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Report No.: 1707RSU02607
Report Version: V01
Issue Date: 08-10-2017

MEASUREMENT REPORT

FCC PART 22&24 Portable Handset

FCC ID:	HD5-EDA50211
APPLICANT:	Honeywell International Inc Honeywell Sensing & Productivity Solutions
Application Type:	Class II Permissive Change
Product:	Mobile Computer
Model No.:	EDA50-211
Brand Name:	Honeywell
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)
FCC Rule Part(s):	Part2, Part22 Subpart H, Part24 Subpart E
Test Procedure(s):	ANSI/TIA-603-D-2010, KDB 971168 D01v02r02
Test Date:	July 24 ~ August 08, 2017

Reviewed By : Jame Yuan
(Jame Yuan)

Approved By : Marlin Chen
(Marlin Chen)

ACCREDITED
TESTING LABORATORY
CERTIFICATE #3628.01

Revision History

Report No.	Version	Description	Issue Date	Note
1707RSU02607	Rev. 01	Initial report	08-10-2017	Valid

Note: This test report was based on MRT original report number: 1704RSU05707. The EUT change the all antennas of BT/Wi-Fi/NFC/GSM/WCDMA/LTE, and we have assessed the part of radiation emission testing.

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§2.1033 General Information

Applicant:	Honeywell International Inc Honeywell Sensing and Productivity Solutions
Applicant Address:	9680 Old Bailes Rd. Fort Mill, SC 29707 United States
Manufacturer:	Honeywell International Inc Honeywell Sensing and Productivity Solutions
Manufacturer Address:	9680 Old Bailes Rd. Fort Mill, SC 29707 United States
Test Site:	MRT Technology (Suzhou) Co., Ltd
Test Site Address:	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China
MRT Registration No.:	893164
FCC Rule Part(s):	Part 22 Subpart H, Part 24 Subpart E
Model No.:	EDA50-211
FCC ID:	HD5-EDA50211
Test Device Serial No.:	N/A ☐ Production ☒ Pre-Production ☐ Engineering
FCC Classification:	PCS Licensed Transmitter Held to Ear (PCE)

Test Facility / Accreditations

Measurements were performed at MRT Laboratory located in Tian'edang Rd., Suzhou, China.

- **MRT facility is a FCC registered (MRT Reg. No. 893164) test facility with the site description report on file and has met all the requirements specified in Section 2.948 of the FCC Rules.**
- **MRT facility is an IC registered (MRT Reg. No. 11384A-1) test laboratory with the site description on file at Industry Canada.**
- **MRT facility is a VCCI registered (R-4179, G-814, C-4664, T-2206) test laboratory with the site description on file at VCCI Council.**
- **MRT Lab is accredited to ISO 17025 by the American Association for Laboratory Accreditation (A2LA) under the American Association for Laboratory Accreditation Program (A2LA Cert. No. 3628.01) in EMC, Telecommunications and Radio testing for FCC, Industry Canada, EU and TELEC Rules.**

