RADIO TEST REPORT

Report No.:STS2307047W02

Issued for

Chongqing Huiye lot Technology Co., Ltd.

No.4 Of No.6 Comprehensive Tax Avenue, Shapingba Districh, Chongqing, China

> Product Name: LCD Display Brand: Fill 1972 Model Name: B03N-U FCC ID: 2A5B3-B03N Test Standard: FCC Part 15.247

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TEST RESULT CERTIFICATION

Applicant's Name	Chongqing Huiye lot Technology Co., Ltd.
Address	No.4 Of No.6 Comprehensive Tax Avenue, Shapingba Districh, Chongqing, China
	Chongqing Huiye lot Technology Co., Ltd.
Address	No.4 Of No.6 Comprehensive Tax Avenue, Shapingba Districh, Chongqing, China
Product Description	
Product Name:	LCD Display
Brand	HUIYE
Model Name	. B03N-U
Test Standards	FCC Part15.247
Test Procedure	ANSI C63.10-2013

This device described above has been tested by STS, the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Date of lest	
Date of receipt of test item:	11 July 2023
Date (s) of performance of tests:	11 July 2023 ~ 18 July 2023
Date of Issue	18 July 2023
Test Result	Pass

Testing Engineer :	Aann 13u	
	(Aaron Bu)	
Technical Manager :	Sean She	STEST SERVIC
	(Sean she)	TESTING APPROVAL
Authorized Signatory :	Chin cher	IESTING AFFRUVAL

(Chris Chen)



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Revision History

Rev.	Issue Date	Report NO.	Effect Page	Contents
00	18 July 2023	STS2307047W02	ALL	Initial Issue
			2	1





1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards: KDB 558074 D01 15.247 Meas Guidance v05r02.

	FCC Part 15.247,Subpart C		
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	N/A	
15.247 (a)(2)	6dB Bandwidth	PASS	
15.247 (b)(3)	Output Power	PASS	
15.209	Radiated Spurious Emission	PASS	-
15.247 (d)	Conducted Spurious & Band Edge Emission	PASS	5
15.247 (e)	Power Spectral Density	PASS	
15.205	Restricted bands of operation	PASS	
Part 15.247(d)/ Part 15.209(a)	Band Edge Emission	PASS	
15.203	Antenna Requirement	PASS	

NOTE:

- (1) 'N/A' denotes test is not applicable in this Test Report.
- (2) All tests are according to ANSI C63.10-2013.



1.1 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD Add. : 101, Building B, Zhuoke Science Park, No.190 Chongqing Road, ZhanChengShequ, Fuhai Sub-District, Bao'an District, Shenzhen, Guang Dong, China FCC test Firm Registration Number: 625569

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IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01

1.2 MEASUREMENT UNCERTAINTY

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

No.	Item	Uncertainty
1	RF output power, conducted	±1.197dB
2	Unwanted Emissions, conducted	±2.896dB
3	All emissions, radiated 9K-30MHz	±3.84dB
4	All emissions, radiated 30M-1GHz	±3.94dB
5	All emissions, radiated 1G-6GHz	±4.59dB
6	All emissions, radiated>6G	±5.22dB
7	Conducted Emission (9KHz-150KHz)	±2.14dB
8	Conducted Emission (150KHz-30MHz)	±2.54dB
9	Power Spectral Density, Conducted	±1.25dB
10 Occupied Channel Bandwidth		±3.5%



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

Product Name	LCD Display					
Brand						
Model Number	B03N-U					
Series Model(s)	N/A					
Model Difference	N/A					
	The EUT is a LCD I	Display				
	Operation Frequency:	2402~2480 MHz				
	Modulation Type:	GFSK				
Product Description	Radio Technology:	BLE				
	Bluetooth	LE(Support 1M PHY)				
	Configuration:					
	Number Of Channel:	40				
	Antenna Type:	PCB				
	Antenna Gain (dBi)	Antenna Gain (dBi) 1.91dBi				
Channel List	Please refer to the	Please refer to the Note 3.				
Rating	Input: 12V-60V	Input: 12V-60V 2A				
Hardware version number	B03_MAIN_PCB_V	/1.02				
Software version number	N/A					
Connecting I/O Port(s)	Please refer to the	Note 1.				
lete:						

Note:

- 1. For a more detailed features description, please refer to the manufacturer's specifications or the User Manual.
- 2. The antenna information refer the manufacturer provide report, applicable only to the tested sample identified in the report. Due to the incorrect antenna information, a series of problems such as the accuracy of the test results will be borne by the customer.

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

2.2 DESCRIPTION OF THE TEST MODES

For conducted test items and radiated spurious emissions Each of these EUT operation mode(s) or test configuration mode(s) mentioned below was evaluated respectively.

Worst Mode	Description	Data/Modulation	
Mode 1	TX CH00(2402MHz)	1 Mbps/GFSK	
Mode 2	TX CH19(2440MHz)	1 Mbps/GFSK	
Mode 3	TX CH39(2480MHz)	1 Mbps/GFSK	

Note:

(1) We tested for all available U.S. voltage and frequencies (For 120V, 50/60Hz and 240V, 50/60Hz) for which the device is capable of operation, and the worst case of 120V/ 60Hz is shown in the report.

(2) The battery is fully-charged during the radiated and RF conducted test.

2.3 TEST SOFTWARE AND POWER LEVEL

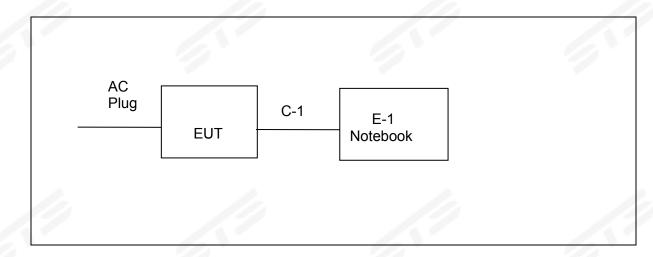
During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level.

RF Function	Туре	Mode Or Modulation type	ANT Gain(dBi)	Power Class	Software For Testing
BLE	BLE	GFSK	1.91	Default	MauiMETA_v8.1520.9



2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Spurious Emission Test







2.5 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

			lecessary accessories		
ltem	Equipment	Mfr/Brand	Model/Type No.	Length	Note
N/A	N/A	N/A	N/A	N/A	N/A

Support units

			e apport armo		
Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note
E-1	Notebook	LENOVO	Think Pad E470	N/A	N/A
C-1	USB Cable	N/A	N/A	150cm	N/A

Note:

- (1) For detachable type I/O cable should be specified the length in cm in ^CLength₂ column.
- (2) "YES" is means "with core"; "NO" is means "without core".



2.6 EQUIPMENTS LIST

		RF Radiation Tes		1 1	Orthurstand
Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
Temperature & Humidity	SW-108	SuWei	N/A	2023.03.03	2024.03.02
Pre-Amplifier (0.1M-3GHz)	EM	EM330	060665	2023.2.28	2024.2.27
Pre-Amplifier (1G-18GHz)	SKET	LNPA-01018G-45	SK2018080901	2022.09.29	2023.09.28
18GHz-40GHz Filter	XINGBO	XBLBQ-GTA44	22062003-1	2023.03.06	2024.03.05
Pre-mplifier (18G-40G)	SKET	LNPA_1840-50	SK2018101801	2023.03.06	2024.03.05
Positioning Controller	MF	MF-7802	MF-780208587	N/A	N/A
Signal Analyzer	R&S	FSV 40-N	101823	2022.09.29	2023.09.28
Switch Control Box	N/A	N/A	N/A	N/A	N/A
Filter Box	BALUN Technology	SU319E	BL-SZ1530051	N/A	N/A
Active loop Antenna	ZHINAN	ZN30900C	16035	2023.02.28	2024.02.27
Bilog Antenna	TESEQ	CBL6111D	34678	2022.09.30	2024.09.29
Horn Antenna	SCHWARZBE CK	BBHA 9120D	02014	2021.10.11	2023.10.10
Horn Antenna	A-INFOMW	LB-180400-KF	J211020657	2021.09.28	2023.09.27
Antenna Mast	MF	MFA-440H	N/A	N/A	N/A
Turn Table	MF	SC100_1	60531	N/A	N/A
AC Power Source	APC	KDF-11010G	F214050035	N/A	N/A
DC Power Supply	Zhaoxin	RXN 605D	20R605D11010081	N/A	N/A
Test SW	EZ-EMC		Ver.STSLAB-03A	1 RE	
		Conduction Test	equipment		
Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2022.09.29	2023.09.28
LISN	R&S	ENV216	101242	2022.09.28	2023.09.27
LISN	EMCO	3810/2NM	23625	2022.09.28	2023.09.27
Temperature & Humidity	HH660	Mieo	N/A	2022.09.30	2023.09.29
Test SW	EZ-EMC		Ver.STSLAB-03A	1 CE	
		RF Connect	ed Test		
Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Signal Analyzer	Agilent	N9020A	MY51510623	2023.03.01	2024.02.28
Switch control box	MW	MW100-RFCB	N/A	N/A	N/A
Temperature & Humidity	HH660	Mieo	N/A	2022.09.30	2023.09.29
Test SW	MW		MTS 8310_2.0	.0.0	



3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION LIMITS

The radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table.

