



# CE Radio Test Report

**Project No.** : 2401C127A  
**Equipment** : AX1500 Wi-Fi 6 5G NR Router  
**Brand Name** : Tenda  
**Test Model** : 5G01  
**Series Model** : N/A  
**Applicant** : SHENZHEN TENDA TECHNOLOGY CO.,LTD.  
**Address** : 6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District, Shenzhen, China. 518052  
**Manufacturer** : SHENZHEN TENDA TECHNOLOGY CO.,LTD.  
**Address** : 6-8 Floor, Tower E3, No. 1001, Zhongshanyuan Road, Nanshan District, Shenzhen, China. 518052  
**Date of Receipt** : Jan. 16, 2024  
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**Report Version** : R00  
**Test Sample** : Engineering Sample No.: DG2024011641 for radiated, SSL2024020649 for conducted.  
**Standard(s)** : ETSI EN 300 440 V2.2.1 (2018-07)

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

**Prepared by** : Grani Zhou  
Grani Zhou

**Approved by** : Steven Lu  
Steven Lu

Room 108, Building 2, No.1, Yile Road, Songshan Lake Zone, Dongguan City, Guangdong,  
People's Republic of China

Tel: +86-769-8318-3000 Web: [www.newbtl.com](http://www.newbtl.com) Service mail: [btl\\_qa@newbtl.com](mailto:btl_qa@newbtl.com)

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**BTL** represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

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**BTL** is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer which may affect the validity of results, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements of applied standards and in all the possible configurations as representative of its intended use.

**Limitation**

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Please note that the measurement uncertainty is provided for informational purpose only and are not use in determining the Pass/Fail results.

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### REPORT ISSUED HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-ETSP-3-2401C127A	R00	This is a copy report which referencing test data are provided from the original test report (BTL-ETSP-3-2401C127). The product name, brand, model name, applicant and manufacturer information are changed which does not affect the test results. Other are kept the same.	Apr. 09, 2024	Valid

## 1. RF EMISSIONS MEASUREMENT

### 1.1 TEST FACILITY

For Radiated Emissions Items:

The test facilities used to collect the test data in this report is **DG-CB15** at the location of No.3, Jinshagang 1st Road, Dalang, Dongguan City, Guangdong People's Republic of China.

For other Items:

The test facilities used to collect the test data in this report is **SSL-TR19/TR08/TR06** at the location of Room 108, Building 2, No.1, Yile Road, Songshan Lake Zone, Dongguan City, Guangdong, People's Republic of China.

### 1.2 MEASUREMENT UNCERTAINTY

The measurement uncertainty figures shall be calculated according the methods described in the ETSI TR 100 028 and shall correspond to an expansion factor (coverage factor)  $k=1.96$  or  $k=2$  (which provide confidence levels of respectively 95% and 95.45% in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)).

Measurement Uncertainty for a Level of Confidence of 95.45%,  $U=2 \times u_c(y)$ .

The BTL measurement uncertainty as below table:

Parameters	Uncertainty
Radio frequency	2.7 ppm
RF power (conducted)	1.3 dB
Radiated emission of transmitter/receiver (25MHz ~ 1GHz)	3.50 dB
Radiated emission of transmitter/receiver (1GHz ~ 18GHz)	3.54 dB
Radiated emission of transmitter/receiver (18GHz ~ 40GHz)	4.00 dB
Temperature	0.8 °C
Humidity	2.2 %
Voltage (DC)	1 %
Voltage (AC, < 10 kHz)	2 %

### 1.3 TEST CONDITIONS

	Normal Test Conditions	Extreme Test Conditions
Temperature	+15°C to +35°C	0°C to 40°C
Relative Humidity	20% to 75%	N/A
Supply Voltage	DC 12V	DC 10.8-13.2V Note: (2)

Test Item	Temperature	Humidity	Test Voltage	Tested By
Equivalent isotropically radiated power (e.i.r.p.)	Normal & Extreme	46-48%	Normal & Extreme	Evan Fang
Permitted range of operating frequencies	Normal & Extreme	52%	Normal & Extreme	Tember Zhuang
Unwanted emissions in the spurious domain	23°C	43-50%	AC 230V/50Hz	Meers Zhang
Duty cycle	25°C	52%	DC 12V	Tember Zhuang
Adjacent channel selectivity	23.7°C	66%	DC 12V	Tember Zhuang
Blocking or desensitization	23.7°C	66%	DC 12V	Tember Zhuang
Spurious radiations	23°C	43-50%	AC 230V/50Hz	Meers Zhang

Note:

- (1) For tests at extreme temperatures, measurements shall be made in accordance with the procedures specified in clause 5.7.1.1, at the upper and lower temperatures of one of the following ranges, either:

The temperature range as declared by the manufacturer	0°C to +40°C	√
Category I (General):	-20°C to +55°C	
Category II (Portable):	-10°C to +55°C	
Category III (Equipment for normal indoor use):	5°C to +35°C	

(2) **Mains voltage:**

- 1) The normal test voltage for equipment to be connected to the mains shall be the nominal mains voltage. For the purpose of the present document, the nominal voltage shall be the declared voltage, or any of the declared voltages, for which the equipment was designed.
- 2) The extreme test voltages for equipment to be connected to an ac mains source shall be the nominal mains voltage  $\pm 10\%$ . For equipment that operates over a range of mains voltages clause 5.7.2.4 applies.

**Battery power sources**

- 1) When the radio equipment is intended for operation with the usual types of battery power source, the normal test voltage shall be 1,1 multiplied by the nominal voltage of the battery (e.g. 6 V, 12 V, etc.).
- 2) When the radio equipment is intended for operation from the usual type of battery power sources the extreme test voltages shall be 1,3 and 0,9 multiplied by the nominal voltage of the battery (6 V, 12 V, etc.).

For float charge applications using "gel-cell" type batteries the extreme voltage shall be 1,15 and 0,85 multiplied by the nominal voltage of the declared battery voltage.

**Power sources using other types of batteries**

The lower extreme test voltages for equipment with power sources using batteries shall be as follows:

- for equipment with a battery indicator, the end point voltage as indicated;
- for equipment without a battery indicator the following end point voltages shall be used:
  - for the Leclanché or the lithium type of battery:
    - 0,85 multiplied by the nominal voltage of the battery;
  - for the nickel-cadmium type of battery:
    - 0,9 multiplied by the nominal voltage of the battery;
- for other types of battery or equipment, the lower extreme test voltage for the discharged condition shall be declared by the equipment manufacturer.

The nominal voltage is considered to be the upper extreme test voltage in this case.

**Other power sources**

- 1) For operation from other power sources or types of battery (primary or secondary), the normal test voltage shall be that declared by the equipment manufacturer and agreed to by the accredited test laboratory. Such values shall be stated in the test report.
- 2) For equipment using other power sources, or capable of being operated from a variety of power sources, the extreme test voltages shall be those agreed between the equipment manufacturer and the test laboratory. This shall be recorded in the test report.

#### 1.4 TEST CHANNEL

IEEE 802.11a / IEEE 802.11n(HT20) / IEEE 802.11ac(VHT20) / IEEE 802.11ax(HE20)		
Test Channel	EUT Channel	Test Frequency
Low	CH149	5745 MHz
Middle	CH157	5785 MHz
High	CH165	5825 MHz

IEEE 802.11n(HT40) / IEEE 802.11ac(VHT40) / IEEE 802.11ax(HE40)		
Test Channel	EUT Channel	Test Frequency
Low	CH151	5755 MHz
High	CH159	5795 MHz

IEEE 802.11ac(VHT80) / IEEE 802.11ax(HE80)		
Test Channel	EUT Channel	Test Frequency
High	CH155	5775 MHz

## 1.5 TEST METHODOLOGY AND RESULTS

Harmonised Standard ETSI EN 300 440					
Requirement			Requirement Conditionality		Observations
No	Description	Reference: Clause No	U/C	Condition	
1	e.i.r.p.	4.2.2	C	Applies to all devices with transmitters	PASS
2	Permitted range of operating frequencies	4.2.3	C	Applies to all devices with transmitters	PASS
3	Unwanted emissions in the spurious domain	4.2.4	C	Applies to all devices with transmitters	PASS Note (2)
4	Duty cycle	4.2.5.4	C	Transmitting devices which do not use LBT, DAA, or RFID transmitters operating in the 2 446 to 2 454 MHz band transmitting more than 500 mW e.i.r.p. power level	PASS
5	Additional requirements for FHSS equipment	4.2.6	C	Equipment utilizing FHSS modulation	N/A
6	Adjacent channel selectivity	4.3.3	C	Applies to equipment Category 1 receivers	PASS
7	Blocking or desensitization	4.3.4	C	Applies to category 1, 2, and 3 SRD communication media receivers	PASS
8	Spurious radiations	4.3.5	C	Applies to all receivers, except receivers used in combination with permanently co-located transmitters continuously transmitting	PASS
9	Spectrum access techniques	4.4	C	Equipment which are not using duty cycle restrictions for media access	N/A
10	GBSAR antenna pattern	4.6.4	C	Applies only GBSAR systems	N/A
11	Limits for GBSAR	Annex I	C	Applies only GBSAR systems	N/A

Note:


(1) "U/C": Indicates whether the requirement is unconditionally applicable (U) or is conditional upon the manufacturer's claimed functionality of the equipment (C).

