

JianYan Testing Group Shenzhen Co., Ltd.

Report No: JYTSZB-R12-2100569

FCC REPORT

(Bluetooth)

Applicant: TECNO MOBILE LIMITED

Address of Applicant: FLAT 39 8/F BLOCK D WAH LOK INDUSTRIAL CENTRE 31-

35 SHAN MEI STREET FOTAN NT

Equipment Under Test (EUT)

Product Name: Mobile Phone

Model No.: L6502S

Trade mark: TECNO

FCC ID: 2ADYY-L6502S

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

Date of sample receipt: 15 Apr., 2021

Date of Test: 16 Apr., to 07 May, 2021

Date of report issued: 25 May, 2021

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 JYT product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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





2 Version

Version No.	Date	Description
00	25 May, 2021	Original

Tested by:	Mike.ou	Date:	25 May, 2021
	Test Engineer		
	1. Times Thang		

Reviewed by: Date: 25 May, 2021

Project Engineer





3 Contents

	Page
1 COVER PAGE	1
2 VERSION	2
3 CONTENTS	3
4 TEST SUMMARY	4
5 GENERAL INFORMATION	
	_
5.1 CLIENT INFORMATION	
5.2 GENERAL DESCRIPTION OF E.U.T. 5.3 TEST ENVIRONMENT AND MODE	
5.4 DESCRIPTION OF SUPPORT UNITS	
5.5 MEASUREMENT UNCERTAINTY	
5.6 ADDITIONS TO, DEVIATIONS, OR EXCLUSIONS FROM THE METHOD	6
5.7 LABORATORY FACILITY	
5.8 LABORATORY LOCATION	
5.9 TEST INSTRUMENTS LIST	7
6 TEST RESULTS AND MEASUREMENT DATA	8
6.1 Antenna Requirement	8
6.2 CONDUCTED EMISSIONS	
6.3 CONDUCTED OUTPUT POWER	
6.4 20DB OCCUPY BANDWIDTH	
6.5 CARRIER FREQUENCIES SEPARATION	
6.7 DWELL TIME	_
6.8 PSEUDORANDOM FREQUENCY HOPPING SEQUENCE	
6.9 BAND EDGE	
6.9.1 Conducted Emission Method	
6.9.2 Radiated Emission Method	
6.10 Spurious Emission	
6.10.1 Conducted Emission Method	
7 TEST SETUP PHOTO	38
8 EUT CONSTRUCTIONAL DETAILS	39

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4 Test Summary

Test Items	Section in CFR 47	Test Data	Result
Antenna Requirement	15.203 & 15.247 (b)	See Section 6.1	Pass
AC Power Line Conducted Emission	15.207	See Section 6.2	Pass
Conducted Peak Output Power	15.247 (b)(1)	Appendix A – BT	Pass
20dB Occupied Bandwidth	15.247 (a)(1)	Appendix A – BT	Pass
Carrier Frequencies Separation	15.247 (a)(1)	Appendix A – BT	Pass
Hopping Channel Number	15.247 (a)(1)	Appendix A – BT	Pass
Dwell Time	15.247 (a)(1)	Appendix A – BT	Pass
Conducted Band Edge	45 205 8 45 200	Appendix A – BT	Pass
Radiated Band Edge	15.205 & 15.209	See Section 6.9.2	Pass
Conducted Spurious Emission	15 047(d)	Appendix A – BT	Pass
Radiated Spurious Emission	- 15.247(d)	See Section 6.10.2	Pass

Remark:

- 1. Pass: The EUT complies with the essential requirements in the standard.
- 2. N/A: Not Applicable.
- The cable insertion loss used by "RF Output Power" and other conduction measurement items is 0.5dB (provided by the customer).

Test Method:

ANSI C63.10-2013

KDB 558074 D01 15.247 Meas Guidance v05r02

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5 General Information

5.1 Client Information

Applicant:	TECNO MOBILE LIMITED
Address:	FLAT 39 8/F BLOCK D WAH LOK INDUSTRIAL CENTRE 31-35 SHAN MEI STREET FOTAN NT
Manufacturer:	TECNO MOBILE LIMITED
Address:	FLAT 39 8/F BLOCK D WAH LOK INDUSTRIAL CENTRE 31-35 SHAN MEI STREET FOTAN NT
Factory:	SHENZHEN TECNO TECHNOLOGY CO.,LTD.
Address:	101, Building 24, Waijing Industrial Park, Fumin Community, Fucheng Street, Longhua District, Shenzhen City, P.R.China

5.2 General Description of E.U.T.

Product Name:	Mobile Phone
Model No.:	L6502S
Operation Frequency:	2402MHz~2480MHz
Transfer rate:	1/2/3 Mbits/s
Number of channel:	79
Modulation type:	GFSK, π/4-DQPSK, 8DPSK
Modulation technology:	FHSS
Antenna Type:	Internal Antenna
Antenna gain:	1.25 dBi
Power supply:	Rechargeable Li-Polymer Battery DC3.85V-3900mAh
AC adapter:	Model: A18A-050100U-US2
	Input: AC100-240V, 50/60Hz, 0.2A
	Output: DC 5.0V, 1000mA
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

Operation Frequency each of channel for GFSK, π/4-DQPSK, 8DPSK							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
0	2402MHz	20	2422MHz	40	2442MHz	60	2462MHz
1	2403MHz	21	2423MHz	41	2443MHz	61	2463MHz
2	2404MHz	22	2424MHz	42	2444MHz	62	2464MHz
3	2405MHz	23	2425MHz	43	2445MHz	63	2465MHz
4	2406MHz	24	2426MHz	44	2446MHz	64	2466MHz
5	2407MHz	25	2427MHz	45	2447MHz	65	2467MHz
15	2417MHz	35	2437MHz	55	2457MHz	75	2477MHz
16	2418MHz	36	2438MHz	56	2458MHz	76	2478MHz
17	2419MHz	37	2439MHz	57	2459MHz	77	2479MHz
18	2420MHz	38	2440MHz	58	2460MHz	78	2480MHz
19	2421MHz	39	2441MHz	59	2461MHz		
Remark: Cha	annel 0, 39 &78 se	elected for Gl	-SK, π/4-DQPSk	and 8DPSK.			

