

Shenzhen Toby Technology Co., Ltd.

Report No.: TB-FCC148253

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FCC Radio Test Report FCC ID: 2AILG-G3

Original Grant

Report No. : TB-FCC148253

Applicant: NJY Science & Technology Co., Ltd

Equipment Under Test (EUT)

EUT Name: Smart Watch

Model No. : G3

Serial No. : G4, G5, G6, D5, D6, D7, D8, Q7, S6

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,

Test/Witness

Engineer

.

Approved& Authorized

the report.

Logsa

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

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	1	Smart Watch		
Models No.	7	G3, G4, G5, G6, D5, D6	, D7, D8, Q7, S6	
Model Difference	1	All these models are identical in the same PCB, layout and electrical circuit, the only difference is model name for commercial.		
TO IS		Operation Frequency: Bluetooth4.0(BLE): 2402MHz~2480MHz Bluetooth3.0: 2402MHz~2480MHz see note(2) GSM 850: 824.20MHz-848.80MHz see note(2) PCS1900: 1850.20MHz-1909.80MHz see note(2)		
Product Description		Number of Channel: RF Output Power: Antenna Gain:	Bluetooth4.0(BLE): 40 channels see note(3) 4.515 dBm Conducted Power 1.55 Integral PCB Antenna	
		Modulation Type: Bit Rate of Transmitter:	GFSK 1Mbps(GFSK)	
Power Supply			m Host System by USB cable.	
Power Rating		DC 5.0V by USB cable. DC 3.7V by 380mAh Li-i	V by USB cable. V by 380mAh Li-ion Battery.	
Connecting I/O Port(S)		Please refer to the User	's Manual	

Note:

- (1) This Test Report is FCC Part 15.247 for Bluetooth BLE, the test procedure follows the FCC KDB 558074 D01 DTS Meas Guidance v03r05.
- (2) 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 Bluetooth3.0 and FCC 2&22&24 for GSM function, and recorded in the separate test report.
- (3) Antenna information provided by the applicant.



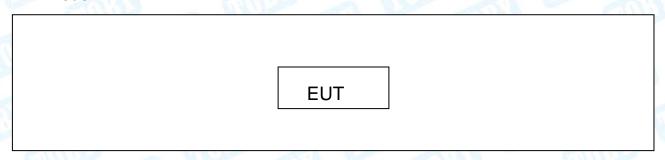
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(4) Channel List:

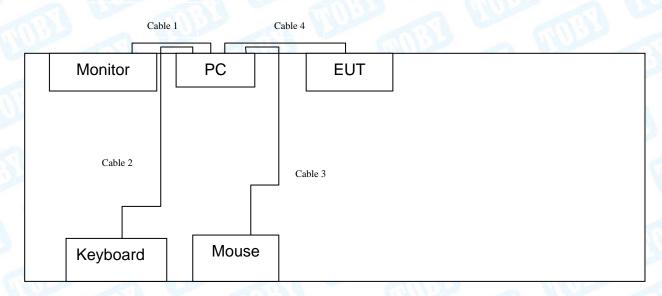
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	14	2430	28	2458
01	2404	15	2432	29	2460
02	2406	16	2434	30	2462
03	2408	17	2436	31	2464
04	2410	18	2438	32	2466
05	2412	19	2440	33	2468
06	2414	20	2442	34	2470
07	2416	21	2444	35	2472
08	2418	22	2446	36	2474
09	2420	23	2448	37	2476
10	2422	24	2450	38	2478
11	2424	25	2452	39	2480
12	2426	26	2454		
13	2428	27	2456		

1.3 Block Diagram Showing the Configuration of System Tested

TX Mode



USB Charging with TX Mode





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1.4 Description of Support Units

	Eq	uipment Informati	on	
Name	Model	FCC ID/DOC	Manufacturer	Used "√"
LCD Monitor	E170Sc	DOC	DELL	~
PC	OPTIPLEX380	DOC	DELL	√
Keyboard	L100	DOC	DELL	1
Mouse	M-UARDEL7	DOC	DELL	√
		Cable Information	1	
Number	Shielded Type	Ferrite Core	Length	Note
Cable 1	YES	YES	1.5M	MARCH
Cable 2	YES	YES	1.5M	
Cable 3	YES	NO	1.5M	4037
Cable 4	NO	NO	0.8M	en

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	TX Mode

For	Radiated Test
Final Test Mode	Description
Mode 2	TX Mode
Mode 3	TX Mode
Wode 3	(Channel 00/20/39)

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



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all kinds of data rate.

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:

Bluetooth BLE Mode: GFSK Modulation Transmitting mode.

- (2) During the testing procedure, the continuously transmitting with the maximum power mode was programmed by the customer.
- (3) The EUT is considered a mobile unit; in normal use it was positioned on X-plane. The worst case was found positioned on X-plane. Therefore only the test data of this X-plane was used for radiated emission measurement test.

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 RF setting.

Test Software Version	A W	Media Tek BT To	ol
Frequency	2402 MHz	2442MHz	2480 MHz
BLE GFSK	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 _{Lab})
	Level Accuracy:	
Conducted Emission	9kHz~150kHz	±3.42 dB
THE PARTY OF	150kHz to 30MHz ±3.42 dB	±3.42 dB
Dedicted Emission	Level Accuracy:	. 4 CO dD
Radiated Emission	9kHz to 30 MHz	±4.60 dB
Dedicted Emission	Level Accuracy:	. 4 40 40
Radiated Emission	30MHz to 1000 MHz	±4.40 dB
Dedicted Emission	Level Accuracy:	. 4.00 dD
Radiated Emission	Above 1000MHz	±4.20 dB



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1.8 Test Facility

The testing was 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

Standa	rd Section		11103	
FCC	IC	Test Item	Judgment	Remark
15.203		Antenna Requirement	PASS	N/A
15.207	RSS-GEN 7.2.4	Conducted Emission	PASS	N/A
15.205	RSS-GEN 7.2.2	Restricted Bands	PASS	N/A
15.247(a)(2)	RSS 247 5.2 (1)	6dB Bandwidth	PASS	N/A
15.247(b)	RSS 247 5.4 (4)	Peak Output Power	PASS	N/A
15.247(e)	RSS 247 5.2 (2)	Power Spectral Density	PASS	N/A
15.247(d)	RSS 247 5.5	Transmitter Radiated Spurious Emission	PASS	N/A



