

## Shenzhen Toby Technology Co., Ltd.

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# **FCC Radio Test Report** FCC ID: 2AILG-G3

## **Original Grant**

Report No. TB-FCC148254

NJY Science & Technology Co., Ltd **Applicant** 

**Equipment Under Test (EUT)** 

Smart Watch **EUT Name** 

G3 Model No.

G4, G5, G6, D5, D6, D7, D8, Q7, S6 Series Model No.

**Brand Name** N/A

**Receipt Date** 2016-05-13

**Test Date** 2016-05-14 to 2016-05-30

**Issue Date** 2016-05-31

**Standards** FCC Part 15: 2015, Subpart C(15.247)

**Test Method** ANSI C63.10: 2013

**Conclusions PASS** 

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

The EUT technically complies with the FCC requirements

**Test/Witness Engineer** 

**Approved& Authorized** 

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

TB-RF-074-1.0

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## 1. General Information about EUT

### 1.1 Client Information

Applicant : NJY Science & Technology Co., Ltd

Address: 1788, Block A, Modern Window, NO.1050 Huagiang North Road,

Futian District, Shenzhen, China

Manufacturer : NJY Science & Technology Co., Ltd

Address: 1788, Block A, Modern Window, NO.1050 Huaqiang North Road,

Futian District, Shenzhen, China

### 1.2 General Description of EUT (Equipment Under Test)

EUT Name	À	Smart Watch			
Models No.		G3, G4, G5, G6, D5, D6, D7, D8, Q7, S6			
Model Difference	:		models are identical in the same PCB, layout and electrical e only difference is model name for commercial.		
		Operation Frequency: Bluetooth3.0: 2402MHz~2480MHz Bluetooth4.0(BLE): 2402MHz~2480MHz see note(1) GSM 850: 824.20MHz-848.80MHz see note(1) PCS1900: 1850.20MHz-1909.80MHz see note(1)			
Product		Number of Channel:	Bluetooth:79 Channels see Note 2		
Description		Max Peak Output Power:	Bluetooth: 4.720 dBm(GFSK)		
		Antenna Gain:	1.55 dBi Integral Antenna		
	Modulation Type:		GFSK 1Mbps(1 Mbps) π /4-DQPSK(2 Mbps) 8-DPSK(3 Mbps)		
Power Supply		DC Voltage supplied from Host System by USB cable.  DC power by Li-ion Battery.			
Power Rating		DC 5.0V by USB cable. DC 3.7V by 380mAh Li-ion Battery.			
Connecting I/O Port(S)	Š	Please refer to the User's Manual			

### Note:

(1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual. The EUT has also been tested and complied the FCC 15.247 for Bluetooth 4.0 and FCC 2&22&24 for GSM function, and recorded in the separate test report.

### (2) Channel List:

Bluetooth Channel List					
Channel	Frequency	Channel	Frequency	Channel	Frequency



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		EMILL			
	(MHz)		(MHz)		(MHz)
00	2402	27	2429	54	2456
01	2403	28	2430	55	2457
02	2404	29	2431	56	2458
03	2405	30	2432	57	2459
04	2406	31	2433	58	2460
05	2407	32	2434	59	2461
06	2408	33	2435	60	2462
07	2409	34	2436	61	2463
08	2410	35	2437	62	2464
09	2411	36	2438	63	2465
10	2412	37	2439	64	2466
11	2413	38	2440	65	2467
12	2414	39	2441	66	2468
13	2415	40	2442	67	2469
14	2416	41	2443	68	2470
15	2417	42	2444	69	2471
16	2418	43	2445	70	2472
17	2419	44	2446	71	2473
18	2420	45	2447	72	2474
19	2421	46	2448	73	2475
20	2422	47	2449	74	2476
21	2423	48	2450	75	2477
22	2424	49	2451	76	2478
23	2425	50	2452	77	2479
24	2426	51	2453	78	2480
25	2427	52	2454		
26	2428	53	2455	E CHILL	

(3) The Antenna information about the equipment is provided by the applicant.

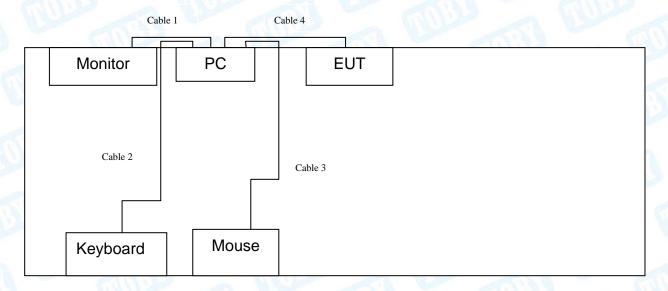
## 1.3 Block Diagram Showing the Configuration of System Tested

TX Mode			F. C.
		]	
	EUT		



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### **USB Charging with TX Mode**



## 1.4 Description of Support Units

Equipment Information					
Name	Model	FCC ID/DOC	Manufacturer	Used "√"	
LCD Monitor	E170Sc	DOC	DELL	<b>√</b>	
PC	OPTIPLEX380	DOC	DELL	<b>√</b>	
Keyboard	L100	DOC	DELL	<b>√</b>	
Mouse	M-UARDEL7	DOC	DELL	<b>√</b>	
		Cable Information			
Number	Shielded Type	Ferrite Core	Length	Note	
Cable 1	YES	YES	1.5M	(III)	
Cable 2	YES	YES	1.5M		
Cable 3	YES	NO	1.5M	W.	
Cable 4	NO	NO	0.8M		



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### 1.5 Description of Test Mode

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned follow was evaluated respectively.

For Conducted Test					
Final Test Mode	Description				
Mode 1	USB Charging with TX GFSK Mode				

For Radiated Test			
Final Test Mode	Description		
Mode 1 USB Charging with TX GFSK Mode			
Mode 2 TX Mode(GFSK) Channel 00/39/78			
Mode 3 TX Mode( π /4-DQPSK) Channel 00/39/7			
Mode 4	TX Mode(8-DPSK) Channel 00/39/78		
Mode 5 Hopping Mode(GFSK)			
Mode 6 Hopping Mode( π /4-DQPSK)			
Mode 7 Hopping Mode(8-DPSK)			

### Note:

(1) For all test, we have verified the construction and function in typical operation. And all the test modes were carried out with the EUT in transmitting operation in maximum power with all kinds of data rate. We have pretested all the test mode above.

According to ANSI C63.10 standards, the measurements are performed at the highest, middle, lowest available channels, and the worst case data rate as follows:

TX Mode: GFSK (1 Mbps)
TX Mode: π /4-DQPSK (2 Mbps)
TX Mode: 8-DPSK (3Mbps)

(2) The EUT is considered a portable unit; it was pre-tested on the positioned of each 3 axis, X-plane, Y-plane and Z-plane. The worst case was found positioned on X-plane as the normal use. Therefore only the test data of this X-plane was used for radiated emission measurement test.



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### 1.6 Description of Test Software Setting

During testing channel& Power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of Bluetooth mode.

Test Software Version	man:	Media Tek BT Tool	
Frequency	2402 MHz	2441MHz	2480 MHz
GFSK	DEF	DEF	DEF
π /4-DQPSK	DEF	DEF	DEF
8-DPSK	DEF	DEF	DEF

### 1.7 Measurement Uncertainty

The reported uncertainty of measurement  $y \pm U$ , where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

Test Item	Parameters	Expanded Uncertainty (U <sub>Lab</sub> )
	Level Accuracy:	THE STATE OF THE S
Conducted Emission	9kHz~150kHz	±3.42 dB
	150kHz to 30MHz	±3.42 dB
Radiated Emission	Level Accuracy:	±4.60 dB
Radiated Effilssion	9kHz to 30 MHz	±4.00 dB
Radiated Emission	Level Accuracy:	±4.40 dB
Radiated Effilssion	30MHz to 1000 MHz	±4.40 db
Radiated Emission	Level Accuracy:	±4.20 dB
Naulateu ElliiSSIOII	Above 1000MHz	±4.20 UD



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### 1.8 Test Facility

The testing report were performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at 1A/F., Bldg.6, Yusheng Industrial Zone, The National Road No.107 Xixiang Section 467, Xixiang, Bao'an, Shenzhen, Guangdong, China. At the time of testing, the following bodies accredited the Laboratory:

### **CNAS (L5813)**

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

### FCC List No.: (811562)

The Laboratory is listed in the United States of American Federal Communications Commission (FCC), and the registration number is 811562.

### IC Registration No.: (11950A-1)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A-1.



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## 2. Test Summary

	FCC Part 15 Subpart C(15.247)/ RSS 247 Issue 1						
Standard Section		Totalitano		_			
FCC	IC	Test Item	Judgment	Remark			
15.203	9	Antenna Requirement	PASS	N/A			
15.207	RSS-GEN 7.2.2	Conducted Emission	PASS	N/A			
15.205	RSS-Gen 7.2.3	Restricted Bands	PASS	N/A			
15.247(a)(1)	RSS 247 5.1 (2)	Hopping Channel Separation	PASS	N/A			
15.247(a)(1)	RSS 247 5.1 (4)	Dwell Time	PASS	N/A			
15.247(b)(1)	RSS 247 5.4 (2)	Peak Output Power	PASS	N/A			
15.247(b)(1)	RSS 247 5.1 (4)	Number of Hopping Frequency	PASS	N/A			
15.247(c)	RSS 247 5.5	Radiated Spurious Emission	PASS	N/A			
15.247(a)	RSS 247 5.1 (1)	99% Occupied Bandwidth & 20dB Bandwidth	PASS	99%OBW GFSK:870.9333kHz π/4-DQPSK: 1163.70kHz 8-DPSK: 1157.60KHz			



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# 3. Test Equipment

Conducte	d Emission Te	st			
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
EMI Test Receiver	Rohde & Schwarz	ESCI	100321	Aug. 07, 2015	Aug. 06, 2016
RF Switching Unit	Compliance Direction Systems Inc	RSU-A4	34403	Aug. 07, 2015	Aug. 06, 2016
AMN	SCHWARZBECK	NNBL 8226-2	8226-2/164	Aug. 07, 2015	Aug. 06, 2016
LISN	Rohde & Schwarz	ENV216	101131	Aug. 08, 2015	Aug. 07, 2016
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	
Spectrum Analyzer EMI Test	Agilent	E4407B	MY45106456	Aug. 29, 2015	Aug. 28, 2016
Receiver	Rohde & Schwarz	ESCI	100010/007	Aug. 07, 2015	Aug. 06, 2016
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Mar. 26, 2016	Mar. 25, 2017
Bilog Antenna	ETS-LINDGREN	3142E	00117542	Mar. 26, 2016	Mar. 25, 2017
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar. 26, 2016	Mar. 25, 2017
Horn Antenna	ETS-LINDGREN	3117	00143209	Mar. 26, 2016	Mar. 25, 2017
Pre-amplifier	Sonoma	310N	185903	Mar. 26, 2016	Mar. 25, 2017
Pre-amplifier	HP	8447B	3008A00849	Mar. 26, 2016	Mar. 25, 2017
Cable	HUBER+SUHNER	100	SUCOFLEX	Mar. 26, 2016	Mar. 25, 2017
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A



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### 4. Conducted Emission Test

#### 4.1 Test Standard and Limit

4.1.1Test Standard FCC Part 15.207

#### 4.1.2 Test Limit

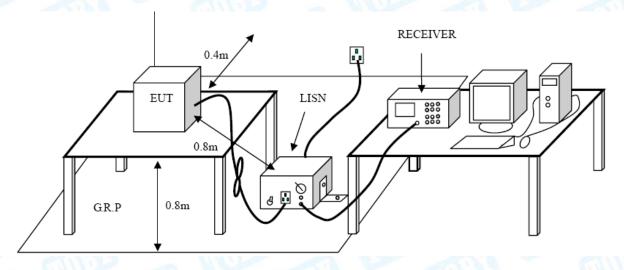
### **Conducted Emission Test Limit**

Eroguonov	Maximum RF Line Voltage (dBμV)				
Frequency	Quasi-peak Level	Average Level			
150kHz~500kHz	66 ~ 56 *	56 ~ 46 *			
500kHz~5MHz	56	46			
5MHz~30MHz	60	50			

#### Notes:

- (1) \*Decreasing linearly with logarithm of the frequency.
- (2) The lower limit shall apply at the transition frequencies.
- (3) The limit decrease in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

### 4.2 Test Setup



### 4.3 Test Procedure

The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/50uH of coupling impedance for the measuring instrument.

Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.



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I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

LISN at least 80 cm from nearest part of EUT chassis

The bandwidth of EMI test receiver is set at 9kHz, and the test frequency band is from 0.15MHz to 30MHz.

### 4.4 EUT Operating Mode

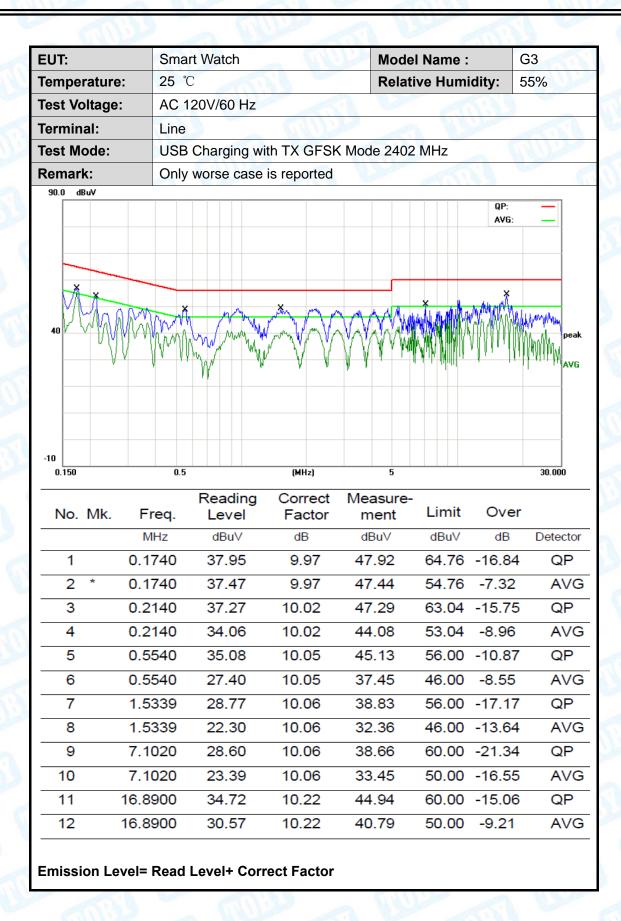
Please refer to the description of test mode.

### 4.5 Test Data

Test data please refer the following pages.



