CE-RADIO

ETSI EN 300 328 V2.2.2 (2019-07)

TEST REPORT

Client Name	:	XonTel Technology Trd. Co. W.L.L.
Address	:	Kuwait City Aladel Tower, F21 QIBLA, Zip Code: 13065. State of Kuwait.
Product Name	:	WiFi Thermostat
Test Model No.	:	AC-01
Report No.	:	CCTI-2023061507-1E
Issued Date	:	Jun. 26, 2023

Prepared By	:	Shenzhen CCTI Technology Co., Ltd.
Address	:	7th Floor, Block A, Building E, Yongwei Industrial Park, No. 118, Yongfu Road, Qiaotou, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Contact Info	:	Service Tel : 0086-400-188-9662 CCTI E-mail : ccti@ccti-lab.com CCTI Web : www.ccti-lab.com

Scan code for report

TEST REPORT VERIFICATION

Applicant	:	XonTel Technology Trd. Co. W.L.L.
Address	:	Kuwait City Aladel Tower, F21 QIBLA, Zip Code: 13065. State of Kuwait.
Manufacturer	:	XonTel Technology Trd. Co. W.L.L.
Address	:	Kuwait City Aladel Tower, F21 QIBLA, Zip Code: 13065. State of Kuwait.
Product Name	:	WiFi Thermostat
Model No.	:	AC-01
Series No.	:	N/A
Trade Mark	:	XonTel
Rating(s)	:	Input: DC 5V
Test Date	:	Jun. 09, 2023 to Jun. 26, 2023
Test Standard(s)	:	**ETSI EN 300 328 V2.2.2 (2019-07)**
Test Result	:	**PASS**

This device described above has been tested by CCTI, and the test results show that the equipment under test (EUT) is in compliance with the 2014/53/EU RED Directive Art.3.2 requirements. The results shown in this test report refer only to the sample(s) tested unless other wise stated and the sample(s) are retained for 30 days only.

The document is issued by CCTI, may be altered or revised by CCTI, personal only, and shall be noted in the revision of the document. this document cannont be reproduced except in full with our prior written permission.

Producer By : Berry Liang (Betty Liang / Engineer) **Date** : Jun. 26, 2023

Authorized Signer : (Corey Mao / Manager) **Date** : Jun. 26, 2023

SHENZHEN CCTI TECHNOLOGY CO., LTD. ** APPROVED **

TABLE OF CONTENTS

1. TEST STANDARDS

The tests were performed according to following standards:

ETSI EN 300 328 V2.2.2 (2019-07)

Wideband transmission systems; Data transmission equipment operating in the 2.4 GHz band; Harmonised Standard for access to radio spectrum

2. TEST SUMMARY

The Product has been tested according to the following specifications:

No.	Test Parameter	Clause No	Results
Transmitter Parameters			
1	RF output power	4.3.2.1	PASS
2	Power Spectral Density	4.3.2.2	PASS
3	Duty Cycle, Tx-sequence, Tx-gap	4.3.2.3	N/A
4	Dwell time, Minimum Frequency Occupation & Hopping Sequence	4.3.1.3	N/A
5	Hopping Frequency Separation	4.3.1.4	N/A
6	Medium Utilisation (MU) factor	4.3.2.4	N/A
7	Adaptivity (adaptive equipment using modulations other than FHSS)	4.3.2.5	PASS
8	Occupied Channel Bandwidth	4.3.2.6	PASS
10	Transmitter unwanted emissions in the out-of-band domain	4.3.2.7	PASS
Receiver Parameters			
11	Receiver spurious emissions	4.3.2.9	PASS
12	Receiver Blocking	4.3.2.10	PASS
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.			

3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2.

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

No.	Test Item	Uncertainty
1	Occupied Channel Bandwidth	±3.68%
2	RF power, conducted	±0.37dB
3	Power Spectral Density, conducted	±0.78dB
4	Unwanted Emissions, conducted	±2.71dB
5	All emissions, radiated	±4.28dB
6	Temperature	±0.5°C
7	Humidity	±2%
8	DC and low frequency voltages	±1.5%
9	Time	±1.0%
10	Duty Cycle	±3.0%

4. PRODUCT INFORMATION AND TEST SETUP

4.1. Product Information

EUT Name	:	WiFi Thermostat
Trademark	:	XonTel
Model No.	:	AC-01
Series No.	:	N/A
Model Difference	:	N/A
Operation Frequency	:	2.4G WIFI: 2412 MHz ~ 2472 MHz (802.11b:13/802.11g:13/802.11n HT20:13) 2422 MHz ~ 2462 MHz (802.11n HT40:11)
Type of Modulation	:	2.4G WIFI: DSSS, OFDM
Used Bandwidth	:	20MHz and 40MHz
Antenna installation	:	Internal Antenna
Antenna Gain:	:	2.4G WIF: 1.0dBi
Power Supply	:	Input: DC 5V

Remark:

(1) AC-01 was selected as the test model and the datas have been recorded in this report.

(2) For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

Note:

This test report is issued for the purpose of Co-license.

This report is based on report CCTI-2023061505-1E, the new models AC-01 in Co-license are the same as original models PCT513-TY mentioned in test report CCTI-2023061505-1E respectively except for trademark "XonTel" and license holder "XonTel Technology Trd. Co. W.L.L.", no further test need.

4.2. Test Setup Configuration

See test photographs attached in EUT TEST SETUP PHOTOGRAPHS for the actual connections between Product and support equipment.

4.3. Support Equipment

No.	Device Type	Brand	Model	Series No.	Data Cable	Power Cord
-	-	-	-	-	-	-

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4. Test Mode

IEEE 802.11b/g/n: Thirteen channels are provided to the EUT.

Channel	Frequency(MHz)	Channel	Frequency(MHz)
1	2412	8	2447
2	2417	9	2452
3	2422	10	2457
4	2427	11	2462
5	2432	12	2467
6	2437	13	2472
7	2442		

Test Frequency List

Modulation Type	Test Frequency					
	Low		Middle		High	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
802.11b	1	2412	7	2442	13	2472
802.11g	1	2412	7	2442	13	2472
802.11n HT20	1	2412	7	2442	13	2472
802.11n HT40	3	2422	7	2442	11	2462

4.5. Test Environment

4.5.1. Normal Test Conditions:

Humidity(%):	54
Atmospheric Pressure(kPa):	101
Temperature(℃):	26
Test Voltage(DC):	DC 5V

4.5.2. Extreme Test Conditions:

For tests at extreme temperatures, measurements shall be made over the extremes of the operating temperature range as declared by the manufacturer.

For tests at extreme voltages, measurements shall be made over the extremes of the power source voltage range as declared by the manufacturer.

Test Conditions	LT	HT
Temperature (℃)	0	35

5. TEST FACILITY AND TEST INSTRUMENT USED

5.1. Test Facility

Shenzhen CCTI Technology Co., Ltd.

7th Floor, Block A, Building E, Yongwei Industrial Park, No. 118, Yongfu Road, Qiaotou, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

5.2. Test Instrument Used

Item	Equipment	Manufacturer	Type No.	Serial No.	Last Cal.	Next Cal.
1	966 chamber	ChengYu	966 Room	966	2023.03.09	2024.03.08
2	Receiver	R&S	ESR3	102075	2023.03.09	2024.03.08
3	Spectrum Analyzer	Agilent	E4407B	MY45109572	2023.03.09	2024.03.08
4	Amplifier	Schwarzbeck	BBV9718	9718-309	2023.03.09	2024.03.08
5	Amplifier	Schwarzbeck	BBV9744	9744-0037	2023.03.09	2024.03.08
6	TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	VULB9163-942	2023.03.09	2024.03.08
7	Horn Antenna	SCHWARZBECK	BBHA9120D	1541	2023.03.09	2024.03.08
8	Band rejection filter	ZBSF	ZBSF-C2441.5	1706003606	2023.03.09	2024.03.08
9	Signal Generator	Keysight	N5181A	MY50143748	2023.03.09	2024.03.08
10	Communication test set	R&S	CMU200	119435	2023.03.09	2024.03.08
11	Spectrum Analyzer	Keysight	N9020A	MY49100060	2023.03.09	2024.03.08
12	Signal Generator	Keysight	N5182B	MY56200519	2023.03.09	2024.03.08
13	Power Meter	Keysight	E4419B	\	2023.03.09	2024.03.08
14	Power Sensor	Keysight	E9 300A	\	2023.03.09	2024.03.08
15	Horn antenna	SCHWARZBE CK	BBHA9170	00822	2023.03.09	2024.03.08
16	Preamplifier	MITEQ	TTA1840-35- HG	2034381	2023.03.09	2024.03.08
17	Software	Frad	EZ-EMC	FA-03A2 RE	\	\
18	Software	Keysight	Keysight.ETSL Test system	1.02.05	\	\
19	D.C. Power Supply	LongWei	TPR-6405D	\	\	\
20	Loop Antenna	Schwarzbeck	FMZB1519B	00014	2023.03.09	2024.03.08

6. INFORMATION AS REQUIRED

ETSI EN 300 328 V2.2.2 Annex E

a) The type of modulation used by the equipment:

☐ FHSS
☒ other forms of modulation

b) In case of FHSS :

☐ 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 maximum Channel Occupancy Time implemented by the equipment: .....ms
☒ The equipment has implemented an LBT mechanism
☐ In case of non-FHSS equipment:
☐ 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 a 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.): .....dBm
The maximum (corresponding) Duty Cycle: ……. %
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:
IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK)
IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK)
IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK)
IEEE 802.11n HT40: OFDM (64QAM, 16QAM, QPSK,BPSK)
☐ Power Spectral Density:

IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK)
IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK)
IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK)
IEEE 802.11n HT40: OFDM (64QAM, 16QAM, QPSK,BPSK)

☐ Duty cycle, Tx-Sequence, Tx-gap:
☐ Accumulated Transmit time, Frequency Occupation & Hopping Sequence (only for FHSS equipment):
☐ Hopping Frequency Separation (only for FHSS equipment):

☒ Medium Utilization:
IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK)
IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK)
IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK)
IEEE 802.11n HT40: OFDM (64QAM, 16QAM, QPSK,BPSK)

☐ Adaptivity & Receiver Blocking:

☒ Nominal Channel Bandwidth:
IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK)
IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK)
IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK)
IEEE 802.11n HT40: OFDM (64QAM, 16QAM, QPSK,BPSK)

☒ Transmitter unwanted emissions in the OOB domain:
IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK)
IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK)
IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK)
IEEE 802.11n HT40: OFDM (64QAM, 16QAM, QPSK,BPSK)

☒ Transmitter unwanted emissions in the spurious domain:
IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK)
IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK)
IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK)
IEEE 802.11n HT40: OFDM (64QAM, 16QAM, QPSK,BPSK)

☒ Receiver spurious emissions:
IEEE 802.11b: DSSS(CCK,DQPSK,DBPSK)
IEEE 802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK)
IEEE 802.11n HT20: OFDM (64QAM, 16QAM, QPSK,BPSK)
IEEE 802.11n HT40: OFDM (64QAM, 16QAM, QPSK,BPSK)

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

☒ Operating mode 1: Single Antenna Equipment
- ☒ Equipment with only one antenna
- ☐ Equipment with two diversity antennas but only one antenna active at any moment in time
- ☐ Smart Antenna Systems with two or more antennas, but operating in a (legacy) mode where only
- ☐ One antenna is used (es.g. IEEE 802.11™ 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™ legacy mode)
☐ High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 1
☐ High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 2
NOTE 1: 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 Nominal Channel Bandwidth 1
☐ High Throughput (> 1 spatial stream) using Nominal Channel Bandwidth 2
NOTE 2: 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 (additional) beam forming gain: .....
NOTE: The additional 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: 2402 MHz to 2480 MHz
Operating Frequency Range 2: ..... MHz to ..... MHz
NOTE: Add more lines if more Frequency Ranges are supported.

j) Nominal Channel Bandwidth(s):

☒ Occupied Channel Bandwidth 1:
802.11b: 13.496MHz
802.11g: 16.601MHz
802.11n HT20: 17.757MHz
802.11n HT40: 36.157MHz
☐ Occupied Channel Bandwidth 2:
802.11b:
802.11g:
802.11n HT20:
802.11n HT40:
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 normal and the extreme operating conditions that apply to the equipment:

Operating temperature range:-10° C to 40° C
Operating voltage range: 3.145V to 4.255V ☐ 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: 3.0dBi
If applicable, additional beamforming gain (excluding basic antenna gain): ..... dBm
☐ 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).
For each of the Power Levels, provide the intended antenna assemblies, their corresponding gains (G) and the resulting e.i.r.p. levels also taking into account the beamforming gain (Y) if applicable Power Level 1: 13.39dBm
Number of antenna assemblies provided for this power level: .....

Power Level 1:
Number of antenna assemblies provided for this power level:

Assembly #	Gain (dBi)	E.i.r.p.(dBm)	Part number or model name
1	1.0	14.39	
2			
3			
4			

NOTE 3: Add more rows in case more antenna assemblies are supported for this power level.

Power Level 2:
Number of antenna assemblies provided for this power level:

Assembly #	Gain (dBi)	E.i.r.p.(dBm)	Part number or model name
1			
2			
3			
4			

NOTE 4: Add more rows in case more antenna assemblies are supported for this power level.

Power Level 3:
Number of antenna assemblies provided for this power level:

Assembly #	Gain (dBi)	E.i.r.p.(dBm)	Part number or model name
1			

2			
3			
4			

NOTE 5: Add more rows in case more antenna assemblies are supported for this power level.

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 …..V
☐ 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: V
☐ Other: .....

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

The EUT can transmit with test software which named CSR BlueSuite

p) The equipment type (e.g. Bluetooth®, IEEE 802.11™ [i.3], IEEE 802.15.4™ [i.4], proprietary, etc.):

Other: NO FHSS

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:

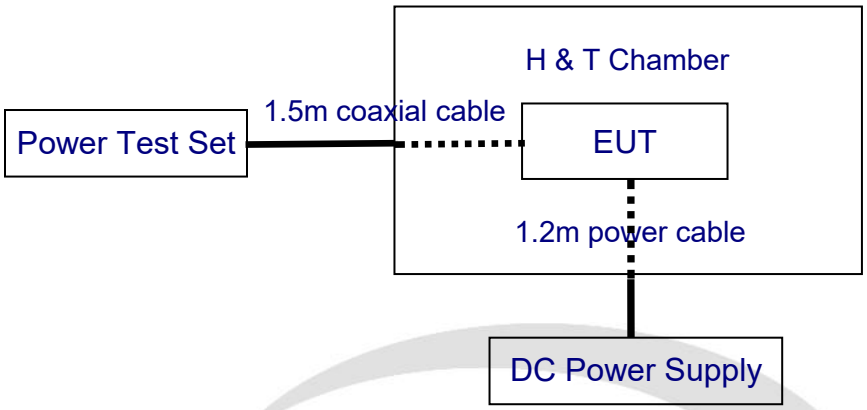
☐ Yes
The geographical location determined by the equipment as defined in clause 4.3.1.13.2 or clause 4.3.2.12.2 is not accessible to the user
☒ No

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.

7. RF Output Power

7.1. Block Diagram Of Test Setup



7.2. Limit

According to ETSI EN 300 328 V2.2.2 § 4.3.1.2.3.

For adaptive equipment using wide band modulations other than FHSS, the maximum RF output power shall be 20 dBm.

The maximum RF output power for non-adaptive equipment shall be declared by the supplier and shall not exceed 20 dBm. See clause 5.4.1 m). For non-adaptive equipment using wide band modulations other than FHSS, the maximum RF output power shall be equal to or less than the value declared by the supplier.

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

7.3. Test Procedure

According to ETSI EN 300 328 V2.2.2(2019-07) §5.4.2.2.1.2, conducted method.

Step 1:

Use a fast power sensor with a minimum sensitivity of -40 dBm and capable of minimum 1 MS/s.

Use the following settings:

• Sample speed 1 MS/s or faster.

• The samples shall represent the RMS power of the signal.

• Measurement duration: For non-adaptive equipment: equal to the observation period defined in clause 4.3.1.3.2 or clause 4.3.2.4.2. For adaptive equipment, the measurement duration shall be long enough to ensure a minimum number of bursts (at least 10) are captured.

NOTE 1: For adaptive equipment, to increase the measurement accuracy, a higher number of bursts may be used

Step 2:

For conducted measurements on devices with one transmit chain:

• Connect the power sensor to the transmit port, sample the transmit signal and store the raw data. Use these stored samples in all following steps.

For conducted measurements on devices with multiple transmit chains:

• Connect one power sensor to each transmit port for a synchronous measurement on all transmit ports.

• Trigger the power sensors so that they start sampling at the same time. Make sure the time difference between the samples of all sensors is less than 500 ns.

• For each individual sampling point (time domain), sum the coincident power samples of all ports and store them. Use these summed samples as the new stored data set.

Step 3:

• Find the start and stop times of each burst in the stored measurement samples.

The start and stop times are defined as the points where the power is at least 30 dB below the highest value of the stored samples in step 2.

• In case of insufficient sensitivity of the power sensor (e.g. in case of radiated measurements), the value of 30 dB may need to be reduced appropriately.

Step 4:

• Between the start and stop times of each individual burst calculate the RMS power over the burst using the formula below. The start and stop points shall be included. Save these Pburst values, as well as the start and stop times for each burst.

$$P_{burst} = \frac{1}{k}\sum_{n=1}^{k} P_{sample}(n)$$

with 'k' being the total number of samples and 'n' the actual sample number

Step 5:

• The highest of all Pburst values (value "A" in dBm) will be used for maximum e.i.r.p. calculations.

Step 6:

• Add the (stated) antenna assembly gain "G" in dBi of the individual antenna.

• In case of smart antenna systems operating in mode with beamforming (see clause 5.3.2.2.4), add the additional beamforming gain Y in dB.

• If more than one antenna assembly is intended for this power setting, the maximum overall antenna gain (G or G + Y) shall be used.

• The RF Output Power (Pout) shall be calculated using the formula below::

$$P_{out} = A + G + Y$$

• This value, which shall comply with the limit given in clause 4.3.1.2.3 or clause 4.3.2.2.3, shall be recorded in the test report.

7.4. EUT Description

Mode:	☒ 802.11b	☒ 802.11g	☒ 802.11n HT20	☒ 802.11n HT40
Test Channel:	☒ 2412MHz ☒ 2442MHz ☒ 2472MHz	☒ 2412MHz ☒ 2442MHz ☒ 2472MHz	☒ 2412MHz ☒ 2442MHz ☒ 2472MHz	☒ 2422MHz ☒ 2442MHz ☒ 2462MHz
Bandwidth:	☒ 20MHz ☐ 40MHz	☒ 20MHz ☐ 40MHz	☒ 20MHz ☐ 40MHz	☐ 20MHz ☒ 40MHz
Modulation Type:	☒ DSSS ☐ OFDM	☐ DSSS ☒ OFDM	☐ DSSS ☒ OFDM	☐ DSSS ☒ OFDM
Channel Separation:	☒ 5MHz	☒ 5MHz	☒ 5MHz	☒ 5MHz

7.5. Measurement Description

Instrument:	Power Meter measuring burst Power(RMS) of a least 10 packets
Performed:	☒ Conducted ☐ Radiated (only if no conducted sample is provided)

7.6. Test Result

802.11b (1Mbps) Mode

Channel	Test Condition	Bursts	Power	Limit (dBm)	Test Result
Low	NTC	15	13.98	20	Compliant
	LT/NV	15	13.24	20	Compliant
	HT/NV	15	14.05	20	Compliant
Middle	NTC	15	13.47	20	Compliant
	LT/NV	15	14.39	20	Compliant
	HT/NV	15	14.14	20	Compliant
High	NTC	15	14.00	20	Compliant
	LT/NV	15	13.28	20	Compliant
	HT/NV	15	13.28	20	Compliant

802.11g (6Mbps) Mode

Channel	Test Condition	Bursts	Power	Limit (dBm)	Test Result
Low	NTC	15	12.55	20	Compliant
	LT/NV	15	13.19	20	Compliant
	HT/NV	15	12.67	20	Compliant
Middle	NTC	15	12.67	20	Compliant
	LT/NV	15	12.74	20	Compliant
	HT/NV	15	12.82	20	Compliant
High	NTC	15	13.27	20	Compliant
	LT/NV	15	12.83	20	Compliant
	HT/NV	15	12.94	20	Compliant

802.11n HT-20 (6.5Mbps) Mode

Channel	Test Condition	Bursts	Power	Limit (dBm)	Test Result
Low	NTC	15	12.99	20	Compliant
	LT/NV	15	12.70	20	Compliant
	HT/NV	15	12.93	20	Compliant
Middle	NTC	15	13.09	20	Compliant
	LT/NV	15	12.69	20	Compliant
	HT/NV	15	12.75	20	Compliant
High	NTC	15	12.23	20	Compliant
	LT/NV	15	12.89	20	Compliant
	HT/NV	15	12.75	20	Compliant

802.11n HT-40 (13.5Mbps) Mode

Channel	Test Condition	Bursts	Power	Limit (dBm)	Test Result
Low	NTC	15	12.15	20	Compliant
	LT/NV	15	12.39	20	Compliant
	HT/NV	15	11.45	20	Compliant
Middle	NTC	15	12.23	20	Compliant
	LT/NV	15	11.37	20	Compliant
	HT/NV	15	12.01	20	Compliant
High	NTC	15	11.76	20	Compliant
	LT/NV	15	11.58	20	Compliant
	HT/NV	15	11.80	20	Compliant

Note: 1. Cable loss and antenna gain was combined in the calculated result.

8. Duty Cycle,TX-sequence,TX-gap

8.1. Limit

ETSI EN 300 328 (V2.2.2) Sub-clause 4.3.1.3.3

The Duty Cycle shall be equal to or less than the maximum value declared by the manufacturer.

The Tx-sequence time shall be equal to or less than 10 ms. The minimum Tx-gap time following a Tx- sequence shall be equal to the duration of that proceeding Tx-sequence with a minimum of 3.5 ms.

8.2. Test procedure

Please refer to ETSI EN 300 328 (V2.2.2) Sub-clause 5.4.2.2.1.3

For systems using wide band modulations other than FHSS, the measurement shall be performed at the lowest, the middle, and the highest channel on which the equipment can operate. These frequencies shall be recorded.

The test procedure, which shall only be performed for non-adaptive systems and only to be performed at normal environmental conditions, shall be as follows:

Step 1:

•Use the same stored measurement samples from the procedure described in clause 5.4.2.2.1.2.

• The start and stop times are defined as the points where the power is at least 30 dB below the highest value of the stored samples. In case of insufficient sensitivity of the power sensor (e.g. in case of radiated measurements), the value of 30 dB may need to be reduced appropriately.

Step 2:

• Between the saved start and stop times of each individual burst, calculate the TxOn time. Save these TxOn values.

Step 3:

• Duty Cycle (DC) is the sum of all TxOn times between the end of the first gap (which is the start of the first burst within the observation period) and the start of the last burst (within this observation period) divided by the observation period. The observation period is defined in clause 4.3.1.3.2 or clause 4.3.2.4.2.

Step 4:

• For FHSS equipment using blacklisting, the TxOn time measured for a single (and active) hopping frequency shall be multiplied by the number of blacklisted frequencies. This value shall be added to the sum calculated in step 3 above. If the number of blacklisted frequencies cannot be determined, the minimum number of hopping frequencies (N) as defined in clause 4.3.1.4.3 shall be assumed.

• The calculated value for Duty Cycle (DC) shall be recorded in the test report. This value shall be equal to or less than the maximum value declared by the manufacturer.

Step 5:

• Use the same stored measurement samples from the procedure described in clause 5.4.2.2.1.2.

vIdentify any TxOff time that is equal to or greater than the minimum Tx-gap time as defined in clause 4.3.1.3.3 or clause 4.3.2.4.3. These are the potential valid gap times to be further considered in this procedure.

• Starting from the second identified gap, calculate the time from the start of this gap to the end of the preceding gap. This time is the Tx-sequence time for this transmission. Repeat this procedure until the last identified gap within the observation period is reached.

• A combination of consecutive Tx-sequence times and Tx-gap times followed by a Tx-gap time, which is at least as long as the duration of this combination, may be considered as a single Tx-sequence time and in which case it shall comply with the limits defined in clause 4.3.1.3.3 or clause 4.3.2.4.3.

• It shall be noted in the test report whether the UUT complies with the limits for the maximum Tx-sequence time and minimum Tx-gap time as defined in clause 4.3.1.3.3 or clause 4.3.2.4.3.

8.3. EUT Description

Mode:	☒ 802.11b	☒ 802.11g	☒ 802.11n HT20	☒ 802.11n HT40
Test Channel:	☒ 2412MHz ☒ 2442MHz ☒ 2472MHz	☒ 2412MHz ☒ 2442MHz ☒ 2472MHz	☒ 2412MHz ☒ 2442MHz ☒ 2472MHz	☒ 2422MHz ☒ 2442MHz ☒ 2462MHz
Bandwidth:	☒ 20MHz ☐ 40MHz	☒ 20MHz ☐ 40MHz	☒ 20MHz ☐ 40MHz	☐ 20MHz ☒ 40MHz
Modulation Type:	☒ DSSS ☐ OFDM	☐ DSSS ☒ OFDM	☐ DSSS ☒ OFDM	☐ DSSS ☒ OFDM
Channel Separation:	☒ 5MHz	☒ 5MHz	☒ 5MHz	☒ 5MHz

8.4. Measurement Description

Instrument:	Power Meter measuring burst Power(RMS) of a least 10 packets
Performed:	☒ Conducted ☐ Radiated (only if no conducted sample is provided)

8.5. Test Result

Not Applicable.

9. Medium Utilisation (MU) factor

9.1. Limit

ETSI EN 300 328 V2.2.2(2019-07) Sub-clause 4.3.1.6.3

For non-adaptive equipment using wide band modulations other than FHSS, the maximum Medium Utilization factor shall be 10 %.

This requirement does not apply to adaptive equipment unless operating in a non-adaptive mode. In addition, this requirement does not apply for equipment with a maximum declared RF Output power level of less than 10 dBm e.i.r.p. or for equipment when operating in a mode where the RF Output power is less than 10 dBm e.i.r.p.

9.2. Test procedure

Please refer to ETSI EN 300 328 V2.2.2(2019-07) Sub-clause 5.4.2.2.1.4

Step 1:

• Use the same stored measurement samples from the procedure described in clause 5.4.2.2.1.2.

Step 2:

• For each burst calculate the product of (Pburst / 100 mW) and the TxOn time. Pburst is expressed in mW.

TxOn time is expressed in ms..

Step 3:

• Medium Utilization is the sum of all these products divided by the observation period (expressed in ms) which is defined in clause 4.3.1.3.2 or clause 4.3.2.4.2. This value, which shall comply with the limit given in clause 4.3.1.6.3 or clause 4.3.2.5.3, shall be recorded in the test report.

If, in case of FHSS equipment, operation without blacklisted frequencies is not possible, the power of the bursts on blacklisted hopping frequencies (for the calculation of the Medium Utilization) is assumed to be equal to the average value of the RMS power of the bursts on all active hopping frequencies.

9.3. EUT Description

Mode:	☒ 802.11b	☒ 802.11g	☒ 802.11n HT20	☒ 802.11n HT40
Test Channel:	☒ 2412MHz ☒ 2442MHz ☒ 2472MHz	☒ 2412MHz ☒ 2442MHz ☒ 2472MHz	☒ 2412MHz ☒ 2442MHz ☒ 2472MHz	☒ 2422MHz ☒ 2442MHz ☒ 2462MHz
Bandwidth:	☒ 20MHz ☐ 40MHz	☒ 20MHz ☐ 40MHz	☒ 20MHz ☐ 40MHz	☐ 20MHz ☒ 40MHz
Modulation Type:	☒ DSSS ☐ OFDM	☐ DSSS ☒ OFDM	☐ DSSS ☒ OFDM	☐ DSSS ☒ OFDM

Channel Separation:	☒ 5MHz	☒ 5MHz	☒ 5MHz	☒ 5MHz

9.4. Measurement Description

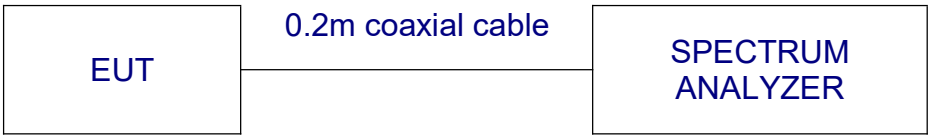
Instrument:	Power Meter measuring burst Power(RMS) of a least 10 packets
Performed:	☒ Conducted ☐ Radiated (only if no conducted sample is provided)

9.5. Test Result

Not Applicable.

10. Power Spectral Density

10.1. Block Diagram of Test Setup



10.2. Limit

The Occupied Channel Bandwidth for each hopping frequency shall be within the band given in 2.4GHz to 2.4835GHz.

In addition, for non-adaptive FHSS equipment with e.i.r.p. greater than 10 dBm, the Occupied Channel Bandwidth for every occupied hopping frequency shall be equal to or less than 5 MHz

10.3. Test procedure

According to ETSI EN 300 328 V2.2.2(2019-07) § 5.4.3.2.1, conducted method. The test procedure shall be as follows:

Step 1:

• Connect the UUT to the spectrum analyser and use the following settings:

Start Frequency: 2 400 MHz

Stop Frequency: 2 483.5 MHz

Resolution BW: 10 kHz

Video BW: 30 kHz

Sweep Points: ＞8 350; for spectrum analysers not supporting this number of sweep points, the frequency band may be segmented

Detector: RMS

Trace Mode: Max Hold

• Sweep time: For non-continuous transmissions: 2 × Channel Occupancy Time × number of sweep Points

• For non-adaptive equipment use the maximum TX-sequence time in the formula above instead of the Channel Occupancy Time

• For continuous transmissions: 10 s; the sweep time may be increased further untila value where the sweep time has no further impact anymore on the RMS value of the signal

• For non-continuous signals, wait for the trace to stabilize.