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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.	Date
	Emission Tes		<u> </u>		Cal. Due
Spectrum	Agilent	E4407B	MY45106456	Aug. 29, 2015	Aug. 28, 2016
Analyzer	Agiletit	L4407B	W143100430	Aug. 29, 2013	Aug. 20, 2010
EMI Test 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

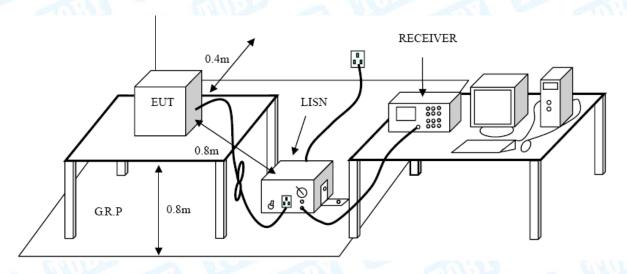
Conducted Emission Test Limit

Eronio monthi	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:	Smai	t Watch		Mode	l Name :	G3
Temperature	: 25 °C		-	Relat	ive Humidity:	55%
Test Voltage:	: AC 1	20V/60 Hz	CHO.		I Brown	
Terminal:	Line			CHILD.	3	Alle
Test Mode:	USB	Charging wi	th TX GFSK	Mode 2402	2 MHz	
Remark:	Only	worse case	is reported	-01	A STATE OF	
90.0 dBuV					QI	P:
40			***************************************		A	YG: ————————————————————————————————————
-10 0.150 No. Mk.	0.5	Reading Level	(MHz) Correct Factor	Measure- ment		30.000 /er
	MHz	dBuV	dB	dBuV	dBuV d	B Detecto
1	0.1740	37.95	9.97	47.92	64.76 -16.	84 QP
2 *	0.1740	37.47	9.97	47.44	54.76 -7.3	32 AV
3	0.2140	37.27	10.02	47.29	63.04 -15.	75 QP
4	0.2140	34.06	10.02	44.08	53.04 -8.9	96 AV
5	0.5540	35.08	10.05	45.13	56.00 -10.	87 QP
6	0.5540	27.40	10.05	37.45	46.00 -8.5	55 AVO
7	1.5339	28.77	10.06	38.83	56.00 -17.	17 QP
8	1.5339	22.30	10.06	32.36	46.00 -13.	64 AV
9	7.1020	28.60	10.06	38.66	60.00 -21.	34 QP
10	7.1020	23.39	10.06	33.45	50.00 -16.	55 AV
11	16.8900	34.72	10.22	44.94	60.00 -15.	06 QP
	16.8900	30.57	10.22	40.79	50.00 -9.2	21 AV





EUT:	Smar	t Watch	10	Mod	el Name :	G3
Temperature:	25 ℃			Rela	tive Humidity:	55%
Test Voltage:	AC 12	20V/60 Hz	DATE		3 6	
Terminal:	Neutr	al		O Pierro		MILL
Test Mode:	USB	Charging w	ith TX GFSk	Mode 240	2 MHz	
Remark:	Only	worse case	is reported		N3	
90.0 dBuV					QI	9: — /G: —
40		My many my				peak
-10 0.150	0.5		(MHz)	5		30.000
No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit Ove	er
	MHz	dBu∀	dB	dBu∀	dBuV dB	Detector
1 (0.1740	34.66	9.97	44.63	64.76 -20.13	3 QP
2 (0.1740	34.02	9.97	43.99	54.76 -10.7	7 AVG
3 (0.2140	33.47	10.02	43.49	63.04 -19.5	5 QP
4 0	0.2140	31.88	10.02	41.90	53.04 -11.1	4 AVG
5 (0.5540	36.05	10.05	46.10	56.00 -9.90	QP
6 * 0	0.5540	28.38	10.05	38.43	46.00 -7.57	AVG
7 1	1.5339	28.50	10.06	38.56	56.00 -17.4	4 QP
8 1	1.5339	22.08	10.06	32.14	46.00 -13.80	6 AVG
9 7	7.1020	28.83	10.06	38.89	60.00 -21.1	1 QP
10 7	7.1020	23.54	10.06	33.60	50.00 -16.4	0 AVG
11 16	3.8260	32.52	10.22	42.74	60.00 -17.20	6 QP
12 16	3.8260	30.85	10.22	41.07	50.00 -8.93	AVG





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EUT:	Smart Watch	1	Model	Name :	G3
Temperature:	25 ℃		Relati	ve Humidity	: 55%
Test Voltage:	AC 240V/60 Hz		J. WILL		J. Francisco
Terminal:	Line			mill's	19
Test Mode:	USB Charging w	ith TX GFSK	Mode 2402	MHz	
Remark:	Only worse case	is reported	Will Top		A Branch
40 40 0.0 0.150	0.5	(MHz)	V	Manage of the second	QP: — AVG: — peak
	Reading	Correct	Measure-		
No. Mk. F	req. Level	Factor	ment	Limit C	ver
N	1Hz dBuV	dB	dBu∀	dBuV	dB Detector
1 0.2	060 38.01	10.02	48.03	63.36 -15	3.33 QP
2 * 0.2	060 35.09	10.02	45.11	53.36 -8.	.25 AVG
3 0.5	860 32.27	10.06	42.33	56.00 -13	3.67 QP
4 0.5	860 26.62	10.06	36.68	46.00 -9	.32 AVG
5 0.9	660 28.52	10.07	38.59	56.00 -17	'.41 QP
6 0.9	660 22.65	10.07	32.72	46.00 -13	3.28 AVG
7 1.5	940 26.59	10.06	36.65	56.00 -19).35 QP
8 1.5	940 21.36	10.06	31.42	46.00 -14	.58 AVG
9 2.2	060 26.18	10.05	36.23	56.00 -19).77 QP
	060 22.18	10.05	32.23	46.00 -13	
11 24.2		10.16	30.43	60.00 -29	
12 24.2		10.16	17.69	50.00 -32	
Emission Level=	Read Level+ Cor	rect Factor			