"N/A": indicates test is not applicable to this device.

(2) The emission of the transmitter on standby mode is equal to that of receiving mode.

## 2. GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

Equipment	AX1500 Wi-Fi 6 5G NR Router
Brand Name	Tenda
Test Model	5G01
Series Model	N/A
Model Difference(s)	N/A
Hardware Version	v1.0
Software Version	V1.0.0.1
Power Source	DC Voltage supplied from AC adapter. 1# Model: BN026-A24012E(EU) 2# Model: BN026-A24012B(UK)
Power Rating	I/P: 100-240V~ 50/60Hz 0.7A    O/P: 12.0V  2.0A 24.0W
Operation Frequency	5725 MHz ~ 5850 MHz
Modulation Type	IEEE 802.11a/n/ac: OFDM IEEE 802.11ax: OFDMA
Bit Rate of Transmitter	IEEE 802.11a: 54/48/36/24/18/12/9/6 Mbps IEEE 802.11n: up to 300 Mbps IEEE 802.11ac: up to 866.7 Mbps IEEE 802.11ax: up to 1201 Mbps
Max. e.i.r.p. _Non Beamforming	IEEE 802.11a: 13.86 dBm (24.32 mW) IEEE 802.11n(HT20): 13.81 dBm (24.04 mW) IEEE 802.11n(HT40): 13.73 dBm (23.60 mW) IEEE 802.11ac(VHT20): 13.92 dBm (24.66 mW) IEEE 802.11ac(VHT40): 13.75 dBm (23.71 mW) IEEE 802.11ac(VHT80): 13.74 dBm (23.66 mW) IEEE 802.11ax(HE20): 13.54 dBm (22.59 mW) IEEE 802.11ax(HE40): 13.81 dBm (24.04 mW) IEEE 802.11ax(HE80): 13.56 dBm (22.70 mW)
Max. e.i.r.p. _Beamforming	IEEE 802.11n(HT20): 13.65 dBm (23.17 mW) IEEE 802.11n(HT40): 13.53 dBm (22.54 mW) IEEE 802.11ac(VHT20): 13.69 dBm (23.39 mW) IEEE 802.11ac(VHT40): 13.58 dBm (22.80 mW) IEEE 802.11ac(VHT80): 13.67 dBm (23.28 mW) IEEE 802.11ax(HE20): 13.33 dBm (21.53 mW) IEEE 802.11ax(HE40): 13.75 dBm (23.71 mW) IEEE 802.11ax(HE80): 13.50 dBm (22.39 mW)
Categorization	<input checked="" type="checkbox"/> Receiver category 1 <input type="checkbox"/> Receiver category 2 <input type="checkbox"/> Receiver category 3

**Note:**

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.

## 2. Channel List:

IEEE 802.11a IEEE 802.11n(HT20) IEEE 802.11ac(VHT20) IEEE 802.11ax(HE20)		IEEE 802.11n(HT40) IEEE 802.11ac(VHT40) IEEE 802.11ax(HE40)		IEEE 802.11ac(VHT80) IEEE 802.11ax(HE80)	
Band 4		Band 4		Band 4	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	151	5755	155	5775
153	5765	159	5795		
157	5785				
161	5805				
165	5825				

## 3. Table for Filed Antenna:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	<i>Tenda</i>	N/A	PCB	N/A	3.35
2	<i>Tenda</i>	N/A	PCB	N/A	4.41

Note:

- 1) The EUT supports MIMO(Except IEEE 802.11a mode). Physically, the EUT provides two completed transmitters and receivers (2T2R).
- 2) Beamforming Gain: 3dB.

## 4. The worst case for 1TX/2TX as follow:

Non Beamforming:

Operating Mode TX Mode	1TX	2TX
IEEE 802.11a	V (Ant. 1)	-
IEEE 802.11n(HT20)	-	V (Ant. 1+Ant. 2)
IEEE 802.11n(HT40)	-	V (Ant. 1+Ant. 2)
IEEE 802.11ac(VHT20)	-	V (Ant. 1+Ant. 2)
IEEE 802.11ac(VHT40)	-	V (Ant. 1+Ant. 2)
IEEE 802.11ac(VHT80)	-	V (Ant. 1+Ant. 2)
IEEE 802.11ax(HE20)	-	V (Ant. 1+Ant. 2)
IEEE 802.11ax(HE40)	-	V (Ant. 1+Ant. 2)
IEEE 802.11ax(HE80)	-	V (Ant. 1+Ant. 2)

Beamforming:

Operating Mode	TX Mode	2TX
IEEE 802.11n(HT20)		V (Ant. 1+Ant. 2)
IEEE 802.11n(HT40)		V (Ant. 1+Ant. 2)
IEEE 802.11ac(VHT20)		V (Ant. 1+Ant. 2)
IEEE 802.11ac(VHT40)		V (Ant. 1+Ant. 2)
IEEE 802.11ac(VHT80)		V (Ant. 1+Ant. 2)
IEEE 802.11ax(HE20)		V (Ant. 1+Ant. 2)
IEEE 802.11ax(HE40)		V (Ant. 1+Ant. 2)
IEEE 802.11ax(HE80)		V (Ant. 1+Ant. 2)

## 2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Test Items	Mode	Data Rate	Channel
Equivalent isotropically radiated power	IEEE 802.11a	6 Mbps	149/157/165
	IEEE 802.11n(HT20)	MCS0	
	IEEE 802.11ac(VHT20)	MCS0	
	IEEE 802.11ax(HE20)	MCS0	
	IEEE 802.11n(HT40)	MCS0	151/159
	IEEE 802.11ac(VHT40)	MCS0	
	IEEE 802.11ax(HE40)	MCS0	
	IEEE 802.11ac(VHT80)	MCS0	155
	IEEE 802.11ax(HE80)	MCS0	
Permitted range of operating frequencies	IEEE 802.11a	6 Mbps	149/165
	IEEE 802.11ac(VHT20)	MCS0	
	IEEE 802.11ax(HE20)	MCS0	
	IEEE 802.11ac(VHT40)	MCS0	151/159
	IEEE 802.11ax(HE40)	MCS0	
	IEEE 802.11ac(VHT80)	MCS0	155
	IEEE 802.11ax(HE80)	MCS0	
Unwanted emissions in the spurious domain - Operating / Standby (25MHz~1GHz)	IEEE 802.11ac(VHT20)	MCS0	149/165
Unwanted emissions in the spurious domain - Operating / Standby (1GHz~18GHz)	IEEE 802.11a	6 Mbps	149/165
	IEEE 802.11ac(VHT20)	MCS0	
	IEEE 802.11ax(HE20)	MCS0	
	IEEE 802.11ac(VHT40)	MCS0	151/159
	IEEE 802.11ax(HE40)	MCS0	
	IEEE 802.11ac(VHT80)	MCS0	155
	IEEE 802.11ax(HE80)	MCS0	
Unwanted emissions in the spurious domain - Operating / Standby (Above 18GHz)	IEEE 802.11ac(VHT20)	MCS0	149/165
Duty cycle	IEEE 802.11a	6 Mbps	149
Adjacent channel selectivity	IEEE 802.11a	6 Mbps	157
Blocking	IEEE 802.11a	6 Mbps	149/165
Spurious radiation - Receiver (25MHz~1GHz)	IEEE 802.11ac(VHT20)	MCS0	149/165
Spurious radiation - Receiver (Above 1GHz)	IEEE 802.11ac(VHT20)	MCS0	149/165

**Note :**

- (1) The measurements for Power were tested, the worst case were IEEE 802.11a mode, IEEE 802.11ac(VHT20) mode, IEEE 802.11ac(VHT40) mode, IEEE 802.11ac(VHT80) mode, IEEE 802.11ax(HE20) mode, IEEE 802.11ax(HE40) mode and IEEE 802.11ax(HE80) mode, only worst case were documented for other test items.
- (2) For radiated spurious emissions below 1 GHz and receiver spurious emissions above 1 GHz test, the IEEE 802.11ac(VHT20) channel 149/165 are found to be the worst case and recorded.
- (3) IEEE 802.11ax mode only supports full RU, so only the full RU is evaluated and measured inside report.
- (4) All antennas of IEEE 802.11a mode are evaluated, but only the worst case (Ant.1) is recorded.
- (5) The measurements for RF Output Power are tested, the Non Beamforming and Beamforming are recorded in the report. The worst case is Non Beamforming and only the worst case is documented for other test items.
- (6) For radiated emission Harmonic 18-40GHz test, only tested the worst case and recorded.
- (7) Two adapters only differ in the plug, so tested the EU plug.

