FCC Test Report

APPLICANT : CT Asia

EQUIPMENT: Mobile Phone

BRAND NAME : BLU

MODEL NAME : Studio 5.0 LTE

FCC ID : YHLBLUSTUD50LTE

STANDARD : FCC 47 CFR FCC Part 15 Subpart B

CLASSIFICATION : Certification

The product was received on May 22, 2014 and testing was completed on Jul. 10, 2014. We, SPORTON INTERNATIONAL (SHENZHEN) INC., would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI C63.4-2003 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 (SHENZHEN) INC., the test report shall not be reproduced except in full.

Reviewed by: Louis Wu / Manager

Louis Wu

Approved by: Jones Tsai / Manager

SPORTON INTERNATIONAL (SHENZHEN) INC.

No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P.R.C.

TEL: 86-755- 3320-2398 FCC ID: YHLBLUSTUD50LTE Page Number : 1 of 25
Report Issued Date : Aug. 08, 2014

Testing Laboratory 2353

Report No.: FC452209

TABLE OF CONTENTS

RE	VISIO	N HISTORY	3
		RY OF TEST RESULT	
30	IAIIAI	VI OF TEST RESOLT	
1.	GENI	ERAL DESCRIPTION	5
	1.1.	Applicant	5
	1.2.	Manufacturer	5
	1.3.	Product Feature of Equipment Under Test	5
	1.4.	Product Specification subjective to this standard	
	1.5.	Modification of EUT	
	1.6.	Test Location	
	1.7.	Applicable Standards	7
2.	TEST	CONFIGURATION OF EQUIPMENT UNDER TEST	8
	2.1.	Test Mode	8
	2.2.	Connection Diagram of Test System	
	2.3.	Support Unit used in test configuration and system	
	2.4.	EUT Operation Test Setup	12
3.	TEST	「RESULT	13
	3.1.	Test of AC Conducted Emission Measurement	13
	3.2.	Test of Radiated Emission Measurement	19
4.	LIST	OF MEASURING EQUIPMENT	24
5.	UNCI	ERTAINTY OF EVALUATION	25
Α	PPENI	DIX A. SETUP PHOTOGRAPHS	

TEL: 86-755- 3320-2398 FCC ID: YHLBLUSTUD50LTE Page Number : 2 of 25 Report Issued Date : Aug. 08, 2014

Report No.: FC452209

REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FC452209	Rev. 01	Initial issue of report	Aug. 08, 2014

TEL: 86-755- 3320-2398 FCC ID: YHLBLUSTUD50LTE Page Number : 3 of 25
Report Issued Date : Aug. 08, 2014
Report Version : Rev. 01

SUMMARY OF TEST RESULT

Report Section	FCC Rule	C Rule Description Lin		Result	Remark
					Under limit
3.1	15.107	AC Conducted Emission	< 15.107 limits	PASS	7.29 dB at
					0.570 MHz
					Under limit
3.2	15.109	09 Radiated Emission	< 15.109 limits	PASS	6.00 dB at
					275.430 MHz

TEL: 86-755- 3320-2398 FCC ID: YHLBLUSTUD50LTE Page Number : 4 of 25
Report Issued Date : Aug. 08, 2014

Report No.: FC452209

1. General Description

1.1. Applicant

CT Asia

Unit 01, 15/F, Seaview Centre, 139-141 Hoi bun road, Kwun Tong, Kowloon, Hongkong

1.2. Manufacturer

BEIJING BENYWAVE TECHNOLOGY CO., LTD.

NO.55 Jiachang 2 road, OPTO-Mechatronics Industrial Park, Tongzhou district, Beijing 101111

1.3. Product Feature of Equipment Under Test

	Product Feature
Equipment	Mobile PHONE
Brand Name	BLU
Model Name	Studio 5.0 LTE
FCC ID	YHLBLUSTUD50LTE
	GSM/GPRS/EGPRS/WCDMA/HSPA/LTE
EUT supports Radios application	WLAN 2.4GHz 802.11b/g/n HT20/HT40
	Bluetooth v3.0 + EDR
HW Version	TBW5990_P1.1_001
SW Version	BLU_Y530Q_V06_GENGRIC
EUT Stage	Pre-Production

Remark:

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

Report No.: FC452209

SPORTON INTERNATIONAL (SHENZHEN) INC.Page Number: 5 of 25TEL: 86-755- 3320-2398Report Issued Date: Aug. 08, 2014FCC ID: YHLBLUSTUD50LTEReport Version: Rev. 01

