



### CFR 47 FCC PART 15 SUBPART C(DTS)

#### **TEST REPORT**

For

#### **Portable Thermal Printer**

# MODEL NUMBER: ITP06, A49, A49H, ITP06S, TPA49, A49Pro, TPA49H, A49S, APA49, APA49H

#### REPORT NUMBER: E04A24100909F00402

#### ISSUE DATE: January 22, 2025

#### FCC ID: 2A74AA49

#### Prepared for

#### Xiamen Lujiang Technology Co., Ltd.

#### Room 601-2,No.63-1,Wanghai Road, Software Park Phase II,Torch Hi-Tech Zone, Xiamen, China

#### Prepared by

#### Guangdong Global Testing Technology Co., Ltd.

#### Room 101-105, 203-210, Building 1, No.2, Keji 8 Road, Songshan Lake Park, Dongguan city, Guangdong, People's Republic of China, 523808

This report is based on a single evaluation of the submitted sample(s) of the above mentioned product, it does not imply an assessment of the production of the products. This report shall not be reproduced, except in full, without the written approval of Guangdong Global Testing Technology Co., Ltd.

#### REPORT NO.: E04A24100909F00402 Page 2 of 63

### **Revision History**

Rev.	Issue Date	Revisions	Revised By
V0	January 22, 2025	Initial Issue	

Test Item	Clause	Limit/Requirement	Result
Antenna Requirement	N/A	FCC Part 15.203/15.247 (c)	Pass
AC Power Line Conducted Emission	ANSI C63.10-2013, Clause 6.2	FCC Part 15.207	Pass
Conducted Output Power	ANSI C63.10-2013, Clause 11.9.1.3	FCC Part 15.247 (b)(3)	Pass
6dB Bandwidth and 99% Occupied Bandwidth	ANSI C63.10-2013, Clause 11.8.1	FCC Part 15.247 (a)(2)	Pass
Power Spectral Density	ANSI C63.10-2013, Clause 11.10.2	FCC Part 15.247 (e)	Pass
Conducted Band edge and spurious emission	ANSI C63.10-2013, Clause 11.11	FCC Part 15.247(d)	Pass
Radiated Band edge and Spurious Emission	ANSI C63.10-2013, Clause 11.11 & Clause 11.12	FCC Part 15.205/15.209	Pass
Duty Cycle	ANSI C63.10-2013, Clause 11.6	None; for reporting purposes only.	Pass

\*This test report is only published to and used by the applicant, and it is not for evidence purpose in China.

\*The measurement result for the sample received is <Pass> according to <CFR 47 FCC PART 15 SUBPART C(DTS)> when <Accuracy Method> decision rule is applied.

# CONTENTS

1.	ATTES	TATION OF TEST RESULTS	.5
2.	TEST N	IETHODOLOGY	.6
3.	FACILI	TIES AND ACCREDITATION	.6
4.	CALIBI	RATION AND UNCERTAINTY	.7
4	.1.	MEASURING INSTRUMENT CALIBRATION	.7
4	.2.	MEASUREMENT UNCERTAINTY	.7
5.	EQUIP	MENT UNDER TEST	.8
5	.1.	DESCRIPTION OF EUT	.8
5	.2.	CHANNEL LIST	.8
5	.3.	MAXIMUM EIRP	.9
5	.4.	TEST CHANNEL CONFIGURATION	.9
5	.5.	THE WORSE CASE POWER SETTING PARAMETER	.9
5	.6.	DESCRIPTION OF AVAILABLE ANTENNAS	.9
5	.7.	EUT ACCESSORY	.9
5	.8.	SUPPORT UNITS FOR SYSTEM TEST	10
5	.9.	SETUP DIAGRAM	10
6.	MEASU	JRING EQUIPMENT AND SOFTWARE USED1	1
7.	ANTEN	INA PORT TEST RESULTS1	3
7	.1.	Conducted Output Power	13
7	.2.	6dB Bandwidth and 99% Occupied Bandwidth	14
7	.3.	Power Spectral Density	16
7	.4.	Conducted Band edge and spurious emission	17
7	.5.	Duty Cycle	19
8.	RADIA	TED TEST RESULTS	20
8	.1.	Radiated Band edge and Spurious Emission	26
9.	ANTEN	INA REQUIREMENT	38
10.		AC POWER LINE CONDUCTED EMISSION	39
11.		TEST DATA - Appendix A	12

# **1. ATTESTATION OF TEST RESULTS**

#### Applicant Information

Company Name:	Xiamen Lujiang Technology Co., Ltd.
Address:	Room 601-2,No.63-1,Wanghai Road, Software Park Phase II,Torch Hi-Tech Zone, Xiamen, China
Manufacturer Information	
Company Name:	Xiamen Lujiang Technology Co., Ltd.
Address:	Room 601-2,No.63-1,Wanghai Road, Software Park Phase II,Torch Hi-Tech Zone, Xiamen, China

#### **EUT Information**

Product Description: Model:	Portable Thermal Printer ITP06
Series Model:	A49, A49H, ITP06S, TPA49, A49Pro, TPA49H, A49S, APA49, APA49H
Brand:	1
Sample Received Date:	November 20, 2024
Sample Status:	Normal
Sample ID:	A24100909 001
Date of Tested:	November 20, 2024 to January 22, 2025

#### **APPLICABLE STANDARDS**

STANDARD

**TEST RESULTS** 

CFR 47 FCC PART 15 SUBPART C(DTS)

Pass

Prepared By:

~2ng

Win Huang

San La

Checked By:

Alan He Laboratory Leader



# 2. TEST METHODOLOGY

All tests were performed in accordance with the standard CFR 47 FCC PART 15 SUBPART C(DTS)

# 3. FACILITIES AND ACCREDITATION

Guangdong Global Testing Technology Co., Ltd.
Changeong Closer rooting rootinology oo., Etc.
has been assessed and proved to be in compliance with A2LA.
FCC (FCC Designation No.: CN1343)
Guangdong Global Testing Technology Co., Ltd.
has been recognized to perform compliance testing on equipment
Accreditation Certificate subject to Supplier's Declaration of Conformity (SDoC) and
Certification rules
ISED (Company No.: 30714)
Guangdong Global Testing Technology Co., Ltd.
has been registered and fully described in a report filed with ISED.
The Company Number is 30714 and the test lab Conformity
Assessment Body Identifier (CABID) is CN0148.

Note: All tests measurement facilities use to collect the measurement data are located at Room 101-105, 203-210, Building 1, No.2, Keji 8 Road, Songshan Lake Park, Dongguan city, Guangdong, People's Republic of China, 523808

# 4. CALIBRATION AND UNCERTAINTY

### 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognized national standards.

### 4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Items	k	Uncertainty			
DTS Bandwidth	1.96	±9.2 PPM			
20dB Emission Bandwidth	1.96	±9.2 PPM			
Carrier Frequency Separation	1.96	±9.2 PPM			
Time of Occupancy	1.96	±0.57%			
Conducted Output Power	1.96	±1.5 dB			
Power Spectral Density Level	1.96	±1.9 dB			
Conducted Spurious Emission	1.96	9 kHz-30 MHz: ± 0.95 dB 30 MHz-1 GHz: ± 1.5 dB 1GHz-12.75GHz: ± 1.8 dB 12.75 GHz-26.5 GHz: ± 2.1dB			
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.					

Test Item	Measurement Frequency Range	К	U(dB)		
Conducted emissions from the AC mains power ports (AMN)	150 kHz ~ 30 MHz	2	3.37		
Radiated emissions	9 kHz ~ 30 MHz	2	4.16		
Radiated emissions	30 MHz ~ 1 GHz	2	3.79		
Radiated emissions	1 GHz ~ 18 GHz	2	5.62		
Radiated emissions	18 GHz ~ 40 GHz	2	5.54		
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.					

# 5. EQUIPMENT UNDER TEST

# 5.1. DESCRIPTION OF EUT

EUT Name		Portable Thermal Printer		
Model		ITP06		
Series Model		A49, A49H, ITP06S, TPA49, A49Pro, TPA49H, A49S, APA49, APA49H		
Model Difference		Note: Only the model name difference.		
Hardware Version		V0		
Software Version		V1.0		
Ratings		DC 5V - 2A		
	DC	5V		
Power Supply	Battery	DC 7.4V 2600mAh, 19.24Wh		

Frequency Band:	2400 MHz to 2483.5 MHz		
1 3			
Frequency Range:	2402 MHz to 2480 MHz		
Bluetooth Version:	Bluetooth 5.2		
Bluetooth Mode:	Bluetooth LE		
Type of Modulation:	GFSK		
Number of Channels:	40		
Channel Separation:	2 MHz		
Maximum Peak Power:	-1.86 dBm		
Antenna Type:	PCB Antenna		
Antenna Gain:	-0.93 dBi		
Normal Test Voltage:	5 Vdc		
EUT Test software:	fcc_test_tool		
Note:	The Antenna Gain was provided by customer, and this information may affect the validity of the results, customer should be responsible for this.		

# 5.2. CHANNEL LIST

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	11	2424	22	2446	33	2468
1	2404	12	2426	23	2448	34	2470
2	2406	13	2428	24	2450	35	2472
3	2408	14	2430	25	2452	36	2474
4	2410	15	2432	26	2454	37	2476
5	2412	16	2434	27	2456	38	2478
6	2414	17	2436	28	2458	39	2480
7	2416	18	2438	29	2460	/	/
8	2418	19	2440	30	2462	/	/

TRF No.: 04-E001-0B

Global Testing , Great Quality.

9	2420	20	2442	31	2464	/	/
10	2422	21	2444	32	2468	/	/

#### 5.3. MAXIMUM EIRP

Test Mode	Frequency (MHz)	Channel Number	Maximum Peak Output Power (dBm)	Maximum EIRP (dBm)
GFSK(1Mbps)	2402 ~ 2480	0-39[40]	-1.86	/

### 5.4. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel	Frequency
GFSK(1Mbps)	CH 0(Low Channel), CH 19(MID Channel), CH 39(High Channel)	2402 MHz, 2440 MHz, 2480 MHz

### 5.5. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band					
Test Softwar	e Version	fcc_test_tool			
Modulation Type	Transmit				
	Antenna Number	CH 0	CH 19	CH 39	
GFSK(1Mbps)	1	default	default	default	

### 5.6. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
1	2402-2480	PCB	-0.93

Test Mode Transmit and Receive Mode		Description		
GFSK(1Mbps)	⊠1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.		