### 2.3 TABLE OF PARAMETERS OF TEST SOFTWARE SETTING

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level.

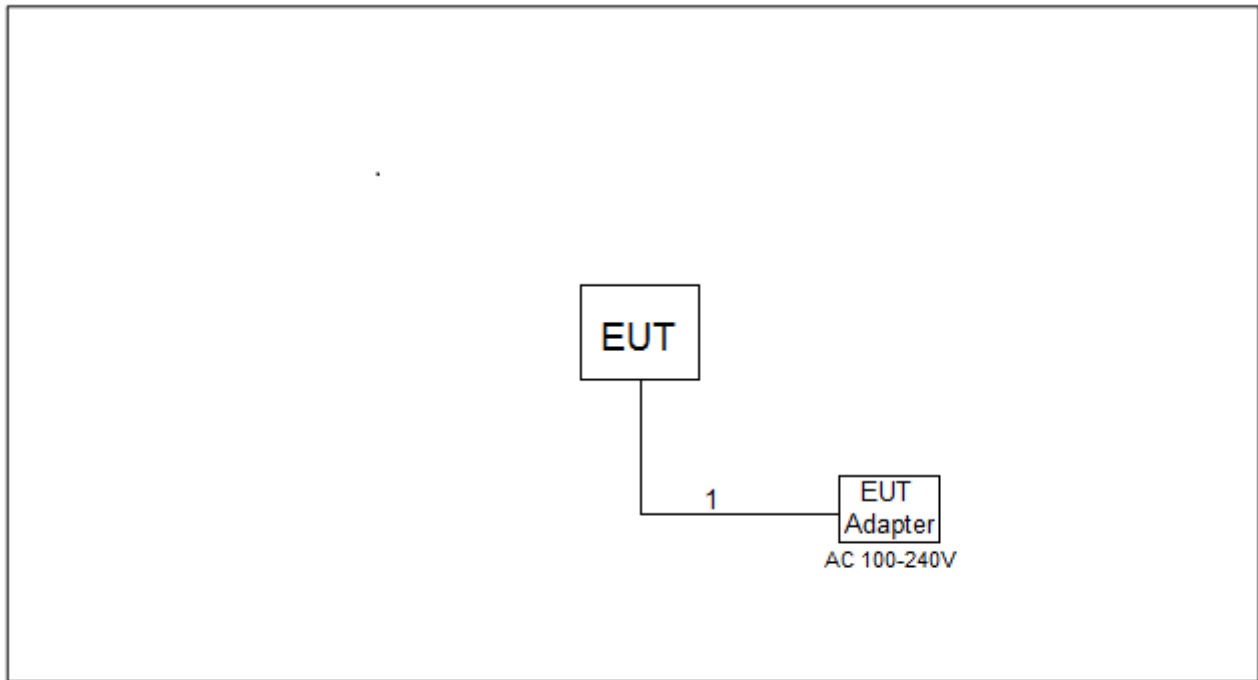
#### Non Beamforming

Test Software Version	IPOP 4.0		
Frequency (MHz)	5745	5785	5825
IEEE 802.11a	800	800	800
IEEE 802.11n(HT20)	650	650	650
IEEE 802.11ac(VHT20)	650	650	650
IEEE 802.11ax(HE20)	650	650	650
Frequency (MHz)	5755	5795	
IEEE 802.11n(HT40)	600	600	
IEEE 802.11ac(VHT40)	650	650	
IEEE 802.11ax(HE40)	650	650	
Frequency (MHz)	5775		
IEEE 802.11ac(VHT80)	650		
IEEE 802.11ax(HE80)	650		

#### Beamforming

Test Software Version	IPOP 4.0		
Frequency (MHz)	5745	5785	5825
IEEE 802.11n(HT20)	50	100	50
IEEE 802.11ac(VHT20)	50	50	50
IEEE 802.11ax(HE20)	50	100	100
Frequency (MHz)	5755	5795	
IEEE 802.11n(HT40)	100	150	
IEEE 802.11ac(VHT40)	100	150	
IEEE 802.11ax(HE40)	200	200	
Frequency (MHz)	5775		
IEEE 802.11ac(VHT80)	50		
IEEE 802.11ax(HE80)	100		

## 2.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



## 2.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Brand	Model No.	Series No.
-	-	-	-	-

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	DC Cable	NO	NO	1.5m

## 2.6 CUSTOMER INFORMATION DESCRIPTION

- 1) The antenna gain and beamforming gain are provided by the manufacturer.
- 2) Except for radiated spurious emissions, the results of all test items include cable losses. All cable losses are provided by the testing laboratory.

### 3. EQUIVALENT ISOTROPICALLY RADIATED POWER (E.I.R.P.)

#### 3.1 LIMITS

Clause	4.2.2.4				
Test Item	Equivalent isotropically radiated power (e.i.r.p.)				
Limits	The transmitter maximum e.i.r.p. under normal and extreme test conditions.				
	Entry	Frequency Bands	Power	Application	Notes
	1	2 400 MHz to 2 483,5 MHz	10 mW e.i.r.p.	Non-specific short range devices	
	2	2 400 MHz to 2 483,5 MHz	25 mW e.i.r.p.	Radiodetermination devices	
	3	(a) 2 446 MHz to 2 454 MHz	500 mW e.i.r.p.	Radio Frequency Identification (RFID) devices	See also table 4 and Annex G
	4	(b) 2 446 MHz to 2 454 MHz	4 W e.i.r.p.	Radio Frequency Identification (RFID) devices	See also table 4 and Annex G
	5	5 725 MHz to 5 875 MHz	25 mW e.i.r.p.	Non-specific short range devices	
	6	9 200 MHz to 9 500 MHz	25 mW e.i.r.p.	Radiodetermination devices	
	7	9 500 MHz to 9 975 MHz	25 mW e.i.r.p.	Radiodetermination devices	
	8	10,5 GHz to 10,6 GHz	500 mW e.i.r.p.	Radiodetermination devices	
	9	13,4 GHz to 14,0 GHz	25 mW e.i.r.p.	Radiodetermination devices	
	10	17,1 GHz to 17,3 GHz	400 mW e.i.r.p.	Radiodetermination devices	See Annex H
	11	24,00 GHz to 24,25 GHz	100 mW e.i.r.p.	Non-specific short range devices and radiodetermination devices	
NOTE: The spectrum ranges in some entries are not harmonised throughout all EU territory, specifically entries 4, 9, and 11 have been identified as such. Implementers are cautioned to refer to CEPT/ERC Recommendation 70-03 [i.2] as well as current National Radio plans to verify acceptance within intended regions of use.					

#### 3.2 TEST PROCEDURES

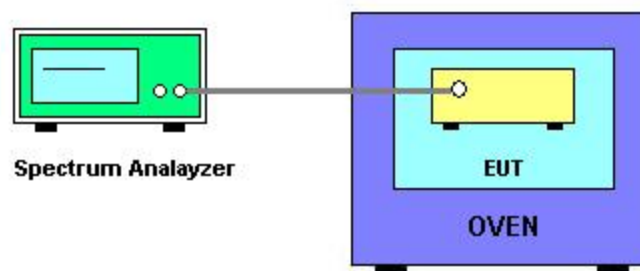
Refer to ETSI EN 300 440, chapter 4.2.2.3.

#### 3.3 TEST SETUP LAYOUT

Normal Condition:



Extreme Condition:



**3.4 TEST DEVIATION**

There is no deviation with the original standard.

**3.5 EUT OPERATION DURING TEST**

The measurements shall be performed during continuously transmitting.

**3.6 TEST RESULTS**

Please refer to the Appendix A.

