ETSI EN 300 328 RADIO TEST REPORT

On Behalf of

Sunivision Technology Development Company Limited

Wifi camera

Model No.: See the Annex for details

Prepared for	:	Sunivision Technology Development Company Limited
Address	:	Floor 3, Building B, TaoYuan Industrial Park, Huangpu East Development Zone, Guangzhou, 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	:	A2102076-C01-R03
Date of Receipt	:	March 4, 2021
Date of Test	:	March 4, 2021 – March 12, 2021
Date of Report	:	March 12, 2021
Version Number	:	V0

TABLE OF CONTENTS

Description Page

TEST REPORT DECLARATION

Applicant	:	Sunivision Technology Development Company Limited
Address	:	Floor 3, Building B, TaoYuan Industrial Park, Huangpu East Development Zone, Guangzhou, China
Manufacturer	:	Sunivision Technology Development Company Limited
Address	:	Floor 3, Building B, TaoYuan Industrial Park, Huangpu East Development Zone, Guangzhou, China
EUT Description	:	Wifi camera
		(A) Model No. : See the Annex for details
		(B) Trademark : N/A

Measurement Standard Used:

ETSI EN 300 328 V2.2.2:2019

The device described above is tested by Shenzhen Alpha Product Testing Co., Ltd. The measurement results are contained in this test report and Shenzhen Alpha Product Testing Co., Ltd. is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the ETSI EN 300 328 requirements.

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	Lucas Pang
Approved by (name + signature)…....:	Simple Guan Project Manager	
Date of issue…… …………………..:	March 12, 2021	

SHENZHEN ALPHA PRODUCT TESTING CO.,LTD
ALPHA
ALPHA TESTING

Revision History

Revision	Issue Date	Revisions	Revised By
V0	March 12, 2021	Initial released Issue	Lucas Pang

1. General Information

1.1. Description of Device (EUT)

EUT Name	:	Wifi camera
Model No.	:	See the Annex for details
DIFF	:	There is no difference except for the appearance, shape and model name. So all the test were performed on the model AP-107W1Y-2MP-TY.
Trade Name	:	N/A
Power supply	:	DC 5V from adapter
2.4G WIFI		
Operation frequency	:	2412MHz-2472MHz for IEEE 802.11 b, g. n/HT20 2422MHz-2462MHz for IEEE 802. 11 n/HT40.
Channel No.	:	802.11b/802.11g /802.11n(HT20): 13CH 802.11(HT40): 9CH
Modulation type	:	IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK) IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) IEEE 802.11n :OFDM(64QAM, 16QAM, QPSK, BPSK)
Antenna Type	:	Internal antenna1, Maximum Gain is 1.0dBi
Software	:	V1.0
Hardware	:	V1.0
Intend use environment	:	Residential, commercial and light industrial environment

a) The type of modulation used by the equipment:

☐FHSS

■other forms of modulation

b) In case of FHSS modulation:

- In case of non-Adaptive Frequency Hopping equipment:
  The number of Hopping Frequencies:
- In case of Adaptive Frequency Hopping Equipment:
  The maximum number of Hopping Frequencies:
  The minimum number of Hopping Frequencies:
  The Dwell Time:
  The Minimum Channel Occupation Time:

c) Adaptive / non-adaptive equipment:

☐non-adaptive Equipment

■adaptive Equipment without the possibility to switch to a non-adaptive mode

☐adaptive Equipment which can also operate in a non-adaptive mode

d) In case of adaptive equipment:

The Channel Occupancy Time implemented by the equipment:

☐The equipment has implemented an LBT based DAA mechanism

- In case of equipment using modulation different from FHSS:

☐The equipment is Frame Based equipment

☐The equipment is Load Based equipment

☐The equipment can switch dynamically between Frame Based and Load Based equipment

The CCA time implemented by the equipment: .... µs

The value q as referred to in clause 4.3.2.5.2.2.2 ....

■The equipment has implemented an non-LBT based DAA mechanism

☐The equipment can operate in more than one adaptive mode

e) In case of non-adaptive Equipment:

The maximum RF Output Power (e.i.r.p.): ……….

The maximum (corresponding) Duty Cycle: …94.47. %

Equipment with dynamic behaviour, that behaviour is described here. (e.g. the different combinations of duty cycle and corresponding power levels to be declared):

f) The worst case operational mode for each of the following tests:

- RF Output Power
  DSSS
- Power Spectral Density
  DSSS
- Duty cycle, Tx-Sequence, Tx-gap
  DSSS: Duty cycle 99%
- Dwell time, Minimum Frequency Occupation & Hopping Sequence (only for FHSS equipment)

- Hopping Frequency Separation (only for FHSS equipment)

- Medium Utilisation

....

- Adaptivity & Receiver Blocking

....

- Occupied Channel Bandwidth
  DSSS

• Transmitter unwanted emissions in the OOB domain
DSSS
• Transmitter unwanted emissions in the spurious domain
DSSS
• Receiver spurious emissions
DSSS

g) The different transmit operating modes (tick all that apply):

■Operating mode 1: Single Antenna Equipment
■Equipment with only 1 antenna
☐Equipment with 2 diversity antennas but only 1 antenna active at any moment in time
☐Smart Antenna Systems with 2 or more antennas, but operating in a (legacy) mode where only 1 antenna is used. (e.g. IEEE 802.11™ [i.3] legacy mode in smart antenna systems)
☐Operating mode 2: Smart Antenna Systems - Multiple Antennas without beam forming
☐Single spatial stream / Standard throughput / (e.g. IEEE 802.11™ [i.3] legacy mode)
☐High Throughput (> 1 spatial stream) using Occupied Channel Bandwidth 1
☐High Throughput (> 1 spatial stream) using Occupied Channel Bandwidth 2
NOTE: Add more lines if more channel bandwidths are supported.
☐Operating mode 3: Smart Antenna Systems - Multiple Antennas with beam forming
☐Single spatial stream / Standard throughput (e.g. IEEE 802.11™ [i.3] legacy mode)
☐High Throughput (> 1 spatial stream) using Occupied Channel Bandwidth 1
☐High Throughput (> 1 spatial stream) using Occupied Channel Bandwidth 2
NOTE: Add more lines if more channel bandwidths are supported.

h) In case of Smart Antenna Systems:

• The number of Receive chains: ....
• The number of Transmit chains: ....
☐symmetrical power distribution
☐asymmetrical power distribution
In case of beam forming, the maximum beam forming gain: ....
NOTE: Beam forming gain does not include the basic gain of a single antenna.

i) Operating Frequency Range(s) of the equipment:

• Operating Frequency Range 1: 2412 MHz to 2472 MHz
Operating Frequency Range 2: MHz to MHz
• NOTE: Add more lines if more Frequency Ranges are supported.

j) Occupied Channel Bandwidth(s):

☐ Occupied Channel Bandwidth : ……
Occupied Channel Bandwidth 2: ……
☐ NOTE: Add more lines if more channel bandwidths are supported.

k) Type of Equipment (stand-alone, combined, plug-in radio device, etc.):

■Stand-alone
☐Combined Equipment (Equipment where the radio part is fully integrated within another type of equipment)
☐Plug-in radio device (Equipment intended for a variety of host systems)
Other ....

l) The extreme operating conditions that apply to the equipment:

Operating temperature range: -30 °C to 60 °C
Operating voltage range: DC 5V ☐AC ■DC
Details provided are for the: ■stand-alone equipment
☐combined (or host) equipment
☐test jig

m) The intended combination(s) of the radio equipment power settings and one or more antenna

assemblies and their corresponding e.i.r.p levels:

- Antenna Type

■Internal antenna
Antenna Gain: 1.0dBi
If applicable, additional beamforming gain (excluding basic antenna gain): .... dB
☐Temporary RF connector provided
☐No temporary RF connector provided

☐Dedicated Antennas (equipment with antenna connector)
☐Single power level with corresponding antenna(s)
☐Multiple power settings and corresponding antenna(s)
Number of different Power Levels: ....
Power Level 1: .... dBm
Power Level 2: .... dBm
Power Level 3: .... dBm

NOTE 1: Add more lines in case the equipment has more power levels.
NOTE 2: These power levels are conducted power levels (at antenna connector).

n) The nominal voltages of the stand-alone radio equipment or the nominal voltages of the combined (host) equipment or test jig in case of plug-in devices:

Details provided are for the: ■stand-alone equipment
☐combined (or host) equipment
☐test jig

Supply Voltage ☐AC mains State AC voltage ……
☐ DC State DC voltage : V

In case of DC, indicate the type of power source
☐Internal Power Supply
☐External Power Supply or AC/DC adapter
☐Battery: ....
■Other: DC 5V from adapter

o) Describe the test modes available which can facilitate testing:

The EUT can be into the Engineer mode for testing

p) The equipment type (e.g. Bluetooth®, IEEE 802.11™ [i.3], proprietary, etc.):

WiFi

q) If applicable, the statistical analysis referred to in clause 5.4.1 q)

Not apply

r) If applicable, the statistical analysis referred to in clause 5.4.1 r)

Not apply

s) Geo-location capability supported by the equipment:

☐Yes
☐The geographical location determined by the equipment as defined in clause 4.3.1.13.2 or clause 4.3.2.12.2 is not accessible to the user
■No

t) Describe the minimum performance criteria that apply to the equipment (see clause 4.3.1.12.3 or clause 4.3.2.11.3):

The minimum performance criterion shall be a PER less than or equal to 10 %.

The intended use of the equipment should be in the normal operation without lost the communication link or no unintentionally operation occurs.

1.2. Categorization

■ Receiver category 1

Adaptive equipment with a maximum RF output power greater than 10 dBm e.i.r.p. shall be considered as receiver category 1 equipment.

☐ Receiver category 2

Non-adaptive equipment with a Medium Utilization (MU) factor greater than 1 % and less than or equal to 10 % or adaptive equipment with a maximum RF output power of 10 Bm e.i.r.p. shall be considered as receiver category 2 equipment.

☐ Receiver category 3

Non-adaptive equipment with a maximum Medium Utilization (MU) factor of 1 % or adaptive equipment with a maximum RF output power of 0 dBm e.i.r.p. shall be considered as receiver category 3 equipment.

1.3. Accessories of Device (EUT)

Accessories1	:	AC Adapter	Power Ad
Manufacturer	:	Shenzhen ShiAn Power Tehnology Co.,Ltd	Shenzhen
Model	:	SA-0501500EUU	SA-12010
OUTPUT	:	100-240V~50/60Hz 0.35A MAX	100-240V 0.4A MA
Output Power	:	7.5W	12V/1A

1.4. Ancillary Equipment Details

No.	Description	Manufacturer	Model	Serial Number	Certification
1	N/A	N/A	N/A	N/A	N/A

1.5. Test Lab Information

Shenzhen Alpha Product Testing Co., Ltd.

Building i, No.2, Lixin Road, Fuyong Street, Bao'an District,
518103, Shenzhen, Guangdong, China

2. Summary of Test

2.1. Test Standard Description:

ETSI EN 300 328 V2.2.2:2019: Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonised Standard for access to radio spectrum

2.2. Summary of Test Result

Technical requirements for the equipment using wide band modulations other than FHSS:

The following essential requirements and test specifications are relevant to the presumption of conformity under Article 3.2 of Directive 2014/53/EU			
No	Test Parameter	Clause No	Results
Transmitter Parameters			
1	RF output power	4.3.2.2	PASS
2	Power Spectral Density	4.3.2.3	PASS
3	Duty Cycle, Tx-sequence, Tx-gap	4.3.2.4	N/A
4	Accumulated Transmit time, Frequency Occupation & Hopping Sequence	4.3.1.4	N/A
5	Hopping Frequency Separation	4.3.1.5	N/A
6	Medium Utilisation (MU) factor	4.3.2.5	N/A
7	Adaptivity	4.3.2.6	PASS
8	Occupied Channel Bandwidth	4.3.2.7	PASS
9	Transmitter unwanted emissions in the OOB domain	4.3.2.8	PASS
10	Transmitter unwanted emissions in the spurious domain	4.3.2.9	PASS
11	Receiver spurious emissions	4.3.2.10	PASS
Receiver Parameters			
12	Receiver Blocking	4.3.2.11	PASS
13	Geo-location capability	4.3.2.12	N/A
Note: N/A is an abbreviation for Not Applicable and means this test item is not applicable for this device according to the technology characteristic of device.			

2.3. Block Diagram of Configuration for Test

EUT

2.4. Test Mode

The special RF test software was used to control EUT work in Continuous WIFI TX mode, and select test channel, wireless mode.

Mode	data rate (Mpbs)	Channel	Frequency (MHz)
IEEE 802.11b	1	Low :CH1	2412
	1	Middle: CH7	2442
	1	High: CH13	2472
IEEE 802.11g	6	Low :CH1	2412
	6	Middle: CH7	2442
	6	High: CH13	2472
IEEE 802.11n HT20	6.5	Low :CH1	2412
	6.5	Middle: CH7	2442
	6.5	High: CH13	2472
IEEE802.11n HT40	13.5	Low :CH3	2422
	13.5	Middle: CH7	2442
	13.5	High: CH11	2462
Note1: According exploratory test, EUT will have maximum output power in those data rate, so those data rate were used for all test.			

2.5. Test Conditions

	Normal Conditions	Extreme Conditions
Temperature range	15-35℃	-30℃ and 60℃
Humidity range	20-75%	20-75%
Pressure range	86-106kPa	86-106kPa
Power supply	DC 5V	4.25V and 5.75V (declared by the manufacturer.)
Note 1: The test procedure described in clause 5.1 of EN300 328 was used for extreme test procedure. 2: The Extreme Temperature and Extreme Voltages declared by the manufacturer.		

2.6. Measurement Uncertainty (95% confidence levels, k=2)

Item	MU	Remark
Uncertainty for Conducted Emission Test	2.74dB	
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)	4.16dB	Polarize: H
	4.13dB	Polarize: V
Uncertainty for radio frequency	5.4×10^{-8}	
Uncertainty for conducted RF Power	0.37dB	

2.7. Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last cal.	Cal. Due day
Bilog Antenna	SCHWARZBECK	VULB 9168	9168-438	2019.09.07	2021.09.06
Test Receiver	R&S	ESCI	101165	2020.09.02	2021.09.01
Spectrum analyzer	R&S	FSV40-N	102137	2020.09.02	2021.09.01
Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D(1201)	2020.04.12	2022.04.11
Filter	KANGMAI	ZLPF-LDC-1000- 1959	1209002075	2020.09.02	2021.09.01
Filter	WAINWRIGHT	WHKX2.80 /18G- 12SS	SN1	2020.09.02	2021.09.01
RF Cable	Resenberger	Cable 4	N/A	2020.09.02	2021.09.01
CMU200	R&S	CMU200	116785	2020.09.02	2021.09.01
Signal Analyzer	Agilent	N9020A	MY499100060	2020.09.02	2021.09.01
vector Signal Generator	Agilent	N5182A	MY49060042	2020.09.02	2021.09.01
vector Signal Generator	Agilent	E4438C	US44271917	2020.09.02	2021.09.01
Amplifier	HP	HP8347A	2834A00455	2020.09.02	2021.09.01
Amplifier	Agilent	8449B	3008A02664	2020.09.02	2021.09.01
Filter	WAINWRIGHT	WHKX1.0G/15G- 10SS	SN40	2020.09.02	2021.09.01
Test Receiver	R&S	ESR	1316.3003K03-102082-Wa	2020.09.02	2021.09.01
Bilog Antenna	SCHWARZBECK	VULB 9168	9168-627	2020.04.12	2022.04.11
9*6*6 anechoic chamber	CHENYU	9*6*6	N/A	2019.09.06	2022.09.05
RF Cable	Resenberger	Cable 1	N/A	2020.09.02	2021.09.01
RF Cable	Resenberger	Cable 2	N/A	2020.09.02	2021.09.01
RF Cable	Resenberger	Cable 3	N/A	2020.09.02	2021.09.01
Power Sensor	DARE	RPR3006W	15100041SNO91	2020.09.02	2021.09.01
Power Sensor	DARE	RPR3006W	15100041SNO92	2020.09.02	2021.09.01
CMW500	R&S	CMW500	1201.0002K50-117239-sM	2020.09.02	2021.09.01
Loop Antenna	SCHWARZBECK	FMZB 1519B	00059	2019.09.07	2021.09.06
Attenuator	HP	8494B	DC-18G	2020.09.02	2021.09.01
Attenuator	HP	8496B	DC-18G	2020.09.02	2021.09.01
Temp. & Humid. Chamber	Weihuang	WHTH-1000-40-880	100631	2020.08.11	2021.08.10
20dB Attenuator	ICPROBING	IATS1	82347	2020.09.02	2021.09.01

3. RF Output Power

3.1. Limit

The RF output power for non-FHSS equipment shall be equal to or less than 20 dBm.

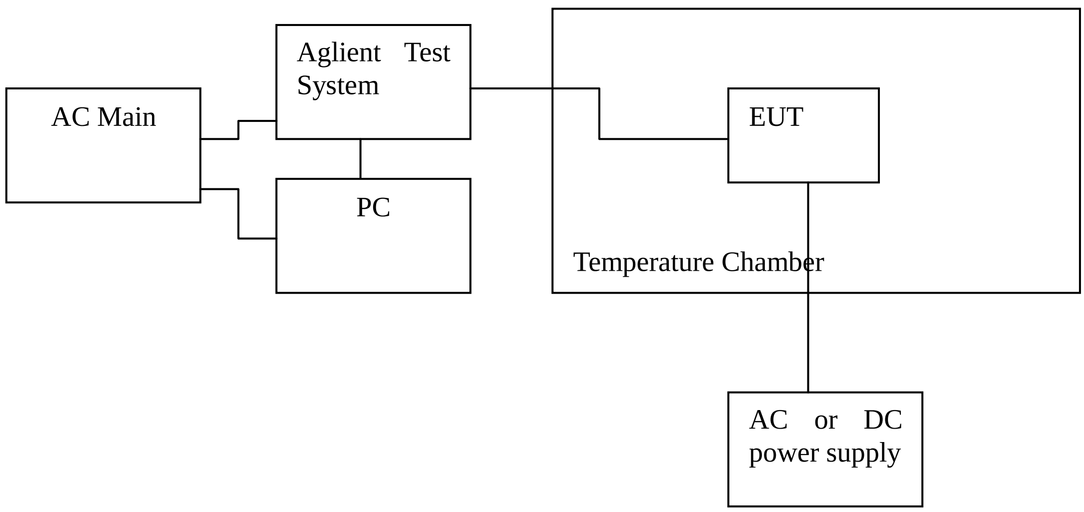
NOTE: For Non-adaptive FHSS equipment, the manufacturer may have declared a reduced RF Output Power (see clause 5.4.1 m)) and associated Duty Cycle (see clause 5.4.1 e)) that will ensure that the equipment meets the requirement for the Medium Utilization (MU) factor further described in clause 4.3.2.5. This is verified by the conformance test referred to in clause 4.3.2.5.4.

For non-adaptive non-FHSS equipment, where the manufacturer has declared an RF output power of less than 20 dBm e.i.r.p., the RF output power shall be equal to or less than that declared value.

This limit shall apply for any combination of power level and intended antenna assembly.

Limit
20dBm

3.2. Test Setup



3.3. Test Procedure

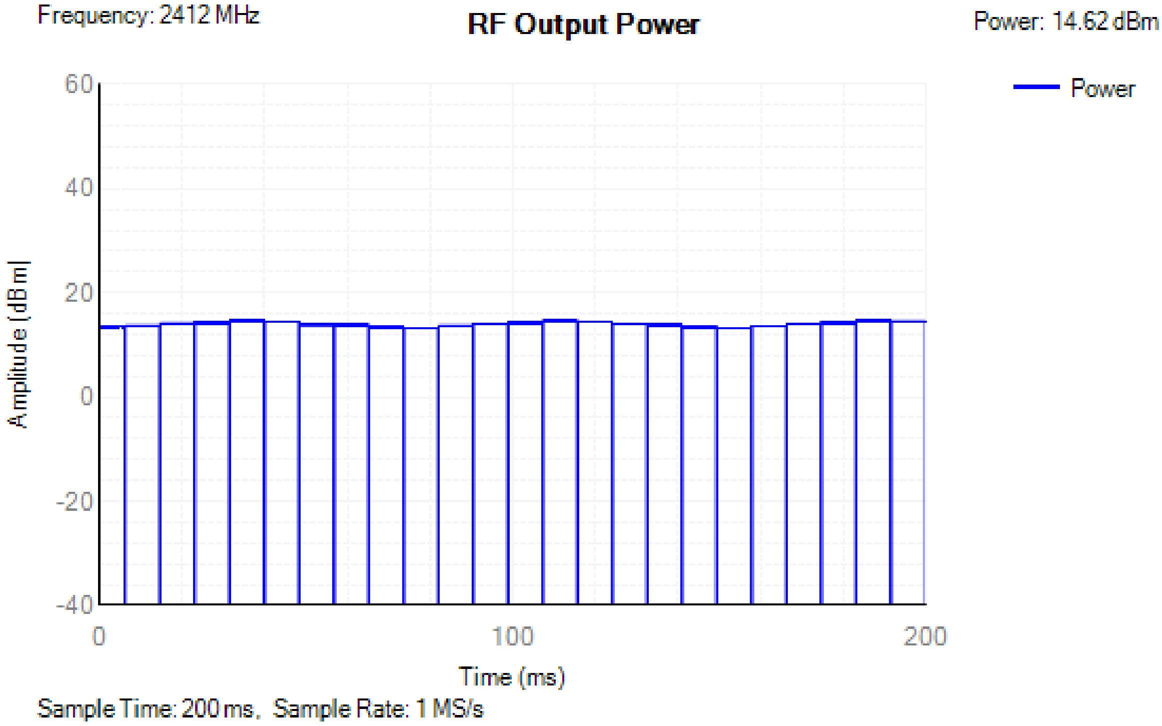
Refer to ETSI EN 300 328 V2.2.2:2019 Clause 5.4.2.

3.4. Test Result

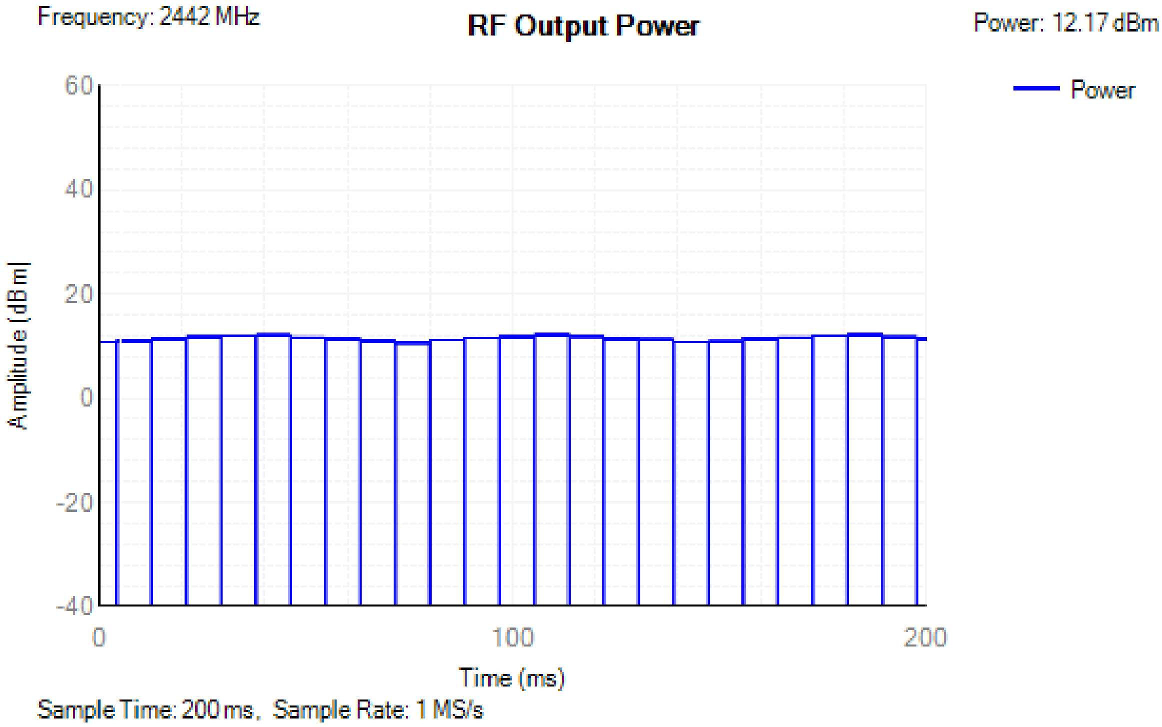
Test result				
Cable loss: 0.6dB				Antenna Gain: 1.0dBi
Sample speed	1 MS/s for power sensor			
Number of Burst	At least 10			
Duty cycle X: 100%				
Mode	Condition	CH	Result Total e.i.r.p（dBm）	Limit e.i.r.p (dBm)
11b	NTNV	CH1	14.62	20
		CH7	12.17	20
		CH13	12.19	20
	LTHV	CH1	14.53	20
		CH7	12.13	20
		CH13	12.18	20
	LTLV	CH1	14.52	20
		CH7	12.17	20
		CH13	12.05	20
	HTLV	CH1	14.58	20
		CH7	12.07	20
		CH13	12.10	20
	HTHV	CH1	14.54	20
		CH7	12.08	20
		CH13	12.15	20
11g	NTNV	CH1	13.96	20
		CH7	11.78	20
		CH13	12.04	20
	LTHV	CH1	13.88	20
		CH7	11.78	20
		CH13	12.00	20
	LTLV	CH1	13.89	20
		CH7	11.69	20
		CH13	11.95	20
	HTLV	CH1	13.93	20
		CH7	11.77	20
		CH13	11.98	20
	HTHV	CH1	13.94	20
		CH7	11.78	20
		CH13	11.94	20
Conclusion: PASS				

Test result				
Cable loss: 0.6dB				Antenna Gain: 1.0dBi
Sample speed		1 MS/s for power sensor		
Number of Burst		At least 10		
Duty cycle X: 100%				
Mode	Condition	CH	Result	Limit
			Total e.i.r.p（dBm）	e.i.r.p (dBm)
11n/HT20	NTNV	CH1	13.89	20
		CH7	11.77	20
		CH13	12.06	20
	LTHV	CH1	13.77	20
		CH7	11.71	20
		CH13	11.91	20
	LTLV	CH1	13.76	20
		CH7	11.62	20
		CH13	11.90	20
	HTLV	CH1	13.84	20
		CH7	11.74	20
		CH13	12.02	20
	HTHV	CH1	13.75	20
		CH7	11.66	20
		CH13	11.95	20
11n/HT40	NTNV	CH3	12.97	20
		CH7	12.58	20
		CH11	11.84	20
	LTHV	CH3	12.94	20
		CH7	12.53	20
		CH11	11.81	20
	LTLV	CH3	12.94	20
		CH7	12.57	20
		CH11	11.70	20
	HTLV	CH3	12.88	20
		CH7	12.48	20
		CH11	11.75	20
	HTHV	CH3	12.86	20
		CH7	12.43	20
		CH11	11.74	20
Conclusion: PASS				