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Page 5 of 39



5.3 Test environment and mode

Operating Environment:	
Temperature:	24.0 °C
Humidity:	54 % RH
Atmospheric Pressure:	1010 mbar
Test Modes:	
Non-hopping mode:	Keep the EUT in continuous transmitting mode with worst case data rate.
Hopping mode:	Keep the EUT in hopping mode.
Remark	GFSK (1 Mbps) is the worst case mode.

Radiated Emission: The sample was placed 0.8m (below 1GHz)/1.5m (above 1GHz) 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.

5.4 Description of Support Units

The EUT has been tested as an independent unit.

5.5 Measurement Uncertainty

Parameters	Expanded Uncertainty
Conducted Emission (9kHz ~ 30MHz)	±1.60 dB (k=2)
Radiated Emission (9kHz ~ 30MHz)	±3.12 dB (k=2)
Radiated Emission (30MHz ~ 1000MHz)	±4.32 dB (k=2)
Radiated Emission (1GHz ~ 18GHz)	±5.16 dB (k=2)
Radiated Emission (18GHz ~ 40GHz)	±3.20 dB (k=2)

5.6 Additions to, deviations, or exclusions from the method

No

5.7 Laboratory Facility

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

FCC - Designation No.: CN1211

JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

ISED – CAB identifier.: CN0021

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

• A2LA - Registration No.: 4346.01

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: https://portal.a2la.org/scopepdf/4346-01.pdf

5.8 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.

Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.

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

Email: info@ccis-cb.com, Website: http://www.ccis-cb.com

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5.9 Test Instruments list

Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
3m SAC	ETS	9m*6m*6m	966	01-19-2021	01-18-2024
BiConiLog Antenna	SCHWARZBECK	VULB9163	497	03-03-2021	03-02-2022
Biconical Antenna	SCHWARZBECK	VUBA9117	359	06-18-2020	06-17-2021
Horn Antenna	SCHWARZBECK	BBHA9120D	916	03-03-2021	03-02-2022
Horn Antenna	SCHWARZBECK	BBHA9120D	1805	06-18-2020	06-17-2021
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170582	11-18-2020	11-17-2021
EMI Test Software	AUDIX	E3	\	ersion: 6.110919b)
Pre-amplifier	HP	8447D	2944A09358	03-03-2021	03-02-2022
Pre-amplifier	CD	PAP-1G18	11804	03-03-2021	03-02-2022
Spectrum analyzer	Rohde & Schwarz	FSP30	101454	03-03-2021	03-02-2022
Spectrum analyzer	Rohde & Schwarz	FSP40	100363	11-18-2020	11-17-2021
EMI Test Receiver	Rohde & Schwarz	ESRP7	101070	03-03-2021	03-02-2022
Spectrum Analyzer	Agilent	N9020A	MY50510123	11-18-2020	11-17-2021
Signal Generator	Rohde & Schwarz	SMX	835454/016	03-03-2021	03-02-2022
Signal Generator	R&S	SMR20	1008100050	03-03-2021	03-02-2022
RF Switch Unit	MWRFTEST	MW200	N/A	N/A	N/A
Test Software	MWRFTEST	MTS8200		Version: 2.0.0.0	
Cable	ZDECL	Z108-NJ-NJ-81	1608458	03-03-2021	03-02-2022
Cable	MICRO-COAX	MFR64639	K10742-5	03-03-2021	03-02-2022
Cable	SUHNER	SUCOFLEX100	58193/4PE	03-03-2021	03-02-2022
DC Power Supply	XinNuoEr	WYK-10020K	1409050110020	09-25-2020	09-24-2021
Temperature Humidity Chamber	HengPu	HPGDS-500	20140828008	11-01-2020	10-31-2021
Simulated Station	Rohde & Schwarz	CMW500	140493	07-22-2020	07-21-2021

Conducted Emission:					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
EMI Test Receiver	Rohde & Schwarz	ESCI	101189	03-03-2021	03-02-2022
Pulse Limiter	SCHWARZBECK	OSRAM 2306	9731	03-03-2021	03-02-2022
LISN	CHASE	MN2050D	1447	03-03-2021	03-02-2022
LISN	Rohde & Schwarz	ESH3-Z5	8438621/010	06-18-2020	06-17-2021
Cable	HP	10503A	N/A	03-03-2021	03-02-2022
EMI Test Software	AUDIX	E3	\	/ersion: 6.110919l)

Conducted method:					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
Spectrum Analyzer	Keysight	N9010B	MY60240202	11-27-2020	11-26-2021
Vector Signal Generator	Keysight	N5182B	MY59101009	11-27-2020	11-26-2021
Analog Signal Generator	Keysight	N5173B	MY59100765	11-27-2020	11-26-2021
Power Detector Box	MWRF-test	MW100-PSB	MW201020JYT	11-27-2020	11-26-2021
Simulated Station	Rohde & Schwarz	CMW270	102335	11-27-2020	11-26-2021
RF Control Box	MWRF-test	MW100-RFCB	MW200927JYT	N/A	N/A
PDU	MWRF-test	XY-G10	N/A	N/A	N/A
Test Software	MWRF-tes	MTS 8310	,	Version: 2.0.0.0	
DC Power Supply	Keysight	E3642A	MY60296194	11-27-2020	11-26-2021



6 Test results and measurement data

6.1 Antenna Requirement

Standard requirement: FCC Part 15 C Section 15.203 & 247(b)

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(b) (4) requirement:

(4) The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

E.U.T Antenna:

The Bluetooth antenna is an Internal antenna which permanently attached, and the best case gain of the antenna is 1.25 dBi.

