FCC Test Report

APPLICANT	:	Bullitt Group
EQUIPMENT	:	Rugged Smart Phone
BRAND NAME	:	CAT
MODEL NAME	:	S60
MARKETING NAME	:	S60
FCC ID	:	ZL5S60
STANDARD	:	FCC 47 CFR FCC Part 15 Subpart B
CLASSIFICATION	:	Certification

The product was received on Mar. 03, 2016 and testing was completed on May 12, 2016. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI C63.4-2014 and has been in 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.

Louis Wu

Reviewed by: Louis Wu / Manager

Jones Tsai

Approved by: Jones Tsai / Manager

Testing Laboratory 1190

SPORTON INTERNATIONAL INC.

No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C.

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC630110-01	Rev. 01	Initial issue of report	Jun. 06, 2016

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.107	AC Conducted Emission	< 15.107 limits	PASS	Under limit 7.30 dB at 0.158 MHz
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	Under limit 4.88 dB at 179.850 MHz

1. General Description

1.1. Applicant

Bullitt Group
One Valpy,Valpy Street,Reading, Berkshire,RG1 1AR United Kingdom

1.2. Manufacturer

Compal Electronics, INC.
No. 385, Yangguang St. Neihu District, Taipei City 11491, Taiwan, R.O.C

1.3. Product Feature of Equipment Under Test

Product Feature	
Equipment	Rugged Smart Phone
Brand Name	CAT
Model Name	S60
Marketing Name	S60
Sample 1	EUT with Dual SIM
Sample 2	EUT with Single SIM
FCC ID	ZL5S60
EUT supports Radios application	GSM/EGPRS/WCDMA/HSPA/LTE/NFC WLAN 11b/g/n HT20/HT40 Bluetooth v4.1 EDR/LE
EUT Stage	Identical Prototype

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

1.4. Product Specification of Equipment Under Test

Standards-related Product Specification	
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 IV : 1712.4 MHz ~ 1752.6 MHz WCDMA Band II: 1852.4 MHz ~ 1907.6 MHz LTE Band 2 : 1850.7 MHz ~ 1909.3 MHz LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz LTE Band 5 : 824.7 MHz ~ 848.3 MHz LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz LTE Band 12 : 698.7 MHz ~ 715.3 MHz LTE Band 17 : 706.5 MHz ~ 713.5 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz NFC : 13.56 MHz
Rx Frequency	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 IV : 2112.4 MHz ~ 2152.6 MHz WCDMA Band II: 1932.4 MHz ~ 1987.6 MHz LTE Band 2 : 1930.7 MHz ~ 1989.3 MHz LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz LTE Band 5 : 869.7 MHz ~ 893.3 MHz LTE Band 7 : 2622.5MHz ~ 2687.5 MHz LTE Band 12 : 729.7 MHz ~ 745.3 MHz LTE Band 17 : 736.5 MHz ~ 743.5 MHz 802.11b/g/n: 2412 MHz ~ 2462 MHz Bluetooth: 2402 MHz ~ 2480 MHz GPS : 1.57542 GHz NFC : 13.56 MHz
Antenna Type	WWAN : PIFA + Coupling type (LDS) Antenna WLAN : PIFA Antenna Bluetooth : PIFA Antenna GPS : PIFA Antenna NFC : Coil Antenna (single loop)
Type of Modulation	GSM: GMSK GPRS: GMSK EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK WCDMA: QPSK (Uplink) HSDPA: 64QAM (Downlink) HSUPA: QPSK (Uplink) LTE: QPSK / 16QAM / 64QAM 802.11b : DSSS (DBPSK / DQPSK / CCK) 802.11g/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) Bluetooth LE : GFSK Bluetooth (1Mbps) : GFSK Bluetooth (2Mbps) : π/4-DQPSK Bluetooth (3Mbps) : 8-DPSK GPS : BPSK NFC: ASK

1.5. Modification of EUT

No modifications are made to the EUT during all test items.

1.6. Test Location

Sporton Lab is accredited to ISO 17025 by Taiwan Accreditation Foundation (TAF code : 1190) and the FCC designation No. TW1022 under the FCC 2.948(e) by Mutual Recognition Agreement (MRA) in FCC Test.

Test Site	SPORTON INTERNATIONAL INC.	
Test Site Location	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C. TEL: +886-3-327-3456 FAX: +886-3-328-4978	
Test Site No.	**Sporton Site No.**	
	CO05-HY	03CH06-HY

1.7. Applicable 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 C63.4-2014

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

2. Test Configuration of Equipment Under Test

2.1. Test Mode

The EUT has been associated with peripherals pursuant to ANSI C63.4-2014 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

Frequency range investigated: conduction (150 kHz to 30 MHz), 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 AC	EMI RE<1G	EMI RE≥1G
1.	Charging Mode (EUT with adapter)	☒	☒	Note 1
2.	Data application transferred mode (EUT with notebook)	☒	☒	☒

Abbreviations:

- EMI AC: AC conducted emissions
- EMI RE ≥ 1G: EUT radiated emissions ≥ 1GHz
- EMI RE < 1G: EUT radiated emissions < 1GHz

Note 1: Testing for this mode is not required or not the worst case.

