Radio Test Report

Report No.:STS2406139W02

Issued for

QIYUE(Shenzhen) Technology Co., Ltd.

Room 1312P4, Building A, Galaxy Century, No. 3069, Caitian Road, Gangxia Community, Futian Street, Futian District, Shenzhen, China.

Product Name:	Nbook
Brand Name:	N-one
Model Name:	LAP001
Series Model(s):	LAP002, LAP003, LAP004, LAP005, LAP006, LAP007, LAP008, LAP009, LAP010, LAP011, LAP012, LAP013, LAP014, LAP015, LAP016, LAP017, LAP018, LAP019, LAP020, LAP021, LAP022, LAP023, LAP024, LAP025, LAP026, LAP027, LAP028, LAP029, LAP030, LAP031, LAP032, LAP033, LAP034, LAP035, LAP036, LAP037, LAP038, LAP039, LAP040, LAP041, LAP042, LAP043, LAP044, LAP045, LAP046, LAP047, LAP048, LAP049, LAP045, TAB001, TAB002, TAB003, TAB004, TAB005, TAB006, TAB007, TAB008, TAB009, TAB010, TAB011, TAB012, TAB013, TAB014, TAB015
FCC ID:	2A8TT-LAP
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

Applicant's Name: QIYUE(Shenzhen) Technology Co., Ltd.			
Address:	Room 1312P4, Building A, Galaxy Century, No. 3069, Caitian Road, Gangxia Community, Futian Street, Futian District, Shenzhen, China.		
Manufacturer's Name:	QIYUE(Shenzhen) Technology Co., Ltd.		
Address:	Room 1312P4, Building A, Galaxy Century, No. 3069, Caitian Road, Gangxia Community, Futian Street, Futian District, Shenzhen, China.		

Product Description

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Brand Name:	N-one
Model Name:	LAP001
Series Model(s):	LAP002, LAP003, LAP004, LAP005, LAP006, LAP007, LAP008, LAP009, LAP010, LAP011, LAP012, LAP013, LAP014, LAP015, LAP016, LAP017, LAP018, LAP019, LAP020, LAP021, LAP022, LAP023, LAP024, LAP025, LAP026, LAP027, LAP028, LAP029, LAP030, LAP031, LAP032, LAP033, LAP034, LAP035, LAP036, LAP037, LAP038, LAP039, LAP040, LAP041, LAP042, LAP043, LAP044, LAP045, LAP046, LAP047, LAP048, LAP049, LAP050, TAB001, TAB002, TAB003, TAB004, TAB005, TAB006, TAB007, TAB008, TAB009, TAB010, TAB011, TAB012, TAB013, TAB014, TAB015

Test Standards FCC Part15.247

Test Procedure: 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 27 June 2024

Date (s) of performance of tests 27 June 2024~ 02 July 2024

Date of Issue...... 02 July 2024

Test Result..... Pass

Testing Engineer :	Aann 13u	STEST SERL
	(Aaron Bu)	S Pr
Technical Manager :	Chins cher	
	(Chris Chen)	TESTING APPROVAL
Authorized Signatory :	Trong Lang	

(Bovey Yang)



Table of Contents	Page
1. SUMMARY OF TEST RESULTS	6
1.1 TEST FACTORY	7
1.2 MEASUREMENT UNCERTAINTY	7
2. GENERAL INFORMATION	8
2.1 GENERAL DESCRIPTION OF THE EUT	8
2.2 DESCRIPTION OF THE TEST MODES	10
2.3 FREQUENCY HOPPING SYSTEM REQUIREMENTS	10
2.4 TABLE OF PARAMETERS OF TEST SOFTWARE SETTING	12
2.5 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTE	D 12
2.6 DESCRIPTION OF NECESSARY ACCESSORIES AND SUPPORT UNITS	13
2.7 EQUIPMENTS LIST	14
3. EMC EMISSION TEST	15
3.1 CONDUCTED EMISSION MEASUREMENT	15
3.2 RADIATED EMISSION MEASUREMENT	19
4. CONDUCTED SPURIOUS & BAND EDGE EMISSION	31
4.1 LIMIT	31
4.2 TEST PROCEDURE	31
4.3 TEST SETUP	32
4.4 EUT OPERATION CONDITIONS	32
4.5 TEST RESULTS	32
5. NUMBER OF HOPPING CHANNEL	33
5.1 LIMIT	33
5.2 TEST PROCEDURE	33
5.3 TEST SETUP	33
5.4 EUT OPERATION CONDITIONS	33
5.5 TEST RESULTS	33
6. AVERAGE TIME OF OCCUPANCY	34
6.1 LIMIT	34
6.2 TEST PROCEDURE	34
6.3 TEST SETUP	34
6.4 EUT OPERATION CONDITIONS	34
6.5 TEST RESULTS	34
7. HOPPING CHANNEL SEPARATION MEASUREMEN	35



	Table of Contents	Page
7.1 LIMI	- <i>10 10</i>	35
	T PROCEDURE	35
	T SETUP	35
7.4 EUT	OPERATION CONDITIONS	35
7.5 TES	TRESULTS	35
8. BANDWI	DTH TEST	36
8.1 LIMI	т	36
8.2 TES	T PROCEDURE	36
8.3 TES	T SETUP	36
	OPERATION CONDITIONS	36
8.5 TES	TRESULTS	36
9. OUTPUT	POWER TEST	37
9.1 LIMI		37
		37
		38
	OPERATION CONDITIONS	38
		38
		38
	ANDARD REQUIREMENT	38
	1-TEST DATA	39 39
	-	
1. DWELL 1	· ···-	39
2. MAXIMU	M PEAK CONDUCTED OUTPUT POWER	49
320DB B/	ANDWIDTH	55
4. CARRIER	R FREQUENCIES SEPARATION	61
5. NUMBEF	R OF HOPPING CHANNEL	67
6. BAND EI	DGE	70
7. BAND EI	DGE(HOPPING)	77
8. CONDUC	CTED RF SPURIOUS EMISSION	84
APPENDIX	2-PHOTOS OF TEST SETUP	94



Page 5 of 94

Report No.:STS2406139W02

Revision History

	Rev.	Issue Date	Report No.	Effect Page	Contents
į,	00	02 July 2024	STS2406139W02	ALL	Initial Issue
	1. 1.			2	9





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	Test Item	Judgment	Remark	
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)	Bandwidth	PASS		
15.205	Restricted bands of operation	PASS		
Part 15.247(d)/part 15.209(a)	Band Edge Emission	PASS	-	
15.203	Antenna Requirement	PASS	4	

NOTE:

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

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



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	Duty Cycle	±3.2%



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF THE EUT

Product Name	Nbook		
Brand Name	N-one		
Model Name	LAP001		
LAP002, LAP003, LAP004, LAP005, LAP006, L. LAP008, LAP009, LAP010, LAP011, LAP012, L. LAP014, LAP015, LAP016, LAP017, LAP018, L. LAP020, LAP021, LAP022, LAP023, LAP024, L. LAP026, LAP027, LAP028, LAP029, LAP030, L. LAP032, LAP033, LAP034, LAP035, LAP036, L. LAP038, LAP039, LAP040, LAP041, LAP042, L. LAP044, LAP045, LAP046, LAP047, LAP048, L. LAP050, TAB001, TAB002, TAB003, TAB004, T. TAB006, TAB007, TAB008, TAB009, TAB010, T. TAB012, TAB013, TAB014, TAB015			
Model Difference	Only different in model name.		
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	PIFA		
Antenna Gain	2.63dBi		
Adapter	Input: 100-240V~50/60Hz 1.0A Output:DC 12.0V 3.0A		
Battery	Rated Voltage:7.7V Charge Limit Voltage:8.8V Capacity: 6000mAh/46.2Wh		
Hardware version number	GLF.NU140.23110102.006		
Software version number	NU140-REV11		
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.

		Chanı	nel 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	ТХ СН00	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	· ТХ СН39	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.

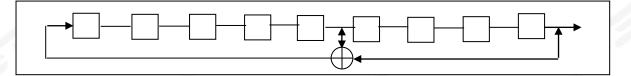


The incorporation of intelligence within a frequency hopping spread spectrum system that permits the system to recognize other users within the spectrum band so that it individually and independently chooses and adapts its hop sets to avoid hopping on occupied channels is permitted. The coordination 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.

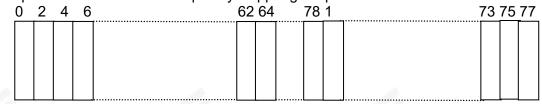
(2)The Pseudorandom sequence may be generated in a nin-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first one of 9 consecutive ones: i.e. the shift register is initialized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



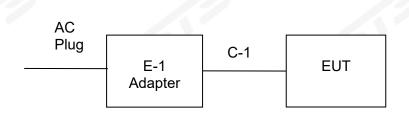
2.4 TABLE OF PARAMETERS OF TEST SOFTWARE SETTING

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.

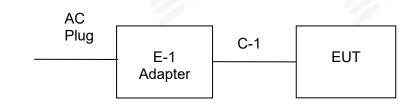
	-	Fest program: Bluetooth	1
(Control software) Parameters(1/2/3Mbps)	Packet type: DH1:4:27 2DH1:20:54 3DH1:24:83	Packet type: DH3:11:183 2DH3:26:367 3DH3:27:552	Packet type: DH5:15:339 2DH5:30:679 3DH5:31:1021

RF Function	Туре	Mode Or Modulation type	ANT Gain(dBi)	Power Class	Software For Testing
		GFSK	2.63	Default	
ВТ	BR+EDR	[*] π/4-DQPSK	2.63	Default	RTLBTAPP
			2.63	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	Item Equipment Mfr/Brand Model/Type No. Length Note					
N/A	N/A	N/A	N/A	N/A	N/A	

Support units

Item	Equipment	Mfr/Brand	Model/Type No.	Length	Note
E-1	Adapter	Qingliupower®	QL036-1203000V	N/A	N/A
C-1	USB Cable	N/A	N/A	150cm	N/A

Note:

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



2.7 EQUIPMENTS LIST

	RF Radi	ation Test Equipmer	nt		
Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
Temperature & Humidity	SW-108	SuWei	N/A	2024.03.15	2025.03.14
Pre-Amplifier(0.1M-3GHz)	EM	EM330	060665	2024.02.23	2025.02.22
Pre-Amplifier(1G-18GHz)	SKET	LNPA-01018G-45	SK2018080901	2023.09.26	2024.09.25
Pre-Amplifier(18G-40GHz)	SKET	LNPA_1840-50	SK2018101801	2024.02.23	2025.02.22
Active loop Antenna	ZHINAN	ZN30900C	16035	2023.02.28	2025.02.27
Bilog Antenna	TESEQ	CBL6111D	34678	2022.09.30	2024.09.29
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	2023.09.26	2024.09.25
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	ower supply HONGSHENGFENG		17064939	2023.09.26	2024.09.25
Test SW	EZ-EMC		Ver.STSLAB-03	A1 RE	1
	Conduc	ction Test equipment	t i i i i i i i i i i i i i i i i i i i	10	
Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Test Receiver	R&S	ESCI	101427	2023.09.25	2024.09.24
Limtter	CYBERTEK	EM5010	N/A	2023.09.25	2024.09.24
LISN	R&S	ENV216	101242	2023.09.25	2024.09.24
LISN	EMCO	3810/2NM	23625	2023.09.25	2024.09.24
Temperature & Humidity	SW-108	SuWei	N/A	2024.03.15	2025.03.14
Test SW	EZ-EMC		Ver.STSLAB-03	A1 CE	
	RF	Connected Test			
Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
Signal Analyzer	Agilent	N9020A	MY51510623	2024.02.23	2025.02.22
Power detector group	Keysight	NW2021031	N/A	2023.09.26	2024.09.25
Switch control box	MW	MW100-RFCB	N/A	N/A	N/A
Temperature & Humidity	SW-108	SuWei	N/A	2024.03.15	2025.03.14
Test SW	MW		MTS 8310_2.0	0.0.0	
C.	6	6		6	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

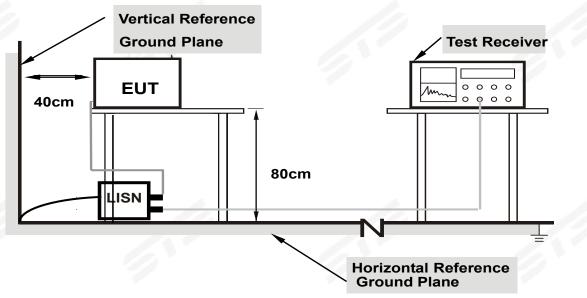
Receiver Parameters	Setting		
Attenuation	10 dB		
Start Frequency	0.15 MHz		
Stop Frequency	30 MHz		
IF Bandwidth	9 kHz		



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

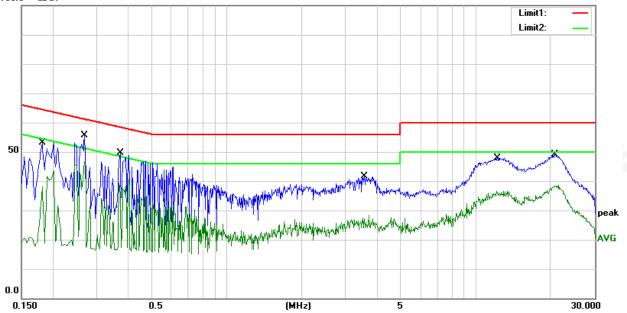
Temperature:	25.1(C)	Relative Humidity:	59%RH
Test Voltage:	AC 120V/60Hz	Phase:	L
Test Mode:	Mode 13	65	68

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1820	33.44	19.77	53.21	64.39	-11.18	QP
2	0.1820	23.82	19.77	43.59	54.39	-10.80	AVG
3	0.2700	35.47	20.08	55.55	61.12	-5.57	QP
4	0.2700	26.54	20.08	46.62	51.12	-4.50	AVG
5	0.3740	29.49	20.06	49.55	58.41	-8.86	QP
6	0.3740	20.63	20.06	40.69	48.41	-7.72	AVG
7	3.5780	21.68	19.83	41.51	56.00	-14.49	QP
8	3.5780	8.44	19.83	28.27	46.00	-17.73	AVG
9	12.2340	27.61	20.34	47.95	60.00	-12.05	QP
10	12.2340	16.27	20.34	36.61	50.00	-13.39	AVG
11	20.7860	28.57	20.46	49.03	60.00	-10.97	QP
12	20.7860	18.08	20.46	38.54	50.00	-11.46	AVG

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





Page 18 of 94

Temperature:	25.1(C)	Relative Humidity:	59%RH
Test Voltage:	AC 120V/60Hz	Phase:	N
Test Mode:	Mode 13	17	17

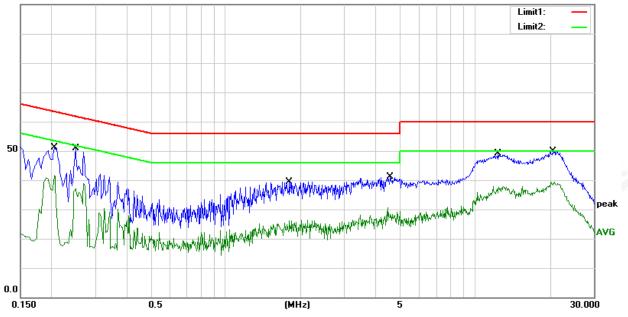
No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB)	(dBuV)	(dBuV)	(dB)	
1	0.2060	31.22	19.80	51.02	63.37	-12.35	QP
2	0.2060	21.90	19.80	41.70	53.37	-11.67	AVG
3	0.2500	30.87	19.99	50.86	61.76	-10.90	QP
4	0.2500	18.79	19.99	38.78	51.76	-12.98	AVG
5	1.8060	19.70	19.78	39.48	56.00	-16.52	QP
6	1.8060	6.69	19.78	26.47	46.00	-19.53	AVG
7	4.5780	21.35	19.83	41.18	56.00	-14.82	QP
8	4.5780	10.75	19.83	30.58	46.00	-15.42	AVG
9	12.4300	28.65	20.35	49.00	60.00	-11.00	QP
10	12.4300	17.62	20.35	37.97	50.00	-12.03	AVG
11	20.5820	29.29	20.47	49.76	60.00	-10.24	QP
12	20.5820	18.85	20.47	39.32	50.00	-10.68	AVG

Remark:

All readings are Quasi-Peak and Average values
 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)

	(dBuV/m) (at 3M)				
FREQUENCY (MHz)	PEAK	AVERAGE			
Above 1000	74	54			
Madaaa					

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)	FREQUENCY (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	
band)	120 KHz / 300 KHz

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	
ø	Detector	Peak/AV	
		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)	

Report No.:STS2406139W02



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.