# 5.7. EUT ACCESSORY

Cable				
Accessory:	USB-C cable			
Model No.:	1			
Description:	USB Type-C Plug Cable			
Cable Type:	Unshielded without ferrite			
Length:	1.2 Meter			

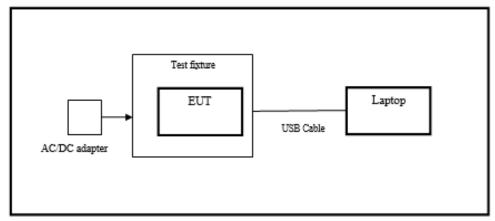
# 5.8. SUPPORT UNITS FOR SYSTEM TEST

The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	Laptop	Lenovo	Thinkpad T14	PF-3EAKYR	GTG Support
E-2	Adapter	Xiaomi	MDY-11-EX	N/A	GTG Support

### 5.9. SETUP DIAGRAM

Radiated emissions & AC Power Line Conducted Emission:



6. MEA	SURING EQUIPMENT	AND SOFTWARE USED
--------	------------------	-------------------

Test Equipment of Conducted RF								
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date			
Spectrum Analyzer	Rohde & Schwarz	FSV40	102257	2024/09/14	2025/09/13			
Spectrum Analyzer	KEYSIGHT	N9020A	MY51285127	2024/09/14	2025/09/13			
EXG Analog Signal Generator	KEYSIGHT	N5173B	MY61253075	2024/09/14	2025/09/13			
Vector Signal Generator	Rohde & Schwarz	SMM100A	101899	2024/09/14	2025/09/13			
RF Control box	MWRF-test	MW100-RFCB	MW220926GTG	2024/09/14	2025/09/13			
Wideband Radio Communication Tester	Rohde & Schwarz	CMW270	102792	2024/09/14	2025/09/13			
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	103235	2024/09/14	2025/09/13			
temperature humidity chamber	Espec	SH-241	SH-241-2014	2024/09/14	2025/09/13			
RF Test Software	MWRF-test	MTS8310E (Ver. V2/0)	N/A	N/A	N/A			

Test Equipment of Radiated emissions below 1GHz								
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date			
3m Semi-anechoic Chamber	ETS	9m*6m*6m	Q2146	2022/08/30	2025/08/29			
EMI Test Receiver	Rohde & Schwarz	ESCI3	101409	2024/09/14	2025/09/13			
Spectrum Analyzer	KEYSIGHT	N9020A	MY51283932	2024/09/14	2025/09/13			
Pre-Amplifier	HzEMC	HPA-9K0130	HYPA21001	2024/09/14	2025/09/13			
Biconilog Antenna	Schwarzbeck	VULB 9168	01315	2022/10/10	2025/10/09			
Biconilog Antenna	ETS	3142E	00243646	2022/03/23	2025/03/22			
Loop Antenna	ETS	6502	243668	2022/03/30	2025/03/29			
Test Software	Farad	EZ-EMC (Ver.FA-03A2 RE)	N/A	N/A	N/A			

Test Equipment of Radiated emissions above 1GHz								
EquipmentManufacturerModel No.Serial No.Last Cal.								
3m Semi-anechoic Chamber	ETS	9m*6m*6m	Q2149	2022/08/30	2025/08/29			
Spectrum Analyzer	Rohde & Schwarz	FSV40	101413	2024/09/14	2025/09/13			
Spectrum Analyzer	KEYSIGHT	N9020A	MY51283932	2024/09/14	2025/09/13			
Pre-Amplifier	A-INFO	HPA-1G1850	HYPA21003	2024/09/14	2025/09/13			
Horn antenna	A-INFO	3117	246069	2022/03/11	2025/03/10			
Pre-Amplifier	ZKJC	HPA-184057	HYPA21004	2024/09/14	2025/09/13			

TRF No.: 04-E001-0B

Global Testing , Great Quality.

Horn antenna	ZKJC	3116C	246265	2022/03/29	2025/03/28
Test Software	Farad	EZ-EMC (Ver.FA-03A2 RE+)	N/A	N/A	N/A

Test Equipment of Conducted emissions					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
Shielded Room	CHENG YU	8m*5m*4m	N/A	2022/10/29	2025/10/28
EMI Test Receiver	Rohde & Schwarz	ESR3	102647	2024/09/14	2025/09/13
LISN/AMN	Rohde & Schwarz	ENV216	102843	2024/09/14	2025/09/13
NNLK 8129 RC	Schwarzbeck	NNLK 8129 RC	5046	2024/09/14	2025/09/13
Test Software	Farad	EZ-EMC (Ver. EMC-con-3A1 1+)	N/A	N/A	N/A

# 7. ANTENNA PORT TEST RESULTS

### 7.1. CONDUCTED OUTPUT POWER

#### <u>LIMITS</u>

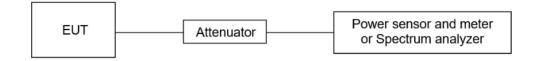
CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 3			
Section Test Item Limit Frequency Range (MHz)			
CFR 47 FCC 15.247(b)(3) ISED RSS-247 5.4 (d)	Peak Conduct Output Power	1 watt or 30 dBm	2400-2483.5

#### TEST PROCEDURE

Connect the EUT to a low loss RF cable from the antenna port to the power sensor (video bandwidth is greater than the occupied bandwidth).

Measure peak emission level, the indicated level is the peak output power, after any corrections for external attenuators and cables.

#### TEST SETUP



#### TEST ENVIRONMENT

Temperature	23.8°C	Relative Humidity	53%
Atmosphere Pressure	101kPa		

#### TEST RESULTS

Please refer to section "Test Data" - Appendix A

### 7.2. 6DB BANDWIDTH AND 99% OCCUPIED BANDWIDTH

#### LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 3			
Section Test Item Limit Frequency Range (MHz)			
CFR 47 FCC 15.247(a)(2) ISED RSS-247 5.2 (a)	6 dB Bandwidth	≥ 500 kHz	2400-2483.5
ISED RSS-Gen Clause 6.7	99 % Occupied Bandwidth	For reporting purposes only.	2400-2483.5

#### TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.8 for DTS bandwidth and clause 6.9 for Occupied Bandwidth.

Center Frequency	The center frequency of the channel under test
Frequency Span	For 6 dB Bandwidth: Enough to capture all products of the modulation carrier emission For 99 % Occupied Bandwidth: Between 1.5 times and 5.0 times the OBW
Detector	Peak
IRB///	For 6 dB Bandwidth: 100 kHz For 99 % Occupied Bandwidth: 1 % to 5 % of the occupied bandwidth
IV RW	For 6 dB Bandwidth: ≥3 × RBW For 99 % Occupied Bandwidth: ≥3 × RBW
Trace	Max hold
Sweep	Auto couple

Connect the EUT to the spectrum analyser and use the following settings:

a) Use the 99 % power bandwidth function of the instrument, allow the trace to stabilize and report the measured bandwidth.

b) Allow the trace to stabilize and 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.

#### TEST SETUP



#### **TEST ENVIRONMENT**

Temperature	23.8°C	Relative Humidity	53%
Atmosphere Pressure	101kPa		

#### TEST RESULTS

Please refer to section "Test Data" - Appendix A

# 7.3. POWER SPECTRAL DENSITY

#### LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 3			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC §15.247 (e) ISED RSS-247 5.2 (b)	Power Spectral Density	8 dBm in any 3 kHz band	2400-2483.5

#### TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.10.

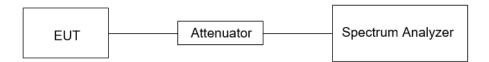
Connect the EUT to the spectrum analyser and use the following settings:

Center Frequency	The center frequency of the channel under test
Detector	PEAK
RBW	$3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple

Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.

If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

#### TEST SETUP



#### TEST ENVIRONMENT

Temperature	23.8°C	Relative Humidity	53%
Atmosphere Pressure	101kPa		

#### TEST RESULTS

Please refer to section "Test Data" - Appendix A

### 7.4. CONDUCTED BAND EDGE AND SPURIOUS EMISSION

#### LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 3			
Section Test Item Limit			
CFR 47 FCC §15.247 (d) ISED RSS-247 5.5	Conducted Bandedge and Spurious Emissions	at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power	

#### TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.11 and 11.13.

Connect the EUT to the spectrum analyser and use the following settings for reference level measurement:

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	100 kHz
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum PSD level.

Change the settings for emission level measurement:

15040	Set the center frequency and span to encompass frequency range to be measured
Detector	Peak
RBW	100 kHz
VBW	≥3 × RBW
measurement points	≥span/RBW
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum PSD level. Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11.

#### TEST SETUP



#### **TEST ENVIRONMENT**

Temperature	23.8°C	Relative Humidity	53%
Atmosphere Pressure	101kPa		

#### TEST RESULTS

Please refer to section "Test Data" - Appendix A

### 7.5. DUTY CYCLE

### <u>LIMITS</u>

None; for reporting purposes only.

#### TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.6 Zero – Span Spectrum Analyzer method.

#### TEST SETUP



#### **TEST ENVIRONMENT**

Temperature	23.8°C	Relative Humidity	53%
Atmosphere Pressure	101kPa		

#### TEST RESULTS

Please refer to section "Test Data" - Appendix A

# 8. RADIATED TEST RESULTS

#### <u>LIMITS</u>

Please refer to CFR 47 FCC §15.205 and §15.209.

Please refer to ISED RSS-GEN Clause 8.9 and Clause 8.10.

Radiation Disturbance Test Limit for FCC (Class B) (9 kHz ~ 1 GHz)

Emissions radiated outside of the specified frequency bands above 30 MHz			
Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Stren (dBuV/m)	0
		Quasi-l	Peak
30 - 88	100	40	
88 - 216	150	43.	5
216 - 960	200	46	
Above 960	500	54	
Above 1000	500	Peak	Average
	300	74	54

FCC Emissions radiated outside of the specified frequency bands below 30 MHz		
Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30

#### ISED General field strength limits at frequencies below 30 MHz

Table 6 – General field strength limits at frequencies below 30 MHz		
Frequency	Magnetic field strength (H-Field) (μA/m)	Measurement distance (m)
9 - 490 kHz <sup>Note 1</sup>	6.37/F (F in kHz)	300
490 - 1705 kHz	63.7/F (F in kHz)	30
1.705 - 30 MHz	0.08	30

**Note 1:** The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

#### ISED Restricted bands please refer to ISED RSS-GEN Clause 8.10

z	MHz	GHz
90 - 0.110	149.9 - 150.05	9.0 - 9.2
95 - 0.505	158.52475 - 158.52525	9.3 - 9.5
735 - 2.1905	158.7 - 158.9	10.6 - 12.7
20 - 3.028	162.0125 - 167.17	13.25 - 13.4
25 - 4.128	167.72 - 173.2	14.47 - 14.5
725 - 4.17775	240 - 285	15.35 - 16.2
0725 - 4.20775	322 - 335.4	17.7 - 21.4
7 - 5.683	399.9 - 410	22.01 - 23.12
5 - 6.218	608 - 614	23.6 - 24.0
3775 - 6.26825	960 - 1427	31.2 - 31.8
175 - 6.31225	1435 - 1626.5	36.43 - 36.5
91 - 8.294	1845.5 - 1648.5	Above 38.6
32 - 8.366	1880 - 1710	
7625 - 8.38675	1718.8 - 1722.2	
425 - 8.41475	2200 - 2300	
29 - 12.293	2310 - 2390	
1975 - 12.52025	2483.5 - 2500	
57675 - 12.57725	2855 - 2900	
3 - 13.41	3260 - 3267	
2 - 16.423	3332 - 3339	
9475 - 16.69525	3345.8 - 3358	
80425 - 16.80475	3500 - 4400	
- 25.67	4500 - 5150	
38.25	5350 - 5460	
74.6	7250 - 7750	
- 75.2	8025 - 8500	
- 138		

Note 1: Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.

#### FCC Restricted bands of operation refer to FCC §15.205 (a):

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
<sup>1</sup> 0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	(2)
13.36-13.41			

Note: <sup>1</sup>Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz. <sup>2</sup>Above 38.6c

#### **TEST PROCEDURE**

Below 30 MHz

TRF No.: 04-E001-0B

RBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
VBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
Sweep	Auto

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.4.

2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80 cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1 m height antenna tower.

5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz Radiated emission limits in these three bands are based on measurements employing an average detector.

6. For measurement below 1 GHz, 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 and average detector mode remeasured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak and average detector and reported.

7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30m open field site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field site based on KDB 414788.

8. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of  $377\Omega$ . For example, the measurement frequency X KHz resulted in a level of Y dBuV/m, which is equivalent to Y-51.5 = Z dBuA/m, which has the same margin, W dB, to the corresponding RSS-GEN Table 6 limit as it has to be 15.209(a) limit.

Below 1 GHz and above 30 MHz

The setting of the spectrum analyser

RBW	120 kHz
VBW	300 kHz
Sweep	Auto
Detector	Peak/QP
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.5.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high

pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80 cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement below 1 GHz, 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. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

#### Above 1G

The setting of the spectrum analyser

RBW	1 MHz
IV BW	PEAK: 3 MHz AVG: see note 6
Sweep	Auto
Detector	Peak
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.6.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

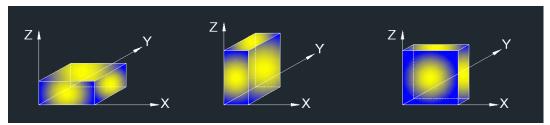
3. The EUT was placed on a turntable with 1.5 m above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement above 1 GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.

