



RADIO TEST REPORT FCC ID: 2AOKUNOTE13P

Product: Smartphone

Trade Mark: HOTWAV

Model No.: Note 13 Pro

Family Model: Note 13, Note, T1, T1-S1L, Note 11, Note 12, iHunt S24 Xtreme, HT02, HT03, Note 15, Note 15 Pro, Note 16, Note 16 Pro, Note 12E, Note 13e, Note 13 Plus, Note 15e, Note 15 Plus Report No.: S23112101803002

Issue Date: Dec 12, 2023

Prepared for

SHENZHEN TUGAO INTELLIGENT CO., LTD

8th Floor, Bldg A, Jinggang Science&Technology Park, Fuyong, Bao'an District, Shenzhen, China

Prepared by

Shenzhen NTEK Testing Technology Co., Ltd. 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street Bao'an District, Shenzhen 518126 P.R. China Tel. 400-800-6106, 0755-2320 0050, 0755-2320 0090 Website: http://www.ntek.org.cn





TABLE OF CONTENTS

1 TES	FRESULT CERTIFICATION	4
2 SUM	MARY OF TEST RESULTS	5
	ILITIES AND ACCREDITATIONS	
	FACILITIES LABORATORY ACCREDITATIONS AND LISTINGS	
	MEASUREMENT UNCERTAINTY	
	ERAL DESCRIPTION OF EUT	
5 DES	CRIPTION OF TEST MODES	9
6 SET	UP OF EQUIPMENT UNDER TEST	10
6.1	BLOCK DIAGRAM CONFIGURATION OF TEST SYSTEM	10
	SUPPORT EQUIPMENT	
6.3	EQUIPMENTS LIST FOR ALL TEST ITEMS	. 12
7 TES	Γ REQUIREMENTS	
	CONDUCTED EMISSIONS TEST	
/.1 7.1.1	Applicable Standard	
7.1.2	Conformance Limit	
7.1.2	Measuring Instruments	
7.1.4		
7.1.5		
7.1.6		
7.2	RADIATED SPURIOUS EMISSION	
7.2.1	Applicable Standard	
7.2.2	Conformance Limit	
7.2.3	Measuring Instruments	
7.2.4 7.2.5	Test Configuration Test Procedure	
7.2.3		
7.3	6DB BANDWIDTH	
7.3.1	Applicable Standard	
7.3.2	••	
7.3.3	Measuring Instruments	
7.3.4	<i>-F</i>	
7.3.5	Test Procedure	
7.3.6		
	DUTY CYCLE	
7.4.1	Applicable Standard	
7.4.2 7.4.3	Conformance Limit Measuring Instruments	
7.4.3	Test Setup	
7.4.5	Test Secup	
7.4.6		
7.5	PEAK OUTPUT POWER	
7.5.1	Applicable Standard	
7.5.2	Conformance Limit	. 29
7.5.3	Measuring Instruments	
7.5.4	Test Setup	
7.5.5	Test Procedure	
7.5.6	Test Results	. 29



7.6 F	POWER SPECTRAL DENSITY	30
7.6.1	Applicable Standard	30
7.6.2	Conformance Limit	30
7.6.3	Measuring Instruments	30
7.6.4	Test Setup	30
7.6.5	Test Procedure	30
7.6.6	Test Results	
7.7 C	CONDUCTED BAND EDGE MEASUREMENT	32
7.7.1	Applicable Standard	32
7.7.2	Conformance Limit	32
7.7.3	Measuring Instruments	32
7.7.4	Test Setup	32
7.7.5	Test Procedure	32
7.7.6	Test Results	
7.8 S	SPURIOUS RF CONDUCTED EMISSIONS	33
7.8.1	Conformance Limit	33
7.8.2	Measuring Instruments	33
7.8.3	Test Setup	33
7.8.4	Test Procedure	33
7.8.5	Test Results	
7.9 A	ANTENNA APPLICATION	34
7.9.1	Antenna Requirement	
7.9.2	Result	34
8 TEST	RESULTS	35
8.1 1	M	35
8.1.1	Maximum Conducted Output Power	
8.1.2	-6dB Bandwidth	
8.1.3	Maximum Power Spectral Density Level	
8.1.4	Band Edge	
8.1.5	Conducted RF Spurious Emission	
	M	
8.2.1	Maximum Conducted Output Power	
8.2.2	-6dB Bandwidth	
8.2.3	Maximum Power Spectral Density Level	
8.2.4	Band Edge	
8.2.5	Conducted RF Spurious Emission	



1 TEST RESULT CERTIFICATION

Applicant's name:	SHENZHEN TUGAO INTELLIGENT CO.,LTD	
Address:	8th Floor, Bldg A, Jinggang Science&Technology Park, Fuyong,	
	Bao'an District, Shenzhen, China	
Manufacturer's Name:	SHENZHEN TUGAO INTELLIGENT CO.,LTD	
Address:	8th Floor, Bldg A, Jinggang Science&Technology Park, Fuyong,	
	Bao'an District, Shenzhen, China	
Product description		
Product name:	Smartphone	
Trade Mark:	HOTWAV	
Model and/or type reference:	Note 13 Pro	
Family Model:	Note 13, Note, T1, T1-S1L, Note 11, Note 12, iHunt S24 Xtreme, HT02, HT03, Note 15, Note 15 Pro, Note 16, Note 16 Pro, Note 12E, Note 13e, Note 13 Plus, Note 15e, Note 15 Plus	
Test Sample number:	S231121018001	
Date of Test:	Nov 21, 2023 ~ Dec 12, 2023	

Measurement Procedure Used:

APPLICABLE STANDARDSAPPLICABLE STANDARD/ TEST PROCEDURETEST RESULTFCC 47 CFR Part 2, Subpart JFCC 47 CFR Part 15, Subpart CANSI C63.10-2013CompliedKDB 558074 D01 15.247 Meas Guidance v05r02Complex

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.

Prepared By: Mary Hu Reviewed By: Aaron Cheng Approved Alex Li (Project Engineer) (Manager) (Supervisor)

SUMMARY OF TEST RESULTS 2

R

ilac.M

FCC Part15 (15.247), Subpart C					
Standard Section Test Item Verdict Remain					
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			

ACCREDITED

Certificate #4298.01

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	Smartphone			
Trade Mark	HOTWAV			
FCC ID	2AOKUNOTE13P			
Model No.	Note 13 Pro			
Family Model	Note 13, Note, T1, T1-S1L, Note 11, Note 12, iHunt S24 Xtreme, HT02, HT03, Note 15, Note 15 Pro, Note 16, Note 16 Pro, Note 12E, Note 13e, Note 13 Plus, Note 15e, Note 15 Plus			
Model Difference	All the model are the same circuit and RF module, except the model names.			
Operating Frequency	2402MHz~2480MHz			
Modulation	GFSK			
Number of Channels	40 Channels			
Antenna Type	PIFA Antenna			
Antenna Gain	-2.84 dBi			
Adapter	Model: QZ-02002AC00 Input: 100-240V~50/60Hz 0.5A Output USB-C: 5.0V3.0A or 9.0V2.22A or 12.0V1.67A(20.0W)			
Battery	DC 3.87V, 5160mAh, 19.97Wh			
Power supply	DC 3.87V from battery or DC 5V from adapter			
HW Version	V1.0			
SW Version	N/A			

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

Revision mistory					
Report No.	Version	Description	Issued Date		
S23112101803002	Rev.01	Initial issue of report	Dec 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.

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+k×2MHz 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			

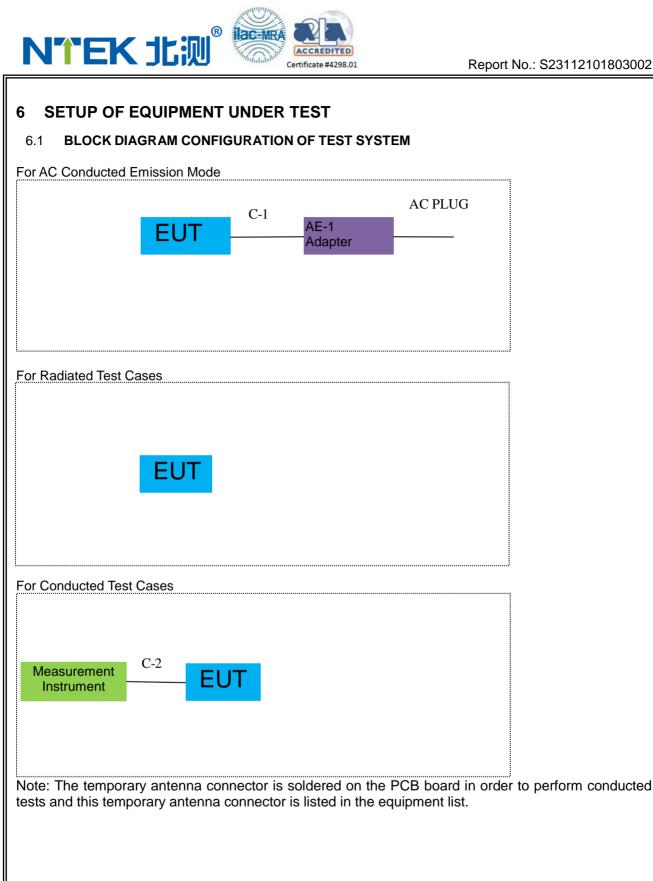
Note:

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.







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-02002AC00 N/A		Peripherals

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

Notes:

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



6.3 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation& Conducted Test equipment

		iest 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	2023.05.29	2024.05.28	1 year
3	Spectrum Analyzer	R&S	FSV40	101417	2023.05.29	2024.05.28	1 year
4	Test Receiver	R&S	ESPI7	101318	2023.03.27	2024.04.26	1 year
5	Bilog Antenna	TESEQ	CBL6111D	31216	2023.03.16	2024.03.16	1 year
6	50Ω Coaxial Switch	Anritsu	MP59B	6200983705	2023.05.06	2026.05.05	3 year
7	Horn Antenna	SCHWARZBE CK	BBHA 9120 D	2816	2023.01.12	2024.01.11	1 year
8	Broadband Horn Antenna	SCHWARZBE CK	BBHA 9170	803	2022.11.07	2025.11.06	3 year
9	Amplifier	EMC	EMC051835 SE	980246	2023.05.29	2024.05.28	1 year
10	Active Loop Antenna	SCHWARZBE CK	FMZB 1519 B	055	2023.11.03	2026.11.02	3 year
11	Power Meter	DARE	RPR3006W	15I00041SN 084	2023.05.29	2024.05.28	1 year
12	Test Cable (9KHz-30MHz)	N/A	R-01	N/A	2022.06.17	2025.06.16	3 year
13	Test Cable (30MHz-1GHz)	N/A	R-02	N/A	2022.06.17	2025.06.16	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	2023.03.26	2026.03.25	3 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	onduction 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	2023.05.06	2026.05.05	3 year
5	Test Cable (9KHz-30MH z)	N/A	C01	N/A	2023.05.06	2026.05.05	3 year
6	Test Cable (9KHz-30MH z)	N/A	C02	N/A	2023.05.06	2026.05.05	3 year
7	Test Cable (9KHz-30MH z)	N/A	C03	N/A	2023.05.06	2026.05.05	3 year

ACCRED

Certificate #4298.01

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.

NTEK 北测[®]



7 TEST REQUIREMENTS

7.1 CONDUCTED EMISSIONS TEST

7.1.1 Applicable Standard

According to FCC Part 15.207(a)

7.1.2 Conformance Limit

Frequency (MHz)	Conducted	Emission Limit
Frequency(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

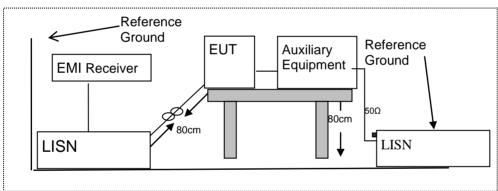
2. The lower limit shall apply at the transition frequencies

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

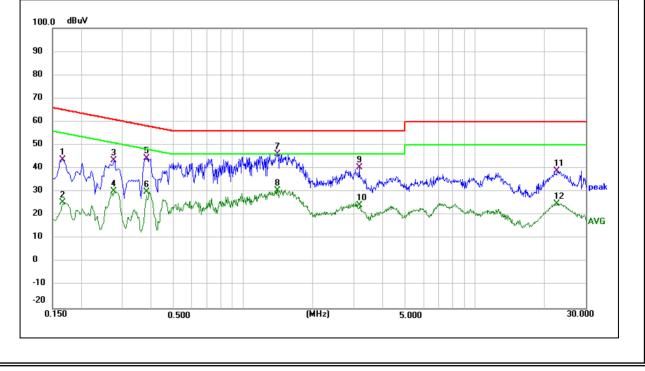
EUT:	Smartphone	Model Name :	Note 13 Pro
Temperature:	22 ℃	Relative Humidity:	57%
Pressure:	1010hPa	Phase :	L
Test Voltage :	DC 5V from Adapter AC 120V/60Hz	Test Mode:	Mode 1

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Domork
(MHz)	(dBµV)	(dB)	(dBµV)	(dBµV)	(dB)	Remark
0.1660	33.69	9.97	43.66	65.16	-21.50	QP
0.1660	15.37	9.97	25.34	55.16	-29.82	AVG
0.2779	33.37	10.20	43.57	60.88	-17.31	QP
0.2779	20.02	10.20	30.22	50.88	-20.66	AVG
0.3820	33.83	10.40	44.23	58.24	-14.01	QP
0.3820	19.50	10.40	29.90	48.24	-18.34	AVG
1.4060	33.72	12.48	46.20	56.00	-9.80	QP
1.4060	18.11	12.48	30.59	46.00	-15.41	AVG
3.1580	30.74	9.67	40.41	56.00	-15.59	QP
3.1580	14.70	9.67	24.37	46.00	-21.63	AVG
22.6380	29.16	9.68	38.84	60.00	-21.16	QP
22.6380	15.25	9.68	24.93	50.00	-25.07	AVG

Remark:

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

2. Factor = Insertion Loss + Cable Loss.







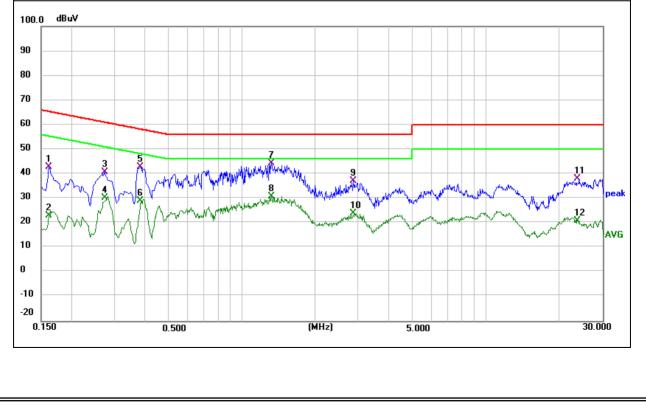
EUT:	Smartphone	Model Name :	Note 13 Pro
Temperature:	22 ℃	Relative Humidity:	57%
Pressure:	1010hPa	Phase :	Ν
Test Voltage :	DC 5V from Adapter AC 120V/60Hz	Test Mode:	Mode 1

