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

TEST REPORT

Applicant	:	QINGFENG ELETRONIC CO., LIMITED
Address	:	Flat A, 15/F, Goldfield Industrial Building, 144-150 Tai Lin Pai Road Kwai Chung, NT, Hong Kong
Manufacturer	:	Shenzhen shi jin ao kai keji youxian gongsi
Address	:	Room 1447, 1st Floor, Block B, China Electronics Technology Building, Shennan Middle Road, Huaqiang North Street, Futian District, Shenzhen, China
EUT	:	Pen camera
Model No		A57, W8, W9, W10, W11, W12, W13, W14, W15, B1, B2, B3, B4
Brand Name:	:	N/A
Report Number		PRMS2506082-01EW
Test Date	:	June 05-16, 2025
Date of Issue	:	June 17, 2025
Test Procedure Used:		ETSI EN 300 328 V2.2.2 (2019-07)

Prepared By : Wanna
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(Chopin Xiao)

Approved by : Approved
(Kind yang)

Shenzhen Promise Test Technology Co., Ltd.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information	
Applicant:	QINGFENG ELETRONIC CO., LIMITED
Address of applicant:	Flat A, 15/F, Goldfield Industrial Building, 144-150 Tai Lin Pai Road Kwai Chung, NT, Hong Kong
Manufacturer:	Shenzhen shi jin ao kai keji youxian gongsi
Address of Manufacturer:	Room 1447, 1st Floor, Block B, China Electronics Technology Building, Shennan Middle Road, Huaqiang North Street, Futian District, Shenzhen, China

General Description of EUT	
Product Name:	Pen camera
Brand Name:	N/A
Test Model:	A57
Adding Model(s):	W8, W9, W10, W11, W12, W13, W14, W15, B1, B2, B3, B4
Rated Voltage:	Input: DC5V,1A or DC3.7V 200mAh battery
Battery Capacity:	N/A
Power Adapter:	N/A
Software Version:	V1.0
Hardware Version:	V2.0
Note: The test data is gathered from a production sample, provided by the manufacturer. The appearance of others models listed in the report is different from main-test model A57, but the circuit and the electronic construction do not change, declared by the manufacturer.	

Technical index for WIFI				
Supported Type:	☒802.11b	☒802.11g	☒802.11n(HT20)	☒802.11n(HT40)
Modulation:	DSSS for 802.11b OFDM for 802.11g/802.11n(HT20)/802.11n(HT40)			
Operation Frequency:	2412MHz~2472MHz for 802.11b/802.11g/802.11n(HT20) 2422MHz~2462MHz for 802.11n(HT40)			
Channel Number:	13 for 802.11b/802.11g/802.11n(HT20) 9 for 802.11n(HT40)			
Channel Separation:	5MHz			
Modulation:	☐ FHSS		☒ Other forms of modulation	
Type of Equipment:	☒ Stand-alone		☐ Combined Equipment	

	☐ Plug-in radio device ☐ Other
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
Receiver Categories:	☒ Adaptive equipment with a maximum RF output power greater than 10 dBm e.i.r.p. shall be considered as receiver category 1 equipment.
	☐ non-adaptive equipment with a Medium Utilization (MU) factor greater than 1 % and less than or equal to 10 % (irrespective of the maximum RF output power); or equipment (adaptive or non-adaptive) with a maximum RF output power greater than 0 dBm e.i.r.p. and less than or equal to 10 dBm e.i.r.p. shall be considered as receiver category 2 equipment.
	☐ non-adaptive equipment with a maximum Medium Utilization (MU) factor of 1 % (irrespective of the maximum RF output power); or equipment (adaptive or non-adaptive) with a maximum RF output power of 0 dBm e.i.r.p shall be considered as receiver category 3 equipment.
Operating Mode:	☒ Single Antenna Equipment ☒ Equipment with only 1 antenna ☐ Equipment with 2 diversity antennas but only 1 antenna active at any moment in time ☐ Smart Antenna Systems with 2 or more antennas, but operating in a (legacy) mode where only 1antenna is used.
	☐ Smart Antenna Systems - Multiple Antennas without beam forming ☐ Single spatial stream / Standard throughput ☐ High Throughput (> 1 spatial stream) using Occupied Channel Bandwidth 1 ☐ High Throughput (> 1 spatial stream) using Occupied Channel Bandwidth 2
	☐ Smart Antenna Systems - Multiple Antennas with beamforming ☐ Single spatial stream / Standard throughput ☐ High Throughput (> 1 spatial stream) using Occupied Channel Bandwidth 1 ☐ High Throughput (> 1 spatial stream) using Occupied Channel Bandwidth 2

Antenna Type:	☒ Integral Antenna ☒ Temporary RF connector provided ☐ No temporary RF connector provided Antenna Gain : ....2.... dBi Beamforming gain: .....dB
	☐ 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
Information is Provided by the Supplier	
☐ In Case of FHSS Modulation:	☐ In case of non-Adaptive Frequency Hopping equipment: The number of Hopping Frequencies: ……..
	☐ In case of Adaptive Frequency Hopping Equipment: The maximum number of Hopping Frequencies: …….. The minimum number of Hopping Frequencies: ……..
	The Dwell Time: ……..
	The Minimum Channel Occupation Time: ……..
☒ In case of Adaptive Equipment:	The Channel Occupancy Time implemented by the equipment:../.. ms
	☒ The equipment has implemented an LBT based DAA mechanism In case of equipment using modulation different from FHSS: ☐ The equipment is Frame Based equipment ☒ The equipment is Load Based equipment ☐ The equipment can switch dynamically between Frame Based and Load Based equipment The CCA time implemented by the equipment: Refer to section 5.3
	☐ The equipment has implemented an non-LBT based DAA mechanism
	☐ The equipment can operate in more than one adaptive mode
☐In Case of Non-adaptive Equipment	The maximum RF Output Power (e.i.r.p.): ……. dBm The maximum (corresponding) Duty Cycle: ……. %

The worst case operational mode for each of the following tests:	
RF Output Power	Refer to section 3.3
Occupied Channel Bandwidth	Refer to section 6.3
Transmitter Unwanted Emissions in the OOB Domain	Refer to section 7.3
Transmitter Unwanted Emissions in the Spurious Domain	Refer to section 8.3
Receiver Spurious Emissions	Refer to section 9.3
☐ FHSS	
Dwell time:	
Minimum Frequency Occupation:	
Hopping Sequence:	
Hopping Frequency Separation	
☒ Other	
Power Spectral Density:	Refer to section 4.3
☒ Adaptive Equipment	
Adaptivity:	Refer to section 5.3
Receiver Blocking:	Refer to section 10.3
☐ Non-adaptive Equipment	
Duty cycle:	
Tx-Sequence:	
Tx-gap:	
Medium Utilisation:	

1.2 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

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product maybe which result in lowering the emission/immunity should be checked to ensure compliance has been maintained

1.3 Report version

Version No.	Date of issue	Description
Rev.00	2024-10-30	Original
/	/	/

1.4 Test Methodology

All measurements contained in this report were conducted with ETSI EN 300328,
The equipment under test (EUT) was configured to measure its highest possible emission level. For more detail refer to the Operating Instructions.

1.5 Test Facility

ShenZhen Promise Test Technology Co., Ltd.

(Add.): 103, Building 1, Yibaolai Industrial City, Qiaotou Community, Fuhai Street, Baoan District, Shenzhen, Guangdong, China

1.6 EUT Setup and Test Mode

The equipment under test (EUT) was configured to measure its highest possible emission/immunity level. The test modes were adapted according to the operation manual for use, the EUT was operated in the engineering mode to fix the Tx/Rx frequency that was for the purpose of the measurements, more detailed description as follows:

Test Mode	
Description	Test Frequency
802.11b-Transmitting/Receiving	2412MHz(CH01), 2442MHz(CH07), 2472MHz(CH13)
802.11g-Transmitting/Receiving	2412MHz(CH01), 2442MHz(CH07), 2472MHz(CH13)
802.11 n(HT20)-Transmitting/Receiving	2412MHz(CH01), 2442MHz(CH07), 2472MHz(CH13)
802.11 n(HT40)-Transmitting/Receiving	2422MHz(CH03), 2442MHz(CH07), 2462MHz(CH11)

Environmental Conditions	NTNV	LTNV	HTNV
Temperature (°C)	24.2	-10	40
Voltage (V)	DC5V		
Relative Humidity:	50 %.		
ATM Pressure:	1005 mbar		

Auxiliary Devices And Cable List and Details			
●	laptop computer	Manufacturer :	Huawei Technologies Co., Ltd
/		Model No. :	Wdh9
/	/	Manufacturer :	/
/	/	Model No. :	/
/	/	Length (m):	/
/	/	Shielded/Unshielded:	/
● - supplied by the manufacturer ○ - supplied by the lab			

Accessory Equipment	
Remote control	
Manufacturer :	/
Model No. :	/

1.7 Measurement Uncertainty

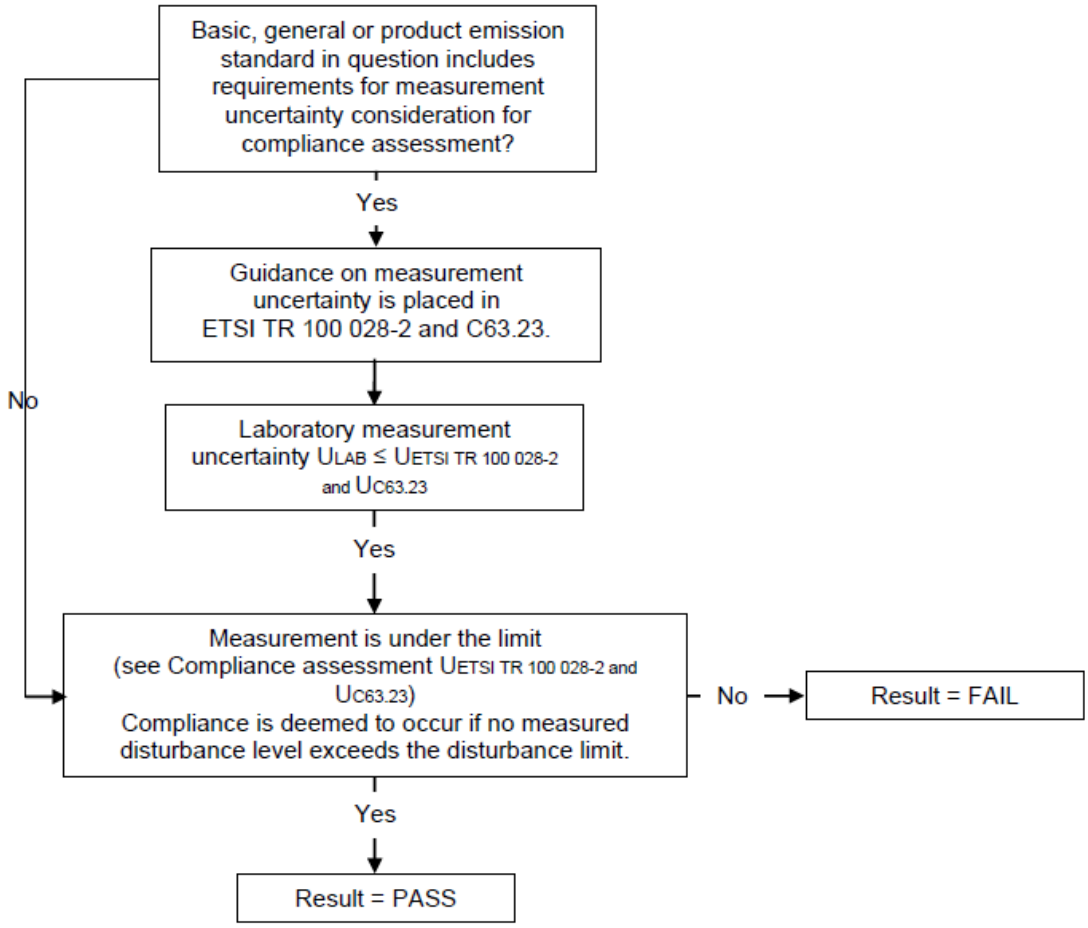
Measurement uncertainty		
Parameter	Uncertainty	Notes
Conducted RF Output Power	±0.852dB	(1)
Occupied Bandwidth	±0.0135MHz	(1)
Conducted Power Spectral Density	±0.57dB	(1)
Radiated Spurious Emissions	25MHz-1000MHz ±1.50dB	(1)
	1000MHz-20000MHz ±2.20dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=1.96.

1.8 Application of decision rule

Application of decision rule and statement of conformity is defined in document CNAS-GL015 Decision rule and measurement uncertainty.
As a general rule Pass/Fail decisions are based on simple acceptance rule and acceptance limits chosen based on simple acceptance (w = 0, AL = TL) except if a decision rule is governed by particular standard or guidance document.

Decision rule:



1.9 Test Equipment List and Details

Description	Manufacturer	Model	Serial Number	Cal Date	Due Date
Spectrum Analyzer	Rohde & Schwarz	FSP	100397	2025-04-02	2026-04-01
Spectrum Analyzer	Agilent	E4407B	MY44210554	2025-04-02	2026-04-01
EMI Test Receiver	Rohde & Schwarz	ESCI 3	100687	2025-04-02	2026-04-01
EMI Test Receiver	Rohde & Schwarz	ESPI7	/	2025-04-02	2026-04-01
Semi Annechoic Chamber	SAEMC	FSAC318	/	2025-04-02	2026-04-01
Horn Antenna	A.H.	AH-118	/	2025-04-02	2026-04-01
Loop Antenna	/	ZN30900A	/	2025-04-02	2026-04-01
Broadband Logarithmic Period Antenna	Schwarzbeck	VULB 9162	/	2025-04-02	2026-04-01
Broadband Preamplifier	Schwarzbeck	BBV9718-182	9718-182	2025-04-02	2026-04-01
Vector Signal Generator	Agilent	N5182A	MY47071034	2025-04-02	2026-04-01
SFU Signal Generator	R&S	SFU	/	2025-04-02	2026-04-01

Software List

Description	Manufacturer	Model	Version
Test Software	Farad	EZ-EMC	RA-03A1

*Remark: indicates software version used in the compliance certification testing

2. SUMMARY OF TEST RESULTS

Standards	Reference	Description of Test Item	Result
EN 300328	4.3.2.2	RF Output Power	Pass
	4.3.2.3	Power Spectral Density	Pass
	4.3.2.4	Duty Cycle, Tx-sequence, Tx-gap	N/A
	4.3.2.5	Medium Utilisation (MU) Factor	N/A
	4.3.2.6	Adaptivity(adaptive equipment using modulations other than FHSS)	Pass
	4.3.2.7	Occupied Channel Bandwidth	Pass
	4.3.2.8	Transmitter Unwanted Emissions in the Out-of-band Domain	Pass
	4.3.2.9	Transmitter Unwanted Emissions in the Spurious Domain	Pass
	4.3.2.10	Receiver Spurious Emissions	Pass
	4.3.2.11	Receiver Blocking	Pass
	4.3.2.12	Geo-location capability	N/A
Pass: The EUT complies with the essential requirements in the standard Fail: The EUT does not comply with the essential requirements in the standard N/A: not applicable			

3. RF Output Power

3.1 Limit

According to ETSI EN 300 328 Section 4.3.2.2.3, The RF output power for non-FHSS equipment shall be equal to or less than 20 dBm. For non-adaptive non-FHSS equipment, where the manufacturer has declared an RF output power of less than 20 dBm e.i.r.p., the RF output power shall be equal to or less than that declared value.

3.2 Test Procedure

1. The test conditions.

   ☒Normal condition ☒Extreme conditions

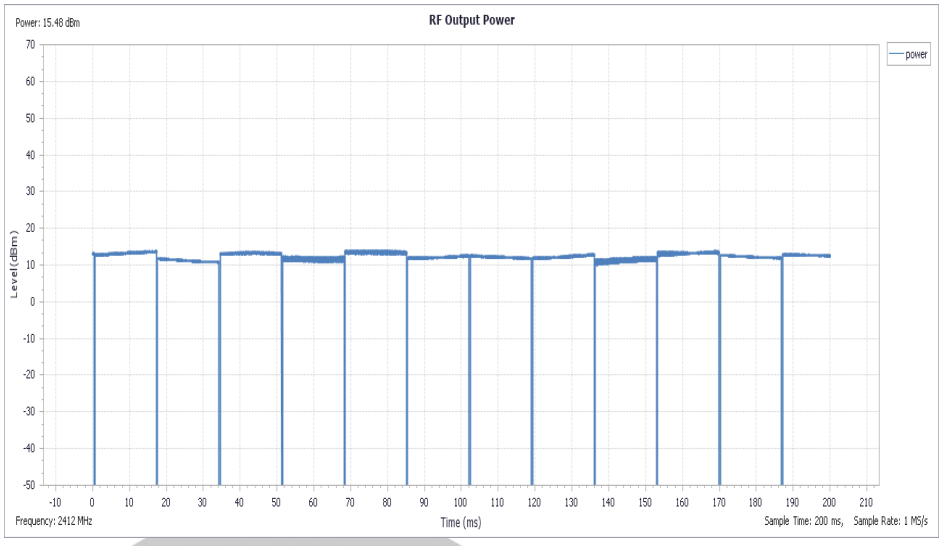
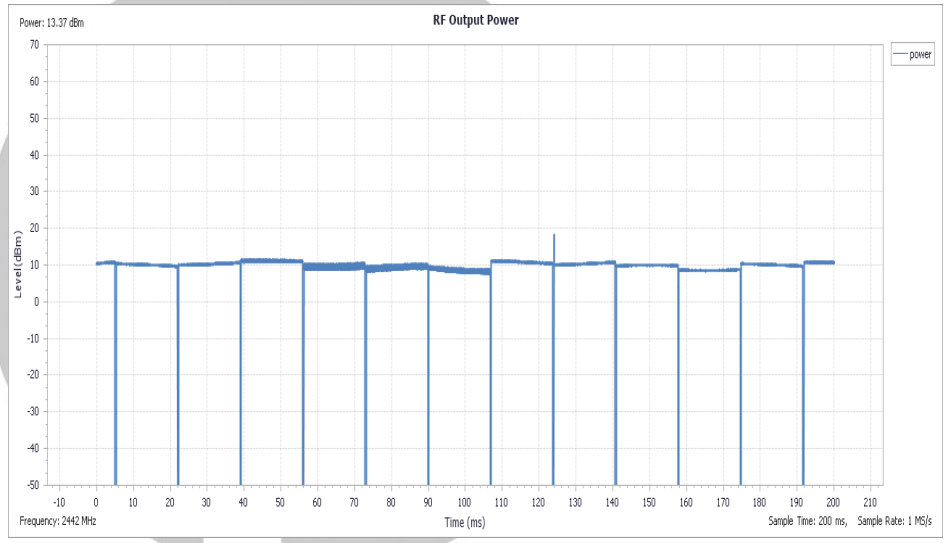
2. Please refer to ETSI EN 300 328 Sub-clause 5.4.2.2.1 for the measurement method.

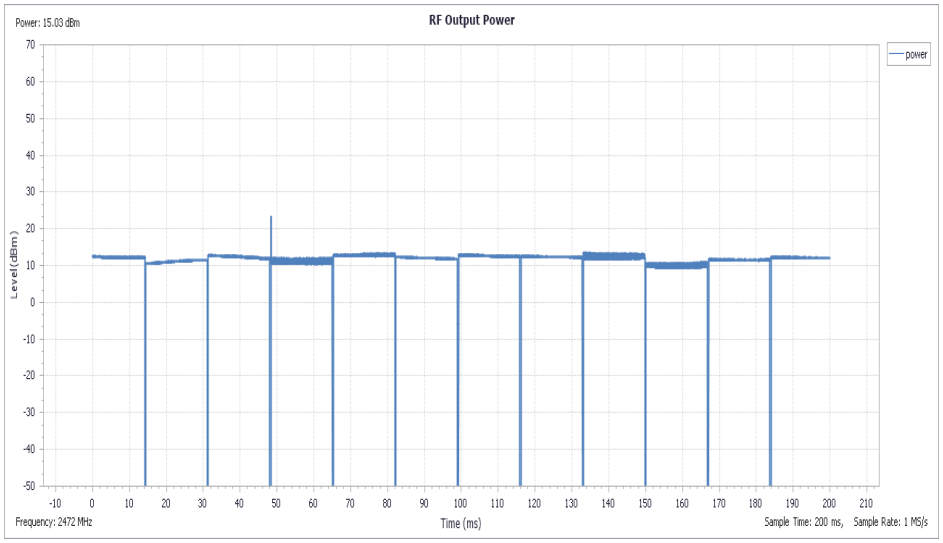
3.3 Summary of Test Results

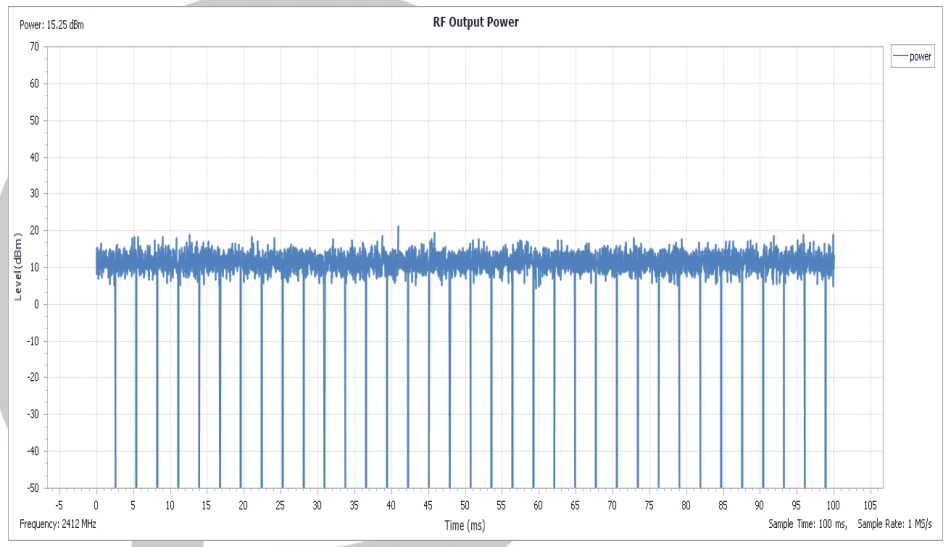
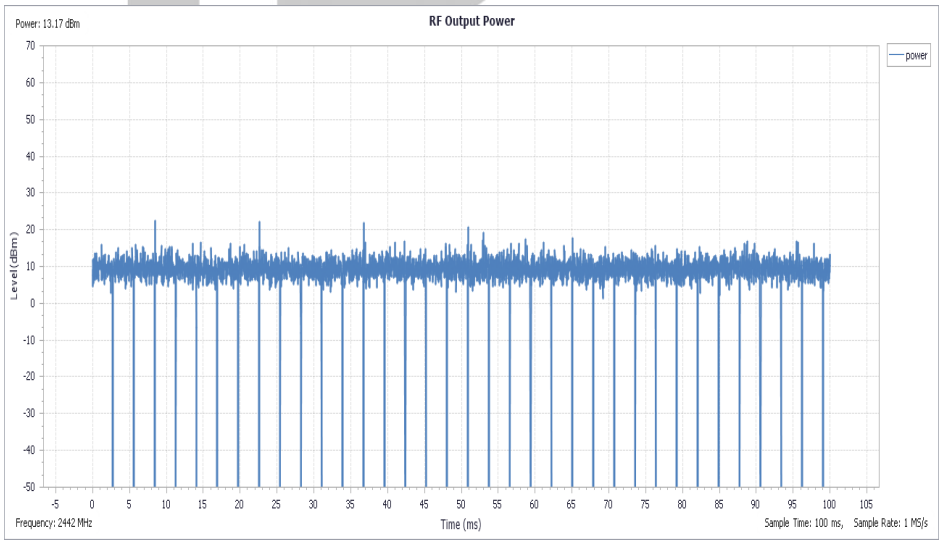
☒ Passed ☐ Not Applicable

