CTC Laboratories, Inc.

TEST REPORT

Report No. ....:	**CTC2024287505**
Applicant ....:	**XonTel Technology Trd. Co. W.L.L**
Address…………………………….....:	Office 21 - Justice Tower - Ali Al Salem St. - Qibla - Kuwait City - State Of Kuwait
Manufacturer..................................:	XonTel Technology Trd. Co. W.L.L
Address..:	Office 21 - Justice Tower - Ali Al Salem St. - Qibla - Kuwait City - State Of Kuwait
Product Name ....:	**Prime Business Phone**
Trade Mark ....:	XonTel
Model/Type reference....................:	XT-24G
Listed Model(s) ....:	/
Standard ....:	**ETSI EN 300 328 V2.2.2: 2019-07**
Test Report Form No ....:	CTC-TR-052_A1
Master TRF....................................:	Dated 2024-09-20
Date of receipt of test sample…:	Jan. 18, 2022
Date of testing…………………..:	Jan. 19, 2022 ~ Feb. 21, 2022
Date of issue………………….....:	Dec. 20, 2024
Result……………………………:	**PASS**

Compiled by: (Printed name+signature)	Jim Jiang	Jim Jiang
Supervised by: (Printed name+signature)	Eric Zhang	Eric Zhang
Approved by: (Printed name+signature)	Totti Zhao	

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1. TEST SUMMARY

1.1. 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 ISM band and using wide band modulation techniques; Harmonised Standard for access to radio spectrum

1.2. Report version

Revised No.	Report No.	Date of issue	Description
01	CTC2024287505	Dec. 20, 2024	On the basis of the original report CTC20220136E10, update the applicant, manufacturer, trademark and model number., no testing involved.

1.3. Test Description

Radio Spectrum Matter (RSM) Part of Transmitter			
Test Item	**Test require**	**Result**	**Test Engineer**
Maximum transmit power	clause 4.3.2.2	Pass	Alicia Liu
Power Spectral Density	clause 4.3.2.3	Pass	Alicia Liu
Duty Cycle, Tx-sequence, Tx-gap	clause 4.3.2.4	N/A	N/A
Medium Utilisation (MU) factor	clause 4.3.2.5	N/A	N/A
Adaptivity	clause 4.3.2.6	Pass	Alicia Liu
Occupied Channel Bandwidth	clause 4.3.2.7	Pass	Alicia Liu
Transmitter unwanted emissions in the out-of-band domain	clause 4.3.2.8	Pass	Alicia Liu
Transmitter unwanted emissions in the spurious domain	clause 4.3.2.9	Pass	Alicia Liu
Radio Spectrum Matter (RSM) Part of Receiver			
Test Item	**Test require**	**Result**	**Test Engineer**
Receiver spurious emissions	clause 4.3.2.10	Pass	Alicia Liu
Receiver Blocking	clause 4.3.2.11	Pass	Alicia Liu
Geo-location capability	clause 4.3.2.12	N/A	N/A

Note:

1. The measurement uncertainty is not included in the test result.

2. “N/A”: means this test item is not applicable for this device according to the technology characteristic of device.

1.4. Test Facility

Address of the report laboratory

CTC Laboratories, Inc.

Add: Room 101 of Building B, Room 107, 108, 207, 208 of Building A, No. 7, Lanqing 1st Road, Luhu Community, Guanhu Subdistrict, Longhua District, Shenzhen, Guangdong, China

Laboratory accreditation

The test facility is recognized, certified, or accredited by the following organizations:

A2LA-Lab Cert. No.: 4340.01

CTC Laboratories, Inc. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in th e identified field of testing.

Industry Canada (Registration No.: 9783A, CAB Identifier: CN0029)

CTC Laboratories, Inc. EMC Laboratory has been registered by Certification and Engineer Bureau of Indus try Canada for the performance of with Registration NO.: 9783A on Jan, 2016.

FCC (Registration No.: 951311, Designation Number CN1208)

CTC Laboratories, Inc. EMC Laboratory has been registered and fully described in a report filed with the (F CC) Federal Communications Commission. The acceptance letter from the FCC is maintained inour files. Registration 951311, Aug 26, 2017.

1.5. Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01" Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM);Uncertainties in the measurement of mobile radio equipment characteristics; Part 2 " and is documented in the CTC Laboratories, Inc. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Below is the best measurement capability for CTC Laboratories, Inc.

Test Items	Measurement Uncertainty	Notes
Maximum transmit power	±1.5dB	(1)
Power Spectral Density	±1.5dB	(1)
Duty Cycle, Tx-sequence, Tx-gap	±5%	(1)
Accumulated Transmit Time, Frequency Occupation and Hopping Sequence	±5%	(1)
Hopping Frequency Separation	±5%	(1)
Medium Utilisation (MU) factor	±5%	(1)
Adaptively	±5%	(1)
Occupied Channel Bandwidth	±5%	(1)
Transmitter unwanted emissions in the out-of-band domain	±2.8dB	(1)
Transmitter unwanted emissions in the spurious domain	±2.8dB	(1)
Receiver spurious emissions	±2.8dB	(1)
Receiver Blocking	±2.8dB	(1)

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

1.6. Environmental conditions

Normal Condition	Temperature	25 °C
	Relative humidity	55 %
	Voltage	The equipment shall be the nominal voltage for which the equipment was designed.
Extreme Condition	Temperature	Measurements shall be made over the extremes of the operating temperature range as declared by the manufacturer
	Voltage	Measurements shall be made over the extremes of the operating voltage range as declared by the manufacturer

Normal Condition	T_N=Normal Temperature	25 °C
Extreme Condition	T_L=Lower Temperature	0 °C
	T_H=Higher Temperature	45 °C

2. GENERAL INFORMATION

2.1. Client Information

Applicant:	XonTel Technology Trd. Co. W.L.L
Address:	Office 21 - Justice Tower - Ali Al Salem St. - Qibla - Kuwait City - State Of Kuwait
Manufacturer:	XonTel Technology Trd. Co. W.L.L
Address:	Office 21 - Justice Tower - Ali Al Salem St. - Qibla - Kuwait City - State Of Kuwait

2.2. General Description of EUT

Product Name:	Prime Business Phone			
Trade Mark:	XonTel			
Model/Type reference:	XT-24G			
Listed Model(s):	/			
Power supply:	5Vdc/2A from AC/DC Adapter 48Vdc/0.3A from POE			
Adapter 1 Model:	F12W8-050200SPAV Input: 100-240V~ 50/60Hz 0.6A Output: 5Vdc/2A			
Adapter 2 Model:	F12W8-050200SPAB Input: 100-240V~ 50/60Hz 0.6A Output: 5Vdc/2A			
Adapter 3 Model:	F12W8-050200SPAS Input: 100-240V~ 50/60Hz 0.6A Output: 5Vdc/2A			
Adapter Difference:	All these models are identical in the same PCB, Layout and electrical circuit, The only difference is plugs.			
Hardware version:	V1.0			
Software version:	T0.0.9.5.1			
Antenna type:	FPC Antenna			
Antenna gain:	5dBi			
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)			
Operation frequency:	2412MHz~2472MHz for 802.11b/802.11g/802.11n(HT20)			
Channel number:	13 for 802.11b/802.11g/802.11n(HT20)			
Channel separation:	5MHz			
Test frequency:	CH01: 2412M CH07: 2442MHz CH13: 2472MHz			

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 % or adaptive equipment with a maximum RF output power of 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 % or adaptive equipment 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 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
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:../..4.588 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: .... µs
	☐ 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: ………. %
☒Antennas and transmit operating modes:	Operating mode 1 (single antenna) ☒ Equipment with only 1 antenna ☐ Equipment with 2 diversity antennas but only 1 antenna active at any moment in time ☐ Smart Antenna Systems with 2 or more antennas, but operating in a (legacy) mode where only 1 antenna is used.

2.3. Accessory Equipment information

Equipment Information			
Name	Model	S/N	Manufacturer
Notebook	ThinkBook 14G3 ACL	MP246QDR	Lenovo
/	/	/	/
Cable Information			
Name	Shielded Type	Ferrite Core	Length
/	/	/	/
Test Software Information			
Name	Versions	/	/
SecureCRT.exe	8.7.1	/	/

2.4. Measurement Instruments List

Tonscend JS0806-2 Test system					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated until
1	Spectrum Analyzer	KEYSIGHT	N9020A	100231	Dec. 23, 2022
2	Spectrum Analyzer	Rohde & Schwarz	FUV40-N	101331	Mar. 15, 2022
3	MXG Vector Signal Generator	Agilent	N5182A	MY47420864	Dec. 23, 2022
4	Signal Generator	Agilent	E8257D	MY46521908	Dec. 23, 2022
5	Power Sensor	Agilent	U2021XA	MY5365004	Mar. 15, 2022
6	Power Sensor	Agilent	U2021XA	MY5365006	Mar. 15, 2022
7	High and low temperature box	ESPEC	MT3035	N/A	Mar. 24, 2022
8	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	102414	Dec. 23, 2022
9	300328 v2.2.2 test system	TONSCEND	v2.6	/	/

Radiated emission(3m chamber 2)					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	9168-1013	Jan. 12, 2023
2	Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-647	Dec. 23, 2022
3	Spectrum Analyzer	R&S	FSU26	100105	Dec. 23, 2022
4	Spectrum Analyzer	R&S	FSV40-N	101331	Mar. 15, 2022
5	Pre-Amplifier	SONOMA	310	186194	Dec. 23, 2022
6	Low Noise Pre-Amplifier	EMCI	EMC051835	980075	Dec. 23, 2022
7	Test Receiver	R&S	ESCI7	100967	Dec. 23, 2022

Radiated emission(3m chamber 3)					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Calibrated Until
1	Trilog-Broadband Antenna	Schwarzbeck	VULB 9168	9168-759	Nov. 09, 2022
2	Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-647	Dec. 23, 2022
3	Test Receiver	Keysight	N9038A	MY56400071	Dec. 23, 2022
4	Broadband Premplifier	SCHWARZBECK	BBV9743B	259	Dec. 23, 2022
5	Mirowave Broadband Amplifier	SCHWARZBECK	BBV9718C	111	Dec. 23, 2022

Note: The cable loss has calculated in test result which connection between each test instruments.

3. TEST ITEM AND RESULTS

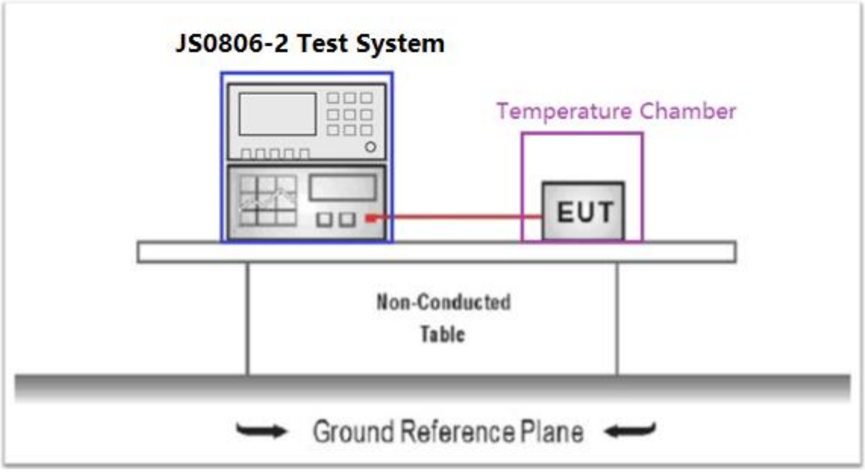
3.1. RF Output Power

Limit

ETSI EN 300 328 Sub-clause 4.3.2.2.3

1. For adaptive equipment using wide band modulations other than FHSS, the maximum RF output power shall be 20 dBm
2. The maximum RF output power for non-adaptive equipment shall be declared by the supplier and shall not exceed 20 dBm. 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

Test Configuration



Test Procedure

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

Test Results

Test Condition	Test Mode	Channel	EIRP[dBm]	Limit[dBm]	Verdict
NTNV	802.11b	2412	15.70	20	PASS
		2442	15.49	20	PASS
		2472	15.55	20	PASS
	802.11g	2412	15.71	20	PASS
		2442	15.57	20	PASS
		2472	15.37	20	PASS
	802.11n(HT20)	2412	15.16	20	PASS
		2442	15.47	20	PASS
		2472	15.17	20	PASS
LTNV	802.11b	2412	15.77	20	PASS
		2442	15.50	20	PASS
		2472	15.55	20	PASS
	802.11g	2412	15.65	20	PASS
		2442	15.57	20	PASS
		2472	15.28	20	PASS
	802.11n(HT20)	2412	15.17	20	PASS
		2442	15.27	20	PASS
		2472	15.70	20	PASS
HTNV	802.11b	2412	16.40	20	PASS
		2442	15.97	20	PASS
		2472	15.49	20	PASS
	802.11g	2412	15.65	20	PASS
		2442	15.55	20	PASS
		2472	15.31	20	PASS
	802.11n(HT20)	2412	15.25	20	PASS
		2442	15.38	20	PASS
		2472	15.04	20	PASS

Note:
1. Measured Power(EIRP) include the cable loss and antenna gain.
2. Test bursts: 15.

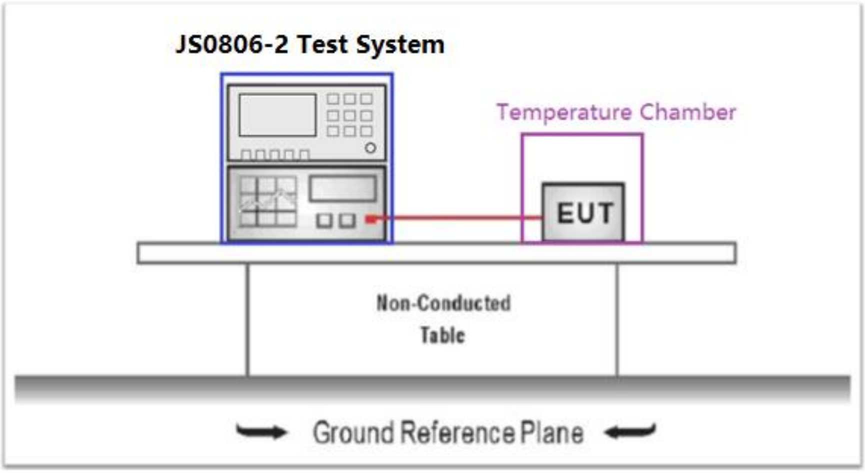
3.2. Power Spectral Density

Limit

ETSI EN 300 328 Sub-clause 4.3.2.3.3

For equipment using wide band modulations other than FHSS, the maximum Power Spectral Density is limited to10 dBm per MHz.

Test Configuration



Test Procedure

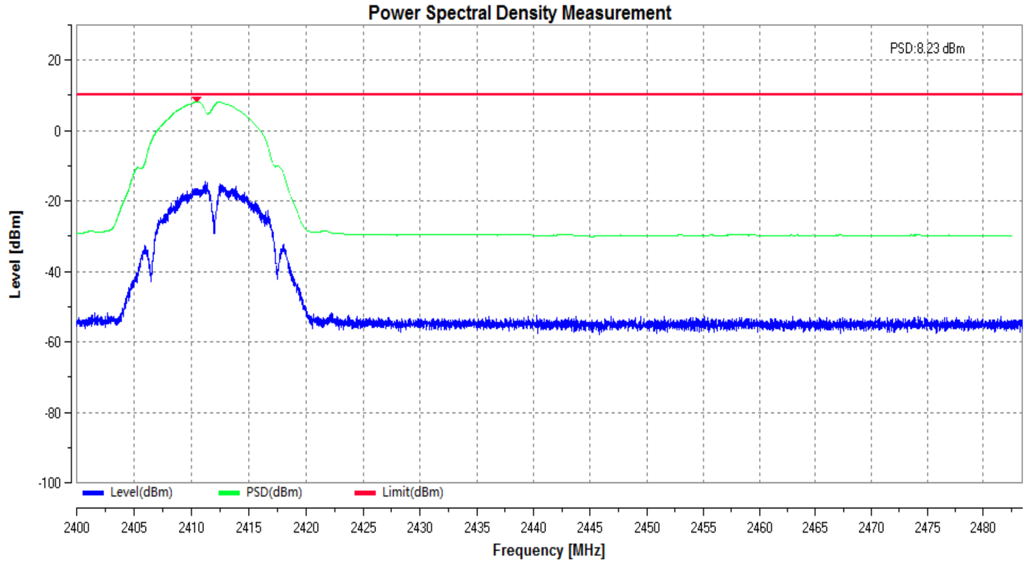
Please refer to ETSI EN 300 328 Sub-clause 5.4.3.2.1 for the measurement method.

Test Result

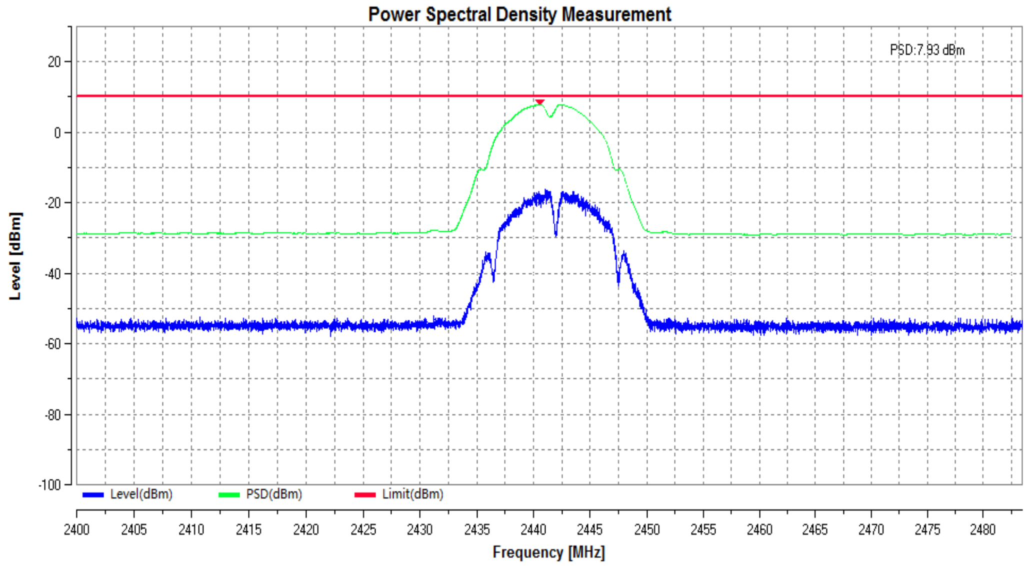
Test Mode	Channel	PSD[dBm/MHz]	Limit[dBm/MHz]	Verdict
802.11b	2412	8.23	10	PASS
	2442	7.93	10	PASS
	2472	8.08	10	PASS
802.11g	2412	6.65	10	PASS
	2442	6.49	10	PASS
	2472	6.35	10	PASS
802.11n(HT20)	2412	6.03	10	PASS
	2442	6.06	10	PASS
	2472	6.00	10	PASS

Note:
1) Measured Power(EIRP) include the cable loss and antenna gain.

