

Variant FCC Test Report

APPLICANT : Intel Corp.
EQUIPMENT : Android Smart Phone
BRAND NAME : Intel
MODEL NAME : AZ210
MARKETING NAME : AZ210
FCC ID : O2Z-AZ210
STANDARD : FCC 47 CFR FCC Part 15 Subpart B
CLASSIFICATION : Certification

This is a variant report which is only valid together with the original test report. The product was received on Aug. 21, 2012 and completely tested on Sep. 01, 2012. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 and shown the compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:



Jones Tsai / Manager



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FCC ID : O2Z-AZ210

Page Number : 1 of 16

Report Issued Date : Sep. 12, 2012

Report Version : Rev. 01

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC232306-03	Rev. 01	This is a variant report based on the original report, Sporton Report Number FC232306. Detail changes list as below : 1. HW change. 2. Change HW/SW version. 3. GPRS power reduction (GMPP2→1) via software setting change. Based on the product-equality-declaration exhibit, only the worst radiated test case found in the original report is verified.	Sep. 12, 2012

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.109	7.2.3.2	Radiated Emission	< 15.109 limits or < RSS-Gen table 1 limits (Section 6)	PASS	Under limit 3.64 dB at 148.530 MHz



1. General Description

1.1. Applicant

Intel Corp.

RNB-5-112, 2200 Mission College Blvd, Santa Clara, CA 95054, USA

1.2. Manufacturer

Chi Mei Communication Systems, Inc.

No. 4, Mingsheng Street, Tucheng City, New Taipei City 23678, Taiwan

1.3. Feature of Equipment Under Test

Product Feature	
Equipment	Android Smart Phone
Brand Name	Intel
Model Name	AZ210
Marketing Name	AZ210
FCC ID	O2Z-AZ210
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA WLAN 11abgn / Bluetooth / NFC
HW Version	DV3.0
SW Version	6082
EUT Stage	Production Unit

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

Product Specification subjective to this standard	
Tx Frequency	GSM850: 824.2 MHz ~ 848.8 MHz GSM1900: 1850.2 MHz ~ 1909.8MHz WCDMA Band V: 826.4 MHz ~ 846.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz 802.11a: 5180 MHz ~ 5240 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC : 13.56 MHz
Rx Frequency Range	GSM850: 869.2 MHz ~ 893.8 MHz GSM1900: 1930.2 MHz ~ 1989.8 MHz WCDMA Band V: 871.4 MHz ~ 891.6 MHz WCDMA Band II: 1932.4 MHz ~ 1987.6 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz 802.11a: 5180 MHz ~ 5240 MHz Bluetooth: 2402 MHz ~ 2480 MHz GPS : 1.57542 GHz NFC : 13.56 MHz
Antenna Type	WWAN : PIFA Antenna WLAN : PIFA Antenna Bluetooth : PIFA Antenna NFC : FPC Antenna
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE: GMSK / 8PSK WCDMA: QPSK (Uplink) HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink) 802.11b : DSSS (BPSK / QPSK / CCK) 802.11a/g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) Bluetooth (1Mbps) : GFSK Bluetooth 2.1 EDR (2Mbps) : $\pi/4$ -DQPSK Bluetooth 2.1 EDR (3Mbps) : 8-DPSK GPS : BPSK NFC: ASK

1.4. Test Site

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978	
Test Site No.	Sporton Site No.	FCC/IC Registration No.
	03CH06HY	722060/4086B-1

1.5. Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC 47 CFR FCC Part 15 Subpart B
- ANSI C63.4-2003
- IC RSS-Gen Issue 3

Remark: All test items were verified and recorded according to the standards and without any deviation during the test.

1.6. Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	System Simulator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
2.	GPS Station	Pendulum	GSG-54	N/A	N/A	Unshielded, 1.8 m
3.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
4.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
5.	LCD TV	SONY	KDL-22S5700	N/A	N/A	Unshielded, 2.0 m

2. Test Configuration of Equipment Under Test

2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

Frequency range investigated: radiation (30MHz to the 5th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

The following tables are showing the test modes as the worst cases and recorded in this report.

