

Report No: CCIS15110089202

FCC REPORT

(BLE)

Applicant: Creative trading inc

Address of Applicant: 86 Pressed Brick Drive, Brampton, ONT, L6V 4k4, Canada

Equipment Under Test (EUT)

Product Name: Mobile Phone

Model No.: HELLO HM54, HELLO HM58, HELLO HEM7, HELLO HMX5

Trade mark: HELLO!

FCC ID: 2AGLT- HM54

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247

Date of sample receipt: 17 Nov., 2015

Date of Test: 17 Nov., to 25 Nov., 2015

Date of report issued: 25 Nov., 2015

Test Result: PASS *

Authorized Signature:



Bruce Zhang Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

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^{*} In the configuration tested, the EUT complied with the standards specified above.





2 Version

Version No.	Date	Description
00	25 Nov., 2015	Original

Tested by: Date: 25 Nov., 2015

Test Engineer

Reviewed by: 25 Nov., 2015

Project Engineer



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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	15.207	Pass
Conducted Peak Output Power	15.247 (b)(3)	Pass
6dB Emission Bandwidth	15.247 (a)(2)	Pass
Power Spectral Density	15.247 (e)	Pass
Band Edge	15.247(d)	Pass
Spurious Emission	15.205/15.209	Pass

Pass: The EUT complies with the essential requirements in the standard.





5 General Information

5.1 Client Information

Applicant:	Creative trading inc
Address of Applicant:	86 Pressed Brick Drive, Brampton, ONT, L6V 4k4, Canada
Manufacturer:	Shenzhen Nony Electronics Co., Ltd
Address of Manufacturer:	Chuangye Building Chuangye Road, Dragon Village Dakang Henggang, Longgang Shenzhen, China

5.2 General Description of E.U.T.

Due do et Nieure e	Mobile Phone			
Product Name:	Mobile Prione			
Model No.:	HELLO HM54, HELLO HM58, HELLO HEM7, HELLO HMX5			
Operation Frequency:	2402-2480 MHz			
Channel numbers:	40			
Channel separation:	2 MHz			
Modulation technology:	GFSK			
Data speed :	1Mbps			
Antenna Type:	Internal Antenna			
Antenna gain:	1.3 dBi			
Power supply:	Rechargeable Li-ion Battery DC3.7V-3100mAh			
AC adapter:	Model: NOKOKO-3			
	Input:100-240V AC, 50/60Hz 0.5A			
	Output:5V DC MAX 1000mA			
Remark:	Model No.: HELLO HM54, HELLO HM58, HELLO HEM7, HELLO HMX5 were identical inside, the electrical circuit design, layout, components used and internal wiring, with only difference being model name and exterior colors.			



Operation Frequency each of channel								
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency	
0	2402MHz	10	2422MHz	20	2442MHz	30	2462MHz	
1	2404MHz	11	2424MHz	21	2444MHz	31	2464MHz	
2	2406MHz	12	2426MHz	22	2446MHz	32	2466MHz	
3	2408MHz	13	2428MHz	23	2448MHz	33	2468MHz	
4	2410MHz	14	2430MHz	24	2450MHz	34	2470MHz	
5	2412MHz	15	2432MHz	25	2452MHz	35	2472MHz	
6	2414MHz	16	2434MHz	26	2454MHz	36	2474MHz	
7	2416MHz	17	2436MHz	27	2456MHz	37	2476MHz	
8	2418MHz	18	2438MHz	28	2458MHz	38	2478MHz	
9	2420MHz	19	2440MHz	29	2460MHz	39	2480MHz	

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The lowest channel	2402MHz
The middle channel	2442MHz
The Highest channel	2480MHz



5.3 Test environment and mode

Operating Environment:				
Temperature:	24.0 °C			
Humidity:	54 % RH			
Atmospheric Pressure:	1010 mbar			
Test mode:				
Operation mode	Keep the EUT in continuous transmitting with modulation			

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The sample was placed 0.8m above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages. Duty cycle setting during the transmission is 100% with maximum power setting for all modulations.

5.4 Description of Support Units

N/A

5.5 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

• FCC - Registration No.: 817957

Shenzhen Zhongjian Nanfang Testing Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in out files. Registration 817957, February 27, 2012.

• IC - Registration No.: 10106A-1

The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

• CNAS - Registration No.: CNAS L6048

Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.

5.6 Laboratory Location

Shenzhen Zhongjian Nanfang Testing Co., Ltd.

Address: No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road,

Bao'an District, Shenzhen, Guangdong, China

Tel: +86-755-23118282 Fax: +86-755-23116366

Shenzhen Zhongjian Nanfang Testing Co., Ltd.
No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road, Bao'an District, Shenzhen, Guangdong, China
Telephone: +86 (0) 755 23118282 Fax: +86 (0) 755 23116366





