Report No: CCISE180916702

# **FCC REPORT**

(Bluetooth)

Applicant: Xwireless LLC

Address of Applicant: 11565 Old Georgetown Road Rockville MD 20852

**Equipment Under Test (EUT)** 

Product Name: Smart phone

Model No.: Sync

Trade mark: Vortex

FCC ID: 2ADLJSYNC

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

Date of sample receipt: 30 Sep., 2018

**Date of Test:** 08 Oct., to 29 Oct., 2018

Date of report issued: 30 Oct., 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: CCISE180916702

## 2 Version

Version No.	Date	Description
00	30 Oct., 2018	Original

Tested by: ( Quen ( hen Date: 30 Oct., 2018

Test Engineer

Reviewed by: Date: 30 Oct., 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:	Xwireless LLC
Address:	11565 Old Georgetown Road Rockville MD 20852
Manufacturer/ Factory:	Shenzhen LEAGOO Intelligence Co., Limited
Address:	2nd Floor of Building B, HongLianYing Technology Park, No.286 of SiLi Road, DaBuXiang Community, Longhua New District, Shenzhen, China

5.2 General Description of E.U.T.

OLE OCHERAL DESCRIPTION	0. 2.0
Product Name:	Smart phone
Model No.:	Sync
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:	0.5 dBi
Power supply:	Rechargeable Li-ion Battery DC3.8V 2000mAh
AC adapter:	Model: ES007-U050100X0F Input: AC100-240V, 50/60Hz, 0.3A Output: DC 5.0V, 1000mA
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

Operation	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.		Remark: Channel 0, 39 &78 selected for GFSK, π/4-DQPSK and 8DPSK.						

### 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

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## 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	\	/ersion: 6.110919	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	E3 Version: 6.110919b		b	



## 6 Test results and measurement data

## 6.1 Antenna Requirement

#### Standard requirement: 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 Bluetooth antenna is an Internal antenna which permanently attached, and the best case gain of the antenna is 0.5 dBi.







## **6.2 Conducted Emissions**

Test Requirement:	FCC Part 15 C Section 1	5.207		
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	e Plane		
	AUX Equipment  Test table/Insulation plane  Remark E.U.T. Equipment Under Test LISN: Line Impedence Stabilization Nerestable height=0.8m	EMI Receiver		
Test procedure:	<ol> <li>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.</li> <li>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).</li> <li>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.</li> </ol>			
Test Instruments:	Refer to section 5.8 for d	letails		
Test mode:	Hopping mode			
Test results:	Pass			
	ı			

Product model: Sync



#### **Measurement Data:**

Smart phone

Product name:

Product name.	Smart priorie	Product model.	Syric
Test by:	Yaro	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%
80 Level (dBu)	V)		
70			
			FCC CLASS-B QP
60			TCC CLASS-D QP
50			FCC CLASS-B AV
- h 1 .a	4 6 8	10	11
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.15 .2	.5 1	2 5 Frequency (MHz)	10 20
Trace: 5	Read LISM (		mit Over
Fr	eq Level Factor		ine Limit Remark
			E-#
	TT 1T TT 1T	117 117 11 1	T TT 1T)

	Freq	Level	Factor	Loss	Level	Line	Limit	Remark
<u> </u>	MHz	dBu∀	<u>dB</u>	dB	dBu₹	dBu∇	<u>d</u> B	
1	0.194	15.16	0.15	10.76	26.07	53.84	-27.77	Average
2	0.198	34.20	0.15	10.76	45.11	63.71	-18.60	QP
3	0.398	13.07	0.12	10.72	23.91	47.90	-23.99	Average
4	0.541	33.21	0.12	10.76	44.09	56.00	-11.91	QP
2 3 4 5 6 7 8 9	0.541	17.20	0.12	10.76	28.08	46.00	-17.92	Average
6	0.637	30.01	0.13	10.77	40.91	56.00	-15.09	QP
7	1.082	12.85	0.13	10.88	23.86	46.00	-22.14	Average
8	1.129	29.05	0.13	10.89	40.07	56.00	-15.93	QP
9	1.619	12.23	0.14	10.93	23.30	46.00	-22.70	Average
10	1.671	29.56	0.14	10.94	40.64	56.00	-15.36	QP
11	16.398	30.62	0.30	10.91	41.83	60.00	-18.17	QP
12	26.001	12.51	0.35	10.87	23.73	50.00	-26.27	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.



#### 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	

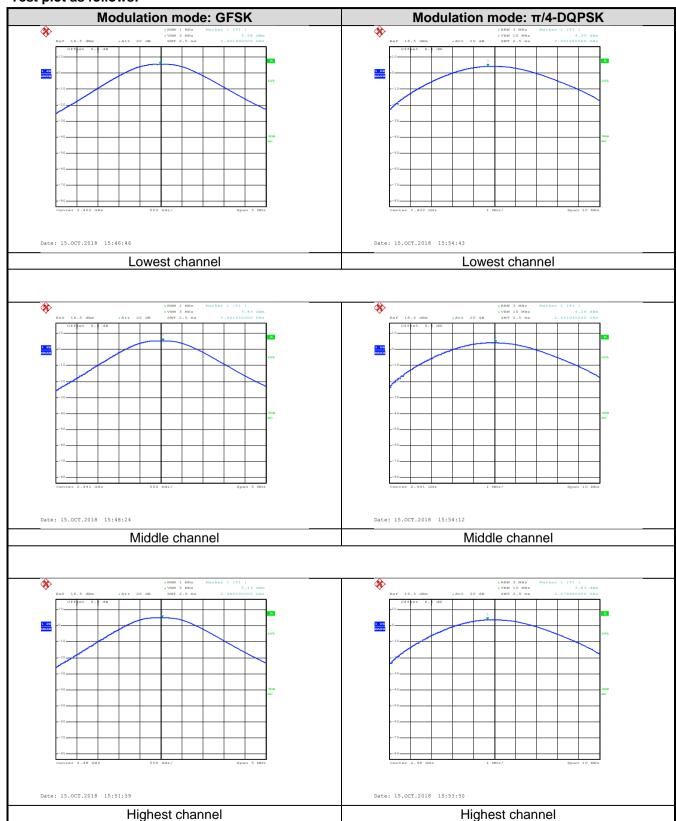
#### **Measurement Data:**

Test channel	Peak Output Power (dBm)	Limit (dBm)	Result			
	GFSK mode					
Lowest channel	5.58	30.00	Pass			
Middle channel	5.43	30.00	Pass			
Highest channel	5.13	30.00	Pass			
	π/4-DQPSK mode					
Lowest channel	4.35	21.00	Pass			
Middle channel	4.29	21.00	Pass			
Highest channel	3.83	21.00	Pass			
	8DPSK mode					
Lowest channel	4.32	21.00	Pass			
Middle channel	4.35	21.00	Pass			
Highest channel	3.74	21.00	Pass			