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6.2 Conducted Emissions

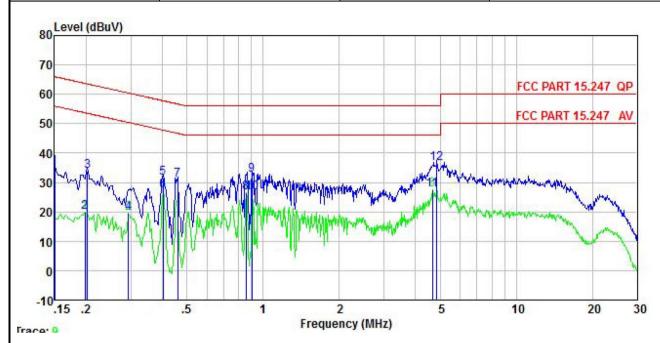
Test Requirement:	FCC Part 15 C Section 15.	207						
Test Frequency Range:	150 kHz to 30 MHz							
Class / Severity:	Class B	Class B						
Receiver setup:	RBW=9 kHz, VBW=30 kHz	z, Sweep time=auto						
Limit:	Frequency range (MHz)	Limit (c	dBuV)					
		Quasi-peak	Average					
	0.15-0.5	66 to 56*	56 to 46*					
	0.5-5	56	46					
	5-30 * Decreases with the logari	60	50					
Test setup:	Reference Pl	•						
Toet procedure:	AUX Equipment Test table/Insulation plane Remark E.U.T. Equipment Under Test LISN Line Impedence Stabilization Network Test table height=0.8m							
Test procedure:	 The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This 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 C63.10(latest version) on conducted measurement. 							
Test Instruments:	Refer to section 5.9 for det	ails						
Test mode:	Hopping mode							
Test results:	Pass							

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Measurement Data:

Product name:	Mobile Phone	Product model:	L6502S
Test by:	Mike	Test mode:	BT Tx mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Line
Test voltage:	AC 120 V/60 Hz	Environment:	Temp: 22.5℃ Huni: 55%



	Freq	Read Level	LISN Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBu∜	<u>ab</u>	<u>ab</u>	<u>ap</u>	—dBu√	—dBu∜	<u>ab</u>	
1	0.150	35.74	-0.57	-0.05	0.01	35.13	66.00	-30.87	QP
2	0.198	20.68	-0.59	-0.16	0.04	19.97	53.71	-33.74	Average
3	0.202	34.59	-0.59	-0.16	0.04	33.88	63.54	-29.66	QP
4	0.294	20.32	-0.55	-0.26	0.03	19.54	50.41	-30.87	Average
5	0.402	31.41	-0.48	0.42	0.04	31.39	57.81	-26.42	QP
6	0.402	27.18	-0.48	0.42	0.04	27.16	47.81	-20.65	Average
7	0.459	31.34	-0.45	-0.06	0.03	30.86	56.71	-25.85	QP
1 2 3 4 5 6 7 8 9	0.857	26.83	-0.58	0.09	0.04	26.38	46.00	-19.62	Average
9	0.904	32.93	-0.59	0.21	0.04	32.59	56.00	-23.41	QP
10	0.904	26.78	-0.59	0.21	0.04	26.44	46.00	-19.56	Average
11	4.672	27.88	-0.40	0.04	0.09	27.61			Average
12	4.848	36.78	-0.39	0.06	0.09	36.54		-19.46	

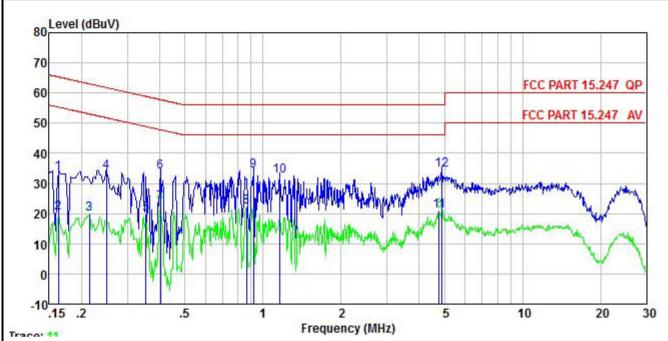
Notes:

- 1. An initial pre-scan was performed on the line 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 + Aux Factor + Cable Loss.

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Product name:	Mobile Phone	Product model:	L6502S
Test by:	Mike	Test mode:	BT Tx mode
Test frequency:	150 kHz ~ 30 MHz	Phase:	Neutral
Test voltage:	AC 120 V/60 Hz	Environment:	Temp: 22.5℃ Huni: 55%



	Freq	Read Level	LISN Factor	Aux Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
=	MHz	—dBu∜	<u>dB</u>	<u>ab</u>	<u>ap</u>	−−dBuV	—dBu∜	<u>ab</u>	
1	0.162	34.16	-0.68	0.01	0.01	33.50	65.34	-31.84	QP
2	0.162	20.76	-0.68	0.01	0.01	20.10	55.34	-35.24	Average
2 3	0.214	20.43	-0.67	0.00	0.03	19.79	53.05	-33.26	Average
4 5 6 7	0.249	34.37	-0.67	0.01	0.01	33.72	61.78	-28.06	QP
5	0.354	20.68	-0.65	-0.03	0.02	20.02	48.87	-28.85	Average
6	0.402	34.49	-0.63	-0.06	0.04	33.84	57.81	-23.97	QP
	0.402	24.04	-0.63	-0.06	0.04	23.39	47.81	-24.42	Average
8 9	0.862	22.78	-0.66	0.06	0.04	22.22	46.00	-23.78	Average
9	0.918	34.74	-0.67	0.07	0.04	34.18	56.00	-21.82	QP
10	1.160	33.13	-0.69	0.10	0.08	32.62	56.00	-23.38	QP
11	4.772	20.81	-0.64	0.64	0.09	20.90	46.00	-25.10	Average
12	4.874	34.31	-0.64	0.65	0.09	34.41	56.00	-21.59	QP

Notes

- 1. An initial pre-scan was performed on the line 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 + Aux Factor + Cable Loss.





