



FCC TEST REPORT

FCC ID: 2AFCB-H-03

On Behalf of

Shenzhen Longzhiyuan Technology Co., Ltd.

Trail Camera

Model No.: H-03, H-12P

Prepared for : Shenzhen Longzhiyuan Technology Co., Ltd.
Address : 2F & 5F, Bldg #2, Zhuangbian 2nd Industrial Park, Hezhou Community,
Hangcheng, Bao'an, Shenzhen City, China

Prepared By : Shenzhen Alpha Product Testing Co., Ltd.
Address : Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103,
Shenzhen, Guangdong, China

Report Number : A2202034-C01-R02
Date of Receipt : February 11, 2022
Date of Test : February 12, 2022-February 21, 2022
Date of Report : February 21, 2022
Version Number : V0

TABLE OF CONTENTS

Description	Page
1. Summary Of Standards And Results -----	6
1.1. Description of Standards and Results -----	6
2. General Information -----	7
2.1. Description of Device (EUT)-----	7
2.2. Accessories of Device (EUT) -----	8
2.3. Tested Supporting System Details -----	8
2.4. Block Diagram of connection between EUT and simulators -----	8
2.5. Test Mode Description -----	8
2.6. Test Conditions -----	8
2.7. Test Facility -----	9
2.8. Measurement Uncertainty -----	9
2.9. Test Equipment List -----	10
3. Spurious Emission -----	11
3.1. Test Limits -----	11
3.2. Test Procedure -----	11
3.3. Test Setup -----	12
3.4. Test Results -----	13
4. Power Line Conducted Emission -----	20
4.1. Test Limits -----	20
4.2. Test Procedure -----	20
4.3. Test Setup -----	20
4.4. Test Results -----	21
5. Conducted Maximum Output Power -----	23
5.1. Test limits -----	23
5.2. Test Procedure -----	23
5.3. Test Setup -----	23
5.4. Test Results -----	23
6. Peak Power Spectral Density -----	24
6.1. Test limits -----	24
6.2. Test Procedure -----	24
6.3. Test Setup -----	24
6.4. Test Results -----	24
7. Bandwidth -----	27
7.1. Test limits -----	27
7.2. Test Procedure -----	27
7.3. Test Setup -----	27
7.4. Test Results -----	27
8. Band Edge Check -----	32
8.1. Test limits -----	32
8.2. Test Procedure -----	32
8.3. Test Setup -----	32
8.4. Test Results -----	32
9. Antenna Requirement -----	35
9.1. Standard Requirement -----	35
9.2. Antenna Connected Construction -----	35

9.3. Results	35
10. Test Setup Photo	36
10.1. Photos of Radiated emission	36
10.2. Photos of Conducted Emission test.....	37
11. EUT photo.....	38

TEST REPORT DECLARATION

Applicant : Shenzhen Longzhiyuan Technology Co., Ltd.
 Address : 2F & 5F, Bldg #2, Zhuangbian 2nd Industrial Park, Hezhou Community, Hangcheng, Bao'an, Shenzhen City, China
 Manufacturer : Shenzhen Longzhiyuan Technology Co., Ltd.
 Address : 2F & 5F, Bldg #2, Zhuangbian 2nd Industrial Park, Hezhou Community, Hangcheng, Bao'an, Shenzhen City, China
 EUT Description : Trail Camera
 (A) Model No. : H-03, H-12P
 (B) Trademark : N/A

Measurement Standard Used:

**FCC Rules and Regulations Part 15 Subpart C Section 15.247
ANSI C63.10-2013**

The device described above is tested by Shenzhen Alpha Product Testing Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits both conducted and radiated emissions. The test results are contained in this test report and Shenzhen Alpha Product Testing Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

After the test, our opinion is that EUT compliance with the requirement of the above standards.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Shenzhen Alpha Product Testing Co., Ltd.

Tested by (name + signature).....: Lucas Pang
Project Engineer



Approved by (name + signature).....: Simple Guan
Project Manager



Date of issue..... : February 21, 2022

Revision History

Revision	Issue Date	Revisions	Revised By
V0	February 21, 2022	Initial released Issue	Lucas Pang

1. Summary Of Standards And Results

1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below:

Test Item	Test Requirement	Standards Paragraph	Result
Conducted Emission	FCC PART 15	15.207	P
6dB Bandwidth	FCC PART 15	15.247 (a)(2)	P
Output Power	FCC PART 15	15.247 (b)(3)	P
Radiated Spurious Emission	FCC PART 15	15.247 (c)	P
Conducted Spurious & Band Edge Emission	FCC PART 15	15.247 (d)	P
Power Spectral Density	FCC PART 15	15.247 (e)	P
Radiated Band Edge Emission	FCC PART 15	15.205	P
Antenna Requirement	FCC PART 15	15.203	P
Note:	1. P is an abbreviation for Pass. 2. F is an abbreviation for Fail. 3. N/A is an abbreviation for Not Applicable.		

2. General Information

2.1. Description of Device (EUT)

EUT	:	Trail Camera
Trade Name	:	N/A
Model No.	:	H-03, H-12P
DIFF	:	The working principle of the circuit is the same, but the PCB layout and product appearance are different. The differences between the models have been tested.
Power supply	:	DC 12V from battery or DC 12V from DC power, DC 5V from USB
Radio Technology	:	Bluetooth V5.0 LE
Operation frequency	:	2402MHz -2480MHz
Channel No.	:	40 Channels
Channel spacing	:	2MHz
Modulation	:	GFSK
Antenna Type	:	Internal Antenna, 0dBi(Max).
Software	:	V1.0
Hardware	:	V1.0
Intend use environment	:	Residential, commercial and light industrial environment

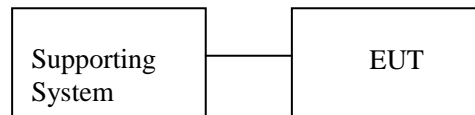
2.2. Accessories of Device (EUT)

Accessories1 : /
 Manufacturer : /
 Model : /
 Remark : /

2.3. Tested Supporting System Details

No.	Description	Manufacturer	Model	Serial Number	Certification or SDOC
1	Notebook PC	ThinkPad	E490	/	/

2.4. Block Diagram of connection between EUT and simulators



2.5. Test Mode Description

Tested mode, channel, and data rate information		
Mode	Channel	Frequency (MHz)
GFSK	Low :CH0	2402
	Middle: CH19	2440
	High: CH39	2480

2.6. Test Conditions

Items	Required	Actual
Temperature range:	15-35°C	24°C
Humidity range:	25-75%	56%
Pressure range:	86-106kPa	980kPa

2.7. Test Facility

Shenzhen Alpha Product Testing Co., Ltd
 Building i, No.2, Lixin Road, Fuyong Street, Bao'an District, 518103,
 Shenzhen, Guangdong, China

June 21, 2018 File on Federal Communication Commission
 Registration Number: 293961

July 15, 2019 Certificated by IC
 Registration Number: CN0085

2.8. Measurement Uncertainty

(95% confidence levels, k=2)

Item	Uncertainty
Uncertainty for Power point Conducted Emissions Test	2.74dB
Uncertainty for Radiation Emission test in 3m chamber (below 30MHz)	2.13 dB(Polarize: V)
	2.57dB(Polarize: H)
Uncertainty for Radiation Emission test in 3m chamber (30MHz to 1GHz)	3.77dB(Polarize: V)
	3.80dB(Polarize: H)
Uncertainty for Radiation Emission test in 3m chamber (1GHz to 25GHz)	4.13dB(Polarize: H)
	4.16dB(Polarize: V)
Uncertainty for radio frequency	5.4×10^{-8}
Uncertainty for conducted RF Power	0.37dB
Uncertainty for temperature	0.2°C
Uncertainty for humidity	1%
Uncertainty for DC and low frequency voltages	0.06%

2.9. Test Equipment List

Equipment	Manufacture	Model No.	Serial No.	Last cal.	Cal Interval
9*6*6 anechoic chamber	CHENYU	9*6*6	N/A	2020.09.02	3Year
Spectrum analyzer	ROHDE&SCHWARZ	FSV40-N	102137	2021.08.25	1 Year
Spectrum analyzer	Agilent	N9020A	MY499100060	2021.08.25	1 Year
Receiver	ROHDE&SCHWARZ	ESR	1316.3003K03-10208 2-Wa	2021.08.25	1 Year
Receiver	R&S	ESCI	101165	2021.08.25	1 Year
Bilog Antenna	Schwarzbeck	VULB 9168	VULB9168-438	2020.04.12	2Year
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D(1201)	2020.04.12	2Year
Active Loop Antenna	SCHWARZBECK	FMZB 1519B	00059	2021.08.30	2Year
RF Cable	Resenberger	Cable 1	RE1	2021.08.25	1 Year
RF Cable	Resenberger	Cable 2	RE2	2021.08.25	1 Year
RF Cable	Resenberger	Cable 3	CE1	2021.08.25	1 Year
Pre-amplifier	HP	HP8347A	2834A00455	2021.08.25	1 Year
Pre-amplifier	Agilent	8449B	3008A02664	2021.08.25	1 Year
L.I.S.N.#1	Schwarzbeck	NSLK8126	8126-466	2021.08.25	1 Year
L.I.S.N.#2	ROHDE&SCHWARZ	ENV216	101043	2021.08.25	1 Year
Horn Antenna	SCHWARZBECK	BBHA9170	00946	2021.08.30	2 Year
Preamplifier	SKET	LNPA_1840 -50	SK2018101801	2021.08.25	1 Year
Power Meter	Agilent	E9300A	MY41496628	2021.08.25	1 Year
Power Sensor	DARE	RPR3006W	15100041SNO91	2021.08.25	1 Year
Temp. & Humid. Chamber	Weihuang	WHTH-1000 -40-880	100631	2021.04.21	1 Year
Switching Mode Power Supply	JUNKE	JK12010S	20140927-6	2021.08.25	1 Year
Adjustable attenuator	MWRFtest	N/A	N/A	N/A	N/A
10dB Attenuator	Mini-Circuits	DC-6G	N/A	N/A	N/A

3. Spurious Emission

3.1. Test Limits

Frequencies (MHz)	Field Strength (micorvolts/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
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

Harmonic emissions limits comply with below 54 dBuV/m at 3m. Other emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or comply with the radiated emissions limits specified in section 15.209(a) limit in the table below has to be followed.

