	TEST REPOR	т			
FCC ID :	2ASCB-DCNGDPL				
Test Report No::	TCT210714E902				
Date of issue:	Jul. 28, 2021				
Testing laboratory:	SHENZHEN TONGCE TESTING	G LAB			
Testing location/ address:		TCT Testing Industrial Park Fuqiao 5th Industrial Zone, Fuhai Street, Bao'an District Shenzhen, Guangdong, 518103, People's Republic of China			
Applicant's name: :	D2G Group LLC				
Address:	81 Commerce Drive, Fall River, States	Massachusetts 02720	0, United		
Manufacturer's name :	GUANGZHOU YOUGUANG OP	TOELECTRONICS C	O., LTD.		
Address:	No. 75, Pacific Ind. Zone, Xingtang Town, Zengcheng, Guangzhou, 511340 China				
Standard(s):	FCC CFR Title 47 Part 15 Subpart C Section 15.247 FCC KDB 558074 D01 15.247 Meas Guidance v05r02 ANSI C63.10:2013				
Test item description :	Digital Pedestal Display Case				
Trade Mark:	N/A ()	(\mathcal{C})			
Model/Type reference :	DCNGDPL				
Rating(s):	AC 120V/60Hz		(E)		
Date of receipt of test item	Jul. 14, 2021				
Date (s) of performance of test:	See dates for each test case				
Tested by (+signature) :	Brews Xu	Brens Xu			
Check by (+signature) :	: Beryl Zhao Beryl Than				
Approved by (+signature):	Tomsin	Tomsm			
Remark:	This test report was based on TO name, product name and application		nge model		

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1. General Product Information

1.1. EUT description

Test item description:	Digital Pedestal Display Case	(\mathcal{C}^{*})	
Model/Type reference:	DCNGDPL		
Sample Number:	TCT210702E004-0101		
Bluetooth Version:	V4.2		
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:	Internal Antenna		
Antenna Gain:	5dBi	KO)	
Rating(s):	AC 120V/60Hz		

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

None.

1.3. Operation Frequency

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
0	2402MHz	20	2422MHz	40	2442MHz	60	2462MHz
1	2403MHz	21	2423MHz	41	2443MHz	61	2463MHz
10	2412MHz	30	2432MHz	50	2452MHz	70	2472MHz
11	2413MHz	31	2433MHz	51	2453MHz	71	2473MHz
18	2420MHz	38	2440MHz	58	2460MHz	78	2480MHz
19	2421MHz	39	2441MHz	59	2461MHz		-
Remark:	Channel 0, 3		ve been tes	ted for G	FSK. π/4-D0	QPSK. 8D	PSK

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

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2. Test Result Summary

Requirement	CFR 47 Section		Result	
Antenna Requirement	§15.203/§15.247 (c)	S S	PASS	K
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	k
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.

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3. General Information

3.1. Test environment and mode

Operating Environment:				
Condition	Conducted Emission	Radiated Emission		
Temperature:	25.0 °C	25.0 °C		
Humidity:	55 % RH	55 % RH		
Atmospheric Pressure:	1010 mbar	1010 mbar		

Test Software:

Software Information:	RFTestTool-user-5.6	
Power Level:	Default	

Test Mode:

Engineering mode: Keep the EUT in continuous transmitting by select channel and modulations.

The sample was placed 0.1m 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
/	/	/	/	/

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.

FCT通测检测 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: TCT Testing Industrial Park Fuqiao 5th Industrial Zone, Fuhai Street, 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. Test Results and Measurement Data

5.1. Antenna requirement

Standard requirement: FCC Part15 C Section 15.203 /247(c)

15.203 requirement:

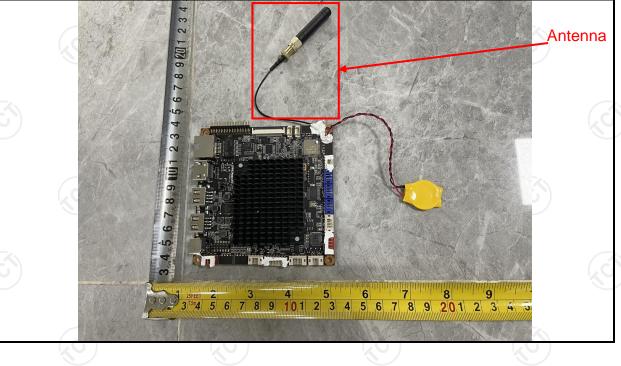
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

15.247(c) (1)(i) requirement:

(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

E.U.T Antenna:

The Bluetooth antenna is internal antenna which permanently attached, and the best case gain of the antenna is 5dBi.





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				
Receiver setup:	RBW=9 kHz, VBW=30 kHz, Sweep time=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: Test Mode:	E.U.T AC powe Test table/Insulation plane Remark: E.U.T: Equipment Under Test LISN: Line Impedence Stabilization Na Test table height=0.8m	EMI Receiver	— AC power		
Lest Mode					
	 The E.U.T is connerimpedance stabilizy provides a 500hm/s measuring equipme The peripheral device power through a Licoupling impedance refer to the block photographs). Both sides of A.C. conducted interferent emission, the relative the interface cables 	zation network 50uH coupling im nt. ces are also conne ISN that provides with 50ohm tern diagram of the line are checke nce. In order to fin re positions of equ must be changed	(L.I.S.N.). This pedance for the ected to the main a 50ohm/50uh nination. (Please test setup and ed for maximun nd the maximun ipment and all o according to		
Test Result:	 The E.U.T is connerimpedance stabilizy provides a 500hm/s measuring equipme The peripheral device power through a Licoupling impedance refer to the block photographs). Both sides of A.C. conducted interferent emission, the relative 	zation network 50uH coupling im nt. ces are also conne ISN that provides with 50ohm tern diagram of the line are checke nce. In order to fin re positions of equ must be changed	(L.I.S.N.). This pedance for the ected to the main a 500hm/50uh nination. (Please test setup and ed for maximum nd the maximum ipment and all of according to		

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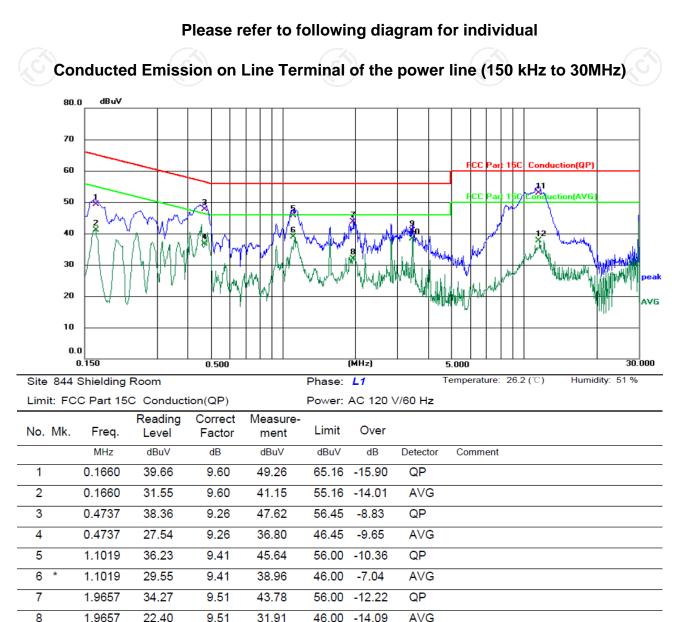
5.2.2. Test Instruments

Conducted Emission Shielding Room Test Site (843)					
Equipment	Manufacturer	Model	Serial Number	Calibration Due	
EMI Test Receiver	R&S	ESCI3	100898	Jul. 07, 2022	
Line Impedance Stabilisation Newtork(LISN)	Schwarzbeck	NSLK 8126	8126453	Mar. 11, 2022	
Line-5	ТСТ	CE-05	N/A	Jul. 07, 2022	
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A	



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5.2.3. Test data





9

10

11

12

3.4500

3.4500

11.5137

11.5137

31.31

28.62

43.14

27.98

40.91

38.22

52.85

37.69

9.60

9.60

9.71

9.71

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.

56.00 -15.09

46.00 -7.78

60.00 -7.15

50.00 -12.31

QP

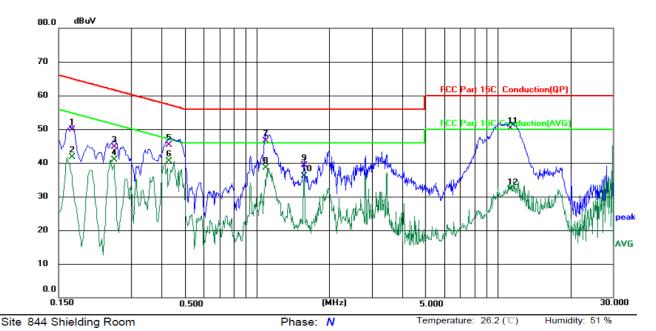
AVG

QP

AVG

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Power: AC 120 V/60 Hz

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

Limit: FCC Part 15C Conduction(QP)

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Reading Correct Measure-Limit Over No. Mk. Freq. Level Factor ment dBuV MHz dB dBuV dBuV dB Comment Detector 40.28 49.85 QP 0.1700 9.57 64.96 -15.11 1 2 0.1700 32.14 41.71 54.96 -13.25 AVG 9.57 0.2540 35.30 44.65 QP 3 9.35 61.63 -16.98 4 0.2540 31.49 9.35 40.84 51.63 -10.79 AVG 0.4300 36.11 9.29 45.40 57.25 -11.85 QP 5 6 0.4300 31.21 9.29 40.50 47.25 -6.75 AVG 46.60 QP 7 1.0900 37.21 9.39 56.00 -9.40 1.0900 29.14 9.39 38.53 46.00 -7.47 AVG 8 9 1.5700 29.87 9.42 39.29 56.00 -16.71 QP 10 1.5700 26.78 9.42 36.20 46.00 -9.80 AVG 11.2980 40.50 9.73 50.23 60.00 -9.77 QP 11 11.2980 9.73 32.11 12 22.38 50.00 -17.89 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 μ V) – Limits (dB μ 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 (Lowest channel and GFSK) was submitted only.



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 peak conducted outpu power of the intentional radiator shall not exceed the following: (1) For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band 0.125 watts.		
Test Setup:	Spectrum Analyzer EUT		
Test Mode:	Transmitting mode with modulation		
Test Procedure:	Use the following spectrum analyzer settings: Span = approximately 5 times the 20 dB bandwidth centered on a hopping channel RBW > the 20 dB bandwidth of the emission being measured VBW ≥ RBW Sweep = auto Detector function = peak Trace = max hold Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the		
	peak of the emission.		

5.3.2. Test Instruments

Name	Manufacturer	Model No.	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jul. 18, 2022
Combiner Box	Ascentest	AT890-RFB	S N/A	Jul. 07, 2022





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:	 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. 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. Measure and record the results in the test report. 			
Test Result:	PASS			

5.4.2. Test Instruments

Name	Manufacturer	Model No.	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jul. 18, 2022
Combiner Box	Ascentest	AT890-RFB	N/A	Jul. 07, 2022



5.5. Carrier Frequencies Separation

5.5.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)
Test Method:	KDB 558074 D01 v05r02
Limit:	Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, 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, provided the systems operate with an output power no greater than 125 mW.
Test Setup:	Spectrum Analyzer EUT
Test Mode:	Hopping mode
Test Procedure:	 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. Enable the EUT hopping function. 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. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. Record the value in report.
Test Result:	PASS (S)

5.5.2. Test Instruments

Name	Manufacturer	Model No.	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jul. 18, 2022
Combiner Box	Ascentest	AT890-RFB	N/A	Jul. 07, 2022

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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:			
Test Mode:	Spectrum Analyzer EUT Hopping mode		
	1. The RF output of EUT was connected to the		
Test Procedure:	 spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. 2. Set to the maximum power setting and enable the EUT transmit continuously. 3. Enable the EUT hopping function. 4. 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. 5. The number of hopping frequency used is defined as the number of total channel. 6. Record the measurement data in report. 		
Test Result:	PASS		
5.6.2. Tost Instruments			

5.6.2. Test Instruments

Name	Manufacturer	Model No.	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jul. 18, 2022
Combiner Box	Ascentest	AT890-RFB	N/A	Jul. 07, 2022