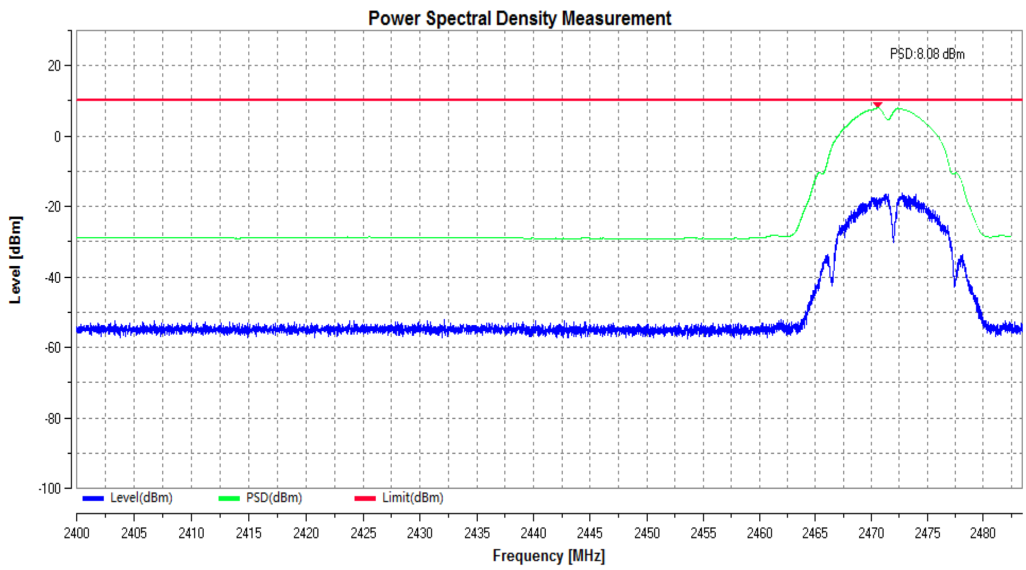
802.11b_2412



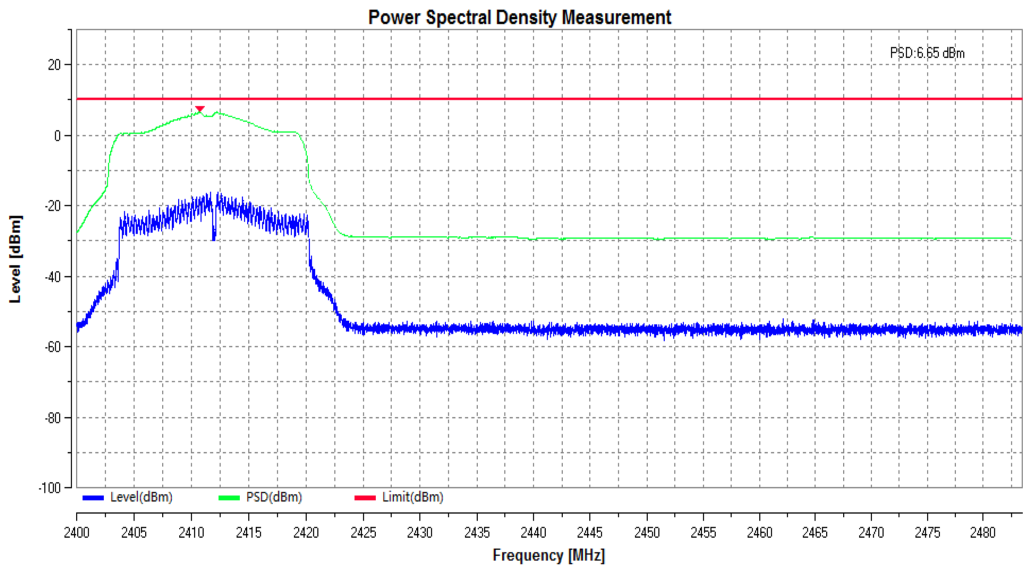
802.11b_2442



802.11b_2472



802.11g_2412



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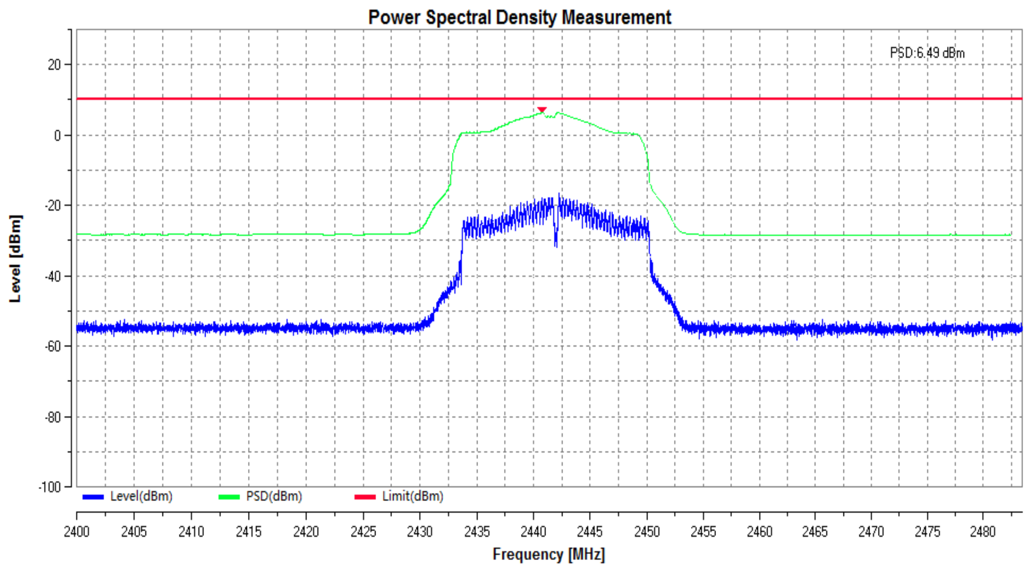

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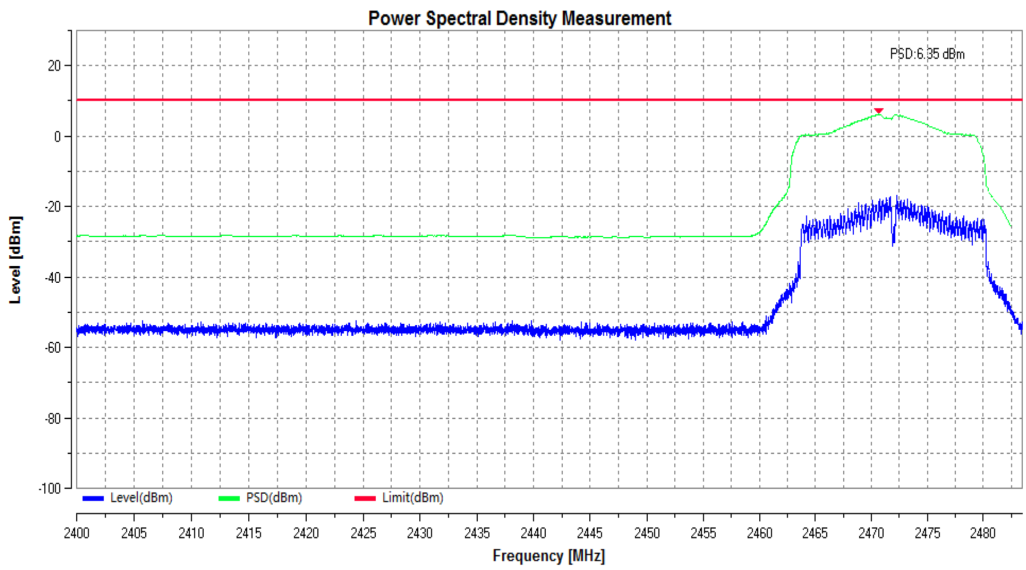
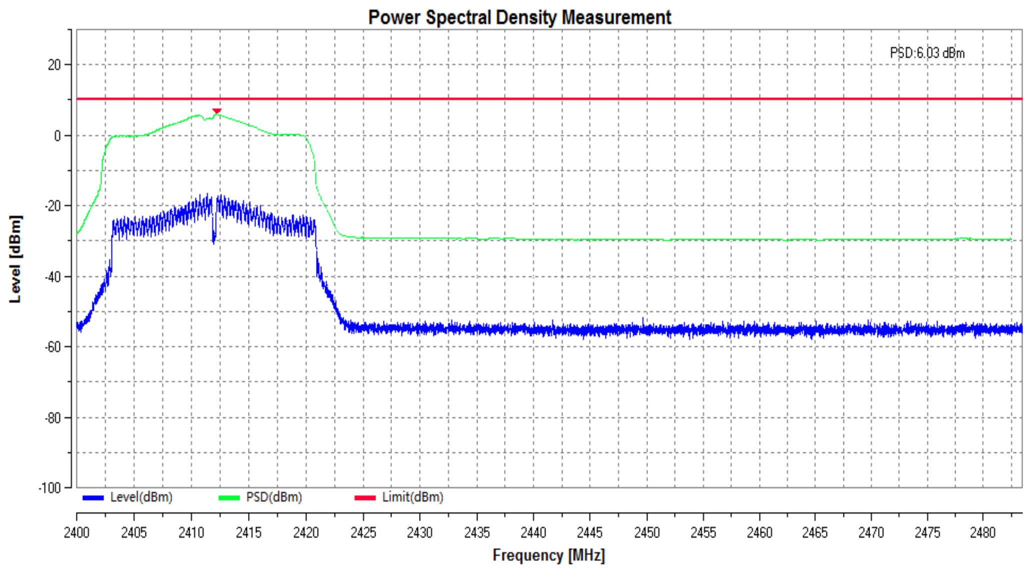
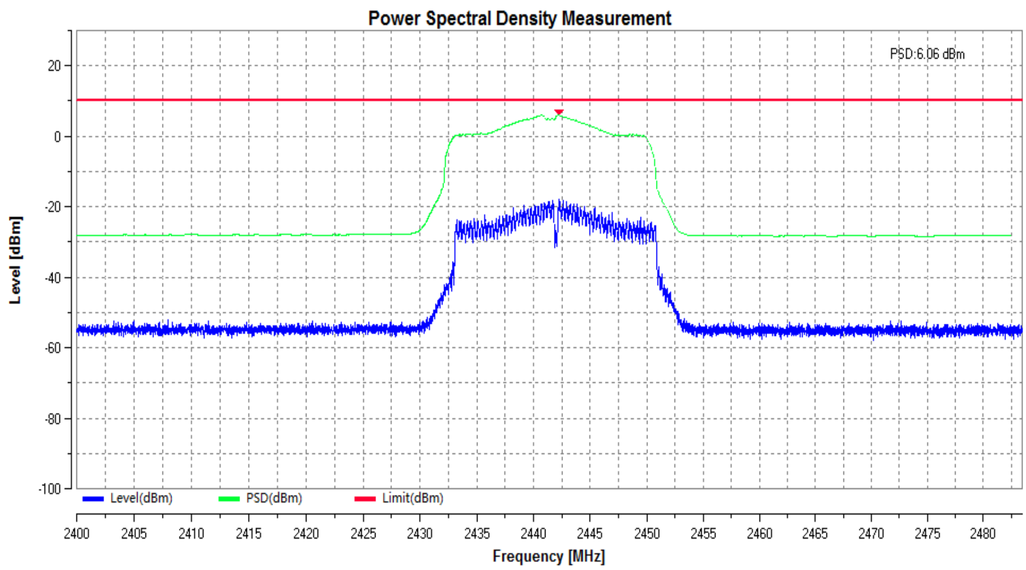


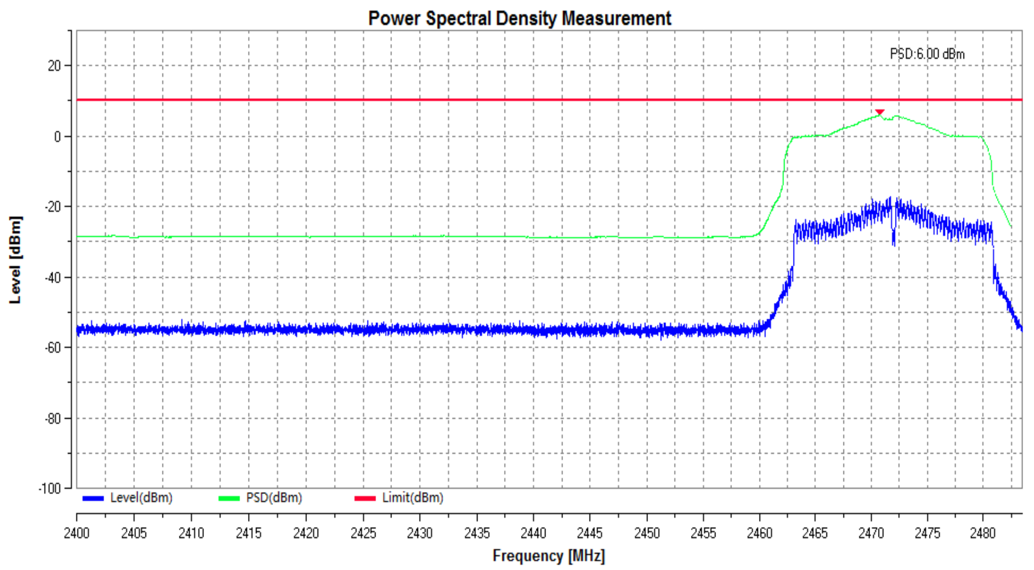
802.11n(HT20)_2412



802.11n(HT20)_2442



802.11n(HT20)_2472


Power Spectral Density Measurement
PSD:6.00 dBm
Level [dBm]
20
0
-20
-40
-60
-80
-100
Level(dBm)
PSD(dBm)
Limit(dBm)
2400
2405
2410
2415
2420
2425
2430
2435
2440
2445
2450
2455
2460
2465
2470
2475
2480
Frequency [MHz]

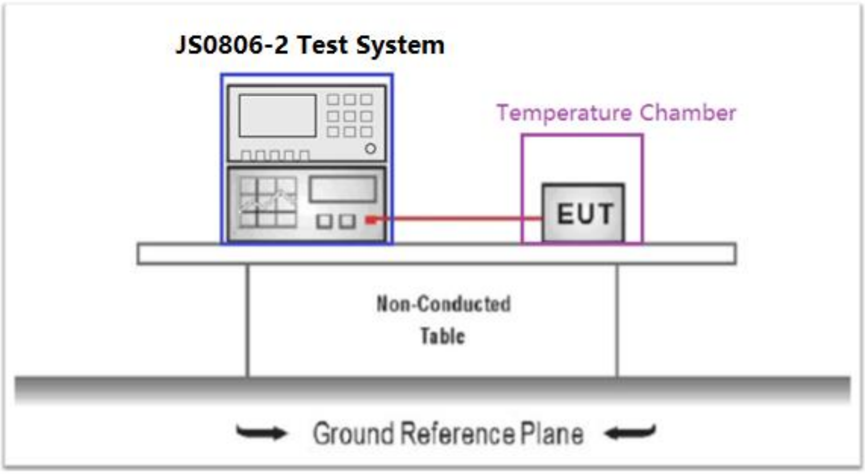
3.3. Duty Cycle, Tx-sequence, Tx-gap

Limit

ETSI EN 300 328 V2.2.2 Sub-clause 4.3.1.3.3 & 4.3.2.4.3

1. For non-adaptive FHSS equipment, the Duty Cycle shall be equal to or less than the maximum value declared by the supplier. In addition, the maximum Tx -sequence time shall be 5 ms while the minimum Tx-gap time shall be 5 ms.
2. For equipment using wide band modulations other than FHSS, the Duty Cycle shall be equal to or less than the maximum value declared by the supplier.
   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.

Test Configuration



Test Procedure

Please refer to ETSI EN 300 328 Sub-clause 5.4.2.2.1.3 for the measurement method.

Test Results

Not applicable to this device which was adaptive equipment and cannot operate in a non-adaptive mode.

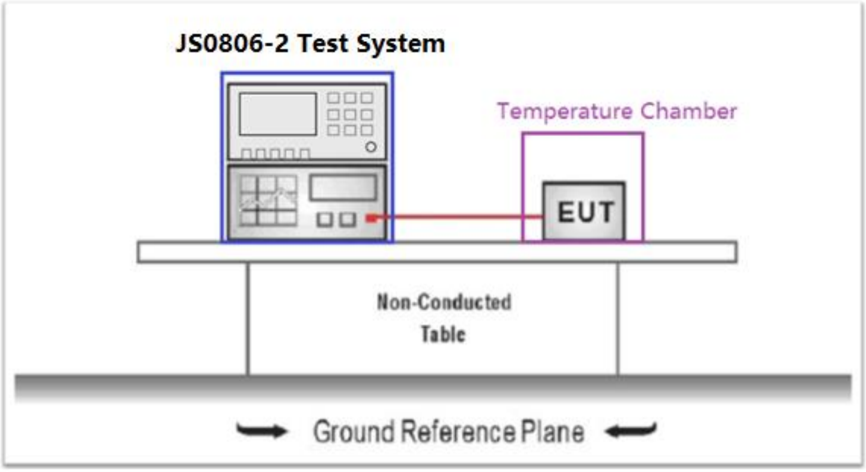
3.4. Medium Utilisation (MU) factor

Limit

ETSI EN 300 328 V2.2.2 Sub-clause 4.3.1.6.3&4.3.2.5.3

The maximum Medium Utilisation factor for non-adaptive equipment shall be 10 %.

Test Configuration



Test Procedure

Please refer to ETSI EN 300 328 Sub-clause 5.4.2.2.1.4 for the measurement method.

