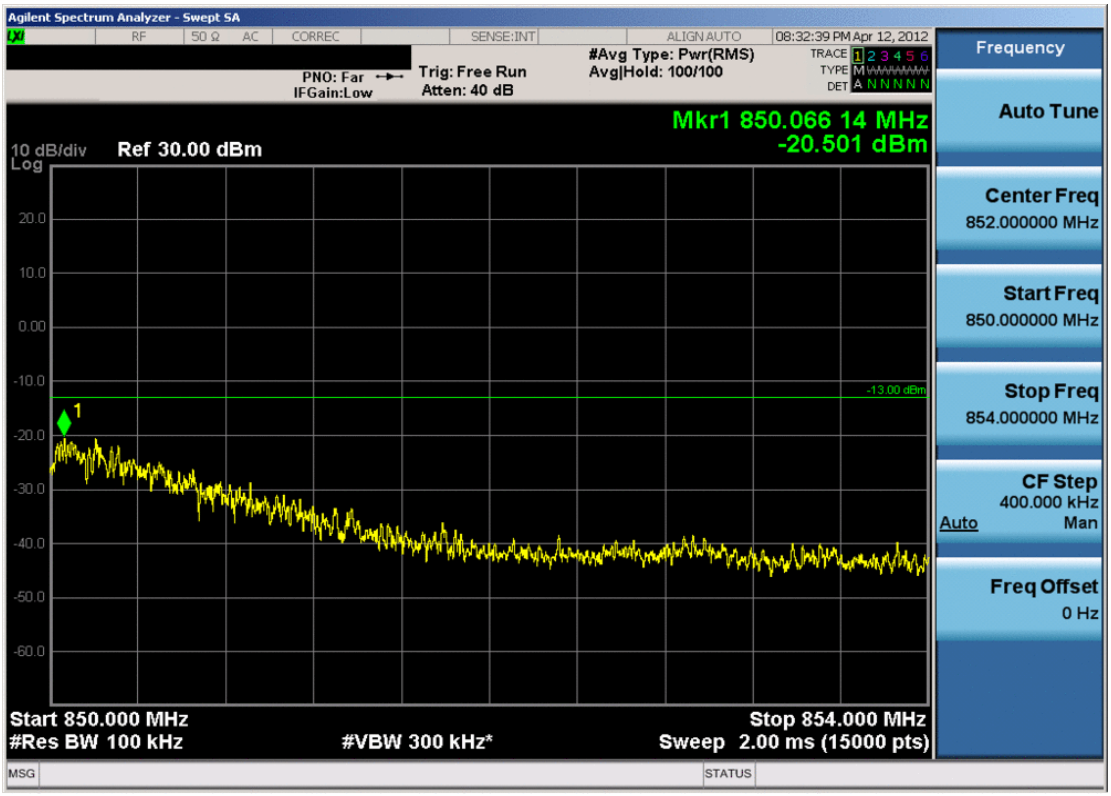
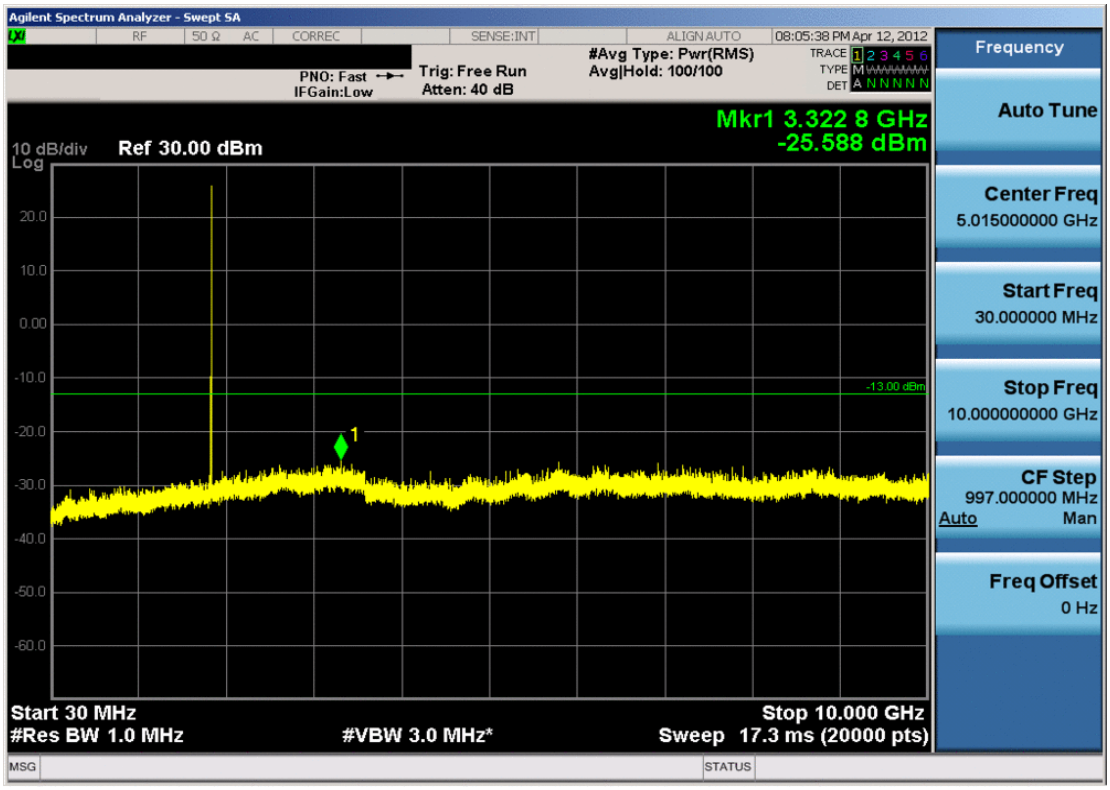


