

Shenzhen Toby Technology Co., Ltd.

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FCC Radio Test Report FCC ID: 2AOSJ-SSP01

Original Grant

Report No.		TB-FCC157817
Applicant	5	Smlpretty Technology Co., Ltd
Equipment Under	Те	st (EUT)
EUT Name	÷	Smart Bluetooth Padlock
Model No.		SSP01
Serial Model No.	6	N/A
Brand Name		N/A
Receipt Date	1	2018-01-09
Test Date		2018-01-10 to 2018-01-15
Issue Date	-	2018-01-16
Standards	1	FCC Part 15: 2017, 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

WAN SU foughter.

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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Revision History

Version	Description	Issued Date
Rev.01	Initial issue of report	2018-01-15
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1. General Information about EUT

1.1 Client Information

Applicant	: Smlpretty Technology Co., Ltd
Address	: Unit 4J, Block B, Central, Xixiang Town, Bao'an District, Shenzhen, China
Manufacturer	: Smlpretty Technology Co., Ltd
Address	: Unit 4J, Block B, Central, Xixiang Town, Bao'an District, Shenzhen, China

1.2 General Description of EUT (Equipment Under Test)

EUT Name		Smart Bluetooth Padlock		
Models No.	2	SSP01		
133		Operation Frequency:	Bluetooth 4.2(BLE): 2402MHz~2480MHz	
Product Description		Number of Channel:	Bluetooth 4.2(BLE): 40 channels see note(3)	
	d.	RF Output Power:	-0.688dBm Conducted Power	
		Antenna Gain: 4dBi PCB Antenna		
	E	Modulation Type: GFSK		
		Bit Rate of Transmitter:	1Mbps(GFSK)	
Power Supply	:	DC Voltage supplied by USB cabel DC Voltage supplied by Li-ion battery		
Power Rating	:	DC 5.0V by USB cable		
DC 3.6V by 140mAh Li			ion battery	
Connecting I/O Port(S)	:	Please refer to the User's Manual		

Note:

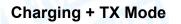
This Test Report is FCC Part 15.247 for Bluetooth BLE, the test procedure follows the FCC KDB 558074 D01 DTS Means Guidance v04.

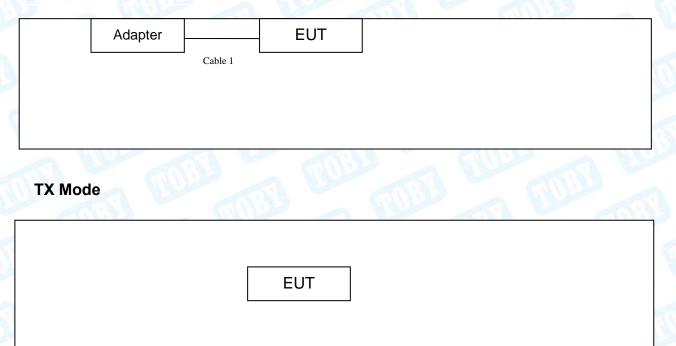
- (1) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- (2) Antenna information provided by the applicant.
- (3) Channel List:



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







1.4 Description of Support Units

Equipment Information					
Name	Model	FCC ID/VOC	Manufacturer	Used "√"	
Adapter	BSY02D050200V		BSY	\checkmark	
	Cable Information				
Number	Shielded Type	Ferrite Core	Length	Note	
Cable 1	NO	NO	0.5M		

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	Charging + TX Mode	

For Radiated Test			
Final Test Mode	Description		
Mode 2	TX Mode		
Mode 3	TX Mode (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 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:

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 portable 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	nRFgo Studio		
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
	150kHz to 30MHz	±3.42 dB
Radiated Emission	Level Accuracy:	±4.60 dB
Radiated Emission	9kHz to 30 MHz	±4.00 0B
Radiated Emission	Level Accuracy:	±4.40 dB
Radiated Emission	30MHz to 1000 MHz	±4.40 dB
Padiated Emission	Level Accuracy:	14.20 dP
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.: (854351)

The Laboratory is listed in the United States of American Federal Communications Commission (FCC), and the registration number is 854351.

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

Standard Section		-	ludement	Domork	
FCC	IC	Test Item	Judgment	Remark	
15.203		Antenna Requirement	PASS	N/A	
15.207(a)	RSS-GEN 7.2.4	Conducted Emission	PASS	N/A	
15.205&15.247(d) RSS-GEN 7.2.2		Band-Edge & Unwanted Emissions into Restricted PASS Frequency		N/A	
15.247(a)(2)	RSS 247 5.2 (1)	6dB Bandwidth	PASS	N/A	
15 24/(b)(3)		Conducted Max Output Power	PASS	N/A	
15.247(e) RSS 247 5.2 (2)		Power Spectral Density PASS		N/A	
15.205, RSS 247 15.209&15.247(d) 5.5		Transmitter Radiated Spurious &Unwanted Emissions into Restricted Frequency	PASS	N/A	



3. Test Equipment

Conducted Emiss	ion Test				
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
EMI Test Receiver	Rohde & Schwarz	ESCI	100321	Jul. 20, 2017	Jul. 19, 2018
RF Switching Unit	Compliance Direction Systems Inc	RSU-A4 34403		Jul. 20, 2017	Jul. 19, 2018
AMN	SCHWARZBECK	NNBL 8226-2	8226-2/164	Jul. 20, 2017	Jul. 19, 2018
LISN	Rohde & Schwarz	ENV216	101131	Jul. 20, 2017	Jul. 19, 2018
Radiation Emissic	on Test			-	-
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 20, 2017	Jul. 19, 2018
EMI Test Receiver	Rohde & Schwarz	ESPI	100010/007	Jul. 20, 2017	Jul. 19, 2018
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Mar.25, 2017	Mar. 24, 2018
Bilog Antenna	ETS-LINDGREN	3142E	00117542	Mar.25, 2017	Mar. 24, 2018
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar.24, 2017	Mar. 23, 2018
Horn Antenna	ETS-LINDGREN	3117	00143209	Mar.24, 2017	Mar. 23, 2018
Loop Antenna	Laplace instrument	RF300	0701	Mar.24, 2017	Mar. 23, 2018
Pre-amplifier	Sonoma	310N	185903	Mar.24, 2017	Mar. 23, 2018
Pre-amplifier	HP	8449B	3008A00849	Mar.25, 2017	Mar. 24, 2018
Cable	HUBER+SUHNER	100	SUCOFLEX	Mar.24, 2017	Mar. 23, 2018
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A
Antenna Conduct	ed Emission				
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 20, 2017	Jul. 19, 2018
Spectrum Analyzer	Rohde & Schwarz	ESCI	100010/007	Jul. 20, 2017	Jul. 19, 2018
MXA Signal Analyzer	Agilent	N9020A	MY49100060	Oct. 26, 2017	Oct. 25, 2018
Vector Signal Generator	Agilent	N5182A	MY50141294	Oct. 26, 2017	Oct. 25, 2018
Analog Signal Generator	Agilent	N5181A	MY50141953	Oct. 26, 2017	Oct. 25, 2018
	DARE!! Instruments	RadiPowerRPR3006W	17100015SNO26	Oct. 26, 2017	Oct. 25, 2018
PE Dowor Concor	DARE!! Instruments	RadiPowerRPR3006W	17100015SNO29	Oct. 26, 2017	Oct. 25, 2018
RF Power Sensor	DARE!! Instruments	RadiPowerRPR3006W	17100015SNO31	Oct. 26, 2017	Oct. 25, 2018
	DARE!! Instruments	RadiPowerRPR3006W	17100015SNO33	Oct. 26, 2017	Oct. 25, 2018