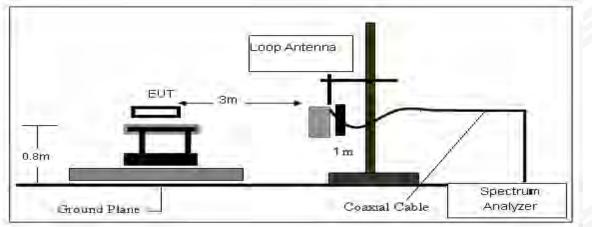
3.2.3 DEVIATION FROM TEST STANDARD

No deviation.

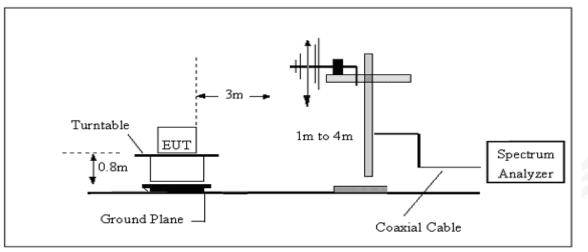


3.2.4 TESTSETUP

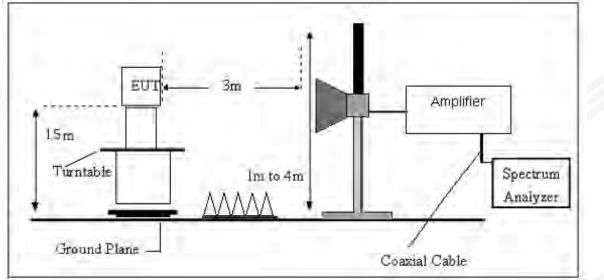
(A) Radiated Emission Test-Up Frequency Below 30MHz

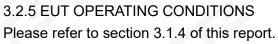


(B) Radiated Emission Test-Up Frequency 30MHz~1GHz



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







3.2.6 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:	23.1(C)	Relative Humidity:	60%RH
Test Voltage:	AC 120V/60Hz	Test Mode:	TX Mode

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



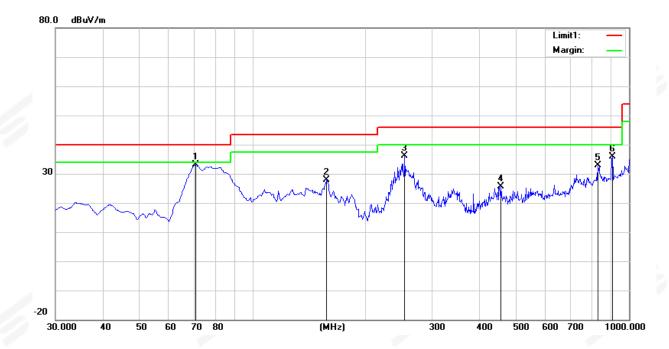
(30MHz-1000MHz)

Temperature:	23.1(C)	Relative Humidity:	60%RH
Test Voltage:	AC 120V/60Hz	Phase:	Horizontal
Test Mode:	Mode 1/2/3/4/5/6/7/8/9(Mode 7 worst mode)		

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	70.7400	57.91	-24.73	33.18	40.00	-6.82	peak
2	158.0400	46.74	-18.74	28.00	43.50	-15.50	peak
3	254.0700	51.72	-15.50	36.22	46.00	-9.78	peak
4	457.7700	35.08	-9.51	25.57	46.00	-20.43	peak
5	829.2800	33.67	-0.83	32.84	46.00	-13.16	peak
6	903.9700	36.21	-0.34	35.87	46.00	-10.13	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.



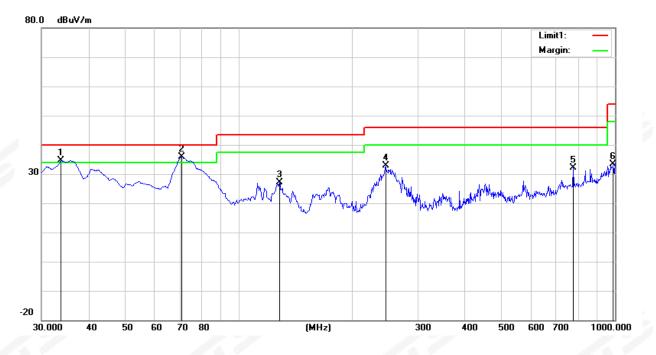


Report No.:STS2406139W02

Temperature:	23.1(C)	Relative Humidity:	60%RH		
Test Voltage:	AC 120V/60Hz	Phase:	Vertical		
Test Mode:	Mode 1/2/3/4/5/6/7/8/9(Mode 7 worst mode)				

Frequency	Reading	Correct	Result	Limit	Margin	Remark
(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
33.8800	49.45	-14.80	34.65	40.00	-5.35	peak
70.7400	60.73	-24.73	36.00	40.00	-4.00	peak
128.9400	45.38	-18.26	27.12	43.50	-16.38	peak
246.3100	49.61	-16.76	32.85	46.00	-13.15	peak
774.9600	34.45	-2.28	32.17	46.00	-13.83	peak
992.2400	31.29	2.05	33.34	54.00	-20.66	peak
992.2400	31.29	2.05	33.34	54.00	-20.66	pe
	(MHz) 33.8800 70.7400 128.9400 246.3100 774.9600	(MHz)(dBuV)33.880049.4570.740060.73128.940045.38246.310049.61774.960034.45	(MHz)(dBuV)Factor(dB/m)33.880049.45-14.8070.740060.73-24.73128.940045.38-18.26246.310049.61-16.76774.960034.45-2.28	(MHz)(dBuV)Factor(dB/m)(dBuV/m)33.880049.45-14.8034.6570.740060.73-24.7336.00128.940045.38-18.2627.12246.310049.61-16.7632.85774.960034.45-2.2832.17	(MHz)(dBuV)Factor(dB/m)(dBuV/m)(dBuV/m)33.880049.45-14.8034.6540.0070.740060.73-24.7336.0040.00128.940045.38-18.2627.1243.50246.310049.61-16.7632.8546.00774.960034.45-2.2832.1746.00	(MHz)(dBuV)Factor(dB/m)(dBuV/m)(dBuV/m)(dB)33.880049.45-14.8034.6540.00-5.3570.740060.73-24.7336.0040.00-4.00128.940045.38-18.2627.1243.50-16.38246.310049.61-16.7632.8546.00-13.15774.960034.45-2.2832.1746.00-13.83

Margin = Result (Result =Reading + Factor)–Limit
 Factor= Antenna factor+Cable attenuation factor(cable loss)-Amplifier gain





(1GHz~25GHz) Spurious emission Requirements

Frequency	Meter Reading	Amplifier	Loss	Antenna Factor	Corrected Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBµV)	(dB)	(dB)	(dB/m)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре	-
			1.12	Low Ch	annel (8DPSK	/2402 MHz)			110	(e.
3264.73	61.75	44.70	6.70	28.20	-9.80	51.95	74.00	-22.05	PK	Vertical
3264.73	51.19	44.70	6.70	28.20	-9.80	41.39	54.00	-12.61	AV	Vertical
3264.59	61.97	44.70	6.70	28.20	-9.80	52.17	74.00	-21.83	PK	Horizontal
3264.59	50.26	44.70	6.70	28.20	-9.80	40.46	54.00	-13.54	AV	Horizontal
4804.35	58.60	44.20	9.04	31.60	-3.56	55.04	74.00	-18.96	PK	Vertical
4804.35	49.74	44.20	9.04	31.60	-3.56	46.18	54.00	-7.82	AV	Vertical
4804.40	58.86	44.20	9.04	31.60	-3.56	55.30	74.00	-18.70	PK	Horizontal
4804.40	49.20	44.20	9.04	31.60	-3.56	45.64	54.00	-8.36	AV	Horizontal
5359.74	48.33	44.20	9.86	32.00	-2.34	45.99	74.00	-28.01	PK	Vertical
5359.74	40.06	44.20	9.86	32.00	-2.34	37.72	54.00	-16.28	AV	Vertical
5359.73	48.05	44.20	9.86	32.00	-2.34	45.71	74.00	-28.29	PK	Horizontal
5359.73	39.00	44.20	9.86	32.00	-2.34	36.66	54.00	-17.34	AV	Horizontal
7205.94	54.73	43.50	۱1.40 ۱	35.50	3.40	58.13	74.00	-15.87	PK	Vertical
7205.94	44.10	43.50	11.40	35.50	3.40	47.50	54.00	-6.50	AV	Vertical
7205.89	54.05	43.50	11.40	35.50	3.40	57.45	74.00	-16.55	PK	Horizontal
7205.89	43.71	43.50	11.40	35.50	3.40	47.11	54.00	-6.89	AV	Horizontal
		•		Middle C	hannel (8DPSI	√/2441 MHz)			•	
3264.66	61.47	44.70	6.70	28.20	-9.80	51.67	74.00	-22.33	PK	Vertical
3264.66	51.65	44.70	6.70	28.20	-9.80	41.85	54.00	-12.15	AV	Vertical
3264.60	60.93	44.70	6.70	28.20	-9.80	51.13	74.00	-22.87	PK	Horizontal
3264.60	50.08	44.70	6.70	28.20	-9.80	40.28	54.00	-13.72	AV	Horizontal
4882.33	58.61	44.20	9.04	31.60	-3.56	55.05	74.00	-18.95	PK	Vertical
4882.33	49.83	44.20	9.04	31.60	-3.56	46.27	54.00	-7.73	AV	Vertical
4882.40	58.23	44.20	9.04	31.60	-3.56	54.67	74.00	-19.33	PK	Horizontal
4882.40	50.11	44.20	9.04	31.60	-3.56	46.55	54.00	-7.45	AV	Horizontal
5359.88	48.94	44.20	9.86	32.00	-2.34	46.60	74.00	-27.40	PK	Vertical
5359.88	39.47	44.20	9.86	32.00	-2.34	37.13	54.00	-16.87	AV	Vertical
5359.64	48.00	44.20	9.86	32.00	-2.34	45.66	74.00	-28.34	PK	Horizontal
5359.64	38.88	44.20	9.86	32.00	-2.34	36.54	54.00	-17.46	AV	Horizontal
7323.87	54.72	43.50	11.40	35.50	3.40	58.12	74.00	-15.88	PK	Vertical
7323.87	44.83	43.50	11.40	35.50	3.40	48.23	54.00	-5.77	AV	Vertical
7323.89	54.49	43.50	11.40	35.50	3.40	57.89	74.00	-16.11	PK	Horizontal
7323.89	44.87	43.50	11.40	35.50	3.40	48.27	54.00	-5.73	AV	Horizontal



Report No.:STS2406139W02

				High Chan	nel (8DPSK	/2480 MHz)				
3264.78	61.92	44.70	6.70	28.20	-9.80	52.12	74.00	-21.88	PK	Vertical
3264.78	50.64	44.70	6.70	28.20	-9.80	40.84	54.00	-13.16	AV	Vertical
3264.56	62.14	44.70	6.70	28.20	-9.80	52.34	74.00	-21.66	PK	Horizontal
3264.56	50.25	44.70	6.70	28.20	-9.80	40.45	54.00	-13.55	AV	Horizontal
4960.43	59.36	44.20	9.04	31.60	-3.56	55.80	74.00	-18.20	PK	Vertical
4960.43	49.65	44.20	9.04	31.60	-3.56	46.09	54.00	-7.91	AV	Vertical
4960.38	58.70	44.20	9.04	31.60	-3.56	55.14	74.00	-18.86	PK	Horizontal
4960.38	49.68	44.20	9.04	31.60	-3.56	46.12	54.00	-7.88	AV	Horizontal
5359.89	48.74	44.20	9.86	32.00	-2.34	46.40	74.00	-27.60	PK	Vertical
5359.89	39.95	44.20	9.86	32.00	-2.34	37.61	54.00	-16.39	AV	Vertical
5359.59	47.85	44.20	9.86	32.00	-2.34	45.51	74.00	-28.49	PK	Horizontal
5359.59	39.23	44.20	9.86	32.00	-2.34	36.89	54.00	-17.11	AV	Horizontal
7439.92	54.88	43.50	11.40	35.50	3.40	58.28	74.00	-15.72	PK	Vertical
7439.92	44.55	43.50	11.40	35.50	3.40	47.95	54.00	-6.05	AV	Vertical
7439.96	54.11	43.50	11.40	35.50	3.40	57.51	74.00	-16.49	PK	Horizontal
7439.96	44.65	43.50	11.40	35.50	3.40	48.05	54.00	-5.95	AV	Horizontal

Note:

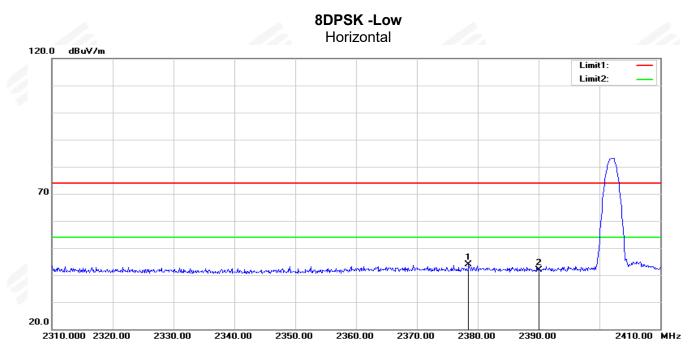
- 1) All modes have been measurement, only worst mode was reported.
- 2) Factor = Antenna Factor + Cable Loss Pre-amplifier.