1.4. Product Specification subjective to this standard

Product Specif	ication subjective to this standard
	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 : 020.4 MHz ~ 040.6 MHz
Ty Fraguency	WCDMA Band II: 1852.4 MHz ~ 1752.6 MHz
Tx Frequency	
	LTE Band 4 : 1710.7 MHz ~ 1754.3 MHz LTE Band 7 : 2502.5 MHz ~ 2567.5 MHz
	802.11b/g/n: 2412 MHz ~ 2462 MHz
	Bluetooth: 2402 MHz ~ 2480 MHz 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
Rx Frequency	LTE Band 4 : 2110.7 MHz ~ 2154.3 MHz
	LTE Band 7 : 2622.5 MHz ~ 2687.5 MHz
	802.11b/g/n: 2412 MHz ~ 2462 MHz
	Bluetooth: 2402 MHz ~ 2480 MHz
	GPS : 1.57542 GHz
	WWAN : PIFA Antenna
	LTE: PIFA Antenna
Antenna Type	WLAN : PIFA Antenna
	Bluetooth: PIFA Antenna
	GPS: PIFA Antenna
	GSM: GMSK
	GPRS: GMSK
	EDGE(MCS 0-4): GMSK / (MCS 5-9): 8PSK
	WCDMA: QPSK (Uplink)
	HSDPA: QPSK (Uplink)
Type of Modulation	HSUPA: QPSK (Uplink)
Type of Modulation	LTE: QPSK / 16QAM
	802.11b: DSSS (DBPSK / DQPSK / CCK)
	802.11g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM)
	Bluetooth v4.0 LE : GFSK
	Bluetooth v3.0 EDR : GFSK, π /4-DQPSK, 8-DPSK
	GPS: BPSK

1.5. Modification of EUT

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

SPORTON INTERNATIONAL (SHENZHEN) INC.

TEL: 86-755- 3320-2398 FCC ID: YHLBLUSTUD50LTE Page Number : 6 of 25
Report Issued Date : Aug. 08, 2014

Report No.: FC452209

1.6. Test Location

Test Site	SPORTON INTERNATIONAL (SHENZHEN) INC.					
Test Site Location	No. 3 Building, the third floor of south, Shahe River west, Fengzeyuan warehouse, Nanshan District, Shenzhen, Guangdong, P.R.C.					
1000 0110 200411011	TEL: +86-755- 3320-2398					
Test Site No.	Sporton Site No.		FCC Registration No.			
Test Site No.	CO01-SZ	03CH01-SZ	831040			

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 C63.4-2003

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

 ${\it SPORTON\ INTERNATIONAL\ (SHENZHEN)\ INC.}$

TEL: 86-755- 3320-2398 FCC ID: YHLBLUSTUD50LTE Page Number : 7 of 25
Report Issued Date : Aug. 08, 2014

Report No.: FC452209

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.

		Те	st Condition	on
Item	EUT Configuration	EMI	EMI	EMI
		AC	RE<1G	RE≥1G
1.	Charging Mode (EUT with adapter)	\boxtimes	\boxtimes	Note 1
2.	Data application transferred mode		\boxtimes	\bowtie
	(EUT connected 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.

TEL: 86-755- 3320-2398 FCC ID: YHLBLUSTUD50LTE Page Number : 8 of 25 Report Issued Date : Aug. 08, 2014

Report No.: FC452209

Test Items	EUT Configure Mode	Function Type
		Mode 1: GSM850 Idle + Bluetooth Idle + Earphone + WLAN Idle + USB Cable (Charging from Adapter) + Camera <fig.1></fig.1>
AC Conducted Emission	1/2	Mode 2: WCDMA Band V Idle + Bluetooth Idle + Earphone + WLAN Idle + USB Cable (Charging from Adapter) + MPEG4 <fig.1></fig.1>
		Mode 3: LTE Band 4 Idle + Bluetooth Idle + Earphone + WLAN Idle + USB Cable (Data Link with Notebook) + GPS Rx <fig.2></fig.2>
		Mode 1: GSM850 Idle + Bluetooth Idle + Earphone + WLAN Idle + USB Cable (Charging from Adapter) + Camera <fig.1></fig.1>
Radiated Emissions < 1GHz	1/2	Mode 2: WCDMA Band V Idle + Bluetooth Idle + Earphone + WLAN Idle + USB Cable (Charging from Adapter) + MPEG4 <fig.1></fig.1>
		Mode 3: LTE Band 4 Idle + Bluetooth Idle + Earphone + WLAN Idle + USB Cable (Data Link with Notebook) + GPS Rx <fig.2></fig.2>
Radiated Emissions ≥ 1GHz	2	Mode 1: LTE Band 4 Idle + Bluetooth Idle + Earphone + WLAN Idle + USB Cable (Data Link with Notebook) + GPS Rx <fig.2></fig.2>