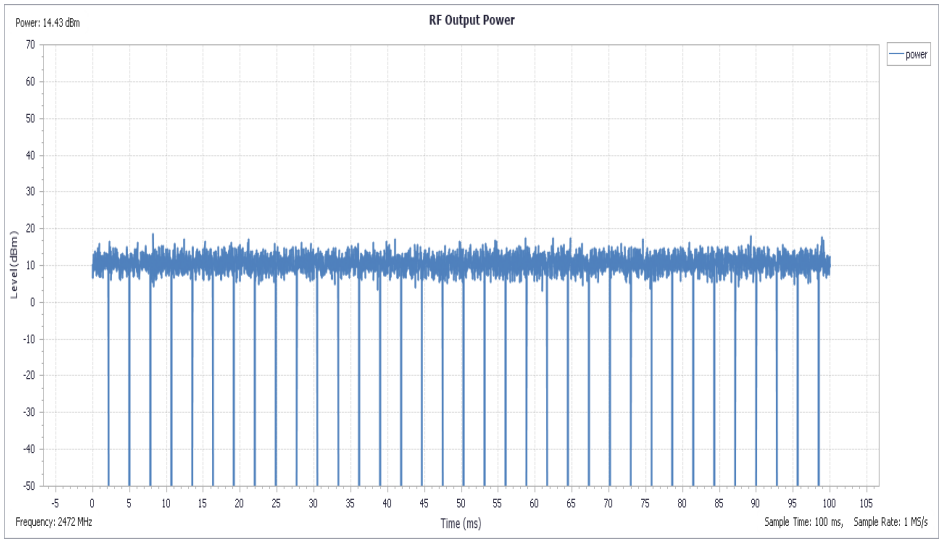
Test conditions	Channel	EIRP (dBm)				Limit (dBm)
		802.11b	802.11g	802.11n (HT20)	802.11n (HT40)	
NTNV	1/3	15.48	15.25	15.17	13.23	20
NTNV	7	13.37	13.17	13.02	11.78	20
NTNV	13/11	15.03	14.43	14.38	12.68	20
LTNV	1/3	14.72	14.80	14.69	12.42	20
LTNV	7	12.94	12.33	12.61	11.61	20
LTNV	13/11	14.67	13.97	14.26	11.94	20
HTNV	1/3	15.39	15.03	14.44	12.63	20
HTNV	7	12.40	12.62	13.01	11.08	20
HTNV	13/11	14.10	13.70	13.86	12.30	20
Note: Measured Power(EIRP) include the cable loss and antenna gain.						

Test plot as follows:

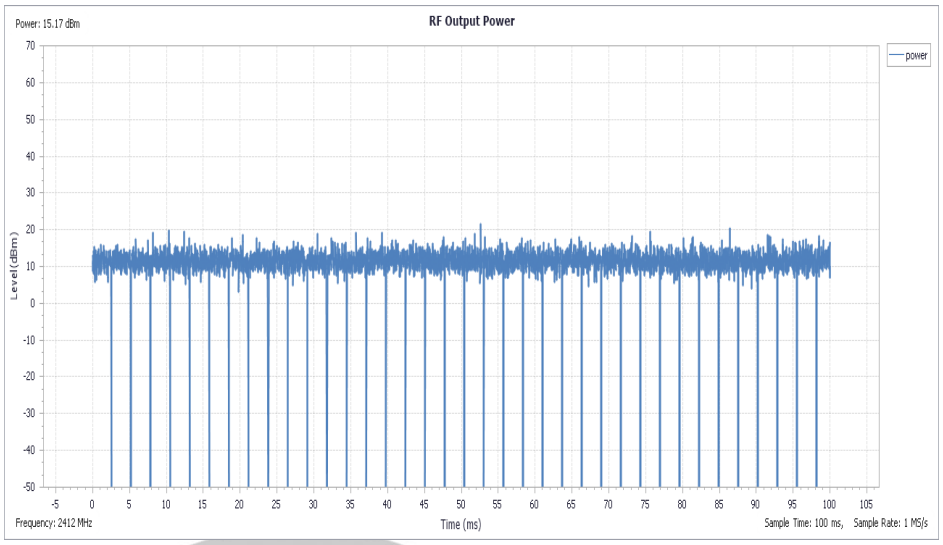
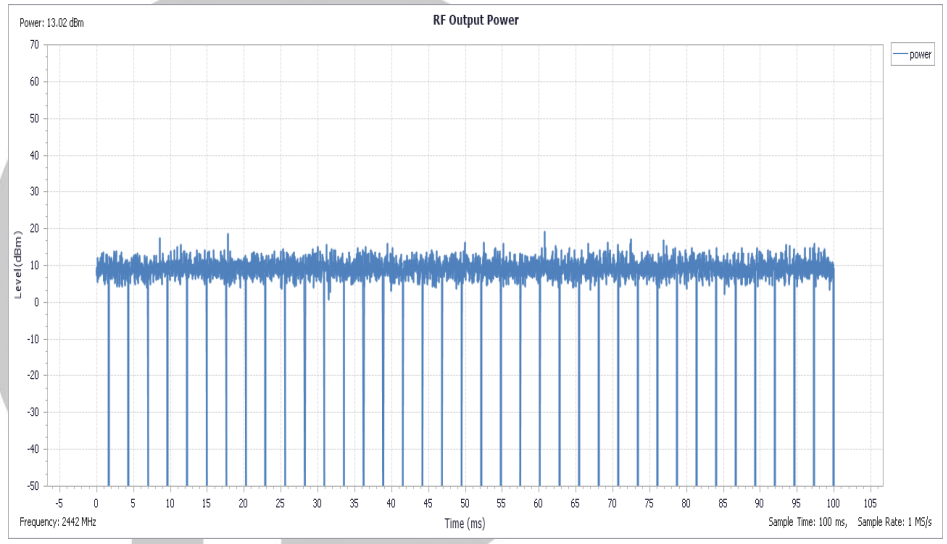
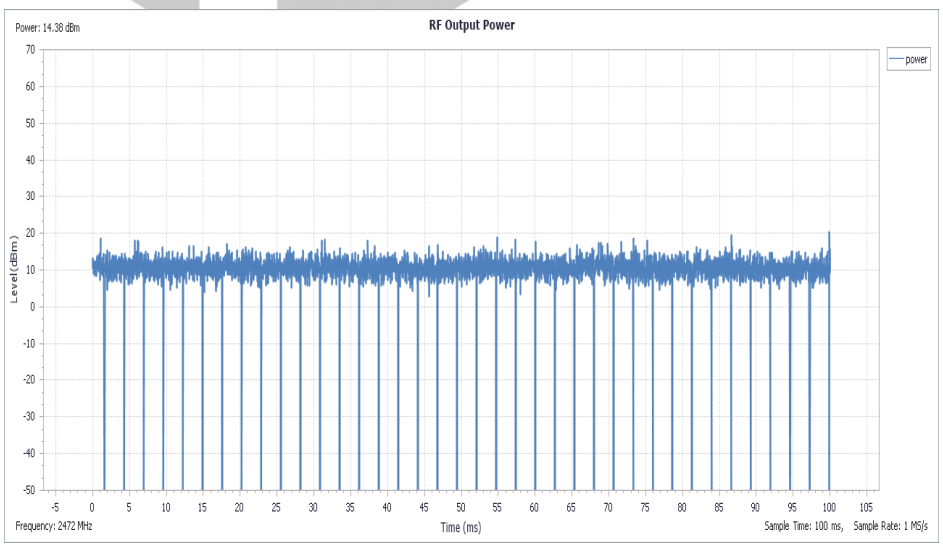
802.11b	
CH01:	
CH07:	

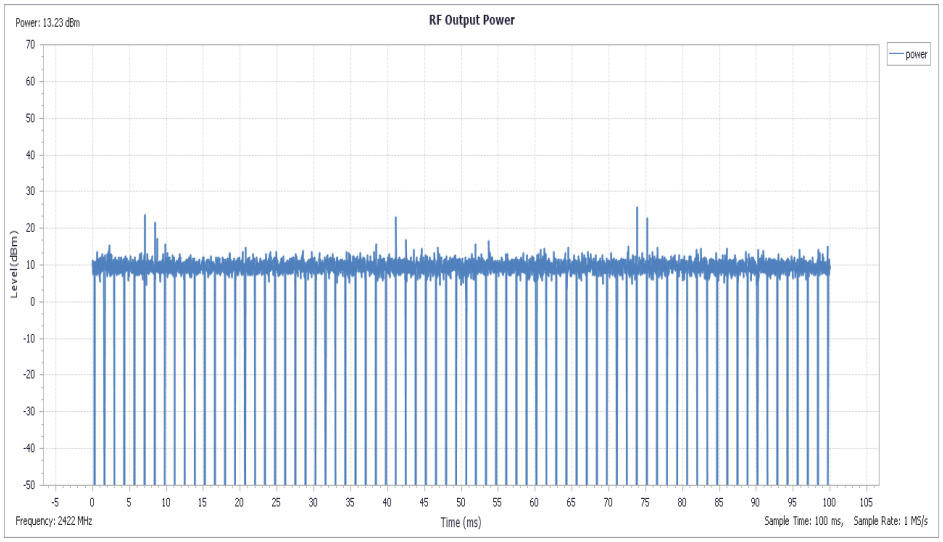
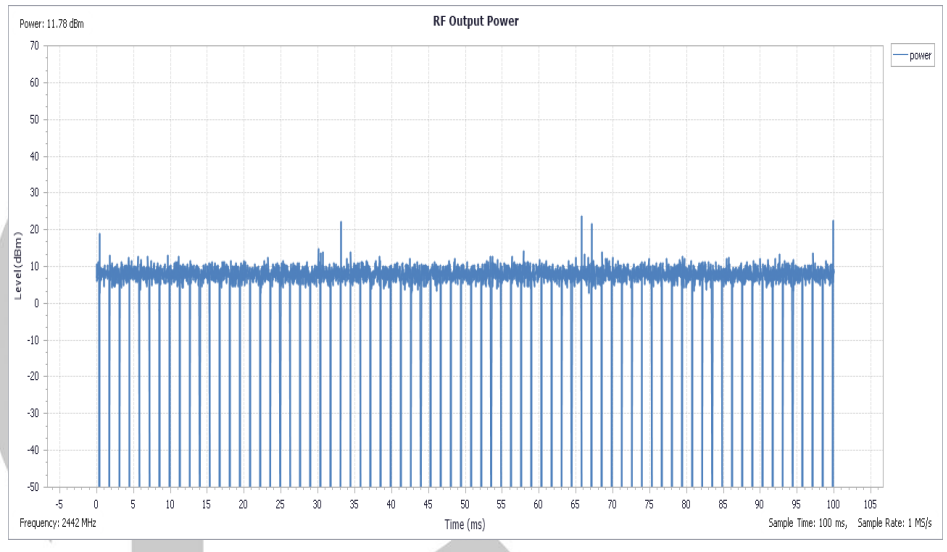
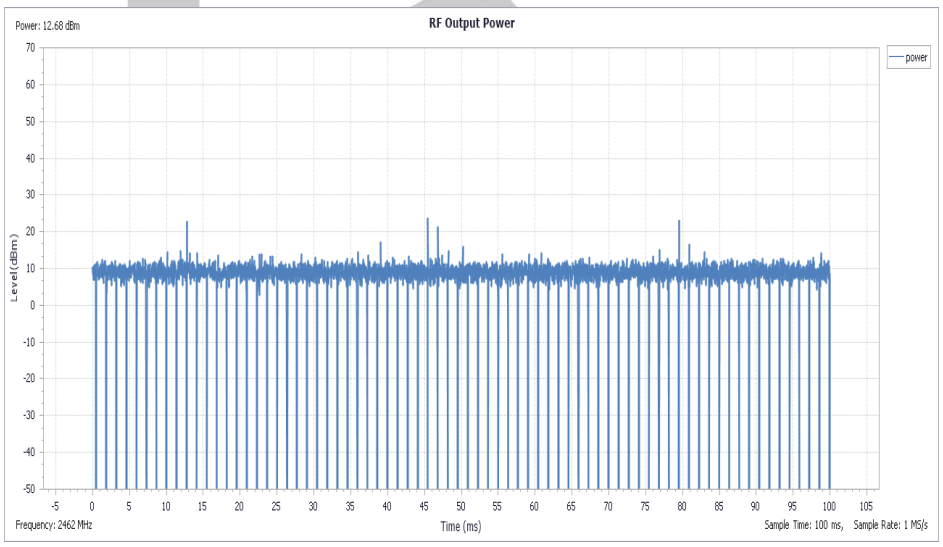
CH13:	

802.11g	
CH01:	
CH07:	

CH13:	

Power: 14.43 dBm
RF Output Power
power
Level(dBm)
Time (ms)
Frequency: 2472 MHz
Sample Time: 100 ms, Sample Rate: 1 MS/s

802.11n(HT20)	
CH01:	
CH07:	
CH13:	

802.11n(HT40)	
CH03:	
CH07:	
CH11:	

4. Power Spectral Density

4.1 Limit

According to ETSI EN 300 328 Section 4.3.2.3.3, The maximum Power Spectral Density for non-FHSS equipment is 10 dBm per MHz.

4.2 Test Procedure

1. The test conditions.

   ☒Normal condition ☐Extreme conditions

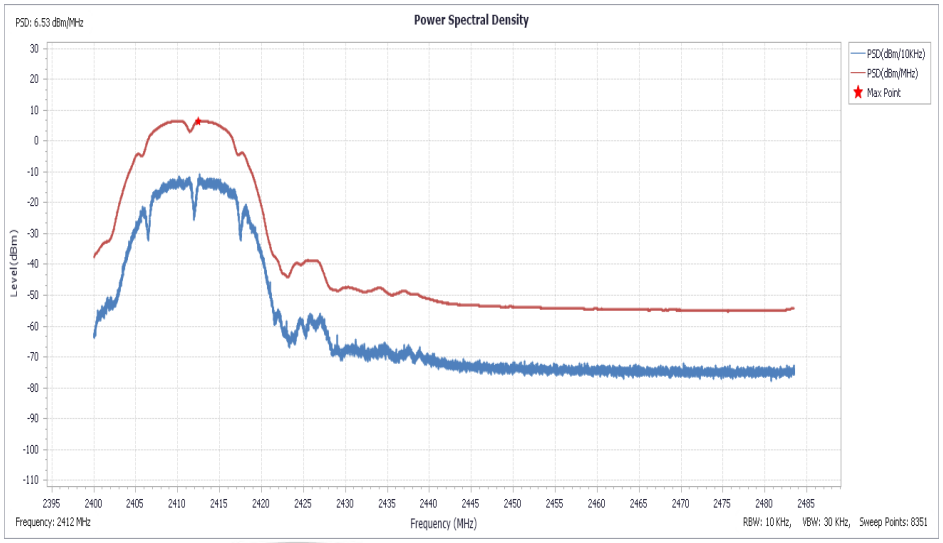
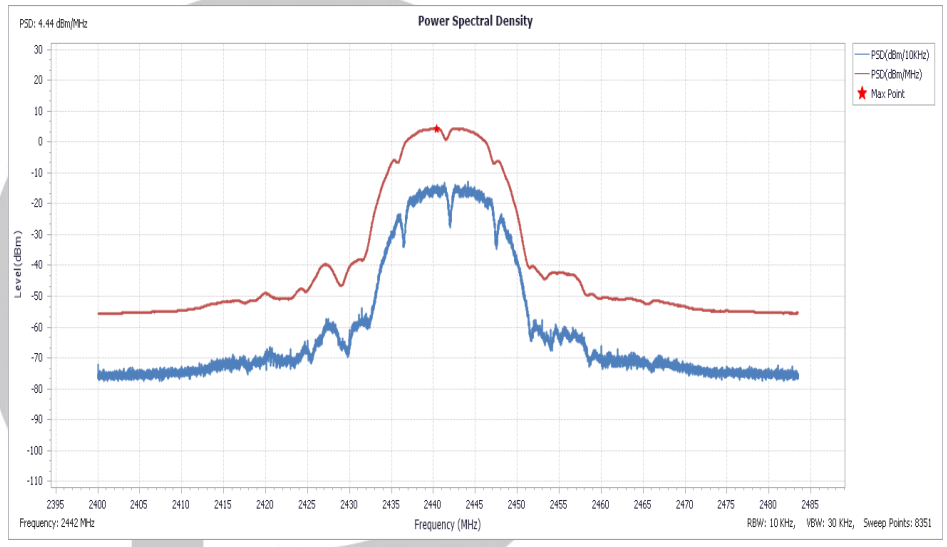
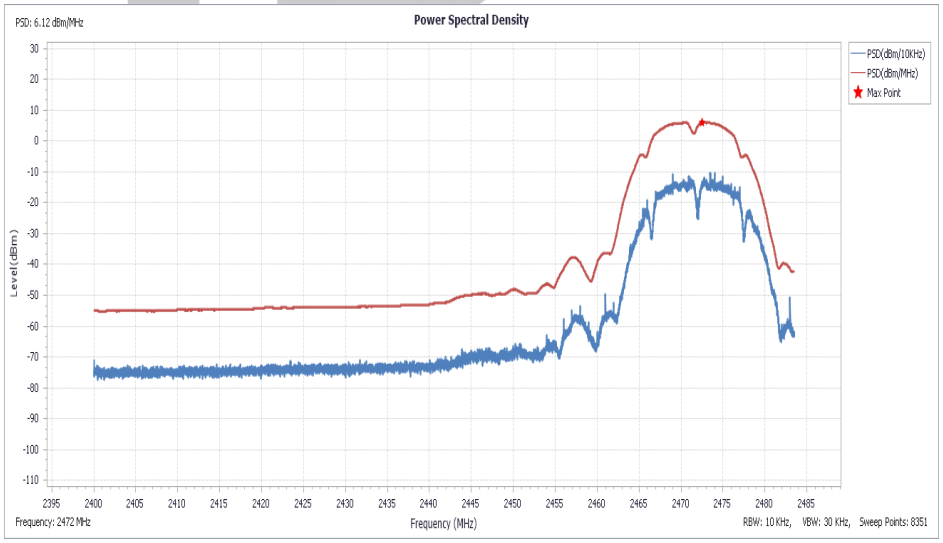
2. Please refer to ETSI EN 300 328 Sub-clause 5.4.3.2.1 for the measurement method.