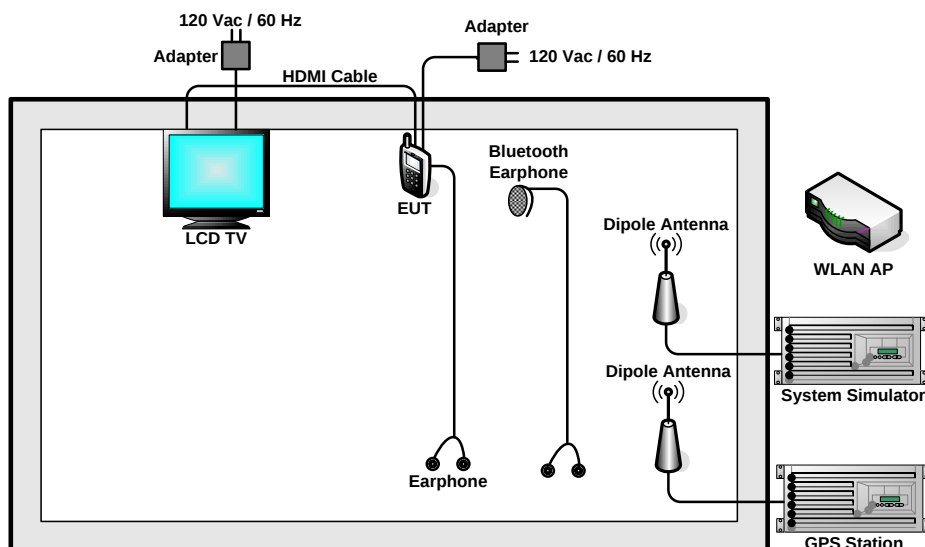
Item	EUT Configuration	Test Condition
		EMI RE
1.	Charging Mode (EUT with adapter)	☒

Abbreviations:

- EMI RE: EUT radiated emissions

Test Items	EUT Configure Mode	Function Type
Radiated Emissions	1	Mode 1 : WCDMA Band II Idle + Bluetooth Idle + WLAN (2.4G) Idle + GPS Rx + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable
Remark: HDMI Cable means media application transferred between EUT and external display.		

2.2. Connection Diagram of Test System



2.3. Test Software

The EUT was in WCDMA idle mode during the testing. The EUT was synchronized to the BCCH, and is in continuous receiving mode by setting system simulator's paging reorganization.

At the same time, the EUT was attached to the Bluetooth earphone or WLAN AP, and the following programs installed in the EUT were programmed during the test.

1. Execute "GPS Test" to make the EUT receive continuous signals from GPS station.
2. The EUT plays files to show on the LCD Monitor via HDMI Cable.

3. Test Result

3.1. Test of Radiated Emission Measurement

3.1.1. Limit of Radiated Emission

The emissions from an unintentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.1.2. Measuring Instruments

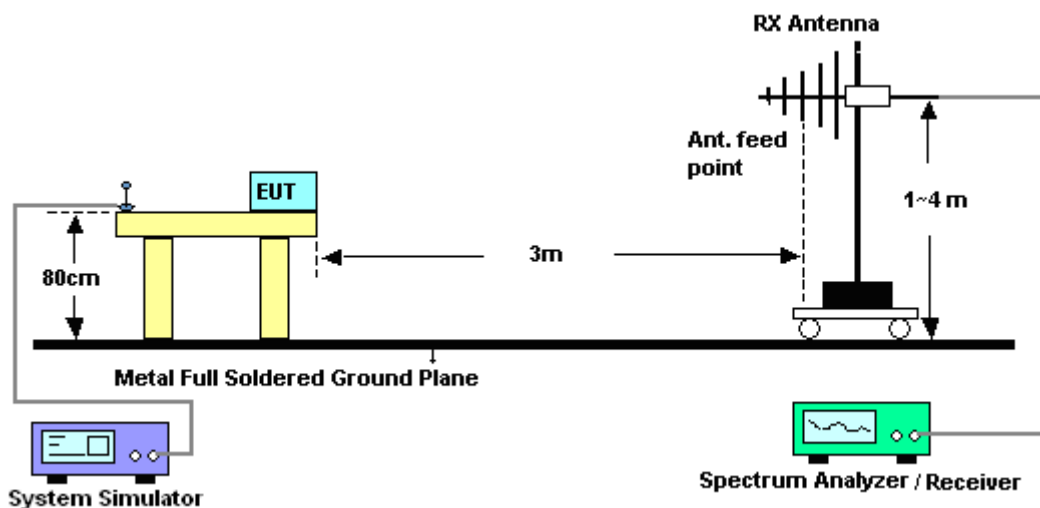
See list of measuring instruments of this test report.

