ETSI EN300 328 RADIO TEST REPORT

Product Name:	Dynamic light box
Model Number:	JCD-NW
Applicant:	Blueview Elec-optic Tech Co., Ltd.

KeySense Testing & Certification International Co., Ltd.

1-3F, Lab Building, No.29 District, ZhongKai Hi-Tech Industrial Development Park, Huizhou, Guangdong, China

Test Report Verification				
Product name	Dynamic light box			
Model number	JCD-NW			
Series Model	JCD-RGB、Blueview-NW、Blueview-RGB (The just different model number.)			
Applicant	**Name**	Blueview Elec-optic Tech Co., Ltd.		
	Address	No.1000, Section 2, 2nd Konggang Road, Southwest Aviation Industrial Development Zone, Shuangliu District, Chengdu City, Sichuan Province, P.R.China		
Manufacturer	**Name**	Blueview Elec-optic Tech Co., Ltd.		
	Address	No.1000, Section 2, 2nd Konggang Road, Southwest Aviation Industrial Development Zone, Shuangliu District, Chengdu City, Sichuan Province, P.R.China		
Factory	**Name**	Blueview Elec-optic Tech Co., Ltd.		
	Address	No.1000, Section 2, 2nd Konggang Road, Southwest Aviation Industrial Development Zone, Shuangliu District, Chengdu City, Sichuan Province, P.R.China		
Trade Name	N/A			
Receipt date	Nov 02, 2021		**Quantity**	1
Standard	ETSI EN 300 328 V2.2.2 (2019-07)			
Test period	Nov 02, 2021 to Nov 10, 2021		**Issue Date**	Nov 15, 2021
Test result	The device described above is tested by KeySense Testing & Certification International Co., Ltd. The measurement results were contained in this test report and KeySense Testing & Certification International Co., Ltd. was assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliance with the ETSI EN 300 328 requirements. This report applies to above tested sample only and shall not be reproduced in part without written approval of KeySense Testing & Certification International Co., Ltd.			

Tested by: Bing.He	**Sign:**	**Date:** 2021.11.15	
Reviewed by: Jack,Li	**Sign:**	**Date:** 2021.11.15	**(Stamp)**
Approved by: Tony.Xu (General Manager)	**Sign:**	**Date:** 2021.11.15	

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Description Page

1. SUMMARY OF MEASUREMENTS AND RESULTS

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

Harmonized Standard EN300 328 The following essential requirements and test specifications are relevant to the presumption of conformity under Article 3.2 of the RE Directive 2014/53/EU				
No	Test Parameter	Clause No	Condition	Results
Transmitter Parameters				
1	RF Output Power	4.3.1.2 or 4.3.2.2	Apply all equipment	PASS
2	Power Spectral Density	4.3.2.3	Only for modulations other than FHSS	PASS
3	Duty Cycle ,Tx-Sequence, Tx-gap	4.3.1.3 or 4.3.2.4	Only for non-adaptive equipment	N/A
4	Accumulated Transmit Time, Frequency Occupation & Hopping Sequence	4.3.1.4	Only for FHSS	N/A
5	Hopping Frequency Separation	4.3.1.5	Only for FHSS	N/A
6	Medium Utilization	4.3.1.6 or 4.3.2.5	Only for non-adaptive equipment	N/A
7	Adaptivity	4.3.1.7 or 4.3.2.6	Only for adaptive equipment	PASS
8	Occupied Channel Bandwidth	4.3.1.8 or 4.3.2.7	Apply all equipment	PASS
9	Transmitter unwanted emissions in the OOB domain	4.3.1.9 or 4.3.2.8	Apply all equipment	PASS
10	Transmitter unwanted emissions in the spurious domain	4.3.1.10 or 4.3.2.9	Apply all equipment	PASS
11	Receiver spurious emissions	4.3.1.11 or 4.3.2.10	Apply all equipment	PASS
12	Receiver Blocking	4.3.1.12 or 4.3.2.11	Apply all equipment	PASS
13	Geo-location capability	4.3.1.13 or 4.3.2.12	If implemented	N/A
Note: N/A is an abbreviation for Not Applicable and means this test item is not applicable for this device according to the technology characteristic of device.				

2. ENERAL INFORMATION

2.1.Description of Device (EUT)

Product Name	:	Dynamic light box
Model Number	:	JCD-NW
Series Model	:	JCD-RGB、Blueview-NW、Blueview-RGB (The just different model number.)
Modulation	:	IEEE 802.11b mode: DSSS(CCK,QPSK, BPSK) IEEE 802.11g mode: OFDM (BPSK/QPSK/16QAM/64QAM) IEEE 802.11n HT20 MHz mode: OFDM (BPSK/QPSK/16QAM/64QAM) IEEE 802.11n HT40 MHz mode: OFDM (BPSK/QPSK/16QAM/64QAM)
Operation Frequency	:	IEEE 802.11b/g: 2412 ~ 2472 MHz IEEE 802.11n HT20 : 2412 ~ 2472 MHz IEEE 802.11n HT40 : 2422 ~ 2462 MHz
Number of channel	:	IEEE 802.11b: 13 Channels IEEE 802.11g: 13 Channels IEEE 802.11n HT20: 13 Channels IEEE 802.11n HT40: 9 Channels
Antenna and Gain	:	External Antenna with 3.2dBi gain (Max)
Software Version	:	1.1.33
Hardware Version	:	15.5
Test Voltage:	:	AC 230V/50Hz

2.2.Test Facilities

Site Description	1-3F, Lab Building, No.29 District, ZhongKai Hi-Tech Industrial Development Park, Huizhou, Guangdong, China
Name of Firm:	KeySense Testing & Certification International Co., Ltd.
EMC Lab	Certificated by CNAS, CHINA
	Registration No.: L9678
	Date of registration: Feb 07, 2017

2.3.Measurement uncertainty

Uncertainty for Radiated Spurious Emission test in RF chamber	1 dB (Bilog antenna 30M~1000MHz)
	0.9 dB (Horn antenna 1000M~25000MHz)
Uncertainty for Conduction Spurious emission test	2.10 dB
Uncertainty for Output power test	0.94 dB
Uncertainty for Power density test	2.10 dB
Uncertainty for Temperature and humidity test	2%
	1℃
Uncertainty for Frequency range test	1×10-6
Uncertainty for Bandwidth test	1×10-6
Uncertainty for DC power test	0.042 %
Uncertainty for test site temperature and humidity	0.6℃
	3%

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

2.4.Standard Description

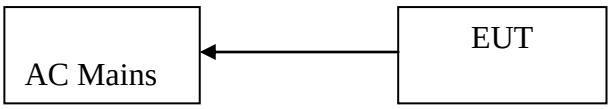
ETSI EN 300 328 V2.2.2 (2019-07): Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU.

2.5.Assistant equipment used for test

2.5.1.Notebook

M / N : VM510L
Manufacturer : ASUS

2.6.Block Diagram of Test Setup



(EUT: Dynamic light box)

2.7.Test mode

The test software was used to control EUT work in Continuous TX or RX mode, and select test channel, wireless mode

Test mode	Lower channel	Center channel	Upper channel
IEEE 802.11b;IEEE 802.11g;IEEE 802.11n HT20 Transmitting	2412MHz	2442MHz	2472MHz
IEEE 802.11b;IEEE 802.11g;IEEE 802.11n HT20 Receiving	2412MHz	2442MHz	2472MHz
IEEE 802.11n HT40 Transmitting	2422MHz	2442MHz	2462MHz
IEEE 802.11n HT40 Receiving	2422MHz	2442MHz	2462MHz

2.8.Channel List

IEEE 802.11b;IEEE 802.11g;IEEE 802.11n HT20					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	6	2437	11	2462
2	2417	7	2442	12	2467
3	2422	8	2447	13	2472
4	2427	9	2452		
5	2432	10	2457		
IEEE 802.11n HT40					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2422	4	2437	7	2452
2	2427	5	2442	8	2457
3	2432	6	2447	9	2462

3. MEASUREMENTS OF PARAMETERS (ETSI EN 300 328)

3.1.RF Output Power

3.1.1.Test Equipment

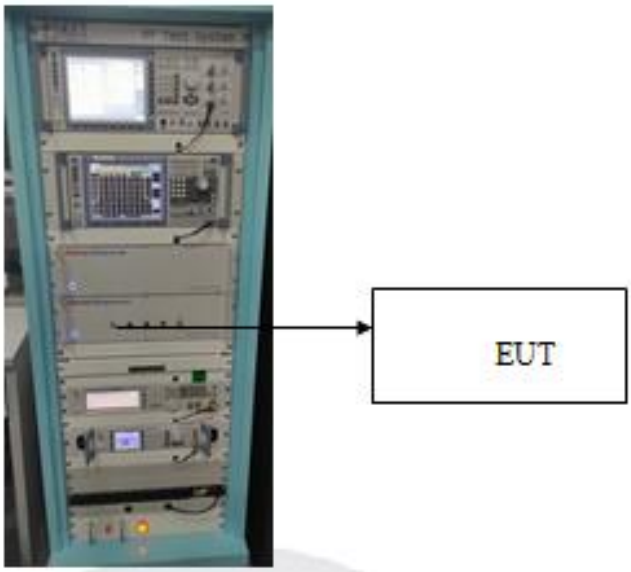
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
Spectrum	Rohde & Schwarz	FSV	103559	Dec 25,2020	1 Year
Vector signal source	Agilent	N5182A	MY47420382	Dec 25,2020	1 Year
Analog signal source	Rohde & Schwarz	SMB 100A	179706	Dec 25,2020	1 Year
Comprehensive measuring instrument	Rohde & Schwarz	CMW 500	158242	Dec 25,2020	1 Year
control unit	MWRF	MW100-RFCB	10165	Dec 25,2020	1 Year
Testing software	SKET	MTS-8310	10165	Dec 25,2020	1 Year
N/A is an abbreviation for Not Applicable.					

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

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

3.1.3.Test Method

(1) Connected the antenna port to the OSP of MTS-8310S system, read output power of the transmitter. (As below).



(2) Test conditions refer to chapter 5.4.2.1 of EN 300 328 V2.2.2

(3) Test method refer to chapter 5.4.2.2.1.2 of EN 300 328 V2.2.2

3.1.4.Test Information

EUT: Dynamic light box	
M/N: JCD-NW	
Test Date: 2021.11.06	Tested by:Bing.He
Ambient Temperature: 23℃	Relative Humidity: 54%

3.1.5.Test Results

Test mode: IEEE 802.11b		Test result: Pass		
Test condition	Frequency (MHz)	Max EIRP (dBm)	Limit (dBm)	Result
Normal T:23℃ V: AC 230V	2412	11.73	20	Pass
	2442	11.66		Pass
	2472	10.71		Pass
Extreme T:0℃ V: AC 230V	2412	11.66		Pass
	2442	11.44		Pass
	2472	11.03		Pass
Extreme T:45℃ V: AC 230V	2412	11.69		Pass
	2442	11.11		Pass
	2472	10.21		Pass
1、 Worst case were 1Mbit/s				

Test mode: IEEE 802.11g		Test result: Pass		
Test condition	Frequency (MHz)	Max EIRP (dBm)	Limit (dBm)	Result
Normal T:23℃ V: AC 230V	2412	10.76	20	Pass
	2442	9.73		Pass
	2472	9.49		Pass
Extreme T:0℃ V: AC 230V	2412	10.53		Pass
	2442	9.69		Pass
	2472	9.25		Pass
Extreme T:45℃ V: AC 230V	2412	10.70		Pass
	2442	9.73		Pass
	2472	9.49		Pass
1、 Worst case were 6Mbit/s				

Test mode: IEEE 802.11n HT20		Test result: Pass		
Test condition	Frequency (MHz)	Max EIRP (dBm)	Limit (dBm)	Result
Normal T:23℃ V: AC 230V	2412	9.78	20	Pass
	2442	9.66		Pass
	2472	9.13		Pass
Extreme T:0℃ V: AC 230V	2412	9.87		Pass
	2442	9.79		Pass
	2472	9.85		Pass
Extreme T:45℃ V: AC 230V	2412	9.05		Pass
	2442	9.45		Pass
	2472	9.63		Pass
1、 Worst case were MCS0				

Test mode: IEEE 802.11n HT40		Test result: Pass		
Test condition	Frequency (MHz)	Max EIRP (dBm)	Limit (dBm)	Result
Normal T:23℃ V: AC 230V	2422	7.40	20	Pass
	2442	7.00		Pass
	2462	6.40		Pass
Extreme T:0℃ V: AC 230V	2422	7.50		Pass
	2442	7.10		Pass
	2462	6.40		Pass
Extreme T:45℃ V: AC 230V	2422	7.50		Pass
	2442	7.00		Pass
	2462	6.20		Pass
1. Worst case were MCS0				

3.2.Power Spectral Density

3.2.1.Test Equipment

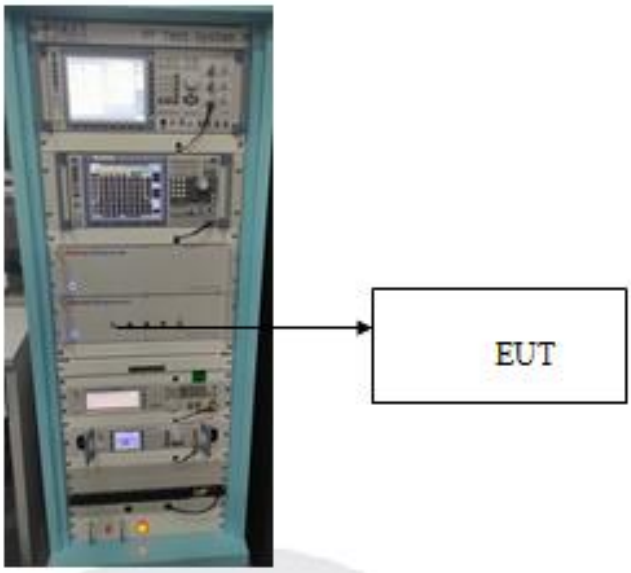
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
Spectrum	Rohde & Schwarz	FSV	103559	Dec 25,2020	1 Year
Vector signal source	Agilent	N5182A	MY47420382	Dec 25,2020	1 Year
Analog signal source	Rohde & Schwarz	SMB 100A	179706	Dec 25,2020	1 Year
Comprehensive measuring instrument	Rohde & Schwarz	CMW 500	158242	Dec 25,2020	1 Year
control unit	MWRF	MW100-RFCB	10165	Dec 25,2020	1 Year
Testing software	SKET	MTS-8310	10165	Dec 25,2020	1 Year
N/A is an abbreviation for Not Applicable.					

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

For equipment using wide band modulations other than FHSS, the maximum Power Spectral Density is limited to 10 dBm per MHz.

3.2.3.Test Method

(1) Connected the antenna port to the OSP of MTS-8310 system, read output power of the transmitter. (As below).



(2) Configure EUT work in TX operation mode.

