Report No: CCISE181005102

FCC REPORT

(Bluetooth)

Applicant: INDUSTRIA FUEGUINA DE RELOJERIA ELECTRONICA SA

Address of Applicant: SARMIENTO 2920 9420 RIO GRANDE, Argentina 9420

Equipment Under Test (EUT)

Product Name: Smartphone

Model No.: Smartway T1

Trade mark: Kodak

FCC ID: 2ALP3-T1

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

Date of sample receipt: 26 Oct., 2018

Date of Test: 26 Oct., to 09 Nov., 2018

Date of report issued: 12 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: CCISE181005102

2 Version

Version No.	Date	Description
00	12 Nov., 2018	Original

Tested by: | Men Date: 12 Nov., 2018

Reviewed by: 12 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:	INDUSTRIA FUEGUINA DE RELOJERIA ELECTRONICA SA
Address:	SARMIENTO 2920 9420 RIO GRANDE, Argentina 9420
Manufacturer:	INDUSTRIA FUEGUINA DE RELOJERIA ELECTRONICA SA
Address:	SARMIENTO 2920 9420 RIO GRANDE, Argentina 9420
Factory:	Vikin Communication Technology Co., Ltd
Address:	Room 1005, HSAE Technology Building, Hi-Tech Park, Nanshan District, Shenzhen, China

5.2 General Description of E.U.T.

3.2 General Description	01 2.0.11
Product Name:	Smartphone
Model No.:	Smartway T1
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:	0.9 dBi
Power supply:	Rechargeable Li-ion Battery DC3.8V-2800mAh
AC adapter:	Model: KA1508-0501000AR 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	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	19 2421MHz 39 2441MHz 59 2461MHz								
Remark: Cl	nannel 0, 39 &78	3 selected fo	or GFSK, π/4-D	QPSK and 8	BDPSK.				

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5.3 Test environment and test mode

Operating Environment:	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:	Radiated Emission:						
Test Equipment	juipment Manufacturer Model No. Serial No.		Cal. Date	Cal. Due date			
				(mm-dd-yy)	(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	101454 03-07-2018 03-06-2			
Spectrum analyzer	Rohde & Schwarz	FSP40	100363	100363 11-21-2017 11-20-2018			
EMI Test Receiver	Rohde & Schwarz	ESRP7	101070	101070 03-07-2018 03-06-20			
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 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 0.9 dBi.







6.2 Conducted Emissions

	30.01.0				
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 Net Test table height=0.8m	EMI Receiver			
Test procedure:	line impedance stabili 50ohm/50uH coupling 2. The peripheral device LISN that provides a stermination. (Please r photographs). 3. Both sides of A.C. line interference. In order positions of equipmen	ators are connected to the zation network (L.I.S.N.). I impedance for the measures are also connected to the 500hm/50uH coupling impeder to the block diagram of the are checked for maximum to find the maximum emist and all of the interface calls.4: 2014 on conducted maximum conduct	This provides a uring equipment. e main power through a edance with 50ohm of the test setup and m conducted sion, the relative ables must be changed		
Test Instruments:	Refer to section 5.8 for details				
Test mode:	Hopping mode				
Test results:	Pass				



Measurement Data:

Product name:	Smartphone		Р	roduct mod	lel: Sm	Smartway T1	
Test by:	Yaro		T	Test mode:		BT Tx mode	
Test frequency:	150 kHz ~ 30) MHz	Р	hase:	Line	Line	
Test voltage:	AC 120 V/60	Hz	E	nvironment	t: Ter	np: 22.5℃	Huni: 55%
80 Level (dBuV) 70 60 50 40 1 30 20	57 \$8 WWW.	9	12 //_	/ he have	V/M/M/MM		CC CLASS-B QP
0.15 .2	.5	1	2 Frequence	y (MHz)	5	10	20 3
Trace: 9	Read	LISN	Cable		Limit	Over	
Fre		Factor	Loss	Level	Line		Remark
<u>M</u>	īz —dBuV	<u>dB</u>		—dBu₹	—dBu∇	<u>d</u> B	
1 0.15 2 0.16		0.18 0.17	10.78 10.77	36.31 52.08		-19.47 -13.26	Average
2 0.16 3 0.18 4 0.22 5 0.50 6 0.50	2 37.36	0.16 0.14 0.12	10.76 10.76 10.76	35.40 48.26 45.72	62.74	-18.80 -14.48 -10.28	Average QP

Notes:

7

8

9

10

11

12

0.535

0.538

0.968

1.005

1.577

2.099

- 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.

0.12

0.12

0.13

0.13

0.14

0.14

10.76

10.76

10.86

10.87

10.93

10.96

45.68

41.13

39.24

31.60

30.90

39.15

56.00 -10.32 QP

56.00 -16.76 QP

56.00 -16.85 QP

46.00 -4.87 Average

46.00 -14.40 Average

46.00 -15.10 Average

3. Final Level =Receiver Read level + LISN Factor + Cable Loss.

34.80

30.25

28.25

20.60

19.83

28.05



Product name:	Smartphone		Product mo	del:	Smartway T1	
Test by:	Yaro		Test mode:		BT Tx mode	
Test frequency:	150 kHz ~ 30 MHz		Phase: Neutral			
Test voltage:	AC 120 V/60 Hz		Environmen	t:	Temp: 22.5℃	Huni: 55%
80 Level (dBuV) 70 60 50 12 40 30 20	5 4 4 4 4 8 8 8 1	10 10	THE STATE OF THE S	many)		FCC CLASS-B QP
10 0.15 .2 Trace: 11	.5 1 Read LISN q Level Factor	Frequer Cable	ncy (MHz)	5 Limi Lin		20 30 Remark
1 0.16 2 0.17 3 0.19 4 0.47 5 0.50 6 0.50 7 0.56 8 0.91 9 1.06 10 1.80 11 2.63	2 38.85 0.97 8 37.69 0.95 0 22.82 0.93 4 22.71 0.97 2 33.89 0.97 5 25.55 0.97 7 22.55 0.97 8 19.93 0.97 5 30.66 0.97 0 29.66 0.98 6 30.86 0.99	10. 77 10. 77 10. 76 10. 76 10. 76 10. 76 10. 84 10. 88 10. 95 10. 93	50.59 49.41 34.51 34.43 45.62 37.28 34.28 31.74 42.51 41.59 42.78	64.5 54.0 46.0 46.0 46.0 56.0 56.0	dB 34 -14.75 59 -15.18 52 -19.51 15 -12.02 50 -10.38 50 -8.72 50 -11.72 50 -14.26 50 -13.49 50 -14.41 50 -14.71	QP Average Average QP Average Average Average QP QP 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 KDB 558074	
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	