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Domorila
(MHz)	(dBµV)	(dB)	(dBµV)	(dBµV)	(dB)	Remark
0.1620	32.95	9.95	42.90	65.36	-22.46	QP
0.1620	12.98	9.95	22.93	55.36	-32.43	AVG
0.2740	30.60	10.18	40.78	61.00	-20.22	QP
0.2740	20.02	10.18	30.20	51.00	-20.80	AVG
0.3820	32.59	10.40	42.99	58.24	-15.25	QP
0.3820	18.57	10.40	28.97	48.24	-19.27	AVG
1.3220	32.05	12.30	44.35	56.00	-11.65	QP
1.3220	18.54	12.30	30.84	46.00	-15.16	AVG
2.8580	27.51	9.67	37.18	56.00	-18.82	QP
2.8580	14.19	9.67	23.86	46.00	-22.14	AVG
23.6940	28.30	9.66	37.96	60.00	-22.04	QP
23.6940	11.19	9.66	20.85	50.00	-29.15	AVG

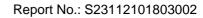
Remark:

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

Certificate #4298.01

o, noothotoa banao		
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)

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

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

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

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

For Frequency above 30MHz: Distance extrapolation factor =20log(Specific distance/ test distance)(dB);





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

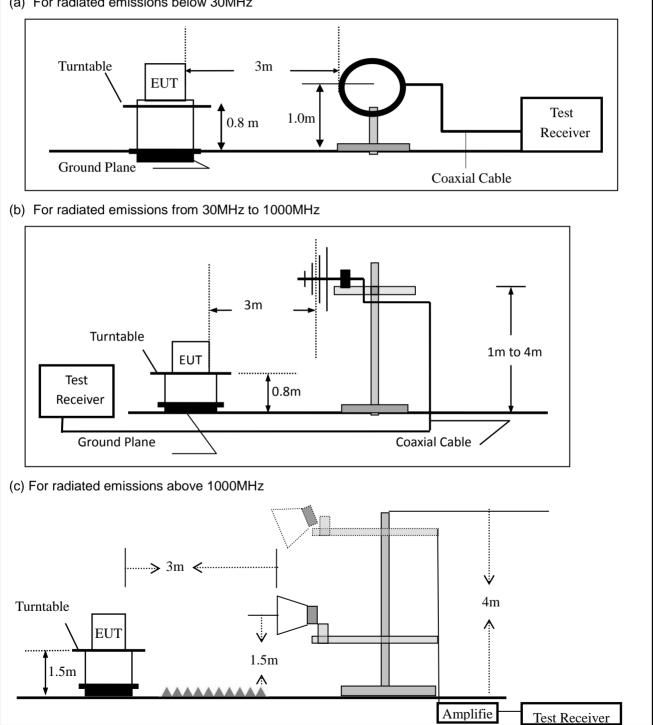
Certificate #4298.01

7.2.3 **Measuring Instruments**

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

Test Configuration 7.2.4

(a) For radiated emissions below 30MHz





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.

Certificate #4298.0

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:

Certificate #4298.01

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:	Smartphone	Model No.:	Note 13 Pro
Temperature:	20 °C	Relative Humidity:	48%
Lest Mode.	Mode1/Mode2/Mode3/ Mode4	Test By:	Mary Hu

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:

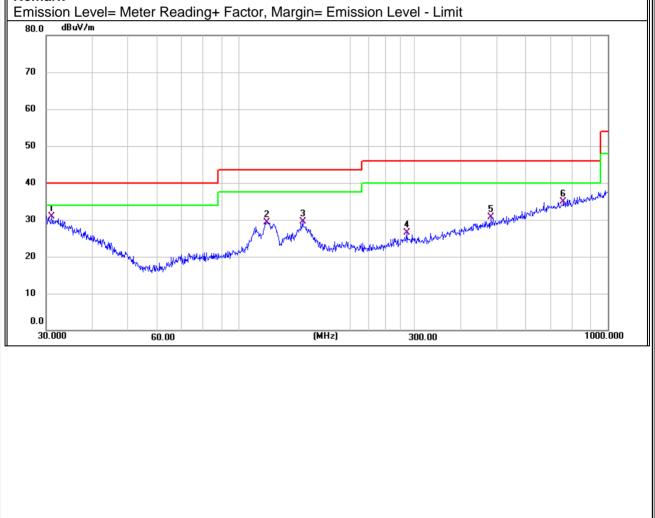
EUT:	Smartphone	Model Name :	Note 13 Pro
Temperature:	25 ℃	Relative Humidity:	55%
Pressure:	1010hPa	Test Mode:	Mode 3
Test Voltage :	DC 3.87V		

ACCREDITED

Certificate #4298.01

Polar	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Remark	
(H/V)	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)		
V	31.0706	5.17	25.82	30.99	40.00	-9.01	QP	
V	119.0180	10.72	18.61	29.33	43.50	-14.17	QP	
V	148.9625	11.11	18.41	29.52	43.50	-13.98	QP	
V	284.9767	6.56	19.89	26.45	46.00	-19.55	QP	
V	482.2156	6.22	24.55	30.77	46.00	-15.23	QP	
V	758.0408	6.07	28.83	34.90	46.00	-11.10	QP	

Remark







Polar	Frequency	Meter Reading	g Factor	Emission Level	Limits	Margin	Remark
(H/V)	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	rtoman
Н	30.7455	4.96	26.00	30.96	40.00	-9.04	QP
Н	73.6170	5.98	14.10	20.08	40.00	-19.92	QP
Н	123.6985	6.70	18.64	25.34	43.50	-18.16	QP
Н	146.3735	6.68	18.46	25.14	43.50	-18.36	QP
Н	274.1939	7.45	19.71	27.16	46.00	-18.84	QP
H Remark	526.3967	6.45	25.15	31.60	46.00	-14.40	QP
	n Level= Mete ^{Bu¥/m}						
70							
60							
50							
40							
30	Uhren Aug.		3 4		5	W. Aller and Martin Martin	Manar
20	Moond man and a start of the second of	2 www.www.ukayw.www.alwanalw	Maturianterstructure	Mahanna Anaradan and an	an a		
0.0 30.000		60.00		(MHz)	300.00		1000.000
30.000		30.00		(M12)	300.00		1000.000





EUT:		Smartpho	ne		Model No.:		Ν	Note 13 Pro			
Temperati	ure:	20 ℃			Relative H	umidity:	4	48%			
Test Mode):	Mode2/Mo	ode3/Mode	94	Test By:		Ν	Mary Hu			
					j						
Frequency	Read Level	Cable loss	Antenna Factor	Pream Facto			mits	Margin	Remark	Comment	
(MHz)	(dBµV)	(dB)	dB/m	(dB)	(dBµV/	n) (dB	µV/m) (dB)			
Low Channel (2402 MHz)(GFSK)Above 1G											
4802.41	63.66	5.21	35.59	44.3	0 60.10	5 74	4.00	-13.84	Pk	Vertical	
4802.41	43.28	5.21	35.59	44.3	0 39.78	54	4.00	-14.22	AV	Vertical	
7206.31	64.96	6.48	36.27	44.6	0 63.1 ²	74	4.00	-10.89	Pk	Vertical	
7206.31	43.38	6.48	36.27	44.6	0 41.5	54	4.00	-12.47	AV	Vertical	
4804.16	61.17	5.21	35.55	44.3	0 57.63	5 74	4.00	-16.37	Pk	Horizontal	
4804.16	43.79	5.21	35.55	44.3	0 40.2	5 54	4.00	-13.75	AV	Horizontal	
7206.54	63.58	6.48	36.27	44.5	2 61.8 ⁻	74	4.00	-12.19	Pk	Horizontal	
7206.54	43.95	6.48	36.27	44.5	2 42.18	54	4.00	-11.82	AV	Horizontal	
Mid Channel (2440 MHz)(GFSK)Above 1G											
4880.36	62.31	5.21	35.66	44.2	0 58.98	8 74	4.00	-15.02	Pk	Vertical	
4880.36	43.48	5.21	35.66	44.2	0 40.1	5 54	4.00	-13.85	AV	Vertical	
7320.28	64.27	7.10	36.50	44.4	3 63.44	- 74	4.00	-10.56	Pk	Vertical	
7320.28	43.47	7.10	36.50	44.4	3 42.64	54	4.00	-11.36	AV	Vertical	
4880.92	64.63	5.21	35.66	44.2	0 61.30) 74	4.00	-12.70	Pk	Horizontal	
4880.92	43.38	5.21	35.66	44.2	0 40.0	5 54	4.00	-13.95	AV	Horizontal	
7320.16	64.45	7.10	36.50	44.4	3 63.62	2 74	4.00	-10.38	Pk	Horizontal	
7320.16	43.51	7.10	36.50	44.4	3 42.68	54	4.00	-11.32	AV	Horizontal	
			High	Channel	(2480 MHz)(0	FSK) Al	bove '	1G			
4960.73	64.53	5.21	35.52	44.2		5 74	4.00	-12.95	Pk	Vertical	
4960.73	43.69	5.21	35.52	44.2	1 40.2	54	4.00	-13.79	AV	Vertical	
7440.86	62.42	7.10	36.53	44.6	0 61.4	5 74	4.00	-12.55	Pk	Vertical	
7440.86	43.90	7.10	36.53	44.6	0 42.93	54	4.00	-11.07	AV	Vertical	
4960.45	64.05	5.21	35.52	44.2	1 60.5	74	4.00	-13.43	Pk	Horizontal	
4960.45	43.27	5.21	35.52	44.2	1 39.79	54	4.00	-14.21	AV	Horizontal	
7440.51	61.38	7.10	36.53	44.6	0 60.4	74	4.00	-13.59	Pk	Horizontal	
7440.51	43.29	7.10	36.53	44.6	0 42.32	54	4.00	-11.68	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 (1Mbps for GFSK modulation) test result is the worst





Spurious	Emission i	in Restrie	cted Band	2310-2	2390)MHz and 2	2483.	5-250	0MHz		
EUT:	Smartp	hone		M	odel	No.:		Note	13 Pro		
Temperature:	: 20 ℃	20 ℃ Relative			e Humidity	dity: 48%					
Test Mode:	Mode2/	Mode2/ Mode4			est B	sy:		Mary	Hu		
Frequency	Meter Reading	Cable Loss	Antenna Factor	Prea Fact		Emission Level	Lir	nits	Margin	Detector	Comment
(MHz)	(dBµV)	(dB)	dB/m	(dB	5)	(dBµV/m)	(dB	ıV/m)	(dB)	Туре	
1Mbps(GFSK)											
2310.00	60.53	2.97	27.80	43.8	30	47.50	7	74	-26.50	Pk	Horizontal
2310.00	39.61	2.97	27.80	43.8	30	26.58	5	54	-27.42	AV	Horizontal
2310.00	62.17	2.97	27.80	43.8	30	49.14	7	74	-24.86	Pk	Vertical
2310.00	43.74	2.97	27.80	43.8	30	30.71	5	54	-23.29	AV	Vertical
2390.00	62.94	3.14	27.21	43.8	30	49.49	7	74	-24.51	Pk	Vertical
2390.00	43.21	3.14	27.21	43.8	30	29.76	Ę	54	-24.24	AV	Vertical
2390.00	63.48	3.14	27.21	43.8	30	50.03	7	74	-23.97	Pk	Horizontal
2390.00	43.76	3.14	27.21	43.8	30	30.31	Ę	54	-23.69	AV	Horizontal
2483.50	64.09	3.58	27.70	44.0	00	51.37	7	74	-22.63	Pk	Vertical
2483.50	43.59	3.58	27.70	44.0	00	30.87	Ę	54	-23.13	AV	Vertical
2483.50	63.07	3.58	27.70	44.0	00	50.35	7	74	-23.65	Pk	Horizontal
2483.50	43.07	3.58	27.70	44.0	00	30.35	Ę	54	-23.65	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 (1Mbps for GFSK modulation) test result is the worst

Spurious	s Emi	ission	in Restric	ted Band	3260MH	z-18000MHz						
EUT:	IT: Smartphone Model No.:							Note 13 Pro				
Temperature	: :	20 ℃			Rela	tive Humidity	<i>'</i> :	48%				
Test Mode:		Mode	2/ Mode4	ļ	Test	By:		Mary I	Hu			
Frequency		ading evel	Cable Loss	Antenna Factor	Preamp Factor		Li	imits	Margin	Detector	Comment	
(MHz)	(dE	3μV)	(dB)	dB/m	(dB)	(dBµV/m)	(dB	μV/m)	(dB)	Туре		
3260	65	5.63	4.04	29.57	44.70	54.54		74	-19.46	Pk	Vertical	
3260	43	3.31	4.04	29.57	44.70	32.22		54	-21.78	AV	Vertical	
3260	61	1.43	4.04	29.57	44.70	50.34		74	-23.66	Pk	Horizontal	
3260	43	3.98	4.04	29.57	44.70	32.89		54	-21.11	AV	Horizontal	
3332	62	2.02	4.26	29.87	44.40	51.75		74	-22.25	Pk	Vertical	
3332	43	3.86	4.26	29.87	44.40	33.59		54	-20.41	AV	Vertical	
3332	63	3.14	4.26	29.87	44.40	52.87		74	-21.13	Pk	Horizontal	
3332	43	3.86	4.26	29.87	44.40	33.59		54	-20.41	AV	Horizontal	
17797	47	7.13	10.99	43.95	43.50	58.57		74	-15.43	Pk	Vertical	
17797	34	1.26	10.99	43.95	43.50	45.70		54	-8.30	AV	Vertical	
17788	47	7.69	11.81	43.69	44.60	58.59		74	-15.41	Pk	Horizontal	
17788	34	4.07	11.81	43.69	44.60	44.97		54	-9.03	AV	Horizontal	

ACCREDITED

Certificate #4298.01

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

(2)Only the worst data is recorded in the report, the data rates (1Mbps 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.

Certificate #4298.01

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:	Smartphone	Model No.:	Note 13 Pro
Temperature:	20 ℃	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Mary Hu





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.)

Certificate #4298.01

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 (\geq RBW) Number of points in Sweep >100 Detector function = peak Trace = Clear write Measure T_{total} and T_{on} Calculate Duty Cycle = T_{on} / T_{total}





7.4.6 Test Results

EUT:	Smartphone	Model No.:	Note 13 Pro
Temperature:	20 ℃	Relative Humidity:	48%
Test Mode:	N/A	Test By:	N/A

ACCREDITED

Certificate #4298.01

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.

Certificate #4298.01

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:	Smartphone	Model No.:	Note 13 Pro
Temperature:	20 ℃	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Mary Hu



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.

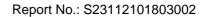
The path loss was compensated to the results for each measurement.

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:	Smartphone	Model No.:	Note 13 Pro
Temperature:	20 °C	Relative Humidity:	48%
Test Mode:	Mode2/Mode3/Mode4	Test By:	Mary Hu

ACCREDITED

Certificate #4298.01



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.

Certificate #4298.01

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:	Smartphone	Model No.:	Note 13 Pro
Temperature:	20 ℃	Relative Humidity:	48%
Test Mode:	Mode2/Mode4	Test By:	Mary Hu





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.

Certificate #4298.01

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:-2.84 dBi). It comply with the standard requirement.





