

Radio Test Report

Report No.:STS2503179W01

Issued for

XPO Health Limited

East House, Braeside Business Park, Sterte Avenue West, Poole, BH15 2BX, UK

Product Name: E4L miHealth 2.0

Brand Name: E4L

Model Name: E4L miHealth 2.0

Series Model(s): N/A

FCC ID: 2BOXK-MIHEALTH02

Test Standards: FCC Part15.247

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Shenzhen STS Test Services Co., Ltd.



TEST REPORT

XPO Health Limited
East House, Braeside Business Park, Sterte Avenue West, Poole, BH15 2BX, UK
Electronic Precepts
4525 140th Ave N Suite 900 Clearwater, FL 33762 USA
E4L miHealth 2.0
E4L
E4L miHealth 2.0
N/A
FCC Part15.247
ANSI C63.10-2020

This device described above has been tested by STS, the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Shenzhen STS Test Services Co., Ltd.

Date of Test	
Date of receipt of test item:	26 Mar. 2025
Date (s) of performance of tests .:	26 Mar. 2025 ~ 19 Apr. 2025
Date of Issue	19 Apr. 2025
Test Result	Pass

Testing Engineer

Jann Bu

Technical Manager

Authorized Signatory :

(Aaron Bu)

(Skylar Li)



(Bovey Yang)

in



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Revision History

Rev.	Issue Date	Report No.	Effect Page	Contents
00	19 Apr. 2025	STS2503179W01	ALL	Initial Issue
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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards: KDB 558074 D01 15.247 Meas Guidance v05r02.

FCC Part 15.247,Subpart C					
Standard Section	Lest Item				
15.207	Conducted Emission	PASS			
15.247(a)(1)	Hopping Channel Separation	PASS			
15.247(a)(1)&(b)(1)	Output Power	PASS			
15.209	Radiated Spurious Emission	PASS	-		
15.247(d) Conducted Spurious & Band Edge Emission		PASS			
15.247(a)(1)(iii) Number of Hopping Frequency		PASS			
15.247(a)(1)(iii) Dwell Time		PASS			
15.247(a)(1)	15.247(a)(1) Bandwidth				
15.205	Restricted bands of operation	PASS			
Part 15.247(d)/part 15.209(a)	Band Edge Emission	PASS			
15.203	Antenna Requirement	PASS			

Note:

(1) 'N/A' denotes test is not applicable in this Test Report.

(2) All tests are according to ANSI C63.10-2020.



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1.1 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD Add. : 101, Building B, Zhuoke Science Park, No.190 Chongqing Road, ZhanChengShequ, Fuhai Sub-District, Bao'an District, Shenzhen, Guang Dong, China FCC test Firm Registration Number: 625569 IC test Firm Registration Number: 12108A A2LA Certificate No.: 4338.01

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of **k=2**, providing a level of confidence of approximately **95** %.

No.	Item	Uncertainty
1	RF output power, conducted	±0.755dB
2	Unwanted Emissions, conducted	±2.874dB
3	All emissions, radiated 9K-30MHz	±3.80dB
4	All emissions, radiated 30M-1GHz	±4.18dB
5	All emissions, radiated 1G-6GHz	±4.90dB
6	All emissions, radiated>6G	±5.24dB
7	Conducted Emission (9KHz-150KHz)	±2.19dB
8	Conducted Emission (150KHz-30MHz)	±2.53dB
9	Occupied Channel Bandwidth	±3.5%
10	Dwell time	±3.2%



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

Product Name	E4L miHealth 2.0	
Brand Name	E4L	
Model Name	E4L miHealth 2.0	
Series Model(s)	N/A	
Model Difference	N/A	
Channel List	Please refer to the Note 3.	
Bluetooth	Frequency:2402 – 2480 MHz Modulation: GFSK(1Mbps), π/4-DQPSK(2Mbps), 8DPSK(3Mbps)	
Bluetooth Configuration	BR+EDR	
Antenna Type	Ceramic Antenna	
Antenna Gain	0.5dBi	
Power Rating	DC 5V 0.5A	
Adapter	N/A	
	Rated Voltage:3.7V	
Battery	Charge Limit Voltage: 4.2V	
	Capacity: 2000mAh	
Hardware version number	Rev A8	
Software version number	1.3.7-1.2.10	
Connecting I/O Port(s)	Please refer to the Note 1.	

Note:

- 1. For a more detailed features description, please refer to the manufacturer's specifications or the User Manual.
- 2. The antenna information refer the manufacturer provide report, applicable only to the tested sample identified in the report. Due to the incorrect antenna information, a series of problems such as the accuracy of the test results will be borne by the customer.



3.

	Channel List					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	
00	2402	27	2429	54	2456	
01	2403	28	2430	55	2457	
02	2404	29	2431	56	2458	
03	2405	30	2432	57	2459	
04	2406	31	2433	58	2460	
05	2407	32	2434	59	2461	
06	2408	33	2435	60	2462	
07	2409	34	2436	61	2463	
08	2410	35	2437	62	2464	
09	2411	36	2438	63	2465	
10	2412	37	2439	64	2466	
11	2413	38	2440	65	2467	
12	2414	39	2441	66	2468	
13	2415	40	2442	67	2469	
14	2416	41	2443	68	2470	
15	2417	42	2444	69	2471	
16	2418	43	2445	70	2472	
17	2419	44	2446	71	2473	
18	2420	45	2447	72	2474	
19	2421	46	2448	73	2475	
20	2422	47	2449	74	2476	
21	2423	48	2450	75	2477	
22	2424	49	2451	76	2478	
23	2425	50	2452	77	2479	
24	2426	51	2453	78	2480	
25	2427	52	2454			
26	2428	53	2455			



2.2 DESCRIPTION OF THE TEST MODES

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

Worst Mode	Description	Data Rate/Modulation	
Mode 1	TX CH00	1Mbps/GFSK	
Mode 2	TX CH39	1Mbps/GFSK	
Mode 3	TX CH78	1Mbps/GFSK	
Mode 4	TX CH00	2 Mbps/π/4-DQPSK	
Mode 5	TX CH39	2 Mbps/π/4-DQPSK	
Mode 6	TX CH78	2 Mbps/π/4-DQPSK	
Mode7	TX CH00	3 Mbps/8DPSK	
Mode 8	TX CH39	3 Mbps/8DPSK	
Mode 9	TX CH78	3 Mbps/8DPSK	
Mode 10	Hopping	GFSK	
Mode 11	Hopping	π/4-DQPSK	
Mode 12	Hopping	8DPSK	

Note:

(1) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported.

(2) We tested for all available U.S. voltage and frequencies (For 120V, 50/60Hz and 240V, 50/60Hz) for which the device is capable of operation, and the worst case of 120V/ 60Hz is shown in the report.

(3) The battery is fully-charged during the radiated and RF conducted test.

For AC Conducted Emission

Test Case		
AC Conducted Emission	Mode 13 : Keeping BT TX	

2.3 FREQUENCY HOPPING SYSTEM REQUIREMENTS

(1)Standard and Limit

According to FCC Part 15.247(a)(1), The system shall hop to channel frequencies that are selected at the system hopping rate from a pseudo randomly ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

Frequency hopping spread spectrum systems are not required to employ all available hopping channels during each transmission. However, the system, consisting of both the transmitter and the receiver, must be designed to comply with all of the regulations in this section should the transmitter be presented with a continuous data (or information) stream. In addition, a system employing short transmission bursts must comply with the definition of a frequency hopping system and must distribute its transmissions over the minimum number of hopping channels specified in this section.

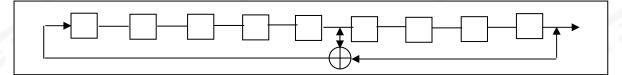


The incorporation of intelligence within a frequency hopping spread spectrum system that permits the system to recognize other users within the spectrum band so that it individually and independently chooses and adapts its hop sets to avoid hopping on occupied channels is permitted. The coordination of frequency hopping systems in any other manner for the express purpose of avoiding the simultaneous occupancy of individual hopping frequencies by multiple transmitters is not permitted.

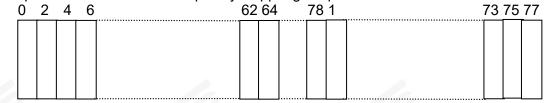
(2)The Pseudorandom sequence may be generated in a nin-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first one of 9 consecutive ones: i.e. the shift register is initialized with nine ones.

Numver of shift register stages:9 Length of pseudo-random sequence:2⁹-1=511bits

Longest sequence of zeros: 8(non-inverted signal)



Liner Feedback Shift Register for Generator of the PRBS sequence An example of Pseudorandom Frequency Hoppong Sequence as follow:



Each frequency used equally on th average by each transmitter. The system receivers have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies ini synchronization with the transmitted signals.

(3)Frequency Hopping System

This transmitter device is frequency hopping device, and complies with FCC part 15.247 rule.

This device uses Bluetooth radio which operates in 2400-2483.5 MHz band. Bluetooth uses a radio technology called frequency-hopping spread spectrum, which chops up the data being sent and transmits chunks of it on up to 79 bands (1 MHz each; centred from 2402 to 2480 MHz) in the range 2,400-2,483.5MHz. The transmitter switches hop frequencies 1,600 times per second to assure a high degree of data security. All Bluetooth devices participating in a given piconet are synchronized to the frequency-hopping channel for the piconet. The frequency hopping sequence is determined by the master's device address and the phase of the hopping sequence (the frequency to hop at a specific time) is determined by the master's internal clock. Therefore, all slaves in a piconet must know the master's device address and must synchronize their clocks with the master's clock.

Adaptive Frequency Hopping (AFH) was introduced in the Bluetooth specification to provide an effective way for a Bluetooth radio to counteract normal interference. AFH identifies "bad" channels, where either other wireless devices are interfering with the Bluetooth signal or the Bluetooth signal is interfering with another device. The AFH-enabled Bluetooth device will then communicate with other devices within its piconet to share details of any identified bad channels. The devices will then switch to alternative available "good" channels, away from the areas of interference, thus having no impact on the bandwidth used.

This device was tested with a bluetooth system receiver to check that the device maintained hopping synchronization, and the device complied with these requirements FCC Part 15.247 rule.



2.4 TABLE OF PARAMETERS OF TEST SOFTWARE SETTING

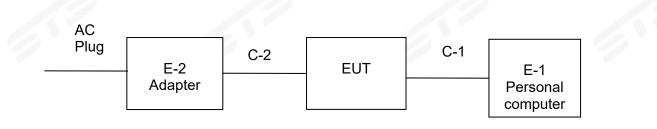
During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final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

	Test program: Bluetooth		
(Control software) Parameters(1/2/3Mbps)	Packet type: DH1:4:27 2DH1:20:54 3DH1:24:83	Packet type: DH3:11:183 2DH3:26:367 3DH3:27:552	Packet type: DH5:15:339 2DH5:30:679 3DH5:31:1021

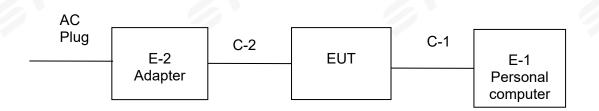
RF Function	Туре	Mode Or Modulation type	ANT Gain(dBi)	Power Class	Software For Testing
		GFSK	0.5	Default	
ВТ	BR+EDR	π/4-DQPSK	0.5	Default	QRCT
		8DPSK	0.5	Default	

2.5 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Spurious Emission Test



Conducted Emission Test





2.6 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Note
E-1	Personal computer	DELL	Inspiron 3501	N/A
E-2	Adapter	ZTC	NB-A515A	N/A
C-1	Serial port board	XES	WTYZK	N/A
C-2	USB Cable	ZTC	NB-A515A	N/A

Item	Shielded Type	Ferrite Core	Length	Note
C-2	Shielded	NO	150cm	N/A

Note:

- (1) For detachable type I/O cable should be specified the length in cm in ^CLength₂ column.
- (2) "YES" is means "with core"; "NO" is means "without core".



2.7 EQUIPMENTS LIST

RF Radiation Test Equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
Temperature & Humidity	SW-108	SuWei	N/A	2025.02.24	2026.02.23
Pre-Amplifier(0.1 M-3GHz)	EM	EM330	060665	2025.02.22	2026.02.21
Pre-Amplifier(1G- 18GHz)	SKET	LNPA-01018G -45	SK2018080901	2024.09.23	2025.09.22
Pre-Amplifier(18 G-40GHz)	SKET	LNPA_1840-5 0	SK2018101801	2025.02.22	2026.02.21
Active loop Antenna	ZHINAN	ZN30900C	16035	2025.02.25	2026.02.24
Bilog Antenna	TESEQ	CBL6111D	34678	2024.09.30	2025.09.29
Horn Antenna	SCHWARZBECK	BBHA 9120D	02014	2023.09.24	2025.09.23
Horn Antenna	A-INFOMW	LB-180400-KF	J211020657	2023.10.10	2025.10.09
Positioning Controller	MF	MF-7802	MF-780208587	N/A	N/A
Signal Analyzer	R&S	FSV 40-N	101823	2024.09.23	2025.09.22
Switch Control Box	N/A	N/A	N/A	N/A	N/A
Filter Box	BALUN Technology	SU319E	BL-SZ1530051	N/A	N/A
Antenna Mast	MF	MFA-440H	N/A	N/A	N/A
Turn Table	MF	SC100_1	60531	N/A	N/A
AC Power Source	APC	KDF-11010G	F214050035	N/A	N/A
DC power supply	HONGSHENGFE NG	DPS-305AF	17064939	2024.09.23	2025.09.22
Test SW	EZ-EMC		Ver.STSLAB-0	3A1 RE	

Conduction Test equipment

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2024.09.24	2025.09.23
Limtter	CYBERTEK	EM5010	N/A	2024.09.24	2025.09.23
LISN	R&S	ENV216	101242	2024.09.24	2025.09.23
LISN	EMCO	3810/2NM	23625	2024.09.24	2025.09.23
Temperature & Humidity	SW-108	SuWei	N/A	2025.02.24	2026.02.23
Test SW	EZ-EMC	Ver.STSLAB-03A1 CE			

RF Connected Test

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Signal Analyzer	Agilent	N9020A	MY51510623	2025.02.22	2026.02.21
Power Sensor	Keysight	U2021XA	MY56120038	2024.09.23	2025.09.22
Temperature & Humidity	SW-108	SuWei	N/A	2025.02.24	2026.02.23
Test SW	MW		MTS 8310_2	.0.0.0	11
	1				1



3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION LIMITS

The radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table.

	Conducted Emissionlimit (dBuV)		
FREQUENCY (MHz)	Quasi-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	

Note:

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

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

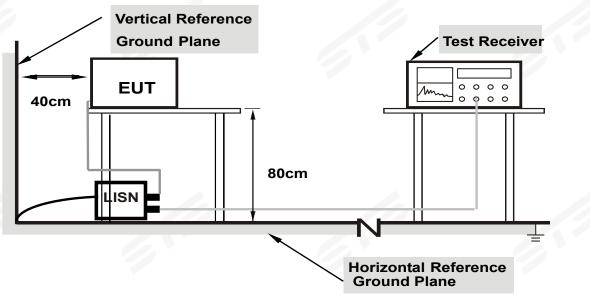
Receiver Parameters	Setting	
Attenuation	10 dB	
Start Frequency	0.15 MHz	
Stop Frequency	30 MHz	
IF Bandwidth	9 kHz	



3.1.2 TEST PROCEDURE

- a. The EUT is 0.8 m from the horizontal ground plane and 0.4 m from the vertical ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments are powered from additional LISN(s). The LISN provides 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN is at least 80 cm from the nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item -EUT Test Photos.

3.1.3 TEST SETUP



Note: 1. Support units were connected to second LISN.

2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes support units.

3.1.4 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.



3.1.5 TEST RESULT

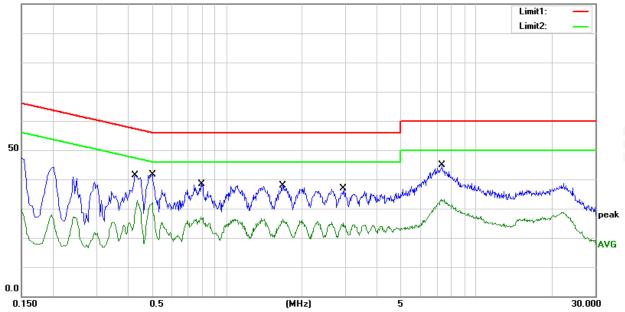
Temperature:	25.1℃	Relative Humidity:	59%RH
Test Voltage:	AC 120V/60Hz	Phase:	L
Test Mode:	Mode 13		

	Reading	Correct	Result	Limit	Margin	Remark
(MHz)	(dBuV)	Factor(d B)	(dBuV)	(dBuV)	(dB)	
0.4300	21.37	20.01	41.38	57.25	-15.87	QP
0.4300	12.92	20.01	32.93	47.25	-14.32	AVG
0.5020	21.72	20.01	41.73	56.00	-14.27	QP
0.5020	12.05	20.01	32.06	46.00	-13.94	AVG
0.7940	18.54	19.80	38.34	56.00	-17.66	QP
0.7940	5.33	19.80	25.13	46.00	-20.87	AVG
1.6780	18.13	19.79	37.92	56.00	-18.08	QP
1.6780	6.51	19.79	26.30	46.00	-19.70	AVG
2.9500	17.03	19.83	36.86	56.00	-19.14	QP
2.9500	5.21	19.83	25.04	46.00	-20.96	AVG
7.2940	24.87	19.89	44.76	60.00	-15.24	QP
7.2940	13.15	19.89	33.04	50.00	-16.96	AVG
	0.4300 0.4300 0.5020 0.5020 0.7940 0.7940 1.6780 1.6780 2.9500 2.9500 7.2940	0.4300 21.37 0.4300 12.92 0.5020 21.72 0.5020 12.05 0.7940 18.54 0.7940 5.33 1.6780 18.13 1.6780 6.51 2.9500 5.21 7.2940 24.87	(MH2)(dBuv)B)0.430021.3720.010.430012.9220.010.502021.7220.010.502012.0520.010.794018.5419.800.79405.3319.801.678018.1319.791.67806.5119.792.950017.0319.832.95005.2119.837.294024.8719.89	(MH2)(dBuv)B)(dBuv)0.430021.3720.0141.380.430012.9220.0132.930.502021.7220.0141.730.502012.0520.0132.060.794018.5419.8038.340.79405.3319.8025.131.678018.1319.7937.921.67806.5119.7926.302.950017.0319.8336.862.95005.2119.8944.76	(MH2)(dBuv)B)(dBuv)(dBuv)0.430021.3720.0141.3857.250.430012.9220.0132.9347.250.502021.7220.0141.7356.000.502012.0520.0132.0646.000.794018.5419.8038.3456.000.79405.3319.8025.1346.001.678018.1319.7937.9256.001.67806.5119.7926.3046.002.950017.0319.8336.8656.002.95005.2119.8325.0446.007.294024.8719.8944.7660.00	(MH2)(dBUV)B)(dBUV)(dBUV)(dBUV)(dBUV)0.430021.3720.0141.3857.25-15.870.430012.9220.0132.9347.25-14.320.502021.7220.0141.7356.00-14.270.502012.0520.0132.0646.00-13.940.794018.5419.8038.3456.00-17.660.79405.3319.8025.1346.00-20.871.678018.1319.7937.9256.00-18.081.67806.5119.7926.3046.00-19.702.950017.0319.8336.8656.00-19.142.95005.2119.8944.7660.00-15.24