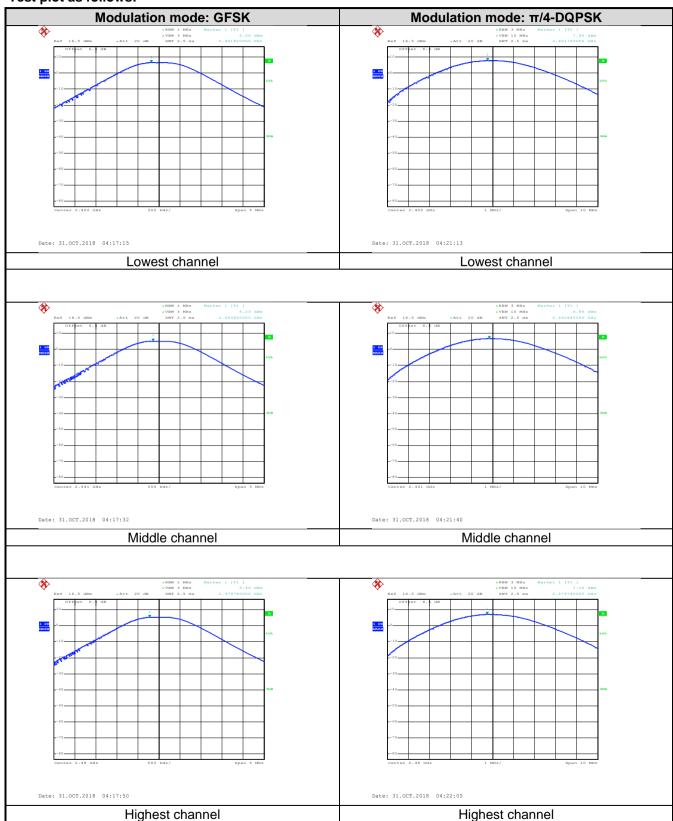
Measurement Data:

Test channel	Peak Output Power (dBm)	Limit (dBm)	Result		
	GFSK mode				
Lowest channel	6.66	30.00	Pass		
Middle channel	5.23	30.00	Pass		
Highest channel	5.46	30.00	Pass		
	π/4-DQPSK i	mode			
Lowest channel	7.95	21.00	Pass		
Middle channel	6.86	21.00	Pass		
Highest channel	7.16	21.00	Pass		
	8DPSK mode				
Lowest channel	8.05	21.00	Pass		
Middle channel	6.83	21.00	Pass		
Highest channel	7.16	21.00	Pass		

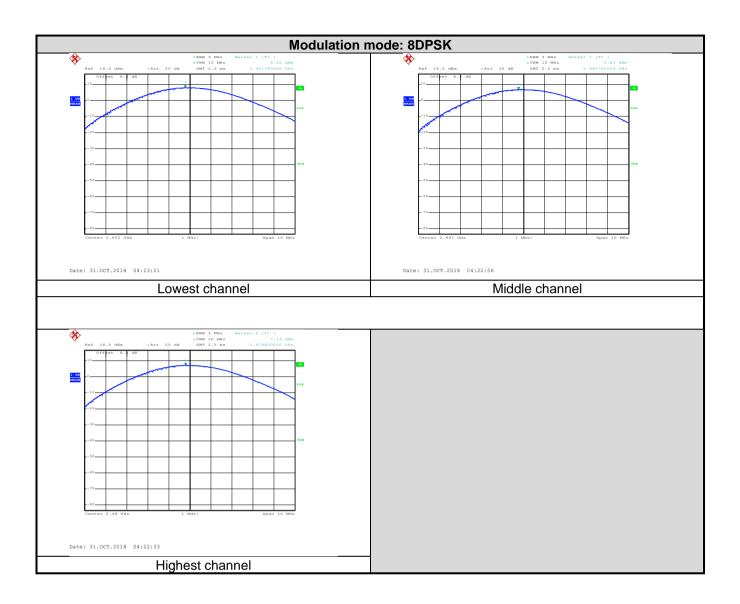




Test plot as follows:











6.4 20dB Occupy Bandwidth

Test Requirement:	FCC Part 15 C Section 15.247 (a)(1)	
Test Method:	ANSI C63.10:2013 and KDB 558074	
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	

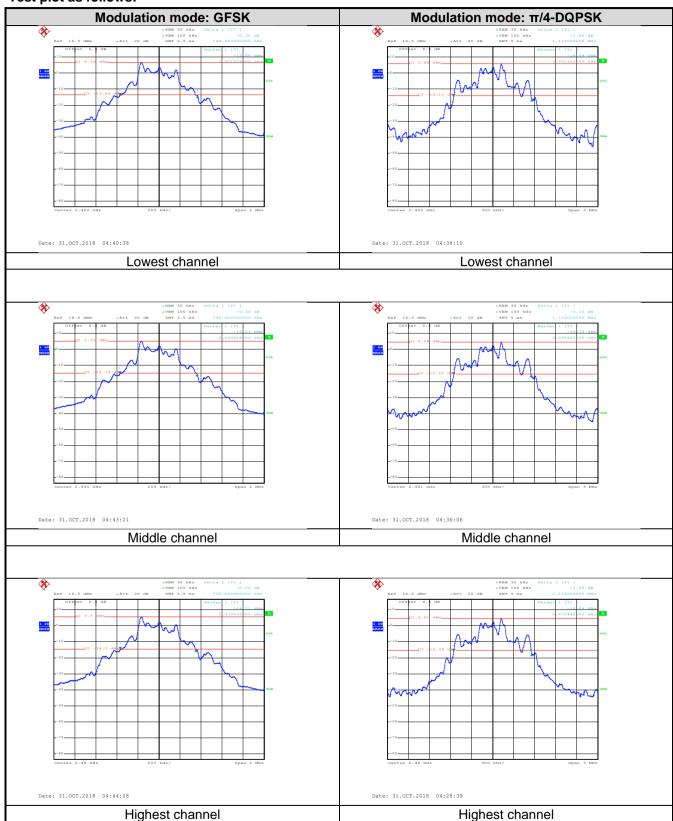
Measurement Data:

Test channel	20dB Occupy Bandwidth (kHz)			
rest channel	GFSK	π/4-DQPSK	8DPSK	
Lowest	740	1116	1170	
Middle	736	1110	1176	
Highest	720	1116	1182	

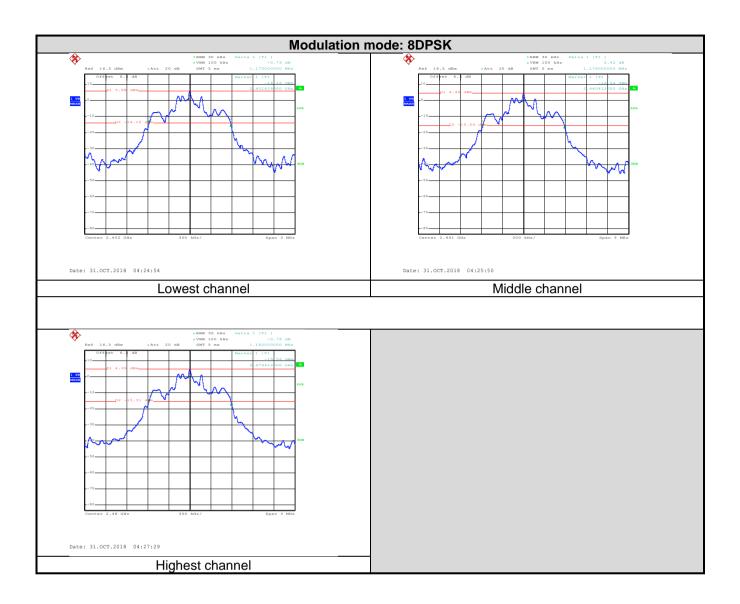




Test plot as follows:











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 KDB 558074
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	720.00	Pass		
Middle	1004	720.00	Pass		
Highest	1000	720.00	Pass		
	π/4-DQPSK mode				
Lowest	1004	740.00	Pass		
Middle	1004	740.00	Pass		
Highest	1004	740.00	Pass		
	8DPSK mode				
Lowest	1004	780.00	Pass		
Middle	1004	780.00	Pass		
Highest	1000	780.00	Pass		

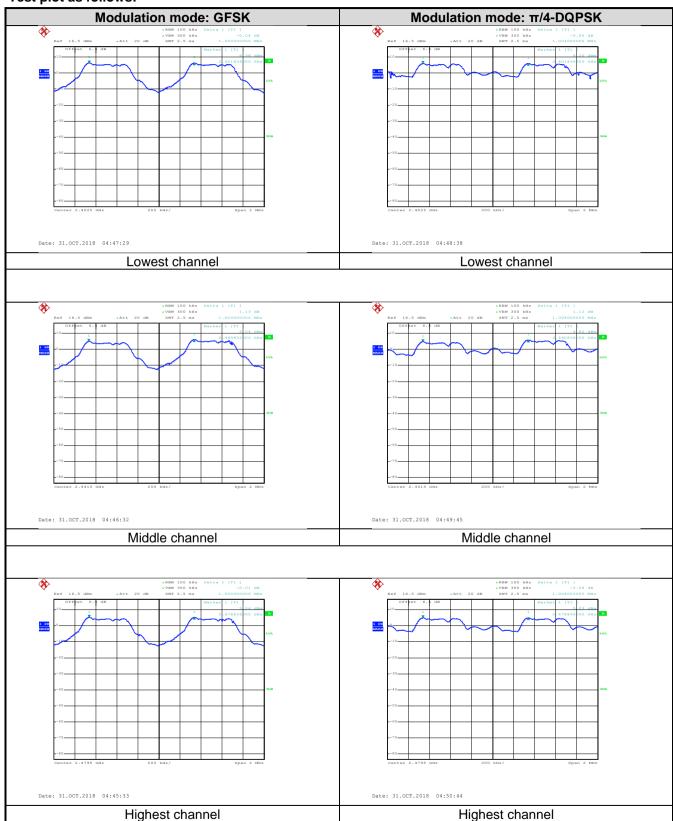
Note: According to section 6.4

Mode	20dB bandwidth (kHz) (worse case)	Limit (kHz) (Carrier Frequencies Separation)	
GFSK	720	720.00	
π/4-DQPSK	1110	740.00	
8DPSK	1170	780.00	

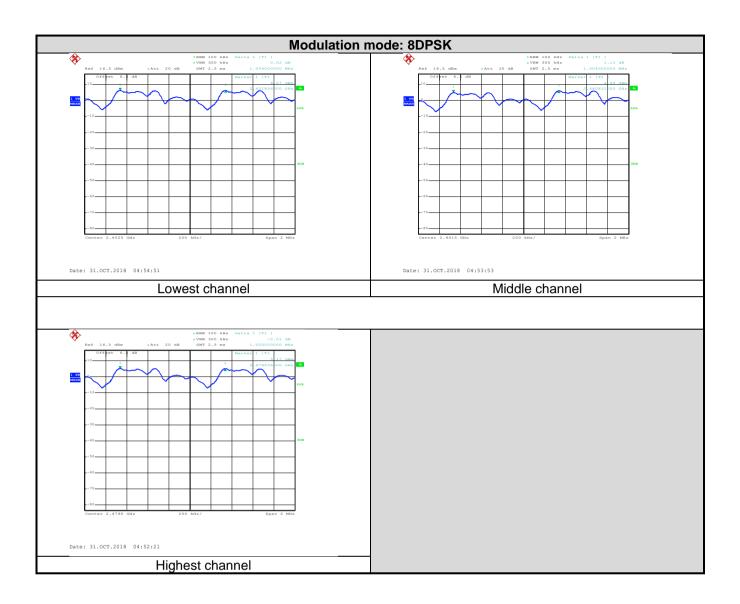




Test plot as follows:











6.6 Hopping Channel Number

Test Requirement:	FCC Part 15 C Section 15.247 (a)(1)
Test Method:	ANSI C63.10:2013 and KDB 558074
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

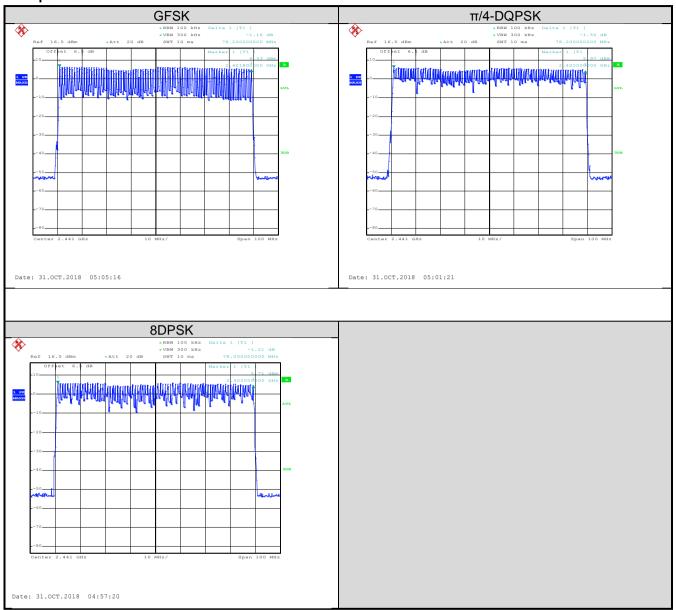
Measurement Data:

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 558074		
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	0.13312		
GFSK	DH3	0.27104	0.4	Pass
	DH5	0.31680		
	2-DH1	0.13184		
π/4-DQPSK	2-DH3	0.26816	0.4	Pass
	2-DH5	0.31424		
	3-DH1	0.13184		
8DPSK	3-DH3	0.26912	0.4	Pass
	3-DH5	0.31509		

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

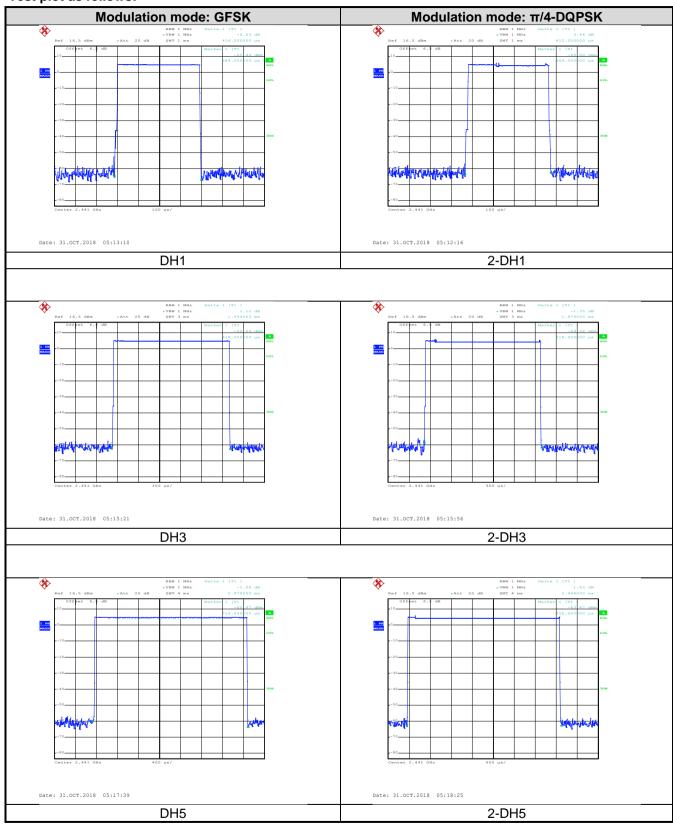
For example:

DH1 time slot=0.416*(1600/ (2*79)) * 31.6=133.12ms DH3 time slot=1.694*(1600/ (4*79)) * 31.6=271.04ms DH5 time slot=2.97*(1600/ (6*79)) * 31.6=316.80ms

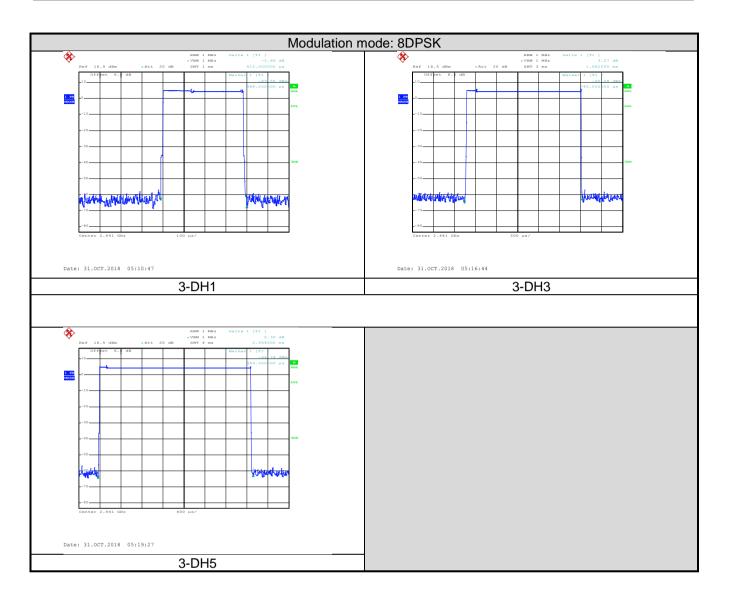




Test plot as follows:







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6.8 Pseudorandom Frequency Hopping Sequence

Test Requirement: FCC Pa

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

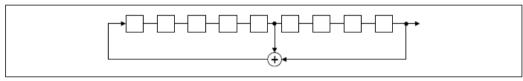
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

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

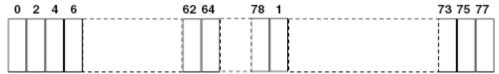
The pseudorandom sequence may be generated in a nine-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first ONE of 9 consecutive ONEs; i.e. the shift register is initialized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

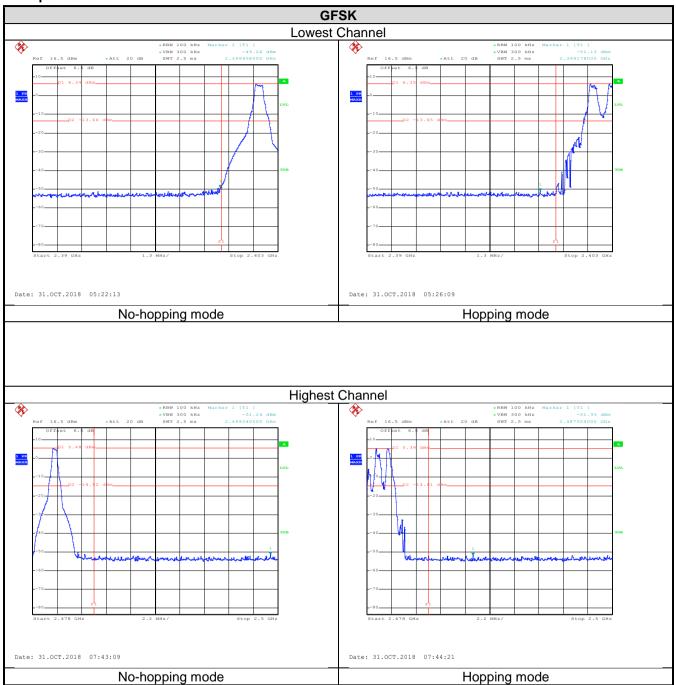
6.9.1 Conducted Emission Method

Test Requirement:	FCC Part 15 C Section 15.247 (d)
Test Method:	ANSI C63.10:2013 and KDB 558074
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