8 TEST RESULTS

8.1 **1M**

8.1.1 Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	-3.18	30	Pass
NVNT	BLE 1M	2440	Ant1	-2.12	30	Pass
NVNT	BLE 1M	2480	Ant1	-4.53	30	Pass

		Power N	Test Gra	phs 1 2402MHz Ant1	1		
Spectrum)	1 01101 1			•		
Ref Level 20.0 Att SGL Count 100/:	30 dB SWT	t 2.38 dB 👄 10.1 ms 👄	RBW 3 MHz VBW 10 MHz	Mode Auto Swee	р		
1Pk Max							
				M1[1]			3.18 dBr 1000 GH
10 dBm					+ +	2.40192	1000 GH
0 dBm			M1				
-10 dBm							
-20 dBm							
2012							
30 dBm							
-40 dBm							
-50 dBm							
-60 dBm							
-70 dBm							
CF 2.402 GHz			10001 p	ts		Span 1	LO.O MHz
				Rei	ady 🚺		



Report No.: S23112101803002

Att SGL Count	20.00 dBm 30 dB 100/100		2.39 dB 👄 10.1 ms 👄			Auto Sweep		
●1Pk Max			1			M1[1]		-2.12 dBm
						milii	2.4399	95000 GHz
10 dBm								
0 dBm					M1		 	
-10 dBm								
-10 UBIII								
-20 dBm								
SO dBm								
-40 dBm					-			
-50 dBm							 	
-60 dBm								
-30 ubiii								
-70 dBm								
25.6								
				10	001 pts			10.0 MHz
CF 2.44 GH Spectrum		Offect				DMHz Ant1		
Spectrum Ref Level Att SGL Count	20.00 dBm 30 dB		2.42 dB 👄	RBW 31	ИНz	DMHz Ant1		
Spectrum Ref Level Att	20.00 dBm 30 dB		2.42 dB 👄	RBW 31	MHz MHz Mode			
Spectrum Ref Level Att SGL Count	20.00 dBm 30 dB		2.42 dB 👄	RBW 31	MHz MHz Mode	Auto Sweep		
Spectrum Ref Level Att SGL Count 1Pk Max 10 dBm	20.00 dBm 30 dB		2.42 dB 👄	RBW 31	MHz MHz Mode	Auto Sweep	 	-4.53 dBm
Spectrum Ref Level Att SGL Count 1Pk Max	20.00 dBm 30 dB		2.42 dB 👄	RBW 31	MHz MHz Mode	Auto Sweep		-4.53 dBm
Spectrum Ref Level Att SGL Count 1Pk Max 10 dBm	20.00 dBm 30 dB		2.42 dB 👄	RBW 31	MHz MHz Mode	Auto Sweep		-4.53 dBm
Spectrum Ref Level Att SGL Count 1Pk Max 10 dBm 0 dBm -10 dBm	20.00 dBm 30 dB		2.42 dB 👄	RBW 31	MHz MHz Mode	Auto Sweep		-4.53 dBm
Spectrum Ref Level Att SGL Count 1Pk Max 10 dBm 0 dBm -10 dBm -20 dBm	20.00 dBm 30 dB		2.42 dB 👄	RBW 31	MHz MHz Mode	Auto Sweep		-4.53 dBm
Spectrum Ref Level Att SGL Count 1Pk Max 10 dBm 0 dBm -10 dBm	20.00 dBm 30 dB		2.42 dB 👄	RBW 31	MHz MHz Mode	Auto Sweep		-4.53 dBm
Spectrum Ref Level Att SGL Count 1Pk Max 10 dBm 0 dBm -10 dBm -20 dBm	20.00 dBm 30 dB		2.42 dB 👄	RBW 31	MHz MHz Mode	Auto Sweep		-4.53 dBm
Spectrum Ref Level Att SGL Count 1Pk Max 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm -20 dBm -40 dBm	20.00 dBm 30 dB		2.42 dB 👄	RBW 31	MHz MHz Mode	Auto Sweep		-4.53 dBm
Spectrum Ref Level Att SGL Count 1Pk Max 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm	20.00 dBm 30 dB		2.42 dB 👄	RBW 31	MHz MHz Mode	Auto Sweep		-4.53 dBm
Spectrum Ref Level Att SGL Count 1Pk Max 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm -20 dBm -40 dBm	20.00 dBm 30 dB		2.42 dB 👄	RBW 31	MHz MHz Mode	Auto Sweep		-4.53 dBm
Spectrum Ref Level Att SGL Count 1Pk Max 10 dBm -10 dBm -20 dBm -20 dBm -40 dBm -50 dBm -60 dBm	20.00 dBm 30 dB		2.42 dB 👄	RBW 31	MHz MHz Mode	Auto Sweep		-4.53 dBm
Spectrum Ref Level Att SGL Count 1Pk Max 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm -40 dBm -50 dBm	20.00 dBm 30 dB		2.42 dB 👄	RBW 31	MHz MHz Mode	Auto Sweep		-4.53 dBm
Spectrum Ref Level Att SGL Count IPk Max 10 dBm -10 dBm -20 dBm -20 dBm -40 dBm -50 dBm -60 dBm	20.00 dBm 30 dB 100/100		2.42 dB 👄	RBW 31 VBW 101	MHz MHz Mode	Auto Sweep	2.4795	-4.53 dBm
Spectrum Ref Level Att SGL Count 1Pk Max 10 dBm -10 dBm -20 dBm -20 dBm -40 dBm -50 dBm -60 dBm	20.00 dBm 30 dB 100/100		2.42 dB 👄	RBW 31 VBW 101	MHz Mode	Auto Sweep	2.4795	-4.53 dBm 041000 GHz

ACCREDITED

Certificate #4298.01





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	0.698	0.5	Pass
NVNT	BLE 1M	2440	Ant1	0.687	0.5	Pass
NVNT	BLE 1M	2480	Ant1	0.655	0.5	Pass

			Test Grap				
	_	-6dB Band	width NVNT BLI	E 1M 2402MH	z Ant1		
Spectrum							
Ref Level	20.00 dBr	n Offset 2.38 dB	• RBW 100 kHz				
Att	30 d	В SWT 18.9 µs	• VBW 300 kHz	Mode Auto FFT			
SGL Count 2	200/200						
1Pk Max							
				M1[1]			-4.63 dBm
10 dBm							94600 GHz
				M2[1]			10.64 dBm
D dBm			M			2.4016	57000 GHz
		M2		м	13		
-10 dBm —					Č		
-20 dBm —					+		
		1					
-30 dBm							
10 10-							
-40 dBm							
-50 dBm							
-50 abiii							
-60 dBm							
-70 dBm							
CF 2.402 GH	lz			s		l Spa	n 2.0 MHz
1arker							
Type Ref	Trc	X-value	Y-value	Function	Fund	tion Result	
M1	1	2.4019946 GHz	-4.63 dBm				
M2	1	2.401657 GHz	-10.64 dBm				
M3	1	2.402355 GHz	-10.62 dBm				
				Re	adv.		1





ACCREDITED





8.1.3 Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	-19.04	8	Pass
NVNT	BLE 1M	2440	Ant1	-18.05	8	Pass
NVNT	BLE 1M	2480	Ant1	-20.36	8	Pass

	<u> </u>		PSD NV	Test G NT BLE 1	M 2402M	Hz Ant1			G
Spectrum									
Ref Level 20 Att	.00 dBm 30 dB		.38 dB 👄 R 632 us 👄 V	BW 3 kHz BW 10 kHz		Ito FET			
SGL Count 300			. • CH 200	20 10 10 10	Mode A				
1Pk Max						1[1]			19.04 dB
					IN I	1[1]			.97700 GF
10 dBm									
0 dBm									
o doni									
-10 dBm									
				M1					
-20 dBm	4.04	Mu	MWW	WanMarch	AMAM	MANY	1		
-30 dBm	AM	pr'll M	A FOUR R	0.* 0 P	uu puv y	1. A. A. A. A.	MMM	WALLAND 0	
N/WIGHT Y		}	V				,	ւ հահո	MMAD
-#d/dBm									4.00
-50 dBm									
-60 dBm									
-70 dBm									
-70 aBm									
CF 2.402 GHz				1001	pts			Span 1	L.047 MH
				1301	1				

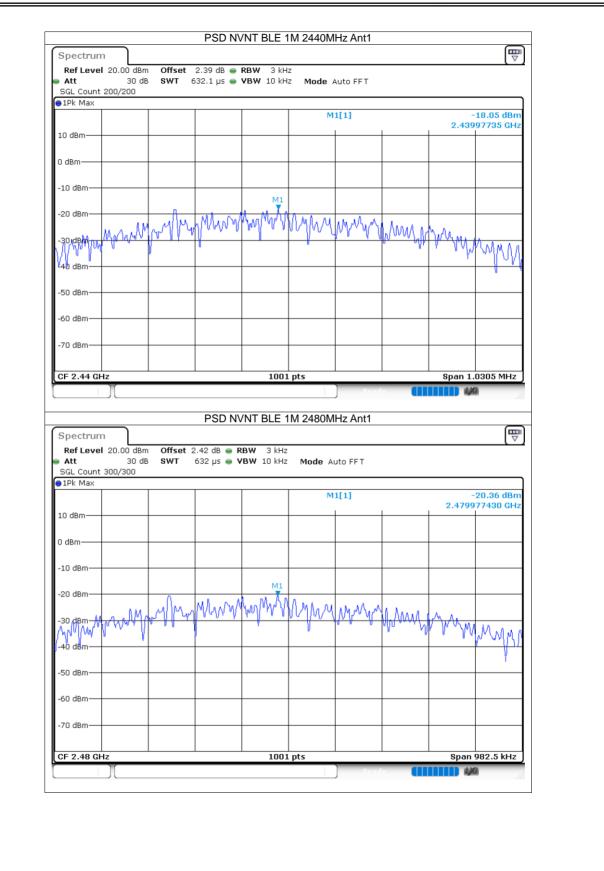


ilac-MR

ACCREDITED

Certificate #4298.01

Report No.: S23112101803002







8.1.4 Band Edge

tion	Mode	Frequence		Antenna	Max Value		Limit (dBc)	Verd
1T	BLE 1M	240		Ant1	-46.4		-20	Pas
1T	BLE 1M	248	30	Ant1	-36.8	9	-20	Pas
				Test Graphs				
	<u>(</u>		sanα Edge N	IVNI BLE 1M 24	02MHz Ant1 Ref		Ē	
	Spectrum							
	Ref Level 2 Att		: 2.38 dB 👄 R 18.9 µs 👄 V	BW 100 kHz BW 300 kHz Mod	e Auto FFT			
	SGL Count 1							
	●1Pk Max				M1[1]		-3.86 dBm	
	10 40					2.	40175220 GHz	
	10 dBm							
	0 dBm			M1				
				1 Ann				
	-10 dBm			+			-	
	-20 dBm							
	20 dom				\setminus \square			
	-30 dBm				+		 	
				X	N I			
	-40 dBm		/					
	-50 dBm							
		m	mont		1 min	mm	man mar	
	-60 dBm							
	-70 dBm							
	05.0.100.01			1001 pts				
	CF 2.402 GH			1001 pts	Peady		Span 8.0 MHz	
)[1001 pts	Ready			
)(d Edge NVN		MHz Ant1 Emiss			
	Spectrum)(d Edge NVN		MHz Ant1 Emissi			
	Spectrum Ref Level 2	Ban	: 2.38 dB 👄 I	NT BLE 1M 2402				
	Spectrum	Ban 0.00 dBm Offset 35 dB SWT	: 2.38 dB 👄 I	NT BLE 1M 2402				
	Spectrum Ref Level 2 Att	Ban 0.00 dBm Offset 35 dB SWT	: 2.38 dB 👄 I	NT BLE 1M 2402	le Auto FFT			
	Spectrum Ref Level 2 Att SGL Count 1 ● 1Pk Max	Ban 0.00 dBm Offset 35 dB SWT	: 2.38 dB 👄 I	NT BLE 1M 2402		ion		
	Spectrum Ref Level 2 Att SGL Count 1 1Pk Max 10 dBm	Ban 0.00 dBm Offset 35 dB SWT	: 2.38 dB 👄 I	NT BLE 1M 2402	le Auto FFT	ion	-3.91 dBm 40175000 GHz -56.39 dBm	
	Spectrum Ref Level 2 Att SGL Count 1 ● 1Pk Max	Ban 0.00 dBm Offset 35 dB SWT	: 2.38 dB 👄 I	NT BLE 1M 2402	de Auto FFT M1[1]	ion	-3.91 dBm 40175000 GHz	
	Spectrum Ref Level 2 Att SGL Count 1 1Pk Max 10 dBm	Ban 0.00 dBm Offset 35 dB SWT	: 2.38 dB 👄 I	NT BLE 1M 2402	de Auto FFT M1[1]	ion	-3.91 dBm 40175000 GHz -56.39 dBm	
	Spectrum Ref Level 2 Att SGL Count 1 1 Pk Max 10 dBm 0 dBm -10 dBm -20 dBm	Ban 0.00 dBm Offset 35 dB SwT 00/100	: 2.38 dB 👄 I	NT BLE 1M 2402	de Auto FFT M1[1]	ion	-3.91 dBm 40175000 GHz -56.39 dBm	
	Spectrum Ref Level 20 Att SGL Count 11 10 dBm 0 dBm -10 dBm -20 dBm D	Ban 0.00 dBm Offset 35 dB SWT	: 2.38 dB 👄 I	NT BLE 1M 2402	de Auto FFT M1[1]	ion	-3.91 dBm 40175000 GHz -56.39 dBm	
	Spectrum Ref Level 2 Att SGL Count 1 • 1Pk Max 10 dBm - 10 dBm - 20 dBm - 30 dBm	Ban 0.00 dBm Offset 35 dB SwT 00/100	: 2.38 dB 👄 I	NT BLE 1M 2402	de Auto FFT M1[1]	ion	-3.91 dBm 40175000 GHz -56.39 dBm	
	Spectrum Ref Level 20 Att SGL Count 11 10 dBm 0 dBm -10 dBm -20 dBm D	Ban 0.00 dBm Offset 35 dB SwT 00/100	: 2.38 dB • 1 227.5 µs • 1	NT BLE 1M 2402	de Auto FFT M1[1]	ion	-3.91 dBm 40175000 GHz -56.39 dBm	
	Spectrum Ref Level 2 Att SGL Count 11 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -30 dBm -30 dBm -50 dBm	Ban 0.00 dBm Offset 35 dB SWT 00/100	227.5 μs • Υ	NT BLE 1M 2402	le Auto FFTM2[1]	2. 2.	-3.91 dBm 40175000 GHz -56.39 dBm 4000000 Ω GHz	
	Spectrum Ref Level 2 Att SGL Count 11 P1Pk Max 10 dBm -10 dBm -10 dBm -20 dBm -30 dBm -40 dBm	Ban 0.00 dBm Offset 35 dB SWT 00/100	227.5 μs • Υ	NT BLE 1M 2402	de Auto FFT M1[1]	2. 2.	-3.91 dBm 40175000 GHz -56.39 dBm 4000000 Ω GHz	
	Spectrum Ref Level 2 Att SGL Count 11 IPk Max 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -30 dBm -40 dBm -50 dBm -50 dBm	Ban 0.00 dBm Offset 35 dB SWT 00/100	227.5 μs • Υ	NT BLE 1M 2402	le Auto FFTM2[1]	2. 2.	-3.91 dBm 40175000 GHz -56.39 dBm 4000000 Ω GHz	
	Spectrum Ref Level 2 Att SGL Count 1 9 1Pk Max 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -30 dBm -50 dBm -50 dBm	Ban 0.00 dBm Offset 35 dB SWT 00/100	227.5 μs • Υ	NT BLE 1M 2402	le Auto FFTM2[1]	2. 2.	-3.91 dBm 40175000 GHz -56.39 dBm 4000000 Ω GHz	
	Spectrum Ref Level 2 Att SGL Count 11 IPk Max 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -30 dBm -40 dBm -50 dBm -50 dBm	Ban 0.00 dBm Offset 35 dB SWT 00/100	227.5 μs • Υ	NT BLE 1M 2402	le Auto FFTM2[1]	2. 2. 2.	-3.91 dBm 40175000 GHz -56.39 dBm 4000000 Ω GHz	
	Spectrum Ref Level 2 Att SGL Count 11 P 1Pk Max 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm -30 dBm -40 dBm -50 dBm -50 dBm -50 dBm -70 dBm -70 dBm -70 dBm	Ban 0.00 dBm Offset 35 dB SWT 00/100 1 -23.863 dBm namharland hywellyw GHz	227.5 μs • 1	NT BLE 1M 2402	de Auto FFT M1[1] M2[1]	2. 2. 4. 4. 4. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5.	-3.91 dBm 40175000 GHz -56.39 dBm 40000000 GHz	
	Spectrum Ref Level 2: Att SGL Count 1: 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -30 dBm -40 dBm -50 dBm -70 dBm -70 dBm	Ban 0.00 dBm Offset 35 dB SWT 00/100 1 -23.863 dBm Conduction GHz Trc X-ve 1 2.4	227.5 μs • 1	NT BLE 1M 2402	le Auto FFTM2[1]	2. 2. 2.	-3.91 dBm 40175000 GHz -56.39 dBm 40000000 GHz	
	Spectrum Ref Level 2: Att SGL Count 11 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -30 dBm -30 dBm -30 dBm -70 dBm -70 dBm -70 dBm Start 2.306 dBm Type Ref M1 M2	Ban 0.00 dBm Offset 35 dB SWT 00/100 1 -23.863 dBm nwm/mm/m/m/m/m/m/m GHz Trc X-ve 1 2.4	227.5 μs • 227.5 μs • 227.5 μs • 40175 GHz 2.4 GHz	NT BLE 1M 2402 RBW 100 kHz YBW 300 kHz Mon WBW 300 kHz Mon 100 kHz 1001 pts Y-value F -3.91 dBm -56.39 dBm	de Auto FFT M1[1] M2[1]	2. 2. 4. 4. 4. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5.	-3.91 dBm 40175000 GHz -56.39 dBm 40000000 GHz	
	Spectrum Ref Level 2 Att SGL Count 11 10 dBm 0 dBm -10 dBm -10 dBm -20 dBm -30 dBm -30 dBm -30 dBm -30 dBm -40 dBm -50 dBm -70 dBm	Ban 0.00 dBm Offset 35 dB SWT 00/100 1 -23.863 dBm 1 -23.863 dBm GHz GHz Trc X-vz 1 2.4 1 2.4	 2.38 dB • I 227.5 μs • Y M4 <	NT BLE 1M 2402	de Auto FFT M1[1] M2[1]	2. 2. 4. 4. 4. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5.	-3.91 dBm 40175000 GHz -56.39 dBm 40000000 GHz	