6.3 Conducted Output Power

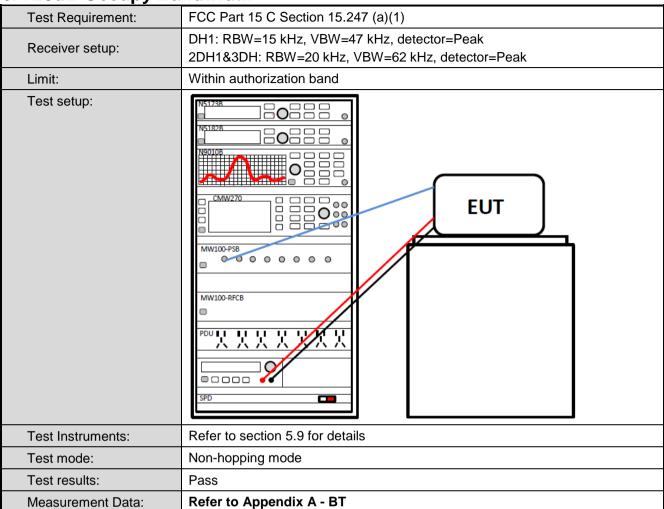
Test Requirement:	FCC Part 15 C Section 15.247 (b)(1)							
Receiver setup:	RBW=1MHz, VBW=3MHz, Detector=Peak (If 20dB BW ≤1 MHz) RBW=2MHz, VBW=6MHz, Detector=Peak (If 20dB BW > 1 MHz and < 3MHz)							
Limit:	For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.							
Test setup:	NS1828 NS							
Test Instruments:	Refer to section 5.9 for details							
Test mode:	Non-hopping mode							
Test results:	Pass							
Measurement Data:	Refer to Appendix A - BT							

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6.4 20dB Occupy Bandwidth

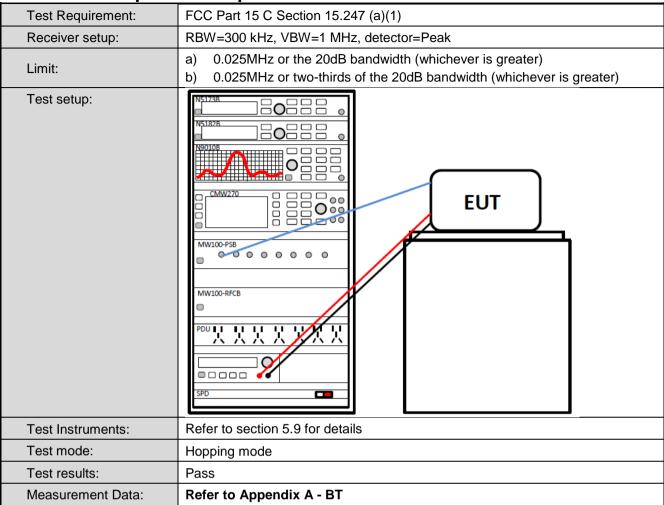


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6.5 Carrier Frequencies Separation

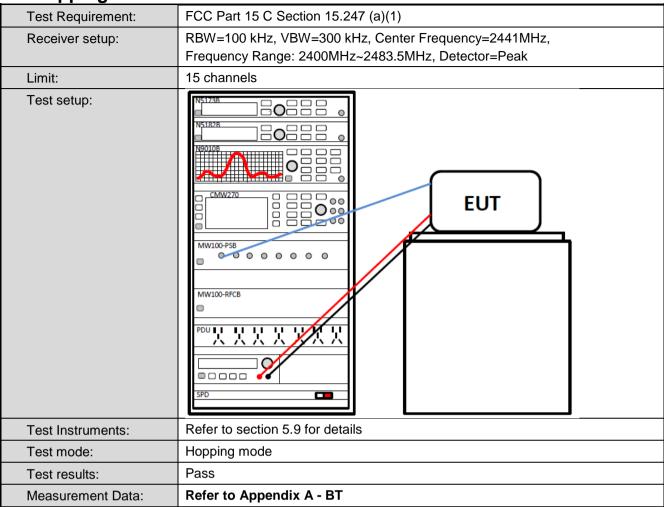


Page 14 of 39



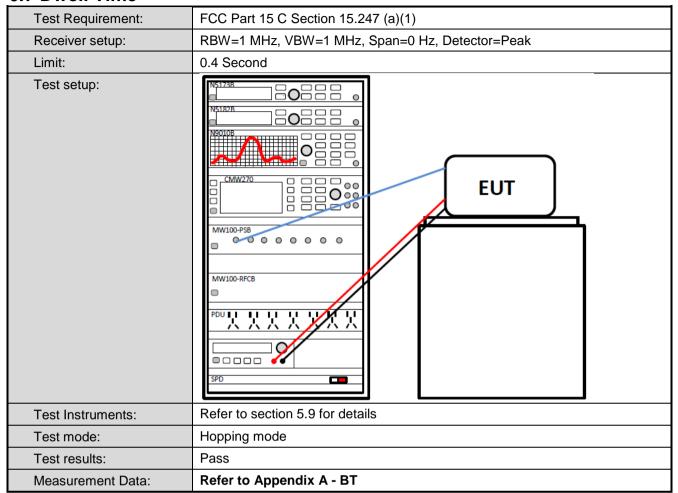


6.6 Hopping Channel Number





6.7 Dwell Time



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Project No.: JYTSZE2104060



6.8 Pseudorandom Frequency Hopping Sequence

Test Requirement:

FCC Part 15 C Section 15.247 (a)(1) requirement:

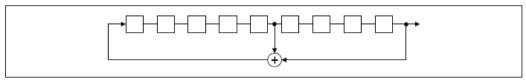
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

Alternatively. Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a Pseudorandom ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

EUT Pseudorandom Frequency Hopping Sequence

The pseudorandom sequence may be generated in a nine-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first ONE of 9 consecutive ONEs; i.e. the shift register is initialized with nine ones.