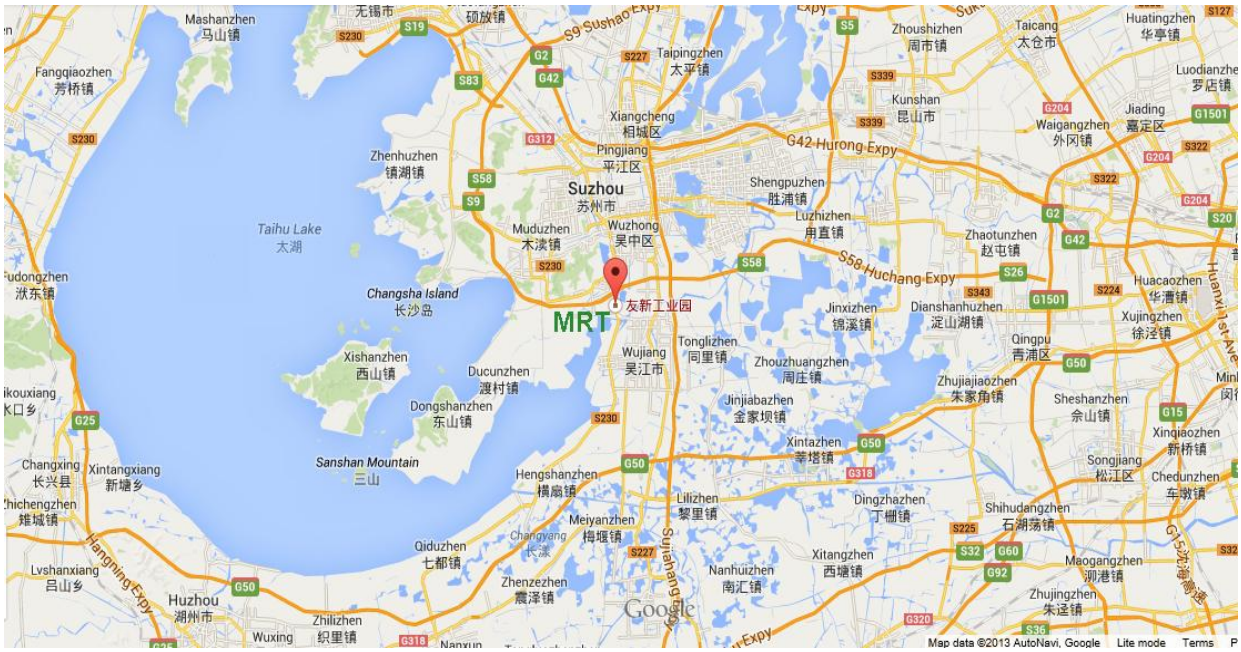
1. INTRODUCTION

1.1. Scope

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

1.2. MRT Test Location

The map below shows the location of the MRT LABORATORY, its proximity to the Taihu Lake. These measurement tests were conducted at the MRT Technology (Suzhou) Co., Ltd. Facility located at D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China. The detailed description of the measurement facility was found to be in compliance with the requirements of § 2.948 according to ANSI C63.4-2009 on September 30, 2013.



2. PRODUCT INFORMATION

2.1. Equipment Description

Product Name:	Mobile Computer
Model No.:	EDA50-211
Brand Name:	Honeywell
Hardware Version:	V2.0
Software Version:	205.01.00.0006.eng
IMEI:	356074080038511
Wi-Fi Specification:	802.11a/b/g/n
Bluetooth Specification:	v4.0 dual mode
GSM Operation Band (s):	E-GSM 850 / DCS 1900
WCDMA Operation Band (s):	Band II / V
LTE Operation Band (s):	FDD Band 2/4/7
NFC:	13.56MHz
GPS:	1575.42MHz
Components	
Adapter	Model No.: ADS-12B-06 05010E Input Power: 100 - 240V ~ 50/60Hz, Max. 0.3A Output Power: 5VDC 2.0A

2.2. Product Specification Subjective to this Report

T_X Frequency Range	GSM850: 824.2 ~ 848.8MHz, PCS1900: 1850.2 ~ 1909.8MHz WCDMA Band II: 826.4 ~ 846.6MHz WCDMA Band V: 1852.4 ~ 1907.6MHz
R_X Frequency Range	GSM850: 869.2 ~ 893.8MHz, PCS1900: 1930.2 ~ 1989.8MHz WCDMA Band II: 1932.4 ~ 1987.6MHz WCDMA Band V: 826.4 ~ 846.6MHz
Antenna Type	FPC Antenna
Antenna Gain	GSM850 / WCDMA Band V: 1.7dBi PCS1900 / WCDMA Band II: 0.8dBi
Type of Modulation	GSM / GPRS: GMSK EDGE: 8PSK WCDMA: QPSK

Note: For other features of this EUT, test report will be issued separately.

2.3. Device Capabilities

This device contains the following capabilities:
2.4GHz WLAN (DTS), 5GHz WLAN (UNII), Bluetooth (v4.0 dual mode), NFC, GSM 850/1900 WCDMA Band II/V, LTE FDD Band 2/4/7

2.4. Test Configuration

The **Mobile Computer FCC ID: HD5-EDA50211** was tested per the guidance of ANSI/TIA-603-D-2010 and KDB 971168 D01v02r02. See section 3.0 of this report for a description of the radiated and antenna port conducted emissions tests.

2.5. EMI Suppression Device(s)/Modifications

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

3. DESCRIPTION OF TEST

3.1. Evaluation Procedure

The measurement procedures described in the “Land Mobile FM or PM - Communications Equipment - Measurements and Performance Standards” (ANSI/TIA-603-D-2010) and “Procedures for Compliance Measurement of the Fundamental Emission Power of Licensed Wideband (> 1 MHz) Digital Transmission Systems” (KDB 971168) were used in the measurement of the **Mobile Computer FCC ID: HD5-EDA50211**

Deviation from measurement procedure…….....None

3.2. Cellular - Base Frequency Blocks

§22.905

Block 1: 869 - 880 MHz (A* Low + A)

