

Report No. : FC231606

FCC Test Report

APPLICANT : CT Asia

EQUIPMENT : **GSM** mobile phone

BRAND NAME : BLU
MODEL NAME : Dash

FCC ID : YHLBLUDASH

STANDARD : FCC 47 CFR FCC Part 15 Subpart B

CLASSIFICATION : Certification

The product was received on Mar. 16, 2012 and completely tested on Apr. 01, 2012. We, SPORTON INTERNATIONAL (KUNSHAN) 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 (KUNSHAN) INC., the test report shall not be reproduced except in full.

Reviewed by:

Jones Tsai / Manager





SPORTON INTERNATIONAL (KUNSHAN) INC. No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C.

Report Version : Rev. 01



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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC231606	Rev. 01	Initial issue of report	Apr. 06, 2012

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SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	15.107	AC Conducted Emission	< 15.107 limits	PASS	Under limit10.48 dB at
					2.71 MHz
					Under limit3.07 dB at
3.2	15.109	Radiated Emission	< 15.109 limits	PASS	43.23 MHz for peak
3.2		Radiated Emission	< 15.109 minus	PASS	Under limit13.47 dB at
					46.74 MHz for Quasi-Peak

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1. General Description

1.1. Applicant

CT Asia

RMA2011, 20/F, GOLDEN CENTRAL TOWER, NO.3037# JINTIAN ROAD, FUTIAN DISTRICT

1.2. Manufacturer

Telacom INT'L Limited (Shenzhen) Office

Office Tower 28/F, the Pavilion Hotel, Hua Qiang Bei Road 4002, Futian District, 518028, Shenzhen, **PRC**

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1.3. Feature of Equipment Under Test

Product F	eature & Specification
Equipment	GSM mobile phone
Brand Name	BLU
Model Name	Dash
FCC ID	YHLBLUDASH
Tx Frequency Range	GSM850: 824 MHz ~ 849 MHz GSM1900: 1850 MHz ~ 1910 MHz WCDMA Band V: 824 MHz ~ 849 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz WLAN: 2400 MHz ~ 2483.5 MHz
Rx Frequency Range	GSM850: 869 MHz ~ 894 MHz GSM1900: 1930 MHz ~ 1990 MHz WCDMA Band V: 869 MHz ~ 894 MHz Bluetooth: 2400 MHz ~ 2483.5 MHz WLAN: 2400 MHz ~ 2483.5 MHz GPS: 1.57542 GHz
Antenna Type	WWAN : Fixed Internal Antenna Bluetooth : Dipole Antenna WLAN : Dipole Antenna
HW Version	WMABa
SW Version	TL-BR-BLU-DASH-Q15D-E300-V1.0.11
Type of Modulation	GSM / GPRS: GMSK EDGE: GMSK / 8PSK WCDMA: QPSK (Uplink) HSDPA: QPSK (Uplink) HSUPA: QPSK (Uplink) 802.11b: DSSS (BPSK / QPSK / CCK) 802.11g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM) GPS: BPSK
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.

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1.4. Test Site

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.
	No. 101, Complex Building C, Guanglong Village, Xili Town,
Toot Site Legation	Nanshan District, Shenzhen, Guangdong, P.R.C.
Test Site Location	TEL: +86-755-8637-9589
	FAX: +86-755-8637-9595
Toot Site No	Sporton Site No. :
Test Site No.	CO01-SZ

Test Site	SPORTON INTERNATIONAL (KUNSHAN) INC.				
	No. 3-2, PingXiang Road, Kunshan, Jiangsu Province, P.R.C.				
Test Site Location	TEL: +86-0512-5790-0158				
	FAX: +86-0512-5790-0958				
Toot Site No	Sporton Site No. FCC/IC Registration N				
Test Site No.	03CH01-KS	149928/4086E-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

