

# RADIO TEST REPORT FCC ID: ZSHX70

Product: Mobile Phone Trade Mark: KXD, EL, Kenxinda, E&L, Ken mobile Model No.: X70 Family Model: N/A Report No.: STR220209001001E Issue Date: Apr 08 . 2022

## **Prepared for**

SHENZHEN KENXINDA TECHNOLOGY CO.,LTD 18TH FLOOR, FUCHUN ORIENT BUILDING, SHENNAN AV 7006, SHENZHEN China

## Prepared by

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## 1 TEST RESULT CERTIFICATION

Applicant's name:	SHENZHEN KENXINDA TECHNOLOGY CO.,LTD
Address:	18TH FLOOR, FUCHUN ORIENT BUILDING, SHENNAN AV 7006, SHENZHEN China
Manufacturer's Name:	SHENZHEN KENXINDA TECHNOLOGY CO.,LTD
Address:	18TH FLOOR, FUCHUN ORIENT BUILDING, SHENNAN AV 7006, SHENZHEN China
Product description	
Test sample Number	T220209001R003
Product name:	Mobile Phone
Model and/or type reference:	X70
Family Model:	N/A

#### 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.

This report shall not be reproduced except in full, without the written approval of Shenzhen NTEK Testing Technology Co., Ltd., this document may be altered or revised by Shenzhen NTEK Testing Technology Co., Ltd., personnel only, and shall be noted in the revision of the document.

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

Date of Test

Testing Engineer

Authorized Signatory

(Alex Li)

Feb 09, 2022 ~ Apr 08, 2022

(Mukzi Lee)



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



## 4 GENERAL DESCRIPTION OF EUT

Product Feature and Specification		
Equipment	Mobile Phone	
Trade Mark	KXD, EL, Kenxinda, E&L, Ken mobile	
FCC ID	ZSHX70	
Model No.	X70	
Family Model	N/A	
Model Difference	N/A	
Operating Frequency	2402MHz~2480MHz	
Modulation	GFSK, π/4-DQPSK, 8-DPSK	
Number of Channels	79 Channels	
Antenna Type	PIFA Antenna	
Antenna Gain	0.6 dBi	
Power supply	DC 3.85V from battery or DC 5V from Adapter.	
Battery	DC 3.85V, 4000mAh, 15.4Wh	
Adapter	Model: CD-28 Input: AC 100-240V~50/60Hz 0.3A Output: DC 5V2A	
HW Version	S225_MB_V1.2	
SW Version	X70_mt6761_JZ_EL_V3.0_20220317	

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.



Revision History				
Report No. Version Description Issued Date				
STR220209001001E	Rev.01	Initial issue of report	Apr 08, 2022	

ACCREE

Certificate #4298.01

ED



## 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

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 AO according Operational Englishing on a testa day day and income starts and a second		

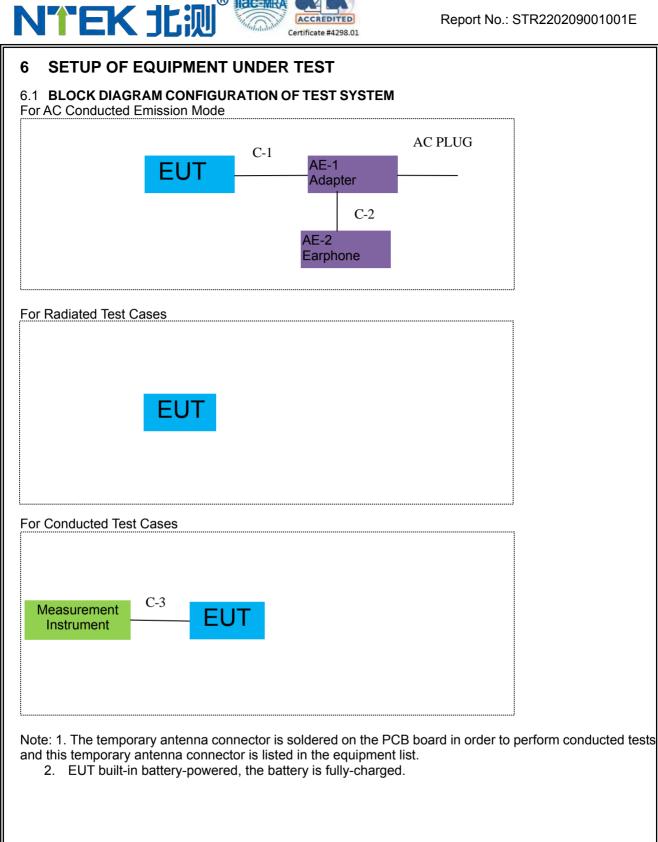
Note: AC power line Conducted Emission was tested under maximum output power.

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.



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## 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	CD-28	N/A	Peripherals
AE-2	Earphone	N/A	N/A	Peripherals

Item	Cable Type	Shielded Type	Ferrite Core	Length
C-1	USB Cable	NO	NO	1.0m
C-2	Earphone cable	NO	NO	1.2m
C-3	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

		estequipment					
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	2021.04.27	2022.04.26	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	2021.04.27	2022.04.26	1 year
8	Broadband Horn Antenna	SCHWARZBE CK	BBHA 9170	803	2021.11.07	2022.11.06	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	2021.11.07	2022.11.06	1 year
11	Power Meter	DARE	RPR3006W	15I00041SN O84	2021.11.07	2022.11.06	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	2021.11.07	2022.11.06	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)

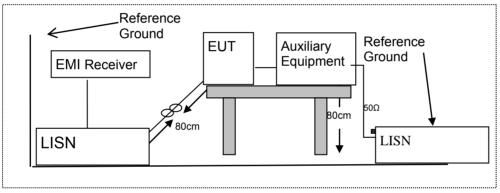
#### 7.1.2 Conformance Limit

	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

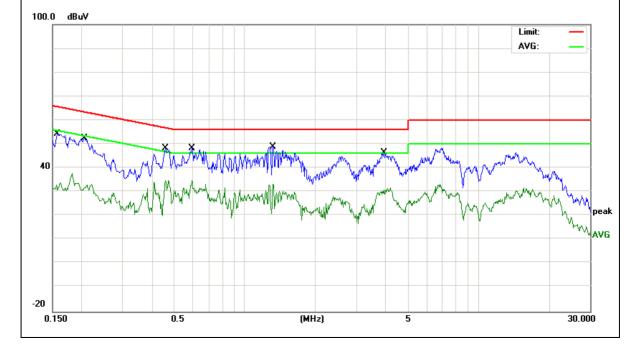
EUT:	Mobile Phone	Model Name :	X70
Temperature:	<b>22</b> ℃	Relative Humidity:	57%
Pressure:	1010hPa	Phase :	L
Test Voltage :	DC 5V from Adapter AC 120V/60Hz	Test Mode:	Mode 1

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	
(MHz)	(dBµV)	(dB)	(dBµV)	(dBµV)	(dB)	Remark
0.1554	44.45	9.72	54.17	65.70	-11.53	QP
0.1554	23.09	9.72	32.81	55.70	-22.89	AVG
0.2058	42.96	9.63	52.59	63.37	-10.78	QP
0.2058	22.28	9.63	31.91	53.37	-21.46	AVG
0.4580	38.52	9.64	48.16	56.73	-8.57	QP
0.4580	25.17	9.64	34.81	46.73	-11.92	AVG
0.5936	38.55	9.69	48.24	56.00	-7.76	QP
0.5936	25.07	9.69	34.76	46.00	-11.24	AVG
1.3220	39.03	9.75	48.78	56.00	-7.22	QP
1.3220	23.64	9.75	33.39	46.00	-12.61	AVG
3.9420	36.74	9.67	46.41	56.00	-9.59	QP
3.9420	21.17	9.67	30.84	46.00	-15.16	AVG

Remark:

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

2. Factor = Insertion Loss + Cable Loss.





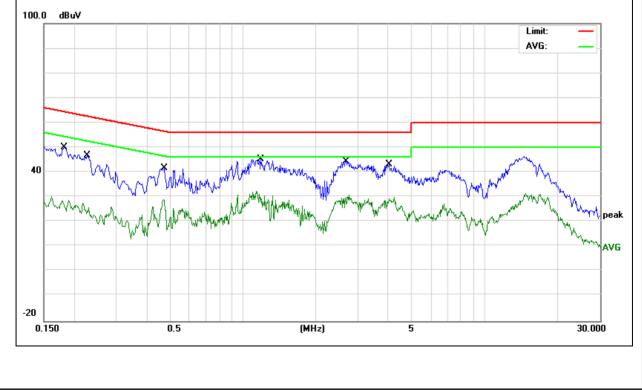
EUT:	Mobile Phone	Model Name :	X70
Temperature:	<b>25</b> ℃	Relative Humidity:	62%
Pressure:	1010hPa	Phase :	Ν
Test Voltage :	DC 5V from Adapter AC 120V/60Hz	Test Mode:	Mode 1

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	
Frequency	Reading Level		weasure-mem	LIIIIIIS	wargin	Remark
(MHz)	(dBµV)	(dB)	(dBµV)	(dBµV)	(dB)	
0.1796	40.54	9.63	50.17	64.50	-14.33	QP
0.1796	18.97	9.63	28.60	54.50	-25.90	AVG
0.2267	37.12	9.64	46.76	62.57	-15.81	QP
0.2267	15.97	9.64	25.61	52.57	-26.96	AVG
0.4737	31.92	9.73	41.65	56.45	-14.80	QP
0.4737	18.83	9.73	28.56	46.45	-17.89	AVG
1.1897	35.60	9.73	45.33	56.00	-10.67	QP
1.1897	20.00	9.73	29.73	46.00	-16.27	AVG
2.6739	34.76	9.69	44.45	56.00	-11.55	QP
2.6739	20.30	9.69	29.99	46.00	-16.01	AVG
4.0419	33.43	9.77	43.20	56.00	-12.80	QP
4.0419	19.60	9.77	29.37	46.00	-16.63	AVG

#### 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 FOC Fart15.20			
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)

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

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

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

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.

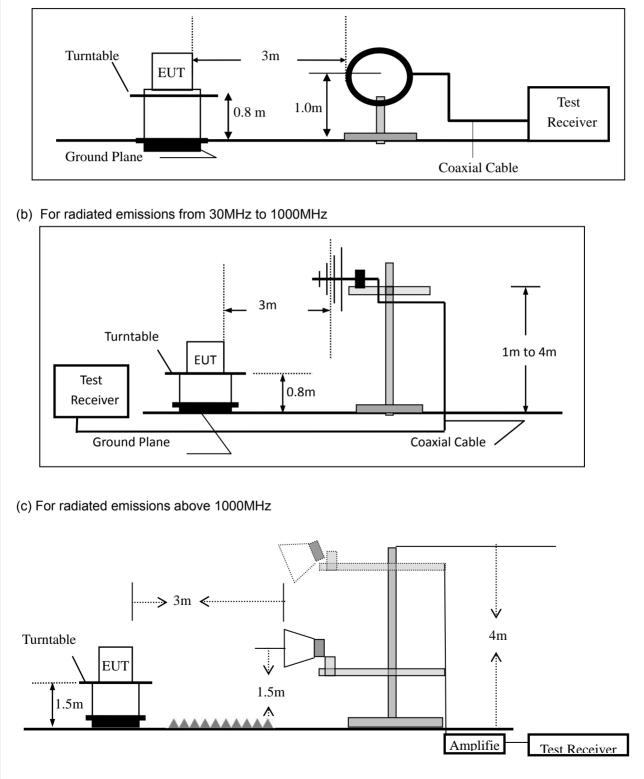


## 7.2.3 Measuring Instruments

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





#### 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:

<u> </u>						
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



ļ	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							
ſ	About 1000	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:	Mobile Phone	Model No.:	X70
Temperature:	<b>20</b> °C	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Mukzi Lee

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

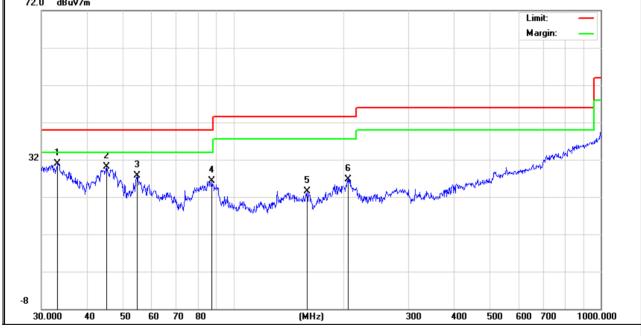
/ in the modulut	Air the modulation modes have been tested, and the worst result was report as below.									
EUT:	Mobile Phone	Model Name :	X70							
Temperature:	<b>25</b> ℃	Relative Humidity:	55%							
Pressure:	1010hPa	Test Mode:	Mode 1							
Test Voltage :	DC 3.85V									

Polar	Frequency	Meter Reading	Factor	Factor Emission Level		Margin	Remark
(H/V)	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	33.2111	9.04	21.95	30.99	40.00	-9.01	QP
V	45.0583	13.76	16.34	30.10	40.00	-9.90	QP
V	54.6428	13.33	14.35	27.68	40.00	-12.32	QP
V	87.4175	11.96	14.40	26.36	40.00	-13.64	QP
V	158.6673	6.54	17.05	23.59	43.50	-19.91	QP
V	204.9550	9.20	17.44	26.64	43.50	-16.86	QP

#### **Remark:**

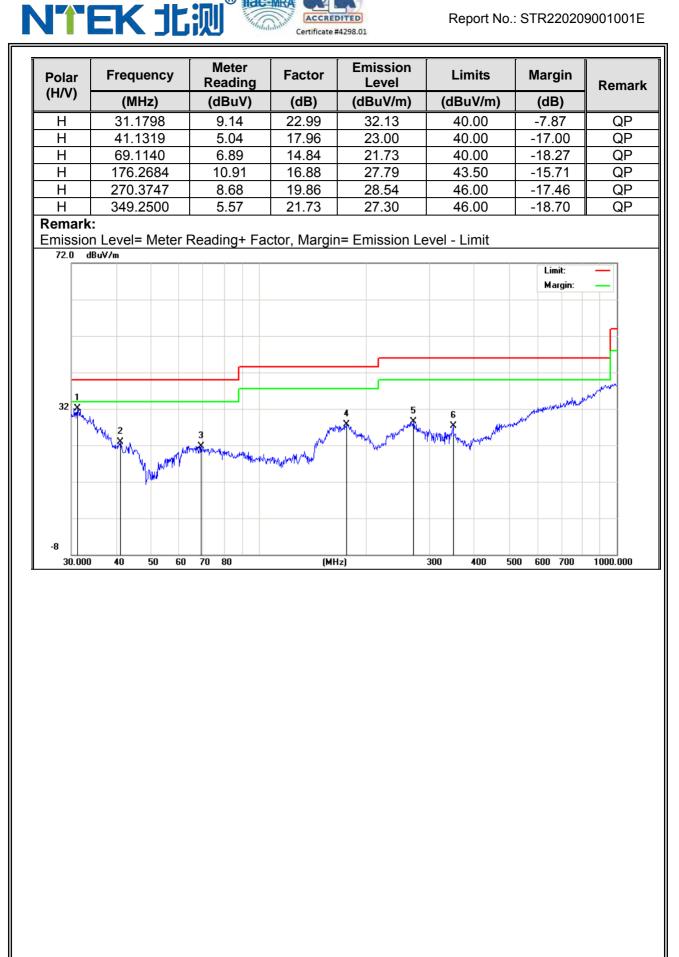
Emission Level= Meter Reading+ Factor, Margin= Emission Level - Limit