- Number of shift register stages: 9
- Length of pseudo-random sequence: $2^9-1 = 511$ bits
- · Longest sequence of zeros: 8 (non-inverted signal)



Linear Feedback Shift Register for Generation of the PRBS sequence

An example of Pseudorandom Frequency Hopping Sequence as follow:



Each frequency used equally on the average by each transmitter.

The system receivers have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals.

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6.9 Band Edge

6.9.1 Conducted Emission Method

Test Requirement:	FCC Part 15 C Section 15.247 (d)						
Receiver setup:	RBW=100 kHz, VBW=300 kHz, Detector=Peak						
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:	NS107-8. NS107-						
Test Instruments:	Refer to section 5.9 for details						
Test mode:	Non-hopping mode and hopping mode						
Test results:	Pass						
Measurement Data:	Refer to Appendix A - BT						

Page 18 of 39



6.9.2 Radiated Emission Method

Test Requirement:	FCC Part 15 C Section 15.209 and 15.205						
Test Frequency Range:	2310 MHz to 2390 MHz and 2483.5 MHz to 2500 MHz						
Test Distance:	3m						
Receiver setup:	Frequency	Detecto	or	RBW	V	Remark	
	Above 1GHz	Peak		1MHz	3MHz		Peak Value
	Above 1G112	RMS		1MHz	31	ИНz	Average Value
Limit:	Frequenc	су	Lim	nit (dBuV/m @3	3m)		Remark
	Above 1G	Hz -		54.00		Av	rerage Value
	7,5070 10			74.00		F	Peak Value
Test setup:	Horn Antenna Tower Test Receiver Test Receiver Test Receiver Test Receiver						
Test Procedure:	 The EUT was placed on the top of a rotating table 1.5meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 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. 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. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. If the emission level of the EUT in peak mode was 10dB 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 10dB margin would be re-tested one by one using peak, quasi-peak or 						
Test Instruments:	Refer to section			and then repo			
Test mode:	Non-hopping mode						
Test results:	Passed						

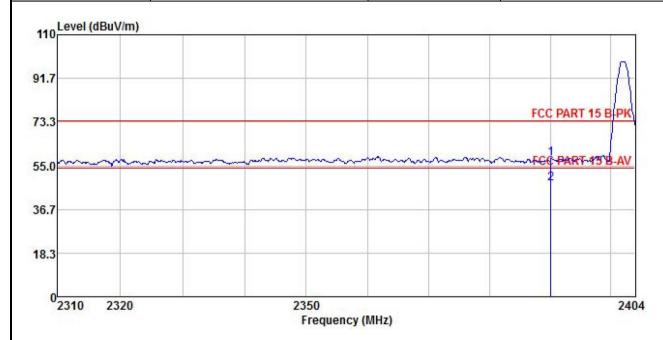
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GFSK Mode:

Product Name:	Mobile Phone	Product Model:	L6502S
Test By:	Mike	Test mode:	DH1 Tx mode
Test Channel:	Lowest channel	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24°C Huni: 57%



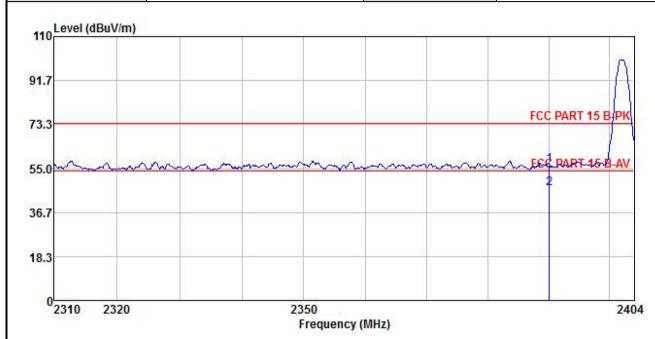
	Freq		Antenna Factor				Limit Line		Remark
	MHz	WHz dBuV dB/m		dBdB dBuV/		$\overline{dB}\overline{u}\overline{V}/\overline{m}$	BuV/m dBuV/m		
1 2	2390.000 2390.000								

Remark:

- 1. Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.



Product Name:	Mobile Phone	Product Model:	L6502S
Test By:	Mike	Test mode:	DH1 Tx mode
Test Channel:	Lowest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24°C Huni: 57%



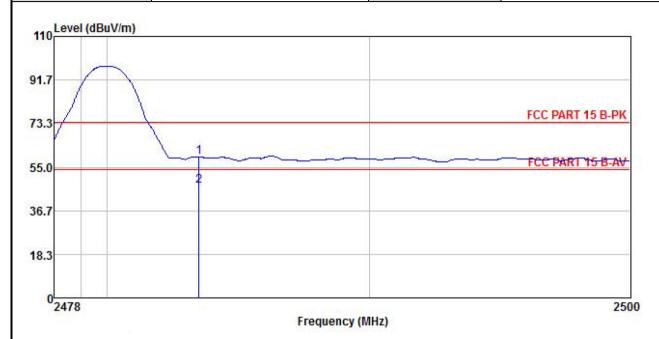
	Freq		Antenna Factor						
	MHz	dBu∇	<u>dB</u> /m	<u>ab</u>	<u>dB</u>	$\overline{dBuV/m}$	dBuV/m	<u>dB</u>	
1 2	2390.000 2390.000								

- 1. Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Page 21 of 39



Product Name:	Mobile Phone	Product Model:	L6502S
Test By:	Mike	Test mode:	DH1 Tx mode
Test Channel:	Highest channel	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24°C Huni: 57%



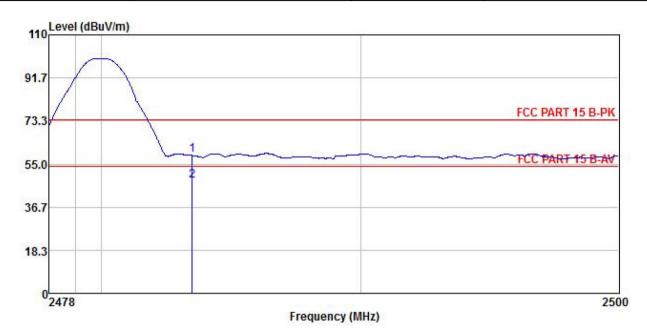
	Freq		Antenna Factor			Limit Line		Remark
	MHz	dBu₹	<u>dB</u> /m	 <u>ab</u>	dBuV/m	$\overline{dBuV/m}$	<u>ab</u>	
1 2	2483.500 2483.500							

