Report No: CCISE180916402

FCC REPORT

(Bluetooth)

Applicant: NEXUS TELECOM SERVICES (HK) LIMITED

Address of Applicant: R112, 11/F Hollywood Plaza, Mangkok, Kowloon Hong Kong

Equipment Under Test (EUT)

Product Name: MOBILE PHONE

Model No.: GO1006

Trade mark: GOMOBILE

FCC ID: 2AHDFGO1006

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

Date of sample receipt: 29 Sep., 2018

Date of Test: 29 Sep., to 02 Nov., 2018

Date of report issued: 05 Nov., 2018

Test Result: PASS *

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

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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Report No: CCISE180916402

2 Version

Version No.	Date	Description
00	05 Nov., 2018	Original

Tested by: Mike OU Date: 05 Nov., 2018

Test Engineer

Reviewed by: 05 Nov., 2018

Project Engineer





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4 Test Summary

Test Items	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)(1)	Pass
20dB Occupied Bandwidth	15.247 (a)(1)	Pass
Carrier Frequencies Separation	15.247 (a)(1)	Pass
Hopping Channel Number	15.247 (a)(1)	Pass
Dwell Time	15.247 (a)(1)	Pass
Spurious Emission	15.205 & 15.209	Pass
Band Edge	15.247(d)	Pass

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

N/A: Not Applicable.





5 General Information

5.1 Client Information

Applicant:	NEXUS TELECOM SERVICES (HK) LIMITED	
Address:	dress: R112, 11/F Hollywood Plaza, Mangkok, Kowloon Hong Kong	
Manufacturer:	Guizhou Fortuneship Technology Co., Ltd	
Address:	2nd Floor, Factory Building 4, Hi-Tech Industrial Park, Xinpu Economic Development Zone, Xinpu New District, Zunyi City, Guizhou Province, P. R. China	

5.2 General Description of E.U.T.

3.2 Ochiciai Description	0. 2.0
Product Name:	MOBILE PHONE
Model No.:	GO1006
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:	1.8 dBi
Power supply:	Rechargeable Li-ion Battery DC3.7V-2000mAh
AC adapter:	Model: GO1006 Input: AC100-240V, 50/60Hz, 0.15A 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: Cl	nannel 0, 39 &78	3 selected fo	or GFSK, π/4-D	QPSK and 8	BDPSK.		



5.3 Test environment and test 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.			

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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 with a fresh battery, 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)	±2.22 dB (k=2)
Radiated Emission (9kHz ~ 30MHz)	±2.76 dB (k=2)
Radiated Emission (30MHz ~ 1000MHz)	±4.28 dB (k=2)
Radiated Emission (1GHz ~ 18GHz)	±5.72 dB (k=2)
Radiated Emission (18GHz ~ 40GHz)	±2.88 dB (k=2)

5.6 Laboratory Facility

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

FCC - Registration No.: 727551

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

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.

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

5.7 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

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

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





5.8 Test Instruments list

Radiated Emission:						
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)	
3m SAC	SAEMC	9m*6m*6m	966	07-22-2017	07-21-2020	
Loop Antenna	SCHWARZBECK	FMZB1519B	00044	03-16-2018	03-15-2019	
BiConiLog Antenna	SCHWARZBECK	VULB9163	497	03-16-2018	03-15-2019	
Horn Antenna	SCHWARZBECK	BBHA9120D	916	03-16-2018	03-15-2019	
Horn Antenna	SCHWARZBECK	BBHA9120D	1805	06-22-2017	06-21-2020	
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170582	11-21-2017	11-20-2018	
EMI Test Software	AUDIX	E3	Version: 6.110919b		b	
Pre-amplifier	HP	8447D	2944A09358	03-07-2018	03-06-2019	
Pre-amplifier	CD	PAP-1G18	11804	03-07-2018	03-06-2019	
Spectrum analyzer	Rohde & Schwarz	FSP30	101454	03-07-2018	03-06-2019	
Spectrum analyzer	Rohde & Schwarz	FSP40	100363	11-21-2017	11-20-2018	
EMI Test Receiver	Rohde & Schwarz	ESRP7	101070	03-07-2018	03-06-2019	
Cable	ZDECL	Z108-NJ-NJ-81	1608458	03-07-2018	03-06-2019	
Cable	MICRO-COAX	MFR64639	K10742-5	03-07-2018	03-06-2019	
Cable	SUHNER	SUCOFLEX100	58193/4PE	03-07-2018	03-06-2019	
RF Switch Unit	MWRFTEST	MW200	N/A	N/A	N/A	
Test Software	MWRFTEST	MTS8200	Version: 2.0.0.0			

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	03-07-2018	03-06-2019	
Pulse Limiter	SCHWARZBECK	OSRAM 2306	9731	03-07-2018	03-06-2019	
LISN	CHASE	MN2050D	1447	03-19-2018	03-18-2019	
LISN	Rohde & Schwarz	ESH3-Z5	8438621/010	07-21-2018	07-20-2019	
Cable	HP	10503A	N/A	03-07-2018	03-06-2019	
EMI Test Software	AUDIX	E3	Version: 6.110919b			



6 Test results and measurement data

6.1 Antenna Requirement

Standard requirement: FCC P

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 1.8 dBi.







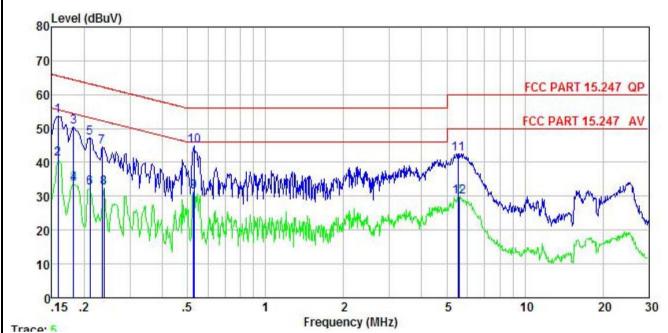
6.2 Conducted Emissions

Test Requirement:	FCC Part 15 C Section 15.207			
Test Method:	ANSI C63.10:2013			
Test Frequency Range:	150 kHz to 30 MHz			
Class / Severity:	Class B			
Receiver setup:	RBW=9 kHz, VBW=30 k	Hz, Sweep time=auto		
Limit:	Frequency range	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 log	arithm of the frequency.		
Test setup:	Reference	Plane		
	AUX Equipment E.U.T EMI Receiver 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 C63.4: 2014 on conducted measurement. 			
Test Instruments:	Refer to section 5.8 for details			
Test mode:	Hopping mode			
Test results:	Pass			



Measurement Data:

Product name:	MOBILE PHONE	Product model:	GO1006
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%



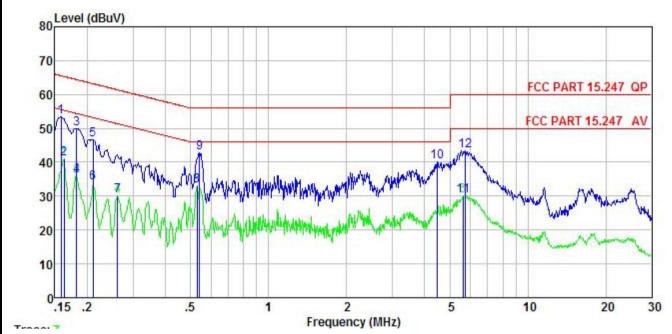
	Freq	Kead Level	Factor	Loss	Level	Limit	Over Limit	Remark
-	MHz	dBu∜	<u>dB</u>	dB	dBu₹	dBu√	<u>ab</u>	
1	0.158	42.75	0.17	10.77	53.69	65.56	-11.87	QP
2	0.158	30.11	0.17	10.77	41.05	55.56	-14.51	Average
3	0.182	39.63	0.16	10.77	50.56	64.42	-13.86	QP
2 3 4 5 6 7 8 9	0.182	22.66	0.16	10.77	33.59	54.42	-20.83	Average
5	0.211	36.37	0.15	10.76	47.28	63.18	-15.90	QP
6	0.211	21.60	0.15	10.76	32.51	53.18	-20.67	Average
7	0.234	33.75	0.14	10.75	44.64	62.30	-17.66	QP
8	0.238	21.45	0.14	10.75	32.34	52.17	-19.83	Average
9	0.527	20.48	0.12	10.76	31.36	46.00	-14.64	Average
10	0.529	33.91	0.12	10.76	44.79	56.00	-11.21	QP
11	5.535	31.47	0.22	10.83	42.52	60.00	-17.48	QP
12	5.594	18.68	0.22	10.83	29.73	50.00	-20.27	Average

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 + Cable Loss.



