

TEST REPORT

Report No.:	BCTC2405339638-1E
Applicant:	Shenzhen Mike Morgen Technology Co., Ltd
Product Name:	NYXI Master P1
Test Model:	NP01
Tested Date:	2024-05-18 to 2024-05-20
Issued Date:	2024-05-29
She	enzhen BCTC Testing Co., Ltd.
No.: BCTC/RF-EMC-005	



FCC ID: 2A88F-NP01

Product Name:	NYXI Master P1	
Trademark:	N/A	
Model/Type Reference:	NP01	
Prepared For:	Shenzhen Mike Morgen Technology Co., Ltd	
Address:	Room 302, Building 5, Zone C, Jinxiu Huacheng Park, Bantian Street,	
Address.	Longgang District, Shenzhen, China, 518000	
Manufacturer:	Shenzhen Mike Morgen Technology Co., Ltd	
Address:	Room 302, Building 5, Zone C, Jinxiu Huacheng Park, Bantian Street,	
Prepared By:	Shenzhen BCTC Testing Co., Ltd	
Address:		
Sample Received Date:	2024-05-13	
Sample Tested Date:	2024-05-18 to 2024-05-20	
Report No.:	BCTC2405339638-1E	
Test Standards	FCC Part15.247 ANSI C63.10-2013	
Test Results	PASS	
Remark:	This is Bluetooth Classic radio test report.	
Tested	by: Approved by:	

Brave Ze

Brave Zeng/ Project Handler

×

Zero Zhou/Reviewer

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Page: 2 of 81



Table of Content

Tes	t Report Declaration	Page
1.	Version	5
2.	Test Summary	6
3.	Measurement Uncertainty	7
4.	Product Information and Test Setup	
4.1	Product Information	
4.2	Test Setup Configuration	
4.3	Support Equipment	
4.4	Channel List	
4.5	Test Mode	10
4.6	Table Of Parameters Of Text Software Setting	10
5.	Test Facility And Test Instrument Used	
5.1	Test Facility	
5.2	Test Instrument Used	
6.	Conducted Emissions	13
6.1	Block Diagram Of Test Setup	
6.2	Limit	
6.3	Test procedure	
6.4	EUT operating Conditions	
6.5	Test Result	
7.	Radiated emissions	
7.1	Block Diagram Of Test Setup	
7.2	Limit	
7.3	Test procedure	18
7.4	EUT operating Conditions	19
7.5	Test Result	
8.	Radiated Band Emission Measurement and Restricted Bands of Operat	ion24
8.1	Block Diagram Of Test Setup	
8.2	Limit	24
8.3	Test procedure	
8.4	EUT operating Conditions	1 1 1 L
8.5	Test Result	
9.	Spurious RF Conducted Emissions	
9.1	Block Diagram Of Test Setup	
9.2	Limit	
9.3	Test procedure	
9.4	Test Result	
10.	20 dB Bandwidth	49
10.1	1 Block Diagram Of Test Setup	49
10.2	1 Block Diagram Of Test Setup 2 Limit	49
10.3		49
10.4	4 Test Result	50
11.	Maximum Peak Output Power 1 Block Diagram Of Test Setup 2 Limit	56
11.1	1 Block Diagram Of Test Setup	56
11.2	2 Limit	56
11.3	3 Test procedure	56



11.4 Test Result	
12. Hopping Channel Separation	62
12.1 Block Diagram Of Test Setup	62
12.2 Limit	62
12.3 Test procedure	62
12.4 Test Result	62
13. Number of Hopping Frequency	68
13.1 Block Diagram Of Test Setup	68
13.2 Limit	68
13.3 Test procedure	68
13.4 Test Result	68
14. Dwell Time	71
14.1 Block Diagram Of Test Setup	71
14.2 Limit	
14.3 Test procedure	71
14.4 Test Result	
15. Antenna Requirement	78
15.1 Limit	78
15.2 Test Result	78
16. EUT Test Setup Photographs	79

Page: 4 of 81



1. Version

Report No.	Issue Date	Description	Approved
BCTC2405339638-1E	2024-05-29	Original	Valid

Page: 5 of 81



Test Summary 2.

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	Number of hopping frequencies	§15.247(a)(1)(iii)	PASS
5	Dwell Time	§15.247(a)(1)(iii)	PASS
6	Spurious RF conducted emissions	§15.247(d)	PASS
7	Band edge	§15.247(d)	PASS
8	Spurious radiated emissions for transmitter	§15.247(d) & §15.209 & §15.205	PASS
9	Antenna Requirement	15.203	PASS
NOTEA	NI/A (Nist Ameliantia)	· ·	

NOTE1: N/A (Not Applicable) NOTE2: According to FCC OET KDB 558074, the report use radiated measurements in the restricted frequency bands. In addition, the radiated test is also performed to ensure the emissions emanating from the device cabinet also comply with the applicable limits.

Page: 6 of 81



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° ℃

Page: 7 of 81



4. Product Information and Test Setup

4.1 Product Information

Model/Type reference:	NP01
Model differences:	N/A
Hardware Version:	N/A
Software Version:	N/A
Operation Frequency:	Bluetooth: 2402-2480MHz
Type of Modulation:	Bluetooth: GFSK, π/ 4 DQPSK,8DPSK
Number Of Channel	79CH
Antenna installation:	Internal antenna
Antenna Gain:	2.499dBi
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.
power supply:	DC 5V,0.39A
Battery:	DC 3.7V,600mAh

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:

E-2 Adapter

Radiated Spurious Emission



Page: 8 of 81



4.3 Support Equipment

No.	Device Type	Brand Model		Series No.	Note	
E-1	NYXI Master P1	N/A	NP01	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	N/A	N/A	

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	\\\\////



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)	2441MHz	2480MHz				
4	Transmitting (Conducted emission & Radiated emission)						

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	FCC_assist 1.0.1.2				
Frequency	2402 MHz	2441 MHz	2480 MHz		
Parameters	DEF	DEF	DEF		

Page: 10 of 81



5. Test Facility And Test Instrument Used

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, Tangwei, 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 IC Registered No.: 23583

5.2 Test Instrument Used

Conducted Emissions Test										
Equipment	Manufacturer Model# Serial		Serial#	Last Cal.	Next Cal.					
Receiver	R&S	ESR3	102075	May 16, 2024	May 15, 2025					
LISN	R&S	ENV216	101375	May 16, 2024	May 15, 2025					
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\					
Pulse limiter	Schwarzbeck	VTSD 9561-F	01323	May 16, 2024	May 15, 2025					

RF Conducted Test									
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.				
Power meter	Keysight	E4419	/	May 16, 2024	May 15, 2025				
Power Sensor (AV)	Keysight	E9300A	١	May 16, 2024	May 15, 2025				
Signal Analyzer20kH z-26.5GHz	Keysight	N9020A	MY49100060	May 16, 2024	May 15, 2025				
Spectrum Analyzer9kHz- 40GHz	R&S	FSP40	100363	May 16, 2024	May 15, 2025				

Page: 11 of 81



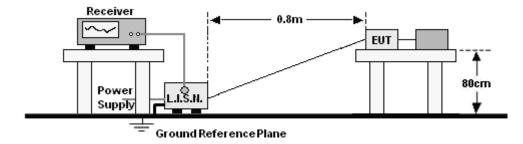
Radiated Emissions Test (966 Chamber)									
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.				
966 chamber	ChengYu	966 Room	966	May 16, 2024	May 15, 2025				
Receiver	R&S	ESR3	102075	May 16, 2024	May 15, 2025				
Receiver	R&S	ESRP	101154	May 16, 2024	May 15, 2025				
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 16, 2024	May 15, 2025				
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	SK202104090 1	May 16, 2024	May 15, 2025				
Horn Antenna	Schwarzbeck	BBHA9120D	1541	May 31, 2023	May 30, 2024				
Amplifier(18G Hz-40GHz)	MITEQ	TTA1840-35- HG	2034381	May 16, 2024	May 15, 2025				
Horn Antenn(18GH z-40GHz)	Schwarzbeck	BBHA9170	00822	May 31, 2023	May 30, 2024				
Spectrum Analyzer9kHz- 40GHz	R&S	FSP40	100363	May 16, 2024	May 15, 2025				
Software	Frad	EZ-EMC	FA-03A2 RE	\	\				

Page: 12 of 81



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.

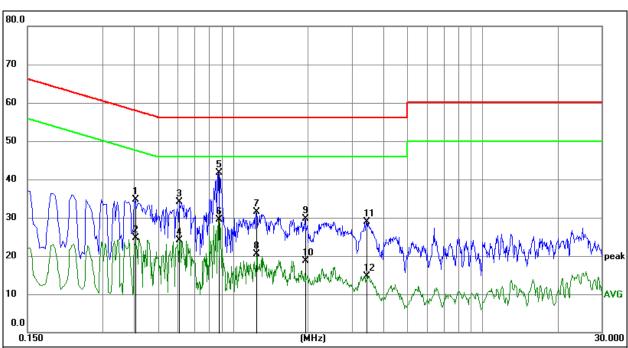
6.4 EUT operating Conditions

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 4	Test Voltage :	AC120V/60Hz



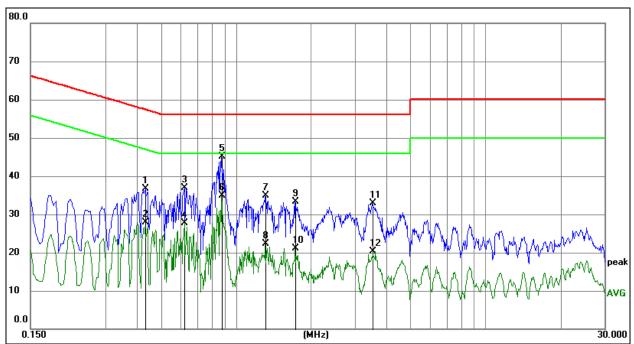
Remark:

- 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	Comment
1	0.4065	24.47	10.18	34.65	57.72	-23.07	QP	
2	0.4065	14.46	10.18	24.64	47.72	-23.08	AVG	
3	0.6090	23.87	10.19	34.06	56.00	-21.94	QP	
4	0.6090	13.88	10.19	24.07	46.00	-21.93	AVG	
5 *	0.8790	31.46	10.21	41.67	56.00	-14.33	QP	
6	0.8790	19.23	10.21	29.44	46.00	-16.56	AVG	
7	1.2390	21.40	10.18	31.58	56.00	-24.42	QP	
8	1.2390	10.34	10.18	20.52	46.00	-25.48	AVG	
9	1.9455	19.51	10.10	29.61	56.00	-26.39	QP	
10	1.9455	8.66	10.10	18.76	46.00	-27.24	AVG	
11	3.4215	18.75	10.20	28.95	56.00	-27.05	QP	
12	3.4215	4.53	10.20	14.73	46.00	-31.27	AVG	



Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Phase :	Ν
Test Mode:	Mode 4	Test Voltage :	AC120V/60Hz



Remark:

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

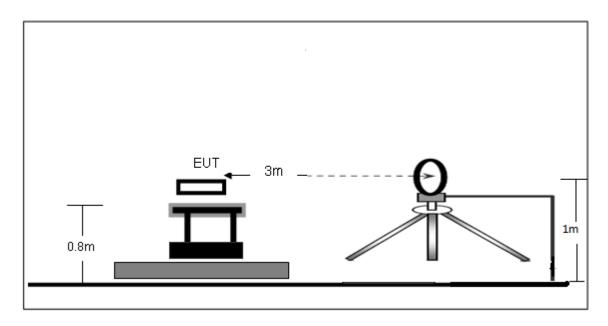
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over			
		MHz		dB	dBuV	dBuV	dB	Detector	Comment	
1		0.4335	26.51	10.18	36.69	57.19	-20.50	QP		
2		0.4335	17.72	10.18	27.90	47.19	-19.29	AVG		
3		0.6225	26.65	10.19	36.84	56.00	-19.16	QP		
4		0.6225	17.59	10.19	27.78	46.00	-18.22	AVG		
5	*	0.8790	34.87	10.21	45.08	56.00	-10.92	QP		
6		0.8790	24.63	10.21	34.84	46.00	-11.16	AVG		
7		1.3154	24.76	10.17	34.93	56.00	-21.07	QP		
8		1.3154	12.10	10.17	22.27	46.00	-23.73	AVG		
9		1.7295	23.22	10.12	33.34	56.00	-22.66	QP		
10		1.7295	11.06	10.12	21.18	46.00	-24.82	AVG		
11		3.5205	22.72	10.21	32.93	56.00	-23.07	QP		
12		3.5205	10.19	10.21	20.40	46.00	-25.60	AVG		



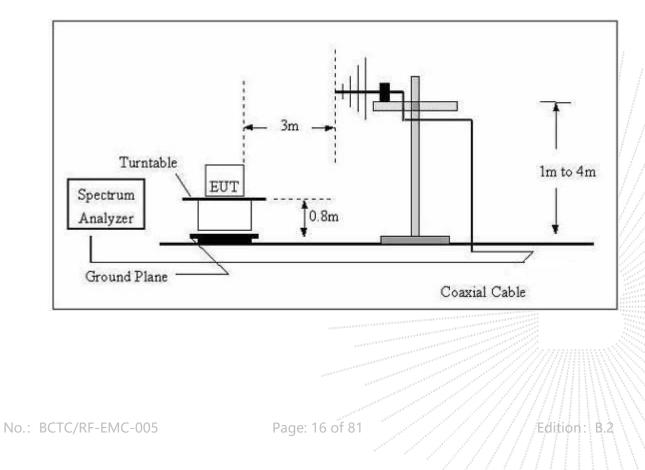
7. Radiated emissions

7.1 Block Diagram Of Test Setup

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

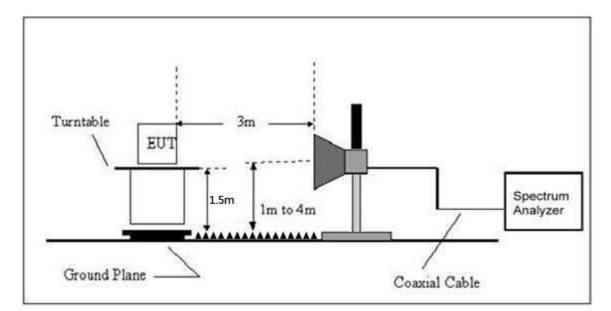


(B) Radiated Emission Test-Up Frequency 30MHz~1GHz





(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) Peak Average				
Frequency (MHz)					
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.