Emission Level = Reading + Factor

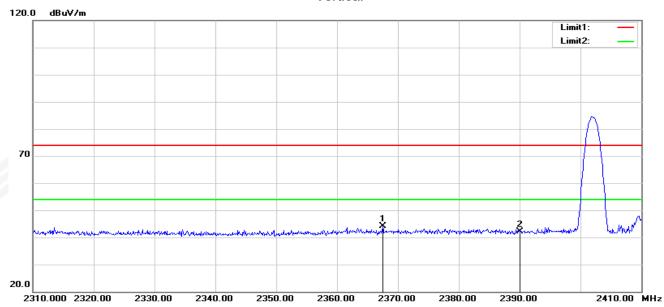
3) The frequency emission of peak points that did not show above the forms are at least 20dB below the limit, the frequency emission is mainly from the environment noise.



Restricted band Requirements

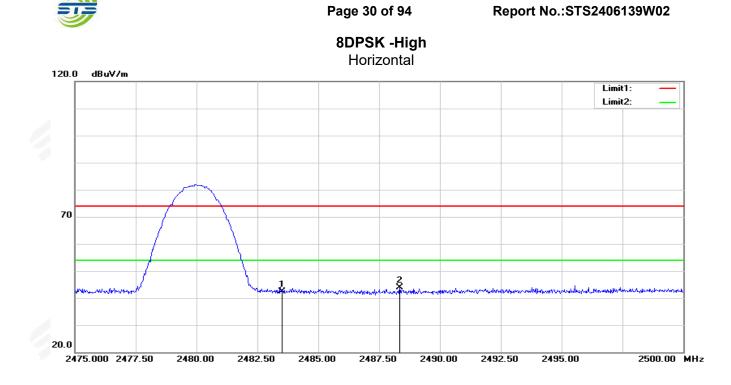


No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2378.500	39.65	4.17	43.82	74.00	-30.18	peak
2	2390.000	37.48	4.34	41.82	74.00	-32.18	peak

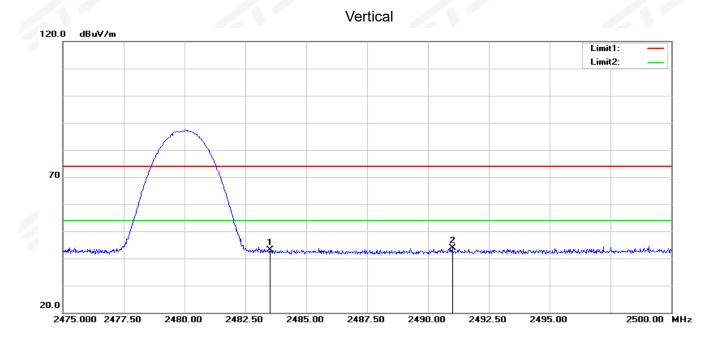


Vertical

	No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
Ē		(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
	1	2367.500	40.18	4.00	44.18	74.00	-29.82	peak
	2	2390.000	37.77	4.34	42.11	74.00	-31.89	peak



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	37.84	4.60	42.44	74.00	-31.56	peak
2	2488.350	39.36	4.62	43.98	74.00	-30.02	peak



No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	38.63	4.60	43.23	74.00	-30.77	peak
2	2491.000	39.22	4.63	43.85	74.00	-30.15	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		
Detector	Peak		
Start/Stan Example	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

Spectrum Parameter	Setting
Detector	Peak
Start/Stan Eraguanay	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





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



5. NUMBER OF HOPPING CHANNEL

5.1 LIMIT

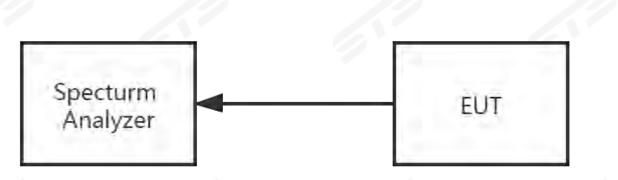
			and the second sec	
FCC Part 15.247,Subpart C				
Section	Test Item	Limit	FrequencyRange (MHz)	Result
15.247 (a)(1)(iii)	Number of Hopping Channel	≥15	2400-2483.5	PASS

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



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.
- g. Set the EUT for DH5, DH3 and DH1 packet transmitting.
- h. Measure the maximum time duration of one single pulse.
- i. DH5 Packet permit maximum 1600/ 79 / 6 = 3.37 hops per second in each channel (5 time slots RX, 1 time slot TX). So the number of pulses in the observation period of 31.6 seconds is 3.37 x 31.6 = 106.6.
- j. DH3 Packet permit maximum 1600 / 79 / 4 = 5.06 hops per second in each channel (3 time slots RX, 1 time slot TX). So the number of pulses in the observation period of 31.6 seconds is $5.06 \times 31.6 = 160$.
- k. DH1 Packet permit maximum 1600 / 79 / 2 = 10.12 hops per second in each channel (1 time slot RX, 1 time slot TX). So the number of pulses in the observation period of 31.6 seconds is 10.12 x 31.6 = 320.

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



8.1 LIMIT

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

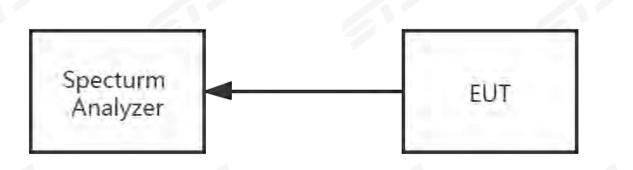
Spectrum Parameter	Setting		
Attenuation	Auto		
Span Frequency	> Measurement Bandwidth or Channel Separation		
RB	30 kHz (20dB Bandwidth) / 30 kHz (Channel Separation)		
VB	100 kHz (20dB Bandwidth) / 100 kHz (Channel Separation)		
Detector	· Peak		
Trace	Max Hold		
Sweep Time	Auto		

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

and the second			ALC ALC A						
	FCC Part 15.247,Subpart C								
Section	Test Item	Limit	Frequency Range (MHz)	Result					
	<i>.</i>	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 ≥ 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.

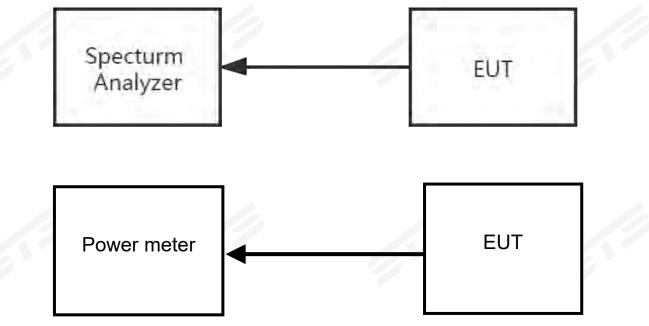
e) A plot of the test results and setup description shall be included in the test report.

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.

PKPM1 Peak power meter method:

The maximum peak conducted output power may be measured using a broadband peak RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the DSS bandwidth and shall use a fast-responding diode detector.





9.4 EUT OPERATION CONDITIONS

Please refer to section 3.1.4 of this report.

9.5 TEST RESULTS

Note: The test data please refer to APPENDIX 1. 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 PIFA Antenna. It comply with the standard requirement.

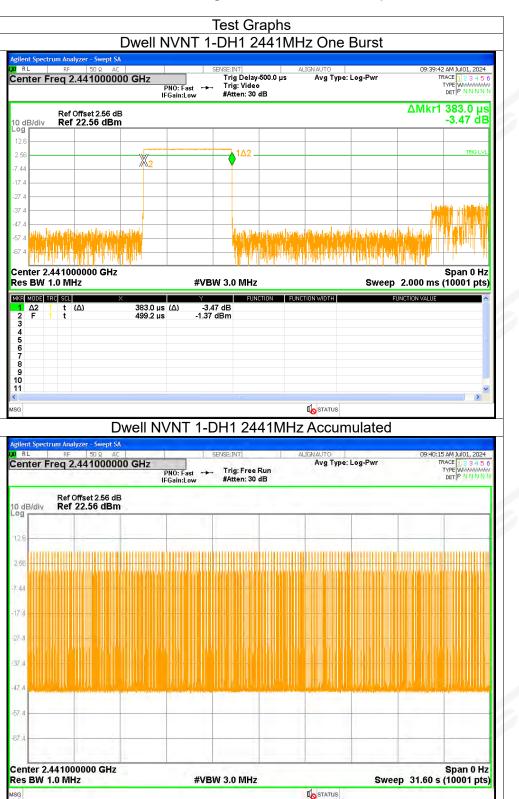


1. Dwell Time

Condition	Mode	Frequency	Pulse	Total Dwell	Burst	Period	Limit	Verdict
		(MHz)	Time (ms)	Time (ms)	Count	Time (ms)	(ms)	
NVNT	1-DH1	2441	0.383	122.177	319	31600	<=400	Pass
NVNT	1-DH3	2441	1.639	275.352	168	31600	<=400	Pass
NVNT	1-DH5	2441	2.887	317.57	110	31600	<=400	Pass
NVNT	2-DH1	2441	0.391	125.12	320	31600	<=400	Pass
NVNT	2-DH3	2441	1.644	277.836	169	31600	<=400	Pass
NVNT	2-DH5	2441	2.891	274.645	95	31600	<=400	Pass
NVNT	3-DH1	2441	0.391	124.729	319	31600	<=400	Pass
NVNT	3-DH3	2441	1.643	254.665	155	31600	<=400	Pass
NVNT	3-DH5	2441	2.894	292.294	101	31600	<=400	Pass

