

RADIO TEST REPORT FCC ID: 2A3KJ-D018

Product:Diffuser SpeakerTrade Mark:N/AModel No.:D018Family Model:DBS-6/1703Report No.:S21110100902001Issue Date:Nov 23, 2021

Prepared for

Ningbo Usborn Household Products Co.,Ltd Room 911,Bldg A,Yin Yi Cptl Int,No.535 Youngor Road,Haishu,Ningbo,China.

Prepared by

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1 TEST RESULT CERTIFICATION

Applicant's name	Ningbo Usborn Household Products Co.,Ltd
Address	Room 911,Bldg A,Yin Yi Cptl Int,No.535 Youngor Road,Haishu,Ningbo,China.
Manufacturer's Name:	Ningbo Usborn Household Products Co.,Ltd
Address	Room 911,Bldg A,Yin Yi Cptl Int,No.535 Youngor Road,Haishu,Ningbo,China.
Product description	
Product name:	Diffuser Speaker
Model and/or type reference:	D018
Family Model	DBS-6/1703

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

Testing Engineer

(Mary Hu)

Nov 10. 2021~ Nov 23, 2021

. Hu

hram

Authorized Signatory

(Alex Li)



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		

Remark:

 "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 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 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).
	: 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%
9	All emissions, radiated(9KHz~30MHz)	±6dB



4 GENERAL DESCRIPTION OF EUT

Product Feature and Specification		
Equipment	Diffuser Speaker	
Trade Mark	N/A	
FCC ID	2A3KJ-D018	
Model No.	D018	
Family Model	DBS-6/1703	
Model Difference	All models are the same circuit and RF module, except the Model name.	
Operating Frequency	2402MHz~2480MHz	
Modulation	GFSK, π/4-DQPSK	
Number of Channels	79 Channels	
Antenna Type	PCB Antenna	
Antenna Gain	0 dBi	
Power supply	DC 5V from Type-C.	
Adapter	N/A	
Battery	N/A	
HW Version	V1.0	
SW Version	V1.0	

Note 1: 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.

Note 2: The engineering test program was provided and the EUT was programmed to be in continuously transmitting mode, the power level is the software default value.



Certificate #4298.01 Revision History			
Report No.	Version	Description	Issued Date
S21110100902001	Rev.01	Initial issue of report	Nov 23, 2021
	!		
	<u> </u>		



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 $\pi/4$ -DQPSK ; 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

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

For AC Conducted Emission			
Final Test Mode	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 2Mbps 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.

NTEK J			ort No.: S21110100902001				
6 SETUP OF EQUIPMENT UNDER TEST 6.1 BLOCK DIAGRAM CONFIGURATION OF TEST SYSTEM For AC Conducted Emission Mode							
	C-1	AC PLUG AE-1 Adapter					
For Radiated Test Cases							
E	UT						
For Conducted Test Cases	5						
Measurement Instrument	– EUT						
Note: 1. The temporary an and this temporary antenn	tenna connector is soldere a connector is listed in the	ed on the PCB board in order equipment list.	to 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	Model/Type No.	Series No.	Note
AE-1	Adapter	N/A	N/A	Peripherals

Item	Cable Type	Shielded Type	Ferrite Core	Length
C-1	Power Cable	NO	NO	1.0m
C-2	RF Cable	YES	NO	0.1m

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".



6.3 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation& Conducted Test equipment

uuuuu	Ind Conducted	col equipment					
Item	Item Kind of Equipment Manufacturer Type No.		Serial No.	Last calibration	Calibrated until	Calibrati on period	
1	Spectrum Analyzer	Aglient	E4407B	MY45108040	2021.04.27	2022.04.26	1 year
2	Spectrum Analyzer	Agilent	N9020A	MY49100060	2021.04.27	2022.04.26	1 year
3	Spectrum Analyzer	R&S	FSV40	101417	2021.04.27	2022.04.26	1 year
4	Test Receiver	R&S	ESPI7	101318	2021.04.27	2022.04.26	1 year
5	Bilog Antenna	TESEQ	CBL6111D	31216	2021.03.29	2022.03.28	1 year
6	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2020.05.11	2023.05.10	3 year
7	Horn Antenna	EM	EM-AH-1018 0	2011071402	2021.03.29	2022.03.28	1 year
8	Broadband Horn Antenna	SCHWARZBE CK	BBHA 9170	803	2021.07.01	2022.06.30	1 year
9	Amplifier	EMC	EMC051835 SE	980246	2021.07.01	2022.06.30	1 year
10	Active Loop Antenna	SCHWARZBE CK	FMZB 1519 B	055	2021.07.01	2022.06.30	1 year
11	Power Meter	DARE	RPR3006W	15I00041SN 084	2021.07.01	2022.06.30	1 year
12	Test Cable (9KHz-30MHz)	N/A	R-01	N/A	2019.08.06	2022.08.05	3 year
13	Test Cable (30MHz-1GHz)	N/A	R-02	N/A	2019.08.06	2022.08.05	3 year
14	High Test Cable(1G-40G Hz)	N/A	R-03	N/A	2019.06.28	2022.06.27	3 year
15	Filter	TRILTHIC	2400MHz	29	2021.07.01	2022.06.30	1 year
16	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 Co	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	2021.04.27	2022.04.26	1 year
2	LISN	R&S	ENV216	101313	2021.04.27	2022.04.26	1 year
3	LISN	SCHWARZBE CK	NNLK 8129	8129245	2021.04.27	2022.04.26	1 year
4	50Ω Coaxial Switch	ANRITSU CORP	MP59B	6200983704	2020.05.11	2023.05.10	3 year
5	Test Cable (9KHz-30MH z)	N/A	C01	N/A	2020.05.11	2023.05.10	3 year
6	Test Cable (9KHz-30MH z)	N/A	C02	N/A	2020.05.11	2023.05.10	3 year
7	Test Cable (9KHz-30MH z)	N/A	C03	N/A	2020.05.11	2023.05.10	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.



7 TEST REQUIREMENTS

7.1 CONDUCTED EMISSIONS TEST

7.1.1 Applicable Standard

According to FCC Part 15.207(a)

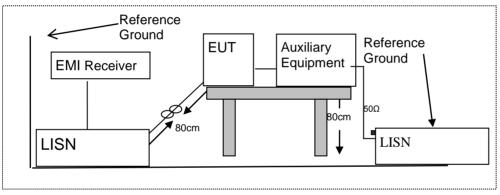
7.1.2 Conformance Limit

	Conducted Emission Limit		
Frequency(MHz)	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.
- 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.
- 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

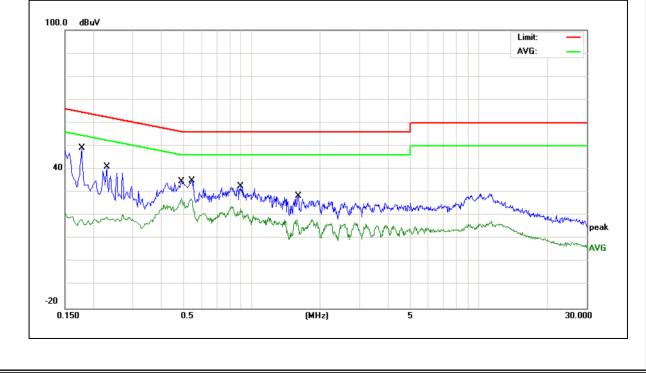
EUT:	Diffuser Speaker	Model Name :	D018
Temperature:	21.6℃	Relative Humidity:	56%
Pressure:	1010hPa	Phase :	L
Test Voltage :	DC 5V from adapter AC 120V/60Hz	Test Mode:	Mode 1

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Domork
(MHz)	(dBµV)	(dB)	(dBµV)	(dBµV)	(dB)	Remark
0.1779	39.43	9.67	49.10	64.58	-15.48	QP
0.1779	8.64	9.67	18.31	54.58	-36.27	AVG
0.2300	31.30	9.63	40.93	62.45	-21.52	QP
0.2300	9.74	9.63	19.37	52.45	-33.08	AVG
0.4899	25.03	9.64	34.67	56.17	-21.50	QP
0.4899	18.05	9.64	27.69	46.17	-18.48	AVG
0.5460	25.47	9.66	35.13	56.00	-20.87	QP
0.5460	17.73	9.66	27.39	46.00	-18.61	AVG
0.8980	22.84	9.74	32.58	56.00	-23.42	QP
0.8980	13.33	9.74	23.07	46.00	-22.93	AVG
1.6019	18.65	9.76	28.41	56.00	-27.59	QP
1.6019	8.60	9.76	18.36	46.00	-27.64	AVG

Remark:

1. All readings are Quasi-Peak and Average values.

2. Factor = Insertion Loss + Cable Loss.





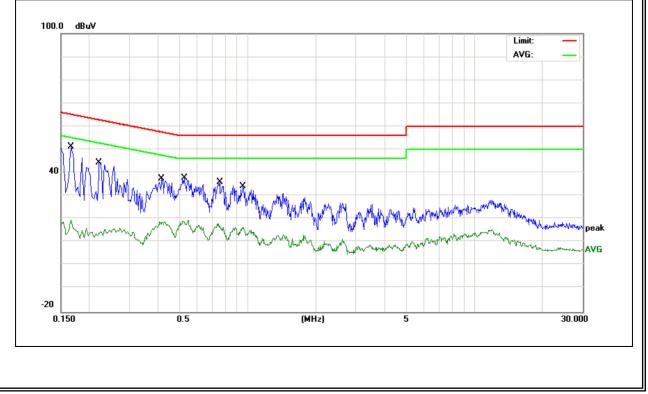
EUT:	Diffuser Speaker	Model Name :	D018
Temperature:	21.6 ℃	Relative Humidity:	56%
Pressure:	1010hPa	Phase :	Ν
Test Voltage :	DC 5V from adapter AC 120V/60Hz	Test Mode:	Mode 1

	1	1			1	
Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBµV)	(dB)	(dBµV)	(dBµV)	(dB)	Remark
0.1660	41.53	9.63	51.16	65.15	-13.99	QP
0.1660	10.02	9.63	19.65	55.15	-35.50	AVG
0.2220	34.80	9.64	44.44	62.74	-18.30	QP
0.2220	5.98	9.64	15.62	52.74	-37.12	AVG
0.4180	27.87	9.71	37.58	57.49	-19.91	QP
0.4180	9.26	9.71	18.97	47.49	-28.52	AVG
0.5260	28.00	9.73	37.73	56.00	-18.27	AVG
0.5260	9.84	9.73	19.57	46.00	-26.43	QP
0.7539	26.34	9.66	36.00	56.00	-20.00	QP
0.7539	8.34	9.66	18.00	46.00	-28.00	AVG
0.9500	24.34	9.73	34.07	56.00	-21.93	AVG
0.9500	6.81	9.73	16.54	46.00	-29.46	QP

Remark:

1. All readings are Quasi-Peak and Average values.

2. Factor = Insertion Loss + Cable Loss.





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)

Frequency(MHz)	Class B (dBuV/m) (at 3M)					
	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:

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.

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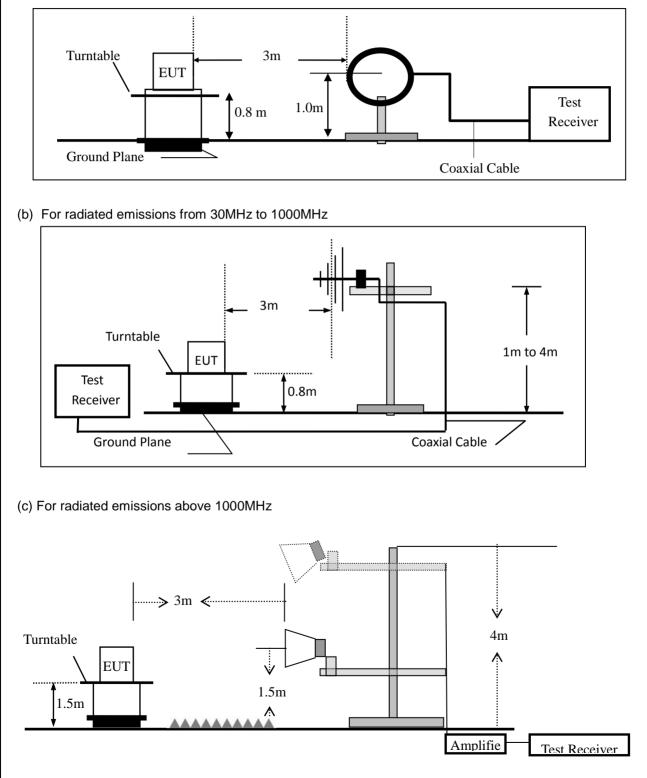
7.2.3 Measuring Instruments

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

ACCREDITED Certificate #4298.01

7.2.4 Test Configuration

(a) For radiated emissions below 30MHz





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 / 1 MHz 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:										
Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth							
30 to 1000	QP	120 kHz	300 kHz							
Ahava 4000	Peak	1 MHz	1 MHz							
Above 1000	Average	1 MHz	1 MHz							

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 30M	/Hz)
--	------

EUT:	Diffuser Speaker	Model No.:	D018
Temperature:	20 ℃	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Mary Hu

Freq.	Ant.Pol.	Emission Level(dBuV/m)		Emission Level(dBuV/m) Limit 3m(dBuV/m)		Over	r(dB)
(MHz)	H/V	PK ÀV		PK AV		PK	r(dB) AV

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





Spurious Emission below 1GHz (30MHz to 1GHz) All the modulation modes have been tested, and the worst result was report as below:

EUT:	Diffuser Speaker	Model Name :	D018
Temperature:	25.3℃	Relative Humidity:	51%
Pressure:	1010hPa	Test Mode:	Mode 1
Test Voltage :	DC 5V from adapter AC 120	V/60Hz	

Polar	Frequency	Meter Reading	Factor	tor Emission Limits		Margin	Remark
(H/V)	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	30.5305	6.11	24.66	30.77	40.00	-9.23	QP
V	59.8588	21.50	11.41	32.91	40.00	-7.09	QP
V	138.3873	16.68	19.23	35.91	43.50	-7.59	QP
V	149.4857	15.25	18.83	34.08	43.50	-9.42	QP
V	271.3246	12.41	21.46	33.87	46.00	-12.13	QP
V	815.9678	6.77	32.88	39.65	46.00	-6.35	QP