- 1. Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Page 22 of 39



Product Name:	Mobile Phone	Product Model:	L6502S
Test By:	Mike	Test mode:	DH1 Tx mode
Test Channel:	Highest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24°C Huni: 57%



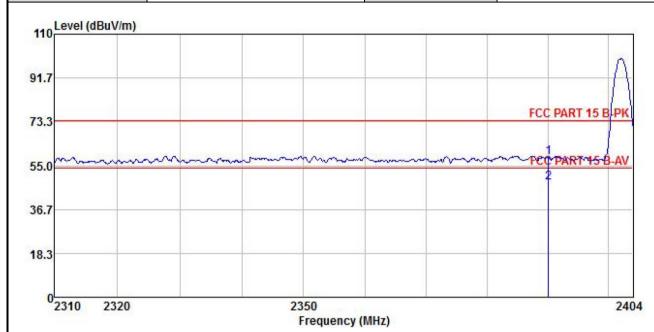
	Freq		Antenna Factor			Limit Line		Remark
-	MHz	dBu∇	<u>dB</u> /m	 <u>ab</u>	$\overline{dBuV/m}$	$\overline{dBuV/m}$	<u>ab</u>	
1 2	2483.500 2483.500							

- 1. Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.



π/4-DQPSK mode

Product Name:	Mobile Phone	Product Model:	L6502S
Test By:	Mike	Test mode:	2DH1 Tx mode
Test Channel:	Lowest channel	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24°C Huni: 57%



	Freq		Antenna Factor						Remark
	MHz	MHz dBuV	dB/m	dB/m dB	<u>ab</u>	$\overline{dBuV/m}$	$\overline{dBuV/m}$	<u>dB</u>	grande in Kongret De Stelleberet er
1 2	2390.000 2390.000								

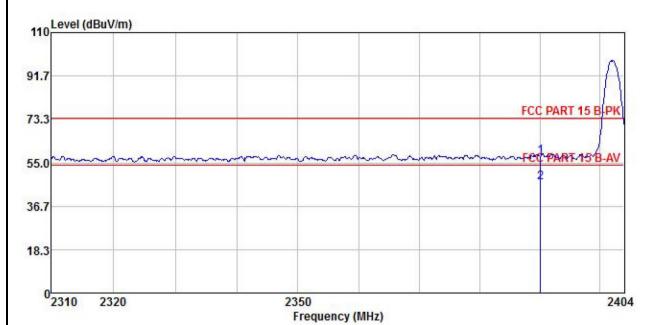
Remark:

- 1. Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

Page 24 of 39



Product Name:	Mobile Phone	Product Model:	L6502S
Test By:	Mike	Test mode:	2DH1 Tx mode
Test Channel:	Lowest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



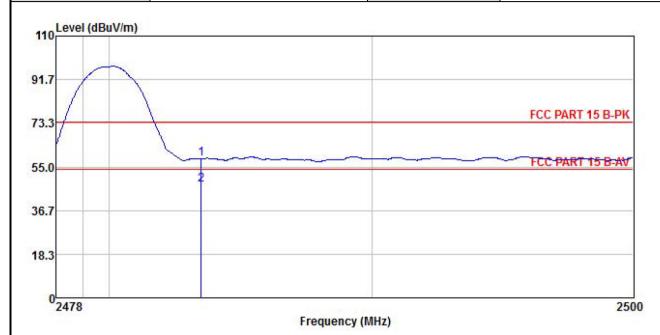
	Freq		Antenna Factor					Over Limit	
	MHz	MHz dBuV		<u>dB</u>	$\overline{dBuV/m}$	$\overline{dBuV/m}$	<u>dB</u>		
1 2	2390.000 2390.000								

- 1. Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

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Product Name:	Mobile Phone	Product Model:	L6502S
Test By:	Mike	Test mode:	2DH1 Tx mode
Test Channel:	Highest channel	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24°C Huni: 57%



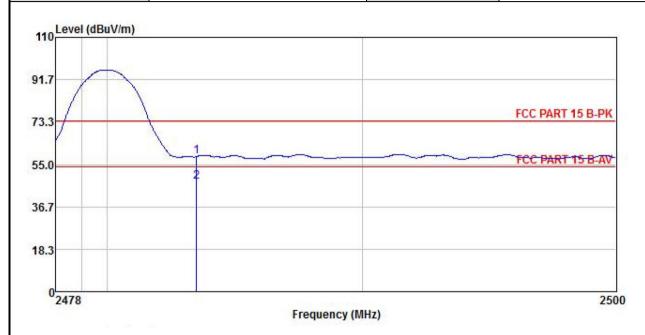
			Antenna Factor					Remark
		MHz dBuV		 $\overline{dBuV/m}$	$\overline{dBuV/m}$	<u>dB</u>		
1 2	2483.500 2483.500							

- 1. Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

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Product Name:	Mobile Phone	Product Model:	L6502S
Test By:	Mike	Test mode:	2DH1 Tx mode
Test Channel:	Highest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24°C Huni: 57%



	Freq		Antenna Factor			Limit Line		Remark
	MHz	dBu∇	— <u>d</u> B/m	 <u>d</u> B	dBuV/m	dBuV/m	<u>d</u> B	
1 2	2483.500 2483.500				58.52 47.57			