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

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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.	System Simulator	Agilent	E5515C	N/A	N/A	Unshielded, 1.8 m
3.	GPS Station	T&E	GS-50	N/A	N/A	Unshielded, 1.8 m
4.	GPS Simulator	T&E	GS-50	N/A	N/A	Unshielded, 1.8 m
5.	Signal Generator	R&S	CMU 200	N/A	N/A	Unshielded, 1.8 m
6.	PC	DELL	DCSM	FCC DoC	N/A	Unshielded, 1.8 m
7.	Monitor	DELL	E1910Hc	FCC DoC	Shielded, 1.2 m	Unshielded, 1.8 m
8.	Monitor	DELL	1707FPt	FCC DoC	Shielded, 1.2 m	Unshielded, 1.8 m
9.	Printer	HP	Laser Jet 1018	FCC DoC	Shielded, 1.8 m	Unshielded, 1.8 m
10.	Bluetooth Earphone	Nokia	BH-102	PYAHS-107W	N/A	N/A
11.	Bluetooth Earphone	Nokia	BH-108	N/A	N/A	N/A
12.	Earphone	Eimuse	E-500MV	FCC DoC	Shielded, 2.2 m	Unshielded, 1.8 m
13.	Notebook	DELL	VOSTRO 1440	N/A	N/A	AC I/P: Unshielded, 1.8 m DC O/P: Shielded, 1.8 m
14.	(USB) Keyboard	DELL	SK-8115	FCC DoC	Shielded, 1.8 m with Core	N/A
15.	(USB) Mouse	DELL	N231	FCC DoC	Shielded, 1.8 m	N/A
16.	iPod	Apple	A1199	FCC DoC	Shielded, 1.2 m	N/A
17.	iPod	Apple	MC525 ZP/A	FCC DoC	Shielded, 1.0 m	N/A
18.	Router	D-link	DIR-855	KA2DIR855A2	N/A	Unshielded, 1.8 m
19.	Router	Hometek	NW616	N/A	N/A	Unshielded, 1.8 m
20.	Mini Card	Kingstom	N0214-001.AOOLF	N/A	N/A	N/A

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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: 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.

		Te	est Condition	on
Item	EUT Configuration	EMI AC	EMI RE<1G	EMI RE≥1G
1.	Charging Mode (EUT with adapter)		\boxtimes	Note 1
2.	Data application transferred mode (EUT with notebook /	\square	\boxtimes	
	PC)			

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.

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Test Items	EUT Configure Mode	Function Type
		Mode 1: GSM 850 Idle + Bluetooth Idle + WLAN Idle + Adapter + Earphone + Camera
A.C. Conducted		Mode 2: GSM 1900 Idle + Bluetooth Idle + WLAN Idle + Adapter + Earphone + MP3
AC Conducted Emission	1/2	Mode 3: WCDMA Band V Idle + Bluetooth Idle + WLAN Idle + Adapter + Earphone + FM Rx
		Mode 4: WCDMA Band V Idle + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Data Link with Notebook) + GPS Rx
		Mode 1: GSM 850 Idle + Bluetooth Idle + WLAN Idle + Adapter + Earphone + Camera
Radiated	4/0	Mode 2: GSM 1900 Idle + Bluetooth Idle + WLAN Idle + Adapter + Earphone + MP3
Emissions < 1GHz	1/2	Mode 3: WCDMA Band V Idle + Bluetooth Idle + WLAN Idle + Adapter + Earphone + FM Rx
		Mode 4: WCDMA Band V Idle + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Data Link with PC) + GPS Rx
Radiated Emissions ≥ 1GHz	2	Mode 1: WCDMA Band V Idle + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Data Link with PC) + GPS Rx

Remark:

- **1.** The worst case of AC Conducted Emission is mode 2, and mode 4 that for data exchange mode is also reported.
- 2. The worst case of RE < 1G is mode 4; only the test data of this mode was reported.
- **3.** Link with Notebook/PC means data application transferred mode between EUT and Notebook/PC.

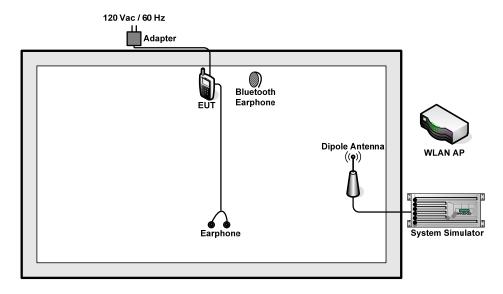
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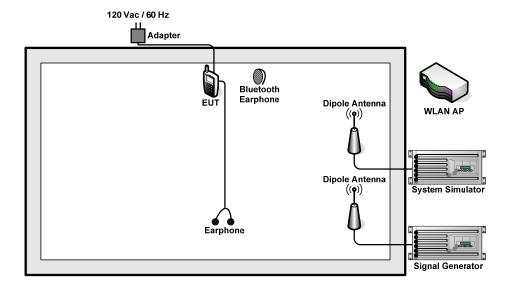


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2.2. Connection Diagram of Test System

<EUT with Adapter Mode>





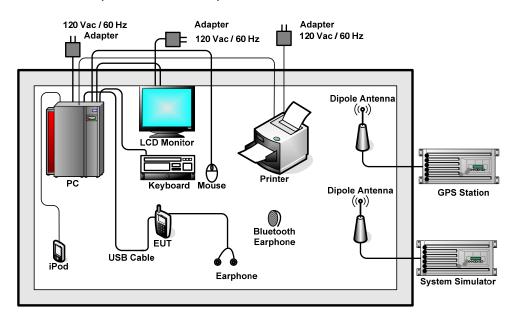
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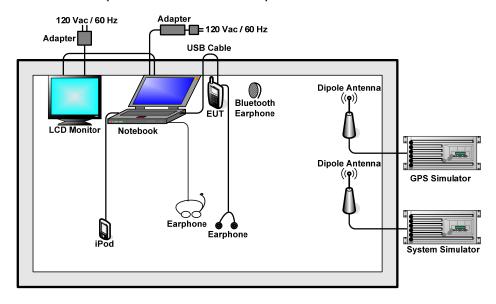