NOTE:

- a) The tighter limit applies at the band edges.
- b) Emission Level(dB uV/m)=20log Emission Level(uv/m)

3.2. Test Procedure

The measuring distance of 3m shall be used for measurements at frequency up to 1GH and above 1GHz, The EUT was placed on a rotating 0.8 m high above ground for below 1GHz and 1.5m high for above1GHz testing, The table was rotated 360 degrees to determine the position of the highest radiation

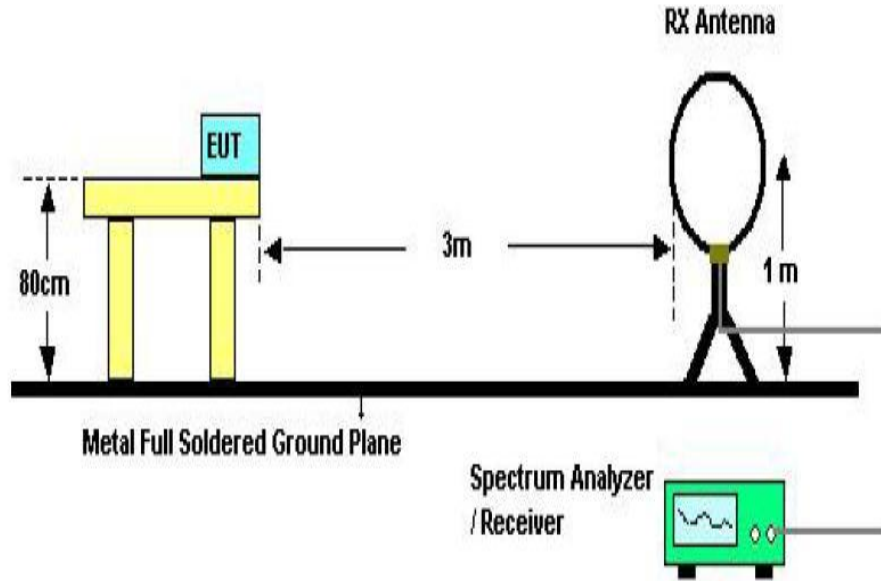
The Test antenna shall vary between 1m and 4m, Both Horizontal and Vertical antenna are set of make measurement.

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 Qusia Peak Detector mode premeasured

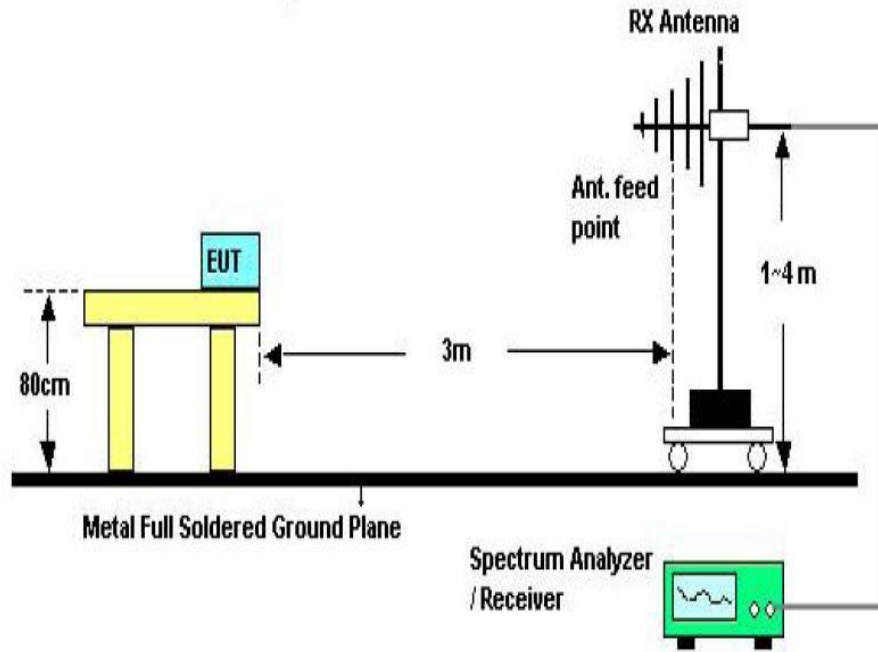
If Peak value comply with QP limit Below 1GHz.The EUT deemed to comply with QP limit. But the Peak value and average value both need to comply with applicable limit above 1GHz.

For the actual test configuration, please see the test setup photo.

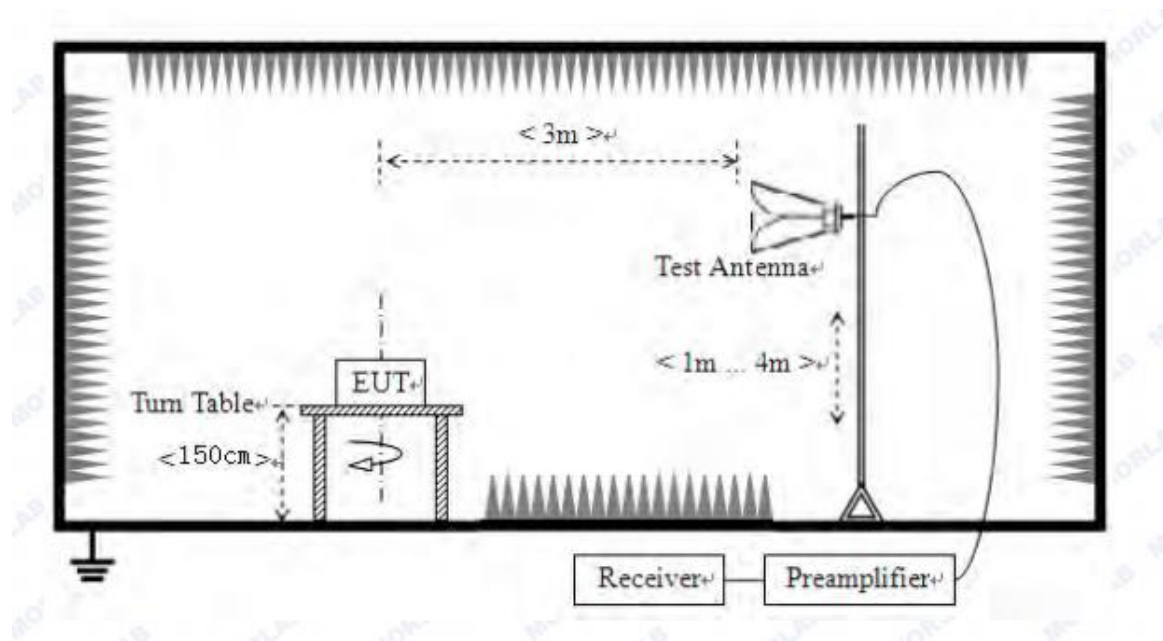
3.3. Test Setup



Below 30MHz Test Setup



Above 30MHz Test Setup



Above 1GHz Test Setup

3.4. Test Results

Test Condition

Continual Transmitting in maximum power.

9KHz~150KHz	RBW200Hz	VBW1KHz
150KHz~30MHz	RBW9KHz	VBW 30KHz
30MHz~1GHz	RBW120KHz	VBW 300KHz
Above1GHz	RBW1MHz	VBW 3MHz

We have scanned the 10th harmonic from 9 kHz to the EUT.

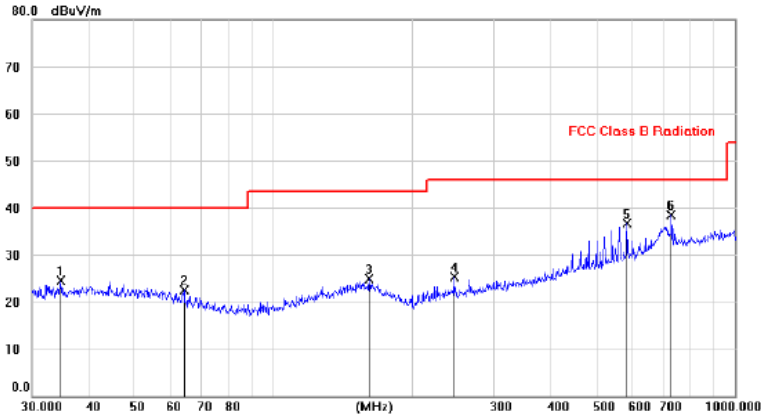
Detailed information please see the following page.

From 9KHz to 30MHz: Conclusion: PASS

Note: 1. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

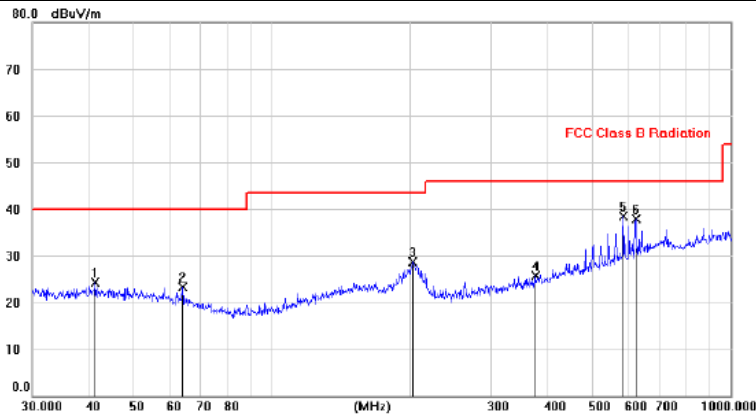
2. Only show the test data of the worst Channel in this report.

