

RADIO TEST REPORT FCC ID: OKUSBF19E80

Product: AURA WALL MOUNT STEREO Trade Mark: JBL Model No.: JBL-AURA Family Model: SB-F19E80,AA-111110,BL-AURA-SPK Report No.: S20032802102001 Issue Date: 30 Apr. 2020

Prepared for

SHENZHEN JUNLAN ELECTRONIC LTD No.277 PingKui Road, Shijing Community, Pingshan Street, Pingshar New District, Shenzhen, China

Prepared by

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Certificate #4298.01

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1 TEST RESULT CERTIFICATION

Applicant's name:	SHENZHEN JUNLAN ELECTRONIC LTD
Address:	No.277 PingKui Road, Shijing Community, Pingshan Street, Pingshan New District, Shenzhen, China
Manufacturer's Name:	SHENZHEN JUNLAN ELECTRONIC LTD
Address:	No.277 PingKui Road, Shijing Community, Pingshan Street, Pingshan New District, Shenzhen, China
Product description	
Product name:	AURA WALL MOUNT STEREO
Model and/or type reference:	JBL-AURA
Family Model:	SB-F19E80, AA-111110, JBL-AURA-SPK

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Measurement Procedure Used:

APPLICABLE STANDARDS

STANDARD/ TEST PROCEDURE	TEST RESULT
FCC 47 CFR Part 2, Subpart J FCC 47 CFR Part 15, Subpart C ANSI C63.10-2013	Complied

This device described above has been tested by Shenzhen NTEK Testing Technology Co., Ltd., and 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.

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The test results of this report relate only to the tested sample identified in this report.

Date of Test	:	27 Feb. 2020 ~ 30 Apr. 2020
Testing Engineer	:	Johan Lin
		(Allen Liu)
Technical Manager	:	Jason chen
C C		(Jason Chen)
		Sam. Chen
Authorized Signatory	:	
		(Sam Chen)

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2 SUMMARY OF TEST RESULTS

FCC Part15 (15.247), Subpart C						
Standard Section Test Item Verdict Remark						
15.207	Conducted Emission	PASS				
15.209 (a) 15.205 (a)	Radiated Spurious Emission	PASS				
15.247(a)(1)	Hopping Channel Separation	PASS				
15.247(b)(1)	Peak Output Power	PASS				
15.247(a)(iii)	Number of Hopping Frequency	PASS				
15.247(a)(iii)	Dwell Time	PASS				
15.247(a)(1)	Bandwidth	PASS				
15.247 (d)	Band Edge Emission	PASS				
15.247 (d)	Spurious RF Conducted Emission	PASS				
15.203	Antenna Requirement	PASS				

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Remark:

1. "N/A" denotes test is not applicable in this Test Report.

 All test items were verified and recorded according to the standards and without any deviation during the test.

3. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.



3 FACILITIES AND ACCREDITATIONS

3.1 FACILITIES

All measurement facilities used to collect the measurement data are located at

1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R. China.

The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10 and CISPR Publication 22.

3.2 LABORATORY ACCREDITATIONS AND LISTINGS

Site Description	
CNAS-Lab.	: The Laboratory has been assessed and proved to be in compliance with
	CNAS-CL01:2006 (identical to ISO/IEC 17025:2005)
	The Certificate Registration Number is L5516.
IC-Registration	The Certificate Registration Number is 9270A.
	CAB identifier:CN0074
FCC- Accredited	Test Firm Registration Number: 463705.
	Designation Number: CN1184
A2LA-Lab.	The Certificate Registration Number is 4298.01
	This laboratory is accredited in accordance with the recognized
	International Standard ISO/IEC 17025:2005 General requirements for
	the competence of testing and calibration laboratories.
	This accreditation demonstrates technical competence for a defined
	scope and the operation of a laboratory quality management system
	(refer to joint ISO-ILAC-IAF Communiqué dated 8 January 2009).
Name of Firm	: Shenzhen NTEK Testing Technology Co., Ltd.
Site Location	: 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang
	Street, Bao'an District, Shenzhen 518126 P.R. China.

3.3 MEASUREMENT UNCERTAINTY

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

No.	Item	Uncertainty
1	Conducted Emission Test	±2.80dB
2	RF power, conducted	±0.16dB
3	Spurious emissions, conducted	±0.21dB
4	All emissions, radiated(30MHz~1GHz)	±2.64dB
5	All emissions, radiated(1GHz~6GHz)	±2.40dB
6	All emissions, radiated(>6GHz)	±2.52dB
7	Temperature	±0.5°C
8	Humidity	±2%

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4 GENERAL DESCRIPTION OF EUT

Product Feature and Specification				
Equipment	AURA WALL MOUNT STEREO			
Trade Mark	JBL			
FCC ID	OKUSBF19E80			
Model No.	JBL-AURA			
Family Model	SB-F19E80, AA-111110, JBL-AURA-SPK			
Model Difference	All models are identical except appearance color.			
Operating Frequency	2402MHz~2480MHz			
Modulation	GFSK, π/4-DQPSK, 8-DPSK			
Bluetooth Version	BT V4.0			
Number of Channels	79 Channels			
Antenna Type	PCB Antenna			
Antenna Gain	0.7dBi			
Power supply	DC supply: DC12V 8Amax from DC source			
HW Version	V1.0			
SW Version	V1.0			

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Note: Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.



Revision History

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Certificate #4298.01

Report No.	Version	Description	Issued Date
S20032802102001	Rev.01	Initial issue of report	30 Apr. 2020
	1		



5 DESCRIPTION OF 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.

The Transmitter was operated in the normal operating mode. The TX frequency was fixed which was for the purpose of the measurements.

Test of channel included the lowest and middle and highest frequency to perform the test, then record on this report.

Those data rates (1Mbps for GFSK modulation; 2Mbps for π /4-DQPSK modulation; 3Mbps for 8-DPSK modulation) were used for all test.

The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement -X, Y, and Z-plane. The X-plane results were found as the worst case and were shown in this report.

Carrier Frequency and Channel list:

Channel	Frequency(MHz)
0	2402
1	2403
39	2441
40	2442
77	2479
78	2480

Note: fc=2402MHz+k×1MHz k=0 to 78(k is the Channel)

The following summary table is showing all test modes to demonstrate in compliance with the standard.

For AC Conducted Emission			
Final Test Mode	Description		
Mode 1 normal link mode			

Note: AC power line Conducted Emission was tested under maximum output power.

For Radiated Test Cases		
Final Test Mode	Description	
Mode 1	normal link mode	
Mode 2	CH00(2402MHz)	
Mode 3	CH39(2441MHz)	
Mode 4	CH78(2480MHz)	

Note: For radiated test cases, the worst mode data rate 1Mbps was reported only, because this data rate has the highest RF output power at preliminary tests, and no other significantly frequencies found in conducted spurious emission.

For Conducted Test Cases				
Final Test Mode	Description			
Mode 2	CH00(2402MHz)			
Mode 3	CH39(2441MHz)			
Mode 4	CH78(2480MHz)			
Mode 5	Hopping mode			

Note: The engineering test program was provided and the EUT was programmed to be in continuously transmitting mode.



6 SETUP OF EQUIPMENT UNDER TEST	
6.1 BLOCK DIAGRAM CONFIGURATION OF TEST SYSTEM For AC Conducted Emission Mode	
Monitor C-2 C-1 DC Source AC PLUG	
C-3 DVD	
For Radiated Test Cases	
EUT	
For Conducted Test Cases	
Measurement C-4 FUT	
Note: 1. The temporary antenna connector is soldered on the PCB board in order to and this temporary antenna connector is listed in the equipment list.	perform conducted tests



6.2 SUPPORT EQUIPMENT

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.	Series No.	Note
AE-1	AURA WALL MOUNT STEREO	JBL	JBL-AURA	N/A	Peripherals

Item	Cable Type	Shielded Type	Ferrite Core	Length
C-1	DC cable	NO	NO	1.0m
C-2	HDMI Cable	NO	NO	1.2m
C-3	HDMI Cable	NO	NO	1.2m
C-4	RF Cable	NO	NO	1.2m

Notes:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in [Length] column.
- (3) "YES" is means "shielded" "with core"; "NO" is means "unshielded" "without core".

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6.3 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation& Conducted Test equipment

		corequipment					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibrati on period
1	Spectrum Analyzer	Aglient	E4407B	MY45108040	2019.05.13	2020.05.12	1 year
2	Spectrum Analyzer	Agilent	N9020A	MY49100060	2019.08.28	2020.08.27	1 year
3	Spectrum Analyzer	R&S	FSV40	101417	2019.08.28	2020.08.27	1 year
4	Test Receiver	R&S	ESPI7	101318	2019.05.13	2020.05.12	1 year
5	Bilog Antenna	TESEQ	CBL6111D	31216	2020.04.11	2021.04.10	1 year
6	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2018.05.19	2020.05.18	2 year
7	Horn Antenna	EM	EM-AH-1018 0	2011071402	2019.08.15	2020.08.14	1 year
8	Broadband Horn Antenna	SCHWARZBE CK	BBHA 9170	803	2019.12.12	2020.12.11	1 year
9	Amplifier	EMC	EMC051835 SE	980246	2019.08.06	2020.08.05	1 year
10	Active Loop Antenna	SCHWARZBE CK	FMZB 1519 B	055	2019.12.12	2020.12.11	1 year
11	Power Meter	DARE	RPR3006W	15I00041SN 084	2019.08.06	2020.08.05	1 year
12	Test Cable (9KHz-30MHz)	N/A	R-01	N/A	2018.04.21	2021.04.20	3 year
13	Test Cable (30MHz-1GHz)	N/A	R-02	N/A	2018.04.21	2021.04.20	3 year
14	High Test Cable(1G-40G Hz)	N/A	R-03	N/A	2018.04.21	2021.04.20	3 year
15	High Test Cable(1G-40G Hz)	N/A	R-04	N/A	2018.04.21	2021.04.20	3 year
16	Filter	TRILTHIC	2400MHz	29	2018.04.19	2021.04.18	3 year
17	temporary antenna connector (Note)	NTS	R001	N/A	N/A	N/A	N/A

Note:

We will use the temporary antenna connector (soldered on the PCB board) When conducted test And this temporary antenna connector is listed within the instrument list



AC Conduction Test equipment							
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Test Receiver	R&S	ESCI	101160	2019.05.13	2020.05.12	1 year
2	LISN	R&S	ENV216	101313	2019.04.15	2021.04.14	1 year
3	LISN	SCHWARZBE CK	NNLK 8129	8129245	2019.08.13	2020.08.12	1 year
4	50Ω Coaxial Switch	ANRITSU CORP	MP59B	6200983704	2018.05.19	2020.05.18	2 year
5	Test Cable (9KHz-30MH z)	N/A	C01	N/A	2018.04.21	2021.04.20	3 year
6	Test Cable (9KHz-30MH z)	N/A	C02	N/A	2018.04.21	2021.04.20	3 year
7	Test Cable (9KHz-30MH z)	N/A	C03	N/A	2018.04.21	2021.04.20	3 year

Note: Each piece of equipment is scheduled for calibration once a year except the Aux Equipment & Test Cable which is scheduled for calibration every 2 or 3 years.

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7 TEST REQUIREMENTS

7.1 CONDUCTED EMISSIONS TEST

7.1.1 Applicable Standard

According to FCC Part 15.207(a)

7.1.2 Conformance Limit

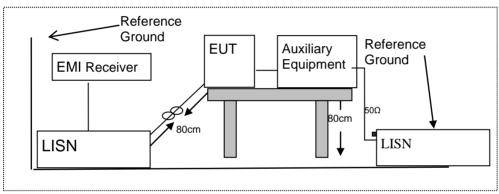
Frequency(MHz)	Conducted Emission Limit			
Frequency(MI12)	Quasi-peak	Average		
0.15-0.5	66-56*	56-46*		
0.5-5.0	56	46		
5.0-30.0	60	50		

Note: 1. *Decreases with the logarithm of the frequency

2. The lower limit shall apply at the transition frequencies

3. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

7.1.3 Test Configuration



7.1.4 Test Procedure

According to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 Conducted emissions the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode.

- 1. The EUT was placed 0.4 meter from the conducting wall of the shielding room.
- 2. The EUT was placed on a table which is 0.8m above ground plane.
- 3. Connect EUT to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- 4. 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 40cm long.
- 5. 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.
- 6. LISN at least 80 cm from nearest part of EUT chassis.
- 7. The frequency range from 150KHz to 30MHz was searched.
- 8. Set the test-receiver system to Peak Detect Function and specified bandwidth(IF bandwidth=9KHz) with Maximum Hold Mode
- 9. For the actual test configuration, please refer to the related Item –EUT Test Photos.