5.7 Test Instruments list

Radiated Emission:									
Item Test Equipment		Manufacturer	Model No.	Inventory No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)			
1	3m SAC	SAEMC	9(L)*6(W)* 6(H)	CCIS0001	08-23-2014	08-22-2017			
2	BiConiLog Antenna	SCHWARZBECK	VULB9163	CCIS0005	03-28-2015	03-28-2016			
3	Horn Antenna	SCHWARZBECK	BBHA9120D	CCIS0006	03-28-2015	03-28-2016			
4	Pre-amplifier (10kHz-1.3GHz)	HP	8447D	CCIS0003	04-01-2015	03-31-2016			
5	Pre-amplifier (1GHz-18GHz)	Compliance Direction Systems Inc.	PAP-1G18	CCIS0011	04-01-2015	03-31-2016			
6	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	04-01-2015	03-31-2016			
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	04-01-2015	03-31-2016			
8	Spectrum analyzer 9k-30GHz	Rohde & Schwarz	FSP30	CCIS0023	03-28-2015	03-28-2016			
9	EMI Test Receiver	Rohde & Schwarz	ESRP7	CCIS0167	03-28-2015	03-28-2016			
10	Loop antenna	Laplace instrument	RF300	EMC0701	04-01-2015	03-31-2016			

Conducted Emission:									
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)			
1	Shielding Room	ZhongShuo Electron	11.0(L)x4.0(W)x3.0(H)	CCIS0061	11-10-2012	11-09-2015			
2	EMI Test Receiver	Rohde & Schwarz	ESCI	CCIS0002	03-28-2015	03-28-2016			
3	LISN	CHASE	MN2050D	CCIS0074	03-28-2015	03-28-2016			
4	Coaxial Cable	CCIS	N/A	CCIS0086	04-01-2015	03-31-2016			
5	EMI Test Software	AUDIX	E3	N/A	N/A	N/A			



6 Test results and Measurement Data

6.1 Antenna requirement:

Standard requirement: FCC

FCC Part 15 C Section 15.203 /247(c)

15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(c) (1)(i) requirement:

(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

E.U.T Antenna:

The BLE antenna is an internal antenna which cannot replace by end-user, the best case gain of the antenna is 1.3 dBi.





6.2 Conducted Emission

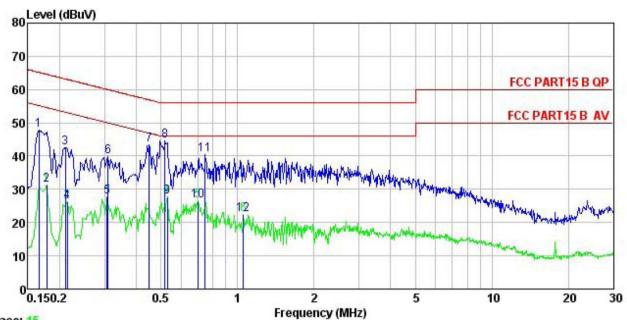
Test Requirement:	FCC Part 15 C Section 15.207	7				
Test Method:	ANSI C63.4: 2009					
Test Frequency Range:	150 kHz to 30 MHz					
. , ,	Class B					
Class / Severity:						
Receiver setup:	RBW=9kHz, VBW=30kHz	1	ID 10			
Limit:	Frequency range (MHz)	Limit (c Quasi-peak	Average			
	0.15-0.5 66 to 56* 56 to 46*					
	0.5-5 56 46					
	5-30	60	50			
	* Decreases with the logarithm					
Test procedure	 The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.), which provides a 50ohm/50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2009 on conducted measurement. 					
Test setup:	LISN 40cm		er — AC power			
Test Uncertainty:			±3.28 dB			
Test Instruments:	Refer to section 5.7 for details					
Test mode:	Refer to section 5.3 for details					
Test results:	Passed					

Measurement Data





Neutral:



Trace: 15

Site

: CCIS Shielding Room : FCC PART15 B QP LISN NEUTRAL Condition EUT

: Mobile phone : HELLO HM54 Model Test Mode : BLE mode Power Rating : AC 120V/60Hz