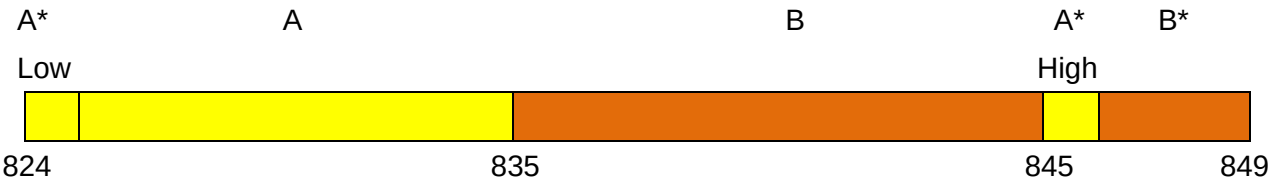
Block 2: 880 - 890 MHz (B)

Block 3: 890 - 891.5 MHz (A* High)

Block 4: 891.5 - 894 MHz (B*)

3.3. Cellular - Mobile Frequency Blocks

§22.905



Block 1: 824 - 835 MHz (A* Low + A)

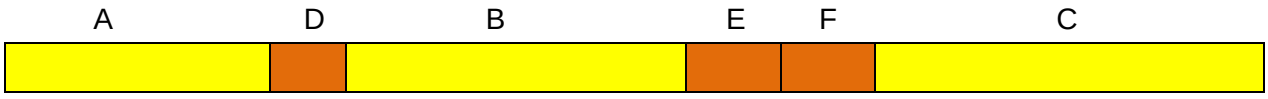
Block 2: 835 - 845 MHz (B)

Block 3: 845 - 846.5 MHz (A* High)

Block 4: 846.5 - 849 MHz (B*)

3.4. PCS - Base Frequency Blocks

§24.229



Block 1: 1930 - 1945 MHz (A)

Block 2: 1945 - 1950 MHz (D)

Block 3: 1950 - 1965 MHz (B)

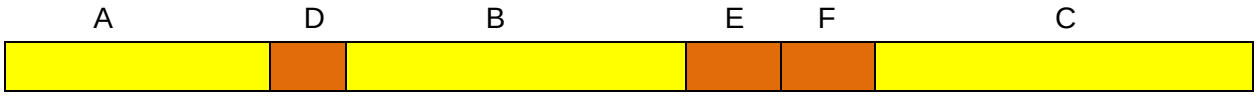
Block 4: 1965 - 1970 MHz (E)

Block 5: 1970 - 1975 MHz (F)

Block 6: 1975 - 1990 MHz (C)

3.5. PCS - Mobile Frequency Blocks

§24.229



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

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. The spectrum analyzers' "occupied bandwidth" measurement function was used to record the occupied bandwidth in accordance with KDB 971168.

3.7. Spurious and Harmonic Emissions at Antenna Terminal

§2.1051 §22.917(a) §24.238(a)

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 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 100 kHz or greater for Part 22 and 1 MHz or greater for Part 24. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26 dB below the transmitter power.

3.8. Radiated Power and Radiated Spurious Emissions

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

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

The equipment under test was transmitting while connected to its integral antenna and is placed on a wooden turntable 80cm above the ground plane and 3 meters from the receive antenna. The receive antenna height is adjusted between 1 and 4 meter height, the turntable is rotated through 360 degrees, and the EUT is manipulated through all orthogonal planes representative of its typical use to achieve the highest reading on the receive spectrum analyzer. Radiated power levels are also investigated with the receive antenna horizontally and vertically polarized. The maximized power level is recorded using the spectrum analyzer “Channel Power” function with the integration band set to the emissions’ occupied bandwidth, a RMS detector, RBW = 100kHz, VBW = 300kHz, and a 1 second sweep time over a minimum of 10 sweeps, per the guidelines of KDB 971168.

Per the guidance of ANSI/TIA-603-D-2010, a half-wave dipole is then substituted in place of the EUT. For emissions above 1GHz, a horn antenna is substituted in place of the EUT. The substitute antenna is driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive spectrum analyzer level previously recorded from the spurious emission from the EUT. The power of the emission is calculated using the following formula:

Pd [dBm] = Pg [dBm] - cable loss [dB] + antenna gain [dBd/dBi]

Where, Pd is the dipole equivalent power, Pg 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 Pg [dBm] – cable loss [dB].

The calculated Pd levels are then compared to the absolute spurious emission limit of -13dBm which is equivalent to the required minimum attenuation of 43 + 10*log10(Power [Watts]) specified in 22.917(a) and 24.238(a).

3.9. Peak-Average Ratio

§24.232(d)

A peak to average ratio measurement is performed at the conducted port of the EUT. The spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level.

