

TEST REPORT

Report No.:	BCTC2401726300-1E					
Applicant:	NINGBO AUDITORYWORKS CO., LTD.					
Product Name:	HearPod Air					
Test Model:	TC1600-15Y					
Tested Date:	2024-01-15 to 2024-01-24					
Issued Date:	2024-01-24	• ••••• ••••				

She	nzhen BCTC Testing Co., Ltd.	·····				
No.: BCTC/RF-EMC-005	Page: 1/of 79 Edition: B.1					



FCC ID: 2BAHR-TC1600

Product Name:	HearPod Air
Trademark:	N/A
Model/Type Reference:	TC1600-15Y FT-09E, FT-09F, FT-03B, FT-15A, FT-04A, TC1600-02Y, TC1600-03Y, TC1600-04Y, TC1600-08Y, TC1600-09Y, TC1600-11Y,AW-HA10, FT-****, TC1600- *****, AW-HA***** ("*" can be 0-9, A-Z, a-z or blank, indicate different enclosure color, sales area or customer)
Prepared For:	NINGBO AUDITORYWORKS CO., LTD.
Address:	3-314 Lingqiao Road 229, Haishu District, Ningbo City, Zhejiang Province, China
Manufacturer:	NINGBO AUDITORYWORKS CO., LTD.
Address:	3-314 Lingqiao Road 229, Haishu District, Ningbo City, Zhejiang Province, China
Prepared By:	Shenzhen BCTC Testing Co., Ltd.
Address:	1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Sample Received Date:	2024-01-15
Sample tested Date:	2024-01-15 to 2024-01-24
Issue Date:	2024-01-24
Report No.:	BCTC2401726300-1E
Test Standards	FCC Part15.247 ANSI C63.10-2013
Test Results	PASS
Remark:	This is Bluetooth Classic radio test report.

Tested by:

INP

Brave Zeng/ Project Handler

Approved by:

Zero Zhou/Reviewer

The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client.



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(Note: N/A Means Not Applicable)

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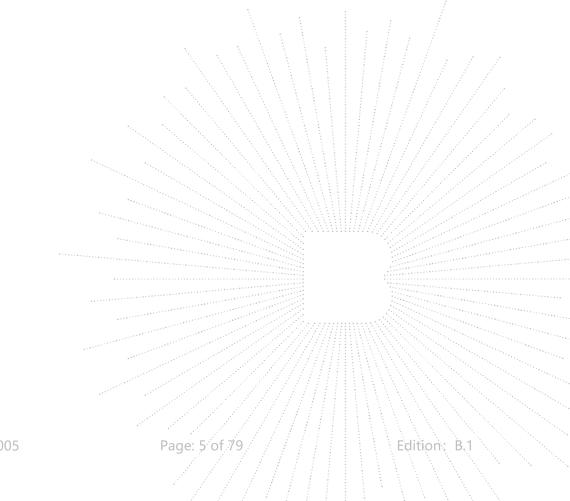
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1. Version

Report No.	Issue Date	Description	Approved
BCTC2401726300-1E	2024-01-24	Original	Valid





2. Test Summary

The Product has been tested according to the following specifications:

No.	Test Parameter	Clause No	Results
1	Conducted emission AC power port	§15.207	PASS
2	Conducted peak output power for FHSS	§15.247(b)(1)	PASS
3	20dB Occupied bandwidth	§15.247(a)(1)	PASS
4	Hopping channel separation	§15.247(a)(1)	PASS
5	Number of hopping frequencies	§15.247(a)(1)(iii)	PASS
6	Dwell Time	§15.247(a)(1)(iii)	PASS
7	Spurious RF conducted emissions	§15.247(d)	PASS
8	Band edge	§15.247(d)	PASS
9	Spurious radiated emissions for transmitter	§15.247(d) & §15.209 & §15.205	PASS
10	Antenna Requirement	15.203	PASS



3. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

No.	Item	Uncertainty
1	3m chamber Radiated spurious emission(30MHz-1GHz)	U=4.3dB
2	3m chamber Radiated spurious emission(9KHz-30MHz)	U=3.7dB
3	3m chamber Radiated spurious emission(1GHz-18GHz)	U=4.5dB
4	3m chamber Radiated spurious emission(18GHz-40GHz)	U=3.34dB
5	Conducted Emission (150kHz-30MHz)	U=3.20dB
6	Conducted Adjacent channel power	U=1.38dB
7	Conducted output power uncertainty Above 1G	U=1.576dB
8	Conducted output power uncertainty below 1G	U=1.28dB
9	humidity uncertainty	U=5.3%
10	Temperature uncertainty	U≑0.59℃



4. Product Information And Test Setup

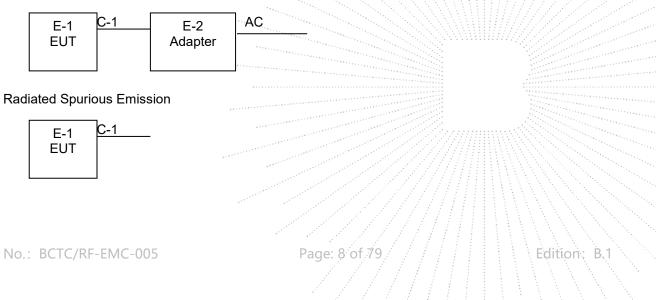
4.1 Product Information

Model/Type reference:	TC1600-15Y FT-09E, FT-09F, FT-03B, FT-15A, FT-04A, TC1600-02Y, TC1600-03Y, TC1600-04Y, TC1600-08Y, TC1600-09Y, TC1600-11Y,AW-HA10, FT-****, TC1600- *****, AW-HA***** ("*" can be 0-9, A-Z, a-z or blank, indicate different enclosure color, sales area or customer)
Model differences:	All the model are the same circuit and RF module, except model names and appearance of the color.
Bluetooth Version:	5.3
Hardware Version:	V0.2
Software Version:	1.0.1.1
Operation Frequency:	2402-2480MHz
Type of Modulation:	GFSK, π/ 4 DQPSK, 8DPSK
Number Of Channel	79CH
Antenna installation:	Internal antenna
Antenna Gain:	 2.5 dBi Remark: The antenna gain of the product comes from the antenna report provided by the customer, and the test data is affected by the customer information. The antenna gain of the product is provided by the customer, and the test data is affected by the customer, and the test data is affected by the customer, and the test data
Ratings:	DC 5V from adapter/DC 3.7V from battery

4.2 Test Setup Configuration

See test photographs attached in *EUT TEST SETUP PHOTOGRAPHS* for the actual connections between Product and support equipment.

Conducted Emission:





4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
E-1	HearPod Air	N/A	TC1600-15Y	N/A	EUT
E-2	Adapter	N/A	N/A	N/A	Auxiliary

ltem	Shielded Type	Ferrite Core	Length	Note
C-1	N/A	N/A	0.5M	DC cable unshielded

Notes:

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.

4.4 Channel List

СН	Frequency (MHz)	СН	Frequency (MHz)	СН	Frequency (MHz)	СН	Frequency (MHz)
0	2402	1	2403	2	2404	3	2405
4	2406	5	2407	6	2408	7	2409
8	2410	9	2411	10	2412	11	2413
12	2414	13	2415	14	2416	15	2417
16	2418	17	2419	18	2420	19	2421
20	2422	21	2423	22	2424	23	2425
24	2426	25	2427	26	2428	27	2429
28	2430	29	2431	30	2432	31	2433
32	2434	33	2435	34	2436	35	2437
36	2438	37	2439	38	2440	39	2441
40	2442	41	2443	42	2444	43	2445
44	2446	45	2447	46	2448	47	2449
48	2450	49	2451	50	2452	51	2453
52	2454	53	2455	54	2456	55	2457
56	2458	57	2459	58	2460	59	2461
60	2462	61	2463	62	2464	63	2465
64	2466	65	2467	66	2468	67	2469
68	2470	69	2471	70	2472	71	2473
72	2474	73	2475	74	2476	75	2477
76	2478	77	2479	78	2480	79	1



4.5 Test Mode

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

Test Mode	Test mode	Low channel	Middle channel	High channel
1	Transmitting(GFSK)	2402MHz	2441MHz	2480MHz
2	Transmitting(π/ 4 DQPSK)	2402MHz	2441MHz	2480MHz
3	Transmitting(8DPSK)	2402MHz	2441MHz	2480MHz
4		Link		

Note:

(1) The measurements are performed at the highest, middle, lowest available channels.

(2) Fully-charged battery is used during the test

4.6 Table Of Parameters Of Text Software Setting

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters

Test software Version	CMD				
Frequency	2402 MHz	2441 MHz	2480 MHz		
Parameters	DEF	DEF	DEF		



Test Facility And Test Instrument Used 5.

5.1 **Test Facility**

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards. FCC Test Firm Registration Number: 712850

A2LA certificate registration number is: CN1212

ISED Registered No.: 23583

ISED CAB identifier: CN0017

5.2 Test Instrument Used

Conducted Emissions Test								
Equipment	Manufacturer Model# Serial# Last Cal. Next Cal.							
Receiver	R&S	ESR3	102075	May 15, 2023	May 14, 2024			
LISN	R&S	ENV216	101375	May 15, 2023	May 14, 2024			
Software	Frad	EZ-EMC	EMC-CON 3A1	/	/			
Pulse limiter	Schwarzbeck	VTSD9561-F	01323	Sept. 22, 2023	Sept 21, 2024			

RF Conducted Test							
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.		
Power meter	Keysight	E4419	1	May 15, 2023	May 14, 2024		
Power Sensor (AV)	Keysight	E9300A		May 15, 2023	May 14, 2024		
Signal Analyzer20kH z-26.5GHz	Keysight	N9020A	MY49100060	May 15, 2023	May 14, 2024		
Spectrum Analyzer9kHz- 40GHz	R&S	FSP40	100363	May 15, 2023	May 14, 2024		
Radio frequency control box	MAIWEI	MW100-RFC B	and the second sec				
Software	MAIWEI	MTS 8310	· · · · · · · · · · · · · · · · · · ·				



Radiated Emissions Test (966 Chamber01)							
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.		
966 chamber	ChengYu	966 Room	966	May 15, 2023	May 14, 2026		
Receiver	R&S	ESR3	102075	May 15, 2023	May 14, 2024		
Receiver	R&S	ESRP	101154	May 15, 2023	May 14, 2024		
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 15, 2023	May 14, 2024		
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	942	May 29, 2023	May 28, 2024		
Loop Antenna(9KHz -30MHz)	Schwarzbeck	FMZB1519B	00014	May 31, 2023	May 30, 2024		
Amplifier	SKET	LAPA_01G18 G-45dB	SK2021040901	May 15, 2023	May 14, 2024		
Horn Antenna	Schwarzbeck	BBHA9120D	1541	May 31, 2023	May 30, 2024		
Amplifier(18G Hz-40GHz)	MITEQ	TTA1840-35- HG	2034381	May 15, 2023	May 14, 2024		
Horn Antenna(18G Hz-40GHz)	Schwarzbeck	BBHA9170	00822	May 31, 2023	May 30, 2024		
Spectrum Analyzer9kHz- 40GHz	R&S	FSP40	100363	May 15, 2023	May 14, 2024		
Software	Frad	EZ-EMC	FA-03A2 RE	\	\		

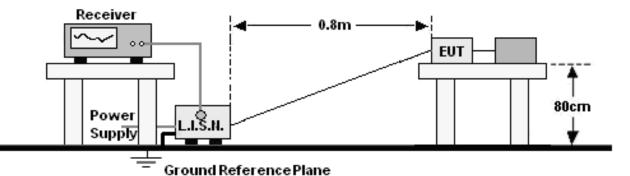
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6. Conducted Emissions

6.1 Block Diagram Of Test Setup



6.2 Limit

	Limit (dBuV)
Frequency (MHz)	Quas-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Notes:

1. *Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

6.3 Test procedure

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

a. The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).

b. The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.

c. For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

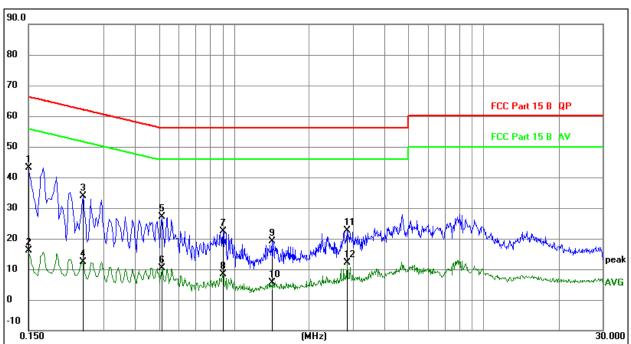
6.4 EUT operating Conditions

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



6.5 Test Result

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Phase :	L
Test Mode:	Mode 1	Test Voltage :	DC 5V from adapter



Remark:

All readings are Quasi-Peak and Average values.
 Factor = Insertion Loss + Cable Loss.
 Measurement = Reading Level + Correct Factor
 Over = Measurement - Limit

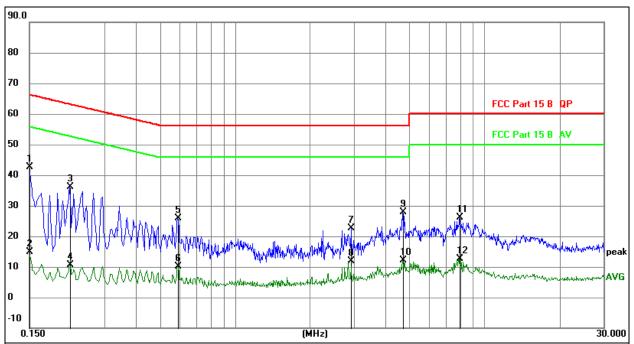
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz		dB	dBuV	dBuV	dB	Detector
1	*	0.1500	23.38	19.73	43.11	66.00	-22.89	QP
2		0.1500	-3.61	19.73	16.12	56.00	-39.88	AVG
3		0.2481	14.05	19.83	33.88	61.82	-27.94	QP
4		0.2481	-7.54	19.83	12.29	51.82	-39.53	AVG
5		0.5128	7.34	19.84	27.18	56.00	-28.82	QP
6		0.5128	-9.35	19.84	10.49	46.00	-35.51	AVG
7		0.9039	2.42	19.91	22.33	56.00	-33.67	QP
8		0.9039	-11.49	19.91	8.42	46.00	-37.58	AVG
9		1.4182	-0.80	19.95	19.15	56.00	-36.85	QP
10		1.4182	-14.24	19.95	5.71	46.00	-40.29	AVG
11		2.8389	2.48	20.25	22.73	56.00	-33.27	QP
12		2.8389	-8.24	20.25	12.01	46.00	-33.99	AVG