Environment : Temp: 23 °C Huni: 56% Atmos: 101KPa

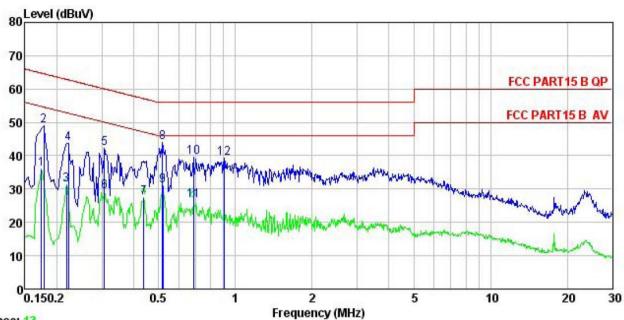
Test Engineer: MT.liang Remark

Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
MHz	dBu∜	<u>dB</u>	₫B	dBu₹	dBu₹	<u>dB</u>	
0.166	36.66	0.25	10.77	47.68	65.16	-17.48	QP
0.178	20.18	0.25	10.77	31.20	54.59	-23.39	Average
0.211	31.62	0.25	10.76	42.63	63.18	-20.55	QP
0.214	15.17	0.25	10.76	26.18	53.05	-26.87	Average
0.307	16.83	0.26	10.74	27.83	50.06	-22.23	Average
0.310	28.84	0.26	10.74	39.84	59.97	-20.13	QP
0.449	32.47	0.27	10.74	43.48	56.89	-13.41	QP
0.518	33.64	0.28	10.76	44.68	56.00	-11.32	QP
0.529	16.85	0.27	10.76	27.88	46.00	-18.12	Average
0.697	15.69	0.18	10.77	26.64	46.00	-19.36	Average
0.747	29.54	0.19	10.79	40.52	56.00	-15.48	QP
1.054	11.32	0.22	10.88	22.42	46.00	-23.58	Average
	MHz 0. 166 0. 178 0. 211 0. 214 0. 307 0. 310 0. 449 0. 518 0. 529 0. 697 0. 747	MHz dBuV 0.166 36.66 0.178 20.18 0.211 31.62 0.214 15.17 0.307 16.83 0.310 28.84 0.449 32.47 0.518 33.64 0.529 16.85 0.697 15.69 0.747 29.54	Freq Level Factor MHz dBuV dB	MHz dBuV dB dB 0.166 36.66 0.25 10.77 0.178 20.18 0.25 10.77 0.211 31.62 0.25 10.76 0.214 15.17 0.25 10.76 0.307 16.83 0.26 10.74 0.49 32.47 0.27 10.74 0.518 33.64 0.28 10.76 0.529 16.85 0.27 10.76 0.697 15.69 0.18 10.77 0.747 29.54 0.19 10.79	MHz dBuV dB dB dBuV 0.166 36.66 0.25 10.77 47.68 0.178 20.18 0.25 10.77 31.20 0.211 31.62 0.25 10.76 42.63 0.214 15.17 0.25 10.76 26.18 0.307 16.83 0.26 10.74 27.83 0.310 28.84 0.26 10.74 39.84 0.449 32.47 0.27 10.74 43.48 0.518 33.64 0.28 10.76 44.68 0.529 16.85 0.27 10.76 27.88 0.697 15.69 0.18 10.77 26.64 0.747 29.54 0.19 10.79 40.52	MHz dBuV dB dB dBuV dBuV 0.166 36.66 0.25 10.77 47.68 65.16 0.178 20.18 0.25 10.77 31.20 54.59 0.211 31.62 0.25 10.76 42.63 63.18 0.214 15.17 0.25 10.76 26.18 53.05 0.307 16.83 0.26 10.74 27.83 50.06 0.310 28.84 0.26 10.74 39.84 59.97 0.449 32.47 0.27 10.74 43.48 56.89 0.518 33.64 0.28 10.76 24.68 56.00 0.529 16.85 0.27 10.76 27.88 46.00 0.697 15.69 0.18 10.77 26.64 46.00 0.747 29.54 0.19 10.79 40.52 56.00	MHz dBuV dB dB dBuV dBuV dB 0.166 36.66 0.25 10.77 47.68 65.16 -17.48 0.178 20.18 0.25 10.77 31.20 54.59 -23.39 0.211 31.62 0.25 10.76 42.63 63.18 -20.55 0.214 15.17 0.25 10.76 26.18 53.05 -26.87 0.307 16.83 0.26 10.74 27.83 50.06 -22.23 0.310 28.84 0.26 10.74 39.84 59.97 -20.13 0.449 32.47 0.27 10.74 43.48 56.89 -13.41 0.518 33.64 0.28 10.76 44.68 56.00 -11.32 0.529 16.85 0.27 10.76 27.88 46.00 -18.12 0.697 15.69 0.18 10.77 26.64 46.00 -19.36 0.747 29.54 0.19

Report No: CCIS15110089202



Line:



Trace: 13

Site : CCIS Shielding Room Condition : FCC PART15 B QP LISN LINE

EUT : Mobile phone
Model : HELLO HM54
Test Mode : BLE mode
Power Rating : AC 120V/60Hz

Environment : Temp: 23 °C Huni: 56% Atmos: 101KPa

Test Engineer: MT.liang

Remark

Nesital K	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBu∜	<u>dB</u>		dBu₹	—dBu∀	<u>ab</u>	
1	0.174	24.91	0.27	10.77	35.95	54.77	-18.82	Average
2	0.178	38.03	0.28	10.77	49.08	64.59	-15.51	QP
3	0.219	20.36	0.28	10.76	31.40	52.88	-21.48	Average
4	0.222	32.72	0.27	10.75	43.74	62.74	-19.00	QP
1 2 3 4 5 6 7 8 9	0.307	31.14	0.26	10.74	42.14	60.06	-17.92	QP
6	0.307	18.12	0.26	10.74	29.12	50.06	-20.94	Average
7	0.437	16.47	0.28	10.74	27.49	47.11	-19.62	Average
8	0.518	32.81	0.28	10.76	43.85	56.00	-12.15	QP
9	0.521	19.98	0.28	10.76	31.02	46.00	-14.98	Average
10	0.686	28.57	0.22	10.77	39.56	56.00	-16.44	QP
11	0.686	15.49	0.22	10.77	26.48	46.00	-19.52	Average
12	0.904	28.08	0.24	10.84	39.16	56.00	-16.84	QP

Notes

- 1. An initial pre-scan was performed on the live and neutral lines with peak detector.
- 2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
- 3. Final Level =Receiver Read level + LISN Factor + Cable Loss



6.3 Conducted Output Power

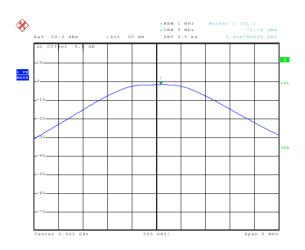
Test Requirement:	FCC Part 15 C Section 15.247 (b)(3)				
Test Method:	ANSI C63.10:2009 and KDB558074v03r03 section 9.2.2				
Limit:	30dBm				
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane				
Test Instruments:	Refer to section 5.7 for details				
Test mode:	Refer to section 5.3 for details				
Test results:	Passed				