7.1.5 Test Results

Pass



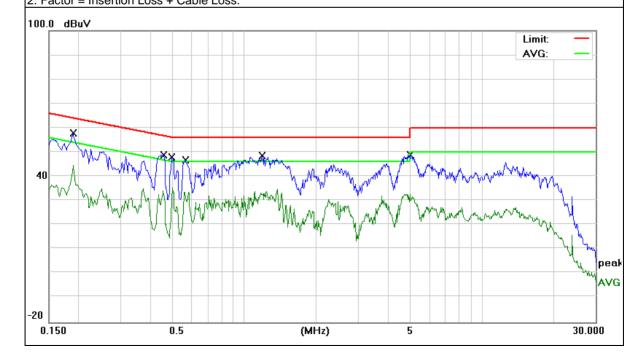
7.1.6 Test Results

EUT:	AURA WALL MOUNT STEREO	Model Name :	JBL-AURA
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	1010hPa	Phase :	L
Test Voltage :	DC12V From DC Source	Test Mode:	Mode 1

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Dement
(MHz)	(dBµV)	(dB)	(dBµV)	(dBµV)	(dB)	Remark
0.190	48.19	9.76	57.95	64.03	-6.08	QP
0.190	34.75	9.76	44.51	54.03	-9.52	AVG
0.458	39.11	9.74	48.85	56.73	-7.88	QP
0.458	28.28	9.74	38.02	46.73	-8.71	AVG
0.498	38.12	9.74	47.86	56.03	-8.17	QP
0.498	25.59	9.74	35.33	46.03	-10.70	AVG
0.566	36.86	9.74	46.60	56.00	-9.40	QP
0.566	26.71	9.74	36.45	46.00	-9.55	AVG
1.186	38.68	9.74	48.42	56.00	-7.58	QP
1.186	24.98	9.74	34.72	46.00	-11.28	AVG
4.986	39.01	9.87	48.88	56.00	-7.12	QP
4.986	22.89	9.87	32.76	46.00	-13.24	AVG

Remark:

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





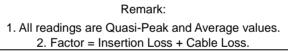
Report No.: S20032802102001

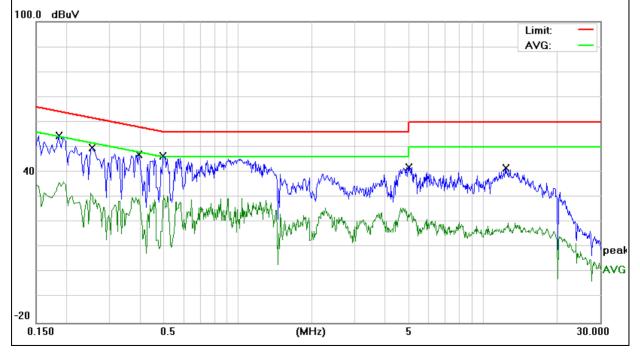
EUT:	AURA WALL MOUNT STEREO	Model Name :	JBL-AURA
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	1010hPa	Phase :	Ν
Test Voltage :	DC12V From DC Source	Test Mode:	Mode 1

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Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Demeri
(MHz)	(dBµV)	(dB)	(dBµV)	(dBµV)	(dB)	Remark
0.186	44.69	9.73	54.42	64.21	-9.79	QP
0.186	34.60	9.73	44.33	54.21	-9.88	AVG
0.254	40.10	9.74	49.84	61.62	-11.78	QP
0.254	26.42	9.74	36.16	51.62	-15.46	AVG
0.394	37.26	9.75	47.01	57.98	-10.97	QP
0.394	26.90	9.75	36.65	47.98	-11.33	AVG
0.494	36.73	9.75	46.48	56.10	-9.62	QP
0.494	26.37	9.75	36.12	46.10	-9.98	AVG
4.958	32.10	9.94	42.04	56.00	-13.96	QP
4.958	18.67	9.94	28.61	46.00	-17.39	AVG
12.370	31.71	10.07	41.78	60.00	-18.22	QP
12.370	9.64	10.07	19.71	50.00	-30.29	AVG







7.2 RADIATED SPURIOUS EMISSION

7.2.1 Applicable Standard

According to FCC Part 15.247(d) and 15.209 and ANSI C63.10-2013

7.2.2 Conformance Limit

According to FCC Part 15.247(d): radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)). According to FCC Part15.205, Restricted bands

According to 1 CC 1 art 13.203, restricted bands							
MHz	MHz	MHz	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	123-138	2200-2300	14.47-14.5				
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2				
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4				
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12				
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0				
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8				
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5				
12.57675-12.57725	322-335.4	3600-4400	(2)				
13.36-13.41							

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

Restricted Frequency(MHz)	Field Strength (µV/m)	Field Strength (dBµV/m)	Measurement Distance
0.009~0.490	2400/F(KHz)	20 log (uV/m)	300
0.490~1.705	24000/F(KHz)	20 log (uV/m)	30
1.705~30.0	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

Limits of Radiated Emission Measurement(Above 1000MHz)

	Class B (dBuV/m) (at 3M)					
Frequency(MHz)	PEAK	AVERAGE				
Above 1000	74	54				

Remark :1. Emission level in dBuV/m=20 log (uV/m)

Measurement was performed at an antenna to the closed point of EUT distance of meters.
For Frequency 9kHz~30MHz:

3. For Frequency 9kHz~30MHz.

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

Limit line=Specific limits(dBuV) + distance extrapolation factor.

For Frequency above 30MHz:

Distance extrapolation factor =20log(Specific distance/ test distance)(dB);

Limit line=Specific limits(dBuV) + distance extrapolation factor.

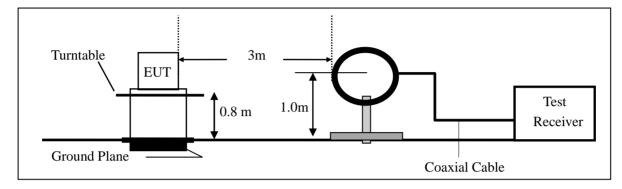


7.2.3 **Measuring Instruments**

The Measuring equipment is listed in the section 6.3 of this test report.

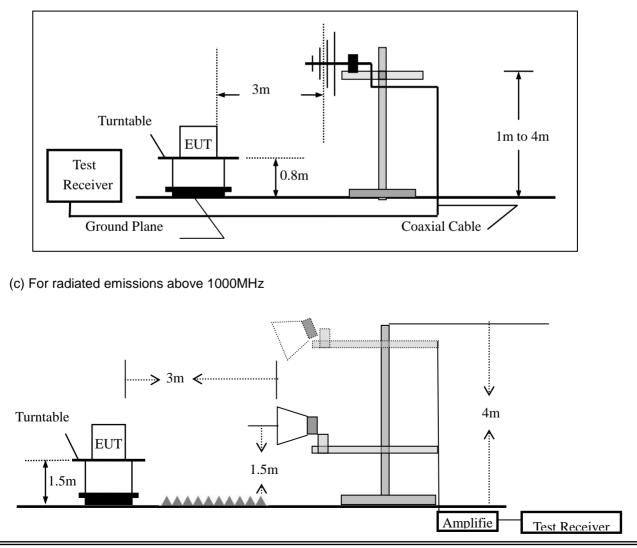
Test Configuration 7.2.4

(a) For radiated emissions below 30MHz



ACC

(b) For radiated emissions from 30MHz to 1000MHz





7.2.5 Test Procedure

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10-2013. The test distance is 3m. The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 and CAN/CSA-CEI/IEC CISPR 22.

This test is required for any spurious emission that falls in a Restricted Band, as defined in Section 15.205. It must be performed with the highest gain of each type of antenna proposed for use with the EUT. Use the following spectrum analyzer settings:

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 m for below 1GHz and 1.5m for above 1GHz the ground at a 3 meter. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m for below 1GHz and 1.5m for above 1GHz; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For the radiated emission test above 1GHz: Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- e. 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 then Quasi Peak detector mode re-measured.
- f. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- g. 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

During the radiated emission test, the Spectrum Analyzer was set with the following configurations: For peak measurement:

Set RBW=120 kHz for f < 1 GHz; VBW≥RBW; Sweep = auto; Detector function = peak; Trace = max hold; Set RBW = 1 MHz, VBW= 3MHz for f≥1 GHz

For average measurement:

VBW = 10 Hz, when duty cycle is no less than 98 percent.

VBW \geq 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.



During the radiated emission t	est, the Spectrum An	alyzer was set with the follow	ving configurations:
Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	QP	120 kHz	300 kHz
Above 1000	Peak	1 MHz	1 MHz
Above 1000	Average	1 MHz	10 Hz

Note: for the frequency ranges below 30 MHz, a narrower RBW is used for these ranges but the measured value should add a RBW correction factor (RBWCF) where RBWCF [dB] =10*lg(100 [kHz]/narrower RBW [kHz]). , the narrower RBW is 1 kHz and RBWCF is 20 dB for the frequency 9 kHz to 150 kHz, and the narrower RBW is 10 kHz and RBWCF is 10 dB for the frequency 150 kHz to 30 MHz.

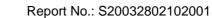
7.2.6 Test Results

■ Spurious Emission below 30MHz (9KHz to 30MHz)

EUT:	AURA WALL MOUNT STEREO	Model No.:	JBL-AURA
Temperature:	20 ℃	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Allen Liu

Freq.	Ant.Pol.	Emission L	.evel(dBuV/m)	Limit 3	m(dBuV/m)	Over(dB)		
(MHz)	H/V	PK	AV	PK	AV	PK	AV	

Note: the amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.



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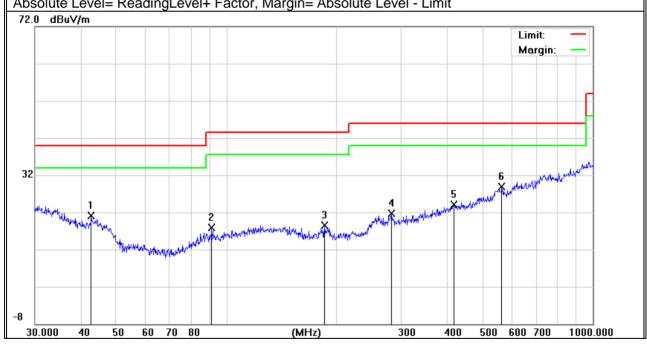
Spurious Emission below 1GHz (30MHz to 1GHz) All the modulation modes have been tested, and the

All the modulation	i modes nave been tested, a	and the worst result was repor	t as below:
EUT:	AURA WALL MOUNT STEREO	Model Name :	JBL-AURA
Temperature:	20 ℃	Relative Humidity:	48%
Pressure:	1010hPa	Test Mode:	Mode 1
Test Voltage :	DC12V From DC Source		

Polar	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(H/V)	(MHz) (dBuV) (dB) (dBuV/m		(dBuV/m)	(dBuV/m)	(dB)		
V	42.750	8.69	12.32	21.01	40.00	-18.99	QP
V	91.175	7.85	10.10	17.95	43.50	-25.55	QP
V	185.138	8.56	9.85	18.41	43.50	-25.09	QP
V	281.995	6.22	15.50	21.72	46.00	-24.28	QP
V	417.641	5.22	18.79	24.01	46.00	-21.99	QP
V	564.639	6.55	22.29	28.84	46.00	-17.16	QP

Remark:

Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit





Polar	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(H/V)	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Н	48.843	6.33	10.07	16.40	40.00	-23.60	QP
Н	94.098	7.77	10.57	18.34	43.50	-25.16	QP
Н	155.910	6.97	11.72	18.69	43.50	-24.81	QP
Н	280.024	5.62	16.24	21.86	46.00	-24.14	QP
Н	420.580	13.18	18.85	32.03	46.00	-13.97	QP
Н	665.804	7.74	23.06	30.80	46.00	-15.20	QP
						Margin:	
32	Mr. de under an de transformation programs	Provident Participation	3 พงพังษ์"างการเคมีปล _{ากเก}	numer and the second	admeter and a second and a se	6 /*~~/*********	nutre lines
8		70 80	(MHz) 31	00 400 500) 600 700	1000.000



EUT:			AURA WALL MOUNT			el No.:		JBL-AURA			
Temperatu	re:	20 ℃			Relat	ive Humi	dity:	48%			
Test Mode		Mode2	/Mode3/M	lode4	Test	By:		Allen Liu			
All the mod	ulation m	odes hav	e been tes	sted, G	FSK is	s worst c	ase and	the worst re	sult was rep	oort as belo	
Frequency	Read Level	Cable loss	Antenna Factor	Prear Fact		Emission Level	Limits	Margin	Remark	Comment	
(MHz)	(dBµV)	(dB)	dB/m	(dB	3) (dBµV/m)	(dBµV/n	n) (dB)			
			Low Cha	annel (2	2402 M	lHz)(GFSI	≺)Abov	re 1G			
4804.718	60.05	5.21	35.59	44.3	30	56.55	74.00	-17.45	Pk	Vertical	
4804.718	42.08	5.21	35.59	44.3	30	38.58	54.00	-15.42	AV	Vertical	
7205.686	61.57	6.48	36.27	44.6	60	59.72	74.00	-14.28	Pk	Vertical	
7205.686	39.91	6.48	36.27	44.6	60	38.06	54.00	-15.94	AV	Vertical	
4804.626	61.45	5.21	35.55	44.3	30	57.91	74.00	-16.09	Pk	Horizontal	
4804.626	41.30	5.21	35.55	44.30		37.76	54.00	-16.24	AV	Horizontal	
7206.287	60.05	6.48	36.27	44.52		58.28	74.00	-15.72	Pk	Horizontal	
7206.287	40.44	6.48	36.27	44.5		38.67	54.00		AV	Horizontal	
			Mid Cha	annel (2	441 M	Hz)(GFSF	()Abov	e 1G			
4881.191	61.88	5.21	35.66	44.2	20	58.55	74.00	-15.45	Pk	Vertical	
4881.191	42.20	5.21	35.66	44.2	20	38.87	54.00	-15.13	AV	Vertical	
7322.874	62.36	7.10	36.50	44.4	13	61.53	74.00	-12.47	Pk	Vertical	
7322.874	42.33	7.10	36.50	44.4	13	41.50	54.00	-12.50	AV	Vertical	
4882.276	60.30	5.21	35.66	44.2	20	56.97	74.00	-17.03	Pk	Horizontal	
4882.276	41.80	5.21	35.66	44.2	20	38.47	54.00	-15.53	AV	Horizontal	
7322.973	61.96	7.10	36.50	44.4		61.13	74.00		Pk	Horizontal	
7322.973	39.59	7.10	36.50	44.4		38.76	54.00		AV	Horizontal	
			_	-		Hz)(GFSI	-			1	
4960.742	60.22	5.21	35.52	44.2		56.74	74.00		Pk	Vertical	
4960.742	41.93	5.21	35.52	44.2		38.45	54.00		AV	Vertical	
7440.332	61.00	7.10	36.53	44.6		60.03	74.00		Pk	Vertical	
7440.332	40.77	7.10	36.53	44.6		39.80	54.00		AV	Vertical	
4960.735	59.88	5.21	35.52	44.2		56.40	74.00	-17.60	Pk	Horizontal	
4960.735	41.72	5.21	35.52	44.2		38.24	54.00		AV	Horizontal	
7440.564	60.08	7.10	36.53	44.6		59.11	74.00	-14.89	Pk	Horizontal	
7440.564	41.85	7.10	36.53	44.6	50	40.88	54.00	-13.12	AV	Horizontal	

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Note:

(1) Emission Level= Antenna Factor + Cable Loss + Read Level - Preamp Factor (2)All other emissions more than 20dB below the limit.



