

## RADIO TEST REPORT FCC ID: 2A7DX-TAB8WIFI

Certificate #4298 0

Product: Tablet PC Trade Mark: Blackview, OSCAL Model No.: Tab 8 WiFi Family Model: Tab 8 Kids, Pad 70 Report No.: STR230303002002E Issue Date: Apr 12, 2023

## **Prepared for**

DOKE COMMUNICATION (HK) LIMITED RM 1902 EASEY COMM BLDG 253-261 HENNESSY ROAD WANCHAI HONG KONG China

## Prepared by

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## **1 TEST RESULT CERTIFICATION**

Applicant's name:	DOKE COMMUNICATION (HK) LIMITED
Address:	RM 1902 EASEY COMM BLDG 253-261 HENNESSY ROAD WANCHAI HONG KONG China
Manufacturer's Name:	Shenzhen DOKE Electronic Co.,Ltd
Address:	801, Building3, 7th Industrial Zone, Yulv Community, Yutang Road, Guangming District, Shenzhen, China
Product description	
Product name:	Tablet PC
Model and/or type reference:	Tab 8 WiFi
Family Model:	Tab 8 Kids, Pad 70
Sample number	T230303001R001

Measurement Procedure Used:

#### APPLICABLE STANDARDS

APPLICABLE STANDARD/ TEST PROCEDURE	TEST RESULT
FCC 47 CFR Part 2, Subpart J	
FCC 47 CFR Part 15, Subpart C	Complied
ANSI C63.10-2013	Complied
KDB 558074 D01 15.247 Meas Guidance v05r02	

This device described above has been tested by Shenzhen NTEK Testing Technology Co., Ltd., and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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

Date of Test	:	Mar 27, 2023 ~ Apr 11, 2023	
Testing Engineer	:	Den lin	
		(Allen Liu)	
Authorized Signatory	:	Alese	
		(Alex Li)	

#### SUMMARY OF TEST RESULTS 2

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ilac-M

FCC Part15 (15.247), Subpart C				
Standard Section	Test Item	Verdict	Remark	
15.207	Conducted Emission PASS			
15.247 (a)(2)	6dB Bandwidth	PASS		
15.247 (b)	Peak Output Power PASS			
15.209 (a) 15.205 (a)	Radiated Spurious Emission PASS			
15.247 (e)	Power Spectral Density PASS			
15.247 (d)	Band Edge Emission	PASS		
15.247 (d)	Spurious RF Conducted Emission	PASS		
15.203	Antenna Requirement	PASS		

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#### Remark:

 "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	Tablet PC	
Trade Mark	Blackview, OSCAL	
FCC ID	2A7DX-TAB8WIFI	
Model No.	Tab 8 WiFi	
Family Model	Tab 8 Kids, Pad 70	
Model Difference	All the model are the same circuit and RF module, except the Trade Mark.	
Operating Frequency	2402MHz~2480MHz	
Modulation	GFSK	
Number of Channels	40 Channels	
Antenna Type	PIFA Antenna	
Antenna Gain	3dBi	
Adapter	Model: QZ-01000AA00 Input: 100-240V~50/60Hz 0.3A Output: 5.0V2.0A (10.0W)	
Battery	Battery 1: DC 3.8V, 6580mAh Battery 2: DC 3.8V, 6580mAh	
Power supply	DC 3.8V from battery or DC 5V from Adapter.	
HW Version	R863T-RK3566-DK-V1.0	
SW Version	Tab_8_WiFi_ROW_S863T_V1.0 Tab_8_Kids_ROW_S863T_V1.0 PAD_70_NEU_S863T_V1.0	

Note 1: Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual.

Note 2: The engineering test program was provided and the EUT was programmed to be in continuously transmitting mode.



### **Revision History**

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Revision history			
Report No.	Version	Description	Issued Date
STR230303002002E	Rev.01	Initial issue of report	Apr 12, 2023





### 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.

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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/2Mbps for GFSK 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	2404	
19	2440	
20	2442	
38	2478	
39	2480	

Note: fc=2402MHz+kx2MHz k=0 to 39

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

	Test Cases
Test Item	Data Rate/ Modulation
AC Conducted Emission	Mode 1: normal link mode
	Mode 1: normal link mode
Radiated Test	Mode 2: GFSK Tx Ch00_2402MHz_1Mbps/2Mbps
Cases	Mode 3: GFSK Tx Ch19_2440MHz_1Mbps/2Mbps
	Mode 4: GFSK Tx Ch39_2480MHz_1Mbps/2Mbps
Conducted Test	Mode 2: GFSK Tx Ch00_2402MHz_1Mbps/2Mbps
Conducted Test Cases	Mode 3: GFSK Tx Ch19_2440MHz_1Mbps/2Mbps
Cases	Mode 4: GFSK Tx Ch39_2480MHz_1Mbps/2Mbps

Note:

1. The engineering test program was provided and the EUT was programmed to be in continuously transmitting mode(duty cycle =100% during the test)

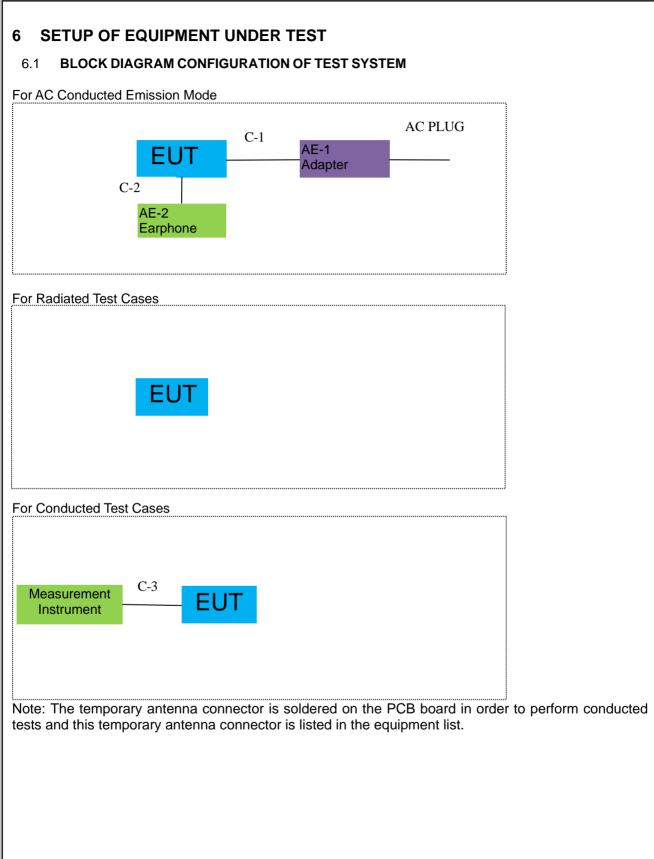
2. AC power line Conducted Emission was tested under maximum output power.

3. 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.

4. EUT built-in battery-powered, the battery is fully-charged.

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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	QZ-01000AA00	N/A	Peripherals
AE-2	Earphone	N/A	N/A	Peripherals

Item	Cable Type	Shielded Type	Ferrite Core	Length
C-1	USB Cable	YES	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

addada	na conducted	eet equipment					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibrati on period
1	Spectrum Analyzer	Aglient	E4407B	MY45108040	2023.03.27	2024.03.26	1 year
2	Spectrum Analyzer	Agilent	N9020A	MY49100060	2022.06.17	2023.06.16	1 year
3	Spectrum Analyzer	R&S	FSV40	101417	2023.03.27	2024.03.26	1 year
4	Test Receiver	R&S	ESPI7	101318	2023.03.27	2024.03.26	1 year
5	Bilog Antenna	TESEQ	CBL6111D	31216	2023.03.27	2024.03.26	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	2023.03.27	2024.03.26	1 year
8	Broadband Horn Antenna	SCHWARZBE CK	BBHA 9170	803	2022.11.08	2023.11.07	1 year
9	Amplifier	EMC	EMC051835 SE	980246	2022.06.17	2023.06.16	1 year
10	Active Loop Antenna	SCHWARZBE CK	FMZB 1519 B	055	2022.11.08	2023.11.07	1 year
11	Power Meter	DARE	RPR3006W	15I00041SN 084	2022.11.08	2023.11.07	1 year
12	Test Cable (9KHz-30MHz)	N/A	R-01	N/A	2020.05.11	2023.05.10	3 year
13	Test Cable (30MHz-1GHz)	N/A	R-02	N/A	2020.05.11	2023.05.10	3 year
14	High Test Cable(1G-40G Hz)	N/A	R-03	N/A	2022.06.17	2025.06.16	3 year
15	Filter	TRILTHIC	2400MHz	29	2022.11.08	2023.11.07	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



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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	2023.03.27	2024.03.26	1 year
2	LISN	R&S	ENV216	101313	2023.03.27	2024.03.26	1 year
3	LISN	SCHWARZBE CK	NNLK 8129	8129245	2023.03.27	2024.03.26	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

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

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## 7 TEST REQUIREMENTS

### 7.1 CONDUCTED EMISSIONS TEST

#### 7.1.1 Applicable Standard

According to FCC Part 15.207(a)

#### 7.1.2 Conformance Limit

	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

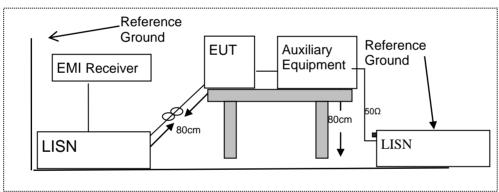
2. The lower limit shall apply at the transition frequencies

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

#### 7.1.3 Measuring Instruments

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

#### 7.1.4 Test Configuration



#### 7.1.5 Test Procedure

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

- 1. The EUT was placed 0.4 meter from the conducting wall of the shielding room.
- 2. The EUT was placed on a table which is 0.8m above ground plane.
- 3. Connect EUT to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- 4. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40cm long.
- 5. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- 6. LISN at least 80 cm from nearest part of EUT chassis.
- 7. The frequency range from 150KHz to 30MHz was searched.
- 8. Set the test-receiver system to Peak Detect Function and specified bandwidth(IF bandwidth=9KHz) with Maximum Hold Mode
- 9. For the actual test configuration, please refer to the related Item -EUT Test Photos.





#### 7.1.6 Test Results

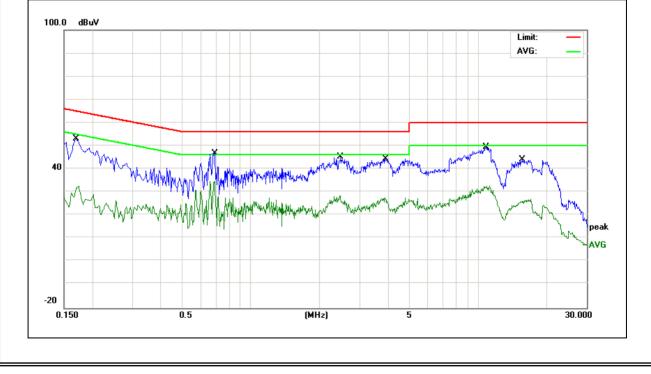
EUT:	Tablet PC	Model Name :	Tab 8 WiFi
Temperature:	<b>22</b> °C	Relative Humidity:	57%
Pressure:	1010hPa	Phase :	L
	DC 5V from Adapter AC 120V/60Hz	Test Mode:	Mode 1

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Domork
(MHz)	(dBµV)	(dB)	(dBµV)	(dBµV)	(dB)	Remark
0.1700	43.58	9.61	53.19	64.96	-11.77	QP
0.1700	22.10	9.61	31.71	54.96	-23.25	AVG
0.6900	37.05	9.67	46.72	56.00	-9.28	QP
0.6900	23.34	9.67	33.01	46.00	-12.99	AVG
2.4739	35.60	9.71	45.31	56.00	-10.69	QP
2.4739	17.85	9.71	27.56	46.00	-18.44	AVG
3.9220	34.70	9.75	44.45	56.00	-11.55	QP
3.9220	17.02	9.75	26.77	46.00	-19.23	AVG
10.8220	39.53	9.95	49.48	60.00	-10.52	QP
10.8220	21.99	9.95	31.94	50.00	-18.06	AVG
15.5780	33.82	10.10	43.92	60.00	-16.08	QP
15.5780	15.48	10.10	25.58	50.00	-24.42	AVG

Remark:

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

2. Factor = Insertion Loss + Cable Loss.







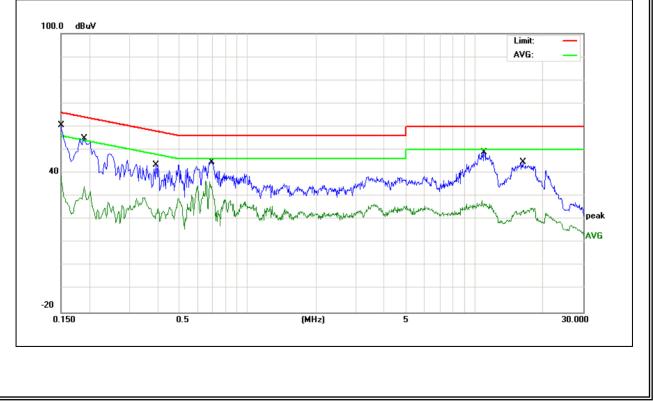
EUT:	Tablet PC	Model Name :	Tab 8 WiFi
Temperature:	<b>22</b> ℃	Relative Humidity:	57%
Pressure:	1010hPa	Phase :	N
Test Voltage :	DC 5V from Adapter AC 120V/60Hz	Test Mode:	Mode 1