Measurement Data

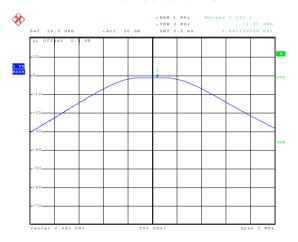
Test CH	Maximum Conducted Output Power (dBm)	Limit(dBm)	Result
Lowest	-1.74		
Middle	-1.01	30.00	Pass
Highest	-1.20		

Test plot as follows:

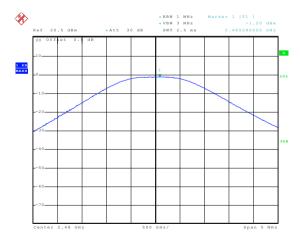




Lowest channel



Date: 17.NOV.2015 01:45:27 Middle channel



Date: 17.NOV.2015 01:45:45 Highest channel



6.4 Occupy Bandwidth

Test Requirement:	FCC Part 15 C Section 15.247 (a)(2)				
Test Method:	ANSI C63.10:2009 and KDB558074v03r03 section 8.1				
Limit:	>500kHz				
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane				
Test Instruments:	Refer to section 5.7 for details				
Test mode:	Refer to section 5.3 for details				
Test results:	Passed				

Measurement Data

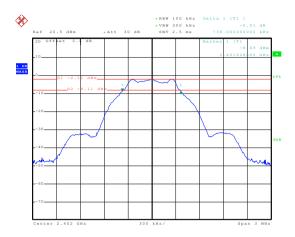
Test CH	6dB Emission Bandwidth (MHz)	Limit(kHz)	Result
Lowest	0.738		
Middle	0.732	>500	Pass
Highest	0.720		

Test CH	99% Occupy Bandwidth (MHz)	Limit(kHz)	Result
Lowest	1.032		
Middle	1.032	N/A	N/A
Highest	1.032		

Test plot as follows:

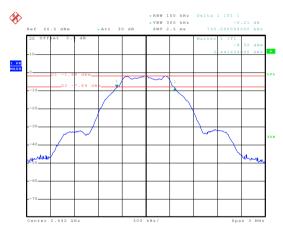


6dB EBW



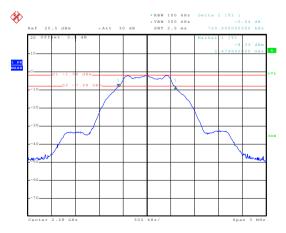
Date: 17.NOV.2015 01:49:07

Lowest channel



Date: 17.NOV.2015 01:47:40

Middle channel

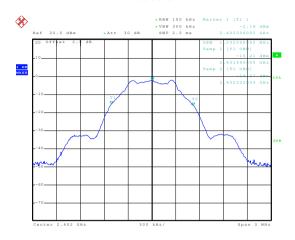


Date: 17.NOV.2015 01:46:42

Highest channel



99% OBW



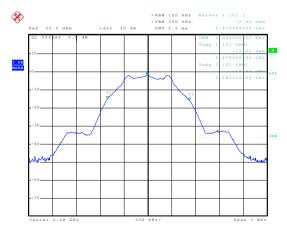
Date: 17.NOV.2015 01:50:01

Lowest channel



Date: 17.NOV.2015 01:50:29

Middle channel



Date: 17.NOV.2015 01:51:01

Highest channel



6.5 Power Spectral Density

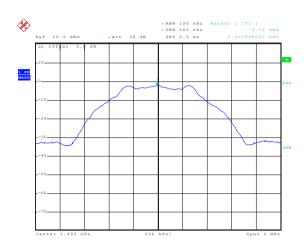
Test Requirement:	FCC Part 15 C Section 15.247 (e)				
Test Method:	ANSI C63.10:2009 and KDB558074v03r03 section 10.2				
Limit:	8 dBm				
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane				
Test Instruments:	Refer to section 5.7 for details				
Test mode:	Refer to section 5.3 for details				
Test results:	Passed				

Measurement Data

Test CH	Power Spectral Density (dBm)	Limit(dBm)	Result
Lowest	-2.10		
Middle	-1.91	8.00	Pass
Highest	-1.96		

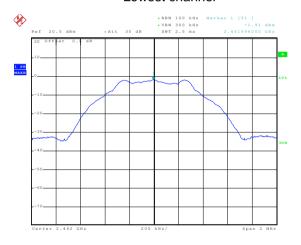
Test plots as follow:





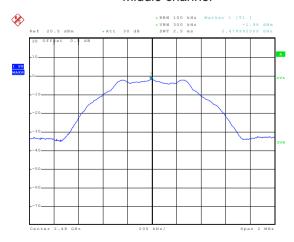
Date: 17.NOV.2015 01:52:52

Lowest channel



Date: 17.NOV.2015 01:52:16

Middle channel



Date: 17.NOV.2015 01:51:49

Highest channel





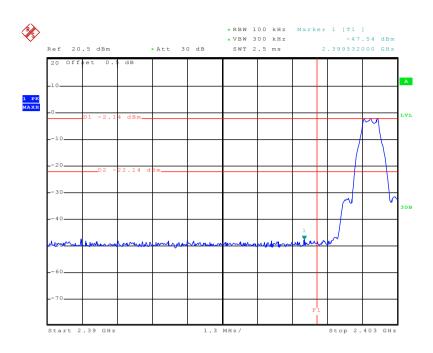
6.6 Band Edge

6.6.1 Conducted Emission Method

Test Requirement:	FCC Part 15 C Section 15.247 (d)				
Test Method:	ANSI C63.10:2009 and KDB558074v03r03 section 13				
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.				
Test setup:	Spectrum Analyzer				
	Spectrum Analyzer E.U.T Non-Conducted Table				
Test Instruments:	Refer to section 5.7 for details				
Test mode:	Refer to section 5.3 for details				
Test results:	Passed				

