

Shenzhen Toby Technology Co., Ltd.

Report No.: TB-FCC180206 Page: 1 of 42

FCC Radio Test Report FCC ID: 2ACNO-QPR-C2

Original Grant

Report No.	:	TB-FCC180206			
Applicant	:	I/O INTERCONNECT INC.			
Equipment Under Test	(E	EUT)			
EUT Name	8	qico Dongle			
Model No.	:	QPR-C2			
Series Model No.		QPR-C202			
Brand Name	:	qico			
Sample ID	1	TBBJ-20210425-16-1#& TBBJ-20210425-16-2#			
Receipt Date		2021-05-08			
Test Date	÷	2021-05-08 to 2021-05-15			
Issue Date		2021-05-18			
Standards		FCC Part 15, 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	1	: Countle 4 Camille L			
Engineer Supervisor		: Countle Li : WAN SU			

Engineer Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

Rav Lat

fory Lai.

TB-RF-074-1.0



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Revision History

Report No.	Version	Description	Issued Date
TB-FCC180206	Rev.01	Initial issue of report	2021-05-18
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1. General Information about EUT

1.1 Client Information

Applicant		I/O INTERCONNECT INC.
Address	ss : 28F5, No.97, Sec.1, Xintai 5th Rd., Xizhi Dist., New Taipei C 221, Taiwan	
Manufacturer		Shenzhen Radioland Technology Co., Ltd
Address		203, Block A1, JianYuan Park, XiXiangTown, Bao'an district, Shenzhen, China

1.2 General Description of EUT (Equipment Under Test)

EUT Name	:	qico Dongle		
Model(s)	•••	QPR-C2, QPR-C202		
Model Difference	5.	All PCB boards and circuit diagrams are the same, the only difference is the color and appearance.		
a Dur		Operation Frequency:	Bluetooth 4.0(BLE): 2402MHz~2480MHz	
		Number of Channel:	Bluetooth 4.0(BLE): 40 channels see note(3)	
Product		RF Output Power:	5.615dBm (Max)	
Description		Antenna Gain:	0 dBi PCB Antenna	
		Modulation Type:	GFSK	
RUSS		Bit Rate of Transmitter:	1Mbps	
Power Rating		Input: DC 5V		
Software Version		N/A N/A		
Hardware Version	•			
Connecting I/O Port(S)	:	Please refer to the User's Manual		

Note:

This Test Report is FCC Part 15.247 for Bluetooth, the test procedure follows the FCC KDB 558074 D01 DTS Means Guidance v05r02.

- (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

Conducted Test

E. U.L.		AL OF		
	EUT		Notebook	
		_		







1.4 Description of Support Units

	Equipment Information						
Name	Model	FCC ID/VOC	Manufacturer	Used "√"			
Notebook				\checkmark			
Cable Information							
Number	Shielded Type	Ferrite Core	Length	Note			

1.5 Description of Test Mode

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

For Conducted Test					
Final Test Mode Description					
Mode 1	TX Mode (Channel 00)				
For Radiated Test					
Final Test Mode Description					
Mode 1	TX Mode (Channel 00)				
Mode 2 TX Mode (Channel 00/20/39)					
Note : The antenna gain prov	vided by the applicant, the adapter and verified for the RF				

conduction test provided by TOBY test lab

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.

2	Test Software Version	SmartRF		
	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})
Conducted Emission	Level Accuracy: 9kHz~150kHz 150kHz to 30MHz	±3.50 dB ±3.10 dB
Radiated Emission	Level Accuracy: 9kHz to 30 MHz	±4.60 dB
Radiated Emission	Level Accuracy: 30MHz to 1000 MHz	±4.50 dB
Radiated Emission	Level Accuracy: Above 1000MHz	±4.20 dB



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)

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

TOBY

2. Test Summary

FCC Part 15 Subpart C(15.247)/RSS 247 Issue 2					
Standard Section		Test How		lundaria en t	
FCC	IC	Test Item	Test Sample(s)	Judgment	Remark
15.203	2	Antenna Requirement	TBBJ-20210425-16-2#	PASS	N/A
15.207(a)	RSS-GEN 7.2.4	Conducted Emission	TBBJ-20210425-16-1#	PASS	N/A
15.205&15.247(d)	RSS-GEN 7.2.2	Band-Edge & Unwanted Emissions into Restricted Frequency	TBBJ-20210425-16-2#	PASS	N/A
15.247(a)(2)	RSS 247 5.2 (1)	6dB Bandwidth	TBBJ-20210425-16-2#	PASS	N/A
15.247(b)(3)	RSS 247 5.4 (4)	Conducted Max Output Power	TBBJ-20210425-16-2#	PASS	N/A
15.247(e)	RSS 247 5.2 (2)	Power Spectral Density	TBBJ-20210425-16-2#	PASS	N/A
15.205, 15.209&15.247(d)	RSS 247 5.5	Transmitter Radiated Spurious &Unwanted Emissions into Restricted Frequency	TBBJ-20210425-16-1# TBBJ-20210425-16-2#	PASS	N/A

Note: N/A is an abbreviation for Not Applicable.