Remark: For signal above 1GHz, the worst case was test item 2.

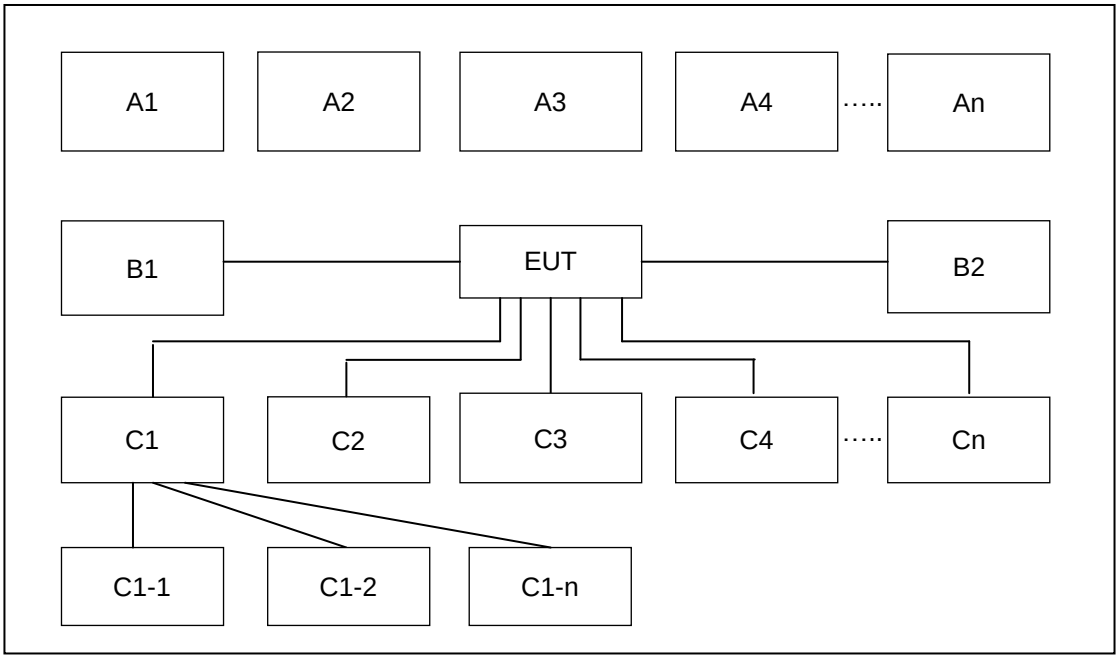
Test Items	EUT Configure Mode	Function Type
AC Conducted Emission	1/2	Mode 1 : GSM850 Idle + Bluetooth Idle + WLAN Idle + MP3 + Earphone + Battery + USB Cable (Charging from Adapter) + SIM 1 for Sample 1 Mode 2 : WCDMA Band II Idle + Bluetooth Idle + WLAN Idle + Camera (Rear) + Earphone + Battery + USB Cable (Charging from Adapter) + SIM 1 for Sample 1 Mode 3 : LTE Band 4 Idle + Bluetooth Idle + WLAN Idle + NFC on + Earphone + Battery + USB Cable (Data Link with Notebook) + SIM 1 for Sample 1 Mode 4 : LTE Band 12 Idle + Bluetooth Idle + WLAN Idle + GPS Rx + Earphone + Battery + USB Cable (Data Link with Notebook) + SIM 2 for Sample 1 Mode 5 : LTE Band 12 Idle + Bluetooth Idle + WLAN Idle + Camera (Thermal sensors) + Earphone + Battery + USB Cable (Data Link with Notebook) + SIM 2 for Sample 1 Mode 6 : LTE Band 12 Idle + Bluetooth Idle + WLAN Idle + GPS Rx + Earphone + Battery + USB Cable (Data Link with Notebook) for Sample 2

Test Items	EUT Configure Mode	Function Type
Radiated Emissions < 1GHz	1/2	Mode 1 : GSM850 Idle + Bluetooth Idle + WLAN Idle + MP3 + Earphone + Battery + USB Cable (Charging from Adapter) + SIM 1 for Sample 1 Mode 2 : WCDMA Band II Idle + Bluetooth Idle + WLAN Idle + Camera (Rear) + Earphone + Battery + USB Cable (Charging from Adapter) + SIM 1 for Sample 1 Mode 3 : LTE Band 4 Idle + Bluetooth Idle + WLAN Idle + NFC on + Earphone + Battery + USB Cable (Data Link with Notebook) + SIM 1 for Sample 1 Mode 4 : LTE Band 12 Idle + Bluetooth Idle + WLAN Idle + GPS Rx + Earphone + Battery + USB Cable (Data Link with Notebook) + SIM 2 for Sample 1 Mode 5 : LTE Band 4 Idle + Bluetooth Idle + WLAN Idle + Camera (Thermal sensors) + Earphone + Battery + USB Cable (Data Link with Notebook) + SIM 1 for Sample 1 Mode 6 : LTE Band 4 Idle + Bluetooth Idle + WLAN Idle + Camera (Thermal sensors) + Earphone + Battery + USB Cable (Data Link with Notebook) for Sample 2
Radiated Emissions ≥ 1GHz	2	Mode 1 : LTE Band 4 Idle + Bluetooth Idle + WLAN Idle + Camera (Thermal sensors) + Earphone + Battery + USB Cable (Data Link with Notebook) + SIM 1 for Sample 1