Product name:	MOBILE PHONE	Product model:	GO1006	
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	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBu₹	<u>dB</u>	dB	dBu₹	dBu₹	<u>dB</u>	
1	0.158	41.72	0.98	10.77	53.47	65.56	-12.09	QP
2	0.162	29.24	0.97	10.77	40.98	55.34	-14.36	Average
3	0.182	38.33	0.94	10.77	50.04	64.42	-14.38	QP
1 2 3 4 5 6 7 8	0.182	24.34	0.94	10.77	36.05	54.42	-18.37	Average
5	0.211	35.07	0.93	10.76	46.76	63.18	-16.42	QP
6	0.211	22.15	0.93	10.76	33.84	53.18	-19.34	Average
7	0.262	18.42	0.95	10.75	30.12			Average
8	0.529	21.27	0.97	10.76	33.00	46.00	-13.00	Average
9	0.541	31.21	0.97	10.76	42.94	56.00	-13.06	QP
10	4.454	28.32	1.00	10.87	40.19	56.00	-15.81	QP
11	5.623	18.38	1.01	10.83	30.22	50.00	-19.78	Average
12	5.713	31.58	1.01	10.83	43.42	60.00	-16.58	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 + Cable Loss.





6.3 Conducted Output Power

Test Requirement:	FCC Part 15 C Section 15.247 (b)(1)		
Test Method:	ANSI C63.10:2013 and DA00-705		
Receiver setup:	RBW=1MHz, VBW=3MHz, Detector=Peak (If 20dB BW ≤1 MHz) RBW=3MHz, VBW=10MHz, 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:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane		
Test Instruments:	Refer to section 5.8 for details		
Test mode:	Non-hopping mode		
Test results:	Pass		

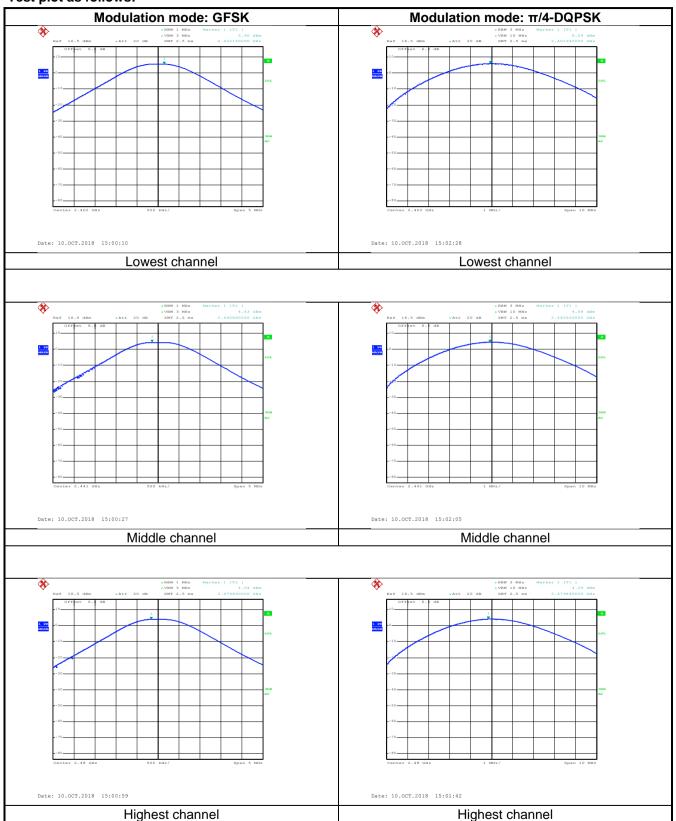
Measurement Data:

measurement Data.						
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result			
	GFSK mo	de				
Lowest channel	5.60	30.00	Pass			
Middle channel	4.43	30.00	Pass			
Highest channel	4.04	30.00	Pass			
	π/4-DQPSK mode					
Lowest channel	6.09	21.00	Pass			
Middle channel	4.69	21.00	Pass			
Highest channel	4.29	21.00	Pass			
	8DPSK mode					
Lowest channel	6.12	21.00	Pass			
Middle channel	4.72	21.00	Pass			
Highest channel	4.29	21.00	Pass			

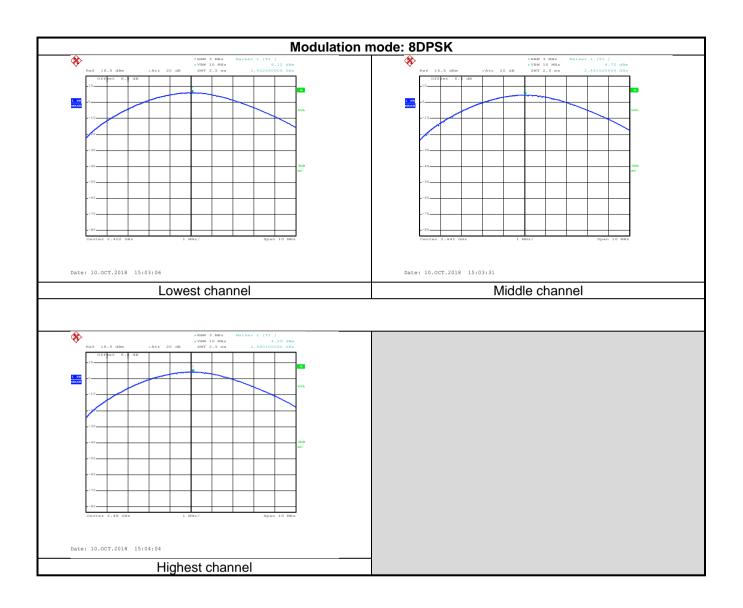




Test plot as follows:











6.4 20dB Occupy Bandwidth

Test Requirement:	FCC Part 15 C Section 15.247 (a)(1)		
Test Method:	ANSI C63.10:2013 and DA00-705		
Receiver setup:	RBW=30 kHz, VBW=100 kHz, detector=Peak		
Limit:	NA		
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane		
Test Instruments:	Refer to section 5.8 for details		
Test mode:	Non-hopping mode		
Test results:	Pass		

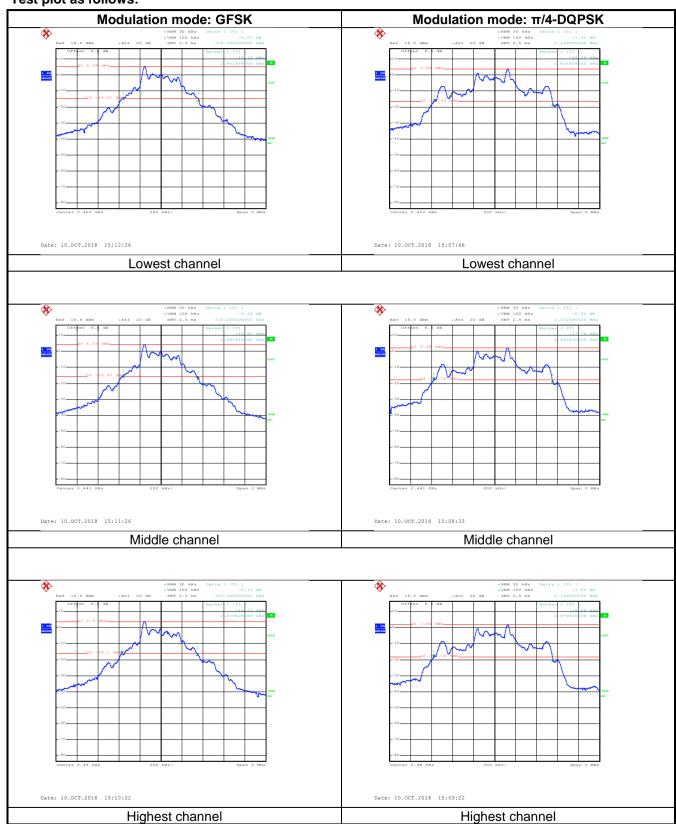
Measurement Data:

Toot channel		20dB Occupy Bandwidth (kHz)		
Test channel	GFSK	π/4-DQPSK	8DPSK	
Lowest	716	1128	1164	
Middle	712	1132	1164	
Highest	720	1136	1172	

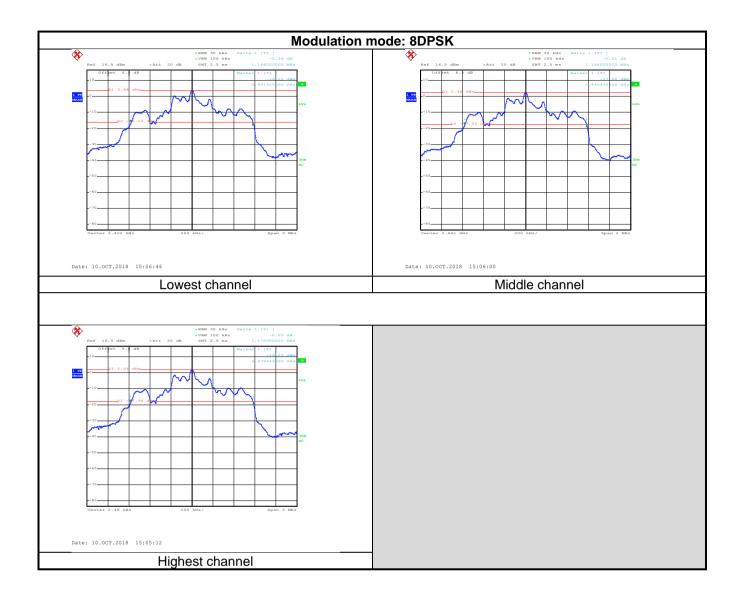




Test plot as follows:











6.5 Carrier Frequencies Separation

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Test Requirement:	FCC Part 15 C Section 15.247 (a)(1)		
Test Method:	ANSI C63.10:2013 and DA00-705		
Receiver setup:	RBW=100 kHz, VBW=300 kHz, detector=Peak		
Limit:	a) 0.025MHz or the 20dB bandwidth (whichever is greater)b) 0.025MHz or 2/3 of the 20dB bandwidth (whichever is greater)		
Test setup:	Spectrum Analyzer Non-Conducted Table Ground Reference Plane		
Test Instruments:	Refer to section 5.8 for details		
Test mode:	Hopping mode		
Test results:	Pass		



Measurement Data:

Test channel	Carrier Frequencies Separation (kHz)	Limit (kHz)	Result		
	GFSK				
Lowest	1004	720.00	Pass		
Middle	1004	720.00	Pass		
Highest	1004	720.00	Pass		
	π/4-DQPSK mode				
Lowest	1004	757.33	Pass		
Middle	1008	757.33	Pass		
Highest	1004	757.33	Pass		
8DPSK mode					
Lowest	1000	781.33	Pass		
Middle	1000	781.33	Pass		
Highest	1004	781.33	Pass		

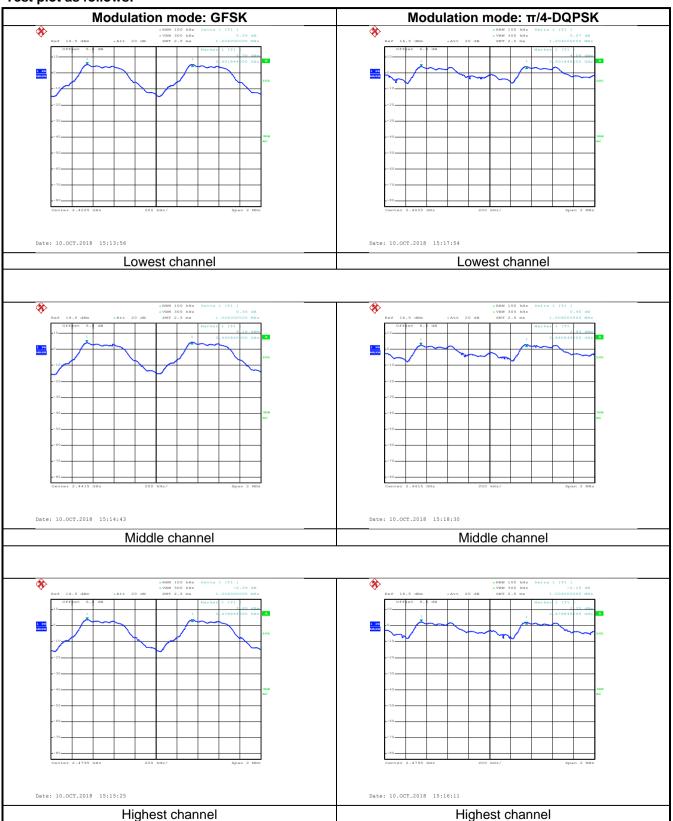
Note: According to section 6.4

		The state of the s
Mode	20dB bandwidth (kHz) (worse case)	Limit (kHz) (Carrier Frequencies Separation)
GFSK	720	720.00
π/4-DQPSK	1136	757.33
8DPSK	1172	781.33

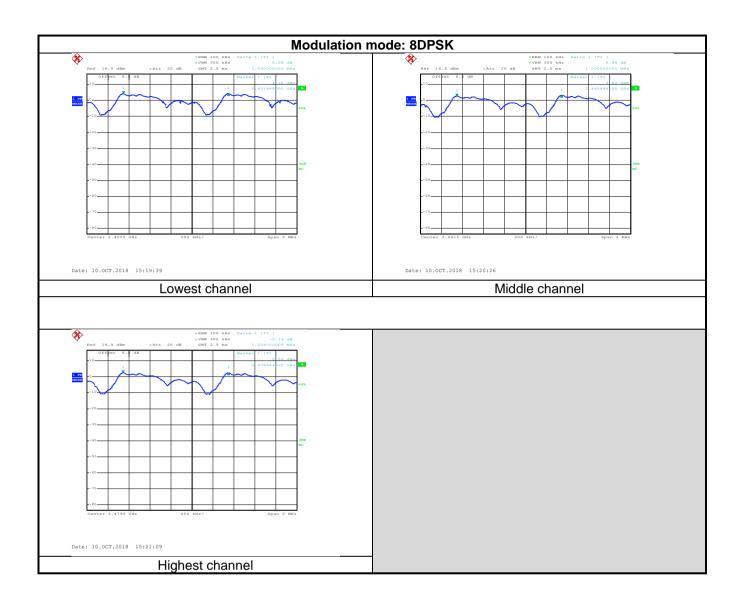




Test plot as follows:











6.6 Hopping Channel Number

Test Requirement:	FCC Part 15 C Section 15.247 (a)(1)			
Test Method:	ANSI C63.10:2013 and DA00-705			
Receiver setup:	RBW=100 kHz, VBW=300 kHz, Frequency range=2400MHz-2483.5MHz, Detector=Peak			
	Detector—I ear			
Limit:	15 channels			
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane			
Test Instruments:	Refer to section 5.8 for details			
Test mode:	Hopping mode			
Test results:	Pass			