Temperature	24°C	Humidity	56%
Pol	Vertical	Test mode	BLE 2402MHz
Test Voltage	AC 120V/60Hz		
EUT	Trail Camera	Model	H-03



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Margin dB	Detector	Antenna Height cm	Table Degree	Comment
1	34.7399	10.70	13.73	24.43	40.00	-15.57	peak			
2	64.0876	10.01	12.49	22.50	40.00	-17.50	peak			
3	161.3232	10.08	14.91	24.99	43.50	-18.51	peak			
4	246.2674	12.70	12.69	25.39	46.00	-20.61	peak			
5	583.2876	16.77	19.89	36.66	46.00	-9.34	peak			
6 *	729.1026	16.39	22.13	38.52	46.00	-7.48	peak			

Pol	Horizontal
------------	------------



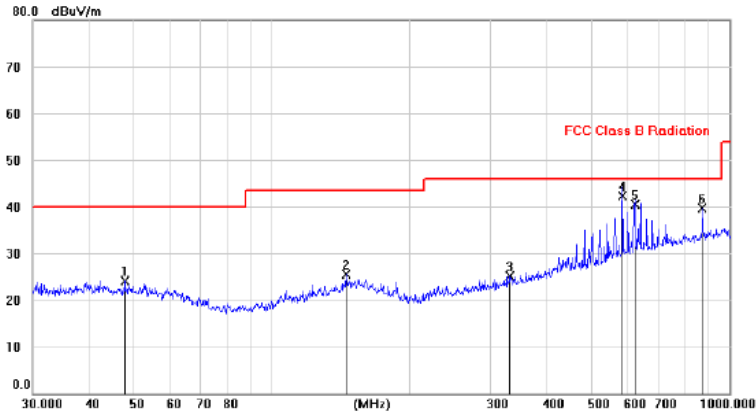
No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Margin dB	Detector	Antenna Height cm	Table Degree	Comment
1	41.1802	9.90	14.34	24.24	40.00	-15.76	peak			
2	63.8334	10.71	12.52	23.23	40.00	-16.77	peak			
3	202.4788	17.74	10.94	28.68	43.50	-14.82	peak			
4	375.6311	9.97	15.80	25.77	46.00	-20.23	peak			
5 *	583.2876	18.67	19.89	38.56	46.00	-7.44	peak			
6	620.7096	17.29	20.61	37.90	46.00	-8.10	peak			

Note:1. *Maximum data; x:Over limit; /lower margin.
 2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

C

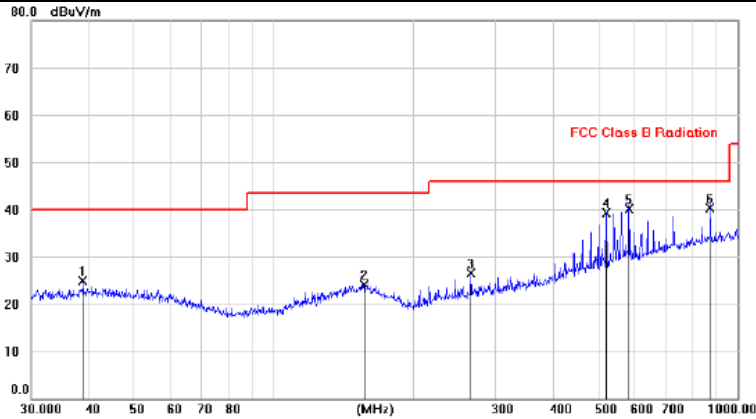
Notes: Above is below 1GHz test data. This report only show the worst case mode for TX 2402MHz

Temperature	24°C	Humidity	56%
Pol	Vertical	Test mode	BLE 2402MHz
Test Voltage	AC 120V/60Hz		
EUT	Trail Camera	Model	H-12P



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Margin dB	Detector	Antenna Height cm	Table Degree	Comment
1	47.6808	9.99	14.08	24.07	40.00	-15.93	peak			
2	145.8100	10.75	14.75	25.50	43.50	-18.00	peak			
3	332.3244	10.20	14.88	25.08	46.00	-20.92	peak			
4 *	583.2194	22.38	19.89	42.27	46.00	-3.73	QP			
5	620.7096	19.94	20.61	40.55	46.00	-5.45	QP			
6	874.9401	15.90	23.71	39.61	46.00	-6.39	peak			

Pol Horizontal



No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measurement dBuV/m	Limit dBuV/m	Margin dB	Detector	Antenna Height cm	Table Degree	Comment
1	38.8832	10.51	14.42	24.93	40.00	-15.07	peak			
2	157.0073	9.01	15.05	24.06	43.50	-19.44	peak			
3	265.9864	13.34	13.16	26.50	46.00	-19.50	peak			
4	522.1683	20.61	18.65	39.26	46.00	-6.74	peak			
5	583.2876	20.16	19.89	40.05	46.00	-5.95	QP			
6 *	874.9400	16.67	23.71	40.38	46.00	-5.62	QP			

Note:1. *Maximum data; x:Over limit; l:lower margin.
 2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

From 1G-25GHz

Test Mode: TX Low									
Freq (MHz)	Read Level (dBuV/m)	Polar (H/V)	Antenna Factor (dB/m)	Cable loss(dB)	Amp Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
4804	47.10	V	33.95	10.18	34.26	56.97	74	-17.03	PK
4804	33.95	V	33.95	10.18	34.26	43.82	54	-10.18	AV
7206	/	/	/	/	/	/	/	/	/
9608	/	/	/	/	/	/	/	/	/
4804	47.83	H	33.95	10.18	34.26	57.70	74	-16.30	PK
4804	34.41	H	33.95	10.18	34.26	44.28	54	-9.72	AV
7206	/	/	/	/	/	/	/	/	/
9608	/	/	/	/	/	/	/	/	/
Test Mode: TX Mid									
4880	45.94	V	33.93	10.20	34.29	55.78	74	-18.22	PK
4880	35.66	V	33.93	10.20	34.29	45.50	54	-8.50	AV
7320	/	/	/	/	/	/	/	/	/
9760	/	/	/	/	/	/	/	/	/
4880	47.60	H	33.93	10.20	34.29	57.44	74	-16.56	PK
4880	35.22	H	33.93	10.20	34.29	45.06	54	-8.94	AV
7320	/	/	/	/	/	/	/	/	/
9760	/	/	/	/	/	/	/	/	/
Test Mode: TX High									
4960	48.39	V	33.98	10.22	34.25	58.34	74	-15.66	PK
4960	35.92	V	33.98	10.22	34.25	45.87	54	-8.13	AV
7440	/	/	/	/	/	/	/	/	/
9920	/	/	/	/	/	/	/	/	/
4960	46.50	H	33.98	10.22	34.25	56.45	74	-17.55	PK
4960	35.16	H	33.98	10.22	34.25	45.11	54	-8.89	AV
7440	/	/	/	/	/	/	/	/	/
9920	/	/	/	/	/	/	/	/	/

Note:

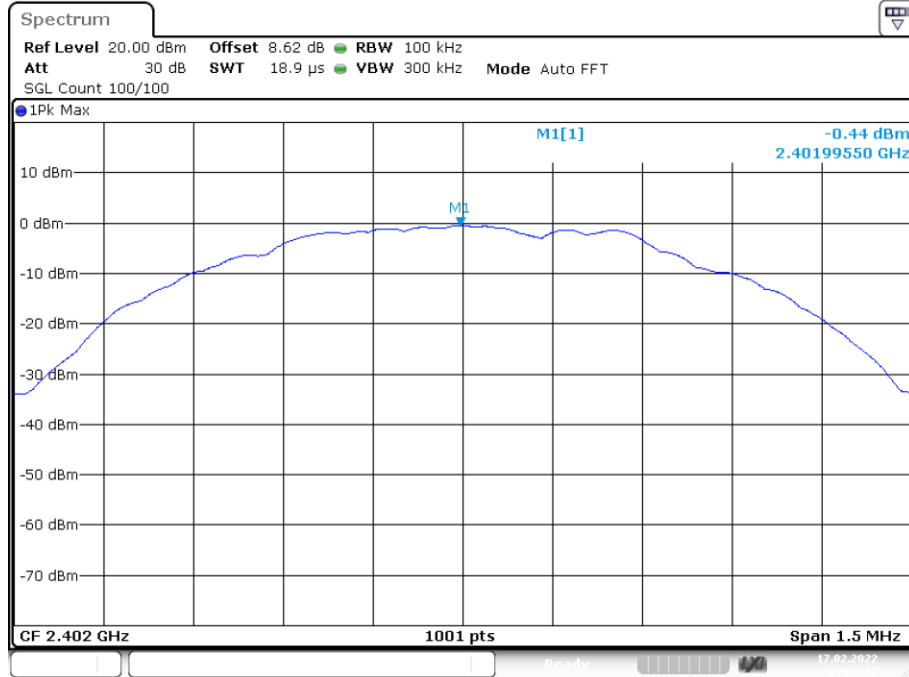
1, Result = Read level + Antenna factor + cable loss-Amp factor

2, All the other emissions not reported were too low to read and deemed to comply with FCC limit.

Note: both models have been tested, which only reflects the test data of the worst model.