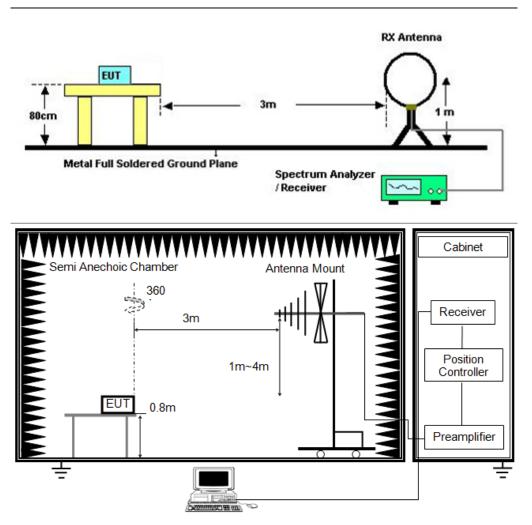
6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector for average measurements. For the Duty Cycle please refer to clause 7.1.ON TIME AND DUTY CYCLE.

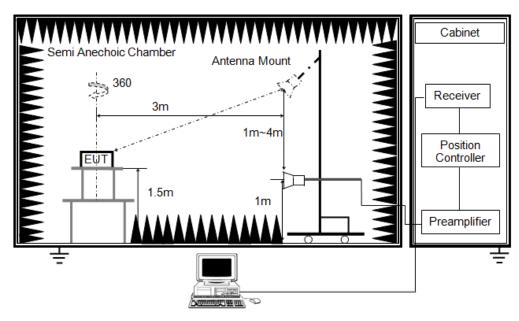
#### X axis, Y axis, Z axis positions:



Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

#### TEST SETUP





#### TEST ENVIRONMENT

Temperature	24.9°C	Relative Humidity	53%
Atmosphere Pressure	101kPa		

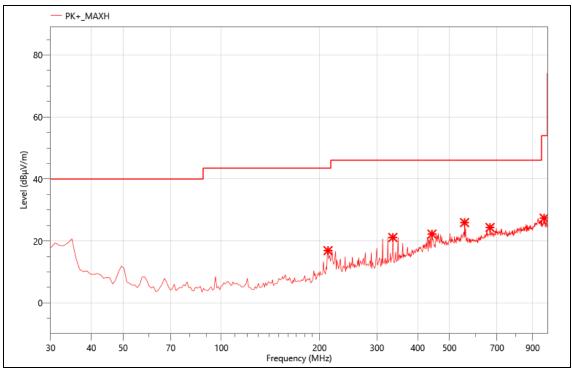
#### TEST RESULTS

# 8.1. RADIATED BAND EDGE AND SPURIOUS EMISSION

Undesirable radiated Spurious Emission below 1GHz (30MHz to 1GHz)

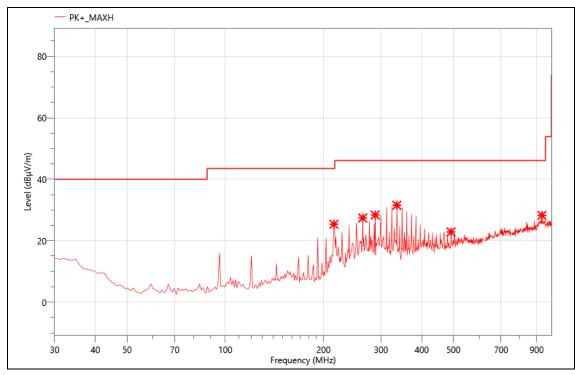
All modes have been tested and the worst result as bellow:

Mode:	BLE1M-2402
Power:	DC 5V
TE:	Berny
Date	2024/11/26
T/A/P	24.9°C/53%/101Kpa



No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	212.360	38.03	-21.16	16.87	43.50	26.63	PK+	V
2	335.550	38.23	-17.11	21.12	46.00	24.88	PK+	V
3	442.250	36.38	-14.17	22.21	46.00	23.79	PK+	V
4	556.710	36.02	-10.09	25.93	46.00	20.07	PK+	V
5	666.320	32.52	-8.17	24.35	46.00	21.65	PK+	V
6	975.750	31.05	-3.7	27.35	53.90	26.55	PK+	V

Mode:	BLE1M-2402
Power:	DC 5V
TE:	Berny
Date	2024/11/26
T/A/P	24.9°C/53%/101Kpa



No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	215.270	46.36	-21	25.36	43.50	18.14	PK+	Н
2	263.770	45.72	-18.32	27.40	46.00	18.60	PK+	Н
3	288.020	47.84	-19.48	28.36	46.00	17.64	PK+	Н
4	335.550	48.64	-17.11	31.53	46.00	14.47	PK+	Н
5	491.720	35.39	-12.54	22.85	46.00	23.15	PK+	Н
6	934.040	31.29	-3.05	28.24	46.00	17.76	PK+	Н

Note:

1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

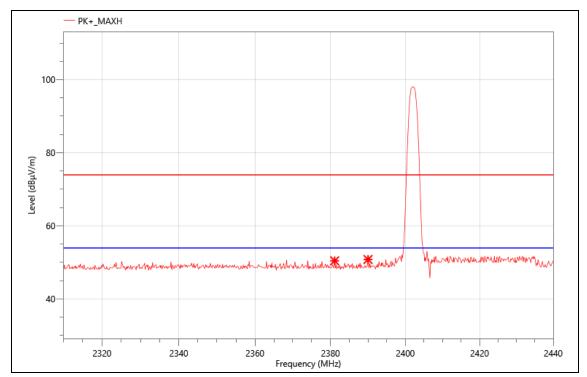
3. Peak: Peak detector.

4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

### Band Edge

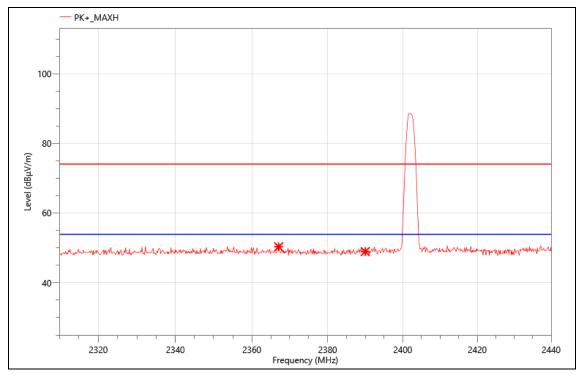
All modes have been tested and the worst result as bellow:

Mode:	BLE1M-2402
Power:	DC 5V
TE:	Berny
Date	2024/11/26
T/A/P	24.9°C/53%/101Kpa



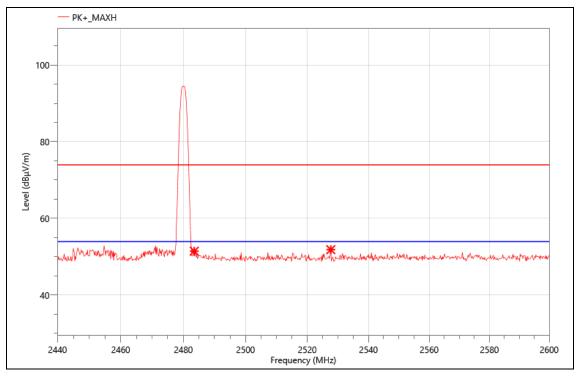
No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2381.110	27.86	22.55	50.41	74.00	23.59	PK+	Н
2	2390.000	28.06	22.72	50.78	74.00	23.22	PK+	Н

Mode:	BLE1M-2402
Power:	DC 5V
TE:	Berny
Date	2024/11/26
T/A/P	24.9°C/53%/101Kpa



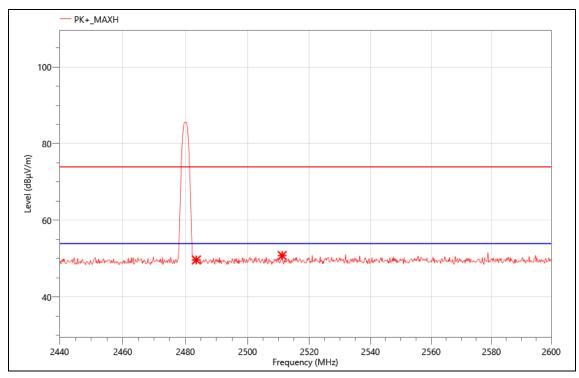
No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2367.070	27.63	22.65	50.28	74.00	23.72	PK+	V
2	2390.000	26.18	22.72	48.90	74.00	25.10	PK+	V

Mode:	BLE1M-2480
Power:	DC 5V
TE:	Berny
Date	2024/11/26
T/A/P	24.9°C/53%/101Kpa



No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2483.500	28.29	23.15	51.44	74.00	22.56	PK+	Н
2	2527.680	28.68	23.16	51.84	74.00	22.16	PK+	Н

Mode:	BLE1M-2480
Power:	DC 5V
TE:	Berny
Date	2024/11/26
T/A/P	24.9°C/53%/101Kpa



No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2483.500	26.53	23.15	49.68	74.00	24.32	PK+	V
2	2511.200	27.72	23.11	50.83	74.00	23.17	PK+	V

Note:

1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

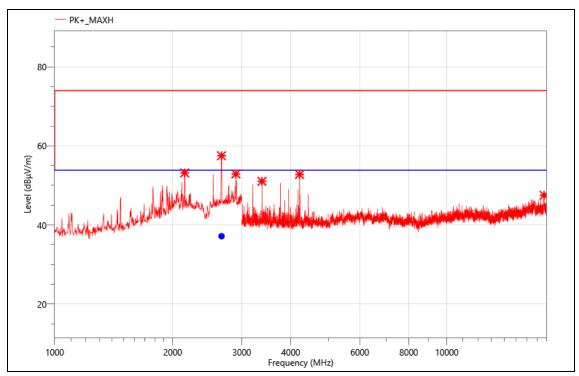
3. Peak: Peak detector.

4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

Undesirable radiated Spurious Emission Above 1GHz (1GHz to 40GHz)

Mode:	BLE1M-2402
Power:	DC 5V
TE:	Berny
Date	2025/01/22
T/A/P	24.9°C/53%/101Kpa

All modes have been tested and the worst result as bellow:



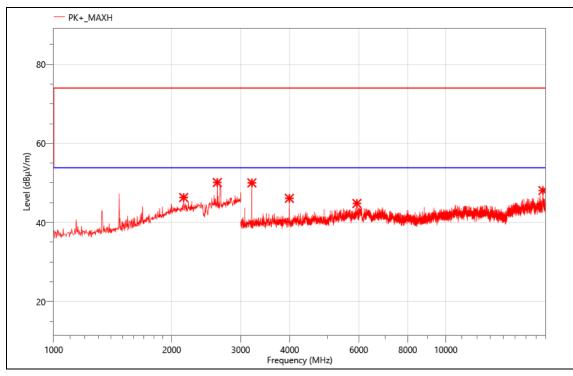
# Critical\_Freqs

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2146.000	62.21	-9.05	53.16	74.00	20.84	PK+	V
2	2664.000	66.12	-8.62	57.50	74.00	16.50	PK+	V
3	2898.000	60.80	-7.91	52.89	74.00	21.11	PK+	V
4	3378.000	65.49	-14.45	51.04	74.00	22.96	PK+	V
5	4213.500	65.47	-12.69	52.78	74.00	21.22	PK+	V
6	17701.500	47.37	0.14	47.51	74.00	26.49	PK+	V