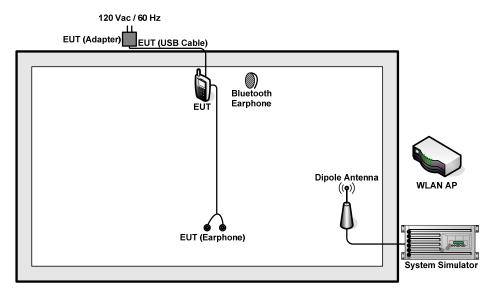
Remark:

- 1. The worst case of AC is mode 2, and the USB Link mode of AC is mode 3, the test data of these modes are reported.
- 2. The worst case of RE < 1G is mode 3; only the test data of this mode was reported.
- 3. Link with Notebook means data application transferred mode between EUT and Notebook.

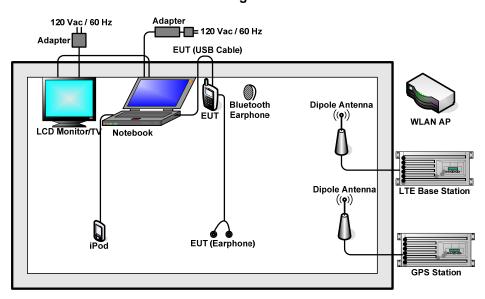
TEL: 86-755- 3320-2398 FCC ID: YHLBLUSTUD50LTE Page Number : 9 of 25
Report Issued Date : Aug. 08, 2014
Report Version : Rev. 01

2.2. Connection Diagram of Test System

<EUT with Adapter Mode>



<Fig.1>



<Fig.2>

TEL: 86-755- 3320-2398 FCC ID: YHLBLUSTUD50LTE Page Number : 10 of 25
Report Issued Date : Aug. 08, 2014

Report No.: FC452209

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	CMW 500	N/A	N/A	Unshielded, 1.8 m
2.	Bluetooth Earphone	Nokia	BH-108	PYAHS-107W	N/A	N/A
3.	Base Station	Agilent	8960	N/A	N/A	Unshielded, 1.8 m
4.	System Simulator(LTE)	Anitsu	MT8820C	N/A	N/A	Unshielded, 1.8 m
5.	Notebook	Lenovo	G480	FCC DoC	N/A	AC I/P: Unshielded, 1.2m DC O/P: Shielded, 1.8 m
6.	WLAN AP	D-Link	DIR-628	KA2DIR628A2	N/A	Unshielded, 1.8 m
7.	WLAN AP	D-link	DIR-615	N/A	N/A	Unshielded,1.8m
8.	WLAN AP	D-link	DIR-815	KA2IR815A1	N/A	Unshielded,1.8m
9.	GPS Station	ADIVIC	MP9000	N/A	N/A	Unshielded, 1.8 m
10.	Television	changhong	LTE19920EX	N/A	N/A	Unshielded, 1.8 m
11.	Notebook	Lenovo	E540	FCC DoC	N/A	AC I/P: Unshielded, 1.2m DC O/P: Shielded, 1.8 m
12.	GPS Station	T&E	GS-50	N/A	N/A	Unshielded, 1.8 m
13.	LCD Monitor	DELL	IN1940MWb	FCC DoC	Shielded, 1.6 m	Unshielded, 1.8 m
14.	SD Card	SanDisk	4G class 4	FCC DoC	N/A	N/A
15.	iPod nano 8GB	Apple	MC690 ZP/A	FCC DoC	Shielded, 1.2 m	N/A
16.	iPod	Apple	MC525 ZP/A	FCC DoC	Shielded, 1.0 m	N/A

TEL: 86-755- 3320-2398 FCC ID: YHLBLUSTUD50LTE Page Number : 11 of 25
Report Issued Date : Aug. 08, 2014
Report Version : Rev. 01

2.4. EUT Operation Test Setup

The EUT was in GSM or WCDMA idle mode during the testing. The EUT was synchronized to the BCCH, and was 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 notebook and EUT via USB cable.
- 2. Execute "Video player" to play MPEG4 files.
- 3. Turn on camera to capture images.
- 4. Execute "GPS Test" to make the EUT receive continuous signals from GPS station.

