	之 <b>沪,</b> CHNOLOGY	
	TEST REPOR	Т
FCC ID :	AUSCR612BADAPTOR	
Test Report No::	TCT240328E018	
Date of issue:	Apr. 08, 2024	
Testing laboratory:	SHENZHEN TONGCE TESTING	S LAB
Testing location/ address:	2101 & 2201, Zhenchang Factor Subdistrict, Bao'an District, Shen People's Republic of China	y Renshan Industrial Zone, Fuhai zhen, Guangdong, 518103,
Applicant's name: :	Modern Marketing Concepts, Inc	
Address:	1220 E Oak, St.Louisville Kentuc	ky 40204United States
Manufacturer's name :	Jiangxi Jiayinking Culture Techn	ology Company Limited
Address:	K3-17, Electronical Information S Longnan Technical Economic De Jiangxi Province, China.	
Standard(s):	FCC CFR Title 47 Part 15 Subpa FCC KDB 558074 D01 15.247 M ANSI C63.10:2013	
Product Name::	Corsair with BT	
Trade Mark:	CROSLEY	$\langle \mathcal{C} \rangle$
Model/Type reference :	CR612B-AB, CR612B, CR612B- ("XX" stands for appearance colo	
Rating(s):	Adapter Information: MODEL: GKYZA0100120US Input: AC 100–240V, 50/60Hz, 0 Output: DC 12V, 1000mA	.5A MAX
Date of receipt of test item	Mar. 28, 2024	
Date (s) of performance of test:	Mar. 28, 2024 ~ Apr. 08, 2024	
Tested by (+signature) :	Ronaldo LUO	R-male + 6Wager
Check by (+signature) :	Beryl ZHAO	BoylererT
Approved by (+signature):	Tomsin	Jomsin's st
	oduced except in full, without the his document may be altered or re	

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TCT 通测检测 TESTING CENTRE TECHNOLOGY

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-		



# **1. General Product Information**

## 1.1. EUT description

Product Name:	Corsair with BT	$(c^{(1)})$		
Model/Type reference:	CR612B-AB			
Sample Number:	TCT240328E018-0101			
Bluetooth Version:	V5.0		S	
Operation Frequency:	2402MHz~2480MHz			
Transfer Rate:	1/2/3 Mbits/s			
Number of Channel:	79			
Modulation Type:	GFSK, π/4-DQPSK, 8DPSK			
Modulation Technology:	FHSS			
Antenna Type:	PCB Antenna			
Antenna Gain:	0dBi	KC)		
Rating(s):	Adapter Information: MODEL: GKYZA0100120US Input: AC 100–240V, 50/60Hz, 0 Output: DC 12V, 1000mA	.5A MAX	S	

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

# 1.2. Model(s) list

		0.	Te	sted with
$(\mathcal{C})$	CR612B-/	AB	C.	$\boxtimes$
s CR612B, CR			X ("XX"	
	AB is tested model, oth	AB is tested model, other models are derivative	stands for appearance color)         AB is tested model, other models are derivative models. The models	s CR612B, CR612B-BK, CR612B-RE, CR612B-XX ("XX" stands for appearance color) AB is tested model, other models are derivative models. The models are identical in or y different on the model names. So the test data of CR612B-AB can represent the re

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# 1.3. Operation Frequency

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
0	2402MHz	20	2422MHz	40	2442MHz	60	2462MHz
G`)1	2403MHz	21	2423MHz	41	2443MHz	61	2463MHz
<i>–</i>		·		·		·	
10	2412MHz	30	2432MHz	50	2452MHz	70	2472MHz
11	2413MHz	31	2433MHz	51	2453MHz	71	2473MHz
	S		<b>.</b>		<b>S</b>		<u>e</u>
18	2420MHz	38	2440MHz	58	2460MHz	78	2480MHz
19	2421MHz	39	2441MHz	59	2461MHz		-
Remark:	Channel 0, 3	89 & 78 h	ave been te	sted for G	FSK, π/4-D	QPSK, 8	DPSK

Remark: Channel 0, 39 & 78 have been tested for GFSK, π/4-DQPSK, 8DPSK modulation mode.





# 2. Test Result Summary

Requirement	CFR 47 Section	Result
Antenna Requirement	§15.203/§15.247 (c)	PASS
AC Power Line Conducted Emission	§15.207	PASS
Conducted Peak Output Power	§15.247 (b)(1)	PASS
20dB Occupied Bandwidth	§15.247 (a)(1)	PASS
Carrier Frequencies Separation	§15.247 (a)(1)	PASS
Hopping Channel Number	§15.247 (a)(1)	PASS
Dwell Time	§15.247 (a)(1)	PASS
Radiated Emission	§15.205/§15.209	PASS
Band Edge	§15.247(d)	PASS

#### Note:

1. PASS: Test item meets the requirement.

2. Fail: Test item does not meet the requirement.

3. N/A: Test case does not apply to the test object.

4. The test result judgment is decided by the limit of test standard.

# 3. General Information

# 3.1. Test environment and mode

Operating Environment:		
Condition	Conducted Emission	Radiated Emission
Temperature:	22.6 °C	25.6 °C
Humidity:	51 % RH	53 % RH
Atmospheric Pressure:	1010 mbar	1010 mbar

#### Test Software:

Software Information:	FCC Assist 1.0.2.2	
Power Level:	Maximum	

Test Mode:

	Keep the EUT in continuous transmitting by select channel and modulations
--	---

The sample was placed 0.8m & 1.5m for the measurement below & above 1GHz above the ground plane of 3m chamber. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case(Z axis) are shown in Test Results of the following pages. DH1 DH3 DH5 all have been tested, only worse case DH1 is reported.

# 3.2. Description of 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.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
DAB/FM Signal Generator	SABRE	K3256003		Telce
Mobile Phone	SM-G9350	R28HA2ER3GT	/	SAMSUNG

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.

2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

3. For conducted measurements (Output Power, 20dB Occupied Bandwidth, Carrier Frequencies Separation, Hopping Channel Number, Dwell Time, Spurious Emissions), the antenna of EUT is connected to the test equipment via temporary antenna connector, the antenna connector is soldered on the antenna port of EUT, and the temporary antenna connector is listed in the Test Instruments.

# TCT通测检测 TESTING CENTRE TECHNOLOGY

# 4. Facilities and Accreditations

## 4.1. Facilities

The test facility is recognized, certified, or accredited by the following organizations:

• FCC - Registration No.: 645098

SHENZHEN TONGCE TESTING LAB

Designation Number: CN1205

The testing lab has been registered and fully described in a report with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

## IC - Registration No.: 10668A-1

SHENZHEN TONGCE TESTING LAB

CAB identifier: CN0031

The testing lab has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

# 4.2. Location

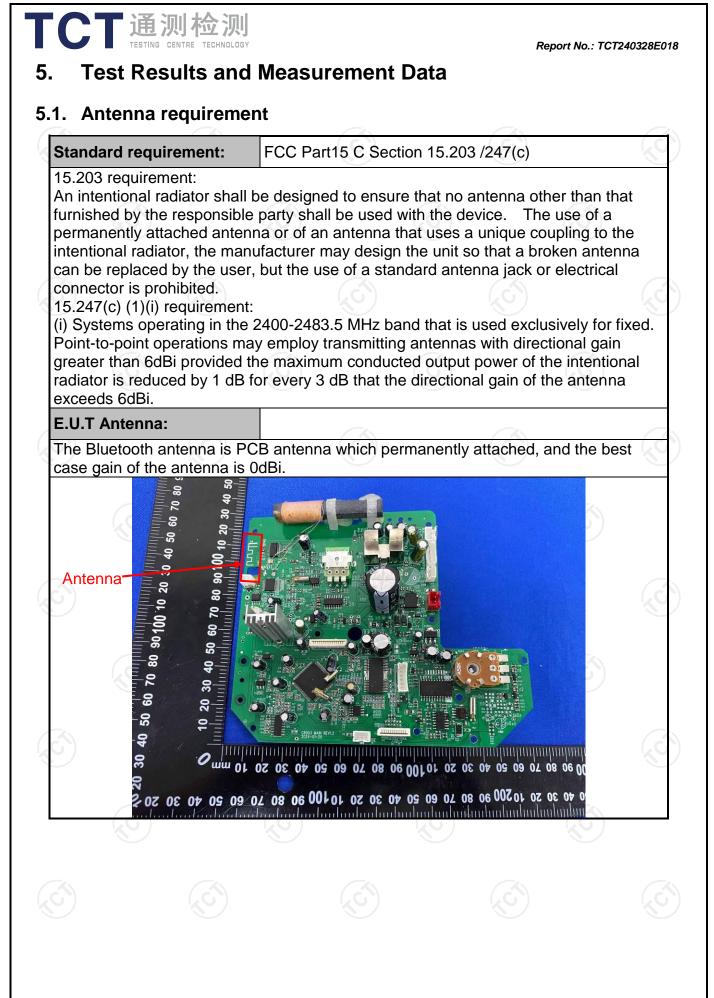
## SHENZHEN TONGCE TESTING LAB

Address: 2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China TEL: +86-755-27673339

# 4.3. 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	MU
1	Conducted Emission	± 3.10 dB
2	RF power, conducted	± 0.12 dB
3	Spurious emissions, conducted	± 0.11 dB
4	All emissions, radiated(<1 GHz)	± 4.56 dB
5	All emissions, radiated(1 GHz - 18 GHz)	± 4.22 dB
6	All emissions, radiated(18 GHz- 40 GHz)	± 4.36 dB





## 5.2. Conducted Emission

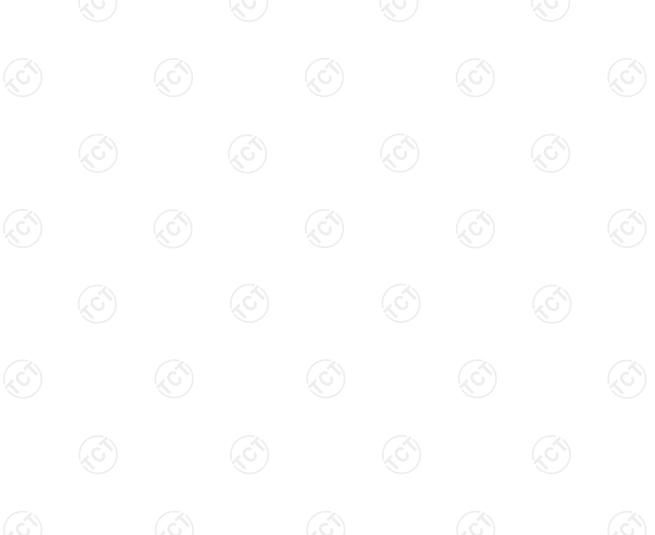
### 5.2.1. Test Specification

			(
Test Requirement:	FCC Part15 C Section	15.207	
Test Method:	ANSI C63.10:2013		
Frequency Range:	150 kHz to 30 MHz	<u>(</u> ()	
Receiver setup:	RBW=9 kHz, VBW=30	) kHz, Sweep time	e=auto
	Frequency range	Limit (	dBuV)
	(MHz)	Quasi-peak	Áverage
Limits:	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
	Referenc	e Plane	
Test Setup:	40cm E.U.T AC powe	r <sup>80cm</sup> LISN Filter	7
	Test table/Insulation plane Remark: E.U.T: Equipment Under Test LISN: Line Impedence Stabilization N Test table height=0.8m	EMI Receiver	r   — AC power
Test Mode:	Remarkc E.U.T. Equipment Under Test LISN: Line Impedence Stabilization N Test table height=0.8m Transmitting Mode	EMI Receiver	
Test Mode: Test Procedure:	Remark:         E.U.T. Equipment Under Test         LISN: Line Impedence Stabilization N         Test table height=0.8m         Transmitting Mode         1. The E.U.T is connerimpedance stabilization provides a 500hm/s         measuring equipme         2. The peripheral device power through a Lice coupling impedance refer to the block photographs).         3. Both sides of A.C. conducted interference emission, the relative the interface cables	EMI Receiver etwork ected to an adapte zation network 50uH coupling im nt. ces are also conne ISN that provides e with 50ohm tern diagram of the line are checked nce. In order to fin e positions of equi must be changed	er through a line (L.I.S.N.). This pedance for the ected to the main a 50ohm/50ut nination. (Please test setup and test setup and ed for maximum ind the maximum ipment and all of according to
	Remark E U T: Equipment Under Test LISN: Line Impedence Stabilization N Test table height=0.8m Transmitting Mode 1. The E.U.T is conner impedance stabiliz provides a 500hm/s measuring equipme 2. The peripheral device power through a Li coupling impedance refer to the block photographs). 3. Both sides of A.C. conducted interferent emission, the relative	EMI Receiver etwork ected to an adapte zation network 50uH coupling im nt. ces are also conne ISN that provides e with 50ohm tern diagram of the line are checked nce. In order to fin e positions of equi must be changed	er through a line (L.I.S.N.). This pedance for the ected to the main a 50ohm/50ut nination. (Please test setup and test setup and ed for maximum ind the maximum ipment and all of according to



### 5.2.2. Test Instruments

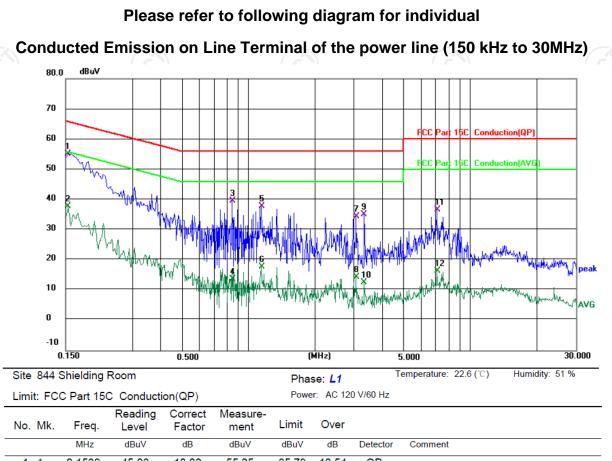
Conducted Emission Shielding Room Test Site (843)									
Equipment	Manufacturer	Model	Serial Number	Calibration Due					
EMI Test Receiver	R&S	ESCI3	100898	Jun. 29, 2024					
Line Impedance Stabilisation Newtork(LISN)	Schwarzbeck	NSLK 8126	8126453	Jan. 31, 2025					
Line-5	ТСТ	CE-05	/	Jul. 03, 2024					
EMI Test Software	Shurple Technology	EZ-EMC	1	1					



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#### 5.2.3. Test data

Report No.: TCT240328E018

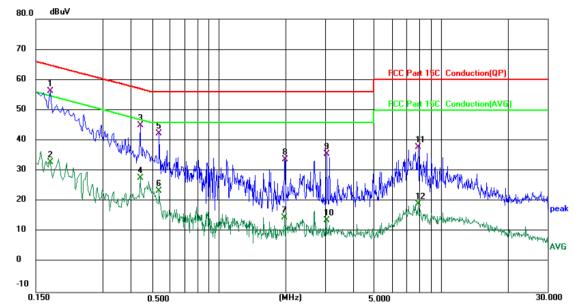


	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1 *	0.1539	45.23	10.02	55.25	65.79	-10.54	QP	
2	0.1539	27.75	10.02	37.77	55.79	-18.02	AVG	
3	0.8459	30.48	9.03	39.51	56.00	-16.49	QP	
4	0.8459	4.73	9.03	13.76	46.00	-32.24	AVG	
5	1.1459	27.85	9.91	37.76	56.00	-18.24	QP	
6	1.1459	7.94	9.91	17.85	46.00	-28.15	AVG	
7	3.0620	24.18	10.19	34.37	56.00	-21.63	QP	
8	3.0620	4.29	10.19	14.48	46.00	-31.52	AVG	
9	3.3420	24.86	10.22	35.08	56.00	-20.92	QP	
10	3.3420	2.39	10.22	12.61	46.00	-33.39	AVG	
11	7.0740	26.24	10.50	36.74	60.00	-23.26	QP	
12	7.0740	5.98	10.50	16.48	50.00	-33.52	AVG	

#### Note:

Freq. = Emission frequency in MHz Reading level  $(dB\mu V)$  = Receiver reading Corr. Factor (dB) = LISN factor + Cable loss Measurement  $(dB\mu V)$  = Reading level  $(dB\mu V)$  + Corr. Factor (dB)Limit  $(dB\mu V)$  = Limit stated in standard Margin (dB) = Measurement  $(dB\mu V)$  – Limits  $(dB\mu V)$ Q.P. =Quasi-Peak AVG =average

\* is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.