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Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Phase :	Ν
Test Mode:	Mode 1	Test Voltage :	DC 5V from adapter



Remark:

All readings are Quasi-Peak and Average values.
 Factor = Insertion Loss + Cable Loss.
 Measurement = Reading Level + Correct Factor

4.	Over =	Measurement -	Limit

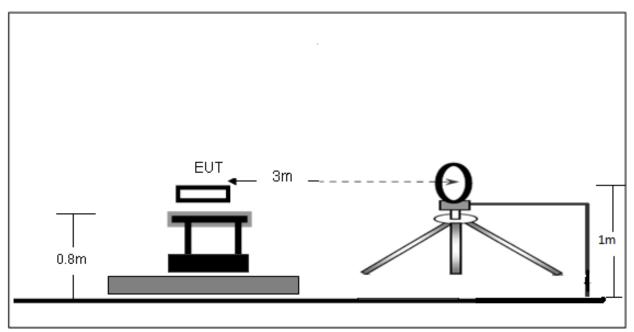
M 1 * 0. 2 0. 3 0. 3 0. 4 0. 5 0. 0. 0.	req.	Reading	Correct	Measure-			
1 * 0. 2 0. 3 0. 4 0. 5 0.		Level	Factor	ment	Limit	Over	
2 0. 3 0. 4 0. 5 0.	1Hz		dB	dBuV	dBuV	dB	Detector
3 0. 4 0. 5 0.	.1500	22.78	19.73	42.51	66.00	-23.49	QP
4 0. 5 0.	.1500	-4.89	19.73	14.84	56.00	-41.16	AVG
5 0.	.2175	16.20	19.83	36.03	62.91	-26.88	QP
	.2175	-9.19	19.83	10.64	52.91	-42.27	AVG
6 0.	.5910	6.03	19.84	25.87	56.00	-30.13	QP
	.5910	-9.61	19.84	10.23	46.00	-35.77	AVG
7 2.	.9265	2.28	20.28	22.56	56.00	-33.44	QP
8 2.	.9265	-8.52	20.28	11.76	46.00	-34.24	AVG
9 4.	.7175	7.39	20.49	27.88	56.00	-28.12	QP
10 4.	.7175	-8.31	20.49	12.18	46.00	-33.82	AVG
11 7.	.9755	6.32	19.93	26.25	60.00	-33.75	QP
12 7.	.9755	-7.35	19.93	12.58	50.00	-37.42	AVG



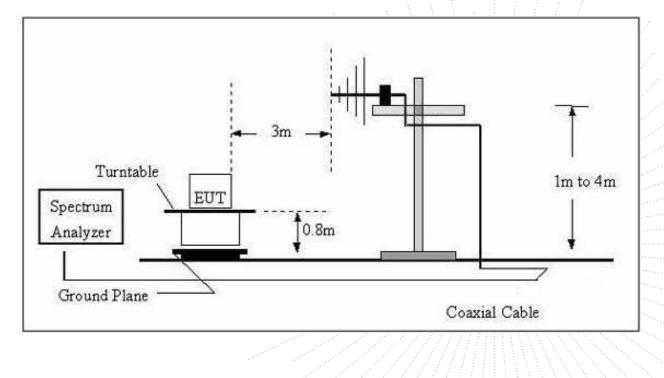
7. Radiated emissions

7.1 Block Diagram Of Test Setup

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

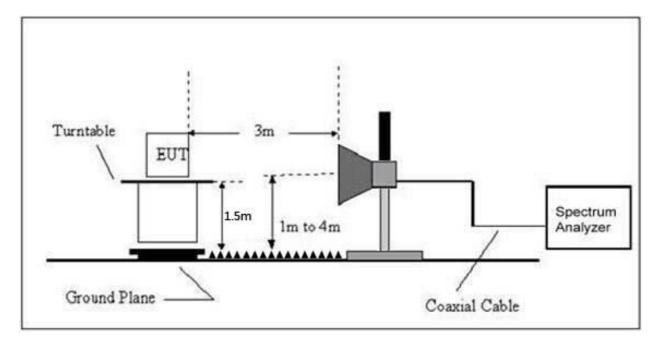


(B) Radiated Emission Test-Up Frequency 30MHz~1GHz





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



7.2 Limit

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

Frequency	Field Strength	Distance	Field Strength Limit at 3m Distance		
(MHz)	uV/m	(m)	uV/m	dBuV/m	
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	20log ^{(2400/F(kHz))} + 80	
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	20log ^{(24000/F(kHz))} + 40	
1.705 ~ 30	30	30	100 * 30	20log ⁽³⁰⁾ + 40	
30 ~ 88	100	3	100	20log ⁽¹⁰⁰⁾	
88 ~ 216	150	3	150	20log ⁽¹⁵⁰⁾	
216 ~ 960	200	3	200	20log ⁽²⁰⁰⁾	
Above 960	500	3	500	20log ⁽⁵⁰⁰⁾	

Limits Of Radiated Emission Measurement (Above 1000MHz)

	Limit (dBuV/m) (at 3M)	
Frequency (MHz)	Peak	Average
Above 1000	74	54

Notes:

(1)The limit for radiated test was performed according to FCC PART 15C

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

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



Frequency Range Of Radiated Measurement

(a) For an intentional radiator the spectrum shall be investigated from the lowest radio frequency signal generated in the device, without going below 9 kHz, up to at least the frequency shown in this paragraph:

(1) If the intentional radiator operates below 10 GHz: to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

(2) If the intentional radiator operates at or above 10 GHz and below 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 100 GHz, whichever is lower.

(3) If the intentional radiator operates at or above 30 GHz: to the fifth harmonic of the highest fundamental frequency or to 200 GHz, whichever is lower, unless specified otherwise elsewhere in the rules.

(4) If the intentional radiator operates at or above 95 GHz: To the third harmonic of the highest fundamental frequency or to 750 GHz, whichever is lower, unless specified otherwise elsewhere in the rules.

(5) If the intentional radiator contains a digital device, regardless of whether this digital device controls the functions of the intentional radiator or the digital device is used for additional control or function purposes other than to enable the operation of the intentional radiator, the frequency range shall be investigated up to the range specified in paragraphs (a) (1)through (4) of this section or the range applicable to the digital device, as shown in paragraph (b)(1) of this section, whichever is the higher frequency range of investigation.

7.3 Test procedure

Receiver Parameter	Setting
Attenuation	Auto
9kHz~150kHz	RBW 200Hz for QP
150kHz~30MHz	RBW 9kHz for QP
30MHz~1000MHz	RBW 120kHz for QP

Spectrum Parameter	Setting
1-25GHz	RBW 1 MHz /VBW 1 MHz for Peak, RBW 1 MHz / VBW 10Hz for Average

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.



Above 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.

b.The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c.The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d.For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.

e.The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel, the middlest channel, the Highest channel. Note:

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

7.4 EUT operating Conditions

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

7.5 Test Result

Below 30MHz

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	DC 5V from adapter, DC 3.7V
Test Mode:	Mode 2	Polarization :	NNH 1777777

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

Note:

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

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

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



80.0 dBuV/m

Report No.:BCTC2401726300-1E

Between 30MHz – 1GHzTemperature:26 °CRelative Humidity:54%				
Pressure:	101KPa	Phase :	Horizontal	
Test Mode:	Mode 2	Test Voltage :	DC 3.7V	



40	1 X			3 		5 ×	PART15_B_03 Margin -6	dB
0.0	40 50) 60 70	80	(MHz)	300	400 50	0 600 700	1000.000
2. Measu	- = Antenna	Reading L	Cable Loss – .evel + Correc nit	Pre-amplifier.				
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	38	.4809	27.00	-15.01	11.99	40.00	-28.01	QP
2	110	.1816	26.89	-16.64	10.25	43.50	-33.25	QP
3	199	.9856	34.40	-15.72	18.68	43.50	-24.82	QP
4	250	.3012	30.98	-14.28	16.70	46.00	-29.30	QP

5

6

*

434.0651

774.1584

40.09

25.83

29.92

21.13

46.00

46.00

-16.08

-24.87

-10.17

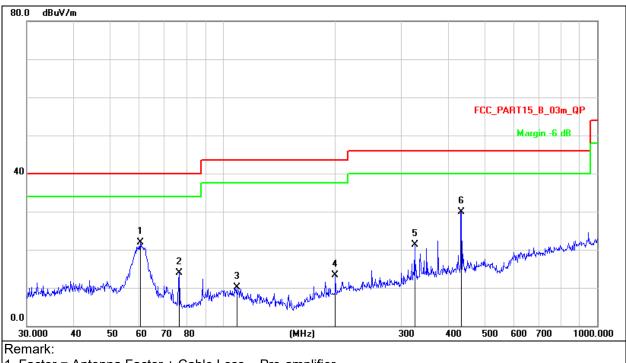
-4.70

QP

QP



Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Phase :	Vertical
Test Mode:	Mode 2	Test Voltage :	DC 3.7V



Factor = Antenna Factor + Cable Loss – Pre-amplifier.
 Measurement = Reading Level + Correct Factor

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		60.2801	37.28	-15.33	21.95	40.00	-18.05	QP
2		76.5121	32.97	-19.14	13.83	40.00	-26.17	QP
3		109.0286	26.69	-16.56	10.13	43.50	-33.37	QP
4		199.9856	28.96	-15.72	13.24	43.50	-30.26	QP
5		325.5958	33.61	-12.34	21.27	46.00	-24.73	QP
6	*	434.0651	40.12	-10.17	29.95	46.00	-16.05	QP

3. Over = Measurement - Limit



Polar	Fre- quency	Reading Level	Correct Factor	Measure- ment	Limits	Over	Detector
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	Туре
			GFSK Lo	w channel			
V	4804.00	75.12	-19.99	55.13	74.00	-18.87	PK
V	4804.00	64.39	-19.99	44.40	54.00	-9.60	AV
V	7206.00	64.17	-14.22	49.95	74.00	-24.05	PK
V	7206.00	54.02	-14.22	39.80	54.00	-14.20	AV
Н	4804.00	72.81	-19.99	52.82	74.00	-21.18	PK
Н	4804.00	63.36	-19.99	43.37	54.00	-10.63	AV
Н	7206.00	61.31	-14.22	47.09	74.00	-26.91	PK
Н	7206.00	52.92	-14.22	38.70	54.00	-15.30	AV
			GFSK Mid	dle channel			
V	4882.00	72.42	-19.84	52.58	74.00	-21.42	PK
V	4882.00	64.74	-19.84	44.90	54.00	-9.10	AV
V	7323.00	64.01	-13.90	50.11	74.00	-23.89	PK
V	7323.00	55.93	-13.90	42.03	54.00	-11.97	AV
Н	4882.00	67.48	-19.84	47.64	74.00	-26.36	PK
Н	4882.00	57.29	-19.84	37.45	54.00	-16.55	AV
Н	7323.00	61.81	-13.90	47.91	74.00	-26.09	PK
Н	7323.00	54.31	-13.90	40.41	54.00	-13.59	AV
			GFSK Hig	gh channel			1
V	4960.00	74.68	-19.68	55.00	74.00	-19.00	/ PK
V	4960.00	63.81	-19.68	44.13	54.00	-9.87	AV
V	7440.00	67.15	-13.57	53.58	74.00	-20.42	PK
V	7440.00	56.36	-13.57	42.79	54.00	-11.21	AV
Н	4960.00	71.75	-19.68	52.07	74.00	-21.93	PK
Н	4960.00	61.19	-19.68	41.51	54.00	-12.49	AV
Н	7440.00	65.53	-13.57	51.96	74.00	-22.04	PK
Н	7440.00	57.88	-13.57	44.31	54.00	-9.69	AV

Between 1GHz - 25GHz

Remark:

1. Measurement = Reading Level + Correct Factor,

Correct Factor = Antenna Factor + Cable Loss - Pre-amplifier,

Over= Measurement - Limit

2.If peak below the average limit, the average emission was no test.

3. In restricted bands of operation, The spurious emissions below the permissible value more than 20dB

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

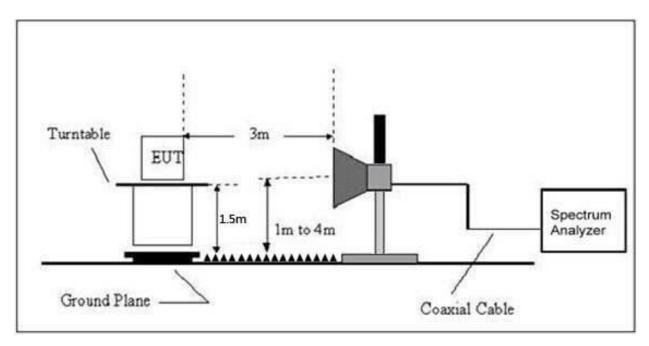
5.All the Modulation are test, the worst mode is GFSK, the data recording in the report.



8. Radiated Band Emission Measurement And Restricted Bands Of Operation

8.1 Block Diagram Of Test Setup

Radiated Emission Test-Up Frequency Above 1GHz



8.2 Limit

FCC Part15 C Section 15.209 and 15.205

(a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
¹ 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			



Limits Of Radiated Emission Measurement (Above 1000MHz)

	Limit (dBuV/m) (at 3M)			
Frequency (MHz)	Peak	Average		
Above 1000	74	54		

Notes:

(1)The limit for radiated test was performed according to FCC PART 15C.

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

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

8.3 Test procedure

Receiver Parameter	Setting
Attenuation	Auto
Start Frequency	2300MHz
Stop Frequency	2520
RB / VB (Emission In Restricted Band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

Above 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.

b.The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c.The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d.For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.

e.The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel, the middlest channel, the Highest channel.