4. Conducted Emission Test

- 4.1 Test Standard and Limit
 - 4.1.1Test Standard FCC Part 15.207
 - 4.1.2 Test Limit

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

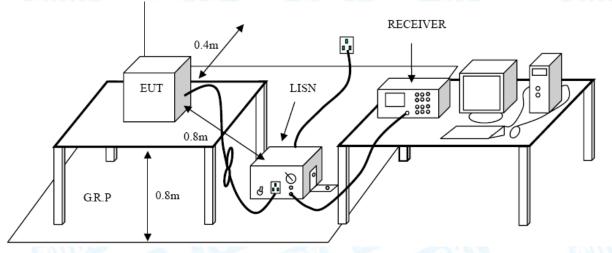
Notes:

(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.



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 9 kHz, 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 Da5ta

Please refer to the Attachment A.



5. Radiated Emission Test

- 5.1 Test Standard and Limit
 - 5.1.1 Test Standard
 - FCC Part 15.247(d)
 - 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	Distance Meters(at 3m)			
(MHz)	Peak (dBuV/m)	Average (dBuV/m)		
Above 1000	74	54		

Note:

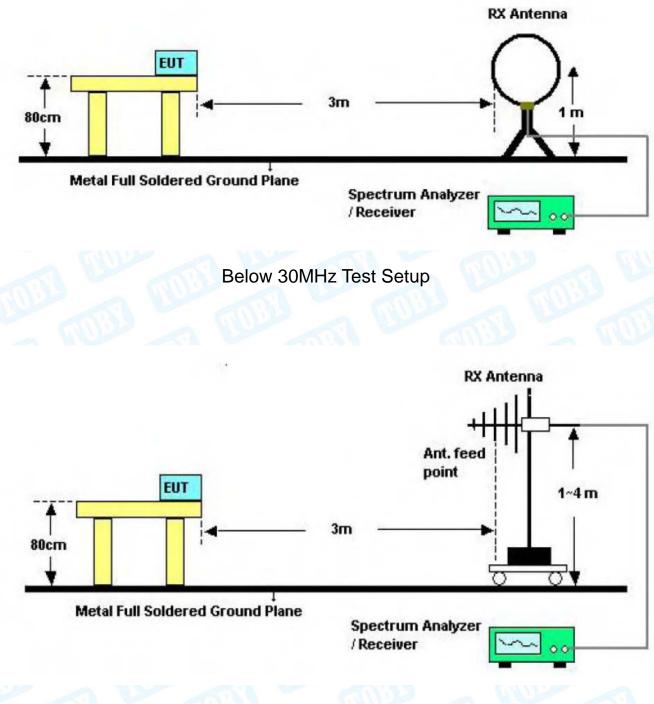
(1) The tighter limit applies at the band edges.

(2) Emission Level (dBuV/m)=20log Emission Level (uV/m)



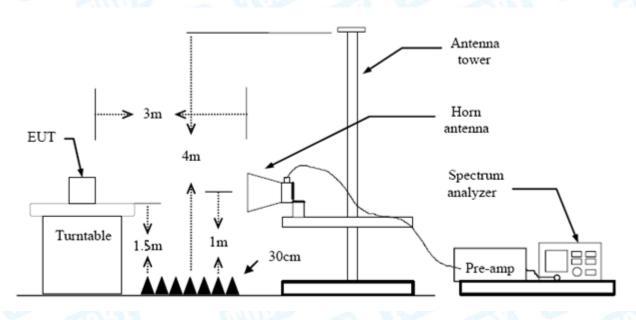
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5.2 Test Setup



Below 1000MHz Test Setup





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 Hz with Peak Detector for Average Values.

Please refer to the Attachment B.

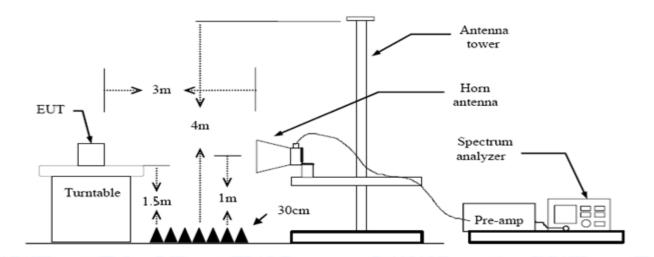


6. Restricted Bands Requirement

- 6.1 Test Standard and Limit
 - 6.1.1 Test Standard
 - FCC Part 15.247(d) FCC Part 15.205
 - 6.1.2 Test Limit

Restricted Frequency	Distance Meters(at 3m)			
Band (MHz)	Peak (dBuV/m)	Average (dBuV/m)		
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 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 Hz with Peak Detector for Average Values. Please refer to the Attachment C.

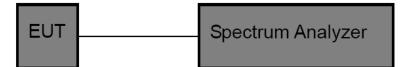


7. Bandwidth Test

- 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-247Test ItemLimitFrequency Range(MHz)					
Test Item						
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.

7.5 Test Data

Please refer to the Attachment D.



8. Peak Output Power Test

- 8.1 Test Standard and Limit
 - 8.1.1 Test Standard
 - FCC Part 15.247 (b)(3)
 - 8.1.2 Test Limit

FCC Part 15 Subpart C(15.247)/RSS-247					
Test Item Limit Frequency Range(I					
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 v04.

- (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.

8.5 Test Data

Please refer to the Attachment E.

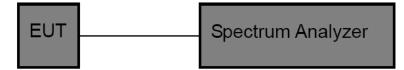


9. Power Spectral Density Test

- 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(MH					
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 v04.