(3) Test conditions refer to chapter 5.4.3.1 of EN 300 328 V2.2.2

(4) Test method refer to chapter 5.4.3.2.1 of EN 300 328 V2.2.2

3.2.4.Test Information

EUT: Dynamic light box	
M/N: JCD-NW	
Test Date: 2021.11.06	Tested by:Bing.He
Ambient Temperature: 23℃	Relative Humidity: 54%

3.2.5.Test Results

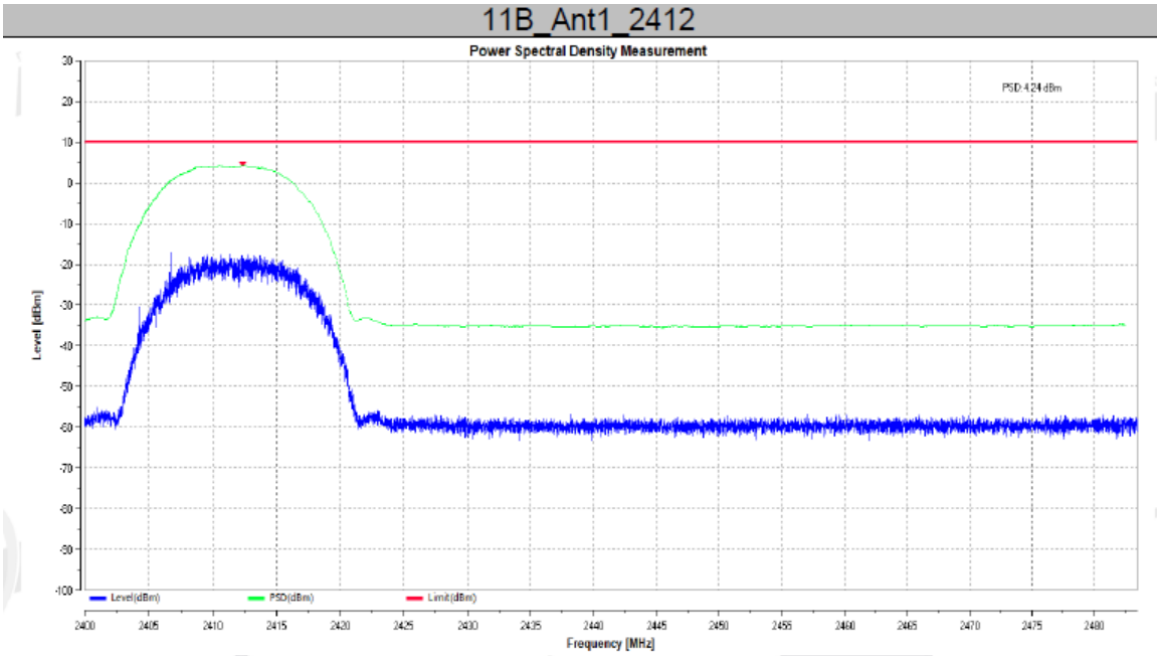
Test mode: IEEE 802.11b; IEEE 802.11g; IEEE 802.11n HT20, IEEE 802.11n HT40

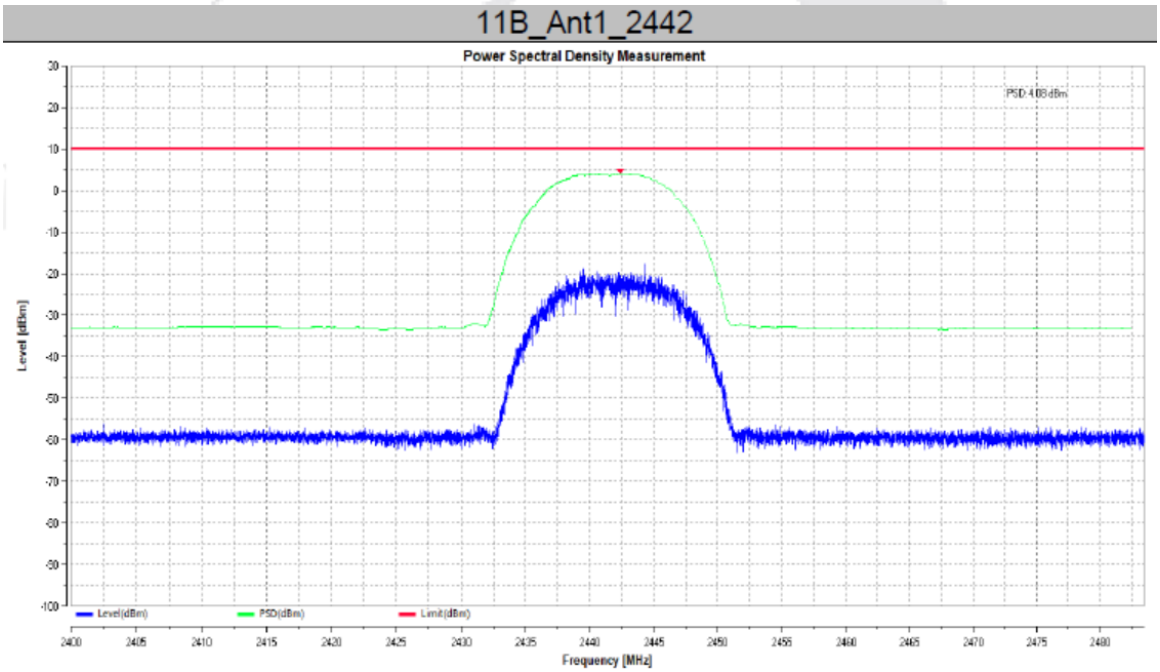
Test result: Pass

Test Mode	Frequency (MHz)	Level (dBm)	Limit (dBm)	Result
IEEE 802.11b	2412	4.24	10	Pass
	2442	4.08		Pass
	2472	4.15		Pass
IEEE 802.11g	2412	2.61		Pass
	2442	2.16		Pass
	2472	2.40		Pass
IEEE 802.11n HT20	2412	2.29		Pass
	2442	2.16		Pass
	2472	2.35		Pass
IEEE 802.11n HT40	2422	0.04		Pass
	2442	-0.67		Pass
	2462	-0.09		Pass

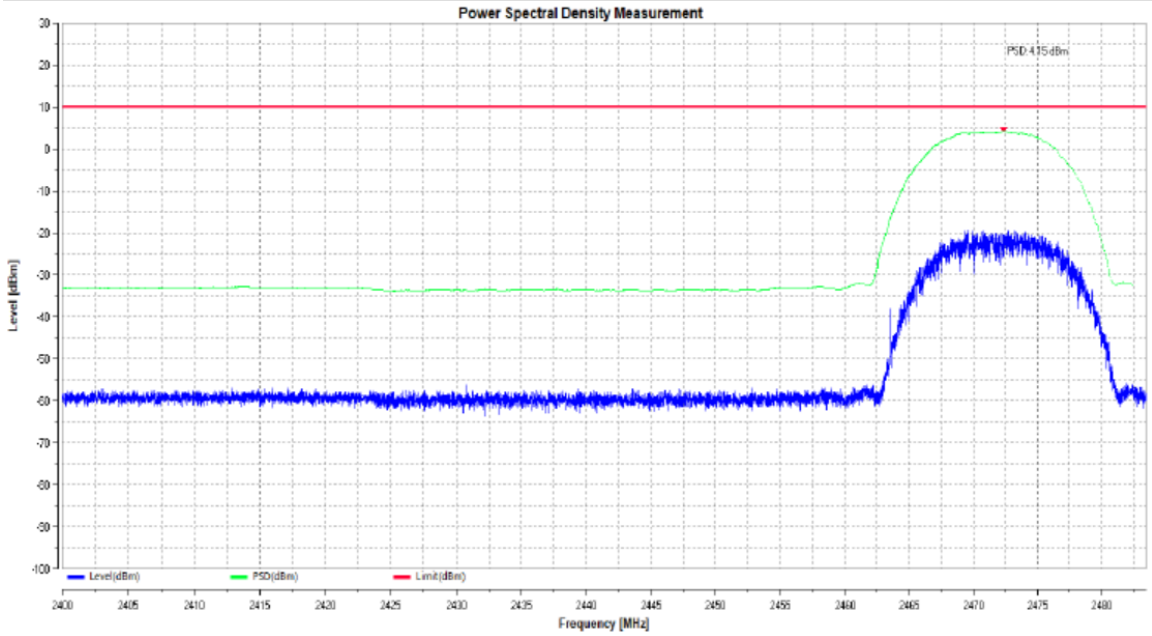
1、 IEEE 802.11b: Worst case were 1Mbit/s
2、 IEEE 802.11g: Worst case were 6Mbit/s
3、 IEEE 802.11n HT20: Worst case were MCS0
4、 IEEE 802.11n HT40: Worst case were MCS0