#### Conducted Emission on Neutral Terminal of the power line (150 kHz to 30MHz)

Site 844 Shielding Room					Pha	ase: N		Temperature: 22.6 (°C)	Humidity: 51 %
Limit: FCC Part 15C Conduction(QP)						er: AC 12	20 V/60 Hz		
No. Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment	

MHz         dBuV         dB         dBuV         dB         dBuV         dB         Detector         Comment           1         *         0.1737         46.28         10.00         56.28         64.78         -8.50         QP           2         0.1737         22.92         10.00         32.92         54.78         -21.86         AVG           3         0.4420         35.56         9.37         44.93         57.02         -12.09         QP           4         0.4420         18.33         9.37         27.70         47.02         -19.32         AVG           5         0.5380         33.03         9.28         42.31         56.00         -13.69         QP           6         0.5380         14.08         9.28         23.36         46.00         -22.64         AVG           7         1.9778         4.66         9.98         14.64         46.00         -31.36         AVG           8         1.9779         23.69         9.98         33.67         56.00         -22.33         QP           9         3.0539         25.51         10.11         35.62         56.00         -32.25         AVG           10	NO. N	VIK.	Fleq.	Level	Factor	ment	Linin	Over		
2       0.1737       22.92       10.00       32.92       54.78       -21.86       AVG         3       0.4420       35.56       9.37       44.93       57.02       -12.09       QP         4       0.4420       18.33       9.37       27.70       47.02       -19.32       AVG         5       0.5380       33.03       9.28       42.31       56.00       -13.69       QP         6       0.5380       14.08       9.28       23.36       46.00       -22.64       AVG         7       1.9778       4.66       9.98       14.64       46.00       -31.36       AVG         8       1.9779       23.69       9.98       33.67       56.00       -22.33       QP         9       3.0539       25.51       10.11       35.62       56.00       -20.38       QP         10       3.0539       3.64       10.11       13.75       46.00       -32.25       AVG         11       7.8780       27.34       10.52       37.86       60.00       -22.14       QP			MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
3       0.4420       35.56       9.37       44.93       57.02       -12.09       QP         4       0.4420       18.33       9.37       27.70       47.02       -19.32       AVG         5       0.5380       33.03       9.28       42.31       56.00       -13.69       QP         6       0.5380       14.08       9.28       23.36       46.00       -22.64       AVG         7       1.9778       4.66       9.98       14.64       46.00       -31.36       AVG         8       1.9779       23.69       9.98       33.67       56.00       -22.33       QP         9       3.0539       25.51       10.11       35.62       56.00       -20.38       QP         10       3.0539       3.64       10.11       13.75       46.00       -32.25       AVG         11       7.8780       27.34       10.52       37.86       60.00       -22.14       QP	1 *	*	0.1737	46.28	10.00	56.28	64.78	-8.50	QP	
4       0.4420       18.33       9.37       27.70       47.02       -19.32       AVG         5       0.5380       33.03       9.28       42.31       56.00       -13.69       QP         6       0.5380       14.08       9.28       23.36       46.00       -22.64       AVG         7       1.9778       4.66       9.98       14.64       46.00       -31.36       AVG         8       1.9779       23.69       9.98       33.67       56.00       -22.33       QP         9       3.0539       25.51       10.11       35.62       56.00       -20.38       QP         10       3.0539       3.64       10.11       13.75       46.00       -32.25       AVG         11       7.8780       27.34       10.52       37.86       60.00       -22.14       QP	2		0.1737	22.92	10.00	32.92	54.78	-21.86	AVG	
5       0.5380       33.03       9.28       42.31       56.00       -13.69       QP         6       0.5380       14.08       9.28       23.36       46.00       -22.64       AVG         7       1.9778       4.66       9.98       14.64       46.00       -31.36       AVG         8       1.9779       23.69       9.98       33.67       56.00       -22.33       QP         9       3.0539       25.51       10.11       35.62       56.00       -20.38       QP         10       3.0539       3.64       10.11       13.75       46.00       -32.25       AVG         11       7.8780       27.34       10.52       37.86       60.00       -22.14       QP	3		0.4420	35.56	9.37	44.93	57.02	-12.09	QP	
6       0.5380       14.08       9.28       23.36       46.00       -22.64       AVG         7       1.9778       4.66       9.98       14.64       46.00       -31.36       AVG         8       1.9779       23.69       9.98       33.67       56.00       -22.33       QP         9       3.0539       25.51       10.11       35.62       56.00       -20.38       QP         10       3.0539       3.64       10.11       13.75       46.00       -32.25       AVG         11       7.8780       27.34       10.52       37.86       60.00       -22.14       QP	4		0.4420	18.33	9.37	27.70	47.02	-19.32	AVG	
7       1.9778       4.66       9.98       14.64       46.00       -31.36       AVG         8       1.9779       23.69       9.98       33.67       56.00       -22.33       QP         9       3.0539       25.51       10.11       35.62       56.00       -20.38       QP         10       3.0539       3.64       10.11       13.75       46.00       -32.25       AVG         11       7.8780       27.34       10.52       37.86       60.00       -22.14       QP	5		0.5380	33.03	9.28	42.31	56.00	-13.69	QP	
8       1.9779       23.69       9.98       33.67       56.00       -22.33       QP         9       3.0539       25.51       10.11       35.62       56.00       -20.38       QP         10       3.0539       3.64       10.11       13.75       46.00       -32.25       AVG         11       7.8780       27.34       10.52       37.86       60.00       -22.14       QP	6		0.5380	14.08	9.28	23.36	46.00	-22.64	AVG	
9       3.0539       25.51       10.11       35.62       56.00       -20.38       QP         10       3.0539       3.64       10.11       13.75       46.00       -32.25       AVG         11       7.8780       27.34       10.52       37.86       60.00       -22.14       QP	7		1.9778	4.66	9.98	14.64	46.00	-31.36	AVG	
10       3.0539       3.64       10.11       13.75       46.00       -32.25       AVG         11       7.8780       27.34       10.52       37.86       60.00       -22.14       QP	8		1.9779	23.69	9.98	33.67	56.00	-22.33	QP	
11 7.8780 27.34 10.52 37.86 60.00 -22.14 QP	9		3.0539	25.51	10.11	35.62	56.00	-20.38	QP	
	10		3.0539	3.64	10.11	13.75	46.00	-32.25	AVG	
12 7.8780 8.59 10.52 19.11 50.00 -30.89 AVG	11		7.8780	27.34	10.52	37.86	60.00	-22.14	QP	
	12		7.8780	8.59	10.52	19.11	50.00	-30.89	AVG	

#### Note1:

Freq. = Emission frequency in MHz Reading level  $(dB\mu V)$  = Receiver reading Corr. Factor (dB) = LISN factor + Cable loss Measurement  $(dB\mu V)$  = Reading level  $(dB\mu V)$  + Corr. Factor (dB)Limit  $(dB\mu V)$  = Limit stated in standard Margin (dB) = Measurement  $(dB\mu V)$  – Limits  $(dB\mu V)$ Q.P. =Quasi-Peak AVG =average

\* is meaning the worst frequency has been tested in the frequency range 150 kHz to 30MHz.

#### Note2:

Measurements were conducted in all three channels (high, middle, low) and three modulation (GFSK, Pi/4 DQPSK, 8DPSK), and the worst case Mode (Middle channel and 8DPSK) was submitted only.

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# 5.3. Conducted Output Power

### 5.3.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (b	)(1)
Test Method:	KDB 558074 D01 v05r02	
Limit:	Section 15.247 (b) The maximum power of the intentional radiator s following: (1) For frequency hopp in the 2400-2483.5 MHz band en non-overlapping hopping channe hopping systems in the 5725-588 For all other frequency hopping s 2400-2483.5 MHz band 0.125 wa	shall not exceed the bing systems operating nploying at least 75 els, and all frequency 50 MHz band: 1 watt. Systems in the
Test Setup:	Spectrum Analyzer	EUT
Test Mode:	Transmitting mode with modulati	on
Test Procedure:	Use the following spectrum analy Span = approximately 5 times centered on a hopping channel RBW > the 20 dB bandwidth of the measured VBW ≥ RBW Sweep = auto Detector function = peak Trace = max hold Allow the trace to stabilize. Use the marker-to-peak function peak of the emission.	the 20 dB bandwidth,
Test Result:	PASS	

### 5.3.2. Test Instruments

Name	Manufacturer	Model No.	Serial Number	<b>Calibration Due</b>
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jun. 28, 2024
Combiner Box	Ascentest	AT890-RFB		





# 5.4. 20dB Occupy Bandwidth

### 5.4.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)						
Test Method:	KDB 558074 D01 v05r02						
Limit:	N/A						
Test Setup:	Spectrum Analyzer EUT						
Test Mode:	Transmitting mode with modulation						
Test Procedure:	<ol> <li>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.</li> <li>Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>Use the following spectrum analyzer settings for 20dB Bandwidth measurement. Span = approximately 2 to 5 times the 20 dB bandwidth, centered on a hopping channel; 1%≤RBW≤5% of the 20 dB bandwidth; VBW≥3RBW; Sweep = auto; Detector function = peak; Trace = max hold.</li> <li>Measure and record the results in the test report.</li> </ol>						
Test Result:	PASS						

### 5.4.2. Test Instruments

Name	Manufacturer	Model No.	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jun. 28, 2024
Combiner Box	Ascentest	AT890-RFB	/	/



# 5.5. Carrier Frequencies Separation

### 5.5.1. Test Specification

<u> </u>						
Test Requirement:	FCC Part15 C Section 15.247 (a)(1)					
Test Method:	KDB 558074 D01 v05r02					
Limit:	Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater.					
Test Setup:	Spectrum Analyzer EUT					
Test Mode:	Hopping mode					
Test Procedure:	<ol> <li>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.</li> <li>Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>Enable the EUT hopping function.</li> <li>Use the following spectrum analyzer settings: Span = wide enough to capture the peaks of two adjacent channels; RBW is set to approximately 30% of the channel spacing, adjust as necessary to best identify the center of each individual channel; VBW≥RBW; Sweep = auto; Detector function = peak; Trace = max hold.</li> <li>Use the marker-delta function to determine the separation between the peaks of the adjacent channels. Record the value in report.</li> </ol>					
Test Result:	PASS					

#### 5.5.2. Test Instruments

Name	Manufacturer	Model No.	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jun. 28, 2024
Combiner Box	Ascentest	AT890-RFB	<u> </u>	



# 5.6. Hopping Channel Number

### 5.6.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)
Test Method:	KDB 558074 D01 v05r02
Limit:	Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.
Test Setup:	Spectrum Analyzer EUT
Test Mode:	Hopping mode
Test Procedure:	<ol> <li>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.</li> <li>Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>Enable the EUT hopping function.</li> <li>Use the following spectrum analyzer settings: Span = the frequency band of operation; set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller; VBW≥RBW; Sweep = auto; Detector function = peak; Trace = max hold.</li> <li>The number of hopping frequency used is defined as the number of total channel.</li> <li>Record the measurement data in report.</li> </ol>
Test Result:	PASS
5.6.2 Test Instruments	

#### 5.6.2. Test Instruments

Name	Manufacturer	Model No.	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jun. 28, 2024
Combiner Box	Ascentest	AT890-RFB	/	/

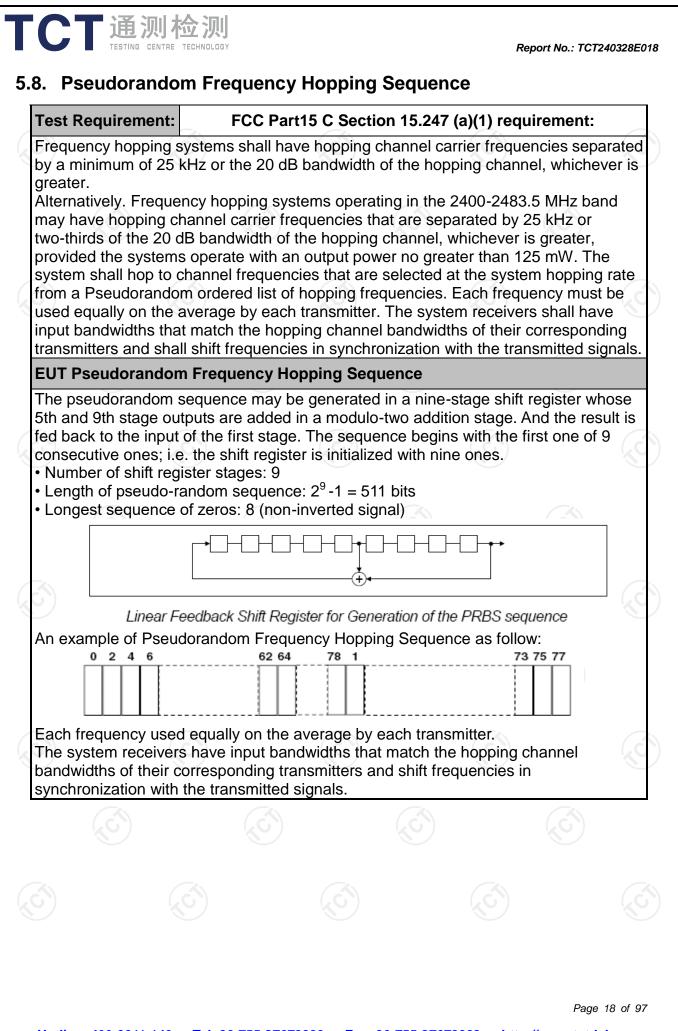
## 5.7. Dwell Time

### 5.7.1. Test Specification

FCC Part15 C Section 15.247 (a)(1)
KDB 558074 D01 v05r02
The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.
Spectrum Analyzer EUT
Hopping mode
<ol> <li>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.</li> <li>Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>Enable the EUT hopping function.</li> <li>Use the following spectrum analyzer settings: Span = zero span, centered on a hopping channel; RBW shall be ≤ channel spacing and where possible RBW should be set &gt;&gt; 1 / T, where T is the expected dwell time per channel; VBW≥RBW; Sweep = as necessary to capture the entire dwell time per hopping channel; Detector function = peak; Trace = max hold.</li> <li>Measure and record the results in the test report.</li> </ol>
PASS

#### 5.7.2. Test Instruments

Name	Manufacturer	Model No.	Serial Number	<b>Calibration Due</b>
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jun. 28, 2024
Combiner Box	Ascentest	AT890-RFB		





# 5.9. Conducted Band Edge Measurement

### 5.9.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	KDB 558074 D01 v05r02
Limit:	In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.
Test Setup:	Spectrum Analyzer EUT
Test Mode:	Transmitting mode with modulation
Test Procedure:	<ol> <li>Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>Set RBW = 100 kHz (≥1% span=10MHz), VBW = 300 kHz (≥RBW). Band edge emissions must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100kHz RBW. The attenuation shall be 30 dB instead of 20 dB when RMS conducted output power procedure is used.</li> <li>Enable hopping function of the EUT and then repeat step 2 and 3.</li> <li>Measure and record the results in the test report.</li> </ol>
Test Result:	PASS

#### 5.9.2. Test Instruments

Name	Manufacturer	Model No.	Serial Number	<b>Calibration Due</b>
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jun. 28, 2024
Combiner Box	Ascentest	AT890-RFB	/	/



# 5.10. Conducted Spurious Emission Measurement

### 5.10.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (d)
Test Method:	KDB 558074 D01 v05r02
Limit:	In any 100 kHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. In addition, radiated emissions which fall in the restricted bands must also comply with the radiated emission limits.
Test Setup:	Spectrum Analyzer EUT
Test Mode:	Transmitting mode with modulation
Test Procedure:	<ol> <li>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.</li> <li>Set to the maximum power setting and enable the EUT transmit continuously.</li> <li>Set RBW = 100 kHz, VBW = 300kHz, scan up through 10th harmonic. All harmonics / spurs must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 kHz RBW.</li> <li>Measure and record the results in the test report.</li> <li>The RF fundamental frequency should be excluded against the limit line in the operating frequency band.</li> </ol>
Test Result:	PASS

### 5.10.2. Test Instruments

Name	Manufacturer	Model No.	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jun. 28, 2024
Combiner Box	Ascentest	AT890-RFB		