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EUT:		Smart V	Vatch		Mode	l Name :		G3
Temperat	ure:	25 ℃		13	Relat	ive Humic	dity:	55%
Test Volta	age:	AC 120'	V/60 Hz			1	CAN	
Terminal:		Neutral		WILL S		I KR		
Test Mod	e:	USB Ch	narging wit	th TX GFSK	Mode 2402	2 MHz	a 1	Milliam
Remark:		Only wo	rse case	is reported	Com			
90.0 dBuV			War war wat of the				QP: AVG:	peak AVG
0.150		0.5 R	eading	(MHz) Correct	5 Measure-			30.000
No. M	k. Fr		Level	Factor	ment	Limit	Over	
			dBuV	dB	dBu∨	dBu∨	dB	Detector
1	0.17		34.66	9.97	44.63	64.76 -		QP
2	0.17		34.02	9.97	43.99	54.76 -		AVG
3	0.21		33.47	10.02	43.49	63.04 -		QP
4	0.21		31.88	10.02	41.90	53.04 -		AVG
5	0.55		36.05	10.05	46.10	56.00		QP
6 *	0.55		28.38	10.05	38.43	46.00		AVG
7	1.53		28.50	10.06	38.56	56.00 -		QP
8	7.10		22.08	10.06	32.14	46.00 -		AVG
10	7.10		28.83 23.54	10.06	38.89	60.00 -: 50.00 -		QP AVG
10	7.10	20 2	20.04	10.00	55.00	50.00 -	10.40	710

42.74

41.07

10.22

10.22

60.00 -17.26

50.00 -8.93

**Emission Level= Read Level+ Correct Factor** 

32.52

30.85

16.8260

16.8260

11

12

QP

AVG

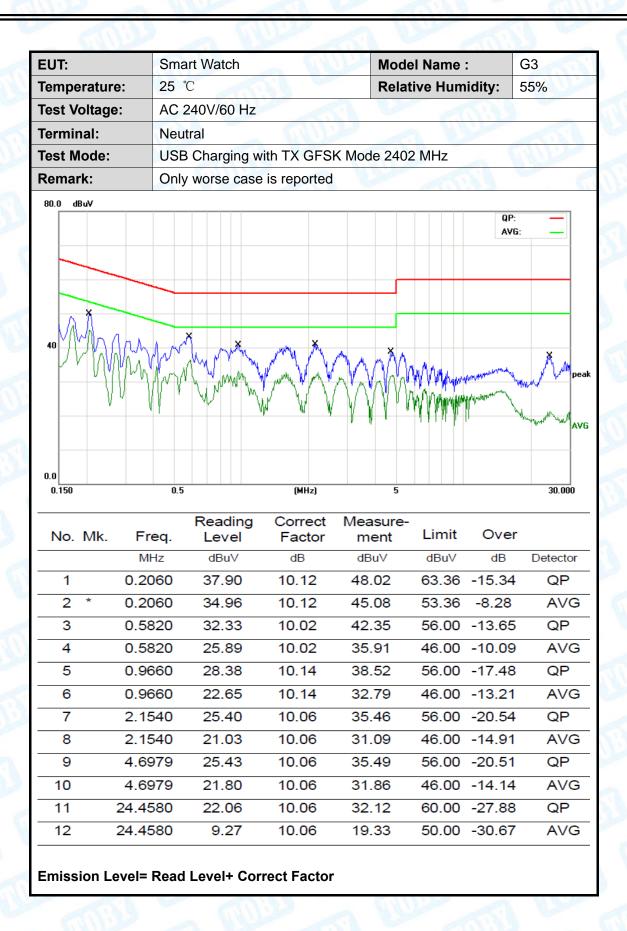


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EUT:		Smart	Watch	2 Parti	Mode	l Name :		G3
Гетре	rature:	25 ℃		11	Relati	ive Humi	idity:	55%
Test Vo	oltage:	AC 24	0V/60 Hz		1 6		64.7	
Termin	al:	Line				1 M.		
Test M	ode:	USB C	Charging wi	th TX GFSK	Mode 2402	MHz	- 1	Miles
Remar	k:	Only w	vorse case	is reported	1	100	19	- 6
80.0 dE	Bu∀						OD	
40					\^\^\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	V/V/Mag/fi/	QP: AVG:	peak
0.0								
	Mk. F	req.	Reading Level	Correct Factor	Measure- ment	Limit	Over	30.000
			_	Correct	Measure-	<b>Limit</b>	Over	30.000 Detector
	N	req.	Level	Correct Factor	Measure- ment	dBuV		
	0.2	req.	Level dBuV	Correct Factor	Measure- ment	dBuV	dB	Detector
No.	0.2 * 0.2	req. IHz	dBuV 38.01	Correct Factor dB 10.02	Measure- ment dBuV 48.03	dBuV 63.36 53.36	dB -15.33	Detector QP
No.	0.2 * 0.2 0.5	req. 1Hz 2060	dBuV 38.01 35.09	Correct Factor dB 10.02 10.02	Measure- ment dBuV 48.03 45.11	dBuV 63.36 53.36	dB -15.33 -8.25	Detector QP AVG QP
No. 1 2 3	* 0.2 * 0.5 0.5	req. 1Hz 2060 2060 8660	dBuV 38.01 35.09 32.27	Correct Factor dB 10.02 10.02 10.06	Measure- ment dBuV 48.03 45.11 42.33	dBuV 63.36 53.36 56.00 46.00	dB -15.33 -8.25 -13.67	Detector QP AVG
No. 1 2 3 4	* 0.2 * 0.2 0.5 0.5	req. 1Hz 2060 2060 860	dBuV 38.01 35.09 32.27 26.62	Correct Factor dB 10.02 10.02 10.06	Measure- ment dBuV 48.03 45.11 42.33 36.68	dBuV 63.36 53.36 56.00 46.00 56.00	dB -15.33 -8.25 -13.67 -9.32	Detector QP AVG QP AVG
No.  1 2 3 4 5	* 0.2 * 0.2 0.5 0.5 0.9	req. 1Hz 2060 2060 860 860 660	dBuV 38.01 35.09 32.27 26.62 28.52 22.65	Correct Factor dB 10.02 10.02 10.06 10.06 10.07	Measure- ment dBuV 48.03 45.11 42.33 36.68 38.59 32.72	dBuV 63.36 53.36 56.00 46.00 56.00	dB -15.33 -8.25 -13.67 -9.32 -17.41 -13.28	Detector QP AVG QP AVG QP AVG
No.  1 2 3 4 5 6 7	* 0.2 * 0.2 0.5 0.5 0.9 0.9	req. 1Hz 2060 2060 860 860 660 940	dBuV 38.01 35.09 32.27 26.62 28.52 22.65 26.59	Correct Factor dB 10.02 10.02 10.06 10.06 10.07 10.07	Measure- ment dBuV 48.03 45.11 42.33 36.68 38.59 32.72 36.65	dBuV 63.36 53.36 56.00 46.00 46.00 56.00	dB -15.33 -8.25 -13.67 -9.32 -17.41 -13.28 -19.35	Detector QP AVG QP AVG QP AVG
No.  1 2 3 4 5 6 7 8	* 0.2 * 0.2 0.5 0.5 0.9 0.9 1.5	req. 1Hz 2060 2060 860 860 660 940 940	dBuV 38.01 35.09 32.27 26.62 28.52 22.65 26.59 21.36	Correct Factor  dB  10.02  10.02  10.06  10.07  10.07  10.06  10.06	Measure- ment dBuV 48.03 45.11 42.33 36.68 38.59 32.72 36.65 31.42	dBuV 63.36 53.36 56.00 46.00 46.00 46.00	dB -15.33 -8.25 -13.67 -9.32 -17.41 -13.28 -19.35 -14.58	Detector QP AVG QP AVG QP AVG AVG
No.  1 2 3 4 5 6 7 8	* 0.2 * 0.2 0.5 0.5 0.9 0.9 1.5 2.2	req. 1Hz 2060 2060 860 860 660 940 940 2060	dBuV 38.01 35.09 32.27 26.62 28.52 22.65 26.59 21.36 26.18	Correct Factor  dB  10.02  10.02  10.06  10.06  10.07  10.07  10.06  10.06  10.05	Measure- ment dBuV 48.03 45.11 42.33 36.68 38.59 32.72 36.65 31.42 36.23	dBuV 63.36 53.36 56.00 46.00 56.00 46.00 56.00	dB -15.33 -8.25 -13.67 -9.32 -17.41 -13.28 -19.35 -14.58 -19.77	Detector QP AVG QP AVG QP AVG QP AVG
No.  1 2 3 4 5 6 7 8	* 0.2 * 0.2 0.5 0.5 0.9 0.9 1.5 2.2	req. 1Hz 1060 1060 1860 1860 1940 1940 1060	dBuV 38.01 35.09 32.27 26.62 28.52 22.65 26.59 21.36	Correct Factor  dB  10.02  10.02  10.06  10.07  10.07  10.06  10.06	Measure- ment dBuV 48.03 45.11 42.33 36.68 38.59 32.72 36.65 31.42	dBuV 63.36 53.36 56.00 46.00 56.00 46.00 56.00 46.00	dB -15.33 -8.25 -13.67 -9.32 -17.41 -13.28 -19.35 -14.58	Detector QP AVG QP AVG QP AVG



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## 5. Radiated Emission Test

### 5.1 Test Standard and Limit

5.1.1 Test Standard FCC Part 15.209

5.1.2 Test Limit

### Radiated Emission Limit (9 kHz~1000MHz)

Frequency (MHz	Field Strength (microvolt/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

### Radiated Emission Limit (Above 1000MHz)

Frequency	Class B (dBuV/m)(at 3m)				
(MHz)	Peak	Average			
Above 1000	74	54			

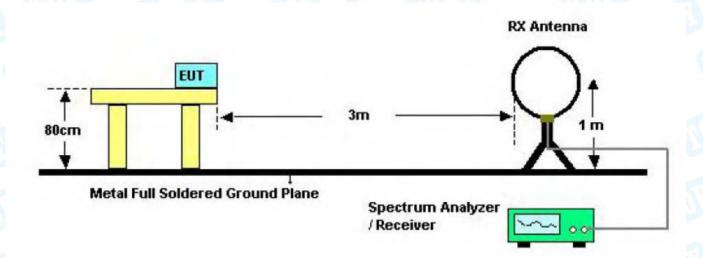
### Note:

- (1) The tighter limit applies at the band edges.
- (2) Emission Level (dBuV/m)=20log Emission Level (uV/m)

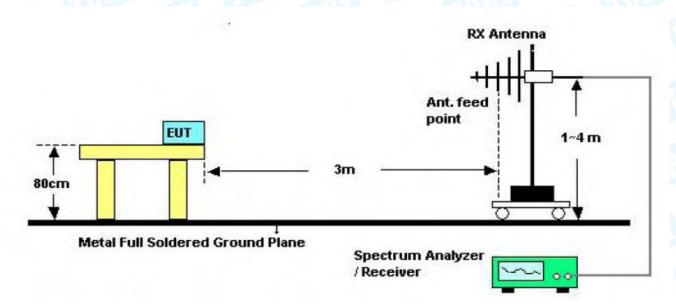


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## 5.2 Test Setup



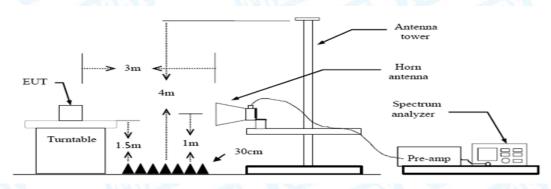
Bellow 30MHz Test Setup



**Bellow 1000MHz Test Setup** 



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**Above 1GHz Test Setup** 

### 5.3 Test Procedure

- (1) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1 GHz. The EUT was placed on a rotating 0.8m high above ground, the table was rotated 360 degrees to determine the position of the highest radiation.
- (2) Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.
- (3) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.
- (4) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- (5) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- (6) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (7) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- (8) For the actual test configuration, please see the test setup photo.

### 5.4 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power in TX mode.

#### 5.5 Test Data

Remark: During testing above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=1 kHz with Peak Detector for Average Values.

Test data please refer the following pages.



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emperature:	Smart Watch	2 CALL	Model	Name :	G3
	25 ℃	27	Relativ	e Humidity:	55%
est Voltage:	DC 3.7V		6300		
nt. Pol.	Horizontal			Marie	
est Mode:	TX GFSK Mode	2402MHz			Millian
Remark:	Only worse case	e is reported	Charles of		
40 40 30.000 40 50	60 70 80	(MHz)		5 6 X	iation in -6 dB
No. Mk. Fr	Reading req. Level	Correct M Factor	leasure- ment L	imit Ove	er
M	Hz dBuV	dB/m	dBuV/m (	dBuV/m dE	B Detector
1 54.2	2610 55.19	-24.45	30.74	40.00 -9.2	26 peak
2 88.0	327 56.94	-22.81	34.13	43.50 -9.	37 peak
	0414 58.86	-20.65	38.21	43.50 -5.2	29 peak
3 ! 162.			40.00	40.00	70 peak
	9874 60.89	-18.59	42.30	46.00 -3.	10 pear
4 * 239.	9874 60.89 5228 52.76	-18.59 -12.84		46.00 -3. 46.00 -6.0	



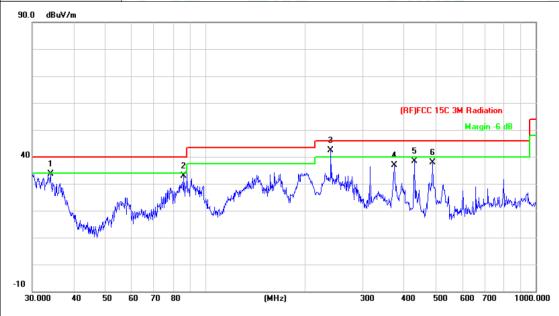
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25 ℃					
		Relative Humidity:			MAL
DC 3.7V				13	
Vertical	THE STATE OF THE S		Min		100
TX GFSK Mode 2	402MHz		9	GI	صفيل
Only worse case i	s reported	Charles			
3 4	5	6	nth Math	Margin -6	raykrolods.
60 70 80 	(MHZ)		400 500	600 700	1000.000
Reading req. Level	Correct Factor	Measure- ment	Limit	Over	
lHz dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detecto
3278 51.22	-16.02	35.20	40.00	-4.80	peak
9658 57.31	-21.84	35.47	40.00	-4.53	peak
9128 59.21	-23.80	35.41	40.00	-4.59	peak
7600 60.55	-22.28	38.27	43.50	-5.23	peak
0680 62.95	-20.91	42.04	43.50	-1.46	peak
9874 58.90	-18.59	40.31	46.00	-5.69	peak
	Vertical TX GFSK Mode 2 Only worse case i  Reading Level Hz dBuV 3278 51.22 9658 57.31 9128 59.21 7600 60.55 0680 62.95	Vertical  TX GFSK Mode 2402MHz  Only worse case is reported  Reading Correct Factor  Hz dBuV dB/m  3278 51.22 -16.02  9658 57.31 -21.84  9128 59.21 -23.80  7600 60.55 -22.28  0680 62.95 -20.91	Vertical  TX GFSK Mode 2402MHz  Only worse case is reported  Reading Correct Measure- req. Level Factor ment  Hz dBuV dB/m dBuV/m  3278 51.22 -16.02 35.20  658 57.31 -21.84 35.47  2128 59.21 -23.80 35.41  7600 60.55 -22.28 38.27  0680 62.95 -20.91 42.04	Vertical  TX GFSK Mode 2402MHz  Only worse case is reported  REJECT 15C 3  MHz  Reading Correct Measure- req. Level Factor ment Limit  Hz dBuV dB/m dBuV/m dBuV/m  3278 51.22 -16.02 35.20 40.00  9658 57.31 -21.84 35.47 40.00  9128 59.21 -23.80 35.41 40.00  9128 59.21 -23.80 35.41 40.00  91600 60.55 -22.28 38.27 43.50  91680 62.95 -20.91 42.04 43.50	Vertical  TX GFSK Mode 2402MHz  Only worse case is reported  (REJECC 15C 3M Radiation Margin -6)  Reading Correct Measure- Factor Measure- Hz dBuV dB/m dBuV/m dBuV/m dB  3278 51.22 -16.02 35.20 40.00 -4.80  3278 57.31 -21.84 35.47 40.00 -4.53  3128 59.21 -23.80 35.41 40.00 -4.59  3600 60.55 -22.28 38.27 43.50 -5.23



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EUT:	Smart Watch	Model Name :	G3
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	TX π/4-DQPSK Mode 2402MHz	111:32	MILLER
Remark:	Only worse case is reported		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		34.0363	50.02	-16.46	33.56	40.00	-6.44	peak
2		86.2001	55.70	-22.92	32.78	40.00	-7.22	peak
3	*	239.9874	60.89	-18.59	42.30	46.00	-3.70	peak
4		373.3110	51.27	-14.47	36.80	46.00	-9.20	peak
5		429.5228	51.26	-12.84	38.42	46.00	-7.58	peak
6		487.3149	49.45	-11.65	37.80	46.00	-8.20	peak