3.2.6. Original test data

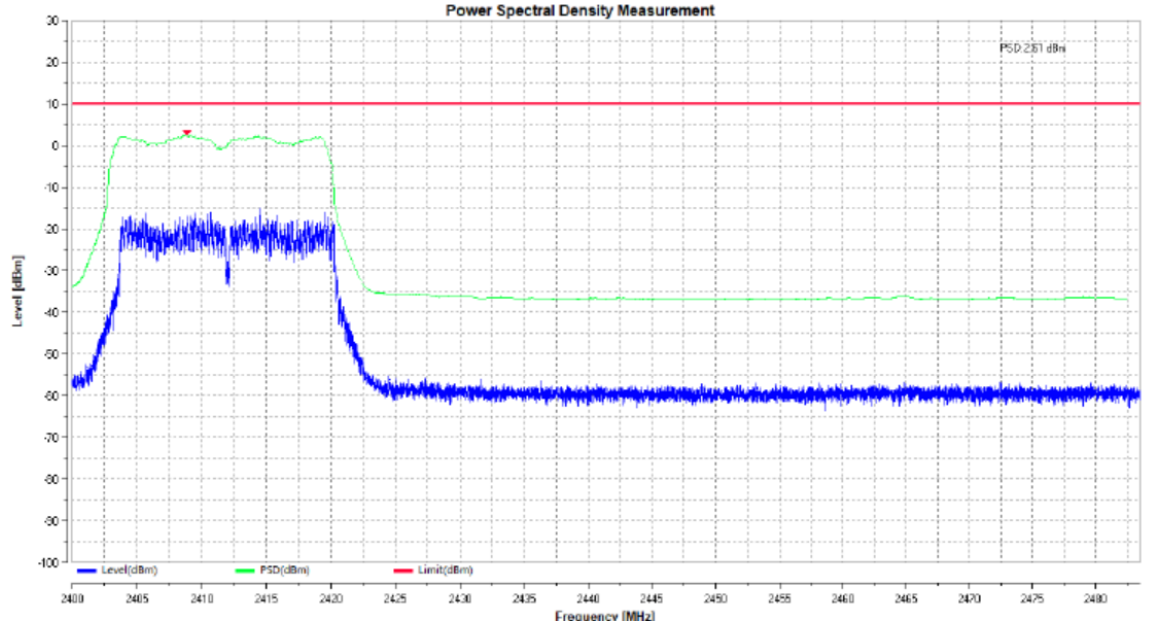


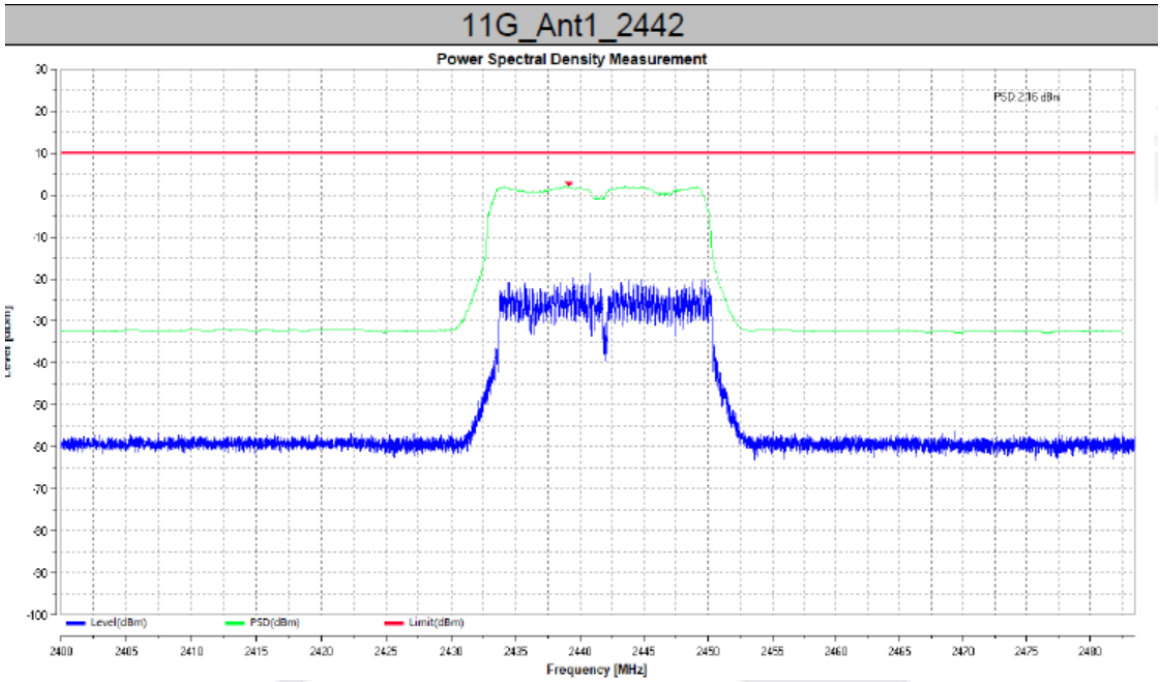


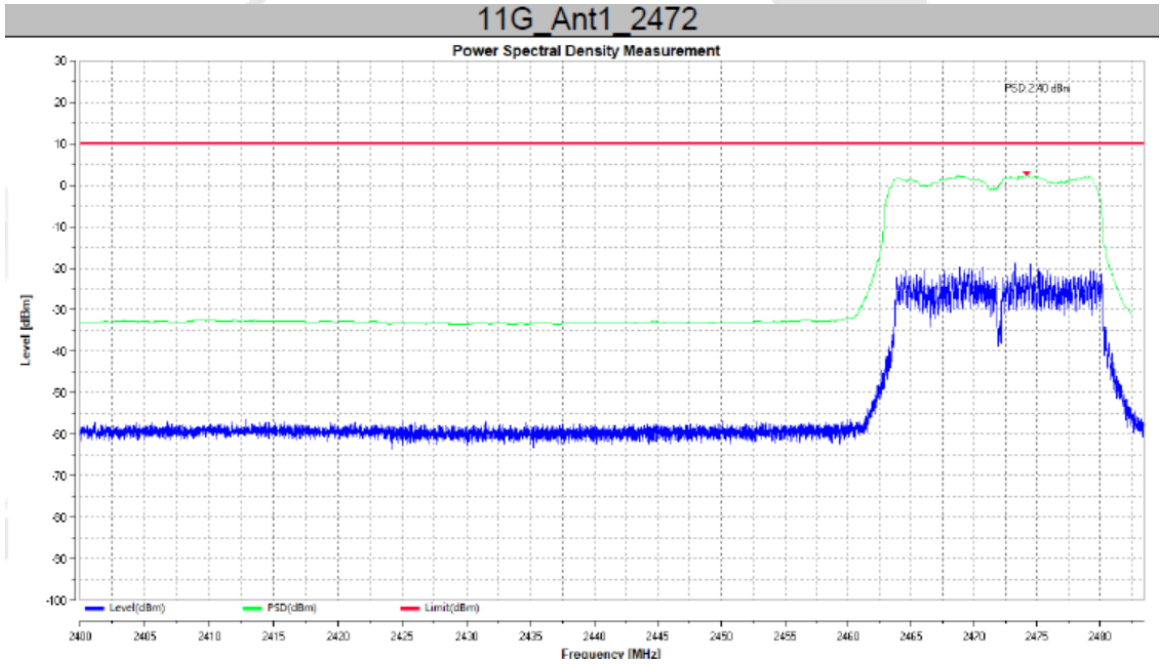
11B_Ant1_2472



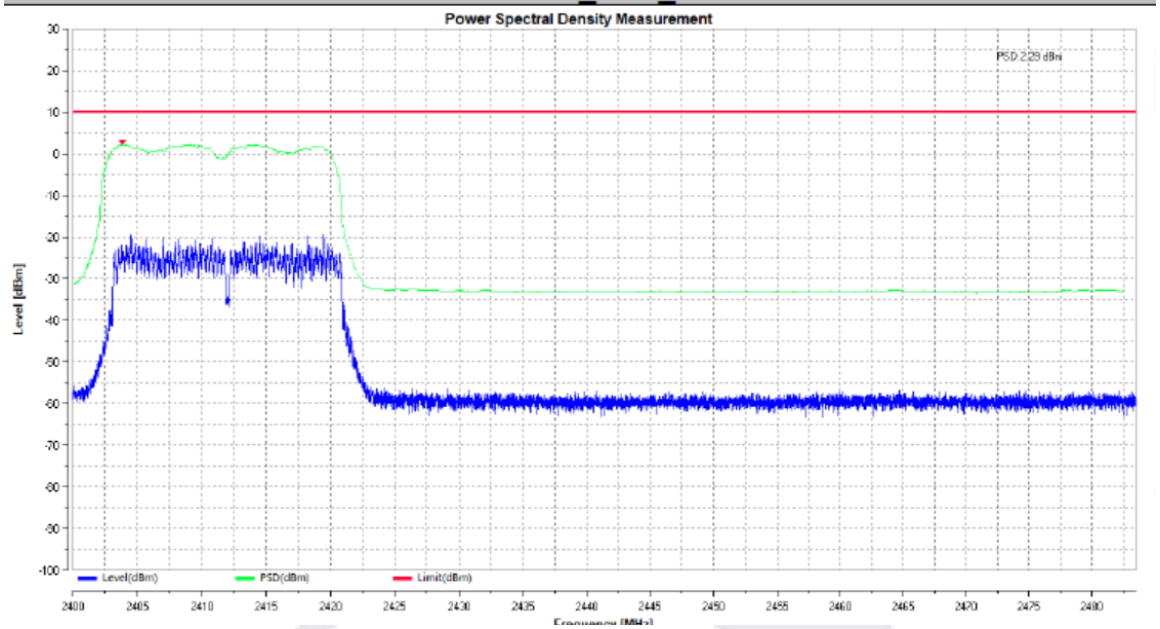
11G_Ant1_2412



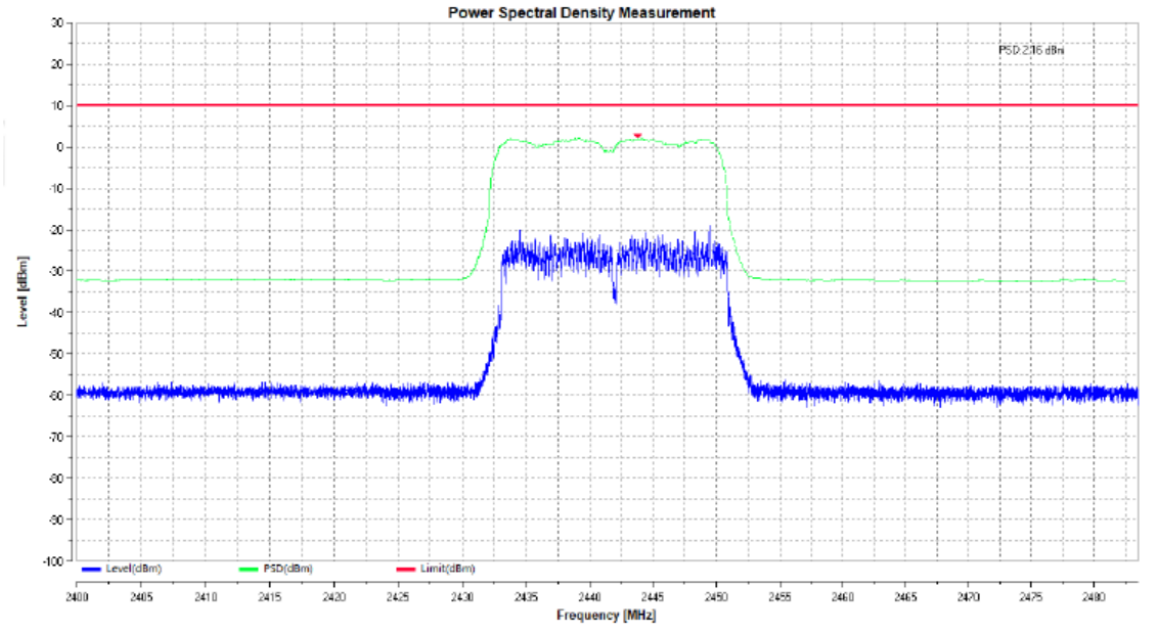

11G_Ant1_2442
Power Spectral Density Measurement
PSD:2.16 dBm
Level(dBm)
PSD(dBm)
Limit(dBm)
Frequency [MHz]


11G_Ant1_2472
Power Spectral Density Measurement
PSD:2.40 dBm
Level(dBm)
PSD(dBm)
Limit(dBm)
Frequency [MHz]

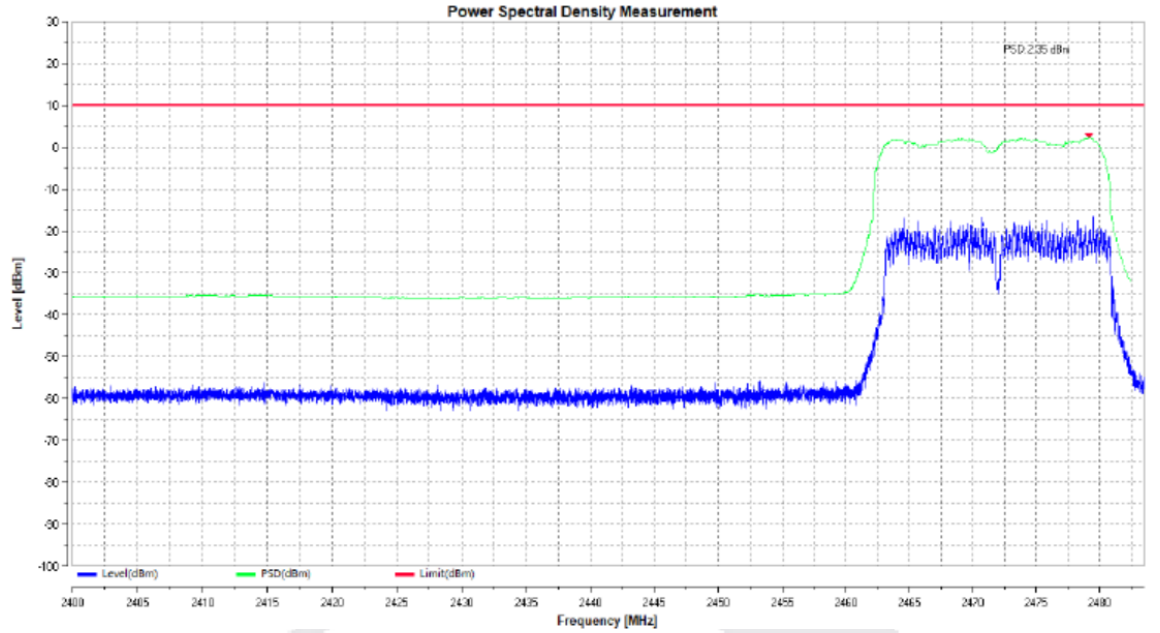
11N20SISO_Ant1_2412



11N20SISO_Ant1_2442



11N20SISO_Ant1_2472



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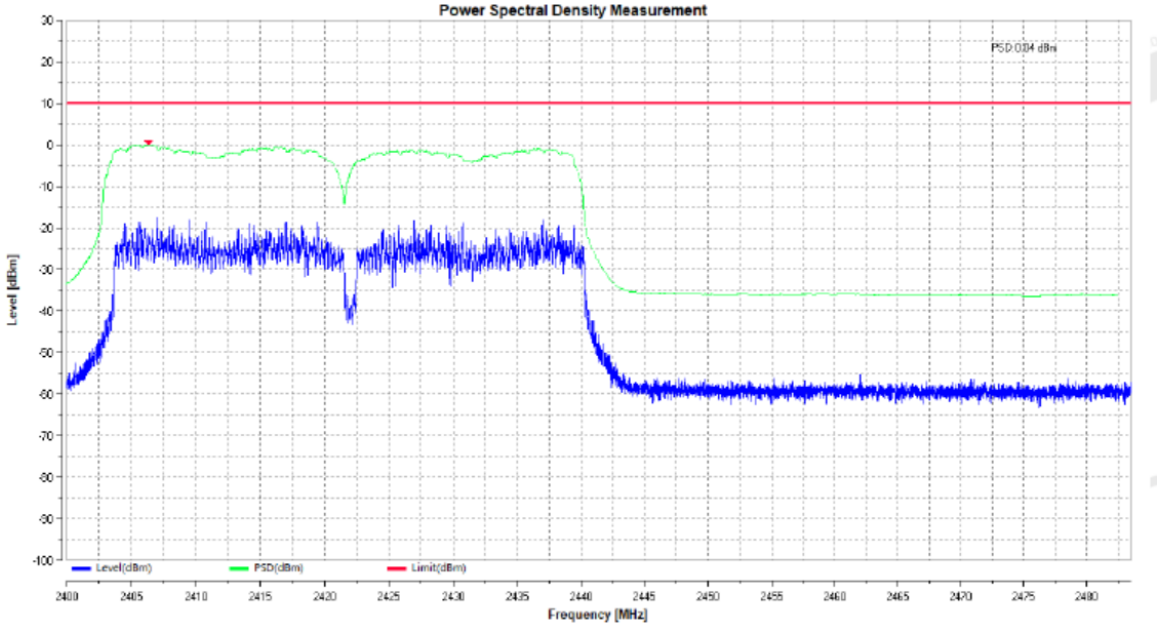
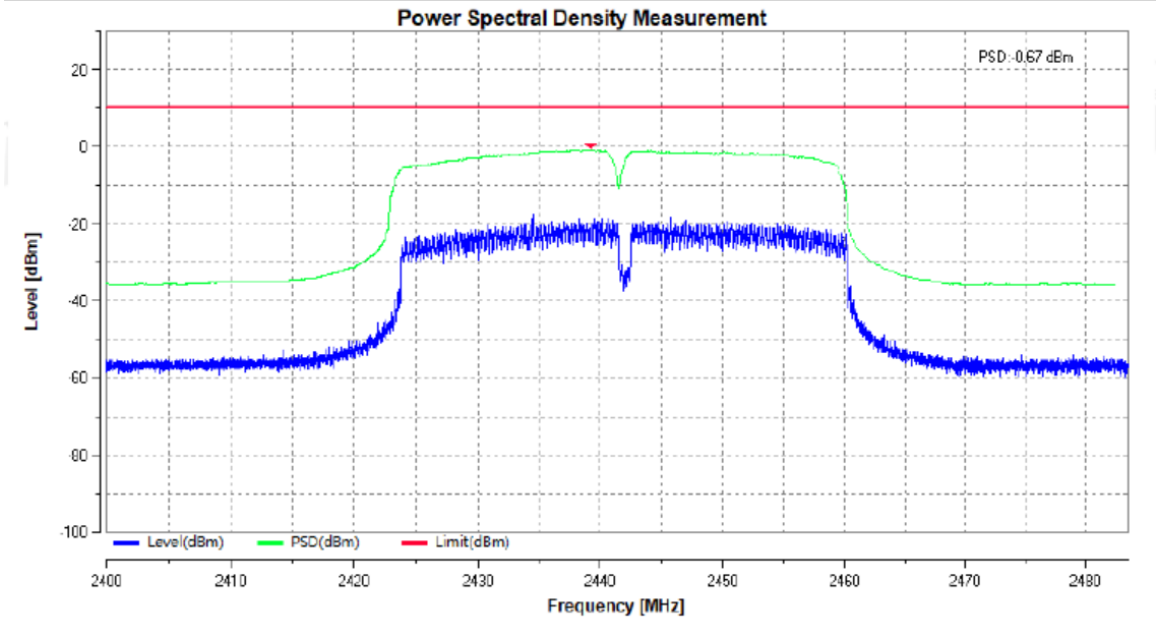
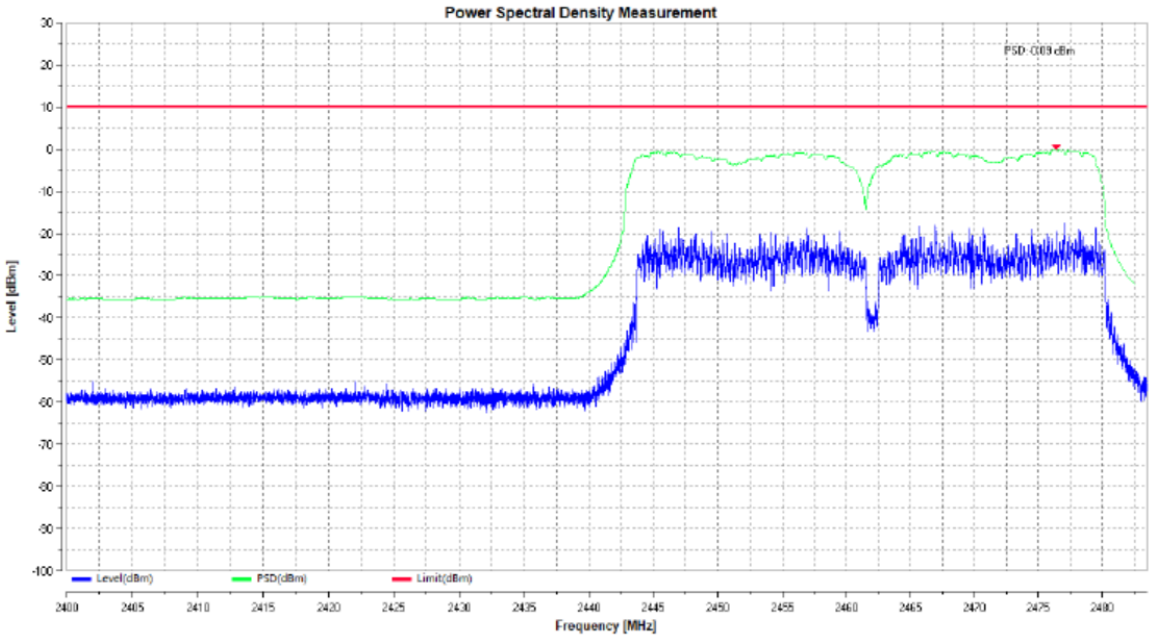


11N40SISO_Ant1_2442



11N40SISO_Ant1_2462



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

N/A (Not Applicable)
These requirements apply to non-adaptive equipment or to adaptive equipment when operating in a non-adaptive mode. The equipment is using wide band modulations other than FHSS.
These requirements do not apply for equipment with a maximum declared RF Output power level of less than 10 dBm e.i.r.p. or for equipment when operating in a mode where the RF Output power is less than 10 dBm e.i.r.p.

3.4.Accumulated Transmit Time, Frequency Occupation and Hopping Sequence

N/A (Not Applicable)
Only for FHSS equipment.

3.5.Medium Utilization (MU) factor

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

3.6.Adaptivity

3.6.1.Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
Spectrum	Rohde & Schwarz	FSV	103559	Dec 25,2020	1 Year
Vector signal source	Agilent	N5182A	MY47420382	Dec 25,2020	1 Year
Analog signal source	Rohde & Schwarz	SMB 100A	179706	Dec 25,2020	1 Year
Comprehensive measuring instrument	Rohde & Schwarz	CMW 500	158242	Dec 25,2020	1 Year
control unit	MWRF	MW100-RFCB	10165	Dec 25,2020	1 Year
Testing software	SKET	MTS-8310	10165	Dec 25,2020	1 Year
N/A is an abbreviation for Not Applicable.					

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

Refer to chapter 4.3.2.6 of EN 300 328 V2.2.2

4.3.2.6.2 Non-LBT based Detect and Avoid

Equipment using a modulation other than FHSS and using the non-LBT based Detect and Avoid mechanism, 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. If it is determined that a signal is present with a level above the detection threshold defined in step 5 the channel shall be marked as 'unavailable'.

2) The channel 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.

4) 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.

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 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 / Pout) (Pout 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 9.

Table 9: Unwanted Signal parameters

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.		

4.3.2.6.3 LBT based Detect and Avoid

Requirements & Limits

1、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. See figure 2 below.

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. See figure 2 below.

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.

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 / Pout) (Pout 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 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 figure 2.

