

Engineer Supervisor

Engineer Manager

Shenzhen Toby Technology Co., Ltd.

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FCC Radio Test Report FCC ID: 2ARUI-3556

Original Grant

Report No.	TB-FCC162923					
Applicant	American Exchange Time LLC	American Exchange Time LLC				
Equipment Under Test (EUT)						
EUT Name	Q7 sport					
Model No.	3556					
Serial Model No.	3557, 3635					
Brand Name	Q7					
Receipt Date	2018-12-25					
Test Date	2018-12-28 to 2019-01-07					
Issue Date	2019-01-08					
Standards	FCC Part 15: 2018, 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	: Jason Xu SECHNOLOGIA					



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

Report No.	Version	Description	Issued Date
TB-FCC162923	Rev.01	Initial issue of report	2019-01-08
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1. General Information about EUT

1.1 Client Information

Applicant		American Exchange Time LLC	
Address	:	lo.1441 Broadway 27th Floor, New York, NY 10018	
Manufacturer		Shenzhen KY Technology Co., Ltd	
Address	:	No.369, BaoTian 1st RD, TieGang Industrial Park, Xixiang Town, Baoan District, ShenZhen, PRC.China.	

1.2 General Description of EUT (Equipment Under Test)

EUT Name		Q7 sport			
Models No.	:	3556, 3557, 3635			
Model Different	:	All models are in the same PCB layout interior structure and electrical circuits, The only difference is model name.			
and	3	Operation Frequency:	Bluetooth 4.0(BLE): 2402MHz~2480MHz		
ET D	d	Number of Channel:	Bluetooth 4.0(BLE): 40 channels see note(3)		
Product		RF Output Power:	BLE:-2.810dBm (Max)		
Description		Antenna Gain:	1dBi PCB Antenna		
	2	Modulation Type:	GFSK		
CONBY .		Bit Rate of Transmitter:	1Mbps(GFSK)		
Power Supply	•		DC Voltage Supply from USB Port. DC Supply by the Li-ion Battery.		
Power Rating	÷	DC 5.0 V from the USB DC 3.7V by 150mAh Li-i			
Software Version	-	V2402			
Hardware Version	:	V1.2			
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 v05.

- (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.



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(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	2440	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

							-31A A
	ADAPTER		EUT				
		CABLE 1		3			
113	GUILS						
				1			
			EUT				
				-			
					-	m ias	



1.4 Description of Support Units

Equipment Information						
NameModelFCC ID/VOCManufacturerUsed "√"						
ADAPTER	FJ-SW1202000U		1	\checkmark		

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	EMI_Test_Tool_v1.3.exe				
Frequency	2402 MHz	2440MHz	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:	1 CO 4D	
	9kHz to 30 MHz	±4.60 dB	
Radiated Emission	Level Accuracy:	1 40 dD	
	30MHz to 1000 MHz	±4.40 dB	
Radiated Emission	Level Accuracy:	1 20 dB	
	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.

A2LA Certificate No.: 4750.01

The laboratory has been accredited by American Association for Laboratory Accreditation(A2LA) to ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories for the technical competence in the field of Electrical Testing. And the A2LA Certificate No.: 4750.01. FCC Accredited Test Site Number: 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	Test Item	ludamont	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 Frequency	PASS	N/A
15.247(a)(2)	RSS 247 5.2 (1)	6dB Bandwidth	PASS	N/A
15.247(b)(3)	RSS 247 5.4 (4)	Conducted Max Output Power	PASS	N/A
15.247(e)	RSS 247 5.2 (2)	Power Spectral Density	PASS	N/A
15.205, 15.209&15.247(d)	RSS 247 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. 18, 2018	Jul. 17, 2019
RF Switching Unit	Compliance Direction Systems Inc	RSU-A4	34403	Jul. 18, 2018	Jul. 17, 2019
AMN	SCHWARZBECK	NNBL 8226-2	8226-2/164	Jul. 18, 2018	Jul. 17, 2019
LISN	Rohde & Schwarz	ENV216	101131	Jul. 18, 2018	Jul. 17, 2019
Radiation Emissio	on Test	-	-	-	-
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 18, 2018	Jul. 17, 2019
EMI Test Receiver	Rohde & Schwarz	ESPI	100010/007	Jul. 18, 2018	Jul. 17, 2019
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Mar.16, 2018	Mar. 15, 2019
Bilog Antenna	ETS-LINDGREN	3142E	00117542	Mar.16, 2018	Mar. 15, 2019
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar.16, 2018	Mar. 15, 2019
Horn Antenna	ETS-LINDGREN	3117	00143209	Mar.16, 2018	Mar. 15, 2019
Loop Antenna	SCHWARZBECK	FMZB 1519 B	1519B-059	Jul. 14, 2018	Jul. 13, 2019
Pre-amplifier	Sonoma	310N	185903	Mar.16, 2018	Mar. 15, 2019
Pre-amplifier	HP	8449B	3008A00849	Mar.16, 2018	Mar. 15, 2019
Cable	HUBER+SUHNER	100	SUCOFLEX	Mar.16, 2018	Mar. 15, 2019
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A
Antenna Conducto	ed Emission		·		
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 18, 2018	Jul. 17, 2019
Spectrum Analyzer	Rohde & Schwarz	ESCI	100010/007	Jul. 18, 2018	Jul. 17, 2019
MXA Signal Analyzer	Agilent	N9020A	MY49100060	Sep. 15, 2018	Sep. 14, 2019
Vector Signal Generator	Agilent	N5182A	MY50141294	Sep. 15, 2018	Sep. 14, 2019
Analog Signal Generator	Agilent	N5181A	MY50141953	Sep. 15, 2018	Sep. 14, 2019
	DARE!! Instruments	RadiPowerRPR3006W	17100015SNO26	Sep. 15, 2018	Sep. 14, 2019
	DARE!! Instruments	RadiPowerRPR3006W	17100015SNO29	Sep. 15, 2018	Sep. 14, 2019
RF Power Sensor	DARE!! Instruments	RadiPowerRPR3006W	17100015SNO31	Sep. 15, 2018	Sep. 14, 2019
	DARE!! Instruments	RadiPowerRPR3006W	17100015SNO33	Sep. 15, 2018	Sep. 14, 2019



4. Conducted Emission Test

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

Francisco	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

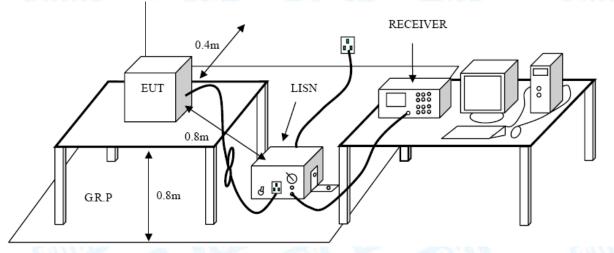
Notes:

(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.