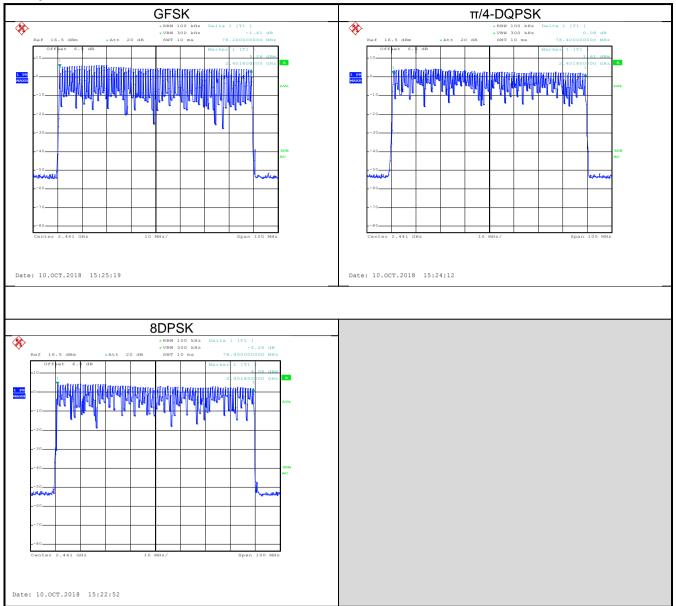
Measurement Data:

Mode	Hopping channel numbers	Limit	Result
GFSK, π/4-DQPSK, 8DPSK	79	15	Pass





Test plot as follows:





6.7 Dwell Time

Test Requirement:	FCC Part 15 C Section 15.247 (a)(1)				
Test Method:	ANSI C63.10:2013 and KDB DA00-705				
Receiver setup:	RBW=1 MHz, VBW=1 MHz, Span=0 Hz, Detector=Peak				
Limit:	0.4 Second				
Test setup:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane				
Test Instruments:	Refer to section 5.8 for details				
Test mode:	Hopping mode				
Test results:	Pass				

Measurement Data (Worse case):

Mode	Packet	Dwell time (second)	Limit (second)	Result	
	DH1	0.13568			
GFSK	DH3	0.27072	0.4	Pass	
	DH5	0.31509			
	2-DH1	0.13184			
π/4-DQPSK	2-DH3	0.26976	0.4	Pass	
	2-DH5	0.31317			
	3-DH1	0.12992			
8DPSK	3-DH3	0.26784	0.4	Pass	
	3-DH5	0.31317			

Note:

The test period = 0.4 Second/Channel x 79 Channel = 31.6 s

Calculation Formula: Dwell time = Ton time per hop * Hopping numbers * Period

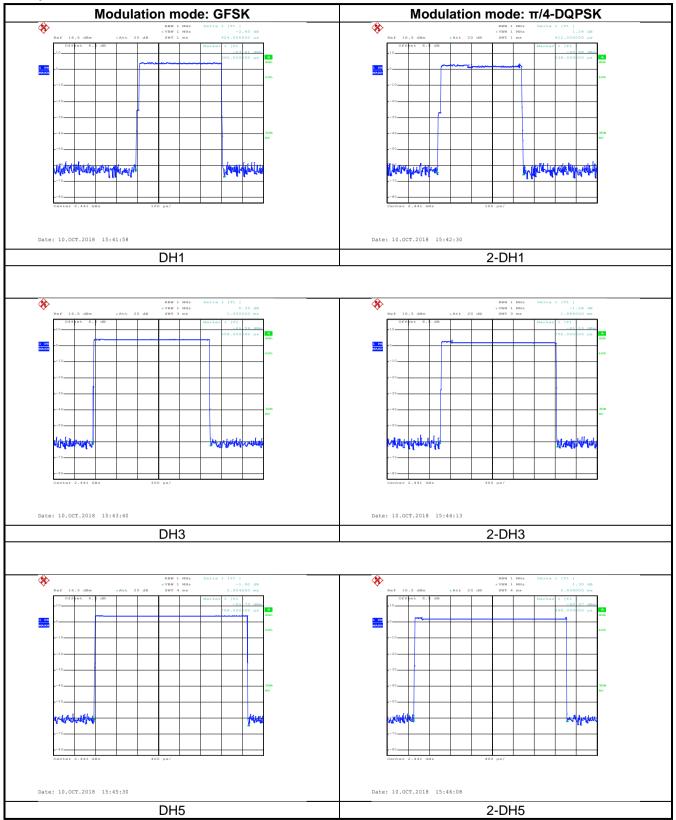
For example:

DH1 time slot=0.416*(1600/(2*79))*31.6=135.68ms DH3 time slot=1.686*(1600/(4*79))*31.6=270.72ms DH5 time slot=2.952*(1600/(6*79))*31.6=315.09ms

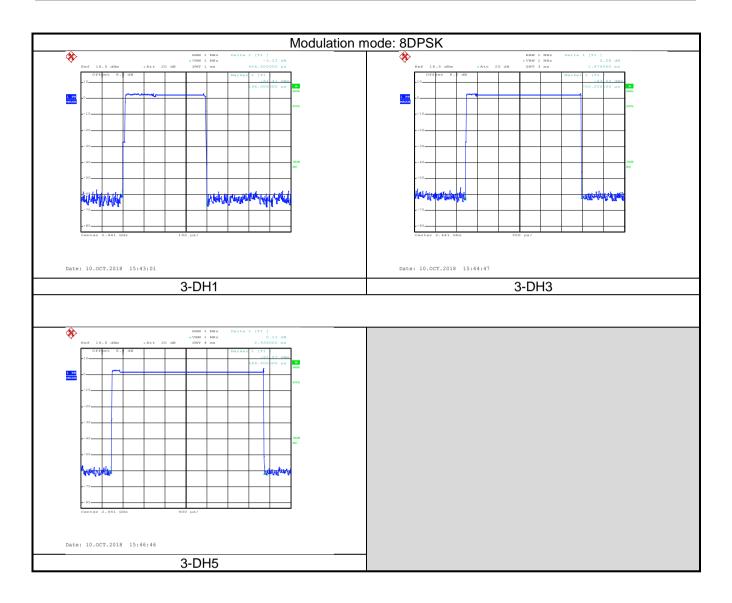




Test plot as follows:







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6.8 Pseudorandom Frequency Hopping Sequence

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

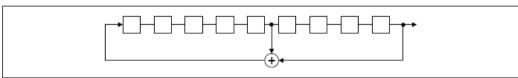
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

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

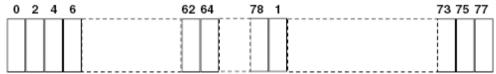
The pseudorandom sequence may be generated in a nine-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first ONE of 9 consecutive ONEs; i.e. the shift register is initialized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

- · Number of shift register stages: 9
- Length of pseudo-random sequence: 29-1 = 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.



6.9 Band Edge

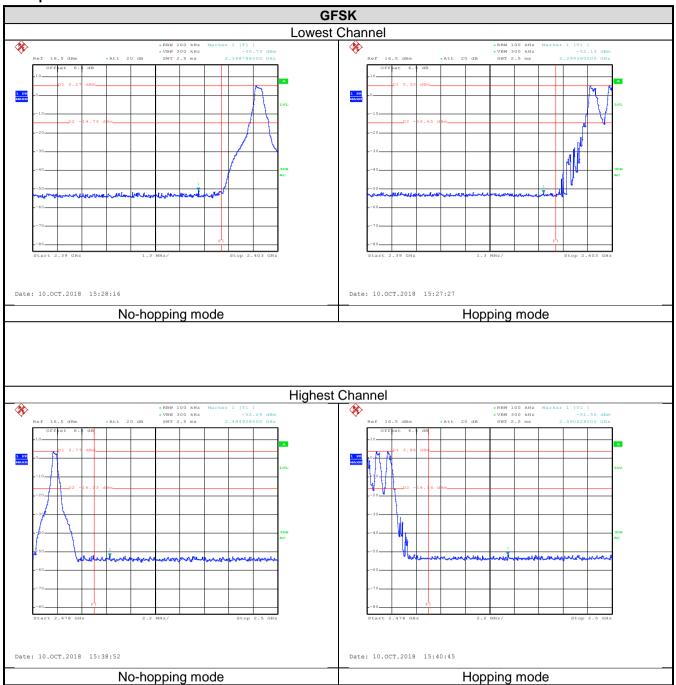
6.9.1 Conducted Emission Method

Test Requirement:	FCC Part 15 C Section 15.247 (d)				
Test Method:	ANSI C63.10:2013 and DA00-705				
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:	Spectrum Analyzer E.U.T Non-Conducted Table Ground Reference Plane				
Test Instruments:	Refer to section 5.8 for details				
Test mode:	Non-hopping mode and hopping mode				
Test results:	Pass				