EUT:	Sma	rt Watch	A.D	Mod	el Name :	G3	
Temperatur	e: 25 °	C	-	Rela	tive Humidity:	55%	
est Voltage	e: AC 2	240V/60 Hz	Will.		3 63		
Terminal:	Neur	tral		dillo		din	
Test Mode:	USB	Charging w	ith TX GFSI	K Mode 240	2 MHz		
Remark:	Only	worse case	e is reported		A B C		
80.0 dBuV							
						QP: — AVG: —	
A 1							
40	ans a d	X ×	. *				
VVIN		My by Johnson	J ~ / / /	<u> </u>	α. Α	. 🐧	
ν \'		A MANAGAN A	half more har he had been been been been been been been bee	~\V_\V_\\\	CAN A All April and an annual and	MW A CALL DO	
V	, M.	A). W	w W V	A A A A A	(M) Mahalahan	\ " \	
				11 11	1 1 1 1	A)	
0.0							
0.150	0.5		(MHz)	5		30.000	
		Reading	Correct	Measure-	•		
No. Mk.	Freq.	Level	Factor	ment	Limit Ov	er	
	MHz	dBu∀	dB	dBu∀	dBuV dE	B Detector	
1	0.2060	37.90	10.12	48.02	63.36 -15.3	34 QP	
2 *	0.2060	34.96	10.12	45.08	53.36 -8.2	8 AVG	
3	0.5820	32.33	10.02	42.35	56.00 -13.6	65 QP	
4	0.5820	25.89	10.02	35.91	46.00 -10.0	9 AVG	
5	0.9660	28.38	10.14	38.52	56.00 -17.4	18 QP	
6	0.9660	22.65	10.14	32.79	46.00 -13.2	21 AVG	
7	2.1540	25.40	10.06	35.46	56.00 -20.5	54 QP	
8	2.1540	21.03	10.06	31.09	46.00 -14.9	91 AVG	
9	4.6979	25.43	10.06	35.49	56.00 -20.5	51 QP	
10	4.6979	21.80	10.06	31.86	46.00 -14.1	14 AVG	
	24.4580	22.06	10.06	32.12	60.00 -27.8	38 QP	
11	24.4300						



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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 Limits (9kHz~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 A (dBu\	//m)(at 3 M)	Class B (dBuV/m)(at 3 M)		
(MHz)	Peak	Average	Peak	Average	
Above 1000	80	60	74	54	

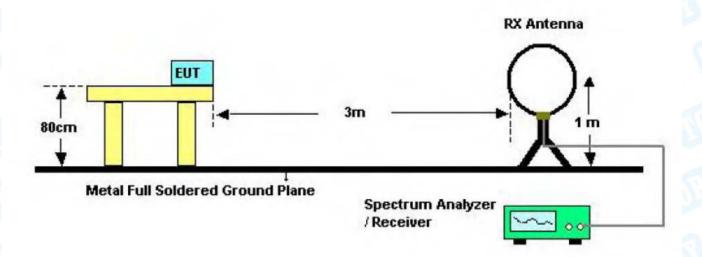
Note:

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

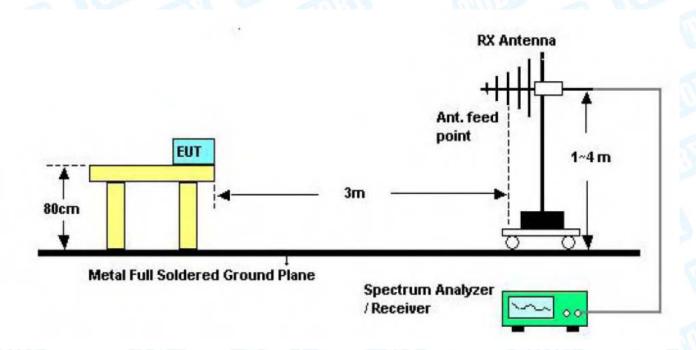


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5.2 Test Setup



Below 30MHz Test Setup

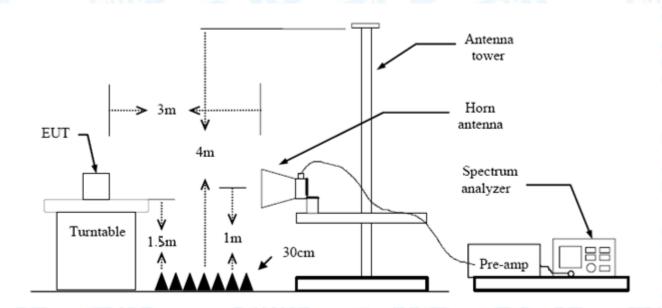


Below 1000MHz Test Setup





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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.



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5.4 EUT Operating Condition

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

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=10 kHz with Peak Detector for Average Values.

Test data please refer the following pages.