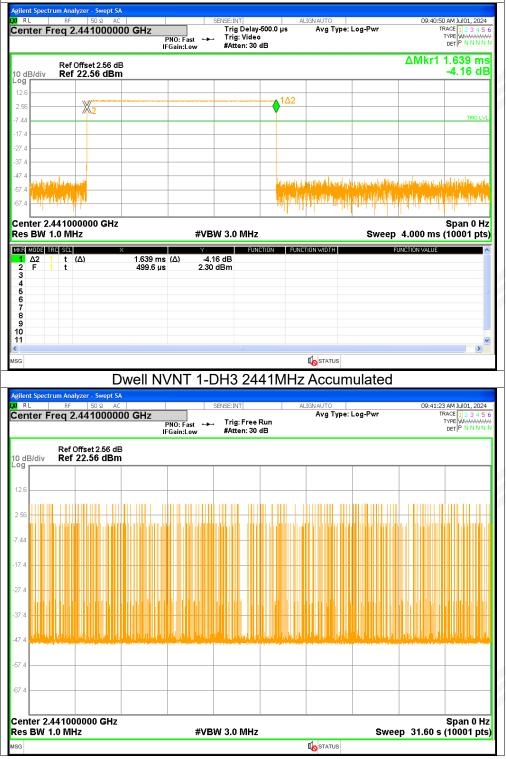


Page 40 of 94



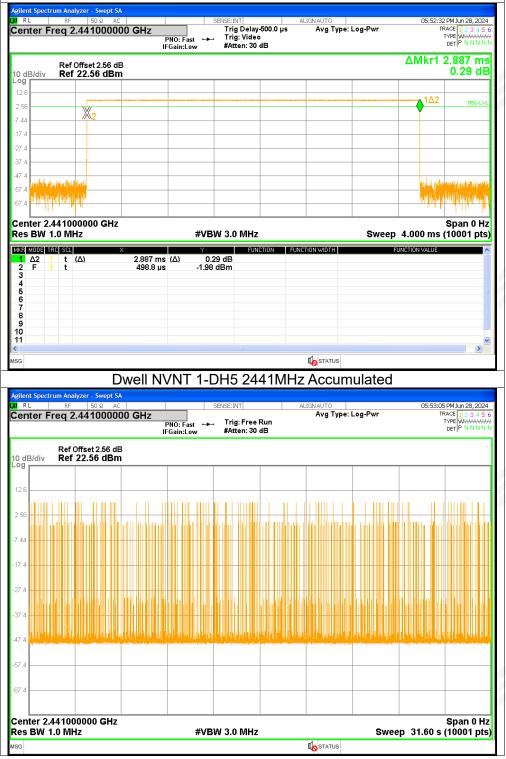


Dwell NVNT 1-DH3 2441MHz One Burst





Dwell NVNT 1-DH5 2441MHz One Burst





Dwell NVNT 2-DH1 2441MHz One Burst





Dwell NVNT 2-DH3 2441MHz One Burst



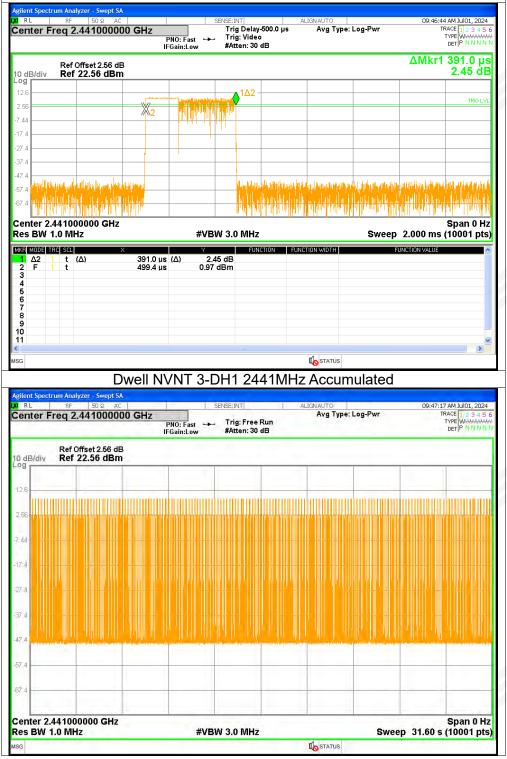


Dwell NVNT 2-DH5 2441MHz One Burst



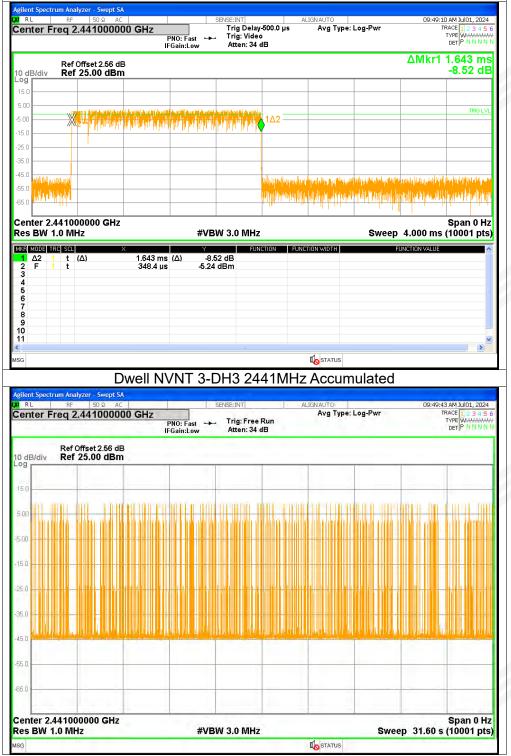


Dwell NVNT 3-DH1 2441MHz One Burst





Dwell NVNT 3-DH3 2441MHz One Burst





Dwell NVNT 3-DH5 2441MHz One Burst



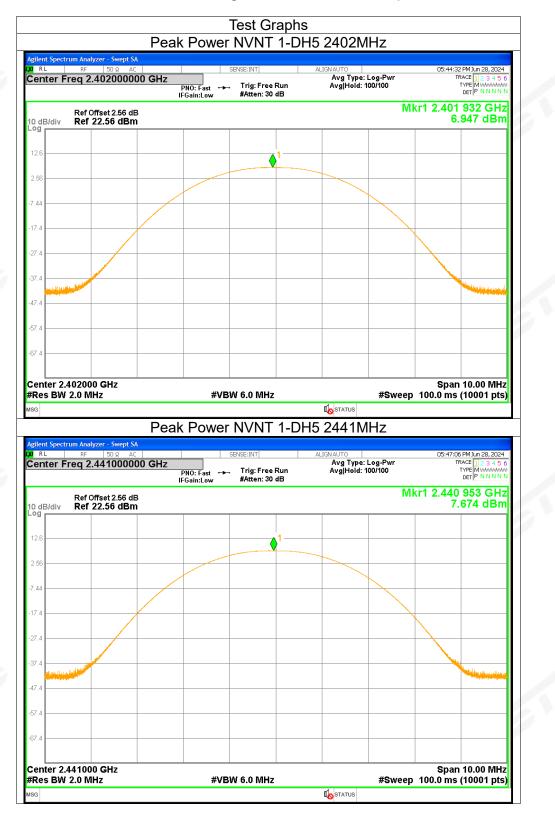


2. Maximum Peak Conducted Output Power

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	6.95	<=21	Pass
NVNT	1-DH5	2441	7.67	<=21	Pass
NVNT	1-DH5	2480	7.4	<=21	Pass
NVNT	2-DH5	2402	8.23	<=21	Pass
NVNT	2-DH5	2441	8.94	<=21	Pass
NVNT	2-DH5	2480	8.63	<=21	Pass
NVNT	3-DH5	2402	8.42	<=21	Pass
NVNT	3-DH5	2441	9.05	<=21	Pass
NVNT	3-DH5	2480	9.68	<=21	Pass



Page 50 of 94





Page 51 of 94

Peak Power NVNT 1-DH5 2480MHz 59 PM Jun 28, 2024 TRACE 1 2 3 4 5 TYPE M WWWW DET P N N N N R L Center Freq 2.480000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.479 859 GHz Ref Offset 2.52 dB Ref 22.52 dBm 7.403 dBm 10 dB/div Q 7 <u>A</u>1 37 47.5 Center 2.480000 GHz Span 10.00 MHz #VBW 6.0 MHz #Sweep 100.0 ms (10001 pts) #Res BW 2.0 MHz **I**STATUS ISG Peak Power NVNT 2-DH5 2402MHz gilent Spectrum Analyzer - Swept SA 09:09:09 AM Jul 01, 2024 TRACE 1 2 3 4 5 6 TYPE M WWWW DET P N N N N N B L Center Freq 2.402000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.401 975 GHz Ref Offset 2.56 dB Ref 22.56 dBm 8.233 dBm 10 dB/div Log 2.5 7.44 a lake 47. Center 2.402000 GHz Span 10.00 MHz #Res BW 2.0 MHz #VBW 6.0 MHz #Sweep 100.0 ms (10001 pts) **I**STATUS SG



Page 52 of 94

Peak Power NVNT 2-DH5 2441MHz 09:14:15 AM Jul 01, 2024 TRACE 1 2 3 4 5 TYPE M DET P N N N N R L Center Freq 2.441000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.440 891 GHz Ref Offset 2.56 dB Ref 22.56 dBm 8.936 dBm 10 dB/div E 7 4 47.7 Center 2.441000 GHz Span 10.00 MHz #VBW 6.0 MHz Sweep 1.333 ms (10001 pts) #Res BW 2.0 MHz **I**STATUS ISG Peak Power NVNT 2-DH5 2480MHz gilent Spectrum Analyzer - Swept SA 09:16:06 AM Jul 01, 2024 TRACE 1 2 3 4 5 6 TYPE M WWWW DET P N N N N N B L Center Freq 2.480000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.479 908 GHz Ref Offset 2.52 dB Ref 22.52 dBm 8.631 dBm 10 dB/div 7.48 37.5 47.3 Center 2.480000 GHz Span 10.00 MHz #Res BW 2.0 MHz #VBW 6.0 MHz Sweep 1.333 ms (10001 pts) **I**STATUS SG

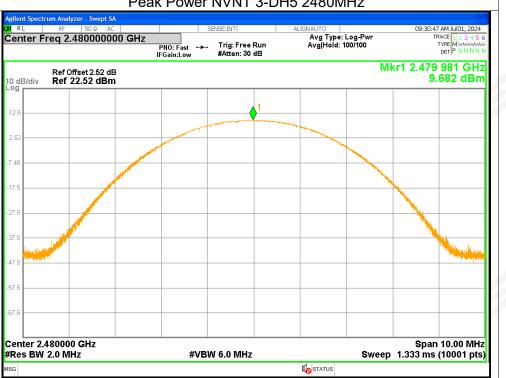


Page 53 of 94

Peak Power NVNT 3-DH5 2402MHz 09:27:13 AM Jul 01, 2024 TRACE 1 2 3 4 5 TYPE M DET P N N N N R L Center Freq 2.402000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.401 955 GHz Ref Offset 2.56 dB Ref 22.56 dBm 8.418 dBm 10 dB/div E 7 4 فللبراريا 47. Center 2.402000 GHz Span 10.00 MHz #VBW 6.0 MHz Sweep 1.333 ms (10001 pts) #Res BW 2.0 MHz **I**STATUS ISG Peak Power NVNT 3-DH5 2441MHz gilent Spectrum Analyzer - Swept SA 09:29:14 AM Jul01, 2024 TRACE 1 2 3 4 5 6 TYPE M WWWW DET P N N N N N B L Center Freq 2.441000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.441 002 GHz 9.047 dBm Ref Offset 2.56 dB Ref 22.56 dBm 10 dB/div 7.4 37. 47. Center 2.441000 GHz Span 10.00 MHz #Res BW 2.0 MHz #VBW 6.0 MHz Sweep 1.333 ms (10001 pts) **I**STATUS SG



Page 54 of 94



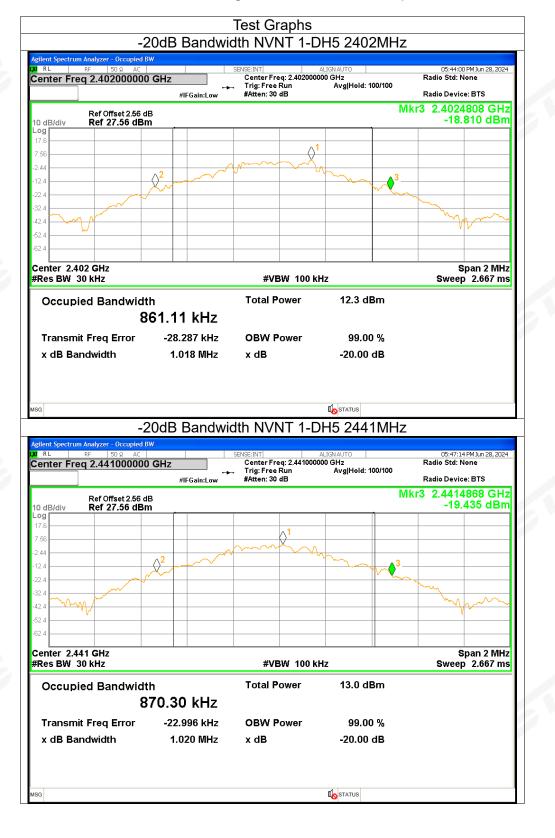
Peak Power NVNT 3-DH5 2480MHz



3. -20dB Bandwidth

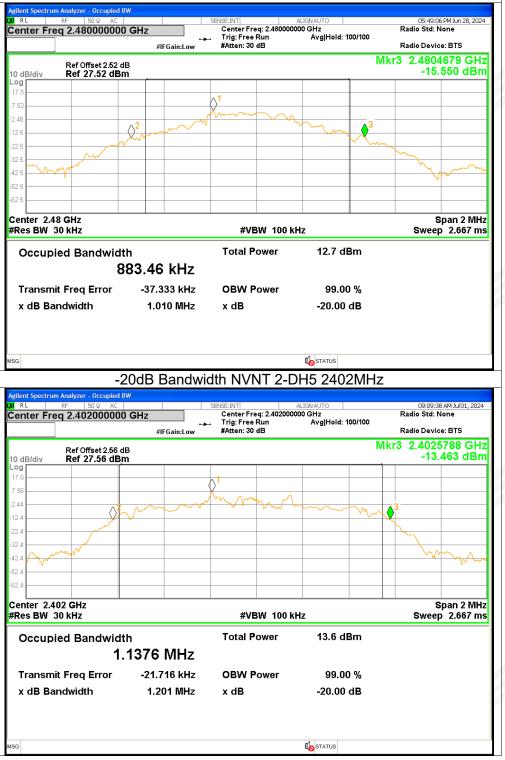
Condition	Mode	Frequency (MHz)	-20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	1.0182	Pass
NVNT	1-DH5	2441	1.0196	Pass
NVNT	1-DH5	2480	1.0105	Pass
NVNT	2-DH5	2402	1.2011	Pass
NVNT	2-DH5	2441	1.241	Pass
NVNT	2-DH5	2480	1.2441	Pass
NVNT	3-DH5	2402	1.2551	Pass
NVNT	3-DH5	2441	1.2821	Pass
NVNT	3-DH5	2480	1.2944	Pass





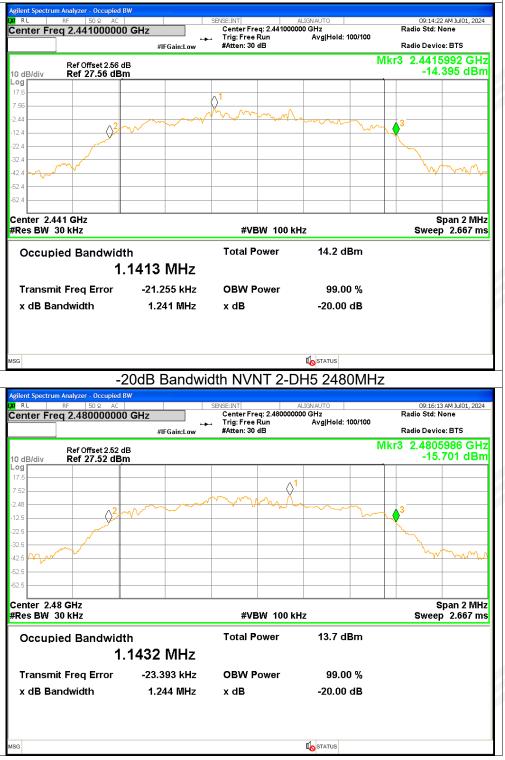


-20dB Bandwidth NVNT 1-DH5 2480MHz



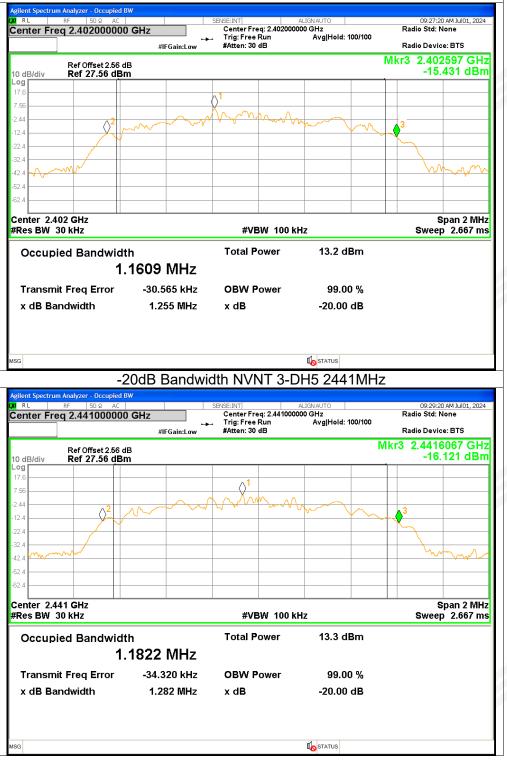


-20dB Bandwidth NVNT 2-DH5 2441MHz



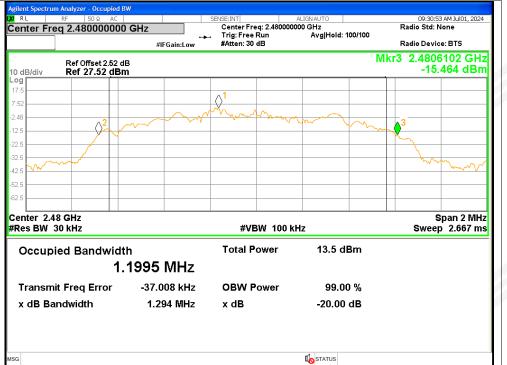


-20dB Bandwidth NVNT 3-DH5 2402MHz





-20dB Bandwidth NVNT 3-DH5 2480MHz











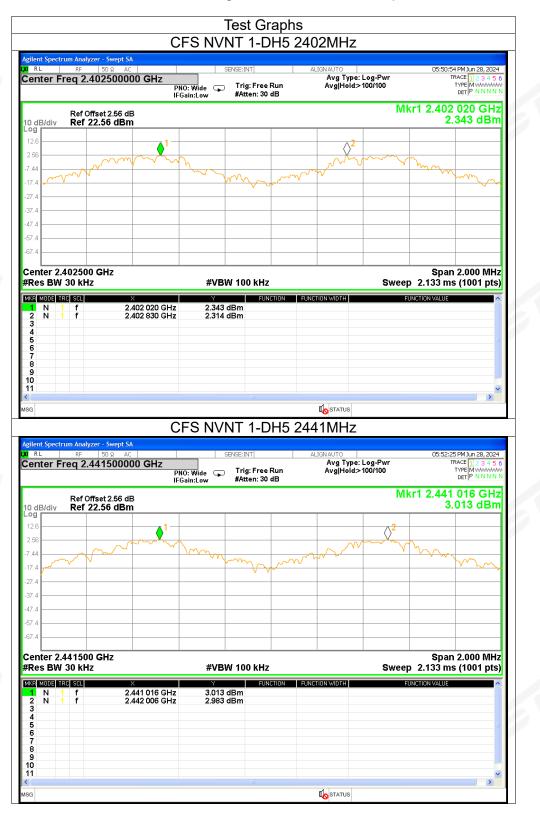


4. Carrier Frequencies Separation

Condition	Mode	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	2402.02	2402.83	0.81	>=0.679	Pass
NVNT	1-DH5	2441.016	2442.006	0.99	>=0.68	Pass
NVNT	1-DH5	2479.014	2480.004	0.99	>=0.674	Pass
NVNT	2-DH5	2401.946	2402.954	1.008	>=0.801	Pass
NVNT	2-DH5	2440.794	2441.814	1.02	>=0.827	Pass
NVNT	2-DH5	2479.134	2480.01	0.876	>=0.829	Pass
NVNT	3-DH5	2401.806	2402.81	1.004	>=0.837	Pass
NVNT	3-DH5	2441.132	2441.988	0.856	>=0.855	Pass
NVNT	3-DH5	2478.808	2479.948	1.14	>=0.863	Pass