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< EUT with USB Cable (Data Link with PC) Mode >



<EUT with USB Cable (Data Link with Notebook) Mode>



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2.3. Test Software

The EUT was in GSM or 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 the program, "Winthrax", installed in notebook or PC for active sync files transfer with EUT via USB cable / iPod.
- 2. Execute "Music Player" to play MP3 file.
- 3. Turn on camera to capture images.
- 4. Turn on GPS function to make the EUT receive signals from GPS station / GPS simulator continuously.
- 5. Turn on FM function to keep EUT receiving signals continuously in FM Rx mode.
- 6. Keep the EUT transmitting and receiving signals continuously from system simulator.

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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	Conducted	limit (dBuV)
(MHz)	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

See list of measuring instruments of this test report.

3.1.3 Test Procedure

- 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. The EUT link with notebook / PC, connect notebook / PC 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 with Maximum Hold Mode.

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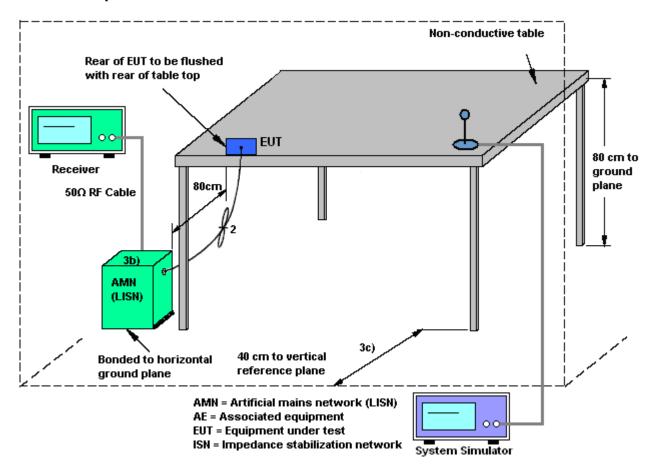
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3.1.4 Test Setup



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3.1.5 Test Result of AC Conducted Emission