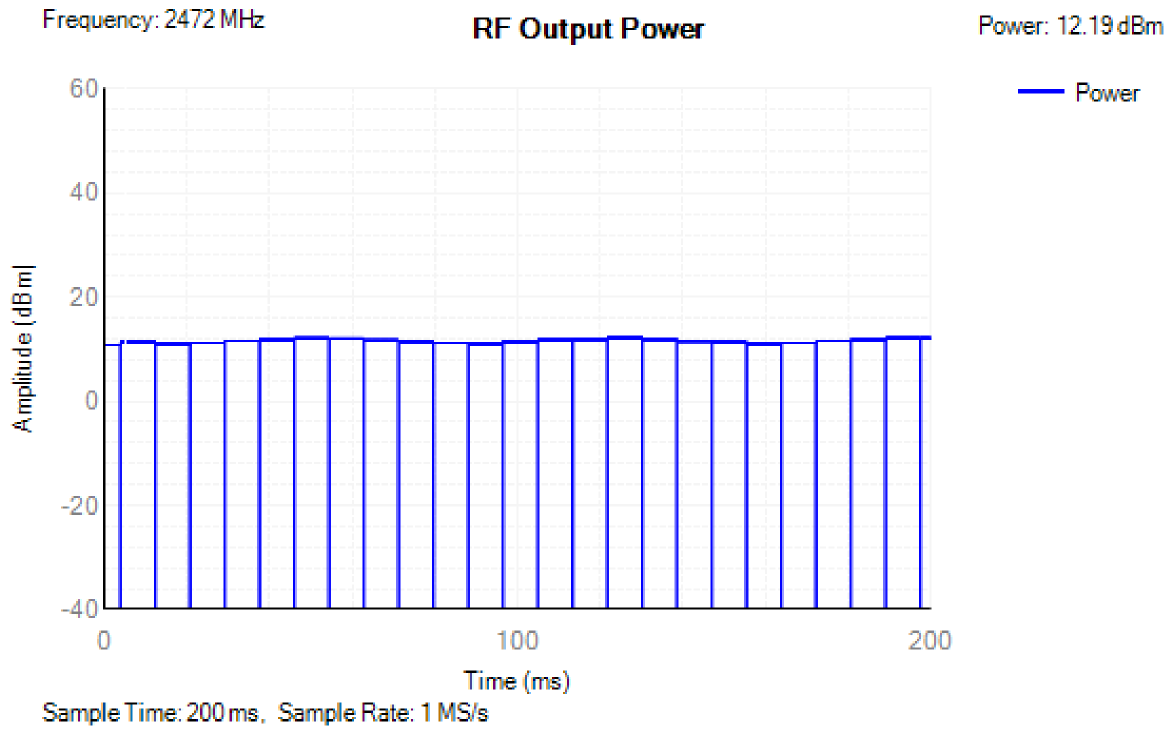
Power NVNT b 2412MHz Ant1



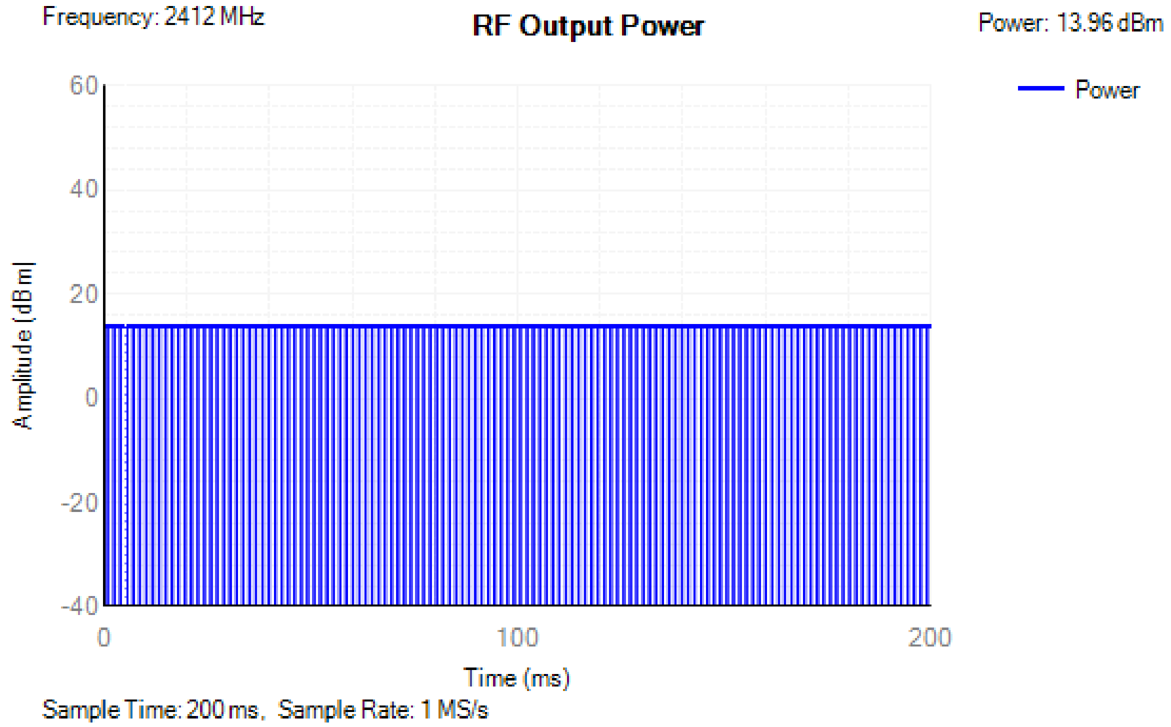
Power NVNT b 2442MHz Ant1



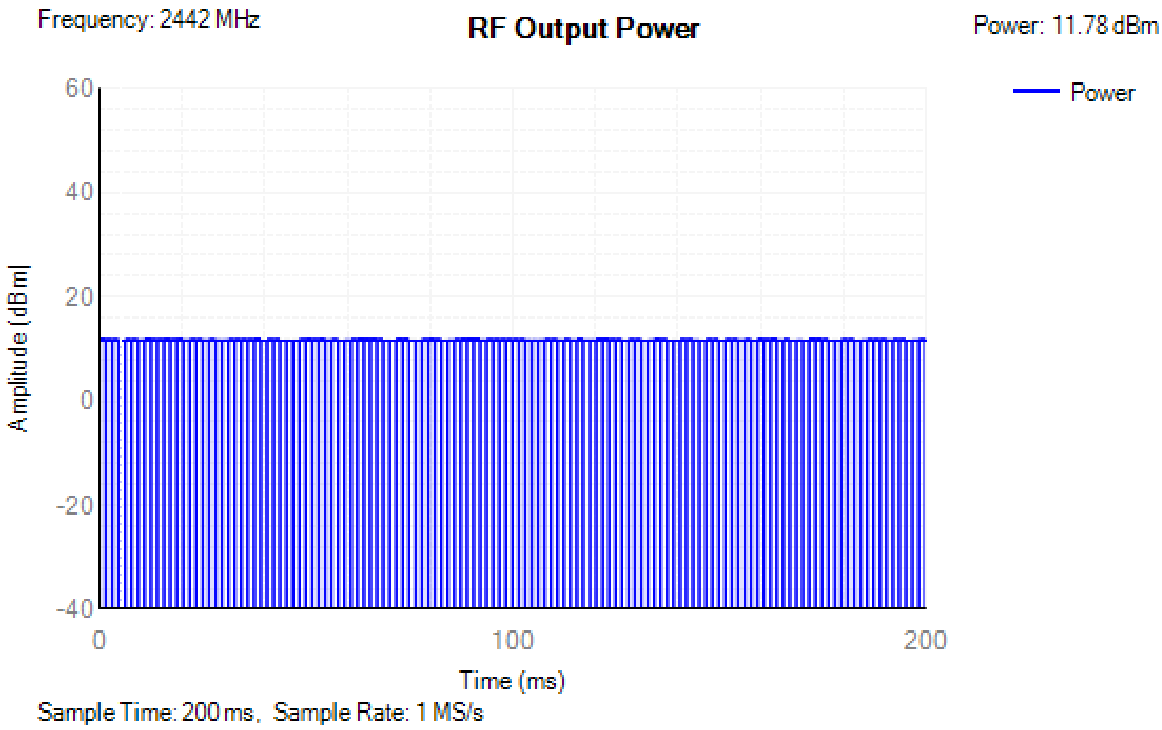
Power NVNT b 2472MHz Ant1



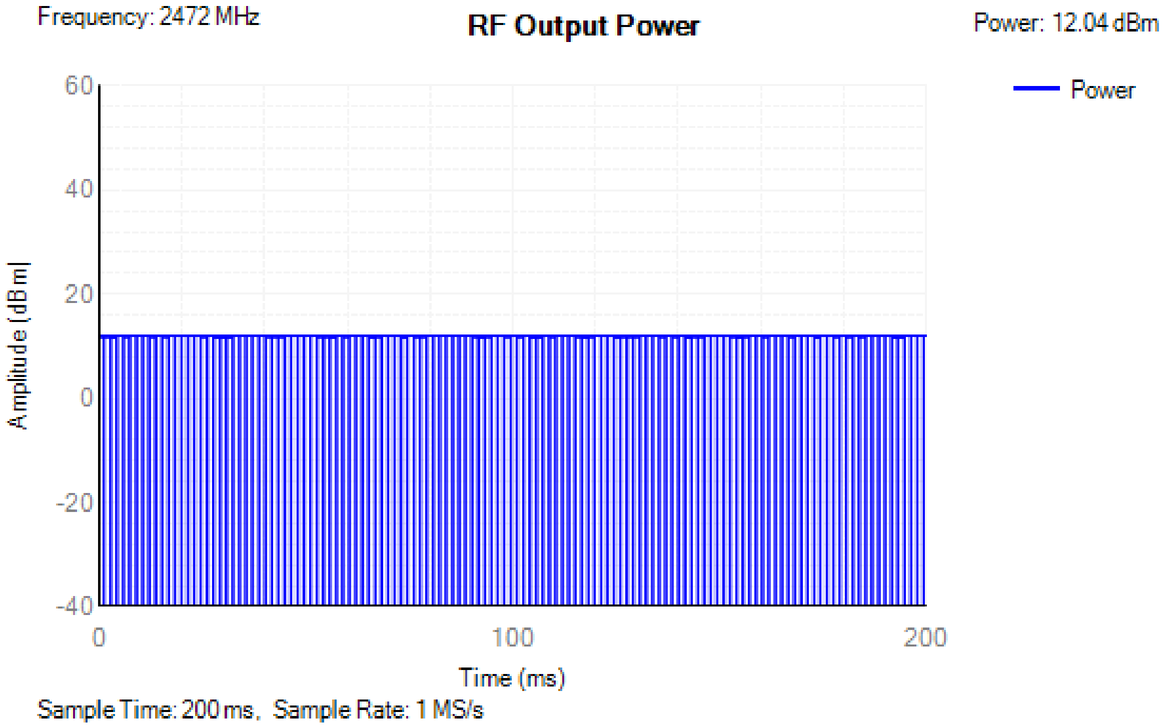
Power NVNT g 2412MHz Ant1



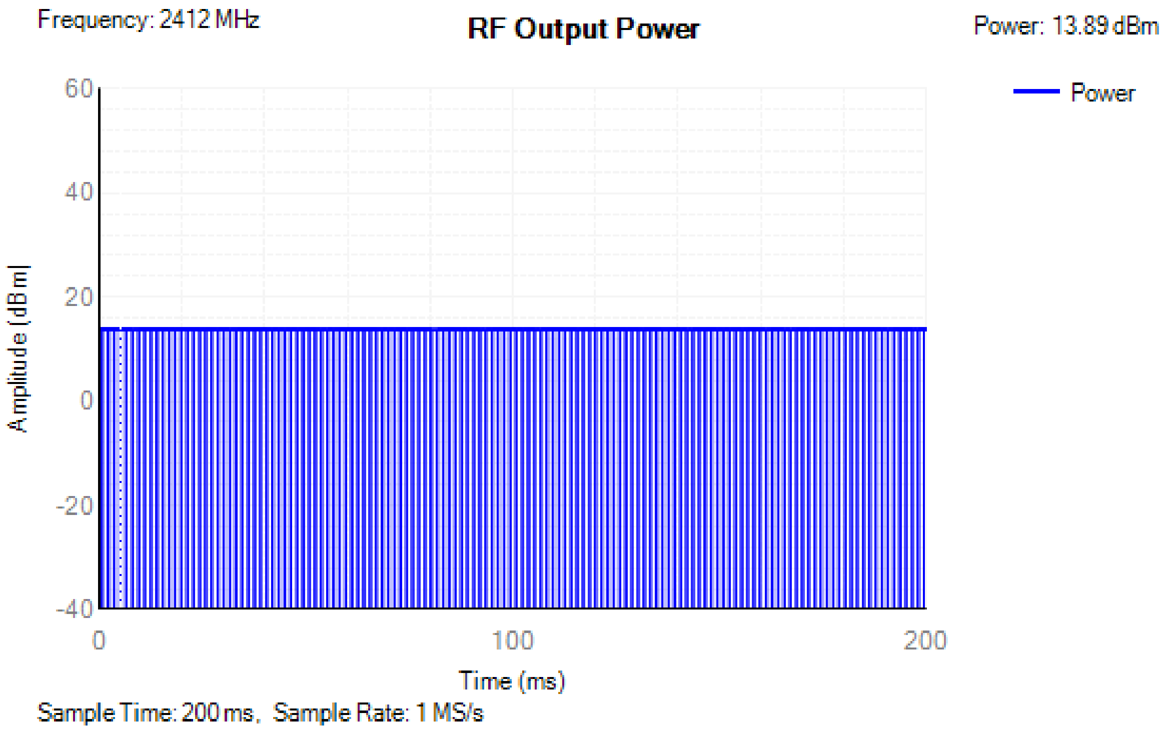
Power NVNT g 2442MHz Ant1



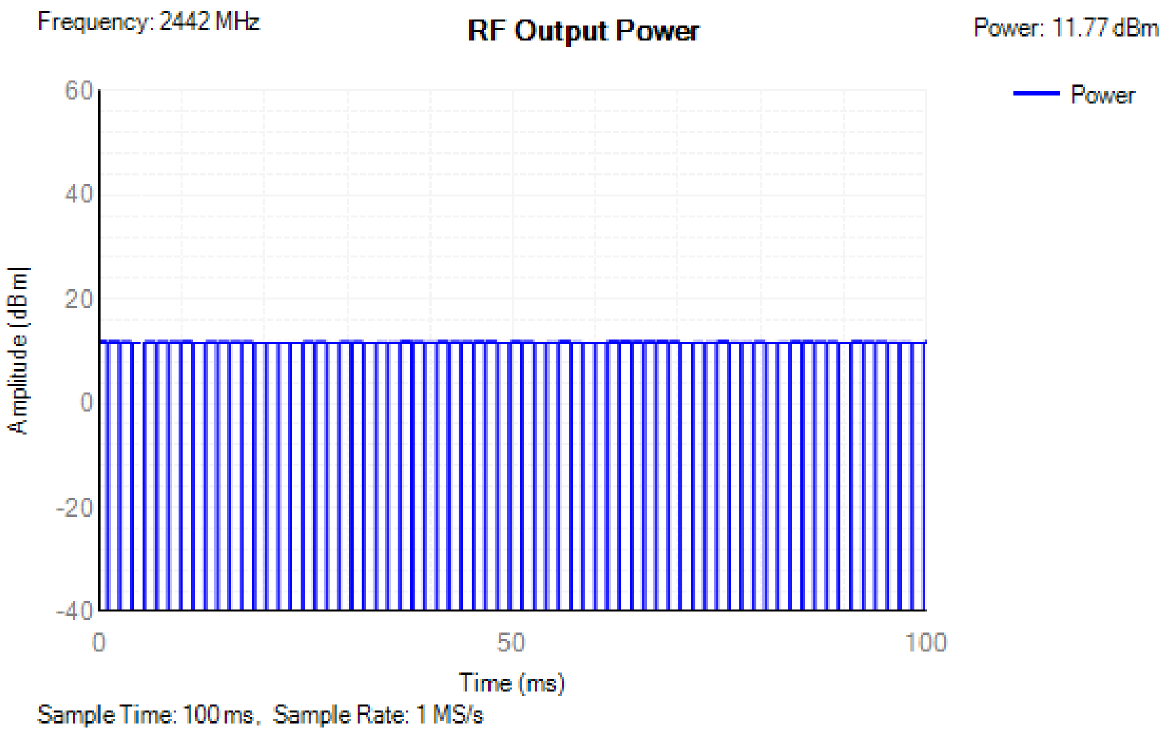
Power NVNT g 2472MHz Ant1



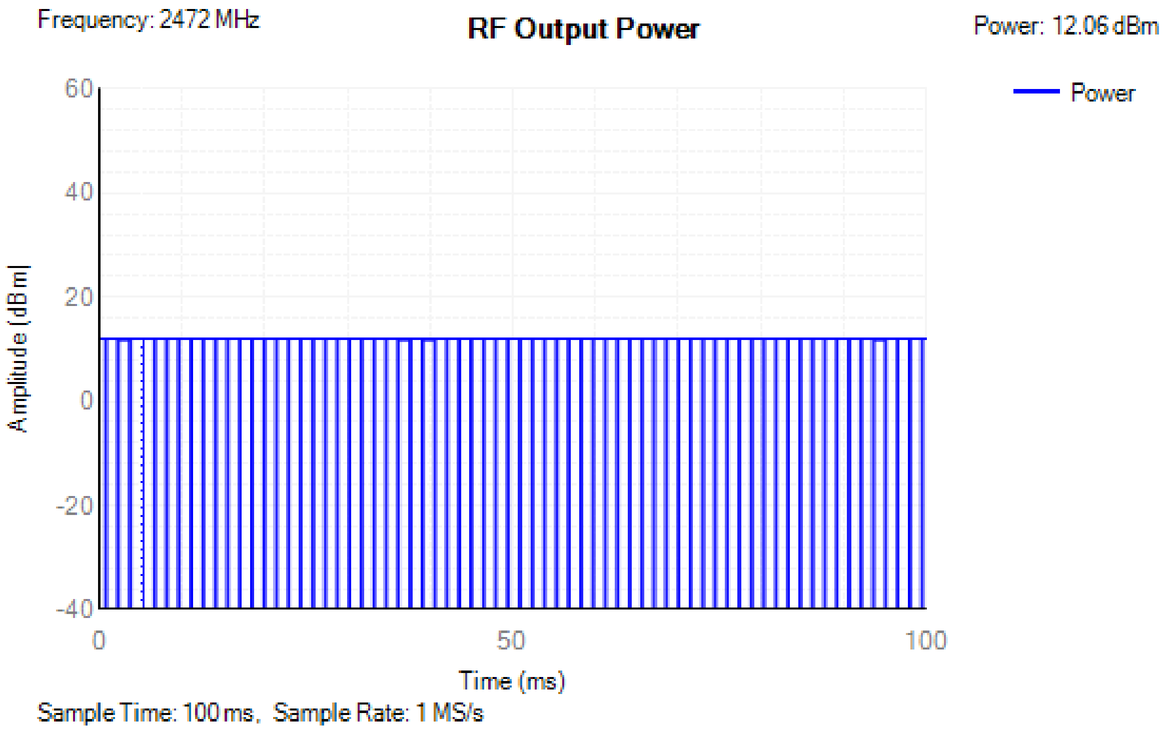
Power NVNT n20 2412MHz Ant1



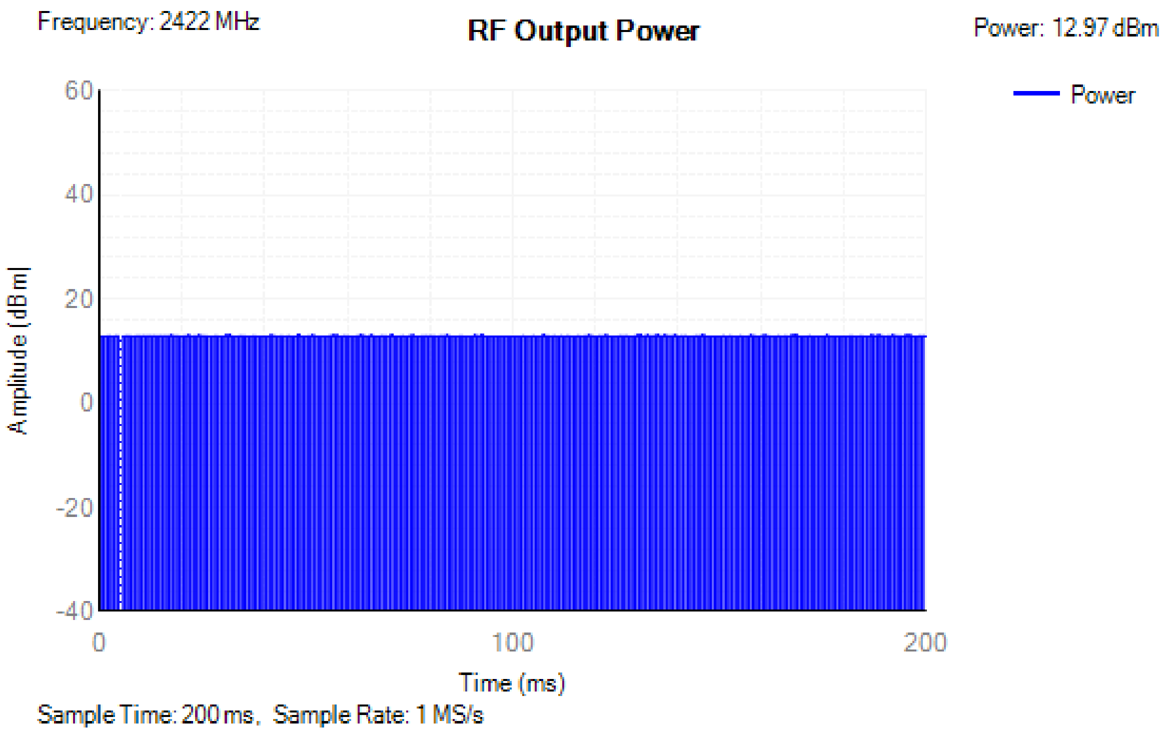
Power NVNT n20 2442MHz Ant1



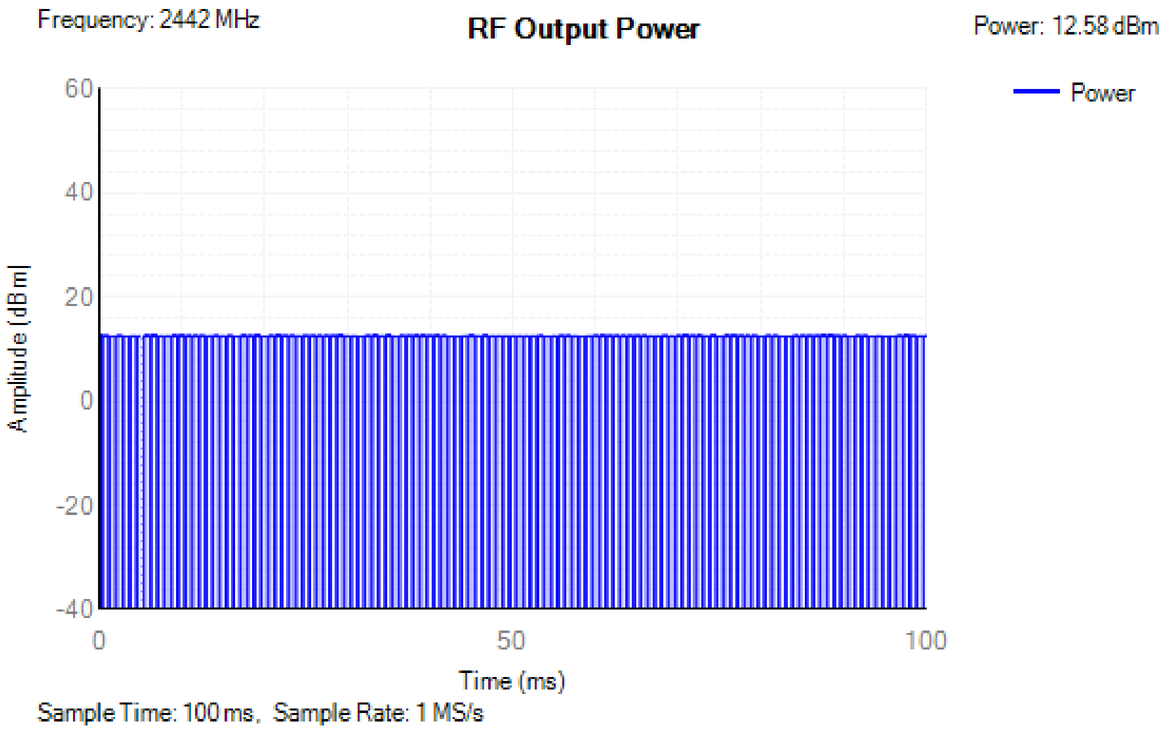
Power NVNT n20 2472MHz Ant1



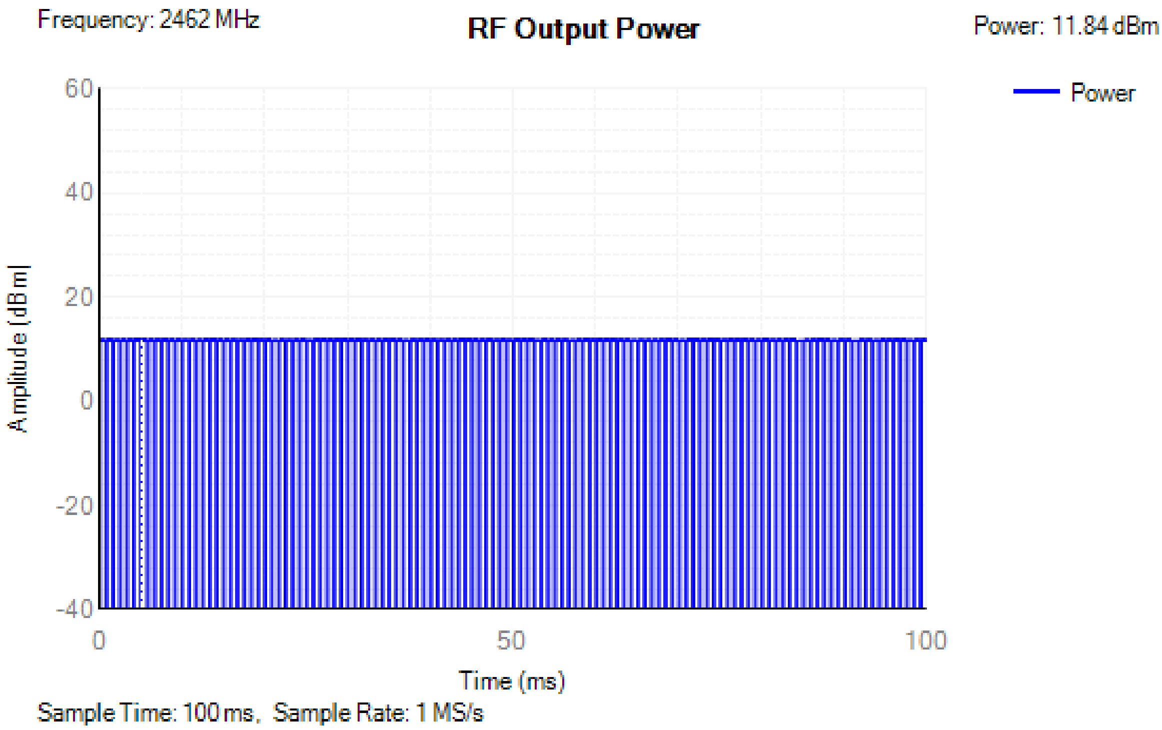
Power NVNT n40 2422MHz Ant1



Power NVNT n40 2442MHz Ant1



Power NVNT n40 2462MHz Ant1



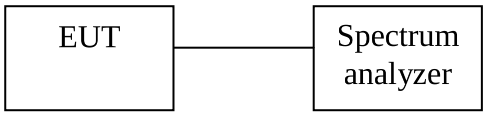
4. Power Spectral Density

4.1. Limit

The maximum Power Spectral Density for non-FHSS equipment is 10 dBm per MHz.

Limit
10dBm/MHz

4.2. Test Setup



4.3. Test Procedure

Refer to ETSI EN 300 328 V2.2.2:2019 Clause 5.4.3

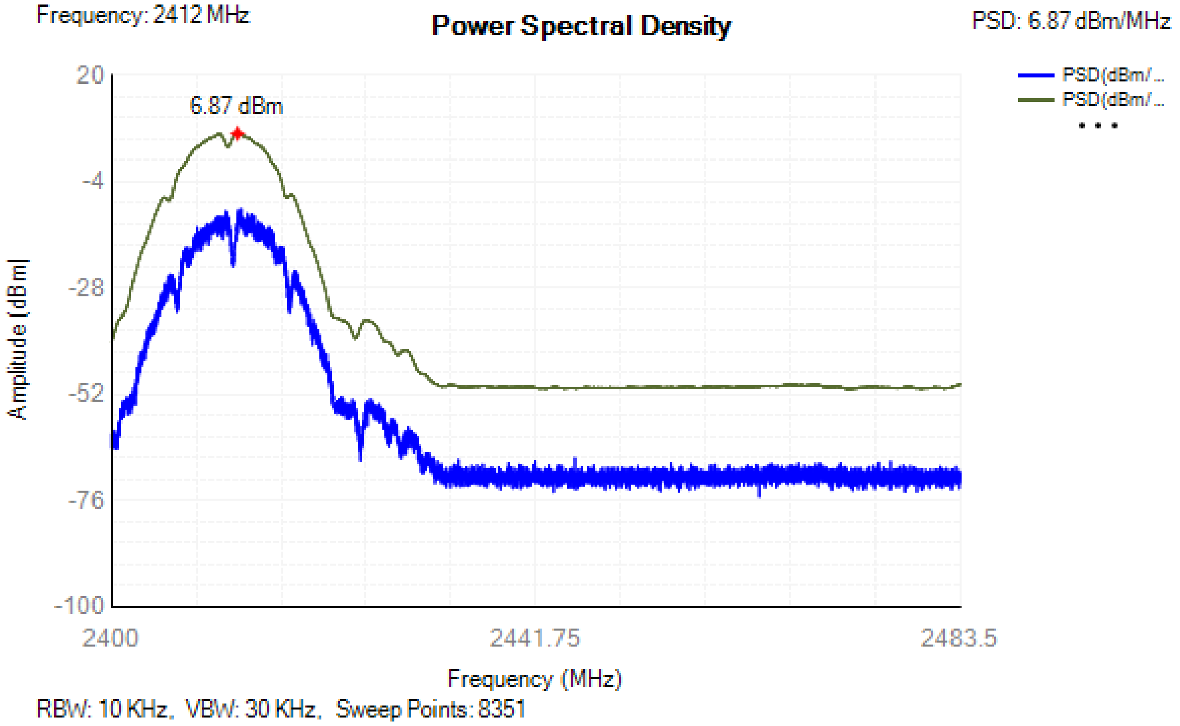
Connect the UUT to the spectrum analyzer and use the following settings:

Frequency range	2400MHz-2483.5MHz
RBW/VBW	10KHz/30KHz
Sweep points/time	>8350 / 10S
Detector	RMS
Trace	Max hold

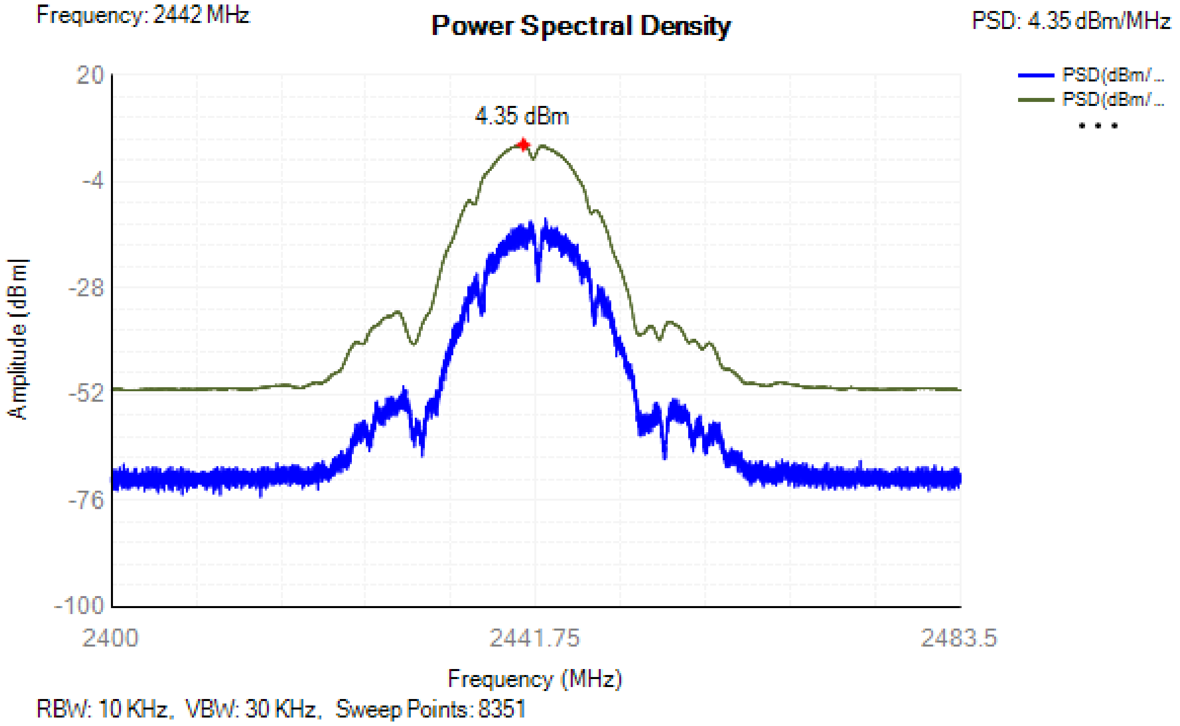
4.4. Test Result

Condition	Mode	Frequency (MHz)	Antenna	Max PSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
NVNT	b	2412	Ant1	6.87	10	Pass
NVNT	b	2442	Ant1	4.35	10	Pass
NVNT	b	2472	Ant1	4.44	10	Pass
NVNT	g	2412	Ant1	2.51	10	Pass
NVNT	g	2442	Ant1	0.99	10	Pass
NVNT	g	2472	Ant1	2.29	10	Pass
NVNT	n20	2412	Ant1	2.05	10	Pass
NVNT	n20	2442	Ant1	0.66	10	Pass
NVNT	n20	2472	Ant1	2.02	10	Pass
NVNT	n40	2422	Ant1	-1.72	10	Pass
NVNT	n40	2442	Ant1	-1.59	10	Pass
NVNT	n40	2462	Ant1	-1.48	10	Pass