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

3.10. Frequency Stability / Temperature Variation

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

Frequency stability testing is performed in accordance with the guidelines of ANSI/TIA-603-D-2010. The frequency stability of the transmitter is measured by:

a.) Temperature: The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.

b.) Primary Supply Voltage: The primary supply voltage is varied from 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 - For Part 22, the frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5 ppm) of the center frequency. For Part 24, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Time Period and Procedure:

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a “standby” condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

4. TEST EQUIPMENT CALIBRATION DATE

Radiated Emissions - AC2

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Spectrum Analyzer	Agilent	N9038A	MRTSUE06125	1 year	2017/08/19
EMI Test Receiver	R&S	ESR7	MRTSUE06001	1 year	2018/06/21
Radio Communication Tester	R&S	CMU 200	MRTSUE06009	1 year	2017/11/10
Wideband Radio Communication Tester	R&S	CMW 500	MRTSUE06243	1 year	2018/02/14
Preamplifier	Schwarzbeck	BBV 9721	MRTSUE06121	1 year	2018/04/15
Loop Antenna	Schwarzbeck	FMZB1519	MRTSUE06025	1 year	2017/11/21
TRILOG Antenna	Schwarzbeck	VULB9168	MRTSUE06172	1 year	2017/11/19
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	MRTSUE06171	1 year	2017/11/19
Broadband Horn Antenna	Schwarzbeck	BBHA9170	MRTSUE06024	1 year	2017/12/30
Digital Thermometer & Hygrometer	Minggao	N/A	MRTSUE06170	1 year	2017/12/14
Anechoic Chamber	RIKEN	Chamber-AC2	MRTSUE06213	1 year	2018/05/10

Software	Version	Function
e3	V8.3.5	EMI Test Software

5. SAMPLE CALCULATIONS

GSM Emission Designator

Emission Designator = 250KGXW

GSM BW = 250 kHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

EDGE Emission Designator

Emission Designator = 250KG7W

GSM BW = 250 kHz

G = Phase Modulation

7 = Quantized/Digital Info

W = Combination (Audio/Data)

WCDMA Emission Designator

Emission Designator = 4M16F9W

WCDMA BW = 4.16 MHz

F = Frequency Modulation

9 = Composite Digital Info

W = Combination (Audio/Data) (Measured at the 99.75% power bandwidth)

Spurious Radiated Emission

Example: Spurious emission at 3700.40 MHz

The receive spectrum analyzer reading at 3 meters with the EUT on the turntable was –81.0dBm. The gain of the substituted antenna is 8.1dBi. The signal generator connected to the substituted antenna terminals is adjusted to produce a reading of –81.0dBm 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 3700.40MHz. So 6.1 dB is added to the signal generator reading of –30.9dBm yielding –24.80dBm. The fundamental EIRP was 25.50dBm so this harmonic was 25.50dBm – (-24.80) = 50.3dBc.

6. MEASUREMENT UNCERTAINTY

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

Radiated Emission Measurement - AC2
Measuring Uncertainty for a Level of Confidence of 95% (U=2Uc(y)): 9kHz ~ 1GHz: 4.18dB 1GHz ~ 25GHz: 4.76dB

7. TEST RESULT

7.1. Summary

Company Name:	**Honeywell International Inc** **Honeywell Sensing & Productivity Solutions**
FCC ID:	**HD5-EDA50211**
FCC Classification:	**PCS Licensed Transmitter Held to Ear (PCE)**
Mode(s):	**GSM / WCDMA**

FCC Part Section(s)	Test Description	Test Limit	Test Condition	Test Result	Reference
22.913(a.2)	Effective Radiated Power	< 7 Watts max. ERP	Radiated	Pass	Section 7.2
24.232(c)	Equivalent Isotropic Radiated Power	< 2 Watts max. EIRP		Pass	Section 7.2
2.1053 22.917(a) 24.238(a)	Undesirable Emissions	> 43 + log10 (P[Watts]) for all out-of-band emissions		Pass	Section 7.2

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 4.0 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.

7.2. Radiated Power and Radiated Spurious Emissions

7.2.1. Test Limit

Radiated Power

For FCC Part 22.913(a)(2):

The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

For FCC Part 24.232(b):

The EIRP of mobile transmitters and auxiliary test transmitters must not exceed 2 Watts.