Plot 7-11. 4MHz Span Plot (Cellular CDMA Mode – Ch. 777)



Plot 7-12. Conducted Spurious Plot (PCS CDMA Mode – Ch. 25)

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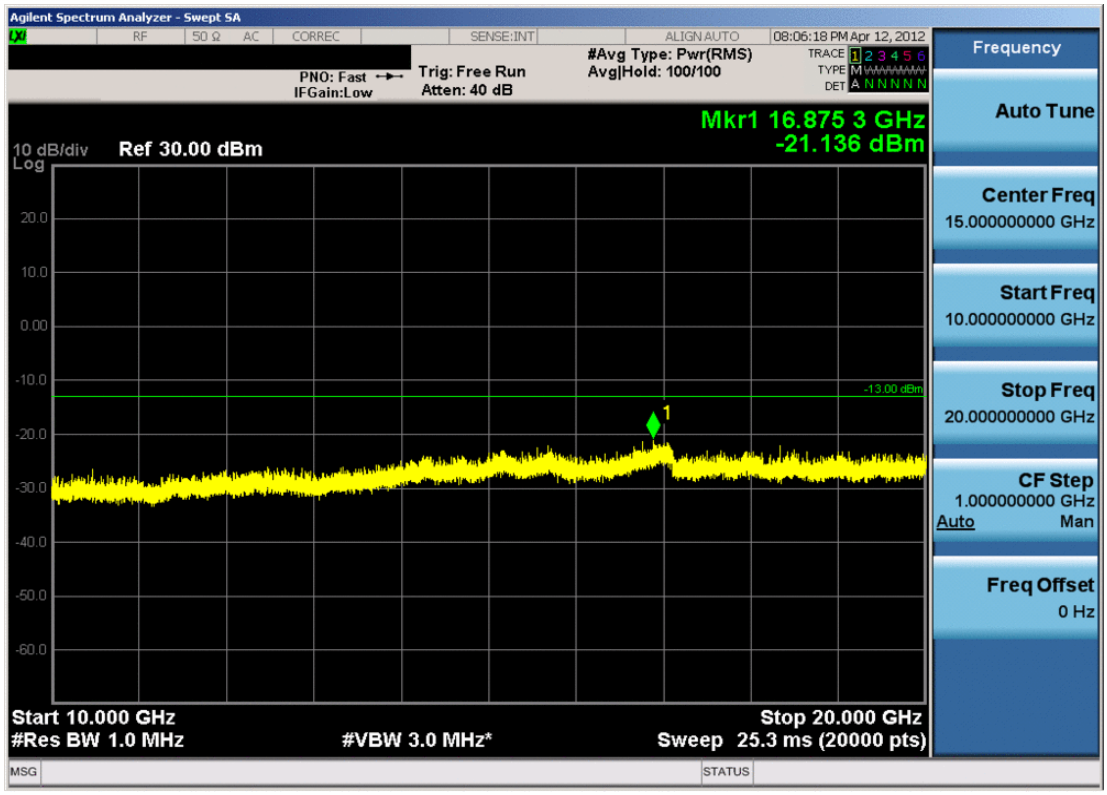
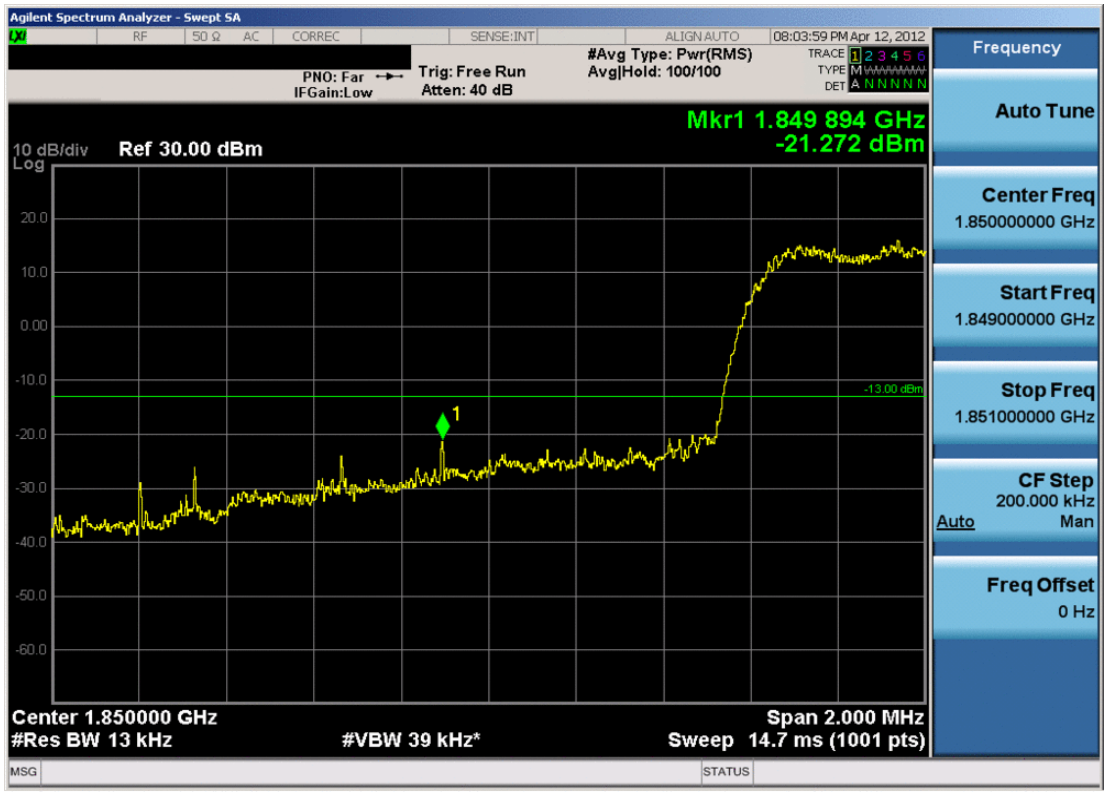