Remark:

1. The worst case of AC is mode 6; only the test data of this mode was reported.
2. The worst case of RE < 1G is mode 5; only the test data of this mode was reported.
3. Data Link with Notebook means data application transferred mode between EUT and Notebook.

2.2. Connection Diagram of Test System



Conduction Test Setup									
No.	**Wireless Station**	**Connection Type**	**Test Mode**						
			1	**2**	**3**	**4**	**5**	**6**	**-**
A1	BT Earphone	Bluetooth	X	X	X	X	X	X	
A2	System Simulator	GSM/WCDMA/LTE	X	X	X	X	X	X	
A3	GPS Station	GPS				X		X	
A4	AP router	WiFi	X	X	X	X	X	X	
No.	**Power Source**	**Connection Type**	**1**	**2**	**3**	**4**	**5**	**6**	**-**
B1	AC : 120V/60Hz	AC Power Cable	X	X					
No.	**Setup Peripherals**	**Connection Type**	**1**	**2**	**3**	**4**	**5**	**6**	**-**
C1	Notebook	USB Cable			X	X	X	X	
C1-1	IPod	USB Cable to C1			X	X	X	X	
C1-2	AP router	RJ-45 Cable to C1			X	X	X	X	
C2	Earphone	Earphone jack	X	X	X	X	X	X	
C3	SD card	SD I/O interface without Cable	X	X	X	X	X	X	

Radiation Test Setup									
No.	Wireless Station	Connection Type	Test Mode						
			1	2	3	4	5	6	-
A1	BT Earphone	Bluetooth	X	X	X	X	X	X	
A2	System Simulator	GSM/WCDMA/LTE	X	X	X	X	X	X	
A3	GPS Station	GPS				X			
A4	AP router	WiFi	X	X	X	X	X	X	
No.	**Power Source**	**Connection Type**	**1**	**2**	**3**	**4**	**5**	**6**	**-**
B1	AC : 120V/60Hz	AC Power Cable	X	X					
No.	**Setup Peripherals**	**Connection Type**	**1**	**2**	**3**	**4**	**5**	**6**	**-**
C1	Notebook	USB cable			X	X	X	X	
C1-1	IPod	USB Cable to C1			X	X	X	X	
C1-2	WLAN AP	RJ-45 Cable to C1			X	X	X	X	
C2	Earphone	Earphone jack	X	X	X	X	X	X	
C3	SD card	SD I/O interface without cable	X	X	X	X	X	X	

2.3. Support Unit used in test configuration and system

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.	System Simulator	Anritsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
3.	GPS Station	Pendulum	GSG-54	N/A	N/A	Unshielded, 1.8 m
4.	Bluetooth Earphone	Sony Ericsson	MW600	PY7DDA-2029	N/A	N/A
5.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
6.	WLAN AP	D-Link	DIR-865L	KA2IR865LA1	N/A	Unshielded, 1.8 m
7.	SD Card	SanDisk	MicroSD HC	FCC DoC	N/A	N/A
8.	Notebook	DELL	Latitude E6320	FCC DoC/ Contains FCC ID: QDS-BRCM1054	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
9.	iPod	Apple	A1199	FCC DoC	Unshielded, 1.2 m	N/A
10.	iPod	Apple	A1285	FCC DoC	Shielded, 1.0 m	N/A

2.4. EUT Operation Test Setup

The EUT was in GSM, WCDMA and LTE 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. Data application is transferred between Laptop and EUT via USB cable.
2. Execute "GPS Test" to make the EUT receive continuous signals from GPS station.
3. Execute "Music Player" to play MP3 file.
4. Turn on camera to capture images.
5. Turn on NFC function.
6. Execute "My FLIR" to turn on the Thermal sensors.

