



PCTEST ENGINEERING LABORATORY, INC.

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CERTIFICATE OF COMPLIANCE FCC Part 27 Class II Permissive Change

Applicant Name:

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

Date of Testing:

July 28, 2009

Test Site/Location:

PCTEST Lab., Columbia, MD, USA

Test Report Serial No.:

0907131386.A3L

FCC ID:

A3LSWDM100

APPLICANT:

SAMSUNG ELECTRONICS, CO. LTD.

Application Type:

Class II Permissive Change

FCC Classification:

Licensed Non-Broadcast Transmitter (TNB)

FCC Rule Part(s):

§2; §27 Subpart M

EUT Type:

WiMAX Hand-held with Bluetooth and WLAN

Model(s):

SWD-M100

Tx Frequency Range:

2498.5 - 2687.5MHz (WiMAX using 5MHz BW)

2501 - 2685MHz (WiMAX using 10MHz BW)

Max. RF Output Power:

0.324 W EIRP WiMAX (25.1 dBm) (WiMAX using 5MHz BW, 16QAM)

0.219 W EIRP WiMAX (23.4 dBm) (WiMAX using 10MHz BW, 16QAM)

0.269 W EIRP WiMAX (24.3 dBm) (WiMAX using 5MHz BW, QPSK)

0.195 W EIRP WiMAX (22.9 dBm) (WiMAX using 10MHz BW, QPSK)

Test Device Serial No.:

identical prototype [S/N: FG-200-A]

Class II Perm. Change:

Please see FCC Change Document

Original Grant Date:

April 13, 2009

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.

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: Power output listed is EIRP for Part 27.

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


Randy Ortanez
President

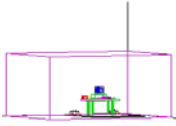


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MEASUREMENT REPORT

FCC Part 27

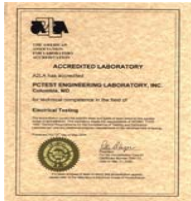


§2.1033 General Information

APPLICANT: Samsung Electronics, Co. Ltd.
APPLICANT ADDRESS: 18600 Broadwick St.
 Rancho Dominguez, CA 90220
TEST SITE: PCTEST ENGINEERING LABORATORY, INC.
TEST SITE ADDRESS: 6660-B Dobbin Road, Columbia, MD 21045 USA
FCC RULE PART(S): §2; §27(M)
BASE MODEL: SWD-M100
FCC ID: A3LSWDM100
FCC CLASSIFICATION: Licensed Non-Broadcast Transmitter (TNB)
MODE: WiMAX
FREQUENCY TOLERANCE: Emission must remain in band
Test Device Serial No.: FG-200-A ☐ Production ☒ Pre-Production ☐ Engineering
DATE(S) OF TEST: July 28, 2009
TEST REPORT S/N: 0907131386.A3L

Test Facility / Accreditations

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



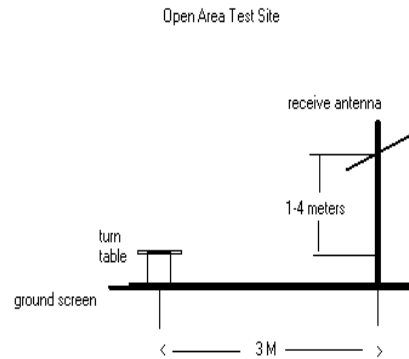
- PCTEST facility is an FCC registered (PCTEST Reg. No. 90864) test facility with the site description report on file and has met all the requirements specified in Section 2.948 of the FCC Rules and Industry Canada (IC-2451).
- PCTEST Lab is accredited to ISO 17025 by U.S. National Institute of Standards 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 (IC-2451) 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 Measurement Procedure

The radiated spurious measurements were made outdoors at a 3-meter test range (see Figure 1-1). The equipment under test is placed on a wooden turntable 3-meters from the receive antenna. The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic antenna are taken into consideration.



Deviation from Measurement Procedure.....None

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

1.2 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.

1.3 Testing Facility

These measurements 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 27, 2006 and Industry Canada.