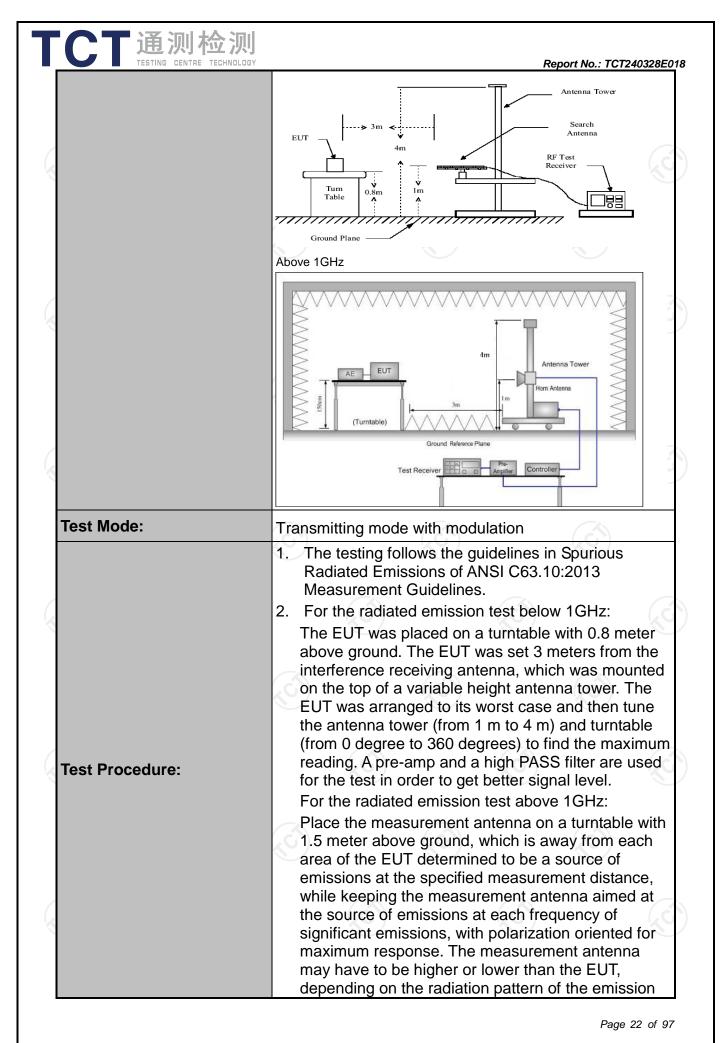


# 5.11. Radiated Spurious Emission Measurement

### 5.11.1. Test Specification

TCT通测检测 TESTING CENTRE TECHNOLOGY

ANSI C63.10 9 kHz to 25 0						
9 kHz to 25 (	9 kHz to 25 GHz					
3 m	1	9		R		
Horizontal &	Vertical					
Frequency	Detector	RBW	VBW		Remark	
9kHz- 150kHz Quasi-peak			1kHz		i-peak Value	
150kHz- 30MHz	Quasi-peak	9kHz	30kHz	Quas	i-peak Value	
30MHz-1GHz			300KHz		i-peak Value	
Above 1GHz		/			eak Value	
	Peak				erage Value	
Frequen	су		-		asurement nce (meters)	
0.009-04	190			DISID	300	
					30	
		30			30	
	1				3	
	<i></i>			-( <u>,</u> ć	3	
				3		
Frequency     Field Strength (microvolts/meter)       Above 1GHz     500       5000     5000			Ŭ			
Dis EUT 0.Sm	stance = 3m					
		(,	C)			
	Frequency 9kHz- 150kHz 150kHz- 30MHz 30MHz-1GHz Above 1GHz Frequency 0.009-0.4 0.490-1.5 1.705-3 30-88 88-216 216-96 Above 9 Frequency Above 1GHz For radiated emis	9kHz- 150kHz       Quasi-peak         150kHz-       Quasi-peak         30MHz-1GHz       Quasi-peak         30MHz-1GHz       Quasi-peak         Above 1GHz       Peak         Peak       Peak         0.009-0.490       0.490-1.705         1.705-30       30-88         88-216       216-960         Above 960       Frequency         Frequency       Field (micro         Above 1GHz       For radiated emissions below         Distance = 3m       Image: State of the state of t	FrequencyDetectorRBW9kHz-150kHzQuasi-peak200Hz150kHz-Quasi-peak9kHz30MHzQuasi-peak120KHzAbove 1GHzPeak1MHzPeak1MHzFrequencyField Stre (microvolts)0.009-0.4902400/F(i)0.490-1.70524000/F(i)1.705-303030-8810088-216150216-960200Above 960500FrequencyField Strength (microvolts/meter)Above 1GHz50050005000For radiated emissions below 30MHzDistance = 3mUnit tableUnit tableUnit tableUnit tableUnit tableImage: Image: Imag	FrequencyDetectorRBWVBW9kHz-150kHzQuasi-peak200Hz1kHz150kHz-Quasi-peak9kHz30kHz30MHzQuasi-peak120KHz300KHz30MHz-1GHzQuasi-peak120KHz300KHzAbove 1GHzPeak1MHz3MHz0.009-0.4902400/F(KHz)10Hz0.009-0.4902400/F(KHz)1.705-303030-8810088-216150216-960200Above 960500Field Strength (microvolts/meter)Above 1GHz500330For radiated emissions below 30MHzDistance = 3mFor radiated emissions below 30MHzDistance = 3mGround Plane	Frequency       Detector       RBW       VBW         9kHz- 150kHz       Quasi-peak       200Hz       1kHz       Quasi- 30kHz         30MHz-1GHz       Quasi-peak       9kHz       300KHz       Quasi- 300KHz         30MHz-1GHz       Quasi-peak       120KHz       300KHz       Quasi- 300KHz         30MHz-1GHz       Quasi-peak       120KHz       300KHz       Quasi- 300KHz         Above 1GHz       Peak       1MHz       30Hz       Peak         Frequency       Field Strength (microvolts/meter)       Measurement       Distance         0.009-0.490       2400/F(KHz)       0.490-1.705       24000/F(KHz)       0.490-1.705         1.705-30       30       30       30       30       30         30-88       100       88-216       150       216-960       200         Above 960       500       500       30       30       30         Frequency       Field Strength (microvolts/meter)       Measurement Distance (meters)       Distance       100         Above 1GHz       500       3       30       3       30       3         Above 1GHz       500       3       3       3       3       3         Above 1GHz	



	n n a r 3. 4	neasurement antern naximizes the emis intenna elevation for estricted to a range above the ground of Set to the maximu EUT transmit contin Use the following s (1) Span shall wide emission being (2) Set RBW=120 for f>1GHz ; VE Sweep = auto = max hold for (3) For average m correction fact	num signal. The final nna elevation shall be ssions. The measuren or maximum emission e of heights of from 1 r reference ground pl m power setting and nuously. pectrum analyzer set e enough to fully capt measured; kHz for f < 1 GHz, RE BW≥RBW; ; Detector function = r peak neasurement: use dut for method per cycle = On time/100 r	e that which nent ns shall be m to 4 m ane. I enable th tings: ture the BW=1MHz peak; Trac ty cycle millisecond
	Ĩ	length of type Average Emis Level + 20*log Corrected Read	number of type 1 puls 1 pulses, etc. sion Level = Peak Er g(Duty cycle) ding: Antenna Factor	es, L1 is nission + Cable
Fest results:	PAS	Where N1 is n length of type Average Emis Level + 20*log Corrected Read Loss + Read Le	number of type 1 puls 1 pulses, etc. sion Level = Peak Er g(Duty cycle)	es, L1 is nission + Cable
Fest results:	PAS	Where N1 is n length of type Average Emis Level + 20*log Corrected Read Loss + Read Le	number of type 1 puls 1 pulses, etc. sion Level = Peak Er g(Duty cycle) ding: Antenna Factor	es, L1 is nission + Cable
Fest results:	PAS	Where N1 is n length of type Average Emis Level + 20*log Corrected Read Loss + Read Le	number of type 1 puls 1 pulses, etc. sion Level = Peak Er g(Duty cycle) ding: Antenna Factor	es, L1 is nission + Cable
Fest results:	PAS	Where N1 is n length of type Average Emis Level + 20*log Corrected Read Loss + Read Le	number of type 1 puls 1 pulses, etc. sion Level = Peak Er g(Duty cycle) ding: Antenna Factor	es, L1 is nission + Cable



# 5.11.2. Test Instruments

	Radiated Em	nission Test Site	e (966)	
Name of Equipment	Manufacturer	octurer Model Serial Number		Calibration Due
EMI Test Receiver	R&S	ESIB7	100197	Jun. 29, 2024
Spectrum Analyzer	R&S	FSQ40	200061	Jun. 29, 2024
Pre-amplifier	SKET	LNPA_0118G- 45	SK2021012 102	Jan. 31, 2025
Pre-amplifier	Pre-amplifier SKET LNPA		SK2021092 03500	Jan. 31, 2025
Pre-amplifier	HP	8447D	2727A05017	Jun. 27, 2024
Loop antenna	Schwarzbeck	FMZB1519B	00191	Jul. 02, 2024
Broadband Antenna	Schwarzbeck	VULB9163	340	Jul. 01, 2024
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Jul. 01, 2024
Horn Antenna	Schwarzbeck	BBHA 9170	00956	Feb. 02, 2025
Antenna Mast	Keleto	RE-AM	/	/
Coaxial cable	SKET	RC-18G-N-M	1	Jan. 31, 2025
Coaxial cable	SKET	RC_40G-K-M	/	Jan. 31, 2025
EMI Test Software	Shurple Technology	EZ-EMC		1

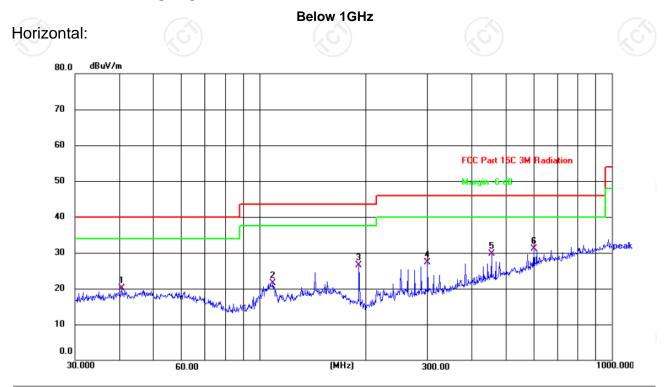


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#### 5.11.3. Test Data

TCT通测检测 TCT通测检测

#### Please refer to following diagram for individual



Site: 3m Anechoic Chamber Temperature: 25.6(℃) Humidity: 53 % Polarization: Horizontal

Limit:	FCC	Part	15C	3M	Radiatio
--------	-----	------	-----	----	----------

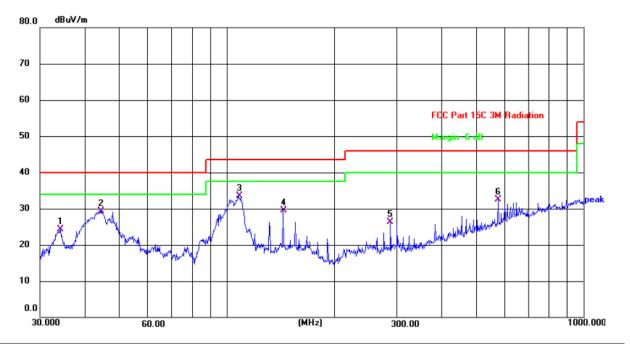
Power:AC 120 V/60 Hz

Limit:	FCC Part 150	C 3M Radia	ation		Pov	ver:AC	120 V/60	Hz	,
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	40.7014	5.98	14.12	20.10	40.00	-19.90	QP	Ρ	
2	109.4116	9.83	11.67	21.50	43.50	-22.00	QP	Ρ	
3	191.7450	14.92	11.49	26.41	43.50	-17.09	QP	Ρ	
4	300.3672	12.92	14.32	27.24	46.00	-18.76	QP	Ρ	
5	455.9058	11.45	18.29	29.74	46.00	-16.26	QP	Ρ	
6 *	601.4265	9.45	21.66	31.11	46.00	-14.89	QP	Ρ	

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Report No.: TCT240328E018

#### Vertical:



Site: 3m Anechoic Chamber Temperature: 25.6(°C) Humidity: 53 % Polarization: Vertical

Limit <sup>.</sup>	FCC Pa	art 15C 3M	Radiation
	FUU Fe		Radiation

Limit:	FCC Part 150	C 3M Radia		Po	wer:AC				
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector	P/F	Remark
1	34.2760	10.94	13.31	24.25	40.00	-15.75	QP	Ρ	
2	44.2752	15.54	13.84	29.38	40.00	-10.62	QP	Ρ	
3 *	108.2666	21.87	11.56	33.43	43.50	-10.07	QP	Ρ	
4	143.8294	15.16	14.34	29.50	43.50	-14.00	QP	Ρ	
5	287.9904	11.76	14.55	26.31	46.00	-19.69	QP	Ρ	
6	576.6443	11.61	20.83	32.44	46.00	-13.56	QP	Ρ	

Note: 1. The low frequency, which started from 9KHz~30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

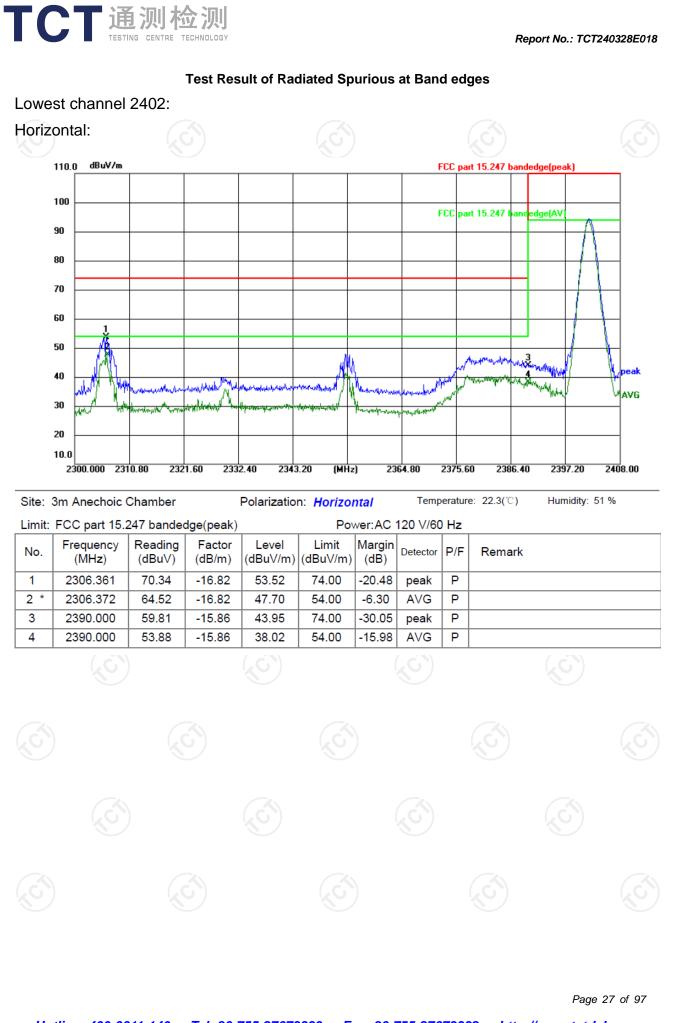
2. Measurements were conducted in all three channels (high, middle, low) and three modulation (GFSK, Pi/4 DQPSK, 8DPSK) and the worst case Mode (Middle channel and 8DPSK) was submitted only.

- 3. Freq. = Emission frequency in MHz
- Measurement  $(dB\mu V/m) = Reading \, level \, (dB\mu V) + Corr. Factor \, (dB)$ Correction Factor = Antenna Factor + Cable loss - Pre-amplifier Limit  $(dB\mu V/m) = Limit$  stated in standard
- $Over (dB) = Measurement (dB\mu V/m) Limits (dB\mu V/m)$

\* is meaning the worst frequency has been tested in the test frequency range.