Test Results

Not applicable to this device which cannot operation in a non-adaptive mode.

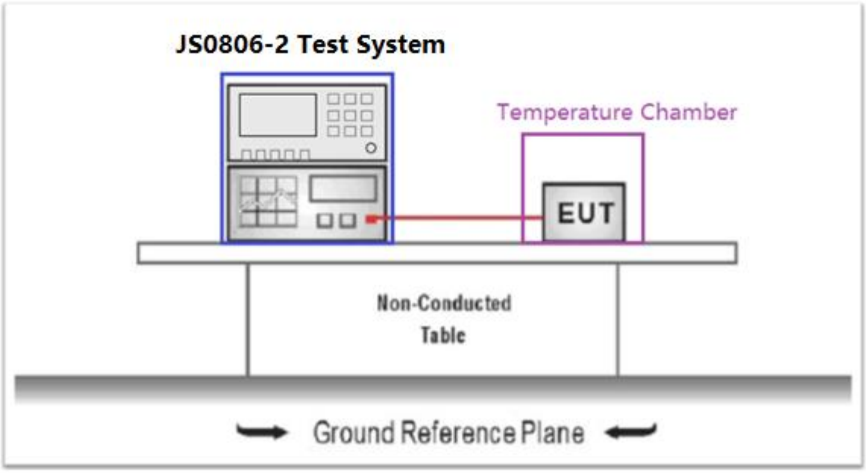
3.5. Occupied Channel Bandwidth

Limit

ETSI EN 300 328 Sub-clause 4.3.2.7.3

1. The Occupied Channel Bandwidth shall fall completely within the band given in the band 2,4 GHz to 2,4835 GHz.
2. In addition, for non-adaptive equipment 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.

Test Configuration

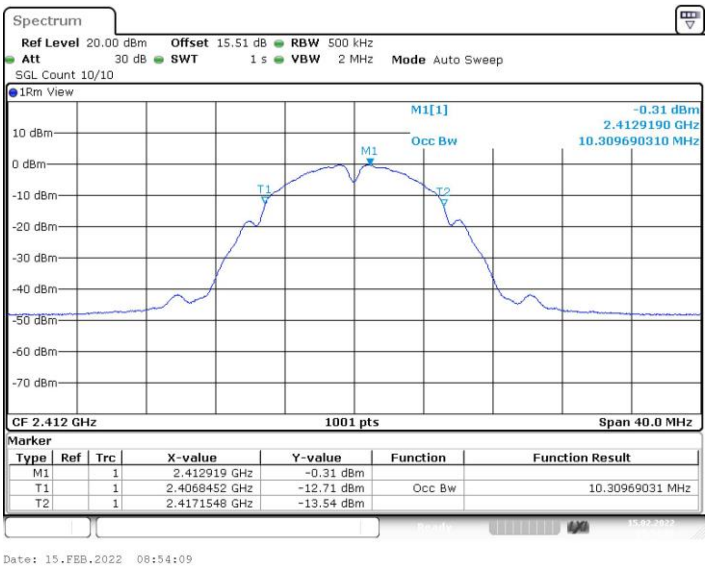


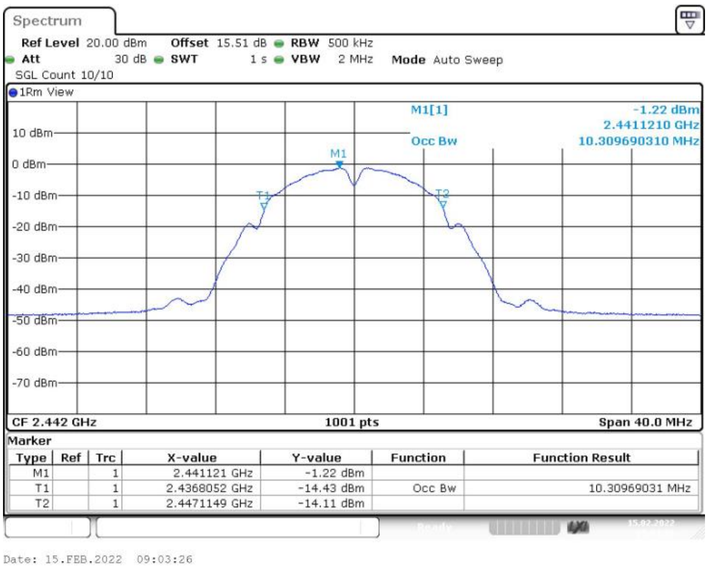
Test Procedure

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

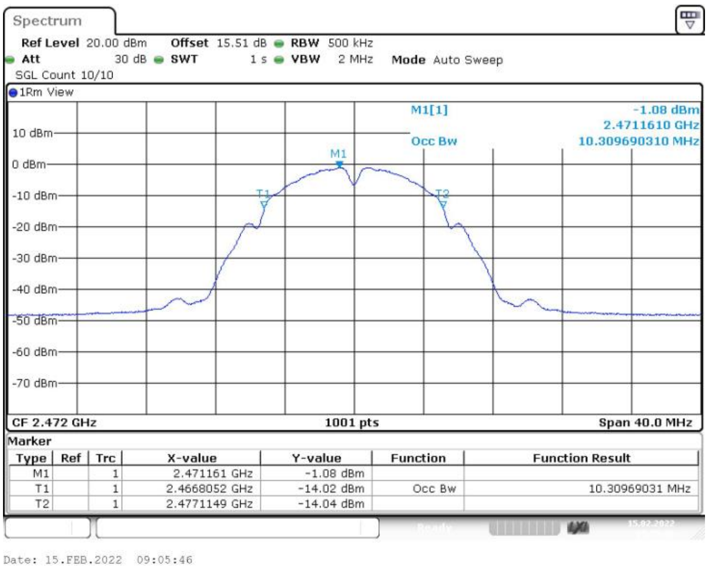
Test Result

Test Mode	Channel	OCB[MHz]	FL[MHz]	FH[MHz]	Limit[MHz]	Verdict
802.11b	2412	10.31	2406.8450	2417.1550	2400 to 2483.5	PASS
	2442	10.31	2436.8050	2447.1150	2400 to 2483.5	PASS
	2472	10.31	2466.8050	2477.1150	2400 to 2483.5	PASS
802.11g	2412	16.424	2403.7680	2420.1920	2400 to 2483.5	PASS
	2442	16.464	2433.7280	2450.1920	2400 to 2483.5	PASS
	2472	16.464	2463.7280	2480.1920	2400 to 2483.5	PASS
802.11n(HT20)	2412	17.622	2403.1690	2420.7910	2400 to 2483.5	PASS
	2442	17.662	2433.1290	2450.7910	2400 to 2483.5	PASS
	2472	17.622	2463.1690	2480.7910	2400 to 2483.5	PASS

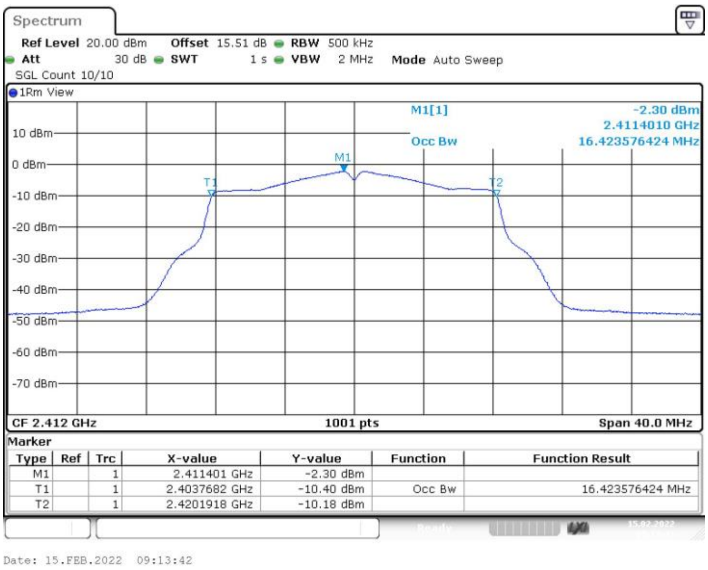
802.11b_2412


802.11b_2442


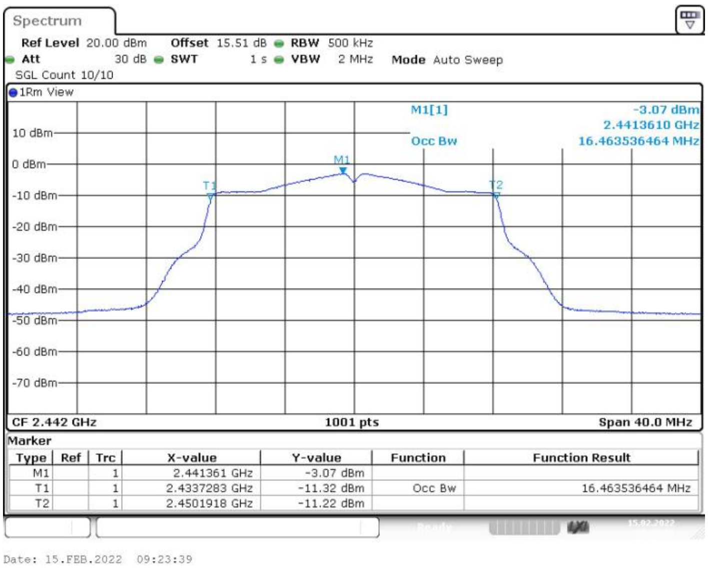
802.11b_2472



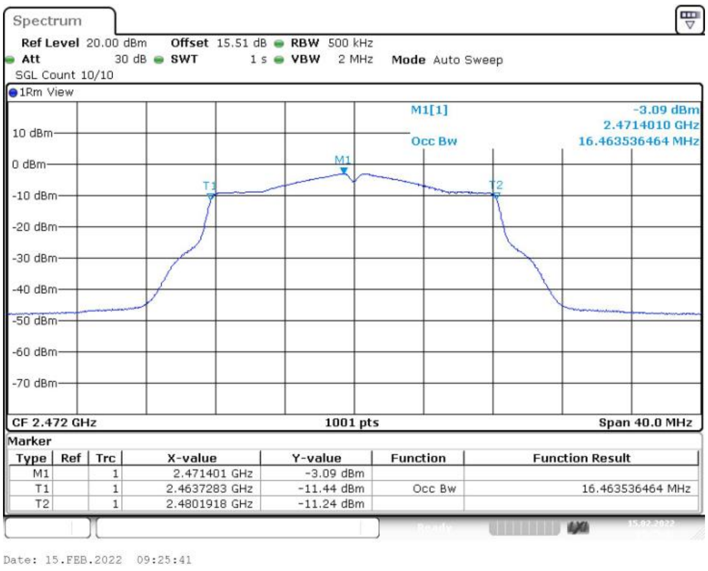
802.11g_2412



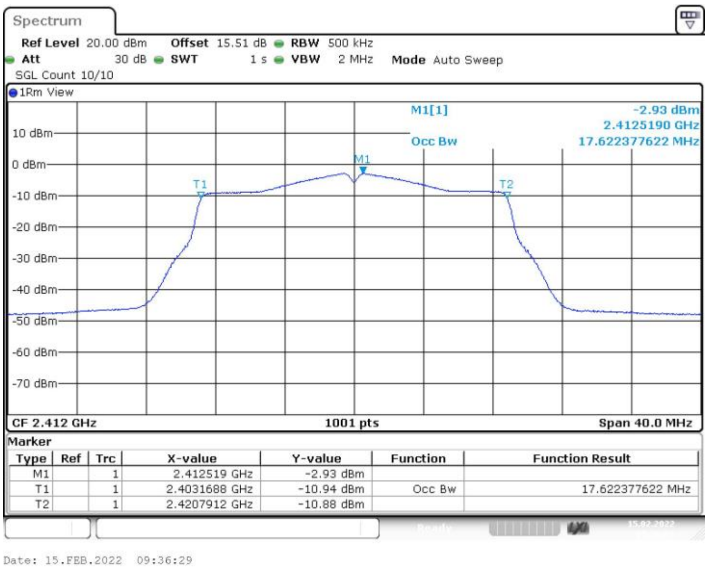
802.11g_2442



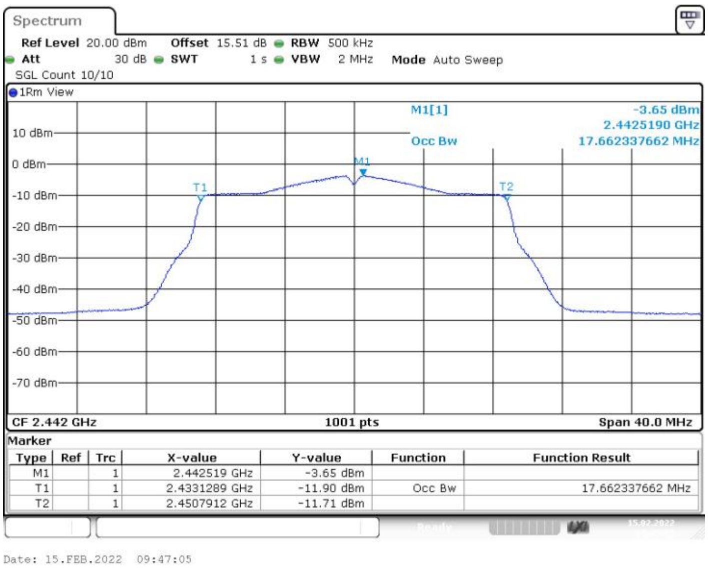
802.11g_2472



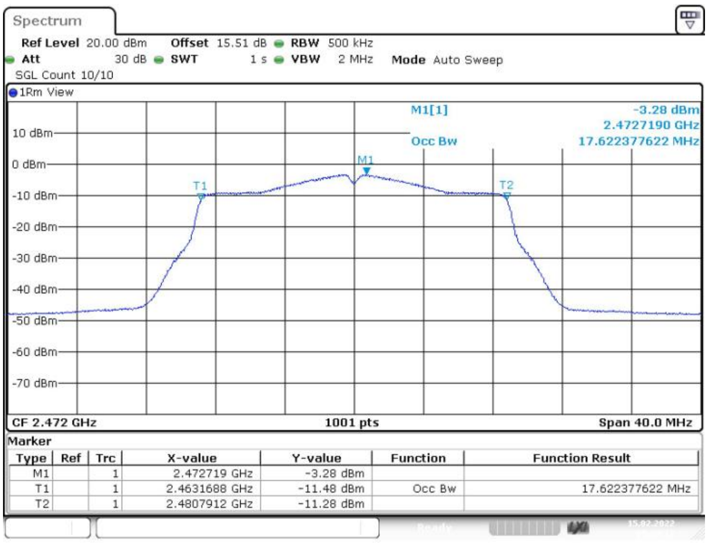
802.11n(HT20)_2412



802.11n(HT20)_2442



802.11n(HT20)_2472



Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.472719 GHz	-3.28 dBm		
T1		1	2.4631688 GHz	-11.48 dBm	Occ Bw	17.622377622 MHz
T2		1	2.4807912 GHz	-11.28 dBm		

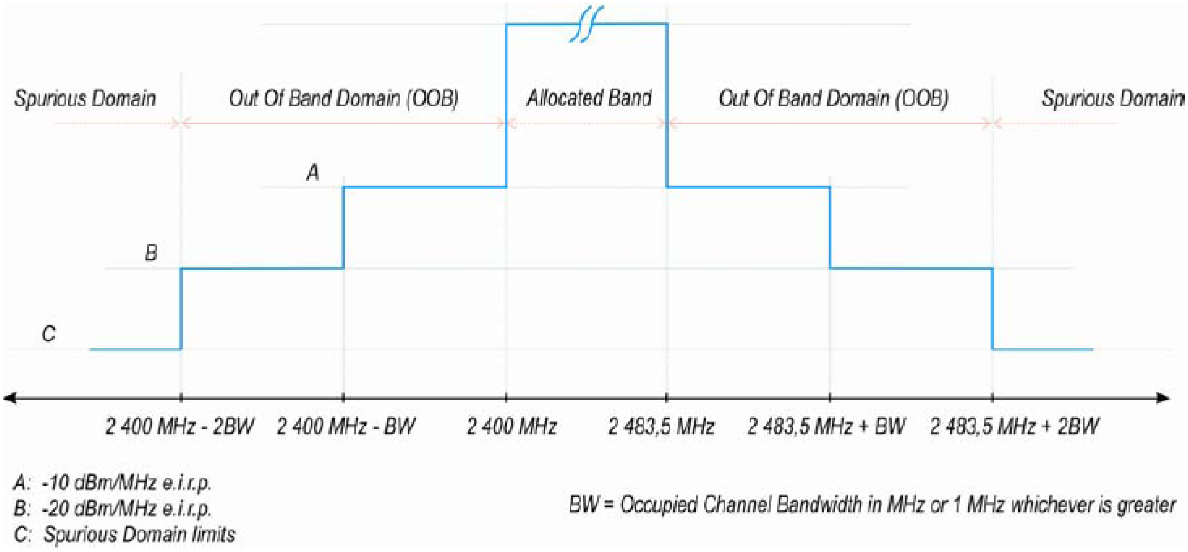
Date: 15.FEB.2022 09:50:17

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

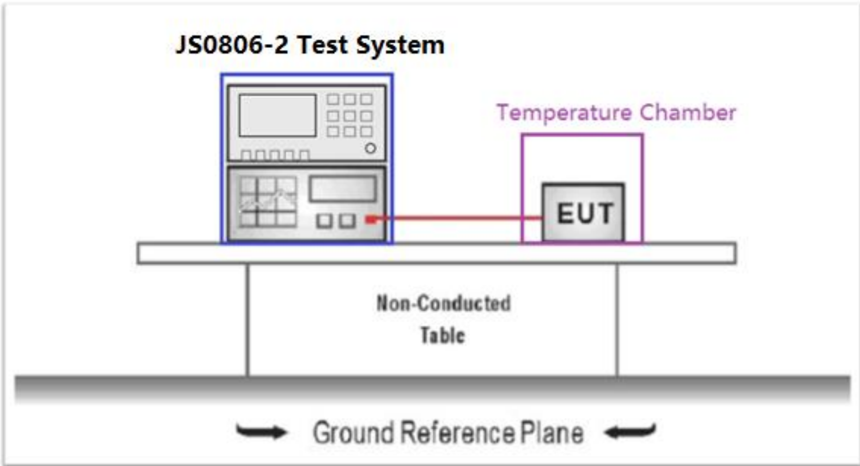
Limit

ETSI EN 300 328 V2.2.2 Sub-clause 4.3.1.9.3&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 1.