Remark:

Emission Level= Meter Reading+ Factor, Margin= Emission Level - Limit









	Emission			to 25GHz	<u>z</u>)		1				
EUT:	Diffu	iser Spea	ıker	Model	No.:		D018				
Temperature	e: 20 °	2		Relativ	e Humidity	:	48%				
Test Mode:	Mod	e2/Mode	3/Mode4	Test B	y:		Mary I	Hu			
Il the modulation modes have been tested, and the worst result was report as below:											
Frequency	Read Level	Cable loss	Antenna Factor	Preamp Factor	Emission Level	Li	mits	Margin	Rema	rk	Comment
(MHz)	(dBµV)	(dB)	dB/m	(dB)	(dBµV/m)	(dB	µV/m)	(dB)			
		Lov	v Channel (2402 MHz)	(π/4-DQPS	SK)/	Above ?	1G			
4804.32	63.49	5.21	35.59	44.30	59.99	74	4.00	-14.01	Pk		Vertical
4804.32	43.48	5.21	35.59	44.30	39.98	54	4.00	-14.02	AV		Vertical
7206.37	62.60	6.48	36.27	44.60	60.75	74	4.00	-13.25	Pk		Vertical
7206.37	42.28	6.48	36.27	44.60	40.43	54	4.00	-13.57	AV		Vertical
4804.09	64.78	5.21	35.55	44.30	61.24	74	4.00	-12.76	Pk	H	lorizontal
4804.09	41.09	5.21	35.55	44.30	37.55	54	4.00	-16.45	16.45 AV		lorizontal
7206.84	60.14	6.48	36.27	44.52	58.37	74	4.00	-15.63	3 Pk I		lorizontal
7206.84	41.73	6.48	36.27	44.52	39.96	54	4.00	-14.04	AV	H	lorizontal
		Mie	d Channel (2441 MHz)	(π/4-DQPS	6K)A	Above 1	G			
4882.50	65.92	5.21	35.66	44.20	62.59	74	4.00	-11.41	Pk		Vertical
4882.50	43.81	5.21	35.66	44.20	40.48	54	4.00	-13.52	AV		Vertical
7323.45	61.18	7.10	36.50	44.43	60.35	74	4.00	-13.65	Pk		Vertical
7323.45	43.40	7.10	36.50	44.43	42.57	54	4.00	-11.43	AV		Vertical
4882.51	64.47	5.21	35.66	44.20	61.14	74	4.00	-12.86	Pk	H	lorizontal
4882.51	40.31	5.21	35.66	44.20	36.98	54	4.00	-17.02	AV	H	lorizontal
7324.57	61.26	7.10	36.50	44.43	60.43	74	4.00	-13.57	Pk	H	lorizontal
7324.57	40.26	7.10	36.50	44.43	39.43	54	4.00	-14.57	AV	H	lorizontal
		Hig	h Channel (2480 MHz)	(π/4-DQPS	SK)	Above	1G			
4960.04	63.05	5.21	35.52	44.21	59.57	74	4.00	-14.43	Pk		Vertical
4960.04	43.65	5.21	35.52	44.21	40.17	54	4.00	-13.83	AV		Vertical
7439.76	60.04	7.10	36.53	44.60	59.07	74	4.00	-14.93	Pk		Vertical
7439.76	42.10	7.10	36.53	44.60	41.13	54	4.00	-12.87	AV		Vertical
4960.20	64.04	5.21	35.52	44.21	60.56	74	4.00	-13.44	Pk	H	lorizontal
4960.20	42.86	5.21	35.52	44.21	39.38	54	4.00	-14.62	AV	H	lorizontal
7440.26	63.21	7.10	36.53	44.60	62.24	74	4.00	-11.76	Pk	H	lorizontal
7440.26	43.71	7.10	36.53	44.60	42.74	54	4.00	-11.26	AV	H	lorizontal

Note:

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



Spurious	Diffuser S		leu Danu A		0-2390MHz and 2483. Model No.:			D018					
		Jeaner											
Temperature					ve Humidity	, ,	48%						
Test Mode: Mode2/ Mode4 Test By: Mary Hu													
All the modulation modes have been tested, and the worst result was report as below:													
Frequency	Meter Reading	Cable Loss	Antenna Factor	Preamp Factor	Emission Level	Lim	nits	Margin	Detector	Comment			
(MHz)	(dBµV)	(dB)	dB/m	(dB)	(dBµV/m)			(dB)	Туре				
2Mbps(π/4-DQPSK)- Non-hopping													
2310.00	52.29	2.97	27.80	43.80	39.26	74		-34.74	Pk	Horizontal			
2310.00	41.16	2.97	27.80	43.80	28.13	54		-25.87	AV	Horizontal			
2310.00	54.10	2.97	27.80	43.80	41.07	74	4	-32.93	Pk	Vertical			
2310.00	40.45	2.97	27.80	43.80	27.42	54	4	-26.58	AV	Vertical			
2390.00	53.95	3.14	27.21	43.80	40.50	74	4	-33.50	Pk	Vertical			
2390.00	42.12	3.14	27.21	43.80	28.67	54	4	-25.33	AV	Vertical			
2390.00	51.23	3.14	27.21	43.80	37.78	74	4	-36.22	Pk	Horizontal			
2390.00	41.69	3.14	27.21	43.80	28.24	54	4	-25.76	AV	Horizontal			
2483.50	53.40	3.58	27.70	44.00	40.68	74	4	-33.32	Pk	Vertical			
2483.50	41.40	3.58	27.70	44.00	28.68	54	4	-25.32	AV	Vertical			
2483.50	54.87	3.58	27.70	44.00	42.15	74	4	-31.85	Pk	Horizontal			
2483.50	41.58	3.58	27.70	44.00	28.86	54	4	-25.14	AV	Horizontal			
			2Mb	ops(π/4-D	QPSK)- hop	ping							
2310.00	54.37	2.97	27.80	43.80	41.34	74	4	-32.66	Pk	Horizontal			
2310.00	41.39	2.97	27.80	43.80	28.36	54	4	-25.64	AV	Horizonta			
2310.00	51.86	2.97	27.80	43.80	38.83	74	4	-35.17	Pk	Vertical			
2310.00	41.07	2.97	27.80	43.80	28.04	54	4	-25.96	AV	Vertical			
2390.00	50.26	3.14	27.21	43.80	36.81	74	4	-37.19	Pk	Vertical			
2390.00	43.97	3.14	27.21	43.80	30.52	54	4	-23.48	AV	Vertical			
2390.00	54.57	3.14	27.21	43.80	41.12	74	4	-32.88	Pk	Horizonta			
2390.00	43.86	3.14	27.21	43.80	30.41	54	4	-23.59	AV	Horizontal			
2483.50	52.17	3.58	27.70	44.00	39.45	74	4	-34.55	Pk	Vertical			
2483.50	40.73	3.58	27.70	44.00	28.01	54	4	-25.99	AV	Vertical			
2483.50	53.78	3.58	27.70	44.00	41.06	74	4	-32.94	Pk	Horizontal			
2483.50	43.82	3.58	27.70	44.00	31.10	54	4	-22.90	AV	Horizonta			

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



EUT:		Diffus	er Spea	ker	er Model No.:			D018			
Temperature: 2		20 °C				tive Humidity	y: 4	48%			
Test Mode:		Mode	2/ Mode	4	Test	By:	ſ	Mary I	Hu		
All the modu	lation	mode	es have b	een teste	d, and th	ne worst resu	ult was	repo	rt as belo	SW:	
Frequency		ding vel	Cable Loss	Antenna Factor	Preamp Factor		Lim	nits	Margin	Detector	Comment
(MHz)	(dB	μV)	(dB)	dB/m	(dB)	(dBµV/m)	(dBµ'	V/m)	(dB)	Туре	
3260	58	.64	4.04	29.57	44.70	47.55	74	4	-26.45	Pk	Vertical
3260	49	49.97 4.04		29.57	44.70	38.88	5	4	-15.12	AV	Vertical
3260	57.	.44	4.04	29.57	44.70	46.35	74	4	-27.65	Pk	Horizonta
3260	44.	.91	4.04	29.57	44.70	33.82	5	4	-20.18	AV	Horizonta
3332	64	.53	4.26	29.87	44.40	54.26	74	4	-19.74	Pk	Vertical
3332	43.	.87	4.26	29.87	44.40	33.60	5	4	-20.40	AV	Vertical
3332	63.	.95	4.26	29.87	44.40	53.68	74	4	-20.32	Pk	Horizonta
3332	44.	.84	4.26	29.87	44.40	34.57	5	4	-19.43	AV	Horizonta
17797	51	.50	10.99	43.95	43.50	62.94	74	4	-11.06	Pk	Vertical
17797	37.	.57	10.99	43.95	43.50	3.50 49.01 54		4	-4.99	AV	Vertical
17788	52	.44	11.81	43.69	44.60	63.34	74	4	-10.66	Pk	Horizonta
17788	38	.92	11.81	43.69	44.60	49.82	5	4	-4.18	AV	Horizonta

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.

 $VBW \ge RBW$

Sweep = auto

Detector function = peak Trace = max hold

7.3.6 Test Results

EUT:	Diffuser Speaker	Model No.:	D018
Temperature:		Relative Humidity:	48%
Test Mode:	Mode 5(1Mbps)	Test By:	Mary Hu



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 ≥ RBW Sweep = auto

Detector function = peak

Trace = max hold

7.4.6 Test Results

EUT:	Diffuser Speaker	Model No.:	D018
Temperature:	20 °C	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Mary Hu



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:	Diffuser Speaker	Model No.:	D018
Temperature:	20 °C	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Mary Hu

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 x 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 $(800 / 6 / 20) \times (0.4 \times 20) = 53.33$ 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:	Diffuser Speaker	Model No.:	D018
Temperature:	20 °C	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Mary Hu



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

 $RBW \ge the 20 \text{ dB}$ bandwidth of the emission being measured

 $\mathsf{VBW} \geq \mathsf{RBW}$

Sweep = auto

Detector function = peak Trace = max hold

7.7.6 Test Results

EUT:	Diffuser Speaker	Model No.:	D018
Temperature:	20 °C	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Mary Hu



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 §15.205(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:	Diffuser Speaker	Model No.:	D018
Temperature:	20 ℃	Relative Humidity:	48%
Test Mode:	Mode2 /Mode4/ Mode 5	Test By:	Mary Hu



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 30MHzHz 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: 0dBi). It comply with the standard requirement.

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7.11 FREQUENCY HOPPING SYSTEM (FHSS) EQUIPMENT REQUIREMENTS 7.11.1 Standard Applicable

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. (g) 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 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. (h) 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 hopsets 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.

7.11.2 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 2,400-2,483.5 MHz. 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 an bluetooth system receiver to check that the device maintained hopping synchronization, and the device complied with these requirements for FCC Part 15.247 rule.

7.11.3 EUT Pseudorandom Frequency Hopping Sequence

Pseudorandom Frequency Hopping Sequence Table as below: Channel: 08, 24, 40, 56, 40, 56, 72, 09, 01, 09, 33, 41, 33, 41, 65, 73, 53, 69, 06, 22, 04, 20, 36, 52, 38, 46, 70, 78, 68, 76, 21, 29, 10, 26, 42, 58, 44, 60, 76, 13, 03, 11, 35, 43, 37, 45, 69, 77, 55, 71, 08, 24, 08, 24, 40, 56, 40, 48, 72, 01, 72, 01, 25, 33, 12, 28, 44, 60, 42, 58, 74, 11, 05, 13, 37, 45 etc.

The system receiver have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals.



8 TEST RESULTS

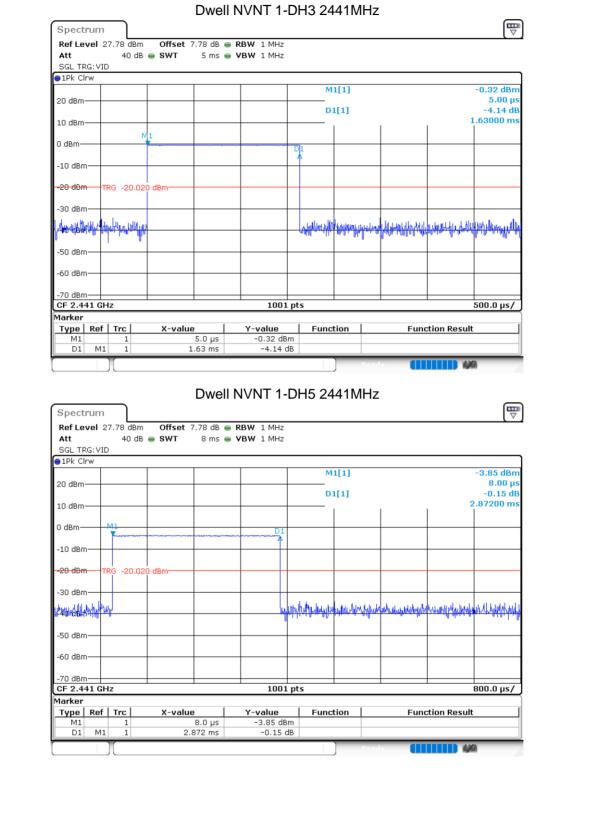
8.1 **DWELL TIME**

Condition	Mode	Frequency	Pulse	Total Dwell	Period	Limit	Verdict
Condition	Mode	(MHz)	Time (ms)	Time (ms)	Time (ms)	(ms)	verdict
NVNT	1-DH1	2441	0.375	120	31600	400	Pass
NVNT	1-DH3	2441	1.63	260.8	31600	400	Pass
NVNT	1-DH5	2441	2.872	306.347	31600	400	Pass
NVNT	2-DH1	2441	0.369	118.08	31600	400	Pass
NVNT	2-DH3	2441	1.625	260	31600	400	Pass
NVNT	2-DH5	2441	2.872	306.347	31600	400	Pass