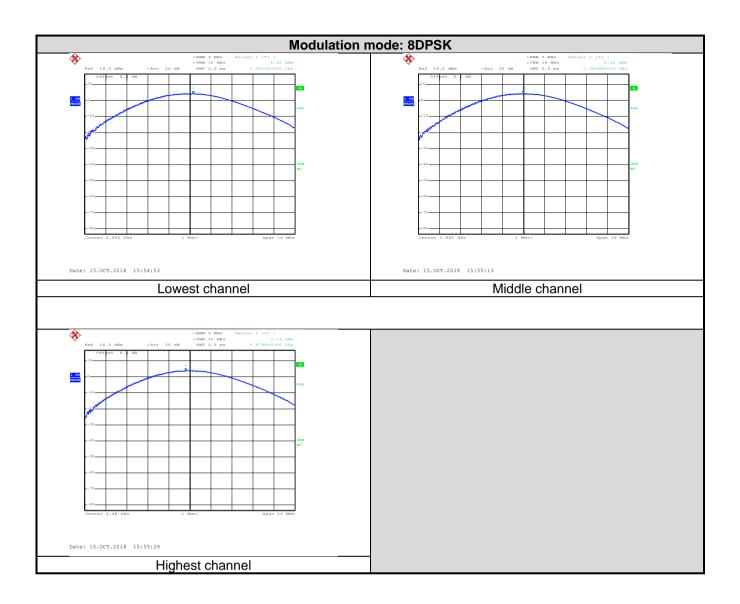




### Test plot as follows:











6.4 20dB Occupy Bandwidth

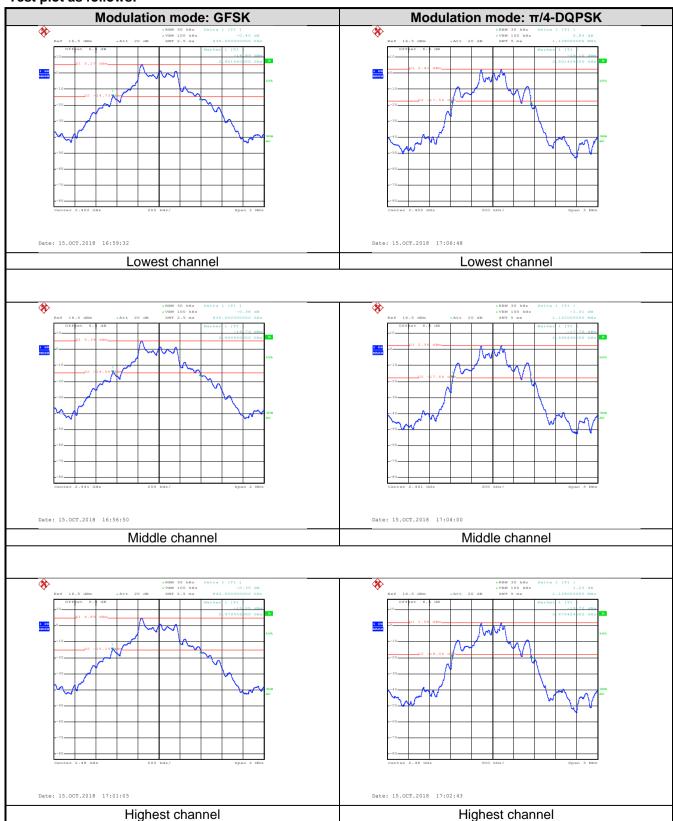
Test Requirement:	FCC Part 15 C Section 15.247 (a)(1)	
Test Method:	ANSI C63.10:2013 and DA00-705	
Receiver setup:	RBW=30 kHz, VBW=100 kHz, detector=Peak	
Limit:	NA	
Test setup:	Spectrum Analyzer  E.U.T  Non-Conducted Table  Ground Reference Plane	
Test Instruments:	Refer to section 5.8 for details	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

#### **Measurement Data:**

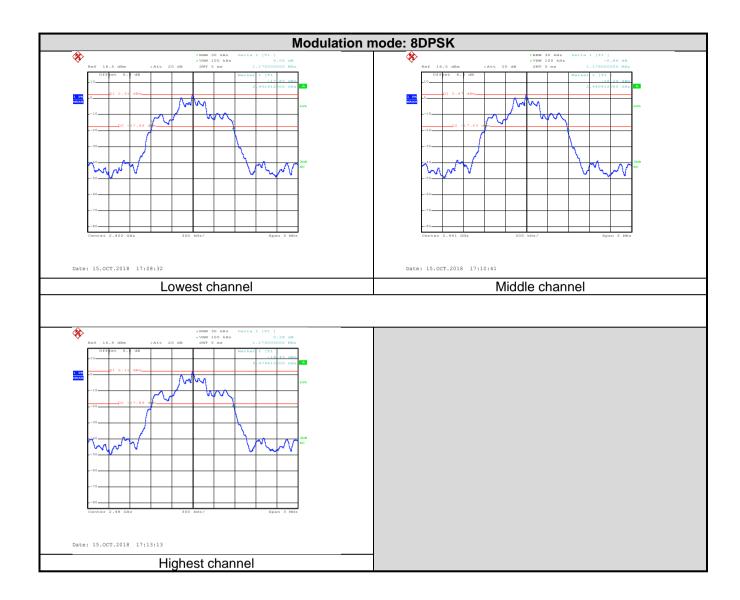
Toot shannel	20dB Occupy Bandwidth (kHz)		
Test channel	GFSK	π/4-DQPSK	8DPSK
Lowest	836	1128	1170
Middle	836	1122	1176
Highest	844	1128	1170



#### Test plot as follows:











6.5 Carrier Frequencies Separation

olo Garrior i roquoriolog			
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  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:**

Test channel	Carrier Frequencies Separation (kHz)	Limit (kHz)	Result	
	GFSK			
Lowest	1000	836.00	Pass	
Middle	1004	836.00	Pass	
Highest	1000	836.00	Pass	
π/4-DQPSK mode				
Lowest	1004	748.00	Pass	
Middle	1004	748.00	Pass	
Highest	1004	748.00	Pass	
8DPSK mode				
Lowest	1000	780.00	Pass	
Middle	1004	780.00	Pass	
Highest	1004	780.00	Pass	

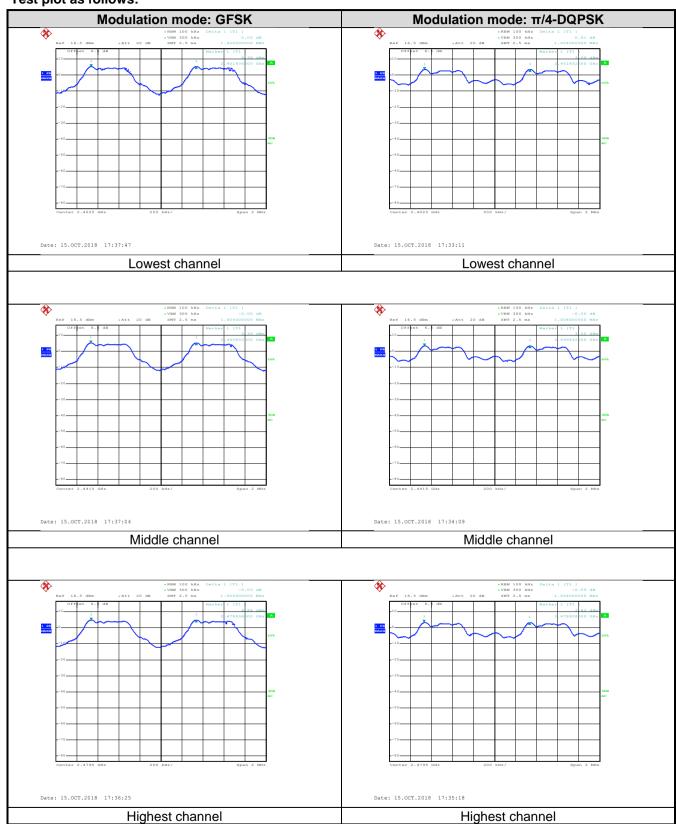
Note: According to section 6.4

		The state of the s
Mode	20dB bandwidth (kHz) (worse case)	Limit (kHz) (Carrier Frequencies Separation)
GFSK	836	836.00
π/4-DQPSK	1122	748.00
8DPSK	1170	780.00

