

# RADIO TEST REPORT FCC ID: 2AXP2-SP24

Product: Series 2 PRO Trade Mark: GLORIOUS Model No.: Series 2 PRO Family Model: N/A Report No.: S24031102702001 Issue Date: Mar 22. 2024

# Prepared for

**Glorious LLC** 

13809 Research Blvd Suite 500 PMB 93206 Austin, TX 78750, USA

# Prepared by

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TEST RESULT

Complied



# **1 TEST RESULT CERTIFICATION**

Applicant's name:	Glorious LLC
Address:	13809 Research Blvd Suite 500 PMB 93206 Austin, TX 78750,USA
Manufacturer's Name:	Glorious LLC
Address	13809 Research Blvd Suite 500 PMB 93206 Austin, TX 78750,USA
Product description	
Product name:	Series 2 PRO
Model and/or type reference:	Series 2 PRO
Family Model	N/A
Test Sample Number:	S240311027003
Date (s) of performance of tests	Mar 11. 2024~Mar 22. 2024

Measurement Procedure Used:

# APPLICABLE STANDARDS

APPLICABLE STANDARD/ TEST PROCEDURE

FCC 47 CFR Part 2, Subpart J

FCC 47 CFR Part 15, Subpart C

ANSI C63.10-2013

KDB 558074 D01 15.247 Meas Guidance v05r02

This device described above has been tested by Shenzhen NTEK Testing Technology Co., Ltd., and 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.

This report shall not be reproduced except in full, without the written approval of Shenzhen NTEK Testing Technology Co., Ltd., this document may be altered or revised by Shenzhen NTEK Testing Technology Co., Ltd., personnel only, and shall be noted in the revision of the document.

The test results of this report relate only to the tested sample identified in this report.

Prepared . By <sup>· ·</sup>	Mary Hu Mary Hu (Project Engineer)	Reviewed By <sup>:</sup> –	Aaron Cheng (Supervisor)	Approved : Alex Li By : Alex Li (Manager)



SUMMARY OF TE		-				
FCC Part15 (15.247), Subpart C						
Standard Section	Test Item	Verdict	Remark			
15.207	Conducted Emission	PASS				
15.247 (a)(2)	6dB Bandwidth	PASS				
15.247 (b)	Peak Output Power PASS					
15.209 (a) 15.205 (a)	Radiated Spurious Emission	PASS				
15.247 (e)	Power Spectral Density	PASS				
15.247 (d) Band Edge Emission PASS						
15.247 (d)	Spurious RF Conducted Emission	PASS				
15.203	Antenna Requirement	PASS				

#### Remark:

 "N/A" denotes test is not applicable in this Test Report.
 All test items were verified and recorded according to the standards and without any deviation during the test.



# **3 FACILITIES AND ACCREDITATIONS**

# 3.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R. China.

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10 and CISPR Publication 22.

## 3.2 LABORATORY ACCREDITATIONS AND LISTINGS

Site Description	
CNAS-Lab.	: The Certificate Registration Number is L5516.
IC-Registration	The Certificate Registration Number is 9270A.
-	CAB identifier:CN0074
FCC- Accredited	Test Firm Registration Number: 463705.
	Designation Number: CN1184
A2LA-Lab.	The Certificate Registration Number is 4298.01
	This laboratory is accredited in accordance with the recognized
	International Standard ISO/IEC 17025:2005 General requirements for
	the competence of testing and calibration laboratories.
	This accreditation demonstrates technical competence for a defined
	scope and the operation of a laboratory quality management system
	(refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).
Name of Firm	: Shenzhen NTEK Testing Technology Co., Ltd.
Site Location	: 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang
	Street, Bao'an District, Shenzhen 518126 P.R. China.

#### 3.3 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 %.

No.	Item	Uncertainty	
1	Conducted Emission Test	±2.80dB	
2	RF power, conducted, PSD	±0.16dB	
3	Spurious emissions, conducted	±0.21dB	
4	All emissions, radiated(30MHz~1GHz)	±2.64dB	
5	All emissions, radiated(1GHz~6GHz)	±2.40dB	
6	All emissions, radiated(>6GHz)	±2.52dB	
7	Temperature	±0.5°C	
8	Humidity	±2%	
9	All emissions, radiated(9KHz~30MHz)	±6dB	
10	Occupied bandwidth	±4.7%	

# 4 GENERAL DESCRIPTION OF EUT

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ACCREDITED Certificate #4298.01

Product Feature and Specification				
Equipment	Series 2 PRO			
Trade Mark	GLORIOUS			
FCC ID	2AXP2-SP24			
Model No.	Series 2 PRO			
Family Model	N/A			
Model Difference	N/A			
Operating Frequency	2402MHz~2480MHz			
Modulation	GFSK			
Number of Channels	40 Channels			
Antenna Type	Chip Antenna			
Antenna Gain	2.78dBi			
Power supply	DC 3.7Vfrom battery or DC 5V from type-c port			
Adapter	N/A			
HW Version	V2			
FW Version	N/A			
SW Version	V09.99.00.14			

Note 1: Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.

Note 2: The engineering test program was provided and the EUT was programmed to be in continuously transmitting mode.



	"adatabate	Certificate #4298.01					
	Revision History						
Report No.	Version	Description	Issued Date				
S24031102702001	Rev.01	Initial issue of report	Mar 22. 2024				





# 5 DESCRIPTION OF TEST MODES

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 above was evaluated respectively.

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

Test of channel included the lowest and middle and highest frequency to perform the test, then record on this report.

Those data rates (2Mbps for GFSK modulation) were used for all test.

The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement -X, Y, and Z-plane. The X-plane results were found as the worst case and were shown in this report.

Carrier Frequency and Channel list:

Channel	Frequency(MHz)
0	2402
1	2403
38	2440
39	2441
40	2442
77	2479
78	2480

Note: fc=2402MHz+k×1MHz k=0 to 78

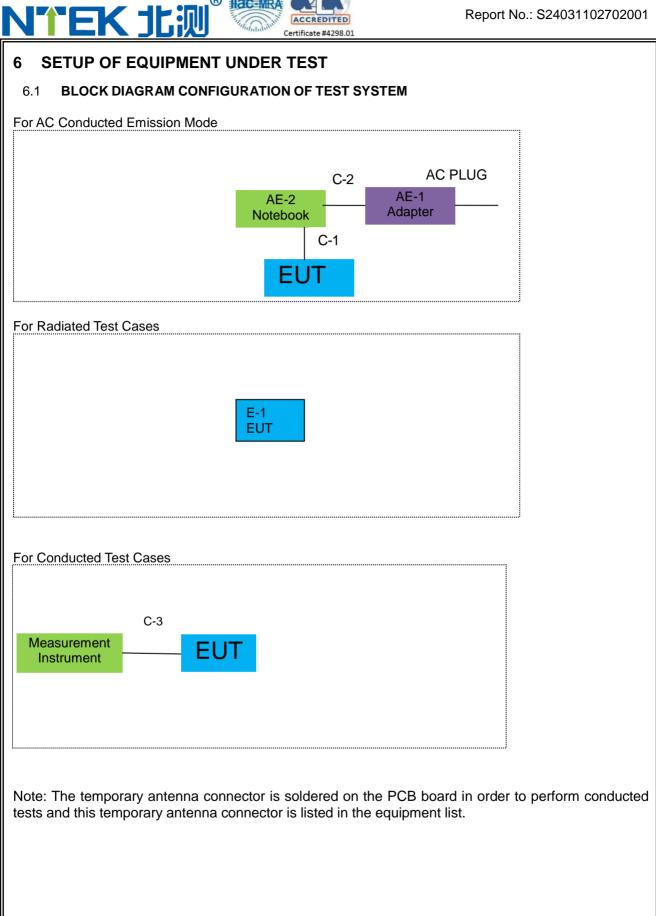
The following summary table is showing all test modes to demonstrate in compliance with the standard.

Test Cases				
Test Item	Data Rate/ Modulation			
AC Conducted Emission Mode 1: normal link mode				
	Mode 1: normal link mode			
Radiated Test	Mode 2: GFSK Tx Ch00_2402MHz_2Mbps			
Cases	Mode 3: GFSK Tx Ch38_2440MHz_2Mbps			
	Mode 4: GFSK Tx Ch78_2480MHz_2Mbps			
Conducted Test	Mode 2: GFSK Tx Ch00_2402MHz_2Mbps			
Conducted Test	Mode 3: GFSK Tx Ch38_2440MHz_2Mbps			
Cases	Mode 4: GFSK Tx Ch78_2480MHz_2Mbps			

Note:

1. The engineering test program was provided and the EUT was programmed to be in continuously transmitting mode(duty cycle =100% during the test)

- 2. AC power line Conducted Emission was tested under maximum output power.
- 3. For radiated test cases, the worst mode data rate 2Mbps was reported only, because this data rate has the highest RF output power at preliminary tests, and no other significantly frequencies found in conducted spurious emission.
- 4. EUT built-in battery-powered, the battery is fully-charged.