3. Test Result

3.1. Test of AC Conducted Emission Measurement

3.1.1 Limits of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table.

Frequency of emission (MHz)	Conducted limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

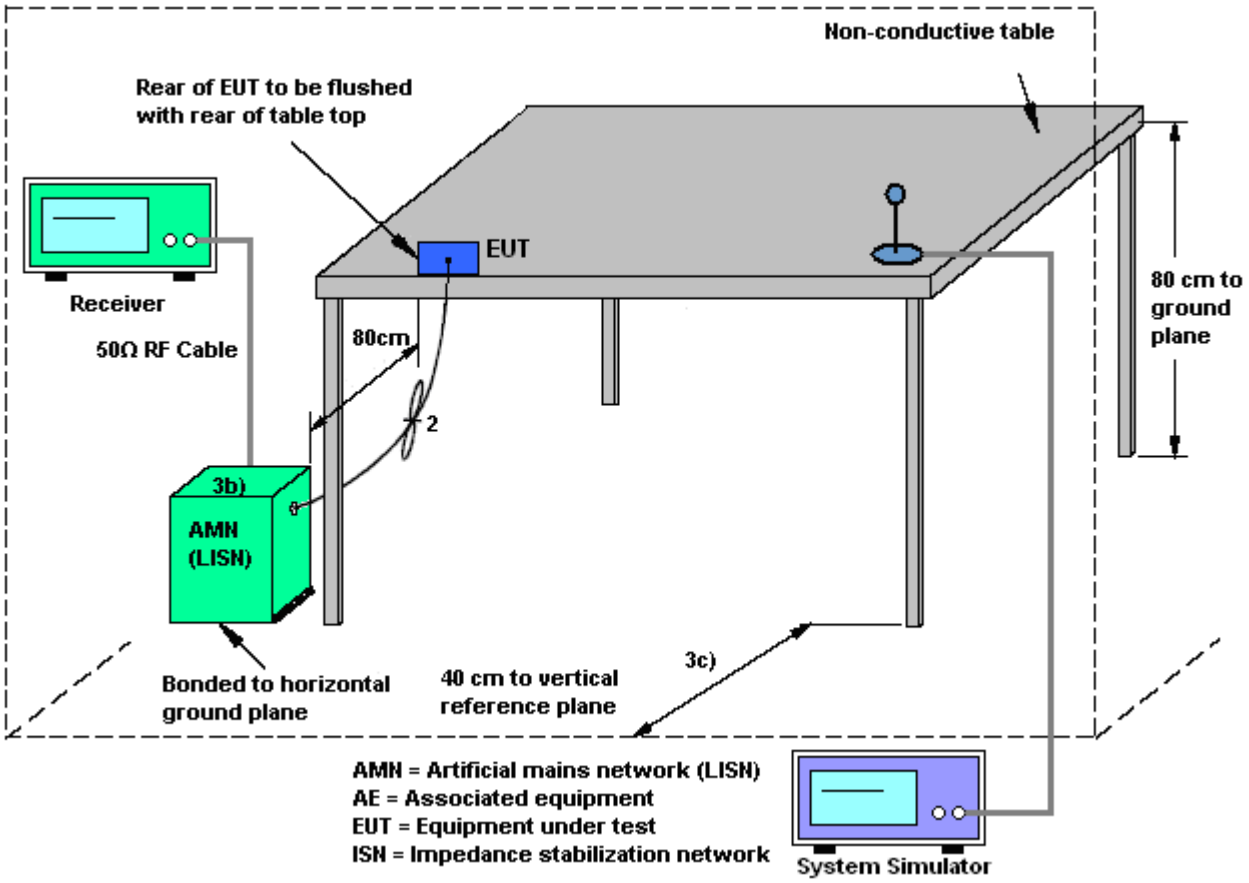
3.1.2 Measuring Instruments

The measuring equipment is listed in the section 4 of this test report.

3.1.3 Test Procedure

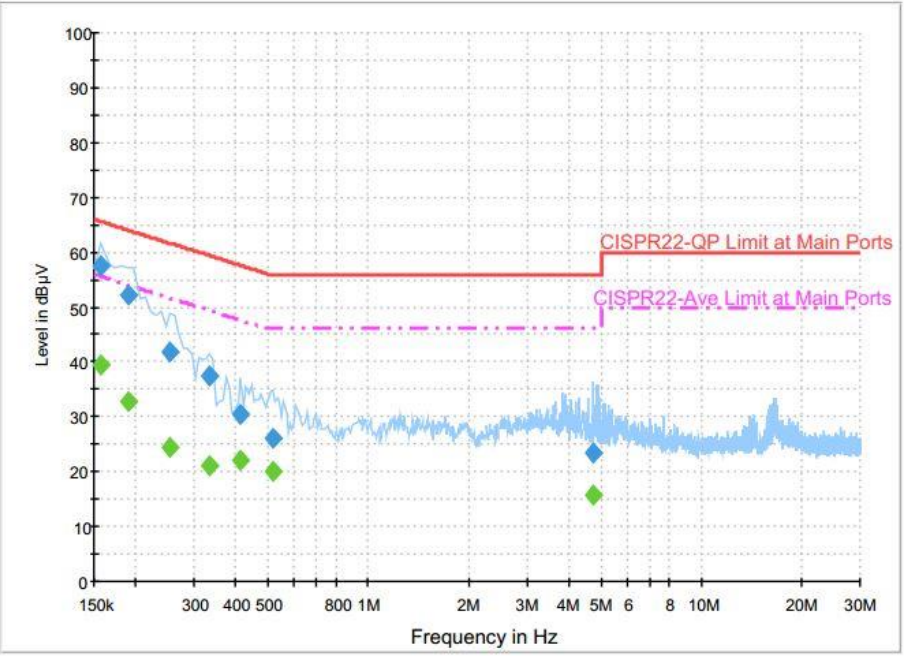
1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connecting to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth (IF Bandwidth = 9kHz) with Maximum Hold Mode. Then measurement is also conducted by Average Detector and Quasi-Peak Detector Function respectively.