Page: 19 of 81



7.5 Test Result

Below 30MHz

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	DC 3.7V
Test Mode:	Mode 4	Test vollage.	DC 3.7 V

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.

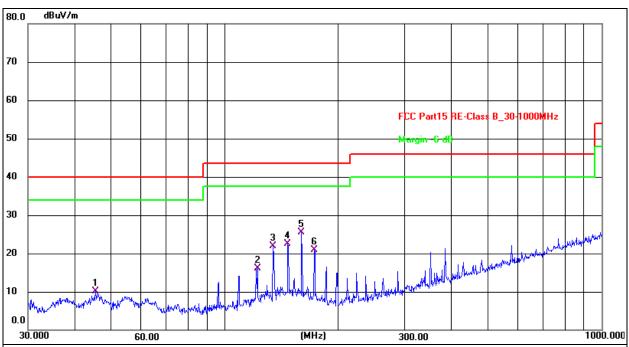
No.: BCTC/RF-EMC-005

Page: 20 of 81



Between 30MHz - 1GHz

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Phase :	Horizontal
Test Mode:	Mode 4	Test Voltage :	DC 3.7V



Remark:

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

- Measurement = Reading Level + Correct Factor
 Over = Measurement Limit

I					1 1 1		
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	45.3755	27.04	-16.85	10.19	40.00	-29.81	QP
2	121.9755	32.82	-16.77	16.05	43.50	-27.45	QP
3	134.0882	37.54	-15.73	21.81	43.50	-21.69	QP
4	146.8877	37.23	-14.64	22.59	43.50	-20.91	QP
5 *	159.7844	40.51	-14.99	25.52	43.50	-17.98	QP
6	172.5988	36.75	-15.80	20.95	43.50	-22.55	QP



Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Phase :	Vertical
Test Mode:	Mode 4	Test Voltage :	DC 3.7V



Remark:

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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detecto
1	39.7146	25.35	-16.95	8.40	40.00	-31.60	QP
2	46.9948	27.02	-16.84	10.18	40.00	-29.82	QP
3	55.4147	26.41	-17.01	9.40	40.00	-30.60	QP
4 *	134.0882	32.16	-15.73	16.43	43.50	-27.07	QP
5	146.8877	30.67	-14.64	16.03	43.50	-27.47	QP
6	383.9318	26.69	-10.94	15.75	46.00	-30.25	QP



Polar	Frequency	Reading Level	Correct Factor	Measure- ment	Limits	Over	Detector		
(H/V)	(MHz)	(dBuV/m)	(dB) (d	(dBuV/m)	(dBuV/ m)	(dB)	Туре		
	GFSK Low channel								
V	4804.00	70.13	-19.99	50.14	74.00	-23.86	PK		
V	4804.00	61.12	-19.99	41.13	54.00	-12.87	AV		
V	7206.00	61.95	-14.22	47.73	74.00	-26.27	PK		
V	7206.00	51.71	-14.22	37.49	54.00	-16.51	AV		
Н	4804.00	67.92	-19.99	47.93	74.00	-26.07	PK		
Н	4804.00	57.55	-19.99	37.56	54.00	-16.44	AV		
Н	7206.00	60.55	-14.22	46.33	74.00	-27.67	PK		
Н	7206.00	52.92	-14.22	38.70	54.00	-15.30	AV		
	GFSK Middle channel								
V	4882.00	66.84	-19.84	47.00	74.00	-27.00	PK		
V	4882.00	60.69	-19.84	40.85	54.00	-13.15	AV		
V	7323.00	57.04	-13.90	43.14	74.00	-30.86	PK		
V	7323.00	48.43	-13.90	34.53	54.00	-19.47	AV		
Н	4882.00	63.76	-19.84	43.92	74.00	-30.08	PK		
Н	4882.00	54.61	-19.84	34.77	54.00	-19.23	AV		
Н	7323.00	55.56	-13.90	41.66	74.00	-32.34	PK		
Н	7323.00	47.12	-13.90	33.22	54.00	-20.78	AV		
			GFSK High ch	annel					
V	4960.00	69.57	-19.68	49.89	74.00	-24.11	PK		
V	4960.00	61.50	-19.68	41.82	54.00	-12.18	AV		
V	7440.00	61.49	-13.57	47.92	74.00	-26.08	PK		
V	7440.00	52.10	-13.57	38.53	54.00	-15.47	AV		
Н	4960.00	67.51	-19.68	47.83	74.00	-26.17	PK		
Н	4960.00	56.55	-19.68	36.87	54.00	-17.13	AV		
Н	7440.00	59.36	-13.57	45.79	74.00	-28.21	PK		
Н	7440.00	52.23	-13.57	38.66	54.00	-15.34	AV		

Between 1GHz – 25GHz

Remark:

1.Emission Level = Meter Reading + Factor, Factor = Antenna Factor + Cable Loss – Pre-amplifier. Over= Emission Level - 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.

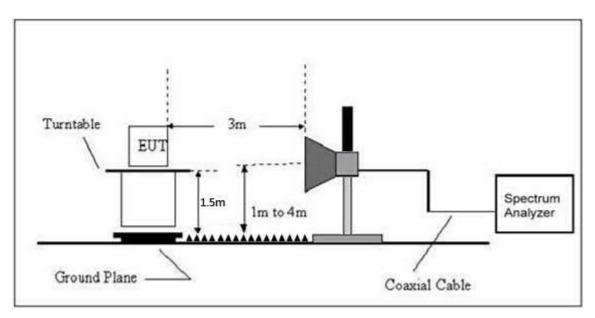
5.All the Modulation are test, the worst mode is GFSK, the data recording in the report.



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)

Frequency (MHz)	Limit (dBuV/m) (at 3M)				
Frequency (MIRZ)	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

Test mode		Frequency (MHz)	Reading Level (dBuV/m)	Correct Factor (dB)	Measure- ment (dBuV/m)	Limits (dBuV/m)		Result		
		(PK	PK	AV			
	Low Channel 2402MHz									
GFSK	Н	2390.00	73.77	-25.43	48.34	74.00	54.00	PASS		
	Н	2400.00	76.35	-25.40	50.95	74.00	54.00	PASS		
	V	2390.00	74.08	-25.43	48.65	74.00	54.00	PASS		
	V	2400.00	73.83	-25.40	48.43	74.00	54.00	PASS		
	High Channel 2480MHz									
	H	2483.50	73.66	-25.15	48.51	74.00	54.00	PASS		
	Н	2500.00	69.67	-25.10	44.57	74.00	54.00	PASS		
	V	2483.50	72.55	-25.15	47.40	74.00	54.00	PASS		
	V	2500.00	68.66	-25.10	43.56	74.00	54.00	PASS		
π/4DQPSK	Low Channel 2402MHz									
	H	2390.00	72.09	-25.43	46.66	74.00	54.00	PASS		
	Н	2400.00	73.59	-25.40	48.19	74.00	54.00	PASS		
	V	2390.00	72.11	-25.43	46.68	74.00	54.00	PASS		
	V	2400.00	72.55	-25.40	47.15	74.00	54.00	PASS		
	High Channel 2480MHz									
	Н	2483.50	71.34	-25.15	46.19	74.00	54.00	PASS		
	H	2500.00	68.00	-25.10	42.90	74.00	54.00	PASS		
	V	2483.50	70.35	-25.15	45.20	74.00	54.00	PASS		
	V	2500.00	66.30	-25.10	41.20	74.00	54.00	PASS		
8DPSK	Low Channel 2402MHz									
	Н	2390.00	73.35	-25.43	47.92	74.00	54.00	PASS		
	Н	2400.00	75.06	-25.40	49.66	74.00	54.00	PASS		
	V	2390.00	72.82	-25.43	47.39	74.00	54.00	PASS		
	V	2400.00	72.85	-25.40	47.45	74.00	54.00	PASS		
	High Channel 2480MHz									
	Н	2483.50	73.37	-25.15	48.22	74.00	54.00	PASS		
	Н	2500.00	70.08	-25.10	44.98	74.00	54.00	PASS		
	V	2483.50	71.67	-25.15	46.52	74.00	54.00	PASS		
	V	2500.00	67.38	-25.10	42.28	74.00	54.00	PASS		

Remark:

1. Emission Level = Meter Reading + Factor, Factor = Antenna Factor + Cable Loss – Pre-amplifier. Over= Emission Level - 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: Below 30MHz: RBW = 100kHz, VBW = 300kHz, Sweep = auto Detector function = peak, Trace = max hold Above 30MHz: RBW = 100KHz, VBW = 300KHz, Sweep = auto Detector function = peak, Trace = max hold