	Mode 2	2			Temp	erature	:	22~23 ℃		_
Test Engineer :	Neaps	Wang			Relati	ive Hun	nidity :	44~46%		
Test Voltage :	120Va	c / 60H	lz		Phase	Phase: Line				
Function Type :	GSM 1	GSM 1900 Idle + Bluetooth				Idle + WLAN Idle + Adapter + Earphone				
Remark :	All emi	ssions	not rep	orted h	ere are	e more t	than 10	dB below	the prescri	ibe
100L	evel (dBu\	/)			-			Da	ite: 2012-03-30	ĺ
90.0										
80.0										
70.0										
2000	-								FCC 15B_QP	
60.0			4				-		FCC 15B_AVG	
50.0		-	YAKAY MANIKA		in to all districts	HAMMAN PANY	A THE PARTY OF THE			
40.0	property Land	MA LANK	Phy many and the fine	Play My House Man	J T	7 4	12	Whom Walled Admin	ر ماه	
30.0	Alan Maria			S. 101	3 1		111	Mallinan	HAMMAN AND BE HOLD	
20.0			-							
								400		l
10.0										
2000	15 2							10	20 2	
2000	15 .2		.5	1	2 Frequence	cy (MHz)	5	10	20 3	80
0. Site	: 00	01-sz			Frequen		5	10	20 3	80
Site Conditi	: CO	C 15B_	QP LISN		Frequen		5	10	20 3	30
0. Site	: CO	C 15B_C	QP LISN		Frequen		5	10	20 3	30
Site Conditi Project	: CO : On: FC : : (Fo : Mod	C 15B_c C)2316 de2	QP LISN 06 Over	Limit	Frequence 00601 I	LINE LISN	Cable		20 3	80
Site Conditi Project	: CO : On: FC : : (Fo : Mod	C 15B_C	QP LISN	_L_200	Frequence 00601 I	LINE	Cable	10	20 3	80
Site Conditi Project	: CO : On: FC : : (Fo : Mod	C 15B_c C)2316 de2	QP LISN 06 Over	Limit	Frequence 00601 I	LINE LISN	Cable		20 3	60
Site Conditi Project	: CO : On: FC : (F) : Mo	C 15B_C) 2316 de2 Level	QP LISN 06 Over Limit	Limit Line	Read Level	LINE LISN Factor dB	Cable Loss dB		20 3	00
Site Conditi Project Mode	: COO : FCC : (Fc : Moo Freq MHz 0.37	C 15B_C) 2316 de2 Level dBuV 30.09 39.09	QP LISN 06 Over Limit dB -18.38 -19.38	Limit Line dBuV 48.47 58.47	Read Level dBuV	LISN Factor dB 0.02 0.02	Cable Loss dB 10.07 10.07	Remark Average QP	20 3	60
Site Conditi Project Mode	: COO : FCC : (FC : MOO Freq MHz 0.37 0.37 1.59	C 15B_C) 2316 de2 Level dBuV 30.09 39.09 27.86	QP LISM O6 Over Limit dB -18.38 -19.38 -18.14	Limit Line dBuV 48.47 58.47 46.00	Read Level dBuV 20.00 17.70	LISN Factor dB 0.02 0.02 0.03	Cable Loss dB 10.07 10.07 10.13	Remark Average QP Average	20 3	60
Site Conditi Project Mode	: COO : On: FCC : (Fo : Moo Freq MHz 0.37 0.37 1.59 1.59	C 15B_C) 2316 de2 Level dBuV 30.09 39.09 27.86 36.86	QP LISN 06	Limit Line dBuV 48.47 58.47 46.00 56.00	Read Level dBuV 20.00 17.70 26.70	LISN Factor dB 0.02 0.02 0.03 0.03	Cable Loss dB 10.07 10.07 10.13 10.13	Remark Average QP Average QP	20 3	B0
Site Conditi Project Mode	: COO: con: FCC : (Fo: : Moo: Freq MHz 0.37 0.37 1.59 1.59 2.12	C 15B_C) 2316 de2 Level dBuV 30.09 39.09 27.86 36.86 29.59	QP LISN O6 Over Limit dB -18.38 -19.38 -18.14 -19.14 -16.41	Limit Line dBuV 48.47 58.47 46.00 56.00 46.00	Read Level dBuV 20.00 29.00 17.70 26.70 19.39	LISN Factor dB 0.02 0.02 0.03 0.03 0.04	Cable Loss dB 10.07 10.07 10.13 10.13 10.16	Remark Average QP Average QP Average	20 3	60
Site Conditi Project Mode	: COM: FCC: (F): Mod Freq MHz 0.37 0.37 1.59 1.59 2.12 2.12	C 15B_C) 2316 de2 Level dBuV 30.09 39.09 27.86 36.86 29.59 38.79	QP LISM O6 Over Limit dB -18.38 -19.38 -19.14 -19.14 -16.41 -17.21	Limit Line dBuV 48.47 58.47 46.00 56.00 46.00 56.00	Read Level dBuV 20.00 29.00 17.70 26.70 19.39 28.59	LISN Factor dB 0.02 0.02 0.03 0.03 0.04 0.04	Cable Loss dB 10.07 10.07 10.13 10.13 10.16 10.16	Remark Average QP Average QP Average QP	20 3	60
Site Conditi Project Mode	: COO : : (Fe : : Moo Freq MHz 0.37 0.37 1.59 2.12 2.12 2.53	C 15B_C) 2316 de2 Level dBuV 30.09 39.09 27.86 29.59 38.79 30.42	QP LISM O6 Over Limit dB -18.38 -19.38 -18.14 -19.14 -16.41 -17.21 -15.58	Limit Line dBuV 48.47 76.00 56.00 46.00 56.00 46.00	Read Level 20.00 29.00 17.70 26.70 19.39 28.59 20.20	LISN Factor dB 0.02 0.03 0.03 0.04 0.04 0.04	Cable Loss dB 10.07 10.07 10.13 10.16 10.16 10.16	Remark Average QP Average QP Average QP Average QP Average	20 3	60
Site Conditi Project Mode	: COO : : (F) : : Moo Freq MHz 0.37 0.37 1.59 2.12 2.12 2.53 2.53	C 15B_C) 2316 de2 Level dBuV 30.09 39.09 27.86 36.86 29.59 38.79 30.42 39.62	QP LISM O6 Over Limit dB -18.38 -19.38 -19.14 -16.41 -17.21 -15.58 -16.38	Limit Line dBuV 48.47 58.47 46.00 56.00 46.00 56.00 56.00	Read Level 20.00 29.00 17.70 19.39 28.59 20.20 29.40	LISN Factor dB 0.02 0.03 0.03 0.04 0.04 0.04 0.04	Cable Loss dB 10.07 10.07 10.13 10.13 10.16 10.16 10.18 10.18	Remark Average QP Average QP Average QP Average QP Average QP	20 3	60
Site Conditi Project Mode	: COM: FCC: (F: Moor Freq MHz 0.37 0.37 1.59 1.59 2.12 2.53 2.53 3.03	C 15B_c) 2316 de2 Level 30.09 39.09 27.86 36.86 29.59 38.79 30.42 30.42 30.23	QP LISM O6 Over Limit dB -18.38 -19.38 -19.14 -19.14 -16.41 -17.21 -15.58 -16.38 -15.77	Limit Line dBuV 48.47 58.47 46.00 56.00 46.00 46.00 56.00 46.00	Read Level dBuV 20.00 29.00 17.70 26.70 19.39 28.59 20.20 29.40 19.99	LISN Factor dB 0.02 0.02 0.03 0.03 0.04 0.04 0.04 0.04 0.05	Cable Loss dB 10.07 10.07 10.13 10.16 10.16 10.18 10.18 10.18	Remark Average QP Average QP Average QP Average QP Average QP Average	20 3	60
Site Conditi Project Mode	: COM: FCC: (FC: Moor Freq MHz 0.37 0.37 1.59 1.59 2.12 2.13 2.53 3.03 3.03	C 15B_C) 2316 de2 Level 30.09 39.09 27.86 36.86 29.59 38.79 30.42 30.23 39.63	QP LISM O6 Over Limit dB -18.38 -19.38 -18.14 -19.14 -16.41 -17.21 -15.58 -16.38 -15.77 -16.37	Limit Line dBuV 48.47 58.47 46.00 56.00 46.00 56.00 46.00 56.00 46.00 56.00	Read Level dBuV 20.00 29.00 17.70 26.70 19.39 28.59 20.20 29.40 19.99 29.39	LISN Factor dB 0.02 0.03 0.03 0.04 0.04 0.04 0.04 0.05 0.05	Cable Loss dB 10.07 10.07 10.13 10.13 10.16 10.16 10.18 10.19 10.19	Remark Average QP Average QP Average QP Average QP Average QP Average	20 3	30