3.1.4 Test Setup



3.1.5 Test Result of AC Conducted Emission

Test Mode :	Mode 6	Temperature :	22~23℃
Test Engineer :	Kai-Chun Chu	Relative Humidity :	42~43%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	LTE Band 12 Idle + Bluetooth Idle + WLAN Idle + GPS Rx + Earphone + Battery + USB Cable (Data Link with Notebook) for Sample 2		



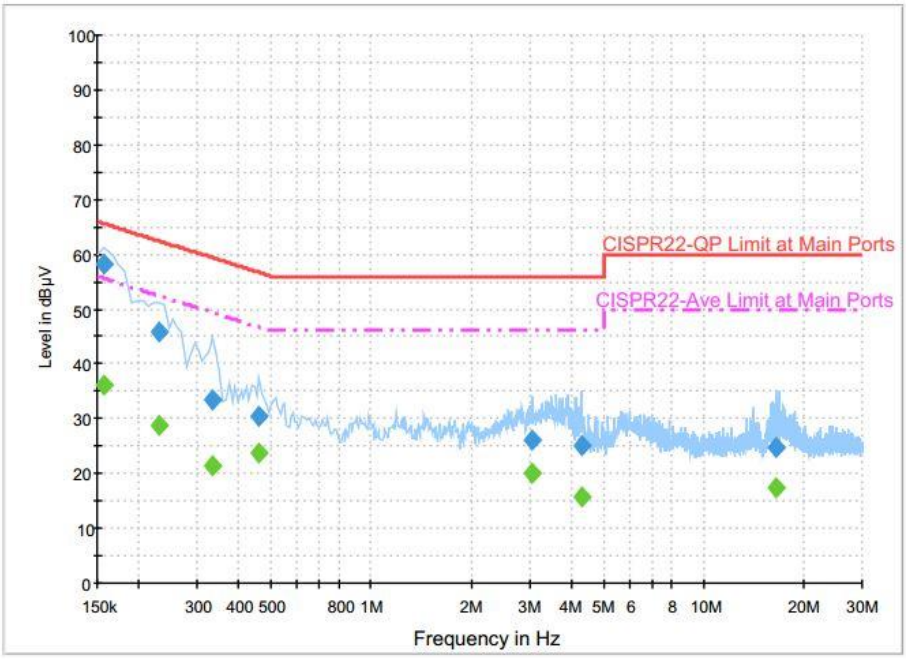
Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	57.6	Off	L1	19.6	8.0	65.6
0.190000	52.2	Off	L1	19.6	11.8	64.0
0.254000	42.0	Off	L1	19.6	19.6	61.6
0.334000	37.5	Off	L1	19.6	21.9	59.4
0.414000	30.5	Off	L1	19.6	27.1	57.6
0.518000	26.1	Off	L1	19.6	29.9	56.0
4.734000	23.3	Off	L1	19.7	32.7	56.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	39.4	Off	L1	19.6	16.2	55.6
0.190000	32.6	Off	L1	19.6	21.4	54.0
0.254000	24.4	Off	L1	19.6	27.2	51.6
0.334000	21.2	Off	L1	19.6	28.2	49.4
0.414000	22.2	Off	L1	19.6	25.4	47.6
0.518000	20.0	Off	L1	19.6	26.0	46.0
4.734000	15.8	Off	L1	19.7	30.2	46.0

Test Mode :	Mode 6	Temperature :	22~23℃
Test Engineer :	Kai-Chun Chu	Relative Humidity :	42~43%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WCDMA Band II Idle + Bluetooth Idle + WLAN Idle + Camera (Rear) + Earphone + Battery + USB Cable (Charging from Adapter) + SIM 1 for Sample 1		



Final Result : Quasi-Peak

Frequency (MHz)	Quasi-Peak (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	58.3	Off	N	19.6	7.3	65.6
0.230000	46.0	Off	N	19.6	16.4	62.4
0.334000	33.6	Off	N	19.6	25.8	59.4
0.462000	30.3	Off	N	19.6	26.4	56.7
3.062000	26.2	Off	N	19.6	29.8	56.0
4.318000	25.2	Off	N	19.6	30.8	56.0
16.590000	24.7	Off	N	19.9	35.3	60.0

Final Result : Average

Frequency (MHz)	Average (dBµV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.158000	36.1	Off	N	19.6	19.5	55.6
0.230000	28.6	Off	N	19.6	23.8	52.4
0.334000	21.5	Off	N	19.6	27.9	49.4
0.462000	23.7	Off	N	19.6	23.0	46.7
3.062000	20.2	Off	N	19.6	25.8	46.0
4.318000	15.9	Off	N	19.6	30.1	46.0
16.590000	17.4	Off	N	19.9	32.6	50.0