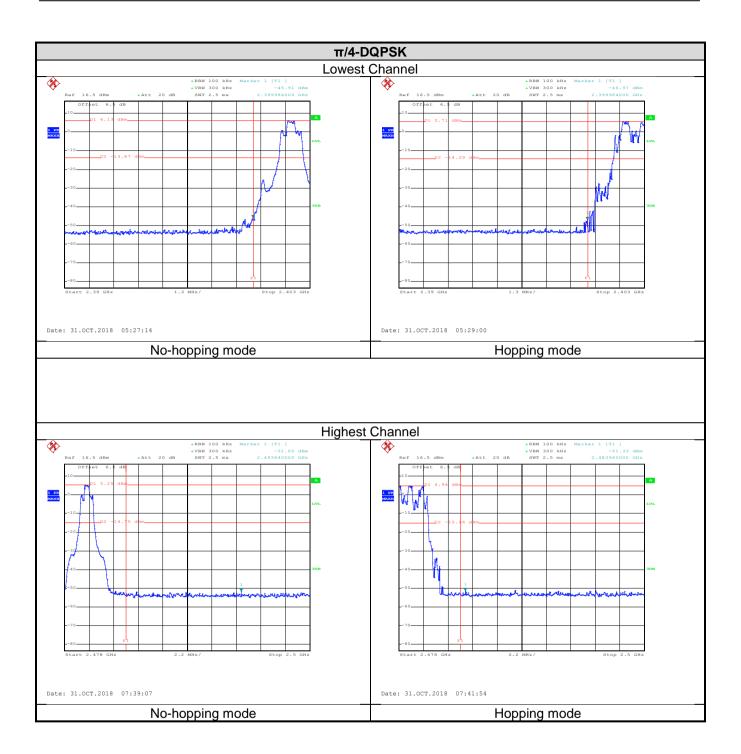




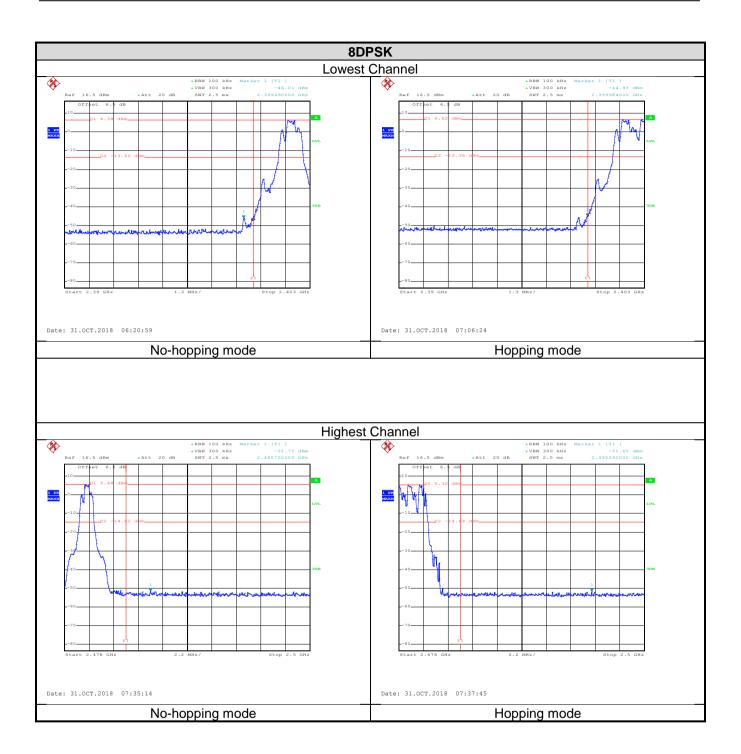
Test plot as follows:













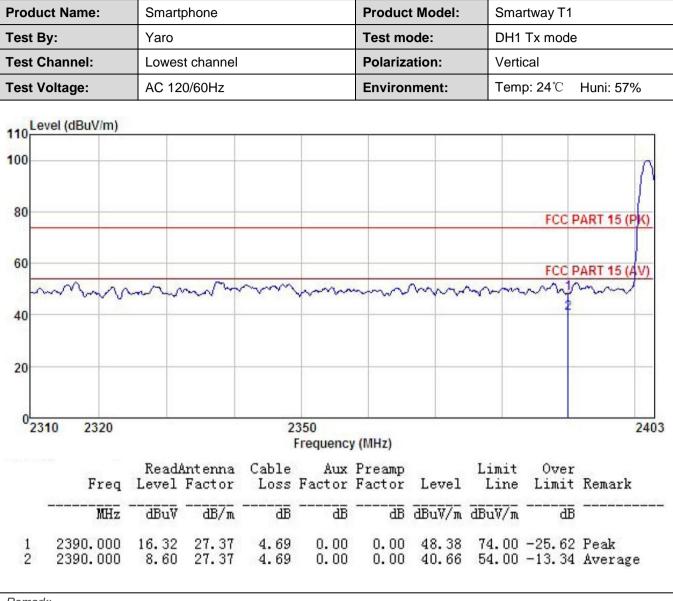
6.9.2 Radiated Emission Method

Test Requirement:	ECC D2件 4年 C	Section 1	5 200	and 15.205				
Test Method:	ANSI C63.10: 2		3.208	and 13.203				
	2.3GHz to 2.5GHz							
1 , 0	3m							
Receiver setup:								
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)	Δι	verage Value	
	Above 1G	iHz		74.00			Peak Value	
Test setup:	(Tur	EUT Handale)	Ground Rel	ierence Plane	antenna Tow	ver Wer		
	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	amber of the eters nounted warie he made was to turned with M of the Esting of the re-term of the eterm of th	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 m	node						
Test results:	Passed							





GFSK Mode:



Remark:

- 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:		Smartp	Smartphone				Product Model:			Smartway T1			
Test By:		Yaro				Test me	Test mode:		DH1 Tx mode				
Test Channel	:	Lowest channel			Polarization:		Но	Horizontal					
Test Voltage:		AC 120	AC 120/60Hz			Enviror	nment:	Tei	mp: 24 ℃	Huni: 5	7%		
Loyal (dDy	Mm)	•						•					
110 Level (dBu	Vittij						1						
100											Λ		
80									FCC	PART 15 (I	PIK)		
											1		
60									FCC I	PART 15 ((V)		
60	~~~	~~~	mm	~~~	~~~	~~~	~~~	nun	FCC	PART 15 ((V)		
man	~~~	mah	~~	~~~	<i>~</i> ~~	~~~	~~~	v-v	FCC I	PART 15 (A	(V)		
40	www.	~~~	~~	^m	·~~	~~~	~~~	~~~	FCC I	PART 15 (A	(V)		
40			~~	n	~~	~~~	~~~	~~~	FCC I	PART 15 (AV)		
man		mdu	~~	~~~	~~	••••	~~~	~~~	FCC 2	PART 15 (A	AV)		
40		mdu	~~~	~~~		~~~	www	2	FCC 2	PART 15 (A	(V)		
40	320				350		m	~~~	FCC 2	PART 15 (2403		
40	320	mulu	~~~	i	Frequency		~~~	2	2				
20 0 2310 2				Cable	Frequency Aux	(MHz) Preamp Factor		Limit	2 Over		2403		
20 2310 2			Factor	Cable Loss	Frequency Aux	Preamp Factor		Line	Ove:	r t Remarl	2403		

Remark:

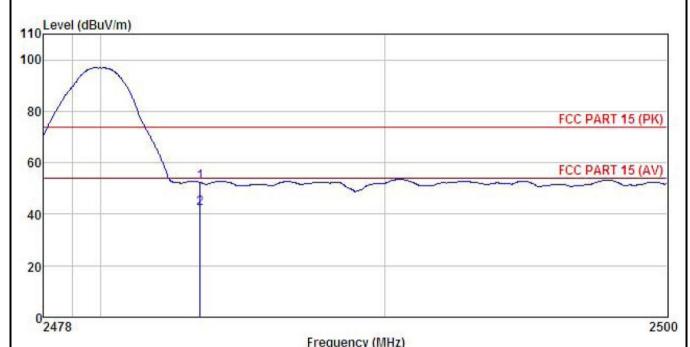
^{1.} Final Level = Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor.

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





Product Name:	Smartphone	Product Model:	Smartway T1
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		Antenna Factor					Limit Line		
	MHz	dBu₹	<u>dB</u> /m	<u>dB</u>	<u>dB</u>	<u>dB</u>	$\overline{dBuV/m}$	dBuV/m	<u>dB</u>	
1 2	2483.500 2483.500						52.36 42.16			

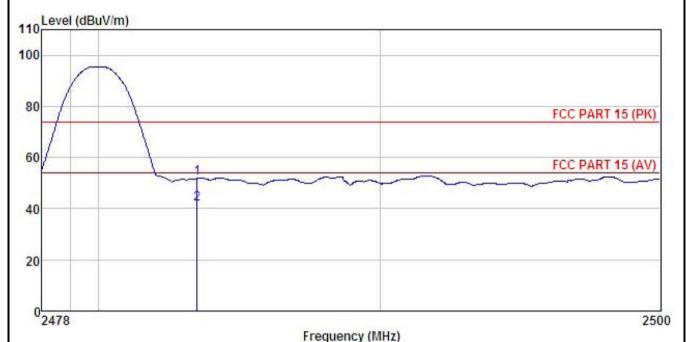
Remark:

- 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:	Smartphone	Product Model:	Smartway T1
Test By:	Yaro	Test mode:	DH1 Tx mode
Test Channel:	Highest channel	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>dB</u>	<u>dB</u>	$\overline{dBuV/m}$	dBuV/m	<u>dB</u>	
1 2	2483.500 2483.500								

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

rodu	ct Name:	Smartp	hone			Produc	t Model:	Sma	rtway T1	
est B	By:	Yaro				Test me	ode:	2DH	1 Tx mod	e
est C	hannel:	Lowes	t channel			Polariza	ation:	Vert	ical	
est V	oltage:	AC 120	AC 120/60Hz				nment:	Tem	np: 24℃ Huni: 57%	
le	evel (dBuV/m)							•		
	Tor (abarring									
00										Λ
80	0								FCC P	ART 15 (PK)
60								FCC P	ART 15 (AV)	
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		m	~~~~	Marian	vv~~	ww	~~~	m	wh	my
40					-				- 7	
20										
023	10 2320			2	350					240
23	2320				Frequency	(MHz)				24
			ntenna			Preamp		Limit	Over	
	Freq	Level	Factor	Loss	Factor	Factor	Level	Line	Limit	Remark
	MHz	dBu∀	₫B/m	dB	₫₿	₫B	dBuV/m	dBuV/m	d₿	
1	2390.000	17.54					49.60			
2	2390.000	8.23	27.37	4.69	0.00	0.00	40.29	54.00	-13.71	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.





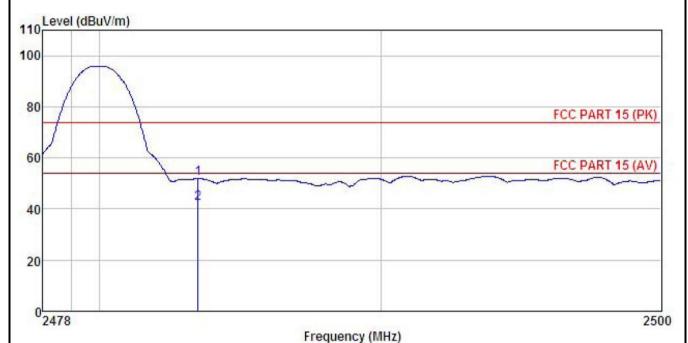
roduct Name:		Smart	phone			Produc	t Model:	Sma	artway T1	
est B	y:	Yaro				Test mo	ode:	2DH	11 Tx mod	е
est C	hannel:	Lowes	st channel			Polariza	ation:	Hori:	zontal	
est V	oltage:	AC 12	:0/60Hz			Environ	nment:	Tem	np: 24℃	Huni: 57%
Le	evel (dBuV/m)									
10	wor (dbd viii)									
00					+					$\Lambda$
										11
80					+				FCC F	PART 15 (PK)
60									FCC F	ART 15 (AV)
~	monte	man	mm	~~~	~~~	man	min	~~~	min	m
40									2	
20										
0	67 (0.00/10)									
~23	310 2320				2350 Frequency	v (MHz)				2403
								20 2001280		
	Freq	ReadA Level	Antenna Factor	Cable Loss	Aux Factor	Preamp Factor	Level	Limit Line		Remark
	MHz	dBu∜	dB/m	₫B	<u>d</u> B	<u>dB</u>	$\overline{dBuV/m}$	$\overline{dBuV/m}$	dB	
	2390.000	18.10	27.37	4.69	0.00	0.00	50.16	74.00	-23.84	Peak

- 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:	Smartphone	Product Model:	Smartway T1
Test By:	Yaro	Test mode:	2DH1 Tx mode
Test Channel:	Highest channel	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



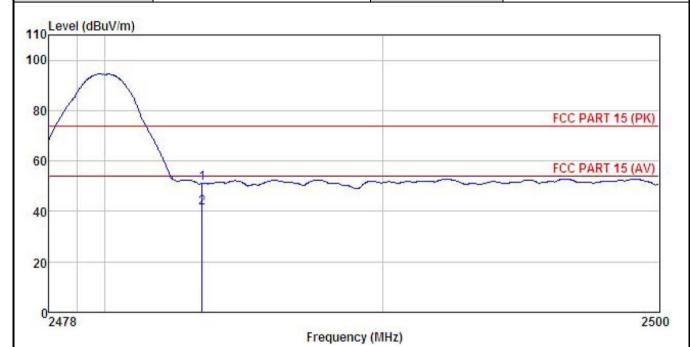
					and the state of the state of the state of					
	Freq		Antenna Factor					Limit Line		
	MHz	—dBuV	$-\frac{dB}{m}$	<u>d</u> B	<u>d</u> B	<u>dB</u>	dBu√/m	dBuV/m	<u>dB</u>	
1 2	2483.500 2483.500		27.57 27.57				51.87 42.07			

- 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:	Smartphone	Product Model:	Smartway T1		
Test By:	Yaro	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						Over Limit	Remark
-	MHz	—dBu∇	<u>dB</u> /m	<u>dB</u>	<u>dB</u>	<u>dB</u>	$\overline{dBuV/m}$	dBuV/m	<u>dB</u>	
1 2	2483,500 2483,500						51.01 41.50			

- 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

oduc	Product Name:		'			Produc	t Model:	Sma	Smartway T1		
est By	y:	Yaro				Test mo	ode:	3DH	11 Tx mod	le	
est Cl	hannel:	Lowes	t channel			Polariza	ation:	Vert	ical		
est Vo	oltage:	AC 120	0/60Hz			Environment:		Tem	Temp: 24℃ Huni: 57%		
Lo	wol /dDu\//m\										
10	evel (dBuV/m)										
00									-	0	
										1	
80									FCC F	PART 15 (PK)	
						_			1001	AKT 10 (1 K)	
60									FCCF	ADT 45 (AV)	
60	.0	20.0	~~ ~~	va vav	\\\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.\.		V. ~ ~ ~ ~ ~	Non-A	FCC F	PART 15 (AV)	
~	~~~~~~	~~~	m	~~~	····	~~~	~~~~	V	FCCF	PART 15 (AV)	
40	~~~~~	~~~	m	~~~	····	~~~	~~~	V	FCC F	PART 15 (AV)	
~	~~~~~	~~~	~~~	~~~	····	~~	~~~	<b>√</b> ~~~	FCC F	PART 15 (AV)	
~	~~~~~	vuv	mm	~~~	····		~~~~~	M	FCC F	PART 15 (AV)	
40	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~	~~~		····		~~~~	M	FCCF	PART 15 (AV)	
20		~~~			350		~~~~	<b>~~</b> ~	FCC F		
20	310 2320	~~~	~~~		350 Frequency	y (MHz)	~~~~	<b>~</b>	FCC F	PART 15 (AV)	
20			nt enna		Frequenc		~~~~	Limit	2	24	
20	310 2320	ReadA	ntenna Factor	Cable	Frequenc	Preamp		Cimit Line	Over	24	
20	310 2320	ReadA Level		Cable	Frequency Aux	Preamp Factor		Line	Over Limit	24 Remark	
20	10 2320 Freq	ReadA Level	Factor  dB/m	Cable Loss	Frequency Aux Factor dB	Preamp Factor dB	Level	Line	Over Limit	24 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.





