

### RADIO TEST REPORT FCC ID: OKUDP030600

Product: 10.1 INCH PORTABLE DVD/CD PLAYER Trade Mark: OTIC Model No.: HJ10PRB01 Family Model: DP-030600 Report No.: S20062302602001 Issue Date: 16 Jul. 2020

#### **Prepared for**

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

#### Prepared by

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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:	10.1 INCH PORTABLE DVD/CD PLAYER
Model and/or type reference:	HJ10PRB01
Family Model:	DP-030600

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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	:	23 Jun. 2020 ~ 16 Jul. 2020
Testing Engineer	:	John Lin
		(Allen Liu)
Technical Manager	:	Jason chem
reenned manager	·	(Jason Chen)
		Sam. Chen
Authorized Signatory	:	
		(Sam Chen)

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#### 2 SUMMARY OF TEST RESULTS

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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.

2. 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	10.1 INCH PORTABLE DVD/CD PLAYER				
Trade Mark	οτις				
FCC ID	OKUDP030600				
Model No.	HJ10PRB01				
Family Model	DP-030600				
Model Difference	All models are the same circuit and RF module, except colour.				
Operating Frequency	2402MHz~2480MHz				
Modulation	GFSK, π/4-DQPSK, 8-DPSK				
Bluetooth Version	BT V5.0				
Number of Channels	79 Channels				
Antenna Type	PCB Antenna				
Antenna Gain	0dBi				
Power supply	<ul> <li>☑Battery supply: DC 7.4V 2000mAh,14.8Wh</li> <li>☑Adapter supply: Model: JY012120100BD-UL Input: 100-240V~50-60Hz 0.5A Max Output: 12V1.0A</li> <li>☑DC supply: Car charger model: JYDC12002Z Input: DC 12V,2A</li> <li>Output: DC 12V,2A</li> </ul>				
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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Report No.	Version	Description	Issued Date	
S20062302602001	Rev.01	Initial issue of report	16 Jul. 2020	



#### **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; 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.



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



#### 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.

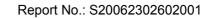
Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
AE-1	Adapter	N/A	JY012120100BD-UL		Peripherals
AE-2	Monitor	SHARP	N/A		Peripherals
AE-3	Earphone	N/A	N/A		Peripherals
AE-4	Remote	N/A	N/A		Peripherals

Item	Cable Type	Shielded Type	Ferrite Core	Length
C-1	DC cable	NO	NO	1.5m
C-2	video cable	YES	NO	1.2m
C-3	Earphone Cable	NO	NO	1.2m
C-4	RF Cable	YES	NO	1.0m

#### 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

Kind of Equipment Spectrum	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated	Calibrati on
				calibration	until	period
Analyzer	Aglient	E4407B	MY45108040	2020.05.11	2021.05.10	1 year
Spectrum Analyzer	Agilent	N9020A	MY49100060	2020.05.11	2021.05.10	1 year
Spectrum Analyzer	R&S	FSV40	101417	2020.05.11	2021.05.10	1 year
Test Receiver	R&S	ESPI7	101318	2020.05.11	2021.05.10	1 year
Bilog Antenna	TESEQ	CBL6111D	31216	2020.04.11	2021.04.10	1 year
50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2020.05.11	2023.05.10	3 year
Horn Antenna	EM	EM-AH-1018 0	2011071402	2020.05.11	2021.05.10	1 year
Broadband Horn Antenna	SCHWARZBE CK	BBHA 9170	803	2020.05.11	2021.05.10	1 year
Amplifier	EMC	EMC051835 SE	980246	2020.05.11	2021.05.10	1 year
Active Loop Antenna	SCHWARZBE CK	FMZB 1519 B	055	2020.05.11	2021.05.10	1 year
Power Meter	DARE	RPR3006W	15I00041SN 084	2020.05.11	2021.05.10	1 year
Test Cable 9KHz-30MHz)	N/A	R-01	N/A	2020.05.11	2023.05.10	3 year
Test Cable 30MHz-1GHz)	N/A	R-02	N/A	2020.05.11	2023.05.10	3 year
High Test Cable(1G-40G Hz)	N/A	R-03	N/A	2020.05.11	2023.05.10	3 year
High Test Cable(1G-40G Hz)	N/A	R-04	N/A	2020.05.11	2023.05.10	3 year
Filter	TRILTHIC	2400MHz	29	2020.04.07	2023.04.06	3 year
temporary antenna	NTS	R001	N/A	N/A	N/A	N/A
F 9 3 2	Amplifier Active Loop Antenna Power Meter Test Cable (KHz-30MHz) Test Cable 0MHz-1GHz) High Test able(1G-40G Hz) High Test able(1G-40G Hz) Filter temporary antenna	AmplifierEMCActive Loop AntennaSCHWARZBE CKPower MeterDAREPower MeterDARETest Cable (KHz-30MHz)N/ATest Cable (MHz-1GHz)N/AMigh Test able(1G-40G Hz)N/AHigh Test able(1G-40G Hz)N/AFilterTRILTHICtemporary antennaNTS	AmplifierEMCEMC051835 SEActive Loop AntennaSCHWARZBE CKFMZB 1519 BAntennaCKBPower MeterDARERPR3006WTest Cable (KHz-30MHz)N/AR-01Test Cable 0MHz-1GHz)N/AR-02High Test able(1G-40G Hz)N/AR-03High Test able(1G-40GN/AR-03High Test able(1G-40GN/AR-04Hz)TRILTHIC2400MHztemporary antennaNTSR001	AmplifierEMCEMC051835 SE980246Active Loop AntennaSCHWARZBE CKFMZB 1519 B055Power MeterDARERPR3006W15100041SN 084Power MeterDARERPR3006W15100041SN 084Test Cable (KHz-30MHz)N/AR-01N/ATest Cable 0MHz-1GHz)N/AR-02N/AHigh Test able(1G-40G Hz)N/AR-03N/AHigh Test able(1G-40G Hz)N/AR-04N/AFilterTRILTHIC2400MHz29temporary antennaNTSR001N/A	AmplifierEMCEMC051835 SE9802462020.05.11Active Loop AntennaSCHWARZBE CKFMZB 1519 B0552020.05.11Power MeterDARERPR3006W15100041SN 0842020.05.11Power MeterDARERPR3006W1500041SN 0842020.05.11Test Cable KHz-30MHz)N/AR-01N/APower MeterN/AR-01N/A2020.05.11Test Cable 0MHz-1GHz)N/AR-02N/A2020.05.11High Test able(1G-40G Hz)N/AR-03N/A2020.05.11High Test able(1G-40G Hz)N/AR-04N/A2020.05.11FilterTRILTHIC2400MHz292020.04.07temporary antennaNTSR001N/AN/A	Amplifier         EMC         EMC051835 SE         980246         2020.05.11         2021.05.10           Active Loop Antenna         SCHWARZBE CK         FMZB 1519 B         055         2020.05.11         2021.05.10           Power Meter         DARE         RPR3006W         15100041SN 084         2020.05.11         2021.05.10           Power Meter         DARE         RPR3006W         15100041SN 084         2020.05.11         2021.05.10           Test Cable KHz-30MHz)         N/A         R-01         N/A         2020.05.11         2023.05.10           Test Cable 0MHz-1GHz)         N/A         R-02         N/A         2020.05.11         2023.05.10           High Test able(1G-40G         N/A         R-03         N/A         2020.05.11         2023.05.10           High Test able(1G-40G         N/A         R-04         N/A         2020.04.07         2023.04.06           Filter         TRILTHIC

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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	2020.05.11	2021.05.10	1 year
2	LISN	R&S	ENV216	101313	2020.05.11	2021.05.10	1 year
3	LISN	SCHWARZBE CK	NNLK 8129	8129245	2020.05.11	2021.05.10	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.

# NTEKJLIN CERTIFICATE #4298.01

#### 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

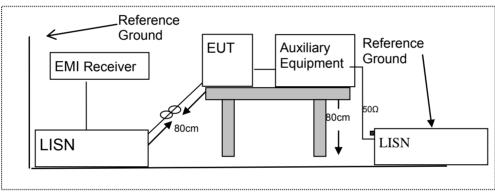
	Conducted Emission Limit		
Frequency(MHz)	Quasi-peak	Average	
0.15-0.5	66-56*	56-46*	
0.5-5.0	56	46	
5.0-30.0	60	50	

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.
- 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



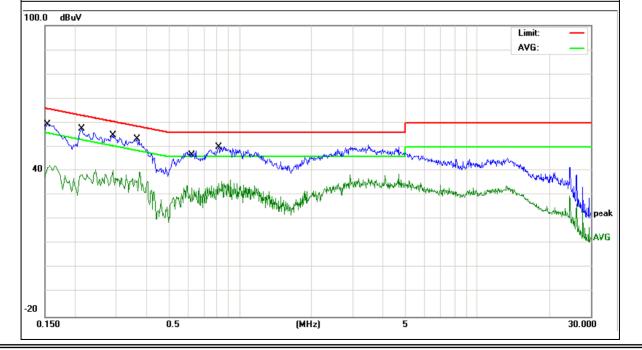
#### 7.1.6 Test Results

EUT:	10.1 INCH PORTABLE DVD/CD PLAYER	Model Name :	HJ10PRB01
Temperature:	<b>26</b> ℃	Relative Humidity:	54%
Pressure:	1010hPa	Phase :	L
Test Voltage :	DC 12V from Adapter AC 120V/60Hz	Test Mode:	Mode 1

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV)	(dBµV)	(dB)	Remark
0.1539	49.91	9.56	59.47	65.78	-6.31	QP
0.1539	32.66	9.56	42.22	55.78	-13.56	AVG
0.2139	47.99	9.55	57.54	63.05	-5.51	QP
0.2139	29.03	9.55	38.58	53.05	-14.47	AVG
0.2899	45.26	9.54	54.8	60.52	-5.72	QP
0.2899	30.56	9.54	40.1	50.52	-10.42	AVG
0.3659	43.86	9.55	53.41	58.59	-5.18	QP
0.3659	30.1	9.55	39.65	48.59	-8.94	AVG
0.6219	39.05	9.55	48.6	56	-7.4	QP
0.6219	23.27	9.55	32.82	46	-13.18	AVG
0.8139	40.56	9.55	50.11	56	-5.89	QP
0.8139	26.09	9.55	35.64	46	-10.36	AVG

Remark:

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

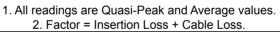


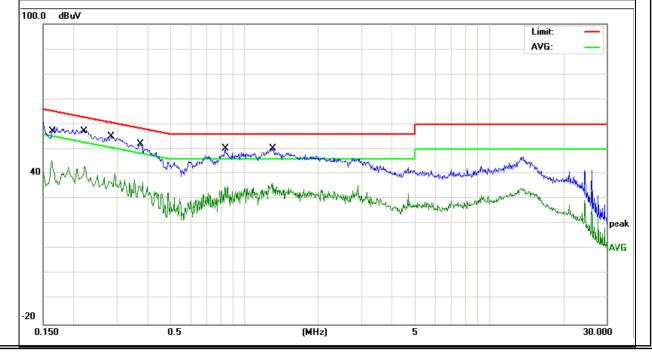


EUT:	10.1 INCH PORTABLE DVD/CD PLAYER	Model Name :	HJ10PRB01
Temperature:	<b>26</b> ℃	Relative Humidity:	54%
Pressure:	1010hPa	Phase :	Ν
Test Voltage :	DC 12V from Adapter AC 120V/60Hz	Test Mode:	Mode 1

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBµV)	(dB)	(dBµV)	(dBµV)	(dB)	Remark
0.1621	49.27	9.55	58.82	65.35	-6.53	QP
0.1621	35.85	9.55	45.4	55.35	-9.95	AVG
0.222	48.03	9.54	57.57	62.74	-5.17	QP
0.222	33.43	9.54	42.97	52.74	-9.77	AVG
0.2857	45.49	9.53	55.02	60.65	-5.63	QP
0.2857	30.5	9.53	40.03	50.65	-10.62	AVG
0.3738	42.62	9.54	52.16	58.41	-6.25	QP
0.3738	27.1	9.54	36.64	48.41	-11.77	AVG
0.8377	40.75	9.54	50.29	56	-5.71	QP
0.8377	25.46	9.54	35	46	-11	AVG
1.302	40.67	9.55	50.22	56	-5.78	QP
1.302	26.82	9.55	36.37	46	-9.63	AVG

Remark:







#### 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 alt 13.20	According to FOC Fait 15.205, 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)

2. Measurement was performed at an antenna to the closed point of EUT distance of meters.

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.

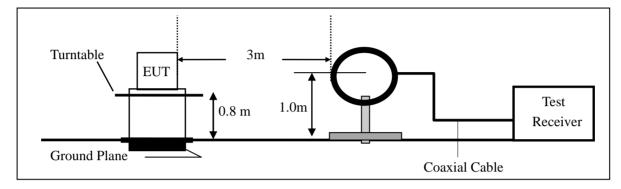


#### 7.2.3 Measuring Instruments

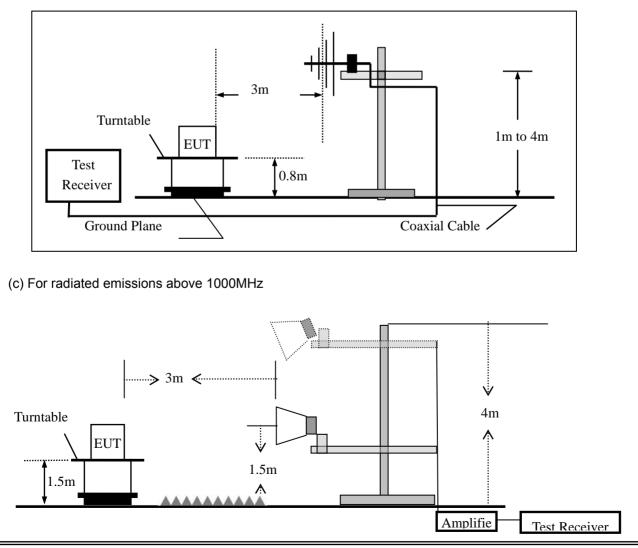
The Measuring equipment is listed in the section 6.3 of this test report.