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Domorly
(MHz)	(dBµV)	(dB)	(dBµV)	(dBµV)	(dB)	Remark
0.1500	50.99	9.60	60.59	65.99	-5.40	QP
0.1500	28.94	9.60	38.54	55.99	-17.45	AVG
0.1900	45.29	9.61	54.90	64.03	-9.13	QP
0.1900	24.01	9.61	33.62	54.03	-20.41	AVG
0.3940	33.95	9.65	43.60	57.98	-14.38	QP
0.3940	13.07	9.65	22.72	47.98	-25.26	AVG
0.6940	35.03	9.67	44.70	56.00	-11.30	QP
0.6940	24.44	9.67	34.11	46.00	-11.89	AVG
10.9819	38.95	9.96	48.91	60.00	-11.09	QP
10.9819	16.65	9.96	26.61	50.00	-23.39	AVG
16.2740	34.45	10.11	44.56	60.00	-15.44	QP
16.2740	13.92	10.11	24.03	50.00	-25.97	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

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MHz	MHz	GHz		
16.42-16.423	399.9-410	4.5-5.15		
16.69475-16.69525	608-614	5.35-5.46		
16.80425-16.80475	960-1240	7.25-7.75		
25.5-25.67	1300-1427	8.025-8.5		
37.5-38.25	1435-1626.5	9.0-9.2		
73-74.6	1645.5-1646.5	9.3-9.5		
74.8-75.2	1660-1710	10.6-12.7		
123-138	2200-2300	14.47-14.5		
149.9-150.05	2310-2390	15.35-16.2		
156.52475-156.52525	2483.5-2500	17.7-21.4		
156.7-156.9	2690-2900	22.01-23.12		
162.0125-167.17	3260-3267	23.6-24.0		
167.72-173.2	3332-3339	31.2-31.8		
240-285	3345.8-3358	36.43-36.5		
322-335.4	3600-4400	(2)		
	MHz 16.42-16.423 16.69475-16.69525 16.80425-16.80475 25.5-25.67 37.5-38.25 73-74.6 74.8-75.2 123-138 149.9-150.05 156.52475-156.52525 156.7-156.9 162.0125-167.17 167.72-173.2 240-285	MHzMHz16.42-16.423399.9-41016.69475-16.69525608-61416.80425-16.80475960-124025.5-25.671300-142737.5-38.251435-1626.573-74.61645.5-1646.574.8-75.21660-1710123-1382200-2300149.9-150.052310-2390156.52475-156.525252483.5-2500156.7-156.92690-2900162.0125-167.173260-3267167.72-173.23332-3339240-2853345.8-3358		

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)

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

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

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

3. For Frequency 9kHz~30MHz: Distance extrapolation factor =40log(Specific distance/ test distance)(dB); Limit line=Specific limits(dBuV) + distance extrapolation factor.

For Frequency above 30MHz: Distance extrapolation factor =20log(Specific distance/ test distance)(dB); Limit line=Specific limits(dBuV) + distance extrapolation factor.

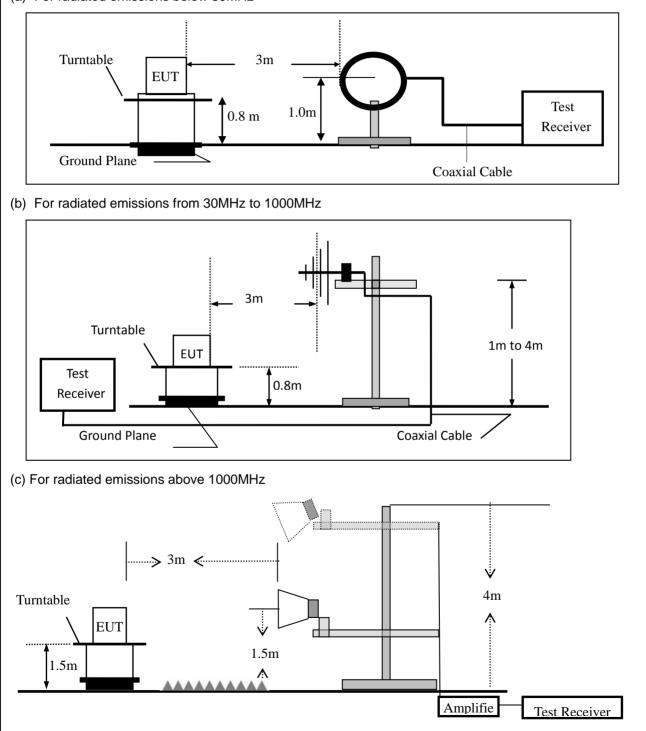


### 7.2.3 Measuring Instruments

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

### 7.2.4 Test Configuration

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







### 7.2.5 Test Procedure

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

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

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

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

a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.

- b. The EUT was placed on the top of a rotating table 0.8 m for below 1GHz and 1.5m for above 1GHz the ground at a 3 meter. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m for below 1GHz and 1.5m for above 1GHz; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For the radiated emission test above 1GHz:

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

- e. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- f. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- g. For the actual test configuration, please refer to the related Item -EUT Test Photos.

#### Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported



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

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

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

#### 7.2.6 Test Results

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

EUT:	Tablet PC	Model No.:	Tab 8 WiFi
Temperature:	<b>20</b> ℃	Relative Humidity:	48%
Lest Mode.	Mode1/Mode2/Mode3/ Mode4	Test By:	Allen Liu

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

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



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

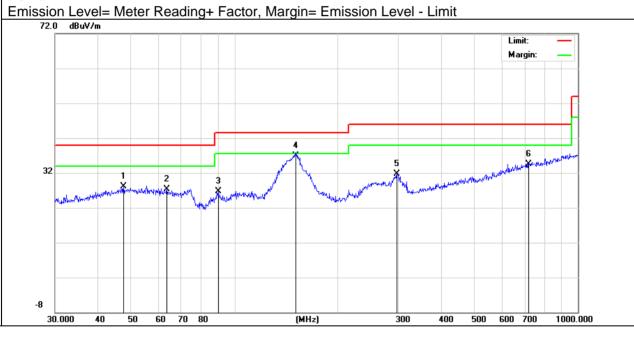
EUT:	Tablet PC	Model Name :	Tab 8 WiFi
Temperature:	<b>25</b> ℃	Relative Humidity:	55%
Pressure:	1010hPa	Test Mode:	Mode 4 2Mbps
Test Voltage :	DC 3.8V		

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Polar	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark
(H/V)	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
V	47.4918	7.25	20.81	28.06	40.00	-11.94	QP
V	63.5356	8.53	18.76	27.29	40.00	-12.71	QP
V	89.5899	9.74	17.02	26.76	43.50	-16.74	QP
V	150.0108	21.87	15.13	37.00	43.50	-6.50	QP
V	297.2241	11.78	19.94	31.72	46.00	-14.28	QP
V	719.1995	7.56	27.03	34.59	46.00	-11.41	QP

#### Remark:





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(H/V)         (MHz)         (dBuV)         (dB)         (dBuV/m)         (dBuV/m)         (dB)           H         34.3964         13.48         18.27         31.75         40.00         -8.25            H         46.9948         8.74         20.75         29.49         40.00         -10.51            H         65.5727         7.39         18.10         25.49         40.00         -14.51           H         150.0108         18.92         15.13         34.05         43.50         -9.45           H         370.7023         7.62         21.49         29.11         46.00         -16.89           H         804.6028         6.28         27.94         34.22         46.00         -11.78           Remark:         Emission Level= Meter Reading+ Factor, Margin= Emission Level - Limit         72.0         dBuV/m         Margin:	Remark peak peak peak peak peak
H       46.9948       8.74       20.75       29.49       40.00       -10.51         H       65.5727       7.39       18.10       25.49       40.00       -14.51         H       150.0108       18.92       15.13       34.05       43.50       -9.45         H       370.7023       7.62       21.49       29.11       46.00       -16.89         H       804.6028       6.28       27.94       34.22       46.00       -11.78         Remark:       Emission Level= Meter Reading+ Factor, Margin= Emission Level - Limit       Limit:	peak peak peak peak
H       65.5727       7.39       18.10       25.49       40.00       -14.51         H       150.0108       18.92       15.13       34.05       43.50       -9.45         H       370.7023       7.62       21.49       29.11       46.00       -16.89         H       804.6028       6.28       27.94       34.22       46.00       -11.78         Remark:       Emission Level= Meter Reading+ Factor, Margin= Emission Level - Limit       Limit:       Limit:	peak peak peak peak
H       150.0108       18.92       15.13       34.05       43.50       -9.45         H       370.7023       7.62       21.49       29.11       46.00       -16.89         H       804.6028       6.28       27.94       34.22       46.00       -11.78         Remark:       Emission Level= Meter Reading+ Factor, Margin= Emission Level - Limit       72.0       dBuV/m       Limit:	peak peak peak
H         370.7023         7.62         21.49         29.11         46.00         -16.89           H         804.6028         6.28         27.94         34.22         46.00         -11.78           Remark:         Emission Level= Meter Reading+ Factor, Margin= Emission Level - Limit         -11.78         -11.78	peak
H         804.6028         6.28         27.94         34.22         46.00         -11.78           Remark:         Emission Level= Meter Reading+ Factor, Margin= Emission Level - Limit         -11.78         -11.78           72.0         dBuV/m         Limit:	
Remark: Emission Level= Meter Reading+ Factor, Margin= Emission Level - Limit 72.0 dBuV/m	peak
Emission Level= Meter Reading+ Factor, Margin= Emission Level - Limit 72.0 dBuV/m	
$32 \times 2$ $5$ $\mu_{\mu}h_{\mu}h_{\mu}h_{\mu}h_{\mu}h_{\mu}h_{\mu}h_{\mu}$	-
30.000 40 50 60 70 80 (MHz) 300 400 500 600 700 1000.	.000

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JT:	Т	ablet PC			Model No.:		Tab 8 Wil	-i	
emperature	: 2	0 °C			Relative Humidity: 48%				
est Mode:	N	lode2/Mod	de3/Mode	4	Test By:		Allen Liu		
Frequency	Read Level	Cable loss	Antenna Factor	Pream Facto	•	Limits	Margin	Remark	Comment
(MHz)	(dBµV)	(dB)	dB/m	(dB)	(dBµV/m)	(dBµV/m)	(dB)		
			Low (	Channel	(2402 MHz)(GF	SK)Above	1G		
4804.338	62.74	5.21	35.59	44.30	59.24	74.00	-14.76	Pk	Vertical
4804.338	41.71	5.21	35.59	44.30	38.21	54.00	-15.79	AV	Vertical
7206.107	61.95	6.48	36.27	44.60	60.10	74.00	-13.90	Pk	Vertical
7206.107	41.07	6.48	36.27	44.60	39.22	54.00	-14.78	AV	Vertical
4804.169	63.89	5.21	35.55	44.30	60.35	74.00	-13.65	Pk	Horizontal
4804.169	42.57	5.21	35.55	44.30	39.03	54.00	-14.97	AV	Horizontal
7206.214	61.53	6.48	36.27	44.52	2 59.76	74.00	-14.24	Pk	Horizontal
7206.214	41.88	6.48	36.27	44.52	40.11	54.00	-13.89	AV	Horizontal
Mid Channel (2440 MHz)(GFSK)Above 1G									
4880.473	62.68	5.21	35.66	44.20	59.35	74.00	-14.65	Pk	Vertical
4880.473	44.02	5.21	35.66	44.20	40.69	54.00	-13.31	AV	Vertical
7320.265	65.90	7.10	36.50	44.43	65.07	74.00	-8.93	Pk	Vertical
7320.265	41.80	7.10	36.50	44.43	40.97	54.00	-13.03	AV	Vertical
4880.366	62.35	5.21	35.66	44.20	59.02	74.00	-14.98	Pk	Horizontal
4880.366	40.58	5.21	35.66	44.20	37.25	54.00	-16.75	AV	Horizontal
7320.234	59.96	7.10	36.50	44.43	59.13	74.00	-14.87	Pk	Horizontal
7320.234	43.49	7.10	36.50	44.43		54.00	-11.34	AV	Horizontal
			High C	Channel	(2480 MHz)(GF	SK) Above	e 1G		1
4960.482	63.01	5.21	35.52	44.21	59.53	74.00	-14.47	Pk	Vertical
4960.482	41.84	5.21	35.52	44.21	38.36	54.00	-15.64	AV	Vertical
7440.131	64.87	7.10	36.53	44.60	63.90	74.00	-10.10	Pk	Vertical
7440.131	48.38	7.10	36.53	44.60	) 47.41	54.00	-6.59	AV	Vertical
4960.326	64.49	5.21	35.52	44.21	61.01	74.00	-12.99	Pk	Horizontal
4960.326	44.44	5.21	35.52	44.21	40.96	54.00	-13.04	AV	Horizontal
7440.199	64.76	7.10	36.53	44.60	63.79	74.00	-10.21	Pk	Horizontal
7440.199	45.56	7.10	36.53	44.60	44.59	54.00	-9.41	AV	Horizontal

Note:

(1) Emission Level= Antenna Factor + Cable Loss + Read Level - Preamp Factor

(2)All other emissions more than 20dB below the limit.