Plot 7-13. Conducted Spurious Plot (PCS CDMA Mode – Ch. 25)



Plot 7-14. Band Edge Plot (PCS CDMA Mode – Ch. 25)

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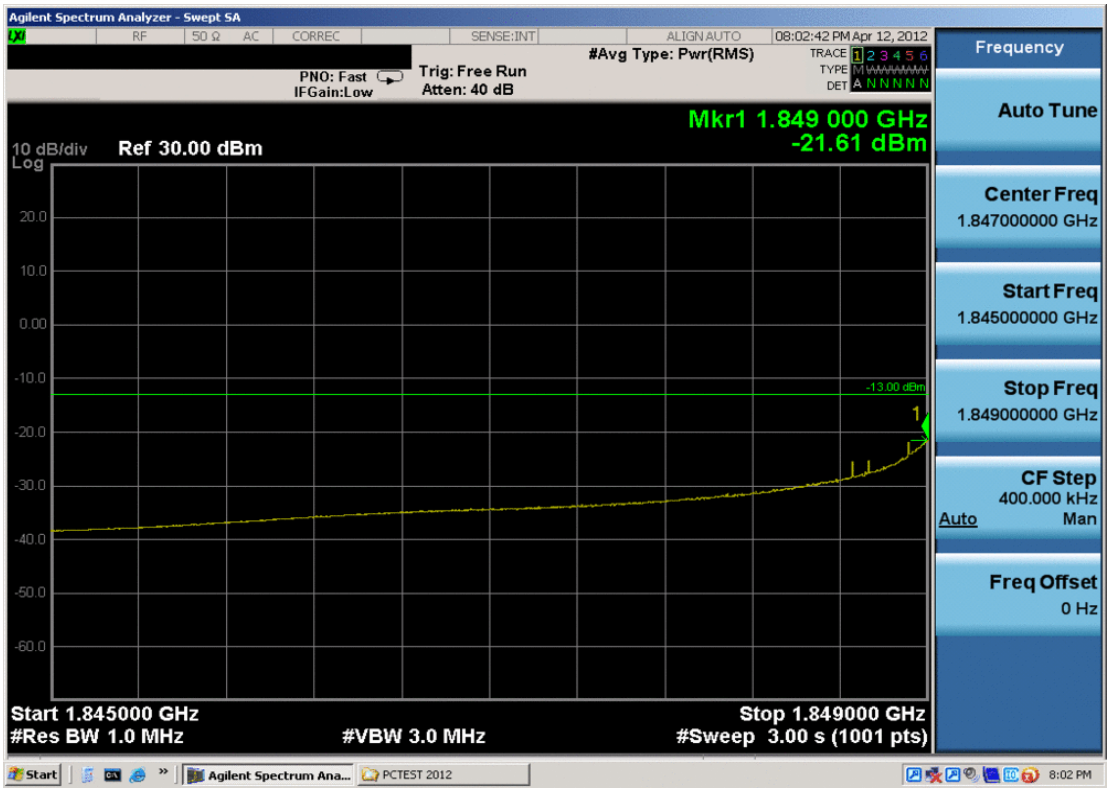