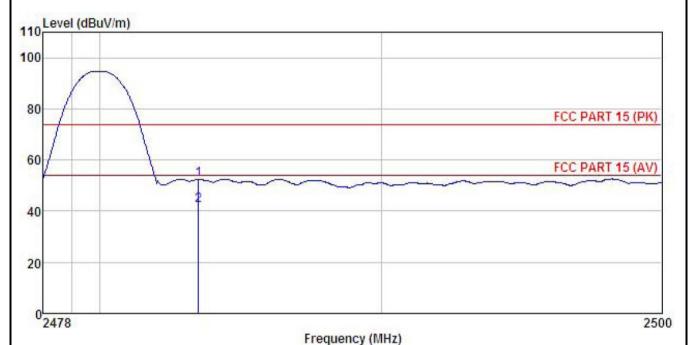
Produc	ct Name:	Smartphon	е		Produc	t Model:	Sma	artway T1	
Test B	y:	Yaro			Test me	ode:	3DH	I1 Tx mod	е
Test C	hannel:	Lowest cha	nnel		Polariza	ation:	Hori	zontal	
Test V	oltage:	AC 120/60I	Hz		Enviror	vironment: Temp: 24℃ Huni: 57%			Huni: 57%
110 Le	vel (dBuV/m)			4					
100									N
80								FCC P	ART 15 (PK)
60								FCC P	ART 15 (AV)
40		m		~~~	my	m		v.	
20									
023	10 2320	Noja		350 Frequency	y (MHz)				2403
	Freq		nna Cable tor Loss		Preamp Factor		Limit Line		Remark
	MHz	dBuV d	B/mdB	₫B	₫B	dBuV/m	dBuV/m	<u>dB</u>	
1 2	2390.000 2390.000	17.75 27 8.50 27	.37 4.69 .37 4.69			49.81 40.56			Peak 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:	Smartphone	Product Model:	Smartway T1
Test By:	Yaro	Test mode:	3DH1 Tx mode
Test Channel:	Highest channel	Polarization:	Vertical
Test Voltage:	AC 120/60Hz	Environment:	Temp: 24℃ Huni: 57%



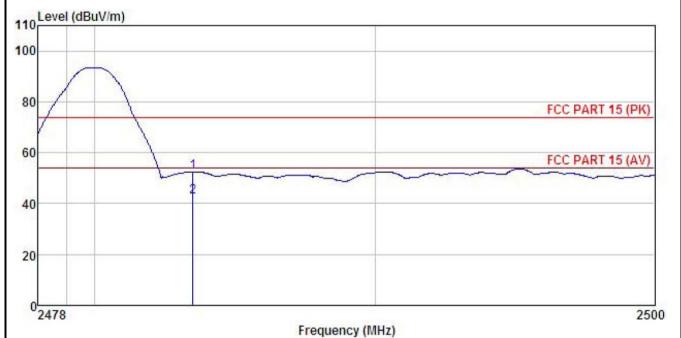
	Freq		Antenna Factor						Over Limit	
	MHz	dBu₹	-dB/m	<u>d</u> B	<u>dB</u>	<u>ab</u>	$\overline{dBuV/m}$	dBuV/m	dB	
1 2	2483.500 2483.500						52.33 42.05			

- 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:	Smartphone	Product Model:	Smartway T1
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		Antenna Factor					Over Limit	
2	MHz	dBu₹	dB/m	 <u>d</u> B	<u>d</u> B	$\overline{dBuV/m}$	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 very lower than the limit and not show in test report.



# 6.10 Spurious Emission

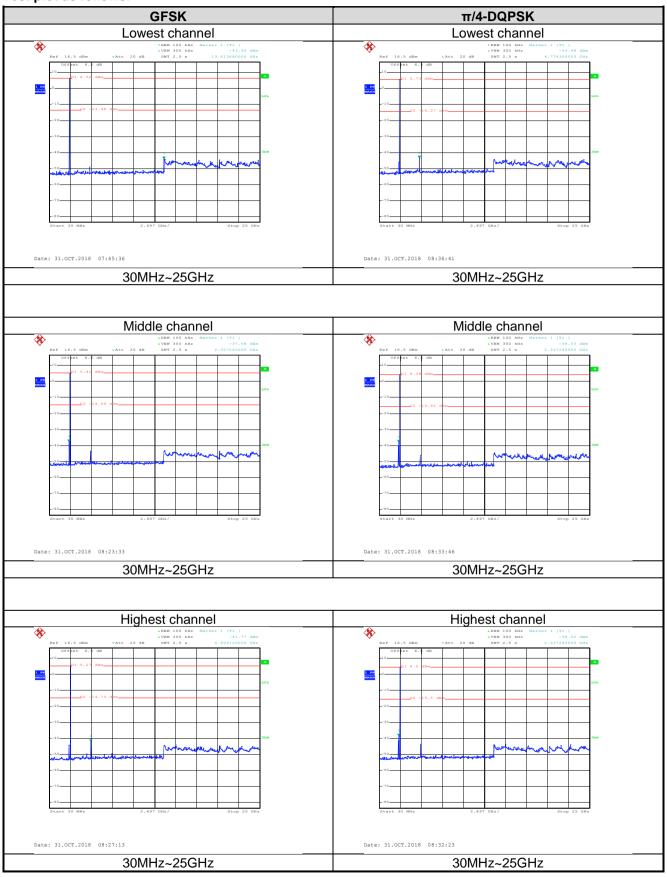
# 6.10.1 Conducted Emission Method

Test Requirement:	FCC Part 15 C Section 15.247 (d)						
Test Method:	ANSI C63.10:2013 and KDB 558074						
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						