- (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 frequency.
- (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, Middle and high channel for the test.

9.5 Test Data

Please refer to the Attachment F.



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 4dBi, 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 PCB Antenna. It complies with the standard requirement.

Antenna Type		
	Permanent attached antenna	
2 1	Unique connector antenna	
	Professional installation antenna	

Attachment A--- Conducted Emission Test Data

TOBY

Tem	peratur	e: 25°C		R	elative Humid	ity:	55%	Mine
Test	Voltage	e: AC 1	20V/60 Hz		AL CONTRACT	163	686	
Tern	ninal:	Line	13	UM .				1990
Test	Mode:	TX C	FSK Mode 2	2402 MHz	(ALD)		2	LUL .
Rem	nark:	Only	worse case	is reported		-		
80.0	dBuV							
							QP: AVG:	
-								
-								
_		v						
30	MADOR.	Â.						
	A A A A A	M. Marana Marana	ห-หรือเหน่งสังสุดภูมิที่ได้	Mustele Mark und May	Harry read Mar Mar Mar Alpropher of the	whentherester	where the for the type	M. M. M. Marth pe
	Magal	alm will "						
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-								
20			-		5			20.000
0.15	00	0.9	0	(MHz)	5			30.000
			Reading	Correct	Measure-			
No	. Mk.	Freq.	Level	Factor	ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.4620	22.02	9.60	31.62	56.66	-25.04	
2	*	0.4620	12.91					QP
3		0.1020	12.91	9.60	22.51 4	46.66	-24.15	-
		0.6340	11.11	9.60 9.61		46.66 56.00	-24.15 -35.28	-
4					20.72			AVG

9.60

9.60

9.60

9.60

9.61

9.61

9.63

9.63

20.61

15.82

21.28

16.27

20.99

16.04

20.09

15.43

Emission Level= Read Level+ Correct Factor

0.8700

0.8700

1.1580

1.1580

1.7020

1.7020

2.5900

2.5900

5

6

7

8

9

10

11

12

11.01

6.22

11.68

6.67

11.38

6.43

10.46

5.80

56.00 -35.39

46.00 -30.18

56.00 -34.72

46.00 -29.73

56.00 -35.01

46.00 -29.96

56.00 -35.91

46.00 -30.57

QP

QP

AVG

AVG

AVG

QP

AVG

QP



Temperature:	25 ℃		Relative Humidity:	55%						
Test Voltage:	AC 120V/60 Hz									
Terminal:	Neutral	-		139						
Test Mode: TX GFSK Mode 2402 MHz										
Remark:	Only worse ca	ase is reported	MIDE	2 199						
80.0 dBuV				QP: —						
				AVG:						
30 MM Mun X	XX		en and a second s							
" "W" W	WWWWWWWWWWWWWWW	whether and the solution of the solution of the	bandarian mental historic and menosite the manufactures	weburneyweighterentlybeters of a second state of the period of the second state of the						
much	warden and a superior and a superior	agalenderforten og en af e	here and the state of the second s	AV						
-20										

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.2860	13.02	9.58	22.60	60.64	-38.04	QP
2		0.2860	8.47	9.58	18.05	50.64	-32.59	AVG
3		0.4100	14.77	9.58	24.35	57.65	-33.30	QP
4		0.4100	6.69	9.58	16.27	47.65	-31.38	AVG
5		0.4700	19.09	9.58	28.67	56.51	-27.84	QP
6	*	0.4700	9.10	9.58	18.68	46.51	-27.83	AVG
7		0.9140	9.92	9.59	19.51	56.00	-36.49	QP
8		0.9140	5.22	9.59	14.81	46.00	-31.19	AVG
9		1.5460	10.12	9.60	19.72	56.00	-36.28	QP
10		1.5460	5.25	9.60	14.85	46.00	-31.15	AVG
11		1.9740	9.89	9.61	19.50	56.00	-36.50	QP
12		1.9740	5.24	9.61	14.85	46.00	-31.15	AVG



Temperature:	25 ℃		Relative Humidity	: 55%
Test Voltage:	AC 240V/60	Hz	AUL -	1
Ferminal:	Line		11	anisy a
Fest Mode:	TX GFSK M	ode 2402 MHz		
Remark:	Only worse	case is reported	MUDD	
80.0 dBuV				
				QP: AVG:
\\\ a_	* 7			
30 May Mary	WANNA WINDOWN	What we want the start of the s	MA Marthathaireadown	which we are in the international the second states and the second second second second second second second se
many	how why why how were	Martin Martin	and the sheet of the	A
	• 111	Manual II I Junior View	and down which advertises	And a surface where the many and a surface of the s
0.150	0.5	(MHz)	5	30.000
		(-	00.000

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.4220	16.83	9.60	26.43	57.41	-30.98	QP
2		0.4220	10.29	9.60	19.89	47.41	-27.52	AVG
3		0.4780	23.52	9.60	33.12	56.37	-23.25	QP
4	*	0.4780	16.69	9.60	26.29	46.37	-20.08	AVG
5		1.2500	14.77	9.60	24.37	56.00	-31.63	QP
6		1.2500	7.78	9.60	17.38	46.00	-28.62	AVG
7		2.1500	13.50	9.62	23.12	56.00	-32.88	QP
8		2.1500	7.10	9.62	16.72	46.00	-29.28	AVG
9		2.9500	13.23	9.64	22.87	56.00	-33.13	QP
10		2.9500	7.17	9.64	16.81	46.00	-29.19	AVG
11		3.7300	12.27	9.67	21.94	56.00	-34.06	QP
12		3.7300	6.87	9.67	16.54	46.00	-29.46	AVG



Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	AC 240V/60 Hz		A
Terminal:	Neutral		133
Test Mode:	TX GFSK Mode 2402 M	Hz	
Remark:	Only worse case is repor	rted	a lui
80.0 dBuV 30 X MMMMM	MMM Marine and a second and a		QP: AVG:
-20	0.5 (MHz	2) 5	30.000

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1		0.2180	14.80	9.64	24.44	62.89	-38.45	QP
2		0.2180	6.63	9.64	16.27	52.89	-36.62	AVG
3		0.3860	13.97	9.58	23.55	58.15	-34.60	QP
4		0.3860	6.33	9.58	15.91	48.15	-32.24	AVG
5	*	0.4740	22.21	9.58	31.79	56.44	-24.65	QP
6		0.4740	11.52	9.58	21.10	46.44	-25.34	AVG
7		0.6740	11.26	9.59	20.85	56.00	-35.15	QP
8		0.6740	5.71	9.59	15.30	46.00	-30.70	AVG
9		1.3099	12.38	9.60	21.98	56.00	-34.02	QP
10		1.3099	5.98	9.60	15.58	46.00	-30.42	AVG
11		1.9300	10.71	9.61	20.32	56.00	-35.68	QP
12		1.9300	5.53	9.61	15.14	46.00	-30.86	AVG



Attachment B-- Radiated Emission Test Data

9 KHz~30 MHz

From 9 KHz to 30 MHz: Conclusion: PASS

Note: The amplitude of spurious emissions which are attenuated by more than 20dB Below the permissible value has no need to be reported.