Report No.: S20032802102001

EUT:		AURA WALL MOUNT STEREO			Mode	el No.:		JBL-AURA			
Temperate	ure:	20 ℃				tive Humic	lity:	48%	, D		
Test Mode		Mode2/	Mode4		Test	By:		Alle	n Liu		
All the modulation modes have been tested, and the worst result was report as below:							elow:				
Frequenc	Meter	Cable	Antenna	Prea		Emission	Limits				
у	Reading	Loss	Factor	Fac	ctor	Level	Limit	S	Margin	Detector	Comment
(MHz)	(dBµV)	(dB)	dB/m		B)	(dBµV/m)	(dBµV/	/m)	(dB)	Туре	
				Mbps	រ (GFS	SK)-hopping	9				
2310.00	62.25	2.97	27.80	43.	.80	49.22	74		-24.78	Pk	Horizontal
2310.00	42.84	2.97	27.80	43.	.80	29.81	54		-24.19	AV	Horizontal
2310.00	60.28	2.97	27.80	43.	.80	47.25	74		-26.75	Pk	Vertical
2310.00	41.54	2.97	27.80	43.80		28.51	54		-25.49	AV	Vertical
2390.00	60.05	3.14	27.21	43.80		46.60	74		-27.40	Pk	Vertical
2390.00	41.61	3.14	27.21	43.80		28.16	54		-25.84	AV	Vertical
2390.00	62.02	3.14	27.21	43.80		48.57	74		-25.43	Pk	Horizontal
2390.00	41.43	3.14	27.21	43.	.80	27.98	54		-26.02	AV	Horizontal
2483.50	60.45	3.58	27.70	44.	.00	47.73	74		-26.27	Pk	Vertical
2483.50	40.40	3.58	27.70	44.	.00	27.68	54		-26.32	AV	Vertical
2483.50	61.21	3.58	27.70	44.	.00	48.49	74		-25.51	Pk	Horizontal
2483.50	39.84	3.58	27.70	44.	.00	27.12	54		-26.88	AV	Horizontal
			1M	bps(G	FSK)	- Non-hopp	oing				
2310.00	61.70	2.97	27.80	43.	.80	48.67	74		-25.33	Pk	Horizontal
2310.00	40.99	2.97	27.80	43.	.80	27.96	54		-26.04	AV	Horizontal
2310.00	60.67	2.97	27.80	43.	.80	47.64	74		-26.36	Pk	Vertical
2310.00	40.34	2.97	27.80	43	.80	27.31	54		-26.69	AV	Vertical
2390.00	62.41	3.14	27.21	43	.80	48.96	74		-25.04	Pk	Vertical
2390.00	40.37	3.14	27.21	43	.80	26.92	54		-27.08	AV	Vertical
2390.00	62.29	3.14	27.21	43.	.80	48.84	74		-25.16	Pk	Horizontal
2390.00	40.55	3.14	27.21	43.	.80	27.10	54		-26.90	AV	Horizontal
2483.50	59.99	3.58	27.70	44.	.00	47.27	74		-26.73	Pk	Vertical
2483.50	41.59	3.58	27.70	44.	.00	28.87	54		-25.13	AV	Vertical
2483.50	61.78	3.58	27.70	44.	.00	49.06	74		-24.94	Pk	Horizontal
2483.50	41.13	3.58	27.70	44.	.00	28.41	54		-25.59	AV	Horizontal

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Certificate #4298.01

Note: (1) All other emissions more than 20dB below the limit.



EUT: AURA WALL MOUNT STEREO			T Model N	Model No.:		JBL-AURA						
Temperature: 20 °C			Relative	Relative Humidity:			48%					
Test Mode: Mode2/ Mode4			Test By	est By: Allen Liu								
All th	e modulatio	n moo	des	have be	en tested	, and the v	worst resul	t was	s re	port as b	elow:	
	Frequenc y	Read g Lev		Cable Loss	Antenn a	Preamp Factor	Emission Level	Limi	its	Margin	Detecto r	Commont
	(MHz)	(dBµ	ıV)	(dB)	dB/m	(dB)	(dBµ V/m)	(dB) V/m		(dB)	Туре	Comment
	3260	61.2	21	4.04	29.57	44.70	50.12	74	ŀ	-23.88	Pk	Vertical
	3260	48.6	53	4.04	29.57	44.70	37.54	54	ļ	-16.46	AV	Vertical
	3260	61.3	33	4.04	29.57	44.70	50.24	74	ļ	-23.76	Pk	Horizontal
	3260	50.8	33	4.04	29.57	44.70	39.74	54	ŀ	-14.26	AV	Horizontal
	3332	59.5	59	4.26	29.87	44.40	49.32	74	ŀ	-24.68	Pk	Vertical
	3332	50.8	35	4.26	29.87	44.40	40.58	54	ŀ	-13.42	AV	Vertical
	3332	61.7	71	4.26	29.87	44.40	51.44	74	ŀ	-22.56	Pk	Horizontal
	3332	49.8	33	4.26	29.87	44.40	39.56	54	Ļ	-14.44	AV	Horizontal
	17797	40.1	17	10.99	43.95	43.50	51.61	74	Ļ	-22.39	Pk	Vertical
	17797	30.1	17	10.99	43.95	43.50	41.61	54	ŀ	-12.39	AV	Vertical
	17788	39.5	54	11.81	43.69	44.60	50.44	74	ŀ	-23.56	Pk	Horizontal
	17788	30.1	15	11.81	43.69	44.60	41.05	54	ŀ	-12.95	AV	Horizontal

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Certificate #4298.01

Note: (1) All other emissions more than 20dB below the limit.



7.3 NUMBER OF HOPPING CHANNEL

7.3.1 Applicable Standard

According to FCC Part 15.247(a)(1) (iii)and ANSI C63.10-2013

7.3.2 Conformance Limit

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

7.3.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

7.3.4 Test Setup

Please refer to Section 6.1 of this test report.

7.3.5 Test Procedure

The testing follows ANSI C63.10-2013 clause 7.8.3

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.

The path loss was compensated to the results for each measurement.

Set to the maximum power setting and enable the EUT transmit continuously.

The EUT must have its hopping function enabled.

Use the following spectrum analyzer settings:

Span = the frequency band of operation

RBW : To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dB bandwidth, whichever is smaller.

VBW ≥ RBW

Sweep = auto

Detector function = peak Trace = max hold

7.3.6 Test Results

EUT:	AURA WALL MOUNT STEREO	Model No.:	JBL-AURA
Temperature:	20 ℃	Relative Humidity:	48%
Test Mode:	Mode 5(1Mbps)	Test By:	Allen Liu



7.4 HOPPING CHANNEL SEPARATION MEASUREMENT

7.4.1 Applicable Standard

According to FCC Part 15.247(a)(1) and ANSI C63.10-2013

7.4.2 Conformance 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 2400-2483.5MHz band shall have hopping channel carrier frequencies that are separated by 25kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater.

7.4.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

7.4.4 Test Setup

Please refer to Section 6.1 of this test report.

7.4.5 Test Procedure

The testing follows ANSI C63.10-2013 clause 7.8.2 The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. Set to the maximum power setting and enable the EUT transmit continuously. The EUT was operating in controlled its channel. Use the following spectrum analyzer settings: Span = Measurement Bandwidth or Channel Separation RBW: Start with the RBW set to approximately 3% of the channel spacing; adjust as necessary to best identify the center of each individual channel. VBW \geq RBW Sweep = auto Detector function = peak Trace = max hold

7.4.6 Test Results

EUT:	AURA WALL MOUNT STEREO	Model No.:	JBL-AURA
Temperature:	20 ℃	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Allen Liu



7.5 AVERAGE TIME OF OCCUPANCY (DWELL TIME)

7.5.1 Applicable Standard

According to FCC Part 15.247(a)(1)(iii) and ANSI C63.10-2013

7.5.2 Conformance Limit

The average time of occupancy on any channel shall not be greater than 0.4s within a period of 0.4s multiplied by the number of hopping channels employed.

7.5.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

7.5.4 Test Setup

Please refer to Section 6.1 of this test report.

7.5.5 Test Procedure

The testing follows ANSI C63.10-2013 clause 7.8.4 The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. Set to the maximum power setting and enable the EUT transmit continuously. The EUT must have its hopping function enabled. Use the following spectrum analyzer settings: Span = zero span, centered on a hopping channel RBW \geq 1MHz VBW \geq RBW Sweep = as necessary to capture the entire dwell time per hopping channel Detector function = peak Trace = max hold Measure the maximum time duration of one single pulse. Set the EUT for DH5, DH3 and DH1 packet transmitting. Measure the maximum time duration of one single pulse.



7.5.6 Test Results

EUT:	AURA WALL MOUNT STEREO	Model No.:	JBL-AURA
Temperature:	20 ℃	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Allen Liu

Test data reference attachment. Note: A Period Time = (channel number)*0.4 DH1 Dwell time: Reading * (1600/2)*31.6/(channel number) DH3 Dwell time: Reading * (1600/4)*31.6/(channel number) DH5 Dwell time: Reading * (1600/6)*31.6/(channel number)

For Example:

- 1. In normal mode, hopping rate is 1600 hops/s with 6 slots in 79 hopping channels. With channel hopping rate (1600 / 6 / 79) in Occupancy Time Limit (0.4×79) (s), Hops Over Occupancy Time comes to $(1600 / 6 / 79) \times (0.4 \times 79) = 106.67$ hops.
- 2. In AFH mode, hopping rate is 800 hops/s with 6 slots in 20 hopping channels. With channel hopping rate (800 / 6 / 20) in Occupancy Time Limit (0.4 x 20) (s), Hops Over Occupancy Time comes to (800 / 6 / 20) x (0.4 x 20) = 53.33 hops.
- 3. Dwell Time(s) = Hops Over Occupancy Time (hops) x Package Transfer Time



7.6 20DB BANDWIDTH TEST

7.6.1 Applicable Standard

According to FCC Part 15.247(a)(1) and ANSI C63.10-2013

7.6.2 Conformance Limit

No limit requirement.

7.6.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

7.6.4 Test Setup

Please refer to Section 6.1 of this test report.

7.6.5 Test Procedure

The testing follows ANSI C63.10-2013 clause 6.9.2 The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement. Set to the maximum power setting and enable the EUT transmit continuously. The EUT was operating in controlled its channel. Use the following spectrum analyzer settings: Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel RBW \geq 1% of the 20 dB bandwidth VBW \geq RBW Sweep = auto Detector function = peak Trace = max hold

7.6.6 Test Results

EUT:	AURA WALL MOUNT STEREO	Model No.:	JBL-AURA
Temperature:	20 ℃	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Allen Liu



7.7 PEAK OUTPUT POWER

7.7.1 Applicable Standard

According to FCC Part 15.247(b)(1) and ANSI C63.10-2013

7.7.2 Conformance Limit

The maximum peak conducted output power of the intentional radiator shall not exceed the following: (1) For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band 0.125 watts.

7.7.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

7.7.4 Test Setup

Please refer to Section 6.1 of this test report.

7.7.5 Test Procedure

The testing follows ANSI C63.10-2013 clause 7.8.5.

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.

The path loss was compensated to the results for each measurement.

Set to the maximum power setting and enable the EUT transmit continuously.

The EUT was operating in controlled its channel.

Use the following spectrum analyzer settings:

Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel

RBW \geq the 20 dB bandwidth of the emission being measured

 $VBW \ge RBW$

Sweep = auto

Detector function = peak

Trace = max hold

7.7.6 Test Results

EUT:	AURA WALL MOUNT STEREO	Model No.:	JBL-AURA
Temperature:	20 ℃	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Allen Liu



7.8 CONDUCTED BAND EDGE MEASUREMENT

7.8.1 Applicable Standard

According to FCC Part 15.247(d) and ANSI C63.10-2013

7.8.2 Conformance Limit

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

7.8.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

7.8.4 Test Setup

Please refer to Section 6.1 of this test report.

7.8.5 Test Procedure

The testing follows ANSI C63.10-2013 clause 7.8.6.

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.

The path loss was compensated to the results for each measurement.

Set to the maximum power setting and enable the EUT transmit continuously.

The EUT must have its hopping function enabled.

Use the following spectrum analyzer settings:

Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel

RBW = 100KHz

VBW = 300KHz

Band edge emissions must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100kHz RBW. The attenuation shall be 30 dB instead of 20 dB when RMS conducted output power procedure is used.

Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.

Repeat above procedures until all measured frequencies were complete.

7.8.6 Test Results

EUT:	AURA WALL MOUNT STEREO	Model No.:	JBL-AURA
Temperature:	20 ℃	Relative Humidity:	48%
Test Mode:	Mode2 /Mode4/ Mode 5	Test By:	Allen Liu



7.9 SPURIOUS RF CONDUCTED EMISSION

7.9.1 Applicable Standard

According to FCC Part 15.247(d) and ANSI C63.10-2013.

7.9.2 Conformance Limit

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

7.9.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

7.9.4 Test Setup

Please refer to Section 6.1 of this test report.

7.9.5 Test Procedure

Establish an emission level by using the following procedure:

- a) Set the center frequency and span to encompass frequency range to be measured.
- b) Set the RBW = 100 kHz.
- c) Set the VBW \geq [3 × RBW].
- d) Detector = peak.
- e) Sweep time = auto couple.
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize.

h) Use the peak marker function to determine the maximum amplitude level.

Then the limit shall be attenuated by at least 20 dB relative to the maximum amplitude level in 100 kHz.

7.9.6 Test Results

Remark: The measurement frequency range is from 9KHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and bandege measurement data.