Page: 27 of 81



9.4 Test Result



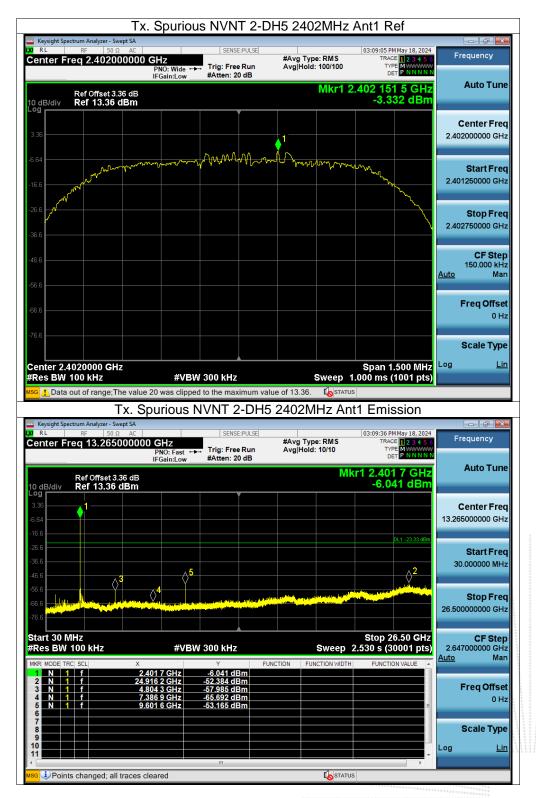








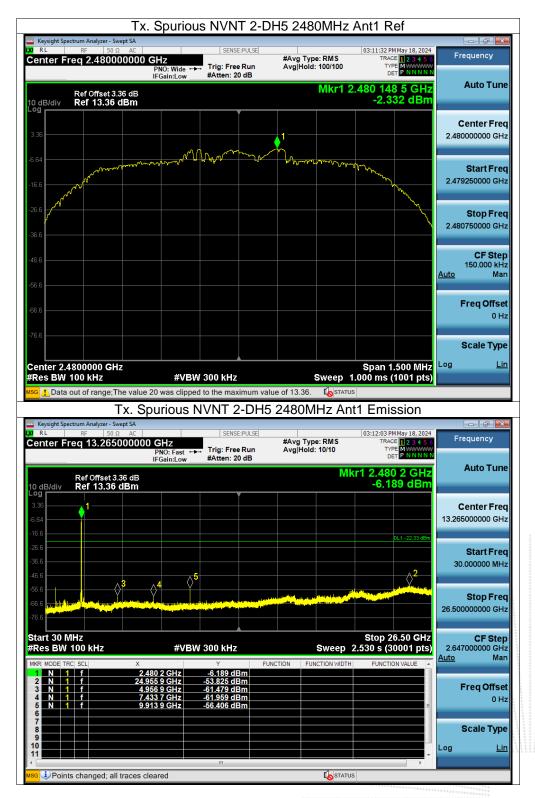




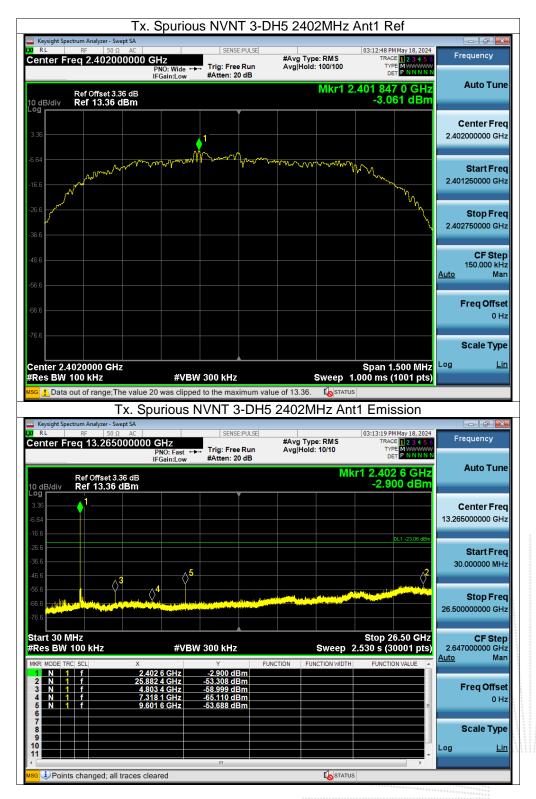




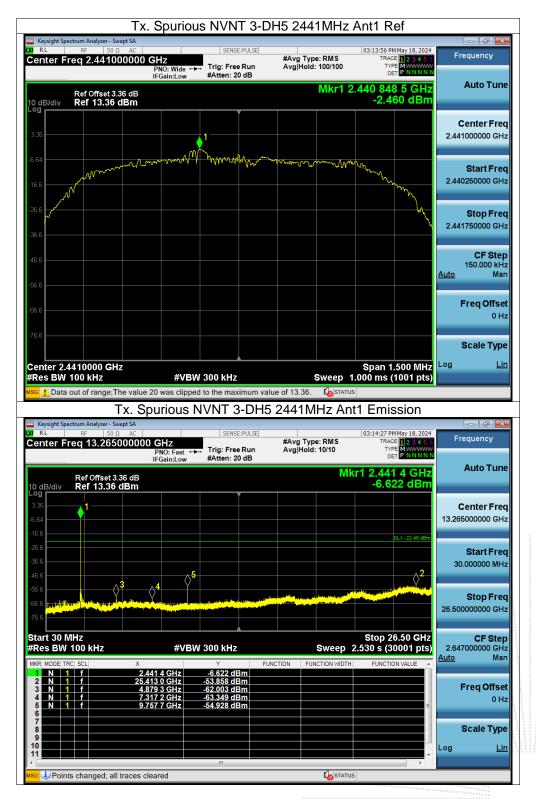




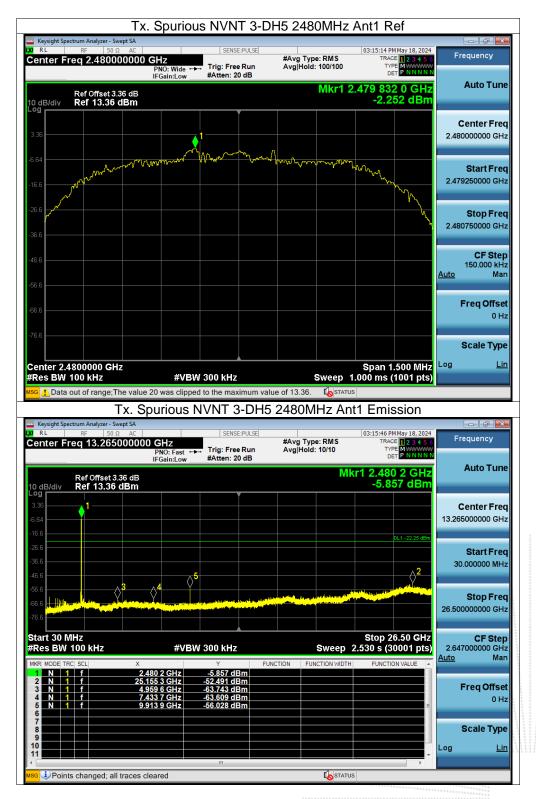














		N F 1-DH5 240	J2MHz Ant1 N	o-Hopping Re		
Keysight Spectrum Analyzer - So RL RF 50 9		SENSE:PULSE		03:04:56 PM May 18, 2024		
Center Freq 2.4020	00000 GHz PNO: Wide IFGain:Low	Trig: Free Run	#Avg Type: RMS Avg Hold: 100/100	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P NNNNN	Frequency	
Ref Offset 3 0 dB/div Ref 20.00	.36 dB		Mkr1	2.401 992 GHz -2.792 dBm	Auto Tun	
.og					Center Fre	
10.0		.1			2.402000000 GH	
0.00					Start Fre 2.398000000 G⊢	
10.0						
20.0					Stop Fre 2.406000000 G⊢	
40.0					CF Ste	
50.0		M	M		800.000 k⊢ <u>Auto</u> Ma	
50.0 mander M	www.		Mary Josef Mar	Mannanapart	Freq Offs	
70.0					0 H	
					Scale Typ	
enter 2.402000 GHz Res BW 100 kHz				Span 8.000 MHz	Log <u>Li</u>	
Res BW 100 KHZ	#V	BW 300 kHz	Sweep 7	1.000 ms (1001 pts)		
SG			STATU	1.000 ms (1001 pts) s		
Band	Edge NVNT		STATU	1.000 ms (1001 pts)		
SG Band Keysight Spectrum Analyzer - Sv	Edge NVNT		MHz Ant1 No-F	1.000 ms (1001 pts) s Hopping Emiss	- ¢	
SG Band Keysight Spectrum Analyzer - Si RL RF 50 9	Edge NVNT	SENSE:PULSE	STATU	1.000 ms (1001 pts) s Hopping Emiss		
Band Keysight Spectrum Analyzer - Sr RL RF 504 Senter Freq 2.3560 Ref Offset 3 0 dB/div Ref 20.00	Edge NVNT wept SA 2 AC 000000 GHz PNO: Fast IFGain:Low 36 dB	SENSE:PULSE	MHz Ant1 NO-H #Avg Type: RMS Avg Hold: 100/100	1.000 ms (1001 pts) s Hopping Emiss 03:05:00 PMMay 18, 2024 TRACE 12, 23, 45, 6 TRACE 23, 45, 6	Frequency	
Band Keysight Spectrum Analyzer - Si RL RF 50 1 Center Freq 2.3560 Ref Offset 3 0 dB/div Ref 20.00 10 0	Edge NVNT wept SA 2 AC 000000 GHz PNO: Fast IFGain:Low 36 dB	SENSE:PULSE	MHz Ant1 NO-H #Avg Type: RMS Avg Hold: 100/100	1.000 ms (1001 pts) s Hopping Emiss 03:05:00 PMMay 18, 2024 TRACE 12 3 4 5 6 TYPE MWWWW DET P.N.N.N.N KT1 2.402 0 GH2	Frequency Auto Turn Center Fre	
Band Keysight Spectrum Analyzer - Si RL RF 50 01 Center Freq 2.3560 Ref Offset 3 0 dB/div Ref 20.00 0 00	Edge NVNT wept SA 2 AC 000000 GHz PNO: Fast IFGain:Low 36 dB	SENSE:PULSE	MHz Ant1 NO-H #Avg Type: RMS Avg Hold: 100/100	1.000 ms (1001 pts) s Hopping Emiss 03:05:00 PMMay 18, 2024 TRACE 12 3 4 5 6 TYPE MWWWW DET P.N.N.N.N KT1 2.402 0 GH2	Frequency Auto Turn Center Fre	
Band Keysight Spectrum Analyzer - Si RL RF 500 Center Freq 2.3560 Ref Offset 3 0 dB/div Ref 20.00 0 00 0 00 0 0 00 0 00 0 0 00 0 00 0 00 0 00 0 00 0 00 0 00 0 0	Edge NVNT wept SA 2 AC 000000 GHz PNO: Fast IFGain:Low 36 dB	1-DH5 2402N SENSE:PULSE Trig: Free Run	MHz Ant1 NO-H #Avg Type: RMS Avg Hold: 100/100	1.000 ms (1001 pts) s Hopping Emiss 03:05:00 PMMay 18, 2024 TRACE 12 3 4 5 6 TYPE MWWWW DET P.N.N.N.N KT1 2.402 0 GH2	Frequency Auto Tun Center Fre 2.35600000 GF Start Fre	
Rand Keysight Spectrum Analyzer - Sr RL RF Senter Freq 2.3560 Ref Offset 3 0 dB/div	Edge NVNT wept SA 2 AC 000000 GHz PNO: Fast IFGain:Low 36 dB	1-DH5 2402N SENSE:PULSE Trig: Free Run	MHz Ant1 No-H #Avg Type: RMS Avg Hold: 100/100	1.000 ms (1001 pts) s Hopping Emiss 03:05:00 PMMay 18, 2024 TRACE 12 3 4 5 6 TRACE 12 3 4 5	Center Fre 2.35600000 GH	
Reysight Spectrum Analyzer - Sr RL RF 501 center Freq 2.3560 Ref Offset 3 0 dB/div Ref 3	Edge NVNT wept SA 2 AC 000000 GHz PNO: Fast IFGain:Low 36 dB	1-DH5 2402N SENSE:PULSE Trig: Free Run	MHz Ant1 NO-H #Avg Type: RMS Avg Hold: 100/100	1.000 ms (1001 pts) s Hopping Emiss 03:05:00 PMMay 18, 2024 TRACE 12 3 4 5 6 TRACE 12 3 4 5	Center Fre 2.35600000 GH 2.30600000 GH Start Fre 2.30600000 GH	
SG Keysight Spectrum Analyzer - Sv RL RF SV Senter Freq 2.3560 0 dB/div Ref 20.00 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Edge NVNT wept SA 2 AC PNO: Fast IFGaint.ow 36 dB dBm 4 Note a National Action	T-DH5 2402N SENSE:PULSE Trig: Free Run #Atten: 30 dB	MHz Ant1 No-H #Avg Type: RMS Avg Hold: 100/100 MI	1.000 ms (1001 pts) s Hopping Emiss 03:05:00 PMMay 18, 2024 TRACE [] 2:3:4:5 6 TRACE [] 2:3:4:5 7 TRACE [] 2:3:5 7 TRACE [] 3:3:5 7 TR	Center Fre 2.35600000 GF 2.30600000 GF 2.30600000 GF 2.40600000 GF	
Rand Keysight Spectrum Analyzer - St RL RF Stenter Freq 2.3560 Ref Offset 3 0 dB/div Ref 20.00 9	Edge NVNT wept SA 2 AC PNO: Fast IFGain:Low 36 dB dBm 400000 GHz PNO: Fast IFGain:Low 400000 GHZ PNO: Fast IFGain:Low #V #V	T-DH5 2402N	MHz Ant1 No-H #Avg Type: RMS Avg Hold: 100/100 MI	1.000 ms (1001 pts) s Hopping Emiss 03:05:00 PMMay 18, 2024 TRACE 12 3 4 5 6 TRACE 12 3 4 5 6 TR	Center Fre 2.35600000 GH Start Fre 2.30600000 GH Stop Fre 2.40600000 GH	
Band RL RF 501 Ref Offset 3 Ref Offset 3 Ref Offset 3 Ref Offset 3 0 dB/div Ref 20.00	Edge NVNT wept SA 2 AC PNO: Fast IFGaint.ow 36 dB dBm 4 Note a National Action	T -DH5 2402N SENSE:PULSE Trig: Free Run #Atten: 30 dB	MHz Ant1 No-H #Avg Type: RMS Avg Hold: 100/100 MI	1.000 ms (1001 pts) s Hopping Emiss 03:05:00 PMMay 18, 2024 TRACE 12 3 4 5 6 TRACE 12 3 4 5 6 TR	Center Fre 2.356000000 GF Start Fre 2.306000000 GF Stop Fre 2.406000000 GF CF Ste 10.000000 MF Auto Mato Freq Offse	
Band Refsight Spectrum Analyzer - St Ref Offset 3 Ref Offset 3 Conter Freq 2.3560 Ref Offset 3 O dB/div Colspan="2">O dB/div O dB/div O day O day O day <th col<="" td=""><td>Edge NVNT wept SA 2 AC PNO: Fast IFGain:Low 36 dB dBm 40 Ayle and a second second #V X 2402 0 GHz 2400 0 GHz 2400 0 GHz</td><td>1-DH5 2402N [SENSE:PULSE] → Trig: Free Run #Atten: 30 dB 0.00</td><td>MHz Ant1 No-H #Avg Type: RMS Avg Hold: 100/100 MI</td><td>1.000 ms (1001 pts) s Hopping Emiss 03:05:00 PMMay 18, 2024 TRACE 12 3 4 5 6 TRACE 12 3 4 5 6 TR</td><td>Start Fre 2.356000000 GF 2.306000000 GF 2.306000000 GF 2.406000000 GF 2.406000000 GF CF Ste 10.000000 MF Auto Auto Freq Offse 0 F</td></th>	<td>Edge NVNT wept SA 2 AC PNO: Fast IFGain:Low 36 dB dBm 40 Ayle and a second second #V X 2402 0 GHz 2400 0 GHz 2400 0 GHz</td> <td>1-DH5 2402N [SENSE:PULSE] → Trig: Free Run #Atten: 30 dB 0.00</td> <td>MHz Ant1 No-H #Avg Type: RMS Avg Hold: 100/100 MI</td> <td>1.000 ms (1001 pts) s Hopping Emiss 03:05:00 PMMay 18, 2024 TRACE 12 3 4 5 6 TRACE 12 3 4 5 6 TR</td> <td>Start Fre 2.356000000 GF 2.306000000 GF 2.306000000 GF 2.406000000 GF 2.406000000 GF CF Ste 10.000000 MF Auto Auto Freq Offse 0 F</td>	Edge NVNT wept SA 2 AC PNO: Fast IFGain:Low 36 dB dBm 40 Ayle and a second second #V X 2402 0 GHz 2400 0 GHz 2400 0 GHz	1-DH5 2402N [SENSE:PULSE] → Trig: Free Run #Atten: 30 dB 0.00	MHz Ant1 No-H #Avg Type: RMS Avg Hold: 100/100 MI	1.000 ms (1001 pts) s Hopping Emiss 03:05:00 PMMay 18, 2024 TRACE 12 3 4 5 6 TRACE 12 3 4 5 6 TR	Start Fre 2.356000000 GF 2.306000000 GF 2.306000000 GF 2.406000000 GF 2.406000000 GF CF Ste 10.000000 MF Auto Auto Freq Offse 0 F
Band Band Ref setrum Analyzer - Si RL RF 50.0 Ref Offset 3 Conter Freq 2.3560 Ref Offset 3 O dB/div Ref Coffset 3 O dB/div Colspan="2">O div Start 2.306000 GHz Res BW 100 kHz M 1 f Start 2.306000 GHz Ref MID0 kHz M 1 f Start 2.306000 GHz Ref MID0 kHz M 1 f Start 2.30600 GHz Start 2.30600 GHz <	Edge NVNT wept SA 2 AC PNO: Fast IFGain:Low 36 dB dBm 40 Ayle and a second second #V X 2402 0 GHz 2400 0 GHz 2400 0 GHz	1-DH5 2402N [SENSE:PULSE] → Trig: Free Run #Atten: 30 dB 0.00	MHz Ant1 No-H #Avg Type: RMS Avg Hold: 100/100 MI	1.000 ms (1001 pts) s Hopping Emiss 03:05:00 PMMay 18, 2024 TRACE 12 24 5 G TRACE 12 2	Center Fre 2.356000000 GF Start Fre 2.306000000 GF Stop Fre 2.406000000 GF CF Ste 10.000000 MF	