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UT:	Smart	t Watch		Model:		G3				
Temperature:	25 ℃	em'	33	Relative Hu	ımidity:	55%	The same			
est Voltage:	DC 3\	/		18	611	1.33				
Ant. Pol.	Horizo	ontal	AHIT.		1 63		TO Y			
Test Mode:	BLE T	X 2402 Mo	de	THE PERSON		A MILLIAM				
Remark:	Only v	Only worse case is reported								
90.0 dBuV/m										
40	My.		pro-market have been been been been been been been be	3 4 X	(RF)FCC 1	5C 3M Radiation Margin -6				
Veri-will, pill	0 60 70	80	(MHz)	300	400 5	00 600 700	1000,00			
10 V************************************	W 1		(MHz)		400 50	00 600 700	1000.00			
10 30.000 40 50	0 60 70	Reading	Correct	Measure-	400 50	00 600 700 Over	1000.00			
10 30.000 40 50	W 1		Correct Factor							
10 30.000 40 50	60 70 Freq.	Reading Level	Correct	Measure- ment	Limit	Over	Detecto			
No. Mk. F	Freq. MHz .0329	Reading Level dBuV 60.44	Correct Factor dB/m -22.81	Measure- ment dBuV/m 37.63	Limit dBuV/m 43.50	Over dB -5.87	Detecto			
No. Mk. F	Freq. MHz .0329	Reading Level dBuV 60.44 53.40	Correct Factor dB/m -22.81 -20.81	Measure- ment dBuV/m 37.63 32.59	Limit dBuV/m 43.50 43.50	Over dB -5.87 -10.91	Detector peak			
No. Mk. F	Freq. MHz .0329 .7450	Reading Level dBuV 60.44 53.40 58.39	Correct Factor dB/m -22.81 -20.81 -18.59	Measure- ment dBuV/m 37.63 32.59 39.80	Limit dBuV/m 43.50 43.50 46.00	Over dB -5.87 -10.91 -6.20	Detector peal peal peal			
No. Mk. F 1 * 88 2 191 3 239 4 315	Freq. MHz .0329 .7450 0.9874 5.4808	Reading Level dBuV 60.44 53.40 58.39 50.40	Correct Factor dB/m -22.81 -20.81 -18.59 -16.50	Measure- ment dBuV/m 37.63 32.59 39.80 33.90	Limit dBuV/m 43.50 43.50 46.00 46.00	Over dB -5.87 -10.91 -6.20 -12.10	peak peak peak peak			
No. Mk. F 1 * 88 2 191 3 239 4 315 5 373	Freq. MHz .0329 .7450	Reading Level dBuV 60.44 53.40 58.39	Correct Factor dB/m -22.81 -20.81 -18.59	Measure- ment dBuV/m 37.63 32.59 39.80	Limit dBuV/m 43.50 43.50 46.00	Over dB -5.87 -10.91 -6.20	Detector peak peak peak peak peak			



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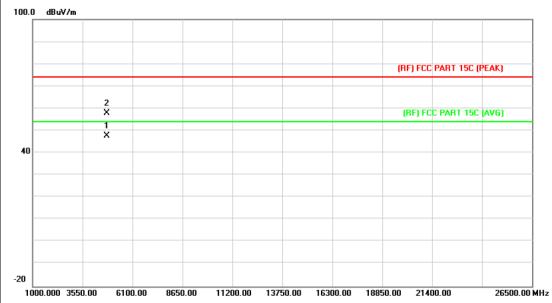
UT:				· VVC	atch			•		G3			
Tempe	rature) :	25 ℃	!	TITLE STATE	30	Relativ	e Hum	idity:	55%	6	W	
est Vo	oltage	:	DC 3	V			Dist.		G		33		
nt. Po	ol.		Vertic	al		aki	-				-	1	
est M	ode:		BLE	ΓX 2	402 M	ode	. 6	N//ID			1		
Remar	k:		Only	wors	se case	e is reporte	ed		611	111			
90.0 dB	uV/m												
									(RF)FC	CC 15C :	3M Radiati Margin		
40	Mundpeles	Arabylyksey	, addition to the second	Ä,	3	4 5 yrth March wyddin yn	Many	Almini Ali	**************************************	My	Munh	n,h/knyk	alp/likes
White the second	4 \\ \\display \\ \display \\ \ding \\ \display \\	50	60 70	80	3 X X	4	da A	300	400	500	600 70	10 1	.lp/lb.,
30.000	40 Mk.	50		Re	ading evel	propried to the second of the		300 asure- nent			600 70 Over		000.00
0 30.000			eq.	Re Le	_	(MHz)	r n	asure-	400	t			000.00
0 30.000		Fre	eq.	Re Le	evel	(MHz) Correct Facto	r m	asure- nent	400 Limi	t //m	Over	D	
30.000 No.	Mk.	Fre	eq. Iz 363	Re Le	evel IBuV	(MHz) Correct Facto	r m	asure- nent BuV/m	400 Limi	t //m 00	Over	D	etect
0 30.000 No.	Mk.	Fr∈ M⊢ 34.03	eq. Iz 363	Re Le 52	evel BuV 2.67	Correct Facto dB/m -16.46	r m	asure- nent BuV/m	Limi dBuv 40.0	t //m 00	Over	D	etect pea
No.	Mk. * !	Fre MH 34.03	eq. dz 363 141	Re Le 52 56	evel BuV 2.67 8.58	Correct Facto dB/m -16.46	r m dl 3	asure- nent BuV/m 66.21	400 Limi dBuv 40.0	t //m 00 00	Over	D 7	etect pea pea
No.	Mk. * !	Fre MH 34.03 80.64 94.09	eq. dz 363 441 978	Re Le 52 56 66	evel IBuV 2.67 8.58 0.44	(MHz) Correct Facto dB/m -16.46 -23.25	r m dt 3 3 3	asure- nent BuV/m 66.21 95.33	400 Limi dBuv 40.0 40.0	t //m 00 00 50 50	Over dB -3.79 -4.67 -5.39	9 7 9	etect pea pea pea





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EUT:	Smart Watch	Model:	G3					
Temperature:	25 ℃	Relative Humidity:	55%					
Test Voltage:	DC 3V	DC 3V						
Ant. Pol.	Horizontal	Horizontal						
Test Mode:	BLE Mode TX 2402 MHz	WILD -	3 Hills					
Remark:	No report for the emission v	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		*	4804.147	34.29	13.44	47.73	54.00	-6.27	AVG
2			4804.207	44.46	13.44	57.90	74.00	-16.10	peak



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EUT:	Smart Watch	Model:	G3
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3V	01	
Ant. Pol.	Vertical		
Test Mode:	BLE Mode TX 2402 MHz		THE RESERVE TO SERVE
Remark:	No report for the emission	n which more than 10 o	dB below the
	prescribed limit.	2 m 13	



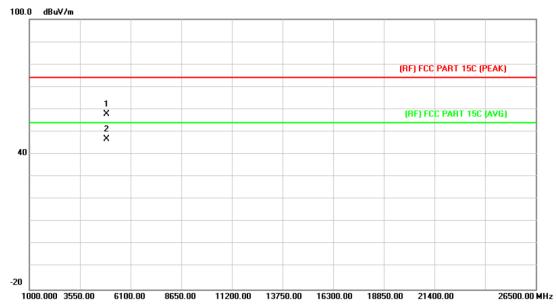
N	o. M	lk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4	1804.120	33.47	13.44	46.91	54.00	-7.09	AVG
2		4	1804.234	44.25	13.44	57.69	74.00	-16.31	peak



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T()BI	100
	190	

EUT:	Smart Watch	Model:	G3				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	DC 3V	DC 3V					
Ant. Pol.	Horizontal						
Test Mode:	BLE Mode TX 2442 MHz						
Remark:	No report for the emission	n which more than 10	dB below the				
	prescribed limit.						