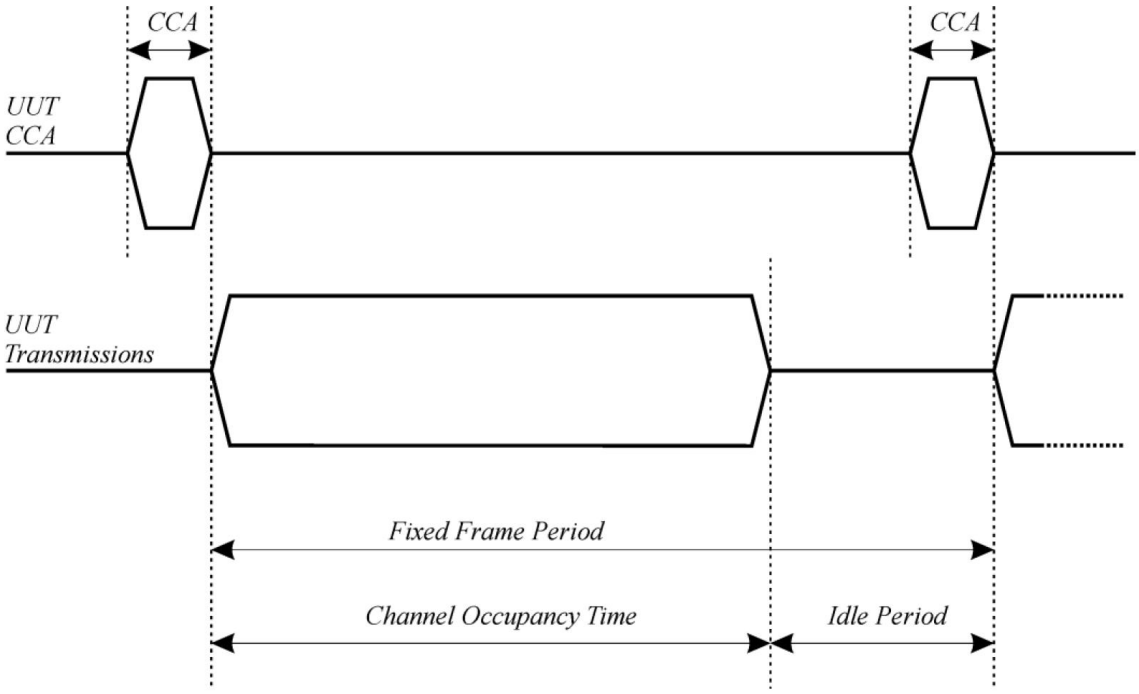


Figure 2: Example of timing for Frame Based Equipment

2、Load 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™-2012 [i.3], clause 9, clause 10, clause 16, clause 17, clause 19 and clause 20, or in IEEE 802.15.4™-2011 [i.4], clause 4,

clause 5 and clause 8 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 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 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:

$$TL = -70 \text{ dBm/MHz} + 10 \times \log10 (100 \text{ mW} / Pout)$$

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

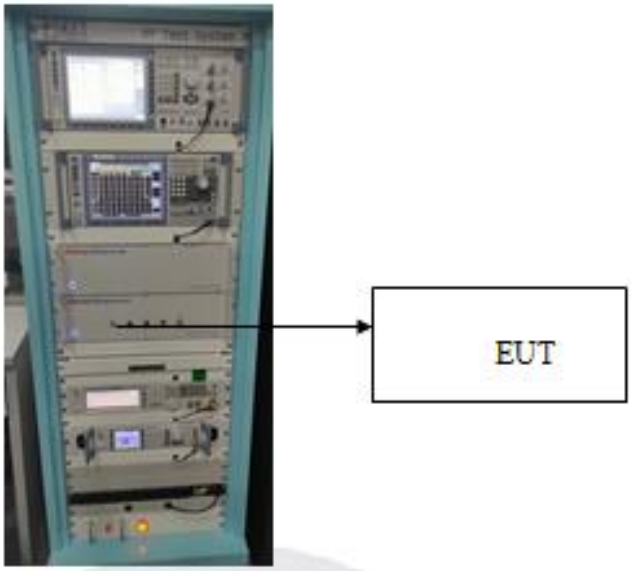
Wanted signal mean power from companion device	Unwanted signal frequency (MHz)	Unwanted signal power (dBm)
sufficient to maintain the link (see note 2)	2 395 or 2 488,5 (see note 1)	-35 (see note 3)
NOTE 1: The highest frequency shall be used for testing operating channels within the range 2 400 MHz 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 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

f 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.
NOTE: Duty Cycle is defined in clause 4.3.2.4.2.

3.6.3.Test method

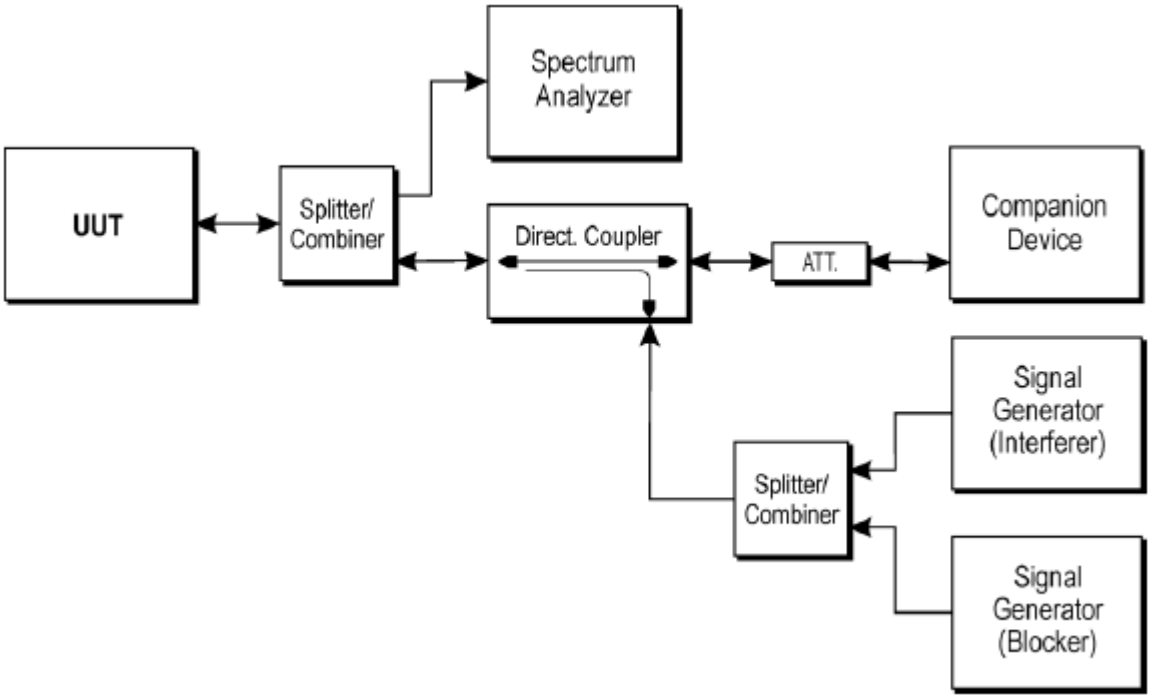
(1) Connected the antenna port to the OSP of MTS-8310 system



(3) Test conditions refer to chapter 5.4.6.1 of EN 300 328 V2.2.2

(4) Test method refer to chapter 5.4.6.2 of EN 300 328 V2.2.2

(4) Test Setup:



3.6.4.Test Information

EUT: Dynamic light box	
M/N: JCD-NW	
Test Date: 2021.11.06	Tested by:Bing.He
Ambient Temperature: 23℃	Relative Humidity: 54%

3.6.5.Test Results

EUT operation Mode	☐ 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
	☐ Load Based Equipment not using any of the mechanisms referenced above

Adaptivity Detection Threshold		
Test Mode	Frequency (MHz)	Detection Threshold Level (dBm/MHz)
IEEE 802.11b	2412	-66.17
	2472	-66.84
IEEE 802.11g	2412	-65.34
	2472	-65.84
IEEE 802.11n HT20	2412	-68.00
	2472	-69.01
IEEE 802.11n HT40	2422	-66.78
	2462	-68.02
TL = -70 dBm/MHz + 10 ×log 10 (100 mW / Pout) (Pout in mW e.i.r.p.)		

Clear Channel Assessment And Channel Occupancy Time						
Test Mode	Frequency (MHz)	CCA (us)	COT (ms)	CCA Limit (us)	COT Limit (ms)	Result
IEEE 802.11b	2412	18.00	4.11	≥18	≤13	Pass
	2472	18.00	7.41	≥18	≤13	Pass
IEEE 802.11g	2412	18.00	7.13	≥18	≤13	Pass
	2472	18.00	2.75	≥18	≤13	Pass
IEEE 802.11n HT20	2412	18.00	9.20	≥18	≤13	Pass
	2472	18.00	4.11	≥18	≤13	Pass
IEEE 802.11n HT40	2422	18.00	7.12	≥18	≤13	Pass
	2462	18.00	4.97	≥18	≤13	Pass

Adaptivity And Short Control Signalling Transmissions					
Test Mode	Frequency (MHz)	Adaptivity	SCST (%)	SCST Limit (%)	Result
IEEE 802.11b	2412	Pass	7.72	≤10	Pass
	2472	Pass	8.12	≤10	Pass
IEEE 802.11g	2412	Pass	7.85	≤10	Pass
	2472	Pass	1.81	≤10	Pass
IEEE 802.11n HT20	2412	Pass	7.16	≤10	Pass
	2472	Pass	3.75	≤10	Pass
IEEE 802.11n HT40	2422	Pass	5.38	≤10	Pass
	2462	Pass	4.64	≤10	Pass

3.7.Occupied Channel Bandwidth

3.7.1.Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
Spectrum	Rohde & Schwarz	FSV	103559	Dec 25,2020	1 Year
Vector signal source	Agilent	N5182A	MY47420382	Dec 25,2020	1 Year
Analog signal source	Rohde & Schwarz	SMB 100A	179706	Dec 25,2020	1 Year
Comprehensive measuring instrument	Rohde & Schwarz	CMW 500	158242	Dec 25,2020	1 Year
control unit	MWRF	MW100-RFCB	10165	Dec 25,2020	1 Year
Testing software	SKET	MTS-8310	10165	Dec 25,2020	1 Year
N/A is an abbreviation for Not Applicable.					

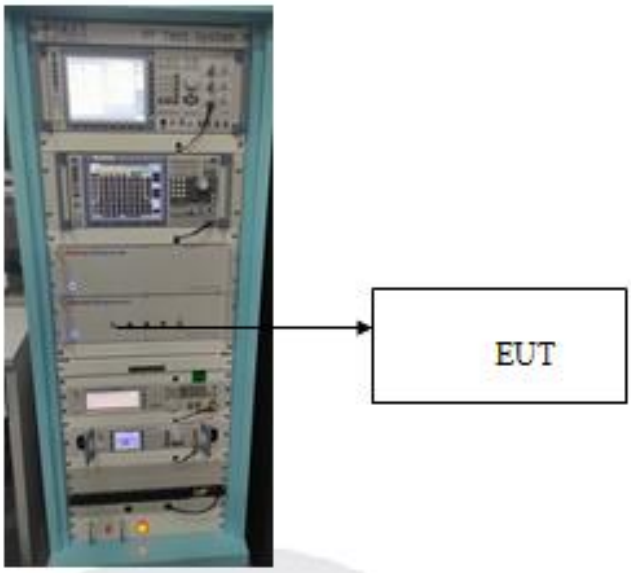
3.7.2.Limit (ETSI EN 300 328 V2.2.2 (2019-07))

The Occupied Channel Bandwidth shall fall completely within 2400MHz to 2483.5MHz.

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

3.7.3.Test method

(1) Connected the antenna port to the OSP of MTS-8310 system, read output power of the transmitter. (As below).



(2) Configure EUT work in lowest and highest TX frequency.

(3) Test conditions refer to chapter 5.4.7.1 of EN 300 328 V2.2.2

(4) Test method refer to chapter 5.4.7.2.1 of EN 300 328 V2.2.2

3.7.4.Test Information

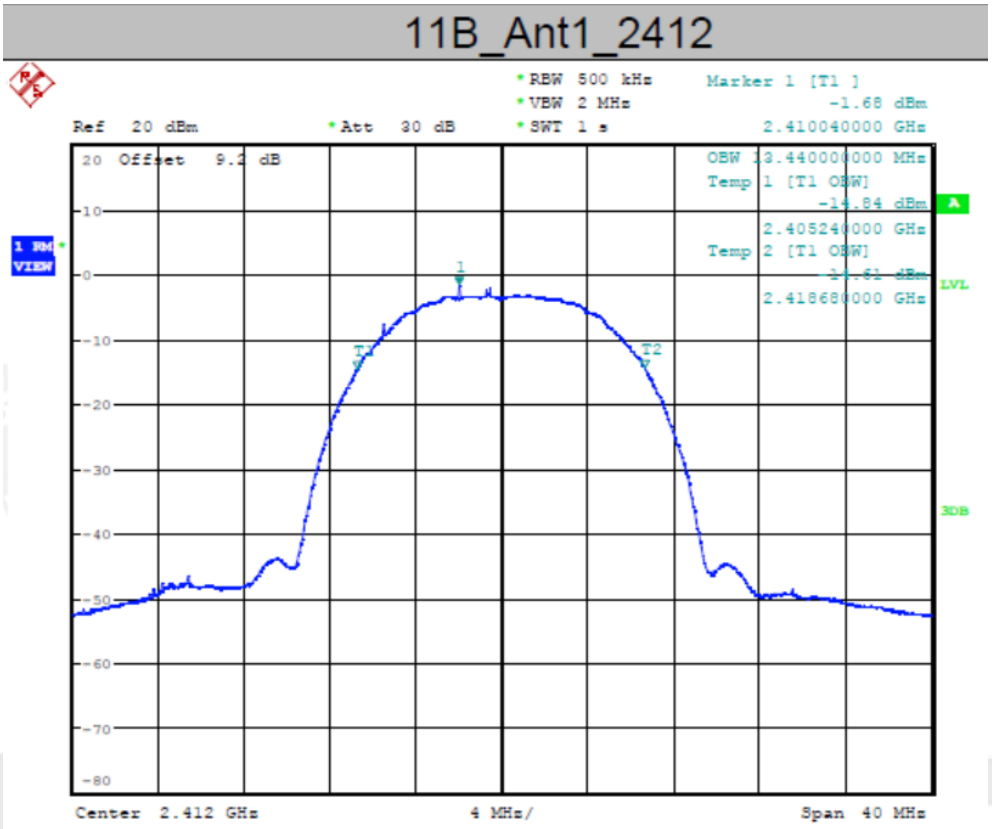
EUT: Dynamic light box	
M/N: JCD-NW	
Test Date: 2021.11.06	Tested by:Bing.He
Ambient Temperature: 23℃	Relative Humidity: 54%