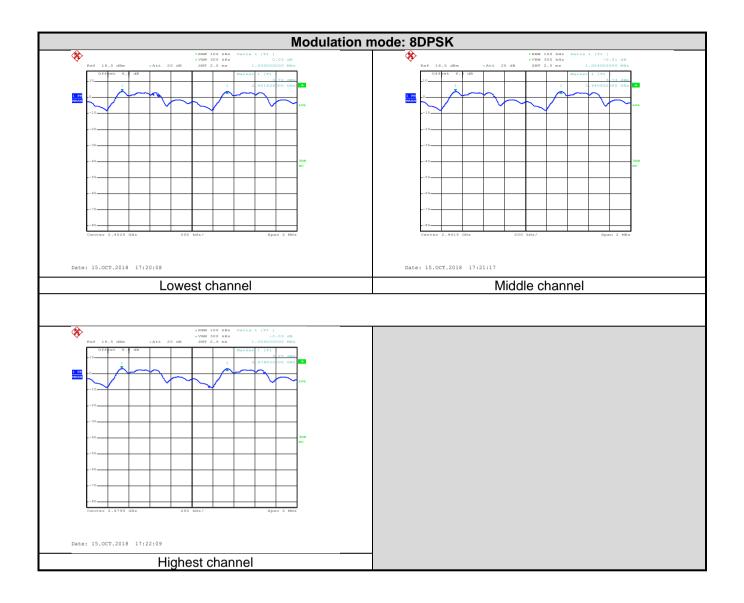




### Test plot as follows:











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	
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	

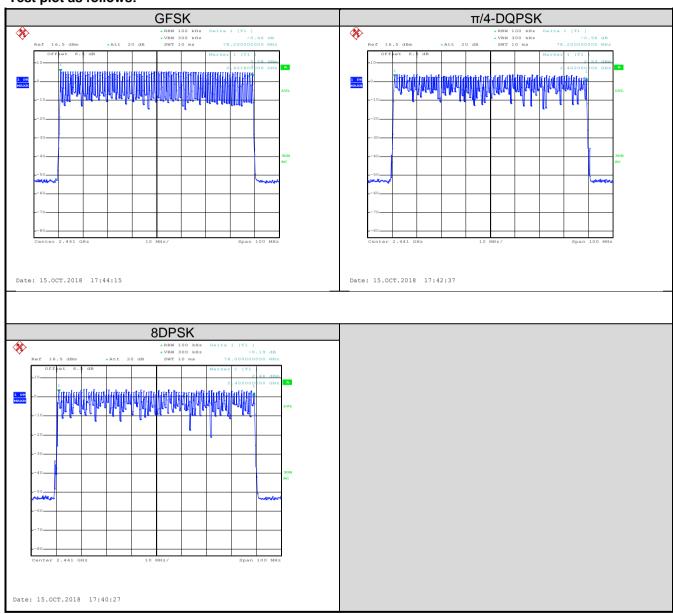




#### **Measurement Data:**

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	0.12608			
GFSK	DH3	0.26880	0.4	Pass	
	DH5	0.31232			
π/4-DQPSK	2-DH1	0.12672			
	2-DH3	0.26688	0.4	Pass	
	2-DH5	0.31403		ļ	
	3-DH1	0.12672			
8DPSK	3-DH3	0.26688	0.4	Pass	
	3-DH5	0.31232			

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

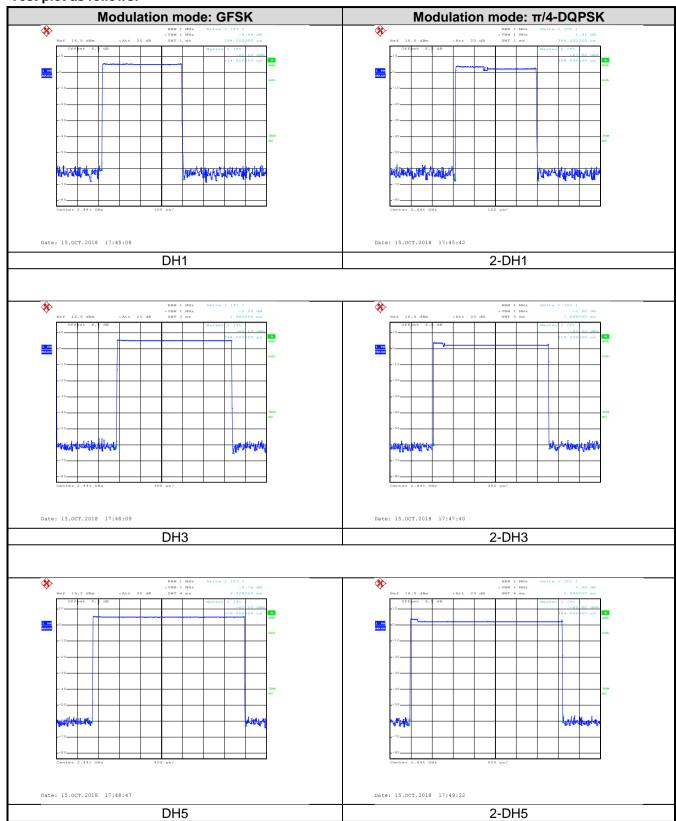
For example:

DH1 time slot=0.394\*(1600/(2\*79))\*31.6=126.08ms DH3 time slot=1.680\*(1600/(4\*79))\*31.6=268.80ms DH5 time slot=2.928\*(1600/(6\*79))\*31.6=312.32ms

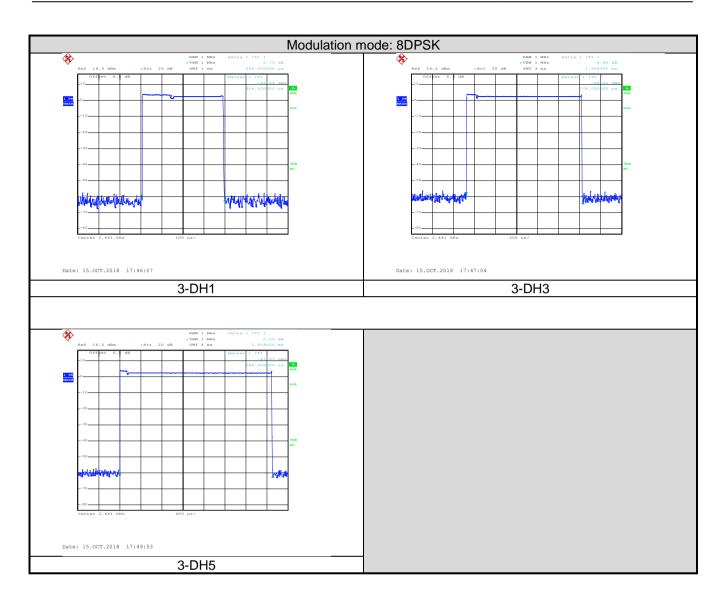




### Test plot as follows:







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## 6.8 Pseudorandom Frequency Hopping Sequence

