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MEASUREMENT REPORT FCC PART 15.407 / IC RSS-210 802.11a/n (UNII)

Applicant Name:
Samsung Electronics, Co. Ltd.
18600 Broadwick St.
Rancho Dominguez, CA 90220
United States

Date of Testing:
August 19 - 23, 2011
Test Site/Location:
PCTEST Lab, Columbia, MD, USA
Test Report Serial No.:
OY1108151426.A3L

FCC ID:	A3LGTI9100
IC CERTIFICATION NO.:	649E-GTI9100
APPLICANT:	Samsung Electronics, Co. Ltd.

Application Type: Class II Permissive Change
Model(s): GT-I9100M
EUT Type: Portable Handset
Frequency Range: 5180MHz – 5240MHz (UNII Band 1), 5260MHz – 5320MHz (UNII Band 2), 5500MHz – 5700MHz (UNII Band 3)
FCC Classification: Unlicensed National Information Infrastructure (UNII)
FCC Rule Part(s): Part 15.407
IC Specification(s): RSS-210 Issue 8
Class II Perm. Change: Please see FCC change documents.
Original Grant Date: March 11, 2011

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 ANSI C-63.4-2003. 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.

Grant Conditions: Listed output power is conducted.

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



FCC ID: A3LGTI9100		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
Test Report S/N: OY1108151426.A3L	Test Dates: August 19 - 23, 2011	EUT Type: Portable Handset		Page 1 of 25

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MEASUREMENT REPORT

FCC Part 15.407



§ 2.1033 General Information

APPLICANT: Samsung Electronics, Co. Ltd.

APPLICANT ADDRESS: 18600 Broadwick St.
Rancho Dominguez, CA 90220, United States

TEST SITE: PCTEST ENGINEERING LABORATORY, INC.

TEST SITE ADDRESS: 6660-B Dobbin Road, Columbia, MD 21045 USA

FCC RULE PART(S): Part 15.407

IC SPECIFICATION(S): RSS-210 Issue 8

MODEL NAME: GT-I9100M

FCC ID: A3LGTI9100

Test Device Serial No.: FI-198-C Production Pre-Production Engineering

FCC CLASSIFICATION: Unlicensed National Information Infrastructure (UNII)

DATE(S) OF TEST: August 19 - 23, 2011



TEST REPORT S/N: 0Y1108151426.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 (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 PCTEST Test Location

The map below shows the location of the PCTEST LABORATORY, its proximity to the FCC Laboratory, the Columbia vicinity area, 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 28, 2009.