30MHz~1GHz

					CILL		
Temperatur	re: 25℃			Relative Hur	nidity:	55%	
Test Voltage	e: DC 3	8.6V				ann	
Ant. Pol.	Horiz	contal					2.0
Test Mode:	BLE	TX 2402 Mo	de		N	-	
Remark:	Only	worse case	is reported			MUP	1
80.0 dBuV/m							
					(RF)FCC 1	ISC 3M Radiation	
						Margin -6	ав
30							
301			3 4	5	6	he handburght	when the
×	2 X		MM	э Х	with with with the	Non- Armiter Marine	
Notent Marine 1	/ Mm		Nº W M	moley maker marked			
non Willingmont	surviva Aut	homeonicated	V				
-20							
30.000 40	50 60	70 BO	(MHz)	300	400 5	500 600 700	1000.000
		Reading	Correct	Measure-			
No. Mk.	Freq.	Level	Factor	ment	Limit	Over	
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1 *	35.7490	36.54	-17.00	19.54	40.00	-20.46	peak
2	58.4074	39.96	-23.90	16.06	40.00	-23.94	peak
3	142.3243	42.00	-21.15	20.85	43.50	-22.65	peak
4 (166.0680	40.24	-20.17	20.07	43.50	-23.43	peak
5 3	329.0390	33.93	-14.79	19.14	46.00	-26.86	peak

*:Maximum data x:Over limit !:over margin

459.1144

6

Emission Level= Read Level+ Correct Factor

33.89

-11.23

22.66

46.00

-23.34

peak



									-	116	195	<u> </u>	
Ten	nperat	ure:	25°C	2	A1 - 5		Relative H	umi	dity:	55%	þ	-	
Tes	t Volta	ige:	DC	3.6V	A.		-	47		R			
Ant	. Pol.		Vert	ical							2		
Tes	t Mod	e:	BLE	TX 24	02 M	ode		1			A	5	
Rer	nark:		Only	y worse	case	e is reported			2	2	111		
80.	0 dBuV/	'n											_
									(RF)FCC	15C 3M	Radiatio	n	
											Margin -	5 dB	
				ſ									
30		1 x	3	4		5				6			
		×	×	×		. Å A.				MA.	Waynatam	uning	When
	WMWM	nut Moun	m m	₩1 <u></u> ,		N MY N			AV MANANA MANANA	ŕ	A entrances .		
	r -	P IF		white	manner	W ' '	Manage and the sold	matricke	<u>~</u>			_	
-20													
3	0.000	40 50	D 60	70 BO		(MHz)		300	400	500 6	00 700	10	00.00
				Rea	ding	Correct	Measur	e-					
N	o. Mk	. Fi	req.	Le	vel	Factor	ment		Limit	0	ver		
		М	Hz	dB	luV	dB/m	dBuV/n	n	dBuV/m		dB	Def	tecto
1		45.2	2166	48	.77	-21.79	26.98	}	40.00	-1	3.02	р	eak
2	*	47.9	940	52	.37	-22.95	29.42	2	40.00	-1	0.58	р	eak
3		55.2	2207	51	.42	-23.86	27.56	;	40.00	-1	2.44		eak
4		71.0	0803	49	.67	-23.02	26.65	;	40.00	-1	3.35	р	eak
5		142.	3243	46	.69	-21.15	25.54	ŀ	43.50	-1	7.96	р	eak
6		552.	8832	35	.41	-9.20	26.21		46.00	-1	9.79	р	eak
												-	

*:Maximum data x:Over limit !:over margin

TOBY

Above 1GHz

Tempera	iture:	25 ℃			Relative Humidi	i ty: 55%					
Fest Volt	tage:	DC 3.6V									
Ant. Pol.		Horizont	Horizontal								
Test Mod	de:	BLE Mo	BLE Mode TX 2402 MHz								
Remark:			No report for the emission which more than 10 dB below the prescribed limit.								
100.0 dBu	.V/m										
					(BF) FCC PART 15C (PEA)					
	1 X										
	2				(R	IF) FCC PART 15C (AVC					
50	×										
0.0											

No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4804.004	49.99	15.87	65.86	74.00	-8.14	peak
2	*	4804.264	34.98	15.87	50.85	54.00	-3.15	AVG



Tem	perature	:	25 ℃			Relative H	lumidity:	55%			
Test	Voltage	:	DC 3.6	DC 3.6V							
۸nt.	Pol.		Vertica								
est	Mode:		BLE Mode TX 2402 MHz								
Rem	ark:			ort for the bed limit.	the emission which more than 10 dB below the mit.						
100.0	dBuV/m										
							(RF) FC	C PART 15C (PEAK)			
		2 X									
-		~					(BE) E	CC PART 15C (AVG)			
50		1 X									
0.0											

No	o. Mk	. Freq.	Reading Correct Level Factor			Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	
1	*	4803.948	34.98	15.87	50.85	54.00	-3.15	AVG	
2		4804.764	49.72	15.87	65.59	74.00	-8.41	peak	



em	perature:	25 ℃		Rela	tive Humidity:	55%
est	Voltage:	DC 3.6V	Carles .		AUDE	
Ant.	Pol.	Horizont	al		61	133
est	Mode:	BLE Mod	de TX 2442 I	MHz		
Rem	nark:	No repor prescribe		ssion which r	nore than 10 dB	below the
100.0) dBuV/m					
					(RF) FCC	PART 15C (PEAK)
	1 X					
					(RF) FC	C PART 15C (AVG)
50	2 X					
0.0	00.000 3550.00	6100.00 865	0.00 11200.00	13750.00 1630		0.00 26500.00 N

No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4884.250	48.70	16.55	65.25	74.00	-8.75	peak
2	*	4884.790	34.77	16.55	51.32	54.00	-2.68	AVG