FREQUENCY (MHz)	Conducted Emission limit (dBuV)		
FREQUENCT (MHZ)	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	
0.50 -5.0	56.00	46.00	
5.0 -30.0	60.00	50.00	

Note:

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

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

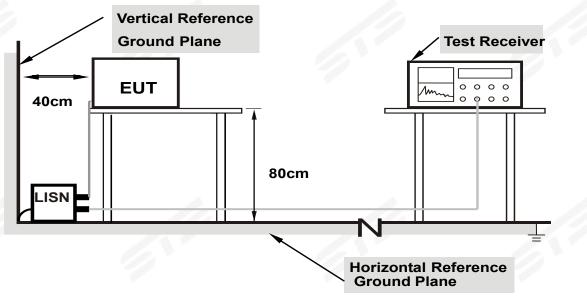
Receiver Parameters	Setting	
Attenuation	10 dB	
Start Frequency	0.15 MHz	
Stop Frequency	30 MHz	
IF Bandwidth	9 kHz	



3.2 TEST PROCEDURE

- a. The EUT is 0.8 m from the horizontal ground plane and 0.4 m from the vertical ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments are powered from additional LISN(s). The LISN provides 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. 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.
- c. 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.
- d. LISN is at least 80 cm from the nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item -EUT Test Photos.

3.3 TEST SETUP



Note: 1. Support units were connected to second LISN.

2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes support units.

3.4 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.



3.5 TEST RESULTS

Temperature:	(C)	Relative Humidity:	%RH
Test Voltage:	N/A	Phase:	N/A
Test Mode:	N/A	9	9

Note: Note: EUT cannot be powered by DC Power and is not applicable.





4. RADIATED EMISSION MEASUREMENT

4.1 RADIATED EMISSION LIMITS

In any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the Restricted band specified on Part15.205(a)&209(a) limit in the table and according to ANSI C63.10-2013 below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (Frequency Range 9kHz-1000MHz)

Frequencies	Field Strength	Measurement Distance
(MHz)	(micorvolts/meter)	(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

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

	(dBuV/m) (at 3M)		
FREQUENCY (MHz)	PEAK	AVERAGE	
Above 1000	74	54	
Notes:			1
(1) The limit for radiated te	est was performed according	to FCC PART 15C.	
(2) The tighter limit applies	s at the band edges.		

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

LIMITS OF RESTRICTED FREQUENCY BANDS

FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (MHz)	FREQUENCY (GHz)
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			



For Radiated Emission

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/QP/AV
Start Frequency	9 KHz/150KHz(Peak/QP/AV)
Stop Frequency	150KHz/30MHz(Peak/QP/AV)
	200Hz (From 9kHz to 0.15MHz)/
RB / VB (emission in restricted	9KHz (From 0.15MHz to 30MHz);
band)	200Hz (From 9kHz to 0.15MHz)/
	9KHz (From 0.15MHz to 30MHz)

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/QP
Start Frequency	30 MHz(Peak/QP)
Stop Frequency	1000 MHz (Peak/QP)
RB / VB (emission in restricted	120 KHz / 300 KHz
band)	

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/AV
Start Frequency	1000 MHz(Peak/AV)
Stop Frequency	10th carrier hamonic(Peak/AV)
RB / VB (emission in restricted	1 MHz / 3 MHz(Peak)
band)	1 MHz/1/T MHz(AVG)
For Destricted hand	

For Restricted band

Spectrum Parameter	Setting				
Detector	Peak/AV				
Start/Stan Fraguanay	Lower Band Edge: 2310 to 2410 MHz				
Start/Stop Frequency	Upper Band Edge: 2475 to 2500 MHz				
	1 MHz / 3 MHz(Peak)				
RB / VB	1 MHz/1/T MHz(AVG)				





Receiver Parameter	Setting
Start ~ Stop Frequency	9kHz~90kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	90kHz~110kHz / RB 200Hz for QP
Start ~ Stop Frequency	110kHz~490kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	490kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

4.2 TEST PROCEDURE

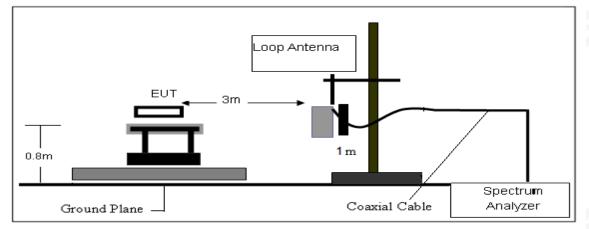
- a. The measuring distance at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz, and above 1GHz.
- b. The EUT was placed on the top of a rotating table 0.8 m (above 1GHz is 1.5 m) above the ground at a 3 m anechoic chamber test site. The table was rotated 360 degree to determine the position of the highest radiation.
- c. The height of the equipment shall be 0.8 m (above 1GHz is 1.5 m); the height of the test antenna shall vary between 1 m to 4 m. Horizontal and vertical polarization of the antenna are set to make the measurement.
- d. 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 QuasiPeak detector mode will be re-measured.
- e. If the Peak Mode measured value is compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and no additional QP Mode measurement was performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos. Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

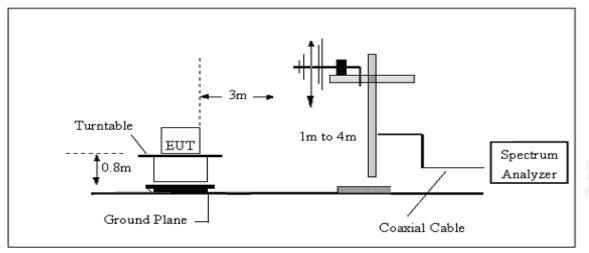


4.3 TEST SETUP

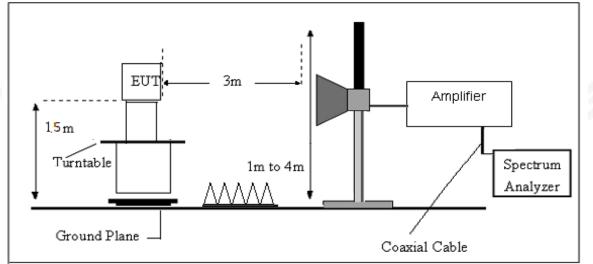
(A) Radiated Emission Test-Up Frequency Below 30MHz



(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



(C) Radiated Emission Test-Up Frequency Above 1GHz



4.4 EUT OPERATING CONDITIONS Please refer to section 3.4 of this report.

4.5 FIELD STRENGTH CALCULATION



The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AG Where

FS = Field Strength

CL = Cable Attenuation Factor (Cable Loss)

RA = Reading Amplitude

AG = Amplifier Gain

AF = Antenna Factor

For example

Frequency	FS	RA	AF	CL	AG	Factor
(MHz)	(dBµV/m)	(dBµV/m)	(dB)	(dB)	(dB)	(dB)
300	40	58.1	12.2	1.6	31.9	-18.1

Factor=AF+CL-AG









4.6 TEST RESULTS

(Between 9KHz – 30 MHz)

Temperature:	23.1(C)	Relative Humidtity:	60%RH
Test Voltage:	DC 12V	Polarization:	- //
Test Mode:	TX Mode		

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
				PASS
				PASS

Note:

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

Distance extrapolation factor =40 log (specific distance/test distance)(dB);

Limit line = specific limits(dBuv) + distance extrapolation factor.