7.10 ANTENNA APPLICATION

7.10.1 Antenna 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.

7.10.2 Result

The EUT antenna is permanent attached PCB antenna (Gain: 0.7dBi). It comply with the standard requirement.

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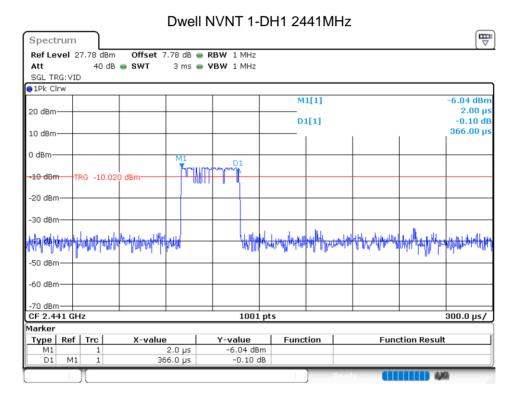
8 TEST RESULTS

8.1 DWELL TIME

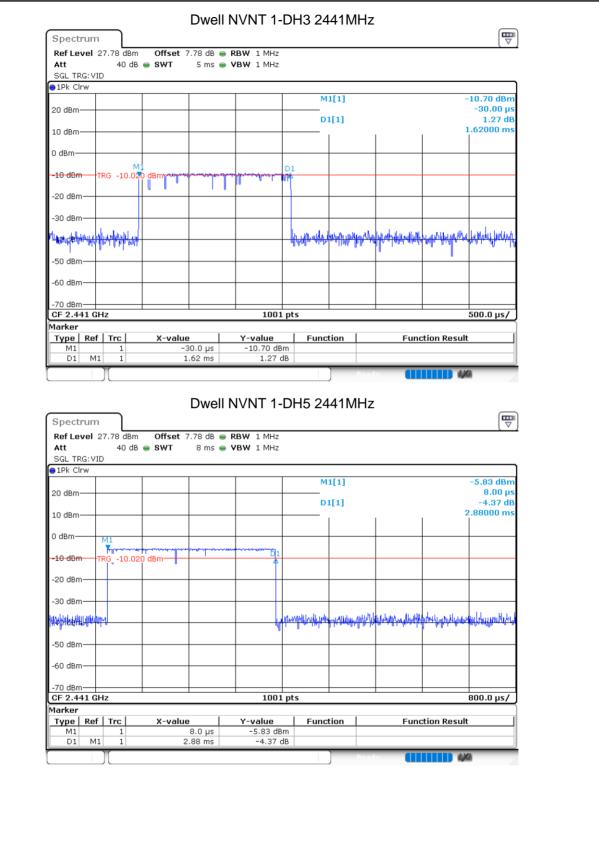
Condition	Mode	Frequency (MHz)	Pulse Time (ms)	Total Dwell Time (ms)	Period Time (ms)	Limit (ms)	Verdict
NVNT	1-DH1	2441	0.366	117.12	31600	400	Pass
NVNT	1-DH3	2441	1.62	259.2	31600	400	Pass
NVNT	1-DH5	2441	2.88	307.2	31600	400	Pass
NVNT	2-DH1	2441	0.376	120.32	31600	400	Pass
NVNT	2-DH3	2441	1.625	260	31600	400	Pass
NVNT	2-DH5	2441	2.88	307.2	31600	400	Pass
NVNT	3-DH1	2441	0.381	121.92	31600	400	Pass
NVNT	3-DH3	2441	1.625	260	31600	400	Pass
NVNT	3-DH5	2441	2.872	306.347	31600	400	Pass

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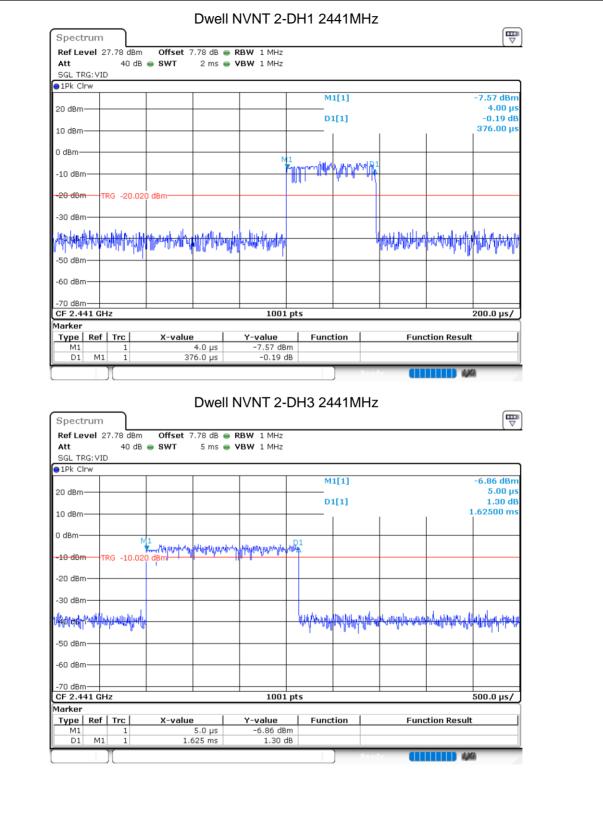
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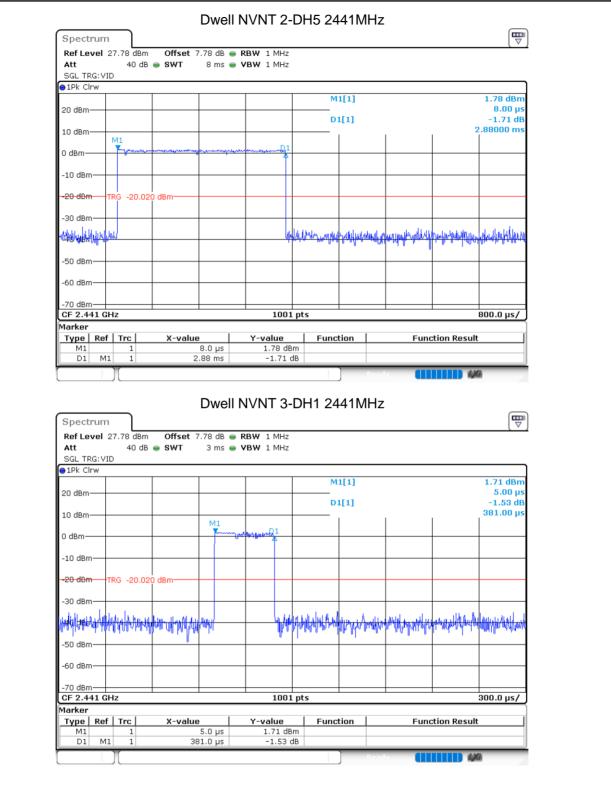








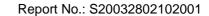






	Offset 7.78 dB ● ● SWT 5 ms ●	VBW 1 MHz					
SGL TRG: VID 9 1Pk Clrw							
20 dBm			M1[1	1]			-6.83 dBm 5.00 µs
			D1[1	u –			-1.62 dB
10 dBm							62500 ms
0 dBm	1 	A second local de data					
-10 dBm TRG -10.020	o dBm	VIA PARA AND AND AND AND AND AND AND AND AND AN					
-20 dBm					-		
-30 dBm							
-so abin Madilletopyda (124,194,144,144,144,144,1			denority of the	an a bha chi	<mark>, իկս, ուշձվերին</mark>	- while the contract in the	والمراجعة المنافعين أتحاف
ւ րաց ու տցակությանները			a Man hall had	han di ka l	Manda Androidia	Alluvanhalla .va	Manahanan
-50 dBm		+ +					
-60 dBm		++					
-70 dBm							
CF 2.441 GHz Marker		1001 p	pts				500.0 μs/
Type Ref Trc	X-value	Y-value	Functio	n	Func	tion Result	
M1 1 D1 M1 1	5.0 µs 1.625 ms	-6.83 dBm -1.62 dB					
D1 M1 1	210201115						
Spectrum Ref Level 27.78 dBm	Offset 7.78 dB •	NVNT 3-E	DH5 244	Poor 1MHz			
Spectrum Ref Level 27.78 dBm Att 40 dB SGL TRG:VID	Offset 7.78 dB	RBW 1 MHz	DH5 244	Read			
Spectrum Ref Level 27.78 dBm Att 40 dB SGL TRG:VID PIPk Clrw	Offset 7.78 dB	RBW 1 MHz	DH5 244				-6.92 dBm
Spectrum Ref Level 27.78 dBm Att 40 dB SGL TRG:VID	Offset 7.78 dB	RBW 1 MHz		1]			
Spectrum Ref Level 27.78 dBm Att 40 dB SGL TRG:VID PIPk Clrw	Offset 7.78 dB	RBW 1 MHz	M1[1	1]			-6.92 dBm 16.00 μs
Spectrum Ref Level 27.78 dBm Att 40 dB SGL TRG:VID ● 1Pk Clrw 20 dBm 10 dBm 0 dBm	Offset 7.78 dB • • SWT 8 ms •	RBW 1 MHz VBW 1 MHz	M1[1	1]		2	-6.92 dBm 16.00 μs -2.73 dB
Spectrum Ref Level 27.78 dBm Att 40 dB SGL TRG:VID ● 1Pk Clrw 20 dBm 10 dBm 0 dBm	Offset 7.78 dB	RBW 1 MHz VBW 1 MHz	M1[1	1]		2	-6.92 dBm 16.00 μs -2.73 dB
Spectrum Ref Level 27.78 dBm Att 40 dB SGL TRG: VID 1Pk Clrw 20 dBm 10 dBm 0 dBm 10 dBm 10 dBm	Offset 7.78 dB • • SWT 8 ms •	RBW 1 MHz VBW 1 MHz	M1[1	1]		2	-6.92 dBm 16.00 μs -2.73 dB
Spectrum Ref Level 27.78 dBm Att 40 dB SGL TRG: VID 10 dBm 0 dBm -10 dBm -10 dBm -20 dBm TRG -20.020	Offset 7.78 dB • • SWT 8 ms •	RBW 1 MHz VBW 1 MHz	M1[1	1]		2	-6.92 dBm 16.00 μs -2.73 dB
Spectrum Ref Level 27.78 dBm Att 40 dB SGL TRG: VID 10 dBm 0 dBm 0 dBm -10 d	Offset 7.78 dB • • SWT 8 ms •	RBW 1 MHz VBW 1 MHz	M1[1 	ı] I]			-6.92 dBm 16.00 µs -2.73 dB 2.87200 ms
Spectrum Ref Level 27.78 dBm Att 40 dB SGL TRG: VID 10 dBm 0 dBm -10 dBm -10 dBm -20 dBm TRG -20.020	Offset 7.78 dB • • SWT 8 ms •	RBW 1 MHz VBW 1 MHz	M1[1	ı] I]			-6.92 dBm 16.00 µs -2.73 dB 2.87200 ms
Spectrum Ref Level 27.78 dBm Att 40 dB SGL TRG: VID 10 dBm 0 dBm 0 dBm -10 d	Offset 7.78 dB • • SWT 8 ms •	RBW 1 MHz VBW 1 MHz	M1[1 	ı] I]			-6.92 dBm 16.00 µs -2.73 dB 2.87200 ms
Spectrum Ref Level 27.78 dBm Att 40 dB SGL TRG: VID 10 dBm 10 dBm 10 dBm -10 dBm -20 dBm TRG -20.020 -30 dBm -20 dBm	Offset 7.78 dB • • SWT 8 ms •	RBW 1 MHz VBW 1 MHz	M1[1 	ı] I]			-6.92 dBm 16.00 µs -2.73 dB 2.87200 ms
Spectrum Ref Level 27.78 dBm Att 40 dB SGL TRG: VID ● 1Pk Clrw 20 dBm 10 dBm -10 dBm -20 dBm TRG -20.020 -30 dBm -50 dBm -60 dBm	Offset 7.78 dB • • SWT 8 ms •	RBW 1 MHz VBW 1 MHz		ı] I]		Jutthe of low or which	-6.92 dBm 16.00 µs -2.73 dB 2.87200 ms
Spectrum Ref Level 27.78 dBm Att 40 dB SGL TRG: VID ● 1Pk Clrw 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm -50 dBm -60 dBm -70 dBm -70 dBm	Offset 7.78 dB • • SWT 8 ms •	RBW 1 MHz VBW 1 MHz		ı] I]		Jutthe of low or which	-6.92 dBm 16.00 µs -2.73 dB 2.87200 ms
Spectrum Ref Level 27.78 dBm Att 40 dB SGL TRG: VID ● 1Pk Clrw 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm -50 dBm -50 dBm -60 dBm -70 dBm CF 2.441 GHz Marker Type	Dwell I offset 7.78 dB • SWT 8 ms • SWT 8 ms • OdBm	RBW 1 MHz VBW 1 MHz United to the second	M1[1 D1[1 	1] 1] 4/////////////////////////////////		Jutthe of low or which	-6.92 dBm 16.00 µs -2.73 dB 2.87200 ms
Spectrum Ref Level 27.78 dBm Att 40 dB SGL TRG: VID 9 IPk Clrw 20 dBm 10 dBm 10 dBm -10 dBm -10 dBm -10 dBm -20 dBm TRG -20 dBm -20.020 -30 dBm -50 dBm -50 dBm -60 dBm -70 dBm -70 dBm GF 2.441 GHz Marker	Dwell I offset 7.78 dB • SWT 8 ms • U U U U U U U U U U U U U	RBW 1 MHz VBW 1 MHz	M1[1 	1] 1] 4/////////////////////////////////		ala alla alla and a	-6.92 dBm 16.00 µs -2.73 dB 2.87200 ms