<sup>\*:</sup>Maximum data x:Over limit !:over margin



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Page:

			Sma	rt Wate	ch	e AA	N	/lode	l Name	e :	G3	
Tempe	erature	:	25 °	C		18	F	Relativ	ve Hum	idity:	559	%
Test V	oltage:		DC 3	3.7V	MA		V I		A			
Ant. P	ol.		Verti	cal		UIII.		1	11/1			
Test N	lode:		TX	π <b>/4-D</b> 0	QPSK	Mode 2402	2MHz	133	3	١		M. San
Rema	rk:		Only	worse	case	is reported	W			8.0		
90.0 d	lBuV/m											
40	AN A	Miles	4					*******	(RF)FCC	15C 3M Rai	diation rgin -6	
-10 30.000	1 40	50	60 70	) 80		(MHz)		300	400	500 600	700	1000.00
				Rea	ding	Correct	Measu	ıre-				1000.00
30.000	. Mk.	Fre MH	eq.		vel		Measu men	ire-	400 Limit	Ove	er	1000.00
30.000	. Mk.	Fre	eq.	Rea Le	vel uV	Correct Factor	men	ire- t	Limit	Ove	er	
30.000 No.	. Mk.	Fre	eq. z 140	Rea Lev	vel u∨ .08	Correct Factor	men dBuV/	ire- t m	Limit dBuV/m	Ove n dB -3.7	er 17	Detecto
No.	. Mk. * (	Fre MH 80.64	eq. z 140	Rea Lev dB	vel uV .08 .94	Correct Factor dB/m -23.25	men dBuV/ 36.8	ire- t m 3	Limit dBuV/m	Ove -3.7	er 17	Detecto peak
No.	. Mk. * 6 ! !	Fre MH 80.64 94.09	eq. z 140 978 680	Rea Lev dB 60.	vel uV .08 .94	Correct Factor dB/m -23.25 -22.33	men dBuV/ 36.8 38.6	ire- t m 3 1	Limit dBuV/m 40.00 43.50	Ove -3.7 -4.8	er 17 39	Detecto peak peak
No.	. Mk. * 6 ! 9	Fre MH 80.64 94.09	eq. z 140 978 680	Rea Lev dB 60.	vel uV .08 .94 .45	Correct Factor dB/m -23.25 -22.33 -20.91	men dBuV/ 36.8 38.6 38.5	ire- t /m 3 1 4 3	Limit  dBuV/m  40.00  43.50  43.50	Ove -3.7 -4.8 -4.9 -6.0	er 17 39 96	Detector peak peak peak



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EUT:	Smart Water	h	Mod	lel Name :	G3
Temperature:	25 ℃ Relative Humidity:				55%
Test Voltage:	DC 3.7V				
Ant. Pol.	Horizontal			a William	
Test Mode:	TX 8-DPSK	Mode 2402MH	z (M)	ام الا	amm
Remark:	Only worse	case is reported	b		
90.0 dBuV/m					
				(RF)FCC 15C 3M	Radiation
					Aargin -6 dB
40		, 3	3 6 4		
	W Allen		My / "\		
harridaha ja	PANA LIMBORY YANA	The man of the	W "Myddin		Mahlandy Ma
And Million Al	Marphaple	Alba		, Man	
1 4 1					
30.000 40 50	60 70 80	(MHz)	300	400 500 60	0 700 1000.000
30.000 40 30	00 70 00	(MIZ)	300	400 500 60	0 700 1000.000
	Read		Measure-	Limit O	
	eq. Lev		ment		/er
MI	Hz dBu	V dB/m	dBuV/m	dBuV/m c	IB Detector
1 86.2	001 55.2	20 -22.92	32.28	40.00 -7	.72 peak
2 142.3	3240 56.4	10 -21.80	34.60	43.50 -8	.90 peak
3 162.0	0414 56.8	36 -20.65	36.21	43.50 -7	.29 peak
4 191.7	7450 54.9	90 -20.81	34.09	43.50 -9	.41 peak
5 * 239.9	9874 59.3	39 -18.59	40.80	46.00 -5	.20 peak
6 252.9	9482 55.7	79 -18.05	37.74	46.00 -8	.26 peak
					-
*:Maximum data x:C	Over limit !:over	margin			

TB-RF-074-1.0



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ΕU	T:		Sr	mart	Wa	tch			Mo	odel	Nan	ne :		G3	
Ten	nperat	ure:	25	<b>25</b> ℃			Re	lative	e Hu	midi	ty:	55%	ó		
Tes	t Volta	ge:	D	OC 3.7V											
Ant	. Pol.		Ve	'ertical								1			
Tes	TX 8-DPSK Mode 2402MHz							سائرا							
Rer	mark:		O	nly v	vors	e case	is report	ed			A	N	Ŋ		
90.0	O dBuV/n	n													
40		w.U.M	الأوانس والمرادة	2	<b>1</b>		3	4 5 ************************************	6 G		REJECC	15C 3N		n-6 dB	J-di.,
-10	).000     4	10 50	60	70	80		(MHz)		300		400	500	600 7	00 10	000.000

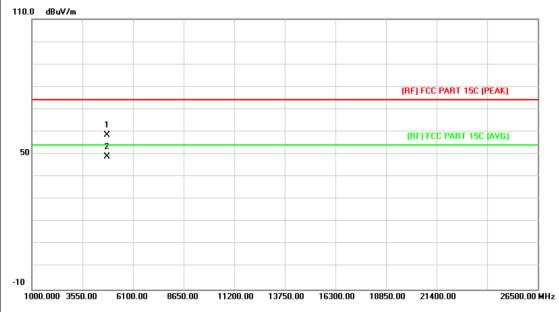
	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
			MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		ļ	34.0363	53.17	-16.46	36.71	40.00	-3.29	peak
2	-	İ	75.7112	57.79	-23.42	34.37	40.00	-5.63	peak
3	3	*	166.0680	61.45	-20.91	40.54	43.50	-2.96	peak
4			191.7450	58.24	-20.81	37.43	43.50	-6.07	peak
5	5		239.9874	57.90	-18.59	39.31	46.00	-6.69	peak
6	6		315.4806	55.16	-16.50	38.66	46.00	-7.34	peak

<sup>\*:</sup>Maximum data x:Over limit !:over margin



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EUT:	Smart Watch	Model Name :	G3					
Temperature:	25 ℃	Relative Humidity:	55%					
Test Voltage:	DC 3.7V							
Ant. Pol.	Horizontal	Horizontal						
Test Mode:	TX GFSK Mode 2402MHz	10:30	MILLER					
Remark:	No report for the emission which more than 10 dB below the prescribed limit.							

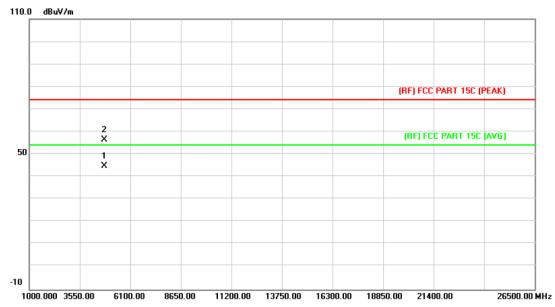


No	. Mk	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4803.787	45.07	13.44	58.51	74.00	-15.49	peak
2	*	4803.787	35.62	13.44	49.06	54.00	-4.94	AVG



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EUT:	Smart Watch	Model Name :	G3				
Temperature:	<b>25</b> ℃	Relative Humidity:	55%				
Test Voltage:	DC 3.7V						
Ant. Pol.	Vertical						
Test Mode:	TX GFSK Mode 2402MHz	11:30	Millian				
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						

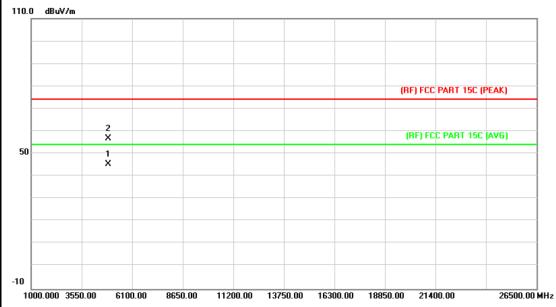


No	o. Mk	. Freq.			Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4802.111	31.35	13.43	44.78	54.00	-9.22	AVG
2		4802.713	42.88	13.43	56.31	74.00	-17.69	peak



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EUT:	Smart Watch	Model Name :	G3					
Temperature:	<b>25</b> ℃	Relative Humidity:	55%					
Test Voltage:	DC 3.7V							
Ant. Pol.	Horizontal							
Test Mode:	TX GFSK Mode 2441MHz		Millian					
Remark:	Remark: No report for the emission which more than 10 dB below the prescribed limit.							



No	. Mk	. Freq.	_		Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4882.087	31.33	13.90	45.23	54.00	-8.77	AVG
2		4882.603	42.82	13.90	56.72	74.00	-17.28	peak



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EUT:	Smart Watch	Model Name :	G3				
Temperature:	<b>25</b> ℃	Relative Humidity:	55%				
Test Voltage:	DC 3.7V						
Ant. Pol.	Vertical						
Test Mode:	TX GFSK Mode 2441MHz	M:30	MILL				
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						

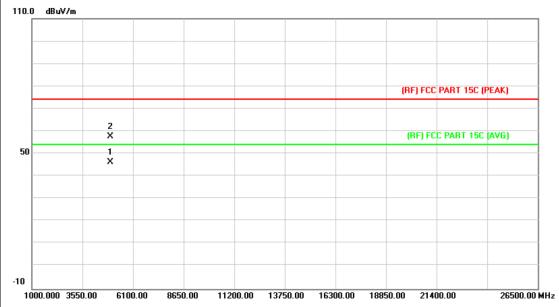


N	<b>l</b> o.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1	,	*	4882.586	31.34	13.90	45.24	54.00	-8.76	AVG
2			4882.835	42.88	13.90	56.78	74.00	-17.22	peak



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EUT:	Smart Watch	Model Name :	G3				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	DC 3.7V						
Ant. Pol.	Horizontal						
Test Mode:	TX GFSK Mode 2480MHz	17:33	Millian				
Remark: No report for the emission which more than 10 dB below the prescribed limit.							



No	. Mk	. Freq.	_		Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4959.487	31.77	14.36	46.13	54.00	-7.87	AVG
2		4960.981	43.31	14.36	57.67	74.00	-16.33	peak



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EUT:	Smart Watch	Model Name :	G3				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	DC 3.7V	DC 3.7V					
Ant. Pol.	Vertical	THE PARTY NAMED IN					
Test Mode:	TX GFSK Mode 2480MHz		Millian				
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						

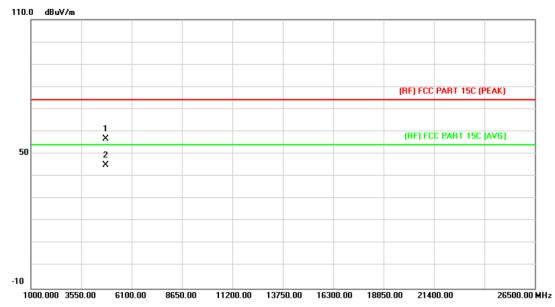


No. Mk.		Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		*	4959.961	32.10	14.36	46.46	54.00	-7.54	AVG
2			4960.144	43.54	14.36	57.90	74.00	-16.10	peak



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EUT:	Smart Watch	Model Name :	G3			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	DC 3.7V					
Ant. Pol.	Horizontal	The state of the s				
Test Mode:	TX 8-DPSK Mode 2402MHz	M:N	MILLER			
Remark:	No report for the emission which more than 10 dB below the prescribed limit.					



No	o. Mk	Freq.	_		Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4803.229	43.23	13.44	56.67	74.00	-17.33	peak
2	*	4804.105	31.73	13.44	45.17	54.00	-8.83	AVG



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EUT:	Smart Watch	Model Name :	G3				
Temperature:	25 ℃	25 ℃ Relative Humidity: 55%					
Test Voltage:	DC 3.7V	DC 3.7V					
Ant. Pol.	Vertical						
Test Mode:	TX 8-DPSK Mode 2402MHz		THE				
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						



N	o. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4804.546	31.46	13.44	44.90	54.00	-9.10	AVG
2		4804.603	43.25	13.44	56.69	74.00	-17.31	peak



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EUT:	Smart Watch	Model Name :	G3				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	ge: DC 3.7V						
Ant. Pol.	Horizontal						
Test Mode:	TX 8-DPSK Mode 2441MHz	TX 8-DPSK Mode 2441MHz					
Remark:	No report for the emission which more than 10 dB below the prescribed limit.						

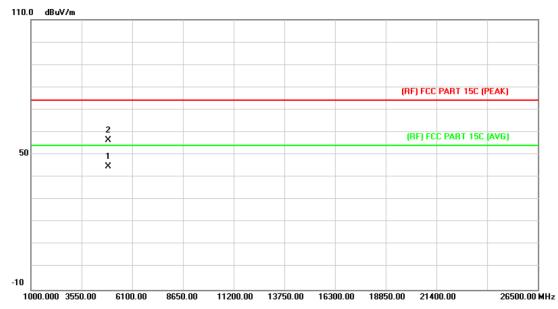


No	. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4882.223	30.96	13.90	44.86	54.00	-9.14	AVG
2		4882.445	42.92	13.90	56.82	74.00	-17.18	peak



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EUT:	Smart Watch	Model Name :	G3					
Temperature:	25 ℃	Relative Humidity:	55%					
Test Voltage:	DC 3.7V							
Ant. Pol.	Vertical							
Test Mode:	TX 8-DPSK Mode 2441MHz	11:30	Mil					
Remark:	No report for the emission which more than 10 dB below the							
	prescribed limit.							

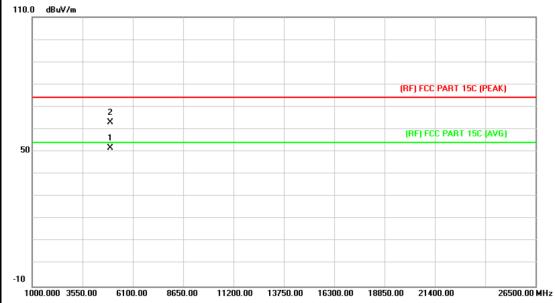


N	lo.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	k	4882.195	30.85	13.90	44.75	54.00	-9.25	AVG
2			4882.759	42.46	13.90	56.36	74.00	-17.64	peak



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EUT:	Smart Watch	Model Name :	G3	
Temperature:	Temperature: 25 ℃ Relative Humidit			
Test Voltage:	DC 3.7V			
Ant. Pol.	Horizontal			
Test Mode:	TX 8-DPSK Mode 2480MHz		Millian	
Remark:	No report for the emission which represcribed limit.	nore than 10 dB below t	he	

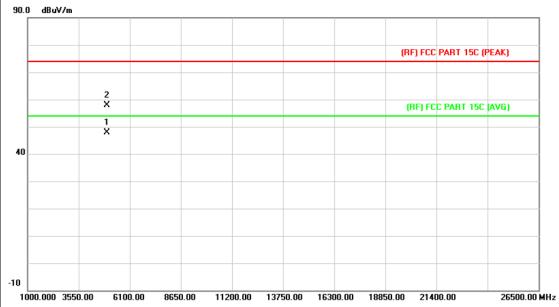


N	0.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		*	4960.267	37.24	14.36	51.60	54.00	-2.40	AVG
2			4960.741	48.79	14.36	63.15	74.00	-10.85	peak



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EUT:	Smart Watch	Model Name :	G3				
Temperature:	25 ℃	25 °C Relative Humidity: 55%					
Test Voltage:	DC 3.7V						
Ant. Pol.	Vertical						
Test Mode:	TX 8-DPSK Mode 2480MHz	11:32	Millian				
Remark:	No report for the emission which more prescribed limit.	ore than 10 dB below th	ne				
00.0 40.44							



No	o. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4959.831	33.50	14.36	47.86	54.00	-6.14	AVG
2		4960.359	43.57	14.36	57.93	74.00	-16.07	peak



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## 6. Restricted Bands Requirement

## 6.1 Test Standard and Limit

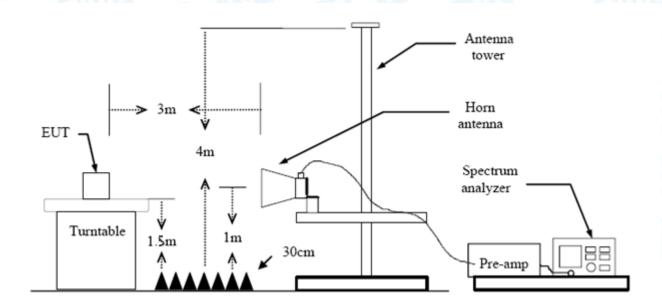
6.1.1 Test Standard FCC Part 15.209 FCC Part 15.205

6.1.2 Test Limit

Restricted Frequency	Class B (dE	BuV/m)(at 3m)
Band (MHz)	Peak	Average
2310 ~2390	74	54
2483.5 ~2500	74	54

Note: All restriction bands have been tested, only the worst case is reported.