FCC ID : YHLBLUSTUD50LTE

Page Number : 12 of 25
Report Issued Date : Aug. 08, 2014

Report No. : FC452209

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

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

3.1.3 Test Procedure

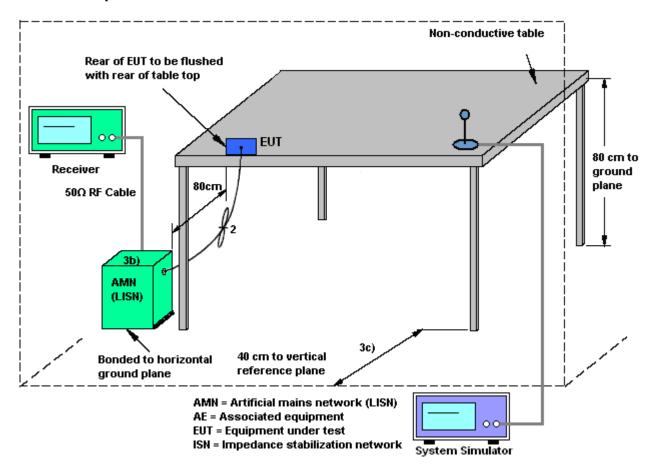
- The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least
 80 centimeters from any other grounded conducting surface.
- 2. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- 3. All the support units are connecting to the other 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 with Maximum Hold Mode.

FCC ID: YHLBLUSTUD50LTE

Page Number : 13 of 25
Report Issued Date : Aug. 08, 2014

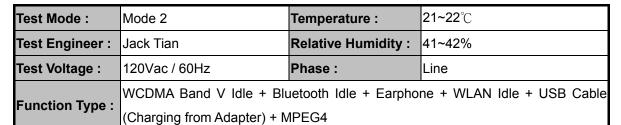
Report No.: FC452209

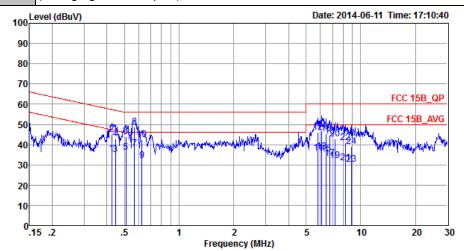
3.1.4 Test Setup



TEL: 86-755- 3320-2398 FCC ID: YHLBLUSTUD50LTE Page Number : 14 of 25
Report Issued Date : Aug. 08, 2014
Report Version : Rev. 01

3.1.5 Test Result of AC Conducted Emission





Site : CO01-SZ

Condition: FCC 15B_QP LISN_L_20140304 LINE

Project : (FC)452209 Mode : Mode 1 IMEI : N/A

THE	: N/A							
			Over	Limit	Read	LISN	Cable	
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark
_								
	MHz	dBu∀	dB	dBu∀	dBu∀	dB	dB	
1	0.43		-11.88	47.33	24.99			Average
2	0.43		-12.28	57.33				
3	0.45		-11.88	46.93				Average
4	0.45	42.95	-13.98	56.93	32.50	0.29	10.16	QP
5	0.51		-9.75	46.00	25.80	0.29		Average
6	0.51	43.75	-12.25	56.00	33.30	0.29	10.16	QP
7	0.57	38.01	-7.99	46.00	27.61	0.25	10.15	Average
8 *	0.57	48.71	-7.29	56.00	38.31	0.25	10.15	QP
9	0.62	32.07	-13.93	46.00	21.70	0.22	10.15	Average
10	0.62	42.37	-13.63	56.00	32.00	0.22	10.15	QP
11	5.84	35.86	-14.14	50.00	25.20	0.40	10.26	Average
12	5.84	45.96	-14.04	60.00	35.30	0.40	10.26	QP
13	6.12	36.46	-13.54	50.00	25.80	0.40	10.26	Average
14	6.12	46.76	-13.24	60.00	36.10	0.40	10.26	QP
15	6.45	35.26	-14.74	50.00	24.60	0.39	10.27	Average
16	6.45	45.56	-14.44	60.00	34.90	0.39	10.27	QP
17	6.77	33.26	-16.74	50.00	22.61	0.38	10.27	Average
18	6.77	44.16	-15.84	60.00	33.51	0.38	10.27	QP
19	7.21	32.08	-17.92	50.00	21.40	0.40	10.28	Average
20	7.21	42.98	-17.02	60.00	32.30	0.40	10.28	QP
21	8.28	31.10	-18.90	50.00	20.30	0.50	10.30	Average
22	8.28	41.00	-19.00	60.00	30.20	0.50		_
23	8.87	30.16	-19.84	50.00	19.29	0.56		Average
24	8.87		-20.74	60.00	28.39		10.31	_