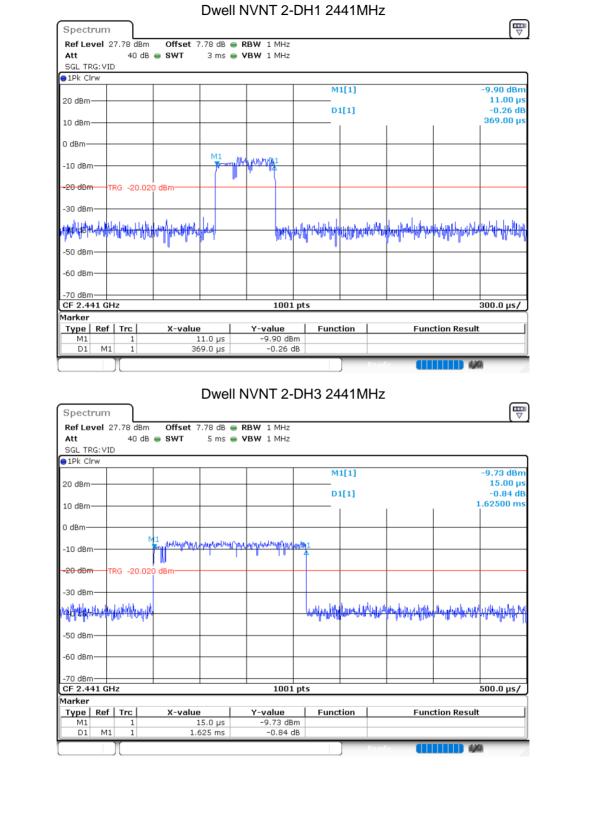
Dwell NVNT 1-DH1 2441MHz

Att	VEI 2	7.78 dB 40 c	m Offset 7 dB 👄 SWT										
SGL TF													
∋1Pk Cl	rw												
20 dBm								_M	1[1]				-12.22 dBn 2.00 μ
20 0011								D	1[1]				-0.15 di
10 dBm													375.00 μ
0 dBm—													
-10 dBn				Minor	u wawa	and the second se							
				1		₩.							
-20 dBn	TF	RG -20.	020 dBm			_							
-30 dBn													
-30 UBII													
hha kaela		hhuman	<u>Pillipipinal in Pilipipi</u>	HM ^M m		<u></u>	MUL LAND	Aul	the star	ALL &	WHY WORLD (In A A A A
o e pol	.1 109	nd d	. Mole mer e f	NO IN		MA	1 1	~ ~	11	. Ma		1. 0×0 .	
-50 dBn													
-60 dBn	\												
-70 dBn			_										
CF 2.4	41 GH	z				1001	pts						300.0 µs/
Marker Type	Ref	Trc	X-value		v_	value		unc	tion		Eup	ction Resul	
M1	Rei	1		2.0 µs	-	2.22 dP		unc	CIOIL		Fun	LION RESUL	ι
D1	M1	1		'5.0 µs		-0.15 (









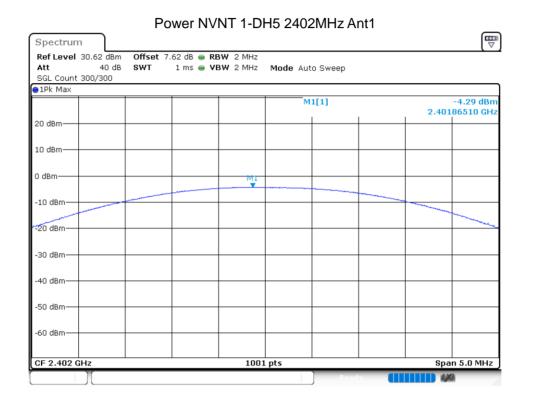


		Dwell	NVNT 2-D	H5 244	41MHz			
Spectrum	1							
Ref Level 27.78	dBm Offset	7.78 dB 👄	RBW 1 MHz					
	O dB 👄 SWT	8 ms 👄	VBW 1 MHz					
SGL TRG: VID								
●1Pk Clrw								
0.0 10-1				M1	[1]		-	12.07 dBm 16.00 μs
20 dBm				D1	(11			-1.97 dB
10 dBm							2	.87200 ms
0 dBm		-						
M1								
-10 dBm	ŧIJ ^ĸ ŧŗţŗ <mark>Į</mark> ŧŧŊĬĬŧŴĬŊŊŊ~vŊĿĬĬĸ	aller aller and the second	mater way and a second					
-20 dBm TRG -2	20.020 dBm		• • •					
20 000 110 -2	10.020 ubm							
-30 dBm								
المتلقلة بالمراب والم			114.4		ia al al consolation	and we have been a start of the second s	a datata	AN ALA HAVE MADE
uddonegelyddifwrdiau d				անհանգությե	nt-action halfed	by the second of the	n mredinair ha	1.0. A. 0
				· ·				
-50 dBm								
-60 dBm								
-70 dBm								
CF 2.441 GHz		·	1001 p	ts		·		800.0 µs/
• I								
	X-valu	e	Y-value	Functi	on	Fund	tion Result	
Type Ref Trc								
Type Ref Trc M1 1	1	16.0 µs	-12.07 dBm					
M1 1	1	16.0 µs 872 ms	-12.07 dBm -1.97 dB					