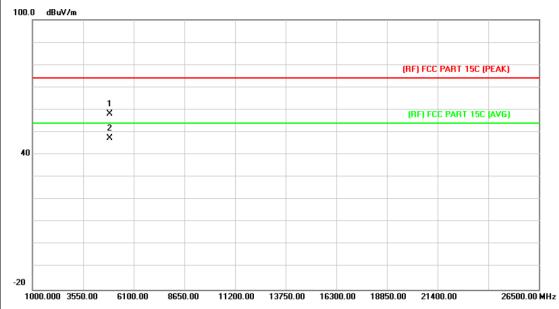
N	o. N	Λk.	Freq.			Measure- ment	Limit	Over	
			MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1			4883.796	43.79	13.92	57.71	74.00	-16.29	peak
2	*	•	4884.300	32.69	13.92	46.61	54.00	-7.39	AVG



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EUT:	Smart Watch	Model:	G3				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	DC 3V						
Ant. Pol.	Vertical						
Test Mode:	BLE Mode TX 2442 MHz						
Remark:	No report for the emission prescribed limit.	n which more than 10 c	dB below the				



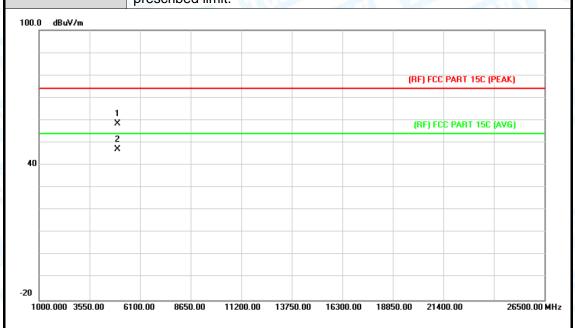
No	o. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4884.189	44.24	13.92	58.16	74.00	-15.84	peak
2	*	4884.303	33.40	13.92	47.32	54.00	-6.68	AVG



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EUT:	Smart Watch	Model:	G3
Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 3V		
Ant. Pol.	Horizontal	NO.	
Test Mode:	BLF Mode TX 2480 M	IH ₇	THE STATE OF THE S

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		4959.385	44.18	14.36	58.54	74.00	-15.46	peak
2	*	4959.916	32.56	14.36	46.92	54.00	-7.08	AVG



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EUT:	Smart Watch	Model:	G3					
Temperature:	25 ℃	Relative Humidity:	55%					
Test Voltage:	DC 3V	DC 3V						
Ant. Pol.	Vertical							
Test Mode:	BLE Mode TX 2480 MHz							
Remark:	No report for the emissio prescribed limit.	No report for the emission which more than 10 dB below the prescribed limit.						
	prescribed limit.	1 10 W						



No.	Mk.	Freq.	_	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∨	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4959.145	43.58	14.36	57.94	74.00	-16.06	peak
2	*	4960.507	32.22	14.36	46.58	54.00	-7.42	AVG



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6. Restricted Bands Requirement

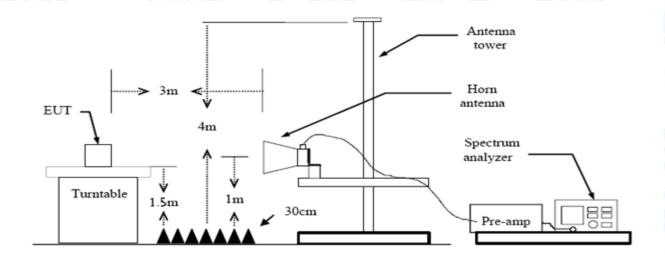
6.1 Test Standard and Limit

6.1.1 Test Standard FCC Part 15.209 FCC Part 15.205

6.1.2 Test Limit

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

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.
- (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



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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.

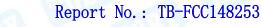
6.4 EUT Operating Condition

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

6.5 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=10 kHz with Peak Detector for Average Values.

Test data please refer the following pages.

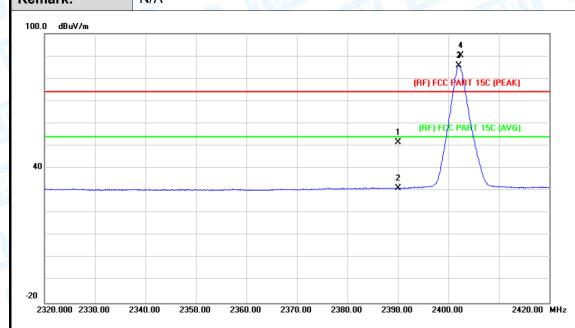




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(1) Radiation Test

EUT:	Smart Watch	Model:	G3				
Temperature:	25 ℃	Relative Humidity:	55%				
Test Voltage:	DC 3V	DC 3V					
Ant. Pol.	Horizontal	COURS -	MILL				
Test Mode:	BLE Mode TX 2402 MHz						
Remark:	N/A	A Marie	W Arthur				



No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBu∀	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	50.74	0.77	51.51	74.00	-22.49	peak
2		2390.000	30.32	0.77	31.09	54.00	-22.91	AVG
3	*	2402.100	84.79	0.82	85.61	Fundamental Frequency		AVG
4	Χ	2402.400	89.55	0.82	90.37	Fundamental F	requency	peak