# 6.2 SUPPORT EQUIPMENT

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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.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
AE-1	Adapter	N/A	HW-200325CP0	N/A	Peripherals
AE-2	Notebook	HUAWEI	KLVD-WFH9	J8GPM21B020001 49	Peripherals

Item	Cable Type	Shielded Type	Ferrite Core	Length
C-1	USB cable	NO	NO	1.2m
C-2	Power cable	NO	NO	1.0m
C-3	RF Cable	YES	NO	0.1m

#### Notes:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in [Length] column.
- (3) "YES" is means "shielded" "with core"; "NO" is means "unshielded" "without core".



#### 6.3 EQUIPMENTS LIST FOR ALL TEST ITEMS

#### Radiation& Conducted Test equipment

N

Radiation& Conducted Test equipment							
Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibratio n period
1	Spectrum Analyzer	Agilent	E4440A	MY41000130	2023.03.27	2024.03.26	1 year
2	Spectrum Analyzer	Agilent	N9020A	MY49100060	2023.05.29	2024.05.28	1 year
3	Spectrum Analyzer	R&S	FSV40	101417	2023.05.29	2024.05.28	1 year
4	Test Receiver	R&S	ESPI7	101318	2023.03.27	2024.04.26	1 year
5	Bilog Antenna	TESEQ	CBL6111D	31216	2024.03.11	2025.03.10	1 year
6	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2023.05.06	2026.05.05	3 year
7	Horn Antenna	EM	EM-AH-1018 0	2011071402	2022.03.31	2025.03.30	3 year
8	Broadband Horn Antenna	SCHWARZBE CK	BBHA 9170	803	2022.11.07	2025.11.06	3 year
9	Amplifier	EMC	EMC051835 SE	980246	2023.05.29	2024.05.28	1 year
10	Active Loop Antenna	SCHWARZBE CK	FMZB 1519 B	055	2023.11.03	2026.11.02	3 year
11	Power Meter	DARE	RPR3006W	15I00041SN 084	2023.05.29	2024.05.28	1 year
12	Test Cable (9KHz-30MHz)	N/A	R-01	N/A	2022.06.17	2025.06.16	3 year
13	Test Cable (30MHz-1GHz)	N/A	R-02	N/A	2022.06.17	2025.06.16	3 year
14	High Test Cable(1G-40G Hz)	N/A	R-03	N/A	2022.06.17	2025.06.16	3 year
15	High Test Cable(1G-40G Hz)	N/A	R-04	N/A	2021.03.29	2024.03.28	3 year
16	Filter	TRILTHIC	2400MHz	29	2023.03.26	2026.03.25	3 year
17	temporary antenna connector (Note)	NTS	R001	N/A	N/A	N/A	N/A

Note:

We will use the temporary antenna connector (soldered on the PCB board) When conducted test And this temporary antenna connector is listed within the instrument list

AC Co	AC Conduction Test equipment							
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period	
1	Test Receiver	R&S	ESCI	101160	2023.03.27	2024.03.26	1 year	
2	LISN	R&S	ENV216	101313	2023.03.27	2024.03.26	1 year	
3	LISN	SCHWARZBE CK	NNLK 8129	8129245	2023.03.27	2024.03.26	1 year	
4	50Ω Coaxial Switch	ANRITSU CORP	MP59B	6200983704	2023.05.06	2026.05.05	3 year	
5	Test Cable (9KHz-30MH z)	N/A	C01	N/A	2023.05.06	2026.05.05	3 year	
6	Test Cable (9KHz-30MH z)	N/A	C02	N/A	2023.05.06	2026.05.05	3 year	
7	Test Cable (9KHz-30MH z)	N/A	C03	N/A	2023.05.06	2026.05.05	3 year	

Note: Each piece of equipment is scheduled for calibration once a year except the Aux Equipment & Test Cable which is scheduled for calibration every 2 or 3 years.



# 7 TEST REQUIREMENTS

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#### 7.1 CONDUCTED EMISSIONS TEST

#### 7.1.1 Applicable Standard

According to FCC Part 15.207(a)

#### 7.1.2 **Conformance Limit**

	Conducted Emission Limit			
Frequency(MHz)	Quasi-peak	Average		
0.15-0.5	66-56*	56-46*		
0.5-5.0	56	46		
5.0-30.0	60	50		

Note: 1. \*Decreases with the logarithm of the frequency

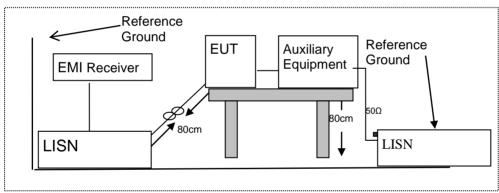
2. The lower limit shall apply at the transition frequencies

3. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

#### 7.1.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

#### 7.1.4 **Test Configuration**



#### 7.1.5 Test Procedure

According to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 Conducted emissions the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode.

- 1. The EUT was placed 0.4 meter from the conducting wall of the shielding room.
- 2. The EUT was placed on a table which is 0.8m above ground plane.
- 3. Connect EUT 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.
- 4. 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 40cm long.
- 5. 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.
- 6. LISN at least 80 cm from nearest part of EUT chassis.
- 7. The frequency range from 150KHz to 30MHz was searched.
- 8. Set the test-receiver system to Peak Detect Function and specified bandwidth(IF bandwidth=9KHz) with Maximum Hold Mode
- 9. For the actual test configuration, please refer to the related Item -EUT Test Photos.



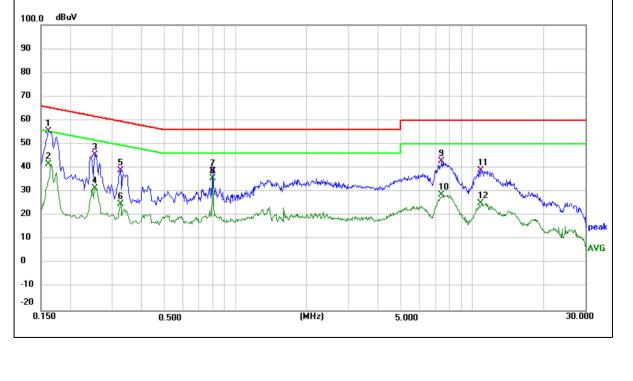
## 7.1.6 Test Results

EUT:	Series 2 P	RO		Model Name :		Series 2 PRO	
Temperature:	<b>22</b> ℃			Relative Humidity:		57%	
Pressure: 1010hPa			Phase	:	L		
Test Voltage :	DC 5V from AC 120V/6	V from Adapter 20V/60Hz		Test Mode:		Mode 1	
Frequency	Reading Level	Correct Factor	Measure	e-ment	Limits	Margin	Development
(MHz)	(dBµV)	(dB)	(dBµ	IV)	(dBµV)	(dB)	Remark
0.1620	45.53	9.95	55.4	48	65.36	-9.88	QP
0.1620	31.78	9.95	41.7	73	55.36	-13.63	AVG
0.2540	35.47	10.14	45.6	61	61.63	-16.02	QP
0.2540	21.46	10.14	31.6	60	51.63	-20.03	AVG
0.3260	28.66	10.30	38.9	96	59.55	-20.59	QP
0.3260	14.41	10.30	24.7	71	49.55	-24.84	AVG
0.7980	27.27	11.26	38.5	53	56.00	-17.47	QP
0.7980	24.38	11.26	35.6	64	46.00	-10.36	AVG
7.4218	33.11	9.68	42.7	79	60.00	-17.21	QP
7.4218	19.12	9.68	28.8	30	50.00	-21.20	AVG
10.8740	29.13	9.69	38.8	32	60.00	-21.18	QP
10.8740	15.52	9.69	25.2	21	50.00	-24.79	AVG

Remark:

1. All readings are Quasi-Peak and Average values.

2. Factor = Insertion Loss + Cable Loss.



Version.1.3





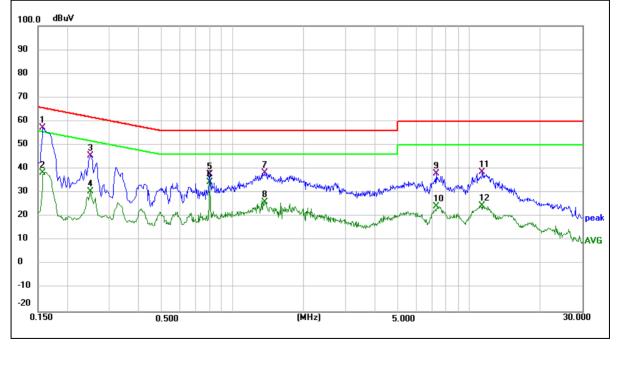
EUT: Series 2 PRO			Model	Name :	Series 2 PRO		
Temperature: 22 °C		Relative Humidity: 57%					
Pressure: 1010hPa		Phase : N		N			
Test Voltage :		DC 5V from Adapter AC 120V/60Hz		Test M	ode:	Mode 1	
					1.1.14		
Frequency R	eading Level	Correct Factor	Measure	e-ment	Limits	Margin	Remark

riequoney	riouding Lover	Concorr dotor	model of more	Ennito	margin	Remark
(MHz)	(dBµV)	(dB)	(dBµV)	(dBµV)	(dB)	Remark
0.1580	47.30	9.95	57.25	65.57	-8.32	QP
0.1580	28.43	9.95	38.38	55.57	-17.19	AVG
0.2500	35.47	10.14	45.61	61.76	-16.15	QP
0.2500	20.33	10.14	30.47	51.76	-21.29	AVG
0.7980	26.63	11.26	37.89	56.00	-18.11	QP
0.7980	23.23	11.26	34.49	46.00	-11.51	AVG
1.3700	25.96	12.40	38.36	56.00	-17.64	QP
1.3700	13.75	12.40	26.15	46.00	-19.85	AVG
7.2378	28.26	9.68	37.94	60.00	-22.06	QP
7.2378	14.46	9.68	24.14	50.00	-25.86	AVG
11.3658	28.88	9.69	38.57	60.00	-21.43	QP
11.3658	14.79	9.69	24.48	50.00	-25.52	AVG