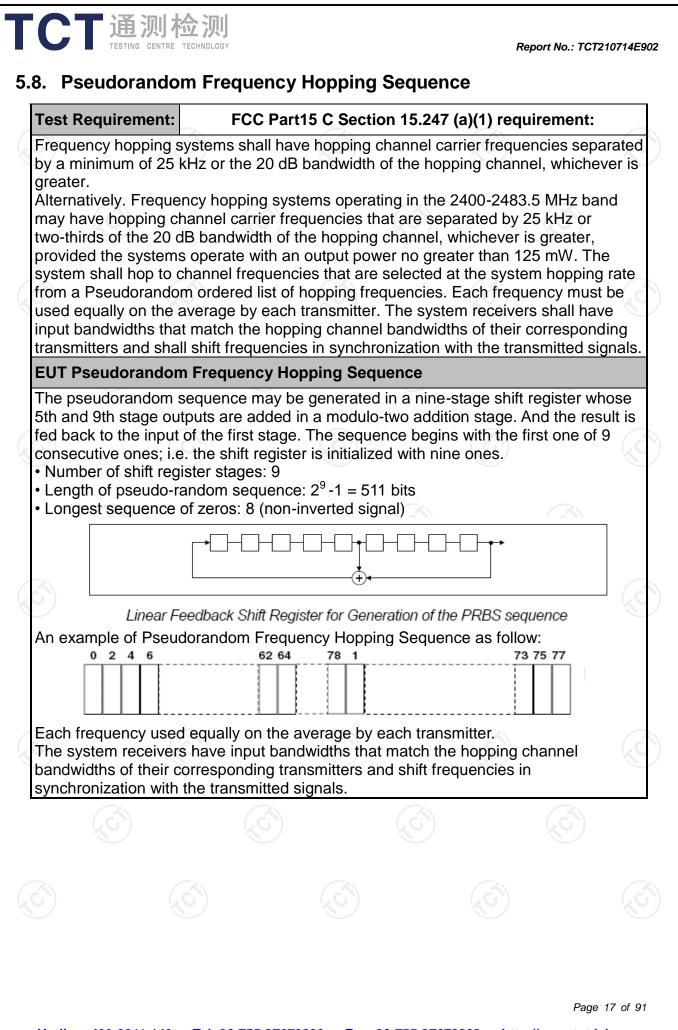
5.7. Dwell Time

5.7.1. Test Specification

Test Requirement:	FCC Part15 C Section 15.247 (a)(1)
Test Method:	KDB 558074 D01 v05r02
Limit:	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.
Test Setup:	Spectrum Analyzer EUT
Test Mode:	Hopping mode
Test Procedure:	 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. Enable the EUT hopping function. 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 >> 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. Measure and record the results in the test report.
Test Result:	PASS

5.7.2. Test Instruments

Name	Manufacturer	Model No.	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jul. 18, 2022
Combiner Box	Ascentest	AT890-RFB	N/A	Jul. 07, 2022





5.9. Conducted Band Edge Measurement

5.9.1. Test Specification

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

5.9.2. Test Instruments

Name	Manufacturer	Model No.	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jul. 18, 2022
Combiner Box	Ascentest	AT890-RFB	N/A	Jul. 07, 2022



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:	 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. 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. Measure and record the results in the test report. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
Test Result:	PASS

5.10.2. Test Instruments

Name	Manufacturer	Model No.	Serial Number	Calibration Due
Spectrum Analyzer	Agilent	N9020A	MY49100619	Jul. 18, 2022
Combiner Box	Ascentest	AT890-RFB	N/A	Jul. 07, 2022

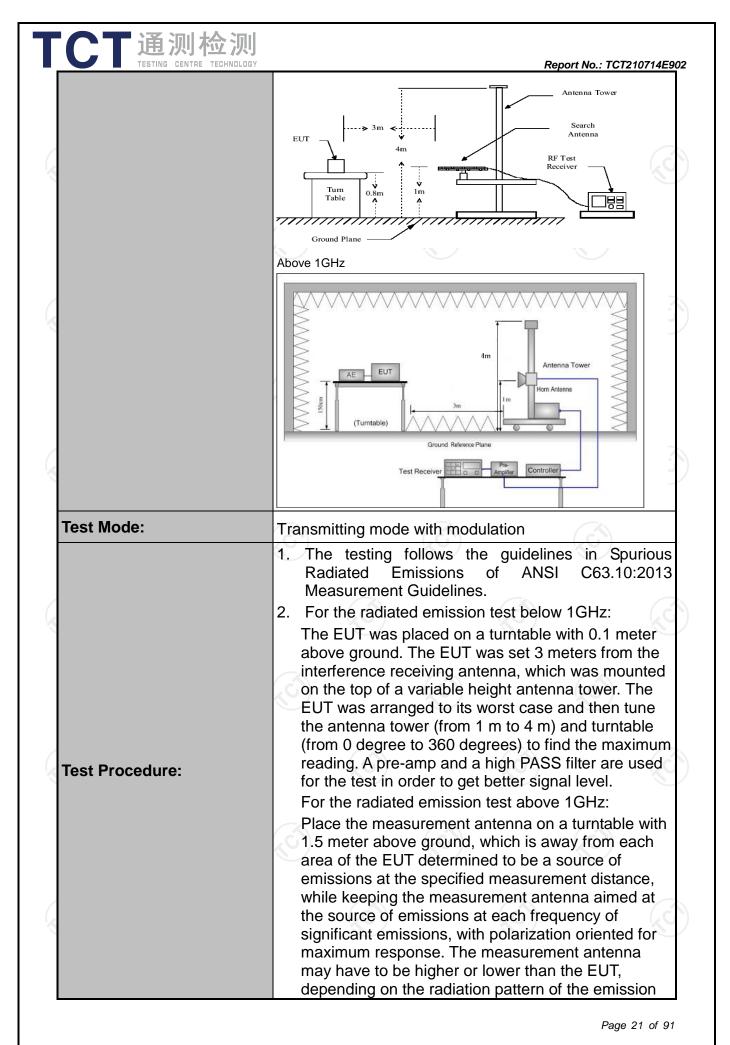


5.11. Radiated Spurious Emission Measurement

5.11.1. Test Specification

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Test Requirement:	FCC Part15	C Section	15.209			No.
Test Method:	ANSI C63.10):2013				
Frequency Range:	9 kHz to 25 (GHz	Z		G	í)
Measurement Distance:	3 m	X			K.)
Antenna Polarization:	Horizontal &	Vertical				
	Frequency	Detector	RBW	VBW		Remark
	9kHz- 150kHz	Quasi-peal		1kHz		i-peak Value
Receiver Setup:	150kHz- 30MHz	Quasi-peal	k 9kHz	30kHz	Quas	i-peak Value
-	30MHz-1GHz	Quasi-peal	120KHz	300KHz	Quas	i-peak Value
	Above 1GHz	Peak	1MHz	3MHz		eak Value
	Above TGHZ	Peak	1MHz	10Hz	Ave	rage Value
	Frequen	CV	Field Str			asurement
	0.009-0.4		(microvolts) 2400/F(Distai	nce (meters)
	0.009-0.2		2400/F() 24000/F(<u>300</u> 30
	1.705-3		<u></u>	(i \ i \∠)		30
	30-88		100)		3
	88-216	6	150		6	3
Limit:	216-96		200		No.	3
	Above 9	60	500)		3
	Frequency Above 1GHz	(micro	d Strength ovolts/meter) 500 5000	Measure Distan (mete 3 3	nce	Detector Average Peak
Test setup:	EUT	stance = 3m			Comput	
		5	(,			
						Page 20 of S



	recei meas maxi anter restri abov 3. Set EUT 4. Use (1) (2)	staying aim iving the ma surement ai mizes the e nna elevatic icted to a ra 'e the groun to the max 'transmit co the followin Span shall sources a Set RBW=1 for f>1GHz Sweep = a = max holo For averag correction 15.35(c). Do On time =N	aximum signatenna ele missions. on for maxinge of hei ad or refere imum powo ontinuously og spectrum wide enouge eing measure to kHz for ; VBW≥RE uto; Detect d for peak ge measure factor met uty cycle = 1*L1+N2*I	mission s mal. The f vation sha The meas mum emi ghts of fro ence groun er setting n analyze gh to fully ured; r f < 1 GH 3W; ctor function ement: us hod per On time/ _2++Nn	final all be that surement ssions sha om 1 m to nd plane. and enat r settings: capture th z, RBW=1 on = peak; e duty cyc 100 millise -1*LNn-1+	which all be 4 m ole the ne MHz Trace le econds Nn*Lr
		Where N1 length of ty Average E Level + 20 Corrected F Loss + Rea	/pe 1 pulse mission Le *log(Duty Reading: A	es, etc. evel = Pea cycle) ntenna Fa	ak Emissio actor + Cal	on ble
Test results:		length of ty Average E Level + 20 Corrected F	/pe 1 pulse mission Le *log(Duty Reading: A	es, etc. evel = Pea cycle) ntenna Fa	ak Emissio actor + Cal	on ble
Test results:		length of ty Average E Level + 20 Corrected F	/pe 1 pulse mission Le *log(Duty Reading: A	es, etc. evel = Pea cycle) ntenna Fa	ak Emissio actor + Cal	on ble
Test results:		length of ty Average E Level + 20 Corrected F	/pe 1 pulse mission Le *log(Duty Reading: A	es, etc. evel = Pea cycle) ntenna Fa	ak Emissio actor + Cal	on ble
Test results:		length of ty Average E Level + 20 Corrected F	/pe 1 pulse mission Le *log(Duty Reading: A	es, etc. evel = Pea cycle) ntenna Fa	ak Emissio actor + Cal	on ble



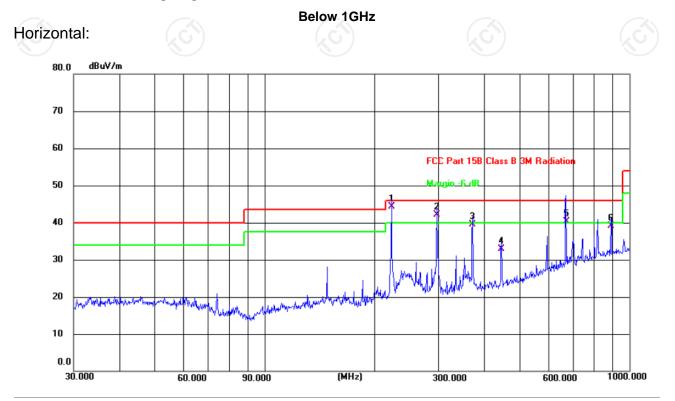
5.11.2. Test Instruments

	Radiated En	nission Test Site	e (966)	
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
EMI Test Receiver	R&S	ESIB7	100197	Jul. 07, 2022
Spectrum Analyzer	R&S	FSQ40	200061	Jul. 07, 2022
Pre-amplifier	SKET	LNPA_0118G- 45	SK2021012 102	Mar. 11, 2022
Pre-amplifier	SKET	LNPA_1840G- 50	SK2021092 03500	Apr. 08, 2022
Pre-amplifier	HP	8447D	2727A05017	Jul. 07, 2022
Loop antenna	ZHINAN	ZN30900A	12024	Sep. 05, 2022
Broadband Antenna	Schwarzbeck	VULB9163	340	Sep. 04, 2022
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Sep. 04, 2022
Horn Antenna	Schwarzbeck	BBHA 9170	00956	Apr. 10, 2023
Antenna Mast	Keleto	RE-AM	N/A	N/A
Coaxial cable	SKET	RC_DC18G-N	N/A	Apr. 08, 2022
Coaxial cable	SKET	RC-DC18G-N	N/A	Apr. 08, 2022
Coaxial cable	SKET	RC-DC40G-N	N/A	Jul. 07, 2022
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A
			\mathcal{I}	



5.11.3. Test Data

Please refer to following diagram for individual



				Polar	ization:	Horizo	ontal	Temperature: 23.6(C)
FCC Part 15	B Class B 3	3M Radiat	tion	Powe	r: AC	120 V/60	Hz	Humidity: 53 %
Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	-	Detector	P/F	Remark
222.9502	32.82	11.58	44.40	46.00	-1.60	QP	Р	
297.2238	28.15	13.95	42.10	46.00	-3.90	QP	Р	
372.0045	23.64	15.86	39.50	46.00	-6.50	QP	Р	
446.4139	15.18	17.72	32.90	46.00	-13.10	QP	Р	
670.4893	18.16	22.14	40.30	46.00	-5.70	QP	Р	
890.7277	13.66	25.54	39.20	46.00	-6.80	QP	Р	
	Frequency (MHz) 222.9502 297.2238 372.0045 446.4139 670.4893	Frequency (MHz)Reading (dBuV)222.950232.82297.223828.15372.004523.64446.413915.18670.489318.16	Frequency (MHz)Reading (dBuV)Factor (dB/m)222.950232.8211.58297.223828.1513.95372.004523.6415.86446.413915.1817.72670.489318.1622.14	(MHz)(dBuV)(dB/m)(dBuV/m)222.950232.8211.5844.40297.223828.1513.9542.10372.004523.6415.8639.50446.413915.1817.7232.90670.489318.1622.1440.30	FCC Part 15B Class B 3M Radiation Powe Frequency (MHz) Reading (dBuV) Factor (dB/m) Level (dBuV/m) Limit (dBuV/m) 222.9502 32.82 11.58 44.40 46.00 297.2238 28.15 13.95 42.10 46.00 372.0045 23.64 15.86 39.50 46.00 446.4139 15.18 17.72 32.90 46.00 670.4893 18.16 22.14 40.30 46.00	Frequency (MHz) Reading (dBuV) Factor (dB/m) Level (dBuV/m) Limit (dBuV/m) Margin (dB) 222.9502 32.82 11.58 44.40 46.00 -1.60 297.2238 28.15 13.95 42.10 46.00 -3.90 372.0045 23.64 15.86 39.50 46.00 -6.50 446.4139 15.18 17.72 32.90 46.00 -13.10 670.4893 18.16 22.14 40.30 46.00 -5.70	FCC Part 15B Class B 3M Radiation Power: AC 120 V/60 Frequency (MHz) Reading (dBuV) Factor (dB/m) Level (dBuV/m) Limit (dBuV/m) Margin (dB) Detector 222.9502 32.82 11.58 44.40 46.00 -1.60 QP 297.2238 28.15 13.95 42.10 46.00 -3.90 QP 372.0045 23.64 15.86 39.50 46.00 -6.50 QP 446.4139 15.18 17.72 32.90 46.00 -13.10 QP 670.4893 18.16 22.14 40.30 46.00 -5.70 QP	FCC Part 15B Class B 3M Radiation Power: AC 120 V/60 Hz Frequency (MHz) Reading (dBuV) Factor (dB/m) Level (dBuV/m) Limit (dBuV/m) Margin (dB) Detector P/F 222.9502 32.82 11.58 44.40 46.00 -1.60 QP P 297.2238 28.15 13.95 42.10 46.00 -3.90 QP P 372.0045 23.64 15.86 39.50 46.00 -13.10 QP P 446.4139 15.18 17.72 32.90 46.00 -5.70 QP P 670.4893 18.16 22.14 40.30 46.00 -5.70 QP P