Note:

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

8.4 EUT operating Conditions

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



8.5 Test Result

	Polar (H/V)	Fre- quency	Reading Level	Correct Factor	Measure- ment (dBuV/m)		mits uV/m)	Result
	()	(MHz)	(dBuV/m)	(dB)	PK	PK	AV	-
				Low Channe	el 2402MHz			1
	Н	2390.00	71.64	-25.43	46.21	74.00	54.00	PASS
	Н	2400.00	75.74	-25.40	50.34	74.00	54.00	PASS
	V	2390.00	71.28	-25.43	45.85	74.00	54.00	PASS
OFOK	V	2400.00	76.02	-25.40	50.62	74.00	54.00	PASS
GFSK			ŀ	ligh Channe	el 2480MHz			
	Н	2483.50	74.15	-25.15	49.00	74.00	54.00	PASS
	Н	2500.00	71.07	-25.10	45.97	74.00	54.00	PASS
	V	2483.50	73.65	-25.15	48.50	74.00	54.00	PASS
	V	2500.00	70.11	-25.10	45.01	74.00	54.00	PASS
			l	Low Channe	el 2402MHz			
	Н	2390.00	72.02	-25.43	46.59	74.00	54.00	PASS
	Н	2400.00	76.77	-25.40	51.37	74.00	54.00	PASS
	V	2390.00	71.55	-25.43	46.12	74.00	54.00	PASS
π	V	2400.00	75.19	-25.40	49.79	74.00	54.00	PASS
/4DQPSK			ł	High Channe	el 2480MHz			
	Н	2483.50	74.79	-25.15	49.64	74.00	54.00	PASS
	Н	2500.00	70.44	-25.10	45.34	74.00	54.00	PASS
	V	2483.50	75.86	-25.15	50.71	74.00	54.00	PASS
	V	2500.00	71.44	-25.10	46.34	74.00	54.00	PASS
			l	Low Channe	el 2402MHz			
	Н	2390.00	71.04	-25.43	45.61	74.00	54.00	PASS
	Н	2400.00	74.13	-25.40	48.73	74.00	54.00	PASS
	V	2390.00	71.30	-25.43	45.87	74.00	54.00	PASS
8DPSK	V	2400.00	76.09	-25.40	50.69	74.00	54.00	PASS
ODF SK			·	ligh Channe	el 2480MHz			
	Н	2483.50	73.27	-25.15	48.12	74.00	54.00	PASS
	Н	2500.00	69.74	-25.10	44.64	74.00	54.00	PASS
	V	2483.50	74.78	-25.15	49.63	74.00	54.00	PASS
	V	2500.00	70.84	-25.10	45.74	74.00	54.00	PASS

1. Measurement = Reading Level + Correct Factor, Correct Factor = Antenna Factor + Cable Loss – Pre-amplifier,

Over= Measurement - Limit

2. If the PK measured levels comply with average limit, then the average level were deemed to comply with average limit.

3 In restricted bands of operation, The spurious emissions below the permissible value more than 20dB 4. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.



9. Spurious RF Conducted Emissions

9.1 Block Diagram Of Test Setup



9.2 Limit

Regulation 15.247 (d),In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.205(c))

9.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum;

2. Set the spectrum analyzer: RBW = 100kHz, VBW = 300kHz, Sweep = auto Detector function = peak, Trace = max hold

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9.4 Test Result



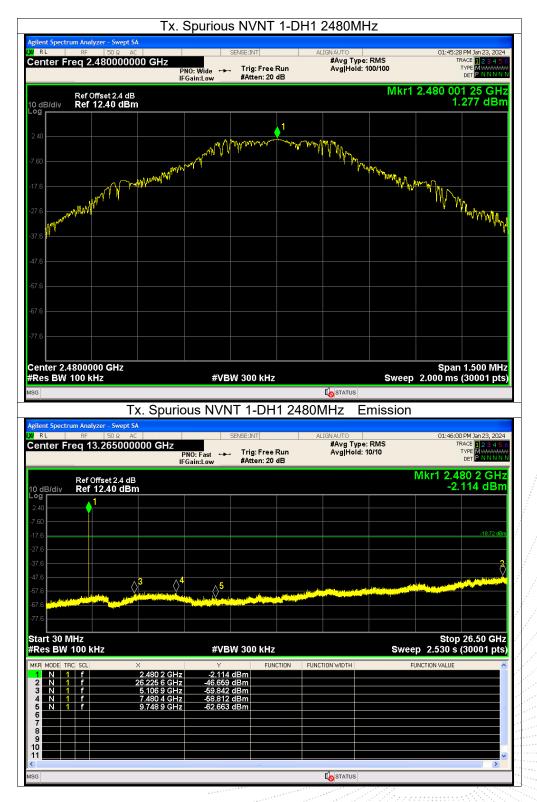
No.: BCTC/RF-EMC-005

Edition: B.1







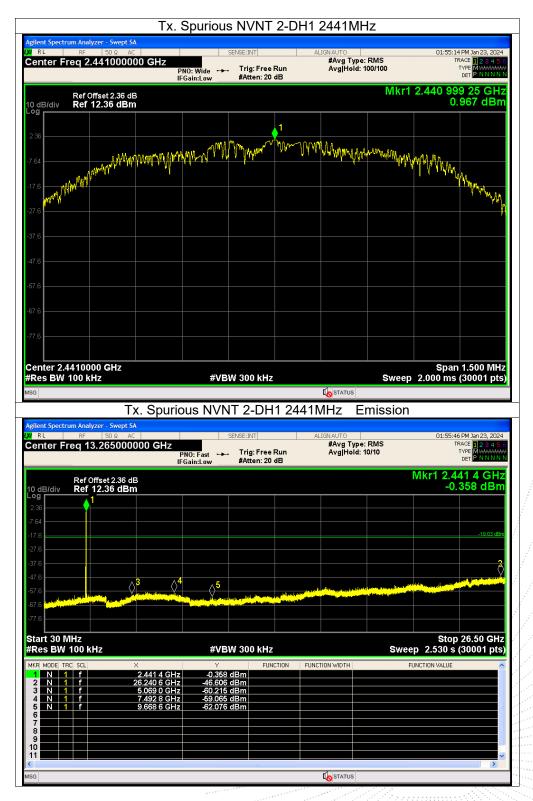




ilent Spectrum Analyzer - S	Swept SA			11 2402MHz		
	DΩ AC	SENSE:IM		ALIGNAUTO #Avg Type: R	MS	01:47:48 PM Jan 23, 202 TRACE 1 2 3 4
	Р		: Free Run en: 20 dB	Avg Hold: 100		DET
Ref Offset: dB/div Ref 12.34	2.34 dB 4 dB m				Mkr1 2.40	2 004 65 GH 0.549 dBi
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enter 2.4020000 G Res BW 100 kHz	Hz	#3 (D14) 0.04				Span 1.500 MH
G RES BW TOU KHZ		#VBW 300	Л КП2		Sweep 2.00	0 ms (30001 pt
				I STATUS		
	Tx. Spuric	ous NVNT 2	DH1 240		nission	
	Swept SA)2MHz Em		01:48:20 PM Jan 23, 202
RL RF 50	Swept SA ว ฉ AC 5000000 GHz	SENSE:IN	T : Free Run		MS	TRACE 1234
RL RF 50 enter Freq 13.26	Swept SA 0 Ω AC 50000000 GHz IF	SENSE:IN PNO: Fast → Trig	Т	D2MHz Em	MS 10	TRACE 1 2 3 4 5 TYPE MWWW DET P N N N 1 2.401 7 GH
RL RF 50 enter Freq 13.26 Ref Offset	Swept SA 3 Ω AC 50000000 GHz F IF 2.34 dB	SENSE:IN	T : Free Run	D2MHz Em	MS 10	TRACE 1 2 3 4 5 TYPE MWWW DET P N N N 1 2.401 7 GH
RL RF SC enter Freq 13.26 Ref Offset 0 dB/div Ref 12.3/ 29	Swept SA 3 Ω AC 50000000 GHz F IF 2.34 dB	SENSE:IN	T : Free Run	D2MHz Em	MS 10	TRACE 12345 TYPE MWWWW DET PNNN 1 2.401 7 GH
RL RF SC enter Freq 13.26: Ref Offset Ref Offset 0 dB/div Ref 12.3/ Ref 12.3/ 29 1 1 .34 1 1 .66 1 1	Swept SA 3 Ω AC 50000000 GHz F IF 2.34 dB	SENSE:IN	T : Free Run	D2MHz Em	MS 10	TRACE 12 3 4 5 TYPE MMMMM DET P NNNN 1 2.401 7 GH 0.259 dBr
Ref Offset OdB/div Ref 12.32 Og 134 66 77 7	Swept SA 3 Ω AC 50000000 GHz F IF 2.34 dB	SENSE:IN	T : Free Run	D2MHz Em	MS 10	01:48:20 PM Jan 23, 202 TRACE [] 2:3 + 3 TYPE MUMUMU DET P NNNN 1 2:401 7 GH 0.259 dBr
RL RF SC enter Freq 13.26: Sef Offset Sef Offset D dB/div Ref 0ffset Sef 0ffset 29 1 1 234 1 1 66 1 1 67 1 1	5000000 GHz 5000000 GHz F 2.34 dB 4 dBm	SENSE:IN PNO: Fast Trig Gain:Low #Att	T : Free Run	D2MHz Em	MS 10	TRACE 12 3 4 5 TYPE MMMMM DET P NNNN 1 2.401 7 GH 0.259 dBr
RL RF SC enter Freq 13.26: Ref Offset Ref Offset 0 dB/div Ref 12.34 Ref 12.34 1	Swept SA 3 Ω AC 50000000 GHz F IF 2.34 dB	SENSE:IN	T : Free Run	D2MHz Em	MS 10	TRACE 12 3 4 5 TYPE MMMMM DET P NNNN 1 2.401 7 GH 0.259 dBr
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RL RF SC enter Freq 13.26 Ref Offset SC odB/div Ref 12.3/ SC odg 1 1	Swept SA 202 AC 5000000 GHz F 2.34 dB 4 dBm 4 dBm 4 dBm 4 dBm 4 dBm	SENSE:IN PNO: Fast →→ Trig Gain:Low → #Att SGain:Low + + + + + + + + + + + + + + + + + + +	T Cree Run en: 20 dB	D2MHz Em	MS 10 Mkr1	1 2.401 7 GH 0.259 dBr .1945.# Stop 26.50 GH 30 s (30001 pt
RL RF SC enter Freq 13.26 Ref Offset SC 0 dB/div Ref 12.3c SC 34 1 1 354 1 1 364 1 1 377 1 1 377 1 1 377 1 1 377 1 1 377 1 1 377 1 1 377 1 1 377 1 1 377 1 1 377 1 1 377 1 1 377 1 1 377 1 1 377 1 1 377 1 1	Swept 5A 302 AC 5000000 GHz F 2.34 dB 4 dBm 4 dBm 4 dBm 4 dBm 4 dBm 4 dBm 5 00010 GHz 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SENSE:IN Gain:Low → #Att Gain:Low → #Att SGATE	T Cree Run en: 20 dB	D2MHz Em	MS Mkr1	1 2.401 7 GH 0.259 dBt
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RL RF SC enter Freq 13.26 Ref Offset dB/div Ref 12.3c 34	Swept 5A 302 AC 5000000 GHz F 2.34 dB 4 dBm 4 dBm 4 dBm 4 dBm 4 dBm 4 dBm 5 00010 GHz 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SENSE:IN Gain:Low → Trig Gain:Low → #Att Sense:Low + + + + + + + + + + + + + + + + + + +	T Cree Run en: 20 dB	D2MHz Em	MS Mkr1	1 2.401 7 GH 0.259 dBt
RL RF SC enter Freq 13.26 Ref Offset 86 dB/div Ref 12.32 1 34 1 1 34 1 1 36 1 1 37 1 1 36 1 1 37 1 1 38 1 1 39 1 1 30 MHz 1 30 1 1 3 1 1 3 1 1 3 1 1 3 1 1 3 1 1 4 1 1 5 1 1	Swept 5A 302 AC 5000000 GHz F 2.34 dB 4 dBm 4 dBm 4 dBm 4 dBm 4 dBm 4 dBm 5 00010 GHz 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	SENSE:IN Gain:Low → Trig Gain:Low → #Att Sense:Low + + + + + + + + + + + + + + + + + + +	T Cree Run en: 20 dB	D2MHz Em	MS Mkr1	1 2.401 7 GH 0.259 dBt

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Edition: B.1



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gilent Spectrum Analyzer - Swe RL RF 50 Ω enter Freq 2.48000	AC	SENSE:INT		ALIGNAUTO #Avg Type: R		01:53:50 PM Jan 23, 202 TRACE 1 2 3 4 5
	PNO: IFGair			Avg Hold: 100	/100	DET P N N N N
Ref Offset 2.4 dB/div Ref 12.40 c	dB IBm				Mkr1 2.47	9 999 55 GH 0.442 dBn
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						-19.56 dB
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17.6 27.6 37.6 		\$ ⁵				-12.55.00
17.6		5				19.56.48
17.6	³ ⁴				Surgeon 2	Stop 26.50 GH
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17 6	× 2.480 2 GHz 26.178 8 GHz	#VBW 300 kl			· · ·	Stop 26.50 GHz 530 s (30001 pts
17.6 27.6 37.6 47.6 57.6	× 2.480 2 GHz	#VBW 300 kl			· · ·	Stop 26.50 GH: 530 s (30001 pts
17.6	X 2.480 2 GHz 26.178 8 GHz 5.114 9 GHz 7.371 0 GHz	#VBW 300 kl 0.004 dBm 47.098 dBm -60.049 dBm -59.658 dBm			· · ·	Stop 26.50 GH 530 s (30001 pts
7.6	X 2.480 2 GHz 26.178 8 GHz 5.114 9 GHz 7.371 0 GHz	#VBW 300 kl 0.004 dBm 47.098 dBm -60.049 dBm -59.658 dBm			· · ·	Stop 26.50 GH 530 s (30001 pts
7.6 7.6 7.6 7.6 7.6 7.6 7.6 7.6	X 2.480 2 GHz 26.178 8 GHz 5.114 9 GHz 7.371 0 GHz	#VBW 300 kl 0.004 dBm 47.098 dBm -60.049 dBm -59.658 dBm			· · ·	Stop 26.50 GHz 530 s (30001 pts

Edition: B.1



ilent Spectrum Analyzer - Sv	wept SA	Spurious NV		0H1 2402MI		
RL RF 50 9 enter Freq 2.4020	Ω AC	SENSE:IN	IT	ALIGN AUTO #Avg Type	: RMS	01:58:05 PM Jan 23, 20 TRACE 1 2 3 4
	PI	NO:Wide ↔→ Trig Gain:Low #Att	:Free Run en:20 dB	Avg Hold:	100/100	DET P N N N
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RL RF 505 enter Freq 13.265 Ref Offset 2	wept SA 2 AC 0000000 GHz IF .34 dB	SENSE:IN	л j: Free Run	402MHz E Alignauto #Avg Type	e: RMS 10/10	TRACE 1234 TYPE MWWW DET P N N N
RL 803 enter Freq 13.265 Ref Offset 2 0 dB/div Ref 12.34 9	wept SA 2 AC 0000000 GHz IF .34 dB	SENSE:IN	л j: Free Run	402MHz E Alignauto #Avg Type	e: RMS 10/10	TRACE 12343 TYPE MWWW DET P N N N
RL RF 503 enter Freq 13.265 Ref Offset 2 0 dB/div Ref 12.34 og 1	wept SA 2 AC 0000000 GHz IF .34 dB	SENSE:IN	л j: Free Run	402MHz E Alignauto #Avg Type	e: RMS 10/10	TRACE 12343 TYPE MWWW DET P N N N
RL RF 503 enter Freq 13.265 Ref Offset 2 D dB/div Ref 12.34 9 1 234 1 766 7	wept SA 2 AC 0000000 GHz IF .34 dB	SENSE:IN	л j: Free Run	402MHz E Alignauto #Avg Type	e: RMS 10/10	TRACE 12 3 4 TYPE MYWWW DET PINNIN Akr1 2.401 7 GH 0.535 dBi
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RL RF 90: enter Freq 13.265 Ref Offset 2 odB/div Ref 12.34 og 1 34 1 66 1 7.7 1 7.7 1 7.7 1 7.7 1 7.7 1 7.7 1 7.7 1 7.7 1 7.7 1 7.7 1 7.7 1 7.7 1 7.7 1 8.8 0 9.9 1 9.9 1 9.9 1 9.9 1 9.9 1 9.9 1 9.9 1 9.9 1 9.9 1 9.9 1 9.9 1 9.9 1 9.9 1 9.9	wept SA 2 AC 3 AC 4 AC 4 4 4 4 4 4 4 4 4 4 4 4 4	NO: Fast +++ Trig Gain:Low #Att	IT : Free Run en: 20 dB	402MHz E	E: RMS 10/10	TRACE 12 3 4 4 TYPE MYNNY Akr1 2.401 7 GH 0.535 dB1
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Edition: B.1