#### 7.2.4 Test Configuration

#### (a) For radiated emissions below 30MHz



#### (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 test, th	ne Spectrum Analyzer was set	t with the following configurations:
Bannig and radiated enhoused, a		c mar allo ronoming comigaratione.

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.

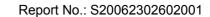
#### 7.2.6 Test Results

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

EUT:	10.1 INCH PORTABLE DVD/CD PLAYER	Model No.:	HJ10PRB01
Temperature:	<b>20</b> ℃	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.





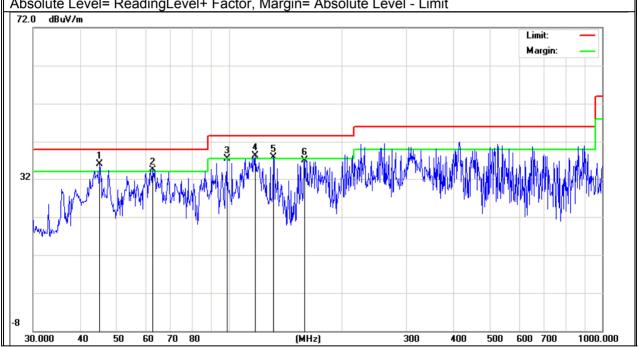
Spurious Emission below 1GHz (30MHz to 1GHz) All the modulation modes have been tested, and the worst result was report as below: 

EUT:	10.1 INCH PORTABLE DVD/CD PLAYER	Model Name :	HJ10PRB01
Temperature:	<b>20</b> ℃	Relative Humidity:	48%
Pressure:	1010hPa	Test Mode:	Mode 1
Test Voltage :	DC 7.4V		

Polar	Frequency	Meter Reading	Factor         mits   Mardin		Remark			
(H/V)	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)		
V	45.2165	24.85	11.18	36.03	40	-3.97	QP	
V	62.6507	28.49	6.02	34.51	40	-5.49	QP	
V	98.8324	26.64	10.78	37.42	43.5	-6.08	QP	
V	117.7724	25.84	12.43	38.27	43.5	-5.23	QP	
V	131.7573	25.28	12.54	37.82	43.5	-5.68	QP	
V	159.7844	26.27	10.83	37.1	43.5	-6.4	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	36.0007	15.86	16.02	31.88	40	-8.12	QP
Н	43.9658	22.66	11.96	34.62	40	-5.38	QP
Н	53.8817	27.56	7.19	34.75	40	-5.25	QP
Н	81.4967	27.94	8.16	36.1	40	-3.9	QP
Н	102.0014	28.28	11.08	39.36	43.5	-4.14	QP
Н	159.2247	29.55	10.93	40.48	43.5	-3.02	QP
	e Level= Readin uV/m		,			Limit: Margin:	_
32							
-8							



EUT: 10.1 INCH PORTABLE DVD/CD PLAYER			Мос	lel No.:		HJ10PRB01					
Temperatu	re:	<b>20</b> ℃			Relative Humidity:			48%	)		
Test Mode:		Mode2	/Mode3/M	ode4	Tes	t By:		Allen Liu			
All the mod	ulation me	odes hav	e been tes	sted, 8-	DPS	K is worst	case ar	nd the worst r	esult was re	eport as bel	
Frequency	Read Level	Cable loss	Antenna Factor	Prea Fact	•	Emission Level	Limits	Margin	Remark	Comment	
(MHz)	(dBµV)	(dB)	dB/m	(dB	3)	(dBµV/m)	(dBµV/r	n) (dB)			
			Low Cha	annel (2	402 I	MHz)(8-DPS	K)Abov	/e 1G			
4804.365	62.33	5.21	35.59	44.3	30	58.83	74.00	-15.17	Pk	Vertical	
4804.365	41.07	5.21	35.59	44.3	30	37.57	54.00	-16.43	AV	Vertical	
7206.201	54.88	6.48	36.27	44.6	60	53.03	74.00	-20.97	Pk	Vertical	
7206.201	42.00	6.48	36.27	44.6	60	40.15	54.00	-13.85	AV	Vertical	
4804.395	62.41	5.21	35.55	44.3	30	58.87	74.00	-15.13	Pk	Horizontal	
4804.395	40.01	5.21	35.55	44.3	30	36.47	54.00	-17.53	AV	Horizontal	
7206.234	60.14	6.48	36.27	44.5	52	58.37	74.00	-15.63	Pk	Horizontal	
7206.234	41.17	6.48	36.27	44.5		39.40	54.00		AV	Horizontal	
			Mid Cha	nnel (2	441 N	/Hz)(8-DPS	K)Abov	e 1G			
4882.786	61.73	5.21	35.66	44.2	-	58.40	74.00	-15.60	Pk	Vertical	
4882.786	40.87	5.21	35.66	44.2	20	37.54	54.00	-16.46	AV	Vertical	
7323.227	62.28	7.10	36.50	44.4	3	61.45	74.00	-12.55	Pk	Vertical	
7323.227	43.33	7.10	36.50	44.4	3	42.50	54.00	-11.50	AV	Vertical	
4882.374	61.81	5.21	35.66	44.2	20	58.48	74.00	-15.52	Pk	Horizontal	
4882.374	42.3	5.21	35.66	44.2	20	38.97	54.00		AV	Horizontal	
7323.294	62.18	7.10	36.50	44.4	-	61.35	74.00		Pk	Horizontal	
7323.294	41.05	7.10	36.50	44.4	-	40.22	54.00		AV	Horizontal	
				,		MHz)(8-DPS	,			T	
4960.067	61.18	5.21	35.52	44.2		57.70	74.00		Pk	Vertical	
4960.067	41.4	5.21	35.52	44.2		37.92	54.00		AV	Vertical	
7440.214	62.37	7.10	36.53	44.6		61.40	74.00		Pk	Vertical	
7440.214	42.16	7.10	36.53	44.6	60	41.19	54.00		AV	Vertical	
4960.301	61.23	5.21	35.52	44.2		57.75	74.00		Pk	Horizontal	
4960.301	41.96	5.21	35.52	44.2		38.48	54.00		AV	Horizontal	
7440.262	61.05	7.10	36.53	44.6		60.08	74.00		Pk	Horizontal	
7440.262	45.09	7.10	36.53	44.6	60	44.12	54.00	-9.88	AV	Horizontal	

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Certificate #4298.01

Note:

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



Report No.: S20062302602001

Spuric	ous Emissic					0MHz and	2483.	5-25	00MHz		
EUT: 10.1 INCH PORTABLE DVD/CD PLAYER			Model No.:			HJ10PRB01					
Temperatu	ure:	<b>20</b> ℃			Relati	ve Humidit	y:	y: 48%			
Test Mode	:	Mode2/	Mode4		Test E	By:		Aller	n Liu		
All the mo	dulation m	odes have	e been test	ed, a	and the	e worst res	ult wa	is rep	ort as belo	w:	
Frequenc	Meter	Cable	Antenna	Pre	eamp	Emission	Lim	vito	Margin	Detector	
у	Reading	Loss	Factor		actor	Level			warym	Delector	Comment
(MHz)	(dBµV)	(dB)	dB/m		dB)	(dBµV/m)		V/m)	(dB)	Туре	
						()- Non-hop	<u> </u>				
2310.00	67.75	2.97	27.80		3.80	54.72	74		-19.28	Pk	Horizontal
2310.00	48.81	2.97	27.80		3.80	35.78	5		-18.22	AV	Horizontal
2310.00	71.15	2.97	27.80		3.80	58.12	7-		-15.88	Pk	Vertical
2310.00	50.03	2.97	27.80		3.80	37.00	5		-17.00	AV	Vertical
2390.00	69.15	3.14	27.21		3.80	55.70	74		-18.30	Pk	Vertical
2390.00	47.87	3.14	27.21		3.80	34.42	5		-19.58	AV	Vertical
2390.00	70.82	3.14	27.21		3.80	57.37	74		-16.63	Pk	Horizontal
2390.00	51.85	3.14	27.21	43	3.80	38.40	5		-15.60	AV	Horizontal
2483.50	71.58	3.58	27.70	44	4.00	58.86	74	4	-15.14	Pk	Vertical
2483.50	51.60	3.58	27.70	44	4.00	38.88	5	4	-15.12	AV	Vertical
2483.50	72.15	3.58	27.70	44	4.00	59.43	74	4	-14.57	Pk	Horizontal
2483.50	53.68	3.58	27.70		4.00	40.96	5	4	-13.04	AV	Horizontal
			31	Лbps	; (8-DP	'SK)- hoppiı	ng				
2310.00	70.75	2.97	27.80	4	3.80	57.72	74	4	-16.28	Pk	Horizontal
2310.00	48.75	2.97	27.80	4	3.80	35.72	5	4	-18.28	AV	Horizontal
2310.00	68.90	2.97	27.80	4	3.80	55.87	74	4	-18.13	Pk	Vertical
2310.00	51.77	2.97	27.80	4	3.80	38.74	5	4	-15.26	AV	Vertical
2390.00	71.53	3.14	27.21	4	3.80	58.08	74	4	-15.92	Pk	Vertical
2390.00	48.77	3.14	27.21	4	3.80	35.32	5	4	-18.68	AV	Vertical
2390.00	71.01	3.14	27.21	4	3.80	57.56	74	4	-16.44	Pk	Horizontal
2390.00	51.18	3.14	27.21	4	3.80	37.73	5	4	-16.27	AV	Horizontal
2483.50	68.79	3.58	27.70	44	4.00	56.07	74	4	-17.93	Pk	Vertical
2483.50	50.45	3.58	27.70	4	4.00	37.73	5	4	-16.27	AV	Vertical
2483.50	70.07	3.58	27.70	4	4.00	57.35	7	4	-16.65	Pk	Horizontal
2483.50	50.68	3.58	27.70	44	4.00	37.96	5	4	-16.04	AV	Horizontal

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



EUT: 10.1 INCH PORTABLE DVD/CD PLAYER			E Model N	Model No.: HJ10PRB01						
Temperature: 20 °C			Relative	Relative Humidity: 48%						
Test Mode: Mode2/ Mode4			Test By	est By: Allen Liu						
All th	e modulatio	n mode	s have be	en tested	, and the v	worst resul	t was	report as b	pelow:	
	Frequenc	Readin	Cable	Antenn	Preamp	Emission	Limi	ts Margin	Detect	
	у	g Leve	I Loss	а	Factor	Level			or	Comment
	(MHz)	(dBµV)	) (dB)	dB/m	(dB)	(dBµ V/m)	(dBj V/m		Туре	Common
	3260	60.48	4.04	29.57	44.70	49.39	74	-24.61	Pk	Vertical
	3260	49.79	4.04	29.57	44.70	38.70	54	-15.30	AV	Vertical
	3260	61.84	4.04	29.57	44.70	50.75	74	-23.25	Pk	Horizontal
	3260	43.66	4.04	29.57	44.70	32.57	54	-21.43	AV	Horizontal
	3332	62.84	4.26	29.87	44.40	52.57	74	-21.43	Pk	Vertical
	3332	49.23	4.26	29.87	44.40	38.96	54	-15.04	AV	Vertical
	3332	59.22	4.26	29.87	44.40	48.95	74	-25.05	Pk	Horizontal
	3332	43.66	4.26	29.87	44.40	33.39	54	-20.61	AV	Horizontal
	17797	41.48	10.99	43.95	43.50	52.92	74	-21.08	Pk	Vertical
	17797	29.23	10.99	43.95	43.50	40.67	54	-13.33	AV	Vertical
	17788	47.09	11.81	43.69	44.60	57.99	74	-16.01	Pk	Horizontal
	17788	29.18	11.81	43.69	44.60	40.08	54	-13.92	AV	Horizontal

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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:	10.1 INCH PORTABLE DVD/CD PLAYER	Model No.:	HJ10PRB01
Temperature:	<b>20</b> ℃	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:	10.1 INCH PORTABLE DVD/CD PLAYER	Model No.:	HJ10PRB01
Temperature:	<b>20</b> ℃	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:	10.1 INCH PORTABLE DVD/CD PLAYER	Model No.:	HJ10PRB01
Temperature:	<b>20</b> ℃	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:

- 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) x (0.4 x 79) = 106.67 hops.
- 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:	10.1 INCH PORTABLE DVD/CD PLAYER	Model No.:	HJ10PRB01
Temperature:	<b>20</b> ℃	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  $\geq$  RBW

Sweep = auto

Detector function = peak Trace = max hold

#### 7.7.6 Test Results

EUT:	10.1 INCH PORTABLE DVD/CD PLAYER Model No.:		HJ10PRB01
Temperature:	<b>20</b> ℃	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.

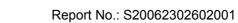
Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.

Repeat above procedures until all measured frequencies were complete.

#### 7.8.6 Test Results

EUT:	10.1 INCH PORTABLE DVD/CD PLAYER	Model No.:	HJ10PRB01
Temperature:	<b>20</b> ℃	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 30MHz 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

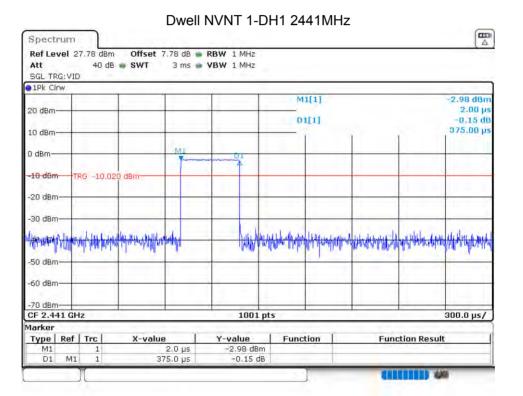
The EUT antenna is permanent attached PCB antenna (Gain: 0dBi). It comply with the standard requirement.