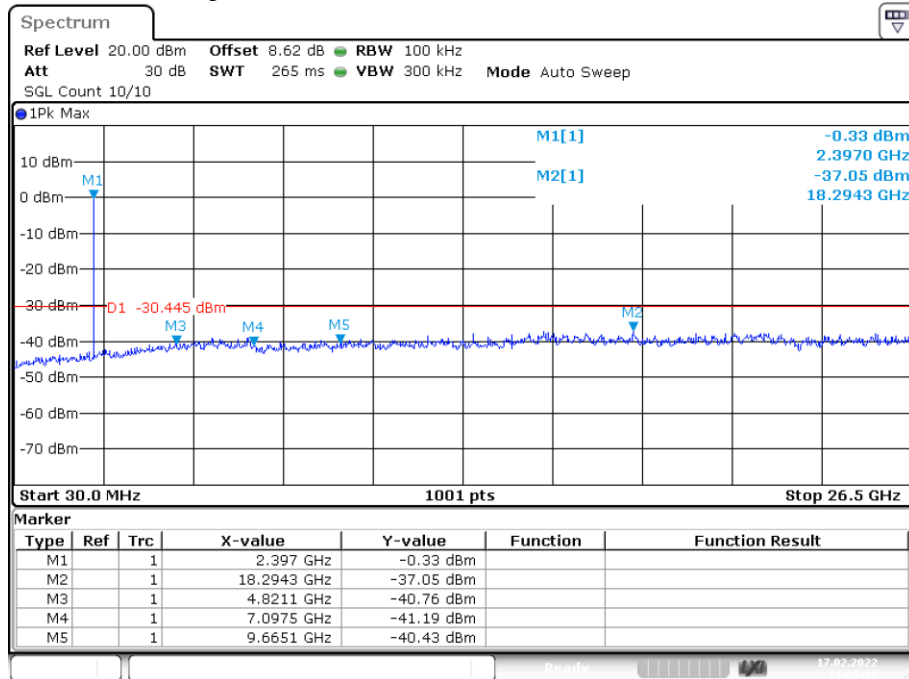
Conducted RF Spurious Emission

Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Ref



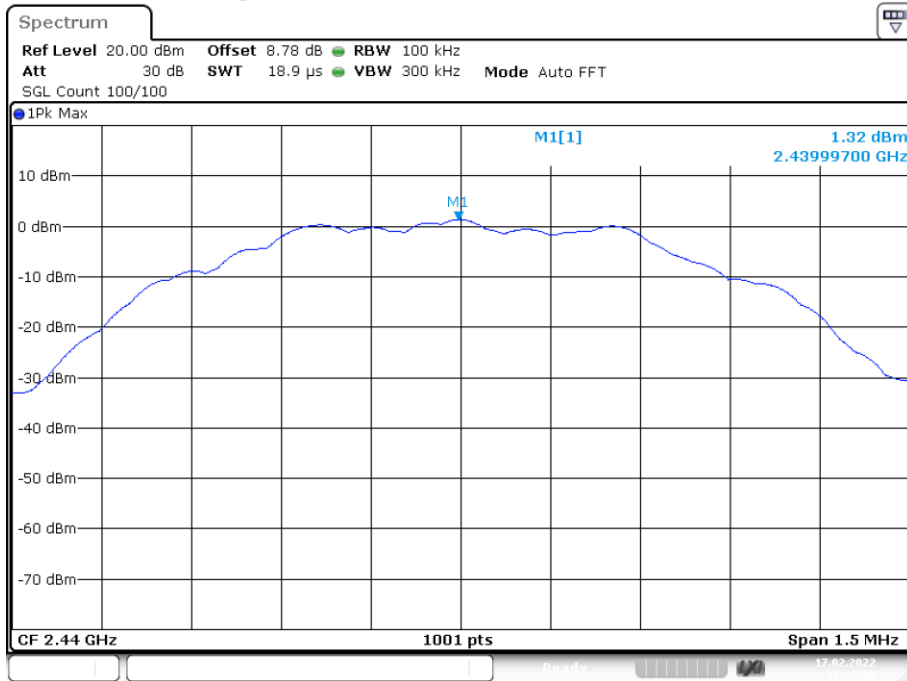
Date: 17.FEB.2022 11:06:17

Tx. Spurious NVNT BLE 1M 2402MHz Ant1 Emission



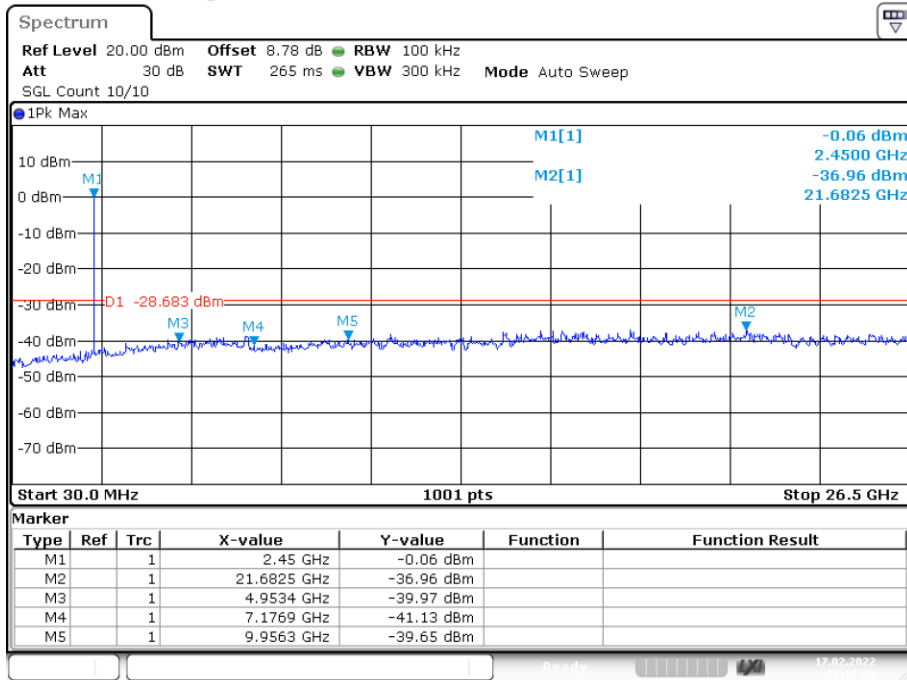
Date: 17.FEB.2022 11:06:35

Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Ref



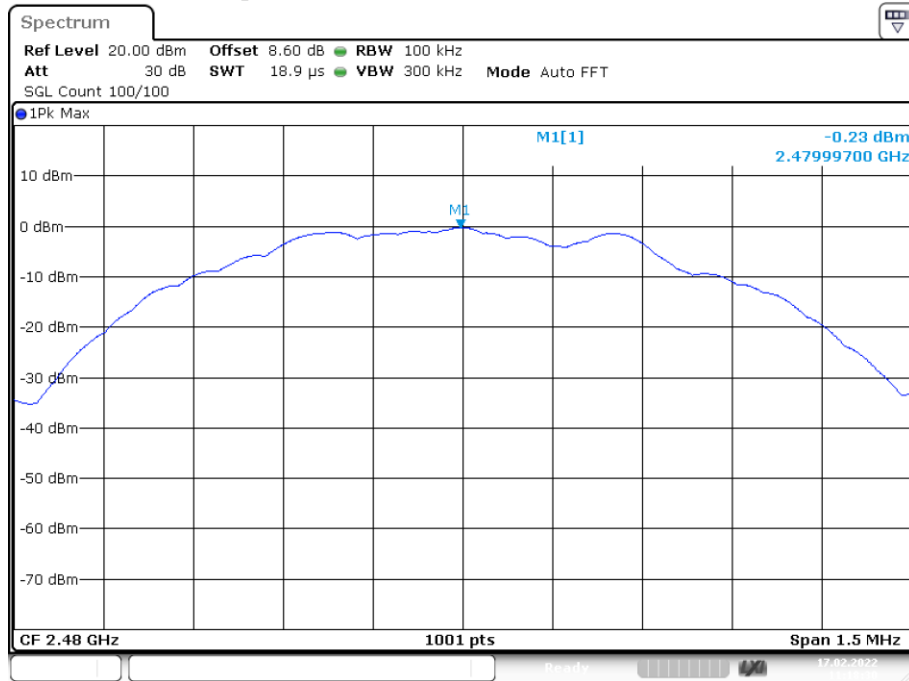
Date: 17.FEB.2022 11:17:06

Tx. Spurious NVNT BLE 1M 2440MHz Ant1 Emission

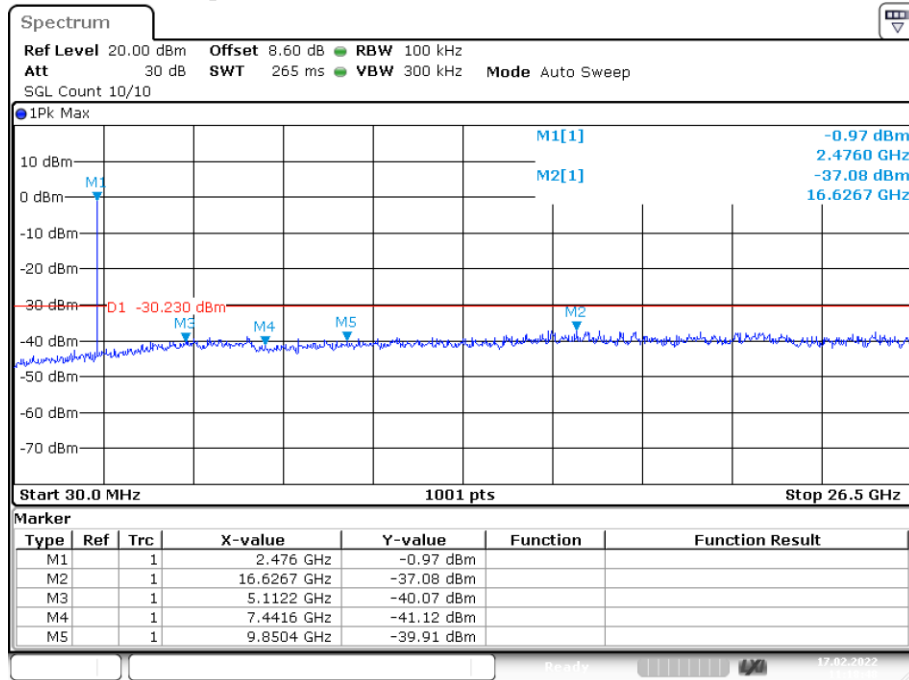


Date: 17.FEB.2022 11:17:24

Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Ref



Tx. Spurious NVNT BLE 1M 2480MHz Ant1 Emission



Note: both models have been tested, which only reflects the test data of the worst model.

4. Power Line Conducted Emission

4.1. Test Limits

Frequency MHz	Limits dB(μ V)	
	Quasi-peak Level	Average Level
0.15 -0.50	66 -56*	56 - 46*
0.50 -5.00	56	46
5.00 -30.00	60	50

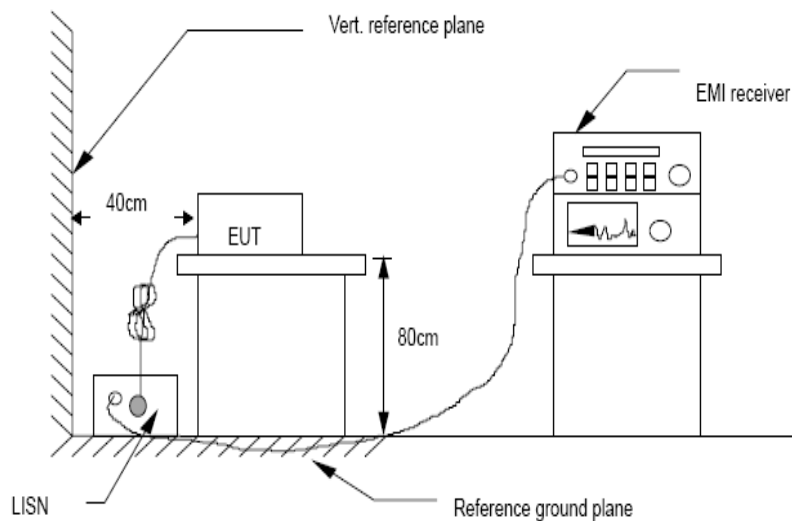
- Notes: 1. *Decreasing linearly with logarithm of frequency.
 2. The lower limit shall apply at the transition frequencies.
 3. The limit decreases in line with the logarithm of the frequency in rang of 0.15 to 0.50 MHz.

4.2. Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC lines are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to ANSI C63.10:2013 on Conducted Emission Measurement.