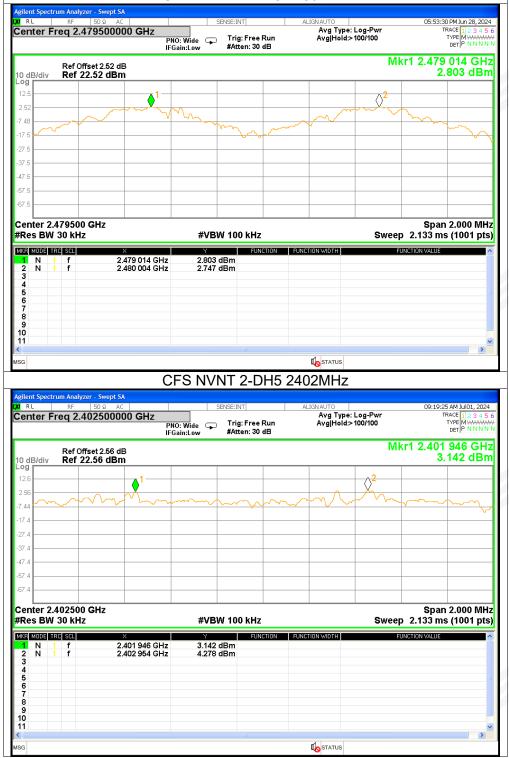
Page 62 of 94



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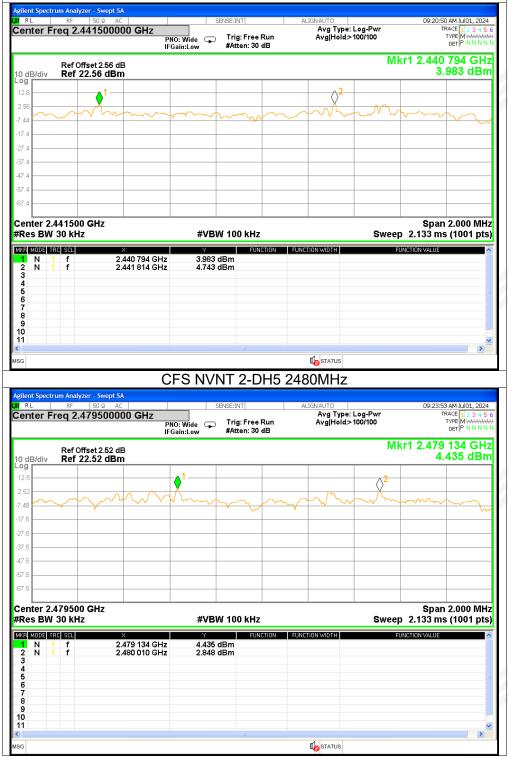
CFS NVNT 1-DH5 2480MHz





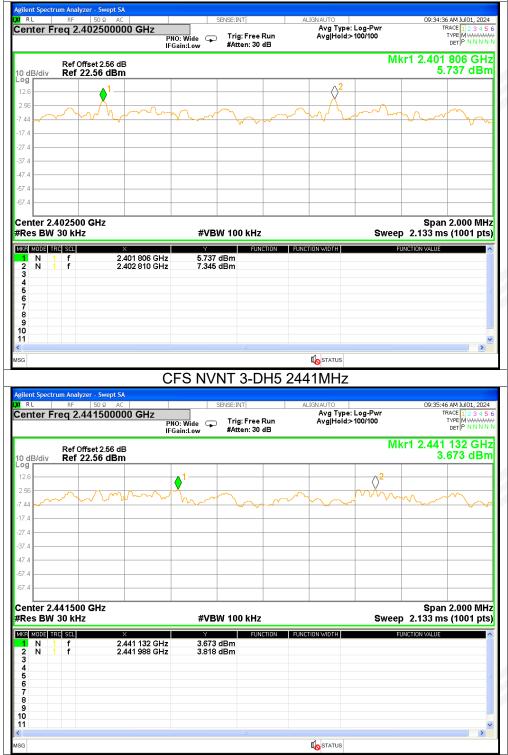


CFS NVNT 2-DH5 2441MHz



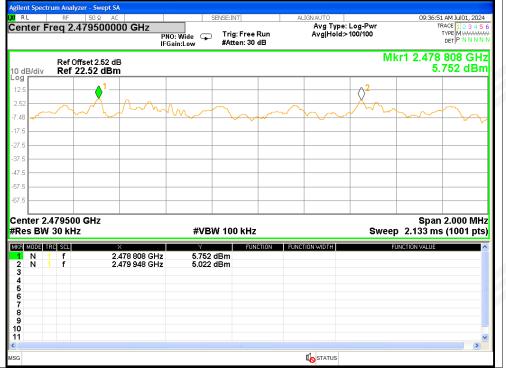


CFS NVNT 3-DH5 2402MHz





CFS NVNT 3-DH5 2480MHz















5. 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





Page 68 of 94

	Honn	ing No. N		NUE Llanning		
gilent Spectrum Analyzer		ng no. n		H5 Hopping	}	
RL RF		SENSE:I	nt	ALIGNAUTO Avg Type: Log Avg Hold>100/	-Pwr	5:51:19 PM Jun 28, 2024 TRACE 1 2 3 4 5 6 TYPE MWWWWW
	IFO	Gain:Low #At	ten: 30 dB		Mkr1 2 40	2 087 5 GHz
Ref Offse 0 dB/div Ref 22.4						5.127 dBm
	0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.	0.0.00.00.00.00.00	በ በ በ ስ ቢ ለበ ስ በ/	1	4.6.6.6.6.7.6.6.6.6.6.6.6.6.6.6.6.6.6.6.	
2.56 - 1117 1117 1117 111 7.44 - 111 111 111 111			VVVVVVV	YWWWWWWW	ĬŶŶŲŶŰŴŶŶŶŶ	
17.4	· ·		·			
37.4						
17.4						
57.4						
tart 2.40000 GHz						p 2.48350 GHz
Res BW 100 kHz	×	#VBW 30		FUNCTION WIDTH	Sweep 8.00	0 ms (1001 pts)
1 N 1 f	2.402 087 5 GHz 2.479 993 0 GHz	5.127 dBm 5.883 dBm				
3	2.473 330 0 0112	0.000 0.001				
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1	Норр	oing No. N	VNT 2-D	-	3	×
1		ing No. N	VNT 2-D	Mostatus 1H5 Hopping]	2
G ilent Spectrum Analyzer RL RF	- Swept SA 50 Ω AC	bing No. N'			0'	9:19:51 AM Jul 01, 2024
G ilent Spectrum Analyzer RL RF	- Swept SA 50 Ω AC 1750000 GHz	SENSE:I	NT	0H5 Hopping Alignauto Avg Type: Log	0: -Pwr	19:51 AM Jul 01, 2024 TRACE 1 2 3 4 5 6 TYPE MUMANAMA
G ilent Spectrum Analyzer RL RF	- Swept SA 50 Ω AC 1750000 GHz 	SENSE:II			0' -Pwr 100	2:19:51 AM 0401, 2024 TRACE 1 2:3 4:5 6 TYPE MWWWWW DET P N N N N N
1 ilent Spectrum Analyzer RL RF 1 enter Freq 2.44 Ref Offse	- Swept SA 50 Q AC 1750000 GHz P IF(IF(t 2.56 dB	SENSE:I	NT g: Free Run	0H5 Hopping Alignauto Avg Type: Log	0' -Pwr 100	19:51 AM Jul 01, 2024 TRACE 1 2 3 4 5 6 TYPE MUMANANA
1 g glent Spectrum Analyzer RL RF 1 enter Freq 2.44' Ref Offse 0 dB/div Ref 22.4 og 2	- Swept SA 50 Q AC 1750000 GHz P IF(IF(t 2.56 dB	SENSE:I	NT g: Free Run	0H5 Hopping Alignauto Avg Type: Log	0' -Pwr 100	19:51 AM 2001, 2024 TRACE 1 2 3 4 5 6 TYPE MWWWW DET P NNNNN 1 753 5 GHz
1 g g g g g g g g g g g g g	- Swept SA 50 Q AC 1750000 GHz P IF(IF(t 2.56 dB	SENSE:I	NT g: Free Run	0H5 Hopping Alignauto Avg Type: Log	0' -Pwr 100	19:51 AM 1001, 2024 TRACE 12 3 4 5 6 TYPE MWWWWW DET PNNNN 1 753 5 GHz
Ilent Spectrum Analyzer RL RF I enter Freq 2.44 0 dB/div Ref 22.5 0 dB/div Ref 22.5 0 dB/div Ref 22.5	- Swept SA 50 Q AC 1750000 GHz P IF(IF(t 2.56 dB	SENSE:I	NT g: Free Run	0H5 Hopping Alignauto Avg Type: Log	0' -Pwr 100	19:51 AM 2001, 2024 TRACE 1 2 3 4 5 6 TYPE MWWWW DET P NNNNN 1 753 5 GHz
1 G G C C C C C C C C C C C C C	- Swept SA 50 Q AC 1750000 GHz P IF(IF(t 2.56 dB	SENSE:I	NT g: Free Run	0H5 Hopping Alignauto Avg Type: Log	0' -Pwr 100	19:51 AM 2001, 2024 TRACE 1 2 3 4 5 6 TYPE MWWWW DET P NNNNN 1 753 5 GHz
1 3 3 3 3 3 3 3 3 3 3 3 3 3	- Swept SA 50 Q AC 1750000 GHz P IF(IF(t 2.56 dB	SENSE:I	NT g: Free Run	0H5 Hopping Alignauto Avg Type: Log	0' -Pwr 100	19:51 AM 2001, 2024 TRACE 1 2 3 4 5 6 TYPE MWWWW DET P NNNNN 1 753 5 GHz
11	- Swept SA 50 Q AC 1750000 GHz P IF(IF(t 2.56 dB	SENSE:I	NT g: Free Run	0H5 Hopping Alignauto Avg Type: Log	0' -Pwr 100	19:51 AM 2001, 2024 TRACE 1 2 3 4 5 6 TYPE MWWWW DET P NNNNN 1 753 5 GHz
II glent Spectrum Analyzer RL RF I enter Freq 2.44 Ref Offse	- Swept SA 50 Q AC 1750000 GHz P IF(IF(t 2.56 dB	SENSE:I	NT g: Free Run	0H5 Hopping Alignauto Avg Type: Log	0' -Pwr 100	19:51 AM 2001, 2024 TRACE 1 2 3 4 5 6 TYPE MWWWW DET P NNNNN 1 753 5 GHz
11 Image: Sector of the sector o	- Swept SA 50 Q AC 1750000 GHz P IF(IF(t 2.56 dB	SENSE: NO: Fast Trit Gain:Low #At	nt	0H5 Hopping Alignauto Avg Type: Log	-Pwr 100 Mkr1 2.40 Ann All Ann All All All All All All All	29:51 AM 3401, 2024 TRACE 12:3 4 5 6 TYPE MININA 1 753 5 GHz 6.993 dBm 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
11	- Swept SA 50 Q AC 1750000 GHz Pi IF(it 2.56 dB	SENSE:I	nt] [] g: Free Run ten: 30 dB	PH5 Hopping	Pwr 100 Mkr1 2.40 AmmAda Andar Sweep 8.00	P19-51 AM 3401, 2024 TRACE 12 3 4 5 6 TYPE MANNAN 1 753 5 GHz 6.993 dBm 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
I1 III IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Swept SA 50 9 AC 1750000 GHz P If (t 2.56 dB 56 dBm министраниции (1753 5 GHz)	SENSEI NO: Fast Trit Gain:Low #At	nt] [] g: Free Run ten: 30 dB	0H5 Hopping Alignauto Avg Type: Log	-Pwr 100 Mkr1 2.40 Ann All Ann All All All All All All All	P19-51 AM 3401, 2024 TRACE 12 3 4 5 6 TYPE MANNAN 1 753 5 GHz 6.993 dBm 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
I1 Ref Offse glent Spectrum Analyzer RF RL RF enter Freq 2.44* 0 dB/div Ref Offse 0 dB/div Ref 22.4 0 12.6 12.6 14.7 17.4 <tr td=""></tr>	Swept SA 50 2 AC 1750000 GHz t 2.56 dB 56 dBm ////////////////////////////////////	SENSE: NO: Fast Trit Gain:Low #At AAAAywayayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayay AAAAywayayay AAAAywayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayay AAAAywayayay AAAAywayayay AAAAywayay AAAAywayayay AAAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAywayayay AAAAAywayayay AAAAAywayayay AAAAA	nt] [] g: Free Run ten: 30 dB	PH5 Hopping	Pwr 100 Mkr1 2.40 AmmAda Andar Sweep 8.00	P19-51 AM 3401, 2024 TRACE 12 3 4 5 6 TYPE MANNAN 1 753 5 GHz 6.993 dBm 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
I1 Ref Offse glent Spectrum Analyzer RF RL RF enter Freq 2.44* 0 B/div 0 Ref Offse 0 B/div 2 Ref Offse 0 I 2 I 12.6 I 2.56 I 47.4 I 47.4 I 47.4 I 47.4 I 47.4 I 57.4 I 17.4 I	Swept SA 50 9 AC 1750000 GHz P If (t 2.56 dB 56 dBm министраниции (1753 5 GHz)	SENSEI NO: Fast Trit Gain:Low #At	nt] [] g: Free Run ten: 30 dB	PH5 Hopping	Pwr 100 Mkr1 2.40 AmmAda Andar Sweep 8.00	P19-51 AM 3401, 2024 TRACE 12 3 4 5 6 TYPE MANNAN 1 753 5 GHz 6.993 dBm 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
II II III IIII Ref Ref IIIII IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Swept SA 50 9 AC 1750000 GHz P If (t 2.56 dB 56 dBm министраниции (1753 5 GHz)	SENSEI NO: Fast Trit Gain:Low #At	nt] [] g: Free Run ten: 30 dB	PH5 Hopping	Pwr 100 Mkr1 2.40 AmmAda Andar Sweep 8.00	P:19:51 AM JUO1, 2024 TRACE 1 2 3 4 5 6 TRACE 1 2 3 4 5 7 TRACE 1 2 3 5 7 TRACE 1
1 Ref Offse RL RF enter Freq 2.44* 0 0 dB/div Ref Offse 0 dB/div Ref Offse 0 dB/div Ref Offse 0 dB/div Ref Offse 12.6 1 47.4 1 47.4 1 47.4 1 47.4 1 47.4 1 47.4 1 47.4 1 47.4 1 47.4 1 47.4 1 47.4 1 56 1 6 1 8 1	Swept SA 50 9 AC 1750000 GHz P If (t 2.56 dB 56 dBm министраниции (1753 5 GHz)	SENSEI NO: Fast Trit Gain:Low #At	nt] [] g: Free Run ten: 30 dB	PH5 Hopping	Pwr 100 Mkr1 2.40 AmmAda Andar Sweep 8.00	P:19:51 AM JUO1, 2024 TRACE 1 2 3 4 5 6 TRACE 1 2 3 4 5 7 TRACE 1 2 3 5 7 TRACE 1
11	Swept SA 50 9 AC 1750000 GHz P If (t 2.56 dB 56 dBm министраниции (1753 5 GHz)	SENSEI NO: Fast Trit Gain:Low #At	nt] [] g: Free Run ten: 30 dB	PH5 Hopping	Pwr 100 Mkr1 2.40 AmmAda Andar Sweep 8.00	P:19:51 AM Jul01, 2024 TRACE 2 3 4 5 5 TYPE MINIMUM 1 753 5 GHz 6.993 dBm 2 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
1 Image: Sector of the sec	Swept SA 50 9 AC 1750000 GHz P If (t 2.56 dB 56 dBm министраниции (1753 5 GHz)	SENSEI NO: Fast Trit Gain:Low #At	nt] [] g: Free Run ten: 30 dB	PH5 Hopping	Pwr 100 Mkr1 2.40 AmmAda Andar Sweep 8.00	P:19:51 AM JUO1, 2024 TRACE 1 2 3 4 5 6 TRACE 1 2 3 4 5 7 TRACE 1 2 3 5 7 TRACE 1