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 (MHz)	Distance Met	ers(at 3m)
	Peak (dBuV/m)	Average (dBuV/m)
Above 1000	74	54

Note:

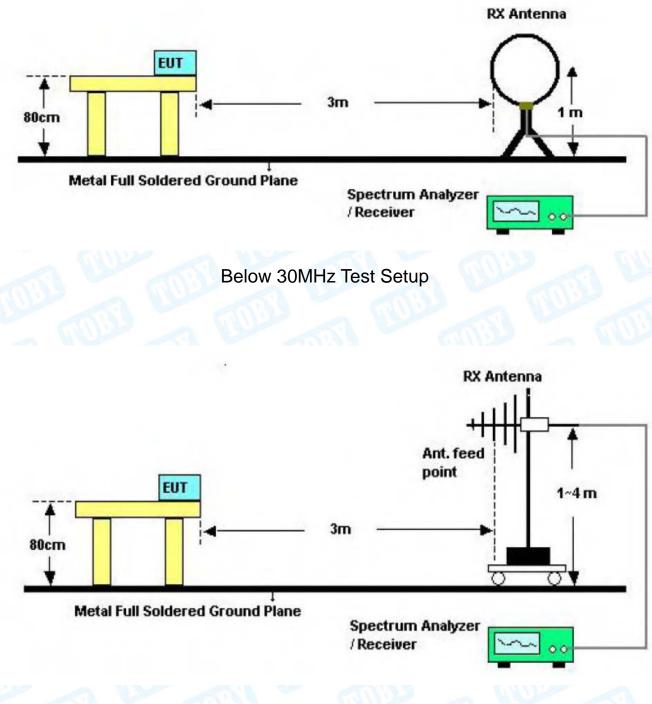
(1) The tighter limit applies at the band edges.

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



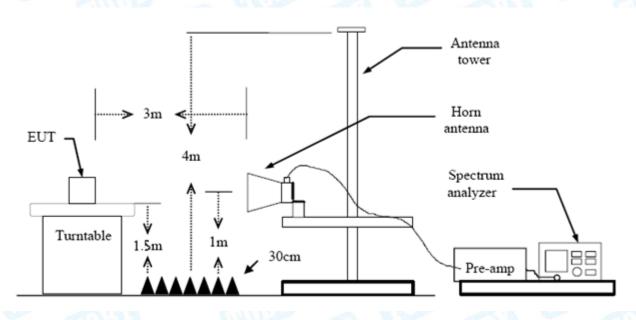
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5.2 Test Setup



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.

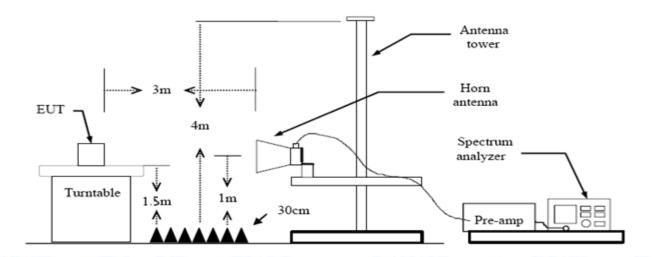


6. Restricted Bands Requirement

- 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.

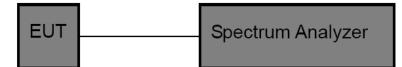


7. Bandwidth Test

- 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-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.

7.5 Test Data

Please refer to the Attachment D.

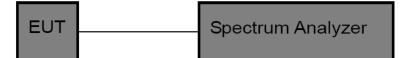


8. Peak Output Power Test

- 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(M			
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 v05.

- (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.

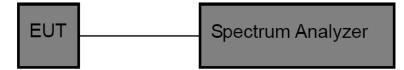


9. Power Spectral Density Test

- 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(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 v05.

- (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 gains of the antenna used for transmitting is 1dBi, 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		
The second	Permanent attached antenna	(CIN
a	Unique connector antenna	2
	Professional installation antenna	and the

Attachment A-- Conducted Emission Test Data

Temperature:	25°C	2		Relative Hu	umidity:	55%	
Test Voltage:	AC	120V				CINE:	3
Terminal:	Line)		12 -		1000	1000
Test Mode:	BLE	E TX 2402 M	ode		D S	-	ARE -
Remark:	Only	y worse case	e is reporte	d	R		
90.0 dBuV							4P: 4V6:
-10 0.150	Winnym A www.ma	ANNANANANANANANANANANANANANANANANANANA	ไข่งเป ็นที่ของเป็น เขาและส่งของเกราร	MMAMM Mandaan	mm	to a factor and	nonnenderfrigheten p ubnormennender A
-10		0.5	(MHz)		5		30.000
-10 0.150 No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBu∨	Limit dBuV	Over dB	Detector
No. Mk. 1 0	Freq. MHz 0.1500	Reading Level dBuV 26.48	Correct Factor dB 9.58	Measure- ment dBuV 36.06	Limit dBuV 65.99	Over dB -29.93	Detector QP
No. Mk. 1 0 2 0	Freq. MHz 0.1500 0.1500	Reading Level dBuV 26.48 9.01	Correct Factor dB 9.58 9.58	Measure- ment dBuV 36.06 18.59	Limit dBuV 65.99 55.99	Over dB -29.93 -37.40	Detector QP AVG
No. Mk. 1 0 2 0 3 0	Freq. MHz 0.1500 0.1500 0.1860	Reading Level dBuV 26.48 9.01 23.12	Correct Factor dB 9.58 9.58 9.58	Measure- ment dBuV 36.06 18.59 32.70	Limit dBuV 65.99 55.99 64.21	Over dB -29.93 -37.40 -31.51	Detector QP AVG QP
No. Mk. 1 0 2 0 3 0 4 0	Freq. MHz 0.1500 0.1500 0.1860 0.1860	Reading Level dBuV 26.48 9.01 23.12 6.47	Correct Factor dB 9.58 9.58 9.58 9.58	Measure- ment dBuV 36.06 18.59 32.70 16.05	Limit dBuV 65.99 55.99 64.21 54.21	Over dB -29.93 -37.40 -31.51 -38.16	Detector QP AVG QP AVG
No. Mk. 1 0 2 0 3 0 4 0 5 0	Freq. MHz 0.1500 0.1500 0.1860 0.1860 0.2366	Reading Level dBuV 26.48 9.01 23.12 6.47 19.96	Correct Factor dB 9.58 9.58 9.58 9.58 9.58	Measure- ment dBuV 36.06 18.59 32.70 16.05 29.54	Limit dBuV 65.99 55.99 64.21 54.21 62.21	Over dB -29.93 -37.40 -31.51 -38.16 -32.67	Detector QP AVG QP AVG QP
No. Mk. 1 0 2 0 3 0 4 0 5 0	Freq. MHz 0.1500 0.1500 0.1860 0.1860	Reading Level dBuV 26.48 9.01 23.12 6.47	Correct Factor dB 9.58 9.58 9.58 9.58	Measure- ment dBuV 36.06 18.59 32.70 16.05	Limit dBuV 65.99 55.99 64.21 54.21 62.21 52.21	Over dB -29.93 -37.40 -31.51 -38.16 -32.67 -37.24	Detector QP AVG QP AVG QP AVG
No. Mk. 1 0 2 0 3 0 4 0 5 0 6 0	Freq. MHz 0.1500 0.1500 0.1860 0.1860 0.2366	Reading Level dBuV 26.48 9.01 23.12 6.47 19.96	Correct Factor dB 9.58 9.58 9.58 9.58 9.58	Measure- ment dBuV 36.06 18.59 32.70 16.05 29.54	Limit dBuV 65.99 55.99 64.21 54.21 62.21 52.21	Over dB -29.93 -37.40 -31.51 -38.16 -32.67	Detector QP AVG QP AVG QP AVG QP
No. Mk. 1 0 2 0 3 0 4 0 5 0 6 0 7 0	Freq. MHz 0.1500 0.1500 0.1860 0.1860 0.2366 0.2366	Reading Level dBuV 26.48 9.01 23.12 6.47 19.96 5.39	Correct Factor dB 9.58 9.58 9.58 9.58 9.58 9.58	Measure- ment dBuV 36.06 18.59 32.70 16.05 29.54 14.97	Limit dBuV 65.99 55.99 64.21 54.21 62.21 52.21 56.58	Over dB -29.93 -37.40 -31.51 -38.16 -32.67 -37.24	Detector QP AVG QP AVG QP AVG
No. Mk. 1 0 2 0 3 0 4 0 5 0 6 0 7 0 8 * 0	Freq. MHz 0.1500 0.1500 0.1860 0.1860 0.2366 0.2366 0.2366	Reading Level dBuV 26.48 9.01 23.12 6.47 19.96 5.39 13.50	Correct Factor dB 9.58 9.58 9.58 9.58 9.58 9.58 9.58 9.58	Measure- ment dBuV 36.06 18.59 32.70 16.05 29.54 14.97 23.10	Limit dBuV 65.99 55.99 64.21 54.21 62.21 52.21 56.58 46.58	Over dB -29.93 -37.40 -31.51 -38.16 -32.67 -37.24 -33.48	Detector QP AVG QP AVG QP AVG QP
No. Mk. 1 0 2 0 3 0 4 0 5 0 6 0 7 0 8 * 0 9 1	Freq. MHz 0.1500 0.1500 0.1860 0.1860 0.2366 0.2366 0.2366 0.4660	Reading Level dBuV 26.48 9.01 23.12 6.47 19.96 5.39 13.50 8.46	Correct Factor dB 9.58 9.58 9.58 9.58 9.58 9.58 9.58 9.60 9.60	Measure- ment dBuV 36.06 18.59 32.70 16.05 29.54 14.97 23.10 18.06	Limit dBuV 65.99 55.99 64.21 54.21 52.21 52.21 56.58 46.58 56.00	Over dB -29.93 -37.40 -31.51 -38.16 -32.67 -37.24 -33.48 -28.52	Detector QP AVG QP AVG QP AVG QP AVG
No. Mk. 1 0 2 0 3 0 4 0 5 0 6 0 7 0 8 * 0 9 1 10 1	Freq. MHz 0.1500 0.1500 0.1860 0.1860 0.2366 0.2366 0.2366 0.4660 0.4660 0.4620	Reading Level dBuV 26.48 9.01 23.12 6.47 19.96 5.39 13.50 8.46 10.07	Correct Factor dB 9.58 9.58 9.58 9.58 9.58 9.58 9.58 9.60 9.60 9.60	Measure- ment dBuV 36.06 18.59 32.70 16.05 29.54 14.97 23.10 18.06 19.67	Limit dBuV 65.99 55.99 64.21 54.21 52.21 52.21 56.58 46.58 46.58 56.00 46.00	Over dB -29.93 -37.40 -31.51 -38.16 -32.67 -37.24 -33.48 -28.52 -36.33	Detector QP AVG QP AVG QP AVG QP AVG QP