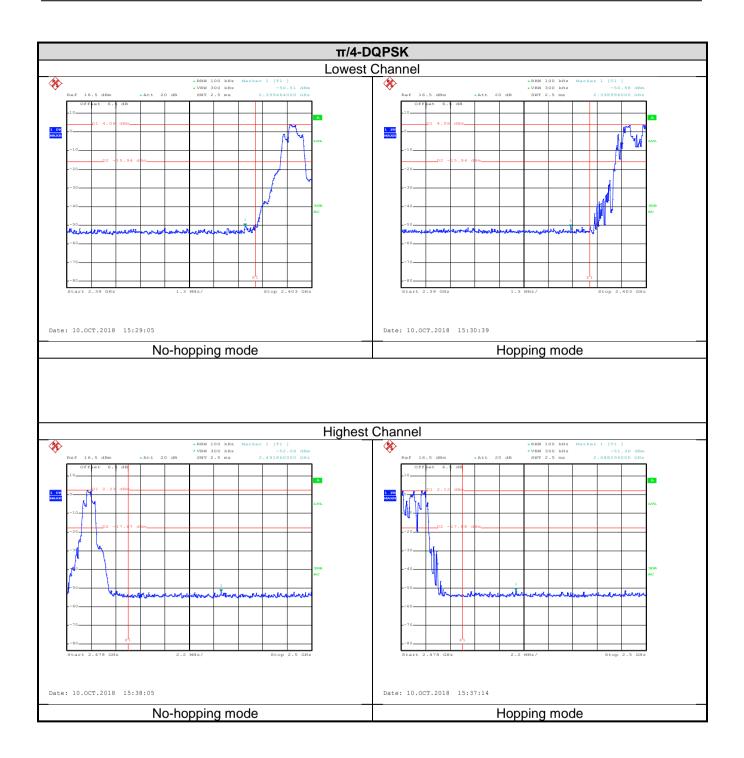




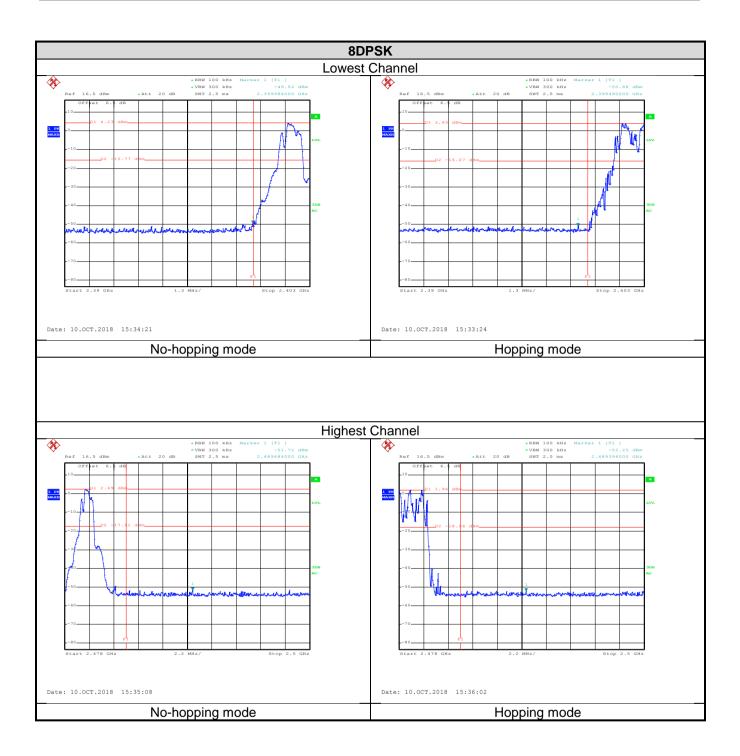
Test plot as follows:













6.9.2 Radiated Emission Method

Test Requirement:	ECC D2件 1年 C	Section 1	5 200	and 15 205			
Test Method:	FCC Part 15 C Section 15.209 and 15.205 ANSI C63.10: 2013						
	2.3GHz to 2.5GHz						
1 , 0	3m						
Receiver setup:					Remark		
Receiver setup.	Frequency	Peak		1MHz		ЛНz	Peak Value
	Above 1GHz	RMS		1MHz		ИHz	Average Value
Limit:	Frequenc	1		nit (dBuV/m @3		/11 12	Remark
Limit.	rrequeri	Су	LIII	54.00)111)	Average Value	
	Above 1G	iHz		74.00			Peak Value
Test setup:	Horn Antenna Tower Ground Reference Plane Test Receiver Test Receiver Test Receiver						
	ground at a determine the determine the 2. The EUT was antenna, who tower. 3. The antennate ground to deshorizontal armeasurement. 4. For each sure and then the and the rotal maximum refusion of the emission of the emiss	3 meter cane position as set 3 minutes as the set 3 minutes as the set of the	variene massic was to turne was to turne was to turne to the Esting of the Ferre-tee.	r. The table wat he highest radial away from the away from the ed on the top of the ed on the EUT was to he he have to he he have to he he have to he he he have the have the he have the	ter to fanten	erence-liable-har four me field streen a are strunction as 10dE at the period that drag peak	receiving eight antenna sters above the ength. Both set to make the oits worst case or to 4 meters grees to find the son and solower than the eak values of the lid not have a quasi-peak or
Test Instruments:	Refer to section	n 5.8 for d	etails	·			
Test mode:	Non-hopping mode						
Test results:	Passed						





GFSK Mode:

roduct N	Name: MOBILE PHONE			Product Model:		GC	GO1006					
est By:		Mike Test mode: DH1 Tx mod			DH1 Tx mode							
est Char	nnel:	Lowes	t channel			Polariz	ation:	Ve	Vertical			
est Volta	age:	AC 120	0/60Hz			Enviro	nment:	Tei	Temp: 24℃ Huni: 57%			
16	evel (dBuV/m	1)										
2000		-7										
110												
											0	
90			41								1	
									FCC F	PART 15 (F	()	
70												
50									FCC F	PART 15 (A	(V)	
50~	~~~		~~~	V. J.	m	~~~		more	my	and the same		
wi.									1			
30												
10												
02:	310 2320)	100		2350	180 3 5 5 5 5					240	
					Frequen	cy (MHz)						
	Eros	Read	Antenna Factor	Cable	Preamp	Lorral	Limit		Pomork			
-23									Vewark			
	MHz	dBu∀	dB/m	dB	dB	dBuV/m	dBuV/m	dB				
	2390.000	17.96	27.37	4.69	0.00			-23.98				
2	2390.000	7.47	27.37	4.69	0.00	39.53	54.00	-14.47	Average	;		

Remark:

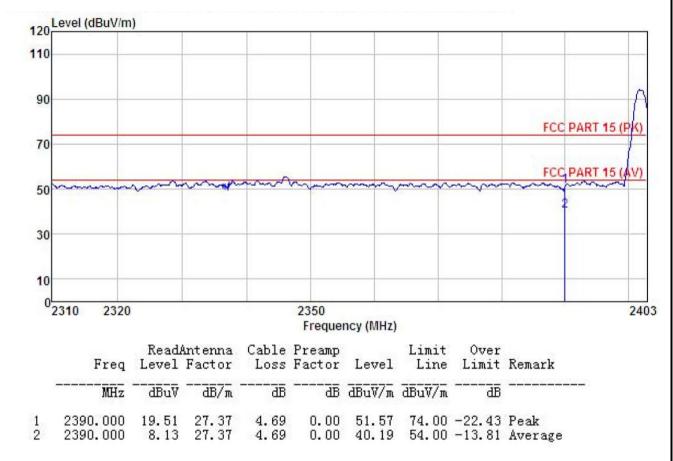
^{1.} Final Level = Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor.