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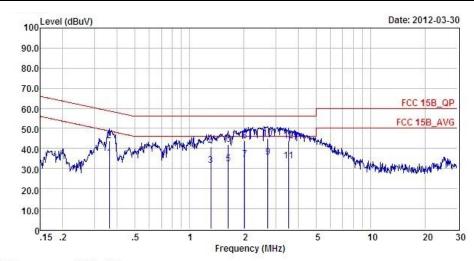
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Test Mode :	Mode 2	Temperature :	22~23 ℃				
Test Engineer :	Neaps Wang	Relative Humidity :	44~46%				
Test Voltage :	120Vac / 60Hz	Phase :	Neutral				
Function Type :	GSM 1900 Idle + Bluetooth Idle + WLAN Idle + Adapter + Earphone + MP3						
Remark :	All emissions not reported h	ere are more than 10 c	IB below the prescribed limit.				



: CO01-SZ

Condition: FCC 15B_QP LISN_N_2000601 NEUTRAL

Project : (FC)231606 Mode : Mode2

			Over	Limit	Read	LISN	Cable	
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark
-	MHz	dBuV	dB	dBuV	dBuV	dB	dB	-
1	0.36	35.19	-13.50	48.69	25.10	0.02	10.07	Average
2	0.36	43.69	-15.00	58.69	33.60	0.02	10.07	QP
3	1.31	31.65	-14.35	46.00	21.51	0.02	10.12	Average
4 5	1.31	41.05	-14.95	56.00	30.91	0.02	10.12	QP
5	1.64	32.46	-13.54	46.00	22.30	0.03	10.13	Average
6	1.64	41.86	-14.14	56.00	31.70	0.03	10.13	QP
7	2.02	34.49	-11.51	46.00	24.31	0.03	10.15	Average
8	2.02	43.89	-12.11	56.00	33.71	0.03	10.15	QP
9	2.71	35.52	-10.48	46.00	25.30	0.04	10.18	Average
10	2.71	45.02	-10.98	56.00	34.80	0.04	10.18	QP
11	3.53	33.85	-12.15	46.00	23.60	0.06	10.19	Average
12	3.53	43.85	-12.15	56.00	33.60	0.06	10.19	QP

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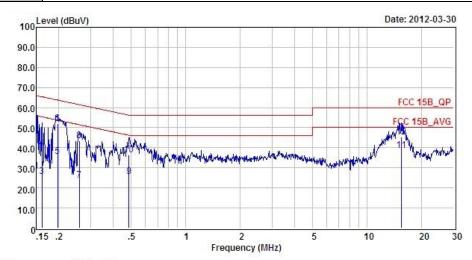
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Test Mode: Mode 4
Temperature: 22~23°C
Test Engineer: Neaps Wang
Relative Humidity: 44~46%
Test Voltage: 120Vac / 60Hz
Phase: Line

WCDMA Band V Idle + Bluetooth Idle + WLAN Idle + Earphone + USB Cable (Data Link with Notebook) + GPS Rx

Remark: All emissions not reported here are more than 10 dB below the prescribed limit.