Save the data (trace data) set to a file.

Step 2:

• For conducted measurements on smart antenna systems using either operating mode 2 or operating mode 3 (see clause 5.3.2.2), repeat the measurement for each of the transmit ports. For each sampling point (frequency domain), add up the coincident power values (in mW) for the different transmit chains and use this as the new data set.

Step 3:

• Add up the values for power for all the samples in the file using the formula below.

$$P_{Sum} = \sum_{n=1}^{k} P_{sample}(n)$$

with k being the total number of samples and n the actual sample number

Step 4:

• Normalize the individual values for power (in dBm) so that the sum is equal to the RF Output Power (e.i.r.p.) measured in clause 5.4.2 and save the corrected data. The following formulas can be used:

$$C_{Corr} = P_{Sum} - P_{e.i.r.p.}$$

$$P_{Samplecorr}(n) = P_{Sample}(n) - C_{Corr}$$

with n being the actual sample number

Step 5:

• Starting from the first sample PSamplecorr(n) (lowest frequency), add up the power (in mW) of the following samples representing a 1 MHz segment and record the results for power and position (i.e. sample #1 to sample #100). This is the Power Spectral Density (e.i.r.p.) for the first 1 MHz segment which shall be recorded.

Step 6:

• Shift the start point of the samples added up in step 5 by one sample and repeat the procedure in step 5 (i.e. sample #2 to sample #101).

Step 7:

• Repeat step 6 until the end of the data set and record the Power Spectral Density values for each of the 1 MHz segments.

• From all the recorded results, the highest value is the maximum Power Spectral Density (PSD) for the UUT. This value, which shall comply with the limit given in clause 4.3.2.3.3, shall be recorded in the test report.

10.4. EUT Description

Mode:	☒ 802.11b	☒ 802.11g	☒ 802.11n HT20	☒ 802.11n HT40
Test Channel:	☒ 2412MHz ☒ 2442MHz ☒ 2472MHz	☒ 2412MHz ☒ 2442MHz ☒ 2472MHz	☒ 2412MHz ☒ 2442MHz ☒ 2472MHz	☒ 2422MHz ☒ 2442MHz ☒ 2462MHz
Bandwidth:	☒ 20MHz ☐ 40MHz	☒ 20MHz ☐ 40MHz	☒ 20MHz ☐ 40MHz	☐ 20MHz ☒ 40MHz
Modulation Type:	☒ DSSS ☐ OFDM	☐ DSSS ☒ OFDM	☐ DSSS ☒ OFDM	☐ DSSS ☒ OFDM
Channel Separation:	☒ 5MHz	☒ 5MHz	☒ 5MHz	☒ 5MHz

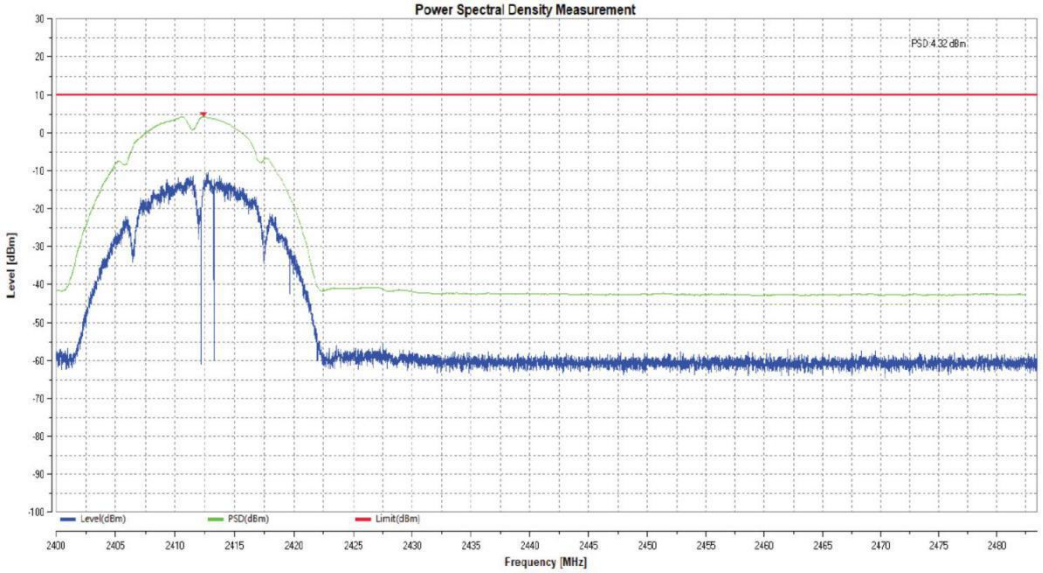
10.5. Measurement Description

Instrument:	Spectrum Analyzer
Detector:	RMS
Sweep time:	10S
Video bandwidth:	30KHz
Resolution bandwidth:	10KHz
Span:	83.5MHz
Frequency range:	2400-2483.5MHz
Sweep Points:	15000
Performed:	☒ Conducted ☐ Radiated (only if no conducted sample is provided)

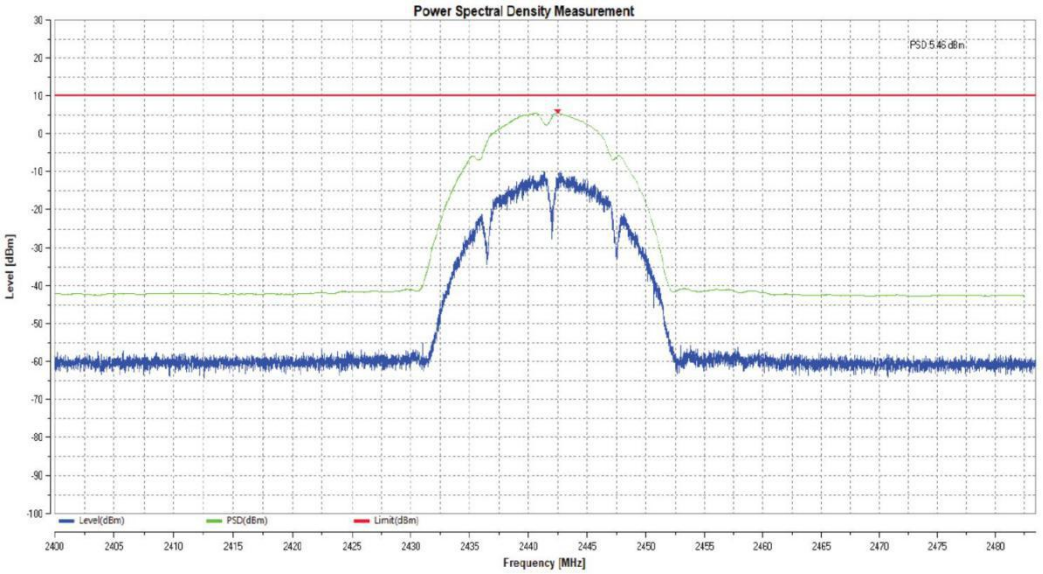
10.6. Test Result

Test mode	Spatial Streams	Channel Frequency (MHz)	Power Density (dBm/MHz)	Limit (dBm/MHz)
802.11b 1Mbps	1	Low	4.32	10
	1	Middle	5.46	10
	1	High	5.36	10
802.11g 6Mbps	1	Low	0.20	10
	1	Middle	0.59	10
	1	High	0.12	10
802.11n HT-20 6.5Mbps	1	Low	0.30	10
	1	Middle	0.42	10
	1	High	-0.16	10
802.11n HT-40 13.5Mbps	1	Low	-3.13	10
	1	Middle	-2.42	10
	1	High	-2.91	10

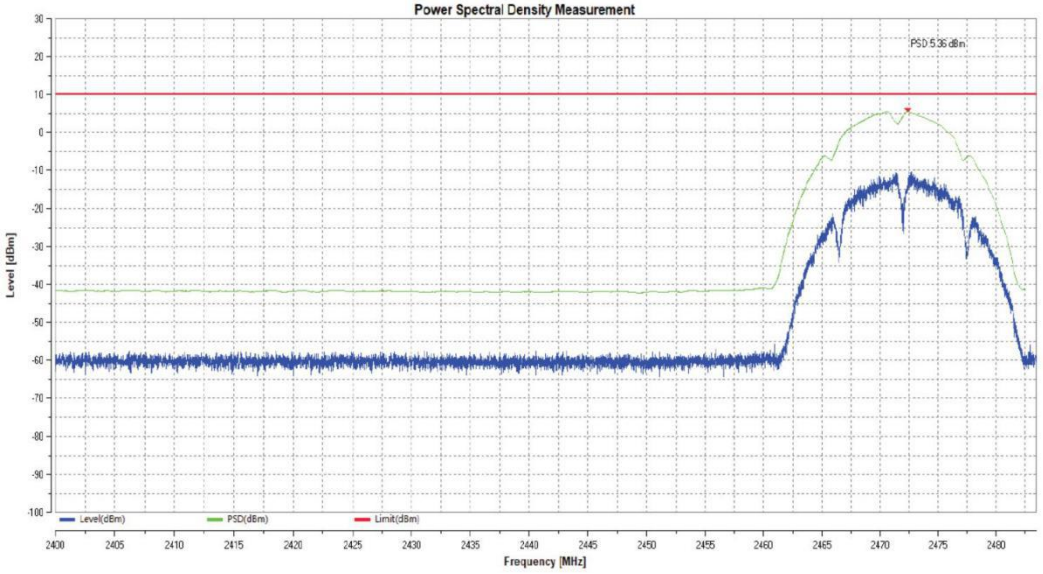
802.11b 2412



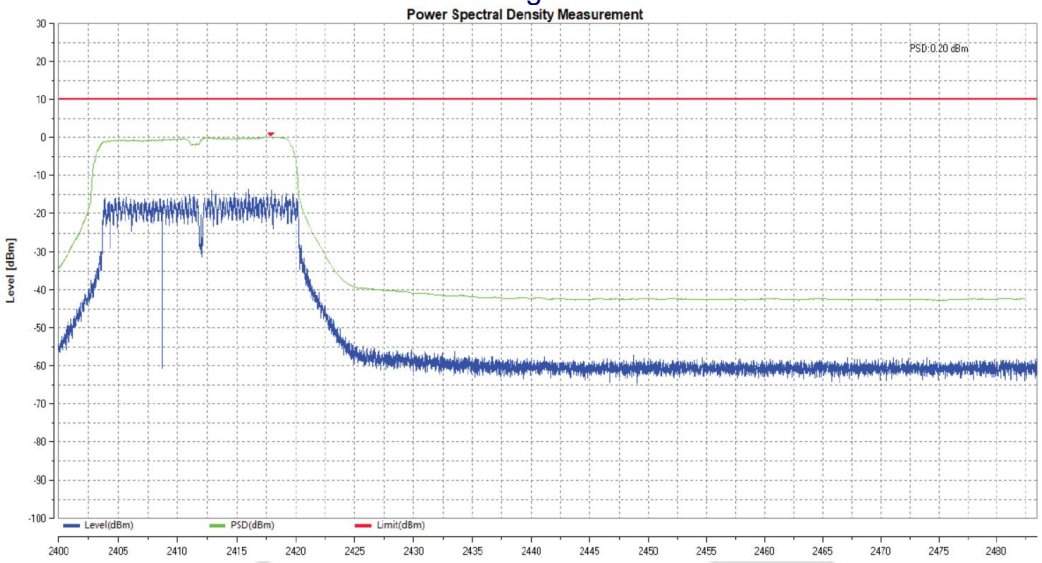
802.11b 2442



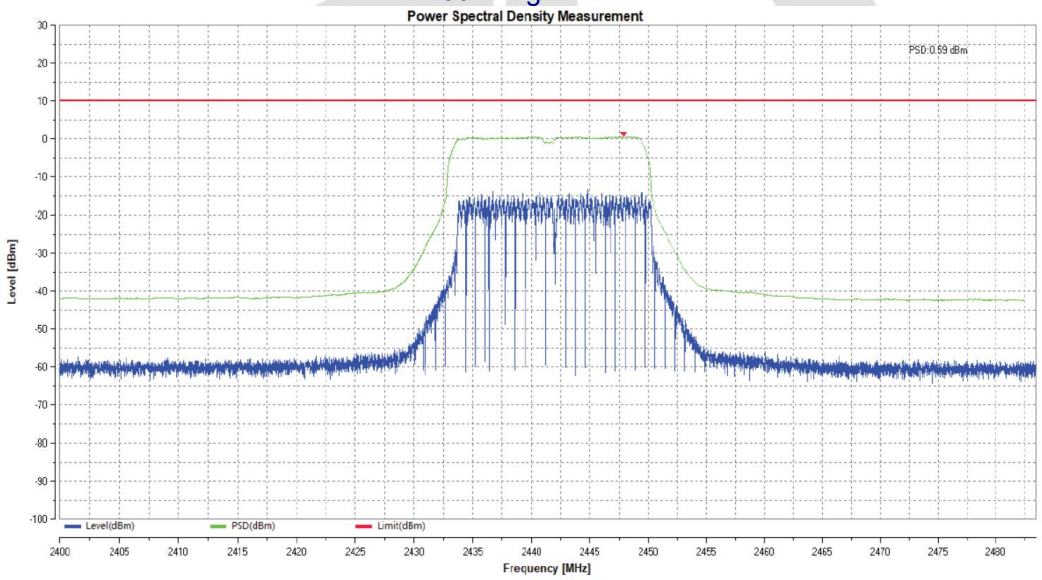
802.11b 2472



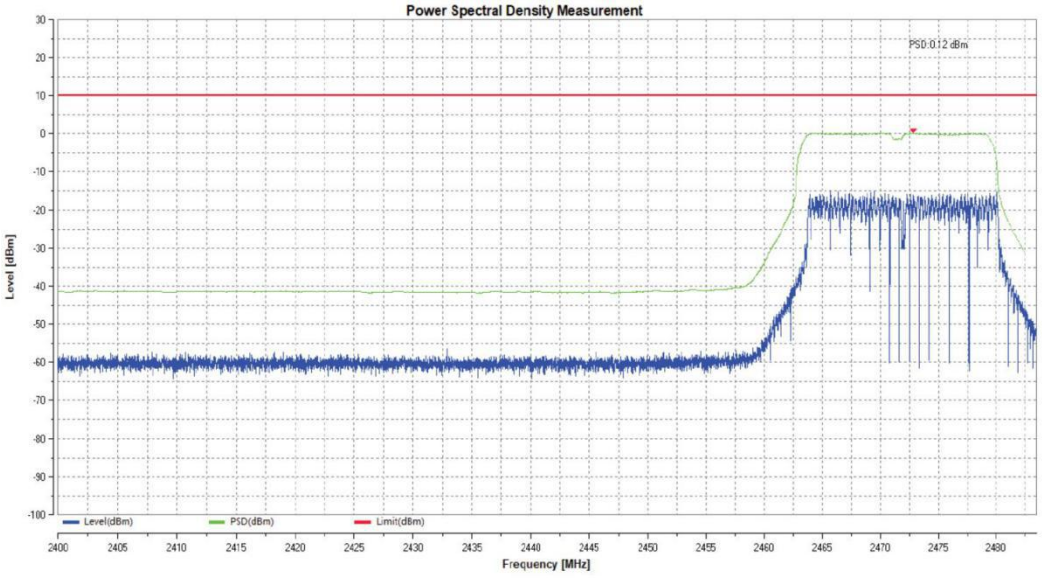
802.11g 2412



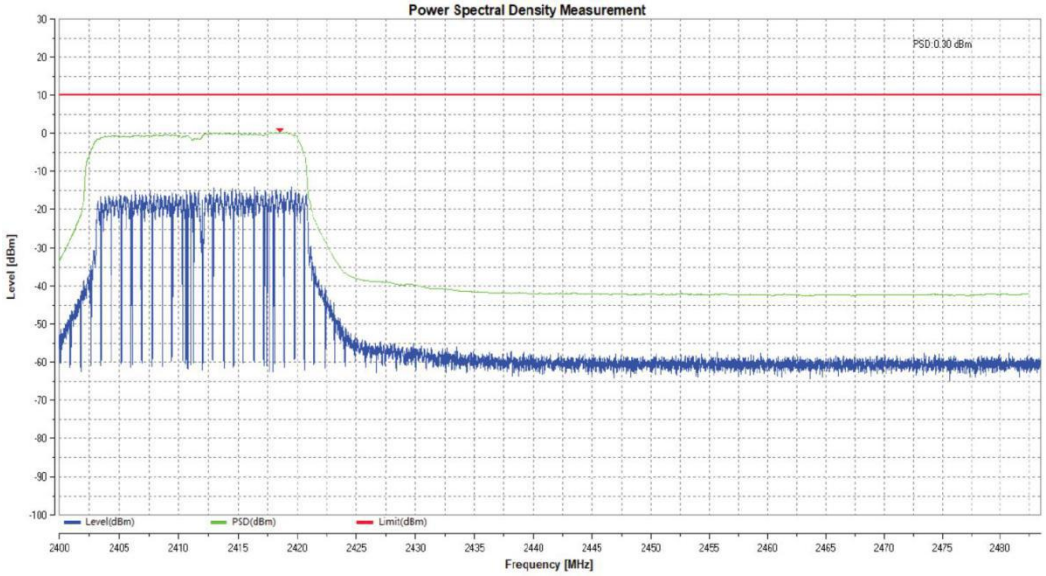
802.11g 2442



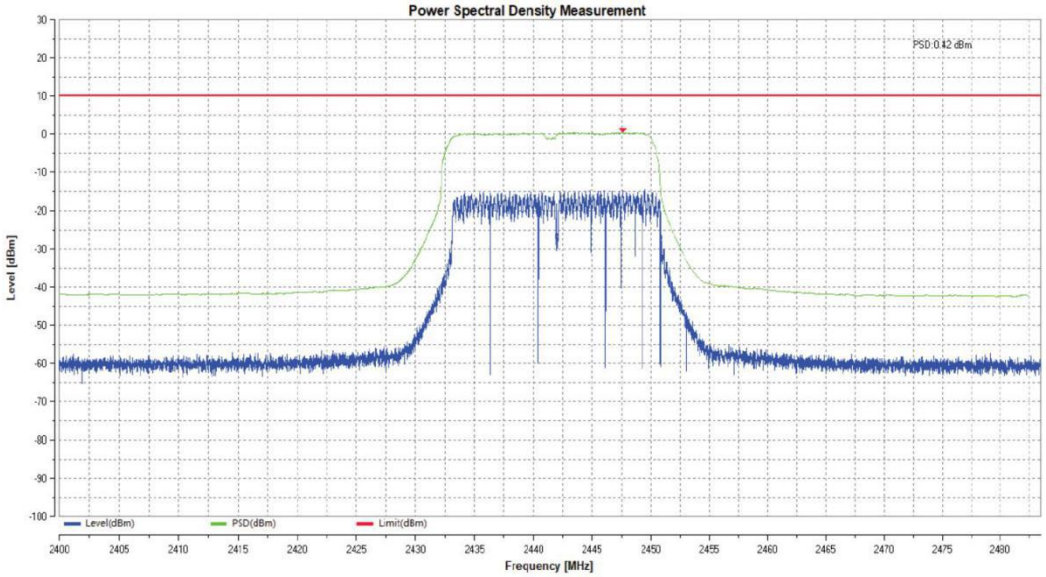
802.11g 2472



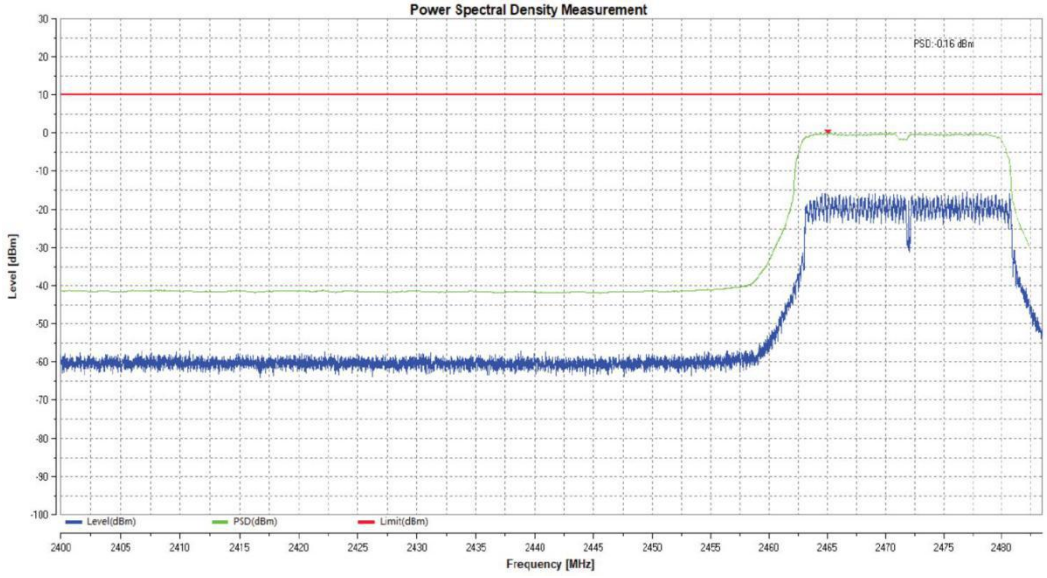
802.11n HT20 2412



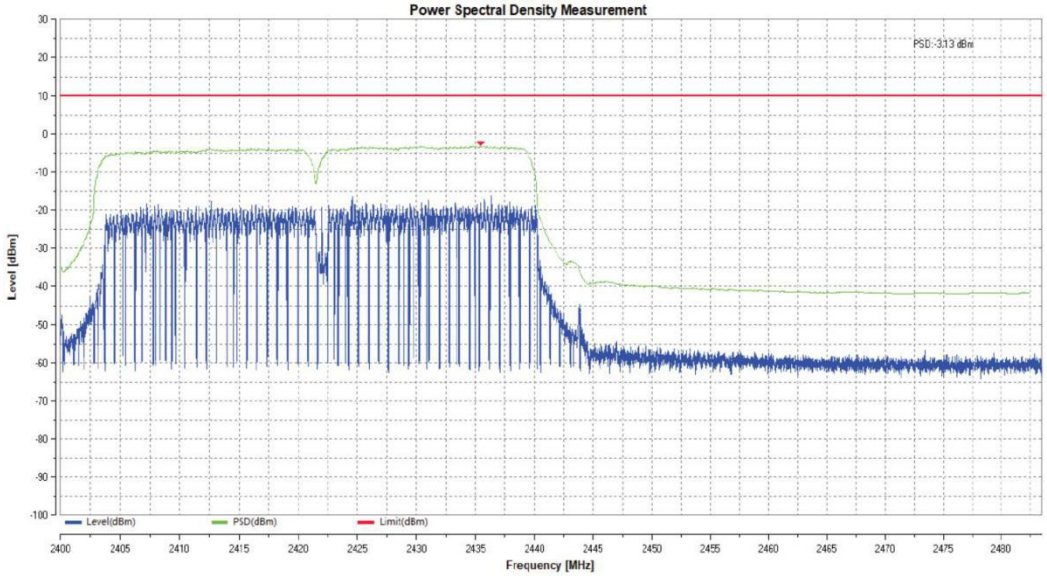
802.11n HT20 2442



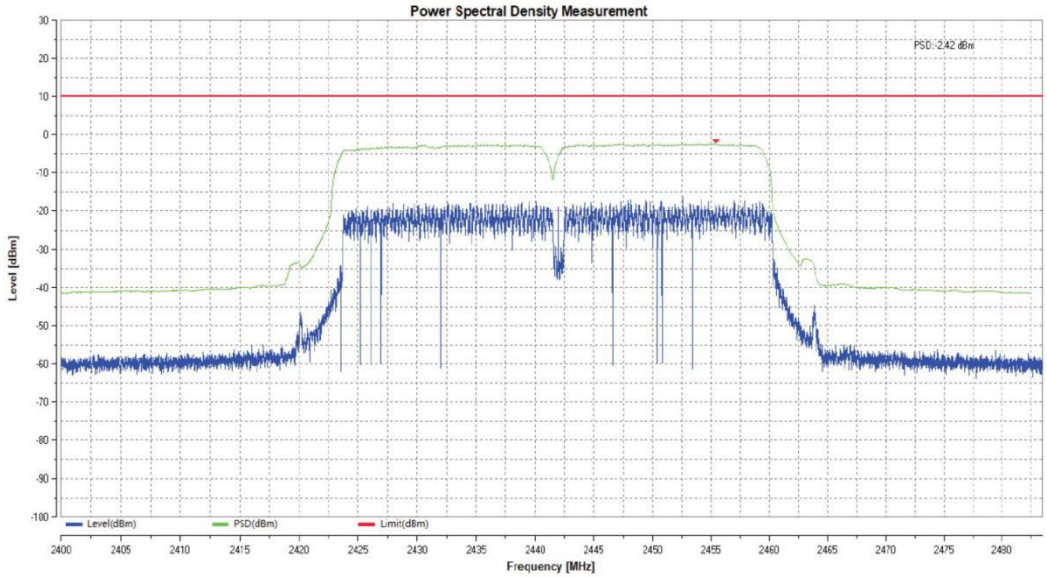
802.11n HT20 2472



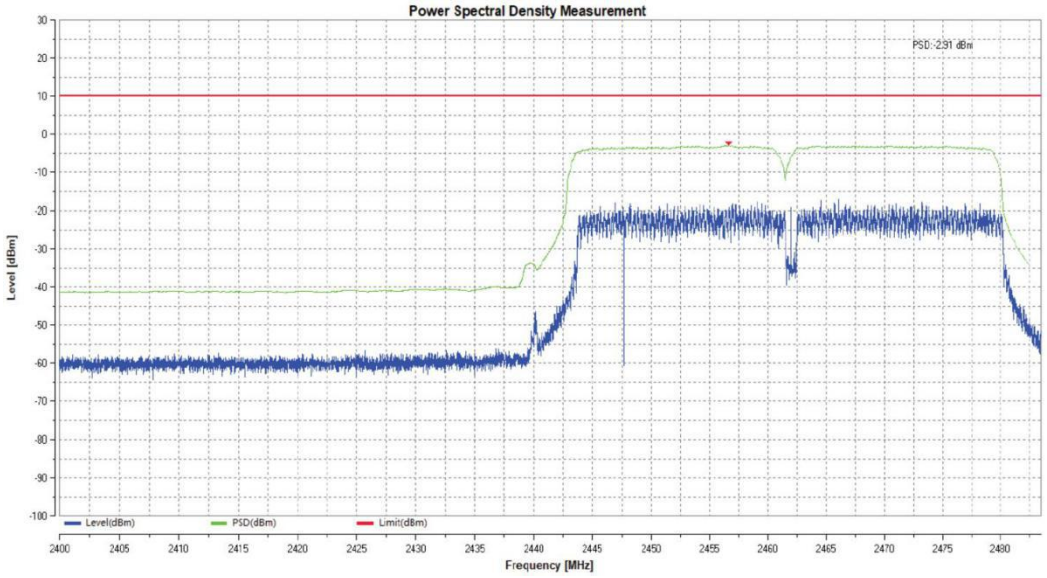
802.11n HT40 2422



802.11n HT40 2442

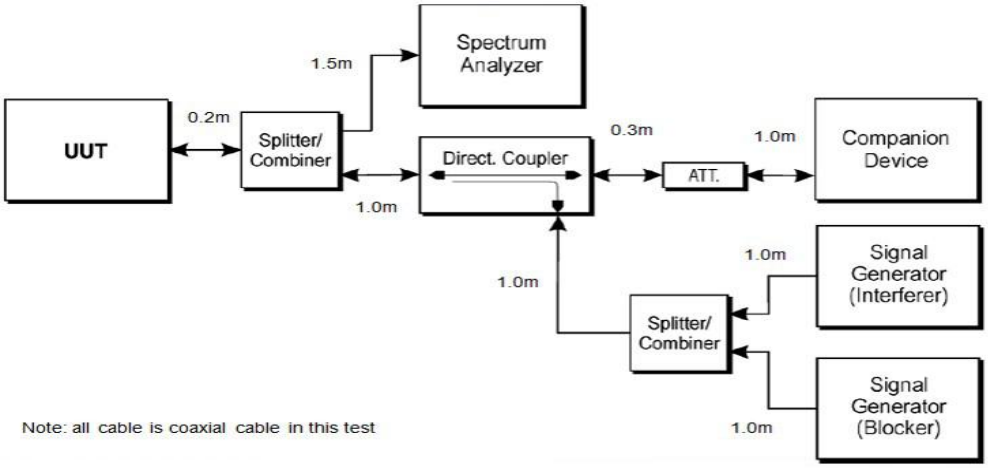


802.11n HT40 2462



11. Adaptivity (Adaptive equipment using modulations other than FHSS)

11.1. Block Diagram of Test Setup



11.2. Limit

Requirement	Operational Mode			
	Non-LBT based Detect and Avoid	LBT based Detect and Avoid		
		Frame Based Equipment	Load Based Equipment (CCA using 'energy detect')	Load Based Equipment (CCA not using any of the mechanisms referenced as note 2)
Minimum Clear Channel Assessment (CCA) Time	NA	18 us (see note 1)	18 us (see note 2)	18 us (see note 2)
Maximum Channel Occupancy (COT) Time	40 ms	1ms to 10 ms	13ms (see note 2)	13ms
Minimum Idle Period	At least 5% of COT and 100 μs	5% of COT	(see note 2)	(see note 2)
Extended CCA check	NA	NA	(see note 2)	between 18 μs and at least 160 μs
Short Control Signaling Transmissions	Maximum duty cycle of 10% within an observation period of 50 ms (see note 3)			

Note 1: The CCA time used by the equipment shall be declared by the supplier.