Report No.:STS2406139W02

Page 69 of 94

Hopping No. NVNT 3-DH5 Hopping

ilent Spectrum Analyz						
RL RF	50 Ω AC 41750000 GHz	SENSE:	INT	ALIGNAUTO Avg Type: L		3:35:01 AM Jul 01, 2024 TRACE 1 2 3 4 5
enter Freq 2.4	41750000 GHZ		ig: Free Run tten: 30 dB	Avg Hold:>10		DET P N N N N
	fset 2.56 dB 2.56 dBm				Mkr1 2.40	1 670 0 GHz 2.857 dBm
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art 2.40000 GH Res BW 100 kH		#VBW 30)0 kHz			p 2.48350 GHz) ms (1001 pts
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6. Band Edge

Condition	Mode	Frequency (MHz)	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	No-Hopping	-54.31	<=-20	Pass
NVNT	1-DH5	2480	No-Hopping	-59.72	<=-20	Pass
NVNT	2-DH5	2402	No-Hopping	-56.97	<=-20	Pass
NVNT	2-DH5	2480	No-Hopping	-62.3	<=-20	Pass
NVNT	3-DH5	2402	No-Hopping	-56.24	<=-20	Pass
NVNT	3-DH5	2480	No-Hopping	-61.58	<=-20	Pass



















Page 71 of 94

Test Graphs Band Edge NVNT 1-DH5 2402MHz No-Hopping Ref 27 DM 1 un 28-21 Center Freq 2.402000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 TRACE Trig: Free Run #Atten: 30 dB DET P N N N N PNO: Wide IFGain:Low Mkr1 2.401 928 GHz Ref Offset 2.56 dB Ref 22.56 dBm 6.175 dBm 10 dB/div 7.4 Center 2.402000 GHz #Res BW 100 kHz Span 8.000 MHz Sweep 1.000 ms (1001 pts) #VBW 300 kHz **STATUS** Band Edge NVNT 1-DH5 2402MHz No-Hopping Emission Analyzer - Swept SA RL :40 PM Jun 28, 2024 Center Freq 2.356000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 TRACE PNO: Fast ↔→ Trig: Free Run IFGain:Low #Atten: 30 dB TYPE MWWWWWW DET P N N N N Mkr1 2.401 9 GHz 6.384 dBm Ref Offset 2.56 dB Ref 22.56 dBm 0 dB(dis 2.5 .4 Start 2.30600 GHz #Res BW 100 kHz Stop 2.40600 GHz Sweep 9.600 ms (1001 pts) #VBW 300 kHz MKR MODE TRC SCL FUNCTION EUNCTION VALUE EUNCTION WIDTH 6.384 dBm -56.168 dBm -56.168 dBm -48.137 dBm 2.401 9 Gru 2.400 0 GHz 2.400 0 GHz 2.399 4 GHz N N N 2 3 4 5 6 7 8 9 10 **I**STATUS

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Band Edge NVNT 1-DH5 2480MHz No-Hopping Ref 12 PM Jun 28, 2024 TRACE 1 2 3 4 5 TYPE MWWWW DET P N N N N R L Center Freq 2.480000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 Trig: Free Run #Atten: 30 dB PNO: Wide 🔸 Mkr1 2.479 904 GHz Ref Offset 2.52 dB Ref 22.52 dBm 6.664 dBm 10 dB/div ٥ 5 7 4 47. MAM Center 2.480000 GHz Span 8.000 MHz #VBW 300 kHz Sweep 1.000 ms (1001 pts) #Res BW 100 kHz **I**STATUS ISG Band Edge NVNT 1-DH5 2480MHz No-Hopping Emission ctrum Analyzer - Swept SA ilent Spe 49:15 PM Jun 28, B L Center Freq 2.526000000 GHz IRACE 1 2 3 4 5 (TYPE MWWWW DET P N N N N Avg Type: Log-Pwi Avg|Hold: 100/100 PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.480 0 GHz Ref Offset 2.52 dB Ref 22.52 dBm 6.646 dBm 10 dB/div 2.5 .48 ⊼¢ $\langle \rangle^3$ Start 2.47600 GHz Stop 2.57600 GHz #VBW 300 kHz #Res BW 100 kHz Sweep 9.600 ms (1001 pts) MKR MODE TRC SCL FUNCTION W TION VALUE JNCTION 2.480 0 GHz 2.483 5 GHz 2.500 0 GHz 2.485 2 GHz 6.646 dBm -57.003 dBm -59.169 dBm -53.069 dBm N N N 2 3 4 5 6 7 8 9 10 11 **I**STATUS SG



Band Edge NVNT 2-DH5 2402MHz No-Hopping Ref :43 AM Jul 01, 2024 TRACE 1 2 3 4 5 TYPE MWWWW DET P N N N N B L Center Freq 2.402000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 PNO: Wide 🛶 Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.402 144 GHz 7.977 dBm Ref Offset 2.56 dB Ref 22.56 dBm 10 dB/div ****1 7 A. 37 47. Mm Center 2.402000 GHz Span 8.000 MHz #VBW 300 kHz Sweep 1.000 ms (1001 pts) #Res BW 100 kHz **I**STATUS MSG Band Edge NVNT 2-DH5 2402MHz No-Hopping Emission ctrum Analyzer - Swept SA ilent Spe 09:09:46 AM Jul 01, 2024 TRACE 1 2 3 4 5 6 TYPE M M M M M DET P N N N N B L Center Freq 2.356000000 GHz Avg Type: Log-Pwi Avg|Hold: 100/100 PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.402 0 GHz Ref Offset 2 56 dB 7.290 dBm 10 dB/div Ref 22.56 dBm 4 $\langle \rangle^3$ 47. Start 2.30600 GHz Stop 2.40600 GHz #VBW 300 kHz #Res BW 100 kHz Sweep 9.600 ms (1001 pts) MKR MODE TRC SCL FUNCTION ION VALUE 7.290 dBm -50.780 dBm -50.780 dBm -48.994 dBm 2.402 0 GHz 2.400 0 GHz 2.400 0 GHz 2.399 7 GHz N N N 2 3 4 5 6 7 8 9 10 11 **K**STATUS SG



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RL	RF 50 Ω /	AC	SENSE:INT		ALIGNAUTO		6:18 AM Jul 01, 2024
nter F	req 2.480000(PN	O: Wide ↔→ Trig: F ain:Low #Atten	ree Run : 30 dB	Avg Type: Log-Pwi Avg Hold: 100/100		TRACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N N
dB/div	Ref Offset 2.52 d Ref 22.52 dB					Mkr1 2.4	79 824 GHz 8.469 dBm
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	480000 GHz					Sn	an 8.000 MHz
	100 kHz		#VBW 300 k	Hz			
	100 kHz				I STATUS	weep 1.000	ms (1001 pts)
â	^{100 кн} г Band Eo					weep 1.000	ms (1001 pts)
ent Spectr R L	100 kHz Band Ed rum Analyzer - Swept RF 50 Ω 4	SA AC			No-Hopping	Emissio	ms (1001 pts) N 6:21 AM 14/01, 2024
ent Spectr R L	100 kHz Band Ed rum Analyzer - Swept	SA AC DOO GHz Pt	T 2-DH5 24	80MHz	No-Hopping	Emissio	ms (1001 pts) N
ent Spectr RL enter F	100 kHz Band Ec um Analyzer - Swept RF 50 Ω ≠ req 2.5260000	SA AC DOO GHZ PN IFC	T 2-DH5 24	80MHz	NO-Hopping	Emissio	ms (1001 pts) N 6:21 AM JU01, 2024 TRACE 12 3 4 5 6 TYPE MWWWW DET P NNNN 480 0 GHz
ent Spectr RL enter Fl	100 kHz Band Ed um Analyzer - Sweet RF 50 Q 2 req 2.5260000	SA AC DOO GHZ PN IFC	T 2-DH5 24	80MHz	NO-Hopping	Emissio	ms (1001 pts)
ent Spectr RL enter Fi dB/div g	100 kHz Band Ec um Analyzer - Swept RF 50 Ω ≠ req 2.5260000	SA AC DOO GHZ PN IFC	T 2-DH5 24	80MHz	NO-Hopping	Emissio	ms (1001 pts) N 6:21 AM JU01, 2024 TRACE 12 3 4 5 6 TYPE MWWWW DET P NNNN 480 0 GHz
dB/div g g g g g g g g g g g g g g g g g g g	100 kHz Band Ec um Analyzer - Swept RF 50 Ω ≠ req 2.5260000	SA AC DOO GHZ PN IFC	T 2-DH5 24	80MHz	NO-Hopping	Emissio	ms (1001 pts) N 6:21 AM JU01, 2024 TRACE 12 3 4 5 6 TYPE MWWWW DET P NNNN 480 0 GHz
dB/div g 2.5 52 48	100 kHz Band Ec um Analyzer - Swept RF 50 Ω ≠ req 2.5260000	SA AC DOO GHZ PN IFC	T 2-DH5 24	80MHz	NO-Hopping	Emissio	ms (1001 pts)
dB/div 9 2.5 52 48 48 5.5	100 kHz Band Ec um Analyzer - Swept RF 50 Ω ≠ req 2.5260000	SA AC DOO GHZ PN IFC	T 2-DH5 24	80MHz	NO-Hopping	Emissio	ms (1001 pts)
dB/div gg 2.5 52 48 48 55 52 55 52 55 52 55 55 55 55 55 55 55	100 kHz Band Ec um Analyzer - Swept RF 50 Ω ≠ req 2.5260000	SA AC DOO GHZ PN IFC	T 2-DH5 24	80MHz	NO-Hopping	Emissio	ms (1001 pts)
dB/div g solution g g g g g g g g g g g g g g g g g g g	100 kHz Band Ec um Analyzer - Swept RF 50 Ω ≠ req 2.5260000	SA AC DOO GHZ PN IFC	T 2-DH5 24	80MHz	NO-Hopping	Emissio	ms (1001 pts)
dB/div g 2.5 52 48 7.5 7.5 7.5	100 kHz Band Ec um Analyzer - Swept RF 50 Ω ≠ req 2.5260000	SA AC DOO GHZ PN IFC	T 2-DH5 24	80MHz	NO-Hopping	Emissio	ms (1001 pts)
a dB/div dB/d	100 kHz Band Ec um Analyzer - Swept RF 50 Ω ≠ req 2.5260000	SA AC DOO GHZ PN IFC	T 2-DH5 24	80MHz	ALIGNAUTO Avg Type: Log-Pwr AvgHold: 100/100	Mkr1 2	ms (1001 pts)
a lent Spectr RL anter F dB/div 22.5 5.2 4.8 7.5 7.5 7.5 7.5 7.5 7.5 7.5 7.5	100 kHz	sa ac provide the second secon	T 2-DH5 24	80MHz	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 100/100	Mkr1 2	ms (1001 pts)
a Ilent Spectr RL enter F a a b a b a b b a b b b a b b a b b b b b b b b b b c b b c	100 kHz Band Ed Im Analyzer - Swept PF 50 0 A req 2.5260000 Ref Offset 2.52 dB 1 1 2600 GHz 100 kHz 2600 GHz 1 f	SA AC DOO GHZ PP IFC dB m 2.480 0 GHz 2.480 0 GHz 2.480 0 GHz 2.483 5 GHz	T 2-DH5 24	80MHz	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 100/100	Weep 1.000 Emissio	ms (1001 pts)
a Ilent Spectr RL enter F a a b a b a b b a b b b a b b a b b b b b b b b b b c b b c	100 kHz	SA ac	T 2-DH5 24	80MHz	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 100/100	Weep 1.000 Emissio	ms (1001 pts)
s lent Spectr RL enter F dB/div g 2.5 5.2 4.8 7.5 7.5 7.5 7.5 7.5 7.5 7.5 7.5	100 kHz Band E(req 2.5260000 Ref Offset 2.52 dB 1 1 6000 GHz 100 kHz 38 SCL f f	SA 2000 GHz PP IFC dB m 2.480 0 GHz 2.480 0 GHz 2.483 5 GHz 2.500 0 GHz	T 2-DH5 24 SENSE:INT 10: Fast → Trig: F ain:Low → #Atten #Atten #Atten #Atten 4 3.985 dBm 58.721 dBm 58.721 dBm	80MHz	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 100/100	Weep 1.000 Emissio	ms (1001 pts)
Ient Spectr RL anter F dB/div 9 25 52 48 7.5 <	100 kHz Band E(req 2.5260000 Ref Offset 2.52 dB 1 1 6000 GHz 100 kHz 38 SCL f f	SA 2000 GHz PP IFC dB m 2.480 0 GHz 2.480 0 GHz 2.483 5 GHz 2.500 0 GHz	T 2-DH5 24 SENSE:INT 10: Fast → Trig: F ain:Low → #Atten #Atten #Atten #Atten 4 3.985 dBm 58.721 dBm 58.721 dBm	80MHz	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 100/100	Weep 1.000 Emissio	ms (1001 pts)
ent Spectr RL enter F dB/div g s 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	100 kHz Band E(req 2.5260000 Ref Offset 2.52 dB 1 1 6000 GHz 100 kHz 38 SCL f f	SA 2000 GHz PP IFC dB m 2.480 0 GHz 2.480 0 GHz 2.483 5 GHz 2.500 0 GHz	T 2-DH5 24 SENSE:INT 10: Fast → Trig: F ain:Low → #Atten #Atten #Atten #Atten 4 3.985 dBm 58.721 dBm 58.721 dBm	80MHz	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 100/100	Weep 1.000 Emissio	ms (1001 pts)
Image: sector	100 kHz Band E(req 2.5260000 Ref Offset 2.52 dB 1 1 6000 GHz 100 kHz 38 SCL f f	SA 2000 GHz PP IFC dB m 2.480 0 GHz 2.480 0 GHz 2.483 5 GHz 2.500 0 GHz	T 2-DH5 24 SENSE:INT 10: Fast → Trig: F ain:Low → #Atten #Atten #Atten #Atten 4 3.985 dBm 58.721 dBm 58.721 dBm	80MHz	ALIGNAUTO Avg Type: Log-Pwr Avg Hold: 100/100	Weep 1.000 Emissio	ms (1001 pts)