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EUT:			Smart Watch				Model: G3			G3				
Гетр	eratu	re:	25 °C	2		CE		Relative Humidity:			55%			
Test \	Voltag	e:	DC 3	V			50							
۹nt. I	Pol.		Vertic	cal		111	13		1		(C)		60	
Test I	Mode:		BLE	Mode	e TX 2	480 MH:	Z	1	4/10			5 N	177	
Rema	ark:		N/A	M	No.		51	1			111			-
100.0	dBuV/m													
												4 %		
												Ň		
							+			(RI) FCC P	ART 15C (PE	AKJ	
							+			· ·	Н	PART 15C (A	VGJ	
40												\perp		
_										2 X	_ ل		~	
							_							
-20														
2320	1.000 233	0.00 23	340.00	2350.	UU 231	60.00 23	70.00	2380.	00 23	390.00	2400.0	JU	2420.00	мн
				D-	1:	0		N 4						
No	o. Mk.	Fre	-a		ading evel	Corre Fact			sure- ent	Lin	nit	Over		
140	. IVIIX.		-4.		VCI	i ac	.01	1110	SIII				Dete	acto
		M	17	d	Ru\/	dD/a		dBı	ı\//m	dBi	ı\//m	dB		
4		MH			Bu∀	dB/n			ıV/m		ıV/m	dB		
1		2390.	000	53	3.86	0.77	7	54	.63	74	.00	-19.3	7 ре	eak
1 2			000	53			7	54		74			7 ре	eak
1 2 3	*	2390.	000	50 3°	3.86	0.77	7	54 31	.63	74 54	.00	-19.3	7 pe	eak VG VG



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EUT:		Smart Watch		M	Model:			G3				
Temperature: 25 °C		NIN.	R	elative l	Humid	ity: 5	55%					
Test Volta	ge:	DC 3	DC 3V									
Ant. Pol.		Horiz	ontal	-	MA		1	6				
Test Mode):	BLE	Mode T	X 2480 I	MHz	111	MUE		3 V			
Remark:		N/A	ARA						33		ķ	
100.0 dBuV/	m											
]	
		1 22										
		X						(RF) FCC	PART 15C (PE	AK)	1	
			3									
		1	×					(RF) FC	C PART 15C (A	(VG)		
		1 \	4									
40			*								1	
		,									1	
											1	
											1	
											-	
											-	
2458.000 2	468.00 2	2478.00	2488.00	2498.00	2508.00	2518.00	2528.	00 2538	3.00	2558.00	_ MHz	
			.									
No. M	ν Ε ν	eq.	Readi Leve		orrect actor	Meas		Limit	Over			
- INO. IVI					actor	mer						
		Hz	dBu√		dB/m	dBu∨		dBuV/m	n dB	Dete	ecto	
1 X	2479	.900	82.2	8 ′	1.15	83.4	43 F	undament	al Frequenc	_y pe	ak	
2 *	2480	.000	78.0	1 '	1.15	79.1	16 г	undament	al Frequenc	y A\	/G	

74.00

54.00

59.59

41.42

-14.41

-12.58

peak

AVG

Emission Level= Read Level+ Correct Factor

58.42

40.25

1.17

1.17

2483.500

2483.500

3

4



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EUT:	Smart	Smart Watch		odel:	G3			
Temperature:	25 ℃	CITI'S	R	elative Humidit	y : 55%	55%		
Test Voltage:	DC 3V	1	1	8.8	Call 13			
Ant. Pol.	Vertica		allo		63			
Test Mode:	BLE M	ode TX 2480) MHz			THE PARTY		
Remark:	N/A				11133			
100.0 dBuV/m								
	2 ⊀							
	Å							
	3 X			- 1	RF) FCC PART 15C (PEAK)		
	/ \^							
	/ /•				(RF) FCC PART 15C	(AVG)		
	/ *							
40								
				· · · · · · · · · · · · · · · · · · ·				
-20 2458.000 2468.00	2478.00 2	488.00 2498.00	2508.00	2518.00 2528.00	2538.00	2558.00 MHz		
	F	_	Correct	Measure-				
No. Mk.	Freq.	Level	Factor	ment L	imit Ove	∍r		
	MHz	dBuV	dB/m	dBuV/m d	BuV/m dB	Detector		
1 * 24	180.100	87.60	1.15	88.75 _{Fur}	ndamental Freque	ency AVG		
2 X 24	180.300	92.61	1.15	93.76 Fur	ndamental Freque	ency peak		

Emission Level= Read Level+ Correct Factor

69.70

48.77

1.17

1.17

70.87

49.94

74.00

54.00

-3.13

-4.06

peak

AVG

2483.500

2483.500

3

4

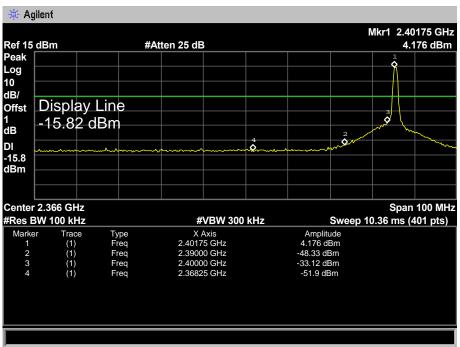


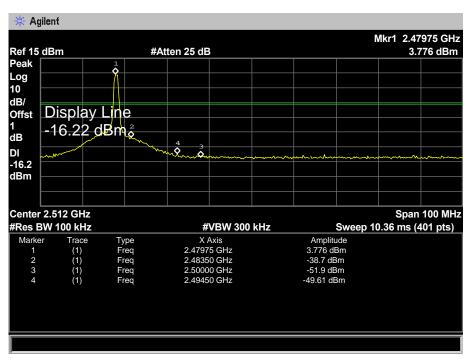


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(2) Conducted Test

EUT:	Smart Watch	Model:	G3		
Temperature:	25 ℃	Relative Humidity:	55%		
Test Voltage:	DC 3V				
Test Mode:	BLE Mode TX 2402MHz / BLE Mode TX 2480MHz				
Remark:	The EUT is programed in continuously transmitting mode				







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7. Bandwidth Test

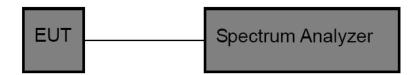
7.1 Test Standard and Limit

7.1.1 Test Standard FCC Part 15.247 (a)(2)

7.1.2 Test Limit

FCC	FCC Part 15 Subpart C(15.247)/RSS-247				
Test Item	Limit	Frequency Range(MHz)			
Bandwidth	>=500 KHz (6dB bandwidth)	2400~2483.5			

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) The bandwidth is measured at an amplitude level reduced 6dB 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.
- (3)Measure the channel separation the spectrum analyzer was set to Resolution Bandwidth:100 kHz, and Video Bandwidth:300 kHz, Detector: Peak, Sweep Time set auto.