Remark:

1. All readings are Quasi-Peak and Average values.

2. Factor = Insertion Loss + Cable Loss.





# 7.2 RADIATED SPURIOUS EMISSION

# 7.2.1 Applicable Standard

According to FCC Part 15.247(d) and 15.209 and ANSI C63.10-2013

# 7.2.2 Conformance Limit

According to FCC Part 15.247(d): radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)). According to FCC Part15.205, Restricted bands

According to 1 CC 1 art 13.20	According to FOCT art 15.200, Restricted bands						
MHz	MHz	MHz	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	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	(2)				
13.36-13.41							
8.41425-8.41475 12.29-12.293 12.51975-12.52025 12.57675-12.57725	162.0125-167.17 167.72-173.2 240-285	3260-3267 3332-3339 3345.8-3358	23.6-24.0 31.2-31.8 36.43-36.5				

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Restricted Frequency(MHz)	Field Strength (µV/m)	Field Strength (dBµV/m)	Measurement Distance
0.009~0.490	2400/F(KHz)	20 log (uV/m)	300
0.490~1.705	24000/F(KHz)	20 log (uV/m)	30
1.705~30.0	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

# Limits of Radiated Emission Measurement(Above 1000MHz)

Frequency(MHz)	Class B (dBuV	/m) (at 3M)
Frequency(winz)	PEAK	AVERAGE
Above 1000	74	54

Remark :1. Emission level in dBuV/m=20 log (uV/m)

2. Measurement was performed at an antenna to the closed point of EUT distance of meters.

3. For Frequency 9kHz~30MHz: Distance extrapolation factor =40log(Specific distance/ test distance)(dB); Limit line=Specific limits(dBuV) + distance extrapolation factor.

For Frequency above 30MHz: Distance extrapolation factor =20log(Specific distance/ test distance)(dB); Limit line=Specific limits(dBuV) + distance extrapolation factor.

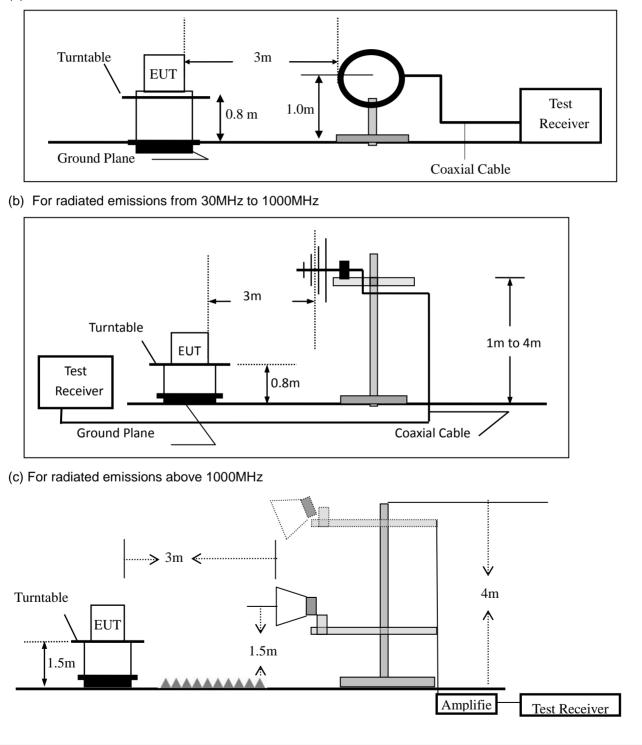


#### 7.2.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

## 7.2.4 Test Configuration

#### (a) For radiated emissions below 30MHz





#### 7.2.5 Test Procedure

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10-2013. The test distance is 3m. The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 and CAN/CSA-CEI/IEC CISPR 22.

This test is required for any spurious emission that falls in a Restricted Band, as defined in Section 15.205. It must be performed with the highest gain of each type of antenna proposed for use with the EUT. Use the following spectrum analyzer settings:

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 1MHz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 m for below 1GHz and 1.5m for above 1GHz the ground at a 3 meter. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m for below 1GHz and 1.5m for above 1GHz; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For the radiated emission test above 1GHz: Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- e. 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.
- f. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- g. 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



During the radiated emission test, the Spectrum Analyzer was set with the following configurations:					
Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth		
30 to 1000	QP	120 kHz	300 kHz		
Ab aug 1000	Peak	1 MHz	1 MHz		
Above 1000	Average	1 MHz	1 MHz		

Note: for the frequency ranges below 30 MHz, a narrower RBW is used for these ranges but the measured value should add a RBW correction factor (RBWCF) where RBWCF [dB] =10\*lg(100 [kHz]/narrower RBW [kHz]). , the narrower RBW is 1 kHz and RBWCF is 20 dB for the frequency 9 kHz to 150 kHz, and the narrower RBW is 10 kHz and RBWCF is 10 dB for the frequency 150 kHz to 30 MHz.

#### 7.2.6 Test Results

■ Spurious Emission below 30MHz (9KHz to 30MHz)

EUT:	Series 2 PRO	Model No.:	Series 2 PRO
Temperature:	20 °C	Relative Humidity:	48%
Lest Mode.	Mode1/Mode2/Mode3/ Mode4	Test By:	Mary Hu

Freq.	Ant.Pol.	Emission L	.evel(dBuV/m)	Limit 3	m(dBuV/m)	Over(dB)		
(MHz)	H/V	PK	AV	PK	AV	PK	AV	

Note: the amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.



Spurious Emission below 1GHz (30MHz to 1GHz) All the modulation modes have been tested, and the worst result was report as below:

		,	
EUT:	Series 2 PRO	Model Name :	Series 2 PRO
Temperature:	<b>25</b> ℃	Relative Humidity:	55%
Pressure:	1010hPa	Test Mode:	GFSK (2M) CH00
Test Voltage :	DC 3.7V		

Polar	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(H/V)	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	55.8046	13.01	19.89	32.90	40.00	-7.10	QP
V	106.0126	9.95	19.36	29.31	43.50	-14.19	QP
V	157.5586	16.51	15.87	32.38	43.50	-11.12	QP
V	249.4250	13.15	19.32	32.47	46.00	-13.53	QP
V	677.5797	4.63	26.55	31.18	46.00	-14.82	QP
V	863.0561	2.87	28.99	31.86	46.00	-14.14	QP

#### Remark:

Emission Level= Meter Reading+ Factor, Margin= Emission Level - Limit





Polar	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(H/V)	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Н	55.8046	9.59	19.89	29.48	40.00	-10.52	QP
Н	106.0126	9.72	19.36	29.08	43.50	-14.42	QP
Н	249.4250	12.55	19.32	31.87	46.00	-14.13	QP
Н	497.6764	5.28	23.84	29.12	46.00	-16.88	QP
Н	556.7743	5.11	24.63	29.74	46.00	-16.26	QP
Н	758.0407	4.04	27.64	31.68	46.00	-14.32	QP
Remark Emission 80.0	: n Level= Meter f dBuV/m	Reading+ Fac	ctor, Margin	= Emission Le	evel - Limit		
70							
60							
50							
40				3		6	
30	. m.M.		2	Lind Mh	Many Many Mar	5 Salan Current	An growth
20 M	months	and the state of the second states of the second st	Mursha	And Mary			
0.0 30.0	00 er	).00	0	MHz)	300.00		1000.000