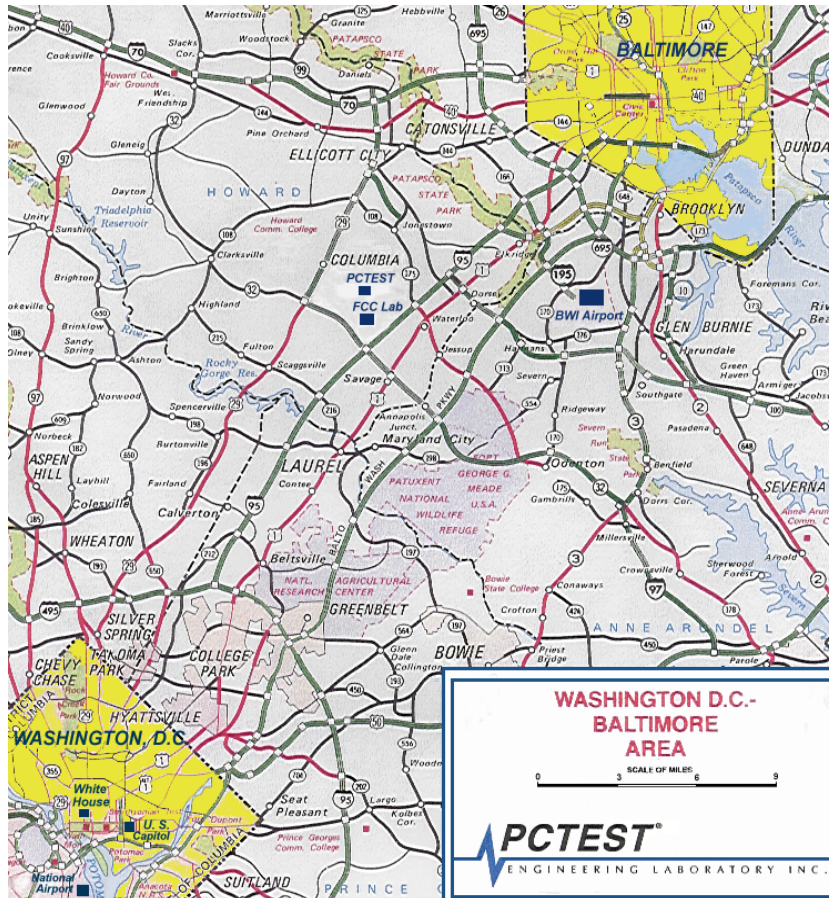


Figure 1-1. Map of the Greater Baltimore and Metropolitan Washington, D.C. area

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung Portable Handset FCC ID: A3LGTI9100**. The EUT consisted of the following component(s):

Manufacturer / Model	FCC ID	Description
Samsung / Model: GT-I9100M	A3LGTI9100	Portable Handset

Table 2-1. EUT Equipment Description

2.2 EMI Suppression Device(s)/Modifications



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

2.3 Labeling Requirements

Per 2.1074 & 15.19; Docket 95-19

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 TEST

3.1 Evaluation Procedure

The measurement procedure described in the American National Standard for Methods of Measurement of Radio-Noise Emission from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz (ANSI C63.4-2003) and FCC Public Notice DA 02-2138 dated August 30, 2002 entitled "Measurement Procedure Updated for Peak Transmit Power in the Unlicensed National Information Infrastructure (U-NII) Bands" were used in the measurement of **Samsung Portable Handset FCC ID: A3LGTI9100**.

Deviation from measurement procedure.....None

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3.2 Radiated Emissions

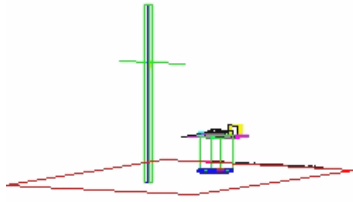


Figure 3-1. 3-Meter Test Site

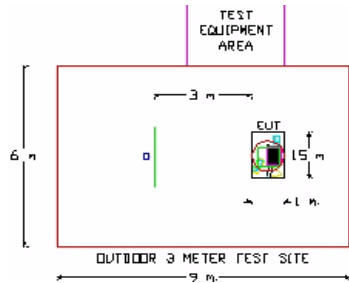


Figure 3-2. Dimensions of Outdoor Test Site

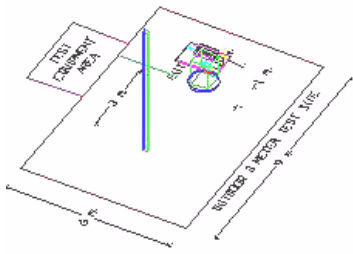


Figure 3-3. Turntable and System Setup

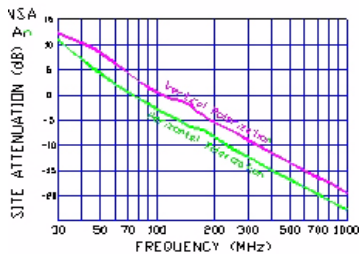


Figure 3-4. Normalized Site Attenuation Curves (H&V)

Preliminary measurements were made indoors at 1-meter using broadband antennas, broadband amplifiers, and spectrum analyzers to determine the frequency producing the maximum EME. Appropriate precaution was taken to ensure that all EME from the EUT were maximized and investigated. The system configuration, clock speed, mode of operation or video resolution, and turntable azimuth with respect to the antenna was noted for each frequency found. The spectrum was scanned from 30 to 200 MHz using a bi-conical antenna and from 200 to 1000 MHz using a log-spiral antenna. Above 1 GHz, linearly polarized double ridge horn antennas were used.

Final measurements were made outdoors at 3-meter test range using Roberts™ Dipole antennas or horn antennas (see Figure 3-1). The test equipment was placed on a wooden and plastic bench situated on a 1.5m x 2m area adjacent to the measurement area (see Figure 3-2). Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The detector function was set to CISPR quasi-peak mode and the bandwidth of the spectrum analyzer was set to 100kHz for frequencies below 1GHz or 1MHz for frequencies above 1GHz. Above 1GHz the detector function was set to average mode (RBW = 1MHz, VBW = 10Hz).