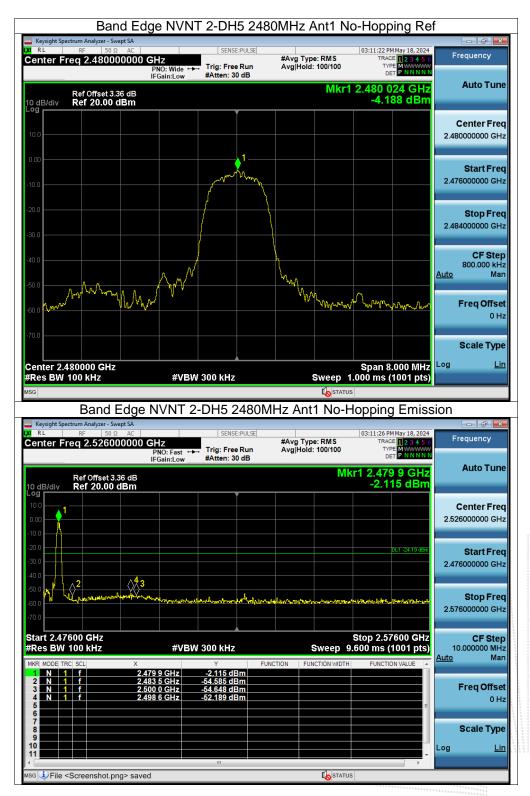




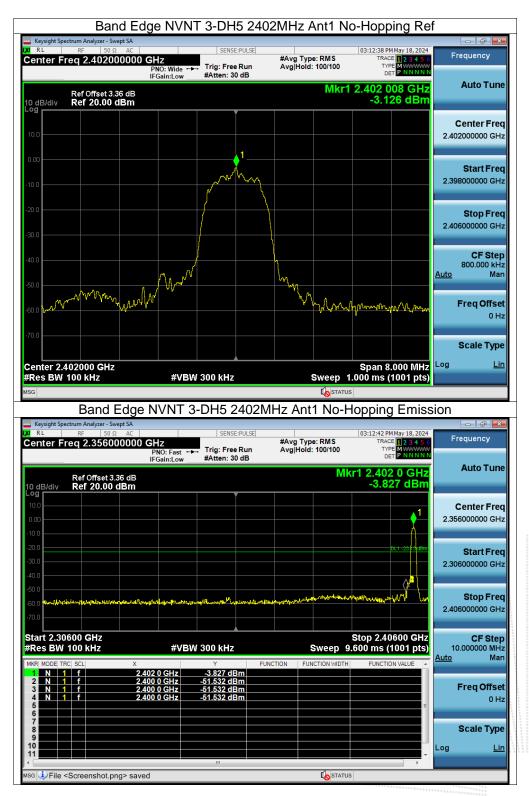


















Band Edg	e(Hopping	Test G) NVNT 1-D	H5 2402MHz /	Ant1 Hopping	Ref
Keysight Spectrum Analyzer - Swept SA RL RF 50 Ω AC					- F
RL RF 50 Ω AC Center Freq 2.40200000		SENSE:PULSE	#Avg Type: RMS Avg Hold: 2000/2000	03:16:29 PM May 18, 2024 TRACE 1 2 3 4 5 6 TYPE MWWWW DET P N N N N N	Frequency
	PNO: Wide ↔ IFGain:Low	#Atten: 30 dB	Avginola. 2000/2000	DET PNNNN	
Ref Offset 3.36 dE 0 dB/div Ref 20.00 dBm			Mkr1	2.402 960 GHz -2.909 dBm	Auto Tun
0 dB/div Ref 20.00 dBm		Ĭ			Conton Eng
10.0					Center Fre 2.402000000 GH
			.1		
0.00		~~~	2 m	Jun Pr	Start Fre
10.0		/ <u>\</u>			2.398000000 GH
				nd hd	
20.0		∫ ^r iv	V	₩ <u>₩</u>	Stop Fre
30.0		<i> </i>			2.406000000 GH
12.0					CF Ste
40.0	~				800.000 kH Auto Ma
50.0	A AN				
50.0	w w				Freq Offs
					0 H
70.0					Deele Tra
					Scale Typ
enter 2.402000 GHz				Span 8.000 MHz	Log <u>Li</u>
	#\/D\/	200 642	Sween 1	Spart 8.000 MHZ	
Res BW 100 kHz	#VBV	V 300 kHz		.000 ms (1001 pts)	
SG				.000 ms (1001 pts)	
SG Band Edge(H Keysight Spectrum Analyzer - Swept SA	Hopping) N	IVNT 1-DH5		.000 ms (1001 pts) 1 Hopping En	
SG Band Edge(H Keysight Spectrum Analyzer - Swept SA RL RF 50 Q AC	Hopping) N	VVNT 1-DH5	2402MHz Ant #Avg Type: RMS	.000 ms (1001 pts) 1 Hopping En 03:16:48 PMMay 18, 2024	nission
SG Band Edge(H Keysight Spectrum Analyzer - Swept SA RL RF 50 Q AC	Hopping) N	IVNT 1-DH5	Constantus 2402MHz Ant	.000 ms (1001 pts) 1 Hopping En	nission Frequency
Band Edge(H Keysight Spectrum Analyzer - Swept SA	Hopping) N 00 GHz PNO: Fast ↔ IFGain:Low	SENSE:PULSE	2402MHz Ant #Avg Type: RMS Avg Hold: 1000/1000	.000 ms (1001 pts) 1 Hopping En 03:16:48 PMMay 18, 2024 TRACE 12 23 4 5 6 TYPE WWWW DET WINNIN CT 2.403 0 GHz	nission Frequency
Band Edge(ł Keysight Spectrum Analyzer - Swett SA RL RF 50 Q. AC Center Freq 2.35600000 Ref Offset 3.36 dli 0 dB/dly Ref 20.00 dBm	Hopping) N 00 GHz PNO: Fast ↔ IFGain:Low	SENSE:PULSE	2402MHz Ant #Avg Type: RMS Avg Hold: 1000/1000	.000 ms (1001 pts) 1 Hopping En 03:16:48 PMMay 18, 2024 TRACE 2 2 3 4 5 0 TYPE NINNN	nission Frequency
SG Band Edge(f Keysight Spectrum Analyzer - Swept SA RL RF 50 Q AC center Freq 2.35600000 Ref Offset 3.36 dE Ref 20.00 dBm	Hopping) N 00 GHz PNO: Fast ↔ IFGain:Low	SENSE:PULSE	2402MHz Ant #Avg Type: RMS Avg Hold: 1000/1000	.000 ms (1001 pts) 1 Hopping En 03:16:48 PMMay 18, 2024 TRACE 12 23 4 5 6 TYPE WWWW DET WINNIN CT 2.403 0 GHz	nission Frequency Auto Tun Center Fre
SG Band Edge(f Keysight Spectrum Analyzer - Swept SA RL RF 50 Q AC center Freq 2.335600000 Ref Offset 3.36 dE Ref 20.00 dBm	Hopping) N 00 GHz PNO: Fast ↔ IFGain:Low	SENSE:PULSE	2402MHz Ant #Avg Type: RMS Avg Hold: 1000/1000	.000 ms (1001 pts) 1 Hopping En 03:16:48 PMMay 18, 2024 TRACE 12 23 4 5 6 TYPE WWWW DET WINNIN CT 2.403 0 GHz	nission Frequency Auto Tun Center Fre
Band Edge(f Keysight Spectrum Analyzer - Swept SA RL RF Social State O dB/div Ref Offset 3.36 dE Ref 20.00 dBm 0 0 0 0 0	Hopping) N 00 GHz PNO: Fast ↔ IFGain:Low	SENSE:PULSE	2402MHz Ant #Avg Type: RMS Avg Hold: 1000/1000	.000 ms (1001 pts) 1 Hopping En 03:16:48 PMMay 18, 2024 TRACE 12 23 4 5 6 TYPE WWWW DET WINNIN CT 2.403 0 GHz	nission Frequency Auto Tun Center Fre 2.356000000 GH
SG Band Edge(Keysight Spectrum Analyzer - Swept SA RL RF 500 AC Center Freq 2.35600000 Ref Offset 3.36 dE Ref 20.00 dB/m 0 00 0	Hopping) N 00 GHz PNO: Fast ↔ IFGain:Low	SENSE:PULSE	2402MHz Ant #Avg Type: RMS Avg Hold: 1000/1000	.000 ms (1001 pts) 1 Hopping En 03:16:48 PMMay 18, 2024 TRACE 12 23 4 5 6 TYPE WWWW DET WINNIN CT 2.403 0 GHz	nission Frequency Auto Tun Center Fre 2.356000000 GH Start Fre
SG Band Edge(ł Keysight Spectrum Analyzer - Swept SA RL RF 50.0. Ac Center Freq 2.35600000 Ref Offset 3.36 dE 0 dB/div Ref 20.00 dBm 0 dB/div Ref 20.00 dBm 0 00 0.00 0 00 0.00 0 00 0.00 0 00 0.00 0 00 0.00 0 00 0.00 0 00 0.00	Hopping) N 00 GHz PNO: Fast ↔ IFGain:Low	SENSE:PULSE	5 2402MHz Ant #Avg Type: RMS Avg Hold: 1000/1000	.000 ms (1001 pts) 1 Hopping En 03:16:48 PMay 18, 2024 TRACE 23 4 5 6 TRACE 23 4 5 6 TRACE 23 4 5 6 TRACE 24 03 0 GHz -2.750 dBm	nission Frequency Auto Tun Center Fre 2.356000000 GH Start Fre
SG Band Edge(ł Keysight Spectrum Analyzer - Swept SA RL RF 50.0. Ac Center Freq 2.35600000 Ref Offset 3.36 dB 0 dB/div Ref 20.00 dBm 0 0 Ref 20.00 dBm	Hopping) N 00 GHz PNO: Fast → IFGain:Low	JVNT 1-DH5 SENSE:PULSE Trig: Free Run #Atten: 30 dB	E 2402MHz Ant #Avg Type: RMS Avg Hold: 1000/1000	.000 ms (1001 pts) 1 Hopping En 03:16:48 PMMay 18, 2024 TRACE 23 45 6 TYPE 23 45 6 TYPE 23 45 6 TYPE 23 45 6 TYPE 12 3	Auto Tun Center Fre 2.35600000 GH Start Fre 2.306000000 GH
SG Band Edge(ł Keysight Spectrum Analyzer - Swept SA Sector State RL RF SOQ AC Center Freq 2.35600000 Ref Offset 3.36 dB Sector State Sector State 0 dB/div Ref Offset 3.36 dB Ref 20.00 dBm Sector State Sec	Hopping) N 00 GHz PNO: Fast → IFGain:Low	JVNT 1-DH5 SENSE:PULSE Trig: Free Run #Atten: 30 dB	5 2402MHz Ant #Avg Type: RMS Avg Hold: 1000/1000	.000 ms (1001 pts) 1 Hopping En 03:16:48 PMMay 18, 2024 TRACE 23 45 6 TYPE 23 45 6 TYPE 23 45 6 TYPE 23 45 6 TYPE 12 3	nission Frequency Auto Tun 2.356000000 GH 2.306000000 GH 2.306000000 GH
SG Band Edge(I Keysight Spectrum Analyzer - Swept SA So Q AC RL RF So Q AC Center Freq 2.35600000 So Q AC 0 dB/div Ref Offset 3.36 dB 0 dB/div Ref 20.00 dBm 0 0 AC	Hopping) N 00 GHz PNO: Fast → IFGain:Low	JVNT 1-DH5 SENSE:PULSE Trig: Free Run #Atten: 30 dB	E 2402MHz Ant #Avg Type: RMS Avg Hold: 1000/1000	.000 ms (1001 pts) 1 Hopping En 03:16:48 PMay 18, 204 TRACE 12 3 4 5 6 TYPE 12 4	Auto Tun Center Fre 2.356000000 GH Start Fre 2.306000000 GH Stop Fre 2.406000000 GH
SG Band Edge(ł Keysight Spectrum Analyzer - Swept SA RL RF SO AC Center Freq 2.35600000 Ref Offset 3.36 dE Ref Offset 3.36 dE 0 dB/div Ref Offset 3.36 dE Ref 0.00 dBm 0 dB/div Ref 20.00 dBm Ref 0.00 dBm 0 dB/div Ref 20.00 dBm Ref 0.00 dBm 0 dB/div Ref 20.00 dBm Ref 20.00 dBm 0 dB/div	Hopping) N DO GHz PNO: Fast + IFGain:Low	JVNT 1-DH5 SENSE:PULSE Trig: Free Run #Atten: 30 dB	2402MHz Ant #Avg Type: RMS Avg Hold: 1000/1000 Mk	.000 ms (1001 pts) 1 Hopping En 03:16:48 PMMay 18, 2024 TRACE 23 45 6 TYPE 23 45 6 TYPE 23 45 6 TYPE 23 45 6 TYPE 12 3	nission Frequency Auto Tur Center Fre 2.356000000 GF Start Fre 2.306000000 GF Stop Fre 2.406000000 GF
SG Band Edge(ł Keysight Spectrum Analyzer - Swet SA RL RF Start 2,30600 GHz Start 2,30600 GHz Start 2,30600 GHz KK MKR MKM MKM MKM MKM MKM MKK MKK <td>Hopping) N</td> <td>VNT 1-DH5</td> <td>2402MHz Ant #Avg Type: RMS Avg Hold: 1000/1000 Mk</td> <td>.000 ms (1001 pts) 1 Hopping En 03:16:48 PMMay 18, 2024 TRACE 2 2 4 5 6 TRACE 2 3 4 5 6 TRACE 1 2 3 4 5</td> <td>nission</td>	Hopping) N	VNT 1-DH5	2402MHz Ant #Avg Type: RMS Avg Hold: 1000/1000 Mk	.000 ms (1001 pts) 1 Hopping En 03:16:48 PMMay 18, 2024 TRACE 2 2 4 5 6 TRACE 2 3 4 5 6 TRACE 1 2 3 4 5	nission
SG Band Edge(ł Keysight Spectrum Analyzer - Swept SA RL RF Sventser Status Center Freq 2.35600000 0 dB/div Ref Offset 3.36 dB 0 dB/div Ref 20.00 dBm 0 dB/div Ref 20.0	Hopping) N	VNT 1-DH5	5 2402MHz Ant #Avg Type: RMS Avg Hold: 1000/1000 MK	.000 ms (1001 pts) 1 Hopping En 03:16:48 PMay 18, 204 TRACE 12 3 4 5 6 TRACE 12	Dission Frequency Auto Tun Center Fre 2.356000000 GH 2.306000000 GH 2.406000000 GH 2.406000000 GH CF Ste 10.000000 MH Auto Ma
SG Band Edge(ł Keysight Spectrum Analyzer - Swept SA RL RF 50 Q AC Center Freq 2.355600000 Ref Offset 3.36 dE G 0 dB/div Ref Offset 3.36 dE G 0 dB/div Ref Offset 3.36 dE G 0 dB/div Ref 0 dFset 3.36 dE G 0 dB/div Ref 0 dFset 3.46 dE G 0 dB/div Ref 20.00 dBm G 0 dB/div </td <td>Hopping) N 00 GHz PNO: Fast → IFGain:Low 3 1 4 4 4 4 4 4 4 4 4 4 4 4 4</td> <td>VNT 1-DH5</td> <td>5 2402MHz Ant #Avg Type: RMS Avg Hold: 1000/1000 MK</td> <td>.000 ms (1001 pts) 1 Hopping En 03:16:48 PMay 18, 204 TRACE 12 3 4 5 6 TRACE 12</td> <td>Dission Frequency Auto Tun Center Fre 2.356000000 GH Start Fre 2.306000000 GH 2.406000000 GH CF Ste 10.000000 MH</td>	Hopping) N 00 GHz PNO: Fast → IFGain:Low 3 1 4 4 4 4 4 4 4 4 4 4 4 4 4	VNT 1-DH5	5 2402MHz Ant #Avg Type: RMS Avg Hold: 1000/1000 MK	.000 ms (1001 pts) 1 Hopping En 03:16:48 PMay 18, 204 TRACE 12 3 4 5 6 TRACE 12	Dission Frequency Auto Tun Center Fre 2.356000000 GH Start Fre 2.306000000 GH 2.406000000 GH CF Ste 10.000000 MH
SG Band Edge(ł Keysight Spectrum Analyzer - Swept SA RL RF 50.0 Ac center Freq 2.35600000 Ref Offset 3.36 dE 0 dB/div Ref 20.00 dBm	Hopping) N 00 GHz PNO: Fast → IFGain:Low 3 1 4 4 4 4 4 4 4 4 4 4 4 4 4	VNT 1-DH5	5 2402MHz Ant #Avg Type: RMS Avg Hold: 1000/1000 MK	.000 ms (1001 pts) 1 Hopping En 03:16:48 PMay 18, 204 TRACE 12 3 4 5 6 TRACE 12	hission Frequency Auto Tun Center Fre 2.356000000 GF 2.306000000 GF 2.406000000 GF 2.406000000 GF CF Ste 10.000000 MF Auto Ma
SG Band Edge(f Keysight Spectrum Analyzer - Swept SA RL RF 50.0 AC Center Freq 2.35600000 OdB/div Ref Offset 3.36 dB OdB/div Ref 20.00 dBm 0 Ref 20.00 dBm <td>Hopping) N 00 GHz PNO: Fast → IFGain:Low 3 1 4 4 4 4 4 4 4 4 4 4 4 4 4</td> <td>VNT 1-DH5</td> <td>5 2402MHz Ant #Avg Type: RMS Avg Hold: 1000/1000 MK</td> <td>.000 ms (1001 pts) 1 Hopping En 03:16:48 PMay 18, 204 TRACE 12 3 4 5 6 TRACE 12</td> <td>nission Frequency Auto Tur Center Fre 2.356000000 GF 2.306000000 GF 2.406000000 GF 2.406000000 GF CF Ste 10.000000 MF Auto Ma</td>	Hopping) N 00 GHz PNO: Fast → IFGain:Low 3 1 4 4 4 4 4 4 4 4 4 4 4 4 4	VNT 1-DH5	5 2402MHz Ant #Avg Type: RMS Avg Hold: 1000/1000 MK	.000 ms (1001 pts) 1 Hopping En 03:16:48 PMay 18, 204 TRACE 12 3 4 5 6 TRACE 12	nission Frequency Auto Tur Center Fre 2.356000000 GF 2.306000000 GF 2.406000000 GF 2.406000000 GF CF Ste 10.000000 MF Auto Ma
SG Band Edge(ł Keysight Spectrum Analyzer - Swept SA RL RF S/0 A AC Center Freq 2.35600000 OdB/div Ref Offset 3.36 dB 0 dB/div Ref 20.00 dBm 0 dB/div Ref 20.00 dBm <td>Hopping) N 00 GHz PNO: Fast → IFGain:Low 3 1 4 4 4 4 4 4 4 4 4 4 4 4 4</td> <td>VNT 1-DH5</td> <td>5 2402MHz Ant #Avg Type: RMS Avg Hold: 1000/1000 MK</td> <td>.000 ms (1001 pts) 1 Hopping En 03:16:48 PMay 18, 204 TRACE 12 3 4 5 6 TRACE 12</td> <td>hission Frequency Auto Turn Center Fre 2.356000000 GF 2.306000000 GF 2.406000000 GF 2.406000000 GF CF Ste 10.000000 MF Auto Ma</td>	Hopping) N 00 GHz PNO: Fast → IFGain:Low 3 1 4 4 4 4 4 4 4 4 4 4 4 4 4	VNT 1-DH5	5 2402MHz Ant #Avg Type: RMS Avg Hold: 1000/1000 MK	.000 ms (1001 pts) 1 Hopping En 03:16:48 PMay 18, 204 TRACE 12 3 4 5 6 TRACE 12	hission Frequency Auto Turn Center Fre 2.356000000 GF 2.306000000 GF 2.406000000 GF 2.406000000 GF CF Ste 10.000000 MF Auto Ma