72.0 dBuV/m





® Hac-MR/





EUT:		obile Phon	GHz (1GH			z)   No.:		X70			
emperature		) °C						48%			
•		ode2/Mod	2/Mada4					4070 Mukzi			
Test Mode:					est E	,				<i>.</i> .	
	Read	Cable	Antenna	Prea		Emission				/.	
Frequency	Level	loss	Factor	Fac		Level	Li	mits	Margin	Remark	Commen
(MHz)	(dBµV)	(dB)	dB/m	(dE	B)	(dBµV/m)	(dB	µV/m)	(dB)		
		L	ow Channe.	el (2402	2 MH	z)(π/4-DQPS	6K)A	bove 1	G		
4804	68.39	5.21	35.59	44.3	30	64.89	74	4.00	-9.11	Pk	Vertical
4804	49.12	5.21	35.59	44.3	30	45.62	54	4.00	-8.38	AV	Vertical
7206	68.77	6.48	36.27	44.0	60	66.92	74	4.00	-7.08	Pk	Vertical
7206	45.77	6.48	36.27	44.0	60	43.92	54	4.00	-10.08	AV	Vertical
4804	69.63	5.21	35.55	44.3	30	66.09	74	4.00	-7.91	Pk	Horizonta
4804	48.08	5.21	35.55	44.3	30	44.54	54	4.00	-9.46	AV	Horizonta
7206	70.55	6.48	36.27	44.	52	68.78	74	4.00	-5.22	Pk	Horizonta
7206	47.3	6.48	36.27	44.	52	45.53	54	4.00	-8.47	AV	Horizonta
		N	/lid Channel	(2441	MHz	)( π/4-DQPS	SK)A	bove 1	G		-
4882	70.93	5.21	35.66	44.2	20	67.60	74	4.00	-6.40	Pk	Vertical
4882	46.72	5.21	35.66	44.2	20	43.39	54	4.00	-10.61	AV	Vertical
7323	70.22	7.10	36.50	44.4	43	69.39	74	4.00	-4.61	Pk	Vertical
7323	46.62	7.10	36.50	44.4	43	45.79	54	4.00	-8.21	AV	Vertical
4882	69	5.21	35.66	44.2	20	65.67	74	4.00	-8.33	Pk	Horizonta
4882	48.62	5.21	35.66	44.2	20	45.29	54	4.00	-8.71	AV	Horizonta
7323	69.83	7.10	36.50	44.4	43	69.00	74	4.00	-5.00	Pk	Horizonta
7323	49.1	7.10	36.50	44.4	43	48.27	54	4.00	-5.73	AV	Horizonta
		Н	igh Channel	l (2480	) MHz	z)( π/4-DQPS	SK)	Above <sup>·</sup>	1G		-
4960	69.12	5.21	35.52	44.2	21	65.64	74	4.00	-8.36	Pk	Vertical
4960	48.68	5.21	35.52	44.2	21	45.20	54	4.00	-8.80	AV	Vertical
7440	69.79	7.10	36.53	44.0	60	68.82	74	4.00	-5.18	Pk	Vertical
7440	48.87	7.10	36.53	44.0	60	47.90	54	4.00	-6.10	AV	Vertical
4960	68.62	5.21	35.52	44.2	21	65.14	74	4.00	-8.86	Pk	Horizonta
4960	50.81	5.21	35.52	44.2	21	47.33	54	4.00	-6.67	AV	Horizonta
7440	70.21	7.10	36.53	44.0	60	69.24	74	4.00	-4.76	Pk	Horizonta
7440	46.01	7.10	36.53	44.	60	45.04	54	4.00	-8.96	AV	Horizonta

Note:

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



	Spurious Emission in Restricted Band 2310-2390MHz and 2483.5-2500MHz  EUT: Mobile Phone Model No.: X70										
ΕL	JT:	Mobile Phone Model No.:									
Те	mperature:	<b>20</b> ℃			Rela	ive Humidit	y: 4	48%			
Те	st Mode:	Mode2/ M	ode4		Test	By:	N	/lukzi	i Lee		
A	II the modul	ation mode	es have	been teste	ed, and th	e worst res	ult was	repo	ort as be	low:	
	Frequency	Meter Reading	Cable Loss	Antenna Factor	Preamp Factor	Emission Level	Limit	s	Margin	Detector	Comment
	(MHz)	(dBµV)	(dB)	dB/m	(dB)	(dBµV/m)	(dBµV/	/m)	(dB)	Туре	
				2Mb	ps(π/4-DC	PSK)-Non-h	opping				
	2310.00	70.3	2.97	27.80	43.80	57.27	74		-16.73	Pk	Horizontal
	2310.00	49.93	2.97	27.80	43.80	36.90	54		-17.10	AV	Horizontal
	2310.00	68.04	2.97	27.80	43.80	55.01	74		-18.99	Pk	Vertical
	2310.00	45.06	2.97	27.80	43.80	32.03	54		-21.97	AV	Vertical
	2390.00	70.25	3.14	27.21	43.80	56.80	74		-17.20	Pk	Vertical
	2390.00	49.75	3.14	27.21	43.80	36.30	54		-17.70	AV	Vertical
	2390.00	69.3	3.14	27.21	43.80	55.85	74		-18.15	Pk	Horizontal
	2390.00	49.45	3.14	27.21	43.80	36.00	54		-18.00	AV	Horizontal
	2483.50	68.42	3.58	27.70	44.00	55.70	74		-18.30	Pk	Vertical
	2483.50	47.34	3.58	27.70	44.00	34.62	54		-19.38	AV	Vertical
	2483.50	70.84	3.58	27.70	44.00	58.12	74		-15.88	Pk	Horizontal
	2483.50	47.19	3.58	27.70	44.00	34.47	54		-19.53	AV	Horizontal
				21	/bps(π/4-l	DQPSK)-hop	ping				
	2310.00	70.19	2.97	27.80	43.80	57.16	74		-16.84	Pk	Horizontal
	2310.00	48.78	2.97	27.80	43.80	35.75	54		-18.25	AV	Horizontal
	2310.00	68.37	2.97	27.80	43.80	55.34	74		-18.66	Pk	Vertical
	2310.00	49.98	2.97	27.80	43.80	36.95	54		-17.05	AV	Vertical
	2390.00	70.65	3.14	27.21	43.80	57.20	74		-16.80	Pk	Vertical
	2390.00	50.54	3.14	27.21	43.80	37.09	54		-16.91	AV	Vertical
	2390.00	70.4	3.14	27.21	43.80	56.95	74		-17.05	Pk	Horizontal
	2390.00	49.13	3.14	27.21	43.80	35.68	54		-18.32	AV	Horizontal
	2483.50	69.16	3.58	27.70	44.00	56.44	74		-17.56	Pk	Vertical
	2483.50	48.97	3.58	27.70	44.00	36.25	54		-17.75	AV	Vertical
	2483.50	70.5	3.58	27.70	44.00	57.78	74		-16.22	Pk	Horizontal
	2483.50	48.66	3.58	27.70	44.00	35.94	54		-18.06	AV	Horizontal

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



Spurious E	Spurious Emission in Restricted Band 3260MHz-18000MHz										
EUT:	Г: Mobile Phone				Model No.: X70			X70	0		
Temperature:	20 °	C			Relat	ve Humidit	y:	48%			
Test Mode:	Mod	e2/ Mod	e4		Test I	Зу:		Mukzi	Lee		
All the modula	ation moc	les have	been teste	ed, a	and the	e worst resi	ult wa	is repo	ort as belo	ow:	
Frequency	Reading Level	Cable Loss	Antenna Factor		eamp actor	Emission Level	Lii	nits	Margin	Detector	Comment
(MHz)	(dBµV)	(dB)	dB/m	(	dB)	(dBµV/m)	(dB	uV/m)	(dB)	Туре	
3260	69.72	4.04	29.57	44	4.70	58.63		74	-15.37	Pk	Vertical
3260	49.81	4.04	29.57	44	4.70	38.72	į	54	-15.28	AV	Vertical
3260	69.74	4.04	29.57	44	4.70	58.65	7	74	-15.35	Pk	Horizontal
3260	46.8	4.04	29.57	44	4.70	35.71	ę	54	-18.29	AV	Horizontal
3332	70.75	4.26	29.87	44	4.40	60.48	7	74	-13.52	Pk	Vertical
3332	49.22	4.26	29.87	44	4.40	38.95	ę	54	-15.05	AV	Vertical
3332	68.54	4.26	29.87	44	4.40	58.27	7	74	-15.73	Pk	Horizontal
3332	48.72	4.26	29.87	44	4.40	38.45	ę	54	-15.55	AV	Horizontal
17797	53.05	10.99	43.95	43	3.50	64.49	7	74	-9.51	Pk	Vertical
17797	40.55	10.99	43.95	43	3.50	51.99	ę	54	-2.01	AV	Vertical
17788	54.01	11.81	43.69	44	4.60	64.91	-	74	-9.09	Pk	Horizontal
17788	38.39	11.81	43.69	44	4.60	49.29	Į	54	-4.71	AV	Horizontal

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  $\geq$  RBW Sweep = auto Detector function = peak Trace = max hold

#### 7.3.6 Test Results

EUT:	Mobile Phone	Model No.:	X70
Temperature:	<b>20</b> ℃	Relative Humidity:	48%
Test Mode:	Mode 5(1Mbps)	Test By:	Mukzi Lee



#### 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 30% 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:	Mobile Phone	Model No.:	X70
Temperature:	<b>20</b> °C	Relative Humidity:	X70 48% Mukzi Lee
Test Mode:	Mode2/Mode3/Mode4	Test By:	Mukzi Lee

### 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:	Mobile Phone	Model No.:	X70
Temperature:	<b>20</b> ℃	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Mukzi Lee

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:	Mobile Phone	Model No.:	X70
Temperature:	<b>20</b> ℃	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Mukzi Lee



## 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 dB bandwidth of the emission being measured

 $VBW \ge RBW$ 

Sweep = auto

Detector function = peak Trace = max hold

#### 7.7.6 Test Results

EUT:	Mobile Phone	Model No.:	X70
Temperature:	<b>20</b> ℃	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Mukzi Lee



#### 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:	Mobile Phone	Model No.:	X70
Temperature:	<b>20</b> °C	Relative Humidity:	48%
Test Mode:	Mode2 /Mode4/ Mode 5	Test By:	X70 48% Mukzi Lee



## 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 PIFA antenna (Gain: 0.6 dBi). It comply with the standard requirement.



#### 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 transmission sover 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.

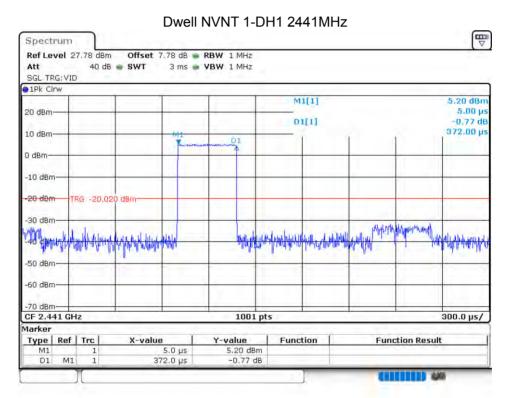
The system receiver have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals.



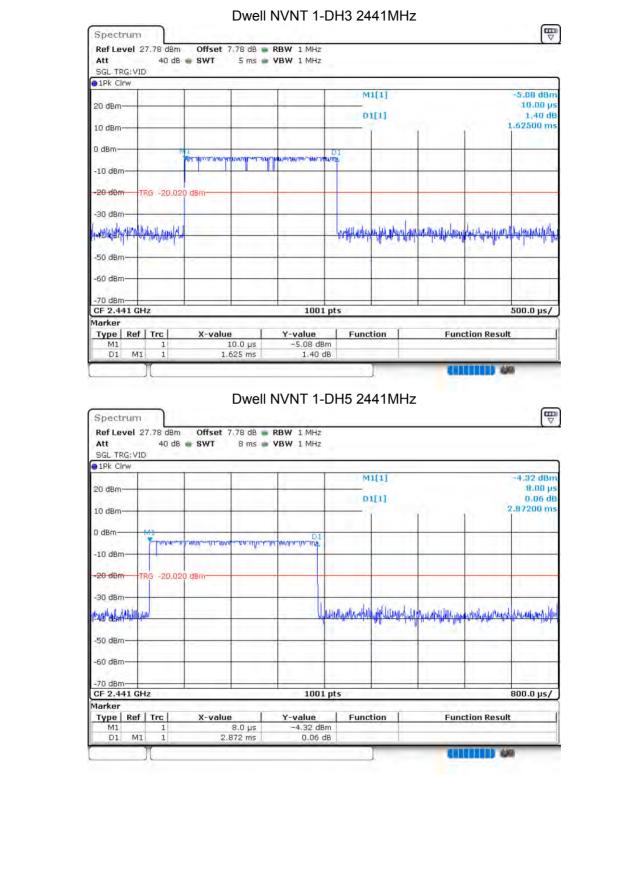
## 8 TEST RESULTS

#### 8.1 DWELL TIME

Condition Mod	Freque	Frequency	Pulse	Total Dwell	Period	Limit	Verdict
	Mode	Mode (MHz)	Time (ms)	Time (ms)	Time (ms)	(ms)	
NVNT	1-DH1	2441	0.372	119.04	31600	400	Pass
NVNT	1-DH3	2441	1.625	260	31600	400	Pass
NVNT	1-DH5	2441	2.872	306.347	31600	400	Pass
NVNT	2-DH1	2441	0.378	120.96	31600	400	Pass
NVNT	2-DH3	2441	1.63	260.8	31600	400	Pass
NVNT	2-DH5	2441	2.872	306.347	31600	400	Pass
NVNT	3-DH1	2441	0.381	121.92	31600	400	Pass
NVNT	3-DH3	2441	1.625	260	31600	400	Pass
NVNT	3-DH5	2441	2.88	307.2	31600	400	Pass