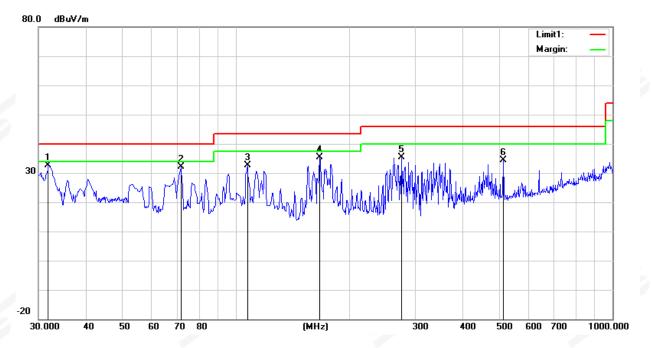
(30MHz -1000MHz)

Temperature:	23.1(C)	Relative Humidity:	60%RH					
Test Voltage:	DC 12V	Phase:	Horizontal					
Test Mode:	Mode 1/2/3 (Mode 1 worst mo	Node 1/2/3 (Mode 1 worst mode)						

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/ m)	(dBuV/m)	(dBuV/m)	(dB)	
1	31.9400	46.39	-13.86	32.53	40.00	-7.47	peak
2	71.7100	56.79	-24.56	32.23	40.00	-7.77	peak
3	107.6000	52.02	-19.32	32.70	43.50	-10.80	peak
4	167.7400	55.07	-19.58	35.49	43.50	-8.01	peak
5	275.4100	50.95	-15.46	35.49	46.00	-10.51	peak
6	515.0000	42.33	-7.88	34.45	46.00	-11.55	peak

Remark:

- Margin = Result (Result = Reading + Factor)–Limit
 Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain 2.





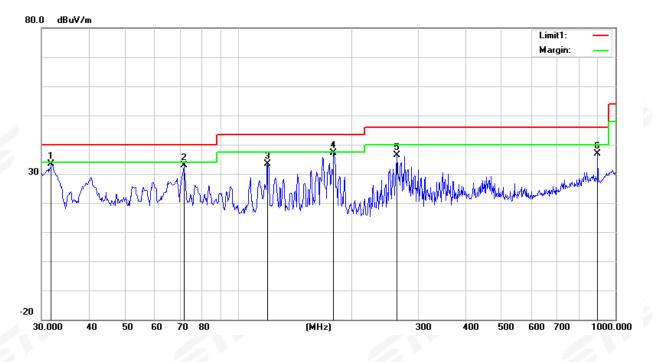
Report No.:STS2307047W02

Temperature:	23.1(C)	Relative Humidity:	60%RH				
Test Voltage:	DC 12V	Phase:	Vertical				
Test Mode:	Mode 1/2/3 (Mode 1 worst mode)						

Remark	Margin	Limit	Result	Correct	Frequency Reading		No.
	(dB)	(dBuV/m)	(dBuV/m)	Factor(dB/ m)	(dBuV)	(MHz)	
peak	-6.60	40.00	33.40	-13.86	47.26	31.9400	1
peak	-7.00	40.00	33.00	-24.56	57.56	71.7100	2
peak	-10.22	43.50	33.28	-18.38	51.66	119.4361	3
peak	-6.39	43.50	37.11	-20.02	57.13	179.3800	4
peak	-9.62	46.00	36.38	-14.75	51.13	263.7700	5
peak	-9.21	46.00	36.79	-0.45	37.24	900.0900	6
						900.0900	

Remark:

 Margin = Result (Result =Reading + Factor)–Limit
 Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain 2.





(1GHz-25GHz) Spurious emission Requirements

GFSK Corrected Meter Antenna Emission Frequency Amplifier Loss Limits Margin Detector Reading Factor Factor Level Comment (MHz) (dBµV/m) (dB) (dBµV) (dB) (dB) (dB/m) (dB) (dBµV/m) Туре Low Channel (GFSK/2402 MHz) 44.70 -22.47 PK 3264.73 61.33 6.70 28.20 -9.80 51.53 74.00 Vertical 44.70 6.70 -13.38 3264.73 50.42 28.20 -9.80 40.62 54.00 AV Vertical 44.70 -22.22 3264.70 61.58 6.70 28.20 -9.80 51.78 74.00 ΡK Horizontal 44.70 3264.70 50.41 6.70 28.20 -9.80 40.61 54.00 -13.39 AV Horizontal 4804.53 58.67 44.20 9.04 31.60 -3.56 55.11 74.00 -18.89 ΡK Vertical 4804.53 49.52 44.20 9.04 31.60 -3.56 45.96 54.00 -8.04 AV Vertical -19.05 4804.33 58.51 44.20 9.04 31.60 -3.56 54.95 74.00 ΡK Horizontal 4804.33 50.31 44.20 9.04 31.60 -3.56 46.75 54.00 -7.25 AV Horizontal 5359.74 48.22 44.20 9.86 32.00 -2.34 45.87 74.00 -28.13 ΡK Vertical 5359.74 39.74 44.20 9.86 32.00 -2.34 37.40 54.00 -16.60 AV Vertical 5359.57 47.98 44.20 9.86 32.00 -2.34 45.64 74.00 -28.36 ΡK Horizontal 5359.57 39.40 44.20 9.86 32.00 -2.34 37.06 54.00 -16.94 AV Horizontal 7205.87 54.87 43.50 11.40 35.50 3.40 58.27 74.00 -15.73 PK Vertical 7205.87 43.53 43.50 11.40 35.50 3.40 46.93 54.00 -7.07 AV Vertical 7205.93 54.26 43.50 11.40 35.50 3.40 57.66 74.00 -16.34 PK Horizontal 7205.93 44.26 43.50 11.40 35.50 3.40 47.66 54.00 -6.34 AV Horizontal Middle Channel (GFSK/2440 MHz) 3263.08 61.58 44.70 6.70 28.20 -9.80 51.78 74.00 -22.22 ΡK Vertical 3263.08 50.72 44.70 6.70 28.20 -9.80 40.92 54.00 -13.08 AV Vertical 3262.99 61.99 44.70 6.70 28.20 -9.80 52.19 74.00 -21.81 ΡK Horizontal 3262.99 50.81 44.70 6.70 28.20 -9.80 41.01 54.00 -12.99 AV Horizontal 4879.99 59.00 44.20 9.04 31.60 -3.56 55.44 74.00 -18.56 ΡK Vertical 4879.99 49.62 44.20 9.04 31.60 -3.56 46.06 54.00 -7.94 AV Vertical 4879.95 58.84 44.20 9.04 31.60 -3.56 55.28 74.00 -18.72 ΡK Horizontal 4879.95 49.86 44.20 9.04 31.60 -3.56 46.30 54.00 -7.70 AV Horizontal 5357.23 48.76 44.20 9.86 32.00 -2.34 46.42 74.00 -27.58 ΡK Vertical 44.20 37.94 54.00 -16.06 AV 5357.23 40.28 9.86 32.00 -2.34 Vertical 5357.39 44.20 -2.34 45.71 74.00 -28.29 PK 48.06 9.86 32.00 Horizontal 36.60 54.00 -17.40 5357.09 38.94 44.20 9.86 32.00 -2.34 AV Horizontal 54.17 43.50 11.40 3.40 57.57 74.00 -16.43 ΡK 7320.85 35.50 Vertical 54.00 AV 7320.85 44.88 43.50 11.40 35.50 3.40 48.28 -5.72 Vertical 43.50 11.40 3.40 56.94 74.00 ΡK 7320.47 53.54 35.50 -17.06 Horizontal 7320.47 43.83 43.50 11.40 3.40 47.23 54.00 -6.77 AV 35.50 Horizontal



Report No.:STS2307047W02

High Channel (GFSK/2480 MHz)											
3264.73	61.51	44.70	6.70	28.20	-9.80	51.71	74.00	-22.29	PK	Vertical	
3264.73	50.81	44.70	6.70	28.20	-9.80	41.01	54.00	-12.99	AV	Vertical	
3264.85	61.40	44.70	6.70	28.20	-9.80	51.60	74.00	-22.40	PK	Horizontal	
3264.85	50.75	44.70	6.70	28.20	-9.80	40.95	54.00	-13.05	AV	Horizontal	
4960.45	58.25	44.20	9.04	31.60	-3.56	54.69	74.00	-19.31	PK	Vertical	
4960.45	49.84	44.20	9.04	31.60	-3.56	46.28	54.00	-7.72	AV	Vertical	
4960.46	58.71	44.20	9.04	31.60	-3.56	55.15	74.00	-18.85	PK	Horizontal	
4960.46	49.52	44.20	9.04	31.60	-3.56	45.96	54.00	-8.04	AV	Horizontal	
5359.79	48.28	44.20	9.86	32.00	-2.34	45.94	74.00	-28.06	PK	Vertical	
5359.79	40.13	44.20	9.86	32.00	-2.34	37.78	54.00	-16.22	AV	Vertical	
5359.82	47.23	44.20	9.86	32.00	-2.34	44.89	74.00	-29.11	PK	Horizontal	
5359.82	38.28	44.20	9.86	32.00	-2.34	35.94	54.00	-18.06	AV	Horizontal	
7439.77	54.02	43.50	11.40	35.50	3.40	57.42	74.00	-16.58	PK	Vertical	
7439.77	44.47	43.50	11.40	35.50	3.40	47.87	54.00	-6.13	AV	Vertical	
7439.94	53.69	43.50	11.40	35.50	3.40	57.09	74.00	-16.91	PK	Horizontal	
7439.94	43.57	43.50	11.40	35.50	3.40	46.97	54.00	-7.03	AV	Horizontal	