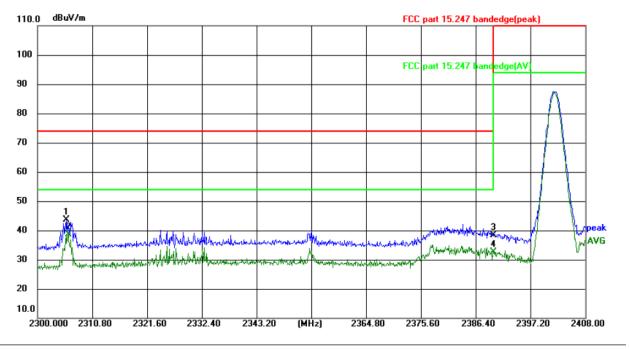
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Report No.: TCT240328E018



Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

#### Vertical:



Site: 3m Anechoic Chamber Polarization: Vertical Temperature: 22.3(°C) Humidity: 51 %

Limit: FCC part 15.247 bandedge(peak) Power:AC 120 V/60 Hz

	-								
No.	Frequency (MHz)	Reading (dBu∀)	Factor (dB/m)	Level (dBuV/m)		Margin (dB)	Detector	P/F	Remark
1	2305.670	60.42	-16.83	43.59	74.00	-30.41	peak	Ρ	
2 *	2306.145	55.34	-16.82	38.52	54.00	-15.48	AVG	Ρ	
3	2390.000	54.25	-15.86	38.39	74.00	-35.61	peak	Ρ	
4	2390.000	48.50	-15.86	32.64	54.00	-21.36	AVG	Ρ	

Report No.: TCT240328E018 Highest channel 2480: Horizontal: 110.0 dBuV/m 100 90 80 part 15.247 bandedge(pe FCC 70 60 FCC part 15.247 I andedge(AV 50 and a state of the second Muddynamound relationships and the second M 40 wareport mpul MUNICIPAL P dwalker white approved with manuterinte march 30 AVG

Site: 3m Anechoic Chamber Polarization: Horizontal Temperature: 22.3(°C) Humidity: 51 %

2489.00

Limit: FCC part 15.247 bandedge(peak) Power:AC 120 V/60 Hz

2485.50

20 10.0

2475.000 2478.50

2482.00

No.	Frequency (MHz)	Reading (dBuV)		Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	2483.500	66.93	-15.87	51.06	74.00	-22.94	peak	Ρ	
2 *	2483.500	64.24	-15.87	48.37	54.00	-5.63	AVG	Ρ	

(MHz)

2496.00

2499.50

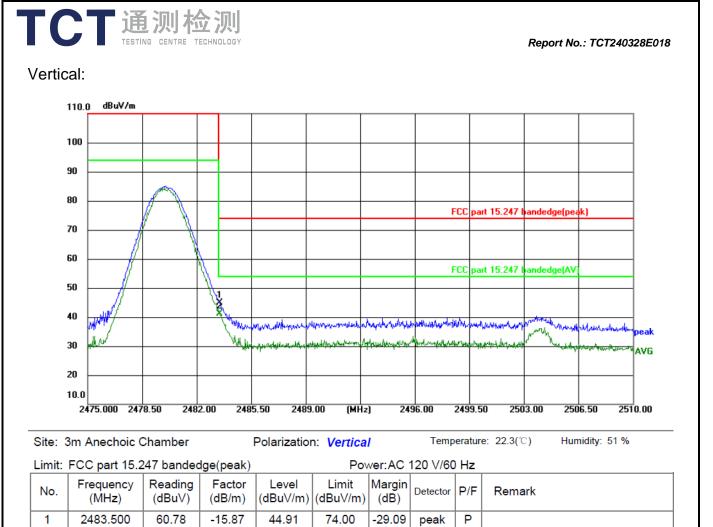
2503.00

2506.50

2510.00

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Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com



**Note:** Measurements were conducted in all three modulation (GFSK, Pi/4 DQPSK, 8DPSK), and the worst case Mode (8DPSK) was submitted only.

54.00

-12.80

Ρ

AVG

2483.500

2 \*

57.07

-15.87

41.20

#### Above 1GHz

Ī	Modulation Type: 8DPSK										
Low channel: 2402 MHz											
	Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBµV)	AV reading (dBuV)	Correction Factor (dB/m)	Peak	n Level AV (dBµV/m)	Peak limit (dBµV/m)	AV limit (dBµV/m)	Margin (dB)	
	4804	Н	46.04		0.66	46.70		74	54	-7.30	
	7206	Н	36.18		9.50	45.68		74	54	-8.32	
Ī		Н					~~~~				
Ī	(	<b>G</b>		0.)		()	.G`)		$(\mathcal{O})$		
Ī	4804	V	44.66		0.66	45.32		74	54	-8.68	
Ī	7206	V	35.43		9.50	44.93		74	54	-9.07	
Ī		V									
						λ.					

Middle cha	nnel: 2441	MHz			)		10		K V
Frequency (MHz)	Ant. Pol. H/V	Peak reading (dBµV)	AV reading (dBµV)	Correction Factor (dB/m)	Peak		Peak limit (dBµV/m)		Margin (dB)
4882	Н	44.98		0.99	45.97		74	54	-8.03
7323	KOĤ)	34.74	-1,0	9.87	44.61		74	54	-9.39
	Ĥ					<u> </u>			
4882	V	46.31		0.99	47.30		74	54	-6.70
7323	V	36.22		9.87	46.09		74	54	-7.91
· · · · ·	V			~~ X	/				

#### High channel: 2480 MHz

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Ant Dol	Peak	AV	Correction	Emission Level		Poak limit	A\/ limit	Margin			
		reading	Factor	Peak	AV	(dBuV/m)	(dBuV/m)	(dB)			
11/ V	(dBµV)	(dBµV)	(dB/m)	(dBµV/m)	(dBµV/m)	(abp v/m)	(abp v/m)	(GD)			
Н	45.55		1.33	46.88		74	54	-7.12			
Н	35.07		10.22	45.29		74	54	-8.71			
Н											
	(.G)		(.0			(.c)		(.C			
V	45.76		1.33	47.09		74	54	-6.91			
V	36.51		10.22	46.73		74	54	-7.27			
V											
ſ	Ant. Pol. H/V H H	Ant. Pol. H/V Peak reading (dBµV) H 45.55 H 35.07 H V 45.76 V 36.51	Ant. Pol. H/V         Peak reading (dBμV)         AV reading (dBμV)           H         45.55            H         35.07            H             V         45.76            V         36.51	Ant. Pol. H/V         Peak reading (dBµV)         AV reading (dBµV)         Correction Factor (dB/m)           H         45.55          1.33           H         35.07          10.22           H           10.22           V         45.76          1.33           V         36.51          1.22	Ant. Pol. H/V         Peak reading (dBµV)         AV reading (dBµV)         Correction Factor (dB/m)         Emission Peak (dBµV/m)           H         45.55          1.33         46.88           H         35.07          10.22         45.29           H               V         45.76          1.33         47.09           V         36.51          10.22         46.73	Ant. Pol. H/V         Peak reading (dBµV)         AV reading (dBµV)         Correction Factor (dB/m)         Emission Level Peak (dBµV/m)           H         45.55          1.33         46.88            H         35.07          10.22         45.29            H           1.33         46.88            V         45.76          1.33         47.09            V         36.51          10.22         46.73	Ant. Pol. H/V         Peak reading (dBµV)         AV reading (dBµV)         Correction Factor (dB/m)         Emission Level Peak (dBµV/m)         Peak limit (dBµV/m)           H         45.55          1.33         46.88          74           H         35.07          10.22         45.29          74           H           1.33         47.09          74           V         45.76          1.33         47.09          74           V         36.51          10.22         46.73          74	$\begin{array}{c c c c c c c c c c c c c c c c c c c $			

#### Note:

1. Emission Level=Peak Reading + Correction Factor; Correction Factor= Antenna Factor + Cable loss - Pre-amplifier

2. Margin (dB) = Emission Level (Peak) (dB $\mu$ V/m)-Average limit (dB $\mu$ V/m)

3. The emission levels of other frequencies are very lower than the limit and not show in test report.

4. Measurements were conducted from 1 GHz to the 10th harmonic of highest fundamental frequency.

5. Data of measurement shown "---"in the above table mean that the reading of emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.

6. Measurements were conducted in all three modulation (GFSK, Pi/4 DQPSK, 8DPSK), and the worst case Mode (8DPSK) was submitted only.

7. All the restriction bands are compliance with the limit of 15.209.

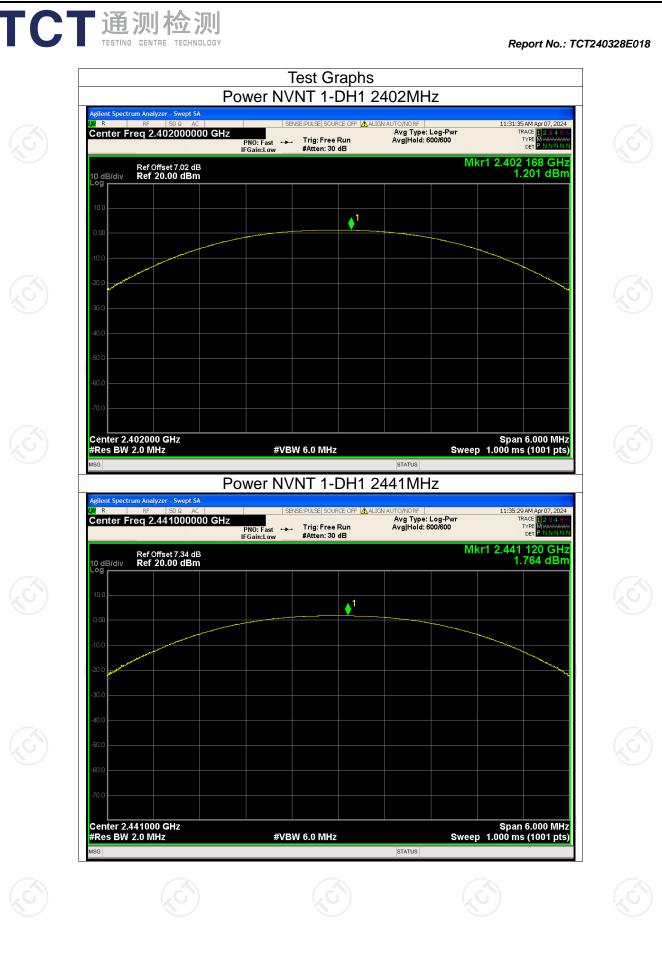


# **Appendix A: Test Result of Conducted Test**

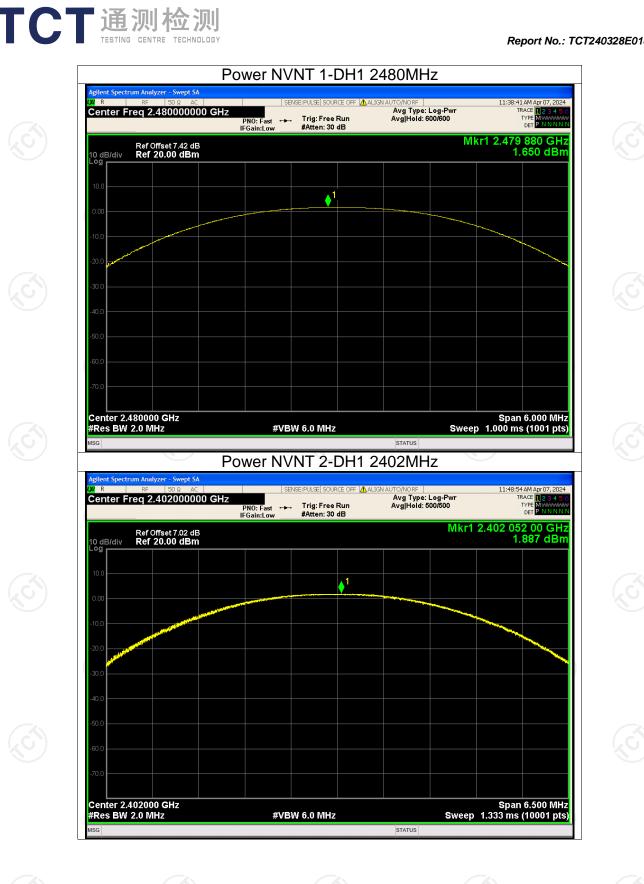
	Maximum Conducted Output Power											
Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict							
NVNT	1-DH1	2402	1.20	21	Pass							
NVNT	1-DH1	2441	1.76	21	Pass							
NVNT	1-DH1	2480	1.65	21	Pass							
NVNT	2-DH1	2402	1.89	21	Pass							
NVNT	2-DH1	2441	2.42	21	Pass							
NVNT	2-DH1	2480	2.47	21	Pass							
NVNT	3-DH1	2402	2.14	21	Pass							
NVNT	3-DH1	2441	2.64	21	Pass							
NVNT	3-DH1	2480	2.56	21	Pass							



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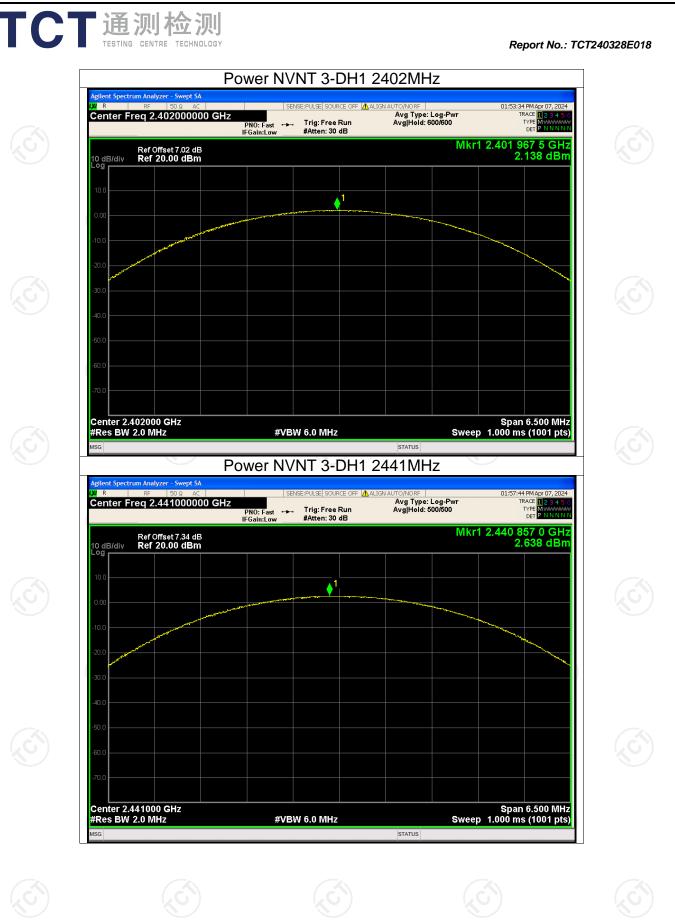


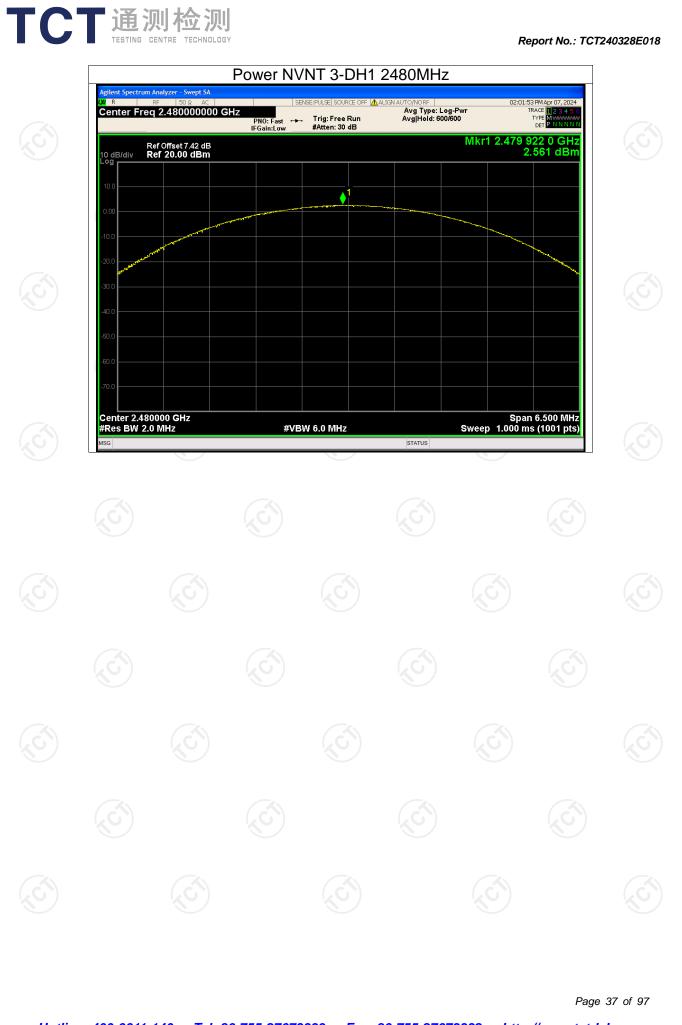
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Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com