|--|--|

R

20 dBm					M	1[1]			-3.18 dBn
				-		1[1]			-133.00 µ -2.16 di
10 dBm				-		1	1 1		378.00 µ
D dBm	_	M1	10.0						
-10 dBm			Un properties	14	1				
	TRG -20.020	) dBm							
	180 -20,020	Juan							
-30 dBm	dia an	W. Vara W.L		daller	in the and the	Mailerin	Countr Matel	Bene Lado a	eader (Md)
month faith with	A District and a second second	Hupping		And a start of the	allally all the	Alar hall all all	Alexy and the second second	alling and a second	Ranning and
-50 dBm	·						-		1
-60 dBm				-			-		
-70 dBm-									000.5
CF 2.441 G Marker				1001	pts		_	2	300.0 µs/
Type   Ref	f   Trc	X-value		Y-value	Func	tion	Func	tion Result	
641		-17	12 D UE		20				
M1 D1 M	1		33.0 µs 78.0 µs	-3.18 dB -2.16 c		1	011		8
Spectrum Ref Level Att	1 1 1 27.78 dBm 40 dB	37 Offset 7	Dwell N		IB	] 41MHz	-		(T
D1 M Spectrum Ref Level	1 1 1 27.78 dBm 40 dB	37 Offset 7	Dwell N	-2.16 c	DH3 24		-		
Spectrum Ref Level Att SGL TRG:V	1 1 1 27.78 dBm 40 dB	37 Offset 7	Dwell N	-2.16 c	DH3 24	) 41MHz	-		-4.57 dBn
Spectrum Ref Level Att SGL TRG:V @1Pk Clrw 20 dBm-	1 1 1 27.78 dBm 40 dB	37 Offset 7	Dwell N	-2.16 c	DH3 24		-		-4.57 dBn 5.00 µ -2,04 dE 1.63000 m
D1 M Spectrum Ref Level Att SGL TRG: V 91Pk Clrw 20 dBm 10 dBm	1 1 1 27.78 dBm 40 dB	37 Offset 7	Dwell N	-2.16 c	DH3 24	1[1]		,	-4.57 dBn 5.00 µs -2,04 dB
Spectrum Ref Level Att SGL TRG:V @1Pk Clrw 20 dBm-	1 1 277.78 dBm 40 dB ID	Offset 7	78.0 μs Dwell Ν 5 ms • Ν	-2.16 c	DH3 24	1[1]			-4.57 dBn 5.00 µs -2,04 dB
Spectrum Ref Level Att SGL TRG: V IPk Clrw 20 dBm 10 dBm	1 1 277.78 dBm 40 dB ID	Offset 7	78.0 μs Dwell Ν 5 ms • Ν	-2.16 c	DH3 24	1[1]			-4.57 dBn 5.00 µs -2,04 dB
Spectrum Ref Level Att SGL TRG:V. PIPk Clrw 20 dBm 10 dBm -10 dBm	1 1 277.78 dBm 40 dB ID	37 Offset 7 ■ SWT	78.0 μs Dwell Ν 5 ms • Ν	-2.16 c	DH3 24	1[1]		,	-4.57 dBn 5.00 µs -2,04 dB
D1         M           Spectrum         Ref Level           Att         SGL TRG: V           ● 1Pk Clrw         20 dBm           10 dBm         0 dBm           -10 dBm         -20 dBm           -30 dBm         -30 dBm	1 1 1 27.78 dBm 40 dB ID	37 Offset 7 ■ SWT	78.0 μs Dwell Ν 5 ms • Ν	-2.16 c	DH3 24	1[1]			-4.57 dBn 5.00 µs -2,04 dB
D1         M           Spectrum         Ref Level           Att         SGL TRG: V           ● 1Pk Clrw         20 dBm           10 dBm         0 dBm           -10 dBm         -20 dBm           -30 dBm         -30 dBm	1 1 1 27.78 dBm 40 dB ID	37 Offset 7 ■ SWT	78.0 μs Dwell Ν 5 ms • Ν	-2.16 c	DH3 24	1[1]			-4.57 dBn 5.00 µ -2.04 dE 1.63000 m
D1 M Spectrum Ref Level Att SGL TRG: V 10 dBm 10 dBm -10 dBm -20 dBm -30 dBm	1 1 1 27.78 dBm 40 dB ID	37 Offset 7 ■ SWT	78.0 μs Dwell Ν 5 ms • Ν	-2.16 c	DH3 24	1[1]			-4.57 dBn 5.00 µ -2.04 dE 1.63000 m
D1 M Spectrum Ref Level Att SGL TRG: V PIPK Clrw 20 dBm 10 dBm -10 dBm -20 dBm -30 dBm -30 dBm -50 dBm	1 1 1 27.78 dBm 40 dB ID	37 Offset 7 ■ SWT	78.0 μs Dwell Ν 5 ms • Ν	-2.16 c	DH3 24	1[1]			-4.57 dBn 5.00 µ -2.04 dE 1.63000 m
D1         M           Spectrum         Ref Level           Att         SGL TRG: V           SGL TRG: V         1Pk Clrw           20 dBm         10 dBm           10 dBm         -           -10 dBm         -           -30 dBm         -           -50 dBm         -           -60 dBm         -	1 1 1 27.78 dBm 40 dB ID TRG -20,020	37 Offset 7 ■ SWT	78.0 μs Dwell Ν 5 ms • Ν	-2.16 c	DH3 24	1[1]			-4.57 dBn 5.00 µ -2.04 dE 1.63000 m
D1 M Spectrum Ref Level Att SGL TRG:V 1Pk Clrw 20 dBm 10 dBm -10 dBm -20 dBm -30 dBm -30 dBm -50 dBm	1 1 1 27.78 dBm 40 dB 10 TRG -20,020	37 Offset 7 ■ SWT	78.0 μs Dwell Ν 5 ms • Ν	-2.16 c	DH3 24	1[1]		al for the state of the state o	-4.57 dBn 5.00 µ -2.04 dE 1.63000 m
D1         M           Spectrum         Ref Level           Att         SGL TRG: V.           SGL TRG: V.         1Pk Clrw           20 dBm         10 dBm           10 dBm         -           -10 dBm         -           -30 dBm         -           -50 dBm         -           -60 dBm         -           -70 dBm         CF 2.441 G           Marker         -	1 1 1 1 27.78 dBm 40 dB ID 1 1 1 1 1 1 1 1 1 1 1 1 1	37 Offset 7 SWT	78.0 µs	-2.16 c	DH3 24			alla the second of the	-4.57 dBn 5.00 µ -2,04 dE 63000 m 63000 m
D1         M           Spectrum         Ref Level           Att         SGL TRG: V           SGL TRG: V         IPk Clrw           20 dBm         10 dBm           10 dBm         -           -10 dBm         -           -30 dBm         -           -50 dBm         -           -60 dBm         -           -70 dBm         -           -60 dBm         -           -70 dBm         - <t< td=""><td>1 1 1 1 27.78 dBm 40 dB ID TRG -20,020 TRG -20,020 TRG -20,020 TRG -1</td><td>37 Offset 7 SWT</td><td>78.0 µs</td><td>-2.16 c</td><td>DH3 24</td><td>1[1] u[1]</td><td></td><td>al for the state of the state o</td><td>-4.57 dBn 5.00 µ -2,04 dE 63000 m 63000 m</td></t<>	1 1 1 1 27.78 dBm 40 dB ID TRG -20,020 TRG -20,020 TRG -20,020 TRG -1	37 Offset 7 SWT	78.0 µs	-2.16 c	DH3 24	1[1] u[1]		al for the state of the state o	-4.57 dBn 5.00 µ -2,04 dE 63000 m 63000 m
D1         M           Spectrum         Ref Level           Att         SGL TRG: V           9 D8 Chrw         10 dBm           10 dBm         10 dBm           -10 dBm         -30 dBm           -30 dBm         -30 dBm           -50 dBm         -50 dBm           -70 dBm         CF 2.441 G           Marker         Type	1 1 1 1 27.78 dBm 40 dB ID TRG -20,020 TRG -20,020 TRG -20,020 TRG -1	37 Offset 7 SWT	'8.0 µs Dwell N 5 ms • N 	-2.16 c	DH3 24	1[1] u[1]	func	alla the second of the	-4.57 dBn 5.00 µ -2.04 dt 1.63000 m





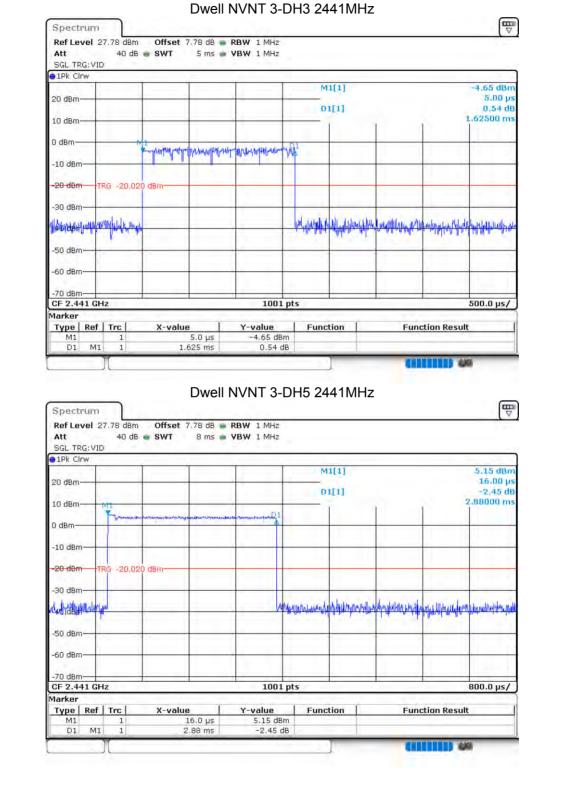
SGL TRG: VID 1Pk Clrw					
20 dBm-			M1[1]		-4.02 dBn 16.00 µ
			01[1]		0.12 dt
10 dBm-			1 1	1	2.87200 m
D dBm	pushikal alipa spinika munipaka	avina wrander 1			
-10 dBm	a second s		_		
-20 dBm TRG -20,020 dBr	n				
-30 dBm		Unitaria	alia man ana an	the state of the state	main to a serie of the series
and a second and a s		achillith helper a	and the shift of the second of the second states of the second	Unor a Well And	anthe national stands and the strategy of stiller.
-50 dBm-			-		
-60 dBm					
-70 dBm					
CF 2.441 GHz		1001 pts		36	800.0 µs/
Marker Type Ref Trc >	(-value	Y-value   Fu	unction	Functi	on Result
M1 1	16.0 μs 2.872 ms	-4.02 dBm 0.12 dB			
D1 M1 1		OTTE NO			
Spectrum Ref Level 27.78 dBm C		√NT 3-DH1 2 ₩ 1 MH2	2441MHz	CHI	<b>) &amp;</b> 
Spectrum Ref Level 27.78 dBm C Att 40 dB S SGL TRG: VID	Dwell N	W 1 MHz	2441MHz	CARC	<b>₩</b>
Spectrum Ref Level 27.78 dBm C Att 40 dB s	Dwell N	W 1 MHz	2441MHz		5.28 dBn
Spectrum Ref Level 27.78 dBm C Att 40 dB S SGL TRG: VID	Dwell N	W 1 MHz	M1[1]		5.28 dBn 5.00 p
Spectrum Ref Level 27.78 dBm C Att 40 dB S SGL TRG: VID	Dwell N Dffset 7.78 dB R WT 3 ms VB	W 1 MHz 1 MHz			5.28 dBn
Spectrum Ref Level 27.78 dBm C Att 40 dB S SGL TRG: VID PIPk Clrw 20 dBm	Dwell N Dffset 7.78 dB R WT 3 ms VB	W 1 MHz	M1[1]		5.28 dBn 5.00 p -2,45 di
Spectrum Ref Level 27.78 dBm C Att 40 dB S SGL TRG: VID 1Pk Clrw 20 dBm 10 dBm	Dwell N Dffset 7.78 dB R WT 3 ms VB	W 1 MHz 1 MHz	M1[1]		5.28 dBn 5.00 p -2,45 di
Spectrum           Ref Level 27.78 dBm           Att         40 dB           SGL TRG:VID           IPk Cirw           20 dBm           10 dBm           -10 dBm	Dwell NV	W 1 MHz 1 MHz	M1[1]		5.28 dBn 5.00 p -2,45 di
Spectrum           Ref Level 27.78 dBm           Att           40 dB           SGL TRG: VID           ●1Pk Clrw           20 dBm           10 dBm           -10 dBm           -20 dBm           TRG -20,020 dBr	Dwell NV	W 1 MHz 1 MHz	M1[1]		5.28 dBn 5.00 p -2,45 di
Spectrum Ref Level 27.78 dBm C Att 40 dB S SGL TRG: VID 1Pk Clrw 20 dBm 10 dBm -10 dBm -20 dBm -20 dBm -20 dBm -20 dBm	Dwell NV	W 1 MHz 1 MHz	M1[1] D1[1]		5.28 dBn 5.00 µ -2,45 dt 381.00 µ
Spectrum           Ref Level 27.78 dBm           Att           40 dB           SGL TRG: VID           ●1Pk Clrw           20 dBm           10 dBm           -10 dBm           -20 dBm           TRG -20,020 dBr	Dwell NV	W 1 MHz 1 MHz	M1[1] D1[1]		5.28 dBn 5.00 p -2,45 di
Spectrum           Ref Level 27.78 dBm           Att         40 dB           SGL TRG: VID           IPR Clrw           20 dBm           10 dBm           -10 dBm           -20 dBm           -30 dBm	Dwell NV	W 1 MHz 1 MHz	M1[1] D1[1]		5.28 dBn 5.00 µ -2,45 dt 381.00 µ
Spectrum Ref Level 27.78 dBm C Att 40 dB S SGL TRG: VID 1Pk Clrw 20 dBm 10 dBm -10 dBm -20 dBm -30 dBm -30 dBm -30 dBm -30 dBm	Dwell NV	W 1 MHz 1 MHz	M1[1] D1[1]	and a second sec	5.28 dBn 5.00 µ -2,45 dt 381.00 µ
Spectrum           Ref Level 27.78 dBm         C           Att         40 dB         S           SGL TRG:VID         •         P           • IPk Cirw         20 dBm         •         P           10 dBm         •         P         P           -10 dBm         •         P         P           -30 dBm         •         •         P           -50 dBm         •         •         •         P	Dwell NV	W 1 MHz 1 MHz	M1[1] D1[1]	A A A A A A A A A A A A A A A A A A A	5.28 dBn 5.00 µ -2,45 dt 381.00 µ
Spectrum  Ref Level 27.78 dBm C  Att 40 dB S  SGL TRG: VID  ID dBm  D dBm  -10 dBm  -20 dBm  -20 dBm  -30 dBm  -50 dBm  -60 dBm  -70 dBm -	Dwell NV	W 1 MHz 1 MHz	M1[1] D1[1]		5.28 dBn 5.00 µ -2,45 dt 381.00 µ
Spectrum           Ref Level 27.78 dBm           Att         40 dB           SGL TRG: VID           IPR Cirw           20 dBm           10 dBm           -10 dBm           -20 dBm           -30 dBm           -50 dBm           -60 dBm           -70 dBm           CF 2.441 GHz	Dwell NV	W 1 MHz W 1 MHz	M1[1] D1[1]		5.28 dBn 5.00 µ -2.45 dt 381.00 µ
Spectrum           Ref Level 27.78 dBm           Att         40 dB           SGL TRG: VID           IPR Cirw           20 dBm           10 dBm           -10 dBm           -20 dBm           -30 dBm           -50 dBm           -60 dBm           -70 dBm           CF 2.441 GHz	Dwell NV	W 1 MHz 1 MHz			5.28 dBn 5.00 µ -2.45 db 381.00 µ 

ACCREDITED

Certificate #4298.01

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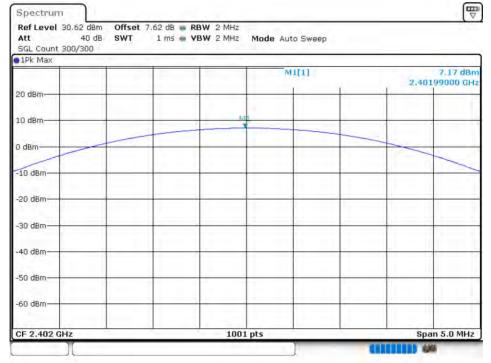


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## 8.2 MAXIMUM CONDUCTED OUTPUT POWER

0.2 10.00						
Condition	Mode	Frequency (MHz)	Antenna	Power (dBm)	Limit (dBm)	Verdict
NVNT	1-DH5	2402	Ant 1	7.168	30	Pass
NVNT	1-DH5	2441	Ant 1	5.351	30	Pass
NVNT	1-DH5	2480	Ant 1	6.873	30	Pass
NVNT	2-DH5	2402	Ant 1	7.203	21	Pass
NVNT	2-DH5	2441	Ant 1	5.228	21	Pass
NVNT	2-DH5	2480	Ant 1	6.932	21	Pass
NVNT	3-DH5	2402	Ant 1	7.203	21	Pass
NVNT	3-DH5	2441	Ant 1	5.224	21	Pass
NVNT	3-DH5	2480	Ant 1	6.928	21	Pass

#### Power NVNT 1-DH5 2402MHz Ant1





















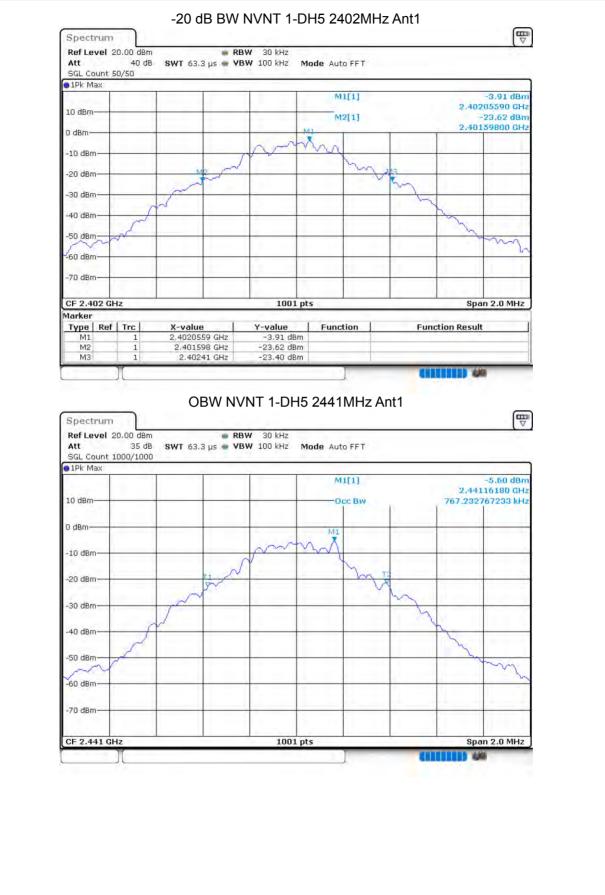
# 8.3 OCCUPIED CHANNEL BANDWIDTH

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)	-20 dB Bandwidth (MHz)	Verdict
NVNT	1-DH5	2402	Ant 1	0.7772	0.812	Pass
NVNT	1-DH5	2441	Ant 1	0.7672	0.862	Pass
NVNT	1-DH5	2480	Ant 1	0.7592	0.814	Pass
NVNT	2-DH5	2402	Ant 1	1.1568	1.274	Pass
NVNT	2-DH5	2441	Ant 1	1.1548	1.272	Pass
NVNT	2-DH5	2480	Ant 1	1.1628	1.272	Pass
NVNT	3-DH5	2402	Ant 1	1.1608	1.274	Pass
NVNT	3-DH5	2441	Ant 1	1.1668	1.292	Pass
NVNT	3-DH5	2480	Ant 1	1.1608	1.27	Pass