Note 2: Load Based Equipment may implement an LBT based spectrum sharing mechanism based on the Clear Channel Assessment (CCA) mode using energy detect, as described in IEEE Std. 802.11TM-2007 clauses 9,15,18 or 19, in IEEE Std. 802.11n TM -2009 clauses 9,11 and 20 or in IEEE Std. 802.15.4 TM -2011, clauses 4 and 5.

Note 3: Adaptive equipment may or may not have Short Control Signaling Transmissions.

Wanted signal mean power from companion device:

TL = -70 dBm/MHz + 10 × $\log^{10}$ (100 mW / P_{out}) (Pout in mW e.i.r.p.)

Unwanted Signal parameters

Wanted signal mean power from companion device	Maximum transmit power (PH) EIRP mW	Threshold Level (TL)
Sufficient to maintain the link (see note 2)	2395 or 2488.5 (see note 1)	-35 (see note 3)

NOTE 1: The highest frequency shall be used for testing operating channels within the range 2 400 MHz to 2 442 MHz, while the lowest frequency shall be used for testing operating channels within the range 2 442 MHz to 2 483,5 MHz. See clause 5.4.6.1.

NOTE 2: A typical value which can be used in most cases is -50 dBm/MHz.

NOTE 3: The level specified is the level in front of the UUT antenna. In case of conducted measurements, this level has to be corrected by the actual antenna assembly gain.

11.3. Test procedures

According to ETSI EN 300 328 V2.2.2(2019-07) §5.4.6.2.1.4, Conducted measurements.

Step 1:

• The UUT shall connect to a companion device during the test. The interference signal generator, the unwanted signal generator, the spectrum analyser, the UUT and the companion device are connected using a set-up equivalent to the example given by figure 5 although the interference and unwanted signal generator do not generate any signals at this point in time. The spectrum analyser is used to monitor the transmissions of both the UUT and the companion device and it should be possible to distinguish between either transmission. In addition, the spectrum analyser is used to monitor the transmissions of the UUT in response to the interfering and the unwanted signals.

• Adjust the received signal level (wanted signal from the companion device) at the UUT to the value defined in table 10 (clause 4.3.2.6.3.2.2) for Frame Based Equipment or in table 11 (clause 4.3.2.6.3.2.3) for Load Based Equipment. Testing of Unidirectional equipment does not require a link to be established with a companion device.

• The analyser shall be set as follows:

-RBW: ≥ Occupied Channel Bandwidth (if the analyser does not support this setting, the highest available setting shall be used)

-VBW: 3 × RBW (if the analyser does not support this setting, the highest available setting shall be used)

-Detector Mode: RMS

-Centre Frequency: Equal to the centre frequency of the operating channel

-Span: 0 Hz

-Sweep time: > maximum Channel Occupancy Time

-Trace Mode: Clear Write

-Trigger Mode: Video

Step 2:

• Configure the UUT for normal transmissions with a sufficiently high payload resulting in a minimum transmitter activity ratio (TxOn / (TxOn + TxOff)) of 0,3. Where this is not possible, the UUT shall be configured to the maximum payload possible.

• For Frame Based Equipment, using the procedure defined in clause 5.4.6.2.1.5, it shall be verified that the UUT complies with the maximum Channel Occupancy Time and minimum Idle Period defined in clause 4.3.2.6.3.2.2, step 3. When measuring the Idle Period of the UUT, only transmissions from the UUT shall be considered.
• For Load Based equipment, using the procedure defined in clause 5.4.6.2.1.5, it shall be verified that the UUT complies with the maximum Channel Occupancy Time and minimum Idle Period defined in clause 4.3.2.6.3.2.3, step 2 and step 3. When measuring the Idle Period of the UUT, only transmissions from the UUT shall be considered.
• For the purpose of testing Load Based Equipment referred to in the first paragraph of clause 4.3.2.6.3.2.3 (IEEE 802.11™ [i.3] or IEEE 802.15.4™ [i.4] equipment), the limits to be applied for the minimum Idle Period and the maximum Channel Occupancy Time are the same as defined for other types of Load Based Equipment (see clause 4.3.2.6.3.2.3, step 2 and step 3). The Idle Period is considered to be equal to the CCA or Extended CCA time defined in clause 4.3.2.6.3.2.3, step 1 and step 2.

Step 3: Adding the interference signal

• An interference signal as defined in clause B.7 is injected on the current operating channel of the UUT. The power spectral density level (at the input of the UUT) of this interference signal shall be equal to the detection threshold defined in clause 4.3.2.6.3.2.2, step 5 (frame based equipment) or clause 4.3.2.6.3.2.3, step 5 (load based equipment).

Step 4: Verification of reaction to the interference signal

• The spectrum analyser shall be used to monitor the transmissions of the UUT on the selected operating channel with the interfering signal injected. This may require the spectrum analyser sweep to be triggered by the start of the interfering signal.
• Using the procedure defined in clause 5.4.6.2.1.5, it shall be verified that:
i) The UUT shall stop transmissions on the current operating channel.
The UUT is assumed to stop transmissions within a period equal to the maximum Channel Occupancy Time defined in clause 4.3.2.6.3.2.2 (frame based equipment) or clause 4.3.2.6.3.2.3 (load based equipment).
ii) Apart from Short Control Signalling Transmissions, there shall be no subsequent transmissions while the interfering signal is present.
To verify that the UUT is not resuming normal transmissions as long as the interference signal is present, the monitoring time may need to be 60 s or more.
iii) The UUT may continue to have Short Control Signalling Transmissions on the operating channel while the interfering signal is present. These transmissions shall comply with the limits defined in clause 4.3.2.6.4.2.
The verification of the Short Control Signalling transmissions may require the analyser settings to be changed (e.g. sweep time).
iv) Alternatively, the equipment may switch to a non-adaptive mode.

Step 5: Adding the unwanted signal

• With the interfering signal present, a 100 % duty cycle CW signal is inserted as the unwanted signal. The frequency and the level are provided in table 10 (clause 4.3.2.6.3.2.2) for Frame Based Equipment or in table 11 (clause 4.3.2.6.3.2.3) for Load Based Equipment.

• The spectrum analyser shall be used to monitor the transmissions of the UUT on the selected operating channel. This may require the spectrum analyser sweep to be triggered by the start of the unwanted signal.

• Using the procedure defined in clause 5.4.6.2.1.5, it shall be verified that:

i)The UUT shall not resume normal transmissions on the current operating channel as long as both the interference and unwanted signals remain present.

To verify that the UUT is not resuming normal transmissions as long as the interference and unwanted signals are present, the monitoring time may need to be 60 s or more.

ii)The UUT may continue to have Short Control Signalling Transmissions on the operating channel while the interfering and unwanted signals are present. These transmissions shall comply with the limits defined in clause 4.3.2.6.4.2.

The verification of the Short Control Signalling transmissions may require the analyser settings to be changed (e.g. sweep time).

Step 6: Removing the interference and unwanted signal

• On removal of the interference and unwanted signals the UUT is allowed to start transmissions again on this channel; however, this is not a requirement and, therefore, does not require testing.

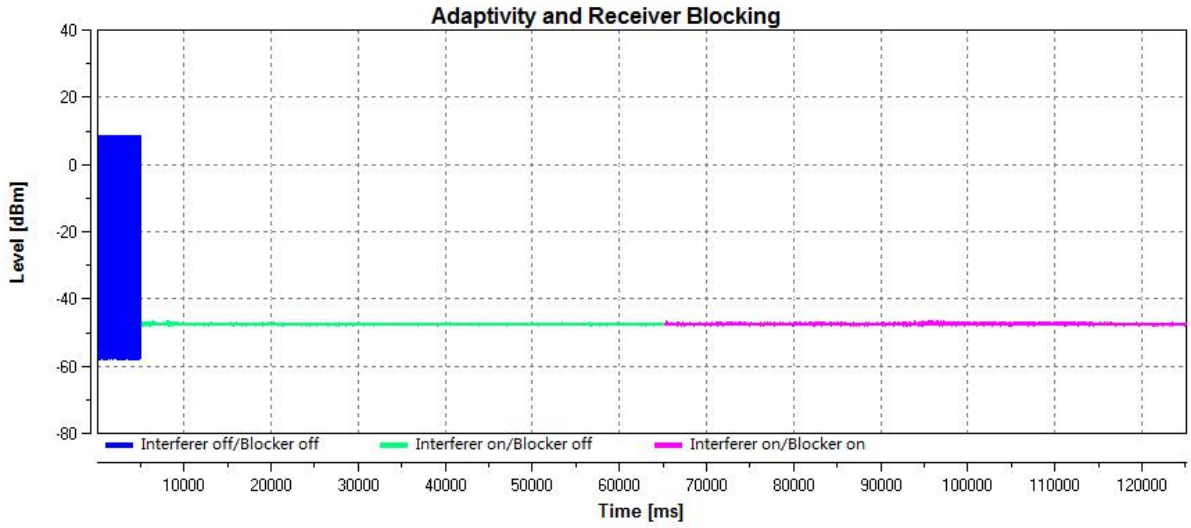
Step 7:

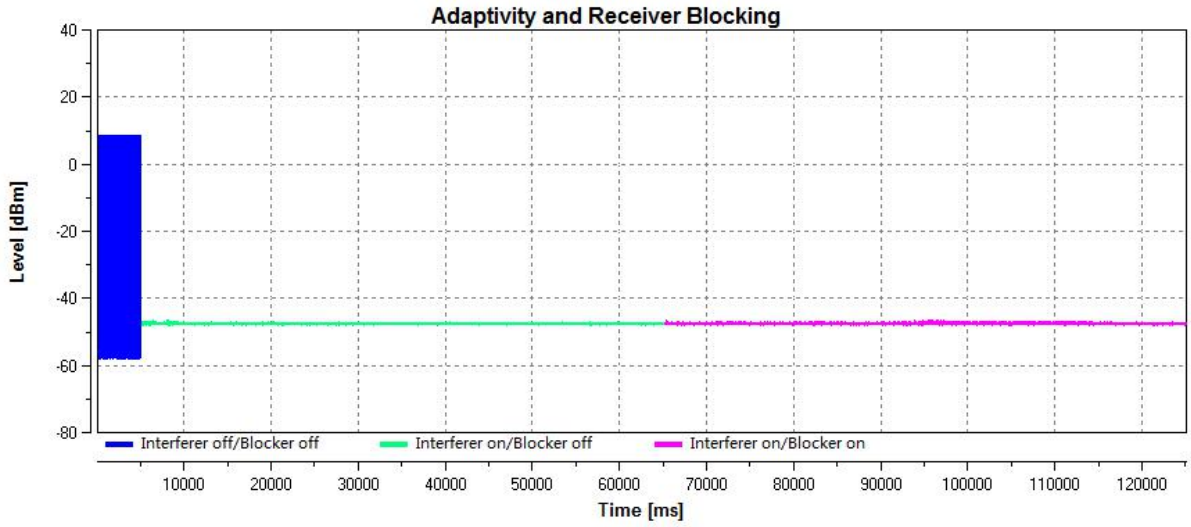
• Step 2 to step 6 shall be repeated for each of the frequencies to be tested.

11.4. Test Result

Mode	Channel	COT values(ms)	Idle values [ms]	Short Control (%)			Verdict
				Interferer values	CW values	Limit [%]	
802.11b	LCH	2.279	0.065	0	0	10	PASS
802.11b	HCH	2.366	0.054	0	0	10	PASS

Test Plot

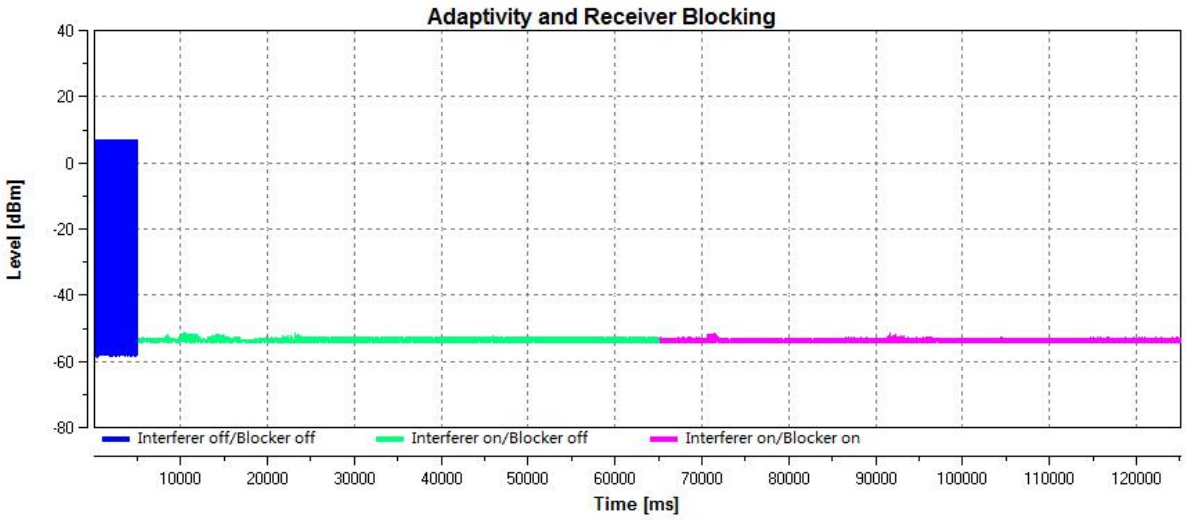


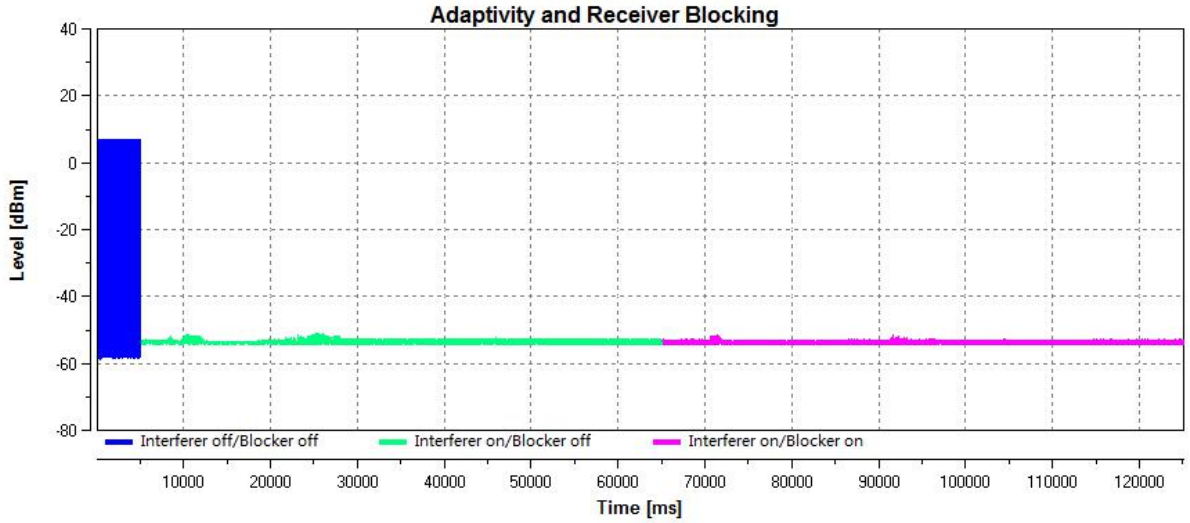


Note: Only the worst plots were recorded in this report.

Mode	Channel	COT values(ms)	Idle values [ms]	Short Control (%)			Verdict
				Interferer values	CW values	Limit [%]	
802.11g	LCH	2.456	0.013	0	0	10	PASS
802.11g	HCH	1.825	0.177	0	0	10	PASS

Test Plot

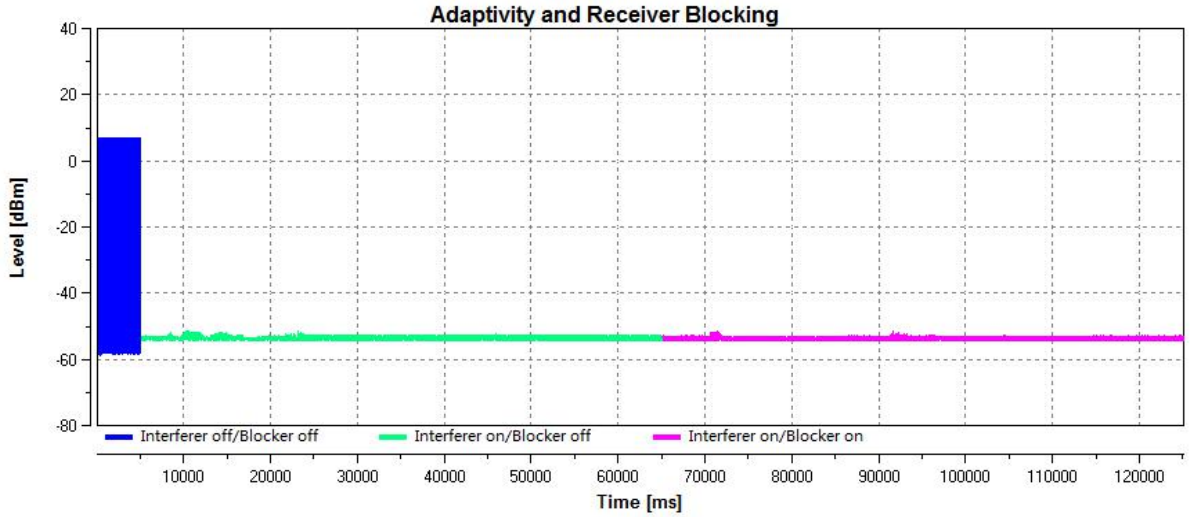


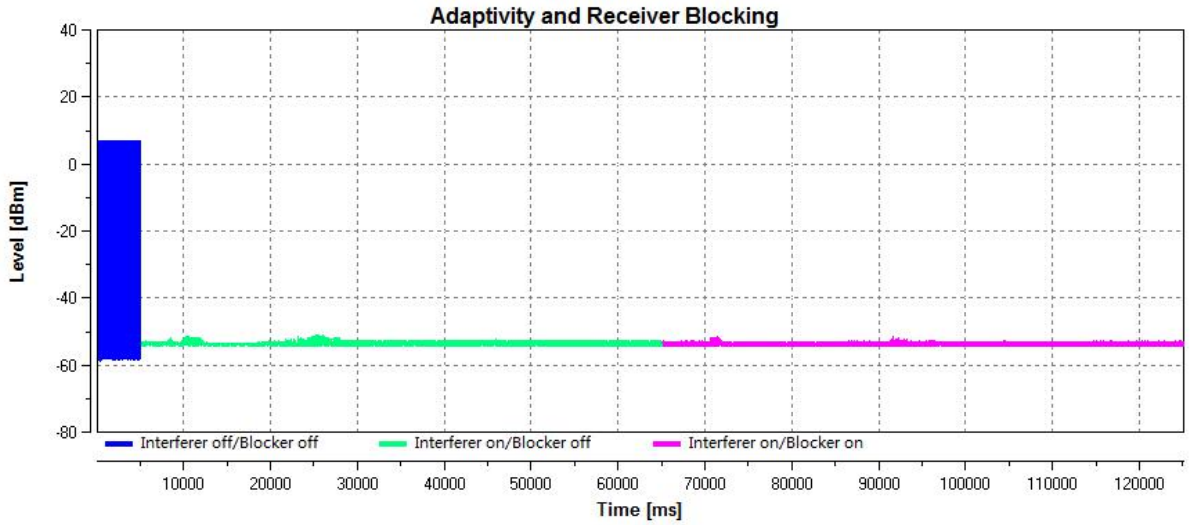


Note: Only the worst plots were recorded in this report.

Mode	Channel	COT values(ms)	Idle values [ms]	Short Control (%)			Verdict
				Interferer values	CW values	Limit [%]	
802.11n HT20	LCH	2.964	0.091	0	0	10	PASS
802.11n HT20	HCH	2.662	0.036	0	0	10	PASS

Test Plot

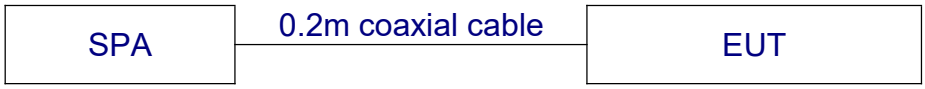




Note: Only the worst plots were recorded in this report.

12. Occupied Channel Bandwidth

12.1. Block Diagram of Test Setup



12.2. Limit

According to ETSI EN 300 328 V2.2.2(2019-07) 4.3.2.7.3,
The Occupied Channel Bandwidth shall fall completely within the band given in table 1.

Table 1: Service frequency bands

	Service frequency bands
Transmit	2 400 MHz to 2 483,5 MHz
Receive	2 400 MHz to 2 483,5 MHz

In addition, for non-adaptive systems using wide band modulations other than FHSS and with e.i.r.p greater than 10 dBm, the occupied channel bandwidth shall be less than 20 MHz.
These measurements shall only be performed at normal test conditions.

12.3. Test Procedure

According to ETSI EN 300 328 V2.2.2(2019-07) §5.4.7.2.1, conducted method.

Step 1:
Connect the UUT to the spectrum analyser and use the following settings:
•Centre Frequency: The centre frequency of the channel under test
•Resolution BW: ~ 1 % of the span without going below 1 %
•Video BW: 3 × RBW
•Frequency Span: 2 × Nominal Channel Bandwidth
•Detector Mode: RMS
•Trace Mode: Max Hold
•Sweep time: 1 s

Step 2:
Wait for the trace to stabilize.
Find the peak value of the trace and place the analyser marker on this peak.

Step 3:
Use the 99 % bandwidth function of the spectrum analyser to measure the Occupied Channel Bandwidth of the UUT. This value shall be recorded.
Make sure that the power envelope is sufficiently above the noise floor of the analyser to avoid the noise signals left and right from the power envelope being taken into account by this measurement.

12.4. EUT Description

Mode:	☒ 802.11b	☒ 802.11g	☒ 802.11n HT20	☒ 802.11n HT40
Test Channel:	☒ 2412MHz ☒ 2442MHz ☒ 2472MHz	☒ 2412MHz ☒ 2442MHz ☒ 2472MHz	☒ 2412MHz ☒ 2442MHz ☒ 2472MHz	☒ 2422MHz ☒ 2442MHz ☒ 2462MHz
Bandwidth:	☒ 20MHz ☐ 40MHz	☒ 20MHz ☐ 40MHz	☒ 20MHz ☐ 40MHz	☐ 20MHz ☒ 40MHz
Modulation Type:	☒ DSSS ☐ OFDM	☐ DSSS ☒ OFDM	☐ DSSS ☒ OFDM	☐ DSSS ☒ OFDM
Channel Separation:	☒ 5MHz	☒ 5MHz	☒ 5MHz	☒ 5MHz

12.5. Measurement Description

Instrument:	Spectrum Analyzer	
Detector:	RMS	
Sweep time:	Auto	
Video bandwidth:	☒ 20 MHz(Bandwith): 1.5MHz	☒ 40 MHz(Bandwith): 3MHz
Resolution bandwidth:	☒ 20 MHz(Bandwith): 410KHz	☒ 40 MHz(Bandwith): 820KHz
Span:	☒ 20 MHz(Bandwith): 40MHz	☒ 40 MHz(Bandwith): 80MHz
Center:	Transmit channel	
Trace:	Max hold	
Performed:	☒ Conducted ☐ Radiated (only if no conducted sample is provided)	

12.6. Test Result

Test Condition	Test Mode	Test Channel	Ant	OBW [MHz]	FL OBW [MHz]	FH OBW [MHz]	Verdict
TNVN	11B	2412	Ant1	13.496	2405.321	---	PASS
TNVN	11B	2472	Ant1	13.474	---	2478.713	PASS
TNVN	11G	2412	Ant1	16.589	2403.713	---	PASS
TNVN	11G	2472	Ant1	16.601	---	2480.286	PASS
TNVN	11N20	2412	Ant1	17.746	2403.140	---	PASS
TNVN	11N20	2472	Ant1	17.757	---	2480.863	PASS
TNVN	11N40	2422	Ant1	36.126	2403.986	---	PASS
TNVN	11N40	2462	Ant1	36.157	---	2480.071	PASS

802.11b 2412

802.11b 2472

802.11g 2412

802.11g 2472

802.11n HT20 2412

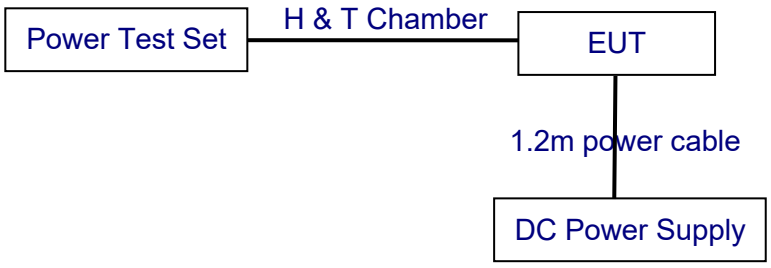
802.11n HT20 2472

802.11n HT40 2422

802.11n HT40 2462

13. Transmitter unwanted emissions in the out-of-band domain

13.1. Block Diagram of Test Setup



13.2. Limit

ETSI EN 300 328 (V2.2.2) Sub-clause 4.3.2.8.3

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.

NOTE: Within the 2 400 MHz to 2 483,5 MHz band, the Out-of-band emissions are fulfilled by compliance with the Occupied Channel Bandwidth requirement in clause 4.3.2.7.

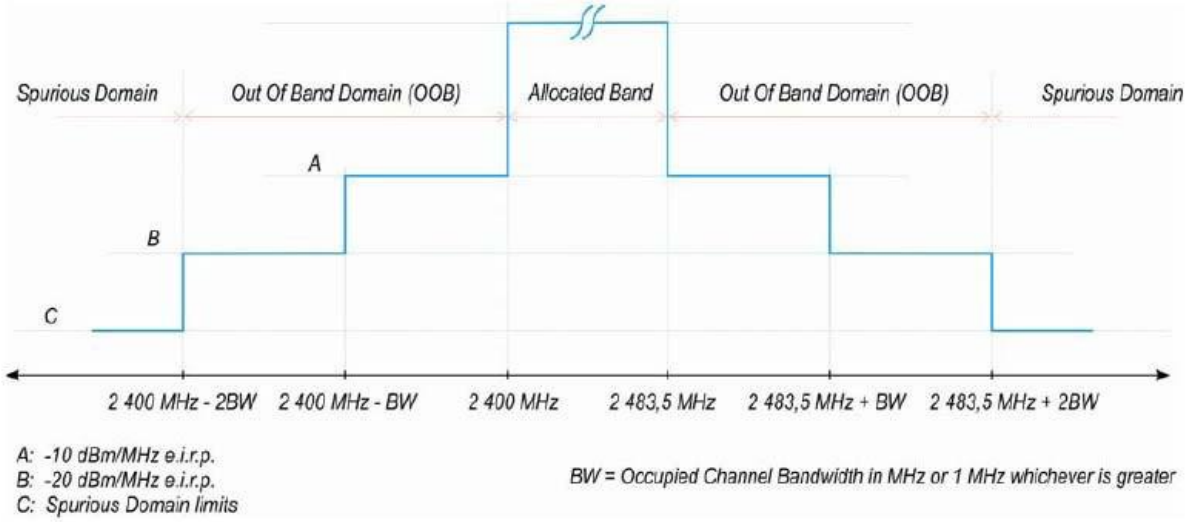


Figure 3: Transmit mask

Transmitter unwanted emissions in the out-of-band domain are emissions when the equipment is in Transmit mode, on frequencies immediately outside the necessary bandwidth which results from the modulation process, but excluding spurious.

These measurements shall only be performed at normal test conditions.

For systems using FHSS modulation, the measurements shall be performed during normal operation (hopping).

For systems using wide band modulations other than FHSS, the measurement shall be performed at the lowest and the highest channel on which the equipment can operate. These operating channels shall be recorded.

The equipment shall be configured to operate under its worst case situation with respect to output power. If the equipment can operate with different Occupied Channel Bandwidths (e.g. 20 MHz and 40 MHz), than each channel bandwidth shall be tested separately.

13.3. Test Procedure

According to ETSI EN 300 328 V2.2.2(2019-07) §5.4.8.2.1, conducted method.

Step 1:

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

- Measurement Mode: Time Domain Power
- Centre Frequency: 2484 MHz
- Span: Zero Span
- Resolution BW: 1 MHz
- Filter mode: Channel filter
- Video BW: 3 MHz
- Detector Mode: RMS
- Trace Mode: Max Hold
- Sweep Mode: Single Sweep
- Sweep Points: Sweep time [µs] / (1 µs) with a maximum of 30000
- Trigger Mode: Video
- Sweep Time: ＞120% of the duration of the longest burst detected during the measurement of the RF Output Power

Step 2 (segment 2483.5 MHz to 2483.5 MHz + BW):

The measurement shall be performed and repeated while the trigger level is increased until no triggering takes place.

For FHSS equipment operating in a normal hopping mode, the different hops will result in signal bursts with different power levels. In this case the burst with the highest power level shall be selected.

Set a window (start and stop lines) to match with the start and end of the burst and in which the RMS power shall be measured using the Time Domain Power function.

Select RMS power to be measured within the selected window and note the result which is the RMS power within this 1 MHz segment (2483.5 MHz to 2484.5 MHz).

Compare this value with the applicable limit provided by the mask.

Increase the centre frequency in steps of 1MHz and repeat this measurement for every 1 MHz segment within the range 2483.5 MHz to 2483.5 MHz + BW.

The centre frequency of the last 1MHz segment shall be set to 2483.5 MHz + BW - 0.5 MHz (which means this may partly overlap with the previous 1 MHz segment).

Step 3 (segment 2483.5 MHz + BW to 2483.5 MHz + 2 BW):

Change the centre frequency of the analyser to 2484 MHz + BW and perform the measurement for the first 1 MHz segment within range 2483.5 MHz + BW to 2483.5 MHz + 2 BW. Increase the centre frequency in1 MHz steps and repeat the measurements to cover this whole range. The centre frequency of the last 1 MHz segment shall be set to 2483.5 MHz + 2 BW - 0.5 MHz (which means this may partly overlap with the previous 1 MHz segment).