Spurious EUT:		Series 2 P	,		lodel No.:	0	eries 2 PRO		
			NO						
Temperature		0°C			elative Humidity	,			
Test Mode:	N	lode2/Mo	de3/Mode4	• 1	est By:	Ma	ary Hu		
Frequency	Read	Cable	Antenna	Prear		Limit	s Margin		2
(MHz)	Level (dBµV)	loss (dB)	Factor dB/m	Factor (dB			/m) (dB)	Remark	Commen
(MHz)         (dBμV)         (dB)         (dB)         (dBμV/m)         (dB)           Low Channel (2402 MHz)(GFSK)Above 1G									
4804.97	68.40	5.21	35.59	44.3	, (	74.0		Pk	Vertical
4804.97	46.04	5.21	35.59	44.3		54.0		AV	Vertical
7206.73	67.08	6.48	36.27	44.6		74.0		Pk	Vertical
7206.73	46.68	6.48	36.27	44.6		54.0		AV	Vertical
4804.07	65.60	5.21	35.55	44.3		74.0		Pk	Horizonta
4804.07	46.32	5.21	35.55	44.3		54.0		AV	Horizonta
7206.63	66.32	6.48	36.27	44.5	2 64.55	74.0	0 -9.45	Pk	Horizonta
7206.63	46.20	6.48	36.27	44.5		54.0		AV	Horizonta
Mid Channel (2440 MHz)(GFSK)Above 1G									
4880.54	64.65	5.21	35.66	44.2	0 61.32	74.0	0 -12.68	Pk	Vertical
4880.54	45.32	5.21	35.66	44.2	0 41.99	54.0	0 -12.01	AV	Vertical
7320.51	64.60	7.10	36.50	44.4	3 63.77	74.0	0 -10.23	Pk	Vertical
7320.51	45.41	7.10	36.50	44.4	3 44.58	54.0	0 -9.42	AV	Vertical
4880.16	64.62	5.21	35.66	44.2	0 61.29	74.0	0 -12.71	Pk	Horizonta
4880.16	46.82	5.21	35.66	44.2	0 43.49	54.0	0 -10.51	AV	Horizonta
7320.55	65.77	7.10	36.50	44.4	3 64.94	74.0	0 -9.06	Pk	Horizonta
7320.55	46.71	7.10	36.50	44.4	3 45.88	54.0	0 -8.12	AV	Horizonta
			High Chan	nel (24	80 MHz)(GFSK	() Abov	/e 1G		
4960.680	66.37	5.21	35.52	44.2	1 62.89	74.0	0 -11.11	Pk	Vertical
4960.680	46.73	5.21	35.52	44.2	1 43.25	54.0	0 -10.75	AV	Vertical
7440.230	64.13	7.10	36.53	44.6	0 63.16	74.0	0 -10.84	Pk	Vertical
7440.230	45.86	7.10	36.53	44.6	0 44.89	54.0	0 -9.11	AV	Vertical
4960.250	65.41	5.21	35.52	44.2	1 61.93	74.0		Pk	Horizonta
4960.250	45.65	5.21	35.52	44.2		54.0		AV	Horizonta
7440.450	66.08	7.10	36.53	44.6	0 65.11	74.0	0 -8.89	Pk	Horizonta
7440.450	45.04	7.10	36.53	44.6	0 44.07	54.0	0 -9.93	AV	Horizonta

Note:

(1) Emission Level= Antenna Factor + Cable Loss + Read Level - Preamp Factor

(2)All other emissions more than 20dB below the limit.

(3)Only the worst data is recorded in the report, the data rates (2Mbps for GFSK modulation) test result is the worst



UT:	Series 2	2 PRO		Mo	Model No.: Se		Serie	Series 2 PRO		
emperature:	<b>20</b> ℃			Rel	ative Humidi	lumidity: 48%				
est Mode:	Mode2/	e2/ Mode4 T			t By:		Mary	′ Hu		
Frequency	Meter Reading	Cable Loss	Antenna Factor	Preamp Factor	Emission Level	Lim	its	Margin	Detector	Comment
(MHz)	(dBµV)	(dB)	dB/m	(dB)	(dBµV/m)	(dBµ∖	V/m)	(dB)	Туре	
	2Mbps(GFSK)									
2310.00	64.45	2.97	27.80	43.80	51.42	74	1	-22.58	Pk	Horizontal
2310.00	45.54	2.97	27.80	43.80	32.51	54	1	-21.49	AV	Horizontal
2310.00	66.32	2.97	27.80	43.80	53.29	74	1	-20.71	Pk	Vertical
2310.00	45.24	2.97	27.80	43.80	32.21	54	1	-21.79	AV	Vertical
2390.00	65.71	3.14	27.21	43.80	52.26	74	1	-21.74	Pk	Vertical
2390.00	45.21	3.14	27.21	43.80	31.76	54	1	-22.24	AV	Vertical
2390.00	66.66	3.14	27.21	43.80	53.21	74	4	-20.79	Pk	Horizontal
2390.00	46.80	3.14	27.21	43.80	33.35	54	1	-20.65	AV	Horizontal
2483.50	65.64	3.58	27.70	44.00	52.92	74	1	-21.08	Pk	Vertical
2483.50	45.77	3.58	27.70	44.00	33.05	54	1	-20.95	AV	Vertical
2483.50	68.84	3.58	27.70	44.00	56.12	74	1	-17.88	Pk	Horizontal
2483.50	44.89	3.58	27.70	44.00	32.17	54	1	-21.83	AV	Horizontal

Note: (1) All other emissions more than 20dB below the limit.

(2)Only the worst data is recorded in the report, the data rates (2Mbps for GFSK modulation) test result is the worst



EUT:	Serie	s 2 PRC	)		Mode	l No.:	Model No.: Serie			es 2 PRO		
Temperature					Relati	Relative Humidity: 48%						
•	•											
Test Mode:			Test E	Бу.		iviary i	nu					
Frequency	Reading Level	Cable Loss	Antenna Factor		eamp actor	Emission Level	Li	mits	Margin	Detector	Comment	
(MHz)	(dBµV)	(dB)	dB/m	(0	dB)	(dBµV/m)	(dB	µV/m)	(dB)	Туре		
3260	66.21	4.04	29.57	44	4.70	55.12		74	-18.88	Pk	Vertical	
3260	44.09	4.04	29.57	44	4.70	33.00	:	54	-21.00	AV	Vertical	
3260	67.72	4.04	29.57	44	4.70	56.63		74	-17.37	Pk	Horizontal	
3260	46.42	4.04	29.57	44	4.70	35.33	:	54	-18.67	AV	Horizontal	
3332	66.71	4.26	29.87	44	4.40	56.44		74	-17.56	Pk	Vertical	
3332	46.67	4.26	29.87	44	4.40	36.40	:	54	-17.60	AV	Vertical	
3332	68.35	4.26	29.87	44	4.40	58.08		74	-15.92	Pk	Horizontal	
3332	45.77	4.26	29.87	44	4.40	35.50	:	54	-18.50	AV	Horizontal	
17797	50.15	10.99	43.95	43	3.50	61.59		74	-12.41	Pk	Vertical	
17797	32.70	10.99	43.95	43	3.50	44.14	;	54	-9.86	AV	Vertical	
17788	51.91	11.81	43.69	44	4.60	62.81		74	-11.19	Pk	Horizontal	
17788	34.77	11.81	43.69	44	4.60	45.67		54	-8.33	AV	Horizontal	

Note: (1) All other emissions more than 20dB below the limit.

(2)Only the worst data is recorded in the report, the data rates (2Mbps for GFSK modulation) test result is the worst



#### 7.3 6DB BANDWIDTH

#### 7.3.1 Applicable Standard

According to FCC Part 15.247(a)(2) and KDB 558074 D01 15.247 Meas Guidance v05r02 Section 8.2.

#### 7.3.2 **Conformance Limit**

The minimum permissible 6dB bandwidth is 500 kHz.

#### 7.3.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

#### 7.3.4 Test Setup

Please refer to Section 6.1 of this test report.

#### 7.3.5 Test Procedure

The testing follows Subclause 11.8 of ANSI C63.10

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.

The path loss was compensated to the results for each measurement.

Set to the maximum power setting and enable the EUT transmit continuously.

The EUT was operating in controlled its channel.

Use the following spectrum analyzer settings:

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW)  $\ge$  3\*RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.

g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

#### 7.3.6 Test Results

EUT:	Series 2 PRO	Model No.:	Series 2 PRO
Temperature:	20 °C	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Mary Hu



## 7.4 DUTY CYCLE

#### 7.4.1 Applicable Standard

According to KDB 558074 D01 15.247 Meas Guidance v05r02s Section 6.

#### 7.4.2 Conformance Limit

No limit requirement.

#### 7.4.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

#### 7.4.4 Test Setup

Please refer to Section 6.1 of this test report.

#### 7.4.5 **Test Procedure**

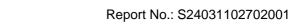
The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal. Set the center frequency of the instrument to the center frequency of the transmission. Set RBW  $\geq$  OBW if possible; otherwise, set RBW to the largest available value. Set VBW  $\geq$  RBW. Set detector = peak or average. The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if T  $\leq$  16.7 microseconds.)

The transmitter output is connected to the Spectrum Analyzer. We tested accroding to the zero-span measurement method, 6.0)b) in KDB 558074

The largest available value of RBW is 8 MHz and VBW is 50 MHz. The zero-span method of measuring duty cycle shall not be used if  $T \le 6.25$  microseconds. (50/6.25 = 8)

The zero-span method was used because all measured T data are > 6.25 microseconds and both RBW and VBW are > 50/T.

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. Set to the maximum power setting and enable the EUT transmit continuously. The EUT was operating in controlled its channel. Use the following spectrum analyzer settings: Span = Zero Span RBW = 8MHz(the largest available value) VBW = 8MHz ( $\geq$  RBW) Number of points in Sweep >100 Detector function = peak Trace = Clear write Measure T<sub>total</sub> and T<sub>on</sub> Calculate Duty Cycle = T<sub>on</sub>/T<sub>total</sub>





#### 7.4.6 Test Results

EUT:	Series 2 PRO	Model No.:	Series 2 PRO
Temperature:	<b>20</b> ℃	Relative Humidity:	48%
Test Mode:	N/A	Test By:	N/A

Note: Not Applicable



# 7.5 **PEAK OUTPUT POWER**

# 7.5.1 Applicable Standard

According to FCC Part 15.247(b)(3) and KDB 558074 D01 15.247 Meas Guidance v05r02 Section 8.3.1.