The half-wave dipole antenna was tuned to the frequency found during preliminary radiated measurements. The EUT, support equipment and interconnecting cables were re-configured to the set-up producing the maximum emission for the frequency and were placed on top of a 0.8-meter high non-metallic 1 x 1.5 meter table (see Figure 3-3). The EUT, support equipment, and interconnecting cables were re-arranged and manipulated to maximize each EME emission. The turntable containing the system was rotated and the height of the receive antenna was varied 1 to 4 meters and stopped at the azimuth and height producing the maximum emission. Each emission was maximized by: varying the mode of operation or resolution; clock or data exchange speed; scrolling H pattern to the EUT and/or support equipment, and powering the monitor from the floor mounted outlet box and the computer aux AC outlet, if applicable; and changing the polarity of the antenna, whichever determined the worst-case emission. Photographs of the worst-case emission can be seen in the test setup photographs. Each EME reported was calibrated using the .Agilent E8257D (250kHz – 20GHz) PSG Signal Generator. The Theoretical Normalized Site Attenuation Curves for both horizontal and vertical polarization are shown in Figure 3-4.

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4.0 ANTENNA REQUIREMENTS

Excerpt from §15.203 of the FCC Rules/Regulations:

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.”

- The antennas of the Portable Handset are **permanently attached**.
- There are no provisions for connection to an external antenna.

Conclusion:



The **Samsung Portable Handset FCC ID: A3LGTI9100** unit complies with the requirement of §15.203.

Band 1		Band 2		Band 3	
Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)
36	5180	52	5260	100	5500
:	:	:	:	:	:
42	5210	56	5280	120	5600
:	:	:	:	:	:
48	5240	64	5320	140	5700

Table 4-1. 802.11a Frequency / Channel Operations

Band 1		Band 2		Band 3	
Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)
36	5180	52	5260	100	5500
:	:	:	:	:	:
42	5210	56	5280	120	5600
:	:	:	:	:	:
48	5240	64	5320	140	5700

Table 4-2. 802.11n Frequency / Channel Operations



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5.0 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
-	No.165	(30MHz - 1000MHz) RG58 Coax Cable	N/A		N/A	N/A
-	No.166	(1000-26500MHz) Microwave RF Cable	N/A		N/A	N/A
-	No.167	(100kHz - 100MHz) RG58 Coax Cable	N/A		N/A	N/A
Agilent	8447D	Broadband Amplifier	3/17/2011	Annual	3/17/2012	1937A03348
Agilent	8447D	Broadband Amplifier	3/17/2011	Annual	3/17/2012	2443A01900
Agilent	8449B	(1-26.5GHz) Pre-Amplifier	2/8/2011	Annual	2/8/2012	3008A00985
Agilent	85650A	Quasi-Peak Adapter	4/7/2011	Annual	4/7/2012	3303A01872
Agilent	85650A	Quasi-Peak Adapter	4/7/2011	Annual	4/7/2012	2043A00301
Agilent	8566B	(100Hz-22GHz) Spectrum Analyzer	4/7/2011	Annual	4/7/2012	2618A02866
Agilent	8566B	(100Hz-22GHz) Spectrum Analyzer	4/7/2011	Annual	4/7/2012	2542A11898
Agilent	8566B	(100Hz-22GHz) Spectrum Analyzer	4/7/2011	Annual	4/7/2012	3638A08713
Agilent	E4407B	ESA Spectrum Analyzer	4/5/2011	Annual	4/5/2012	US39210313
Agilent	E4448A	PSA (3Hz-50GHz) Spectrum Analyzer	11/30/2010	Annual	11/30/2011	US42510244
Agilent	E8257D	(250kHz-20GHz) Signal Generator	4/8/2011	Annual	4/8/2012	MY45470194
Agilent	N9020A	MXA Signal Analyzer	9/8/2010	Annual	9/8/2011	US46470561
Agilent	N9038A	MXE EMI Receiver	8/5/2011	Annual	8/5/2012	MY51210133
Anritsu	ML2495A	Power Meter	10/13/2010	Annual	10/13/2011	941001
Anritsu	MA2411B	Pulse Sensor	N/A		N/A	1027293
Emco	3115	Horn Antenna (1-18GHz)	10/14/2009	Biennial	10/14/2011	9704-5182
Emco	3115	Horn Antenna (1-18GHz)	4/8/2010	Biennial	4/8/2012	9205-3874
Emco	3116	Horn Antenna (18 - 40GHz)	9/9/2008	Triennial	9/9/2011	9203-2178
Emco	3816/2	LISN	11/5/2010	Biennial	11/5/2012	9707-1077
Emco	3816/2	LISN	11/3/2010	Biennial	11/3/2012	9707-1079
Gigatronics	80701A	(0.05-18GHz) Power Sensor	10/11/2010	Annual	10/11/2011	1833460
Gigatronics	8651A	Universal Power Meter	10/11/2010	Annual	10/11/2011	8650319
MiniCircuits	VHF-3100+	High Pass Filter	N/A		N/A	30721
Sunol	DRH-118	Horn Antenna (1 - 18GHz)	7/5/2011	Biennial	7/5/2013	A050307
Sunol	JB5	Bi-Log Antenna (30M - 5GHz)	9/17/2009	Biennial	9/17/2011	A051107