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Band Edge NVNT 3-DH5 2402MHz No-Hopping Ref 26 AM Jul 01, 2024 TRACE 1 2 3 4 5 TYPE MWWWW DET P N N N N B L Center Freq 2.402000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 Trig: Free Run #Atten: 30 dB PNO: Wide 🔸 Mkr1 2.401 816 GHz Ref Offset 2.56 dB Ref 22.56 dBm 8.058 dBm 10 dB/div ٥ 7 4 47. man WWW white Center 2.402000 GHz Span 8.000 MHz #VBW 300 kHz Sweep 1.000 ms (1001 pts) #Res BW 100 kHz **I**STATUS ISG Band Edge NVNT 3-DH5 2402MHz No-Hopping Emission ctrum Analyzer - Swept SA ilent Spe 28 AM Jul01, 2024 TRACE 1 2 3 4 5 6 TYPE M WWWW DET P N N N N B L Center Freq 2.356000000 GHz Avg Type: Log-Pwi Avg|Hold: 100/100 PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.401 8 GHz Ref Offset 2 56 dB 6.797 dBm 10 dB/div Ref 22.56 dBm .4 $\sqrt{3}$ 47 Start 2.30600 GHz Stop 2.40600 GHz #VBW 300 kHz #Res BW 100 kHz Sweep 9.600 ms (1001 pts) MKR MODE TRC SCL FUNCTION TION VALUE 2.401 8 GHz 2.400 0 GHz 2.400 0 GHz 2.399 6 GHz 6.797 dBm -51.150 dBm -51.150 dBm -48.185 dBm N N N 2 3 4 5 6 7 8 9 10 11 **K**STATUS SG



Band Edge NVNT 3-DH5 2480MHz No-Hopping Ref D9:31:00 AM Jul 01, 2024 TRACE 1 2 3 4 5 TYPE MWWWW DET P N N N N R L Center Freq 2.480000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 Trig: Free Run #Atten: 30 dB PNO: Wide 🔸 Mkr1 2.479 824 GHz Ref Offset 2.52 dB Ref 22.52 dBm 9.200 dBm 10 dB/div 5 7 4 March 47. WW Center 2.480000 GHz Span 8.000 MHz #VBW 300 kHz Sweep 1.000 ms (1001 pts) #Res BW 100 kHz **I**STATUS ISG Band Edge NVNT 3-DH5 2480MHz No-Hopping Emission ctrum Analyzer - Swept SA ilent Spe D9:31:02 AM Jul01, 2024 TRACE 1 2 3 4 5 6 TYPE MWWWW DET P N N N N B L Center Freq 2.526000000 GHz Avg Type: Log-Pwi Avg|Hold: 100/100 PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.479 9 GHz Ref Offset 2.52 dB Ref 22.52 dBm 7.920 dBm 10 dB/div .48 ₹ 47. $\langle \rangle$ Start 2.47600 GHz Stop 2.57600 GHz #VBW 300 kHz #Res BW 100 kHz Sweep 9.600 ms (1001 pts) MKR MODE TRC SCL FUNCTION V TION VALUE 2.479 9 GHz 2.483 5 GHz 2.500 0 GHz 2.485 2 GHz 7.920 dBm -56.913 dBm -58.787 dBm -52.383 dBm N N N 2 3 4 5 6 7 8 9 10 11 **K**STATUS SG



7. Band Edge(Hopping)

Condition	Mode	Frequency (MHz)	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Hopping	-61.75	<=-20	Pass
NVNT	1-DH5	2480	Hopping	-59.99	<=-20	Pass
NVNT	2-DH5	2402	Hopping	-64.72	<=-20	Pass
NVNT	2-DH5	2480	Hopping	-61.97	<=-20	Pass
NVNT	3-DH5	2402	Hopping	-66.23	<=-20	Pass
NVNT	3-DH5	2480	Hopping	-64.47	<=-20	Pass



















Page 78 of 94





Band Edge(Hopping) NVNT 1-DH5 2480MHz Hopping Ref 348 PM Jun 28, 202 TRACE 1 2 3 4 5 TYPE M WWWW DET P N N N 1 R L Center Freq 2.480000000 GHz Avg Type: Log-Pwr Avg|Hold: 2000/2000 Trig: Free Run #Atten: 30 dB PNO: Wide IFGain:Low -----Mkr1 2.476 144 GHz Ref Offset 2.52 dB Ref 22.52 dBm 7.167 dBm 10 dB/div 4 47. Center 2.480000 GHz Span 8.000 MHz #VBW 300 kHz Sweep 1.000 ms (1001 pts) #Res BW 100 kHz **I**STATUS SG Band Edge(Hopping) NVNT 1-DH5 2480MHz Hopping Emission gilent Spectrum Analyzer - Swept SA B L 54:05 PM Jun 28 Center Freq 2.526000000 GHz TYPE M WWWWW DET P N N N N Avg Type: Log-Pwr Avg|Hold: 1000/1000 PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.476 9 GHz Ref Offset 2 52 dB 6.878 dBm 10 dB/div Ref 22.52 dBm bg .48 37 $\langle \rangle^3$ 47. Start 2.47600 GHz Stop 2.57600 GHz #VBW 300 kHz #Res BW 100 kHz Sweep 9.600 ms (1001 pts) MKR MODE TRC SCL FUNCTION V TION VALUE UNCTION 2.476 9 GHz 2.483 5 GHz 2.500 0 GHz 2.486 9 GHz 6.878 dBm N N N -56.245 dBm -54.859 dBm -52.824 dBm 2 3 4 5 6 7 8 9 10 11 > **K**STATUS SG



Band Edge(Hopping) NVNT 2-DH5 2402MHz Hopping Ref 09 AM Jul 01, 2024 TRACE 1 2 3 4 5 TYPE M WWWW DET P N N N N B L Center Freq 2.402000000 GHz Avg Type: Log-Pwr Avg|Hold: 2000/2000 Trig: Free Run #Atten: 30 dB PNO: Wide 🔸 Mkr1 2.402 832 GHz Ref Offset 2.56 dB Ref 22.56 dBm 8.463 dBm 10 dB/div 7 4 M 47. mont wh Center 2.402000 GHz Span 8.000 MHz #VBW 300 kHz #Res BW 100 kHz Sweep 1.000 ms (1001 pts) **I**STATUS SG Band Edge(Hopping) NVNT 2-DH5 2402MHz Hopping Emission gilent Spectrum Analyzer - Swept SA R L 26 AM Jul 01 Center Freq 2.356000000 GHz Avg Type: Log-Pwr Avg|Hold: 1000/1000 TRACE RACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.403 9 GHz Ref Offset 2 56 dB 8.321 dBm 10 dB/div Ref 22.56 dBm .4 $\langle \rangle$ 47. $\langle \rangle$ $\langle \rangle$ Start 2.30600 GHz Stop 2.40600 GHz #VBW 300 kHz #Res BW 100 kHz Sweep 9.600 ms (1001 pts) MKR MODE TRC SCL FUNCTION W ION VALUE JNCTION 8.321 dBm -50.038 dBm -58.960 dBm -56.268 dBm 2.403 9 GHz 2.400 0 GHz 2.390 0 GHz 2.328 8 GHz N N N 2 3 4 5 6 7 8 9 10 11 **K**STATUS SG



Band Edge(Hopping) NVNT 2-DH5 2480MHz Hopping Ref 09:24:11 AM Jul 01, 2024 TRACE 1 2 3 4 5 TYPE M WWWW DET P N N N N B L Center Freq 2.480000000 GHz Avg Type: Log-Pwr Avg|Hold: 2000/2000 Trig: Free Run #Atten: 30 dB PNO: Wide IFGain:Low -----Mkr1 2.479 152 GHz Ref Offset 2.52 dB Ref 22.52 dBm 8.482 dBm 10 dB/div MMMM 7 4 WW 47. www Center 2.480000 GHz Span 8.000 MHz #VBW 300 kHz Sweep 1.000 ms (1001 pts) #Res BW 100 kHz **I**STATUS SG Band Edge(Hopping) NVNT 2-DH5 2480MHz Hopping Emission gilent Spectrum Analyzer - Swept SA R L 9:24:28 AM Jul 01 Center Freq 2.526000000 GHz TYPE N N N N N Avg Type: Log-Pwr Avg|Hold: 1000/1000 PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.477 0 GHz Ref Offset 2.52 dB 7.359 dBm 10 dB/div Ref 22.52 dBm bg 12.6 .48 ⊘° \bigcirc^4 47. \wedge Start 2.47600 GHz Stop 2.57600 GHz #VBW 300 kHz #Res BW 100 kHz Sweep 9.600 ms (1001 pts) MKR MODE TRC SCL FUNCTION V ION VALUE 7.359 dBm -57.102 dBm -57.365 dBm -53.499 dBm 2.477 0 GHz 2.483 5 GHz 2.500 0 GHz 2.494 0 GHz N N N 2 3 4 5 6 7 8 9 10 11 **K**STATUS SG



Band Edge(Hopping) NVNT 3-DH5 2402MHz Hopping Ref 19 AM Jul 01, 2024 TRACE 1 2 3 4 5 TYPE MWWWW DET P N N N N B L Center Freq 2.402000000 GHz Avg Type: Log-Pwr Avg|Hold: 2000/2000 Trig: Free Run #Atten: 30 dB PNO: Wide 🔸 Mkr1 2.405 816 GHz Ref Offset 2.56 dB Ref 22.56 dBm 8.962 dBm 10 dB/div 7 4 47. WWW V NWW Center 2.402000 GHz Span 8.000 MHz #VBW 300 kHz #Res BW 100 kHz Sweep 1.000 ms (1001 pts) **I**STATUS SG Band Edge(Hopping) NVNT 3-DH5 2402MHz Hopping Emission gilent Spectrum Analyzer - Swept SA R L 22 AM Jul 01 Center Freq 2.356000000 GHz Avg Type: Log-Pwi Avg|Hold: 100/100 TRACE RACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.402 7 GHz Ref Offset 2 56 dB 3.825 dBm 10 dB/div Ref 22.56 dBm ۵ 4 47. $()^2$ $\langle \rangle$ Start 2.30600 GHz Stop 2.40600 GHz #VBW 300 kHz #Res BW 100 kHz Sweep 9.600 ms (1001 pts) MKR MODE TRC SCL FUNCTION 3.825 dBm -54.252 dBm -60.365 dBm -57.279 dBm 2.402 7 GHz 2.400 0 GHz 2.390 0 GHz 2.356 5 GHz N N N 2 3 4 5 6 7 8 9 10 11 **K**STATUS SG



Band Edge(Hopping) NVNT 3-DH5 2480MHz Hopping Ref 109 AM Jul 01, 2024 TRACE 1 2 3 4 5 TYPE MWWWW DET P N N N N R L Center Freq 2.480000000 GHz Avg Type: Log-Pwr Avg|Hold: 2000/2000 Trig: Free Run #Atten: 30 dB PNO: Wide IFGain:Low -----Mkr1 2.476 808 GHz Ref Offset 2.52 dB Ref 22.52 dBm 9.243 dBm 10 dB/div 7 4 mary 47. Whin Center 2.480000 GHz Span 8.000 MHz #VBW 300 kHz Sweep 1.000 ms (1001 pts) #Res BW 100 kHz **I**STATUS SG Band Edge(Hopping) NVNT 3-DH5 2480MHz Hopping Emission gilent Spectrum Analyzer - Swept SA B L 13 AM Jul 01, TRACE 1 2 3 Center Freq 2.526000000 GHz Avg Type: Log-Pwi Avg|Hold: 100/100 RACE 1 2 3 4 5 6 TYPE MWWWWW DET P N N N N PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.479 9 GHz Ref Offset 2.52 dB Ref 22.52 dBm 6.404 dBm 10 dB/div 2.5 .48 47. () $\langle \rangle$ Start 2.47600 GHz Stop 2.57600 GHz #VBW 300 kHz #Res BW 100 kHz Sweep 9.600 ms (1001 pts) MKR MODE TRC SCL FUNCTION V TION VALUE 2.479 9 GHz 2.483 5 GHz 2.500 0 GHz 2.485 2 GHz 6.404 dBm N N N -58.568 dBm -58.513 dBm -55.239 dBm 2 3 4 5 6 7 8 9 10 11 **K**STATUS SG