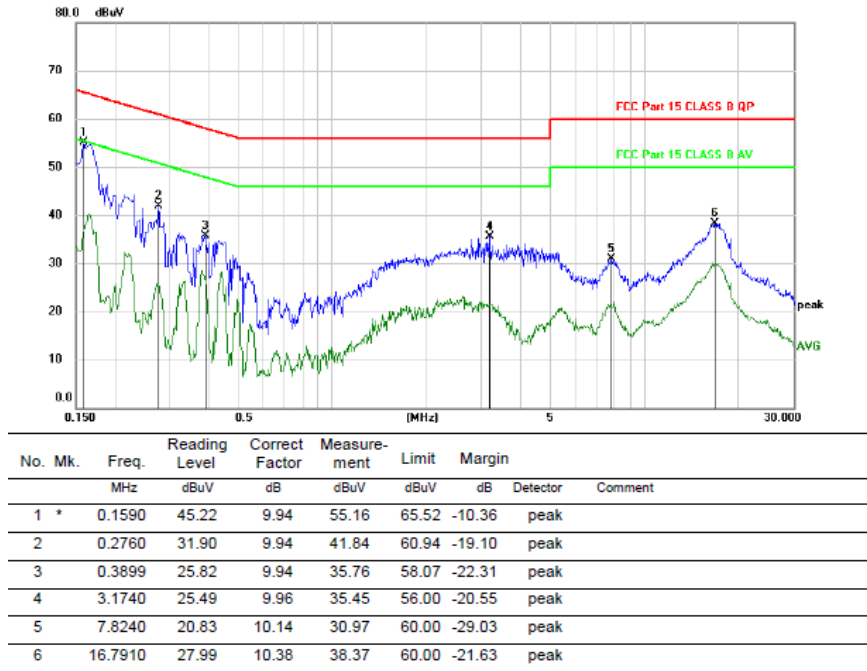
The bandwidth of test receiver is set at 9 kHz.

4.3. Test Setup

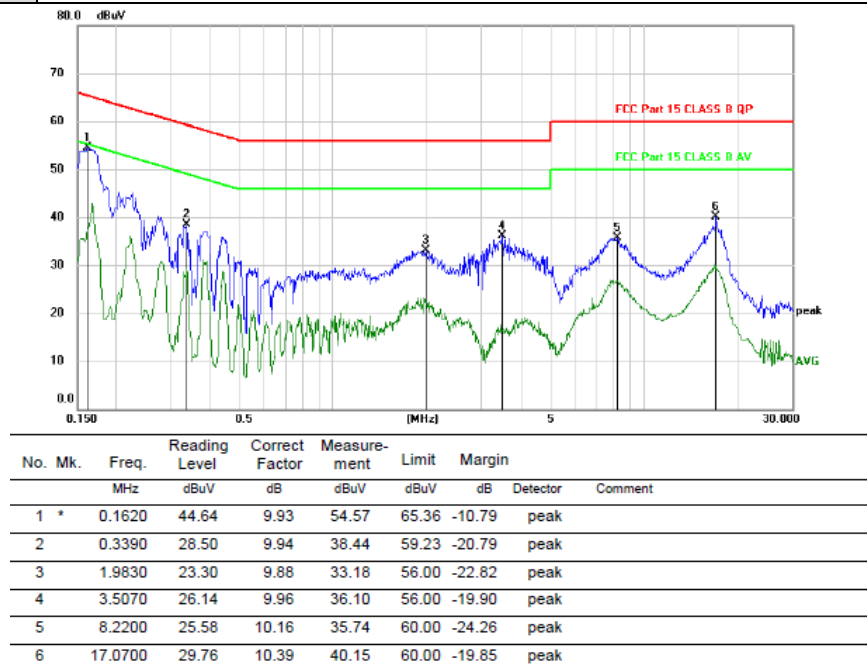


4.4. Test Results

Temperature	24°C	Humidity	56%
Pol	Line	Test mode	BLE 2402M
Test Voltage	DC 12V		
EUT	Trail Camera	Model	H-03

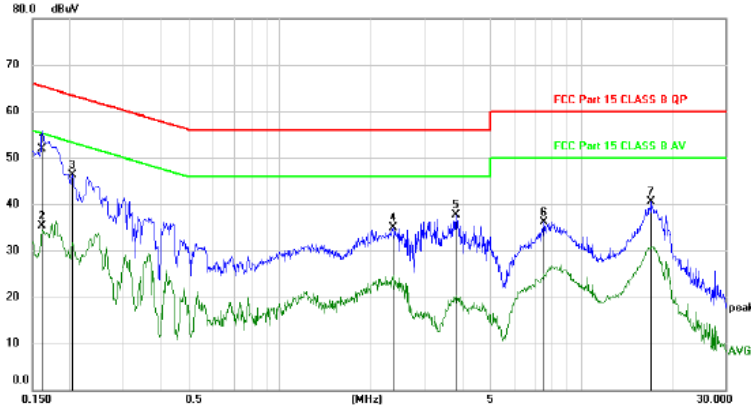


Pol	Neutral
------------	---------



Note: 1. *: Maximum data; x: Over limit; !: over margin.
 2. Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

Temperature	24°C	Humidity	56%
Pol	Line	Test mode	BLE 2402M
Test Voltage	DC 12V		
EUT	Trail Camera	Model	H-12P



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	*	0.1620	42.07	9.93	52.00	65.36	-13.36	QP	
2		0.1620	25.38	9.93	35.31	55.36	-20.05	AVG	
3		0.2040	36.36	9.92	46.28	63.45	-17.17	peak	
4		2.3699	24.98	9.90	34.88	56.00	-21.12	peak	
5		3.8310	27.73	9.96	37.69	56.00	-18.31	peak	
6		7.4970	25.91	10.13	36.04	60.00	-23.96	peak	
7		17.0459	30.17	10.39	40.56	60.00	-19.44	peak	

Pol	Neutral
------------	---------



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	*	0.1560	40.47	9.94	50.41	65.67	-15.26	QP	
2		0.1560	21.31	9.94	31.25	55.67	-24.42	AVG	
3		0.2340	35.98	9.95	45.93	62.31	-16.38	peak	
4		1.8090	23.50	9.89	33.39	56.00	-22.61	peak	
5		2.9730	26.85	9.95	36.80	56.00	-19.20	peak	
6		7.6380	23.44	10.14	33.58	60.00	-26.42	peak	
7		17.1180	29.63	10.39	40.02	60.00	-19.98	peak	

Note: 1. *:Maximum data; x:Over limit; !:over margin.
 2. Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

5. Conducted Maximum Output Power

5.1. Test limits

Please refer section RSS-247 & 15.247.

5.2. Test Procedure

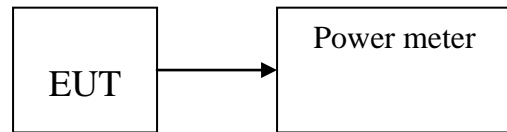
Details see the KDB 558074 D01 15.247 Meas Guidance v05r02

5.2.1 Place the EUT on the table and set it in transmitting mode.

5.2.2 Measure out each mode and each bands peak output power of EUT.

Note: The cable loss and attenuator loss were offset into measure device as amplitude offset.

5.3. Test Setup



5.4. Test Results

Model: H-03

Channel	Frequency (MHz)	PK Output Power (dBm)	PK Output Power (mW)	Limit (dBm)	Result
CH0	2402	0.826	1.209	30	Pass
CH19	2440	0.622	1.154	30	Pass
CH39	2480	0.531	1.130	30	Pass

Model: H-12P

Channel	Frequency (MHz)	PK Output Power (dBm)	PK Output Power (mW)	Limit (dBm)	Result
CH0	2402	0.814	1.206	30	Pass
CH19	2440	0.585	1.144	30	Pass
CH39	2480	0.450	1.109	30	Pass

6. Peak Power Spectral Density

6.1. Test limits

6.1.1 Please refer section RSS-247 & 15.247.

6.1.2 For direct sequence systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.

6.1.3 The direct sequence operating of the hybrid system, with the frequency hopping operation turned off, shall comply with the power density requirements of paragraph (d) of this section.

6.2. Test Procedure

Details see the KDB 558074 D01 15.247 Meas Guidance v05r02

6.2.1 Place the EUT on the table and set it in transmitting mode.

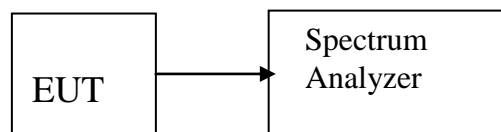
6.2.2 Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.

6.2.3 Set the spectrum analyzer as RBW = 3kHz(Set the RBW to: $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.), VBW = 10kHz(Set the VBW $\geq 3 \times \text{RBW}$), span= $1.5 \times \text{DTS bandwidth}$., detail see the test plot.