Table 5-1. Annual Test Equipment Calibration Schedule

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6.0 TEST RESULTS

6.1 Summary



Company Name: Samsung Electronics, Co. Ltd.
 FCC ID: A3LGTI9100
 Method/System: Unlicensed National Information Infrastructure (UNII)
 Data Rate(s) Tested: 6, 9, 12, 18, 24, 36, 48, 54Mbps (802.11a)
6.5/7.2, 13/14.4, 19.5/21.7, 26/28.9, 39/43.3, 52/57.8, 58.5/65, 65/72.2 (n)

FCC Part Section(s)	RSS Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
TRANSMITTER MODE (TX)						
15.407(b)(1), (2),(3)	RSS-210 [A9.2]	Undesirable Emissions	< -27 dBm/MHz EIRP (5150-5350MHz, 5470-5725MHz)	RADIATED	PASS	Section 6.2
15.407(h)	RSS-210 [A9.3]	Dynamic Frequency Selection	See DFS Test Report		PASS	See DFS Test Report
15.205, 5.407(b)(1), (5), (6)	RSS-Gen [7.2.3.2]	General Field Strength Limits (Restricted Bands and Radiated Emission Limits)	Emissions in restricted bands must meet the radiated limits detailed in 15.209 (RSS-210 table 3 limits)		PASS	Section 6.3
RECEIVER MODE (RX) / DIGITAL EMISSIONS						
15.109	RSS-Gen [7.2.3.2]	General Field Strength Limits (Restricted Bands and Radiated Emissions Limits)	< FCC 15.109 limits or < RSS-210 table 3 limits	RADIATED (30MHz-1GHz) (1-25 GHz)	PASS	Part 15B Test Report

Table 6-1. Summary of Test Results

NOTE:

All modes of operation and data rates were investigated. The test results shown in the following sections represent the worst case emissions.

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6.2 Radiated Spurious Emission Measurements

§15.407(b)(1), (6), §15.205, §15.209; RSS-210 [A9.2]

The EUT was tested from 9kHz and up to the 10th harmonic of the fundamental frequency of the transmitter using CISPR quasi peak detector below 1GHZ. Above 1 GHz, average measurements were taken using RBW = 1MHz and VBW = 10Hz. Peak measurements were taken using RBW = VBW = 1MHz and linearly polarized horn antennas. All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table 6-2 per Section 15.209.

All data rates and modes were investigated for radiated spurious emissions. Only the radiated emissions of the configuration that produced the worst case emissions are reported in this section.