3. Test Software

	Test Item	Test Software	Manufacturer	Version No.
1	Radiation Emission	EZ-EMC	EZ	FA-03A2RE
	RF Conducted	MTS-8310	MWRFtest	V2.0.0.0
	Measurement	WIT 5-0510		V2.0.0.0



4. Test Equipment

Conducted Emission	Test				
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
EMI Test Receiver	Rohde & Schwarz	ESCI	100321	Jul. 06, 2020	Jul. 05, 2021
	Compliance		1000	2 11	
RF Switching Unit	Direction Systems	RSU-A4	34403	Jul. 06, 2020	Jul. 05, 2021
	Inc	m 100			
AMN	SCHWARZBECK	NNBL 8226-2	8226-2/164	Jul. 06, 2020	Jul. 05, 2021
LISN	Rohde & Schwarz	ENV216	101131	Jul. 06, 2020	Jul. 05, 2021
Radiation Emission T	Test			-	
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 06, 2020	Jul. 05, 2021
EMI Test Receiver	Rohde & Schwarz	ESPI	100010/007	Jul. 06, 2020	Jul. 05, 2021
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102197	Jul. 06, 2020	Jul. 05, 2021
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Mar.01, 2020	Feb. 28, 2022
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar.01, 2020	Feb. 28, 2022
Horn Antenna	ETS-LINDGREN	BBHA 9170	BBHA9170582	Mar.01, 2020	Feb. 28, 2022
Loop Antenna	SCHWARZBECK	FMZB 1519 B	1519B-059	Jul. 07, 2020	Jul. 06, 2021
Pre-amplifier	Sonoma	310N	185903	Feb.25, 2021	Feb. 24, 2022
Pre-amplifier	HP	8449B	3008A00849	Feb.25, 2021	Feb. 24, 2022
Pre-amplifier	SKET	LNPA_1840G-50	SK201904032	Feb.25, 2021	Feb. 24, 2022
Cable	HUBER+SUHNER	100	SUCOFLEX	Feb.25, 2021	Feb. 24, 2022
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A
Antenna Conducted	Emission				
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 06, 2020	Jul. 05, 2021
Spectrum Analyzer	Rohde & Schwarz	ESPI	100010/007	Jul. 06, 2020	Jul. 05, 2021
MXA Signal Analyzer	Agilent	N9020A	MY49100060	Sep. 11, 2020	Sep. 10, 2021
Vector Signal Generator	Agilent	N5182A	MY50141294	Sep. 11, 2020	Sep. 10, 2021
Analog Signal Generator	Agilent	N5181A	MY50141953	Sep. 11, 2020	Sep. 10, 2021
	DARE!! Instruments	RadiPowerRPR3006W	17100015SNO26	Sep. 11, 2020	Sep. 10, 2021
	DARE!! Instruments	RadiPowerRPR3006W	17100015SNO29	Sep. 11, 2020	Sep. 10, 2021
RF Power Sensor	DARE!! Instruments	RadiPowerRPR3006W	17100015SNO31	Sep. 11, 2020	Sep. 10, 2021
	DARE!! Instruments	RadiPowerRPR3006W	17100015SNO33	Sep. 11, 2020	Sep. 10, 2021



5. Conducted Emission Test

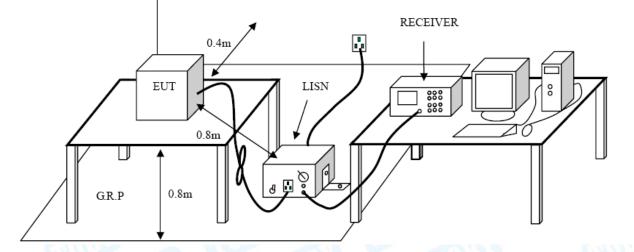
- 5.1 Test Standard and Limit
 - 5.1.1Test Standard FCC Part 15.207
 - 5.1.2 Test Limit

	Conducted	Emission	Test	Limit
--	-----------	----------	------	-------

E	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.
- 5.2 Test Setup





5.3 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.

5.4 Deviation From Test Standard

No deviation

5.5 EUT Operating Mode

Please refer to the description of test mode.

5.6 Test Data

Please refer to the Attachment A.



6. Radiated Emission Test

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

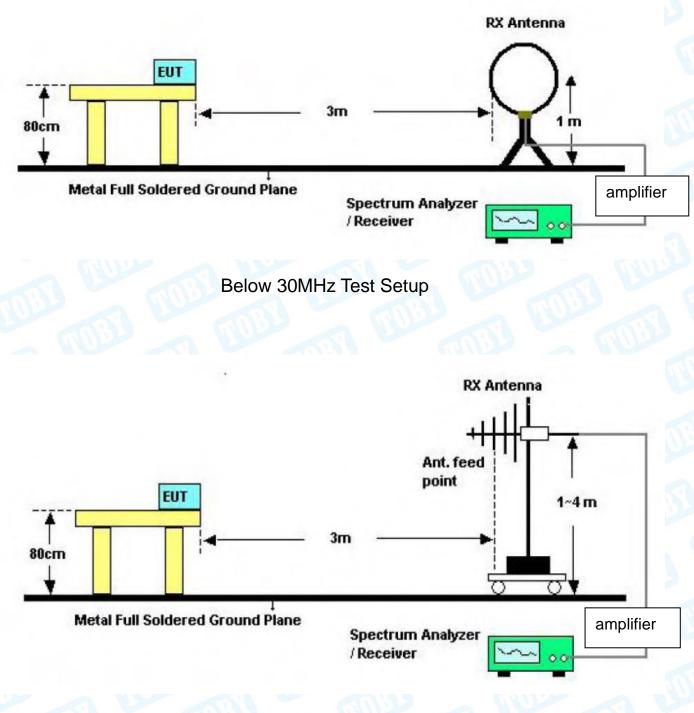
Note:

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

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

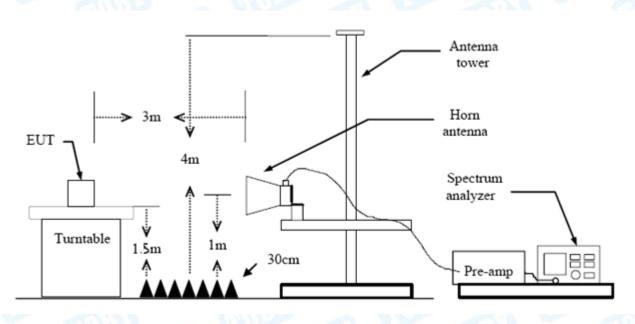


6.2 Test Setup



Below 1000MHz Test Setup





Above 1GHz 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.



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6.4 Deviation From Test Standard

No deviation

6.5 EUT Operating Condition

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

6.6 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 A.

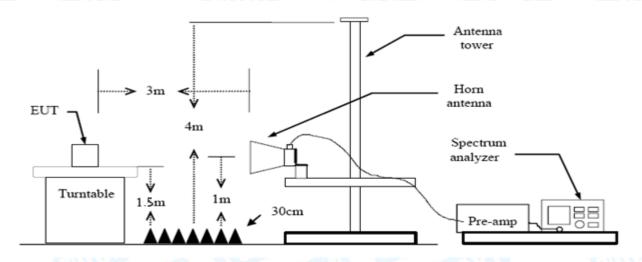


7. Restricted Bands Requirement

- 7.1 Test Standard and Limit
 - 7.1.1 Test Standard FCC Part 15.247(d) FCC Part 15.205
 - 7.1.2 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	

7.2 Test Setup



7.3 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.
- 7.4 Deviation From Test Standard

No deviation

7.5 EUT Operating Condition

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

7.6 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.

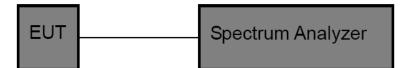


8. Bandwidth Test

- 8.1 Test Standard and Limit
 - 8.1.1 Test Standard
 - FCC Part 15.247 (a)(2)
 - 8.1.2 Test Limit

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

8.2 Test Setup



8.3 Test Procedure

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

8.4 Deviation From Test Standard

No deviation

8.5 EUT Operating Condition

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

8.6 Test Data

Please refer to the Attachment C.

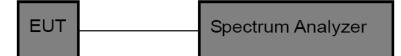


9. Peak Output Power Test

- 9.1 Test Standard and Limit
 - 9.1.1 Test Standard
 - FCC Part 15.247 (b)(3)
 - 9.1.2 Test Limit

FCC Part 15 Subpart C(15.247)/RSS-247			
Test Item Limit Frequency Range			
Peak Output Power	1 Watt or 30 dBm	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 is according to section 9.1.1 of KDB 558074 D01 DTS Meas Guidance v05r02.

- (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.

9.4 Deviation From Test Standard

No deviation

9.5 EUT Operating Condition

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

9.6 Test Data

Please refer to the Attachment D.

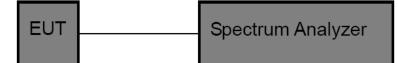


10. Power Spectral Density Test

- 10.1 Test Standard and Limit
 - 10.1.1 Test Standard FCC Part 15.247 (e)
 - 10.1.2 Test Limit

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

10.2 Test Setup



10.3 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 v05r02.

- (1) The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above.
- (2) Set analyser centre frequency to DTS channel centre 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.

10.4 Deviation From Test Standard

No deviation

10.5 EUT Operating Condition

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

10.6 Test Data

Please refer to the Attachment E.



11. Antenna Requirement

11.1 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.

11.2 Deviation From Test Standard

No deviation

11.3 Antenna Connected Construction

The gains of the antenna used for transmitting is 0 dBi, and the antenna de-signed with permanent attachment and no consideration of replacement. Please see the EUT photo for details.

11.4 Result

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

Antenna Type	
Permanent attached antenna	
Unique connector antenna	Long Long
Professional installation antenna	

Attachment A-- Conducted Emission Test Data

Temperature: 25°C Relative Humidity: 55% Rest Voltage: AC 120V 60Hz AC 120V 60Hz AC 120V 60Hz Terminal: Line Line AC 120V 60Hz AC 120V 60Hz Terminal: Line Mode 1 AC 120V 60Hz AC 120V 60Hz AC 120V 60Hz Terminal: Line Mode 1 AC 120V 60Hz AC 120V 60Hz AC 120V 60Hz AC 120V 60Hz Terminal: Line Mode 1 AC 120V 60Hz Mode 1 AC 120V 60Hz				
ierminal: Line iest Mode: Mode 1 iemark: Only worse case is reported ^{80.0} dBuv ^{90.}	emperature:	25 ℃	Relative Humidity:	55%
Pest Mode: Mode 1 Nemark: Only worse case is reported 80.0 dBuV 0 d	est Voltage:	AC 120V 60Hz		IN IS
Remark: Only worse case is reported	erminal:	Line		
80.0 dBuV	est Mode:	Mode 1	6000	
30 MWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWWW	emark:	Only worse case is report	rted	RU C
-20 0.150 0.5 (MHz) 5 30.000	30 30 			AVG:

No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1 *	0.4820	21.14	9.70	30.84	56.30	-25.46	QP
2	0.4820	10.00	9.70	19.70	46.30	-26.60	AVG
3	0.8540	12.38	9.75	22.13	56.00	-33.87	QP
4	0.8540	1.50	9.75	11.25	46.00	-34.75	AVG
5	2.4900	8.69	9.80	18.49	56.00	-37.51	QP
6	2.4900	-0.73	9.80	9.07	46.00	-36.93	AVG
7	3.9820	9.89	9.90	19.79	56.00	-36.21	QP
8	3.9820	0.90	9.90	10.80	46.00	-35.20	AVG
9	5.3420	10.77	9.88	20.65	60.00	-39.35	QP
10	5.3420	0.63	9.88	10.51	50.00	-39.49	AVG
11	6.6820	11.79	9.82	21.61	60.00	-38.39	QP
12	6.6820	0.99	9.82	10.81	50.00	-39.19	AVG

Remark:

TOBY

1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB)

2. Margin (dB) =QuasiPeak/Average (dBuV)-Limit (dBuV)



emperature:	25 ℃	Rel	ative Humidity:	55%	
est Voltage:	AC 120V 60Hz	1200			~
erminal:	Neutral	GUU-20	10	100	
est Mode:	Mode 1		2000		
emark:	Only worse case is	reported		NS	
80.0 dBuV				QP: AVG:	
30 -20	Martin and and a second and a s	Enner Marthan property of	ww.XMMMM www.VVWyuuu	WWwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwwww	pea AV6

No. N	/lk. F	Freq.	Readir Leve			1.1	Over	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector
1 *	• 0.•	4820	21.64	9.80	31.44	56.30	-24.86	QP
2	0.	4820	9.43	9.80) 19.23	46.30	-27.07	AVG
3	0.	8580	12.92	2 9.80) 22.72	56.00	-33.28	QP
4	0.	8580	1.34	9.80) 11.14	46.00	-34.86	AVG
5	1.	4060	9.51	9.80) 19.31	56.00	-36.69	QP
6	1.	4060	-1.82	9.80	7.98	46.00	-38.02	AVG
7	2.	1460	9.04	9.80	18.84	56.00	-37.16	QP
8	2.	1460	-1.79	9.80	8.01	46.00	-37.99	AVG
9	4.	6700	9.82	9.80) 19.62	56.00	-36.38	QP
10	4.	6700	-0.32	9.80	9.48	46.00	-36.52	AVG
11	6.	7300	11.60	9.89	9 21.49	60.00	-38.51	QP
12	6.	7300	0.04	9.89	9.93	50.00	-40.07	AVG

Remark: 1. Corr. Factor (dB) = LISN Factor (dB) + Cable Loss (dB) 2. Margin (dB) =QuasiPeak/Average (dBuV)-Limit (dBuV)



Attachment A-- 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

emperature:	25 ℃	Relative Hum	nidity:	55%
est Voltage:	DC 5V	6003		TUP
nt. Pol.	Horizontal		CON I	
est Mode:	Mode 1		NO.	
Remark:	three models were	e tested, and the report sl	howed on	ly the worst da
80.0 dBuV/m				
			(RF)FCC 15C 3	M Radiation Margin -6 dB
30				6
		man Marin Marina	Mumh	munition
manne	2	appenter when when the second	www.www.w	
- manager	mound	MANNAMANA		
-20				

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		35.4993	32.17	-16.91	15.26	40.00	-24.74	peak
2		95.4270	33.45	-21.90	11.55	43.50	-31.95	peak
3		200.6881	39.16	-19.91	19.25	43.50	-24.25	peak
4		277.0935	38.05	-16.72	21.33	46.00	-24.67	peak
5		361.7139	35.82	-14.09	21.73	46.00	-24.27	peak
6	*	804.6028	34.25	-5.67	28.58	46.00	-17.42	peak

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

Remark:

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
- 2. QuasiPeak (dBµV/m)= Corr. (dB/m)+ Read Level (dBµV)
- 3. Margin (dB) = QuasiPeak (dB μ V/m)-Limit QPK(dB μ V/m)



Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 5V		
Ant. Pol.	Vertical		
Test Mode:	Mode 1		
Remark:	three models were	tested, and the report showe	ed only the worst data.
80.0 dBu∀/m			
		(RF)FC	C 15C 3M Radiation
			Margin -6 dB
30			6
X .	2 3	4 5 www.	min the warmen
MANNAMAN	the Manuna market	muluum the work	
	all . Married		
-20			
30.000 40 50	60 70 80	(MHz) 300 400	500 600 700 1000.000
	Deeding	Correct Measure	
No. Mk. F	Reading Freq. Level	Correct Measure- Factor ment Lir	mit Over
	MHz dBuV	dB/m dBuV/m dB	uV/m dB Detector
1 * 32	.1795 38.61	-14.57 24.04 40	0.00 -15.96 peak

-23.52

-24.03

-20.23

-16.16

-8.67

16.33

17.59

15.93

20.19

27.42

-23.67

-22.41

-27.57

-25.81

-18.58

peak

peak

peak

peak

peak

40.00

40.00

43.50

46.00

46.00

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

54.0711

62.2128

176.8878

303.5437

570.6100

Remark:

2

3

4

5

6

- Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
 QuasiPeak (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)

39.85

41.62

36.16

36.35

36.09

3. Margin (dB) = QuasiPeak (dBµV/m)-Limit QPK(dBµV/m)

TOBY

Above 1GHz

Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 5V	0 00	
Ant. Pol.	Horizontal		
Test Mode:	BLE Mode TX 2402 MHz		612
Remark:	No report for the emission v	which more than 20 dB	below the
	prescribed limit.		