emperati	ure:	25℃		Relative	Humidity	: 55%	
est Volta	ge:	AC 120V	ABL T	1	UP		N.C.
erminal:		Neutral	2	20 -	G		
est Mode):	BLE TX 240	2 Mode			2	
emark:		Only worse of	case is reporte	d	05		15 yr
40 40 40				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		QP: AVG	
			her de la Ce.				
0.150		0.5 Readin	(MHz) g Correct	Measure	5 }-		30.000
	Freq	Readin Level	^(МН2) g Correct Factor	Measure ment	- Limit	Over	30.000
0.150 No. Mk.	MHz	Readin Level dBuV	^[МН2] g Correct Factor dB	Measure ment dBuV	E- Limit dBuV	Over dB	30.000 Detector
0.150 No. Mk. 1	MHz 0.1700	Readin Level dBuV) 23.43	^(МН2) g Correct Factor dB 9.64	Measure ment dBuV 33.07	Limit dBuV 64.96	Over dB -31.89	30.000 Detector QP
0.150 No. Mk. 1 2	MHz 0.1700 0.1700	Readin Level dBuV) 23.43) 8.97	^(МН2) g Correct Factor dB 9.64 9.64	Measure ment dBuV 33.07 18.61	Limit dBuV 64.96 54.96	Over dB -31.89 -36.35	30.000 Detector QP AVG
0.150 No. Mk. 1 2 3	MHz 0.1700 0.1700 0.2020	Readin Level dBuV 23.43) 8.97) 22.08	мна g Correct Factor dB 9.64 9.64 9.65	Measure ment dBuV 33.07 18.61 31.73	Limit dBuV 64.96 54.96 63.52	Over dB -31.89 -36.35 -31.79	30.000 Detector QP AVG QP
0.150 No. Mk. 1 2 3 4	MHz 0.1700 0.1700 0.2020 0.2020	Readin Level dBuV 23.43 23.43 23.43 23.43 23.43 23.43 23.43 23.43 23.43 23.43 23.43 23.43 23.43 23.43 23.43 23.43 23.43 23.43 23.43	мна) g Correct Factor dB 9.64 9.64 9.65 9.65	Measure ment dBuV 33.07 18.61 31.73 19.18	Limit dBuV 64.96 54.96 63.52 53.52	Over dB -31.89 -36.35 -31.79 -34.34	30.000 Detector QP AVG QP AVG
0.150 No. Mk. 1 2 3 4 5	MHz 0.1700 0.1700 0.2020 0.2020 0.4540	Readin Level dBuV) 23.43) 8.97) 22.08) 9.53) 22.69	мна) g Correct Factor dB 9.64 9.64 9.65 9.65 9.58	Measure ment dBuV 33.07 18.61 31.73 19.18 32.27	Limit dBuV 64.96 54.96 63.52 53.52 56.80	Over dB -31.89 -36.35 -31.79 -34.34 -24.53	30.000 Detector QP AVG QP AVG QP
0.150 No. Mk. 1 2 3 4	MHz 0.1700 0.1700 0.2020 0.2020	Readin Level dBuV) 23.43) 8.97) 22.08) 9.53) 22.69	мна) g Correct Factor dB 9.64 9.64 9.65 9.65 9.58	Measure ment dBuV 33.07 18.61 31.73 19.18	Limit dBuV 64.96 54.96 63.52 53.52 56.80	Over dB -31.89 -36.35 -31.79 -34.34	30.000 Detector QP AVG QP AVG QP AVG
0.150 No. Mk. 1 2 3 4 5	MHz 0.1700 0.1700 0.2020 0.2020 0.4540	Readin Level dBuV) 23.43) 23.43) 23.43) 23.43) 23.69) 22.69) 22.69) 17.23	мна) g Correct Factor dB 9.64 9.64 9.65 9.65 9.58 9.58	Measure ment dBuV 33.07 18.61 31.73 19.18 32.27	Limit dBuV 64.96 54.96 63.52 53.52 56.80 46.80	Over dB -31.89 -36.35 -31.79 -34.34 -24.53	30.000 Detector QP AVG QP AVG QP
0.150 No. Mk. 1 2 3 4 5 6 *	MHz 0.1700 0.1700 0.2020 0.2020 0.4540 0.4540	Readin Level dBuV) 23.43) 23.43) 23.43) 23.43) 22.08) 9.53) 22.69) 17.23) 13.44	мнг) g Correct Factor dB 9.64 9.64 9.65 9.65 9.65 9.58 9.58 9.59	Measure ment dBuV 33.07 18.61 31.73 19.18 32.27 26.81	Limit dBuV 64.96 54.96 63.52 53.52 56.80 46.80 56.00	Over dB -31.89 -36.35 -31.79 -34.34 -24.53 -19.99	30.000 30.000 Detector QP AVG QP AVG QP AVG QP
0.150 No. Mk. 1 2 3 4 5 6 * 7	MHz 0.1700 0.1700 0.2020 0.2020 0.4540 0.4540 0.6540	Readin Level dBuV) 23.43) 23.43) 23.43) 23.43) 23.43) 22.08) 9.53) 22.69) 17.23) 13.44) 7.95	мнг) g Correct Factor dB 9.64 9.64 9.65 9.65 9.65 9.58 9.58 9.59 9.59	Measure ment dBuV 33.07 18.61 31.73 19.18 32.27 26.81 23.03	Limit dBuV 64.96 54.96 63.52 53.52 55.80 46.80 56.00 46.00	Over dB -31.89 -36.35 -31.79 -34.34 -24.53 -19.99 -32.97	30.000 Detector QP AVG QP AVG QP AVG
No. Mk. 1 2 3 4 5 6 * 7 8	MHz 0.1700 0.1700 0.2020 0.2020 0.4540 0.4540 0.6540	Readin Level dBuV) 23.43) 23.43) 23.43) 23.43) 22.08) 22.08) 9.53) 22.69) 17.23) 13.44) 7.95) 13.22	мна) g Correct Factor dB 9.64 9.64 9.65 9.65 9.65 9.58 9.58 9.59 9.59 9.59	Measure ment dBuV 33.07 18.61 31.73 19.18 32.27 26.81 23.03 17.54	Limit dBuV 64.96 54.96 63.52 53.52 56.80 46.80 56.00 46.00 56.00	Over dB -31.89 -36.35 -31.79 -34.34 -24.53 -19.99 -32.97 -28.46	30.000 30.000 Detector QP AVG QP AVG QP AVG QP AVG
0.150 No. Mk. 1 2 3 4 5 6 * 7 8 9	MHz 0.1700 0.1700 0.2020 0.2020 0.4540 0.4540 0.6540 1.1100	Readin Level dBuV) 23.43) 23.43) 23.43) 23.43) 23.43) 22.08) 9.53) 22.69) 17.23) 13.44) 7.95) 13.22) 6.75	мна) g Correct Factor dB 9.64 9.64 9.65 9.65 9.65 9.58 9.58 9.59 9.59 9.59	Measure ment dBuV 33.07 18.61 31.73 19.18 32.27 26.81 23.03 17.54 22.81	Limit dBuV 64.96 54.96 63.52 53.52 56.80 46.80 56.00 46.00 56.00	Over dB -31.89 -36.35 -31.79 -34.34 -24.53 -19.99 -32.97 -28.46 -33.19	30.000 30.000 Detector QP AVG QP AVG QP AVG QP AVG QP