Frequency	Field Strength [$\mu\text{V/m}$]	Measured Distance [Meters]
0.009 – 0.490 MHz	2400/F (kHz)	300
0.490 – 1.705 MHz	24000/F (kHz)	30
1.705 – 30.00 MHz	30	30
30.00 – 88.00 MHz	100	3
88.00 – 216.0 MHz	150	3
216.0 – 960.0 MHz	200	3
Above 960.0 MHz	500	3



Table 6-2. Radiated Limits

Sample Calculation

- Field Strength Level [$\text{dB}\mu\text{V/m}$] = Analyzer Level [dBm] + 107 + AFCL [dB]

Notes:

- AFCL = Antenna Factor [dB] + Cable Loss [dB]

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Radiated Spurious Emission Measurements (Cont'd)
§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]



Mode: 802.11a
 Transfer Rate: 6 Mbps
 Distance of Measurements: 1 Meter
 Operating Frequency: 5180MHz
 Channel: 36

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10360.00	-95.78	Peak	H	54.62	-9.54	56.30	68.20	-11.90
* 15540.00	-135.00	Average	H	60.84	0.00	32.84	53.98	-21.14
* 15540.00	-125.00	Peak	H	60.84	0.00	42.84	73.98	-31.14
* 20720.00	-135.00	Average	H	58.41	0.00	30.41	53.98	-23.57
* 20720.00	-125.00	Peak	H	58.41	0.00	40.41	73.98	-33.57
25900.00	-125.00	Peak	H	60.26	0.00	42.26	68.20	-25.94

Table 6-3. Radiated Measurements @ 1 meter

NOTES:

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.
- All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 are below the limit shown in Table 6-2.
- Average measurements > 1GHz using RBW = 1MHz and VBW = 10Hz. Peak measurements > 1GHz using RBW = VBW = 1MHz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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Radiated Spurious Emission Measurements (Cont'd)
§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]



Mode: 802.11a
 Transfer Rate: 6 Mbps
 Distance of Measurements: 1 Meter
 Operating Frequency: 5200MHz
 Channel: 40

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10400.00	-96.97	Peak	H	54.67	-9.54	55.16	68.20	-13.04
* 15600.00	-135.00	Average	H	60.80	0.00	32.80	53.98	-21.18
* 15600.00	-125.00	Peak	H	60.80	0.00	42.80	73.98	-31.18
* 20800.00	-135.00	Average	H	58.47	0.00	30.47	53.98	-23.51
* 20800.00	-125.00	Peak	H	58.47	0.00	40.47	73.98	-33.51
26000.00	-125.00	Peak	H	60.28	0.00	42.28	68.20	-25.92

Table 6-4. Radiated Measurements @ 1 meter

NOTES:

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.
- All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 are below the limit shown in Table 6-2.
- Average measurements > 1GHz using RBW = 1MHz and VBW = 10Hz. Peak measurements > 1GHz using RBW = VBW = 1MHz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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Radiated Spurious Emission Measurements (Cont'd)
§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]



Mode: 802.11a
 Transfer Rate: 6 Mbps
 Distance of Measurements: 1 Meter
 Operating Frequency: 5240MHz
 Channel: 48

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10480.00	-96.98	Peak	H	54.79	-9.54	55.27	68.20	-12.93
* 15720.00	-135.00	Average	H	60.63	0.00	32.63	53.98	-21.35
* 15720.00	-125.00	Peak	H	60.63	0.00	42.63	73.98	-31.35
* 20960.00	-135.00	Average	H	58.60	0.00	30.60	53.98	-23.38
* 20960.00	-125.00	Peak	H	58.60	0.00	40.60	73.98	-33.38
26200.00	-125.00	Peak	H	60.24	0.00	42.24	68.20	-25.96

Table 6-5. Radiated Measurements @ 1 meter

NOTES:

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.
- All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 are below the limit shown in Table 6-2.
- Average measurements > 1GHz using RBW = 1MHz and VBW = 10Hz. Peak measurements > 1GHz using RBW = VBW = 1MHz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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Radiated Spurious Emission Measurements (Cont'd)
§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]



Mode: 802.11a
 Transfer Rate: 6 Mbps
 Distance of Measurements: 1 Meter
 Operating Frequency: 5260MHz
 Channel: 52

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10520.00	-98.14	Peak	H	55.98	-9.54	55.30	68.20	-12.90
* 15780.00	-135.00	Average	H	70.91	0.00	42.91	53.98	-11.07
* 15780.00	-125.00	Peak	H	70.91	0.00	52.91	73.98	-21.07
* 21040.00	-135.00	Average	H	58.65	0.00	30.65	53.98	-23.33
* 21040.00	-125.00	Peak	H	58.65	0.00	40.65	73.98	-33.33
26300.00	-125.00	Peak	H	60.22	0.00	42.22	68.20	-25.98