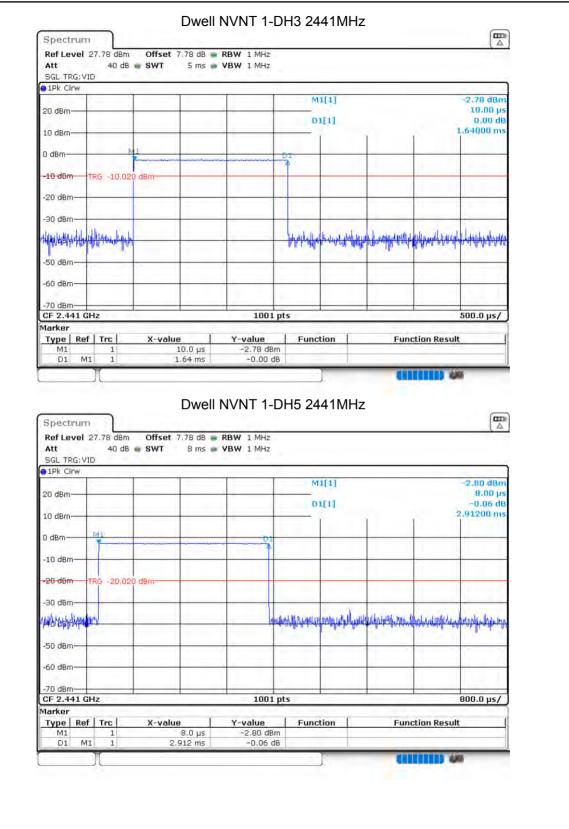
#### 8 TEST RESULTS

#### 8.1 DWELL TIME

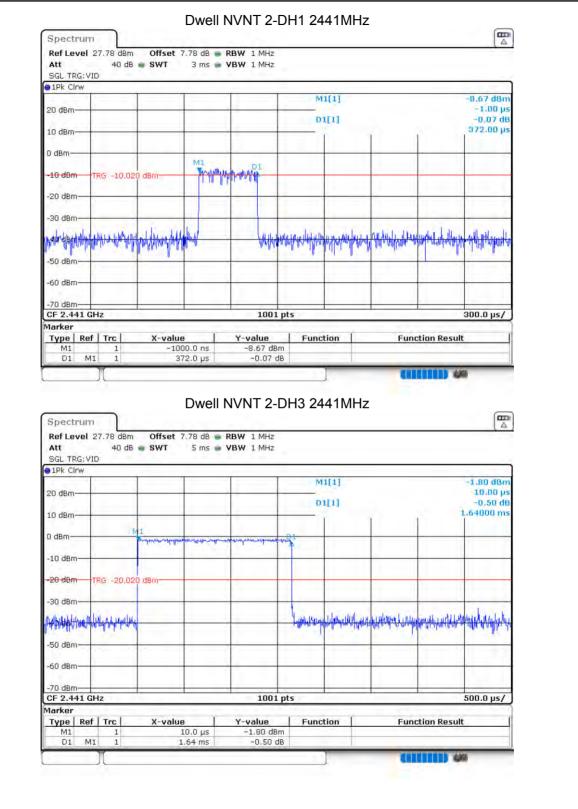
r						
Mode	Frequency	Pulse Time	Total Dwell	Period Time	Limit	Verdict
MOUE	(MHz)	(ms)	Time (ms)	(ms)	(ms)	VEILICI
1-DH1	2441	0.375	120	31600	400	Pass
1-DH3	2441	1.64	262.4	31600	400	Pass
1-DH5	2441	2.912	310.613	31600	400	Pass
2-DH1	2441	0.372	119.04	31600	400	Pass
2-DH3	2441	1.64	262.4	31600	400	Pass
2-DH5	2441	2.936	313.173	31600	400	Pass
3-DH1	2441	0.372	119.04	31600	400	Pass
3-DH3	2441	1.64	262.4	31600	400	Pass
3-DH5	2441	2.92	311.467	31600	400	Pass
	1-DH3 1-DH5 2-DH1 2-DH3 2-DH5 3-DH1 3-DH3	Mode(MHz)1-DH124411-DH324411-DH524412-DH124412-DH324412-DH524413-DH124413-DH32441	Mode(MHz)(ms)1-DH124410.3751-DH324411.641-DH524412.9122-DH124410.3722-DH324411.642-DH524412.9363-DH124410.3723-DH324411.64	Mode(MHz)(ms)Time (ms)1-DH124410.3751201-DH324411.64262.41-DH524412.912310.6132-DH124410.372119.042-DH324411.64262.42-DH524412.936313.1733-DH124410.372119.043-DH324411.64262.4	Mode(MHz)(ms)Time (ms)(ms)1-DH124410.375120316001-DH324411.64262.4316001-DH524412.912310.613316002-DH124410.372119.04316002-DH324411.64262.4316002-DH524412.936313.173316003-DH124410.372119.04316003-DH324411.64262.431600	Mode(MHz)(ms)Time (ms)(ms)(ms)1-DH124410.375120316004001-DH324411.64262.4316004001-DH524412.912310.613316004002-DH124410.372119.04316004002-DH324411.64262.4316004002-DH524412.936313.173316004003-DH124410.372119.04316004003-DH324411.64262.431600400



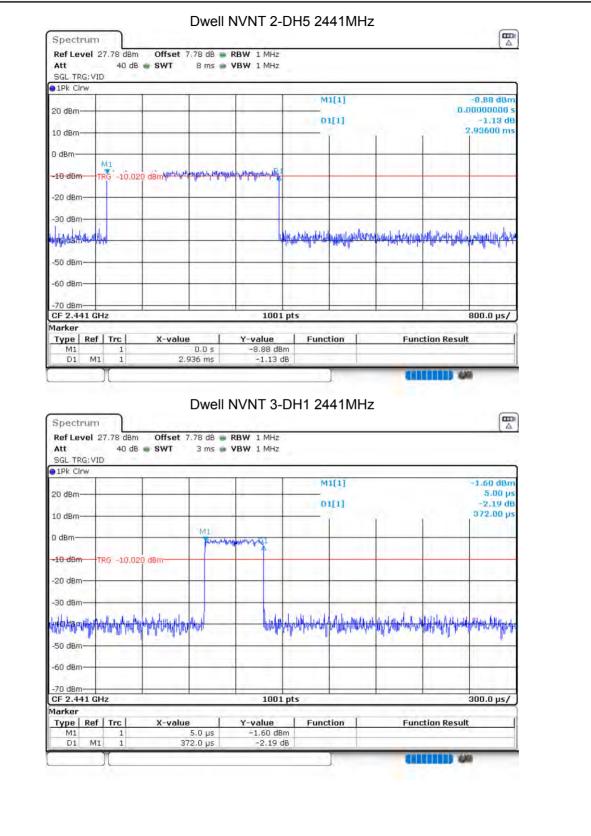




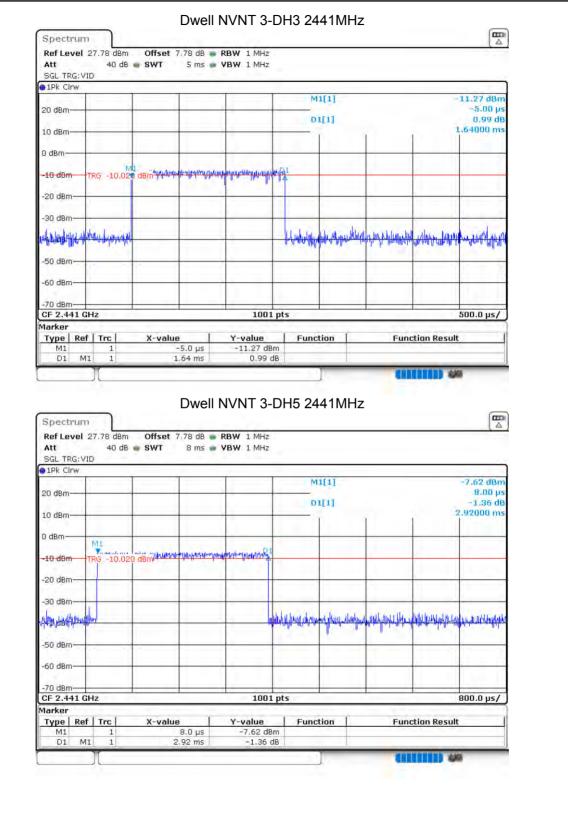










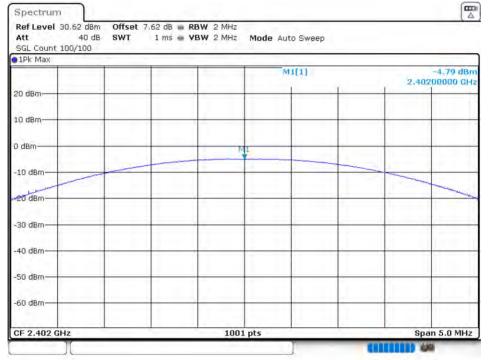




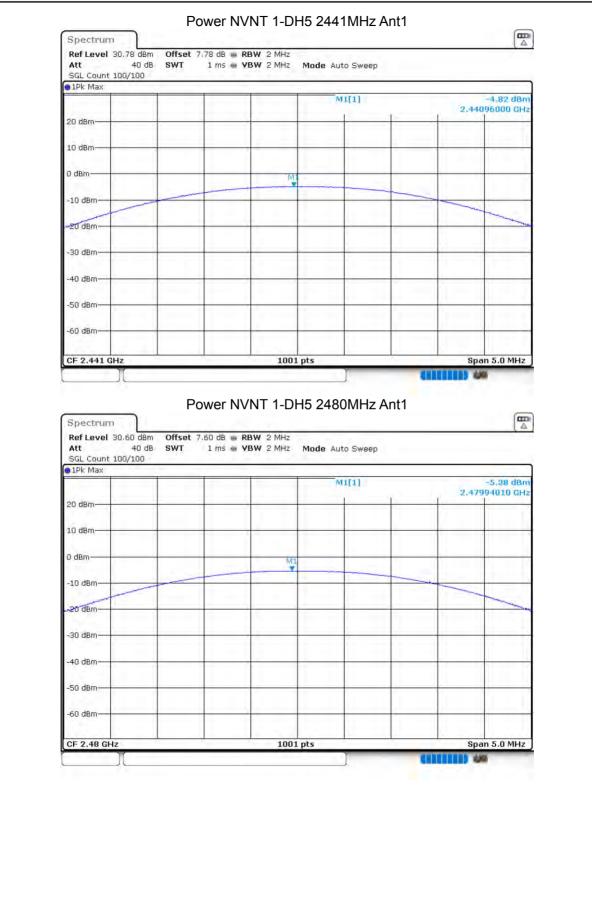
## 8.2 MAXIMUM CONDUCTED OUTPUT POWER

Condition	Mode	Frequency (MHz)	Antenna	Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant 1	-4.79	21	Pass
NVNT	1-DH5	2441	Ant 1	-4.823	21	Pass
NVNT	1-DH5	2480	Ant 1	-5.384	21	Pass
NVNT	2-DH5	2402	Ant 1	-2.941	21	Pass
NVNT	2-DH5	2441	Ant 1	-2.743	21	Pass
NVNT	2-DH5	2480	Ant 1	-3.391	21	Pass
NVNT	3-DH5	2402	Ant 1	-2.524	21	Pass
NVNT	3-DH5	2441	Ant 1	-2.384	21	Pass
NVNT	3-DH5	2480	Ant 1	-2.997	21	Pass

## Power NVNT 1-DH5 2402MHz Ant1







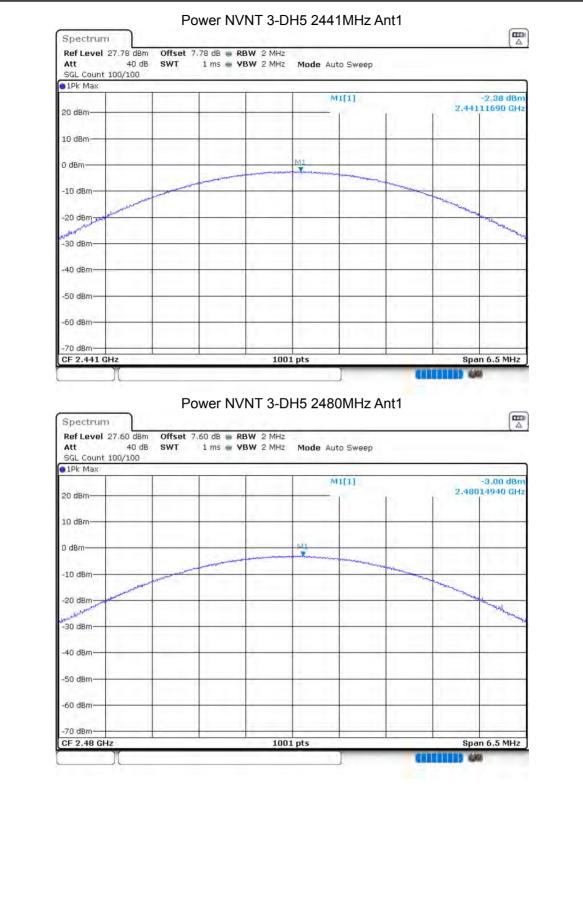














## 8.3 OCCUPIED CHANNEL BANDWIDTH

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)	-20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant 1	0.9171	1.002	Pass
NVNT	1-DH5	2441	Ant 1	0.9171	0.98	Pass
NVNT	1-DH5	2480	Ant 1	0.9171	0.99	Pass
NVNT	2-DH5	2402	Ant 1	1.1948	1.356	Pass
NVNT	2-DH5	2441	Ant 1	1.1928	1.356	Pass
NVNT	2-DH5	2480	Ant 1	1.1948	1.354	Pass
NVNT	3-DH5	2402	Ant 1	1.1968	1.342	Pass
NVNT	3-DH5	2441	Ant 1	1.2008	1.344	Pass
NVNT	3-DH5	2480	Ant 1	1.2008	1.344	Pass