3.1.3. Test Procedures

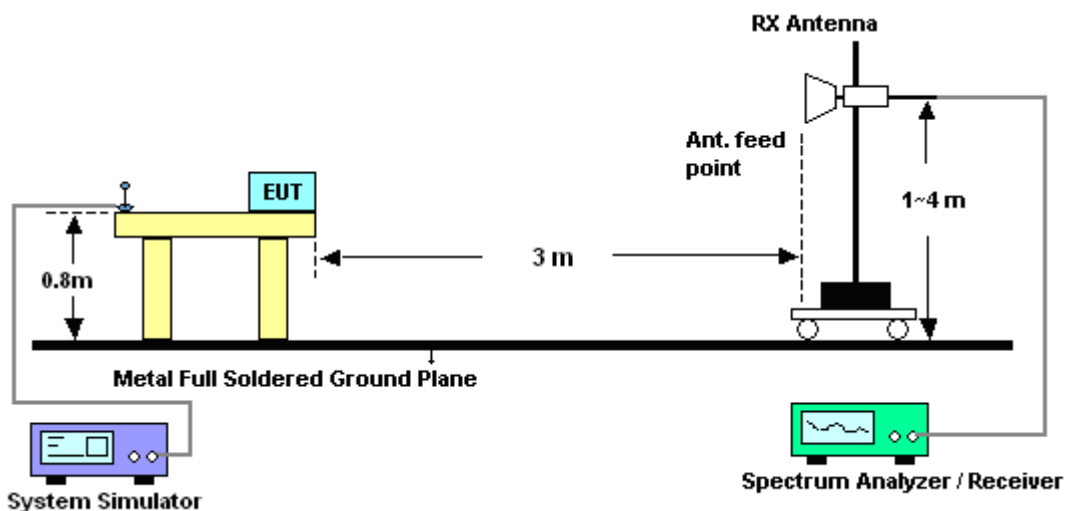
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna is a Bi-Log antenna and its height is adjusted between one to four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
7. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, peak values of EUT will be reported. Otherwise, the emission will be repeated by using the quasi-peak method and reported.
8. Emission level (dBuV/m) = 20 log Emission level (uV/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