## 6.2 Test Setup



## 6.3 Test Procedure

- (1) The measuring distance of 3m shall be used for measurements at frequency up to 1GHz and above 1 GHz. The EUT was placed on a rotating 0.8m high above ground, the table was rotated 360 degrees to determine the position of the highest radiation.
- (2) Measurements at frequency above 1GHz. The EUT was placed on a rotating 1.5m high above the ground. RF absorbers covered the ground plane with a minimum area of 3.0m by 3.0m between the EUT and measurement receiver antenna. The RF absorber shall not exceed 30cm in high above the conducting floor. The table was rotated 360 degrees to determine the position of the highest radiation.



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(3) The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set to make measurement.

- (4) The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- (5) If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit Bellow 1 GHz, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. But the Peak Value and average value both need to comply with applicable limit above 1 GHz.
- (6) Testing frequency range below 1GHz the measuring instrument use VBW=120 kHz with Quasi-peak detection.
- (7) Testing frequency range above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=10 Hz with Peak Detector for Average Values.
- (8) For the actual test configuration, please see the test setup photo.

## 6.4 EUT Operating Condition

The Equipment Under Test was set to Continual Transmitting in maximum power.

## 6.4 Test Data

Remark: During testing above 1GHz the measuring instrument use RBW=1 MHz and VBW=3 MHz with Peak Detector for Peak Values, and use RBW=1 MHz and VBW=1 KHz with Peak Detector for Average Values.

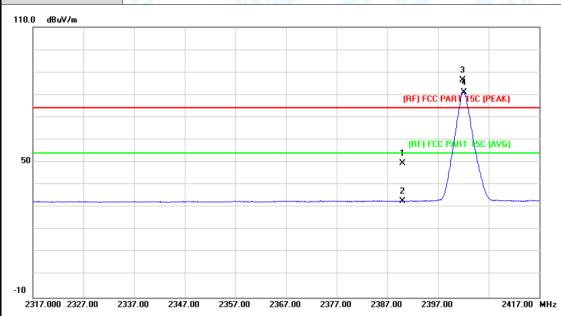
All restriction bands have been tested, only the worst case is reported.



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## (1) Radiation Test

EUT:	Smart Watch	Model Name :	G3
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal	7:33	Millian
Test Mode:	TX GFSK Mode 2402MHz		
Remark:	N/A	THE PARTY OF THE P	1



N	o. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	48.82	0.77	49.59	74.00	-24.41	peak
2		2390.000	31.86	0.77	32.63	54.00	-21.37	AVG
3	Χ	2401.900	85.70	0.82	86.52	Fundamenta	l Frequency	peak
4	*	2402.100	80.38	0.82	81.20	Fundamenta	l Frequency	AVG



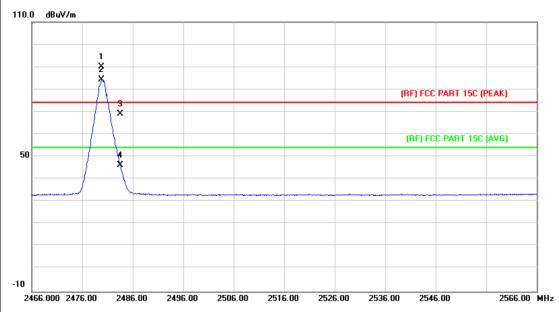
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EUT:	Smart Watch	0.11	Model Name :	G3
Temperature:	25 ℃	3	Relative Humidity:	55%
Test Voltage:	DC 3.7V			133
Ant. Pol.	Vertical	WILL:		
Test Mode:	TX GFSK Mode 24	02MHz		THE PROPERTY OF
Remark:	N/A	-0		
110.0 dBuV/m				
50				PART 15C (PEAK)
-10				
	Reading (eq. Level	Correct Factor	2375.00 2385.00 2395  Measure- ment Limit	.00 2415.00 MHz
MI	Hz dBuV	dB/m	dBuV/m dBuV/m	dB Detector
1 2390.	.000 50.57	0.77	51.34 74.00	-22.66 peak
2 2390.	.000 32.25	0.77	33.02 54.00	-20.98 AVG
3 X 2402.	.000 88.16	0.82	88.98 Fundament	tal Frequency peak
4 * 2402	.000 82.84	0.82	83.66 Fundament	tal Frequency AVG



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EUT:	Smart Watch	Model Name :	G3				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	DC 3.7V		133				
Ant. Pol.	Horizontal						
Test Mode:	TX GFSK Mode 2480 MHz	TX GFSK Mode 2480 MHz					
Remark:	N/A	100					

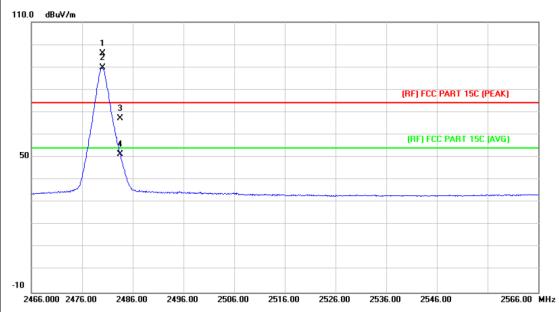


No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	Χ	2479.800	88.83	1.15	89.98	Fundamental F	requency	peak
2	*	2479.800	83.28	1.15	84.43	Fundamental F	requency	AVG
3		2483.500	67.95	1.17	69.12	74.00	-4.88	peak
4		2483.500	44.97	1.17	46.14	54.00	-7.86	AVG



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EUT:	Smart Watch	Model Name :	G3
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		133
Ant. Pol.	Vertical		
Test Mode:	TX GFSK Mode 2480 MHz		LITTLE OF
Remark:	N/A		

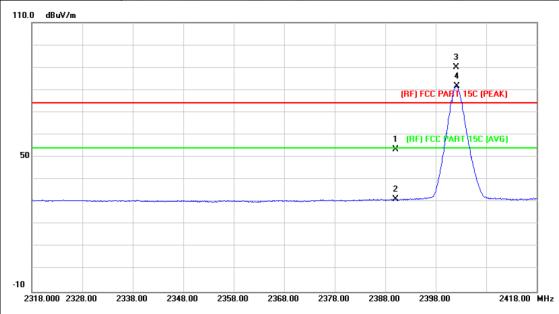


١	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
			MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		X	2480.000	94.79	1.15	95.94	Fundamenta	I Frequency	peak
2		*	2480.100	88.65	1.15	89.80	Fundamenta	Frequency	AVG
3			2483.500	66.02	1.17	67.19	74.00	-6.81	peak
4			2483.500	50.29	1.17	51.46	54.00	-2.54	AVG



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EUT:	Smart Watch	Model Name :	G3			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	DC 3.7V					
Ant. Pol.	Horizontal	Horizontal				
Test Mode:	TX 8-DPSK Mode 2402MHz					
Remark:	N/A					

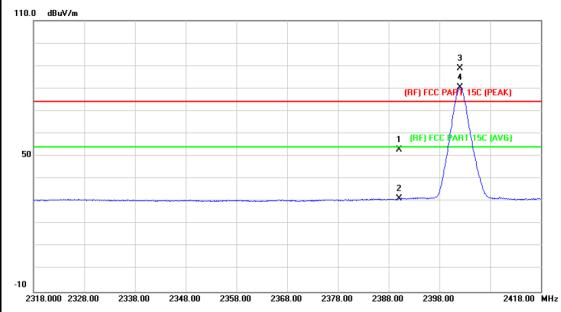


No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	52.62	0.77	53.39	74.00	-20.61	peak
2		2390.000	30.38	0.77	31.15	54.00	-22.85	AVG
3	Χ	2402.000	89.35	0.82	90.17	Fundamenta	al Frequency	peak
4	*	2402.200	80.74	0.82	81.56	Fundamenta	al Frequency	AVG



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EUT:	Smart Watch	Model Name :	G3		
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	DC 3.7V				
Ant. Pol.	Vertical				
Test Mode:	TX 8-DPSK Mode 2402MHz				
Remark: N/A					
110.0 dBuV/m					

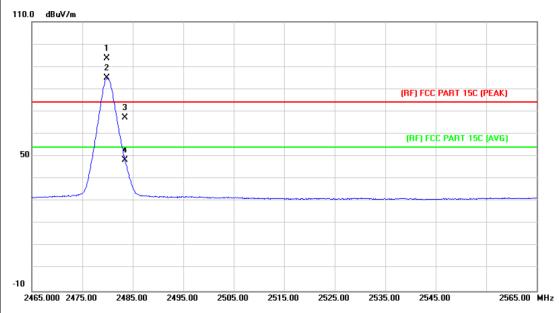


No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	51.97	0.77	52.74	74.00	-21.26	peak
2		2390.000	30.37	0.77	31.14	54.00	-22.86	AVG
3	Χ	2402.100	88.01	0.82	88.83	Fundamental	Frequency	peak
4	*	2402.100	79.62	0.82	80.44	Fundamental	Frequency	AVG



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EUT:	Smart Watch	Model Name :	G3		
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	DC 3.7V				
Ant. Pol.	Horizontal				
Test Mode:	TX 8-DPSK Mode 2480MHz				
Remark:	N/A				

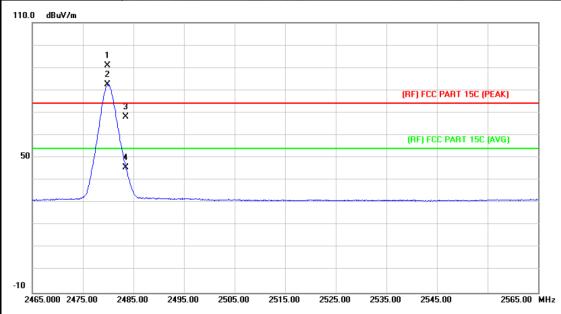


	No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
			MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		X	2479.900	92.44	1.15	93.59	Fundamental	Frequency	peak
2		*	2479.900	83.66	1.15	84.81	Fundamental	Frequency	AVG
3			2483.500	66.08	1.17	67.25	74.00	-6.75	peak
4			2483.500	47.03	1.17	48.20	54.00	-5.80	AVG



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EUT:	Smart Watch	Model Name :	G3			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	DC 3.7V	DC 3.7V				
Ant. Pol.	Vertical	Vertical				
Test Mode:	TX 8-DPSK Mode 2480M	TX 8-DPSK Mode 2480MHz				
Remark:	N/A					

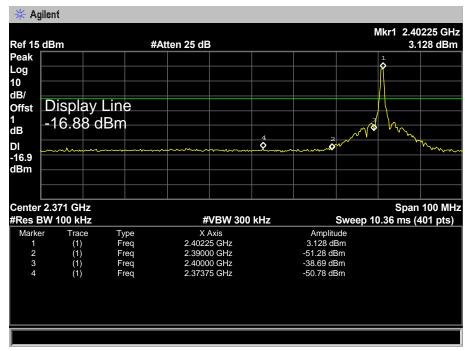


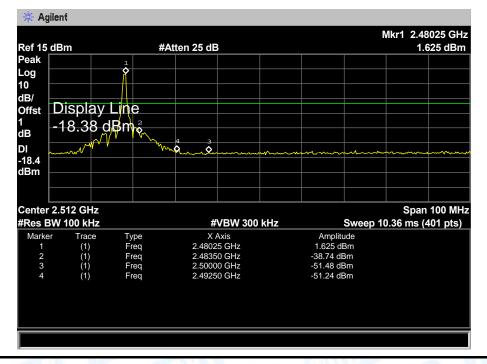
No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1	X	2479.800	89.80	1.15	90.95	Fundamental	Frequency	peak
2	*	2479.900	81.29	1.15	82.44	Fundamental	Frequency	AVG
3		2483.500	67.07	1.17	68.24	74.00	-5.76	peak
4		2483.500	44.35	1.17	45.52	54.00	-8.48	AVG



(2) Conducted Test

EUT:	Smart Watch	Model Name :	G3			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	DC 3.7V					
Test Mode:	TX GFSK Mode 2402MHz / 2480 M	TX GFSK Mode 2402MHz / 2480 MHz				
Remark:	N/A					

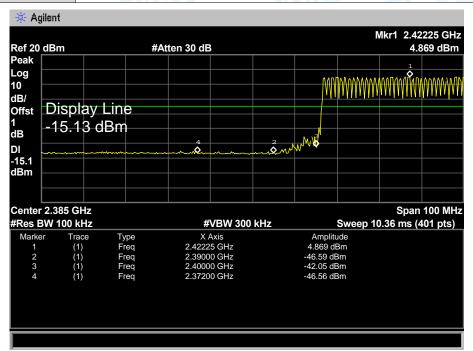


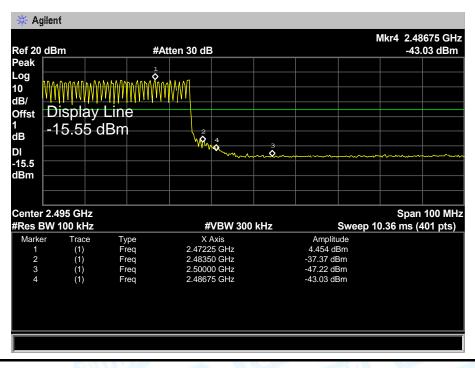




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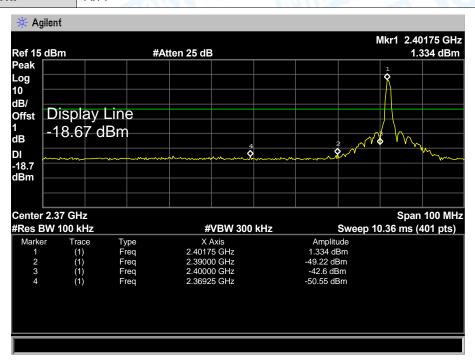
EUT:	Smart Watch	Model Name :	G3		
Temperature:	<b>25</b> ℃	Relative Humidity:	55%		
Test Voltage:	DC 3.7V	The same			
Test Mode:	GFSK Hopping Mode				
Remark:	N/A		MILL		