(3)Only the worst data is recorded in the report, the data rates (2Mbps for GFSK modulation) test result is the worst





Spurious Er	mission in	Restricted Band 231	0-2390MHz and 2483.	.5-2500MHz

ilac-M

EUT:	Tablet PC	Model No.:	Tab 8 WiFi
Temperature:	<b>20</b> ℃	Relative Humidity:	48%
Test Mode:	Mode2/ Mode4	Test By:	Allen Liu

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Frequency	Meter Reading	Cable Loss	Antenna Factor	Preamp Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBµV)	(dB)	dB/m	(dB)	(dBµV/m)	(dBµV/m)	(dB)	Туре	
	1Mbps(GFSK)								
2310.00	63.56	2.97	27.80	43.80	50.53	74	-23.47	Pk	Horizontal
2310.00	43.94	2.97	27.80	43.80	30.91	54	-23.09	AV	Horizontal
2310.00	62.72	2.97	27.80	43.80	49.69	74	-24.31	Pk	Vertical
2310.00	42.93	2.97	27.80	43.80	29.90	54	-24.10	AV	Vertical
2390.00	63.80	3.14	27.21	43.80	50.35	74	-23.65	Pk	Vertical
2390.00	42.93	3.14	27.21	43.80	29.48	54	-24.52	AV	Vertical
2390.00	63.07	3.14	27.21	43.80	49.62	74	-24.38	Pk	Horizontal
2390.00	42.79	3.14	27.21	43.80	29.34	54	-24.66	AV	Horizontal
2483.50	61.56	3.58	27.70	44.00	48.84	74	-25.16	Pk	Vertical
2483.50	44.03	3.58	27.70	44.00	31.31	54	-22.69	AV	Vertical
2483.50	64.62	3.58	27.70	44.00	51.90	74	-22.10	Pk	Horizontal
2483.50	43.17	3.58	27.70	44.00	30.45	54	-23.55	AV	Horizontal

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

(2)Only the worst data is recorded in the report, the data rates (2Mbps for GFSK modulation) test result is the worst

UT: Tablet PC		Model	Model No.:		Tab 8 WiFi					
emperature: 20 °C		Relativ	Relative Humidity:		48%					
est Mode: Mode2/ Mode4			Test By	Test By:		Allen Liu				
Frequency	Reading Level	Cable Loss	Antenna Factor	Preamp Factor	Emission Level	Lir	nits	Margin	Detector	Comment
(MHz)	(dBµV)	(dB)	dB/m	(dB)	(dBµV/m)	(dBµ	ıV/m)	(dB)	Туре	
3260	63.70	4.04	29.57	44.70	52.61	7	74	-21.39	Pk	Vertical
3260	56.50	4.04	29.57	44.70	45.41	Ę	54	-8.59	AV	Vertical
3260	66.27	4.04	29.57	44.70	55.18	7	74	-18.82	Pk	Horizontal
3260	58.34	4.04	29.57	44.70	47.25	Ę	54	-6.75	AV	Horizontal
3332	66.12	4.26	29.87	44.40	55.85	7	74	-18.15	Pk	Vertical
3332	56.85	4.26	29.87	44.40	46.58	Ę	54	-7.42	AV	Vertical
3332	66.49	4.26	29.87	44.40	56.22	7	74	-17.78	Pk	Horizontal
3332	52.04	4.26	29.87	44.40	41.77	5	54	-12.23	AV	Horizontal
17797	45.16	10.99	43.95	43.50	56.60	7	74	-17.40	Pk	Vertical
17797	35.28	10.99	43.95	43.50	46.72	5	54	-7.28	AV	Vertical
17788	45.28	11.81	43.69	44.60	56.18	7	74	-17.82	Pk	Horizontal
17788	37.21	11.81	43.69	44.60	48.11	5	54	-5.89	AV	Horizontal

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

(2)Only the worst data is recorded in the report, the data rates (2Mbps for GFSK modulation) test result is the worst



#### 7.3 6DB BANDWIDTH

#### 7.3.1 Applicable Standard

According to FCC Part 15.247(a)(2) and KDB 558074 D01 15.247 Meas Guidance v05r02 Section 8.2.

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#### 7.3.2 Conformance Limit

The minimum permissible 6dB bandwidth is 500 kHz.

#### 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 Subclause 11.8 of ANSI C63.10

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:

- a) Set RBW = 100 kHz.
- b) Set the video bandwidth (VBW)  $\geq$  3\*RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Sweep = auto couple.
- f) Allow the trace to stabilize.

g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

#### 7.3.6 Test Results

EUT:	Tablet PC	Model No.:	Tab 8 WiFi
Temperature:	<b>20</b> ℃	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Allen Liu



#### 7.4 DUTY CYCLE

#### 7.4.1 Applicable Standard

According to KDB 558074 D01 15.247 Meas Guidance v05r02s Section 6.

#### 7.4.2 Conformance Limit

No limit requirement.

#### 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 zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal. Set the center frequency of the instrument to the center frequency of the transmission. Set RBW  $\geq$  OBW if possible; otherwise, set RBW to the largest available value. Set VBW  $\geq$  RBW. Set detector = peak or average. The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if T  $\leq$  16.7 microseconds.)

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The transmitter output is connected to the Spectrum Analyzer. We tested accroding to the zero-span measurement method, 6.0)b) in KDB 558074

The largest available value of RBW is 8 MHz and VBW is 50 MHz. The zero-span method of measuring duty cycle shall not be used if  $T \le 6.25$  microseconds. (50/6.25 = 8)

The zero-span method was used because all measured T data are > 6.25 microseconds and both RBW and VBW are > 50/T.

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 = Zero Span RBW = 8MHz(the largest available value) VBW = 8MHz ( $\ge$  RBW) Number of points in Sweep >100 Detector function = peak Trace = Clear write Measure T<sub>total</sub> and T<sub>on</sub> Calculate Duty Cycle = T<sub>on</sub> / T<sub>total</sub>



#### 7.4.6 Test Results

EUT:	Tablet PC	Model No.:	Tab 8 WiFi
Temperature:	<b>20</b> ℃	Relative Humidity:	48%
Test Mode:	N/A	Test By:	N/A

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Note: Not Applicable



#### 7.5 PEAK OUTPUT POWER

#### 7.5.1 Applicable Standard

According to FCC Part 15.247(b)(3) and KDB 558074 D01 15.247 Meas Guidance v05r02 Section 8.3.1.

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#### 7.5.2 Conformance Limit

The maximum peak conducted output power of the intentional radiator for systems using digital modulation in the 2400 - 2483.5 MHz bands shall not exceed: 1 Watt (30dBm). If transmitting antenna of directional gain greater than 6dBi is used, the peak output power from the intentional radiator shall be reduced below the above stated value by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

#### 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 Subclause 11.9.1.1 of ANSI C63.10 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: Set the RBW  $\geq$  DTS bandwidth. Set VBW =3\*RBW. Set the span  $\geq$  3\*RBW Set Sweep time = auto couple. Set Detector = peak. Set Trace mode = max hold. Allow trace to fully stabilize. Use peak marker function to determine the peak amplitude level.

#### 7.5.6 Test Results

EUT:	Tablet PC	Model No.:	Tab 8 WiFi
Temperature:	<b>20</b> ℃	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Allen Liu



#### 7.6 POWER SPECTRAL DENSITY

#### 7.6.1 Applicable Standard

According to FCC Part 15.247(e) and KDB 558074 D01 15.247 Meas Guidance v05r02 Section 8.4.

#### 7.6.2 Conformance Limit

The transmitter power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

#### 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 Measurement Procedure Subclause 11.10.2 of ANSI C63.10 This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance, and is optional if the maximum conducted (average) output power was used to demonstrate compliance.

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.

- a) Set analyzer center frequency to DTS channel center frequency.
- b) Set the span to 1.5\*DTS bandwidth.
- c) Set the RBW to:  $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$ .
- d) Set the VBW  $\geq$  3 RBW.
- e) Detector = peak.
- f) Sweep time = auto couple.
- g) Trace mode = max hold.
- h) Allow trace to fully stabilize.
- i) Use the peak marker function to determine the maximum amplitude level within the RBW.
- j) If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.





#### 7.6.6 Test Results

EUT:	Tablet PC	Model No.:	Tab 8 WiFi
Temperature:	<b>20</b> ℃	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Allen Liu

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#### 7.7 CONDUCTED BAND EDGE MEASUREMENT

#### 7.7.1 Applicable Standard

According to FCC Part 15.247(d) and KDB 558074 D01 15.247 Meas Guidance v05r02 Section 8.7.

#### 7.7.2 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.

#### 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 FCC KDB 558074 D01 15.247 Meas Guidance v05r02 Section 8.7.

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.

Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.

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.

#### 7.7.6 Test Results

EUT:	Tablet PC	Model No.:	Tab 8 WiFi
Temperature:	<b>20</b> ℃	Relative Humidity:	48%
Test Mode:	Mode2/Mode4	Test By:	Allen Liu





#### 7.8 SPURIOUS RF CONDUCTED EMISSIONS

#### 7.8.1 Conformance Limit

1. Below -20dB of the highest emission level in operating band.

2. Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209.

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#### 7.8.2 Measuring Instruments

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

#### 7.8.3 Test Setup

Please refer to Section 6.1 of this test report.

#### 7.8.4 Test Procedure

The Spurious RF conducted emissions compliance of RF radiated emission should be measured by following the guidance in ANSI C63.10-2013 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization etc. Set RBW=100kHz and VBW= 300KHz to measure the peak field strength , and measure frequency range from 30MHz to 26.5GHz.

#### 7.8.5 Test Results

Remark: The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and bandege measurement data.





#### 7.9 ANTENNA APPLICATION

#### 7.9.1 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.

#### 7.9.2 Result

The EUT antenna is permanent attached PIFA antenna (Gain: 3 dBi). It comply with the standard requirement.



## 8 TEST RESULTS

#### 1M:

## 8.1.1 Maximum Conducted Output Power

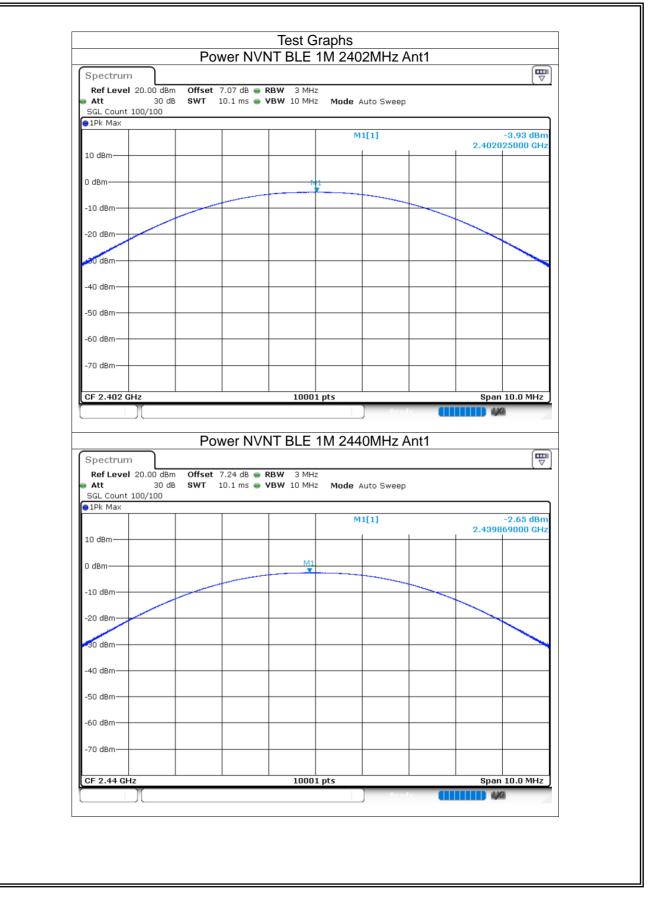
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	-3.93	30	Pass
NVNT	BLE 1M	2440	Ant1	-2.65	30	Pass
NVNT	BLE 1M	2480	Ant1	-3.38	30	Pass

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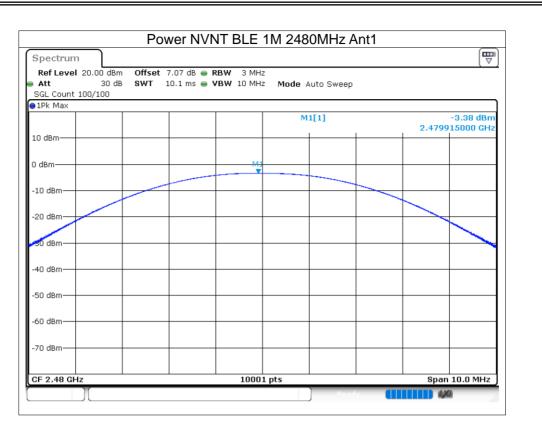
#### Report No.: STR230303002002E



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### 8.1.2 -6dB Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1M	2402	Ant1	0.672	0.5	Pass
NVNT	BLE 1M	2440	Ant1	0.714	0.5	Pass
NVNT	BLE 1M	2480	Ant1	0.644	0.5	Pass