Step 4 (segment 2 400 MHz - BW to 2 400 MHz):

Change the centre frequency of the analyser to 2399.5 MHz and perform the measurement for the first 1 MHz segment within range 2400 MHz - BW to 2400 MHz Reduce the centre frequency in 1 MHz steps and repeat the measurements to cover this whole range. The centre frequency of the last 1 MHz segment shall be set to 2400 MHz - BW + 0.5 MHz (which means this may partly overlap with the previous 1 MHz segment).

Step 5 (segment 2400 MHz - 2 BW to 2 400 MHz - BW):

Change the centre frequency of the analyser to 2399.5 MHz - BW and perform the measurement for the first 1MHz segment within range 2400 MHz -2BW to 2400 MHz - BW.

Reduce the centre frequency in 1 MHz steps and repeat the measurements to cover this whole range. The centre frequency of the last 1MHz segment shall be set to 2400 MHz - 2 BW + 0,5 MHz (which means this may partly overlap with the previous 1MHz segment).

Step 6:

In case of conducted measurements on equipment with a single transmit chain, the declared antenna assembly gain G in dBi shall be added to the results for each of the 1 MHz segments and compared with the limits provided by the mask given in figure 1 or figure 3. If more than one antenna assembly is intended for this power setting, the antenna with the highest gain shall be considered.

In case of conducted measurements on smart antenna systems (equipment with multiple transmit chains), the measurements need to be repeated for each of the active transmit chains. The declared antenna assembly gain G in dBi for a single antenna shall be added to these results. If more than one antenna assembly is intended for this power setting, the antenna with the highest gain shall be considered.

Comparison with theapplicable limits shall be done using any of the options given below:

-Option 1: the results for each of the transmit chains for the corresponding 1 MHz segments shall be added. The additional beamforming gain Y in dB shall be added as well and the resulting values compared with the limits provided by the mask given in figure 1 or figure 3.

-Option 2: the limits provided by the mask given in figure 1 or figure 3 shall be reduced by 10 × $\log^{10}$(Ach) and the additional beamforming gain Y in dB.

The results for each of the transmit chains shall be individually compared with these reduced limits.

NOTE: Ach refers to the number of active transmit chains.

It shall be recorded whether the equipment complies with the mask provided in figure 1 or figure 3.

13.4. EUT Description

Mode:	☒ 802.11b	☒ 802.11g	☒ 802.11n HT20	☒ 802.11n HT40
Test Channel:	☒ 2412MHz ☒ 2472MHz	☒ 2412MHz ☒ 2472MHz	☒ 2412MHz ☒ 2472MHz	☒ 2422MHz ☒ 2462MHz
Bandwidth:	☒ 20MHz ☐ 40MHz	☒ 20MHz ☐ 40MHz	☒ 20MHz ☐ 40MHz	☐ 20MHz ☒ 40MHz
Modulation Type:	☒ DSSS ☐ OFDM	☐ DSSS ☒ OFDM	☐ DSSS ☒ OFDM	☐ DSSS ☒ OFDM
Channel Separation:	☒ 5MHz	☒ 5MHz	☒ 5MHz	☒ 5MHz

13.5. Measurement Description

Instrument:	Spectrum Analyzer
Detector:	RMS
Sweep time:	depending on packet length
Video bandwidth:	3MHz
Resolution bandwidth:	1MHz
Span:	0Hz
Trace:	Trigger to burst
Sweep points:	Sweep Time [s] / (1 μs) or 5 000 whichever is greater
Performed:	☒ Conducted ☐ Radiated (only if no conducted sample is provided)

13.6. Test Result

Note: Cable loss and antenna gain was combined in the calculated result.

Test Condition	Test Mode	Test Channel	Ant	Freq [MHz]	Result [dBm]	Limit [dBm]	Verdict
TNVN	11B	2412	Ant1	2370.529	-46.92	<=-20	PASS
TNVN	11B	2412	Ant1	2370.558	-45.40	<=-20	PASS
TNVN	11B	2412	Ant1	2371.529	-48.05	<=-20	PASS
TNVN	11B	2412	Ant1	2372.529	-46.66	<=-20	PASS
TNVN	11B	2412	Ant1	2373.529	-45.08	<=-20	PASS
TNVN	11B	2412	Ant1	2374.529	-44.96	<=-20	PASS
TNVN	11B	2412	Ant1	2375.529	-49.14	<=-20	PASS
TNVN	11B	2412	Ant1	2376.529	-47.94	<=-20	PASS
TNVN	11B	2412	Ant1	2377.529	-46.80	<=-20	PASS
TNVN	11B	2412	Ant1	2378.529	-46.38	<=-20	PASS
TNVN	11B	2412	Ant1	2379.529	-47.38	<=-20	PASS
TNVN	11B	2412	Ant1	2380.529	-44.10	<=-20	PASS
TNVN	11B	2412	Ant1	2381.529	-46.30	<=-20	PASS
TNVN	11B	2412	Ant1	2382.529	-45.69	<=-20	PASS
TNVN	11B	2412	Ant1	2383.529	-42.31	<=-20	PASS
TNVN	11B	2412	Ant1	2384.529	-44.97	<=-20	PASS
TNVN	11B	2412	Ant1	2385.500	-41.53	<=-10	PASS
TNVN	11B	2412	Ant1	2385.529	-43.71	<=-10	PASS
TNVN	11B	2412	Ant1	2386.500	-44.55	<=-10	PASS
TNVN	11B	2412	Ant1	2387.500	-42.03	<=-10	PASS
TNVN	11B	2412	Ant1	2388.500	-42.55	<=-10	PASS
TNVN	11B	2412	Ant1	2389.500	-45.43	<=-10	PASS
TNVN	11B	2412	Ant1	2390.500	-40.95	<=-10	PASS
TNVN	11B	2412	Ant1	2391.500	-42.27	<=-10	PASS
TNVN	11B	2412	Ant1	2392.500	-39.16	<=-10	PASS
TNVN	11B	2412	Ant1	2393.500	-35.14	<=-10	PASS
TNVN	11B	2412	Ant1	2394.500	-28.70	<=-10	PASS
TNVN	11B	2412	Ant1	2395.500	-27.51	<=-10	PASS
TNVN	11B	2412	Ant1	2396.500	-26.96	<=-10	PASS
TNVN	11B	2412	Ant1	2397.500	-23.92	<=-10	PASS
TNVN	11B	2412	Ant1	2398.500	-25.34	<=-10	PASS
TNVN	11B	2412	Ant1	2399.500	-24.88	<=-10	PASS
TNVN	11B	2412	Ant1	2484.000	-48.80	<=-10	PASS
TNVN	11B	2412	Ant1	2485.000	-42.96	<=-10	PASS
TNVN	11B	2412	Ant1	2486.000	-47.17	<=-10	PASS
TNVN	11B	2412	Ant1	2487.000	-44.00	<=-10	PASS

Test Condition	Test Mode	Test Channel	Ant	Freq [MHz]	Result [dBm]	Limit [dBm]	Verdict
TNVN	11B	2412	Ant1	2488.000	-45.07	<=-10	PASS
TNVN	11B	2412	Ant1	2489.000	-43.36	<=-10	PASS
TNVN	11B	2412	Ant1	2490.000	-43.76	<=-10	PASS
TNVN	11B	2412	Ant1	2491.000	-46.76	<=-10	PASS
TNVN	11B	2412	Ant1	2492.000	-46.39	<=-10	PASS
TNVN	11B	2412	Ant1	2493.000	-44.11	<=-10	PASS
TNVN	11B	2412	Ant1	2494.000	-46.07	<=-10	PASS
TNVN	11B	2412	Ant1	2495.000	-46.67	<=-10	PASS
TNVN	11B	2412	Ant1	2496.000	-45.94	<=-10	PASS
TNVN	11B	2412	Ant1	2497.000	-44.16	<=-10	PASS
TNVN	11B	2412	Ant1	2497.971	-45.35	<=-10	PASS
TNVN	11B	2412	Ant1	2498.000	-48.08	<=-10	PASS
TNVN	11B	2412	Ant1	2498.971	-42.56	<=-20	PASS
TNVN	11B	2412	Ant1	2499.971	-44.30	<=-20	PASS
TNVN	11B	2412	Ant1	2500.971	-43.21	<=-20	PASS
TNVN	11B	2412	Ant1	2501.971	-48.67	<=-20	PASS
TNVN	11B	2412	Ant1	2502.971	-46.53	<=-20	PASS
TNVN	11B	2412	Ant1	2503.971	-46.40	<=-20	PASS
TNVN	11B	2412	Ant1	2504.971	-44.49	<=-20	PASS
TNVN	11B	2412	Ant1	2505.971	-45.33	<=-20	PASS
TNVN	11B	2412	Ant1	2506.971	-43.49	<=-20	PASS
TNVN	11B	2412	Ant1	2507.971	-45.18	<=-20	PASS
TNVN	11B	2412	Ant1	2508.971	-44.79	<=-20	PASS
TNVN	11B	2412	Ant1	2509.971	-46.68	<=-20	PASS
TNVN	11B	2412	Ant1	2510.971	-46.32	<=-20	PASS
TNVN	11B	2412	Ant1	2511.971	-43.11	<=-20	PASS
TNVN	11B	2412	Ant1	2512.942	-42.22	<=-20	PASS
TNVN	11B	2412	Ant1	2512.971	-44.11	<=-20	PASS
TNVN	11B	2472	Ant1	2484.000	-45.88	<=-20	PASS
TNVN	11B	2472	Ant1	2485.000	-43.80	<=-20	PASS
TNVN	11B	2472	Ant1	2376.186	-49.73	<=-20	PASS
TNVN	11B	2472	Ant1	2376.343	-49.04	<=-20	PASS
TNVN	11B	2472	Ant1	2377.343	-48.93	<=-20	PASS
TNVN	11B	2472	Ant1	2378.343	-49.55	<=-20	PASS
TNVN	11B	2472	Ant1	2379.343	-47.48	<=-20	PASS
TNVN	11B	2472	Ant1	2380.343	-48.62	<=-20	PASS
TNVN	11B	2472	Ant1	2381.343	-51.99	<=-20	PASS
TNVN	11B	2472	Ant1	2382.343	-49.15	<=-20	PASS
TNVN	11B	2472	Ant1	2383.343	-48.51	<=-20	PASS

Test Condition	Test Mode	Test Channel	Ant	Freq [MHz]	Result [dBm]	Limit [dBm]	Verdict
TNVN	11B	2472	Ant1	2384.343	-47.37	<=-20	PASS
TNVN	11B	2472	Ant1	2385.343	-47.30	<=-20	PASS
TNVN	11B	2472	Ant1	2386.343	-50.51	<=-20	PASS
TNVN	11B	2472	Ant1	2387.343	-47.63	<=-20	PASS
TNVN	11B	2472	Ant1	2388.343	-49.52	<=-20	PASS
TNVN	11B	2472	Ant1	2388.500	-49.84	<=-20	PASS
TNVN	11B	2472	Ant1	2389.500	-51.12	<=-10	PASS
TNVN	11B	2472	Ant1	2390.500	-46.18	<=-10	PASS
TNVN	11B	2472	Ant1	2391.500	-46.43	<=-10	PASS
TNVN	11B	2472	Ant1	2392.500	-50.26	<=-10	PASS
TNVN	11B	2472	Ant1	2393.500	-44.63	<=-10	PASS
TNVN	11B	2472	Ant1	2394.500	-50.37	<=-10	PASS
TNVN	11B	2472	Ant1	2395.500	-45.91	<=-10	PASS
TNVN	11B	2472	Ant1	2396.500	-48.43	<=-10	PASS
TNVN	11B	2472	Ant1	2376.186	-50.47	<=-10	PASS
TNVN	11B	2472	Ant1	2376.343	-51.94	<=-10	PASS
TNVN	11B	2472	Ant1	2377.343	-51.93	<=-10	PASS
TNVN	11B	2472	Ant1	2378.343	-46.15	<=-10	PASS
TNVN	11B	2472	Ant1	2379.343	-48.12	<=-10	PASS
TNVN	11B	2472	Ant1	2380.343	-49.38	<=-10	PASS
TNVN	11B	2472	Ant1	2381.343	-47.41	<=-10	PASS
TNVN	11B	2472	Ant1	2382.343	-47.82	<=-10	PASS
TNVN	11B	2472	Ant1	2383.343	-47.97	<=-10	PASS
TNVN	11B	2472	Ant1	2384.343	-46.38	<=-10	PASS
TNVN	11B	2472	Ant1	2385.343	-50.65	<=-10	PASS
TNVN	11B	2472	Ant1	2397.500	-50.64	<=-10	PASS
TNVN	11B	2472	Ant1	2398.500	-48.77	<=-10	PASS
TNVN	11B	2472	Ant1	2399.500	-49.18	<=-10	PASS
TNVN	11B	2472	Ant1	2484.000	-38.47	<=-10	PASS
TNVN	11B	2472	Ant1	2485.000	-37.30	<=-10	PASS
TNVN	11B	2472	Ant1	2486.000	-41.22	<=-10	PASS
TNVN	11B	2472	Ant1	2487.000	-41.10	<=-10	PASS
TNVN	11B	2472	Ant1	2488.000	-41.49	<=-10	PASS
TNVN	11B	2472	Ant1	2489.000	-46.13	<=-10	PASS
TNVN	11B	2472	Ant1	2490.000	-45.03	<=-10	PASS
TNVN	11B	2472	Ant1	2491.000	-46.53	<=-10	PASS
TNVN	11B	2472	Ant1	2492.000	-46.57	<=-10	PASS
TNVN	11B	2472	Ant1	2493.000	-46.96	<=-10	PASS
TNVN	11B	2472	Ant1	2494.000	-47.98	<=-10	PASS

Test Condition	Test Mode	Test Channel	Ant	Freq [MHz]	Result [dBm]	Limit [dBm]	Verdict
TNVN	11B	2472	Ant1	2495.000	-46.42	<=-10	PASS
TNVN	11B	2472	Ant1	2495.157	-47.72	<=-20	PASS
TNVN	11B	2472	Ant1	2496.157	-47.94	<=-20	PASS
TNVN	11B	2472	Ant1	2497.157	-48.92	<=-20	PASS
TNVN	11B	2472	Ant1	2498.157	-45.72	<=-20	PASS
TNVN	11B	2472	Ant1	2499.157	-46.99	<=-20	PASS
TNVN	11B	2472	Ant1	2500.157	-48.15	<=-20	PASS
TNVN	11B	2472	Ant1	2501.157	-45.88	<=-20	PASS
TNVN	11B	2472	Ant1	2502.157	-46.97	<=-20	PASS
TNVN	11B	2472	Ant1	2503.157	-48.42	<=-20	PASS
TNVN	11B	2472	Ant1	2504.157	-47.04	<=-20	PASS
TNVN	11B	2472	Ant1	2505.157	-44.31	<=-20	PASS
TNVN	11B	2472	Ant1	2506.157	-48.95	<=-20	PASS
TNVN	11B	2472	Ant1	2507.157	-48.86	<=-20	PASS
TNVN	11B	2472	Ant1	2507.314	-47.42	<=-20	PASS
TNVN	11B	2472	Ant1	2397.500	-49.06	<=-20	PASS
TNVN	11B	2472	Ant1	2398.500	-48.36	<=-20	PASS
TNVN	11B	2472	Ant1	2399.500	-51.90	<=-20	PASS
TNVN	11G	2412	Ant1	2484.000	-38.16	<=-20	PASS
TNVN	11G	2412	Ant1	2485.000	-41.64	<=-20	PASS
TNVN	11G	2412	Ant1	2366.878	-46.75	<=-20	PASS
TNVN	11G	2412	Ant1	2367.256	-46.81	<=-20	PASS
TNVN	11G	2412	Ant1	2367.878	-43.50	<=-20	PASS
TNVN	11G	2412	Ant1	2368.878	-44.67	<=-20	PASS
TNVN	11G	2412	Ant1	2369.878	-44.93	<=-20	PASS
TNVN	11G	2412	Ant1	2370.878	-41.01	<=-20	PASS
TNVN	11G	2412	Ant1	2371.878	-45.23	<=-20	PASS
TNVN	11G	2412	Ant1	2372.878	-43.69	<=-20	PASS
TNVN	11G	2412	Ant1	2373.878	-44.53	<=-20	PASS
TNVN	11G	2412	Ant1	2374.878	-40.02	<=-20	PASS
TNVN	11G	2412	Ant1	2375.878	-40.05	<=-20	PASS
TNVN	11G	2412	Ant1	2376.878	-41.52	<=-20	PASS
TNVN	11G	2412	Ant1	2377.878	-42.01	<=-20	PASS
TNVN	11G	2412	Ant1	2378.878	-40.20	<=-20	PASS
TNVN	11G	2412	Ant1	2366.878	-44.48	<=-20	PASS
TNVN	11G	2412	Ant1	2367.256	-47.36	<=-20	PASS
TNVN	11G	2412	Ant1	2367.878	-40.82	<=-10	PASS
TNVN	11G	2412	Ant1	2368.878	-43.50	<=-10	PASS
TNVN	11G	2412	Ant1	2379.878	-40.22	<=-10	PASS

Test Condition	Test Mode	Test Channel	Ant	Freq [MHz]	Result [dBm]	Limit [dBm]	Verdict
TNVN	11G	2412	Ant1	2380.878	-37.48	<=-10	PASS
TNVN	11G	2412	Ant1	2381.878	-37.57	<=-10	PASS
TNVN	11G	2412	Ant1	2382.878	-32.93	<=-10	PASS
TNVN	11G	2412	Ant1	2383.5	-38.29	<=-10	PASS
TNVN	11G	2412	Ant1	2383.878	-35.83	<=-10	PASS
TNVN	11G	2412	Ant1	2384.500	-35.91	<=-10	PASS
TNVN	11G	2412	Ant1	2385.500	-35.72	<=-10	PASS
TNVN	11G	2412	Ant1	2386.500	-34.48	<=-10	PASS
TNVN	11G	2412	Ant1	2387.500	-31.92	<=-10	PASS
TNVN	11G	2412	Ant1	2388.500	-30.78	<=-10	PASS
TNVN	11G	2412	Ant1	2389.500	-31.25	<=-10	PASS
TNVN	11G	2412	Ant1	2390.500	-31.00	<=-10	PASS
TNVN	11G	2412	Ant1	2391.500	-30.76	<=-10	PASS
TNVN	11G	2412	Ant1	2392.500	-27.50	<=-10	PASS
TNVN	11G	2412	Ant1	2393.500	-31.45	<=-10	PASS
TNVN	11G	2412	Ant1	2393.500	-29.13	<=-10	PASS
TNVN	11G	2412	Ant1	2394.500	-27.77	<=-10	PASS
TNVN	11G	2412	Ant1	2395.500	-28.47	<=-10	PASS
TNVN	11G	2412	Ant1	2396.500	-26.74	<=-10	PASS
TNVN	11G	2412	Ant1	2397.500	-27.41	<=-10	PASS
TNVN	11G	2412	Ant1	2398.500	-26.97	<=-10	PASS
TNVN	11G	2412	Ant1	2399.500	-28.71	<=-10	PASS
TNVN	11G	2412	Ant1	2484.000	-43.50	<=-10	PASS
TNVN	11G	2412	Ant1	2485.000	-46.71	<=-10	PASS
TNVN	11G	2412	Ant1	2486.000	-48.43	<=-10	PASS
TNVN	11G	2412	Ant1	2487.000	-49.01	<=-10	PASS
TNVN	11G	2412	Ant1	2488.000	-46.78	<=-10	PASS
TNVN	11G	2412	Ant1	2489.000	-45.76	<=-10	PASS
TNVN	11G	2412	Ant1	2490.000	-46.44	<=-10	PASS
TNVN	11G	2412	Ant1	2491.000	-44.62	<=-10	PASS
TNVN	11G	2412	Ant1	2492.000	-47.06	<=-10	PASS
TNVN	11G	2412	Ant1	2493.000	-47.81	<=-10	PASS
TNVN	11G	2412	Ant1	2494.000	-45.66	<=-10	PASS
TNVN	11G	2412	Ant1	2495.000	-49.11	<=-20	PASS
TNVN	11G	2412	Ant1	2496.000	-45.85	<=-20	PASS
TNVN	11G	2412	Ant1	2497.000	-47.07	<=-20	PASS
TNVN	11G	2412	Ant1	2498.000	-46.33	<=-20	PASS
TNVN	11G	2412	Ant1	2499.000	-45.76	<=-20	PASS
TNVN	11G	2412	Ant1	2499.622	-48.54	<=-20	PASS

Test Condition	Test Mode	Test Channel	Ant	Freq [MHz]	Result [dBm]	Limit [dBm]	Verdict
TNVN	11G	2412	Ant1	2500.000	-45.83	<=-20	PASS
TNVN	11G	2412	Ant1	2500.622	-47.36	<=-20	PASS
TNVN	11G	2412	Ant1	2501.622	-48.39	<=-20	PASS
TNVN	11G	2412	Ant1	2502.622	-47.22	<=-20	PASS
TNVN	11G	2412	Ant1	2393.500	-30.67	<=-20	PASS
TNVN	11G	2412	Ant1	2394.500	-27.05	<=-20	PASS
TNVN	11G	2412	Ant1	2395.500	-29.93	<=-20	PASS
TNVN	11G	2412	Ant1	2396.500	-29.90	<=-20	PASS
TNVN	11G	2412	Ant1	2397.500	-25.76	<=-20	PASS
TNVN	11G	2412	Ant1	2398.500	-27.96	<=-20	PASS
TNVN	11G	2412	Ant1	2503.622	-44.72	<=-20	PASS
TNVN	11G	2412	Ant1	2504.622	-46.04	<=-20	PASS
TNVN	11G	2472	Ant1	2505.622	-47.50	<=-20	PASS
TNVN	11G	2472	Ant1	2506.622	-49.54	<=-20	PASS
TNVN	11G	2472	Ant1	2507.622	-48.62	<=-20	PASS
TNVN	11G	2472	Ant1	2508.622	-45.82	<=-20	PASS
TNVN	11G	2472	Ant1	2509.622	-45.60	<=-20	PASS
TNVN	11G	2472	Ant1	2510.622	-46.57	<=-20	PASS
TNVN	11G	2472	Ant1	2511.622	-45.18	<=-20	PASS
TNVN	11G	2472	Ant1	2512.622	-47.00	<=-20	PASS
TNVN	11G	2472	Ant1	2513.622	-50.18	<=-20	PASS
TNVN	11G	2472	Ant1	2514.622	-46.82	<=-20	PASS
TNVN	11G	2472	Ant1	2515.622	-50.90	<=-20	PASS
TNVN	11G	2472	Ant1	2516.244	-50.85	<=-20	PASS
TNVN	11G	2472	Ant1	2516.622	-47.67	<=-20	PASS
TNVN	11G	2472	Ant1	2364.783	-46.57	<=-20	PASS
TNVN	11G	2472	Ant1	2365.066	-48.03	<=-20	PASS
TNVN	11G	2472	Ant1	2365.783	-48.29	<=-20	PASS
TNVN	11G	2472	Ant1	2366.783	-50.92	<=-20	PASS
TNVN	11G	2472	Ant1	2367.783	-49.32	<=-20	PASS
TNVN	11G	2472	Ant1	2368.783	-48.95	<=-10	PASS
TNVN	11G	2472	Ant1	2369.783	-49.06	<=-10	PASS
TNVN	11G	2472	Ant1	2370.783	-50.40	<=-10	PASS
TNVN	11G	2472	Ant1	2371.783	-46.73	<=-10	PASS
TNVN	11G	2472	Ant1	2372.783	-47.94	<=-10	PASS
TNVN	11G	2472	Ant1	2503.622	-47.81	<=-10	PASS
TNVN	11G	2472	Ant1	2504.622	-46.55	<=-10	PASS
TNVN	11G	2472	Ant1	2505.622	-48.57	<=-10	PASS
TNVN	11G	2472	Ant1	2506.622	-50.04	<=-10	PASS

Test Condition	Test Mode	Test Channel	Ant	Freq [MHz]	Result [dBm]	Limit [dBm]	Verdict
TNVN	11G	2472	Ant1	2507.622	-47.36	<=-10	PASS
TNVN	11G	2472	Ant1	2508.622	-45.68	<=-10	PASS
TNVN	11G	2472	Ant1	2509.622	-46.72	<=-10	PASS
TNVN	11G	2472	Ant1	2510.622	-45.79	<=-10	PASS
TNVN	11G	2472	Ant1	2511.622	-47.77	<=-10	PASS
TNVN	11G	2472	Ant1	2373.783	-48.35	<=-10	PASS
TNVN	11G	2472	Ant1	2374.783	-49.61	<=-10	PASS
TNVN	11G	2472	Ant1	2375.783	-47.57	<=-10	PASS
TNVN	11G	2472	Ant1	2376.783	-47.25	<=-10	PASS
TNVN	11G	2472	Ant1	2377.783	-46.16	<=-10	PASS
TNVN	11G	2472	Ant1	2378.783	-46.59	<=-10	PASS
TNVN	11G	2472	Ant1	2379.783	-46.09	<=-10	PASS
TNVN	11G	2472	Ant1	2380.783	-45.72	<=-10	PASS
TNVN	11G	2472	Ant1	2381.783	-42.60	<=-10	PASS
TNVN	11G	2472	Ant1	2382.500	-46.07	<=-10	PASS
TNVN	11G	2472	Ant1	2382.783	-45.04	<=-10	PASS
TNVN	11G	2472	Ant1	2383.500	-40.46	<=-10	PASS
TNVN	11G	2472	Ant1	2384.500	-38.84	<=-10	PASS
TNVN	11G	2472	Ant1	2385.500	-40.07	<=-10	PASS
TNVN	11G	2472	Ant1	2386.500	-42.67	<=-10	PASS
TNVN	11G	2472	Ant1	2387.500	-40.08	<=-10	PASS
TNVN	11G	2472	Ant1	2388.500	-38.82	<=-10	PASS
TNVN	11G	2472	Ant1	2389.500	-36.72	<=-10	PASS
TNVN	11G	2472	Ant1	2373.783	-51.77	<=-10	PASS
TNVN	11G	2472	Ant1	2374.783	-49.03	<=-10	PASS
TNVN	11G	2472	Ant1	2375.783	-49.77	<=-10	PASS
TNVN	11G	2472	Ant1	2376.783	-46.58	<=-10	PASS
TNVN	11G	2472	Ant1	2377.783	-47.04	<=-20	PASS
TNVN	11G	2472	Ant1	2378.783	-49.71	<=-20	PASS
TNVN	11G	2472	Ant1	2390.500	-35.49	<=-20	PASS
TNVN	11G	2472	Ant1	2391.500	-34.02	<=-20	PASS
TNVN	11G	2472	Ant1	2392.500	-32.18	<=-20	PASS
TNVN	11G	2472	Ant1	2393.500	-35.27	<=-20	PASS
TNVN	11G	2472	Ant1	2394.500	-33.43	<=-20	PASS
TNVN	11G	2472	Ant1	2395.500	-31.45	<=-20	PASS
TNVN	11G	2472	Ant1	2396.500	-31.71	<=-20	PASS
TNVN	11G	2472	Ant1	2397.500	-33.25	<=-20	PASS
TNVN	11G	2472	Ant1	2398.500	-27.27	<=-20	PASS
TNVN	11G	2472	Ant1	2399.500	-30.49	<=-20	PASS

Test Condition	Test Mode	Test Channel	Ant	Freq [MHz]	Result [dBm]	Limit [dBm]	Verdict
TNVN	11G	2472	Ant1	2485.000	-48.78	<=-20	PASS
TNVN	11G	2472	Ant1	2486.000	-47.63	<=-20	PASS
TNVN	11G	2472	Ant1	2487.000	-47.54	<=-20	PASS
TNVN	11G	2472	Ant1	2488.000	-45.95	<=-20	PASS
TNVN	11G	2472	Ant1	2489.000	-47.74	<=-20	PASS
TNVN	11G	2472	Ant1	2490.000	-47.84	<=-20	PASS
TNVN	11N20	2412	Ant1	2491.000	-45.74	<=-20	PASS
TNVN	11N20	2412	Ant1	2492.000	-47.60	<=-20	PASS
TNVN	11N20	2412	Ant1	2493.000	-48.33	<=-20	PASS
TNVN	11N20	2412	Ant1	2494.000	-47.42	<=-20	PASS
TNVN	11N20	2412	Ant1	2495.000	-43.14	<=-20	PASS
TNVN	11N20	2412	Ant1	2496.000	-50.07	<=-20	PASS
TNVN	11N20	2412	Ant1	2497.000	-49.15	<=-20	PASS
TNVN	11N20	2412	Ant1	2498.000	-46.45	<=-20	PASS
TNVN	11N20	2412	Ant1	2499.000	-45.85	<=-20	PASS
TNVN	11N20	2412	Ant1	2500.000	-49.76	<=-20	PASS
TNVN	11N20	2412	Ant1	2500.717	-50.12	<=-20	PASS
TNVN	11N20	2412	Ant1	2501.000	-46.42	<=-20	PASS
TNVN	11N20	2412	Ant1	2501.717	-51.11	<=-20	PASS
TNVN	11N20	2412	Ant1	2502.717	-48.40	<=-20	PASS
TNVN	11N20	2412	Ant1	2503.717	-46.00	<=-20	PASS
TNVN	11N20	2412	Ant1	2504.717	-47.83	<=-20	PASS
TNVN	11N20	2412	Ant1	2505.717	-50.15	<=-20	PASS
TNVN	11N20	2412	Ant1	2506.717	-45.94	<=-20	PASS
TNVN	11N20	2412	Ant1	2507.717	-47.71	<=-20	PASS
TNVN	11N20	2412	Ant1	2508.717	-48.02	<=-10	PASS
TNVN	11N20	2412	Ant1	2509.717	-47.71	<=-10	PASS
TNVN	11N20	2412	Ant1	2510.717	-43.78	<=-10	PASS
TNVN	11N20	2412	Ant1	2511.717	-50.26	<=-10	PASS
TNVN	11N20	2412	Ant1	2512.717	-47.57	<=-10	PASS
TNVN	11N20	2412	Ant1	2513.717	-45.41	<=-10	PASS
TNVN	11N20	2412	Ant1	2514.717	-47.62	<=-10	PASS
TNVN	11N20	2412	Ant1	2485.000	-45.96	<=-10	PASS
TNVN	11N20	2412	Ant1	2486.000	-48.40	<=-10	PASS
TNVN	11N20	2412	Ant1	2515.717	-48.28	<=-10	PASS
TNVN	11N20	2412	Ant1	2516.717	-48.14	<=-10	PASS
TNVN	11N20	2412	Ant1	2517.717	-45.97	<=-10	PASS
TNVN	11N20	2412	Ant1	2518.434	-44.91	<=-10	PASS
TNVN	11N20	2412	Ant1	2518.717	-47.70	<=-10	PASS