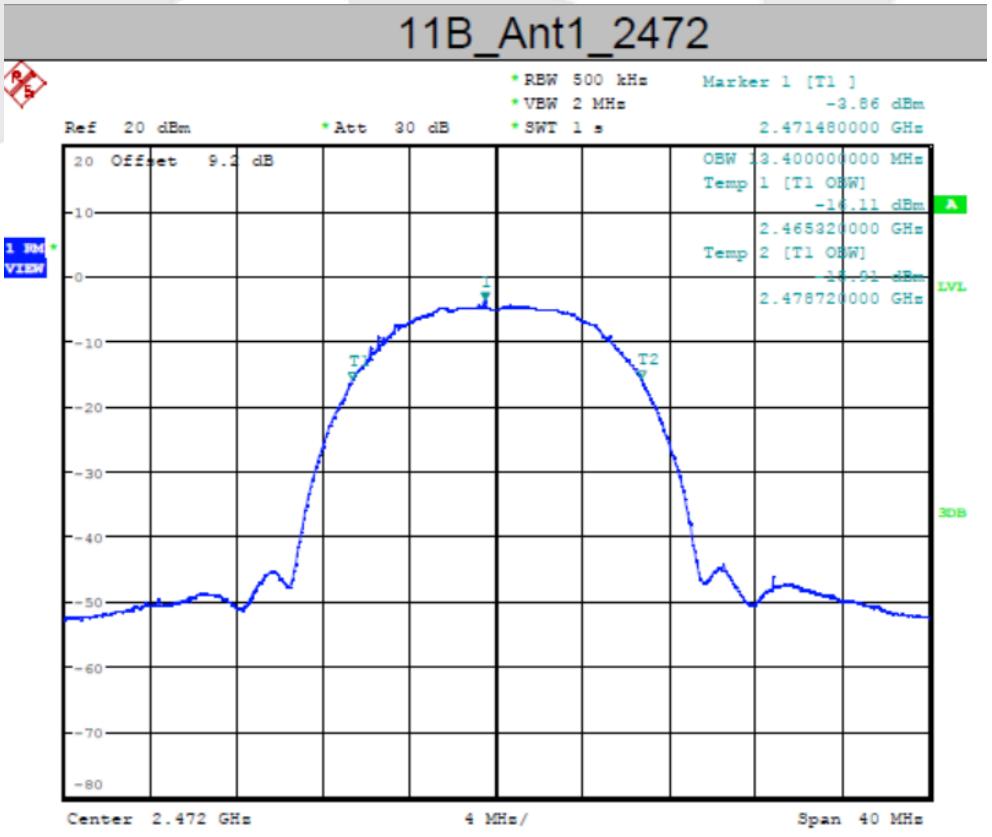
3.7.5.Test Results

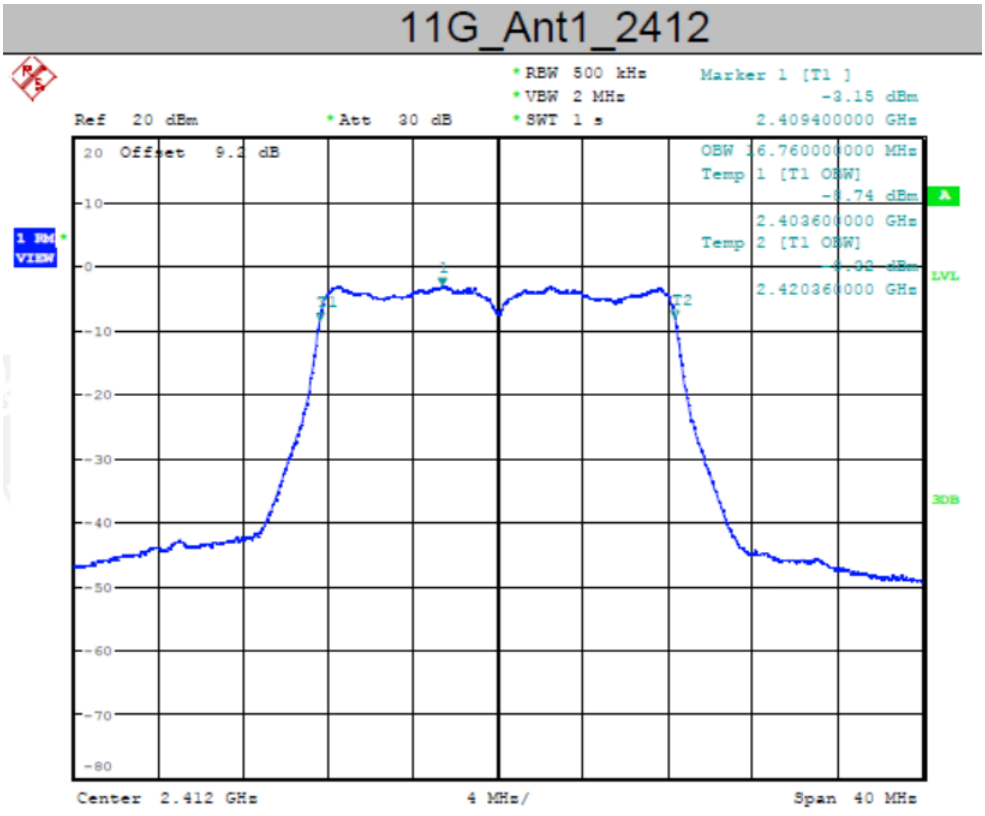
Test result: Pass

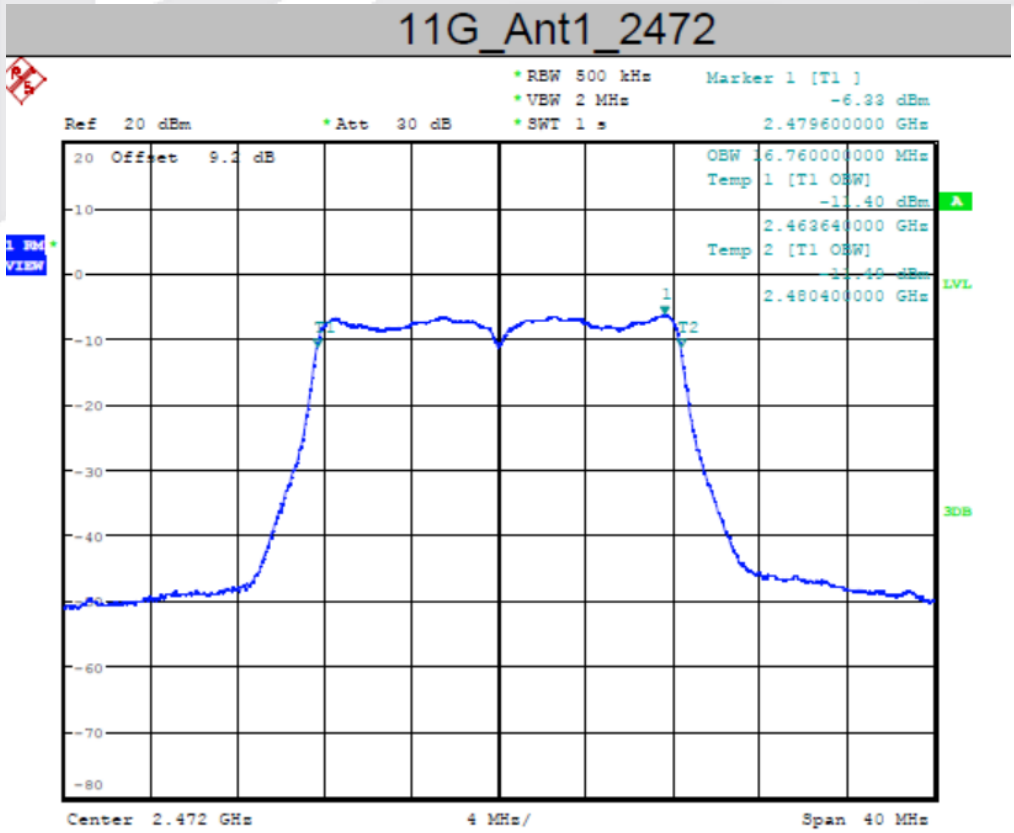
Module Mode	Channel	Occupied Channel Bandwidth (MHz)	Lower Band Edge (MHz)	Upper Band Edge (MHz)	Conclusion
IEEE 802.11b	Low CH	13.44	2405.24	2418.68	PASS
	High CH	13.40	2465.32	2478.72	PASS
IEEE 802.11g	Low CH	16.76	2403.60	2420.36	PASS
	High CH	16.76	2463.64	2480.40	PASS
IEEE 802.11n HT 20	Low CH	17.80	2403.08	2420.88	PASS
	High CH	17.80	2463.12	2480.92	PASS
IEEE 802.11n HT 40	Low CH	36.56	2403.68	2440.24	PASS
	High CH	36.56	2443.76	2480.32	PASS

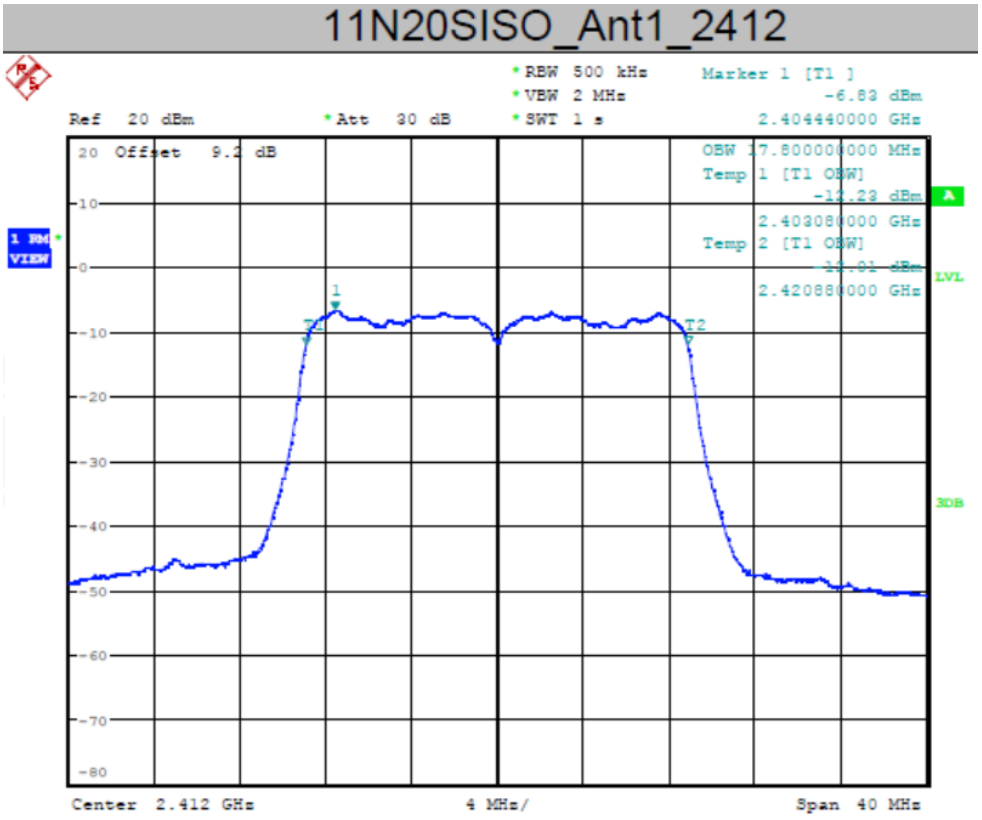
3.7.6. Original test data

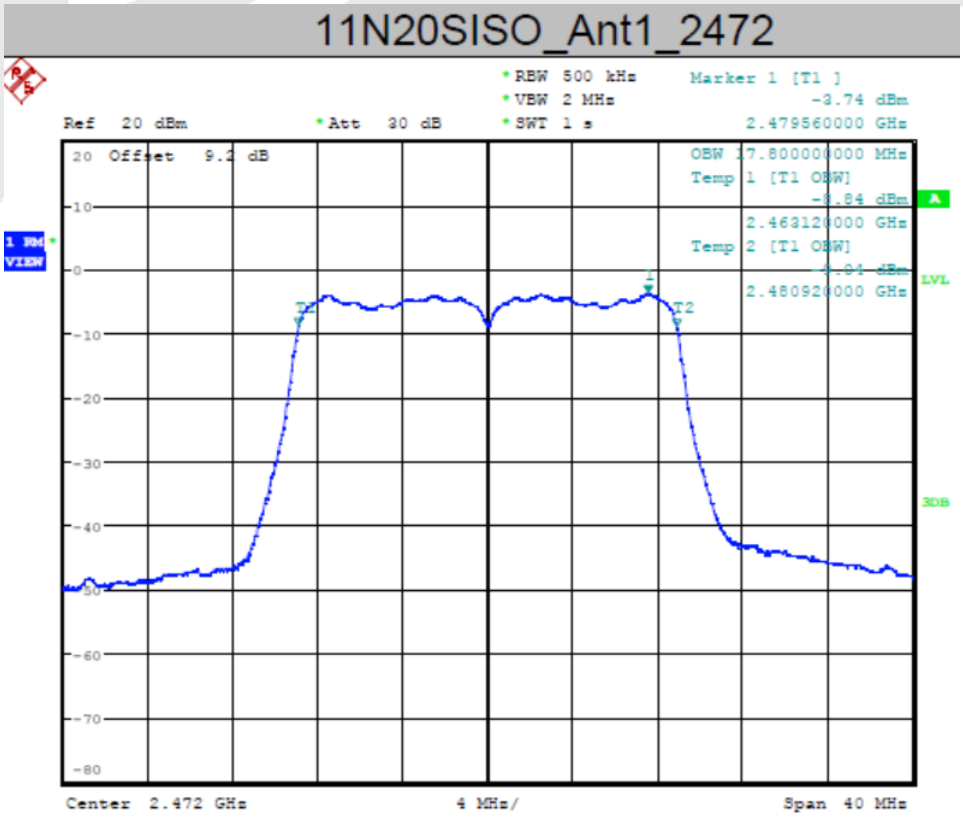


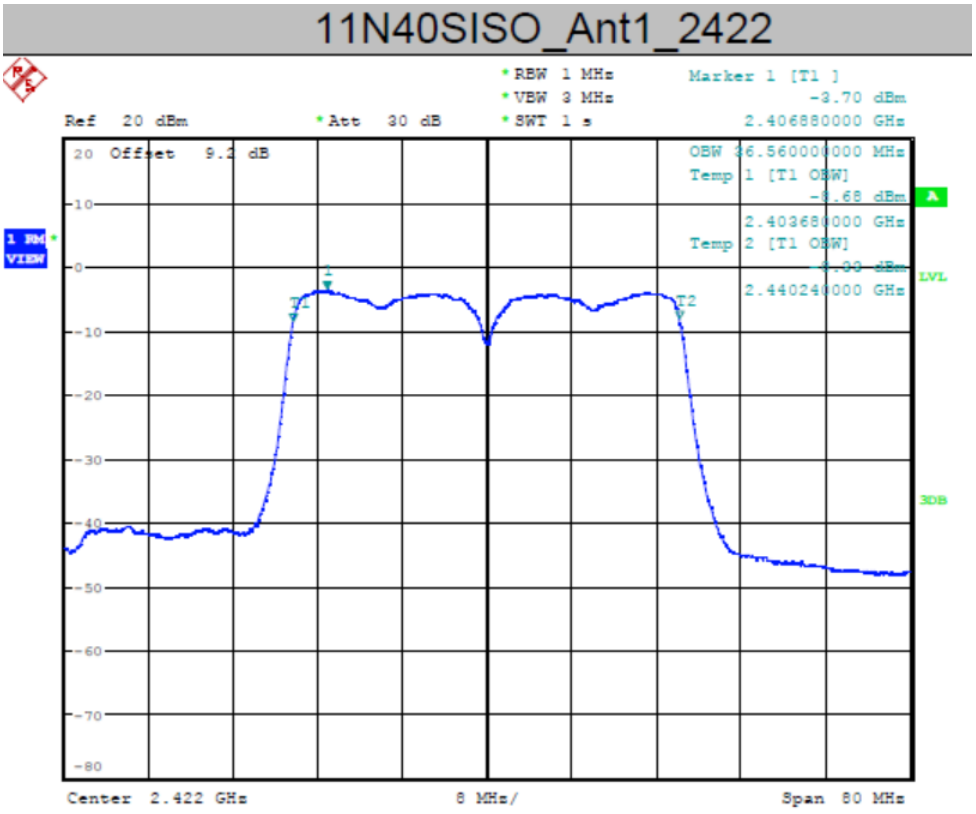


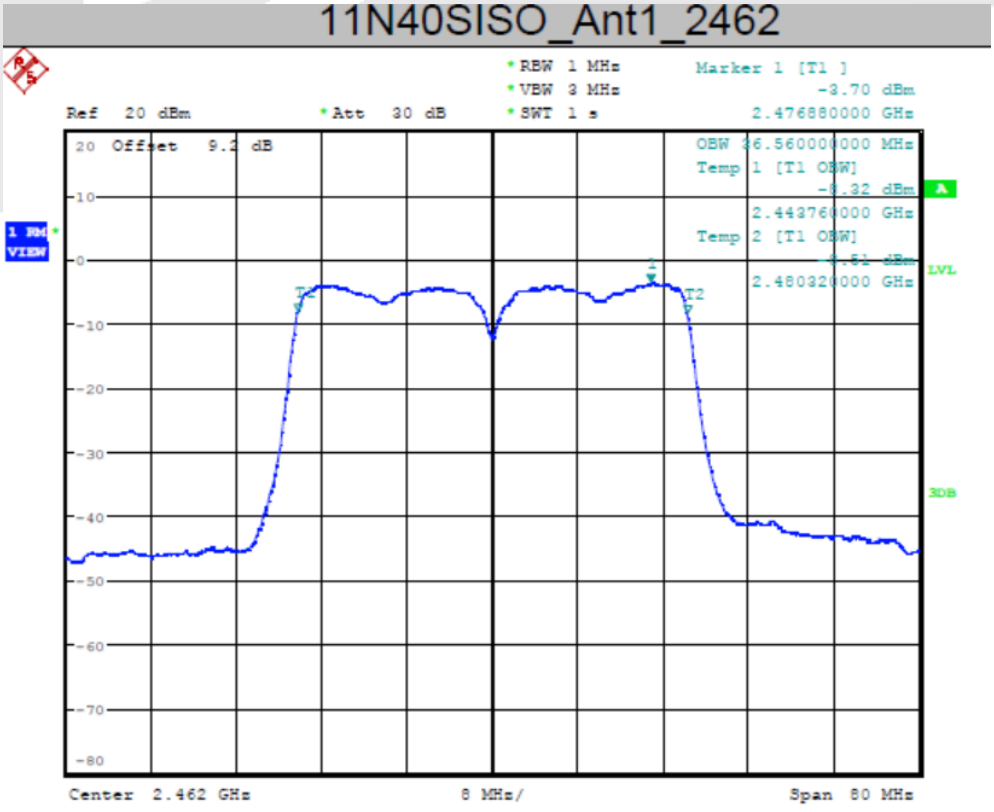

11G_Ant1_2412
RBW 500 kHz
VBW 2 MHz
SWT 1 s
Marker 1 [T1]
-3.15 dBm
2.409400000 GHz
Ref 20 dBm
Att 30 dB
Offset 9.2 dB
OBW 16.760000000 MHz
Temp 1 [T1 OBW]
-8.74 dBm
2.403600000 GHz
Temp 2 [T1 OBW]
-8.92 dBm
2.420360000 GHz
1 RM
VIEW
A
LVL
3DB
Center 2.412 GHz
4 MHz/
Span 40 MHz