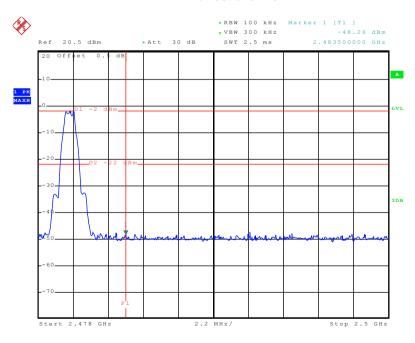
Test plots as follow:





Date: 17.NOV.2015 01:54:37

Lowest channel



Date: 17.NOV.2015 01:56:18

Highest channel



6.6.2 Radiated Emission Method

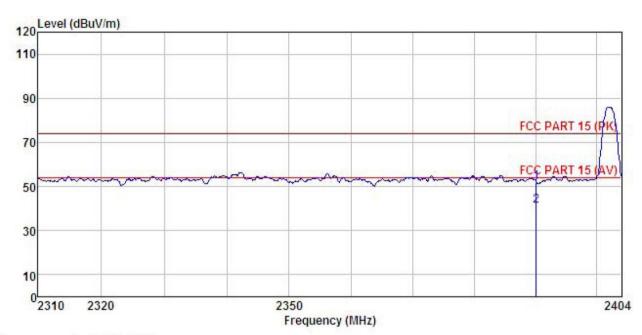
Test Requirement: FCC Part 15 C Section 15.209 and 15.205 Test Method: ANSI C63.10: 2013 and KDB 558074v03r03 section 12.1 Test Frequency Range: 2.3GHz to 2.5GHz Test site: Measurement Distance: 3m Receiver setup: Frequency Detector RBW VBW Remark Above 1GHz Peak 1MHz 3MHz Peak Value Above 1GHZ RMS 1MHz 3MHz Average Value Limit: Frequency Limit (dBuV/m @3m) Remark Above 1GHZ 74.00 Average Value Test Procedure: 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be re-tested one by one using peak, quasipeak or average method as specified and then reported in a data sheet. Test setup:	 0.2 Radiated Emission Method						
Test Frequency Range: Test site: Measurement Distance: 3m Receiver setup: Frequency Detector RBW VBW Remark Above 1GHz Peak 1MHz 3MHz Peak Value RMS 1MHz 3MHz Average Value Frequency Limit (dBuV/m @3m) Remark Above 1GHz Fav. 100 Peak Value Test Procedure: Test Procedure: 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be repeated one by one using peak, quasipeak or average method as specified and then reported in a data sheet. Test setup:	Test Requirement:	FCC Part 15 C Section 15.209 and 15.205					
Test site: Receiver setup: Frequency Detector RBW VBW Remark	Test Method:	ANSI C63.10: 2	2013 and KD	B 558074v03r	03 section	12.1	
Receiver setup: Frequency	Test Frequency Range:	2.3GHz to 2.50	SHz				
Above 1GHz RMS IMHz AWARDS Value RMS IMHZ AWARDS Value Frequency Limit (BuV/m @3m) Remark Above 1GHz Above 1GHz Test Procedure: 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was turned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasipeak or average method as specified and then reported in a data sheet. Test setup: Test lnstruments: Refer to section 5.7 for details	Test site:	Measurement	Distance: 3m				
Limit: Frequency Limit (dBuV/m @3m) Remark	Receiver setup:	Frequency					
Limit: Frequency		Above 1GHz					
Above 1GHz Test Procedure: 1. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest rotation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasipeak or average method as specified and then reported in a data sheet. Test setup:	Limit:	Frequ					
Test Procedure: 1. The EUT was placed on the top of a rushing table 0.48 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasipeak or average method as specified and then reported in a data sheet. Test setup: Refer to section 5.7 for details	Lilliit.		-				
the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasipeak or average method as specified and then reported in a data sheet. Test setup: Refer to section 5.7 for details						Peak Value	
Test Instruments: Refer to section 5.7 for details		the ground to determing to determing to determing the second seco	d at a 3 meter ne the position was set 3 met which was mo na height is vide to determine ontal and vert measurement suspected emother the antered the rota table maximum reaseceiver system Bandwidth with the control of the control of the pecified, then I would be rep margin wou	camber. The n of the higher ers away from unted on the taried from one the maximum ical polarization ission, the EU ina was turned ading. In was set to Pich Maximum Higher EUT in peatesting could be orted. Otherwild be re-tested.	table was rest radiation. I the interfer op of a variation op of a variation of the arms o	rence-receiving able-height antenna our meters above the field strength. Intenna are set to a	
	Test setup:	800	Furntable)	3m June Reference Plane		wer	
Total models	Test Instruments:	Refer to section 5.7 for details					
Test mode: Refer to section 5.3 for details	Test mode:	Refer to section	n 5.3 for detai	ls			
Test results: Passed	Test results:	Passed					