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

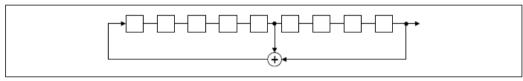
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

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**

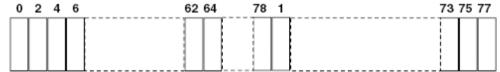
The pseudorandom sequence may be generated in a nine-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first ONE of 9 consecutive ONEs; i.e. the shift register is initialized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

- · Number of shift register stages: 9
- Length of pseudo-random sequence: 2<sup>9</sup>-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

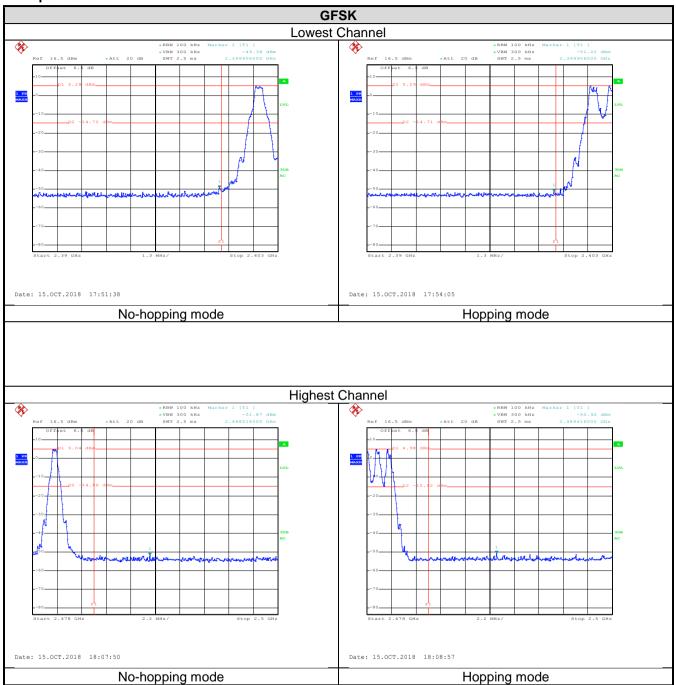
## 6.9.1 Conducted Emission Method

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				

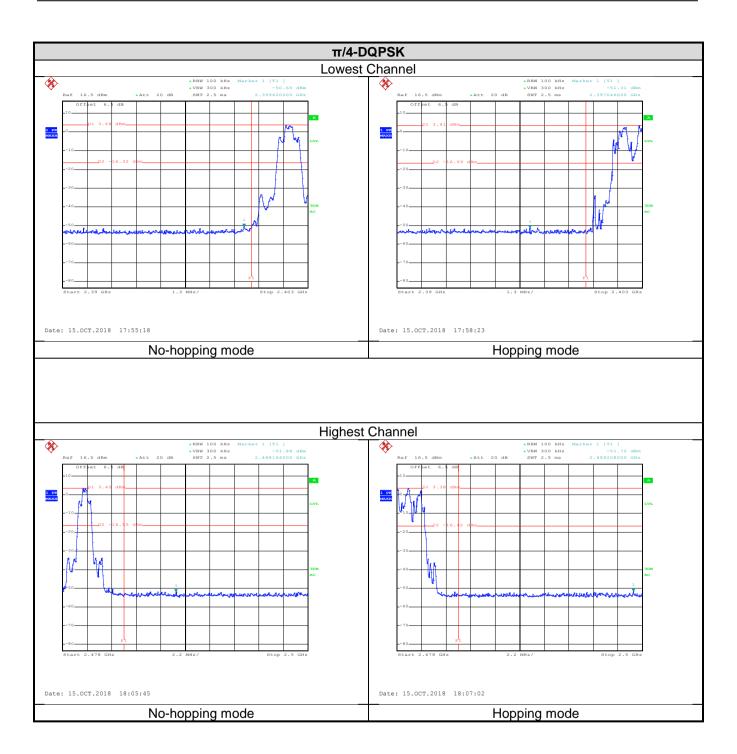




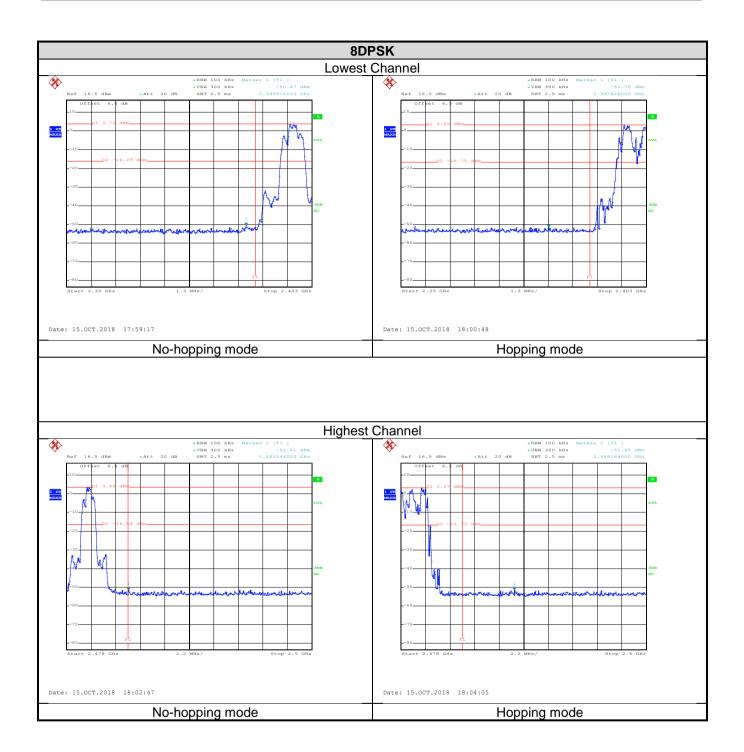
### Test plot as follows:













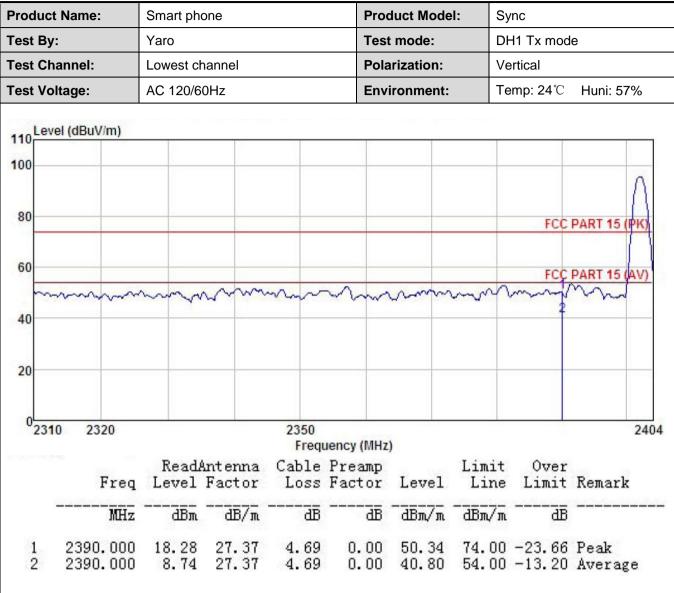
### 6.9.2 Radiated Emission Method

	5.9.2 Radiated Emission Method										
Test Requirement:	FCC Part 15 C Section 15.209 and 15.205										
Test Method:	ANSI C63.10: 2013										
Test Frequency Range:	2.3GHz to 2.5GHz										
Test Distance:	3m	3m									
Receiver setup:	Frequency	Detecto	or	RBW	VB	3W	Remark				
	Above 1GHz	Peak		1MHz	3M	Hz	Peak Value				
	7.5576 15112	RMS		1MHz	3M	Hz	Average Value				
Limit:	Frequen	су	Lim	it (dBuV/m @3	3m)		Remark				
	Above 1G	Hz -		54.00		A۱	erage Value				
	Above re	71 12		74.00		F	Peak Value				
	Horn Antenna Tower    AE   EUT										
Test Procedure:	ground at a determine the second at a determine the second antenna, who tower.  3. The antennation ground to de horizontal at measureme 4. For each surand then the second and the rotal maximum results. The test-recurs Specified Bases. If the emission limit specified EUT would a 10dB marginist.	3 meter cane position as set 3 me inch was eading.  Seiver system and width we inch level of ed, then test be reported in would be	waried a polar mission was to turned the Esting of the re-test of the re-test of the re-test of the test of the re-test of the	r. The table was en highest radial away from the ed on the top of the ed on the top of the ed on the EUT was ed from 0 degrees set to Peak aximum Hold I EUT in peak moduld be stoppherwise the emplement of the ed on t	as rotate ation. interfer f a varie ter to for the fin antenn as arrar s from ees to 3  Detect Mode. ode wa ed and aissions ne using	rence-lable-hour me eld strena are songed to 1 mete 360 de Functions 10dE the pes that did gipeak	receiving eight antenna ters above the ength. Both set to make the oits worst case or to 4 meters grees to find the on and allower than the eak values of the id not have an quasi-peak or				
Test Instruments:	Refer to sectio			<u> </u>							
Test mode:	Non-hopping m	node									
Test results:	Passed										





#### **GFSK Mode:**



#### Remark:

<sup>1.</sup> Final Level = Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor.

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





Produc	ct Name:	Smart pho	one	Product Model:		el: S	Sync			
Test By	y:	Yaro			Tes	Test mode:		DH1 Tx mode		
Test Cl	hannel:	Lowest ch	nannel		Pola	arization:	Н	orizontal		
Test Vo	oltage:	AC 120/6	0Hz		Env	ironment:	T	emp: <b>24</b> ℃	Huni: 57%	
Lo	val (dDv)//m)				•		•			
110 Le	vel (dBuV/m)									
100								-		
									Λ	
80										
_								FC	C PART 15 (PK)	
60										
60								FC(	C PART 15 (AV)	
-1	many	m	~~~~	mon	m	rom	~~~	~~~~	mond	
40										
20										
0										
23	10 2320			2350	70.01	-1	-22		240	
		D - 14			juency (MH	Z)	7 : : 4	^		
	Frea	Level	ntenna Factor		Preamp Factor	Level	Limit Line		Remark	
	MHz	dBm	dB/m	dB	dB	dBm/m	dBm/m	dB		
1	2390.000	16.87	27.37	4.69	0.00			-25.07	Peak	
2	2390.000	9.55	27.37	4.69	0.00	41.61		40 00	Average	

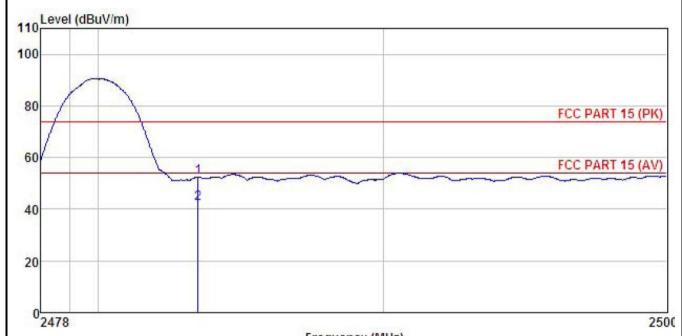
## Remark:

- 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:	Smart phone	Product Model:	Sync
Test By:	Yaro	Test mode:	DH1 Tx mode
Test Channel:	Highest channel	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



				Freq	uency (IVIH)	Z)			
	Freq				Preamp Factor				Remark
	MHz	dBm	<u>dB</u> /m		<u>ab</u>	_dBm/m	-dBm/m	<u>dB</u>	
1 2	2483.500 2483.500				0.00 0.00				

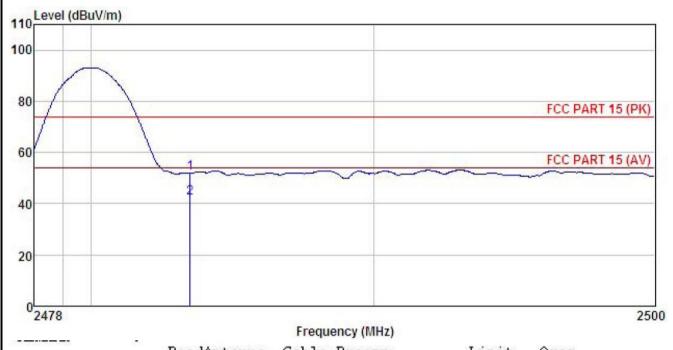
#### Remark

- 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:	Smart phone	Product Model:	Sync
Test By:	Yaro	Test mode:	DH1 Tx mode
Test Channel:	Highest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



				Frequ	ency (MHZ)				
	Freq				Preamp Factor				Remark
-	MHz	dBm	<u>dB</u> /m	<u>ap</u>	<u>dB</u>	-dBm/m	_dBm/m	<u>dB</u>	
	83.500 83.500				0.00 0.00				Peak 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.