Test Configuration



Test Procedure

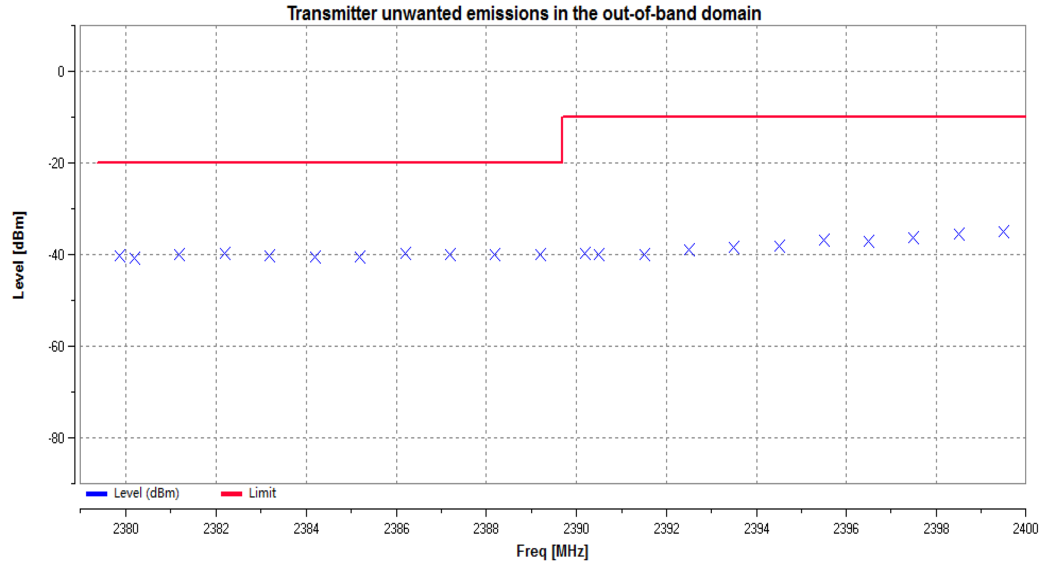
Please refer to ETSI EN 300 328 Sub-clause 5.4.8.2.1 for the measurement method.

Test Result

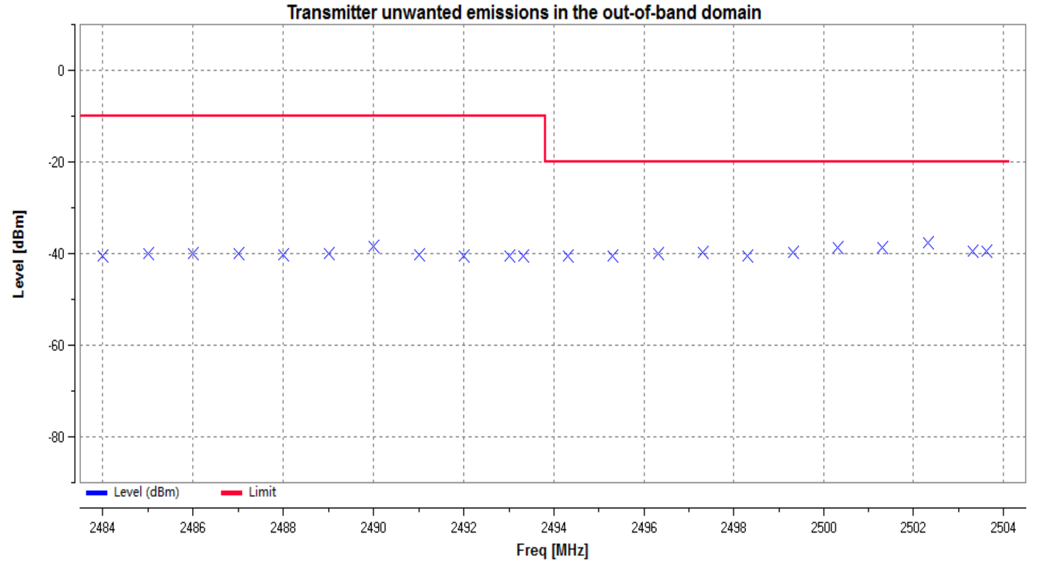
Remark: The datum recorded below represents the worst emission level in each segment and the plot for normal condition.

802.11b				
Frequency range (MHz)		Level (dBm)	Limit (dBm)	Result
Start	Stop			
2400-2OBW	2400-OBW	-39.76	<-20.00	Pass
2400-OBW	2400	-35.05	<-10.00	Pass
2483.5	2483.5+OBW	-38.51	<-10.00	Pass
2483.5+OBW	2483.5+2OBW	-38.65	<-20.00	Pass

Test plot as follows:



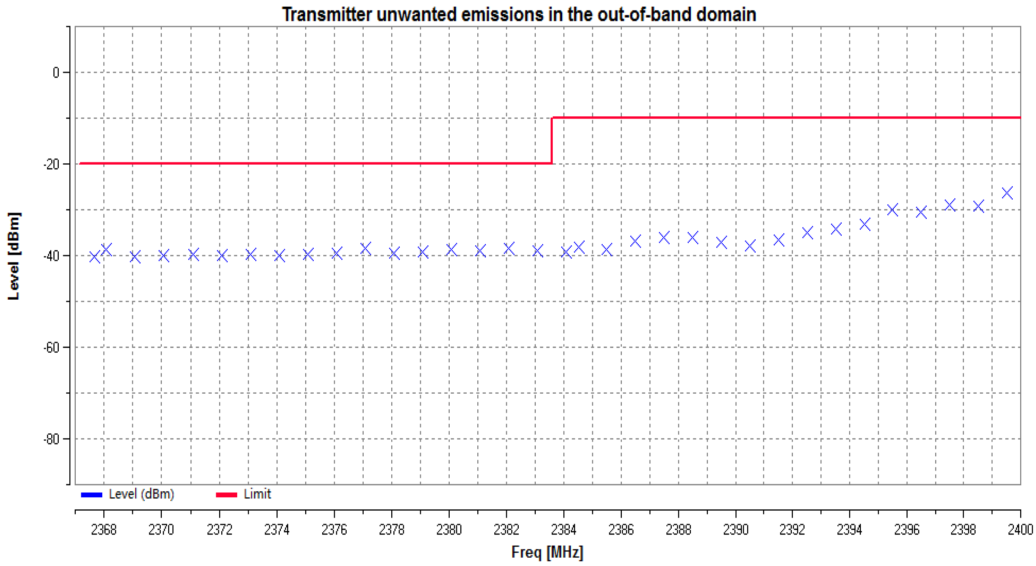
CH01



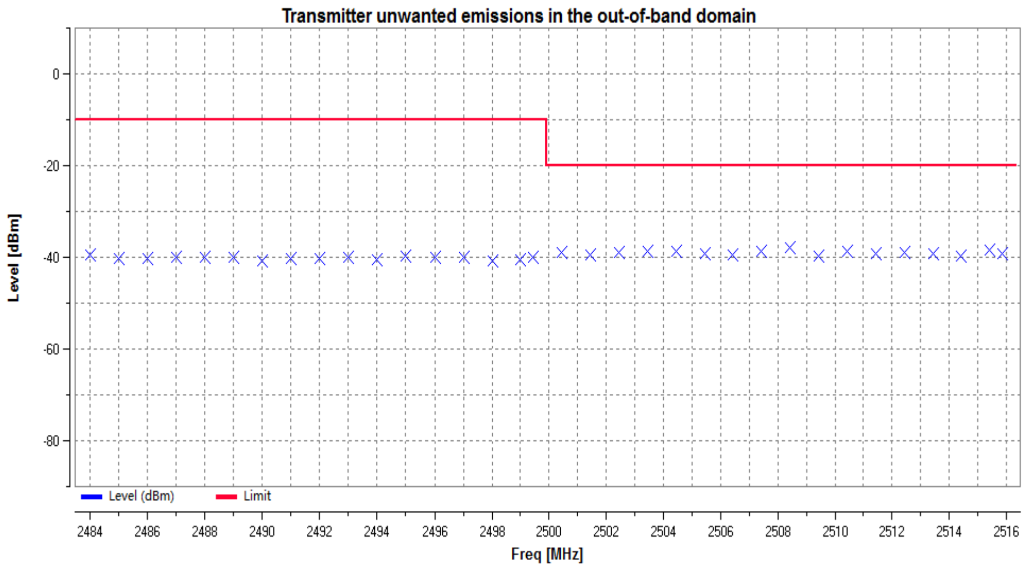
CH13

802.11g				
Frequency range (MHz)		Level (dBm)	Limit (dBm)	Result
Start	Stop			
2400-2OBW	2400-OBW	-38.35	<-20.00	Pass
2400-OBW	2400	-26.42	<-10.00	Pass
2483.5	2483.5+OBW	-39.65	<-10.00	Pass
2483.5+OBW	2483.5+2OBW	-38.40	<-20.00	Pass

Test plot as follows:



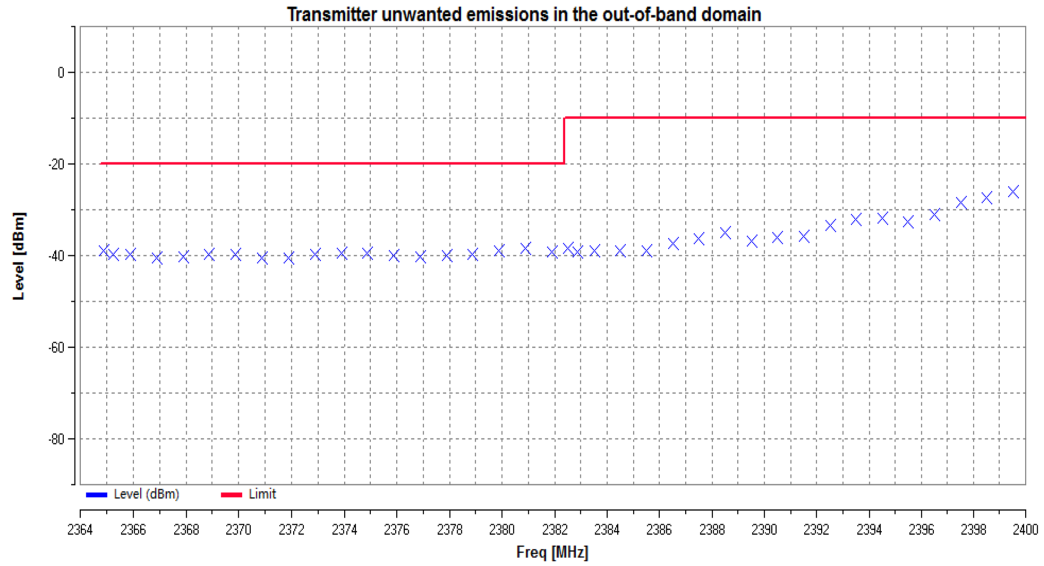
CH01



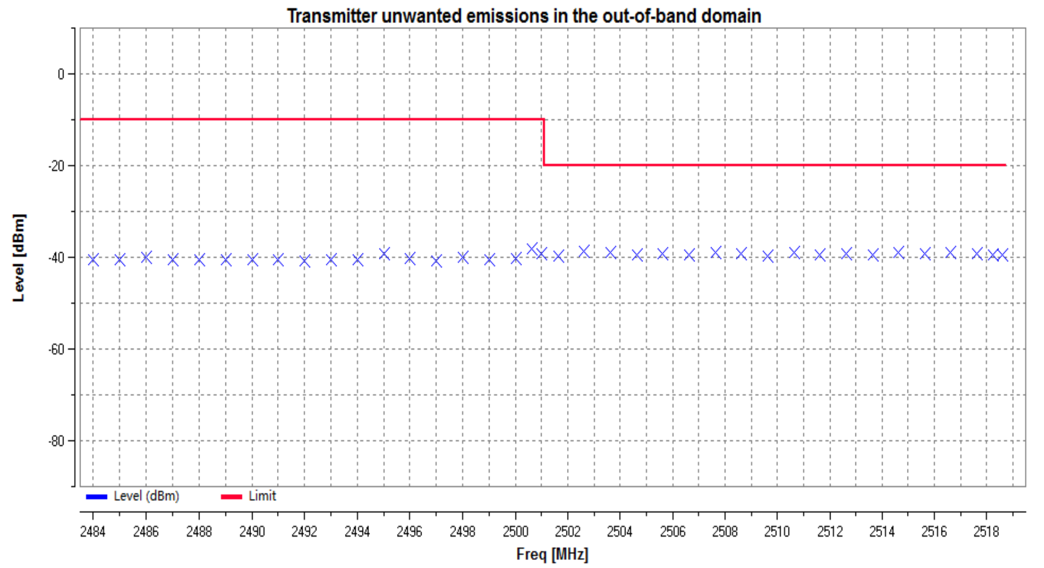
CH13

802.11n(HT20)				
Frequency range (MHz)		Level (dBm)	Limit (dBm)	Result
Start	Stop			
2400-2OBW	2400-OBW	-38.31	<-20.00	Pass
2400-OBW	2400	-26.17	<-10.00	Pass
2483.5	2483.5+OBW	-38.14	<-10.00	Pass
2483.5+OBW	2483.5+2OBW	-38.86	<-20.00	Pass

Test plot as follows:



CH01



CH13

3.7. Transmitter unwanted emissions in the spurious domain-Conducted measurements

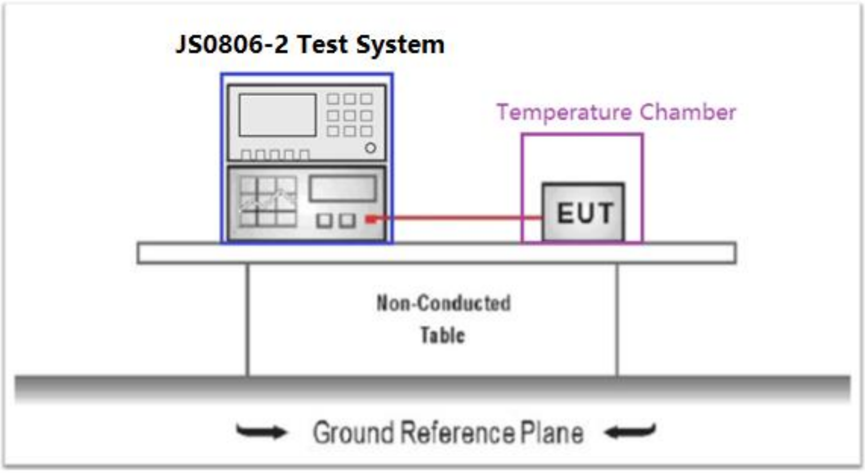
Limit

ETSI EN 300 328 Sub-clause 4.3.2.9.3

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

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

Test Configuration



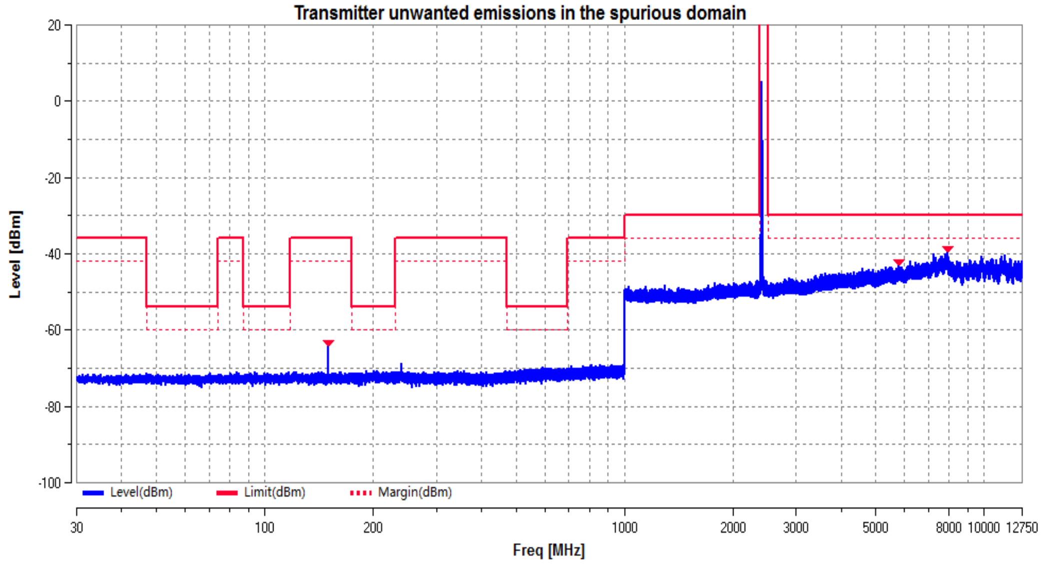
Test Procedure

Please refer to ETSI EN 300 328 Sub-clause 5.4.9.2.1 for the measurement method.

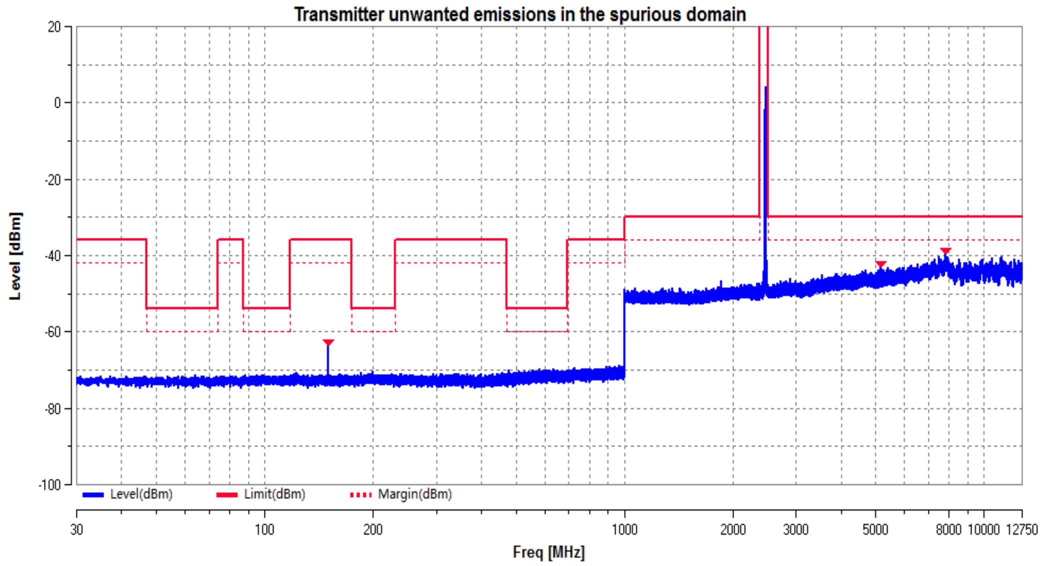
Test Result

Note: Pre-scan 802.11b, 802.11g, 802.11n (HT20) mode, And found the 802.11b mode which it is worse case, So only show the test data for worse case.