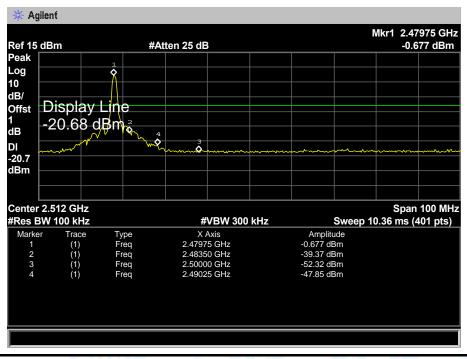






EUT:Smart WatchModel Name :G3Temperature:25 °CRelative Humidity:55%Test Voltage:DC 3.7VTest Mode:TX 8-DPSK Mode 2402MHz / 2480 MHzRemark:N/A

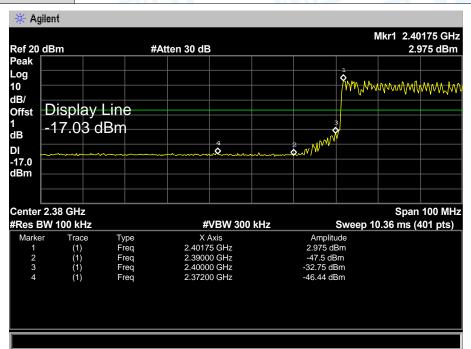


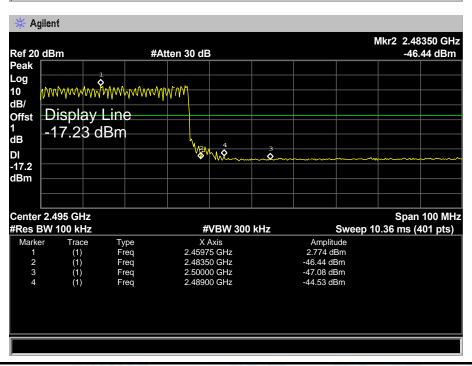




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EUT:	Smart Watch	Model Name :	G3			
Temperature:	<b>25</b> ℃	Relative Humidity:	55%			
Test Voltage:	DC 3.7V					
Test Mode:	8-DPSK Hopping Mode	8-DPSK Hopping Mode				
Remark:	N/A					







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## 7. Number of Hopping Channel

## 7.1 Test Standard and Limit

6.1.1 Test Standard FCC Part 15.247 (a)(1)

6.1.2 Test Limit

Section	Test Item	Limit
15.247	Number of Hopping Channel	>15

## 7.2 Test Setup



## 7.3 Test Procedure

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Spectrum Setting: RBW=100 KHz, VBW=100 KHz, Sweep time= Auto.

## 7.4 EUT Operating Condition

The EUT was set to the Hopping Mode by the Customer.

## 7.5 Test Data



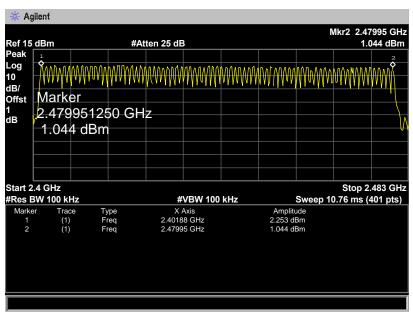
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EUT:	Smart Watch	Model Name :	G3
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		

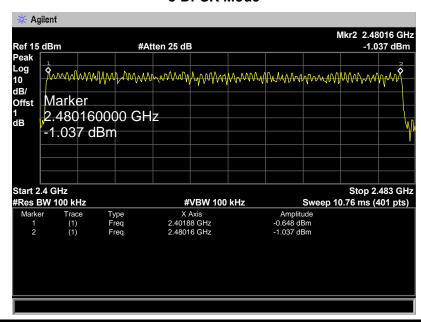
**Test Mode:** Hopping Mode (GFSK/8-DPSK)

Frequency Range	Quantity of Hopping Channel	Limit
2402MH- 2490MH-	79	\1E
2402MHz~2480MHz	79	>15

#### **GFSK Mode**



#### 8-DPSK Mode





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## 8. Average Time of Occupancy

## 8.1 Test Standard and Limit

8.1.1 Test Standard FCC Part 15.247 (a)(1)

8.1.2 Test Limit

Section	Test Item	Limit
15.247(a)(1)/ RSS-210	Average Time of	0.4.000
Annex 8(A8.1d)	Occupancy	0.4 sec

## 8.2 Test Setup



## 8.3 Test Procedure

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Spectrum Setting: RBW=1MHz, VBW=1MHz.
- (3) Use video trigger with the trigger level set to enable triggering only on full pulses.
- (4) Sweep Time is more than once pulse time.
- (5) Set the center frequency on any frequency would be measure and set the frequency span to zero.
- (6) Measure the maximum time duration of one single pulse.
- (7) Set the EUT for packet transmitting.
- (8) Measure the maximum time duration of one single pulse.

## 8.4 EUT Operating Condition

The EUT was set to the Hopping Mode by the Customer.

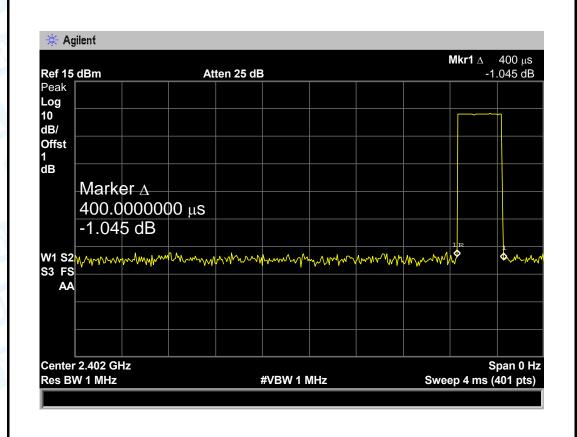


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## 8.5 Test Data

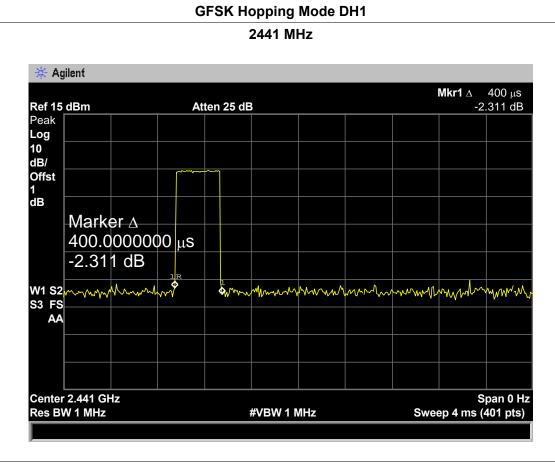
EUT:	Smart Watch		Model Name	:	G3	
Temperature:	<b>25</b> ℃		Relative Humi	dity:	55%	
Test Voltage:	DC 3.7V	DC 3.7V				
Test Mode:	Hopping Mod	de (GFSK DH1)	CHILL ST.		Millian	
Channel	Pulse Time	Total of Dwell	Period Time	Limit	Result	
(MHz)	(ms)	(ms)	(s)	(ms)	Result	
2402	0.400	128.00				
2441	0.400	128.00	31.60	400	PASS	
2480	0.400	128.00				

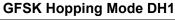
## **GFSK Hopping Mode DH1**

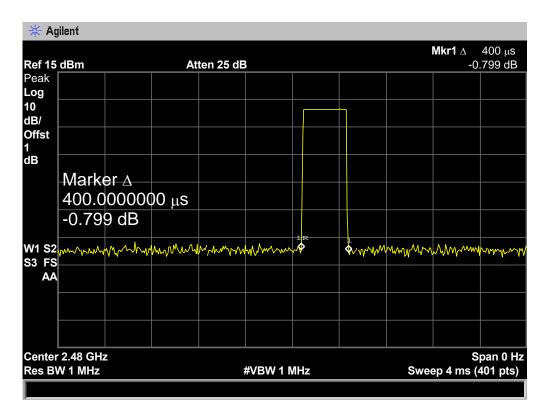




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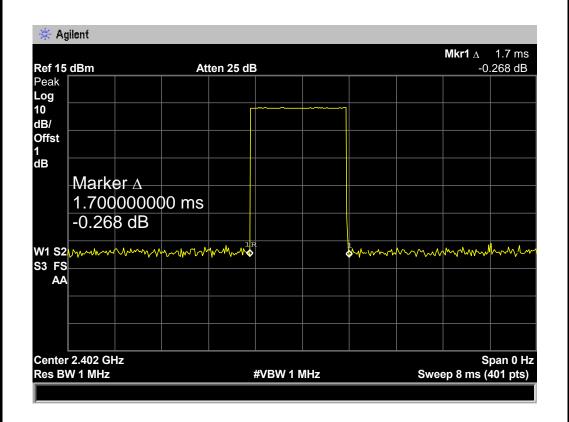




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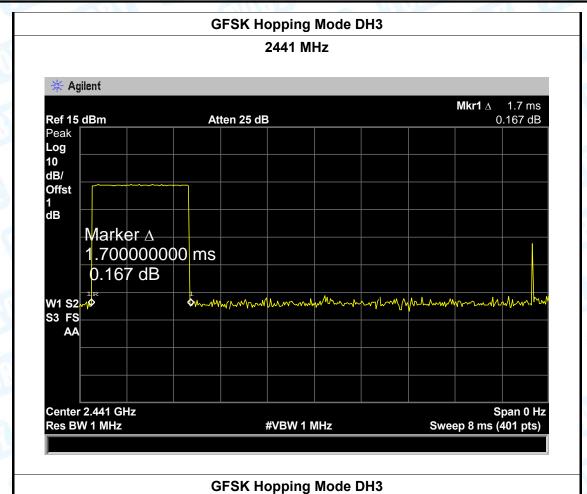
Smart Water	Smart Watch		Model Name :	
25 ℃	<b>25</b> ℃		dity:	55%
DC 3.7V			CO TO	
Hopping M	ode (GFSK DH3)			1
Pulse Time	Total of Dwell	Period Time	Limit	Result
(ms)	(ms)	(s)	(ms)	Result
1.700	272.00			
1.700	272.00	31.60	400	PASS
1.700	272.00			
	25 °C DC 3.7V Hopping M Pulse Time (ms) 1.700 1.700	25 °C  DC 3.7V  Hopping Mode (GFSK DH3)  Pulse Time (ms) (ms)  1.700 272.00  1.700 272.00	25 °C       Relative Humin         DC 3.7V       Hopping Mode (GFSK DH3)         Pulse Time (ms) (ms) (ms) (s)         1.700 272.00       31.60	25 °C       Relative Humidity:         DC 3.7V       Hopping Mode (GFSK DH3)         Pulse Time (ms) (ms) (ms) (s) (ms)         1.700       272.00         1.700       272.00         31.60       400

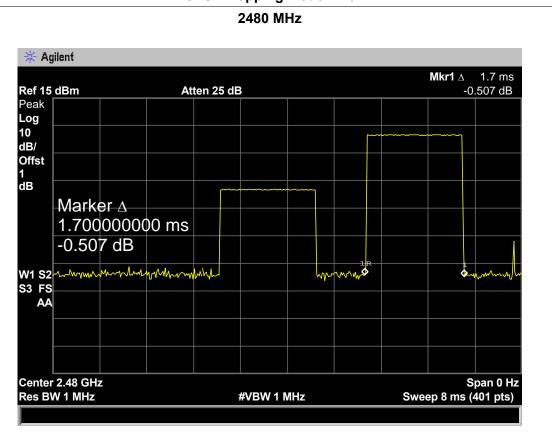
## **GFSK Hopping Mode DH3**





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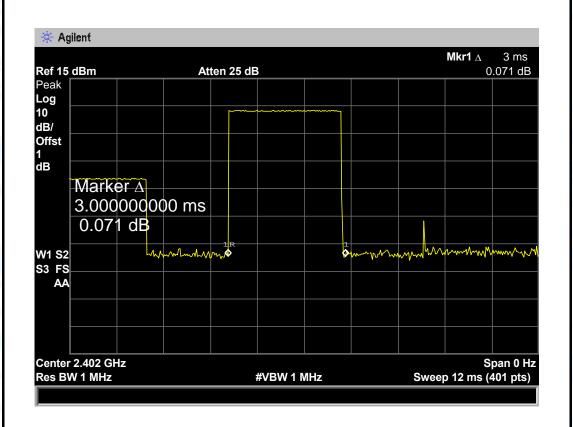




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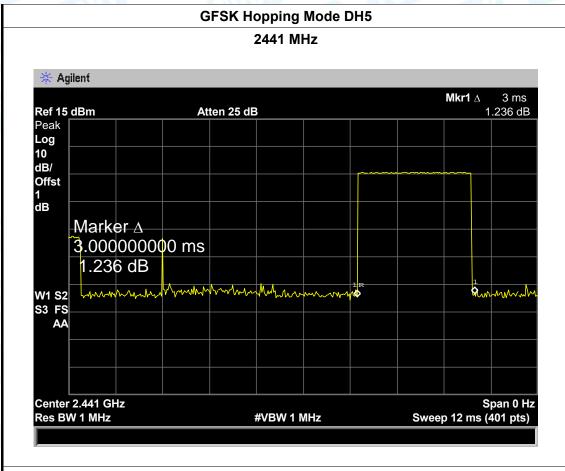
EUT:	Smart Watch Model Name :		<del>)</del> :	G3	
Temperature	: 25 ℃	25 ℃		idity:	55%
Test Voltage:	DC 3.7V	DC 3.7V			
Test Mode:	Hopping M	ode (GFSK DH5)			
Channel	Pulse Time	Total of Dwell	Period Time	Limit	Result
(MHz)	(ms)	(ms)	(s)	(ms)	Result
2402	3.000	320.00			
2441	3.000	320.00	31.60	400	PASS
2480	3.000	320.00			
		OFOIC II M.	d. Due		

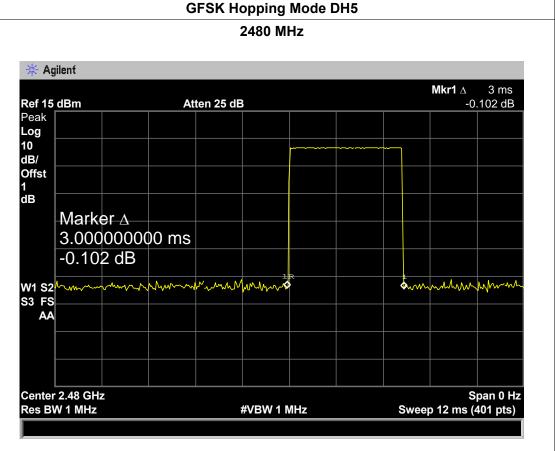
## **GFSK Hopping Mode DH5**





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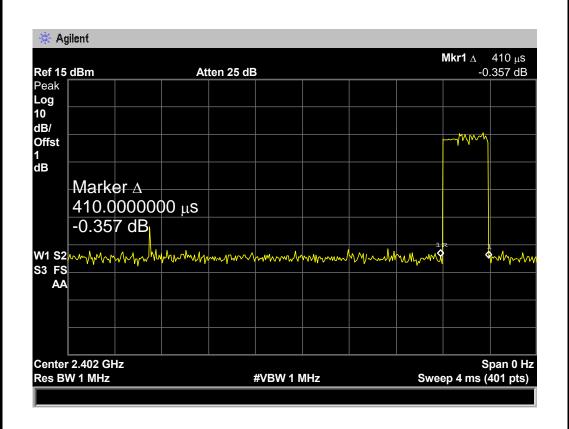