Spectrum Ref Level 3		Offset 2.	42 dB 👄 R	BW 100 kHz					
Att SGL Count 1	45 dB			' BW 300 kHz		uto FFT			
●1Pk Max									F 00 d5
					M	1[1]		2.479	-5.39 dBm 75220 GHz
20 dBm									
10 dBm									
TO UBIII									
0 dBm				M1					
				- The	~				
-10 dBm					[°] کړ				
-20 dBm									
					$ \rangle$				
-30 dBm				1/	\vdash				
-40 dBm				/					
m m/	mm	\sim	$h \sim 10^{-10}$	X	\	h.m.	m	m	mm
-50 dBm	(···V wr (v í						
-60 dBm									
05.0.40.01	-			1000					- 0.0 M ²
CF 2.48 GH				1001	, prs			spa	n 8.0 MHz
-						z Ant1 Em	nission		
Ref Level 3 Att	30.00 dBm 45 dB	Offset 2	2.42 dB 😑 I	NT BLE 1M RBW 100 kH VBW 300 kH	z		nission		(E)
Ref Level 3 Att SGL Count 1	30.00 dBm 45 dB	Offset 2	2.42 dB 😑 I	RBW 100 kH	z z Mode /	Auto FFT	nission		
Ref Level 3 Att SGL Count 1 1Pk Max	30.00 dBm 45 dB	Offset 2	2.42 dB 😑 I	RBW 100 kH	z z Mode /		hission		-5.23 dBm 75000 GHz
Ref Level 3 Att SGL Count 1 1Pk Max 20 dBm	30.00 dBm 45 dB	Offset 2	2.42 dB 😑 I	RBW 100 kH	z Mode /	Auto FFT	nission	2.479	-5.23 dBm 75000 GHz 46.32 dBm
Ref Level 3 Att SGL Count 1 1Pk Max 20 dBm	30.00 dBm 45 dB	Offset 2	2.42 dB 😑 I	RBW 100 kH	z Mode /	Auto FFT 1[1]	hission	2.479	-5.23 dBm 75000 GHz
Ref Level 3 Att SGL Count 1 P1Pk Max 20 dBm 10 dBm	30.00 dBm 45 dB	Offset 2	2.42 dB 😑 I	RBW 100 kH	z Mode /	Auto FFT 1[1]		2.479	-5.23 dBm 75000 GHz 46.32 dBm
Ref Level 3 Att SGL Count 1 1Pk Max 20 dBm 10 dBm 0 dBm	30.00 dBm 45 dB	Offset 2	2.42 dB 😑 I	RBW 100 kH	z Mode /	Auto FFT 1[1]		2.479	-5.23 dBm 75000 GHz 46.32 dBm
Ref Level 3 Att SGL Count 1 IPk Max 20 dBm 10 dBm 0 dBm -10 dBm	30.00 dBm 45 dB	Offset 2	2.42 dB 😑 I	RBW 100 kH	z Mode /	Auto FFT 1[1]		2.479	-5.23 dBm 75000 GHz 46.32 dBm
Ref Level 3 Att SGL Count 2 IPk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm	30.00 dBm 45 dB	Offset 2 SWT 22	2.42 dB 😑 I	RBW 100 kH	z Mode /	Auto FFT 1[1]		2.479	-5.23 dBm 75000 GHz 46.32 dBm
Ref Level 3 Att SGL Count 3 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 cBm -30 cBm	30.00 dBm 45 dB 100/100	Offset 2 SWT 22	2.42 dB 😑 I	RBW 100 kH	z Mode /	Auto FFT 1[1]		2.479	-5.23 dBm 75000 GHz 46.32 dBm
Ref Level 3 Att SGL Count 1 SGL Count 2 IPk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 cBm -30 cBm	30.00 dBm 45 dB 100/100	Offset 2 SWT 22	2.42 dB • 1 7.5 μs • '	RBW 100 kH	z Mode / M M	Auto FFT 1[1] 2[1]		2.479 - 2.483	-5.23 dBm 75000 GHz 46.32 dBm 50000 GHz
Ref Level 3 Att SGL Count 1 SGL Count 2 IPk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm -30 dBm -40 dBm	30.00 dBm 45 dB 100/100	Offset 2 SWT 22	2.42 dB • 1 7.5 μs • '	RBW 100 kH	z Mode / M M	Auto FFT 1[1] 2[1]		2.479 - 2.483	-5.23 dBm 75000 GHz 46.32 dBm 50000 GHz
Ref Level 3 Att SGL Count 3 1Pk Max 20 dBm 10 dBm 0 d&m -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm	30.00 dBm 45 dB 100/100	Offset 2 SWT 22	2.42 dB • 1 7.5 μs • '	RBW 100 kH	z Mode / M M	Auto FFT 1[1] 2[1]		2.479 - 2.483	-5.23 dBm 75000 GHz 46.32 dBm 50000 GHz
Ref Level 3 Att SGL Count 3 IPk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm	30.00 dBm 45 dB 100/100	Offset 2 SWT 22	2.42 dB • 1 7.5 μs • '	RBW 100 kH	2 2 Mode / M M / / / / / / / / / / / / / / / / /	Auto FFT 1[1] 2[1]		2.479 - 2.483	-5.29 dBm 75000 GHz 46.32 dBm 50000 GHz
Ref Level 3 Att SGL Count 3 IPk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm Start 2.476	30.00 dBm 45 dB 100/100	Offset 2 SWT 22	2.42 dB • 1 7.5 μs • '	RBW 100 kH	2 2 Mode / M M / / / / / / / / / / / / / / / / /	Auto FFT 1[1] 2[1]		2.479 - 2.483	-5.23 dBm 75000 GHz 46.32 dBm 50000 GHz
Att SGL Count 1 SGL Count 2 IPk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 cBm -20 cBm -30 cBm -60 dBm -60 dBm Start 2.476 Marker Type	30.00 dBm 45 dB 100/100 01 -25.391 01 -25.391 GHz	Offset 2 SWT 22	2.42 dB • 1 7.5 μs • '	RBW 100 kH	z Mode / M M ا س ا س ا س ا س ا س ا س ا س ا س ا س	Auto FFT 1[1] 2[1]	offer the start of	2.479 - 2.483	-5.23 dBm 75000 GHz 46.32 dBm 50000 GHz
Ref Level 3 Att SGL Count 3 1Pk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -50 dBm -60 dBm -50 dBm -60 dBm -60 dBm -70 dRef Type Ref	30.00 dBm 45 dB 000/100)1 -25.391 mm,/ull-1/up/ GHz I Trc 1 1	Offset 2 SWT 22 dBm 	2.42 dB 27.5 μs 75 GHz	RBW 100 kH VBW 300 kH	2 2 Mode / M M ////////////////////////////////	Auto FFT 1[1] 2[1]	offer the start of	2.479 - 2.483 	-5.23 dBm 75000 GHz 46.32 dBm 50000 GHz
Ref Level 3 Att SGL Count 3 IPk Max 20 dBm 10 dBm 0 dBm -20 dBm -20 dBm -20 dBm -20 dBm -30 dBm -60 dBm Start 2.476 Marker Type Ref M1 M2 M3	30.00 dBm 45 dB 100/100 01 -25.391 01 -25.391 6Hz 6Hz 1 1 1 1	Offset 2 SWT 22 dBm dBm <u>M3</u> whul whum colored z.4797 2.4493 2	2.42 dB 7.5 μs 7.5 μs 7	RBW 100 kH VBW 300 kH 	z Mode / M M M M M M M M M M M M M m m	Auto FFT 1[1] 2[1]	offer the start of	2.479 - 2.483 	-5.23 dBm 75000 GHz 46.32 dBm 50000 GHz
Ref Level 3 Att SGL Count 3 IPk Max 20 dBm 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm -60 dBm Start 2.476 Marker Type Ref M1 M2	30.00 dBm 45 dB 100/100 01 -25.391 01 -25.591 01 -25.591 01 -25.591 01 -25.591 01 -25.591 01 -25.591 01 -25.59	Offset 2 SWT 22 dBm dBm <u>M3</u> whul whum colored z.4797 2.4493 2	2.42 dB 27.5 μs 27.5 μs 27.5 μs 27.5 μs 27.5 μs 27.5 μs 27.5 GHz 27.5 G	RBW 100 kH VBW 300 kH	z Mode / M M M M M M M M M M M M M m m	Auto FFT 1[1] 2[1]	չեւթույստյուն Func	2.479 - 2.483 	-5.23 dBm 75000 GHz 46.32 dBm 50000 GHz





8.1.5 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-47.08	-20	Pass
NVNT	BLE 1M	2440	Ant1	-48.44	-20	Pass
NVNT	BLE 1M	2480	Ant1	-45.95	-20	Pass