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

Temperature:	25 ℃		ſ	Relative Hum	nidity:	55%	
Test Voltage:	DC 3.7	V		6000		CUD .	
Ant. Pol.	Horizor	ntal					22
Test Mode:	BLE T	X 2402 Moc	de		N		
Remark:	Only w	orse case i	is reported			CU D	
80.0 dBu∀/m							
					(RF)FCC	15C 3M Radiation	
						Margin -6	dB
					——		
30				T			
							mm
1 2 X 3				6 Xmmy	who	mmunum	
2 3 MAX MANNAN		4 5	5 KWWWWWWW	- and the second	Aler -		
	where we						
-20							
30.000 40 50			(MHz)	300	400	500 600 700	1000.000
No. Mk. Fi	req.	Reading	Correct	Measure-	Limit	Over	
		Level	Factor	ment			
	IHz	dBuV	dB/m	dBuV/m	dBuV/m		Detector
	0000	26.09	-13.00	13.09	40.00	-26.91	peak
2 33.7	7986	27.15	-15.86	11.29	40.00	-28.71	peak
3 40.2	2757	27.56	-19.25	8.31	40.00	-31.69	peak
4 81.7	7833	29.06	-22.43	6.63	40.00	-33.37	peak
5 117.	7725	29.11	-22.32	6.79	43.50	-36.71	peak
6 260.	1444	29.64	-16.98	12.66	46.00	-33.34	peak
*:Maximum data x	:Over limit	:over margin					-

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



. •	perature:	25 ℃		R	elative Humi	dity:	55%	
Fes t	t Voltage:	DC 3	.7V	30		10		
Ant.	. Pol.	Vertic	al	-		1 mil	132	
Fes t	t Mode:	BLE	TX 2402 Mod	de			A	21
Ren	nark:	Only	worse case i	s reported	MID	2		J.
80.0	dBuV∕m				1			
						(RF)FCC	15C 3M Radiation	
-							Margin -6	dB
-								
30								
						5	6	mm
	$\frac{1}{x^2}$				4 X	5 mm the	within	
	1 2 3			N. Margan	www.www.mith	ANR		
-		montown	-Away wowe	at myst the state				
-								
20								
30.	.000 40	50 60 7	0	(MHz)	300	40 0	500 600 700	1000.00
			Reading	Correct	Measure-		_	
Ν	o. Mk.	Freq.	Level	Factor	ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	n dB	Detecto
1	32	мнz 2.4059	dBu∨ 28.79	dB/m -14.81	dBuV/m 13.98	dBuV/m 40.00		
1							-26.02	peal
	35	2.4059	28.79	-14.81	13.98	40.00	-26.02 -29.11	
2	35 40	2.4059 5.2512	28.79 27.76	-14.81 -16.87	13.98 10.89	40.00	-26.02 -29.11 -30.61	peal peal peal
2	35 40 31	2.4059 5.2512 0.2757	28.79 27.76 28.64	-14.81 -16.87 -19.25	13.98 10.89 9.39	40.00 40.00 40.00	-26.02 -29.11 -30.61 -32.35	peal peal peal

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

TOBY

Above 1GHz

Temperatu	ire: 25°C		র ত	Relative Hu	midity:	55%	200	
Test Voltag	ge: DC	3.7V				120		
Ant. Pol.	Hor	Horizontal						
Test Mode	: BLE	BLE Mode TX 2402 MHz						
Remark:		No report for the emission which more than 10 dB below the prescribed limit.						
No. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	
1	4804.252	47.30	14.43	61.73	74.00	-12.27	peak	
2 *	4804.984	34.00	14.44	48.44	54.00	-5.56	AVG	

Emission Level= Read Level+ Correct Factor

-						
Temperature:	25℃	Relative Humidity:	55%			
Test Voltage:	DC 3.7V					
Ant. Pol.	Vertical					
Test Mode:	BLE Mode TX 2402 MHz					
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	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4803.256	34.05	14.42	48.47	54.00	-5.53	AVG
2		4804.306	48.01	14.43	62.44	74.00	-11.56	peak



2

Tempe	ratu	re: 25°C			Relative Hu	midity:	55%		
Test Vo	oltag	e: DC	3.7V		199	100		Contraction of the second	
Ant. Po	ol.	Hori	Horizontal						
Test M	ode:	BLE	BLE Mode TX 2440 MHz						
Remar	k:		report for the scribed limit.	emission w	which more that	an 10 dB t	below the		
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector	
1	*	4883.972	29.85	14.92	44.77	54.00	-9.23	AVG	

14.92

74.00

59.24

-14.76

peak

Emission Level= Read Level+ Correct Factor

44.32

4884.160

Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	DC 3.7V					
Ant. Pol.	Vertical					
Test Mode:	BLE Mode TX 2440 MHz					
Remark:	No report for the emission which more than 10 dB below the					
	prescribed limit.					