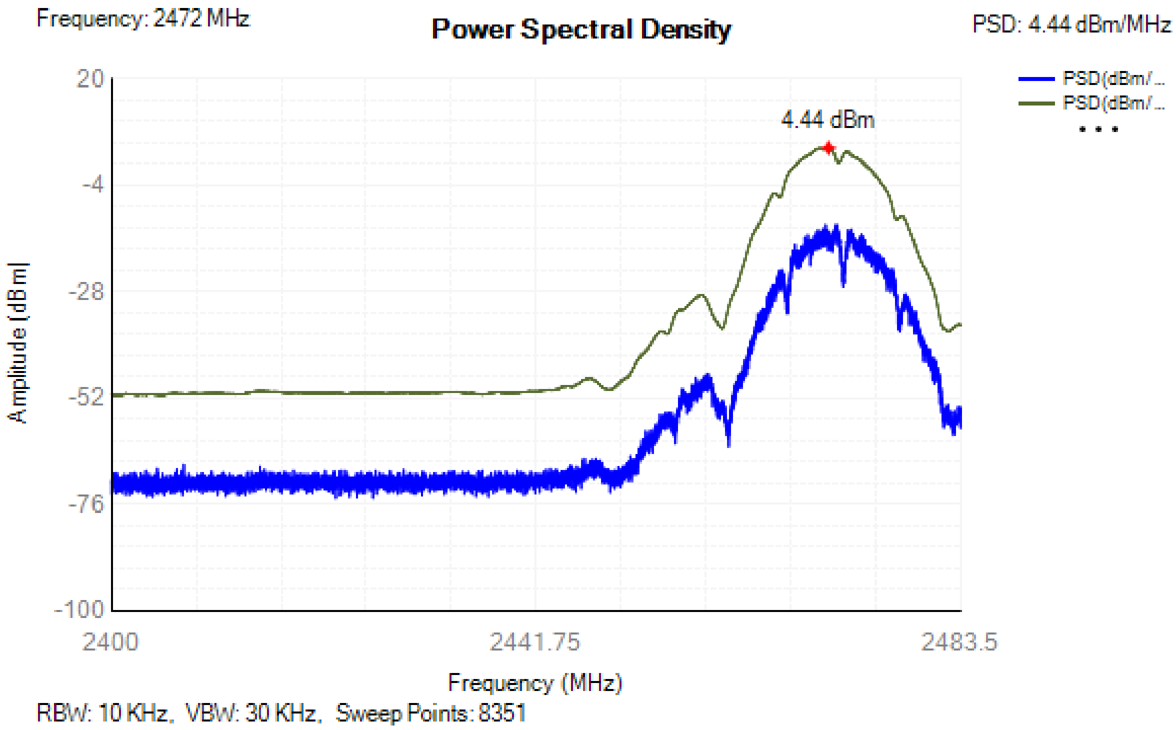
PSD NVNT b 2412MHz Ant1



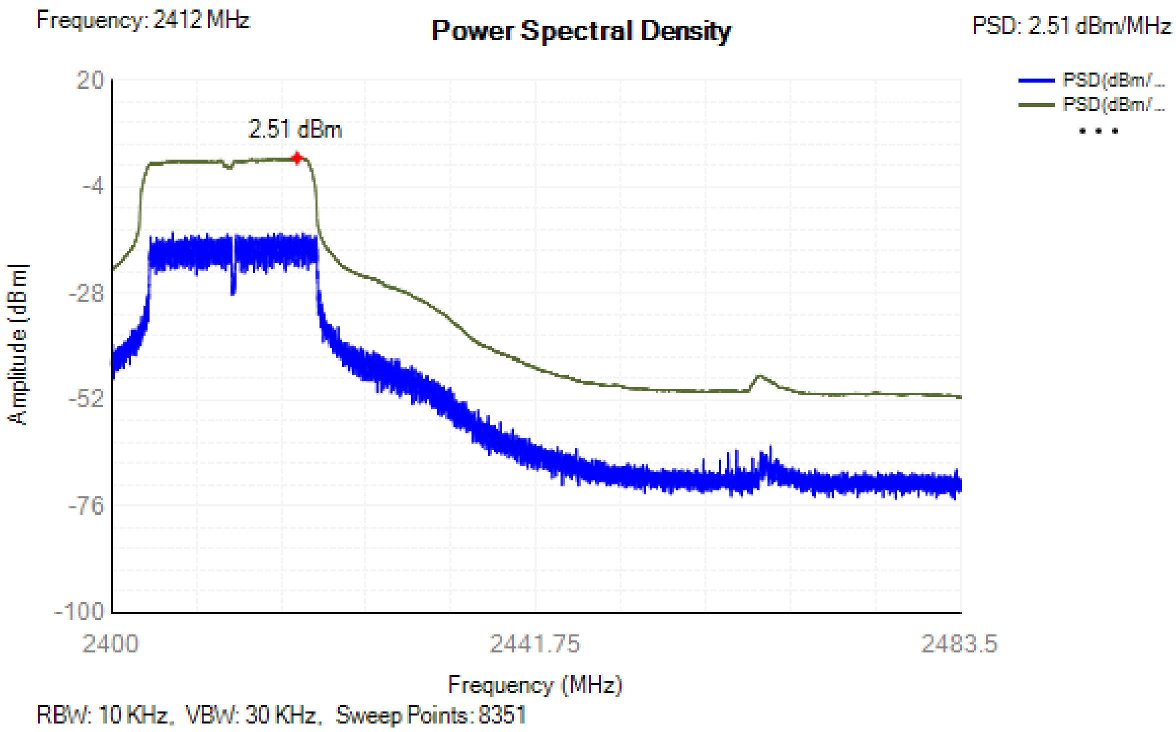
PSD NVNT b 2442MHz Ant1



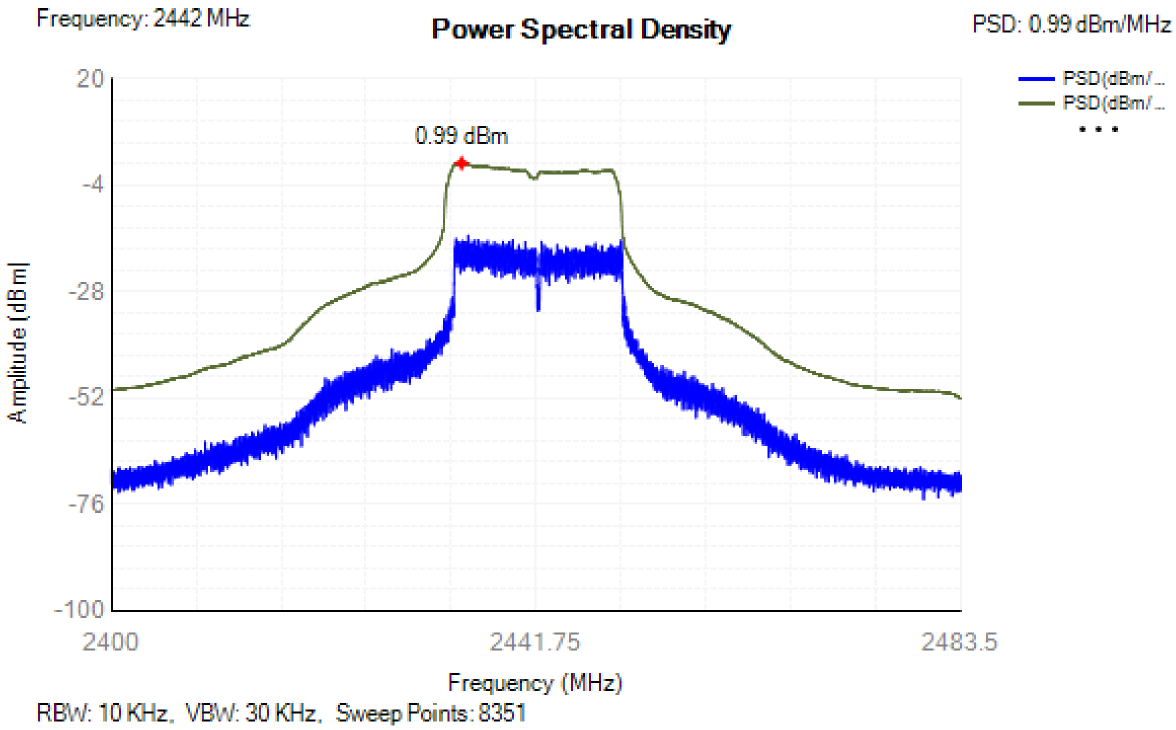
PSD NVNT b 2472MHz Ant1



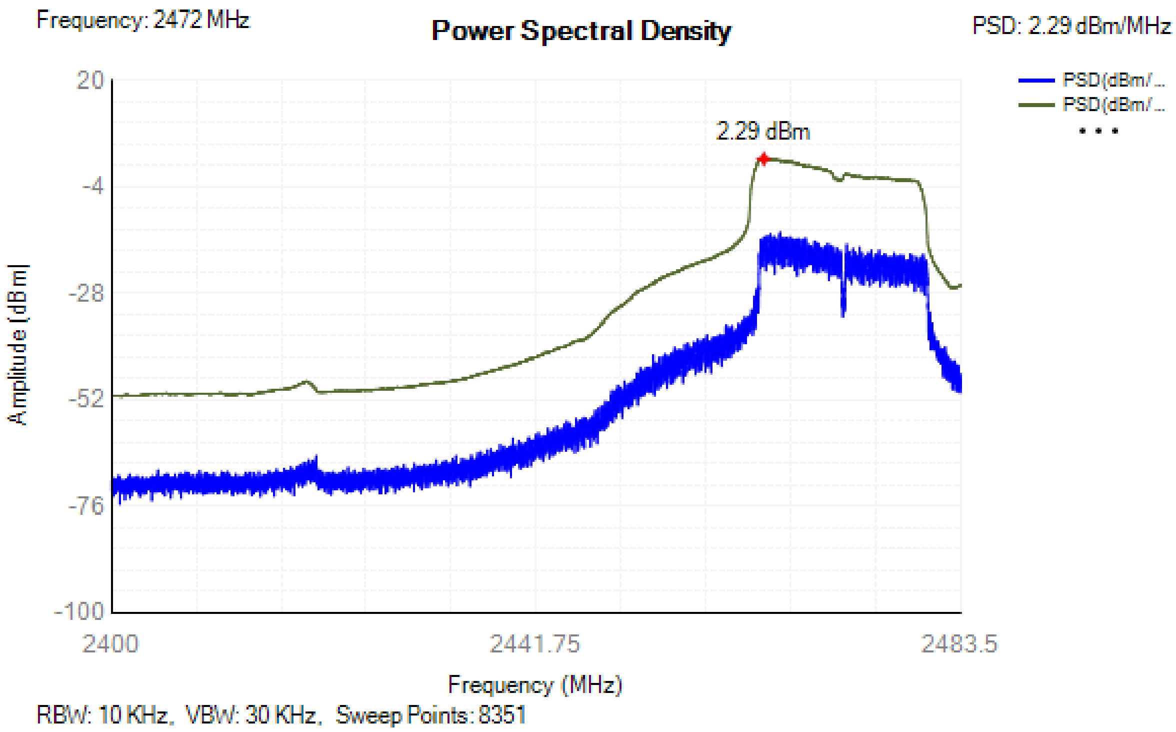
PSD NVNT g 2412MHz Ant1



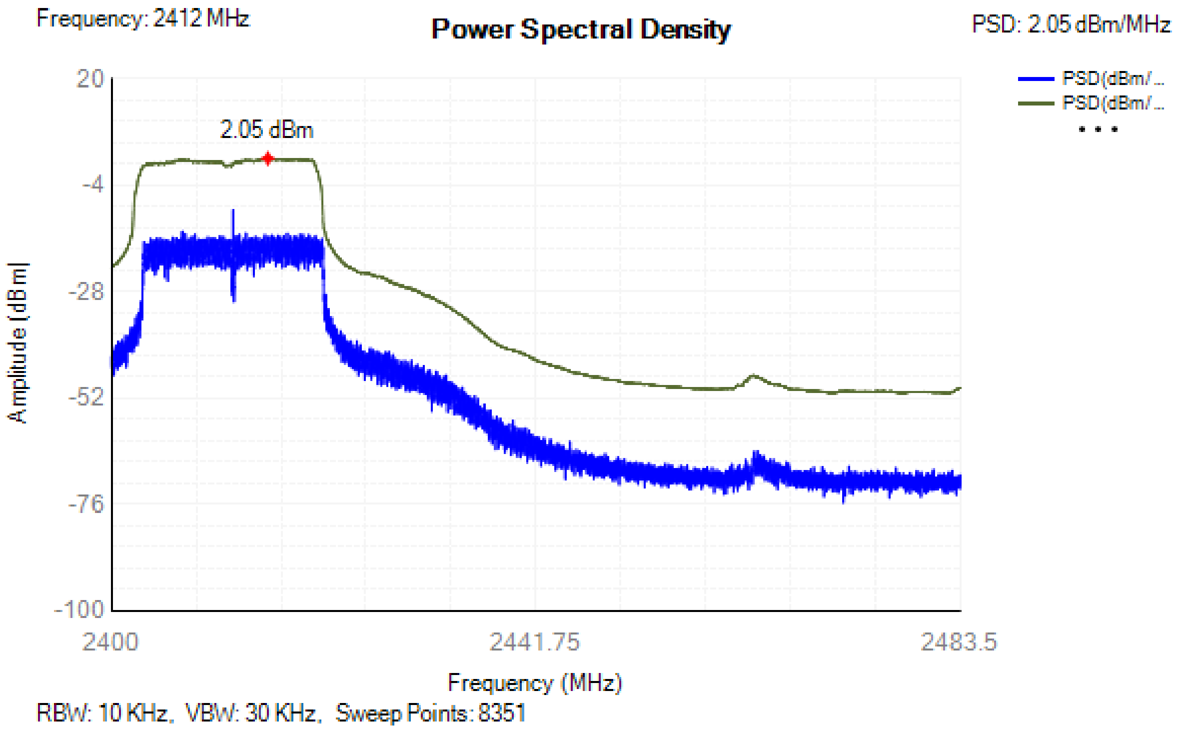
PSD NVNT g 2442MHz Ant1



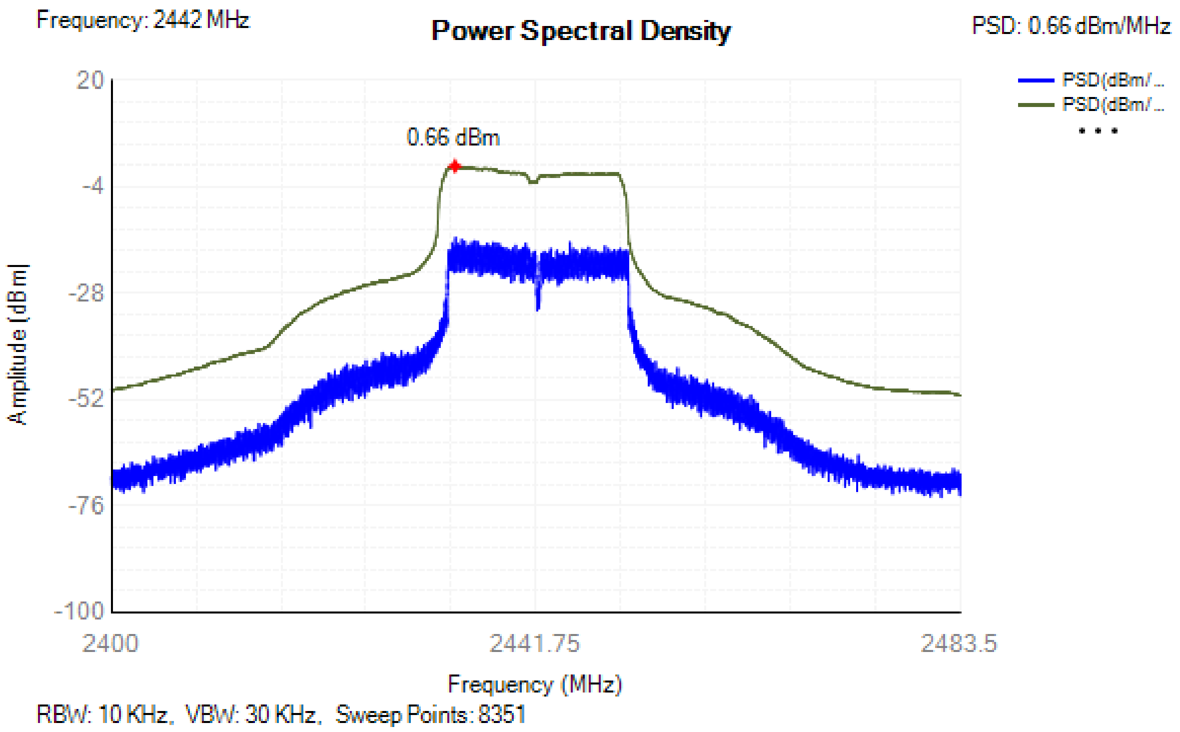
PSD NVNT g 2472MHz Ant1



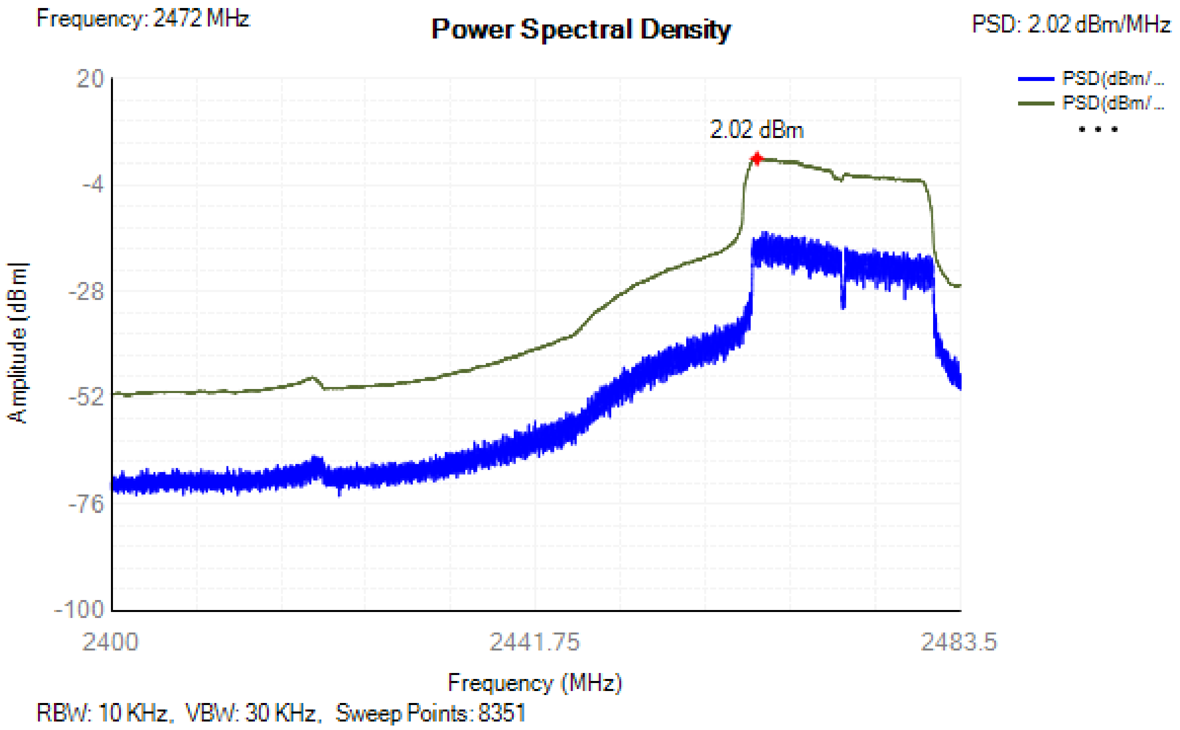
PSD NVNT n20 2412MHz Ant1



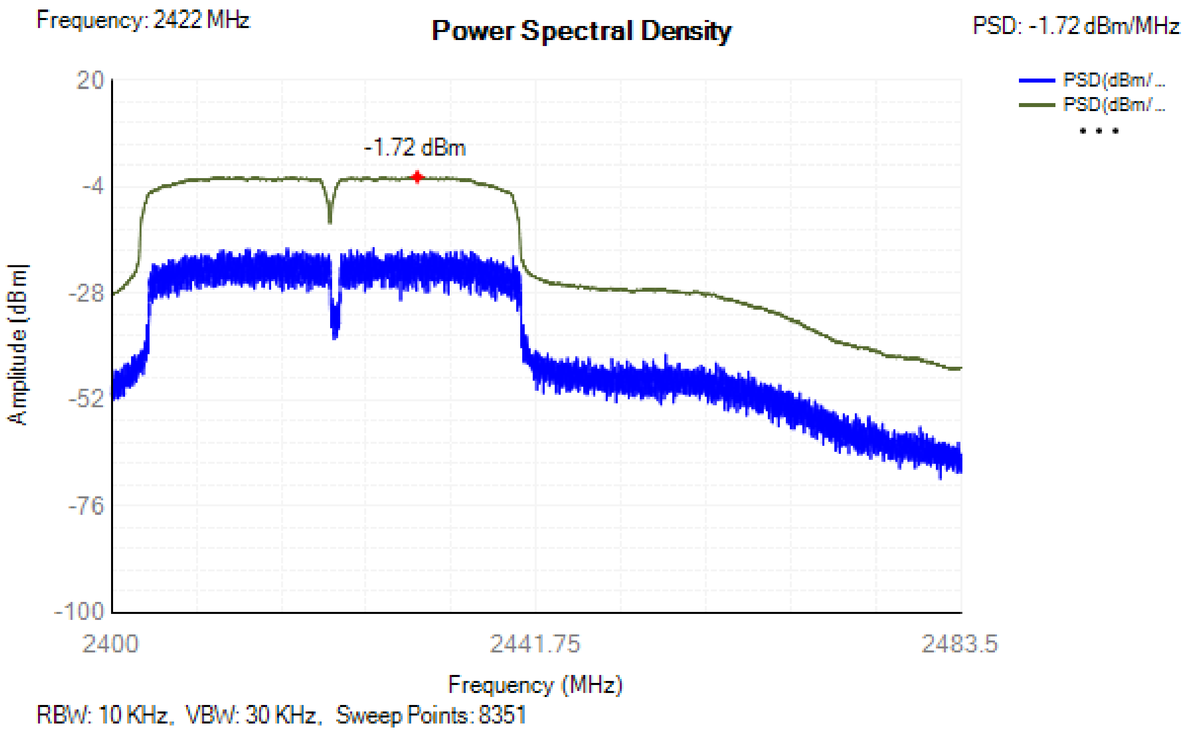
PSD NVNT n20 2442MHz Ant1



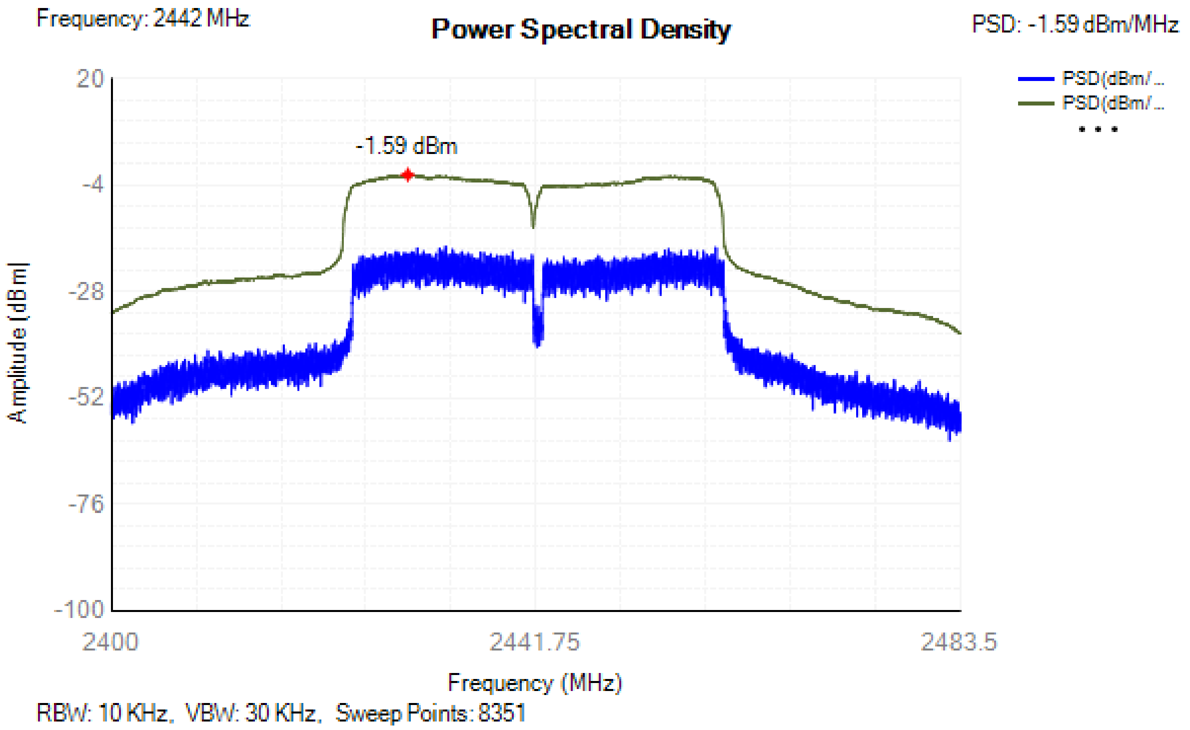
PSD NVNT n20 2472MHz Ant1



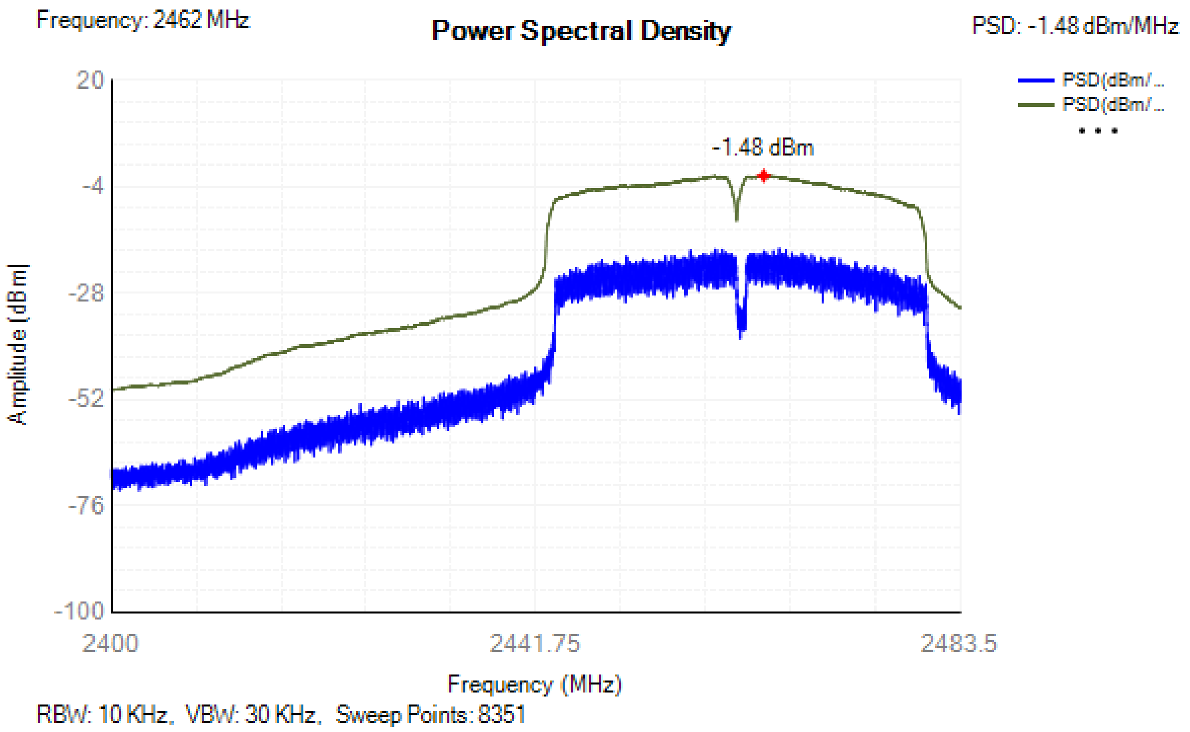
PSD NVNT n40 2422MHz Ant1



PSD NVNT n40 2442MHz Ant1



PSD NVNT n40 2462MHz Ant1



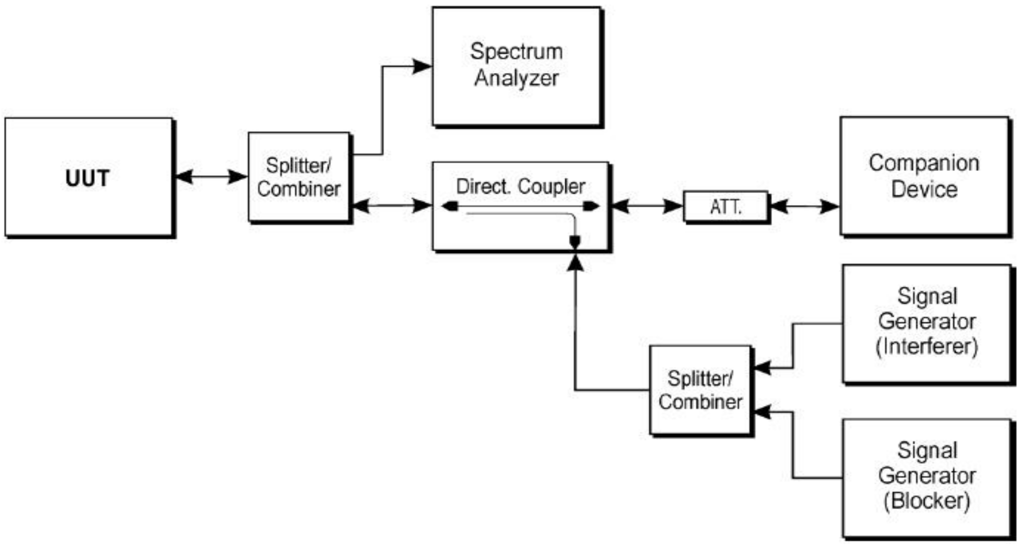
5. Adaptivity

5.1. Limit

The frequency range of the equipment is determined by the lowest and highest

Non-LBT based Detect And Avoid: 1 The hopping frequency shall remain unavailable for a minimum time equal to 1 second or 5 times the actual number of hopping frequencies in the current (adapted) channel map used by the equipment, multiplied with the Channel Occupancy Time whichever is greater. There shall be no transmissions during this silent period on this hopping frequency. After this, the hopping frequency may be considered again as an 'available' frequency.; 2 COT ＜ 40 ms; 3 Idle Period = 5% of COT⩾100us; 4 Detection threshold level = -70 dBm/MHz + 10 ×log10 (100 mW / Pout) (Pout in mW e.i.r.p.);
LBT based Detect And Avoid (Frame Based Equipment): 1 Minimum Clear Channel Assessment (CCA) time = 18 us; 2 CCA observation time declared by the supplier; 3 COT ＜ 60 ms; 4 Idle Period = 5% of COT⩾100us; 5 Detection threshold level = -70 dBm/MHz + 10 ×log10 (100 mW / Pout) (Pout in mW e.i.r.p.);
Short Control Signalling Transmissions: Short Control Signalling Transmissions shall have a maximum TxOn / (TxOn + TxOff) ratio of 10% within an observation period of 50msor within an observation period equal to the dwell time, whichever is less.

5.2. Test Setup



5.3. Test Procedure

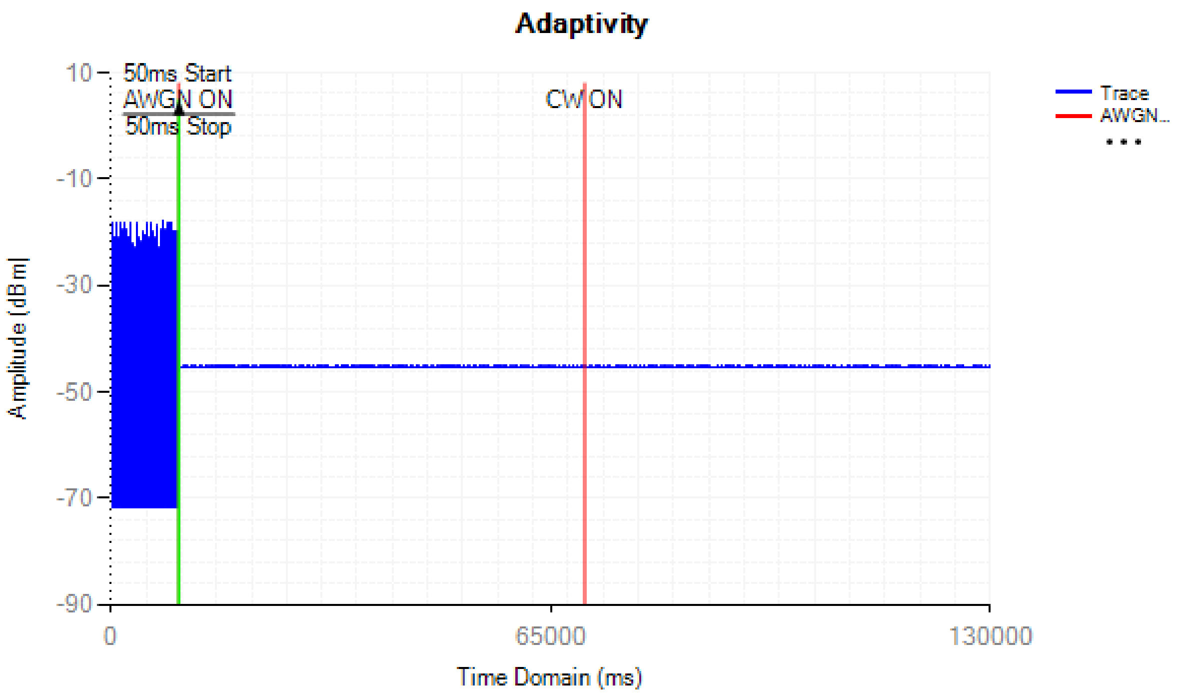
Refer to ETSI EN 300 328 V2.2.2:2019 Clause 5.4.6.

5.4. Test Result

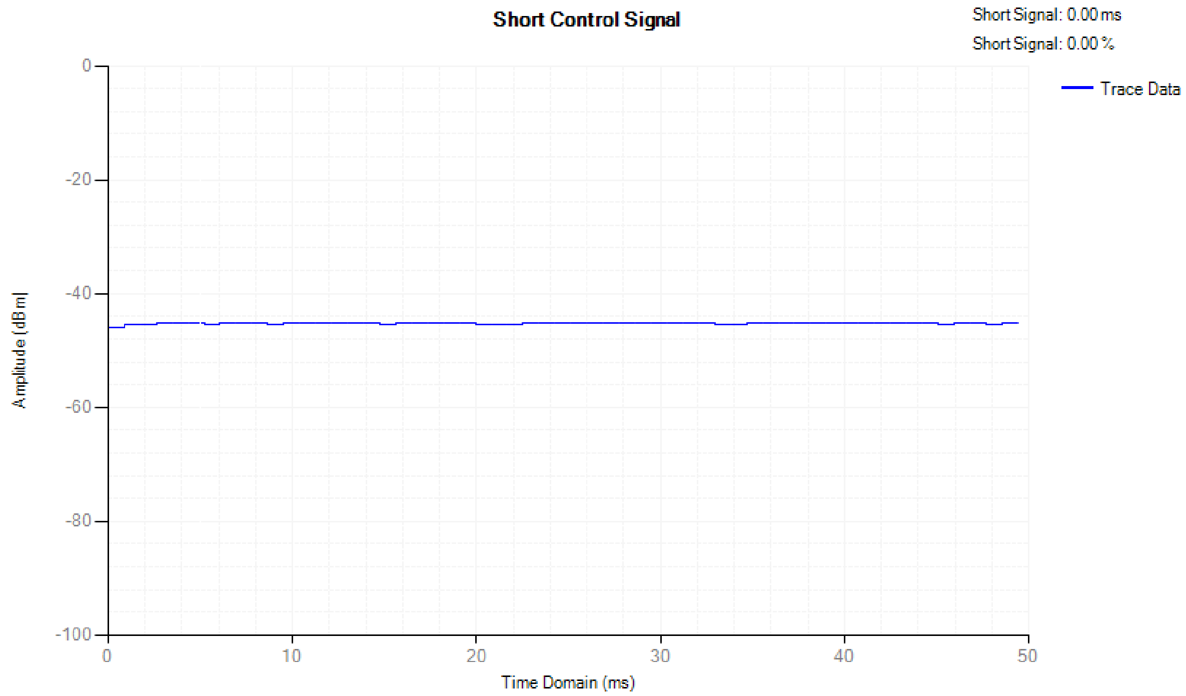
Adaptivity

Condition	Mode	Frequency (MHz)	Antenna	AWGN Level (dBm)	CW Level (dBm)	Short Control Width (ms)	Short Control Ratio(%)	Limit (%)	Verdict
NVNT	b	2412	Ant1	-60	-35	0	0	<=10	Pass
NVNT	b	2472	Ant1	-60	-35	0	0	<=10	Pass
NVNT	g	2412	Ant1	-60	-35	0	0	<=10	Pass
NVNT	g	2472	Ant1	-60	-35	0	0	<=10	Pass
NVNT	n20	2412	Ant1	-63.89	-35	0	0	<=10	Pass
NVNT	n20	2472	Ant1	-62.06	-35	0	0	<=10	Pass
NVNT	n40	2422	Ant1	-62.97	-35	0	0	<=10	Pass
NVNT	n40	2462	Ant1	-60	-35	0	0	<=10	Pass