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





Product Name:	MOBILE PHONE	Product Model:	GO1006
Test By:	Mike	Test mode:	DH1 Tx mode
Test Channel:	Lowest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



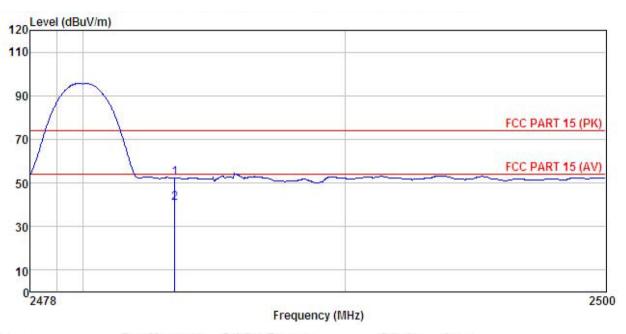
Remark:

- 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.





Product Name:	MOBILE PHONE	Product Model:	GO1006
Test By:	Mike	Test mode:	DH1 Tx mode
Test Channel:	Highest channel	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



ReadAntenna Cable Preamp Over Limit Freq Level Factor Loss Factor Level Line Limit Remark dB dBuV/m dBuV/m MHz dBuV dB/m <u>ab</u> --4.81 2483.500 19.72 0.00 52.10 74.00 -21.90 Peak 27.57 2483.500 8.26 27.57 4.81 0.00 40.64 54.00 -13.36 Average

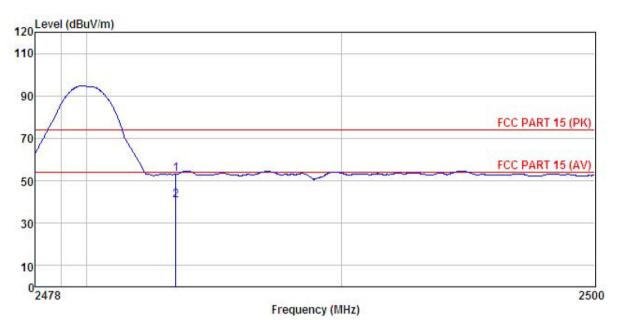
Remark:

- 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.





Product Name:	MOBILE PHONE	Product Model:	GO1006
Test By:	Mike	Test mode:	DH1 Tx mode
Test Channel:	Highest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



Freq		Antenna Factor						
MHz	dBu₹	<u>dB</u> /m	<u>d</u> B	<u>dB</u>	dBuV/m	dBuV/m	<u>dB</u>	
2483.500 2483.500								

Remark:

1 2

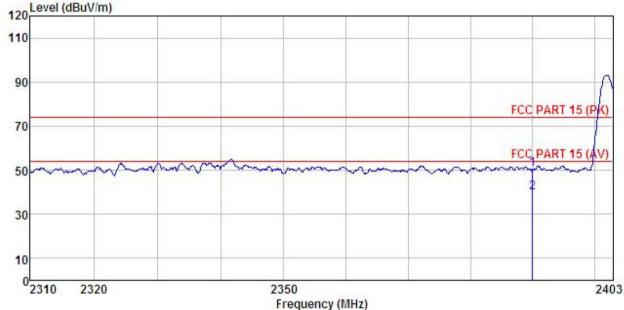
- 1. Final Level = Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor.
- 2. The emission levels of other frequencies are very lower than the limit and not show in test report.





π/4-DQPSK mode

Product Name:	MOBILE PHONE	Product Model:	GO1006							
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%							
120 Level (dBuV/m)										



	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	
	MHz	dBu∜		<u>d</u> B	<u>ab</u>	$\overline{dBuV/m}$	dBu√/m	<u>dB</u>	
1 2	2390.000 2390.000		27.37 27.37			50.65 40.04			

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.





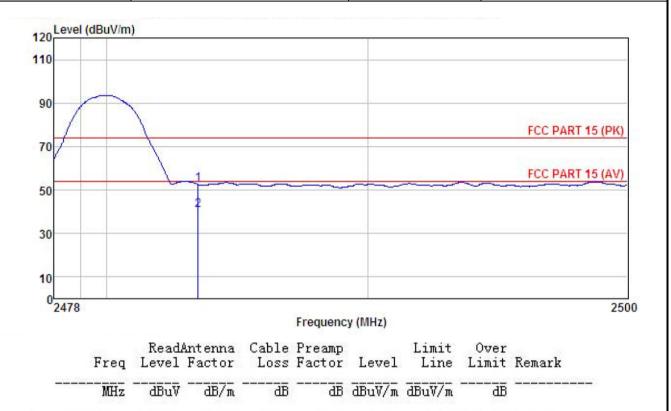
oduct Name:		MOBILE PHONE				duct Mod	del:	GO1006						
/ :	Mike				Test	t mode:		2DH1 Tx m	node					
nannel:	Lowe	st channe	el		Pola	rization		Horizontal			Horizontal			
est Voltage:		20/60Hz			Env	ironmen	t:	Temp: 24°C	Huni: 57	7%				
ovel /dBull/m														
Level (ubuviiii	1)		7/											
										Λ				
								FCC	PΔRT 15 (P	6				
								100	TAILT TO LE	-				
								FCC	PART 15 (4	(V)				
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~	~~~	~~~	~~~	~~~	m	~~~	marina	hamil					
								-	2					
2310 2320		0	1	2350		4				2403				
				Freque	ency (MHz	2)								
Freq								Remark						
MHz	dBu₹	<u>d</u> B/m		<u>d</u> B	dBuV/m	dBuV/m	<u>dB</u>							
2390.000 2390.000	18.07 7.99		4.69 4.69											
	evel (dBuV/m 2310 2320 Freq MHz 2390,000	Mike Lowe lotage: AC 12 Level (dBuV/m)  Readle Freq Level MHz dBuV  2390.000 18.07	Mike Lowest channel: Lowest channel level (dBuV/m)  ReadAntenna Freq Level Factor MHz dBuV dB/m  2390.000 18.07 27.37	Mike Lowest channel AC 120/60Hz  Level (dBuV/m)  ReadAntenna Cable Freq Level Factor Loss MHz dBuV dB/m dB  2390.000 18.07 27.37 4.69	Mike   Lowest channel	### Mike   Test	### Test mode:   Lowest channel	Mike   Test mode:	Mike	Mike				

- 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.





Product Name:	MOBILE PHONE	Product Model:	GO1006
Test By:	Mike	Test mode:	2DH1 Tx mode
Test Channel:	nel: Highest channel Polariz		Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



0.00 52.52

74.00 -21.48 Peak

0.00 40.81 54.00 -13.19 Average

### Remark:

1

2483.500

2483,500

20.14

8.43

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor.