## 7.5.2 **Conformance Limit**

The maximum peak conducted output power of the intentional radiator for systems using digital modulation in the 2400 - 2483.5 MHz bands shall not exceed: 1 Watt (30dBm). If transmitting antenna of directional gain greater than 6dBi is used, the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

#### 7.5.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

#### 7.5.4 Test Setup

Please refer to Section 6.1 of this test report.

#### 7.5.5 **Test Procedure**

The testing follows Subclause 11.9.1.1 of ANSI C63.10 The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. Set to the maximum power setting and enable the EUT transmit continuously. The EUT was operating in controlled its channel. Use the following spectrum analyzer settings: Set the RBW  $\geq$  DTS bandwidth. Set VBW =3\*RBW. Set the span  $\geq$  3\*RBW Set Sweep time = auto couple. Set Detector = peak. Set Trace mode = max hold. Allow trace to fully stabilize. Use peak marker function to determine the peak amplitude level.

#### 7.5.6 Test Results

EUT:	Series 2 PRO	Model No.:	Series 2 PRO
Temperature:	20 °C	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Mary Hu



## 7.6 **POWER SPECTRAL DENSITY**

#### 7.6.1 Applicable Standard

According to FCC Part 15.247(e) and KDB 558074 D01 15.247 Meas Guidance v05r02 Section 8.4.

#### 7.6.2 Conformance Limit

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

#### 7.6.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

#### 7.6.4 Test Setup

Please refer to Section 6.1 of this test report.

#### 7.6.5 Test Procedure

The testing follows Measurement Procedure Subclause 11.10.2 of ANSI C63.10 This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance, and is optional if the maximum conducted (average) output power was used to demonstrate compliance.

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.

The path loss was compensated to the results for each measurement.

Set to the maximum power setting and enable the EUT transmit continuously.

The EUT was operating in controlled its channel.

- a) Set analyzer center frequency to DTS channel center frequency.
- b) Set the span to 1.5\*DTS bandwidth.
- c) Set the RBW to:  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ .
- d) Set the VBW  $\geq$  3 RBW.
- e) Detector = peak.
- f) Sweep time = auto couple.
- g) Trace mode = max hold.
- h) Allow trace to fully stabilize.
- i) Use the peak marker function to determine the maximum amplitude level within the RBW.
- j) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.



#### 7.6.6 Test Results

EUT:	Series 2 PRO	Model No.:	Series 2 PRO
Temperature:	20 °C	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Mary Hu



# 7.7 CONDUCTED BAND EDGE MEASUREMENT

#### 7.7.1 Applicable Standard

According to FCC Part 15.247(d) and KDB 558074 D01 15.247 Meas Guidance v05r02 Section 8.7.

#### 7.7.2 Conformance Limit

In any 100 kHz 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 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

#### 7.7.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

#### 7.7.4 Test Setup

Please refer to Section 6.1 of this test report.

#### 7.7.5 Test Procedure

The testing follows FCC KDB 558074 D01 15.247 Meas Guidance v05r02 Section 8.7.

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.

The path loss was compensated to the results for each measurement.

Set to the maximum power setting and enable the EUT transmit continuously.

The EUT was operating in controlled its channel.

Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.

Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.

Repeat above procedures until all measured frequencies were complete.

#### 7.7.6 Test Results

EUT:	Series 2 PRO	Model No.:	Series 2 PRO
Temperature:	20 °C	Relative Humidity:	48%
Test Mode:	Mode2/Mode4	Test By:	Mary Hu



# 7.8 SPURIOUS RF CONDUCTED EMISSIONS

#### 7.8.1 Conformance Limit

Below -20dB of the highest emission level in operating band.
 Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209.

#### 7.8.2 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

#### 7.8.3 Test Setup

Please refer to Section 6.1 of this test report.

#### 7.8.4 Test Procedure

The Spurious RF conducted emissions compliance of RF radiated emission should be measured by following the guidance in ANSI C63.10-2013 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization etc. Set RBW=100kHz and VBW= 300KHz to measure the peak field strength , and measure frequency range from 30MHz to 26.5GHz.

#### 7.8.5 Test Results

Remark: The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and bandege measurement data.



# 7.9 ANTENNA APPLICATION

#### 7.9.1 Antenna 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.

#### 7.9.2 **Result**

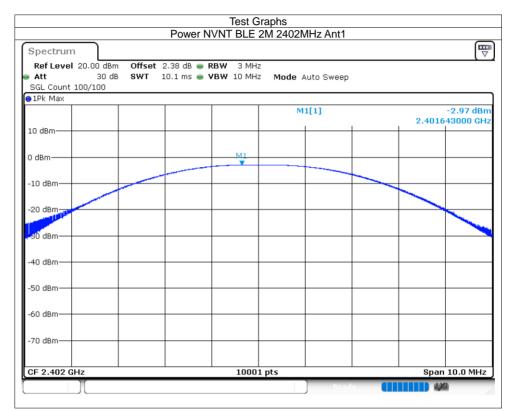
The EUT antenna is permanent attached Chip Antenna (Gain:2.78 dBi). It comply with the standard requirement.

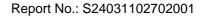


# 8 TEST RESULTS

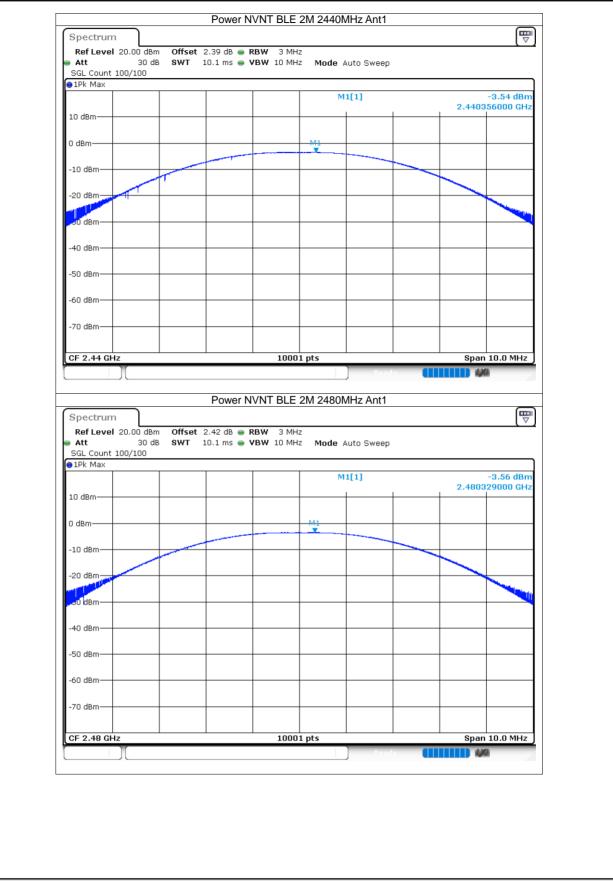
#### 8.1 Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	GFSK 2M	2402	Ant1	-2.97	30	Pass
NVNT	GFSK 2M	2440	Ant1	-3.54	30	Pass
NVNT	GFSK 2M	2480	Ant1	-3.56	30	Pass





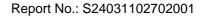




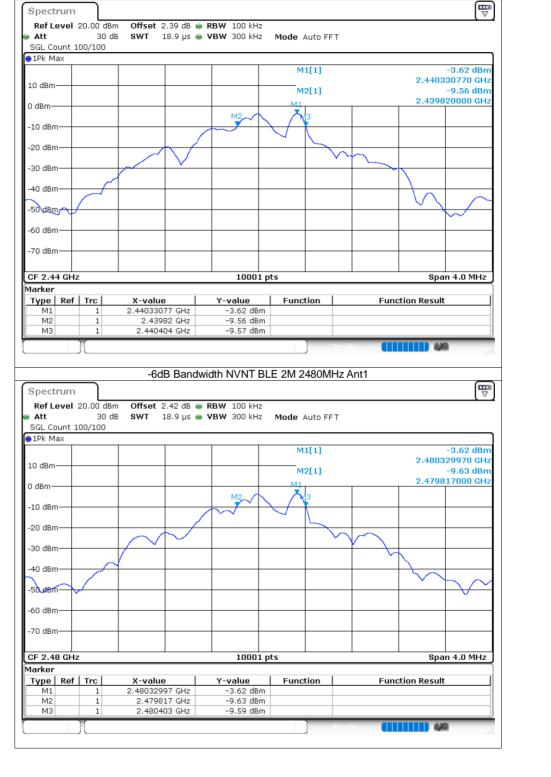
ondition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdi
NVNT	GFSK 2M	2402	Ant1	0.724	0.5	Pas
NVNT	GFSK 2M	2440	Ant1	0.584	0.5	Pas
IVNT	GFSK 2M	2480	Ant1	0.586	0.5	Pas
Г			Test	Graphs		
		-6dB B		T BLE 2M 2402MHz Ant	:1	
	Spectrum					
	Ref Level 20.0 Att SGL Count 3000/ Pk Max	30 dB SWT 18.9	dB <b>● RBW</b> 100   µs <b>● VBW</b> 300			
				M1[1]	-3.03 dBm	
	10 dBm			M2[1]	2.402331970 GHz -9.00 dBm	
	0 dBm			M1	2.401684000 GHz	
	o ubiii		M2			
	-10 dBm					
	-20 dBm		/		~	
	-30 dBm					
	-50 0011					
	-40 dBm					
	-50 dBm				~	
	-60 dBm					
	-ou ubili					
	-70 dBm					
	CF 2.402 GHz				Sama 4.0 Milia	
	CF 2.402 GHz         10001 pts         Span 4.0 MHz           Marker					
	Type   Ref   Tro	: X-value	Y-value	Function	Function Result	
		1 2.40233197 G				
		1 2.401684 G 1 2.402408 G				
	1913	I 2.402408 G	HZ -9.00			
				Ready		