# Final\_Result

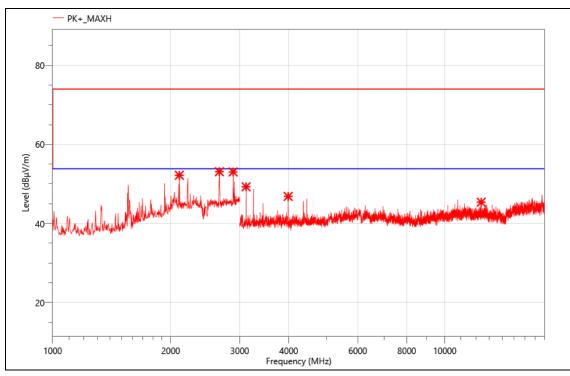
No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.	Verdict
1	2663.906	45.78	-8.62	37.16	53.90	16.74	AVG	V	PASS

Mode:	BLE1M-2402
Power:	DC 5V
TE:	Berny
Date	2025/01/22
T/A/P	24.9°C/53%/101Kpa



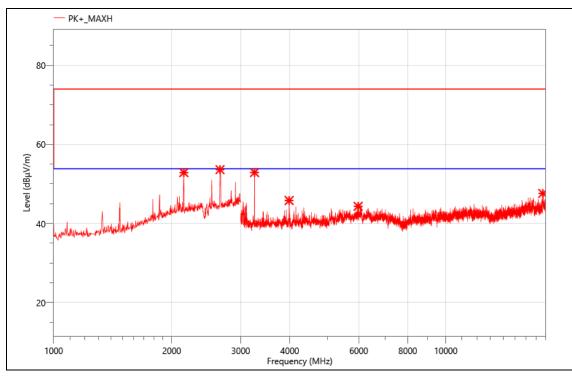
No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2146.000	55.36	-9.05	46.31	74.00	27.69	PK+	Н
2	2614.000	58.44	-8.33	50.11	74.00	23.89	PK+	Н
3	3202.500	64.80	-14.79	50.01	74.00	23.99	PK+	Н
4	3991.500	59.39	-13.28	46.11	74.00	27.89	PK+	Н
5	5934.000	53.67	-8.87	44.80	74.00	29.20	PK+	Н
6	17689.500	47.84	0.24	48.08	74.00	25.92	PK+	Н

Mode:	BLE1M-2440
Power:	DC 5V
TE:	Berny
Date	2025/01/22
T/A/P	24.9°C/53%/101Kpa



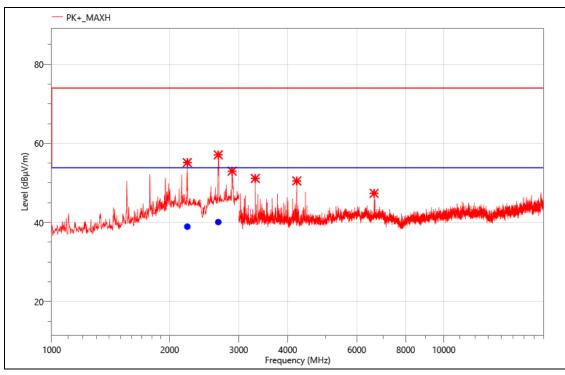
No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2104.000	61.48	-9.28	52.20	74.00	21.80	PK+	Н
2	2662.000	61.75	-8.66	53.09	74.00	20.91	PK+	Н
3	2886.000	61.22	-8.19	53.03	74.00	20.97	PK+	Н
4	3114.000	64.32	-15.04	49.28	74.00	24.72	PK+	Н
5	3987.000	60.08	-13.24	46.84	74.00	27.16	PK+	Н
6	12382.500	50.14	-4.76	45.38	74.00	28.62	PK+	Н

Mode:	BLE1M-2440
Power:	DC 5V
TE:	Berny
Date	2025/01/22
T/A/P	24.9°C/53%/101Kpa



No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2148.000	61.92	-9.05	52.87	74.00	21.13	PK+	V
2	2656.000	62.38	-8.76	53.62	74.00	20.38	PK+	V
3	3253.500	67.64	-14.76	52.88	74.00	21.12	PK+	V
4	3985.500	59.04	-13.23	45.81	74.00	28.19	PK+	V
5	5977.500	53.29	-8.95	44.34	74.00	29.66	PK+	V
6	17673.000	47.30	0.3	47.60	74.00	26.40	PK+	V

Mode:	BLE1M-2480
Power:	DC 5V
TE:	Berny
Date	2025/01/22
T/A/P	24.9°C/53%/101Kpa

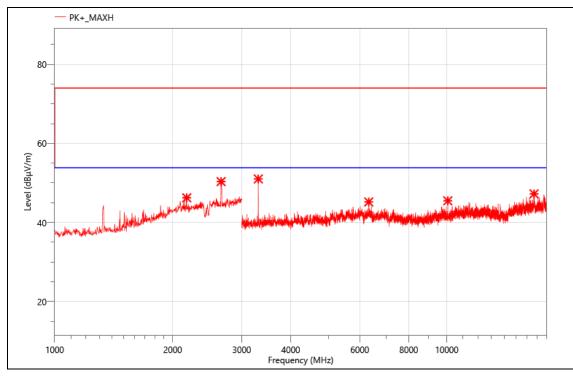


No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2218.000	64.37	-9.22	55.15	74.00	18.85	PK+	V
2	2660.000	65.79	-8.69	57.10	74.00	16.90	PK+	V
3	2886.000	61.17	-8.19	52.98	74.00	21.02	PK+	V
4	3306.000	65.54	-14.4	51.14	74.00	22.86	PK+	V
5	4218.000	63.19	-12.69	50.50	74.00	23.50	PK+	V
6	6642.000	55.67	-8.3	47.37	74.00	26.63	PK+	V

# Final\_Result

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.	Verdict
1	2218.000	48.17	-9.22	38.95	53.90	14.95	AVG	V	PASS
2	2660.000	48.79	-8.69	40.10	53.90	13.80	AVG	V	PASS

Mode:	BLE1M-2480
Power:	DC 5V
TE:	Berny
Date	2025/01/22
T/A/P	24.9°C/53%/101Kpa



## **Critical\_Freqs**

No.	Freq. (MHz)	Reading (dBµV)	Corr. (dB)	Meas. (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Det.	Pol.
1	2172.000	55.29	-9.05	46.24	74.00	27.76	PK+	Н
2	2658.000	59.07	-8.73	50.34	74.00	23.66	PK+	Н
3	3306.000	65.41	-14.4	51.01	74.00	22.99	PK+	Н
4	6324.000	53.04	-7.85	45.19	74.00	28.81	PK+	Н
5	10059.000	51.74	-6.26	45.48	74.00	28.52	PK+	Н
6	16692.000	47.72	-0.49	47.23	74.00	26.77	PK+	Н

Note:

1. Measurement = Reading Level + Correct Factor.

2. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.

3. Peak: Peak detector.

4. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

For the frequency above 18 GHz, a pre-scan was performed, and the result was 20 dB lower than the limit line, the test data was not shown in the report.

### 9. ANTENNA REQUIREMENT

#### REQUIREMENT

#### Please refer to FCC §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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

#### Please refer to FCC §15.247(b)(4)

The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

#### DESCRIPTION

Pass

### **10. AC POWER LINE CONDUCTED EMISSION**

### LIMITS

Please refer to CFR 47 FCC §15.207 (a) and ISED RSS-Gen Clause 8.8

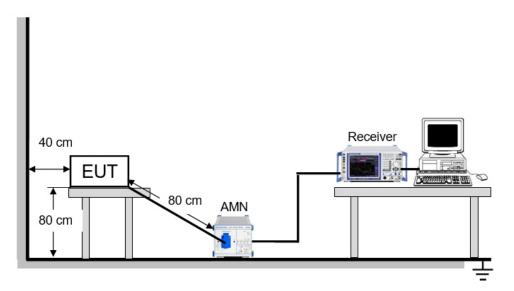
FREQUENCY (MHz)	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

#### TEST PROCEDURE

The EUT is put on a table of non-conducting material that is 80 cm high. The vertical conducting wall of shielding is located 40 cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2013.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9 kHz.

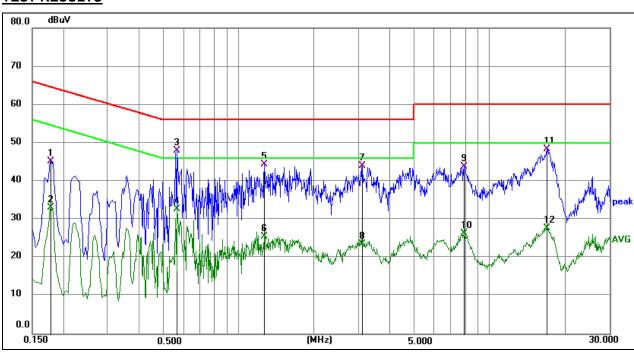
The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

#### TEST SETUP



#### TEST ENVIRONMENT

Temperature	23°C	Relative Humidity	54%
Atmosphere Pressure	101kPa		

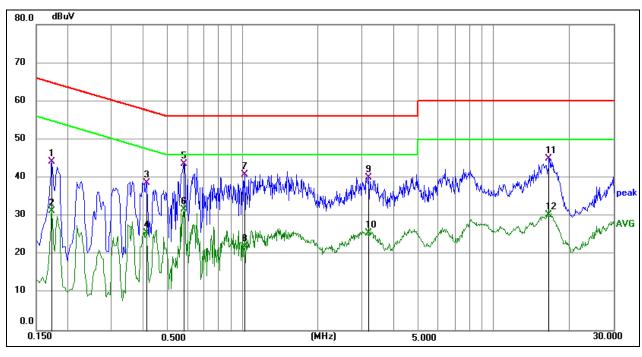


#### TEST RESULTS

Phase:	L1

Mode: BLE 2402MHz

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1770	35.52	9.71	45.23	64.63	-19.40	QP
2	0.1770	23.25	9.71	32.96	54.63	-21.67	AVG
3	0.5685	38.20	9.82	48.02	56.00	-7.98	QP
4	0.5685	22.87	9.82	32.69	46.00	-13.31	AVG
5	1.2660	34.51	9.79	44.30	56.00	-11.70	QP
6	1.2660	15.63	9.79	25.42	46.00	-20.58	AVG
7	3.1155	34.00	9.89	43.89	56.00	-12.11	QP
8	3.1155	13.55	9.89	23.44	46.00	-22.56	AVG
9	7.9260	33.94	9.88	43.82	60.00	-16.18	QP
10	7.9260	16.38	9.88	26.26	50.00	-23.74	AVG
11	16.9215	38.16	10.11	48.27	60.00	-11.73	QP
12	16.9215	17.54	10.11	27.65	50.00	-22.35	AVG



Phase: N	Mode: BLE 2402MHz

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dB)	
1	0.1725	34.32	9.86	44.18	64.84	-20.66	QP
2	0.1725	21.32	9.86	31.18	54.84	-23.66	AVG
3	0.4110	28.81	9.75	38.56	57.63	-19.07	QP
4	0.4110	15.74	9.75	25.49	47.63	-22.14	AVG
5	0.5820	33.90	9.76	43.66	56.00	-12.34	QP
6	0.5820	21.96	9.76	31.72	46.00	-14.28	AVG
7	1.0184	31.00	9.84	40.84	56.00	-15.16	QP
8	1.0184	12.14	9.84	21.98	46.00	-24.02	AVG
9	3.1875	30.15	9.81	39.96	56.00	-16.04	QP
10	3.1875	15.78	9.81	25.59	46.00	-20.41	AVG
11	16.5795	35.03	9.99	45.02	60.00	-14.98	QP
12	16.5795	20.19	9.99	30.18	50.00	-19.82	AVG

Note: 1. Result = Reading + Correct Factor.

- 2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
- 3. Test setup: RBW: 200 Hz (9 kHz ~ 150 kHz), 9 kHz (150 kHz ~ 30 MHz).
- 4. Step size: 80 Hz (0.009 MHz ~ 0.15 MHz), 4 kHz (0.15 MHz ~ 30 MHz), Scan time: auto.