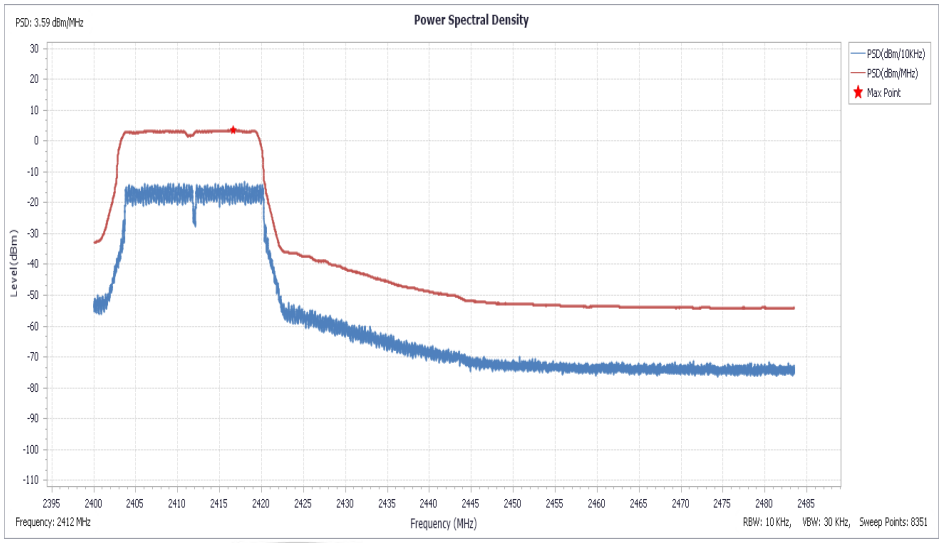
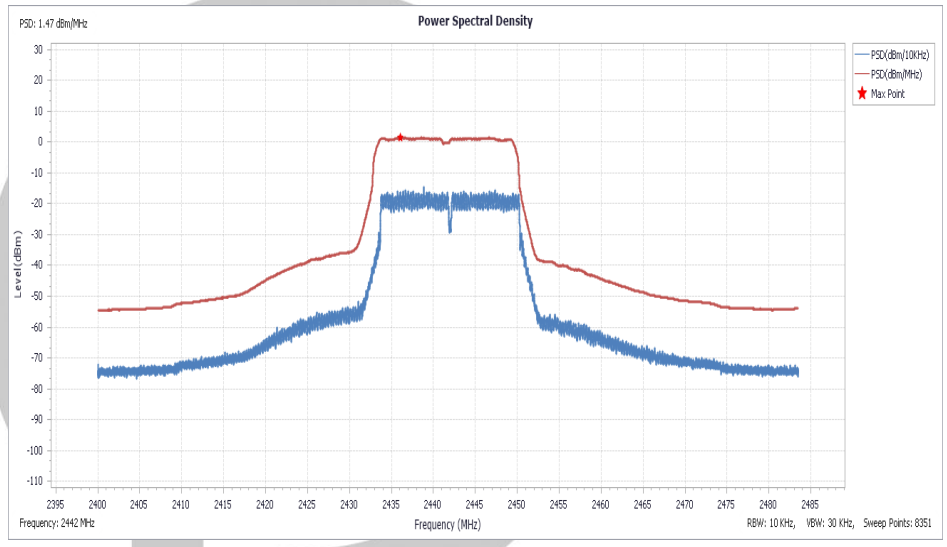
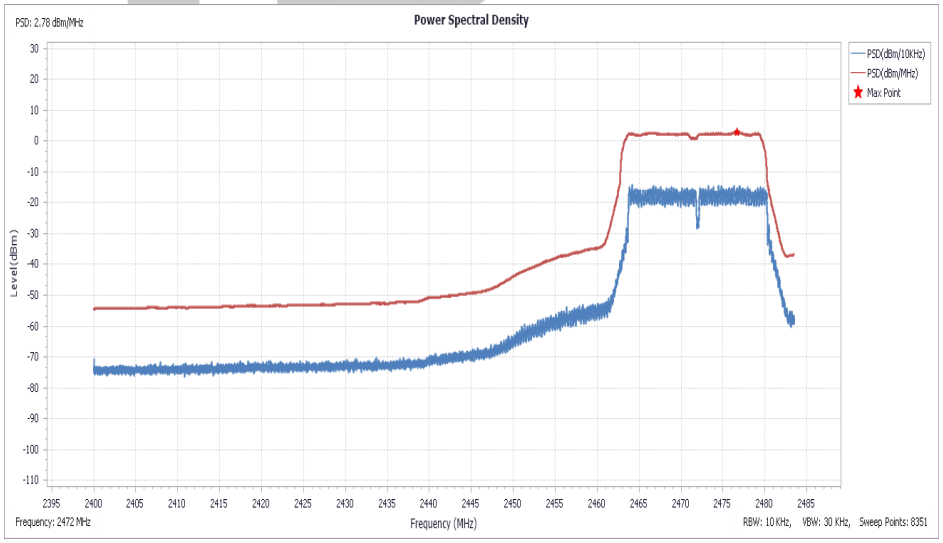
4.3 Summary of Test Results

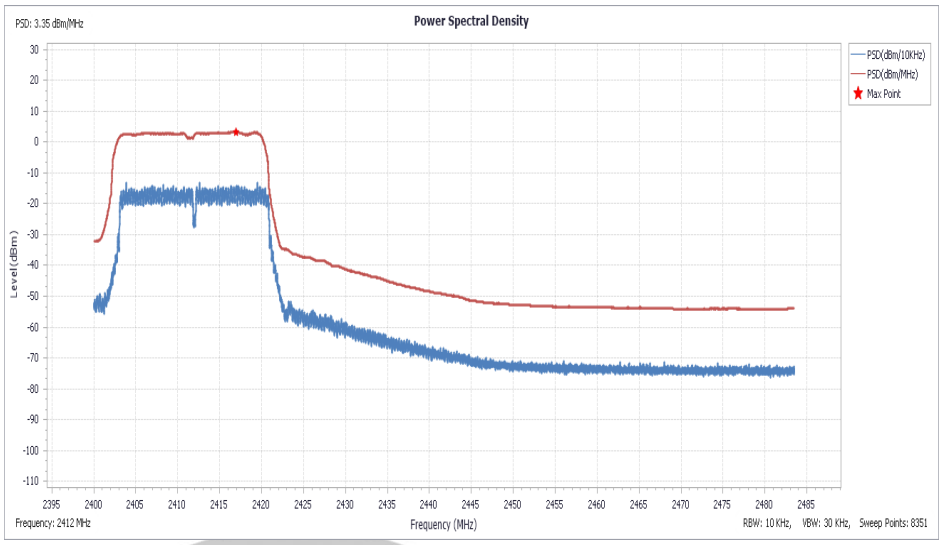
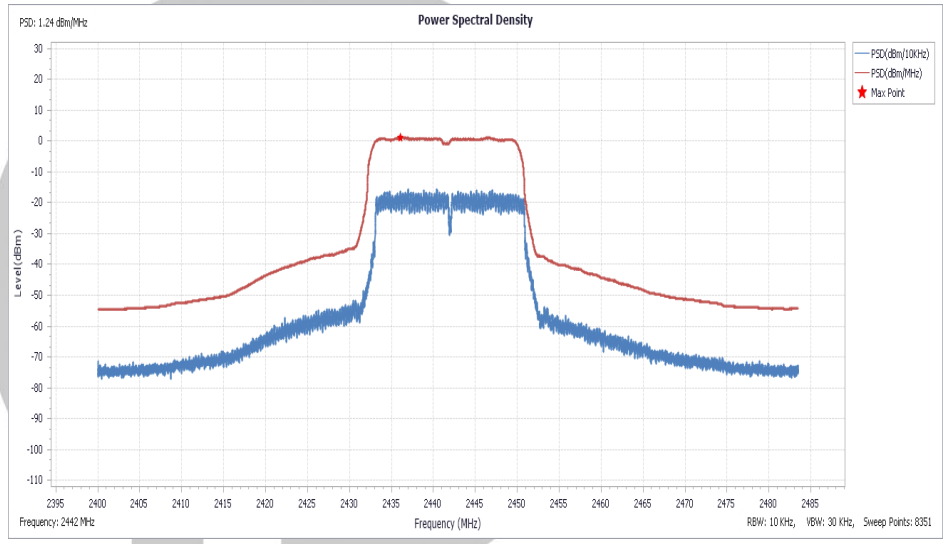
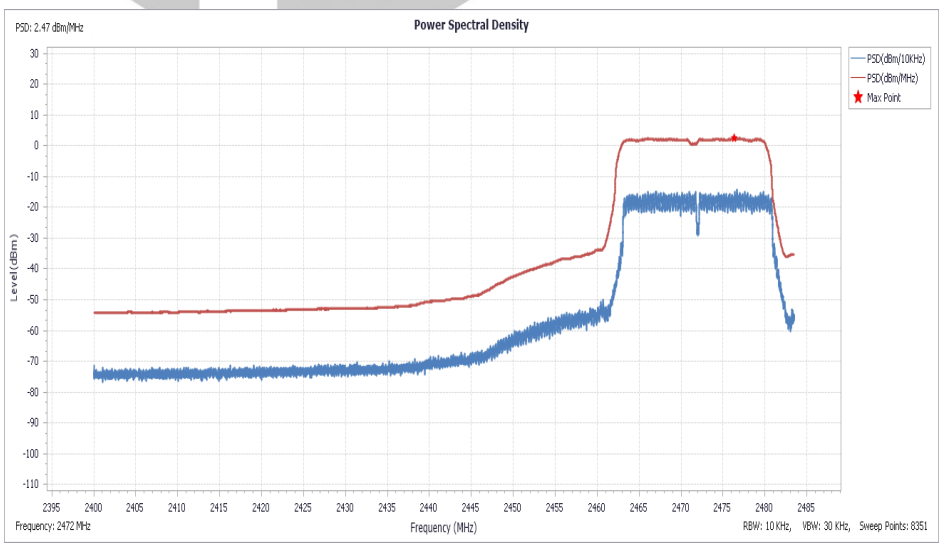
☒ Passed ☐ Not Applicable

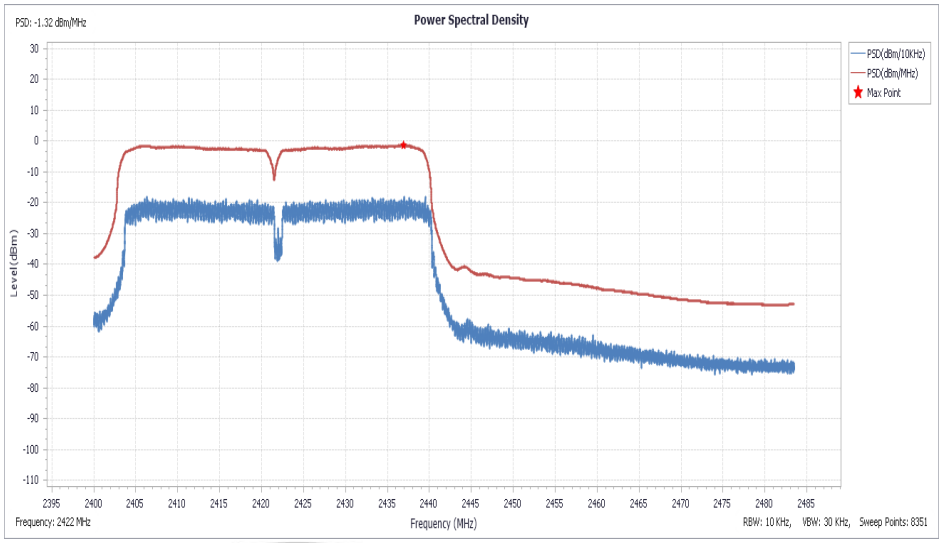
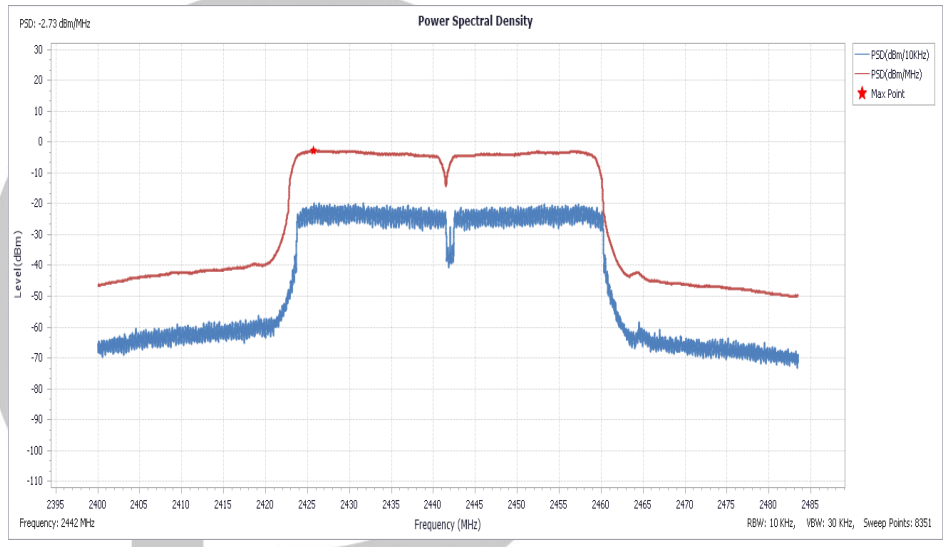
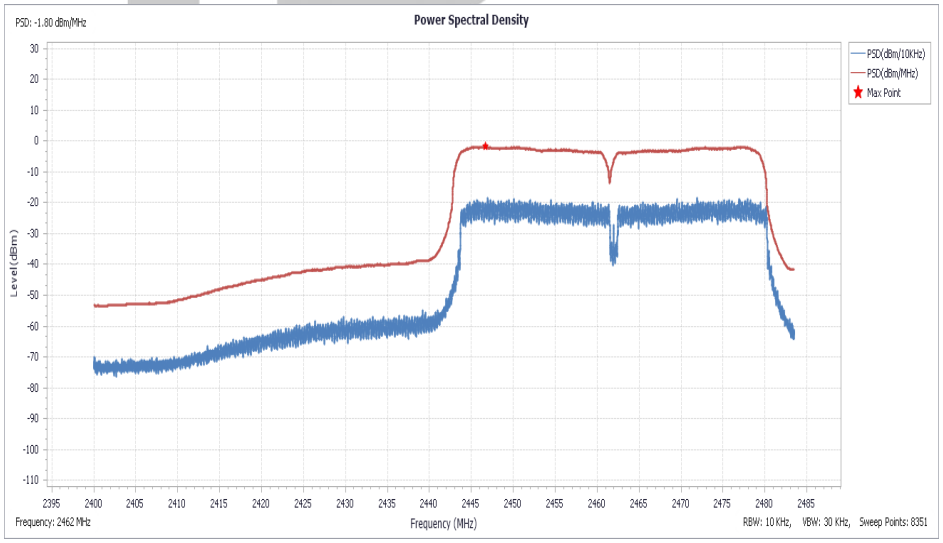
Test Mode	Test Frequency	Spectral Density	Limit
	MHz	dBm/MHz	dBm/MHz
802.11b	2412	6.53	10
	2442	4.44	10
	2472	6.12	10
802.11g	2412	3.59	10
	2442	1.47	10
	2472	2.78	10
802.11n (HT20)	2412	3.35	10
	2442	1.24	10
	2472	2.47	10
802.11n (HT40)	2422	-1.32	10
	2442	-2.73	10
	2462	-1.80	10
Note: Measured Power Spectral Density include the cable loss and antenna gain.			

Test plot as follows:

802.11b	
CH01:	
CH07:	
CH13:	

802.11g	
CH01:	
CH07:	
CH13:	

802.11n(HT20)	
CH01:	
CH07:	
CH13:	

802.11n(HT40)	
CH03:	
CH07:	
CH11:	

5. Adaptivity

5.1 Limit

According to ETSI EN 300 328 section 4.3.2.6

Adaptive non-FHSS using DAA

Adaptive non-FHSS equipment using DAA shall comply with the following minimum set of requirements:

1) During normal operation, the equipment shall evaluate the presence of a signal on its current operating channel(s). If it is determined that a signal is present with a level above the detection threshold defined in step 5 that channel shall be marked as 'unavailable'.

2) The channel(s) shall remain unavailable for a minimum time equal to 1 s after which the channel may be considered again as an 'available' channel.

3) The total time during which an equipment has transmissions on a given channel without re-evaluating the availability of that channel, is defined as the Channel Occupancy Time. The Channel Occupancy Time shall be less than 40 ms. Each such transmission sequence shall be followed by an Idle Period (no transmissions) of minimum 5 % of the Channel Occupancy Time with a minimum of 100 µs. After this, the procedure as in step 1 needs to be repeated.

4) The detection threshold shall be proportional to the transmit power of the transmitter: for a 20 dBm e.i.r.p. transmitter the detection threshold level (TL) shall be equal to or less than -70 dBm/MHz at the input to the receiver assuming a 0 dBi (receive) antenna assembly. This threshold level (TL) may be corrected for the (receive) antenna assembly gain (G); however, beamforming gain (Y) shall not be taken into account. For power levels less than 20 dBm e.i.r.p., the detection threshold level may be relaxed to: TL = -70 dBm/MHz + 10 × log10 (100 mW / P_{out}) (P_{out} in mW e.i.r.p.)

5) The equipment shall comply with the requirements defined in step 1 to step 4 of the present clause in the presence of an unwanted CW signal as defined in table 9.

Table 9: Unwanted Signal parameters

Wanted signal mean power from companion device (dBm)	Unwanted signal frequency (MHz)	Unwanted CW signal power (dBm)
-30 (see note 2)	2 395 or 2 488,5 (see note 1)	-35 (see note 2)
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: 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 in front of the UUT antenna.		

Adaptive non-FHSS using LBT

Frame Based Equipment shall comply with the following requirements:

1) Before transmission, the equipment shall perform a Clear Channel Assessment (CCA) check using energy detect. The equipment shall observe the operating channel for the duration of the CCA observation time which shall be not less than 18 µs. The channel shall be considered occupied if the

energy level in the channel exceeds the threshold given in step 5 below. If the equipment finds the channel to be clear, it may transmit immediately. See figure 2.

2) If the equipment finds the channel occupied, it shall not transmit on this channel during the next Frame Period. The equipment is allowed to switch to a non-adaptive mode and to continue transmissions on this channel providing it complies with the requirements applicable to non-adaptive equipment. See clause 4.3.2.6.1. Alternatively, the equipment is also allowed to continue Short Control Signalling Transmissions on this channel providing it complies with the requirements given in clause 4.3.2.6.4.

3) The total time during which an equipment has transmissions on a given channel without re-evaluating the availability of that channel, is defined as the Channel Occupancy Time. The Channel Occupancy Time shall be in the range 1 ms to 10 ms followed by an Idle Period of at least 5 % of the Channel Occupancy Time used in the equipment for the current Frame Period. See figure 2.

4) An equipment, upon correct reception of a transmission which was intended for this equipment can skip CCA and immediately (see also next paragraph) proceed with the transmission of management and control frames. A consecutive sequence of such transmissions by the equipment without a new CCA shall not exceed the maximum Channel Occupancy Time. For the purpose of multi-cast, the ACK transmissions (associated with the same data packet) of the individual devices are allowed to take place in a sequence.

5) The energy detection threshold for the CCA shall be proportional to the transmit power of the transmitter: for a 20 dBm e.i.r.p. transmitter the CCA threshold level (TL) shall be equal to or less than -70 dBm/MHz at the input to the receiver assuming a 0 dBi (receive) antenna assembly. This threshold level (TL) may be corrected for the (receive) antenna assembly gain (G); however, beamforming gain (Y) shall not be taken into account. For power levels less than 20 dBm e.i.r.p. the CCA threshold level may be relaxed to: TL = -70 dBm/MHz + 10 × log10 (100 mW / P_{out}) (P_{out} in mW e.i.r.p.)

6) The equipment shall comply with the requirements defined in step 1 to step 4 in the present clause in the presence of an unwanted CW signal as defined in table 10.

Table 10: Unwanted Signal parameters

Wanted signal mean power from companion device	Unwanted signal frequency (MHz)	Unwanted signal power (dBm)
sufficient to maintain the link (see note 2)	2 395 or 2 488,5 (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 conducted value which can be used in most cases is -50 dBm/MHz.		
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 in front of the UUT antenna.		

An example of the timing for Frame Based Equipment is provided in figure 2.

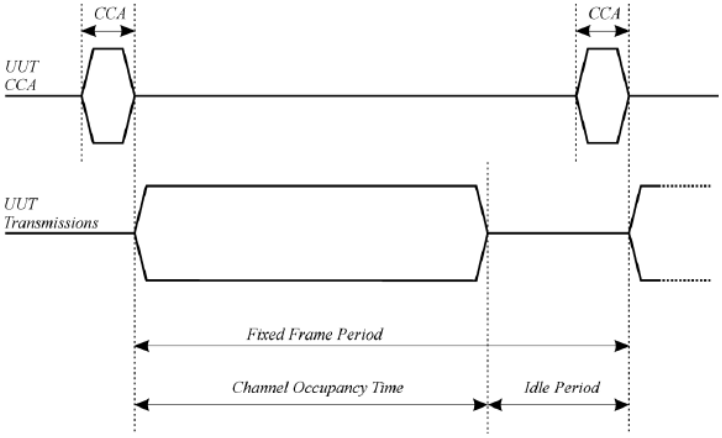


Figure 2: Example of timing for Frame Based Equipment

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 802.11™ [i.3], clause 10 clause 11, clause 15, clause 16, clause 18 and clause 19, or in IEEE 802.15.4™ [i.4], clause 5, clause 6 and clause 10 providing the equipment complies with the conformance requirements referred to in clause 4.3.2.6.3.4. Load Based Equipment not using any of the mechanisms referenced above shall comply with the following minimum set of requirements:

1) Before a transmission or a burst of transmissions, the equipment shall perform a Clear Channel Assessment (CCA) check using energy detect. The equipment shall observe the operating channel for the duration of the CCA observation time which shall be not less than 18 µs. The channel shall be considered occupied if the energy level in the channel exceeds the threshold given in step 5 below. If the equipment finds the channel to be clear, it may transmit immediately.

2) If the equipment finds the channel occupied, it shall not transmit on this channel (see also the next paragraph). The equipment shall perform an Extended CCA check in which the channel is observed for a random duration in the range between 18 µs and at least 160 µs. If the extended CCA check has determined the channel to be no longer occupied, the equipment may resume transmissions on this channel. If the Extended CCA time has determined the channel still to be occupied, it shall perform new Extended CCA checks until the channel is no longer occupied.

NOTE: The Idle Period in between transmissions is considered to be the CCA or the Extended CCA check as there are no transmissions during this period.

The equipment is allowed to switch to a non-adaptive mode and to continue transmissions on this channel providing it complies with the requirements applicable to non-adaptive equipment. Alternatively, the equipment is also allowed to continue Short Control Signalling Transmissions on this channel providing it complies with the requirements given in clause 4.3.2.6.4.

3) The total time that an equipment makes use of a RF channel is defined as the Channel Occupancy Time. This Channel Occupancy Time shall be less than 13 ms, after which the device shall perform a new CCA as described in step 1 above.

4) The equipment, upon correct reception of a transmission which was intended for this equipment can skip CCA and immediately (see also next paragraph) proceed with the transmission of management and control frames. A consecutive sequence of transmissions by the equipment without a new CCA shall not exceed the maximum channel occupancy time as defined in step 3 above.

For the purpose of multi-cast, the ACK transmissions (associated with the same data packet) of the

individual devices are allowed to take place in a sequence.

5) The energy detection threshold for the CCA shall be proportional to the transmit power of the transmitter: for a 20 dBm e.i.r.p. transmitter the CCA threshold level (TL) shall be equal to or less than -70 dBm/MHz at the input to the receiver assuming a 0 dBi (receive) antenna assembly. This threshold level (TL) may be corrected for the (receive) antenna assembly gain (G); however, beamforming gain (Y) shall not be taken into account. For power levels less than 20 dBm e.i.r.p., the CCA threshold level may be relaxed to: TL = -70 dBm/MHz + 10 × log10 (100 mW / P_{out}) (P_{out} in mW e.i.r.p.)

6) The equipment shall comply with the requirements defined in step 1 to step 4 of the present clause in the presence of an unwanted CW signal as defined in table 11.

Table 11: Unwanted Signal parameters

Wanted signal mean power from companion device	Unwanted signal frequency (MHz)	Unwanted signal power (dBm)
sufficient to maintain the link (see note 2)	2 395 or 2 488,5 (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 conducted value which can be used in most cases is -50 dBm/MHz.		
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.		

Short Control Signalling Transmissions

If implemented, Short Control Signalling Transmissions of adaptive non-FHSS equipment shall have a maximum TxOn / (TxOn + TxOff) ratio of 10 % within any observation period of 50 ms.

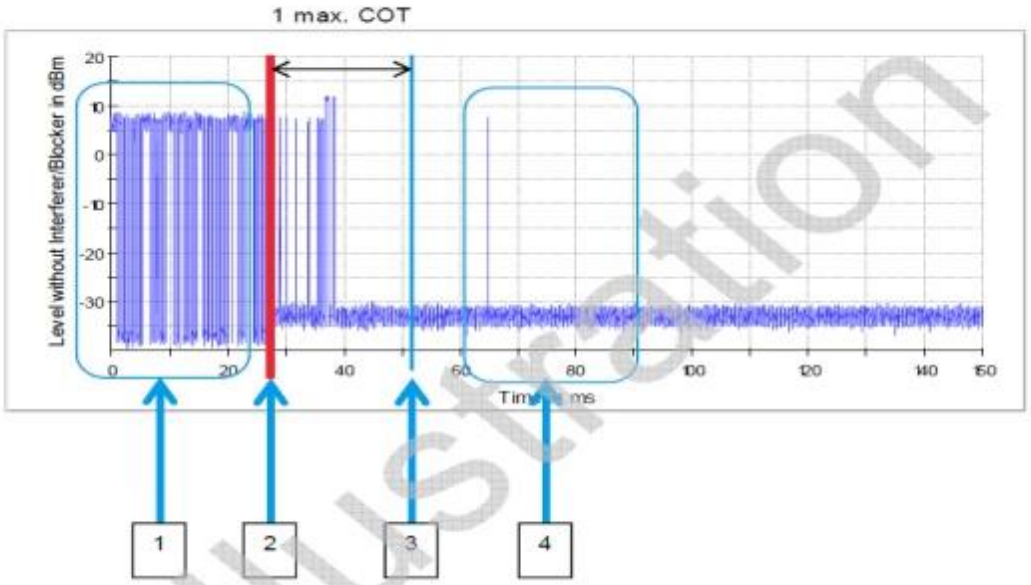
5.2 Test procedure

1.The test conditions.