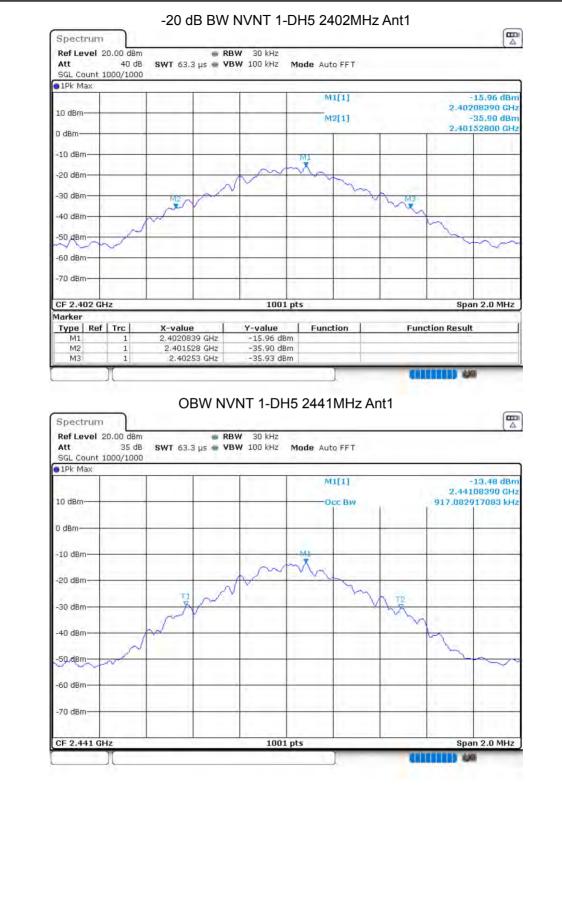
ACCREDITED

Certificate #4298.01

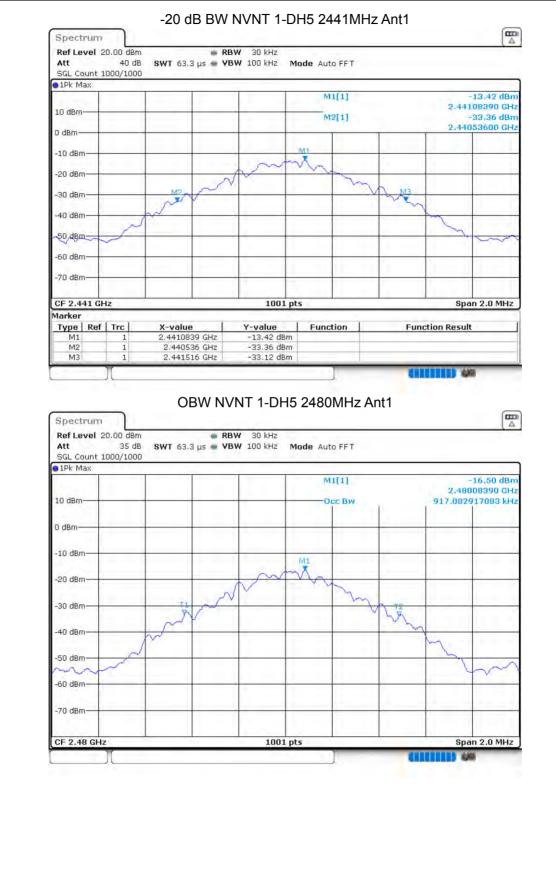
## OBW NVNT 1-DH5 2402MHz Ant1



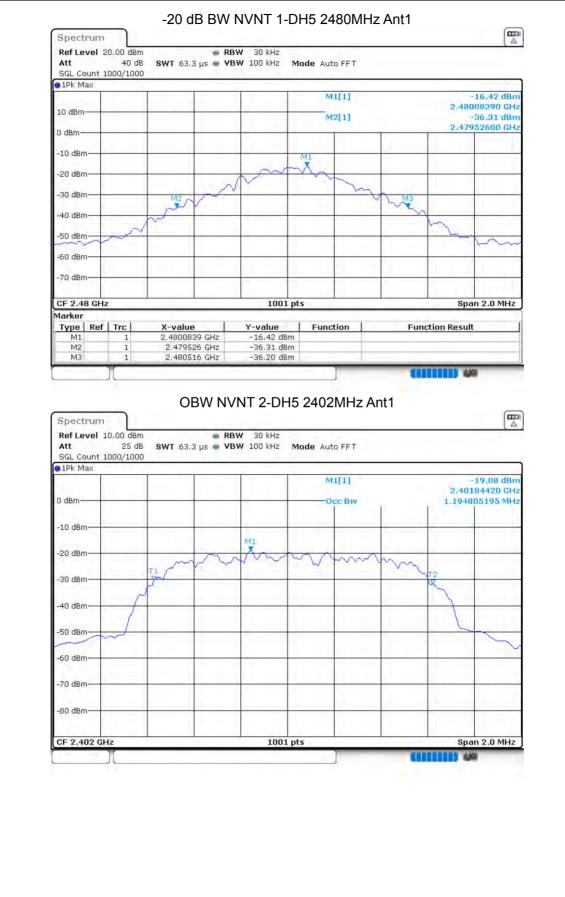












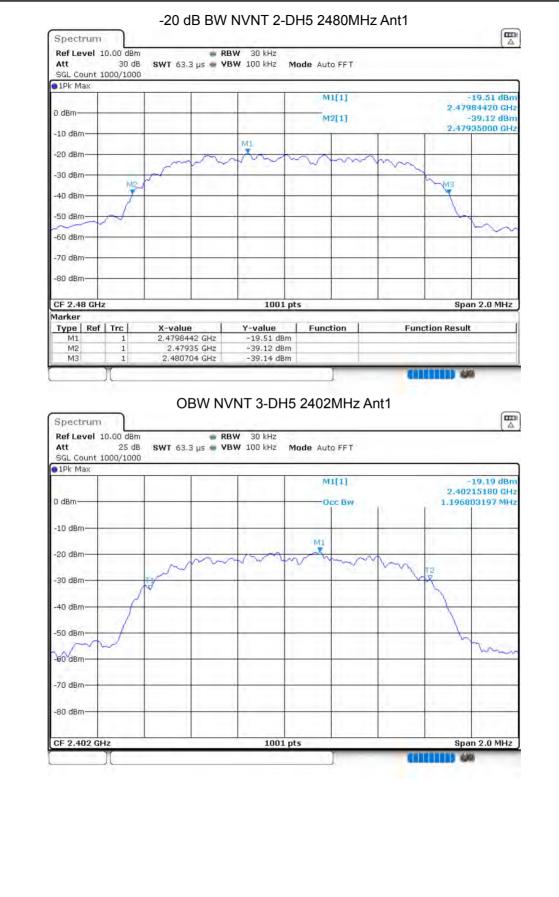








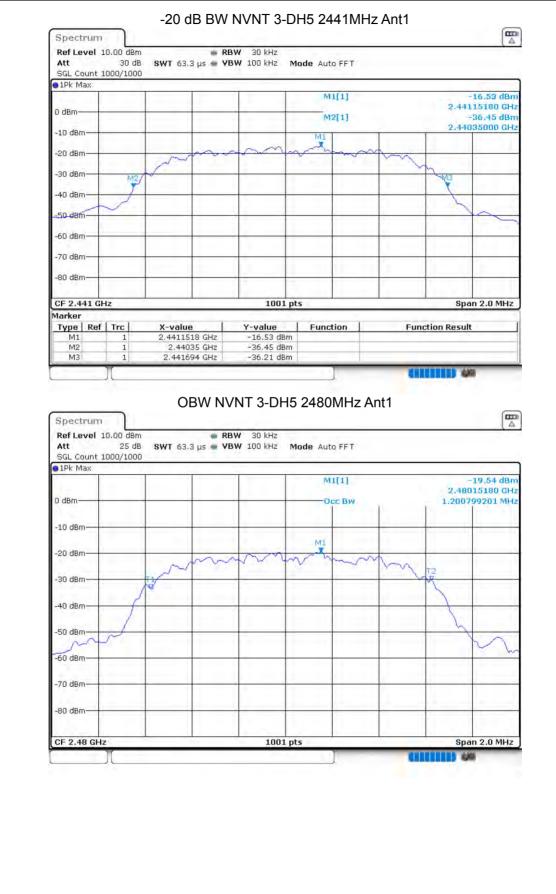




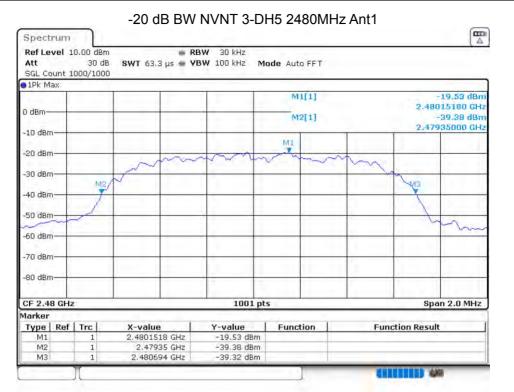














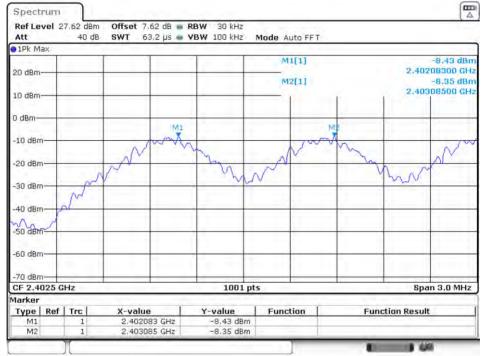
## 8.4 CARRIER FREQUENCIES SEPARATION

						1
Condition	Mode	Hopping Freq1	Hopping Freq2	HFS	Limit	Verdict
Condition	MOUE	(MHz)	(MHz)	(MHz)	(MHz)	Veruici
NVNT	1-DH5	2402.083	2403.085	1.002	0.668	Pass
NVNT	1-DH5	2441.083	2442.082	0.999	0.653	Pass
NVNT	1-DH5	2479.083	2480.085	1.002	0.66	Pass
NVNT	2-DH5	2401.843	2402.842	0.999	0.904	Pass
NVNT	2-DH5	2440.84	2441.845	1.005	0.904	Pass
NVNT	2-DH5	2478.843	2479.839	0.996	0.903	Pass
NVNT	3-DH5	2402.152	2403.154	1.002	0.895	Pass
NVNT	3-DH5	2441.152	2442.151	0.999	0.896	Pass
NVNT	3-DH5	2479.152	2480.154	1.002	0.896	Pass

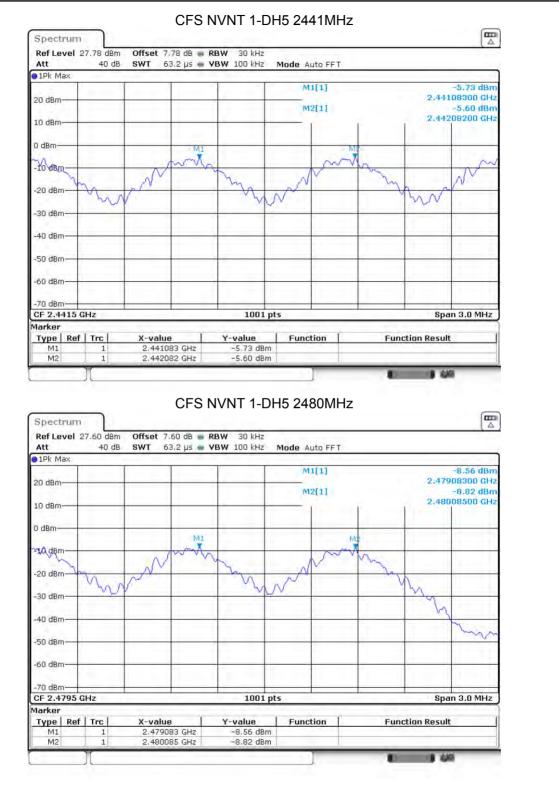
ACCREDITED

Certificate #4298.01

## CFS NVNT 1-DH5 2402MHz







ACCREDITED

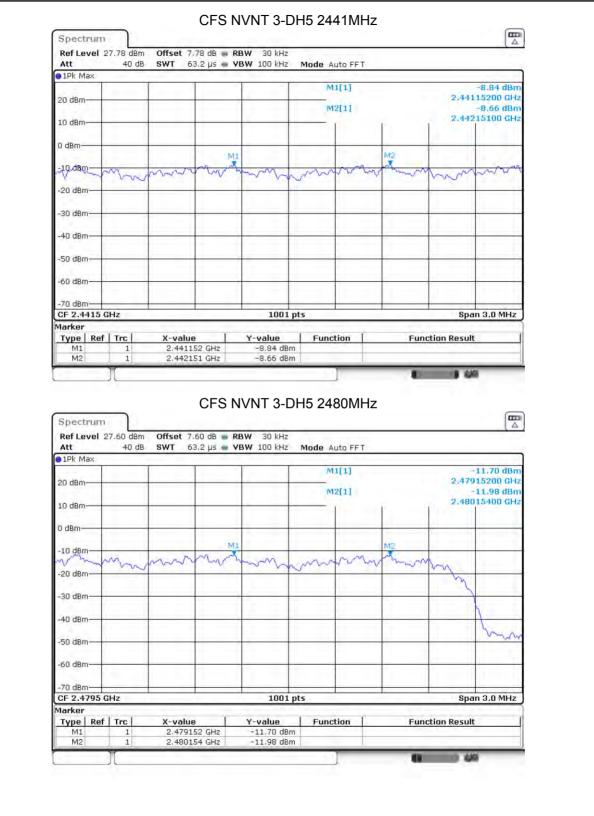














#### 8.5 NUMBER OF HOPPING CHANNEL Mode Hopping Number | Limit | Verdict Condition NVNT Pass 1-DH5 15 79 Hopping No. NVNT 1-DH5 2402MHz Spectrum Offset 7.62 dB 🝙 RBW 100 kHz Ref Level 27.62 dBm Att 40 dB SWT 1 ms 🕳 VBW 300 kHz Mode Auto Sweep SGL Count 5000/5000 1Pk Max M1[1] 6.35 dBn 20 dBm 2.4018370 GHz M2[1] -6.35 dBn 2.4800765 GHz 10 dBm 0 dBm 10110000 hassaana ADAAAAA ADDADDDADDADDA 00040 INARA 20 dBr 30 dBm 40 dBm -50 dBm--60 dBm -70 dBm 1001 pts Stop 2.4835 GHz Start 2.4 GHz Marker Type | Ref | Trc | Function **Function Result** X-value Y-value 2.401837 GHz -6.35 dBm M1 1 M2 1 2.4800765 GHz -6.35 dBm