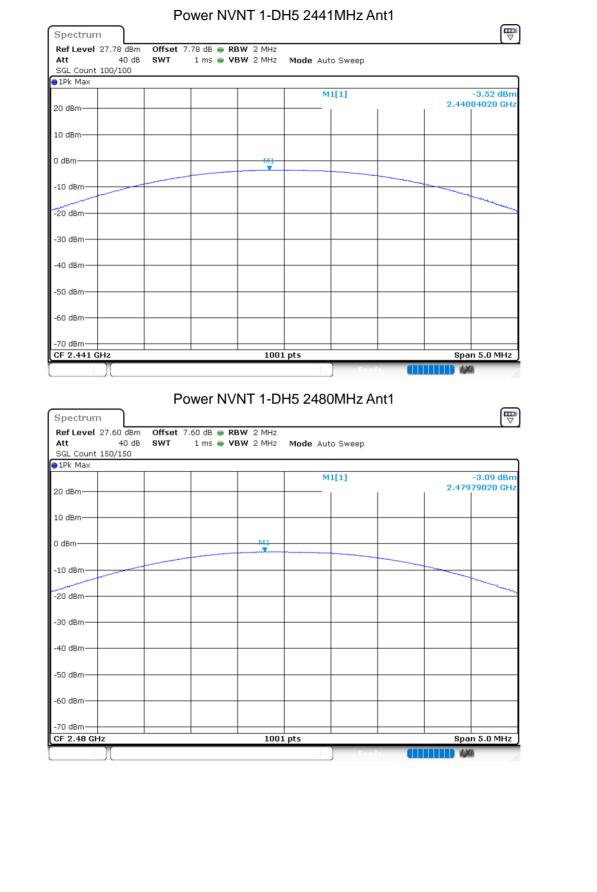


8.2 MAXIMUM CONDUCTED OUTPUT POWER

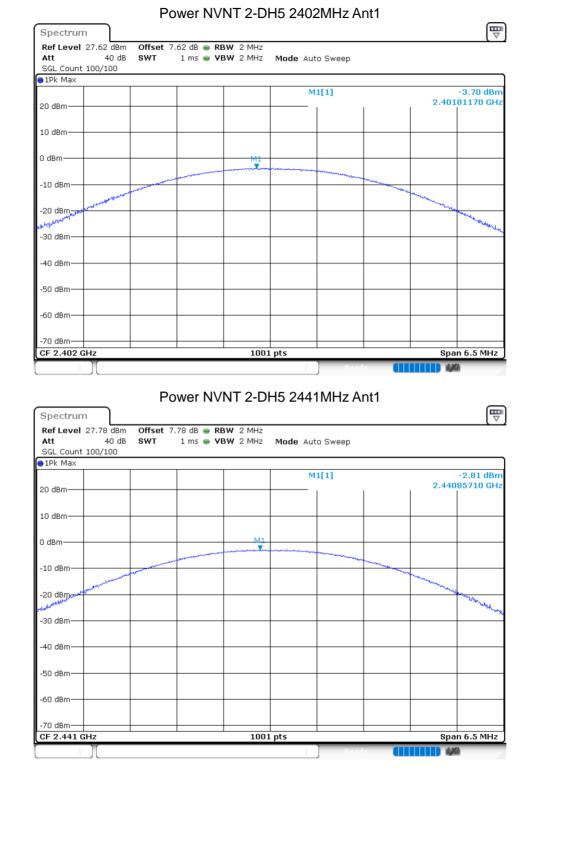
~~~							
	Condition	Mode	Frequency (MHz)	Antenna	Power (dBm)	Limit (dBm)	Verdict
	NVNT	1-DH5	2402	Ant 1	-4.29	30	Pass
	NVNT	1-DH5	2441	Ant 1	-3.52	30	Pass
	NVNT	1-DH5	2480	Ant 1	-3.09	30	Pass
	NVNT	2-DH5	2402	Ant 1	-3.70	20.97	Pass
	NVNT	2-DH5	2441	Ant 1	-2.81	20.97	Pass
	NVNT	2-DH5	2480	Ant 1	-2.58	20.97	Pass



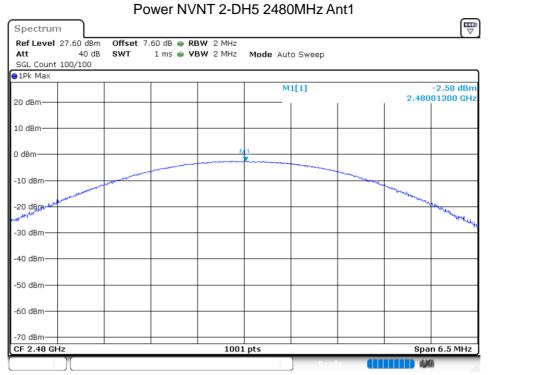










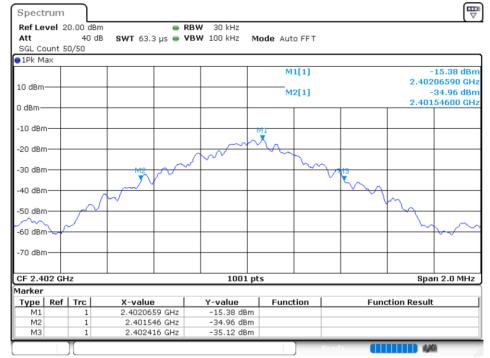




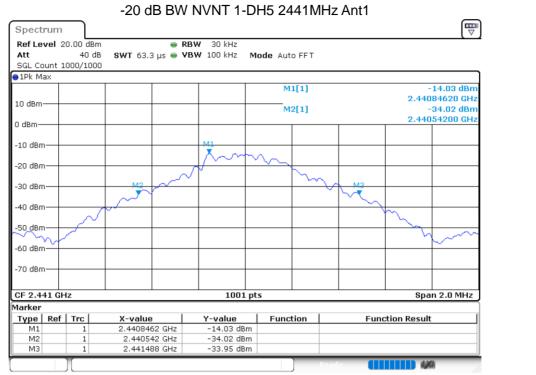
#### 8.3 OCCUPIED CHANNEL BANDWIDTH

Condition	Mode	Frequency	Antenna	-20 dB Bandwidth	Verdict
		(MHz)		(MHz)	
NVNT	1-DH5	2402	Ant 1	0.87	Pass
NVNT	1-DH5	2441	Ant 1	0.946	Pass
NVNT	1-DH5	2480	Ant 1	0.938	Pass
NVNT	2-DH5	2402	Ant 1	1.314	Pass
NVNT	2-DH5	2441	Ant 1	1.278	Pass
NVNT	2-DH5	2480	Ant 1	1.306	Pass

### -20 dB BW NVNT 1-DH5 2402MHz Ant1



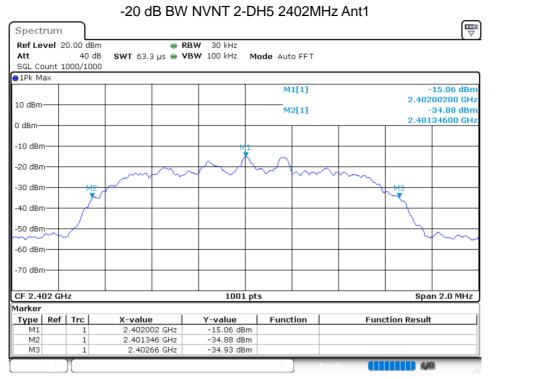




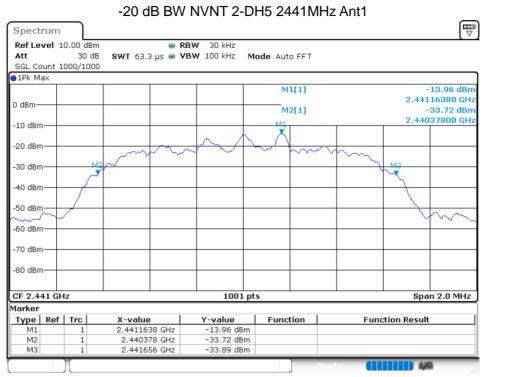


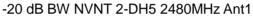


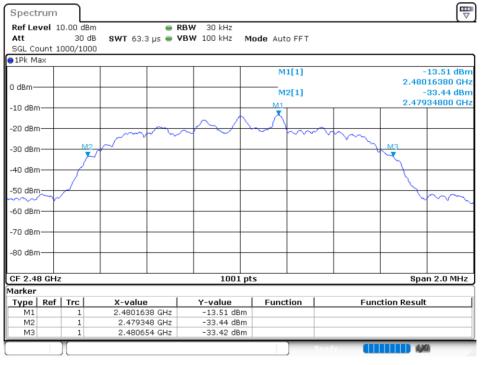








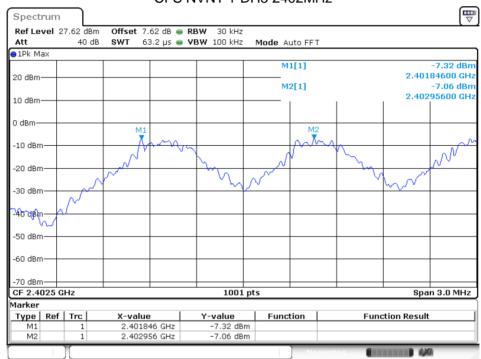




# NTEK ILW®

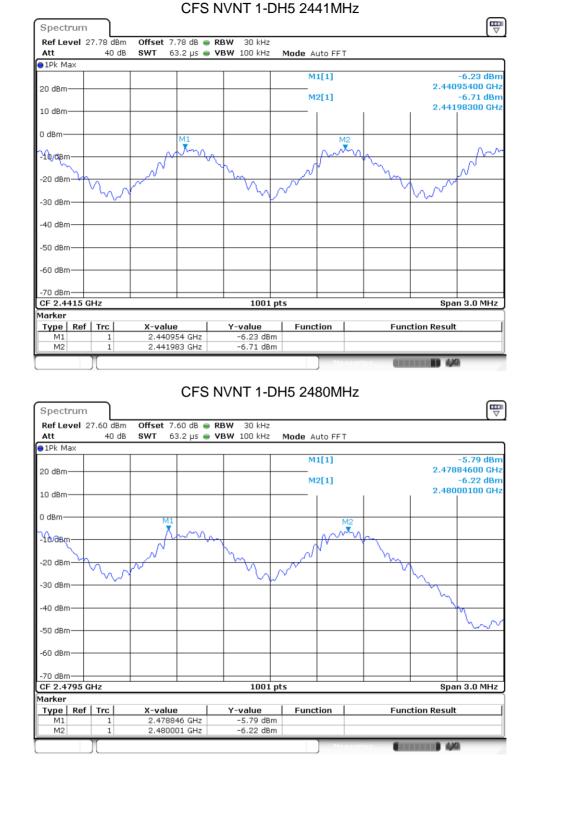
# 8.4 CARRIER FREQUENCIES SEPARATION

Condition	Mode	Hopping Freq1 (MHz)	Hopping Freq2	HFS (MHz)	Limit	Verdict
			(MHz)		(MHz)	
NVNT	1-DH5	2401.846	2402.956	1.11	0.87	Pass
NVNT	1-DH5	2440.954	2441.983	1.029	0.946	Pass
NVNT	1-DH5	2478.846	2480.001	1.155	0.938	Pass
NVNT	2-DH5	2402.008	2403.163	1.155	0.876	Pass
NVNT	2-DH5	2441.002	2442.004	1.002	0.852	Pass
NVNT	2-DH5	2479.008	2480.01	1.002	0.871	Pass

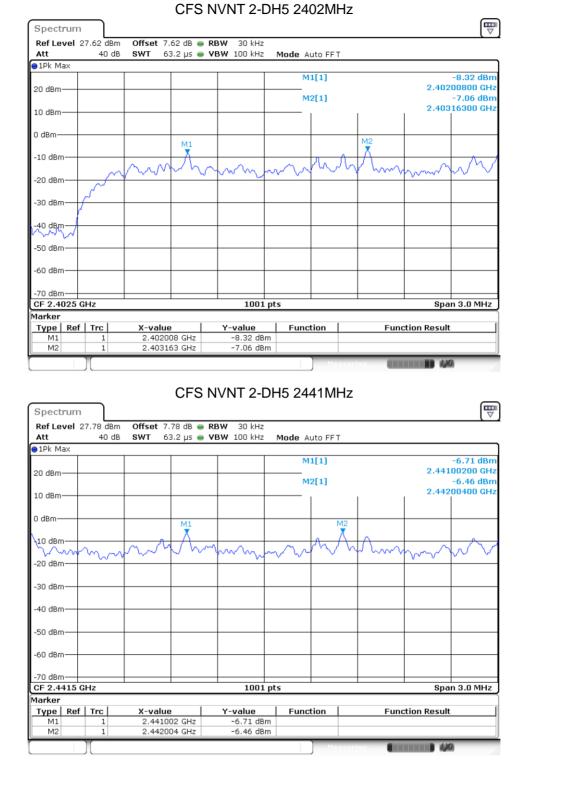


## CFS NVNT 1-DH5 2402MHz

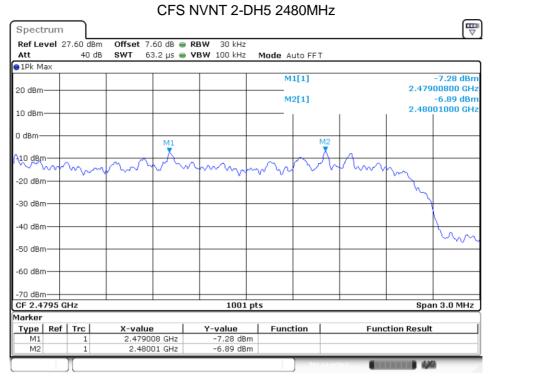














#### 8.5 NUMBER OF HOPPING CHANNEL

Condition	Mode	Hopping Number	Limit	Verdict
NVNT	1-DH5	79	15	Pass

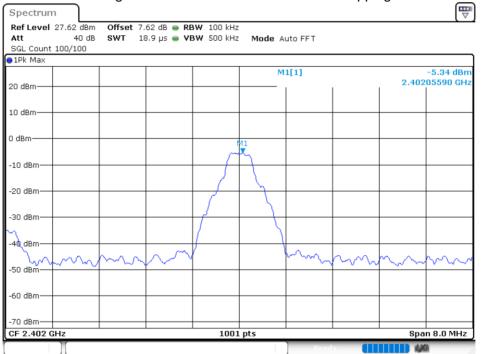
Att		7.62 dB		_	RBW 100 kHz					
	unt 7í	40 d 200/700		1 ms 👄	VBW 300 kHz	Mode A	uto Sweep	)		
1Pk M		5007700								
						M	1[1]			-5.16 dBm
20 dBm			_						2.40	020040 GHz
						M	2[1]		2.40	-4.47 dBm 302435 GHz
10 dBm									2.40	
0,dBm-										M2
TAN A	0 A 0 N	n <u>n h h n i</u>		Idaaabb	6066666666	MARAWAJ	INNAAAAA	AAAAAAAAAAAAA	hanana	0.0 0 0 0 7
-10 cBm	L M L	HARIAG	<u> HARAAAAAAA</u>	ЩИНИ	./	RAARA	11111111	1144444444	HUANNA	ANAAAA 🔰
-10000	WWW	YUYIY	DAUARANAA	1186868	AABAAAAAAAA	Athilian	ויייויא	) A B A B A B A B A B A B A B A B A B A	ITAAAAAAAA	07878
-30 484	( <del>кпр ∥</del>	44444	<u> </u>	of						
-30 dBm										
- <b>j</b> 0 ubii	'									
40 dBm	η <u> </u>									
u,										لديريه
-50 dBrr	1									
-60 dBrr										
-70 dBm										
Start 2	·	z			1001	pts		I	Stop 2	.4835 GHz
Marker										
Туре	Ref		X-value		Y-value	Func	tion	Fund	tion Result	t l
M1 M2		1	2.4020		-5.16 dB -4.47 dB					



### 8.6 BAND EDGE

0.0 DAND	LDGE						
Condition	Mode	Frequency	Antenna	Hopping	Max Value	Limit	Verdict
		(MHz)		Mode	(dBc)	(dBc)	
NVNT	1-DH5	2402	Ant 1	No-Hopping	-36.23	-20	Pass
NVNT	1-DH5	2402	Ant 1	Hopping	-35.59	-20	Pass
NVNT	1-DH5	2480	Ant 1	No-Hopping	-39.6	-20	Pass
NVNT	1-DH5	2480	Ant 1	Hopping	-38.37	-20	Pass
NVNT	2-DH5	2402	Ant 1	No-Hopping	-35.89	-20	Pass
NVNT	2-DH5	2402	Ant 1	Hopping	-34.87	-20	Pass
NVNT	2-DH5	2480	Ant 1	No-Hopping	-37.45	-20	Pass
NVNT	2-DH5	2480	Ant 1	Hopping	-38.98	-20	Pass

#### Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Ref





Att SGL Count 10	.62 dBm 40 dB 0/100			RBW 100 kHz VBW 500 kHz		uto FFT			
●1Pk Max									
20 dBm					M1	[1]		2.40	-4.72 dBm 185000 GHz
10 dBm					M2	[1]			-45.29 dBm 000000 GHz
0 dBm								2.10	N41
									Ţ
-10 dBm									
-20 dBm-01	-25.337	dBm							
-30 dBm			M4						
-40 dBm	udstate e	uburat Maraa		up more any	and months at use	u. Lakhara and		M3	un Wall
-50 dBm	an alteres	an anna ann an an an an an an an an an a			لعائدت وبالحدية	danaadharana	over (04) Cablamy	asso Calettelling .	har date and
-60 dBm									
-70 dBm									
Start 2.306 G Marker	Hz			1001	pts			Stop	2.406 GHz
Type   Ref		X-value		Y-value	Funct	ion	Fund	tion Resu	lt 🔤
M1 M2	1		.85 GHz 2.4 GHz	-4.72 dBr -45.29 dBr					
M3	1	2.	39 GHz	-47.22 dBr	m				
Bar	1	2.34	ping) N	-41.57 dBr		Door 2MHz A	Ant1 Ho	pping F	Ref
Bar Spectrum Ref Level 27 Att SGL Count 80	1 nd Edg 	2.34 ge(Hop) Offset 7	ping) N'	-41.57 dBr	H5 2402		Ant1 Ho	pping F	Ref
Bar Spectrum Ref Level 27 Att	1 nd Edg 	2.34 ge(Hop) Offset 7	ping) N'	VNT 1-D	H5 2402 Mode Au		Ant1 Ho	pping F	
Bar Spectrum Ref Level 27 Att SGL Count 80	1 nd Edg 	2.34 ge(Hop) Offset 7	ping) N'	VNT 1-D	H5 2402 Mode Au	to FFT	Ant1 Ho		
Bar Spectrum Ref Level 27 Att SGL Count 80 • 1Pk Max	1 nd Edg 	2.34 ge(Hop) Offset 7	ping) N'	VNT 1-D	H5 2402 Mode Au	to FFT	Ant1 Ho		-4.56 dBm
Bar Spectrum Ref Level 27 Att SGL Count 80 1Pk Max 20 dBm 10 dBm	1 nd Edg 	2.34 ge(Hop) Offset 7	ping) N'	VNT 1-D	H5 2402 Mode Au	to FFT	Ant1 Ho		-4.56 dBm
Bar Spectrum Ref Level 27 Att SGL Count 80 • 1Pk Max 20 dBm	1 nd Edg 	2.34 ge(Hop) Offset 7	ping) N'	VNT 1-D	H5 2402 Mode Au	to FFT	Ant1 Ho		-4.56 dBm
Bar Spectrum Ref Level 27 Att SGL Count 80 1Pk Max 20 dBm 10 dBm	1 nd Edg 	2.34 ge(Hop) Offset 7	ping) N'	VNT 1-D	H5 2402 Mode Au	to FFT	Ant1 Ho		-4.56 dBm 585210 GHz
Bar Spectrum Ref Level 27 Att SGL Count 80 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm	1 nd Edg 	2.34 ge(Hop) Offset 7	ping) N'	VNT 1-D	H5 2402 Mode Au	to FFT	Ant1 Ho		-4.56 dBm 585210 GHz
Bar Spectrum Ref Level 27 Att SGL Count 80 1Pk Max 20 dBm 10 dBm 0 dBm	1 nd Edg 	2.34 ge(Hop) Offset 7	ping) N'	VNT 1-D	H5 2402 Mode Au	to FFT	Ant1 Ho		-4.56 dBm 585210 GHz
Bar Spectrum Ref Level 27 Att SGL Count 80 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm	1 nd Edg 	2.34 ge(Hop) Offset 7	ping) N'	VNT 1-D	H5 2402 Mode Au	to FFT	Ant1 Ho		-4.56 dBm 585210 GHz
Bar Spectrum Ref Level 27 Att SGL Count 80 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm	1 nd Edg 	2.34 ge(Hop) Offset 7	ping) N'	VNT 1-D	H5 2402 Mode Au	to FFT	Ant1 Ho		-4.56 dBm 585210 GHz
Bar Spectrum Ref Level 27 Att SGL Count 80 • 1Pk Max 20 dBm 10 dBm - 0 dBm - 10 dBm - 20 dBm	1 nd Edg 	2.34 ge(Hop) Offset 7	ping) N'	VNT 1-D	H5 2402 Mode Au	to FFT	Ant1 Ho		-4.56 dBm 585210 GHz
Bar Spectrum Ref Level 27 Att SGL Count 80 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm	1 nd Edg 	2.34 ge(Hop) Offset 7	ping) N'	VNT 1-D	H5 2402 Mode Au	to FFT	Ant1 Ho		-4.56 dBm 585210 GHz
Bar Spectrum Ref Level 27 Att SGL Count 80 • 1Pk Max 20 dBm 10 dBm - 10 dBm - 20 dBm - 30 dBm - 40 dBm	1 nd Edg 	2.34 ge(Hop) Offset 7	ping) N'	VNT 1-D	H5 2402 Mode Au	to FFT	Ant1 Ho		-4.56 dBm 585210 GHz
Bar Spectrum Ref Level 27 Att SGL Count 80 • 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm	1 nd Edg 	2.34 ge(Hop) Offset 7	ping) N'	VNT 1-D	H5 2402 Mode Au	to FFT			-4.56 dBm 585210 GHz
Bar Spectrum Ref Level 27 Att SGL Count 80 11Pk Max 20 dBm 10 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm	1 .62 dBm 40 dB 00/8000	2.34 ge(Hop) Offset 7	ping) N'	VNT 1-D	Mode Au	to FFT	Ant1 Ho	2.40	-4.56 dBm 585210 GHz
Bar Spectrum Ref Level 27 Att SGL Count 80 • 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -30 dBm -50 dBm -60 dBm	1 .62 dBm 40 dB 00/8000	2.34 ge(Hop) Offset 7	ping) N'	VNT 1-D	Mode Au	to FFT		2.40	-4.56 dBm 585210 GHz
Bar Spectrum Ref Level 27 Att SGL Count 80 11Pk Max 20 dBm 10 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm	1 .62 dBm 40 dB 00/8000	2.34 ge(Hop) Offset 7	ping) N'	VNT 1-D	Mode Au	to FFT	Ant1 Ho	2.40	-4.56 dBm 585210 GHz



1Pk Max     20 dBm     10 dBm     0 dBm     -10 dBm     -20 dBm     D1 -24,563     -30 dBm     -40 dBm	dBm		M1[1] M2[1]		-5.21 dBm 395000 GHz
10 dBm	dBm		M2[1]		395000 GHz
0 dBm	dBm			2.40	-34.99 dBm
-10 dBm	dBm				000000 GHz
-20 dBm D1 -24.563 -30 dBm	dBm				M1
-30 dBm -40 dBm	dBm				
-30 dBm	ubin				(YVU)
					M2
	M4	water of the work was	Mushim for any she	H3	
-50 dBm			and the second s		
-60 dBm		_			
-70 dBm					
Start 2.306 GHz Marker		1001 p	is	Stop	2.406 GHz