Radiated Spurious Emissions

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

7.2.2. Test Procedure Used

KDB 971168 D01v02r02 - Section 7.0 & ANSI/TIA-603-D-2010

7.2.3. Test Setting

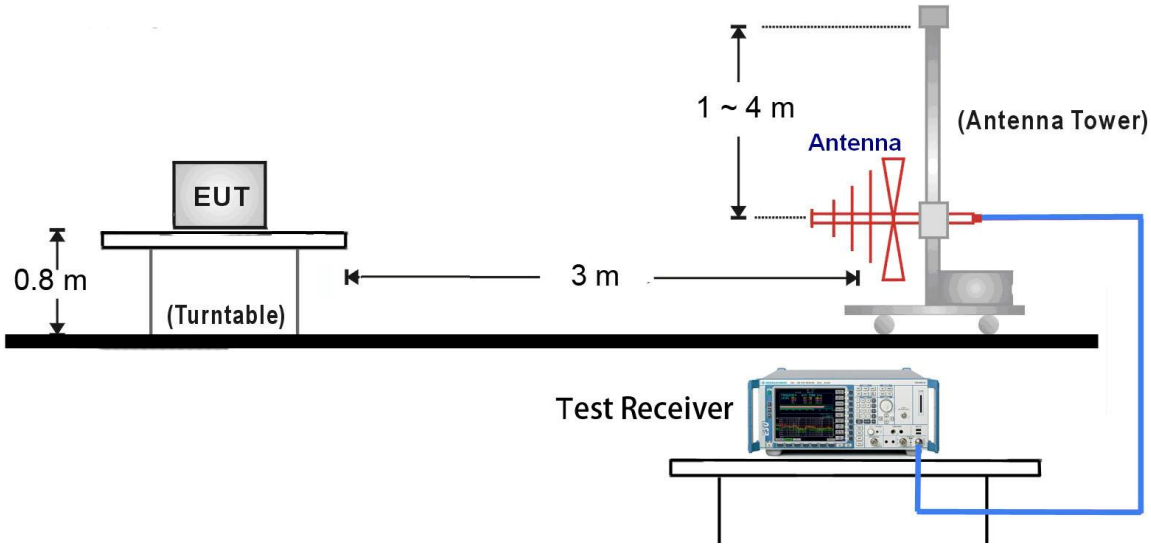
1. The EUT shall be placed at the specified height on a support, and in the position closest to normal use as declared by provider.
2. The test antenna shall be oriented initially for vertical polarization and shall be chosen to correspond to the frequency of the transmitter
3. The output of the test antenna shall be connected to the measuring receiver.
4. The transmitter shall be switched on and the measuring receiver shall be tuned to the frequency of the transmitter under test.
5. The test antenna shall be raised and lowered through the specified range of height until a maximum signal level is detected by the measuring receiver.
6. The transmitter shall then be rotated through 360° in the horizontal plane, until the

maximum signal level is detected by the measuring receiver.

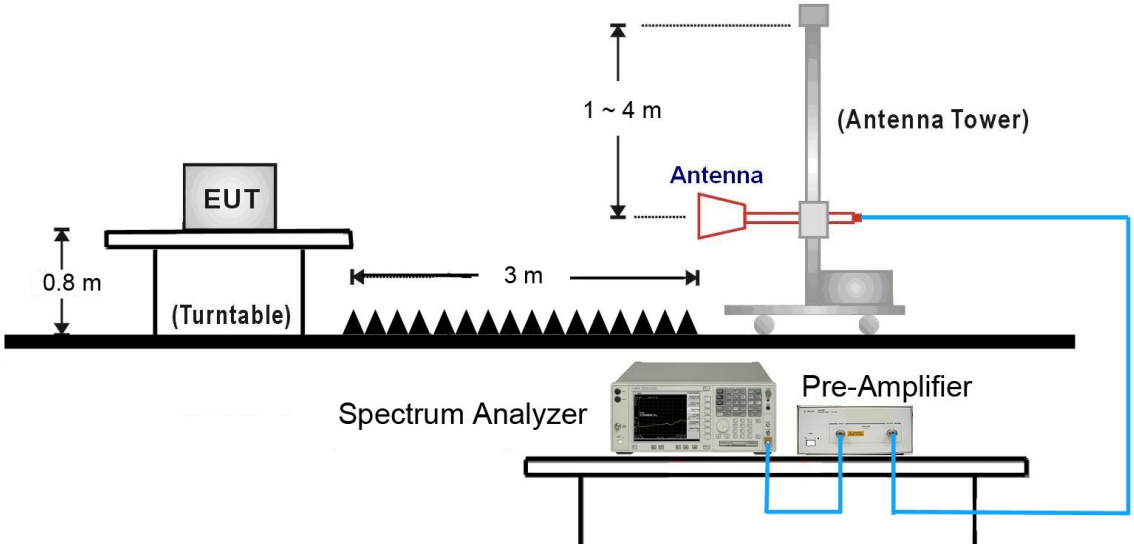
7. The test antenna shall be raised and lowered again through the specified range of height until a maximum signal level is detected by the measuring receiver.
8. The maximum signal level detected by the measuring receiver shall be noted.
9. The transmitter shall be replaced by a substitution antenna.
10. The substitution antenna shall be orientated for vertical polarization and the length of the substitution antenna shall be adjusted to correspond to the frequency of the transmitter.
11. The substitution antenna shall be connected to a calibrated signal generator.
12. If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
13. The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.
14. The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuator setting of the measuring receiver.
15. The measurement shall be repeated with the test antenna and the substitution antenna orientated for horizontal polarization.
16. The measure of the effective radiated power is the larger of the two levels recorded at the input to the substitution antenna, corrected for gain of the substitution antenna if necessary.
17. Test site anechoic chamber refer to ANSI C63.4: 2009.