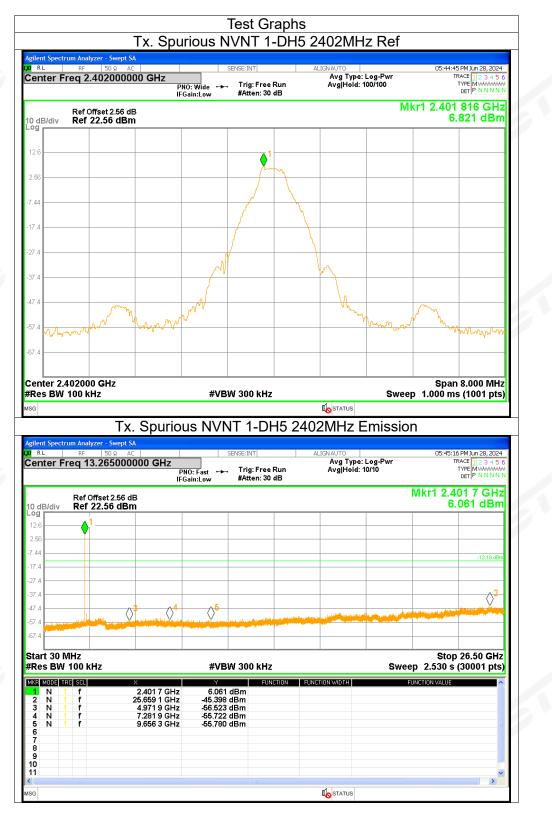


8. Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	-52.21	<=-20	Pass
NVNT	1-DH5	2441	-52.9	<=-20	Pass
NVNT	1-DH5	2480	-52.66	<=-20	Pass
NVNT	2-DH5	2402	-51.94	<=-20	Pass
NVNT	2-DH5	2441	-54.76	<=-20	Pass
NVNT	2-DH5	2480	-52.63	<=-20	Pass
NVNT	3-DH5	2402	-53.01	<=-20	Pass
NVNT	3-DH5	2441	-50.51	<=-20	Pass
NVNT	3-DH5	2480	-54.85	<=-20	Pass



Page 85 of 94





19 PM Jun 28, 2024 TRACE 1 2 3 4 5 TYPE M R L Center Freq 2.441000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 PNO: Wide --- Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.440 928 GHz Ref Offset 2.56 dB Ref 22.56 dBm 6.975 dBm 10 dB/div Ø 7 4 47. ᠬ᠕ Center 2.441000 GHz Span 8.000 MHz #VBW 300 kHz Sweep 1.000 ms (1001 pts) #Res BW 100 kHz **I**STATUS ISG Tx. Spurious NVNT 1-DH5 2441MHz Emission gilent Spectrum Analyzer - Swept SA B L 05:47:50 PM Jun 28, 20 Center Freq 13.265000000 GHz TYPE M WWWWW DET P N N N N N Avg Type: Log-Pwr Avg|Hold: 10/10 PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.440 5 GHz Ref Offset 2.56 dB Ref 22.56 dBm 7.120 dBm 10 dB/div 2.5 .4 $\langle \rangle^2$ 47 $\langle \rangle^4$ $\langle \rangle^{5}$ $\langle \rangle$ 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 UNCTION VALUE JNCTION * 2.440 5 GHz 25.617 7 GHz 4.865 2 GHz 7.414 2 GHz 9.631 6 GHz 7.120 dBm -45.922 dBm -55.648 dBm -55.121 dBm -56.457 dBm 1 2 3 4 5 6 7 8 9 10 11 N N N N N > **K**STATUS SG

Tx. Spurious NVNT 1-DH5 2441MHz Ref



Tx. Spurious NVNT 1-DH5 2480MHz Ref 9:21 PM Jun 28, 2024 TRACE 1 2 3 4 5 TYPE M WWWW DET P N N N N R L Center Freq 2.480000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 PNO: Wide --- Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.479 816 GHz Ref Offset 2.52 dB Ref 22.52 dBm 7.257 dBm 10 dB/div ٥ 7 <u>A</u> 47. Center 2.480000 GHz Span 8.000 MHz #VBW 300 kHz Sweep 1.000 ms (1001 pts) #Res BW 100 kHz **I**STATUS ISG Tx. Spurious NVNT 1-DH5 2480MHz Emission gilent Spectrum Analyzer - Swept SA B L)5:49:51 PM Jun 28, 20 Center Freg 13.265000000 GHz TYPE M WWWWW DET P N N N N Avg Type: Log-Pwr Avg|Hold: 10/10 PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.480 2 GHz Ref Offset 2.52 dB Ref 22.52 dBm 5.966 dBm 10 dB/div 2.5 7.48 -12.74 dB \Diamond^2 47. ⊘5 $\langle \rangle^4$ $\langle \rangle$ 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 UNCTION VALUE JNCTION * 2.480 2 GHz 25.631 8 GHz 4.959 6 GHz 7.376 3 GHz 9.811 5 GHz 5.966 dBm -45.405 dBm -55.597 dBm -55.727 dBm -56.235 dBm 1 2 3 4 5 6 7 8 9 10 11 N N N N N > **I**STATUS SG



52 AM Jul01, 2024 TRACE 1 2 3 4 5 TYPE MWWWM DET P N N N N R L Center Freq 2.402000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 Trig: Free Run #Atten: 30 dB PNO: Wide 🔸 Mkr1 2.402 112 GHz Ref Offset 2.56 dB Ref 22.56 dBm 6.097 dBm 10 dB/div 7 4 47. www. myn Center 2.402000 GHz Span 8.000 MHz #VBW 300 kHz Sweep 1.000 ms (1001 pts) #Res BW 100 kHz **I**STATUS ISG Tx. Spurious NVNT 2-DH5 2402MHz Emission ilent Spectrum Analyzer - Swept SA 09:10:24 AM Jul 01, 2024 TRACE 1 2 3 4 5 6 TYPE M M M M M M DET P N N N N R L Center Freg 13.265000000 GHz Avg Type: Log-Pwr Avg|Hold: 10/10 PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.401 7 GHz Ref Offset 2.56 dB Ref 22.56 dBm 6.657 dBm 10 dB/div 4 $\langle \rangle^2$ 47 \Diamond^4 \Diamond^{5} $\langle \rangle$ 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 TION VALUE INCTION * 2.401 7 GHz 25.644 1 GHz 4.829 9 GHz 7.094 0 GHz 9.544 2 GHz 6.657 dBm -45.842 dBm -56.402 dBm -56.434 dBm -56.357 dBm 1 N N N N N 2 3 4 5 6 7 8 9 10 11 **I**STATUS SG

Tx. Spurious NVNT 2-DH5 2402MHz Ref



D9:14:28 AM Jul 01, 2024 TRACE 1 2 3 4 5 TYPE MWWWW DET P N N N N R L Center Freq 2.441000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 Trig: Free Run #Atten: 30 dB PNO: Wide 🔸 Mkr1 2.441 152 GHz Ref Offset 2.56 dB Ref 22.56 dBm 8.749 dBm 10 dB/div 7 4 47. Center 2.441000 GHz Span 8.000 MHz #VBW 300 kHz Sweep 1.000 ms (1001 pts) #Res BW 100 kHz **I**STATUS ISG Tx. Spurious NVNT 2-DH5 2441MHz Emission ilent Spectrum Analyzer - Swept SA 09:14:59 AM Jul 01, 2024 TRACE 1 2 3 4 5 6 TYPE M M M M M M DET P N N N N R L Center Freg 13.265000000 GHz Avg Type: Log-Pwr Avg|Hold: 10/10 PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.441 4 GHz Ref Offset 2.56 dB Ref 22.56 dBm 4.149 dBm 10 dB/div 2.5 4 $\langle \rangle^2$ 05 \Diamond $\langle \rangle$ 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 TION VALUE JNCTION * 2.441 4 GHz 25.158 0 GHz 5.059 3 GHz 7.453 1 GHz 9.645 7 GHz 4.149 dBm -46.016 dBm -55.330 dBm -55.685 dBm -57.090 dBm 1 2 3 4 5 6 7 8 9 10 N N N N N **I**STATUS SG

Tx. Spurious NVNT 2-DH5 2441MHz Ref



27 AM Jul 01, 2024 TRACE 1 2 3 4 5 TYPE M WANNA DET P N N N N R L Center Freq 2.480000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 Trig: Free Run #Atten: 30 dB PNO: Wide 🔸 Mkr1 2.479 984 GHz Ref Offset 2.52 dB Ref 22.52 dBm 6.943 dBm 10 dB/div 7 <u>A</u> min have 47. mm Imm Center 2.480000 GHz Span 8.000 MHz #VBW 300 kHz Sweep 1.000 ms (1001 pts) #Res BW 100 kHz **I**STATUS ISG Tx. Spurious NVNT 2-DH5 2480MHz Emission ilent Spectrum Analyzer - Swept SA 09:16:58 AM Jul 01, 2024 TRACE 1 2 3 4 5 6 TYPE M M M M M M DET P N N N N B L Center Freg 13.265000000 GHz Avg Type: Log-Pwr Avg|Hold: 10/10 PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.480 2 GHz Ref Offset 2.52 dB Ref 22.52 dBm 5.208 dBm 10 dB/div 2.5 7.48 -13.06 dE ĸ 47 \bigcirc^{5} $\langle \rangle^4$ $\langle \rangle$ 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 TION VALUE JNCTION * 2.480 2 GHz 24.038 3 GHz 5.047 8 GHz 7.376 3 GHz 9.902 4 GHz 5.208 dBm -45.699 dBm -55.839 dBm -55.631 dBm -56.752 dBm 1 2 3 4 5 6 7 8 9 10 N N N N N > **I**STATUS SG

Tx. Spurious NVNT 2-DH5 2480MHz Ref



33 AM Jul 01, 2024 TRACE 1 2 3 4 5 TYPE M WANNA DET P N N N N R L Center Freq 2.402000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 Trig: Free Run #Atten: 30 dB PNO: Wide 🔸 Mkr1 2.401 840 GHz Ref Offset 2.56 dB Ref 22.56 dBm 7.112 dBm 10 dB/div Ø 7 4 47. mon Mur Mar Center 2.402000 GHz Span 8.000 MHz #VBW 300 kHz Sweep 1.000 ms (1001 pts) #Res BW 100 kHz **I**STATUS ISG Tx. Spurious NVNT 3-DH5 2402MHz Emission ilent Spectrum Analyzer - Swept SA D9:28:04 AM Jul01, 2024 TRACE 1 2 3 4 5 6 TYPE MWWWW DET P N N N N R L Center Freg 13.265000000 GHz Avg Type: Log-Pwr Avg|Hold: 10/10 PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.401 7 GHz Ref Offset 2.56 dB Ref 22.56 dBm 1.823 dBm 10 dB/div 2.5 4 $\langle \rangle$ 47 \Diamond^{5} $\langle \rangle$ $\langle \rangle^4$ 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 TION VALUE JNCTION 2.401 7 GHz 25.908 0 GHz 4.904 9 GHz 7.390 4 GHz 9.496 6 GHz 1.823 dBm -45.901 dBm -55.790 dBm -55.902 dBm -55.878 dBm 1 2 3 4 5 6 7 8 9 10 N N N N N **I**STATUS SG

Tx. Spurious NVNT 3-DH5 2402MHz Ref



9:26 AM Jul 01, 2024 TRACE 1 2 3 4 5 TYPE MWWWM DET P N N N N R L Center Freq 2.441000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 Trig: Free Run #Atten: 30 dB PNO: Wide 🔸 Mkr1 2.441 200 GHz Ref Offset 2.56 dB Ref 22.56 dBm 4.980 dBm 10 dB/div 7 4 mrs 47. man mmm Center 2.441000 GHz Span 8.000 MHz #VBW 300 kHz Sweep 1.000 ms (1001 pts) #Res BW 100 kHz **I**STATUS ISG Tx. Spurious NVNT 3-DH5 2441MHz Emission ilent Spectrum Analyzer - Swept SA 09:29:56 AM Jul 01, 2024 TRACE 1 2 3 4 5 6 TYPE M WWWW DET P N N N N R L Center Freg 13.265000000 GHz Avg Type: Log-Pwr Avg|Hold: 10/10 PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.440 5 GHz Ref Offset 2.56 dB Ref 22.56 dBm 7.147 dBm 10 dB/div 4 -15.02 dE $\langle \rangle^2$ $\langle \rangle^4$ $\langle\rangle^{5}$ $\langle \rangle$ 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 UNCTION VALUE JNCTION * 2.440 5 GHz 25.689 1 GHz 4.983 4 GHz 7.405 4 GHz 9.906 8 GHz 7.147 dBm -45.538 dBm -55.664 dBm -55.370 dBm -56.863 dBm 1 2 3 4 5 6 7 8 9 10 N N N N N **I**STATUS SG

Tx. Spurious NVNT 3-DH5 2441MHz Ref



D9:31:07 AM Jul 01, 2024 TRACE 1 2 3 4 5 TYPE MWWWW DET P N N N N R L Center Freq 2.480000000 GHz Avg Type: Log-Pwr Avg|Hold: 100/100 Trig: Free Run #Atten: 30 dB PNO: Wide 🔸 Mkr1 2.479 824 GHz Ref Offset 2.52 dB Ref 22.52 dBm 9.397 dBm 10 dB/div 7 <u>A</u> 47. Center 2.480000 GHz Span 8.000 MHz #VBW 300 kHz Sweep 1.000 ms (1001 pts) #Res BW 100 kHz **I**STATUS ISG Tx. Spurious NVNT 3-DH5 2480MHz Emission ilent Spectrum Analyzer - Swept SA 09:31:38 AM Jul 01, 2024 TRACE 1 2 3 4 5 6 TYPE MWWWW DET P N N N N B L Center Freg 13.265000000 GHz Avg Type: Log-Pwr Avg|Hold: 10/10 PNO: Fast +++ Trig: Free Run IFGain:Low #Atten: 30 dB Mkr1 2.480 2 GHz Ref Offset 2.52 dB Ref 22.52 dBm 7.340 dBm 10 dB/div .48 $\langle \rangle^2$ 47 $\langle \rangle$ \bigcirc^{5} $\langle \rangle$ 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 TION VALUE JNCTION 7.340 dBm -45.454 dBm -54.965 dBm -56.042 dBm -56.623 dBm 2.480 2 GHz 25.687 4 GHz 4.959 6 GHz 7.533 4 GHz 10.093 0 GHz 1 2 3 4 5 6 7 8 9 10 N N N N N **I**STATUS 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.

* * * * * END OF THE REPORT * * * *