Table 6-6. Radiated Measurements @ 1 meter

NOTES:

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.
- All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 are below the limit shown in Table 6-2.
- Average measurements > 1GHz using RBW = 1MHz and VBW = 10Hz. Peak measurements > 1GHz using RBW = VBW = 1MHz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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Radiated Spurious Emission Measurements (Cont'd)
§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]



Mode: 802.11a
 Transfer Rate: 6 Mbps
 Distance of Measurements: 1 Meter
 Operating Frequency: 5280MHz
 Channel: 56

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
10560.00	-98.04	Peak	H	54.90	-9.54	54.31	68.20	-13.89
* 15840.00	-135.00	Average	H	60.19	0.00	32.19	53.98	-21.79
* 15840.00	-125.00	Peak	H	60.19	0.00	42.19	73.98	-31.79
* 21120.00	-135.00	Average	H	58.70	0.00	30.70	53.98	-23.28
* 21120.00	-125.00	Peak	H	58.70	0.00	40.70	73.98	-33.28
26400.00	-125.00	Peak	H	60.20	0.00	42.20	68.20	-26.00

Table 6-7. Radiated Measurements @ 1 meter

NOTES:

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.
- All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 are below the limit shown in Table 6-2.
- Average measurements > 1GHz using RBW = 1MHz and VBW = 10Hz. Peak measurements > 1GHz using RBW = VBW = 1MHz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

FCC ID: A3LGTI9100		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
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Radiated Spurious Emission Measurements (Cont'd)

§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]

Mode: 802.11a

Transfer Rate: 6 Mbps

Distance of Measurements: 1 Meter

Operating Frequency: 5320MHz



Channel: 64

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 10640.00	-109.95	Average	H	55.01	-9.54	42.52	53.98	-11.46
* 10640.00	-97.86	Peak	H	55.01	-9.54	54.61	73.98	-19.37
* 15960.00	-135.00	Average	H	59.93	0.00	31.93	53.98	-22.05
* 15960.00	-125.00	Peak	H	59.93	0.00	41.93	73.98	-32.05
* 21280.00	-135.00	Average	H	58.80	0.00	30.80	53.98	-23.18
* 21280.00	-125.00	Peak	H	58.80	0.00	40.80	73.98	-33.18
26600.00	-125.00	Peak	H	60.20	0.00	42.20	68.20	-26.00

Table 6-8. Radiated Measurements @ 1 meter

NOTES:

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.
- All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 are below the limit shown in Table 6-2.
- Average measurements > 1GHz using RBW = 1MHz and VBW = 10Hz. Peak measurements > 1GHz using RBW = VBW = 1MHz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

FCC ID: A3LGT19100		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
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Radiated Spurious Emission Measurements (Cont'd)
§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]



Mode: 802.11a
 Transfer Rate: 6 Mbps
 Distance of Measurements: 1 Meter
 Operating Frequency: 5500MHz
 Channel: 100

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11000.00	-110.77	Average	H	56.01	-9.54	42.70	53.98	-11.28
* 11000.00	-97.57	Peak	H	56.01	-9.54	55.90	73.98	-18.08
16500.00	-125.00	Peak	H	59.69	0.00	41.69	68.20	-26.51
22000.00	-125.00	Peak	H	58.82	0.00	40.82	68.20	-27.38
27500.00	-125.00	Peak	H	60.47	0.00	42.47	68.20	-25.73

Table 6-9. Radiated Measurements @ 1 meter

NOTES:

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.
- All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 are below the limit shown in Table 6-2.
- Average measurements > 1GHz using RBW = 1MHz and VBW = 10Hz. Peak measurements > 1GHz using RBW = VBW = 1MHz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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Radiated Spurious Emission Measurements (Cont'd)
§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]



Mode: 802.11a
 Transfer Rate: 6 Mbps
 Distance of Measurements: 1 Meter
 Operating Frequency: 5600MHz
 Channel: 120