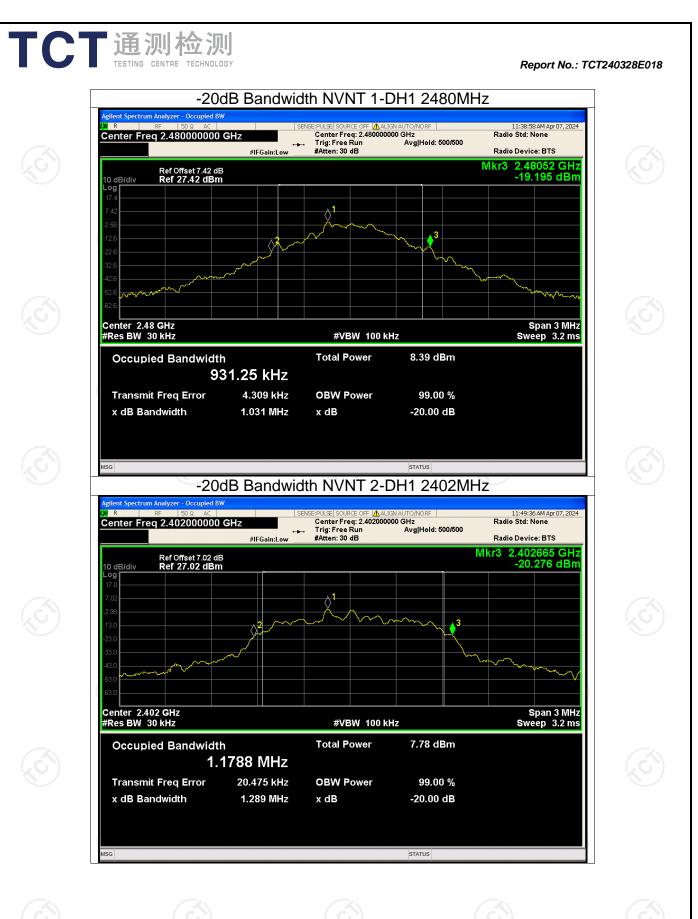
Condition	Mode	Frequency (MHz)	-20 dB Bandwidth (MHz)	Verdict					
NVNT	1-DH1	2402	1.001	Pass					
NVNT 🚫	1-DH1	2441	1.023	Pass					
NVNT	1-DH1	2480	1.031	Pass					
NVNT	2-DH1	2402	1.289	Pass					
NVNT	2-DH1	2441	1.292	Pass					
NVNT	2-DH1	2480	1.289	Pass					
NVNT	3-DH1	2402	1.259	Pass					
NVNT	3-DH1	2441	1.253	Pass					
NVNT	3-DH1	2480	1.263	Pass					
X			KO)	•					

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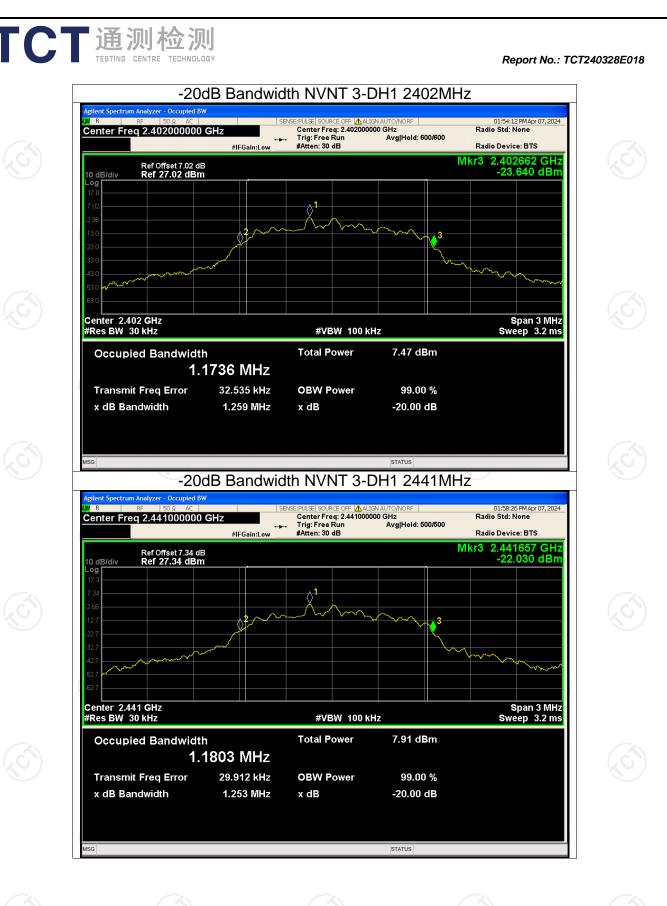


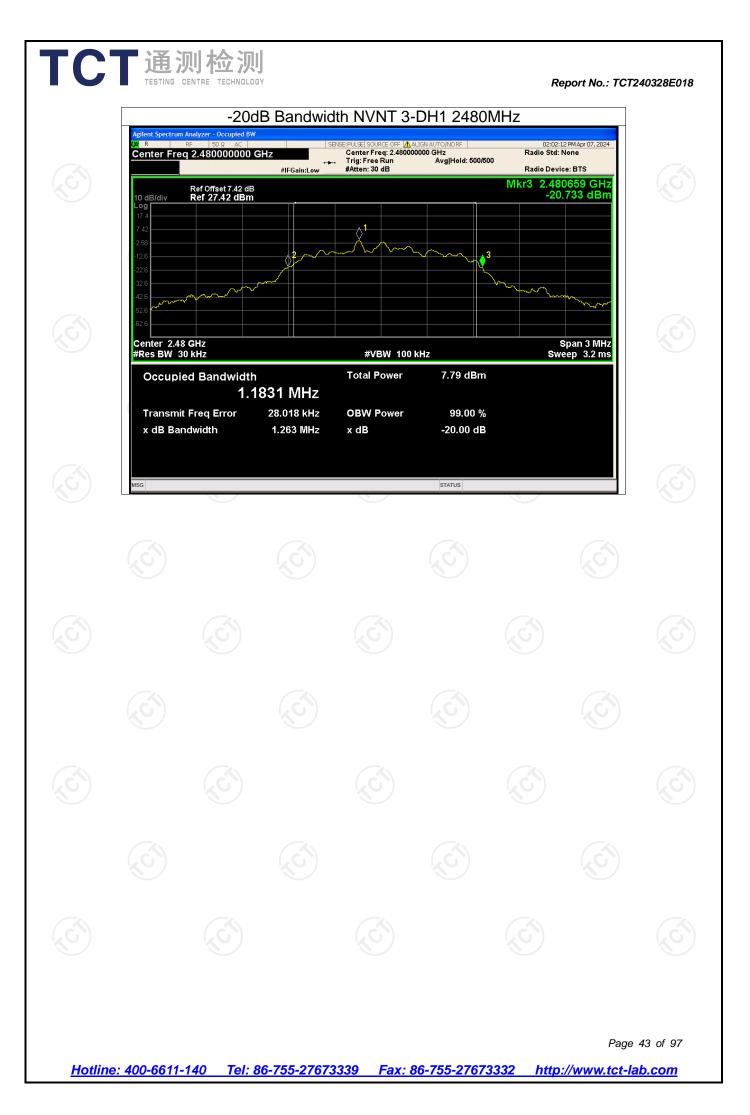






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Contaition	Mode	(MHz)	(MHz)	(MHz)	(MHz)	Verdiet
NVNT	1-DH1	2401.854	2402.852	0.998	0.687	Pass
NVNT	1-DH1	2440.852	2441.860	1.008	0.687	Pass
NVNT	1-DH1	2479.01	2480.008	0.998	0.687	Pass
NVNT	2-DH1	2401.854	2402.860	1.006	0.861	Pass
NVNT	2-DH1	2440.852	2441.854	1.002	0.861	Pass
NVNT	2-DH1	2479.01	2480.010	1	0.861	Pass
NVNT	3-DH1	2401.854	2402.856	1.002	0.842	Pass
NVNT	3-DH1	2440.854	2441.860	1.006	0.842	Pass
NVNT	3-DH1	2479.01	2480.010		0.842	Pass

## Carrier Frequencies Separation Hopping Freq1 Hopping Freq2



Mode

Condition

Report No.: TCT240328E018

Verdict

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Limit

**HFS** 

# $\Diamond^2$ Span 2.000 MHz Sweep 1.000 ms (1001 pts) #VBW 300 kHz FUNCTION FUNCTION WIDTH 0.815 dBm 0.781 dBm 2.401 854 GHz 2.402 852 GHz

Test Graphs CFS NVNT 1-DH1 2402MHz

INSE:PULSE SOURCE OFF 🖪 ALIGN

PNO: Wide 😱 Trig: Free Run IFGain:Low #Atten: 30 dB

Avg Type: Log-Pwi Avg|Hold>100/100

**U**R

10 a Log

um Analyzer - Swept SA

Ref Offset 7.02 dB Ref 20.00 dBm

∎1

Center Freq 2.402500000 GHz

Center 2.402500 GHz #Res BW 100 kHz

N 1 f N 1 f

234

# CFS NVNT 1-DH1 2441MHz

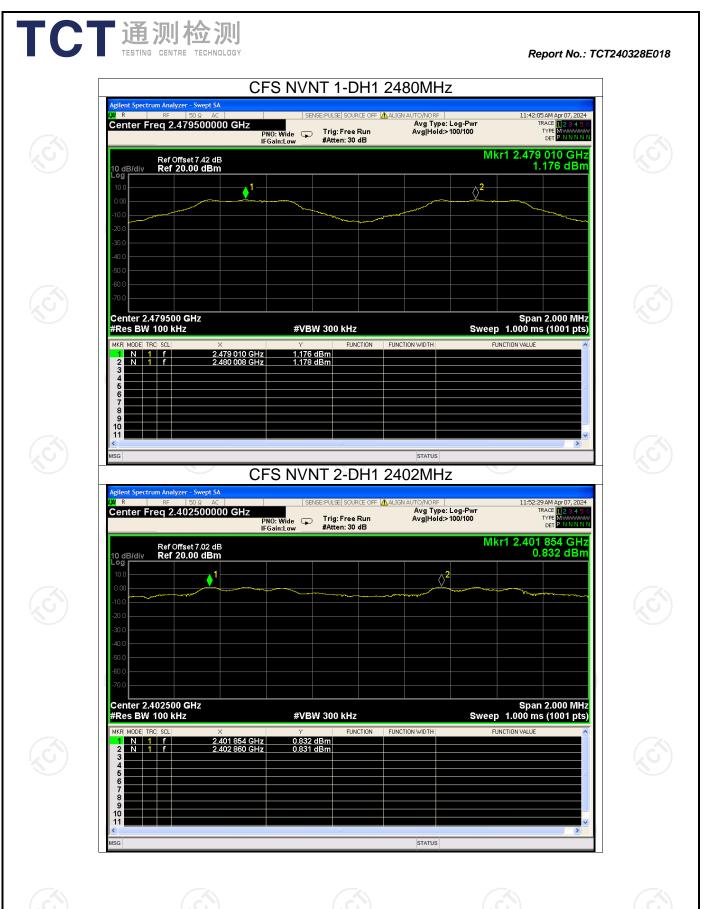
Agilent Spectrum Analyzer - Swept SA			
XX R RF 50Ω AC	SENSE:PULSE SOURCE OFF 🛕 AL	IGN AUTO/NORF Avg Type: Log-Pwr	11:37:56 AM Apr 07, 2024 TRACE <b>1 2 3 4 5 6</b>
Center Freq 2.441500000 GHz	PNO: Wide 🖵 Trig: Free Run IFGain:Low #Atten: 30 dB	Avg Type: Log-rwr Avg Hold≫100/100	TYPE MWWWW DET PNNNN
Ref Offset 7.34 dB 10 dB/div Ref 20.00 dBm		М	kr1 2.440 852 GHz 1.264 dBm
10.0 10.0		<mark>2</mark>	
·10.0			
-20.0			
-40.0			
-60.0			
-70.0			
Center 2.441500 GHz #Res BW 100 kHz	#VBW 300 kHz	Swee	Span 2.000 MHz p 1.000 ms (1001 pts)
MKR MODE TRC SCL X		INCTION WIDTH F	UNCTION VALUE
1         N         1         f         2.440         852         GI           2         N         1         f         2.441         860         GI           3         4         -			
5 6 7 8			
9 10 11			~
<	Ш		>
MSG		STATUS	