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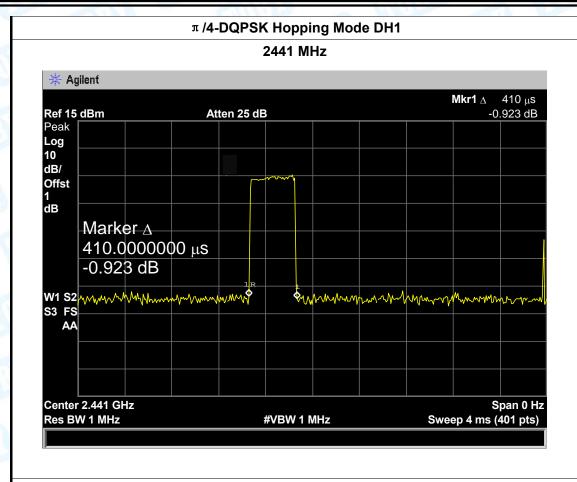
EUT:	Smart Wate	Smart Watch		Model Name :		
Temperature:	: 25 ℃	<b>25</b> ℃		umidity:	55%	
Test Voltage:	DC 3.7V	DC 3.7V				
Test Mode:	Hopping M	ode ( $\pi$ /4-DQPSK DH	1)	Alle		
Channel	Pulse Time	Total of Dwell	Period Time Limit		Result	
(MHz)	(ms)	(ms)	(s)	(ms)	Result	
2402	0.410	131.20				
2441	0.410	131.20	31.60	400	PASS	
2480	0.410	131.20				
π /4-DQPSK Hopping Mode DH1						

#### ... 0

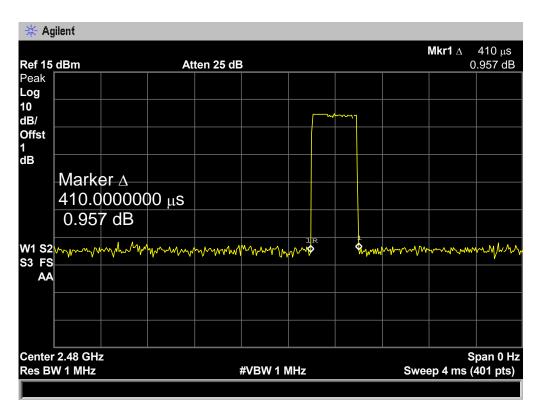




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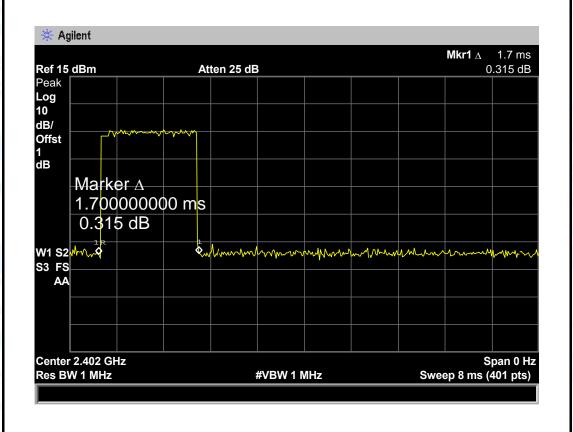




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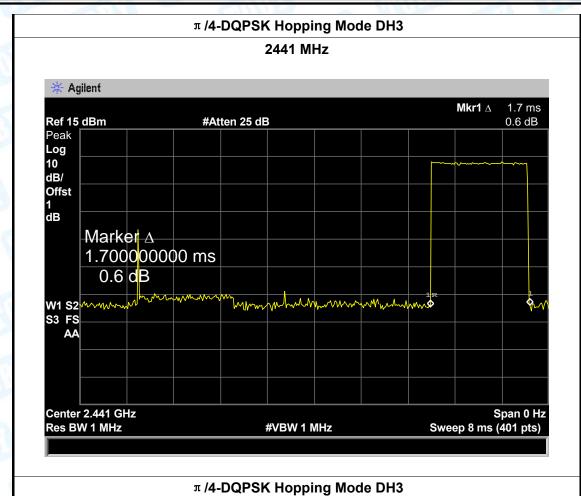
EUT:	Smart Watch Model Name :		Smart Watch		G3	
Temperature:		25 ℃	25 ℃ Relat		idity:	55%
Test Voltage:		DC 3.7V	3.7V		TO B	
Test Mode:	est Mode: Hopping Mode (π/4-DQPSK DH3)					
Channel	Pu	Ise Time	Total of Dwell	Period Time	Limit	Result
(MHz)		(ms)	(ms)	(s)	(ms)	Resuit
2402		1.700	272.00			
2441		1.700	272.00	31.60	400	PASS
2480		1.700	272.00			

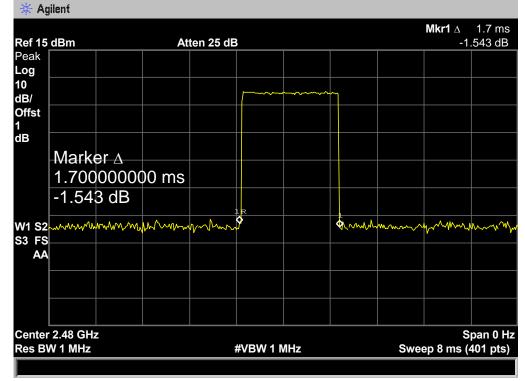
## π /4-DQPSK Hopping Mode DH3





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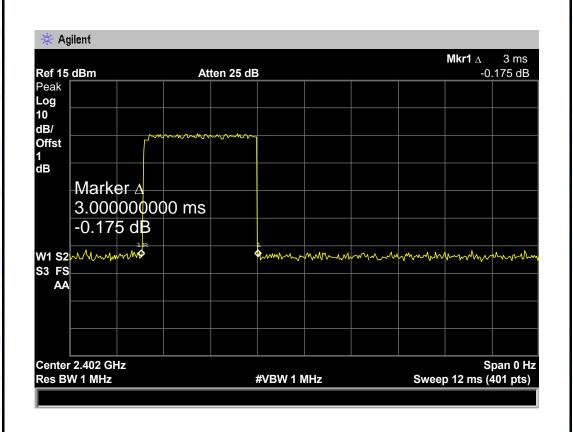




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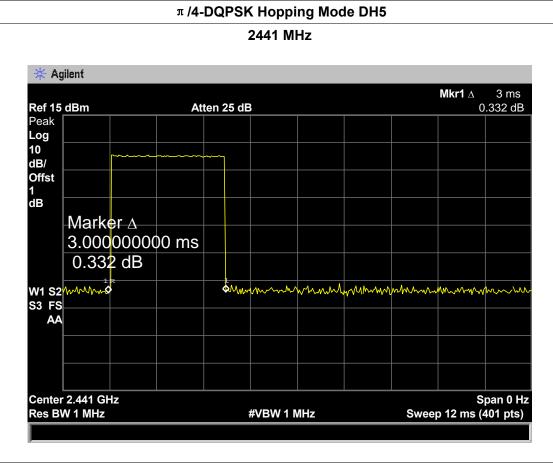
EUT:	Smart Wate	Smart Watch		<b>:</b>	G3
Temperature:	25 ℃	25 ℃		idity:	55%
Test Voltage:	DC 3.7V	DC 3.7V			
Test Mode:	Hopping M	ode (π/4-DQPSK DH	15)		
Channel	Pulse Time	Total of Dwell	Period Time	Limit	Result
(MHz)	(ms)	(ms)	(s)	(ms)	Result
2402	3.000	320.00			
2441	3.000	320.00	31.60	400	PASS
2480	3.000	320.00			

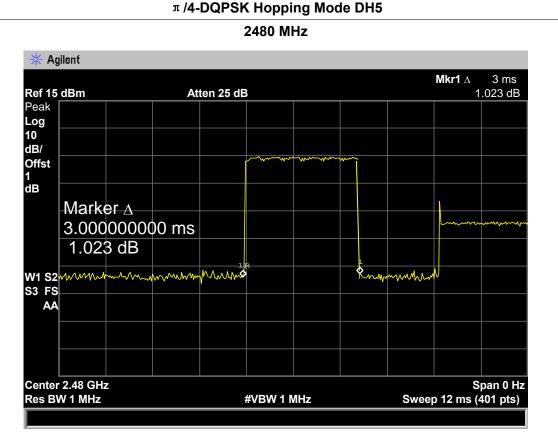
## π /4-DQPSK Hopping Mode DH5





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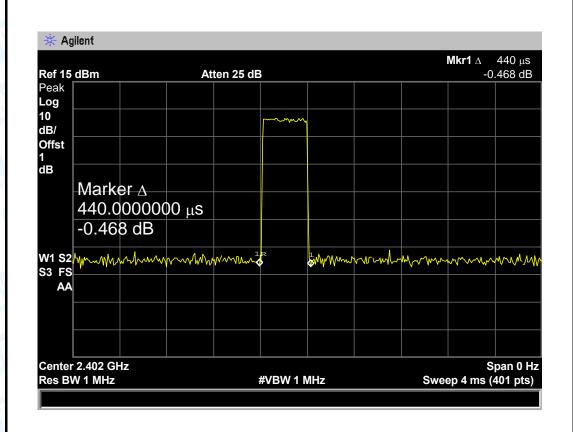




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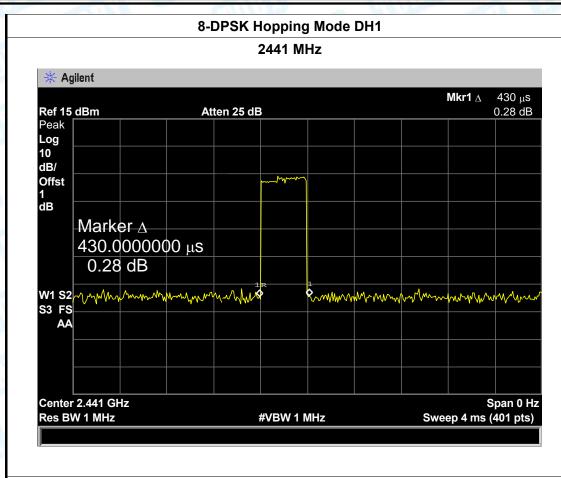
EUT:	Smart Water	Smart Watch		e :	G3
Temperature:	25 ℃	25 ℃		idity:	55%
Test Voltage:	t Voltage: DC 3.7V		MARINE		
Test Mode:	Hopping M	ode (8-DPSK DH1)		MILE IN	
Channel	Pulse Time	Total of Dwell (ms)	Period Time	Limit	Result
(MHz)	(ms)	Total of Dwell (IIIs)	(s)	(ms)	Result
2402	0.440	140.80			
2441	0.430	137.60	31.60	400	PASS
2480	0.430	137.60			

## 8-DPSK Hopping Mode DH1

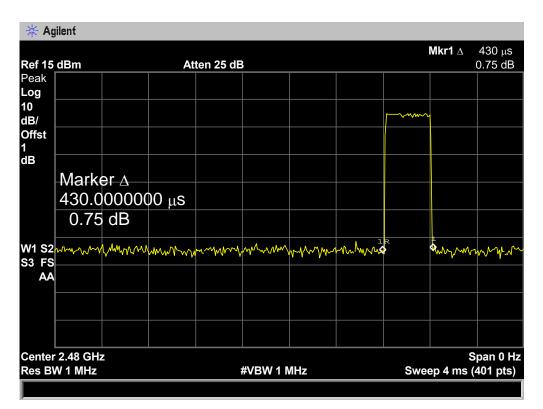




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## 8-DPSK Hopping Mode DH1

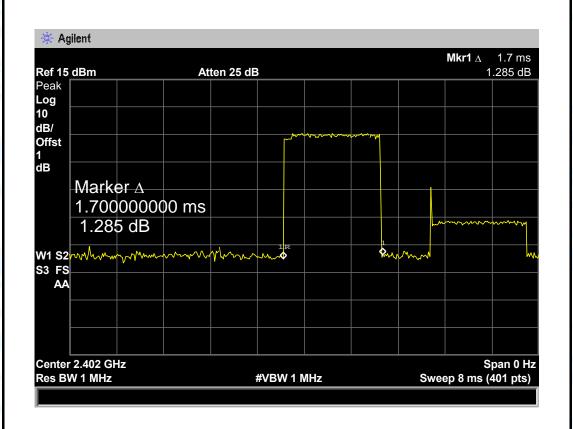




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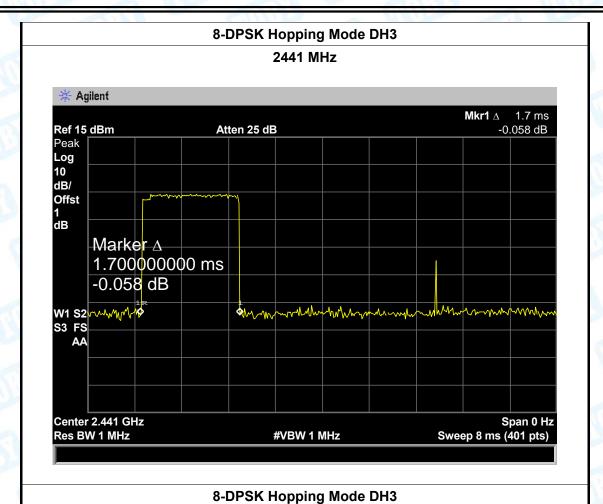
EUT:	Smart Wate	Smart Watch		Smart Watch Model Name :		e :	G3
Temperature	25 ℃	<b>25</b> ℃		idity:	55%		
Test Voltage:	DC 3.7V	DC 3.7V		13.73			
Test Mode:	Hopping M	ode (8-DPSK DH3)					
Channel	Pulse Time	Total of Dwell	Period Time	Limit	Result		
(MHz)	(ms)	(ms)	(s)	(ms)	Resuit		
2402	1.700	272.00					
2441	1.700	272.00	31.60	400	PASS		
2480	1.700	272.00					
		O DDCK Hanning Mad	- DIII2		*		

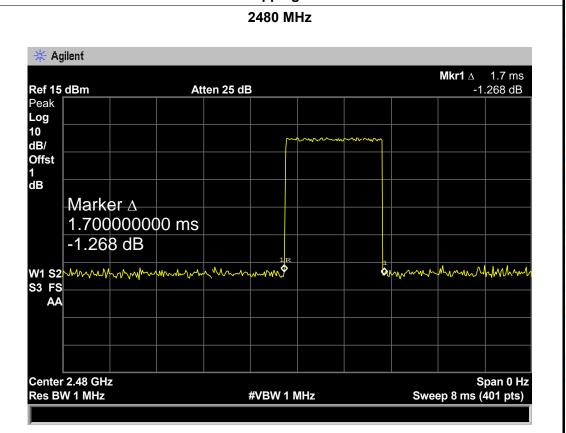
## 8-DPSK Hopping Mode DH3





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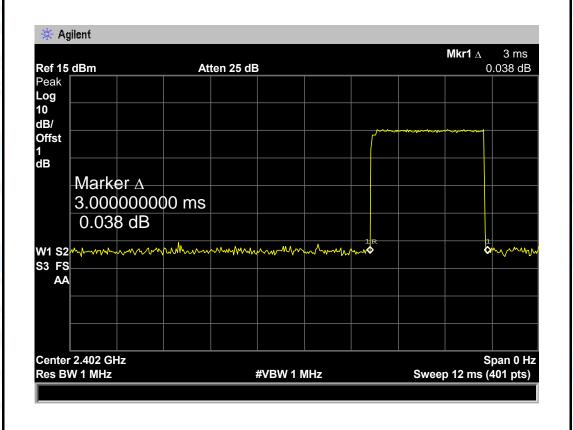