Test channel: Lowest

Horizontal:



Site

: 3m chamber : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL : Mobile phone : HELLO HM54 Condition

EUT Model Test mode : BLE-L Mode Power Rating : AC 120V/60Hz

Environment : Temp: 25.5°C Huni: 55%

Test Engineer: MT REMARK :

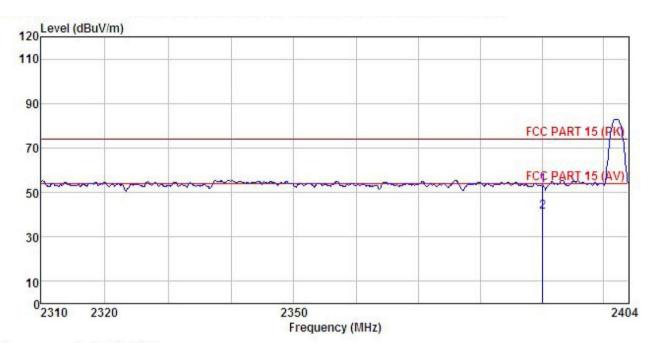
Freq		Antenna Factor						
MHz	dBu∜	dB/m	dB	<u>dB</u>	dBuV/m	dBuV/m	<u>dB</u>	
2390.000 2390.000								





Test channel: Lowest

Vertical:



Site

: 3m chamber : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL : Mobile phone Condition

EUT Model : HELLO HM54 Test mode : BLE-L Mode Power Rating : AC 120V/60Hz

Environment: Temp: 25.5°C Huni: 55%

Test Engineer: MT REMARK :

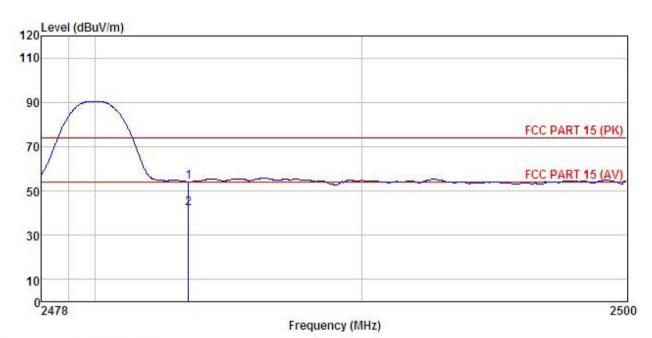
LWWL									
	-		Ant enna					Over	
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Kemark
	MHz	dBu∜	dB/m	dB	dB	dBuV/m	dBu√/m	₫B	
1 2	2390.000 2390.000					53.22 41.38			Peak Average





Test channel: Highest

Horizontal:



Site

: 3m chamber : FCC PART 15 (PK) 3m BBHA9120(1G18) HORIZONTAL Condition

: Mobile phone : HELLO HM54 EUT Model Test mode : BLE-H Mode Power Rating : AC 120V/60Hz

Environment: Temp: 25.5°C Huni: 55%

Test Engineer: MT REMARK :

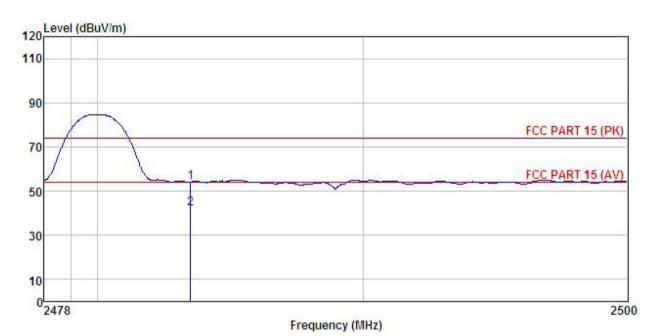
JIGHO			Antenna						Dl-
	Freq	rever	Factor	LOSS	ractor	rever	Line	Limit	Kemark
2	MHz	dBu₹	<u>dB</u> /m	dB	dB	dBuV/m	dBuV/m	dB	
1	2483.500	19.63	27.52	6.85	0.00	54.00	74.00	-20.00	Peak
2	2483, 500	7.74	27. 52	6, 85	0.00	42.11	54,00	-11.89	Average





Test channel: Highest

Vertical:



Site

: 3m chamber : FCC PART 15 (PK) 3m BBHA9120(1G18) VERTICAL : Mobile phone Condition

EUT : HELLO HM54 Model Test mode : BLE-H Mode Power Rating : AC 120V/60Hz

Environment : Temp: 25.5°C Huni: 55%

Test Engineer: MT REMARK :

Freq		Antenna Factor						
MHz	—dBu∇		<u>dB</u>	<u>d</u> B	$\overline{dBuV/m}$	$\overline{dBuV/m}$	<u>dB</u>	
2483.500 2483.500								



6.7 Spurious Emission

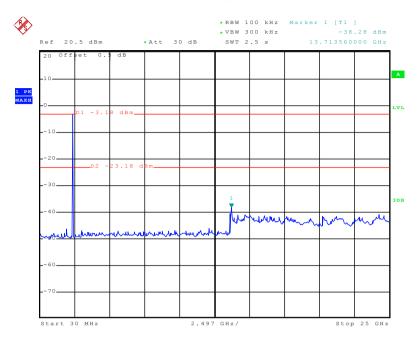
6.7.1 Conducted Emission Method

Test Requirement:	FCC Part 15 C Section 15.247 (d)					
Test Method:	ANSI C63.10:2009 and KDB558074 section 11					
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.					
Test setup:						
	Spectrum Analyzer E.U.T Non-Conducted Table					
Test Instruments:	Ground Reference Plane Refer to section 5.7 for details					
Test mode:	Refer to section 5.3 for details					
Test results:	Passed					