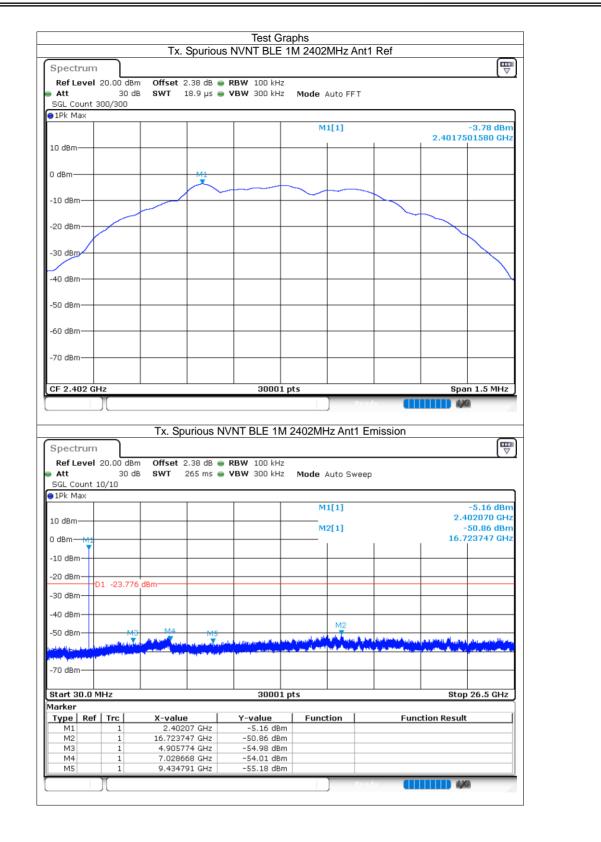


ilac-MR

ACCREDITED

Certificate #4298.01

Report No.: S23112101803002





Att	20.00 dBm 30 dB			RBW 100 kHz VBW 300 kHz	Mode Auto FF	т		
SGL Count :	100/100							
1Pk Max					M1[1]			-2.76 dBm
					South1		2.439	7500580 GHz
LO dBm								
			M1					
) dBm			~					
10 dBm		\square						
							\checkmark	
20 dBm							-	
30 dBm								
40 dBm								
50 dBm							-	
60 dBm								
70 dBm								
								pan 1.5 MHz
CF 2.44 GH	z			30001	ots			pan 1.5 minz T
		Tx. Spur	rious N\		2440MHz Ant	Ready		4/4
Spectrum Ref Level Att	20.00 dBm 30 dB	Offset 2.3	39 dB 👄	/NT BLE 1M				
Spectrum Ref Level Att SGL Count :	20.00 dBm 30 dB	Offset 2.3	39 dB 👄	/NT BLE 1M	2440MHz Ant Mode Auto Sv			4/4
Spectrum Ref Level Att SGL Count : 1Pk Max	20.00 dBm 30 dB	Offset 2.3	39 dB 👄	/NT BLE 1M	2440MHz Ant			₩ ())))))))))))))))))
Spectrum Ref Level Att SGL Count : 1Pk Max	20.00 dBm 30 dB	Offset 2.3	39 dB 👄	/NT BLE 1M	2440MHz Ant Mode Auto Sv			-2.88 dBm 2.440010 GHz -51.21 dBm
Spectrum Ref Level Att SGL Count : 1Pk Max	20.00 dBm 30 dB	Offset 2.3	39 dB 👄	/NT BLE 1M	2440MHz Ant Mode Auto Sv M1[1]			-2.88 dBm 2.440010 GHz
Spectrum Ref Level Att SGL Count : 1Pk Max	20.00 dBm 30 dB	Offset 2.3	39 dB 👄	/NT BLE 1M	2440MHz Ant Mode Auto Sv M1[1]			-2.88 dBm 2.440010 GHz -51.21 dBm
Spectrum Ref Level Att SGL Count : 1Pk Max 10 dBm 10 dBm 10 dBm	20.00 dBm 30 dE 10/10	Offset 2.3 SWT 26	39 dB 👄	/NT BLE 1M	2440MHz Ant Mode Auto Sv M1[1]			-2.88 dBm 2.440010 GHz -51.21 dBm
Spectrum Ref Level Att SGL Count : 10 Pk Max 10 dBm 10 dBm 10 dBm 10 dBm 10 dBm	20.00 dBm 30 dE 10/10	Offset 2.3 SWT 26	39 dB 👄	/NT BLE 1M	2440MHz Ant Mode Auto Sv M1[1]			-2.88 dBm 2.440010 GHz -51.21 dBm
Spectrum Ref Level Att SGL Count : 1Pk Max 10 dBm 10 dBm 20 dBm 10 dBm 10 dBm 10 dBm 10 dBm 10 dBm	20.00 dBm 30 dE 10/10	Offset 2.3 SWT 26	39 dB 👄	/NT BLE 1M	2440MHz Ant Mode Auto Sv M1[1]			-2.88 dBm 2.440010 GHz -51.21 dBm
Spectrum Ref Level Att SGL Count : 10 Pk Max 10 dBm 10 dBm 10 dBm 10 dBm 10 dBm	20.00 dBm 30 dE 10/10	Offset 2.3 SWT 26	39 dB 👄	/NT BLE 1M	2440MHz Ant Mode Auto Sv M1[1] M2[1]			-2.88 dBm 2.440010 GHz -51.21 dBm
Spectrum Ref Level Att SGL Count : 1Pk Max 10 dBm 10 dBm 20 dBm 10 dBm 10 dBm 10 dBm 10 dBm 10 dBm	20.00 dBm 30 dE 10/10	Offset 2.3 SWT 26	39 dB 👄	/NT BLE 1M	2440MHz Ant Mode Auto Sv M1[1] M2[1] M2[1]			-2.88 dBm 2.440010 GHz -51.21 dBm
Spectrum Ref Level Att SGL Count : 1Pk Max 10 dBm 10 dBm 20 dBm 40 dBm 40 dBm	20.00 dBm 30 dE 10/10	Offset 2.3 SWT 26	39 dB 👄	/NT BLE 1M	2440MHz Ant Mode Auto Sv M1[1] M2[1] M2[1]	/eep		-2.88 dBm 2.440010 GHz -51.21 dBm
Spectrum Ref Level Att SGL Count : 1Pk Max 10 dBm 10 dBm 20 dBm 40 dBm 40 dBm	20.00 dBm 30 dE 10/10	Offset 2.3 SWT 26	39 dB 👄	/NT BLE 1M	2440MHz Ant Mode Auto Sv M1[1] M2[1] M2[1]			-2.88 dBm 2.440010 GHz -51.21 dBm
Spectrum Ref Level Att SGL Count : 1Pk Max 10 dBm 10 dBm 20 dBm 40 dBm 50 dBm 40 dBm 70 dBm 70 dBm	20.00 dBm 30 dE 10/10	Offset 2.3 SWT 26	39 dB 👄	/NT BLE 1M RBW 100 kHz VBW 300 kHz	2440MHz Ant Mode Auto Sv M1[1] M2[1] M2 M2			-2.88 dBm 2.440010 GHz -51.21 dBm 5.655241 GHz
Spectrum Ref Level Att SGL Count : IPK Max I OdBm 0 dBm 10 dBm 20 dBm 40 dBm 50 dBm 50 dBm 70 dBm 70 dBm 31 dBm 10 dBm	20.00 dBm 30 dE 10/10	Offset 2.3 SWT 26	39 dB 👄	/NT BLE 1M	2440MHz Ant Mode Auto Sv M1[1] M2[1] M2 M2			-2.88 dBm 2.440010 GHz -51.21 dBm
Spectrum Ref Level Att SGL Count : DIPk Max O dBm O dB	20.00 dBm 30 dE 10/10 D1 -22.758	dBm	39 dB 👄	/NT BLE 1M RBW 100 kHz YBW 300 kHz	2440MHz Ant Mode Auto Sv M1[1] M2[1] M2 M2			-2.88 dBm 2.440010 GHz -51.21 dBm 5.655241 GHz
Spectrum Ref Level Att SGL Count : 1Pk Max 10 dBm 10 dBm 20 dBm 30 dBm 40 dBm 50 dBm 70 dBm 70 dBm 70 dBm 70 dBm 70 dBm 8 dBm 70 dBm 70 dBm 9 dB	20.00 dBm 30 dE 10/10	Offset 2.3 SWT 26	39 dB 5 ms	/NT BLE 1M RBW 100 kHz VBW 300 kHz 	2440MHz Ant Mode Auto Sv M1[1] M2[1] M2[1] M2 M2 M2 M2 M2 M2 M2			-2.88 dBm 2.440010 GHz -51.21 dBm 5.655241 GHz
Spectrum Ref Level Att SGL Count :: 10 dBm 10 dBm 10 dBm 20 dBm 40 dBm 50 dBm 70 dBm 70 dBm 31 darker Type Ref	20.00 dBm 30 dE 10/10 D1 -22.758 MC MHz	Offset 2.3 SWT 26	39 dB 5 ms	/NT BLE 1M RBW 100 kHz yBW 300 kHz 	2440MHz Ant Mode Auto Sv M1[1] M2[1] M2[1] M2 M2 M2 M2 M2 M2			-2.88 dBm 2.440010 GHz -51.21 dBm 5.655241 GHz
Spectrum Ref Level Att SGL Count : 112 GBm 10 dBm 30 dBm 40 dBm 70 dBm Start 30.0 M Interer Type Ref M1 M2 M3 M4	20.00 dBm 30 dE 10/10 D1 -22.758 MHz MHz I Trc 1 1 1 1	Offset 2.3 SWT 26	39 dB 55 ms 55 ms 75	/NT BLE 1M RBW 100 kHz yBW 300 kHz	2440MHz Ant Mode Auto Sv M1[1] M2[1] M2[1] M2 M2 M2 M2 M2 M2			-2.88 dBm 2.440010 GHz -51.21 dBm 5.655241 GHz
Spectrum Ref Level Att SGL Count : DIPk Max CO dBm	20.00 dBm 30 dE 10/10 D1 -22.758 MC MHz MHz I Trc 1 1 1	Offset 2.3 SWT 26	39 dB 55 ms 55 ms 75	/NT BLE 1M RBW 100 kHz VBW 300 kHz 	2440MHz Ant Mode Auto Sv M1[1] M2[1] M2[1] M2 M2 M2 M2 M2 M2		1	-2.88 dBm 2.440010 GHz -51.21 dBm 5.655241 GHz

ACCREDITED



Spectrum Ref Level 20.00 df Att 30 SGL Count 200/200		2 dB 👄 RBW 9 µs 👄 VBW		Mode Aut	o FFT			
1Pk Max								5 10 10
				M1[1	J.		2.4797	-5.12 dBm 486580 GHz
LO dBm								
) dBm								
		M1						
10 dBm								
.20 dBm								
-30 dBm								
40 dBm								
50 dBm	+							
60 dBm								
oo aan								
-70 dBm								
CF 2.48 GHz			30001	pts			Spa	an 1.5 MHz
Spectrum	TX. Spuil	ous NVNT	BLE 1M	2480MHz	Ant1 En	nission		P
Ref Level 20.00 da Att 30	3m Offset 2.4		/ 100 kHz			nission		
Ref Level 20.00 dt Att 30 SGL Count 5/5	3m Offset 2.4	2 dB 👄 RBW	/ 100 kHz	Mode Aut	o Sweep	nission		
Ref Level 20.00 d8 Att 30 SGL Count 5/5 1Pk Max	3m Offset 2.4	2 dB 👄 RBW	/ 100 kHz	Mode Aut	o Sweep .]	nission	2.	-51.06 dBm 479720 GHz
Ref Level 20.00 ds Att 30 SGL Count 5/5 IPk Max 0 0 dBm 0	3m Offset 2.4	2 dB 👄 RBW	/ 100 kHz	Mode Aut	o Sweep .]	nission	2.	-51.06 dBm
Ref Level 20.00 df Att 30 SGL Count 5/5 1Pk Max 30 10 dBm 30	3m Offset 2.4	2 dB 👄 RBW	/ 100 kHz	Mode Aut	o Sweep .]	nission	2.	-51.06 dBm 479720 GHz -51.07 dBm
Att 30 SGL Count 5/5 PIPk Max	3m Offset 2.4	2 dB 👄 RBW	/ 100 kHz	Mode Aut	o Sweep .]	nission	2.	-51.06 dBm 479720 GHz -51.07 dBm
Ref Level 20.00 df Att 30 SGL Count 5/5 11Pk Max 30 00 dBm 0 10 dBm 20 dBm 20 dBm 01 -25.11	3m Offset 2.4 dB SWT 26:	2 dB 👄 RBW	/ 100 kHz	Mode Aut	o Sweep .]	nission	2.	-51.06 dBm 479720 GHz -51.07 dBm
Ref Level 20.00 dl Att 30 SGL Count 5/5 11Pk Max 30 10 dBm 30 10 dBm 30 20 dBm 01 -25.11	3m Offset 2.4 dB SWT 26:	2 dB 👄 RBW	/ 100 kHz	Mode Aut	o Sweep .]	nission	2.	-51.06 dBm 479720 GHz -51.07 dBm
Ref Level 20.00 dl Att 30 SGL Count 5/5 1Pk Max 30 L0 dBm 0 10 dBm 0 20 dBm 01 -25.13 30 dBm 40 dBm	3m Offset 2.4 dB SWT 26:	2 dB 👄 RBW	/ 100 kHz	Mode Aut	o Sweep .]	M2	2.	-51.06 dBm 479720 GHz -51.07 dBm
Ref Level 20.00 df Att 30 SGL Count 5/5 PIPk Max 30 10 dBm 30 10 dBm 30 20 dBm 20 dBm 30 dBm 30 dBm 40 dBm 40 dBm	3m Offset 2.4 dB SWT 26:	2 dB 👄 RBW	/ 100 kHz	Mode Aut	o Sweep .] .]		2.	-51.06 dBm 479720 GHz -51.07 dBm
Ref Level 20.00 dl Att 30 SGL Count 5/5 1Pk Max 30 L0 dBm 0 10 dBm 0 20 dBm 01 -25.13 30 dBm 40 dBm	3m Offset 2,4 dB SWT 26:	2 dB 👄 RBW	/ 100 kHz	Mode Aut	o Sweep .] .]		2.	-51.06 dBm 479720 GHz -51.07 dBm
Ref Level 20.00 dl Att 30 SGL Count 5/5 1Pk Max 30 L0 dBm 0 10 dBm 0 20 dBm 01 -25.13 30 dBm 40 dBm	3m Offset 2,4 dB SWT 26:	2 dB 👄 RBW	/ 100 kHz	Mode Aut	o Sweep .] .]	 	2.	-51.06 dBm 479720 GHz -51.07 dBm
Ref Level 20.00 df Att 30 SGL Count 5/5 IPK Max 30 10 dBm 30 10 dBm 9 10 dBm 9 10 dBm 9 30 dBm 9 40 dBm 9 50 dBm 9 50 dBm 9 50 dBm 9 70 dBm 9	3m Offset 2,4 dB SWT 26:	2 dB 👄 RBW	/ 100 kHz / 300 kHz	Mode Aut	o Sweep .] .]	 	2. 19.	-51.06 dBm 479720 GHz -51.07 dBm 859559 GHz
Ref Level 20.00 df Att 30 SGL Count 5/5 IPK Max 30 0 dBm 0 10 dBm 0 20 dBm 01 20 dBm 01 30 dBm 01 40 dBm 01 50 dBm 01 70 dBm 01 30 dBm 01 30 dBm 01 40 dBm 01 50 dBm 01 70 dBm 01 30 dBm 01 30 dBm 01 30 dBm 01 70 dBm 01 31 data 00 31 data 00 32 data 00	3m Offset 2.4 dB SWT 26:	2 dB RBW 5 ms VBW	/ 100 kHz / 300 kHz	Mode Aut	o Sweep	M2	2. 19.	-51.06 dBm 479720 GHz -51.07 dBm 559559 GHz
Ref Level 20.00 df Att 30 SGL Count 5/5 IPK Max 30 0 dBm 0 10 dBm 0 20 dBm 01 20 dBm 01 30 dBm 01 40 dBm 01 50 dBm 01 70 dBm 01 30 dBm 01 30 dBm 01 40 dBm 01 50 dBm 01 70 dBm 01 30 dBm 01 30 dBm 01 30 dBm 01 70 dBm 01 31 data 00 31 data 00 32 data 00	3m Offset 2,4 dB SWT 26:	2 dB RBW 5 ms VBW	/ 100 kHz / 300 kHz	Mode Aut	o Sweep	M2	2. 19.	-51.06 dBm 479720 GHz -51.07 dBm 559559 GHz
Ref Level 20.0 df Att 30 SGL Count 5/5 PIPk Max 30 SGL Count 5/5 PIPk Max 10 J0 dBm 10 20 dBm 11 30 dBm 11 40 dBm 11 50 dBm 11 50 dBm 11 70 dBm 11 Start 30.0 MHz 11 M1 1	3m Offset 2.4 dB SWT 26: 18 dBm 18 dBm 19 11 1014 10 10000000000	2 dB RBW 5 ms VBW	/ 100 kHz / 300 kHz / 300 kHz / / / / / / / / / / / / / / / / / / /	Mode Aut M1[1 M2[1 	o Sweep	M2	2. 19.	-51.06 dBm 479720 GHz -51.07 dBm 559559 GHz
Ref Level 20.00 dK Att 30 SGL Count 5/5 11Pk Max 30 10 dBm	3m Offset 2.4 dB SWT 26.	2 dB RBW 5 ms VBW	/ 100 kHz / 300 kHz / 300 kHz / / / / / / / / / / / / / / / / / / /	Mode Aut M1[1 M2[1 M2[1 M2[1 M2[1 M2[1 M2[1 M2[1 M2[1 M2[1 M2[1 M2] M2[1 M2[1 M2[1 M2] M2[1 M2[1 M2] M2[1 M2] M2[1 M2] M2[1 M2] M2[1 M2] M2[1 M2] M2[1 M2] M2] M2[1 M2] M2] M2[1 M2] M2] M2] M2] M2] M2] M2] M2]	o Sweep	M2	2. 19.	-51.06 dBm 479720 GHz -51.07 dBm 559559 GHz
Ref Level 20.00 df Att 30 SGL Count 5/5 11Pk Max 30 10 dBm	3m Offset 2.4 dB SWT 26: 	2 dB RBW 5 ms VBW	/ 100 kHz / 300 kHz / 300 kHz / / / / / / / / / / / / / / / / / / /	Mode Aut M1[1 M2[1 M2[1 M2[1 M2[1 M2[1 M2[1 M2[1 M2[1 M2[1 M2[1 M2] M2[1 M2[1 M2[1 M2] M2[1 M2[1 M2] M2[1 M2] M2[1 M2] M2[1 M2] M2[1 M2] M2[1 M2] M2[1 M2] M2] M2[1 M2] M2] M2[1 M2] M2] M2] M2] M2] M2] M2] M2]	o Sweep	M2	2. 19.	-51.06 dBm 479720 GHz -51.07 dBm 559559 GHz

ACCREDITED





8.2 **2M**

8.2.1 Maximum Conducted Output Power

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 2M	2402	Ant1	-3.34	30	Pass
NVNT	BLE 2M	2440	Ant1	-2.29	30	Pass
NVNT	BLE 2M	2480	Ant1	-4.5	30	Pass