27.57

27.57

2. The emission levels of other frequencies are very lower than the limit and not show in test report.

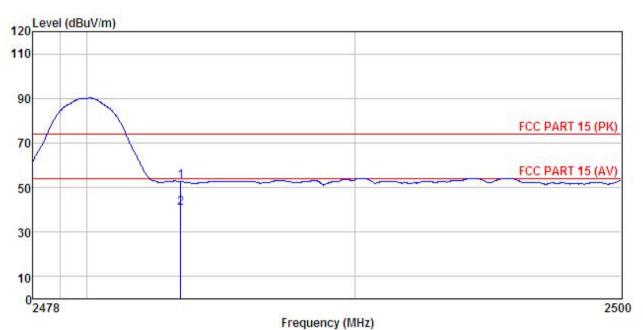
4.81

4.81





Product Name:	MOBILE PHONE	Product Model:	GO1006
Test By:	Mike	Test mode:	2DH1 Tx mode
Test Channel:	Highest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



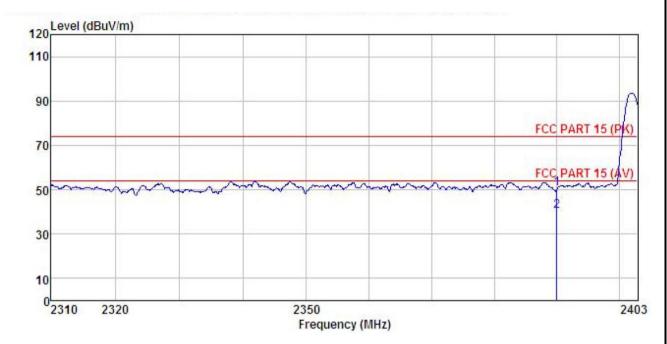
	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBu∜	$\overline{dB}/\overline{m}$		<u>ab</u>	$\overline{dBuV/m}$	$\overline{dBuV/m}$	<u>d</u> B	
1 2	2483.500 2483.500								

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



### 8DPSK mode

Product Name:	MOBILE PHONE	Product Model:	GO1006
Test By:	Mike	Test mode:	3DH1 Tx mode
Test Channel:	Lowest channel	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24°C Huni: 57%



	Freq		Antenna Factor						
	MHz	dBu₹	dB/m	dB	ā	dBuV/m	dBuV/m		
1	2390.000	18.62	27.37	4.69	0.00	50.68	74.00	-23.32	Peak
2	2390.000	8.13	27.37	4.69	0.00	40.19	54.00	-13.81	Average

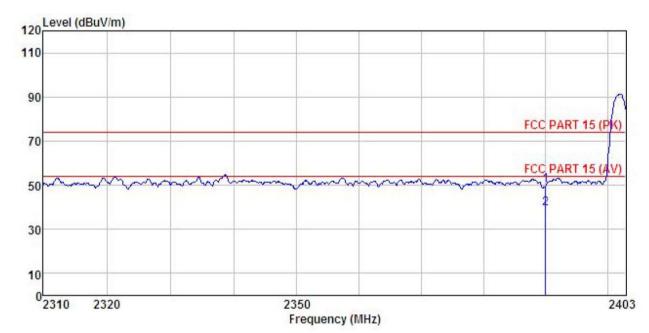
### Remark:

- 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.





Product Name:	MOBILE PHONE	Product Model:	GO1006
Test By:	Mike	Test mode:	3DH1 Tx mode
Test Channel:	Lowest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



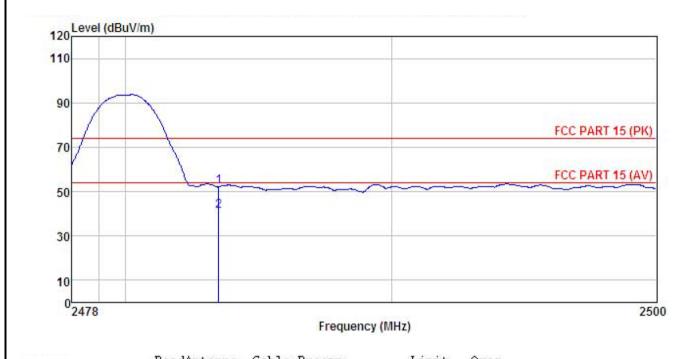
	Freq		Antenna Factor						
	MHz	—dBu∇	<u>dB</u> /m	<u>dB</u>	<u>dB</u>	$\overline{dBuV/m}$	$\overline{dBuV/m}$	<u>dB</u>	
1 2	2390.000 2390.000								

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





Product Name:	MOBILE PHONE	Product Model:	GO1006
Test By:	Mike	Test mode:	3DH1 Tx mode
Test Channel:	Highest channel	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



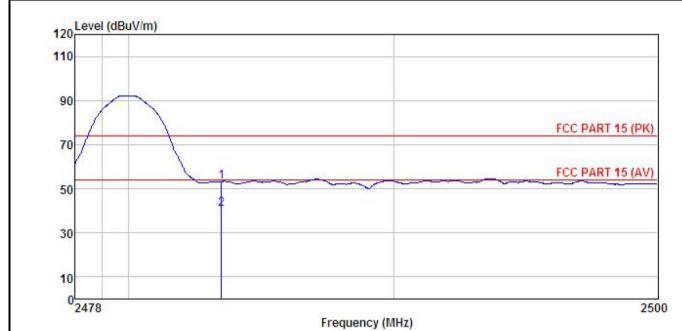
		KeadAntenna		Cable	Preamp		Limit	Over		
	Freq	Freq Level Fac		Loss	Factor	Level	Line	Limit	Remark	
	MHz	dBu∜	<u>dB</u> /m	<u>dB</u>	<u>dB</u>	$\overline{dBuV/m}$	dBuV/m	<u>dB</u>		
L	2483.500	19.87	27.57	4.81	0.00	52.25	74.00	-21.75	Peak	
2	2483.500	8.69	27.57	4.81	0.00	41.07	54.00	-12.93	Average	

- 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.





Product Name:	MOBILE PHONE	Product Model:	GO1006
Test By:	Mike	Test mode:	3DH1 Tx mode
Test Channel:	Highest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



ReadAntenna Cable Preamp Limit Over Freq Level Factor Loss Factor Level Line Limit Remark dB --dB dBuV/m dBuV/m MHz dBuV dB/m 2483.500 20.94 27.57 4.81 0.00 53.32 74.00 -20.68 Peak 2483.500 8.39 27.57 4.81 0.00 40.77 54.00 -13.23 Average

### 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.



# 6.10 Spurious Emission

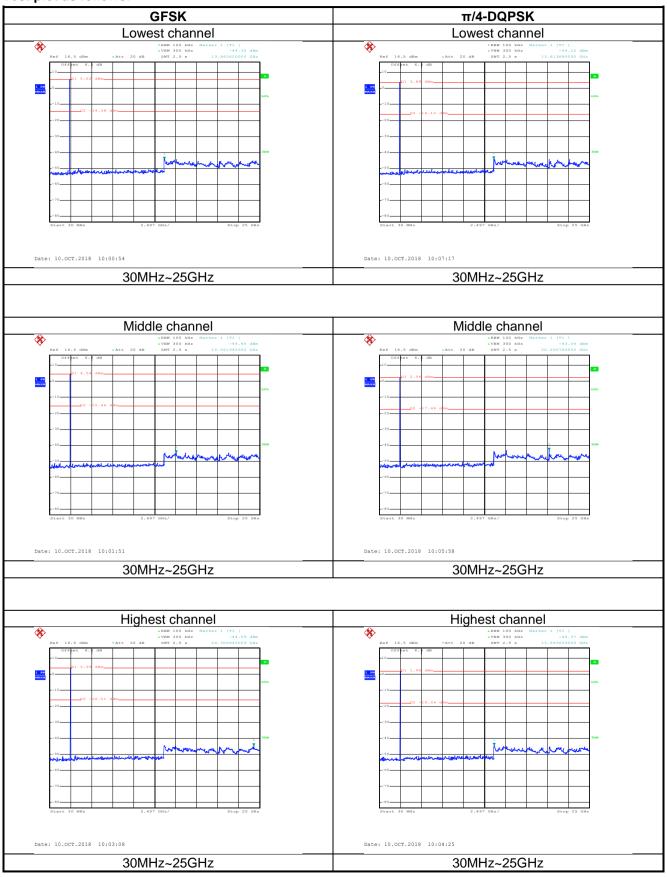
## 6.10.1 Conducted Emission Method

Test Requirement:	FCC Part 15 C Section 15.247 (d)					
Test Method:	ANSI C63.10:2013 and DA00-705					
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  Ground Reference Plane					
Test Instruments:	Refer to section 5.8 for details					
Test mode:	Non-hopping mode					
Test results:	Pass					