## 4. PERMITTED RANGE OF OPERATING FREQUENCIES

### 4.1 LIMITS

Clause	4.2.3.5
Test Item	Permitted range of operating frequencies
Limits	<p>The width of the power spectrum envelope is <math>f_H - f_L</math> for a given operating frequency. In equipment that allows adjustment or selection of different operating frequencies, the power envelope takes up different positions in the allowed band. The frequency range is determined by the lowest value of <math>f_L</math> and the highest value of <math>f_H</math> resulting from the adjustment of the equipment to the lowest and highest operating frequencies.</p> <p>The occupied bandwidth (i.e. the bandwidth in which 99 % of the wanted emission is contained) of the transmitter shall fall within the assigned frequency band.</p> <p>For all equipment the frequency range shall lie within the frequency band given by clause 4.2.2.4, table 2. For non-harmonized frequency bands the available frequency range may differ between national administrations.</p>

### 4.2 TEST PROCEDURES

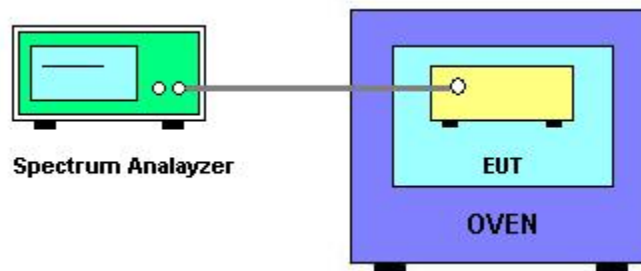
Refer to ETSI EN 300 440, chapter 4.2.3.3.

### 4.3 TEST SETUP LAYOUT

**Normal Condition:**



**Extreme Condition:**



### 4.4 TEST DEVIATION

There is no deviation with the original standard.

### 4.5 EUT OPERATION DURING TEST

The measurements shall be performed during continuously transmitting.

### 4.6 TEST RESULTS

Please refer to the Appendix B.

## 5. UNWANTED EMISSIONS IN THE SPURIOUS DOMAIN

### 5.1 LIMITS

Clause	4.2.4.4			
Test Item	Unwanted emissions in the spurious domain			
Limits	The maximum power limits of any unwanted emissions in the spurious domain are given.			
	Frequency ranges	47 MHz to 74 MHz 87,5 MHz to 108 MHz 174 MHz to 230 MHz 470 MHz to 862 MHz	Other frequencies ≤ 1 000 MHz	Frequencies > 1 000 MHz
	State			
	Operating	4 nW	250 nW	1 μW
	Standby	2 nW	2 nW	20 nW

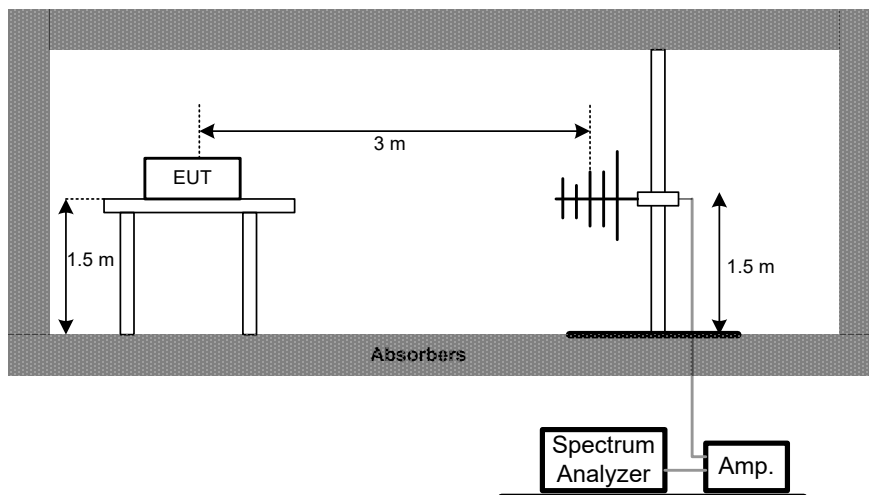
Note: Operating: transmitter switched on, Standby: transmitter switched off.

### 5.2 TEST PROCEDURES

Refer to ETSI EN 300 440, chapter 4.2.4.3.

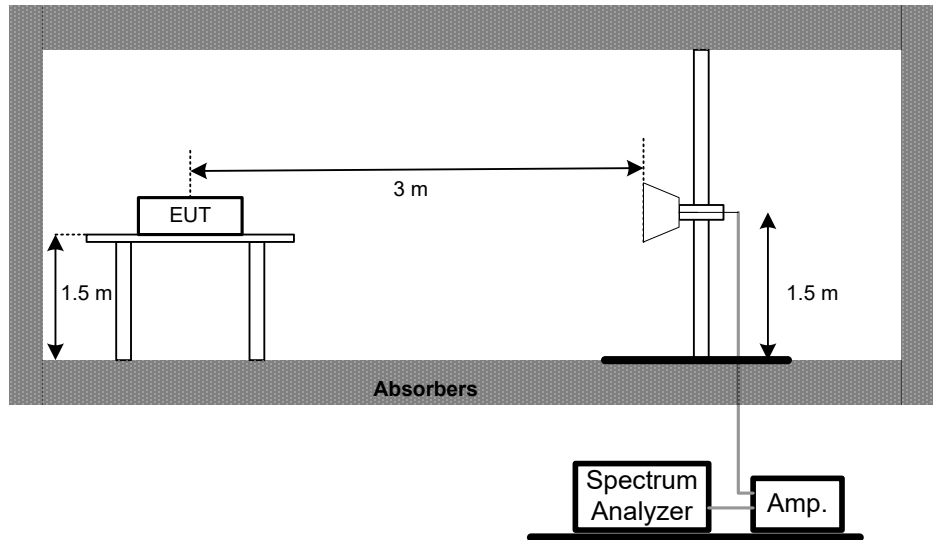
### 5.3 TEST SETUP LAYOUT

Radiated Measurement Test Set-Up Frequency Below 1 GHz

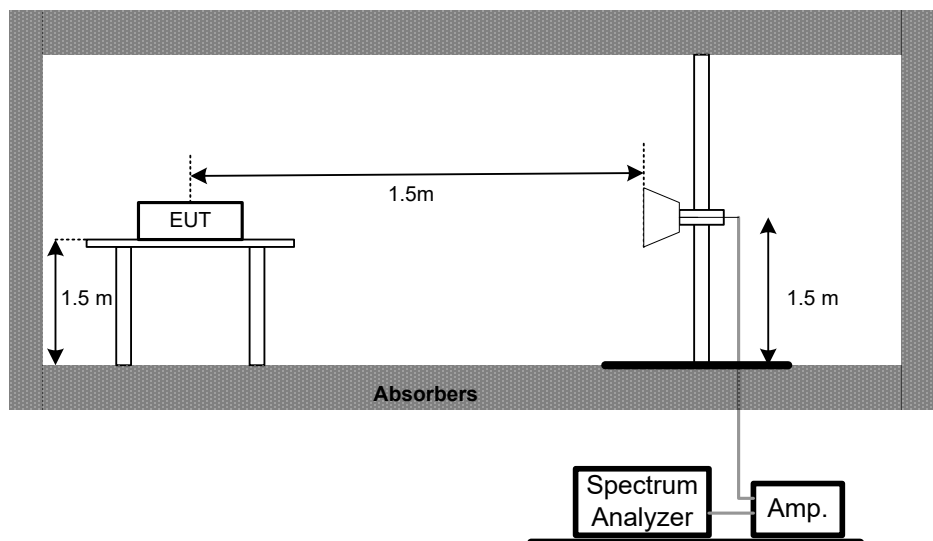


## Radiated Measurement Test Set-Up Frequency Above 1 GHz

### 1 GHz - 18 GHz



### 18 GHz - 40 GHz



#### 5.4 TEST DEVIATION

There is no deviation with the original standard.

#### 5.5 EUT OPERATION DURING TEST

The measurements shall be performed during continuously transmitting.

#### 5.6 TEST RESULTS (25MHZ TO 1000MHZ)

Please refer to the Appendix C for operating mode.

Please refer to the Appendix D for standby mode.

#### 5.7 TEST RESULTS (ABOVE 1000MHZ)

Please refer to the Appendix E for operating mode.

Please refer to the Appendix F for standby mode.

## 6. DUTY CYCLE

### 6.1 LIMITS

Clause	4.2.5.4			
Test Item	Duty cycle			
Limits	<b>Frequency Band</b>	<b>Duty cycle</b>	<b>Application</b>	<b>Notes</b>
	2 400 MHz to 2 483,5 MHz	No Restriction	Generic use	
	2 400 MHz to 2 483,5 MHz	No Restriction	Radiodetermination	
	(a) 2 446 MHz to 2 454 MHz	No Restriction	RFID	Limits shown in Annex G shall apply
	(b) 2 446 MHz to 2 454 MHz	≤ 15 %	RFID	Limits shown in Annex G shall apply
	5 725 MHz to 5 875 MHz	No Restriction	Generic use	
	9 200 MHz to 9 500 MHz	No Restriction	Radiodetermination	
	9 500 MHz to 9 975 MHz	No Restriction	Radiodetermination	
	10,5 GHz to 10,6 GHz	No Restriction	Radiodetermination	
	13,4 GHz to 14,0 GHz	No Restriction	Radiodetermination	
	17,1 GHz to 17,3 GHz	DAA or equivalent techniques	Radiodetermination, limited to GBSAR detecting and movement and alert applications	Limits shown in Annex I shall apply
	24,00 GHz to 24,25 GHz	No Restriction	Generic use and for radiodetermination	
	NOTE: The spectrum ranges in some entries are not harmonised throughout all EU territory, specifically entries 4, 9, and 11 have been identified as such. Implementers are cautioned to refer to CEPT/ERC Recommendation 70-03 [i.2] as well as current National Radio plans to verify acceptance within intended regions of use.			