7.4 EUT Operating Condition

The EUT was set to continuously transmitting in each mode and low, middle and high channel for the test.

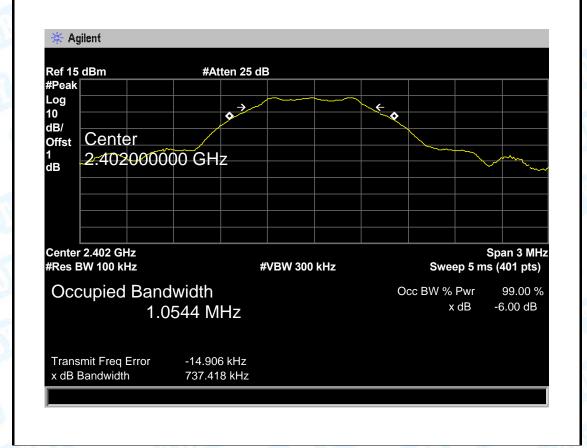


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7.5 Test Data

EUT:	Smart Watch	Model:	G3			
Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	DC 3V	Militia				
Test Mode:	est Mode: BLE TX Mode					
Channel frequen	cy 6dB Bandwidth	99% Bandwidth	Limit			
(MHz)	(kHz)	(kHz)	(kHz)			
2402	737.418	1054.40				
2442	737.592	1054.80	>=500			
2480	741.921	1055.70				
	RI F	Mode				

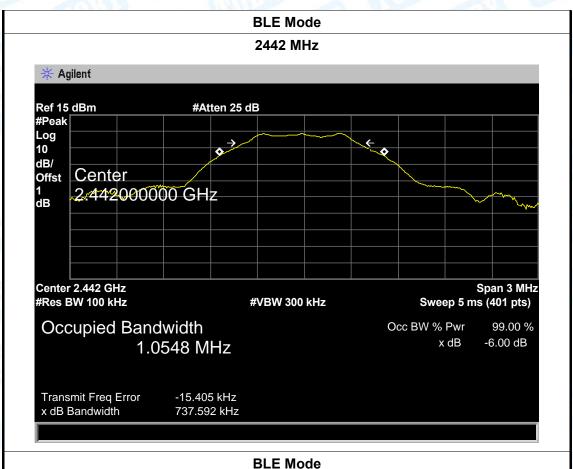
2402 MHz







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2480 MHz 🔆 Agilent #Atten 25 dB Ref 15 dBm #Peak Log **€** 10 dB/ Center Offst 1 dB 2:480000000 GHz Center 2.48 GHz Span 3 MHz #Res BW 100 kHz Sweep 5 ms (401 pts) **#VBW 300 kHz** Occupied Bandwidth Occ BW % Pwr 99.00 % -6.00 dB x dB 1.0557 MHz Transmit Freq Error -14.846 kHz 741.921 kHz x dB Bandwidth



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8. Peak Output Power Test

8.1 Test Standard and Limit

8.1.1 Test Standard FCC Part 15.247 (b)

8.1.2 Test Limit

FCC Part 15 Subpart C(15.247)/RSS-247			
Test Item	Limit	Frequency Range(MHz)	
Peak Output Power	1 Watt or 30 dBm	2400~2483.5	

8.2 Test Setup



8.3 Test Procedure

The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement is according to section 9.1.1 of KDB 558074 D01 DTS Meas Guidance v03r05.

- (1) Set the RBW≥DTS Bandwidth
- (2) Set VBW≥3*RBW
- (3) Set Span≥3*RBW
- (4) Sweep time=auto
- (5) Detector= peak
- (6) Trace mode= maxhold.
- (7) Allow trace to fully stabilize, and then use peak marker function to determine the peak amplitude level.

8.4 EUT Operating Condition

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

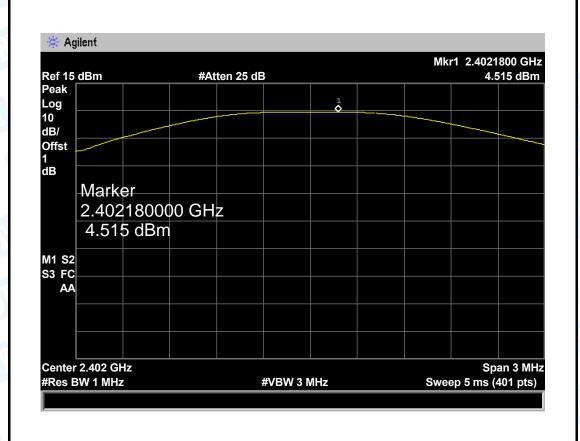


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8.5 Test Data

EUT:	Smart Wa	Smart Watch			G3
Temperature:	mperature: 25 °C		Relative Humidity:		55%
Test Voltage:	DC 3.7V	עניוה	Will to		
Test Mode:	BLE TX M	lode			10
Channel frequen	cy (MHz)	Test Resu	t (dBm)	L	imit (dBm)
2402		4.51	5		
2442		4.393		30	
2480		4.35	0		
		BLE M	ode		