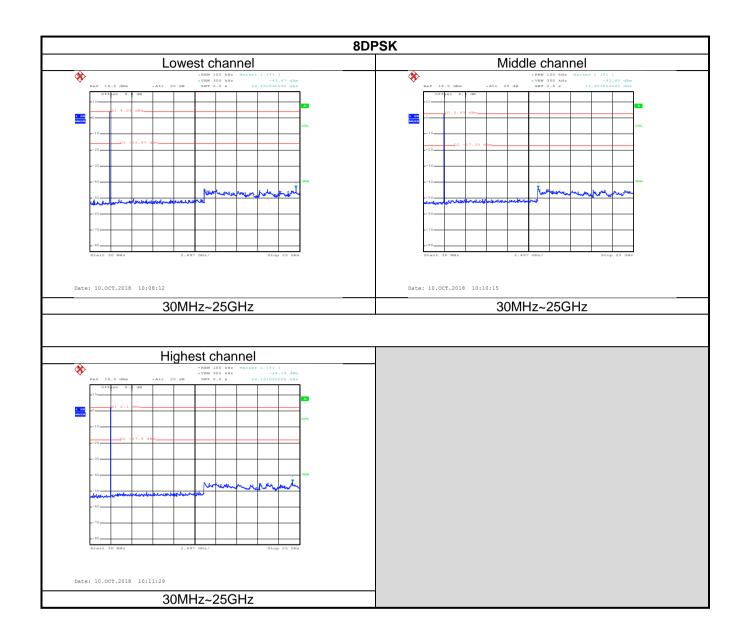




### Test plot as follows:









### 6.10.2 Radiated Emission Method

6.10.2 Radiated Emission M					1				
Test Requirement:	FCC Part 15 C Section 15.209								
Test Method:	ANSI C63.10: 2013								
Test Frequency Range:	9 kHz to 25 GHz								
Test Distance:	3m	1							
Receiver setup:	Frequency	Frequency Detector RBW VBW Remark							
	30MHz-1GHz	Quasi-pea	ık 120kHz	300kl	Hz Quasi-peak Value				
	Above 1GHz	Peak	1MHz	ЗМН	z Peak Value				
	Above 10112	RMS	1MHz	3MH	z Average Value				
Limit:	Frequenc	y l	Limit (dBuV/m	@3m)	Remark				
	30MHz-88N	ИHz	40.0		Quasi-peak Value				
	88MHz-216	MHz	43.5		Quasi-peak Value				
	216MHz-960	MHz	46.0		Quasi-peak Value				
	960MHz-10	SHz	54.0		Quasi-peak Value				
	Above 1GI	<b>⊔</b> -7	54.0		Average Value				
	Above IGI	112	74.0		Peak Value				
	Below 1GHz  Antenna Tower  Search Antenna  RF Test Receiver  Ground Plane  Above 1GHz								
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1. The ELIT was placed on the top of a retating table 0.8m (helew 10 Hz)							
Test Procedure:	Test Procedure:  1. 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.
	<ol><li>The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</li></ol>
	<ol><li>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.</li></ol>
	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.
	<ol><li>The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li></ol>
	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.
Test Instruments:	Refer to section 5.8 for details
Test mode:	Non-hopping mode
Test results:	Pass
Remark:	<ol> <li>Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis is the worst case.</li> <li>9 kHz to 30 MHz is noise floor, so only shows the data of above</li> </ol>
	30MHz in this report.

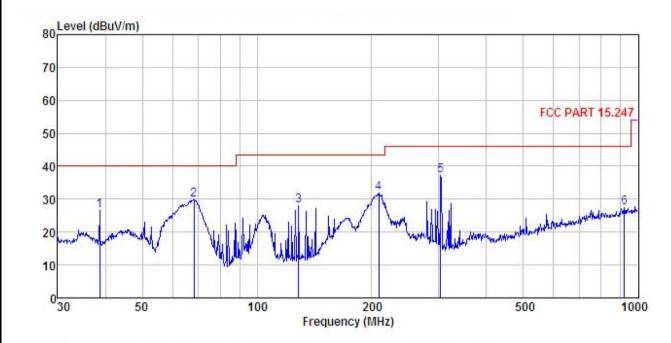




### Measurement Data (worst case):

### **Below 1GHz:**

Product Name:	MOBILE PHONE	Product Model:	GO1006
Test By:	Mike	Test mode:	BT Tx mode
Test Frequency:	30 MHz ~ 1 GHz	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



	Freq		Antenna Factor						Remark
	MHz	dBu₹	<u>dB</u> /m	₫B	<u>dB</u>	dBuV/m	dBuV/m	dB	
1	38.616	42.85	12.51	1.18	29.91	26.63	40.00	-13.37	QP
2	68.391	48.61	9.60	1.46	29.73	29.94	40.00	-10.06	QP
2	128.563	46.27	8.91	2.27	29.34	28.11	43.50	-15.39	QP
4	208.580	45.89	11.84	2.86	28.78	31.81	43.50	-11.69	QP
4 5 6	303.544	48.94	13.68	2.95	28.46	37.11	46.00	-8.89	QP
6		28.90				27.33			

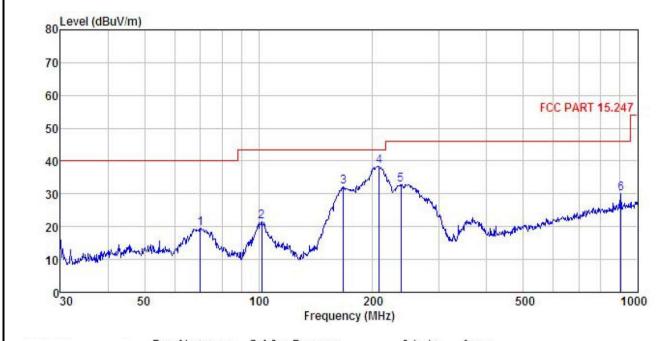
### Remark:

- 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.





Product Name:	MOBILE PHONE	Product Model:	GO1006
Test By:	Mike	Test mode:	BT Tx mode
Test Frequency:	30 MHz ~ 1 GHz	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



	Freq		Antenna Factor				Limit Line		Remark
	MHz	dBu∀	<u>dB</u> /m		<u>d</u> B	dBuV/m	dBuV/m		
1	70.090	38.64	9.09	1.52	29.72	19.53	40.00	-20.47	QP
2	102.001	37.20	11.82	1.96	29.51	21.47	43.50	-22.03	QP
1 2 3 4 5	167.237	49.24	9.32	2.64	29.07	32.13	43.50	-11.37	QP
4	207.850	52.50	11.81	2.86	28.78	38.39	43.50	-5.11	QP
5	237.476	45.73	12.89	2.83	28.61	32.84	46.00	-13.16	QP
6	903.309	31.92	22.31		27.87				

- 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.





### **Above 1GHz:**

Above IGHZ	•							
			Test ch	annel: Lowe	est channel			
			De	tector: Peak	Value			
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	48.86	30.85	6.80	41.81	44.70	74.00	-29.30	Vertical
4804.00	47.79	30.85	6.80	41.81	43.63	74.00	-30.37	Horizontal
			Dete	ctor: Averag	ge Value			
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	38.12	30.85	6.80	41.81	33.96	54.00	-20.04	Vertical
4804.00	37.56	30.85	6.80	41.81	33.40	54.00	-20.60	Horizontal
				annel: Mido				
		_		tector: Peak	Value			
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
4882.00	48.21	31.20	6.86	41.84	44.43	74.00	-29.57	Vertical
4882.00	37.46	31.20	6.86	41.84	33.68	74.00	-40.32	Horizontal
			Dete	ctor: Averag	ge Value			
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
4882.00	38.06	31.20	6.86	41.84	34.28	54.00	-19.72	Vertical
4882.00	37.51	31.20	6.86	41.84	33.73	54.00	-20.27	Horizontal
				annel: Highe				
		ı		tector: Peak	Value		T	
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	47.96	31.63	6.91	41.87	44.63	74.00	-29.37	Vertical
4960.00	47.86	31.63	6.91	41.87	44.53	74.00	-29.47	Horizontal
			Dete	ctor: Averaç	e Value			
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	37.54	31.63	6.91	41.87	34.21	54.00	-19.79	Vertical
4960.00	37.68	31.63	6.91	41.87	34.35	54.00	-19.65	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.