Remark:

All readings are Quasi-Peak and Average values
 Margin = Result (Result =Reading + Factor)–Limit
 Factor=LISN factor+Cable loss+Limiter (10dB)

100.0 dBuV





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Report No.: STS2503179W01

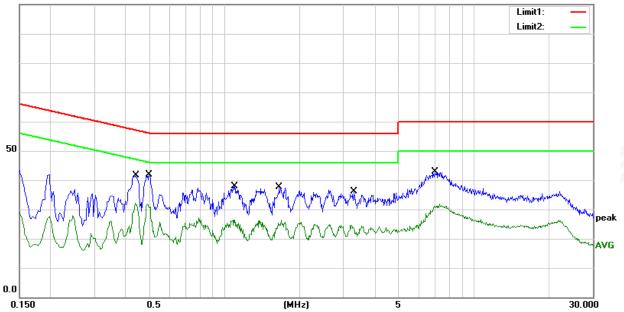
Temperature:	25.1°C	Relative Humidity:	59%RH
Test Voltage:	AC 120V/60Hz	Phase:	N
Test Mode:	Mode 13		

Frequency	Reading	Correct	Result	Limit	Margin	Remark
(MHz)	(dBuV)	Factor(d B)	(dBuV)	(dBuV)	(dB)	
0.1940	24.00	19.85	43.85	63.86	-20.01	QP
0.1940	4.53	19.85	24.38	53.86	-29.48	AVG
0.5020	18.58	19.96	38.54	56.00	-17.46	QP
0.5020	6.12	19.96	26.08	46.00	-19.92	AVG
1.4220	14.99	19.82	34.81	56.00	-21.19	QP
1.4220	1.77	19.82	21.59	46.00	-24.41	AVG
1.9900	15.55	19.88	35.43	56.00	-20.57	QP
1.9900	2.33	19.88	22.21	46.00	-23.79	AVG
4.2740	16.27	19.93	36.20	56.00	-19.80	QP
4.2740	1.68	19.93	21.61	46.00	-24.39	AVG
7.1540	22.25	19.85	42.10	60.00	-17.90	QP
7.1540	8.04	19.85	27.89	50.00	-22.11	AVG
	(MHz) 0.1940 0.1940 0.5020 0.5020 1.4220 1.4220 1.9900 1.9900 4.2740 4.2740 7.1540	(MHz) (dBuV) 0.1940 24.00 0.1940 4.53 0.5020 18.58 0.5020 6.12 1.4220 14.99 1.4220 1.77 1.9900 15.55 1.9900 2.33 4.2740 16.27 4.2740 1.68 7.1540 22.25	(MHz) (dBuV) Factor(dB) 0.1940 24.00 19.85 0.1940 4.53 19.85 0.1940 4.53 19.85 0.5020 18.58 19.96 0.5020 6.12 19.96 1.4220 14.99 19.82 1.4220 1.77 19.82 1.9900 15.55 19.88 1.9900 2.33 19.88 4.2740 16.27 19.93 4.2740 1.68 19.93 7.1540 22.25 19.85	(MHz)(dBuV)Factor(d B)(dBuV)0.194024.0019.8543.850.19404.5319.8524.380.502018.5819.9638.540.50206.1219.9626.081.422014.9919.8234.811.42201.7719.8221.591.990015.5519.8835.431.99002.3319.8822.214.274016.2719.9336.204.27401.6819.9321.617.154022.2519.8542.10	(MHz)(dBuV)Factor(d B)(dBuV)(dBuV)0.194024.0019.8543.8563.860.19404.5319.8524.3853.860.502018.5819.9638.5456.000.50206.1219.9626.0846.001.422014.9919.8234.8156.001.42201.7719.8221.5946.001.990015.5519.8835.4356.001.99002.3319.8822.2146.004.274016.2719.9336.2056.004.27401.6819.9321.6146.007.154022.2519.8542.1060.00	(MHz)(dBuV)Factor(d B)(dBuV)(dBuV)(dB)0.194024.0019.8543.8563.86-20.010.19404.5319.8524.3853.86-29.480.502018.5819.9638.5456.00-17.460.50206.1219.9626.0846.00-19.921.422014.9919.8234.8156.00-21.191.42201.7719.8221.5946.00-24.411.990015.5519.8835.4356.00-20.571.99002.3319.8822.2146.00-23.794.274016.2719.9336.2056.00-19.804.27401.6819.9321.6146.00-24.397.154022.2519.8542.1060.00-17.90

Remark:

1. All readings are Quasi-Peak and Average values

2. Margin = Result (Result =Reading + Factor)–Limit 3. Factor=LISN factor+Cable loss+Limiter (10dB)





3.2 RADIATED EMISSION MEASUREMENT

3.2.1 RADIATED EMISSION LIMITS

In any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the Restricted band specified on Part15.205 (a)&209(a) limit in the table and according to ANSI C63.10-2020 below has to be followed.

LIMITS OF RADIATED EMISSION MEASUREMENT (0.009MHz - 1000MHz)

Frequencies	Field Strength	Measurement Distance
(MHz)	(micorvolts/meter)	(meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (1GHz-25 GHz)

FREQUENCY (MHz)	(dBuV/m) (at 3M)		
FREQUENCE (MILZ)	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).

LIMITS OF RESTRICTED FREQUENCY BANDS

FREQUENCY (MHz)	UENCY (MHz) FREQUENCY (MHz)		FREQUENCY (GHz)
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	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	Above 38.6
13.36-13.41			



For Radiated Emission

Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/QP/AV
Start Frequency	9 KHz/150KHz(Peak/QP/AV)
Stop Frequency	150KHz/30MHz(Peak/QP/AV)
	200Hz (From 9kHz to 0.15MHz)/
RB / VB (emission in restricted	9KHz (From 0.15MHz to 30MHz);
band)	200Hz (From 9kHz to 0.15MHz)/
	9KHz (From 0.15MHz to 30MHz)

Spectrum Parameter	Setting	
Attenuation	Auto	
Detector	Peak/QP	
Start Frequency	30 MHz(Peak/QP)	
Stop Frequency	1000 MHz (Peak/QP)	
RB / VB (emission in restricted	120 KHz / 300 KHz	
band)	120 KHZ / 300 KHZ	

and the second se	
Spectrum Parameter	Setting
Attenuation	Auto
Detector	Peak/AV
Start Frequency	1000 MHz(Peak/AV)
Stop Frequency	10th carrier hamonic(Peak/AV)
RB / VB (emission in restricted	1 MHz / 3 MHz(Peak)
band)	1 MHz/1/T MHz(AVG)

For Restricted band

Spectrum Parameter	Setting		
Detector	Peak/AV		
Start/Stan Fraguanay	Lower Band Edge: 2310 to 2410 MHz		
Start/Stop Frequency	Upper Band Edge: 2476 to 2500 MHz		
	1 MHz / 3 MHz(Peak)		
RB / VB	1 MHz/1/T MHz(AVG)		



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Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~90kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	90kHz~110kHz / RB 200Hz for QP
Start ~ Stop Frequency	110kHz~490kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	490kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 TEST PROCEDURE

- a. The measuring distance at 3 m shall be used for measurements at frequency 0.009MHz up to 1GHz, and above 1GHz.
- b. The EUT was placed on the top of a rotating table 0.8 m (above 1GHz is 1.5 m) above the ground at a 3 m anechoic chamber test site. The table was rotated 360 degree to determine the position of the highest radiation.
- c. The height of the equipment shall be 0.8 m (above 1GHz is 1.5 m); the height of the test antenna shall vary between 1 m to 4 m. Horizontal and vertical polarization of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and QuasiPeak detector mode will be re-measured.
- e. If the Peak Mode measured value is compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and no additional QP Mode measurement was performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos. Note:

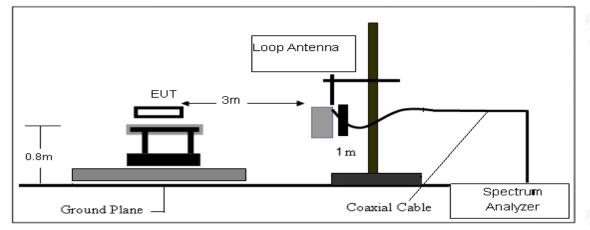
Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

3.2.3 DEVIATION FROM TEST STANDARD No deviation.

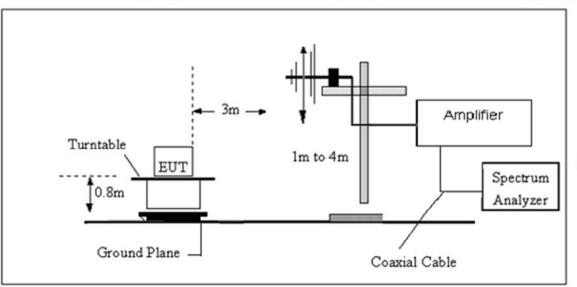


3.2.4 TESTSETUP

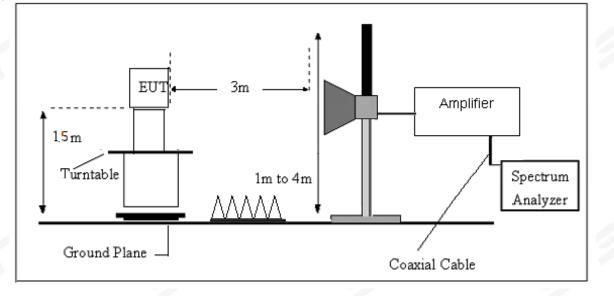
(A) Radiated Emission Test-Up Frequency Below 30MHz



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



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



3.2.5 EUT OPERATING CONDITIONS Please refer to section 3.1.4 of this report.



3.2.6 FIELD STRENGTH CALCULATION

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AGWhere FS = Field Strength CL = Cable Attenuation Factor (Cable Loss) RA = Reading Amplitude AG = Amplifier Gain AF = Antenna Factor

For example

Frequency	FS	RA	AF	CL	AG	Factor
(MHz)	(dBµV/m)	(dBµV/m)	(dB)	(dB)	(dB)	(dB)
300	40	58.1	12.2	1.6	31.9	-18.1

Factor=AF+CL-AG

3.2.7 TEST RESULTS

(9KHz-30MHz)

Temperature:	23.4 ℃	Relative Humidity:	60%RH
Test Voltage:	DC 3.7V From Battery	Test Mode:	TX Mode

Freq.	Reading	Limit	Margin	State	Test Result
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F	iesi Resuli
					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.



(30MHz-1000MHz)

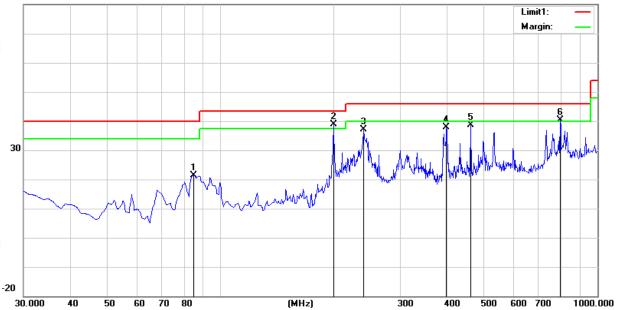
Temperature:	23.4 ℃	Relative Humidity:	60%RH
Test Voltage:	DC 3.7V From Battery	Phase:	Horizontal
Test Mode:	Mode 1/2/3/4/5/6/7/8/9 (Mode 9 worst mode)		

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/ m)	(dBuV/m)	(dBuV/m)	(dB)	
1	85.2900	43.54	-22.13	21.41	40.00	-18.59	peak
2	199.7500	60.05	-21.11	38.94	43.50	-4.56	peak
3	240.4900	55.15	-17.93	37.22	46.00	-8.78	peak
4	398.6000	49.00	-11.20	37.80	46.00	-8.20	peak
5	461.6500	47.97	-9.39	38.58	46.00	-7.42	peak
6	797.2700	42.37	-2.03	40.34	46.00	-5.66	peak

Remark:

- 1. Margin = Result (Result = Reading + Factor)-Limit
- 2. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain
- 3. All modes have been tested, only show the worst case.

80.0 dBuV/m





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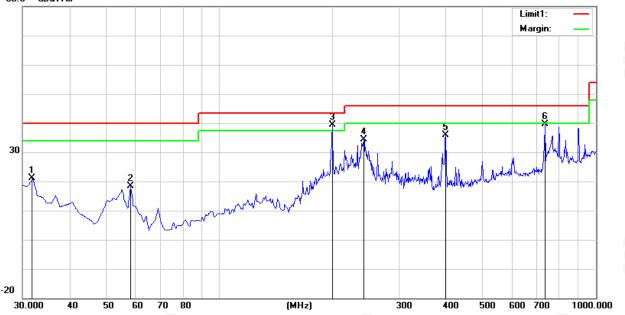
Temperature:	23.4 ℃	Relative Humidity:	60%RH	
Test Voltage:	DC 3.7V From Battery	Phase:	Vertical	
Test Mode:	Mode 1/2/3/4/5/6/7/8/9 (Mode 9 worst mode)			

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/ m)	(dBuV/m)	(dBuV/m)	(dB)	
1	31.9400	34.88	-13.86	21.02	40.00	-18.98	peak
2	58.1300	44.06	-25.58	18.48	40.00	-21.52	peak
3	199.7500	60.54	-21.11	39.43	43.50	-4.07	peak
4	242.4300	52.02	-17.52	34.50	46.00	-11.50	peak
5	399.5700	47.09	-11.16	35.93	46.00	-10.07	peak
6	732.2800	41.90	-2.39	39.51	46.00	-6.49	peak

Remark:

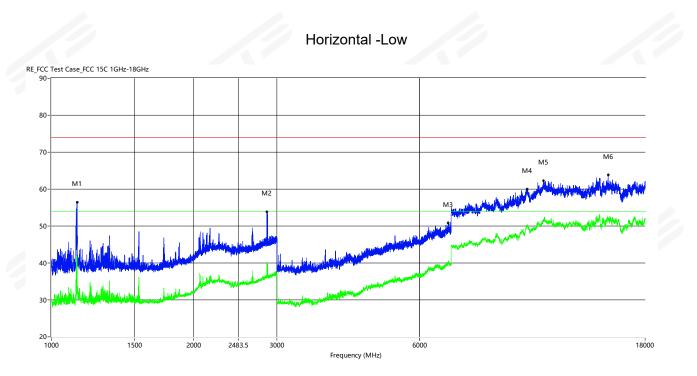
- 4. Margin = Result (Result = Reading + Factor)–Limit
- 5. Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain
- 6. All modes have been tested, only show the worst case.







(1GHz~25GHz) Spurious emission Requirements

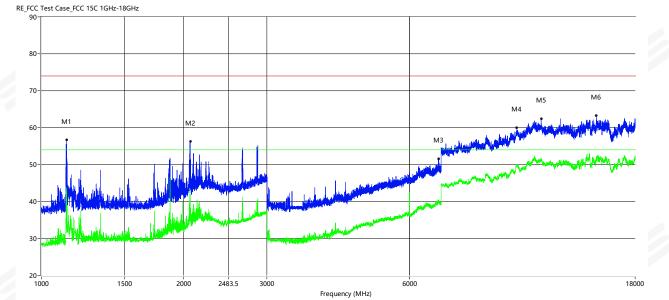


Frequency (MHz)	Peak Level (dBuV/ m)	Averag e Level (dBuV/ m)	Factor (dB)	PK Limit (dBuV/ m)	AV Limit (dBuV/ m)	Over Limit (dB)	Table (o)	Heig ht (cm)	ANT	Verdict
1133.000	56.46	41.72	-1.42	74.0	54.0	-12.28	73.30	100	Horizontal	Pass
2855.000	53.83	39.97	5.61	74.0	54.0	-14.03	279.30	100	Horizontal	Pass
6906.000	50.89	39.91	0.46	74.0	54.0	-14.09	359.40	100	Horizontal	Pass
10132.250	60.07	49.79	7.16	74.0	54.0	-4.21	61.60	100	Horizontal	Pass
10973.750	62.26	51.46	10.02	74.0	54.0	-2.54	342.90	100	Horizontal	Pass
15032.750	63.86	51.21	10.37	74.0	54.0	-2.79	315.10	100	Horizontal	Pass



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Vertical

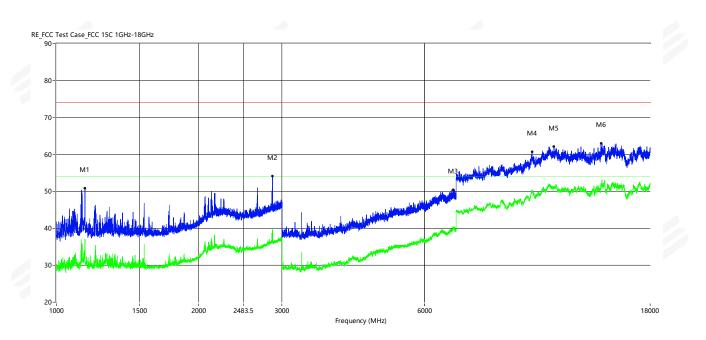


Frequency (MHz)	Peak Level (dBuV/ m)	Averag e Level (dBuV/ m)	Factor (dB)	PK Limit (dBuV/ m)	AV Limit (dBuV/ m)	Over Limit (dB)	Table (o)	Height (cm)	ANT	Verdic t
1131.000	56.75	43.74	-1.42	74.0	54.0	-10.26	186.80	100	Vertical	Pass
2064.500	56.28	41.77	3.10	74.0	54.0	-12.23	179.70	100	Vertical	Pass
6919.000	51.58	39.81	0.47	74.0	54.0	-14.19	6.00	100	Vertical	Pass
10115.750	59.99	49.85	7.17	74.0	54.0	-4.15	0.50	100	Vertical	Pass
11391.750	62.40	51.64	9.73	74.0	54.0	-2.36	104.10	100	Vertical	Pass
14895.250	63.26	51.14	9.89	74.0	54.0	-2.86	337.10	100	Vertical	Pass