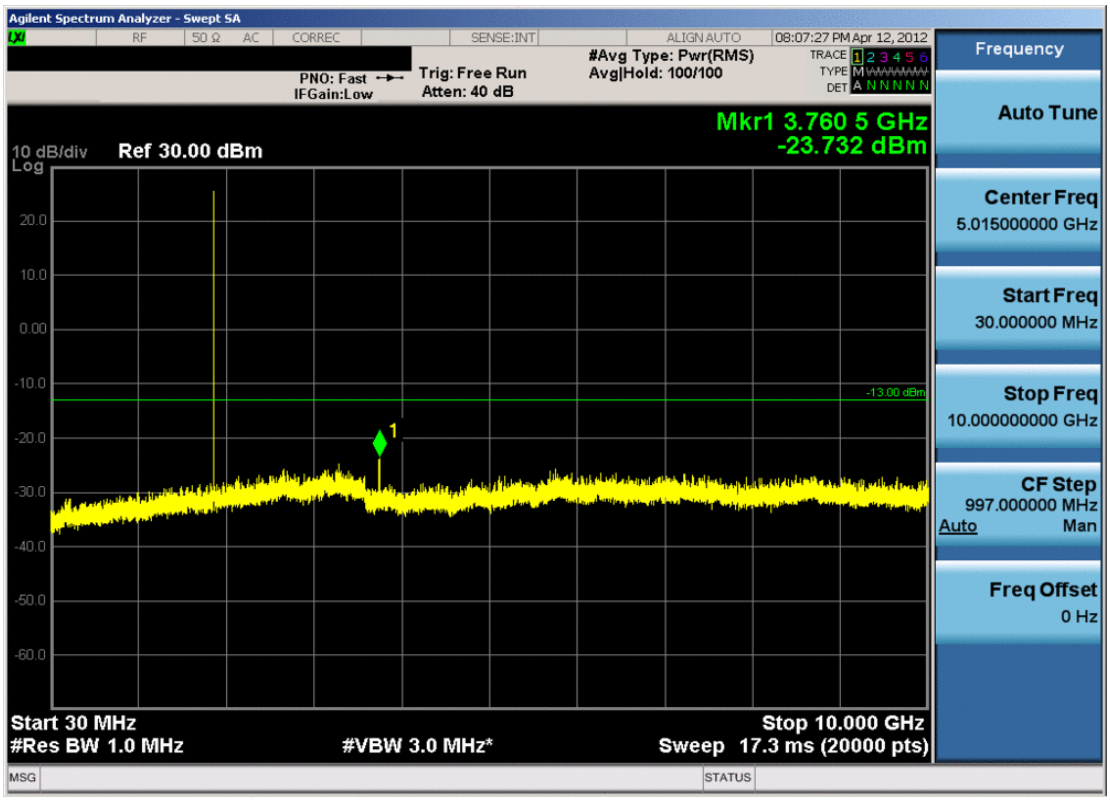


Plot 7-15. 4MHz Span Plot (PCS CDMA Mode – Ch. 25)



Plot 7-16. Conducted Spurious Plot (PCS CDMA Mode – Ch. 600)