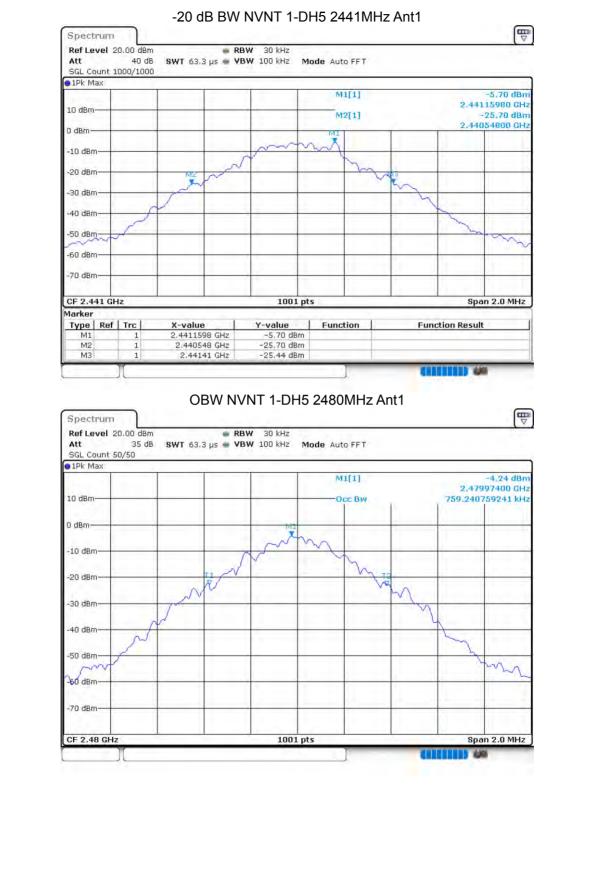
#### OBW NVNT 1-DH5 2402MHz Ant1















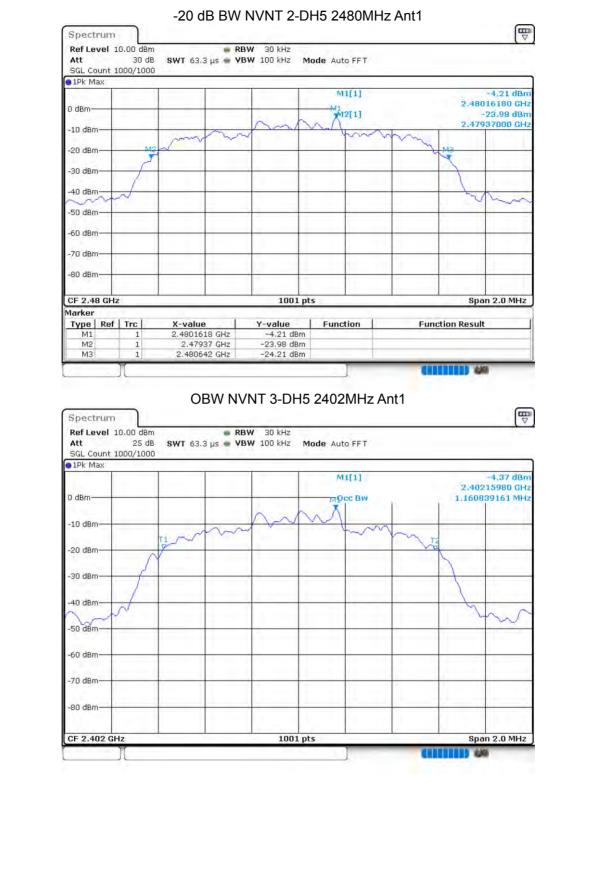








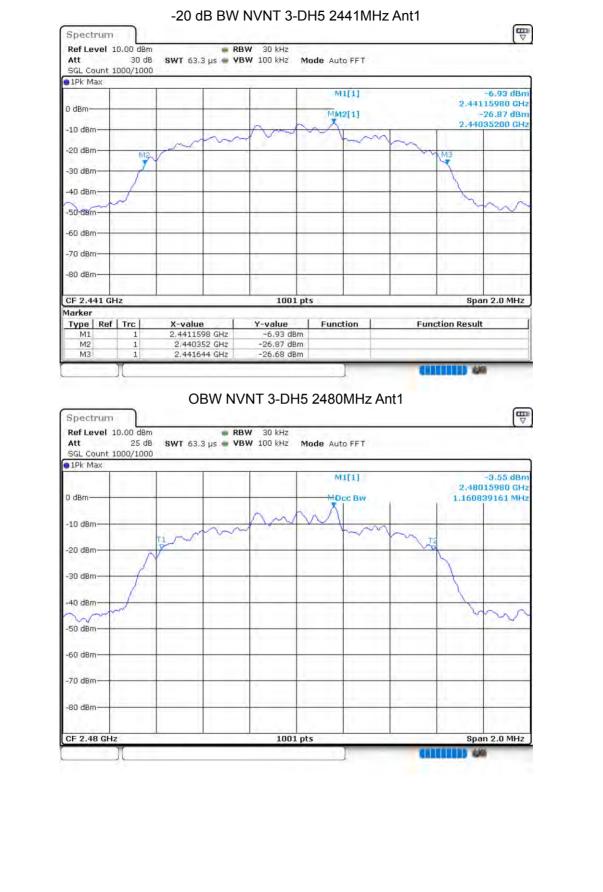




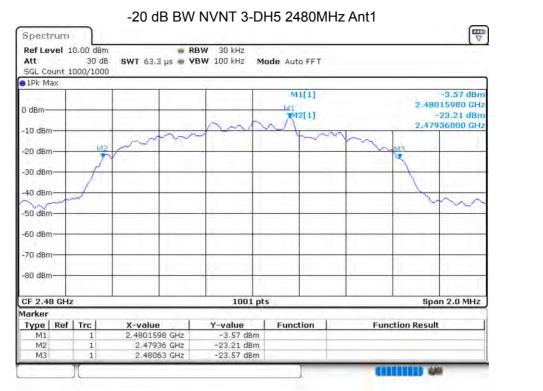








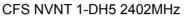


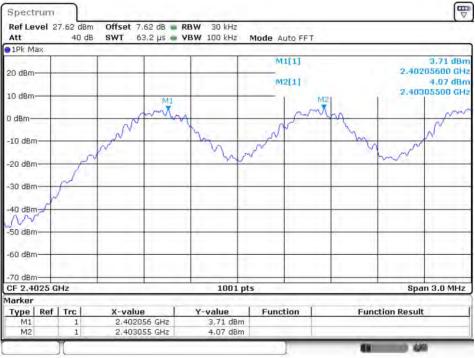




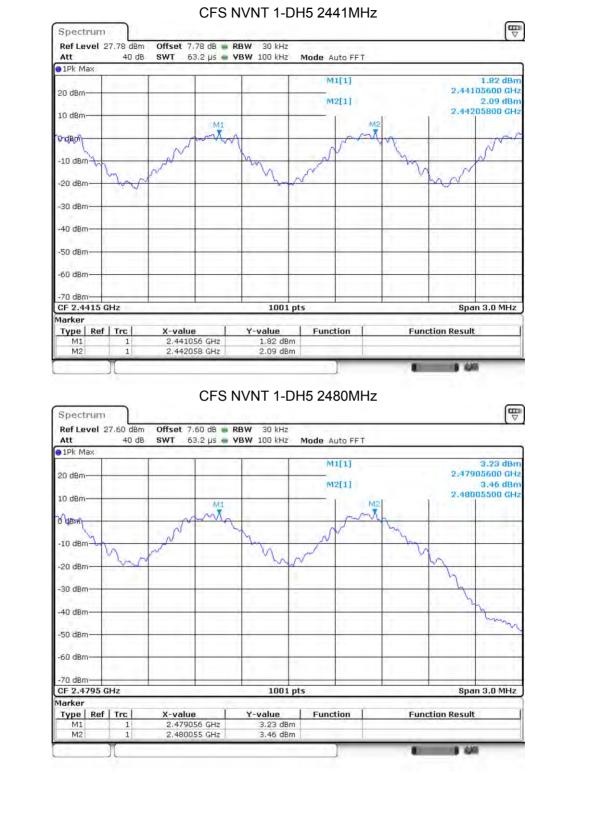
## 8.4 CARRIER FREQUENCIES SEPARATION

0							
	Condition	Mode	Hopping Freq1	Hopping Freq2	HFS	Limit	Verdict
			(MHz)	(MHz)	(MHz)	(MHz)	
	NVNT	1-DH5	2402.056	2403.055	0.999	0.812	Pass
	NVNT	1-DH5	2441.056	2442.058	1.002	0.862	Pass
	NVNT	1-DH5	2479.056	2480.055	0.999	0.814	Pass
	NVNT	2-DH5	2402.02	2403.022	1.002	0.849	Pass
	NVNT	2-DH5	2441.161	2442.163	1.002	0.848	Pass
	NVNT	2-DH5	2479.161	2480.163	1.002	0.848	Pass
	NVNT	3-DH5	2402.161	2403.163	1.002	0.849	Pass
	NVNT	3-DH5	2441.011	2442.013	1.002	0.861	Pass
	NVNT	3-DH5	2479.161	2480.16	0.999	0.847	Pass

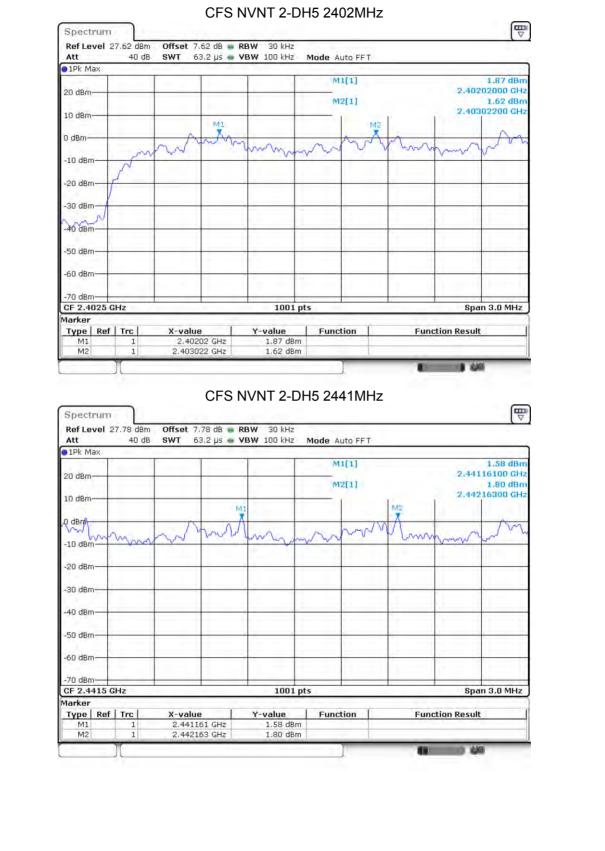








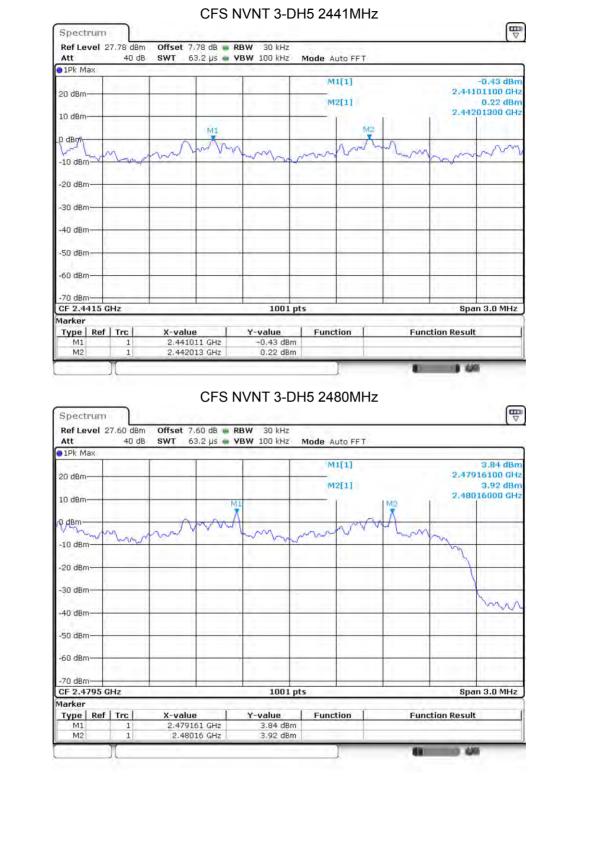














YNT       1-DH5       79       15       Pass         Hopping No. NVNT 1-DH5 2402MHz         Spectrum         Ref Level 27.62 dim offset 7.62 dim e REW 100 Hz         Spectrum         Not dim offset 7.62 dim e REW 100 Hz         Spectrum         Offset 7.62 dim offset 7.62 dim e REW 100 Hz         Offset 7.62 dim offset 7.62 dim e REW 100 Hz         Offset 7.62 dim offset 7.62 dim e REW 100 Hz         Offset 7.62 dim offset 7.62 dim e REW 100 Hz         Offset 7.62 dim offset 7.62 dim e REW 100 Hz         Offset 7.62 dim offset 7.62 dim e REW 100 Hz         Offset 7.62 dim offset 7.62 dim e REW 100 Hz         Offset 7.62 dim offset 7.62 dim e REW 100 Hz         Offset 7.62 dim offset 7.62 dim e REW 100 Hz         Offset 7.62 dim offset 7.62 dim e REW 100 Hz         Offset 7.62 dim offset 7.62 dim e REW 100 Hz         Offset 7.62 dim off	Hopping No. NVNT 1-DH5 2402MHz         Spectrum         Ref Level 27.62 dbm Offset 7.62 db RBW 100 kHz         Att 40 db SWT 1 ms VBW 300 kHz         SGL Count 7000/7000         IPK Max         20 dBm         10 dBm         10 dBm         10 dBm         10 dBm         20 dBm         0 dBm         10 dBm         10 dBm         10 dBm         10 dBm         20 dBm         10 dBm         10 dBm         10 dBm         10 dBm         20 dBm         10 dBm         100 lpts         Stop 2.4835 GHz         100 lpts         Stop 2.4835 GHz         101 lpts         Stop 2.4835 GHz         101 lpts         Stop 2.4835 GHz	Hopping No. NVNT 1-DH5 2402MHz         Spectrum         Ref Level 27.62 dBm       Offset 7.52 dB       RBW 100 kHz         Att       40 dB       SWT       1 ms       VBW 300 kHz       Mode Auto Sweep         GL Count 7000/7000         I 1 k Max       M1[1]       0.4019205 GHz       6.39 dBm         20 dBm       2.4002439(GHz       6.39 dBm       2.4002439(GHz         100 dBm       M2[1]       2.4002439(GHz       6.39 dBm         20 dBm       2.4002439(GHz       6.39 dBm       2.4002439(GHz         100 dBm       M2[1]       0.4000/7000       6.39 dBm         20 dBm       100 dBm       0.4000/7000       0.4000/7000         100 dBm       0.00 dBm       0.4000/7000       0.4000/7000         Stop 2.4835 GHz         Marker         Type Ref Trc X-value       Y-value       Function       Function Result	Hopping No. NVNT 1-DH5 2402MHz           Spectrum           Ref Level 27.62 dBm         Offset 7.52 dB         RBW 100 kHz           Att         40 dB         SWT         1 ms         VBW 300 kHz         Mode Auto Sweep           SGL Count 7000/7000         Image: VBW 300 kHz         Mode Auto Sweep         6.20 dBm           20 dBm         2.4019205 GHz         6.39 dBm         2.4002439(GHz         6.39 dBm           10 dBm         M1[1]         2.4002439(GHz         6.39 dBm         2.4002439(GHz           0 dBm         M1[1]         2.4019205 GHz         6.39 dBm         2.4002439(GHz)           -10 dBm         M1[1]         2.4019205 GHz         6.99 dBm         -10 dBm           -50 dBm         M1[1]         5.00 dBm         5.00 dBm         5.00 dBm           -50 dBm         M1[1]         5.00 dBm         5.00 dBm         5.00 dBm           -70 dBm         M1[1]         5.20 dBm         5.20 dBm         5.00 dBm	Hopping No. NVNT 1-DH5 2402MHz         Spectrum         Ref Level 27.62 dB       Offset 7.62 dB       RBW 100 kHz         Att       40 dB       SWT       1 ms       WBW 300 kHz       Mode Auto Sweep         GL Count 7000/7000         IPK Max       6.20 dBm         2.4002435/GHz         100 dBm         2.4002435/GHz         0 dBm         20 dBm         30 dBm         30 dBm         30 dBm         30 dBm         30 dBm         3001 pts         3002 pt         3001 pts         3002 pt         3001 pts         3002 pt         3001 pts         3002 pt         3001 pts
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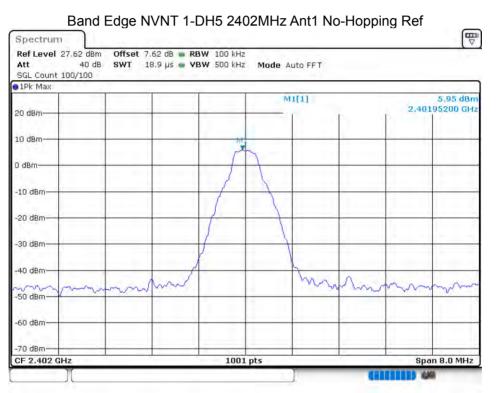