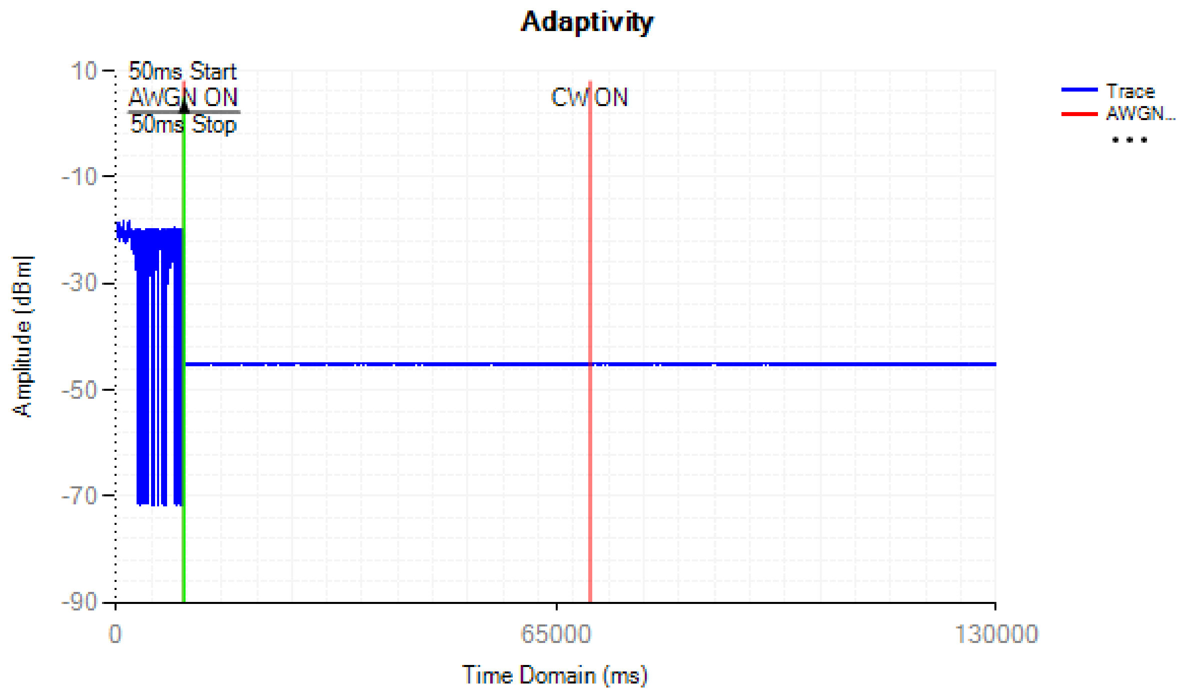
Adaptivity NVNT b 2412MHz



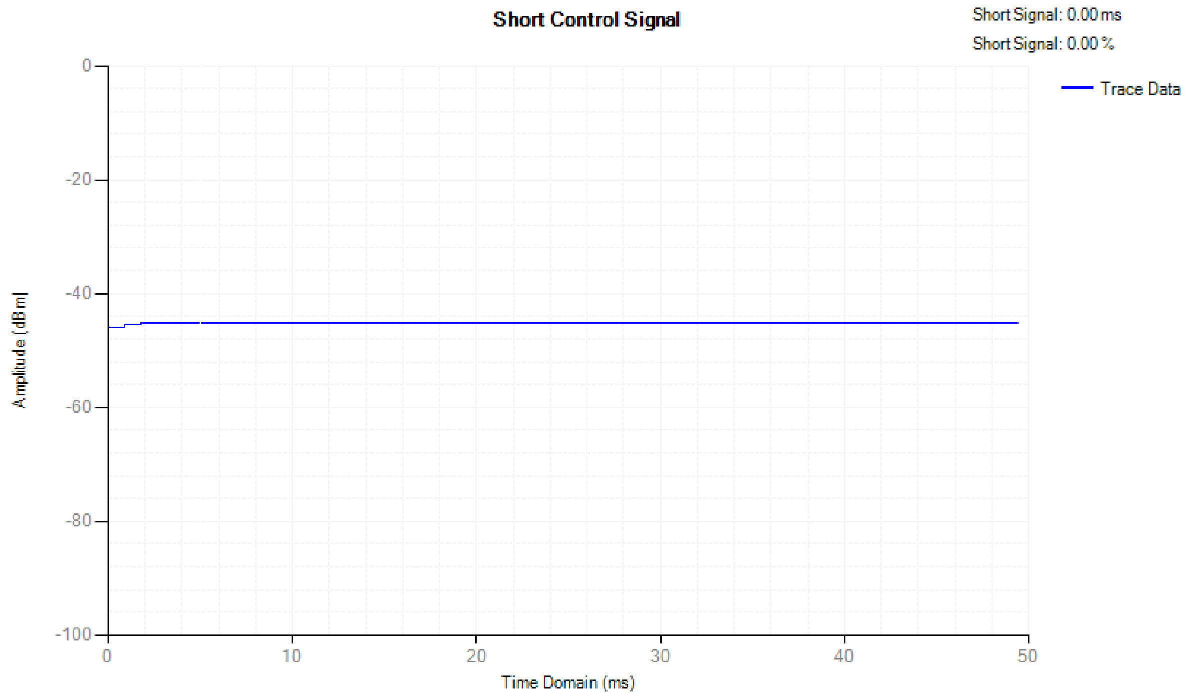
Control Signal NVNT b 2412MHz



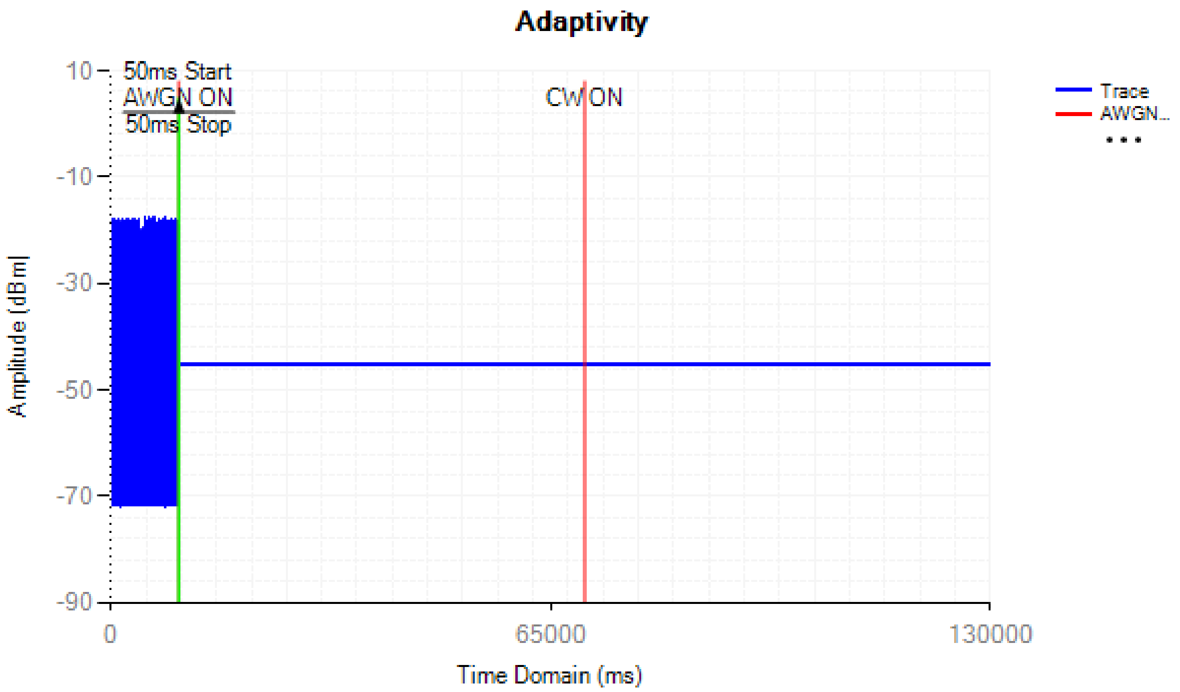
Adaptivity NVNT b 2472MHz



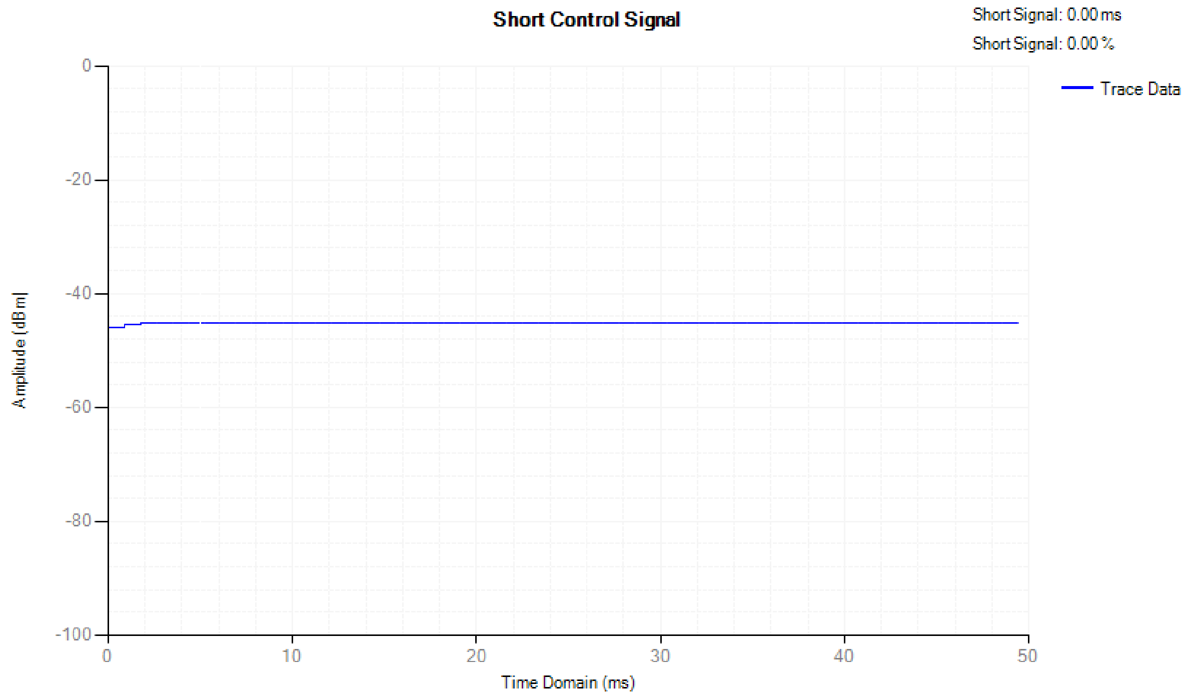
Control Signal NVNT b 2472MHz



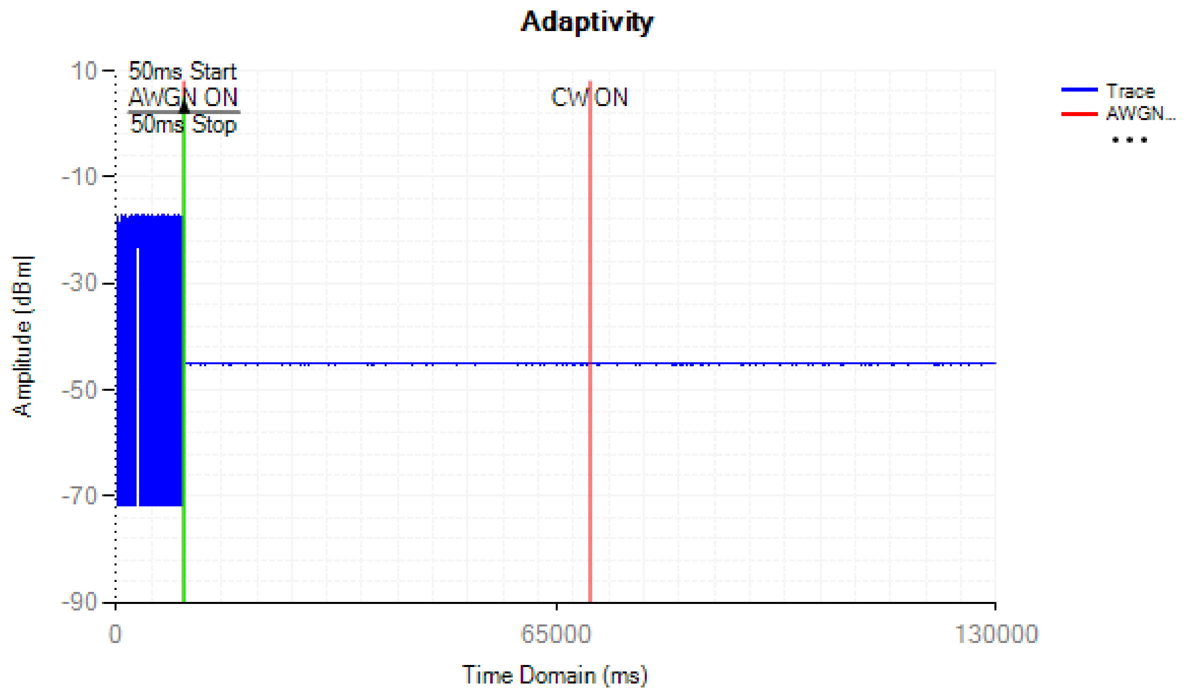
Adaptivity NVNT g 2412MHz



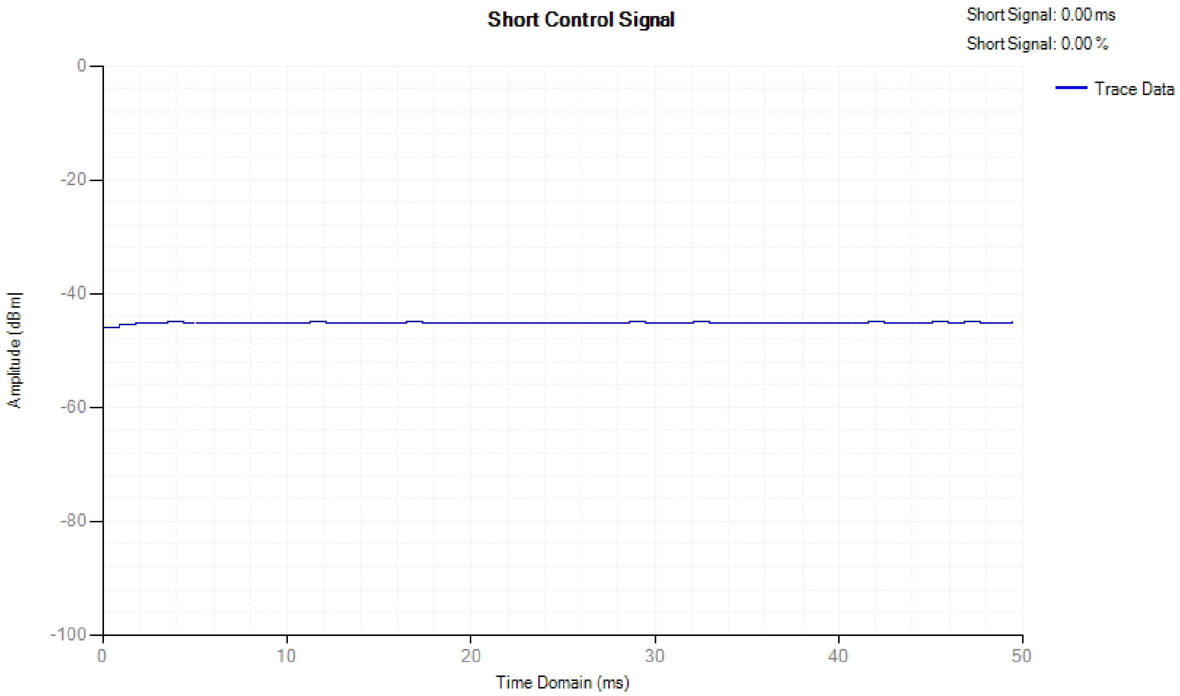
Control Signal NVNT g 2412MHz



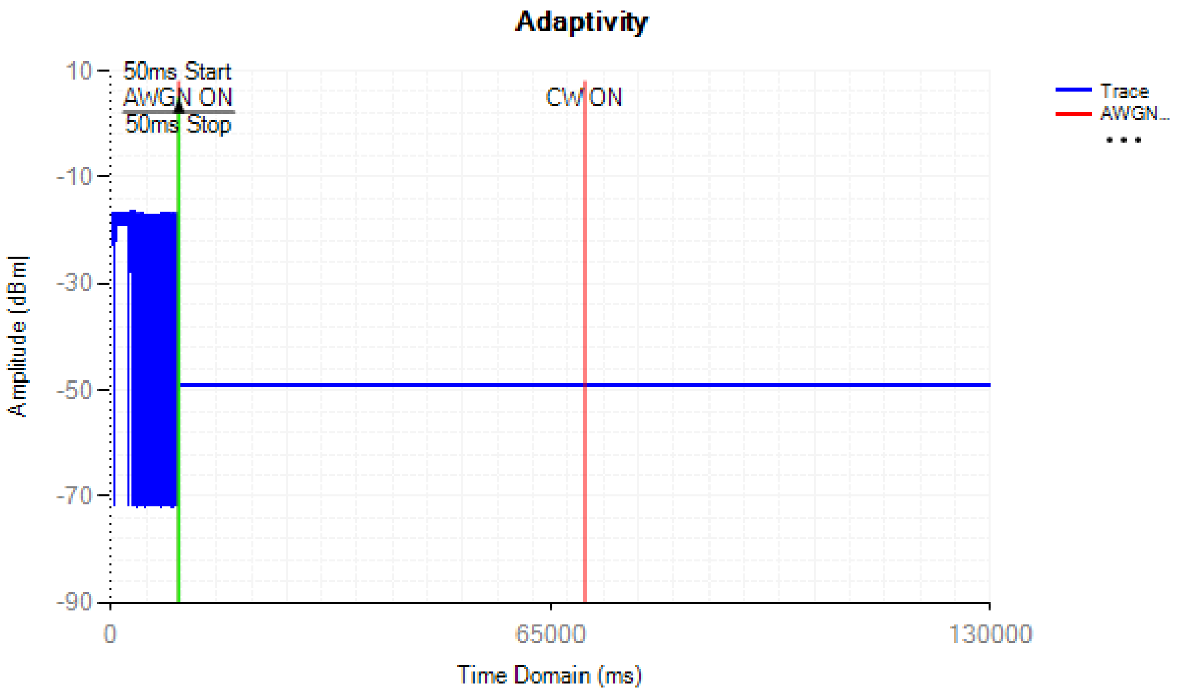
Adaptivity NVNT g 2472MHz



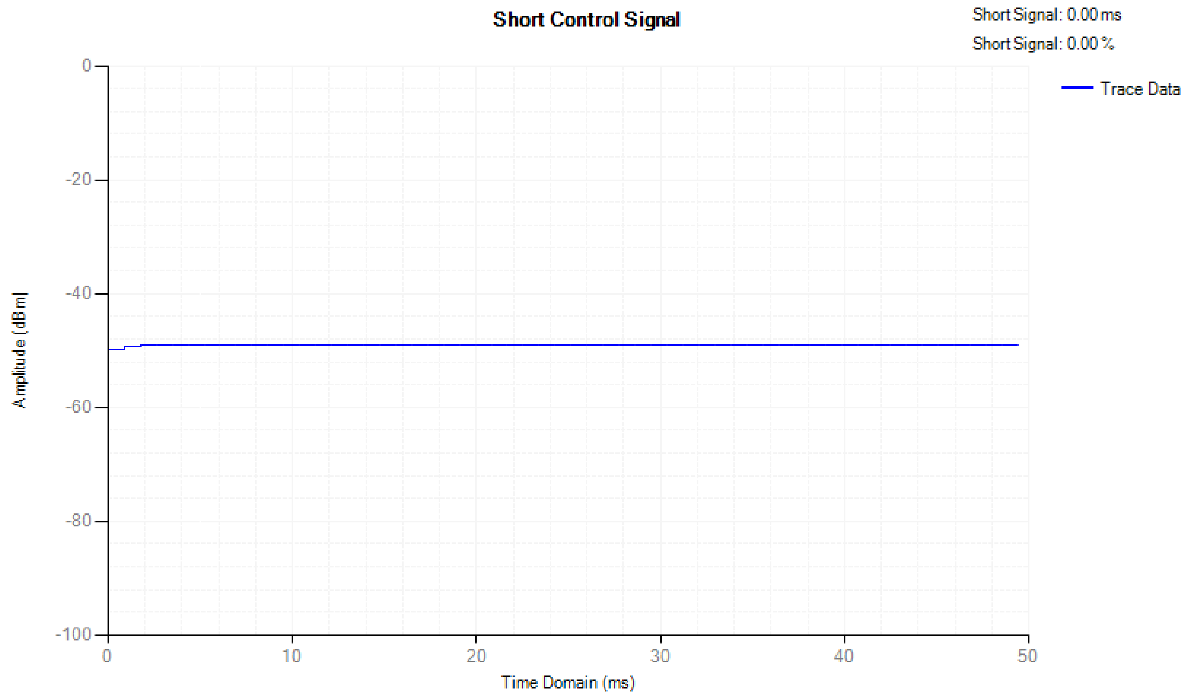
Control Signal NVNT g 2472MHz



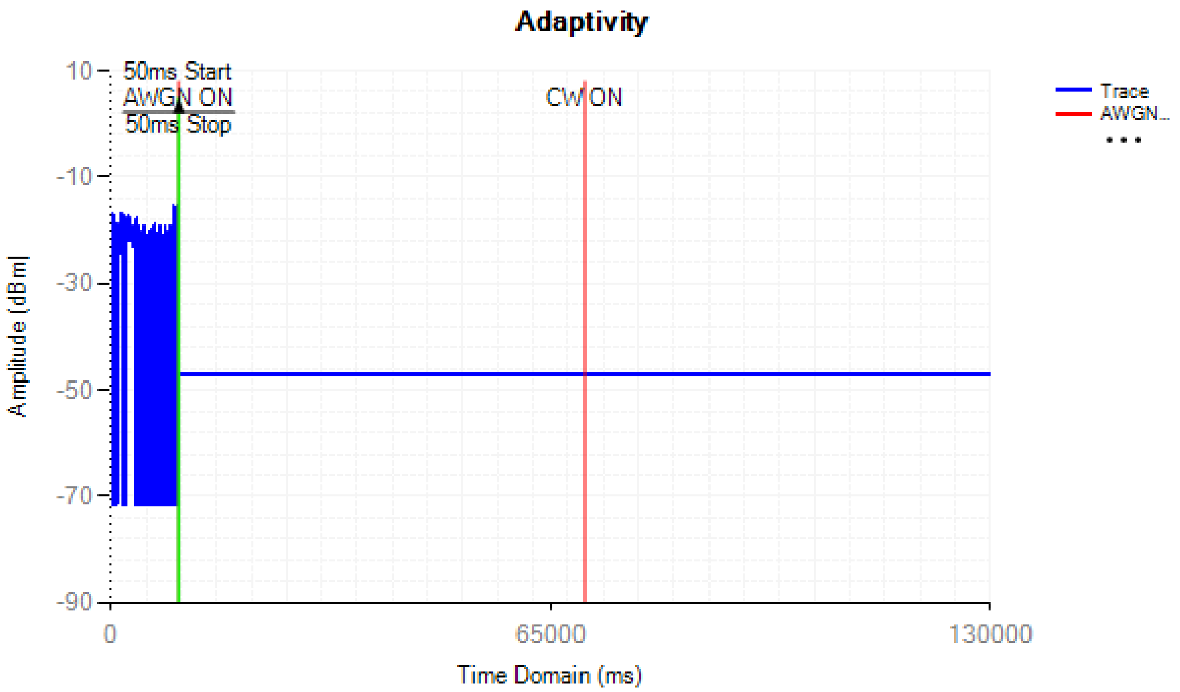
Adaptivity NVNT n20 2412MHz



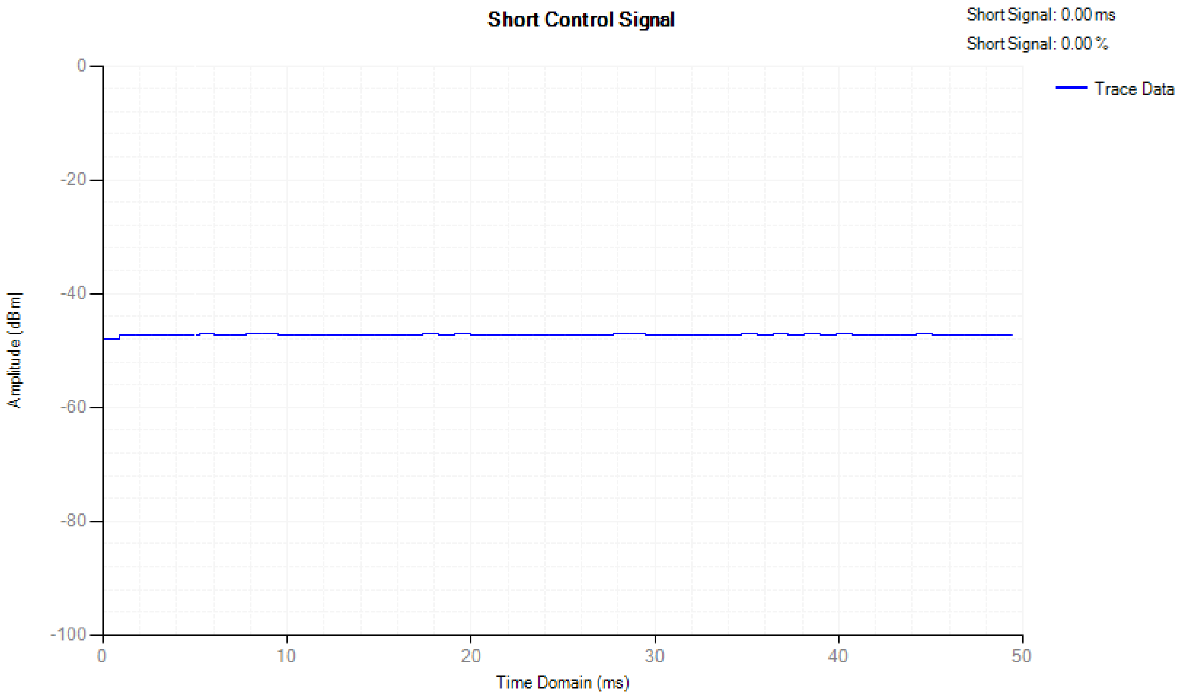
Control Signal NVNT n20 2412MHz



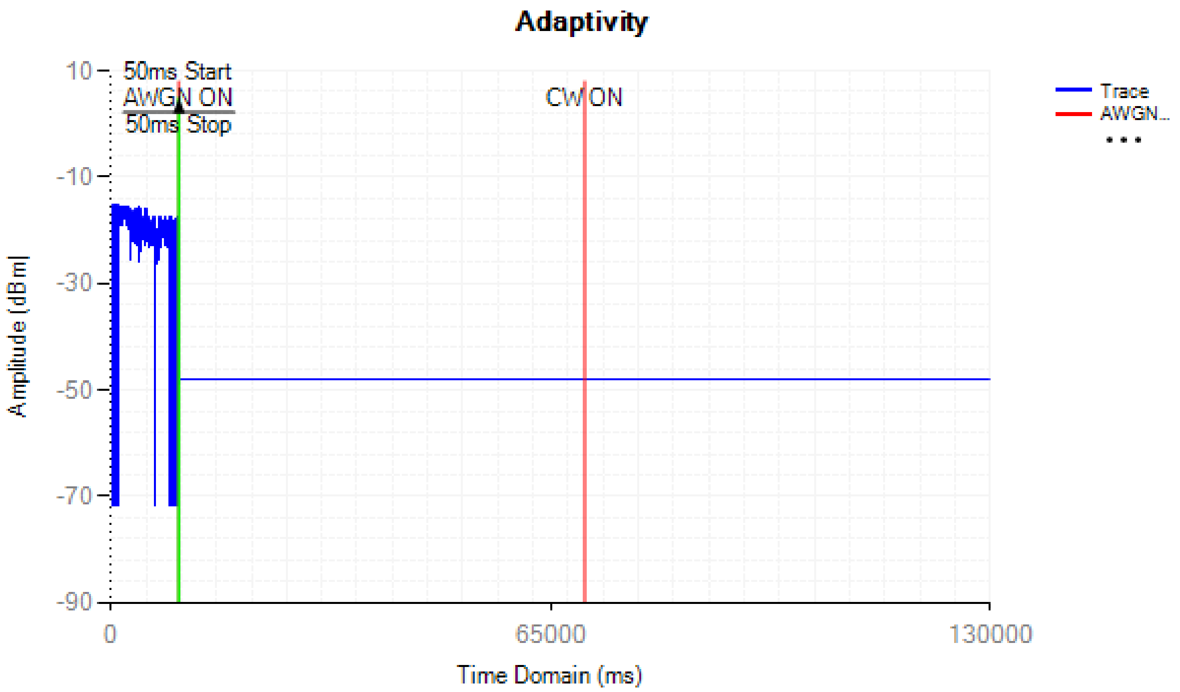
Adaptivity NVNT n20 2472MHz



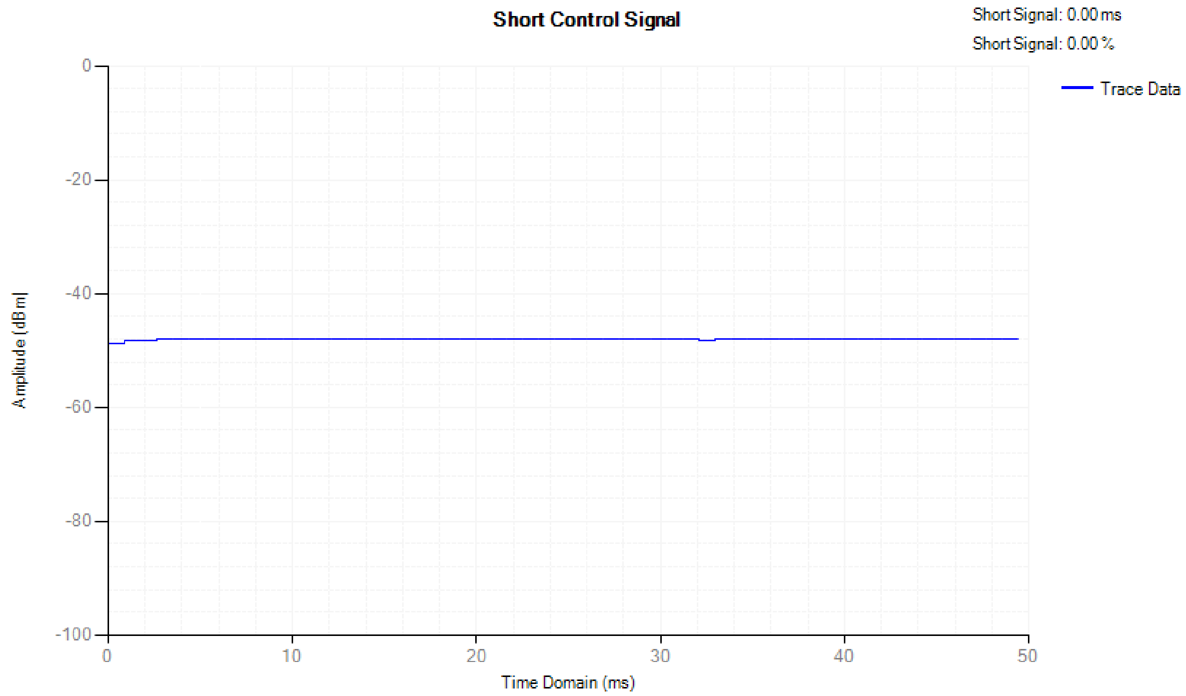
Control Signal NVNT n20 2472MHz



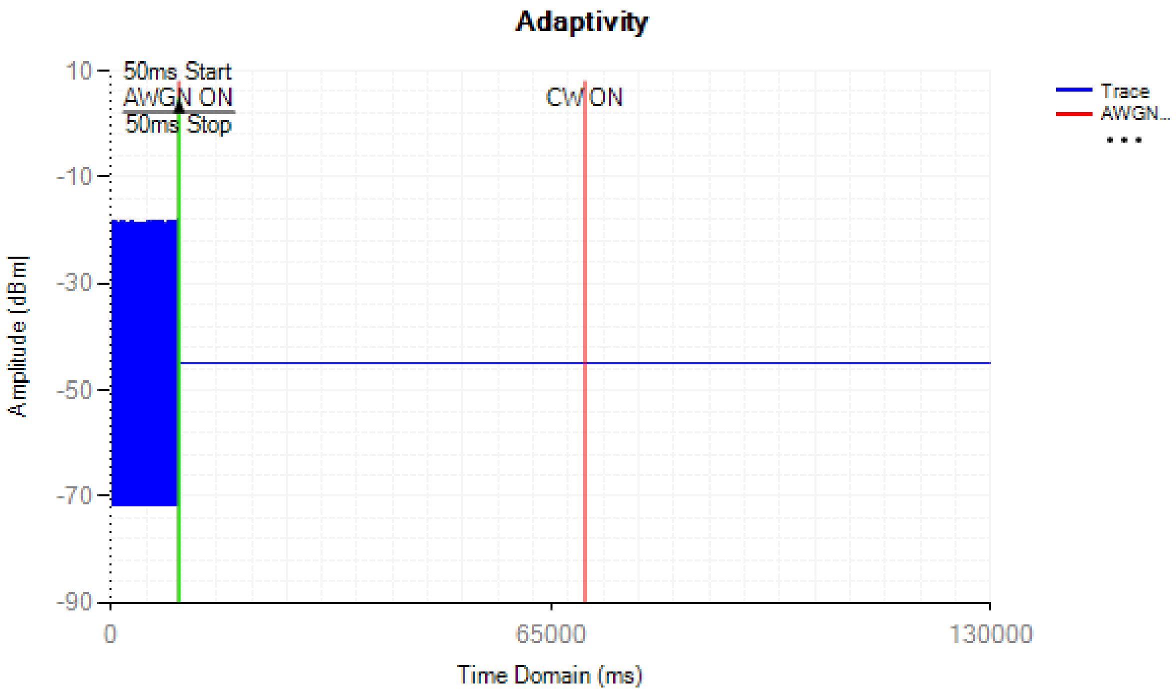
Adaptivity NVNT n40 2422MHz



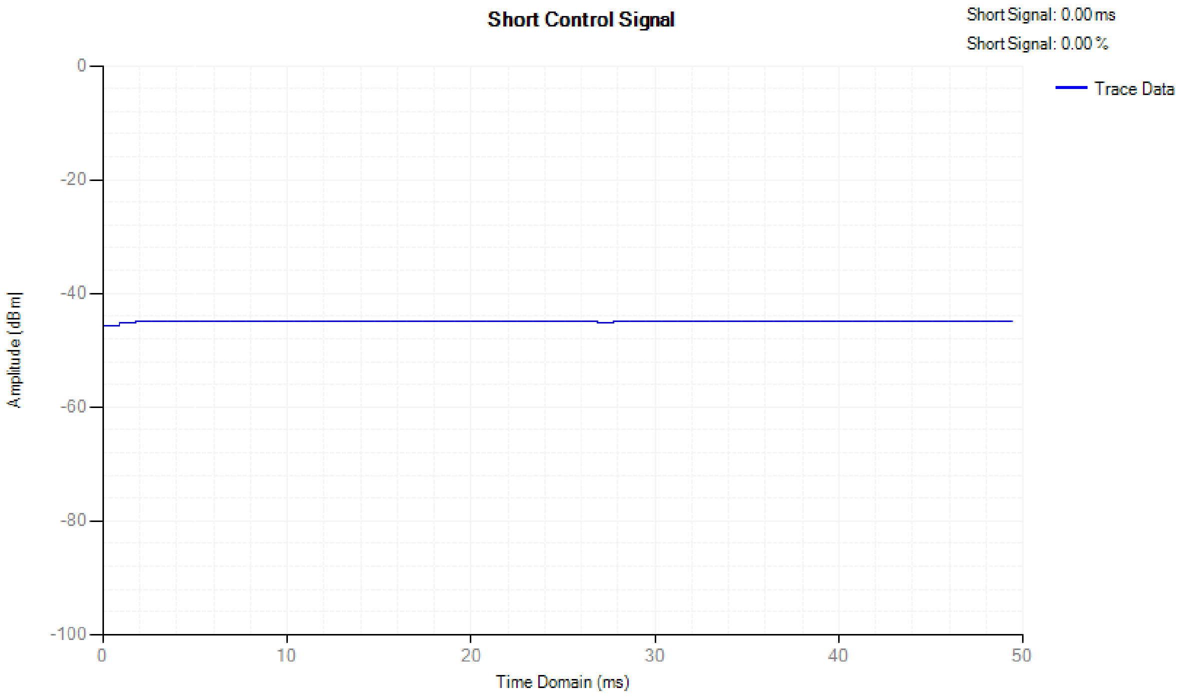
Control Signal NVNT n40 2422MHz



Adaptivity NVNT n40 2462MHz



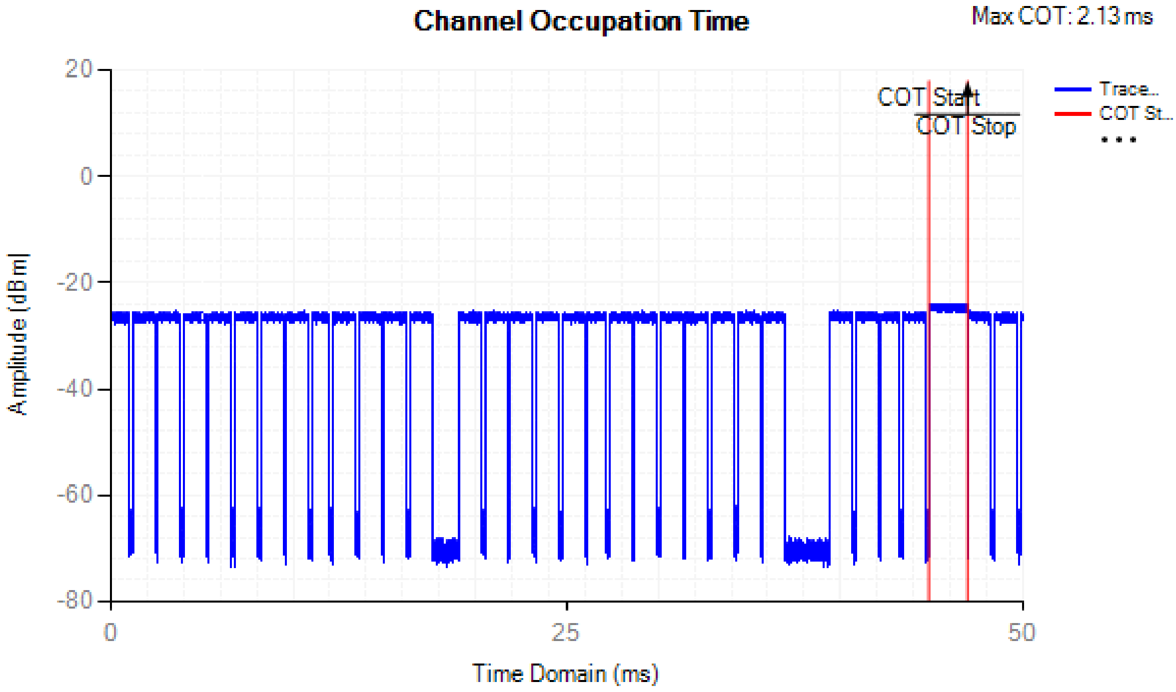
Control Signal NVNT n40 2462MHz



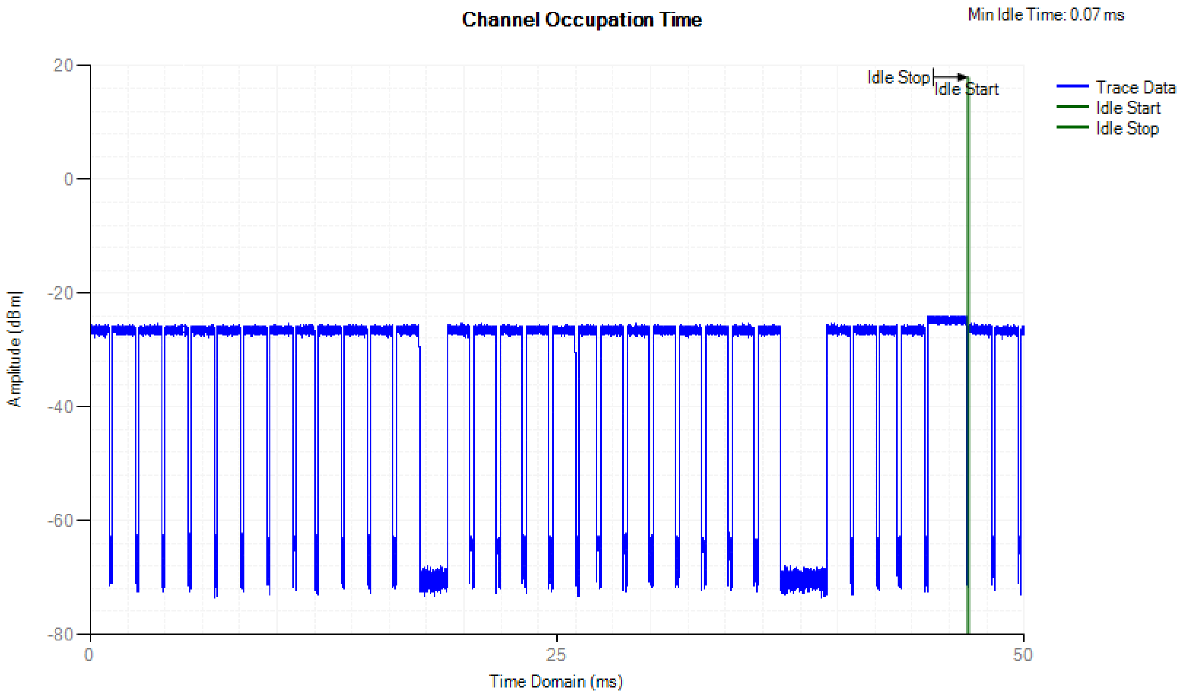
Adaptivity COT

Condition	Mode	Frequency (MHz)	Antenna	Max COT (ms)	Limit COT (ms)	Min Idle Time (ms)	Limit Idle Time (ms)	Verdict
NVNT	b	2412	Ant1	2.128	<=13	0.07	>0.018	Pass
NVNT	b	2472	Ant1	2.13	<=13	0.07	>0.018	Pass
NVNT	g	2412	Ant1	2.233	<=13	0.073	>0.018	Pass
NVNT	g	2472	Ant1	1.763	<=13	0.078	>0.018	Pass
NVNT	n20	2412	Ant1	1.955	<=13	0.083	>0.018	Pass
NVNT	n20	2472	Ant1	1.528	<=13	0.047	>0.018	Pass
NVNT	n40	2422	Ant1	3.868	<=13	0.055	>0.018	Pass
NVNT	n40	2462	Ant1	2.935	<=13	0.047	>0.018	Pass