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11200.00	-111.80	Average	H	58.99	-9.54	44.64	53.98	-9.34
* 11200.00	-97.82	Peak	H	58.99	-9.54	58.62	73.98	-15.36
16800.00	-125.00	Peak	H	72.36	0.00	54.36	68.20	-13.84
* 22400.00	-135.00	Average	H	59.06	0.00	31.06	53.98	-22.92
* 22400.00	-125.00	Peak	H	59.06	0.00	41.06	73.98	-32.92
28000.00	-125.00	Peak	H	60.46	0.00	42.46	68.20	-25.74

Table 6-10. Radiated Measurements @ 1 meter

NOTES:

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.
- All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 are below the limit shown in Table 6-2.
- Average measurements > 1GHz using RBW = 1MHz and VBW = 10Hz. Peak measurements > 1GHz using RBW = VBW = 1MHz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

FCC ID: A3LGT19100		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
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Radiated Spurious Emission Measurements (Cont'd)
§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]



Mode: 802.11a
 Transfer Rate: 6 Mbps
 Distance of Measurements: 1 Meter
 Operating Frequency: 5700MHz
 Channel: 140

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
* 11400.00	-111.43	Average	H	59.13	-9.54	45.16	53.98	-8.82
* 11400.00	-98.33	Peak	H	59.13	-9.54	58.26	73.98	-15.72
17100.00	-125.00	Peak	H	75.44	0.00	57.44	68.20	-10.76
* 22800.00	-135.00	Average	H	59.29	0.00	31.29	53.98	-22.69
* 22800.00	-125.00	Peak	H	59.29	0.00	41.29	73.98	-32.69
28500.00	-125.00	Peak	H	60.26	0.00	42.26	68.20	-25.94

Table 6-11. Radiated Measurements @ 1 meter

NOTES:

- All harmonics that do not lie in a restricted band are subject to a peak limit of -27dBm/MHz.
- All emissions that lie in the restricted bands (denoted by a * next to the frequency) specified in §15.205 are below the limit shown in Table 6-2.
- Average measurements > 1GHz using RBW = 1MHz and VBW = 10Hz. Peak measurements > 1GHz using RBW = VBW = 1MHz.
- The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
- The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
- The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
- Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
- Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

FCC ID: A3LGT9100		FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
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6.3 Radiated Band Edge Measurements §15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]



Mode: 802.11a
 Transfer Rate: 6 Mbps
 Distance of Measurements: 1 Meter
 Operating Frequency: 5180MHz
 Channel: 36

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dB μ V/m]	Limit [dB μ V/m]	Margin [dB]
4604.65	-97.78	Average	H	41.86	-9.54	41.53	53.98	-12.44
4604.65	-92.76	Peak	H	41.86	-9.54	46.55	73.98	-27.42
5020.00	-95.33	Average	H	41.86	-9.54	43.98	53.98	-9.99
5020.00	-83.68	Peak	H	41.86	-9.54	55.63	73.98	-18.34
5150.00	-102.44	Average	H	43.09	-9.54	38.11	53.98	-15.87
5150.00	-84.39	Peak	H	43.09	-9.54	56.16	73.98	-17.82

Table 6-12. Radiated Restricted Band Measurements at 1-meter (4.5 – 5.15GHz)

NOTES:

1. Average measurements > 1GHz using RBW = 1MHz and VBW = 10Hz. Peak measurements > 1GHz using RBW = VBW = 1MHz.
2. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
3. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
4. The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
5. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
6. Above 960MHz the limit is 500 μ V/m (54dB μ /m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

FCC ID: A3LGT19100	 PCTEST ENGINEERING LABORATORY, INC.	FCC Pt. 15.407 802.11a/n UNII MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
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Radiated Band Edge Measurements (Cont'd)
§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]



Mode: 802.11a
 Transfer Rate: 6 Mbps
 Distance of Measurements: 1 Meter
 Operating Frequency: 5320MHz
 Channel: 64

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
5350.00	-104.14	Average	H	44.74	-9.54	38.06	53.98	-15.92
5350.00	-88.38	Peak	H	44.74	-9.54	53.82	73.98	-20.16
5352.20	-104.90	Average	H	44.75	-9.54	37.31	53.98	-16.67
5352.20	-97.64	Peak	H	44.75	-9.54	44.57	73.98	-29.41
5356.82	-106.67	Average	H	44.75	-9.54	35.54	53.98	-18.44
5356.82	-90.84	Peak	H	44.75	-9.54	51.37	73.98	-22.61