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				th NVNT BL			•	
Spectrum								[₩
Ref Level				RBW 100 kHz				
Att SGL Count 1			18.9 µs 🧉	<b>VBW</b> 300 kHz	Mode Auto FFT			
1Pk Max	00/100							
					M1[1]			-4.23 dBm
.0 dBm							2.4799	86400 GHz
					M2[1]			10.16 dBm
I dBm				MI			2.4796	61000 GHz
			M2		МЗ			
10 dBm —					~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	_		
20 dBm								
30 dBm								
+0 dBm								
50 dBm —								
50 dBm —								
70 dBm								
o abiii								
F 2.48 GHz				10001 pt	<u> </u>		Sna	n 2.0 MHz
arker				10001 pt	-			
Type   Ref	Trc	X-valu	e l	Y-value	Function	Fund	tion Result	1
M1	1	2.47998		-4.23 dBm				
M2	1		61 GHz	-10.16 dBm				
MЗ	1	2.4803	805 GHz	-10.26 dBm				

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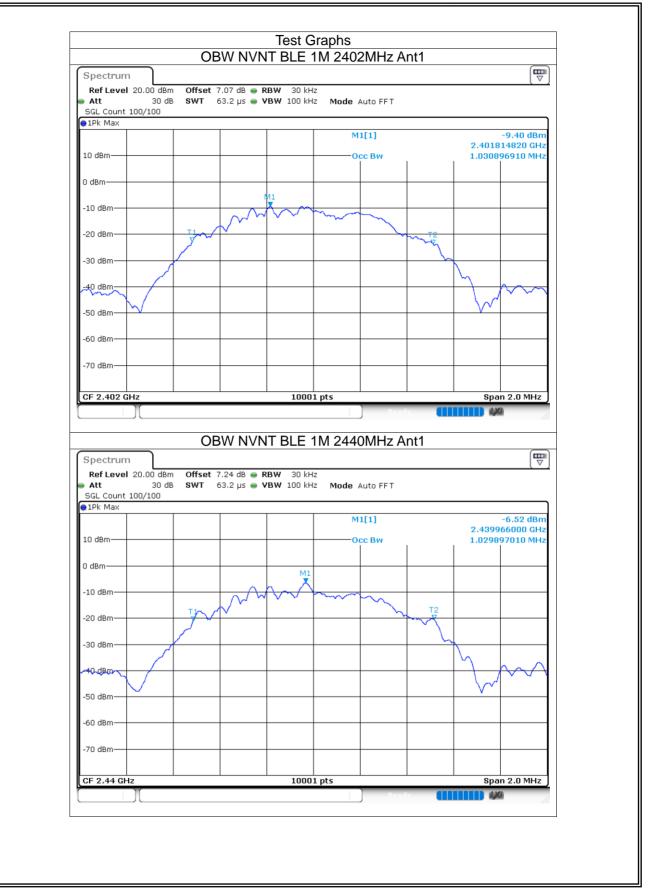


# 8.1.3 Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	BLE 1M	2402	Ant1	1.031
NVNT	BLE 1M	2440	Ant1	1.03
NVNT	BLE 1M	2480	Ant1	1.028

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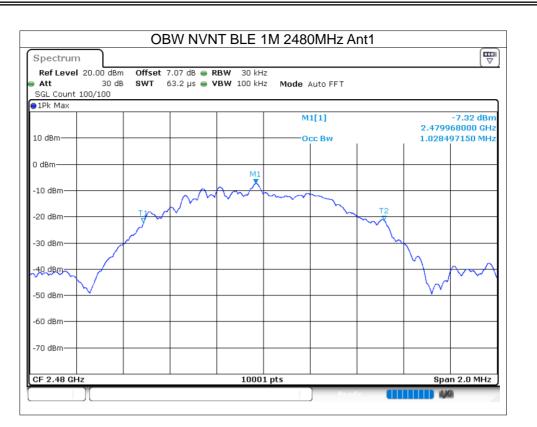


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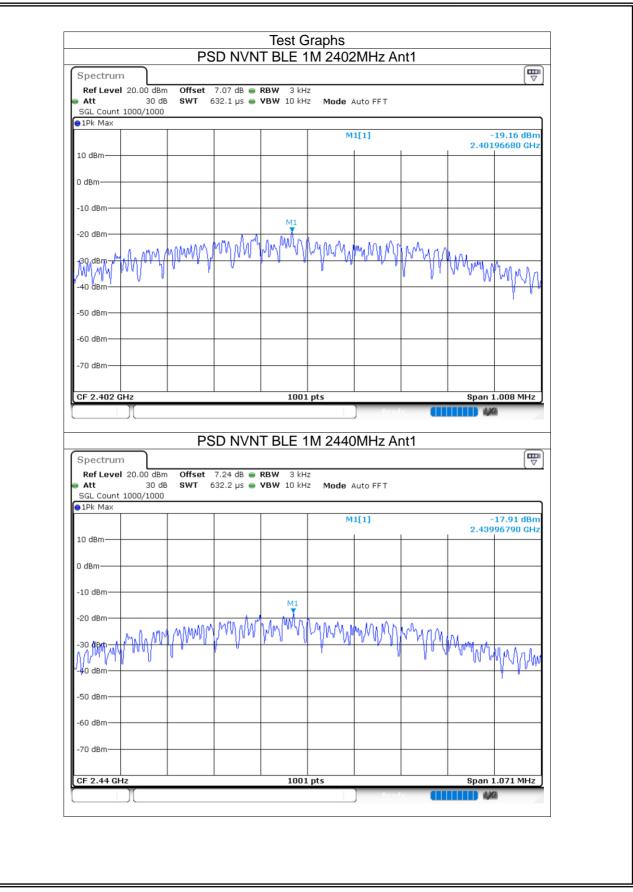


## 8.1.4 Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	-19.16	8	Pass
NVNT	BLE 1M	2440	Ant1	-17.91	8	Pass
NVNT	BLE 1M	2480	Ant1	-18.66	8	Pass

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Spectrum								
Ref Level 20.0		7.07 dB 👄		-				
Att SGL Count 1000	30 dB <b>SWT</b> /1000	632.2 µs 👄	<b>VBW</b> 10 KH	z Mode A	Auto FFT			
1Pk Max	, 1000							
				M	1[1]			18.66 dBm
.0 dBm					I	1	2.4799	68150 GHz
o ubiii								
dBm								
10 dBm								
			M1					
20 dBm		In Arth	A AMO	A				
A. 0. Al	IM MAMMA	ר שאמית	MM	MAM	MUMIN	DAMAA.	ALION	
	u <del>A</del> ¶u ∵u i	f V	<u> </u>				i "LIV VLAM	M 10. 0 0
V. V. V	Y					r r		A. Malan
40 dBm								V
50 dBm								
60 dBm								
70 dBm								
F 2.48 GHz			1001	nts			Snan	966.0 kHz

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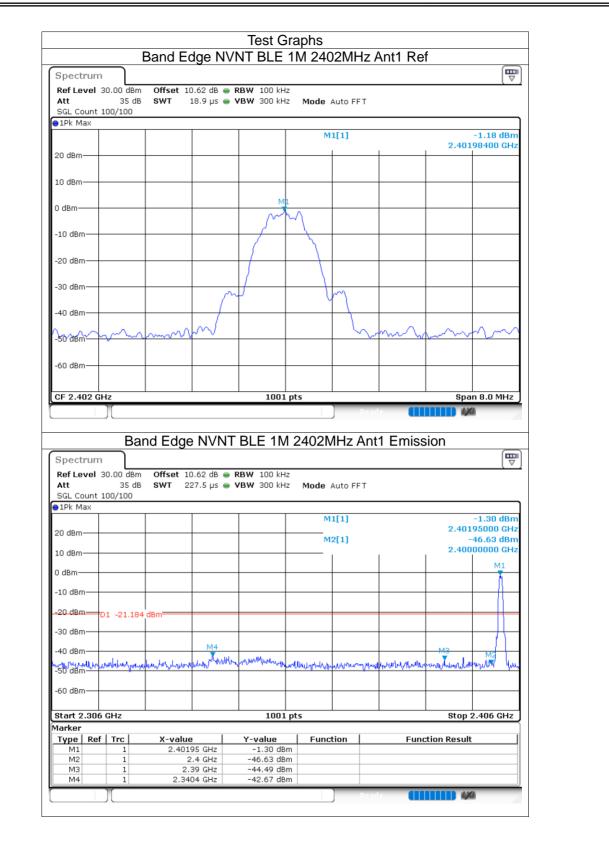


## 8.1.5 Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-41.48	-20	Pass
NVNT	BLE 1M	2480	Ant1	-42.68	-20	Pass

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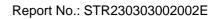
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	30.00 dBm	Offset 10.							
Att SGL Count		SWT 18	ora he 🕋 🗚	<b>'BW</b> 300 kH:	2 Mode	AUTO FFT			
∋1Pk Max									
					М	1[1]		_	-0.59 dBm
20 dBm							1	2.479	98400 GHz
10 dBm									
				м					
0 dBm				~	~~~				
					<u> </u>				
-10 dBm—									
-20 dBm									
20 00.00					\				
-30 dBm—		+		/	{	<u></u>			
			/7	۲		11			
-40 dBm—		+ +							
-50 dBm	hm	from	$\sim$			│	mm	home	m
-30° uBM									
-60 dBm							ļ		
CF 2.48 G	 			1001	nte				n 8.0 MHz
01 2.40 0	~~~~			1001	pts	<u> </u>			
Spectrur		nd Edge	NVNT	BLE 1M	I 2480N	J Real	1 Emiss	sion	
	n 30.00 dBm	Offset 10.	62 dB 曼 R	<b>BW</b> 100 kH:	2		1 Emiss		
-	n 30.00 dBm 35 dB		62 dB 曼 R	<b>BW</b> 100 kH:	2		1 Emiss		
Ref Level Att	n 30.00 dBm 35 dB	Offset 10.	62 dB 曼 R	<b>BW</b> 100 kH:	z z Mode .	Auto FFT	1 Emiss		
Ref Level Att SGL Count P1Pk Max	n 30.00 dBm 35 dB	Offset 10.	62 dB 曼 R	<b>BW</b> 100 kH:	z z Mode .		1 Emiss	sion	-1.10 dBm
Ref Level Att SGL Count	n 30.00 dBm 35 dB	Offset 10.	62 dB 曼 R	<b>BW</b> 100 kH:	z Mode . M	Auto FFT	1 Emiss	<u>sion</u>	-1.10 dBm 25000 GHz 45.76 dBm
Ref Level Att SGL Count P1Pk Max	n 30.00 dBm 35 dB	Offset 10.	62 dB 曼 R	<b>BW</b> 100 kH:	z Mode . M	Auto FFT 1[1]	1 Emiss	<u>sion</u>	-1.10 dBm 25000 GHz
Ref Level Att SGL Count 1Pk Max 20 dBm- 10 dBm- M1	n 30.00 dBm 35 dB	Offset 10.	62 dB 曼 R	<b>BW</b> 100 kH:	z Mode . M	Auto FFT 1[1]	:1 Emiss	<u>sion</u>	-1.10 dBm 25000 GHz 45.76 dBm
Ref Level Att SGL Count 1Pk Max 20 dBm	n 30.00 dBm 35 dB	Offset 10.	62 dB 曼 R	<b>BW</b> 100 kH:	z Mode . M	Auto FFT 1[1]	:1 Emiss	<u>sion</u>	-1.10 dBm 25000 GHz 45.76 dBm
Ref Level Att SGL Count 1Pk Max 20 dBm- 10 dBm- M1	n 30.00 dBm 35 dB	Offset 10.	62 dB 曼 R	<b>BW</b> 100 kH:	z Mode . M	Auto FFT 1[1]	:1 Emiss	<u>sion</u>	-1.10 dBm 25000 GHz 45.76 dBm
Ref Level Att SGL Count 1Pk Max 20 dBm- 10 dBm- -10 dBm-	n 30.00 dBm 35 dB	Offset 10. SWT 227	62 dB 曼 R	<b>BW</b> 100 kH:	z Mode . M	Auto FFT 1[1]	:1 Emiss	<u>sion</u>	-1.10 dBm 25000 GHz 45.76 dBm
Ref Level Att SGL Count 1Pk Max 20 dBm- 10 dBm- -10 dBm-	n 30.00 dBm 35 dB : 100/100	Offset 10. SWT 227	62 dB 曼 R	<b>BW</b> 100 kH:	z Mode . M	Auto FFT 1[1]	1 Emiss	<u>sion</u>	-1.10 dBm 25000 GHz 45.76 dBm
Mef Level           Att           SGL Count           1Pk Max           20 dBm           10 dBm           0 dBm           -10 dBm           -20 cBm           -30 cBm	n 30.00 dBm 35 dB : 100/100	Offset 10. SWT 227	62 dB 曼 R	<b>BW</b> 100 kH:	z Mode . M	Auto FFT 1[1]	1 Emiss	<u>sion</u>	-1.10 dBm 25000 GHz 45.76 dBm
Ref Level           Att           SGL Count           1Pk Max           20 dBm           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBmz	n 30.00 dBm 35 dB 100/100	Offset 10. SWT 227	62 dB <b>— R</b> 7.5 µs <b>— V</b>	28W 100 kH; 78W 300 kH;	2 Mode . M	Auto FFT  1[1] 2[1]		2.480 2.483	-1.10 dBm 125000 GHz 45.76 dBm 50000 GHz
Mef Level           Att           SGL Count           1Pk Max           20 dBm           10 dBm           0 dBm           -10 dBm           -20 cBm           -30 cBm	n 30.00 dBm 35 dB 100/100	Offset 10. SWT 227	62 dB <b>— R</b> 7.5 µs <b>— V</b>	28W 100 kH; 78W 300 kH;	2 Mode . M	Auto FFT  1[1] 2[1]		2.480 2.483	-1.10 dBm 125000 GHz 45.76 dBm 50000 GHz
Ref Level           Att           SGL Count           1Pk Max           20 dBm           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBmz	n 30.00 dBm 35 dB 100/100	Offset 10. SWT 227	62 dB <b>— R</b> 7.5 µs <b>— V</b>	28W 100 kH; 78W 300 kH;	2 Mode . M	Auto FFT  1[1] 2[1]		2.480 2.483	-1.10 dBm 125000 GHz 45.76 dBm 50000 GHz
Ref Level           Att           SGL Count           IPk Max           20 dBm           10 dBm           0 dBm           -10 dBm           -20 cBm           -30 dBm           -30 dBm           -50 dBm	n 30.00 dBm 35 dB : 100/100	Offset 10. SWT 227	62 dB <b>— R</b> 7.5 µs <b>— V</b>	BW 100 kH; BW 300 kH;	2 Mode . 	Auto FFT  1[1] 2[1]		2.480 2.483	-1.10 dBm 25000 GHz 45.76 dBm 50000 GHz
Ref Level           Att           SGL Count           SGL Count           10 dBm           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -30 dBm           -50 dBm           -60 dBm           Start 2.47	n 30.00 dBm 35 dB : 100/100	Offset 10. SWT 227	62 dB <b>— R</b> 7.5 µs <b>— V</b>	28W 100 kH; 78W 300 kH;	2 Mode . 	Auto FFT  1[1] 2[1]		2.480 2.483	-1.10 dBm 125000 GHz 45.76 dBm 50000 GHz
Ref Level           Att           SGL Count           IPk Max           20 dBm           10 dBm           0 dBm           -10 dBm           -20 cBm           -30 dBm           -30 dBm           -50 dBm	n 30.00 dBm 35 dB 100/100	Offset 10. SWT 227	62 dB <b>— R</b> 7.5 µs <b>— V</b>	BW 100 kH; BW 300 kH;	2 Mode . 	Auto FFT  1[1]  2[1]	- prizekteliu, A	2.480 2.483	-1.10 dBm 25000 GHz 45.76 dBm 50000 GHz
Ref Level Att           SGL Count           1Pk Max           20 dBm           10 dBm           0 dBm           -10 dBm           -20 cBm           -30 dBm           -40 dBm           -50 dBm           -60 dBm           -60 dBm           Start 2.47           Marker           Type         Re           M1	n 30.00 dBm 35 dB 100/100 01 -20.59 1 1 6 GHz 1 1	Offset 10.0     SWT 227	62 dB <b>• R</b> 7.5 μs <b>• V</b>	BW 100 kH; BW 300 kH; W 30	2 2 Mode . س س پردیمبید ۱۹۱۹ س pts س	Auto FFT  1[1]  2[1]	- prizekteliu, A	2.480 2.483 2.483	-1.10 dBm 25000 GHz 45.76 dBm 50000 GHz
Ref Level           Att           SGL Count           SGL Count           1Pk Max           20 dBm           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -30 dBm           -60 dBm           Start 2.47           Yarker           Type	n 30.00 dBm 35 dB 100/100 D1 -20.594	Offset 10.0 SWT 227	62 dB <b>• R</b> 7.5 μs <b>• V</b>	2BW 100 kH; 7BW 300 kH; 7BW 7BW 7D kH; 7BW 7D kH	2 Mode M M m pts Func m m	Auto FFT  1[1]  2[1]	- prizekłatky rodyc, A	2.480 2.483 2.483	-1.10 dBm 25000 GHz 45.76 dBm 50000 GHz
Ref Level Att           SGL Count           SGL Count           10 dBm           10 dBm           -10 dBm           -10 dBm           -20 cBm           -30 dBm           -30 dBm           -50 dBm           -60 dBm           Start 2.47           Marker           Type           M1           M2	n 30.00 dBm 35 dB 100/100 D1 -20.594 	Offset 10.0 SWT 227	62 dB	BW 100 kH; BW 300 kH; BW 300 kH; BW 300 kH; BW 100 kH; BW 300	z Mode . M M M M M M M M M M M M M	Auto FFT  1[1]  2[1]	- prizekłatky rodyc, A	2.480 2.483 2.483	-1.10 dBm 25000 GHz 45.76 dBm 50000 GHz