Version.1.3

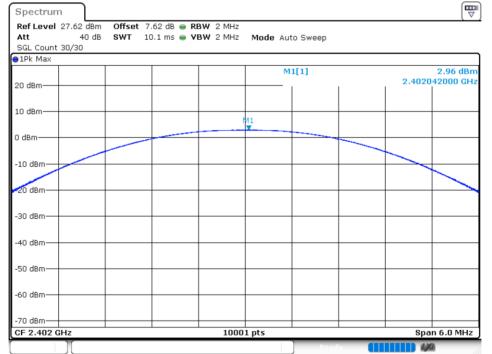




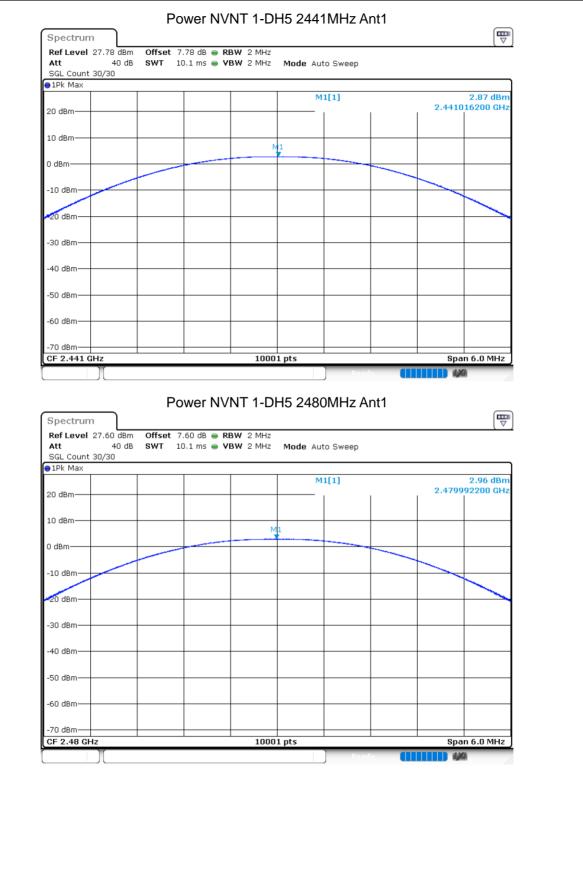
8.2 MAXIMUM CONDUCTED OUTPUT POWER

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant 1	2.957	30	Pass
NVNT	1-DH5	2441	Ant 1	2.874	30	Pass
NVNT	1-DH5	2480	Ant 1	2.96	30	Pass
NVNT	2-DH5	2402	Ant 1	2.635	20.97	Pass
NVNT	2-DH5	2441	Ant 1	2.603	20.97	Pass
NVNT	2-DH5	2480	Ant 1	2.711	20.97	Pass
NVNT	3-DH5	2402	Ant 1	2.766	20.97	Pass
NVNT	3-DH5	2441	Ant 1	2.823	20.97	Pass
NVNT	3-DH5	2480	Ant 1	2.85	20.97	Pass

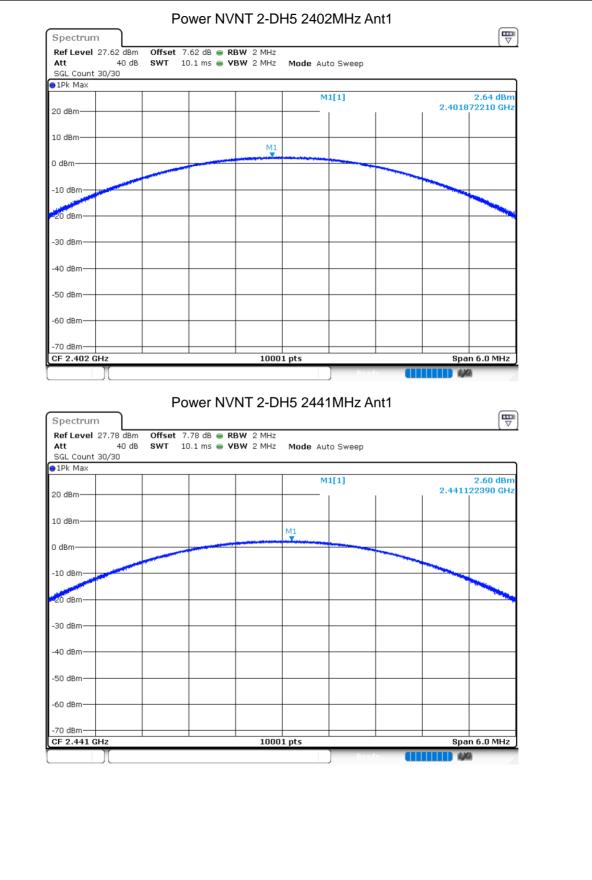
Power NVNT 1-DH5 2402MHz Ant1



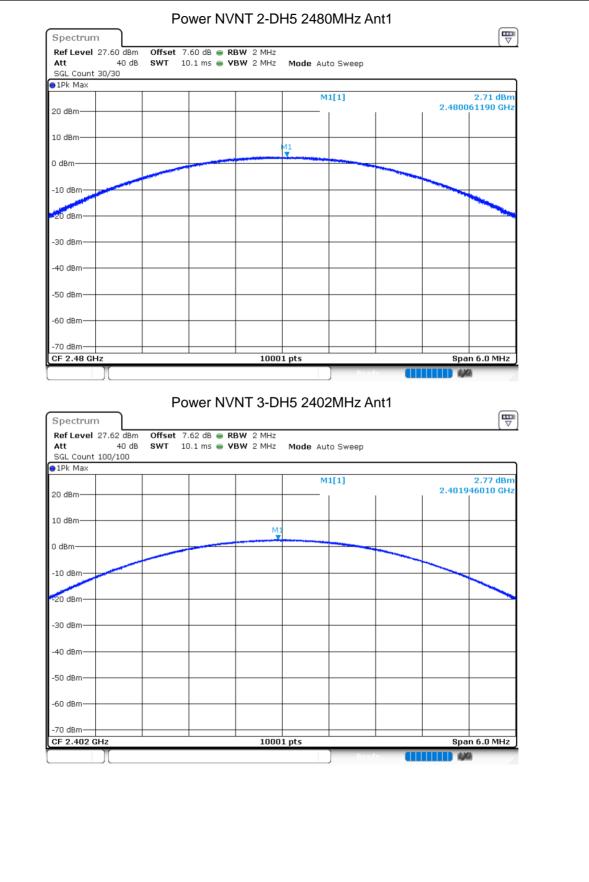




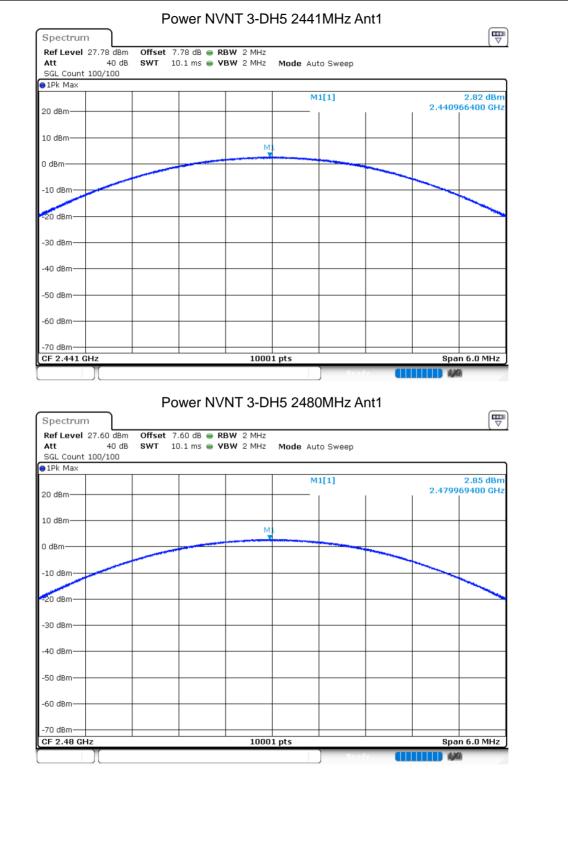


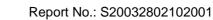














8.3 OCCUPIED CHANNEL BANDWIDTH

		Frequency		99%	-20 dB	Limit -20 dB	
Condition	Mode	Frequency (MHz)	Antenna	OBW	Bandwidth	Bandwidth	Verdict
				(MHz)	(MHz)	(MHz)	
NVNT	1-DH5	2402	Ant 1	0.8891	0.988	N/A	Pass
NVNT	1-DH5	2441	Ant 1	0.8931	0.994	N/A	Pass
NVNT	1-DH5	2480	Ant 1	0.8911	0.962	N/A	Pass
NVNT	2-DH5	2402	Ant 1	1.1848	1.324	N/A	Pass
NVNT	2-DH5	2441	Ant 1	1.1728	1.286	N/A	Pass
NVNT	2-DH5	2480	Ant 1	1.1748	1.284	N/A	Pass
NVNT	3-DH5	2402	Ant 1	1.1848	1.298	N/A	Pass
NVNT	3-DH5	2441	Ant 1	1.1828	1.336	N/A	Pass
NVNT	3-DH5	2480	Ant 1	1.1728	1.278	N/A	Pass

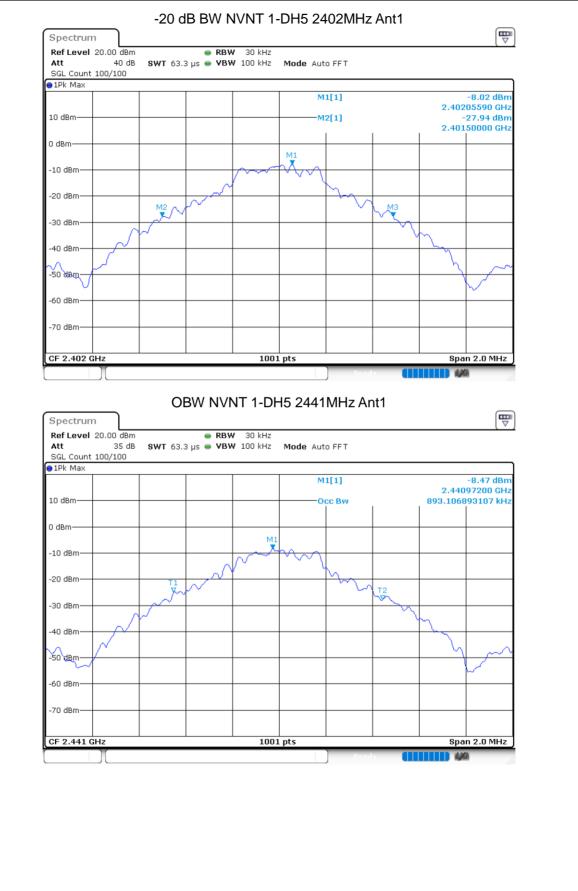
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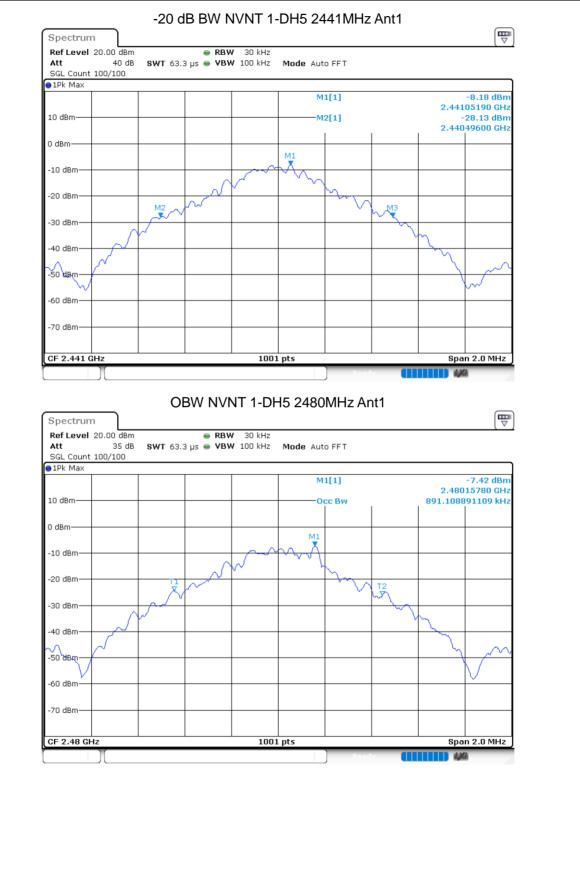
OBW NVNT 1-DH5 2402MHz Ant1