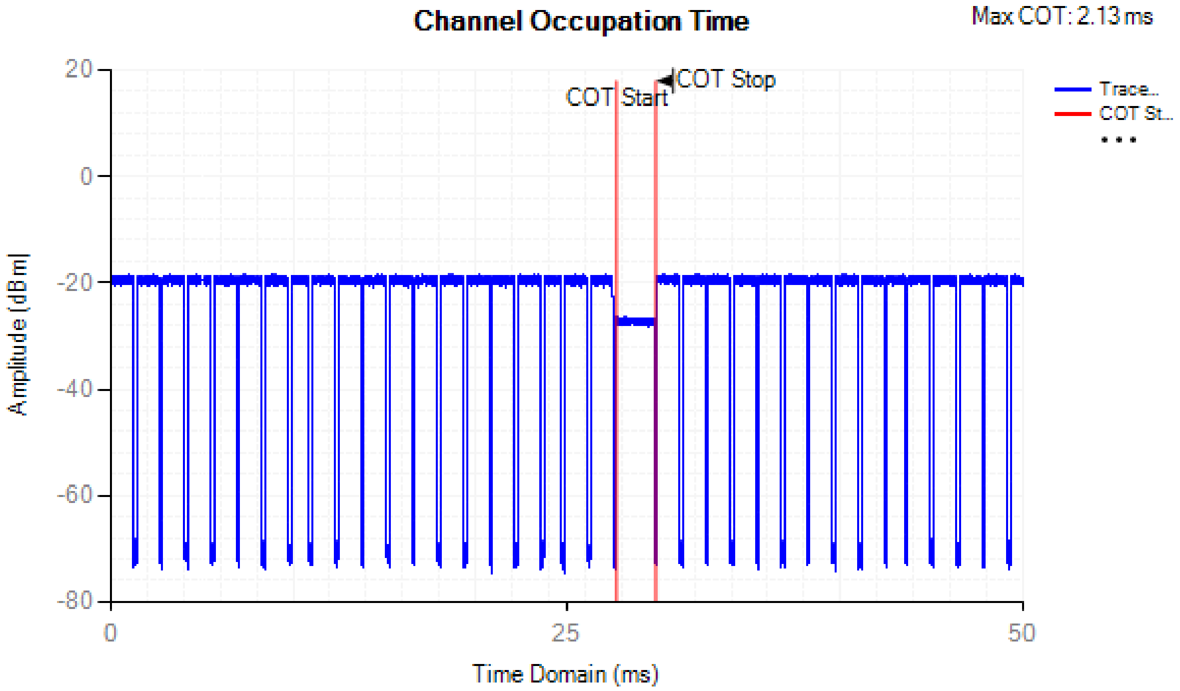
COT NVNT b 2412MHz



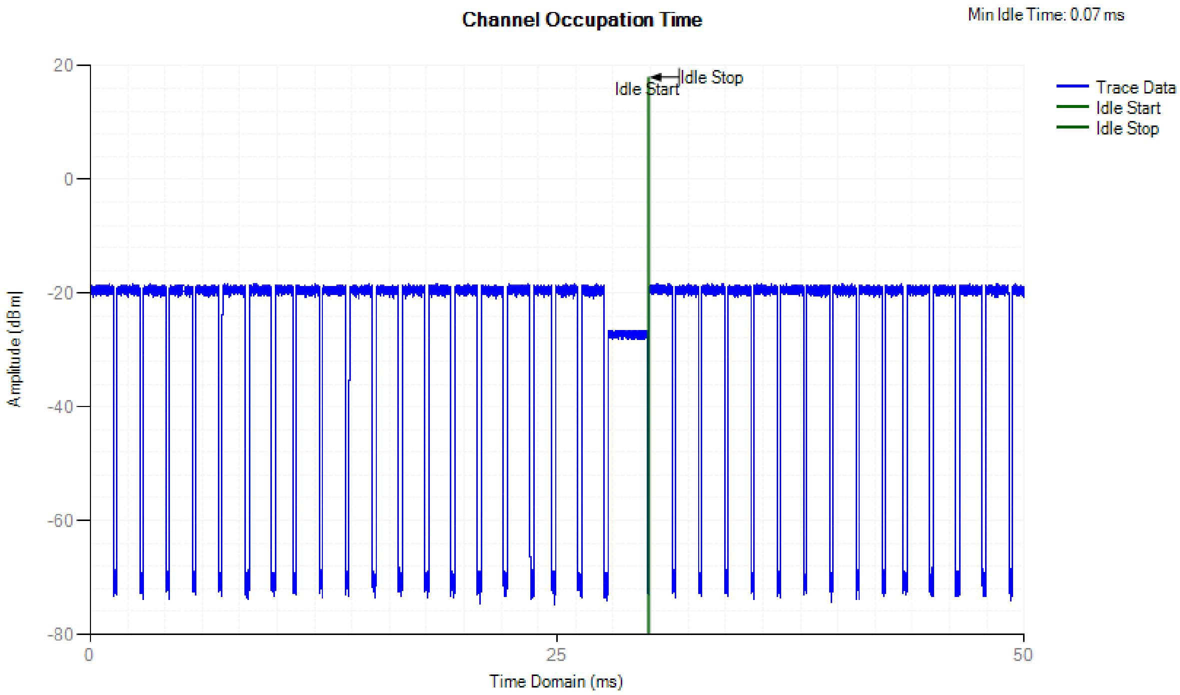
Idle NVNT b 2412MHz



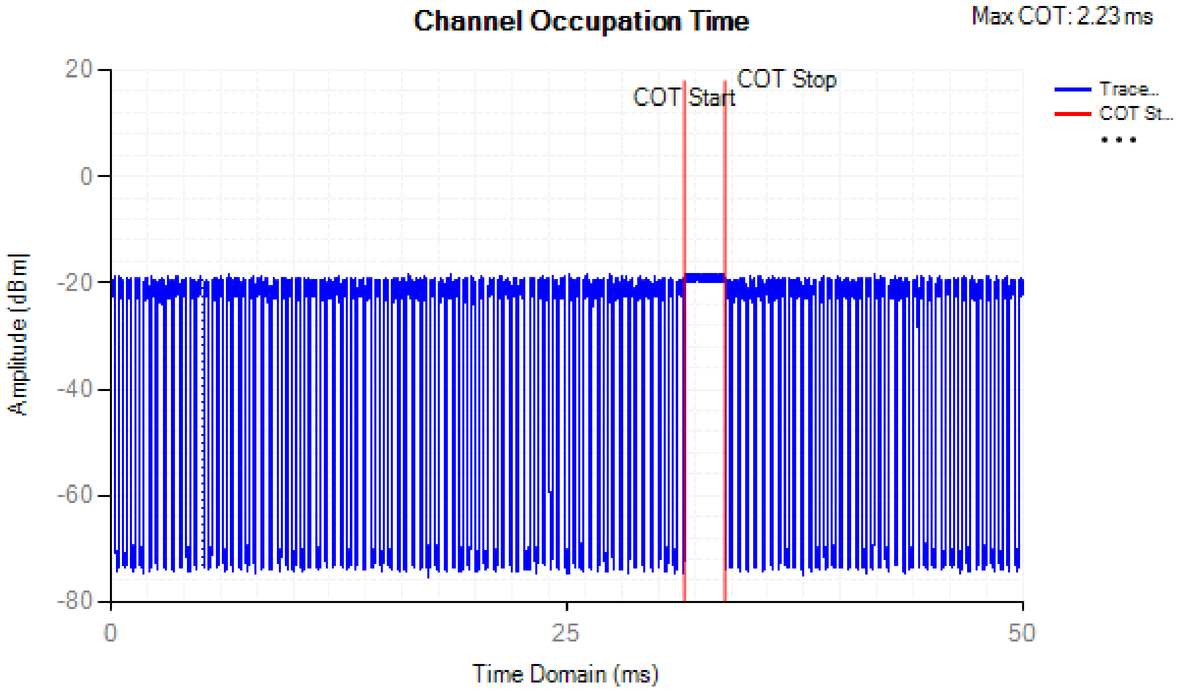
COT NVNT b 2472MHz



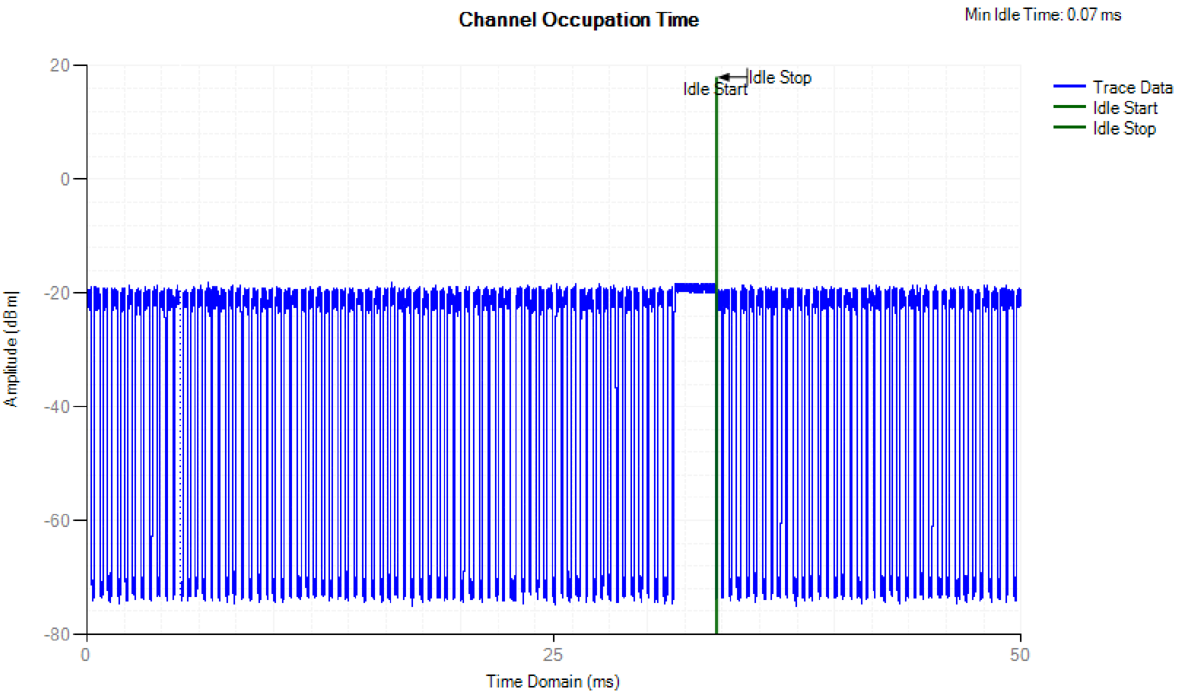
Idle NVNT b 2472MHz



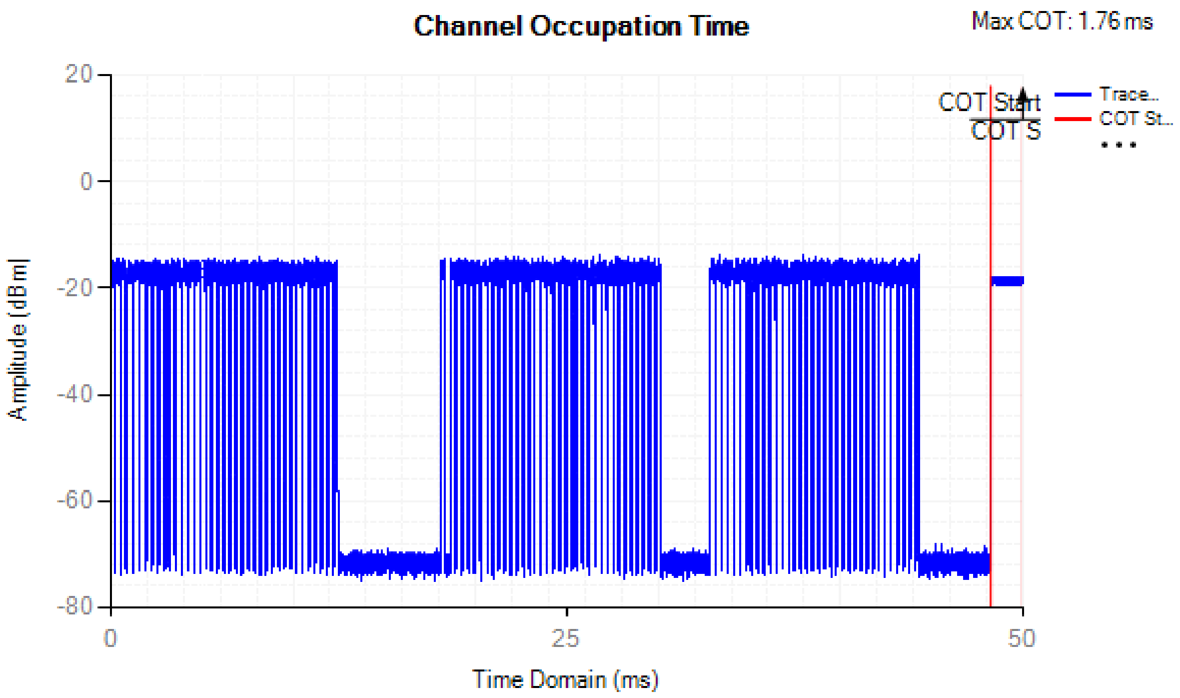
COT NVNT g 2412MHz



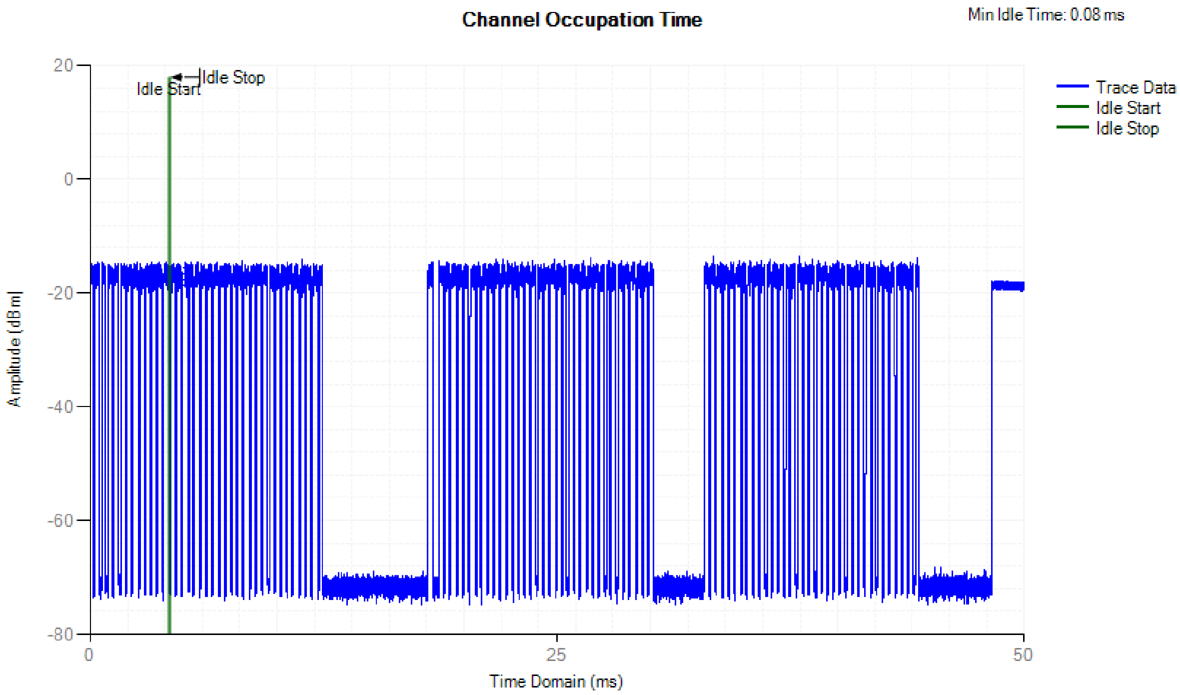
Idle NVNT g 2412MHz



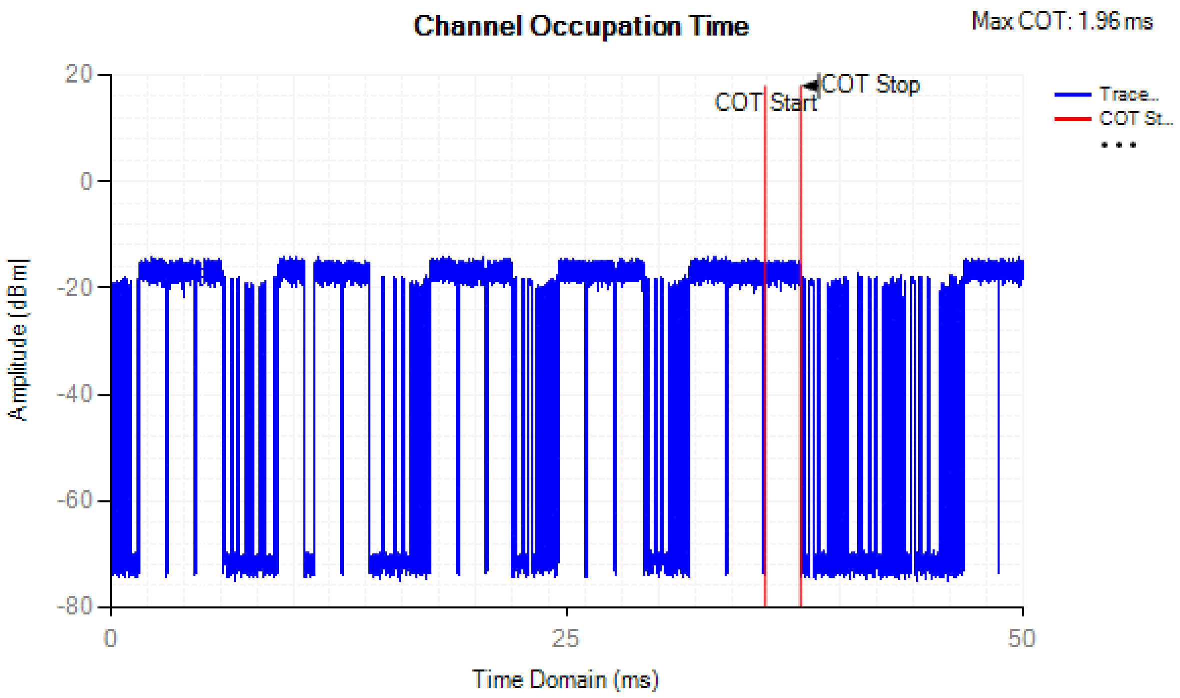
COT NVNT g 2472MHz



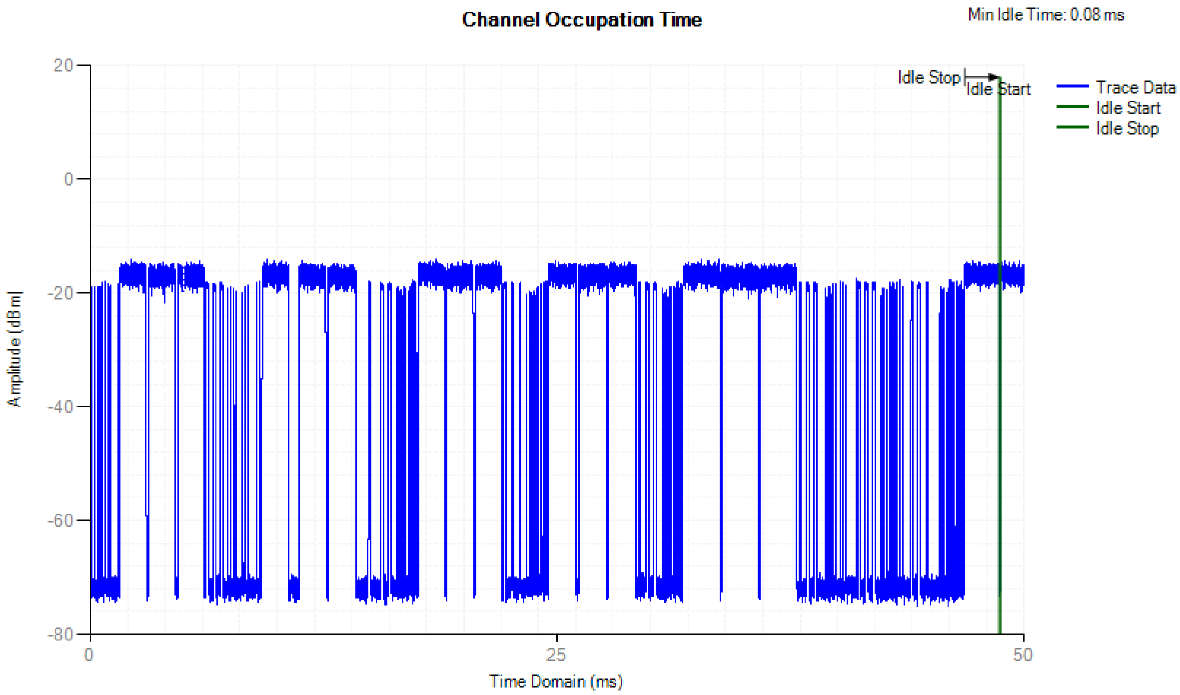
Idle NVNT g 2472MHz



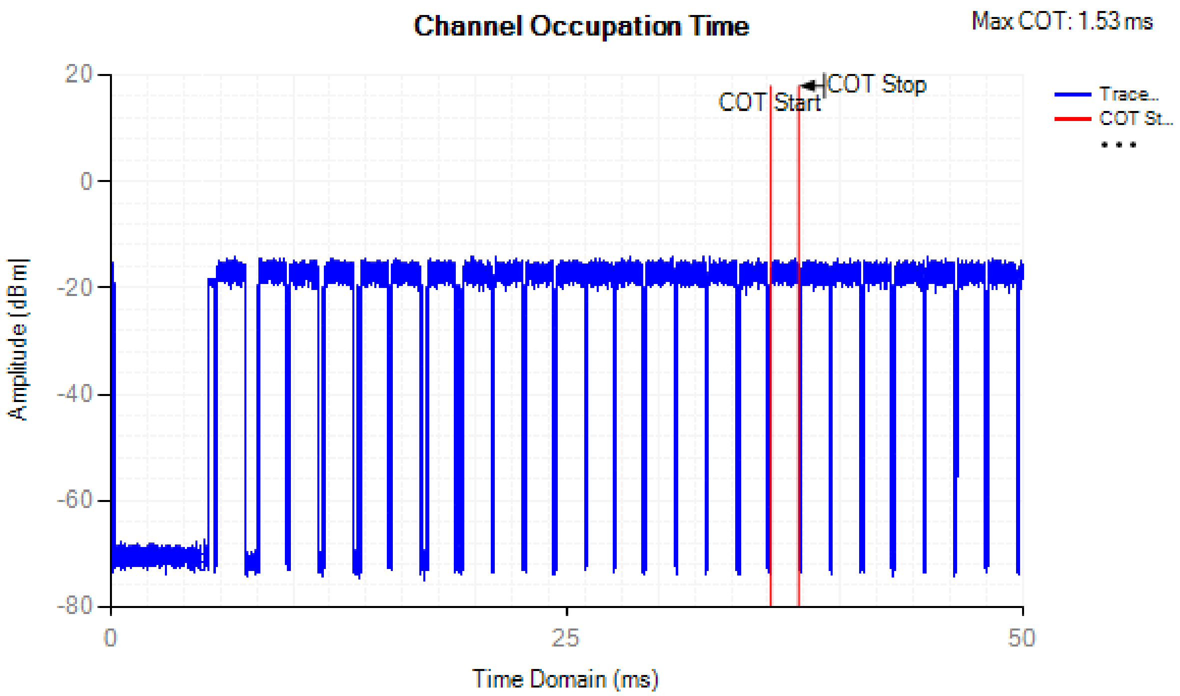
COT NVNT n20 2412MHz



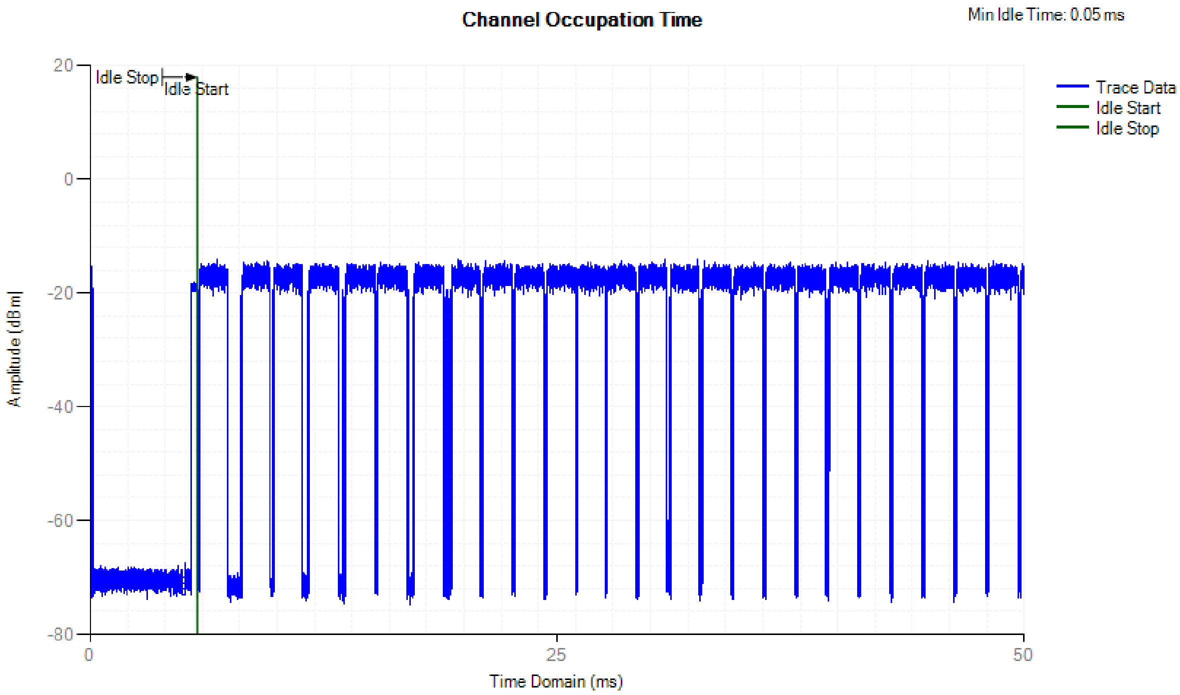
Idle NVNT n20 2412MHz



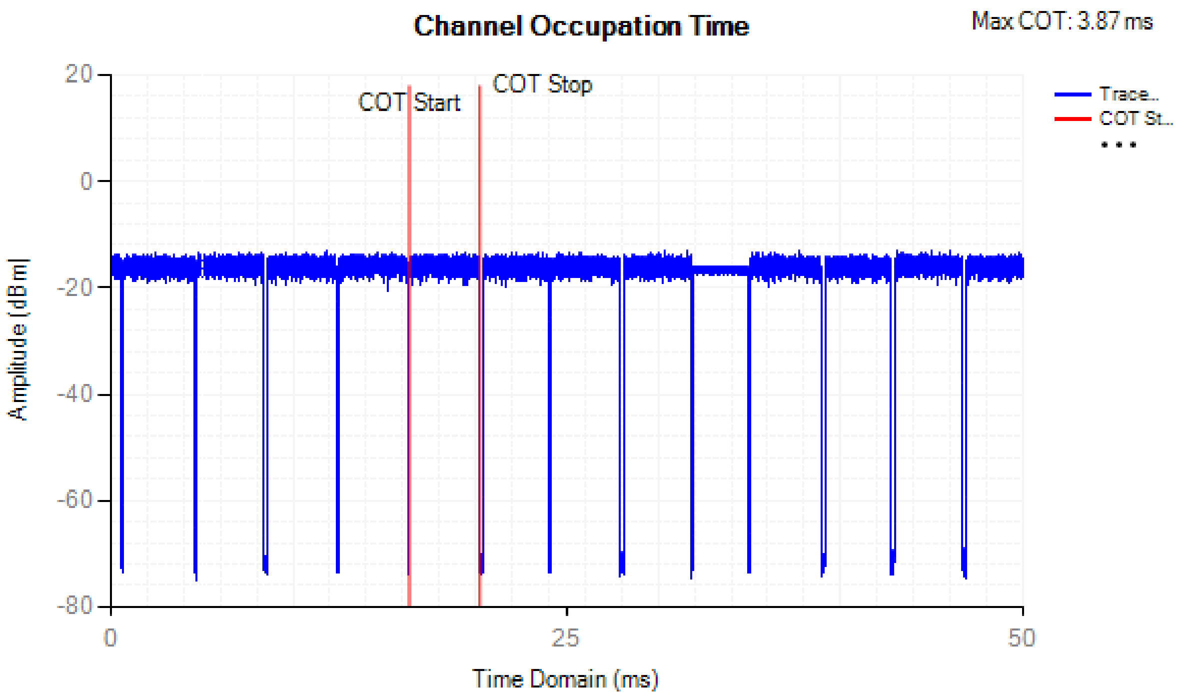
COT NVNT n20 2472MHz



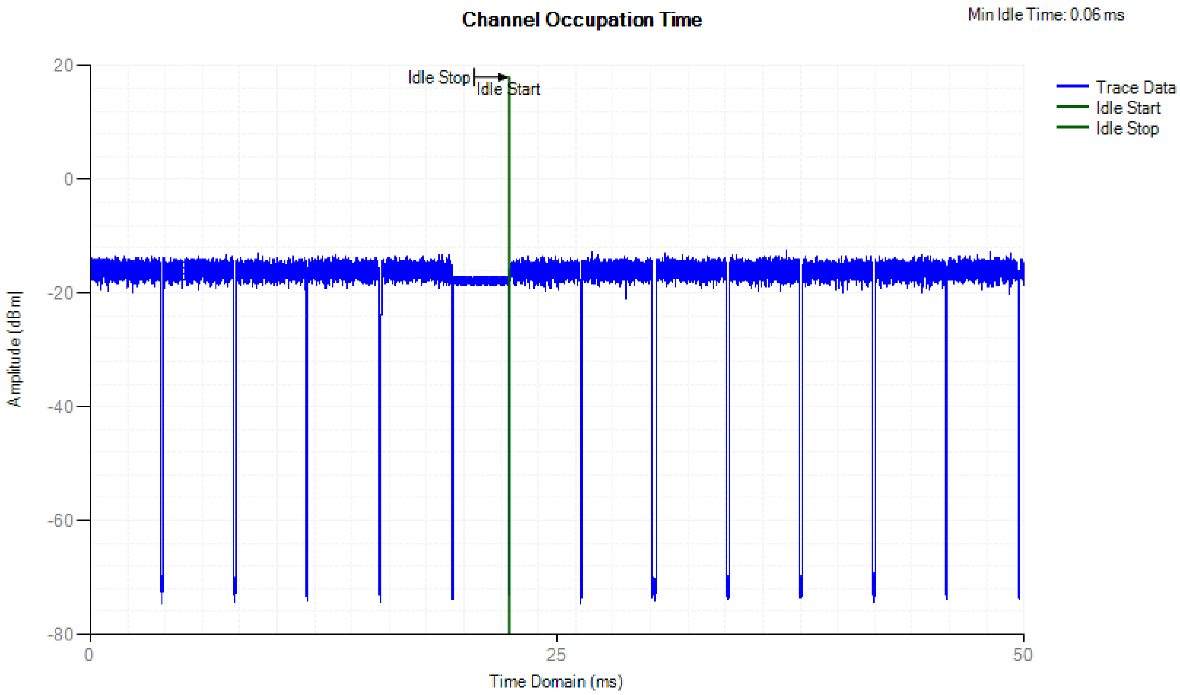
Idle NVNT n20 2472MHz



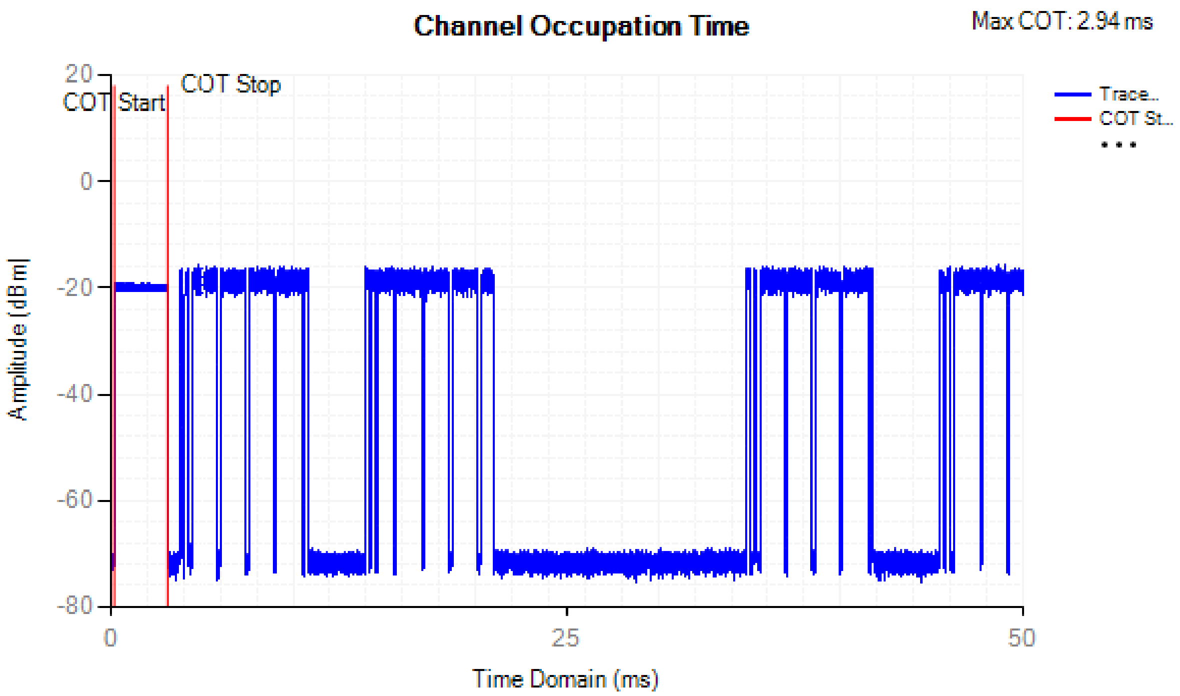
COT NVNT n40 2422MHz



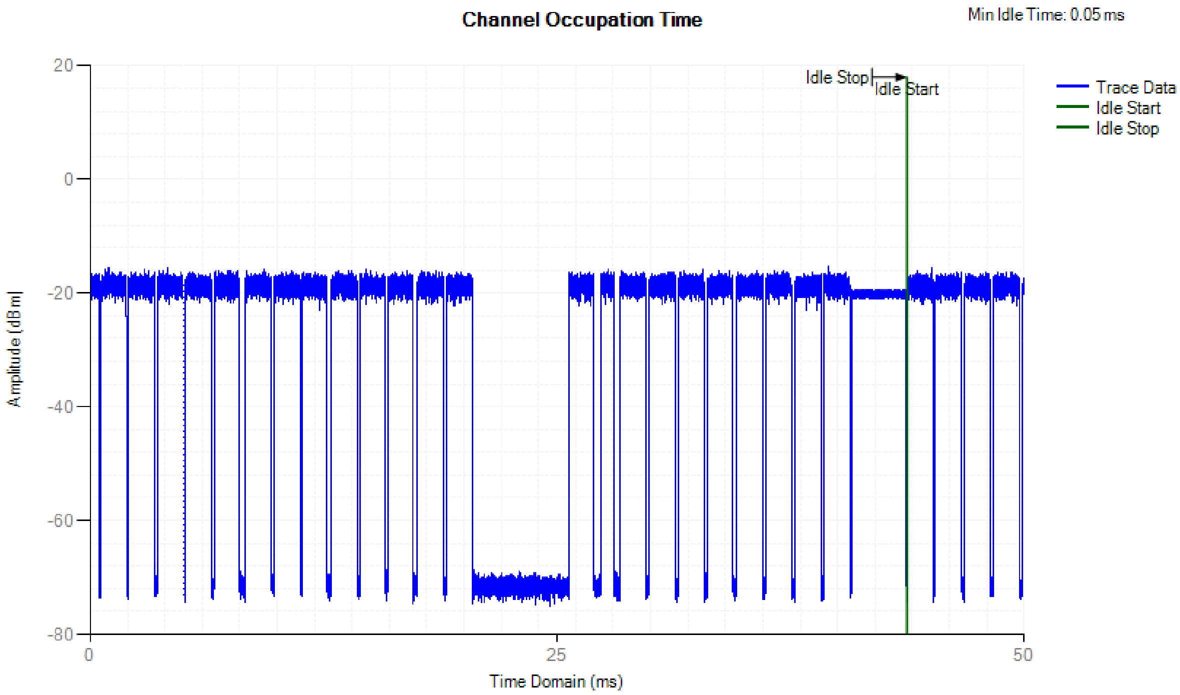
Idle NVNT n40 2422MHz



COT NVNT n40 2462MHz



Idle NVNT n40 2462MHz



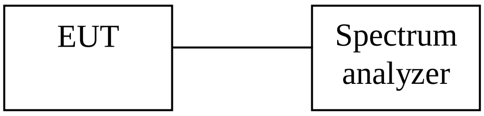
6. Occupied Channel Bandwidth

6.1. Limit

The Occupied Channel Bandwidth shall be within the band 2.4GHz to 2.4835GHz.

In addition, for non-adaptive non-FHSS equipment with e.i.r.p. greater than 10 dBm, the Occupied Channel Bandwidth shall be equal to or less than 20 MHz.

6.2. Test Setup



6.3. Test Procedure

Refer to ETSI EN 300 328 V2.2.2:2019 Clause 5.4.7.

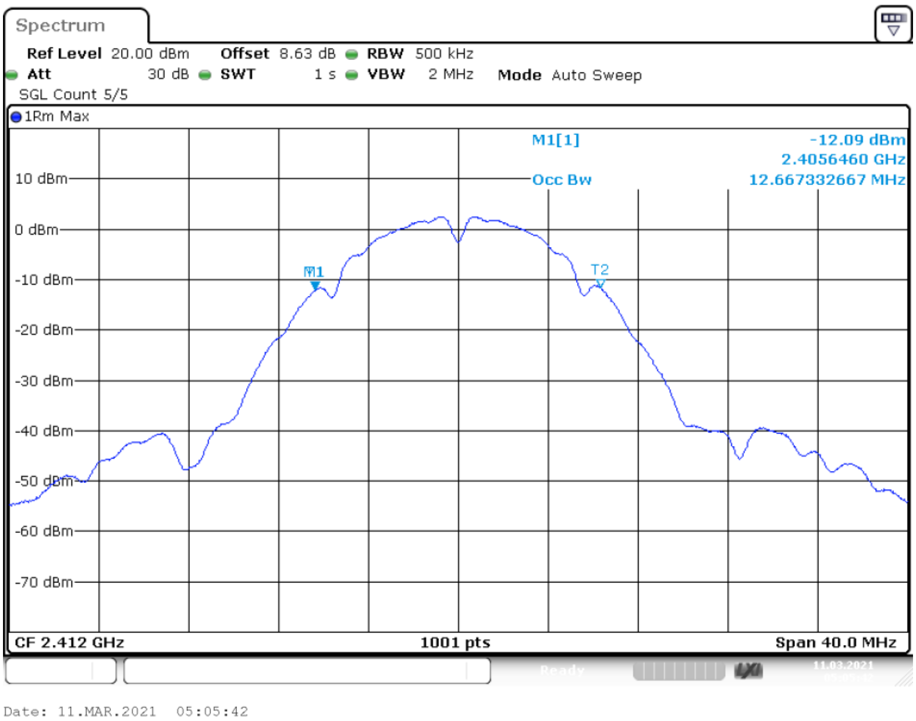
Connect the UUT to the spectrum analyzer and use the following settings:

Centre Frequency	The centre frequency of the channel under test
Frequency Span	2 × Nominal Channel Bandwidth (e.g. 2 MHz for a 1 MHz channel)
RBW	~ 1 % of the span without going below 1 %
VBW	3 × RBW
Detector	RMS
Trace	Max hold
Sweep Time	1s

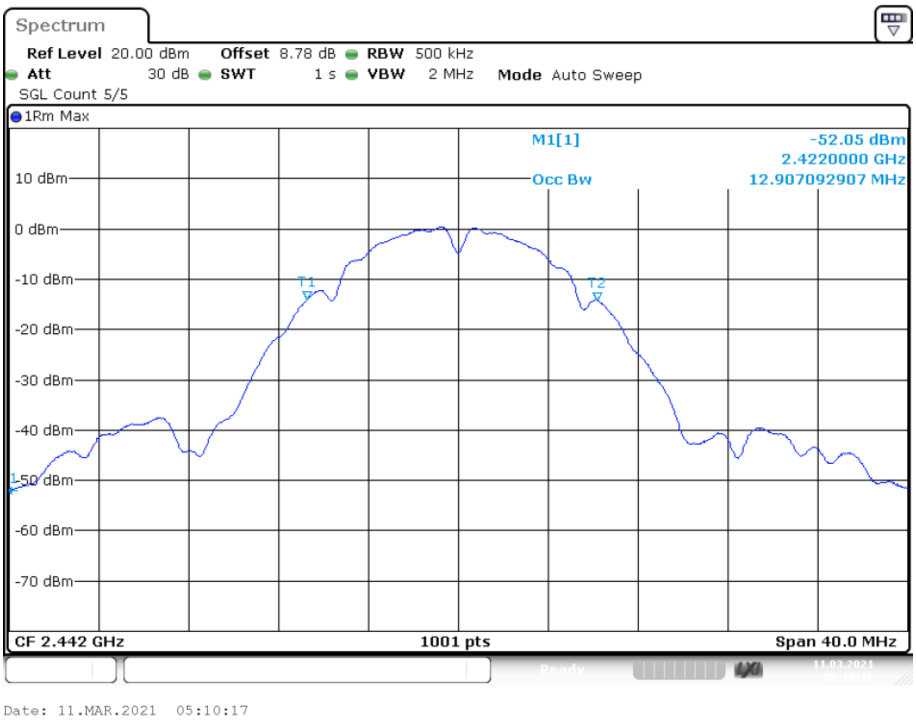
6.4. Test Result

Condition	Mode	Frequency (MHz)	Antenna	Center Frequency (MHz)	OBW (MHz)	Lower Edge (MHz)	Upper Edge (MHz)	Limit OBW (MHz)	Verdict
NVNT	b	2412	Ant1	2411.98	12.667	2405.646	2418.314	2400 - 2483.5MHz	Pass
NVNT	b	2442	Ant1	2441.74	12.907	2435.287	2448.194	2400 - 2483.5MHz	Pass