Site : CO01-SZ

Condition: FCC 15B_QP LISN_L_2000601 LINE

Project : (FC)231606 Mode : Mode4

Over Limit Read LISN Cable Freq Level Limit Line Level Factor Loss Remark MHz dBuV dB dBuV dBuV dB dB 0.15 28.28 -27.72 56.00 18.20 0.03 10.05 Average 0.15 49.18 -16.82 66.00 39.10 0.03 10.05 QP 0.16 25.48 -29.90 55.38 15.40 0.03 10.05 Average 0.16 39.78 -25.60 65.38 29.70 0.20 35.78 -17.98 53.76 25.69 0.03 10.05 QP 0.03 10.06 Average 0.03 10.06 QP 0.20 51.88 -11.88 63.76 41.79 0.26 23.79 -27.68 51.47 13.71 0.02 10.06 Average 0.26 43.39 -18.08 61.47 33.31 0.02 10.06 QP 0.49 25.70 -20.53 46.23 15.60 0.49 36.30 -19.93 56.23 26.20 0.02 10.08 Average 0.02 10.08 QP 9 10 15.47 38.50 -11.50 50.00 27.80 0.25 10.45 Average 15.47 45.50 -14.50 60.00 34.80 0.25 10.45 QP 11

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22~23℃ Test Mode: Mode 4 Temperature: Neaps Wang **Relative Humidity:** 44~46% Test Engineer: 120Vac / 60Hz Phase: Test Voltage: Neutral WCDMA Band V Idle + Bluetooth Idle + WLAN Idle + Earphone + USB Cable Function Type: (Data Link with Notebook) + GPS Rx Remark: All emissions not reported here are more than 10 dB below the prescribed limit. 100 Level (dBuV) Date: 2012-03-30 90.0 80.0 70.0 FCC 15B_QP 60.0 FCC 15B_AVG 50.0 40.0 30.0 20.0 10.0 0<mark>.15 .2</mark> 30 Frequency (MHz) Site : CO01-SZ Condition: FCC 15B QP LISN N 2000601 NEUTRAL Project : (FC) 231606 : Mode4 Over Limit Read LISN Cable Line Level Factor Loss Remark Freq Level Limit dB dBuV dBuV dBuV MHz dB dB 0.17 25.58 -29.41 54.99 15.51 0.02 10.05 Average 0.17 37.08 -27.91 64.99 27.01 0.02 10.05 QP 0.20 34.07 -19.64 53.71 23.99 0.20 50.37 -13.34 63.71 40.29 0.02 10.06 Average 0.02 10.06 QP 3 0.22 24.77 -28.15 52.92 14.69 0.02 10.06 Average 0.22 45.47 -17.45 62.92 35.39 0.02 10.06 QP 0.26 24.58 -26.89 51.47 14.50 0.02 10.06 Average 0.26 42.38 -19.09 61.47 32.30 0.54 27.00 -19.00 46.00 16.89 0.02 10.06 QP 0.02 10.09 Average 8 9 0.54 40.60 -15.40 56.00 30.49 0.02 10.09 QP 15.55 35.11 -14.89 50.00 24.30 0.36 10.45 Average 10 15.55 35.11 -14.89 50.00 24.30 15.55 43.41 -16.59 60.00 32.60 0.36 10.45 QP

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3.2. Test of Radiated Emission Measurement

3.2.1. Limit of Radiated Emission

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

Frequency	Field Strength	Measurement Distance
(MHz)	(microvolts/meter)	(meters)
0.009 - 0.490	2400/F(KHz)	300
0.490 – 1.705	24000/F(KHz)	30
1.705 – 30.0	30	30
30 – 88	100	3
88 – 216	150	3
216 - 960	200	3
Above 960	500	3

3.2.2. Measuring Instruments

See list of measuring instruments of this test report.

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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 meter and 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, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be repeated one by one 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

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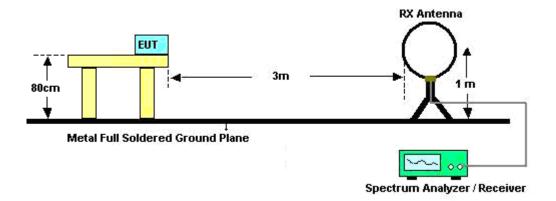
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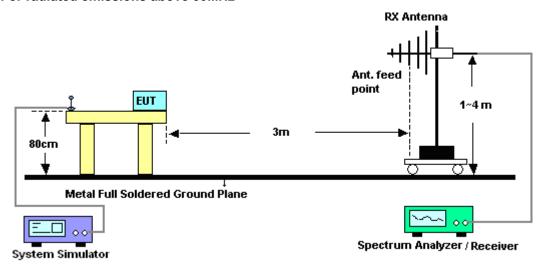