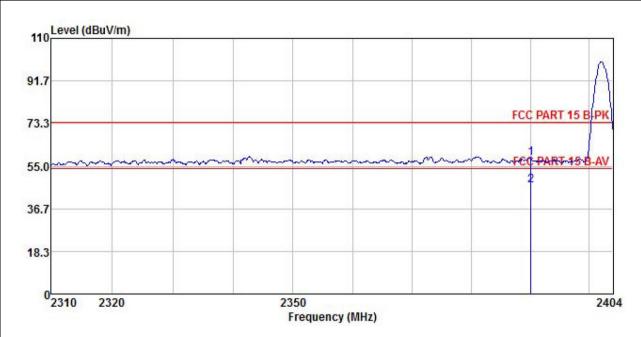
- 1. Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

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8DPSK mode

Product Name:	Mobile Phone	Product Model:	L6502S
Test By:	Mike	Test mode:	3DH1 Tx mode
Test Channel:	Lowest channel	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



	Freq	ReadAntenna Level Factor							Limit Over Level Line Limit R		
	MHz	dBu∇		<u>ab</u>	<u>dB</u>	$\overline{dBuV/m}$	$\overline{dBuV/m}$	<u>ab</u>			
1 2	2390.000 2390.000										

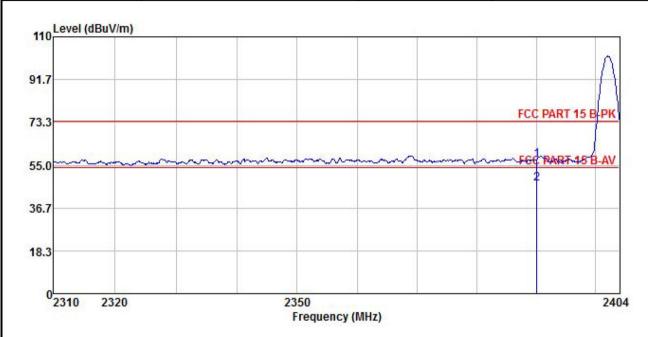
Remark:

- 1. Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

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Product Name:	Mobile Phone	Product Model:	L6502S
Test By:	Mike	Test mode:	3DH1 Tx mode
Test Channel:	Lowest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



Freq		Antenna Factor						Remark
MHz	dBu∀	$\overline{dB}/\overline{m}$	₫B	<u>dB</u>	$\overline{dBuV/m}$	$\overline{dBuV/m}$	<u>d</u> B	
2390.000 2390.000								

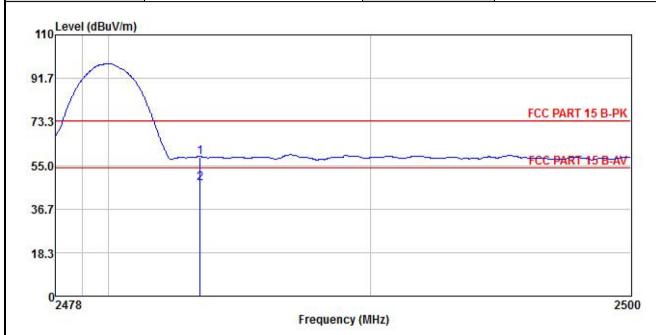
- 1. Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

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Page 29 of 39



Product Name:	Mobile Phone	Product Model:	L6502S
Test By:	Mike	Test mode:	3DH1 Tx mode
Test Channel:	Highest channel	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24°C Huni: 57%



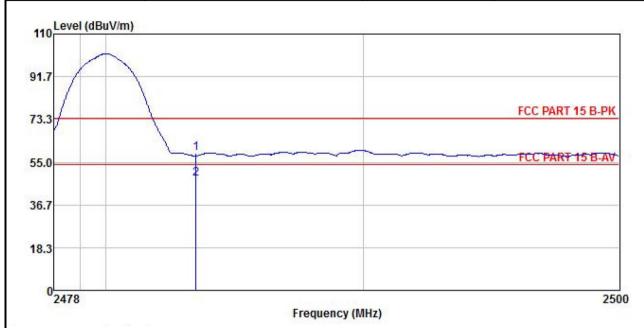
	Freq		Antenna Factor				Limit Line		Remark	
	MHz	dBu∇	<u>dB</u> /π	<u>ab</u>	<u>ab</u>	dBuV/m	dBuV/m	<u>d</u> B		
1 2	2483.500 2483.500									

- 1. Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.

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Product Name:	Mobile Phone	Product Model:	L6502S
Test By:	Mike	Test mode:	3DH1 Tx mode
Test Channel:	Highest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



Freq					Limit Over Level Line Limit			
MHz	dBu∇		<u>ab</u>	<u>dB</u>	dBuV/m	$\overline{dBuV/m}$	<u>ab</u>	
2483.500 2483.500								

- 1. Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.



6.10 Spurious Emission

6.10.1 Conducted Emission Method

Test Requirement:	FCC Part 15 C Section 15.247 (d)					
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:	NS102R NS					
Test Instruments:	Refer to section 5.9 for details					
Test mode:	Non-hopping mode					
Test results:	Pass					
Measurement Data:	Refer to Appendix A - BT					

Page 32 of 39



6.10.2 Radiated Emission Method

5.10.2 Radiated Emission Method								
Test Requirement:	FCC Part 15 C Section 15.209							
Test Frequency Range:	9 kHz to 25 GHz							
Test Distance:	3m							
Receiver setup:	Frequency	Detector	RBW	VBW	Remark			
	30MHz-1GHz	Quasi-peak	120kHz	300kH	Iz Quasi-peak Value			
	Above 1GHz	Peak	1MHz	3MHz	z Peak Value			
	ABOVE TOTIZ	RMS	1MHz	3MHz	z Average Value			
Limit:	Frequenc	y Li	mit (dBuV/m	@3m)	Remark			
	30MHz-88N	1Hz	40.0		Quasi-peak Value			
	88MHz-216	ИHz	43.5		Quasi-peak Value			
	216MHz-960	MHz	46.0		Quasi-peak Value			
	960MHz-10	SHz	54.0		Quasi-peak Value			
	Above 1GI	Hz	54.0		Average Value			
	7.5010101	12	74.0		Peak Value			
Test setup:	Below 1GHz Antenna Tower Search Antenna RF Test Receiver							
	7//////	ble	îm 					
	Solven - Storm	(Turntable)	3m					
Test Procedure:	The EUT was placed on the top of a rotating table 0.8m(below 1GHz) /1.5m(above 1GHz) above the ground at a 3 meter chamber. The table was rotated 360 degrees to determine the position of the highest radiation. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna							