Test plot as follows:



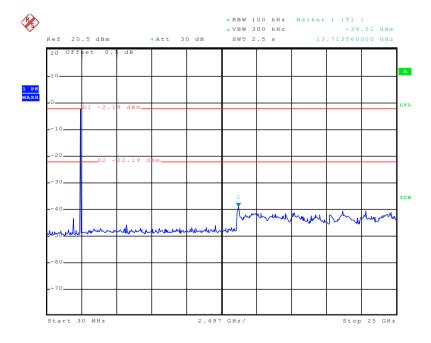
Lowest channel



Date: 17.NOV.2015 02:01:47

30MHz~25GHz

Middle channel

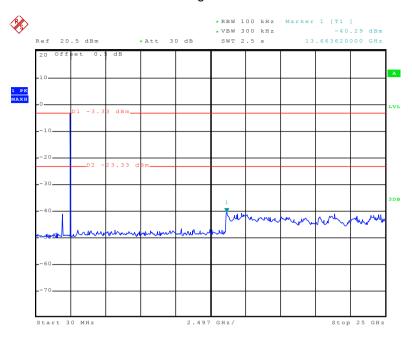


Date: 17.NOV.2015 01:59:43

30MHz~25GHz



Highest channel



Date: 17.NOV.2015 01:57:44

30MHz~25GHz



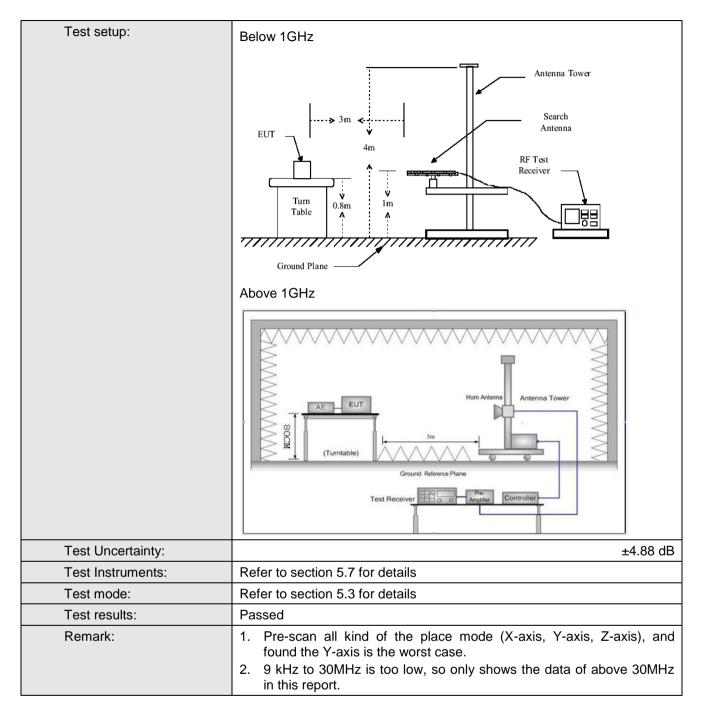


6.7.2 Radiated Emission Method

Test Requirement:	FCC Part 15 C Section 15.209 and 15.205								
Test Method:	ANSI C63.10:2009								
Test Frequency Range:	9KHz to 25GHz								
Test site:	Measurement Distance: 3m								
Receiver setup:	Frequency Detector RBW VBW Remark								
·	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value				
	Above 1GHz	Peak	1MHz	3MHz	Peak Value				
	Above 1G112	RMS	1MHz	3MHz	Average Value				
Limit:	Frequency		Limit (dBuV/m	@3m)	Remark				
	30MHz-88MHz		40.0		Quasi-peak Value				
	88MHz-216MHz		43.5		Quasi-peak Value				
	216MHz-960MH	z	46.0		Quasi-peak Value				
	960MHz-1GHz		54.0		Quasi-peak Value				
	Above 1GHz	-	54.0		Average Value				
			74.0		Peak Value le 0.8 meters above				
Test Procedure:	the ground to determin 2. The EUT of antenna, we tower. 3. The antenry the ground Both horizon make the make the make the make the make sand to find the meters and to find the make the limit specified B. 6. If the emission the limit specified EUT have 10 dB.	at a 3 meter the the position was set 3 meter was set 3 meter was more to determine the anter the anter the anter the rota table maximum read the rota table the rota table maximum read the rota table the rota table the rota table maximum read the rota table th	camber. The nof the highest teters away funted on the trained from one the maximutical polarization in the Enna was turned ding. In the Euther was set of the Euther Euther Euther Euther Euther Euther Could be ported. Other do be re-tested in the first teter the set of the set of the euther Euth	table was a st radiation. Tom the in op of a variance meter to um value or ions of the EUT was and to height from 0 degrate Deak Dold Mode. The stopped wise the end one by one	rotated 360 degrees				