11G_Ant1_2472
RBW 500 kHz
VBW 2 MHz
SWT 1 s
Marker 1 [T1]
-6.33 dBm
2.479600000 GHz
Ref 20 dBm
Att 30 dB
Offset 9.2 dB
OBW 16.760000000 MHz
Temp 1 [T1 OBW]
-11.40 dBm
2.463640000 GHz
Temp 2 [T1 OBW]
-11.40 dBm
2.480400000 GHz
1 RM
VIEW
A
LVL
3DB
Center 2.472 GHz
4 MHz/
Span 40 MHz


11N20SISO_Ant1_2412
RBW 500 kHz
VBW 2 MHz
SWT 1 s
Marker 1 [T1]
-6.83 dBm
2.404440000 GHz
Ref 20 dBm
Att 30 dB
Offset 9.2 dB
OBW 17.800000000 MHz
Temp 1 [T1 OBW]
-12.23 dBm
2.403080000 GHz
Temp 2 [T1 OBW]
-12.01 dBm
2.420880000 GHz
1 RM VIEW
A
LVL
3DB
Center 2.412 GHz
4 MHz/
Span 40 MHz


11N20SISO_Ant1_2472
RBW 500 kHz
VBW 2 MHz
SWT 1 s
Marker 1 [T1]
-3.74 dBm
2.479560000 GHz
Ref 20 dBm
Att 30 dB
Offset 9.2 dB
OBW 17.800000000 MHz
Temp 1 [T1 OBW]
-3.84 dBm
2.463120000 GHz
Temp 2 [T1 OBW]
-4.04 dBm
2.480920000 GHz
1 RM VIEW
A
LVL
3DB
Center 2.472 GHz
4 MHz/
Span 40 MHz


11N40SISO_Ant1_2422
RBW 1 MHz
VBW 3 MHz
SWT 1 s
Marker 1 [T1]
-3.70 dBm
2.406880000 GHz
Ref 20 dBm
Att 30 dB
Offset 9.2 dB
OBW 16.560000000 MHz
Temp 1 [T1 OBW]
-8.68 dBm
2.403680000 GHz
Temp 2 [T1 OBW]
-9.00 dBm
2.440240000 GHz
1 RM VIEW
A
LVL
3DB
Center 2.422 GHz
8 MHz/
Span 80 MHz

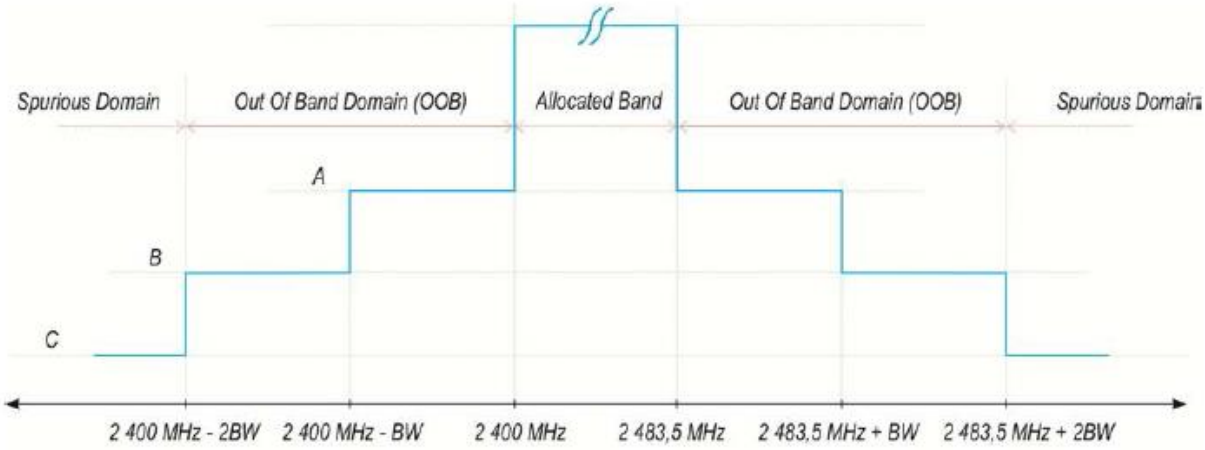

11N40SISO_Ant1_2462
RBW 1 MHz
VBW 3 MHz
SWT 1 s
Marker 1 [T1]
-3.70 dBm
2.476880000 GHz
Ref 20 dBm
Att 30 dB
Offset 9.2 dB
OBW 16.560000000 MHz
Temp 1 [T1 OBW]
-8.32 dBm
2.443760000 GHz
Temp 2 [T1 OBW]
-8.51 dBm
2.480320000 GHz
1 RM VIEW
A
LVL
3DB
Center 2.462 GHz
8 MHz/
Span 80 MHz

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

3.8.1.Test Equipment

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

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 the following figure.

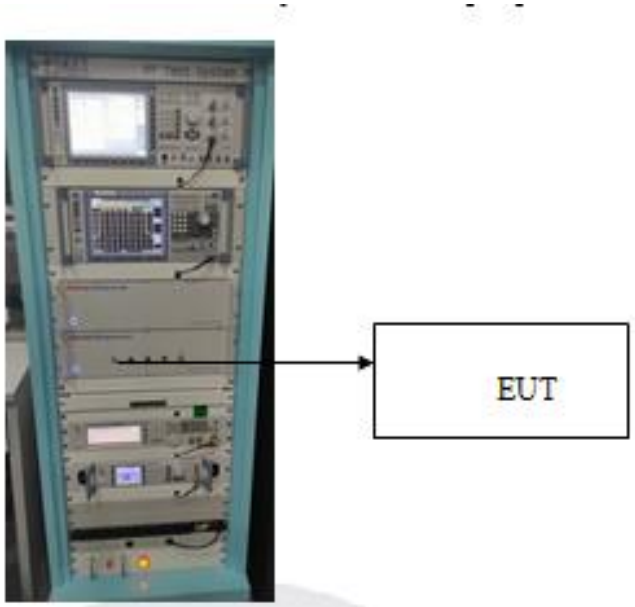


A: -10 dBm/MHz e.i.r.p.
B: -20 dBm/MHz e.i.r.p.
C: Spurious Domain limits

BW = Occupied Channel Bandwidth in MHz or 1 MHz whichever is greater

3.8.3.Test method

(1) Connected the antenna port to the OSP of MTS-8310 system, read output power of the transmitter. (As below)



(2) Configure EUT work in TX mode.

(3) Test conditions refer to chapter 5.4.8.1 of EN 300 328 V2.2.2

(4) Test method refer to chapter 5.4.8.2.1 of EN 300 328 V2.2.2

3.8.4.Test Information

EUT: Dynamic light box	
M/N: JCD-NW	
Test Date: 2021.11.07	Tested by:Bing.He
Ambient Temperature: 23℃	Relative Humidity: 54%

3.8.5.Test Results

Test Mode	Frequency (MHz)	Test Range (MHz)	Emission Frequency (MHz)	Emission Level (dBm)	Limit (dBm)	Result
IEEE 802.11b	2412	2400-2×BW~2400-BW	2359.50	-49.10	-20	Pass
		2400-BW~2400	2399.50	-45.40	-10	Pass
		2483.5~2483.5+BW	2484.00	-46.60	-10	Pass
		2483.5+BW~2483.5+2×BW	2548.00	-48.60	-20	Pass
	2472	2400-2×BW~2400-BW	2347.50	-49.10	-20	Pass
		2400-BW~2400	2399.50	-49.00	-10	Pass
		2483.5~2483.5+BW	2484.00	-37.80	-10	Pass
		2483.5+BW~2483.5+2×BW	2524.00	-48.50	-20	Pass

Note：

Only the worst case emission frequency and level in each test range were recorded.

3.9. Transmitter unwanted emissions in the spurious domain

3.9.1. Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
Spectrum analyzer	R&S	FSV30	103559	Dec 15,2020	1 year
Trilog-boardband antenna	Schwarzbeck	VULB 9163D	9163-971	Dec 15,2019	3 years
Horn antenna	Schwarzbeck	BBHA 9120D	9120D-1590	Dec 15,2019	3 years
Horn antenna	ETS	3160-09	00208373	Dec 15,2019	3 years
Pre-amplifier (Low Freq)	Claviio	BDLNA-0001-272007	1600015	Dec 15,2019	3 years
Pre-amplifier (High Freq)	Claviio	BDLNA-0118-352810	1600019	Dec 15,2019	3 years
Pre-amplifier (High Freq)	Claviio	BDLNA-1826-483105	1600013	Dec 15,2019	3 years

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

Refer to chapter 4.3.2.9 of EN 300 328 V2.2.2

The transmitter unwanted emissions in the spurious domain shall not exceed the values given in table 12.

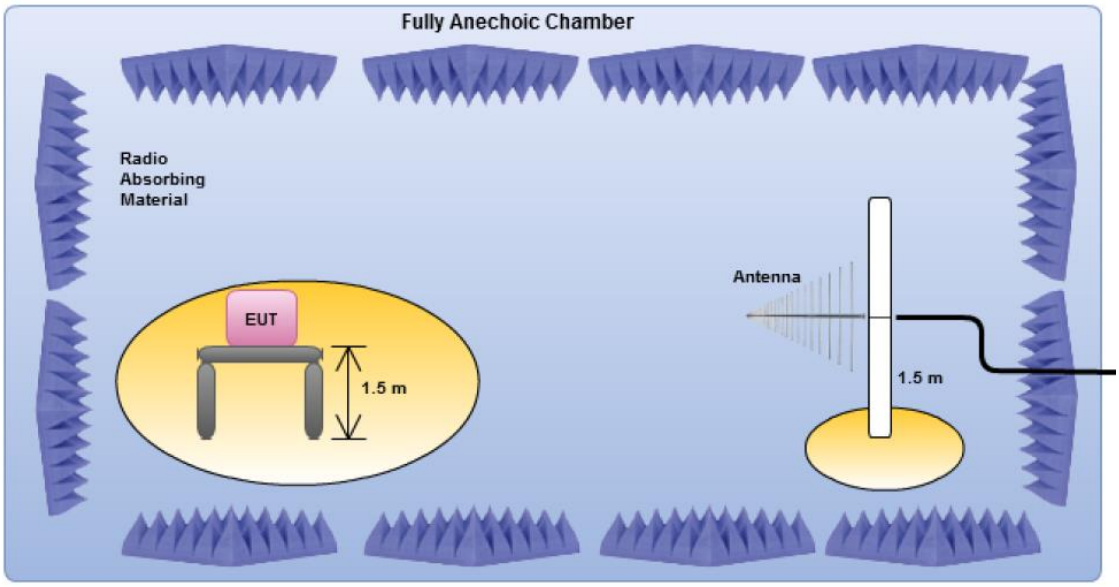
n case of equipment with antenna connectors, these limits apply to emissions at the antenna port (conducted). For emissions radiated by the cabinet or emissions radiated by integral antenna equipment (without antenna connectors), these limits are e.r.p. for emissions up to 1 GHz and as e.i.r.p. for emissions 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 862 MHz	-54 dBm	100 kHz
862 MHz to 1 GHz	-36 dBm	100 kHz
1 GHz to 12,75 GHz	-30 dBm	1 MHz

3.9.3.Test Method

(1) Test Setup.(As Below)



(2) Test conditions refer to chapter 5.4.9.1 of EN 300 328 V2.2.2

(3) Test method refer to chapter 5.4.9.2.2 of EN 300 328 V2.2.2

3.9.4.Test Information

EUT:	Dynamic light box
M/N:	JCD-NW
Test Date:	2021.11.04
Test standard:	ETSI EN 300 328 V2.2.2 (2019-07)
Test mode:	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n HT20, IEEE 802.11n HT40
Test By:	Bing.He

3.9.5.Test Results

30MHz to 1GHz					
EUT mode	Frequency (MHz)	Spurious emissions level (dBm)	Limit (dBm)	Conclusion	Antenna Pole (H/V)
TX Mode	45.66	-56.93	-54.00	Pass	H
	88.63	-55.66	-54.00	Pass	V
1、“H” mean is horizontal direction, “V” mean is vertical direction.。 2、The worst case has recorded in the report.					

Above 1GHz					
EUT mode	Frequency (MHz)	Spurious emissions level (dBm)	Limit (dBm)	Conclusion	Antenna Pole (H/V)
IEEE 802.11b 2412MHz	4824.00	-46.36	-30.00	Pass	H
	7236.00	-49.52	-30.00	Pass	H
	4824.00	-47.25	-30.00	Pass	V
	7236.00	-49.45	-30.00	Pass	V
IEEE 802.11b 2472MHz	4944.00	-48.44	-30.00	Pass	H
	7416.00	-52.66	-30.00	Pass	H
	4944.00	-46.66	-30.00	Pass	V
	7416.00	-55.21	-30.00	Pass	V
Note: “H” mean is horizontal direction, “V” mean is vertical direction.					

Above 1GHz					
EUT mode	Frequency (MHz)	Spurious emissions level (dBm)	Limit (dBm)	Conclusion	Antenna Pole (H/V)
IEEE 802.11g 2412MHz	4824.00	-48.33	-30.00	Pass	H
	7236.00	-52.45	-30.00	Pass	H
	4824.00	-46.78	-30.00	Pass	V
	7236.00	-54.78	-30.00	Pass	V
IEEE 802.11g 2472MHz	4944.00	-47.82	-30.00	Pass	H
	7416.00	-55.03	-30.00	Pass	H
	4944.00	-49.10	-30.00	Pass	V
	7416.00	-57.12	-30.00	Pass	V
Note: “H” mean is horizontal direction, “V” mean is vertical direction.					

Above 1GHz					
EUT mode	Frequency (MHz)	Spurious emissions level (dBm)	Limit (dBm)	Conclusion	Antenna Pole (H/V)
IEEE 802.11n HT20 2412MHz	4824.00	-50.11	-30.00	Pass	H
	7236.00	-59.30	-30.00	Pass	H
	4824.00	-50.00	-30.00	Pass	V
	7236.00	-57.26	-30.00	Pass	V
IEEE 802.11n HT20 2472MHz	4944.00	-49.89	-30.00	Pass	H
	7416.00	-52.98	-30.00	Pass	H
	4944.00	-47.97	-30.00	Pass	V
	7416.00	-51.29	-30.00	Pass	V
Note: “H” mean is horizontal direction, “V” mean is vertical direction.					

Above 1GHz					
EUT mode	Frequency (MHz)	Spurious emissions level (dBm)	Limit (dBm)	Conclusion	Antenna Pole (H/V)
IEEE 802.11n HT40 2422MHz	4844.00	-45.79	-30.00	Pass	H
	7266.00	-49.34	-30.00	Pass	H
	4844.00	-46.04	-30.00	Pass	V
	7266.00	-49.26	-30.00	Pass	V
IEEE 802.11n HT40 2462MHz	4924.00	-46.41	-30.00	Pass	H
	7386.00	-48.78	-30.00	Pass	H
	4924.00	-47.85	-30.00	Pass	V
	7386.00	-50.28	-30.00	Pass	V
Note: “H” mean is horizontal direction, “V” mean is vertical direction.					

3.10.Receiver Spurious Emissions

3.10.1.Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
Spectrum analyzer	R&S	FSV30	103559	Dec 15,2020	1 year
Trilog-boardband antenna	Schwarzbeck	VULB 9163D	9163-971	Dec 15,2019	3 years
Horn antenna	Schwarzbeck	BBHA 9120D	9120D-1590	Dec 15,2019	3 years
Horn antenna	ETS	3160-09	00208373	Dec 15,2019	3 years
Pre-amplifier (Low Freq)	Claviio	BDLNA-0001-272007	1600015	Dec 15,2019	3 years
Pre-amplifier (High Freq)	Claviio	BDLNA-0118-352810	1600019	Dec 15,2019	3 years
Pre-amplifier (High Freq)	Claviio	BDLNA-1826-483105	1600013	Dec 15,2019	3 years

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

Refer to chapter 4.3.2.10 of EN 300 328 V2.2.2

This requirement applies to all types of equipment using wide band modulations other than FHSS.

Receiver spurious emissions are emissions at any frequency when the equipment is in receive mode.

The spurious emissions of the receiver shall not exceed the values given in table 13.