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.

No.: BCTC/RF-EMC-005

Page: 49 of 81

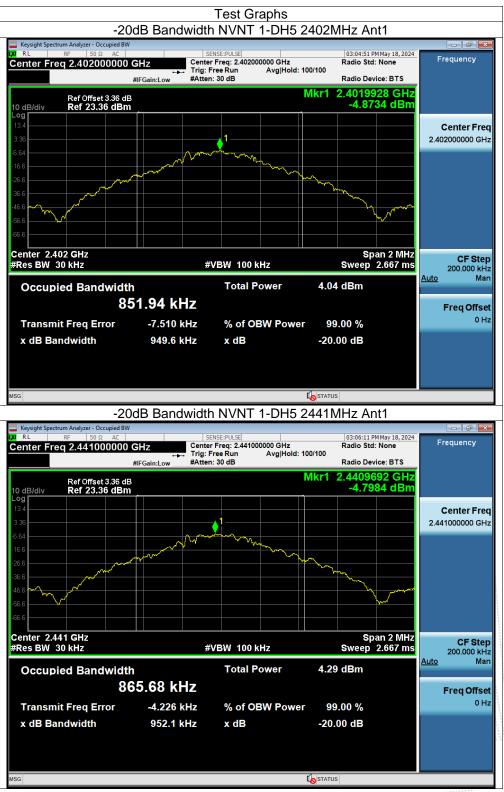


10.4 Test Result

Condition	Mode	Frequency (MHz)	-20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	0.95	Pass
NVNT	1-DH5	2441	0.952	Pass
NVNT	1-DH5	2480	0.942	Pass
NVNT	2-DH5	2402	1.279	Pass
NVNT	2-DH5	2441	1.279	Pass
NVNT	2-DH5	2480	1.279	Pass
NVNT	3-DH5	2402	1.296	Pass
NVNT	3-DH5	2441	1.288	Pass
NVNT	3-DH5	2480	1.309	Pass

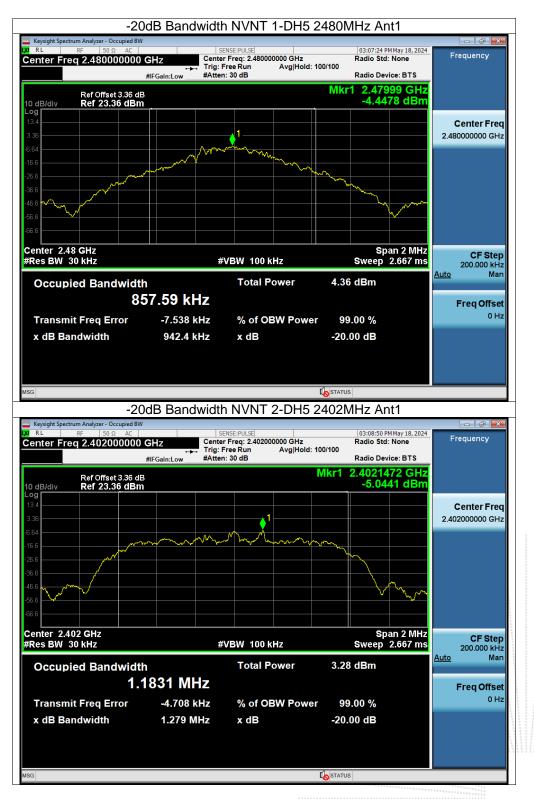
Page: 50 of 81





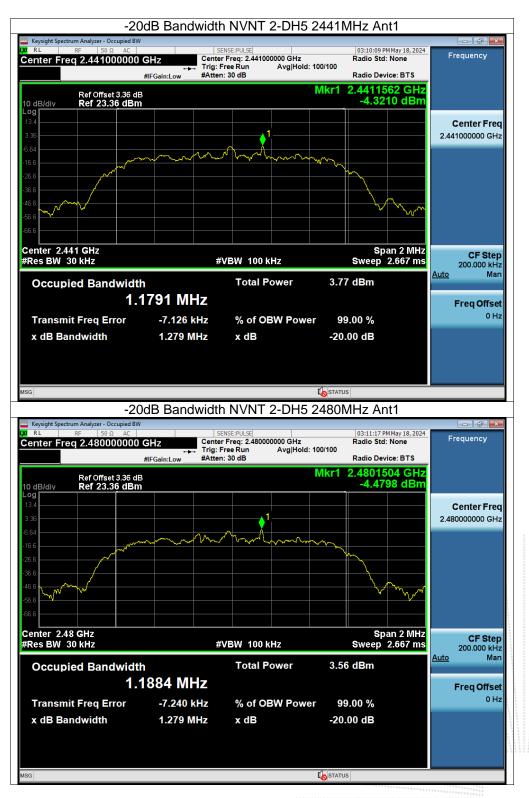
Page: 51 of 81





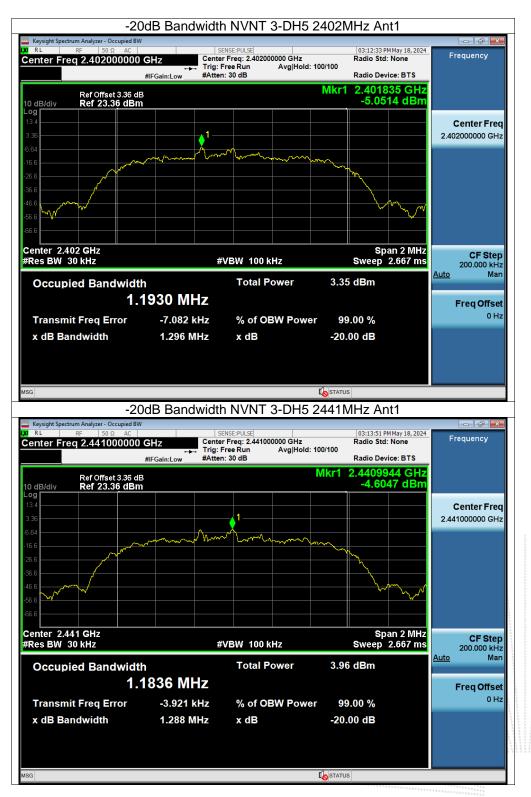
Page: 52 of 81





Page: 53 of 81





Page: 54 of 81





Page: 55 of 81



11. Maximum Peak Output Power

11.1 Block Diagram Of Test Setup



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.

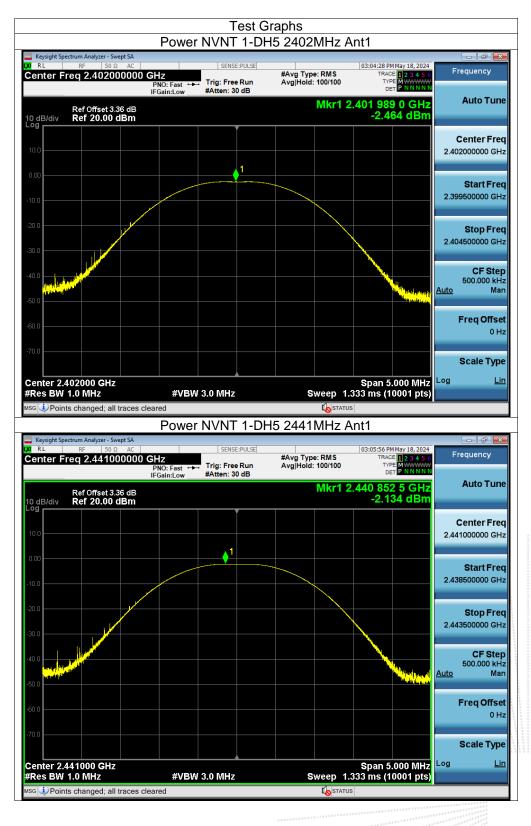
3. Keep the EUT in transmitting at lowest, medium and highest channel individually. Record the max value.

11.4 Test Result

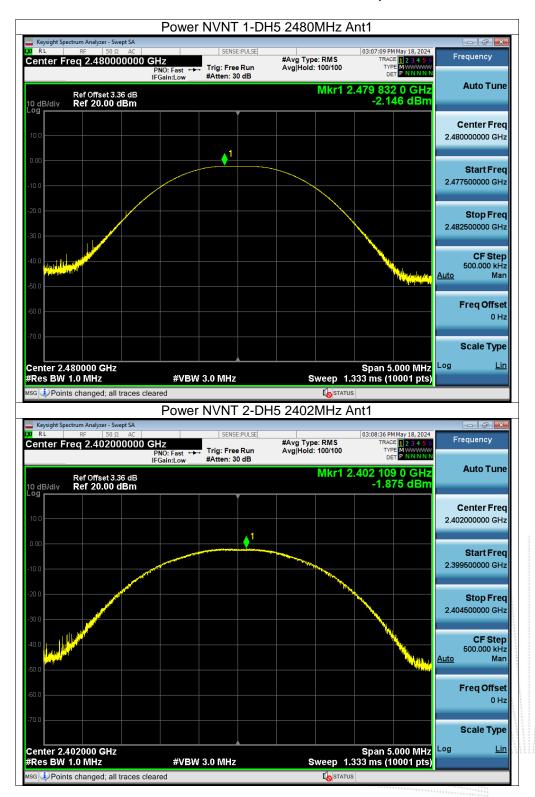
Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	-2.46	21	Pass
NVNT	1-DH5	2441	-2.13	21	Pass
NVNT	1-DH5	2480	-2.15	21	Pass
NVNT	2-DH5	2402	-1.88	21	Pass
NVNT	2-DH5	2441	-1.51	21	Pass
NVNT	2-DH5	2480	1:51	21	Pass
NVNT	3-DH5	2402	-1.57	21	Pass
NVNT	3-DH5	2441	-1.18	21	Pass
NVNT	3-DH5	2480	-1.17	21	Pass

Page: 56 of 81

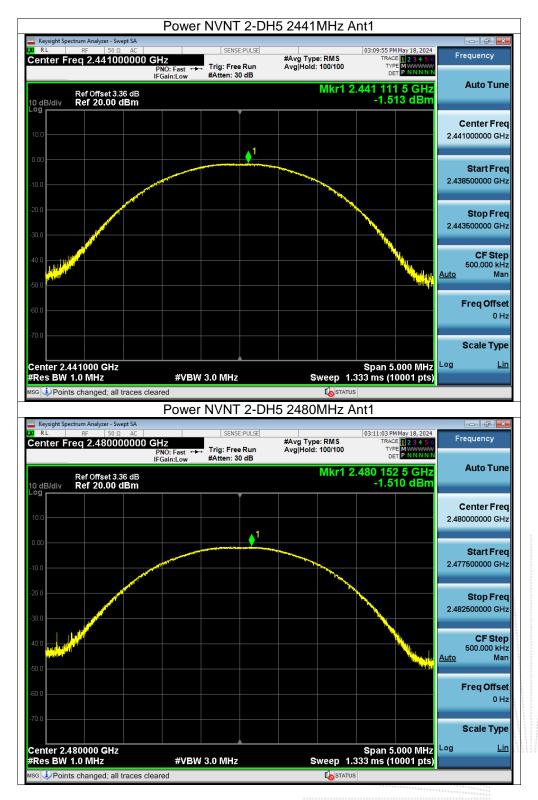








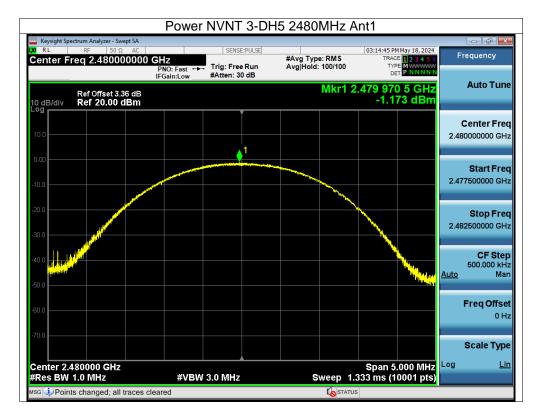












Page: 61 of 81



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.