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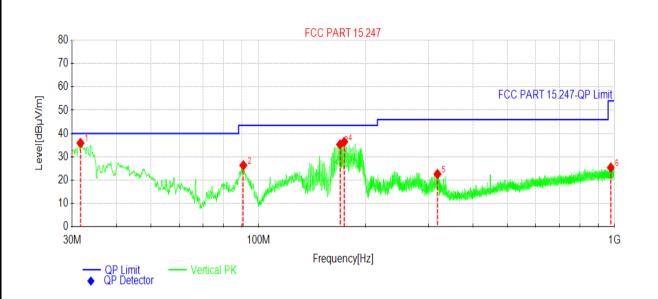
tower.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case 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 10dB 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 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
Refer to section 5.9 for details
Non-hopping mode
Pass
 Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis is the worst case. 9 kHz to 30 MHz is noise floor and lower than the limit 20dB, so only shows the data of above 30MHz in this report.



Measurement Data (worst case):

Below 1GHz:

Product Name:	Mobile Phone	Product Model:	L6502S
Test By:	Mike	Test mode:	BT Tx mode
Test Frequency:	30 MHz ~ 1 GHz	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24°C Huni: 57%



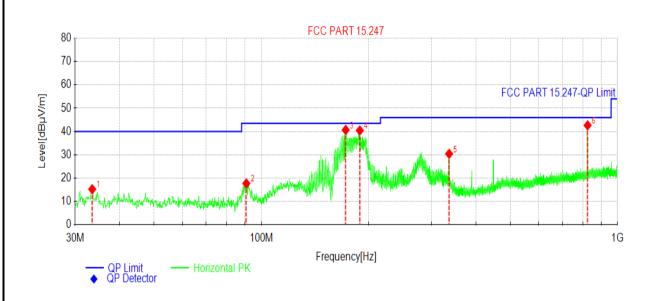
Suspected Data List										
NO.	Freq.	Reading[d	Level	Factor	Limit	Margin	Trace			
140.	[MHz]	BµV/m]	[dBµV/m]	[dB]	[dBµV/m]	[dB]	11400			
1	31.6492	54.00	35.91	-18.09	40.00	4.09	QP			
2	90.7281	45.86	26.33	-19.53	43.50	17.17	QP			
3	169.597	54.12	35.27	-18.85	43.50	8.23	QP			
4	174.059	55.18	36.35	-18.83	43.50	7.15	QP			
5	318.506	36.14	22.57	-13.57	46.00	23.43	QP			
6	977.202	28.51	25.32	-3.19	54.00	28.68	QP			

Remark

- Final Level = Receiver Read level + Factor
 Factor = Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.
- 3. The Aux Factor is a notch filter switch box loss, this item is not used.



Product Name:	Mobile Phone	Product Model:	L6502S
Test By:	Mike	Test mode:	BT Tx mode
Test Frequency:	30 MHz ~ 1 GHz	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24°C Huni: 57%



Suspected Data List										
NO.	Freq.	Reading[d	Level	Factor	Limit	Margin	T			
	[MHz]	BµV/m]	[dBµV/m]	[dB]	[dBµV/m]	[dB]	Trace			
1	33.4923	32.88	15.21	-17.67	40.00	24.79	QP			
2	90.7281	37.21	17.68	-19.53	43.50	25.82	QP			
3	172.507	59.50	40.67	-18.83	43.50	2.83	QP			
4	188.998	58.14	40.45	-17.69	43.50	3.05	QP			
5	336.744	43.71	30.41	-13.30	46.00	15.59	QP			
6	824.800	47.49	42.65	-4.84	46.00	3.35	QP			

- Final Level = Receiver Read level + Factor.
 Factor = Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.
- 3. The Aux Factor is a notch filter switch box loss, this item is not used.

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Above 1GHz:

Test channel: Lowest channel									
Detector: Peak Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4804.00	55.67	30.78	6.80	2.44	41.81	53.88	74.00	-20.12	Vertical
4804.00	56.48	30.78	6.80	2.44	41.81	54.69	74.00	-19.31	Horizontal
				Detector:	Average Va	alue			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4804.00	49.52	30.78	6.80	2.44	41.81	47.73	54.00	-6.27	Vertical
4804.00	49.13	30.78	6.80	2.44	41.81	47.34	54.00	-6.66	Horizontal

Test channel: Middle channel									
Detector: Peak Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4882.00	55.78	30.96	6.86	2.47	41.84	54.23	74.00	-19.77	Vertical
4882.00	56.50	30.96	6.86	2.47	41.84	54.95	74.00	-19.05	Horizontal
				Detector:	Average Va	alue			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4882.00	49.34	30.96	6.86	2.47	41.84	47.79	54.00	-6.21	Vertical
4882.00	49.34	30.96	6.86	2.47	41.84	47.79	54.00	-6.21	Horizontal

Test channel: Highest channel									
Detector: Peak Value									
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4960.00	56.13	31.11	6.91	2.49	41.87	54.77	74.00	-19.23	Vertical
4960.00	56.07	31.11	6.91	2.49	41.87	54.71	74.00	-19.29	Horizontal
				Detector:	Average Va	alue			
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Aux Factor (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4960.00	48.88	31.11	6.91	2.49	41.87	47.52	54.00	-6.48	Vertical
4960.00	48.89	31.11	6.91	2.49	41.87	47.53	54.00	-6.47	Horizontal

Remark:

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^{1.} Final Level =Receiver Read level + Antenna Factor + Cable Loss + Aux Factor - Preamplifier Factor.

^{2.} The emission levels of other frequencies are lower than the limit 20dB and not show in test report.