# π/4-DQPSK mode

-roauc	t Name:	Smart phone				luct Mode	I: S	Sync	
Гest By	<i>r</i> :	Yaro				Test mode:		2DH1 Tx mode	
Test Ch	nannel:	Lowest channel			Pola	Polarization:		Vertical	
Test Vo	oltage:	AC 120/60	)Hz		Envi	ronment:	Т	emp: 24°C	Huni: 57%
	TOWN OF								
110 Lev	el (dBuV/m)								
100									
									Λ
80									
								FCC	PART 15 (PK)
60									
-				0 0 0			-33711 25 14	FCC	PART 15 (AV)
	many	morm	~~~	my	was	ماسم	vvm	~~~	~~~~
40									
1									
20									
20									
	0 2320			2350					240
	0 2320			2350 Frequ	uency (MHz				240
			ntenna	Frequ Cable	Preamp		Limit		
		ReadA Level		Frequ Cable			Limit Line		240-
				Frequ Cable	Preamp			Limit	
	Freq	Level	Factor	Frequence Cable Loss	Preamp Factor ————————————————————————————————————	Level dBm/m	Line dBm/m	Limit	Remark

#### 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.





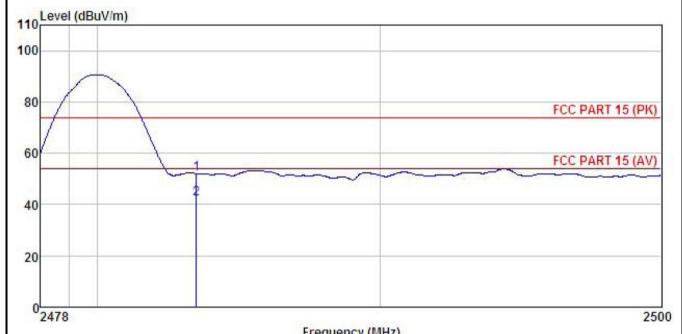
Product Name:		Smart phone				Product Model:		Sync	
Test B	y:	Yaro			Test	t mode:	20	OH1 Tx mo	ode
est C	hannel:	Lowest ch	nannel		Pola	rization:	Н	orizontal	
Test V	oltage:	AC 120/60Hz			Env	vironment: Temp: 24°C Hu		Huni: 57%	
La	aval (dDullim)						·		
110 Le	evel (dBuV/m)								
100									
									$\Lambda$
80								FCC	PART 15 (PK)
								100	TAKT ISTINA
60								FCC	DADT 45 JAVA
00								FLL	PART 15 (AV)
	~~~~~	Janan	aman	man	mr. hr	san	N	Norm	mond
~	~~~~~	m	~~~	~~~	~~~	m	~~~~	vun	ham
40	~~~~	v	~~~	~~~	mur	~~	~~~~	Vun	hum
40	~~~~	m	~~~~	~~~	~~~	~~	~~~~	Vun	ham
~	~~~~	m	·····	~~~		~~	~~~~	V	ham
40	~~~~	mm	·····	~~~	~~~	~~		V	ham
40	310 2320	V	·····	2350	~~~			V	240
40	310 2320	V	····	Freq	Juency (MHz	· · · · · · · · · · · · · · · · · · ·		V	
40			nt enna Fact or	Freq Cable	Preamp		Limit Line	2 Over	240
40 20	Freq	Level	Factor	Freq Cable Loss	Preamp Factor	Level	Line	Over Limit	240
40				Freq Cable	Preamp			2 Over	240
40	Freq	Level	Factor dB/m	Freq Cable Loss	Preamp Factor ————————————————————————————————————	Level	Line dBm/m 74.00	Over Limit dB	240 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:	Smart phone	Product Model:	Sync
Test By:	Yaro	Test mode:	2DH1 Tx mode
Test Channel:	Highest channel	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



				Frequ	iency (WHZ	)			
	Freq				Cable Preamp Loss Factor Le		Limit Line	Over Limit	Remark
	MHz	dB_m	dB/π	<u>ab</u>	<u>ab</u>	_dBm/m	_dBm/m	dB	
1	2483.500 2483.500		27.57 27.57			51.96 42.31			

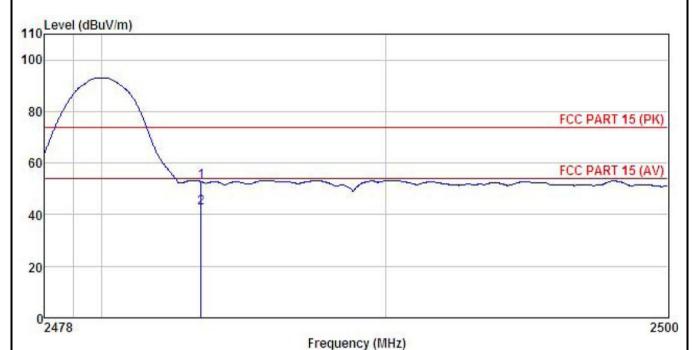
<sup>1.</sup> Final Level = Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor.

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





Product Name:	Smart phone	Product Model:	Sync
Test By:	Yaro	Test mode:	2DH1 Tx mode
Test Channel:	Highest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



	Freq			Preamp Factor				Remark	
-	MHz	dBm	dB/m	 <u>d</u> B	_dBm/m	dBπ/m	dB		
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:	Smart pho	Smart phone			duct Mode	l: Sy	ync	Sync	
Test By:	Yaro  Lowest channel			Test	mode:	3[	3DH1 Tx mode		
Test Channel:				Pola	Polarization: Environment:		Vertical		
Test Voltage:	AC 120/6	AC 120/60Hz					emp: <b>24</b> ℃	Huni: 57%	
Level (dBuV/m)									
110 Lever (dBdV/III)			T T						
100									
								$\wedge$	
80							FCC	PART 15 (PK)	
								II W	
60							FCC	PART 15 (AV)	
60	·····	~~~	~~~	~~~~		~~~	FCC	PART 15 (AV)	
mmy	·····	~~~	~~~	····	www		FCC	PART 15 (AV)	
40	······	~~~	~~~	~~~	www		FCC	PART 15 (AV)	
mmy	·····			~~~	www		FCC	PART 15 (AV)	
mmy		~~~	~~~	~~~	m		FCC	PART 15 (AV)	
40	·····	~~~	~~~	~~~	v		FCC	PART 15 (AV)	
40	······		2350	~~~	~~~		FCC		
40			2350 Frequ	uency (MHz	)		FCC	240	
40	Read	Interna	Frequ			Limit		240	
40 20 0 2310 2320	ReadA	untenna Factor	Frequ Cable	Preamp		Limit Line	Over	240	
20 02310 2320 Free	l Level	Factor	Frequ Cable Loss	Preamp Factor	Level	Line	Over Limit	240 Remark	
40 20 0 2310 2320	l Level	untenna Factor	Frequ Cable	Preamp			Over Limit	240 Remark	