N	o. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4883.952	37.25	14.92	52.17	54.00	-1.83	AVG
2		4884.232	48.89	14.92	63.81	74.00	-10.19	peak



2

-8.68

74.00

peak

				-			
Temperat	ure: 25°	C		Relative Hu	umidity:	55%	199
Test Volta	nge: DC	3.7V		AU AU			
Ant. Pol.	Hor	izontal		20	10	1970	
Test Mod	e: BLE	E Mode TX 24	480 MHz				
Remark:		report for the scribed limit.	emission v	vhich more th	an 10 dB l	below the	
No. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1 *	4960.150	36.40	15.39	51.79	54.00	-2.21	AVG

15.40

65.32

Emission Level= Read Level+ Correct Factor

49.92

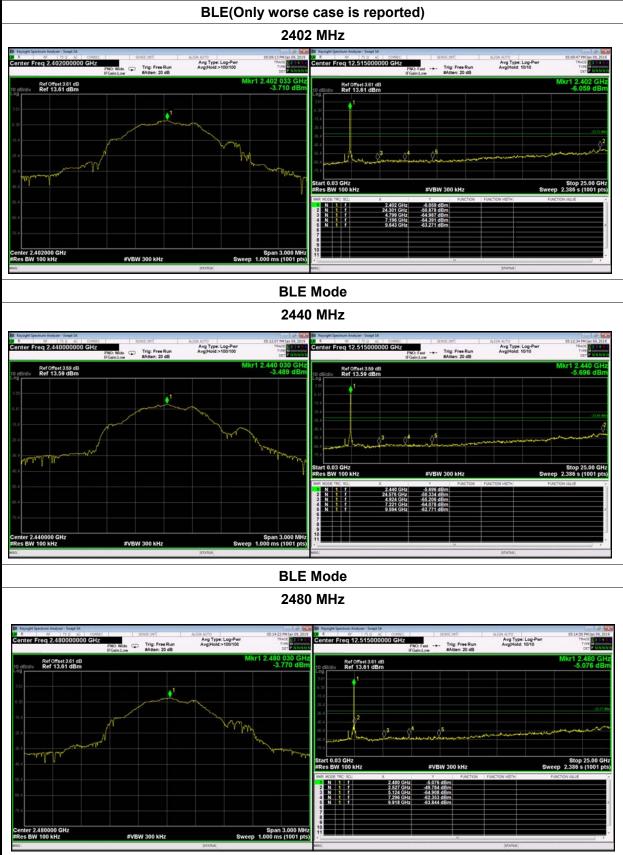
4960.618

Temperature:	25 ℃	Relative Humidity: 55%				
Test Voltage:	DC 3.7V					
Ant. Pol.	Vertical					
Test Mode:	BLE Mode TX 2480 MHz	BLE Mode TX 2480 MHz				
Remark:	No report for the emission which more than 10 dB below the					
	prescribed limit.					

No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*	4960.228	34.66	15.39	50.05	54.00	-3.95	AVG
2		4960.666	49.45	15.40	64.85	74.00	-9.15	peak



Conducted Emission Test Data





Attachment C-- Restricted Bands Requirement Test Data

Temp	peratu	ire: 2	25℃				Relati	ve Hu	imidity:	55%	
Test '	Voltag	ge: [DC 3.7	7V			122 - C	2	AV		5
Ant.	Pol.	ŀ	Horizo	ntal	50		1		199	19 -	
Test	Mode	: E	3LE M	lode T	TX 2402	2 MHz		600			
Rema	ark:	١	N/A			an	20	-			1
100.0	dBuV/m	1									
											a X
											1
									(RF) FCC F	PART 15C (PEAI	4
			_								\vdash
								_	(RF) FCC	PART 15C IAV	 G)
50										1	
						Δ				×	
			^	\square	~~		\downarrow	$\uparrow \sim$	_/	2 X	
0.0 2307	7.000 231	17.00	2327.00	2337	.00 23	47.00 2357	7.00 23	367.00	2377.00 2387.0	.00 :	2407.0
				Rea	ading	Correc	ct Me	asure			
No.	. Mk.	Fre	eq.		evel	Facto	n n	nent	Limit	Over	
		MH	Ηz	d	BuV	dB/m	d	BuV/m	dBuV/m	dB	De
1		2390.	.000	43	3.22	2.82	4	6.04	74.00	-27.96	p
2		2390.	000	31	1.21	2.82	3	34.03	54.00	-19.97	-
		2402.			9.83	2.87		2.70	 Fundamental F		۲
3					1 (1.)	2.01	~	2.10	Tunuunona.	Toquono,	



Tarres	1		05.00					leti		i ali fa co	FF0 /	-	-	
-	peratu		25℃				Ke	Relative Humidity:55%			55%	-		
	Voltag	ge:	DC 3	_	(AA)	90			1.11		-		2	
Ant. I	-		Verti				5		<u> </u>	100	100		_	
	Mode	:		Mode	TX 24	02 MHz	20				1			
Rema	ark:		N/A	A	att				12	P	2			
100.0	dBuV/m													1
						(RF) FCC PART 15C (PEAK)								
													$\left\{ -\right\}$	
										(BE) EC	C PART 15C			
50											1	Ť	\uparrow	
											x			
					~ ~						2 X	J	- V	
							_							
0.0	7.000 23	17.00	2327.00	2337	00 22	47.00 23	57.00	2367.00	n 2 [,]	377.00 2387	00	240	7.00	
2307	.000 23	17.00	2327.00	2336	.00 23	47.00 23.	17.00	2307.00	U 2	377.00 2307	.00	240	W.00	mII
				Re	ading	Corre	oct	Meas	ure.					
No	. Mk	. F	req.		evel	Fact		mer		Limit	Ove	r		
		N	ИНz	d	BuV	dB/m		dBuV	//m	dBuV/m	dB	[Detec	:to
1		239	0.000	42	2.93	2.82	!	45.1	75	74.00	-28.2	25	pea	ak
2		239	0.000	29	9.20	2.82	!	32.0	02	54.00	-21.9	98	AV	G
3	Х	240	2.200	74	4.43	2.87		77.3	30	Fundamental	Frequency	,	pea	ak