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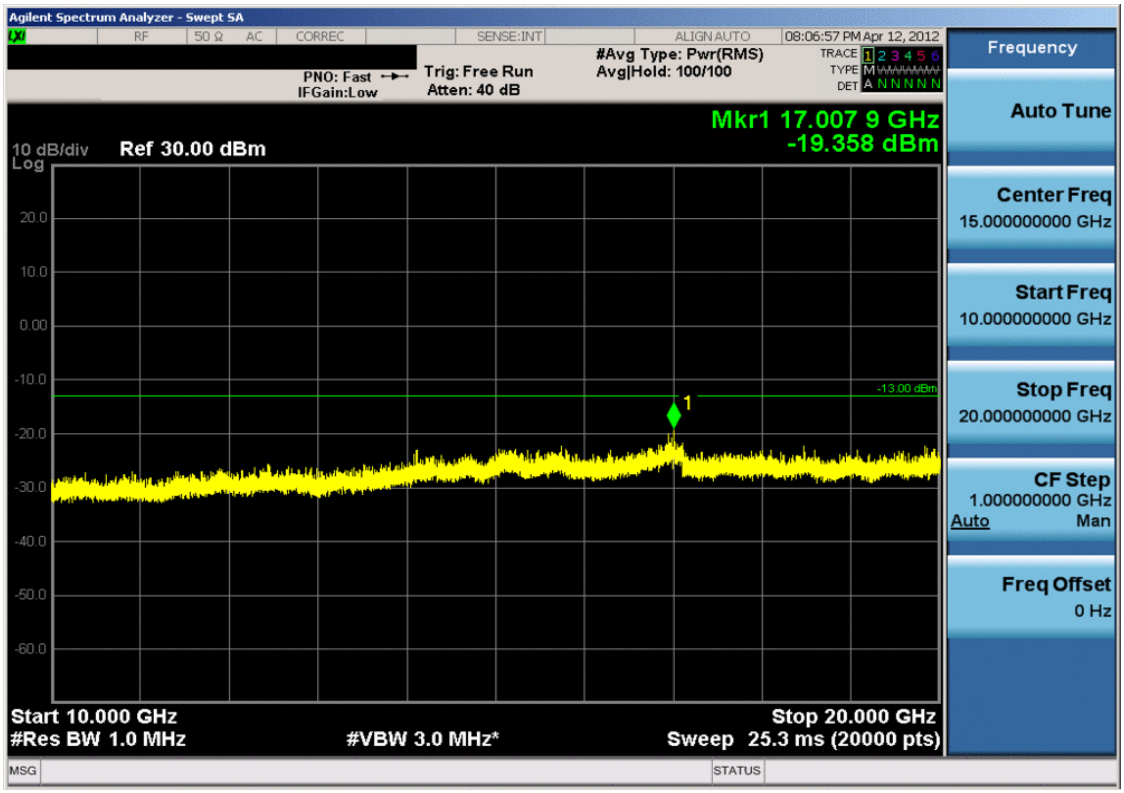
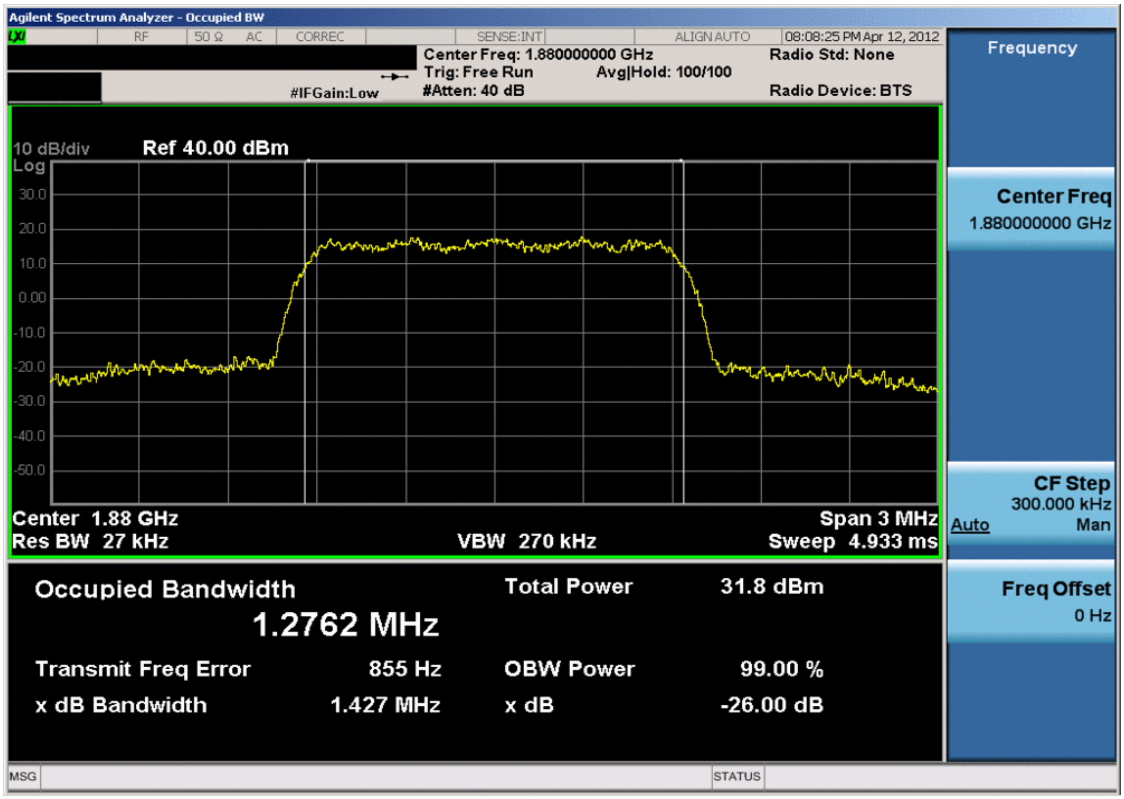


Plot 7-17. Conducted Spurious Plot (PCS CDMA Mode – Ch. 600)



Plot 7-18. Occupied Bandwidth Plot (PCS CDMA Mode – Ch. 600)