3.2. Test of Radiated Emission Measurement

3.2.1. 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

3.2.2. Measuring Instruments

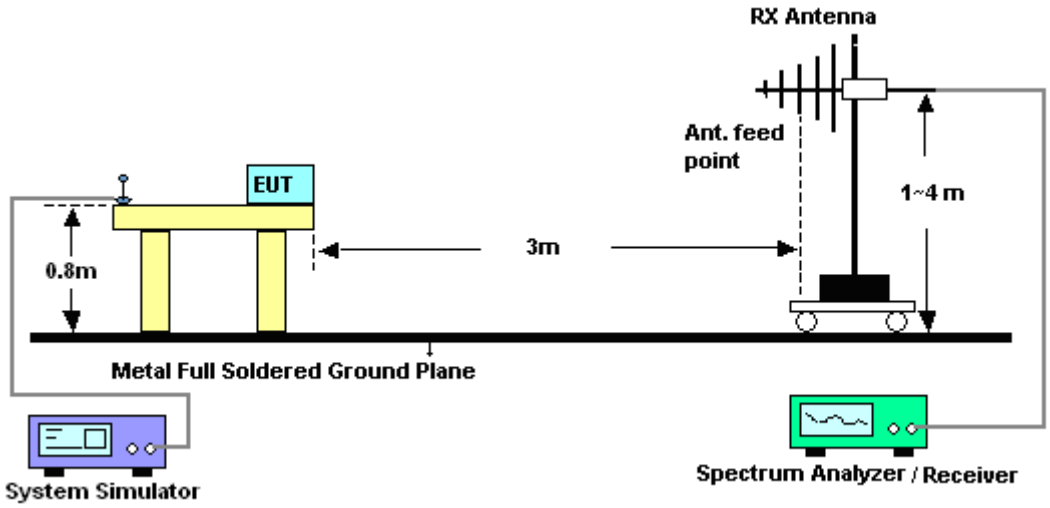
The measuring equipment is listed in the section 4 of this test report.

3.2.3. Test Procedures

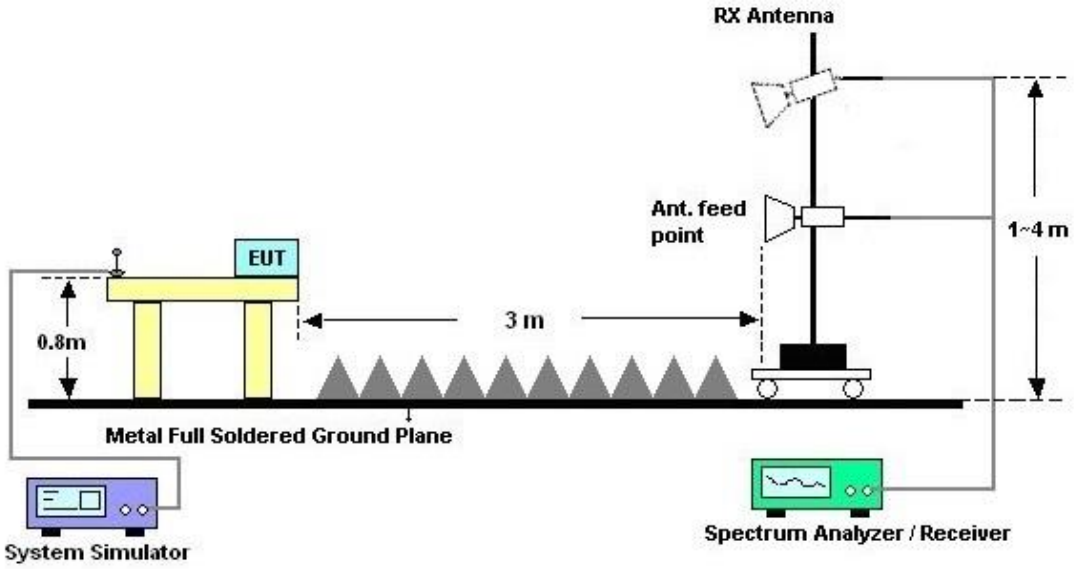
1. The EUT was placed on a turntable with 0.8 meter above ground.
2. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
3. The table was rotated 360 degrees to determine the position of the highest radiation.
4. The antenna 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 (RBW=120kHz/VBW=300kHz for frequency below 1GHz; RBW=1MHz VBW=3MHz (Peak), RBW=1MHz/VBW=10Hz (Average) for frequency above 1GHz).
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 (dBμV/m) = 20 log Emission level (μV/m)
9. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