Temperature:	25 ℃			Relative I	Humidity:	55%	
Test Voltage:	DC 3	3.7V		10 -			
Ant. Pol.	Horiz	zontal	-	20 -	100	132	
Test Mode:	BLE	Mode TX 2	480 MHz				21
Remark:	N/A	and a		THE REAL		a W	J.
100.0 dBuV/m							
2							
Ň							
					(BE) ECC P	ART 15C (PEAK	<u>a</u>
					() + CC		
3					(RF) FCC	PART 15C AVE	i)
50 7				Δ			
$ - \rangle$						^	
	~						
0.0 2475.000 2485.00	2495.00	2505.00 25	15.00 2525.00	0 2535.00	2545.00 2555.0	DO 2	2575.00 MHz
		Reading	Correct	Measure			
No. Mk. F	req.	Level	Factor	ment	Limit	Over	
N	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1 X 248	0.000	87.78	3.38	91.16	Fundamental I	Frequency	peak
2 * 248	0.000	87.55	3.38	90.93	– Fundamental F	Frequency	AVG
3 248	3.500	47.93	3.41	51.34	74.00	-22.66	peak
4 248	3.500	45.32	3.41	48.73	54.00	-5.27	AVG



emperature:	25 ℃		Relative Humidity	/: 55%			
est Voltage:	DC 3.7V		All D				
nt. Pol.	Vertical			Callin	9		
est Mode:	BLE Mode TX 2480 MHz						
emark:	N/A	AL ST	ed II m		an		
00.0 dBuV/m							
2							
Ň				RF) FCC PART 19	ic (Peak)		
50 4				(RF) FCC PART	ISC AVG)		
30 4 X							
/ *			Λ	~			
				_^	-^		
0.0							

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	Х	2480.000	77.16	3.38	80.54	Fundamental Frequency		AVG
2	*	2480.000	77.44	3.38	80.82	Fundamental	Frequency	peak
3		2483.500	35.24	3.41	38.65	54.00	-15.35	AVG
4		2483.500	42.63	3.41	46.04	74.00	-27.96	peak