3.1.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz

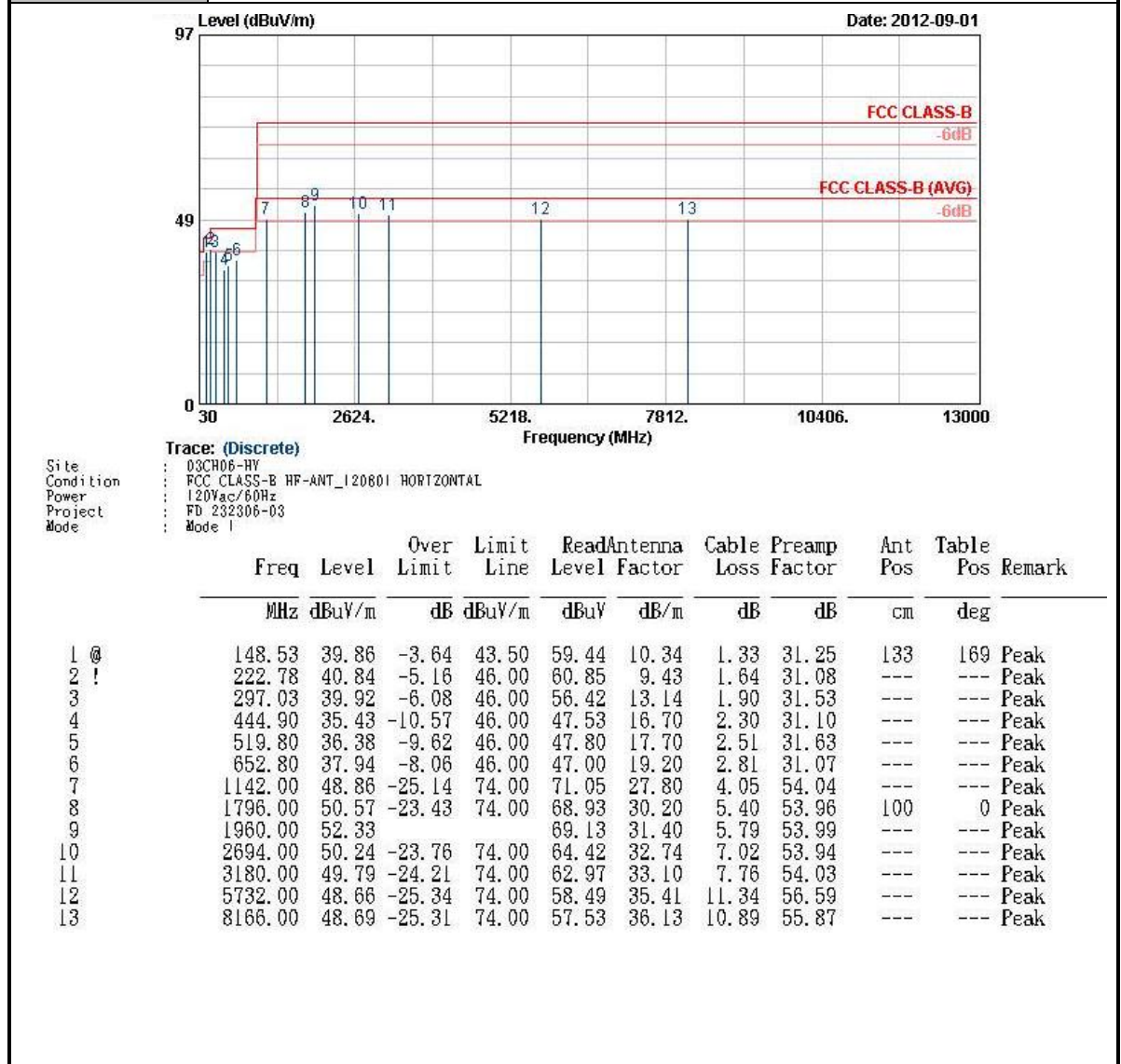


For radiated emissions above 1GHz

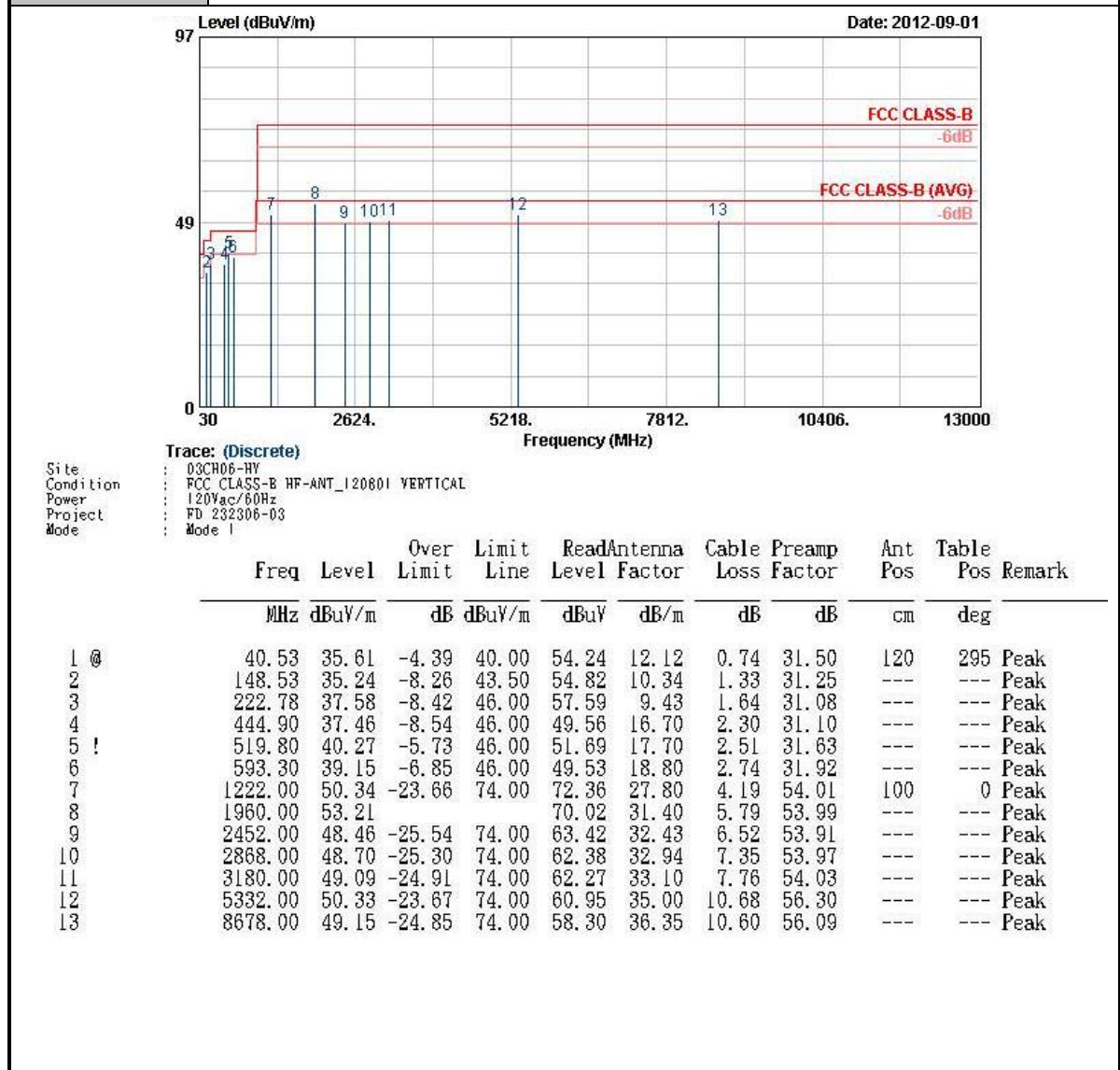


3.1.5. Test Result of Radiated Emission

Test Mode :	Mode 1	Temperature :	24~25°C
Test Engineer :	Ivan Chiang	Relative Humidity :	49~50%
Test Distance :	3m	Polarization :	Horizontal
Function Type :	WCDMA Band II Idle + Bluetooth Idle + WLAN (2.4G) Idle + GPS Rx + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable		
Remark :	#9 is system simulator signal which can be ignored.		



Test Mode :	Mode 1	Temperature :	24~25°C
Test Engineer :	Ivan Chiang	Relative Humidity :	49~50%
Test Distance :	3m	Polarization :	Vertical
Function Type :	WCDMA Band II Idle + Bluetooth Idle + WLAN (2.4G) Idle + GPS Rx + Earphone + Battery + USB Cable (Charging from Adapter) + HDMI Cable		
Remark :	#8 is system simulator signal which can be ignored.		



4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	Agilent	E4408B	MY44211030	9KHz ~ 26.5GHz	Nov. 23, 2011	Sep. 01, 2012	Nov. 22, 2012	Radiation (03CH06-HY)
Spectrum Analyzer	R&S	FSP30	101352	9KHz-30GHz	Nov. 03, 2011	Sep. 01, 2012	Nov. 02, 2012	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESVS10	834468/003	20MHz ~ 1000MHz	May 04, 2012	Sep. 01, 2012	May. 03, 2013	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz ~ 2GHz	Oct. 22, 2011	Sep. 01, 2012	Oct. 21, 2012	Radiation (03CH06-HY)