Test Condition	Test Mode	Test Channel	Ant	Freq [MHz]	Result [dBm]	Limit [dBm]	Verdict
TNVN	11N20	2412	Ant1	2376.164	-51.14	<=-10	PASS
TNVN	11N20	2412	Ant1	2376.332	-46.43	<=-10	PASS
TNVN	11N20	2412	Ant1	2377.332	-49.53	<=-10	PASS
TNVN	11N20	2412	Ant1	2378.332	-49.11	<=-10	PASS
TNVN	11N20	2412	Ant1	2379.332	-47.77	<=-10	PASS
TNVN	11N20	2412	Ant1	2380.332	-51.59	<=-10	PASS
TNVN	11N20	2412	Ant1	2381.332	-47.56	<=-10	PASS
TNVN	11N20	2412	Ant1	2382.332	-47.78	<=-10	PASS
TNVN	11N20	2412	Ant1	2383.332	-50.27	<=-10	PASS
TNVN	11N20	2412	Ant1	2384.332	-47.55	<=-10	PASS
TNVN	11N20	2412	Ant1	2385.332	-48.80	<=-10	PASS
TNVN	11N20	2412	Ant1	2386.332	-50.28	<=-10	PASS
TNVN	11N20	2412	Ant1	2387.332	-47.93	<=-10	PASS
TNVN	11N20	2412	Ant1	2388.332	-44.51	<=-10	PASS
TNVN	11N20	2412	Ant1	2388.500	-48.60	<=-10	PASS
TNVN	11N20	2412	Ant1	2389.500	-45.48	<=-10	PASS
TNVN	11N20	2412	Ant1	2390.500	-43.23	<=-10	PASS
TNVN	11N20	2412	Ant1	2391.500	-44.64	<=-10	PASS
TNVN	11N20	2412	Ant1	2392.500	-49.12	<=-10	PASS
TNVN	11N20	2412	Ant1	2393.500	-42.89	<=-10	PASS
TNVN	11N20	2412	Ant1	2394.500	-44.35	<=-10	PASS
TNVN	11N20	2412	Ant1	2395.500	-42.44	<=-10	PASS
TNVN	11N20	2412	Ant1	2396.500	-44.56	<=-10	PASS
TNVN	11N20	2412	Ant1	2397.500	-39.58	<=-10	PASS
TNVN	11N20	2412	Ant1	2398.500	-38.10	<=-20	PASS
TNVN	11N20	2412	Ant1	2376.164	-50.67	<=-20	PASS
TNVN	11N20	2412	Ant1	2376.332	-47.66	<=-20	PASS
TNVN	11N20	2412	Ant1	2377.332	-48.74	<=-20	PASS
TNVN	11N20	2412	Ant1	2378.332	-50.50	<=-20	PASS
TNVN	11N20	2412	Ant1	2399.500	-37.96	<=-20	PASS
TNVN	11N20	2412	Ant1	2484.000	-45.32	<=-20	PASS
TNVN	11N20	2412	Ant1	2485.000	-48.04	<=-20	PASS
TNVN	11N20	2412	Ant1	2486.000	-51.72	<=-20	PASS
TNVN	11N20	2412	Ant1	2487.000	-48.62	<=-20	PASS
TNVN	11N20	2412	Ant1	2490.000	-46.63	<=-20	PASS
TNVN	11N20	2412	Ant1	2491.000	-45.39	<=-20	PASS
TNVN	11N20	2412	Ant1	2492.000	-51.49	<=-20	PASS
TNVN	11N20	2412	Ant1	2493.000	-46.74	<=-20	PASS
TNVN	11N20	2412	Ant1	2494.000	-46.08	<=-20	PASS

Test Condition	Test Mode	Test Channel	Ant	Freq [MHz]	Result [dBm]	Limit [dBm]	Verdict
TNVN	11N20	2412	Ant1	2495.000	-46.56	<=-20	PASS
TNVN	11N20	2412	Ant1	2495.168	-48.79	<=-20	PASS
TNVN	11N20	2412	Ant1	2496.168	-49.02	<=-20	PASS
TNVN	11N20	2412	Ant1	2497.168	-47.85	<=-20	PASS
TNVN	11N20	2472	Ant1	2498.168	-46.39	<=-20	PASS
TNVN	11N20	2472	Ant1	2499.168	-46.90	<=-20	PASS
TNVN	11N20	2472	Ant1	2500.168	-50.23	<=-20	PASS
TNVN	11N20	2472	Ant1	2501.168	-48.54	<=-20	PASS
TNVN	11N20	2472	Ant1	2502.168	-49.26	<=-20	PASS
TNVN	11N20	2472	Ant1	2503.168	-46.65	<=-20	PASS
TNVN	11N20	2472	Ant1	2504.168	-48.48	<=-20	PASS
TNVN	11N20	2472	Ant1	2505.168	-47.02	<=-20	PASS
TNVN	11N20	2472	Ant1	2506.168	-47.40	<=-20	PASS
TNVN	11N20	2472	Ant1	2507.168	-49.96	<=-20	PASS
TNVN	11N20	2472	Ant1	2507.336	-48.70	<=-20	PASS
TNVN	11N20	2472	Ant1	2490.000	-50.18	<=-20	PASS
TNVN	11N20	2472	Ant1	2491.000	-50.00	<=-20	PASS
TNVN	11N20	2472	Ant1	2492.000	-50.00	<=-20	PASS
TNVN	11N20	2472	Ant1	2493.000	-46.42	<=-20	PASS
TNVN	11N20	2472	Ant1	2494.000	-47.29	<=-20	PASS
TNVN	11N20	2472	Ant1	2495.000	-48.18	<=-20	PASS
TNVN	11N20	2472	Ant1	2495.168	-47.53	<=-20	PASS
TNVN	11N20	2472	Ant1	2496.168	-51.94	<=-20	PASS
TNVN	11N20	2472	Ant1	2497.168	-47.71	<=-10	PASS
TNVN	11N20	2472	Ant1	2376.186	-49.70	<=-10	PASS
TNVN	11N20	2472	Ant1	2376.343	-49.03	<=-10	PASS
TNVN	11N20	2472	Ant1	2377.343	-49.68	<=-10	PASS
TNVN	11N20	2472	Ant1	2378.343	-47.63	<=-10	PASS
TNVN	11N20	2472	Ant1	2379.343	-49.66	<=-10	PASS
TNVN	11N20	2472	Ant1	2380.343	-47.67	<=-10	PASS
TNVN	11N20	2472	Ant1	2381.343	-48.60	<=-10	PASS
TNVN	11N20	2472	Ant1	2382.343	-49.65	<=-10	PASS
TNVN	11N20	2472	Ant1	2383.343	-48.55	<=-10	PASS
TNVN	11N20	2472	Ant1	2384.343	-48.65	<=-10	PASS
TNVN	11N20	2472	Ant1	2385.343	-50.08	<=-10	PASS
TNVN	11N20	2472	Ant1	2386.343	-50.44	<=-10	PASS
TNVN	11N20	2472	Ant1	2387.343	-47.43	<=-10	PASS
TNVN	11N20	2472	Ant1	2388.343	-50.80	<=-10	PASS
TNVN	11N20	2472	Ant1	2388.500	-50.13	<=-10	PASS

Test Condition	Test Mode	Test Channel	Ant	Freq [MHz]	Result [dBm]	Limit [dBm]	Verdict
TNVN	11N20	2472	Ant1	2389.500	-51.21	<=-10	PASS
TNVN	11N20	2472	Ant1	2390.500	-46.47	<=-10	PASS
TNVN	11N20	2472	Ant1	2391.500	-51.16	<=-10	PASS
TNVN	11N20	2472	Ant1	2392.500	-47.38	<=-10	PASS
TNVN	11N20	2472	Ant1	2393.500	-44.11	<=-10	PASS
TNVN	11N20	2472	Ant1	2394.500	-47.32	<=-10	PASS
TNVN	11N20	2472	Ant1	2395.500	-50.58	<=-10	PASS
TNVN	11N20	2472	Ant1	2396.500	-50.89	<=-10	PASS
TNVN	11N20	2472	Ant1	2397.500	-48.46	<=-10	PASS
TNVN	11N20	2472	Ant1	2398.500	-46.68	<=-10	PASS
TNVN	11N20	2472	Ant1	2399.500	-50.88	<=-10	PASS
TNVN	11N20	2472	Ant1	2484.000	-37.51	<=-10	PASS
TNVN	11N20	2472	Ant1	2485.000	-37.63	<=-10	PASS
TNVN	11N20	2472	Ant1	2486.000	-42.73	<=-10	PASS
TNVN	11N20	2472	Ant1	2487.000	-44.66	<=-10	PASS
TNVN	11N20	2472	Ant1	2488.000	-41.84	<=-10	PASS
TNVN	11N20	2472	Ant1	2489.000	-42.15	<=-10	PASS
TNVN	11N20	2472	Ant1	2490.000	-46.44	<=-10	PASS
TNVN	11N20	2472	Ant1	2491.000	-48.25	<=-10	PASS
TNVN	11N20	2472	Ant1	2494.000	-47.37	<=-10	PASS
TNVN	11N20	2472	Ant1	2495.000	-46.62	<=-10	PASS
TNVN	11N20	2472	Ant1	2495.157	-48.23	<=-10	PASS
TNVN	11N20	2472	Ant1	2496.157	-50.25	<=-20	PASS
TNVN	11N20	2472	Ant1	2497.157	-48.27	<=-20	PASS
TNVN	11N20	2472	Ant1	2498.157	-49.88	<=-20	PASS
TNVN	11N20	2472	Ant1	2499.157	-47.04	<=-20	PASS
TNVN	11N20	2472	Ant1	2500.157	-48.65	<=-20	PASS
TNVN	11N20	2472	Ant1	2501.157	-47.72	<=-20	PASS
TNVN	11N20	2472	Ant1	2502.157	-47.76	<=-20	PASS
TNVN	11N20	2472	Ant1	2503.157	-47.65	<=-20	PASS
TNVN	11N20	2472	Ant1	2504.157	-50.13	<=-20	PASS
TNVN	11N20	2472	Ant1	2505.157	-47.12	<=-20	PASS
TNVN	11N20	2472	Ant1	2506.157	-47.45	<=-20	PASS
TNVN	11N20	2472	Ant1	2507.157	-50.11	<=-20	PASS
TNVN	11N20	2472	Ant1	2507.314	-49.26	<=-20	PASS
TNVN	11N20	2472	Ant1	2366.878	-44.50	<=-20	PASS
TNVN	11N20	2472	Ant1	2367.256	-46.50	<=-20	PASS
TNVN	11N20	2472	Ant1	2367.878	-40.49	<=-20	PASS
TNVN	11N20	2472	Ant1	2368.878	-46.51	<=-20	PASS

Test Condition	Test Mode	Test Channel	Ant	Freq [MHz]	Result [dBm]	Limit [dBm]	Verdict
TNVN	11N20	2472	Ant1	2369.878	-46.76	<=-20	PASS
TNVN	11N20	2472	Ant1	2370.878	-45.97	<=-20	PASS
TNVN	11N40	2422	Ant1	2371.878	-44.40	<=-20	PASS
TNVN	11N40	2422	Ant1	2372.878	-42.15	<=-20	PASS
TNVN	11N40	2422	Ant1	2373.878	-42.79	<=-20	PASS
TNVN	11N40	2422	Ant1	2374.878	-39.90	<=-20	PASS
TNVN	11N40	2422	Ant1	2375.878	-43.12	<=-20	PASS
TNVN	11N40	2422	Ant1	2376.878	-42.44	<=-20	PASS
TNVN	11N40	2422	Ant1	2377.878	-38.54	<=-20	PASS
TNVN	11N40	2422	Ant1	2378.878	-40.83	<=-20	PASS
TNVN	11N40	2422	Ant1	2494.000	-50.30	<=-20	PASS
TNVN	11N40	2422	Ant1	2495.000	-46.89	<=-20	PASS
TNVN	11N40	2422	Ant1	2495.157	-46.70	<=-20	PASS
TNVN	11N40	2422	Ant1	2496.157	-49.46	<=-20	PASS
TNVN	11N40	2422	Ant1	2339.208	-38.35	<=-20	PASS
TNVN	11N40	2422	Ant1	2340.208	-40.96	<=-20	PASS
TNVN	11N40	2422	Ant1	2341.208	-41.08	<=-20	PASS
TNVN	11N40	2422	Ant1	2342.208	-31.71	<=-20	PASS
TNVN	11N40	2422	Ant1	2343.208	-36.26	<=-20	PASS
TNVN	11N40	2422	Ant1	2344.208	-36.22	<=-20	PASS
TNVN	11N40	2422	Ant1	2345.208	-32.61	<=-20	PASS
TNVN	11N40	2422	Ant1	2346.208	-33.48	<=-20	PASS
TNVN	11N40	2422	Ant1	2347.208	-34.88	<=-20	PASS
TNVN	11N40	2422	Ant1	2348.208	-32.81	<=-20	PASS
TNVN	11N40	2422	Ant1	2349.208	-30.95	<=-20	PASS
TNVN	11N40	2422	Ant1	2350.208	-31.62	<=-20	PASS
TNVN	11N40	2422	Ant1	2351.208	-33.19	<=-20	PASS
TNVN	11N40	2422	Ant1	2352.208	-31.36	<=-20	PASS
TNVN	11N40	2422	Ant1	2353.208	-29.06	<=-20	PASS
TNVN	11N40	2422	Ant1	2354.208	-30.93	<=-20	PASS
TNVN	11N40	2422	Ant1	2355.208	-30.53	<=-20	PASS
TNVN	11N40	2422	Ant1	2356.208	-30.44	<=-20	PASS
TNVN	11N40	2422	Ant1	2357.208	-29.09	<=-20	PASS
TNVN	11N40	2422	Ant1	2358.208	-25.66	<=-20	PASS
TNVN	11N40	2422	Ant1	2359.208	-28.39	<=-20	PASS
TNVN	11N40	2422	Ant1	2360.208	-28.64	<=-20	PASS
TNVN	11N40	2422	Ant1	2361.208	-45.39	<=-20	PASS
TNVN	11N40	2422	Ant1	2362.208	-46.05	<=-20	PASS
TNVN	11N40	2422	Ant1	2363.208	-44.08	<=-20	PASS

Test Condition	Test Mode	Test Channel	Ant	Freq [MHz]	Result [dBm]	Limit [dBm]	Verdict
TNVN	11N40	2422	Ant1	2364.208	-46.82	<=-10	PASS
TNVN	11N40	2422	Ant1	2364.500	-45.79	<=-10	PASS
TNVN	11N40	2422	Ant1	2365.500	-47.08	<=-10	PASS
TNVN	11N40	2422	Ant1	2366.500	-49.92	<=-10	PASS
TNVN	11N40	2422	Ant1	2367.500	-49.17	<=-10	PASS
TNVN	11N40	2422	Ant1	2368.500	-40.72	<=-10	PASS
TNVN	11N40	2422	Ant1	2369.500	-40.67	<=-10	PASS
TNVN	11N40	2422	Ant1	2370.500	-38.88	<=-10	PASS
TNVN	11N40	2422	Ant1	2371.500	-33.37	<=-10	PASS
TNVN	11N40	2422	Ant1	2372.500	-47.86	<=-10	PASS
TNVN	11N40	2422	Ant1	2373.500	-48.58	<=-10	PASS
TNVN	11N40	2422	Ant1	2374.500	-48.29	<=-10	PASS
TNVN	11N40	2422	Ant1	2375.500	-50.00	<=-10	PASS
TNVN	11N40	2422	Ant1	2376.500	-45.37	<=-10	PASS
TNVN	11N40	2422	Ant1	2377.500	-47.63	<=-10	PASS
TNVN	11N40	2422	Ant1	2378.500	-45.02	<=-10	PASS
TNVN	11N40	2422	Ant1	2379.500	-46.40	<=-10	PASS
TNVN	11N40	2422	Ant1	2380.500	-46.67	<=-10	PASS
TNVN	11N40	2422	Ant1	2381.500	-45.11	<=-10	PASS
TNVN	11N40	2422	Ant1	2382.500	-48.63	<=-10	PASS
TNVN	11N40	2422	Ant1	2383.500	-43.39	<=-10	PASS
TNVN	11N40	2422	Ant1	2384.500	-45.11	<=-10	PASS
TNVN	11N40	2422	Ant1	2385.500	-44.57	<=-10	PASS
TNVN	11N40	2422	Ant1	2386.500	-48.53	<=-10	PASS
TNVN	11N40	2422	Ant1	2387.500	-45.95	<=-10	PASS
TNVN	11N40	2422	Ant1	2388.500	-48.64	<=-10	PASS
TNVN	11N40	2422	Ant1	2389.500	-47.57	<=-10	PASS
TNVN	11N40	2422	Ant1	2390.500	-46.72	<=-10	PASS
TNVN	11N40	2422	Ant1	2391.500	-46.30	<=-10	PASS
TNVN	11N40	2422	Ant1	2392.500	-47.18	<=-10	PASS
TNVN	11N40	2422	Ant1	2393.500	-47.59	<=-10	PASS
TNVN	11N40	2422	Ant1	2394.500	-47.79	<=-10	PASS
TNVN	11N40	2422	Ant1	2395.500	-49.98	<=-10	PASS
TNVN	11N40	2422	Ant1	2396.500	-47.60	<=-10	PASS
TNVN	11N40	2422	Ant1	2397.500	-47.47	<=-10	PASS
TNVN	11N40	2422	Ant1	2398.500	-45.96	<=-10	PASS
TNVN	11N40	2422	Ant1	2399.500	-46.27	<=-10	PASS
TNVN	11N40	2422	Ant1	2484.000	-46.99	<=-10	PASS
TNVN	11N40	2422	Ant1	2485.000	-47.40	<=-10	PASS

Test Condition	Test Mode	Test Channel	Ant	Freq [MHz]	Result [dBm]	Limit [dBm]	Verdict
TNVN	11N40	2422	Ant1	2486.000	-47.93	<=-10	PASS
TNVN	11N40	2422	Ant1	2487.000	-50.80	<=-10	PASS
TNVN	11N40	2422	Ant1	2488.000	-50.56	<=-10	PASS
TNVN	11N40	2422	Ant1	2489.000	-52.01	<=-10	PASS
TNVN	11N40	2422	Ant1	2490.000	-48.94	<=-10	PASS
TNVN	11N40	2422	Ant1	2491.000	-50.89	<=-10	PASS
TNVN	11N40	2422	Ant1	2492.000	-49.22	<=-10	PASS
TNVN	11N40	2422	Ant1	2493.000	-50.08	<=-10	PASS
TNVN	11N40	2422	Ant1	2494.000	-50.10	<=-10	PASS
TNVN	11N40	2422	Ant1	2495.000	-46.42	<=-10	PASS
TNVN	11N40	2422	Ant1	2496.000	-48.13	<=-10	PASS
TNVN	11N40	2422	Ant1	2497.000	-49.21	<=-10	PASS
TNVN	11N40	2422	Ant1	2498.000	-46.79	<=-10	PASS
TNVN	11N40	2422	Ant1	2499.000	-47.91	<=-10	PASS
TNVN	11N40	2422	Ant1	2500.000	-46.96	<=-10	PASS
TNVN	11N40	2422	Ant1	2501.000	-47.77	<=-10	PASS
TNVN	11N40	2422	Ant1	2502.000	-48.42	<=-10	PASS
TNVN	11N40	2422	Ant1	2503.000	-46.20	<=-10	PASS
TNVN	11N40	2422	Ant1	2504.000	-52.00	<=-10	PASS
TNVN	11N40	2422	Ant1	2505.000	-46.99	<=-10	PASS
TNVN	11N40	2422	Ant1	2506.000	-49.28	<=-10	PASS
TNVN	11N40	2422	Ant1	2507.000	-42.93	<=-10	PASS
TNVN	11N40	2422	Ant1	2508.000	-43.80	<=-10	PASS
TNVN	11N40	2422	Ant1	2509.000	-45.64	<=-10	PASS
TNVN	11N40	2422	Ant1	2510.000	-42.78	<=-10	PASS
TNVN	11N40	2422	Ant1	2511.000	-42.89	<=-10	PASS
TNVN	11N40	2422	Ant1	2512.000	-39.15	<=-10	PASS
TNVN	11N40	2422	Ant1	2513.000	-40.75	<=-10	PASS
TNVN	11N40	2422	Ant1	2514.000	-41.53	<=-10	PASS
TNVN	11N40	2422	Ant1	2515.000	-44.10	<=-10	PASS
TNVN	11N40	2422	Ant1	2516.000	-37.65	<=-10	PASS
TNVN	11N40	2422	Ant1	2517.000	-31.40	<=-10	PASS
TNVN	11N40	2422	Ant1	2518.000	-50.81	<=-10	PASS
TNVN	11N40	2422	Ant1	2519.000	-48.36	<=-10	PASS
TNVN	11N40	2422	Ant1	2519.292	-47.23	<=-10	PASS
TNVN	11N40	2422	Ant1	2520.292	-47.65	<=-20	PASS
TNVN	11N40	2422	Ant1	2521.292	-49.66	<=-20	PASS
TNVN	11N40	2422	Ant1	2522.292	-48.31	<=-20	PASS
TNVN	11N40	2422	Ant1	2523.292	-35.32	<=-20	PASS

Test Condition	Test Mode	Test Channel	Ant	Freq [MHz]	Result [dBm]	Limit [dBm]	Verdict
TNVN	11N40	2422	Ant1	2524.292	-34.85	<=-20	PASS
TNVN	11N40	2422	Ant1	2525.292	-33.36	<=-20	PASS
TNVN	11N40	2422	Ant1	2526.292	-30.83	<=-20	PASS
TNVN	11N40	2422	Ant1	2527.292	-34.62	<=-20	PASS
TNVN	11N40	2422	Ant1	2528.292	-35.04	<=-20	PASS
TNVN	11N40	2422	Ant1	2529.292	-29.70	<=-20	PASS
TNVN	11N40	2422	Ant1	2530.292	-31.66	<=-20	PASS
TNVN	11N40	2422	Ant1	2531.292	-30.33	<=-20	PASS
TNVN	11N40	2422	Ant1	2532.292	-28.30	<=-20	PASS
TNVN	11N40	2422	Ant1	2533.292	-51.04	<=-20	PASS
TNVN	11N40	2422	Ant1	2534.292	-45.16	<=-20	PASS
TNVN	11N40	2422	Ant1	2535.292	-48.26	<=-20	PASS
TNVN	11N40	2422	Ant1	2536.292	-48.61	<=-20	PASS
TNVN	11N40	2422	Ant1	2537.292	-45.65	<=-20	PASS
TNVN	11N40	2422	Ant1	2538.292	-47.20	<=-20	PASS
TNVN	11N40	2422	Ant1	2539.292	-48.13	<=-20	PASS
TNVN	11N40	2422	Ant1	2540.292	-47.36	<=-20	PASS
TNVN	11N40	2422	Ant1	2541.292	-45.44	<=-20	PASS
TNVN	11N40	2422	Ant1	2542.292	-47.66	<=-20	PASS
TNVN	11N40	2422	Ant1	2543.292	-46.41	<=-20	PASS
TNVN	11N40	2422	Ant1	2544.292	-46.58	<=-20	PASS
TNVN	11N40	2422	Ant1	2545.292	-43.69	<=-20	PASS
TNVN	11N40	2422	Ant1	2546.292	-46.55	<=-20	PASS
TNVN	11N40	2422	Ant1	2547.292	-45.43	<=-20	PASS
TNVN	11N40	2422	Ant1	2548.292	-47.88	<=-20	PASS
TNVN	11N40	2422	Ant1	2549.292	-51.04	<=-20	PASS
TNVN	11N40	2422	Ant1	2550.292	-48.28	<=-20	PASS
TNVN	11N40	2422	Ant1	2551.292	-37.01	<=-20	PASS
TNVN	11N40	2422	Ant1	2552.292	-35.61	<=-20	PASS
TNVN	11N40	2422	Ant1	2553.292	-31.41	<=-20	PASS
TNVN	11N40	2422	Ant1	2554.292	-32.23	<=-20	PASS
TNVN	11N40	2422	Ant1	2555.292	-32.52	<=-20	PASS
TNVN	11N40	2422	Ant1	2555.584	-31.55	<=-20	PASS
TNVN	11N40	2462	Ant1	2326.943	-47.68	<=-20	PASS
TNVN	11N40	2462	Ant1	2327.386	-50.28	<=-20	PASS
TNVN	11N40	2462	Ant1	2327.943	-45.37	<=-20	PASS
TNVN	11N40	2462	Ant1	2328.943	-51.51	<=-20	PASS
TNVN	11N40	2462	Ant1	2329.943	-46.80	<=-20	PASS
TNVN	11N40	2462	Ant1	2330.943	-47.61	<=-20	PASS

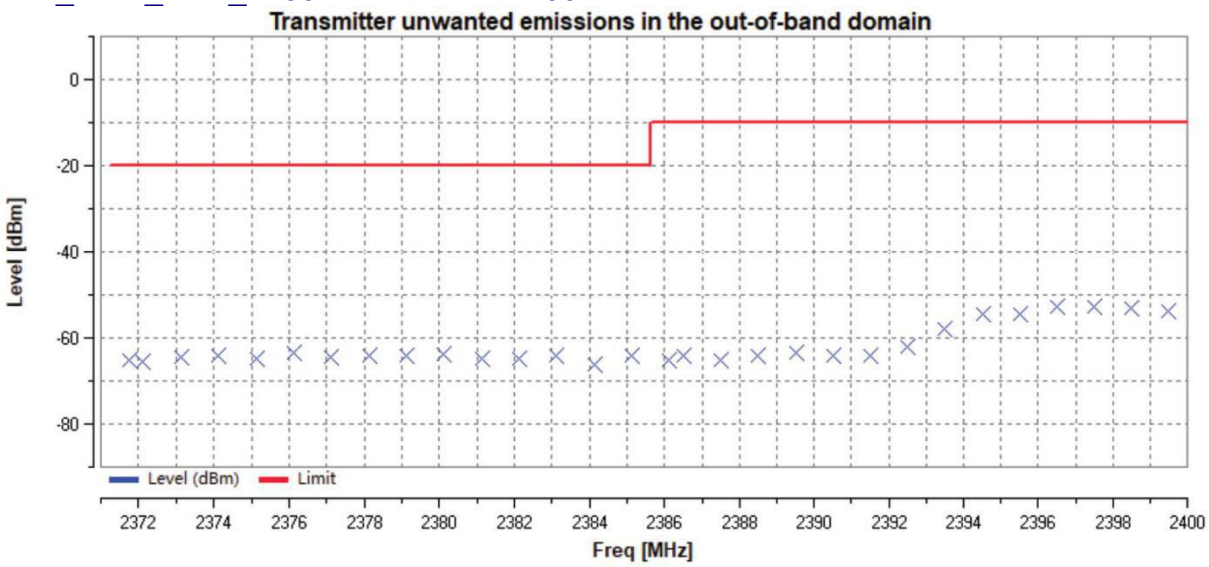
Test Condition	Test Mode	Test Channel	Ant	Freq [MHz]	Result [dBm]	Limit [dBm]	Verdict
TNVN	11N40	2462	Ant1	2331.943	-48.03	<=-20	PASS
TNVN	11N40	2462	Ant1	2332.943	-50.44	<=-20	PASS
TNVN	11N40	2462	Ant1	2333.943	-49.69	<=-20	PASS
TNVN	11N40	2462	Ant1	2334.943	-48.54	<=-20	PASS
TNVN	11N40	2462	Ant1	2335.943	-42.94	<=-20	PASS
TNVN	11N40	2462	Ant1	2336.943	-49.67	<=-20	PASS
TNVN	11N40	2462	Ant1	2337.943	-47.56	<=-20	PASS
TNVN	11N40	2462	Ant1	2338.943	-48.90	<=-20	PASS
TNVN	11N40	2462	Ant1	2339.943	-47.79	<=-20	PASS
TNVN	11N40	2462	Ant1	2340.943	-49.59	<=-20	PASS
TNVN	11N40	2462	Ant1	2341.943	-46.24	<=-20	PASS
TNVN	11N40	2462	Ant1	2342.943	-46.19	<=-20	PASS
TNVN	11N40	2462	Ant1	2343.943	-44.16	<=-20	PASS
TNVN	11N40	2462	Ant1	2344.943	-50.59	<=-20	PASS
TNVN	11N40	2462	Ant1	2345.943	-51.03	<=-20	PASS
TNVN	11N40	2462	Ant1	2346.943	-50.57	<=-20	PASS
TNVN	11N40	2462	Ant1	2347.943	-47.04	<=-20	PASS
TNVN	11N40	2462	Ant1	2348.943	-47.30	<=-20	PASS
TNVN	11N40	2462	Ant1	2349.943	-48.64	<=-20	PASS
TNVN	11N40	2462	Ant1	2350.943	-46.88	<=-20	PASS
TNVN	11N40	2462	Ant1	2351.943	-48.15	<=-20	PASS
TNVN	11N40	2462	Ant1	2352.943	-48.47	<=-20	PASS
TNVN	11N40	2462	Ant1	2353.943	-48.53	<=-20	PASS
TNVN	11N40	2462	Ant1	2354.943	-47.09	<=-20	PASS
TNVN	11N40	2462	Ant1	2355.943	-47.13	<=-20	PASS
TNVN	11N40	2462	Ant1	2356.943	-44.17	<=-20	PASS
TNVN	11N40	2462	Ant1	2357.943	-47.94	<=-20	PASS
TNVN	11N40	2462	Ant1	2358.943	-49.31	<=-20	PASS
TNVN	11N40	2462	Ant1	2370.348	-47.85	<=-20	PASS
TNVN	11N40	2462	Ant1	2370.424	-40.55	<=-20	PASS
TNVN	11N40	2462	Ant1	2371.424	-34.05	<=-20	PASS
TNVN	11N40	2462	Ant1	2372.424	-33.06	<=-20	PASS
TNVN	11N40	2462	Ant1	2373.424	-34.22	<=-10	PASS
TNVN	11N40	2462	Ant1	2374.424	-29.59	<=-10	PASS
TNVN	11N40	2462	Ant1	2375.424	-41.34	<=-10	PASS
TNVN	11N40	2462	Ant1	2376.424	-33.48	<=-10	PASS
TNVN	11N40	2462	Ant1	2377.424	-46.73	<=-10	PASS
TNVN	11N40	2462	Ant1	2378.424	-36.47	<=-10	PASS
TNVN	11N40	2462	Ant1	2379.424	-50.60	<=-10	PASS