6.2.4 Record the max reading.

6.2.5 Repeat the above procedure until the measurements for all frequencies are completed.

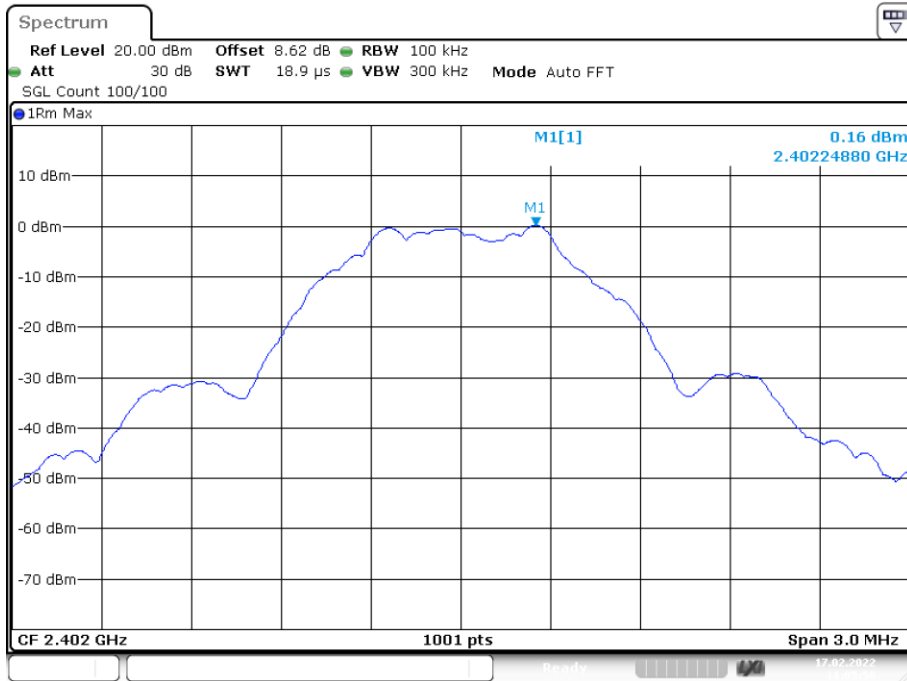
6.3. Test Setup



6.4. Test Results

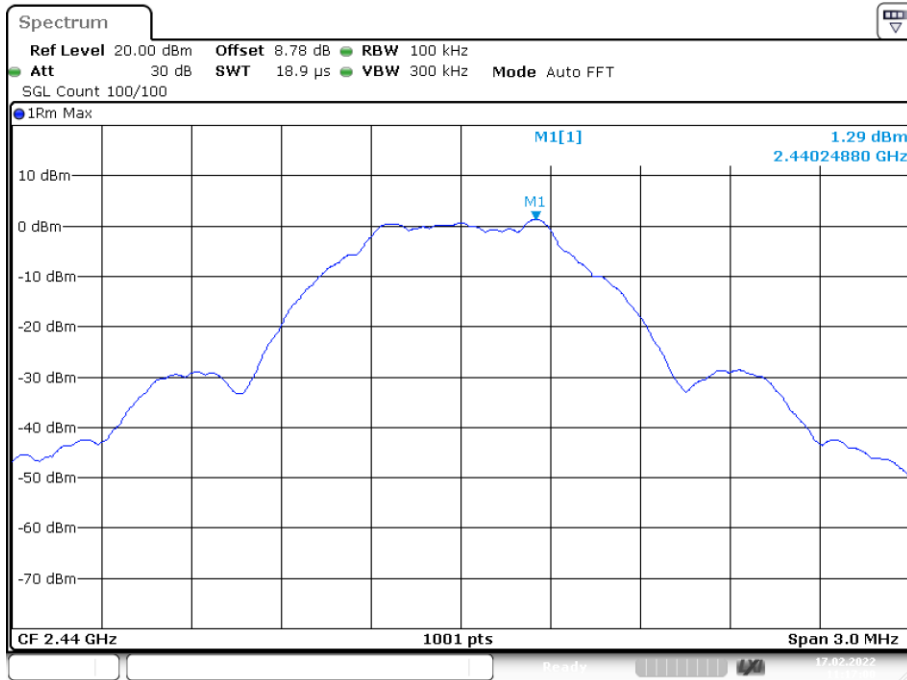
Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limit (dBm)	Result
CH0	2402	0.163	8	PASS
CH19	2440	1.285	8	PASS
CH39	2480	-0.337	8	PASS
Conclusion: PASS				

PSD NVNT BLE 1M 2402MHz Ant1

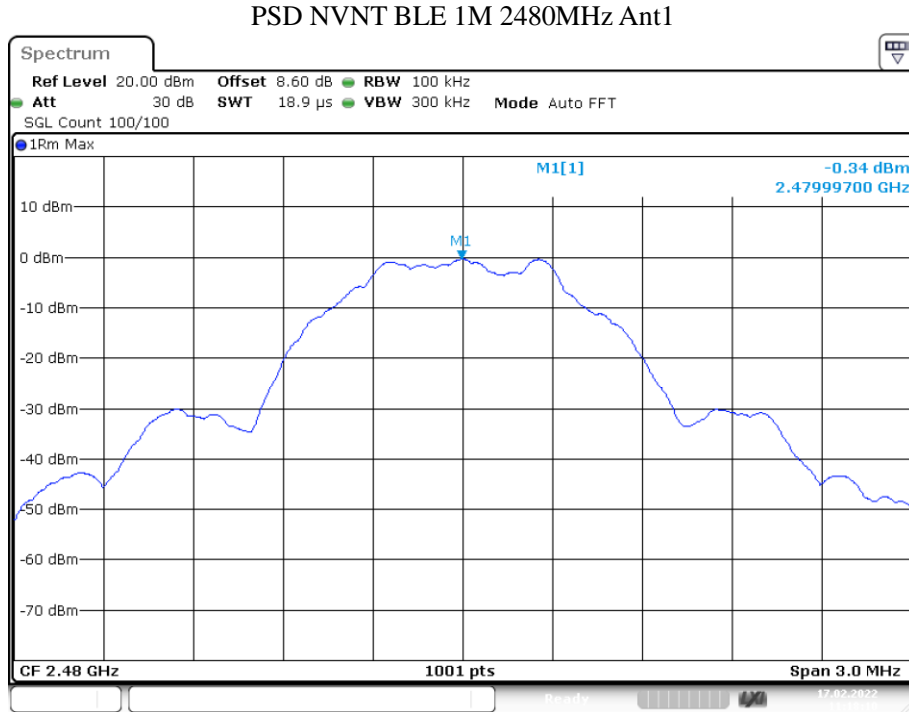


Date: 17.FEB.2022 11:05:59

PSD NVNT BLE 1M 2440MHz Ant1



Date: 17.FEB.2022 11:17:00



Date: 17.FEB.2022 11:18:10

Note: both models have been tested, which only reflects the test data of the worst model.

7. Bandwidth

7.1. Test limits

Please refer section RSS-247 & 15.247

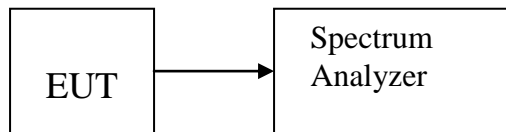
For direct sequence systems, the minimum 6dB bandwidth shall be at least 500 kHz.

7.2. Test Procedure

Details see the KDB 558074 D01 15.247 Meas Guidance v05r02

- a) The bandwidth is measured at an amplitude level reduced 20dB from the reference level. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.
- b) The test receiver set $RBW = 100\text{kHz}$, $VBW \geq 3 * RBW = 300\text{kHz}$, Sweep time set auto, detail see the test plot.

7.3. Test Setup

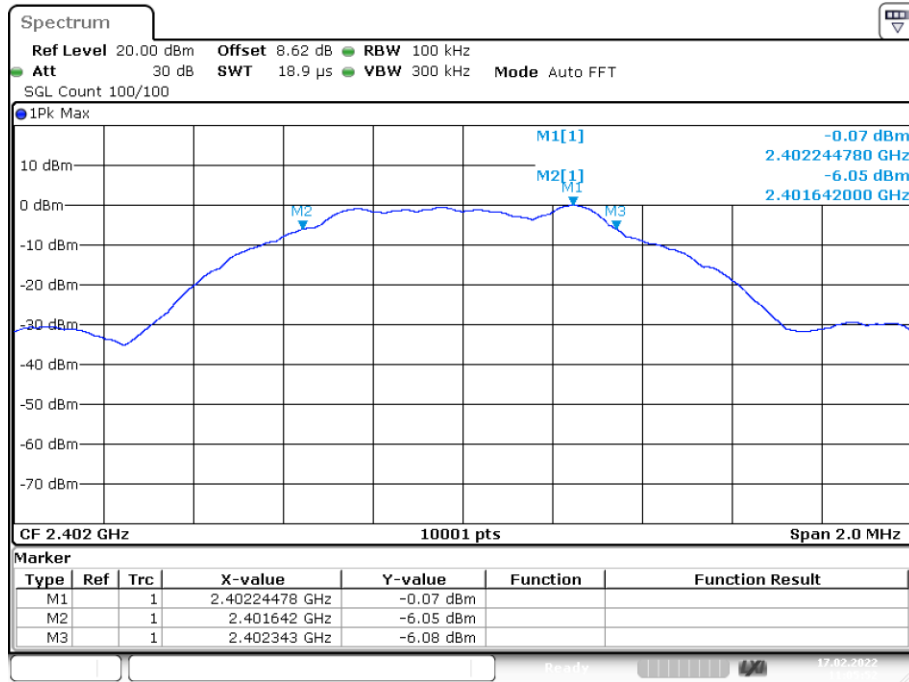


7.4. Test Results

-6dB Bandwidth

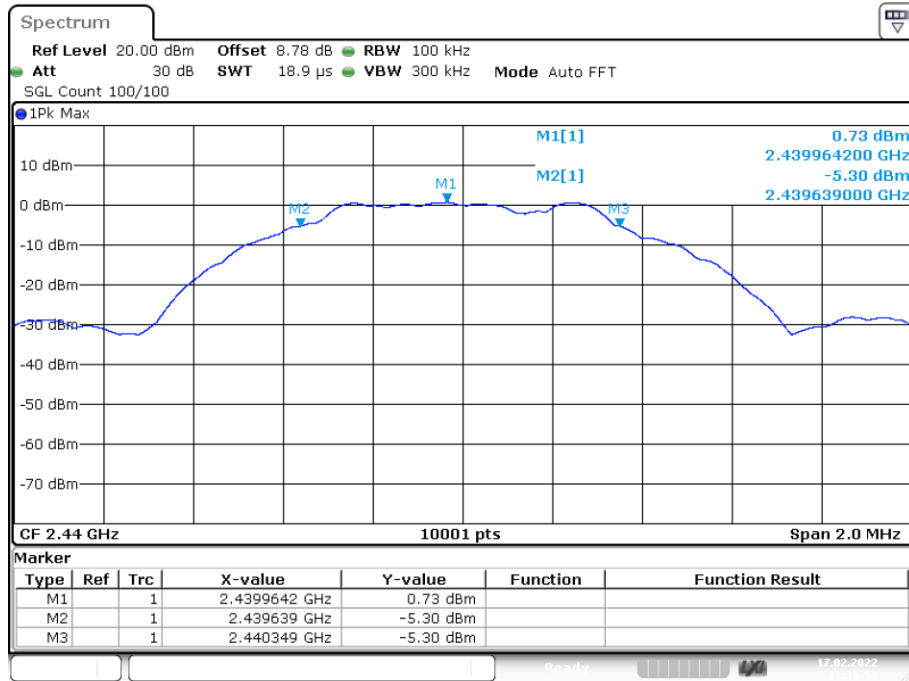
Condition	Mode	Frequency (MHz)	Antenna	-6 dB Bandwidth (MHz)	Limit -6 dB Bandwidth (MHz)	Verdict
NVNT	BLE 1M	2402	Ant1	0.701	0.5	Pass
NVNT	BLE 1M	2440	Ant1	0.710	0.5	Pass
NVNT	BLE 1M	2480	Ant1	0.702	0.5	Pass