(2) Conducted Test

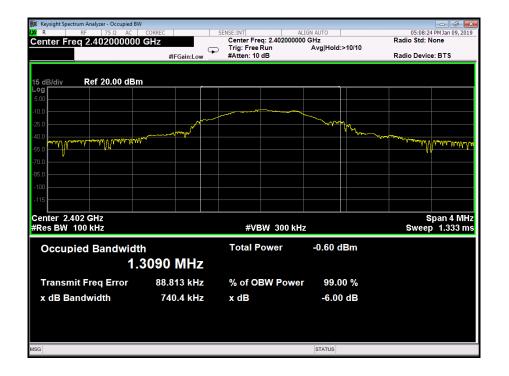
nperature:	25 ℃	Relative Humidity:	55%					
t Voltage:	DC 3.7V							
t Mode:	BLE Mode TX 2402M	Hz / BLE Mode TX 2480MH	Ηz					
mark:	The EUT is programe	d in continuously transmitti	ng mode					
🎉 Keysight Spectrum	n Analyzer - Swept SA		- 6 -					
	RF 75 Ω AC CORREC SENSE 2.356000000 GHz PNO: Fast TI	INT ALIGN AUTO Avg Type: Log-Pwr ig: Free Run Avg Hold:>100/100	12:10:23 AM Dec 26, 2018 TRACE 1 2 3 4 5 6 TYPE MWWWW DET P NNNNN					
	IFGain:Low A	tten: 30 dB	r1 2.401 8 GHz					
10 dB/div Ro	ef Offset 3.61 dB ef 23.61 dBm		1.740 dBm					
13.6 3.61			1					
-6.39								
-16.4			-18.74 dBm					
-36.4			∂ ⁸ ∂ ²					
-56.4 male poly off	₩ _₩ ₩₽₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩	understallagghabershipshering the and service and service and service and service and service and service and s	- Marine Marine Mar					
-66.4	0 GHz		Stop 2.40600 GHz					
#Res BW 100	0 kHz #VBW 3	-).600 ms (1001 pts)					
MKR MODE TRC SC 1 N 1 f 2 N 1 f	f 2.401 8 GHz 1.740 dBm f 2.400 0 GHz -50.630 dBm		TION VALUE					
3 N 1 f 4 N 1 f 5			E					
6 7 8								
9 10 11								
		III III IIII IIII IIIIIIIIIIIIIIIIIIII						
10 11 MSG		III STATUS	, ,					
10 11 MSG MSG MSG MSG MSG MSG MSG MSG	m Analyzer - Swept SA RF 75 G: AC CORREC SENSE 25 25 26 000 000 ACH-		, 12:14:36 AM Dec 26, 2018 TRACE De 4 a co					
10 11 MSG MSG MSG MSG MSG MSG MSG MSG	RF 75 Ω AC CORREC SENSE 2.526000000 GHZ PNO: Fast T							
10 11 MSG MSG MSG MSG Center Freq R	RF 75 Ω AC CORREC SENSE 2.526000000 GHz PNO: Fast IFGain:Low A	INT ALIGN AUTO Avg Type: Log-Pwr ig: Free Run Avg Hold:>100/100 tten: 30 dB	12:14:36 AM Dec 26, 2018 TRACE 1 2 3 4 5 6					
10 11 Keysight Spectrum W R F Center Freq	RF 75 Ω AC CORREC SENSE 2.526000000 GHz PNO: Fast TI	INT ALIGN AUTO Avg Type: Log-Pwr ig: Free Run Avg Hold:>100/100 tten: 30 dB	12:14:36 AMDec 26, 2018 TRACE 1 2 3 4 5 6 TYPE MUMUMUM DET PNNNNN Kr1 2.479 8 GHz					
10 11 MSG MSG MSG MSG MSG MSG MSG MSG	RF 75 Ω AC CORREC SENSE 2.526000000 GHz PNO: Fast IFGain:Low A	INT ALIGN AUTO Avg Type: Log-Pwr ig: Free Run Avg Hold:>100/100 tten: 30 dB	12:14:36 AMDec 26, 2018 TRACE 1 2 3 4 5 6 TYPE MUMUMUM DET PNNNNN Kr1 2.479 8 GHz					
10 11 Keysight Spectrum W R F Center Freq 10 dB/div R 13 6	RF 75 Ω AC CORREC SENSE 2.526000000 GHz PNO: Fast IFGain:Low A	INT ALIGN AUTO Avg Type: Log-Pwr ig: Free Run Avg Hold:>100/100 tten: 30 dB	12:14:36 AMDec 26, 2018 TRACE 1 2 3 4 5 6 TYPE MUMUMUM DET PNNNNN Kr1 2.479 8 GHz					
10 11 MSG MSG MSG MSG MSG MSG MSG MSG	PF 175 Ω AC CORREC SENSE 2.526000000 GHz PNO: Fast IFGain:Low ef Offset 3.61 dB ef 23.61 dBm IFGain:Low IFGAIN:Low IFGAIN:L	INT ALIGN AUTO Avg Type: Log-Pwr ig: Free Run Avg Hold:>100/100 tten: 30 dB	12:14:36 AUDec 26: 2018 ТR42 [] 23 4: 52 туре остраниции остраниции (r1 2.479 8 GHz 1.573 dBm					
10 MISG MI	RF 75 Ω AC CORREC SENSE 2.526000000 GHz PNO: Fast IFGain:Low A	INT ALIGN AUTO Avg Type: Log-Pwr ig: Free Run Avg Hold:>100/100 tten: 30 dB	12:14:36 AUDec 26: 2018 ТR42 [] 23 4: 52 туре остраниции остраниции (r1 2.479 8 GHz 1.573 dBm					
10 11 MSG MSG Keysight Spectrum Center Freq 10 dB/div R 10 dB/div 10 dB/di	PF 175 Q AC CORPEC SENSE 2.526000000 GHz PNO: Fast IFGain:Low Tr A ef Offset 3.61 dB ef 23.61 dBm	INT ALIGN AUTO Avg Type: Log-Pwr ig: Free Run Avg Hold:>100/100 tten: 30 dB	12:14:36 AUDec 26: 2018 TRACE [] 2 3 4 5 0 TYPE [] 2 4 5 5 TYPE [] 2 1 4 5 0 TYPE [] 2 4 5 0 TYPE [] 2 4 5 0 OET [] 2 1 0 0 TYPE [] 2 1 0 0 OET [] 2 1 0 0 OET [] 2 1 0 0 OET [] 2 3 4 5 0 OET []					
10 11 MSG MSG Center Freq 10 dB/dlv R 13 6 13 6 14 15 4 16 4	PF 175 0. AC CORPEC SENSE 2.526000000 GHz PNO: Fast IFGain:Low Tr A ef Offset 3.61 dB Figure 1 Figure 1 ef 23.61 dB Figure 1 Figure 1 ef 0 ffset 3.61 dB Figure 1 Figure 1 ef 0 ffset 3.61 dB Figure 1 Figure 1 ef 0 ffset 3.61 dB Figure 1 Figure 1 ef 0 ffset 3.61 dB Figure 1 Figure 1 ef 0 ffset 3.61 dB Figure 1 Figure 1 ef 0 ffset 3.61 dB Figure 1 Figure 1 ef 0 ffset 3.61 dB Figure 1 Figure 1 ef 0 ffset 3.61 dB Figure 1 Figure 1 ef 0 ffset 3.61 dB Figure 1 Figure 1 ef 0 ffset 3.61 dB Figure 1 Figure 1 ef 0 ffset 3.61 dB Figure 1 Figure 1 ef 0 ffset 3.61 dB Figure 1 Figure 1 ef 0 ffset 3.61 dB Figure 1 Figure 1 ef 0 ffset 3.61 dB Figure 1 Figure 1	INT ALIGN AUTO Avg Type: Log-Pwr Avg Hold:>100/100 MI	12:14:36 AUDec 26: 2018 TRAE [] 3 3 4 5 0 TYPE [] 3 4 5 6 TYPE [] 3 4 5 7 TYPE [] 3 4 5 6 TYPE [] 3 5 7 TYPE [] 3 5 7					
10 11 MSG MSG Center Freq 10 dB/div R Center Freq 13 6 3 61 4 6.4 -66 4 -66 4 Start 2.47600 #Res BW 100 MKR MOE TRCISC	PF 175 Q. AC CORPEC SENSE 2.526000000 GHz PNO: Fast IFGain:Low Tr A ef Offset 3.61 dB If Gain:Low Tr A ef 23.61 dB If Gain:Low If A 2.4 3 If A 2.4 3 If A 2.5 If A If A 2.5 If A If A 3 If A If A 4 3 If A 5 If A If A 6 If A If A 4 3 If A 5 If A If A 6 If A If A 7 If A If A 9 If A If A 10 If A If A 10 If A If A 10 If A If A 11 If A If A	INT ALIGN AUTO ig: Free Run ten: 30 dB MI MI MI MI MI MI MI MI MI MI	12:14:36 AUDec 26: 2016 TRAE [] 23 4: 2016 TYPE MANNAN OET PININNIN (r1 2.479 8 GHz 1.573 dBm 18 60 dlm					
10 Keysight Spectrum MSG R Center Freq Center Freq 10 dB/div 13 6 36 1 36.4 - 36.4 - 46.4 - 66.4 - Start 2.47600 #Res BW 100 MKR MODE TRC! SC - 1 1 2 N 1 3 N 1	PF 175 0. AC CORPEC SENSE 2.526000000 GHz PNO: Fast IFGain:Low TT PNO: Fast IFGain:Low TT A PNO: Fast IFGain:Low TT A PNO: Fast IFGain:Low TT A PNO: Fast IFGain:Low TT A PNO: Fast IFGain:Low TT A PNO: Fast IFGain:Low TT A PNO: Fast IFGain:Low TT A A A A A A A A A A A A A	INT ALIGN AUTO ig: Free Run Avg Type: Log-Pwr ig: Gree Run Gree Run ig: Gree Run Gree Run	12:14:36 AUDec 26: 2018 TRACE [] 3 3 4 5 6 TYPE [] 3 4 5 6 TYPE [] 3 4 5 7 TYPE [] 3 5 7 TYP					
10 11 MSG MSG Center Freq 10 dB/div R Center Freq 13 6 3 61 4 6.4 -66 4 -66 4 Start 2.47600 #Res BW 100 MKR MOE TRCISC	PF 175 0. AC CORPEC SENSE 2.526000000 GHz PNO: Fast IFGain:Low TT PNO: Fast IFGain:Low TT A PNO: Fast IFGain:Low TT A PNO: Fast IFGain:Low TT A PNO: Fast IFGain:Low TT A PNO: Fast IFGain:Low TT A PNO: Fast IFGain:Low TT A PNO: Fast IFGain:Low TT A A A A A A A A A A A A A	INT ALIGN AUTO ig: Free Run Avg Type: Log-Pwr ig: Gree Run Gree Run ig: Gree Run Gree Run	12:14:36 AUDec 26: 2018 TRACE [] 3 3 4 5 6 TYPE [] 3 4 5 6 TYPE [] 3 4 5 7 TYPE [] 3 5 7 TYP					
10 11 MSG MSG MSG E Center Freq R 13 6 3 61 13 6 3 61 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 46 4 40 4 4 5 4 5 8 1 4 5 8 8 9 100 MR MORE MORE TRUE SC 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	PF 175 0. AC CORPEC SENSE 2.526000000 GHz PNO: Fast IFGain:Low TT PNO: Fast IFGain:Low TT A PNO: Fast IFGain:Low TT A PNO: Fast IFGain:Low TT A PNO: Fast IFGain:Low TT A PNO: Fast IFGain:Low TT A PNO: Fast IFGain:Low TT A PNO: Fast IFGain:Low TT A A A A A A A A A A A A A	INT ALIGN AUTO ig: Free Run Avg Type: Log-Pwr ig: Gree Run Gree Run ig: Gree Run Gree Run	12:14:36 AUDec 26: 2018 TRACE [] 3 3 4 5 6 TYPE [] 3 4 5 6 TYPE [] 3 4 5 7 TYPE [] 3 5 7 TYP					
10 11 MSG MSG Image: Center Freq Center Freq 10 dB/dlv R 10 dB/dlv R 10 dB/dlv R 13 6 1 40 dB/dlv R 13 6 1 46 46 4 46 4 46 46 4 46 46 4 46 46 4 4 4 6 4 4 6 4 4 7 1 7 1 1 7 1 1 7 1 1	PF 175 0. AC CORPEC SENSE 2.526000000 GHz PNO: Fast IFGain:Low TT PNO: Fast IFGain:Low TT A PNO: Fast IFGain:Low TT A PNO: Fast IFGain:Low TT A PNO: Fast IFGain:Low TT A PNO: Fast IFGain:Low TT A PNO: Fast IFGain:Low TT A PNO: Fast IFGain:Low TT A A A A A A A A A A A A A	INT ALIGN AUTO ig: Free Run Avg Type: Log-Pwr ig: Gree Run Gree Run ig: Gree Run Gree Run	12:14:36 AUDec 26: 2018 TRACE [] 3 3 4 5 6 TYPE [] 3 4 5 6 TYPE [] 3 4 5 7 TYPE [] 3 5 7 TYP					