☒ Normal condition ☐Extreme conditions

2.Please refer to ETSI EN 300 328 Sub-clause 5.4.6.2.1 for the measurement method.

Adaptivity Test schematic graphic:



1. Reference measurement (interferer off / Blocker off trace)
2. Interferer switched on (rise of the noise floor)
3. Arming of the video trigger one max. COT after interferer is switched on
4. Monitoring measurement triggered by the short signaling (interferer on / Blocker off trace or interferer on / Blocker on trace)

5.3 Summary of Test Results/Plots

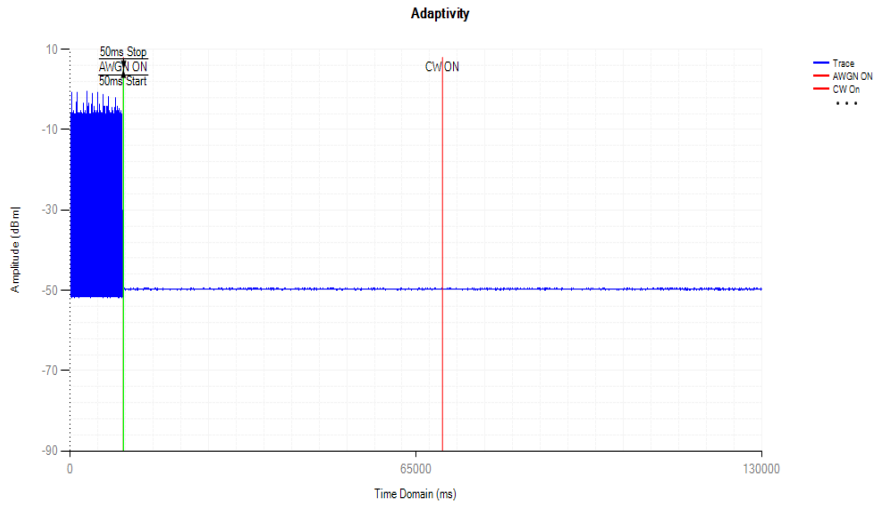
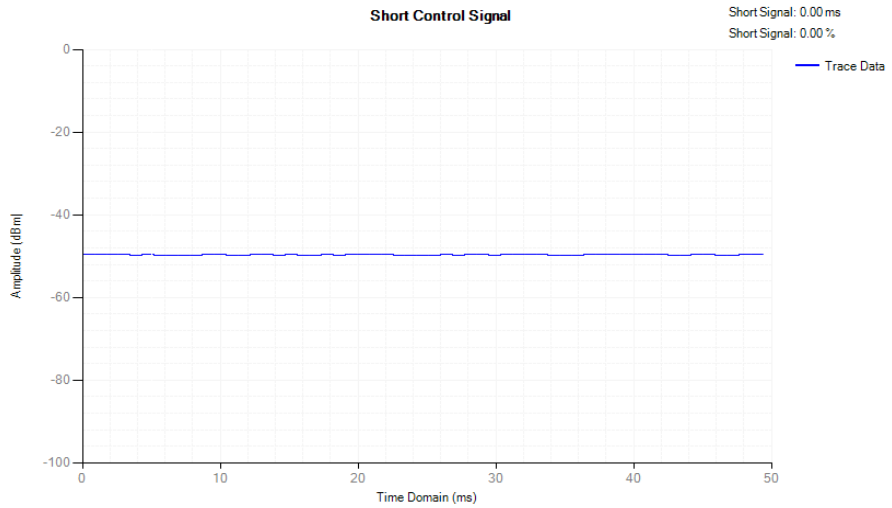
☒ Passed ☐ Not Applicable

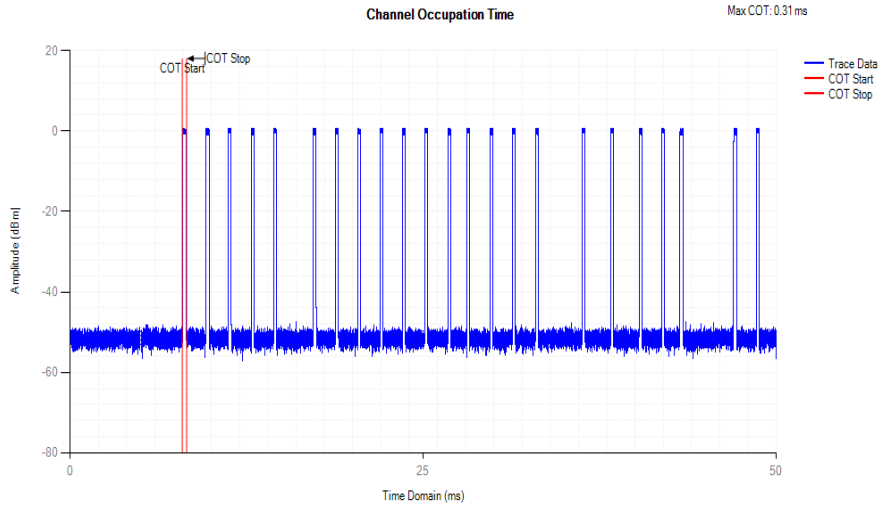
Note: We have tested all modes and rate, only recorded the worst data (802.11b) in the report.

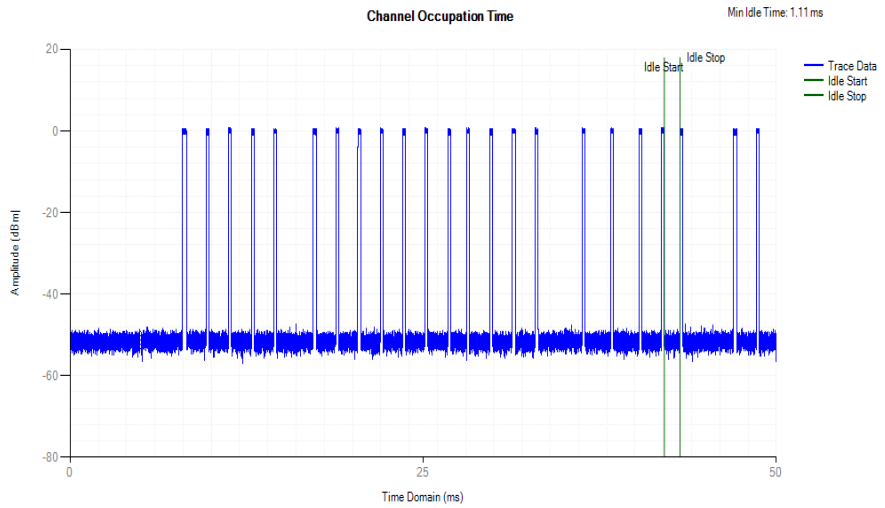
Type	Frequency (MHz)	COT (ms)	Limit (ms)	CCA Time (μs)	Limit (μs)	Result
802.11b	2412	0.307	<=13.00	1112	>18.00	Pass
	2472	0.418		1130		

Type	Frequency (MHz)	AWGN Level (dBm)	CW Level (dBm)	Short Control Width (ms)	Short Control Ratio(%)	Limit (%)	Result
802.11b	2412	-65.48	-35	0	0	<=10	Pass
	2472	-65.03	-35	0	0		

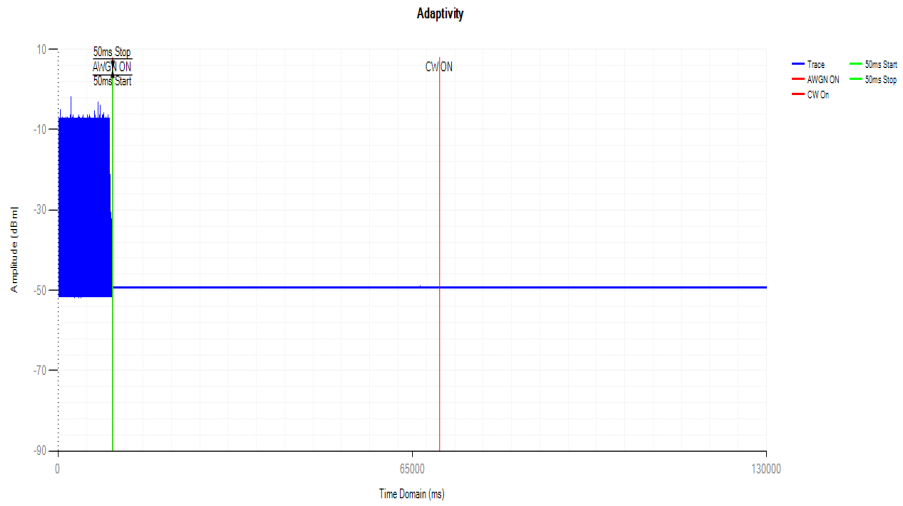
Test plot as follows:

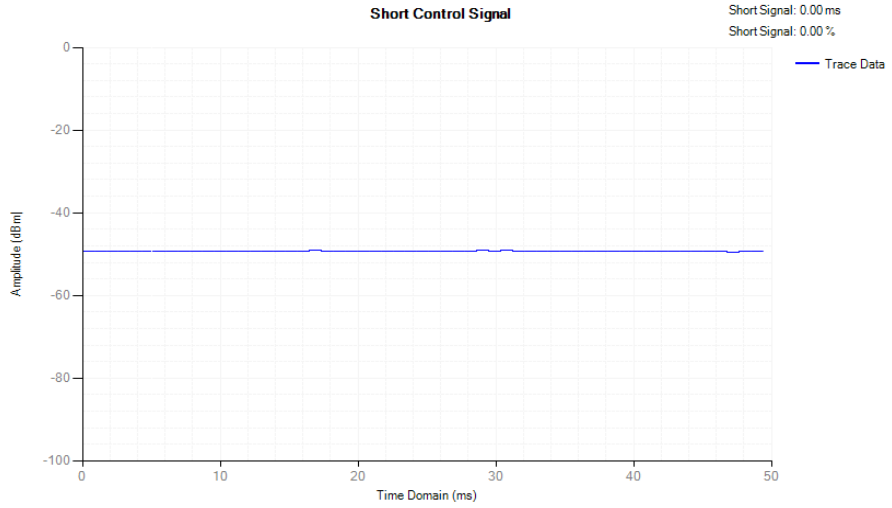
802.11b-2412MHz



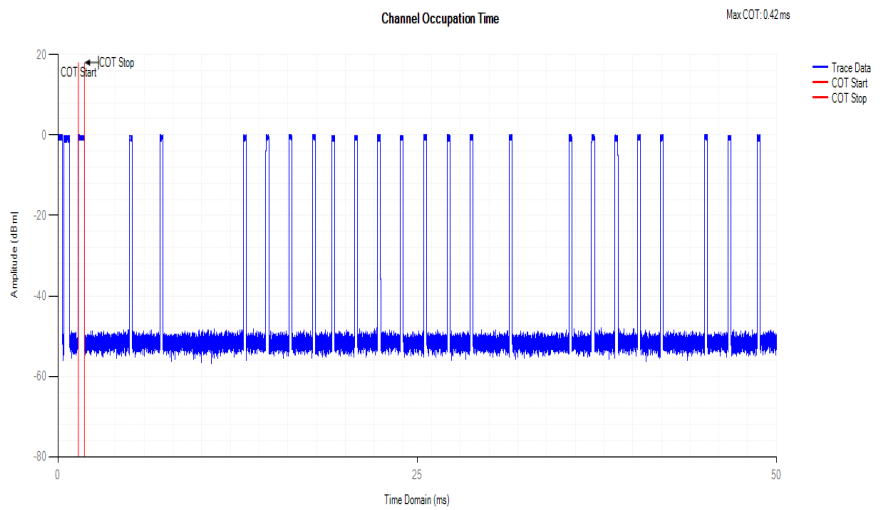

Channel Occupation Time
Max COT: 0.31 ms
COT Start
COT Stop
Trace Data
COT Start
COT Stop
Amplitude (dBm)
Time Domain (ms)

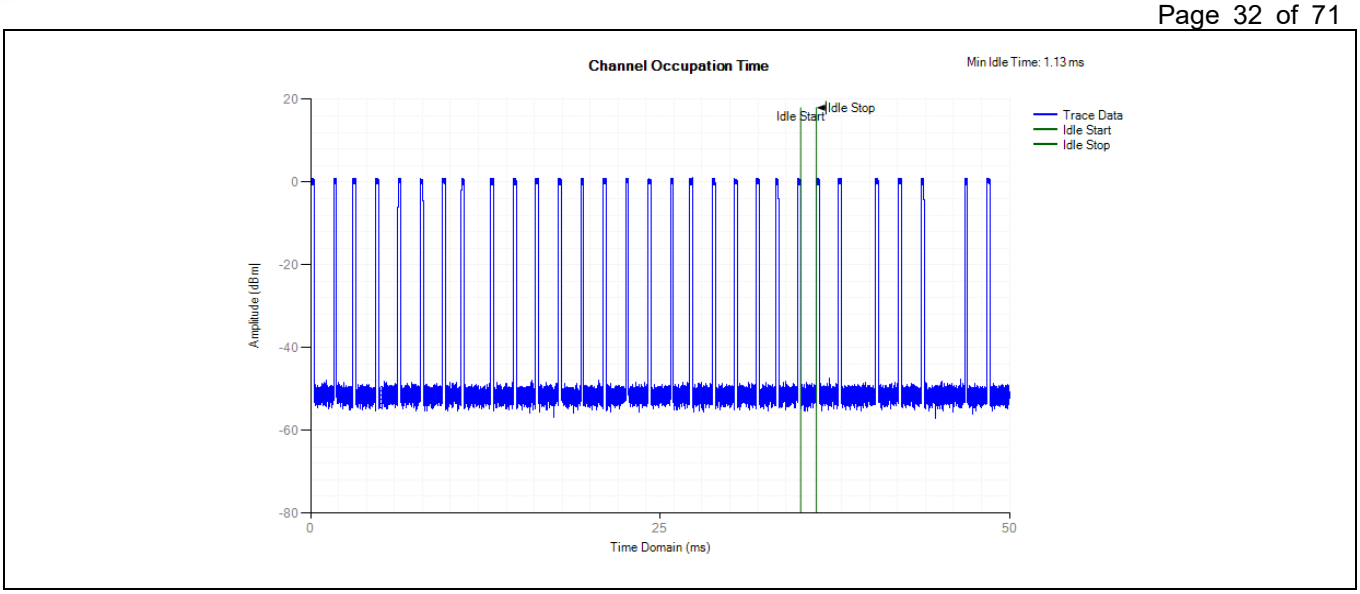

Channel Occupation Time
Min Idle Time: 1.11 ms
Idle Start
Idle Stop
Trace Data
Idle Start
Idle Stop
Amplitude (dBm)
Time Domain (ms)

802.11b-2472MHz








Channel Occupation Time
Min Idle Time: 1.13 ms
Idle Start
Idle Stop
Trace Data
Idle Start
Idle Stop
Amplitude (dBm)
20
0
-20
-40
-60
-80
0
25
50
Time Domain (ms)

6. Occupied Channel Bandwidth

6.1 Limit

According to ETSI EN 300 328 section 4.3.2.7.3, the Occupied Channel Bandwidth shall fall completely within the band given in clause 1.
In addition, for non-adaptive systems using wide band modulations other than FHSS and with e.i.r.p greater than10 dBm, the occupied channel bandwidth shall be less than 20 MHz.

6.2 Test procedure

1. The test conditions.

   ☒Normal condition ☐Extreme conditions

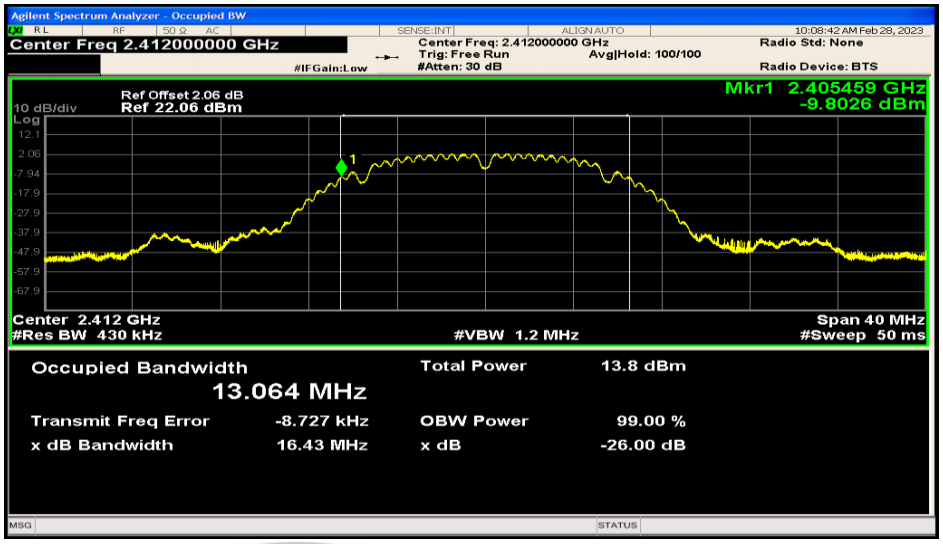
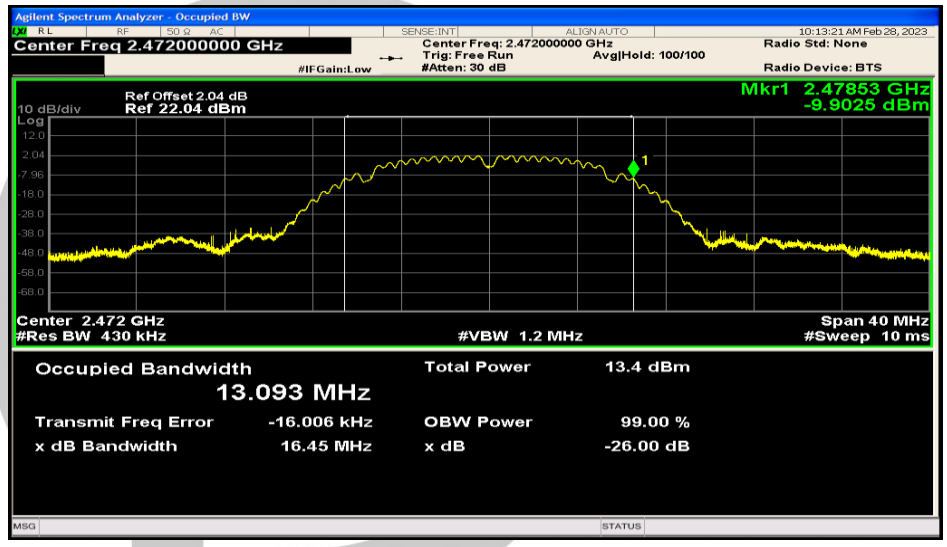
2. Please refer to ETSI EN 300 328 Sub-clause 5.4.7.2.1 for the measurement method.