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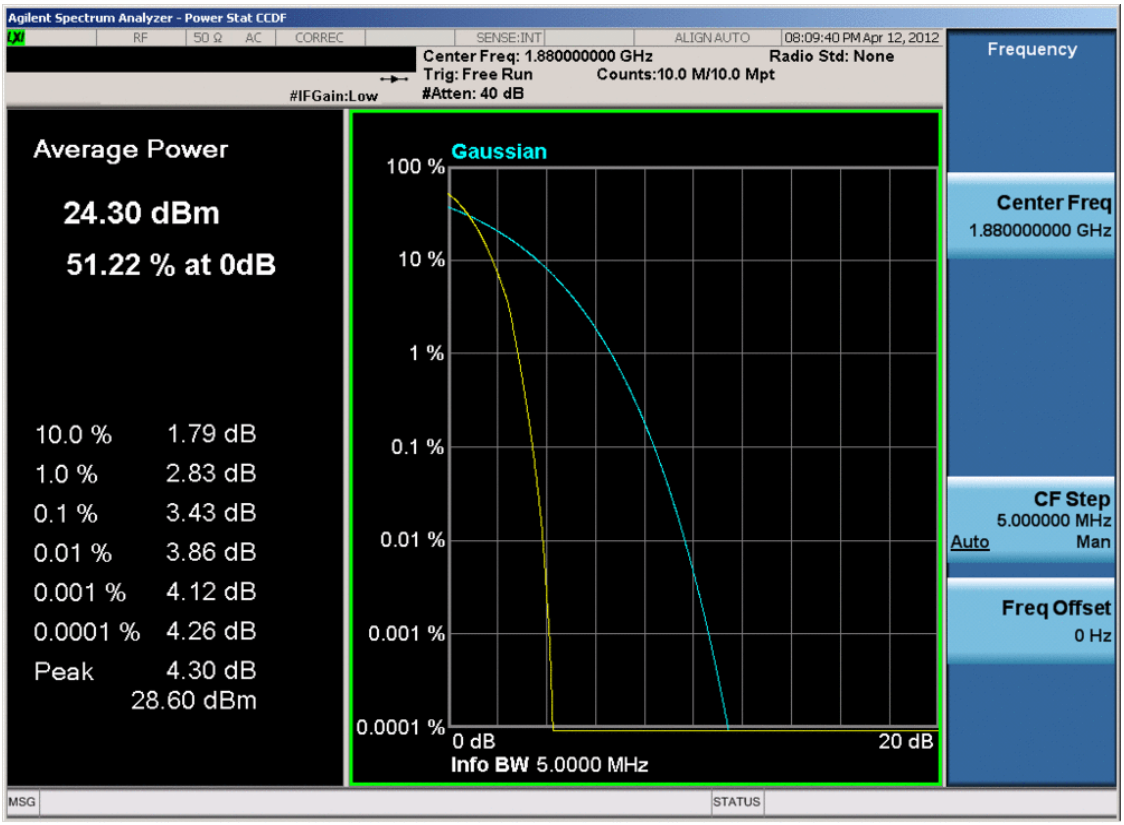
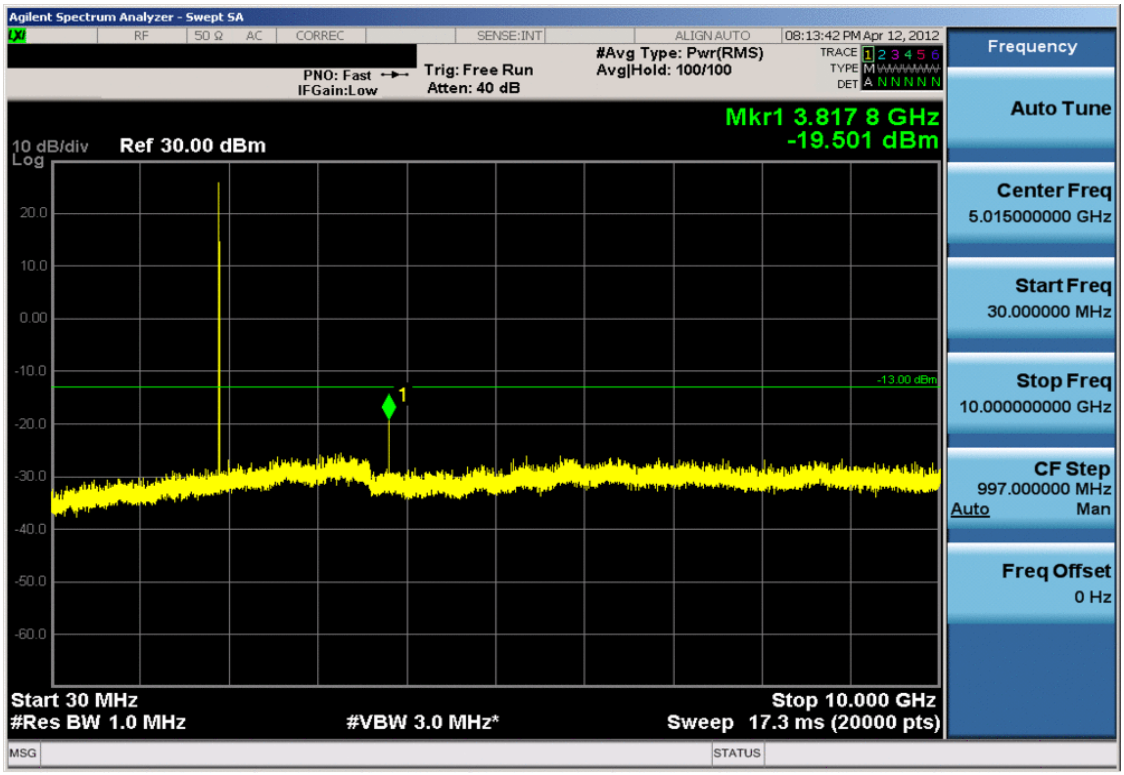