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Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	GFSK 2M	2402	Ant1	1.645
NVNT	GFSK 2M	2440	Ant1	1.665
NVNT	GFSK 2M	2480	Ant1	1.623



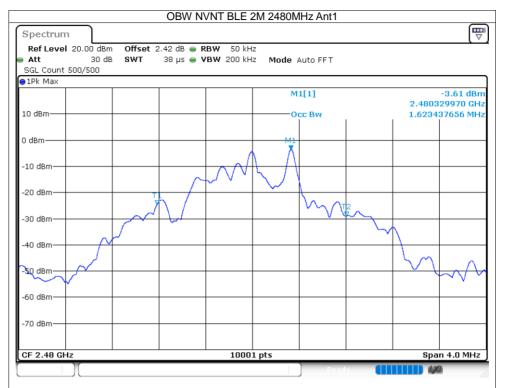
## NTEK 北测®

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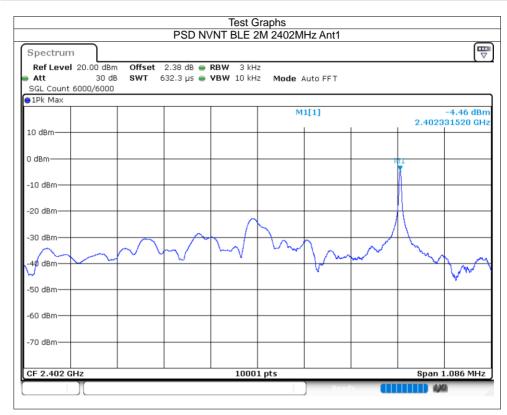


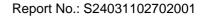




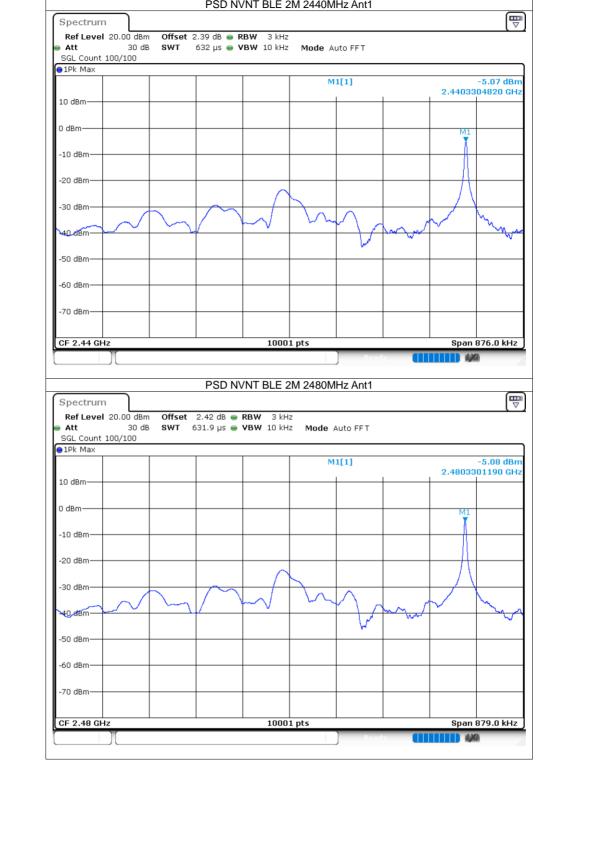
#### 8.4 Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm)	Limit (dBm)	Verdict
NVNT	GFSK 2M	2402	Ant1	-4.46	8	Pass
NVNT	GFSK 2M	2440	Ant1	-5.07	8	Pass
NVNT	GFSK 2M	2480	Ant1	-5.08	8	Pass