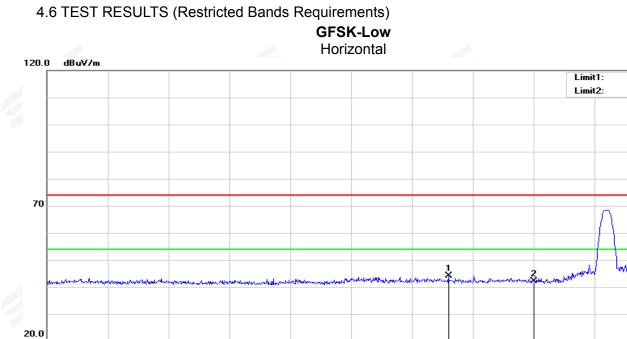
Note:

1) Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Emission Level = Reading + Factor

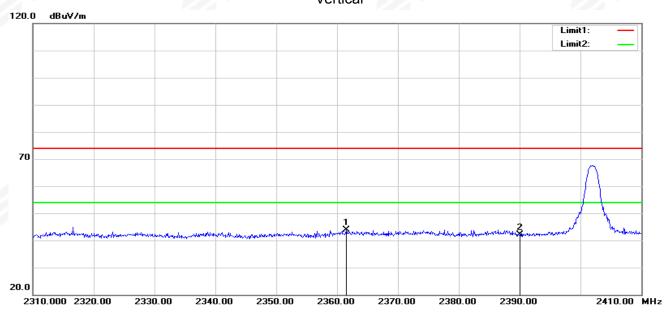
2) The frequency emission of peak points that did not show above the forms are at least 20dB below the limit, the frequency emission is mainly from the environment noise.





2310.000 2320.00 2330.00 2340.00 2350.00 2360.00 2370.00 2380.00 2390.00 2410.00 MHz

No.	Frequency	Reading	Correct	Result Limit		Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2376.000	39.96	4.13	44.09	74.00	-29.91	peak
2	2390.000	37.75	4.34	42.09	74.00	-31.91	peak



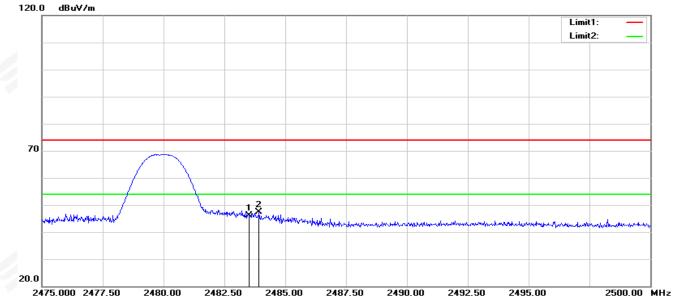
_	100 M			1				
	No.	Frequency	y Reading Correct		Result	Limit	Margin	Remark
		(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
2	1	2361.500	40.00	3.91	43.91	74.00	-30.09	peak
	2	2390.000	37.80	4.34	42.14	74.00	-31.86	peak

Vertical

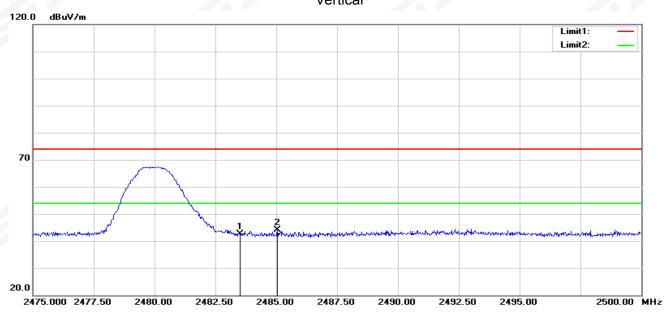


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GFSK-High Horizontal



No.	Frequency	ncy Reading Correct Result Limit		Margin	Remark		
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	41.52	4.60	46.12	74.00	-27.88	peak
2	2483.925	42.81	4.61	47.42	74.00	-26.58	peak



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	37.93	4.60	42.53	74.00	-31.47	peak
2	2485.050	39.41	4.61	44.02	74.00	-29.98	peak
L							

Vertical



5. CONDUCTED SPURIOUS & BAND EDGE EMISSION

5.1 LIMIT

According to FCC section 15.247(d), in any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

5.2 TEST PROCEDURE

Peak		
30 MHz to 10th carrier harmonic		
100 KHz/300 KHz		
Max hold		

For Band edge

Spectrum Parameter	Setting		
Detector	Peak		
Start/Stan Eraguanay	Lower Band Edge: 2300 – 2407 MHz		
Start/Stop Frequency	Upper Band Edge: 2475 – 2500 MHz		
RB / VB (emission in restricted band)	100 KHz/300 KHz		
Trace-Mode:	Max hold		

5.3 TEST SETUP



The EUT is connected to the Spectrum Analyzer; the RF load attached to the EUT antenna termina is 50 Ohm; the path loss as the factor is calibrated to correct the reading. Make the measurement with the spectrum analyzer's resolution bandwidth(RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

5.4 EUT OPERATION CONDITIONS Please refer to section 3.4 of this report.

5.5 TEST RESULTS



6. POWER SPECTRAL DENSITY TEST

6.1 LIMIT

FCC Part 15.247,Subpart C							
Section	Test Item	Limit	Frequency Range (MHz)	Result			
15.247(e)	Power Spectral Density	≤8 dBm (RBW≥3KHz)	2400-2483.5	PASS			

6.2 TEST PROCEDURE

- 1. Set analyzer center frequency to DTS channel center frequency.
- 2. Set the span to 1.5 times the DTS channel bandwidth.
- 3. Set the RBW to: 100 kHz \ge RBW \ge 3 kHz.
- 4. Set the VBW \geq 3 x RBW.
- 5. Detector = peak.
- 6. Sweep time = auto couple.
- 7. Trace mode = max hold.
- 8. Allow trace to fully stabilize.
- 9. Use the peak marker function to determine the maximum amplitude level.
- 10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

6.3 TEST SETUP



6.4 EUT OPERATION CONDITIONS Please refer to section 3.4 of this report.

6.5 TEST RESULTS



7.1 LIMIT

FCC Part 15.247,Subpart C					
Section	Test Item	Limit	Frequency Range (MHz)	Result	
15.247(a)(2)	Bandwidth	>= 500KHz (6dB bandwidth)	2400-2483.5	PASS	

7.2 TEST PROCEDURE

The automatic bandwidth measurement capability of an instrument may be employed using the X dB bandwidth mode with X set to 6 dB, if the functionality described above (i.e., RBW = 100 kHz, VBW≥3RBW, peak detector with maximum hold) is implemented by the instrumentation function. When using this capability, care shall be taken so that the bandwidth measurement is not influenced by any intermediate power nulls in the fundamental emission that might be≥6 dB.

7.3 TEST SETUP



7.4 EUT OPERATION CONDITIONS Please refer to section 3.4 of this report.

7.5 TEST RESULTS



8. PEAK OUTPUT POWER TEST

8.1 LIMIT

_								
		FCC Part 15.247,Subpart C						
	Section	Test Item	Limit	Frequency Range (MHz)	Result			
	15.247(b)(3)	Output Power	1 watt or 30dBm	2400-2483.5	PASS			

8.2 TEST PROCEDURE

One of the following procedures may be used to determine the maximum peak conducted output power of a DTS EUT.

RBW ≥ DTS bandwidth

The following procedure shall be used when an instrument with a resolution bandwidth that is greater than the DTS bandwidth is available to perform the measurement:

a) Set the RBW \geq DTS bandwidth.

b) Set VBW \geq [3 × RBW].

c) Set span \geq [3 × RBW].

d) Sweep time = auto couple.

e) Detector = peak.

f) Trace mode = max hold.

g) Allow trace to fully stabilize.

h) Use peak marker function to determine the peak amplitude level.