Note: The maximum duty cycle within a 1 hour period.

### 6.2 TEST PROCEDURES

Refer to ETSI EN 300 440, chapter 4.2.5.3.

### 6.3 TEST SETUP LAYOUT



### 6.4 TEST DEVIATION

There is no deviation with the original standard.

### 6.5 EUT OPERATION DURING TEST

The measurements shall be performed during normal transmitting.

### 6.6 TEST RESULTS

Please refer to the Appendix G.

## 7. ADJACENT CHANNEL SELECTIVITY

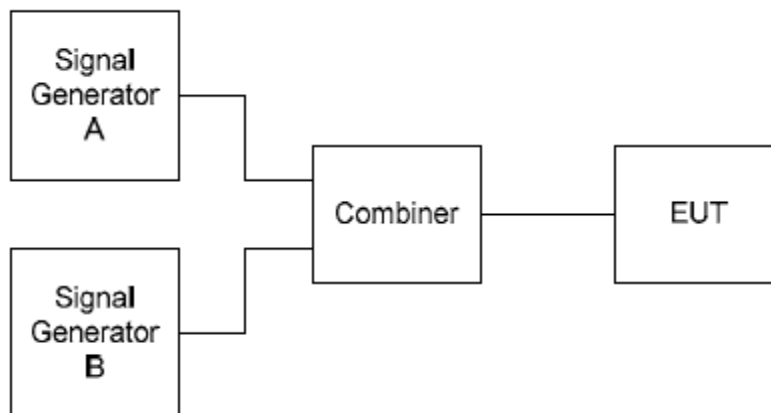
### 7.1 LIMITS

Clause	4.3.3.4
Test Item	Adjacent channel selectivity
Limits	<p>The adjacent channel selectivity of the equipment under specified conditions shall not be less than <math>-30 \text{ dBm} + k</math>.</p> <p>The correction factor, <math>k</math>, is as follows:</p> $k = -20 \log f - 10 \log BW$ <p>Where:</p> <ul style="list-style-type: none"> <li>- <math>f</math> is the frequency in GHz;</li> <li>- <math>BW</math> is the occupied bandwidth in MHz.</li> </ul> <p>The factor <math>k</math> is limited within the following:</p> <ul style="list-style-type: none"> <li>- <math>-40 \text{ dB} &lt; k &lt; 0 \text{ dB}</math>.</li> </ul>

### 7.2 TEST PROCEDURES

Refer to ETSI EN 300 440, chapter 4.3.3.3.

### 7.3 TEST SETUP LAYOUT



### 7.4 TEST DEVIATION

There is no deviation with the original standard.

### 7.5 EUT OPERATION DURING TEST

The measurements shall be performed during normal receiving.

### 7.6 TEST RESULTS

Please refer to the Appendix H.

## 8. BLOCKING OR DESENSITIZATION

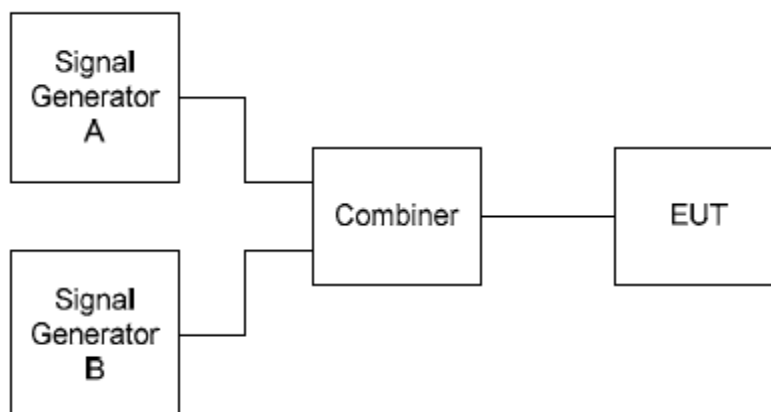
### 8.1 LIMITS

Clause	4.3.4.4								
Test Item	Blocking or desensitization								
Limits	<p>The blocking level, for any frequency within the specified ranges, shall not be less than the values given in table, except at frequencies on which spurious responses are found.</p> <table border="1"> <thead> <tr> <th>Receiver category</th><th>Limit</th></tr> </thead> <tbody> <tr> <td>1</td><td>-30 dBm + k</td></tr> <tr> <td>2</td><td>-45 dBm + k</td></tr> <tr> <td>3</td><td>-60 dBm + k</td></tr> </tbody> </table> <p>The correction factor, k, is as follows:  <math>k = -20 \log f - 10 \log BW</math>  Where:</p> <ul style="list-style-type: none"> <li>- <math>f</math> is the frequency in GHz;</li> <li>- <math>BW</math> is the occupied bandwidth in MHz.</li> </ul> <p>The factor <math>k</math> is limited within the following:</p> <ul style="list-style-type: none"> <li>- <math>-40 \text{ dB} &lt; k &lt; 0 \text{ dB}</math>.</li> </ul>	Receiver category	Limit	1	-30 dBm + k	2	-45 dBm + k	3	-60 dBm + k
Receiver category	Limit								
1	-30 dBm + k								
2	-45 dBm + k								
3	-60 dBm + k								

### 8.2 TEST PROCEDURES

Refer to ETSI EN 300 440, chapter 4.3.4.3.

### 8.3 TEST SETUP LAYOUT



### 8.4 TEST DEVIATION

There is no deviation with the original standard.

### 8.5 EUT OPERATION DURING TEST

The measurements shall be performed during normal receiving.

### 8.6 TEST RESULTS

Please refer to the Appendix I.

## 9. SPURIOUS RADIATIONS

### 9.1 LIMITS

Clause	4.3.5.4		
Test Item	Spurious radiations		
Limit	The power of any spurious emission shall not exceed 2 nW in the range 25 MHz to 1 GHz and shall not exceed 20 nW on frequencies above 1 GHz.		
	Other frequencies 25 MHz to 1000 MHz	Frequencies Above 1000 MHz	
	2 nW (-57dBm)	20 nW (-47dBm)	

### 9.2 TEST PROCEDURES

Refer to ETSI EN 300 440, chapter 4.3.5.3.

### 9.3 TEST SETUP LAYOUT

Refer to clause 5.3.

### 9.4 TEST DEVIATION

There is no deviation with the original standard.

### 9.5 EUT OPERATION DURING TEST

The measurements shall be performed during continuously receiving.

### 9.6 TEST RESULTS (25MHZ TO 1000MHZ)

Please refer to the Appendix J.

### 9.7 TEST RESULTS (ABOVE 1000MHZ)

Please refer to the Appendix K.

## 10. MEASUREMENT INSTRUMENTS LIST

Permitted Range of Operating Frequency					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP38	100852	Jun. 16, 2024
2	Attenuator	RegalWay	RWA-201-S-10	N/A	Sep. 26, 2024
3	Attenuator	RegalWay	RWA-201-S-6	N/A	Sep. 26, 2024
4	Temperature Chamber	ESPEC CORP	SU-242	93018736	Jul. 07, 2024
5	ITECH	DC Power Supply	IT6332C	8034160117673300	May 10, 2024
6	DC Block	N/A	N/A	N/A	N/A

Equivalent Isotropically Radiated Power (e.i.r.p.)					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	CE TestSystem	BTL	CE TestSoftware	N/A	N/A
2	X-series USB Peak and Average Power Sensor	Keysight	U2021XA	MY55190003	Jun. 17, 2024
3	X-series USB Peak and Average Power Sensor	Keysight	U2021XA	MY55190006	Jun. 17, 2024
4	Attenuator	RegalWay	RWA-201-S-10	NA	Sep. 26, 2024
5	Attenuator	RegalWay	RWA-201-S-10	NA	Sep. 26, 2024
6	Temperature Chamber	ESPEC CORP	SU-242	93018736	Jul. 07, 2024
7	Cable	RegalWay	SMA-SMA-1M	NA	Aug. 15, 2024
8	Cable	RegalWay	RWP50-402-SMSM-1M	NA	Aug. 27, 2024