Plot 7-19. Peak-Average Ratio Plot (PCS CDMA Mode – Ch. 600)



Plot 7-20. Conducted Spurious Plot (PCS CDMA Mode – Ch. 1175)

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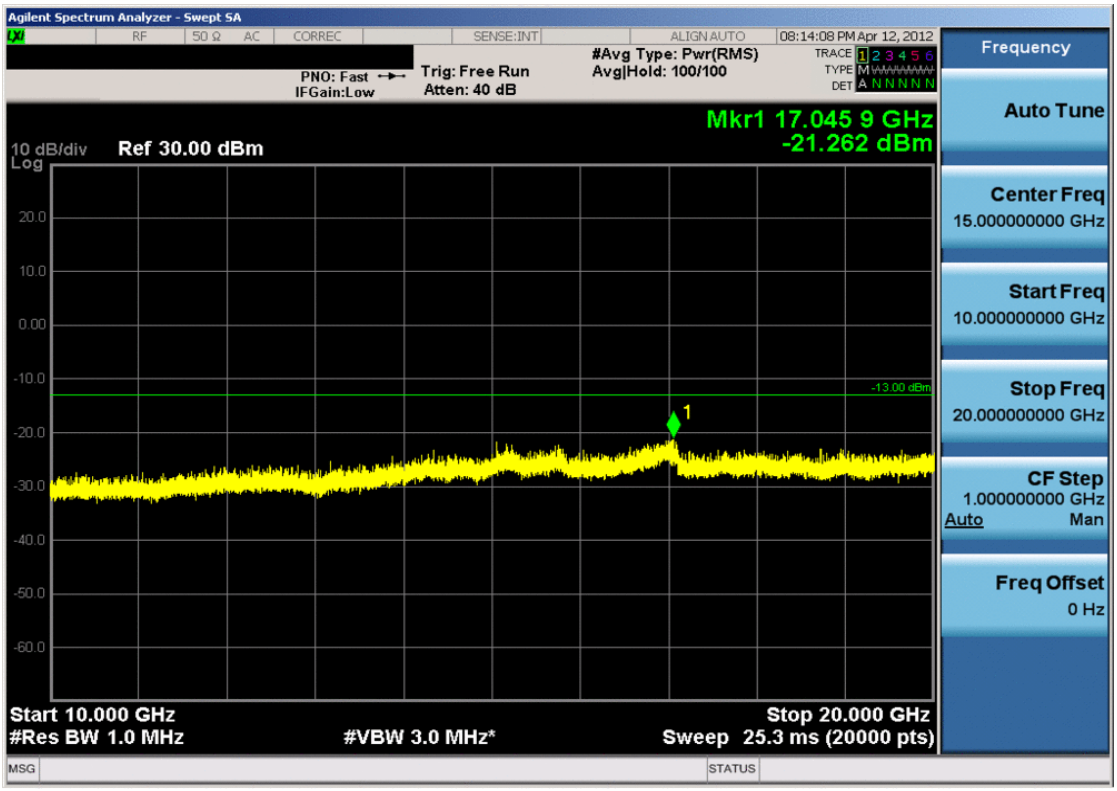
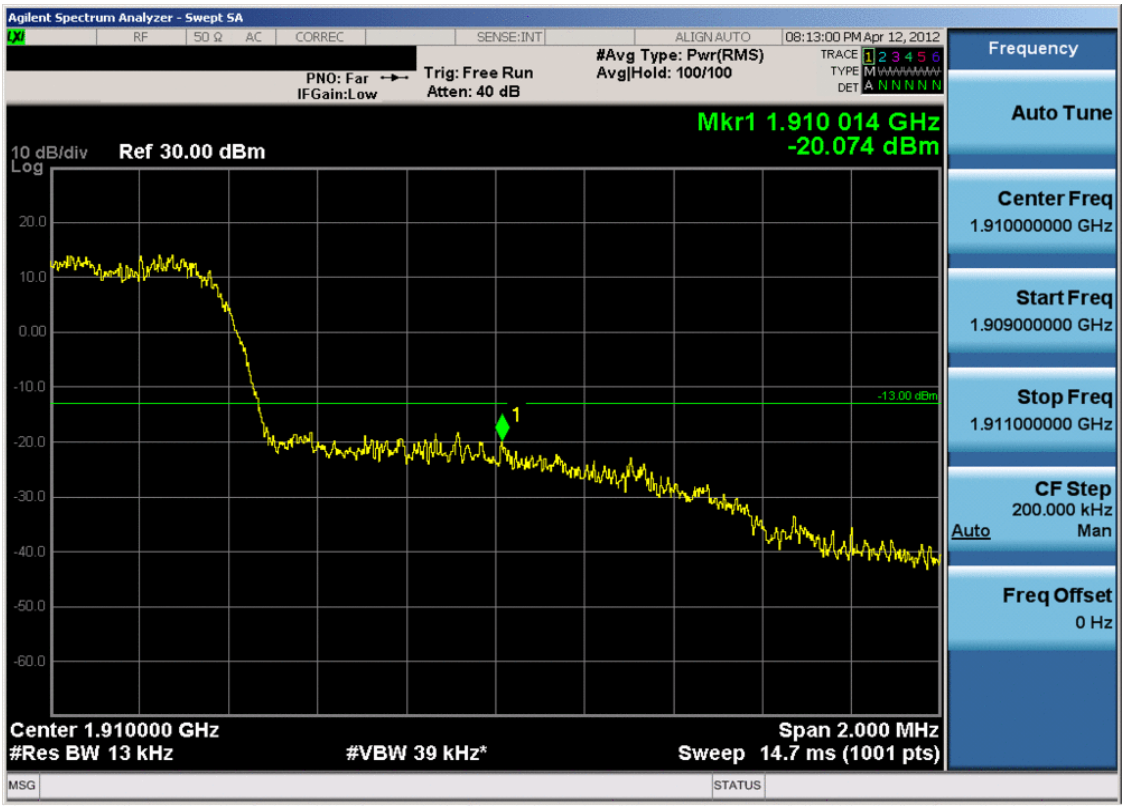