7.2.4. Test Setup

30MHz ~ 1GHz Test Setup:



1GHz ~ 20GHz Test Setup:



7.2.5. Test Result

Product	Mobile Computer	Temperature	25°C
Test Engineer	Flag Yang	Relative Humidity	54%
Test Site	AC2	Test Date	2017/07/27

Radiated Power

GSM850

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Substitute Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 128 (824.20MHz)							
824.20	H	15.97	0.45	0.80	16.32	38.50	-22.18
824.20	V	19.97	0.45	0.80	20.32	38.50	-18.18
Middle Channel 189 (836.40MHz)							
836.40	H	15.17	0.46	0.82	15.53	38.50	-22.97
836.40	V	19.98	0.46	0.82	20.34	38.50	-18.16
High Channel 251 (848.80MHz)							
848.80	H	16.36	0.47	0.86	16.75	38.50	-21.75
848.80	V	19.45	0.47	0.86	19.84	38.50	-18.66

Note: ERP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBd)

PCS1900

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Substitute Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 512 (1850.20MHz)							
1850.20	H	15.12	0.69	10.40	24.83	33.00	-8.17
1850.20	V	12.33	0.69	10.40	22.04	33.00	-10.96
Middle Channel 661 (1880.00MHz)							
1880.00	H	12.51	0.70	10.43	22.24	33.00	-10.76
1880.00	V	10.06	0.70	10.43	19.79	33.00	-13.21
High Channel 810 (1909.80MHz)							
1909.80	H	14.69	0.71	10.44	24.42	33.00	-8.58
1909.80	V	11.31	0.71	10.44	21.04	33.00	-11.96

Note: EIRP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBi)

EDGE850

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Substitute Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 128 (824.20MHz)							
824.20	H	16.10	0.45	0.80	16.45	38.50	-22.05
824.20	V	20.04	0.45	0.80	20.39	38.50	-18.11
Middle Channel 189 (836.40MHz)							
836.40	H	15.18	0.46	0.82	15.54	38.50	-22.96
836.40	V	19.97	0.46	0.82	20.33	38.50	-18.17
High Channel 251 (848.80MHz)							
848.80	H	16.22	0.47	0.86	16.61	38.50	-21.89
848.80	V	19.38	0.47	0.86	19.77	38.50	-18.73

Note: ERP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBd)

EDGE1900

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Substitute Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 512 (1850.20MHz)							
1850.20	H	12.79	0.69	10.40	22.50	33.00	-10.50
1850.20	V	11.37	0.69	10.40	21.08	33.00	-11.92
Middle Channel 661 (1880.00MHz)							
1880.00	H	11.81	0.70	10.43	21.54	33.00	-11.46
1880.00	V	8.74	0.70	10.43	18.47	33.00	-14.53
High Channel 810 (1909.80MHz)							
1909.80	H	11.48	0.71	10.44	21.21	33.00	-11.79
1909.80	V	9.33	0.71	10.44	19.06	33.00	-13.94

Note: EIRP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBi)

WCDMA Band II

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Substitute Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 9262 (1852.4MHz)							
1852.40	H	11.62	0.69	10.40	21.33	33.00	-11.67
1852.40	V	4.10	0.69	10.40	13.81	33.00	-19.19
Middle Channel 9400 (1880.0MHz)							
1880.00	H	11.21	0.70	10.43	20.94	33.00	-12.06
1880.00	V	1.56	0.70	10.43	11.29	33.00	-21.71
High Channel 9538 (1907.6MHz)							
1907.60	H	11.09	0.71	10.44	20.82	33.00	-12.18
1907.60	V	1.85	0.71	10.44	11.58	33.00	-21.42