#### 8.6 BAND EDGE

0.0 DANDED	3C						
Condition	Mode	Frequency (MHz)	Antenna	Hopping Mode	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant 1	No-Hopping	-46.99	-20	Pass
NVNT	1-DH5	2402	Ant 1	Hopping	-47.64	-20	Pass
NVNT	1-DH5	2480	Ant 1	No-Hopping	-49.22	-20	Pass
NVNT	1-DH5	2480	Ant 1	Hopping	-47.75	-20	Pass
NVNT	2-DH5	2402	Ant 1	No-Hopping	-47.71	-20	Pass
NVNT	2-DH5	2402	Ant 1	Hopping	-47.31	-20	Pass
NVNT	2-DH5	2480	Ant 1	No-Hopping	-47.82	-20	Pass
NVNT	2-DH5	2480	Ant 1	Hopping	-47.57	-20	Pass
NVNT	3-DH5	2402	Ant 1	No-Hopping	-47.67	-20	Pass
NVNT	3-DH5	2402	Ant 1	Hopping	-47.83	-20	Pass
NVNT	3-DH5	2480	Ant 1	No-Hopping	-46.86	-20	Pass
NVNT	3-DH5	2480	Ant 1	Hopping	-48.32	-20	Pass
NVNT NVNT NVNT NVNT NVNT NVNT	2-DH5 2-DH5 2-DH5 3-DH5 3-DH5 3-DH5	2402 2480 2480 2402 2402 2402 2480	Ant 1 Ant 1 Ant 1 Ant 1 Ant 1 Ant 1 Ant 1	Hopping No-Hopping Hopping No-Hopping Hopping No-Hopping	-47.31 -47.82 -47.57 -47.67 -47.83 -46.86	-20 -20 -20 -20 -20 -20 -20	Pa Pa Pa Pa Pa Pa

ACCREDITED

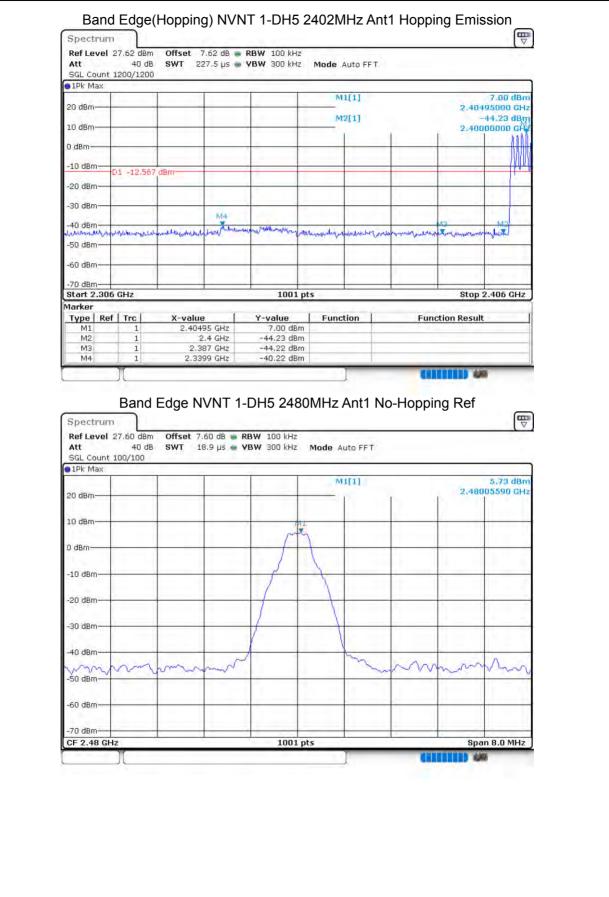
Certificate #4298.01





SGL Count 1Pk Max	100/100								
20 dBm					M	1[1]		2 40	6.28 dBm 185000 GHz
10 dBm			-		M	2[1]			-46.47 dBm
	1						(	2.40	000000 GHz
0 dBm			· · · · · ·						
-10 dBm	D1 -14,050	dBm		-					
-20 dBm							1		
-30 dBm	i		M4		-	1	1.		
-40 dBm-	mondulingha	Where the war		m annorther	MAR MANAMAN MAN	homework	markingenter	annar line ann	March 1 4474
-50 dBm									
-60 dBm	·			1			1	1	
-70 dBm-	6 GHz			1001	pts			Ston	2.406 GHz
Marker						1 - 6-			
Type Re M1	1		35 GHz	Y-value 6.28 dB		tion	Fun	ction Resu	lt
M2 M3	1		.4 GHz 39 GHz	-46.47 dB					
				-41.05 dB	m	- U			
M4	) 1 )	2,343	35 GHz	11.05 00			11		100
B Spectrum Ref Level Att SGL Count	and Edg	ge(Hopp offset 7,4	0 62 dB <b>■ RE</b>		0H5 240 Mode Au	uto FFT	Ant1 Ho	pping F	
B Spectrum Ref Level Att	and Edg n 27.62 dBm 40 dB	ge(Hopp offset 7,4	0 62 dB <b>■ RE</b>	/NT 1-D	0H5 240 Mode Au		Ant1 Ho		
B Spectrur Ref Level Att SGL Count • 1Pk Max	and Edg n 27.62 dBm 40 dB	ge(Hopp offset 7,4	0 62 dB <b>■ RE</b>	/NT 1-D	0H5 240 Mode Au	uto FFT	Ant1 Ho		7.43 dBm
B Spectrun Ref Level Att SGL Count • 1Pk Max 20 dBm-	and Edg n 27.62 dBm 40 dB	ge(Hopp offset 7,4	0ing) N\ 62 dB <b>■ RE</b>	/NT 1-D	0H5 240 Mode Au	uto FFT	Ant1 Ho	2.40	7.43 dBm
B Spectrum Ref Level Att SGL Count SGL Count 1Pk Max 20 dBm- 10 dBm-	and Edg n 27.62 dBm 40 dB	ge(Hopp offset 7,4	0ing) N\ 62 dB <b>■ RE</b>	/NT 1-D	0H5 240 Mode Au	uto FFT	Ant1 Ho	2.40	7.43 dBm
B Spectrum Ref Level Att SGL Count • 1Pk Max 20 dBm	and Edg n 27.62 dBm 40 dB	ge(Hopp offset 7,4	0ing) N\ 62 dB <b>■ RE</b>	/NT 1-D	0H5 240 Mode Au	uto FFT	Ant1 Ho	2.40	7.43 dBm
B Spectrum Ref Level Att SGL Count SGL Count 20 dBm- 10 dBm- 0 dBm-	and Edg n 27.62 dBm 40 dB	ge(Hopp offset 7,4	0 62 dB <b>■ RE</b>	/NT 1-D	0H5 240 Mode Au	uto FFT	Ant1 Ho	2.40	7.43 dBm
B Spectrum Ref Level Att SGL Count • 1Pk Max 20 dBm	and Edg n 27.62 dBm 40 dB	ge(Hopp offset 7,4	0 62 dB <b>■ RE</b>	/NT 1-D	0H5 240 Mode Au	uto FFT	Ant1 Ho	2.40	7.43 dBm
B Spectrum Ref Level Att SGL Count • 1Pk Max 20 dBm- 10 dBm- -10 dBm- -20 dBm-	and Edg n 27.62 dBm 40 dB	ge(Hopp offset 7,4	0 62 dB <b>■ RE</b>	/NT 1-D	0H5 240 Mode Au	uto FFT	Ant1 Ho	2.40	7.43 dBm
B Spectrum Ref Level Att SGL Count SGL Count 10 dBm 10 dBm -10 dBm -10 dBm -20 dBm -30 dBm	and Edg n 27.62 dBm 40 dB	ge(Hopp offset 7,4	0ing) N\ 62 dB <b>■ RE</b>	/NT 1-D	0H5 240 Mode Au	uto FFT	Ant1 Ho	2.40	7.43 dBm
B Spectrum Ref Level Att SGL Count • 1Pk Max 20 dBm	and Edg n 27.62 dBm 40 dB	ge(Hopp offset 7,4	0ing) N\ 62 dB <b>■ RE</b>	/NT 1-D	0H5 240 Mode Au	uto FFT	Ant1 Ho	2.40	7.43 dBm
B Spectrum Ref Level Att SGL Count • 1Pk Max 20 dBm- 10 dBm- -10 dBm- -20 dBm- -30 dBm- -40 dBm-	and Edg n 27.62 dBm 40 dB	ge(Hopp offset 7,4	0ing) N\ 62 dB <b>■ RE</b>	/NT 1-D	0H5 240 Mode Au	uto FFT	Ant1 Ho	2.40	7.43 dBm
B Spectrum Ref Level Att SGL Count ID dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -50 dBm	and Edg 1 27.62 dBm 40 dB 8000/8000	ge(Hopp offset 7,4	0ing) N\ 62 dB <b>■ RE</b>	/NT 1-D	0H5 240	uto FFT	Ant1 Ho	2.40	7.43 dBm 499700 GHz
B Spectrum Ref Level Att SGL Count • 1Pk Max 20 dBm	and Edg 1 27.62 dBm 40 dB 8000/8000	ge(Hopp offset 7,4	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	/NT 1-D	PH5 240	uto FFT	Ant1 Ho	2.40	7.43 dBm
B Spectrum Ref Level Att SGL Count ID dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -50 dBm	and Edg 1 27.62 dBm 40 dB 8000/8000	ge(Hopp offset 7,4	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	/NT 1-D	PH5 240	uto FFT	Ant1 Ho	2.40	7.43 dBm 499700 GHz
B Spectrum Ref Level Att SGL Count ID dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -50 dBm	and Edg 1 27.62 dBm 40 dB 8000/8000	ge(Hopp offset 7,4	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	/NT 1-D	PH5 240	uto FFT	Ant1 Ho	2.40	7.43 dBm 499700 GHz