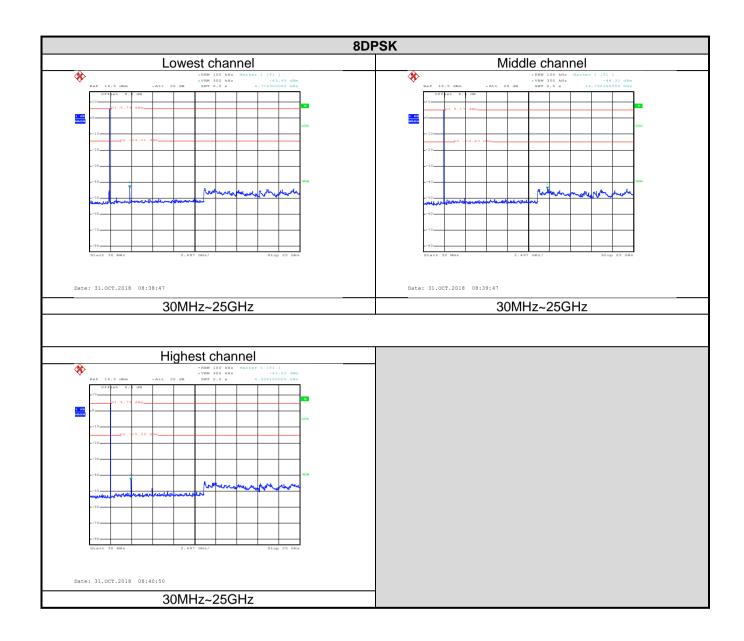




# Test plot as follows:











# 6.10.2 Radiated Emission Method

6.10.2 Radiated Emission Me	ethod								
Test Requirement:	FCC Part 15 C Section 15.209								
Test Method:	ANSI C63.10: 2013								
Test Frequency Range:	9 kHz to 25 GH:	z							
Test Distance:	3m								
Receiver setup:	Frequency	Detect	or	RBW	VBV	٧	Remark		
	30MHz-1GHz	Quasi-p	eak	120kHz	300kl	Hz	Quasi-peak Value		
	Above 1GHz	Peak	(	1MHz	3МН	lz	Peak Value		
	Above 1GHz	RMS	5	1MHz	3МН	lz	Average Value		
Limit:	Frequenc	:y	Lim	it (dBuV/m @	⊉3m)	) Remark			
	30MHz-88MHz 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> -5		54.0			Average Value		
	Above 1GI	ΠΖ		74.0			Peak Value		
	Antenna Tower  Search Antenna  RF Test Receiver  Ground Plane  Above 1GHz								
	WWWW	Antenna Tower  Ground Reference Plane  Test Receiver Amplier Controller							
Test Procedure:							.8m(below 1GHz) 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</li></ul>					
	tower.					
	<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:	1. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis is the worst case.					
	<ol><li>9 kHz to 30 MHz is noise floor, so only shows the data of above 30MHz in this report.</li></ol>					





# Measurement Data (worst case):

# **Below 1GHz:**

	t Name:	Smart	Smartphone Product Model: Smartway T1					Smartway T1 BT Tx mode			
Test By	:	Yaro	Test mode: BT Tx n								
est Fre	equency:	30 MH	z ~ 1 GHz			Polariza	tion:	Verti	Vertical Temp: 24°C Huni: 57°		
Test Vo	Itage:	AC 12	0/60Hz			Environ	ment:	Tem			
Level	(dBuV/m)										
0	, ,										
0										-	
50									FCC PART	15 CL	ASSB
0						276					
10											
,0											
1				100		-					darker
20	2		ax II	4		6 July			- CONTRACTOR - CON	I MANAGEMENT	Miletonia.
	No. 1. 31)		2	M		1/ mariana	1		had a band to be	Mr. Marie	910
	and market )	markery 1			in de	at Code	The Marie Assort	mt. high garage right from	hand on the same of the same	Mr. a.	9/20-
	May have been a	homen		Marin	and the same of the	1/4 Colaina	The Land Assessment	white for my rest	hand of the said the state of	Mr. W	
0	The state of the s	home	port of the same	The same of the sa	and the state of the state of		The second second			M	
030	50	homing	10	)0 F	requency	200 (MHz)	of he had the state of		500	Mrs	100
10	2000		Ant enna	F Cable	Aux	(MHz) Preamp		Limit	500 Over		100
0	Freq	Level	Antenna Factor	Cable Loss	Aux Factor	(MHz) Preamp Factor	Level	Limit Line	500 Over Limit	Rem	100
10	2000		Antenna Factor	F Cable	Aux Factor	(MHz) Preamp Factor		Limit Line	500 Over Limit	Rem	100
030	Freq MHz 30.638	Level 	Antenna Factor dB/m	Cable Loss dB	Aux Factor ————————————————————————————————————	(MHz) Preamp Factor dB 29.98	Level dBuV/m 24.84	Limit Line dBuV/m	0ver Limit ———————————————————————————————————	Rem:	100
030	Freq MHz 30.638 51.481	Level dBuV	Antenna Factor dB/m 10.75 13.83	Cable Loss	Aux Factor ————————————————————————————————————	(MHz) Preamp Factor dB	Level dBuV/m 24.84 21.64	Limit Line dBuV/m 40.00 40.00	Over Limit ———————————————————————————————————	Rem:	100
0	Freq MHz 30.638	Level dBuV 43.29 36.35	Antenna Factor dB/m	Cable Loss dB	Aux Factor dB 0.00	(MHz) Preamp Factor dB 29.98 29.81	Level dBuV/m 24.84 21.64	Limit Line dBuV/m 40.00 40.00 40.00 43.50	0ver Limit ———————————————————————————————————	Rem: QP QP QP QP	100

### 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:			Smartway T1			Smartway T1			
Test By	est By:		Yaro			Test mo	ode:	BT 1	BT Tx mode						
Test Fr	Test Frequency:		lz ~ 1 GHz	<u>,</u>		Polarization:			Horizontal						
Test Vo	ltage:	AC 12	0/60Hz			Environ	Environment: Te		Temp: 24°C Huni: 57%						
70 60 50 40 30	I (dBuV/m)	January Marie Land	J. L. Parket				han han		CC PART						
030	50		10		roguency	200			500		1000				
					requency										
	Freq		Antenna Factor	Cable Loss		Preamp Factor	Level	Limit Line	Over Limit	Rema	ark				
_	MHz	dBu₹	<u>d</u> B/π		<u>ab</u>	<u>ab</u>	dBu√/m	dBuV/m	<u>dB</u>						
1 2 3 4 5	55. 221 79. 800 110. 569 207. 123 224. 519 307. 831	31.23 35.16 38.36 40.39 38.37 36.29	13. 17 8. 12 12. 18 11. 78 12. 43 13. 77	1.36 1.65 2.05 2.86 2.84 2.97	0.00 0.00 0.00 0.00 0.00	29. 64 29. 45 28. 78	15.96 15.29 23.14 26.25 24.96 24.56	40.00 43.50 43.50 46.00	-24.04 -24.71 -20.36 -17.25 -21.04 -21.44	QP QP QP QP					
Domork:															

^{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.	•									
				annel: Lowe						
		ı		tector: Peak	Value		I	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		
4804.00	46.76	35.99	6.80	41.81	47.74	74.00	-26.26	Vertical		
4804.00	46.81	35.99	6.80	41.81	47.79	74.00	-26.21	Horizontal		
Detector: Average 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	38.54	35.99	6.80	41.81	39.52	54.00	-14.48	Vertical		
4804.00	38.49	35.99	6.80	41.81	39.47	54.00	-14.53	Horizontal		
				annel: Midd						
		T		tector: Peak	Value		T	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		
4882.00	45.79	36.38	6.86	41.84	47.19	74.00	-26.81	Vertical		
4882.00	46.47	36.38	6.86	41.84	47.87	74.00	-26.13	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	37.98	36.38	6.86	41.84	39.38	54.00	-14.62	Vertical		
4882.00	38.57	36.38	6.86	41.84	39.97	54.00	-14.03	Horizontal		
				annel: Highe						
		1	De	tector: Peak	Value		T	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		
4960.00	46.47	36.71	6.91	41.87	48.22	74.00	-25.78	Vertical		
4960.00	46.61	36.71	6.91	41.87	48.36	74.00	-25.64	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		
4960.00	38.51	36.71	6.91	41.87	40.26	54.00	-13.74	Vertical		
4960.00	38.94	36.71	6.91	41.87	40.69	54.00	-13.31	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.