40 20 0 2310 2320 Free	Level dBm	Factor —dB/m	Frequ Cable Loss	Preamp Factor ————————————————————————————————————	Level	Line dBm/m	Over Limit	240 Remark	

### 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.





Produc	t Name:	Smart phone				Product Model:		Sync	
Test By	y:	Yaro			Tes	t mode:	31	OH1 Tx mc	ode
Test Cl	hannel:	Lowest ch	nannel		Pola	arization:	H	orizontal	
Test Vo	oltage:	AC 120/60Hz			Env	Environment:		Temp: 24℃ Huni: 57%	
110 Lev	/el (dBuV/m)								
100					-				
									$\Lambda$
80								ECC	PART 15 (PK)
								rcc	PART TO (PR)
									7 4
60								FOC	DART 45 ALB
60		~~~~	,	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	mm	. A	V~2~~	FCC	PART 15 (AV)
	~~~~	·····	~~~~		~~~	man	~~~	FCC	PART 15 (AV)
40	~~~~		V	····	m~~~	www	~~~	FCC	PART 15 (AV)
40	~~~~		<b>~</b>	mount		www	~~~	FCC	PART 15 (AV)
	~~~~	~~~~	<b>~</b>	•••••		www	~~~	FCC	PART 15 (AV)
40	~~~~	~~~~	<b>~</b>		m/~/~	www	~~~~	FCC	PART 15 (AV)
40	10 2320	~~~~	<b>~</b>	2350			~~~~	FCC	240
40 20	10 2320	~~~~	· · · · · · · · · · · · · · · · · · ·	Freq	uency (MHz	······································	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		man
40 20	~~~~~ 10 2320 Freq			Freq Cable	uency (MHz Preamp Factor		Limit Line	Over	man
40 20				Freq Cable	Preamp			Over Limit	240
40 20	Freq	Level	Factor —dB/m	Freq Cable Loss	Preamp Factor ————————————————————————————————————	Level dBm/m	Line dBm/m 74.00	Over Limit dB	240 Remark

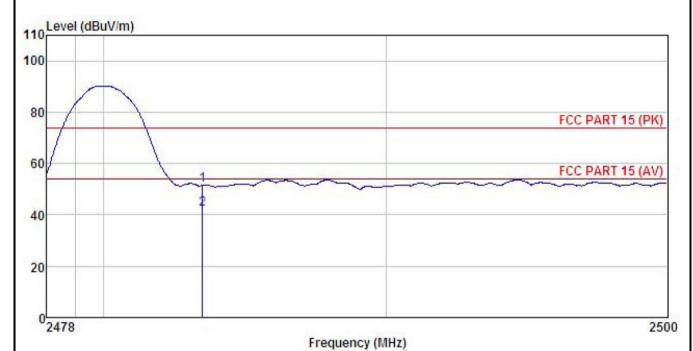
<sup>1.</sup> Final Level = Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor.

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





Product Name:	Smart phone	Product Model:	Sync
Test By:	Yaro	Test mode:	3DH1 Tx mode
Test Channel:	Highest channel	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



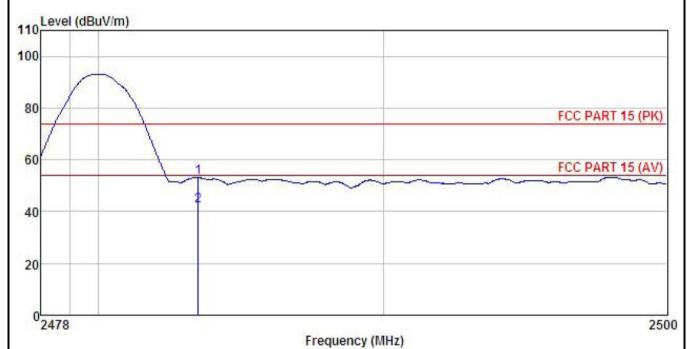
	Freq		Antenna Factor						Remark
-	MHz	dBm	<u>dB</u> /m	dB	<u>dB</u>	_dBm/m	_dBm/m	<u>dB</u>	
1 2	2483.500 2483.500								

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





Product Name:	Smart phone	Product Model:	Sync
Test By:	Yaro	Test mode:	3DH1 Tx mode
Test Channel:	Highest channel	Polarization:	Horizontal
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



	Freq	ReadA Level	Intenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
2	MHz	dBm		<u>d</u> B	<u>d</u> B	_dBm/m	_dBm/m	<u>dB</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 very lower than the limit and not show in test report.



# 6.10 Spurious Emission

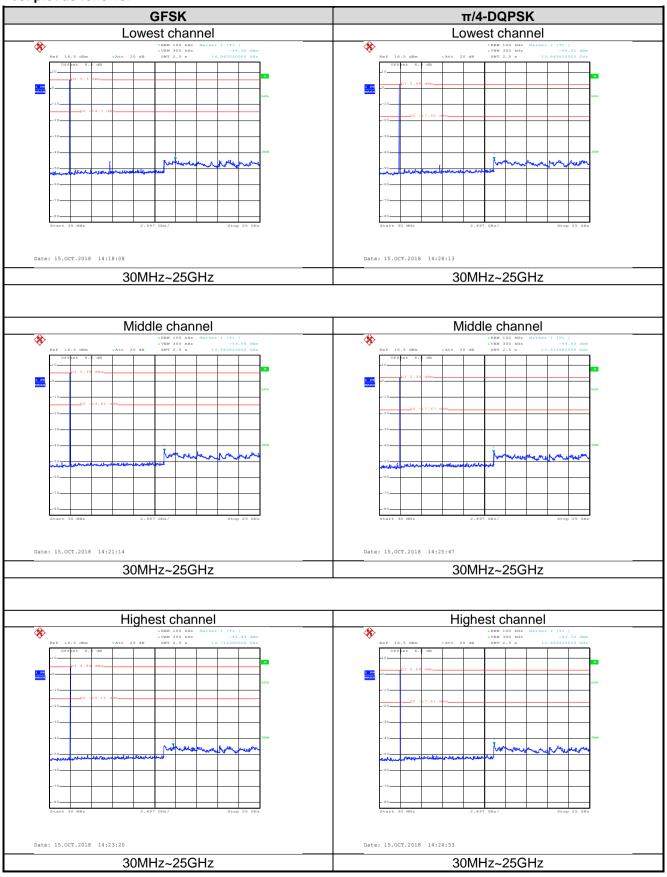
# 6.10.1 Conducted Emission Method

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					

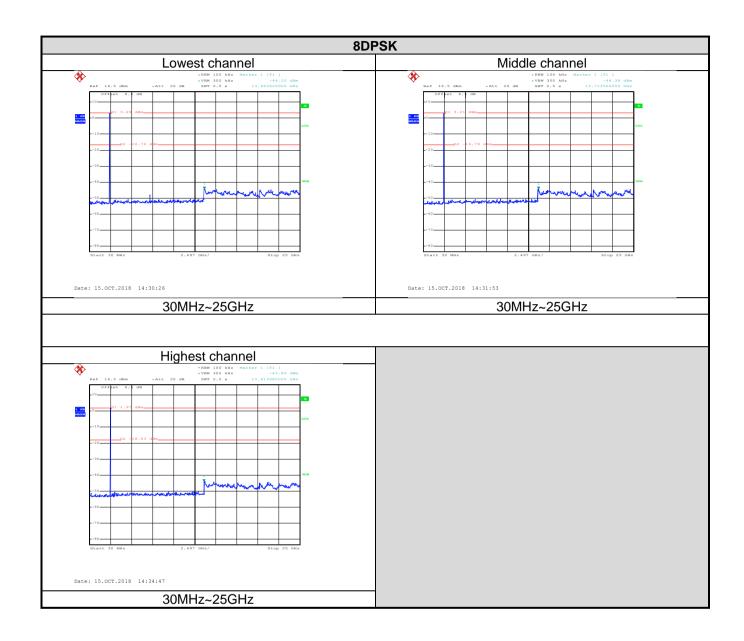




### Test plot as follows:









# 6.10.2 Radiated Emission Method

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							
Receiver setup:	Frequency Detector RBW VBW				٧	Remark		
	30MHz-1GHz	Quasi-pe	eak	120kHz	20kHz 300kl		Quasi-peak Value	
	Above 1GHz	Peak	k 1MHz		3MHz		Peak Value	
	Above 1G112	RMS 1MHz		3MF	łz	Average Value		
Limit:	Frequenc	y	Limit (dBuV/m @3m)			Remark		
	30MHz-88M	ИHz	40.0			Quasi-peak Value		
	88MHz-216N	MHz	43.5			(	Quasi-peak Value	
	216MHz-960	MHz		46.0		(	Quasi-peak Value	
	960MHz-1G	SHz		54.0		(	Quasi-peak Value	
	Above 1GI	47		54.0			Average Value	
	Above IGI	14		74.0			Peak Value	
	Antenna Tower  Search Antenna  RF Test Receiver  Ground Plane  Above 1GHz						Antenna Test ceiver	
	1.50cm	Horn Antenna Tower  AE  Ground Reference Plane  Test Receiver  Test Receiver						
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							





	<ul><li>was rotated 360 degrees to determine the position of the highest radiation.</li><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></ul>
	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.
	<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.

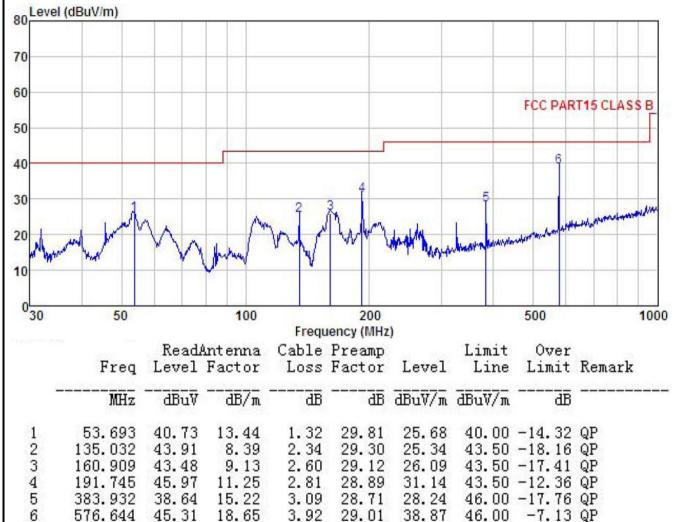




# Measurement Data (worst case):

### **Below 1GHz:**

Product Name:	Smart phone	Product Model:	Sync