Type Ref Trc	X-value 2.40395 GHz	Y-value -5.21 dBm	Function	Function Resul	t
M2 1	2.4 GHz	-34.99 dBm			
M3 1 M4 1	2.387 GHz 2.3409 GHz	-44.59 dBm -40.15 dBm			
●1Pk Max			M1[1]		-3.46 dBm
20 dBm				2.479	984820 GHz
10 dBm					
0.40					
0 dBm					
0 dBm		M1	}		
-10 dBm					
-10 dBm					
-10 dBm					
-10 dBm					
-10 dBm -20 dBm -30 dBm -40 dBm -50 dBm					
-10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm					
-10 dBm -20 dBm -30 dBm -40 dBm -50 dBm		1001 p			
-10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm		M1			



Att SGL Count	27.60 dBm 40 dB 100/100			RBW 100 kH: VBW 300 kH:		Auto FFT				
●1Pk Max					м	1[1]			-3.96 dBm	
20 dBm					м	2[1]			015000 GHz -43.16 dBm	
10 dBm						I	I	2.483	350000 GHz	
0 dĕm										
-10 dBm—										
-20 dBm	D1 -23.461	dBm								
-30 dBm	M4									
-40 dBM2-	manutherase	<del>M3</del> webXutrahra	phanthlph	up when he work	n Muthalush	wooderward	-	mulphing	Hunardial	
-50 dBm										
-60 dBm										
-70 dBm	6 GHz			1001	pts			Stop	2.576 GHz	
Marker Type   Re	f   Tre	X-value	, 1	Y-value	Func	tion	Fun	ction Resul		
M1 M2	1	2.480	15 GHz 35 GHz	-3.96 dB -43.16 dB	m		- an			
			2.5 GHz	-45.03 dB	m					
M3 M4	1	2.49	09 GHz	-43.07 dB	m					
M3 M4 Spectrum Ref Level Att SGL Count	and Edg	ge(Hopp	Ding) N	-43.07 dB	H5 248		Ant1 Ho	pping R	ef	
M3 M4 Spectrum Ref Level Att	and Edg n 27.60 dBm 40 dB	ge(Hopp	Ding) N	VNT 1-D	0H5 248 Mode A	uto FFT	Ant1 Ho	pping R		]
M3 M4 Spectrum Ref Level Att SGL Count	and Edg n 27.60 dBm 40 dB	ge(Hopp	Ding) N	VNT 1-D	0H5 248 Mode A		Ant1 Ho			]
M3 M4 Spectrum Ref Level Att SGL Count ● 1Pk Max	and Edg n 27.60 dBm 40 dB	ge(Hopp	Ding) N	VNT 1-D	0H5 248 Mode A	uto FFT	Ant1 Ho		-3.44 dBm	]
M3 M4 Spectrun Ref Level Att SGL Count 91Pk Max 20 dBm-	and Edg n 27.60 dBm 40 dB	ge(Hopp	Ding) N	VNT 1-D	0H5 248 Mode A	uto FFT	Ant1 Ho		-3.44 dBm	]
M3 M4 Spectrum Ref Level Att SGL Count • 1Pk Max 20 dBm	and Edg n 27.60 dBm 40 dB	ge(Hopp	Ding) N	VNT 1-D	0H5 248 Mode A	uto FFT	Ant1 Ho		-3.44 dBm	]
M3 M4 Spectrum Ref Level Att SGL Count ID dBm 10 dBm -10 dBm	and Edg n 27.60 dBm 40 dB	ge(Hopp	Ding) N	VNT 1-D	0H5 248 Mode A	uto FFT	Ant1 Ho		-3.44 dBm	]
M3 M4 Spectrum Ref Level Att SGL Count • 1Pk Max 20 dBm	and Edg n 27.60 dBm 40 dB	ge(Hopp	Ding) N	VNT 1-D	0H5 248 Mode A	uto FFT	Ant1 Ho		-3.44 dBm	
M3 M4 Spectrum Ref Level Att SGL Count ID dBm 10 dBm -10 dBm	and Edg n 27.60 dBm 40 dB	ge(Hopp	Ding) N	VNT 1-D	0H5 248 Mode A	uto FFT	Ant1 Ho		-3.44 dBm	
M3 M4 Spectrum Ref Level Att SGL Count • 1Pk Max 20 dBm- 10 dBm- 0 dBm- -10 dBm- -20 dBm-	and Edg n 27.60 dBm 40 dB	ge(Hopp	Ding) N	VNT 1-D	0H5 248 Mode A	uto FFT	Ant1 Ho		-3.44 dBm	
M3 M4 Spectrun Ref Level Att SGL Count • 1Pk Max 20 dBm 10 dBm -10 dBm -20 dBm -30 dBm -40 dBm	and Edg n 27.60 dBm 40 dB	ge(Hopp	Ding) N	VNT 1-D	0H5 248 Mode A	uto FFT	Ant1 Ho		-3.44 dBm	
M3 M4 Spectrun Ref Level Att SGL Count • 1Pk Max 20 dBm 10 dBm -10 dBm -20 dBm -30 dBm	and Edg n 27.60 dBm 40 dB	ge(Hopp	Ding) N	VNT 1-D	0H5 248 Mode A	uto FFT	Ant1 Ho		-3.44 dBm	
M3 M4 Spectrun Ref Level Att SGL Count O dBm 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -40 dBm	and Edg n 27.60 dBm 40 dB	ge(Hopp	Ding) N	VNT 1-D	0H5 248 Mode A	uto FFT	Ant1 Ho		-3.44 dBm	
M3 M4 Spectrum Ref Level Att SGL Count • 1Pk Max 20 dBm • 10 dBm • 0 dBm • 0 dBm • -10 dBm • -20 dBm • -30 dBm • -50 dBm • -50 dBm • -70 dBm	and Edg n 27.60 dBm 40 dB 8009/8009	ge(Hopp	Ding) N		Mode A	uto FFT	Ant1 Ho	2.47	-3.44 dBm /16280 GHz	
M3           M4           B           Spectrum           Ref Level           Att           SGL Count           • 1Pk Max           20 dBm           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm           -60 dBm	and Edg n 27.60 dBm 40 dB 8009/8009	ge(Hopp	Ding) N	VNT 1-D	Mode A	uto FFT	Ant1 Ho	2.47	-3.44 dBm /16280 GHz	
M3           M4           B           Spectrum           Ref Level           Att           SGL Count           • 1Pk Max           20 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm           -60 dBm	and Edg n 27.60 dBm 40 dB 8009/8009	ge(Hopp	Ding) N		Mode A	uto FFT	Ant1 Ho	2.47	-3.44 dBm /16280 GHz	



Ref Level         27.60 df           Att         40           SGL Count         1200/12	dB <b>SWT</b> 227		RBW 100 kH VBW 300 kH		Auto FFT			
●1Pk Max			1	M	1[1]			-3.96 dBm
20 dBm								805000 GHz -44.90 dBm
10 dBm				i i i i i i i i i i i i i i i i i i i	2[1]			350000 GHz
01dBm								
16 dBm								
-20 dBm								
-30 dBm	143 dBm							
-40 dBm/2	N/ts	null d					black	
-50 dBm	free to the the share	HAN MAN MAN	What youry a United Date Astron	y hallow was not been been been been been been been bee	uthownships	howwww	when a start and a start and a start a	warmerhow
-60 dBm								
-70 dBm								
Start 2.476 GHz			1001	L pts			Stop	2.576 GHz
Marker Type   Ref   Trc	X-value		Y-value	Fund	tion	Fund	tion Resu	t[
M1 1 M2 1	2.4780		-3.96 dB -44.90 dB	βm				
M3 1	2.	5 GHz 3 GHz	-43.93 dB -41.81 dB	3m				
								]
Spectrum Ref Level 27.62 d	d Edge N Bm Offset 7.6 dB swr 18.	/NT 2-		:		o-Hoppin	ng Ref	
Ban Spectrum Ref Level 27.62 dt Att 40	d Edge N Bm Offset 7.6 dB swr 18.	/NT 2-	DH5 24( BW 100 kHz	: Mode A	uto FFT	-Hoppin	ng Ref	
Ban Spectrum Ref Level 27.62 df Att 40 SGL Count 100/100	d Edge N Bm Offset 7.6 dB swr 18.	/NT 2-	DH5 24( BW 100 kHz	: Mode A		D-Hoppin		-4.80 dBm 216780 GHz
Ban Spectrum Ref Level 27.62 dl Att 40 SGL Count 100/100 1Pk Max	d Edge N Bm Offset 7.6 dB swr 18.	/NT 2-	DH5 24( BW 100 kHz	: Mode A	uto FFT	o-Hoppin		-4.80 dBm
Ban Spectrum Ref Level 27.62 dl Att 40 SGL Count 100/100 1Pk Max 20 dBm 10 dBm	d Edge N Bm Offset 7.6 dB swr 18.	/NT 2-	DH5 24( BW 100 kHz	: Mode A	uto FFT	D-Hoppin		-4.80 dBm
Ban Spectrum Ref Level 27.62 dl Att 40 SGL Count 100/100 PIPK Max 20 dBm	d Edge N Bm Offset 7.6 dB swr 18.	/NT 2-	DH5 24( BW 100 kHz	: Mode A	uto FFT	D-Hoppin		-4.80 dBm
Ban Spectrum Ref Level 27.62 dl Att 40 SGL Count 100/100 1Pk Max 20 dBm 10 dBm	d Edge N Bm Offset 7.6 dB swr 18.	/NT 2-	DH5 24( BW 100 kHz	: Mode A	uto FFT	p-Hoppin		-4.80 dBm
Ban Spectrum Ref Level 27.62 dt Att 40 SGL Count 100/100 1Pk Max 20 dBm 10 dBm 0 dBm	d Edge N Bm Offset 7.6 dB swr 18.	/NT 2-	DH5 24( BW 100 kHz	: Mode A	uto FFT	p-Hoppin		-4.80 dBm
Ban Spectrum Ref Level 27.62 di Att 40 SGL Count 100/100 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm	d Edge N Bm Offset 7.6 dB swr 18.	/NT 2-	DH5 24( BW 100 kHz	: Mode A	uto FFT	p-Hoppin		-4.80 dBm
Ban           Spectrum           Ref Level 27.62 di           Att         40           SGL Count 100/100           IPk Max           20 dBm           10 dBm           -10 dBm	d Edge N Bm Offset 7.6 dB swr 18.	/NT 2-	DH5 24( BW 100 kHz	: Mode A	uto FFT	p-Hoppin		-4.80 dBm
Ban Spectrum Ref Level 27.62 di Att 40 SGL Count 100/100 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm	d Edge N Bm Offset 7.6 dB swr 18.	/NT 2-	DH5 24( BW 100 kHz	: Mode A	uto FFT	p-Hoppin		-4.80 dBm
Ban Spectrum Ref Level 27.62 di Att 40 SGL Count 100/100 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm	d Edge N Bm Offset 7.6 dB swr 18.	/NT 2-	DH5 24( BW 100 kHz	: Mode A	uto FFT	p-Hoppin		-4.80 dBm
Ban Spectrum Ref Level 27.62 di Att 40 SGL Count 100/100 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm	d Edge N Bm Offset 7.6 dB swr 18.	/NT 2-	DH5 24( BW 100 kHz	: Mode A	uto FFT	p-Hoppin		-4.80 dBm
Ban Spectrum Ref Level 27.62 di Att 40 SGL Count 100/100 PIPk Max 20 dBm 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -50 dBm -60 dBm	d Edge N Bm Offset 7.6 dB swr 18.	/NT 2-	DH5 24( BW 100 kHz	: Mode A	uto FFT	p-Hoppin		-4.80 dBm
Ban Spectrum Ref Level 27.62 dt Att 40 SGL Count 100/100 PIPk Max 20 dBm 10 dBm -10 dBm -20 dBm -30 dBm -30 dBm -50 dBm -60 dBm -70 dBm	d Edge N Bm Offset 7.6 dB swr 18.	/NT 2-	DH5 24( BW 100 kHz	Mode A	uto FFT	p-Hoppin	2.40	-4.80 dBm
Ban Spectrum Ref Level 27.62 di Att 40 SGL Count 100/100 PIPk Max 20 dBm 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -50 dBm -60 dBm	d Edge N Bm Offset 7.6 dB swr 18.	/NT 2-	DH5 24(	Mode A	uto FFT		2.40	-4.80 dBm 216780 GHz