		Power	Test Gra NVNT BLE 2	M 2402MHz Ant	:1		
Spectrum	J						Ē
Ref Level 20.0	0 dBm Offs	et 2.38 dB 👄	RBW 3 MHz				
Att 🛛	30 dB SWT	10.1 ms 👄	VBW 10 MHz	Mode Auto Swe	ер		
SGL Count 100/ 1Pk Max	100						
ULEK Man				M1[1]		-2	3.34 dBn
						2.401958	
10 dBm							
0 dBm							
-10 dBm							
-20 dBm							<hr/>
-30 dBm							
-40 dBm							
-50 dBm							
-50 dBm							
-60 dBm							
-00 ubiii							
-70 dBm							
-/ 6 ubii							
CF 2.402 GHz			10001	pts		Span 1	D.O MHz
				Re	ead v		



Att SGL Count	20.00 dBm 30 dB 100/100		RBW 3 MHz /BW 10 MHz		ito Sweep		
●1Pk Max							0.00 dB
				M1	[1]	2.439	-2.29 dBm 974000 GHz
10 dBm							
0 dBm			м				
-10 dBm							
-20 dBm							
-30 dBm							
-40 dBm							
-50 dBm							
-60 dBm						 	↓
-70 dBm							
CF 2.44 GH			10001	ntc			10.0 MHz
			10001	. pts	_		
Spectrum Ref Level	20.00 dBm	2.42 dB 👄 R	VNT BLE 2				
Spectrum Ref Level Att SGL Count	20.00 dBm 30 dB	2.42 dB 👄 R					
Spectrum Ref Level Att	20.00 dBm 30 dB	2.42 dB 👄 R	RBW 3 MHz		ito Sweep		
Spectrum Ref Level Att SGL Count 1Pk Max	20.00 dBm 30 dB	2.42 dB 👄 R	RBW 3 MHz	Mode Au	ito Sweep		
Spectrum Ref Level Att SGL Count 1Pk Max	20.00 dBm 30 dB	2.42 dB 👄 R	RBW 3 MHz	Mode Au	ito Sweep		-4.50 dBm
Spectrum Ref Level Att SGL Count IPk Max	20.00 dBm 30 dB	2.42 dB 👄 R	RBW 3 MHz /BW 10 MHz	Mode Au	ito Sweep		-4.50 dBm
Spectrum Ref Level Att SGL Count 1Pk Max 10 dBm 0 dBm	20.00 dBm 30 dB	2.42 dB 👄 R	RBW 3 MHz /BW 10 MHz	Mode Au	ito Sweep		-4.50 dBm
Spectrum Ref Level Att SGL Count IPk Max 10 dBm 0 dBm -10 dBm	20.00 dBm 30 dB	2.42 dB 👄 R	RBW 3 MHz /BW 10 MHz	Mode Au	ito Sweep		-4.50 dBm
Spectrum Ref Level Att SGL Count	20.00 dBm 30 dB	2.42 dB 👄 R	RBW 3 MHz /BW 10 MHz	Mode Au	ito Sweep		-4.50 dBm
Spectrum Ref Level Att SGL Count IPk Max 10 dBm 0 dBm -10 dBm -20 dBm	20.00 dBm 30 dB	2.42 dB 👄 R	RBW 3 MHz /BW 10 MHz	Mode Au	ito Sweep		-4.50 dBm
Spectrum Ref Level Att SGL Count IPk Max 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm	20.00 dBm 30 dB	2.42 dB 👄 R	RBW 3 MHz /BW 10 MHz	Mode Au	ito Sweep		-4.50 dBm
Spectrum Ref Level Att SGL Count IPk Max 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm	20.00 dBm 30 dB	2.42 dB 👄 R	RBW 3 MHz /BW 10 MHz	Mode Au	ito Sweep		-4.50 dBm
Spectrum Ref Level Att SGL Count IPk Max 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm	20.00 dBm 30 dB	2.42 dB 👄 R	RBW 3 MHz /BW 10 MHz	Mode Au	ito Sweep		-4.50 dBm
Spectrum Ref Level Att SGL Count IPk Max 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm -40 dBm -50 dBm	20.00 dBm 30 dB	2.42 dB 👄 R	RBW 3 MHz /BW 10 MHz	Mode Au	ito Sweep		-4.50 dBm
Spectrum Ref Level Att SGL Count 1Pk Max 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm -30 dBm -40 dBm	20.00 dBm 30 dB	2.42 dB 👄 R	RBW 3 MHz /BW 10 MHz	Mode Au	ito Sweep		-4.50 dBm
Spectrum Ref Level SGL Count IPk Max 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm	20.00 dBm 30 dB	2.42 dB 👄 R	RBW 3 MHz /BW 10 MHz	Mode Au	ito Sweep		-4.50 dBm
Spectrum Ref Level SGL Count IPk Max 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm	20.00 dBm 30 dB	2.42 dB 👄 R	RBW 3 MHz /BW 10 MHz	Mode Au	ito Sweep		-4.50 dBm
Spectrum Ref Level oAtt SGL Count IPk Max 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -60 dBm	20.00 dBm 30 dB 100/100	2.42 dB 👄 R	RBW 3 MHz /BW 10 MHz	Mode Au	ito Sweep	2.479	-4.50 dBm
Spectrum Ref Level Att SGL Count IPk Max 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm -30 dBm -40 dBm	20.00 dBm 30 dB 100/100	2.42 dB 👄 R	XBW 3 MHz //BW 10 MHz	Mode Au	ito Sweep	2.479	-4.50 dBm 342000 GHz

ACCREDITED



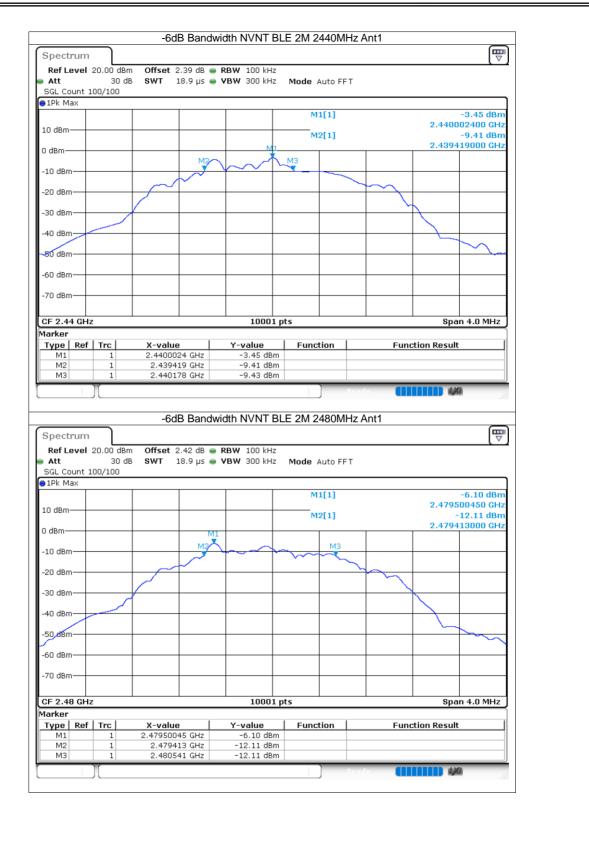


8.2.2 -6dB Bandwidth

Conditio	on Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 2M	2402	Ant1	1.134	0.5	Pass
NVNT	BLE 2M	2440	Ant1	0.759	0.5	Pass
NVNT	BLE 2M	2480	Ant1	1.128	0.5	Pass

Ref Level 20.00 dBm Offset 2.38 dB RBW 100 kHz Att 30 dB SWT 18.9 µs VBW 300 kHz Mode Auto FFT SGL Count 3000/3000 III -4.27 db 2.401500050 cb ID dBm M1[1] -4.27 db 2.401500050 cb ID dBm M1 -10.31 db 2.401418000 cb ID dBm M1 M2[1] -10.31 db -10 dBm M3 M3 -10 -20 dBm M3 -4.27 db -4.27 db -30 dBm M3 -10 -10.31 db -20 dBm M3 -4.27 db -4.27 db -30 dBm -30 dBm -4.01418000 cb -4.01418000 cb -40 dBm -4.0 db -4.0141800 cb -4.0141800 cb -50 dBm -50 dBm -50 dBm -50 dBm -50 dBm -70 dBm -70 db -70 db -70 db -70 db Type Ref Trc X-value Y-value Function				Test Grap				
Ref Level 20.00 dBm Offset 2.38 dB RBW 100 kHz Att 30 dB SWT 18.9 µs VBW 300 kHz Mode Auto FFT SGL Count 3000/3000 Image: Supervision of the second s			-6dB Band	width NVNT BL	E 2M 2402MHz	z Ant1		_
Att 30 dB SWT 18.9 µs VBW 300 kHz Mode Auto FFT SGL Count 3000/3000 IPk Max M1[1] -4.27 dft 10 dBm M1[1] -4.27 dft 10 dBm M2[1] -10.31 dft 2.40150005 0G M2[1] -10.31 dft 2.0 dBm M3 M3 -20 dBm M3 M3 -30 dBm M3 M3 -40 dBm M3 M3 -60 dBm M3 M3 -70 dBm M3 M3 -71 1 2.40150005 GHz -4.27 dBm	Spectrum	ı]						
SGL Count 3000/3000 M1[1] -4.27 di 2.40150050 G 10 dBm M1[1] 2.401300050 G 0 dBm M3 2.401418000 G -10 dBm M3 -10.31 di 2.401418000 G -20 dBm M3 -10 -20 dBm M3 -10 -40 dBm M3 -10 -70 dBm -10 -10 -70 dBm -10001 pts Span 4.0 MH Marker -10001 pts Span 4.0 MH	Ref Level	20.00 dB	m Offset 2.38 dB	RBW 100 kHz				
IPk Max M1[1] -4.27 dl 2.401500050 G 10 dBm M1[1] -4.27 dl 2.4014000 G 0 dBm M1 0.31 dl 2.401418000 G -10 dBm M3 M3 -20 dBm M3 M3 -20 dBm M3 M3 -20 dBm M3 M3 -30 dBm M3 M3 -40 dBm M3 M3 -70 dBm M3 M3 -70 dBm 10001 pts Span 4.0 MH Marker Type Ref Trc X-value Y-value Function Result M1 1 2.40150005 GHz -4.27 dBm				📄 VBW 300 kHz	Mode Auto FFT			
10 dBm M1[1] -4.27 di 10 dBm M2[1] 2.401500050 di 0 dBm M3 2.401418000 di -10 dBm M3 M3 -10 dBm M3 M3 -20 dBm M3 M3 -30 dBm M3 M3 -40 dBm M3 M3 -70 dBm M3 M3 -60 dBm M3 M3 -70 dBm M3 M3 </td <td></td> <td>3000/300</td> <td>)</td> <td></td> <td></td> <td></td> <td></td> <td></td>		3000/300)					
10 dBm 2.401500050 G 0 dBm M3 -10 dBm M3 -10 dBm M3 -20 dBm M3 -30 dBm M3 -30 dBm M3 -40 dBm M3 -50 dBm M3 -60 dBm M3 -70 dBm 10001 pts Span 4.0 MH Marker Type Ref Trc X-value Y-value Function M1 1	∋1Pk Max							
10 dBm -10.31 di 0 dBm M3 -10 dBm M3 -20 dBm M3 -20 dBm M3 -30 dBm M3 -40 dBm -10.31 di -50 dBm -10.31 di -60 dBm -10.31 di -70 dBm -10001 pts Span 4.0 Mi Marker Type Ref Trc X-value Y-value Function -11 2.40150005 GHz					M1[1]			-4.27 dBm
0 dBm M1 2.401418000 G -10 dBm M3 M3 -20 dBm M3 M3 -20 dBm M3 M3 -30 dBm M3 M3 -40 dBm M3 M3 -50 dBm M3 M3 -60 dBm M3 M3 -70 dBm M3 M3 -70 dBm M3 M3 -70 dBm M1 1 1 2.40150005 GHz -4.27 dBm	10 dBm							
-10 dBm -10 dBm -20 dBm -30 dBm -30 dBm -40 dBm -40 dBm -70					M2[1]			
-10 dBm -20 dBm -30 dBm -30 dBm -40 dBm -40 dBm -60 dBm -60 dBm -70	0 dBm		+ + +	41			2.4014	
-20 dBm -30 dBm -40 dBm -40 dBm -40 dBm -59 dBm -60 dBm -70			Ma		M3			
-30 dBm -40 dBm -40 dBm -60 dBm -60 dBm -70	-10 dBm-+							
-30 dBm -40 dBm -40 dBm -60 dBm -60 dBm -70	00 40-0							
40 dBm 40 dBm 40 dBm 40 dBm 58 dBm 40 dBm 60 dBm 40 dBm 70 dBm 40 dBm 60 dBm 40 dBm 70 dBm 10001 pts Span 4.0 MH Anarker Type Ref Trc X-value Y-value Function Function Result M1 1 2.40150005 GHz -4.27 dBm	-20 UBIII							
40 dBm 40 dBm 40 dBm 40 dBm 58 dBm 40 dBm 60 dBm 40 dBm 70 dBm 40 dBm 60 dBm 40 dBm 70 dBm 10001 pts Span 4.0 MH Anarker Type Ref Trc X-value Y-value Function Function Result M1 1 2.40150005 GHz -4.27 dBm	-30 dBm							
S60 dBm Image: Constraint of the second	oo abiii	1						
-60 dBm -70	-40 dBm	and the second					\rightarrow	
-60 dBm -70								\sim
TO dBm Image: constraint of the second	-59 dBm							· ~~
TO dBm Image: constraint of the second								
CF 2.402 GHz 10001 pts Span 4.0 MH Aarker Type Ref Trc X-value Y-value Function Function Result M1 1 2.40150005 GHz -4.27 dBm	-60 dBm —							
CF 2.402 GHz 10001 pts Span 4.0 MH Marker Type Ref Trc X-value Y-value Function Function Result M1 1 2.40150005 GHz -4.27 dBm Function Function Result	70 40							
Marker Type Ref Trc X-value Y-value Function Function Result M1 1 2.40150005 GHz -4.27 dBm <td< td=""><td>-70 dBm</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	-70 dBm							
Marker Type Ref Trc X-value Y-value Function Function Result M1 1 2.40150005 GHz -4.27 dBm <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>								
Type Ref Trc X-value Y-value Function Function Result M1 1 2.40150005 GHz -4.27 dBm		Hz		10001 pt	s		Spar	14.0 MHz
M1 1 2.40150005 GHz -4.27 dBm		1 - 1						
					Function	Func	tion Result	
	M1 M2	1	2.40150005 GHz 2.401418 GHz	-4.27 dBm -10.31 dBm				
M3 1 2.402552 GHz -10.26 dBm								
		7						





ACCREDITED





8.2.3 Maximum Power Spectral Density Level

Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm)	Limit (dBm)	Verdict
NVNT	BLE 2M	2402	Ant1	-21.74	8	Pass
NVNT	BLE 2M	2440	Ant1	-20.72	8	Pass
NVNT	BLE 2M	2480	Ant1	-23.03	8	Pass