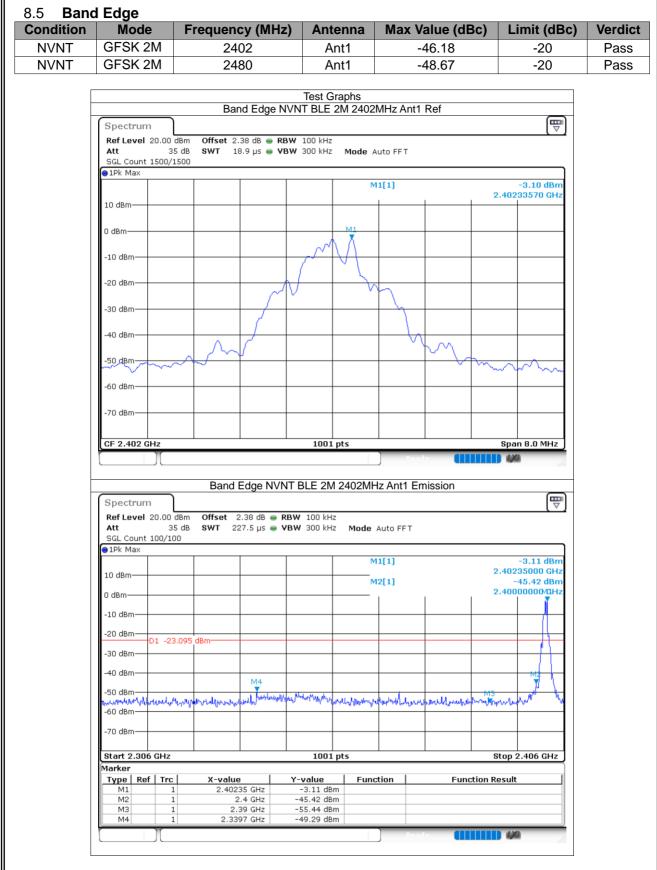








# EK LOV



#### Report No.: S24031102702001



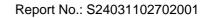
Att		20.00 dBn 35 di 200/200			<b>RBW</b> 100 kHz <b>/BW</b> 300 kHz	Mode A	uto FFT			
1Pk M										
						М	1[1]		2 400	-3.61 dBm )32770 GHz
10 dBm	$\rightarrow$								2.700	
0 dBm—	+					M1 X				
-10 dBn						$\Lambda$				
						$\vee$				
-20 dBn	n+					<u> </u>	~			
20 db-				$\cap$			$\left[ \right]$			
-30 dBn	n						M			
-40 dBn	n						$\left  \right\rangle$			<b>↓┃</b> │
			$ \Lambda $	[			W	M		
-50 dBn			$\mathcal{M}$	/				<u> </u> Υ └∽	hum	m
-60 dBn	n		-						~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~ ~ ~ ~
-70 dBn	n+				+				+	┼───┨│
CF 2.4	8 GH	z			1001	pts			Spa	n 8.0 MHz
Sneet	111100	$\neg$	Danu	zuge inv	INT BLE 2M	2480MH	lz Ant1 En	nission		
Ref Le Att	vel 2	20.00 dBn 35 di 100/100	n Offset 2	.42 dB 👄	<b>RBW</b> 100 kHz <b>VBW</b> 300 kHz	2		nission		
Att	<b>vel</b> 2 ount 1	20.00 dBn 35 df	n Offset 2	.42 dB 👄	<b>RBW</b> 100 kHz	z 2 Mode .	Auto FFT	nission		
Ref Le Att SGL Co 1Pk M	ount 1 lax	20.00 dBn 35 df	n Offset 2	.42 dB 👄	<b>RBW</b> 100 kHz	z 2 Mode .		nission	2,480	-3.64 dBm
Ref Le Att SGL Co 1Pk M	ount 1 lax	20.00 dBn 35 df	n Offset 2	.42 dB 👄	<b>RBW</b> 100 kHz	2 2 Mode . M	Auto FFT	nission		-3.64 dBm 035000 GHz -53.83 dBm
Ref Le Att SGL Co 1Pk M	ount 1 lax	20.00 dBn 35 df	n Offset 2	.42 dB 👄	<b>RBW</b> 100 kHz	2 2 Mode . M	Auto FFT	nission		-3.64 dBm 035000 GHz
Ref Le Att SGL Co 1Pk M	ount 1 lax	20.00 dBn 35 df	n Offset 2	.42 dB 👄	<b>RBW</b> 100 kHz	2 2 Mode . M	Auto FFT			-3.64 dBm 035000 GHz -53.83 dBm
Ref Le Att SGL Co 1Pk M 10 dBm	n	20.00 dBn 35 di 100/100	n Offset 2 3 SWT 22	.42 dB 👄	<b>RBW</b> 100 kHz	2 2 Mode . M	Auto FFT			-3.64 dBm 035000 GHz -53.83 dBm
Ref Le Att SGL Cc 1Pk M 10 dBm -10 dBm -20 dBm	n	20.00 dBn 35 df	n Offset 2 3 SWT 22	.42 dB 👄	<b>RBW</b> 100 kHz	2 2 Mode . M	Auto FFT			-3.64 dBm 035000 GHz -53.83 dBm
Ref Le Att SGL Co 1Pk M 10 dBm -10 dBm -20 dBm -30 dBm	n	20.00 dBn 35 di 100/100	n Offset 2 3 SWT 22	.42 dB 👄	<b>RBW</b> 100 kHz	2 2 Mode . M	Auto FFT			-3.64 dBm 035000 GHz -53.83 dBm
Ref Le Att SGL Cc 1Pk M 10 dBm -10 dBm -20 dBm -30 dBm -30 dBm	n	20.00 dBr 35 dl 100/100	n Offset 2 3 SWT 22	.42 dB ● 7.5 µs ●	RBW 100 kHz VBW 300 kHz	2 Mode . M M	Auto FFT  1[1]  2[1]		2.483	-3.64 dBm 035000 GHz -53.83 dBm
Ref Le Att SGL Cc 1Pk M 10 dBm -10 dBm -20 dBm -30 dBm -30 dBm	n	20.00 dBr 35 dl 100/100	n Offset 2 3 SWT 22	.42 dB ● 7.5 µs ●	RBW 100 kHz VBW 300 kHz	2 Mode . M M	Auto FFT  1[1]  2[1]		2.483	-3.64 dBm 335000 GHz 53.83 dBm 350000 GHz
Ref Le Att SGL Cc 1Pk M 10 dBm -10 dBm -20 dBm -30 dBm -30 dBm	n	20.00 dBr 35 dl 100/100	n Offset 2 3 SWT 22	.42 dB ● 7.5 µs ●	<b>RBW</b> 100 kHz	2 Mode . M M	Auto FFT  1[1]  2[1]		2.483	-3.64 dBm 035000 GHz -53.83 dBm
Ref Le Att SGL Cc 1Pk M 10 dBm -10 dBm -20 dBm -30 dBm -30 dBm	n	20.00 dBr 35 dl 100/100	n Offset 2 3 SWT 22	.42 dB ● 7.5 µs ●	RBW 100 kHz VBW 300 kHz	2 Mode . M M	Auto FFT  1[1]  2[1]		2.483	-3.64 dBm 335000 GHz 53.83 dBm 350000 GHz
Ref Le           Att           SGL Cc           1Pk M           10 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm           -60 dBm		20.00 dBr 35 di 100/100	n Offset 2 3 SWT 22	.42 dB ● 7.5 µs ●	RBW         100 kHz           VBW         300 kHz	2 Mode . 	Auto FFT  1[1]  2[1]		2.480	-3.64 dBm 35000 GHz -53.83 dBm 350000 GHz
Ref Le Att SGL CC 10 dBm -10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -30 dBm -40 dBm -40 dBm -40 dBm -70 dBm -70 dBm -70 dBm -70 dBm	vel 2           point 1           lax           n	20.00 dBr 35 di 100/100	n Offset 2 3 SWT 22	.42 dB ● 7.5 µs ●	RBW 100 kHz VBW 300 kHz	2 Mode . 	Auto FFT  1[1]  2[1]		2.480	-3.64 dBm 335000 GHz 53.83 dBm 350000 GHz
Ref Le Att SGL Cc 9 1Pk M 10 dBm -10 dBm -20 dBm -30 dBm -30 dBm -30 dBm -30 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm	vel 2           point 1           lax           n	20.00 dBr 35 di 100/100	n Offset 2 3 SWT 22	.42 dB ● 7.5 μs ●	RBW         100 kHz           VBW         300 kHz	2 Mode . 	Auto FFT  1[1]  2[1]	Lalactory of Address	2.480	-3.64 dBm 35000 GHz -53.83 dBm 350000 GHz
Ref Le           Att           SGL CC           SGL CC           IP M           10 dBm           10 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm           -60 dBm           -70 dBm           Start 2           Marker           Type	vel 2           point 1           lax           n	20.00 dBn 35 di 100/100 01 -23.61 wdpmulydd GHz I Trc 1 1	n Offset 2 3 SWT 22 2 dBm 2 dBm 2 dBm 3 SWT 22 2 dBm 4 SWT 22 2 dBm 2 SWT 22 2 SW	.42 dB 7.5 μs 	RBW 100 kHz VBW 300 kHz	2 2 Mode M M M M M M M M M M M M M M M M M M M	Auto FFT  1[1]  2[1]	Lalactory of Address	2.483	-3.64 dBm 35000 GHz -53.83 dBm 350000 GHz
Ref Le Att SGL Cc 10 dBm 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -30 dBm -30 dBm -40 dB	vel 2           point 1           lax           n	20.00 dBr 35 di 100/100 01 -23.61 wdfrwuliwi GHz	n Offset 2 3 SWT 22 2 dBm 2 dBm 2 dBm 4 M3 1 M3 1 M3 1 M3 1 M3 1 M3 1 M3 1 M3 1	.42 dB 7.5 μs 	RBW         100 kHz           VBW         300 kHz	2 2 Mode . M M M M M M M M M M M M M M M M M M M	Auto FFT  1[1]  2[1]	Lalactory of Address	2.483	-3.64 dBm 35000 GHz -53.83 dBm 350000 GHz
Ref Le           Att           SGL CC           IPk M           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -30 dBm           -30 dBm           -40 dBm           -50 dBm           -60 dBm           -70 dBm           50 dBm           -70 dBm           M1           M2	vel 2           point 1           lax           n	20.00 dBr 35 di 100/100 01 -23.61 wdf/~wlij/h GHz Trc 1 1	n Offset 2 3 SWT 22 2 dBm 2 dB	.42 dB 7.5 μs 	RBW 100 kHz VBW 300 kHz	2 Mode . M M M M M M M M M M M M M	Auto FFT  1[1]  2[1]	່ ມີມີແດງລາງການປະກາ	2.483	-3.64 dBm 35000 GHz -53.83 dBm 350000 GHz 



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#### 8.6 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	GFSK 2M	2402	Ant1	-47	-20	Pass
NVNT	GFSK 2M	2440	Ant1	-46.74	-20	Pass
NVNT	GFSK 2M	2480	Ant1	-46.63	-20	Pass