-6dB Bandwidth NVNT BLE 1M 2402MHz Ant1



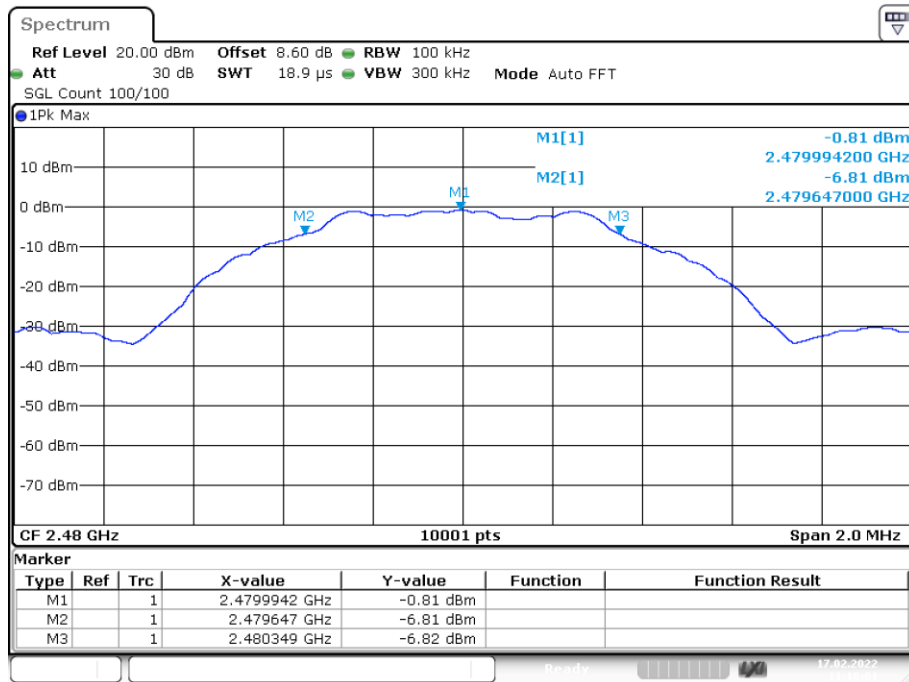
Date: 17.FEB.2022 11:05:52

-6dB Bandwidth NVNT BLE 1M 2440MHz Ant1



Date: 17.FEB.2022 11:16:52

-6dB Bandwidth NVNT BLE 1M 2480MHz Ant1



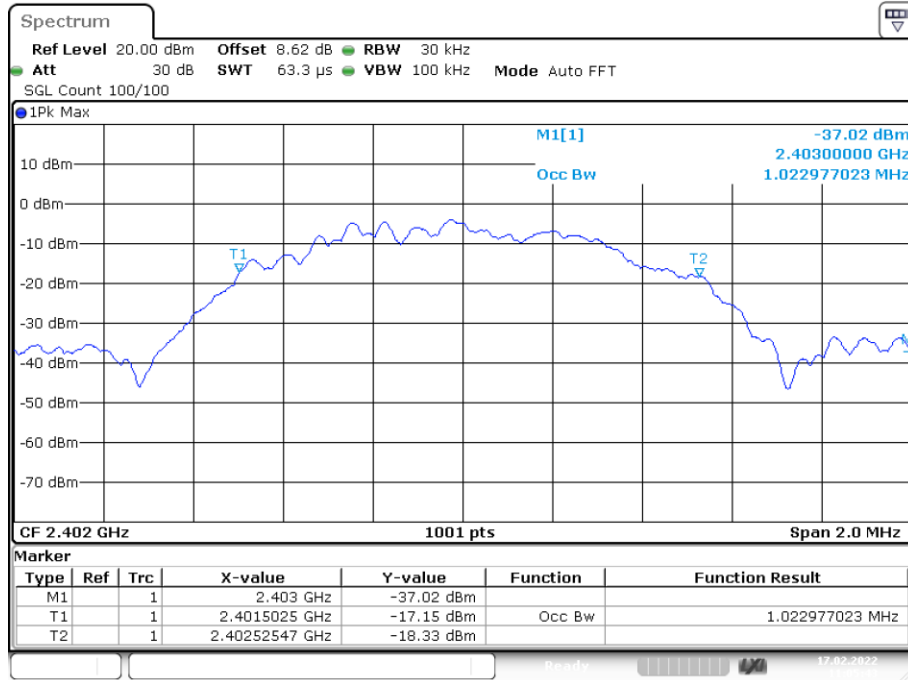
Date: 17.FEB.2022 11:18:01

Note: both models have been tested, which only reflects the test data of the worst model.

Occupied Channel Bandwidth

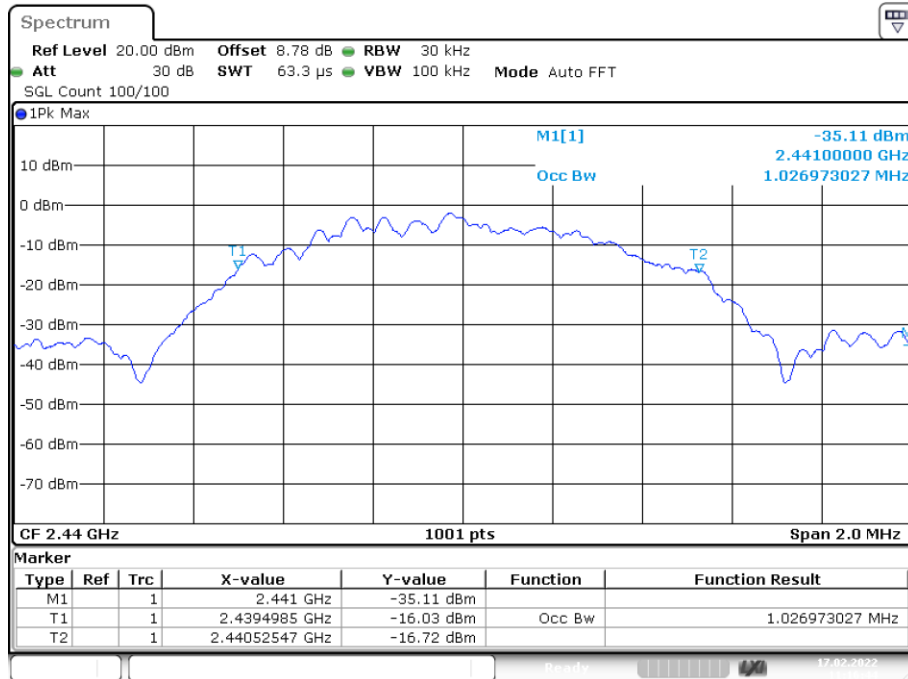
Condition	Mode	Frequency (MHz)	Antenna	99% OBW (MHz)
NVNT	BLE 1M	2402	Ant1	1.023
NVNT	BLE 1M	2440	Ant1	1.027
NVNT	BLE 1M	2480	Ant1	1.017

OBW NVNT BLE 1M 2402MHz Ant1



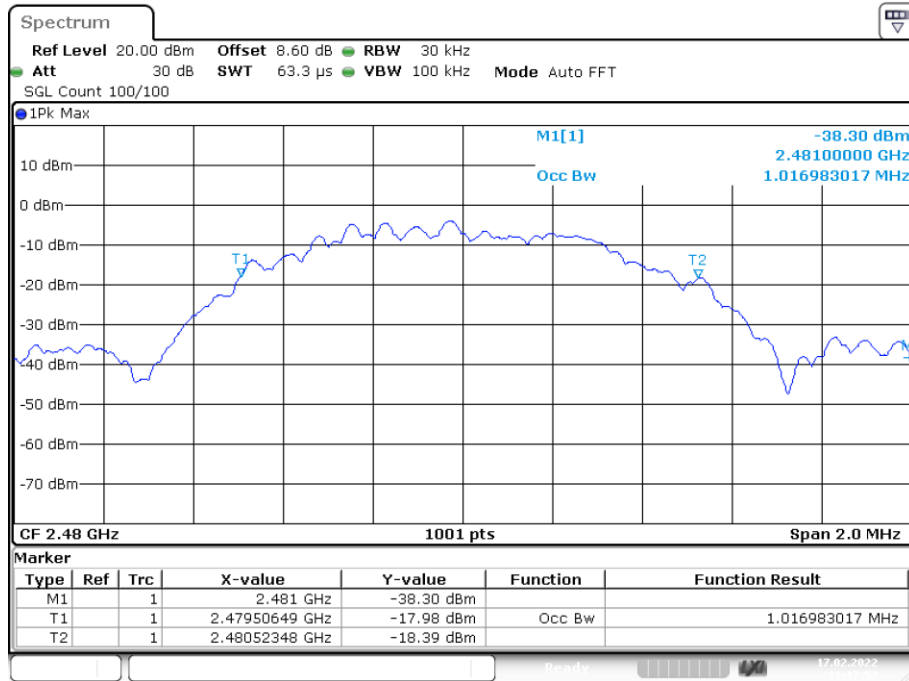
Date: 17.FEB.2022 11:05:43

OBW NVNT BLE 1M 2440MHz Ant1



Date: 17.FEB.2022 11:16:43

OBW NVNT BLE 1M 2480MHz Ant1



Date: 17.FEB.2022 11:17:51

Note: both models have been tested, which only reflects the test data of the worst model.

8. Band Edge Check

8.1. Test limits

Please refer section RSS-GEN&15.247.