Tempe	rature:	25 ℃			Relative H	umidity:	55%
Test Vo	oltage:	DC 3.6\	'ant		- all	200	20
Ant. Po	ol.	Vertical	A CO	1	51	100	
Fest Mo	ode:	BLE Mo	de TX 24	42 MHz			-08
Remarl	k:	No repo prescrib		emission	which more th	an 10 dB	below the
100.0 de	3uV/m						
						(RF) FCC	PART 15C (PEAK)
	2 X						
						(RF) FC	CPART 15C (AVG)
50	1 X						
0.0							

No.	Mk	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4884.368	34.79	16.55	51.34	54.00	-2.66	AVG
2		4884.396	49.49	16.55	66.04	74.00	-7.96	peak



Гem	peratur	e:	25℃				Relative I	lumidity:	55%	
Fest	Voltage):	DC 3.6	6V	137		B = B	1999		
Ant.	Pol.		Horizo	ntal		200		115	132	~
est	Mode:		BLE N	lode TX	2480	MHz				
Rem	nark:			ort for t ibed lim		ssion wł	nich more	than 10 dB	below the	
00.0	dBuV/m									
								(RF) FCC	PART 15C (PEAK)	
		1 X								
								(RF) FC	CPART 15C (AVG)	
50		2 X								
0.0										
10	0.000 3550.	.00 6	100.00	8650.00	11200.00	13750.00	16300.00	18850.00 2140	0.00 2650	0.00 MH

No	. Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4959.424	48.77	17.19	65.96	74.00	-8.04	peak
2	*	4959.632	34.81	17.19	52.00	54.00	-2.00	AVG



Temp	perature:		25° ℃			Rela	tive Humi	dity:	55%	
Test	Voltage:		DC 3.6	SV	163		Alla	2	-	
Ant.	Pol.		Vertica		1	100		100	133	
Test	Mode:		BLE M	ode TX	2480 MH	z		6		1
Rem	ark:			ort for t bed lim		on which r	nore than ?	10 dB	below t	he
100.0	dBuV/m									
-								(RF) FCC	PART 15C (PEAK)
		1 X								
		2						(RF) FC	PART 15C	(AVG)
50		x								
0.0										

No	o. Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4959.720	49.04	17.19	66.23	74.00	-7.77	peak
2	*	4960.790	34.77	17.19	51.96	54.00	-2.04	AVG



Attachment C-- Restricted Bands Requirement Test Data

Test Voltage: DC 3.6V Ant. Pol. Horizontal Test Mode: BLE Mode TX 2402 MHz Remark: N/A 10.0 dBuV/m 60 4 3 5 60 1 60 2 60 2 60 2 60 2 60 2 60 2 60 2 60 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 3 2 2 2 4 3 3 3	Ant. Pol. Horizontal Test Mode: BLE Mode TX 2402 MHz Remark: N/A 110.0 dBuV/m 60 0 60 0 10.0 2335.00 2315.000 2325.00 2315.000 2325.00	1 MF) FCC	3 PART 15C (PEA	
Test Mode: BLE Mode TX 2402 MHz Remark: N/A 110.0 dBuV/m 4 3 3 3 4 3 50 1 60 1 10.0 1 60 2 2 2 10.0 2	Test Mode: BLE Mode TX 2402 MHz Remark: N/A 110.0 dBuV/m 60 0 60 0 10.0 0 2315.000 2325.00 2335.00 2355.00 2365.00 2375.00 23	1 MF) FCC	3 PART 15C (PEA	
Remark: N/A 110.0 dBuV/m 4 3 3 60 1 60 1 60 1 60 2 10.0 2	Remark: N/A 110.0 dBuV/m 60 0 60 0 10.0 0 2315.000 2325.00 235.00 2355.00 2365.00 2375.00 23	1 MF) FCC	3 PART 15C (PEA	
110.0 dBuV/m	110.0 dBuV/m	1 MF) FCC	3 PART 15C (PEA	
60 10.0 10		1 MF) FCC	3 PART 15C (PEA	
60 1 10.0 2		1 MF) FCC	3 PART 15C (PEA	
60 60 1 1 10.0 10.0 10.0 10.0 10.0 10.0		1 MF) FCC	PART 15C (PEA	
60 1 1 1 1 1 10.0 1 1 10.0 1 1 1 1 1 1 1 1 1 1 1 1 1		1 MF) FCC	PART 15C (PEA	
60 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1 MF) FCC		
10.0 MF) FCC PART 15C (AVG)		(MF) FCC		VG)
10.0 MF) FCC PART 15C (AVG)		(MF) FCC		v6)
	2315.000 2325.00 2335.00 2345.00 2355.00 2365.00 2375.00 23			
	2315.000 2325.00 2335.00 2345.00 2355.00 2365.00 2375.00 23	2		
	2315.000 2325.00 2335.00 2345.00 2355.00 2365.00 2375.00 23	~¥		
	2315.000 2325.00 2335.00 2345.00 2355.00 2365.00 2375.00 23			
	2315.000 2325.00 2335.00 2345.00 2355.00 2365.00 2375.00 23			
	2315.000 2325.00 2335.00 2345.00 2355.00 2365.00 2375.00 23			
		85.00 2395.	i.00	2415.00
	Peading Correct Measure			
Peading Correct Measure-	No. Mk. Freq. Level Factor ment	Limit	Over	
Reading Correct Measure- No. Mk. Freq. Level Factor ment Limit Over		dBuV/m	dB	Dete
No. Mk. Freq. Level Factor ment Limit Over		74.00	-16.60) pe
No. Mk. Freq. Level Factor ment Limit Over MHz dBuV dB/m dBuV/m dBuV/m dB Deter				
No. Mk. Freq. Level Factor ment Limit Over MHz dBuV dB/m dBuV/m dBuV/m dB Dete 1 2390.000 56.49 0.91 57.40 74.00 -16.60 per				
No. Mk. Freq. Level Factor ment Limit Over MHz dBuV dB/m dBuV/m dBuV/m dB Deter 1 2390.000 56.49 0.91 57.40 74.00 -16.60 per 2 2390.000 33.45 0.91 34.36 54.00 -19.64 AV	3 * 2402.100 86.99 0.98 87.97 4 X 2402.400 100.41 0.98 101.39	Fundamenta	al Frequency	y pe



Temperature	: 25 ℃		R	elative Humi	idity:	55%	
Test Voltage:	DC 3	.6V		191	2	-	
Ant. Pol.	Verti	cal	-	11	In	201	
Test Mode:	BLE	Mode TX 240	02 MHz			- 0	21
Remark:	N/A			110	2		2
110.0 dBuV/m	L.						
						3 X	
						Å	
					(RF) FCC	PART 15C (PE	4K)
						11	
60					(BF) FC	C PART 15C (AV	ផា
					×		
					2 X		
10.0							
2312.000 2322.0	0 2332.00	2342.00 235	52.00 2362.00	2372.00 238	32.00 2393	2.00	2412.00 Mi
No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detecto
1 2	200.000	F1 40	0.01	50.24	74.00	24.60	nool