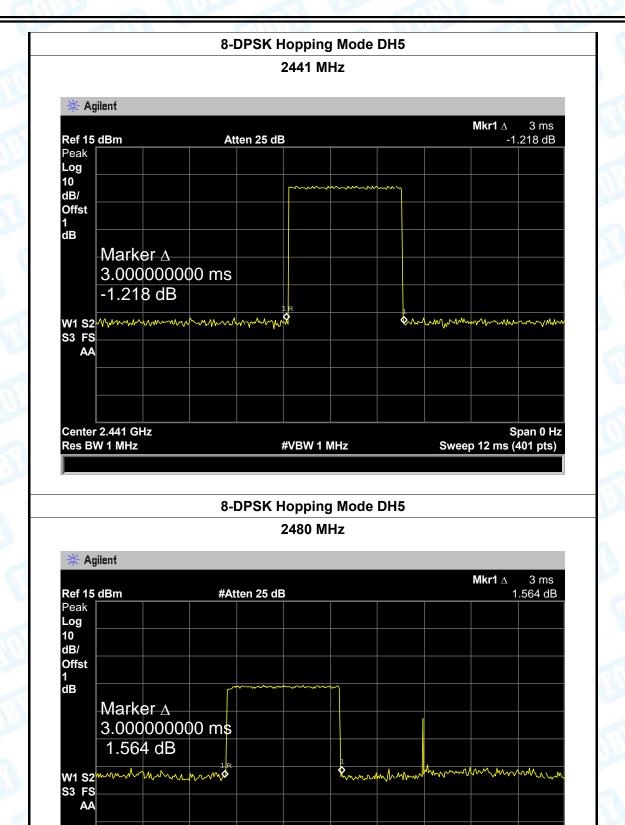
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EUT:	Smart Wate	Smart Watch		Model Name :		
Temperature:	25 ℃	<b>25</b> ℃		idity:	55%	
Test Voltage:	DC 3.7V	TV TV		TO DE		
Test Mode:	Hopping M	ode (8-DPSK DH5)				
Channel	Pulse Time	Total of Dwell	Period Time	Limit	Result	
(MHz)	(ms)	(ms)	(s)	(ms)	Resuit	
2402	3.000	320.00				
2441	3.000	320.00	31.60	400	PASS	
2480	3.000	320.00				
8-DPSK Hopping Mode DH5						





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#VBW 1 MHz

Center 2.48 GHz Res BW 1 MHz Span 0 Hz

Sweep 12 ms (401 pts)



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# 9. Channel Separation and Bandwidth Test

### 9.1 Test Standard and Limit

9.1.1 Test Standard FCC Part 15.247

9.1.2 Test Limit

Test Item	Limit	Frequency Range(MHz)
Bandwidth	<=1 MHz (20dB bandwidth)	2400~2483.5
Channel Separation	>25KHz or >two-thirds of the 20 dB bandwidth Which is greater	2400~2483.5

## 9.2 Test Setup



## 9.3 Test Procedure

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Spectrum Setting:

Channel Separation: RBW=30 kHz, VBW=100 kHz.

Bandwidth: RBW=30 kHz, VBW=100 kHz.

- (3) The bandwidth is measured at an amplitude level reduced 20dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst –case (i.e the widest) bandwidth.
  - (4) Measure the channel separation the spectrum analyzer was set to Resolution Bandwidth:30 kHz, and Video Bandwidth:100 kHz. Sweep Time set auto.

## 9.4 EUT Operating Condition

The EUT was set to the Hopping Mode for Channel Separation Test and continuously transmitting for the Bandwidth Test.

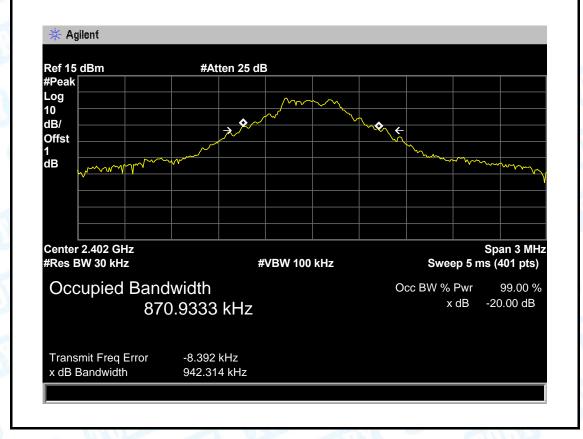


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## 9.5 Test Data

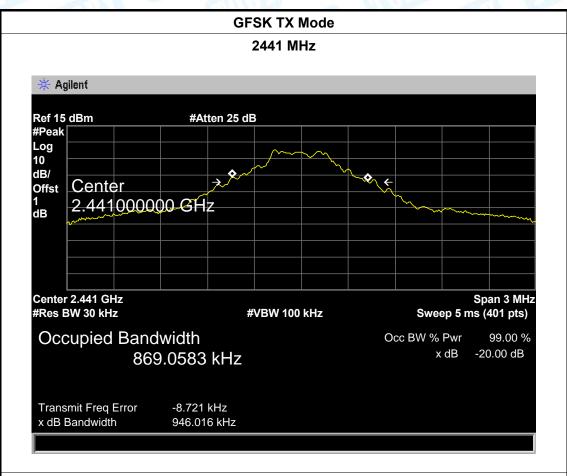
	_			
EUT:	Sma	art Watch	Model Name :	G3
Temperature:	25	${\mathbb C}$	Relative Humidity:	55%
Test Voltage:	DC	3.7V		
Test Mode:	TX	Mode (GFSK)		2 110
Channel freque (MHz)	ncy	99% OBW (kHz)	20dB Bandwidth (kHz)	20dB Bandwidth *2/3 (kHz)
2402		870.9333	942.314	
2441		869.0583	946.016	
2480		859.2758	946.823	

### **GFSK TX Mode**

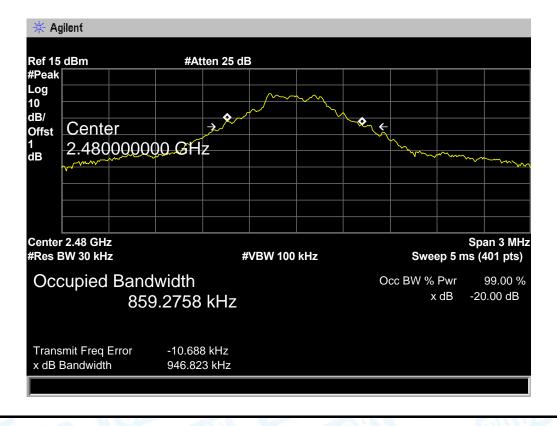




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## **GFSK TX Mode**





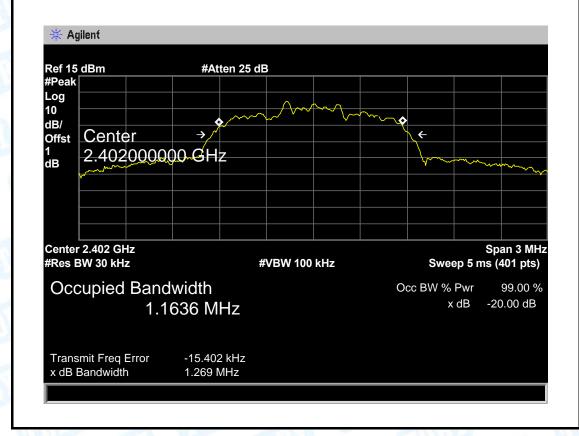
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EUT:	Smart Watch	Model Name :	G3
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V	W To	130
	T)(14 1 ( // DODO)()	* F 3	

**Test Mode:** TX Mode ( $\pi$ /4-DQPSK)

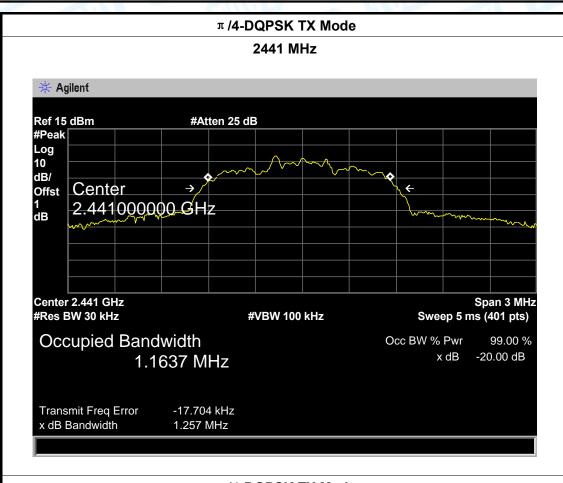
Channel frequency (MHz)	99% OBW (kHz)	20dB Bandwidth (kHz)	20dB Bandwidth *2/3 (kHz)
2402	1163.60	1269.00	846.00
2441	1163.70	1257.00	838.00
2480	1095.10	1217.00	811.33

### π/4-DQPSK TX Mode

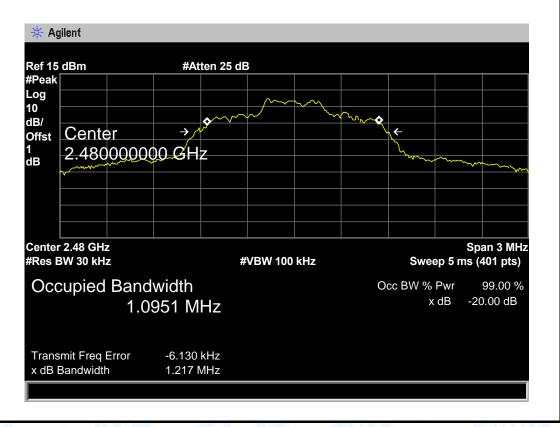




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## $\pi$ /4-DQPSK TX Mode



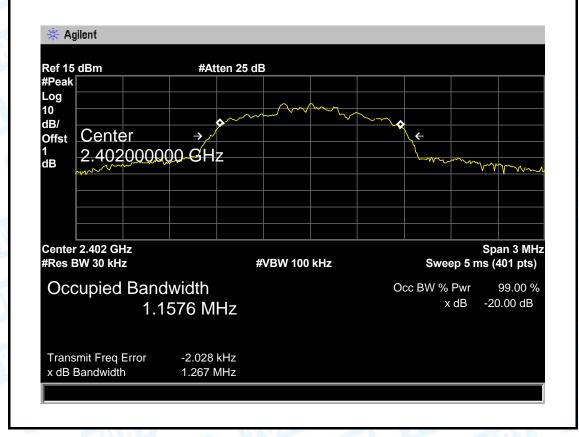


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EUT:	Smart Watch	Model Name :	G3
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Test Mode:	TX Mode (8-DPSK)	100	

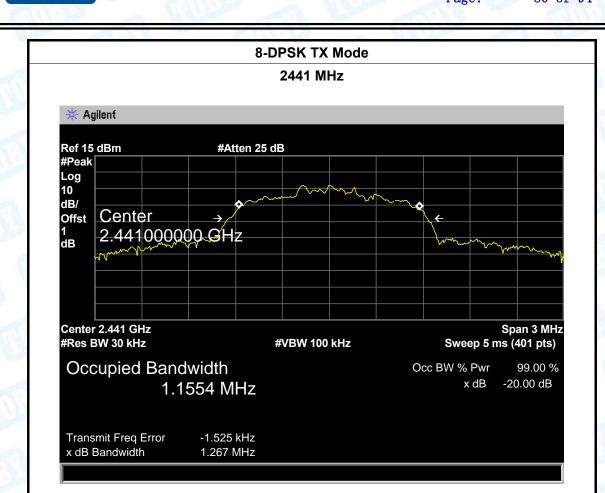
Channel frequency (MHz)	99% OBW (kHz)	20dB Bandwidth (kHz)	20dB Bandwidth *2/3 (kHz)
2402	1157.60	1267.00	844.67
2441	1155.40	1267.00	844.67
2480	1156.40	1266.00	844.00

### 8-DPSK TX Mode

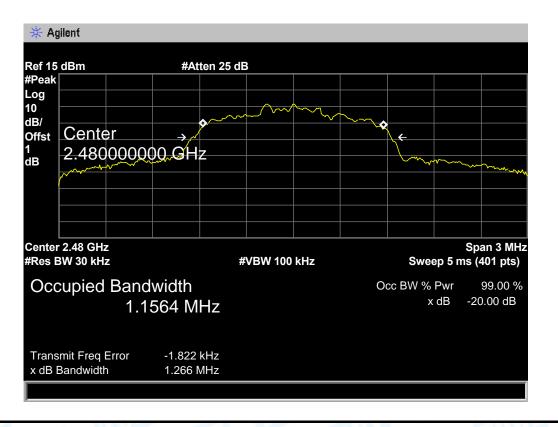




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## 8-DPSK TX Mode





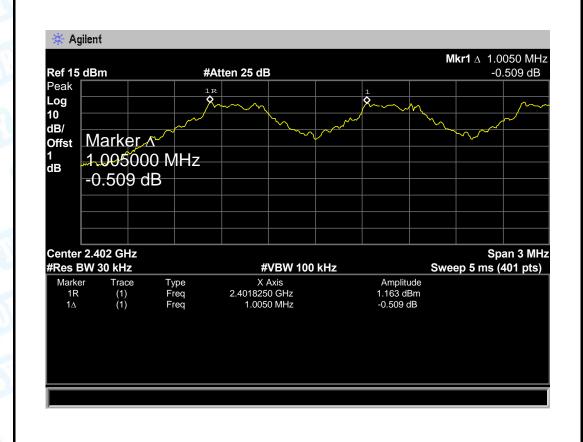
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EUT:	Smart Watch	Model Name :	G3
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
To at Manda.	Hamping Made (CECK)		

Test Mode: Hopping Mode (GFSK)

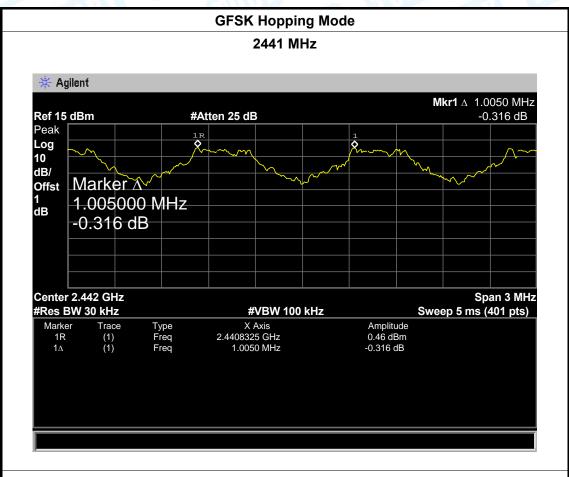
Channel frequency	Separation Read Value	Separation Limit
(MHz)	(kHz)	(kHz)
2402	1005.00	942.314
2441	1005.00	946.016
2480	1005.00	946.823

## **GFSK Hopping Mode**

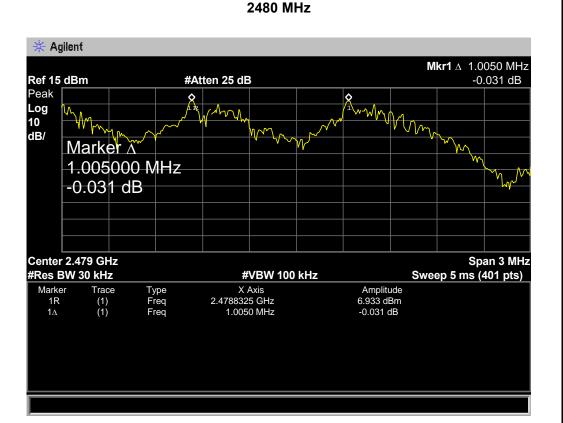




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# **GFSK Hopping Mode**





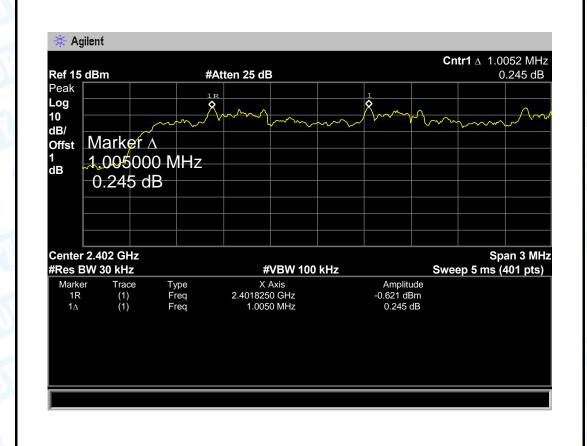
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EUT:	Smart Watch	Model Name :	G3
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V	A WULL	