Transmitter and Receiver Spurious Emission (Radiated Measurement)_Below 1GHz					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Preamplifier	EMC INSTRUMENT	EMC001330	980986	Nov. 17, 2024
2	EXA Signal Analyzer	Keysight	N9010A	MY56480488	Dec. 22, 2024
3	Trilog-Broadband Antenna	Schwarzbeck	VULB9160	9160-3232	Feb. 23, 2024
4	Cable	Talent microwave	L6-NMNM-10M	N/A	N/A
5	Cable	RegalWay	LMR400-NMRANM-0.8M	N/A	N/A
6	Controller	Innco Systems Gmbh	CO3000-4port	CO3000/1155/45430119/P	N/A
7	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

### Transmitter and Receiver Spurious Emission (Radiated Measurement)\_Above 1GHz

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
2	EXA Signal Analyzer	Keysight	N9010A	MY56480488	Dec. 22, 2024
3	Controller	Innco Systems GmbH	CO3000-4port	CO3000/1155/4 5430119/P	N/A
4	DRG Horn Antenna	ETS	3117-PA	221576	Jul. 07, 2024
5	Preamplifier	ETS	3117-PA	221576	Jul. 12, 2024
6	Cable	Talent microwave	A81-SMAMSMAM- 12.5M	N/A	N/A
7	Filter	STI	STI15-9912	N/A	Jun. 16, 2024
8	Cable	RegalWay	RWLP50-4.0A-SMR ANMRA-2M	N/A	N/A
9	Pre-Amplifier	EMC INSTRUMENT	EMC184045SE	980409	Dec. 22, 2024
10	DRG Horn Antenna	ETS	3116C	218942	Mar. 01, 2024
11	Filter	STI	STI15-9939	N/A	Jun. 16, 2024
12	Filter	STI	STI15-9940	N/A	Jun. 16, 2024
13	Cable	Tonscend	HF160-KMKM-5.00 M	N/A	N/A
14	Cable	Tonscend	HF160-KMKM-0.5M	N/A	N/A

### Duty Cycle

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	R&S	FSP38	100852	Jun. 16, 2024

### Adjacent channel selectivity & Blocking

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Wideband Radio Communication tester	R&S	CMW500	168838	Jul. 07, 2024
2	MXG Vector Signal Generator	Keysight	N5182B	MY57300318	Feb. 10, 2024
3	Power Divider	RegalWay	RW-PD2-0118SF30	N/A	Sep. 26, 2024
4	Power Divider	RegalWay	RW-PD2-0118SF30	N/A	Sep. 26, 2024
5	Cable	RegalWay	RWP50-402-SMSM-1 M	N/A	Aug. 27, 2024
6	Cable	RegalWay	RWP50-402-SMSM-1. 5M	N/A	Aug. 27, 2024
7	Cable	RegalWay	RWP50-402-SMSM-1. 5M	N/A	Aug. 27, 2024

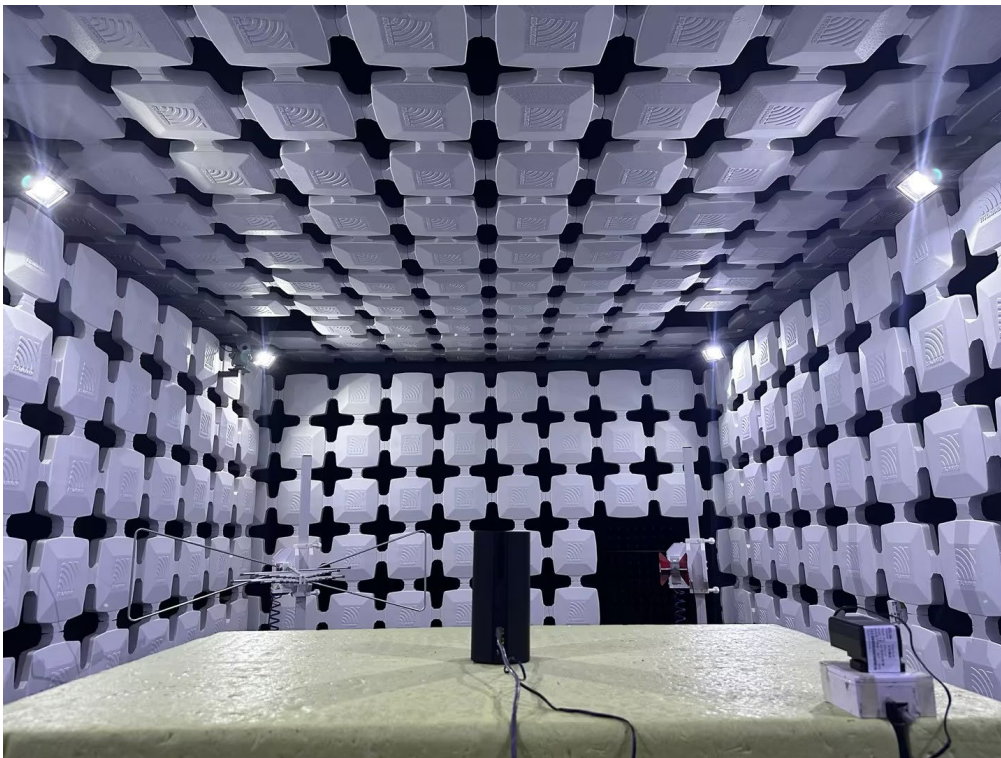
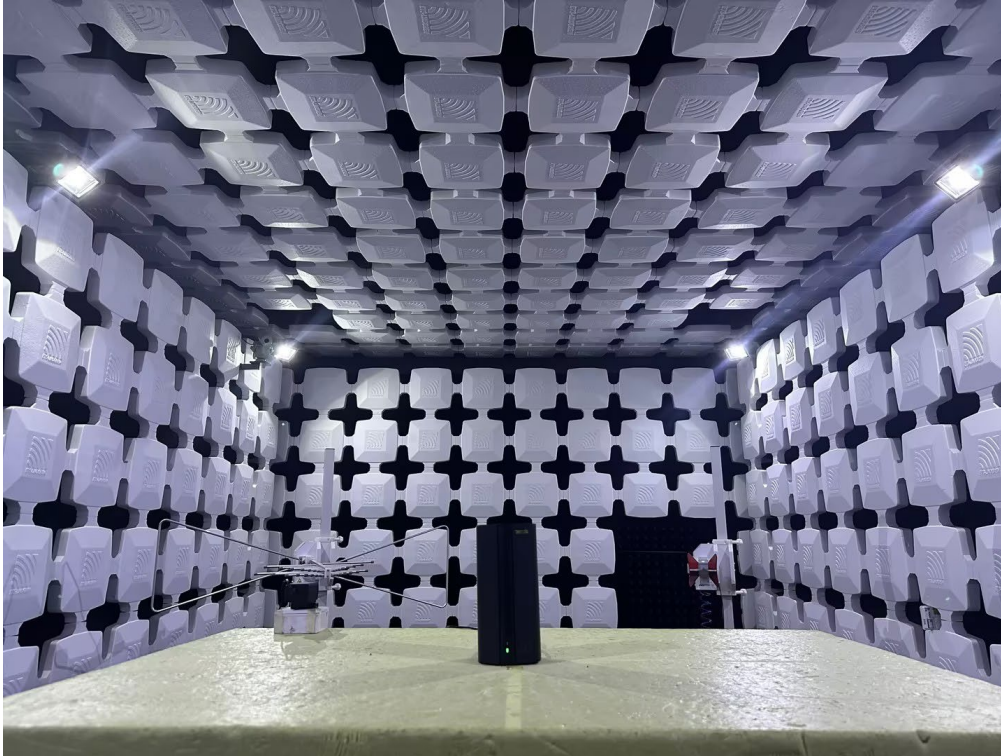
Remark: "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.