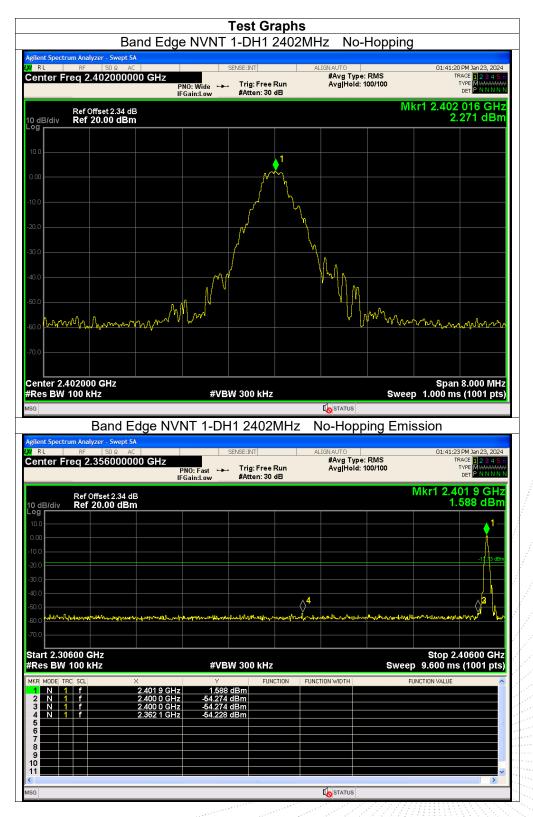


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ilent Spectrum Analyzer - Swep RL RF 50 Ω	AC	SENSE: If	NT	ALIGNAUTO #Avg Type	DMC	02:02:29 PM Jan 23, 202
enter Freq 2.441000	PNO		g: Free Run ten: 20 dB	Avg Hold:		TRACE 1234 TYPE MWWW DET PNNN
Ref Offset 2.36					Mkr1 2	.440 850 05 GH
dB/div Ref 12.36 dB	Зm					0.937 dB
.36		1				
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enter 2.4410000 GHz						Span 1.500 MH
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G	T O I		DI IA O			
ilent Spectrum Analyzer - Swep	Tx. Spuriou	IS INVINT 3	-DH1 24	HATMHZ E	mission	
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	00000 GHz			ALIGNAUTO #Avg Type	: RMS	U2:U3:10 PM Jan 23, 202 TRACE 1 2 3 4
enter Freq 15.26500	PNC): Fast 🛶 Trig in:Low #Att	g: Free Run ten: 20 dB	ALIGN AUTO #Avg Type Avg Hold:	: RMS 13/13	TRACE 2 3 4 TYPE MWAAW DET P N N N
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enter Freq 13.26500 Ref Offset 2.36 0 dB/div Ref 12.36 dl 0 d 1 1 1 1 1 1 1 1 1 1 1 1 1	PNC IFGa 5 dB Bm	in:Low #At	g: Free Run ten: 20 dB	#Avg Type	13/13	TYPE M WWWW
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Ref Offset 2.36 gldB/div Ref 12.36 dl 0 gl/div 1	Price Prove P	5 #VBW 300 46.601 dBm -6.624 dBm	en: 20 dB	#Avg Type Avg Hold:	13/13	176.0E 12 3 4 176.0E 12 3 4 176.0E 1 176.0E
Ref Offset 2.36 D dE/div Ref 12.36 dl 29 1 235 1 64 1 7.6 1 7.6 1 7.6 1 7.6 1 7.6 1 7.6 1 7.6 1 7.6 1 7.7 1 7.8 1 1 1 1 1 1 1 1 1 1 1	PP(IFGa B dB Bm 3 dB 3 dB 2 dB 2 dB 2 dB 2 dB 2 dB 2 dB 2 dB 2	#VBW 30 0.816 dBm -46.601 dBm	en: 20 dB	#Avg Type Avg Hold:	13/13	176.0E 12 3 4 176.0E 12 3 4 176.0E 1 176.0E
Ref Offset 2.36 gdB/div Ref 12.36 dl 99 1 136 1 64 1 64 1 76 1 76 1 76 1 76 1 76 1 76 1 76 1 76 1 76 1 76 1 76 1 76 1 76 1 76 1 76 1 76 1 76 1 76 1 78 1	2441 4 GHz 26 205 3 GHz 2472 8 GHz 27.1937 GHz	#VBW 300 ↓ 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	en: 20 dB	#Avg Type Avg Hold:	13/13	176.0E 12 3 4 176.0E 12 3 4 176.0E 1 176.0E
Ref Offset 2.36 glds/div Ref 12.36 dl 0 dB/div Ref 12.36 dl 0 dB/div Ref 12.36 dl 1 1 64 1 76 1 76 1 76 1 76 1 76 1 76 1 76 1 76 1 76 1 76 1 76 1 8 1 8 1 7 1 8 1 9 1	2441 4 GHz 26 205 3 GHz 2472 8 GHz 27.1937 GHz	#VBW 300 ↓ 10 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	en: 20 dB	#Avg Type Avg Hold:	13/13	TRACE 12 3 4 5 TYPE MUMAN Det P NNN kr1 2.441 4 GH
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gilent Spectrum Analyzer - Swep RL RF 50 Ω	AC	SENSE:IN	Т	ALIGNAUTO #Avg Type	e: PMS	02:05:20 PM Jan 23, 202
enter Freq 2.480000	PNC		: Free Run en: 20 dB	Avg Hold:		TRACE 12345 TYPE MWWW DET PNNN
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enter 2.4800000 GHz Res BW 100 kHz		#VBW 300	kH7		Sween	Span 1.500 Mł 2.000 ms (30001 pi
G				I STATUS		
	Tx. Spuriou	ıs NVNT 3-	DH1 24	480MHz E	Emission	
<mark>rilent Spectrum Analyzer - Swep</mark> RL RF 50 Ω		SENSE:IN	T	ALIGN AUTO		02:05:52 PM Jan 23, 202
enter Freq 13.26500						
	PN	D:Fast ++- Trig bin:Low #Atte	: Free Run en: 20 dB	#Avg Type Avg Hold:	10/10	
Ref Offset 2.4 d	PN0 IFGa dB	D:Fast ↔→ Trig ain:Low #Atte	: Free Run en: 20 dB	#Avg Type Avg Hold:	10/10	1kr1 2.480 2 GH
Ref Offset 2.4 0 0 dB/div Ref 12.40 dB 9 1 2.40	PN0 IFGa dB	D: Fast ↔ Trig Jin:Low #Atte	: Free Run en: 20 dB	#Avg Type Avg Hold:	10/10	1kr1 2.480 2 GH
Ref Offset 2.4 (0 dB/div Ref 12.4 0 dB 99 1 40 1 60 1	PN0 IFGa dB	D: Fast ↔ Trig alin:Low #Atte	Free Run en: 20 dB	#Avg Typ Avg Hold:	10/10	1kr1 2.480 2 GH 0.466 dBi
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Ref Offset 2.4 (0 dB/div Ref 12.4 0 dB 99 40 7 60 7 6 7 6	PN0 IFGa dB	D: Fast ↔ Trig in:Low #Atto	: Free Run en: 20 dB	#Avg Typ- Avg Hold:	10/10	19.48 d 14kr1 2.480 2 GH 0.466 dBi
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Ref Offset 2.4 (0 dB/div Ref 12.40 dB 0 dB/div 1 1	PNI IFGa dB Bm	D: Fast + Trig sin:Low #Atto	:Free Run en: 20 dB	#Avg Typ- Avg Hold:	10/10	1kr1 2.480 2 GH 0.466 dBi
Ref Offset 2.4 0 dB/div Ref 12.40 dB 99 1 1	PNI IFGa dB Bm	D: Fast → Trig nin:Low #Atto	:Free Run en: 20 dB	#Avg Typ- Avg Hold:	10/10	1kr1 2.480 2 GH 0.466 dBi
Ref Offset 2.4 (0 dB/div Ref 12.4 0 dB 0 d 0 d 0 d 0 d 0 d 0 d 0 d 0 d	PNI IFGa dB Bm	D: Fast in:Low #Atto 5 #VBW 300		#Avg Typ- Avg Hold:		1kr1 2.480 2 GH 0.466 dBi
Ref Offset 2.4 d OddB/div Ref 12.40 dB 99 1 94 1 60 1 76 1 77.7 1 8 100 kHz Res BW 100 kHz 1	2.490 2 GHz	111:Low #Attr 5 #VBW 3000 0.466 dBm		#Avg Typ- Avg Hold:	10/10	1kr1 2.480 2 GH 0.466 dB 1948 d 1948 d Stop 26.50 GH
Ref Offset 2.4 m Od B/div Ref 12.40 dB 0 dB/div 1	Pini IFG dB 3m 3m 2.480 2 GHz 26.493 8 GHz 5.073 4 GHz	10.12 ow #Atta 5 10.466 dBm 40.466 dBm 40.650 dBm 40.650 dBm	In 20 dB	Avg Hold:	10/10	1949 d 14kr1 2.480 2 GH 0.466 dBr
Ref Offset 2.4 d OddB/div Ref 12.40 dB 99 1 91 1 92 1 93 1 94 1 95 1 96 1 97 1	PNU IFG2 dB 3m 3 4 3 4 2.480 2 GHz 26.193 8 GHz	11112 ow #Atte	In 20 dB	Avg Hold:	10/10	14kr1 2.480 2 GH 0.466 dBr
Ref Offset 2.4 (Ref 12.40 dB) OddB/div Ref 12.40 dB 99 1 91 1 92 1 93 1 94 1 95 1 96 1 97 1 97 1 97 1 97 1 97 1 97 1 97 1 97 1 97 1 97 1 97 1 97 1 97 1 97 1 97 1 97 1 97 1	PN IFG2 dB 3m 3m 3m 4 3m 2480 2 GHz 26.193 8 GHz 5.073 4 GHz 5.073 4 GHz	#VBW 300 ¥VBW 300 ¥VBW 300 × 46.540 dBm -59.262 dBm	In 20 dB	Avg Hold:	10/10	14kr1 2.480 2 GH 0.466 dBr
Ref Offset 2.4 d D dE/div Ref 12.4 d O de/div Ref 12.4 d T div I T div I T div I T div I I div I div <td>PN IFG2 dB 3m 3m 3m 4 3m 2480 2 GHz 26.193 8 GHz 5.073 4 GHz 5.073 4 GHz</td> <td>#VBW 300 ¥VBW 300 ¥VBW 300 × 46.540 dBm -59.262 dBm</td> <td>In 20 dB</td> <td>Avg Hold:</td> <td>10/10</td> <td>14kr1 2.480 2 GH 0.466 dBr </td>	PN IFG2 dB 3m 3m 3m 4 3m 2480 2 GHz 26.193 8 GHz 5.073 4 GHz 5.073 4 GHz	#VBW 300 ¥VBW 300 ¥VBW 300 × 46.540 dBm -59.262 dBm	In 20 dB	Avg Hold:	10/10	14kr1 2.480 2 GH 0.466 dBr



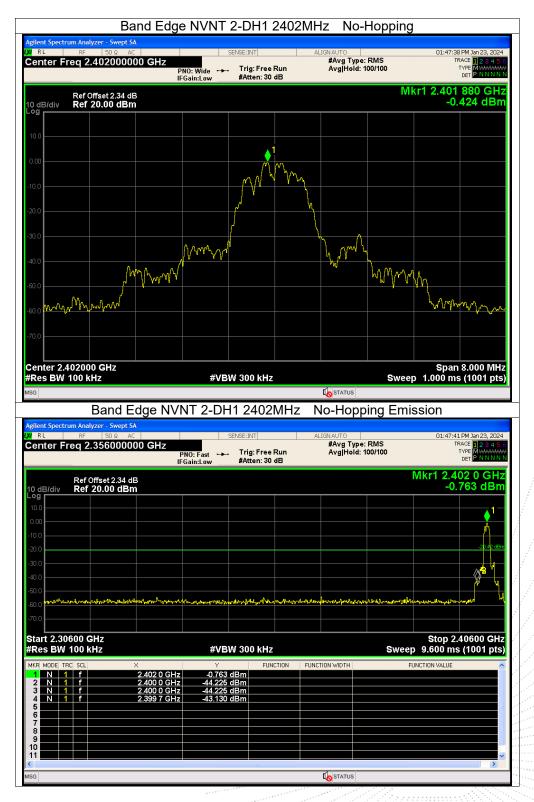


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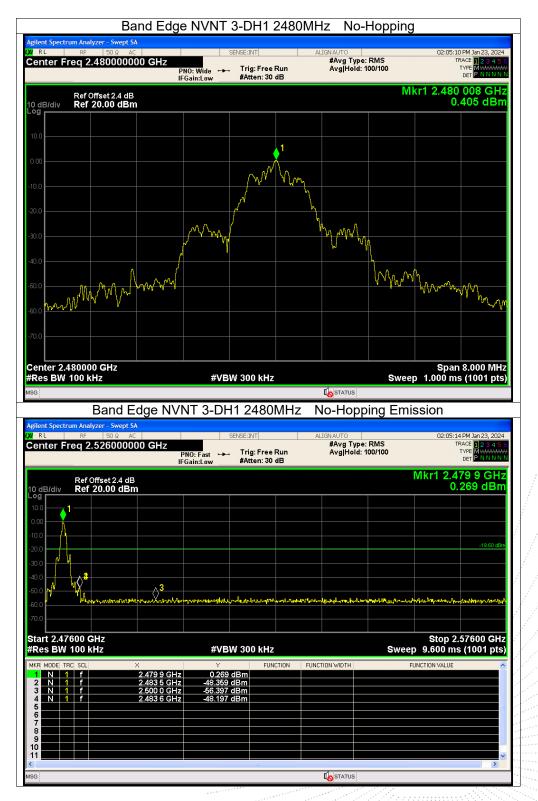