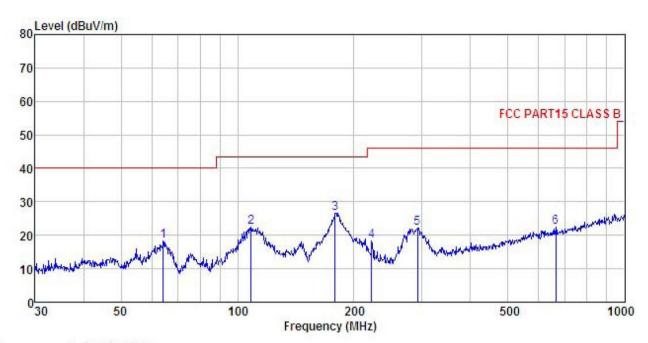






Below 1GHz

Horizontal:



Site

: 3m chamber : FCC PART15 CLASS B 3m VULB9163(30M1G) HORIZONTAL Condition

: Mobile phone : HELLO HM54 EUT Model Test mode : BLE Mode Power Rating : AC 120V/60Hz

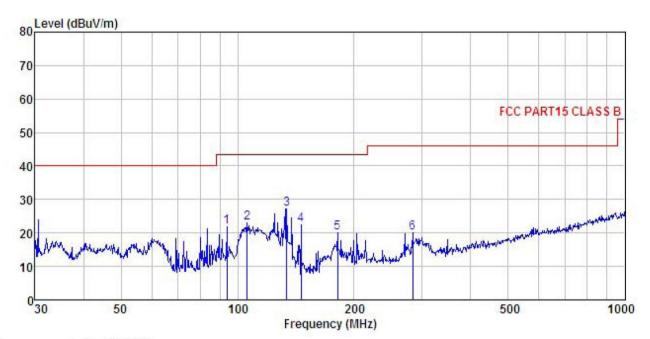
Environment : Temp:25.5°C Huni:55% Test Engineer: MT REMARK :

	Freq		Antenna Factor						
	MHz	dBu∀	<u>d</u> B/m		<u>dB</u>	$\overline{dBuV/m}$	$\overline{dBuV/m}$	<u>d</u> B	
1	64.208	36.26	10.97	0.74	29.76	18.21	40.00	-21.79	QP
2	108.267	38.61	12.39						
3	178.758	44.61	9.62	1.36	28.98	26.61	43.50	-16.89	QP
3	222.170	34.35	11.25	1.49	28.69	18.40	46.00	-27.60	QP
5	292.058	36.08	12.89	1.75	28.46	22.26	46.00	-23.74	QP
6	663.473	29.82	18.68	2.82	28.75	22.57	46.00	-23.43	QP





Vertical:



Site

: 3m chamber : FCC PART15 CLASS B 3m VULB9163(30M1G) VERTICAL Condition

: Mobile phone : HELLO HM54 EUT Model Test mode : BLE Mode Power Rating : AC 120V/60Hz

Environment: Temp: 25.5°C Huni: 55%

Test Engineer: MT REMARK :

	Freq		ntenna Factor						
	MHz	dBu∜			<u>ab</u>	$\overline{dBuV/m}$	$\overline{dBuV/m}$	<u>dB</u>	
1	93.768	38.02	12.58	0.93	29.56	21.97	43.50	-21.53	QP
2	106.013	38.99	12.59	1.01	29.48	23.11	43.50	-20.39	QP
3	134.088								
2 3 4	145.861	42.29	8.23	1.30	29.24	22.58	43.50	-20.92	QP
5	181.283	38.04	9.76	1.36	28.96	20.20	43.50	-23.30	QP
6	282.985	34.12	12.73	1.72	28.48	20.09	46.00	-25.91	QP



Above 1GHz

Test channel:			Lo	west	Le	vel:	Peak	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4804.00	48.29	31.53	10.57	40.24	50.15	74.00	-23.85	Vertical
4804.00	47.73	31.53	10.57	40.24	49.59	74.00	-24.41	Horizontal
Т	est channel	•	Lowest		Le	vel:	A	verage
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4804.00	39.65	31.53	10.57	40.24	41.51	54.00	-12.49	Vertical
4804.00	38.52	31.53	10.57	40.24	40.38	54.00	-13.62	Horizontal

Т	est channel	:	Middle		Le	vel:	Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
4884.00	47.53	31.58	10.66	40.15	49.62	74.00	-24.38	Vertical	
4884.00	49.53	31.58	10.66	40.15	51.62	74.00	-22.38	Horizontal	
Т	est channel	:	Middle		Le	vel:	A	verage	
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization	
4884.00	38.65	31.58	10.66	40.15	40.74	54.00	-13.26	Vertical	
4884.00	40.16	31.58	10.66	40.15	42.25	54.00	-11.75	Horizontal	

Т	:	Hiç	ghest	Le	vel:	Peak		
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4960.00	47.34	31.69	10.73	40.03	49.73	74.00	-24.27	Vertical
4960.00	48.71	31.69	10.73	40.03	51.10	74.00	-22.90	Horizontal
Т	est channel	•	Highest		Le	vel:	A	verage
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4960.00	38.54	31.69	10.73	40.03	40.93	54.00	-13.07	Vertical
4960.00	39.62	31.69	10.73	40.03	42.01	54.00	-11.99	Horizontal

Remark:

- 1. Final Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- 2. The emission levels of other frequencies are very lower than the limit and not show in test report.

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