ACCREDITED

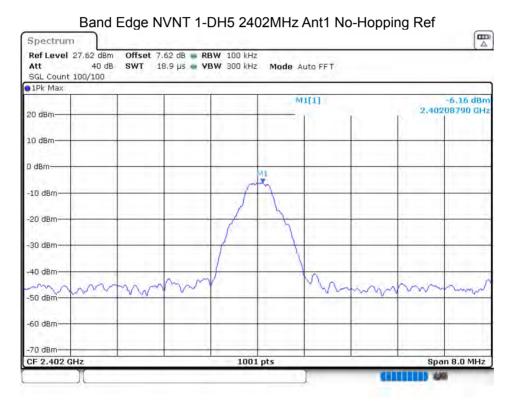
Certificate #4298.01



# NTEKJL

## 8.6 BAND EDGE

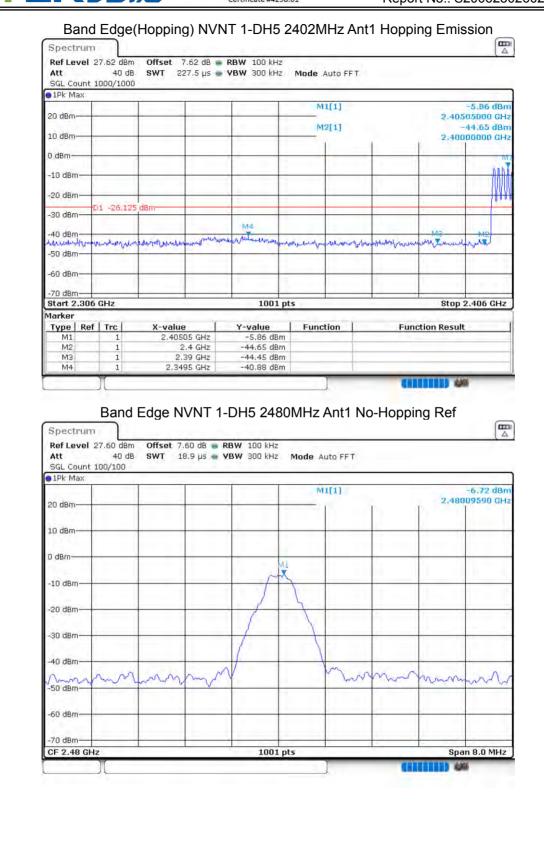
0.0 DAND L							
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant 1	No-Hopping	-35.38	-20	Pass
NVNT	1-DH5	2402	Ant 1	Hopping	-34.75	-20	Pass
NVNT	1-DH5	2480	Ant 1	No-Hopping	-35.36	-20	Pass
NVNT	1-DH5	2480	Ant 1	Hopping	-36.78	-20	Pass
NVNT	2-DH5	2402	Ant 1	No-Hopping	-34.38	-20	Pass
NVNT	2-DH5	2402	Ant 1	Hopping	-32.06	-20	Pass
NVNT	2-DH5	2480	Ant 1	No-Hopping	-36.23	-20	Pass
NVNT	2-DH5	2480	Ant 1	Hopping	-34.15	-20	Pass
NVNT	3-DH5	2402	Ant 1	No-Hopping	-35.29	-20	Pass
NVNT	3-DH5	2402	Ant 1	Hopping	-34.12	-20	Pass
NVNT	3-DH5	2480	Ant 1	No-Hopping	-35.29	-20	Pass
NVNT	3-DH5	2480	Ant 1	Hopping	-35.75	-20	Pass





### Band Edge NVNT 1-DH5 2402MHz Ant1 No-Hopping Emission 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 100/100 1Pk Max M1[1] 6.18 dBn 20 dBm-2.40205000 GHz -46.49 dBm 2.4000000 GHz M2[1] 10 dBm 0 dBm -10 dBm -20 dBm D1 -26,156 dBm -30 dBm-6.00 40 dBm Whowever !! Ma atten when you -hope Muda mounder HUMANAMALA Huntlimm and weater that Mal other land -50 dBm -60 dBm -70 dBm-Stop 2.406 GHz Start 2.306 GHz 1001 pts Marker Y-value -6.18 dBm Function Function Result Type | Ref | Trc X-value 2.40205 GHz M1 1 M2 46.49 dBm 2.4 GHz 1 MЗ 2.39 GHz -45.42 dBm 1 M4 1 2.3399 GHz -41.55 dBm Band Edge(Hopping) NVNT 1-DH5 2402MHz Ant1 Hopping Ref 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 1500/1500 01Pk Max MI[1] -6,13 dBm 2.40403000 GHz 20 dBm 10 dBm 0 dBm M1 -10 dBm -20 dBm 30 dBm -40 dBm -50 dBm -60 dBm -70 dBm-Span 8.0 MHz CF 2.402 GHz 1001 pts

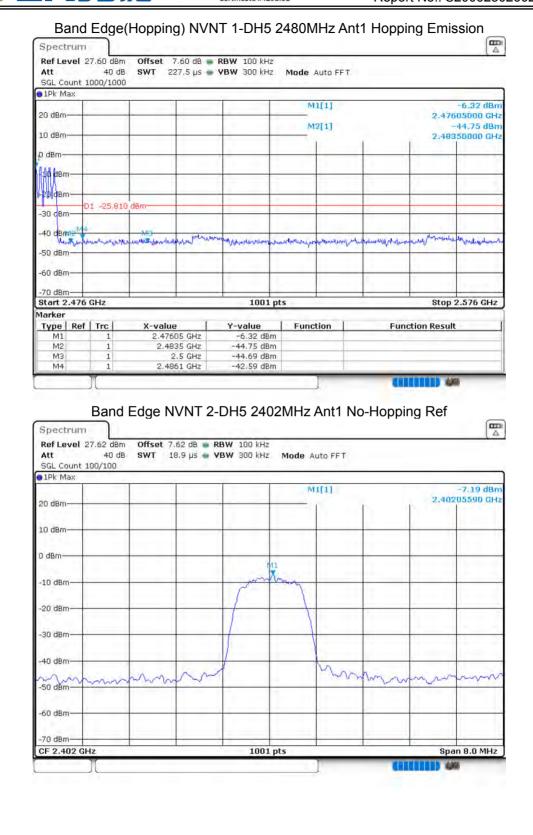






Ref Level Att SGL Count 1Pk Max	n 27.60 dBm 40 dB 100/100			<b>XBW</b> 100 kHz <b>/BW</b> 300 kHz	Mode /				
20 dBm		_				1[1]			-6.73 dBm 195000 GHz
10 dBm					IN	2[1]	()		-46.62 dBm 150000 GHz
0 dBm									
-20 dBm-									1
-30 cBm	D1 -26.718	dBm							
-40 dBm2	M4	MAN MAN MAN	and all the state of the	munum	human	unal address proper	welveragener	hy water adara	kunnereter harden
-50 dBm		-	-						
-70 dBm			1	1			<u> </u>		1
Start 2.476 Marker Type   Rei	1. A.			1001	pts	1		Stop	2.576 GHz
M2 M3 M4	1 1 1	2	35 GHz .5 GHz 72 GHz	-46.62 dBr -45.11 dBr -42.08 dBr	n				
Spectrum		Offset 7.	60 dB 🐞 RE	/NT 1-D	13.21		ant1 Hop	oping R	ef
Spectrum Ref Level Att SGL Count	n 27.60 dBm	Offset 7.	60 dB 🐞 RE	<b>3W</b> 100 kHz	Mode A	uto FFT	ant1 Hop	oping R	
Spectrum Ref Level Att SGL Count	n 27.60 dBm 40 dB	Offset 7.	60 dB 🐞 RE	<b>3W</b> 100 kHz	Mode A		Ant1 Hop		
Spectrum Ref Level Att SGL Count 1Pk Max	n 27.60 dBm 40 dB	Offset 7.	60 dB 🐞 RE	<b>3W</b> 100 kHz	Mode A	uto FFT	Ant1 Hop		-5,81 dBm
Spectrum Ref Level Att SGL Count 1Pk Max 20 dBm-	n 27.60 dBm 40 dB	Offset 7.	60 dB 🐞 RE	<b>3W</b> 100 kHz	Mode A	uto FFT	Ant1 Hop		-5,81 dBm
Spectrum Ref Level Att SGL Count 1Pk Max 20 dBm- 10 dBm-	n 27.60 dBm 40 dB	Offset 7.	60 dB 🐞 RE	3W 100 kHz	Mode A	uto FFT	Ant1 Hop		-5,81 dBm
Spectrum Ref Level Att SGL Count 1Pk Max 20 dBm- 10 dBm- g dBm-	27.60 dBm 40 dB 1500/1500	Offset 7.	60 dB 🐞 RE	3W 100 kHz	Mode A	uto FFT	Ant1 Hop		-5,81 dBm
Spectrum Ref Level Att SGL Count 1Pk Max 20 dBm- 10 dBm- 10 dBm- -10 dBm-	27.60 dBm 40 dB 1500/1500	Offset 7.	60 dB 🐞 RE	3W 100 kHz	Mode A	uto FFT	Ant1 Hop		-5,81 dBm
Spectrum Ref Level Att SGL Count 1Pk Max 20 dBm- 10 dBm- -10 dBm- -20 dBm-	27.60 dBm 40 dB 1500/1500	Offset 7.	60 dB 🐞 RE	3W 100 kHz	Mode A	uto FFT	Ant1 Hop		-5,81 dBm
Spectrum Ref Level Att SGL Count 1Pk Max 20 dBm- 10 dBm- -10 dBm- -20 dBm- -20 dBm-	27.60 dBm 40 dB 1500/1500	Offset 7.	60 dB 🐞 RE	3W 100 kHz	Mode A	uto FFT	Ant1 Hop		-5,81 dBm
Spectrum Ref Level Att SGL Count 1Pk Max 20 dBm 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -40 dBm -50 dBm	27.60 dBm 40 dB 1500/1500	Offset 7.	60 dB 🐞 RE	3W 100 kHz	Mode A	uto FFT	Ant1 Hop		-5,81 dBm
Spectrum Ref Level Att SGL Count IVK Max 20 dBm 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -50 dBm -60 dBm	27.60 dBm 40 dB 1500/1500	Offset 7.	60 dB 🐞 RE	3W 100 kHz	Mode A	uto FFT	Ant1 Hop		-5,81 dBm
Spectrum Ref Level Att SGL Count I Count I Count I Count SGL Count I Count	27.60 dBm 40 dB 1500/1500	Offset 7.	60 dB 🐞 RE	3W 100 kHz	Mode A	uto FFT	Ant1 Hop	2.476	-5,81 dBm