Ban Spectrum Ref Level 27.62 dt Att 40 SGL Count 100/100 PIPk Max 20 dBm 10 dBm -10 dBm -20 dBm -30 dBm -30 dBm -50 dBm -60 dBm -70 dBm	d Edge N Bm Offset 7.6 dB swr 18.	/NT 2-	DH5 24(	Mode A	uto FFT	p-Hoppin	2.40	-4.80 dBm 216780 GHz



SGL Cou 1Pk Max		00/100	1	1		м	1[1]			-4.97 dBm
20 dBm—	+									195000 GHz
10 dBm—	+					IN I	<b>2[1]</b>	I		-46.02 dBm 000000 GHz
0 dBm—	+									M1
-10 dBm—	+									
-20 dBm-	-D:	1 -24.798	dBm							
-30 dBm—	+				M4					
-40 dBm-	onthe	when	how have	swywww	non marine filler	maperunality	or all when we	www.wherefortwhere	M3	and have have
-50 dBm-	$\top$									
-60 dBm-	$\top$									
-70 dBm- Start 2.3	806 0	GHz	1	1	1001	L pts	1	1	Stop	2.406 GHz
Marker Type   F	Ref		X-valu		Y-value	Func	tion	Fund	tion Resul	t
		1	2.401	.95 GHz	-4.97 dE					
M1 M2		1		2.4 GHz	-46.02 dE					
M2 M3 M4 Spectru Ref Leve Att SGL Cou	um el 27 nt 80	1 1 1 nd Ed 7.62 dBm 40 dB	2 2.34 ge(Hop Offset 7	39 GHz 184 GHz ping) N .62 dB	-46.02 dE -47.03 dE -40.69 dE IVNT 2-D RBW 100 kHz VBW 300 kHz	0H5 240		Ant1 Ho	oping R	ef
M2 M3 M4 Spectru Ref Levo Att SGL Cou JPk Max	um el 27 nt 80	1 1 1 nd Ed 7.62 dBm 40 dB	2 2.34 ge(Hop Offset 7	39 GHz 184 GHz ping) N .62 dB	-47.03 de -40.69 de JVNT 2-C RBW 100 kHz	DH5 240		dv 🚺		-4.84 dBm
M2 M3 M4 Spectru Ref Levi Att SGL Cou 1Pk Max 20 dBm—	um el 27 nt 80	1 1 1 nd Ed 7.62 dBm 40 dB	2 2.34 ge(Hop Offset 7	39 GHz 184 GHz ping) N .62 dB	-47.03 de -40.69 de JVNT 2-C RBW 100 kHz	DH5 240	uto FFT	Ant1 Ho		
M2 M3 M4 Spectru Ref Levi Att SGL Cou 1Pk Max 20 dBm—	um el 27 nt 80	1 1 1 nd Ed 7.62 dBm 40 dB	2 2.34 ge(Hop Offset 7	39 GHz 184 GHz ping) N .62 dB	-47.03 de -40.69 de JVNT 2-C RBW 100 kHz	DH5 240	uto FFT	av 🚺 Ant1 Hoj		-4.84 dBm
M2 M3 M4 Spectru Ref Levi Att SGL Cou 1Pk Max 20 dBm— 10 dBm—	um el 27 nt 80	1 1 1 nd Ed 7.62 dBm 40 dB	2 2.34 ge(Hop Offset 7	39 GHz 184 GHz ping) N .62 dB	-47.03 de -40.69 de JVNT 2-C RBW 100 kHz	DH5 240	uto FFT	Ant1 Ho		-4.84 dBm
M2 M3 M4 Spectru Ref Leve Att SGL Cou 1Pk Max 20 dBm- 10 dBm- 0 dBm-	um el 27 nt 80	1 1 1 nd Ed 7.62 dBm 40 dB	2 2.34 ge(Hop Offset 7	39 GHz 184 GHz ping) N .62 dB	-47.03 de -40.69 de JVNT 2-C RBW 100 kHz	DH5 240	uto FFT	Ant1 Ho		-4.84 dBm
M2 M3 M4 Spectru Ref Leve Att SGL Cou 1Pk Max 20 dBm- 10 dBm- 0 dBm-	um el 27 nt 80	1 1 1 nd Ed 7.62 dBm 40 dB	2 2.34 ge(Hop Offset 7	39 GHz 184 GHz ping) N .62 dB	-47.03 de -40.69 de JVNT 2-C RBW 100 kHz	DH5 240	uto FFT	Ant1 Ho		-4.84 dBm
M2 M3 M4 Spectru Ref Levo Att SGL Couu 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm	um el 27 nt 80	1 1 1 nd Ed 7.62 dBm 40 dB	2 2.34 ge(Hop Offset 7	39 GHz 184 GHz ping) N .62 dB	-47.03 de -40.69 de JVNT 2-C RBW 100 kHz	DH5 240	uto FFT	Ant1 Ho		-4.84 dBm
M2 M3 M4 Spectru Ref Leve Att SGL Coulor 10 dBm		1 1 1 nd Ed 7.62 dBm 40 dB	2 2.34 ge(Hop Offset 7	39 GHz 184 GHz ping) N .62 dB	-47.03 de -40.69 de JVNT 2-C RBW 100 kHz	DH5 240	uto FFT	Ant1 Ho		-4.84 dBm
M2 M3 M4 Spectru Ref Levo Att SGL Couu 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm		1 1 1 nd Ed 7.62 dBm 40 dB	2 2.34 ge(Hop Offset 7	39 GHz 184 GHz ping) N .62 dB	-47.03 de -40.69 de JVNT 2-C RBW 100 kHz	DH5 240	uto FFT	Ant1 Ho		-4.84 dBm
M2 M3 M4 Spectru Ref Leve Att SGL Coulor 10 dBm		1 1 1 nd Ed 7.62 dBm 40 dB	2 2.34 ge(Hop Offset 7	39 GHz 184 GHz ping) N .62 dB	-47.03 de -40.69 de JVNT 2-C RBW 100 kHz	DH5 240	uto FFT	Ant1 Ho		-4.84 dBm
M2 M3 M4 Spectru Ref Leve Att SGL Coul 10 dBm- 10 dBm- 10 dBm- -10 dBm- -20 dBm- -20 dBm- -30 dBm-		1 1 1 nd Ed 7.62 dBm 40 dB	2 2.34 ge(Hop Offset 7	39 GHz 184 GHz ping) N .62 dB	-47.03 de -40.69 de JVNT 2-C RBW 100 kHz	DH5 240	uto FFT			-4.84 dBm
M2 M3 M4 Spectru Ref Levi Att SGL Coul 10 dBm	um el 27 	1 1 1 nd Ed 7.62 dBm 40 dB	2 2.34 ge(Hop Offset 7	39 GHz 184 GHz ping) N .62 dB	-47.03 de -40.69 de JVNT 2-C RBW 100 kHz	DH5 240	uto FFT			-4.84 dBm
M2 M3 M4 Spectru Ref Leve Att SGL Coul 10 dBm- 10 dBm- 10 dBm- -10 dBm- -20 dBm- -30 dBm- -30 dBm- -30 dBm- -30 dBm-		1 1 1 7.62 dBm 40 dB 500/8000	2 2.34 ge(Hop Offset 7	39 GHz 184 GHz ping) N .62 dB	-47.03 de -40.69 de JVNT 2-C RBW 100 kHz	DH5 240	uto FFT		2.40:	-4.84 dBm



SGL Count 1200/120 91Pk Max	10							۱
20 dBm			M1	[1]		2 40	-6.29 dBm 295000 GHz	
			M2	2[1]			-40.89 dBm	
10 dBm				1		2.40	000000 GHz	
0 dBm							M1	
-10 dBm							/howel	
-20 dBm								
-30 dBm		M4						
-40 dBm		with report and a series of the	بماليه المعامير	المرير بالشريس	white and when	MB	M2	
-50 dBm	and the a Chiefe set with					and A notine	and the	
-60 dBm								
-70 dBm								
Start 2.306 GHz		1001	pts			Stop	2.406 GHz	Į
Marker Type   Ref   Trc	X-value	Y-value	Funct	ion	Fund	tion Resu	lt	
		lz -6.29 dB	m					
M1 1	2.40295 GH 2.4 GH		m					
	2.40295 GF 2.4 GF 2.39 GF 2.3413 GF	lz -40.89 dB lz -43.66 dB	m	Read	× (11			
M1         1           M2         1           M3         1           M4         1           Band           Spectrum           Ref Level 27.60 dBi           Att         40 d	2.4 GH 2.39 GH 2.3413 GH d Edge NVN m Offset 7.60 dE	Iz -40.89 dB Iz -43.66 dB Iz -39.72 dB	m BOMHz A		-Hoppir	ng Ref	<b>X</b>	]
M1         1           M2         1           M3         1           M4         1           Band           Spectrum           Ref Level 27.60 dBd           Att         40 d           SGL Count 100/100	2.4 GH 2.39 GH 2.3413 GH d Edge NVN m Offset 7.60 dE	4z -40.89 dB 4z -43.66 dB 4z -39.72 dB T 2-DH5 248 3 ● RBW 100 kHz	Mode AL	ito FFT	-Hoppir	ng Ref		]
M1 1 M2 1 M3 1 M4 1 Bance Spectrum Ref Level 27.60 dBr Att 40 d SGL Count 100/100 Phk Max	2.4 GH 2.39 GH 2.3413 GH d Edge NVN m Offset 7.60 dE	4z -40.89 dB 4z -43.66 dB 4z -39.72 dB T 2-DH5 248 3 ● RBW 100 kHz	Mode AL		-Hoppir		✓ -5.53 dBm 998400 GHz	]
M1         1           M2         1           M3         1           M4         1           Band           Spectrum           Ref Level 27.60 dBd           Att         40 d           SGL Count 100/100	2.4 GH 2.39 GH 2.3413 GH d Edge NVN m Offset 7.60 dE	4z -40.89 dB 4z -43.66 dB 4z -39.72 dB T 2-DH5 248 3 ● RBW 100 kHz	Mode AL	ito FFT	-Hoppir		-5.53 dBm	]
M1 1 M2 1 M3 1 M4 1 Banc Spectrum Ref Level 27.60 dBr Att 40 d SGL Count 100/100 IPk Max 20 dBm 10 dBm	2.4 GH 2.39 GH 2.3413 GH d Edge NVN m Offset 7.60 dE	42 -40.89 dB 42 -43.66 dB 42 -39.72 dB T 2-DH5 248 3 ● RBW 100 kHz 5 ● VBW 300 kHz	Mode Au	ito FFT	-Hoppir		-5.53 dBm	]
M1 1 M2 1 M3 1 M4 1 Banc Spectrum Ref Level 27.60 dBr Att 40 d SGL Count 100/100 IPk Max 20 dBm 10 dBm	2.4 GH 2.39 GH 2.3413 GH d Edge NVN m Offset 7.60 dE	4z -40.89 dB 4z -43.66 dB 4z -39.72 dB T 2-DH5 248 3 ● RBW 100 kHz	Mode Au	ito FFT	-Hoppir		-5.53 dBm	]
M1 1 M2 1 M3 1 M4 1 Banc Spectrum Ref Level 27.60 dBr Att 40 d SGL Count 100/100 IPk Max 20 dBm 10 dBm	2.4 GH 2.39 GH 2.3413 GH d Edge NVN m Offset 7.60 dE	42 -40.89 dB 42 -43.66 dB 42 -39.72 dB T 2-DH5 248 3 ● RBW 100 kHz 5 ● VBW 300 kHz	Mode Au	ito FFT	-Hoppir		-5.53 dBm	]
M1 1 M2 1 M3 1 M4 1 M4 1 M4 1 Banc Spectrum Ref Level 27.60 dBr Att 40 d SGL Count 100/100 IPk Max 20 dBm 0 dBm 0 dBm	2.4 GH 2.39 GH 2.3413 GH d Edge NVN m Offset 7.60 dE	42 -40.89 dB 42 -43.66 dB 42 -39.72 dB T 2-DH5 248 3 ● RBW 100 kHz 5 ● VBW 300 kHz	Mode Au	ito FFT	-Hoppir		-5.53 dBm	]
M1 1 M2 1 M3 1 M4 1 M3 1 M4 1 M3 1 M4 1 M3 1 M4 1	2.4 GH 2.39 GH 2.3413 GH d Edge NVN m Offset 7.60 dE	42 -40.89 dB 42 -43.66 dB 42 -39.72 dB T 2-DH5 248 3 ● RBW 100 kHz 5 ● VBW 300 kHz	Mode Au	ito FFT	-Hoppir		-5.53 dBm	]
M1 1 M2 1 M3 1 M4 1 M4 1 M4 1 Banc Spectrum Ref Level 27.60 dBr Att 40 d SGL Count 100/100 1Pk Max 20 dBm 10 dBm -10 dBm -20 dBm -30 dBm	2.4 GH 2.39 GH 2.3413 GH d Edge NVN m Offset 7.60 dE	42 -40.89 dB 42 -43.66 dB 42 -39.72 dB T 2-DH5 248 3 ● RBW 100 kHz 5 ● VBW 300 kHz	Mode Au	Ito FFT	-Hoppir		-5.53 dBm	]