Test Mode: Hopping Mode (π/4-DQPSK)

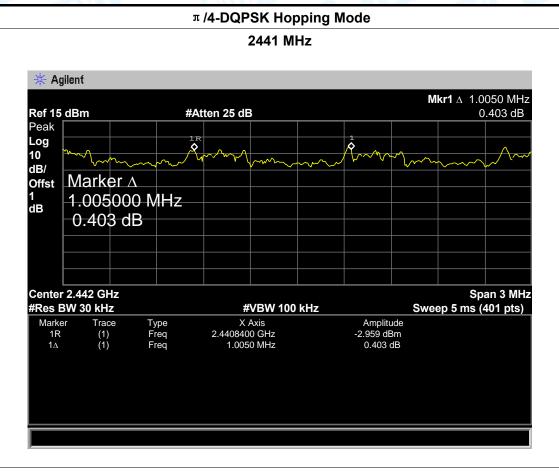
Channel frequency	Separation Read Value	Separation Limit	
(MHz)	(kHz)	(kHz)	
2402	1005.00	846.00	
2441	1005.00	838.00	
2480	1005.00	811.33	

## π /4-DQPSK Hopping Mode

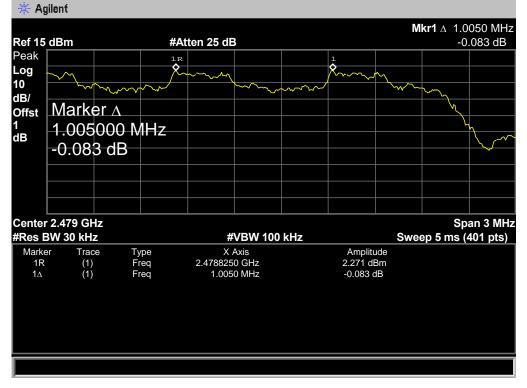




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## π /4-DQPSK Hopping Mode





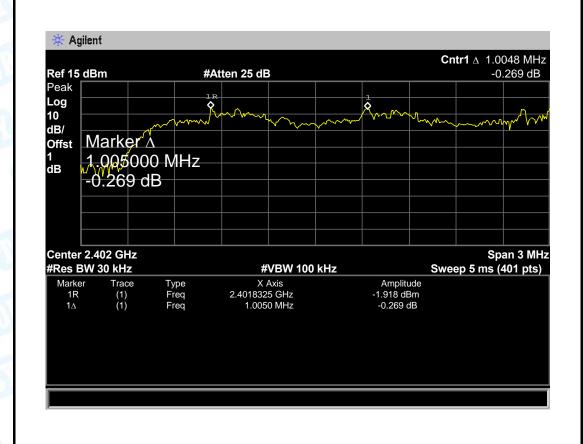
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EUT:	Smart Watch	Model Name :	G3
Temperature:	<b>25</b> ℃	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
	11 1 14 1 (0 DDO10)		4111

Test Mode: Hopping Mode (8-DPSK)

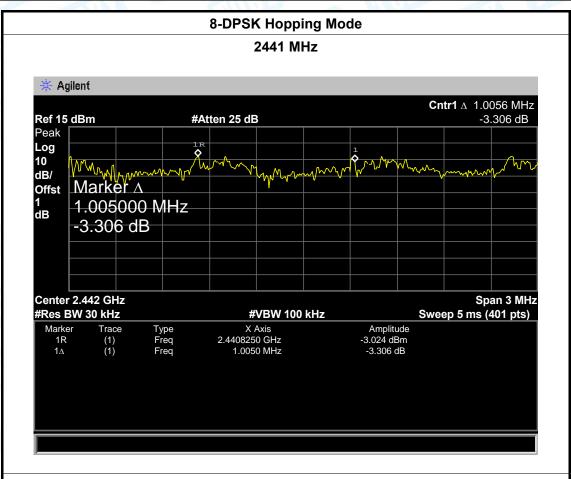
Channel frequency	Separation Read Value	Separation Limit
(MHz)	(kHz)	(kHz)
2402	1004.80	844.67
2441	1005.60	844.67
2480	1005.00	844.00

## 8-DPSK Hopping Mode

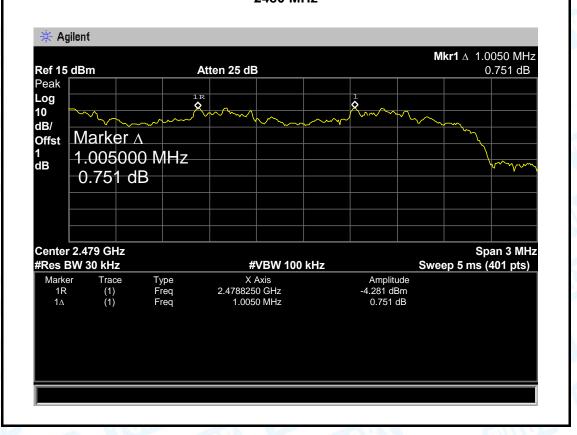




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## 8-DPSK Hopping Mode 2480 MHz





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# 10. Peak Output Power Test

## 10.1 Test Standard and Limit

10.1.1 Test Standard FCC Part 15.247 (b) (1)

10.1.2 Test Limit

Test Item	Limit	Frequency Range(MHz)
Peak Output Power	Hopping Channels>75 Power<1W(30dBm) Other <125 mW(21dBm)	2400~2483.5

## 10.2 Test Setup



## 10.3 Test Procedure

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Spectrum Setting:

Peak Detector: RBW=1 MHz, VBW=3 MHz for bandwidth less than 1MHz. RBW=3 MHz, VBW=3 MHz for bandwidth more than 1MHz.

## 10.4 EUT Operating Condition

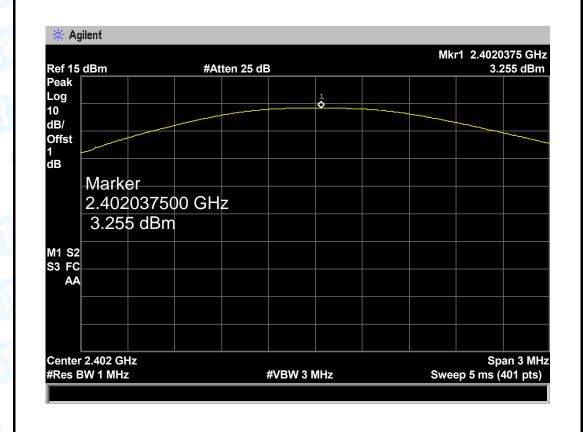
The EUT was set to continuously transmitting in the max power during the test.



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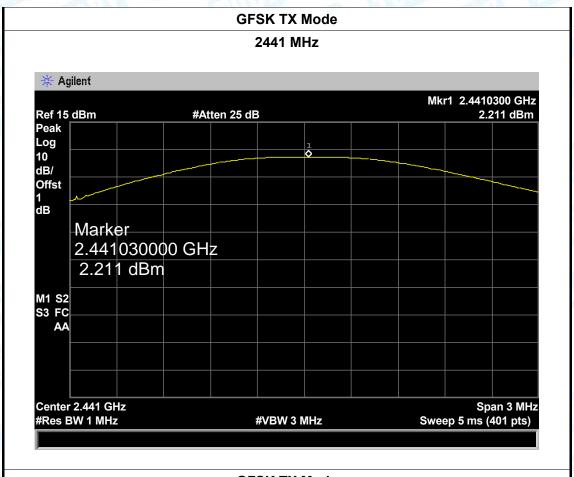
## 10.5 Test Data

EUT:	Smart Watch		Model Name :		G3
Temperature:	25 ℃		Relative Humidity:		55%
Test Voltage:	DC 3.7V		UP		MU
Test Mode:	TX Mode	(GFSK)		CORP.	
Channel frequen	cy (MHz)	Test Result (dBm)		Limit (dl	Bm)
2402		3.255			
2441		2.211		30	
2480	4.720				
		GFSK TX Mode		·	
	2402 MHz				

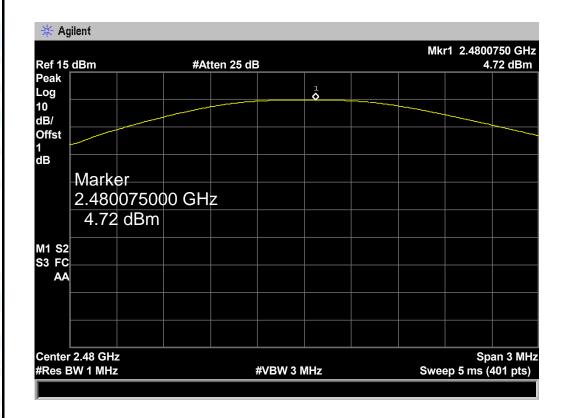




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## **GFSK TX Mode**

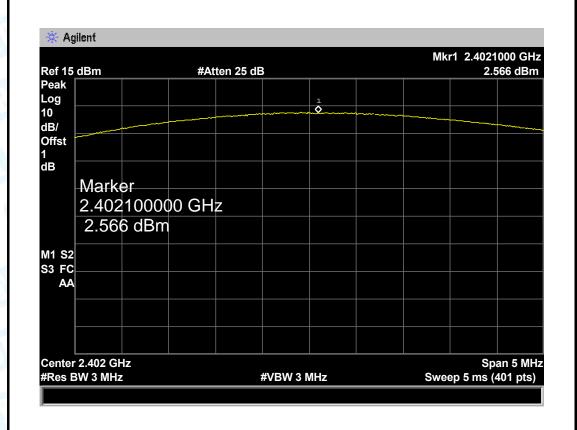




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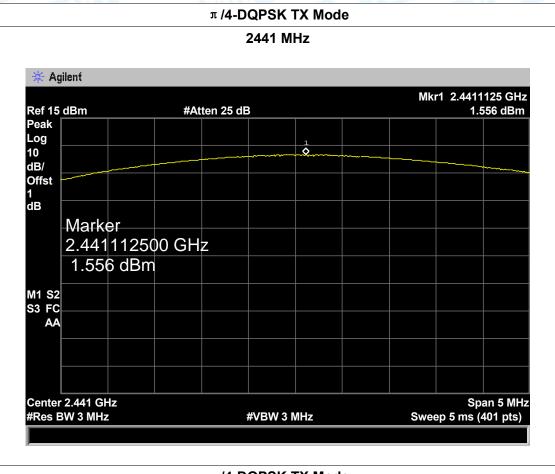
EUT:	Smart Watch		Model Name :		G3
Temperature:	25 ℃		Rel	ative Humidity:	55%
Test Voltage:	DC 3.7V				
Test Mode:	TX Mode	( π /4-DQPSK)	_	J KILL	
Channel frequency (MHz)		Test Result (dBm)	Limit (dBm)		Bm)
2402		2.566			
2441		1.556		21	
2480		1.014			
		# // DODCK TV Med	_		

### π /4-DQPSK TX Mode

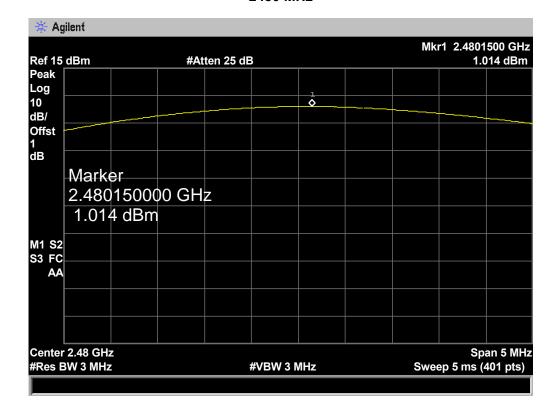




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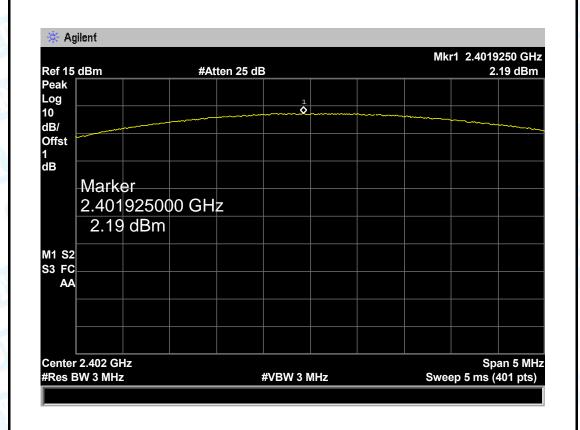




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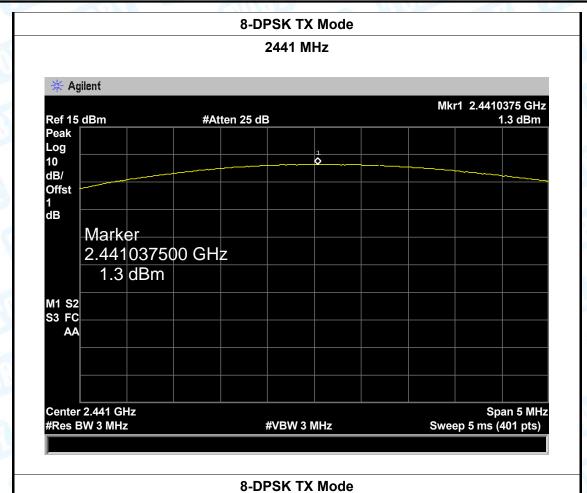
EUT:	Smart Watch		Model Name :		G3
Temperature:	25 ℃		Rel	ative Humidity:	55%
Test Voltage:	DC 3.7V				
Test Mode:	TX Mode	(8-DPSK)	_	J. William	
Channel frequen	cy (MHz)	(MHz) Test Result (dBm) Limit (dBm)		Bm)	
2402		2.190			
2441		1.300		21	
2480	80 0.737				
O DDOK TV Mada					

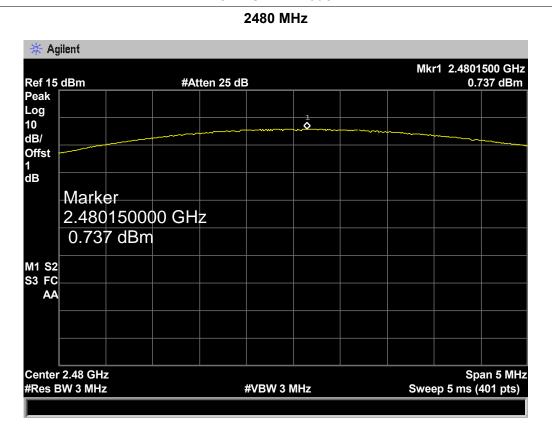
## 8-DPSK TX Mode





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# 11. Antenna Requirement

## 11.1 Standard Requirement

11.1.1 Standard FCC Part 15.203

## 11.1.2 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 shall be considered sufficient to comply with the provisions of this Section. 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.

## 11.2 Antenna Connected Construction

The directional gains of the antenna used for transmitting is 1.55 dBi, and the antenna connector is de-signed with permanent attachment and no consideration of replacement. Please see the EUT photo for details.

The EUT antenna is a Integral antenna. It complies with the standard requirement.

	Antenna Type
a Gu	▼ Permanent attached antenna
	□ Unique connector antenna
A.S.	□ Professional installation antenna