Integrated band power method:

The following procedure can be used when the maximum available RBW of the instrument is less than the

DTS bandwidth:

a) Set the RBW = 1 MHz.

b) Set the VBW \geq [3 × RBW].

c) Set the span \geq [1.5 × DTS bandwidth].

d) Detector = peak.

e) Sweep time = auto couple.

f) Trace mode = max hold.

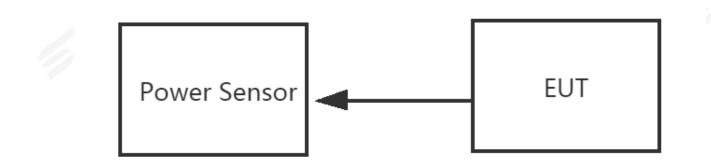
g) Allow trace to fully stabilize.

h) Use the instrument's band/channel power measurement function with the band limits set equal to the DTS bandwidth edges (for some instruments, this may require a manual override to select the peak detector). If the instrument does not have a band power function, then sum the spectrum levels (in linear power units) at intervals equal to the RBW extending across the DTS channel bandwidth.

PKPM1 Peak power meter method:

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DTS bandwidth and shall use a fast-responding diode detector.





8.4 EUT OPERATION CONDITIONS Please refer to section 3.4 of this report.

8.5 TEST RESULTS











9. ANTENNA REQUIREMENT

9.1 STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: 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.

9.2 EUT ANTENNA

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



1. Duty Cycle

Condition	Mode	Frequency (MHz)	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)
NVNT	BLE 1M	2402	63.23	1.99	2.53
NVNT	BLE 1M	2440	63.15	2	2.53
NVNT	BLE 1M	2480	63.2	1.99	2.53



















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Test Graphs Duty Cycle NVNT BLE 1M 2402MHz 11:44:44 PM Jul 12, 202 Center Freq 2.402000000 GHz Avg Type: Log-Pwr TRACE Trig: Free Run #Atten: 36 dB DET P N N N PNO: Fast IFGain:Low Mkr1 49.00 µs -35.04 dBm Ref Offset 2.57 dB Ref 28.57 dBm I0 dB/div .43 11. dulle. ألدناء 171 n) P.P Center 2.402000000 GHz Res BW 1.0 MHz Span 0 Hz Sweep 5.000 ms (10001 pts) #VBW 3.0 MHz MKR MODE TRC SCL UNCTION FUNCTION WIDTH EUNCTION VALUE 35.04 dBm 31.35 dBm 39.01 dBm 49.00 μs 279.0 μs 674.5 μs N N N 2 3 4 5 6 7 8 9 10 11 > **I**STATUS SG Duty Cycle NVNT BLE 1M 2440MHz ctrum Analyzer Swept S/ RI :21 PM Jul 12, 2023 Avg Type: Log-Pwr Center Freq 2.440000000 GHz TRACE PNO: Fast ↔→ IFGain:Low Trig: Free Run #Atten: 36 dB DET P N N N N Mkr1 550.0 µs -38.50 dBm Ref Offset 2.54 dB Ref 28.54 dBm 0 dB(di) 8.5 .48 للواد والعزار l.l. e, ed bli t ît 1 Center 2.440000000 GHz Res BW 1.0 MHz Span 0 Hz Sweep 5.000 ms (10001 pts) #VBW 3.0 MHz MKR MODE TRC SCL EUNCTION VALUE FUNCTION FUNCTION WIDTH 550.0 μs 780.5 μs 1.176 ms -38.50 dBm -14.56 dBm -39.23 dBm N N N 2 3 4 5 6 7 8 9 10 t t

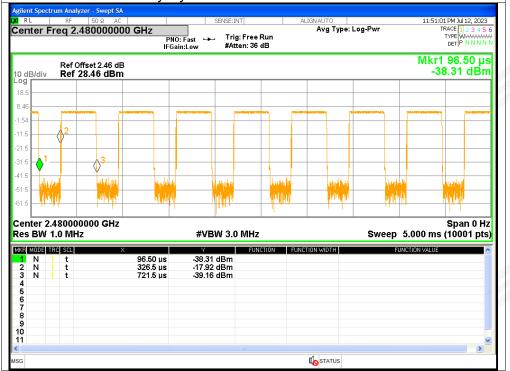
6 P

G.S.



Duty Cycle NVNT BLE 1M 2480MHz

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2. Maximum Average Conducted Output Power

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Duty Factor (dB)	Total Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	3.32	1.99	5.31	<=30	Pass
NVNT	BLE 1M	2440	2.96	2	4.96	<=30	Pass
NVNT	BLE 1M	2480	2.88	1.99	4.87	<=30	Pass











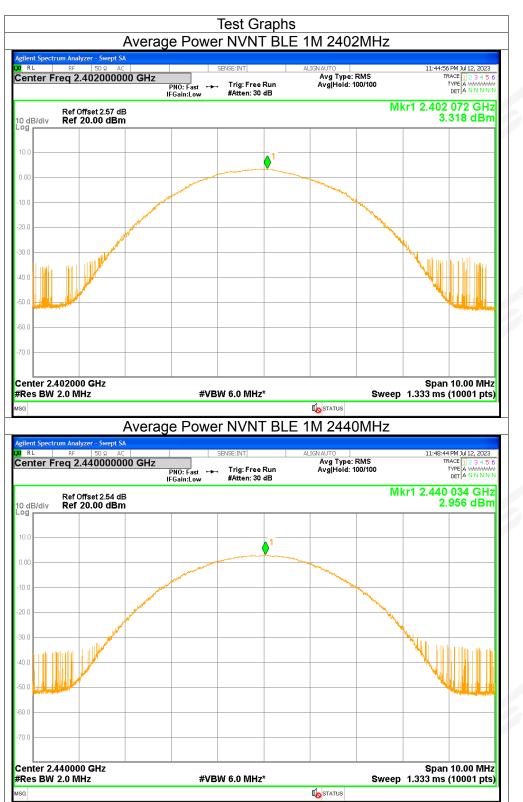








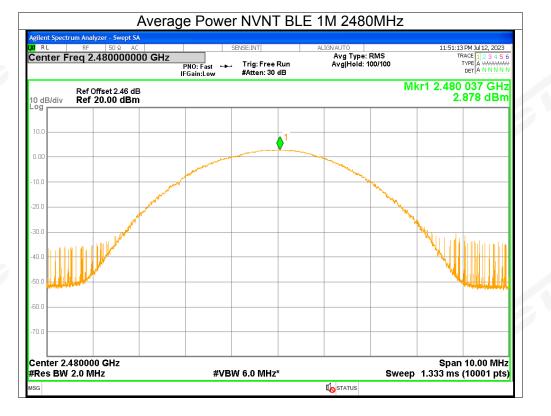
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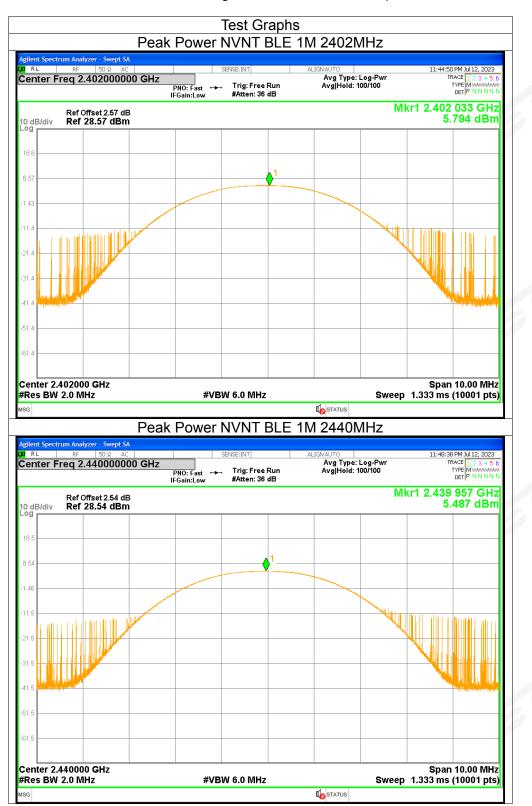
3. Maximum Peak Conducted Output Power

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	5.79	<=30	Pass
NVNT	BLE 1M	2440	5.49	<=30	Pass
NVNT	BLE 1M	2480	5.38	<=30	Pass