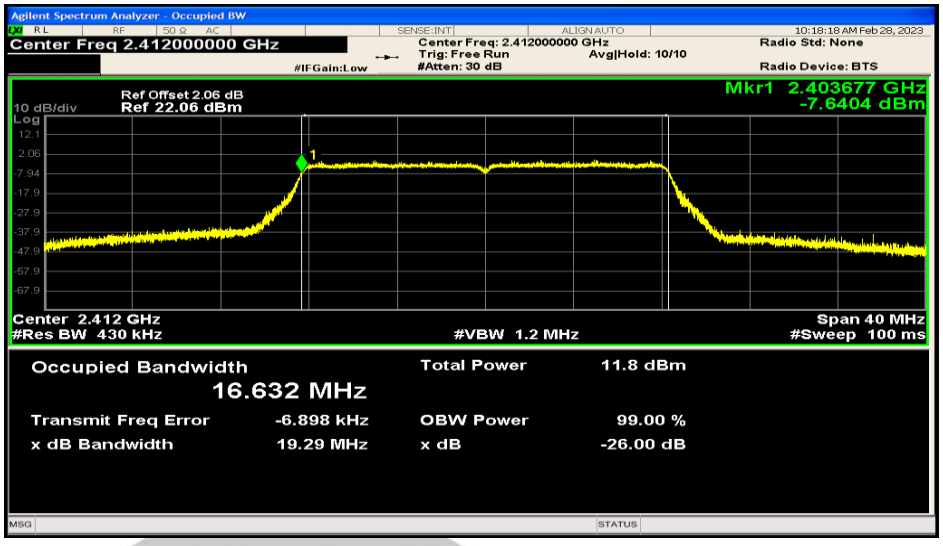
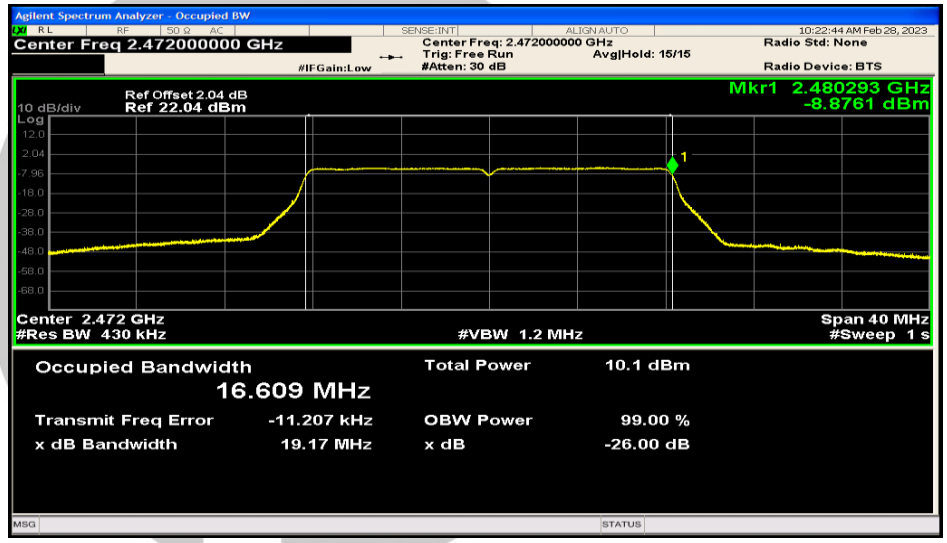
6.3 Summary of Test Results/Plots

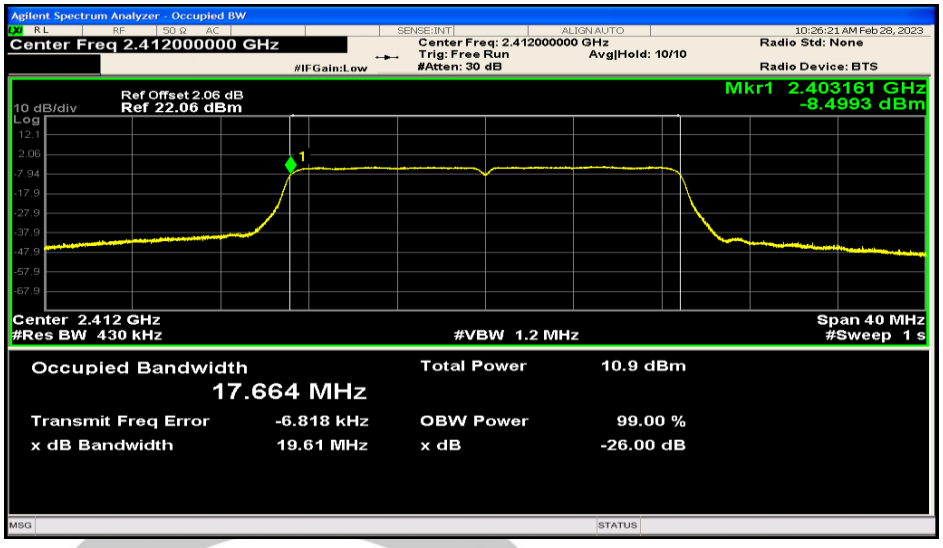
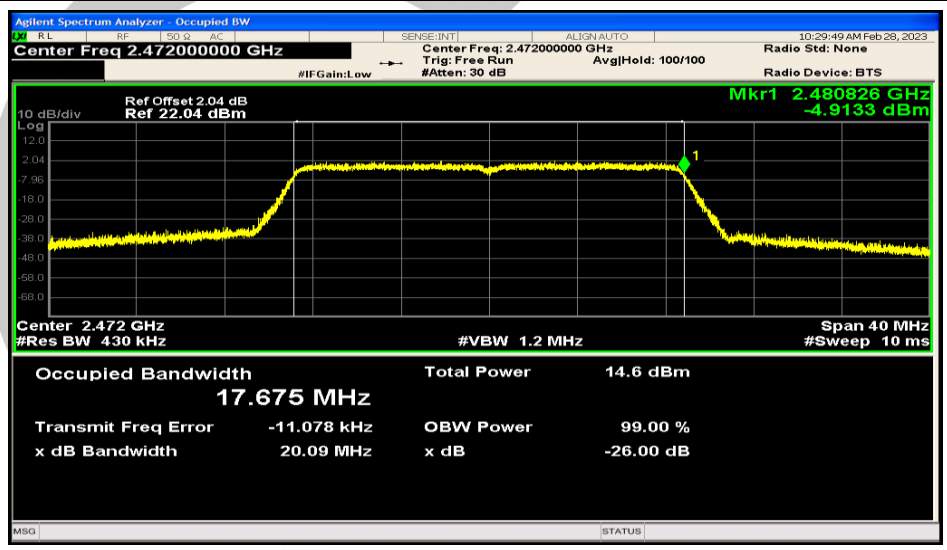
☒ Passed ☐ Not Applicable

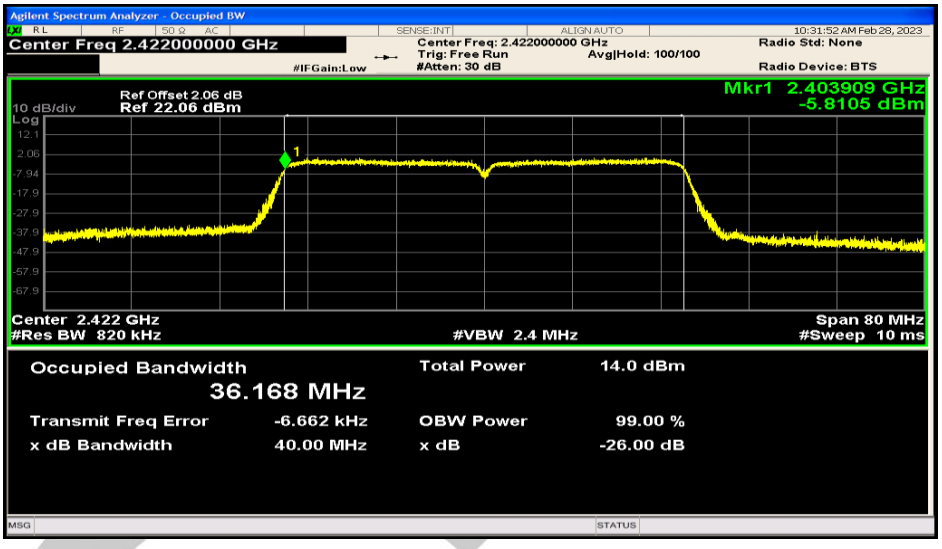
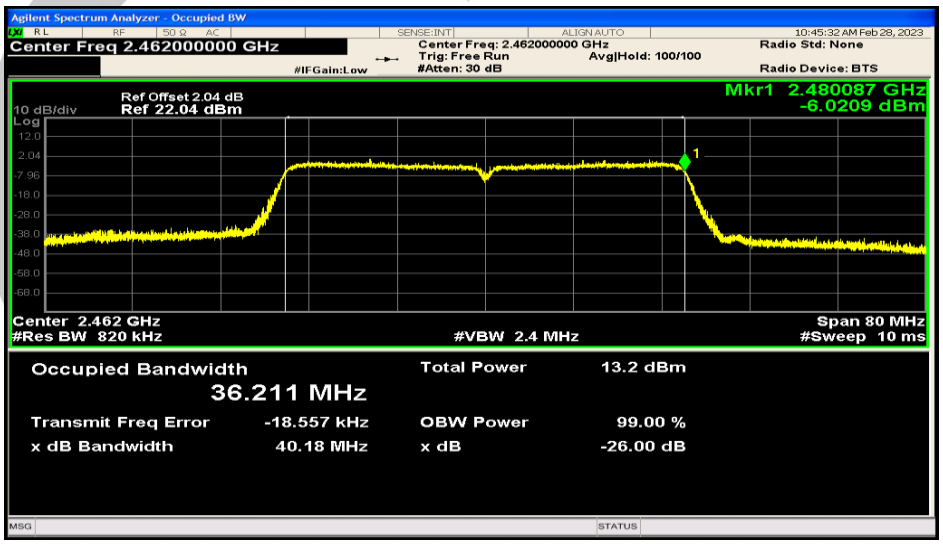
Mode	Channel	Occupied Channel Bandwidth(MHz)	Measured Frequency (MHz)		Limit (MHz)
			Low	High	
802.11b	Low	13.064	2405.459	-	2400.00~2483.50
	High	13.093	-	2478.53	
802.11g	Low	16.632	2403.677	-	2400.00~2483.50
	High	16.609	-	2480.293	
802.11n HT20	Low	17.664	2403.161	-	2400.00~2483.50
	High	17.675	-	2480.826	
802.11n HT40	Low	36.168	2403.909	-	2400.00~2483.50
	High	36.211	-	2480.087	

Test plot as follows:

802.11b	
CH01:	
CH13:	

802.11g	
CH01:	
CH13:	

802.11n(HT20)	
CH01:	
CH13:	

802.11n(HT40)	
CH03:	
CH11:	

7. Transmitter Unwanted Emissions in the Out-of-band Domain

7.1 Limit

According to ETSI EN 300 328 section 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.

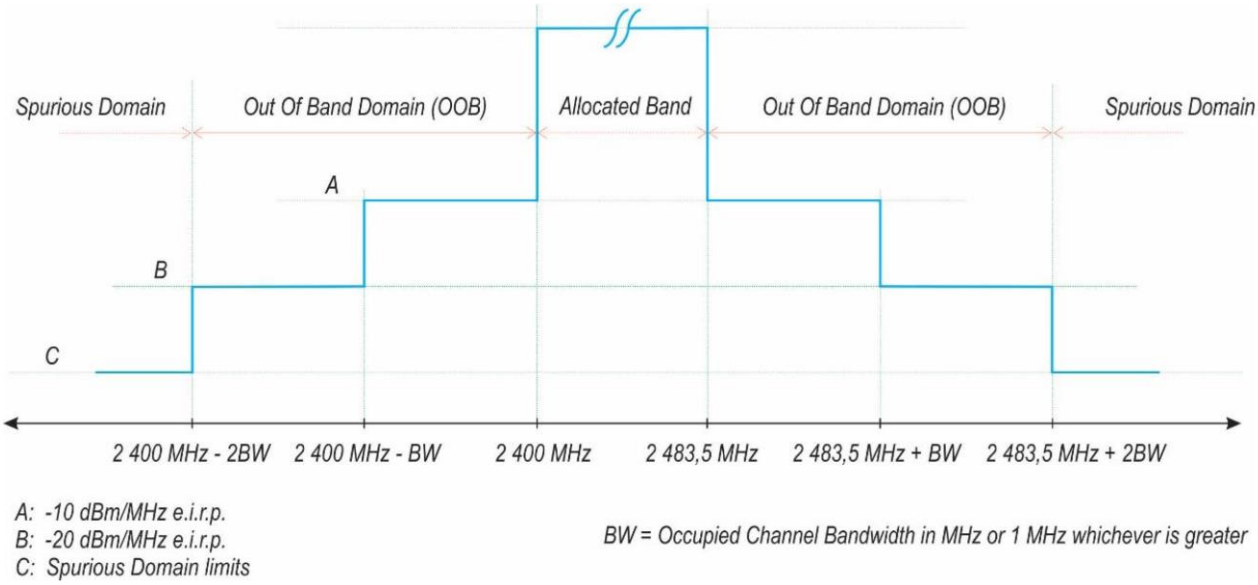


Figure 3: Transmit mask

7.2 Test procedure

1. The test conditions.

   ☒Normal condition ☐Extreme conditions

2. Please refer to ETSI EN 300 328 Sub-clause 5.4.8.2.1 for the measurement method.

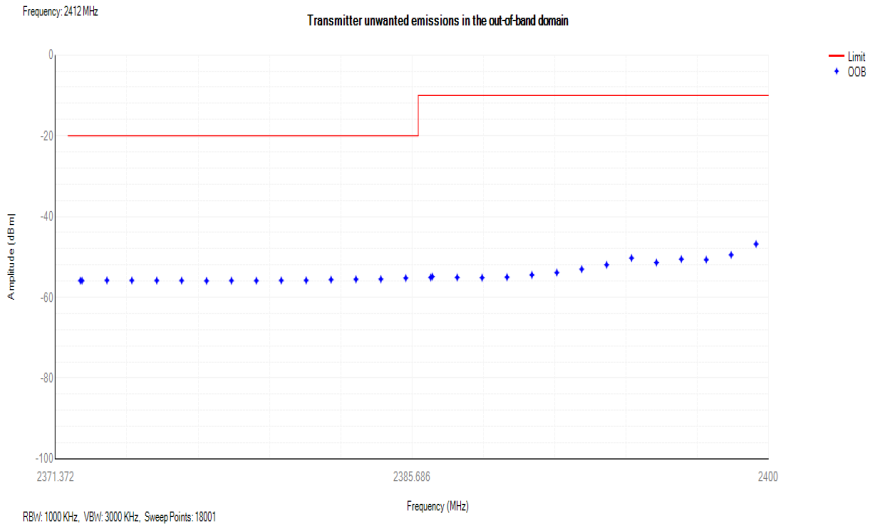
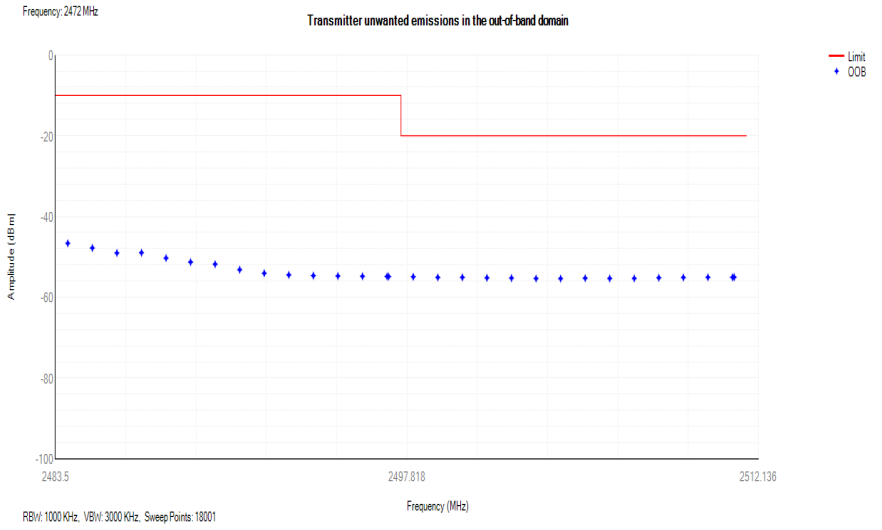
7.3 Summary of Test Results/Plots

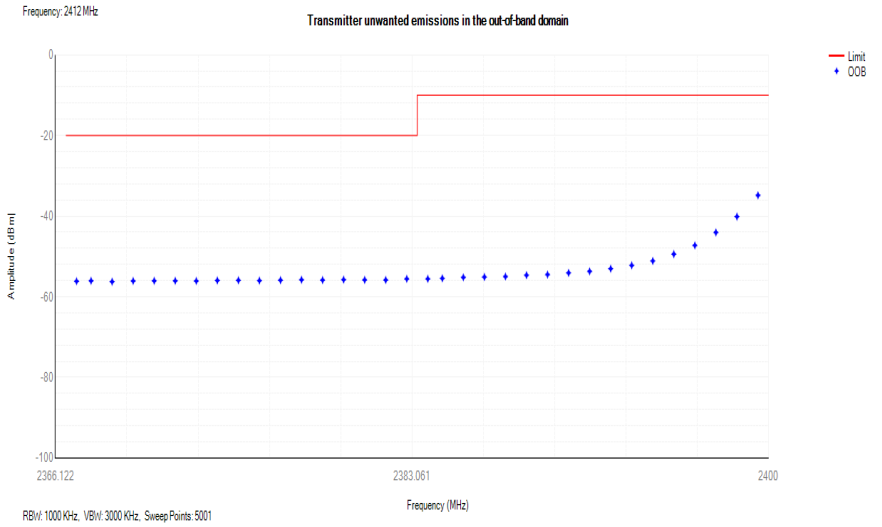
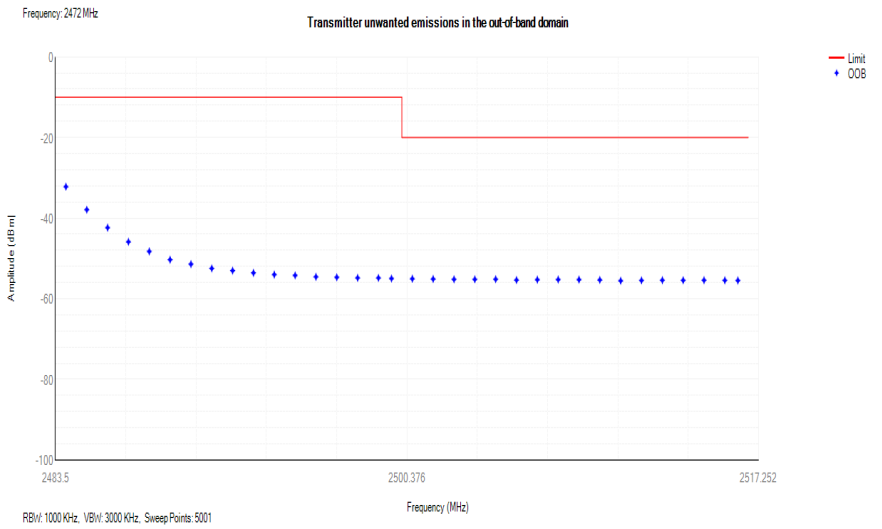
☒ Passed ☐ Not Applicable

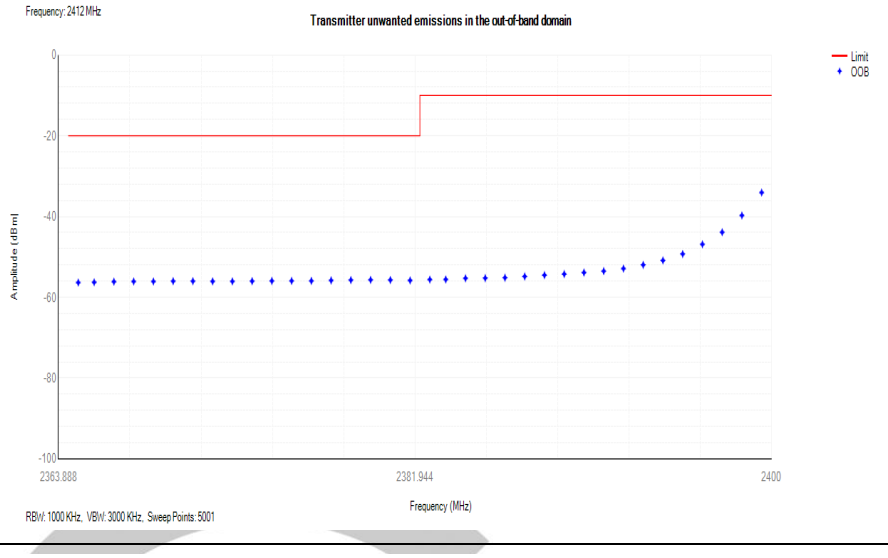
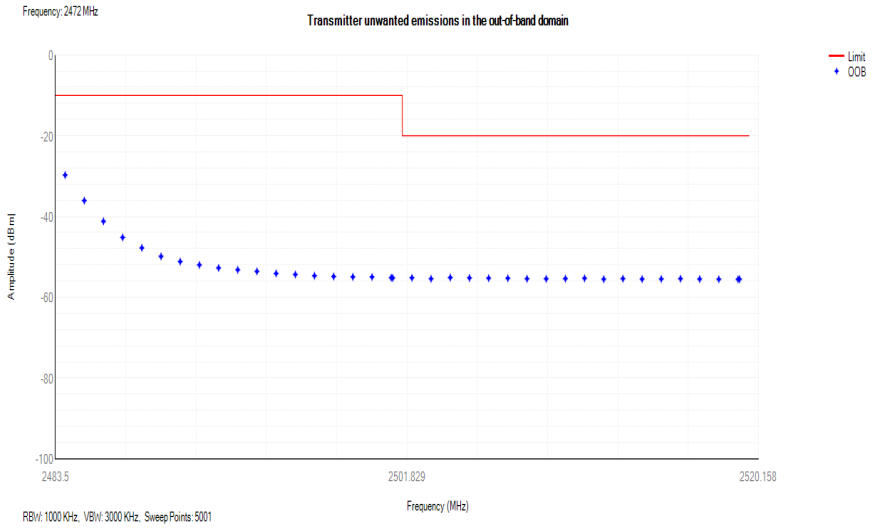
Test plot as follows:

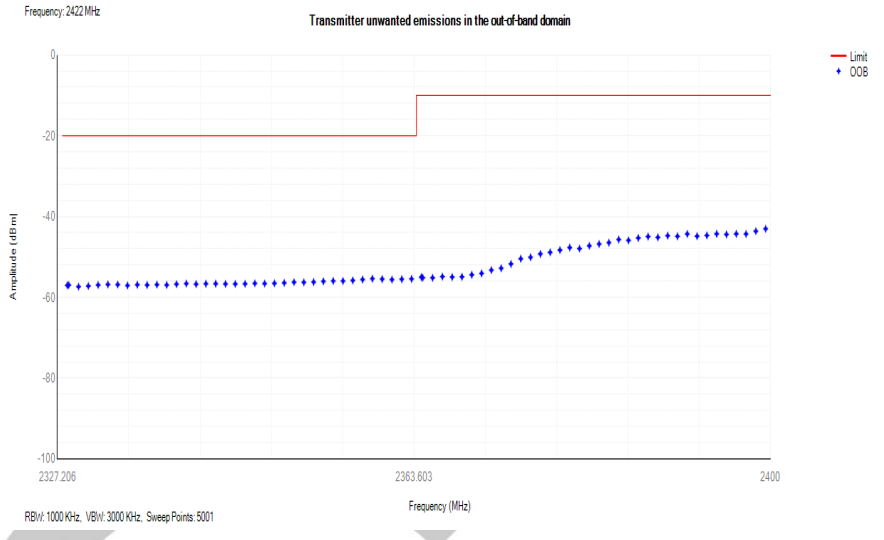
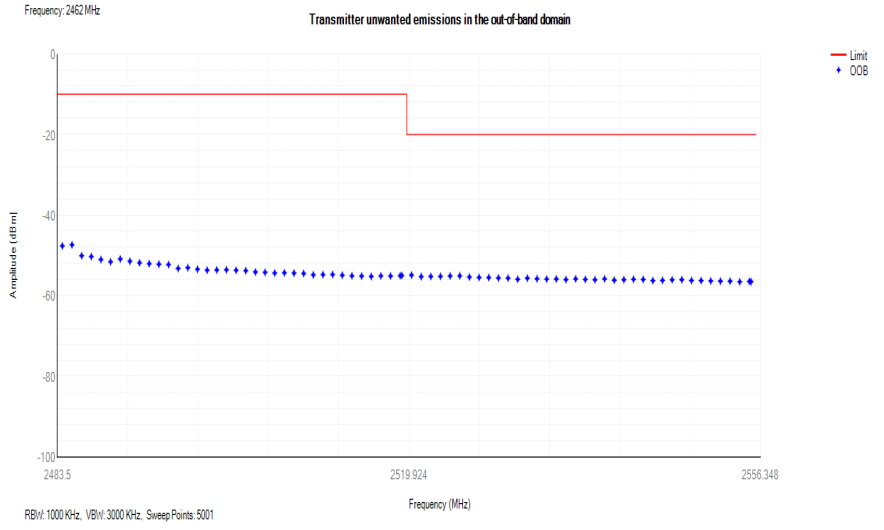
Test CH.	Test Segment	Max. Emissions Reading (dBm)	Limit
	MHz	Normal	dBm
Test Mode: 802.11b			
Lowest	2400-BW to 2400	-45.48	-10
	2400-2BW to 2400-BW	-52.80	-20
Highest	2483.5 to 2483.5+BW	-45.30	-10
	2483.5+BW to 2483.5+2BW	-52.99	-20
Test Mode: 802.11g			
Lowest	2400-BW to 2400	-37.80	-10
	2400-2BW to 2400-BW	-52.46	-20
Highest	2483.5 to 2483.5+BW	-42.05	-10
	2483.5+BW to 2483.5+2BW	-52.96	-20
Test Mode: 802.11n-HT20			
Lowest	2400-BW to 2400	-37.74	-10
	2400-2BW to 2400-BW	-52.79	-20
Highest	2483.5 to 2483.5+BW	-41.72	-10
	2483.5+BW to 2483.5+2BW	-53.14	-20
Test Mode: 802.11n-HT40			
Lowest	2400-BW to 2400	-41.41	-10
	2400-2BW to 2400-BW	-55.29	-20
Highest	2483.5 to 2483.5+BW	-45.57	-10
	2483.5+BW to 2483.5+2BW	-54.91	-20
Note 1: BW please refer to section 6.3 Note 2: the data just list the worst cases			

Test plot as follows:

802.11b	
CH01:	
CH13:	

802.11g	
CH01:	
CH13:	

802.11n(HT20)	
CH01:	
CH13:	

802.11n(HT40)	
CH03:	
CH11:	

8. Transmitter Unwanted Emissions in the Spurious Domain

8.1 Limit

According to ETSI EN 300 328 section 4.3.2.9.3, The transmitter unwanted emissions in the spurious domain shall not exceed the values given in table 12.
In case of equipment with antenna connectors, these limits apply to emissions at the antenna port (conducted). For emissions radiated by the cabinet or emissions radiated by integral antenna equipment (without antenna connectors), these limits are e.r.p. for emissions up to 1 GHz and as e.i.r.p. for emissions above 1 GHz..