Note: EIRP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBi)

WCDMA Band V

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Substitute Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 4132 (826.40MHz)							
826.40	H	11.18	0.45	0.81	11.54	38.50	-26.96
826.40	V	21.43	0.45	0.81	21.79	38.50	-16.71
Middle Channel 4182 (836.40MHz)							
836.40	H	13.49	0.46	0.82	13.85	38.50	-24.65
836.40	V	22.18	0.46	0.82	22.54	38.50	-15.96
High Channel 4233 (846.60MHz)							
846.60	H	14.94	0.47	0.85	15.32	38.50	-23.18
846.60	V	22.87	0.47	0.85	23.25	38.50	-15.25

Note: ERP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBd)

Radiated Spurious Emission

GSM850

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Substitute Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 128 (824.20MHz)							
1646.00	H	-70.79	0.66	9.76	-61.69	-13.00	-48.69
2470.50	H	-55.86	0.82	10.48	-46.20	-13.00	-33.20
1646.00	V	-69.73	0.66	9.76	-60.63	-13.00	-47.63
2470.50	V	-61.49	0.82	10.48	-51.83	-13.00	-38.83
Middle Channel 189 (836.40MHz)							
1671.50	H	-65.98	0.67	9.93	-56.72	-13.00	-43.72
2513.00	H	-63.92	0.82	10.62	-54.12	-13.00	-41.12
1671.50	V	-66.65	0.67	9.93	-57.39	-13.00	-44.39
2513.00	V	-59.74	0.82	10.62	-49.94	-13.00	-36.94
High Channel 251 (848.80MHz)							
1697.00	H	-65.69	0.67	10.11	-56.25	-13.00	-43.25
2547.00	H	-54.09	0.83	10.68	-44.24	-13.00	-31.24
1697.00	V	-65.12	0.67	10.11	-55.68	-13.00	-42.68
2547.00	V	-59.26	0.83	10.68	-49.41	-13.00	-36.41

Note:

1. Spurious emissions within 30-1000MHz were found more than 20dB below limit line.
2. ERP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBd)

PCS1900

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Substitute Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 512 (1850.20MHz)							
3703.00	H	-62.34	1.01	12.69	-50.66	-13.00	-37.66
5105.50	H	-65.36	1.20	12.76	-53.80	-13.00	-40.80
3703.00	V	-60.96	1.01	12.69	-49.28	-13.00	-36.28
5114.00	V	-63.83	1.20	12.77	-52.26	-13.00	-39.26
Middle Channel 661 (1880.00MHz)							
3762.50	H	-64.51	1.02	12.73	-52.80	-13.00	-39.80
5190.50	H	-65.10	1.20	12.85	-53.45	-13.00	-40.45
3762.50	V	-62.95	1.02	12.73	-51.24	-13.00	-38.24
5054.50	V	-64.24	1.20	12.71	-52.73	-13.00	-39.73
High Channel 810 (1909.80MHz)							
3822.00	H	-65.44	1.03	12.73	-53.74	-13.00	-40.74
5054.50	H	-65.37	1.20	12.71	-53.86	-13.00	-40.86
3822.00	V	-65.73	1.03	12.73	-54.03	-13.00	-41.03
5063.00	V	-63.80	1.20	12.72	-52.28	-13.00	-39.28

Note:

1. Spurious emissions within 30-1000MHz were found more than 20dB below limit line.
2. EIRP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBi)

EDGE850

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Substitute Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 128 (824.20MHz)							
1646.00	H	-72.53	0.66	9.76	-63.43	-13.00	-50.43
2470.50	H	-67.72	0.82	10.48	-58.06	-13.00	-45.06
1586.50	V	-71.51	0.65	9.36	-62.80	-13.00	-49.80
2470.50	V	-68.49	0.82	10.48	-58.83	-13.00	-45.83
Middle Channel 189 (836.40MHz)							
1671.50	H	-71.30	0.67	9.93	-62.04	-13.00	-49.04
2513.00	H	-66.12	0.82	10.62	-56.32	-13.00	-43.32
1595.00	V	-71.03	0.65	9.41	-62.27	-13.00	-49.27
2351.50	V	-68.44	0.80	9.93	-59.31	-13.00	-46.31
High Channel 251 (848.80MHz)							
1697.00	H	-69.41	0.67	10.11	-59.97	-13.00	-46.97
2547.00	H	-64.83	0.83	10.68	-54.98	-13.00	-41.98
1697.00	V	-71.25	0.67	10.11	-61.81	-13.00	-48.81
2547.00	V	-68.56	0.83	10.68	-58.71	-13.00	-45.71