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Horizontal - Mid

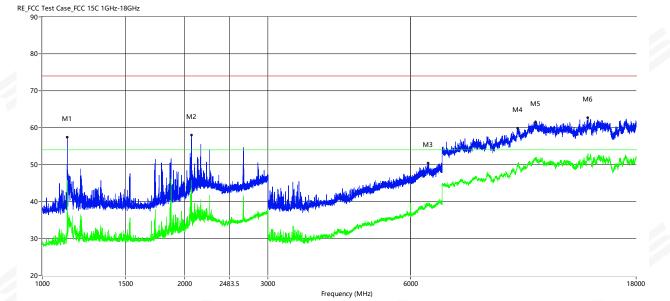


Frequency (MHz)	Peak Level (dBuV/ m)	Averag e Level (dBuV/ m)	Factor (dB)	PK Limit (dBuV/ m)	AV Limit (dBuV/ m)	Over Limit (dB)	Table (o)	Heig ht (cm)	ANT	Verdict
1149.000	50.89	37.06	-1.38	74.0	54.0	-16.94	253.90	100	Horizontal	Pass
2863.500	54.20	39.49	5.61	74.0	54.0	-14.51	119.40	100	Horizontal	Pass
6901.000	50.43	40.13	0.46	74.0	54.0	-13.87	0.40	100	Horizontal	Pass
10126.750	60.73	50.31	7.16	74.0	54.0	-3.69	158.00	100	Horizontal	Pass
11270.750	62.12	50.82	9.55	74.0	54.0	-3.18	153.70	100	Horizontal	Pass
14169.250	63.05	51.83	11.09	74.0	54.0	-2.17	117.30	100	Horizontal	Pass



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Vertical

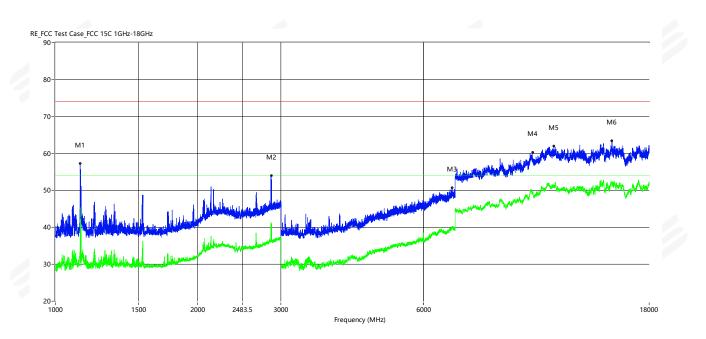


Frequency (MHz)	Peak Level (dBuV/ m)	Averag e Level (dBuV/ m)	Factor (dB)	PK Limit (dBuV/ m)	AV Limit (dBuV/ m)	Over Limit (dB)	Table (o)	Height (cm)	ANT	Verdic t
1129.000	57.44	44.14	-1.43	74.0	54.0	-9.86	196.90	100	Vertical	Pass
2067.000	58.05	43.65	3.15	74.0	54.0	-10.35	196.90	100	Vertical	Pass
6543.000	50.40	39.23	-0.42	74.0	54.0	-14.77	304.60	100	Vertical	Pass
10107.500	59.81	49.78	7.17	74.0	54.0	-4.22	307.70	100	Vertical	Pass
11042.500	61.62	51.83	9.99	74.0	54.0	-2.17	306.20	100	Vertical	Pass
14224.250	62.72	51.95	11.41	74.0	54.0	-2.05	150.80	100	Vertical	Pass



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Horizontal - High

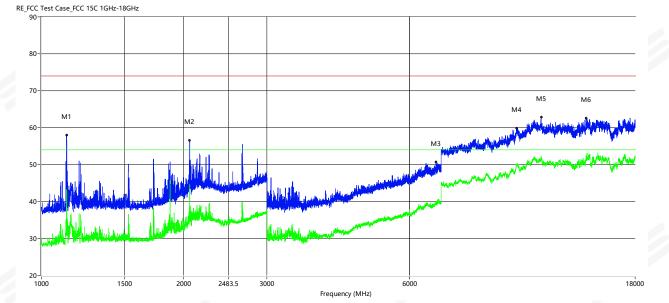


Frequency (MHz)	Peak Level (dBuV/ m)	Averag e Level (dBuV/ m)	Factor (dB)	PK Limit (dBuV/ m)	AV Limit (dBuV/ m)	Over Limit (dB)	Table (o)	Heig ht (cm)	ANT	Verdict
1128.000	57.22	45.33	-1.43	74.0	54.0	-8.67	81.00	100	Horizontal	Pass
2859.000	54.05	40.05	5.61	74.0	54.0	-13.95	111.90	100	Horizontal	Pass
6895.000	50.64	40.06	0.44	74.0	54.0	-13.94	82.80	100	Horizontal	Pass
10214.750	60.26	48.99	6.99	74.0	54.0	-5.01	104.80	100	Horizontal	Pass
11320.250	61.99	51.20	9.57	74.0	54.0	-2.80	182.00	100	Horizontal	Pass
15021.750	63.50	51.86	10.38	74.0	54.0	-2.14	206.70	100	Horizontal	Pass



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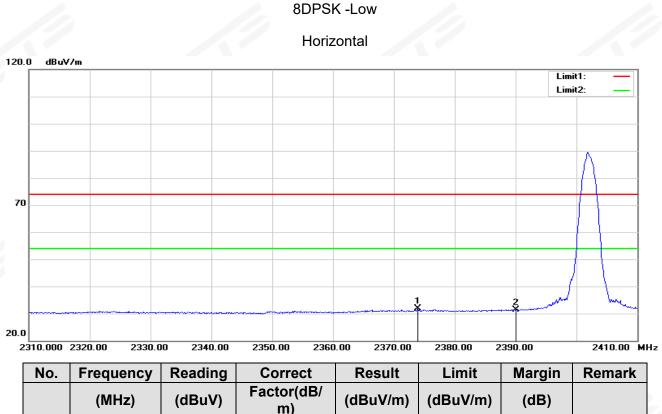
Vertical



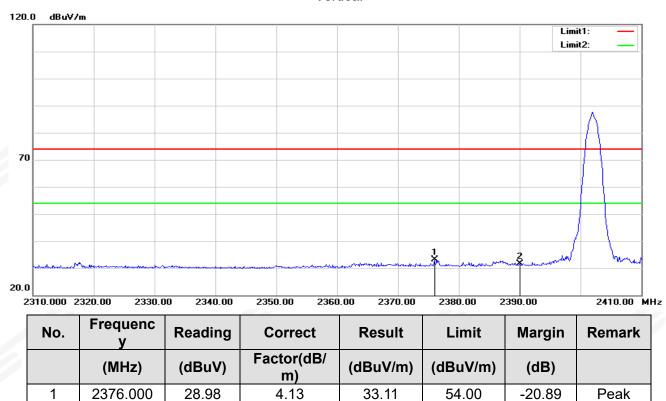
Frequency (MHz)	Peak Level (dBuV/ m)	Averag e Level (dBuV/ m)	Factor (dB)	PK Limit (dBuV/ m)	AV Limit (dBuV/ m)	Over Limit (dB)	Table (o)	Height (cm)	ANT	Verdict
1130.000	58.00	43.22	-1.42	74.0	54.0	-10.78	196.70	100	Vertical	Pass
2058.000	56.52	44.49	2.98	74.0	54.0	-9.51	194.20	100	Vertical	Pass
6824.000	50.78	39.36	0.09	74.0	54.0	-14.64	228.30	100	Vertical	Pass
10115.750	59.91	49.93	7.17	74.0	54.0	-4.07	237.70	100	Vertical	Pass
11394.500	62.91	51.50	9.73	74.0	54.0	-2.50	253.40	100	Vertical	Pass
14163.750	62.57	51.74	10.99	74.0	54.0	-2.26	345.70	100	Vertical	Pass



Restricted band Requirements



NO.	Frequency	Reaulity	Correct	Result	LIIIIIL	warym	Remark
	(MHz)	(dBuV)	Factor(dB/ m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2373.900	27.72	4.10	31.82	54.00	-22.18	Peak
2	2390.000	27.00	4.34	31.34	54.00	-22.66	Peak



31.71

4.34

Vertical

2

2390.000

27.37

101, Building B, Zhuoke Science Park, No. 190 Chongqing Road, Zhancheng Shequ, Fuhai Sub-District, Bao'an District, Shenzhen, Guangdong, China Tel: +86-755 3688 6288 Fax: +86-755 3688 6277 Http://www.stsapp.com E-mail:sts@stsapp.com

54.00

-22.29

Peak

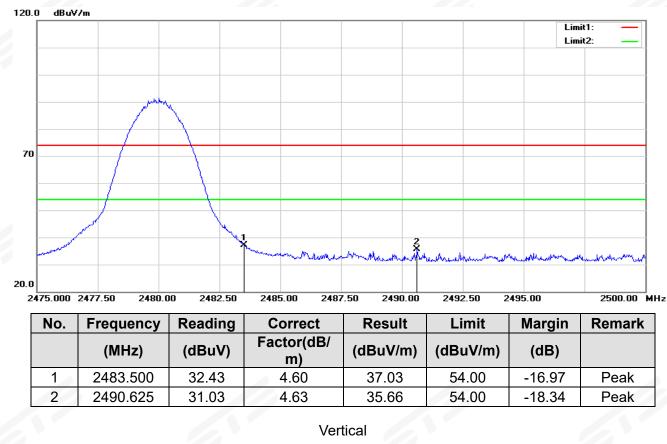


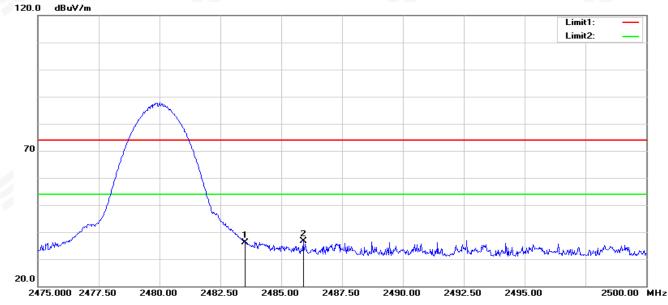
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8DPSK -High

Horizontal





	No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
		(MHz)	(dBuV)	Factor(dB/ m)	(dBuV/m)	(dBuV/m)	(dB)	
	1	2483.500	31.61	4.60	36.21	54.00	-17.79	Peak
2	2	2485.900	32.10	4.61	36.71	54.00	-17.29	Peak

Note: All modes have been measurement, only worst mode was reported.



4. CONDUCTED SPURIOUS & BAND EDGE EMISSION

4.1 LIMIT

According to FCC section 15.247(d), in any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

4.2 TEST PROCEDURE

Spectrum Parameter	Setting
Detector	Peak
Start/Stop Frequency	30 MHz to 10th carrier harmonic
RB / VB (emission in restricted band)	100 KHz/300 KHz
Trace-Mode:	Max hold

For Band edge

Spectrum Parameter	Setting	
·	č	
Detector	Peak	
Stort/Ston Fraguency	Lower Band Edge: 2300 – 2407 MHz	
Start/Stop Frequency	Upper Band Edge: 2475 – 2500 MHz	
RB / VB (emission in restricted band)	100 KHz/300 KHz	
Trace-Mode:	Max hold	

For Hopping Band edge

For Hopping Band edge	For Hopping Band edge		
Detector	Peak		
Start/Stan Fraguency	Lower Band Edge: 2300– 2403 MHz		
Start/Stop Frequency	Upper Band Edge: 2479 – 2500 MHz		
RB / VB (emission in restricted band)	100 KHz/300 KHz		
Trace-Mode:	Max hold		



4.3 TEST SETUP



The EUT is connected to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 500hm; the path loss as the factor is calibrated to correct the reading. Tune the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, the span is set to be greater than RBW.

4.4 EUT OPERATION CONDITIONS Please refer to section 3.1.4 of this report.

4.5 TEST RESULTS

Note: The test data please refer to APPENDIX 1.



5. NUMBER OF HOPPING CHANNEL

5.1 LIMIT

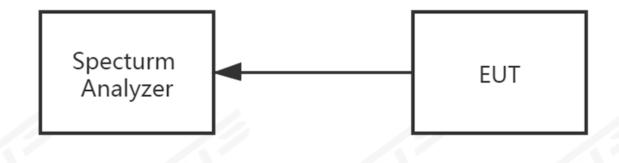
FCC Part 15.247,Subpart C					
Section	Test Item	Limit	FrequencyRange (MHz)	Result	
15.247 (a)(1)(iii)	Number of Hopping Channel	≥15	2400-2483.5	PASS	

Spectrum Parameters	Setting		
Attenuation	Auto		
Span Frequency	> Operating FrequencyRange		
RB	100KHz		
VB	300KHz		
Detector	Peak		
Trace	Max Hold		
Sweep Time	Auto		

5.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- b. Spectrum Setting: RBW= 100KHz, VBW=300KHz, Sweep time = Auto.

5.3 TEST SETUP



5.4 EUT OPERATION CONDITIONS

Please refer to section 3.1.4 of this report.

5.5 TEST RESULTS

Note: The test data please refer to APPENDIX 1.



6. AVERAGE TIME OF OCCUPANCY

6.1 LIMIT

FCC Part 15.247,Subpart C						
	Section	Test Item	Limit	FrequencyRange (MHz)	Result	
	15.247 (a)(1)(iii)	Average Time of Occupancy	0.4sec	2400-2483.5	PASS	

6.2 TEST PROCEDURE

- a. The transmitter output (antenna port) was connected to the spectrum analyzer.
- b. Set RBW =1MHz/VBW =3MHz.
- c. Use a video trigger with the trigger level set to enable triggering only on full pulses.
- d. Sweep Time is more than once pulse time.
- Set the center frequency on any frequency would be measure and set the frequency span to e. zero span.
- f. Measure the maximum time duration of one single pulse.

The Dwell Time=Burst Width*Total Hops.The detailed calculations are showed as follows: The duration for dwell time calculation: 0.4[s]*hopping number=0.4[s]*79[ch)=31.6[s*ch]; Dwell Time Calculate formula:

Dwell time = pulse time (ms) x pulse number in 31.6s

6.3 TEST SETUP



6.4 EUT OPERATION CONDITIONS

Please refer to section 3.1.4 of this report.

6.5 TEST RESULTS



7. HOPPING CHANNEL SEPARATION MEASUREMEN

7.1 LIMIT

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

Spectrum Parameter	Setting	
Attenuation	Auto	
Span Frequency	> 20 dB Bandwidth or Channel Separation	
RB	30 kHz (20dB Bandwidth) / 30 kHz (Channel Separation)	
VB	100 kHz (20dB Bandwidth) / 100 kHz (Channel Separation)	
Detector	Peak	
Trace	Max Hold	
Sweep Time	Auto	

7.2 TEST PROCEDURE

- a. The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode.
- b. The resolution bandwidth of 30 kHz and the video bandwidth of 100 kHz were utilised for 20 dB bandwidth measurement.
- c. The resolution bandwidth of 30 kHz and the video bandwidth of 100 kHz were utilised for channel separation measurement.

7.3 TEST SETUP



7.4 EUT OPERATION CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

7.5 TEST RESULTS



8. BANDWIDTH TEST

8.1 LIMIT

	FC	C Part15 15.247,Subp	art C	
Section	Test Item	Limit	FrequencyRange (MHz)	Result
15.247 (a)(1)	Bandwidth	N/A	2400-2483.5	PASS

Spectrum Parameter	Setting		
Attenuation	Auto		
Span Frequency	> Measurement Bandwidth or Channel Separation		
RB	30 kHz (20dB Bandwidth) / 30 kHz (Channel Separation)		
VB	100 kHz (20dB Bandwidth) / 100 kHz (Channel Separation)		
Detector	Peak		
Trace	Max Hold		
Sweep Time	Auto		

8.2 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below.
- b. Spectrum Setting: RBW= 30KHz, VBW=100KHz, Sweep time = Auto.

8.3 TEST SETUP



8.4 EUT OPERATION CONDITIONS Please refer to section 3.1.4 of this report.

8.5 TEST RESULTS



9. OUTPUT POWER TEST

9.1 LIMIT

			FCC Part 15.247,Subp	art C	
1	Section	Test Item	Frequency Range (MHz)	Result	
			1 W or 0.125W		~
	15.247 (a)(1)&(b)(1)	Output Power	if channel separation > 2/3 bandwidthprovided thesystems operatewith an output power no greater than125 mW(20.97dBm)	2400-2483.5	PASS

9.2 TEST PROCEDURE

This is an RF-conducted test to evaluate maximum peak output power. Use a direct connection between the antenna port of the unlicensed wireless device and the spectrum analyzer, through suitable attenuation. The hopping shall be disabled for this test:

a) Use the following spectrum analyzer settings:

1) Span: Approximately five times the 20 dB bandwidth, centered on a hopping channel.

2) RBW > 20 dB bandwidth of the emission being measured.

3) VBW \geq RBW.

4) Sweep: Auto.

5) Detector function: Peak.

6) Trace: Max hold.

b) Allow trace to stabilize.

c) Use the marker-to-peak function to set the marker to the peak of the emission.

d) The indicated level is the peak output power, after any corrections for external attenuators and cables.

e) A plot of the test results and setup description shall be included in the test report.

Note—A peak responding power meter may be used, where the power meter and sensor system video bandwidth is greater than the occupied bandwidth of the unlicensed wireless device, rather than a spectrum analyzer.



9.3 TEST SETUP



9.4 EUT OPERATION CONDITIONS

Please refer to section 3.1.4 of this report.

9.5 TEST RESULTS



10. ANTENNA REQUIREMENT

10.1 STANDARD REQUIREMENT

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

10.2 EUT ANTENNA

The EUT antenna is Ceramic Antenna. It comply with the standard requirement.