TEL: 86-755- 3320-2398 FCC ID: YHLBLUSTUD50LTE Page Number : 15 of 25
Report Issued Date : Aug. 08, 2014
Report Version : Rev. 01

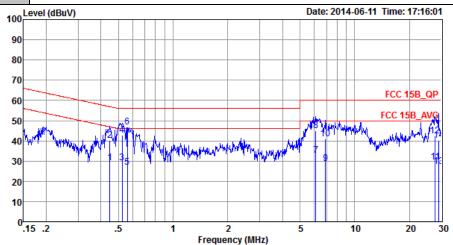


 Test Mode :
 Mode 2
 Temperature :
 21~22°C

 Test Engineer :
 Jack Tian
 Relative Humidity :
 41~42%

 Test Voltage :
 120Vac / 60Hz
 Phase :
 Neutral

Function Type : WCDMA Band V Idle + Bluetooth Idle + Earphone + WLAN Idle + USB Cable (Charging from Adapter) + MPEG4



Site : CO01-SZ

Condition: FCC 15B_QP LISN_N_20140304 NEUTRAL

Project : (FC) 452209 Mode : Mode 1 IMEI : N/A

			Over	Limit	Read	LISN	Cable	
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBu∀	dB	dBu∇	dBu∀	dB	dB	
1	0.45	29.16	-17.73	46.89	18.60	0.40	10.16	Average
2	0.45	40.26	-16.63	56.89	29.70	0.40	10.16	QP
3	0.52	29.14	-16.86	46.00	18.60	0.39	10.15	Average
4	0.52	42.64	-13.36	56.00	32.10	0.39	10.15	QP
5	0.56	26.81	-19.19	46.00	16.30	0.36	10.15	Average
6	* 0.56	46.81	-9.19	56.00	36.30	0.36	10.15	QP
7	6.12	32.92	-17.08	50.00	22.20	0.46	10.26	Average
8	6.12	45.12	-14.88	60.00	34.40	0.46	10.26	QP
9	6.91	28.92	-21.08	50.00	18.20	0.44	10.28	Average
10	6.91	40.82	-19.18	60.00	30.10	0.44	10.28	QP
11	27.71	29.53	-20.47	50.00	15.21	3.73	10.59	Average
12	27.71	42.43	-17.57	60.00	28.11	3.73	10.59	QP
13	28.91	27.23	-22.77	50.00	12.30	4.32	10.61	Average
14	28.91	40.13	-19.87	60.00	25.20	4.32	10.61	OP

TEL: 86-755- 3320-2398 FCC ID: YHLBLUSTUD50LTE Page Number : 16 of 25
Report Issued Date : Aug. 08, 2014
Report Version : Rev. 01



Test Mode: Mode 3

Temperature: 21~22°C

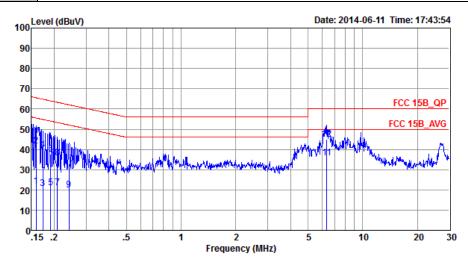
Test Engineer: Jack Tian

Relative Humidity: 41~42%

Test Voltage: 120Vac / 60Hz

Phase: Line

WCDMA Band V Idle + Bluetooth Idle + Earphone + WLAN Idle + USB Cable (Charging from Adapter) + MPEG4