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## 8.1.6 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-40.95	-20	Pass
NVNT	BLE 1M	2440	Ant1	-42.18	-20	Pass
NVNT	BLE 1M	2480	Ant1	-42.16	-20	Pass

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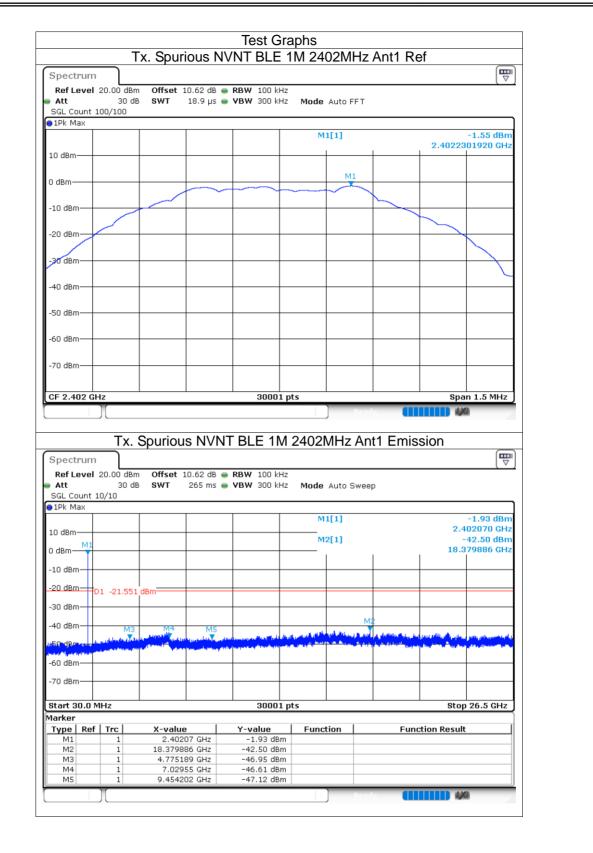


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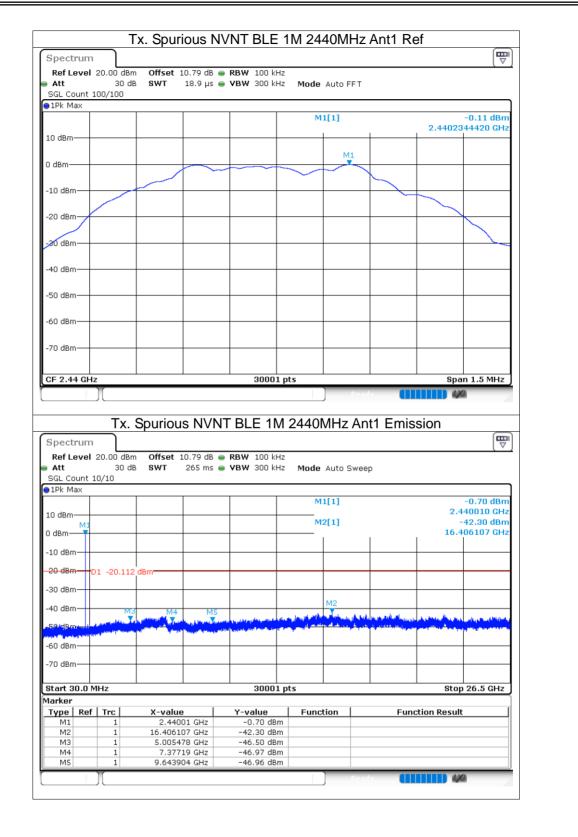
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Certificate #4298.01

#### Report No.: STR230303002002E







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Spectrum							
Ref Level 20.00			• RBW 100 kHz				
SGL Count 100/10	30 dB <b>SWT</b>	18.9 µs 🧉	<b>VBW</b> 300 kHz	Mode Auto FFT			
●1Pk Max	JU						
				M1[1]			-0.53 dBm
						2.47999	00000 GHz
10 dBm							<u> </u>
			MI				
0 dBm							<b> </b>
		T -					
-10 dBm	~					_	
-20 dBm							
-30 dBm		+	+ +	<u> </u>			
-40 dBm			+ +				
-50 dBm							
-60 dBm		1					
-70 dBm							
CF 2.48 GHz			30001 p	its		Spa	n 1.5 MHz
	Tx. Spurio	us NVN	T BLE 1M	 2480MHz Ar	t1 Emiss	sion	
Spectrum Ref Level 20.00	) dBm Offset	10.62 dB 🖷	• <b>RBW</b> 100 kHz			sion	
Spectrum Ref Level 20.00 Att		10.62 dB 🖷	• <b>RBW</b> 100 kHz	2480MHz Ar		sion	
Spectrum Ref Level 20.00	) dBm Offset	10.62 dB 🖷	• <b>RBW</b> 100 kHz			sion	
Spectrum Ref Level 20.00 Att SGL Count 10/10	) dBm Offset	10.62 dB 🖷	• <b>RBW</b> 100 kHz				-0.93 dBm
Spectrum Ref Level 20.00 Att SGL Count 10/10	) dBm Offset	10.62 dB 🧉	• <b>RBW</b> 100 kHz	Mode Auto Swee		2.4	-0.93 dBm 80600 GHz
Spectrum Ref Level 20.00 Att SGL Count 10/10 1Pk Max 10 dBm M3	) dBm Offset	10.62 dB 🧉	• <b>RBW</b> 100 kHz	Mode Auto Swee		2.4	-0.93 dBm 80600 GHz 42.70 dBm
Spectrum Ref Level 20.00 Att SGL Count 10/10 1Pk Max 10 dBm M3 0 dBm	) dBm Offset	10.62 dB 🧉	• <b>RBW</b> 100 kHz	Mode Auto Swee		2.4	-0.93 dBm 80600 GHz
Spectrum Ref Level 20.00 Att SGL Count 10/10 1Pk Max 10 dBm M3	) dBm Offset	10.62 dB 🧉	• <b>RBW</b> 100 kHz	Mode Auto Swee		2.4	-0.93 dBm 80600 GHz 42.70 dBm
Spectrum Ref Level 20.00 Att SGL Count 10/10 1Pk Max 10 dBm M3 0 dBm	0 dBm Offset 30 dB SWT	10.62 dB 🧉	• <b>RBW</b> 100 kHz	Mode Auto Swee		2.4	-0.93 dBm 80600 GHz 42.70 dBm
Spectrum Ref Level 20.00 Att SGL Count 10/10 1Pk Max 10 dBm 10 dBm -10 dBm -20 dBm D1 -20	0 dBm Offset 30 dB SWT	10.62 dB 🧉	• <b>RBW</b> 100 kHz	Mode Auto Swee		2.4	-0.93 dBm 80600 GHz 42.70 dBm
Spectrum           Ref Level 20.00           Att           SGL Count 10/10           1Pk Max           10 dBm           M1           0 dBm           -10 dBm	0 dBm Offset 30 dB SWT	10.62 dB 🧉	• <b>RBW</b> 100 kHz	Mode Auto Swee		2.4	-0.93 dBm 80600 GHz 42.70 dBm
Spectrum Ref Level 20.00 Att SGL Count 10/10 1Pk Max 10 dBm 10 dBm -10 dBm -20 dBm D1 -20	0 dBm Offset 30 dB SWT	10.62 dB 265 ms	RBW         100 kHz           VBW         300 kHz	Mode Auto Swee	p	2.4 - 16.7	-0.93 dBm 80600 GHz 42.70 dBm 01688 GHz
Spectrum           Ref Level 20.00           Att           SGL Count 10/10           1Pk Max           10 dBm           -10 dBm           -20 dBm           D1 -20	0 dBm Offset 30 dB SWT	10.62 dB 265 ms	RBW 100 kHz VBW 300 kHz	Mode Auto Swee	p	2.4	-0.93 dBm 80600 GHz 42.70 dBm 01688 GHz
Spectrum           Ref Level 20.00           Att           SGL Count 10/10           1Pk Max           10 dBm           10 dBm           -20 dBm           -20 dBm           -40 dBm	0 dBm Offset 30 dB SWT	10.62 dB 265 ms	RBW 100 kHz VBW 300 kHz	Mode Auto Swee	p	2.4 - 16.7	-0.93 dBm 80600 GHz 42.70 dBm 01688 GHz
Spectrum           Ref Level 20.00           Att           SGL Count 10/10           1Pk Max           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm	0 dBm Offset 30 dB SWT	10.62 dB 265 ms	RBW 100 kHz VBW 300 kHz	Mode Auto Swee	p	2.4 - 16.7	-0.93 dBm 80600 GHz 42.70 dBm 01688 GHz
Spectrum           Ref Level 20.00           Att           SGL Count 10/10           1Pk Max           10 dBm           10 dBm           -20 dBm           -20 dBm           -40 dBm	0 dBm Offset 30 dB SWT	10.62 dB 265 ms	RBW 100 kHz VBW 300 kHz	Mode Auto Swee	p	2.4 - 16.7	-0.93 dBm 80600 GHz 42.70 dBm 01688 GHz
Spectrum           Ref Level 20.00           Att           SGL Count 10/10           1Pk Max           10 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -60 dBm	0 dBm Offset 30 dB SWT	10.62 dB 265 ms	RBW         100 kHz           VBW         300 kHz	Mode Auto Swee	p	2.4 - 16.7	-0.93 dBm 80600 GHz 42.70 dBm 01688 GHz
Spectrum           Ref Level 20.00           Att           SGL Count 10/10           1Pk Max           10 dBm           10 dBm           -10 dBm           -20 dBm           -20 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm           -70 dBm           -70 dBm           Start 30.0 MHz	0 dBm Offset 30 dB SWT	10.62 dB 265 ms	RBW 100 kHz VBW 300 kHz	Mode Auto Swee	p	2.4 - 16.7	-0.93 dBm 80600 GHz 42.70 dBm 01688 GHz
Spectrum           Ref Level 20.00           Att           SGL Count 10/10           1Pk Max           10 dBm           -10 dBm           -20 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm           -70 dBm           -70 dBm           Start 30.0 MHz	0 dBm Offset 30 dB SWT	10.62 dB 265 ms	RBW         100 kHz           VBW         300 kHz	Mode Auto Swee	p	2.4 - - - - - - - - - - - - - - - - - - -	-0.93 dBm 80600 GHz 42.70 dBm 01688 GHz
Spectrum           Ref Level 20.00           Att           SGL Count 10/10           1Pk Max           10 dBm           0 dBm           -10 dBm           -20 dBm           -20 dBm           -20 dBm           -60 dBm           -60 dBm           -70 dBm           Start 30.0 MHz           Marker           Type         Ref	OdBm         Offset           30 dB         SWT           30 dB         SWT	10.62 dB 265 ms	RBW       100 kHz         VBW       300 kHz	Mode Auto Swee	p	2.4 - 16.7	-0.93 dBm 80600 GHz 42.70 dBm 01688 GHz
Spectrum           Ref Level 20.00           Att           SGL Count 10/10           1Pk Max           10 dBm           -10 dBm           -20 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm           -70 dBm           -70 dBm           Start 30.0 MHz	0 dBm Offset 30 dB SWT 0.525 dBm M3 M4 M3 M4 L 2.4	10.62 dB 265 ms	RBW         100 kHz           VBW         300 kHz	Mode Auto Swee	p	2.4 - - - - - - - - - - - - - - - - - - -	-0.93 dBm 80600 GHz 42.70 dBm 01688 GHz
Spectrum           Ref Level 20.00           Att           SGL Count 10/10           1Pk Max           10 dBm           -10 dBm           -20 dBm           -20 dBm           -30 dBm           -40 dBm           -70 dBm           -70 dBm           Start 30.0 MHz           Marker           Type           M1           M2           M3	0 dBm Offset 30 dB SWT 0.525 dBm M3 M4 M3 M4 M4 M4 M4 M4 M4 M4 M4 M4 M4	10.62 dB 265 ms	RBW         100 kHz           VBW         300 kHz	Mode Auto Swee	p	2.4 - - - - - - - - - - - - - - - - - - -	-0.93 dBm 80600 GHz 42.70 dBm 01688 GHz
Spectrum           Ref Level 20.00           Att           SGL Count 10/10           1Pk Max           10 dBm           0 dBm           -10 dBm           -20 dBm           -20 dBm           -40 dBm           -60 dBm           -70 dBm	0 dBm Offset 30 dB SWT 0.525 dBm 0.525 dBm M3 M4 1 2.4 1 6.701 1 5.152 2 7.243	10.62 dB 265 ms 265 ms 275 ms 265 ms 2	RBW       100 kHz         VBW       300 kHz	Mode Auto Swee	p	2.4 - - - - - - - - - - - - - - - - - - -	-0.93 dBm 80600 GHz 42.70 dBm 01688 GHz
Spectrum           Ref Level 20.00           Att           SGL Count 10/10           1Pk Max           10 dBm           -10 dBm           -20 dBm           -20 dBm           -30 dBm           -40 dBm           -60 dBm           -70 dBm	0 dBm Offset 30 dB SWT 0.525 dBm 0.525 dBm M3 M4 1 2.4 1 6.701 1 5.152 2 7.243	10.62 dB 265 ms	RBW         100 kHz           VBW         300 kHz	Mode Auto Swee	p	2.4 - - - - - - - - - - - - - - - - - - -	-0.93 dBm 80600 GHz 42.70 dBm 01688 GHz 