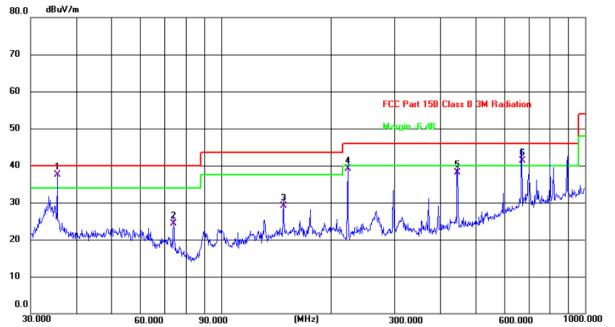
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Report No.: TCT210714E902

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Vertical:

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Site					Polari	zation:	Vertic	al	Temperature: 23.6(C)
Limit:	FCC Part 15	B Class B 🤅	3M Radiat	ion	Powe	r: AC	120 V/60	Hz	Humidity: 53 %
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1 *	35.4992	24.09	13.51	37.60	40.00	-2.40	QP	Р	
2	74.1350	13.95	10.45	24.40	40.00	-15.60	QP	Р	
3	148.4410	15.62	13.48	29.10	43.50	-14.40	QP	Р	
4	222.9500	27.62	11.58	39.20	46.00	-6.80	QP	Р	
5	446.4139	20.48	17.72	38.20	46.00	-7.80	QP	Р	
6 !	670.4892	19.26	22.14	41.40	46.00	-4.60	QP	Р	

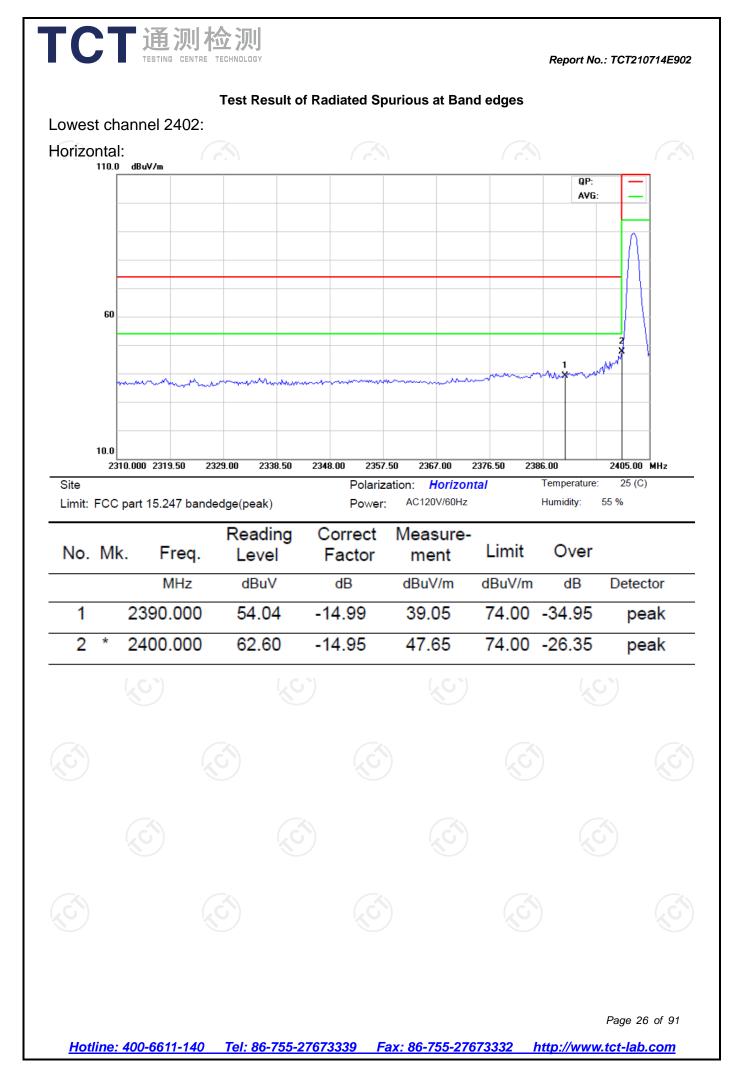
Note: 1. The low frequency, which started from 9KHz~30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

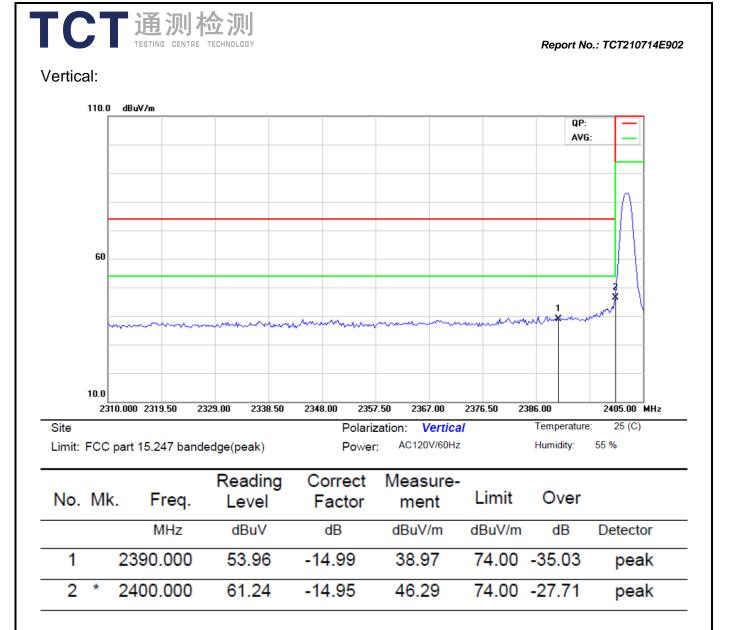
2. Measurements were conducted in all three channels (high, middle, low) and three modulation (GFSK, Pi/4 DQPSK, 8DPSK) and the worst case Mode (Lowest channel and GFSK) was submitted only. 3. Freq. = Emission frequency in MHz

- 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.

Report No.: TCT210714E902

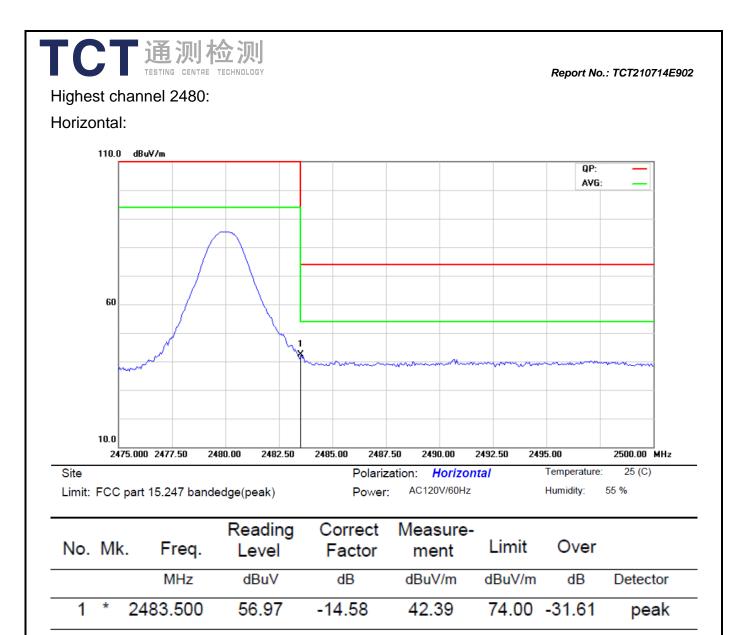
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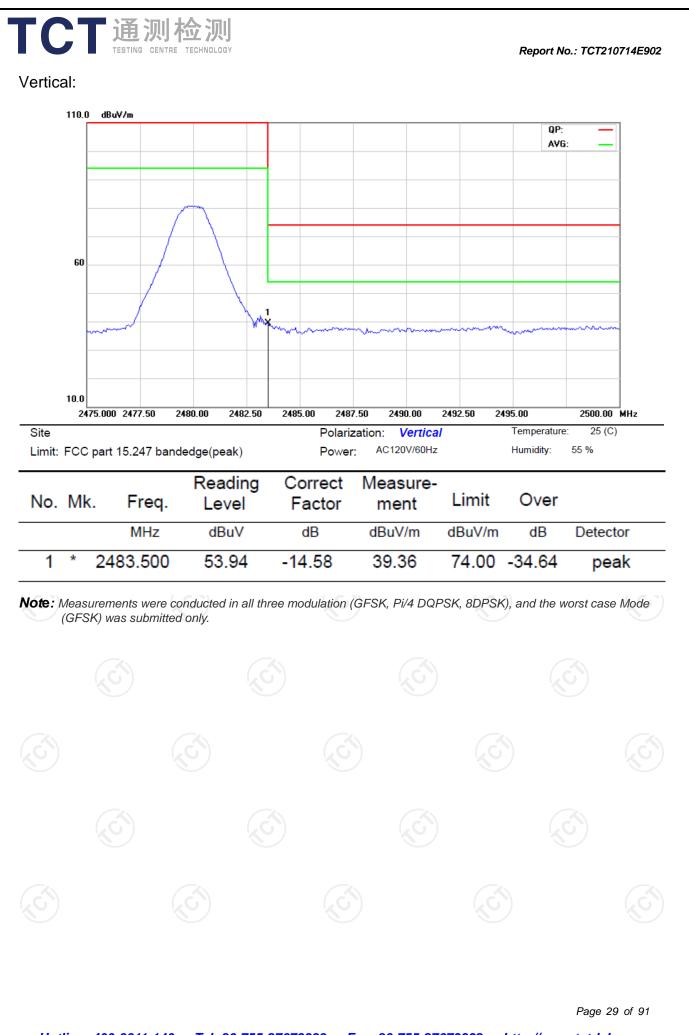


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Above 1GHz

Modulation	Type: GF	SK							
Low chann	el: 2402 N	IHz							
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	46.80		0.66	47.46		74	54	-6.54
7206	Н	35.94		9.50	45.44		74	54	-8.56
	Н					~~			
(2G`)		(,C)	`)	()	·C`)		(\mathcal{O})	
4804	V	47.15		0.66	47.81		74	54	-6.19
7206	V	36.39		9.50	45.89		74	54	-8.11
	V								

Middle cha	nnel: 2441	MHz)				Š
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	43.84		0.99	44.83	·	74	54	-9.17
7323	KOH)	34.70	-120	9.87	44.57	0	74	54	-9.43
	Ĥ					· · ·			
4882	V	46.74		0.99	47.73		74	54	-6.27
7323	V	37.26		9.87	47.13		74	54	-6.87
7	V			'S'	· /				

High channel: 2480 MHz

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i ligit chatti		/// 1 <u>2</u>							
Frequency	Ant Pol	Peak	AV	Correction	Emissic	on Level	Peak limit	AV/ limit	Margin
(MHz)	H/V	reading	reading	Factor	Peak	AV	(dBµV/m)	(dBµV/m)	(dB)
~ /		(dBµV)	(dBµV)	(dB/m)	(dBµV/m)	(dBµV/m)	、 1	、 1	、
4960	Н	43.86		1.33	45.19		74	54	-8.81
7440	Н	34.75		10.22	44.97		74	54	-9.03
	Н								
G`)		(.G)					(.G)		Ĵ.)
4960	V	46.10		1.33 🔍	47.43		74	54	-6.57
7440	V	35.72		10.22	45.94		74	54	-8.06
	V								

Note:

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

2. Margin (dB) = Emission Level (Peak) (dB μ V/m)-Average limit (dB μ 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 (GFSK) 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	Conducted Power	Total Power	Limit	Verdict
		(MHz)	(dBm)	(dBm)	(dBm)	
NVNT	1-DH1	2402	4.493	4.493	30	Pass
NVNT	1-DH1	2441	4.047	4.047	30	Pass
NVNT	1-DH1	2480 🔍 🔍	3.609	3.609	30	Pass
NVNT	2-DH1	2402	3.797	3.797	21	Pass
NVNT	2-DH1	2441	3.416	3.416	21	Pass
NVNT	2-DH1	2480	2.885	2.885	21	Pass
NVNT	3-DH1	2402	3.796	3.796	21	Pass
NVNT	3-DH1	2441	3.432	3.432	21	Pass
NVNT	3-DH1	2480	2.972	2.972	21	Pass



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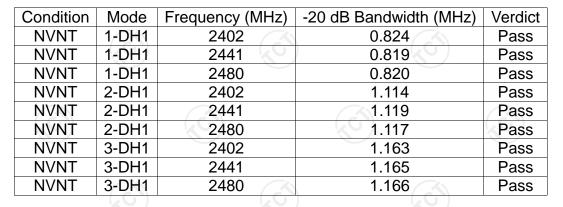
	50 Ω AC 41000000 GHz	Z PNO: Fast IFGain:Low	NSE:PULSE Trig: Free Run #Atten: 30 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold: 200/200	04:13:05 PM Jul 27, 2021 TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N N
Ref Offs 10 dB/div Ref 20 Log	set 7.06 dB).00 dBm				Vlkr1 2.440 945 GHz 4.047 dBm
10.0			1		
0.00					
-10.0					
-30.0					
-40.0					
-50.0					
-60.0					
-70.0					
Center 2.441000 (#Res BW 3.0 MHz		#VB	W 8.0 MHz	#Swe	Span 5.000 MHz eep 100.0 ms (1001 pts)
ISG	S) F	Power NV	'NT 1-DH1	status 2480MHz	2G`)
Agilent Spectrum Analyze	50 Ω AC		NSE:PULSE	ALIGNAUTO Avg Type: Log-Pwr	04:15:13 PM Jul 27, 2021 TRACE 1 2 3 4 5 6
		PNO: Fast ↔→ IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold: 200/200	TRACE 123456 TYPE MWWWW DET PNNNNN Kr1 2.479 922 0 GHz
10 dB/div Ref 20	set 7.03 dB 0.00 dBm				3.609 dBm
10.0			1		
0.00					
-10.0					
-10.0					
-10.0					
-10.0					
-10.0 -20.0 -30.0 -40.0 -60.0					
-10.0 -20.0 -30.0 -40.0 -50.0 -70.0					
-10.0 -20.0 -30.0 -40.0 -50.0 -50.0 -50.0 -70.0 Center 2.480000 0 #Res BW 3.0 MHz	GHz 2	#VB	W 8.0 MHz	#Swee	Span 5.000 MHz ep 100.0 ms (10001 pts)
-10.0 -20.0 -30.0 -40.0 -50.0	GHz z	#VB	W 8.0 MHz		Span 5.000 MHz ep 100.0 ms (10001 pts)
-10.0 -20.0 -30.0 -40.0 -50.0 -50.0 -70.0 Center 2.480000 (#Res BW 3.0 MHz	GHz z	#VB	W 8.0 MHz		Span 5.000 MHz ep 100.0 ms (10001 pts)

Center Freq 2.40200	AC SENSE:PULSE DO000 GHZ PN0: Fast Trig: F IFGain:Low #Atten	ALIGNAUTO Avg Type: Log-P ree Run Avg Hold: 200/200 : 30 dB	04:24:48 PM Jul 27, 2021 Wr TRACE 1 2 3 4 5 6 TYPE MWWWW DET P N N N N N	
Ref Offset 6.9 10 dB/div Ref 20.00 d			Mkr1 2.401 736 GHz 3.797 dBm	(
10.0				×
0.00	antice and a state of the second state of the			
-10.0				
-20.0				
-40.0				G
-50.0				
-60.0				
-70.0				
Center 2.402000 GHz #Res BW 3.0 MHz	#VBW 8.0 M	Hz status	Span 6.000 MHz Sweep 1.000 ms (1001 pts)	
		2-DH1 2441MHz	(¿G`)	
Agilent Spectrum Analyzer - Swa XX RL RF 50 Ω Center Freq 2.44100	AC SENSE:PULSE 00000 GHz PN0: East ↔ Trig: F	ALIGNAUTO Avg Type: Log-P ree Run Avg Hold: 200/200	04:27:40 PM Jul 27, 2021 Wr TRACE 1 2 3 4 5 6 D TYPE M MANAMAN DET P. N.N.N.N	
Ref Offset 7.0 10 dB/div Ref 20.00 d	IFGain:Low #Atten	. 30 dB	Mkr1 2.440 796 GHz 3.416 dBm	
0.00	and an and an and a second			
-10.0				X
-20.0				
-30.0				
-50.0				
-60.0				C
-70.0				
Center 2.441000 GHz #Res BW 3.0 MHz	#VBW 8.0 M	Hz	Span 6.000 MHz Sweep 1.000 ms (1001 pts)	
MSG		STATUS)

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	rf 50 Ω ac q 2.480000000 GH	Z PNO: Fast IFGain:Low	INSE:PULSE - Trig: Free Run #Atten: 30 dB	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 200/200	04:29:20 PM Jul 27, 2021 TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N N	
10 dB/div	Ref Offset 7.03 dB Ref 20.00 dBm				Vkr1 2.479 790 GHz 2.885 dBm	
10.0			1			
0.00	Mannah Mannah Mana	and a start of the second s	<u></u>			
-10.0						
-30.0						
-40.0						
-50.0						
-60.0						
Center 2.48	0000 GH7				Span 6.000 MHz	
#Res BW 3.	0 MHz	#VB	W 8.0 MHz	SWA	eep 1.000 ms (1001 pts)	
Agilent Spectrum	Analyzer - Swept SA	Power N∖	/NT 3-DH1	2402MHz	<u>(</u> G`)	
LXI RL	RF 50 Ω AC q 2.402000000 GH	Z PNO: Fast 🔸	INSE:PULSE	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 200/200	04:41:16 PM Jul 27, 2021 TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N N	
10 dB/div	Ref Offset 6.98 dB Ref 20.00 dBm	IFGain:Low	#Atten: 30 dB		Vkr1 2.401 988 GHz 3.796 dBm	
Log						
0.00	and the second		<u> </u>			
-10.0						
-20.0						
-30.0						
-40.0						
-40.0						
-40 0 -50 0 -60 0	2000 GHz 0 MHz	#VB	W 8.0 MHz	Swe	Span 6.000 MHz sep 1.000 ms (1001 pts)	
-40 0 -50 0 -60 0 -70 0 Center 2.40	2000 GHz 0 MHz	#VB	W 8.0 MHz	Swe status	Span 6.000 MHz eep 1.000 ms (1001 pts)	
-40 0 -60 0 -70 0 Center 2.40 #Res BW 3.	2000 GHz 0 MHz	#VB	W 8.0 MHz		Span 6.000 MHz sep 1.000 ms (1001 pts)	
-40 0 -60 0 -70 0 Center 2.40 #Res BW 3.	2000 GHz 0 MHz	#VB	W 8.0 MHz		Span 6.000 MHz sep 1.000 ms (1001 pts)	

	GHZ PN0: Fast Trig: Free Run IFGain:Low #Atten: 30 dB	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 200/200	04:44:04 PM Jul27, 2021 TRACE 1 2 3 4 5 6 TYPE M WWWWW DET P N N N N N
Ref Offset 7.06 dB 10 dB/div Ref 20.00 dBm		Mkr1	2.440 910 GHz 3.432 dBm
10.0	1		
0.00			
-10.0			
-20.0			
-40.0			
-50.0			
-60.0			
-70.0			
Center 2.441000 GHz #Res BW 3.0 MHz	#VBW 8.0 MHz	Sweep 1	Span 6.000 MHz .000 ms (1001 pts)
Agilent Spectrum Analyzer - Swept SA	Power NVNT 3-DH1 2	2480MHz)
Agreent Speed Unit Analyzet Swept SA (M) RL RF 50 Ω AC Center Freq 2.4800000000 Center Speed Unit Analyzet Speed Unit Analyzet Speed Unit Analyzet	PNO: Fast +++ Irig: Free Run	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 200/200	04:45:36 PM Jul 27, 2021 TRACE 1 2 3 4 5 6 TYPE M
Ref Offset 7.03 dB 10 dB/div Ref 20.00 dBm	IFGain:Low #Atten: 30 dB	Mkr1	2.479 862 GHz 2.972 dBm
0.00	↓		
-10.0			
-20.0			
-30.0			
-50.0			
-60.0			
-60.0	#VBW 8.0 MHz	Sweep 1	Span 6.000 MHz .000 ms (1001 pts)
-60.0	#VBW 8.0 MHz	Sweep 1	Span 6.000 MHz .000 ms (1001 pts)
Center 2.480000 GHz #Res BW 3.0 MHz	#VBW 8.0 MHz		Span 6.000 MHz .000 ms (1001 pts)
Center 2.480000 GHz #Res BW 3.0 MHz	#VBW 8.0 MHz		Span 6.000 MHz .000 ms (1001 pts)