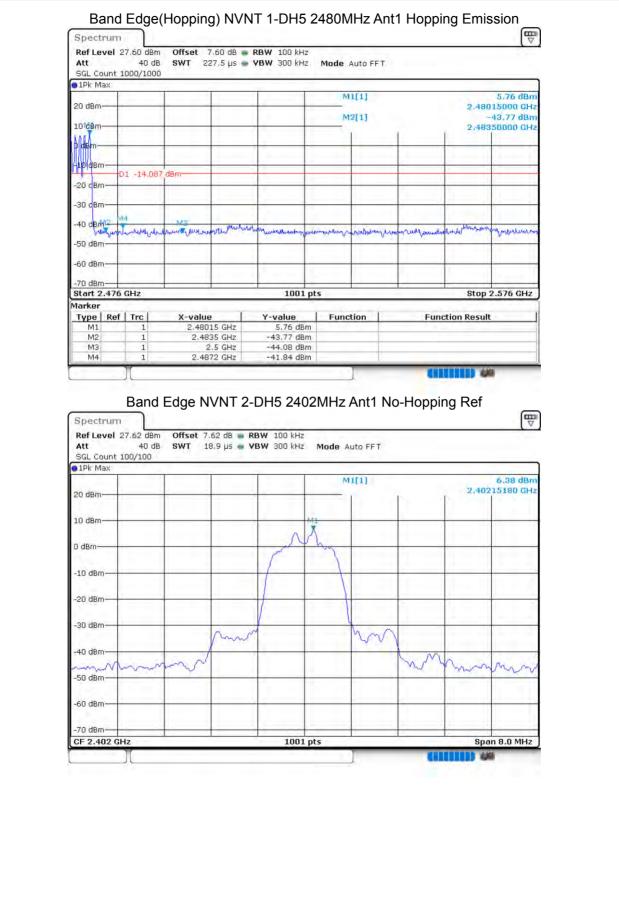






9 1Pk Max	n i		1					
20 dBm	_		_		1[1]			5.94 dBm 85000 GHz
10 <sup>1</sup> d8m				M	2[1]			45.06 dBm 50000 GHz
0 dBm						l		
-10 dBm-							1	1
D1 -14.2	274 dBm							
-20 cBm				1		·		1 - 1
-30' dBm	44				1			1
-40 dBmis	Jun Mar May adapted	hundryhung	the and the second second second	Munhalagel	dundor Mr. Male	industriations	allowater	an upenplatentes
-50 dBm-							-	1
-60 dBm							1	
-70 dBm	1 1	-	1001	pts			Stop 2	2.576 GHz
Marker						-	10.00	
Type Ref Trc M1 1		35 GHz	Y-value 5.94 dBr		uon	Fund	ction Result	-
M2 1 M3 1		35 GHz .5 GHz	-45.06 dBi -45.63 dBi					
M4 1	2.497	72 GHz	-43.49 dBi	m	1			
Band E Spectrum Ref Level 27.60 de Att 40 SGL Count 8009/80 1Pk Max	dB <b>SWT</b> 18	60 dB 🐞 I	IVNT 1-D RBW 100 kHz yBW 300 kHz	Mode A	uto FFT	Ant1 Ho		
Spectrum           Ref Level 27.60 dB           Att         40           SGL Count 8009/80	8m Offset 7. dB SWT 18	60 dB 🐞 I	RBW 100 kHz	Mode A			pping Re	
Spectrum Ref Level 27.60 dB Att 40 ( SGL Count 8009/80 1Pk Max 20 dBm	8m Offset 7. dB SWT 18	60 dB 🐞 I	RBW 100 kHz	Mode A	uto FFT		pping Re	5,91 dBm
Spectrum Ref Level 27.60 dB Att 40 SGL Count 8009/80 PIPK Max 20 dBm 10 dBm	8m Offset 7. dB SWT 18	60 dB 🐞 I	RBW 100 kHz	Mode A	uto FFT		pping Re	5,91 dBm
Spectrum Ref Level 27.60 dB Att 40 ( SGL Count 8009/80 1Pk Max 20 dBm	8m Offset 7. dB SWT 18	60 dB 🐞 I	RBW 100 kHz	Mode A	uto FFT		pping Re	5,91 dBm
Spectrum Ref Level 27.60 dB Att 40 i SGL Count 8009/80 1Pk Max 20 dBm 10 dBm	8m Offset 7. dB SWT 18	60 dB 🐞 I	RBW 100 kHz	Mode A	uto FFT		pping Re	5,91 dBm
Spectrum Ref Level 27.60 dB Att 40 i SGL Count 8009/80 PIPK Max 20 dBm 10 dBm -10 dBm	8m Offset 7. dB SWT 18	60 dB 🐞 I	RBW 100 kHz	Mode A	uto FFT		pping Re	5,91 dBm
Spectrum Ref Level 27.60 dB Att 40 ( SGL Count 8009/80 1Pk Max 20 dBm 10 dBm 0 dBm	8m Offset 7. dB SWT 18	60 dB 🐞 I	RBW 100 kHz	Mode A	uto FFT		pping Re	5,91 dBm
Spectrum Ref Level 27.60 dB Att 40 i SGL Count 8009/80 PIPK Max 20 dBm 10 dBm -10 dBm	8m Offset 7. dB SWT 18	60 dB 🐞 I	RBW 100 kHz	Mode A	uto FFT		pping Re	5,91 dBm
Spectrum Ref Level 27.60 dB Att 40 ( SGL Count 8009/80 1Pk Max 20 dBm 10 dBm -10 dBm -20 dBm -20 dBm	8m Offset 7. dB SWT 18	60 dB 🐞 I	RBW 100 kHz	Mode A	uto FFT		pping Re	5,91 dBm
Spectrum           Ref Level 27.60 dB           Att         40 of           SGL Count 8009/80           IPk Max           20 dBm           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm	8m Offset 7. dB SWT 18	60 dB 🐞 I	RBW 100 kHz	Mode A	uto FFT		pping Re	5,91 dBm
Spectrum           Ref Level 27.60 dB           Att         40 dB           SGL Count 8009/80           IPk Max           20 dBm           10 dBm           -10 dBm           -20 dBm           -30 dBm	8m Offset 7. dB SWT 18	60 dB 🐞 I	RBW 100 kHz	Mode A	uto FFT		pping Re	5,91 dBm
Spectrum           Ref Level 27.60 dB           Att 40           SGL Count 8009/80           • IPk Max           20 dBm           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm	8m Offset 7. dB SWT 18	60 dB 🐞 I	RBW 100 kHz	Mode A	uto FFT		pping Re	5,91 dBm
Spectrum           Ref Level 27.60 dB           Att         40           SGL Count 8009/80           • 1Pk Max           20 dBm           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm	8m Offset 7. dB SWT 18	60 dB 🐞 I	RBW 100 kHz	Mode A	uto FFT		pping Re	5,91 dBm
Spectrum           Ref Level 27.60 dB           Att         40 of SGL Count 8009/80           SGL Count 8009/80           IPk Max           20 dBm           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -50 dBm           -60 dBm	8m Offset 7. dB SWT 18	60 dB 🐞 I	RBW 100 kHz	Mode A	uto FFT		2,480	5.91 dBm 00800 GHz
Spectrum           Ref Level         27.60 db           Att         40 d           SGL         Count         8009/80           • 1Pk         Max         20 dBm           10 dBm         -0 dBm         -0 dBm           -10 dBm         -20 dBm         -30 dBm           -30 dBm         -50 dBm         -60 dBm	8m Offset 7. dB SWT 18	60 dB 🐞 I	RBW 100 kHz	Mode A	uto FFT		2.480	5.91 dBm 00800 GHz
Spectrum           Ref Level         27.60 db           Att         40 d           SGL         Count           B         10 dBm           10 dBm         0 dBm           -10 dBm         -20 dBm           -30 dBm         -30 dBm           -50 dBm         -60 dBm	8m Offset 7. dB SWT 18	60 dB 🐞 I	RBW 100 kHz	Mode A	uto FFT		2,480	5.91 dBm 00800 GHz
Spectrum           Ref Level 27.60 db           Att         40           SGL Count 8009/80           • 1Pk Max           20 dBm           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -50 dBm           -60 dBm	8m Offset 7. dB SWT 18	60 dB 🐞 I	RBW 100 kHz	Mode A	uto FFT		2,480	5.91 dBm 00800 GHz

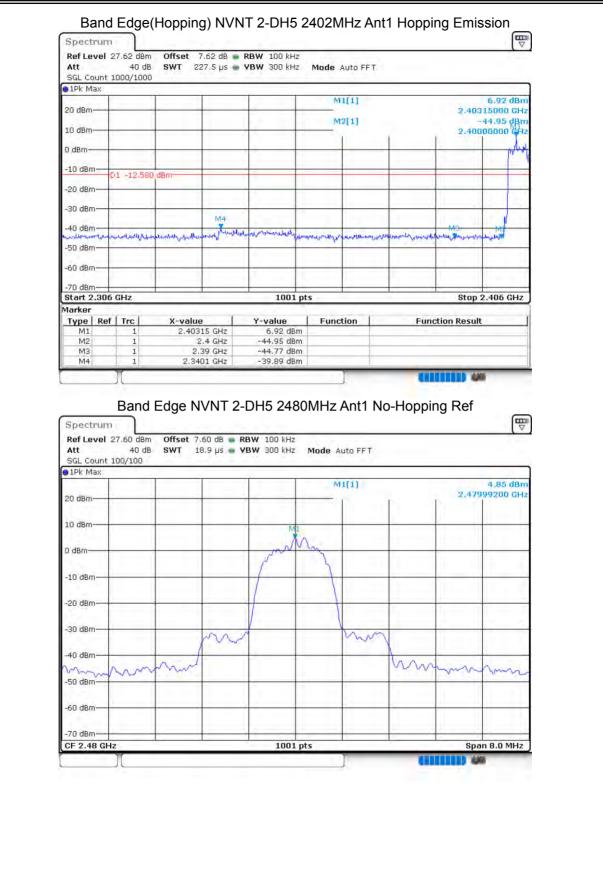






SGL Count 100/: 1Pk Max	100							
20 dBm-		1		M1[	1]		2.40	4.41 dBm 205000 GHz
10 dBm				M2[	1]			-43.38 dBm
0 dBm							2.401	100000/GH2
-10 dBm		1			1		1	
-20 dBm-	13.616 dBm		-	-				
-30 dBm		· · · · ·				<u> </u>		
100		M4	-				MB	ME
-40 dBm revelation of the states	municipality	ader the first and and a state of the state	hundhlunny	ahawa war you have the	abababababa	alm-ladouddellary	howalingen	water the
-60 dBm		-					·	
-70 dBm			-			1		1
Start 2.306 GHz Marker	5	-	1001	pts			Stop	2.406 GHz
Type         Ref         Tr           M1	1 2.40 1 1 2	205 GHz 2.4 GHz 2.39 GHz 417 GHz	Y-value 4.41 dBr -43.38 dBr -45.00 dBr -41.34 dBr	n n	m	Func	tion Resul	
						1000		-
Band Spectrum Ref Level 27.62	40 dB SWT	7.62 dB 🔳 R	VNT 2-D BW 100 kHz BW 300 kHz	10.21	o FFT	Int1 Hop		7,42 dBm
Band Spectrum Ref Level 27.52 Att SGL Count 8000	2 dBm Offset 40 dB SWT	7.62 dB 🔳 R	BW 100 kHz	Mode Aut	o FFT	unt1 Hop	2,405	
Band Spectrum Ref Level 27.52 Att SGL Count 8000 1Pk Max	2 dBm Offset 40 dB SWT	7.62 dB 🔳 R	BW 100 kHz	Mode Aut	o FFT	Ant1 Hop		7,42 dBm
Band Spectrum Ref Level 27.52 Att SGL Count 8000 1Pk Max 20 dBm	2 dBm Offset 40 dB SWT	7.62 dB 🔳 R	BW 100 kHz	Mode Aut	o FFT	Ant1 Hop	2,405	7,42 dBm
Band Spectrum Ref Level 27.62 Att SGL Count 8000 1Pk Max 20 dBm 10 dBm	2 dBm Offset 40 dB SWT	7.62 dB 🔳 R	BW 100 kHz	Mode Aut	o FFT	Ant1 Hop	2,405	7,42 dBm
Band Spectrum Ref Level 27.62 Att SGL Count 8000, 1Pk Max 20 dBm- 10 dBm- 0 dBm-	2 dBm Offset 40 dB SWT	7.62 dB 🔳 R	BW 100 kHz	Mode Aut	o FFT	Ant1 Hop	2,405	7,42 dBm
Band Spectrum Ref Level 27.62 Att SGL Count 8000 1 Dk Max 20 dBm 10 dBm 0 dBm -10 dBm	2 dBm Offset 40 dB SWT	7.62 dB 🔳 R	BW 100 kHz	Mode Aut	o FFT	Ant1 Hop	2,405	7,42 dBm
Band Spectrum Ref Level 27.62 Att SGL Count 8000 1Pk Max 20 dBm 10 dBm 10 dBm -10 dBm -20 dBm -30 dBm	2 dBm Offset 40 dB SWT	7.62 dB 🔳 R	BW 100 kHz	Mode Aut	o FFT	Ant1 Hop	2,405	7,42 dBm
Band Spectrum Ref Level 27.62 Att SGL Count 8000 1Pk Max 20 dBm 10 dBm 10 dBm -10 dBm -20 dBm	2 dBm Offset 40 dB SWT	7.62 dB 🔳 R	BW 100 kHz	Mode Aut	o FFT	Ant1 Hop	2,405	7,42 dBm
Band Spectrum Ref Level 27.62 Att SGL Count 8000, 1 Pk Max 20 dBm 10 dBm 10 dBm -10 dBm -20 dBm -30 dBm	2 dBm Offset 40 dB SWT	7.62 dB 🔳 R	BW 100 kHz	Mode Aut	o FFT		2,405	7,42 dBm
Band           Spectrum           Ref Level 27.62           Att           SGL Count 8000           • IPk Max           20 dBm           10 dBm           -10 dBm           -20 dBm           -30 dBm	2 dBm Offset 40 dB SWT	7.62 dB 🔳 R	BW 100 kHz	Mode Aut	o FFT		2,405	7,42 dBm
Band Spectrum Ref Level 27.62 Att SGL Count 8000 1Pk Max 20 dBm 10 dBm 10 dBm -10 dBm -20 dBm -30 dBm -30 dBm -30 dBm	2 dBm Offset 40 dB SWT	7.62 dB 🔳 R	BW 100 kHz	Mode Aut	o FFT		2,405	7,42 dBm
Band           Spectrum           Ref Level 27.62           Att           SGL Count 8000           • IPk Max           20 dBm           10 dBm           0 dBm           -20 dBm           -30 dBm           -30 dBm           -50 dBm           -60 dBm	2 dBm Offset 40 dB SWT	7.62 dB 🔳 R	BW 100 kHz		o FFT	Ant1 Hop	2.403	7.42 dBm 501300 GHz
Band           Spectrum           Ref Level 27.62           Att           SGL Count 8000,           1Pk Max           20 dBm           10 dBm           -10 dBm           -20 dBm           -30 dBm           -50 dBm           -60 dBm	2 dBm Offset 40 dB SWT	7.62 dB 🔳 R	BW 100 kHz BW 300 kHz		o FFT		2.403	7.42 dBm 501300 GHz
Band           Spectrum           Ref Level 27.62           Att           SGL Count 8000,           1Pk Max           20 dBm           10 dBm           -10 dBm           -20 dBm           -30 dBm           -50 dBm           -60 dBm	2 dBm Offset 40 dB SWT	7.62 dB 🔳 R	BW 100 kHz BW 300 kHz		o FFT	Ant1 Hop	2.403	7.42 dBm 501300 GHz