8.2. Test Procedure

Details see the KDB 558074 D01 15.247 Meas Guidance v05r02

8.2.1 Put the EUT on a 0.8m high table, power on the EUT. Emissions were scanned and measured rotating the EUT to 360 degrees, Find the maximum Emission

8.2.2 Check the spurious emissions out of band.

8.2.3 RBW 1MHz ,VBW 3MHz ,peak detector for peak value , RBW 1MHz ,VBW 3MHz ,RMS detector for AV value.

8.3. Test Setup

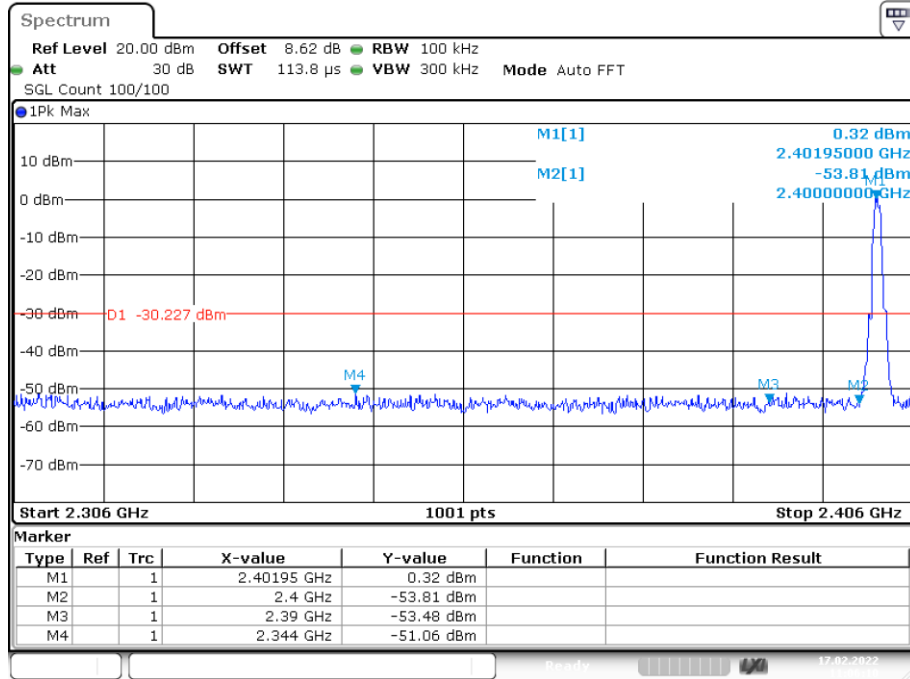
Same as 5.2.2.

8.4. Test Results

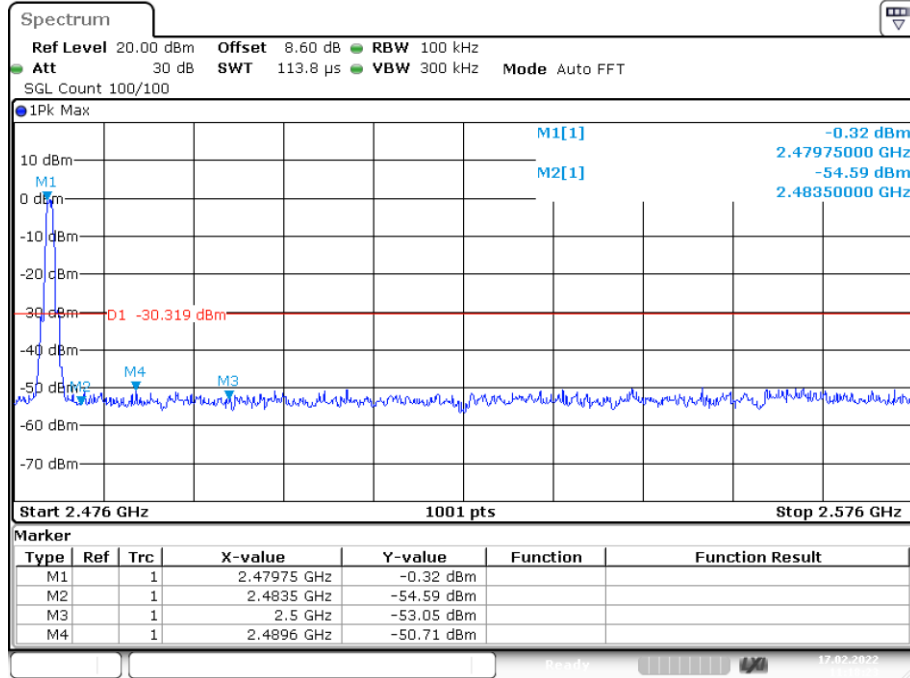
Pass

The results are shown on the next page.

Band Edge NVLT BLE 2402MHz Ant1

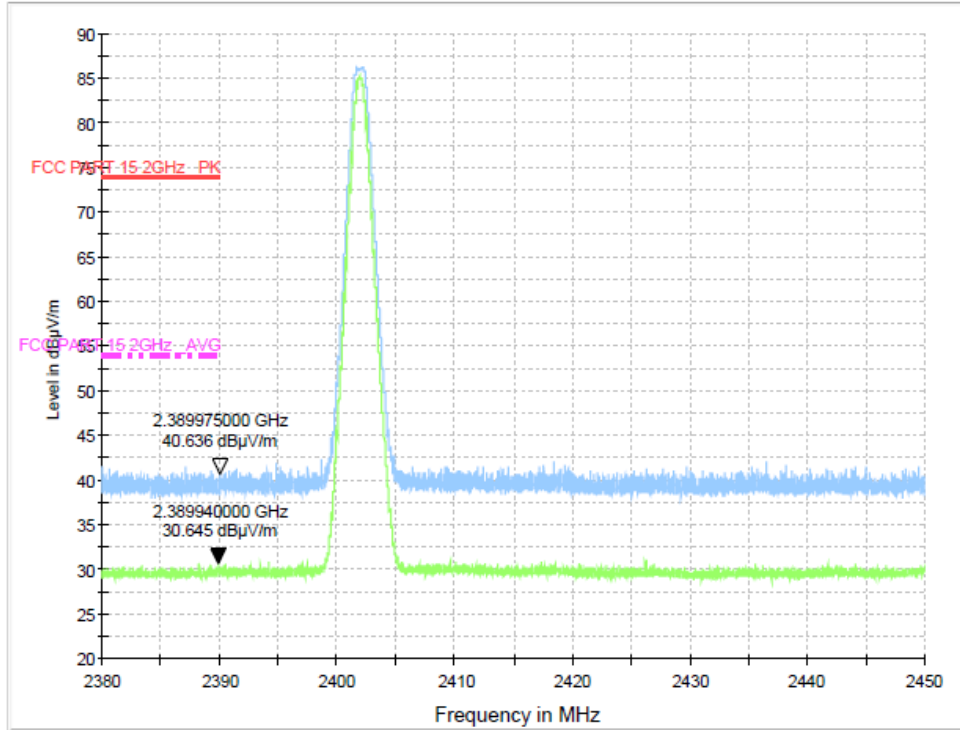


Band Edge NVLT BLE 2480MHz Ant1

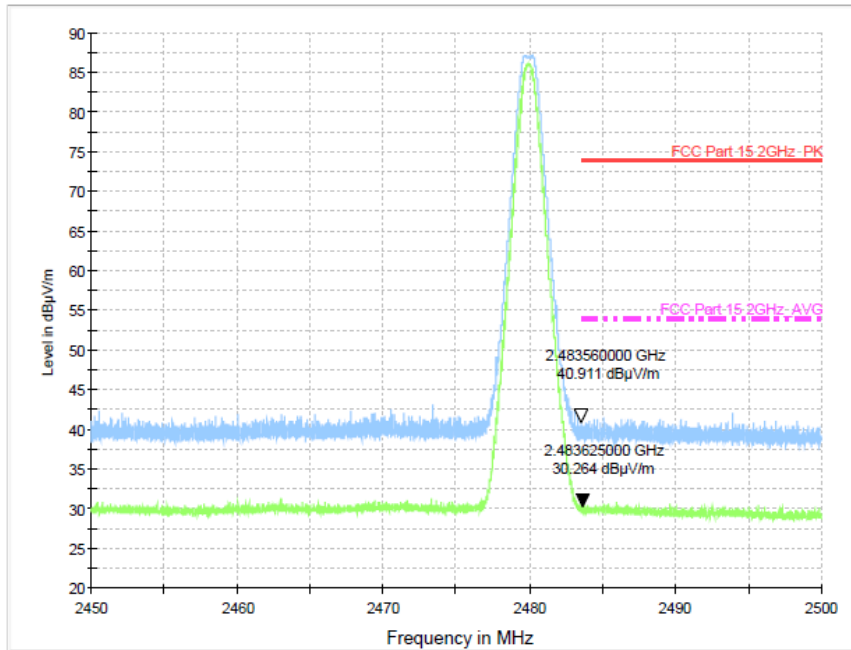


Note: both models have been tested, which only reflects the test data of the worst model.

Test channel: Lowest channel



Test channel: Highest channel



Note: both models have been tested, which only reflects the test data of the worst model.

9. Antenna Requirement

9.1. Standard Requirement

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.

9.2. Antenna Connected Construction

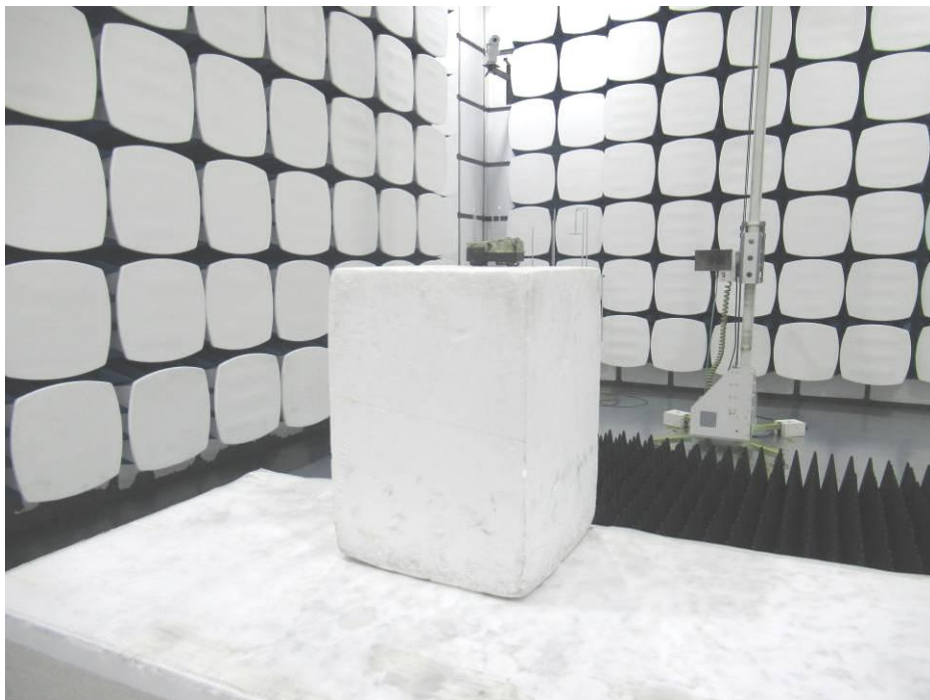
The antenna is internal antenna and no consideration of replacement. Please see EUT photo for details.

9.3. Results

The EUT antenna is Internal Antenna. It complies with the standard requirement.

10. Test Setup Photo

10.1. Photos of Radiated emission



10.2.Photos of Conducted Emission test



11.EUT PHOTO

Please refer to report A2202034-C01-R01.

-----THE END OF REPORT-----