Table 12: Transmitter limits for spurious emissions

Frequency range	Maximum power	Bandwidth
30 MHz to 47 MHz	-36 dBm	100 kHz
47 MHz to 74 MHz	-54 dBm	100 kHz
74 MHz to 87,5 MHz	-36 dBm	100 kHz
87,5 MHz to 118 MHz	-54 dBm	100 kHz
118 MHz to 174 MHz	-36 dBm	100 kHz
174 MHz to 230 MHz	-54 dBm	100 kHz
230 MHz to 470 MHz	-36 dBm	100 kHz
470 MHz to 694 MHz	-54 dBm	100 kHz
694 MHz to 1 GHz	-36 dBm	100 kHz
1 GHz to 12,75 GHz	-30 dBm	1 MHz

8.2 Test Procedure

1. The test conditions.

   ☒Normal condition ☐Extreme conditions

2. Please refer to ETSI EN 300 328 Sub-clause 5.4.9.2.2 for the measurement method.

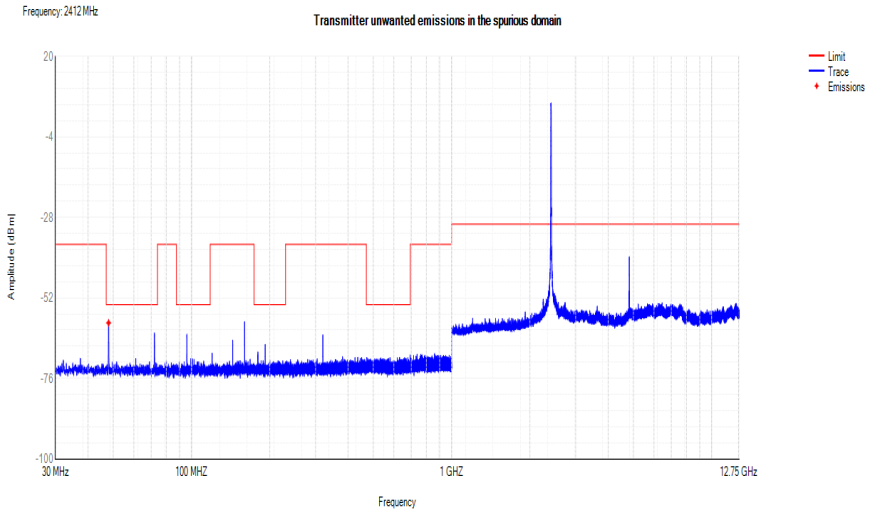
8.3 Summary of Test Results/Plots

☒ Passed ☐ Not Applicable

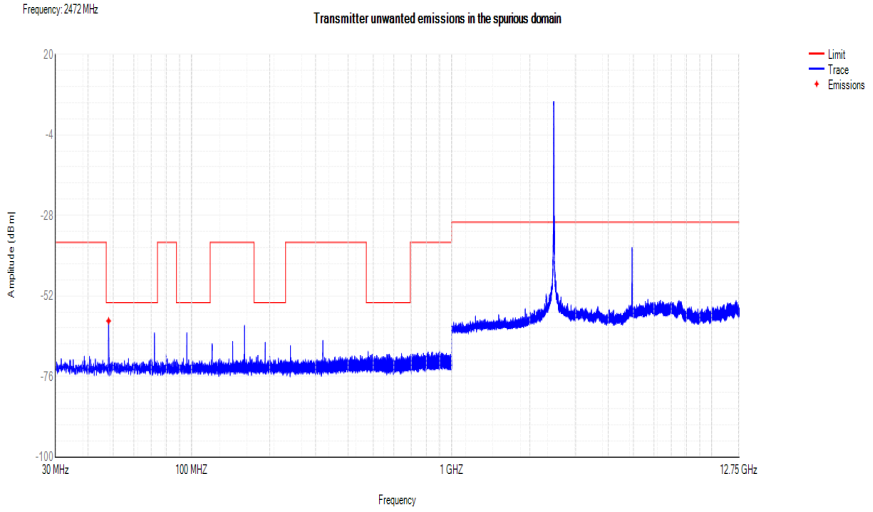
Note 1: According to the data, the EUT complied with the EN 300328 standards, and had the worst cases: 802.11b mode, so only show the test data in the report.
Note 2: this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

➢ Conducted Transmitter Spurious Emission

802.11b	
Test Channel:	CH01

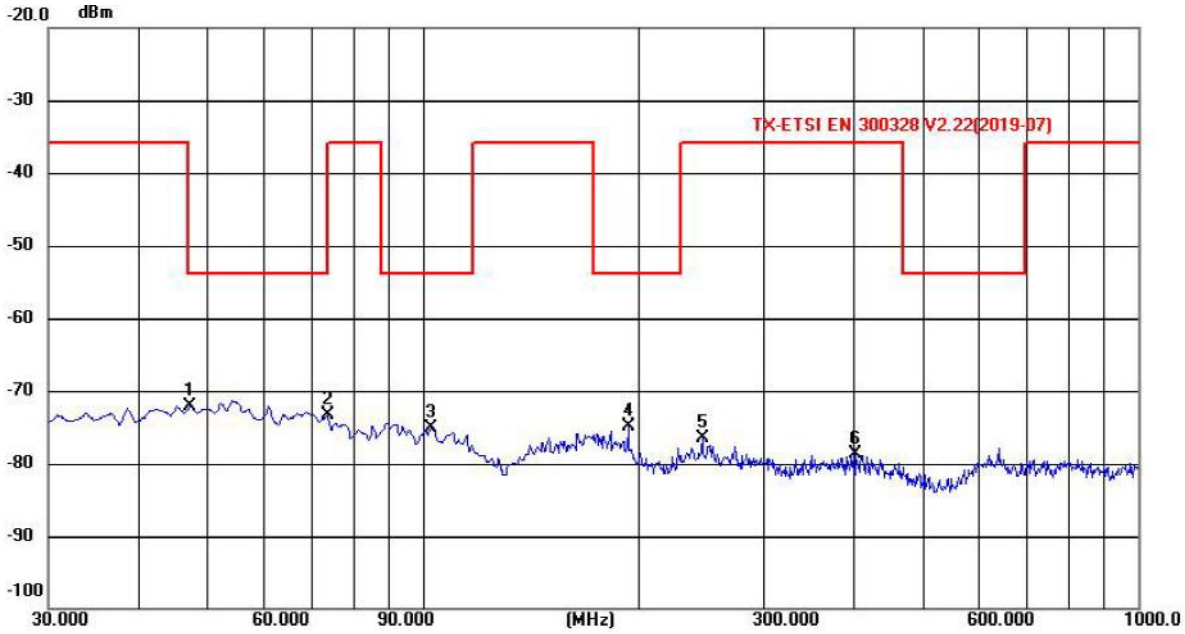


Test Channel:	CH13



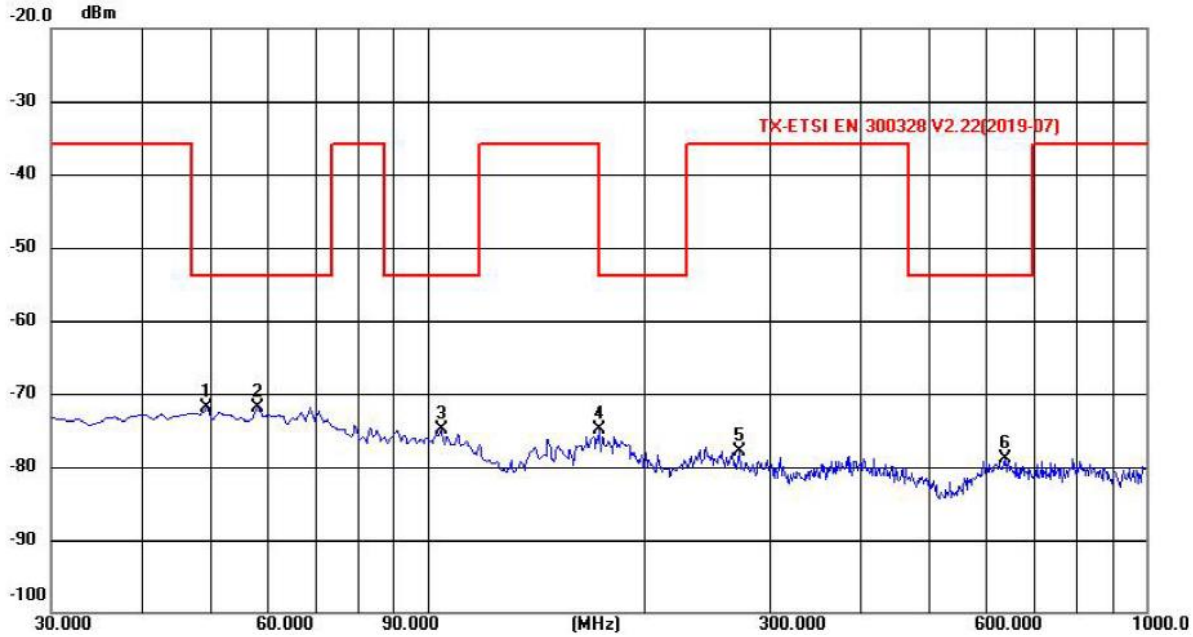
➢ Radiated Transmitter Spurious Emission From 30MHz To 1GHz

802.11b			
Test Channel:	CH01	Polarity:	Horizontal



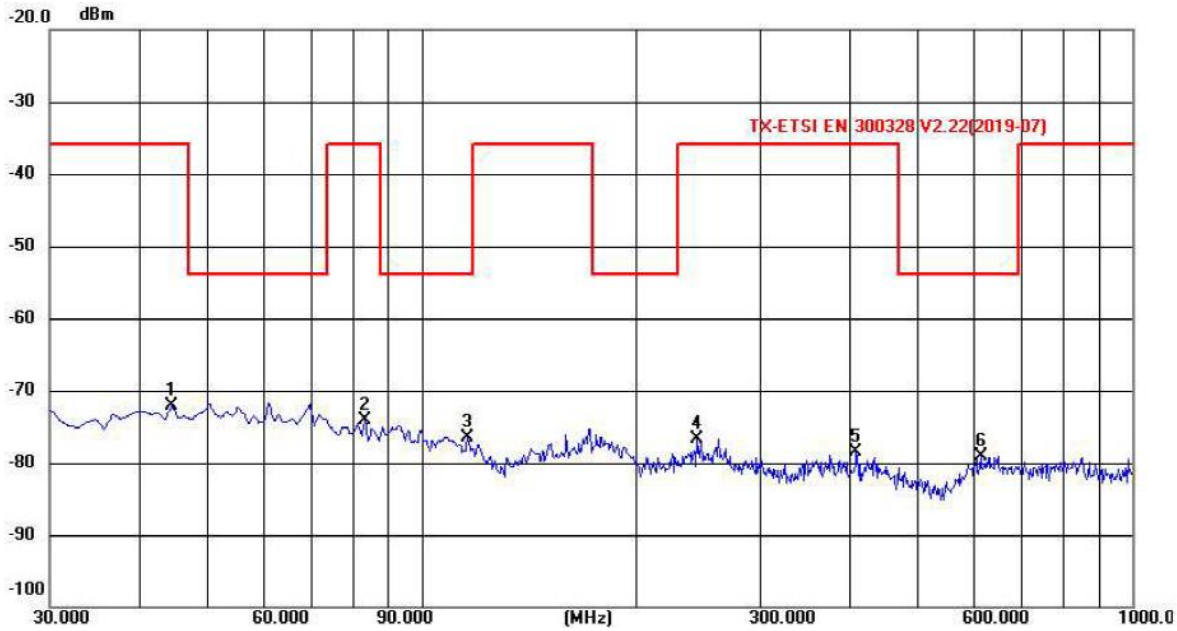
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	47.4600	-83.38	11.25	-72.13	-54.00	18.13	peak	
2		73.6500	-82.98	9.70	-73.28	-54.00	19.28	peak	
3		102.7500	-82.75	7.65	-75.10	-54.00	21.10	peak	
4		193.9300	-80.70	5.73	-74.97	-54.00	20.97	peak	
5		246.3100	-81.47	5.07	-76.40	-36.00	40.40	peak	
6		403.4500	-81.61	2.98	-78.63	-36.00	42.63	peak	

Test Channel:	CH01	Polarity:	Vertical



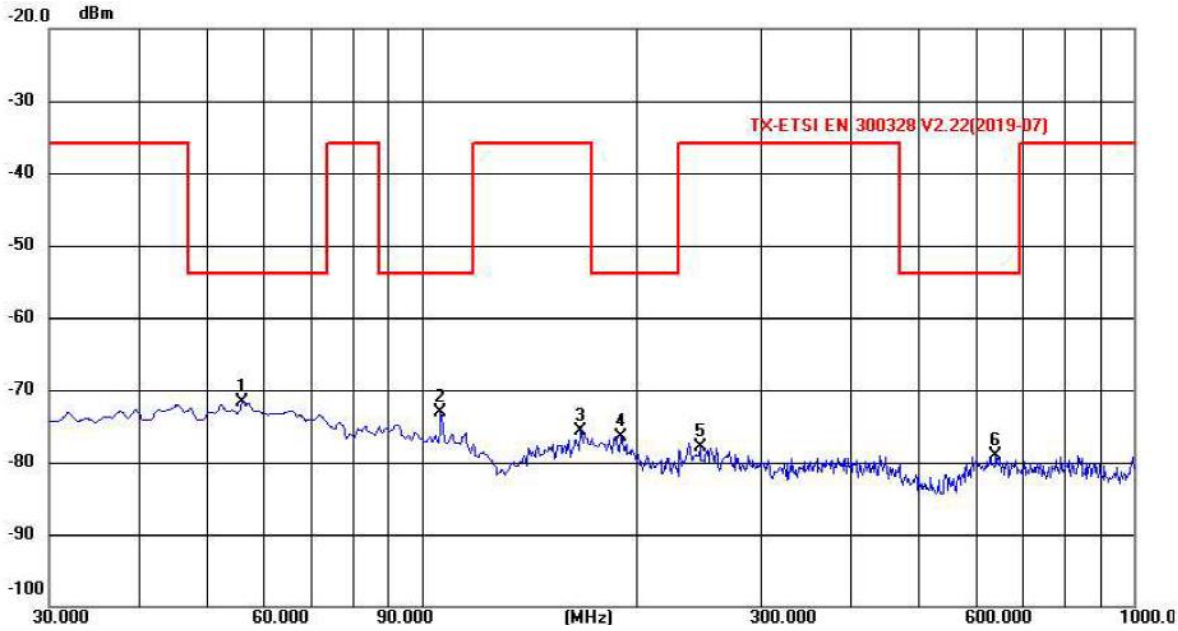
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		49.4000	-83.36	11.44	-71.92	-54.00	17.92	peak	
2	*	58.1300	-82.78	10.98	-71.80	-54.00	17.80	peak	
3		104.6900	-82.66	7.72	-74.94	-54.00	20.94	peak	
4		173.5600	-81.94	7.13	-74.81	-36.00	38.81	peak	
5		271.5300	-82.13	4.25	-77.88	-36.00	41.88	peak	
6		637.2200	-82.10	3.20	-78.90	-54.00	24.90	peak	

802.11b			
Test Channel:	CH13	Polarity:	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		44.5500	-83.03	10.97	-72.06	-36.00	36.06	peak	
2		83.3500	-82.59	8.49	-74.10	-36.00	38.10	peak	
3	*	116.3300	-83.04	6.51	-76.53	-54.00	22.53	peak	
4		244.3700	-81.88	5.13	-76.75	-36.00	40.75	peak	
5		410.2400	-81.31	2.83	-78.48	-36.00	42.48	peak	
6		612.9700	-81.97	2.87	-79.10	-54.00	25.10	peak	

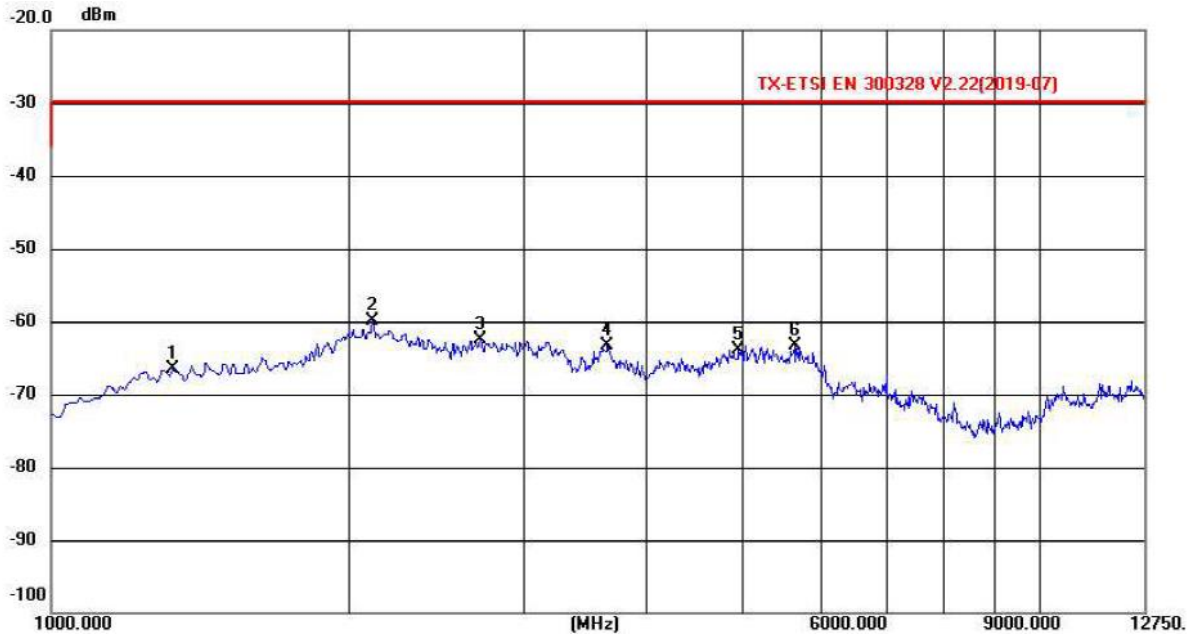
Test Channel:	CH13	Polarity:	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	56.1900	-83.01	11.25	-71.76	-54.00	17.76	peak	
2		106.6300	-80.81	7.74	-73.07	-54.00	19.07	peak	
3		167.7400	-82.64	7.03	-75.61	-36.00	39.61	peak	
4		191.0200	-82.92	6.44	-76.48	-54.00	22.48	peak	
5		246.3100	-82.99	5.07	-77.92	-36.00	41.92	peak	
6		642.0700	-82.23	3.11	-79.12	-54.00	25.12	peak	

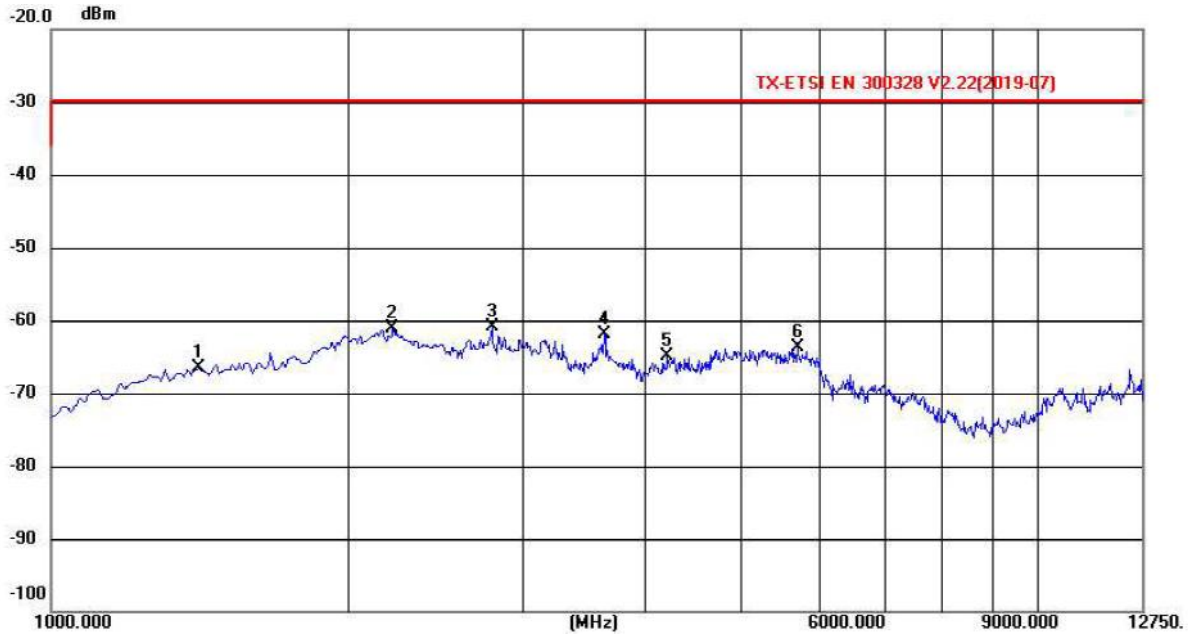
➢ Radiated Transmitter Spurious Emission Above 1GHz