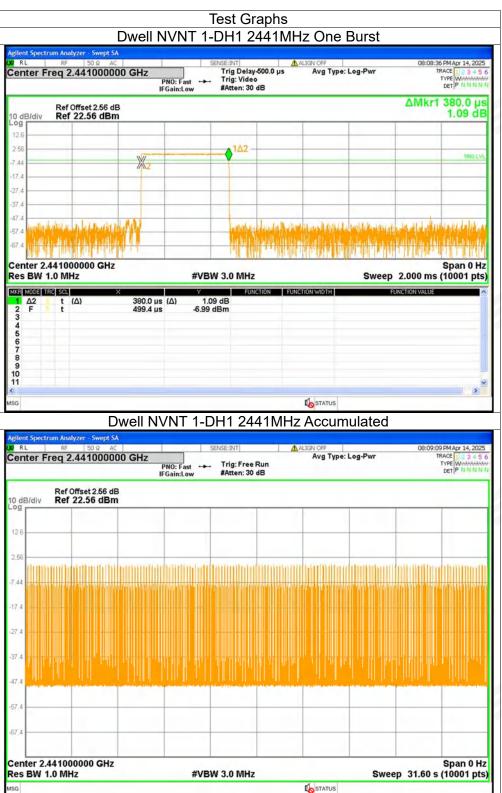


APPENDIX 1-TEST DATA

Dwell Time

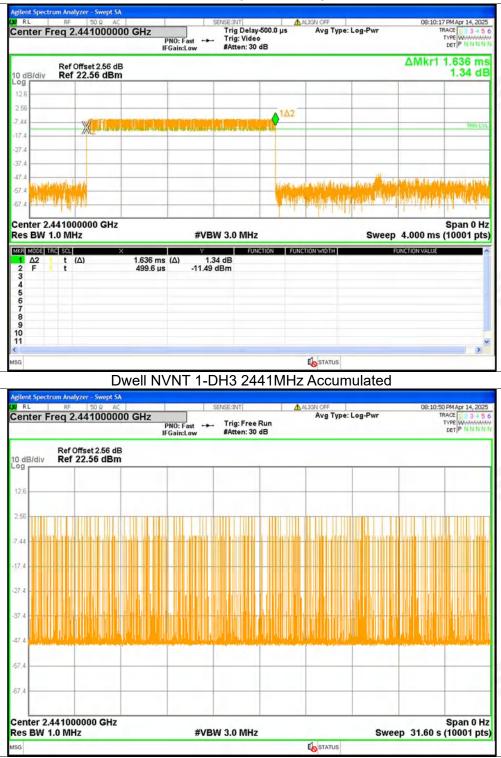
Condition	Mode	Frequency (MHz)	Pulse Time (ms)	Total Dwell Time (ms)	Burst Count	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	0.38	121.22	319	31600	<=400	Pass
NVNT	1-DH3	2441	1.636	253.58	155	31600	<=400	Pass
NVNT	1-DH5	2441	2.885	291.385	101	31600	<=400	Pass
NVNT	2-DH1	2441	0.389	123.313	317	31600	<=400	Pass
NVNT	2-DH3	2441	1.642	251.226	153	31600	<=400	Pass
NVNT	2-DH5	2441	2.889	306.234	106	31600	<=400	Pass
NVNT	3-DH1	2441	0.389	124.091	319	31600	<=400	Pass
NVNT	3-DH3	2441	1.64	255.84	156	31600	<=400	Pass
NVNT	3-DH5	2441	2.891	303.555	105	31600	<=400	Pass





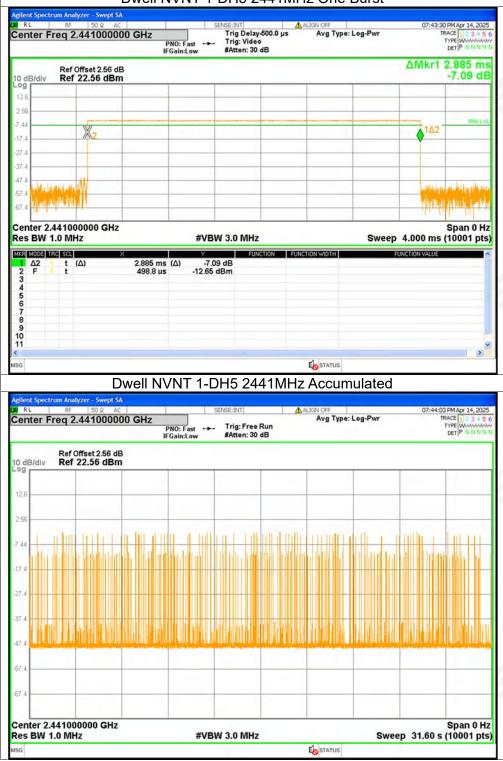


Dwell NVNT 1-DH3 2441MHz One Burst

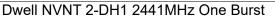


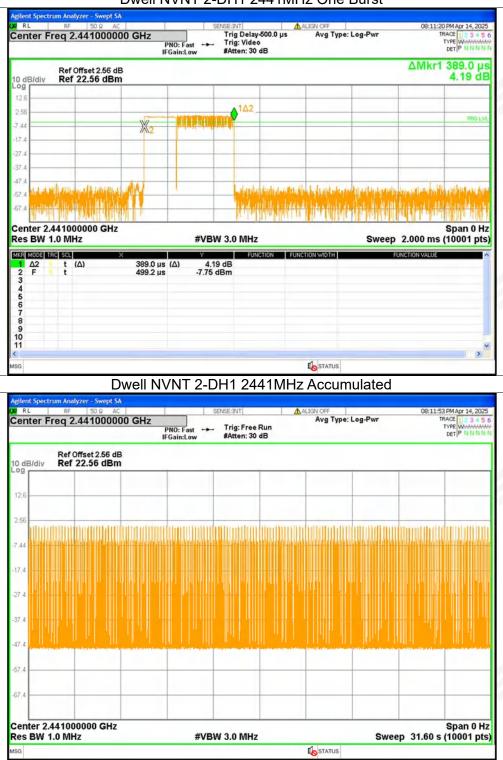


Dwell NVNT 1-DH5 2441MHz One Burst



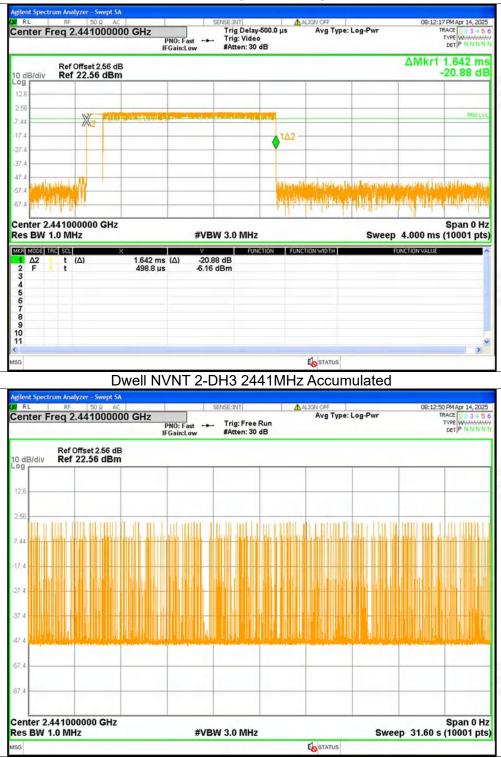






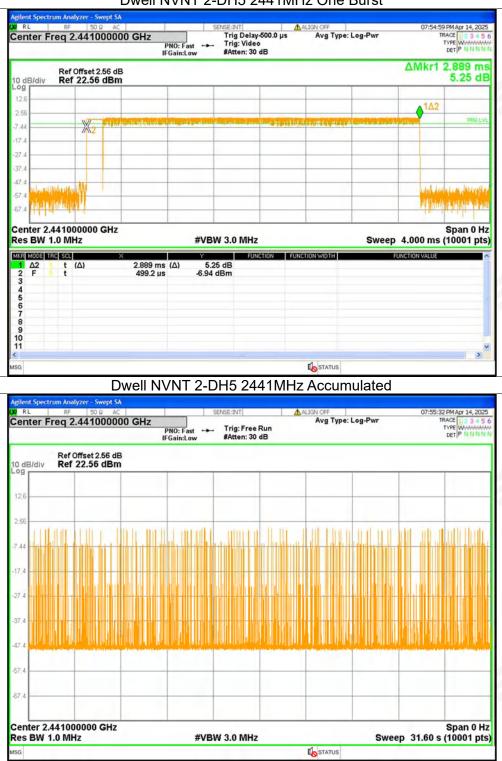


Dwell NVNT 2-DH3 2441MHz One Burst



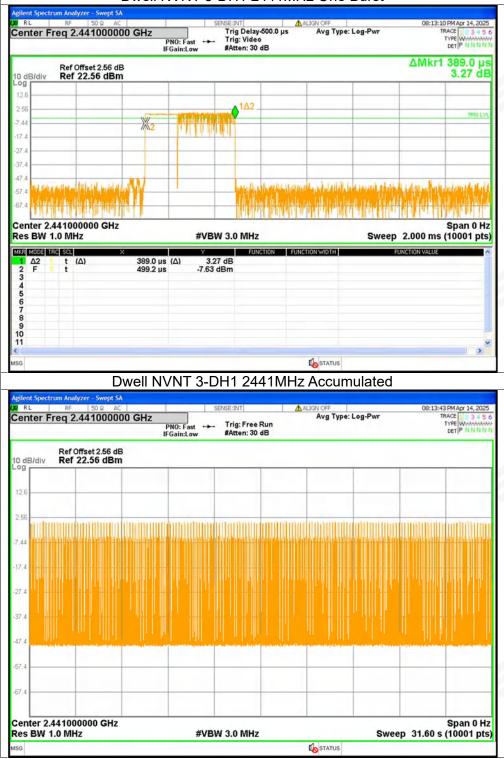


Dwell NVNT 2-DH5 2441MHz One Burst





Dwell NVNT 3-DH1 2441MHz One Burst



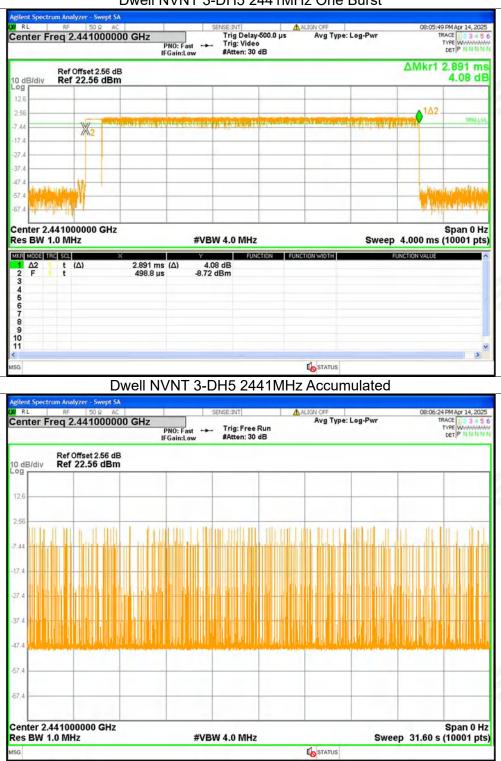


Dwell NVNT 3-DH3 2441MHz One Burst





Dwell NVNT 3-DH5 2441MHz One Burst





Maximum Peak Conducted Output Power

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	-3.53	<=21	Pass
NVNT	1-DH5	2441	-3.57	<=21	Pass
NVNT	1-DH5	2480	-2.91	<=21	Pass
NVNT	2-DH5	2402	-3.49	<=21	Pass
NVNT	2-DH5	2441	-3.6	<=21	Pass
NVNT	2-DH5	2480	-2.95	<=21	Pass
NVNT	3-DH5	2402	-3.31	<=21	Pass
NVNT	3-DH5	2441	-3.33	<=21	Pass
NVNT	3-DH5	2480	-2.73	<=21	Pass

101, Building B, Zhuoke Science Park, No. 190 Chongqing Road, Zhancheng Shequ, Fuhai Sub-District, Bao'an District, Shenzhen, Guangdong, China Tel: +86-755 3688 6288 Fax: +86-755 3688 6277 Http://www.stsapp.com E-mail:sts@stsapp.com

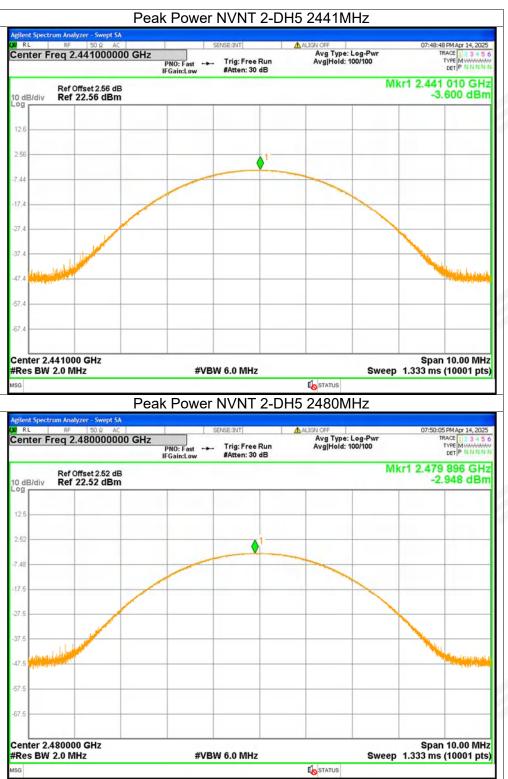




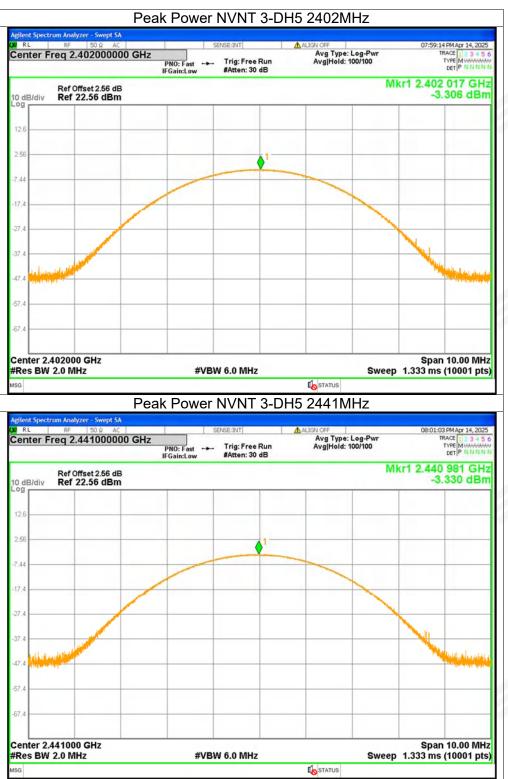


Peak Power NVNT 1-DH5 2480MHz RL 07:39:35 PM Apr 14, 2025 TRACE 1 2 3 4 5 6 Center Freq 2.480000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 TYPE MY DET P + Trig: Free Run #Atten: 30 dB PNO: Fast IFGain:Low Mkr1 2.480 126 GHz Ref Offset 2.52 dB Ref 22.52 dBm -2.914 dBm 10 dB/div 2.5 ٥ 7 4 37 47.5 57. 67 Center 2.480000 GHz Span 10.00 MHz #VBW 6.0 MHz #Sweep 100.0 ms (10001 pts) #Res BW 2.0 MHz **STATUS** 0.21 Peak Power NVNT 2-DH5 2402MHz ALIGN OFF Avg Type: Log-Pwr Avg|Held: 100/100 RL 49 PM Apr 14, 202 Center Freg 2.402000000 GHz PNO: Fast ---- Trig: Free Run IFGain:Low #Atten: 30 dB TYPE M Mkr1 2.401 887 GHz Ref Offset 2.56 dB Ref 22.56 dBm -3.491 dBm 10 dB/div 2.5 0 7.4 .27 37. 47.4 67 Center 2.402000 GHz Span 10.00 MHz #VBW 6.0 MHz #Sweep 100.0 ms (10001 pts) #Res BW 2.0 MHz STATUS SG











Ient Spectrum Analyzer - Swept SA RL RF 50 Ω AC	c	ENSE:INT	ALIGN OFF		08:02:1	6 PM Apr 14, 2025
enter Freq 2.480000000 GHz	PNO: Fast	Trig: Free Run #Atten: 30 dB	Avg Type: Log Avg Hold: 100/1		T	RACE 1 2 3 4 5 C TYPE MWWWWWW DET P NNNN
Ref Offset 2.52 dB dB/div Ref 22.52 dBm				Mk		963 GHz 727 dBm
2.5						
52		1				
48						
5						
5						
5						
5						
nter 2.480000 GHz es BW 2.0 MHz	#VBV	V 6.0 MHz		Sweep	Span 1.333 ms	10.00 MHz (10001 pts)

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-20dB Bandwidth

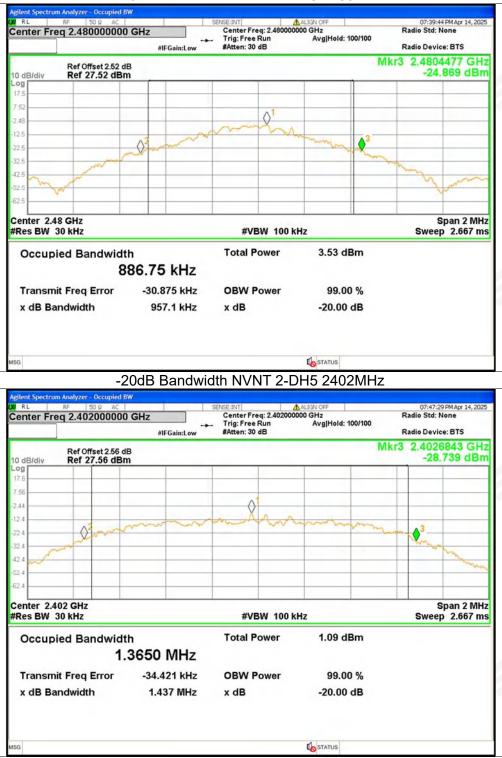
Condition	Mode	Frequency (MHz)	-20 dB Bandwidth (MHz)	Verdict				
NVNT	1-DH5	2402	0.9476	Pass				
NVNT	1-DH5	2441	0.9557	Pass				
NVNT	1-DH5	2480	0.9571	Pass				
NVNT	2-DH5	2402	1.4375	Pass				
NVNT	2-DH5	2441	1.4829	Pass				
NVNT	2-DH5	2480	1.5279	Pass				
NVNT	3-DH5	2402	1.4691	Pass				
NVNT	3-DH5	2441	1.4737	Pass				
NVNT	3-DH5	2480	1.5202	Pass				