Ref Level Att	27.62 dBm 40 dB			RBW 100 kHz /BW 300 kHz		Auto FFT.			
SGL Count				<b>5H</b> 555 Mile	moue				
					M	1[1]		- 0.5	-7.09 dBn
20 dBm					M	2[1]			205000 GH -45.32 dBn
10 dBm		2	1				()	2.400	100000 GH
0 dBm			-	-			-		MI
-10 dBm	-						-		t A
-20 dBm			-		-		-		
-30 dBm	D1 -27,192	dBm	-				-		
-40 dBm-				M4	_			MB	ME
-50 dBm	new proceeding	Annur Malemann	ateral permananda	whether when when when when when when when when	and a superior and	allow and have	for some property and the	www.white	worder he
-60 dBm								1	
	1			·					
-70 dBm- Start 2.30	6 GHz			1001	pts			Stop	2.406 GHz
Marker Type   Re	20.00	X-value		Y-value	Fund			tion Result	
	1	2	.4 GHz	-45.32 dBn					
M3 M4 B		2.3 2.3	39 GHz 49 GHz	-46.56 dBn -41.58 dBn /NT 2-DI	n	) 2MHz A	unt1 Hop	oping R	
M4 B Spectrur		2.3 2.3 ge(Hopp Offset 7.	39 GHz 49 GHz Ding) N\ 62 dB • R	-46.56 dBn -41.58 dBn	H5 240		ant1 Hop	oping R	ef
M4 Spectrur Ref Level Att SGL Count	and Edg	2.3 2.3 ge(Hopp Offset 7.	39 GHz 49 GHz Ding) N\ 62 dB • R	-46.56 dBn -41.58 dBn /NT 2-DI 3W 100 kHz	H5 240		ant1 Hop	oping R	
M4 Spectrur Ref Level Att	1 1 cand Edg 27.62 dBm 40 dB	2.3 2.3 ge(Hopp Offset 7.	39 GHz 49 GHz Ding) N\ 62 dB • R	-46.56 dBn -41.58 dBn /NT 2-DI 3W 100 kHz	Mode A		ant1 Hop		-8,35 dBn
M4 Spectrur Ref Level Att SGL Count	1 1 cand Edg 27.62 dBm 40 dB	2.3 2.3 ge(Hopp Offset 7.	39 GHz 49 GHz Ding) N\ 62 dB • R	-46.56 dBn -41.58 dBn /NT 2-DI 3W 100 kHz	Mode A	uto FFT	ant1 Hop		
M4 Spectrur Ref Level Att SGL Count 1Pk Max	1 1 cand Edg 27.62 dBm 40 dB	2.3 2.3 ge(Hopp Offset 7.	39 GHz 49 GHz Ding) N\ 62 dB • R	-46.56 dBn -41.58 dBn /NT 2-DI 3W 100 kHz	Mode A	uto FFT	ant1 Hop		-8,35 dBn
M4 Spectrur Ref Level Att SGL Count IPk Max 20 dBm-	1 1 cand Edg 27.62 dBm 40 dB	2.3 2.3 ge(Hopp Offset 7.	39 GHz 49 GHz Ding) N\ 62 dB • R	-46.56 dBn -41.58 dBn /NT 2-DI 3W 100 kHz 3W 300 kHz	Mode A	uto FFT	ant1 Hop		-8,35 dBn
M4 Spectrur Ref Level Att SGL Count IPk Max 20 dBm- 10 dBm-	1 1 cand Edg 27.62 dBm 40 dB	2.3 2.3 ge(Hopp Offset 7.	39 GHz 49 GHz Ding) N\ 62 dB • R	-46.56 dBn -41.58 dBn /NT 2-DI 3W 100 kHz	Mode A	uto FFT	Ant1 Hop		-8,35 dBn
M4 Spectrur Ref Level Att SGL Count IPk Max 20 dBm- 10 dBm- 0 dBm-	1 1 cand Edg 27.62 dBm 40 dB	2.3 2.3 ge(Hopp Offset 7.	39 GHz 49 GHz Ding) N\ 62 dB • R	-46.56 dBn -41.58 dBn /NT 2-DI 3W 100 kHz 3W 300 kHz	Mode A	uto FFT	Ant1 Hop		-8,35 dBn
M4 Spectrur Ref Level Att SGL Count 1Pk Max 20 dBm- 10 dBm- -10 dBm-	1 1 cand Edg 27.62 dBm 40 dB	2.3 2.3 ge(Hopp Offset 7.	39 GHz 49 GHz Ding) N\ 62 dB • R	-46.56 dBn -41.58 dBn /NT 2-DI 3W 100 kHz 3W 300 kHz	Mode A	uto FFT	Ant1 Hop		-8,35 dBn
M4 Spectrur Ref Level Att SGL Count IPk Max 20 dBm- 10 dBm- -10 dBm- -20 dBm-	1 1 cand Edg 27.62 dBm 40 dB	2.3 2.3 ge(Hopp Offset 7.	39 GHz 49 GHz Ding) N\ 62 dB • R	-46.56 dBn -41.58 dBn /NT 2-DI 3W 100 kHz 3W 300 kHz	Mode A	uto FFT	Ant1 Hop		-8,35 dBn
M4 Spectrur Ref Level Att SGL Count 10 dBm 10 dBm -10 dBm -20 dBm -30 dBm -40 dBm	1 1 cand Edg 27.62 dBm 40 dB	2.3 2.3 ge(Hopp Offset 7.	39 GHz 49 GHz Ding) N\ 62 dB • R	-46.56 dBn -41.58 dBn /NT 2-DI 3W 100 kHz 3W 300 kHz	Mode A	uto FFT	Ant1 Hop		-8,35 dBn
M4 Spectrur Ref Level Att SGL Count 10 dBm- 10 dBm- -10 dBm- -20 dBm- -30 dBm-	1 1 cand Edg 27.62 dBm 40 dB	2.3 2.3 ge(Hopp Offset 7.	39 GHz 49 GHz Ding) N\ 62 dB • R	-46.56 dBn -41.58 dBn /NT 2-DI 3W 100 kHz 3W 300 kHz	Mode A	uto FFT	Ant1 Hop		-8,35 dBn
M4 Spectrur Ref Level Att SGL Count 11k Max 20 dBm- 10 dBm- -10 dBm- -20 dBm- -30 dBm- -40 dBm-	1 1 cand Edg 27.62 dBm 40 dB	2.3 2.3 ge(Hopp Offset 7.	39 GHz 49 GHz Ding) N\ 62 dB • R	-46.56 dBn -41.58 dBn /NT 2-DI 3W 100 kHz 3W 300 kHz	Mode A	uto FFT	Ant1 Hop		-8,35 dBn

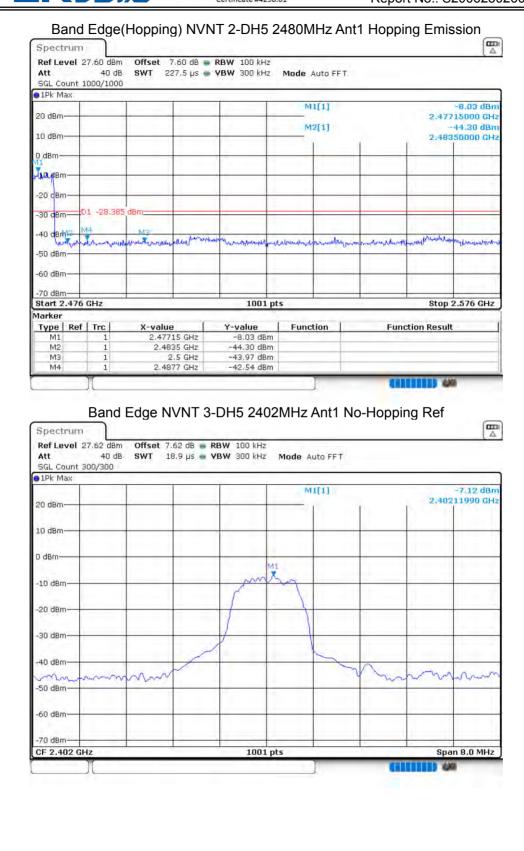


### Band Edge(Hopping) NVNT 2-DH5 2402MHz Ant1 Hopping Emission Spectrum Ref Level 27.62 dBm Offset 7.62 dB 🝙 RBW 100 kHz 40 dB SWT 227.5 µs 🖝 VBW 300 kHz Att Mode Auto FFT SGL Count 2000/2000 0 1Pk Max M1[1] 7.60 dBn 20 dBm-2.40585000 GHz -43.64 dBm 2.40000000 GHz M2[1] 10 dBm 0 dBm -10 dBm -20 dBm D1 -28.350 -30 dBm MAG 40 dBm man man . 3 chong Trans MAL AN An Miline -50 dBm -60 dBm -70 dBm-1001 pts Stop 2.406 GHz Start 2.306 GHz Marker 2.40585 GHz Y-value -7.60 dBm Function Function Result Type | Ref | Trc M1 1 M2 -43.64 dBm 2.4 GHz 1 MЗ 2.39 GHz -44.28 dBm 1 M4 1 2.3492 GHz -40.42 dBm Band Edge NVNT 2-DH5 2480MHz Ant1 No-Hopping Ref Spectrum Ref Level 27.60 dBm Offset 7.60 dB 👜 RBW 100 kHz 40 dB SWT 18.9 µs 💣 YBW 300 kHz Att Mode Auto FFT SGL Count 100/100 01Pk Max MI[1] -7.81 dBn 2.48005590 GHz 20 dBm 10 dBm 0 dBm 11 -10 dBm -20 dBm 30 dBm -40 dBm -50 dBm -60 dBm -70 dBm Span 8.0 MHz CF 2.48 GHz 1001 pts



	n		1.00.10						
Ref Level Att	27.60 dBm 40 dB			<b>RBW</b> 100 kHz <b>VBW</b> 300 kHz	Mode	Auto FET			
SGL Count			- 44 e		moue /	JACOTEL			
1Pk Max	C			1					-
20 dBm					M	1[1]		2.480	-8.75 dBm 015000 GHz
					M	2[1]			-46.29 dBm
10 dBm							1	2.483	350000 GHz
0 dBm				-				-	
-10 dBm									
									1
-20 cBm—	and a second							1	
-30 dBm	D1 -27,811	dBm		-					-
		MAS							
will monthly	water many	truthomanie	multiplesteer	nutmationshampalling	nterstations	and a supplication of the	typhydropolicity	and	un contractions
-50 dBm								1	11
-60 dBm								-	
-70 dBm									1.2.2.4
Start 2.47	6 GHz			1001 pt	s		-	Stop	2.576 GHz
1arker Type   Re	f   Tec	X-value		Y-value	Func	tion 1	Euro	tion Result	+
M1	1	2.480	15 GHz	-8.75 dBm	Func	GUI	Fuffi	aion Resul	
M2 M3	1		35 GHz	-46.29 dBm -46.43 dBm					
M4			10 0112						
	1	2.499	95 GHz	-44.05 dBm					
B		ge(Hopp	oing) N	VNT 2-DH	5 248	) 0MHz	Ant1 Ho	pping R	ef
B Spectrur Ref Level Att	and Edg	ge(Hopp offset 7.	Ding) N		÷		Ant1 Ho	pping R	(m)
B Spectrur Ref Level Att	and Edg	ge(Hopp offset 7.	Ding) N	VNT 2-DH	÷		Ant1 Ho	pping R	(m)
B Spectrur Ref Level Att SGL Count	and Edg	ge(Hopp offset 7.	Ding) N	VNT 2-DH	Mode A		Ant1 Ho	-	-8,39 dBm
B Spectrur Ref Level Att SGL Count	and Edg	ge(Hopp offset 7.	Ding) N	VNT 2-DH	Mode A	uto FFT	Ant1 Ho	-	
B Spectrur Ref Level Att SGL Count SGL Count 1Pk Max 20 dBm-	and Edg	ge(Hopp offset 7.	Ding) N	VNT 2-DH	Mode A	uto FFT	Ant1 Ho	-	-8,39 dBm
B Spectrur Ref Level Att SGL Count 1Pk Max	and Edg	ge(Hopp offset 7.	Ding) N	VNT 2-DH	Mode A	uto FFT	Ant1 Ho	-	-8,39 dBm
B Spectrur Ref Level Att SGL Count SGL Count 1Pk Max 20 dBm-	and Edg	ge(Hopp offset 7.	Ding) N	VNT 2-DH	Mode A	uto FFT	Ant1 Ho	-	-8,39 dBm
B Spectrur Ref Level Att SGL Count SGL Count JPk Max 20 dBm- 10 dBm-	and Edg	ge(Hopp offset 7.	Ding) N	VNT 2-DH	Mode A	uto FFT	Ant1 Ho	-	-8,39 dBm
B Spectrur Ref Level Att SGL Count SGL Count 1Pk Max 20 dBm- 10 dBm-	and Edg	offset 7. swT 10	Ding) N	VNT 2-DH	Mode A	uto FFT	Ant1 Ho	-	-8,39 dBm
B Spectrur Ref Level Att SGL Count 10 dBm 20 dBm 10 dBm 0 dBm 10 dBm	and Edg	offset 7. swT 10	Ding) N	VNT 2-DH	Mode A	uto FFT	Ant1 Ho	-	-8,39 dBm
B Spectrur Ref Level Att SGL Count 10 IPK Max 20 dBm 10 dBm 0 dBm 40 dBm 40 dBm	and Edg	offset 7. swT 10	Ding) N	VNT 2-DH	Mode A	uto FFT	Ant1 Ho	-	-8,39 dBm
B Spectrur Ref Level Att SGL Count 1Pk Max 20 dBm 10 dBm 0 dBm - 10 dBm - 20 dBm - 20 dBm - 20 dBm - 20 dBm - 20 dBm	and Edg	offset 7. swT 10	Ding) N	VNT 2-DH	Mode A	uto FFT	Ant1 Ho	-	-8,39 dBm
B Spectrur Ref Level Att SGL Count 10 HM Max 20 dBm	and Edg	offset 7. swT 10	Ding) N	VNT 2-DH	Mode A	uto FFT	Ant1 Ho	-	-8,39 dBm
B Spectrur Ref Level Att SGL Count 1Pk Max 20 dBm- 10 dBm- 10 dBm- -20 dBm- -20 dBm- -30 dBm-	and Edg	offset 7. swT 10	Ding) N	VNT 2-DH	Mode A	uto FFT	Ant1 Ho	-	-8,39 dBm
B Spectrur Ref Level Att SGL Count 1Pk Max 20 dBm- 10 dBm- 10 dBm- -20 dBm- -20 dBm- -30 dBm-	and Edg	offset 7. swT 10	Ding) N	VNT 2-DH	Mode A	uto FFT	Ant1 Ho	-	-8,39 dBm
B Spectrur Ref Level Att SGL Count 1Pk Max 20 dBm- 10 dBm- 10 dBm- -20 dBm- -20 dBm- -30 dBm- -40 dBm-	and Edg	offset 7. swT 10	Ding) N	VNT 2-DH	Mode A	uto FFT	Ant1 Ho	-	-8,39 dBm
B Spectrur Ref Level Att SGL Count 10 dBm	and Edg	offset 7. swT 10	Ding) N	VNT 2-DH	Mode A	uto FFT	Ant1 Ho	-	-8,39 dBm
B Spectrur Ref Level Att SGL Count 10 dBm 10 dBm 0 dBm 10 dBm -10 dBm -20 dBm -20 dBm	and Edg	offset 7. swT 10	Ding) N	VNT 2-DH	Mode A	uto FFT	Ant1 Ho	-	-8,39 dBm
B Spectrur Ref Level Att SGL Count 10 dBm 10 dBm 20 dBm 10 dBm 10 dBm -20 dBm -20 dBm -30 dBm -30 dBm -50 dBm -50 dBm	and Edg	offset 7. swT 10	Ding) N	VNT 2-DH	Mode A	uto FFT		-	-8,39 dBm
B Spectrur Ref Level Att SGL Count 10 dBm	and Edg 27.60 dBm 40 dB 1000/1000	offset 7. swT 10	Ding) N	VNT 2-DH	Mode A	uto FFT		2,47	-8,39 dBm