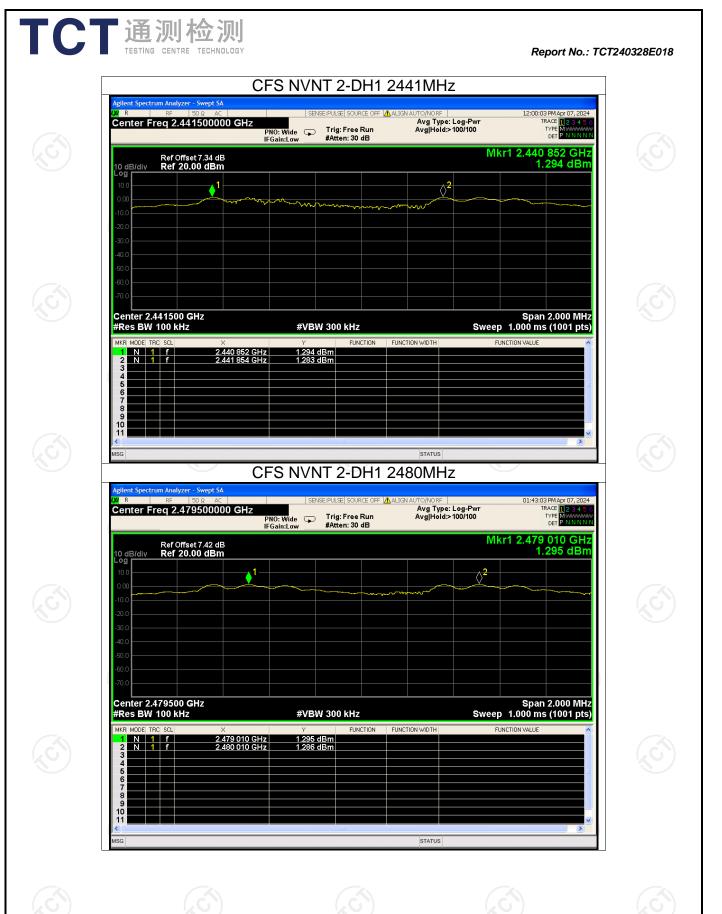
Report No.: TCT240328E018

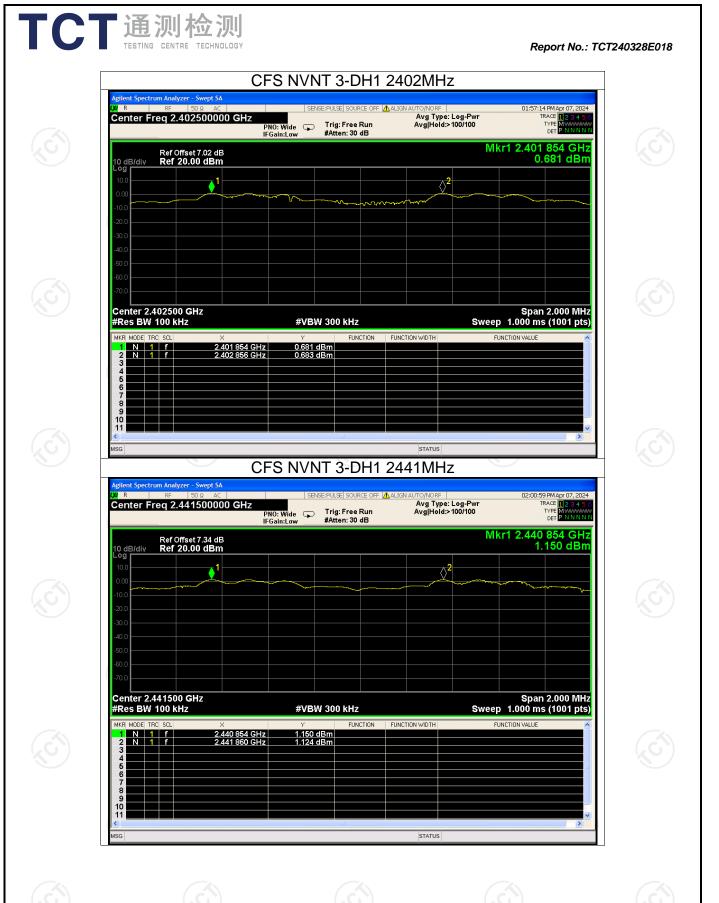
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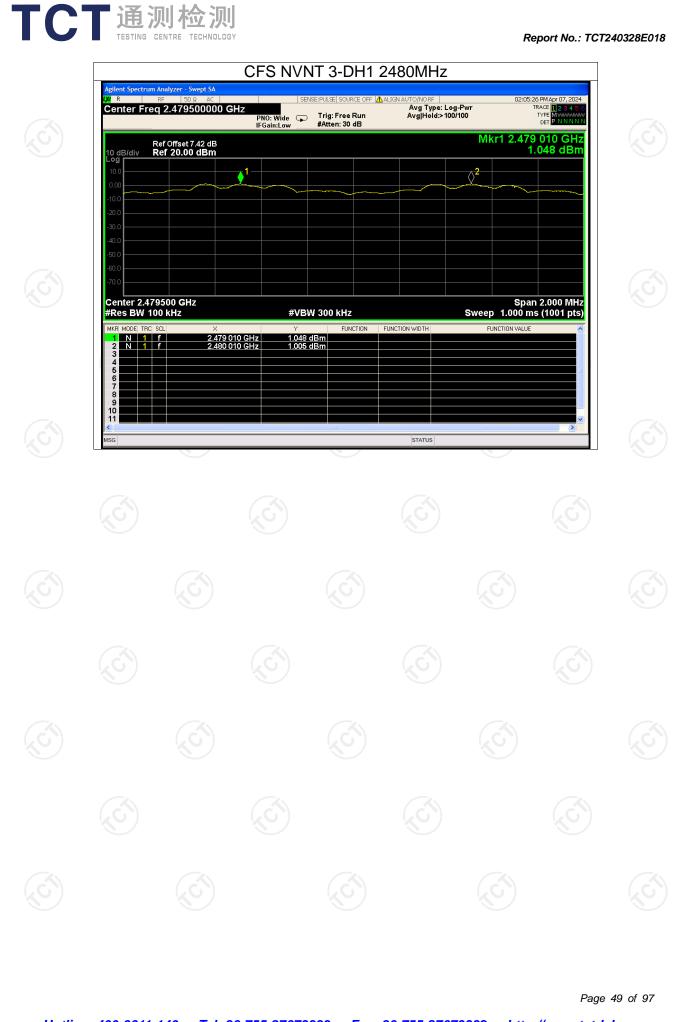
TRACE

Mkr1 2.401 854 GHz 0.815 dBm









Condition	Mode	Frequency (MHz)	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	NVNT 1-DH1 2402		No-Hopping	-51.28	-20	Pass
NVNT	1-DH1	2480	No-Hopping	-49.58	-20	Pass
NVNT	2-DH1	2402	No-Hopping	-50.68	-20	Pass
NVNT	2-DH1	2480	No-Hopping	-50.55	-20	Pass
NVNT	3-DH1	2402	No-Hopping	-50.60	-20	Pass
NVNT	3-DH1	2480	No-Hopping	-49.99	-20	Pass

TCT	通测检测 TESTING CENTRE TECHNOLOGY	
		Band Edge

### Report No.: TCT240328E018



STATUS

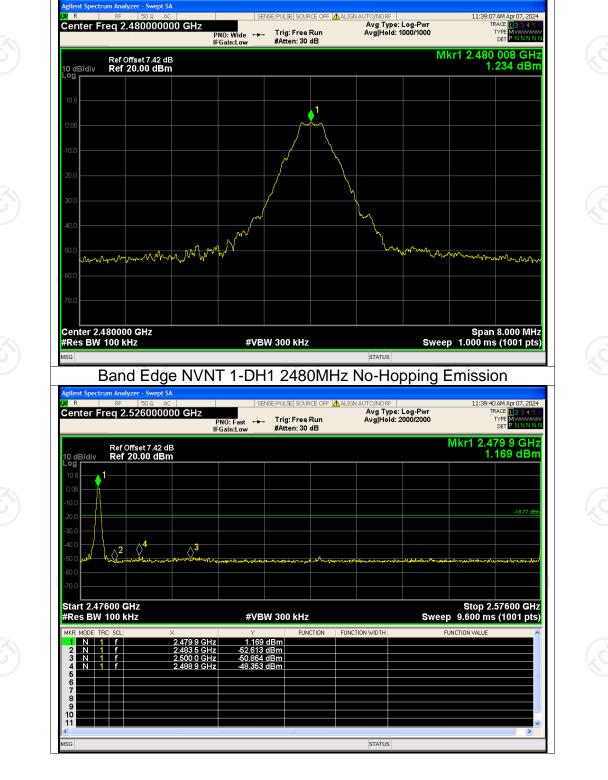
### Band Edge NVNT 1-DH1 2402MHz No-Hopping Ref m Analı U R SENSE:PULSE| SOURCE OFF [ 🚹 ALIGN Apr 07. :41 AM TRACE Center Freq 2.402000000 GHz Avg Type: Log-Pwr Avg|Hold: 2000/2000 TYPE MMMMMM DET P N N N N PNO: Wide ---- Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.402 016 GHz 0.882 dBm Ref Offset 7.02 dB Ref 20.00 dBm 10 dB/div Loa 1 MM <u>\_</u>\_\_\_\_\_\_ mm Center 2.402000 GHz #Res BW 100 kHz Span 8.000 MHz Sweep 1.000 ms (1001 pts) #VBW 300 kHz STATUS Band Edge NVNT 1-DH1 2402MHz No-Hopping Emission ilent Spectrum Analyzer - Swept SA SENSE:PULSE SOURCE OFF ALIGN AUTO/NORF AVG Type: Log-Pwr Avg Type: Log-Pwr Tela: Free Run Avg|Hold: 2000/2000 33:14 AM Apr 07, 2024 TRACE 123456 TYPE MWWWWW DET PNNNN **U**R Center Freq 2.356000000 GHz PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.401 9 GHz 0.878 dBm Ref Offset 7.02 dB Ref 20.00 dBm 10 dB/div Log 1 $\langle \rangle^4$ $\Diamond^3$ Stop 2.40600 GHz Sweep 9.600 ms (1001 pts) Start 2.30600 GHz #Res BW 100 kHz #VBW 300 kHz FUNCTION WIDTH FUNCTION FUNCTION VALUE SHz SHz 84 dBm 80 dBm N 5 8 9 10 11

Test Graphs

**FCT**通测检测 TESTING CENTRE TECHNOLOGY



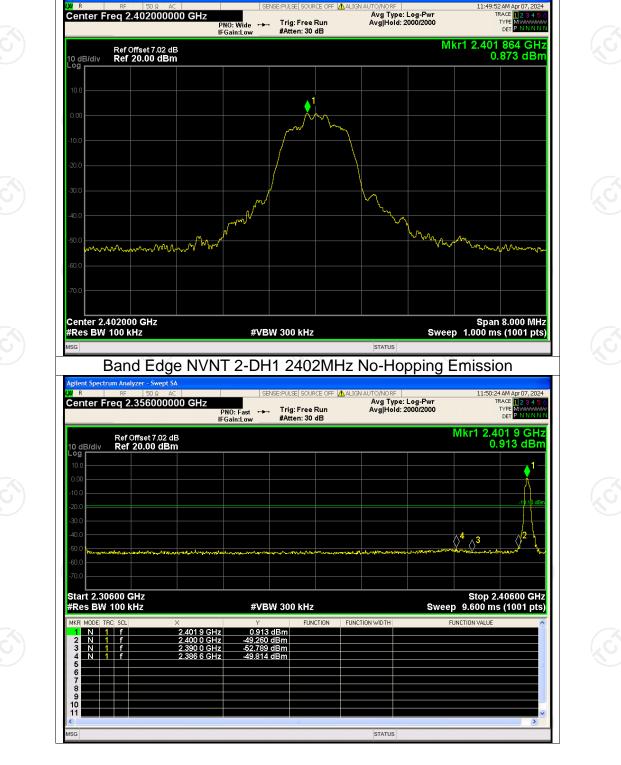
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Band Edge NVNT 1-DH1 2480MHz No-Hopping Ref

Report No.: TCT240328E018

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Band Edge NVNT 2-DH1 2402MHz No-Hopping Ref

#### Report No.: TCT240328E018

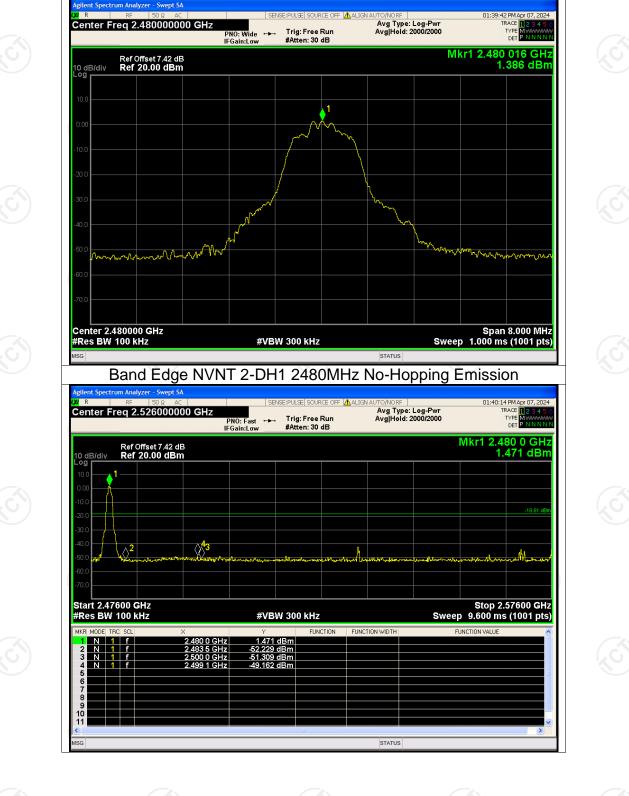








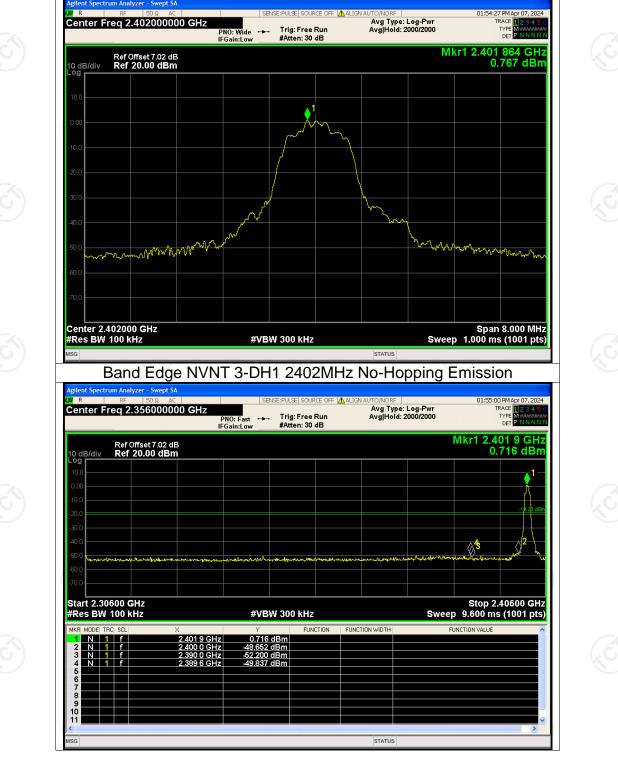




Band Edge NVNT 2-DH1 2480MHz No-Hopping Ref

Report No.: TCT240328E018

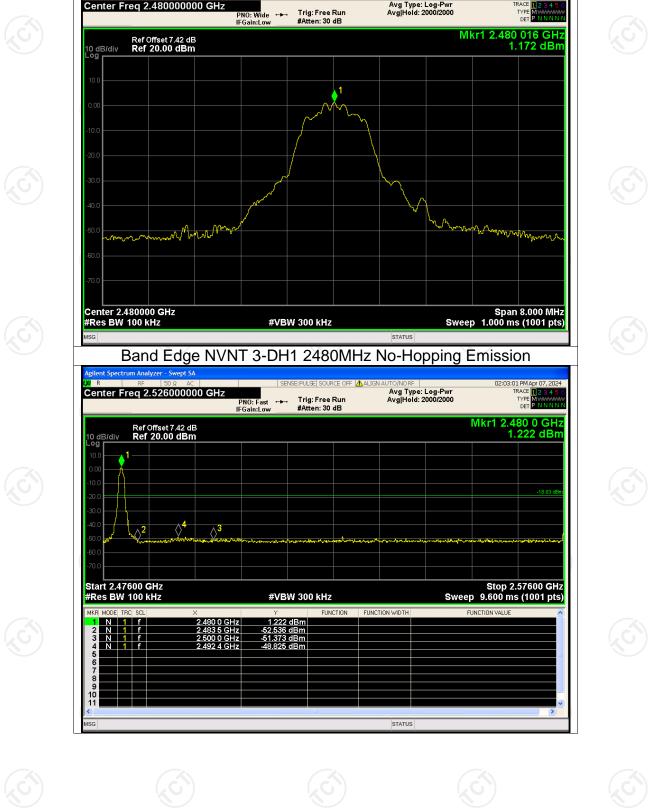
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Band Edge NVNT 3-DH1 2402MHz No-Hopping Ref

Report No.: TCT240328E018

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Band Edge NVNT 3-DH1 2480MHz No-Hopping Ref

SENSE: PULSE SOURCE OFF 🛕 ALIGN A

Avg Type: Log-Pwr Avg|Hold: 2000/2000

Center Freg 2.480000000 GHz

**U**R

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TRACE

TYPE MWAAAAAAA DET P N N N N N

Condition	Mode	Frequency (MHz)	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Hopping	-47.74	-20	Pass
NVNT	1-DH1	2480	Hopping	-46.22	-20	Pass
NVNT	2-DH1	2402	Hopping	-47.45	-20	Pass
NVNT	2-DH1	2480	Hopping	-48.33	-20	Pass
NVNT	3-DH1	2402	Hopping	-48.34	-20	Pass
NVNT 🐇	3-DH1	2480	Hopping	-47.54	-20	Pass

## **Band Edge(Hopping)**



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# Band Edge(Hopping) NVNT 1-DH1 2402MHz Hopping Ref 00 AM Apr 07, 2024 TRACE 1 2 3 4 5 TYPE MWWWWW DET P N N N N PULSE SOURCE OFF 🔼 AL Center Freq 2.402000000 GHz Avg Type: Log-Pwr Avg|Hold: 5000/5000 PNO: Wide ---- Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.404 864 GHz 0.893 dBm Ref Offset 7.02 dB Ref 20.00 dBm WN