Site : CO01-SZ

Condition: FCC 15B_QP LISN_L_20140304 LINE

Project : (FC)452209 Mode : Mode 3 IMEI : N/A

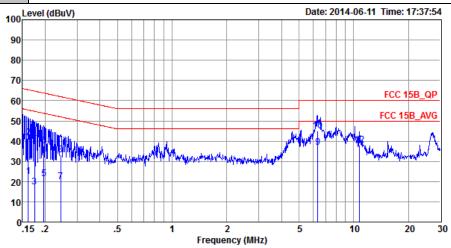
			Over	Limit	Read	LISN	Cable	
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBu₹	dB	dBu∀	dBu∀	dB	dB	
1	0.16	21.87	-33.65	55.52	11.30	0.22	10.35	Average
2	0.16	41.77	-23.75	65.52	31.20	0.22	10.35	QP
3	0.17	20.55	-34.26	54.81	10.00	0.22	10.33	Average
4	0.17	39.75	-25.06	64.81	29.20	0.22	10.33	QP
5	0.19	20.92	-33.06	53.98	10.40	0.22	10.30	Average
6	0.19	37.52	-26.46	63.98	27.00	0.22	10.30	QP
7	0.21	21.21	-32.06	53.27	10.71	0.22	10.28	Average
8	0.21	35.71	-27.56	63.27	25.21	0.22	10.28	QP
9	0.24	19.99	-32.05	52.04	9.50	0.24	10.25	Average
10	0.24	32.79	-29.25	62.04	22.30	0.24	10.25	QP
11 *	6.35	35.76	-14.24	50.00	25.10	0.39	10.27	Average
12	6.35	44.86	-15.14	60.00	34.20	0.39	10.27	QP

TEL: 86-755- 3320-2398 FCC ID: YHLBLUSTUD50LTE Page Number : 17 of 25
Report Issued Date : Aug. 08, 2014
Report Version : Rev. 01



Test Mode:	Mode 3	Temperature :	21~22 ℃				
Test Engineer :	Jack Tian	Relative Humidity :	41~42%				
Test Voltage :	120Vac / 60Hz	Phase :	Neutral				
	ITE Band 4 Idla + Bluetooth Idla + Earnhone + WI AN Idla + I ISB Cable (Data I i						

LTE Band 4 Idle + Bluetooth Idle + Earphone + WLAN Idle + USB Cable (Data Link Function Type: with Notebook) + GPS Rx



: CO01-SZ Site

Condition: FCC 15B_QP LISN_N_20140304 NEUTRAL

Project : (FC) 452209 : Mode 3 IMEI : N/A

			Over	Limit	Read	LISN	Cable	
	Freq	Level	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBu∀	dBuV	dB	dB	
1	0.16	22.37	-33.01	55.38	11.70	0.33	10.34	Average
2	0.16	41.57	-23.81	65.38	30.90	0.33	10.34	QP
3	0.17	17.45	-37.27	54.72	6.81	0.32	10.32	Average
4	0.17	40.45	-24.27	64.72	29.81	0.32	10.32	QP
5	0.20	21.32	-32.44	53.76	10.70	0.32	10.30	Average
6	0.20	37.72	-26.04	63.76	27.10	0.32	10.30	QP
7	0.24	20.09	-31.91	52.00	9.50	0.34	10.25	Average
8	0.24	33.09	-28.91	62.00	22.50	0.34	10.25	QP
9 *	6.35	36.72	-13.28	50.00	26.00	0.45	10.27	Average
10	6.35	45.12	-14.88	60.00	34.40	0.45	10.27	QP
11	10.79	35.84	-14.16	50.00	24.60	0.88	10.36	Average
12	10.79	38.04	-21.96	60.00	26.80	0.88	10.36	QP

TEL: 86-755-3320-2398 FCC ID: YHLBLUSTUD50LTE Page Number : 18 of 25 Report Issued Date: Aug. 08, 2014 : Rev. 01 Report Version

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		

FCC ID : YHLBLUSTUD50LTE

Page Number : 19 of 25
Report Issued Date : Aug. 08, 2014
Report Version : Rev. 01

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.
- 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 (dB μ V/m) = 20 log Emission level (μ V/m)
- 9. Corrected Reading: Antenna Factor + Cable Loss + Read Level Preamp Factor = Level

SPORTON INTERNATIONAL (SHENZHEN) INC.

TEL: 86-755- 3320-2398 FCC ID: YHLBLUSTUD50LTE Page Number : 20 of 25
Report Issued Date : Aug. 08, 2014