Table 6-13. Radiated Restricted Band Measurements at 1-meter (5.35 – 5.46GHz, 5.46 – 5.47GHz)

NOTES:

1. Emissions within 5.35 – 5.46GHz lie in a restricted band and are subject to the radiated emissions limits specified in §15.209. Emission within 5.46 – 5.47GHz are at the lower band edge of UNII Band 3 transmission and are subject to the -27dBm/MHz EIRP limit specified in §15.407.
2. Average measurements > 1GHz using RBW = 1MHz and VBW = 10Hz. Peak measurements > 1GHz using RBW = VBW = 1MHz.
3. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
4. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
5. The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
6. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
7. Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated for emissions that lie in restricteds band specified in §15.205.

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Radiated Band Edge Measurements (Cont'd)
§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]

Mode: 802.11a

Transfer Rate: 6 Mbps

Distance of Measurements: 1 Meter

Operating Frequency: 5500MHz



Channel: 100

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
5461.24	-107.64	Average	H	45.01	-9.54	34.83	53.98	-19.15
5461.24	-95.09	Peak	H	45.01	-9.54	47.38	73.98	-26.60
5463.04	-106.40	Average	H	45.02	-9.54	36.07	53.98	-17.91
5463.04	-91.66	Peak	H	45.02	-9.54	50.81	73.98	-23.17
5469.52	-92.18	Peak	H	45.04	-9.54	50.32	68.20	-17.88

Table 6-14. Radiated Restricted Band Measurements at 1-meter (5.35 – 5.46GHz, 5.46 – 5.47GHz)

NOTES:

1. Emissions within 5.35 – 5.46GHz lie in a restricted band and are subject to the radiated emissions limits specified in §15.209. Emission within 5.46 – 5.47GHz are at the lower band edge of UNII Band 3 transmission and are subject to the -27dBm/MHz EIRP limit specified in §15.407.
2. Average measurements > 1GHz using RBW = 1MHz and VBW = 10Hz. Peak measurements > 1GHz using RBW = VBW = 1MHz.
3. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
4. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
5. The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
6. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
7. Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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Radiated Band Edge Measurements (Cont'd)
§15.407(b)(1) and (2), §15.205 & §15.209; RSS-210 [A9.2]

Mode: 802.11a

Transfer Rate: 6 Mbps

Distance of Measurements: 1 Meter

Operating Frequency: 5700MHz



Channel: 140

Frequency [MHz]	Analyzer Level [dBm]	Detector	Pol. [H/V]	AFCL [dB]	Distance Correction Factor [dB]	Field Strength [dBμV/m]	Limit [dBμV/m]	Margin [dB]
5726.26	-88.59	Peak	H	45.08	-9.54	53.95	68.20	-14.25
5728.64	-92.08	Peak	H	45.09	-9.54	50.46	68.20	-17.74
5859.96	-84.18	Peak	H	45.42	-9.54	58.69	68.20	-9.51

Table 6-15. Radiated Restricted Band Measurements at 1-meter



NOTES:

1. Average measurements > 1GHz using RBW = 1MHz and VBW = 10Hz. Peak measurements > 1GHz using RBW = VBW = 1MHz.
2. The antenna is manipulated through typical positions, polarity and length during the tests. The EUT is manipulated through three orthogonal planes.
3. The EUT is supplied with nominal AC voltage and/or a new/fully-recharged battery.
4. The spectrum is measured from 9kHz to 40GHz and the worst-case emissions are reported. No significant emissions were found beyond the fifth harmonic for this device.
5. Levels at - 135 dBm represent the analyzer noise floor and signify that no emission was detected.
6. Above 960MHz the limit is 500 μV/m (54dBμ/m) at 3 meters radiated for emissions that lie in restricted bands specified in §15.205.

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7.0 CONCLUSION

The data collected relate only the item(s) tested and show that the **Samsung Portable Handset FCC ID: A3LGTI9100** is in compliance with Part 15E of the FCC Rules and RSS-210 of the Industry Canada Rules.

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