Test Condition	Test Mode	Test Channel	Ant	Freq [MHz]	Result [dBm]	Limit [dBm]	Verdict
TNVN	11N40	2462	Ant1	2380.424	-51.51	<=-10	PASS
TNVN	11N40	2462	Ant1	2381.424	-51.79	<=-10	PASS
TNVN	11N40	2462	Ant1	2382.424	-50.71	<=-10	PASS
TNVN	11N40	2462	Ant1	2383.424	-51.08	<=-10	PASS
TNVN	11N40	2462	Ant1	2384.424	-33.90	<=-10	PASS
TNVN	11N40	2462	Ant1	2385.424	-26.93	<=-10	PASS
TNVN	11N40	2462	Ant1	2385.500	-44.23	<=-10	PASS
TNVN	11N40	2462	Ant1	2386.500	-32.16	<=-10	PASS
TNVN	11N40	2462	Ant1	2387.500	-28.53	<=-10	PASS
TNVN	11N40	2462	Ant1	2388.500	-31.51	<=-10	PASS
TNVN	11N40	2462	Ant1	2389.500	-30.66	<=-10	PASS
TNVN	11N40	2462	Ant1	2390.500	-30.22	<=-10	PASS
TNVN	11N40	2462	Ant1	2391.500	-29.73	<=-10	PASS
TNVN	11N40	2462	Ant1	2392.500	-42.73	<=-10	PASS
TNVN	11N40	2462	Ant1	2393.500	-28.97	<=-10	PASS
TNVN	11N40	2462	Ant1	2394.500	-36.84	<=-10	PASS
TNVN	11N40	2462	Ant1	2395.500	-28.17	<=-10	PASS
TNVN	11N40	2462	Ant1	2396.500	-26.54	<=-10	PASS
TNVN	11N40	2462	Ant1	2397.500	-22.98	<=-10	PASS
TNVN	11N40	2462	Ant1	2398.500	-21.10	<=-10	PASS
TNVN	11N40	2462	Ant1	2399.500	-22.75	<=-10	PASS
TNVN	11N40	2462	Ant1	2370.348	-46.42	<=-10	PASS
TNVN	11N40	2462	Ant1	2370.424	-43.21	<=-10	PASS
TNVN	11N40	2462	Ant1	2498.076	-49.35	<=-10	PASS
TNVN	11N40	2462	Ant1	2499.076	-49.96	<=-10	PASS
TNVN	11N40	2462	Ant1	2500.076	-48.64	<=-10	PASS
TNVN	11N40	2462	Ant1	2501.076	-46.81	<=-10	PASS
TNVN	11N40	2462	Ant1	2502.076	-49.09	<=-10	PASS
TNVN	11N40	2462	Ant1	2503.076	-47.44	<=-10	PASS
TNVN	11N40	2462	Ant1	2504.076	-45.28	<=-10	PASS
TNVN	11N40	2462	Ant1	2505.076	-47.39	<=-10	PASS
TNVN	11N40	2462	Ant1	2506.076	-49.33	<=-10	PASS
TNVN	11N40	2462	Ant1	2507.076	-47.24	<=-10	PASS
TNVN	11N40	2462	Ant1	2508.076	-49.70	<=-10	PASS
TNVN	11N40	2462	Ant1	2509.076	-47.95	<=-10	PASS
TNVN	11N40	2462	Ant1	2510.076	-47.20	<=-10	PASS
TNVN	11N40	2462	Ant1	2511.076	-48.07	<=-10	PASS
TNVN	11N40	2462	Ant1	2512.076	-48.40	<=-10	PASS
TNVN	11N40	2462	Ant1	2513.076	-49.13	<=-10	PASS

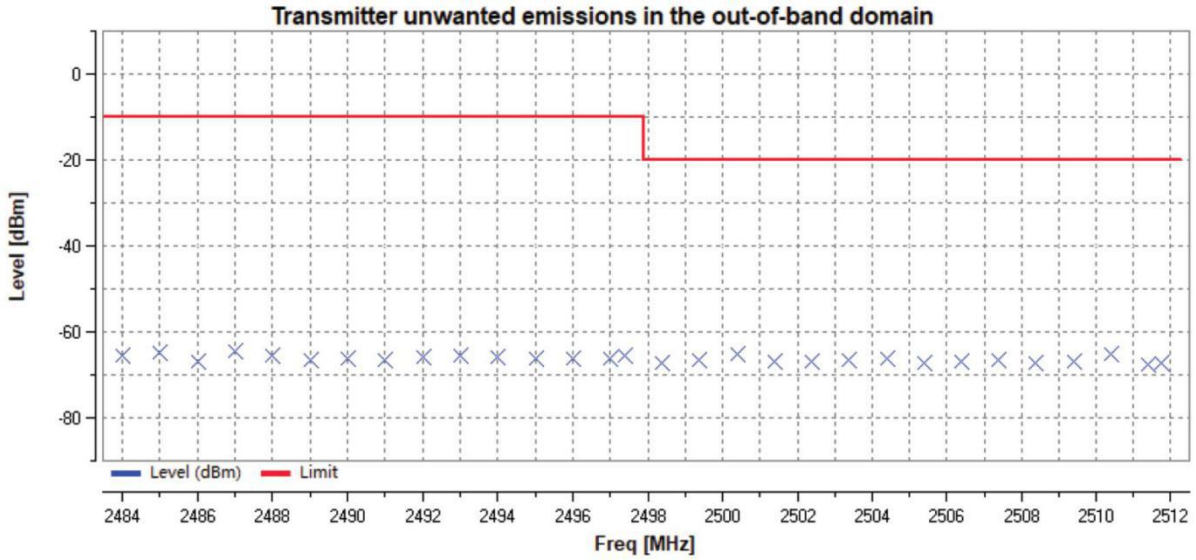
Test Condition	Test Mode	Test Channel	Ant	Freq [MHz]	Result [dBm]	Limit [dBm]	Verdict
TNVN	11N40	2462	Ant1	2513.152	-46.10	<=-10	PASS
TNVN	11N40	2462	Ant1	2370.396	-48.18	<=-10	PASS
TNVN	11N40	2462	Ant1	2370.448	-47.36	<=-10	PASS
TNVN	11N40	2462	Ant1	2371.448	-48.77	<=-10	PASS
TNVN	11N40	2462	Ant1	2372.448	-48.97	<=-10	PASS
TNVN	11N40	2462	Ant1	2373.448	-49.16	<=-10	PASS
TNVN	11N40	2462	Ant1	2374.448	-50.81	<=-10	PASS
TNVN	11N40	2462	Ant1	2375.448	-49.73	<=-10	PASS
TNVN	11N40	2462	Ant1	2376.448	-47.66	<=-10	PASS
TNVN	11N40	2462	Ant1	2377.448	-51.99	<=-10	PASS
TNVN	11N40	2462	Ant1	2378.448	-48.80	<=-10	PASS
TNVN	11N40	2462	Ant1	2379.448	-49.52	<=-10	PASS
TNVN	11N40	2462	Ant1	2498.076	-49.55	<=-10	PASS
TNVN	11N40	2462	Ant1	2499.076	-48.83	<=-10	PASS
TNVN	11N40	2462	Ant1	2500.076	-48.14	<=-10	PASS
TNVN	11N40	2462	Ant1	2501.076	-46.67	<=-10	PASS
TNVN	11N40	2462	Ant1	2502.076	-47.60	<=-10	PASS
TNVN	11N40	2462	Ant1	2503.076	-46.63	<=-10	PASS
TNVN	11N40	2462	Ant1	2505.052	-47.09	<=-10	PASS
TNVN	11N40	2462	Ant1	2506.052	-48.07	<=-10	PASS
TNVN	11N40	2462	Ant1	2507.052	-50.97	<=-10	PASS
TNVN	11N40	2462	Ant1	2508.052	-47.97	<=-10	PASS
TNVN	11N40	2462	Ant1	2509.052	-50.91	<=-10	PASS
TNVN	11N40	2462	Ant1	2510.052	-46.47	<=-10	PASS
TNVN	11N40	2462	Ant1	2511.052	-46.58	<=-10	PASS
TNVN	11N40	2462	Ant1	2512.052	-48.98	<=-10	PASS
TNVN	11N40	2462	Ant1	2513.052	-48.50	<=-10	PASS
TNVN	11N40	2462	Ant1	2513.104	-50.34	<=-10	PASS
TNVN	11N40	2462	Ant1	2366.837	-48.85	<=-10	PASS
TNVN	11N40	2462	Ant1	2367.174	-47.28	<=-10	PASS
TNVN	11N40	2462	Ant1	2367.837	-49.94	<=-20	PASS
TNVN	11N40	2462	Ant1	2368.837	-48.07	<=-20	PASS
TNVN	11N40	2462	Ant1	2369.837	-47.54	<=-20	PASS
TNVN	11N40	2462	Ant1	2370.837	-47.20	<=-20	PASS
TNVN	11N40	2462	Ant1	2371.837	-47.02	<=-20	PASS
TNVN	11N40	2462	Ant1	2372.837	-49.58	<=-20	PASS
TNVN	11N40	2462	Ant1	2373.837	-48.28	<=-20	PASS
TNVN	11N40	2462	Ant1	2374.837	-40.81	<=-20	PASS
TNVN	11N40	2462	Ant1	2375.837	-41.16	<=-20	PASS

Test Condition	Test Mode	Test Channel	Ant	Freq [MHz]	Result [dBm]	Limit [dBm]	Verdict
TNVN	11N40	2462	Ant1	2376.837	-40.27	<=-20	PASS
TNVN	11N40	2462	Ant1	2377.837	-42.99	<=-20	PASS
TNVN	11N40	2462	Ant1	2378.837	-40.58	<=-20	PASS
TNVN	11N40	2462	Ant1	2379.837	-43.66	<=-20	PASS
TNVN	11N40	2462	Ant1	2380.837	-44.14	<=-20	PASS
TNVN	11N40	2462	Ant1	2381.837	-45.13	<=-20	PASS
TNVN	11N40	2462	Ant1	2382.837	-44.28	<=-20	PASS
TNVN	11N40	2462	Ant1	2505.052	-46.48	<=-20	PASS
TNVN	11N40	2462	Ant1	2506.052	-46.73	<=-20	PASS
TNVN	11N40	2462	Ant1	2507.052	-48.36	<=-20	PASS
TNVN	11N40	2462	Ant1	2508.052	-49.90	<=-20	PASS
TNVN	11N40	2462	Ant1	2509.052	-49.16	<=-20	PASS
TNVN	11N40	2462	Ant1	2510.052	-48.11	<=-20	PASS
TNVN	11N40	2462	Ant1	2500.663	-47.11	<=-20	PASS
TNVN	11N40	2462	Ant1	2501.663	-48.17	<=-20	PASS
TNVN	11N40	2462	Ant1	2502.663	-47.85	<=-20	PASS
TNVN	11N40	2462	Ant1	2503.663	-47.25	<=-20	PASS
TNVN	11N40	2462	Ant1	2504.663	-45.53	<=-20	PASS
TNVN	11N40	2462	Ant1	2505.663	-47.11	<=-20	PASS
TNVN	11N40	2462	Ant1	2506.663	-47.21	<=-20	PASS
TNVN	11N40	2462	Ant1	2507.663	-48.23	<=-20	PASS
TNVN	11N40	2462	Ant1	2508.663	-46.07	<=-20	PASS
TNVN	11N40	2462	Ant1	2509.663	-47.45	<=-20	PASS
TNVN	11N40	2462	Ant1	2510.663	-43.71	<=-20	PASS
TNVN	11N40	2462	Ant1	2511.663	-45.23	<=-20	PASS
TNVN	11N40	2462	Ant1	2512.663	-46.57	<=-20	PASS
TNVN	11N40	2462	Ant1	2513.663	-46.66	<=-20	PASS
TNVN	11N40	2462	Ant1	2514.663	-45.80	<=-20	PASS
TNVN	11N40	2462	Ant1	2515.663	-48.88	<=-20	PASS

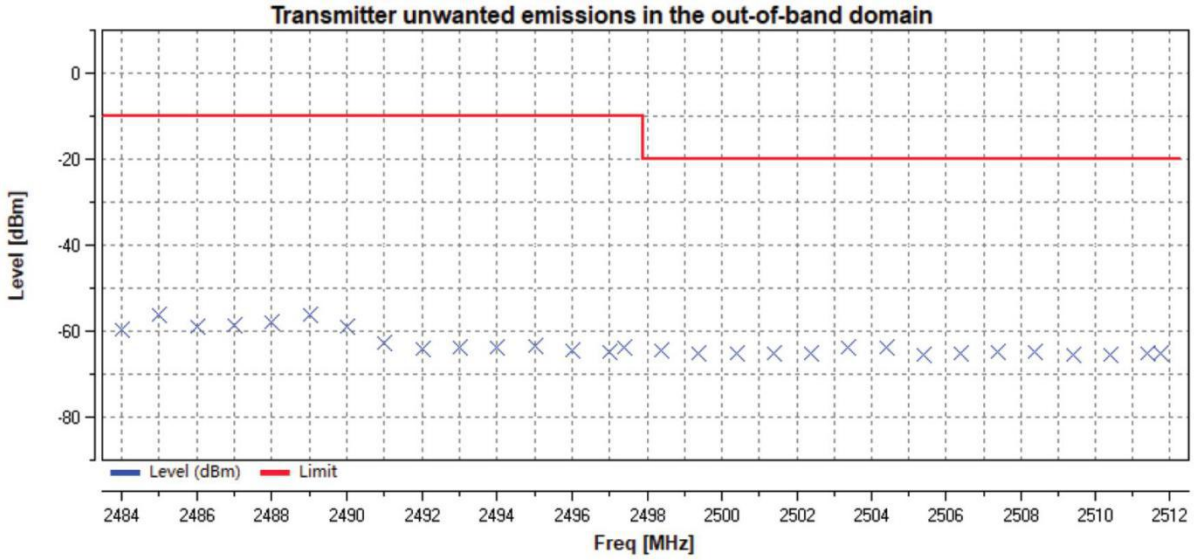
11B_2412_Ant1_2400MHz-2BW to 2400MHz



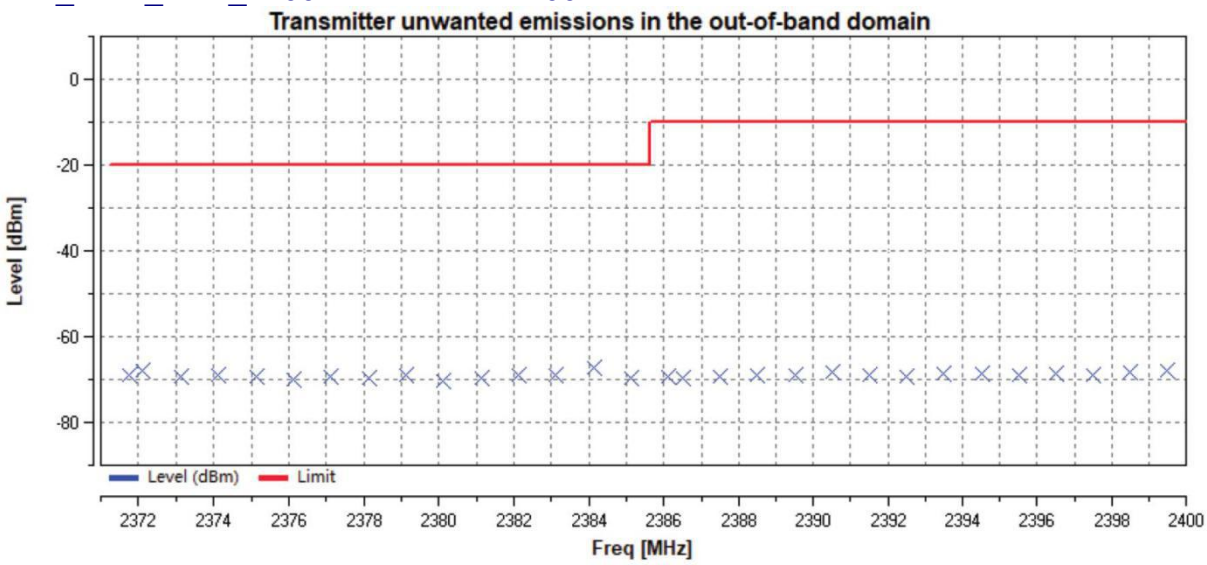
11B_2412_Ant1_2483.5MHz to 2483.5MHz+2BW



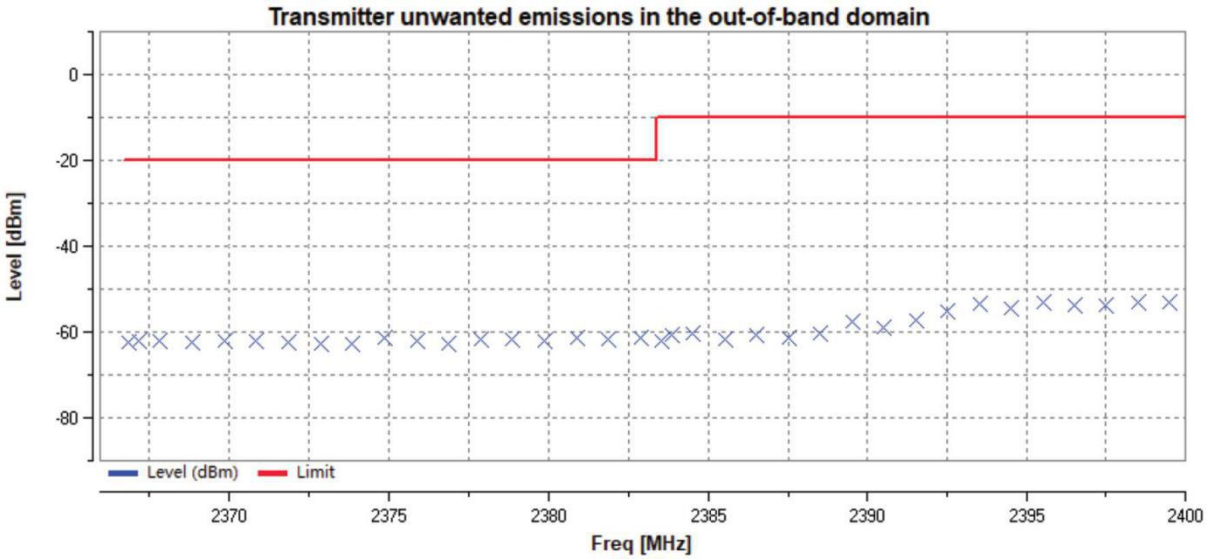
11B_2472_Ant1_2483.5MHz to 2483.5MHz+2BW



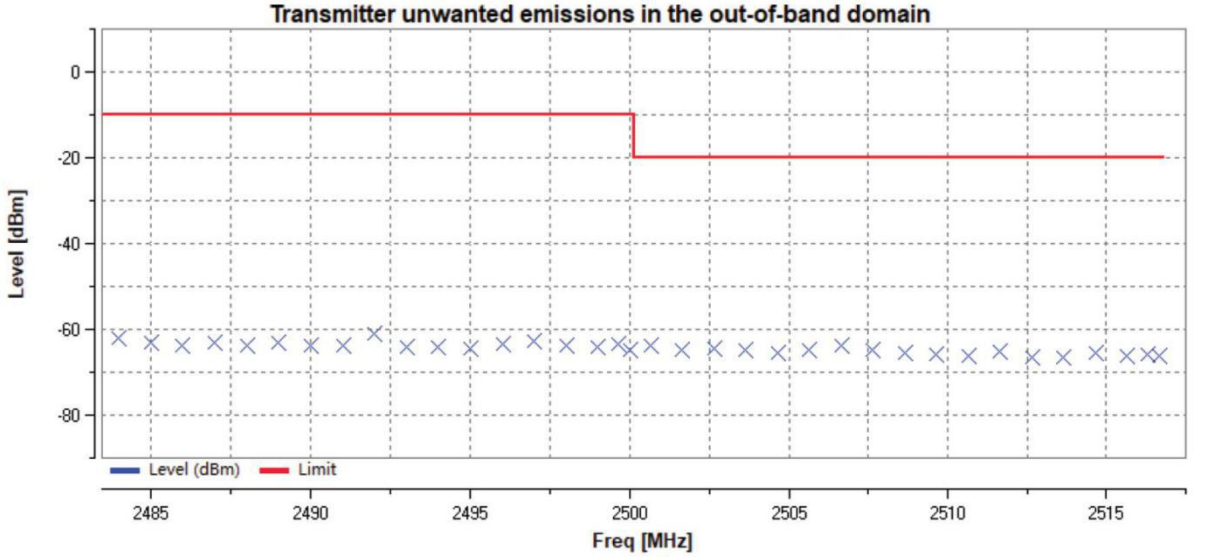
11B_2472_Ant1_2400MHz-2BW to 2400MHz



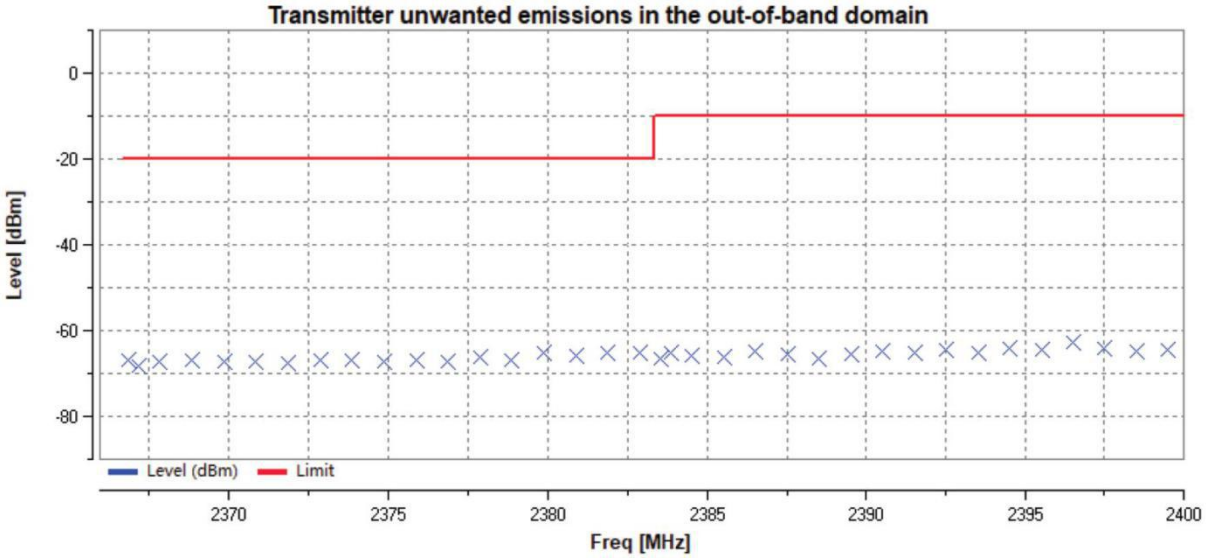
11G_2412_Ant1_2400MHz-2BW to 2400MHz



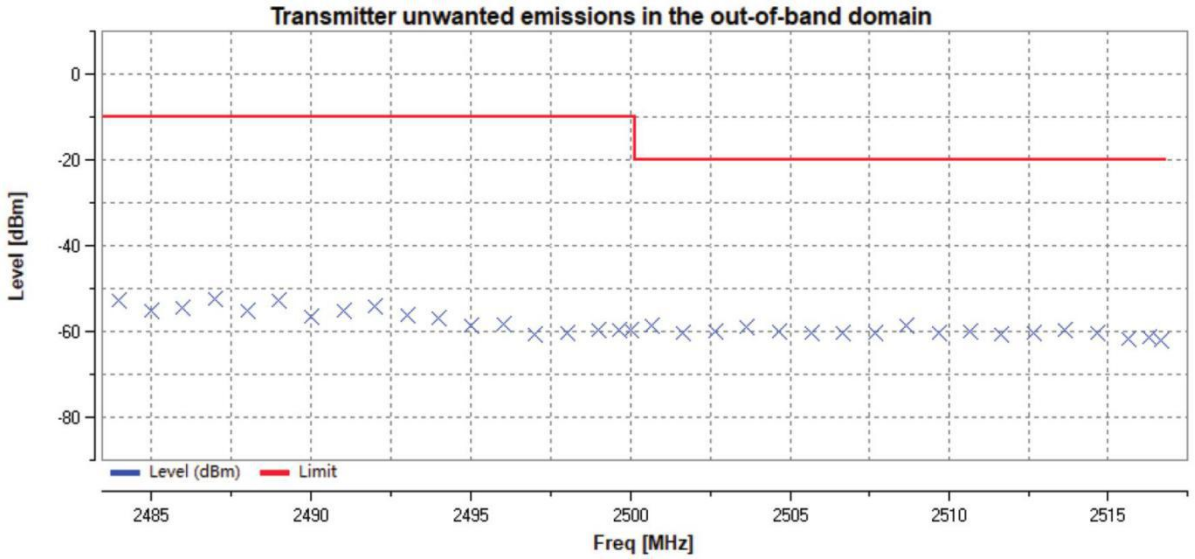
11G_2412_Ant1_2483.5MHz to 2483.5MHz+2BW



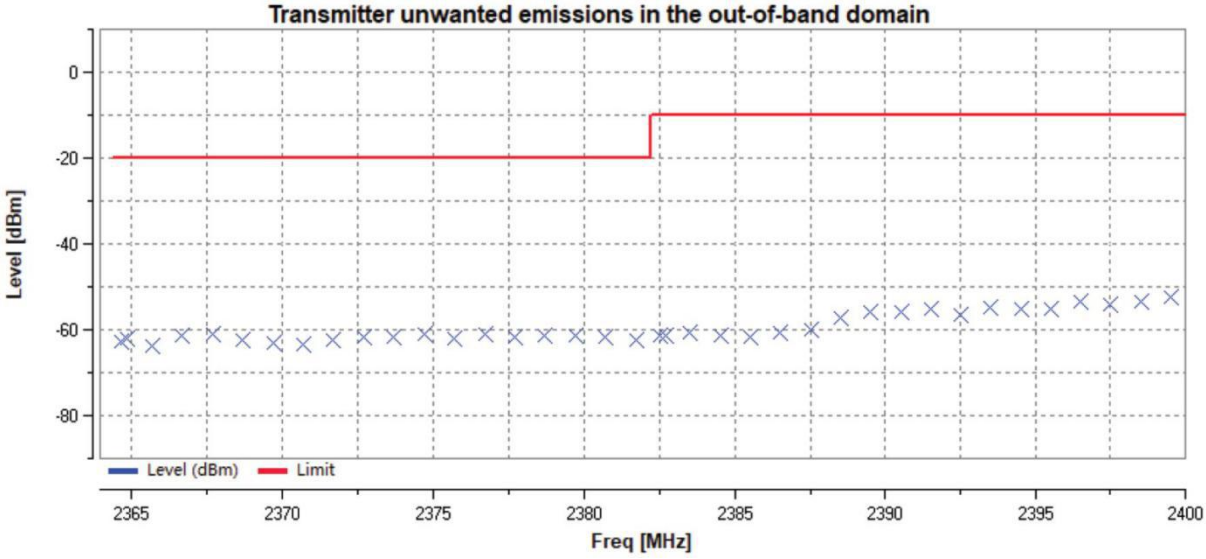
11G_2472_Ant1_2400MHz-2BW to 2400MHz



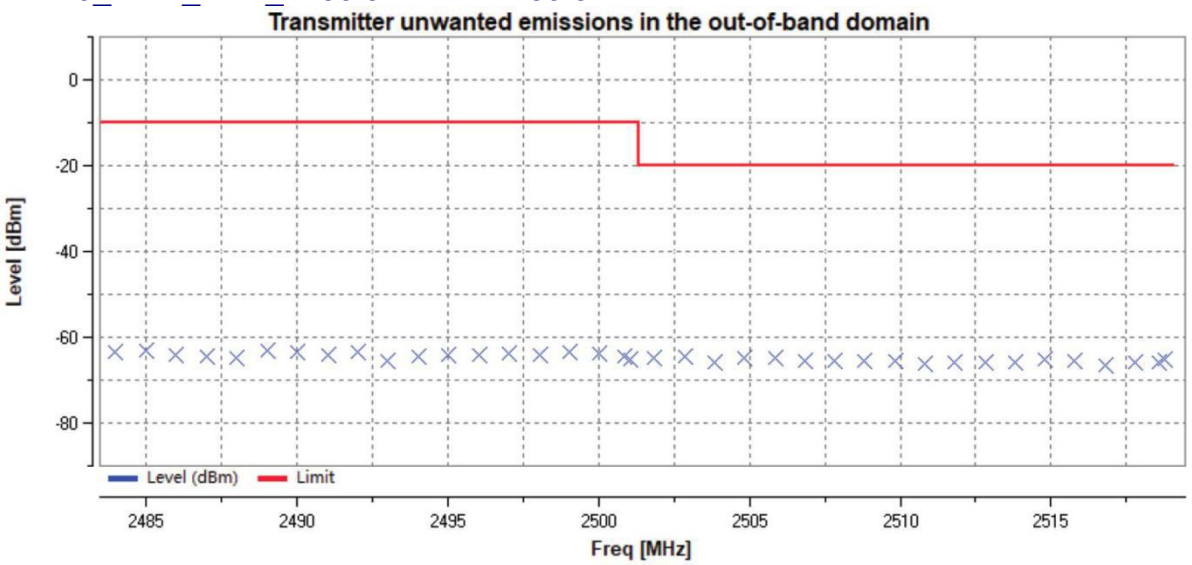
11G_2472_Ant1_2483.5MHz to 2483.5MHz+2BW