802.11b	CH01



802.11b	CH13



3.8. Transmitter unwanted emissions in the spurious domain-Radiated measurements

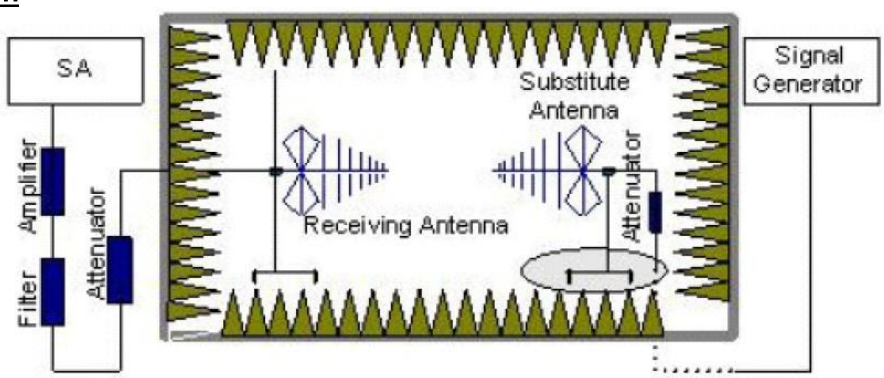
Limit

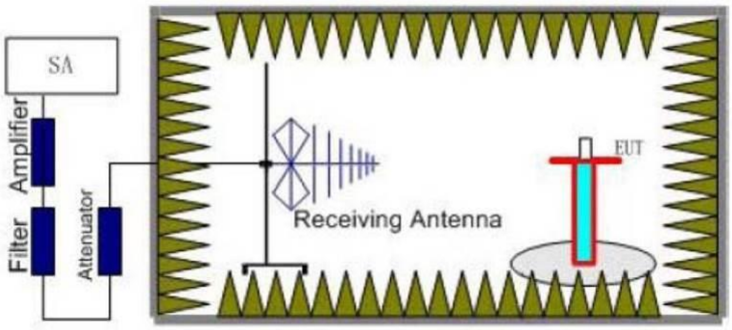
ETSI EN 300 328 Sub-clause 4.3.2.9.3

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

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

Test Configuration





Test Procedure

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

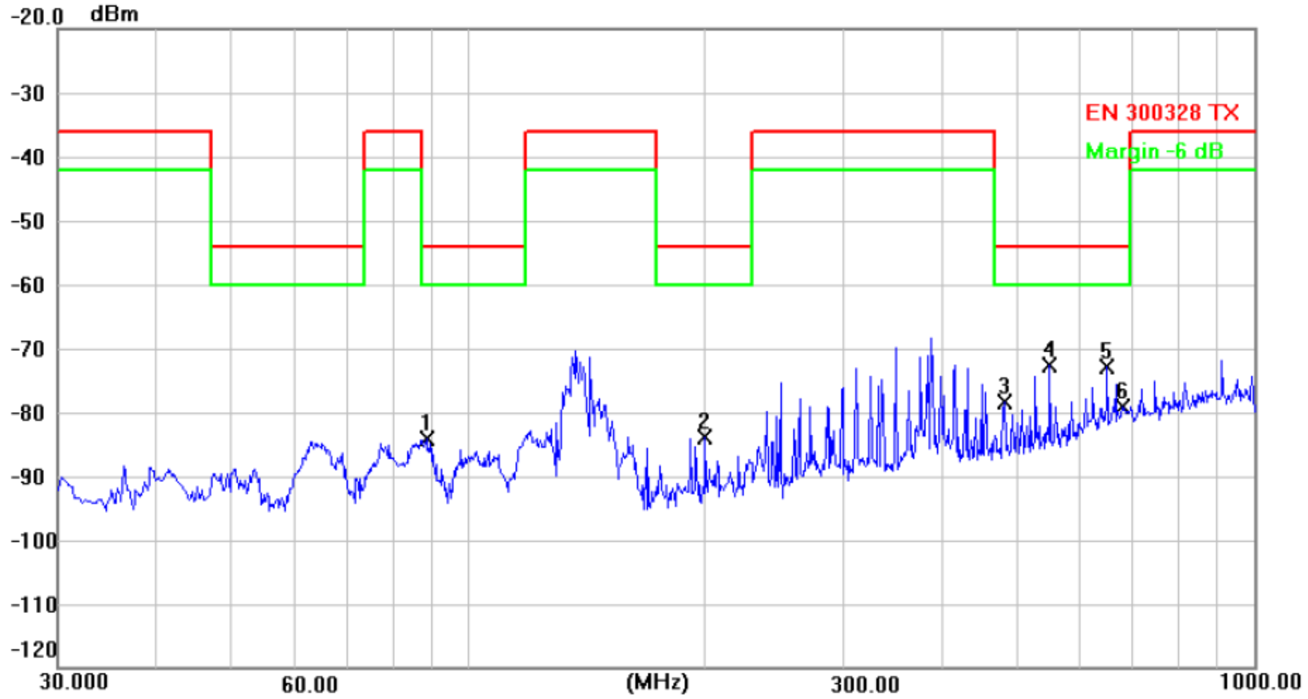
Test Result

Note:

1. Pre-scan 802.11b, 802.11g, 802.11n (HT20) mode, and found the 802.11b mode LCH channel which it is worse case, so only show the test data for worse case.
2. By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that “Z axis” position was the worst, and test data recorded in this report.

(1) Below 1G

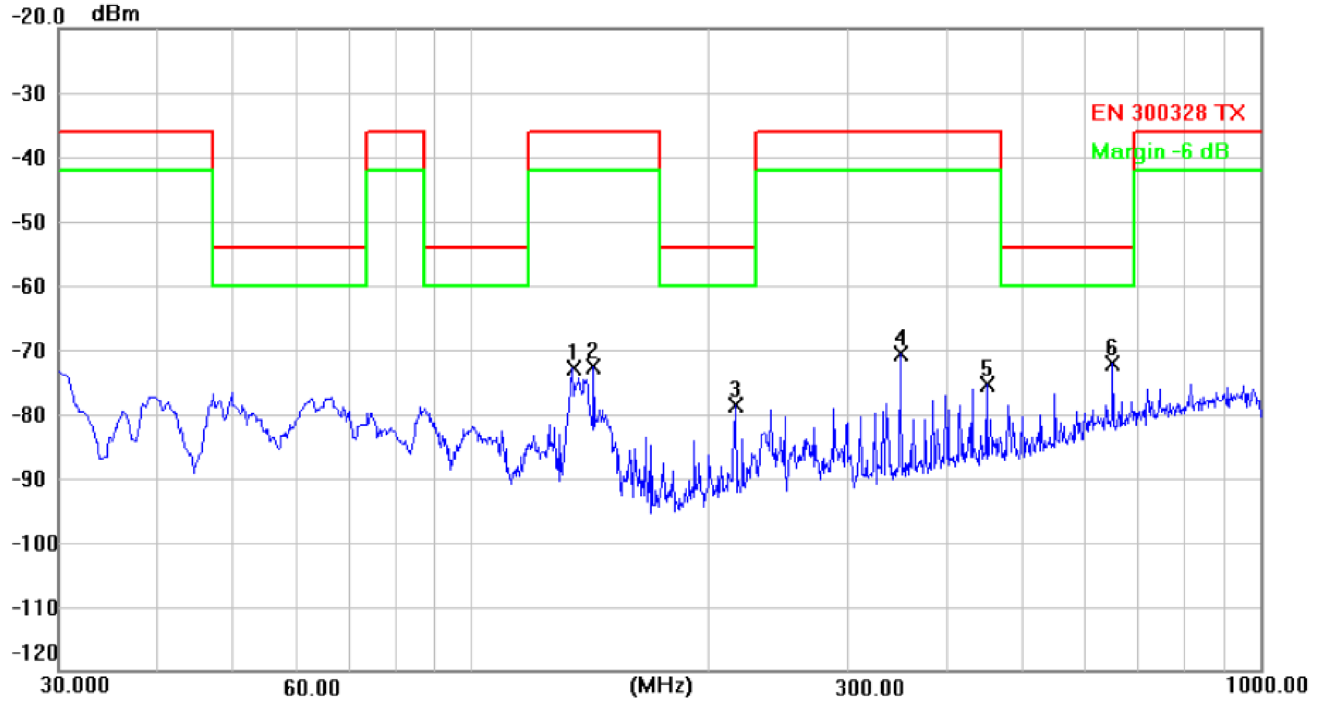
802.11b			
Test Channel:	CH01	Polarity:	Horizontal



No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	88.5233	-65.67	-18.37	-84.04	-54.00	-30.04	peak
2	200.0733	-67.90	-16.07	-83.97	-54.00	-29.97	peak
3	481.0500	-68.92	-9.54	-78.46	-54.00	-24.46	peak
4 *	549.9200	-64.74	-7.94	-72.68	-54.00	-18.68	peak
5	650.1533	-66.88	-6.11	-72.99	-54.00	-18.99	peak
6	680.2233	-73.41	-5.77	-79.18	-54.00	-25.18	peak

Remarks:
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2.Margin value = Level -Limit value

Test Channel:	CH01	Polarity:	Vertical

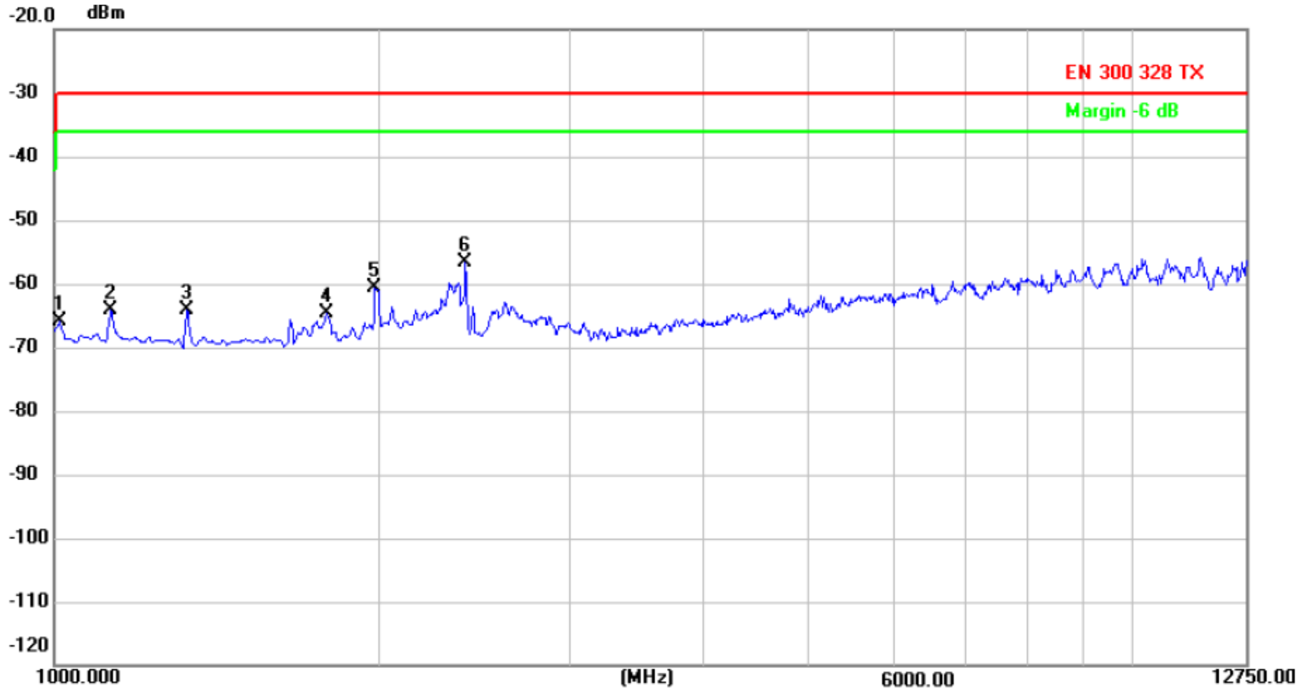


No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	134.4367	-53.25	-19.74	-72.99	-36.00	-36.99	peak
2	142.8432	-52.71	-19.88	-72.59	-36.00	-36.59	peak
3	216.2400	-63.01	-15.61	-78.62	-54.00	-24.62	peak
4	350.1000	-58.38	-12.30	-70.68	-36.00	-34.68	peak
5	450.0100	-65.14	-10.12	-75.26	-36.00	-39.26	peak
6 *	649.8300	-65.92	-6.11	-72.03	-54.00	-18.03	peak

Remarks:
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2.Margin value = Level -Limit value

(2) Above 1G

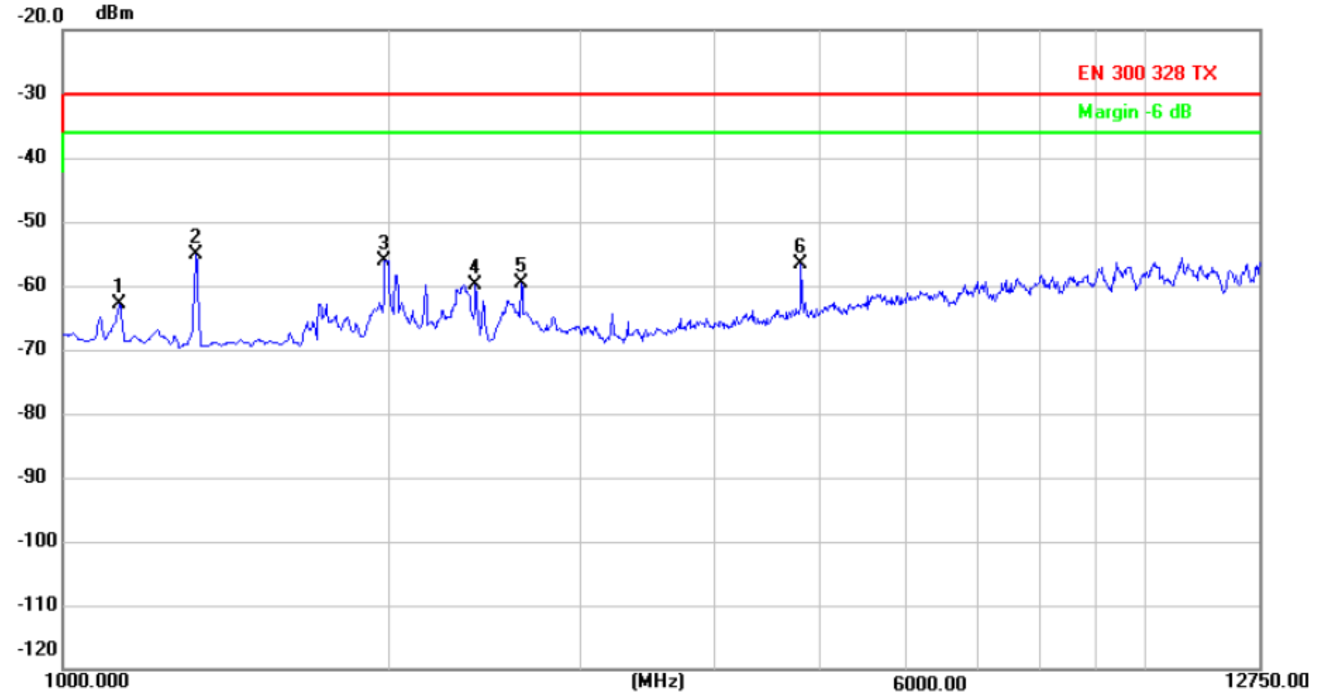
802.11b			
Test Channel:	CH01	Polarity:	Horizontal



No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	1011.750	-53.51	-12.42	-65.93	-30.00	-35.93	peak
2	1129.250	-51.87	-12.23	-64.10	-30.00	-34.10	peak
3	1329.000	-52.48	-11.52	-64.00	-30.00	-34.00	peak
4	1787.250	-53.71	-10.96	-64.67	-30.00	-34.67	peak
5	1987.000	-50.80	-9.94	-60.74	-30.00	-30.74	peak
6 *	2410.000	-48.59	-8.01	-56.60	-30.00	-26.60	peak

Remarks:
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2.Margin value = Level -Limit value

Test Channel:	CH01	Polarity:	Vertical



No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	1129.250	-50.55	-12.23	-62.78	-30.00	-32.78	peak
2 *	1329.000	-43.67	-11.52	-55.19	-30.00	-25.19	peak
3	1987.000	-46.08	-9.94	-56.02	-30.00	-26.02	peak
4	2410.000	-51.88	-8.01	-59.89	-30.00	-29.89	peak
5	2656.750	-52.47	-7.26	-59.73	-30.00	-29.73	peak
6	4818.750	-53.81	-2.77	-56.58	-30.00	-26.58	peak

Remarks:
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2.Margin value = Level -Limit value

3.9. Receiver spurious emissions-Conducted measurements

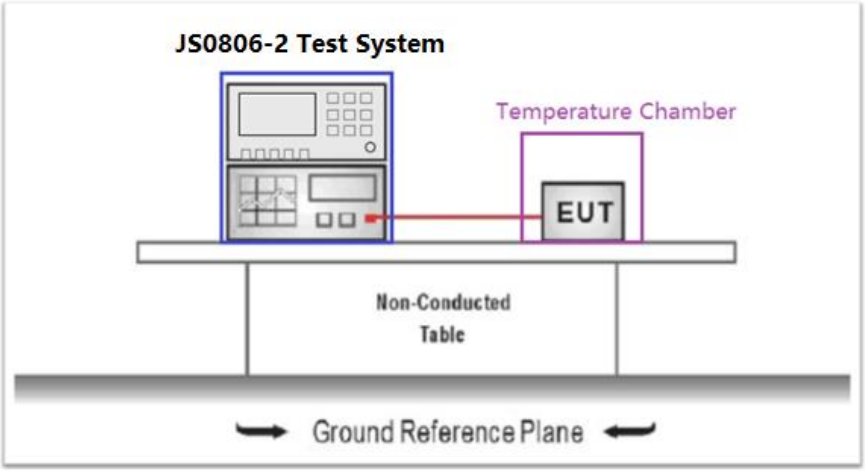
Limit

ETSI EN 300 328 Sub-clause 4.3.2.10.3

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

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

Test Configuration



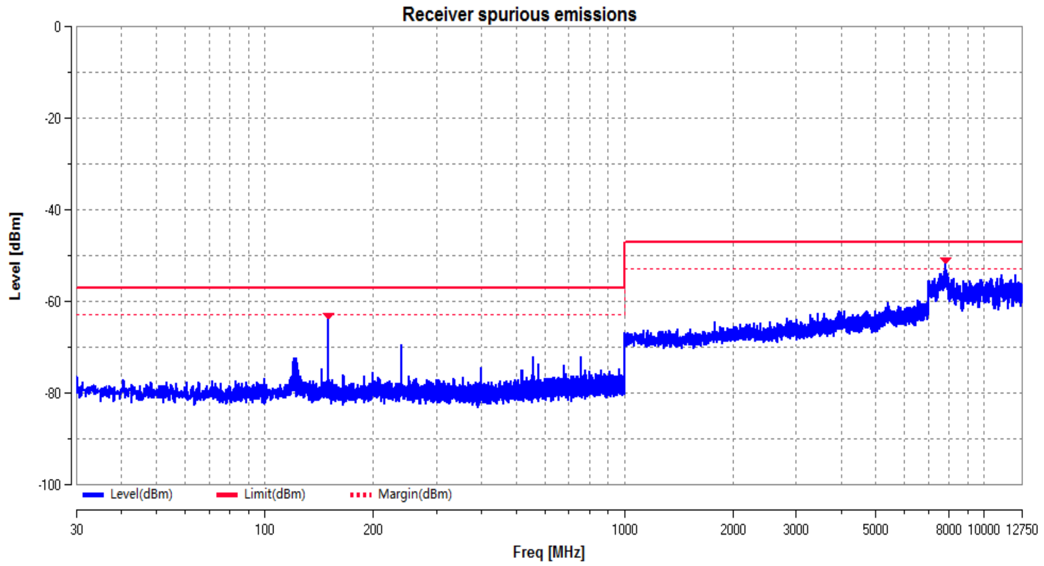
Test Procedure

Please refer to ETSI EN 300 328 Sub-clause 5.4.10.2.1 for the measurement method.