Attachment D-- Bandwidth Test Data

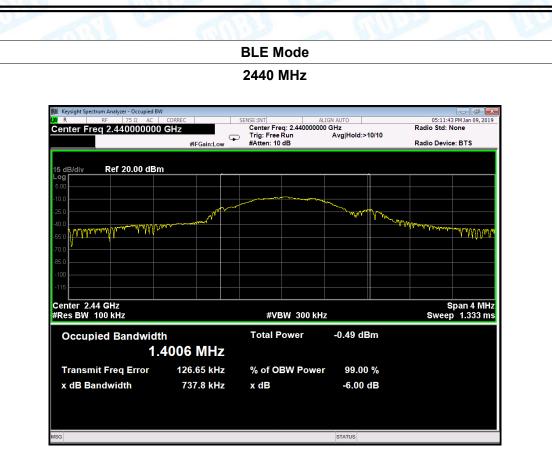
Temperature:	Temperature: 25°C		Relative Humidity:	55%			
Test Voltage:	DC 3	3.7V		ALL CALL			
Test Mode: BLE TX Mode							
Channel frequency		6dB Bandwidth	6dB Bandwidth 99% Bandwidth				
(MHz)		(kHz)	(kHz)	(kHz)			
2402	2402 740.4		1309.0				
2440		737.8	1400.6	>=500			
2480		680.0	1299.1	-			
				u			

BLE Mode

2402 MHz







BLE Mode

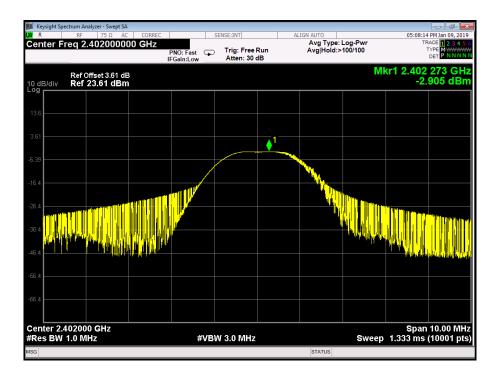
2480 MHz

R RF 75 Ω AC	CORREC	SENSE:INT AL	IGN AUTO	05:13:42 PM Jan 09, 201
enter Freq 2.480000000 (Center Freq: 2.48000000		Radio Std: None Radio Device: BTS
dB/div Ref 20.00 dBm				
g 				
0			man an	
	and a second and a second a se		Mart Martin	
and had been and when the				and the second
0				
5				
enter 2.48 GHz tes BW 100 kHz		#VBW 300 kHz	2	Span 4 MH Sweep 1.333 m
Occupied Bandwidth		Total Power	-0.98 dBm	
1.2	991 MHz			
Transmit Freq Error	87.755 kHz	% of OBW Power	99.00 %	
x dB Bandwidth	680.0 kHz	x dB	-6.00 dB	

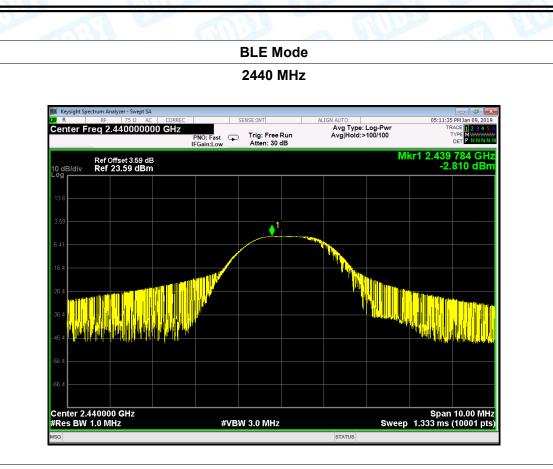


Attachment E-- Peak Output Power Test Data

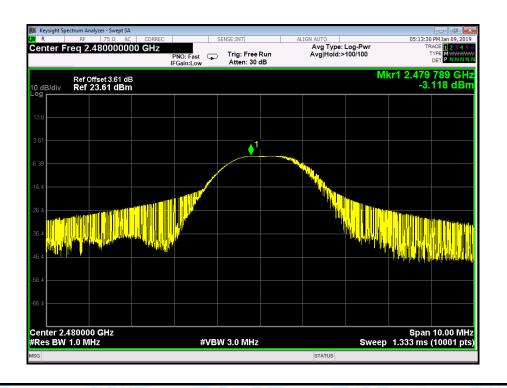
Temperature:25°C		Relative Hu	55%		
Test Voltage:	DC 3.7V		e		
Test Mode:	BLE TX N	lode	a		
Channel freque	ncy (MHz)	Test Result (dBm)	Limit (dBm)		
2402		-2.905			
2440		-2.810		30	
2480		-3.118			
		BLE Mode			
		2402 MHz			







BLE Mode 2480 MHz

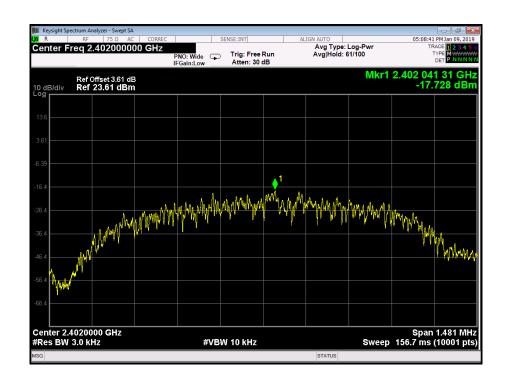


Attachment F-- Power Spectral Density Test Data

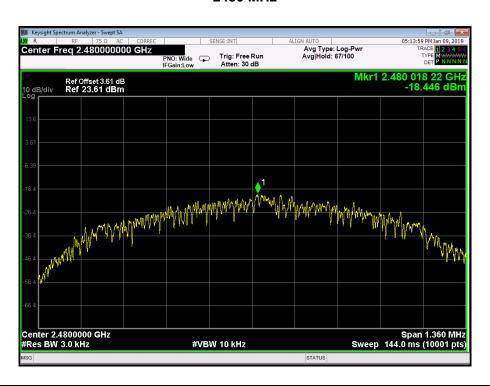
TOBY

Temperature:25°C		Relative Humidity:			ALL ST	
Test Voltage:	DC 3.7V			1995		
Test Mode:	BLE TX N	lode	aU	-		
Channel Fred	luency	Power Density	Limit (dBm)		Result	
(MHz)		(dBm)			Result	
2402		-17.728				
2440		-17.842	8	8 PAS		
2480		-18.446				
		BLE Mode				
		- · · · · · · · · · · ·				

2402 MHz







BLE Mode 2480 MHz