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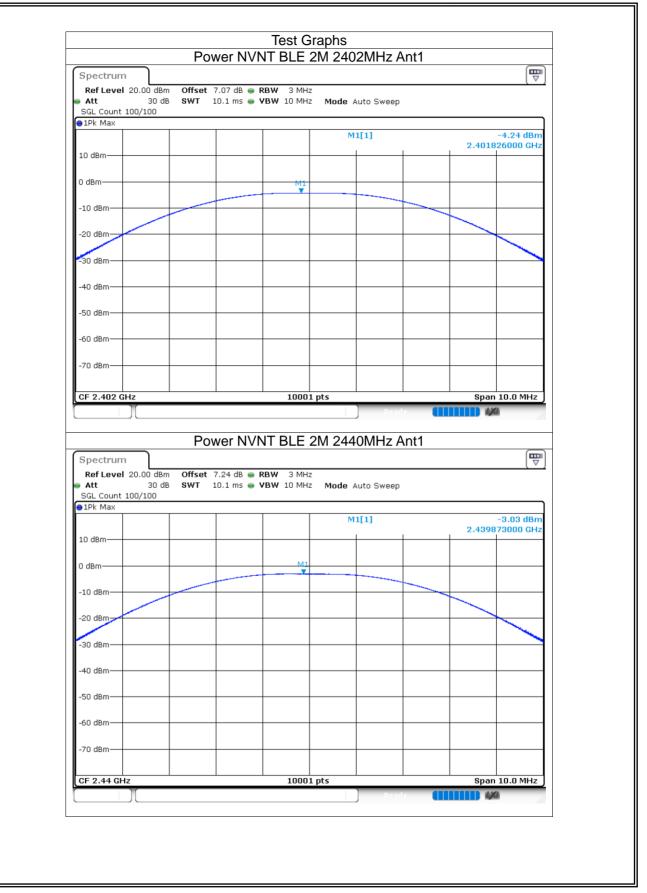


#### 2M:

# 8.1.7 Maximum Conducted Output Power

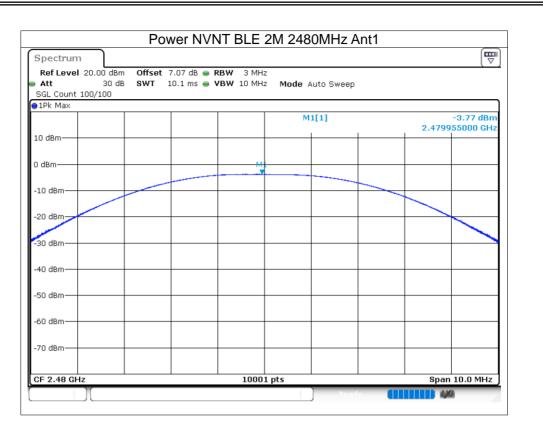
Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 2M	2402	Ant1	-4.24	30	Pass
NVNT	BLE 2M	2440	Ant1	-3.03	30	Pass
NVNT	BLE 2M	2480	Ant1	-3.77	30	Pass





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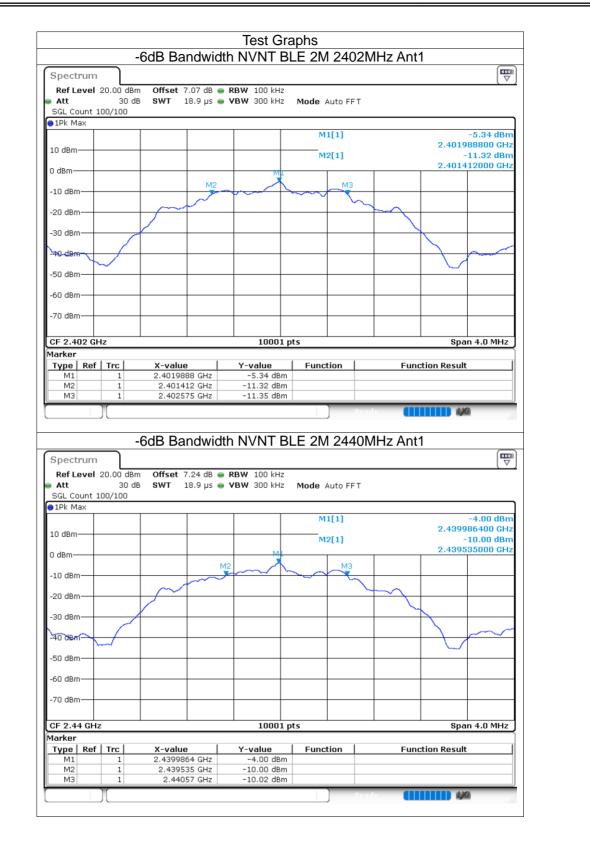




### 8.1.8 -6dB Bandwidth

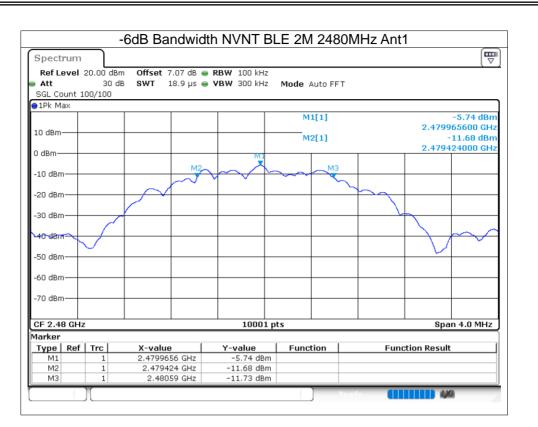
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 2M	2402	Ant1	1.164	0.5	Pass
NVNT	BLE 2M	2440	Ant1	1.035	0.5	Pass
NVNT	BLE 2M	2480	Ant1	1.166	0.5	Pass





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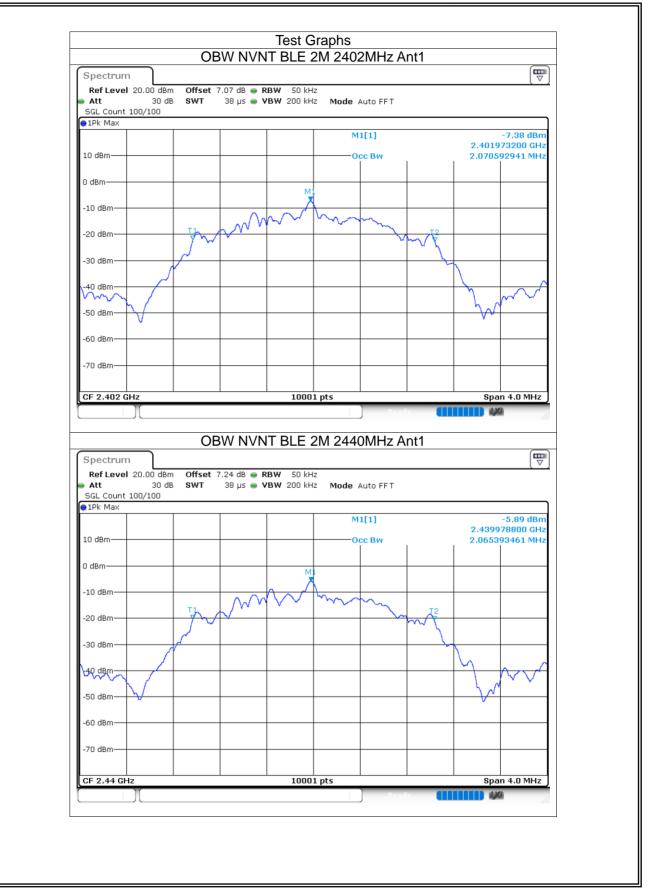


## 8.1.9 Occupied Channel Bandwidth

Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	BLE 2M	2402	Ant1	2.071
NVNT	BLE 2M	2440	Ant1	2.065
NVNT	BLE 2M	2480	Ant1	2.063