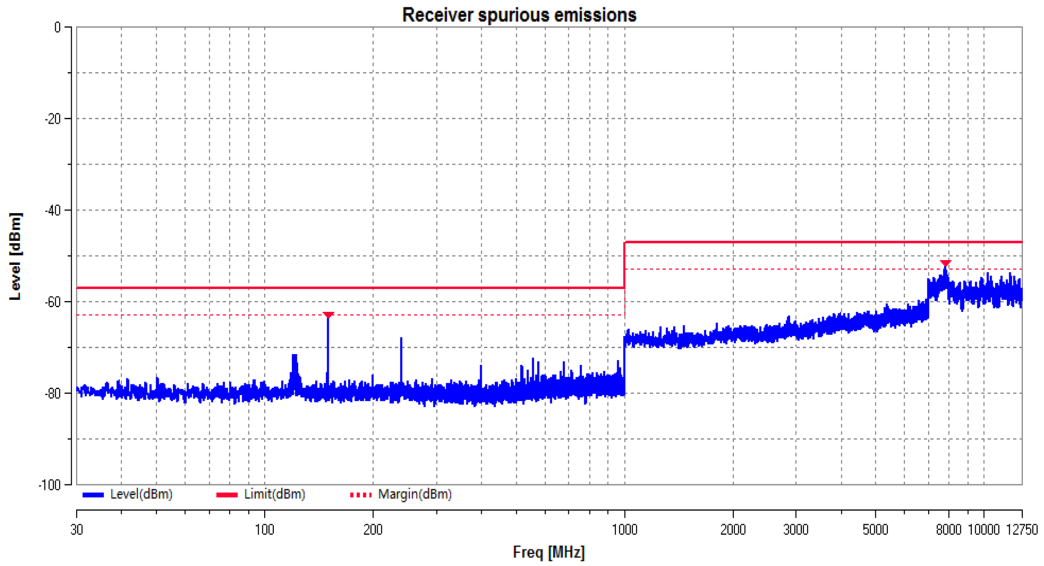
Test Result

Note: Pre-scan 802.11b, 802.11g, 802.11n (HT20) mode, and found the 802.11b mode which it is worse case, so only show the test data for worse case.

802.11b	CH01



802.11b	CH13



3.10. Receiver spurious emissions-Radiated measurements

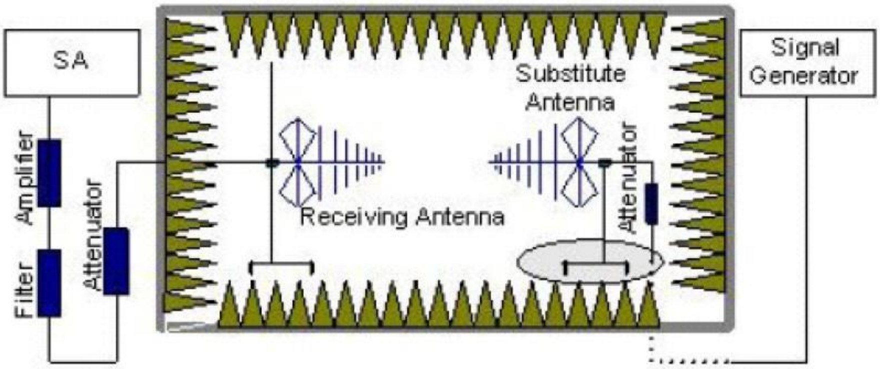
Limit

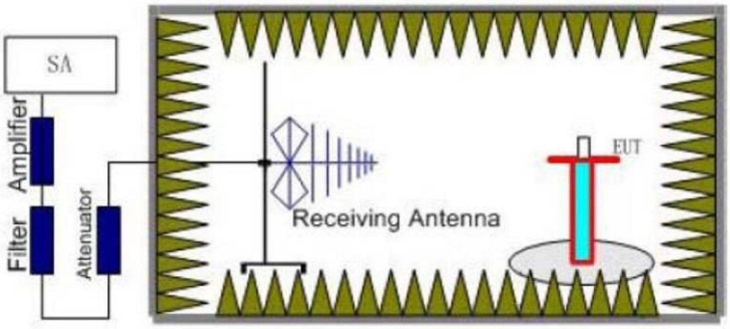
ETSI EN 300 328 Sub-clause 4.3.2.10.3

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

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

Test Configuration





Test Procedure

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

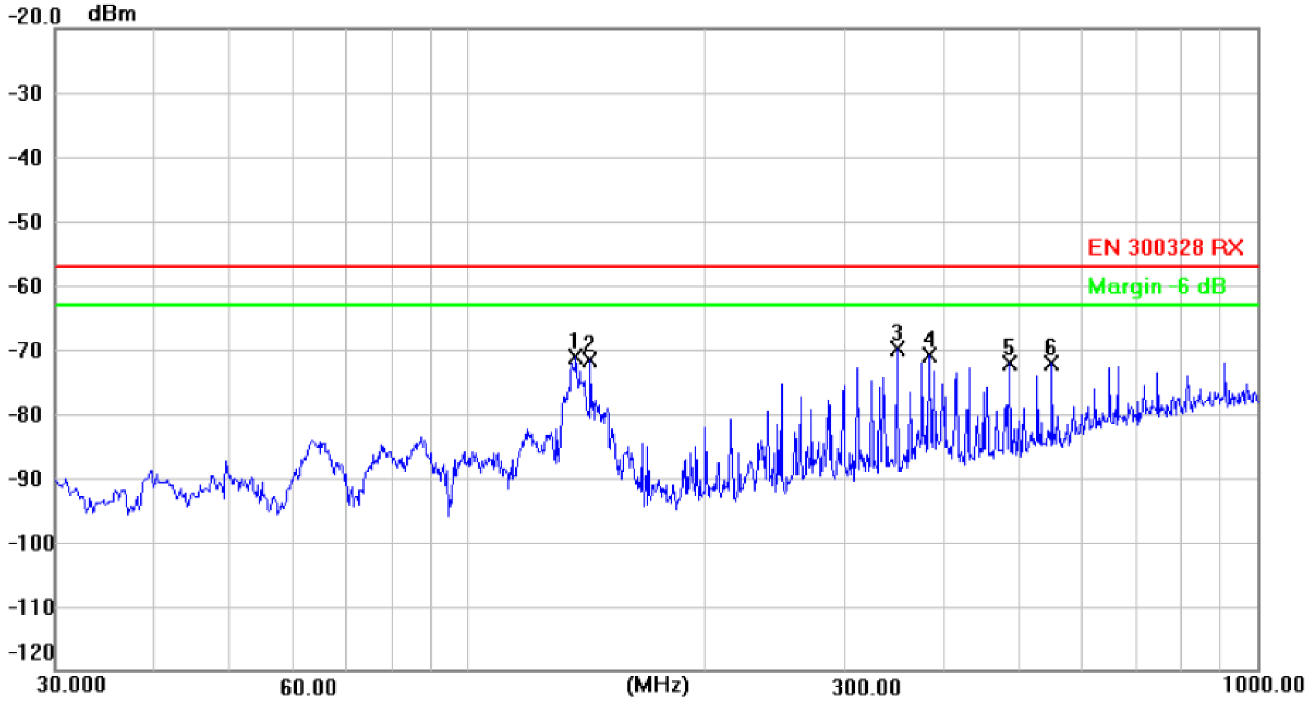
Test Result

Note:

1. Pre-scan 802.11b, 802.11g, 802.11n (HT20) mode, and found the 802.11b mode LCH channel which it is worse case, so only show the test data for worse case.
2. By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that “Z axis” position was the worst, and test data recorded in this report.

(1) Below 1G

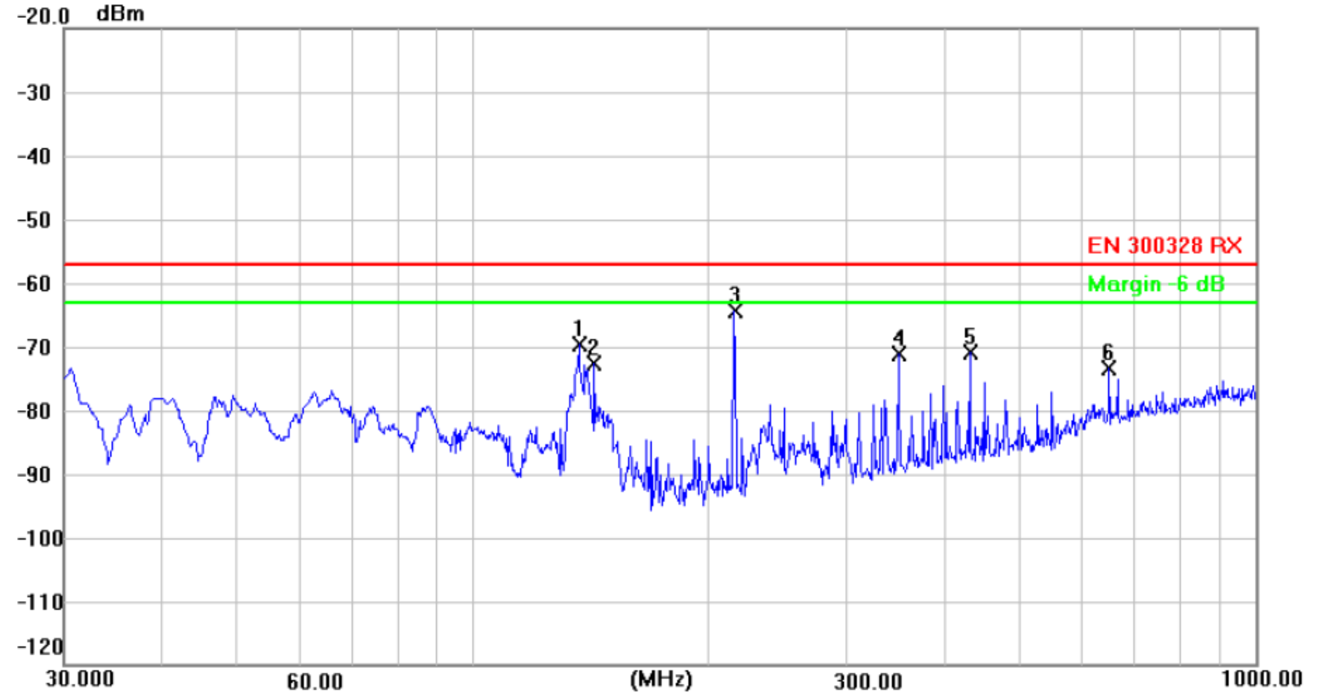
802.11b			
Test Channel:	CH01	Polarity:	Horizontal



No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	137.3466	-51.36	-19.88	-71.24	-57.00	-14.24	peak
2	142.8432	-51.73	-19.88	-71.61	-57.00	-14.61	peak
3 *	350.1000	-57.55	-12.30	-69.85	-57.00	-12.85	peak
4	384.0500	-59.47	-11.45	-70.92	-57.00	-13.92	peak
5	485.9000	-62.62	-9.46	-72.08	-57.00	-15.08	peak
6	549.9200	-64.11	-7.94	-72.05	-57.00	-15.05	peak

Remarks:
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2.Margin value = Level -Limit value

Test Channel:	CH01	Polarity:	Vertical

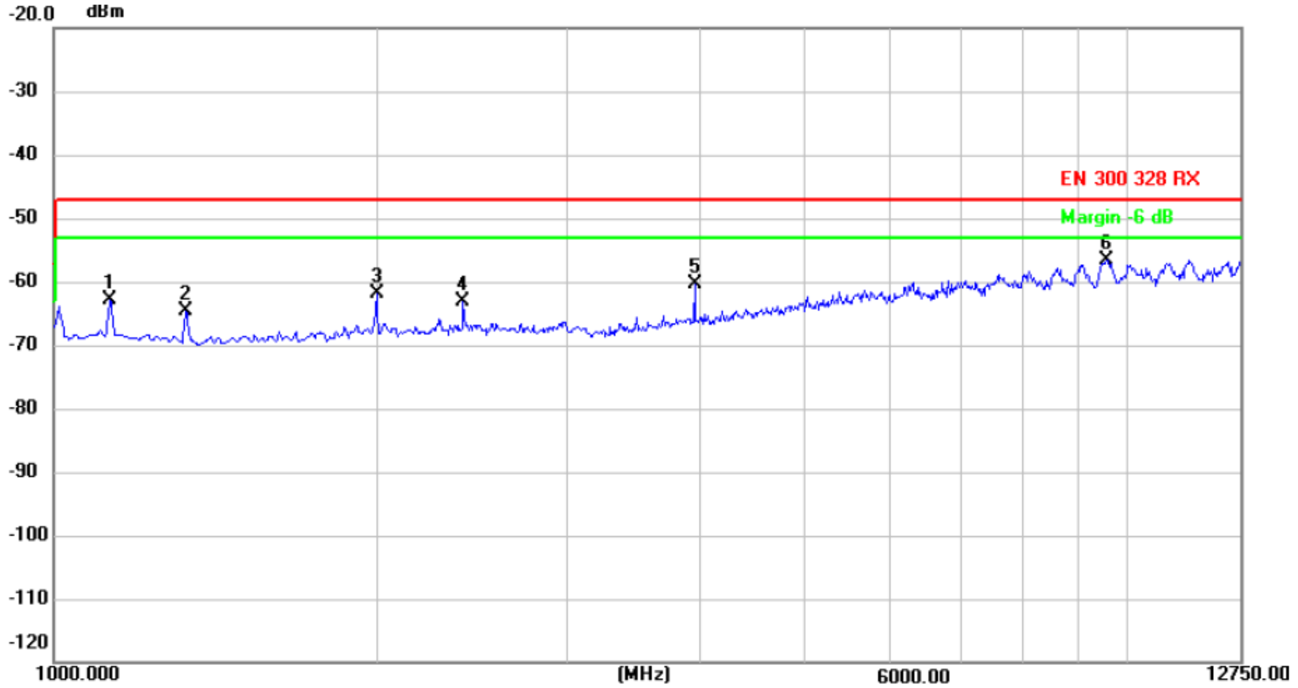


No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	136.7000	-49.83	-19.84	-69.67	-57.00	-12.67	peak
2	142.8432	-52.77	-19.88	-72.65	-57.00	-15.65	peak
3 *	215.9167	-48.87	-15.62	-64.49	-57.00	-7.49	peak
4	350.1000	-58.82	-12.30	-71.12	-57.00	-14.12	peak
5	431.9033	-60.48	-10.46	-70.94	-57.00	-13.94	peak
6	650.1533	-67.17	-6.11	-73.28	-57.00	-16.28	peak

Remarks:
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2.Margin value = Level -Limit value