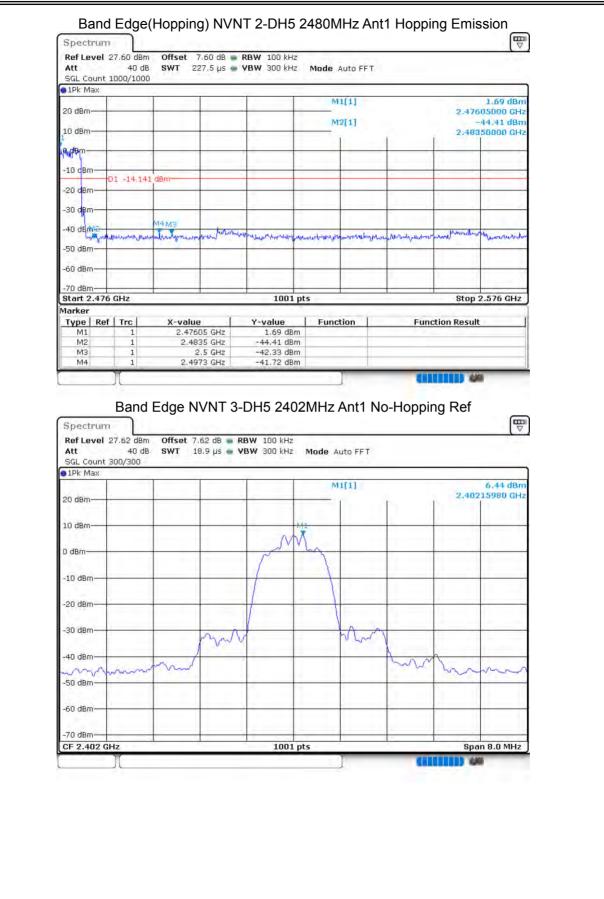






SGL Count 1Pk Max	. 100/100								
20 dBm	· · · · · · · · · · · · · · · · · · ·			1	M	1[1]	-	2.48	4.79 dBm 015000 GHz
10 d8m					M	2[1]			-46.44 dBm
1								2.40	350000 GHz
0 dBm								11	
-10 cBm-	D1 -15,148	dBm		2	_			2	
-20 dBm—	-						-	1	
-30 d8m-					-		-		
-40 demiz	M4	Ma	enpetime	manthe hubwennes	. h . f m . h . n	table on here	Der Marine	and a manager all	then when whether
-50 dBm-	web an webuild	ARMAJEN (LICHAMA)	Aroline 1.	. Marson and	handd canadarolla	and a change	and a share she	an alla a	- Sundhard In In
-60 dBm					-		-		
-70 dBm						11			
Start 2.47 Marker	6 GHz	_	_	1001	pts			Stop	2.576 GHz
Type   Re		X-value		Y-value	Func	tion	Fun	tion Resu	lt
M1 M2	1	2.48	15 GHz 35 GHz	4.79 dBn -46.44 dBn	n				
M3	1		.5 GHz 89 GHz	-44.04 dBn -42.97 dBn					
M4			a sub traction of the						10
B Spectrur Ref Level Att		Offset 7.	60 dB 👜 🖡	VNT 2-DI	Mode A	uto FFT	ant1 Ho	pping F	
B Spectrur Ref Level Att SGL Count PlPk Max	and Edg n 27.60 dBm 40 dB	Offset 7.	60 dB 👜 🖡	RBW 100 kHz	Mode A		ant1 Ho	1.00	5,86 dBm
Spectrur Ref Level Att SGL Count	and Edg n 27.60 dBm 40 dB	Offset 7.	60 dB 👜 🖡	RBW 100 kHz	Mode A	uto FFT	Ant1 Ho	1.00	
B Spectrur Ref Level Att SGL Count PIPk Max	and Edg n 27.60 dBm 40 dB	Offset 7.	60 dB 👜 🖡	RBW 100 kHz	Mode A	uto FFT	Ant1 Ho	1.00	5,86 dBm
B Spectrur Ref Level Att SGL Count 1Pk Max 20 dBm-	and Edg n 27.60 dBm 40 dB : 8000/8000	Offset 7.	60 dB 👜 🖡	RBW 100 kHz	Mode A	uto FFT	Ant1 Ho	1.00	5,86 dBm
B Spectrur Ref Level Att SGL Count SGL Count SGL Count 20 dBm- 10 dBm-	and Edg n 27.60 dBm 40 dB : 8000/8000	Offset 7.	60 dB 👜 🖡	RBW 100 kHz	Mode A	uto FFT	Ant1 Ho	1.00	5,86 dBm
B Spectrur Ref Level Att SGL Count SGL Count 1Pk Max 20 dBm 10 dBm 0 dBm	and Edg n 27.60 dBm 40 dB : 8000/8000	Offset 7.	60 dB 👜 🖡	RBW 100 kHz	Mode A	uto FFT	Ant1 Ho	1.00	5,86 dBm
B Spectrur Ref Level Att SGL Count SGL Count 1Pk Max 20 dBm 10 dBm -10 dBm -10 dBm	and Edg n 27.60 dBm 40 dB : 8000/8000	Offset 7.	60 dB 👜 🖡	RBW 100 kHz	Mode A	uto FF T	Ant1 Ho	1.00	5,86 dBm
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B Spectrur Ref Level Att SGL Count SGL Count 1Pk Max 20 dBm 10 dBm -10 dBm -10 dBm -20 dBm	and Edg n 27.60 dBm 40 dB : 8000/8000	Offset 7.	60 dB 👜 🖡	RBW 100 kHz	Mode A	uto FF T	Ant1 Ho	1.00	5,86 dBm
B Spectrur Ref Level Att SGL Count SGL Count 10 dBm 10 dBm 10 dBm -10 dBm -10 dBm -20 dBm -30 dBm	and Edg n 27.60 dBm 40 dB : 8000/8000	Offset 7.	60 dB 👜 🖡	RBW 100 kHz	Mode A	uto FF T	Ant1 Ho	1.00	5,86 dBm 700300 GH2
B Spectrur Ref Level Att SGL Count SGL Count 10 dBm 10 dBm 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -40 dBm	and Edg n 27.60 dBm 40 dB : 8000/8000	Offset 7.	60 dB 👜 🖡	RBW 100 kHz	Mode A	uto FF T	Ant1 Ho	1.00	5,86 dBm 700300 GH2
B Spectrur Ref Level Att SGL Count SGL Count 10 dBm 10 dBm 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm	and Edg n 27.60 dBm 40 dB : 8000/8000	Offset 7.	60 dB 👜 🖡	RBW 100 kHz	Mode A	uto FF T	Ant1 Ho	1.00	5,86 dBm 700300 GH2
B Spectrur Ref Level Att SGL Count SGL Count 10 dBm 10 dBm 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -30 dBm -40 dBm	and Edg 27.60 dBm 40 dB 9000/8000	Offset 7.	60 dB 👜 🖡	RBW 100 kHz	Mode A	uto FF T	Ant1 Ho	2.47	5,86 dBm 700300 GH2
B Spectrur Ref Level Att SGL Count SGL Count 10 dBm 10 dBm 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -40 dBm -50 dBm -50 dBm	and Edg 27.60 dBm 40 dB 9000/8000	Offset 7.	60 dB 👜 🖡	RBW 100 kHz	Mode A	uto FF T	Ant1 Ho	2.47	5,86 dBm 700300 GH2
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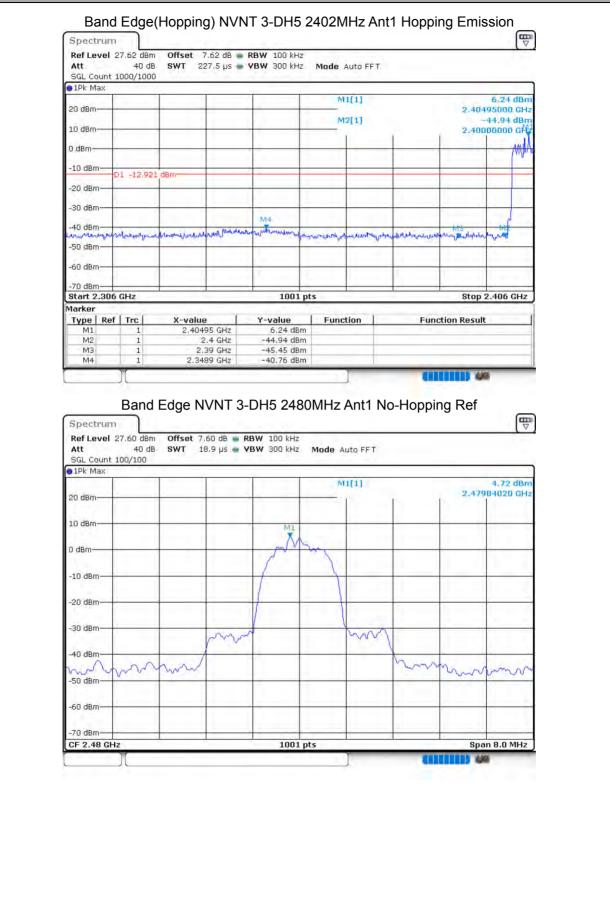






20 dBm 2.40195000 GH 4.55 dBm 2.4000000 GH 4.5.55 dBm 2.4000000 GH 4.5.55 dBm 2.4000000 GH 4.55 dBm 4.00 GH 4.72 dBm 4.00 GH 4	SGL Coun 1Pk Max	( 100/100							-
10 dBm	20 dBm			_		M1[1]	- 1		4.72 dBm 5000 GHz
0 dbm       -10 dbm       01 -13 560 dbm       -10 dbm </td <td></td> <td></td> <td></td> <td></td> <td></td> <td>M2[1]</td> <td></td> <td>-4</td> <td>5.55 dBm</td>						M2[1]		-4	5.55 dBm
-10 dBm -20 dBm -30 dBm -40 dBm -40 dBm -40 dBm -50								2.4000	Ţ
O1         13.350 dem         01         13.350 dem         01           -20 dem         -30 dem         -40 dem         -41.24 dem         -45.55 dem         -44.75 dem         -45.55 dem         -44.74 dem         -45.55 dem         -44.74 dem         -44.74 dem         -44.75 dem         -44.75 dem         -44.75 dem         -44.74 dem         -44.74 dem         -44.75 d							1		- 11-
-30 d8m -40 d8m -40 d8m -50 d8m -50 d8m -60 d8m -70		01 -13.560	dBm						
-40 dbm       M4							<u>1</u>	1	
Million Log Multicular	1000				-		1	1	14
Source         Stop 2.406 GHz           70 dBm         -70 dBm           70 dBm         -70 dBm           Start 2.306 GHz         1001 pts           Marker         -40.3195 GHz           Marker         -40.4195 GHz           Marker         -40.555 dBm           M2         1           2.4 GHz         -45.55 dBm           M4         1           2.348 GHz         -46.39 dBm           M4         1           2.348 GHz         -41.24 dBm        Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref Spectrum	when the light	humber	handmannah	manut	white Muther work	Hortomation where the money	warmen when he have he	windowing and a state of the second state of t	that we
Band         Stop 2.406 GHz           Type   Ref         Tro         X-value         Y-value         Function         Function Result           M1         1         2.4042         -45.55 dBm         -46.59 dBm         -46.59 dBm           M3         1         2.396 GHz         -46.59 dBm         -46.59 dBm         -46.59 dBm           M4         1         2.348 GHz         -41.24 dBm         -41.24 dBm         -41.24 dBm           M4         1         2.348 GHz         -41.24 dBm         -41.24 dBm         -41.24 dBm           Ref Level         27.62 dBm         Offset 7.62 dB         RBW 100 kHz         -41.24 dBm         -41.24 dBm           Succount 8000/8000         SWT         18.9 µS         YBW 300 kHz         Mode Auto FFT         -40.315890 GH           Sold Count 8000/8000					·				1
Stop 2.406 GHz           Stop 2.406 GHz           Marker         Function         Function Result           M1         1         2.40195 GHz         4.72 dBm           M2         1         2.4 GHz         -46.59 dBm           M3         1         2.39 GHz         -46.39 dBm           M4         1         2.348 GHz         -41.24 dBm           Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref           Spectrum           Ref Level 27.62 dBm         Offset 7.62 dB         RBW 100 kHz           Att         40 dB         SWT 18.9 µS         VBW 300 kHz           Mode Auto FFT           SGL Count 8000/8000           M1(1)         7.08 dBr           M1(1)         2.40315880 GH           0 dBm         M1(1)         7.08 dBr				-	· · · · · · · · · · · · · · · · · · ·		J		
Type         Ref         Trc         X-value         Y-value         Function         Function Result           M1         1         2.40195 GHz         4.72 dBm         1		)6 GHz			1001	pts		Stop 2.	406 GHz
M1         1         2.40195 GHz         4.72 dBm           M2         1         2.4 GHz         -45.55 dBm           M3         1         2.39 GHz         -46.59 dBm           M4         1         2.348 GHz         -41.24 dBm           Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref         Image: Comparison of the second	and the second second	of   Tro	V-ualuo	T	Y-ualuo	Euroction	Euro	tion Pocult	1
M3         1         2.39 GHz         -46.39 dBm           M4         1         2.348 GHz         -41.24 dBm           Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref           Spectrum           Ref Level 27.62 dBm         Offset 7.62 dB         RBW 100 kHz           M3 dBm         M1[1]         7.08 dBr           Superior           M1[1]         7.08 dBr           M1[1]         7.08 dBr           M1[1]         7.08 dBr           0 dBm         0 dBm           40 dBm         0 dBm	M1	1	2.40195		4.72 dBn	1	Fuild	cion Result	
Band Edge(Hopping) NVNT 3-DH5 2402MHz Ant1 Hopping Ref           Spectrum         Image: Colspan="2">Colspan="2"           Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2">Colspan="2"           Colspan="2">Colspan="2"           Colspan="2"           Colspan="2" <td>MЗ</td> <td>1</td> <td>2.39</td> <td>GHz</td> <td>-46.39 dBn</td> <td>ו 🗌</td> <td></td> <td></td> <td></td>	MЗ	1	2.39	GHz	-46.39 dBn	ו 🗌			
Spectrum         The flevel 27.62 dBm         Offset 7.62 dB         RBW 100 kHz           Att         40 dB         SWT         18.9 µs         VBW 300 kHz         Mode Auto FFT           SGL Count 8000/8000         Image: second	M4	1	2.348	3 GHz	-41.24 dBn		-		
10 dBm 0 dBm -10 dBm -20 dBm -20 dBm -30 dBm -40 dBm -50 dBm	Spectrui Ref Level Att SGL Coun	m I 27.62 dBm 40 dB	Offset 7.6	2 dB 🐞 RI	<b>BW</b> 100 kHz				
D dBm -10 dBm -20 dBm -20 dBm -30 dBm -30 dBm -30 dBm -30 dBm -30 dBm -40 dBm -40 dBm -50 dBm	Spectrui Ref Level Att SGL Coun	m I 27.62 dBm 40 dB	Offset 7.6	2 dB 🐞 RI	<b>BW</b> 100 kHz	Mode Auto FFT		1.1.12	₩ 7.08 dBm
-10 dBm -20 dBm -30 dBm -40 dBm -50 dBm	Spectrui Ref Level Att SGL Coun 1Pk Max	m I 27.62 dBm 40 dB	Offset 7.6	2 dB 🐞 RI	<b>BW</b> 100 kHz	Mode Auto FFT		1.1.12	₩ 7.08 dBm
-10 dBm -20 dBm -30 dBm -40 dBm -50 dBm	Spectrui Ref Level Att SGL Coun 1Pk Max 20 dBm-	m I 27.62 dBm 40 dB	Offset 7.6	2 dB 🐞 RI	<b>BW</b> 100 kHz	Mode Auto FFT		1.1.12	₩ 7.08 dBm
-20 dBm -30 dBm -40 dBm -50 dBm	Spectrui Ref Level Att SGL Coun 1Pk Max 20 dBm- 10 dBm-	m I 27.62 dBm 40 dB	Offset 7.6	2 dB 🐞 RI	<b>BW</b> 100 kHz	Mode Auto FFT		1.1.12	₩ 7.08 dBm
-30 dBm	Spectrui Ref Level Att SGL Coun 1Pk Max 20 dBm- 10 dBm-	m I 27.62 dBm 40 dB	Offset 7.6	2 dB 🐞 RI	<b>BW</b> 100 kHz	Mode Auto FFT		1.1.12	₩ 7.08 dBm
-40 dBm	Spectrui Ref Level Att SGL Coun 1Pk Max 20 dBm- 10 dBm- 0 dBm-	m I 27.62 dBm 40 dB	Offset 7.6	2 dB 🐞 RI	<b>BW</b> 100 kHz	Mode Auto FFT		1.1.12	₩ 7.08 dBm
-40 dBm -50 dBm	Spectrun Ref Level Att SGL Coun 1Pk Max 20 dBm- 10 dBm- -10 dBm-	m I 27.62 dBm 40 dB	Offset 7.6	2 dB 🐞 RI	<b>BW</b> 100 kHz	Mode Auto FFT		1.1.12	₩ 7.08 dBm
-50 dBm	Spectrui Ref Level Att SGL Coun 1Pk Max 20 dBm- 10 dBm- -10 dBm- -20 dBm-	m I 27.62 dBm 40 dB	Offset 7.6	2 dB 🐞 RI	<b>BW</b> 100 kHz	Mode Auto FFT		1.1.12	₩ 7.08 dBm
	Spectrum Ref Level Att SGL Coun 1Pk Max 20 dBm- 10 dBm- -10 dBm- -20 dBm- -30 dBm-	m I 27.62 dBm 40 dB	Offset 7.6; SWT 18,	2 dB <b>a R</b> 9 µs <b>a V</b>	<b>BW</b> 100 kHz	Mode Auto FFT		1.1.12	₩ 7.08 dBm
-60 dBm	Spectrui Ref Level Att SGL Coun 1Pk Max 20 dBm- 10 dBm- -10 dBm- -20 dBm- -30 dBm- -40 dBm-	m I 27.62 dBm 40 dB	Offset 7.6; SWT 18,	2 dB <b>a R</b> 9 µs <b>a V</b>	<b>BW</b> 100 kHz	Mode Auto FFT		1.1.12	₩ 7.08 dBm
	Spectrui Ref Level Att SGL Coun • 1Pk Max 20 dBm	m I 27.62 dBm 40 dB	Offset 7.6; SWT 18,	2 dB <b>a R</b> 9 µs <b>a V</b>	<b>BW</b> 100 kHz	Mode Auto FFT		1.1.12	₩ 7.08 dBm
	Spectrui Ref Level Att SGL Coun • 1Pk Max 20 dBm	m I 27.62 dBm 40 dB	Offset 7.6; SWT 18,	2 dB <b>a R</b> 9 µs <b>a V</b>	<b>BW</b> 100 kHz	Mode Auto FFT		1.1.12	₩ 7.08 dBm
-70 dBm CF 2.402 GHz 1001 pts Span 8.0 MHz	Spectrum Ref Level Att SGL Coun • 1Pk Max 20 dBm	m I 27.62 dBm 40 dB	Offset 7.6; SWT 18,	2 dB <b>a R</b> 9 µs <b>a V</b>	<b>BW</b> 100 kHz	Mode Auto FFT		1.1.12	₩ 7.08 dBm
	Spectrum Ref Level Att SGL Coun 1Pk Max 20 dBm- 10 dBm- -10 dBm- -20 dBm- -30 dBm- -50 dBm- -60 dBm- -70 dBm-	m	Offset 7.6; SWT 18,	2 dB <b>a R</b> 9 µs <b>a V</b>	BW 100 kHz BW 300 kHz	Mode Auto FFT		2.4031	7.08 dBm 5880 GHz
	Spectrum Ref Level Att SGL Coun 1Pk Max 20 dBm- 10 dBm- -10 dBm- -20 dBm- -30 dBm- -50 dBm- -60 dBm- -70 dBm-	m	Offset 7.6; SWT 18,	2 dB <b>a R</b> 9 µs <b>a V</b>	BW 100 kHz BW 300 kHz	Mode Auto FFT		2,4031	7.08 dBm 5880 GHz







	1		-	1	M	1[1]		-	6.07 dBm
20 dBm						2[1]			995000 GHz -44.31 dBm
10 <sup>1</sup> dBm	-		-	-		211]	( ) ( )		350000 GHz
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-60 dBm	-	-			-			-	1
-70 dBm	GHz			1001	nts		-	Ston	2.576 GHz
Marker							-	1	
Type Ref M1	1		95 GHz	Y-value 6.07 dB		tion	Fund	tion Resul	C
M2 M3	1	2	35 GHz .5 GHz	-44.31 dB -44.57 dB	m	1			
M4	1	2.485	52 GHz	-42.15 dB	m	r			<i>a</i>
		-				1[1]			
20 dBm			-				<u> </u>	2.480	6,14 dBm 000800 GHz
20 dBm				l.	1			2,480	
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	And A	- ۸۸	~~~	barrol	t de la			2.48	
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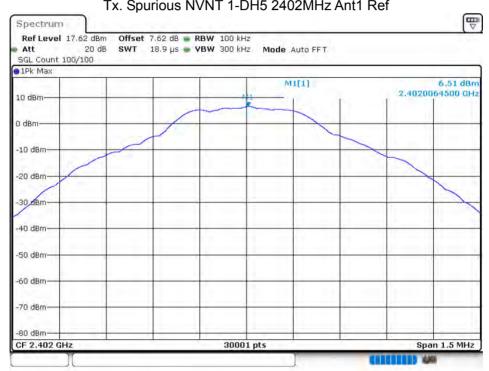
		Mode Auto FFT		ffset 7.60 dB 🖷 WT 227,5 µs 🖷	7.60 dBm 40 dB	Spectrum Ref Level 2' Att
		Houe Auto FFT	4 D V4 300 KH2	MI 227.5 H2		SGL Count 1
					1007 1000	1Pk Max
4.02 dBm		M1[1]	1		1	
2.47705000 GHz			-			0 dBm
~43.66 dBm		M2[1]	the second second			
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# NTEK 北测