## Center 2.402000 GHz #Res BW 100 kHz Span 8.000 MHz Sweep 1.000 ms (1001 pts) #VBW 300 kHz STATUS

1 Mm

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Test Graphs

nt Spectrum A

U F

10 dB/div Loa

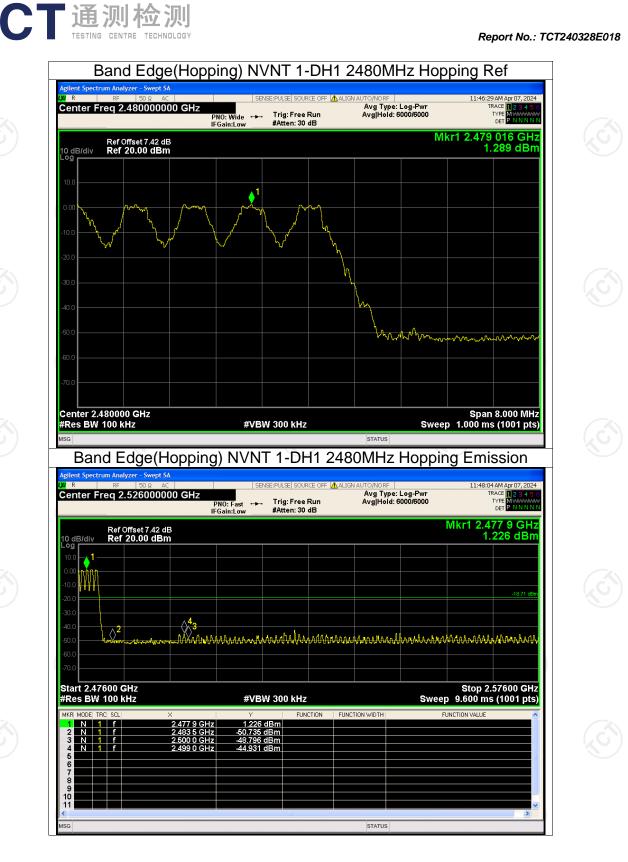
# Band Edge(Hopping) NVNT 1-DH1 2402MHz Hopping Emission

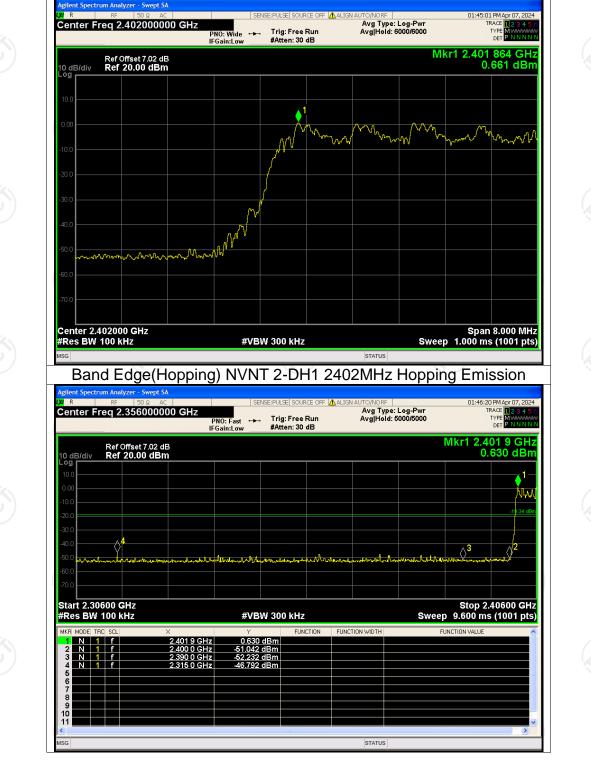
lent Spectrum Analyzer - Sw	AC	OTHOS		T. A. ALTONIAL	TONOR		11.44.1	0.444.4-07.07
enter Freq 2.3560	00000 GHz	PNO: East ↔	:PULSE SOURCE O Trig: Free Run #Atten: 30 dB		Avg Type: Avg Hold: 5			L9 AM Apr 07, 2 IRACE 1 2 3 4 TYPE MWWWA DET PNNN
Ref Offset 7. dB/div Ref 20.00							Mkr1 2.4 0	l03 9 GI .987 dB
).0								
.0								$\square$
.0								-19.11
.0								
						1 1/	A .5	
.0 mathalithater	wyunntun	Muunnuu	uhtun tunun.	withmethe	-t-h-h-h-h-h-h-h-h-h-h-h-h-h-h-h-h-h-h-	1 Y	nutuhundumhumeh	wanne
0 .0	miltonature	Hillinnunnun	ulitaa Ambaa	mbbreak	And the Area	1 Y	rudul i demonstration	
art 2.30600 GHz	MI (Incastro)		ىلىكىكەر <del>ب</del> ەر مەرىمەر مەرەپىرىكە مەرەپىرىكە مەرەپىرىكە مەرەپىرىكە مەرەپىرىكە مەرەپىرىكە مەرەپىرىكە مەرەپىرىكە مەرەپ 300 kHz		And Second	which have	nudd yn dernol yw	
art 2.30600 GHz tes BW 100 kHz	×	#VBW	300 KHz		M WIDTH	utut And., Swee	Stop 2	
Image: state	× 2.403 9 GHz 2.400 0 GHz 2.390 0 GHz	#VBW 0.987 dB -51.851 dB -51.933 dB	300 kHz FUNCTION			utut And., Swee	Stop 2 9.600 m	
Image: Constraint of the second sec	× 2.403 9 GHz 2.400 0 GHz	#VBW 0.987 dB -51.851 dB	300 kHz FUNCTION			utut And., Swee	Stop 2 9.600 m	
Image: constraint of the second sec	× 2.403 9 GHz 2.400 0 GHz 2.390 0 GHz	#VBW 0.987 dB -51.851 dB -51.933 dB	300 kHz FUNCTION			utut And., Swee	Stop 2 9.600 m	
art 2.30600 GHz es BW 100 kHz	× 2.403 9 GHz 2.400 0 GHz 2.390 0 GHz	#VBW 0.987 dB -51.851 dB -51.933 dB	300 kHz FUNCTION			utut And., Swee	Stop 2 9.600 m	

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Band Edge(Hopping) NVNT 2-DH1 2402MHz Hopping Ref

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## **U**R SENSE: PULSE SOURCE OFF ALIGN Center Freg 2.402000000 GHz Avg Type: Log-Pwr Avg|Hold: 6000/6000 TDACE PNO: Wide ↔→→ Trig: Free Run IFGain:Low #Atten: 30 dB TYPE MWWWWW DET P N N N N Mkr1 2.405 016 GHz 0.694 dBm Ref Offset 7.02 dB Ref 20.00 dBm 10 dB/div Log mannan nm nn Mm Center 2.402000 GHz #Res BW 100 kHz Span 8.000 MHz Sweep 1.000 ms (1001 pts) #VBW 300 kHz STATUS Band Edge(Hopping) NVNT 3-DH1 2402MHz Hopping Emission sense:Pulse| Source off Align Auto/Norf Avg Type: Log-Pwr Trig: Free Run Avg|Hold: 5000/5000 02:08:18 PM Ap TRACE TYPE DET Center Freq 2.356000000 GHz PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.402 9 GHz 0.716 dBm Ref Offset 7.02 dB Ref 20.00 dBm 10 dB/div Log

# Ø $\wedge^3$ Start 2.30600 GHz #Res BW 100 kHz Stop 2.40600 GHz Sweep 9.600 ms (1001 pts) #VBW 300 kHz FUNCTION WIDTH FUNCTION





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STATUS



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Condition	Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	-40.90	-20	Pass
NVNT	1-DH1	2441	-39.65	-20	Pass
NVNT	1-DH1	2480	-41.14	-20	Pass
NVNT	2-DH1	2402	-41.01	-20	Pass
NVNT	2-DH1	2441	-50.75	-20	Pass
NVNT	2-DH1	2480	-40.51	-20	Pass
NVNT 🚫	3-DH1	2402	-40.09	-20	Pass
NVNT	3-DH1	2441	-40.68	-20	Pass
NVNT	3-DH1	2480	-40.64	-20	Pass

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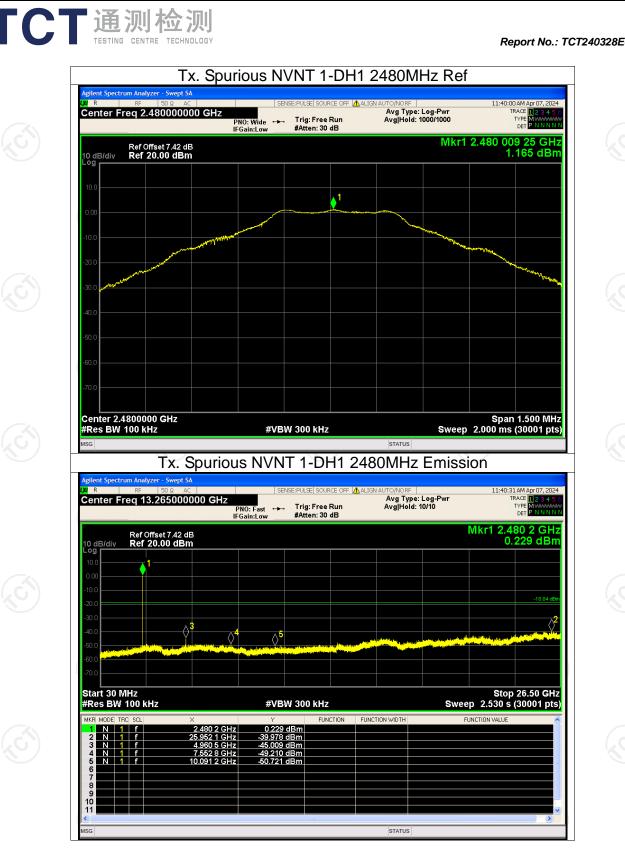
Report No.: TCT240328E018

Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

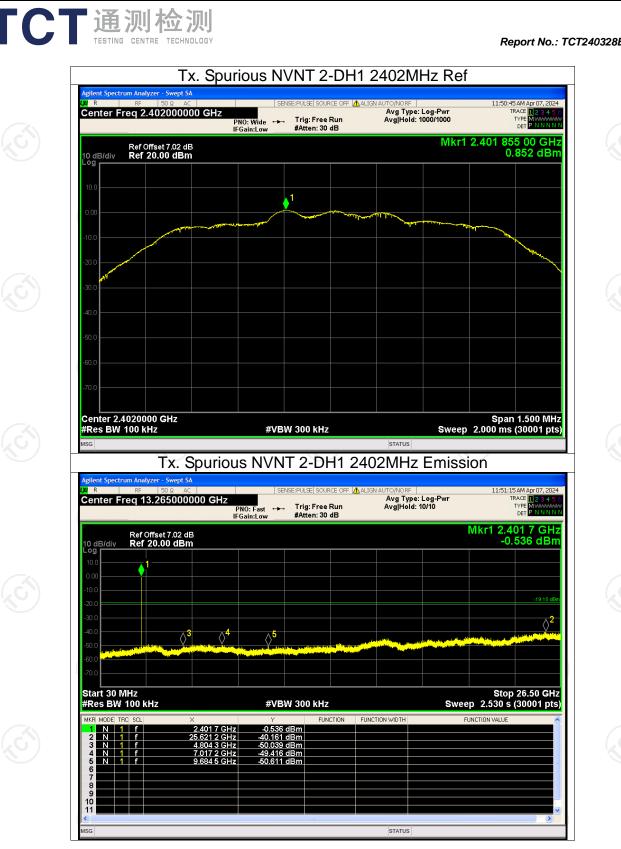






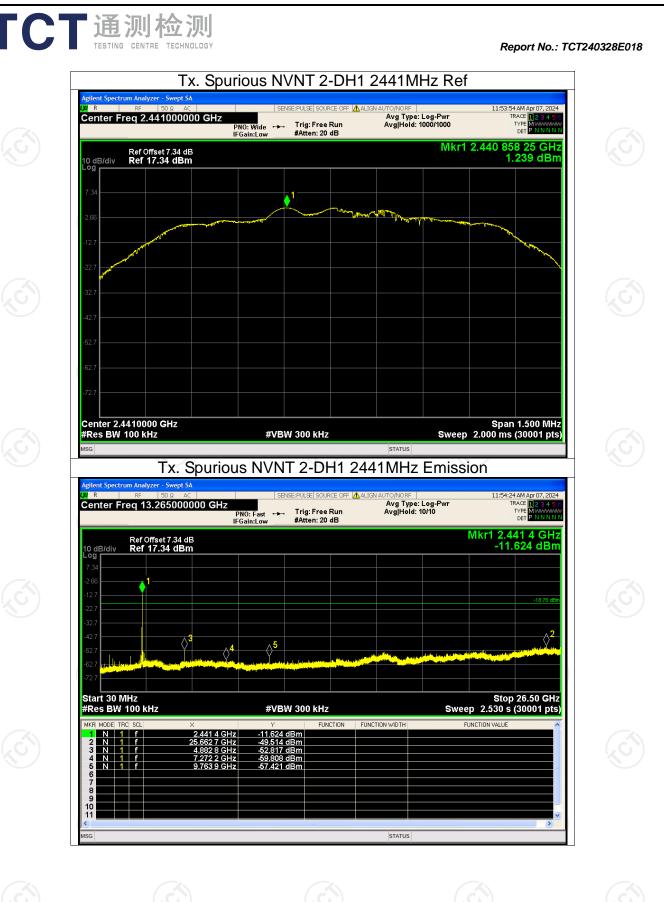


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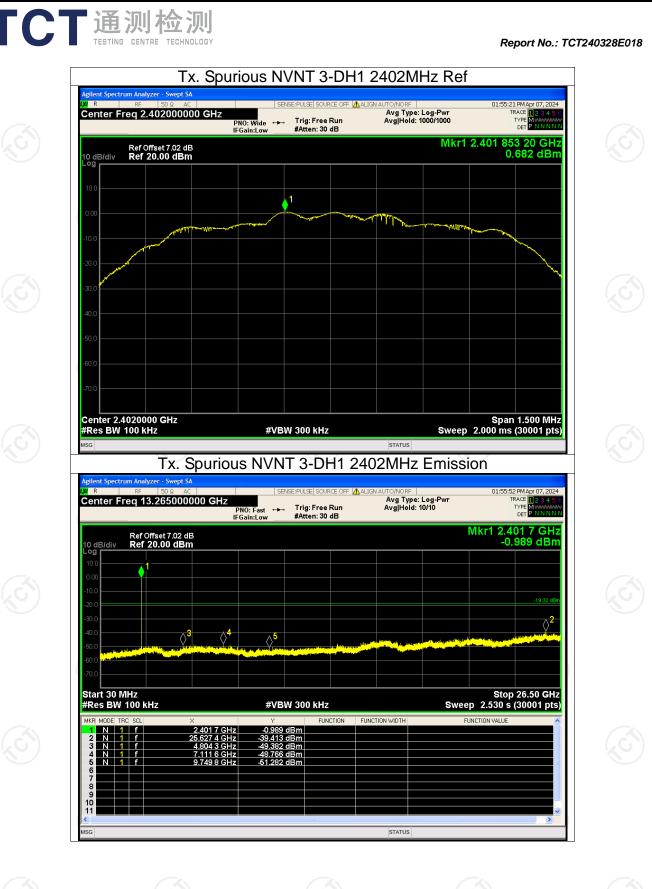
Report No.: TCT240328E018

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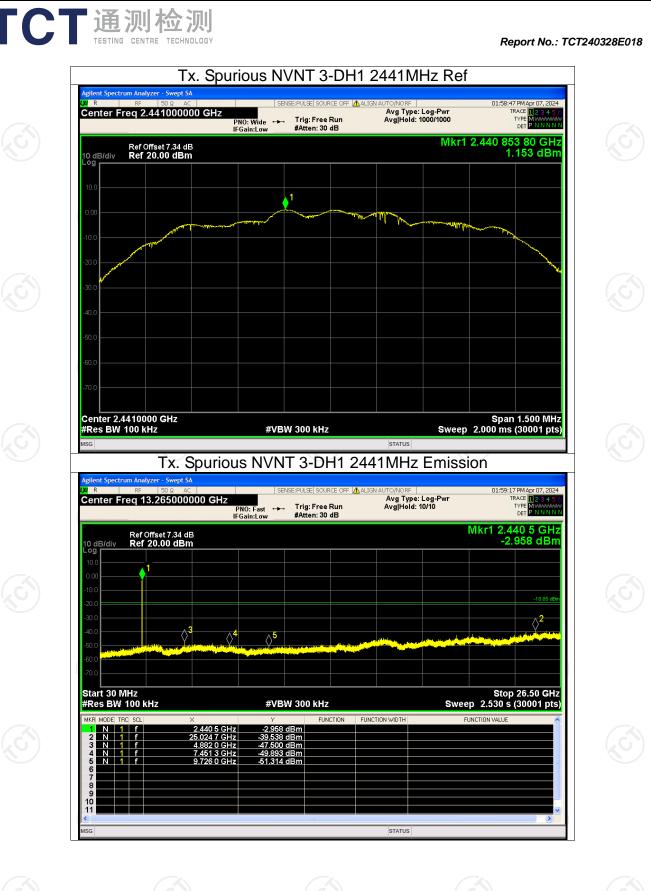