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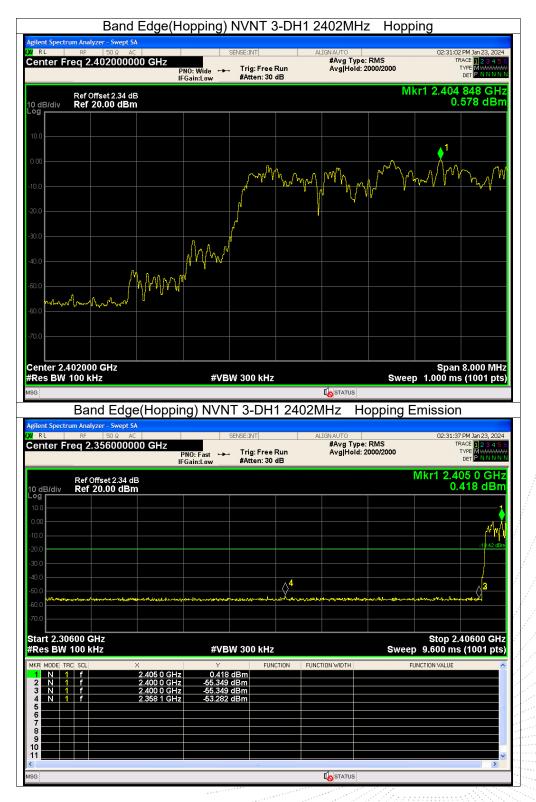




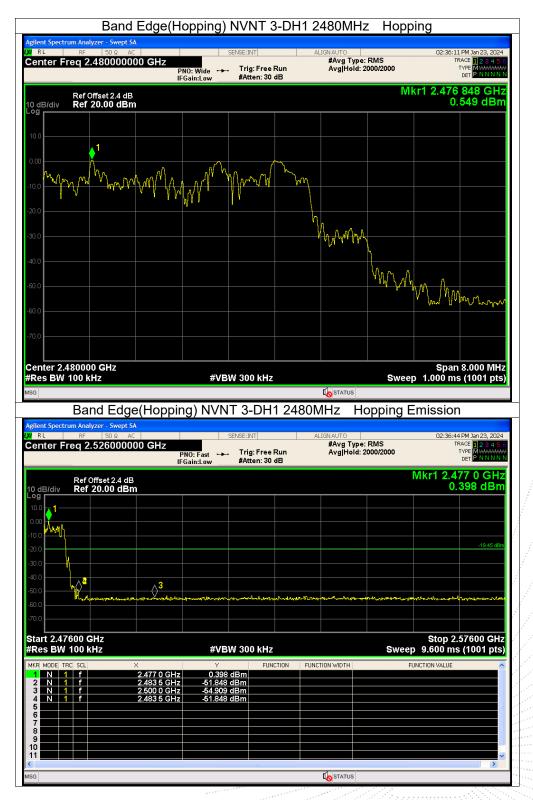














10. 20 dB Bandwidth

10.1 Block Diagram Of Test Setup



10.2 Limit

N/A

10.3 Test procedure

1. Set RBW = 30kHz.

2. Set the video bandwidth (VBW) \ge 3 x RBW.

3. Detector = Peak.

4. Trace mode = max hold.

5. Sweep = auto couple.

6. Allow the trace to stabilize.

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

10.4 Test Result

Temperature:	26 ℃	Relative Humidity:	Ę	54%	b			1	/	/	1		
Test Voltage:	DC 3.7V	Remark:	١	V/A	-		1		1	1	1		
			1			1	1	1.	6.7	ć	ć - 2	÷	÷.

Condition	Mode	Frequency (MHz)	-20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH1	2402	1.035	Pass
NVNT	1-DH1	2441	1.03	Pass
NVNT	1-DH1	2480	1.002	Pass
NVNT	2-DH1	2402	1.352	Pass
NVNT	2-DH1	2441	1.218	Pass
NVNT	2-DH1	2480	1.256	Pass
NVNT	3-DH1	2402	1.212	Pass
NVNT	3-DH1	2441	1.206	Pass
NVNT	3-DH1	2480	1.327	Pass





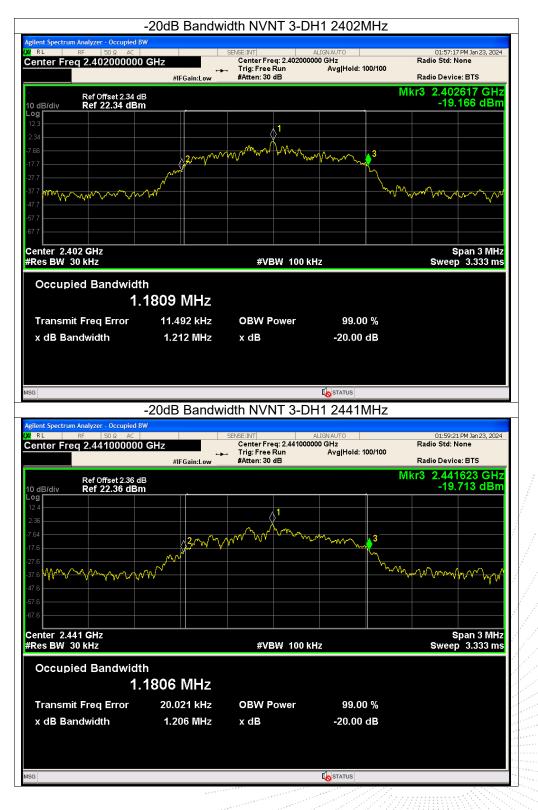














-	-20dB Bandwi	idth NVNT 3-D	H1 2480MHz	
Agilent Spectrum Analyzer - Occupied BW WRL RF 50 ຊຸລິດ Center Freq 2.480000000		SENSE:INT Center Freq: 2.4800000 . Trig: Free Run #Atten: 30 dB	ALIGNAUTO 000 GHz Avg Hold: 100/100	02:03:51 PM Jan 23, 2024 Radio Std: None Radio Device: BTS
Ref Offset 2.4 dB 10 dB/div Ref 22.40 dBm				Vlkr3 2.480665 GHz -20.969 dBm
Log 12.4 2.40 .7.60 .7.60 .7.7.6 .7.7.6 .7.7.6 .7.7.6 .7.7.6 .7.7.6 .7.60 .7.70	2 mm	1 VM MMM		22 Mary Maring pr
Center 2.48 GHz #Res BW 30 kHz		#VBW 100 k	Hz	Span 3 MHz Sweep 3.333 ms
Occupied Bandwidth	2491 MHz			
Transmit Freq Error	1.601 kHz	OBW Power	99.00 %	
x dB Bandwidth	1.327 MHz	x dB	-20.00 dB	
MSG			STATUS	

No.: BCTC/RF-EMC-005

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11. Maximum Peak Output Power

11.1 Block Diagram Of Test Setup

EUT	SPECTRUM
	ANALYZER

11.2 Limit

	FCC Part15 (15.247) , Subpart C								
Section	Test Item	Limit	Frequency Range (MHz)	Result					
15.247(b)(1)	Peak Output Power	0.125 watt or 21dBm	2400-2483.5	PASS					

11.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set the spectrum analyzer: RBW = 2MHz. VBW = 6MHz. Sweep = auto; Detector Function = Peak.

3. Keep the EUT in transmitting at lowest, medium and highest channel individually. Record the max value.

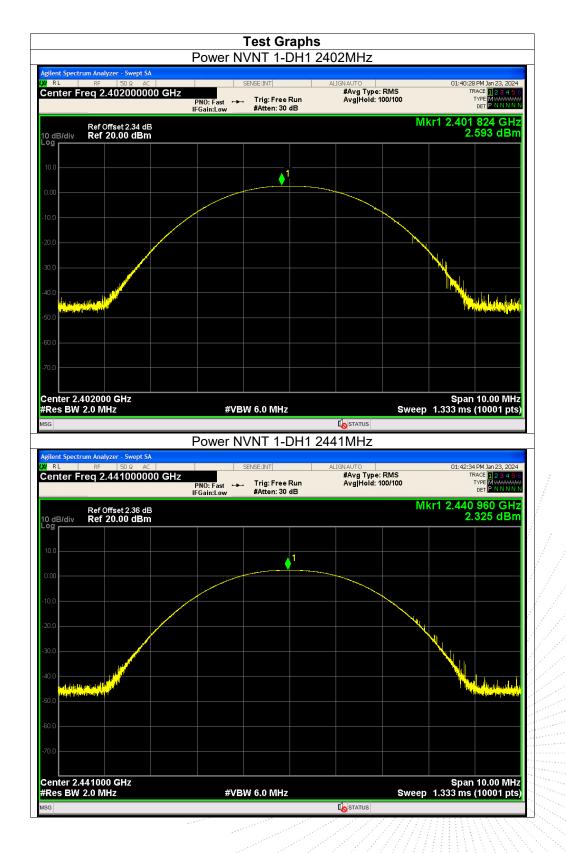
11.4 Test Result

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH1	2402	2.59	21	Pass
NVNT	1-DH1	2441	2.33	21	Pass
NVNT	1-DH1	2480	1.48	21	Pass
NVNT	2-DH1	2402	2.26	21	Pass
NVNT	2-DH1	2441	2.11	21	Pass
NVNT	2-DH1	2480	1.32	21	Pass
NVNT	3-DH1	2402	2.53	21	Pass
NVNT	3-DH1	2441	2.2	21	Pass
NVNT	3-DH1		1.4	21	Pass

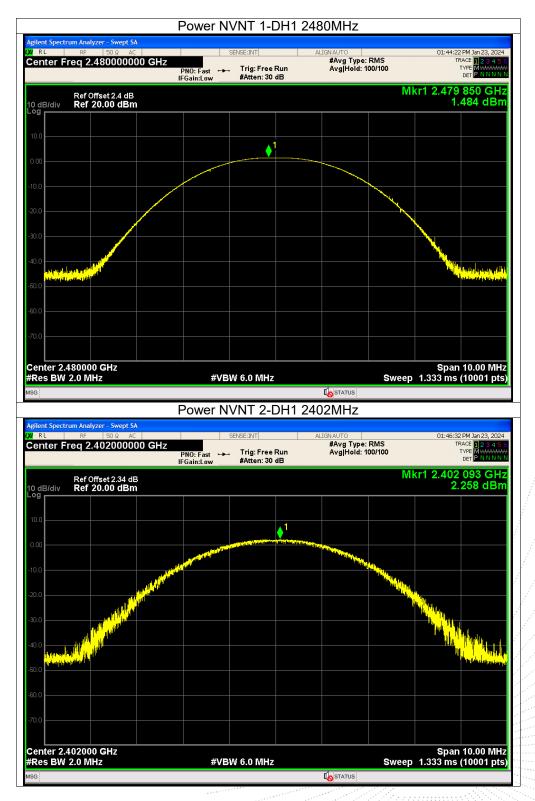
79



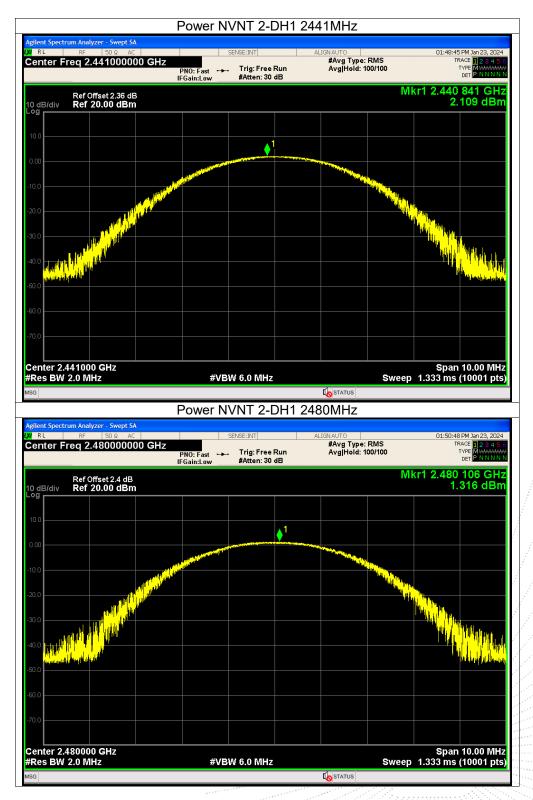




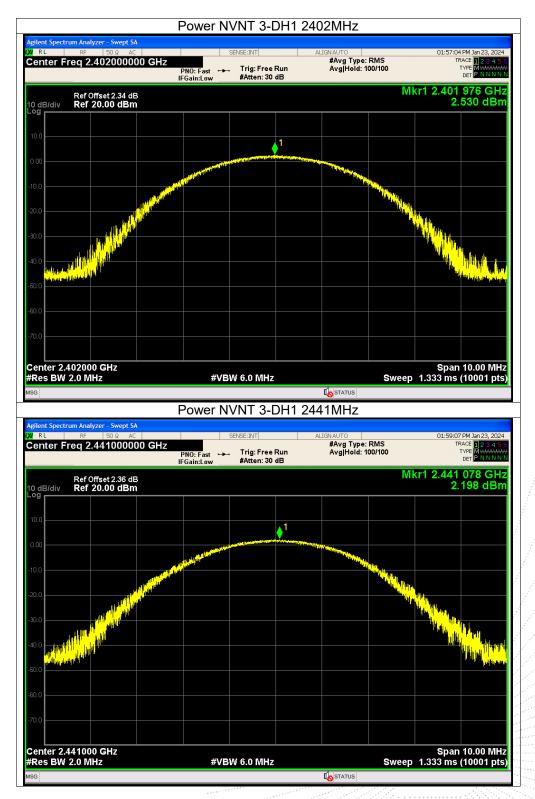




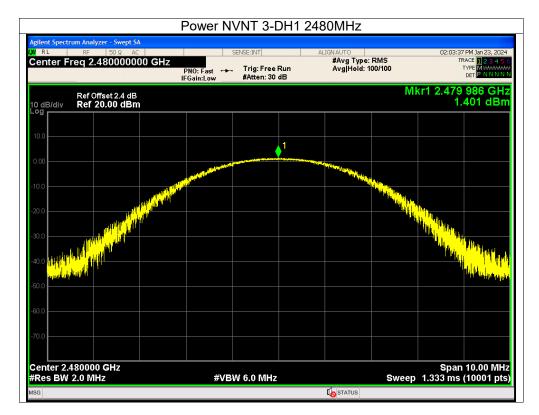












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12. Hopping Channel Separation

12.1 Block Diagram Of Test Setup



12.2 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 0.125W.