NVNT	b	2472	Ant1	2471.401	13.347	2464.727	2478.074	2400 - 2483.5MHz	Pass
NVNT	g	2412	Ant1	2412.02	16.823	2403.608	2420.432	2400 - 2483.5MHz	Pass
NVNT	g	2442	Ant1	2441.88	16.943	2433.409	2450.352	2400 - 2483.5MHz	Pass
NVNT	g	2472	Ant1	2471.281	17.902	2462.33	2480.232	2400 - 2483.5MHz	Pass
NVNT	n20	2412	Ant1	2412.02	17.942	2403.049	2420.991	2400 - 2483.5MHz	Pass
NVNT	n20	2442	Ant1	2441.9	18.102	2432.849	2450.951	2400 - 2483.5MHz	Pass
NVNT	n20	2472	Ant1	2471.381	18.821	2461.97	2480.791	2400 - 2483.5MHz	Pass
NVNT	n40	2422	Ant1	2422.08	36.284	2403.938	2440.222	2400 - 2483.5MHz	Pass
NVNT	n40	2442	Ant1	2441.96	37.003	2423.459	2460.462	2400 - 2483.5MHz	Pass
NVNT	n40	2462	Ant1	2461.84	35.804	2443.938	2479.742	2400 - 2483.5MHz	Pass

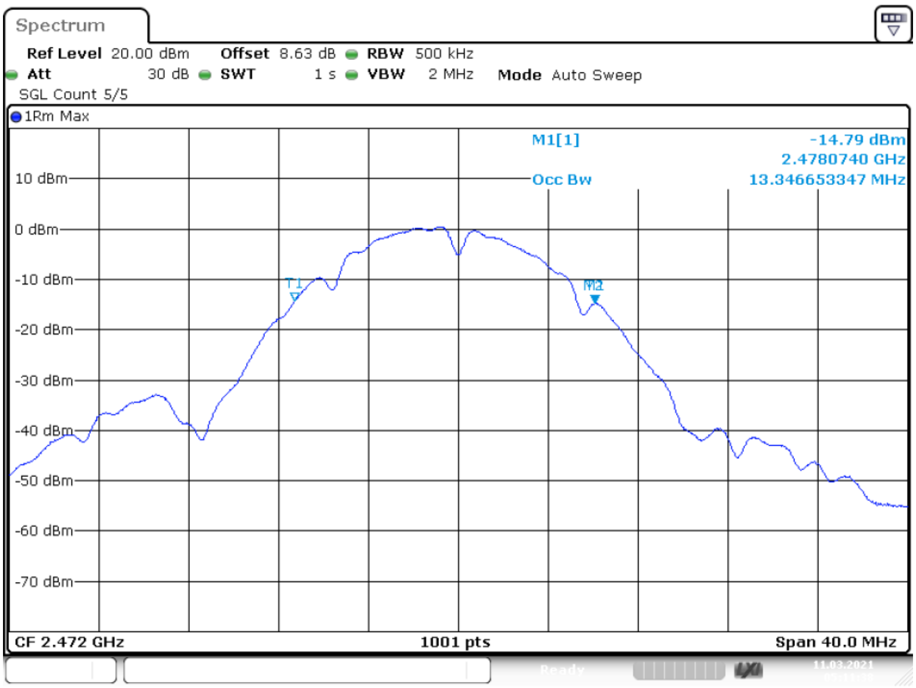
OBW NVNT b 2412MHz Ant1



OBW NVNT b 2442MHz Ant1

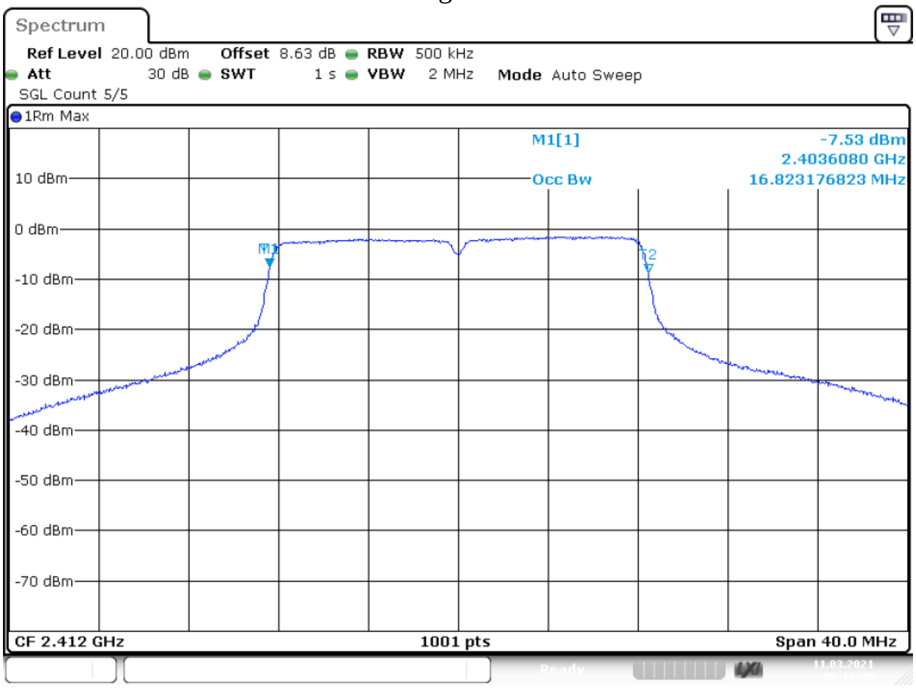


OBW NVNT b 2472MHz Ant1



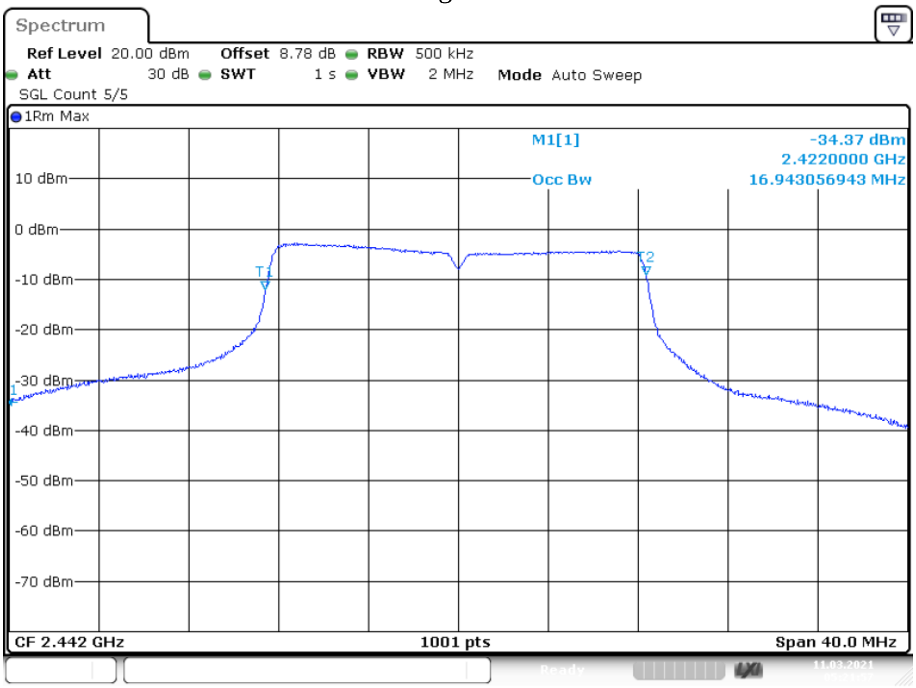
Date: 11.MAR.2021 05:11:38

OBW NVNT g 2412MHz Ant1



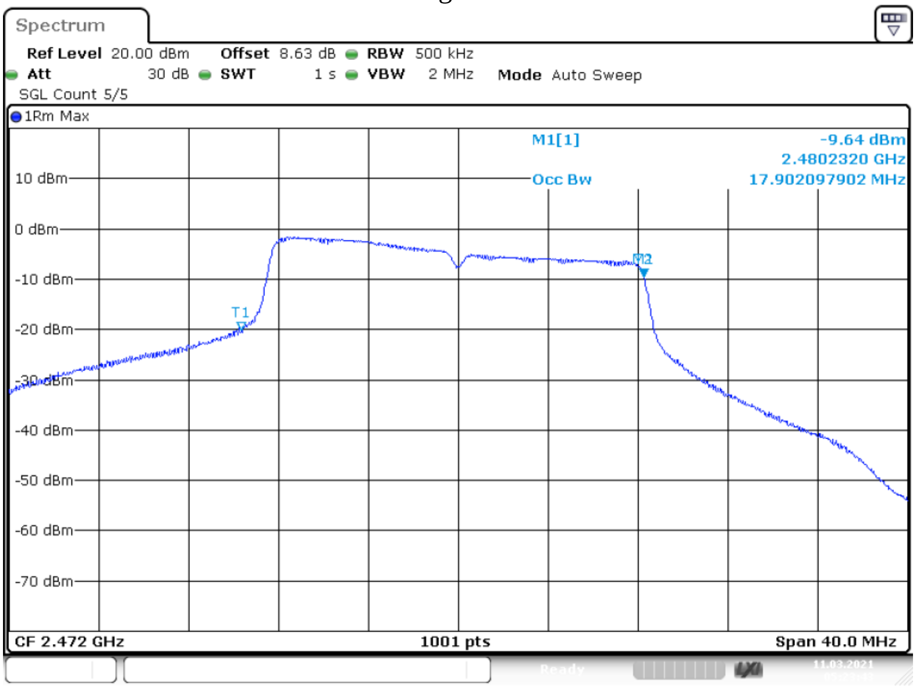
Date: 11.MAR.2021 05:16:30

OBW NVNT g 2442MHz Ant1



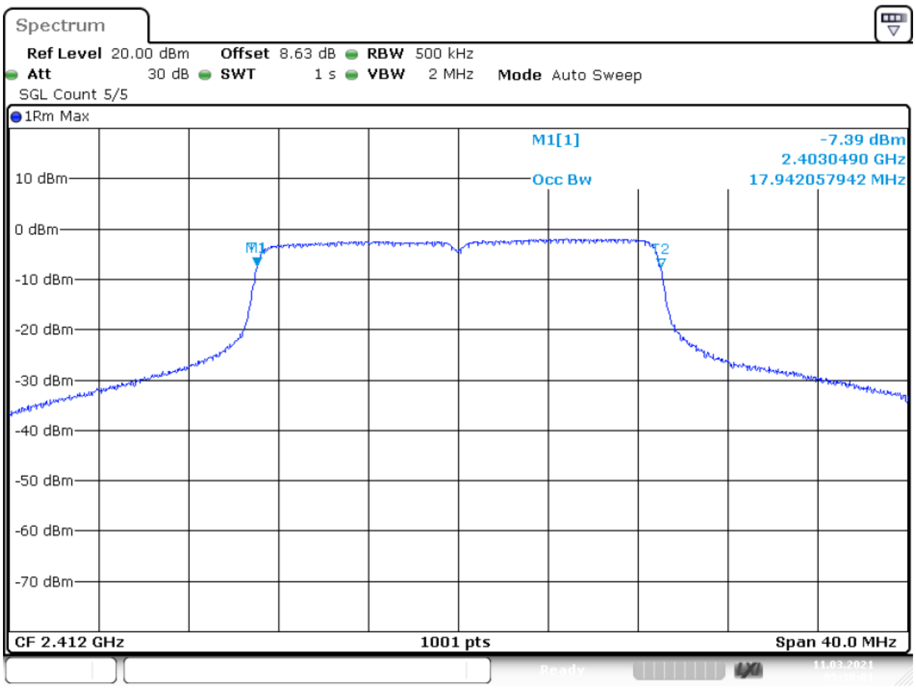
Date: 11.MAR.2021 05:21:57

OBW NVNT g 2472MHz Ant1



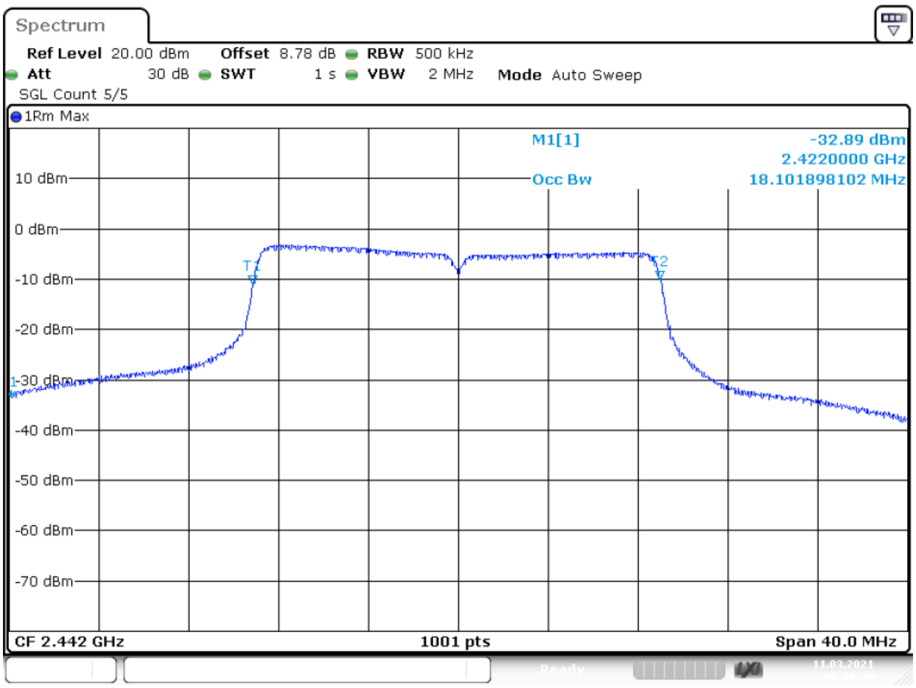
Date: 11.MAR.2021 05:23:43

OBW NVNT n20 2412MHz Ant1



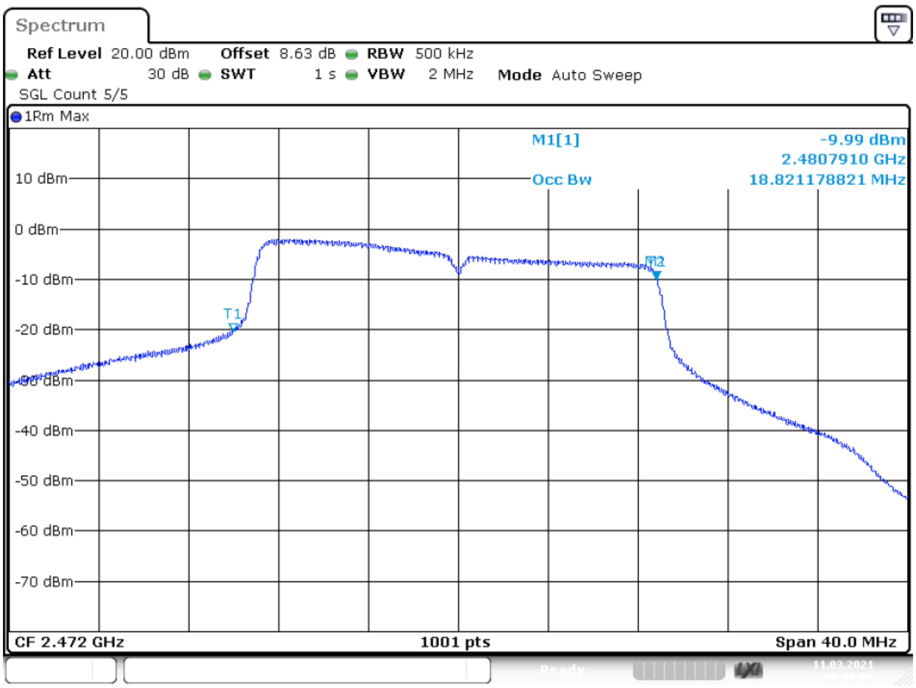
Date: 11.MAR.2021 05:30:01

OBW NVNT n20 2442MHz Ant1



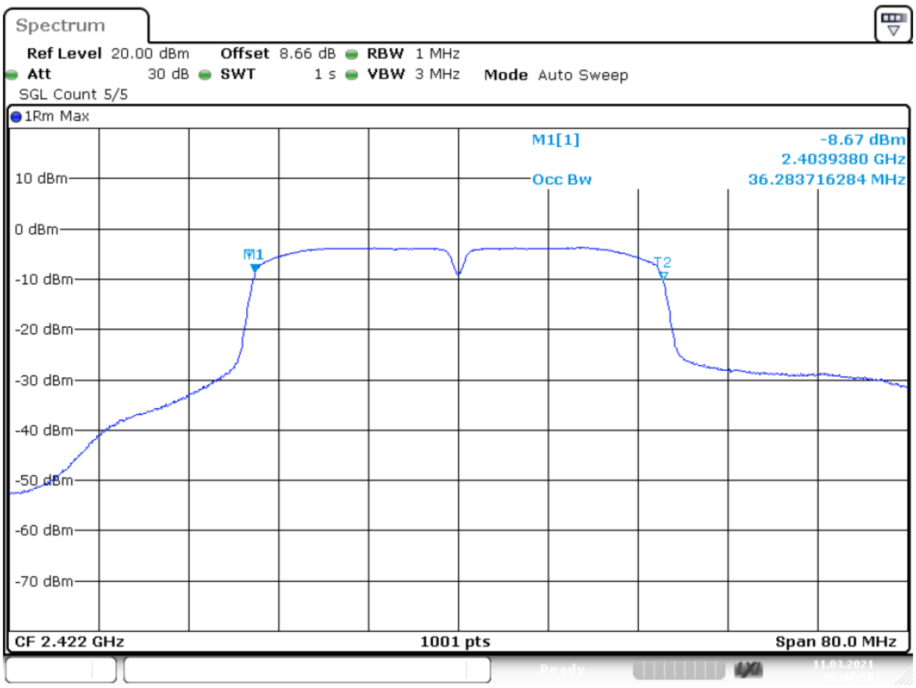
Date: 11.MAR.2021 05:39:20

OBW NVNT n20 2472MHz Ant1



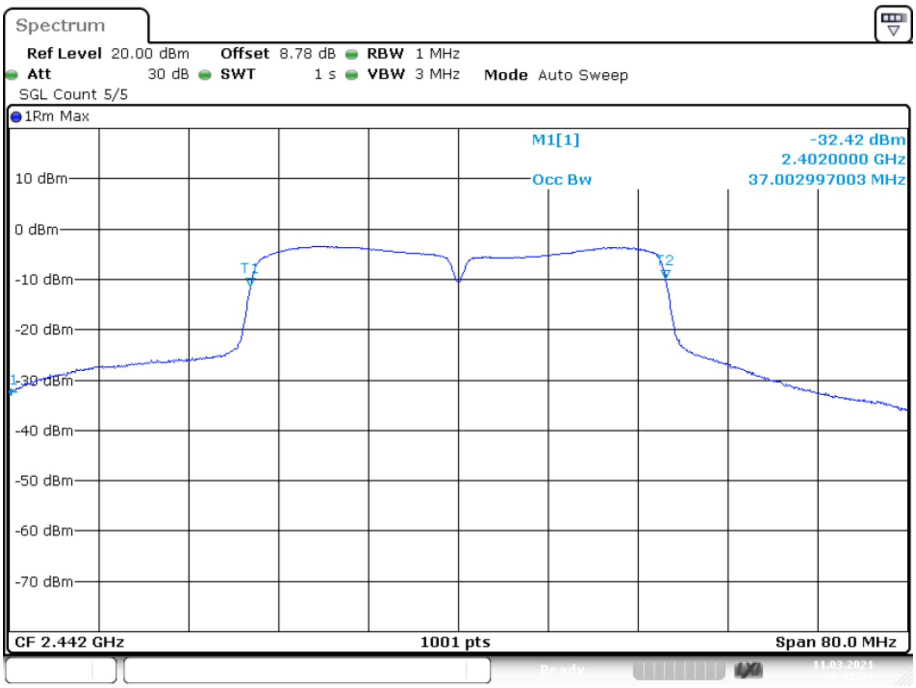
Date: 11.MAR.2021 05:41:00

OBW NVNT n40 2422MHz Ant1



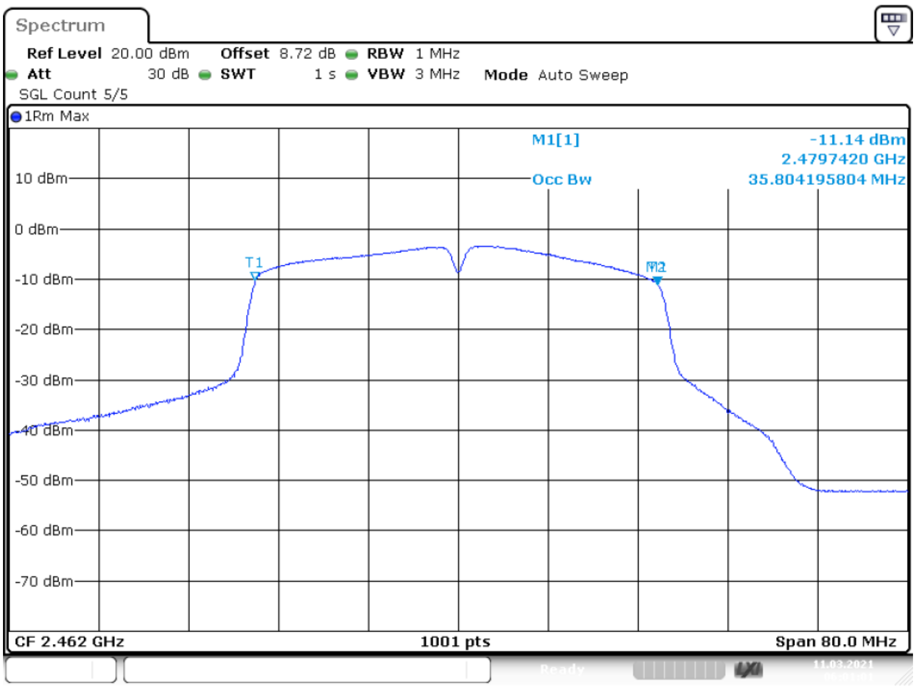
Date: 11.MAR.2021 05:47:49

OBW NVNT n40 2442MHz Ant1



Date: 11.MAR.2021 05:57:26

OBW NVNT n40 2462MHz Ant1



Date: 11.MAR.2021 06:01:00

7. Transmitter Unwanted Emissions in The Out-Of-Band Domain

7.1. Limit

The transmitter unwanted emissions in the out-of-band domain but outside the allocated band, shall not exceed the values provided by the mask in figure 3.