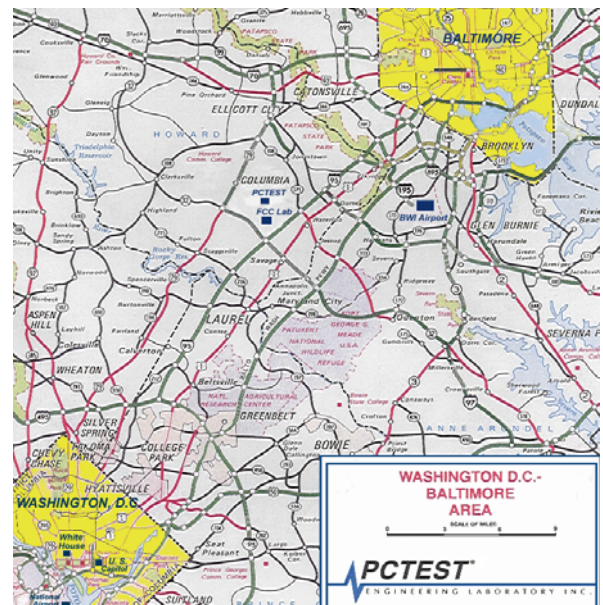


Figure 1-2. Map of the Greater Baltimore and Metropolitan Washington, D.C. area.

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2.0 PRODUCT INFORMATION

2.1 Equipment Description

The Equipment Under Test (EUT) is the **Samsung WiMAX Hand-held with Bluetooth and WLAN FCC ID: A3LSWDM100**. The test data contained in this report pertains only to the emissions due to the EUT's WiMAX function. The EUT consisted of the following component(s):

Trade Name / Base Model	FCC ID	Description
Samsung / Model: SWD-M100	A3LSWDM100	WiMAX Hand-held with Bluetooth and WLAN

Table 2-1. EUT Equipment Description

The EUT was set to transmit at full power through test software installed in the EUT. Each of the four available types of modulations was tested to determine the configuration producing the worst case emissions. The gated triggering functionality of the spectrum analyzer was used so that all measurements were made during the transmitter's "on" period.

2.2 EMI Suppression Device(s)/Modifications

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

2.3 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).

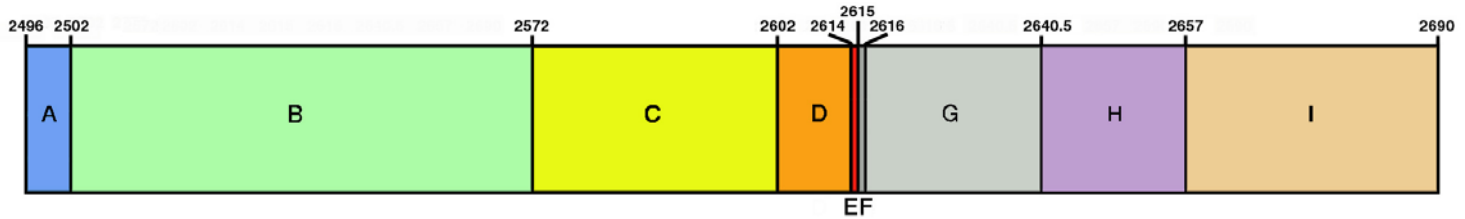
Please see attachment for FCC ID label and label location.

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3.0 DESCRIPTION OF TESTS

3.1 EBS/BRS - Frequency Blocks

§27.5(i)



BLOCK A: 2496MHz – 2502MHz
(BRS)

BLOCK B: 2502MHz – 2572MHz
(EBS)

BLOCK C: 2572MHz – 2602MHz
(EBS)

BLOCK D: 2602MHz – 2614MHz
(BRS)

BLOCK E: 2614MHz – 2615MHz
(BRS)

BLOCK F: 2615MHz – 2616MHz
(EBS)

BLOCK G: 2616MHz – 2640.5MHz
(BRS)

BLOCK H: 2640.5MHz – 2657MHz
(EBS)

BLOCK A: 2657MHz – 2690MHz
(BRS)

3.2 Radiated Spurious and Harmonic Emissions

§2.1053, §27.53(l)(4)(6)

Spurious and harmonic radiated emissions are measured outdoors at our 3-meter test range. The equipment under test is placed on a wooden turntable 3-meters from the receive antenna. The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive spectrum analyzer reading. This level is recorded. For readings above 1 GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration. This device was tested under all configurations and the worst case is reported with BAMC 16QAM modulation.