Note: All the modes have been tested, only the worst data was recorded in the report.

# 11. TEST DATA - Appendix A

## **Duty Cycle**

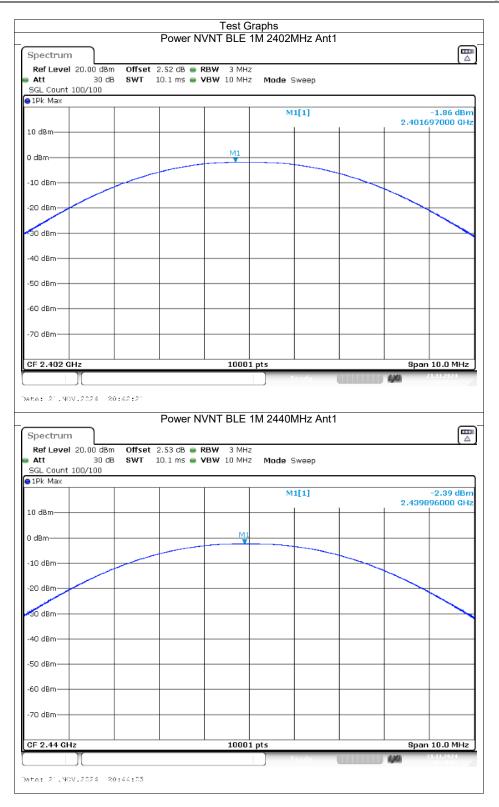
Condition	Mode	Frequency (MHz)	Antenna	On Time (ms)	Period (ms)	Duty Cycle (%)	Correction Factor (dB)	1/T (kHz)	Final settingFor VBW (kHz)
NVNT	BLE 1M	2402	Ant1	0.44	5.58	7.89	11.03	2.28	1
NVNT	BLE 1M	2440	Ant1	0.44	5.58	7.89	11.03	2.28	1
NVNT	BLE 1M	2480	Ant1	0.44	5.58	7.89	11.03	2.27	1

			Duty C	vcle NV	/NT BI	Graphs E 1M 240	)2MH7	Ant	1				
Spectrum			2	<i>j</i> e.e				,	•			ſ	
Ref Level	20.00 dB	m Offs	et 2.52 d	B 👄 RB	W 1 MHz	z						(	
Att	30 0	ib 😑 SWT	Г 20 m	s 👄 VB	<b>W</b> 3 МН2	z							
SGL 91Pk Cirw													
-						М	1[1]					-9.20 d	
10 dBm						M	2[1]					3.08200 -12.25 d	
0 dBm												8.22000	
	101			M2	V 3				1				<b></b>
-10 dBm				1									Π
-20 dBm		_											
-30 dBm		_											
-40 dBm				1.									
PEDNIE WEATH	dan dan	da a compa	ayillin karapate	a contraria	- white	and the data of the	ali a constanti a constanti Constanti a constanti a cons	Uhi -	1	P	եթարկովթե	dentine e	
-60 dem Junit	AV DAY	K <sub>app</sub> ang pang pang pang pang pang pang pang p	ana prad part	hannin a	and they	<u>hulphankadı</u>	<u> hphphpits</u>	h	46.04	up a	<mark>dadapi (den da</mark>	<mark>legande, tiplet</mark>	
-70 dBm													
-70 0.011													
CF 2.402 GH	łz	1			1000	1 pts						2.0 m	s/
Marker	1					1 -	1			_			
Type Ref M1	1	X-va	3.082 ms		-value -9.20 dB	Func Sm	tion			-unc	ction Resul	t	
M2	1		8.22 ms		-12.25 dB								
M3	1		8.658 ms		-8.98 dB	sm				_			
											4.54%		-
ate: 22.NCV	)[ (12024	17:47:10	Duty C	ycle N\	/NT BL	.E 1M 244	10MHz	Ant	.1		44	22.11.202 <del>4</del> 17:47:09	h
Spectrum Ref Level : Att	20.00 de		et 2.53 d	B 👄 RB			iondy ioMHz	Ant	.1		iya	(	
Spectrum Ref Level : Att SGL	20.00 de	m Offs	et 2.53 d	B 👄 RB	<b>W</b> 1 MHz	2	iondy iomHz	Ant	1		4/0	(	
Spectrum Ref Level : Att	20.00 de	m Offs	et 2.53 d	B 👄 RB	<b>W</b> 1 MHz	2 2	iondy iOMHz 1[1]	Ant	1		4/0	-9.17 d	
Spectrum Ref Level : Att SGL	20.00 de	m Offs	et 2.53 d	B 👄 RB	<b>W</b> 1 MHz	2 2 M	1[1]	Ant	1			4.53800	Bn
Spectrum Ref Level : Att SGL 1Pk Cirw 10 dBm	20.00 de	m Offs	et 2.53 d	B 👄 RB	<b>W</b> 1 MHz	2 2 M		Ant	1				Bn m: Bn
Spectrum Ref Level 3 Att SGL 10 dBm 0 dBm	20.00 de	m Offs	et 2.53 d	B 👄 RB	<b>W</b> 1 MHz	2 2 M	1[1]	Ant	1			4.53800 -14.09 d	Bn m: Bn
Spectrum Ref Level : Att SGL 1Pk Cirw 10 dBm	20.00 de	m Offs dB e SW1	et 2.53 d	B 👄 RB	<b>W</b> 1 MHz	2 2 M	1[1]	Ant	1			4.53800 -14.09 d	Bn m: Bn
Spectrum Ref Level 3 Att SGL 10 dBm 0 dBm	20.00 de	m Offs dB e SW1	et 2.53 d	B 👄 RB	<b>W</b> 1 MHz	2 2 M	1[1]	Ant	1			4.53800 -14.09 d	Bn m: Bn
Spectrum Ref Level : Att SGL IPk Clrw 10 dBm 0 dBm -10 dBm -20 dBm	20.00 de	m Offs dB e SW1	et 2.53 d	B 👄 RB	<b>W</b> 1 MHz	2 2 M	1[1]	Ant	1			4.53800 -14.09 d	Bn m: Bn
Spectrum Ref Level : Att SGL 1Pk Cirw 10 dBm -10 dBm -20 dBm -30 dBm	20.00 de	m Offs dB e SW1	et 2.53 d	B 👄 RB	<b>W</b> 1 MHz	2 2 M	1[1]	Ant	1			4.53800 -14.09 d	Bn m: Bn
Spectrum Ref Level 3 Att SGL 10 dBm 0 dBm -10 dBm -20 dBm	20.00 de	m Offs dB e SW1	et 2.53 d	B 👄 RB	<b>W</b> 1 MHz	2 2 M	1[1]	Ant	1			4.53800 -14.09 d	Bn Bn
Spectrum           Ref Level           Att           SGL           IPk Clrw           10 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm	20.00 dE 30 d	m Offs B SW1	et 2.53 d	B 👄 RB	<b>W</b> 1 MHz	Z Z M M Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	1[1] 2[1]		to to a fill the			4.53800 -14.09 d	Bn m: Bn
Spectrum           Ref Level           Att           SGL           IPk Clrw           10 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm	20.00 dE 30 d	m Offs B SW1	et 2.53 d	B RB s VB	W 1 MHz W 3 MHz	2 2 M	1[1] 2[1]		to to a fill the			4.53800 -14.09 d 9.67600	
Spectrum           Ref Level           Att           SGL           1Pk Clrw           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -40 dBm	20.00 dE 30 d	m Offs B SW1	iet 2.53 d 20 m	B RB s VB	W 1 MHz W 3 MHz	Z Z M M Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	1[1] 2[1]		to to a fill the			4.53800 -14.09 d 9.67600	
Spectrum           Ref Level           Att           SGL           IPk Cirw           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -40 dBm	20.00 dE 30 d	m Offs B SW1	iet 2.53 d 20 m	B RB s VB	W 1 MHz W 3 MHz	Z Z M M Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	1[1] 2[1]		to to a fill the			4.53800 -14.09 d 9.67600	
Spectrum           Ref Level           Att           SGL           IPk Clrw           10 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -70 dBm	20.00 de 30 d	m Offs B SW1	iet 2.53 d 20 m	B RB s VB	W 1 MH2 W 3 MH2	z z M M V V	1[1] 2[1]		to to a fill the			4.53800 -14.09 d 9.67600	
Spectrum           Ref Level           Att           SGL           1Pk Cirw           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -70 dBm           -70 dBm           CF 2.44 GHz           Marker	20.00 dE 30 d	m Offs B SW1	et 2.53 d	B RB s VB	W 1 MH2 W 3 MH2	Z Z M M Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	1[1] 2[1]		to to a fill the			4.53800 -14.09 d 9.67600	
Spectrum           Ref Level           Att           SGL           1Pk Clrw           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -70 dBm	20.00 dP 30 d	m Offs B SW1	et 2.53 d r 20 m		W 1 MH2 W 3 MH2 M2 W444 MH2 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2 M2	2 2 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	1[1] 2[1]		te de se bai			4.53800 -14.09 d 9.67600	
Spectrum           Ref Level           Att           SGL           1Pk Clrw           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -70 dBm           GF 2.44 GHz           Marker           Type           Ref           M1           M2	20.00 dE 30 d	m Offs B SW1	iet 2.53 d 20 m 20 m 40 4 40 40 4 40 40 40 40 40 40 40 40 40 40 40 40 40 40 40 4	B RB s VB	W 1 MH2 W 3 MH2 M2 M2 1000 -value -9.17 dB	2 2 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	1[1] 2[1]		te de se bai			4.53800 -14.09 d 9.67600	
Spectrum           Ref Level           Att           SGL           1Pk Clrw           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -70 dBm	20.00 dE 30 d	m Offs B SW1	iet 2.53 d r 20 m 	B RB s VB	W 1 MH2 W 3 MH2 W 3 MH2 1000 -value -value -9.17 de	2 2 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	1[1] 2[1]		te de se bai			4.53800 -14.09 d 9.67600	