	_		PSD N\	Test G NT BLE 2	M 2402M	Hz Ant1			_
Spectrum									
Ref Level 2			_	RBW 3 kH					
SGL Count 60	30 dE 00/6000	SWT 6	31.9 µs 🖷	VBW 10 kH	Z Mode A	Auto FFT			
1Pk Max	,								
					M	1[1]			21.74 dBr
10 dBm								2.4019	57310 GH
0 dBm									
-10 dBm									
-20 dBm				M1					
		MAL W	1. when the	. Mark	Carl to an	بالبار ومعال	.1.1.1		
-30 dBm	Mam		WWWW	M	A MARIAN	N WWW	1970 Augusta	M. WAR	h
MAN. When	ll the eff	1. m. l			_ Y ₽	w c.t.	, shikara	ar Mar. Ia	WMMA, A
	Y	1 1					· · · · · ·		
-50 dBm									
-60 dBm									
-70 dBm									
CF 2.402 GHz	:	1		1000	1 pts	1	1	Span 1	701 MHz
	ſ					Pead			1

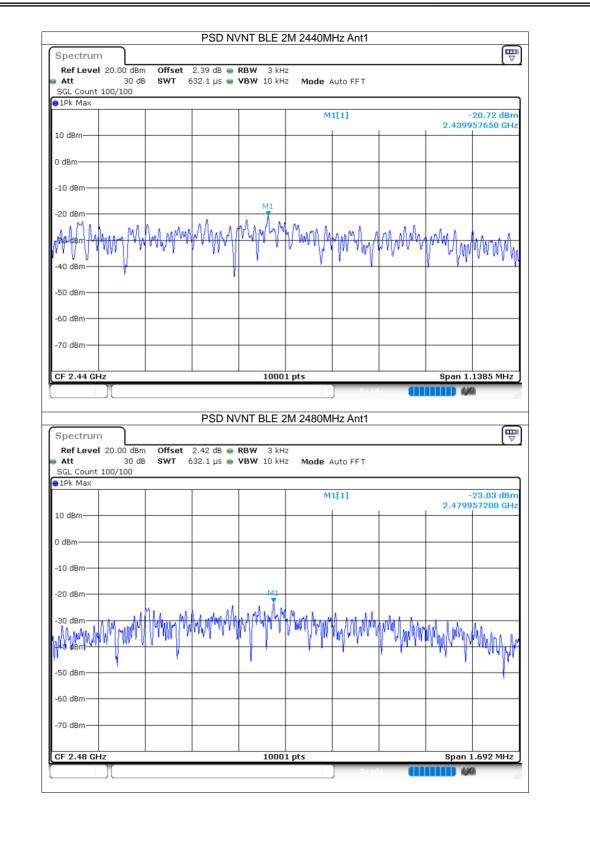


ilac-MF

ACCREDITED

Certificate #4298.01

Report No.: S23112101803002







8.2.4 Band Edge

dition	Mode		ncy (MHz)	Antenna	Max Value (dl		Ve
/NT	BLE 2M		402	Ant1	-46.19	-20	P
/NT	BLE 2M	24	480	Ant1	-47.53	-20	F
			Band Edge N	Test Graphs	02MHz Ant1 Ref		
	Spectrum	\neg	Danu Luye N	VINT DEL 2101 24			
	Ref Level 2	0.00 dBm Offs	set 2.38 dB 👄 RB	JW 100 kHz			
	Att	35 dB SW 1	Γ 18.9 μs 👄 VE	3W 300 kHz Mode	e Auto FFT		
	SGL Count 1 91Pk Max	500/1500					
					M1[1]	-4.36 dBm 2.40149650 GHz	
	10 dBm				+ +		
	0.40-						
	0 dBm			X A			
	-10 dBm						
	00 d0		<i>ل</i> ہ	Y	\sum		
	-20 dBm						
	-30 dBm				+ $+$ $+$ $$	╡───┨│	
	-40 dBm						
	-50 dBm		\checkmark				
		m				Junio	
	-60 dBm						
	-70 dBm						
	CF 2.402 GH	z		1001 pts		Span 8.0 MHz	
		Л			Ready		
		Ba	and Edge NVN	T BLE 2M 2402	MHz Ant1 Emission		
	Spectrum						
	Ref Level 2		set 2.38 dB 👄 R				
		35 dB SW1	Γ 227.5 μs 👄 V	BW 300 kHz Mod	e Auto FFT		
	Att SGL Count 1						
	Att SGL Count 11 91Pk Max						
	SGL Count 1 91Pk Max				M1[1]	-4.42 dBm 2.40145000 GHz	
	SGL Count 11 9 1Pk Max 10 dBm				M1[1] M2[1]	2.40145000 GHz -52.83 dBm	
	SGL Count 11 9 1Pk Max 10 dBm 0 dBm				_	2.40145000 GHz	
	SGL Count 11 9 1Pk Max 10 dBm				_	2.40145000 GHz -52.83 dBm	
	SGL Count 11	00/100			_	2.40145000 GHz -52.83 dBm	
	SGL Count 11				_	2.40145000 GHz -52.83 dBm	
	SGL Count 11	00/100			_	2.40145000 GHz -52.83 dBm	
	SGL Count 11	00/100			M2[1]	2.40145000 GHz -52.83 dBm 2.4000000000000000000000000000000000000	
	SGL Count 11 ● 1Pk Max 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm	00/100			_	2.40145000 GHz -52.83 dBm 2.4000000000000000000000000000000000000	
	SGL Count 11 ● 1Pk Max 10 dBm -10 dBm -20 dBm -30 dBm -30 dBm -50 dBm -50 dBm -50 dBm	00/100		ummungana	M2[1]	2.40145000 GHz -52.83 dBm 2.40000000010 	
	SGL Count 11 ● 1Pk Max 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm	00/100		Ulumbrand Partition	M2[1]	2.40145000 GHz -52.83 dBm 2.40000000010 	
	SGL Count 11 ● 1Pk Max 10 dBm -10 dBm -20 dBm -30 dBm -30 dBm -50 dBm -50 dBm -50 dBm	00/100 1 -24.363 dBm		ม่ม ^{มมม} ูหญญญ 1001 pts	M2[1]	2.40145000 GHz -52.83 dBm 2.40000000010 	
	SGL Count 11	00/100	Holden Marine	1001 pts	M2[1]	2.40145000 GHz -52.83 dBm 2.4000000001 GHz 	
	SGL Count 11 ● 1Pk Max 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm -40 dBm -50 dBm -50 dBm -70 dBm Start 2.306 of Marker Type Ref M1	00/100	value 2.40145 GHz	1001 pts Y-value Fu -4.42 dBm	M2[1]	2.40145000 GHz -52.83 dBm 2.4000000001GHz	
	SGL Count 11 ● 1Pk Max 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm -30 dBm -40 dBm -50 dBm -50 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm	00/100 1 -24.363 dBm- م، السليم المراجع GHz [Trc X-	value	1001 pts Y-value Fu	M2[1]	2.40145000 GHz -52.83 dBm 2.4000000001 GHz 	



Att	35 dB	Offset 2.42 SWT 18.9			Mode Au	uto FFT			
SGL Count	200/200								
					M	1[1]			-5.29 dBm
10 dBm							1	2.479	50450 GHz
10 abiii									
D dBm				M1					
				X					
-10 dBm					mar				
-20 dBm			لم	V I		`			
			(γ			
-30 dBm						\neg			
40 dBec			/						
-40 dBm									
-\$0 dBm	.Λ					Y	m		
S	$\sim \sim \sim$	VV I					1 m	ww	m
-60 dBm	Ť								
-70 dBm									
				1001 p	ate			Spa	n 8.0 MHz
CF 2.48 GH	lz			1001	JUS				
Spectrum				IT BLE 2M	2480MH:) Read z Ant1 Em	nission		
Spectrum Ref Level Att	20.00 dBm 35 dB	Offset 2.4	2 dB 😑 R	IT BLE 2M	2480MH:		nission		
Spectrum Ref Level Att SGL Count	20.00 dBm 35 dB	Offset 2.4	2 dB 😑 R	IT BLE 2M	2480MH; Mode 4	auto FFT	nission		
Spectrum Ref Level Att SGL Count JPk Max	20.00 dBm 35 dB	Offset 2.4	2 dB 😑 R	IT BLE 2M	2480MH: Mode 4	uto FFT	nission		-6.06 dBm 55000 GHz
Spectrum Ref Level Att SGL Count JIPk Max 10 dBm-	20.00 dBm 35 dB	Offset 2.4	2 dB 😑 R	IT BLE 2M	2480MH: Mode 4	auto FFT	nission	-	-6.06 dBm 955000 GHz 54.89 dBm
Spectrum Ref Level Att SGL Count JPk Max 10 dBm 0 dBm	20.00 dBm 35 dB	Offset 2.4	2 dB 😑 R	IT BLE 2M	2480MH: Mode 4	uto FFT	nission	-	-6.06 dBm 55000 GHz
Spectrum Ref Level Att SGL Count JPk Max 10 dBm 0 dBm	20.00 dBm 35 dB	Offset 2.4	2 dB 😑 R	IT BLE 2M	2480MH: Mode 4	uto FFT	hission	-	-6.06 dBm 955000 GHz 54.89 dBm
Spectrum Ref Level Att SGL Count 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm	20.00 dBm 35 dB 100/100	Offset 2.4 SWT 227.	2 dB 😑 R	IT BLE 2M	2480MH: Mode 4	uto FFT	nission	-	-6.06 dBm 955000 GHz 54.89 dBm
Spectrum Ref Level Att SGL Count 1Pk Max 10 dBm	20.00 dBm 35 dB	Offset 2.4 SWT 227.	2 dB 😑 R	IT BLE 2M	2480MH: Mode 4	uto FFT	nission	-	-6.06 dBm 955000 GHz 54.89 dBm
Spectrum Ref Level Att SGL Count 10 dBm 10 dBm -10 dBm -20 dBm -30 dBm	20.00 dBm 35 dB 100/100	Offset 2.4 SWT 227.	2 dB 😑 R	IT BLE 2M	2480MH: Mode 4	uto FFT		-	-6.06 dBm 955000 GHz 54.89 dBm
Spectrum Ref Level Att SGL Count 10 dBm 10 dBm -10 dBm -20 dBm -30 dBm -40 dBm	20.00 dBm 35 dB 100/100	Offset 2.4 SWT 227.	2 dB 😑 R	JT BLE 2M BW 100 kHz BW 300 kHz	2480MH: Mode # 	Auto FFT		2.483	-6.06 dBm 955000 GHz 54.89 dBm
Spectrum Ref Level Att SGL Count IPk Max 10 dBm -10 dBm -20 dBm -30 dBm -30 dBm -50 dBm	-D1 -25.29:	Offset 2.4 SWT 227.	2 dB • R 5 μs • V	IT BLE 2M	2480MH: Mode # 	Auto FFT		2.483	-6.06 dBm 955000 GHz 54.89 dBm
Spectrum Ref Level Att SGL Count IV Max IO dBm -10 dBm -20 dBm -30 dBm -30 dBm -50 dBm	D1 -25.293	Offset 2.4 SWT 227.	2 dB • R 5 μs • V	JT BLE 2M BW 100 kHz BW 300 kHz	2480MH: Mode # 	Auto FFT		2.483	-6.06 dBm 55000 GHz 54.89 dBm 50000 GHz
Spectrum Ref Level Att SGL Count IPk Max 10 dBm -10 dBm -20 dBm -30 dBm -30 dBm -50 dBm -50 dBm -50 dBm	D1 -25.293	Offset 2.4 SWT 227.	2 dB • R 5 μs • V	JT BLE 2M BW 100 kHz BW 300 kHz	2480MH: Mode # 	Auto FFT		2.483	-6.06 dBm 55000 GHz 54.89 dBm 50000 GHz
Spectrum Ref Level Att SGL Count 10 dBm 10 dBm -10 dBm -20 dBm -30 dBm -30 dBm -40 dBm -50 dBm -70 dBm	D1 -25.29	Offset 2.4 SWT 227.	2 dB • R 5 μs • V	IT BLE 2M	2480MH; Mode 4 	Auto FFT		- 2.483 	-6.06 dBm 55000 GHz 54.89 dBm 50000 GHz
Spectrum Ref Level Att SGL Count 10 dBm 10 dBm -10 dBm -20 dBm -30 dBm -40 dBm	D1 -25.29	Offset 2.4 SWT 227.	2 dB • R 5 μs • V	JT BLE 2M BW 100 kHz BW 300 kHz	2480MH; Mode 4 	Auto FFT		- 2.483 	-6.06 dBm 55000 GHz 54.89 dBm 50000 GHz
Spectrum Ref Level Att SGL Count 1Pk Max 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -40 dBm -70	D1 -25.29: M4 M4 M4 M4 M4 M4 M4 M4 M4 M4	Offset 2.4 SWT 227.	2 dB	JT BLE 2M BW 100 kHz BW 300 kHz	2480MH: Mode 4 	xuto FFT 1[1] 2[1]		- 2.483 	-6.06 dBm 55000 GHz 54.89 dBm 50000 GHz
Spectrum Ref Level Att SGL Count 1Pk Max 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -50 dBm -70 dBm -70 dBm -70 dBm -70 dBm -70 dBm	D1 -25.29: M4 wd (rdu, ww) 5 GHz	Offset 2.4 SWT 227.	2 dB • R 5 μs • V	IT BLE 2M	2480MH: Mode 4 Mi Mi Mi Mi Mi Mi Mi Mi Mi Mi	xuto FFT 1[1] 2[1]		2.483	-6.06 dBm 55000 GHz 54.89 dBm 50000 GHz
Spectrum Ref Level Att SGL Count IPk Max 10 dBm -10 dBm -20 dBm -30 dBm -30 dBm -50 dBm -70 dBm	D1 -25.29: M4 wd (rdu, ww) 6 GHz f Trc 1 1 1	Offset 2.4 SWT 227.	2 dB	JT BLE 2M BW 100 kHz BW 300 kHz 	2480MH: Mode 4 Mi Mi Mi Mi Mi Sts	xuto FFT 1[1] 2[1]		2.483	-6.06 dBm 55000 GHz 54.89 dBm 50000 GHz
Spectrum Ref Level Att SGL Count ID dBm 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -30 dBm -70 dBm	D1 -25.293	Offset 2.4 SWT 227.	2 dB	IT BLE 2M BW 100 kHz BW 300 kHz	2480MH: Mode 4 Mi Mi Mi Mi Mi Sts	xuto FFT 1[1] 2[1]		2.483	-6.06 dBm 55000 GHz 54.89 dBm 50000 GHz

ACCREDITED





8.2.5 Conducted RF Spurious Emission

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 2M	2402	Ant1	-46.56	-20	Pass
NVNT	BLE 2M	2440	Ant1	-47.87	-20	Pass
NVNT	BLE 2M	2480	Ant1	-45.19	-20	Pass