Note:

1. Spurious emissions within 30-1000MHz were found more than 20dB below limit line.
2. ERP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBd)

EDGE1900

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Substitute Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 512 (1850.20MHz)							
3703.00	H	-66.15	1.01	12.69	-54.47	-13.00	-41.47
5139.50	H	-64.98	1.21	12.80	-53.39	-13.00	-40.39
3703.00	V	-64.52	1.01	12.69	-52.84	-13.00	-39.84
5190.50	V	-64.15	1.20	12.85	-52.50	-13.00	-39.50
Middle Channel 661 (1880.00MHz)							
3762.50	H	-67.92	1.02	12.73	-56.21	-13.00	-43.21
5080.00	H	-64.96	1.20	12.73	-53.43	-13.00	-40.43
3762.50	V	-66.76	1.02	12.73	-55.05	-13.00	-42.05
5105.50	V	-64.30	1.20	12.76	-52.74	-13.00	-39.74
High Channel 810 (1909.80MHz)							
3822.00	H	-67.21	1.03	12.73	-55.51	-13.00	-42.51
5088.50	H	-65.25	1.20	12.74	-53.71	-13.00	-40.71
4629.50	V	-65.65	1.14	12.63	-54.16	-13.00	-41.16
7145.50	V	-57.38	1.46	11.06	-47.78	-13.00	-34.78

Note:

1. Spurious emissions within 30-1000MHz were found more than 20dB below limit line.
2. EIRP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBi)

WCDMA Band II

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Substitute Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 9262 (1852.4MHz)							
3643.50	H	-67.77	1.02	12.62	-56.17	-13.00	-43.17
5556.00	H	-65.31	1.25	13.15	-53.41	-13.00	-40.41
3686.00	V	-66.68	1.01	12.67	-55.02	-13.00	-42.02
5556.00	V	-62.08	1.25	13.15	-50.18	-13.00	-37.18
Middle Channel 9400 (1880.0MHz)							
3686.00	H	-68.06	1.01	12.67	-56.40	-13.00	-43.40
5641.00	H	-63.85	1.26	13.14	-51.97	-13.00	-38.97
3762.50	V	-67.59	1.02	12.73	-55.88	-13.00	-42.88
5615.50	V	-64.76	1.26	13.15	-52.87	-13.00	-39.87
High Channel 9538 (1907.6MHz)							
3677.50	H	-67.39	1.01	12.66	-55.74	-13.00	-42.74
4629.50	H	-65.92	1.14	12.63	-54.43	-13.00	-41.43
3805.00	V	-67.72	1.03	12.75	-56.00	-13.00	-43.00
5641.00	V	-64.64	1.26	13.14	-52.76	-13.00	-39.76

Note:

1. Spurious emissions within 30-1000MHz were found more than 20dB below limit line.
2. ERP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBd)

WCDMA Band V

Frequency (MHz)	Ant. Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Substitute Antenna Gain (dBd)	ERP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 4132 (826.40MHz)							
1756.50	H	-71.77	0.68	10.26	-62.19	-13.00	-49.19
3201.50	H	-68.26	0.93	12.14	-57.05	-13.00	-44.05
1688.50	V	-71.71	0.67	10.05	-62.33	-13.00	-49.33
2453.50	V	-69.94	0.81	10.41	-60.34	-13.00	-47.34
Middle Channel 4182 (836.40MHz)							
1697.00	H	-71.62	0.67	10.11	-62.18	-13.00	-49.18
2445.00	H	-69.80	0.81	10.38	-60.23	-13.00	-47.23
1680.00	V	-71.34	0.67	9.99	-62.02	-13.00	-49.02
2538.50	V	-70.41	0.83	10.67	-60.57	-13.00	-47.57
High Channel 4233 (846.60MHz)							
1646.00	H	-71.40	0.66	9.76	-62.30	-13.00	-49.30
2402.50	H	-69.55	0.80	10.21	-60.14	-13.00	-47.14
1748.00	V	-71.64	0.69	10.24	-62.09	-13.00	-49.09
2598.00	V	-70.46	0.84	10.77	-60.53	-13.00	-47.53

Note:

1. Spurious emissions within 30-1000MHz were found more than 20dB below limit line.
2. ERP (dBm) = SG Reading (dBm) - Cable Loss (dB) + Substitute Antenna Gain (dBd)

8. CONCLUSION

The data collected relate only the item(s) tested and show that the **Mobile Computer FCC ID:**

HD5-EDA50211compliance with all the requirements of Parts 2, 22, 24 of the FCC Rules.

The End