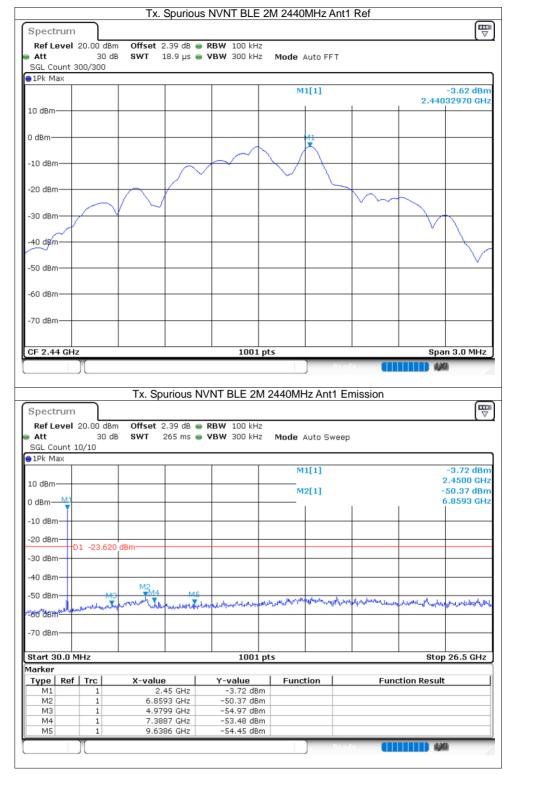




Spectrum									
Ref Level		Offset 2	38 dB 👄 🛛	<b>BW</b> 100 kHz					(°)
Att	30 dB			BW 300 kHz		uto FFT			
SGL Count 3	3000/3000								
●1Pk Max									0.04 17
					M	L[1]		9.40	-3.01 dBm 233270 GHz
10 dBm							+	2.40	200270 0112
0 dBm						41			
						۲			
-10 dBm				$\sim$ ·	$\searrow$ /	$\rightarrow$			
					$\sim$	$\sim$			
-20 dBm						<u> </u>			
	$\sim$	$r \sim 1$					$\sim$	$\frown$	
-30 dBm	<u> </u>								<u> </u>
-40 d8m									
-50 dBm									
-60 dBm									
-70 dBm									
CE 9 409 CL									
CF 2.402 G				1001 NT BLE 2M	1 2402MH	lz Ant1 E	ty 🚺	Sp.	an 3.0 MHz ) M
Spectrum Ref Level Att	20.00 dBm 30 dB	Offset 2.3	38 dB 👄 R		1 2402MH			Sp.	
Spectrum Ref Level Att SGL Count 1	20.00 dBm 30 dB	Offset 2.3	38 dB 👄 R	NT BLE 2M	1 2402MH			Sp.	
Spectrum Ref Level Att SGL Count 1	20.00 dBm 30 dB	Offset 2.3	38 dB 👄 R	NT BLE 2M	1 2402MH Mode A	uto Sweep		Sp.	
Spectrum Ref Level Att SGL Count 1 JPk Max	20.00 dBm 30 dB	Offset 2.3	38 dB 👄 R	NT BLE 2M	1 2402MH Mode A			Sp.	₩ (₩)
Spectrum Ref Level Att SGL Count 3 IPk Max	20.00 dBm 30 dB	Offset 2.3	38 dB 👄 R	NT BLE 2M	1 2402MH Mode A	uto Sweep			
Spectrum Ref Level Att SGL Count 1 JIPk Max	20.00 dBm 30 dB	Offset 2.3	38 dB 👄 R	NT BLE 2M	1 2402MH Mode A	uto Sweer			-3.21 dBm 2.3970 GHz
Spectrum Ref Level ) Att SGL Count 3 ) IPk Max 10 dBm 0 dBm 1	20.00 dBm 30 dB	Offset 2.3	38 dB 👄 R	NT BLE 2M	1 2402MH Mode A	uto Sweer			-3.21 dBm 2.3970 GHz -50.02 dBm
Spectrum Ref Level o Att SGL Count 1 D 1Pk Max 10 dBm 0 dBm -10 dBm	20.00 dBm 30 dB	Offset 2.3	38 dB 👄 R	NT BLE 2M	1 2402MH Mode A	uto Sweer			-3.21 dBm 2.3970 GHz -50.02 dBm
Spectrum Ref Level Att SGL Count 1 1Pk Max 10 dBm 0 dBm -10 dBm -10 dBm -10 dBm	20.00 dBm 30 dE 10/10	Offset 2.3 SWT 26	38 dB 👄 R	NT BLE 2M	1 2402MH Mode A	uto Sweer			-3.21 dBm 2.3970 GHz -50.02 dBm
Spectrum Ref Level Att SGL Count 1 SGL Count 1 ID dBm 0 dBm 10 dBm -10 dBm -20 dBm	20.00 dBm 30 dB	Offset 2.3 SWT 26	38 dB 👄 R	NT BLE 2M	1 2402MH Mode A	uto Sweer			-3.21 dBm 2.3970 GHz -50.02 dBm
Spectrum Ref Level Att SGL Count 1 1Pk Max 10 dBm -10 dBm -20 dBm -30 dBm	20.00 dBm 30 dE 10/10	Offset 2.3 SWT 26	38 dB 👄 R	NT BLE 2M	1 2402MH Mode A	uto Sweer			-3.21 dBm 2.3970 GHz -50.02 dBm
Spectrum Ref Level Att SGL Count 1 SGL Count 1 ID dBm 0 dBm 10 dBm -10 dBm -20 dBm	20.00 dBm 30 dE 10/10	Offset 2.3 SWT 26	38 dB 👄 R	NT BLE 2M	1 2402MH Mode A	uto Sweep [[1] 2[1]			-3.21 dBm 2.3970 GHz -50.02 dBm
Spectrum Ref Level 9 Att SGL Count 1 9 IPk Max 10 dBm -10 dBm -20 dBm -20 dBm -20 dBm -40 dBm	20.00 dBm 30 dE 10/10	Offset 2.: SWT 26	38 dB • R 55 ms • V	NT BLE 2M	1 2402MH Mode A	NUTO Sweep			-3.21 dBm 2.3970 GHz -50.02 dBm
Spectrum Ref Level Att SGL Count 12 SGL Count 12 IPK Max 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -30 dBm -50 dBm	20.00 dBm 30 dE 10/10	Offset 2.3 SWT 26	38 dB 👄 R	NT BLE 2M	1 2402MH Mode A	uto Sweep [[1] 2[1]			-3.21 dBm 2.3970 GHz -50.02 dBm
Spectrum Ref Level Att SGL Count 1 IPk Max 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -30 dBm -40 dBm -50 dBm	20.00 dBm 30 dE 10/10	Offset 2.: SWT 26	38 dB • R 55 ms • V	NT BLE 2M	1 2402MH Mode A	NUTO Sweep			-3.21 dBm 2.3970 GHz -50.02 dBm
Spectrum Ref Level Att SGL Count 1 IPk Max 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -30 dBm -40 dBm -50 dBm	20.00 dBm 30 dE 10/10	Offset 2.: SWT 26	38 dB • R 55 ms • V	NT BLE 2M	1 2402MH Mode A	NUTO Sweep			-3.21 dBm 2.3970 GHz -50.02 dBm
Spectrum Ref Level ) Att SGL Count 12 IPk Max 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -50 dBm -50 dBm -70 dBm -70 dBm	20.00 dBm 30 dE 10/10	Offset 2.: SWT 26	38 dB • R 55 ms • V	NT BLE 2M	Mode A	NUTO Sweep			-3.21 dBm 2.3970 GHz -50.02 dBm 6.2826 GHz
Spectrum Ref Level Att SGL Count 2 IPk Max 10 dBm 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -50 dBm -50 dBm -70 dBm -70 dBm Start 30.0 N	20.00 dBm 30 dE 10/10	Offset 2.: SWT 26	38 dB • R 55 ms • V	NT BLE 2M	Mode A	NUTO Sweep			-3.21 dBm 2.3970 GHz -50.02 dBm
Spectrum Ref Level Att SGL Count 1 Ph Max 10 dBm 10 dBm -10 dBm -20 dBm -20 dBm -40 dBm -50 dBm -70 dB	20.00 dBm 30 dE 10/10	Offset 2.3 SWT 26	38 dB • R 55 ms • V	NT BLE 2M	1 2402MH Mode A M3 M3	M2		pul-m/\A Sto	-3.21 dBm 2.3970 GHz -50.02 dBm 16.2826 GHz
Spectrum Ref Level Att SGL Count 1 PIPK Max 10 dBm 10 dBm -10 dBm -20 dBm -20 dBm -20 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm	20.00 dBm 30 dE 10/10	Offset 2.: SWT 26	38 dB	NT BLE 2M	1 2402MH Mode A M2 M2	M2			-3.21 dBm 2.3970 GHz -50.02 dBm 16.2826 GHz
Spectrum Ref Level ) Att SGL Count 2 IPk Max 10 dBm -10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -30 dBm -30 dBm -40 dBm -50 dBm -50 dBm -70 dBm	20.00 dBm 30 dE 10/10	Offset 2.3 SWT 26	38 dB	NT BLE 2M	1 2402MH Mode A M3 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2	M2		pul-m/\A Sto	-3.21 dBm 2.3970 GHz -50.02 dBm 16.2826 GHz
Spectrum           Ref Level           Att           SGL Count 1           IPk Max           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -30 dBm           -70 dBm           -50 dBm           -70 dBm	20.00 dBm 30 dE 10/10	Offset 2.3 SWT 26	38 dB   R  55 ms  V  55 ms  V  7 GHz  5 GHz  5 GHz	NT BLE 2M BW 100 kHz BW 300 kHz 300 kHz 100 kH	1 2402MH Mode A M3 M3 M3 M3 M3 M3 M3 M3 M3 M3 M3 M3 M3	M2		pul-m/\A Sto	-3.21 dBm 2.3970 GHz -50.02 dBm 16.2826 GHz
Spectrum           Ref Level           Att           SGL Count 1           SGL Count 2           IPk Max           10 dBm           -10 dBm           -20 dBm           -20 dBm           -30 dBm           -30 dBm           -20 dBm           -70 dBm           -70 dBm           Start 30.0 N           Marker           Type           M1           M2           M3           M4	20.00 dBm 30 dE 10/10	Offset 2.3 SWT 26	38 dB   R  55 ms  V  55 ms  V  7 GHz  5 GHz  5 GHz  4 GHz	NT BLE 2M BW 100 kHz /BW 300 kHz //BW 300 kH	1 2402MH Mode A M3 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2	M2		pul-m/\A Sto	-3.21 dBm 2.3970 GHz -50.02 dBm 16.2826 GHz
Spectrum           Ref Level           o Att           SGL Count 1           o IPk Max           10 dBm           -10 dBm           -20 dBm           -20 dBm           -30 dBm           -70 dBm           -50 dBm           -70 dBm	20.00 dBm 30 dE 10/10	Offset 2.3 SWT 26	38 dB   R  55 ms  V  55 ms  V  7 GHz  5 GHz  5 GHz  4 GHz	NT BLE 2M BW 100 kHz BW 300 kHz 300 kHz 100 kH	1 2402MH Mode A M3 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2	M2		pul-m/\A Sto	-3.21 dBm 2.3970 GHz -50.02 dBm 16.2826 GHz

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