M1 1 M2 1 M3 1 M4 1 M3 1 M4 1 Banc Spectrum Ref Level 27.60 dBd Att 40 d SGL Count 100/100 P1Pk Max 20 dBm 10 dBm -10 dBm -20 dBm	2.4 GH 2.39 GH 2.3413 GH d Edge NVN m Offset 7.60 dE B SWT 18.9 µs	42 -40.89 dB 42 -43.66 dB 42 -39.72 dB T 2-DH5 248 3 ● RBW 100 kHz 5 ● VBW 300 kHz	Mode Au	ito FFT	-Hoppir		-5.53 dBm	]
M1 1 M2 1 M3 1 M4 1 M4 1 M4 1 Banc Spectrum Ref Level 27.60 dBr Att 40 d SGL Count 100/100 1Pk Max 20 dBm 10 dBm -10 dBm -20 dBm -30 dBm	2.4 GH 2.39 GH 2.3413 GH d Edge NVN m Offset 7.60 dE B SWT 18.9 µs	42 -40.89 dB 42 -43.66 dB 42 -39.72 dB T 2-DH5 248 3 ● RBW 100 kHz 5 ● VBW 300 kHz M	Mode Au	(1)	-Hoppir		-5.53 dBm	]
M1 1 M2 1 M3 1 M4 1	2.4 GH 2.39 GH 2.3413 GH d Edge NVN m Offset 7.60 dE B SWT 18.9 µs	42 -40.89 dB 42 -43.66 dB 42 -39.72 dB T 2-DH5 248 3 ● RBW 100 kHz 5 ● VBW 300 kHz M	Mode Au	(1)	-Hoppir		-5.53 dBm	]
M1         1           M2         1           M3         1           M4         1           Banc           Spectrum           Ref Level 27.60 dBr           Att         40 d           SGL Count 100/100         1Pk Max           20 dBm         20 dBm           10 dBm         -0 dBm           -20 dBm         -40 dBm	2.4 GH 2.39 GH 2.3413 GH d Edge NVN m Offset 7.60 dE B SWT 18.9 µs	42 -40.89 dB 42 -43.66 dB 42 -39.72 dB T 2-DH5 248 3 ● RBW 100 kHz 5 ● VBW 300 kHz M	Mode Au	(1)	-Hoppir		-5.53 dBm	]
M1 1 M2 1 M3 1 M4 1 M3 1 M4 1 Banc Spectrum Ref Level 27.60 dBn Att 40 d SGL Count 100/100 PIPk Max 20 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -70 dBm	2.4 GH 2.39 GH 2.3413 GH d Edge NVN m Offset 7.60 dE B SWT 18.9 µs	42       -40.89 dB         42       -43.66 dB         42       -39.72 dB         T       2-DH5 248         3       ● RBW 100 kHz         5       ● VBW 300 kHz		(1)	-Hoppir	2.47	-5.53 dBm 998400 GHz	]
M1         1           M2         1           M3         1           M4         1           Banc           Spectrum           Ref Level         27.60 dBn           Att         40 d           SGL Count         100/100           1Pk Max         20 dBm           20 dBm	2.4 GH 2.39 GH 2.3413 GH d Edge NVN m Offset 7.60 dE B SWT 18.9 µs	42 -40.89 dB 42 -43.66 dB 42 -39.72 dB T 2-DH5 248 3 ● RBW 100 kHz 5 ● VBW 300 kHz M		(1)	-Hoppir	2.47	-5.53 dBm 998400 GHz	]



⊖1Pk Max	1	, , , , , , , , , , , , , , , , , , , ,		, ,					4.60.10	1
20 dBm—						1[1]			-4.60 dBm 95000 GHz	
10 dBm—					M	2[1]			-45.61 dBm 150000 GHz	
0 d <b>5</b> m										
-10 dBm—										
-20 cBm—										
-30 dBm—	D1 -25.532	dBm								
-46 dBm12-	M	1 M3	Helindi Lu					. MARTIN	Åri i l	
-50 dBm-	allfollow-start	hubourse - warn	mhul	moundurate	ghannahaliptapati	United to a set of the set	llow light for the second s	Lighting and a second	and have for the second	
-60 dBm—										
-70 dBm-										
Start 2.47 Marker				1001	pts				2.576 GHz	
Type Ro M1	ef Trc	X-value 2.4799	95 GHz	Y-value -4.60 dB	Func m	tion	Fund	tion Result	:	
			35 GHz	-45.61 dB	m					
M2 M3	1		.5 GHz	-45.35 dBi	m					
M3 M4 Spectrum Ref Level Att SGL Coun		2 2.495 ge(Hopp Offset 7.	.5 GHz 56 GHz Ding) N ¹ 60 dB <b>e R</b>	-45.35 dB -42.99 dB VNT 2-D BW 100 kHz BW 100 kHz	m H5 248		ant1 Hop	oping R	ef	
M3 M4 Spectrun Ref Level Att	1 1 Band Edg 1 27.60 dBm 40 dB	2 2.495 ge(Hopp Offset 7.	.5 GHz 56 GHz Ding) N ¹ 60 dB <b>e R</b>	-42.99 dBi	m H5 248 Mode A		ant1 Hop	oping R		
M3 M4 Spectrum Ref Level Att SGL Coun	1 1 Band Edg 1 27.60 dBm 40 dB	2 2.495 ge(Hopp Offset 7.	.5 GHz 56 GHz Ding) N ¹ 60 dB <b>e R</b>	-42.99 dBi	m H5 248 Mode A	uto FFT	ant1 Hop			
M3 M4 Spectrui Ref Level Att SGL Coun • 1Pk Max	1 1 Band Edg 1 27.60 dBm 40 dB	2 2.495 ge(Hopp Offset 7.	.5 GHz 56 GHz Ding) N ¹ 60 dB <b>e R</b>	-42.99 dBi	m H5 248 Mode A	uto FFT	Ant1 Hop		-3.28 dBm	
M3 M4 Spectrum Ref Level Att SGL Coun • 1Pk Max 20 dBm	1 1 Band Edg 1 27.60 dBm 40 dB	2 2.495 ge(Hopp Offset 7.	.5 GHz 56 GHz Ding) N ¹ 60 dB <b>e R</b>	-42.99 dBi	m H5 248 Mode A	uto FFT	ant1 Hop		-3.28 dBm	
M3 M4 Spectrum Ref Level Att SGL Coun • 1Pk Max 20 dBm- 10 dBm- 0 dBm-	1 1 Band Edg 1 27.60 dBm 40 dB	2 2.495 ge(Hopp Offset 7.	.5 GHz 56 GHz Ding) N ¹ 60 dB <b>e R</b>	-42.99 dBi	m H5 248 Mode A	uto FFT	Ant1 Hop		-3.28 dBm	
M3 M4 Spectrun Ref Level Att SGL Coun • 1Pk Max 20 dBm	1 1 Band Edg 1 27.60 dBm 40 dB	2 2.495 ge(Hopp Offset 7.	.5 GHz 56 GHz Ding) N ¹ 60 dB <b>e R</b>	-42.99 dBi	m H5 248 Mode A	uto FFT	Ant1 Hop		-3.28 dBm	
M3 M4 Spectrum Ref Level Att SGL Coun • 1Pk Max 20 dBm- 10 dBm- 0 dBm-	1 1 Band Edg 1 27.60 dBm 40 dB	2 2.495 ge(Hopp Offset 7.	.5 GHz 56 GHz Ding) N ¹ 60 dB <b>e R</b>	-42.99 dBi	m H5 248 Mode A	uto FFT	Ant1 Hop		-3.28 dBm	
M3 M4 Spectrum Ref Level Att SGL Coun IPk Max 20 dBm 10 dBm 0 dBm -18 dBm	1 1 Band Edg 1 27.60 dBm 40 dB	2 2.495 ge(Hopp Offset 7.	.5 GHz 56 GHz Ding) N ¹ 60 dB <b>e R</b>	-42.99 dBi	m H5 248 Mode A	uto FFT	Ant1 Hop		-3.28 dBm	
M3 M4 Spectrum Ref Level Att SGL Coun • 1Pk Max 20 dBm • 1Pk Max 20 dBm • 10 dBm • -18 dBm - 20 dBm - 20 dBm	1 1 Band Edg 1 27.60 dBm 40 dB	2 2.495 ge(Hopp Offset 7.	.5 GHz 56 GHz Ding) N ¹ 60 dB <b>e R</b>	-42.99 dBi	m H5 248 Mode A	uto FFT	Ant1 Hop		-3.28 dBm	
M3 M4 Spectrum Ref Level Att SGL Coun ID dBm 10 dBm 0 dBm -10 dBm -20 dBm	1 1 Band Edg 1 27.60 dBm 40 dB	2 2.495 ge(Hopp Offset 7.	.5 GHz 56 GHz Ding) N ¹ 60 dB <b>e R</b>	-42.99 dBi	m H5 248 Mode A	uto FFT	Ant1 Hop		-3.28 dBm	
M3 M4 Spectrum Ref Level Att SGL Coun • 1Pk Max 20 dBm • 1Pk Max 20 dBm • 10 dBm • -18 dBm - 20 dBm - 20 dBm	1 1 Band Edg 1 27.60 dBm 40 dB	2 2.495 ge(Hopp Offset 7.	.5 GHz 56 GHz Ding) N ¹ 60 dB <b>e R</b>	-42.99 dBi	m H5 248 Mode A	uto FFT	Ant1 Hop		-3.28 dBm	
M3 M4 Spectrun Ref Level Att SGL Coun • 1Pk Max 20 dBm • 1Pk Max 20 dBm • 10 dBm - 10 dBm - 20 dBm - 30 dBm - 40 dBm	1 1 Band Edg 1 27.60 dBm 40 dB	2 2.495 ge(Hopp Offset 7.	.5 GHz 56 GHz Ding) N ¹ 60 dB <b>e R</b>	-42.99 dBi	m H5 248 Mode A	uto FFT	Ant1 Hop		-3.28 dBm	
M3 M4 Spectrun Ref Level Att SGL Coun ● 1Pk Max 20 dBm ● 1Pk Max 20 dBm ● 10 dBm − -10 dBm − -20 dBm − -30 dBm − -30 dBm − -50 dBm	1 1 Band Edg 1 27.60 dBm 40 dB	2 2.495 ge(Hopp Offset 7.	.5 GHz 56 GHz Ding) N ¹ 60 dB <b>e R</b>	-42.99 dBi	m H5 248 Mode A	uto FFT	Ant1 Hop		-3.28 dBm	
M3 M4 Spectrum Ref Level Att SGL Coun ● 1Pk Max 20 dBm ● 1Pk Max 20 dBm ● 10 dBm − 0 dBm − -10 dBm − -20 dBm − -30 dBm − -30 dBm − -50 dBm − -60 dBm	1 1 1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	2 2.495 ge(Hopp Offset 7.	.5 GHz 56 GHz Ding) N ¹ 60 dB <b>e R</b>	-42.99 dBi	Mode A	uto FFT		2.476	-3.28 dBm 85110 GHz	
M3 M4 Spectrum Ref Level Att SGL Coun • 1Pk Max 20 dBm • 1Pk Max 20 dBm • 10 dBm • -18 dBm - 20 dBm 20 dBm 30 dBm 50 dBm 60 dBm	1 1 1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	2 2.495 ge(Hopp Offset 7.	.5 GHz 56 GHz Ding) N ¹ 60 dB <b>e R</b>	-42.99 dBi	Mode A	uto FFT	Ant1 Hop	2.476	-3.28 dBm 85110 GHz	

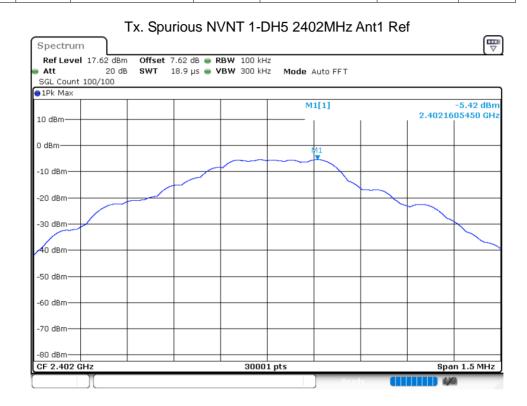


Spectrum										♥
Ref Level 27				• RBW 100 kH						
Att	40 dB		7.5 μs 🧉	• <b>VBW</b> 300 kH	z Mode	Auto FF	Т			
SGL Count 10	00/1000									
1Pk Max										
					N	1[1]				-5.34 dBm
20 dBm										85000 GHz
10 dBm					N	12[1]				44.73 dBm
10 0Bm							1		2.483	50000 GHz
T										
10 dBm										
ויו										
-20 dBm-01	-23.277	Z dBrow								
- <u>1</u>	-23.277									
-30 dBm										
-40 d <mark>8 m/2</mark>	M4	M3								
Just room	monteres	manum	yout of the second	When werennen	mallentralignering	montant	you marely	mon	Myromman	my mulerouse
-50 dBm							·			
-60 dBm										
-70 dBm										
Start 2.476 G	Hz			1001	. pts				Stop :	2.576 GHz
1arker										
	Trc	X-value		Y-value	Fund	tion		Functi	ion Result	
M1	1		35 GHz	-5.34 dB						
M2	1		35 GHz	-44.73 dB						
M3 M4	1		.5 GHz	-42.86 dB -42.26 dB						

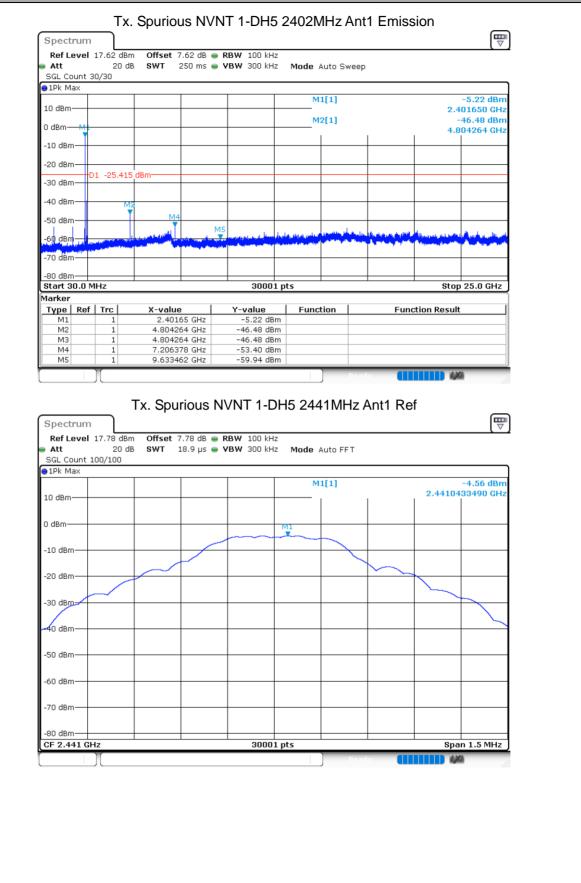


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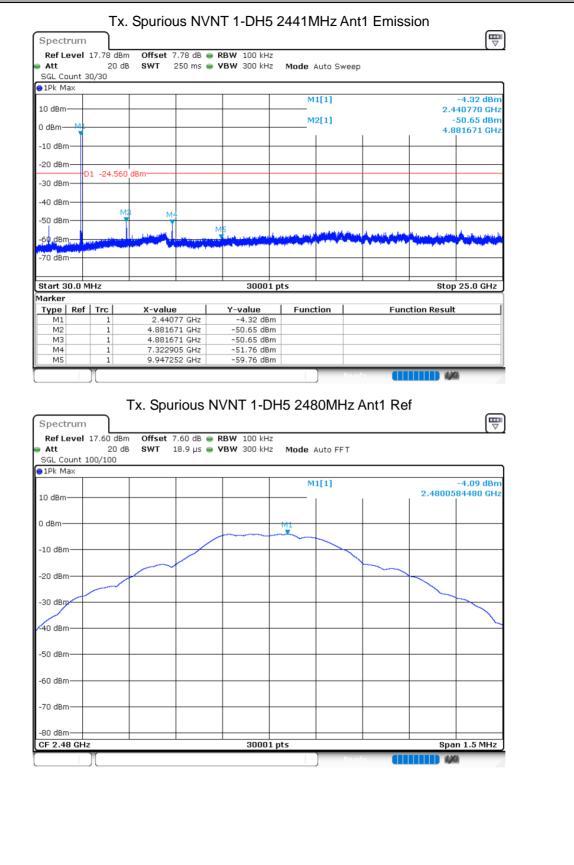
	-					
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant 1	-41.05	-20	Pass
NVNT	1-DH5	2441	Ant 1	-46.09	-20	Pass
NVNT	1-DH5	2480	Ant 1	-44.84	-20	Pass
NVNT	2-DH5	2402	Ant 1	-39.52	-20	Pass
NVNT	2-DH5	2441	Ant 1	-47.78	-20	Pass
NVNT	2-DH5	2480	Ant 1	-47.5	-20	Pass