12.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set the spectrum analyzer: RBW = 30kHz. VBW = 100kHz , Span = 2.0MHz. Sweep = auto; Detector Function = Peak. Trace = Max hold.

3. Allow the trace to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels. The limit is specified in one of the subparagraphs of this Section Submit this plot.

Condition	Mode	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH1	2401.996	2402.996	1	0.69	Pass
NVNT	1-DH1	2440.996	2441.996	1	0.696	Pass
NVNT	1-DH1	2478.996	2479.996	1	0.682	Pass
NVNT	2-DH1	2401.996	2402.996	1	0.901	Pass
NVNT	2-DH1	2440.996	2441.996	1	0.812	Pass
NVNT	2-DH1	2478.996	2479.998	1.002	0.837	Pass
NVNT	3-DH1	2401.994	2402.996	1.002	0.808	Pass
NVNT	3-DH1	2440.996	2441.996	1	0.804	Pass
NVNT	3-DH1	2478.996	2479.996	1	0.885	Pass

12.4 Test Result



lent Spectrum Analyzer -	Swept SA	CFS NVNT [·]					
RL RF 5 enter Freq 2.402	500000 GHz		Free Run	ALIGN AUTO #Avg Typ AvgiHold	e: RMS :>100/100	01:41:1	5 PM Jan 23, 2024 RACE 1 2 3 4 5 1 TYPE M MANANA
	PN IFG		n: 30 dB	Avginoid			DET PNNNN
Ref Offset dB/div Ref 20.0	2.34 dB 0 dBm				M	kr1 2.401 1	996 GHz 536 dBm
	1				^ 2		
		~			` _		
			\sim	~~~			
.0							
.0							
.0							
.0							
enter 2.402500 GH	lz	#) (D)(4) 400			0	Spar	1 2.000 MHz
Res BW 30 kHz	×	#VBW 100	FUNCTION	FUNCTION WIDTH		P 2.133 m	s (1001 pts)
N 1 f N 1 f	2.401 996 GHz 2.402 996 GHz	1.536 dBm 1.498 dBm					
							~
			Ш	I A STATUS			×
	(1-DH1 2	441MHz			
ent Spectrum Analyzer -	Swept SA	CFS NVNT		441MHz			
ent Spectrum Analyzer - RL RF 51	Swept SA DΩ AC 500000 GHz	SENSE:INT	1	A441MHz ALIGNAUTO #Avg Typ	e: RMS >> 100/100	01:43:2	3 PM Jan 23, 2024 RACE 1 2 3 4 5 1 TYPE M Jan 23, 4 5 1
ent Spectrum Analyzer - RL RF 51	Swept SA DΩ AC 500000 GHz PN	SENSE:INT		441MHz ALIGN AUTO	:>100/100		3 PM Jan 23, 2024 RACE 1 2 3 4 5 1 TYPE MAXAAAAA DET P. N. N. N. N
ent Spectrum Analyzer - RL RF Si enter Freq 2.441 Ref Offset dB/div Ref 20.0	Swept SA D Ω AC 5000000 GHz PN IFG 2.36 dB	SENSE:INT 0: Wide 😱 Trig:	Free Run	A441MHz ALIGNAUTO #Avg Typ	:>100/100	kr1 2.440	
ent Spectrum Analyzer - RL RF St enter Freq 2.441 Ref Offset dB/div Ref 20.0 9	Swept SA D Ω AC 5000000 GHz PN IFG 2.36 dB	SENSE:INT 0: Wide 😱 Trig:	Free Run	A441MHz ALIGNAUTO #Avg Typ	:>100/100 M	kr1 2.440	3 PM Jan 23, 2024 RACE 1 2 3 4 5 1 TYPE MWWWW DET P NN NN 996 GHz
lent Spectrum Analyzer - RL RF St enter Freq 2.441 Ref Offset dB/div Ref 20.0 9 0 0 0 0 0 0 0 0 0 0 0 0 0	Swept SA D Ω AC 5000000 GHz PN IFG 2.36 dB	SENSE:INT 0: Wide 😱 Trig:	Free Run	A441MHz ALIGNAUTO #Avg Typ	:>100/100	kr1 2.440	3 PM Jan 23, 2024 RACE 1 2 3 4 5 1 TYPE MWWWW DET P NN NN 996 GHz
ent Spectrum Analyzer - Stenter Freq 2.441	Swept SA D Ω AC 5000000 GHz PN IFG 2.36 dB	SENSE:INT 0: Wide 😱 Trig:	Free Run	A441MHz ALIGNAUTO #Avg Typ	:>100/100 M	kr1 2.440	3 PM Jan 23, 2024 RACE 1 2 3 4 5 1 TYPE MWWWW DET P NN NN 996 GHz
lent Spectrum Analyzer - RL RF St enter Freq 2.441 Ref Offset dB/div Ref 20.0	Swept SA D Ω AC 5000000 GHz PN IFG 2.36 dB	SENSE:INT 0: Wide 😱 Trig:	Free Run	A441MHz ALIGNAUTO #Avg Typ	:>100/100 M	kr1 2.440	3 PM Jan 23, 2024 RACE 1 2 3 4 5 1 TYPE MWWWW DET P NN NN 996 GHz
ent Spectrum Analyzer - Stanter Freq 2.441	Swept SA D Ω AC 5000000 GHz PN IFG 2.36 dB	SENSE:INT 0: Wide 😱 Trig:	Free Run	A441MHz ALIGNAUTO #Avg Typ	:>100/100 M	kr1 2.440	3 PM Jan 23, 2024 RACE 1 2 3 4 5 1 TYPE MWWWW DET P NN NN 996 GHz
ent Spectrum Analyzer - Stanter Freq 2.441	Swept SA D Ω AC 5000000 GHz PN IFG 2.36 dB	SENSE:INT 0: Wide 😱 Trig:	Free Run	A441MHz ALIGNAUTO #Avg Typ	:>100/100 M	kr1 2.440	3 PM Jan 23, 2024 RACE 1 2 3 4 5 1 TYPE MWWWW DET P NN NN 996 GHz
ent Spectrum Analyzer - RL RF 51 enter Freq 2.441 Ref Offset dB/div Ref 20.0 9 0 0 0 0 0 0 0 0 0 0 0 0 0	Swept SA D Ω AC 5000000 GHz PN IFG 2.36 dB	SENSE:INT 0: Wide 😱 Trig:	Free Run	A441MHz ALIGNAUTO #Avg Typ	:>100/100 M	kr1 2.440	3 PM Jan 23, 2024 RACE 1 2 3 4 5 1 TYPE MWWWW DET P NN NN 996 GHz
ent Spectrum Analyzer - RL RF Si enter Freq 2.441 Ref Offset dB/div Ref 20.0 9 9 9 9 9 9 9 9 9 9 9 9 9	Swept SA 500000 GHz PN IFG 2.36 dB 0 dBm 1 1 1 1 1 1 1 1 1 1 1 1 1	0: Wide Sain:Low XAtte	Free Run n: 30 dB	A441MHz ALIGNAUTO #Avg Typ	>> 100/100	kr1 2.440 1	3 PM Jan 23, 2024
ent Spectrum Analyzer - RL RF S enter Freq 2.441 Ref Offset dB/div Ref 20.0 9 9 9 9 9 9 9 9 9 9 9 9 9	Swept SA 500000 GHz PN IFG 2.36 dB 0 dBm 1 1 1 2	SENSE:INT O: Wide Trig: Sain:Low Trig: #VBW 100	Free Run n: 30 dB	441MHz	>100/100	kr1 2.440 1 5 5 9 2.133 m	3 PM Jan 23, 2024 RACE 2 3 4 5 TYPE 2 3 4 5 DET P NNNN 9996 GH2 307 dBm
ent Spectrum Analyzer - RL RE Si enter Freq 2.441 Ref Offset dB/div Ref 20.0 0 0 0 0 0 0 0 0 0 0 0 0 0	Swept SA DO AC 500000 GHz PN FG 2.36 dB 0 dBm 1 1 1 2 X	SENSE:INT O: Wide Sain:Low Trig: #Atte #VBW 100 Y 1.307 dBm	Free Run n: 30 dB	A441MHz ALIGNAUTO #Avg Typ	>100/100	kr1 2.440 1	3 PM Jan 23, 2024
RL PRE SP RL RE SP Parter Freq 2.441 Ref Offset dB/div Ref 20.0 Ref 20.0 Ref 0 Ref Offset ref 2.441 Ref 0 Ref 0	Swept SA 500000 GHz PN IFG 2.36 dB 0 dBm 1 1 1 2	SENSE:INI O: Wide Sain:Low Trig: XAtte	Free Run n: 30 dB	441MHz	>100/100	kr1 2.440 1 5 5 9 2.133 m	3 PM Jan 23, 2024
ent Spectrum Analyzer - RL RF S enter Freq 2.441 Ref Offset dB/div Ref 20.0 9 9 9 9 9 9 9 9 9 9 9 9 9	Swept SA DO AC 500000 GHz PN FG 2.36 dB 0 dBm 1 1 1 2 X	SENSE:INT O: Wide Sain:Low Trig: #Atte #VBW 100 Y 1.307 dBm	Free Run n: 30 dB	441MHz	>100/100	kr1 2.440 1 5 5 9 2.133 m	3 PM Jan 23, 2024
ent Spectrum Analyzer - RL RF Si enter Freq 2.441 Ref Offset dB/div Ref 20.0 9 9 9 9 9 9 9 9 9 9 9 9 9	Swept SA DO AC 500000 GHz PN FG 2.36 dB 0 dBm 1 1 1 2 X	35 SENSE:INT 35 Jin:Low Trig: 36 Jin:Low #XAtte #VBW 1000 1.307 dBm	Free Run n: 30 dB	441MHz	>100/100	kr1 2.440 1 5 5 9 2.133 m	3 PM Jan 23, 2024



rilent Spectrum Analyzer - RL RF 5	50 Ω AC	SENSE:INT	ALIGNAUTO #Avg Type: RMS	01:45:14 PM Jan 23, 2024
enter Freq 2.479	PNO:	Wide Trig: Free Run in:Low #Atten: 30 dB	Avg Hold:>100/100	TRACE 12345 TYPE MWWW DET PNNNN
Ref Offset 0 dB/div Ref 20.0	t 2.4 dB 10 dBm			lkr1 2.478 996 GH: 0.439 dBn
0.0	1		2 ²	
0.0			~~~~	
0.0				
0.0				
enter 2.479500 GI	Hz			Span 2.000 MH
Res BW 30 kHz	×	#VBW 100 kHz	FUNCTION WIDTH	EP 2.133 ms (1001 pts
1 N 1 f 2 N 1 f 3	2.478 996 GHz 2.479 996 GHz	0.439 dBm 0.437 dBm		
4 5 6 9				
7				
0				>
3			STATUS	
	<u> </u>		0.400L411	
	Swept SA	FS NVNT 2-DH1	2402MHz	
RL RF 5	Swept SA 50 Ω AC 2500000 GHz	SENSE:INT	ALIGNAUTO #Avg Type: RMS	01:47:33 РМ Jan 23, 202 ТГАСЕ <mark>1 2 3 4 5</mark> Түүе М 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
RL RF 5 enter Freq 2.402	Swept SA 10 Ω AC 2500000 GHz PNO: IFGa		ALIGNAUTO #Avg Type: RMS Avg Hold:>100/100	TRACE 12345 TYPE MWWWW DET PNNNN
RL RF 5 enter Freq 2.402 Ref Offset 0 dB/div Ref 20.0	Swept SA 10 0 AC 25000000 GHz PNO: IFGa t2.34 dB	SENSE:INT	ALIGNAUTO #Avg Type: RMS Avg Hold:>100/100	TRACE 2 3 4 5 TYPE MWWW DET P N N N N
RL RF 15 enter Freq 2.402 Ref Offset 0 dB/div Ref 20.0	Swept SA 10 0 AC 25000000 GHz PNO: IFGa t2.34 dB	SENSE:INT	ALIGNAUTO #Avg Type: RMS Avg Hold:>100/100	TRACE 2 3 4 5 TYPE MWWW DET P N N N N
RL RF IS enter Freq 2.402 Ref Offset 0 dB/div Ref 20.0 99 0.0 0.0	Swept SA 10 0 AC 25000000 GHz PNO: IFGa t2.34 dB	SENSE:INT	ALIGNAUTO #Avg Type: RMS Avg Hold:>100/100	TRACE 2 3 4 5 TYPE MWWW DET P N N N N
RL RF IS enter Freq 2.402 Ref Offset D dB/div Ref 20.0 99 0.0 0.0 0.0 0.0	Swept SA 10 Q AC PNO: 2500000 GHz IFGa 12.34 dB 10 dBm	SENSE:INT	ALIGNAUTO #Avg Type: RMS Avg Hold:>100/100	TRACE 2 3 4 5 TYPE MWWW DET P N N N N
RL RF IS enter Freq 2.402 Ref Offset 0 dB/div Ref Offset 0 d0/div Ref 20.0	Swept SA 10 Q AC PNO: 2500000 GHz IFGa 12.34 dB 10 dBm	SENSE:INT	ALIGNAUTO #Avg Type: RMS Avg Hold:>100/100	TRACE 2 3 4 5 TYPE MWWW DET P N N N N
RL RF IS enter Freq 2.402 Ref Offset Ref Offset dB/div Ref 20.0 Ref 20.0 00 Ref 20.0 Ref 20.0	Swept 5A 10 2 AC 2500000 GHz PNO: IFGa 10 dBm	SENSE:INT	ALIGNAUTO #Avg Type: RMS Avg Hold:>100/100	TRACE 2 3 4 5 TYPE MWWWW DET P N N N
RL RF IS enter Freq 2.402 Ref Offset Ref Offset 0 dB/div Ref 20.0 Ref 20.0 0 0 0 0 0.0 0 0 0.0 0 0 0.0 0 0 0.0 0 0 0.0 0 0 0.0 0 0 0.0 0 0	Swept 5A 10 Q AC PNO: PNO: FGa 10 dBm	SENSE:INT	ALIGNAUTO #Avg Type: RMS Avg Hold:>100/100	Ikr1 2.401 996 GH: -0.336 dBn
RL RF IS enter Freq 2.402 Ref Offset Ref Offset 0 dB/div Ref 20.0 Ref 20.0 0 0	Swept 5A 10 Q AC PNO: PNO: FGa 10 dBm	SENSE:INT	ALIGNAUTO #Avg Type: RMS Avg Hold>100/100	Ikr1 2.401 996 GH: -0.336 dBn
RL RF IS enter Freq 2.402 Ref Offset Ref Offset d B/div Ref 20.0 Ref 20.0 0	Swept SA 10 Q AC 2500000 GHz PNO: IFGa 10 dBm 1 1 1 1 1 1 1 1 1 1 1 1 1	SENSE:INT	ALIGNAUTO #Avg Type: RMS Avg Hold>100/100	01:47:33 PM Jan 23, 202 TRACE 12 3 4 5 TYPE MUMAN Ikr1 2.401 996 GH: -0.336 dBn -0.336 dBn Span 2.000 MH ep 2.133 ms (1001 pts FUNCTION VALUE
RL RF IS enter Freq 2.402 Ref Offset Ref Offset dB/div Ref 20.0 Ref 20.0 0	Swept SA 10 Q AC PNO: FGa 10 dBm 10 dBm 11 11 12 12 12 12 12 12 12 12	SENSE:INT	ALIGNAUTO #Avg Type: RMS Avg Hold>100/100	Span 2.000 MH ep 2.133 ms (1001 pts
RL RF IS enter Freq 2.402 Ref Offset Ref Offset Ref 20.0 0 dB/div Ref 20.0 Res BW 30 kHz Ref 20.0 XH 1 1 N 1 3 N 4 5 5	Swept SA 10 Q AC 2500000 GHz PNO: IFGa 10 dBm 1 1 1 1 1 1 1 1 1 1 1 1 1	Viide	ALIGNAUTO #Avg Type: RMS Avg Hold>100/100	Span 2.000 MH ep 2.133 ms (1001 pts
RL RF FE enter Freq 2.402 Ref Offset dB/div Ref 20.0 0	Swept SA 10 Q AC 2500000 GHz PNO: IFGa 10 dBm 1 1 1 1 1 1 1 1 1 1 1 1 1	Viide	ALIGNAUTO #Avg Type: RMS Avg Hold>100/100	Span 2.000 MH ep 2.133 ms (1001 pts
D dB/div Ref 20.0 99 90 90 90 90 90 90 90 90 90 90 90 90	Swept SA 10 Q AC 2500000 GHz PNO: IFGa 10 dBm 1 1 1 1 1 1 1 1 1 1 1 1 1	Viide	ALIGNAUTO #Avg Type: RMS Avg Hold>100/100	TRACE 2 2 4 5 TYPE TYPE THE INFORMATION OF THE INTERPOL