-20dB Bandwidth

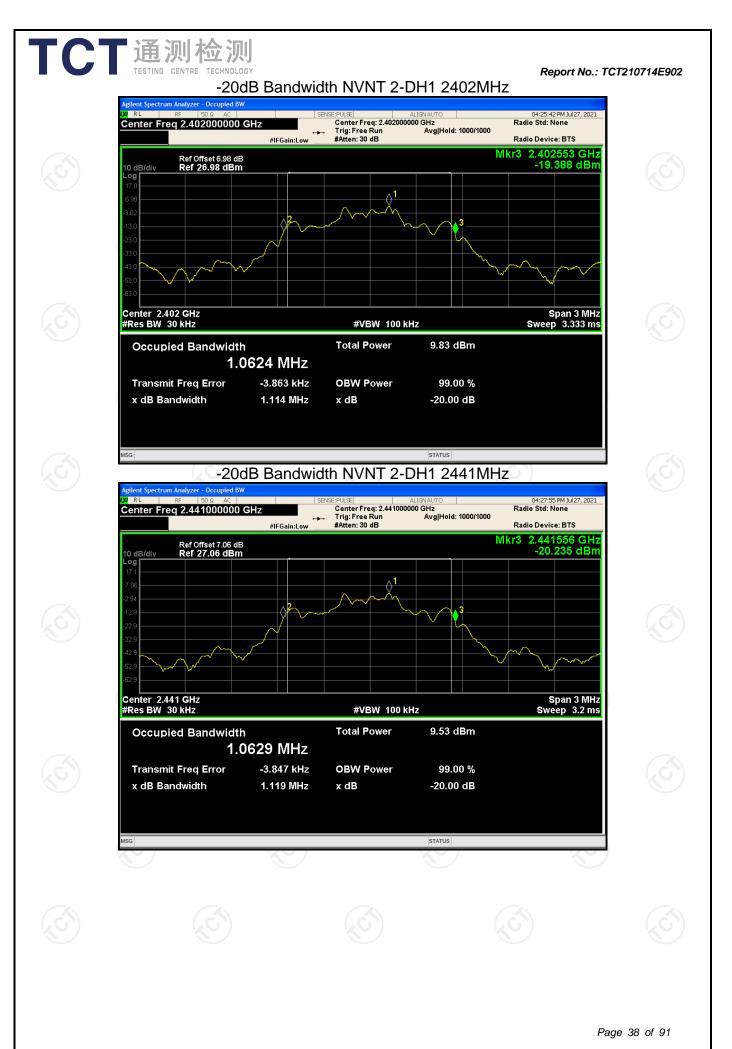
-20dB Bandwidth NVNT 1-DH1 2402MHz

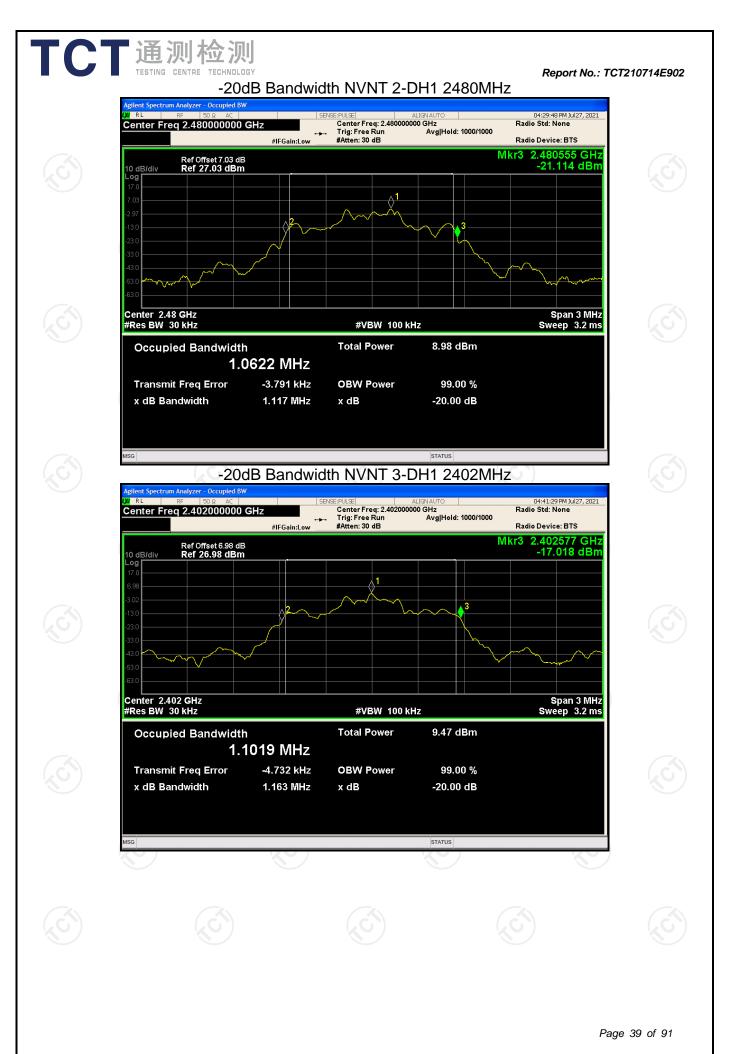


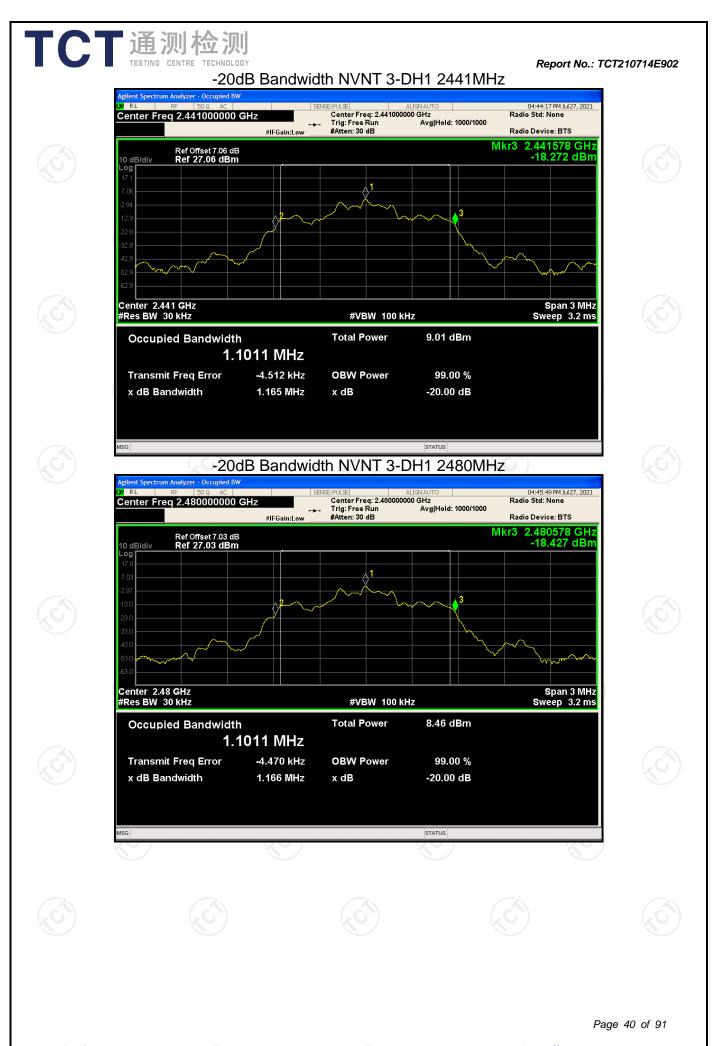
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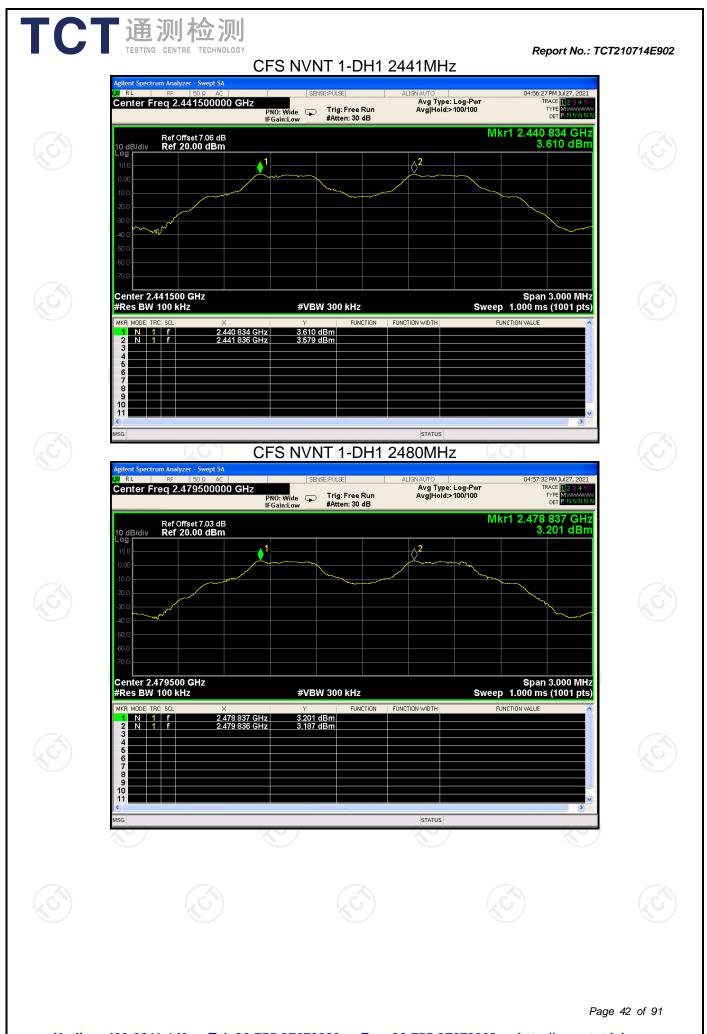


Condition	Mode	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
					· /	
NVNT	1-DH1	2401.837	2402.836	0.999	0.824	Pass
NVNT	1-DH1	2440.834	2441.836	1.002	0.824	Pass
NVNT	1-DH1	2478.837	2479.836	0.999	0.824	Pass
NVNT	2-DH1	2401.837	2402.836	0.999	0.746	Pass
NVNT	2-DH1	2440.840	2441.839	0.999	0.746	Pass
NVNT	2-DH1	2478.840	2479.842	1.002	0.746	Pass
NVNT	3-DH1	2401.837	2402.833	0.996	0.777	Pass
NVNT	3-DH1	2440.837	2441.836	0.999	0.777	Pass
NVNT	3-DH1	2478.837	2479.836	0.999	0.777	Pass

Carrier Frequencies Separation

CFS NVNT 1-DH1 2402MHz





22 RL RF 50Ω AC Center Freq 2.402500000 GH	Z PNO: Wide Trig: Free Run IFGain:Low #Atten: 30 dB	ALIGN AUTO Avg Type: Log-Pwr Avg Hold:>100/100	04:58:33 PM Jul 27, 2021 TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N N	
Ref Offset 6.98 dB 10 dB/div Ref 20.00 dBm			r1 2.401 837 GHz 3.116 dBm	
		2		
-10.0				
-30.0 -40.0 -60.0			hour	
-60.0				
Center 2.402500 GHz #Res BW 100 kHz	#VBW 300 kHz	Sweep	Span 3.000 MHz 1.000 ms (1001 pts)	
MKR MODE TRC SCL X 1 N 1 f 2.401 837 2 N 1 f 2.402 836	Y FUNCTION GHz 3.116 dBm GHz 3.104 dBm	FUNCTION WIDTH FU	NCTION VALUE	
3 4 5 6 6				
7 8 9 10				
11 K MSG	ш —	STATUS		
Agilent Spectrum Analyzer - Swept SA	CFS NVNT 2-DH1	2441MHz	51)	
07 RL RF 50Ω AC Center Freq 2.441500000 GH	PNO: Wide 🧊 🛛 Trig: Free Run	ALIGN AUTO Avg Type: Log-Pwr Avg Hold:>100/100	04:59:35 PM Jul 27, 2021 TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N N	
Ref Offset 7.06 dB	IFGain:Low #Atten: 30 dB	Mk	r1 2.440 840 GHz 2.613 dBm	
10.0		2 		
-10.0	· · · · · · · · · · · · · · · · · · ·			
-30.0				
-50.0				
Center 2.441500 GHz #Res BW 100 kHz	#VBW 300 kHz	Sween	Span 3.000 MHz 1.000 ms (1001 pts)	
MKR MODE TRC SCL X 1 N 1 f 2,440 840 2 N 1 f 2,440 840	Y FUNCTION			
3 4 5	9 GHz 2.632 dBm		E	
10 11 <	la la	STATUS		
	NO		No.	

₩ RL RF 50Ω AC Center Freq 2.479500000 GH	Z SENSE:PULSE PNO: Wide IFGain:Low #Atten: 30 dB	ALIGNAUTO Avg Type: Log-Pwr Avg Hold>100/100	05:00:19 PM Jul 27, 2021 TRACE 1 2 3 4 5 6 TYPE M WWWWW DET P N N N N N	
Ref Offset 7.03 dB 10 dB/div Ref 20.00 dBm			2.478 840 GHz 2.154 dBm	
10.0		2		
-10.0				
-40.0				
Center 2.479500 GHz #Res BW 100 kHz MKR MODE TRC SCL X	#VBW 300 kHz Y FUNCTION		Span 3.000 MHz .000 ms (1001 pts)	
1 N 1 f 2.478 840 2 N 1 f 2.479 842 3 4	0 GHz 2.154 dBm 2 GHz 2.063 dBm			
5 6 7 8 8 9				
		071710	×	
MSG (200)	CFS NVNT 3-DH1	2402MHz	`)	
Agilent Spectrum Analyzer - Swept SA W RL RF 50 Ω AC Center Freq 2.402500000 GH	PNO: Wide 😱 Trig: Free Run	ALIGNAUTO Avg Type: Log-Pwr Avg Hold:>100/100	05:01:05 PM Jul 27, 2021 TRACE 1] 2 3 4 5 6 TYPE MANANANAN DET P. N.N.N.N	
Ref Offset 6.98 dB 10 dB/div Ref 20.00 dBm	IFGain:Low #Atten: 30 dB	Mkr1	2.401 837 GHz 3.101 dBm	
		2		
-10.0 -20.0	- Manun		ho ho	
-30.0 -40.0 -50.0			- Marine Contraction	
-60.0				
Center 2.402500 GHz #Res BW 100 kHz	#VBW 300 kHz		Span 3.000 MHz .000 ms (1001 pts)	
MKR MDDE TRC SEL X 1 N 1 f 2.401 837 2 N 1 f 2.402 833 3 - - - -	7 GHz 3.101 dBm 3 GHz 3.047 dBm	FUNCTION WIDTH FUNCT	ION VALUE	
4				
8 9 10 11			×	
MSG		STATUS		

Image: Name RF SO @ AC AC Center Freq 2.441500000 GHz PN0: IFGai		05:01:58 PM Jul 27, 2021 /pe: Log-Pwr TRACE 12 2 4 5 6 Id> 100/100 TYPE MWWWW Det P NNNNN	
Ref Offset 7.06 dB 10 dB/div Ref 20.00 dBm 10 0		Mkr1 2.440 837 GHz 2.636 dBm	(C
10.00 -10.0 -20.0			
-40.0			
-60.0 -70.0 Center 2.441500 GHz		Span 3.000 MHz	
#Res BW 100 kHz MKR MODE TRC SCL X 1 N 1 f 2.440 837 GHz	#VBW 300 kHz Y FUNCTION FUNCTION WIDTH 2.636 dBm FUNCTION FUNCTION	Sweep 1.000 ms (1001 pts)	
2 N 1 f 2.441 836 GHz 3 4 5 6 6	2.623 dBm		
7 8 9 10 11			
	STATUS S NVNT 3-DH1 2480MI		(c
Agilent Spectrum Analyzer - Swept SA M RF 50 Ω AC Center Freq 2.479500000 GHz	SENSE:PULSE ALIGNAUTO	05:03:13 PM Jul 27, 2021 /pe: Log-Pwr TRACE 12 2 3 5 G Id>100/100 TYPE MWWWWW DET P N NN NH	
IFGai Ref Offset 7.03 dB 10 dB/div Ref 20.00 dBm	Hatten: 30 dB	0er P NNN N Mkr1 2.478 837 GHz 2.146 dBm	
-10.0 -20.0 -30.0			C
-40.0 -50.0 -60.0			
-70.0 Center 2.479500 GHz #Res BW 100 kHz	#VBW 300 kHz	Span 3.000 MHz Sweep 1.000 ms (1001 pts)	
MKR MODE TRC SCL X 1 N 1 f 2,478 837 GHz 2 N 1 f 2,479 836 GHz 3 3 1 f 2,479 836 GHz	Y FUNCTION FUNCTION WIDTH 2.146 dBm 2.134 dBm	FUNCTION VALUE	
4			(JC)
9 9 10 10 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1		×	
MSG	STATUS		