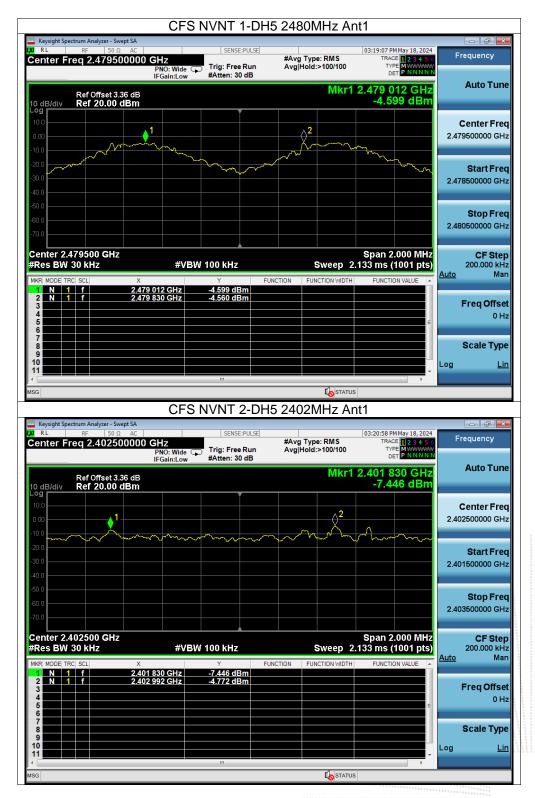
Condition	Mode	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	2401.992	2402.994	1.002	0.633	Pass
NVNT	1-DH5	2440.984	2441.834	0.85	0.635	Pass
NVNT	1-DH5	2479.012	2479.83	0.818	0.628	Pass
NVNT	2-DH5	2401.83	2402.992	1.162	0.853	Pass
NVNT	2-DH5	2440.988	2441.998	1.01	0.853	Pass
NVNT	2-DH5	2478.998	2479.978	0.98	0.853	Pass
NVNT	3-DH5	2401.828	2402.846	1.018	0.864	Pass
NVNT	3-DH5	2440.828	2441.996	1.168	0.859	Pass
NVNT	3-DH5	2478.83	2479.978	1.148	0.873	Pass

12.4 Test Result

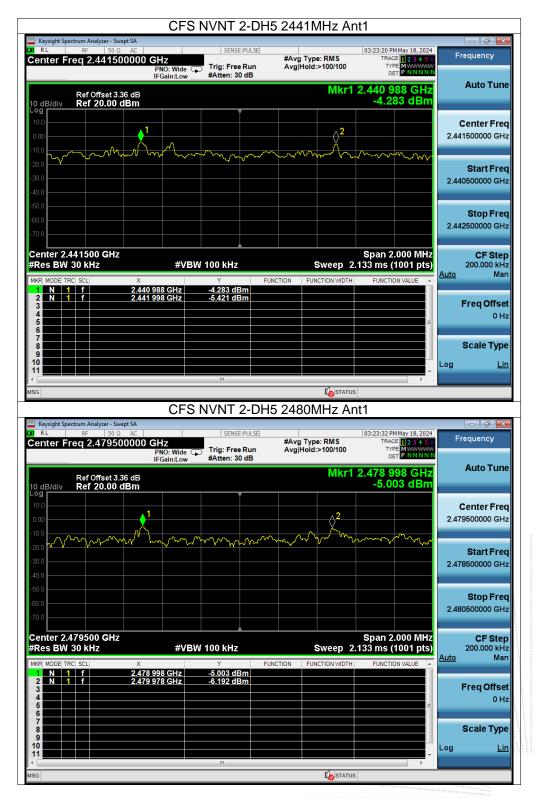


		Test C	Graphs		
	CF	<u>-S NVNT 1-DH</u>	15 2402MHz Ar	nt1	
Keysight Spectrum Analyzer -	Swept SA 0 Ω AC	SENSE:PULSE		03:17:04 PM May 18, 2024	
Center Freq 2.402		le 🕞 Trig: Free Run	#Avg Type: RMS Avg Hold:>100/100	TRACE 1 2 3 4 5 6 TYPE MWWWW DET P NNNNN	Frequency
Ref Offset 10 dB/div Ref 20.0	3.36 dB 0 dBm		Mkr1	2.401 992 GHz -4.828 dBm	Auto Tune
10.0	1				Center Fred 2,402500000 GHz
-10.0	Am		m	mm	
-30.0				~~~~	Start Fred 2.401500000 GHz
-50.0					Stop Fred 2.403500000 GHz
Center 2.402500 GH #Res BW 30 kHz		VBW 100 kHz	Sweep 2	Span 2.000 MHz .133 ms (1001 pts)	CF Step 200.000 kHz
MKR MODE TRC SCL	× 2.401 992 GHz		UNCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Mar
2 N 1 f 3 4 5 6	2.402 994 GHz			E	Freq Offset 0 Hz
7 8 9					Scale Type
10 11 11 11 11 11 11 11 11 11 11 11 11 1		m			Log <u>Lir</u>
11			Ko status		Log <u>Lir</u>
11 MSG			status 15 2441MHz Ar		
11 MSG WSG Keysight Spectrum Analyzer -	Swept SA 0 Ω AC 500000 GHz	FS NVNT 1-DH	I5 2441MHz Ar #Avg Type: RMS	03:18:02 PM May 18, 2024 TRACE 1 2 3 4 5 6	Log Lir
11 wsg Keysight Spectrum Analyzer- XI RL RF St Center Freq 2.441	Swept SA 0 Ω AC 500000 GHz PNO: Wid IFGain:Lo	FS NVNT 1-DH	15 2441MHz Ar #Avg Type: RMS Avg Hold:>100/100	03:18:02 PM May 18, 2024 TRACE 1 2 3 4 5 6 TYPE MUNITORNO DET P. NNNNN 2.440 984 GHZ	ം തില്ല Frequency
11 * wss X RL X RL SC Center Freq 2.441 Ref Offset 10 dB/div Ref 20.01 Log	Swept SA 0 Q AC 500000 GHz PNO: Wid IFGain:Lo 3.36 dB	FS NVNT 1-DH	15 2441MHz Ar #Avg Type: RMS Avg Hold:>100/100	03:18:02 PM May 18, 2024 TRACE 2 3 4 5 6 TYPE MUNICIPAL DET PHINNIN	Frequency Auto Tune
11 wss W RL RF SC Center Freq 2.441 Ref Offset Ref Offset Ref Offset Ref 20.00	Swept SA 0 Q AC 500000 GHz PNO: Wid IFGain:Lo 3.36 dB	FS NVNT 1-DH	15 2441MHz Ar #Avg Type: RMS Avg Hold:>100/100	03:18:02 PM May 18, 2024 TRACE 1 2 3 4 5 6 TYPE WINNING DET PINNING 2.440 984 GHz -5.035 dBm	Frequency Auto Tune
11 wss X RL X RL SG Center Freq 2.441 Ref Offset 10 B/div Ref 20.01 000	Swept SA 0 Q AC 500000 GHz PNO: Wid IFGain:Lo 3.36 dB	FS NVNT 1-DH	IS 2441MHz Ar #Avg Type: RMS Avg Hold:>100/100 Mkr1	03:18:02 PM May 18, 2024 TRACE 1 2 3 4 5 6 TYPE MUNITORNO DET P. NNNNN 2.440 984 GHZ	Frequency Auto Tune Center Freq 2.44150000 GH Start Freq
11 wss wss RL RF 50 Center Freq 2.441 Ref Offset 10 dB/div Ref 20.01 000 -100 -200	Swept SA 0 Q AC 500000 GHz PNO: Wid IFGain:Lo 3.36 dB	FS NVNT 1-DH	IS 2441MHz Ar #Avg Type: RMS Avg Hold:>100/100 Mkr1	03:18:02 PM May 18, 2024 TRACE 1 2 3 4 5 6 TYPE WINNING DET PINNING 2.440 984 GHz -5.035 dBm	Frequency Auto Tune Center Freq 2.441500000 GH: Start Freq 2.440500000 GH: Stop Freq
11 wss wss RL RF 50 Center Freq 2.441 Ref Offset 10 dB/div Ref 20.01 0.00 -10.0 -20.0 -30.0 -40.0 -50.0 -60.0	Swept SA 0 Ω AC 500000 GHz PN0: Wid IFGain:Lo 3.36 dB 0 dBm 1 1 1 2 1 2	ES NVNT 1-DH	IS 2441MHz Ar #Avg Type: RMS Avg Hold:>100/100 Mkr1	03:18:02 PM May 18, 2024 TRACE 1 2 3 4 5 6 TYPE WINNING DET PINNING 2.440 984 GHz -5.035 dBm	Frequency Auto Tune Center Free 2.441500000 GH: Start Free 2.440500000 GH: Stop Free 2.442500000 GH: CF Step 200.000 kH:
11	Swept SA 20 AC 500000 GHz PNO: Wid IFGain:Lo 3.36 dB 0 dBm 1 1 1 1 2 4 4	FS NVNT 1-DH	15 2441MHz Ar #Avg Type: RMS Avg Hold:>100/100 Mkr1	2.440 984 GHz -5.035 dBm	Frequency Auto Tune Center Free 2.441500000 GH: 2.440500000 GH: 2.442500000 GH: 2.4425000000 GH: 2.4425000000 GH: 2.44250000000000000000000000000000000000
11	Swept SA 9 Q AC 500000 GHz PN0: Wid IFGain:Lo 3.36 dB 0 dBm 1 1 1 2 4 X 2.440 984 GHz	FS NVNT 1-DH	15 2441MHz Ar #Avg Type: RMS Avg Hold:>100/100 Mkr1	2.440 984 GHz -5.035 dBm	Frequency Auto Tune Center Frec 2.441500000 GHz Start Frec 2.440500000 GHz Stop Frec 2.442500000 GHz
11 Wisc Keysight Spectrum Analyzer X RL RF 5 Center Freq 2.441 Ref Offset 10 dB/div Ref 20.0 0 00 -10 0 -20 0 -30 0 -40 0 -50 0 -	Swept SA 9 Q AC 500000 GHz PN0: Wid IFGain:Lo 3.36 dB 0 dBm 1 1 1 2 4 X 2.440 984 GHz	FS NVNT 1-DH	15 2441MHz Ar #Avg Type: RMS Avg Hold:>100/100 Mkr1	2.440 984 GHz -5.035 dBm	Frequency Auto Tune Center Frec 2.441500000 GHz 2.440500000 GHz 2.442500000 GHz 2.442500000 GHz 200.000 kHz 200.000 kHz Auto Mar Freq Offset 0 Hz

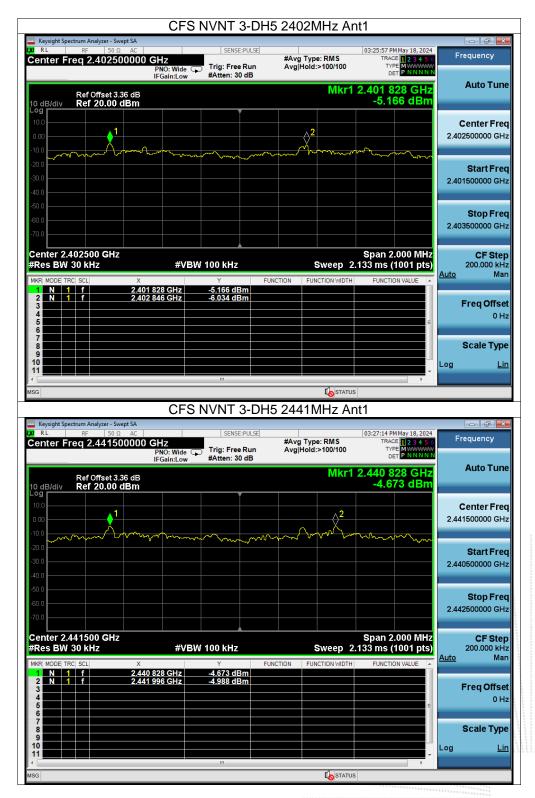




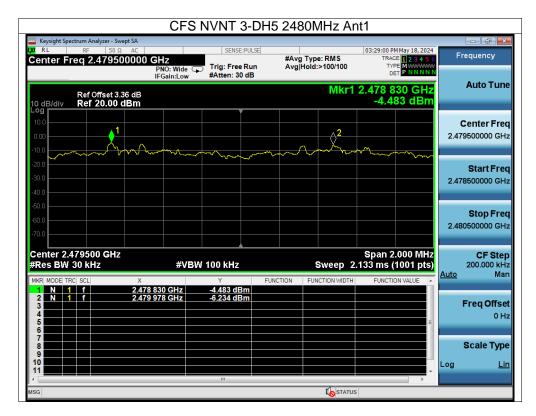












Page: 67 of 81



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-DH5	79	15	Pass
NVNT	2-DH5	79	15	Pass
NVNT	3-DH5	79	15	Pass