### Band Edge NVNT 3-DH5 2402MHz Ant1 No-Hopping Emission 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 100/100 1Pk Max M1[1] 7.34 dBn 20 dBm-2.40215000 GHz -45.32 dBm 2.4000000 GHz M2[1] 10 dBm 0 dBm -10 dBm -20 dBm -27.11 -30 dBm Ma 40 dBm or milled N. H. Andrew H. at the second where the France Martinally ALL MY AL mulasha all Unaatra his a -50 dBm -60 dBm -70 dBm-Stop 2.406 GHz Start 2.306 GHz 1001 pts Marker Y-value -7.34 dBm Function Function Result Type | Ref | Trc X-value 2.40215 GHz M1 1 M2 -45.32 dBm 2.4 GHz 1 MЗ 2.39 GHz -45.72 dBm 1 M4 1 2.3514 GHz -42.41 dBm Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref 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 01Pk Max MI[1] -7,09 dBm 2.40211990 GHz 20 dBm 10 dBm D 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 3-DH5 2402MHz Ant1 Hopping Emission Spectrum Ref Level 27.62 dBm Offset 7.62 dB 🝙 RBW 100 kHz 40 dB SWT 227.5 µs 💿 VBW 300 kHz Att Mode Auto FFT SGL Count 1000/1000 0 1Pk Max M1[1] 8.67 dBn 20 dBm 2.40415000 GHz -44.99 dBm 2.40000000 GHz M2[1] 10 dBm 0 dBm MI -10 dBm -20 dBm 27.0 -30 dBm-M 40 dBm within and herry morner to have adde mondal the to any with Jalanh ft. and they ber -50 dBm -60 dBm -70 dBm-Stop 2.406 GHz Start 2.306 GHz 1001 pts Marker Y-value -8.67 dBm Function Function Result Type | Ref | Trc X-value 2.40415 GHz M1 1 M2 -44.99 dBm 2.4 GHz 1 MЗ 2.39 GHz -44.91 dBm 1 M4 1 2.3413 GHz -41.21 dBm Band Edge NVNT 3-DH5 2480MHz Ant1 No-Hopping Ref Spectrum Ref Level 27.60 dBm Offset 7.60 dB 👜 RBW 100 kHz 40 dB SWT 18.9 µs 💣 YBW 300 kHz Att Mode Auto FFT SGL Count 100/100 01Pk Max MI[1] -7.84 dBn 2,47984820 GHz 20 dBm 10 dBm 0 dBm MI -10 dBm -20 dBm 30 dBm -40 dBm 5 -50 dBm -60 dBm -70 dBm-Span 8.0 MHz CF 2.48 GHz 1001 pts



Att SGL Count	27.60 dBm 40 dB 100/100			<b>RBW</b> 100 kH: <b>/BW</b> 300 kH:		Auto FFT.	_		
		1	1		N	11[1]		C. New	-7.76 dBm
20 dBm					N	12[1]			995000 GHz -46.92 dBm
10 dBm			1	1		1		2.48	350000 GHz
	-			-				-	
-10 Bm-							-		
-20 cBm							_		
-30 dBm	D1 -27,840	dBm							
		MAMA	1	1		1.1	1	1 - 1	1
-40 dBm	Marinewayla		the plane	munupulpring	whethereduter	when the state of	united when the second	www.unanthattanth	Mulatorational
-50 dBm									11
-60 dBm				1					
-70 dBm-						-			0.637.011
Start 2.476 Marker	GHZ			1001	pts	1		stop	2.576 GHz
Type   Ref		X-value		Y-value	Fund	tion	Func	tion Resul	t l
M1	1	2.4799 2.483	95 GHz 35 GHz	-7.76 dB -46.92 dB					
M2		0	5 GHz	-43.57 dB	m				
M2 M3 M4	1		9 GHz	-43.13 dB	m				
M3 M4 Ba Spectrum Ref Level Att	1 and Edg 27.60 dBm 40 dB	2.497 ge(Hopp offset 7.6	9 GHZ Ding) N\ 60 dB <b> RE</b>		H5 248	30MHz A	Int1 Hop	oping R	ef
M3 M4 Ba Spectrum Ref Level	1 and Edg 27.60 dBm 40 dB	2.497 ge(Hopp offset 7.6	9 GHZ Ding) N\ 60 dB <b> RE</b>	/NT 3-D BW 100 kHz	H5 248 Mode A	Auto FFT	nt1 Hop	oping R	
M3 M4 Spectrum Ref Level Att SGL Count	1 and Edg 27.60 dBm 40 dB	2.497 ge(Hopp offset 7.6	9 GHZ Ding) N\ 60 dB <b> RE</b>	/NT 3-D BW 100 kHz	H5 248 Mode A		Int1 Hop		m
M3 M4 Spectrum Ref Level Att SGL Count	1 and Edg 27.60 dBm 40 dB	2.497 ge(Hopp offset 7.6	9 GHZ Ding) N\ 60 dB <b> RE</b>	/NT 3-D BW 100 kHz	H5 248 Mode A	Auto FFT	Int1 Hop		-6,80 dBm
M3 M4 Spectrum Ref Level Att SGL Count	1 and Edg 27.60 dBm 40 dB	2.497 ge(Hopp offset 7.6	9 GHZ Ding) N\ 60 dB <b> RE</b>	/NT 3-D BW 100 kHz	H5 248 Mode A	Auto FFT	unt1 Hop		-6,80 dBm
M3 M4 Spectrum Ref Level Att SGL Count 1Pk Max 20 dBm- 10 dBm-	1 and Edg 27.60 dBm 40 dB	2.497 ge(Hopp offset 7.6	9 GHZ Ding) N\ 60 dB <b> RE</b>	/NT 3-D BW 100 kHz	H5 248 Mode A	Auto FFT	Int1 Hop		-6,80 dBm
M3 M4 Spectrum Ref Level Att SGL Count 1Pk Max 20 dBm-	1 and Edg 27.60 dBm 40 dB	2.497 ge(Hopp offset 7.6	9 GHZ Ding) N\ 60 dB <b> RE</b>	/NT 3-D BW 100 kHz	H5 248 Mode A	Auto FFT	Int1 Hop		-6,80 dBm
M3 M4 Spectrum Ref Level Att SGL Count 1Pk Max 20 dBm- 10 dBm-	and Edg 27.60 dBm 40 dB 1000/1000	2.497 ge(Hopp offset 7.6	9 GHZ Ding) N\ 60 dB <b> RE</b>	/NT 3-D BW 100 kHz	H5 248 Mode A	Auto FFT	unt1 Hop		-6,80 dBm
M3 M4 Spectrum Ref Level Att SGL Count 1Pk Max 20 dBm 10 dBm 0 dBm	and Edg 27.60 dBm 40 dB 1000/1000	2.497 ge(Hopp offset 7.6	9 GHZ Ding) N\ 60 dB <b> RE</b>	/NT 3-D BW 100 kHz	H5 248 Mode A	Auto FFT	unt1 Hop		-6,80 dBm
M3 M4 Spectrum Ref Level Att SGL Count 1Pk Max 20 dBm- 10 dBm- 0 dBm-	and Edg 27.60 dBm 40 dB 1000/1000	2.497 ge(Hopp offset 7.6	9 GHZ Ding) N\ 60 dB <b> RE</b>	/NT 3-D BW 100 kHz	H5 248 Mode A	Auto FFT	ant1 Hop		-6,80 dBm
M3 M4 Spectrum Ref Level Att SGL Count 1Pk Max 20 dBm 10 dBm 0 dBm	and Edg 27.60 dBm 40 dB 1000/1000	2.497 ge(Hopp offset 7.6	9 GHZ Ding) N\ 60 dB <b> RE</b>	/NT 3-D BW 100 kHz	H5 248 Mode A	Auto FFT	Int1 Hop		-6,80 dBm
M3 M4 Ba Spectrum Ref Level Att SGL Count I D dBm 10 dBm 0 dBm -20 dBm -20 dBm -30 dBm	and Edg 27.60 dBm 40 dB 1000/1000	2.497 ge(Hopp offset 7.6	9 GHZ Ding) N\ 60 dB <b> RE</b>	/NT 3-D BW 100 kHz	H5 248 Mode A	Auto FFT	unt1 Hop		-6,80 dBm
M3 M4 Spectrum Ref Level Att SGL Count 1Pk Max 20 dBm 10 dBm 10 dBm - 10 dBm - 20 dBm - 20 dBm	and Edg 27.60 dBm 40 dB 1000/1000	2.497 ge(Hopp offset 7.6	9 GHZ Ding) N\ 60 dB <b> RE</b>	/NT 3-D BW 100 kHz	H5 248 Mode A	Auto FFT	ant1 Hop		-6,80 dBm
M3 M4 B2 Spectrum Ref Level Att SGL Count 10 dBm 10 dBm 0 dBm -20 dBm -20 dBm -30 dBm -40 dBm	and Edg 27.60 dBm 40 dB 1000/1000	2.497 ge(Hopp offset 7.6	9 GHZ Ding) N\ 60 dB <b> RE</b>	/NT 3-D BW 100 kHz	H5 248 Mode A	Auto FFT	ant1 Hop		-6,80 dBm
M3 M4 Ba Spectrum Ref Level Att SGL Count I D dBm 10 dBm 0 dBm -20 dBm -20 dBm -30 dBm	and Edg 27.60 dBm 40 dB 1000/1000	2.497 ge(Hopp offset 7.6	9 GHZ Ding) N\ 60 dB <b> RE</b>	/NT 3-D BW 100 kHz	H5 248 Mode A	Auto FFT	ant1 Hop		-6,80 dBm
M3 M4 B2 Spectrum Ref Level Att SGL Count 10 dBm 10 dBm 0 dBm -20 dBm -20 dBm -30 dBm -40 dBm	and Edg 27.60 dBm 40 dB 1000/1000	2.497 ge(Hopp offset 7.6	9 GHZ Ding) N\ 60 dB <b> RE</b>	/NT 3-D BW 100 kHz	H5 248 Mode A	Auto FFT	ant1 Hop		-6,80 dBm
M3 M4 B2 Spectrum Ref Level Att SGL Count I Co	and Edg 27.60 dBm 40 dB 1000/1000	2.497 ge(Hopp offset 7.6	9 GHZ Ding) N\ 60 dB <b> RE</b>	/NT 3-D BW 100 kHz	H5 248 Mode A	Auto FFT	unt1 Hop		-6,80 dBm
M3 M4 B2 Spectrum Ref Level Att SGL Count I Co	1 and Edg 27.60 dBm 40 dB 1000/1000	2.497 ge(Hopp offset 7.6	9 GHZ Ding) N\ 60 dB <b> RE</b>	/NT 3-D BW 100 kHz	H5 248	Auto FFT	ant1 Hop	2.470	-6,80 dBm



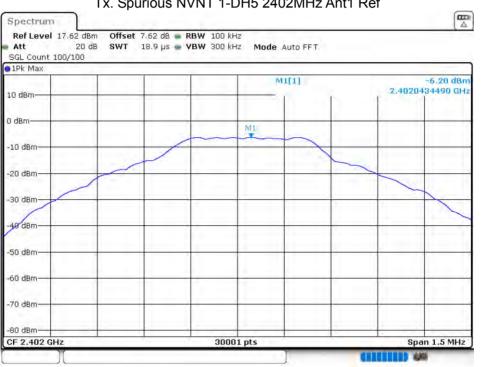
## Band Edge(Hopping) NVNT 3-DH5 2480MHz Ant1 Hopping Emission

Ref Level 2 Att	7.60 de 40		RBW 100 kHz VBW 300 kHz	Mode Auto FF1	3	
SGL Count 1			VEW SUD KH2	MOUE AULO FF I		
1Pk Max			-			
20 dBm				M1[1]		-7.78 dBr 2.47785000 GH
LO dBm				M2[1]	7	-44.15 dBr 2.48350000 GH
) dBm						
11						
CudBm						
20 c Bm			-			
30 oBm-0	1 -26,7	796 dBm	-			
Judom					1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	the second state of the se
40 dem		M943				marker 1
	to with how of	remarked providence	and the second second second	transformation and the second	partition to a partition of the second s	want a more frenching
50 dBm						
60 dBm			1			
do dom						
70 dBm						
Start 2.476	GHz		1001 pt	5		Stop 2.576 GHz
larker	1 A			Contract and		10.000
Type   Ref	Trc	X-value	Y-value	Function	Func	tion Result
M1	1	2.47785 GHz	-7.78 dBm			
M2	1	2.4835 GHz	-44.15 dBm			
M3	1	2.5 GHz	-44.58 dBm			
M4	1	2.4981 GHz	-42.55 dBm			