3.2.4. Test Setup of Radiated Emission

For radiated emissions below 30MHz



For radiated emissions above 30MHz



3.2.5. Test Results of Radiated Emissions (9 kHz ~ 30 MHz)

The low frequency, which started from 9 KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

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Test Mode :	Mode 4	Temperature :	21~22°C		
Test Engineer :	Cloud Peng	Relative Humidity :	41~42%		
Test Distance :	3m	Polarization :	Horizontal		
Function Type :	WCDMA Band V Idle + B (Data Link with PC) + GPS		Idle + Earphone + USB C		
120	Level (dBuV/m)				
			FCC CLASS-B		
60			-6dB FCC CLASS-B (AVG)		
	5 46		-6dB		
	23				
0	30 2624.	5218. 7812.	10406. 13000		

Mode : mode 4

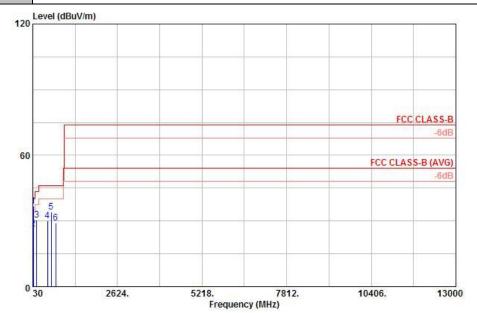
ouc	· mode	-	0	Limit	D4	Antenna	C-1-1-	Preamo	Ant	Table	
	Freq	Level	Over Limit	Line		Factor		Factor	Pos		Remark
80	MHz	dBuV/m	dB	$\overline{\mathtt{dBuV/m}}$	dBuV	dB/m	dB	dB	CM	deg	\$ ·
1	30.27	27.87	-12.13	40.00	39.69	18.00	0.26	30.08			Peak
2	166.62	24.76	-18.74	43.50	44.83	9.31	0.54	29.92			Peak
3	240.33	25.51	-20.49	46.00	43.11	11.56	0.66	29.82		-	Peak
4	479.90	31.46	-14.54	46.00	43.40	16.87	0.94	29.75			Peak
5	594.00	36.14	-9.86	46.00	46.12	18.59	1.06	29.63	100	0	Peak
6	720.00	33.11	-12.89	46.00	42.10	19.52	1.15	29.66			Peak

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21~22°C Test Mode: Mode 4 Temperature : Cloud Peng 41~42% Test Engineer: Relative Humidity: Test Distance : 3m Polarization: Vertical WCDMA Band V Idle + Bluetooth Idle + WLAN Idle + Earphone + USB Cable Function Type: (Data Link with PC) + GPS Rx



Site : 03CH01-KS Condition: FCC CLASS-B 3m LF_ANT_100803 VERTICAL

Project : (FC)231606 Mode : mode 4

uc	. Inoue	1	^	-	D 11		0.11	-	\$1000 E	T 11	
	Freq	Level	Over Limit			intenna Factor		Preamp Factor	Ant Pos	Table Pos	Remark
100	MHz	dBuV/m	dB	dBuV/m	dBu₹	dB/m	dB	dB	CM	deg	÷ 1
1 !	43.23	36.93	-3.07	40.00	56.74	10.03	0.27	30.11			Peak
2	46.74	26.53	-13.47	40.00	47.51	8.88	0.27	30.13	120	360	QP
3	150.15	30.32	-13.18	43.50	49.78	10.00	0.51	29.97			Peak
4	479.90	30.02	-15.98	46.00	41.96	16.87	0.94	29.75		0.000	Peak
4 5	594.00	34.02	-11.98	46.00	44.00	18.59	1.06	29.63			Peak
6	737.50	29.23	-16.77	46.00	37.86	19.78	1.17	29.58			Peak