Spectrum         Image: Constraint of the spectrum         Image: C		Duty Cy	cle NVNT BLE	1M 2480MHz /	Ant1	
Ref Level         20.00 dBm         Offset         2.55 dB         RBW 1 MHz           Att         30 dB         SWT         20 ms         VBW 3 MHz           SGL         IPk Clrw	Spectrum					
Att         30 dB         SWT         20 ms         VBW 3 MHz           SGL         Image: Construction of the second	Poficyal 20.00	dBm Offset 2.55 dB				[ =
SCL         M1[1]         -9.74 dB           10 dBm         M1[1]         -9.74 dB           0 dBm         M2[1]         -22.34 dB           0 dBm         M2[1]         -23.34 dB           -10 dBm         M2         -10           -20 dBm         -10         -10           -20 dBm         -10         -10           -20 dBm         -10         -10           -20 dBm         -10         -10           -20 dBm         -10     <						
IDE         M1[1]         -9.74 dB           10 dBm         2.21200 m         M2[1]         -2.21200 m           0 dBm         M2[1]         -2.3.34 dB         7.35000 m           -10 dBm         M2[1]         -2.3.34 dB         -0.000 m           -20 dBm         M2         M2         M2         M2           -30 dBm         M2         M2         M2         M2         M2           -30 dBm         M2         M2         M2         M2         M2         M2           -40 dBm         M2		10 00 <b>- 3441</b> 20 115				
M1[1]         -9.74 dB           10 dBm         2.21200 n           0 dBm         M2[1]           -20.34 dB           0 dBm         7.35000 n           -10 dBm         M3           -20 dBm         M2           -30 dBm         M2           -40 dBm         M1 n           -40 dBm         M1 n           -10 dBm         M2						
10 dBm     2.21200 m       0 dBm     -20.34 dB       0 dBm     7.35000 m       -10 dBm     -20 dBm       -20 dBm     -20 dBm       -30 dBm     -20 dBm       -30 dBm     -20 dBm       -20 dBm     -20 dBm       -20 dBm     -20 dBm       -20 dBm     -20 dBm       -30 dBm     -20 dBm       -40 dBm     -20 dBm       -40 dBm     -20 dBm	JIPK CIIW			544[4]		0.74 dDm
10 dBm     M2[1]     -23.34 dB       0 dBm     7.35000 m       -10 dBm     M2       -20 dBm     M2       -20 dBm     M2       -30 dBm     M2       -30 dBm     M2       -40 dBm     M2       -20 dBm     M2       -30 dBm     M2       -40 dBm     M2				MILI		
0 dBm     7.35000 n       -10 dBm     7.35000 n       -10 dBm     7.3500 n       -20 dBm     7.3500 n       -20 dBm     7.3500 n       -30 dBm     7.3500 n       -40 dBm     7.3500 n <td< td=""><td>10 dBm</td><td></td><td></td><td>M2[1]</td><td></td><td></td></td<>	10 dBm			M2[1]		
0 dBm -10 dBm -20 dBm -20 dBm -20 dBm -20 dBm -40 d				matri		7.35000 ms
-20 dBm -30 dBm -40	0 dBm					
-20 dBm -30 dBm -40	10 dpm 10		Ma l	mm		
-30 dBm -40 dB	-10 dBm		Ť			
-30 dBm -40 dBm -40 dBm 	-20 dBm	N	12			
-40 dBm เมตราประชุญณ์ เป็นประเทศไปประเทศไปประเทศไปประเทศไปประเทศไปประเทศไปประเทศไปประเทศ เป็นประโทศไปประเทศไปประเทศ เห็นไปประเทศไปประเทศไปประเทศไปประเทศไปประเทศไปประเทศไปประเทศไปประเทศไปประเทศไปประเทศไปประเทศไปประเทศไปประเทศไป 260 ประเทศไปประเทศไปประเทศไปประเทศไปประเทศไปประเทศไปประเทศไปประเทศไปประเทศไปประเทศไปประเทศไปประเทศไปประเทศไปประ	-20 0011		▼   I			
n <mark>eepigewin, hata kandan ang ang kandan na na kandan na kandan kandan kanda kandan kandan kandan kandan kandan k Kandan kandan kandan</mark>	-30 dBm					
nen heren in heren heren heren heren in sternen heren her 1960 Gilmun - Annen heren heren heren in sternen heren her						
1980 Bernin - Antenn ann ann ann ann an ann an ann an ann an a	-40 dBm					
1980 Bernin - Antenn ann ann ann ann an ann an ann an ann an a						
coome little is a little little little in the	astriaterrit darine	ويجهلوا الأبيانية واللاحة والمتعوداتين والمتعاق	l destriction and the	uhterthilden der sonere so	ներերերեր	(news) (idealing the second
comme l'estre estre estre l'estre estre estre	statis datast a	a su di that i daghalkak ala sayatha	a dible databaken aan dib	a a daala aa da ta da da da	detection detected	and the second
70 dBm	-60 <sup>1</sup> d8m <del>17                </del>	the second second second second		terth of the sector of	de la contratio contra	
	70 40					
	-/U dBm					
CF 2.48 GHz 10001 pts 2.0 ms	CF 2.48 GHz		10001 p	ts		2.0 ms/
Marker	Marker					
Type         Ref         Trc         X-value         Y-value         Function         Function Result				Function	Funct	ion Result
M1 1 2.212 ms -9.74 dBm						
M2 1 7.35 ms -23.34 dBm						
M3 1 7.79 ms -12.96 dBm	M3 1	/./9 ms	-12.96 dBm			
Peady 22112023				Distant day		22.11.2024
				Ready		ayor (

Condition	Mode	Frequency (MHz)	Antenna	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	BLE 1M	2402	Ant1	-1.86	30	Pass
NVNT	BLE 1M	2440	Ant1	-2.39	30	Pass
NVNT	BLE 1M	2480	Ant1	-3.38	30	Pass

### **Maximum Conducted Output Power**

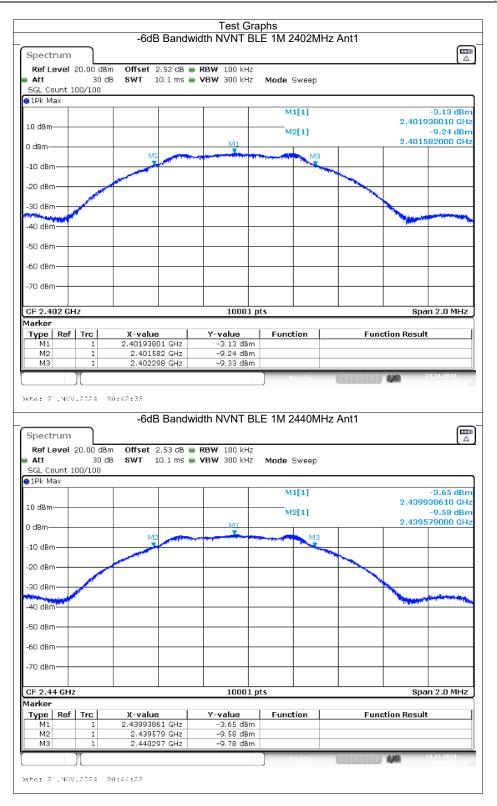


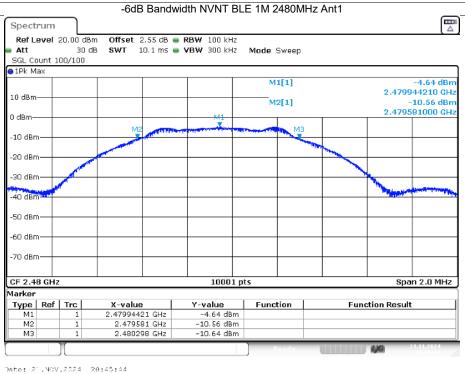
	Power NVNT BLE	1M 2480MHz Ant1		
Spectrum				
Ref Level 20.00 dBm	Offset 2.55 dB 🖷 RBW 3 MH			
Att 30 dB SGL Count 100/100	SWT 10.1 ms 🖷 VBW 10 MH	Iz Mode Sweep		
1Pk Max				
		M1[1]	-3.38 2.479880000	
10 dBm				
0 dBm		1		_
-10 dBm				_
-20 dBm				
e0 dBm				
-40 dBm				
-50 dBm				
-60 dBm				
-70 dBm				
CF 2.48 GHz	1000	)1 pts	Span 10.0 M	/IHz
		Ready	4/0 21.11.202	
Date: 21.NOV.2024 20	:45:27			

•••=						
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1M	2402	Ant1	0.72	0.5	Pass
NVNT	BLE 1M	2440	Ant1	0.72	0.5	Pass
NVNT	BLE 1M	2480	Ant1	0.72	0.5	Pass

# -6dB Bandwidth

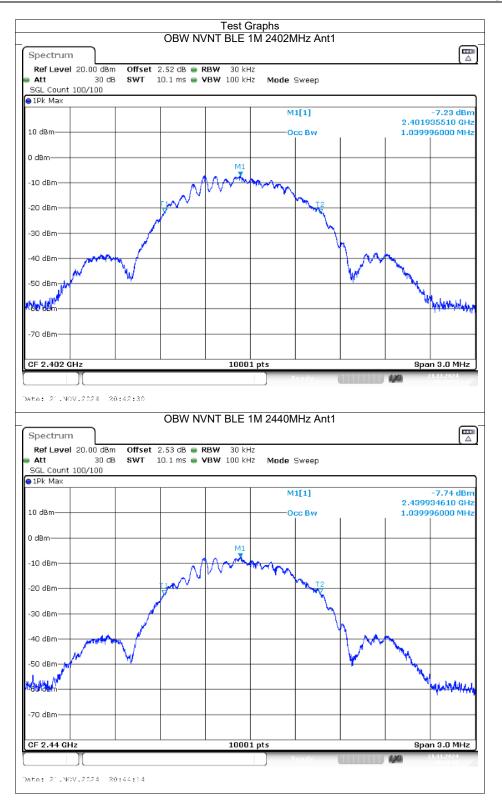
### TRF No.: 04-E001-0B





# **Occupied Channel Bandwidth**

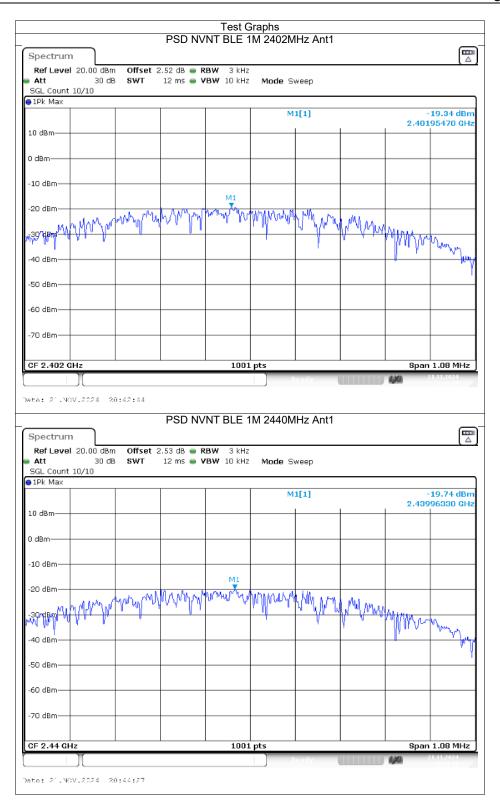
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	BLE 1M	2402	Ant1	1.04
NVNT	BLE 1M	2440	Ant1	1.04
NVNT	BLE 1M	2480	Ant1	1.04

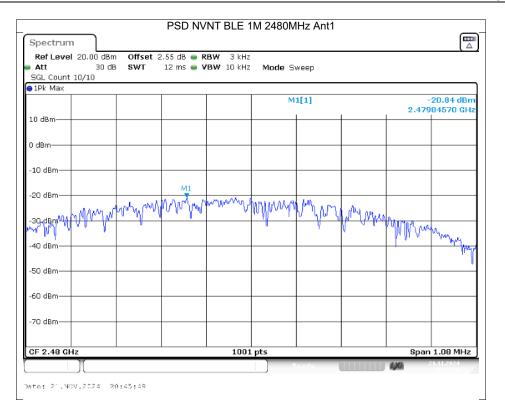




# **Maximum Power Spectral Density Level**

				<b>y</b>		
Condition	Mode	Frequency (MHz)	Antenna	Conducted PSD (dBm/3kHz)	Limit (dBm/3kHz)	Verdict
NVNT	BLE 1M	2402	Ant1	-19.34	8	Pass
NVNT	BLE 1M	2440	Ant1	-19.74	8	Pass
NVNT	BLE 1M	2480	Ant1	-20.84	8	Pass





Band	Edge					
Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-52.34	-20	Pass
NVNT	BLE 1M	2480	Ant1	-50.95	-20	Pass