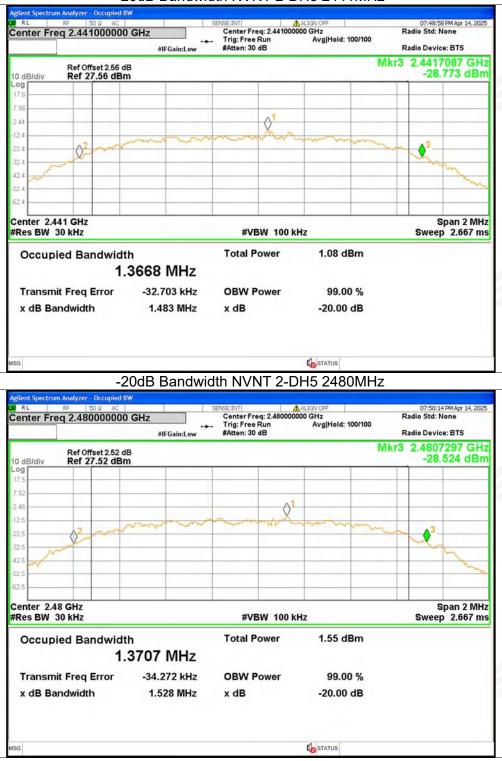


-20dB Bandwidth NVNT 1-DH5 2480MHz



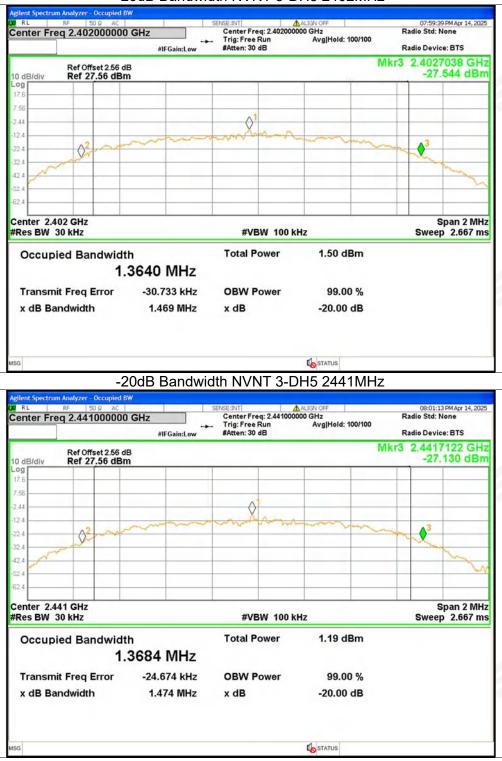


-20dB Bandwidth NVNT 2-DH5 2441MHz



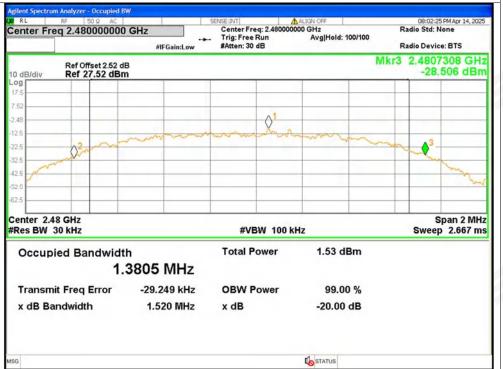


-20dB Bandwidth NVNT 3-DH5 2402MHz





-20dB Bandwidth NVNT 3-DH5 2480MHz





Carrier Frequencies Separation

Condition	Mode	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	2401.962	2403.032	1.07	>=0.632	Pass
NVNT	1-DH5	2440.942	2441.962	1.02	>=0.637	Pass
NVNT	1-DH5	2478.964	2479.942	0.978	>=0.638	Pass
NVNT	2-DH5	2401.954	2402.964	1.01	>=0.958	Pass
NVNT	2-DH5	2440.976	2442.118	1.142	>=0.989	Pass
NVNT	2-DH5	2478.948	2480.138	1.19	>=1.019	Pass
NVNT	3-DH5	2401.87	2403.076	1.206	>=0.979	Pass
NVNT	3-DH5	2441.124	2442.128	1.004	>=0.982	Pass
NVNT	3-DH5	2478.96	2480.128	1.168	>=1.013	Pass

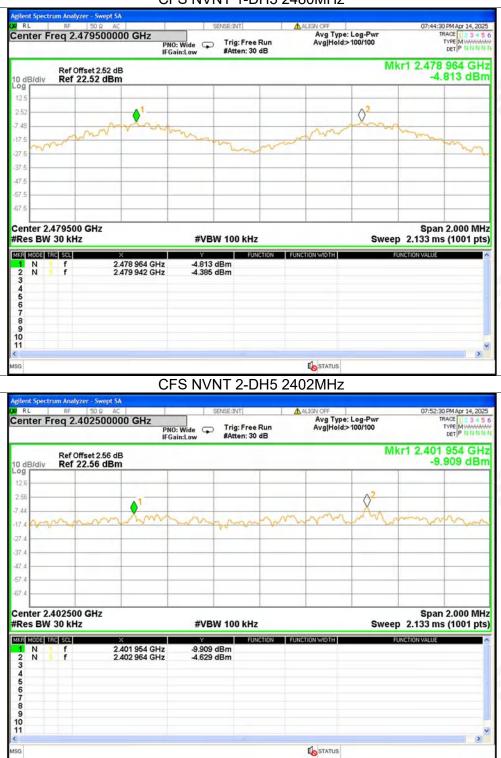


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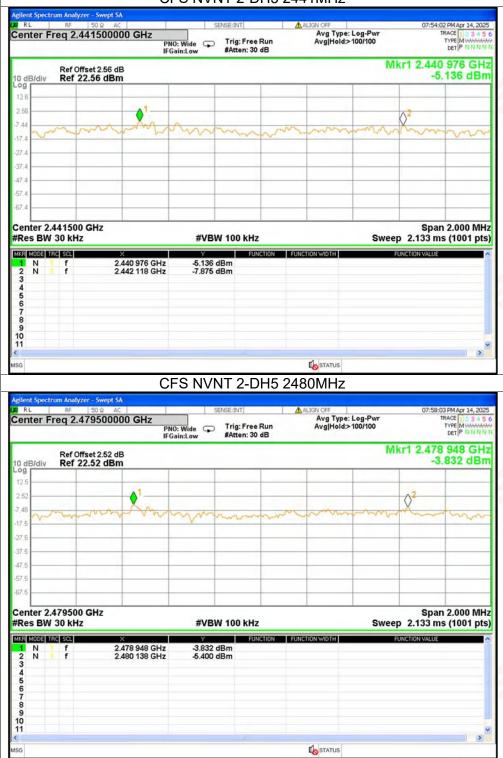


CFS NVNT 1-DH5 2480MHz



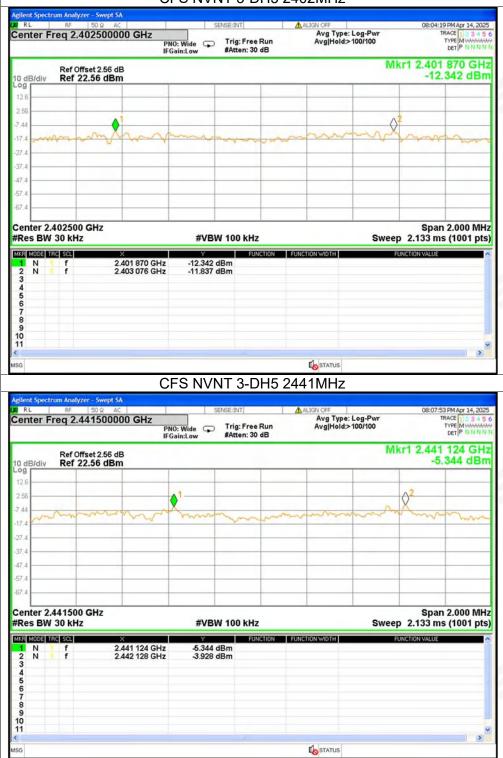


CFS NVNT 2-DH5 2441MHz



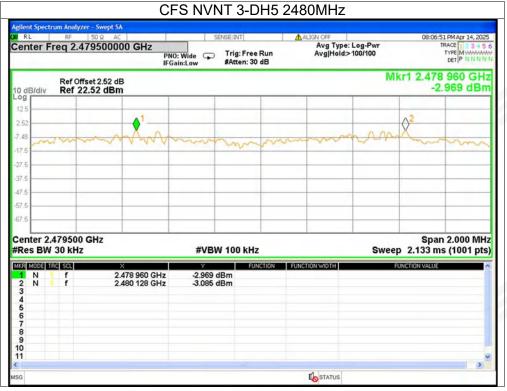


CFS NVNT 3-DH5 2402MHz





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Number of Hopping Channel

Condition	Mode	Hopping Number	Limit	Verdict
NVNT	1-DH5	79	>=15	Pass
NVNT	2-DH5	79	>=15	Pass
NVNT	3-DH5	79	>=15	Pass





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Test Graphs Hopping No. NVNT 1-DH5 Hopping PM Apr 14, 2025 Center Freq 2.441750000 GHz Avg Type: Log-Pw Avg|Hold>100/100 LCF Trig: Free Run #Atten: 30 dB PNO: Fast 😱 IFGain:Low DET Mkr1 2.401 837 0 GHz -4.982 dBm Ref Offset 2.56 dB Ref 22.56 dBm 10 dB/div (АЛАЛАЛАЛАЛАЛАЛ MMMM 4 Start 2.40000 GHz #Res BW 100 kHz Stop 2.48350 GHz Sweep 8.000 ms (1001 pts) #VBW 300 kHz MKR MODEL TRC SCL 2.401 837 0 GHz 2.479 826 0 GHz -4.982 dBm -1.427 dBm NN f 234567891011 TATUS SG Hopping No. NVNT 2-DH5 Hopping PM Apr 14, 2025 Center Freq 2.441750000 GHz Avg Type: Log-Pwr Avg|Hold>100/100 RACE PNO: Fast 😱 Trig: Free Run #Atten: 30 dB DET P IFGain:Low Mkr1 2.401 920 5 GHz -5.245 dBm Ref Offset 2.56 dB Ref 22.56 dBm 0 dB/div anne data makan markanda 4 Start 2.40000 GHz #Res BW 100 kHz Stop 2.48350 GHz Sweep 8.000 ms (1001 pts) #VBW 300 kHz MKR MODE TRC SCL FUNCTION FUNCTION WIDT 2.401 920 5 GHz 2.480 327 0 GHz -5.245 dBm -4.407 dBm N N 1 2 3 4 5 6 7 8 9 10 11 f STATUS



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PNO: Fast Trig: Free Run Avg Hold>100/100 Type Muker IFGain:Low #Atten: 30 dB	pectrum Analyzer - Swept SA		-				
Her UTSet 2.56 dBm -10.121 d 9 -10.121 d <t< th=""><th></th><th>PNO: Fast _ Trig:</th><th>Free Run</th><th>Avg Type: L</th><th></th><th>TR</th><th></th></t<>		PNO: Fast _ Trig:	Free Run	Avg Type: L		TR	
56 1					Mkr1		
44 1							
A A	1 www.www.www.www.www.ww	Analas prodet progra	handaprophy	alter your alter	a stand and	WWWWWW	mmp ²
A B A B							
A B B							
Airt 2.40000 GHz Stop 2.48350 Res BW 100 kHz #VBW 300 kHz Stop 2.48350 N f 2.401 837 0 GHz -10.121 dBm N f 2.480 494 0 GHz -8.505 dBm							J
Res BW 100 kHz #VBW 300 kHz Sweep 8.000 ms (1001 R Mode TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE N 1 f 2.401 837 0 GHz -10.121 dBm FUNCTION FUNCTION WIDTH FUNCTION VALUE N 1 f 2.480 494 0 GHz -8.505 dBm FUNCTION VALUE FUNCTION VALUE	40000 00-					Oton 0	10250 01
N 1 f 2.401 837 0 GHz -10.121 dBm		#VBW 300	kHz		Sweep		
	f 2.401 837 0		FUNCTION F	UNCTION WIDTH	FU	NCTION VALUE	

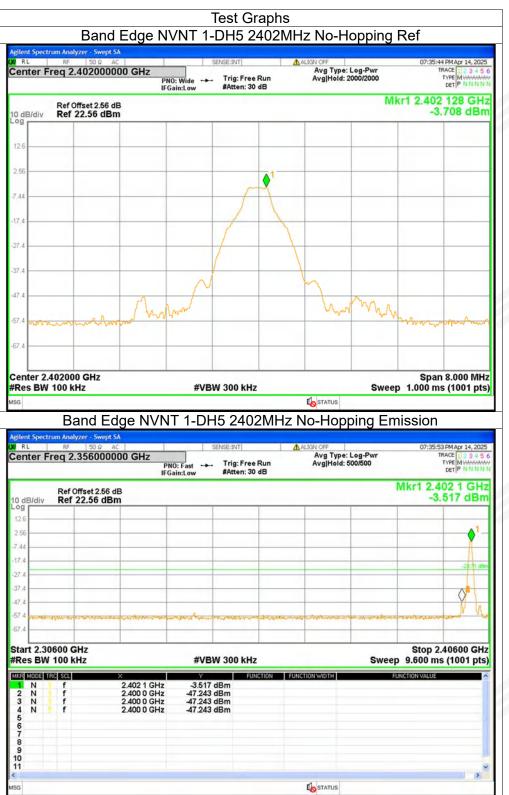


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Band Edge

Condition	Mode	Frequency (MHz)	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	No-Hopping	-43.53	<=-20	Pass
NVNT	1-DH5	2480	No-Hopping	-47.48	<=-20	Pass
NVNT	2-DH5	2402	No-Hopping	-41.19	<=-20	Pass
NVNT	2-DH5	2480	No-Hopping	-50.56	<=-20	Pass
NVNT	3-DH5	2402	No-Hopping	-47.56	<=-20	Pass
NVNT	3-DH5	2480	No-Hopping	-42.89	<=-20	Pass







RL 07:40:00 PM Apr 14, 2025 TRACE 1 2 3 4 5 Center Freq 2.480000000 GHz Avg Type: Log-Pwr Avg|Hold: 1000/1000 TYPE M Trig: Free Run PNO: Wide IFGain:Low #Atten: 30 dB Mkr1 2.480 136 GHz Ref Offset 2.52 dB Ref 22.52 dBm -2.938 dBm 10 dB/div 2.5 7 4 37 47.5 57. 67 Center 2.480000 GHz Span 8.000 MHz #VBW 300 kHz #Res BW 100 kHz Sweep 1.000 ms (1001 pts) **STATUS** na Band Edge NVNT 1-DH5 2480MHz No-Hopping Emission RL 09 PM Apr 14, 202 Avg Type: Log-Pwi Avg|Hold: 500/500 Center Freq 2.526000000 GHz TYPE M PNO: Fast ---- Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2,480 1 GHz Ref Offset 2.52 dB Ref 22.52 dBm -2.863 dBm 10 dB/div Log 1 0 $\langle \rangle^3$ Start 2.47600 GHz Stop 2.57600 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 9.600 ms (1001 pts) MKR MODE TRC SCL FUNCTION WIDTH 2.480 1 GHz 2.483 5 GHz 2.500 0 GHz 2.487 5 GHz -2.863 dBm -58.142 dBm -58.737 dBm -50.424 dBm ZZZZ 234567891011 TATUS SG

Band Edge NVNT 1-DH5 2480MHz No-Hopping Ref



nt Spectrum Analyzer - Swep RL RF 50 Q nter Freq 2.402000	AC	SENSE:INT J Vide → Trig: Free Low #Atten: 30	Run	N OFF Avg Type: Log- Avg Hold: 100/10	Pwr 00	TYPE	Apr 14, 2025
Ref Offset 2.56	dB		-		Mkr1	2.402 0	08 GHz 7 dBm
			1				
	_	man	m				
		J.	2				
		A					
	mm	w		hm			
	mon			V	lan a-		
man	10 10 10				a man	Month	www
er 2.402000 GHz BW 100 kHz		#VBW 300 kHz			S		000 MHz
5 DVV 100 KHZ		#VBVV 500 KH2			Sweep 1.	000 1115 (1	oo i pisj
				STATUS			
	dge NVNT	2-DH5 240			g Emis	sion	
nt Spectrum Analyzer - Swep L RF 50 ជ	AC DOOO GHz	SENSE:INT	2MHz No	-Hoppin	Pwr	07:47:42 PM TRACE	Apr 14, 2025
t Spectrum Analyzer - Swep . RF 50 g	AC	SENSE:INT	2MHz No Alig Run	-Hoppin	Pwr 00	07:47:42 PM TRACE TYPE DET	123456 MWWWWW PNNNNN
t Spectrum Analyzer - Swep RF 50 & ter Freq 2.356000 Ref Offset 2.56	AC PNO: 6 PNO: 6 IFGain: 6 dB	SENSE:INT	2MHz No Alig Run	-Hoppin	Pwr 00	07:47:42 PM TRACE TYPE DET 1 2.402	123456 MWWWWW PNNNNN
Spectrum Analyzer - Swep 8F 50 g er Freq 2.356000 Ref Offset 2.56	AC PNO: 6 PNO: 6 IFGain: 6 dB	SENSE:INT	2MHz No Alig Run	-Hoppin	Pwr 00	07:47:42 PM TRACE TYPE DET 1 2.402	
Spectrum Analyzer - Swep RF 50 & Ser Freq 2.356000 Ref Offset 2.56	AC PNO: 6 PNO: 6 IFGain: 6 dB	SENSE:INT	2MHz No Alig Run	-Hoppin	Pwr 00	07:47:42 PM TRACE TYPE DET 1 2.402	
t Spectrum Analyzer - Swep RF 50 & ter Freq 2.356000 Ref Offset 2.56	AC PNO: 6 PNO: 6 IFGain: 6 dB	SENSE:INT	2MHz No Alig Run	-Hoppin	Pwr 00	07:47:42 PM TRACE TYPE DET 1 2.402	
Spectrum Analyzer - Swep RF 50 & er Freq 2.356000 Ref Offset 2.56	AC PNO: 6 PNO: 6 IFGain: 6 dB	SENSE:INT	2MHz No Alig Run	-Hoppin	Pwr 00	07:47:42 PM TRACE TYPE DET 1 2.402	
t Spectrum Analyzer - Swep RF 50 & ter Freq 2.356000 Ref Offset 2.56	AC PNO: 6 PNO: 6 IFGain: 6 dB	SENSE:INT	2MHz No Alig Run	-Hoppin	Pwr 00	07:47:42 PM TRACE TYPE DET 1 2.402	
t Spectrum Analyzer - Swep	AC PNO: 6 PNO: 6 IFGain: 6 dB	SENSE:INT	2MHz No Alig Run	-Hoppin	Pwr 00	07:47:42 PM TRACE TYPE DET 1 2.402	
nt Spectrum Analyzer - Swep LL RF 50 Q Itter Freq 2.356000 B/div Ref 22.56 dl	AC PNO: 6 PNO: 6 IFGain: 6 dB	SENSE:INT	2MHz No	-Hoppin	Pwr Mki	07:47:42 PM TRYP TRYP CET 1 2.402 -5.85	0 GHz 5 dBm
IL Spectrum Analyzer - Swep L RF 50 @ Iter Freq 2.356000 B/div Ref 22.56 di B/div Ref 22.56 di C C C C C C C C C C C C C C C C C C C	x 2402 0 GHz	SENSE:INT ast → Trig: Free Low #Atten: 30 #Atten: 30 #Atten: 40 #Atten:	2MHz No	-Hoppin	Pwr 00 Mki	07:47:42 PM TRACE TYPH IET 12.402 -5.85 -5.75 -5.85 -5.75 -5.85 -5.95 -5.85 -5.55 -5.85 -5.55 -5.85 -5.5 -5.	0 GHz 5 dBm
Ref Offset 2.56 dl	AC	SENSE:INT ast → Trig: Free Low #Atten: 30 #Atten: 30 #VBW 300 kHz #VBW 300 kHz 5.855 dBm -48.561 dBm -48.561 dBm		-Hoppin	Pwr 00 Mki	07:47:42 PM TRACE TYPH IET 12.402 -5.85 -5.75 -5.85 -5.75 -5.85 -5.95 -5.85 -5.55 -5.85 -5.55 -5.85 -5.5 -5.	0 GHz 5 dBm
Ref Offset 2.56 dl B/F 50 0 ter Freq 2.356000 Ref Offset 2.56 B/div Ref 22.56 dl B/div Ref 22.56 dl B/div Ref 22.56 dl B/div Ref 22.56 dl B/B/D Ref 22.56 dl B/B/D Ref 22.56 dl B/B/D Ref 22.56 dl B/B/D Ref 22.56 dl B/D Ref 2.50 dl	AC PNO: 1 PNO: 1 IFGain: 5 dB Bm	SENSE:INT ast → Trig: Free Low #Atten: 30 #Atten: 30 #Atten: 40 #Atten:		-Hoppin	Pwr 00 Mki	07:47:42 PM TRACE TYPE TT 2.402 -5.85 -5.95 -5.85 -5.55 -5.85 -5.55 -5.85 -5.85 -5.5	0 GHz 5 dBm
Spectrum Analyzer - Swep RF 50 0 er Freq 2.356000 /div Ref 0ffset 2.56 /div Ref 22.56 di 2.30600 GHz BW 100 kHz 009 160 501 N f N f	AC	SENSE:INT ast → Trig: Free Low #Atten: 30 #Atten: 30 #VBW 300 kHz #VBW 300 kHz 5.855 dBm -48.561 dBm -48.561 dBm		-Hoppin	Pwr 00 Mki	07:47:42 PM TRACE TYPE TT 2.402 -5.85 -5.95 -5.85 -5.55 -5.85 -5.55 -5.85 -5.85 -5.5	0 GHz 5 dBm
Spectrum Analyzer - Swep RF 50 0 er Freq 2.356000 /div Ref 0ffset 2.56 /div Ref 22.56 di 2.30600 GHz BW 100 kHz 009 160 501 N f N f	AC	SENSE:INT ast → Trig: Free Low #Atten: 30 #Atten: 30 #VBW 300 kHz #VBW 300 kHz 5.855 dBm -48.561 dBm -48.561 dBm		-Hoppin	Pwr 00 Mki	07:47:42 PM TRACE TYPE TT 2.402 -5.85 -5.95 -5.85 -5.55 -5.85 -5.55 -5.85 -5.85 -5.5	0 GHz 5 dBm