		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	51.40	0.91	52.31	74.00	-21.69	peak
2		2390.000	33.04	0.91	33.95	54.00	-20.05	AVG
3	Х	2401.900	94.60	0.98	95.58	Fundamenta	I Frequency	peak
4	*	2402.100	81.17	0.98	82.15	Fundamental	Frequency	AVG



Temp	eratu	re:	25℃					Rela	tive H	lumidi	ty:	55%	
Test \	/oltag	e:	DC :	3.6V	ant	33			61				
Ant. F	Pol.		Hori	zontal			1	20	~	-	115	139	
Test I	Mode:		BLE	Mode	e TX 2	480 N	1Hz		1		C)	-	<u>a</u>
Rema	ark:		N/A	A	197				1110	2	1	a (W)	
110.0	dBuV/m												
60		1 X X X X										ART 15C (PEA	
10.0													
2470).000 248	0.00 2	2490.00	2500.0 Rea		10.00 Cor	2520.00		5.00 2 Sure-	2540.00	2550.0		2570.00 MI
No.	Mk.	Fre	q.	Lev	/el	Fa	ctor	me	ent	Lim	it	Over	
		MH	z	dB	uV	dB	/m	dBu	ıV/m	dBu	V/m	dB	Detecto
1	X	2479.9	900	94.	29	1.3	32	95	.61	Funda	mental	Frequency	peak
2	*	2480.0	000	80.	75	1.3	32	82	.07	Funda	mental	Freauencv	AVG
3	1	2483.	500	68.	12	1.3	34	69	.46	74	.00	-4.54	peak
		2483.		42.		1.3						-9.71	AVG



Temperature: Test Voltage: Ant. Pol.			25 ℃				Re	lativ	e Hum	nidity:	55%	
			DC 3	DC 3.6V								
			Vertic	al	3.00	1	5		V	G		
est	t Mode	:	BLE I	Node T	X 248	0 MHz	1		~		20	201
Remark:			N/A	-				1	1110	2		Sec.
110.0	dBuV/m											
60 .		1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2									CC PART 15C (PE	
10.0												
	70.000 24 0. Mk		2490.00	2500.00 Read		Corree Facto		2530 Meas me	sure-	540.00 2 Limit	over	2570.00 MI
		N	IHz	dBu	V	dB/m		dBu	ıV/m	dBuV/	m dB	Detecto
1	Х	2479	9.900	92.0)3	1.32		93	.35	Fundame	ntal Frequency	peak
2	*	2480	0.000	78.5	54	1.32		79	.86	Fundame	ntal Frequency	AVG
3		2483	3.500	65.3	33	1.34		66	.67	74.0	0 -7.33	peak