		Ban	d Edge N	Test G VNT BLE		MHz Ant1	Ref		
Spectrum		2.4.1							Ē
Ref Level		n Offset :	2.52 dB 👄 R	BW 100 kHz	2				( <sup>Δ</sup>
Att SGL Count 1	30 d	B SWT	1 ms 🛑 🎙	<b>'BW</b> 300 kHz	2 Mode 9	Sweep			
●1Pk Max	100/100								
					М	1[1]		0.400	-3.22 dBm
10 dBm								2.402	19180 GHz
0 dBm					_M1				
-10 dBm									
-20 dBm					$\rightarrow$				
-30 dBm				/					
-40 dBm			m		V	$\gamma$			
-50 dBm			ww.			W	Maria	mm	della e
v60-88744444	Mar Mar.							n l'ar v l'ar	NWW YU YUNI
-70 dBm									
CF 2.402 GF	17			1001	nts			Sna	n 8.0 MHz
01 21102 0	1			1001		o o d u		110	21.11.2024
ate: 2′.NCV	/.2024 2		Edge NVN	IT BLE 1M	2402MH	lz Ant1 Er	nission		2019427488 //
Spectrum Ref Level	20.00 dBr	Band E	2.52 dB 👄 R	<b>BW</b> 100 kHz	2		mission	-	
Spectrum Ref Level Att SGL Count 1	20.00 dBr 30 d	Band E	2.52 dB 👄 R		2		mission		
Spectrum Ref Level Att	20.00 dBr 30 d	Band E	2.52 dB 👄 R	<b>BW</b> 100 kHz	2 2 Mode 9	Sweep	mission		( △
Spectrum Ref Level Att SGL Count 1 1Pk Max	20.00 dBr 30 d	Band E	2.52 dB 👄 R	<b>BW</b> 100 kHz	2 Mode 9	Gweep 1[1]	mission	2.402	-3.36 dBm 15000 GHz
Spectrum Ref Level Att SGL Count 1 1Pk Max	20.00 dBr 30 d	Band E	2.52 dB 👄 R	<b>BW</b> 100 kHz	2 Mode 9	Sweep	nission	2.402	-3.36 dBm 15000 GHz 57.07 dBm
Spectrum Ref Level Att SGL Count 1 1Pk Max	20.00 dBr 30 d	Band E	2.52 dB 👄 R	<b>BW</b> 100 kHz	2 Mode S	Gweep 1[1]	mission	2.402	-3.36 dBm 15000 GHz 57.07 dBm
Spectrum Ref Level Att SGL Count 1 1Pk Max	20.00 dBr 30 d	Band E	2.52 dB 👄 R	<b>BW</b> 100 kHz	2 Mode S	Gweep 1[1]	mission	2.402	-3.36 dBm 15000 GHz 57.07 dBm
Spectrum Ref Level Att SGL Count 1 IPk Max 10 dBm 0 dBm -10 dBm -20 dBm	20.00 dBr 30 d	Band E	2.52 dB 👄 R	<b>BW</b> 100 kHz	2 Mode S	Gweep 1[1]		2.402	-3.36 dBm 15000 GHz 57.07 dBm
Spectrum Ref Level Att SGL Count 1 IPk Max 10 dBm 0 dBm -10 dBm -20 dBm	20.00 dBr 30 d 100/100	Band E	2.52 dB 👄 R	<b>BW</b> 100 kHz	2 Mode S	Gweep 1[1]		2.402	-3.36 dBm 15000 GHz 57.07 dBm
Spectrum Ref Level Att SGL Count 1 IPk Max 10 dBm 0 dBm -10 dBm -20 dBm -30 dBm	20.00 dBr 30 d 100/100	Band E	2.52 dB 👄 R	<b>BW</b> 100 kHz	2 Mode S	Gweep 1[1]		2.402	-3.36 dBm 15000 GHz 57.07 dBm
Spectrum Ref Level Att SGL Count 1 IPk Max 10 dBm -10 dBm -20 dBm -30 dBm -40 dBm	20.00 dBr 30 d 100/100	Band E	2.52 dB 👄 R	<b>BW</b> 100 kHz	2 Mode S	Gweep 1[1]		2.402	-3.36 dBm 15000 GHz 57.07 dBm 000000,9Hz
Spectrum Ref Level Att SGL Count 1 IPk Max 10 dBm -10 dBm -20 dBm -20 dBm -40 dBm -50 dBm	20.00 dBr 30 d 100/100	Band E	2.52 dB	<b>BW</b> 100 kHz	2 Mode s M	Sweep 1[1] 2[1]		2.402	-3.36 dBm 15000 GHz 57.07 dBm
Spectrum Ref Level Att SGL Count 1 IPk Max 10 dBm -10 dBm -20 dBm -30 dBm -40 dBm	20.00 dBr 30 d 100/100	Band E	2.52 dB	28W 100 kHz 78W 300 kHz	2 Mode s M	Sweep 1[1] 2[1]		2.402	-3.36 dBm -315000 GHz 57.07 dBm 00000Q <sub>1</sub> CHz
Spectrum Ref Level Att SGL Count 1 SGL Count 1 ID dBm 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -30 dBm -70 dBm -70 dBm -70 dBm -70 dBm	20.00 dBr 30 d 100/100	Band E	2.52 dB	28W 100 kHz 28W 300 kHz	2 2 Mode s M M	Sweep 1[1] 2[1]		2.402 - 2.400	-3.36 dBm 215000 GHz 57.07 dBm 00000Q,gCHz
Spectrum Ref Level Att SGL Count 1 SGL Count 1 IPk Max 10 dBm -10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -70 dBm -50 dBm -70 dBm -70 dBm Start 2.306	20.00 dBr 30 d 100/100	Band E	2.52 dB	28W 100 kHz 78W 300 kHz	2 2 Mode s M M	Sweep 1[1] 2[1]		2.402 - 2.400	-3.36 dBm -315000 GHz 57.07 dBm 000000,gHz
Spectrum           Ref Level           Att           SGL Count 1           SGL Count 1           1Pk Max           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -70 dBm           -70 dBm           Start 2.306	20.00 dBr 30 d 100/100 01 -23.210	Band E	2.52 dB 1 ms 1 ms 1	28W 100 kH2 28W 300 kH2	2 Mode s M M M	Sweep 1[1] 2[1]	arandian daglaa	2.402 2.400	-3.36 dBm 15000 GHz 57.07 dBm 000000,GHz
Ref Level           Att           SGL Count 1           SGL Count 1           SGL Count 1           IPk Max           10 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm           -70 dBm           Start 2.306           Marker           Type         Ref	20.00 dBr 30 d 100/100 01 -23.210 01 -23.210 01 -23.210 01 -23.210	Band E	2.52 dB 1 ms 1 m	2BW 100 kHz /BW 300 kHz /BW 300 kHz /BW 300 kHz /BW 300 kHz /BW 300 kHz /BW 100 kHz /BW 100 kHz /BW 300 kHz /BW 3	2 2 Mode S M M M 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Sweep 1[1] 2[1]	arandian daglaa	2.402 - 2.400	-3.36 dBm 15000 GHz
Spectrum Ref Level Att SGL Count 1 SGL Cou	20.00 dBr 30 d 100/100 01 -23.210 Uyhyhyhyka GHz	Band E	2.52 dB   Ims   V	BW 100 kH; BW 300 kH;	2 2 Mode S M M M Pts Func m	Sweep 1[1] 2[1]	arandian daglaa	2.402 2.400	-3.36 dBm 15000 GHz

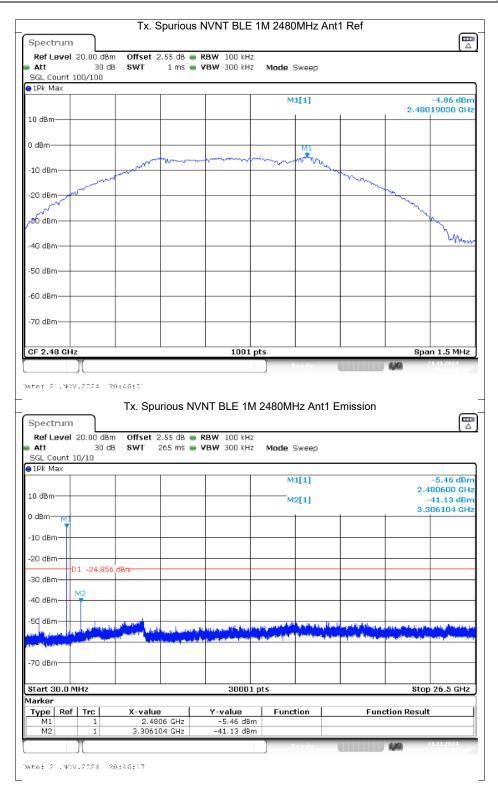
	Ban	a Eage N	VNT BLE	11/1 2480		Rei		_
Spectrum								
Ref Level 20.00 di Att 30			BW 100 kHz BW 300 kHz		Sweep			
SGL Count 100/100 1Pk Max								
DIEK MAX				м	1[1]			-5.18 dBr
10 -0					1	1	2.479	92010 GH
10 dBm								
0 dBm			M1					
			No	~				
-10 dBm								
-20 dBm								
			1	\				
-30 dBm			$\left  \right $					
		~	1		m			
-40 dBm								
-50 dBm	_							
1863890000	man Mar	N.			- Wh	with	Manan	Marchan
Be getter and a second and						οr0 γ 0	10 V 10 M	1 W Mylinia
-70 dBm								
-70 dBm								
CF 2.48 GHz			1001	nte			Pa-	n 8.0 MHz
			1001		laadu		440	21.11.2024
Spectrum	Band E		T BLE 1M		lz Ant1 Er	nission		
Spectrum Ref Level 20.00 di Att 30	Band E	.55 dB 👄 R	T BLE 1M BW 100 kHz BW 300 kHz	!		mission		
Spectrum Ref Level 20.00 di Att 30 SGL Count 100/100	Band E	.55 dB 👄 R	<b>BW</b> 100 kHz	!		mission		
Spectrum Ref Level 20.00 di Att 30 SGL Count 100/100	Band E	.55 dB 👄 R	<b>BW</b> 100 kHz	Mode S		mission		-4.62 dBi
Spectrum Ref Level 20.00 dl Att 30 SGL Count 100/100 JPk Max	Band E	.55 dB 👄 R	<b>BW</b> 100 kHz	Mode s	Sweep	mission		-4.62 dBi 095000 GH
Spectrum Ref Level 20.00 di Att 30 SGL Count 100/100 1Pk Max 10 dBm	Band E	.55 dB 👄 R	<b>BW</b> 100 kHz	Mode s	Sweep 1[1]	mission		-4.62 dBr 95000 GH -57.73 dBr
Spectrum Ref Level 20.00 di Att 30 SGL Count 100/100 10k Max 10 dBm	Band E	.55 dB 👄 R	<b>BW</b> 100 kHz	Mode s	Sweep 1[1]	mission		-4.62 dBr 95000 GH -57.73 dBr
Spectrum Ref Level 20.00 di Att 30 SGL Count 100/100 1Pk Max 10 dBm -10 dBm	Band E	.55 dB 👄 R	<b>BW</b> 100 kHz	Mode s	Sweep 1[1]			-4.62 dBr 95000 GH -57.73 dBr
Spectrum Ref Level 20.00 di Att 30 SGL Count 100/100 1Pk Max 10 dBm 0 dBm -10 dBm -20 dBm	Band E Bm Offset 2 dB SWT	.55 dB 👄 R	<b>BW</b> 100 kHz	Mode s	Sweep 1[1]			-4.62 dBr 95000 GH -57.73 dBr
Spectrum Ref Level 20.00 di Att 30 SGL Count 100/100 1Pk Max 10 dBm 0 dBm -10 dBm -20 dBm D1 -25.11	Band E Bm Offset 2 dB SWT	.55 dB 👄 R	<b>BW</b> 100 kHz	Mode s	Sweep 1[1]			-4.62 dBr 95000 GH -57.73 dBr
Spectrum Ref Level 20.00 di Att 30 SGL Count 100/100 1Pk Max 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm -20 dBm -20 dBm	Band E Bm Offset 2 dB SWT	.55 dB 👄 R	<b>BW</b> 100 kHz	Mode s	Sweep 1[1]			-4.62 dBr 95000 GH -57.73 dBr
Spectrum Ref Level 20.00 di Att 30 SGL Count 100/100 1Pk Max 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm -40 dBm	Band E Bm Offset 2 dB SWT	.55 dB 👄 R	<b>BW</b> 100 kHz	Mode s	Sweep 1[1]			-4.62 dBr 95000 GH -57.73 dBr
Spectrum Ref Level 20.00 di Att 30 SGL Count 100/100 1Pk Max 10 dBm -10 dBm -20 dBm -20 dBm -20 dBm -30 dBm -50 dBm -50 dBm	Band E	2.55 dB • R 1 ms • V	BW 100 kHz BW 300 kHz	: Mode s M	Sweep 1[1] 2[1]		2.485	-4.62 dBi 995000 GH 57.73 dBi 950000 GH
Spectrum Ref Level 20.00 di Att 30 SGL Count 100/100 1Pk Max 10 dBm 0 dBm -10 dBm -20 dBm -20 dBm -20 dBm -20 dBm -30 dBm -30 dBm -50 dBm	Band E	1 ms • V	<b>BW</b> 100 kHz	: Mode s M	Sweep 1[1] 2[1]		2.485	-4.62 dBi
Spectrum Ref Level 20.00 di Att 30 SGL Count 100/100 1Pk Max 10 dBm -10 dBm -20 dBm -20 dBm -30 dBm -30 dBm -50 dBm -50 dBm -50 dBm	Band E	1 ms • V	BW 100 kHz BW 300 kHz	: Mode s M	Sweep 1[1] 2[1]		2.485	-4.62 dBi 995000 GH 57.73 dBi 950000 GH
Spectrum Ref Level 20.00 di Att 30 SGL Count 100/100 IPk Max 0 dBm 0 dBm -10 dBm -20 dBm 01 -25.11 -30 dBm -50 dBm -50 dBm -50 dBm -70 dBm -70 dBm -70 dBm -70 dBm	Band E	1 ms • V	BW 100 kHz	: Mode ։    	Sweep 1[1] 2[1]		2.485	-4.62 dBr 995000 GH 57.73 dBr 950000 GH
Spectrum Ref Level 20.00 di Att 30 SGL Count 100/100 IPk Max 10 dBm 0 dBm -10 dBm -20 dBm -10 dBm -20 dBm -10 dBm -70	Band E	1 ms • V	BW 100 kHz BW 300 kHz	: Mode ։    	Sweep 1[1] 2[1]		2.485	-4.62 dBr 995000 GH 57.73 dBr 950000 GH
Att         30           SGL Count 100/100           SIR Count 100/100           IPk Max           10 dBm           0 dBm           -10 dBm           -20 dBm           -30 dBm           -30 dBm           -50 dBm           -50 dBm           -50 dBm           -50 dBm           -70 dBm	Band E	2.55 dB • R 1 ms • V	BW 100 kHz BW 300 kHz	: Mode s 	Sweep 1[1] 2[1]		2.485	2.576 GHz
Spectrum           Ref Level 20.00 di           Att 30           SGL Count 100/100           IPk Max           10 dBm           -0 dBm           -10 dBm           -20 dBm           -30 dBm           -40 dBm           -50 dBm           -70 dBm           -70 dBm           -70 dBm           -70 dBm           -70 dBm	Band E	1 ms • V	BW 100 kHz	: Mode : 	Sweep 1[1] 2[1]		2.483	-4.62 dBr 195000 GH 57.73 dBr 150000 GH
Spectrum           Ref Level         20.00 di           Att         30           SGL Count         100/100           IPK Max         10           IO dBm         0           -10 dBm         -01           -20 dBm         01           -30 dBm         -01           -40 dBm         -01           -50 dBm         -01           -50 dBm         -01           -50 dBm         -01           -50 dBm         -01           -70 dBm         -70 dBm           -70 dBm         -70 dBm           -70 dBm         -70 dBm           -70 dBm         -70 dBm	Band E	2.55 dB • R 1 ms • V	BW 100 kHz BW 300 kHz	: Mode א א א יייין איייייייייייייייייייייייייי	Sweep 1[1] 2[1]		2.483	-4.62 dBr 195000 GH 57.73 dBr 150000 GH