802.11b			
Test Channel:	CH01	Polarity:	Horizontal



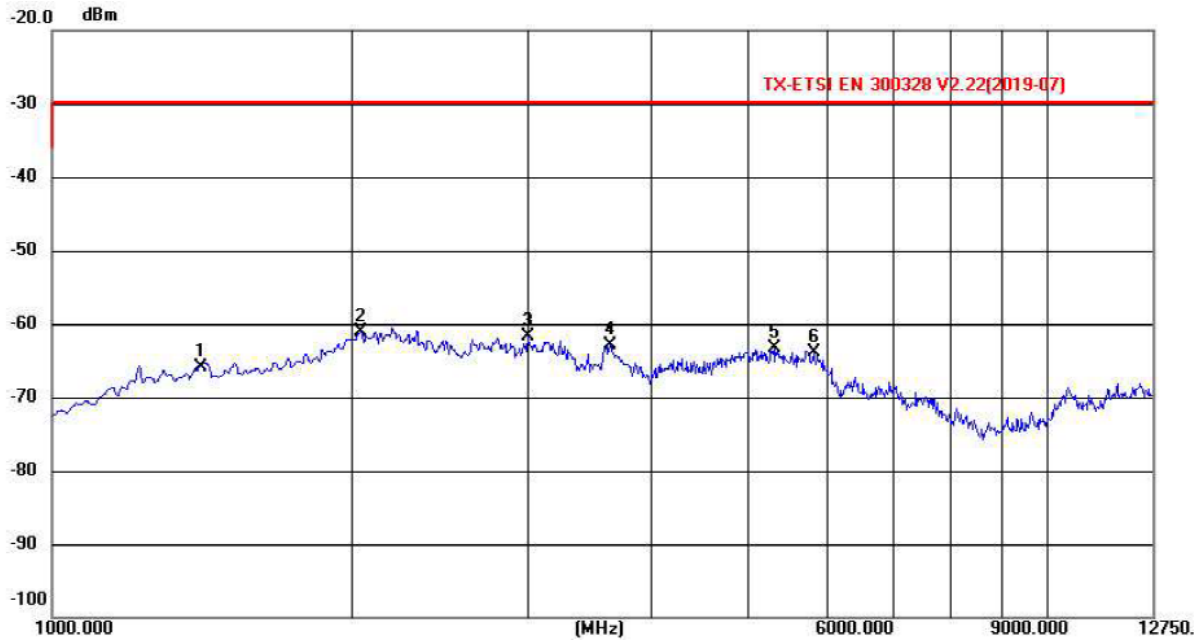
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		1329.000	-71.53	4.96	-66.57	-30.00	36.57	peak	
2	*	2116.250	-68.83	8.91	-59.92	-30.00	29.92	peak	
3		2715.500	-68.60	6.20	-62.40	-30.00	32.40	peak	
4		3655.500	-68.42	5.03	-63.39	-30.00	33.39	peak	
5		4959.750	-68.60	4.70	-63.90	-30.00	33.90	peak	
6		5653.000	-66.43	3.20	-63.23	-30.00	33.23	peak	

Test Channel:	CH01	Polarity:	Vertical



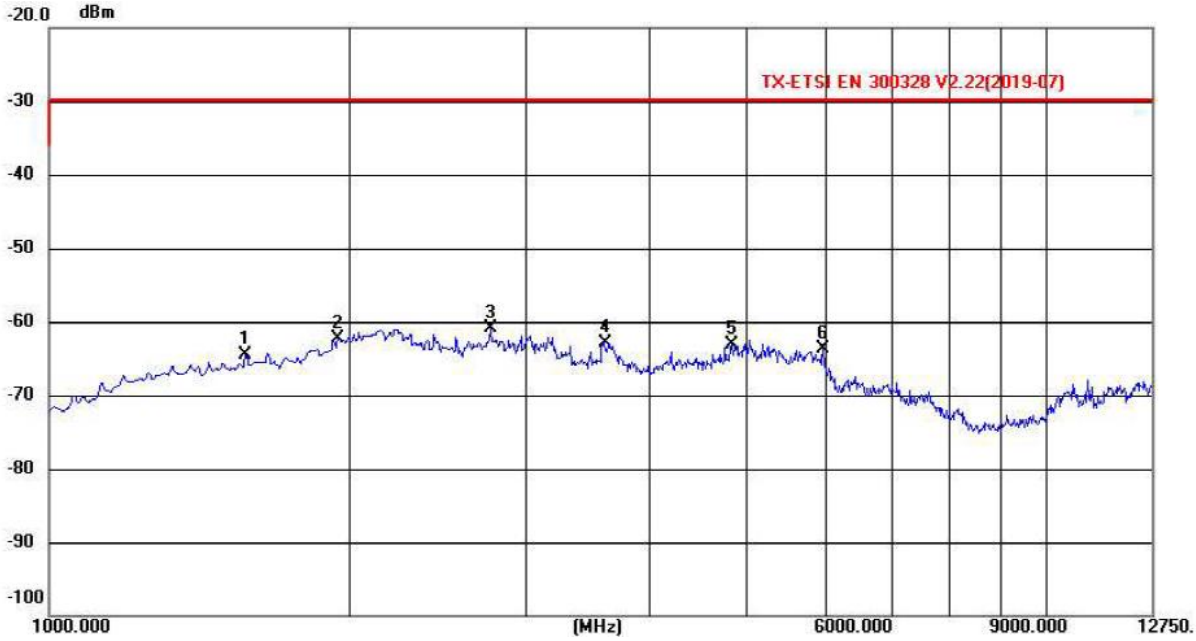
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		1411.250	-71.95	5.39	-66.56	-30.00	36.56	peak	
2		2222.000	-69.97	8.79	-61.18	-30.00	31.18	peak	
3	*	2797.750	-67.56	6.70	-60.86	-30.00	30.86	peak	
4		3643.750	-67.03	5.07	-61.96	-30.00	31.96	peak	
5		4219.500	-69.53	4.63	-64.90	-30.00	34.90	peak	
6		5711.750	-66.82	3.12	-63.70	-30.00	33.70	peak	

802.11b			
Test Channel:	CH13	Polarity:	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		1406.496	-71.35	5.38	-65.97	-30.00	35.97	peak	
2	*	2045.750	-69.85	8.85	-61.00	-30.00	31.00	peak	
3		3009.250	-67.63	6.02	-61.61	-30.00	31.61	peak	
4		3643.750	-67.93	5.07	-62.86	-30.00	32.86	peak	
5		5324.000	-67.47	4.18	-63.29	-30.00	33.29	peak	
6		5829.250	-66.87	3.01	-63.86	-30.00	33.86	peak	

Test Channel:	CH13	Polarity:	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		1575.750	-70.09	5.64	-64.45	-30.00	34.45	peak	
2		1951.750	-70.53	8.29	-62.24	-30.00	32.24	peak	
3	*	2774.250	-67.54	6.55	-60.99	-30.00	30.99	peak	
4		3598.087	-68.11	5.21	-62.90	-30.00	32.90	peak	
5		4842.250	-67.25	4.22	-63.03	-30.00	33.03	peak	
6		5982.000	-66.71	2.96	-63.75	-30.00	33.75	peak	

9. Receiver Spurious Emissions

9.1 Standard Applicable

According to ETSI EN 300 328 section 4.3.2.10.3, The spurious emissions of the receiver shall not exceed the values given in table 13. In case of non-FHSS equipment with antenna connectors, these limits apply to emissions at the antenna port (conducted). For emissions radiated by the cabinet or for emissions radiated by integral antenna equipment (without antenna connectors), these limits are e.r.p. for emissions up to 1 GHz and e.i.r.p. for emissions above 1 GHz.

Table 13: Spurious emission limits for receivers

Frequency range	Maximum power	Bandwidth
30 MHz to 1 GHz	-57 dBm	100 kHz
1 GHz to 12,75 GHz	-47 dBm	1 MHz

9.2 Test Procedure

1. The test conditions.

   ☒Normal condition ☐Extreme conditions

2. Please refer to ETSI EN 300 328 Sub-clause 5.4.10.2.2 for the measurement method.

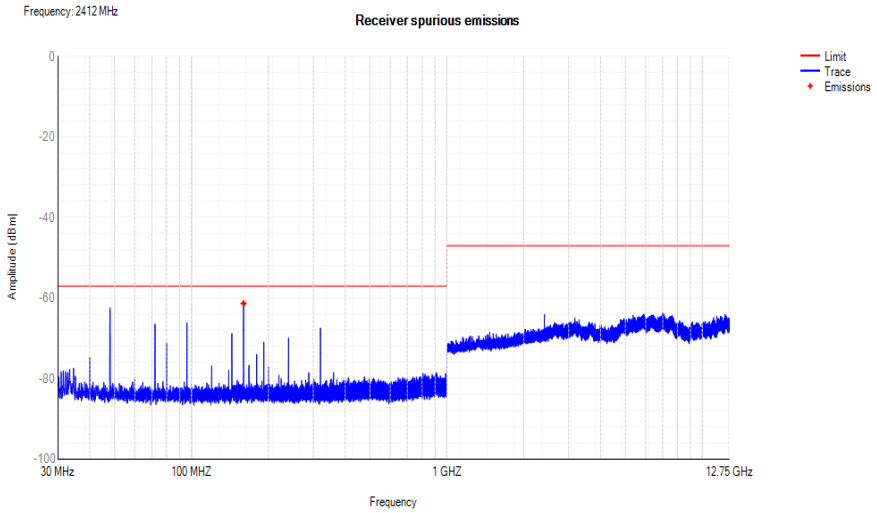
9.3 Summary of Test Results/Plots

☒ Passed ☐ Not Applicable

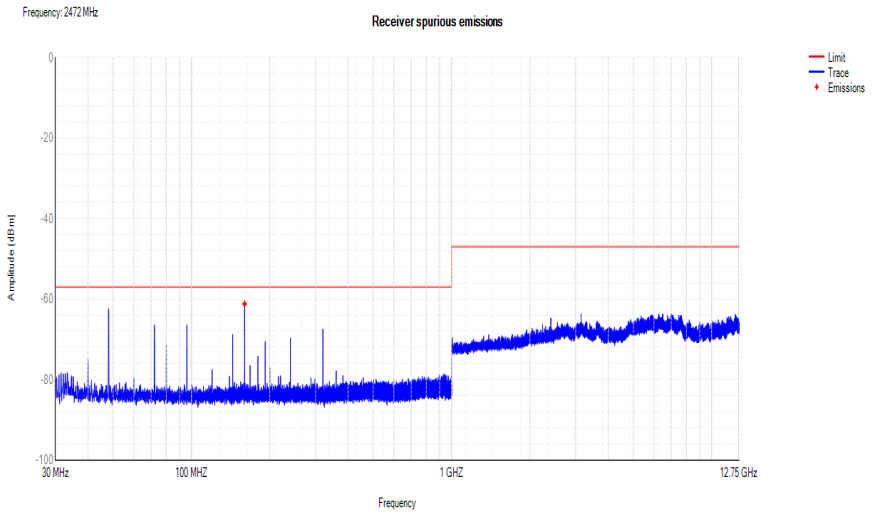
Note 1: According to the data, the EUT complied with the EN 300328 standards, and had the worst cases: 802.11b mode, so only show the test data in the report.
Note 2: this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

➢ Conducted Receiver Spurious Emission

802.11b	
Test Channel:	CH01

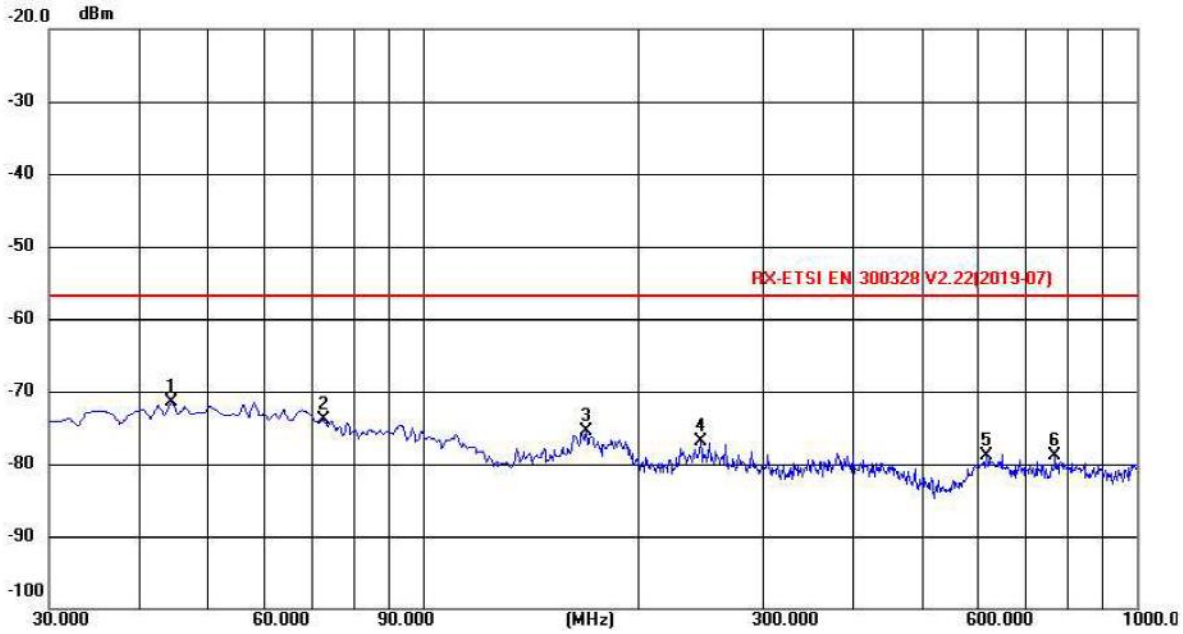


Test Channel:	CH13



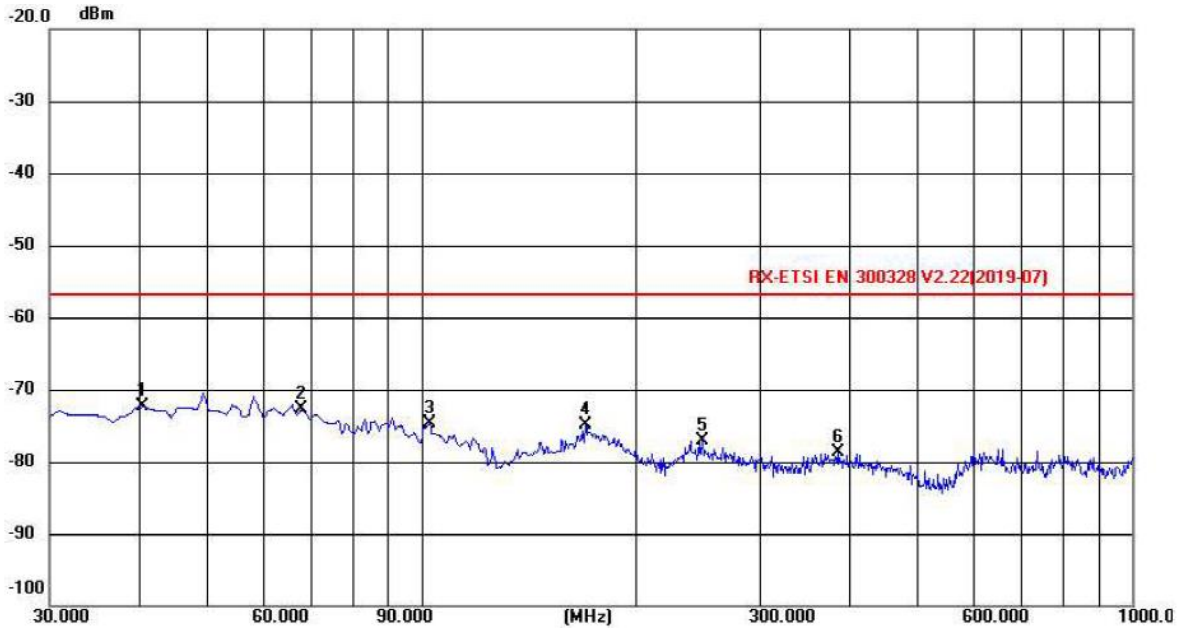
➢ Radiated Receiver Spurious Emission From 30MHz To 1GHz

802.11b			
Test Channel:	CH01	Polarity:	Horizontal



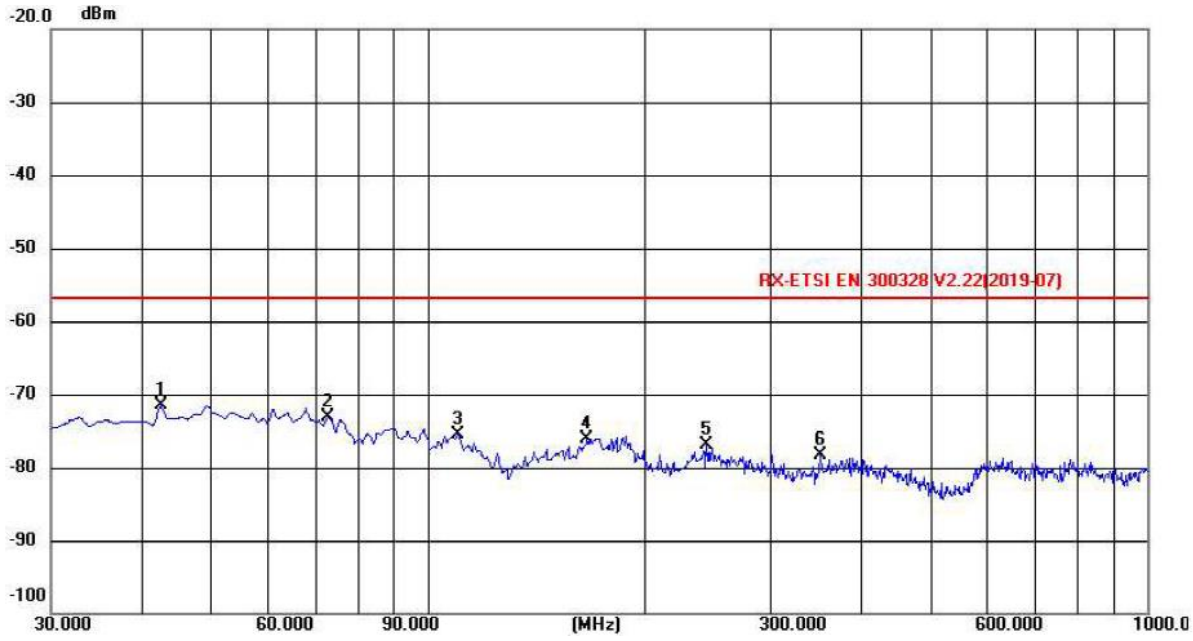
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	44.5500	-82.39	10.97	-71.42	-57.00	14.42	peak	
2		72.8466	-83.95	9.98	-73.97	-57.00	16.97	peak	
3		169.6800	-82.91	7.43	-75.48	-57.00	18.48	peak	
4		245.3400	-81.90	5.09	-76.81	-57.00	19.81	peak	
5		616.8500	-81.84	2.92	-78.92	-57.00	21.92	peak	
6		771.0800	-80.11	1.22	-78.89	-57.00	21.89	peak	

Test Channel:	CH01	Polarity:	Vertical



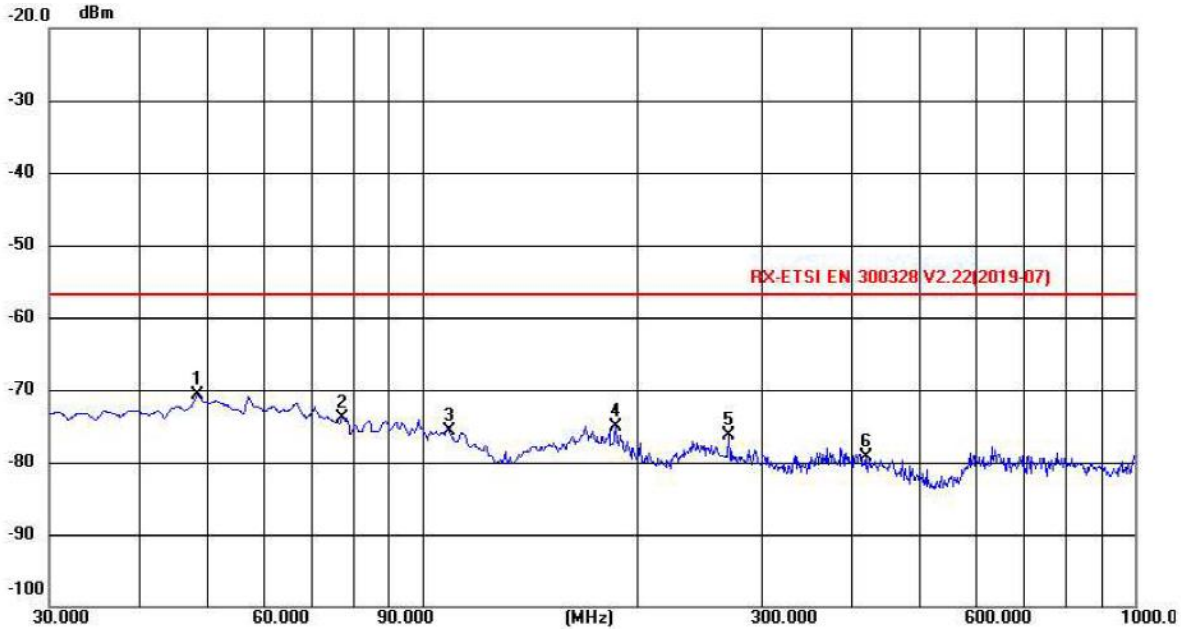
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	40.6700	-83.18	10.79	-72.39	-57.00	15.39	peak	
2		67.8300	-83.58	10.80	-72.78	-57.00	15.78	peak	
3		102.7500	-82.43	7.65	-74.78	-57.00	17.78	peak	
4		170.6500	-82.40	7.43	-74.97	-57.00	17.97	peak	
5		249.2200	-82.10	4.97	-77.13	-57.00	20.13	peak	
6		387.9300	-81.98	3.20	-78.78	-57.00	21.78	peak	

802.11b			
Test Channel:	CH13	Polarity:	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	42.6100	-82.38	10.87	-71.51	-57.00	14.51	peak	
2		72.6800	-83.13	10.05	-73.08	-57.00	16.08	peak	
3		110.5100	-83.13	7.64	-75.49	-57.00	18.49	peak	
4		166.7700	-83.02	6.84	-76.18	-57.00	19.18	peak	
5		244.3700	-82.06	5.13	-76.93	-57.00	19.93	peak	
6		352.0400	-81.25	2.96	-78.29	-57.00	21.29	peak	