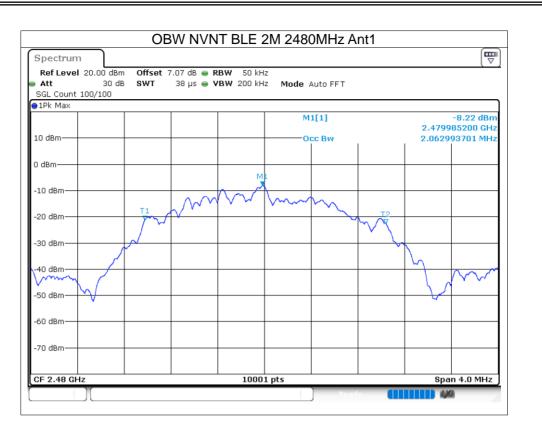
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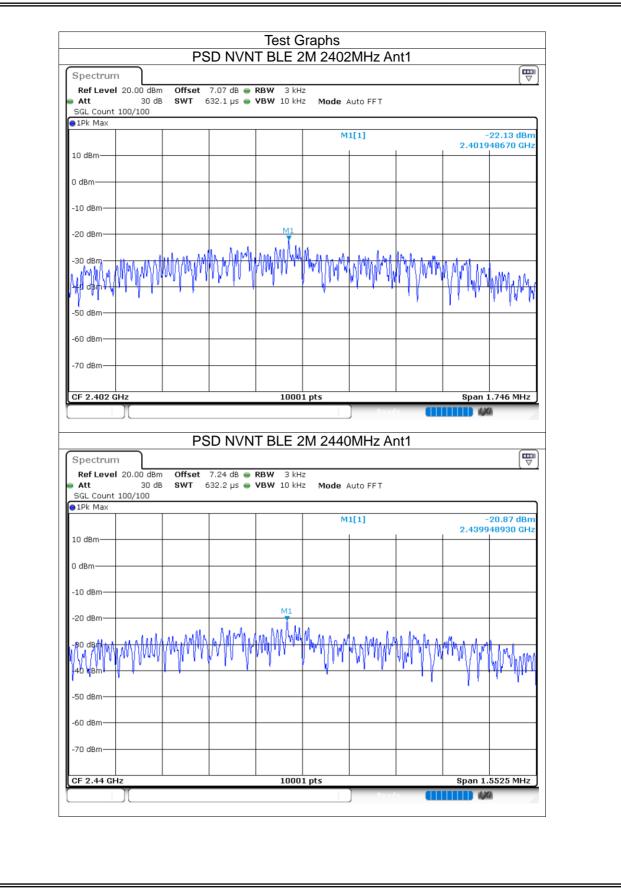


## 8.1.10 Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm)	Limit (dBm)	Verdict
NVNT	BLE 2M	2402	Ant1	-22.13	8	Pass
NVNT	BLE 2M	2440	Ant1	-20.87	8	Pass
NVNT	BLE 2M	2480	Ant1	-21.68	8	Pass

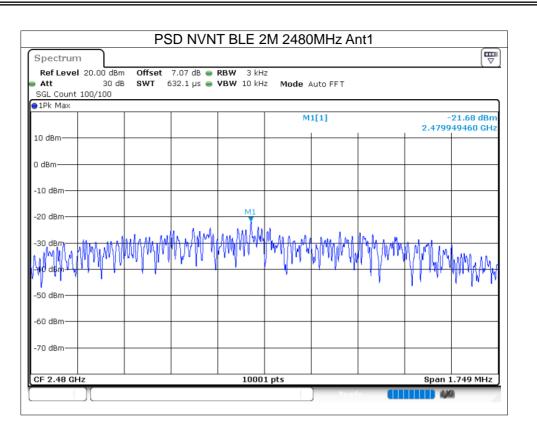
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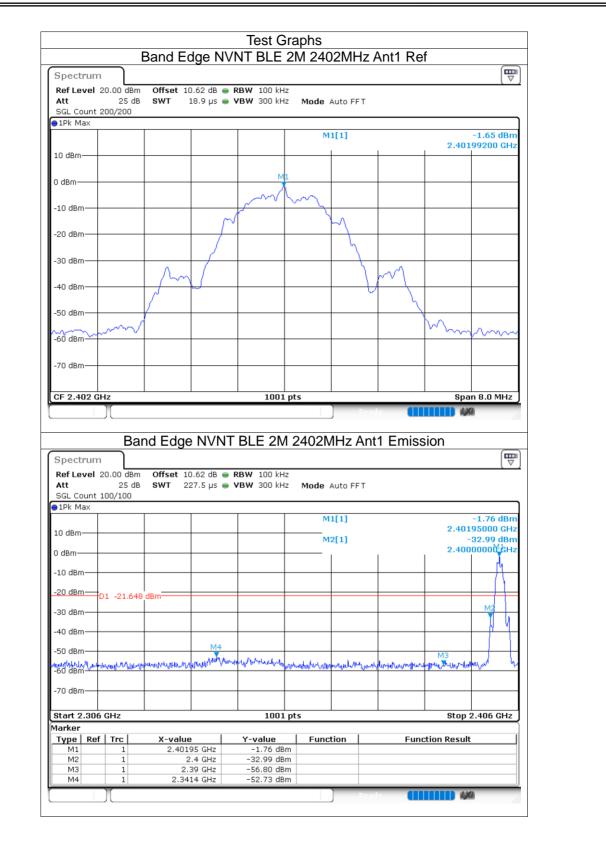
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## 8.1.11 Band Edge

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 2M	2402	Ant1	-51.08	-20	Pass
NVNT	BLE 2M	2480	Ant1	-53.12	-20	Pass





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Spectrum		- 11							
Ref Level Att SGL Count	25 dB			RBW 100 kHz VBW 300 kHz		uto FFT			
1Pk Max		_							
					M1	[1]		2 470	-1.00 dBm 99200 GHz
10 dBm								2.475	99200 GH2
				MI					
0 dBm				m	~				
-10 dBm					<u> </u>				
00 JD			$  \land \land$	/	<u>}</u>	-^			
-20 dBm						5			
-30 dBm			<u> </u>			-			
		1 Am				J	m		
-40 dBm		$\mathbf{A}$	$\mathbb{N}^{-}$						
50 dB		1							
-50 dBm	m	1						m.	
-60 dBm	~~·· V							1 m	m h
-70 dBm									
				1001	nts		•	Sna	n 8.0 MHz
CF 2.48 GF	J Ba	nd Edge	e NVNT	BLE 2M		Beer Hz Ant	1 Emiss		
	Ba	Offset 1	0.62 dB 😑	BLE 2M	2480M		1 Emise		
Spectrum Ref Level Att SGL Count	Ba 20.00 dBm 25 dB	Offset 1	0.62 dB 😑	BLE 2M	2480M		1 Emiss		
Spectrum Ref Level Att	Ba 20.00 dBm 25 dB	Offset 1	0.62 dB 😑	BLE 2M	2480M	uto FFT	1 Emiss	sion	
Spectrum Ref Level Att SGL Count	Ba 20.00 dBm 25 dB	Offset 1	0.62 dB 😑	BLE 2M	2480M	uto FFT	1 Emiss	sion 2.479	-1.64 dBm 95000 GHz
Spectrum Ref Level Att SGL Count ) 1Pk Max 10 dBm	Ba 20.00 dBm 25 dB	Offset 1	0.62 dB 😑	BLE 2M	2480M	uto FFT	1 Emiss	sion 2.479	-1.64 dBm 95000 GHz 57.86 dBm
Spectrum Ref Level Att SGL Count 10 dBm 10 dBm 0 dBm	Ba 20.00 dBm 25 dB	Offset 1	0.62 dB 😑	BLE 2M	2480M	uto FFT	1 Emiss	sion 2.479	-1.64 dBm 95000 GHz
Spectrum Ref Level Att SGL Count ) 1Pk Max 10 dBm	Ba 20.00 dBm 25 dB	Offset 1	0.62 dB 😑	BLE 2M	2480M	uto FFT	1 Emiss	sion 2.479	-1.64 dBm 95000 GHz 57.86 dBm
Spectrum Ref Level Att SGL Count 1Pk Max 10 dBm 0 dBm -10 dBm	Ba 20.00 dBm 25 dB	Offset 1/ SWT 2	0.62 dB 😑	BLE 2M	2480M	uto FFT	1 Emiss	sion 2.479	-1.64 dBm 95000 GHz 57.86 dBm
Spectrum Ref Level Att SGL Count 1Pk Max 10 dBm 0 dBm -10 dBm	Ba 20.00 dBm 25 dB 100/100	Offset 1/ SWT 2	0.62 dB 😑	BLE 2M	2480M	uto FFT	1 Emiss	sion 2.479	-1.64 dBm 95000 GHz 57.86 dBm
Spectrum Ref Level Att SGL Count IPk Max 10 dBm -10 dBm -10 dBm -20 dBm -30 dBm	Ba 20.00 dBm 25 dB 100/100	Offset 1/ SWT 2	0.62 dB 😑	BLE 2M	2480M	uto FFT	1 Emiss	sion 2.479	-1.64 dBm 95000 GHz 57.86 dBm
Spectrum Ref Level Att SGL Count IPk Max ID dBm -10 dBm -20 dBm -30 dBm -40 dBm	Ba 20.00 dBm 25 dB 100/100	Offset 1/ SWT 2	0.62 dB 😑	BLE 2M	2480M	uto FFT	1 Emiss	sion 2.479	-1.64 dBm 95000 GHz 57.86 dBm
Spectrum Ref Level Att SGL Count IPk Max 10 dBm -10 dBm -10 dBm -20 dBm -30 dBm	Ba 20.00 dBm 25 dB 100/100 D1 -21.004	Offset 1/ SWT 2	0.62 dB • 27.5 µs •	BLE 2M	2480M	110 FFT		2.479 2.483	-1.64 dBm 95000 GHz 57.86 dBm 50000 GHz
Spectrum Ref Level Att SGL Count IPk Max ID dBm -10 dBm -20 dBm -30 dBm -40 dBm	Ba 20.00 dBm 25 dB 100/100	Offset 11 SWT 2	0.62 dB • 27.5 µs •	BLE 2M	2480M	110 FFT		2.479 2.483	-1.64 dBm 95000 GHz 57.86 dBm 50000 GHz
Spectrum Ref Level Att SGL Count IPk Max 10 dBm -0 dBm -10 dBm -20 dBm -30 dBm -30 dBm -50 dBm -50 dBm	Ba 20.00 dBm 25 dB 100/100 D1 -21.004	Offset 1/ SWT 2	0.62 dB • 27.5 µs •	BLE 2M	2480M	110 FFT		2.479 2.483	-1.64 dBm 95000 GHz 57.86 dBm 50000 GHz
Spectrum Ref Level Att SGL Count 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -50 dBm -50 dBm -50 dBm -50 dBm	Ba 20.00 dBm 25 dB 100/100 D1 -21.004	Offset 1/ SWT 2	0.62 dB • 27.5 µs •		2480M	110 FFT		2.479 2.483	-1.64 dBm 95000 GHz 57.86 dBm 50000 GHz
Spectrum Ref Level Att SGL Count 10 dBm 10 dBm -10 dBm -20 dBm -30 dBm -30 dBm -50 dBm -70 dBm -70 dBm -70 dBm	Ba 20.00 dBm 25 dB 100/100 D1 -21.004	Offset 1/ SWT 2	0.62 dB • 27.5 µs •	BLE 2M	2480M	110 FFT		2.479 2.483	-1.64 dBm 95000 GHz 57.86 dBm 50000 GHz
Spectrum Ref Level Att SGL Count 10 dBm 10 dBm -10 dBm -20 dBm -20 dBm -50 dBm -50 dBm -70 dBm -70 dBm -70 dBm -70 dBm	Ba 220.00 dBm 25 dB 100/100 D1 -21.004	Offset 11 SWT 2	0.62 dB 27.5 μs 		2480M	uto FFT [1] [1] мыклааруу		2.479 2.483	-1.64 dBm 95000 GHz 57.86 dBm 50000 GHz
Spectrum Ref Level Att SGL Count DIPk Max 10 dBm -10 dBm -20 dBm -30 dBm -30 dBm -50 dBm -50 dBm -70 dBm	Ba 20.00 dBm 25 dB 100/100 D1 -21.004 01 -21.004 6 GHz 6 Trc 1 1	Offset 1 รพт 2	0.62 dB 27.5 μs	BLE 2M	2480M	uto FFT [1] [1] мыклааруу		2.479 2.483	-1.64 dBm 95000 GHz 57.86 dBm 50000 GHz
Spectrum Ref Level Att SGL Count 10 dBm 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -50 dBm -50 dBm -70	Ba 20.00 dBm 25 dB 100/100 D1 -21.004 01 -21.004	Offset 1/ SWT 2 dBm dBm M3 (w////////////////////////////////////	0.62 dB 27.5 μs 27.5	BLE 2M	2480M	uto FFT [1] [1] мыклааруу		2.479 2.483	-1.64 dBm 95000 GHz 57.86 dBm 50000 GHz
Spectrum           Ref Level           Att           SGL Count           IPk Max           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -50 dBm           -50 dBm           -70 dBm           Start 2.476           Marker           Type         Ref           M1	Ba 20.00 dBm 25 dB 100/100 D1 -21.004 01 -21.004 6 GHz 6 Trc 1 1	Оffset 1/ SWT 2 dBm dBm dBm dBm dBm dBm dBm dBm dBm dBm	0.62 dB 27.5 μs	BLE 2M	2480M	uto FFT [1] [1] мыклааруу		2.479 2.483	-1.64 dBm 95000 GHz 57.86 dBm 50000 GHz

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## 8.1.12 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 2M	2402	Ant1	-41.56	-20	Pass
NVNT	BLE 2M	2440	Ant1	-41.87	-20	Pass
NVNT	BLE 2M	2480	Ant1	-41.19	-20	Pass