No.	Mk.	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4803.916	42.34	13.01	55.35	74.00	-18.65	peak
2	*	4804.158	27.84	13.02	40.86	54.00	-13.14	AVG

Remark:

Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
 Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)

3. Margin (dB) = Peak/AVG (dBµV/m)-Limit PK/AVG(dBµV/m)

Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 5V	MODE A	NUL S
Ant. Pol.	Vertical	angu	
Test Mode:	BLE Mode TX 2402 MHz	200	NON I
Remark:	No report for the emission prescribed limit.	which more than 20 dB	3 below the

No	. Mk	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4803.902	41.22	13.01	54.23	74.00	-19.77	peak
2	*	4804.218	27.91	13.02	40.93	54.00	-13.07	AVG

Remark:

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB) 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)

3. Margin (dB) = Peak/AVG (dBµV/m)-Limit PK/AVG(dBµV/m)



Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 5V	TUP-	2 19
Ant. Pol.	Horizontal		
Test Mode:	BLE Mode TX 2442 MH	lz	- BU
Remark:	No report for the emiss prescribed limit.	on which more than 20 dB	below the

No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4883.762	43.28	13.59	56.87	74.00	-17.13	peak
2	*	4883.884	28.15	13.60	41.75	54.00	-12.25	AVG

- Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
 Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dBµV/m)-Limit PK/AVG(dBµV/m)

Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 5V	and a	NU.
Ant. Pol.	Vertical	OB.	61015
Test Mode:	BLE Mode TX 2442 MHz		
Remark:	No report for the emission w	hich more than 20 dB	below the
	prescribed limit.		

N	o. N	Лk.	Freq.	Reading Level		Measure- ment	Limit	Over	
			MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	*		4882.276	28.51	13.59	42.10	54.00	-11.90	AVG
2			4883.686	41.76	13.59	55.35	74.00	-18.65	peak

Remark:

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB) 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dBµV/m)-Limit PK/AVG(dBµV/m)



Temperature:	25 ℃	Relative Humidity:	55%			
Test Voltage:	DC 5V	AUL -	2			
Ant. Pol.	Horizontal					
Test Mode:	BLE Mode TX 2480 MHz					
Remark:	No report for the emission which more than 20 dB below the					
	prescribed limit.					

No	. Mk	Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4959.950	42.25	14.15	56.40	74.00	-17.60	peak
2	*	4960.288	28.09	14.15	42.24	54.00	-11.76	AVG

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB) 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dBµV/m)-Limit PK/AVG(dBµV/m)

Temperature:	25 ℃	Relative Humidity:	55%
Test Voltage:	DC 5V	200	
Ant. Pol.	Vertical		THUE A
Test Mode:	BLE Mode TX 2480 MHz	TORUS .	m DE
Remark:	No report for the emission w	which more than 20 dB	below the
	prescribed limit.		

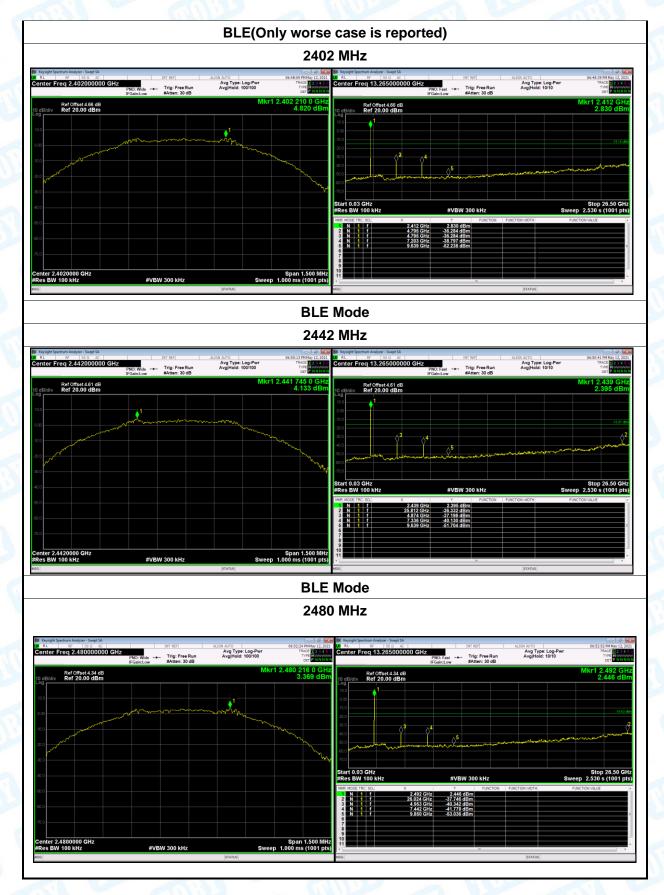
No	. Mk	. Freq.	Reading Level		Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		4959.548	41.92	14.15	56.07	74.00	-17.93	peak
2	*	4959.722	28.32	14.15	42.47	54.00	-11.53	AVG

Remark:

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB) 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dBµV/m)-Limit PK/AVG(dBµV/m)