	Hopping		Graphs I-DH5 2402MH	z Ant1	
Keysight Spectrum Analyzer	50 Ω AC	SENSE:PULSE	#Avg Type: RMS	03:16:15 PM May 18, 2024 TRACE 12 3 4 5 6	Frequency
	PNO: Fast IFGain:Low	Trig: Free Run #Atten: 30 dB	Avg Hold:>100/100		Auto Tune
	t 3.36 dB 00 dBm		MKr1 2	.401 753 5 GHz -8.666 dBm	
10.0					Center Free
	ARANAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	<u>NAMANAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA</u>	ANAAAAAA AAAAAAA	ANNAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	2.441750000 GH:
-20.0					Start Free 2.400000000 GH
-40.0			Y		
-60.0				len για International (για International (για Inte	Stop Free 2.483500000 GH
-70.0 Start 2.40000 GHz				Stop 2.48350 GHz	CE Stor
#Res BW 100 kHz		W 300 kHz	-	.000 ms (1001 pts)	CF Step 8.350000 MH Auto Mar
MKR MODE TRC SCL 1 N 1 f 2 N 1 f	× 2.401 753 5 GHz 2.479 993 0 GHz	-8.666 dBm -3.806 dBm	UNCTION FUNCTION WIDTH	FUNCTION VALUE	Freq Offse
3 4 5				=	0 H
6 7 8					Scale Type
9 10 11					Log <u>Lir</u>
MSG		III	STATUS	3	
Keysight Spectrum Analyzei		g No. NVNT 2	2-DH5 2402MH	z Ant1	
	50 Ω AC 1750000 GHz	SENSE:PULSE	#Avg Type: RMS Avg Hold:>100/100	03:21:29 PM May 18, 2024 TRACE 1 2 3 4 5 6 TYPE M WWWW DET P N N N N N	Frequency
	PNO: Fast IFGain:Low	#Atten: 30 dB		Det <u>P NNNNN</u> .401 920 5 GHz	Auto Tune
Ref Offse 10 dB/div Ref 20. Log	et 3.36 dB 00 dBm			-5.456 dBm	
10.0 0.00 1				2	Center Free 2.441750000 GH
-10.0	MMMmMMMM	www.how.how.how.how.how.how.how.how.how.	an with the second	hankallynut	
-30.0					Start Free 2.400000000 GH:
-40.0 -50.0 <mark>/</mark>					Stop Fro
-60.0					Stop Free 2.483500000 GH
Start 2.40000 GHz				Stop 2.48350 GHz	CF Step
#Res BW 100 kHz	X		UNCTION FUNCTION WIDTH	.000 ms (1001 pts)	8.350000 MH <u>Auto</u> Mar
1 N 1 f 2 N 1 f 3	2.401 920 5 GHz 2.480 410 5 GHz	-5.456 dBm -7.052 dBm			Freq Offse
4 5 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6				E	0 H:
7 8 9					Scale Type
10 11 •					Log <u>Lir</u>
MSG			I STATUS	,	



Ho	pping No. NVNT 3-	DH5 2402MH	z Ant1	
Keysight Spectrum Analyzer - Swept SA				
Center Freq 2.441750000 GH		#Avg Type: RMS	03:25:07 PM May 18, 2024 TRACE 1 2 3 4 5 6	Frequency
	NO: Fast Trig: Free Run Gain:Low #Atten: 30 dB	Avg Hold:>100/100		
Ref Offset 3.36 dB 10 dB/div Ref 20.00 dBm		Mkr1 2	.401 837 0 GHz -3.763 dBm	Auto Tune
Log 10.0 0.00 -10.0 Judy/MWW/WW/WW/W/W/W/W/	un and a stand a	y water ward ward	man 2	Center Freq 2.441750000 GHz
-20.0				Start Freq 2.400000000 GHz
-60.0 -60.0 -70.0				Stop Freq 2.483500000 GHz
Start 2.40000 GHz #Res BW 100 kHz	#VBW 300 kHz	Sweep 8	Stop 2.48350 GHz .000 ms (1001 pts)	CF Step 8.350000 MHz Auto Man
MKR MODE TRC SCL X	0 GHz -3.763 dBm	ICTION FUNCTION WIDTH	FUNCTION VALUE	Auto Mari
2 N 1 f 2.480 327 3 4 5 6 6	0 GHz -7.212 dBm		======================================	Freq Offset 0 Hz
7 8 9 9 9 10 10 10 10 10 10 10 10 10 10 10 10 10				Scale Type
			-	Log <u>Lin</u>
MSG		STATUS	5	

Page: 70 of 81



14. Dwell Time

14.1 Block Diagram Of Test Setup

EUT	SPECTRUM
	ANALYZER

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:

DH5:1600/79/6*0.4*79*(MkrDelta)/1000 DH3:1600/79/4*0.4*79*(MkrDelta)/1000 DH1:1600/79/2*0.4*79*(MkrDelta)/1000 Remark: Mkr Delta is once pulse time.

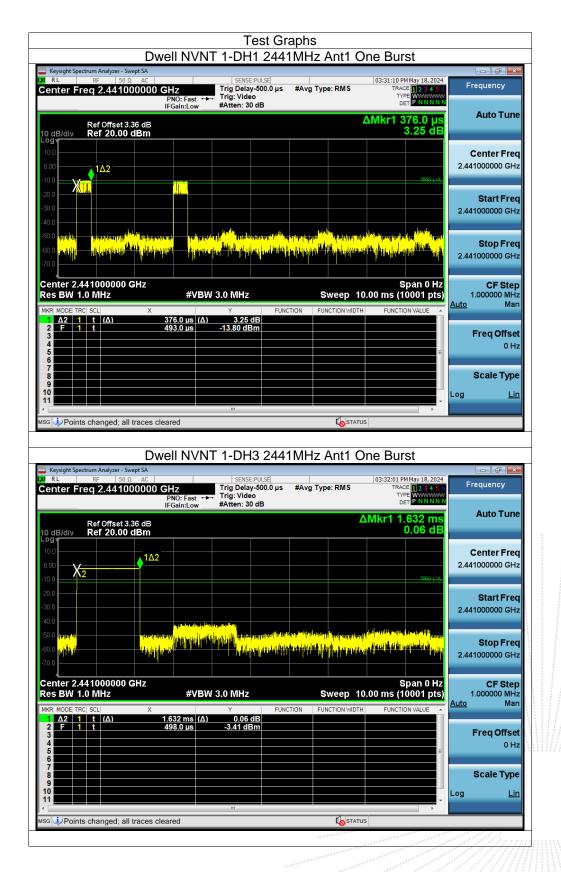
Page: 71 of 81



Condition	Mode	Frequency (MHz)	Pulse Time (ms)	Total Dwell Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	0.376	118.44	400	Pass
NVNT	1-DH3	2441	1.632	261.12	400	Pass
NVNT	1-DH5	2441	2.881	311.148	400	Pass
NVNT	2-DH1	2441	0.386	121.59	400	Pass
NVNT	2-DH3	2441	1.639	262.24	400	Pass
NVNT	2-DH5	2441	2.886	300.144	400	Pass
NVNT	3-DH1	2441	0.387	122.292	400	Pass
NVNT	3-DH3	2441	1.637	247.187	400	Pass
NVNT	3-DH5	2441	2.888	280.136	400	Pass

Page: 72 of 81







Dwell NVNT 1-DH5 2441MHz Ant1 One Burst						
Keysight Spectrum Analyzer - Swept SA K RF 50 Ω AC Center Freq 2.441000000		µs #Avg Type: RMS	03:17:11 PM May 18, 2024 TRACE 1 2 3 4 5 6 TYPE WWWWWW	Frequency		
Ref Offset 3.36 dB	PNO: Fast ↔ Trig: Video IFGain:Low #Atten: 30 dB	Δ	Mkr1 2.881 ms -2.86 dB	Auto Tune		
10 dB/div Ref 20.00 dBm	1Δ2			Center Freq 2.441000000 GHz		
-20.0			n <mark>g kalanan dari kayan dan saran yang kanan dan saran s</mark>	Start Freq 2.441000000 GHz		
-50.0 where the second		angina shun (shi yangin) na shun (na shi	n de la complete (nel des ser de la de La de la decimienta de la d	Stop Freq 2.441000000 GHz		
Center 2.441000000 GHz Res BW 1.0 MHz	#VBW 3.0 MHz	Sweep 10	Span 0 Hz .00 ms (10001 pts)	CF Step 1.000000 MHz <u>Auto</u> Man		
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	2.881 ms (Δ) -2.86 dB 498.0 μs -6.13 dBm	PORCHON		Freq Offset 0 Hz		
7 8 9 10 11				Scale Type Log <u>Lin</u>		
MSG Points changed; all traces of	leared					
Keysight Spectrum Analyzer - Swept SA	well NVNT 2-DH1 24	141MHz Ant1 O	ne Burst			
M RL RF 50 Ω AC Center Freq 2.441000000	GHz SENSE:PULSE PNO: Fast ↔ Trig Delay-500.0 IFGain:Low #Atten: 30 dB	µs #Avg Type: RMS	03:33:30 PM May 18, 2024 TRACE 1 2 3 4 5 6 TYPE WWWWWW DET P N N N N N	Frequency		
Ref Offset 3.36 dB 10 dB/div Ref 20.00 dBm		L	∆Mkr1 386.0 µs -3.35 dB	Auto Tune		
10.0 0.00 -10.0			TRIG LVL	Center Freq 2.441000000 GHz		
-20.0				Start Freq 2.441000000 GHz		
	na fera an		ald Break road all a th ainte Marijan ran all w <mark>ith ^{Danie} all a</mark>	Stop Freq 2.441000000 GHz		
Center 2.441000000 GHz Res BW 1.0 MHz	#VBW 3.0 MHz	Sweep 10	Span 0 Hz .00 ms (10001 pts)	CF Step 1.000000 MHz <u>Auto</u> Man		
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	386.0 μs (Δ) -3.35 dB 493.0 μs -14.23 dBm	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	Freq Offset		
4 5			E	0 Hz		
4				0 Hz Scale Type Log <u>Lin</u>		



AL MC SSG AC Image: SSG AC<		Dwell NVN	Г 2-DH3 2441	1MHz Ant1 O	ne Burst		
Enter Freq 2.414000000 GHz HEGALLOW Tig Delay-soo 0 as because of the operation						- ¢ ×	
Ref Offset 3 38 dB Auto Tur 0 dBlow -3.75 dB 0 dBlow -3.75 dB <		000000 GHz PNO: Fast ↔-	Trig Delay-500.0 μs Trig: Video	#Avg Type: RMS	TRACE 1 2 3 4 5 6	Frequency	
D00 X2 X2 X41000000 GHz 2441000000 GHz #VBW 3.0 MHz Sweep 10.00 ms (1000 ps) Start Free 2441000000 GHz #VBW 3.0 MHz Sweep 10.00 ms (1000 ps) Start Free 2441000000 GHz #VBW 3.0 MHz Sweep 10.00 ms (1000 ps) Finction MDF 2441000000 GHz #VBW 3.0 MHz Sweep 10.00 ms (1000 ps) Finction MDF 2441000000 GHz #VBW 3.0 MHz Sweep 10.00 ms (1000 ps) Finction MDF 2441000000 GHz #VBW 3.0 MHz Sweep 10.00 ms (1000 ps) Finction MDF 2441000000 GHz #VBW 3.0 MHz Sweep 10.00 ms (1000 ps) Finction MDF 2441000000 GHz #VBW 3.0 MHz Sweep 10.00 ms (1000 ps) Finction MDF 2441000000 GHz #VBW 3.0 MHz Sweep 10.00 ms (1000 ps) Finction MDF 2441000000 GHz #VBW 3.0 MHz Sweep 10.00 ms (1000 ps) Finction MDF 2441000000 GHz Trip Delay MOD TS Finction MDF Finction MDF 2441000000 GHz Trip Delay MDF MS	10 dB/div Ref 20.00	3.36 dB		Δ	Mkr1 1.639 ms -3.75 dB	Auto Tun	
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The second s	-20.0					Start Free 2.441000000 GH	
Stop Fre 2.441000000 GHz Stop Fre Stop Fre	-40.0		li ti da native la lavrance de tiera di tal ¹⁰ esta ¹⁰ esta ¹⁰ esta 100 (10	al da anti a cana ana ana ana ana ana ana ana ana	and all the of the condition of the second		
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Image: State in the state	7 8					Scale Type	
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Dwell NVNT 2-DH5 2441MHz Ant1 One Burst Net Figure 100:22:22 PMay 18, 024 Ref 0ffset 3.36 dB Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2" Colspan="2" Colspan="2" Colspan="2" Figure 100:22:22 PMay 18, 024 Colspan="2" Figure 10:22:22 PMay 18, 024 Colspan="2" Colspan="2" Figure 10:22:22 PMay 18, 024 Colspan= 2:2:2: Colspan="2" Colspan="2" Colspan="2" Colspan= 2: Colspan="2" Colspan= 2: Colspan="2" Colspan= 2: Colspan="2" Colspan= 2: Colspan="2" Colspan= 2: Colspan= 2: Colspan="2" Colspan= 2: Colspan= 2: Colspan= 2: Colspan="2" <th col<="" td=""><td>MSG Deints changed: al</td><td>I traces cleared</td><td></td><td></td><td></td><td></td></th>	<td>MSG Deints changed: al</td> <td>I traces cleared</td> <td></td> <td></td> <td></td> <td></td>	MSG Deints changed: al	I traces cleared				
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RL RF S0.0 CL SEREEPUEE 03:22:22 PMAY 18, 2024 PROC Fast Trig Delay-500.0 µs #Avg Type: RMS Trace 23:34 mg PROC Fast Trig Delay-500.0 µs #Avg Type: RMS Trace 23:34 mg OBJ Auto Tur Other State Trig Delay-500.0 µs #Avg Type: RMS Trace 23:34 mg OBJ Control (100 Contro (100 Control (100 Con	Kevsight Spectrum Analyzer - S				ne Durst		
Ref Offset 3.36 dB ΔMikr1 2.886 ms 0 dB/div 1Δ2 0 dB/div 1Δ2 0 dB/div 1Δ2 0 dB/div 1400 mg 0 dB/div 1400	X/ RL RF 50	Ω AC		#Aug Turner DMS	03:22:22 PM May 18, 2024		
Ref Offset 3.36 dB Center Fre 0 dB/div 1Δ2 100 1Δ2	Center Freq 2.4410	PNO: Fast ++-	Trig: Video	#Avg Type. Rivis	TYPE WWWWWW		
100 102 1	10 dB(div Ref 20.00			Δ		Auto Tun	
1000 1000000 1000000 1000000 1000000 1000000 1000000 1000000 10000000 10000000 100000000 100000000 1000000000 1000000000000000000000000000000000000	10.0						
200 1	0.00 V	1Δ2					
500 0 110 <t< td=""><td>-10.0</td><td>1Δ2</td><td></td><td></td><td>TRIQ I VI.</td><td>Center Fre 2.441000000 GH</td></t<>	-10.0	1Δ2			TRIQ I VI.	Center Fre 2.441000000 GH	
Auto Mathematical Matrix #VBW 3.0 MHz Sweep 15.33 ms (10001 pts) MRR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE 1 Δ2 1 t (Δ) 1.09 dB 2 F 1 t 496.8 μs -2.66 dBm 3 F 1 t 496.8 μs 4 F 496.8 μs -2.66 dBm Freq Offset 4 F Scale Typ For the set of the set	Az ministrativ		2013/4ptr		TRIG I M.	2.441000000 GH Start Fre	
MRR MODE TRC TRC </td <td>-10.0 -20.0 -30.0</td> <td></td> <td>Ang Alicenter al and a second s</td> <td></td> <td>tansteleder kijnet en priktelij Leener</td> <td>2.441000000 GH Start Fre 2.441000000 GH Stop Fre</td>	-10.0 -20.0 -30.0		Ang Alicenter al and a second s		tansteleder kijnet en priktelij Leener	2.441000000 GH Start Fre 2.441000000 GH Stop Fre	
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9	-10.0 -20.0 -20.0 -30.0 -40.0 -5	GHz 2.886 ms (Δ)	10.00 LU 10.00	Sweep 15.	Span 0 Hz 33 ms (10001 pts)	2.44100000 GH Start Fre 2.44100000 GH Stop Fre 2.441000000 GH CF Ste 1.000000 MH <u>Auto</u> Ma Freq Offse	
	-10.0 -20.0	GHz 2.886 ms (Δ)	10.00 LU 10.00	Sweep 15.	Span 0 Hz 33 ms (10001 pts)	2.44100000 GH Start Fre 2.44100000 GH Stop Fre 2.441000000 GH CF Ste 1.000000 MH Auto Ma Freq Offse 0 H	
	-10.0 -2	GHz 2.886 ms (Δ)	10.00 LU 10.00	Sweep 15.	Span 0 Hz 33 ms (10001 pts)	2.441000000 GH Start Fre 2.441000000 GH 2.441000000 GH 1.000000 MH <u>Auto</u> Ma Freq Offse 0 H Scale Typ	