nter Freq 2.4800	00000 GHz	D: Wide Trig: Fre ain:Low #Atten: 3			MApr 14, 2025 CE 1 2 3 4 5 6 /PE M M N N N DET P N N N N N
Ref Offset 2 B/div Ref 22.52	.52 dB			Mkr1 2.479	840 GHz 42 dBm
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month.				www.	www.ww
er 2.480000 GHz BW 100 kHz	<u>ن</u>	#VBW 300 kH	IZ.	Span Syan Sweep 1.000 ms	8.000 MHz (1001 pts)
			To STATUS		(
		T 2-DH5 248	tostatus 80MHz No-Hoppin		(**** ===,
t Spectrum Analyzer - Si RF 50	wept SA	T 2-DH5 248			MApr 14, 2025 CE 1 2 3 4 5 6
Spectrum Analyzer - So RF 50	R AC 00000 GHz		BOMHz No-Hoppin	g Emission	MApr 14, 2025 ICE 1 2 3 4 5 6 PE MINNINN ET P NNNNN
Spectrum Analyzer - So RF 50 : er Freq 2.5260 Ref Offset 2	AC AC PN IFG	SENSE:INT O: Fast →→ Trig: Fre	BOMHz No-Hoppin	g Emission	MApr 14, 2025 ICE 1 2 3 4 5 6 PE MINNINN ET P NNNNN
Spectrum Analyzer - So RF 50 cer Freq 2.5260 Ref Offset 2	AC AC PN IFG	SENSE:INT O: Fast →→ Trig: Fre	BOMHz No-Hoppin	g Emission	MApr 14, 2025 CE 12 3 4 5 6 PE M NN NN 0 0 GHZ
Spectrum Analyzer - So RF 50 er Freq 2.5260 Ref Offset 2	AC AC PN IFG	SENSE:INT O: Fast →→ Trig: Fre	BOMHz No-Hoppin	g Emission	MApr 14, 2025 CE 12 3 4 5 6 PE M NN NN 0 0 GHZ
t Spectrum Analyzer - Si RF 50 ter Freq 2.5260 Ref Offset 2	AC AC PN IFG	SENSE:INT O: Fast →→ Trig: Fre	BOMHz No-Hoppin	g Emission	MApr 14, 2025 CE 12 3 4 5 6 PPE M MANAGE M MANAGE M M MANAGE M M M M M M M M M M M M M M M M M M M
t Spectrum Analyzer - Si RF 50 ter Freq 2.5260 Ref Offset 2	AC AC PN IFG	SENSE:INT O: Fast →→ Trig: Fre	BOMHz No-Hoppin	g Emission	MApr 14, 2025 CE 12 3 4 5 6 PE M NN NN 0 0 GHZ
nt Spectrum Analyzer - Si L RF So Iter Freq 2.5260 Ref Offset 2	AC AC PN IFG	SENSE:INT O: Fast →→ Trig: Fre	BOMHz No-Hoppin	g Emission	MApr 14, 2025 CE 12 3 4 5 6 PPE M MANAGE M MANAGE M M MANAGE M M M M M M M M M M M M M M M M M M M
t Spectrum Analyzer - Si RF 50 ter Freq 2.5260 Ref Offset 2	AC AC PN IFG	SENSE:INT O: Fast →→ Trig: Fre	BOMHz No-Hoppin	g Emission	MApr 14, 2025 CE 12 3 4 5 6 PPE M MANAGE M MANAGE M M MANAGE M M M M M M M M M M M M M M M M M M M
Ref Offset 2 3/div Ref Offset 2 3/div Ref 22.52 1 1	AC AC PN IFG	SENSE:INT 0: Fast \rightarrow Trig: Fre #Atten: 3	BOMHz No-Hoppin	g Emission	Mapr 14, 2025 CE 23 4 5 6 Free Multitude Free Multitude 47 dBm -25 74 dBm 7600 GHz
Ref Offset 2 B/div Ref Offset 2 B/div Ref 22.52 Image: state sta	x	SENSE:INT O: Fast Trig: Fre ain:Low #Atten: 3	BOMHz No-Hoppin	g Emission	Mapr 14, 2025 CE 23 4 5 6 Free Multitude Free Multitude 47 dBm -25 74 dBm 7600 GHz
Spectrum Analyzer - S SP SO SP SO SO SO Iter Freq 2.5260 Ref Offset 2 SO SO SO Sddiv Ref Offset 2 SO	x 2.480 0 GHz 2.483 5 GHz	SENSE:INT 0: Fast → Trig: Fre ain:Low #Atten: 3 #Atten: 3 #VBW 300 kH × 8 -5.347 dBm -57.514 dBm	BOMHz No-Hoppin	g Emission	Mapr 14, 2025 CE 3 4 5 6 ref Minute 4 ref Minute 4 47 dBm -25 74 dBm 7600 GHz
Spectrum Analyzer - S RF 90 Ref Offset 2 Mdiv Ref 22.52 1 1 2.47600 GHz BW 100 kHz 1 1 1 1 1 1 1 1 1 1 1 1 1	xept SA AC 00000 GHz PN IFG C52 dB dBm 3 2.480 0 GHz	SENSE:INT 0: Fast → Trig: Fre ain:Low #Atten: 3 #Atten: 3 #VBW 300 kH YVBW 300 kH	BOMHz No-Hoppin	g Emission	Mapr 14, 2025 CE 23 4 5 6 Free Multitude Free Multitude 47 dBm -25 74 dBm 7600 GHz
Spectrum Analyzer - S R# R# S00 Ster Freq 2.5260 Ref Offset 2 Set 2.52	Wept SA P AC 000000 GHz PN IFG :52 dB dBm 2.52 dB 2.480 0 GHz 2.480 0 GHz 2.483 5 GHz 2.483 5 GHz 2.480 0 GHz	SENSE:INT 0: Fast ain:Low → Trig: Fre #Atten: 3 #Atten: 3 #VBW 300 kH 5.347 dBm 57.514 dBm 57.514 dBm	BOMHz No-Hoppin	g Emission	Mapr 14, 2025 CE 3 4 5 6 ref Minute 4 ref Minute 4 47 dBm -25 74 dBm 7600 GHz
Spectrum Analyzer - S 8F 90 er Freq 2.5260 /div Ref 22.52 2.47600 GHz BW 100 kHz 009 100 Set	Wept SA P AC 000000 GHz PN IFG :52 dB dBm 2.52 dB 2.480 0 GHz 2.480 0 GHz 2.483 5 GHz 2.483 5 GHz 2.480 0 GHz	SENSE:INT 0: Fast ain:Low → Trig: Fre #Atten: 3 #Atten: 3 #VBW 300 kH 5.347 dBm 57.514 dBm 57.514 dBm	BOMHz No-Hoppin	g Emission	Mapr 14, 2025 CE 23 4 5 6 Free Multitude Free Multitude 47 dBm -25 74 dBm 7600 GHz

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L RF 501 Iter Freq 2.4020	00000 GHz	SENSE:INT I: Wide Trig: Free sin:Low #Atten: 30	Run Avg Hold	e: Log-Pwr I: 100/100	07:59:49 PM Apr 14, 2025 TRACE 1 2 3 4 5 6 TYPE M WWWWWW DET P N N N N
Ref Offset 2 B/div Ref 22.56				Mkr	2.402 072 GHz -7.232 dBm
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	and the	M.N.	10.4	m n	
monor	mmm/			mon	mannon
ter 2.402000 GHz	,				Span 8.000 MHz
Band	Edae NVN	T 3-DH5 2402	STATUS 2MHz No-Hot	opina Emis	ssion
Spectrum Analyzer - Sv RF 50 s	R AC 00000 GHz	SENSE:INT	2MHz No-Hop	e: Log-Pwr	07:59:52 PMApr 14, 2025 TRACE 3 4 5 6 TYPE M WWWWWW
t Spectrum Analyzer - Sv RF 50 1 ter Freq 2.3560 Ref Offset 2	wept SA R AC 000000 GHz PNI IFGa .56 dB	SENSE:INT	2MHz No-Hop	e: Log-Pwr I: 100/100	07:59:52 PMApr 14, 2025 TRACE 1 2 3 4 5 6 TYPE MUMANAN
At Spectrum Analyzer - Sv RF 50 1 Ster Freq 2.3560 Ref Offset 2	AC PNI AC PNI PNI FG	SENSE:INT	2MHz No-Hop	e: Log-Pwr I: 100/100	07:59:52 PMApr 14, 2025 TRACE 2 3 4 5 6 TYPE M WANNAW DET P NN NN N Kr1 2.402 0 GHz
At Spectrum Analyzer - Sv RF 50 1 Ster Freq 2.3560 Ref Offset 2	AC PNI AC PNI PNI FG	SENSE:INT	2MHz No-Hop	e: Log-Pwr I: 100/100	07:59:52 PMApr 14, 2025 TRACE 2 3 4 5 6 TYPE M WANNAW DET P NN NN N Kr1 2.402 0 GHz
At Spectrum Analyzer - Sv RF 50 1 Ster Freq 2.3560 Ref Offset 2	AC PNI AC PNI PNI FG	SENSE:INT	2MHz No-Hop	e: Log-Pwr I: 100/100	07:59:52 PMApr 14, 2025 TRACE 2 3 4 5 6 TYPE M WANNAW DET P NN NN N Kr1 2.402 0 GHz
At Spectrum Analyzer - Sv RF 50 1 Ster Freq 2.3560 Ref Offset 2	AC PNI AC PNI PNI FG	SENSE:INT	2MHz No-Hop	e: Log-Pwr I: 100/100	07:59:52 PMApr 14, 2025 TRACE 2 3 4 5 6 TYPE M WANNAW DET P NN NN N Kr1 2.402 0 GHz
At Spectrum Analyzer - Sv RF 50 1 Ster Freq 2.3560 Ref Offset 2	AC PNI AC PNI PNI FG	SENSE:INT	2MHz No-Hop	e: Log-Pwr I: 100/100	07:59:52 PMApr 14, 2025 TRACE 2 3 4 5 6 TYPE M WANNAW DET P NN NN N Kr1 2.402 0 GHz
Ref Offset 2 B/div Ref 22.56	AC PNI AC PNI PNI FG	SENSE:INT	2MHz No-Hop	e: Log-Pwr I: 100/100	07:59:52 PMApr 14, 2025 TRACE 3 4 5 6 TYPE M MUMMUM DET P NERMAN kr1 2.402 0 GHz -6.304 dBm
Ref Offset 2 B/div Ref 22.56	AC PNI AC PNI PNI FG	SENSE:INT	2MHz No-Hop	e: Log-Pwr : 100/100	07:59:52 PMApr 14, 2025 TRACE 2 3 4 5 6 TYPE M WANNAW DET P NN NN N Kr1 2.402 0 GHz
Ref Offset 2 B/div Ref 22.56	Wept SA P AC 000000 GHz PNI PRI 2.56 dB dBm dBm 0	SENSE:INT	2MHz No-Hop	e: Log-Pwr 1: 100/100	07:59:52 PMApr 14, 2025 TRACE 34.5 6 TYPE M MINIMUM DET P MINIMUM Kr1 2.402 0 GHz -6.304 dBm
Ref Offset 2 B/div Ref 22.56	x	SENSE:INT D: Fast Trig: Free #Atten: 30		e: Log-Pwr :: 100/100	07:59:52 PMApr 14, 2025 TRACE 34.5 6 TYPE M MINIMUM DET P MINIMUM Kr1 2.402 0 GHz -6.304 dBm
t Spectrum Analyzer - Sv ter Freq 2.3560 Ref Offset 2 B/div Ref 22.56 trace 2.3560 Ref Offset 2 b/div Ref 22.56 trace 2.35600 Ref Offset 2 Ref Offset 2 B/div Ref 22.56 trace 2.35600 Ref Offset 2 B/div Ref 22.56 trace 2.35600 Ref Offset 2 Ref Offset 2 B/div Ref 22.56 Trace 2.35600 Ref Offset 2 Frace 2.35600 Ref Ref Ref Ref Ref Ref Ref Ref Ref Ref	X X	SENSE:INT D: Fast in: Low #Atten: 30 #VBW 300 kHz *VBW 300 kHz * 58:84 dBm -55:834 dBm		e: Log-Pwr :: 100/100	07:59:52 PMApr 14, 2025 TRACE 34.5 6 TYPE M MINIMUM DET P MINIMUM Kr1 2.402 0 GHz -6.304 dBm
t Spectrum Analyzer - Sv ter Freq 2.3560 Ref Offset 2 B/div Ref 22.56 trace 2.3560 Ref Offset 2 b/div Ref 22.56 trace 2.35600 Ref Offset 2 Ref Offset 2 B/div Ref 22.56 trace 2.35600 Ref Offset 2 B/div Ref 22.56 trace 2.35600 Ref Offset 2 Ref Offset 2 B/div Ref 22.56 Trace 2.35600 Ref Offset 2 Frace 2.35600 Ref Ref Ref Ref Ref Ref Ref Ref Ref Ref	X X	SENSE:INT D: Fast in: Low #Atten: 30 #VBW 300 kHz *VBW 300 kHz * 58:84 dBm -55:834 dBm		e: Log-Pwr :: 100/100	07:59:52 PMApr 14, 2025 TRACE 34.5 6 TYPE M MINIMUM DET P MINIMUM Kr1 2.402 0 GHz -6.304 dBm