Conducted Emission Test Data



Attachment B-- Restricted Bands Requirement and Band

Edge Test Data

TOBY

(1) Radiation Test

Temperature:	25 ℃		Relative Hum	nidity:	55%	
Test Voltage:	DC 5V	000	a		20	6
Ant. Pol.	Horizontal		D a	au		~
Test Mode:	BLE Mode T	GI	NOD.			
Remark:	N/A	2	199	1		6
110.0 dBuV/m						
					Ň	
				(RF) FCC	PART 15C (PE	AK)
60				(RF) FCC	PART 15C (A	VEI
				1 X		
				2		\rightarrow
	~~~~					
10.0						

No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	44.30	1.28	45.58	74.00	-28.42	peak
2		2390.000	31.70	1.28	32.98	54.00	-21.02	AVG
3	*	2402.000	85.10	1.33	86.43		I Frequency	AVG
4	Х	2402.400	86.04	1.33	87.37	- Fundamental	Frequency	peak

#### Remark:

- 1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB) 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dBµV/m)-Limit PK/AVG(dBµV/m)



emperature:	<b>25</b> ℃			Relative	Humidity:	55%	
est Voltage:	DC 5	V	835		ALL ST		15
nt. Pol.	Vertic	cal		1.23		<b>NRF</b>	
est Mode:	BLE	BLE Mode TX 2402 MHz					-
Remark: N/A							
110.0 dBuV/m							
					(BE) ECC E	ART 15C (REAK	0
					(11)1001		.,
60						= 1	
					(RF) FCC	PART 15C AVE	i)
					1 X		
						/'	
					2 ***	~~~	Land
10.0 2312.000 2322.00							

No.	Mk.	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		2390.000	44.50	1.28	45.78	74.00	-28.22	peak
2		2390.000	31.41	1.28	32.69	54.00	-21.31	AVG
3	Х	2402.200	76.62	1.33	77.95	- Fundamental I	requency	peak
4	*	2402.200	75.73	1.33	77.06	Fundamental	Frequency	AVG

- Corr. = Antenna Factor (dB/m) + Cable Loss (dB)
  Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)
- 3. Margin (dB) = Peak/AVG (dBµV/m)-Limit PK/AVG(dBµV/m)



ſemp	erature:	<b>25</b> ℃	Relative Humidity:	55%
Fest \	Voltage:	DC 5V	GUU2-	A 15
Ant. F	Pol.	Horizontal		ND -
Fest I	Mode:	BLE Mode TX 2480 M	ЛНz	-00
Rema	ark:	N/A	ALL ALL	
110.0 Г	dBu¥/m			
	Þ			
	ň			
	$-\Lambda$		(RF) FCC P	ART 15C (PEAK)
60	3 ×			
-	×		(RF) FCC	PART 15C (AVG)
	*			
10.0				

No	. Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	Х	2479.600	87.20	1.85	89.05	Fundamental	Frequency	peak
2	*	2479.800	86.45	1.85	88.30	Fundamental	Frequency	AVG
3		2483.500	55.51	1.88	57.39	74.00	-16.61	peak
4		2483.500	46.34	1.88	48.22	54.00	-5.78	AVG

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB) 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)

- 3. Margin (dB) = Peak/AVG (dBµV/m)-Limit PK/AVG(dBµV/m)



emperature:		25°	25℃ Relative Humidity:			55%		
est	Voltage:	DC	DC 5V Vertical BLE Mode TX 2480 MHz					
nt.	Pol.	Ver						
est	Mode:	BLE						
em	ark:	N/A	-		MUL - IL			1
100.0	D dBu∀/m		1		1	1		_
	<u>ა</u> ჯ					(BE) EC	C PART 15C (PEAK)	
						()		
						(RF) FI	CC PART 15C (AVG)	
50								
		~~~~~~						~~~
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	2479.600	76.47	1.85	78.32	Fundamental	Frequency	peak
2	*	2480.000	75.63	1.85	77.48	Fundamental	Frequency	AVG
3		2483.500	49.00	1.88	50.88	74.00	-23.12	peak
4		2483.500	37.15	1.88	39.03	54.00	-14.97	AVG

1. Corr. = Antenna Factor (dB/m) + Cable Loss (dB) 2. Peak/AVG (dBμV/m)= Corr. (dB/m)+ Read Level (dBμV)

- 3. Margin (dB) = Peak/AVG (dBµV/m)-Limit PK/AVG(dBµV/m)