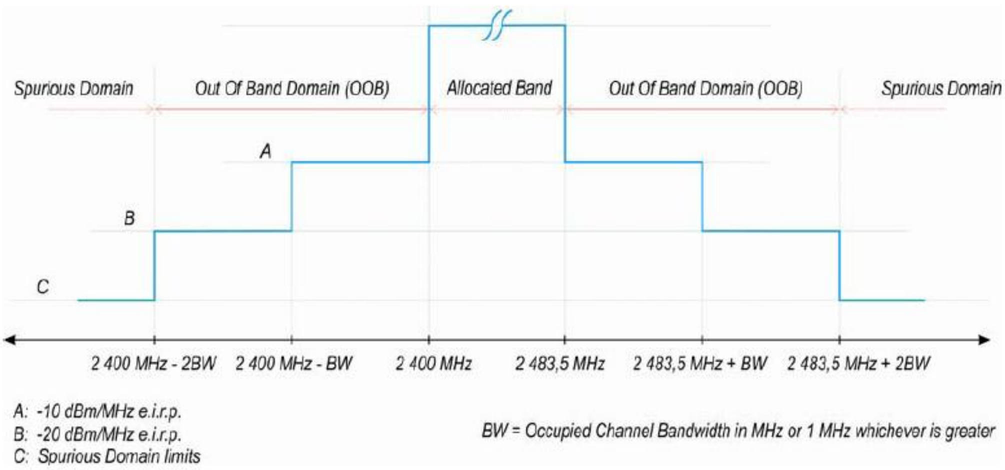
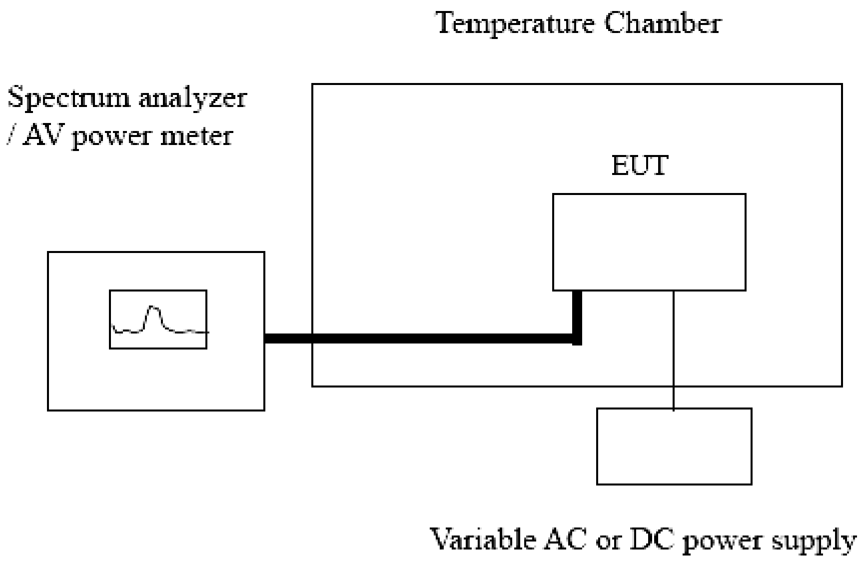


Figure 3: Transmit mask

7.2. Test Setup



7.3. Test Procedure

Refer to ETSI EN 300 328 V2.2.2:2019 Clause 5.4.8.

Connect the UUT to the spectrum analyzer and use the following settings:

RBW/ VBW	1MHz/3MHz
Span	0Hz
Filter mode	Channel filter
Sweep mode	Single Sweep
Sweep Points	Sweep time [µs] / (1 µs) with a maximum of 30 000
Sweep Time:	> 120 % of the duration of the longest burst detected during the measurement of the RF Output Power
Detector	RMS
Trace mode	Max Hold
Trigger Mode	Video trigger

7.4. Test Result

PASS.

Condition	Mode	Frequency (MHz)	Antenna	OOB Frequency (MHz)	Level (dBm/MHz)	Limit (dBm/MHz)	Verdict
NVNT	b	2412	Ant1	2399.5	-37.95	-10	Pass
NVNT	b	2412	Ant1	2398.5	-34.69	-10	Pass
NVNT	b	2412	Ant1	2397.5	-36.19	-10	Pass
NVNT	b	2412	Ant1	2396.5	-39.23	-10	Pass
NVNT	b	2412	Ant1	2395.5	-43.09	-10	Pass
NVNT	b	2412	Ant1	2394.5	-43.43	-10	Pass
NVNT	b	2412	Ant1	2393.5	-47.7	-10	Pass
NVNT	b	2412	Ant1	2392.5	-51.02	-10	Pass
NVNT	b	2412	Ant1	2391.5	-53.49	-10	Pass
NVNT	b	2412	Ant1	2390.5	-54.38	-10	Pass
NVNT	b	2412	Ant1	2389.5	-55.79	-10	Pass
NVNT	b	2412	Ant1	2388.5	-56.35	-10	Pass
NVNT	b	2412	Ant1	2387.833	-56.36	-10	Pass
NVNT	b	2412	Ant1	2386.833	-56.66	-20	Pass
NVNT	b	2412	Ant1	2385.833	-56.83	-20	Pass
NVNT	b	2412	Ant1	2384.833	-56.95	-20	Pass
NVNT	b	2412	Ant1	2383.833	-56.99	-20	Pass
NVNT	b	2412	Ant1	2382.833	-56.99	-20	Pass
NVNT	b	2412	Ant1	2381.833	-57.02	-20	Pass
NVNT	b	2412	Ant1	2380.833	-57.01	-20	Pass
NVNT	b	2412	Ant1	2379.833	-57.03	-20	Pass
NVNT	b	2412	Ant1	2378.833	-57.03	-20	Pass
NVNT	b	2412	Ant1	2377.833	-57.03	-20	Pass
NVNT	b	2412	Ant1	2376.833	-57.02	-20	Pass
NVNT	b	2412	Ant1	2375.833	-57.03	-20	Pass
NVNT	b	2412	Ant1	2375.166	-57.05	-20	Pass
NVNT	b	2472	Ant1	2484	-35.47	-10	Pass
NVNT	b	2472	Ant1	2485	-36.06	-10	Pass
NVNT	b	2472	Ant1	2486	-36.38	-10	Pass

NVNT	b	2472	Ant1	2487	-39.57	-10	Pass
NVNT	b	2472	Ant1	2488	-41.28	-10	Pass
NVNT	b	2472	Ant1	2489	-44.14	-10	Pass
NVNT	b	2472	Ant1	2490	-47.57	-10	Pass
NVNT	b	2472	Ant1	2491	-53.29	-10	Pass
NVNT	b	2472	Ant1	2492	-55.64	-10	Pass
NVNT	b	2472	Ant1	2493	-56.39	-10	Pass
NVNT	b	2472	Ant1	2494	-56.49	-10	Pass
NVNT	b	2472	Ant1	2495	-56.5	-10	Pass
NVNT	b	2472	Ant1	2496	-56.49	-10	Pass
NVNT	b	2472	Ant1	2496.347	-56.5	-10	Pass
NVNT	b	2472	Ant1	2497.347	-56.5	-20	Pass
NVNT	b	2472	Ant1	2498.347	-56.51	-20	Pass
NVNT	b	2472	Ant1	2499.347	-56.49	-20	Pass
NVNT	b	2472	Ant1	2500.347	-56.51	-20	Pass
NVNT	b	2472	Ant1	2501.347	-56.49	-20	Pass
NVNT	b	2472	Ant1	2502.347	-56.51	-20	Pass
NVNT	b	2472	Ant1	2503.347	-56.52	-20	Pass
NVNT	b	2472	Ant1	2504.347	-56.51	-20	Pass
NVNT	b	2472	Ant1	2505.347	-56.51	-20	Pass
NVNT	b	2472	Ant1	2506.347	-56.52	-20	Pass
NVNT	b	2472	Ant1	2507.347	-56.49	-20	Pass
NVNT	b	2472	Ant1	2508.347	-55.14	-20	Pass
NVNT	b	2472	Ant1	2509.347	-56.42	-20	Pass
NVNT	b	2472	Ant1	2509.694	-56.48	-20	Pass
NVNT	g	2412	Ant1	2399.5	-15.93	-10	Pass
NVNT	g	2412	Ant1	2398.5	-17.26	-10	Pass
NVNT	g	2412	Ant1	2397.5	-18.55	-10	Pass
NVNT	g	2412	Ant1	2396.5	-19.61	-10	Pass
NVNT	g	2412	Ant1	2395.5	-20.7	-10	Pass
NVNT	g	2412	Ant1	2394.5	-21.77	-10	Pass
NVNT	g	2412	Ant1	2393.5	-22.68	-10	Pass
NVNT	g	2412	Ant1	2392.5	-23.97	-10	Pass
NVNT	g	2412	Ant1	2391.5	-25.77	-10	Pass
NVNT	g	2412	Ant1	2390.5	-28.48	-10	Pass
NVNT	g	2412	Ant1	2389.5	-32.34	-10	Pass
NVNT	g	2412	Ant1	2388.5	-37.83	-10	Pass
NVNT	g	2412	Ant1	2387.5	-42.56	-10	Pass
NVNT	g	2412	Ant1	2386.5	-46.23	-10	Pass
NVNT	g	2412	Ant1	2385.5	-49.51	-10	Pass
NVNT	g	2412	Ant1	2384.5	-52.1	-10	Pass
NVNT	g	2412	Ant1	2383.677	-53.52	-10	Pass
NVNT	g	2412	Ant1	2382.677	-54.6	-20	Pass
NVNT	g	2412	Ant1	2381.677	-55.09	-20	Pass
NVNT	g	2412	Ant1	2380.677	-55.27	-20	Pass
NVNT	g	2412	Ant1	2379.677	-55.38	-20	Pass
NVNT	g	2412	Ant1	2378.677	-55.42	-20	Pass
NVNT	g	2412	Ant1	2377.677	-55.45	-20	Pass
NVNT	g	2412	Ant1	2376.677	-55.46	-20	Pass
NVNT	g	2412	Ant1	2375.677	-55.46	-20	Pass
NVNT	g	2412	Ant1	2374.677	-55.48	-20	Pass
NVNT	g	2412	Ant1	2373.677	-55.47	-20	Pass
NVNT	g	2412	Ant1	2372.677	-55.51	-20	Pass
NVNT	g	2412	Ant1	2371.677	-55.5	-20	Pass
NVNT	g	2412	Ant1	2370.677	-55.48	-20	Pass
NVNT	g	2412	Ant1	2369.677	-55.47	-20	Pass

NVNT	g	2412	Ant1	2368.677	-55.48	-20	Pass
NVNT	g	2412	Ant1	2367.677	-55.45	-20	Pass
NVNT	g	2412	Ant1	2366.854	-55.47	-20	Pass
NVNT	g	2472	Ant1	2484	-20.8	-10	Pass
NVNT	g	2472	Ant1	2485	-23.09	-10	Pass
NVNT	g	2472	Ant1	2486	-25.26	-10	Pass
NVNT	g	2472	Ant1	2487	-27.13	-10	Pass
NVNT	g	2472	Ant1	2488	-28.9	-10	Pass
NVNT	g	2472	Ant1	2489	-30.89	-10	Pass
NVNT	g	2472	Ant1	2490	-34.41	-10	Pass
NVNT	g	2472	Ant1	2491	-39.87	-10	Pass
NVNT	g	2472	Ant1	2492	-45.74	-10	Pass
NVNT	g	2472	Ant1	2493	-50.73	-10	Pass
NVNT	g	2472	Ant1	2494	-53.72	-10	Pass
NVNT	g	2472	Ant1	2495	-54.68	-10	Pass
NVNT	g	2472	Ant1	2496	-54.88	-10	Pass
NVNT	g	2472	Ant1	2497	-54.94	-10	Pass
NVNT	g	2472	Ant1	2498	-54.97	-10	Pass
NVNT	g	2472	Ant1	2499	-54.93	-10	Pass
NVNT	g	2472	Ant1	2500	-54.94	-10	Pass
NVNT	g	2472	Ant1	2500.902	-54.93	-10	Pass
NVNT	g	2472	Ant1	2501.902	-54.94	-20	Pass
NVNT	g	2472	Ant1	2502.902	-54.92	-20	Pass
NVNT	g	2472	Ant1	2503.902	-54.93	-20	Pass
NVNT	g	2472	Ant1	2504.902	-54.93	-20	Pass
NVNT	g	2472	Ant1	2505.902	-54.93	-20	Pass
NVNT	g	2472	Ant1	2506.902	-54.91	-20	Pass
NVNT	g	2472	Ant1	2507.902	-53.58	-20	Pass
NVNT	g	2472	Ant1	2508.902	-54.84	-20	Pass
NVNT	g	2472	Ant1	2509.902	-53.51	-20	Pass
NVNT	g	2472	Ant1	2510.902	-54.82	-20	Pass
NVNT	g	2472	Ant1	2511.902	-54.91	-20	Pass
NVNT	g	2472	Ant1	2512.902	-54.81	-20	Pass
NVNT	g	2472	Ant1	2513.902	-54.92	-20	Pass
NVNT	g	2472	Ant1	2514.902	-54.92	-20	Pass
NVNT	g	2472	Ant1	2515.902	-54.91	-20	Pass
NVNT	g	2472	Ant1	2516.902	-54.89	-20	Pass
NVNT	g	2472	Ant1	2517.902	-54.89	-20	Pass
NVNT	g	2472	Ant1	2518.804	-54.86	-20	Pass
NVNT	n20	2412	Ant1	2399.5	-15.57	-10	Pass
NVNT	n20	2412	Ant1	2398.5	-16.92	-10	Pass
NVNT	n20	2412	Ant1	2397.5	-18.08	-10	Pass
NVNT	n20	2412	Ant1	2396.5	-19.21	-10	Pass
NVNT	n20	2412	Ant1	2395.5	-20.34	-10	Pass
NVNT	n20	2412	Ant1	2394.5	-21.19	-10	Pass
NVNT	n20	2412	Ant1	2393.5	-22.05	-10	Pass
NVNT	n20	2412	Ant1	2392.5	-23.08	-10	Pass
NVNT	n20	2412	Ant1	2391.5	-24.49	-10	Pass
NVNT	n20	2412	Ant1	2390.5	-26.67	-10	Pass
NVNT	n20	2412	Ant1	2389.5	-29.65	-10	Pass
NVNT	n20	2412	Ant1	2388.5	-33.52	-10	Pass
NVNT	n20	2412	Ant1	2387.5	-38.06	-10	Pass
NVNT	n20	2412	Ant1	2386.5	-43.85	-10	Pass
NVNT	n20	2412	Ant1	2385.5	-48.19	-10	Pass
NVNT	n20	2412	Ant1	2384.5	-51.03	-10	Pass
NVNT	n20	2412	Ant1	2383.5	-53.13	-10	Pass

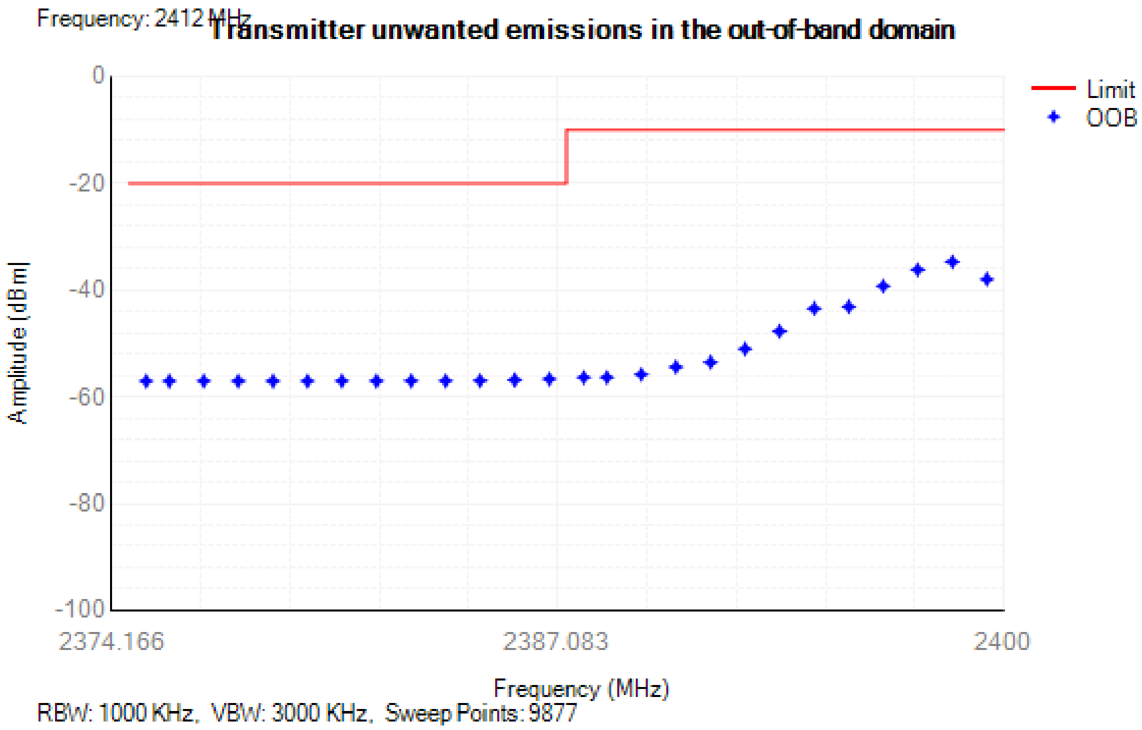
NVNT	n20	2412	Ant1	2382.558	-54.26	-10	Pass
NVNT	n20	2412	Ant1	2381.558	-54.89	-20	Pass
NVNT	n20	2412	Ant1	2380.558	-55.16	-20	Pass
NVNT	n20	2412	Ant1	2379.558	-55.27	-20	Pass
NVNT	n20	2412	Ant1	2378.558	-55.34	-20	Pass
NVNT	n20	2412	Ant1	2377.558	-55.38	-20	Pass
NVNT	n20	2412	Ant1	2376.558	-55.39	-20	Pass
NVNT	n20	2412	Ant1	2375.558	-55.42	-20	Pass
NVNT	n20	2412	Ant1	2374.558	-55.41	-20	Pass
NVNT	n20	2412	Ant1	2373.558	-55.41	-20	Pass
NVNT	n20	2412	Ant1	2372.558	-55.44	-20	Pass
NVNT	n20	2412	Ant1	2371.558	-55.43	-20	Pass
NVNT	n20	2412	Ant1	2370.558	-55.46	-20	Pass
NVNT	n20	2412	Ant1	2369.558	-55.42	-20	Pass
NVNT	n20	2412	Ant1	2368.558	-55.4	-20	Pass
NVNT	n20	2412	Ant1	2367.558	-55.43	-20	Pass
NVNT	n20	2412	Ant1	2366.558	-55.44	-20	Pass
NVNT	n20	2412	Ant1	2365.558	-55.42	-20	Pass
NVNT	n20	2412	Ant1	2364.616	-55.43	-20	Pass
NVNT	n20	2472	Ant1	2484	-20.37	-10	Pass
NVNT	n20	2472	Ant1	2485	-22.64	-10	Pass
NVNT	n20	2472	Ant1	2486	-24.7	-10	Pass
NVNT	n20	2472	Ant1	2487	-26.58	-10	Pass
NVNT	n20	2472	Ant1	2488	-28.19	-10	Pass
NVNT	n20	2472	Ant1	2489	-29.57	-10	Pass
NVNT	n20	2472	Ant1	2490	-33.72	-10	Pass
NVNT	n20	2472	Ant1	2491	-39.1	-10	Pass
NVNT	n20	2472	Ant1	2492	-44.78	-10	Pass
NVNT	n20	2472	Ant1	2493	-49.71	-10	Pass
NVNT	n20	2472	Ant1	2494	-53.12	-10	Pass
NVNT	n20	2472	Ant1	2495	-54.5	-10	Pass
NVNT	n20	2472	Ant1	2496	-54.81	-10	Pass
NVNT	n20	2472	Ant1	2497	-54.89	-10	Pass
NVNT	n20	2472	Ant1	2498	-54.9	-10	Pass
NVNT	n20	2472	Ant1	2499	-54.89	-10	Pass
NVNT	n20	2472	Ant1	2500	-54.92	-10	Pass
NVNT	n20	2472	Ant1	2501	-54.87	-10	Pass
NVNT	n20	2472	Ant1	2501.821	-54.89	-10	Pass
NVNT	n20	2472	Ant1	2502.821	-54.93	-20	Pass
NVNT	n20	2472	Ant1	2503.821	-54.89	-20	Pass
NVNT	n20	2472	Ant1	2504.821	-54.89	-20	Pass
NVNT	n20	2472	Ant1	2505.821	-54.91	-20	Pass
NVNT	n20	2472	Ant1	2506.821	-54.94	-20	Pass
NVNT	n20	2472	Ant1	2507.821	-54.89	-20	Pass
NVNT	n20	2472	Ant1	2508.821	-54.81	-20	Pass
NVNT	n20	2472	Ant1	2509.821	-53.52	-20	Pass
NVNT	n20	2472	Ant1	2510.821	-54.8	-20	Pass
NVNT	n20	2472	Ant1	2511.821	-54.81	-20	Pass
NVNT	n20	2472	Ant1	2512.821	-54.88	-20	Pass
NVNT	n20	2472	Ant1	2513.821	-54.89	-20	Pass
NVNT	n20	2472	Ant1	2514.821	-54.89	-20	Pass
NVNT	n20	2472	Ant1	2515.821	-54.86	-20	Pass
NVNT	n20	2472	Ant1	2516.821	-54.86	-20	Pass
NVNT	n20	2472	Ant1	2517.821	-54.87	-20	Pass
NVNT	n20	2472	Ant1	2518.821	-54.86	-20	Pass
NVNT	n20	2472	Ant1	2519.821	-54.84	-20	Pass

NVNT	n20	2472	Ant1	2520.642	-54.83	-20	Pass
NVNT	n40	2422	Ant1	2399.5	-21.82	-10	Pass
NVNT	n40	2422	Ant1	2398.5	-23.08	-10	Pass
NVNT	n40	2422	Ant1	2397.5	-24.21	-10	Pass
NVNT	n40	2422	Ant1	2396.5	-24.24	-10	Pass
NVNT	n40	2422	Ant1	2395.5	-26.01	-10	Pass
NVNT	n40	2422	Ant1	2394.5	-26.68	-10	Pass
NVNT	n40	2422	Ant1	2393.5	-27.13	-10	Pass
NVNT	n40	2422	Ant1	2392.5	-28.06	-10	Pass
NVNT	n40	2422	Ant1	2391.5	-28.98	-10	Pass
NVNT	n40	2422	Ant1	2390.5	-30.57	-10	Pass
NVNT	n40	2422	Ant1	2389.5	-32.28	-10	Pass
NVNT	n40	2422	Ant1	2388.5	-35.31	-10	Pass
NVNT	n40	2422	Ant1	2387.5	-37.31	-10	Pass
NVNT	n40	2422	Ant1	2386.5	-40.83	-10	Pass
NVNT	n40	2422	Ant1	2385.5	-43.78	-10	Pass
NVNT	n40	2422	Ant1	2384.5	-45.91	-10	Pass
NVNT	n40	2422	Ant1	2383.5	-49.61	-10	Pass
NVNT	n40	2422	Ant1	2382.5	-51.67	-10	Pass
NVNT	n40	2422	Ant1	2381.5	-53.2	-10	Pass
NVNT	n40	2422	Ant1	2380.5	-54.28	-10	Pass
NVNT	n40	2422	Ant1	2379.5	-54.75	-10	Pass
NVNT	n40	2422	Ant1	2378.5	-54.97	-10	Pass
NVNT	n40	2422	Ant1	2377.5	-55.09	-10	Pass
NVNT	n40	2422	Ant1	2376.5	-55.15	-10	Pass
NVNT	n40	2422	Ant1	2375.5	-55.19	-10	Pass
NVNT	n40	2422	Ant1	2374.5	-55.23	-10	Pass
NVNT	n40	2422	Ant1	2373.5	-55.18	-10	Pass
NVNT	n40	2422	Ant1	2372.5	-55.21	-10	Pass
NVNT	n40	2422	Ant1	2371.5	-55.16	-10	Pass
NVNT	n40	2422	Ant1	2370.5	-55.21	-10	Pass
NVNT	n40	2422	Ant1	2369.5	-55.18	-10	Pass
NVNT	n40	2422	Ant1	2368.5	-55.17	-10	Pass
NVNT	n40	2422	Ant1	2367.5	-55.21	-10	Pass
NVNT	n40	2422	Ant1	2366.5	-55.19	-10	Pass
NVNT	n40	2422	Ant1	2365.5	-55.24	-10	Pass
NVNT	n40	2422	Ant1	2364.5	-55.21	-10	Pass
NVNT	n40	2422	Ant1	2364.216	-55.23	-10	Pass
NVNT	n40	2422	Ant1	2363.216	-55.21	-20	Pass
NVNT	n40	2422	Ant1	2362.216	-55.24	-20	Pass
NVNT	n40	2422	Ant1	2361.216	-55.21	-20	Pass
NVNT	n40	2422	Ant1	2360.216	-55.3	-20	Pass
NVNT	n40	2422	Ant1	2359.216	-55.26	-20	Pass
NVNT	n40	2422	Ant1	2358.216	-55.25	-20	Pass
NVNT	n40	2422	Ant1	2357.216	-55.25	-20	Pass
NVNT	n40	2422	Ant1	2356.216	-55.24	-20	Pass
NVNT	n40	2422	Ant1	2355.216	-55.26	-20	Pass
NVNT	n40	2422	Ant1	2354.216	-55.26	-20	Pass
NVNT	n40	2422	Ant1	2353.216	-55.21	-20	Pass
NVNT	n40	2422	Ant1	2352.216	-55.19	-20	Pass
NVNT	n40	2422	Ant1	2351.216	-55.21	-20	Pass
NVNT	n40	2422	Ant1	2350.216	-55.24	-20	Pass
NVNT	n40	2422	Ant1	2349.216	-55.28	-20	Pass
NVNT	n40	2422	Ant1	2348.216	-55.24	-20	Pass
NVNT	n40	2422	Ant1	2347.216	-55.25	-20	Pass
NVNT	n40	2422	Ant1	2346.216	-55.2	-20	Pass

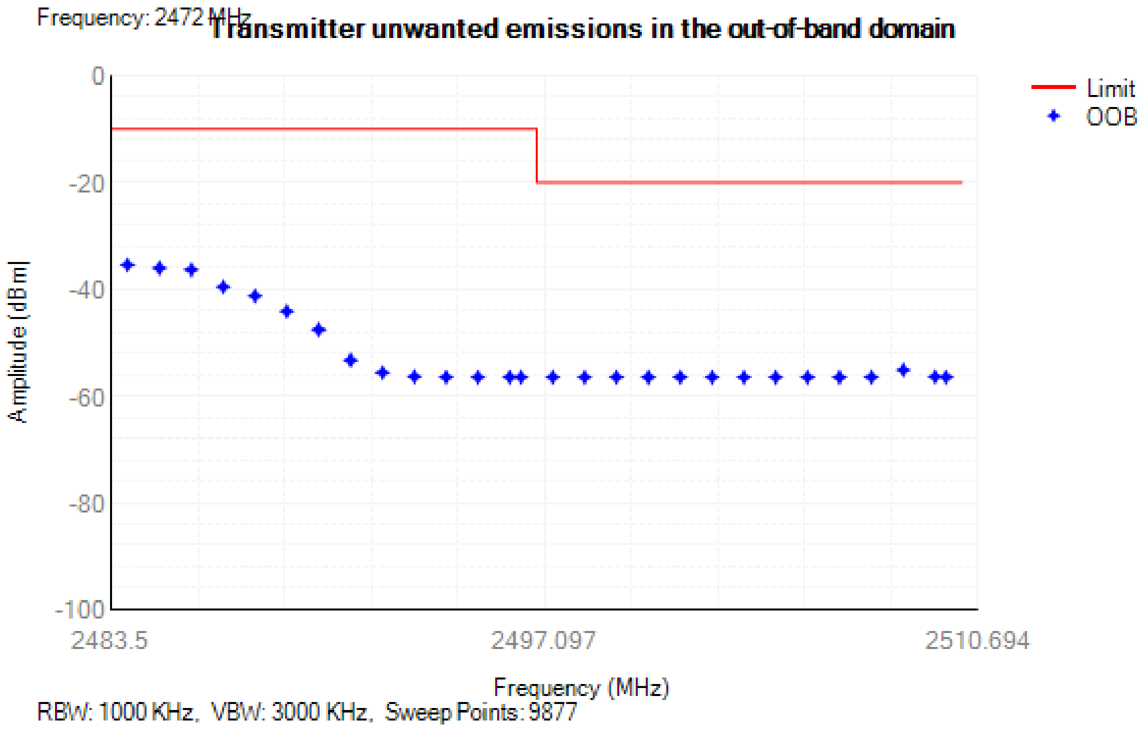
NVNT	n40	2422	Ant1	2345.216	-55.24	-20	Pass
NVNT	n40	2422	Ant1	2344.216	-55.12	-20	Pass
NVNT	n40	2422	Ant1	2343.216	-55.13	-20	Pass
NVNT	n40	2422	Ant1	2342.216	-55.24	-20	Pass
NVNT	n40	2422	Ant1	2341.216	-55.21	-20	Pass
NVNT	n40	2422	Ant1	2340.216	-55.21	-20	Pass
NVNT	n40	2422	Ant1	2339.216	-55.21	-20	Pass
NVNT	n40	2422	Ant1	2338.216	-55.22	-20	Pass
NVNT	n40	2422	Ant1	2337.216	-55.23	-20	Pass
NVNT	n40	2422	Ant1	2336.216	-55.22	-20	Pass
NVNT	n40	2422	Ant1	2335.216	-55.21	-20	Pass
NVNT	n40	2422	Ant1	2334.216	-55.23	-20	Pass
NVNT	n40	2422	Ant1	2333.216	-55.22	-20	Pass
NVNT	n40	2422	Ant1	2332.216	-55.21	-20	Pass
NVNT	n40	2422	Ant1	2331.216	-55.18	-20	Pass
NVNT	n40	2422	Ant1	2330.216	-55.18	-20	Pass
NVNT	n40	2422	Ant1	2329.216	-55.18	-20	Pass
NVNT	n40	2422	Ant1	2328.216	-55.17	-20	Pass
NVNT	n40	2422	Ant1	2327.932	-55.19	-20	Pass
NVNT	n40	2462	Ant1	2484	-23.47	-10	Pass
NVNT	n40	2462	Ant1	2485	-25.08	-10	Pass
NVNT	n40	2462	Ant1	2486	-26.86	-10	Pass
NVNT	n40	2462	Ant1	2487	-28.62	-10	Pass
NVNT	n40	2462	Ant1	2488	-29.71	-10	Pass
NVNT	n40	2462	Ant1	2489	-31.15	-10	Pass
NVNT	n40	2462	Ant1	2490	-33.6	-10	Pass
NVNT	n40	2462	Ant1	2491	-38.74	-10	Pass
NVNT	n40	2462	Ant1	2492	-44	-10	Pass
NVNT	n40	2462	Ant1	2493	-48.48	-10	Pass
NVNT	n40	2462	Ant1	2494	-51.85	-10	Pass
NVNT	n40	2462	Ant1	2495	-53.77	-10	Pass
NVNT	n40	2462	Ant1	2496	-54.41	-10	Pass
NVNT	n40	2462	Ant1	2497	-54.58	-10	Pass
NVNT	n40	2462	Ant1	2498	-54.58	-10	Pass
NVNT	n40	2462	Ant1	2499	-54.58	-10	Pass
NVNT	n40	2462	Ant1	2500	-54.65	-10	Pass
NVNT	n40	2462	Ant1	2501	-54.59	-10	Pass
NVNT	n40	2462	Ant1	2502	-54.6	-10	Pass
NVNT	n40	2462	Ant1	2503	-54.62	-10	Pass
NVNT	n40	2462	Ant1	2504	-54.64	-10	Pass
NVNT	n40	2462	Ant1	2505	-54.58	-10	Pass
NVNT	n40	2462	Ant1	2506	-54.64	-10	Pass
NVNT	n40	2462	Ant1	2507	-54.61	-10	Pass
NVNT	n40	2462	Ant1	2508	-53.24	-10	Pass
NVNT	n40	2462	Ant1	2509	-54.52	-10	Pass
NVNT	n40	2462	Ant1	2510	-53.22	-10	Pass
NVNT	n40	2462	Ant1	2511	-54.48	-10	Pass
NVNT	n40	2462	Ant1	2512	-54.53	-10	Pass
NVNT	n40	2462	Ant1	2513	-54.5	-10	Pass
NVNT	n40	2462	Ant1	2514	-54.57	-10	Pass
NVNT	n40	2462	Ant1	2515	-54.58	-10	Pass
NVNT	n40	2462	Ant1	2516	-54.55	-10	Pass
NVNT	n40	2462	Ant1	2517	-54.57	-10	Pass
NVNT	n40	2462	Ant1	2518	-54.59	-10	Pass
NVNT	n40	2462	Ant1	2518.804	-54.53	-10	Pass
NVNT	n40	2462	Ant1	2519.804	-54.58	-20	Pass