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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
-	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	11713A	Attenuation/Switch Driver	12/4/2008	Annual	12/4/2009	3439A02645
Agilent	8447D	Broadband Amplifier	N/A		N/A	1937A03348
Agilent	8447D	Broadband Amplifier	N/A		N/A	2443A01900
Agilent	8449B	(1-26.5GHz) Pre-Amplifier	12/4/2008	Annual	12/4/2009	3008A00985
Agilent	85650A	Quasi-Peak Adapter	12/4/2008	Annual	12/4/2009	3303A01872
Agilent	85650A	Quasi-Peak Adapter	3/24/2009	Annual	3/24/2010	2043A00301
Agilent	8566B	(100Hz-22GHz) Spectrum Analyzer	3/24/2009	Annual	3/24/2010	2618A02866
Agilent	8566B	(100Hz-22GHz) Spectrum Analyzer	3/24/2009	Annual	3/24/2010	2542A11898
Agilent	8566B	(100Hz-22GHz) Spectrum Analyzer	12/5/2008	Annual	12/5/2009	3638A08713
Agilent	8591A	(9kHz-1.8GHz) Spectrum Analyzer	8/19/2008	Annual	8/19/2009	3144A02458
Agilent	E4407B	ESA Spectrum Analyzer	3/24/2009	Annual	3/24/2010	US39210313
Agilent	E4448A	PSA (3Hz-50GHz) Spectrum Analyzer	12/5/2008	Annual	12/5/2009	US42510244
Agilent	E8257D	(250kHz-20GHz) Signal Generator	3/25/2009	Biennial	3/25/2011	MY45470194
Agilent	N9020A	MXA Signal Analyzer	9/17/2008	Annual	9/17/2009	US46470561
Emco	3115	Horn Antenna (1-18GHz)	9/24/2007	Biennial	9/24/2009	9704-5182
Emco	3115	Horn Antenna (1-18GHz)	10/4/2007	Biennial	10/4/2009	9205-3874
Emco	3116	Horn Antenna (18 - 40GHz)	9/9/2008	Triennial	9/9/2011	9203-2178
Gigatronics	80701A	(0.05-18GHz) Power Sensor	8/18/2008	Annual	8/18/2009	1833460
Gigatronics	8651A	Universal Power Meter	8/18/2008	Annual	8/18/2009	1835299
MiniCircuits	VHF-3100+	High Pass Filter	N/A		N/A	30721
Rohde & Schwarz	NRVD	Dual Channel Power Meter	8/20/2008	Biennial	8/20/2010	101695
Rohde & Schwarz	NRV-Z32	Peak Power Sensor (100uW-2W)	12/5/2008	Biennial	12/5/2010	100155
Rohde & Schwarz	NRV-Z33	Peak Power Sensor (1mW-20W)	12/5/2008	Biennial	12/5/2010	100004
Sunol	DRH-118	Horn Antenna (1 - 18GHz)	5/14/2009	Biennial	5/14/2011	A050307
Rohde & Schwarz	FSQ 26	Spectrum Analyzer	9/29/2008	Annual	9/29/2009	200452

Table 4-1. Test Equipment

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5.0 SAMPLE CALCULATIONS

Emission Designator

QPSK Modulation

Emission Designator = 9M62G7D

WiMAX BW = 9.62 MHz

G = Phase Modulation

7 = Quantized/Digital Info

D = Amplitude/Angle Modulated

16QAM Modulation

Emission Designator = 9M45W7D

WiMAX BW = 9.45 MHz

D = Amplitude/Angle Modulated

7 = Quantized/Digital Info

W = Combination (Audio/Data)

Spurious Radiated Emission – WiMAX Band

Example: Middle Channel WiMAX Mode 2nd Harmonic (5200 MHz)

The receive 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 receive analyzer. The loss of the cable between the signal generator and the terminals of the substituted antenna is 3.2 dB at 5200 MHz. So 4.9 dB is added to the signal generator reading of -30.00 dBm yielding -25.1 dBm. The fundamental EIRP was 25.501 dBm so this harmonic was 25.501 dBm - (-25.1) = 50.6 dBc.

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6.0 TEST RESULTS

6.1 Summary

Company Name: Samsung Electronics, Co. Ltd.
 FCC ID: A3LSWDM100
 FCC Classification: Licensed Non-Broadcast Transmitter (TNB)
 Mode(s): WiMAX

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
TRANSMITTER MODE (Tx)					
27.50(h)(2)	Equivalent Isotropic Radiated Power	< 2 Watts max. EIRP	RADIATED	PASS	Section 6.2
2.1053, 27.53(l)(4)	Undesirable Emissions	< 55 + 10log ₁₀ (P[Watts]) for all out-of-band emissions		PASS	Section 6.3
RF EXPOSURE					
2.1091 / 2.1093	SAR Test	1.6 W/kg (SAR Limit)	SAR	PASS	SAR Report

Table 6-1. Summary of Test Results

FCC ID: A3LSWDM100		FCC Pt. 27 / 802.16e WiMAX MEASUREMENT REPORT (CLASS II PERMISSIVE CHANGE)		Reviewed by: Quality Manager
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6.2 Equivalent Isotropic Radiated Power Output Data

§27.50(h)(2)

POWER: Maximum (WiMAX Mode)