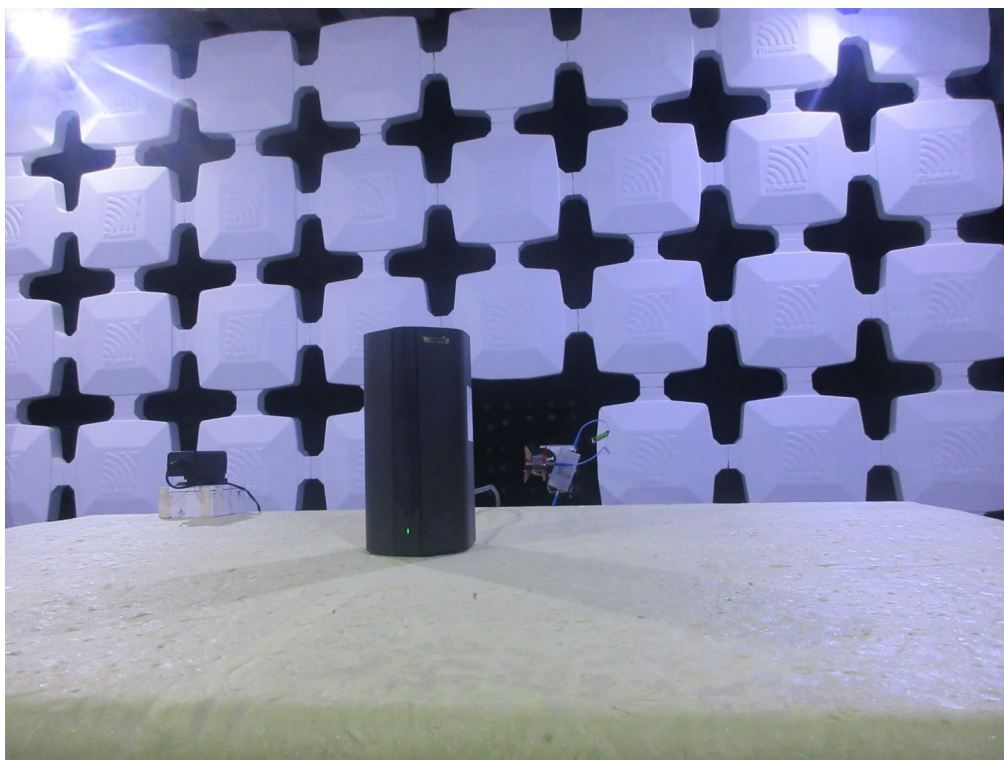
## 11. EUT TEST PHOTO

### Radiated Emissions Test Photos

30MHz~18GHz



Above 18GHz



## **APPENDIX A - EQUIVALENT ISOTROPICALLY RADIATED POWER**

### Non Beamforming

Test Mode: IEEE 802.11a Mode_Ant.1						
Test Conditions				Average e.i.r.p. ( dBm )		
				CH149	CH157	CH165
T <sub>nom</sub> (°C)	25	V <sub>nom</sub> (V)	12.00	13.50	13.59	13.54
T <sub>min</sub> (°C)	0	V <sub>max</sub> (V)	13.20	13.69	13.85	13.73
		V <sub>min</sub> (V)	10.80	13.68	13.86	13.77
T <sub>max</sub> (°C)	40	V <sub>max</sub> (V)	13.20	13.34	13.14	13.42
		V <sub>min</sub> (V)	10.80	13.25	13.27	13.34
Max. e.i.r.p.				13.86		
Limits				13.98dBm (25mW)		
Result				Pass		

Test Mode: IEEE 802.11n(HT20) Mode_Total						
Test Conditions				Average e.i.r.p. ( dBm )		
				CH149	CH157	CH165
T <sub>nom</sub> (°C)	25	V <sub>nom</sub> (V)	12.00	13.44	13.37	13.22
T <sub>min</sub> (°C)	0	V <sub>max</sub> (V)	13.20	13.59	13.74	13.47
		V <sub>min</sub> (V)	10.80	13.81	13.49	13.50
T <sub>max</sub> (°C)	40	V <sub>max</sub> (V)	13.20	12.92	13.21	12.88
		V <sub>min</sub> (V)	10.80	13.19	13.16	12.97
Max. e.i.r.p.				13.81		
Limits				13.98dBm (25mW)		
Result				Pass		

Test Mode: IEEE 802.11n(HT40) Mode_Total						
Test Conditions				Average e.i.r.p. ( dBm )		
				CH151	CH159	
T <sub>nom</sub> (°C)	25	V <sub>nom</sub> (V)	12.00	13.51	13.41	
T <sub>min</sub> (°C)	0	V <sub>max</sub> (V)	13.20	13.66	13.45	
		V <sub>min</sub> (V)	10.80	13.68	13.73	
T <sub>max</sub> (°C)	40	V <sub>max</sub> (V)	13.20	13.40	13.22	
		V <sub>min</sub> (V)	10.80	13.32	13.19	
Max. e.i.r.p.				13.73		
Limits				13.98dBm (25mW)		
Result				Pass		

Test Mode: IEEE 802.11ac(VHT20) Mode_Total						
Test Conditions				Average e.i.r.p. ( dBm )		
				CH149	CH157	CH165
T <sub>nom</sub> (°C)	25	V <sub>nom</sub> (V)	12.00	13.40	13.38	13.21
T <sub>min</sub> (°C)	0	V <sub>max</sub> (V)	13.20	13.50	13.13	13.35
		V <sub>min</sub> (V)	10.80	13.92	13.25	13.51
T <sub>max</sub> (°C)	40	V <sub>max</sub> (V)	13.20	13.20	13.17	13.13
		V <sub>min</sub> (V)	10.80	13.25	13.27	13.00
Max. e.i.r.p.				13.92		
Limits				13.98dBm (25mW)		
Result				Pass		

Test Mode: IEEE 802.11ac(VHT40) Mode_Total					
Test Conditions				Average e.i.r.p. ( dBm )	
				CH151	CH159
T <sub>nom</sub> (°C)	25	V <sub>nom</sub> (V)	12.00	13.52	13.39
T <sub>min</sub> (°C)	0	V <sub>max</sub> (V)	13.20	13.75	13.64
		V <sub>min</sub> (V)	10.80	13.41	13.63
T <sub>max</sub> (°C)	40	V <sub>max</sub> (V)	13.20	13.40	13.21
		V <sub>min</sub> (V)	10.80	13.36	13.18
Max. e.i.r.p.				13.75	
Limits				13.98dBm (25mW)	
Result				Pass	

Test Mode: IEEE 802.11ac(VHT80) Mode_Total				
Test Conditions				Average e.i.r.p. ( dBm )
				CH155
T <sub>nom</sub> (°C)	25	V <sub>nom</sub> (V)	12.00	13.35
T <sub>min</sub> (°C)	0	V <sub>max</sub> (V)	13.20	13.60
		V <sub>min</sub> (V)	10.80	13.74
T <sub>max</sub> (°C)	40	V <sub>max</sub> (V)	13.20	12.98
		V <sub>min</sub> (V)	10.80	13.26
Max. e.i.r.p.				13.74
Limits				13.98dBm (25mW)
Result				Pass

Test Mode: IEEE 802.11ax(HE20) Mode_Total						
Test Conditions				Average e.i.r.p. ( dBm )		
				CH149	CH157	CH165
T <sub>nom</sub> (°C)	25	V <sub>nom</sub> (V)	12.00	13.29	13.27	13.16
T <sub>min</sub> (°C)	0	V <sub>max</sub> (V)	13.20	13.54	13.47	13.35
		V <sub>min</sub> (V)	10.80	13.50	13.34	13.32
T <sub>max</sub> (°C)	40	V <sub>max</sub> (V)	13.20	13.02	13.02	13.04
		V <sub>min</sub> (V)	10.80	13.10	13.37	13.00
Max. e.i.r.p.				13.54		
Limits				13.98dBm (25mW)		
Result				Pass		

Test Mode: IEEE 802.11ax(HE40) Mode_Total					
Test Conditions				Average e.i.r.p. ( dBm )	
				CH151	CH159
T <sub>nom</sub> (°C)	25	V <sub>nom</sub> (V)	12.00	13.48	13.32
T <sub>min</sub> (°C)	0	V <sub>max</sub> (V)	13.20	13.67	13.52
		V <sub>min</sub> (V)	10.80	13.81	13.56
T <sub>max</sub> (°C)	40	V <sub>max</sub> (V)	13.20	13.06	12.95
		V <sub>min</sub> (V)	10.80	13.74	13.01
Max. e.i.r.p.				13.81	
Limits				13.98dBm (25mW)	
Result				Pass	

Test Mode: IEEE 802.11ax(HE80) Mode_Total				
Test Conditions				Average e.i.r.p. ( dBm )
				CH155
T <sub>nom</sub> (°C)	25	V <sub>nom</sub> (V)	12.00	13.25
T <sub>min</sub> (°C)	0	V <sub>max</sub> (V)	13.20	13.42
		V <sub>min</sub> (V)	10.80	13.56
T <sub>max</sub> (°C)	40	V <sub>max</sub> (V)	13.20	12.75
		V <sub>min</sub> (V)	10.80	13.05
Max. e.i.r.p.				13.56
Limits				13.98dBm (25mW)
Result				Pass

Note:

- 1) e.i.r.p. = Conducted output power + G (Ant Gain)
- 2) Conducted output power = Measure result + Cable loss