RF 50 Ω ALIGNAUTO reg 2 441500000 GHz #Avg Type: F	01:50:20 PM Jan 23, 202
eq 2.441500000 GHz #Avg Type: F PNO: Wide Trig: Free Run Avg Hold:>10 IFGain:Low #Atten: 30 dB	
Ref Offset 2.36 dB Ref 20.00 dBm	Mkr1 2.440 996 GH 0.054 dBr
	2
	\sim
141500 GHz	Span 2.000 MH
30 kHz #VBW 100 kHz	Sweep 2.133 ms (1001 pts
C SCL X Y FUNCTION FUNCTION WIDTH f 2.440 996 GHz 0.054 dBm f 2.441 996 GHz 0.058 dBm	FUNCTION VALUE
	<u>></u>
CFS NVNT 2-DH1 2480MHz	
Jm Analyzer - Swept SA SENSE:INT ALIGNAUTO RF 50 Ω AC SENSE:INT ALIGNAUTO eq 2.479500000 GHz #Avg Type: F	01:51:38 PM Jan 23, 202 CMS TRACE 1 2 3 4 5
PNO: Wide 🆵 Trig: Free Run Avg Hold:>10 IFGain:Low #Atten: 30 dB	DETPNNN
Ref Offset 2.4 dB Ref 20.00 dBm	Mkr1 2.478 996 GH -0.374 dBr
	²
179500 GHz	Span 2.000 MH
30 kHz #VBW 100 kHz	Sweep 2.133 ms (1001 pts
	FUNCTION VALUE
f 2.478 996 GHz -0.374 dBm f 2.479 998 GHz -0.515 dBm	
f 2.479 998 GHz 0.374 dBm	
f 2.479 998 GHz 0.374 dBm	
f 2.479 998 GHz 0.374 dBm	



ilent Spectrum Analyzer	50 Ω AC	SENSE:IN	JT	ALIGNAUTO		01:57:51 PM Jan 2	
enter Freq 2.402	PNO): Wide 😱 Trig ain:Low #Att	: Free Run en: 30 dB	#Avg Type: Avg Hold:>1	RMS 100/100	TRACE 12 TYPE MY DET P	345 ////////////////////////////////////
Ref Offse	t 2.34 dB				Mkr1	2.401 994	GH:
0 dB/div Ref 20.0	00 dBm					-0.473	ווסג
.00					λ^2		
		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	~~~~~			m	/
D.0							
0.0							
).0 ).0							
0.0							
enter 2.402500 G Res BW 30 kHz	Hz	#VBW 100	) kHz		Sweep 2	Span 2.000 133 ms (100	
KR MODE TRC SCL	X	Y	FUNCTION	FUNCTION WIDTH		ON VALUE	2
1 N 1 f 2 N 1 f 3	2.401 994 GHz 2.402 996 GHz	-0.473 dBm -0.380 dBm					
5							
6 7 8 <b></b>							
9							
1							>
3		FS NVNT	2 041 (				
ilent Spectrum Analyzer -	- Swept SA			244 1 1011 12			
RL RF Senter Freq 2.44	1500000 GHz	SENSE:IN		ALIGN AUTO #Avg Type:		02:00:01 PM Jan 2 TRACE 1 2 TYPE M DET P N	3, 2024 <mark>3 4 5</mark>
			: Free Run en: 30 dB	Avg Hold:>*			NNN
	10		en. oo ub				
Ref Offse dB/div Ref 20.0	t 2.36 dB					2.440 996 0.015	GH: IBn
dB/div Ref 20.0	t 2.36 dB					2.440 996	GH: dBn
0 dB/div Ref 20.0	t 2.36 dB					2.440 996	GH: dBn
0 dB/div Ref 20.0	t 2.36 dB	~~~~~				2.440 996	GH: dBn
0 dB/div Ref 20.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	t 2.36 dB	~~~~		·····		2.440 996	GH: dBn
0 dB/div Ref 20.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	t 2.36 dB	~				2.440 996	GHi
Ref Offse dB/div Ref 20.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	t 2.36 dB					2.440 996	GHi
dB/div         Ref 20.0           00	t 2.36 dB					2.440 996	GH
enter 2,441500 G	t2.36 dB 00 dBm					2.440 996 0.015 (	
dB/div         Ref 20.0           09	t2.36 dB 00 dBm	~ #VBW 100		FUNCTION W/DTH	Mkr1	2.440 996 0.015 (	
dB/div       Ref 20.0         29	t2.36 dB 00 dBm		D KHz	FUNCTION WIDTH	Mkr1	2.440 996 0.015 ( 	
dB/div       Ref 20.0         29	t2.36 dB 00 dBm	#VBW 100	D KHz	FUNCTION WIDTH	Mkr1	2.440 996 0.015 ( 	
dB/div       Ref 20.0         29	t2.36 dB 00 dBm	#VBW 100	D KHz	FUNCTION W/IDTH	Mkr1	2.440 996 0.015 ( 	
dB/div         Ref 20.0           09	t2.36 dB 00 dBm	#VBW 100	D KHz	FUNCTION WIDTH	Mkr1	2.440 996 0.015 ( 	



			CFS NVI	NT 3-DH1	2480MHz		
gilent Spectru	um Analy	zer - Swept SA					
RL	RF	50Ω AC		INSE:INT	ALIGN AUTO		02:04:58 PM Jan 23, 202
enter Fr	eq 2.	479500000 GHz	PNO: Wide 🖵 IFGain:Low	Trig: Free Run #Atten: 30 dB		rpe: RMS d:≻100/100	TRACE 12345 TYPE MWWWW DET PNNN
) dB/div		ffset 2.4 dB 20.00 dBm				Mk	r1 2.478 996 GH -0.394 dBı
og 0.0							
).00		•				$\diamond^2$	
		$\sim$	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	_		$\sim$	~
0.0							
0.0							
0.0							
0.0							
0.0							
enter 2.4 Res BW			#VBW	/ 100 kHz		Sweep	Span 2.000 MH 2.133 ms (1001 pt
KR MODE TR	C SCL	×	Y	FUNCTION	FUNCTION WIDTH	FU	NCTION VALUE
1 N 1	f	2.478 996	GHz -0.394 d	Bm			
2 N 1 3		2.479 996	GHz -0.435 d	Bm			
4							
5 6							
8							
9							
0							
							>
G					to status		

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## 13. Number Of Hopping Frequency

### 13.1 Block Diagram Of Test Setup



## 13.2 Limit

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

### 13.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set the spectrum analyzer: RBW = 100kHz. VBW = 300kHz. Sweep = auto; Detector Function = Peak. Trace = Max hold.

3. Allow the trace to stabilize. It may prove necessary to break the span up to sections. in order to clearly show all of the hopping frequencies. The limit is specified in one of the subparagraphs of this Section.
4. Set the spectrum analyzer: Start Frequency = 2.4GHz, Stop Frequency = 2.4835GHz. Sweep=auto;

### 13.4 Test Result

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





nt Spectrum Analyzer - Swept SA	Hopping No. NVNT 1-I	DH1 2441MHz	
L RF 50Ω AC hter Freq 2.441750000 GH	Z PN0: Fast IFGain:Low #Atten: 30 dB	ALIGNAUTO #Avg Type: RMS Avg Hold:>100/100	02:22:45 PM Jan 23, 202 TRACE 1 2 3 4 5 TYPE MWWWW DET P N N N N
Ref Offset 2.36 dB B/div Ref 20.00 dBm		Mkr1 :	2.402 004 0 GH 2.048 dBr
			\\
rt 2.40000 GHz es BW 100 kHz MODE TRC SCL X	#VBW 300 kHz		Stop 2.48350 GH 8.000 ms (1001 pts TION VALUE
N 1 f 2.402 004 ( N 1 f 2.479 993 (			
	Hopping No. NVNT 2-[	DH1 2441MHz	
nt Spectrum Analyzer - Swept SA L RF 50 Ω AC Iter Freq 2.441750000 GH	SENSE:INT	ALIGNAUTO #Avg Type: RMS Avg Hold:>100/100	02:29:00 PM Jan 23, 202 TRACE 1 2 3 4 5 TYPE MWWW DET P N N N
Ref Offset 2.36 dB B/div Ref 20.00 dBm			2.401 837 0 GH 0.125 dBr
	,		M
rt 2.40000 GHz s BW 100 kHz	#VBW 300 kHz	Sweep	Stop 2.48350 GF 8.000 ms (1001 pt
MODE TRC SCL X N 1 f 2.401 837 ( N 1 f 2.479 993 (	Y FUNCTION	•	TION VALUE



Нор	ping No. NVNT 3-	DH1 2441MHz	
Agilent Spectrum Analyzer - Swept SA           μ         RL         RF         S0 Ω         AC         AC           Center Freq 2.441750000 GHz         P         P         P         P	SENSE:INT NO: Fast Trig: Free Run Gain:Low #Atten: 30 dB	ALIGNAUTO #Avg Type: RMS Avg Hold>100/100	02:34:47 PM Jan 23, 2024 TRACE 12 3 4 5 6 TYPE MWWWW DET P NNNN N
Ref Offset 2.36 dB           10 dB/dlv         Ref 20.00 dBm           100         1           0 00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1           0.00         1			r1 2.401 837 0 GHz 0.535 dBm
Start 2.40000 GHz #Res BW 100 kHz	#VBW 300 kHz	Swe	Stop 2.48350 GHz ep  8.000 ms (1001 pts)
MKR         MODE         TRC         SCL         X           1         N         1         f         2.401         837         0         Hz           2         N         1         f         2.480         677         5         Hz           3         4         5         5         6         6         7         7         8         9         9         10         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11         11	Y FUNCTION 0.535 dBm -6.056 dBm	FUNCTION WIDTH	FUNCTION VALUE
MSG		STATUS	

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## 14. Dwell Time

### 14.1 Block Diagram Of Test Setup



### 14.2 Limit

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. 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. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

### 14.3 Test procedure

1. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum.

2. Set spectrum analyzer span = 0. Centred on a hopping channel;

3. Set RBW = 1MHz and VBW = 3MHz.Sweep = as necessary to capture the entire dwell time per hopping channel. Set the EUT for DH5, DH3 and DH1 packet transmitting.

4. Use the marker-delta function to determine the dwell time. If this value varies with different modes of operation (e.g., data rate, modulation format, etc.), repeat this test for each variation. The limit is specified in one of the subparagraphs of this Section. Submit this plot(s).

### 14.4 Test Result

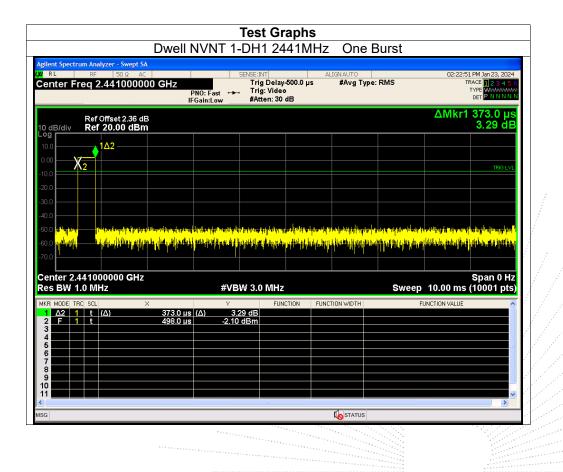
DH5 Packet permit maximum 1600 / 79 / 6 hops per second in each channel (5 time slots RX, 1 time slot TX).

DH3 Packet permit maximum 1600 / 79 / 4 hops per second in each channel (3 time slots RX, 1 time slot TX).