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4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
AC LISN	ETS-LINDGR EN	3816/2SH	00103912	0.1MHz~108MH z	Feb. 27, 2012	Mar. 30, 2012	Feb. 26, 2013	Conduction (CO01-SZ)
AC LISN	ETS-LINDGR EN	3816/2SH	00103892	0.1MHz~108MH z	Feb. 27, 2012	Mar. 30, 2012	Feb. 26, 2013	Conduction (CO01-SZ)
ESCIO TEST Receiver	R&S	1142.8007. 03	100724	9K-3GHz	Mar. 07, 2012	Mar. 30, 2012	Mar. 06, 2013	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	61602000089 1N/A	N/A	Oct. 12, 2011	Mar. 30, 2012	Oct. 11, 2012	Conduction (CO01-SZ)
AC LISN	SCHWARZBE CK	NNLK 8121	8121370	10KHz-30MHz	Jun. 13, 2011	Mar. 30, 2012	Jun. 12, 2012	Conduction (CO01-SZ)
PSG Analog Singnal Generator	Agilent	E8257D	MY48050405	250KHZ-50GHZ	Sep. 03, 2011	Mar. 30, 2012	Sep. 02, 2012	Conduction (CO01-SZ)
System Simulator	Agilent	E5515C	MY50264168	GSM/WCDMA /CDMA2000	Mar. 13, 2012	Mar. 30, 2012	Mar. 12, 2013	Conduction (CO01-SZ)
GPS Simulator	T&E	GS-50	536468	GPS	Oct. 10, 2011	Mar. 30, 2012	Oct. 09, 2012	Conduction (CO01-SZ)
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 09, 2011	Apr. 01, 2012	Nov. 08, 2012	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP40	100319	9kHz~40GHz	Dec. 30, 2011	Apr. 01, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Dec. 08, 2011	Apr. 01, 2012	Dec. 07, 2012	Radiation (03CH01-KS)
Loop Antenna	R&S	HFH2-Z2	860004/00	9 kHz~30 MHz	Jul. 28, 2011	Apr. 01, 2012	Jul. 27, 2012	Radiation (03CH01-KS)
Double Ridge Horn Antenna	EMCO	3117	00075959	1GHz~18GHz	Jan. 06, 2012	Apr. 01, 2012	Jan. 05, 2013	Radiation (03CH01-KS)
Amplifier	Wireless	FPA-6592G	060007	30MHz~2GHz	Dec. 30, 2011	Apr. 01, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Dec. 30, 2011	Apr. 01, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
Active Horn Antenna	com-power	AHA-118	701023	1GHz~18GHz	Nov. 07, 2011	Apr. 01, 2012	Nov. 06, 2012	Radiation (03CH01-KS)
SHE-EHF Horn	Schwarzbeck	BBHA9170	BBHA170249	15GHz~40GHz	Oct. 11, 2011	Apr. 01, 2012	Oct. 10, 2012	Radiation (03CH01-KS)
Signal Generator	R&S	SMR40	100455	10GHz~40GHz	Dec. 30, 2011	Apr. 01, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
System Simulator	R&S	CMU200	837587/066	2G Full-Band	Dec. 30, 2011	Apr. 01, 2012	Dec. 29, 2012	Radiation (03CH01-KS)
GPS Station	T&E	GS-50	N/A	N/A	N/A	Apr. 01, 2012	N/A	Radiation (03CH01-KS)

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5. Uncertainty of Evaluation

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

	Uncerta	Uncertainty of X _i			
Contribution	dB	Probability Distribution	u(X _i)		
Receiver Reading	0.10	Normal (k=2)	0.05		
Cable Loss	0.10	Normal (k=2)	0.05		
AMN Insertion Loss	2.50	Rectangular	0.63		
Receiver Specification	1.50	Rectangular	0.43		
Site Imperfection	1.39	Rectangular	0.80		
Mismatch	+0.34 / -0.35	U-Shape	0.24		
Combined Standard Uncertainty Uc(y)		1.13			
Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.26				

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

	Uncerta			
Contribution	dB	Probability Distribution	u(X _i)	
Receiver Reading	0.41	Normal (k=2)	0.21	
Antenna Factor Calibration	0.83	Normal (k=2)	0.42	
Cable Loss Calibration	0.25	Normal (k=2)	0.13	
Pre-Amplifier Gain Calibration	0.27	Normal (k=2)	0.14	
RCV/SPA Specification	2.50	Rectangular	0.72	
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29	
Site Imperfection	1.43	Rectangular	0.83	
Mismatch	+0.39 / -0.41	U-Shape	0.28	
Combined Standard Uncertainty Uc(y)		1.27		
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)

	Uncertai					
Contribution	dB	Probability Distribution	u(X _i)	C _i	C _i * u(X _i)	
Receiver Reading	±0.10	Normal (k=2)	0.10	1	0.10	
Antenna Factor Calibration	±1.70	Normal (k=2)	0.85	1	0.85	
Cable Loss Calibration	±0.50	Normal (k=2)	0.25	1	0.25	
Receiver Correction	±2.00	Rectangular	1.15	1	1.15	
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87	
Site Imperfection	±2.80	Triangular	1.14	1	1.14	
Mismatch Receiver VSWR Γ 1 = 0.197 Antenna VSWR Γ 2 = 0.194 Uncertainty = 20Log(1- Γ 1* Γ 2)	+0.34 / -0.35	U-Shape	0.244	1	0.244	
Combined Standard Uncertainty Uc(y)	2.36					
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 EP231606 as below.

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