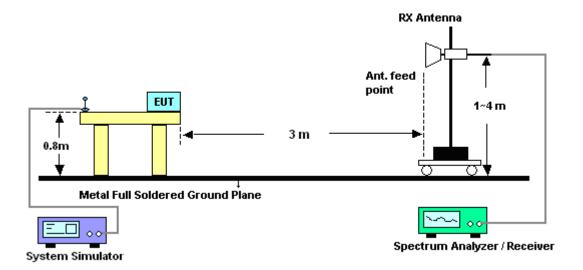
Report No. : FC452209

3.2.4. Test Setup of Radiated Emission

For radiated emissions from 30MHz to 1GHz



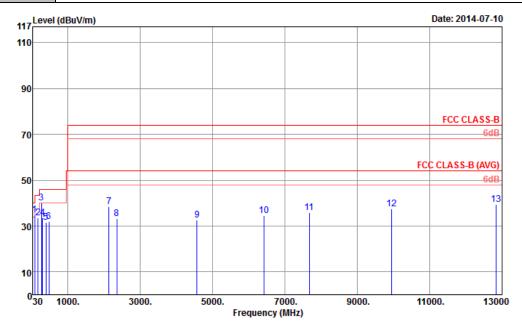
For radiated emissions above 1GHz



TEL: 86-755- 3320-2398 FCC ID: YHLBLUSTUD50LTE Page Number : 21 of 25
Report Issued Date : Aug. 08, 2014
Report Version : Rev. 01

3.2.5. Test Result of Radiated Emission

Test Mode :	Mode 3	Temperature :	24~25°C					
Test Engineer :	Rock Tang	Relative Humidity :	48~49%					
Test Distance :	3m	Polarization :	Horizontal					
Function Type	LTE Band 4 Idle + Bluetooth Idle + Earphone + WLAN Idle + USB Cable (Data Link							
Function Type :								
Remark :	#7 is system simulator signa	I which can be ignored	l.					



Site : 03CH01-SZ

Condition : FCC CLASS-B 3m LF_ANT_131026 HORIZONTAL

Project : (FC)452209 Mode : Mode 3

		Freq	Level	Over Limit	Limit Line		Antenna Factor		Preamp Factor	A/Pos	T/Pos	Remark
	-	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1		88.59	34.82	-8.68	43.50	54.91	8.66	1.19	29.94			Peak
2		181.47	33.59	-9.91	43.50	54.02	7.89	1.62	29.94			Peak
3	Ρ	275.43	40.00	-6.00	46.00	55.85	12.15	1.93	29.93	100	204	Peak
4		304.20	33.60	-12.40	46.00	48.88	12.62	2.03	29.93			Peak
5		398.70	31.48	-14.52	46.00	43.26	15.86	2.29	29.93			Peak
6		479.90	32.08	-13.92	46.00	42.12	17.40	2.48	29.92			Peak
7		2138.00			74.00	59.21	30.69	5.32	56.91			Peak
8		2350.00	33.19	-40.81	74.00	52.88	31.72	5.56	56.97			Peak
9		4570.00	32.70	-41.30	74.00	49.35	33.25	8.10	58.00			Peak
10		6432.00	34.52	-39.48	74.00	47.68	34.00	9.75	56.91			Peak
11		7676.00	35.84	-38.16	74.00	48.03	34.33	10.29	56.81			Peak
12		9950.00	37.38	-36.62	74.00	45.99	36.93	12.58	58.12			Peak
13		12834.00	39.48	-34.52	74.00	44.77	38.50	14.31	58.10	100	209	Peak

TEL: 86-755- 3320-2398 FCC ID: YHLBLUSTUD50LTE Page Number : 22 of 25 Report Issued Date : Aug. 08, 2014

Report No.: FC452209

Report No. : FC452209

Test Mode :	Mode 3					Temperature :			24~25°C				
Test Engine	eer: Rock Tang					Rela	Relative Humidity :			48~49%			
Test Distan	ice :	3m				Pola	rizatio	on :	V	/ertica	I		
Function Ty	vne :	LTE Bar	nd 4 Id	le + Blu	uetootl	h Idle -	- Earp	hone -	+ WLA	N Idle	+ USB	Cable (Data	a Link
i diletion is	ype.	with Not	ebook) + GP	S Rx								
Remark :		#7 is sys	stem s	imulato	or sign	al whic	ch car	n be igr	nored.				
117 ^L	Level (dE	BuV/m)									Date: 2	014-07-10	
110													
90													
											FCC	CLASS-B	
70											100	-6dB	
											FCC CLAS		
50												-6dB	
[³ 5 a	7	,				10	11		12	2	13	
30	² 4 ⁵ 6		5		9		_ĭ						
10													
03	30 100	10	3000.		5000.		7000.		9000.		11000.	13000	
	00 100		3000.		3000.	Frequen)	3000.		11000.	13000	
Site Conditi Project Mode		: 03CH01 : FCC CL : (FC)452 : Mode 3	ASS-B 3	Bm LF_AN	NT_1310	26 VERT	ICAL						
	Fr	eq Level		Limit Line	ReadA Level			Preamp Factor	A/Pos	T/Pos	Remark		
-		IHz dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		deg		_	
4											Peak		
1 2 P	182.	21 29.62 01 34.18	-9.32	43.50	54.51	9.30 7.98		29.94	100		Peak		
3 4		34 35.83 60 31.93						29.93			Peak Peak		
5	479.	90 33.46	-12.54	46.00	43.50	17.40	2.48	29.92			Peak		
6		70 32.21									Peak		
7 8		00 37.61 00 32.89						56.91			Peak Peak		
9				74.00							Peak		
-	4586.												
10	6902.	00 34.03	-39.97								Peak		
10 11	6902. 8200.	00 34.03 00 35.00	-39.97 -39.00	74.00	45.80	35.27	10.84	56.91			Peak		
10	6902. 8200. 10410.	00 34.03	-39.97 -39.00 -36.85	74.00 74.00	45.80 46.17	35.27 36.75	10.84 12.88	56.91 58.65					