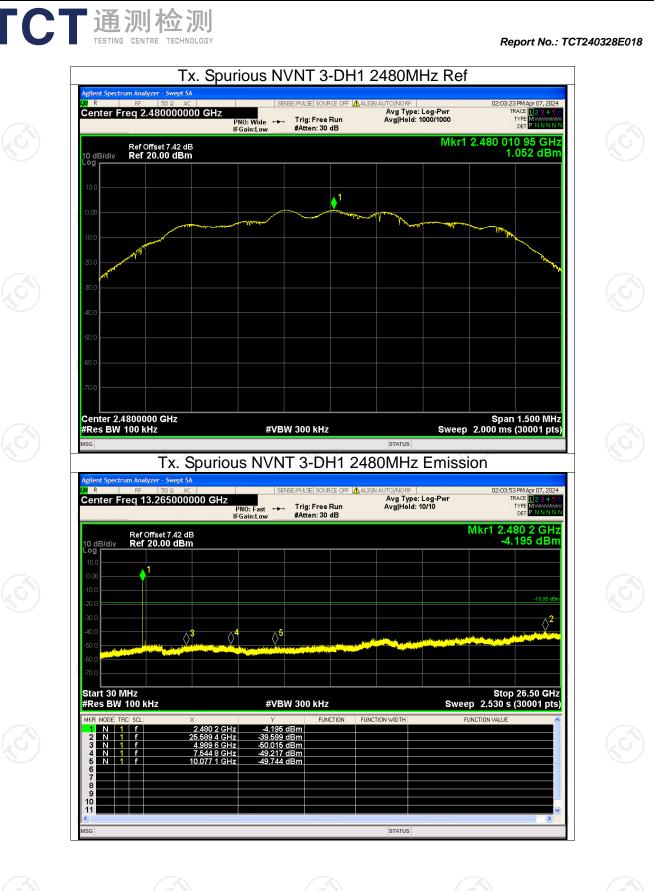
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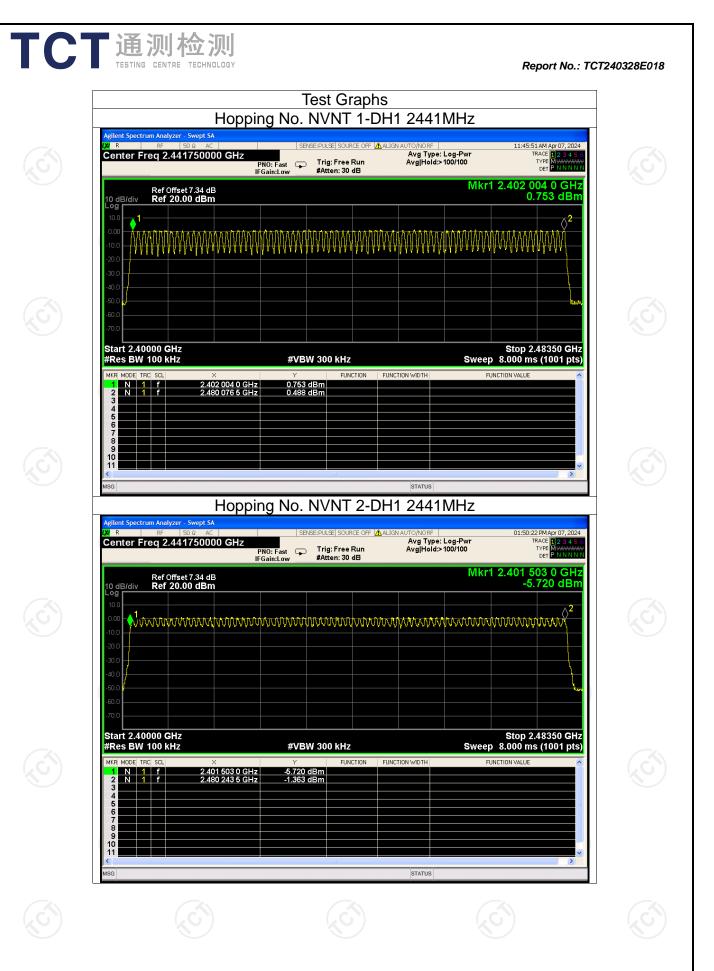
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is is	Verd Pas Pas	Limit 15 15	umber	lopping N 79 79	1-DH1 2-DH1	Condition NVNT NVNT	0
S	Pas	15		79	3-DH1	NVNT	



806 dBm	02:10:46 Pwr TF 100 Mkr1 2.401 53	Avg Type: Log Avg Hold>100/	vse:Pulse source off 🚹 Trig: Free Run #Atten: 30 dB	HZ PNO: Fast IFGain:Low	Analyzer - Swept SA RE 50 Q AC 2.441750000 G ef Offset 7.34 dB ef 20.00 dBm	Center Fre	
48350 GHz s (1001 pts)	Stop 2. Sweep 8.000 ms FUNCTION VALUE		W 300 kHz dBm dBm	5 GHz -5.806	0 kHz al × f <u>2.401 586</u>	-30.0 -40.0 -50.0 -50.0 -50.0 -70.0 <b>Start 2.4000</b> #Res BW 10 MKR MODE TRC 1 N 1 2 N 1 3 4 5 6 6 7 8	
×		STATUS				9 10 11 MSG	

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ГСТ		<b> 检测</b>				Rep	ort No.: TC	T240328E018
			Dwe	II Time				
Condition	Mode	Frequency (MHz)	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	0.38	121.60	320	31600	400	Pass
NVNT	1-DH3	2441	1.63	260.80	160	31600	400	Pass
NVNT	1-DH5	2441	2.88	290.88	101	31600	400	Pass
NVNT	2-DH1	2441	0.39	124.02	318	31600	400	Pass
NVNT	2-DH3	2441	1.64	272.24	166	31600	400	Pass
NVNT	2-DH5	2441	2.89	326.57	113	31600	400	Pass
NVNT	3-DH1	2441	0.39	123.24	316	31600	400	Pass
NVNT	3-DH3	2441	1.64	255.84	156	31600	400	Pass

2.89

300.56

104

31600

400

Pass

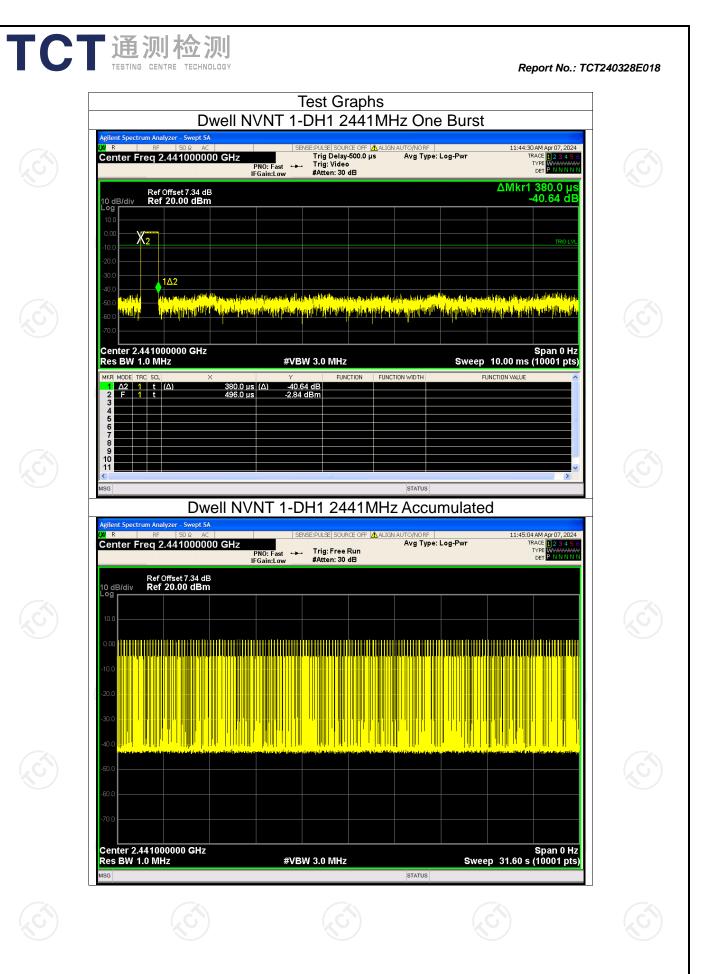
3-DH5

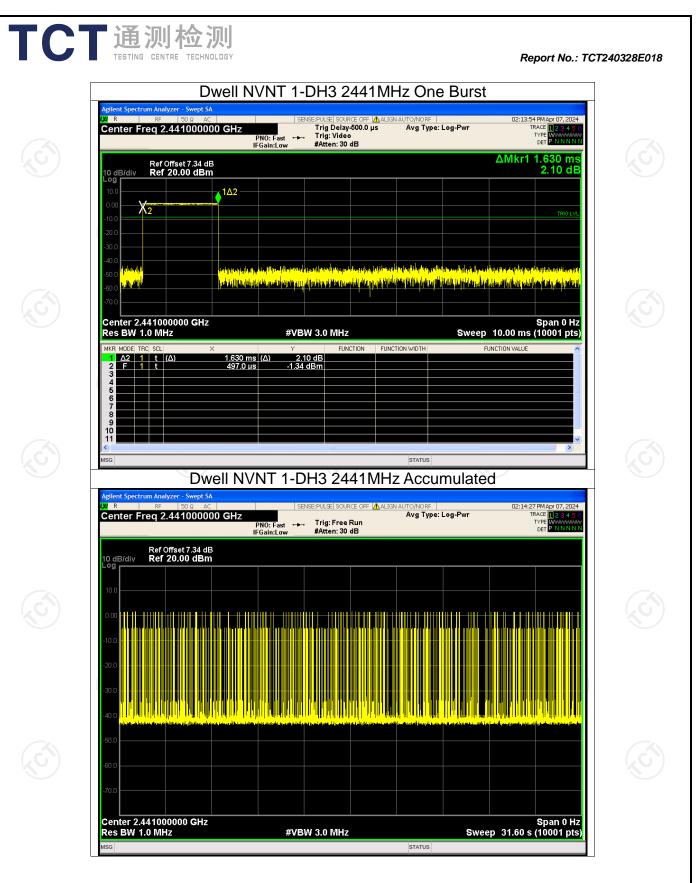
2441

NVNT



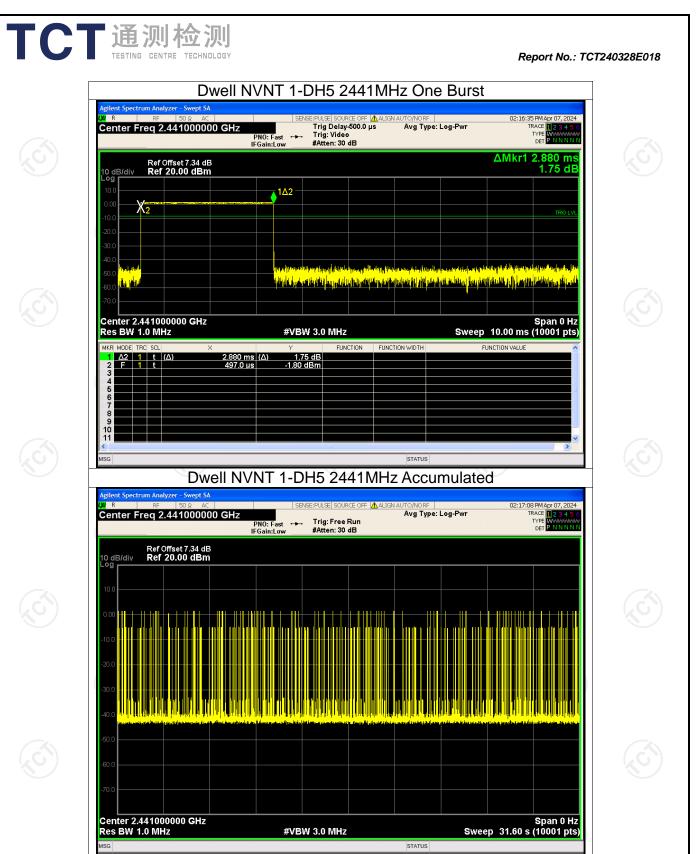
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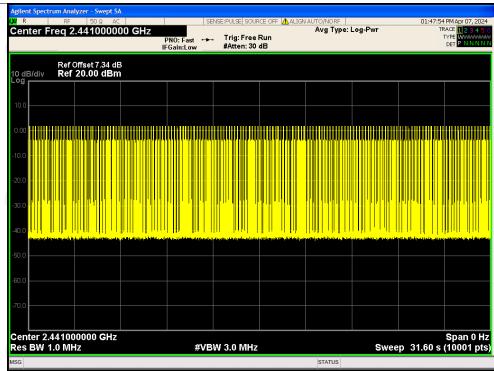
Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com



ГС	TESTING	测检》						Re	port No.
		D۱	well NVN	T 2-DH1	2441M	Hz One	e Burst		
	LXI R	um Analyzer - Swept SA RF 50 Ω AC req 2.441000000		Trig D ast ↔ Trig: V	SOURCE OFF [▲ ALIC elay-500.0 µs /ideo :: 30 dB	AVG Type:	Log-Pwr	Tf	PM Apr 07, 20 RACE 1234 TYPE WWWWW DET PNNN
	10 dB/div	Ref Offset 7.34 dB Ref 20.00 dBm							390.0 μ 41.94 d
	10.0	42							
	-10.0 -20.0								TRIG L
	-30.0		No toothea catto that da	ata di nasara terdi nakan kiriki	r do o miki ani ka ataku u		Martin strike skourse b	taliyana aska.	وروا فأظلفهم
	-50.0 0 00000 -60.0 0 00000 -70.0		alah kasi kada taratan da	lan ka <sub>m</sub> alah pipulah kai	<mark>lyn ar llen new llen y</mark>	lle line litere partie	nia <mark>ll<sub>u k</sub>ikin, and a a</mark>		<mark>, jadi ka</mark> igi
	Center 2.4 Res BW 1	441000000 GHz .0 MHz		#VBW 3.0 N	1Hz		Sweep	10.00 ms	Span 0 H (10001 pt

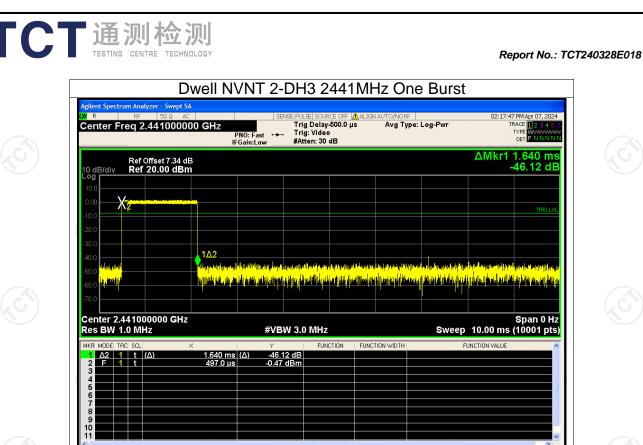
usg

# 390.0 μs (Δ) 497.0 μs -41.94 dB 0.19 dBm Δ2 1 t (Δ) F 1 t STATUS Dwell NVNT 2-DH1 2441MHz Accumulated



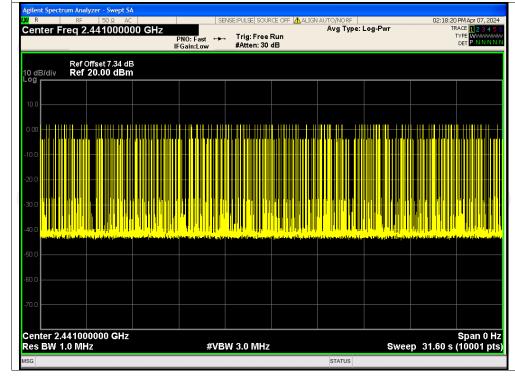


#### No.: TCT240328E018



## Dwell NVNT 2-DH3 2441MHz Accumulated

MSG



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