Plot 7-21. Conducted Spurious Plot (PCS CDMA Mode – Ch. 1175)



Plot 7-22. Band Edge Plot (PCS CDMA Mode – Ch. 1175)

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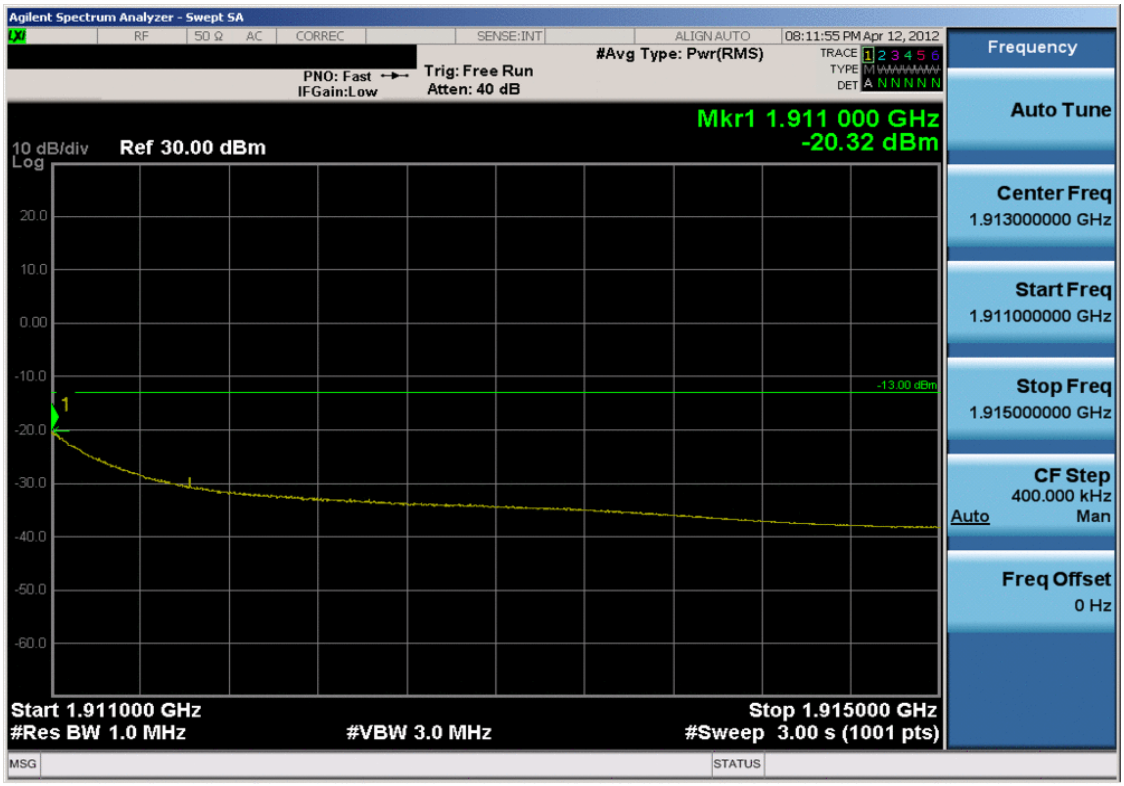

Plot 7-23. 4MHz Span Plot (PCS CDMA Mode – Ch. 1175)

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8.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung Portable Tablet Computer FCC ID: A3LSCHI705** complies with all the requirements of Parts 2, 22, and 24 of the FCC rules and RSS-132 and RSS-133 of the Industry Canada rules.

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