TEL: 86-755-3320-2398 FCC ID: YHLBLUSTUD50LTE Page Number : 23 of 25 Report Issued Date: Aug. 08, 2014 Report Version : Rev. 01

4. List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
ESCIO TEST Receiver	R&S	ESCI	100724	9kHz~3GHz	Feb. 21, 2014	Jul. 10, 2014	Feb. 20, 2015	Radiation (03CH01-SZ)
Spectrum Analyzer	Agilent Technologies	N9038A	MY522601 85	20Hz~26.5GHz	May 26, 2014	Jul. 10, 2014	May 25, 2015	Radiation (03CH01-SZ)
Bilog Antenna	TESEQ	CBL 6112D	23188	30MHz~2GHz	Oct. 26, 2013	Jul. 10, 2014	Oct. 25, 2014	Radiation (03CH01-SZ)
Double Ridge Horn Antenna	ETS Lindgren	3117	00119436	1GHz~18GHz	Oct. 26, 2013	Jul. 10, 2014	Oct. 25, 2014	Radiation (03CH01-SZ)
Amplifier	ADVANTEST	BB525C	E9007003	9kHz~3000MHz	Feb. 21, 2014	Jul. 10, 2014	Feb. 20, 2015	Radiation (03CH01-SZ)
Amplifier	Yiai	AV3860B	04030	2GHz~26.5GHz	May 08, 2014	Jul. 10, 2014	May 07, 2015	Radiation (03CH01-SZ)
AC Source(AVR)	Chroma	61601	616010001 985	100Vac~250Vac	Mar. 25, 2014	Jul. 10, 2014	Mar. 24, 2015	Radiation (03CH01-SZ)
Turn Table	EM Electronics	EM 1000	N/A	0~360 degree	NCR	Jul. 10, 2014	NCR	Radiation (03CH01-SZ)
Antenna Mast	EM Electronics	EM 1000	N/A	1 m~4 m	NCR	Jul. 10, 2014	NCR	Radiation (03CH01-SZ)
ESCIO TEST Receiver	R&S	ESCI	100724	9kHz~3GHz	Feb. 21, 2014	Jun. 11, 2014	Feb. 20, 2015	Conduction (CO01-SZ)
AC LISN	EMCO	3816/2SH	00103912	9kHz~30MHz	Mar. 04, 2014	Jun. 11, 2014	Mar. 03, 2015	Conduction (CO01-SZ)
AC LISN (for auxiliary equipment)	EMCO	3816/2SH	00103892	9kHz~30MHz	Mar. 04, 2014	Jun. 11, 2014	Mar. 03, 2015	Conduction (CO01-SZ)
AC Power Source	Chroma	61602	616020000 891	100Vac~250Vac	Dec. 17, 2013	Jun. 11, 2014	Dec. 16, 2014	Conduction (CO01-SZ)

TEL: 86-755- 3320-2398 FCC ID: YHLBLUSTUD50LTE Page Number : 24 of 25
Report Issued Date : Aug. 08, 2014
Report Version : Rev. 01

5. Uncertainty of Evaluation

<u>Uncertainty of Conducted Emission Measurement (150 kHz ~ 30 MHz)</u>

Measuring Uncertainty for a Level of	2.2
Confidence of 95% (U = 2Uc(y))	2.3

<u>Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)</u>

Measuring Uncertainty for a Level of	2.0
Confidence of 95% (U = 2Uc(y))	3.9

SPORTON INTERNATIONAL (SHENZHEN) INC.
TEL: 86-755-3320-2398

FCC ID : YHLBLUSTUD50LTE

Page Number : 25 of 25
Report Issued Date : Aug. 08, 2014
Report Version : Rev. 01