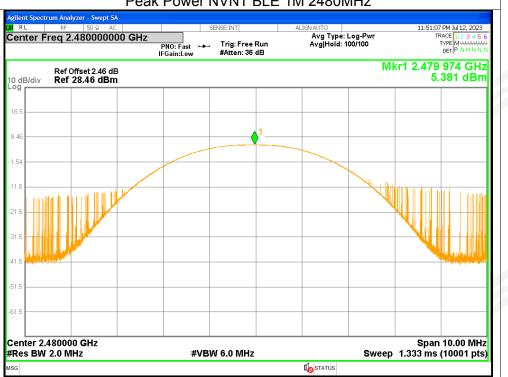
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Peak Power NVNT BLE 1M 2480MHz



4. -6dB Bandwidth

Condition	Mode	Frequency (MHz)	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1M	2402	0.7141	>=0.5	Pass
NVNT	BLE 1M	2440	0.7205	>=0.5	Pass
NVNT	BLE 1M	2480	0.7148	>=0.5	Pass





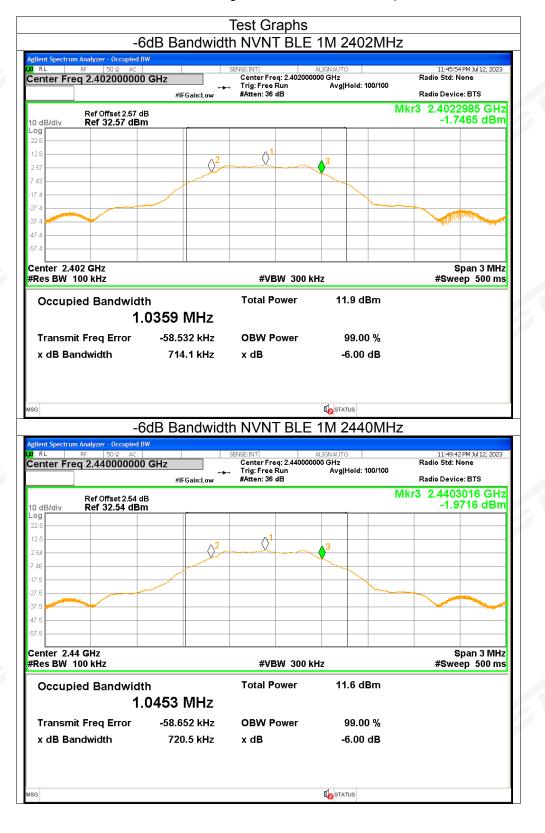






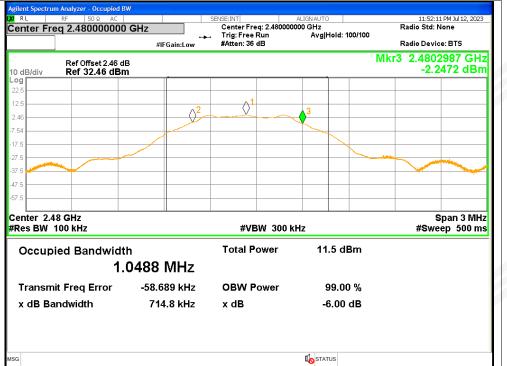


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-6dB Bandwidth NVNT BLE 1M 2480MHz





5. Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 1M	2402	-9.28	<=8	Pass
NVNT	BLE 1M	2440	-9.72	<=8	Pass
NVNT	BLE 1M	2480	-9.91	<=8	Pass





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Test Graphs PSD NVNT BLE 1M 2402MHz Center Freq 2.402000000 GHz Avg Type: Log-Pw Avg|Hold: 100/100 Trig: Free Run #Atten: 30 dB PNO: Wide IFGain:Low ------DET F Mkr1 2.401 841 5 GHz -9.279 dBm Ref Offset 2.57 dB Ref 20.00 dBm 10 dB/div n n Ĉ 10.0 MANN m MM JW MAAA 20. MM 80 Ŵ 40.0 MAAM Center 2.4020000 GHz #Res BW 3.0 kHz Span 1.428 MHz Sweep 150.6 ms (1001 pts) #VBW 10 kHz **STATUS** PSD NVNT BLE 1M 2440MHz 04 PM Jul 12, 2023 Center Freq 2.440000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 TRACE PNO: Wide + Trig: Free Run #Atten: 30 dB TYPE MWWWWW DET P N N N N Mkr1 2.439 840 0 GHz -9.721 dBm Ref Offset 2.54 dB Ref 20.00 dBm 10 dB/div 0.00 10.0 MMMANMMAN MMA MM AN Allow Mary Mary Mary n MN M 30.0 MAN 40.0 1/40/14 60. ۲O. Center 2.4400000 GHz #Res BW 3.0 kHz Span 1.441 MHz Sweep 152.0 ms (1001 pts) #VBW 10 kHz SG

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33 PM Jul 12, 2023 TRACE 1 2 3 4 5 TYPE MWWWW DET P N N N N B L Center Freq 2.480000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 Trig: Free Run #Atten: 30 dB PNO: Wide IFGain:Low -----Mkr1 2.479 915 7 GHz -9.909 dBm Ref Offset 2.46 dB Ref 20.00 dBm 10 dB/div 0.0 **≬**¹ MWAMMAN MAR MM NAL A AM MM 20.0 MMM 30.0 MAN 40 r 50. 60. Center 2.4800000 GHz Span 1.430 MHz #VBW 10 kHz Sweep 150.8 ms (1001 pts) #Res BW 3.0 kHz **K**STATUS SG

PSD NVNT BLE 1M 2480MHz



6. Band Edge

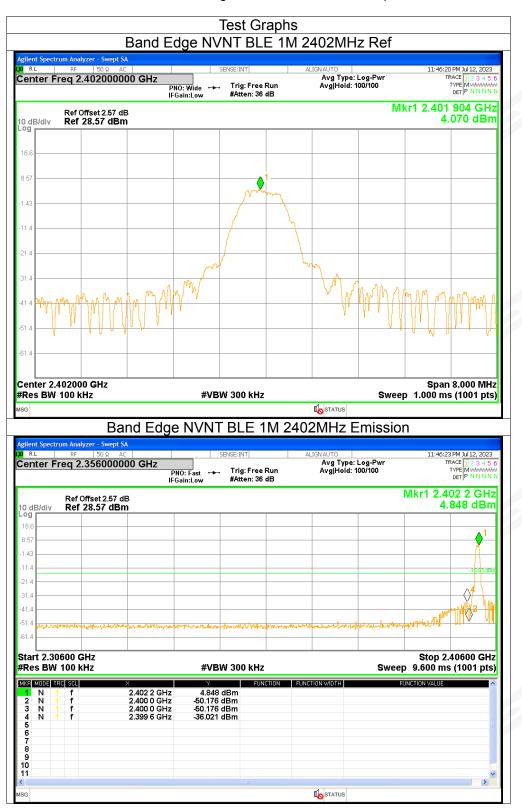
Condition	Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	-40.09	<=-20	Pass
NVNT	BLE 1M	2480	-41.97	<=-20	Pass