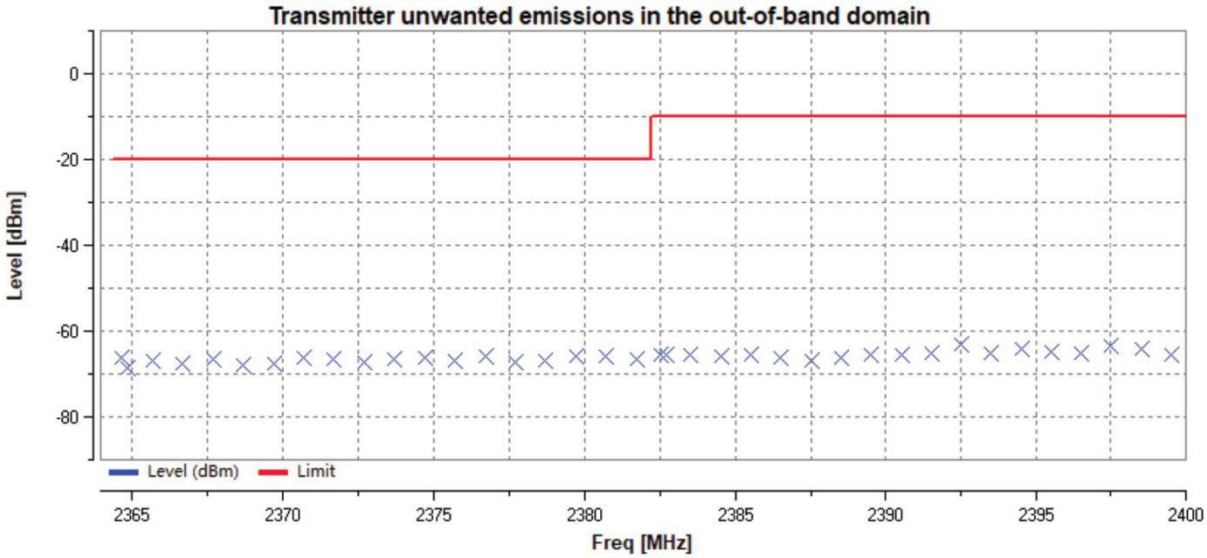
11N20_2412_Ant1_2400MHz-2BW to 2400MHz



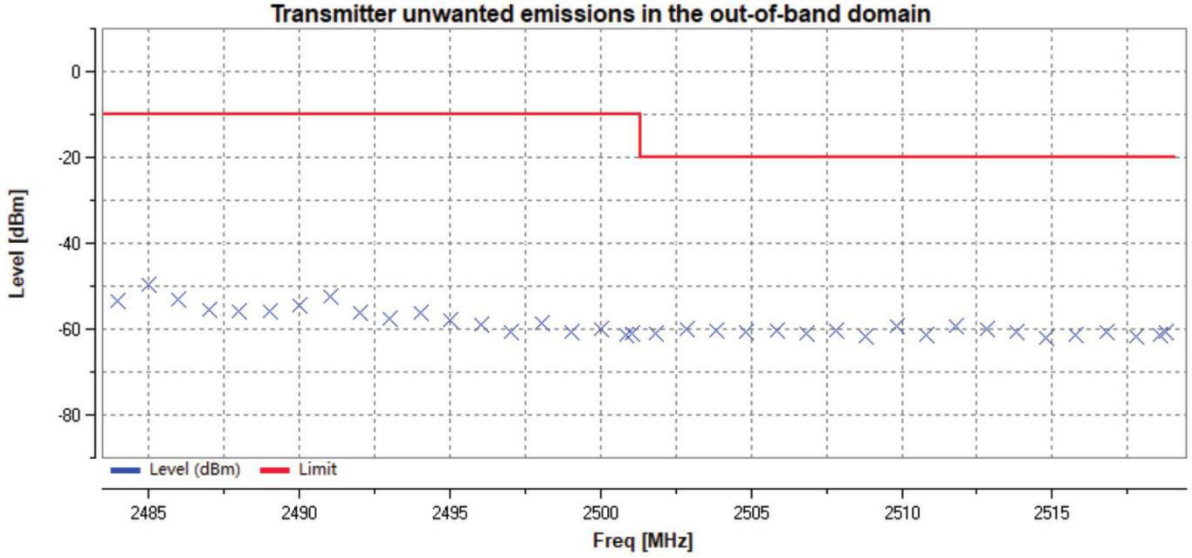
11N20_2412_Ant1_2483.5MHz to 2483.5MHz+2BW



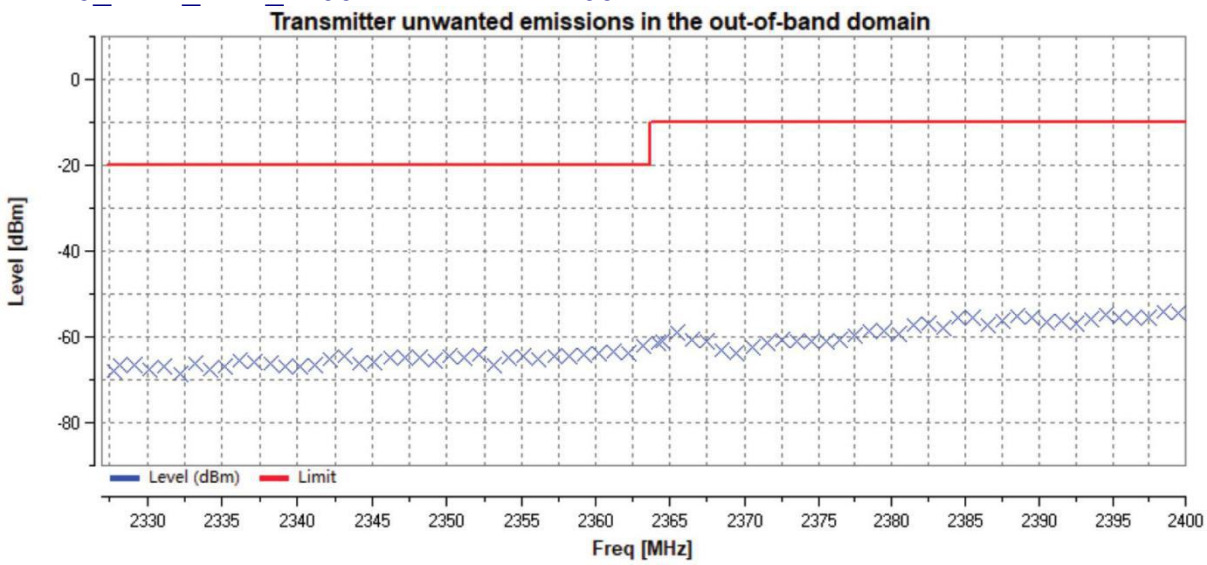
11N20_2472_Ant1_2400MHz-2BW to 2400MHz



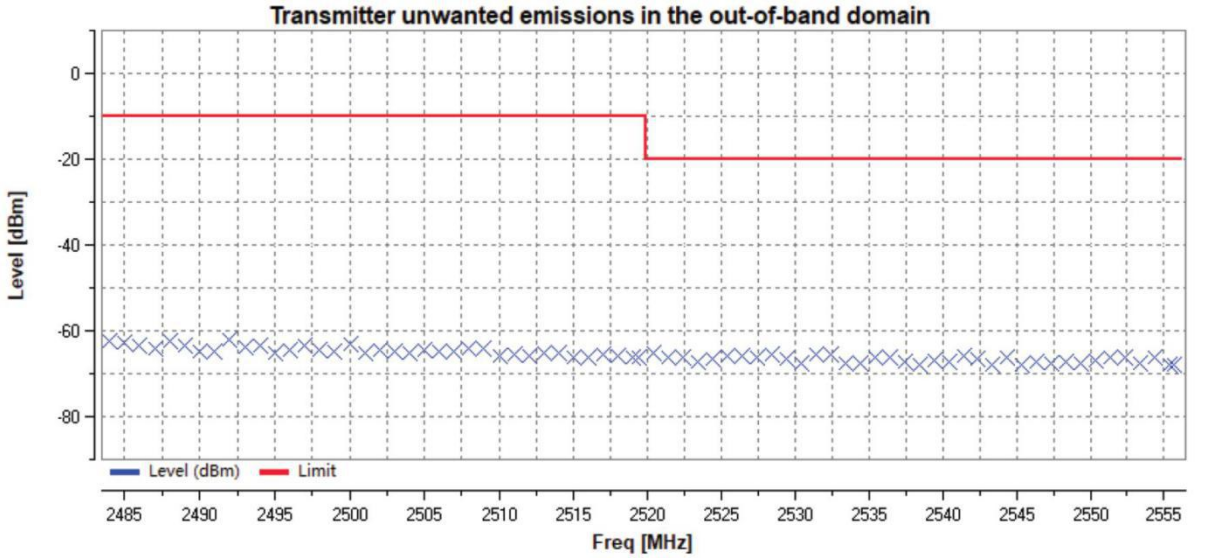
11N20_2472_Ant1_2483.5MHz to 2483.5MHz+2BW



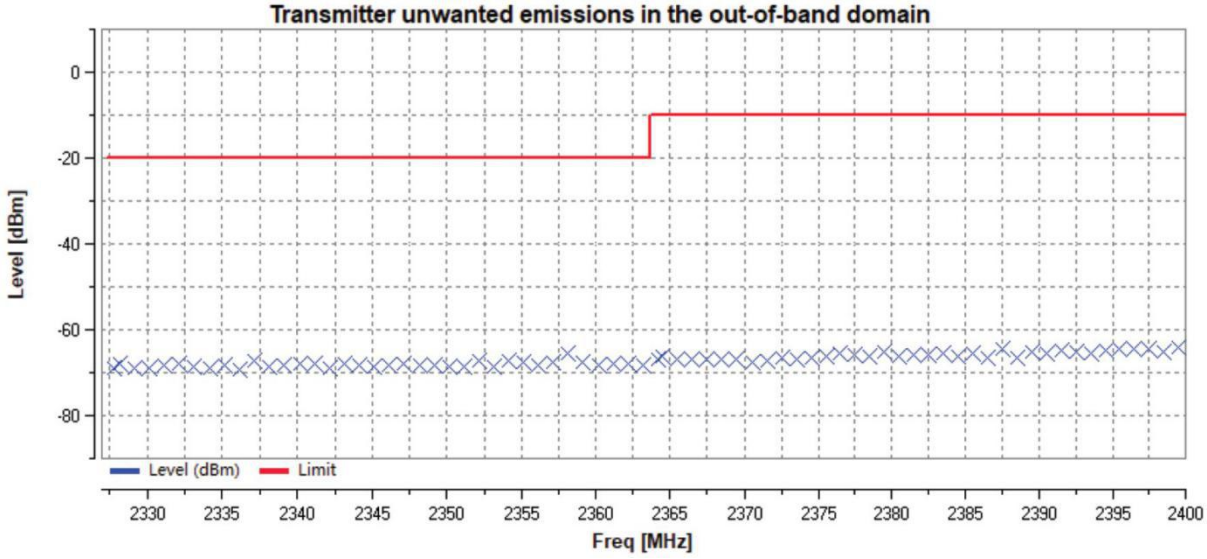
11N40_2422_Ant1_2400MHz-2BW to 2400MHz



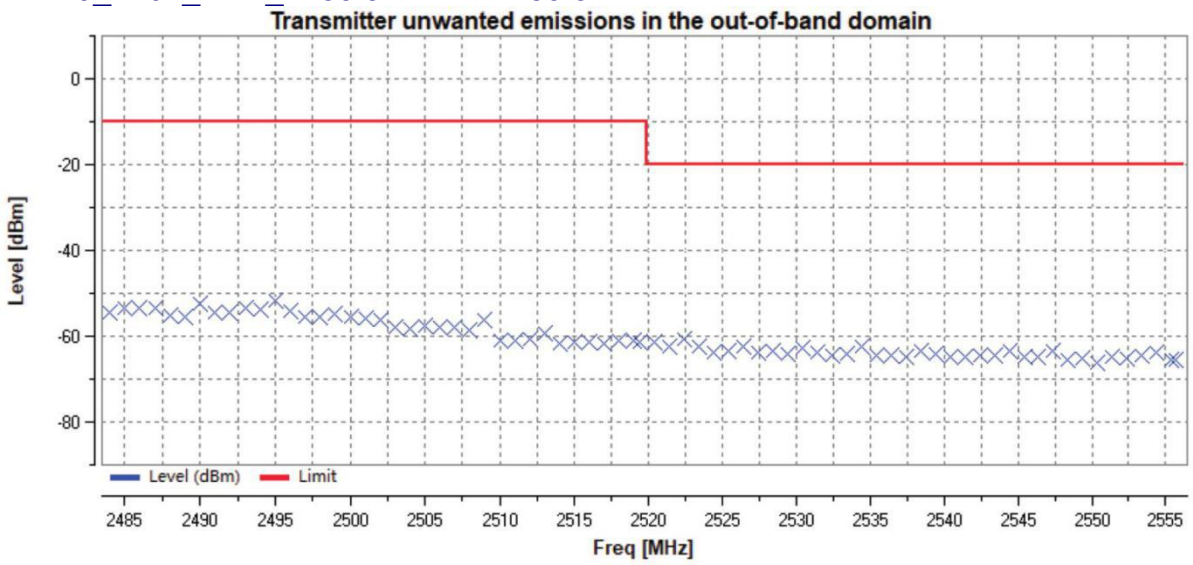
11N40_2422_Ant1_2483.5MHz to 2483.5MHz+2BW



11N40_2462_Ant1_2400MHz-2BW to 2400MHz



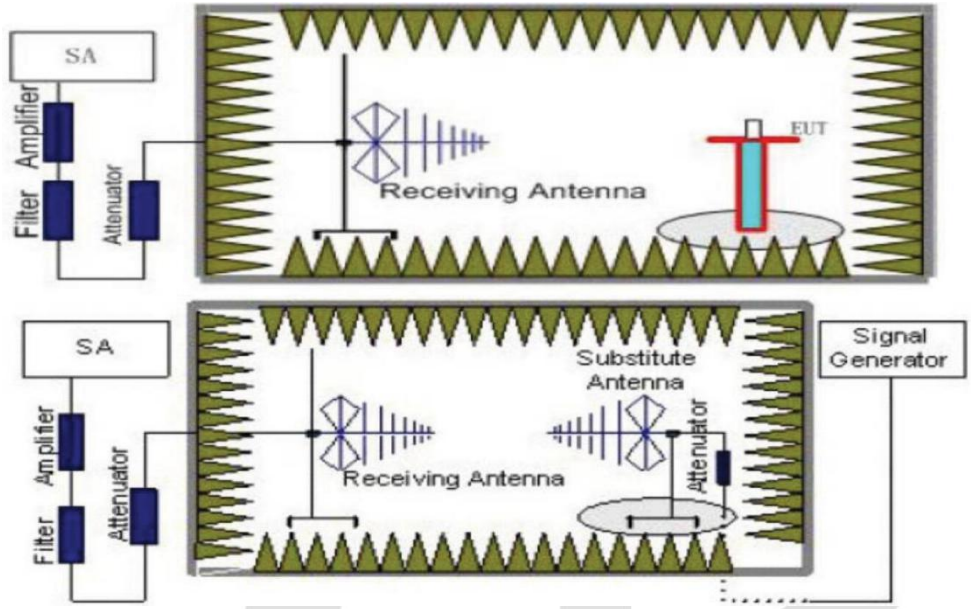
11N40_2462_Ant1_2483.5MHz to 2483.5MHz+2BW



14. Transmitter unwanted emissions in the spurious domain

14.1. Block Diagram of Test Setup

Effective Radiated Power measurement (30 MHz to 12.75 GHz)



14.2. Limit

According to ETSI EN 300 328 V2.2.2(2019-07) §4.3.2.9.3

The transmitter unwanted emissions in the spurious domain shall not exceed the values given in table 4.

Table 4: Transmitter limits for spurious emissions

Frequency Range	Maximum power e.r.p.(≤1 GHz) e.i.r.p.(>1 GHz)	Limit when Standby
30 MHz to 47 MHz	-36 dBm	100 KHz
47 MHz to 74 MHz	-54 dBm	100 KHz
74MHz 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

These measurements shall only be performed at normal test conditions.

The level of spurious emissions shall be measured as, either:

a) their power in a specified load (conducted spurious emissions) and their effective

radiated power when radiated by the cabinet or structure of the equipment (cabinet radiation); or
b) their effective radiated power when radiated by cabinet and antenna in case of Integral antenna equipment with no antenna connectors.
For equipment using FHSS modulation, the measurements may be performed when normal hopping is disabled. In this case measurements need to be performed when operating at the lowest and the highest hopping frequency. When this is not possible, the measurement shall be performed during normal operation (hopping).
For systems using wide band modulations other than FHSS, the measurement shall be performed at the lowest and the highest channel on which the equipment can operate. These frequencies shall be recorded.
The equipment shall be configured to operate under its worst case situation with respect to output power.
If the equipment can operate with different Nominal Channel Bandwidths (e.g. 20 MHz and 40 MHz), then the equipment shall be configured to operate under its worst case situation with respect to spurious emissions.

14.3. Test Procedure

According to ETSI EN 300 328 V2.2.2(2019-07) §5.4.9.2.2, Radiated measurement.

14.4. Test Results

PASS

Fre. (MHz)	ANT. Pol.	Result (dBm)	Limit	Margin	Conclusion
Below 1GHz:					
265.07	V	-76.18	-36	-40.18	PASS
305.59	V	-77.00	-36	-41.00	PASS
394.58	V	-87.62	-36	-51.62	PASS
465.13	V	-75.26	-36	-39.26	PASS
584.08	V	-74.41	-54	-20.41	PASS
900.99	V	-81.33	-36	-45.33	PASS
281.99	H	-73.93	-36	-37.93	PASS
320.49	H	-73.99	-36	-37.99	PASS
420.25	H	-77.35	-36	-41.35	PASS
512.45	H	-79.93	-54	-25.93	PASS
663.44	H	-75.85	-54	-21.85	PASS
937.99	H	-72.78	-36	-36.78	PASS
Note: 1. Cable loss and antenna gain was combined in the calculated result. 2. Other point of the measurements are below 20dB from the limit.					

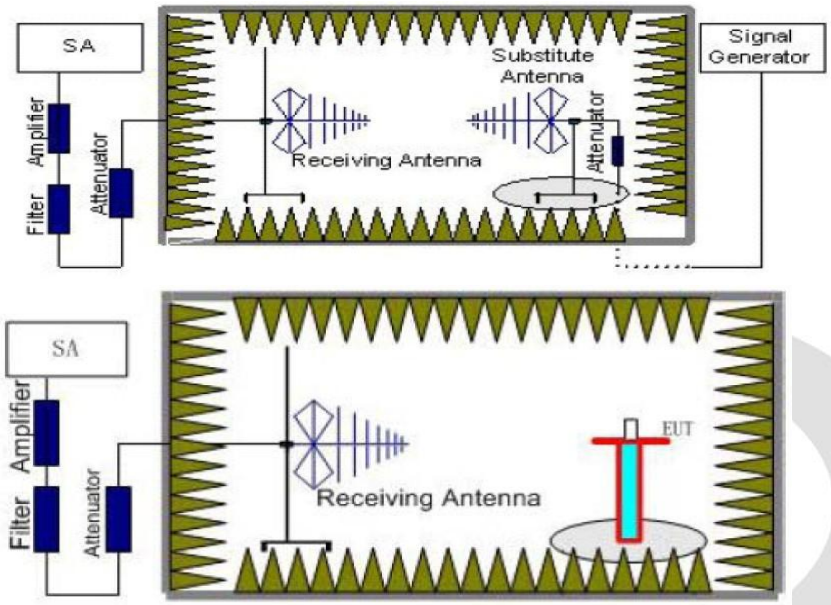
Fre. (MHz)	ANT. Pol.	Result (dBm)	Limit	Margin	Conclusion
Above 1GHz:					
Test Mode: Low Channel					
2129.05	H	-54.23	-30	-24.23	PASS
1989.67	V	-58.14	-30	-28.14	PASS
3007.24	H	-54.10	-30	-24.10	PASS
2815.71	V	-57.44	-30	-27.44	PASS
3520.47	H	-52.02	-30	-22.02	PASS
3841.56	V	-46.28	-30	-16.28	PASS
4206.80	H	-58.10	-30	-28.10	PASS
4087.73	V	-52.18	-30	-22.18	PASS
5362.34	H	-42.64	-30	-12.64	PASS
5439.90	V	-51.70	-30	-21.70	PASS
6872.76	H	-50.25	-30	-20.25	PASS
6838.81	V	-49.83	-30	-19.83	PASS
Test Mode: High Channel					
1832.65	H	-56.65	-30	-26.65	PASS
2018.99	V	-59.21	-30	-29.21	PASS
2915.78	H	-57.58	-30	-27.58	PASS
2831.25	V	-57.55	-30	-27.55	PASS
3510.73	H	-58.82	-30	-28.82	PASS
3635.77	V	-50.12	-30	-20.12	PASS
4193.90	H	-53.24	-30	-23.24	PASS
4080.70	V	-53.32	-30	-23.32	PASS
5389.20	H	-51.09	-30	-21.09	PASS
5454.50	V	-51.66	-30	-21.66	PASS
6880.90	H	-52.62	-30	-22.62	PASS
7226.90	V	-50.67	-30	-20.67	PASS

Note:
1. Cable loss and antenna gain was combined in the calculated result.
2. Other point of the measurements are below 20dB from the limit.

15. Receiver spurious emissions

15.1. Block Diagram of Test Setup

Effective Radiated Power measurement (30 MHz to 12.75 GHz)



The level of spurious emissions shall be measured as, either:
a) their power in a specified load (conducted spurious emissions) and their effective radiated power when radiated by the cabinet or structure of the equipment (cabinet radiation); or
b) their effective radiated power when radiated by cabinet and antenna in case of Integral antenna equipment withno temporary antenna connectors.
Testing shall be performed when the equipment is in a receive-only mode.
For equipment using wide band modulations other than FHSS, the measurement shall be performed at the lowest and the highest channel on which the equipment can operate. These frequencies shall be recorded. For equipment using FHSS modulation, the measurements may be performed when normal hopping is disabled. In this case measurements need to be performed when operating at the lowest and the highest hopping frequency. These frequencies shall be recorded. When disabling the normal hopping is not possible, the measurement shall be performed during normal operation (hopping).

15.2. Limit

According to ETSI EN 300 328 V2.2.2(2019-07) §4.3.2.10.3

The spurious emissions of the receiver shall not exceed the values given in table 5.

Table 5: spurious emission limits for receivers

Frequency	Maximum power, e.r.p.	Measurement bandwidth
30 MHz to 1 GHz	-57 dBm	100 KHz
30 MHz to 12.75 GHz	-47 dBm	1 MHz

15.3. Test Procedure

According to ETSI EN 300 328 V2.2.2(2019-07) §5.4.9.2.2, Radiated measurement.

15.4. Test Results

Remark: We test all modulation type, and recorded the worst case at 802.11b mode for wifi test.

Fre. (MHz)	ANT. Pol.	Result (dBm)	Limit	Margin	Conclusion
Below 1GHz:					
256.96	V	-77.09	-57	-20.09	PASS
308.58	V	-76.64	-57	-19.64	PASS
352.62	V	-80.25	-57	-23.25	PASS
410.83	V	-70.04	-57	-13.04	PASS
517.99	V	-75.45	-57	-18.45	PASS
886.33	V	-77.51	-57	-20.51	PASS
272.91	H	-70.75	-57	-13.75	PASS
376.23	H	-78.52	-57	-21.52	PASS
422.05	H	-72.75	-57	-15.75	PASS
503.07	H	-78.96	-57	-21.96	PASS
660.70	H	-76.59	-57	-19.59	PASS
897.86	H	-82.02	-57	-25.02	PASS
Note: 2. Cable loss and antenna gain was combined in the calculated result. 2. Other point of the measurements are below 20dB from the limit.					

Fre. (MHz)	ANT. Pol.	Result (dBm)	Limit	Margin	Conclusion
Above 1GHz:					
Test Mode: Lowest frequency					
2368.21	H	-61.58	-47	-14.58	PASS
2244.23	V	-63.92	-47	-16.92	PASS
2847.95	H	-70.13	-47	-23.13	PASS
2966.16	V	-64.46	-47	-17.46	PASS
3404.54	H	-65.56	-47	-18.56	PASS
3954.08	V	-65.24	-47	-18.24	PASS
4505.42	H	-61.10	-47	-14.10	PASS
4357.30	V	-61.69	-47	-14.69	PASS
5215.98	H	-66.49	-47	-19.49	PASS
5199.24	V	-68.55	-47	-21.55	PASS
6799.50	H	-73.58	-47	-26.58	PASS
6925.90	V	-67.17	-47	-20.17	PASS
Test Mode: Highest frequency					
2239.94	H	-59.24	-47	-12.24	PASS
2169.91	V	-66.22	-47	-19.22	PASS
3122.74	H	-62.62	-47	-15.62	PASS
2937.79	V	-67.82	-47	-20.82	PASS
3811.70	H	-69.62	-47	-22.62	PASS
3597.92	V	-60.97	-47	-13.97	PASS
4248.12	H	-64.00	-47	-17.00	PASS
3942.04	V	-67.99	-47	-20.99	PASS
5730.68	H	-64.85	-47	-17.85	PASS
5514.27	V	-64.91	-47	-17.91	PASS
6694.78	H	-62.80	-47	-15.80	PASS
6823.45	V	-65.58	-47	-18.58	PASS
Note: 2. Cable loss and antenna gain was combined in the calculated result. 2. Other point of the measurements are below 20dB from the limit.					

16. Receiver Blocking

16.1. Block Diagram of Test Setup

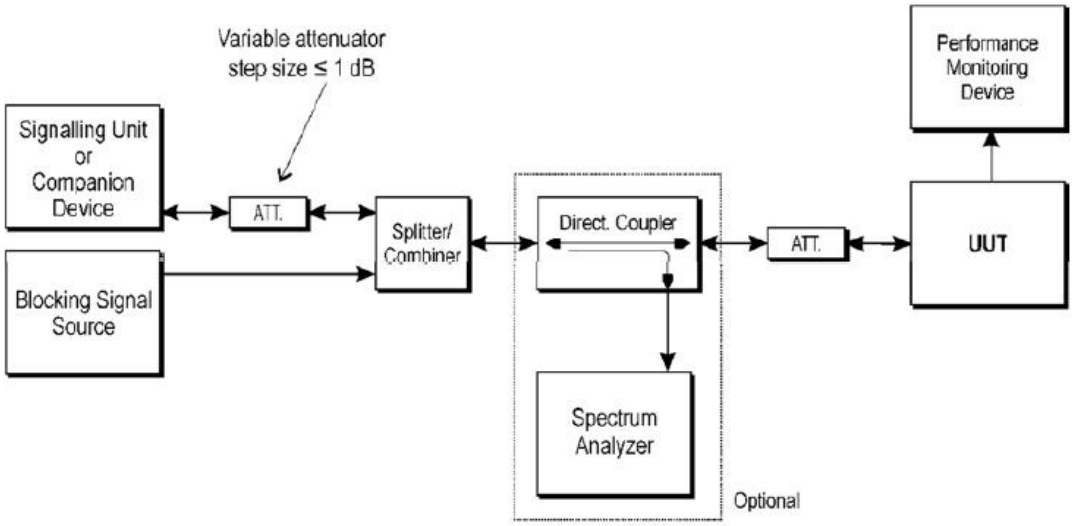


Figure 6: Test Set-up for receiver blocking

16.2. Limit

According to ETSI EN 300 328 V2.2.2(2019-07) §4.3.2.11.4

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.

The minimum performance criterion shall be a PER less than or equal to 10 %. The manufacturer may declare alternative performance criteria as long as that is appropriate for the intended use of the equipment.

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 × $\log_{10}$(OCBW)) or -68 dBm whichever is less (see note 2)	2 380 2 504	-34	CW
(-139 dBm + 10 × $\log_{10}$(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 P_{min} + 26 dB where P_{min} 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 P_{min} + 20 dB where P_{min} 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 3)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 3)	Type of blocking signal
(-139 dBm + 10 × $\log_{10}$(OCBW) + 10 dB) or (-74 dBm + 10 dB) 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 P_{min} + 26 dB where P_{min} 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 3)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 3)	Type of blocking signal
(-139 dBm + 10 × $\log_{10}$(OCBW) + 20 dB) or (-74 dBm + 20 dB) 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 P_{min} + 30 dB where P_{min} 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.			