3.2.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz

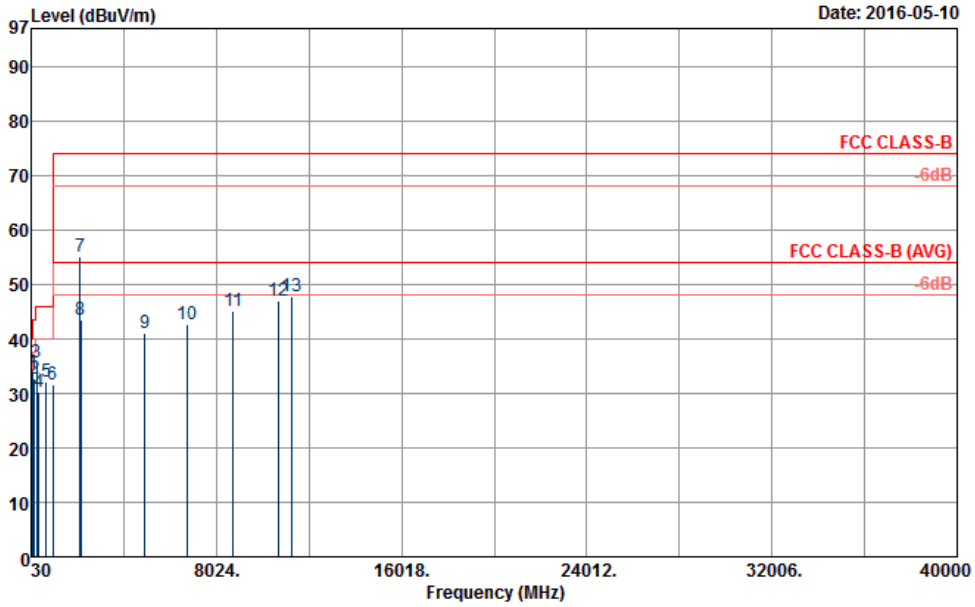


For radiated emissions above 1GHz



3.2.5. Test Result of Radiated Emission

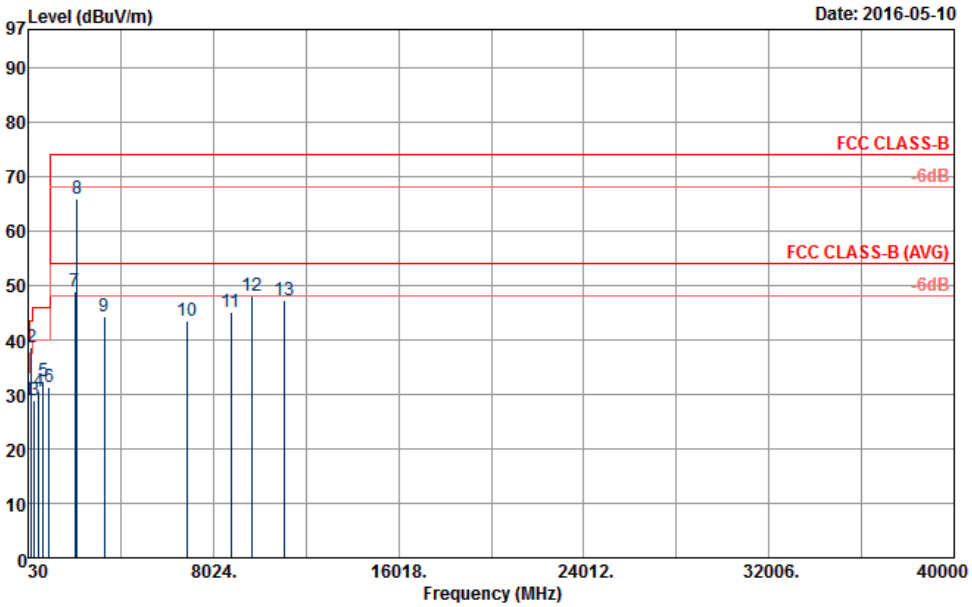
Test Mode :	Mode 5	**Temperature :**	20~23°C
Test Engineer :	Daniel Lee	**Relative Humidity :**	50~53%
Test Distance :	3m	**Polarization :**	Horizontal
Function Type :	LTE Band 4 Idle + Bluetooth Idle + WLAN Idle + Camera (Thermal sensors) + Earphone + Battery + USB Cable (Data Link with Notebook) + SIM 1 for Sample 1		
Remark :	#7 is system simulator signal which can be ignored.		



Site : 03CH06-HY
Condition : FCC CLASS-B 3m 9120D_1156_150827 HORIZONTAL
Project : 630110-01
Power : From System
Memo : Mode 5

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	93.99	33.77	-9.73	43.50	48.23	15.22	2.04	31.72	100	169	Peak
2	171.75	32.68	-10.82	43.50	46.67	15.69	2.04	31.72	---	---	Peak
3	262.20	35.67	-10.33	46.00	45.56	19.58	2.23	31.70	---	---	Peak
4	354.60	30.24	-15.76	46.00	38.47	21.22	2.27	31.72	---	---	Peak
5	666.10	32.28	-13.72	46.00	34.71	26.30	3.33	32.06	---	---	Peak
6	955.20	31.74	-14.26	46.00	28.99	30.70	3.06	31.01	---	---	Peak
7	2132.50	55.11	-----	-----	82.53	26.60	6.48	60.50	---	---	Peak
8	2188.00	43.45	-30.55	74.00	70.72	26.72	6.51	60.50	---	---	Peak
9	4930.00	41.20	-32.80	74.00	57.86	31.39	11.17	59.22	---	---	Peak
10	6778.00	42.59	-31.41	74.00	56.31	34.76	11.86	60.34	---	---	Peak
11	8764.00	45.18	-28.82	74.00	53.25	37.33	14.48	59.88	---	---	Peak
12	10706.00	46.98	-27.02	74.00	52.09	40.27	14.60	59.98	---	---	Peak
13	11262.00	47.83	-26.17	74.00	50.68	40.34	15.54	58.73	100	116	Peak