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ilent Spectr	um Analyzer - Swept	t SA						
RL	RF 50 Ω	AC	9	ENSE:INT	ALIGNAUTO			3 PM Jul 12, 2023
enter Fr	req 2.480000		'NO: Wide +	Trig: Free Ru	Avg Type: n Avg Hold:	Log-Pwr 100/100	TF	RACE 1 2 3 4 5 (
			Gain:Low	#Atten: 36 dB	5.			DET P N N N N
	Ref Offset 2.46	dB				M	kr1 2.479	
dB/div g	Ref 28.46 dB						4.	105 dBm
9								
3.5								
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		-	e NVNT	BLE 1N	to status 1 2480MHz E	Emissio	n	
	um Analyzer - Swept	t SA			1 2480MHz E	Emissio		. PM Jul 12, 2023
RL		AC OOO GHz	s	ENSE:INT	1 2480MHz E Alignauto Avg Type:	Log-Pwr	11:52:41	LPM Jul 12, 2023 RACE 1 2 3 4 5 (
RL	<mark>um Analyzer - Swept</mark> RF 50 Ω	AC 0000 GHz			1 2480MHz E Alignauto Avg Type:	Log-Pwr	11:52:41	LPM Jul 12, 2023 RACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N
RL	um Analyzer - Swept RF 50 Ω req 2.526000	AC 1000 GHz 14	PNO: Fast ↔	ENSE:INT	1 2480MHz E Alignauto Avg Type:	Log-Pwr 100/100	11:52:41	TYPE MWWWWW DET P N N N N
dB/div	<mark>um Analyzer - Swept</mark> RF 50 Ω	AC OOO GHZ	PNO: Fast ↔	ENSE:INT	1 2480MHz E Alignauto Avg Type:	Log-Pwr 100/100	11:52:41 ۲۲ Mkr1 2.4	TYPE MWWWWW DET P N N N N
dB/div	um Analyzer - Swept RF 50 Ω req 2.526000 Ref Offset 2.46	AC OOO GHZ	PNO: Fast ↔	ENSE:INT	1 2480MHz E Alignauto Avg Type:	Log-Pwr 100/100	11:52:41 ۲۲ Mkr1 2.4	
dB/div	um Analyzer - Swept RF 50 Ω req 2.526000 Ref Offset 2.46	AC OOO GHZ	PNO: Fast ↔	ENSE:INT	1 2480MHz E Alignauto Avg Type:	Log-Pwr 100/100	11:52:41 ۲۲ Mkr1 2.4	
dB/div 9 3.5 46	um Analyzer - Swept RF 50 Ω req 2.526000 Ref Offset 2.46	AC OOO GHZ	PNO: Fast ↔	ENSE:INT	1 2480MHz E Alignauto Avg Type:	Log-Pwr 100/100	11:52:41 ۲۲ Mkr1 2.4	
dB/div 93.5 46	um Analyzer - Swept RF 50 Ω req 2.526000 Ref Offset 2.46	AC OOO GHZ	PNO: Fast ↔	ENSE:INT	1 2480MHz E Alignauto Avg Type:	Log-Pwr 100/100	11:52:41 ۲۲ Mkr1 2.4	79 7 GHz 495 dBm
dB/div 3 .5 46 54 1.5	um Analyzer - Swept RF 50 Ω req 2.526000 Ref Offset 2.46	AC OOO GHZ	PNO: Fast ↔	ENSE:INT	1 2480MHz E Alignauto Avg Type:	Log-Pwr 100/100	11:52:41 ۲۲ Mkr1 2.4	
gate gate <thgat< th=""> gate gate g</thgat<>	um Analyzer - Swept RF 50 Ω req 2.526000 Ref Offset 2.46	AC OOO GHZ	PNO: Fast ↔	ENSE:INT	1 2480MHz E Alignauto Avg Type:	Log-Pwr 100/100	11:52:41 ۲۲ Mkr1 2.4	79 7 GHz 495 dBm
dB/div 3.5 46 54 54 55 55	um Analyzer - Swept RF 50 Ω req 2.526000 Ref Offset 2.46	AC OOO GHZ	PNO: Fast ↔	ENSE:INT	1 2480MHz E Alignauto Avg Type:	Log-Pwr 100/100	11:52:41 ۲۲ Mkr1 2.4	79 7 GHz 495 dBm
Bill Bill Bill 0 0	um Analyzer - Swept RF 50 Ω req 2.526000 Ref Offset 2.46	AC OOO GHZ	PNO: Fast ↔	ENSE:INT	1 2480MHz E Alignauto Avg Type:	Log-Pwr 100/100	11:52:41 ۲۲ Mkr1 2.4	79 7 GHz 495 dBm
RL Image: constraint of the second seco	um Analyzer - Swept RF 50 Ω req 2.526000 Ref Offset 2.46	AC OOO GHZ	PNO: Fast ↔	ENSE:INT	1 2480MHz E Alignauto Avg Type:	Log-Pwr 100/100	11:52:41 ۲۲ Mkr1 2.4	79 7 GHz
Bill Bill dB/div 3 3.5 46 54 46 55 5 5.5 5 5.5 5	um Analyzer - Swept RF 50 Ω req 2.526000 Ref Offset 2.46	AC OOO GHZ	PNO: Fast ↔	ENSE:INT	1 2480MHz E Alignauto Avg Type:	Log-Pwr 100/100	11:52:41 T Mkr1 2.4 4.	79 7 GHz 495 dBm
RL dB/div 3.5 46 54 54 55 55 5.5 55 5.5 55	um Analyzer - Swept RF 50 Ω req 2.526000 Ref Offset 2.46	AC OOO GHZ	PNO: Fast ↔	ENSE:INT	1 2480MHz E Alignauto Avg Type:	Log-Pwr 100/100	11:52:41 Tr Mkr1 2.4 4.	24CE [] 23 45 6 TYPE [] WANNAME DET N N N H 79 7 GHz 495 dBm -15.90 dBm -15.90 dBm 57600 GHz
RL g enter Fi 0 3.5 0 46 0 54 0 55 0 5.5	um Analyzer - Swept RF 50 Ω req 2.526000 Ref Offset 2.46 Ref 28.46 dE	AC OOO GHZ	PNO: Fast → Gain:Low	ENSE:INT	1 2480MHz E Alignauto Avg Type:	Log-Pwr 100/100	11:52:41 T Mkr1 2.4 4.	24CE [] 23 45 6 TYPE [] WANNAME DET N N N H 79 7 GHz 495 dBm -15.90 dBm -15.90 dBm 57600 GHz
RL dB/div 93	um Analyzer - Swept RF 50 Ω req 2.526000 Ref Offset 2.46 Ref 28.46 dE 1 6000 GHz 100 kHz 100 kHz	AC A	FNO: Fast → Gain:Low	ENSE:INT Trig: Free Run #Atten: 36 dB	1 2480MHz E	Log-Pwr 100/100	11:52:41 Tr Mkr1 2.4 4.	24CE [] 23 45 6 TYPE [] WANNAME DET N N N H 79 7 GHz 495 dBm -15.90 dBm -15.90 dBm 57600 GHz
alb/div alb/div <td>um Analyzer - Swept RF 50 Ω req 2.526000 Ref Offset 2.46 Ref 28.46 dE 1 6000 GHz 100 kHz 5 5 6 6 6 6 6 6 7 6 6 6 7 7 7 6 7 7 7 7 7 7 7 7 7 7 7 7 7</td> <td>X 2.479 T GHz</td> <td>PN0: Fast → -Gain:Low #VBI</td> <td>AV 300 kHz</td> <td>1 2480MHz E</td> <td>Log-Pwr 100/100</td> <td>11:52:41 T Mkr1 2.4 4. Stop 2. 9.600 ms</td> <td>24CE [] 23 45 6 TYPE [] WANNAME DET N N N H 79 7 GHz 495 dBm -15.90 dBm -15.90 dBm 57600 GHz</td>	um Analyzer - Swept RF 50 Ω req 2.526000 Ref Offset 2.46 Ref 28.46 dE 1 6000 GHz 100 kHz 5 5 6 6 6 6 6 6 7 6 6 6 7 7 7 6 7 7 7 7 7 7 7 7 7 7 7 7 7	X 2.479 T GHz	PN0: Fast → -Gain:Low #VBI	AV 300 kHz	1 2480MHz E	Log-Pwr 100/100	11:52:41 T Mkr1 2.4 4. Stop 2. 9.600 ms	24CE [] 23 45 6 TYPE [] WANNAME DET N N N H 79 7 GHz 495 dBm -15.90 dBm -15.90 dBm 57600 GHz
RL dB/div 9 9 3.5 46 46 46 54 54 55 5 56 5 57 5 68 64 68 64 69 64 55 5 56 5 57 5 68 64 7 7 8 8 8 10000 9 12 12 1 13 1	um Analyzer - Swept RF 50 0 req 2.526000 Ref Offset 2.46 Ref 28.46 dE 1 6000 GHz 100 KHz 56 SCL 7 f	SA AC AC 0000 GHz II dB 3m and	PN0: Fast → -Gain:Low #VB1 4.495 -53.174	AV 300 KHz	1 2480MHz E	Log-Pwr 100/100	11:52:41 T Mkr1 2.4 4. Stop 2. 9.600 ms	24CE [] 23 45 6 TYPE [] WANNAME DET N N N H 79 7 GHz 495 dBm -15.90 dBm -15.90 dBm 57600 GHz
RL dB/div 99	um Analyzer - Swept RF 50 Ω req 2.526000 Ref Offset 2.46 Ref 28.46 dE 1 6000 GHz 100 kHz 5 5 6 6 6 6 6 6 7 6 6 6 7 7 7 6 7 7 7 7 7 7 7 7 7 7 7 7 7	X 2.479 T GHz	PN0: Fast → -Gain:Low #VB1 4.495 -53.174	AV 300 KHz	1 2480MHz E	Log-Pwr 100/100	11:52:41 T Mkr1 2.4 4. Stop 2. 9.600 ms	24CE [] 23 45 6 TYPE [] WANNAME DET N N N H 79 7 GHz 495 dBm -15.90 dBm -15.90 dBm 57600 GHz
RL dB/div 99	um Analyzer - Swept RF 50 0 req 2.526000 Ref Offset 2.46 Ref 28.46 dE 1 6000 GHz 100 KHz 56 SCL 7 f	SA AC AC 0000 GHz II dB 3m and	PN0: Fast → -Gain:Low #VB1 4.495 -53.174	AV 300 KHz	1 2480MHz E	Log-Pwr 100/100	11:52:41 T Mkr1 2.4 4. Stop 2. 9.600 ms	24CE [] 23 45 6 TYPE [] WANNAME DET N N N H 79 7 GHz 495 dBm -15.90 dBm -15.90 dBm 57600 GHz
RL dB/div 3.5 46 54 54 55 55 56 55 57 55 58 55 57 55 58 55 57 55 58 55 57 55 58 55 57 55 58 55 57 55 58 55 57 55 58 55 59 55 50 55 50 55 50 55 50 55 50 55 50 55 50 55 50 55 50 55 50 55 50 55 50 55 50 55 50 55 50	um Analyzer - Swept RF 50 0 req 2.526000 Ref Offset 2.46 Ref 28.46 dE 1 6000 GHz 100 KHz 56 SCL 7 f	SA AC AC 0000 GHz II dB 3m and	PN0: Fast → -Gain:Low #VB1 4.495 -53.174	AV 300 KHz	1 2480MHz E	Log-Pwr 100/100	11:52:41 T Mkr1 2.4 4. Stop 2. 9.600 ms	24CE [] 2 3 4 5 (TYPE [] 2 3 4
att 2.47	um Analyzer - Swept RF 50 0 req 2.526000 Ref Offset 2.46 Ref 28.46 dE 1 6000 GHz 100 KHz 56 SCL 7 f	SA AC AC 0000 GHz II dB 3m and	PN0: Fast → -Gain:Low #VB1 4.495 -53.174	AV 300 KHz	1 2480MHz E	Log-Pwr 100/100	11:52:41 T Mkr1 2.4 4. Stop 2. 9.600 ms	24CE [] 2 3 4 5 (TYPE [] 2 3 4
aB/div dB/div db	um Analyzer - Swept RF 50 0 req 2.526000 Ref Offset 2.46 Ref 28.46 dE 1 6000 GHz 100 KHz 56 SCL 7 f	SA AC AC 0000 GHz II dB 3m and	PN0: Fast → -Gain:Low #VB1 4.495 -53.174	AV 300 KHz	1 2480MHz E	Log-Pwr 100/100	11:52:41 T Mkr1 2.4 4. Stop 2. 9.600 ms	24CE [] 2 3 4 5 (TYPE [] 2 3 4