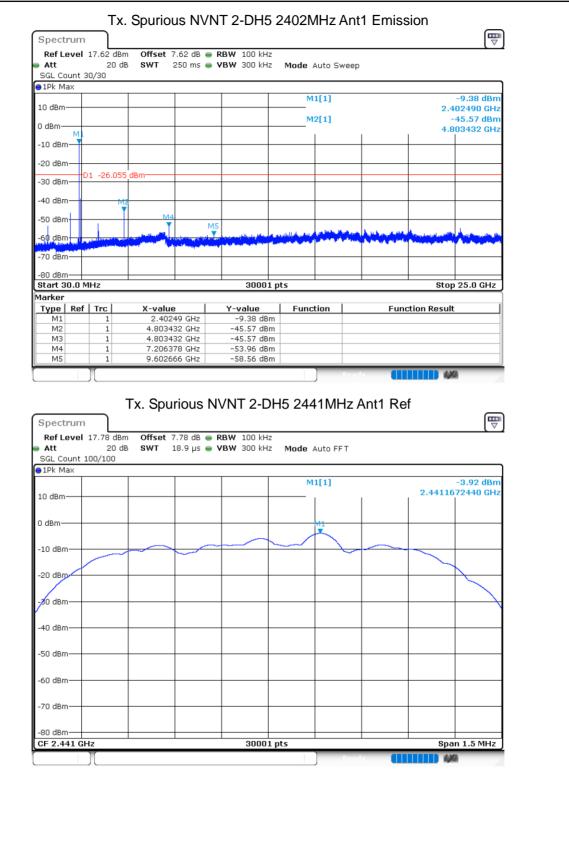






Att SGL Count 30/3	20 dB <b>SWT</b>		RBW 100 kHz VBW 300 kHz		uto Sweep				
●1Pk Max				M1				-4.57 dBm	
10 dBm								479890 GHz	
0 dBm M			_	M2	[1]			-48.94 dBm 959078 GHz	
-10 dBm		_							
-20 dBm									
	24.089 dBm								
-40 dBm	MB	M4							
-50 dBm			MS						
-60 dBm									
-70 dBm									
-80 dBm		_							
Start 30.0 MHz Marker			30001	pts			Sto	p 25.0 GHz	
Type Ref Tr			Y-value	Functi	on 📃	Func	tion Resul	t]	
M1 M2		7989 GHz 9078 GHz	-4.57 dBn -48.94 dBn						
M3		9078 GHz	-48.94 dBn						
		9431 GHz	-51.35 dBn						
M4	1 10 00		-58.78 dBn	n				]	
M5 Spectrum Ref Level 17.6	20 dB SWT	urious   t 7.62 dB •	NVNT 2-D RBW 100 kHz VBW 300 kHz	:		ant1 Rei	f		]
Spectrum Ref Level 17.6	Tx. Sp	urious   t 7.62 dB •	NVNT 2-D RBW 100 kHz	: Mode Au	ito FFT	ant1 Re	f		]
M5 Spectrum Ref Level 17.6 Att SGL Count 100/	Tx. Sp	urious   t 7.62 dB •	NVNT 2-D RBW 100 kHz	:	ito FFT	ant1 Re		-6.05 dBm 124000 GHz	]
M5 Spectrum Ref Level 17.6 Att SGL Count 100/ 1Pk Max	Tx. Sp	urious   t 7.62 dB •	NVNT 2-D RBW 100 kHz VBW 300 kHz	Mode Ac	ito FFT	ant1 Re		-6.05 dBm	]
M5 Spectrum Ref Level 17.6 Att SGL Count 100/ 1Pk Max 10 dBm 0 dBm	Tx. Sp	urious   t 7.62 dB •	NVNT 2-D RBW 100 kHz VBW 300 kHz	: Mode Au	ito FFT	ant1 Re		-6.05 dBm	ļ
M5 Spectrum Ref Level 17.6 Att SGL Count 100/ 1Pk Max 10 dBm	Tx. Sp	urious   t 7.62 dB •	NVNT 2-D RBW 100 kHz VBW 300 kHz	Mode Ac	ito FFT	ant1 Re		-6.05 dBm	
M5 Spectrum Ref Level 17.6 Att SGL Count 100/ 1Pk Max 10 dBm 0 dBm	Tx. Sp	urious   t 7.62 dB •	NVNT 2-D RBW 100 kHz VBW 300 kHz	Mode Ac	ito FFT	Ant1 Re		-6.05 dBm	
M5 Spectrum Ref Level 17.6 Att SGL Count 100/ 91Pk Max 10 dBm 0 dBm -10 dBm	Tx. Sp	urious   t 7.62 dB •	NVNT 2-D RBW 100 kHz VBW 300 kHz	Mode Ac	ito FFT	Ant1 Re		-6.05 dBm	]
M5 Spectrum Ref Level 17.6 Att SGL Count 100/ 91Pk Max 10 dBm 0 dBm -10 dBm	Tx. Sp	urious   t 7.62 dB •	NVNT 2-D RBW 100 kHz VBW 300 kHz	Mode Ac	ito FFT	ant1 Rei		-6.05 dBm	
M5 Spectrum Ref Level 17.6 Att SGL Count 100/ 1Pk Max 10 dBm -10 dBm -20 dBm	Tx. Sp	urious   t 7.62 dB •	NVNT 2-D RBW 100 kHz VBW 300 kHz	Mode Ac	ito FFT	Ant1 Re		-6.05 dBm	
M5 Spectrum Ref Level 17.6 SGL Count 100/ • IPk Max 10 dBm - 10 dBm - 20 dBm - 38 dBm	Tx. Sp	urious   t 7.62 dB •	NVNT 2-D RBW 100 kHz VBW 300 kHz	Mode Ac	ito FFT	Ant1 Re		-6.05 dBm	
M5 Spectrum Ref Level 17.6 SGL Count 100/ 9 IPk Max 10 dBm -10 dBm -20 dBm -20 dBm -38 dBm -40 dBm	Tx. Sp	urious   t 7.62 dB •	NVNT 2-D RBW 100 kHz VBW 300 kHz	Mode Ac	ito FFT	Ant1 Rei		-6.05 dBm	
M5 Spectrum Ref Level 17.6 Att SGL Count 100/ 9 IPK Max 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -50 dBm	Tx. Sp	urious   t 7.62 dB •	NVNT 2-D RBW 100 kHz VBW 300 kHz	Mode Ac	ito FFT	Ant1 Rei		-6.05 dBm	
M5 Spectrum Ref Level 17.6 Att SGL Count 100/ 1Pk Max 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm -30 dBm -50 dBm -60 dBm -70 dBm -70 dBm	Tx. Sp	urious   t 7.62 dB •	NVNT 2-D	Mode Au	ito FFT	ant1 Re	2.4020	-6.05 dBm 124000 GHz	
M5 Spectrum Ref Level 17.6 Att SGL Count 100/ 1Pk Max 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -50 dBm -60 dBm -70 dBm	Tx. Sp	urious   t 7.62 dB •	NVNT 2-D RBW 100 kHz VBW 300 kHz	Mode Au	ito FFT	ant1 Re	2.4020	-6.05 dBm 124000 GHz	







●1Pk Max	1			M1[1]			-9.70 dBm
10 dBm						2.4	40770 GHz
0 dBm				M2[1]			51.70 dBm 81671 GHz
-10 dBm	-						
-20 dBm	-D1 -23.9						
-30 dBm	DI -23.9						
-40 dBm—							
-50 dBm—		M2 M4					
-60 dBm	10107-01 ¹¹⁰		M5	And the second second second			Andrews
-70 dBm—	a sense de la la constante de l						
Start 30.0 Marker	MHz		3000	1 pts		Stop	25.0 GHz
Type Re		X-value	Y-value	Function	Fur	nction Result	
M1 M2	1	2.44077 ( 4.881671 (	GHz -51.70 dB	m			
	1	4.881671 (					
M3 M4	1	7.322905 (	GHz -53.88 dB				
M4 M5 Spectrur	1 1 1 1 1 1 1 1 1 7.60 d 20	9.933102 ( Tx. Spurio 3m Offset 7.60		^m DH5 2480MF		ef	
M4 M5 Spectrur Ref Leve Att	1 1 1 1 1 1 1 1 1 7.60 d 20	9.933102 ( Tx. Spurio 3m Offset 7.60	-59.06 dB us NVNT 2-D dB • RBW 100 kH	m DH5 2480MH ^z Mode Auto FF			
M4 M5 Spectrur Ref Leve Att SGL Count	1 1 1 1 1 1 1 1 1 7.60 d 20	9.933102 ( Tx. Spurio 3m Offset 7.60	-59.06 dB us NVNT 2-D dB • RBW 100 kH	^m DH5 2480MF			-6.05 dBm 66470 GHz
M4 M5 Spectrur Ref Leve Att SGL Count O IPk Max	1 1 1 1 1 1 1 1 1 7.60 d 20	9.933102 ( Tx. Spurio 3m Offset 7.60	-59.06 dB us NVNT 2-D dB • RBW 100 kH	m DH5 2480MH z Mode Auto FF			-6.05 dBm
M4 M5 Spectrur Ref Leve Att SGL Count • 1Pk Max 10 dBm	1 1 1 1 1 1 1 1 1 7.60 d 20	9.933102 ( Tx. Spurio 3m Offset 7.60	-59.06 dB us NVNT 2-D dB • RBW 100 kH	m DH5 2480MH ^z Mode Auto FF			-6.05 dBm
M4 M5 Spectrur Ref Leve Att SGL Count • 1Pk Max	1 1 1 1 1 1 1 1 1 7.60 d 20	9.933102 ( Tx. Spurio 3m Offset 7.60	-59.06 dB us NVNT 2-D dB • RBW 100 kH	m DH5 2480MH z Mode Auto FF			-6.05 dBm
M4 M5 Spectrur Ref Leve Att SGL Count • 1Pk Max 10 dBm	1 1 1 1 1 1 1 1 1 7.60 d 20	9.933102 ( Tx. Spurio 3m Offset 7.60	-59.06 dB us NVNT 2-D dB • RBW 100 kH	m DH5 2480MH z Mode Auto FF			-6.05 dBm
M4 M5 Spectrur Ref Leve Att SGL Count O dBm 0 dBm -10 dBm	1 1 1 1 1 1 1 1 1 7.60 d 20	9.933102 ( Tx. Spurio 3m Offset 7.60	-59.06 dB us NVNT 2-D dB • RBW 100 kH	m DH5 2480MH z Mode Auto FF			-6.05 dBm
M4 M5 Spectrur Ref Leve Att SGL Count 10 dBm -10 dBm -10 dBm -20 dBm	1 1 1 1 1 1 1 1 1 7.60 d 20	9.933102 ( Tx. Spurio 3m Offset 7.60	-59.06 dB us NVNT 2-D dB • RBW 100 kH	m DH5 2480MH z Mode Auto FF			-6.05 dBm
M4 M5 Spectrur Ref Leve Att SGL Count 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm	1 1 1 1 1 1 1 1 1 7.60 d 20	9.933102 ( Tx. Spurio 3m Offset 7.60	-59.06 dB us NVNT 2-D dB • RBW 100 kH	m DH5 2480MH z Mode Auto FF			-6.05 dBm
M4 M5 Spectrur Ref Leve Att SGL Count 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm -40 dBm	1 1 1 1 1 1 1 1 1 7.60 d 20	9.933102 ( Tx. Spurio 3m Offset 7.60	-59.06 dB us NVNT 2-D dB • RBW 100 kH	m DH5 2480MH z Mode Auto FF			-6.05 dBm
M4 M5 Spectrur Ref Leve Att SGL Count 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm -40 dBm -50 dBm	1 1 1 1 1 1 1 1 1 7.60 d 20	9.933102 ( Tx. Spurio 3m Offset 7.60	-59.06 dB us NVNT 2-D dB • RBW 100 kH	m DH5 2480MH z Mode Auto FF			-6.05 dBm
M4 M5 Spectrur Ref Leve Att SGL Count SGL Count 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm -40 dBm -50 dBm -60 dBm	1 1 1 1 1 1 1 1 1 7.60 d 20	9.933102 ( Tx. Spurio 3m Offset 7.60	-59.06 dB us NVNT 2-D dB • RBW 100 kH	m DH5 2480MH z Mode Auto FF			-6.05 dBm
M4 M5 Spectrur Ref Leve Att SGL Count 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm -30 dBm -40 dBm -50 dBm -70 dBm	1 1 1 1 1 1 20 2 100/100	9.933102 ( Tx. Spurio 3m Offset 7.60	-59.06 dB us NVNT 2-D dB • RBW 100 kH	m DH5 2480MH Z Mode Auto FF M1[1]		2.48007	-6.05 dBm 66470 GHz



	Tx.	Spuriou	ıs NV	NT 2-DH5	5 2480N	/IHz Ar	nt1 Emiss	sion	
Spectrum									
Ref Level	17.60 dBm	Offset 7	.60 dB 🧉	• RBW 100 kH:	z				
Att	20 dE	SWT :	250 ms 🧉	• <b>VBW</b> 300 kH:	z Mode /	Auto Swee	ер		
SGL Count 1	10/10						-		
⊜1Pk Max									
					M	1[1]			-8.43 dBm
10 dBm									79890 GHz
0 dBm					M	2[1]			-53.56 dBm
U aBM M1								. 4.9	959910 GHz
-10 dBm				_					
-20 dBm —									<u>├</u> ───┨
C	01 -26.046	dBm							
-30 dBm —									
-40 dBm									
-40 ubiii									
-50 dBm —	M	B M	+						
				M5		and the			
60 dBm	and the second second second	a set the set	n Manuella	and the state of the	الالمني المحالياتين	a second second		A Laking on Rive	a start and start a
	A pattern and a start	Postal Protocol .	philopackurk	uner alle de la milita partie d	the start of the sector of the sector of the sector		and the second sec		
70 dBm									
.80 dBm									
Start 30.0 M	/IHz			30001	1 pts			Stor	25.0 GHz
larker									
	Trc	X-value	. 1	Y-value	Func	tion	Fun	ction Result	t
M1	1		39 GHz	-8.43 dB					
M2	1		91 GHz	-53.56 dB					
MЗ	1	4.959	91 GHz	-53.56 dB	m				
M4	1	7.4402	54 GHz	-55.86 dB	m				
M5	1	9.9830	42 GHz	-59.55 dB	m				
	1					D o	ada att		4
						)			

END OF REPORT