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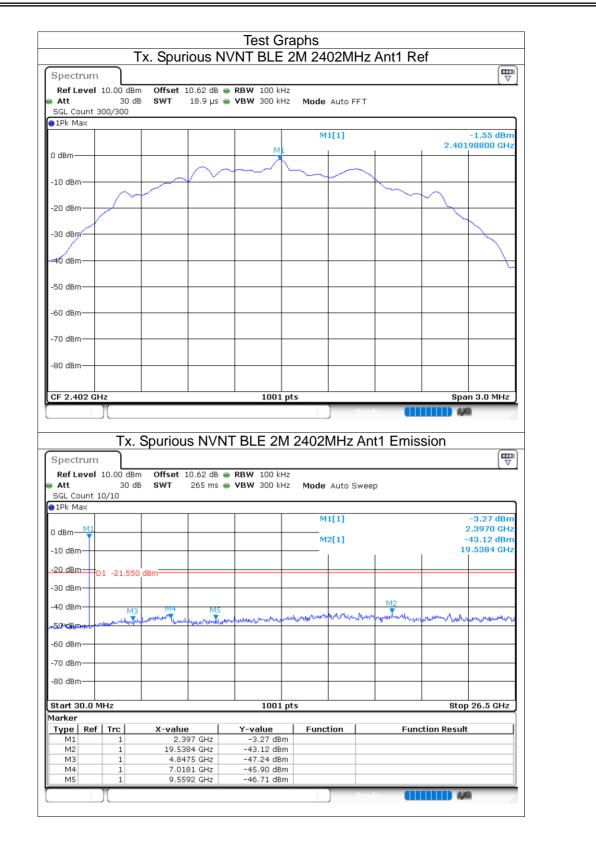


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Certificate #4298.01

#### Report No.: STR230303002002E

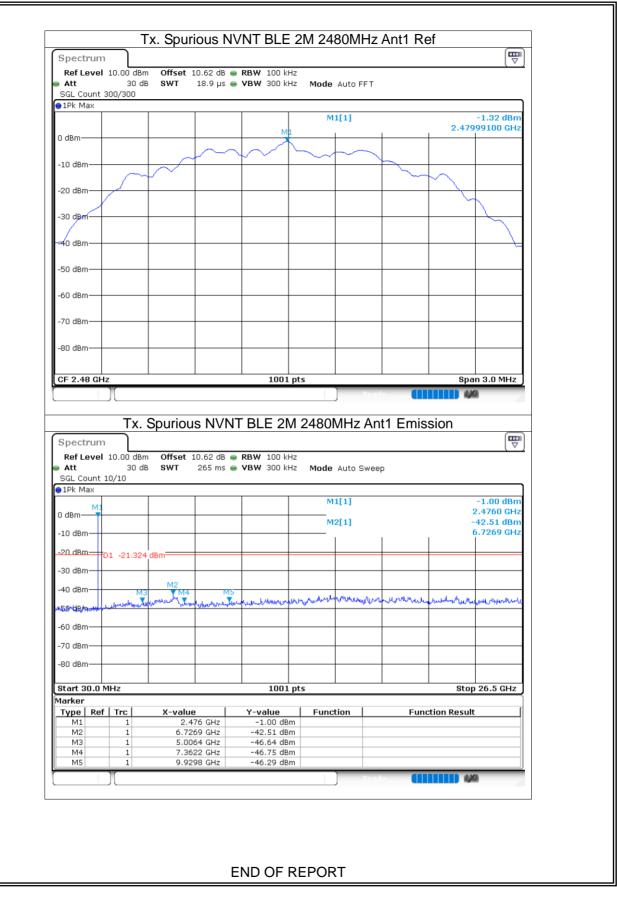




	10.00 dBr		iB 👄 RBW 100 kHz				
Att	30 d	B <b>SWT</b> 18.9 µ	us 🖷 <b>VBW</b> 300 kHz	Mode Auto FF	т		
SGL Count	300/300						
TEK Man				M1[1]			-0.31 dBm
			Mt	milil		2.43	999100 GHz
0 dBm			<del>``</del>				
				$\sim$	~		
-10 dBm							
						$\sim$	
-20 dBm						$\vdash$	
~	ſ						
-30 dBm							
1							
-40 dBm							<u> </u>
-50 dBm							
60 JF							
-60 dBm							
-70 dBm							
-/U aBM							
-80 dBm							
-ou uBM							
CF 2.44 G	lz		1001 pt	s		Sp	an 3.0 MHz
Spectrun		Spurious N	/NT BLE 2M	R	Ant1 Emis	sion	
Ref Leve Att	n   10.00 dBr 30 d	m <b>Offset</b> 10.79 c	/NT BLE 2M	2440MHz A		sion	
Ref Leve Att SGL Count	n   10.00 dBr 30 d	m <b>Offset</b> 10.79 c	iB 🖷 RBW 100 kHz	2440MHz A		sion	
Ref Leve Att	n   10.00 dBr 30 d	m <b>Offset</b> 10.79 c	iB 🖷 RBW 100 kHz	2440MHz A Mode Auto Sv		sion	
Ref Leve Att SGL Count 1Pk Max	n   10.00 dBr 30 d	m <b>Offset</b> 10.79 c	iB 🖷 RBW 100 kHz	2440MHz A		sion	₩ (₩) -0.19 dBm
Ref Leve Att SGL Count 1Pk Max	n   10.00 dBr 30 d	m <b>Offset</b> 10.79 c	iB 🖷 RBW 100 kHz	2440MHz A Mode Auto Sv			
Ref Leve Att SGL Count 1Pk Max	n   10.00 dBr 30 d	m <b>Offset</b> 10.79 c	iB 🖷 RBW 100 kHz	2440MHz / Mode Auto Sv			-0.19 dBm 2.4500 GHz
Ref Leve Att SGL Count 1Pk Max 0 dBm -10 dBm	n   10.00 dBr 30 d 10/10	m Offset 10.79 c B SWT 265 m	iB 🖷 RBW 100 kHz	2440MHz / Mode Auto Sv			-0.19 dBm 2.4500 GHz -42.19 dBm
Ref Leve Att SGL Count 1Pk Max M1 0 dBm -10 dBm 20 dBm	n   10.00 dBr 30 d	m Offset 10.79 c B SWT 265 m	iB 🖷 RBW 100 kHz	2440MHz / Mode Auto Sv			-0.19 dBm 2.4500 GHz -42.19 dBm
Ref Leve Att SGL Count 1Pk Max 0 dBm -10 dBm	n   10.00 dBr 30 d 10/10	m Offset 10.79 c B SWT 265 m	iB 🖷 RBW 100 kHz	2440MHz / Mode Auto Sv M1[1] M2[1]			-0.19 dBm 2.4500 GHz -42.19 dBm
Ref Leve Att SGL Count 1Pk Max M1 0 dBm -10 dBm 20 dBm	n 30 d 10/10	m Offset 10.79 c B SWT 265 m	IB • RBW 100 kHz • VBW 300 kHz	2440MHz / Mode Auto Sv M1[1] M2[1] M2	/eep		-0.19 dBm 2.4500 GHz -42.19 dBm 5.0120 GHz
Ref Leve Att SGL Count 1Pk Max 1Pk Max -10 dBm -20 dBm -30 dBm -40 dBm	n   10.00 dBr 30 d 10/10	m Offset 10.79 c B SWT 265 m	IB • RBW 100 kHz s • VBW 300 kHz	2440MHz / Mode Auto Sv M1[1] M2[1] M2			-0.19 dBm 2.4500 GHz -42.19 dBm 5.0120 GHz
Ref Leve Att SGL Count 1Pk Max M1 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm	n 30 d 10/10	m Offset 10.79 c B SWT 265 m	IB • RBW 100 kHz • VBW 300 kHz	2440MHz / Mode Auto Sv M1[1] M2[1] M2	/eep		-0.19 dBm 2.4500 GHz -42.19 dBm 5.0120 GHz
Ref Leve Att SGL Count 1Pk Max 1Pk Max -10 dBm -20 dBm -30 dBm -40 dBm	n 30 d 10/10	m Offset 10.79 c B SWT 265 m	IB • RBW 100 kHz • VBW 300 kHz	2440MHz / Mode Auto Sv M1[1] M2[1] M2	/eep		-0.19 dBm 2.4500 GHz -42.19 dBm 5.0120 GHz
Ref Leve Att SGL Count 1Pk Max M1 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm	n 30 d 10/10	m Offset 10.79 c B SWT 265 m	IB • RBW 100 kHz • VBW 300 kHz	2440MHz / Mode Auto Sv M1[1] M2[1] M2	/eep		-0.19 dBm 2.4500 GHz -42.19 dBm 5.0120 GHz
Mail         Mail           SGL Count         SGL Count           1Pk Max         M1           0 dBm         -           -10 dBm         -           -20 dBm         -           -30 dBm         -           -40 dBm         -           -50 dBm         -           -70 dBm         -	n 30 d 10/10	m Offset 10.79 c B SWT 265 m	IB • RBW 100 kHz • VBW 300 kHz	2440MHz / Mode Auto Sv M1[1] M2[1] M2	/eep		-0.19 dBm 2.4500 GHz -42.19 dBm 5.0120 GHz
Mail         Mail           SGL Count         SGL Count           1Pk Max         Mi           0 dBm         -           -10 dBm         -           -20 dBm         -           -30 dBm         -           -40 dBm         -           -60 dBm         -	n 30 d 10/10	m Offset 10.79 c B SWT 265 m	IB • RBW 100 kHz • VBW 300 kHz	2440MHz / Mode Auto Sv M1[1] M2[1] M2	/eep		-0.19 dBm 2.4500 GHz -42.19 dBm 5.0120 GHz
Mail         Mail           SGL Count         SGL Count           1Pk Max         M1           0 dBm         -           -10 dBm         -           -20 dBm         -           -30 dBm         -           -40 dBm         -           -50 dBm         -           -70 dBm         -	n 30 d 10/10 D1 -20.31(	m Offset 10.79 c B SWT 265 m	IB • RBW 100 kHz • VBW 300 kHz	2440MHz / Mode Auto Sv M1[1] M2[1] M2 M2	/eep	1 	-0.19 dBm 2.4500 GHz -42.19 dBm 5.0120 GHz
Mathematical Solution           Att           SGL Count           SGL Count           1Pk Max           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -60 dBm           -70 dBm           -80 dBm           -80 dBm	n 30 d 10/10 D1 -20.31(	m Offset 10.79 c B SWT 265 m	MS	2440MHz / Mode Auto Sv M1[1] M2[1] M2 M2	/eep	1 	-0.19 dBm 2.4500 GHz -42.19 dBm 15.0120 GHz
Ref Leve           Att           SGL Count           IPk Max           1Pk Max           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -60 dBm           -70 dBm           -80 dBm           Start 30.0           Marker           Type	MHz	m Offset 10.79 c B SWT 265 m	B  RBW 100 kHz B VBW 300 kHz	2440MHz / Mode Auto Sv M1[1] M2[1] M2 M2		1 	-0.19 dBm 2.4500 GHz -42.19 dBm 15.0120 GHz
Ref Leve           Att           SGL Count           1Pk Max           1Pk Max           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -60 dBm           -70 dBm           -80 dBm           -80 dBm           -70 dBm           -80 dBm           -80 dBm           -70 dBm           -80 dBm	П 10.00 dBn 30 d 10/10 П -20.31( 	m Offset 10.79 c B SWT 265 m 0 dBm 0 dBm 3 M4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	B  RBW 100 kHz  KB KBW 300 kHz  KB KB KBW 300 kHz  KB KB KB KBW 300 kHz  KB KB KBW 300 kHz  KB KB KBW 300 kHz  KB KBW 300 kHz  KBW 300 kHz  KBW 300 kHz KBW 300 kHz  KBW 300 kHz KBW 300 kHz  KBW 300 kHz KBW 300	2440MHz / Mode Auto Sv M1[1] M2[1] M2 SS		۲ بر بر بر بر بر از	-0.19 dBm 2.4500 GHz -42.19 dBm 15.0120 GHz
Ref Leve           Att           SGL Count           IPk Max           1Pk Max           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -60 dBm           -70 dBm           -80 dBm           Start 30.0           Marker           Type	MHz	m Offset 10.79 c B SWT 265 m	B      RBW 100 kHz      VBW 300 kHz      VBW 300 kHz      VBW 100 kHz	2440MHz / Mode Auto Sv M1[1] M2[1] M2 SS		۲ بر بر بر بر بر از	-0.19 dBm 2.4500 GHz -42.19 dBm 15.0120 GHz
Ref Leve           Att           SGL Count           IPk Max           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -60 dBm           -70 dBm           -80 dBm           -80 dBm           Marker           Type         Re           M1           M2           M3           M4	П 10.00 dBn 30 d 10/10 D1 -20.31( 	m Offset 10.79 c B SWT 265 m 3 M4 3 M4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	IB  RBW 100 kHz  KBW 300 kHz  K	2440MHz / Mode Auto Sv M1[1] M2[1] M2 SS		۲ بر بر بر بر بر از	-0.19 dBm 2.4500 GHz -42.19 dBm 15.0120 GHz
Ref Leve           Att           SGL Count           1Pk Max           1Pk Max           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -60 dBm           -70 dBm           -80 dBm           Start 30.0           Marker           Type         Re           M1           M2         M3	п 1 10.00 dBn 30 d 10/10 D1 -20.310 мHz f Trc 1 1 1	m Offset 10.79 c B SWT 265 m 0 dBm 0 dBm 3 M4 3 M4 5 0 dBm 2	IB  RBW 100 kHz  KBW 300 kHz  K	2440MHz / Mode Auto Sv M1[1] M2[1] M2 SS		۲ بر بر بر بر بر از	-0.19 dBm 2.4500 GHz -42.19 dBm 15.0120 GHz

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