Band Edge NVNT BLE 1M 2480MHz Ref



7. Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	-44.44	<=-20	Pass
NVNT	BLE 1M	2440	-43.92	<=-20	Pass
NVNT	BLE 1M	2480	-43.9	<=-20	Pass





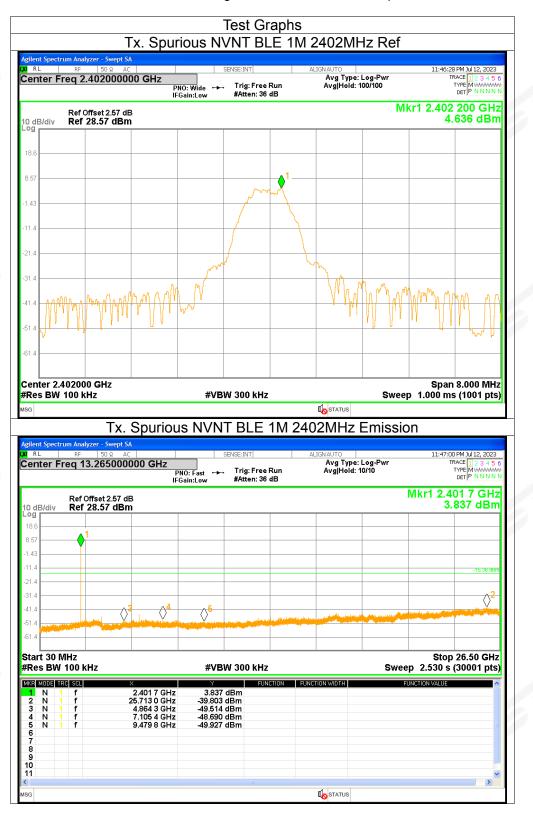








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Tx. Spurious NVNT BLE 1M 2440MHz Ref 109 PM Jul 12, 2023 TRACE 1 2 3 4 5 TYPE MWWWW DET P N N N N B L Center Freq 2.440000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 Trig: Free Run #Atten: 36 dB PNO: Wide ↔ IFGain:Low Mkr1 2.439 952 GHz Ref Offset 2.54 dB Ref 28.54 dBm 4.475 dBm 10 dB/div 1 46 31 41.5 Center 2.440000 GHz Span 8.000 MHz #VBW 300 kHz Sweep 1.000 ms (1001 pts) #Res BW 100 kHz **I**STATUS ISG Tx. Spurious NVNT BLE 1M 2440MHz Emission Swept SA ctrum Analyzer 11:50:40 PM Jul 12, 2023 TRACE 1 2 3 4 5 6 TYPE M WWWWW DET P N N N N R L Center Freg 13.265000000 GHz Avg Type: Log-Pwr Avg|Hold: 10/10 PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 36 dB Mkr1 2.440 5 GHz Ref Offset 2.54 dB Ref 28.54 dBm 4.418 dBm 10 dB/div 18.: 1.48 $\langle \rangle$ 41. $\Diamond^{\mathbf{5}}$ $\langle \rangle$ $\langle \rangle$ Stop 26.50 GHz Sweep 2.530 s (30001 pts) Start 30 MHz #Res BW 100 kHz #VBW 300 kHz MKR MODE TRC SCL FUNCTION VALUE FUNCTION FUNCTION WIDTH 4.418 dBm -39.449 dBm -50.014 dBm -50.335 dBm -50.366 dBm 2.440 5 GHz 25.905 3 GHz 5.052 2 GHz 7.393 1 GHz 9.741 8 GHz N N N N 1 2 3 4 5 6 7 8 9 10 11 **I**STATUS SG



11:52:46 PM Jul 12, 2023 TRACE 1 2 3 4 5 TYPE MWWWW DET P N N N N B L Center Freq 2.480000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 Trig: Free Run #Atten: 36 dB PNO: Wide ↔ IFGain:Low Mkr1 2.479 704 GHz Ref Offset 2.46 dB Ref 28.46 dBm 4.310 dBm 10 dB/div 41.3 Center 2.480000 GHz Span 8.000 MHz #VBW 300 kHz Sweep 1.000 ms (1001 pts) #Res BW 100 kHz **I**STATUS ISG Tx. Spurious NVNT BLE 1M 2480MHz Emission Swept SA ctrum Analyzer 11:53:17 PM Jul 12, 2023 TRACE 1 2 3 4 5 6 TYPE M WWWWW DET P N N N N R L Center Freg 13.265000000 GHz Avg Type: Log-Pwr Avg|Hold: 10/10 PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 36 dB Mkr1 2.480 2 GHz Ref Offset 2 46 dB 2.729 dBm 10 dB/div Ref 28.46 dBm 18 $\langle \rangle^2$ 41. $\langle \rangle^4$ \Diamond^{5} Stop 26.50 GHz Sweep 2.530 s (30001 pts) Start 30 MHz #Res BW 100 kHz #VBW 300 kHz MKR MODE TRC SCL FUNCTION VALUE FUNCTION FUNCTION WIDTH 2.480 2 GHz 25.726 2 GHz 5.046 9 GHz 7.288 1 GHz 9.962 4 GHz 2.729 dBm -39.599 dBm -50.326 dBm -49.671 dBm -50.631 dBm N N N N 1 2 3 4 5 6 7 8 9 10 11 **I**STATUS SG

Tx. Spurious NVNT BLE 1M 2480MHz Ref



APPENDIX 2- EUT TEST PHOTO

Note: See test photos in setup photo document for the actual connections between Product and support equipment.

* * * * * END OF THE REPORT * * * *