Number of Hopping Channel

TCT通测检测 TECTING CENTRE TECHNOLOGY

Condition	Mode	Hopping Number	Limit	Verdict
NVNT	1-DH1	79	15	🔨 Pass
NVNT	2-DH1	79	15	Pass
NVNT	3-DH1	79	15	Pass

Hopping No. NVNT 1-DH1 2402MHz

tenter Freq 2	50 Ω AC .441750000 G		SENSE:PULSE Trig: Fre #Atten: 3	e Run	LIGNAUTO Avg Type: Log-Pwr Avg Hold: 4000/4000		3 PM Jul 27, 20 RACE 1 2 3 4 TYPE MWWWW DET P N N N
In dB(div Ref	Offset 6.98 dB 20.00 dBm					4 1 1 2.401 4	37 0 GI 024 dB
					<u>A</u> MARAMANA		
70.0 Start 2.40000 C	GHz					Stop 2	.48350 G
Res BW 100 k	(Hz	#	VBW 300 kH	Z	s	weep 8.000 m	s (1001 p
2 N 1 f 3 4 4 5 6 7 7 8 9 9 10 9 11 8 11 8 11 1 11 11	2.479 993		114 dBm				
SG			Ш		STATUS		
SG		pping No	o. NVN ⁻	Γ2-DH	status 1 2402MHz	2(6)	
gilent Spectrum Anal		Hz PNO: Fast	D. NVN [™] SENSE:PULSE → Trig: Fre #Atten: 3	e Run		04:34:2	9 PM Jul 27, 20
sg gilent Spectrum Anal (TRL RF Center Freq 2 Ref (lyzer - Swept SA 50 Ω AC 2.441750000 G	Hz	SENSE:PULSE	e Run	1 2402MH2 LIGNAUTO Avg Type: Log-Pwi Avg Hold: 8000/8000	04:34:2	9 PM Jul 27, 20 TRACE 1 2 3 4 TYPE MWWW DET P NN N 37 0 G
sg gilent Spectrum Anal (TRL RF Center Freq 2 Ref (lyzer - Swept SA 50 Ω AC .441750000 G	Hz PNO: Fast	SENSE:PULSE	e Run	1 2402MHz LIGNAUTO Avg Type: Log-Pwr Avg Hold: 8000/8000	04:34:2	39 PM JUI27, 20 RACE 12 3 4 TYPE P WINN 37 0 GH 975 dB

1.975 dBm -4.445 dBm

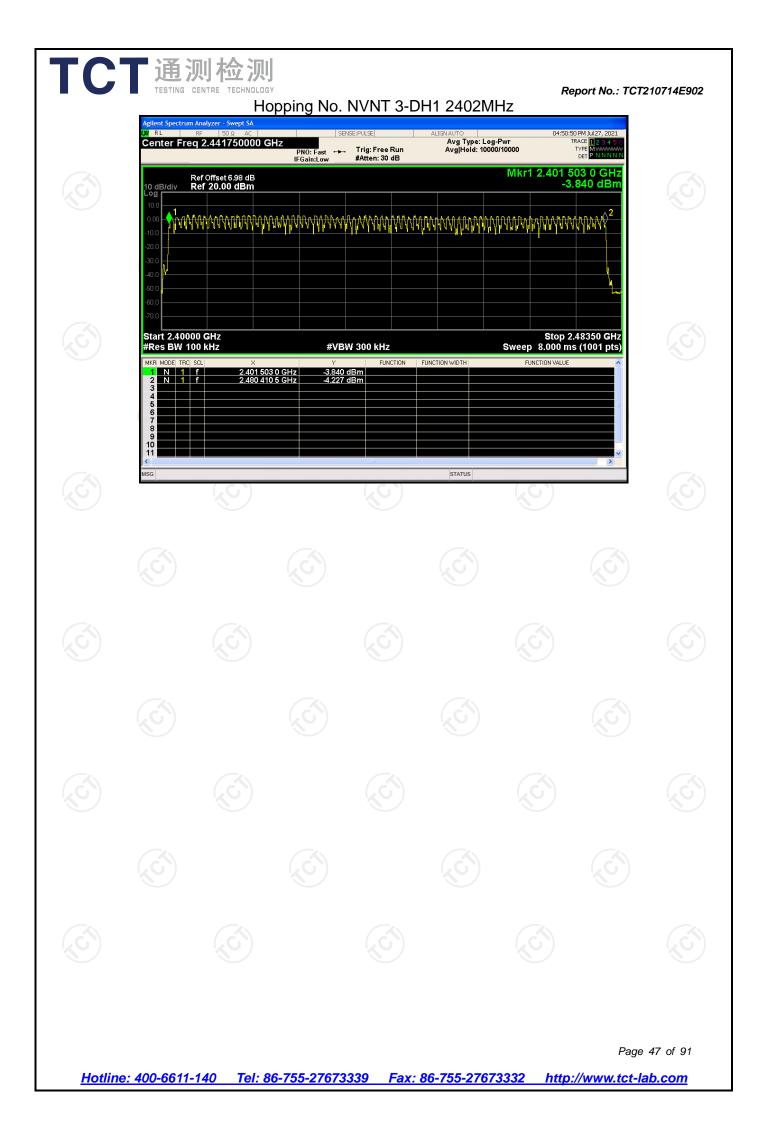
2.401 837 0 GHz 2.480 494 0 GHz

N 1 f N 1 f

10 11

FUNCTION WIDTH

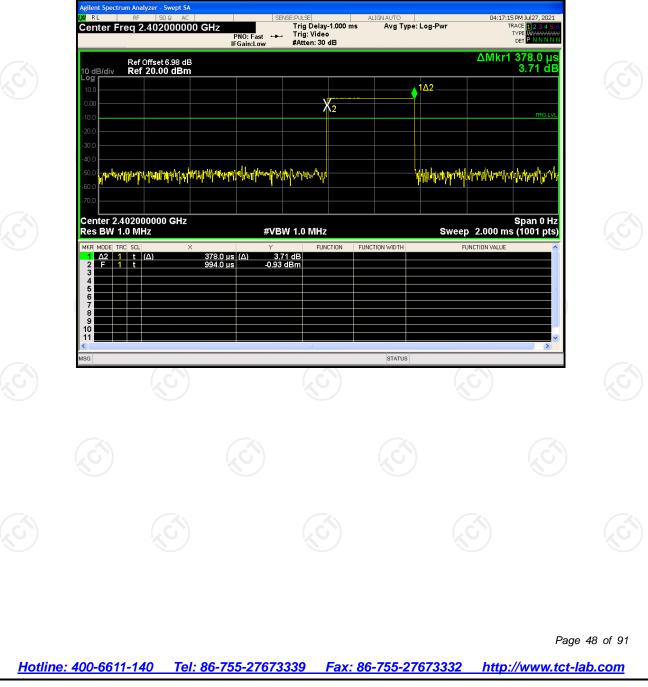
STATUS



Condition	Mode	Frequency (MHz)	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2402	0.378	120.960	31600	400	Pass
NVNT	1-DH3	2402	1.634	261.440	31600	400	Pass
NVNT	1-DH5	2402	2.882	307.413	31600	400	Pass
NVNT	2-DH1	2402	0.385	123.200	31600	400	Pass
NVNT	2-DH3	2402	1.637	261.920	31600	400	Pass
NVNT	2-DH5	2402	2.885	307.733	31600	400	Pass
NVNT	3-DH1	2402	0.386	123.520	31600	400	Pass
NVNT	3-DH3	2402	1.636	261.760	31600	400	Pass
NVNT	3-DH5	2402	2.887	307.947	31600	400	Pass

Dwell Time

Dwell NVNT 1-DH1 2402MHz



Cent	Spectrum Analyzer - Swept SA RF 50 Ω AC er Freq 2.402000000 GHz	SENSE:PULSE Trig Delay-1.000 m PN0: Fast ↔→ Trig: Video IFGain:Low #Atten: 30 dB	ALIGNAUTO IS Avg Type: Log-Pwr	04:23:56 PM Jul 27, 2021 TRACE 1 2 3 4 5 6 TYPE WWWWWWWW DET P N N N N N	
10 dB	Ref Offset 6.98 dB div Ref 20.00 dBm	IFGain:Low #Atten: 30 dB		ΔMkr1 1.634 ms -4.06 dB	
Log 10.0 - 0.00 -		X ₂			
-10.0 - -20.0 - -30.0 -					
-40.0	and a superior of the superior			sty so jas jakoja dagi ja	
Res E	er 2.402000000 GHz 3W 1.0 MHz DDE TRC SCL X	#VBW 1.0 MHz		Span 0 Hz 3.000 ms (10001 pts)	
2 3 4	2 1 t (Δ) 1.634 m 1 t 999.0 μ	ns (Δ) -4.06 dB is -3.78 dBm			
5 6 7 8					
10 11				×	
MSG		well NVNT 1-DH5	2402MHz	3.)	
LXI RL	Spectrum Analyzer - Swept SA RF 50 Ω AC er Freq 2.402000000 GHz	SENSE:PULSE Trig Delay-1.000 m PNO: Fast ↔ Trig: Video	ALIGN AUTO Is Avg Type: Log-Pwr	04:24:15 PM Jul 27, 2021 TRACE 123456 TYPE WWWWWW DET P NNNNN	
10 dB	Ref Offset 6.98 dB div Ref 20.00 dBm	IFGain:Low #Atten: 30 dB		ΔMkr1 2.882 ms -0.75 dB	
Log 10.0 - 0.00 -					
-10.0 - -20.0 -	X2				
-30.0 - -40.0 - -50.0 	en se statistik med en steller met se konstant se se statister ste			Little	
	alis alida materia program de la contra programa de la contra de la contra de la contra de la contra de la cont				
-60.0 <mark></mark> -70.0 –	er 2.402000000 GHz 3W 1.0 MHz	#VBW 1.0 MHz	-	Span 0 Hz 4.000 ms (10001 pts)	
-70.0 Cento Res E		Y EUNCTION	EUNCTION WIDTH FI	NUTION VALUE	
-700 Cent Res E MKR M	DDE TRC SCL X 2 1 t (Δ) 2.882 m - 1 t 998.8 μ	Y FUNCTION 15 (Δ) -0.75 dB 15 -3.66 dBm	FUNCTION WIDTH FL		
-70 0 Centr Res E MKR M 1 A 2 4					
-70 0 Cent Res E MKR M 1 A 3 4 5 6 7			FUNCTION WIDTH FL	>	
-70 0 Cent Res E MKR M 4 2 3 3 4 5 6 7 7 8 9 10 11			FUNCTION WIDTH FL		
-70 0 Cent Res 5 3 4 5 6 7 8 9 10 11					

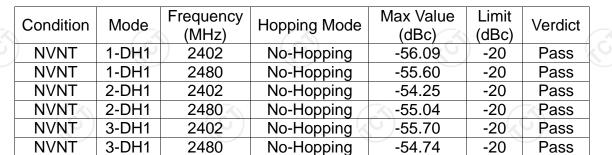
	Center Freq 2.402000000 G		IAUTO 04:32:17 PM Jul 27, 2021 Avg Type: Log-Pwr TRACE 12 2:4 5 6 TYPE WILLING PWR DET PINNNIN DET PINNNIN	
	Ref Offset 6.98 dB 0 dB/div Ref 20.00 dBm		ΔMkr1 385.0 μs -0.93 dB	
	0.00	X ₂		
	30.0 40.0 50.0 nl, the proof on the start of	aite trito da la facilitativa da la Mante da la facilitativa da la facil	and the state of the	
	Center 2.402000000 GHz		Span 0 Hz	
	Aces BW 1.0 MHz MKR MODE TRC X 1 Δ2 1 t Δ2 2 7 F 1 t Δ2 S	#VBW 1.0 MHz Υ FUNCTION FUNCTION 385.0 μs (Δ) -0.93 dB 999.0 μs -6.64 dBm	Sweep 2.000 ms (10001 pts)	
	3 4 5 6 7			
	8 9 9 9 10 10 10 10 10 10 10 10 10 10 10 10 10		×	
5) _	sa (201)	Dwell NVNT 2-DH3 240	status 2MHz	
LX.	gilent Spectrum Analyzer - Swept SA RL RF 50 Q AC Center Freq 2.402000000 G	Hz Trig Delay-1.000 ms PNO: Fast →→→ Trig: Video	IAUTO 04:40:24 PM 3/127, 2021 Avg Type: Log-Pwr TRACE 22 34 5 0 TYPE 24 5 0 TYPE 24 5 0 TYPE 24 5 0 TYPE 24 5 0	
	Ref Offset 6.98 dB 0 dB/div Ref 20.00 dBm	IFGain:Low #Atten: 30 dB	ΔMkr1 1.637 ms -2.12 dB	
18				
	10.0	X ₂		
33)	10.0 0.00 10.0 20.0 30.0			
3	10.0 0.00 10.0 20.0 30.0 40.0			
3	10.0 0.00 20.0			
3	10.0 0.00 20.0	#VBW 1.0 MHz #VBW 1.0 MHz #VBW 1.0 MHz	Sweep 3.000 ms (10001 pts)	
3	10.0 0.00 0.00 20.0	#VBW 1.0 MHz	Sweep 3.000 ms (10001 pts)	
3	10.0 0.00	#VBW 1.0 MHz	TROLUL TROLUL Span 0 Hz Sweep 3.000 ms (10001 pts)	
3	10.0 0.00	#VBW 1.0 MHz	Sweep 3.000 ms (10001 pts)	
3	10.0 0.00	#VBW 1.0 MHz	TRO LVL	