nt Spectrum Analyzer - RL RF 5 nter Freq 2.480	DA AC	SENSE:INT		ALIGN OFF Avg Type: Log-Pwr	T	PM Apr 14, 2025 RACE 1 2 3 4 5 6
	PN		Free Run en: 30 dB	Avg Hold: 100/100		DET P NNNNN
Idiv Ref 22.5					Mkr1 2.480 -7.	112 GHz 031 dBm
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2.480000 GH	łz					8.000 MHz
BW 100 kHz		#VBW 300				
		# 1DH 000	KHZ	SV STATUS	veep 1.000 m	s (1001 pts)
Band	l Edge NVN					s (1001 pts)
Spectrum Analyzer - RF 5	Swept SA		480MHz	No-Hopping	Emission	7 PM Apr 14, 2025
Spectrum Analyzer - RF 5	Swept SA 0 g AC 0 0000000 GHz Ph	T 3-DH5 24	480MHz	Ko-Hopping	Emission	
Spectrum Analyzer - RF 5 Br Freq 2.526 Ref Offset	Swept SA 0 R AC 0000000 GHz PN IFG 2.52 dB	T 3-DH5 24	480MHz	NO-HOPPING	Emission	PMApr 14, 2025 RACE 1 2 3 4 5 6 TYPE MWANNAN DET P N N N N 79 8 GHz
Spectrum Analyzer - RF 5 er Freq 2.526 Ref Offset	Swept SA 0 R AC 0000000 GHz PN IFG 2.52 dB	T 3-DH5 24	480MHz	NO-HOPPING	Emission	PMApr 14, 2025 TACE 1 2 3 4 5 6 TYPE MUMMUM DET P NNNNN
Spectrum Analyzer - RF 5 er Freq 2.526 Ref Offset	Swept SA 0 R AC 0000000 GHz PN IFG 2.52 dB	T 3-DH5 24	480MHz	NO-HOPPING	Emission	PMApr 14, 2025 RACE 1 2 3 4 5 6 TYPE MWANNAN DET P N N N N 79 8 GHz
Spectrum Analyzer - RF 5 Br Freq 2.526 Ref Offset	Swept SA 0 R AC 0000000 GHz PN IFG 2.52 dB	T 3-DH5 24	480MHz	NO-HOPPING	Emission	PMApr 14, 2025 RACE 1 2 3 4 5 6 TYPE MWANNAN DET P N N N N 79 8 GHz
Spectrum Analyzer - RF 5 Br Freq 2.526 Ref Offset	Swept SA 0 R AC 0000000 GHz PN IFG 2.52 dB	T 3-DH5 24	480MHz	NO-HOPPING	Emission	PMApr 14, 2025 RACE 1 2 3 4 5 6 TYPE MWANNAN DET P N N N N 79 8 GHz
t Spectrum Analyzer - RF 5 ter Freq 2.526 Ref Offset	Swept SA D Q AC D Q AC D Q OODOOO GHz PP IFG 2.52 dB 2 dBm	T 3-DH5 24	480MHz	NO-HOPPING	Emission	PMApr 14, 2025 FACE 12 3 4 5 6 TYPE MANNAND DET P NNNN 79 8 GHz 921 dBm
Spectrum Analyzer - RF 5 er Freq 2.526 Ref Offset	Swept SA 0 R AC 0000000 GHz PN IFG 2.52 dB	T 3-DH5 24	480MHz	NO-HOPPING	Emission	PMApr 14, 2025 FACE 12 3 4 5 6 TYPE MANNAND DET P NNNN 79 8 GHz 921 dBm
Spectrum Analyzer	Swept SA D Q AC D Q AC D Q OODOOO GHz PP IFG 2.52 dB 2 dBm	T 3-DH5 24	480MHz	NO-HOPPING	Emission 08:02:3" Mkr1 2.4 -6.	PMApr 14, 2025 WCE 112 3 + 5 6 TYPE M WWWWWW T9 8 GHz 921 dBm -27 03 dBm
Ref Offset Ref 2.526	Swept SA D Q AC D Q AC D Q OODOOO GHz PP IFG 2.52 dB 2 dBm	T 3-DH5 24	480MHz	Auton off Avg Type: Log-Pwr AvgHold: 100/100	Emission 08:02:3" Mkr1 2.4 -6.	PMAgr 14, 2025 PACE 12 3 4 5 6 TYPE MANNUM PTP NN NN N 79 8 GHz 921 dBm -27 03 dBm -27 03 dBm
Ref Offset Ref Offset Ref 2.526	Swept SA D & AC 000000 GHz PP IFG 2.52 dB 2 dBm 2 dBm	T 3-DH5 2. SENSE:INT 10: Fast → Trig: ain:Low → #Atte #VBW 300 6:921 dBm	480MHz	Auton off Avg Type: Log-Pwr AvgHold: 100/100	Emission	PMAgr 14, 2025 PACE 12 3 4 5 6 TYPE MANNUM PTP NN NN N 79 8 GHz 921 dBm -27 03 dBm -27 03 dBm
t Spectrum Analyzer	Swept SA 0 Q AC 0 Q OOD OO GHz PP IF G 2.52 dB 2 dBm 2 dBm 2 dBm 2 dBm	T 3-DH5 24	480MHz	No-Hopping	Emission 08:02:3 Mkr1 2.4 -6. -5. -5. -5. -5. -5. -5. -5. -5. -5. -5	PMAgr 14, 2025 PACE 12 3 4 5 6 TYPE MANNUM PTP NN NN N 79 8 GHz 921 dBm -27 03 dBm -27 03 dBm
Spectrum Analyzer - RF S ter Freq 2.526 Mdiv Ref Offset Ref Offset Ref 22.5 1 2 4 4 4 4 5 5 5 6 6 6 6 6 6 6 6 6 6 6 6 6	Swept SA D Q AC D Q AC D Q AC P P IFG 2.52 dB 2 dBm 3 4 2 dBm 4 2 dBm 4 2 dBm 4 2 dBm 4 2 dBm 4 2 dBm 4 4 2 dBm 4 4 4 4 4 4 4 4 4 4 4 4 4	T 3-DH5 24	480MHz	No-Hopping	Emission 08:02:3 Mkr1 2.4 -6. -5. -5. -5. -5. -5. -5. -5. -5. -5. -5	PMAgr 14, 2025 PACE 12 3 4 5 6 TYPE MANNUM PTP NN NN N 79 8 GHz 921 dBm -27 03 dBm -27 03 dBm
Spectrum Analyzer	Swept SA 0 Q AC 0 Q OOD OO GHz PP IF G 2.52 dB 2 dBm 2 dBm 2 dBm 2 dBm	T 3-DH5 24	480MHz	No-Hopping	Emission 08:02:3 Mkr1 2.4 -6. -5. -5. -5. -5. -5. -5. -5. -5. -5. -5	PMAgr 14, 2025 PACE 12 3 4 5 6 TYPE MANNUM PTP NN NN N 79 8 GHz 921 dBm -27 03 dBm -27 03 dBm
Ref Offset Ref Offset div Ref 2.526	Swept SA 0 Q AC 0 Q OOD OO GHz PP IF G 2.52 dB 2 dBm 2 dBm 2 dBm 2 dBm	T 3-DH5 24	480MHz	No-Hopping	Emission 08:02:3 Mkr1 2.4 -6. -5. -5. -5. -5. -5. -5. -5. -5. -5. -5	PMAgr 14, 2025 PACE 12 3 4 5 6 TYPE MANNUM PTP NN NN N 79 8 GHz 921 dBm -27 03 dBm -27 03 dBm



Band Edge(Hopping)

Condition	Mode	Frequency (MHz)	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Hopping	-51	<=-20	Pass
NVNT	1-DH5	2480	Hopping	-54.22	<=-20	Pass
NVNT	2-DH5	2402	Hopping	-52.69	<=-20	Pass
NVNT	2-DH5	2480	Hopping	-54.35	<=-20	Pass
NVNT	3-DH5	2402	Hopping	-53.19	<=-20	Pass
NVNT	3-DH5	2480	Hopping	-54.65	<=-20	Pass







nt Spectrum Analyzer - Swept L ℝF 50 Ω nter Freq 2.480000	AC 000 GHz	SENSE:INT	ALIGN OFF Avg Type: Log-Pwr Avg Hold: 2000/2000	07:44:52 PM Apr 14, 2025 TRACE 1 2 3 4 5 6 TYPE IM WARMAN
D. 405	PNO: Wide IFGain:Lov			TYPE MWWWWW DET P NNNNN Vkr1 2.477 936 GHz
Ref Offset 2.52 B/div Ref 22.52 dB				-1.570 dBm
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1 / h	Nh f			
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			hm	
			~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	A monoral where
r 2.480000 GHz				Span 8.000 MHz
BW 100 kHz		#VBW 300 kHz	Curre	
				ep 1.000 ms (1001 pts)
Dond Edge			STATUS	
Spectrum Analyzer - Swept RF 50 Q	SA AC 000 GHz	VNT 1-DH5 2	480MHz Hoppin	g Emission
Spectrum Analyzer - Swept RF 50 Q	SA AC	VNT 1-DH5 2		g Emission 07:45:09 PMAger 14, 2025 TRACE TYPE MANNIN DET PHANNIN
Spectrum Analyzer - Swept RF 50 Ω Br Freq 2.526000 Ref Offset 2.52	AC DOO GHZ PNO: Fast IFGain:Lov	VNT 1-DH5 2	480MHz Hoppin	g Emission 07:45:09 PM Apr 14, 2025 TRACE
Spectrum Analyzer - Swept RF 50 Ω ST Freq 2.526000 Ref Offset 2.52	AC DOO GHZ PNO: Fast IFGain:Lov	VNT 1-DH5 2	480MHz Hoppin	g Emission 07:45:09 PM Agr 14, 2025 TRACE 12:34 5 6 TYPE MININ N DET P MININ N Mkr1 2.479 0 GHz
Spectrum Analyzer - Swept 87 50 ♀ er Freq 2.526000 Ref Offset 2.52	AC DOO GHZ PNO: Fast IFGain:Lov	VNT 1-DH5 2	480MHz Hoppin	g Emission 07:45:09 PM Agr 14, 2025 TRACE 12:34 5 6 TYPE MININ N DET P MININ N Mkr1 2.479 0 GHz
Spectrum Analyzer - Swept 8F 50 ♀ er Freq 2.526000 Ref Offset 2.52	AC DOO GHZ PNO: Fast IFGain:Lov	VNT 1-DH5 2	480MHz Hoppin	g Emission 07:45:09 PM Agr 14, 2025 TRACE 12:34 5 6 TYPE MININ N DET P MININ N Mkr1 2.479 0 GHz
Spectrum Analyzer - Swept 87 50 ♀ er Freq 2.526000 Ref Offset 2.52	AC DOO GHZ PNO: Fast IFGain:Lov	VNT 1-DH5 2	480MHz Hoppin	g Emission 07:45:09 PM Agr 14, 2025 TRACE 12:34 5 6 TYPE MININ N DET P MININ N Mkr1 2.479 0 GHz
Ref         Offset 2.52         Generation           Ref         Offset 2.52         Generation         Generation <t< td=""><td>SA AC 000 GHz 0 PNO: Fast IFGain:Lox dB Bm</td><td>VNT 1-DH5 2</td><td>480MHz Hoppin</td><td>g Emission 07:45:09 PM Agr 14, 2025 TRACE 12:34 5 6 TYPE MININ N DET P MININ N Mkr1 2.479 0 GHz</td></t<>	SA AC 000 GHz 0 PNO: Fast IFGain:Lox dB Bm	VNT 1-DH5 2	480MHz Hoppin	g Emission 07:45:09 PM Agr 14, 2025 TRACE 12:34 5 6 TYPE MININ N DET P MININ N Mkr1 2.479 0 GHz
Spectrum Analyzer - Swept 87 50 ♀ er Freq 2.526000 Ref Offset 2.52	SA AC 000 GHz 0 PNO: Fast IFGain:Lov dB Bm	VNT 1-DH5 2	480MHz Hoppin	g Emission 07:45:09 PM Agr 14, 2025 TRACE 12:34 5 6 TYPE MININ N DET P MININ N Mkr1 2.479 0 GHz
Espectrum Analyzer - Swept RF SO 0 ter Freq 2.526000 Ref Offset 2.52 Ref 22.52 dE	SA AC 000 GHz 0 PNO: Fast IFGain:Lox dB Bm	VNT 1-DH5 2	480MHz Hoppin	g Emission 07:45:09 PMaer 14, 2025 TRACE 13 3 4 5 6 TYPE MAXWARD DEF P MARY NA Mkr1 2,479 0 GHz -2.318 dBm
Spectrum Analyzer - Swept 8F 90 2 er Freq 2.526000 /div Ref Offset 2.52 dE 1 2.47600 GHz	SA AC 000 GHz PNO: Fast IFGain:Lox dB Sm	VNT 1-DH5 2	2480MHz Hoppin	g Emission 07:45:09 PM Agr 14, 2025 TRACE 12:34 5 6 TYPE MININ N DET P MININ N Mkr1 2.479 0 GHz
t Spectrum Analyzer - Swept	SA AC DOO GHZ PNO: Fast IF Gain: Lov dB Sm	VNT 1-DH5 2           SENSE:INT            Image: mail of the sense in t	2480MHz Hoppin	g Emission 07:45:09 PMage 14, 2025 TRACE 3 4 5 6 TYPE MARKING 3 4 5 7 5 7 5 7 5 7 5 7 5 7 5 7 5 7 5 7 5
Spectrum Analyzer - Swept RF   50 G ier Freq 2.526000 Ref Offset 2.52 dE Mdiv Ref 22.52 dE 2.52 dE 2.47600 GHz 5 BW 100 kHz 2.52 BW 100 kHz 5.52 BW	SA AC D000 GHz PN0: Fast IFGain:Lov dB Sm 4 2.479 0 GHz 2.479 0 GHz 2.433 5 GHz 2.500 0 GHz 5 5.500 GHz 5	VNT 1-DH5 2           SENSE:INT           Image: SENSE:INT           Image: Trig: Free Run #Atten: 30 dB           Image: Sense: Sense	2480MHz Hoppin ALION OFF Avg Type: Log-Pwr Avg Hold: 1000/1000	g Emission 07:45:09 PMaer 14, 2025 TRACE 11:3 4 5 6 TYPE MAAANA DEEP PLATER MAAANA Mkr1 2.479 0 GHz -2.318 dBm -37 57888 Stop 2.57600 GHz ep 9.600 ms (1001 pts)
Spectrum Analyzor - Swept 87 90 2 197 90 2 197 90 2 197 9 197 9 19	SA AC D000 GHz PN0: Fast IFGain:Lov dB Sm 4 2.479 0 GHz 2.479 0 GHz 2.433 5 GHz 2.500 0 GHz 5 5.500 GHz 5	VNT 1-DH5 2           SENSE:INT            t → Trig: Free Run #Atten: 30 dB           # → WHATEN: 30 dB           # VBW 300 kHz           * VBW 300 kHz           * PUNCTION           8.579 dBm	2480MHz Hoppin ALION OFF Avg Type: Log-Pwr Avg Hold: 1000/1000	g Emission 07:45:09 PMaer 14, 2025 TRACE 11:3 4 5 6 TYPE MAAANA DEEP PLATER MAAANA Mkr1 2.479 0 GHz -2.318 dBm -37 57888 Stop 2.57600 GHz ep 9.600 ms (1001 pts)
Spectrum Analyzer - Swept RF   50 G ier Freq 2.526000 Ref Offset 2.52 dE Mdiv Ref 22.52 dE 2.52 dE 2.47600 GHz 5 BW 100 kHz 2.52 BW 100 kHz 5.52 BW	SA AC D000 GHz PN0: Fast IFGain:Lov dB Sm 4 2.479 0 GHz 2.479 0 GHz 2.433 5 GHz 2.500 0 GHz 5 5.500 GHz 5	VNT 1-DH5 2           SENSE:INT           Image: SENSE:INT           Image: Trig: Free Run #Atten: 30 dB           Image: Sense: Sense	2480MHz Hoppin ALION OFF Avg Type: Log-Pwr Avg Hold: 1000/1000	g Emission 07:45:09 PMaer 14, 2025 TRACE 11:3 4 5 6 TYPE MAAANA DEEP PLATER MAAANA Mkr1 2.479 0 GHz -2.318 dBm -37 57888 Stop 2.57600 GHz ep 9.600 ms (1001 pts)
Spectrum Analyzer - Swept           RF         150 R           Pr         Freq 2.526000           div         Ref Offset 2.52 dE           div         Ref 22.52 dE           2         2           2         2           2         2           2         2           3         1           4         1           5         1           4         1           5         100 kHz	SA AC D000 GHz PN0: Fast IFGain:Lov dB Sm 4 2.479 0 GHz 2.479 0 GHz 2.433 5 GHz 2.500 0 GHz 5 5.500 GHz 5	VNT 1-DH5 2           SENSE:INT           Image: SENSE:INT           Image: Trig: Free Run #Atten: 30 dB           Image: Sense: Sense	2480MHz Hoppin ALION OFF Avg Type: Log-Pwr Avg Hold: 1000/1000	g Emission 07:45:09 PMaer 14, 2025 TRACE 11:3 4 5 6 TYPE MAAANA DEEP PLATER MAAANA Mkr1 2.479 0 GHz -2.318 dBm -37 57888 Stop 2.57600 GHz ep 9.600 ms (1001 pts)
Ref Offset 2.52         Ref Offset 2.52           W         Ref Offset 2.52           W         Ref 22.52           M         Ref 22.52	SA AC D000 GHz PN0: Fast IFGain:Lov dB Sm 4 2.479 0 GHz 2.479 0 GHz 2.433 5 GHz 2.500 0 GHz 5 5.500 GHz 5	VNT 1-DH5 2           SENSE:INT           Image: SENSE:INT           Image: Trig: Free Run #Atten: 30 dB           Image: Sense: Sense	2480MHz Hoppin ALION OFF Avg Type: Log-Pwr Avg Hold: 1000/1000	g Emission 07:45:09 PMaer 14, 2025 TRACE 11:3 4 5 6 TYPE MAAANA DEEP PLATER MAAANA Mkr1 2.479 0 GHz -2.318 dBm -37 57888 Stop 2.57600 GHz ep 9.600 ms (1001 pts)



Ref 22.56 dBm Ref 22.56 dBm Ref 22.56 dBm	
2.402000 GHz W 100 kHz #VBW 300 kHz Sweep Status Band Edge(Hopping) NVNT 2-DH5 2402MHz Hopping trum Analyzer - Swept SA SF 50 & AC Freq 2.356000000 GHz PN0: Fast → Trig: Free Run IFGain:Low #Atten: 30 dB	p 1.000 ms (1001 pts) Emission
2.402000 GHz W 100 kHz #VBW 300 kHz Sweep Status Band Edge(Hopping) NVNT 2-DH5 2402MHz Hopping trum Analyzer - Swept SA SF 50 & AC Freq 2.356000000 GHz PN0: Fast → Trig: Free Run IFGain:Low #Atten: 30 dB	p 1.000 ms (1001 pts) Emission
2.402000 GHz W 100 kHz #VBW 300 kHz Sweep Status Band Edge(Hopping) NVNT 2-DH5 2402MHz Hopping trum Analyzer - Swept SA SF 50 & AC Freq 2.356000000 GHz PN0: Fast → Trig: Free Run IFGain:Low #Atten: 30 dB	p 1.000 ms (1001 pts) Emission
2.402000 GHz W 100 kHz #VBW 300 kHz Sweep Status Band Edge(Hopping) NVNT 2-DH5 2402MHz Hopping trum Analyzer - Swept SA SF 50 & AC Freq 2.356000000 GHz PN0: Fast → Trig: Free Run IFGain:Low #Atten: 30 dB	p 1.000 ms (1001 pts) Emission
2.402000 GHz W 100 kHz #VBW 300 kHz Sweep Status Band Edge(Hopping) NVNT 2-DH5 2402MHz Hopping trum Analyzer - Swept SA SF 50 & AC Freq 2.356000000 GHz PN0: Fast → Trig: Free Run IFGain:Low #Atten: 30 dB	p 1.000 ms (1001 pts) Emission
2.402000 GHz W 100 kHz #VBW 300 kHz Sweep Status Band Edge(Hopping) NVNT 2-DH5 2402MHz Hopping trum Analyzer - Swept SA SF 50 & AC Freq 2.356000000 GHz PN0: Fast → Trig: Free Run IFGain:Low #Atten: 30 dB	p 1.000 ms (1001 pts) Emission
N 100 kHz #VBW 300 kHz Swee Status Band Edge(Hopping) NVNT 2-DH5 2402MHz Hopping trum Analyzer - Swept SA BF 90 Q AC SUBSEINT Freq 2.356000000 GHz PN0: Fast → Trig: Free Run IFGain:Low #Atten: 30 dB	p 1.000 ms (1001 pts) Emission
N 100 kHz #VBW 300 kHz Swee Status Band Edge(Hopping) NVNT 2-DH5 2402MHz Hopping trum Analyzer - Swept SA BF 90 Q AC SUBSEINT Freq 2.356000000 GHz PN0: Fast → Trig: Free Run IFGain:Low #Atten: 30 dB	p 1.000 ms (1001 pts) Emission
Band Edge(Hopping) NVNT 2-DH5 2402MHz Hopping	
RF       S0 R       AC       SENSE:INT       ALIGN OFF         Freq 2.356000000 GHz       Trig: Free Run IFGain:Low       Trig: Free Run #Atten: 30 dB       Avg Hold: 1000/1000	
PNO: Fast ++ Trig: Free Run Avg Hold: 1000/1000 IFGain:Low #Atten: 30 dB	07:53:35 PM Apr 14, 2025 TRACE 1 2 3 4 5 6
D. COT. 10 CO. 10	DET P NNNN
Ref Offset 2.56 dB Ref 22.56 dBm	Mkr1 2.404 0 GHz -3.335 dBm
	<b>\</b>
	-20.53 dBn
	12
• . • . • . • . • . • . • . • . • . • .	and 3 and a for
30600 GHz N 100 kHz #VBW 300 kHz Sweet	Stop 2.40600 GHz 9.600 ms (1001 pts)
TRC SCL         X         Y         FUNCTION         FUNCTION WADTH         FI           1         f         2.404 0 GHz         -3.335 dBm         FUNCTION WADTH         FI           1         f         2.400 0 GHz         -52.490 dBm         FUNCTION WADTH         FI           1         f         2.390 0 GHz         -58.828 dBm         FUNCTION WADTH         FUNCTION WADTH           1         f         2.390 0 GHz         -58.828 dBm         FUNCTION WADTH         FUNCTION WADTH           1         f         2.379 8 GHz         -56.322 dBm         FUNCTION WADTH         FUNCTION WADTH	UNCTION VALUE
<b>D</b> ostatus	, ^v