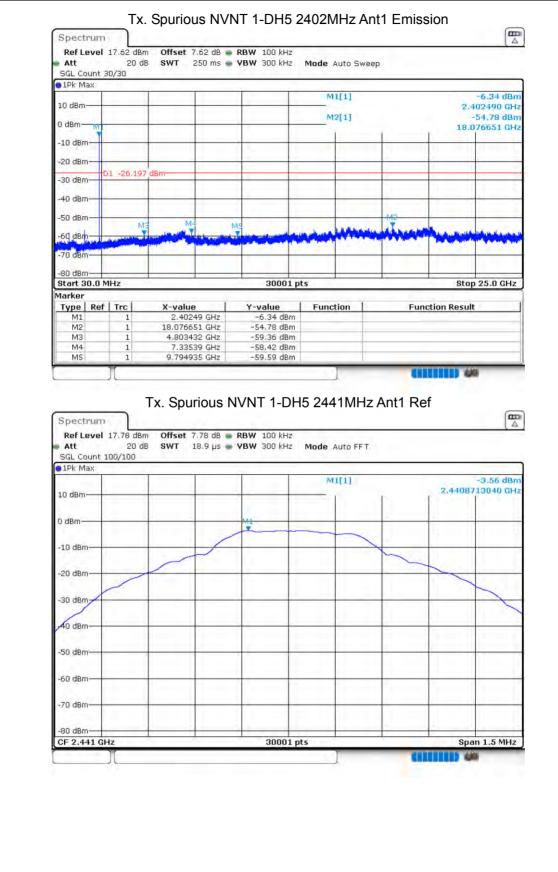
## 8.7 CONDUCTED RF SPURIOUS EMISSION

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant 1	-48.58	-20	Pass
NVNT	1-DH5	2441	Ant 1	-50.18	-20	Pass
NVNT	1-DH5	2480	Ant 1	-47.57	-20	Pass
NVNT	2-DH5	2402	Ant 1	-46.67	-20	Pass
NVNT	2-DH5	2441	Ant 1	-50.07	-20	Pass
NVNT	2-DH5	2480	Ant 1	-46.43	-20	Pass
NVNT	3-DH5	2402	Ant 1	-31.93	-20	Pass
NVNT	3-DH5	2441	Ant 1	-44.24	-20	Pass
NVNT	3-DH5	2480	Ant 1	-46.82	-20	Pass

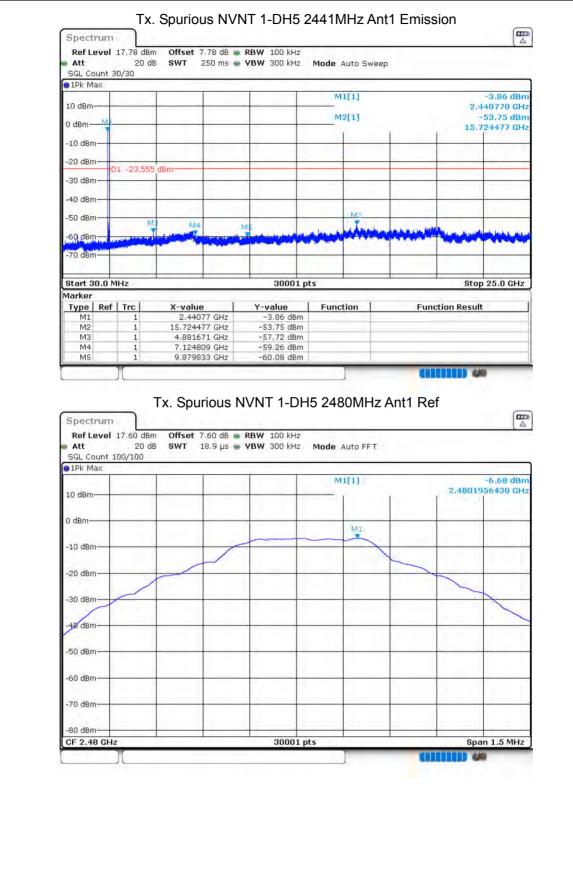


## Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref

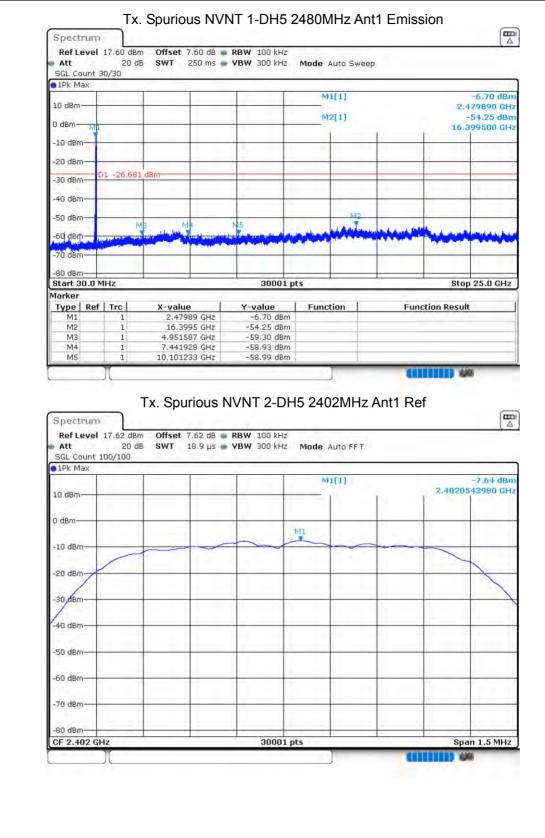




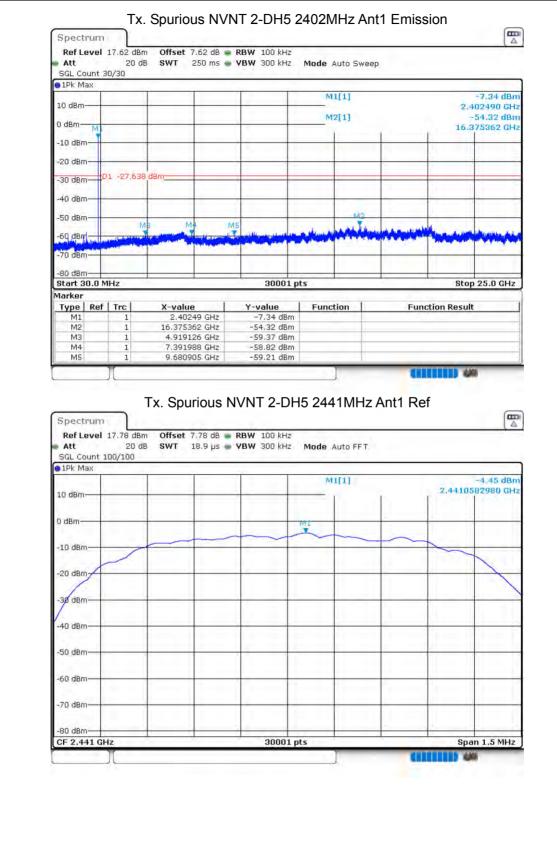




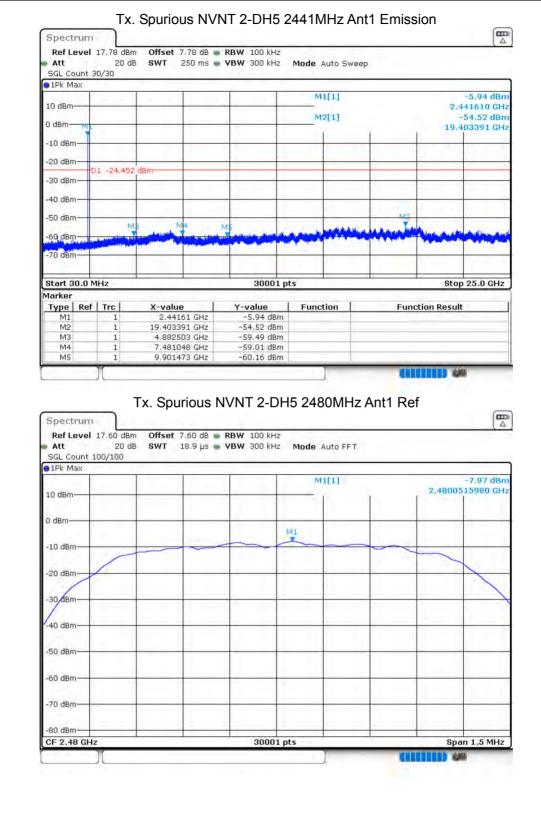




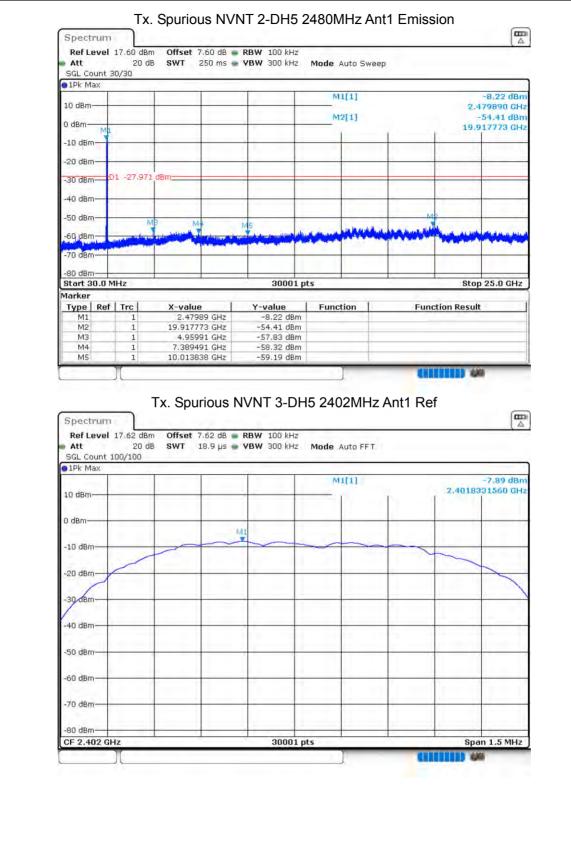




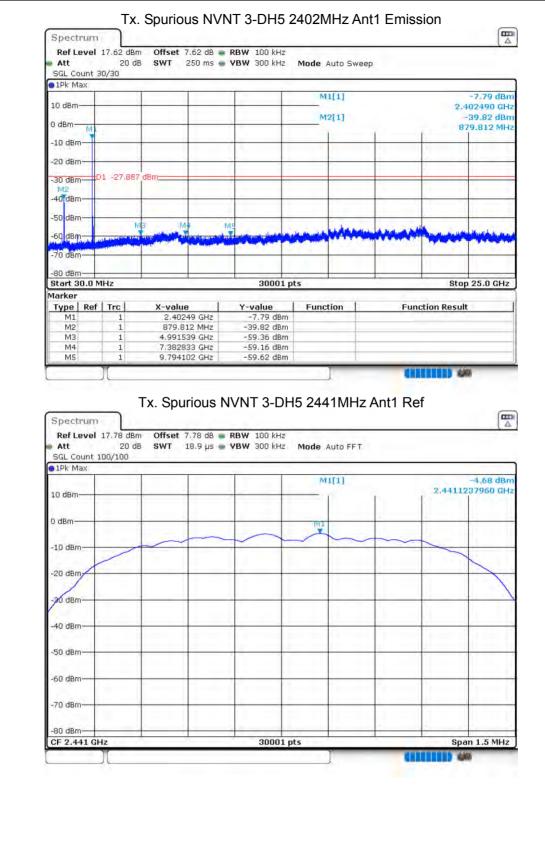




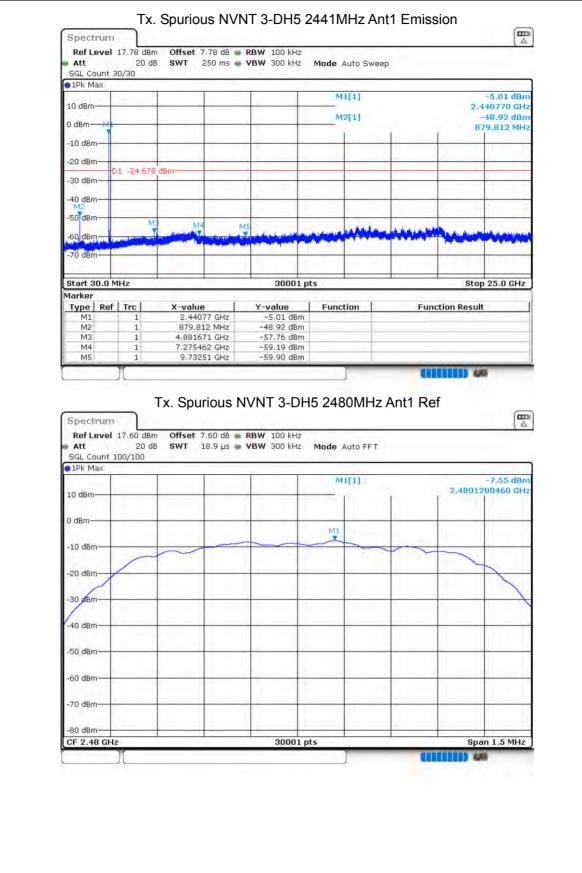




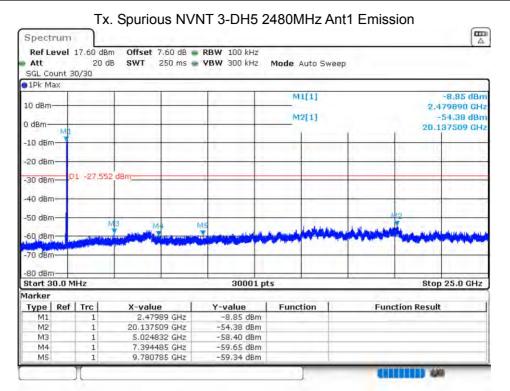












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