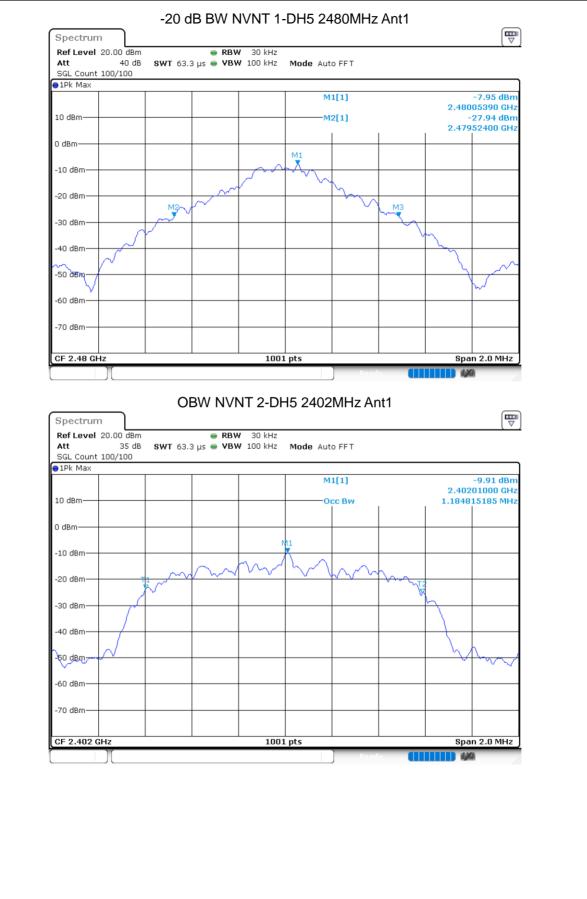




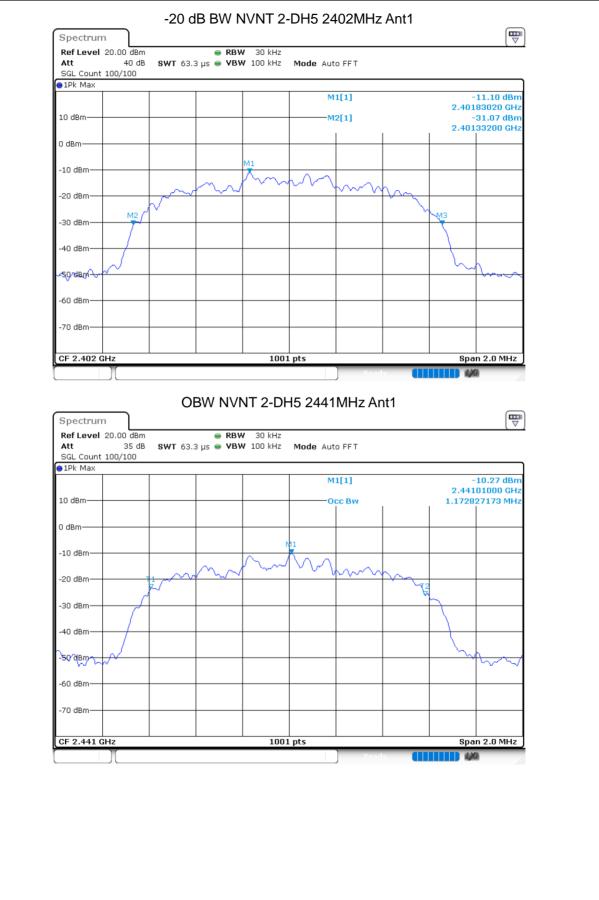




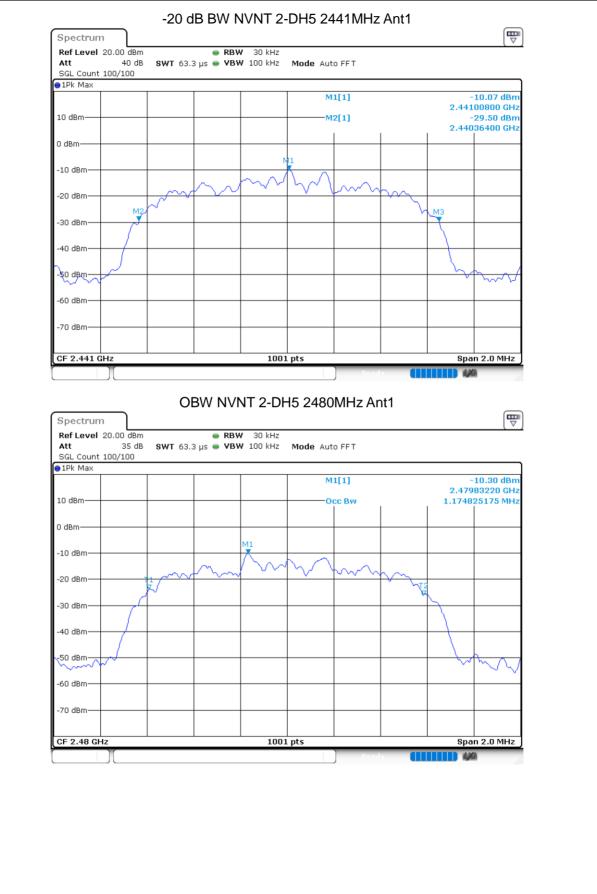




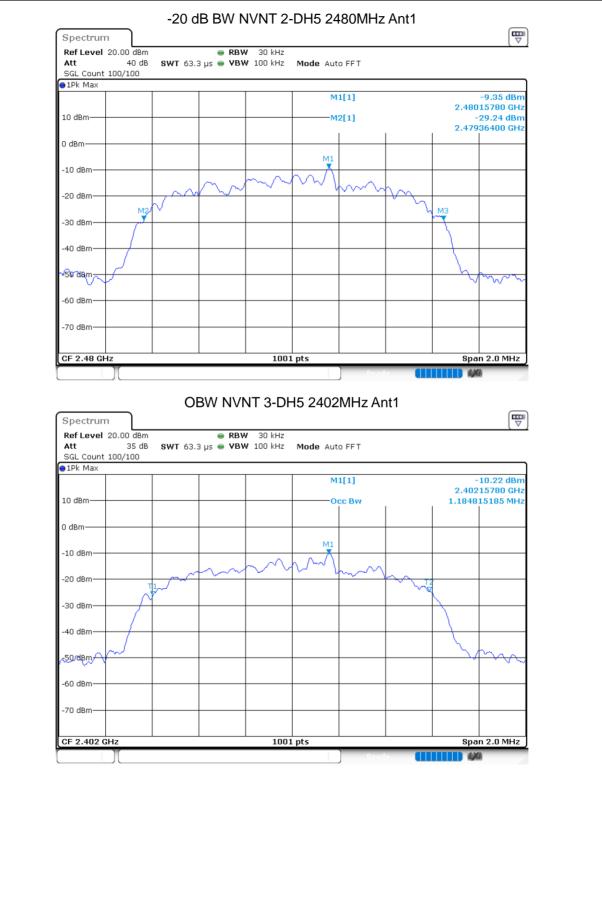




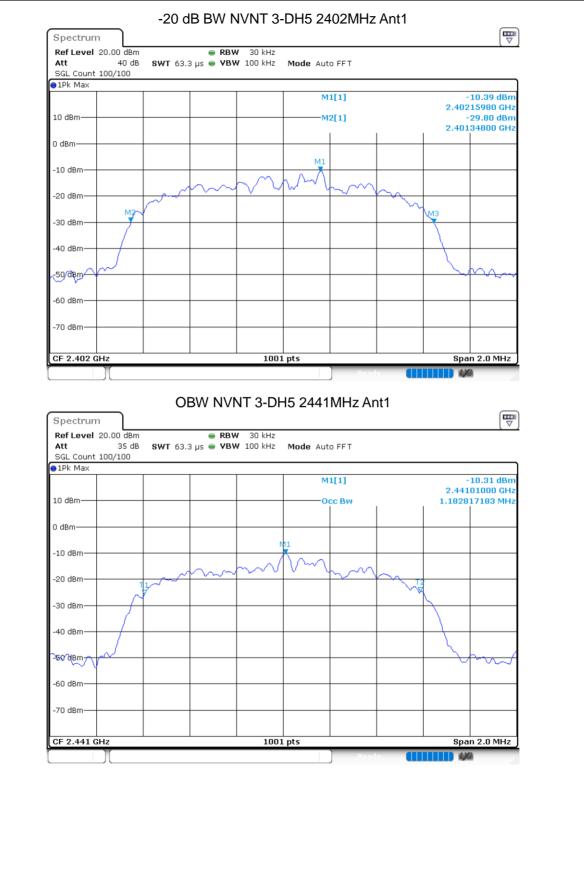




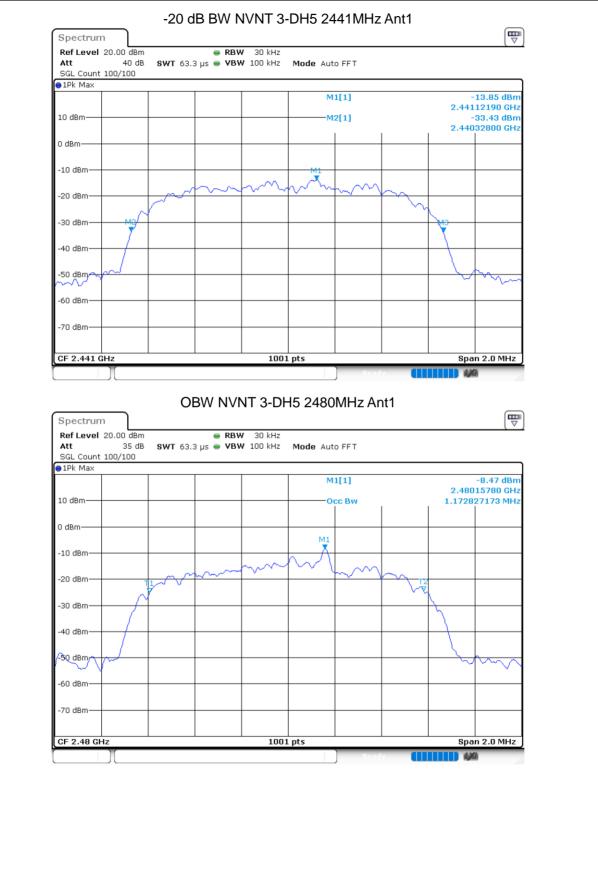




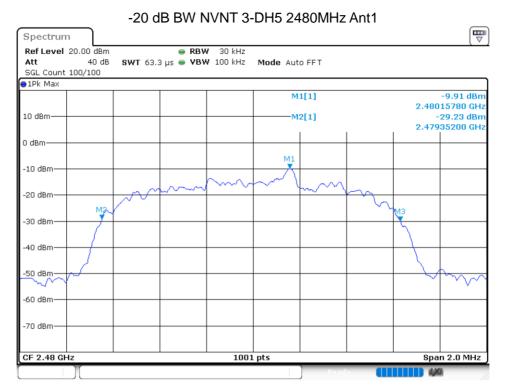












Report No.: S20032802102001



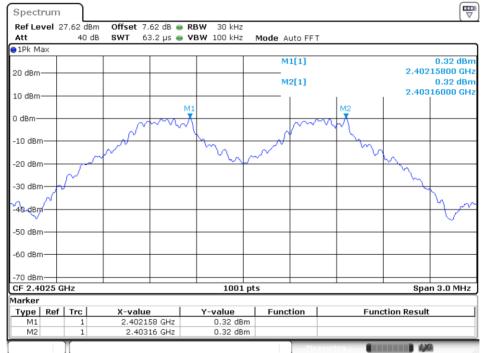
8.4 CARRIER FREQUENCIES SEPARATION

Condition	Mode	Hopping Freq1 (MHz)	Hopping Freq2 (MHz)	HFS (MHz)	Limit (MHz)	Verdict
NVNT	1-DH5	2402.158	2403.16	1.002	0.988	Pass
NVNT	1-DH5	2441.158	2442.157	0.999	0.994	Pass
NVNT	1-DH5	2479.158	2480.157	0.999	0.962	Pass
NVNT	2-DH5	2402.158	2403.16	1.002	0.883	Pass
NVNT	2-DH5	2441.158	2442.16	1.002	0.857	Pass
NVNT	2-DH5	2479.158	2480.16	1.002	0.856	Pass
NVNT	3-DH5	2402.158	2403.157	0.999	0.865	Pass
NVNT	3-DH5	2441.158	2442.157	0.999	0.891	Pass
NVNT	3-DH5	2479.158	2480.157	0.999	0.852	Pass

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CFS NVNT 1-DH5 2402MHz





















8.5 NUMBER OF HOPPING CHANNEL Condition Mode Hopping Number Limit Verdict NVNT 1-DH5 15 Pass 79 Hopping No. NVNT 1-DH5 2402MHz **T** Spectrum Offset 7.62 dB 🔵 RBW 100 kHz Ref Level 27.62 dBm 1 ms 🖷 VBW 300 kHz Att 40 dB SWT Mode Auto Sweep SGL Count 60000/60000 ⊖1Pk Max M1[1] 2.04 dBn 2.4018370 GHz 20 dBm M2[1] 2.41 dBm 2.4802435 GHz 10 dBm M2 obem UN (d der 20 dBm 30 dBm 40 dBm -50 dBm -60 dBm -70 dBm Stop 2.4835 GHz Start 2.4 GHz 1001 pts Marker Function Function Result Type | Ref | Trc | X-value Y-value 2.401837 GHz 2.04 dBm M1 1 M2 1 2.4802435 GHz 2.41 dBm 4,4

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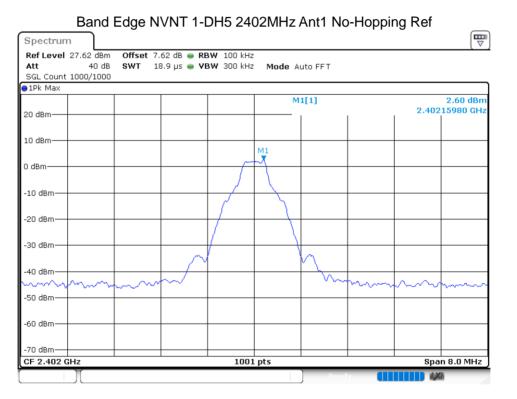
Certificate #4298.01



Report No.: S20032802102001

8.6 BAND EDGE

Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant 1	No-Hopping	-42.69	-20	Pass
NVNT	1-DH5	2402	Ant 1	Hopping	-43	-20	Pass
NVNT	1-DH5	2480	Ant 1	No-Hopping	-46.71	-20	Pass
NVNT	1-DH5	2480	Ant 1	Hopping	-44.16	-20	Pass
NVNT	2-DH5	2402	Ant 1	No-Hopping	-42.57	-20	Pass
NVNT	2-DH5	2402	Ant 1	Hopping	-40.72	-20	Pass
NVNT	2-DH5	2480	Ant 1	No-Hopping	-43.34	-20	Pass
NVNT	2-DH5	2480	Ant 1	Hopping	-43.05	-20	Pass
NVNT	3-DH5	2402	Ant 1	No-Hopping	-42.49	-20	Pass
NVNT	3-DH5	2402	Ant 1	Hopping	-41.4	-20	Pass
NVNT	3-DH5	2480	Ant 1	No-Hopping	-41.36	-20	Pass
NVNT	3-DH5	2480	Ant 1	Hopping	-44.12	-20	Pass





Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission Spectrum Ref Level 27.62 dBm Offset 7.62 dB 曼 RBW 100 kHz 40 dB SWT 227.5 µs 😑 VBW 300 kHz Mode Auto FFT Att SGL Count 100/100 ⊖1Pk Max M1[1] 2.30 dBn 20 dBm-2.40185000 GHz -46.56 dBm 2.40000000 GHz M2[1] 10 dBm 0 dBm -10 dBm 17.40 -20 dBm -30 dBm M4 40 dBm and monder of the west of the second and the second of the second s White was a way with mon monthe with rand und -50 dBm -60 dBm -70 dBm· Stop 2.406 GHz Start 2.306 GHz 1001 pts Marker Y-value 2.30 dBm Function Function Result Type | Ref | Trc X-value 2.40185 GHz M1 1 M2 -46.56 dBm 2.4 GHz 1 ΜЗ 2.39 GHz -46.79 dBm 1 M4 1 2.3404 GHz -40.10 dBm 4,0 Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref **T** Spectrum Ref Level 27.62 dBm Offset 7.62 dB 👄 RBW 100 kHz 40 dB SWT 18.9 µs 😑 VBW 300 kHz Att Mode Auto FFT SGL Count 1000/1000 ●1Pk Max M1[1] 2.19 dBm 2.40499700 GHz 20 dBm· 10 dBm M1 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm· -70 dBm Span 8.0 MHz CF 2.402 GHz 1001 pts



Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Emission **T** Spectrum Ref Level 27.62 dBm Offset 7.62 dB 🖷 RBW 100 kHz 40 dB SWT 227.5 µs 😑 VBW 300 kHz Mode Auto FFT Att SGL Count 500/500 ⊖1Pk Max M1[1] 1.78 dBn 20 dBm-2.40295000 GHz -45.22 dBm M2[1] 10 dBm 2.4000000 GHz ٦ 0 dBm -10 dBm V -20 dBm -30 dBm ми 40 dBm· uppelopperandering monumenteralperte white anuch round mohamme -50 dBm -60 dBm -70 dBm· Stop 2.406 GHz Start 2.306 GHz 1001 pts Marker Y-value 1.78 dBm Function Function Result Type | Ref | Trc X-value 2.40295 GHz M1 1 M2 -45.22 dBm 2.4 GHz 1 ΜЗ 2.39 GHz -44.90 dBm 1 M4 1 2.3433 GHz -40.82 dBm 4,0 Band Edge NVNT 1-DH5 2480MHz Ant1 No-Hopping Ref P Spectrum Ref Level 27.60 dBm Offset 7.60 dB 👄 RBW 100 kHz 40 dB SWT 18.9 µs 😑 VBW 300 kHz Att Mode Auto FFT SGL Count 1000/1000 ●1Pk Max M1[1] 2.61 dBm 2.48015180 GHz 20 dBm· 10 dBm М1 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm· -70 dBm Span 8.0 MHz CF 2.48 GHz 1001 pts



-	um	l									
Ref Lev	el 2				7.60 dB 👄 R						
Att SGL Cou	int 1) dB 0	SWT 22	27.5 µs 👄 V	т ым 300 КН	z Mode /	Auto FFT			
IPk Ma		, 20	-								
							М	1[1]			1.94 dBm
20 dBm-								0[4]			05000 GHz
10 dBm-							M	2[1]			-44.24 dBm 350000 GHz
MI										2.100	- 5000 GHZ
0 dBm—											
-10 dBm-	-										
-20 cBm-	D	1 -17	.388	dBm							
-2010810-											
-30 dBm-	+										
-40 dBm	2 14	4		мз							
well him	mar	mumu	Nulan	mutumm	www.white	hunnaphilian	malument	- where where	aluan mandre	way marked	Moundhand
-50 dBm-											
-60 dBm-											
-70 dBm- Start 2.	476	GHz				1001	nts			Stop	2.576 GHz
Marker						1001	- P.15			otop	
Туре	Ref	Trc		X-value		Y-value	Func	tion	Func	tion Result	:
M1 M2		1			05 GHz 35 GHz	1.94 dB -44.24 dB					
M3											
		1		2	2.5 GHz	-44.49 dB	m				
M4 Spectr		1		2.48	oing) N	-44.10 dB	m) Poor OMHz A	ant1 Hop	oping R	
	um	1 nd I	Ξdį	2.48 ge(Hopp offset 7.	73 GHz	-44.10 dB	m 0H5 248		Int1 Hop	oping R	ef
Spectr Ref Lev Att SGL Cou	um el 2 int 2	1 nd I	Edç	2.48 ge(Hopp offset 7.	73 GHz Ding) N\ .60 dB • RE	-44.10 dB	m 0H5 248		ant1 Hop	oping R	
Spectr Ref Lev Att	um el 2 int 2	1 nd I	Edç	2.48 ge(Hopp offset 7.	73 GHz Ding) N\ .60 dB • RE	-44.10 dB	m 0H5 248 Mode A	uto FFT	ant1 Hop	oping R	
Spectr Ref Lev Att SGL Cou IPk Ma	um el 2 int 2	1 nd I	Edç	2.48 ge(Hopp offset 7.	73 GHz Ding) N\ .60 dB • RE	-44.10 dB	m 0H5 248 Mode A		ant1 Hop		.80 dBm
Spectr Ref Lev Att SGL Cou	um el 2 int 2	1 nd I	Edç	2.48 ge(Hopp offset 7.	73 GHz Ding) N\ .60 dB • RE	-44.10 dB	m 0H5 248 Mode A	uto FFT	ant1 Hop		
Spectr Ref Lev Att SGL Cou 1Pk Ma 20 dBm-	um el 2 int 2	1 nd I	Edç	2.48 ge(Hopp offset 7.	73 GHz Ding) N\ .60 dB • RE	-44.10 dB	m 0H5 248 Mode A	uto FFT	ant1 Hop		.80 dBm
Spectr Ref Lev Att SGL Cou IPk Ma	um el 2 int 2	1 nd I	Edç	2.48 ge(Hopp offset 7.	73 GHz Ding) N\ .60 dB • RE	-44.10 dB	m 0H5 248 Mode A	uto FFT	ant1 Hop		.80 dBm
Spectr Ref Lev Att SGL Cou 9 1Pk Ma 20 dBm- 10 dBm-	um el 2 int 2	1 nd I	Edç	2.48 ge(Hopp offset 7.	73 GHz Ding) N\ .60 dB • RE	-44.10 dB	m 0H5 248 Mode A	uto FFT	ant1 Hop		.80 dBm
Spectr Ref Lev Att SGL Cou 1Pk Ma 20 dBm-	um el 2 int 2	1 nd I	Edç	2.48 ge(Hopp offset 7.	73 GHz Ding) N\ .60 dB • RE	-44.10 dB	m 0H5 248 Mode A	uto FFT	ant1 Hop		.80 dBm
Spectr Ref Lev Att SGL Cou 9 1Pk Ma 20 dBm- 10 dBm-	um el 2 int 2	1 nd I	Edç	2.48 ge(Hopp offset 7.	73 GHz Ding) N\ .60 dB • RE	-44.10 dB	m 0H5 248 Mode A	uto FFT	ant1 Hop		.80 dBm
Spectr Ref Lev Att SGL Cou 1Pk Ma 20 dBm- 10 dBm- 0 dBm-	um el 2 int 2	1 nd I	Edç	2.48 ge(Hopp offset 7.	73 GHz Ding) N\ .60 dB • RE	-44.10 dB	m 0H5 248 Mode A	uto FFT	ant1 Hop		.80 dBm
Spectr Ref Lev Att SGL Cou 1Pk Ma 20 dBm- 10 dBm- 0 dBm-	um el 2 int 2	1 nd I	Edç	2.48 ge(Hopp offset 7.	73 GHz Ding) N\ .60 dB • RE	-44.10 dB	m 0H5 248 Mode A	uto FFT	ant1 Hop		.80 dBm
Spectr Ref Lev Att SGL Cou 1Pk Ma 20 dBm- 10 dBm- 0 dBm- -10 dBm-	um el 2 int 2	1 nd I	Edç	2.48 ge(Hopp offset 7.	73 GHz Ding) N\ .60 dB • RE	-44.10 dB	m 0H5 248 Mode A	uto FFT	ant1 Hop		.80 dBm
Spectr Ref Lev Att SGL Cou 1Pk Ma 20 dBm- 10 dBm- 0 dBm- -10 dBm-	um el 2 int 2	1 nd I	Edç	2.48 ge(Hopp offset 7.	73 GHz Ding) N\ .60 dB • RE	-44.10 dB	m 0H5 248 Mode A	uto FFT	ant1 Hop		.80 dBm
Spectr Ref Lev Att SGL Cou 1Pk Ma 20 dBm- 10 dBm- 0 dBm- -10 dBm- -20 dBm- -20 dBm-	um el 2 int 2	1 nd I	Edç	2.48 ge(Hopp offset 7.	73 GHz Ding) N\ .60 dB • RE	-44.10 dB	m 0H5 248 Mode A	uto FFT	ant1 Hop		.80 dBm
Spectr Ref Lev Att SGL Cou 1Pk Ma 20 dBm- 10 dBm- 0 dBm- -10 dBm- -20 dBm-	um el 2 int 2	1 nd I	Edç	2.48 ge(Hopp offset 7.	73 GHz Ding) N\ .60 dB • RE	-44.10 dB	m 0H5 248 Mode A	uto FFT	Ant1 Hop		.80 dBm
Spectr Ref Lev Att SGL Cou 9 1Pk Ma 20 dBm- 10 dBm- 10 dBm- -10 dBm- -20 dBm- -20 dBm- -30 dBm-	um el 2 int 2	1 nd I	Edç	2.48 ge(Hopp offset 7.	73 GHz Ding) N\ .60 dB • RE	-44.10 dB	m 0H5 248 Mode A	uto FFT	Ant1 Hop		.80 dBm
Spectr Ref Lev Att SGL Cou 1Pk Ma 20 dBm- 10 dBm- 0 dBm- -10 dBm- -20 dBm- -20 dBm-	um el 2 int 2	1 nd I	Edç	2.48 ge(Hopp offset 7.	73 GHz Ding) N\ .60 dB • RE	-44.10 dB	m 0H5 248 Mode A	uto FFT	Ant1 Hop		.80 dBm
Spectr Ref Lev Att SGL Cou 9 1Pk Ma 20 dBm- 10 dBm- 10 dBm- -10 dBm- -20 dBm- -20 dBm- -30 dBm- -40 dBm-	um el 2 int 2	1 nd I	Edç	2.48 ge(Hopp offset 7.	73 GHz Ding) N\ .60 dB • RE	-44.10 dB	m 0H5 248 Mode A	uto FFT	ant1 Hop		.80 dBm
Spectr Ref Lev Att SGL Cou 10 dBm- 10 dBm- 10 dBm- -10 dBm- -20 dBm- -20 dBm- -20 dBm- -20 dBm-	um el 2 int 2	1 nd I	Edç	2.48 ge(Hopp offset 7.	73 GHz Ding) N\ .60 dB • RE	-44.10 dB	m 0H5 248 Mode A	uto FFT	ant1 Hop		.80 dBm



Band Edge(Hopping) NVNT 1-DH5 2480MHz Ant1 Hopping Emission **T** Spectrum Ref Level 27.60 dBm Offset 7.60 dB 曼 RBW 100 kHz 40 dB SWT 227.5 µs 😑 VBW 300 kHz Mode Auto FFT Att SGL Count 500/500 1Pk Max M1[1] 1.95 dBn 20 dBm 2.47805000 GHz M2[1] -42.36 dBm 10 dBm· 2.48350000 GHz h de 10 dBm D1 -18.200 dBm--20 dBm--30 dBm -40 dBm montheman monentifu use how hydreson out of post mal to 1 and an and -50 dBm -60 dBm -70 dBm· Stop 2.576 GHz Start 2.476 GHz 1001 pts Marker 2.47805 GHz Y-value 1.95 dBm Function **Function Result** Type | Ref | Trc M1 1 M2 2.4835 GHz -42.36 dBm 1 ΜЗ 2.5 GHz -44.73 dBm 1 M4 1 2.4835 GHz -42.36 dBm 440 Band Edge NVNT 2-DH5 2402MHz Ant1 No-Hopping Ref P Spectrum Ref Level 27.62 dBm Offset 7.62 dB 👄 RBW 100 kHz 40 dB SWT 18.9 µs 😑 VBW 300 kHz Att Mode Auto FFT SGL Count 1000/1000 ●1Pk Max M1[1] 1.64 dBm 2.40184020 GHz 20 dBm· 10 dBm M1 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm· -60 dBm· -70 dBm· Span 8.0 MHz CF 2.402 GHz 1001 pts



Spectrum Ref Level 2 Att	40 dE		-	Mode Auto FFT		
SGL Count 1	.00/100					
1Pk Max				M1[1]		14 dBm
20 dBm				MILI	2.402150	
				M2[1]		37 dBm
10 dBm —					2.400000	
						M1
0 dBm						X
-10 dBm						- 11
10 0011						
-20 dBm	1 -18.35	5 dBm				
						11 1
-30 dBm —						
10 10-		M4				NN
-40 dBm		a send the second with the	bany letter himdelen		WI3 p	
-50 dBm	an all marked and	reconsidered activities and it is	The second water	Present of the second of the s	www.www.www.www.www.www.www.www.	tao . Affe
-60 dBm —						
70.15						
-70 dBm—— Start 2.306	0113		1001 pts		Stop 2.40	6 0115
larker	GHZ		1001 pt	,	Stop 2.40	
Type Ref	Tro	X-value	Y-value	Function	Function Result	- 1
M1	1	2.40215 GHz	-2,44 dBm	anction	i unction result	
M2	1	2.4 GHz	-46.37 dBm			
MЗ	1	2.39 GHz	-45.54 dBm			
M4	1	2.3409 GHz	-40.93 dBm			
				R	eady All	





Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission **T** Spectrum Ref Level 27.62 dBm Offset 7.62 dB 👄 RBW 100 kHz 40 dB SWT 227.5 μs 😑 VBW 300 kHz Mode Auto FFT Att SGL Count 5000/5000 ⊖1Pk Max M1[1] 1.07 dBn 20 dBm· 2.40585000 GHz M2[1] -44.50 dBm 2.40000000 GHz 10 dBm 0 dBm M -10 dBm -20 dBm-D1 -19.177 -30 dBm M4 40 dBm MЭ ալՇո moun -50 dBm -60 dBm -70 dBm· Stop 2.406 GHz Start 2.306 GHz 1001 pts Marker Y-value 1.07 dBm Function Function Result Type Ref Trc X-value 2.40585 GHz M1 1 M2 -44.50 dBm 2.4 GHz 1 ΜЗ 2.39 GHz -43.88 dBm 1 M4 1 2.349 GHz -39.90 dBm 440 Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref P Spectrum Ref Level 27.60 dBm Offset 7.60 dB 👄 RBW 100 kHz 40 dB SWT 18.9 µs 😑 VBW 300 kHz Att Mode Auto FFT SGL Count 1000/1000 ●1Pk Max M1[1] 1.50 dBm 2.48015180 GHz 20 dBm· 10 dBm M1 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm· -70 dBm Span 8.0 MHz CF 2.48 GHz 1001 pts



Spectrum									
Ref Level 2	7.60 dBm	Offset 7	7.60 dB 👄 R	BW 100 kHz	2				
Att	40 dB	SWT 22	27.5 µs 👄 V	'BW 300 kHz	Mode /	Auto FFT			
SGL Count 1 91Pk Max	.00/100								
					м	1[1]			-0.73 dBm
20 dBm								2.480	15000 GHz
10 d8m					м	2[1]			45.39 dBm
10 dBm M1						I		2.483	50000 GHz
-10 dBm									
	1 -18.498	dBm							
-20 dBm	1 -10.490	abm							
-30 dBm									
		MB							
pul harange	monthender	monter	winderthe tertak	brenchusphan	whenter	heredurator	on-porthing of The Profession	have been been the	the mapping
-50 dBm									
-60 dBm									
-70 dBm									
Start 2.476	GHz			1001	pts			Stop	2.576 GHz
Marker									
Type Ref M1	Trc 1	X-value	15 GHz	<u>Y-value</u> -0.73 dBr	Func	tion	Func	tion Result	
M1 M2	1		35 GHz	-45.39 dBr					
M3	1	2	.5 GHz	-45.36 dBr	n				
Ba		2.48	54 GHz	-41.85 dBr	n) 0MHz A	nt1 Hoj	oping R	
Ba Spectrum	nd Edg	2.48: ge(Hopp	bing) N\	/NT 2-D	n) omhz A	ant1 Hoj	oping R	ef
Ba Spectrum Ref Level 2	nd Edg	2.48 ge(Hopp offset 7.	Ding) N\ 60 dB - RE	/NT 2-D	^m H5 248		nt1 Ho	oping R	
Ba Spectrum Ref Level 2 Att	nd Edg	2.48 ge(Hopp offset 7. swr 18	Ding) N\ 60 dB - RE	/NT 2-D	^m H5 248		ant1 Hoj	oping R	
Ba Spectrum Ref Level 2	nd Edg	2.48 ge(Hopp offset 7. swr 18	Ding) N\ 60 dB - RE	/NT 2-D	^m H5 248		ant1 Hoj	oping R	
Ba Spectrum Ref Level 2 Att SGL Count 1	nd Edg	2.48 ge(Hopp offset 7. swr 18	Ding) N\ 60 dB - RE	/NT 2-D	m H5 248 Mode A		ant1 Hop		.68 dBm
Ba Spectrum Ref Level 2 Att SGL Count 1	nd Edg	2.48 ge(Hopp offset 7. swr 18	Ding) N\ 60 dB - RE	/NT 2-D	m H5 248 Mode A	uto FFT	Ant1 Ho		
Ba Spectrum Ref Level 2 Att SGL Count 1 • 1Pk Max 20 dBm	nd Edg	2.48 ge(Hopp offset 7. swr 18	Ding) N\ 60 dB - RE	/NT 2-D	m H5 248 Mode A	uto FFT	ant1 Ho		.68 dBm
Ba Spectrum Ref Level 2 Att SGL Count 1 • 1Pk Max 20 dBm- 10 dBm-	nd Edg	2.48 ge(Hopp offset 7. swr 18	Ding) N\ 60 dB - RE	/NT 2-D	m H5 248 Mode A	uto FFT	Ant1 Hop		.68 dBm
Ba Spectrum Ref Level 2 Att SGL Count 1 1Pk Max 20 dBm 10 dBm	nd Edg	2.48 ge(Hopp offset 7. swr 18	Ding) N\ 60 dB - RE	/NT 2-D	m H5 248 Mode A	uto FFT	Ant1 Hop		.68 dBm
Ba Spectrum Ref Level 2 Att SGL Count 1 • 1Pk Max 20 dBm- 10 dBm-	nd Edg	2.48 ge(Hopp offset 7. swr 18	Ding) N\ 60 dB - RE	/NT 2-D	m H5 248 Mode A	uto FFT	Ant1 Hop		.68 dBm
Ba Spectrum Ref Level 2 Att SGL Count 1 O IPk Max 20 dBm 10 dBm	nd Edg	2.48 ge(Hopp offset 7. swr 18	Ding) N\ 60 dB - RE	/NT 2-D	m H5 248 Mode A	uto FFT	Ant1 Hop		.68 dBm
Ba Spectrum Ref Level 2 Att SGL Count 1 1Pk Max 20 dBm 10 dBm	nd Edg	2.48 ge(Hopp offset 7. swr 18	Ding) N\ 60 dB - RE	/NT 2-D	m H5 248 Mode A	uto FFT	Ant1 Hop		.68 dBm
Ba Spectrum Ref Level 2 Att SGL Count 1 O IPk Max 20 dBm 10 dBm	nd Edg	2.48 ge(Hopp offset 7. swr 18	Ding) N\ 60 dB - RE	/NT 2-D	m H5 248 Mode A	uto FFT	Ant1 Hop		.68 dBm
Ba Spectrum Ref Level 2 Att SGL Count 1 • IPk Max 20 dBm 10 dBm -10 dBm	nd Edg	2.48 ge(Hopp offset 7. swr 18	Ding) N\ 60 dB - RE	/NT 2-D	m H5 248 Mode A	uto FFT	Ant1 Hop		.68 dBm
Ba Spectrum Ref Level 2 Att SGL Count 1 • IPk Max 20 dBm 10 dBm -10 dBm	nd Edg	2.48 ge(Hopp offset 7. swr 18	Ding) N\ 60 dB - RE	/NT 2-D	m H5 248 Mode A	uto FFT	Ant1 Hop		.68 dBm
Ba Spectrum Ref Level 2 Att SGL Count 1 • 1Pk Max 20 dBm 10 dBm -10 dBm -10 dBm -20 dBm -30 dBm	nd Edg	2.48 ge(Hopp offset 7. swr 18	Ding) N\ 60 dB - RE	/NT 2-D	m H5 248 Mode A	uto FFT	Ant1 Hop		.68 dBm
Ba Spectrum Ref Level 2 Att SGL Count 1 • 1Pk Max 20 dBm 10 dBm -10 dBm -20 dBm	nd Edg	2.48 ge(Hopp offset 7. swr 18	Ding) N\ 60 dB - RE	/NT 2-D	m H5 248 Mode A	uto FFT	Ant1 Hop		.68 dBm
Ba Spectrum Ref Level 2 Att SGL Count 1 • 1Pk Max 20 dBm 10 dBm -10 dBm -20 dBm -30 dBm -40 dBm	nd Edg	2.48 ge(Hopp offset 7. swr 18	Ding) N\ 60 dB - RE	/NT 2-D	m H5 248 Mode A	uto FFT	Ant1 Hop		.68 dBm
Ba Spectrum Ref Level 2 Att SGL Count 1 • 1Pk Max 20 dBm 10 dBm -10 dBm -10 dBm -20 dBm -30 dBm	nd Edg	2.48 ge(Hopp offset 7. swr 18	Ding) N\ 60 dB - RE	/NT 2-D	m H5 248 Mode A	uto FFT	Ant1 Hop		.68 dBm
Ba Spectrum Ref Level 2 Att SGL Count 1 • 1Pk Max 20 dBm 10 dBm 10 dBm -10 dBm -20 dBm -30 dBm -40 dBm	nd Edg	2.48 ge(Hopp offset 7. swr 18	Ding) N\ 60 dB - RE	/NT 2-D	m H5 248 Mode A	uto FFT	Ant1 Hop		.68 dBm
Ba Spectrum Ref Level 2 Att SGL Count 1 • 1Pk Max 20 dBm 10 dBm -10 dBm -20 dBm -30 dBm -40 dBm	nd Edg	2.48 ge(Hopp offset 7. swr 18	Ding) N\ 60 dB - RE	/NT 2-D	m H5 248 Mode A	uto FFT	Ant1 Hop		.68 dBm
Ba Spectrum Ref Level 2 Att SGL Count 1 IPk Max 20 dBm 10 dBm 10 dBm -10 dBm -20 dBm -30 dBm -40 dBm	nd Edg	2.48 ge(Hopp offset 7. swr 18	Ding) N\ 60 dB - RE	/NT 2-D	m H5 248 Mode A	uto FFT	Ant1 Ho		.68 dBm



Band Edge(Hopping) NVNT 2-DH5 2480MHz Ant1 Hopping Emission **T** Spectrum Ref Level 27.60 dBm Offset 7.60 dB 👄 RBW 100 kHz 40 dB SWT 227.5 μs 😑 VBW 300 kHz Mode Auto FFT Att SGL Count 5000/5000 1Pk Max M1[1] 1.03 dBn 20 dBm 2.47985000 GHz M2[1] -43.33 dBm 10 dBm 2.48350000 GHz **Pide**m -10 dBm D1 -18.318 dBm--20 dBm--30 dBm -40 dani month andres -50 dBm -60 dBm -70 dBm· Stop 2.576 GHz Start 2.476 GHz 1001 pts Marker 2.47985 GHz Y-value 1.03 dBm Function Function Result Type Ref Trc M1 1 M2 2.4835 GHz -43.33 dBm 1 ΜЗ 2.5 GHz -43.44 dBm 1 2.4837 GHz M4 1 -41.38 dBm 440 Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Ref P Spectrum Ref Level 27.62 dBm Offset 7.62 dB 👄 RBW 100 kHz 40 dB SWT 18.9 µs 👄 VBW 300 kHz Att Mode Auto FFT SGL Count 100/100 ●1Pk Max M1[1] 1.54 dBm 2.40215180 GHz 20 dBm· 10 dBm M1 0 dBm -10 dBm -20 dBm -30 dBm m -40 dBm ŝ -SO dBm -60 dBm· -70 dBm Span 8.0 MHz CF 2.402 GHz 1001 pts



Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission Spectrum Ref Level 27.62 dBm Offset 7.62 dB 曼 RBW 100 kHz 40 dB SWT 227.5 µs 😑 VBW 300 kHz Mode Auto FFT Att SGL Count 100/100 ⊖1Pk Max M1[1] -0.71 dBn 20 dBm-2.40195000 GHz M2[1] -43.18 dBm 10 dBm 2.4000000 GHz 0 dBm -10 dBm D1 -18.455 dBm -20 dBm--30 dBm ми -40 dBm muhunn M3 ทุกษณฑิณษ์ -50 dBm Maharak A Challenge martial dalors for a al n*H*i -60 dBm -70 dBm· Stop 2.406 GHz Start 2.306 GHz 1001 pts Marker Y-value -0.71 dBm Function Function Result Type | Ref | Trc X-value 2.40195 GHz M1 1 M2 -43.18 dBm 2.4 GHz 1 ΜЗ 2.39 GHz -47.49 dBm 1 M4 1 2.3496 GHz -40.95 dBm 4,0 Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref **T** Spectrum Ref Level 27.62 dBm Offset 7.62 dB 👄 RBW 100 kHz 40 dB SWT 18.9 µs 😑 VBW 300 kHz Att Mode Auto FFT SGL Count 2000/2000 ●1Pk Max M1[1] 0.87 dBm 2.40215180 GHz 20 dBm· 10 dBm м1 0 dBm $\overline{\mathcal{M}}$ -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm

1001 pts

-60 dBm·

-70 dBm

CF 2.402 GHz

Span 8.0 MHz



Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Emission **T** Spectrum Ref Level 27.62 dBm Offset 7.62 dB 🖷 RBW 100 kHz 40 dB SWT 227.5 µs 😑 VBW 300 kHz Mode Auto FFT Att SGL Count 500/500 ⊖1Pk Max M1[1] 0.16 dBr 20 dBm· 2.40295000 GHz M2[1] -46.04 dBm 2.4000000 GHz 10 dBm 0 dBm mhr -10 dBm -20 dBm-D1 -19.134 dBr -30 dBm м4 40 dBm· allow and a strange how to The mark way to be a fear of the second s noral daman and association of the -50 dBm -60 dBm -70 dBm· Stop 2.406 GHz Start 2.306 GHz 1001 pts Marker Y-value 0.16 dBm Function Function Result Type | Ref | Trc X-value 2.40295 GHz M1 1 M2 -46.04 dBm 2.4 GHz 1 ΜЗ 2.39 GHz -44.44 dBm 1 M4 1 2.3412 GHz -40.53 dBm 4,0 Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Ref P Spectrum Ref Level 27.60 dBm Offset 7.60 dB 👄 RBW 100 kHz 40 dB SWT 18.9 µs 💿 VBW 300 kHz Att Mode Auto FFT SGL Count 100/100 ●1Pk Max M1[1] -1.42 dBn 2.47994410 GHz 20 dBm· 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm τ m -50 dBm -60 dBm· -70 dBm Span 8.0 MHz CF 2.48 GHz 1001 pts