etrum Analyzer - Swe RF 50 ฉ Freq 2.48000	AC 0000 GHz P		rig: Free Run Atten: 30 dB	ALIGN OFF Avg Type: Lo Avg Hold: 200		07:56:2 T	1 PM Apr 14, 2025 RACE 1 2 3 4 5 6 TYPE MWANNAN DET P NNNNN
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		g) NVNT :	^{00 кн} г 2-DH5 2	Kostatus 480MHz Ho			s (1001 pts) ON
RF 50 Q	AC AC 0000 GHz	SENSE	2-DH5 2	-	pping E	Emissi	ON 8 PM Apr 14, 2025 RACE 1 2 3 4 5 6
Pectrum Analyzer - Swe RF 50 Ω Pr Freq 2.52600 Ref Offset 2.5	pt SA AC 00000 GHz IF 2 dB	SENSE	2-DH5 2	480MHz Ho	pping E	Emissi	ON 8 PM Apr 14, 2025
Pestrum Analyzer - Swe RF 50 Ω r Freq 2.52600 Ref Offset 2.5	pt SA AC 00000 GHz IF 2 dB	SENSE	2-DH5 2	480MHz Ho	pping E	Emissi	ON RACE 14,2025 RACE 14,2025 DET P
Pectrum Analyzer - Swe RF 50 Ω Pr Freq 2.52600 Ref Offset 2.5	pt SA AC 00000 GHz IF 2 dB	SENSE	2-DH5 2	480MHz Ho	pping E	Emissi	ON RACE 14,2025 RACE 14,2025 DET P
Spectrum Analyzer - Swe RF 50 Ω Ser Freq 2.52600 Ref Offset 2.5	pt SA AC 00000 GHz IF 2 dB	SENSE	2-DH5 2	480MHz Ho	pping E	Emissi	ON RACE 14,2025 RACE 14,2025 DET P
Spectrum Analyzer - Swe RF 50 Ω Br Freq 2.52600 Ref Offset 2.5	pt SA AC 00000 GHz IF 2 dB	SENSE	2-DH5 2	480MHz Ho	pping E	Emissi	ON RACE 14,2025 RACE 14,2025 DET P
Spectrum Analyzer - Swe RF 50 Ω Ser Freq 2.52600 Ref Offset 2.5	pt SA AC 00000 GHz IF 2 dB	SENSE	2-DH5 2	480MHz Ho	pping E	Emissi	ON RMART 14, 2025 RACE 1 3 4 5 6 TYPE MUNICIPAL DET P
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Spectrum Analyzer - Swe RF 50 2 er Freq 2.52600 Aref Offset 2.5 Ref 22.52 d 1 2 2 4 2 4 2 4 4 2 4 4 4 4 4 4 4 4 4 4 4 4 4	pt SA AC 00000 GHz IF 2 dB	SENSE	2-DH5 2	480MHz Ho	g-Pwr 0/1000	Emissi	ON B MAAP 14, 2025 RACE 3 4 5 6 TYPE MANNAN 80 1 GHz 049 dBm -27 67 607 6Hz
Spectrum Analyzer - Swe RF 50 2 er Freq 2.52600 Mer 22.52 c Mer 22.52 c 1 2.52 c 1 2.52 c 1 2.52 c 1 2.52 c 1 2.52 c 2.52 c 2.	pt SA AC 00000 GHz IF 2 dB	SENSE	2-DH5 2	480MHz Ho	g-Pwr o/1000	Emissi 07:56:3 1 1kr1 2.4 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	ON 8 PMApr 14, 2025 RACE 12 3 4 5 6 TYPE MUNICIPAL DET P NORTHAN 80 1 GHz 049 dBm -27 60 dBm
Spectrum Analyzer - Swe RF 50 0 er Freq 2.52600 Mer Freq 2.52600 Mer 22.52 0 Control of the sector of the sec	2.480 1 GHz 2.483 5 GHz	SENSE PNO: Fast → Tr Gain:Low #/ #VBW 3 *VBW 3	2-DH5 2	480MHz Ho	g-Pwr o/1000	Emissi	ON B MAAP 14, 2025 RACE 3 4 5 6 TYPE MANNAN 80 1 GHz 049 dBm -27 67 607 6Hz
Spectrum Analyzer - Swe RF 50 0 er Freq 2.52600 Ref Offset 2.5 Ref 22.52 c 1 2.52 c 2.52 c 2.52 c 1 2.52 c 1 2.52 c 2.52 c 1 2.52 c 2.52 c 1 2.52 c 1 5 5 5 5 5 5 5 5 5 5 5 5 5	2 dB	SENSE PNO: Fast → Tr Gain:Low #/	2-DH5 2	480MHz Ho	g-Pwr o/1000	Emissi 07:56:3 1 1kr1 2.4 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	ON B MAAP 14, 2025 RACE 3 4 5 6 TYPE MANNAN 80 1 GHz 049 dBm -27 67 607 6Hz
Spectrum Analyzer - Swe RF 50 0 er Freq 2.52600 Mer Freq 2.52600 Mer 22.52 0 Control of the sector of the sec	AC 0000 GHz F	#VBW 3	2-DH5 2	480MHz Ho	g-Pwr o/1000	Emissi 07:56:3 1 1kr1 2.4 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	ON B MAAP 14, 2025 RACE 3 4 5 6 TYPE MANNAN 80 1 GHz 049 dBm -27 67 607 6Hz
Spectrum Analyzer - Swe RF 5 50 R er Freq 2.52600 /div Ref 25.52 d 2.47600 GHz BW 100 kHz 009 TRC 504	AC 0000 GHz F	#VBW 3	2-DH5 2	480MHz Ho	g-Pwr o/1000	Emissi 07:56:3 1 1kr1 2.4 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	ON B MAAP 14, 2025 RACE 3 4 5 6 TYPE MANNAN 80 1 GHz 049 dBm -27 67 607 6Hz
Ref Offset 2.5 div Ref 2.52600 Ref 2.52600 div Ref 22.52 d div Ref 2.52 d div Re	AC 0000 GHz F	#VBW 3	2-DH5 2	480MHz Ho	g-Pwr o/1000	Emissi 07:56:3 1 1kr1 2.4 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2 -2	ON B MAAP 14, 2025 RACE 3 4 5 6 TYPE MANNAN 80 1 GHz 049 dBm -27 67 607 6Hz







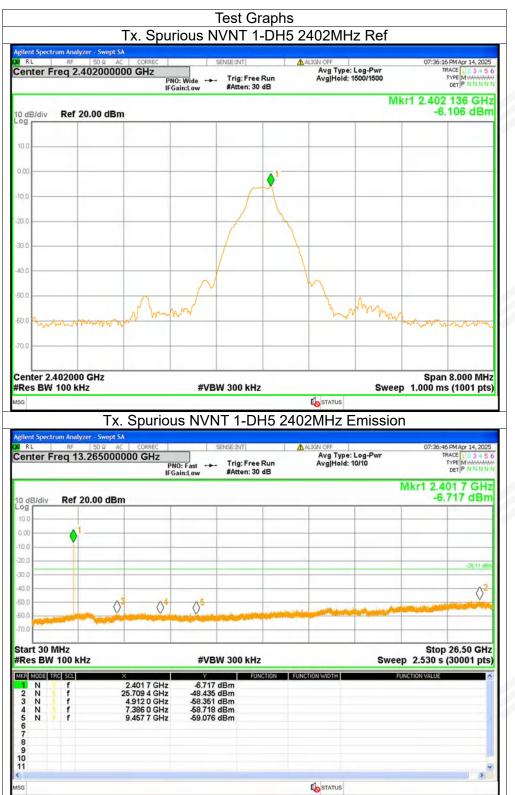




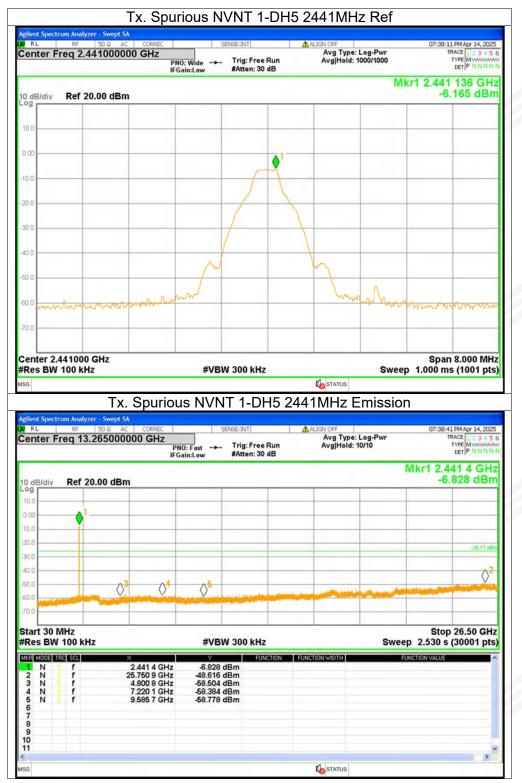
## Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	-42.32	<=-20	Pass
NVNT	1-DH5	2441	-42.45	<=-20	Pass
NVNT	1-DH5	2480	-42.76	<=-20	Pass
NVNT	2-DH5	2402	-39.81	<=-20	Pass
NVNT	2-DH5	2441	-39.38	<=-20	Pass
NVNT	2-DH5	2480	-40.13	<=-20	Pass
NVNT	3-DH5	2402	-38.85	<=-20	Pass
NVNT	3-DH5	2441	-39.84	<=-20	Pass
NVNT	3-DH5	2480	-39.63	<=-20	Pass

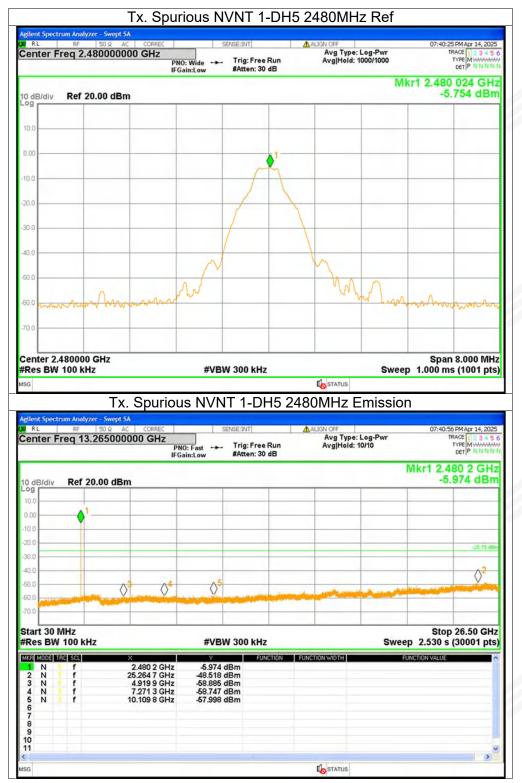




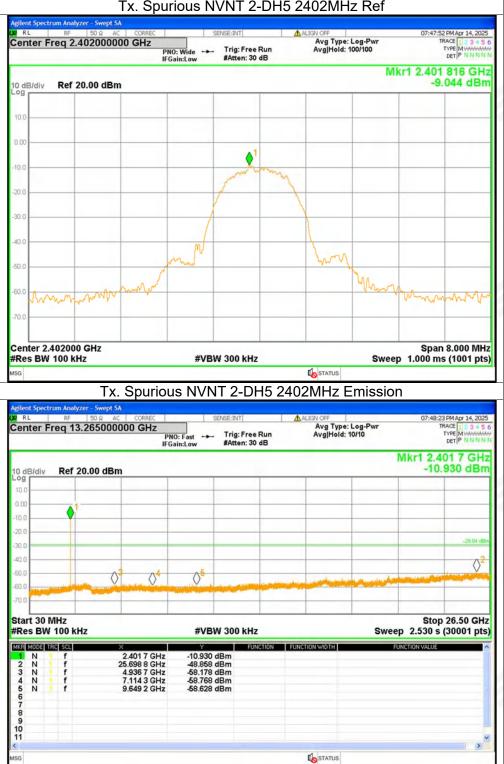






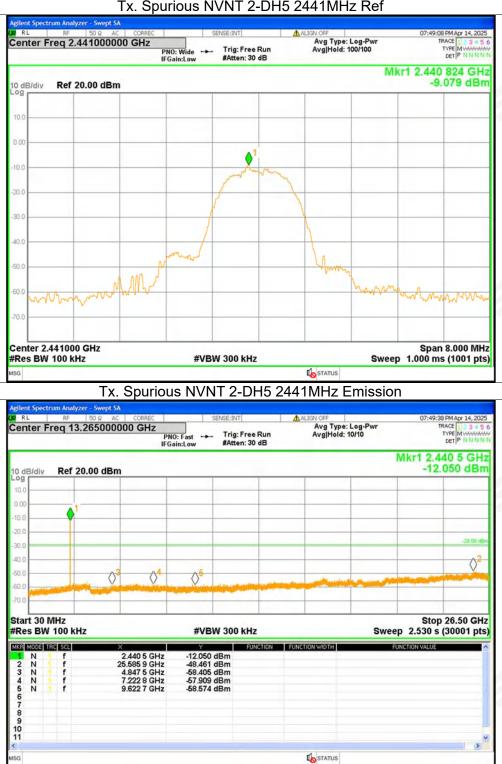






## Tx. Spurious NVNT 2-DH5 2402MHz Ref





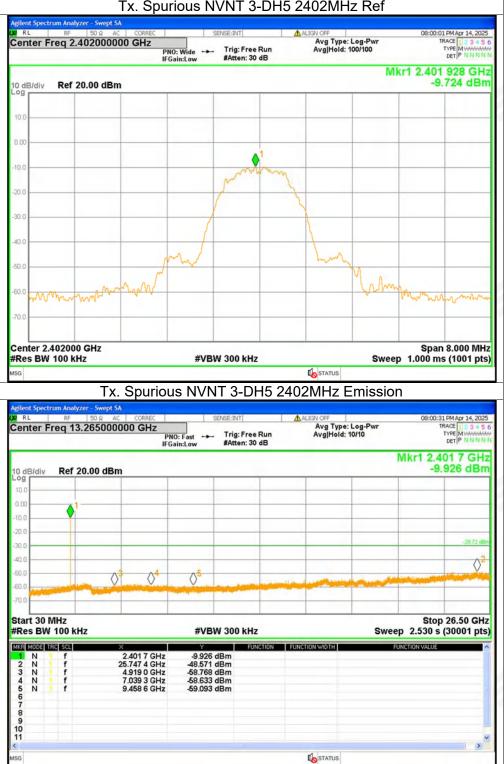
### Tx. Spurious NVNT 2-DH5 2441MHz Ref





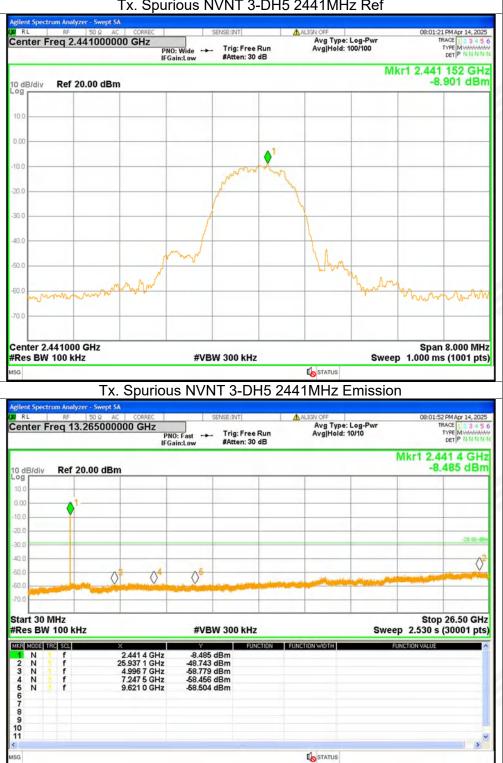
#### Tx. Spurious NVNT 2-DH5 2480MHz Ref





## Tx. Spurious NVNT 3-DH5 2402MHz Ref





Tx. Spurious NVNT 3-DH5 2441MHz Ref



#### 8:02:46 PM Apr 14, 2025 TRACE 1 2 3 4 5 RL Center Freq 2.480000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 TYPE MY DET P Trig: Free Run #Atten: 30 dB PNO: Wide IFGain:Low Mkr1 2.480 064 GHz -8.571 dBm 10 dB/div Ref 20.00 dBm 0.0 20.0 30.0 40.1 50.0 60.0 Center 2.480000 GHz Span 8.000 MHz #VBW 300 kHz #Res BW 100 kHz Sweep 1.000 ms (1001 pts) **STATUS** 0.21 Tx. Spurious NVNT 3-DH5 2480MHz Emission RL :03:16 PM Apr 14, 202 Avg Type: Log-Pwi Avg|Hold: 10/10 Center Freg 13.265000000 GHz #Atten: 30 dB DET P PNO: Fast Mkr1 2.479 4 GHz -10.719 dBm 10 dB/div Ref 20.00 dBm 28.57 20 in i $\langle \rangle^2$ 0 0 0 Start 30 MHz Stop 26.50 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 2.530 s (30001 pts) MKR MODE TRC SCL FUNCTION WIDTH 2.479 4 GHz 25.623 8 GHz 5.009 9 GHz 7.296 0 GHz 9.936 0 GHz -10.719 dBm -48.210 dBm -58.691 dBm -58.049 dBm -57.894 dBm ZZZZZ 1234567891011 TATUS SG

## Tx. Spurious NVNT 3-DH5 2480MHz Ref



## **APPENDIX 2-PHOTOS OF TEST SETUP**

Note: See test photos in setup photo document for the actual connections between Product and support equipment.

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