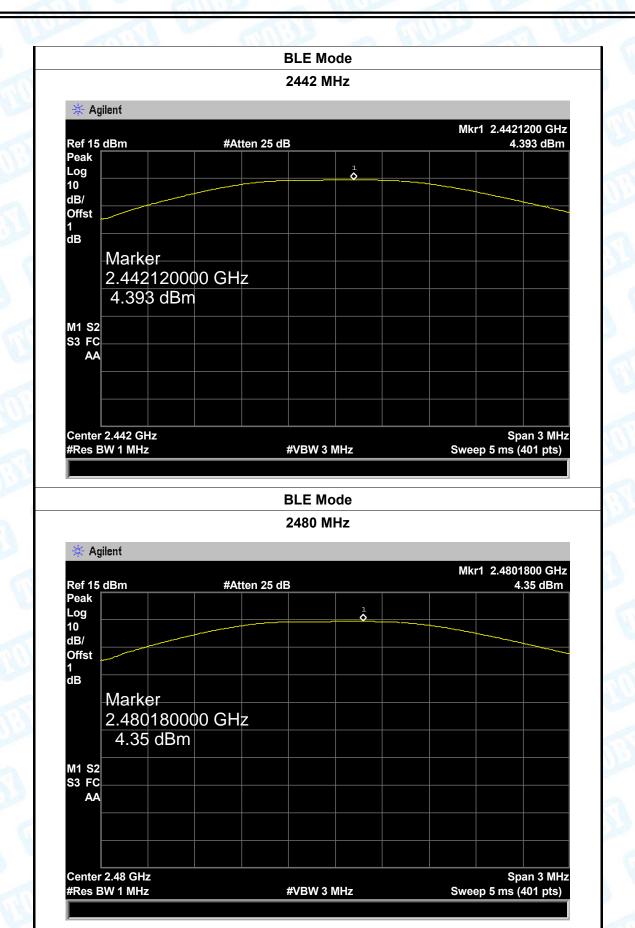
2402 MHz







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9. Power Spectral Density Test

9.1 Test Standard and Limit

9.1.1 Test Standard FCC Part 15.247 (e)

9.1.2 Test Limit

FCC Part 15 Subpart C(15.247)			
Test Item	Limit	Frequency Range(MHz)	
Power Spectral Density	8dBm(in any 3 kHz)	2400~2483.5	

9.2 Test Setup



9.3 Test Procedure

The EUT was directly connected to the Spectrum Analyzer and antenna output port as show in the block diagram above. The measurement according to section 10.2 of KDB 558074 D01 DTS Meas Guidance v03r05.

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Set analyser center frequency to DTS channel center frequenyc.
- (3) Set the span to 1.5 times the DTS bandwidth.
- (4) Set the RBW to: 3 kHz(5) Set the VBW to: 10 kHz
- (6) Detector: peak(7) Sweep time: auto
- (8) Allow trace to fully stabilize. Then use the peak marker function to determine the maximum amplitude level.

9.4 EUT Operating Condition

The EUT was set to continuously transmitting in each mode and low, Midle and high channel for the test.

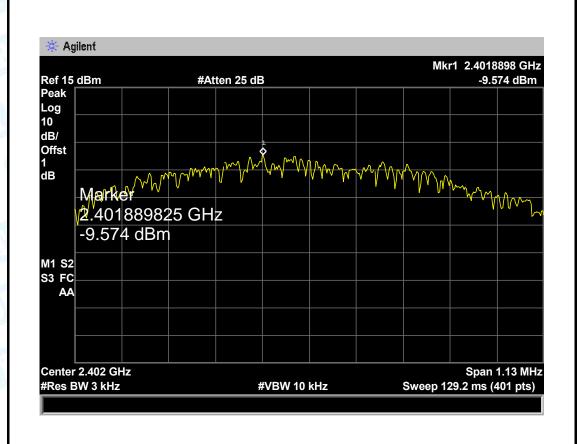


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9.5 Test Data

EUT:	Smart Watch		Model:	G3
Temperature:	25 ℃		Relative Humidity:	55%
Test Voltage:	DC 3.7V			CITIES IN
Test Mode:	BLE TX M	1ode	2 BAILTING	
Channel Frequency		Power Density		Limit (dBm)
(MHz)		(3 kHz	z/dBm)	
2402		-9.	574	
2442		-9.	647	8
2480		-9.976		
		BLF	Mode	

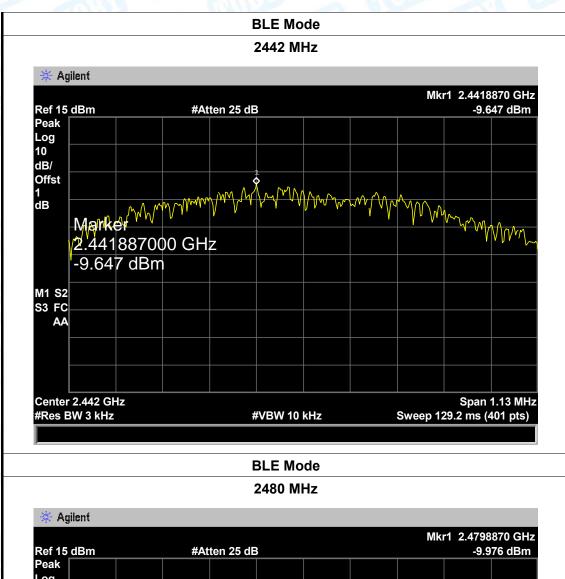
2402 MHz

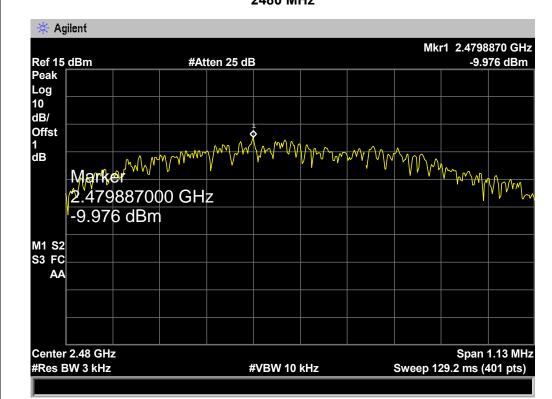






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10. Antenna Requirement

10.1 Standard Requirement

10.1.1 Standard FCC Part 15.203

10.1.2 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.

10.2 Antenna Connected Construction

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

10.3 Result

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

Antenna Type				
3	▼ Permanent attached antenna			
0.03	□ Unique connector antenna			
	□ Professional installation antenna			