Double Ridge Horn Antenna	EMCO	3117	00066583	1GHz ~ 18GHz	Aug. 01, 2012	Sep. 01, 2012	Jul. 31, 2013	Radiation (03CH06-HY)
SHF-EHF Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170251	15GHz ~ 40GHz	Oct. 20, 2011	Sep. 01, 2012	Oct. 19, 2012	Radiation (03CH06-HY)
Preamplifier	Agilent	8449B	3008A01917	1GHz ~ 26.5GHz	Apr. 13, 2012	Sep. 01, 2012	Apr. 12, 2013	Radiation (03CH06-HY)
Amplifier	Agilent	310N	186713	9KHz ~ 1GHz	Apr. 11, 2012	Sep. 01, 2012	Apr. 10, 2013	Radiation (03CH06-HY)
Pre Amplifier	EMCI	EMC051845	SN980048	1GHz ~ 18GHz	Jul. 21, 2012	Sep. 01, 2012	Jul. 20, 2013	Radiation (03CH06-HY)
Pre Amplifier	MITEQ	AMF-7D-0010 1800-30-10P	159087	1GHz~18GHz	Feb. 27, 2012	Sep. 01, 2012	Feb. 26, 2013	Radiation (03CH06-HY)
System Simulator	R&S	CMU200	117995	N/A	Jul. 28, 2011	Sep. 01, 2012	Jul. 27, 2013	Radiation (03CH06-HY)
GPS Station	Pendulum	GSG-54	N/A	N/A	N/A	Sep. 01, 2012	N/A	Radiation (03CH06-HY)

5. Uncertainty of Evaluation

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	2.54
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% ($U = 2Uc(y)$)	4.72
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Appendix A. Photographs of EUT

Please refer to Sporton report number EP232306-03 as below.