According to ETSI EN 300 328 V2.2.2(2019-07) § 4.2.3 Receiver categories

4.2.3.2.1 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.

4.2.3.2.2 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 dBm e.i.r.p. shall be considered as receiver category 2 equipment.

4.2.3.2.3 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.

These measurements shall only be performed at normal test conditions.

For non-frequency hopping equipment, having more than one operating channel, the equipment shall be tested operating at both the lowest and highest operating channels. Equipment which can change their operating channel automatically (adaptive channel allocation), and where this function cannot be disabled, shall be tested as a frequency hopping equipment.

If the equipment can be configured to operate with different Nominal Channel Bandwidths (e.g. 20 MHz and 40 MHz) and different data rates, then the combination of the smallest channel bandwidth and the lowest data rate for this channel bandwidth which still allows the equipment to operate as intended shall be used. This mode of operation shall be aligned with the performance criteria defined in clause 4.3.1.12.3 or clause

4.3.2.11.3 as declared by the manufacturer (see clause 5.4.1 t)) and shall be described in the test report. It shall be verified that this performance criteria as declared by the manufacturer is achieved.

16.3. Measurement Description

According to ETSI EN 300 328 V2.2.2(2019-07) §5.4.11.2.1, Conducted measurements

Step 1:

•For non-FHSS equipment, the UUT shall be set to the lowest operating channel on which the blocking test hasto be performed (see clause 5.4.11.1).

Step 2:

•The blocking signal generator is set to the first frequency as defined in the appropriate table corresponding to the receiver category and type of equipment.

Step 3:

• With the blocking signal generator switched off, a communication link is established between the UUT and the associated companion device using the test setup shown in figure 6.

• Unless the option provided in note 2 of the applicable table referred to in clause 5.4.11.2.1 is used, the level of the wanted signal shall be set to the value provided in the table corresponding to the receiver category and type of equipment. The test procedure defined in clause 5.4.2, and more in particular clause 5.4.2.2.1.2, can be used to measure the (conducted) level of the wanted signal however no correction shall be made for antenna gain of the companion device (step 6 in clause 5.4.2.2.1.2 shall be ignored). This level may be measured directly at the output of the companion device and a correction is made for the coupling loss into the UUT. The actual level for the wanted signal shall be recorded in the test report.

• When the option provided in note 2 of the applicable table referred to in clause 5.4.11.2.1 is used, the attenuation of the variable attenuator shall be increased in 1 dB steps to a value at which the minimum performance criteria as specified in clause 4.3.1.12.3 or clause 4.3.2.11.3 is still met. The resulting level for the wanted signal at the input of the UUT is Pmin. This signal level (Pmin) is increased by the value provided in note 2 of the applicable table corresponding to the receiver category and type of equipment.

Step 4:

• The blocking signal at the UUT is set to the level provided in the table corresponding to the receiver category and type of equipment.

If the performance criteria as specified in clause 4.3.1.12.3 or clause 4.3.2.11.3 are met then proceed to step 6.

Step 5:

• If the performance criteria as specified in clause 4.3.1.12.3 or clause 4.3.2.11.3 is not met, step 3 and step 4 shall be repeated after that the frequency of the blocking signal set in step 2 has been increased with a value equal to the Occupied Channel Bandwidth except:

-For the blocking frequency 2 380 MHz, where this frequency offset shall be less than or equal to 10 MHz. If this frequency offset is more than 7 MHz, the level of the wanted signal shall be increased by 3 dB.

-For the blocking frequency 2 503,5 MHz, where this frequency offset shall be less than or equal to 10 MHz. If this frequency offset is more than 7 MHz, the level of the wanted signal shall be decreased by 3 dB.

• If the performance criteria as specified in clause 4.3.1.12.3 or clause 4.3.2.11.3 is still not met, step 3 and step 4 shall be repeated after that the frequency of the blocking signal set in step 2 has been decreased with a value equal to the Occupied Channel Bandwidth except:

-For the blocking frequency 2 380 MHz, where this frequency offset shall be less than or equal to 10 MHz. If this frequency offset is more than 7 MHz, the level of the wanted signal shall be decreased by 3 dB.

-For the blocking frequency 2 503,5 MHz, where this frequency offset shall be less than or equal to 10 MHz. If this frequency offset is more than 7 MHz, the level of the wanted signal shall be increased by 3 dB.

• If the performance criteria as specified in clause 4.3.1.12.3 or clause 4.3.2.11.3 is still not met, the UUT fails to comply with the Receiver Blocking requirement and step 6 and step 7 are no longer required.

• It shall be recorded in the test report whether the shift of blocking frequencies as described in the present step was used.

Step 6:

• Repeat step 4 and step 5 for each remaining combination of frequency and level for the blocking signal as provided in the table corresponding to the receiver category and type of equipment.

Step 7:

• For non-FHSS equipment, repeat step 2 to step 6 with the UUT operating at the highest operating channel on which the blocking test has to be performed (see clause 5.4.11.1).

Step 8:

It shall be assessed and recorded in the test report whether the UUT complies with the Receiver Blocking requirement

16.4. Test Results

PASS.

Record 802.11b. 1mbps for this test item

Channel 1

Wanted signal mean power form Companion device(dBm)	Blocking signal frequency(MHz)	Blocking sgnal power(dBm)	PER (%)	Limit (%)	Result
-68	2380	-34	0.86	10	Pass
-68	2504	-34	0.49	10	Pass
-74	2300	-34	0.72	10	Pass
-74	2330	-34	0.35	10	Pass
-74	2360	-34	0.71	10	Pass
-74	2524	-34	0.21	10	Pass
-74	2584	-34	0.35	10	Pass
-74	2674	-34	1.20	10	Pass

Channel 13

Wanted signal mean power form Companion device(dBm)	Blocking signal frequency(MHz)	Blocking sgnal power(dBm)	PER (%)	Limit (%)	Result
-68	2380	-34	0.50	10	Pass
-68	2504	-34	0.99	10	Pass
-74	2300	-34	0.64	10	Pass
-74	2330	-34	0.26	10	Pass
-74	2360	-34	0.35	10	Pass
-74	2524	-34	0.82	10	Pass
-74	2584	-34	0.88	10	Pass
-74	2674	-34	0.53	10	Pass

Record 802.11g. 6mbps for this test item

Channel 1

Wanted signal mean power form Companion device(dBm)	Blocking signal frequency(MHz)	Blocking sgnal power(dBm)	PER (%)	Limit (%)	Result
-68	2380	-34	0.69	10	Pass
-68	2504	-34	0.50	10	Pass
-74	2300	-34	0.50	10	Pass
-74	2330	-34	1.24	10	Pass
-74	2360	-34	0.47	10	Pass
-74	2524	-34	0.73	10	Pass
-74	2584	-34	0.93	10	Pass
-74	2674	-34	1.25	10	Pass

Channel 13

Wanted signal mean power form Companion device(dBm)	Blocking signal frequency(MHz)	Blocking sgnal power(dBm)	PER (%)	Limit (%)	Result
-68	2380	-34	1.29	10	Pass
-68	2504	-34	0.20	10	Pass
-74	2300	-34	0.66	10	Pass
-74	2330	-34	1.24	10	Pass
-74	2360	-34	0.58	10	Pass
-74	2524	-34	1.18	10	Pass
-74	2584	-34	0.64	10	Pass
-74	2674	-34	1.23	10	Pass

Record 802.11n20. 6.5mbps for this test item

Channel 1

Wanted signal mean power form Companion device(dBm)	Blocking signal frequency(MHz)	Blocking sgnal power(dBm)	PER (%)	Limit (%)	Result
-68	2380	-34	1.13	10	Pass
-68	2504	-34	0.46	10	Pass
-74	2300	-34	0.69	10	Pass
-74	2330	-34	0.21	10	Pass
-74	2360	-34	0.36	10	Pass
-74	2524	-34	0.94	10	Pass
-74	2584	-34	1.08	10	Pass
-74	2674	-34	0.78	10	Pass

Channel 13

Wanted signal mean power form Companion device(dBm)	Blocking signal frequency(MHz)	Blocking sgnal power(dBm)	PER (%)	Limit (%)	Result
-68	2380	-34	1.18	10	Pass
-68	2504	-34	0.25	10	Pass
-74	2300	-34	0.60	10	Pass
-74	2330	-34	0.85	10	Pass
-74	2360	-34	1.16	10	Pass
-74	2524	-34	0.49	10	Pass
-74	2584	-34	0.80	10	Pass
-74	2674	-34	1.26	10	Pass

Record 802.11n40. 13.5mbps for this test item

Channel 1

Wanted signal mean power form Companion device(dBm)	Blocking signal frequency(MHz)	Blocking sgnal power(dBm)	PER (%)	Limit (%)	Result
-68	2380	-34	0.46	10	Pass
-68	2504	-34	1.13	10	Pass
-74	2300	-34	0.84	10	Pass
-74	2330	-34	0.60	10	Pass
-74	2360	-34	1.21	10	Pass
-74	2524	-34	1.11	10	Pass
-74	2584	-34	0.80	10	Pass
-74	2674	-34	0.61	10	Pass

Channel 13

Wanted signal mean power form Companion device(dBm)	Blocking signal frequency(MHz)	Blocking sgnal power(dBm)	PER (%)	Limit (%)	Result
-68	2380	-34	1.12	10	Pass
-68	2504	-34	1.02	10	Pass
-74	2300	-34	0.75	10	Pass
-74	2330	-34	0.93	10	Pass
-74	2360	-34	1.10	10	Pass
-74	2524	-34	0.98	10	Pass
-74	2584	-34	0.90	10	Pass
-74	2674	-34	1.16	10	Pass

Note: EUT is Receiver Category 1 equipment.

17. Geo-location capability

17.1. Definition& Requirements

ETSI EN 300 328 (V2.2.2) Sub-clause 4.3.2.12.2 & 4.3.2.12.3

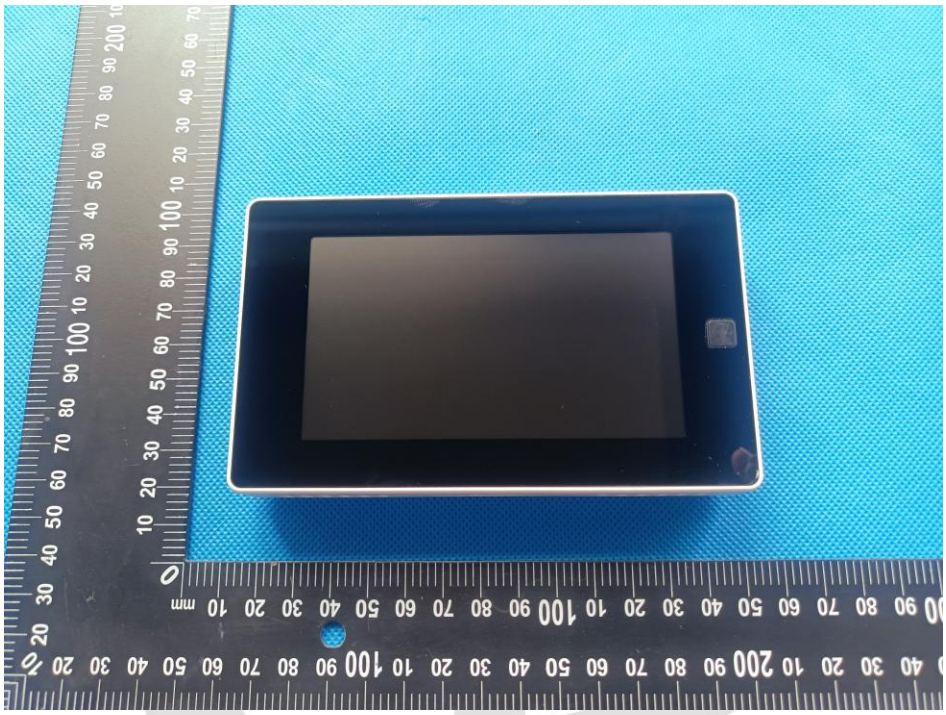
Geo-location capability is a feature of the equipment to determine its geographical location with the purpose to configure itself according to the regulatory requirements applicable at the geographical location where it operates.

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

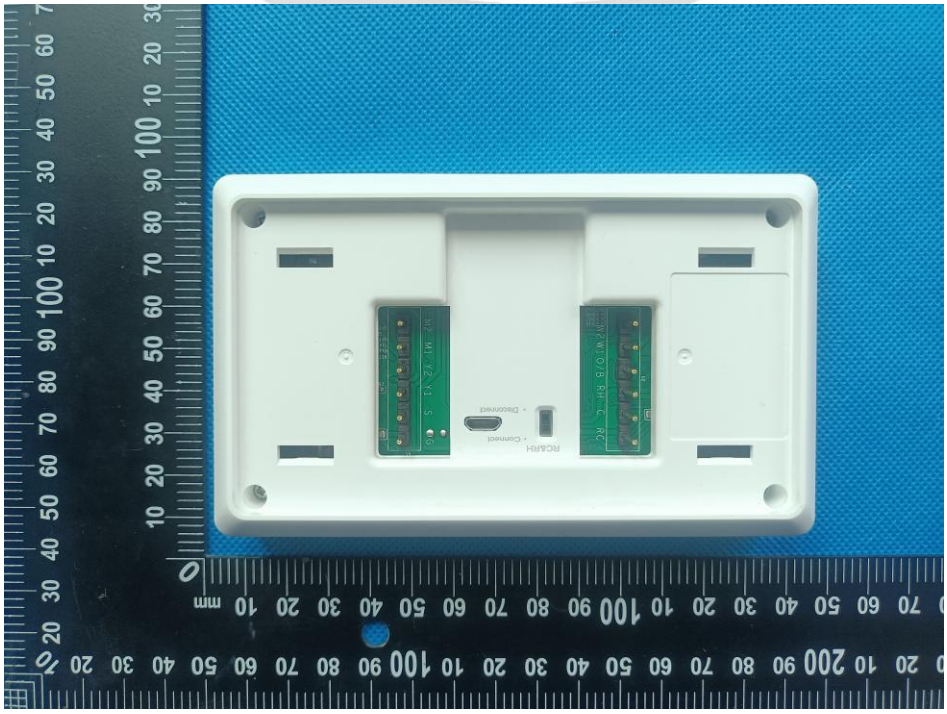
17.2. Results

This equipment does not support Geo-location.

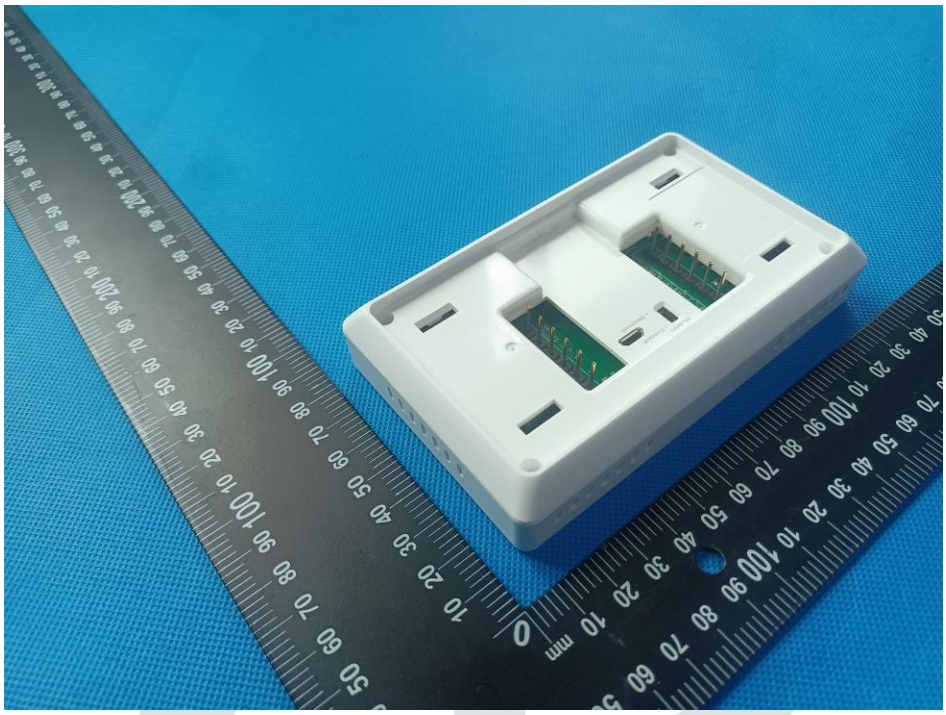
APPENDIX I -- EUT PHOTOGRAPHS



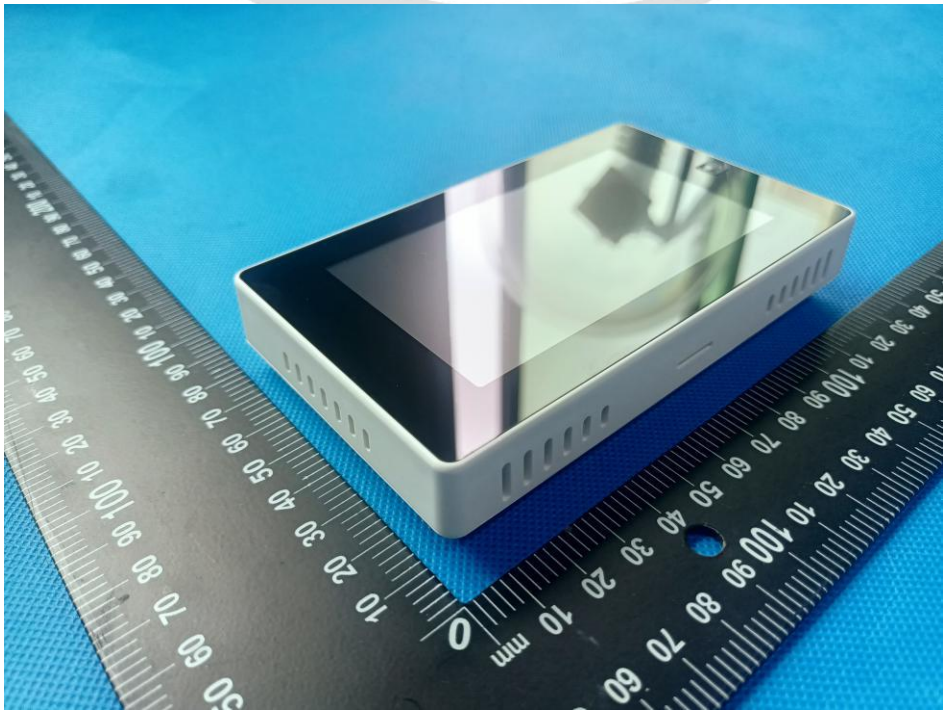
EUT Photo 1



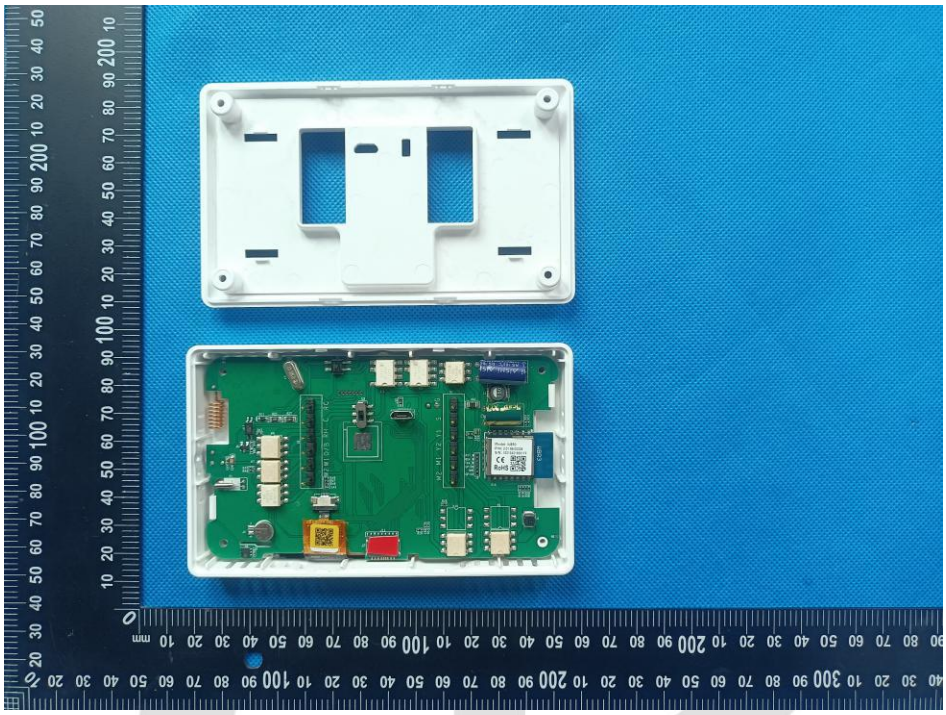
EUT Photo 2



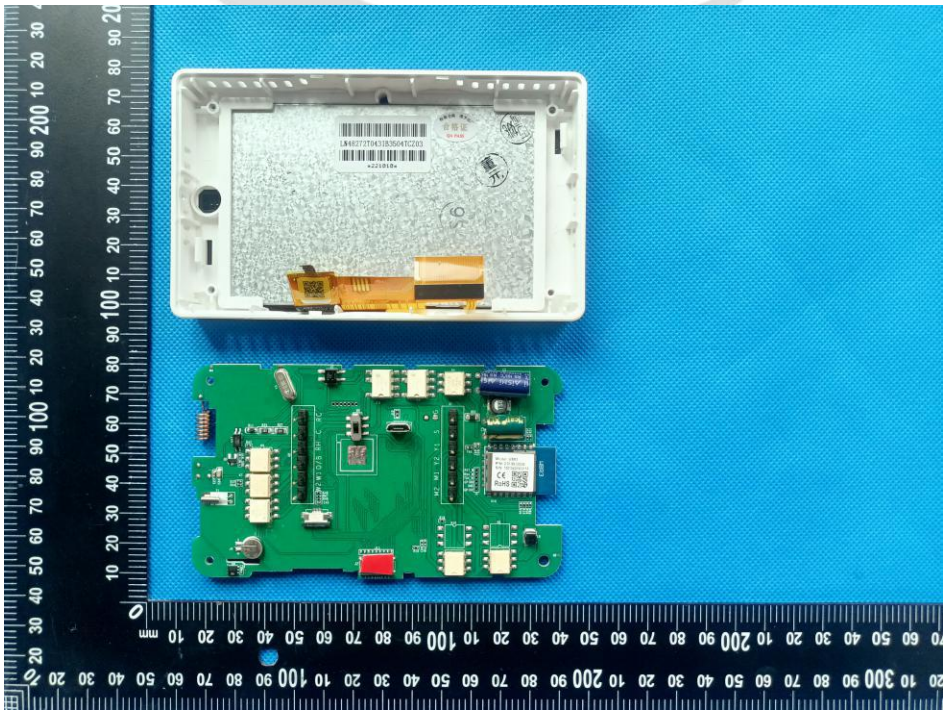
EUT Photo 3



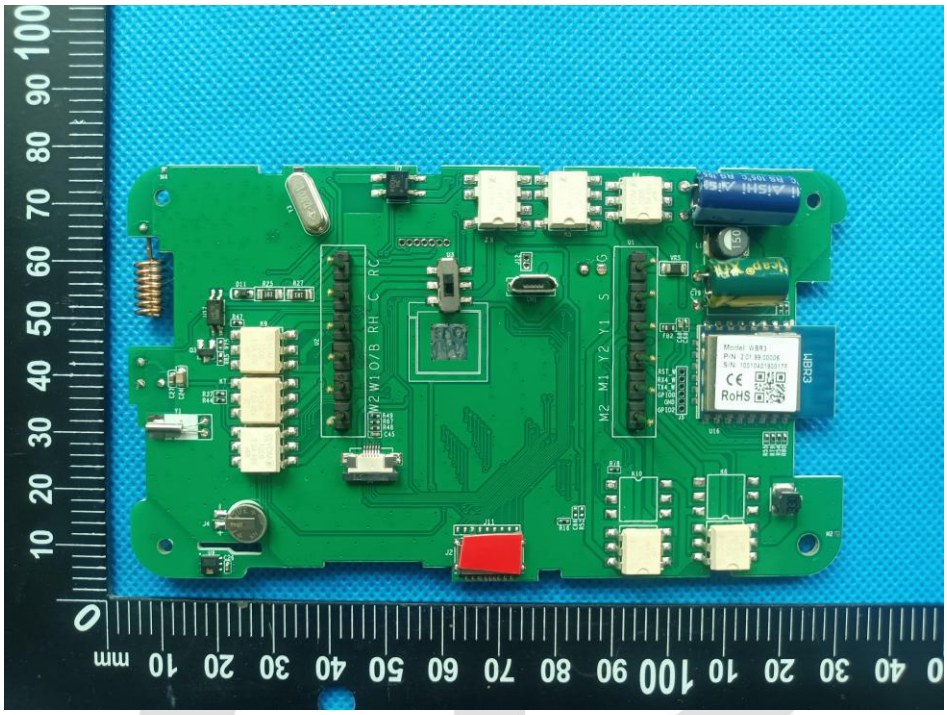
EUT Photo 4



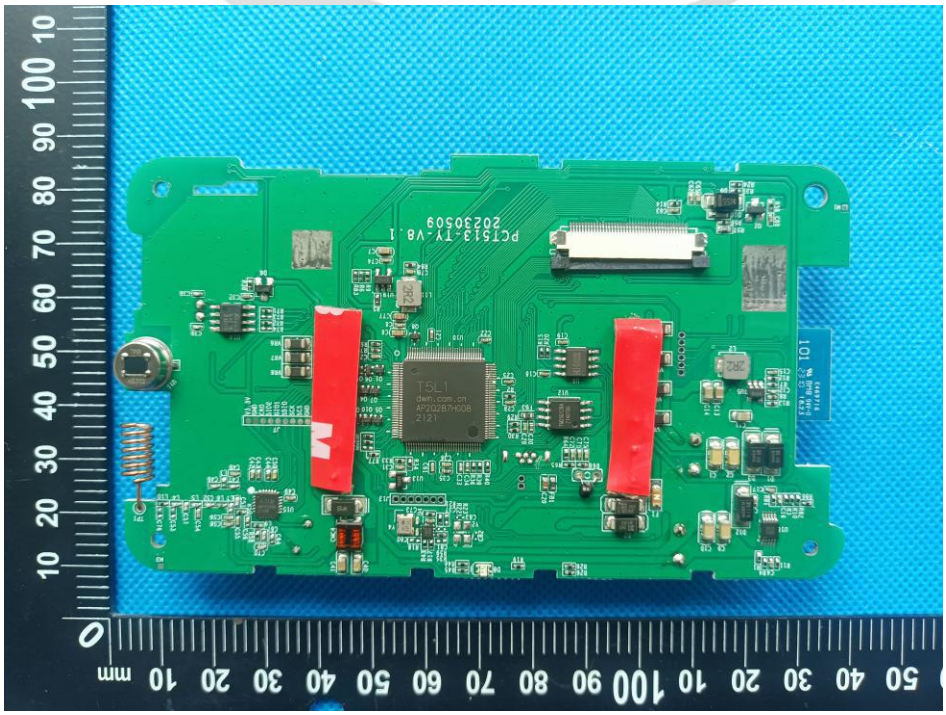
EUT Photo 5



EUT Photo 6

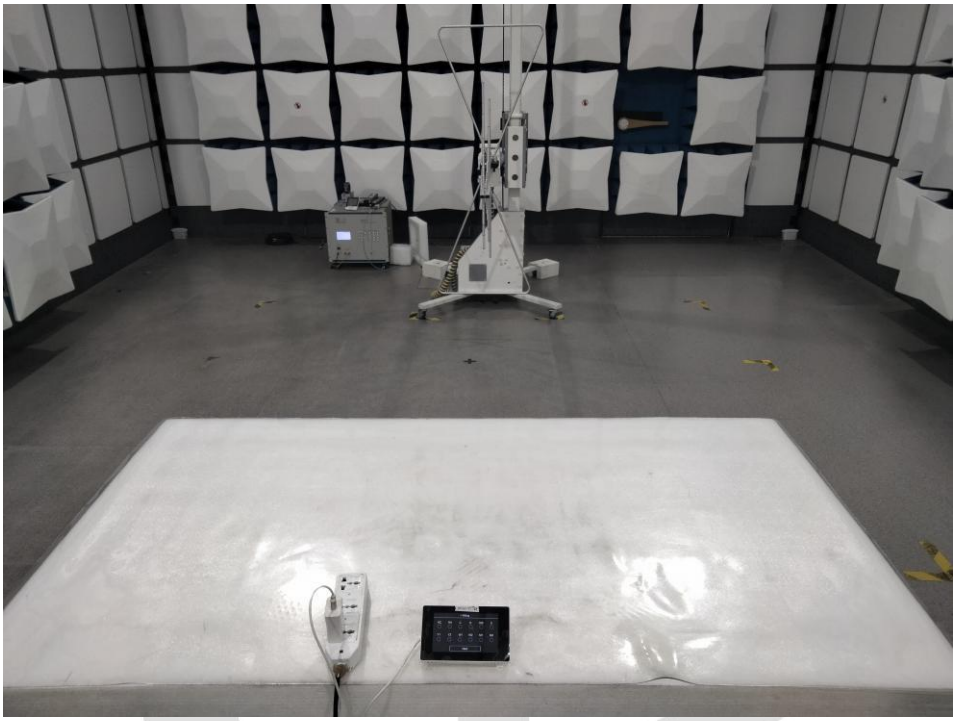


EUT Photo 7



EUT Photo 8

APPENDIX II -- EUT TEST PHOTOGRAPHS



EUT Test Photo

※※※※※ END OF REPORT ※※※※※