# **Conducted RF Spurious Emission**

Condition	Mode	Frequency (MHz)	Antenna	Max Value (dBc)	Limit (dBc)	Verdict
NVNT	BLE 1M	2402	Ant1	-33.75	-20	Pass
NVNT	BLE 1M	2440	Ant1	-35	-20	Pass
NVNT	BLE 1M	2480	Ant1	-36.27	-20	Pass

	Tx. S	purious N	Test Gr IVNT BLE	1M 2402M	Hz Ant1 F	Ref		
Spectrum								
Ref Level 20.00 dBm	n Offset 2	.52 dB 🔵 R	BW 100 kHz					(-
Att 30 de	SWT	1 ms 🛑 ۷	<b>'BW</b> 300 kHz	Mode Swe	eep			
SGL Count 100/100								
				M1[1	.1			-3.16 dBr
					-		2.401	93710 GH
10 dBm								
0 dBm			641					
	-05-	www	······ Tayo	monto	mun			
10 dBm	and the second			· ·	" more and			
and the second	Ĩ I					and the	n.	
-20 dBm							Mary	
Jul 1							~~~	k.
430 dBm								740
-40 dBm								mann
-40 dBm								
-50 dBm								
-60 dBm								
-70 dBm								
							- Sua	n 1.5 MHz
CF 2.402 GHz			1001	ots			opu	
GF 2.402 GH2		rious NVI		Read	Ant1 Emi	ssion	iya	21.11.2024
		rious NVI	NT BLE 1M	Read	Ant1 Emi	ssion	40 1	1.11.2024
ate: 21.VOV.2024 2	Tx. Spu		NT BLE 1M	Read	Ant1 Emi	ssion	4 <u>4</u> 4	1.11.2024
ste: 21.NOV.2024 2 Spectrum Ref Level 20.00 dBm Att 30 dB	Tx. Spu	.52 dB 👄 R	NT BLE 1M	2402MHz		ssion	44	1.11.2024
Spectrum Ref Level 20.00 dBn Att 30 dE SGL Count 10/10	Tx. Spu	.52 dB 👄 R	NT BLE 1M	2402MHz		ssion	490)	1.11.2024
ste: 21.NOV.2024 2 Spectrum Ref Level 20.00 dBm Att 30 dB	Tx. Spu	.52 dB 👄 R	NT BLE 1M	2402MHz	эер	ssion	496 1	11.11.2024
Spectrum Ref Level 20.00 dBn Att 30 dE SGL Count 10/10	Tx. Spu	.52 dB 👄 R	NT BLE 1M	Mode Swe	eep .]	ssion	2.4	-3.48 dBi 02070 GH
Spectrum Ref Level 20.00 dBm Att 30 dB SGL Count 10/10 1Pk Max 10 dBm	Tx. Spu	.52 dB 👄 R	NT BLE 1M	2402MHz Mode Swe	eep .]	ssion	2.4	-3.48 dBr 02070 GH 36.91 dBr
Spectrum Ref Level 20.00 dBn Att 30 dE SGL Count 10/10 1Pk Max	Tx. Spu	.52 dB 👄 R	NT BLE 1M	Mode Swe	eep .]	ssion	2.4	-3.48 dBr 02070 GH 36.91 dBr
Spectrum Ref Level 20.00 dBm Att 30 dB SGL Count 10/10 1Pk Max 10 dBm	Tx. Spu	.52 dB 👄 R	NT BLE 1M	Mode Swe	eep .]	ssion	2.4	-3.48 dBr 02070 GH 36.91 dBr
Spectrum Ref Level 20.00 dBm Att 30 dB SGL Count 10/10 1Pk Max 10 dBm -10 dBm	Tx. Spu	.52 dB 👄 R	NT BLE 1M	Mode Swe	eep .]	ssion	2.4	-3.48 dBr 02070 GH 36.91 dBr
Spectrum Ref Level 20.00 dBm Att 30 dB SGL Count 10/10 1Pk Max 10 dBm -10 dBm	Tx. Spu	.52 dB 👄 R	NT BLE 1M	Mode Swe	eep .]	ssion	2.4	-3.48 dBr 02070 GH 36.91 dBr
Spectrum Ref Level 20.00 dBn Att 30 dB SGL Count 10/10 PIPk Max 10 dBm -10 dBm -20 dBm	Tx. Spu	.52 dB 👄 R	NT BLE 1M	Mode Swe	eep .]	ssion	2.4	-3.48 dBr 02070 GH 36.91 dBr
Spectrum Ref Level 20.00 dBm Att 30 dB SGL Count 10/10 1Pk Max 10 dBm -10 dBm -20 dBm	Tx. Spu	.52 dB 👄 R	NT BLE 1M	Mode Swe	eep .]	ssion	2.4	-3.48 dBr 02070 GH 36.91 dBr
ate: 2'. VOV.2024 2         Spectrum         Ref Level 20.00 dBm         Att 30 dE         SGL Count 10/10         IPk Max         10 dBm         -10 dBm         -20 dBm         -30 dBm         -30 dBm	Tx. Spu	.52 dB 👄 R	NT BLE 1M	Mode Swe	eep .]	ssion	2.4	-3.48 dBr 02070 GH 36.91 dBr
Spectrum Ref Level 20.00 dBm Att 30 dB SGL Count 10/10 1Pk Max 10 dBm -10 dBm -20 dBm	Tx. Spu	.52 dB • R 265 ms • V	NT BLE 1M	Mode Swe			2.4	-3.49 dBi 02070 CH 36.91 dBi 01988 CH
ate: 2'. VOV.2024 2         Spectrum         Ref Level 20.00 dBm         Att 30 dB         SGL Count 10/10         IPk Max         10 dBm         -10 dBm         -20 dBm         -30 dBm         -40 dBm	Tx. Spu	.52 dB 👄 R	NT BLE 1M	Mode Swe			2.4 	-3.48 dBi 02070 GH 36.91 dBi 01988 GH
ate: 2'. VOV.2024 2         Spectrum         Ref Level 20.00 dBm         Att 30 dB         SGL Count 10/10         IPk Max         10 dBm         -10 dBm         -20 dBm         -30 dBm         -40 dBm	Tx. Spu	.52 dB • R 265 ms • V	NT BLE 1M	Mode Swe			2.4 	-3.48 dBr 02070 GH 36.91 dBr 01988 GH
ate: 2'. VOV.2024 2         Spectrum         Ref Level 20.00 dBm         Att 30 dB         SGL Count 10/10         IPk Max         10 dBm         -10 dBm         -20 dBm         -30 dBm         -40 dBm	Tx. Spu	.52 dB • R 265 ms • V	NT BLE 1M	Mode Swe			2.4 	-3.48 dBi 02070 GH 36.91 dBi 01988 GH
ate: 2'. VOV.2024     2       Spectrum	Tx. Spu	.52 dB • R 265 ms • V	NT BLE 1M	Mode Swe			2.4 	-3.48 dBi 02070 GH 36.91 dBi 01988 GH
Spectrum Ref Level 20.00 dBm Att 30 dB SGL Count 10/10 IPk Max 10 dBm -10 dBm -20 dBm -10 dBm -20 dBm	Tx. Spu	.52 dB • R 265 ms • V	NT BLE 1M	2402MHz Mode Swe M1[1 M2[1			2.4 - 3.2 -	-3.48 dBr 02070 GH 36.91 dBr 01988 GH
ate:     21. YOV.2024     2       Spectrum	Tx. Spu	.52 dB  References	NT BLE 1M	2402MHz Mode Swe M1[1 M2[1			2.4 - 3.2 	-3.48 dBr -3.48 dBr 02070 GH 36.91 dBr 01988 GH
Spectrum Ref Level 20.00 dBm Att 30 dB SGL Count 10/10 IPk Max 10 dBm -10 dBm -20 dBm -10 dBm -20 dBm	Tx. Spu	.52 dB  References	NT BLE 1M	2402MHz Mode Swe M1[1 M2[1 M2[1			2.4 - 3.2 -	-3.48 dBr -3.48 dBr 02070 GH 36.91 dBr 01988 GH
ate: 2'. NOV.2024       2         Spectrum	Tx. Spu		NT BLE 1M	2402MHz Mode Swe M1[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] M2[1 M2] M2[1 M2] M2] M2] M2] M2] M2] M2] M2]			2.4 - 3.2 	-3.49 dBr -3.49 dBr 202070 GH 36.91 dBr 01988 GH





### **END OF REPORT**