(2) Conducted Test

nperature:	25 ℃	Re	lative Humidity:	55%				
t Voltage:	DC 5V							
t Mode:	BLE Mode TX 2402MHz / BLE Mode TX 2480MHz							
nark:	The EUT is programmed in continuously transmitting mode							
Keysight Spectrum Analyze								
Center Freq 2.35	50 Ω AC 56000000 GHz PN0: Fast	INT REF	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 100/100	06:48:05 PM May 12, 2021 TRACE 1 2 3 4 5 6 TYPE MWWWW DET P N N N N				
Def offe	IFGain:Lov	w #Atten: 30 dB		Mkr1 2.402 0 GHz				
10 dB/div Ref 20	et 4.66 dB .00 dBm			4.612 dBm				
0.00								
-10.0				-15.53 dBm				
-20.0				AT N				
-40.0				A3				
-50.0 -60.0	ndannayaana shi assaa fasta asala haraka	Man water of all for the second	and the manufacture of the	3 1 1				
-70.0								
Start 2.30600 GHz #Res BW 100 kHz		#VBW 300 kHz	Swee	Stop 2.40600 GHz 9.600 ms (1001 pts)				
MKR MODE TRC SCL	× 2.402 0 GHz	Y FUNCTION	FUNCTION WIDTH F	JNCTION VALUE				
2 N 1 f 3 N 1 f	2.400 0 GHz -2 2.390 0 GHz -5	6.520 dBm 5.912 dBm						
4 N 1 f 5 6	2.383 7 GHz -5	2.076 dBm		=				
7 8								
9 10 11								
10		m	STATUS	•				
10 11 MSG Keysight Spectrum Analyz				•				
10 11 MSG Keysight Spectrum Analyz	50 Ω AC 26000000 GHz	INT REF	ALIGN AUTO Avg Type: Log-Pwr AvgHold: 100/100	06:52:18 PM May 12, 2021 TRACE 12 3 4 5 6				
10 11 MSG Keysight Spectrum Analyz X RL RF Center Freq 2.52	50 Ω AC 26000000 GHz PNO: Fast IFGain:Lov	INT REF	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 100/100	06:52:18 PM May 12, 2021 TRACE 1 2 3 4 5 6 TYPE MWWWW DET P N N N N				
10 11 MSG MSG Keysight Spectrum Analyz VI RL RF Center Freq 2.52 Ref Offs	50 Ω AC 26000000 GHz PNO: Fast	INT REF	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 100/100	06:52:18 PM May 12, 2021 TRACE 12 3 4 5 6				
10 11 MSG MSG MSG MSG MSG MSG MSG MSG	50 Ω AC 26000000 GHz PNO: Fast IFGain:Lov et 4.34 dB	INT REF	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 100/100	06:52:18 PM May 12, 2021 TRACE 1 2 3 4 5 6 TYPE MWWWW DET P NNNNN Mkr1 2.480 0 GHz				
10 11 MSG MSG MSG MSG MSG MSG MSG MSG	50 Ω AC 26000000 GHz PNO: Fast IFGain:Lov et 4.34 dB	INT REF	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 100/100	06:52:18 PM May 12, 2021 TRACE [] 2:34 3: 0 TYPE MUMAN DET P NNNN N Mkr1 2.480 0 GHz 3.425 dBm				
10 11 MSG MSG MSG MSG MSG MSG MSG MSG	50 Ω AC 26000000 GHz PNO: Fast IFGain:Lov et 4.34 dB	INT REF	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 100/100	06:52:18 PM May 12, 2021 TRACE 1 2 3 4 5 6 TYPE MWWWW DET P NNNNN Mkr1 2.480 0 GHz				
10 11 MSG MSG MSG MSG MSG MSG MSG MSG	50 Ω AC 26000000 GHz PNO: Fast IFGain:Lov et 4.34 dB .00 dBm	INT REF	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 100/100	06:52:18 PM May 12, 2021 TRACE [] 2:34 3: 0 TYPE MUMAN DET P NNNN N Mkr1 2.480 0 GHz 3.425 dBm				
10 11 10 11 10 11 10 10 10 10	50 Ω AC 26000000 GHz PN0: Fast IFGain:Lov et 4.34 dB .00 dBm	INT REF Trig: Free Run # → #Atten: 30 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 100/100	06:52:18 PM May 12, 2021 TRACE [] 2:34 3: 0 TYPE MUMANN DET P NNNN N Mkr1 2.480 0 GHz 3.425 dBm				
10 11 MSG MSG MSG MSG MSG MSG MSG Center Freq 2.52 10 dB/div Ref 20 10 0 10 0 10 10 0 10 0 1	50 Ω AC 26000000 GHz PNO: Fast IFGain:Lov et 4.34 dB .00 dBm	INT REF Trig: Free Run # → #Atten: 30 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 100/100	06:52:18 PM May 12, 2021 TRACE [] 2:34 3: 0 TYPE MUMANN DET P NNNN N Mkr1 2.480 0 GHz 3.425 dBm				
10 11 MSG MSG MSG MSG MSG MSG MSG MSG	50 Ω AC 26000000 GHz PNC: Fast IFGain:Lot et 4.34 dB .00 dBm 3 	INT REF Trig: Free Run #Atten: 30 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 100/100	06:52:18 PM May 12, 2021 TRACE [] 2 3 4 3 6 TYPE MUNIMUM DET P NINN N Mkr1 2.480 0 GHz 3.425 dBm -16.75 dBm -16.75 dBm -16.75 dBm -16.75 dBm -16.75 dBm -16.75 dBm				
10 11 MSG MSG MSG Ref Offs Center Freq 2.52 Ref Offs 10 dB/div Ref Offs 10 dB/div Ref Offs 10 dB/div Ref Offs 10 dB/div Ref Offs 0 0 0 0 0 0 -10 -10 -10 -20 -20 -10 -60 -20 -40 -60 -40 -40 -70 -50 -50 Start 2.47600 GH2 -70 Start 2.47600 GH2 -70 MKR MODE TRC SCL MKR MODE TRC SCL	50 Ω AC 2000000 GHz PNC: Fast IFGain:Lov et 4.34 dB .00 dBm 3 	INT REF Trig: Free Run #Atten: 30 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 100/100	06:52:8 PM ANY 12, 2021 TRACE [] 2 3 4 5 0 TYPE MUNIMUM DET P NUMMEN Mkr1 2.480 0 GHz 3.425 dBm -16.75 dBm				
10 11 MSG MSG MSG Ref Offs Center Freq 2.52 Ref Offs 10 dB/div Ref Offs 10 dB/div Ref Offs 10 dB/div Ref 20 0 00 1 0 00 1 -0 0 1 -0 0 2 <	\$0 Ω AC PN0: Fast 26000000 GHz PN0: Fast IFGain:Lox PN0: Fast et 4.34 dB .00 dBm .00 dBm	INT REF INT REF Trig: Free Run #Atten: 30 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 100/100	06:52:18 PM ANY 12, 2021 TRACE [] 2:3 4:5 of TYPE MUNIMUM DET P NUMMEN Mkr1 2.480 0 GHz 3.425 dBm 				
10 11 MSG MSG MSG Ref offs Center Freq 2.52 Ref offs 10 dB/div Ref offs 10 dB/div Ref offs 10 dB/div Ref offs 10 dB/div Ref offs 20 dB 1 1 20 dB 1 1 1 20 dB 1 1 1 1 20 dB 1 <th1< th=""> 1</th1<>	\$0 Ω AC PN0: Fast 26000000 GHz PN0: Fast IFGain:Low PN0: Fast et 4.34 dB 00 dBm .00 dBm	INT REF t t w #Atten: 30 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 100/100	06:52:18 PM ANY 12, 2021 TRACE [] 2:3 4:5 of TYPE MUNIMUM DET P NUMMEN Mkr1 2.480 0 GHz 3.425 dBm 				
10 11 MSG MSG MSG Ref Offs Center Freq 2.52 Ref Offs 10 dB/div Ref Offs 20 d 1 -0 d 1 -1 d 1 -1 d	\$0 Ω AC PN0: Fast 26000000 GHz PN0: Fast IFGain:Low PN0: Fast et 4.34 dB 00 dBm .00 dBm	INT REF t t w #Atten: 30 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 100/100	06:52:18 PM ANY 12, 2021 TRACE [] 2:3 4:5 of TYPE MUNIMUM DET P NUMMEN Mkr1 2.480 0 GHz 3.425 dBm 				
10 11 10 11 10 11 10 11 10 11 10 10	\$0 Ω AC PN0: Fast 26000000 GHz PN0: Fast IFGain:Low PN0: Fast et 4.34 dB 00 dBm .00 dBm	INT REF t t w #Atten: 30 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 100/100	06:52:18 PM way 12, 2021 TRACE [] 2:3 4:3 0 TYPE MUNUMUM DET PININN N Mkr1 2.480 0 GHz 3.425 dBm 				