(2) Conducted Test

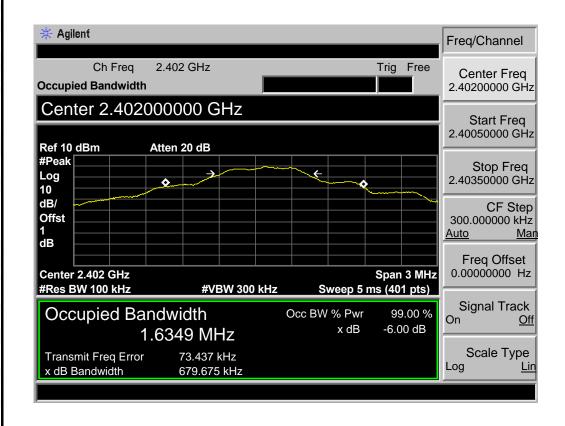
perature:		25° ℃					Rel	ative	e Hur	nidity	:	55%	
Voltage:		DC 3	.6V	139		-	531				2	1.19	
Mode:		BLE	Mode	e TX 2	2402M	1Hz /	BLE	Mod	e TX	2480	MHz	-	2
nark:		The E	EUT i	s pro	grame	ed in	contir	nuou	sly tr	ansmi	tting	mode	
🔆 🔆 Agil	ent										_	Marker	
D-640	-10							Mkr′		200 GHz			
Ref 10 Peak	авт		Atten 2	20 06					-0.0	57 dBm	Se 1	lect Mar	ker ⊿
Log 10										\downarrow	<u> </u>	<u> </u>	
dB/	Max									+ $A-$		No	rmal
Offst 1	Mar	1											
dB		02000 57 <mark> </mark> dB		Θпź			Ŷ		3	/ 4		П	elta
DI -20.6	-0.0		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	بالسبيد	~~~~~	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~ ``	۱		
dBm												Delta I	
											Ref	Tracking	Ref) Delta
Center #Res B				44\/E	M 200 I		Sweep			100 MHz		Span	Pair
Marke	r T	race	Туре	#VC		Axis	Sweep	0 10.30	Amp	litude	Spa	an <u>Ce</u>	enter
1 2		(1) (1)	Freq Freq			00 GHz 00 GHz			-0.57 -37.69				
3		(1)	Freq		2.3900	00 GHz			-57.23	dBm			~ "
4		(1)	Freq			25 GHz			-44.87				Off
4		(1) (1)	Freq			25 GHz							
4		(1)	Freq			25 GHz							Aore of 2
4		(1)	Freq			25 GHz							/lore
4		(1)	Freq			25 GHz							/lore
4		(1)	Freq			25 GHz							/lore
∦ Agil	ent			20 dB		25 GHz		Mkr	-44.87 1 2.48	dBm 000 GHz		1 Marker	Aore of 2
₩ Agil Ref 10 Peak	ent dBm		Freq Atten 2	20 dB		25 GHz		Mkr	-44.87 1 2.48	dBm	Se	1 Marker elect Marl	Nore of 2
₩ Agil Ref 10 Peak Log	ent dBm			20 dB		25 GHz		Mkr [,]	-44.87 1 2.48	dBm 000 GHz		1 Marker	Aore of 2
Ref 10 Peak Log 10 dB/	enf dBm ⊥			20 dB		25 GHz		Mkr	-44.87 1 2.48	dBm 000 GHz	Se	1 Marker elect Mari <u>2 3</u>	Nore of 2
Ref 10 Peak Log 10 dB/	ent dBm ↓	ker	Atten 2			25 GHz		Mkr	-44.87 1 2.48	dBm 000 GHz	Se	1 Marker elect Mari <u>2 3</u>	Nore of 2 ker <u>4</u>
Ref 10 Peak Log 10 dB/ Offst 1	ent dBm ↓ Mar 2.48	ker 30000	Atten 2			25 GHz		Mkr	-44.87 1 2.48	dBm 000 GHz	Se	1 Marker elect Marl <u>2</u> <u>3</u> No	Nore of 2 ker <u>4</u> rmal
Ref 10 Peak Log 10 dB/ Offst 1 dB DI	ent dBm ↓ Mar 2.48	ker	Atten 2			25 GHz		Mkr	-44.87 1 2.48	dBm 000 GHz	Se	1 Marker elect Marl <u>2</u> <u>3</u> No	Nore of 2 ker <u>4</u>
Ref 10 Peak Log 10 dB/ Offst 1	ent dBm ↓ Mar 2.48	ker 30000	Atten 2			25 GHz		Mkr ²	-44.87 1 2.48	dBm 000 GHz	Se 1	1 Marker elect Mari <u>2</u> <u>3</u> No Delta I	Nore of 2 ker <u>4</u> rmal pelta Pair
Ref 10 Peak Log 10 dB/ Offst 1 dB DI -23.1	ent dBm ↓ Mar 2.48	ker 30000	Atten 2			25 GHz		Mkr	-44.87 1 2.48	dBm 000 GHz	Se 1	1 Marker elect Mari <u>2</u> <u>3</u> No Dolta I (Tracking	Nore of 2 ker <u>4</u> rmal pelta Pair
Agil Ref 10 Peak Log 10 dB/ Offst 1 dB DI -23.1 dBm Center	ent dBm ↓ ↓ 2.525	ker 3000Q 74 d	Atten 2	GHz					-44.87	000 GHz 74 dBm	Se 1	1 Marker elect Mari <u>2</u> <u>3</u> No Dolta I Tracking	Aore of 2 ker <u>4</u> rmal velta Pair Ref) <u>Delta</u>
Ref 10 Peak Log 10 dB/ Offst 1 dB DI -23.1 dBm	ent dBm ↓ 2.4§ -3.1 €	ker 3000Q 74 d	Atten 2	GHz	2.3772		Sweep		-44.87	000 GHz 74 dBm	Se 1	1 Marker <u>2</u> 3 No Delta I Tracking <u>1</u>	Nore of 2 ker <u>4</u> rmal pelta Pair Ref) <u>Delta</u>
Ref 10 Peak Log 10 dB/ Offst 1 dB DI -23.1 dBm Center #Res B Marke	ent dBm ↓ 2.48 -3.1 w 100	ker 30000 74 d GHz kHz race (1)	Atten 2 0000 ma	GHz	2.3772	kHz Axis 00 GHz	Sweep		-44.87 1 2.480 -3.11 -3.11 	000 GHz 74 dBm	Se 1 Ref	1 Marker elect Mari <u>2</u> <u>3</u> No Dolta I Tracking <u>1</u> Span	Aore of 2 ker <u>4</u> rmal velta Pair Ref) <u>Delta</u>
Ref 10 Peak Log 10 dB/ Offst 1 dB DI -23.1 dBm Center #Res B Marke	ent dBm Mar 2.4€ ∕3. ₹	ker 30000 74 d 6Hz kHz frace (1) (1)	Atten 2 0000 Type Freq Freq Freq Freq	GHz	2.3772 2.3772 2.3772 3.377772 3.3772 3.3772 3.3772 3.3772 3.3772 3.3772 3.3772 3.3772 3.3772	kHz Axis 00 GHz 00 GHz	Sweep		-44.87 1 2.48 -3.17 -3.17 -3.17 -3.17 -3.174 -5.7.4	dBm 0000 GHz 74 dBm 100 MHz 01 pts) litude dBm dBm	Se 1 Ref	1 Marker elect Mari <u>2</u> <u>3</u> No Dolta I Tracking <u>1</u> Span	Nore of 2 ker <u>4</u> rmal pelta Pair Ref) <u>Delta</u>
Ref 10 Peak Log 10 dB/ Offst 1 dB DI -23.1 dBm Center #Res B Marke 1 2 3	ent dBm Mar 2.4€ ∕3. ₹	ker 3000Q 74 d GHz kHz race (1)	Atten 2 0000 ma Type Freq Freq Freq	GHz	2.3772	kHz Axis 00 GHz 00 GHz	Sweep		-44.87 1 2.48 -3.17 	dBm 0000 GHz 74 dBm 100 MHz 01 pts) litude dBm dBm	Se 1 Ref	1 Marker elect Mari <u>2</u> <u>3</u> No Dolta I Tracking <u>1</u> Span	Nore of 2 ker <u>4</u> rmal pelta Pair Ref) <u>Delta</u> Pair
Ref 10 Peak Log 10 dB/ Offst 1 dB DI -23.1 dBm Center #Res B Marke 1 2 3	ent dBm Mar 2.4€ ∕3. ₹	ker 30000 74 d 6Hz kHz frace (1) (1)	Atten 2 0000 Type Freq Freq Freq Freq	GHz	2.3772 2.3772 2.3772 3.377772 3.3772 3.3772 3.3772 3.3772 3.3772 3.3772 3.3772 3.3772 3.3772	kHz Axis 00 GHz 00 GHz	Sweep		-44.87 1 2.48 -3.17 -3.17 -3.17 -3.17 -3.174 -5.7.4	dBm 0000 GHz 74 dBm 100 MHz 01 pts) litude dBm dBm	Se 1 Ref	1 Marker elect Mari <u>2</u> <u>3</u> No D Delta I Tracking <u>I</u> Span an <u>Ce</u>	Nore of 2 ker <u>4</u> rmal pelta Pair Ref) <u>Delta</u> Pair