	RF 50 Ω AC Is (req 2.402000000 GHz PN0: Fast ↔ IFGain:Low	Toloo Mida a	04:40:45 PM Jul 27, 2021 ype: Log-Pwr TRACE 2:3:4:5:6 TYPE WANNAM DET P NINNALLY	
10 dB/div Log	Ref Offset 6.98 dB Ref 20.00 dBm		ΔMkr1 2.885 ms -0.86 dB	
10.0 0.00				
-10.0	X.I.		THE IVI	
-30.0	.nt bles plad tit, ytholog ok dat		and a second	
-60.0 1. 1777 -60.0 1. 1777 -70.0	under bereichte ander bereichte eine eine eine eine eine eine eine ei		and share the	
Center 2. Res BW 1	402000000 GHz 1.0 MHz #VE	BW 1.0 MHz	Span 0 Hz Sweep 4.000 ms (10001 pts)	
MKR MODE TH 1 42 1 2 F	1 t (Δ) 2.885 ms (Δ) -0	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	
3 4 5 6				
7 8 9 10				
MSG		STATUS	s	
Anilont Sport	Dwell NV	/NT 3-DH1 2402M	Hz (C)	
LXI RL	RF 50Ω AC S Freq 2.402000000 GHz PN0: Fast ↔	🛶 Trig:Video	04:47:57 PM Jul 27, 2021 ype: Log-Pwr TRACE 1 2 3 4 5 6 TYPE WWWWW OET P NNNNN	
10 dB/div	IFGain:Low Ref Offset 6.98 dB Ref 20.00 dBm	#Atten: 30 dB	ΔMkr1 386.0 μs -0.54 dB	
			1Δ2	
-10.0		X2 1	TROLVL	
-30.0				
	en harrisede de antiqui tradicente de la segui antiqui antiqui en la segui antiqui en la segui antiqui en la s		<mark>na dia kaominina dia kaomini Ny faritr'ora dia kaominina d</mark>	
	402000000 GHz		Span 0 Hz	
Res BW 1 MKR MODE TI	RC SCL X Υ 1 t (Δ) 386.0 μs (Δ) -0	SW 1.0 MHz FUNCTION FUNCTION WIDTH	Sweep 2.000 ms (10001 pts)	
2 F 3 4 5	1 t 999.0 μs -6.3	9 dBm		
6 7 8 9				
MSG	No.	STATUS		

CT通测检 TESTING CENTRE TE	Dwell NVNT 3-DH3 240	Report No.: TCT210714E90 02MHz
00/ RL FF 50 Ω Center Freq 2.40200	AC SENSE:PULSE ALIGN	NAUTO 04:53:33 PM 3/127, 2021 Avg Type: Log-Pwr TRACE 123:34 5 6 TYPE WAANNAN DET P I NNN N
Ref Offset 6.5 10 dB/div Ref 20.00 d 10 0 10 0 -10 0 -20 0 -30 0	98 dB	ΔMkr1 1.636 ms 3.04 dB
-40.0 -50.0 -60.0 -77.0 Center 2.402000000 G Res BW 1.0 MHz	High High High High High High High High	Span 0 Hz Sweep 3.000 ms (10001 pts)
MKR MODE TRC SCL 1 Δ2 1 C (Δ) 2 F 1 C (Δ) 3 - - - - 4 - - - - 5 - - - - 6 - - - - 7 - - - - 9 9 - - - 10 - - - -	Y FUNCTION FUNCTION 1.636 ms (Δ) 3.04 dB 999.0 μs 999.0 μs -5.38 dBm -5.38 dBm	N WIDTH FUNCTION VALUE
Agilent Spectrum Analyzer – Swa W RL RF 50 Q Center Freq 2.40200 10 dB/div Ref Offset 6.5 10 dB/div Ref 20.00 d	AC SENSE:PULSE ALIGN D00000 GHz Trig Delay-1.000 ms PNO: Fast Trig: Video IFGain:Low #Atten: 30 dB	STATUS
10.0 0.00 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0 -60.0 -70.0		
Center 2.402000000 G Res BW 1.0 MHz	GHZ #VBW 1.0 MHz × Y FUNCTION FUNCTION	Span 0 Hz Sweep 4.000 ms (10001 pts)
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Δ 2.887 ms (Δ) -2.53 dB Forestar 998.8 μs -2.49 dBm -2.49 dBm	STATUS

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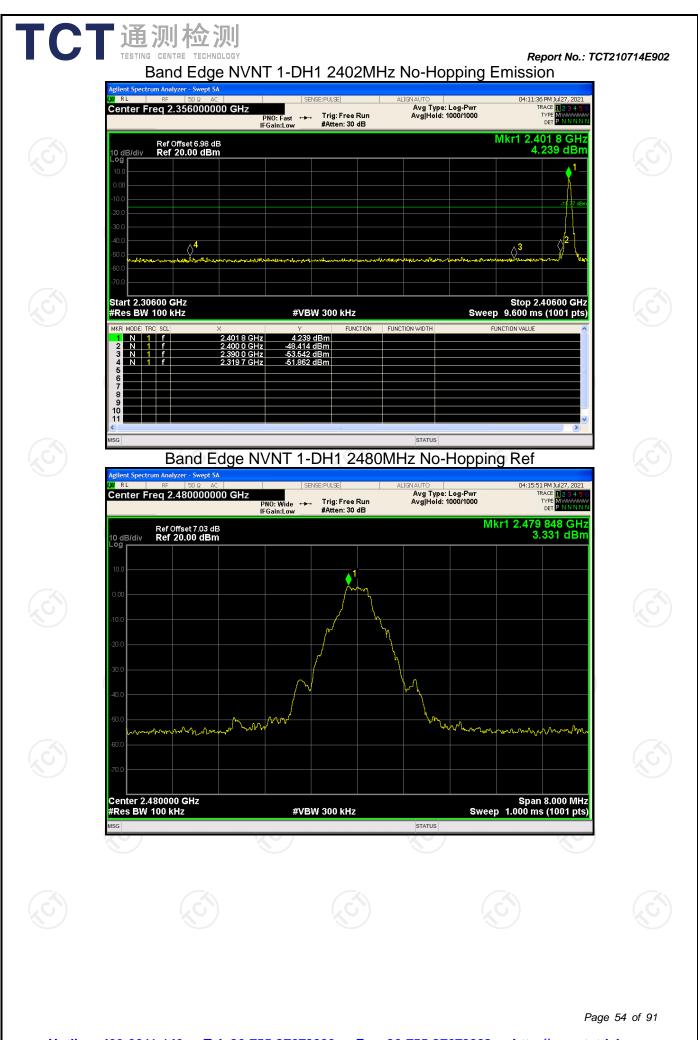
Hotline: 400-6611-140 Tel: 86-755-27673339 Fax: 86-755-27673332 http://www.tct-lab.com

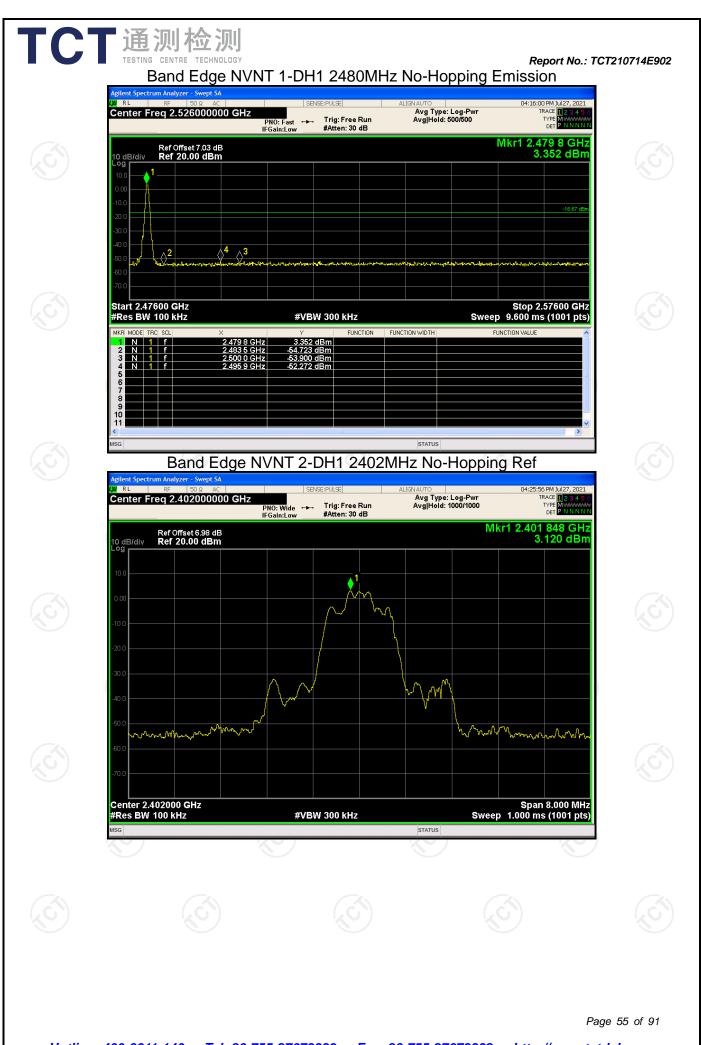


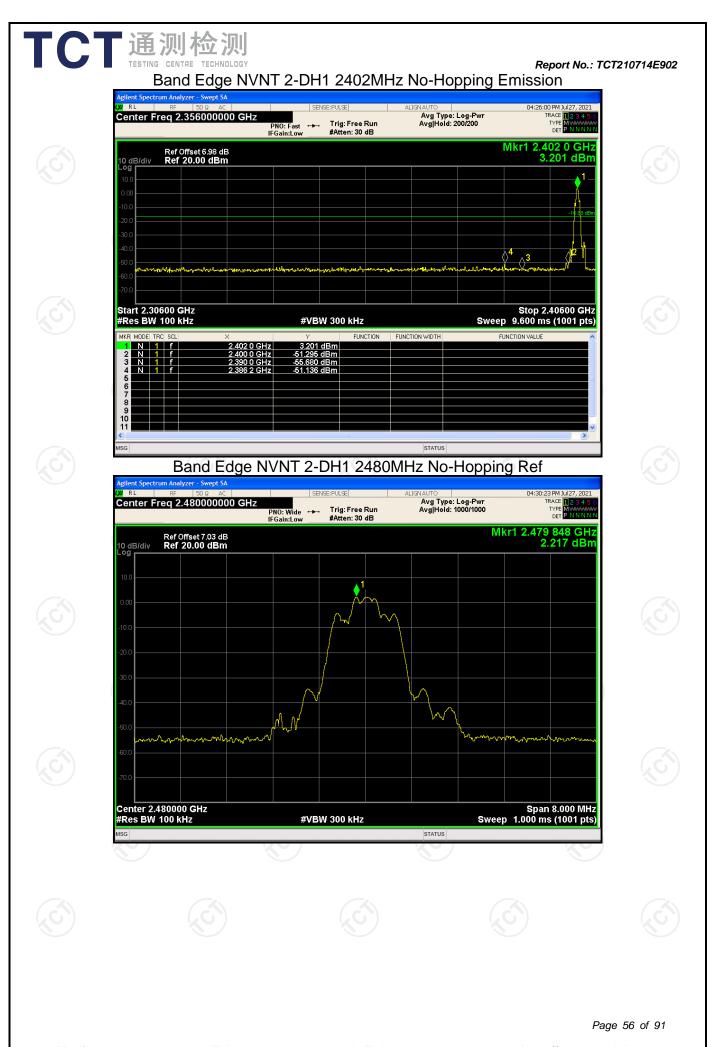
Band Edge

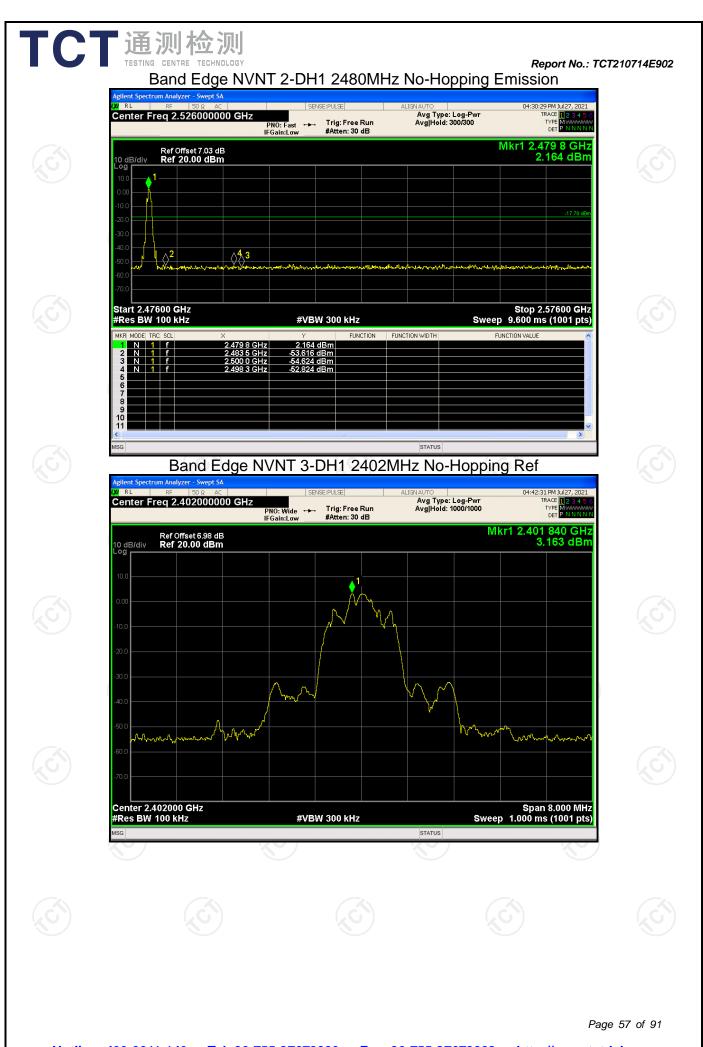
Band Edge NVNT 1-DH1 2402MHz No-Hopping Ref