Attachment C-- Bandwidth Test Data

Temperature:	25 ℃	Relative Humidity:	55%	
Test Voltage:	DC 5V		ABL -	
Test Mode:	BLE TX	Mode		
Channel frequ	lency	6dB Bandwidth	Limit	
(MHz)		(kHz)	(kHz)	
2402		667.1		
2442		674.2	>=500	
2480		667.6		
		BLE Mode		

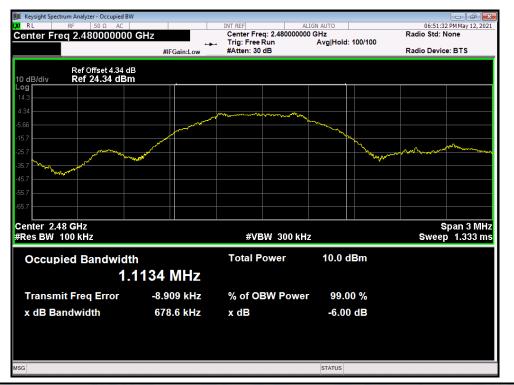
2402 MHz







2480 MHz





Attachment D-- Peak Output Power Test Data

Temperature:	25 ℃	Relative Hu	55%		
Test Voltage:	DC 5V			MBL -	
Test Mode:	BLE TX N	lode			
Channel frequer	ncy (MHz)	Test Result (dBm)		Limit (dBm)	
2402		5.615			
2442		4.908	30		
2480		4.287			
		BLE Mode			
		0 (00 N			



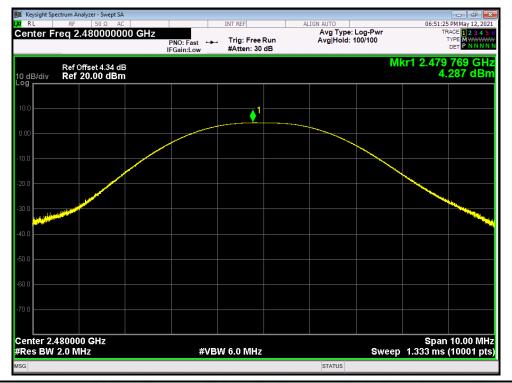






BLE Mode

2480 MHz





Attachment E-- Power Spectral Density Test Data

Temperature:25°C		Relative Humidity:		55%		
Test Voltage: DC 5			21 1	611	1:15	
Test Mode:	BLE TX N	lode	L'E	A V		
Channel Frequ	uency	Power Density Lim		it Result		
(MHz)		(dBm/3	(dBm/3kHz) (dBm/3kHz)		Result	
2402		-6.86	-6.868			
2442		-7.16	-7.166 8			PASS
2480		-8.085				
		BLE M	ode	4	J	

2402 MHz





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