Test By:	Yaro	Test mode:	BT Tx mode
Test Frequency:	30 MHz ~ 1 GHz	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%
Level (dBuV/m)			



### Remark:

<sup>1.</sup> Final Level = Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor.

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





Produc	t Name:	Smart ph	one		Pro	Product Model:		Sync		Sync			
Test By	<b>/</b> :	Yaro			Tes	t mode:	Е	BT Tx mode			BT Tx mode		
Test Frequency:		30 MHz ~	- 1 GHz		Pola	arization:	H	Horizontal					
Test Vo	Test Voltage:		60Hz		Env	ironment:	Т	Temp: 24℃ Huni: 57%					
Love	el (dBuV/m)												
80 Leve	a (dDdv/iii)												
70													
70													
60													
								FCC PAR	RT15 CLA	SSB			
50													
40					4		5						
40								6					
30			1	2	3 ~	O Description				La			
3,030	Λ		∦Y	In M	1) min	WWW.	. Au	100	the land of the section of	and didn			
20	What	TA.		1 my			MAN NOW	Aparent Rock of the Parent					
7	Malana	JA AV	W	1876		Įr.	50/2 D) C)	25. 10					
10			And I										
0	50		400		200			500		4000			
030	50		100	Frequ	200 Jency (MHz	7)		500		1000			
030	50	Read	100 Antenna	Particular State of the State o	uency (MHz	z)	Limit			1000			
030	50 Freq			Cable		Level	Limit Line	Over	Remar				
030			Ant enna	Cable	uency (MHz Preamp		Line	Over Limit	Remar				
	Freq MHz	Level —_dBuV	Antenna Factor ——dB/m	Cable Loss dB	uency (MHz Preamp Factor dB	Level	Line	Over Limit dB					
	Freq	Level	Antenna Factor	Cable Loss	uency (MHz Preamp Factor	Level	Line	Over Limit	 QP				
	Freq MHz 104.170 119.856 159.784	Level  dBuV  43.64 45.88 46.45	Antenna Factor dB/m 11.96 10.23 9.09	Cable Loss dB 1.99 2.17 2.59	Preamp Factor dB 29.50 29.39 29.13	Level  dBuV/m  28.09 28.89 29.00	Line dBuV/m 43.50 43.50 43.50	Over Limit dB -15.41 -14.61	QP QP QP				
	Freq MHz 104.170 119.856 159.784 191.745	Level  dBuV  43.64 45.88 46.45 55.50	Antenna Factor —dB/m 11.96 10.23 9.09 11.25	Cable Loss dB 1.99 2.17 2.59 2.81	Preamp Factor dB 29.50 29.39 29.13 28.89	Level  dBuV/m  28.09 28.89 29.00 40.67	Line dBuV/m 43.50 43.50 43.50 43.50	Over Limit -15.41 -14.61 -14.50 -2.83	QP QP QP QP QP				
030 1 2 3 4 5 6	Freq MHz 104.170 119.856 159.784	Level  dBuV  43.64 45.88 46.45	Antenna Factor dB/m 11.96 10.23 9.09	Cable Loss dB 1.99 2.17 2.59	Preamp Factor dB 29.50 29.39 29.13	Level  dBuV/m  28.09 28.89 29.00	Line dBuV/m 43.50 43.50 43.50 43.50 46.00	Over Limit -15.41 -14.61 -14.50 -2.83	QP QP QP QP QP				

<sup>1.</sup> Final Level = Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor.

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





# **Above 1GHz:**

ADOVE IGHZ	•							
			Test ch	annel: Lowe	est channel			
		1	De	tector: Peak	Value		I	
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	46.60	35.99	6.80	41.81	47.58	74.00	-26.42	Vertical
4804	47.55	35.99	6.80	41.81	48.53	74.00	-25.47	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	38.15	35.99	6.80	41.81	39.13	54.00	-14.87	Vertical
4804.00	39.42	35.99	6.80	41.81	40.40	54.00	-13.60	Horizontal
				annel: Mido				
	D	A		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	46.75	36.38	6.86	41.84	48.15	74.00	-25.85	Vertical
4882.00	46.64	36.38	6.86	41.84	48.04	74.00	-25.96	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	38.24	36.38	6.86	41.84	39.64	54.00	-14.36	Vertical
4882.00	38.41	36.38	6.86	41.84	39.81	54.00	-14.19	Horizontal
				annel: Highe				
				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	48.06	36.71	6.91	41.87	49.81	74.00	-24.19	Vertical
4960.00	47.23	36.71	6.91	41.87	48.98	74.00	-25.02	Horizontal
			Dete	ctor: Averaç	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
4960.00	38.41	36.71	6.91	41.87	40.16	54.00	-13.84	Vertical
4960.00	38.69	36.71	6.91	41.87	40.44	54.00	-13.56	Horizontal
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# Remark:

<sup>1.</sup> Final Level =Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor.

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