Attachment D-- Bandwidth Test Data

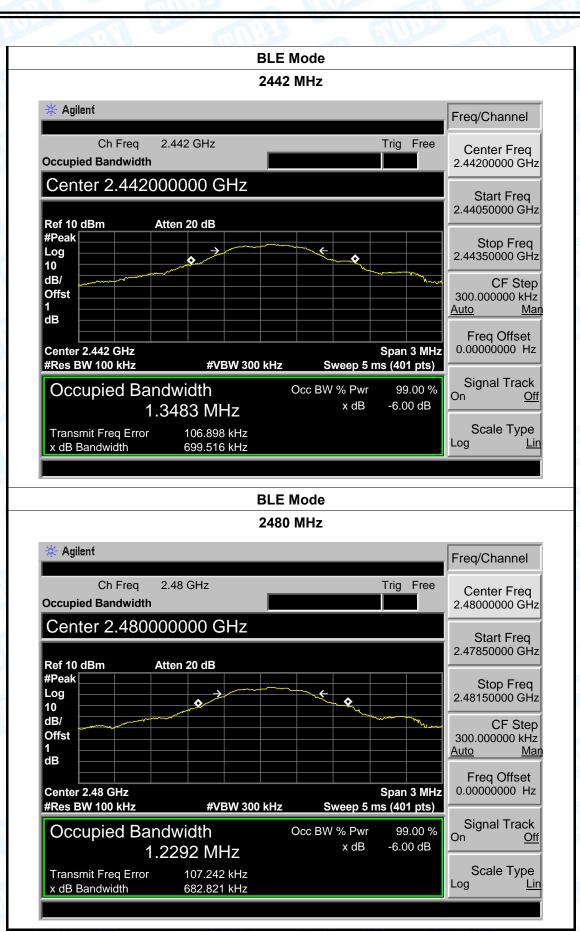
TOBY

Temperature: 25			Relative Humidity:	55%	
Test Voltage:	DC 3	.6V			
Test Mode:	BLE	TX Mode			
Channel freque	ency	6dB Bandwidth	99% Bandwidth	Limit	
(MHz)		(kHz)	(kHz)	(kHz)	
2402		679.675	1634.9		
2442		699.516	1348.3	>=500	
2480		682.821	1229.2		
		BLE	Node	1	

2402 MHz

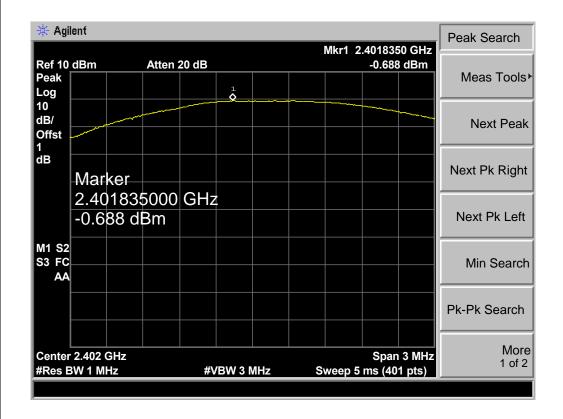




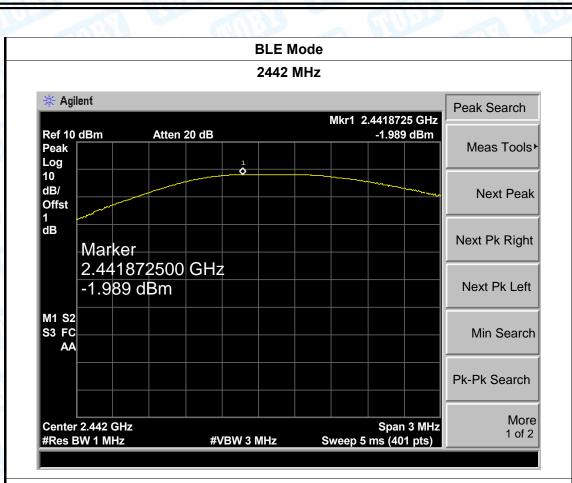


Attachment E-- Peak Output Power Test Data

Temperature:	25 ℃		Relative Humidity:	55%
Test Voltage:	DC 3.6V	1. Ser	etime .	
Test Mode:	BLE TX M	lode		
Channel frequen	icy (MHz)	Test Res	Limit (dBm)	
2402		-0.6	688	
2442		-1.9	989	30
2480		-3.2		
		BLEI	Node	
		2402	MHz	

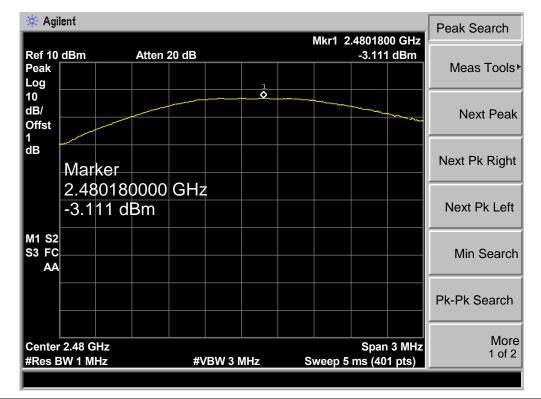






BLE Mode

2480 MHz

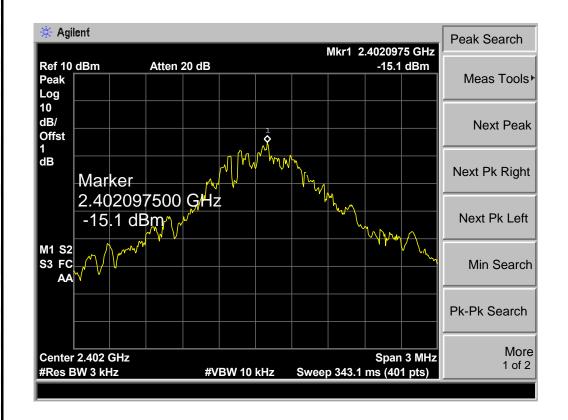


Attachment F-- Power Spectral Density Test Data

TOBY

Temperature: 25°C Test Voltage: DC 3.6V		Relative H	55%	2		
			G	C CIT		
Test Mode:	BLE TX M	lode	aU			
Channel Frequency		Power Density	Lim	it Beault	Result	
(MHz)		(dBm)	(dBr	n)	Result	
2402		-15.10			PASS	
2442		-15.86	8	PASS		
2480		-17.08				
		BLE Mode	1	L		

2402 MHz

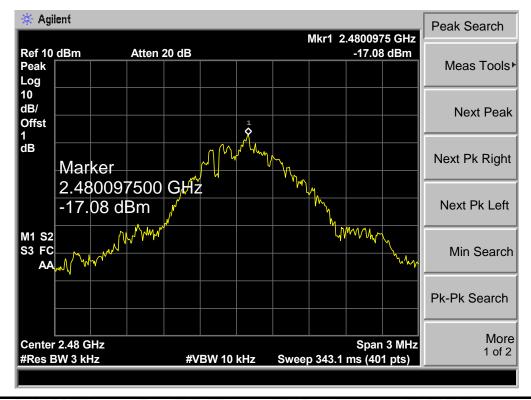






BLE Mode

2480 MHz



-----END OF REPORT-----