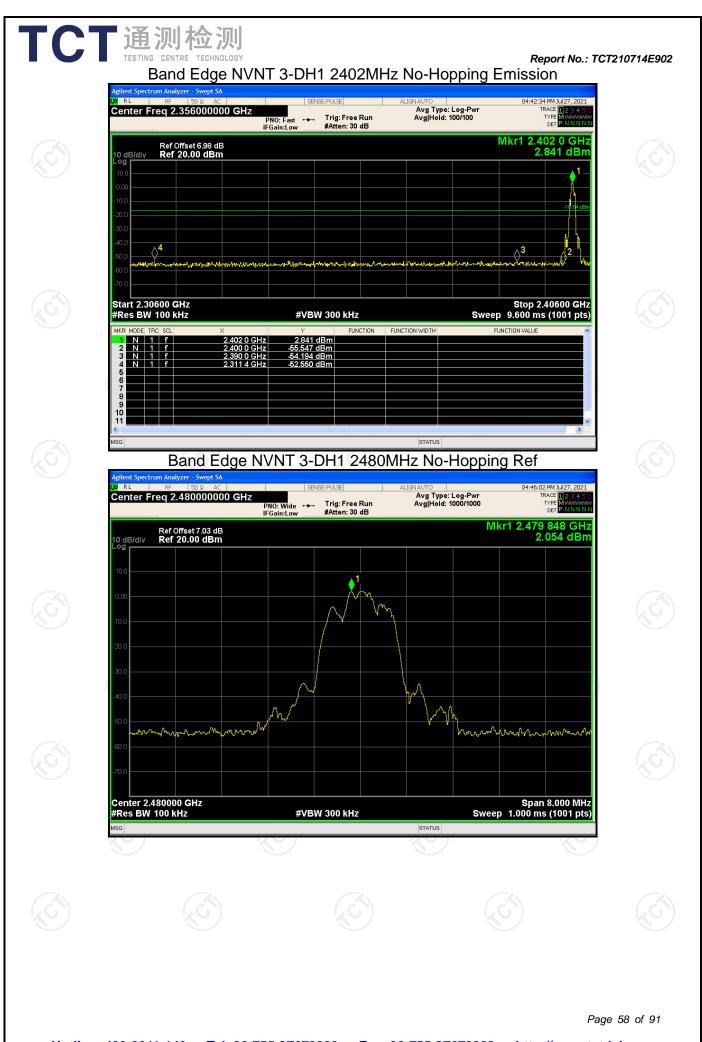


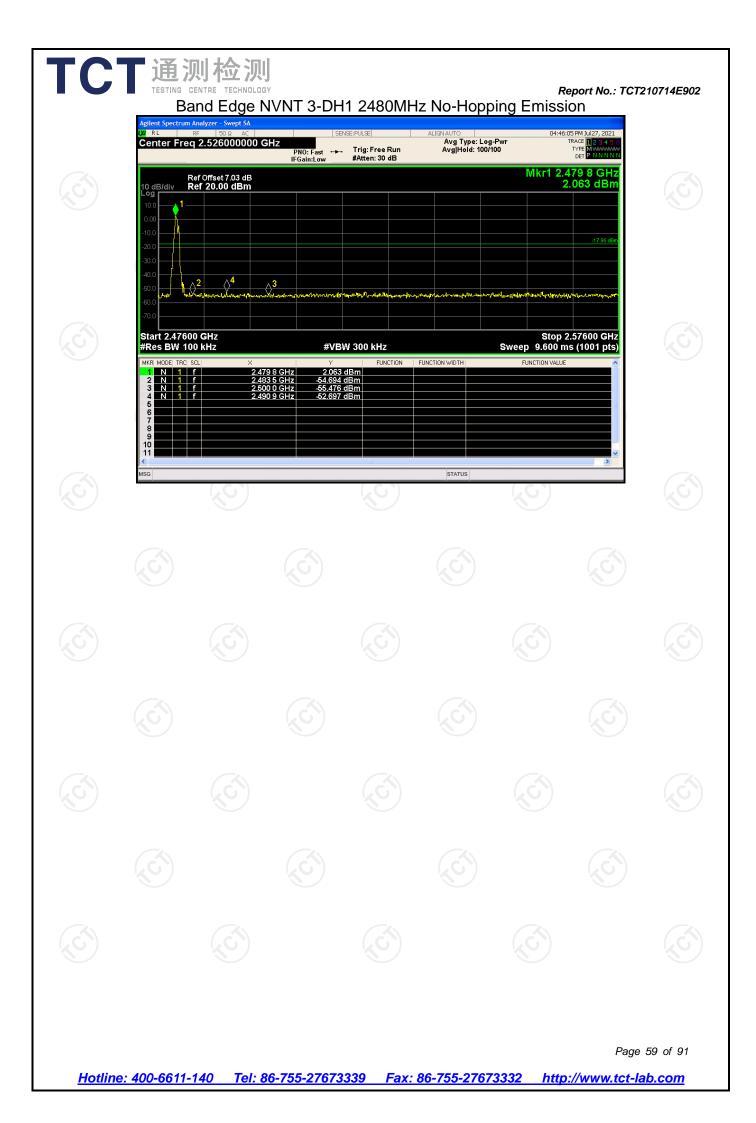












Condition	Mode	Frequency (MHz)	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH1	2402	Hopping	-55.31	-20	Pass
NVNT	1-DH1	2480	Hopping	-55.16	-20	Pass
NVNT	2-DH1	2402	Hopping	-54.66	-20	Pass
NVNT	2-DH1	2480	Hopping	-53.38	-20	Pass
NVNT	3-DH1	2402	Hopping	-53.97	-20	Pass
NVNT	3-DH1	2480	Hopping	-54.32	-20	Pass

Band Edge(Hopping)

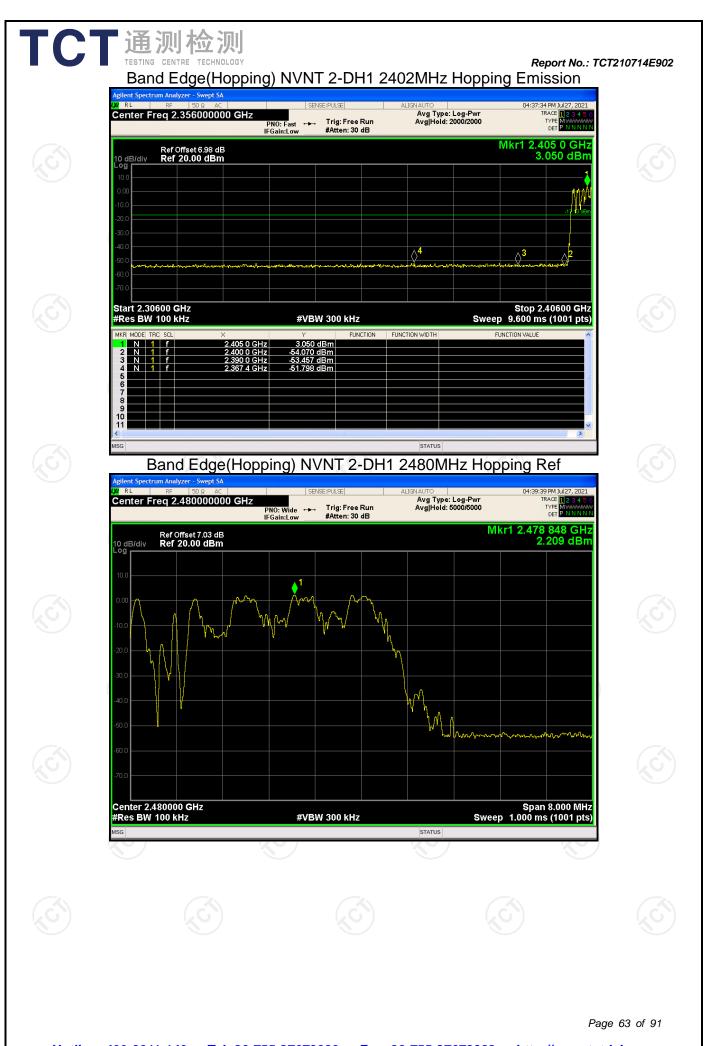
Band Edge(Hopping) NVNT 1-DH1 2402MHz Hopping Ref



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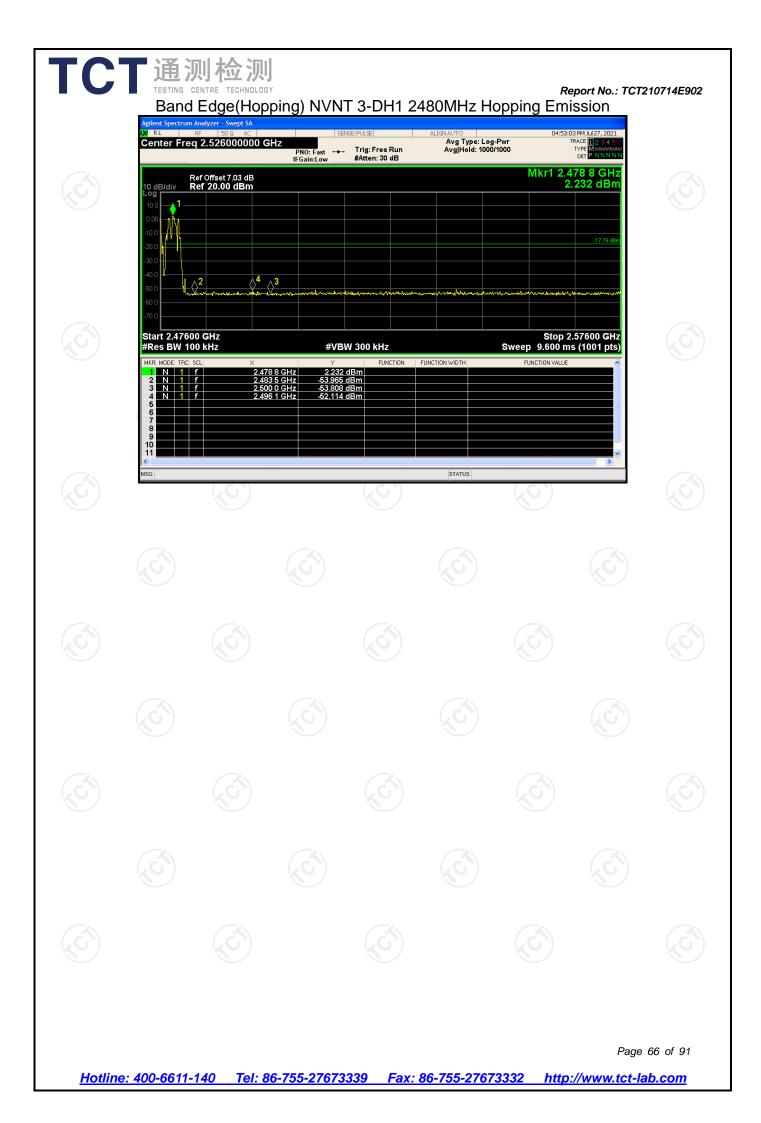


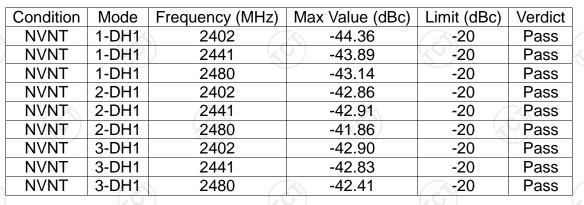












Conducted RF Spurious Emission



Tx. Spurious NVNT 1-DH1 2402MHz Ref

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