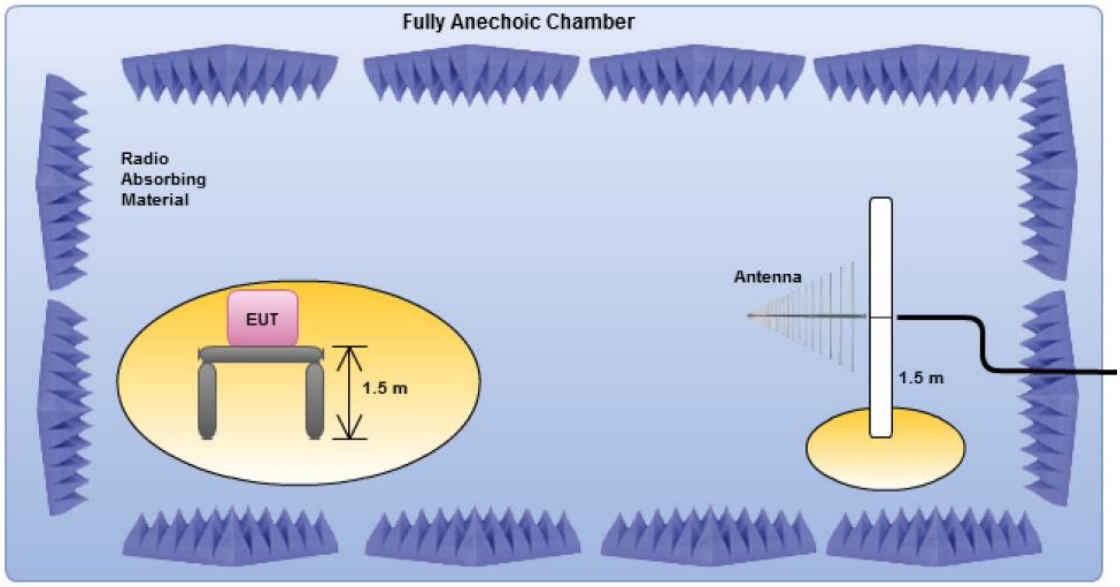
In case of equipment with antenna connectors, these limits apply to emissions at the antenna port (conducted). For emissions radiated by the cabinet or for emissions radiated by integral antenna equipment (without antenna connectors), these limits are e.r.p. for emissions up to 1 GHz and e.i.r.p. for 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

3.10.3.Test Method

(1) Test Setup.(As Below)



(2) Test conditions refer to chapter 5.4.10.1 of EN 300 328 V2.2.2

(3) Test method refer to chapter 5.4.10.2.2 of EN 300 328 V2.2.2

3.10.4.Test Information

EUT:	Dynamic light box
M/N:	JCD-NW
Test Date:	2021.11.04
Test standard:	ETSI EN 300 328 V2.2.2 (2019-07)
Test mode:	IEEE 802.11b, IEEE 802.11g, IEEE 802.11n HT20, IEEE 802.11n HT40
Test By:	Bing.He

3.10.5.Test Results

EUT mode	Frequency (MHz)	Spurious emissions level (dBm)	Limit (dBm)	Conclusion	Antenna Pole (H/V)
RX Mode	35.66	-58.46	–57.00	Pass	H
	2869.36	-59.00	–47.00	Pass	H
	45.11	-59.96	–57.00	Pass	V
	3045.36	-60.11	–47.00	Pass	V
1、“H” mean is horizontal direction, “V” mean is vertical direction.。 2、The worst case has recorded in the report.					

3.11.Receiver Blocking

3.11.1.Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
Spectrum	Rohde & Schwarz	FSV	103559	Dec 25,2020	1 Year
Vector signal source	Agilent	N5182A	MY47420382	Dec 25,2020	1 Year
Analog signal source	Rohde & Schwarz	SMB 100A	179706	Dec 25,2020	1 Year
Comprehensive measuring instrument	Rohde & Schwarz	CMW 500	158242	Dec 25,2020	1 Year
control unit	MWRF	MW100-RFCB	10165	Dec 25,2020	1 Year
Testing software	SKET	MTS-8310	10165	Dec 25,2020	1 Year
N/A is an abbreviation for Not Applicable.					

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

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.
The blocking levels at specified frequency offsets shall be equal to or greater than the limits defined for the applicable receiver category as follows.

Receiver Blocking parameters for Receiver Category 1 equipment

Wanted signal mean power from companion device (dBm) (see notes 1 and 4)	**Blocking Signal frequency (MHz)**	**Blocking signal power (dBm) (see note 4)**	**Type of blocking signal**
(-133dBm+10 $\times \log_{10}$(OCBW)) or -68dBm whichever is less (see note 2)	2380 2504	-34	CW
(-139dBm+10 $\times \log_{10}$(OCBW)) or -74dBm whichever is less (see note 3)	2300 2330 2360 2524 2584 2674		
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 Blocking parameters for Receiver Category 2 equipment

Wanted signal mean power from companion device (dBm) (see notes 1 and 3)	**Blocking Signal frequency (MHz)**	**Blocking signal power (dBm) (see note 3)**	**Type of blocking signal**
(-139dBm+10 ×$\log_{10}$(OCBW)+10dBm) or (-74dBm+10dBm) whichever is less (see note 2)	2380 2504 2300 2584	-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 Blocking parameters for 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**
(-139dBm+10 ×$\log_{10}$(OCBW)+20dBm) or (-74dBm+20dBm) whichever is less (see note 2)	2380 2504 2300 2584	-34	CW

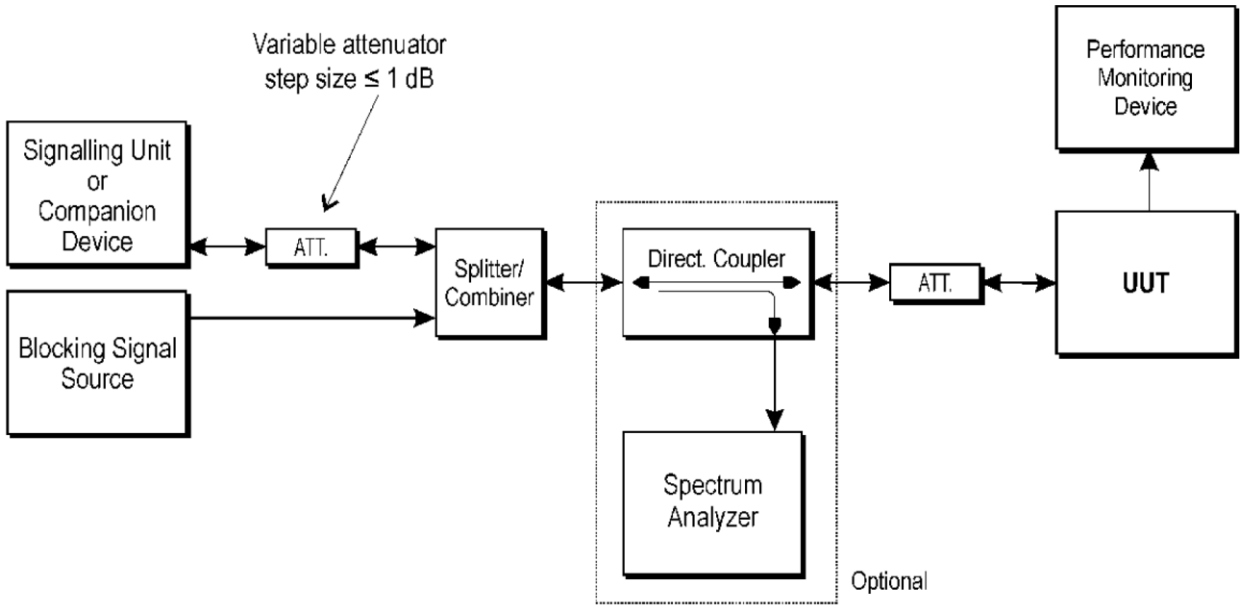
NOTE 1: OCBW is in Hz.

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.

3.11.3.Test Method

(1) Test Setup.(As Below)



(2) Test conditions refer to chapter 5.4.11.1 of EN 300 328 V2.2.2

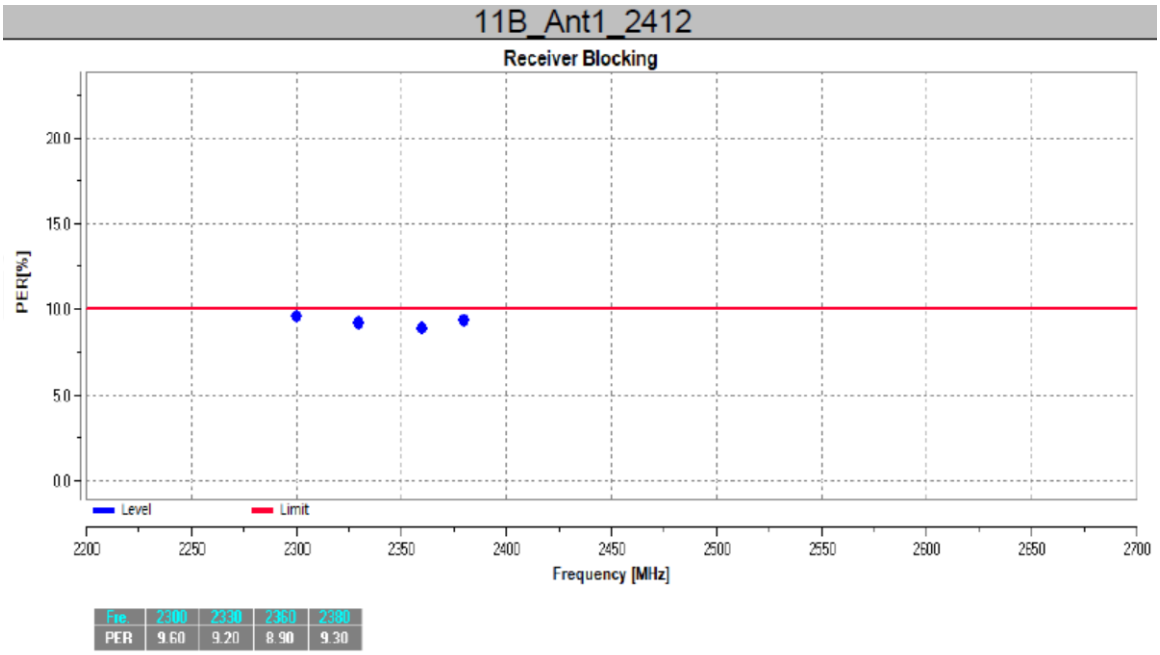
(3) Test method refer to chapter 5.4.11.2.1 of EN 300 328 V2.2.2

3.11.4.Test information

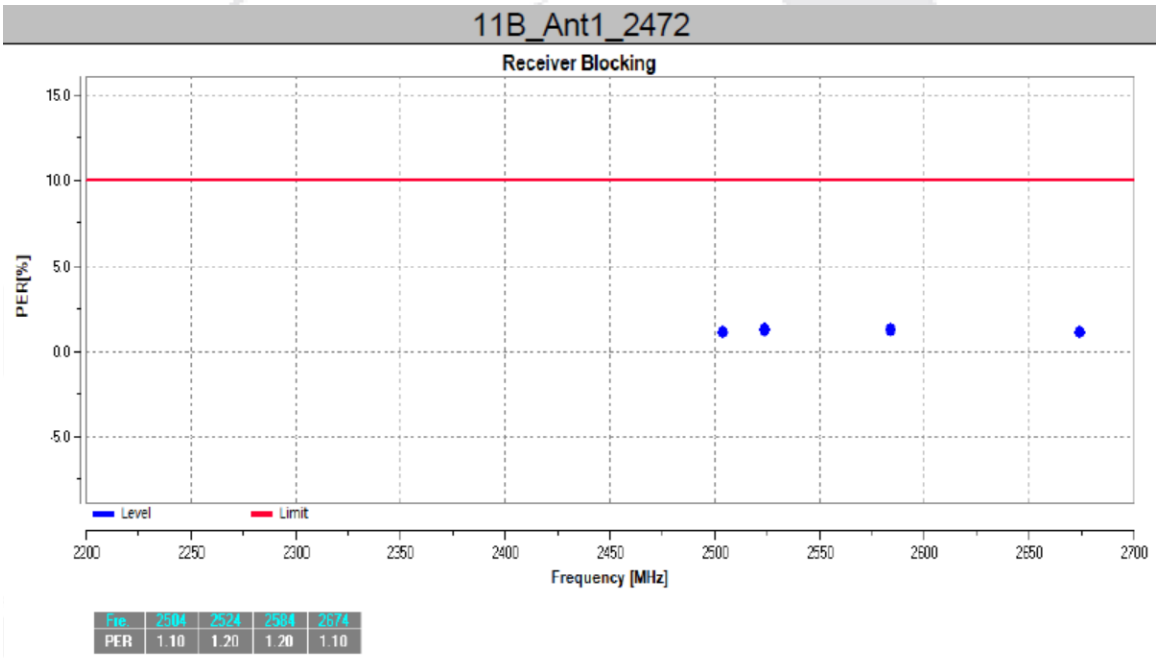
EUT:	Dynamic light box
M/N:	JCD-NW
Test Date:	2021.11.06
Test standard:	ETSI EN 300 328 V2.2.2 (2019-07)
Test mode:	IEEE 802.11b Low Channel and High Channel (Worst)
Test By:	Bing.He

3.11.5.Test Results

Recevier Category 1							
Test Mode	Frequency (MHz)	Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm)	PER (%)	Limit (%)	Result
IEEE 802.11b	2412	-68	2380	-34	9.30	10.00	Pass
		-74	2300		9.60	10.00	Pass
			2330		9.20	10.00	Pass
			2360		8.90	10.00	Pass
	2472	-68	2504		1.10	10.00	Pass
		-74	2524		1.20	10.00	Pass
			2584		1.20	10.00	Pass
			2674		1.10	10.00	Pass



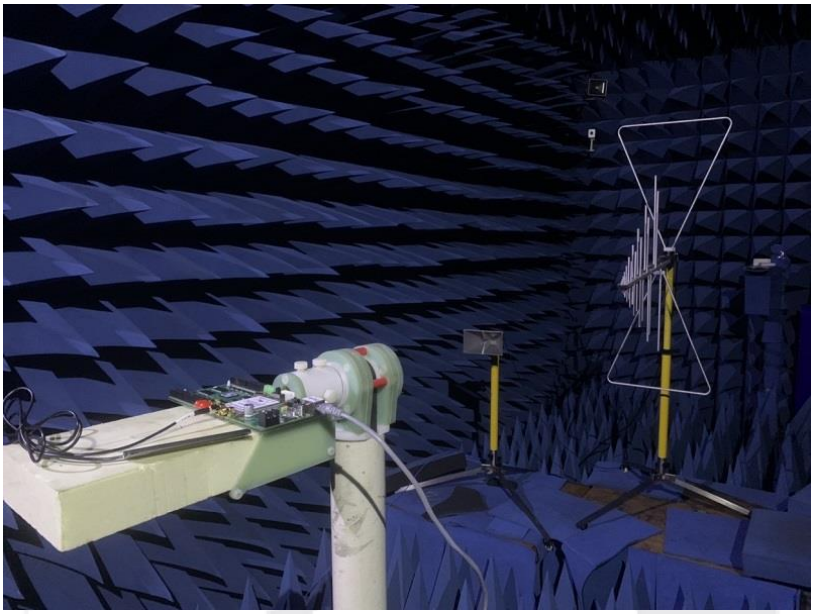
Fre.	2300	2330	2360	2390
PER	9.60	9.20	8.90	9.30



Fre.	2504	2524	2584	2674
PER	1.10	1.20	1.20	1.10

4. PHOTOGRAPHS OF TEST SETUP

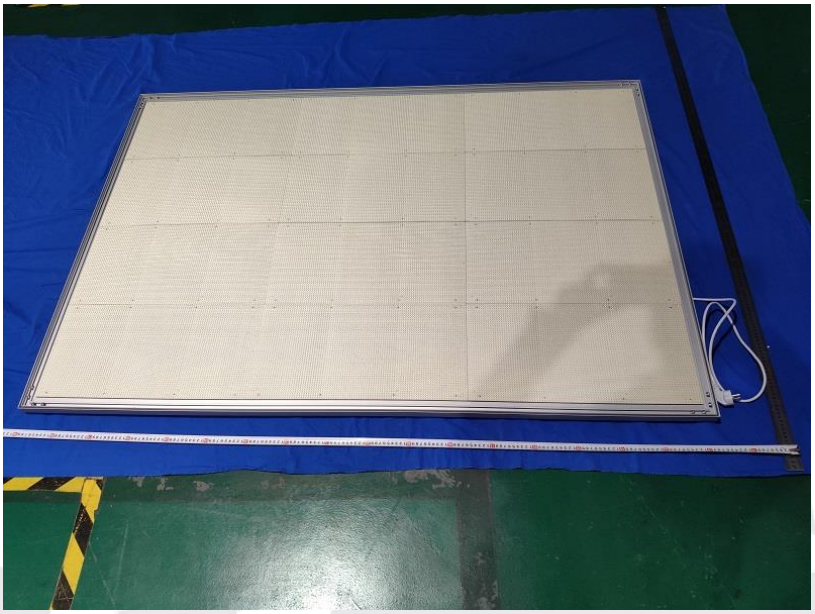
4.1. Set-up for Transmitter & Receiver Spurious Emissions, Below 1GHz & Above 1GHz