DH1 Packet permit maximum 1600 / 79 /2 hops per second in each channel (1 time slot RX, 1 time slot TX). So, the Dwell Time can be calculated as follows:



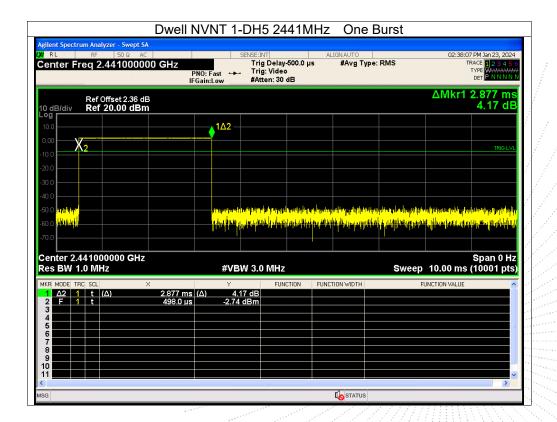
Condition	Mode	Frequency (MHz)	Pulse Time (ms)	Total Dwell Time (s)	Limit (s)	Verdict
NVNT	1-DH1	2441	0.373	0.119	0.4	Pass
NVNT	1-DH3	2441	1.63	0.261	0.4	Pass
NVNT	1-DH5	2441	2.877	0.307	0.4	Pass
NVNT	2-DH1	2441	0.383	0.123	0.4	Pass
NVNT	2-DH3	2441	1.634	0.261	0.4	Pass
NVNT	2-DH5	2441	2.88	0.307	0.4	Pass
NVNT	3-DH1	2441	0.383	0.123	0.4	Pass
NVNT	3-DH3	2441	1.631	0.261	0.4	Pass
NVNT	3-DH5	2441	2.883	0.308	0.4	Pass



Edition: B.1



	Dwell N	NVNT 1-D	DH3 24	41MHz	One	Burst		
gilent Spectrum Analyzer - Swept SA RL RF 50Ω AC Center Freq 2.44100000	00 GHz	NO: Fast ↔ Gain:Low	NSE:INT Trig Delay- Trig: Video #Atten: 30 c	500.0 µs	IGN AUTO #Avg Typ	e: RMS	02:37:	12 PM Jan 23, 202 TRACE <b>1 2 3 4 5</b> TYPE WWWWW DET PNNN
Ref Offset 2.36 dE 0 dB/div Ref 20.00 dBm .ºg							ΔMkr1	1.630 m 0.52 dI
0.00	1∆2							TRIG LV
10.0 <b>2</b> 2.0								
40.0	inda ) at belle jake order a	al addarations and allow	t fordets billet bereke	krátový kristi vzedvoj	lita in Highlith aside	ti dalita andere i dece ti citadore	te per state of the life is a	
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						n (na filadi i na al fila), i an	dayny) yle tyweld	
400 400 400 400 400 400 400 400 400 400		# # #VBW	и <b>3.0 MHz</b> FUNC	<mark>a <mark>Manana ka karina</mark>k</mark>		Sweep	dayny) yle tyweld	Span 0 H s (10001 pts
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40.0	× 1.630 ms	# #VBW (Δ) 0.52	I 3.0 MHz	<mark>a <mark>Manana ka karina</mark>k</mark>	<mark>ele poli d'en la d</mark> a éle de	Sweep	ليونيون 10.00 ms	Span 0 H s (10001 pts
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40.0	× 1.630 ms	# #VBW (Δ) 0.52	I 3.0 MHz	<mark>a <mark>Manana ka karina</mark>k</mark>	<mark>ele poli d'en la d</mark> a éle de	Sweep	ليونيون 10.00 ms	Span 0 H s (10001 pts
400         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ         τ	× 1.630 ms	# #VBW (Δ) 0.52	I 3.0 MHz	<mark>a <mark>Manana ka karina</mark>k</mark>	<mark>ele poli d'en la d</mark> a éle de	Sweep	ليونيون 10.00 ms	Span 0 H: s (10001 pts



No.: BCTC/RF-EMC-005



		Dwell N	NVNT 2-	-DH1 24	44 I M H Z	z One	Burst		
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0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	41000000 GHz 0 MHz	анда <u>вания</u> Булания 2 × 383.0 µs	(μητοφήλογη) #VB (Δ) 1.	W 3.0 MH: 92 dB	<u>مند به الله الله الله الله الله الله الله ا</u>	ne fili fili ta ne fili a	Sweep	10.00 ms	Span 0 H s (10001 pt
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with a state of the	41000000 GHz 0 MHz	анда <u>вания</u> Булания 2 × 383.0 µs	(μητοφήλογη) #VB (Δ) 1.	W 3.0 MH: 92 dB	<u>مند به الله الله الله الله الله الله الله ا</u>	ne fili fili ta ne fili a	Sweep	10.00 ms	Span 0 H s (10001 pt
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0.0         Apple 1           0.0         Apple 1           0.0         Apple 1           enter 2.44         es BW 1.0           KR MODE TRC         1           2         F           3         -           4         -           5         -           6         -           7         8	41000000 GHz 0 MHz	анда <u>вания</u> Булания 2 × 383.0 µs	(μητοφήλογη) #VB (Δ) 1.	W 3.0 MH: 92 dB	<u>مند به الله الله الله الله الله الله الله ا</u>	ne fili fili ta ne fili a	Sweep	10.00 ms	Span 0 H s (10001 pt

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A         Content         Con	× 1.634 ms	#VBW 3 Υ (Δ) 1.71 d	3.0 MHz		Sweep	10.00 ms	Span 0 Hz

No.: BCTC/RF-EMC-005



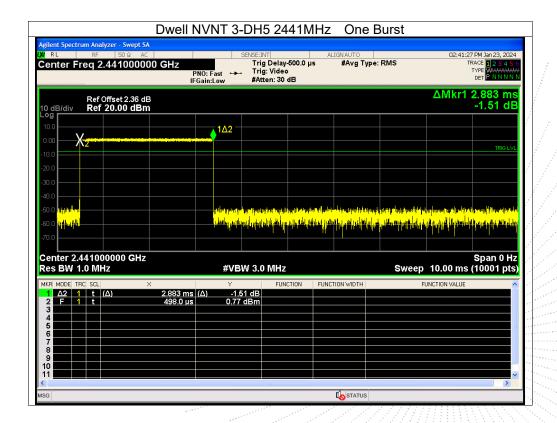
D	well NVNT 2-DI	H5 2441MHz	One Burst	
Blent Spectrum Analyzer - Swept SA           RL         RF         50 Ω         AC           enter Freq 2.441000000 C	PNO: East +++ T	E:INT A Trig Delay-500.0 μs Trig: Video Atten: 30 dB	LIGNAUTO #Avg Type: RMS	02:42:25 PM Jan 23, 202 TRACE 1 2 3 4 5 TYPE WWWWW DET P N N N
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30.0         3.00           30.0         3.00           Senter 2.441000000 GHz           ces BW 1.0 MHz           KR MODE TRC SCL           2         F           1         Δ2           2         F           1         t	#vbw 3	B.	si i line faith a faith	<mark>المعلم المعلم المعلم Span 0 H p   10.00 ms (10001 pt</mark>
enter 2.441000000 GHz es BW 1.0 MHz $I = \Delta 2$ I t ( $\Delta$ ) 2 2 F 1 t ( $\Delta$ ) 2 3 4	#VBW 3 2.880 ms (Δ) 2.23 d	B.	si i line faith a faith	<b>Span 0 H</b> 10.00 ms (10001 pt
RR         MODO         THE           RR         MODE         TRC         SCL           2         F         1         t         (A)         2           3         4         4         5         6         6         6         6	#VBW 3 2.880 ms (Δ) 2.23 d	B.	si i line faith a faith	<b>Span 0 H</b> 10.00 ms (10001 pt
κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ         κ	#VBW 3 2.880 ms (Δ) 2.23 d	B.	si i line faith a faith	<mark>المعلم المعلم المعلم Span 0 H p   10.00 ms (10001 pt</mark>
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20.0         center 2.441000000 GHz           ces BW 1.0 MHz         kR           KR MODE TRC SCL         >           1         Δ2         1         t           2         F         1         t		#VBW 3.	0 MHz		Sweep	Span 10.00 ms (10001	0 H
enter 2.441000000 GHz es BW 1.0 MHz KR MODE TRC SCL > 1 Δ2 1 t (Δ)	< 383.0 μs (Δ	#VBW 3.	0 MHz		Sweep	Span 10.00 ms (10001	0 H
Zenter 2.441000000 GHz           Res BW 1.0 MHz           KR MODE TRC SCL           1         Δ2           2         F           1         t           2         F           1         t	< 383.0 μs (Δ	#VBW 3.	0 MHz		Sweep	Span 10.00 ms (10001	0 H
200         Center 2.441000000 GHz           tes BW 1.0 MHz         MHz           MKR MODE TRC SCL         X           2         F         1         t           3         4         5         5	< 383.0 μs (Δ	#VBW 3.	0 MHz		Sweep	Span 10.00 ms (10001	0 H
200         Conter 2.441000000 GHz           Center 2.441000000 GHz         Center 2.441000000 GHz           Center 2.441000000 GHz         Center 2.441000000 GHz           Center 2.441000000 GHz         Center 2.4410000000 GHz           Center 2.441000000 GHz         Center 2.4410000000 GHz           Center 2.4410000000 GHz         Center 2.44100000000000000000000000000000000000	< 383.0 μs (Δ	#VBW 3.	0 MHz		Sweep	Span 10.00 ms (10001	0 H
200	< 383.0 μs (Δ	#VBW 3.	0 MHz		Sweep	Span 10.00 ms (10001	0 H

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	Dwell N	NVNT 3-DH	13 2441MF	Hz One	Burst		
ilent Spectrum Analyzer - Swept SA RL RF 50Ω AC enter Freg 2.4410000			ig Delay-500.0 μs	ALIGN AUTO #Avg Tyj	pe: RMS		39 PM Jan 23, 202 TRACE <mark>1</mark> 2 3 4 5
	P		rig: Video Atten: 30 dB			AMLed	
Ref Offset 2.36 dl dB/div Ref 20.00 dBn							4.16 d
0.0	1Δ2						
							TRIG L'
0.0 <mark>a byp</mark>		formalita farring and a formality and a					
0.0		hanning an					
0.0 0.0 <mark>allyr</mark> 0.0 <mark>allar</mark>	an fuil a dhi a dan na b		<mark>de 11 (16), po a lite productive podela e p</mark> o		<mark>d philiphis sing series</mark>	<mark>i ta diportati ora da da</mark> na	
0.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	×	#VBW 3.	O MHz		Sweep	<mark>i ta diportati ora da da</mark> na	Span 0 H
0.0 049 0.0 049 0.0 0 049 enter 2.441000000 GHz es BW 1.0 MHz	an a	#VBW 3.	O MHz	<mark>ng tha da an an</mark>	Sweep	10.00 ms	Span 0 H
0.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	<u>страна на соста</u> × 1.631 ms	#VBW 3.	O MHz	<mark>ng tha da an an</mark>	Sweep	10.00 ms	Span 0 H
0.0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	<u>страна на соста</u> × 1.631 ms	#VBW 3.	O MHz	<mark>ng tha da an an</mark>	Sweep	10.00 ms	Span 0 H
0.0         0.0         0.0           0.0         0.0         0.0           enter 2.441000000 GHz         0.0           es BW 1.0 MHz         0.0           KR         MODE         TRC           2         F         1         t           2         F         1         t           3         4         4         4           5         5         5         5           6         7         5         5	<u>страна на соста</u> × 1.631 ms	#VBW 3.	O MHz	<mark>ng tha da an an</mark>	Sweep	10.00 ms	Span 0 H
0.0         0.0         0.0           0.0         0.0         0.0           enter 2.441000000 GHz         es BW 1.0 MHz           KR         MODE         TRC           2         F         1         t           3         4         4           5         5         5           6         6         7           7         8         9	<u>страна на соста</u> × 1.631 ms	#VBW 3.	O MHz	<mark>ng tha da an an</mark>	Sweep	10.00 ms	Span 0 H
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	<u>страна на соста</u> × 1.631 ms	#VBW 3.	O MHz	<mark>ng tha da an an</mark>	Sweep	10.00 ms	Span 0 H
0.0     0.0       0.0     0.0       0.0     0.0       enter 2.441000000 GHz       es BW 1.0 MHz       KR MODE TRC SCL       1     22       1     22       1     1       3       4       5       6       7       8       9       0	<u>страна на соста</u> × 1.631 ms	#VBW 3.	O MHz	<mark>ng tha da an an</mark>	Sweep	10.00 ms	Span 0 H



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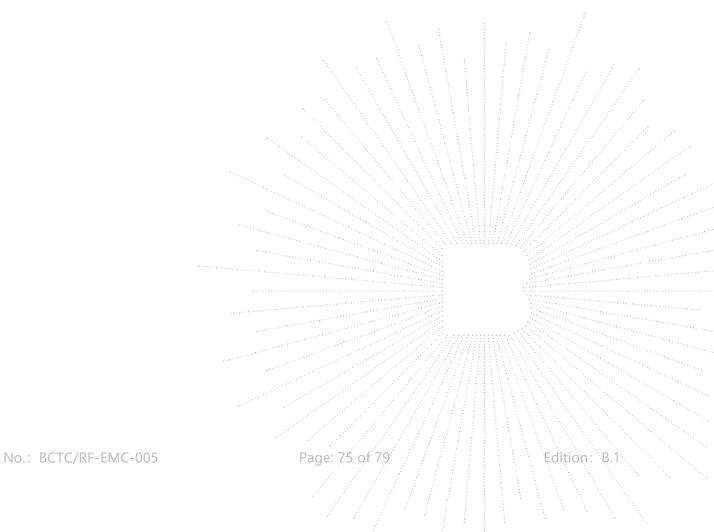
# 15. Antenna Requirement

#### 15.1 Limit

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

### 15.2 Test Result

The EUT antenna is Internal antenna, fulfill the requirement of this section.





# 16. EUT Photographs

### EUT Photo 1







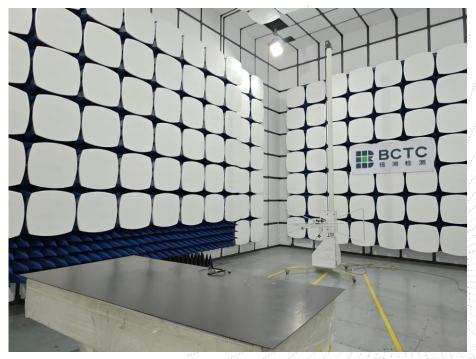


# 17. EUT Test Setup Photographs

# **Conducted Emissions Photo**



#### **Radiated Measurement Photos**



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# STATEMENT

1. The equipment lists are traceable to the national reference standards.

2. The test report can not be partially copied unless prior written approval is issued from our lab.

3. The test report is invalid without the "special seal for inspection and testing".

4. The test report is invalid without the signature of the approver.

5. The test process and test result is only related to the Unit Under Test.

6. Sample information is provided by the client and the laboratory is not responsible for its authenticity.

7. The quality system of our laboratory is in accordance with ISO/IEC17025.

8. If there is any objection to this test report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

Address:

1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China

TEL: 400-788-9558

P.C.: 518103

FAX: 0755-33229357

Website: http://www.chnbctc.com

E-Mail: bctc@bctc-lab.com.cn

***** END *****

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