	Dwell NVNT	3-DH1 244	11MHz Ant1 C	One Burst	
Keysight Spectrum Analyzer - Swept S					
Center Freq 2.4410000		SENSE:PULSE Trig Delay-500.0 µs Trig: Video #Atten: 30 dB	#Avg Type: RMS	03:35:47 PM May 18, 2024 TRACE 1 2 3 4 5 6 TYPE WWWWWW DET P N N N N N	Frequency
Ref Offset 3.36 c 10 dB/div Ref 20.00 dB	1B			ΔMkr1 387.0 μs -2.45 dB	Auto Tune
10.0					Center Freq 2.441000000 GHz
-10.0 -20.0					Start Freq
-30.0					2.441000000 GHz
-50.0 <mark>493.01 - 144.4 perhola 144.44</mark> -60.0 <mark>4 perhola - 14 perhola 144.44</mark> -70.0 -	and and a set of the bar and for the real fold on the set of		halanda yana dan baharan dan sana dan s Tan sana dan s	<mark>alan an a</mark>	Stop Freq 2.441000000 GHz
Center 2.441000000 GHz Res BW 1.0 MHz		3.0 MHz	Sweep 1	Span 0 Hz 0.00 ms (10001 pts)	CF Step 1.000000 MHz
MKR MODE TRC SCL	× 387.0 μs (Δ)	Y FU -2.45 dB	NCTION FUNCTION WIDTH	FUNCTION VALUE	<u>Auto</u> Man
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	387.0 μs (Δ) 483.0 μs	-2.45 0B -13.92 dBm		е	Freq Offset 0 Hz
7 8 9 10					Scale Type
				-	Log <u>Lin</u>
MSG Doints changed; all trac	es cleared		STATU	JS	<u></u>
	Dwell NVNT	3-DH3 244	11MHz Ant1 C	One Burst	
Keysight Spectrum Analyzer - Swept S	A		11MHz Ant1 C		- 6 - ×
Keysight Spectrum Analyzer - Swept S 02 RL RF 50 Ω A Center Freq 2.4410000	A	3-DH3 244 sense:PULSE Trig Delay-500.0 µs Trig: Video #Atten: 30 dB		03:36:35 PM May 18, 2024 TRACE 123456 TYPE DET PNNNNN	Frequency
RL RF 50.0 A Center Freq 2.4410000 Ref 0ffset 3.36 c C Ref 0ffset 3.36 c Ref 20.00 dB Ref 20.00 dB	A DOO GHz PNO: Fast IFGain:Low	SENSE:PULSE Trig Delay-500.0 µs Trig: Video	s #Avg Type: RMS	03:36:35 PM May 18, 2024 TRACE 1 2 3 4 5 6 TYPE WWWWWW	
W RL RF 50.9 A Center Freq 2.4410000 Ref Offset 3.36 of the set o	A DOO GHz PNO: Fast IFGain:Low	SENSE:PULSE Trig Delay-500.0 µs Trig: Video	s #Avg Type: RMS	03:36:35 PM May 18, 2024 TRACE 2.3 4 5 6 TYPE WANNING DET PINNING AMkr1 1.637 ms -1.94 dB	Frequency
RL RF 50.0 A Center Freq 2.4410000 Ref Offset 3.36 c Ref Offset 3.36 c Ref 0ffset 3.36 c 10 dB/div Ref 20.00 dBr Ref 20.00 dBr Ref 20.00 dBr	A DOO GHZ PNO: Fast IFGain:Low IB m	SENSE:PULSE Trig Delay-500.0 µs Trig: Video	s #Avg Type: RMS	03:36:35 PM May 18, 2024 TRACE 1, 2:3 4:5 6 TYPE WWWWWW DET P NNNNN AMKr1 1.637 ms	Frequency Auto Tune Center Freq 2.441000000 GHz
Center Freq 2.4410000 Ref Offset 3.36 c 10 dB/div Ref 20.00 dB 10 0 10 0 10 0 10 0 10 0 10 0 10 0 10 0	A DOO GHZ PNO: Fast IFGain:Low IB m	SENSE:PULSE Trig Delay-500.0 µs Trig: Video	s #Avg Type: RMS	03:36:35 PM May 18, 2024 TRACE 2.3 4 5 6 TYPE WANNING DET PINNING AMkr1 1.637 ms -1.94 dB	Frequency Auto Tune Center Freq
Center Freq 2.4410000 Ref Offset 3.36 c 10 dB/div Ref 20.00 dB/ 10 0 20 0 -10 0 -20 0 -30 0	A DOO GHZ PNO: Fast IFGain:Low IB m	SENSE:PULSE Trig Delay-500.0 µs Trig: Video	* #Avg Type: RMS	03:36:35 PM May 18, 2024 TRACE 2.3 4 5 6 TYPE WANNING DET PINNING AMkr1 1.637 ms -1.94 dB	Frequency Auto Tune Center Freq 2.441000000 GHz Start Freq
W RL RF 50.0 A Center Freq 2.4410000 Ref Offset 3.36 of Ref 20.00 dBr Ref 20.00 dBr Ref 20.00 dBr 10 dB/div Ref 20.00 dBr Ref 20.00 dBr Ref 20.00 dBr 10	A 2000 GHZ PNO: Fast IFGain:Low IB m 1∆2 phony and the intervention of the int	SENSE:PULSE Trig Delay-500.0 µs Trig: Video #Atten: 30 dB	#Avg Type: RMS	03:36:35 PM May 18, 2024 TRACE 1 2 3 4 5 6 TYPE WWWWWW DET P N N N N AMkr1 1.637 ms -1.94 dB TRICLUL TRICLUL TRICLUL Span 0 Hz 0.00 ms (10001 pts)	Frequency Auto Tune Center Freq 2.441000000 GHz Start Freq 2.441000000 GHz Stop Freq 2.441000000 GHz
X RL RF S0.0 A Center Freq 2.4410000 Ref Offset 3.36 c C	A 2000 GHZ PNO: Fast IFGain:Low IB m 1∆2 phony and the intervention of the int	SENSE:PULSE Trig Delay-500.0 µs Trig: Video #Atten: 30 dB	: #Avg Type: RMS	03:36:35 PM May 18, 2024 TRACE 12 3 4 5 6 TYPE WWWWWW DET P N N N N AMkr1 1.637 ms -1.94 dB TROLUL TROLUL Span 0 Hz 0.00 ms (10001 pts)	Frequency Auto Tune Center Freq 2.441000000 GHz Start Freq 2.441000000 GHz 2.441000000 GHz
Image: Second state	A C PNO: Fast IFGain:Low B B M 1∆2 C C C C C C C C C C C C C	Trig Delay-500.0 µs Trig: Video #Atten: 30 dB	#Avg Type: RMS	03:36:35 PM May 18, 2024 TRACE 1 2 3 4 5 6 TYPE WWWWWW DET P N N N N AMkr1 1.637 ms -1.94 dB TRICLUL TRICLUL TRICLUL Span 0 Hz 0.00 ms (10001 pts)	Frequency Auto Tune Center Freq 2.441000000 GHz Start Freq 2.441000000 GHz Stop Freq 2.441000000 GHz Stop Freq 2.441000000 GHz Stop Freq 2.441000000 GHz Stop Freq 2.441000000 GHz Freq Offset 0 Hz Scale Type
X RL RF 50.0 A Center Freq 2.4410000 Ref Offset 3.36 c C	A C PNO: Fast IFGain:Low B B M 1∆2 C C C C C C C C C C C C C	Trig Delay-500.0 µs Trig: Video #Atten: 30 dB	#Avg Type: RMS	03:36:35 PM May 18, 2024 TRACE 1 2 3 4 5 6 TYPE WWWWWW DET P N N N N AMkr1 1.637 ms -1.94 dB TRICLUL TRICLUL TRICLUL Span 0 Hz 0.00 ms (10001 pts)	Frequency Auto Tune Center Freq 2.441000000 GHz Start Freq 2.441000000 GHz 2.441000000 GHz 2.441000000 GHz 1.000000 MHz Auto Man Freq Offset 0 Hz



Dw	ell NVNT 3-DH5	2441MHz Ant1 (One Burst	
Keysight Spectrum Analyzer - Swept SA	SENSE:PUL		03:27:20 PM May 18, 2024	
	HZ PNO: Fast ↔→ IFGain:Low Trig: Video #Atten: 30 dB).0 μs #Avg Type: RMS	TRACE 1 2 3 4 5 6 TYPE WWWWWW DET P N N N N N	Frequency
Ref Offset 3.36 dB 10 dB/div Ref 20.00 dBm			ΔMkr1 2.888 ms -3.09 dB	Auto Tune
	1Δ2		TRIG LVL	Center Freq 2.441000000 GHz
-20.0				Start Freq 2.441000000 GHz
-50.0 <mark>ner (1)</mark> -60.0 <mark>ner (1)</mark> -70.0	et ar en die sterne te die die sterne die Aprie (Date te Angelein) Aprie (Date te Angelein)	sendenis de la complete de la complete Antonio di put <mark>analogo de la complete p</mark> it Antonio di put antonio de la complete pit	en forster en ser ster ser ser ser ser ser ser ser ser ser s	Stop Freq 2.441000000 GHz
Center 2.441000000 GHz Res BW 1.0 MHz	#VBW 3.0 MHz	Sweep 1	Span 0 Hz 0.00 ms (10001 pts)	CF Step 1.000000 MHz Auto Man
	2.888 ms (Δ) -3.09 dB 499.0 μs -2.57 dBm	FUNCTION FUNCTION WIDT	H FUNCTION VALUE	
3 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4			=	Freq Offset 0 Hz
7 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9				Scale Type
	m			Log <u>Lin</u>
MSG I Points changed; all traces cle	ared	to stat	US	

Page: 77 of 81



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

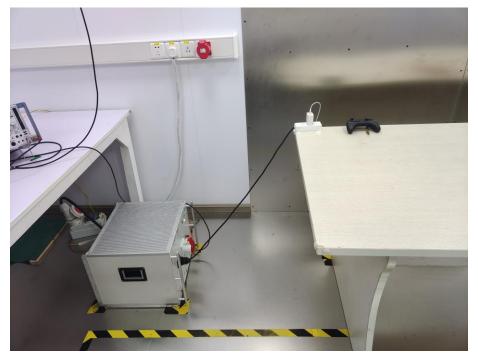
The EUT antenna is internal antenna, fulfill the requirement of this section.

Page: 78 of 81



16. EUT Test Setup Photographs

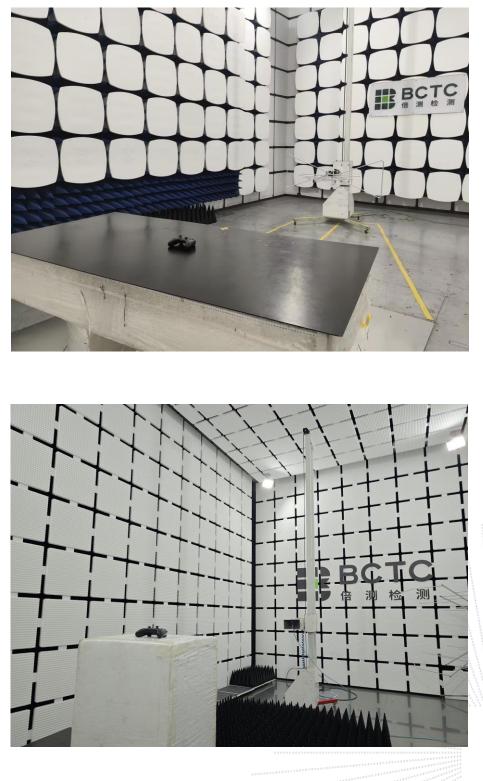
Conducted Emission Measurement Photos



Page: 79 of 81



Radiated Measurement Photos



Page: 80 of 81



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 stamp of laboratory.

4. The test report is invalid without signature of person(s) testing and authorizing.

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

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

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

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***** END *****

Page: 81 of 81