(2) Above 1G

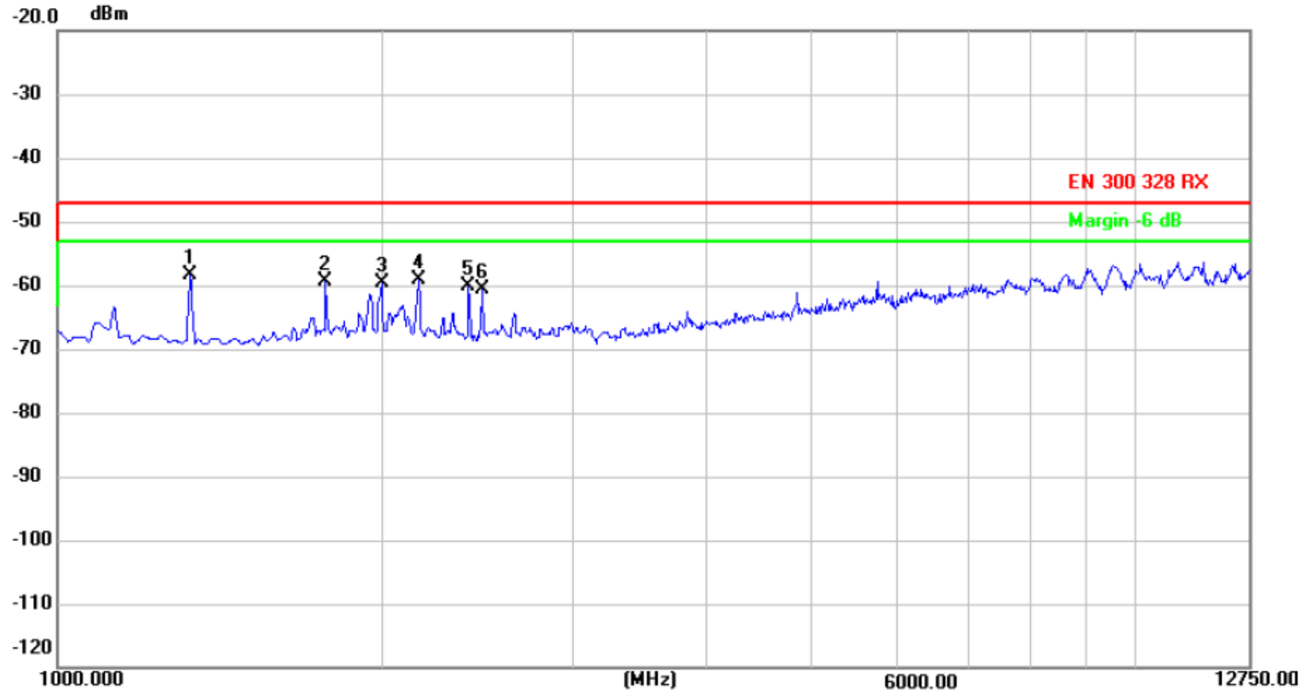
802.11b			
Test Channel:	CH01	Polarity:	Horizontal



No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	1129.250	-50.63	-12.23	-62.86	-47.00	-15.86	peak
2	1329.000	-53.14	-11.52	-64.66	-47.00	-17.66	peak
3	1998.750	-52.10	-9.88	-61.98	-47.00	-14.98	peak
4	2410.000	-55.07	-8.01	-63.08	-47.00	-16.08	peak
5	3961.000	-54.98	-5.27	-60.25	-47.00	-13.25	peak
6 *	9577.500	-59.92	3.42	-56.50	-47.00	-9.50	peak

Remarks:
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2.Margin value = Level -Limit value

Test Channel:	CH01	Polarity:	Vertical



No.	Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1 *	1329.000	-46.94	-11.52	-58.46	-47.00	-11.46	peak
2	1775.500	-48.52	-10.97	-59.49	-47.00	-12.49	peak
3	1998.750	-49.86	-9.88	-59.74	-47.00	-12.74	peak
4	2163.250	-49.92	-9.14	-59.06	-47.00	-12.06	peak
5	2410.000	-52.01	-8.01	-60.02	-47.00	-13.02	peak
6	2480.500	-52.95	-7.69	-60.64	-47.00	-13.64	peak

Remarks:
1.Factor (dB/m) = Antenna Factor (dB/m)+Cable Factor (dB)-Pre-amplifier Factor
2.Margin value = Level -Limit value

3.11. Adaptivity

Limit

ETSI EN 300 328 Sub-clause 4.3.2.6

Non-LBT based Detect and Avoid

1) During normal operation, the equipment shall evaluate the presence of a signal on its current operating channel. Ifit is determined that a signal is present with a level above the detection threshold defined in step 5 the channelshall be marked as 'unavailable'.
2) The channel shall remain unavailable for a minimum time equal to 1 s after which the channel may be consideredagain as an 'available' channel.
3) The Total time during which an equipment has transmissions on a given channel without re-evaluating theavailability of that channel, is defined as the Channel Occupancy Time.
4) The Channel Occupancy Time shall be less than 40 ms. Each such transmission sequence shall be followed by anIdle Period (no transmissions) of minimum 5 % of the Channel Occupancy Time with a minimum of 100 µs. Afterthis, the procedure as in step 1 needs to be repeated.
5) 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 thereceiver 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 lessthan 20 dBm e.i.r.p., the detection threshold level may be relaxed to: TL = -70 dBm/MHz + 10 × log10 (100 mW / Pout) (Pout in mWe.i.r.p.)
6) The equipment shall comply with the requirements defined in step 1 to step 4 of the present clause in the presenceof an unwanted CW signal as defined in below table .

Wanted signal mean power from companion device (dBm)	Unwanted signal frequency (MHz)	Unwanted CW signal power (dBm)
-30	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 in front of the UUT antenna. In case of conducted measurements, this level has to be corrected by the actual antenna assembly gain.		

LBT based Detect and Avoid- Frame Based Equipment

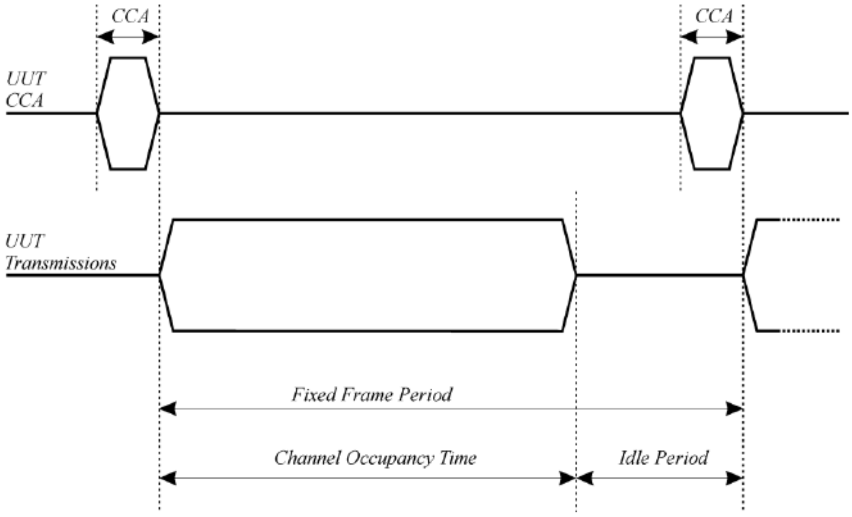
1) Before transmission, the equipment shall perform a Clear Channel Assessment (CCA) check using energy detect. The equipment shall observe the operating channel for the duration of the CCA observation time which shall be not less than 18 µs. The channel shall be considered occupied if the energy level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

Period.

4) An equipment, upon correct reception of a packet which was intended for this equipment can skip CCA and immediately (see also next paragraph) proceed with the transmission of management and control frames (e.g. ACK and Block ACK frames are allowed but data frames are not allowed). A consecutive sequence of such transmissions by the equipment without a new CCA shall not exceed the maximum Channel Occupancy Time.
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 / Pout) (Pout in mWe.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 below table.

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 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.		

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



LBT based Detect and Avoid-Load Based Equipment

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.

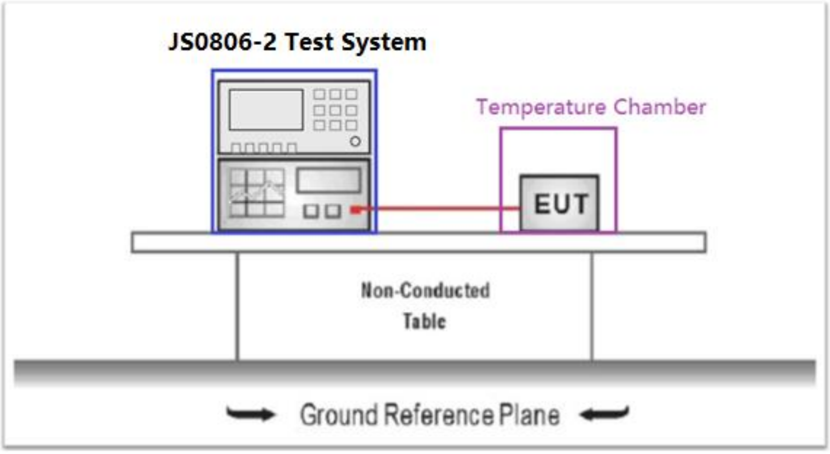
3) The Total time that an equipment makes use of a RF channel is defined as the Channel Occupancy Time. This Channel Occupancy Time shall be less than 13 ms, after which the device shall perform a new CCA as described in step 1 above.
4) The equipment, upon correct reception of a packet which was intended for this equipment can skip CCA and immediately (see also next paragraph) proceed with the transmission of management and control frames (e.g. ACK and Block ACK frames are allowed but data frames are not allowed). 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 equipment, upon correct reception of a packet which was intended for this equipment can skip CCA andimmediately (see note 3) proceed with the transmission of management and control frames (e.g. ACK and BlockACK frames are allowed but data frames are not allowed). A consecutive sequence of transmissions by theequipment without a new CCA shall not exceed the maximum channel occupancy time as defined in step 3)above.
6) 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 / Pout) (Pout in mWe.i.r.p.)
7) 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 below table.

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 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.		

Short Control Signalling Transmissions

If implemented, Short Control Signalling Transmissions of adaptive equipment using wide band modulations other than FHSS shall have a maximum TxOn / (TxOn + TxOff) ratio of 10 % within any observation period of 50 ms.

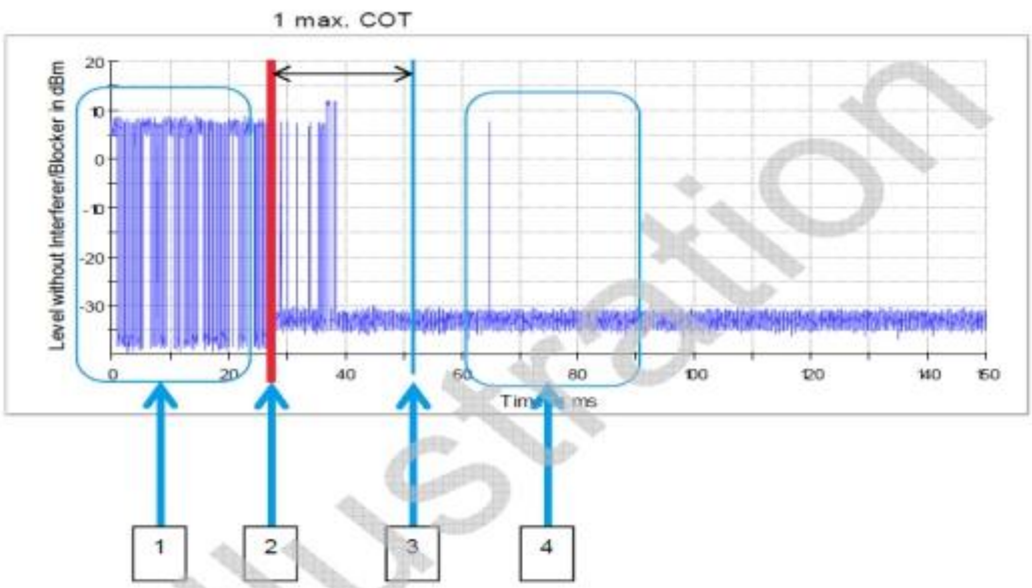
Test Configuration



Test Procedure

Please refer to ETSI EN 300 328 Sub-clause5.4.6.2.1 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)

Test Results

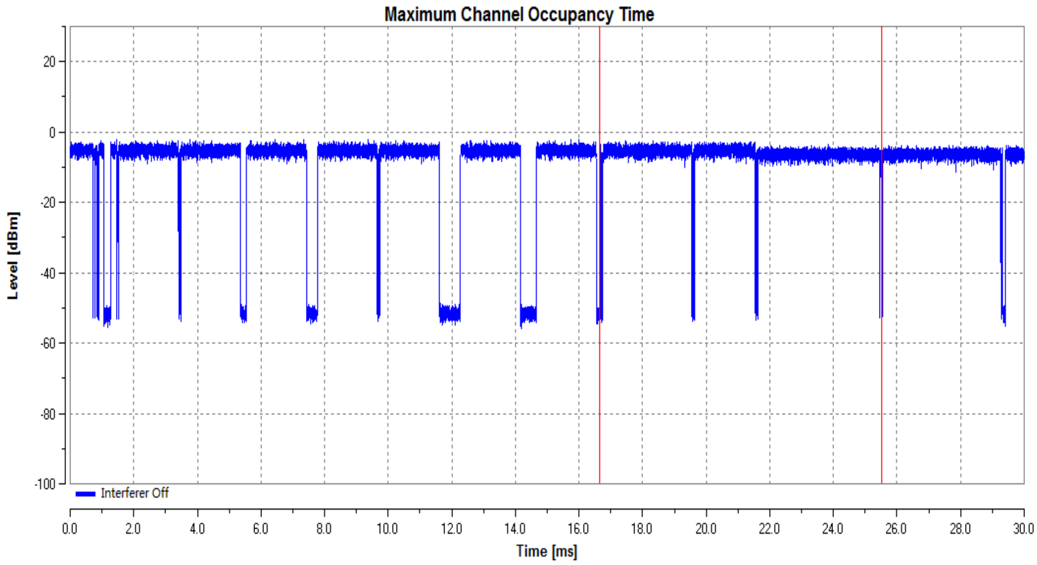
Only show the test data for worse case.

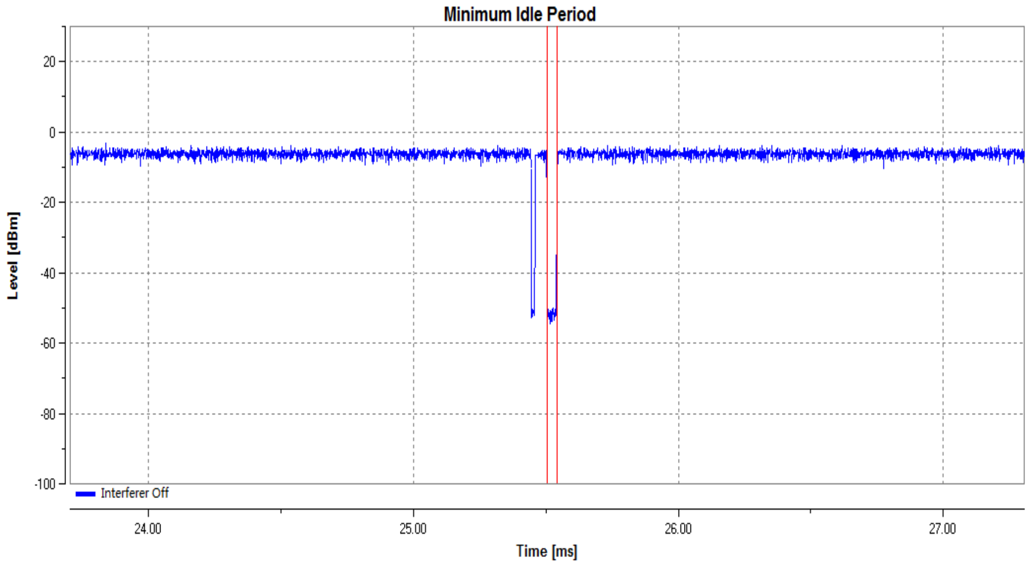
Test Mode	Channel	Max.COT [ms]	Limit [ms]	Min.Idle Time [ms]	Limit [ms]	Verdict
802.11b	2412	8.849	13	0.036	0.018	PASS
	2472	5.646	13	0.067	0.018	PASS

Test Mode	Channel	Add Signal Type	Add Signal Time[ms]	Add Signal Level[dbm]	Max. Short Time [%]	Limit [%]	Verdict
802.11b	2412	AWGN	3000	-66.90	5.00	10	PASS
		CW	65998	-32.50	4.20	10	PASS
	2472	AWGN	3000	-65.04	5.20	10	PASS
		CW	65998	-32.50	4.20	10	PASS

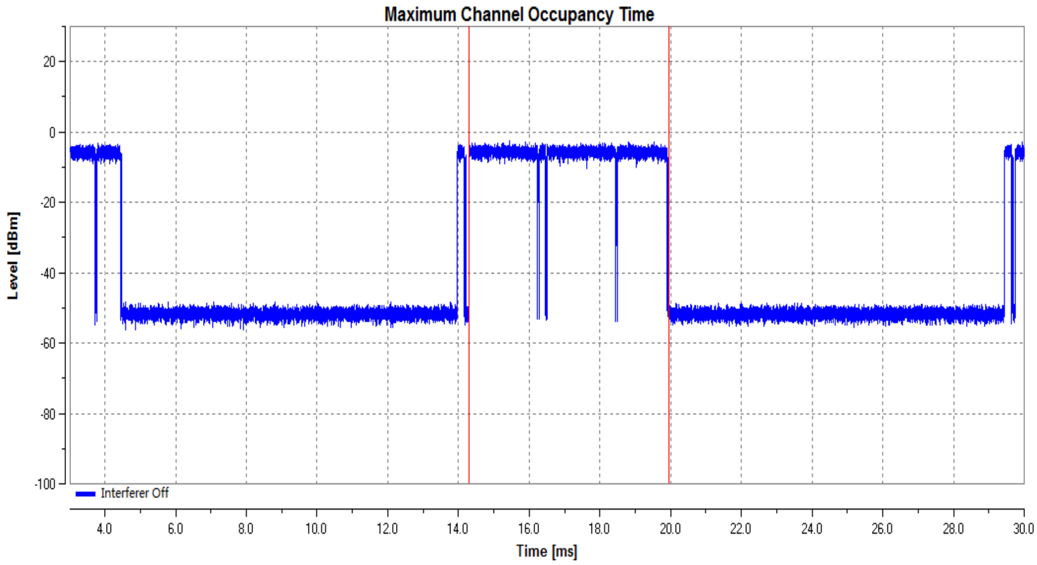
Test Graphs:

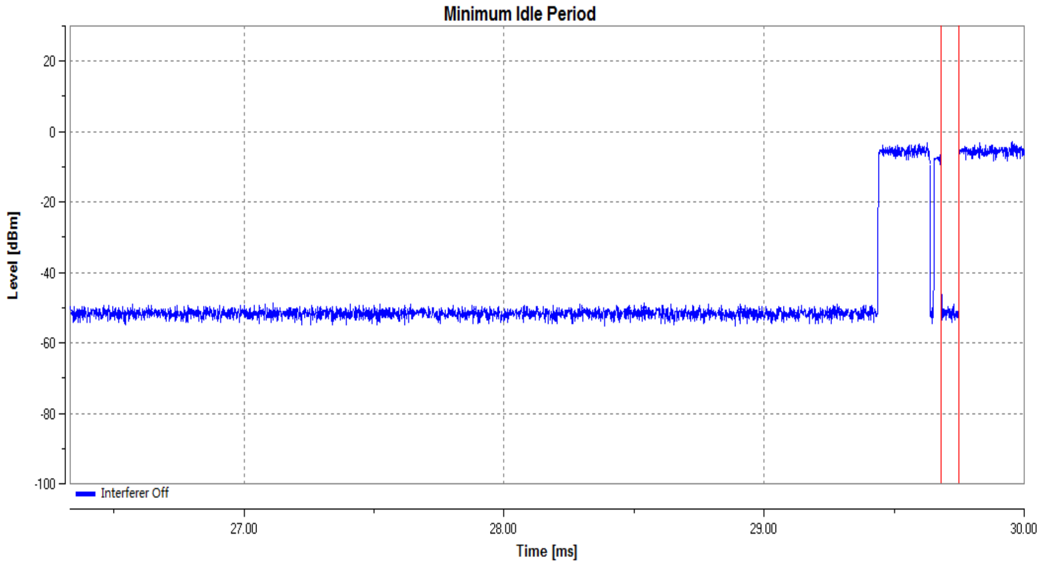
802.11b_2412



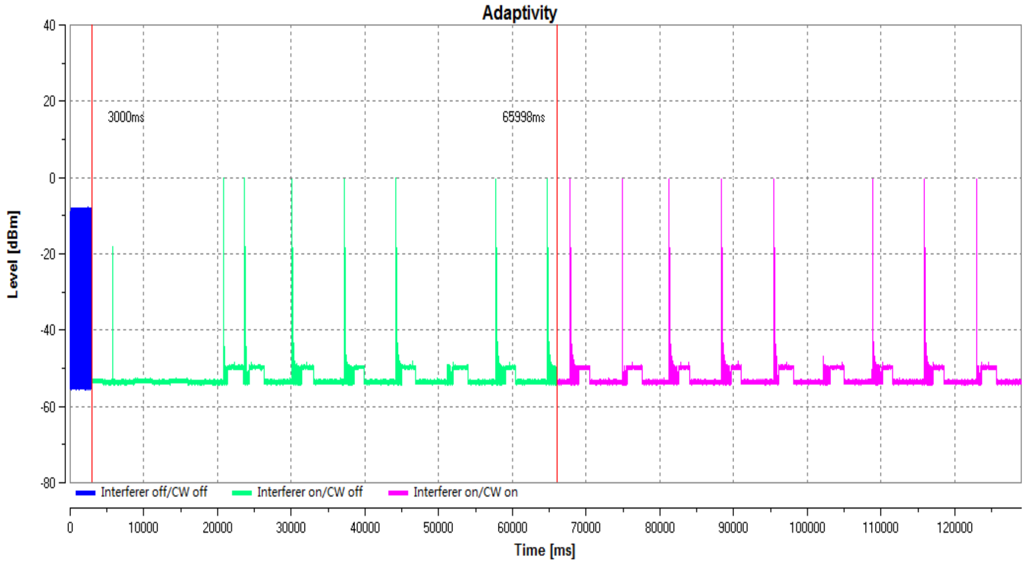


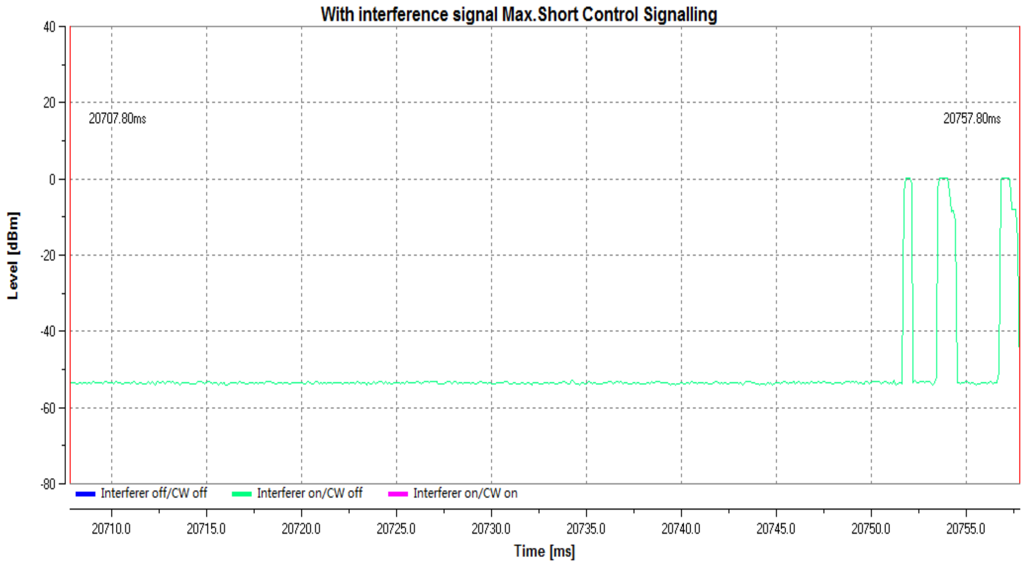
802.11b_2472

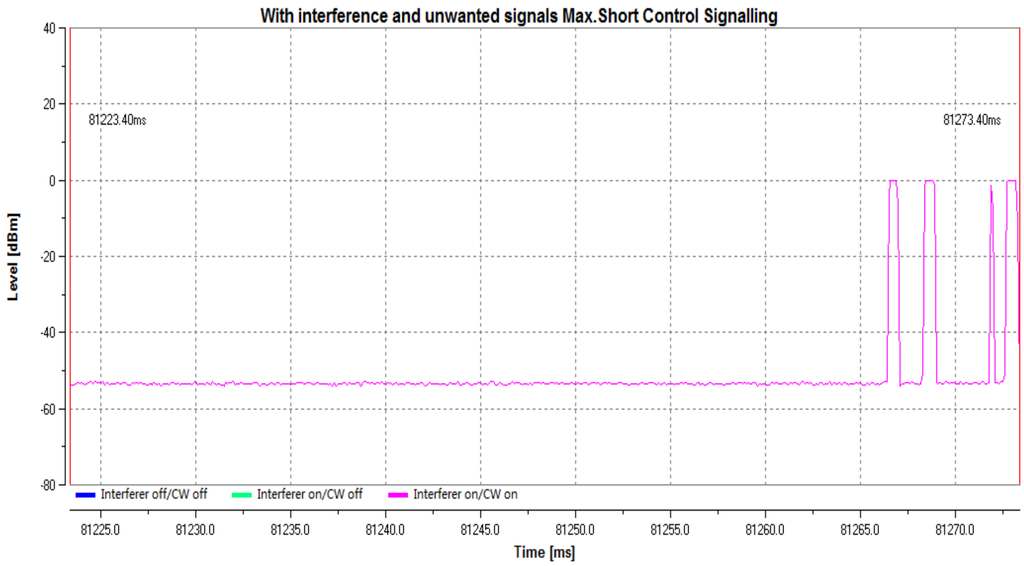



Minimum Idle Period
Level [dBm]
20
0
-20
-40
-60
-80
-100
Interferer Off
27.00
28.00
29.00
30.00
Time [ms]

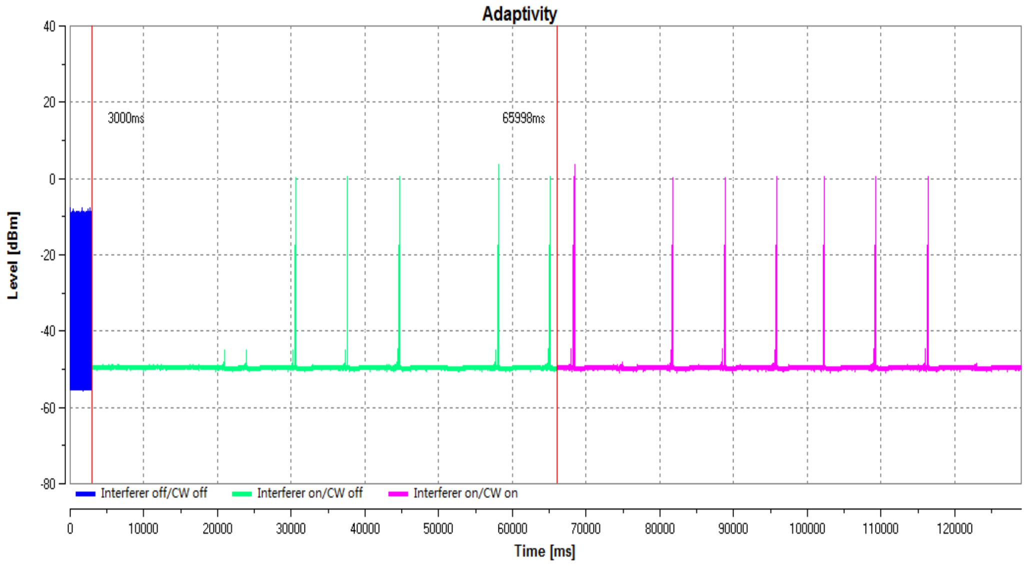
802.11b_2412

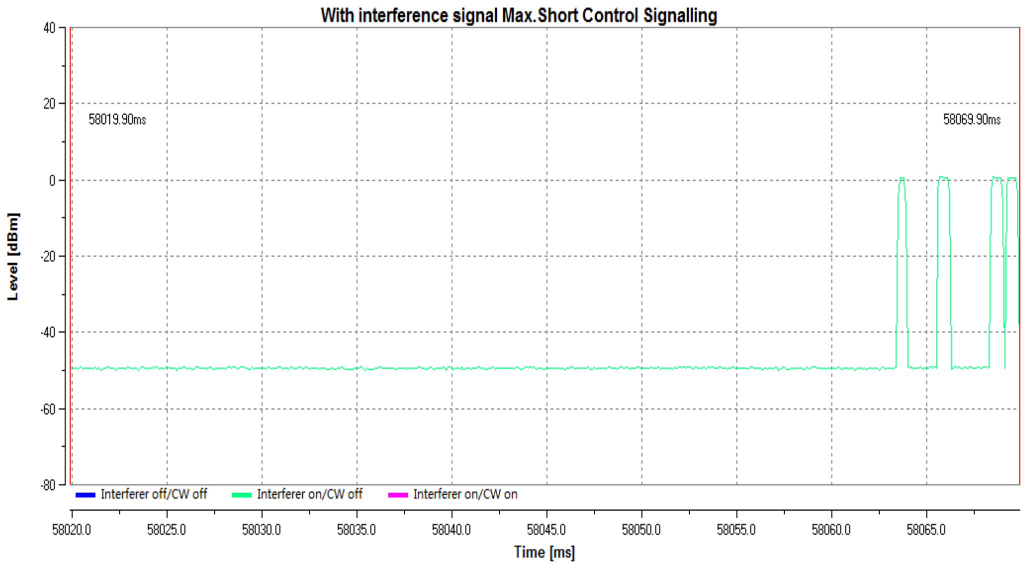


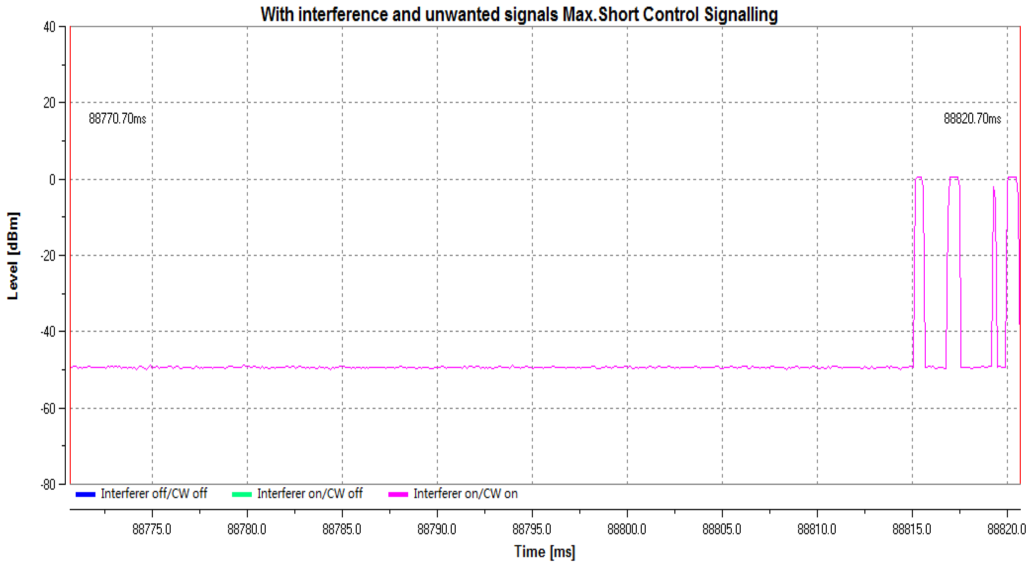




802.11b_2472


Adaptivity
3000ms
65998ms
Level [dBm]
Interferer off/CW off
Interferer on/CW off
Interferer on/CW on
Time [ms]


With interference signal Max.Short Control Signalling
58019.90ms
58069.90ms
Level [dBm]
Interferer off/CW off
Interferer on/CW off
Interferer on/CW on
Time [ms]


With interference and unwanted signals Max.Short Control Signalling
88770.70ms
88820.70ms
Level [dBm]
Interferer off/CW off
Interferer on/CW off
Interferer on/CW on
Time [ms]

3.12. Receiver Blocking

Limit

ETSI EN 300 328 Sub-clause 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. shall be considered as receivercategory 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.

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

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

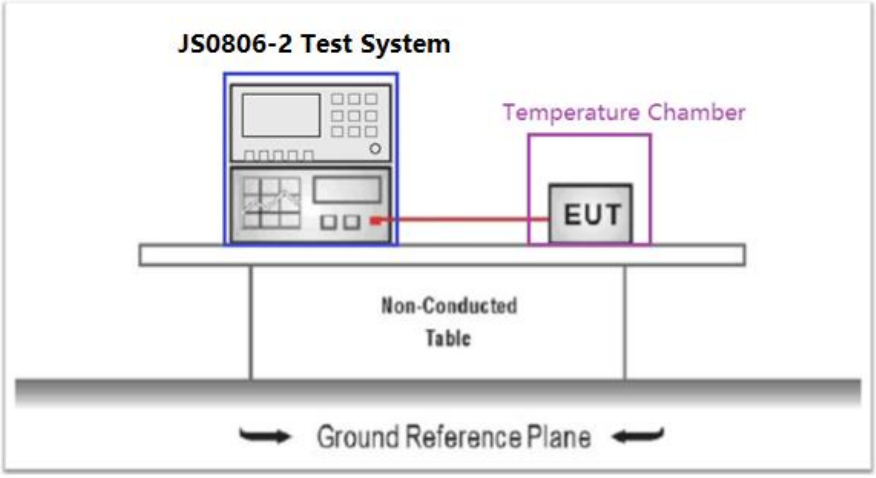
NOTE 1: OCBW is in Hz.
NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to P_{min} + 26 dB where P_{min} is the minimum level of wanted signal 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 % or adaptive equipment with amaximum RF output power of 0 dBm e.i.r.p. shall be considered as 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 the 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.

Test Configuration



Test Procedure

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

Test Results

Operating Channel	Wanted signal power (dBm)	Blocking signal Frequency (MHz)	Blocking signal power (dBm)	Test PER (%)	Limit (%)	Result
CH01	-68dBm	2380	-34	3.6	<10.00	Pass
		2504		3.8		
	-74dBm	2300		4.0		Pass
		2330		4.1		
		2360		4.6		
		2524		3.4		
		2584		3.5		
		2674		3.9		

Operating Channel	Wanted signal power (dBm)	Blocking signal Frequency (MHz)	Blocking signal power (dBm)	Test PER (%)	Limit (%)	Result
CH13	-68dBm	2380	-34	4.2	<10.00	Pass
		2504		4.0		
	-74dBm	2300		4.6		Pass
		2330		3.7		
		2360		3.5		
		2524		3.6		
		2584		3.7		
		2674		4.0		

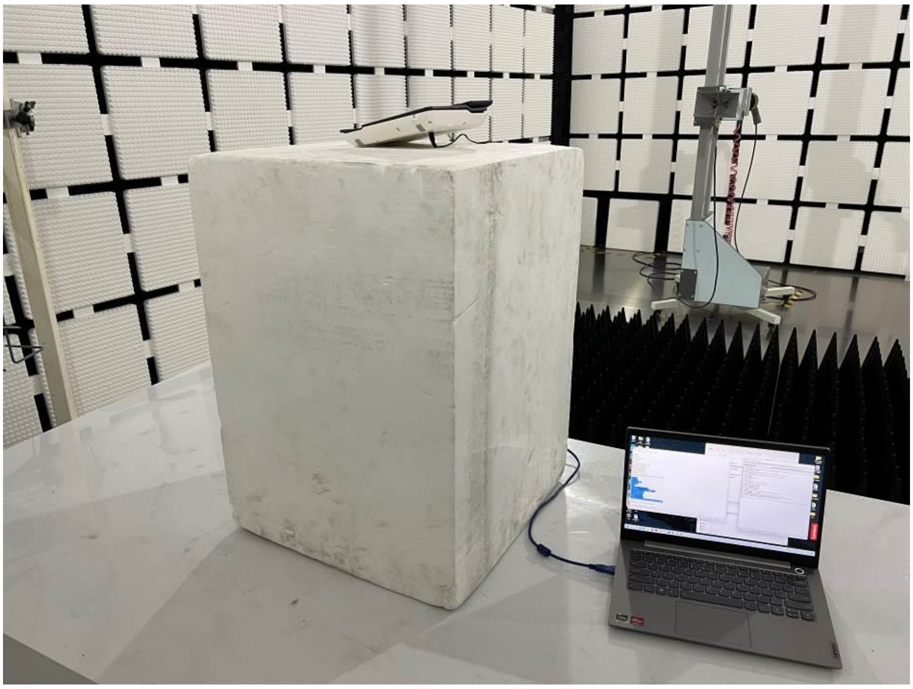
Note:

1. According to ETSI EN 300328 clause 5.4.11.1. Only the lowest data rate(802.11b) mode was tested and recorded.
2. The equipment belong to Receiver Category 1.

4. EUT TEST PHOTOS

Radiated Measurements

Below 1GHz



Above 1GHz

************************THE END************************