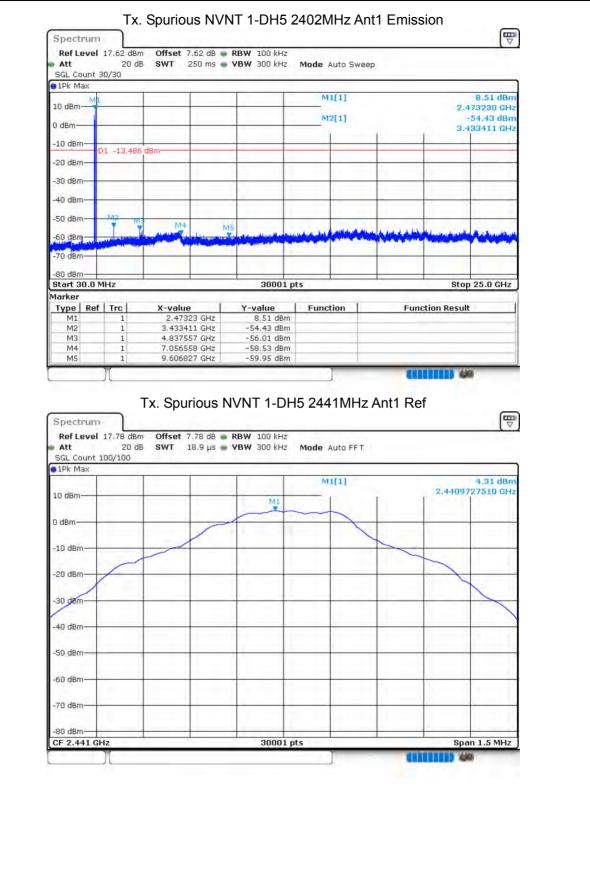
# 8.7 CONDUCTED RF SPURIOUS EMISSION

• ••		•••••••				
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	1-DH5	2402	Ant 1	-60.93	-20	Pass
NVNT	1-DH5	2441	Ant 1	-48.99	-20	Pass
NVNT	1-DH5	2480	Ant 1	-61.48	-20	Pass
NVNT	2-DH5	2402	Ant 1	-61.65	-20	Pass
NVNT	2-DH5	2441	Ant 1	-49.22	-20	Pass
NVNT	2-DH5	2480	Ant 1	-61.4	-20	Pass
NVNT	3-DH5	2402	Ant 1	-50.74	-20	Pass
NVNT	3-DH5	2441	Ant 1	-49.48	-20	Pass
NVNT	3-DH5	2480	Ant 1	-57.25	-20	Pass

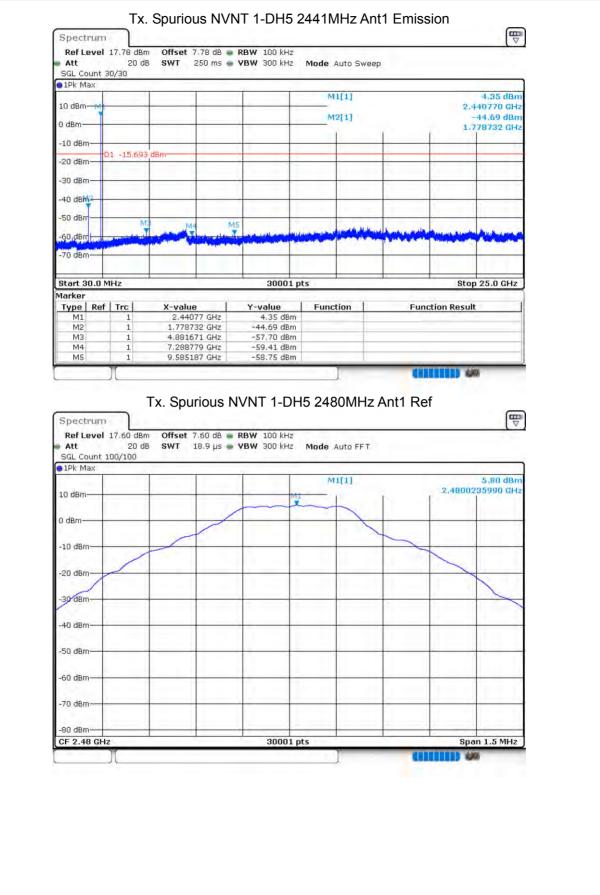


#### Tx. Spurious NVNT 1-DH5 2402MHz Ant1 Ref

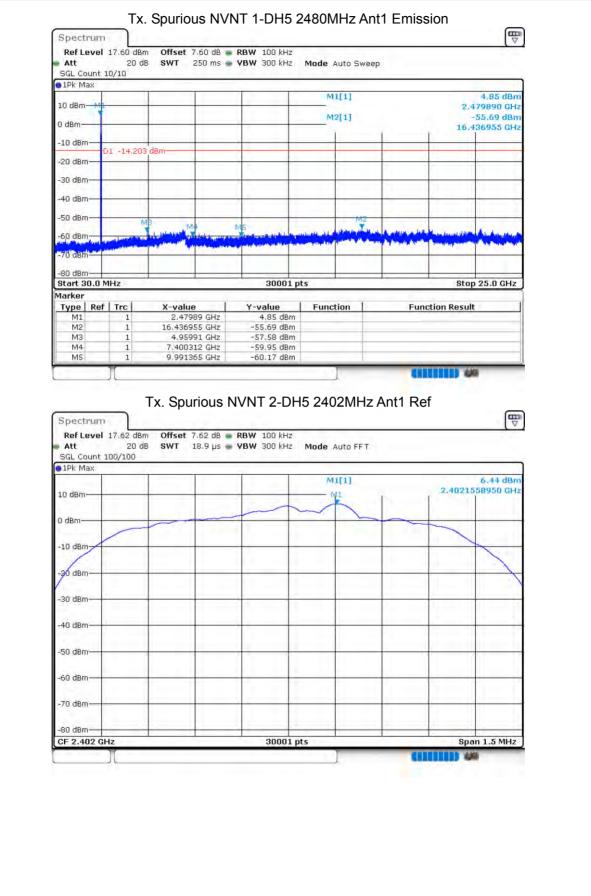




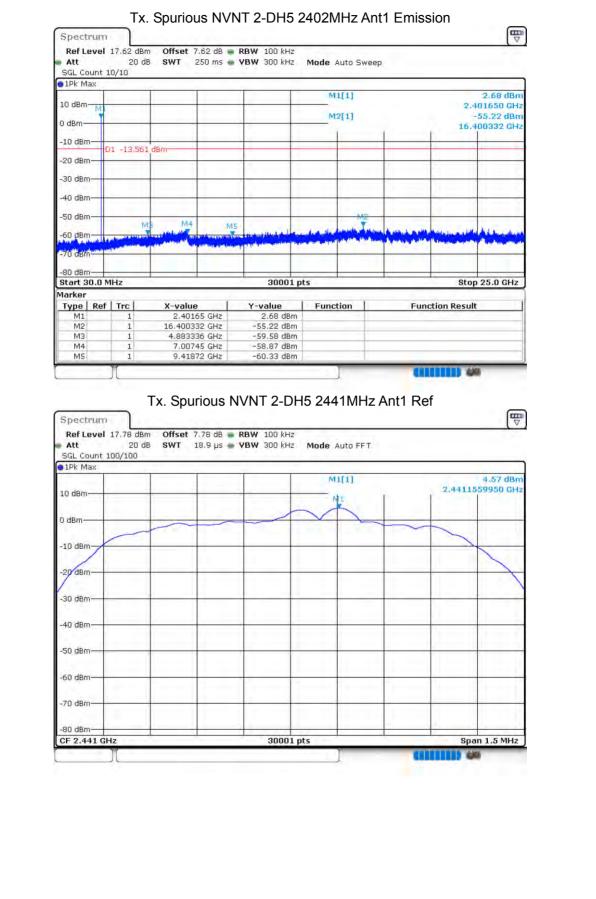




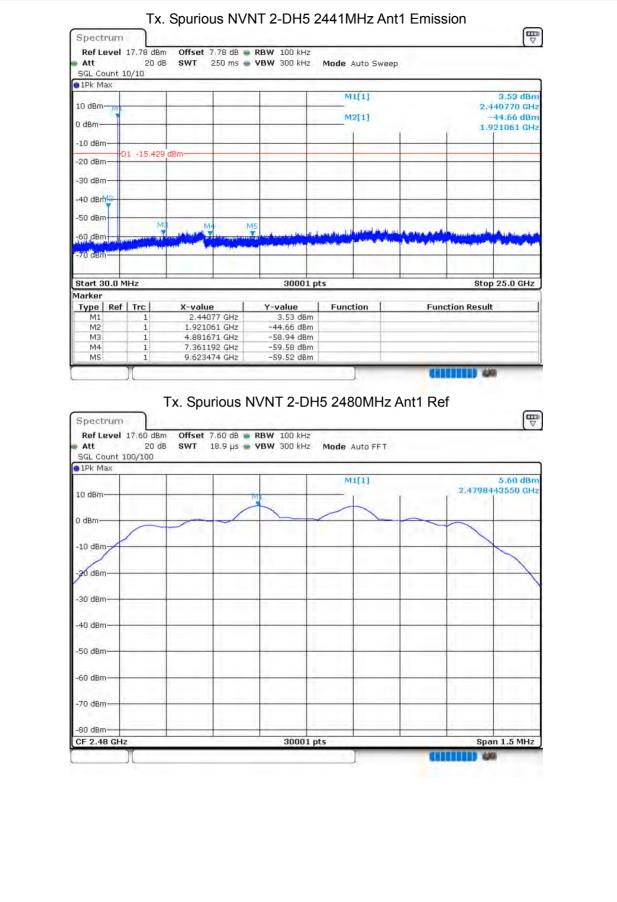




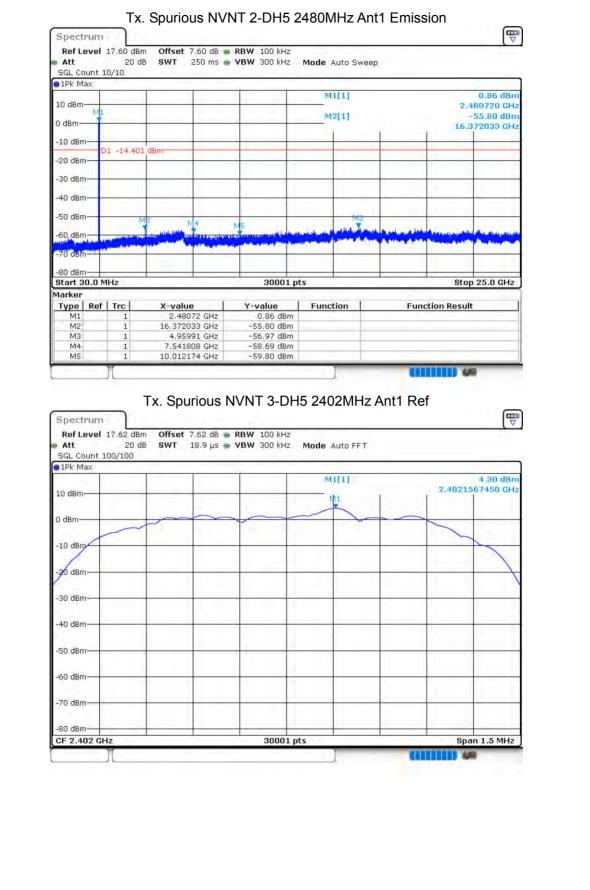




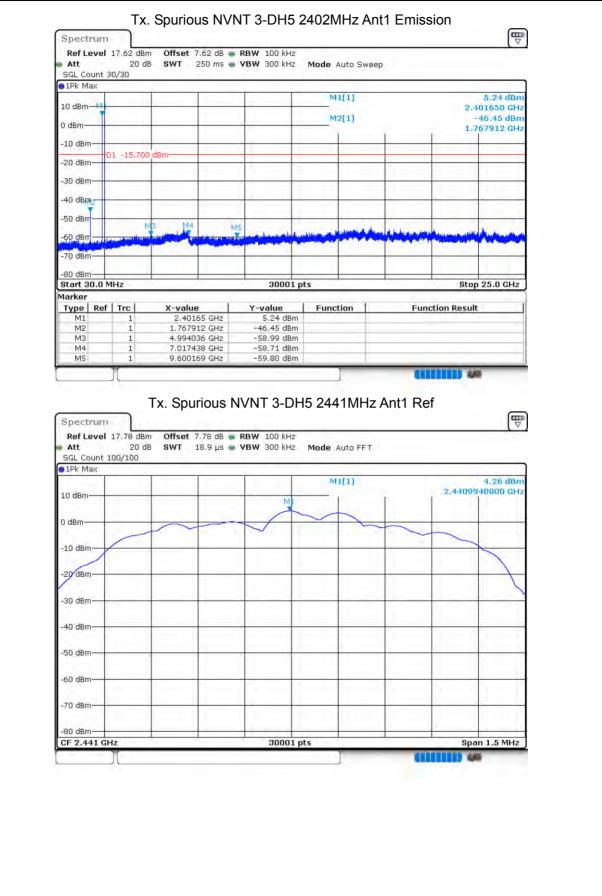




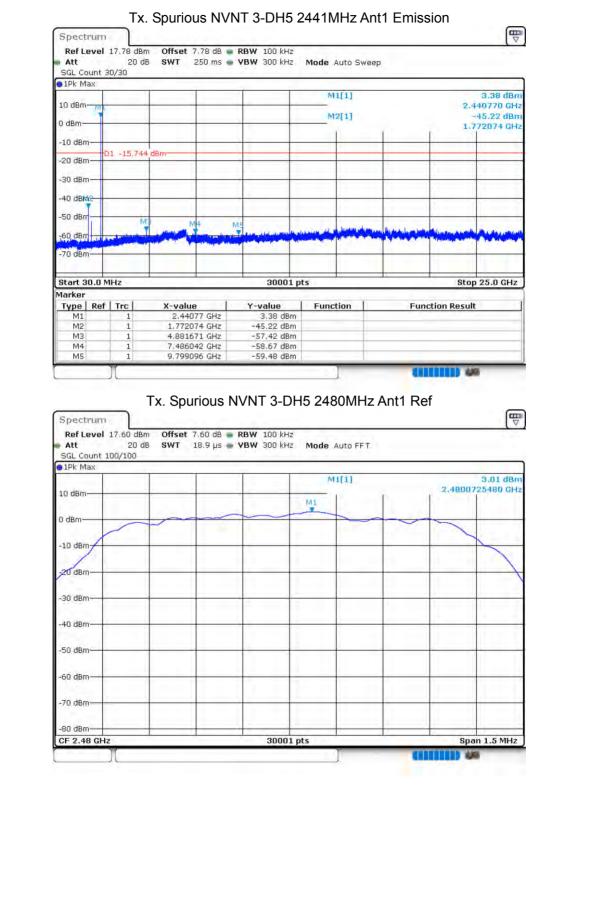




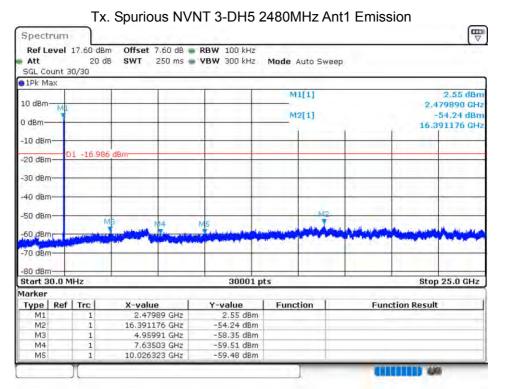












END OF REPORT