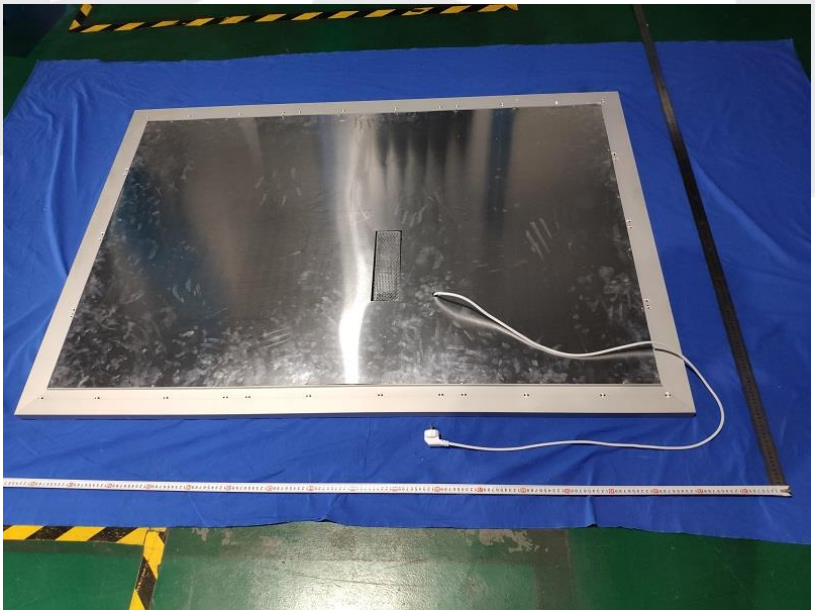


4.2. Set-up for Radio Spectrum Testing, Condition

5. PHOTOGRAPHS OF EUT

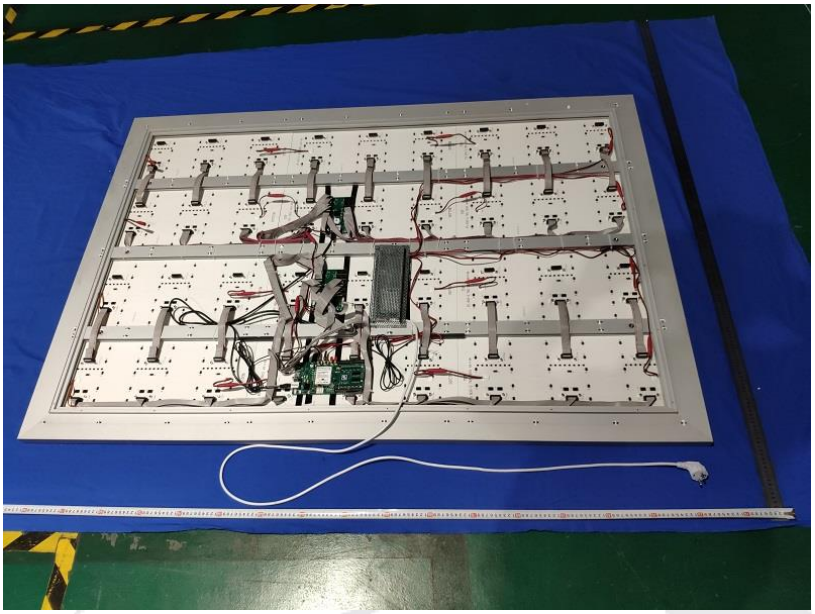
External Photos
Model: JCD-NW





Internal Photos

M/N: JCD-NW



Internal Photos

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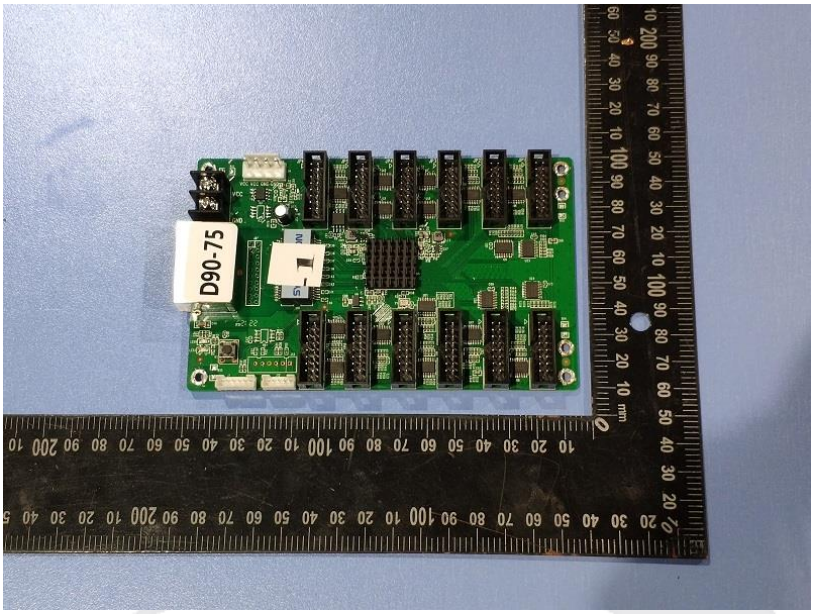
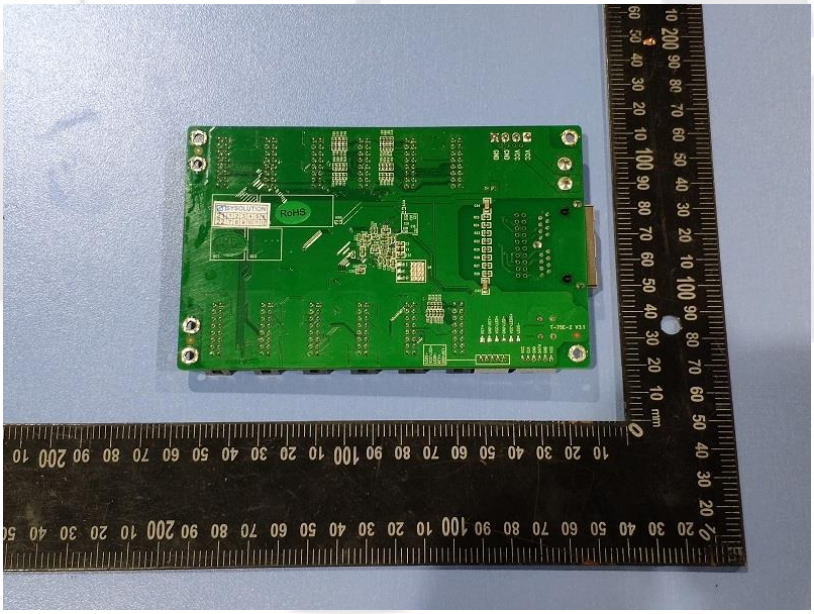
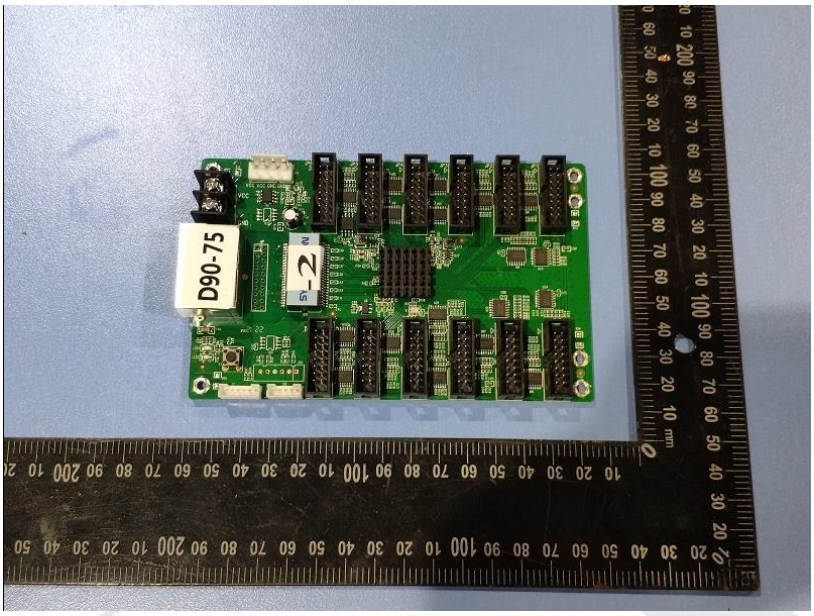
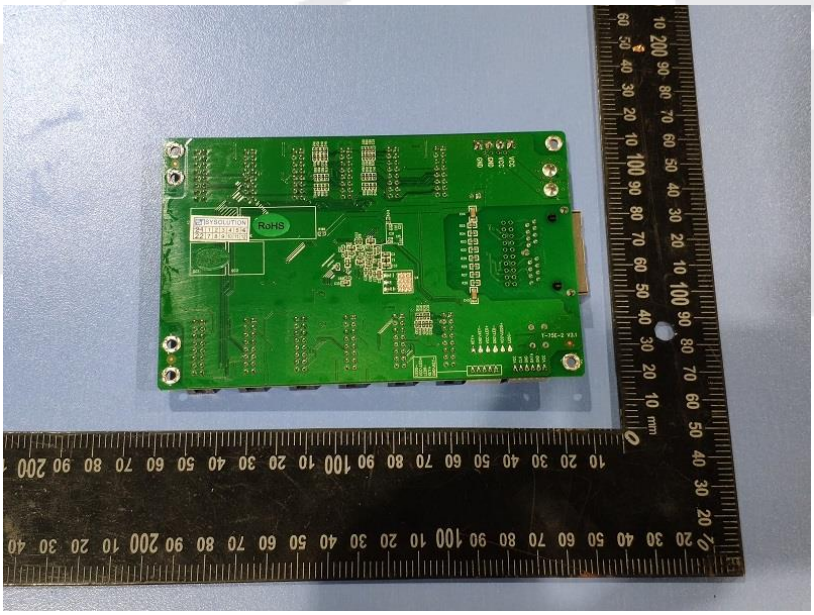




Internal Photos

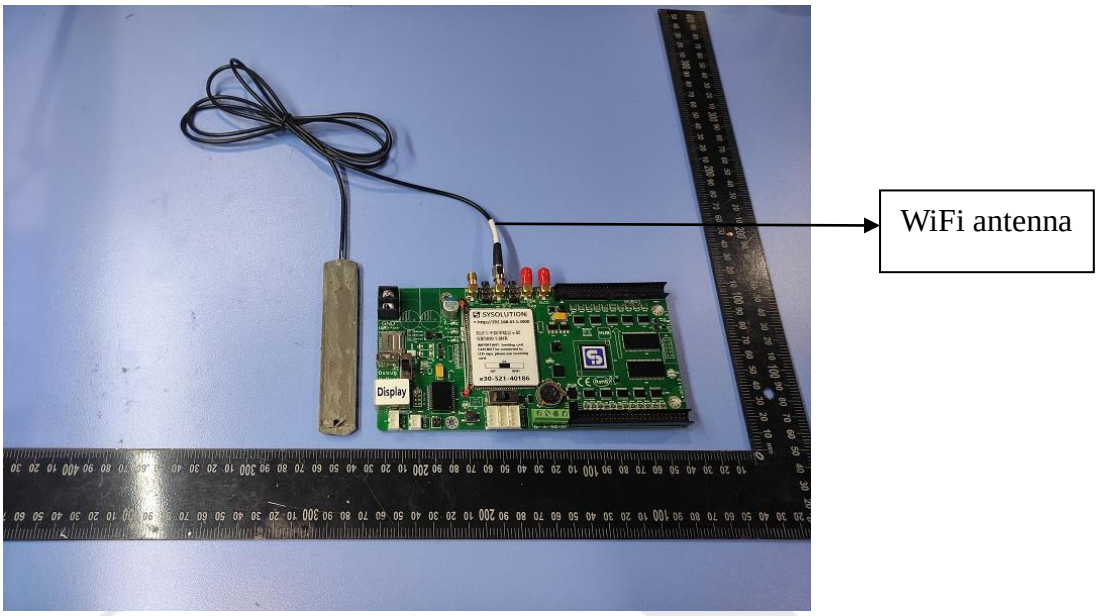
M/N: JCD-NW

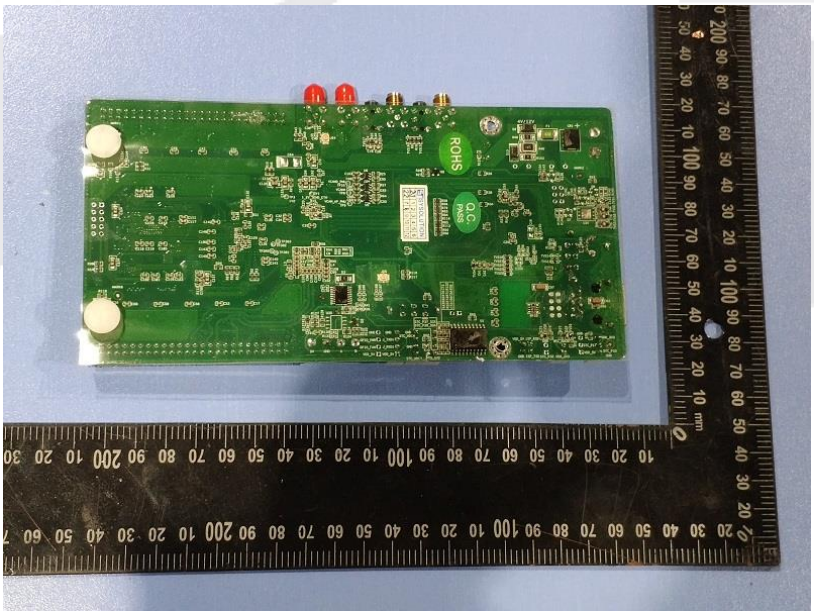




Internal Photos

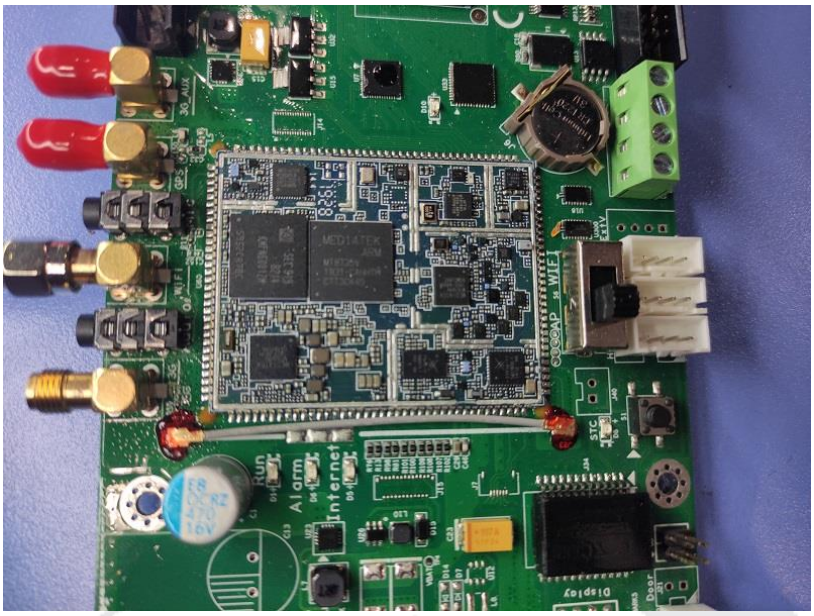
M/N: JCD-NW





Internal Photos

M/N: JCD-NW



End of Report

Statement

1. The calibration and measurement of test equipments used in our laboratory are traceable to National primary standard of measurement and BIPM.
2. The report is invalid without the special test seal of the company.
3. The test report is invalid without the signature of main tester,examiner and approver.
4. The report is invalid if altered and added or deleted.
5. The test results in this report only apply to the tested samples.
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