Frequency [MHz]	Modulation	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]	Battery Type
2501.00	16QAM	-21.100	15.10	8.00	H	23.10	0.204	Standard
2600.00	16QAM	-20.800	15.40	8.00	H	23.40	0.219	Standard
2685.00	16QAM	-23.500	12.70	8.00	H	20.70	0.117	Standard
2600.00	QPSK	-21.300	14.90	8.00	H	22.90	0.195	Standard

Table 6-2. Equivalent Isotropic Radiated Power Output Data for 10MHz Wimax

Frequency [MHz]	Modulation	Measured Level [dBm]	Substitute Level [dBm]	Antenna Gain [dBi]	Pol [H/V]	EIRP [dBm]	EIRP [Watts]	Battery Type
2498.50	16QAM	-19.100	17.10	8.00	H	25.10	0.324	Standard
2600.00	16QAM	-19.300	16.90	8.00	H	24.90	0.309	Standard
2687.50	16QAM	-20.300	15.90	8.00	H	23.90	0.245	Standard
2498.50	QPSK	-19.900	16.30	8.00	H	24.30	0.269	Standard

Table 6-4. Equivalent Isotropic Radiated Power Output Data for 5MHz Wimax

NOTES:

Equivalent Isotropic Radiated Power Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For WiMAX signals, a peak detector is used, with RBW = VBW = 1 MHz. A Horn antenna was substituted in place of the EUT. This Horn antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the Horn antenna is measured. The difference between the gain of the horn and an isotropic antenna is taken into consideration and the EIRP is recorded.

This unit was tested with its standard battery.

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6.3 10MHz WiMAX Radiated Measurements

§2.1053, §27.53(l)(4)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 2501.00 MHz
 CHANNEL: LBS
 MEASURED OUTPUT POWER: 23.400 dBm = 0.219 W
 MODULATION SIGNAL: 10MHz WiMAX
 DISTANCE: 3 meters
 LIMIT: $55 + 10 \log_{10} (W) =$ 48.40 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
5002.00	-36.03	10.70	-25.33	H	48.7
7503.00	-43.20	11.69	-31.51	H	54.9
10004.00	-85.42	12.00	-73.41	H	96.8
12505.00	-79.03	12.80	-66.23	H	89.6
15006.00	-72.38	12.44	-59.93	H	83.3

Table 6-3. Radiated Spurious Data (WiMAX Mode)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method
 according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For WiMAX signals, a peak detector is used, with RBW = VBW = 1 MHz. A Horn antenna was substituted in place of the EUT. This Horn antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the Horn antenna is measured. The difference between the gain of the horn and an isotropic antenna is taken into consideration and the EIRP is recorded.

This device was tested under all configurations and the worst case is reported with BAMC 16QAM modulation. This unit was tested with its standard battery.

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10MHz WiMAX Radiated Measurements (Cont'd)

§2.1053, §27.53(l)(4)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 2600.00 MHz
 CHANNEL: MBS
 MEASURED OUTPUT POWER: 23.400 dBm = 0.219 W
 MODULATION SIGNAL: 10MHz WiMAX
 DISTANCE: 3 meters
 LIMIT: $55 + 10 \log_{10}(W) = 48.40$ dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
5200.00	-46.49	10.66	-35.83	H	59.2
7800.00	-41.13	11.15	-29.98	H	53.4
10400.00	-85.27	12.24	-73.03	H	96.4
13000.00	-77.89	12.90	-64.99	H	88.4
15600.00	-77.40	16.00	-61.40	H	84.8

Table 6-4. Radiated Spurious Data (WiMAX Mode)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method
 according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For WiMAX signals, a peak detector is used, with RBW = VBW = 1 MHz. A Horn antenna was substituted in place of the EUT. This Horn antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the Horn antenna is measured. The difference between the gain of the horn and an isotropic antenna is taken into consideration and the EIRP is recorded.

This device was tested under all configurations and the worst case is reported with BAMC 16QAM modulation. This unit was tested with its standard battery.

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10MHz WiMAX Radiated Measurements (Cont'd)

§2.1053, §27.53(l)(4)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 2685.00 MHz
 CHANNEL: UBS
 MEASURED OUTPUT POWER: 23.400 dBm = 0.219 W
 MODULATION SIGNAL: 10MHz WiMAX
 DISTANCE: 3 meters
 LIMIT: $55 + 10 \log_{10}(W) = 48.40$ dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
5370.00	-40.54	10.63	-29.92	H	53.3
8055.00	-40.09	10.85	-29.25	H	52.6
10740.00	-84.73	12.54	-72.19	H	95.6
13425.00	-76.42	13.50	-62.92	H	86.3
16110.00	-78.19	16.18	-62.02	H	85.4

Table 6-5. Radiated Spurious Data (WiMAX Mode)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method
 according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For WiMAX signals, a peak detector is used, with RBW = VBW = 1 MHz. A Horn antenna was substituted in place of the EUT. This Horn antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the Horn antenna is measured. The difference between the gain of the horn and an isotropic antenna is taken into consideration and the EIRP is recorded.