Test Mode :	Mode 5	**Temperature :**	20~23°C
Test Engineer :	Daniel Lee	**Relative Humidity :**	50~53%
Test Distance :	3m	**Polarization :**	Vertical
Function Type :	LTE Band 4 Idle + Bluetooth Idle + WLAN Idle + Camera (Thermal sensors) + Earphone + Battery + USB Cable (Data Link with Notebook) + SIM 1 for Sample 1		
Remark :	#8 is system simulator signal which can be ignored.		



Site : 03CH06-HY
Condition : FCC CLASS-B 3m 9120D_1156_150827 VERTICAL
Project : 630110-01
Power : From System
Memo : Mode 5

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	32.97	29.04	-10.96	40.00	34.91	24.02	1.91	31.80	---	---	Peak
2	179.85	38.62	-4.88	43.50	53.11	15.25	1.98	31.72	100	136	Peak
3	298.92	29.00	-17.00	46.00	38.91	19.50	2.28	31.69	---	---	Peak
4	498.80	30.54	-15.46	46.00	35.47	24.06	2.90	31.89	---	---	Peak
5	666.10	32.42	-13.58	46.00	34.85	26.30	3.33	32.06	---	---	Peak
6	951.00	31.42	-14.58	46.00	28.72	30.70	3.05	31.05	---	---	Peak
7	2050.00	48.85	-25.15	74.00	76.52	26.41	6.42	60.50	100	113	Peak
8	2132.50	65.97	----	----	93.39	26.60	6.48	60.50	---	---	Peak
9	3326.00	44.24	-29.76	74.00	68.68	28.63	8.09	61.16	---	---	Peak
10	6888.00	43.51	-30.49	74.00	57.06	35.01	11.76	60.32	---	---	Peak
11	8786.00	45.07	-28.93	74.00	53.02	37.35	14.61	59.91	---	---	Peak
12	9696.00	48.17	-25.83	74.00	56.28	38.92	14.07	61.10	---	---	Peak
13	11092.00	47.35	-26.65	74.00	50.60	40.44	15.27	58.96	---	---	Peak

4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
AC Power Source	ChainTek	APC-1000W	N/A	N/A	N/A	May 11, 2016 ~ May 12, 2016	N/A	Conduction (CO05-HY)
EMI Test Receiver	Rohde & Schwarz	ESCI 7	100724	9kHz~7GHz	Aug. 26, 2015	May 11, 2016 ~ May 12, 2016	Aug. 25, 2016	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100080	9kHz~30MHz	Dec. 02, 2015	May 11, 2016 ~ May 12, 2016	Dec. 01, 2016	Conduction (CO05-HY)
LISN	Rohde & Schwarz	ENV216	100081	9kHz~30MHz	Dec. 14, 2015	May 11, 2016 ~ May 12, 2016	Dec. 13, 2016	Conduction (CO05-HY)
Bilog Antenna	Schaffner	CBL6111C	2725	30MHz~1GHz	Nov. 17, 2015	May 09, 2016 ~ May 12, 2016	Nov. 16, 2016	Radiation (03CH06-HY)
EMI Test Receiver	Rohde & Schwarz	ESU26	100472	20Hz~26.5GHz	Jan. 07, 2016	May 09, 2016 ~ May 12, 2016	Jan. 06, 2017	Radiation (03CH06-HY)
Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1156	1GHz~18GHz	Aug. 21, 2015	May 09, 2016 ~ May 12, 2016	Aug. 20, 2016	Radiation (03CH06-HY)
Preamplifier	SONOMA	310N	186713	9kHz~1GHz	Apr. 19, 2016	May 09, 2016 ~ May 12, 2016	Apr. 18, 2017	Radiation (03CH06-HY)
Preamplifier	MITEQ	AMF-7D-00101800-30-10P	1850117	1GHz ~ 18GHz	Jul. 01, 2015	May 09, 2016 ~ May 12, 2016	Jun. 30, 2016	Radiation (03CH06-HY)
Antenna Mast	MF	MF-7802	MF780208212	1m~4m	N/A	May 09, 2016 ~ May 12, 2016	N/A	Radiation (03CH06-HY)
Turn Table	INN-CO	DS2000	420/650/00	0-360 degree	N/A	May 09, 2016 ~ May 12, 2016	N/A	Radiation (03CH06-HY)

5. Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.26**

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

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**4.00**