NVNT	n40	2462	Ant1	2520.804	-54.6	-20	Pass
NVNT	n40	2462	Ant1	2521.804	-54.57	-20	Pass
NVNT	n40	2462	Ant1	2522.804	-54.56	-20	Pass
NVNT	n40	2462	Ant1	2523.804	-54.55	-20	Pass
NVNT	n40	2462	Ant1	2524.804	-54.56	-20	Pass
NVNT	n40	2462	Ant1	2525.804	-54.54	-20	Pass
NVNT	n40	2462	Ant1	2526.804	-54.54	-20	Pass
NVNT	n40	2462	Ant1	2527.804	-54.53	-20	Pass
NVNT	n40	2462	Ant1	2528.804	-54.53	-20	Pass
NVNT	n40	2462	Ant1	2529.804	-54.53	-20	Pass
NVNT	n40	2462	Ant1	2530.804	-54.53	-20	Pass
NVNT	n40	2462	Ant1	2531.804	-54.49	-20	Pass
NVNT	n40	2462	Ant1	2532.804	-54.5	-20	Pass
NVNT	n40	2462	Ant1	2533.804	-54.47	-20	Pass
NVNT	n40	2462	Ant1	2534.804	-54.51	-20	Pass
NVNT	n40	2462	Ant1	2535.804	-54.49	-20	Pass
NVNT	n40	2462	Ant1	2536.804	-54.53	-20	Pass
NVNT	n40	2462	Ant1	2537.804	-54.47	-20	Pass
NVNT	n40	2462	Ant1	2538.804	-54.49	-20	Pass
NVNT	n40	2462	Ant1	2539.804	-54.44	-20	Pass
NVNT	n40	2462	Ant1	2540.804	-54.47	-20	Pass
NVNT	n40	2462	Ant1	2541.804	-54.44	-20	Pass
NVNT	n40	2462	Ant1	2542.804	-54.45	-20	Pass
NVNT	n40	2462	Ant1	2543.804	-54.46	-20	Pass
NVNT	n40	2462	Ant1	2544.804	-54.46	-20	Pass
NVNT	n40	2462	Ant1	2545.804	-54.47	-20	Pass
NVNT	n40	2462	Ant1	2546.804	-54.47	-20	Pass
NVNT	n40	2462	Ant1	2547.804	-54.47	-20	Pass
NVNT	n40	2462	Ant1	2548.804	-54.45	-20	Pass
NVNT	n40	2462	Ant1	2549.804	-54.42	-20	Pass
NVNT	n40	2462	Ant1	2550.804	-54.41	-20	Pass
NVNT	n40	2462	Ant1	2551.804	-54.44	-20	Pass
NVNT	n40	2462	Ant1	2552.804	-54.42	-20	Pass
NVNT	n40	2462	Ant1	2553.804	-54.4	-20	Pass
NVNT	n40	2462	Ant1	2554.608	-54.44	-20	Pass

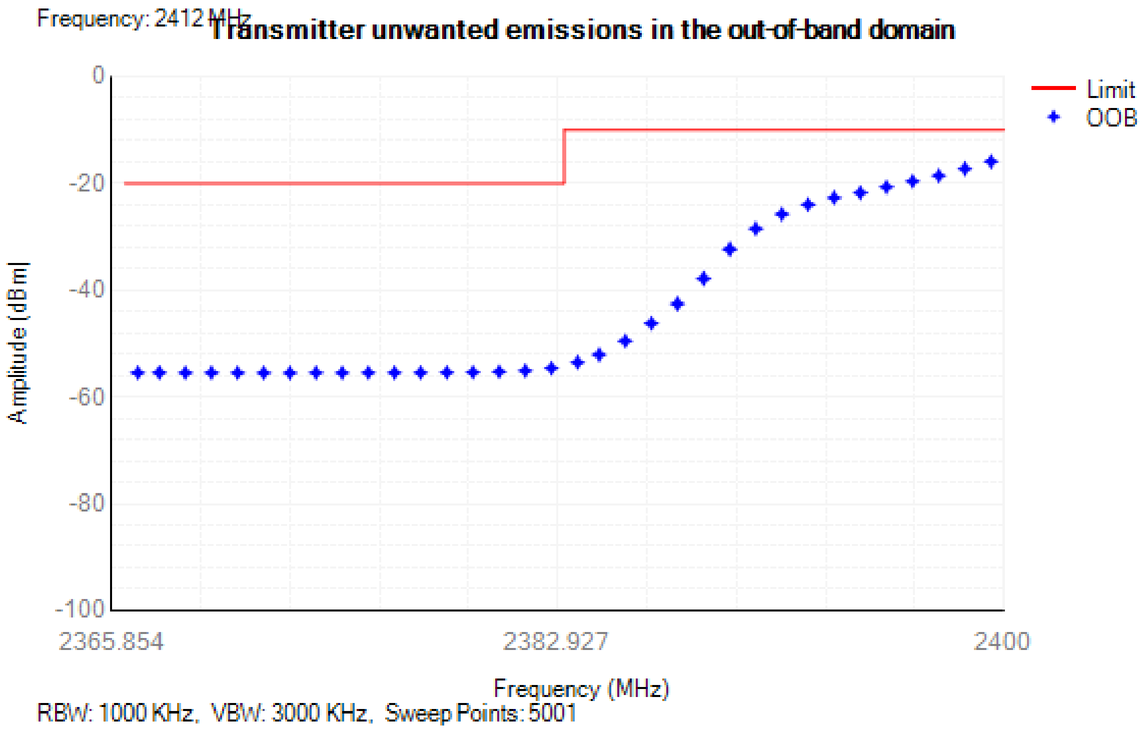
Tx. Emissions OOB NVNT b 2412MHz Ant1



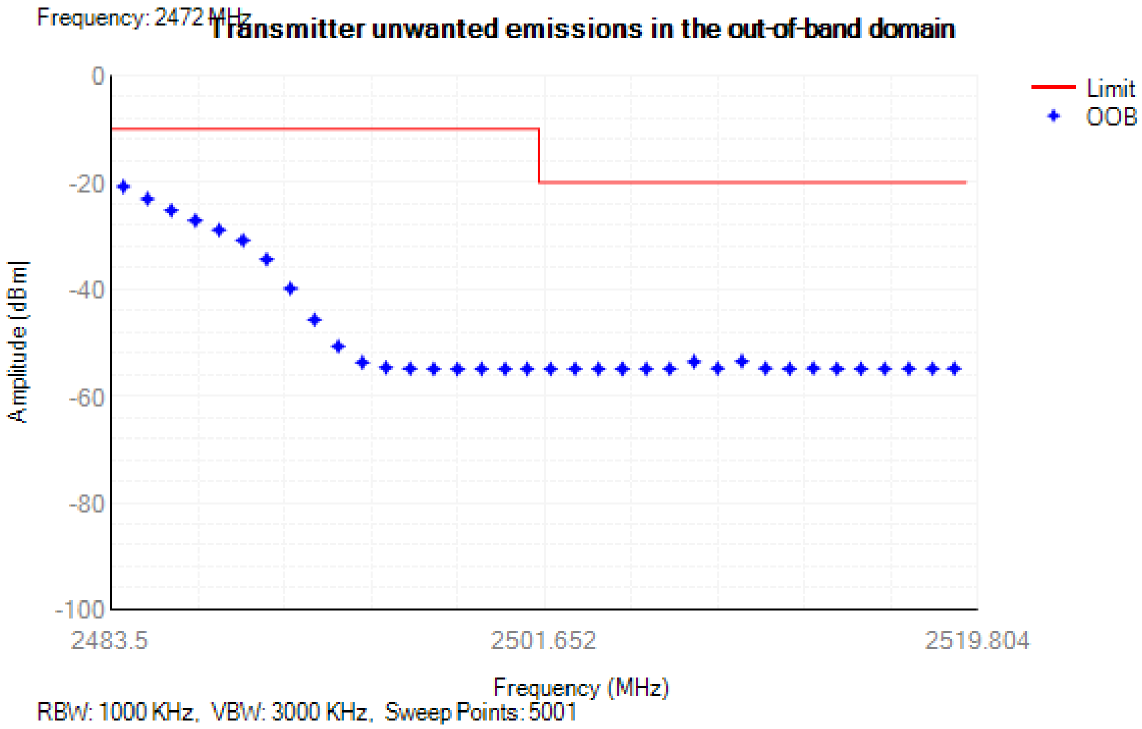
Tx. Emissions OOB NVNT b 2472MHz Ant1



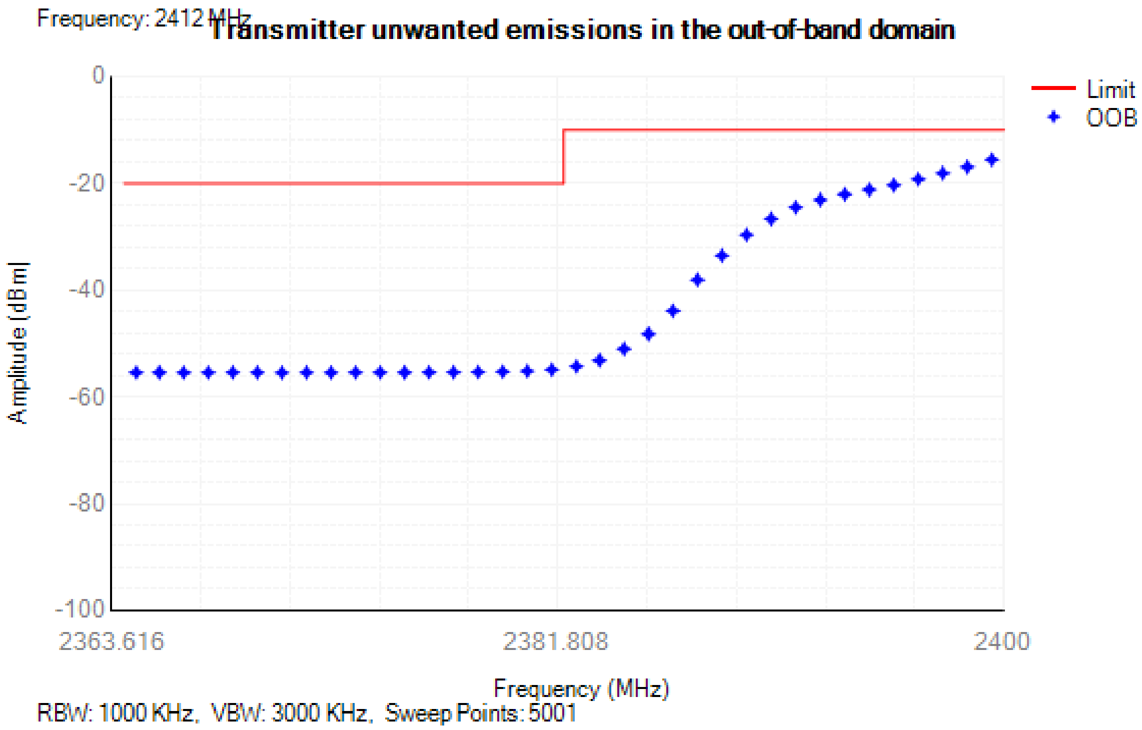
Tx. Emissions OOB NVNT g 2412MHz Ant1



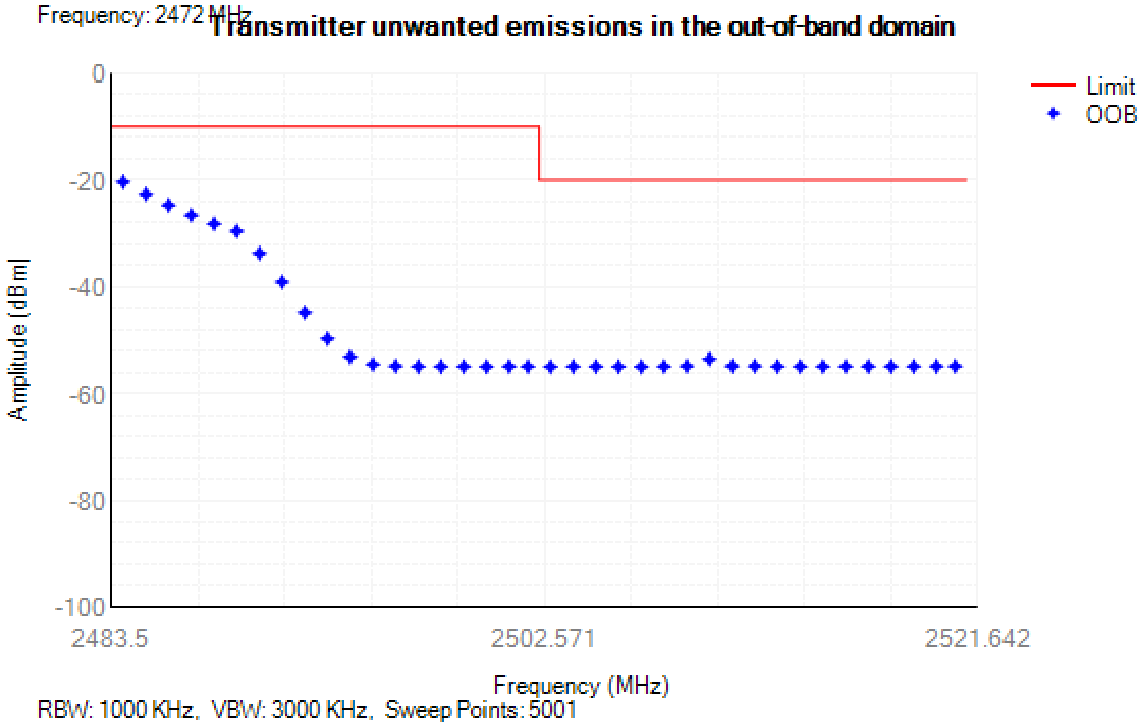
Tx. Emissions OOB NVNT g 2472MHz Ant1



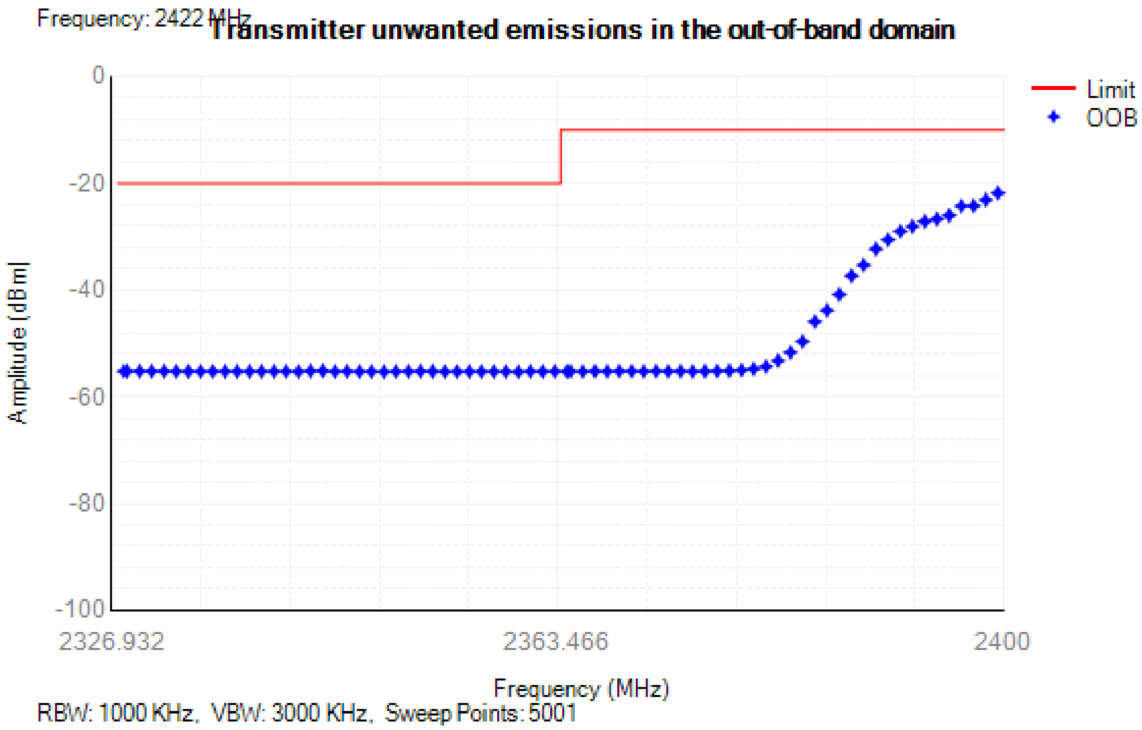
Tx. Emissions OOB NVNT n20 2412MHz Ant1



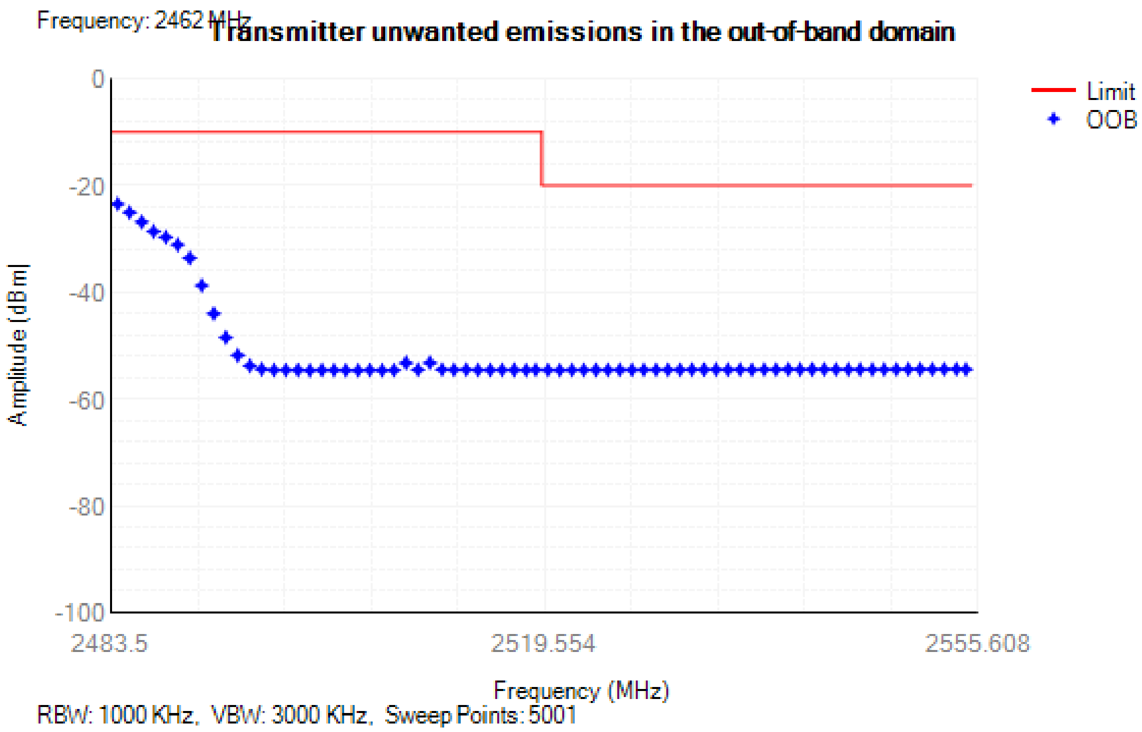
Tx. Emissions OOB NVNT n20 2472MHz Ant1



Tx. Emissions OOB NVNT n40 2422MHz Ant1



Tx. Emissions OOB NVNT n40 2462MHz Ant1



8. Transmitter Unwanted Emissions in The Spurious Domain

8.1. Limit

The transmitter unwanted emissions in the spurious domain shall not exceed the values given in following table .

Frequency range	Maximum power, e.r.p. (⩽ 1 GHz) e.i.r.p. (> 1 GHz)	Bandwidth
30 MHz to 47 MHz	-36 dBm	100 kHz
47 MHz to 74 MHz	-54 dBm	100 kHz
74 MHz to 87,5 MHz	-36 dBm	100 kHz
87,5 MHz to 118 MHz	-54 dBm	100 kHz
118 MHz to 174 MHz	-36 dBm	100 kHz
174 MHz to 230 MHz	-54 dBm	100 kHz
230 MHz to 470 MHz	-36 dBm	100 kHz
470 MHz to 694 MHz	-54 dBm	100 kHz
694 MHz to 1 GHz	-36 dBm	100 kHz
1 GHz to 12,75 GHz	-30 dBm	1 MHz

8.2. Test Procedure

Refer to ETSI EN 300 328 V2.2.2:2019 Clause 5.4.9.

8.3. Test Result

Test Mode: IEEE 802.11b Tx in CH1 2412MHz					
Frequency (MHz)	Antenna polarization	Result (dBm)	Limit (dBm)	Margin (dB)	Conclusion
251.63	H	-53.75	-36	-17.75	Pass
488.90	H	-66.40	-54	-12.40	Pass
4824.47	H	-43.21	-30	-13.21	Pass
7236.36	H	-41.45	-30	-11.45	Pass
274.84	V	-49.20	-36	-13.20	Pass
493.25	V	-65.86	-54	-11.86	Pass
4824.07	V	-44.55	-30	-14.55	Pass
7236.02	V	-43.82	-30	-13.82	Pass
Test Mode: IEEE 802.11b Tx in CH13 2472MHz					
250.17	H	-63.38	-36	-27.38	Pass
487.92	H	-63.60	-54	-9.60	Pass
4944.18	H	-48.62	-30	-18.62	Pass
7416.06	H	-43.05	-30	-13.05	Pass
258.80	V	-48.05	-36	-12.05	Pass
497.42	V	-63.94	-54	-9.94	Pass
4944.09	V	-44.46	-30	-14.46	Pass
7416.08	V	-44.11	-30	-14.11	Pass

Test Mode: IEEE 802.11g Tx in CH1 2412MHz					
Frequency (MHz)	Antenna polarization	Result (dBm)	Limit (dBm)	Margin (dB)	Conclusion
254.07	H	-53.17	-36	-17.17	Pass
493.92	H	-61.01	-54	-7.01	Pass
4824.42	H	-43.17	-30	-13.17	Pass
7236.09	H	-38.86	-30	-8.86	Pass
268.77	V	-48.41	-36	-12.41	Pass
507.37	V	-57.54	-54	-3.54	Pass
4824.02	V	-40.75	-30	-10.75	Pass
7236.00	V	-36.19	-30	-6.19	Pass
Test Mode: IEEE 802.11g Tx in CH13 2472MHz					
243.86	H	-57.77	-36	-21.77	Pass
488.74	H	-57.31	-54	-3.31	Pass
4944.24	H	-35.31	-30	-5.31	Pass
7416.32	H	-42.78	-30	-12.78	Pass
269.48	V	-45.53	-36	-9.53	Pass
508.28	V	-60.81	-54	-6.81	Pass
4944.13	V	-33.88	-30	-3.88	Pass
7416.25	V	-44.06	-30	-14.06	Pass

Test Mode: IEEE 802.11nHT20 Tx in CH1 2412MHz					
Frequency (MHz)	Antenna polarization	Result (dBm)	Limit (dBm)	Margin (dB)	Conclusion
254.54	H	-55.02	-36	-19.02	Pass
488.54	H	-59.17	-54	-5.17	Pass
4824.30	H	-45.59	-30	-15.59	Pass
7236.13	H	-42.13	-30	-12.13	Pass
282.05	V	-41.64	-36	-5.64	Pass
510.74	V	-59.51	-54	-5.51	Pass
4824.07	V	-52.31	-30	-22.31	Pass
7235.97	V	-41.53	-30	-11.53	Pass
Test Mode: IEEE 802.11nHT20 Tx in CH13 2472MHz					
240.76	H	-57.93	-36	-21.93	Pass
489.04	H	-58.50	-54	-4.50	Pass
4944.14	H	-47.97	-30	-17.97	Pass
7416.02	H	-37.33	-30	-7.33	Pass
260.96	V	-41.69	-36	-5.69	Pass
501.39	V	-58.15	-54	-4.15	Pass
4943.94	V	-43.82	-30	-13.82	Pass
7416.08	V	-34.61	-30	-4.61	Pass

Test Mode: IEEE 802.11nHT40 Tx in CH1 2422MHz					
Frequency (MHz)	Antenna polarization	Result (dBm)	Limit (dBm)	Margin (dB)	Conclusion
263.46	H	-54.21	-36	-18.21	Pass
491.18	H	-61.76	-54	-7.76	Pass
4824.39	H	-52.43	-30	-22.43	Pass
7236.32	H	-46.82	-30	-16.82	Pass
281.06	V	-42.94	-36	-6.94	Pass
495.37	V	-59.07	-54	-5.07	Pass
4824.25	V	-55.19	-30	-25.19	Pass
7236.18	V	-47.88	-30	-17.88	Pass
Test Mode: IEEE 802.11nHT40 Tx in CH13 2462MHz					
239.95	H	-53.35	-36	-17.35	Pass
492.60	H	-58.20	-54	-4.20	Pass
4944.18	H	-38.20	-30	-8.20	Pass
7416.21	H	-38.10	-30	-8.10	Pass
272.62	V	-41.03	-36	-5.03	Pass
503.28	V	-65.16	-54	-11.16	Pass
4943.86	V	-39.36	-30	-9.36	Pass
7416.10	V	-42.65	-30	-12.65	Pass

9. Receiver Spurious Emissions

9.1. Limit

The spurious emissions of the receiver shall not exceed the values given in following table .

Frequency range	Maximum power, e.r.p. (≤ 1 GHz) e.i.r.p. (> 1 GHz)	Bandwidth
30 MHz to 1GHz	-57 dBm	100 kHz
1 GHz to 12,75 GHz	-47 dBm	1 MHz

9.2. Test Procedure

Refer to ETSI EN 300 328 V2.2.2:2019 Clause 5.4.10.

9.3. Test Result

Test Mode： IEEE 802.11b Rx in CH1 2412MHz					
Frequency (MHz)	Antenna polarization	Result (dBm)	Limit (dBm)	Margin (dB)	Conclusion
239.30	H	-72.02	-57	-15.02	Pass
589.15	H	-78.63	-57	-21.63	Pass
2016.33	H	-59.23	-47	-12.23	Pass
2398.94	H	-61.38	-47	-14.38	Pass
223.26	V	-77.39	-57	-20.39	Pass
603.16	V	-63.72	-57	-6.72	Pass
2023.34	V	-64.93	-47	-17.93	Pass
2394.53	V	-61.70	-47	-14.70	Pass
Test Mode： IEEE 802.11b Rx in CH13 2472MHz					
249.99	H	-68.00	-57	-11.00	Pass
593.70	H	-73.23	-57	-16.23	Pass
2031.41	H	-62.90	-47	-15.90	Pass
2420.42	H	-61.07	-47	-14.07	Pass
214.71	V	-68.12	-57	-11.12	Pass
617.25	V	-69.18	-57	-12.18	Pass
2026.51	V	-60.29	-47	-13.29	Pass
2409.61	V	-60.75	-47	-13.75	Pass

Remark: This Report only show the test plots of the worst case（802.11b）

10. Receiver Blocking

10.1. Limit

While maintaining the minimum performance criteria as defined in clause 4.3.2.11.3, the blocking levels at specified frequency offsets shall be equal to or greater than the limits defined for the applicable receiver category provided in table 14, table 15 or table 16.

Table 14: Receiver Blocking parameters for Receiver Category 1 equipment

Wanted signal mean power from companion device (dBm) (see notes 1 and 4)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 4)	Type of blocking signal
(-133 dBm + 10 × log10(OCBW)) or -68 dBm whichever is less (see note 2)	2380 2504	-34	CW
(-139 dBm + 10 × log10(OCBW)) or -74 dBm whichever is less (see note 3)	2 300 2 330 2 360 2 524 2 584 2 674		

NOTE 1: OCBW is in Hz.
NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to Pmin + 26 dB where Pmin is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.
NOTE 3: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to Pmin + 20 dB where Pmin is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.
NOTE 4: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

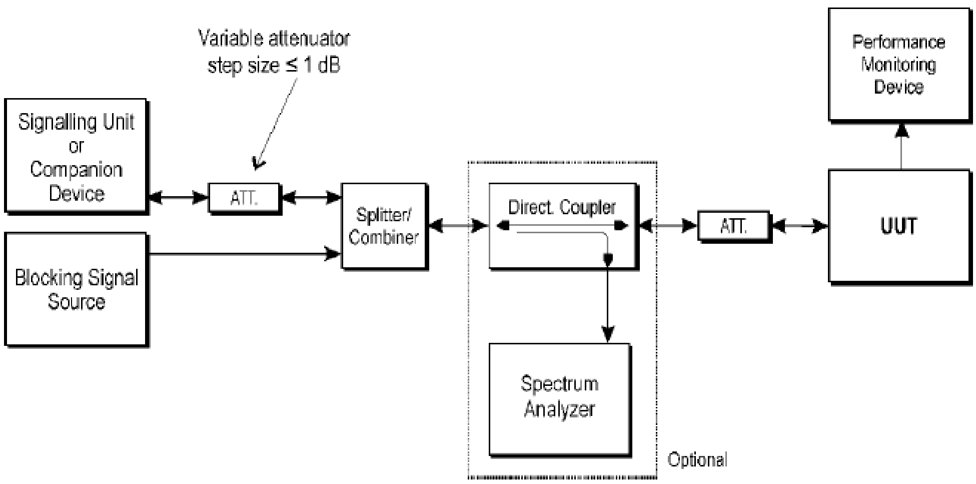
Table 15: Receiver Blocking parameters receiver Category 2 equipment

Wanted signal mean power from companion device (dBm) (see notes 1 and 4)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 4)	Type of blocking signal
(-133 dBm + 10 × log10(OCBW) + 10 dB) or (-74+ 10 dB) dBm whichever is less (see note 2)	2 380 2 504 2 300 2 584	-34	CW
NOTE 1: OCBW is in Hz. NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to Pmin + 26 dB where Pmin is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal. NOTE 3: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.			

Table 16: Receiver Blocking parameters receiver Category 3 equipment

Wanted signal mean power from companion device (dBm) (see notes 1 and 4)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 4)	Type of blocking signal
(-133 dBm + 10 × log10(OCBW) + 20 dB) or (-74+ 20 dB) dBm whichever is less (see note 2)	2 380 2 504 2 300 2 584	-34	CW
NOTE 1: OCBW is in Hz. NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative the test may be performed using a wanted signal up to Pmin + 30 dB where Pmin is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal. NOTE 3: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.			

10.2. Test Setup



10.3. Test Procedure

Refer to ETSI EN 300 328 V2.2.2:2019 Clause 5.4.11.

10.4. Test Result

Wanted signal mean power from companion device (dBm)	Channel frequency (MHz)	Blocking signal frequency (MHz)	Blocking signal power (dBm)	PER	PER limit
-68	2412	2380	-34	2.1	≤10%
	2412	2504		1.6	≤10%
-74	2412	2300		1.8	≤10%
	2412	2330		2.6	≤10%
	2412	2360		2.4	≤10%
	2412	2524		1.2	≤10%
	2412	2584		2.2	≤10%
	2412	2674		1.4	≤10%
-68	2472	2380	-34	2.0	≤10%
	2472	2504		1.5	≤10%
-74	2472	2300		0.9	≤10%
	2472	2330		2.6	≤10%
	2472	2360		2.1	≤10%
	2472	2524		2.8	≤10%
	2472	2584		2.6	≤10%
	2472	2674		1.2	≤10%
Test result: PASS					

Note:

1. The equipmentbelongs to receiver gategory 1 and it shall be tested operating at lowest data transmitting speed, Lowest channel and highest channel.
2. For 2380MHz,2504MHz:Wanted signal mean power(dBm)= (-133dBm + 10 × log10(OCBW)) or (-68 dBm) whichever is less

   For all blocking signal frequency other than 2380MHz,2504MHz: Wanted signal mean power(dBm)= (-139 dBm + 10 ×log10(OCBW)) or (-74 dBm) whichever is less
3. When required blocking signals injected, communication link between the UUT and the associated companion device remains, and the performance still meet the minimum performance criterion PER≤10%.

11. Geo-Location Capability

11.1. Definition

Geo-location capability is a feature of the equipment to determine its geographical location with the purpose to configure itself according to the regulatory requirements applicable at the geographical location where it operates.

The geo-location capability may be present in the equipment or in an external device (temporary) associated with the equipment operating at the same geographical location during the initial power up of the equipment. The geographical location may also be available in equipment already installed and operating at the same geographical location.

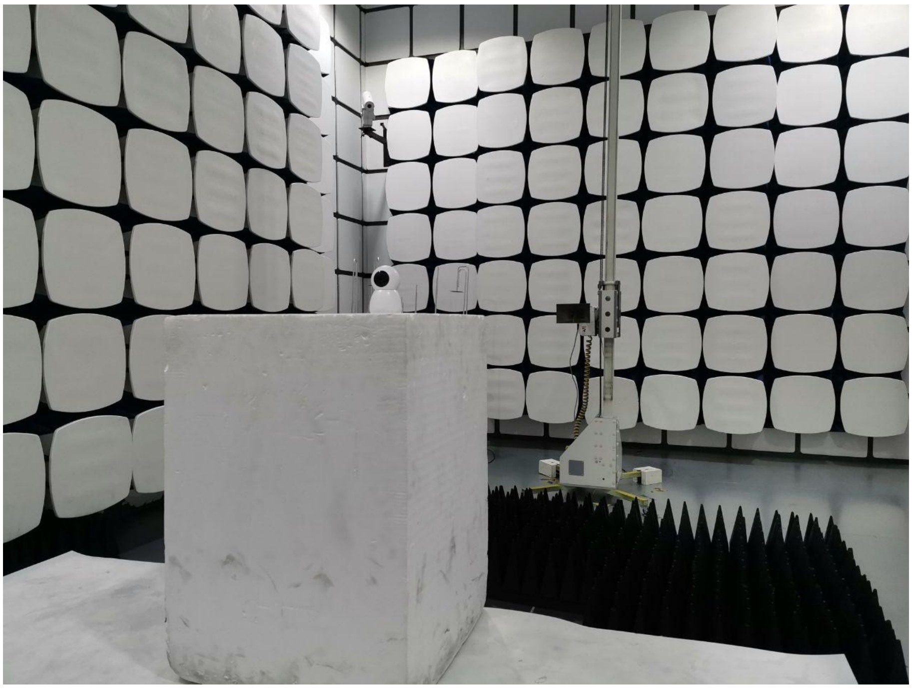
11.2. Requirements

The geographical location determined by the equipment shall not be accessible to the user.

11.3. Test Result

Not apply.
This requirement only applies to equipment with geo-location capability. And this product does not have the Geo-location capability, thus, not apply to this product.

12. Photos of Test Setup



13. Photos of EUT

Please refer to report A2102076-C01-R02.

Annex

Model List		
AP-107W1Y-2MP-TY	AP-107W1-1MP-TY	AP-TY688ZD-1MP
AP-TY688ZD-2MP	AP-9826-10-TY-2MP	AP-TYB151-1MP
AP-TYB151-2MP	AP-TYB149-1MP	AP-VR-P1-130
AP-TYB150-1MP	AP-TYB150-2MP	AP-308ZD-1MP-TY
AP-308ZY-2MP-TY	AP-9826-10-TY-1MP	AP-228ZD-1MP-TY
AP-228ZDH-2MP-TY	AP-618ZD-1MP-TY	AP-K2-10TY
AP-K2-20TY	AP-P11-12-2MP-3.6-6	AP-P09-12-2MP
AP-P10-15-2MP	AP-B166-2MP-XM	AP-B166-1MP-TY
AP-B166-2MP-TY	AP-B166-1MP-AJ	AP-B166-2MP-AJ
AP-618ZDH-2MP-TY		

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