This device was tested under all configurations and the worst case is reported with BAMC 16QAM modulation. This unit was tested with its standard battery.

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6.4 5MHz WiMAX Radiated Measurements

§2.1053, §27.53(l)(4)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 2498.50 MHz
 CHANNEL: LBS
 MEASURED OUTPUT POWER: 25.100 dBm = 0.324 W
 MODULATION SIGNAL: 5MHz WiMAX
 DISTANCE: 3 meters
 LIMIT: $55 + 10 \log_{10} (W) =$ 50.10 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
4997.00	-43.73	10.70	-33.03	H	58.1
7495.50	-43.00	11.69	-31.31	H	56.4
9994.00	-85.42	12.00	-73.41	H	98.5
12492.50	-79.03	12.80	-66.23	H	91.3
14991.00	-72.38	12.44	-59.93	H	85.0

Table 6-7. Radiated Spurious Data (WiMAX Mode)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method
 according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For WiMAX signals, a peak detector is used, with RBW = VBW = 1 MHz. A Horn antenna was substituted in place of the EUT. This Horn antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the Horn antenna is measured. The difference between the gain of the horn and an isotropic antenna is taken into consideration and the EIRP is recorded.

This device was tested under all configurations and the worst case is reported with BAMC 16QAM modulation. This unit was tested with its standard battery.

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5MHz WiMAX Radiated Measurements (Cont'd)

§2.1053, §27.53(l)(4)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 2600.00 MHz
 CHANNEL: MBS
 MEASURED OUTPUT POWER: 25.100 dBm = 0.324 W
 MODULATION SIGNAL: 5MHz WiMAX
 DISTANCE: 3 meters
 LIMIT: $55 + 10 \log_{10} (W) =$ 50.10 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
5200.00	-42.39	10.66	-31.73	H	56.8
7800.00	-40.83	11.15	-29.68	H	54.8
10400.00	-85.27	12.24	-73.03	H	98.1
13000.00	-77.89	12.90	-64.99	H	90.1
15600.00	-77.40	16.00	-61.40	H	86.5

Table 6-8. Radiated Spurious Data (WiMAX Mode)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method
 according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For WiMAX signals, a peak detector is used, with RBW = VBW = 1 MHz. A Horn antenna was substituted in place of the EUT. This Horn antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the Horn antenna is measured. The difference between the gain of the horn and an isotropic antenna is taken into consideration and the EIRP is recorded.

This device was tested under all configurations and the worst case is reported with BAMC 16QAM modulation. This unit was tested with its standard battery.

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5MHz WiMAX Radiated Measurements (Cont'd)

§2.1053, §27.53(l)(4)

Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY: 2687.50 MHz
 CHANNEL: UBS
 MEASURED OUTPUT POWER: 25.100 dBm = 0.324 W
 MODULATION SIGNAL: 5MHz WiMAX
 DISTANCE: 3 meters
 LIMIT: $55 + 10 \log_{10} (W) =$ 50.10 dBc

FREQ. (MHz)	LEVEL @ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
5375.00	-36.34	10.63	-25.72	H	50.8
8062.50	-40.19	10.85	-29.35	H	54.4
10750.00	-84.73	12.54	-72.19	H	97.3
13437.50	-76.42	13.50	-62.92	H	88.0
16125.00	-78.19	16.18	-62.02	H	87.1

Table 6-9. Radiated Spurious Data (WiMAX Mode)

NOTES:

Radiated Spurious Emission Measurements by Substitution Method
 according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. For WiMAX signals, a peak detector is used, with RBW = VBW = 1 MHz. A Horn antenna was substituted in place of the EUT. This Horn antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the Horn antenna is measured. The difference between the gain of the horn and an isotropic antenna is taken into consideration and the EIRP is recorded.

This device was tested under all configurations and the worst case is reported with BAMC 16QAM modulation. This unit was tested with its standard battery.

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7.0 CONCLUSION

The data collected relate only to the item(s) tested and show that the **Samsung WiMAX Hand-held with Bluetooth and WLAN FCC ID: A3LSWDM100** complies with all the requirements of Parts 2 and 27 of the FCC rules.

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