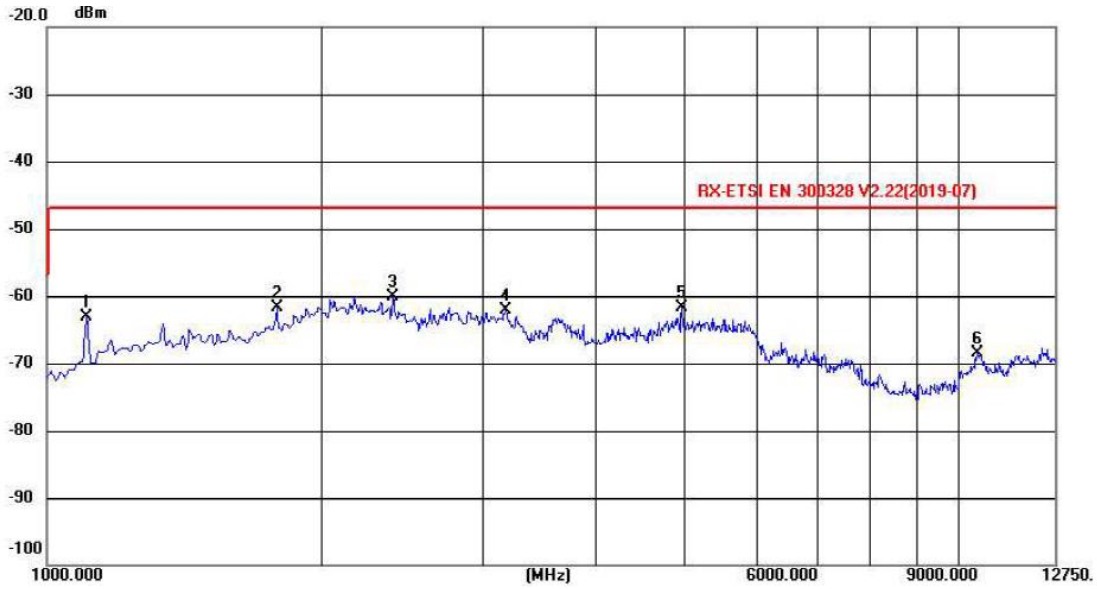
Test Channel:	CH13	Polarity:	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	48.4300	-82.02	11.34	-70.68	-57.00	13.68	peak	
2		77.5300	-82.62	8.71	-73.91	-57.00	16.91	peak	
3		109.5400	-83.51	7.74	-75.77	-57.00	18.77	peak	
4		187.1400	-81.54	6.54	-75.00	-57.00	18.00	peak	
5		269.5900	-80.66	4.35	-76.31	-57.00	19.31	peak	
6		420.9100	-81.85	2.59	-79.26	-57.00	22.26	peak	

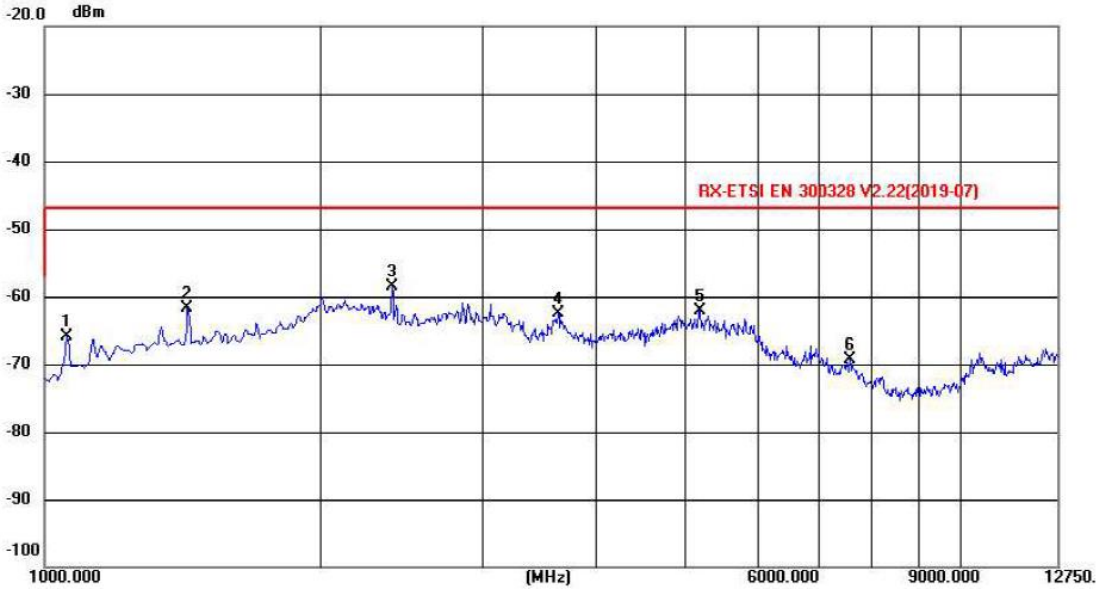
➢ Radiated Receiver Spurious Emission Above 1GHz

802.11b			
Test Channel:	CH01	Polarity:	Horizontal



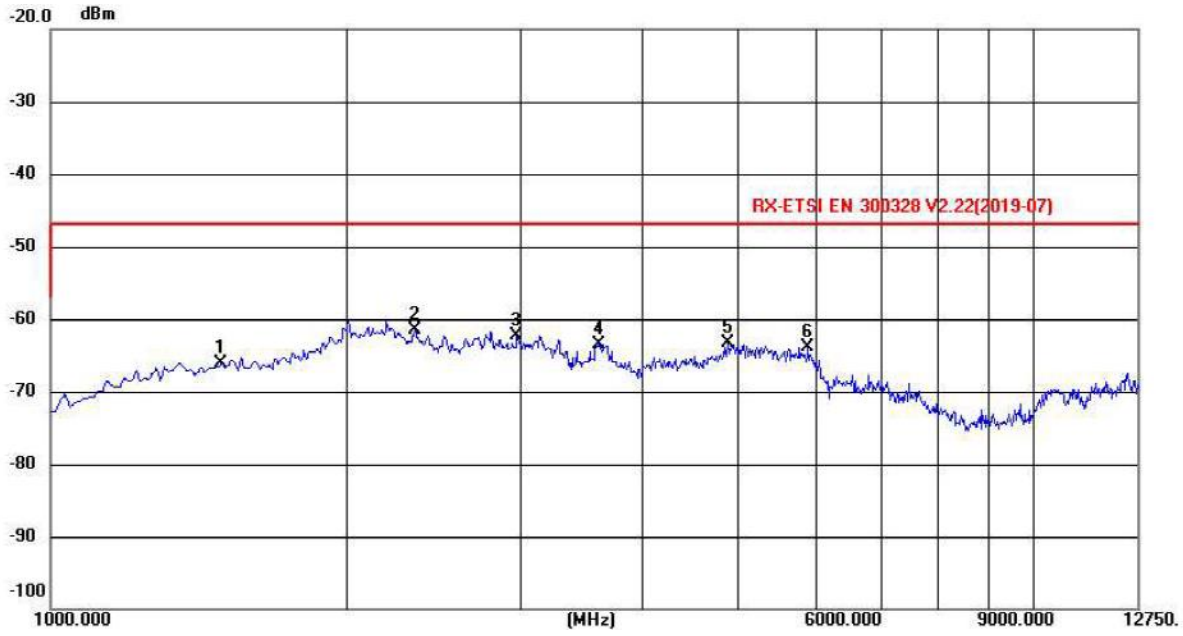
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		1105.750	-65.96	2.90	-63.06	-47.00	16.06	peak	
2		1787.250	-68.26	6.58	-61.68	-47.00	14.68	peak	
3	*	2398.250	-67.46	7.27	-60.19	-47.00	13.19	peak	
4		3185.500	-67.85	5.66	-62.19	-47.00	15.19	peak	
5		4971.500	-66.49	4.74	-61.75	-47.00	14.75	peak	
6		10505.75	-68.80	0.34	-68.46	-47.00	21.46	peak	

Test Channel:	CH01	Polarity:	Vertical



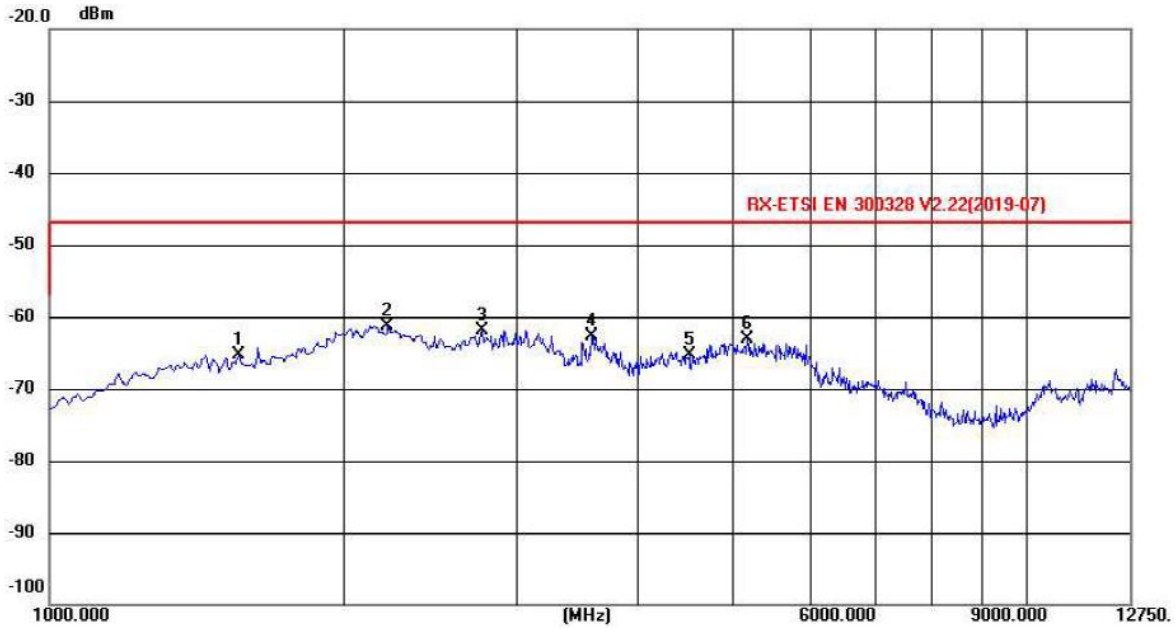
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		1058.750	-68.08	2.26	-65.82	-47.00	18.82	peak	
2		1434.750	-67.08	5.41	-61.67	-47.00	14.67	peak	
3	*	2398.250	-65.75	7.27	-58.48	-47.00	11.48	peak	
4		3643.750	-67.54	5.07	-62.47	-47.00	15.47	peak	
5		5194.750	-66.32	4.25	-62.07	-47.00	15.07	peak	
6		7580.000	-66.84	-2.37	-69.21	-47.00	22.21	peak	

802.11b			
Test Channel:	CH13	Polarity:	Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		1493.500	-71.46	5.46	-66.00	-47.00	19.00	peak	
2	*	2351.250	-69.14	7.68	-61.46	-47.00	14.46	peak	
3		2985.750	-68.46	6.09	-62.37	-47.00	15.37	peak	
4		3620.250	-68.58	5.16	-63.42	-47.00	16.42	peak	
5		4889.250	-67.68	4.40	-63.28	-47.00	16.28	peak	
6		5899.750	-66.90	2.98	-63.92	-47.00	16.92	peak	

Test Channel:	CH13	Polarity:	Vertical



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		1564.000	-70.89	5.61	-65.28	-47.00	18.28	peak	
2	*	2222.000	-70.12	8.79	-61.33	-47.00	14.33	peak	
3		2774.250	-68.39	6.55	-61.84	-47.00	14.84	peak	
4		3596.750	-67.80	5.20	-62.60	-47.00	15.60	peak	
5		4513.250	-69.77	4.47	-65.30	-47.00	18.30	peak	
6		5183.000	-67.42	4.27	-63.15	-47.00	16.15	peak	

10. Receiver Blocking

10.1 Limit

According to ETSI EN 300 328 section 4.3.2.11,

Performance Criteria:
For equipment that supports a PER or FER test to be performed, the minimum performance criterion shall be a PER or FER less than or equal to 10 %.
For equipment that does not support a PER or a FER test to be performed, the minimum performance criterion shall be no loss of the wireless transmission function needed for the intended use of the equipment.

Receiver Category 1: Adaptive equipment with a maximum RF output power greater than 10 dBm e.i.r.p.

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.			

Receiver Category 2: non-adaptive equipment with a Medium Utilization (MU) factor greater than 1 % and less than or equal to 10 % (irrespective of the maximum RF output power); or
equipment (adaptive or non-adaptive) with a maximum RF output power greater than 0 dBm e.i.r.p. and less than or equal to 10 dBm e.i.r.p.

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.			

Receiver category 3: non-adaptive equipment with a maximum Medium Utilization (MU) factor of 1 % (irrespective of the maximum RF output power); or
equipment (adaptive or non-adaptive) with a maximum RF output power of 0 dBm e.i.r.p.

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.			

10.2 Test Procedure

1. The test conditions.

☒ Normal condition ☐Extreme conditions

2. Please refer to ETSI EN 300 328 Sub-clause 5.4.11.2.1 for the measurement method.

10.3 Summary of Test Results/Plots

☒ Passed ☐ Not Applicable

Operating Channel	Wanted signal power (dBm)	Blocking signal Frequency (MHz)	Blocking signal power (dBm)	Test PER (%)	Limit(%)	Result
CH01	-71.00	2300	-31	3.09	⩽10.00	Pass
		2330		2.65		Pass
		2360		2.97		Pass
	-65.00	2380		3.17		Pass
CH13	-65.00	2504		3.43		Pass
	-71.00	2524		3.21		Pass
		2584		2.69		Pass
		2674		2.72		Pass

Note:

1. According to ETSI EN 300328 clause 5.4.11.1. Only the smallest channel bandwidth and the lowest data rate (802.11b) mode was tested and recorded.
2. The equipment belong to Receiver Category 1.
3. For Blocking signal frequency(2300,2330,2360,2524,2584,2674): Wanted signal power (dBm) = (-133dBm + 10 × $\log_{10}$(OCBW)) or -68 dBm, whichever is less.
4. For Blocking signal frequency(2380, 2504): Wanted signal power (dBm) = (-139dBm + 10 × $\log_{10}$(OCBW)) or -74 dBm, whichever is less.

EXHIBIT 1 - EUT PHOTOGRAPHS

Figure 1

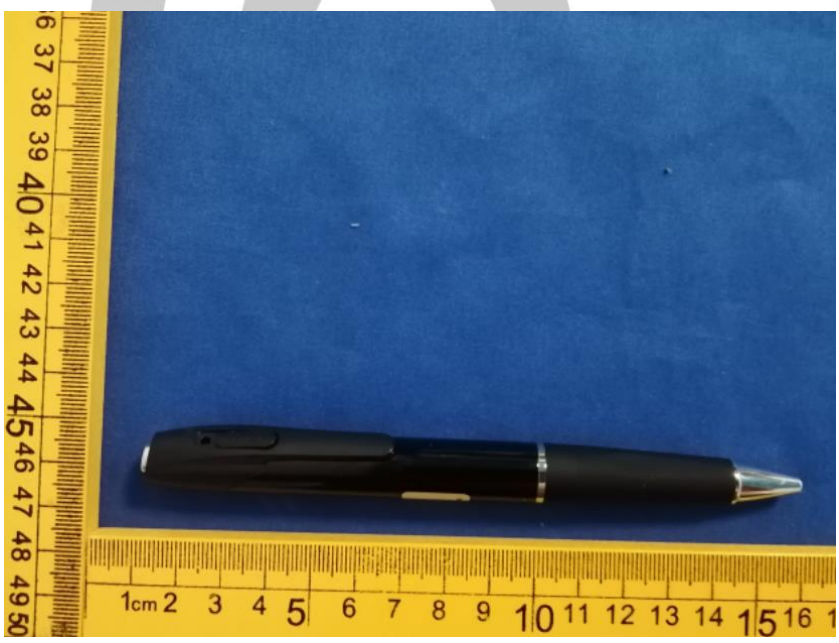


Figure 2

Figure 3

Figure 4

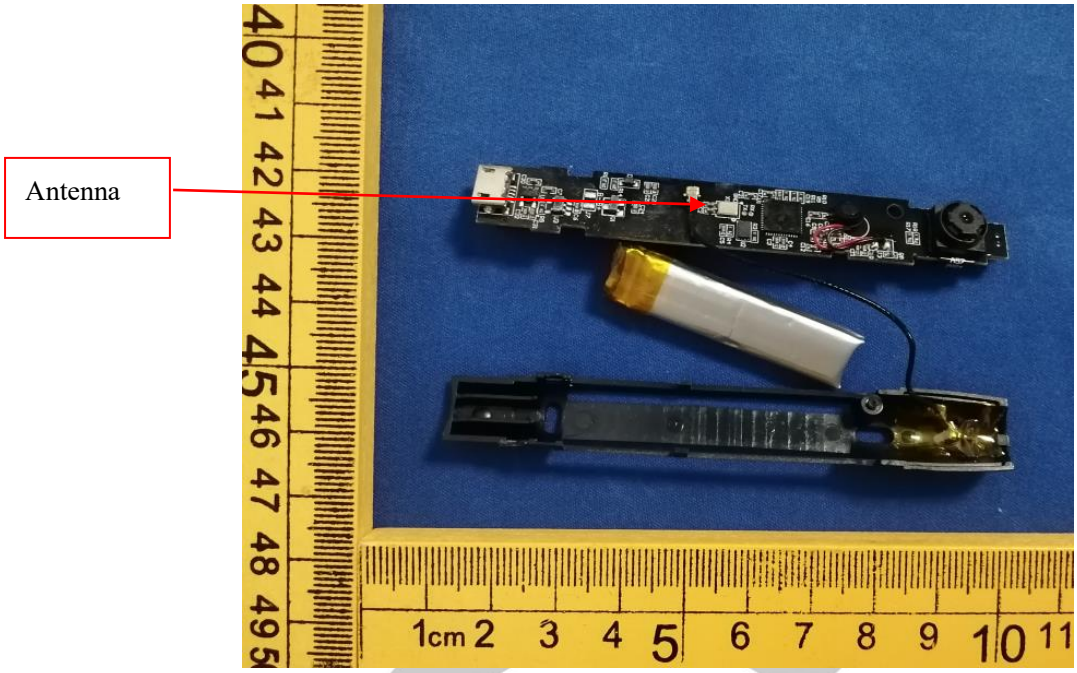


Figure 5

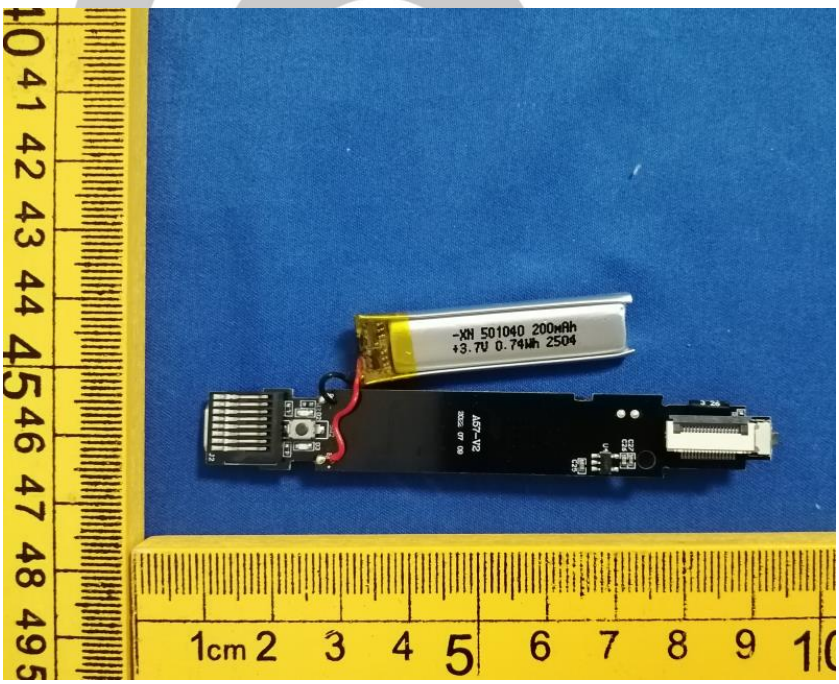


Figure 6

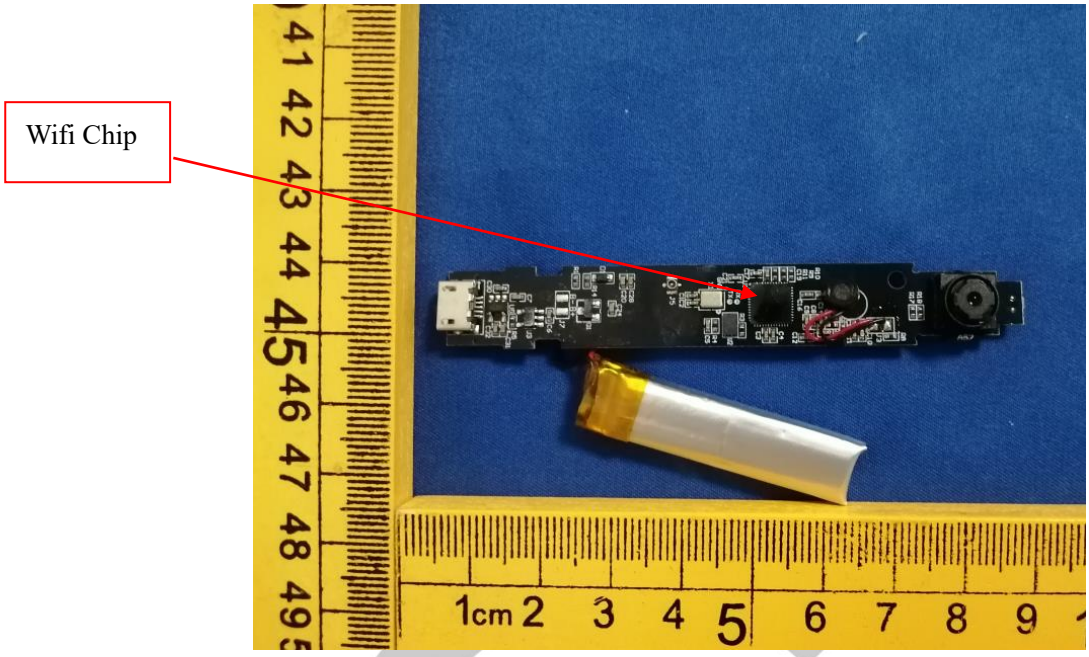


Figure 7

EXHIBIT 2 - TEST SETUP PHOTOGRAPHS

Radiation Emission test

******* END OF REPORT *******