ACCREDITED

Certificate #4298.01

ilac-MR

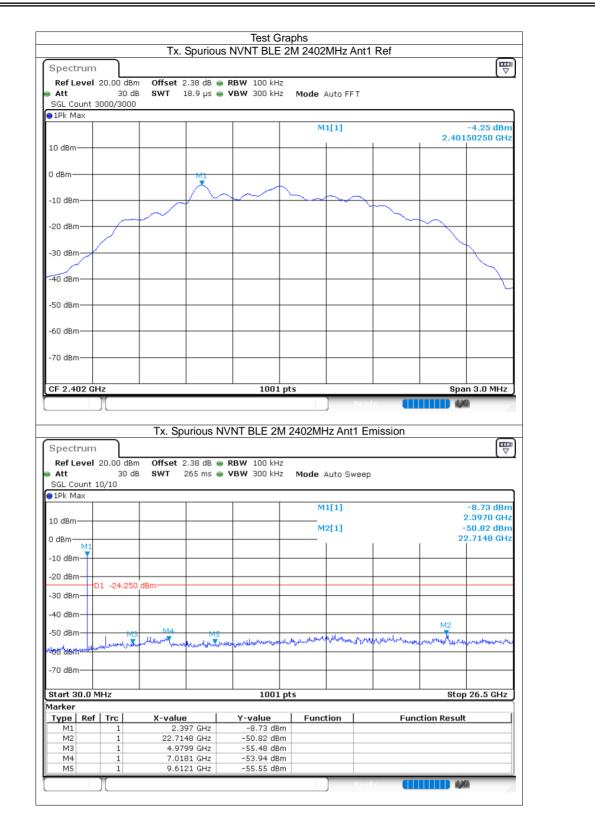


ilac-MR

ACCREDITED

Certificate #4298.01

Report No.: S23112101803002





Spectrum Ref Level 2 Att SGL Count 30	30 dB			RBW 100 kH VBW 300 kH		Auto FFT			
1Pk Max	50/300								
					М	1[1]			-3.13 dBm
LO dBm							1	2.439	50250 GHz
) dBm			M1						
			\wedge		\sim	h _			
10 dBm		\sim	/ ×						
20 dBm	\sim							\sim	
/									
30 dBm									$\overline{}$
40 dB-									\sim
40/dBm									
50 dBm									
60 dBm									
70 dBm									
, o abiii									
CF 2.44 GHz				1001	nts			Sna	n 3.0 MHz
				1001	P13			949	
Spectrum				VNT BLE 2		Hz Ant1 E	mission		
Ref Level 2 Att	30 dB	Offset 2	.39 dB 👄	VNT BLE 21 RBW 100 kH VBW 300 kH	z				
Ref Level 2	30 dB	Offset 2	.39 dB 👄	RBW 100 kH	z z Mode .	Auto Sweep			
Ref Level 2 Att SGL Count 30 1Pk Max	30 dB	Offset 2	.39 dB 👄	RBW 100 kH	z z Mode .				-6.38 dBm 2.4500 GHz
Ref Level 2 Att SGL Count 30 1Pk Max	30 dB	Offset 2	.39 dB 👄	RBW 100 kH	z z Mode . M	Auto Sweep		-	-6.38 dBm 2.4500 GHz •51.00 dBm
Ref Level 2 Att SGL Count 30 1Pk Max	30 dB	Offset 2	.39 dB 👄	RBW 100 kH	z z Mode . M	Auto Sweep 1[1]		-	-6.38 dBm 2.4500 GHz
Ref Level 2 Att SGL Count 30 1Pk Max	30 dB	Offset 2	.39 dB 👄	RBW 100 kH	z z Mode . M	Auto Sweep 1[1]		-	-6.38 dBm 2.4500 GHz •51.00 dBm
Ref Level 2 Att SGL Count 30)1Pk Max 0 dBm 0 dBm 10 dBm 20 dBm	30 dB	Offset 2 SWT 2	.39 dB 👄	RBW 100 kH	z z Mode . M	Auto Sweep 1[1]		-	-6.38 dBm 2.4500 GHz •51.00 dBm
Ref Level 2 Att SGL Count 30)1Pk Max 0 dBm 0 dBm 10 dBm 20 dBm	30 dB 0/30	Offset 2 SWT 2	.39 dB 👄	RBW 100 kH	z z Mode . M	Auto Sweep 1[1]		-	-6.38 dBm 2.4500 GHz •51.00 dBm
Ref Level 2 Att SGL Count 30 11Pk Max 0 dBm 0 dBm 10 dBm 20 dBm D	30 dB 0/30	Offset 2 SWT 2	.39 dB 👄	RBW 100 kH	z z Mode . M	Auto Sweep 1[1]		-	-6.38 dBm 2.4500 GHz •51.00 dBm
Ref Level 2 Att SGL Count 30 SGL Count 30 Bm 10 10 dBm 10 dBm 10 20 dBm 0 30 dBm 10 40 dBm 50 dBm 10 10	30 dB)/30 1 -23.130	Offset 2 SWT 2 dBm	39 dB • 265 ms •	RBW 100 kH VBW 300 kH	Z Mode M	Auto Sweep	2	-	-6.38 dBm 2.4500 GHz 51.00 dBm 8.3737 GHz
Ref Level 2 Att SGL Count 30 SGL Count 30 Bm 10 dBm 10 40 20 dBm 0 30 30 dBm 50 dBm	30 dB)/30 1 -23.130	Offset 2 SWT 2 dBm	39 dB • 265 ms •	RBW 100 kH VBW 300 kH	Z Mode M	Auto Sweep		-	-6.38 dBm 2.4500 GHz •51.00 dBm
Ref Level 2 Att SGL Count 30 11Pk Max 0 dBm 10 dBm 20 dBm 20 dBm 30 dBm 40 dBm 50 dBm 50 dBm	30 dB)/30 1 -23.130	Offset 2 SWT 2 dBm	39 dB • 265 ms •	RBW 100 kH VBW 300 kH	Z Mode M	Auto Sweep	2	-	-6.38 dBm 2.4500 GHz 51.00 dBm 8.3737 GHz
Ref Level 2 Att SGL Count 30 11Pk Max 0 dBm 10 dBm 20 dBm 20 dBm 30 dBm 40 dBm 50 dBm	30 dB)/30 1 -23.130	Offset 2 SWT 2 dBm	39 dB • 265 ms •	RBW 100 kH VBW 300 kH	Z Mode M	Auto Sweep	2	-	-6.38 dBm 2.4500 GHz 51.00 dBm 8.3737 GHz
Ref Level 2 Att SGL Count 30 11Pk Max 0 dBm 10 dBm 20 dBm 20 dBm 30 dBm 40 dBm 50 dBm 50 dBm	30 dB 3/30 1 -23.130	Offset 2 SWT 2 dBm	39 dB • 265 ms •	RBW 100 kH VBW 300 kH	Z Mode . M M M	Auto Sweep	2		-6.38 dBm 2.4500 GHz 51.00 dBm 8.3737 GHz
Ref Level 2 Att SGL Count 30 11Pk Max 10 dBm 10 dBm 10 dBm 20 dBm 10 dBm 30 dBm 40 dBm 50 dBm 70 dBm 70 dBm 30 dBm	30 dB 3/30 1 -23.130 M3 W44	dBm	39 dB	RBW 100 kH VBW 300 kH	Z Mode M	Auto Sweep	2	- 	-6.38 dBm 2.4500 GHz 51.00 dBm 8.3737 GHz
Ref Level 2 Att SGL Count 30 11Pk Max 0 dBm 10 dBm 20 dBm 30 dBm 40 dBm 50 dBm 70 dBm 70 dBm Start 30.0 M	30 dB 3/30 1 -23.130 M3 W44	Offset 2 SWT 2 dBm dBm	39 dB	RBW 100 kH VBW 300 kH	2 Mode . M M M M M M M M M M M M M M M M M M M	Auto Sweep	2		-6.38 dBm 2.4500 GHz 51.00 dBm 8.3737 GHz
Ref Level 2 Att SGL Count 30 SGL Max 30 8 10 dBm 10 8 20 dBm 10 9 30 dBm 9 9 30 dBm 9 9 40 dBm 9 9 50 dBm 9 9 70 dBm 9 9 70 dBm 9 9 8 7 9 70 dBm 9 9 70 dBm 9 9 8 7 9 8 7 9 8 7 9 8 7 9 8 7 9 8 7 9 8 7 9 8 7 9 8 7 9 8 7 9 8 7 9 9 9 9 1	30 dB 3/30 1 -23.130 1 -23.130 Hz Hz Trc 1 1	Offset 2 SWT 2 dBm	39 dB	RBW 100 kH VBW 300 kH - -	2 2 Mode M M M M M M M M M M M M M	Auto Sweep	2	- 	-6.38 dBm 2.4500 GHz 51.00 dBm 8.3737 GHz
Ref Level 2 Att SGL Count 30 SIPK Max 10 dBm 10 dBm 10 dBm 20 dBm 30 dBm 30 dBm 50 dBm 50 dBm 70 dBm 70 dBm Start 30.0 MI Iarker Type Ref	30 dB 3/30 1 -23.130 M Hz Trc 1 1	Offset 2 SWT 2 dBm dBm x-value 2.4 18.373 4.926	39 dB	RBW 100 kH VBW 300 kH Image: State of the sta	z Mode . M M M M M 	Auto Sweep	2	- 	-6.38 dBm 2.4500 GHz 51.00 dBm 8.3737 GHz
Ref Level 2 Att SGL Count 30 11Pk Max 10 dBm 70 dBm 70 dBm 70 dBm Start 30.0 Milliarker Type M1 M2 M3	30 dB 3/30 1 -23.130 Hz Hz Trc 1 1 1 1	Offset 2 SWT 2 dBm dBm x-value 2.4 18.373 4.925 7.386	.39 dB .265 ms	RBW 100 kH VBW 300 kH	z Mode . M M M M M M M M M M M m m m m	Auto Sweep	2	- Ii 	-6.38 dBm 2.4500 GHz 51.00 dBm 8.3737 GHz

ACCREDITED



GGL Count	30 c 300/300	IB SWT 1	18.9 µs 👄 '	VBW 300 KH						
10 dBm					м	1[1]		2.479	-5.59 dBm 949950 GHz	
) dBm			M1							
10 dBm			Ă		<u> </u>					
20 dBm-		~~	[~ \	<u> </u>			
-30 dBm —	_									
40.dBm									\mathbf{n}	
50 dBm-										
-60 dBm										
-70 dBm										
			1		1					
Spectrum Ref Level Att	20.00 dB 30 c	m Offset 2	2.42 dB 👄 I	1001 /NT BLE 21 RBW 100 kH VBW 300 kH	M 2480MF			Spa	m 3.0 MHz	-
Spectrum Ref Level Att SGL Count)1Pk Max	20.00 dB 30 c	m Offset 2	2.42 dB 👄 I	(NT BLE 21 RBW 100 kH	M 2480MH Iz Iz Mode /				-5.69 dBm	-
Spectrum Ref Level Att SGL Count)1Pk Max	20.00 dB 30 c	m Offset 2	2.42 dB 👄 I	(NT BLE 21 RBW 100 kH	M 2480MF	Auto Sweep				-
Spectrum Ref Level Att SGL Count 1Pk Max L0 dBm	20.00 dB 30 c	m Offset 2	2.42 dB 👄 I	(NT BLE 21 RBW 100 kH	M 2480MF	Auto Sweep 1[1]			-5.69 dBm 2.4760 GHz 50.79 dBm	
Spectrum Ref Level Att SGL Count 1Pk Max 10 dBm 10 dBm 20 dBm 20 dBm	20.00 dB 30 c	m Offset 2 B SWT :	2.42 dB 👄 I	(NT BLE 21 RBW 100 kH	M 2480MF	Auto Sweep 1[1]			-5.69 dBm 2.4760 GHz 50.79 dBm	
Spectrum Ref Level Att SGL Count 1Pk Max 10 dBm 10 dBm 20 dBm 30 dBm)(20.00 dB 30 d 10/10	m Offset 2 B SWT :	2.42 dB 👄 I	(NT BLE 21 RBW 100 kH	M 2480MF	Auto Sweep 1[1]			-5.69 dBm 2.4760 GHz 50.79 dBm	-
Spectrum Ref Level Att SGL Count DIPk Max 10 dBm 10 dBm 20 dBm 30 dBm 40 dBm) (m Offset 2 B SWT :	2.42 dB • 1 265 ms • 1	/NT BLE 2! RBW 100 kH увw 300 kH	M 2480MH	Auto Sweep 1[1]			-5.69 dBm 2.4760 GHz 50.79 dBm	
Spectrum Ref Level Att SGL Count 1Pk Max 10 dBm 10 dBm 20 dBm 30 dBm 30 dBm 50 dBm)(20.00 dB 30 d 10/10	m Offset 2 B SWT :	2.42 dB 👄 I	(NT BLE 21 RBW 100 kH	M 2480MH	Auto Sweep 1[1] 2[1] M2			-5.69 dBm 2.4760 GHz 50.79 dBm 6.3091 GHz	
Spectrum Ref Level Att SGL Count IPk Max 10 dBm 10 dBm 10 dBm 30 dBm 30 dBm 40 dBm 50 dBm 50 dBm) (20.00 dB 30 c 10/10 D1 -25.59	m Offset 2 B SWT :	2.42 dB • 1 265 ms • 1	/NT BLE 2! RBW 100 kH увж 300 kH	M 2480MH	Auto Sweep 1[1] 2[1] M2			-5.69 dBm 2.4760 GHz 50.79 dBm 6.3091 GHz	
Att SGL Count SGL Co) (m Offset 2 B SWT :	2.42 dB 265 ms	/NT BLE 2/ RBW 100 kH yBW 300 kH	M 2480MH	Auto Sweep 1[1] 2[1] M2 M2 M2		: 	-5.69 dBm 2.4760 GHz 50.79 dBm 6.3091 GHz	
Spectrum Ref Level Att SGL Count IPK Max IO dBm 0 dBm 10 dBm 20 dBm 30 dBm 40 dBm 50 dBm 50 dBm 50 dBm 50 dBm 50 dBm 70 dBm 70 dBm 70 dBm 70 dBm 80 Start 30.0 f Barker Type Ref M1 M2) (20.00 dB 30 c 10/10 D1 -25.59 MHz MHz 1 1	m Offset 2 B SWT : 5 dBm 5 dBm 45 M1 45 M1 45 M1 45 M1 45 M1 45 M2 45 M2 10 M2 10 M2	2.42 dB 265 ms 76 GHz 91 GHz	/NT BLE 2/ RBW 100 kH VBW 300 kH 	M 2480MH	Auto Sweep 1[1] 2[1] M2 M2 M2			-5.69 dBm 2.4760 GHz 50.79 dBm 6.3091 GHz	
Spectrum Ref Level Att SGL Count 10 dBm 10 dBm -10 dBm -20 dBm -30 dBm -30 dBm -70 dBm -70 dBm Start 30.0 flarker Type Ref M1 M2 M3	20.00 dB 30 c 10/10 D1 -25.59 MHz MHz	m Offset 2 B SWT 3 5 dBm 5 dBm 5 dBm 4 5 dBm 4 5 dBm 4 5 dBm 5 dBm	2.42 dB 265 ms	/NT BLE 21 RBW 100 kH yBW 300 kH 	M 2480MH	Auto Sweep 1[1] 2[1] M2 M2 M2		: 	-5.69 dBm 2.4760 GHz 50.79 dBm 6.3091 GHz	
Spectrum Ref Level Att SGL Count IPk Max I0 dBm O dBm	20.00 dB 30 c 10/10 D1 -25.59 MHz MHz I 1 1	m Offset 2 B SWT 3 5 dBm 5 dBm 5 dBm 4 5 dBm 4 5 dBm 4 5 dBm 5 dBm	2.42 dB 265 ms 265 ms 76 GHz 91 GHz 87 GHz 87 GHz	/NT BLE 2/ RBW 100 kH yBW 300 kH 	M 2480MH	Auto Sweep 1[1] 2[1] M2 M2 M2	ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا ا	: 	-5.69 dBm 2.4760 GHz 50.79 dBm 6.3091 GHz	

ACCREDITED