### Beamforming

Test Mode: IEEE 802.11n(HT20) Mode_Total						
Test Conditions				Average e.i.r.p. ( dBm )		
				CH149	CH157	CH165
T <sub>nom</sub> (°C)	25	V <sub>nom</sub> (V)	12.00	13.17	13.36	13.18
T <sub>min</sub> (°C)	0	V <sub>max</sub> (V)	13.20	13.42	13.43	13.31
		V <sub>min</sub> (V)	10.80	13.65	13.43	13.31
T <sub>max</sub> (°C)	40	V <sub>max</sub> (V)	13.20	12.90	13.11	12.85
		V <sub>min</sub> (V)	10.80	13.07	13.09	12.90
Max. e.i.r.p.				13.65		
Limits				13.98dBm (25mW)		
Result				Pass		

Test Mode: IEEE 802.11n(HT40) Mode_Total					
Test Conditions				Average e.i.r.p. ( dBm )	
				CH151	CH159
T <sub>nom</sub> (°C)	25	V <sub>nom</sub> (V)	12.00	13.28	13.32
T <sub>min</sub> (°C)	0	V <sub>max</sub> (V)	13.20	13.53	13.24
		V <sub>min</sub> (V)	10.80	13.53	13.50
T <sub>max</sub> (°C)	40	V <sub>max</sub> (V)	13.20	13.19	12.90
		V <sub>min</sub> (V)	10.80	13.23	13.11
Max. e.i.r.p.				13.53	
Limits				13.98dBm (25mW)	
Result				Pass	

Test Mode: IEEE 802.11ac(VHT20) Mode_Total						
Test Conditions				Average e.i.r.p. ( dBm )		
				CH149	CH157	CH165
T <sub>nom</sub> (°C)	25	V <sub>nom</sub> (V)	12.00	13.37	13.21	13.18
T <sub>min</sub> (°C)	0	V <sub>max</sub> (V)	13.20	13.35	13.11	13.15
		V <sub>min</sub> (V)	10.80	13.69	13.21	13.40
T <sub>max</sub> (°C)	40	V <sub>max</sub> (V)	13.20	13.14	13.11	12.85
		V <sub>min</sub> (V)	10.80	13.20	13.22	12.98
Max. e.i.r.p.				13.69		
Limits				13.98dBm (25mW)		
Result				Pass		

Test Mode: IEEE 802.11ac(VHT40) Mode_Total					
Test Conditions				Average e.i.r.p. ( dBm )	
				CH151	CH159
T <sub>nom</sub> (°C)	25	V <sub>nom</sub> (V)	12.00	13.31	13.37
T <sub>min</sub> (°C)	0	V <sub>max</sub> (V)	13.20	13.40	13.46
		V <sub>min</sub> (V)	10.80	13.17	13.58
T <sub>max</sub> (°C)	40	V <sub>max</sub> (V)	13.20	13.16	13.18
		V <sub>min</sub> (V)	10.80	13.31	13.13
Max. e.i.r.p.				13.58	
Limits				13.98dBm (25mW)	
Result				Pass	

Test Mode: IEEE 802.11ac(VHT80) Mode_Total				
Test Conditions				Average e.i.r.p. ( dBm )
				CH155
T <sub>nom</sub> (°C)	25	V <sub>nom</sub> (V)	12.00	13.29
T <sub>min</sub> (°C)	0	V <sub>max</sub> (V)	13.20	13.56
		V <sub>min</sub> (V)	10.80	13.67
T <sub>max</sub> (°C)	40	V <sub>max</sub> (V)	13.20	12.96
		V <sub>min</sub> (V)	10.80	13.11
Max. e.i.r.p.				13.67
Limits				13.98dBm (25mW)
Result				Pass

Test Mode: IEEE 802.11ax(HE20) Mode_Total						
Test Conditions				Average e.i.r.p. ( dBm )		
				CH149	CH157	CH165
T <sub>nom</sub> (°C)	25	V <sub>nom</sub> (V)	12.00	13.14	13.26	13.14
T <sub>min</sub> (°C)	0	V <sub>max</sub> (V)	13.20	13.33	13.26	13.29
		V <sub>min</sub> (V)	10.80	13.33	13.26	13.29
T <sub>max</sub> (°C)	40	V <sub>max</sub> (V)	13.20	12.79	12.72	12.71
		V <sub>min</sub> (V)	10.80	12.95	13.04	12.90
Max. e.i.r.p.				13.33		
Limits				13.98dBm (25mW)		
Result				Pass		

Test Mode: IEEE 802.11ax(HE40) Mode_Total					
Test Conditions				Average e.i.r.p. ( dBm )	
				CH151	CH159
T <sub>nom</sub> (°C)	25	V <sub>nom</sub> (V)	12.00	13.44	13.24
T <sub>min</sub> (°C)	0	V <sub>max</sub> (V)	13.20	13.53	13.44
		V <sub>min</sub> (V)	10.80	13.75	13.44
T <sub>max</sub> (°C)	40	V <sub>max</sub> (V)	13.20	12.86	12.83
		V <sub>min</sub> (V)	10.80	13.35	12.95
Max. e.i.r.p.				13.75	
Limits				13.98dBm (25mW)	
Result				Pass	

Test Mode: IEEE 802.11ax(HE80) Mode_Total				
Test Conditions				Average e.i.r.p. ( dBm )
				CH155
T <sub>nom</sub> (°C)	25	V <sub>nom</sub> (V)	12.00	13.23
T <sub>min</sub> (°C)	0	V <sub>max</sub> (V)	13.20	13.40
		V <sub>min</sub> (V)	10.80	13.50
T <sub>max</sub> (°C)	40	V <sub>max</sub> (V)	13.20	12.59
		V <sub>min</sub> (V)	10.80	12.78
Max. e.i.r.p.				13.50
Limits				13.98dBm (25mW)
Result				Pass

Note:

- 1) e.i.r.p. = Conducted output power + G (Ant Gain) + Y (Beamforming Gain)
- 2) Conducted output power = Measure result + Cable loss

## **APPENDIX B - PERMITTED RANGE OF OPERATING FREQUENCIES**

Test Mode: IEEE 802.11a Mode					
Test Conditions				Frequency Range ( MHz )	
				f <sub>L</sub> CH149	f <sub>H</sub> CH165
T <sub>nom</sub> (°C)	25	V <sub>nom</sub> (V)	12.00	5736.5000	5833.5000
T <sub>min</sub> (°C)	0	V <sub>max</sub> (V)	13.20	5736.5000	5833.5000
		V <sub>min</sub> (V)	10.80	5736.5000	5833.5000
T <sub>max</sub> (°C)	40	V <sub>max</sub> (V)	13.20	5736.5000	5833.5000
		V <sub>min</sub> (V)	10.80	5736.5000	5833.5000
Min. f <sub>L</sub> / Max. f <sub>H</sub> Band Edges				5736.5000	5833.5000
Limits				f <sub>L</sub> > 5725.0 MHz	f <sub>H</sub> < 5875.0 MHz
Result				Pass	

Test Mode: IEEE 802.11a Mode			
Test Conditions		Occupied Channel Bandwidth ( MHz )	
		CH149	CH165
T <sub>nom</sub> (°C)	25	16.40	16.40
F <sub>L</sub> OBW		5736.80	-
F <sub>H</sub> OBW		-	5833.20
Limits		f <sub>L</sub> > 5725.0 MHz	f <sub>H</sub> < 5875.0 MHz

Test Mode: IEEE 802.11ac(VHT20) Mode					
Test Conditions				Frequency Range ( MHz )	
				f <sub>L</sub> CH149	f <sub>H</sub> CH165
T <sub>nom</sub> (°C)	25	V <sub>nom</sub> (V)	12.00	5736.0000	5833.9000
T <sub>min</sub> (°C)	0	V <sub>max</sub> (V)	13.20	5736.0000	5833.9000
		V <sub>min</sub> (V)	10.80	5736.0000	5833.9000
T <sub>max</sub> (°C)	40	V <sub>max</sub> (V)	13.20	5736.0000	5833.9000
		V <sub>min</sub> (V)	10.80	5736.0000	5833.9000
Min. f <sub>L</sub> / Max. f <sub>H</sub> Band Edges				5736.0000	5833.9000
Limits				f <sub>L</sub> > 5725.0 MHz	f <sub>H</sub> < 5875.0 MHz
Result				Pass	

Test Mode: IEEE 802.11ac(VHT20) Mode			
Test Conditions		Occupied Channel Bandwidth ( MHz )	
		CH149	CH165
T <sub>nom</sub> (°C)	25	17.40	17.50
F <sub>L</sub> OBW		5736.30	-
F <sub>H</sub> OBW		-	5833.70
Limits		f <sub>L</sub> > 5725.0 MHz	f <sub>H</sub> < 5875.0 MHz

Test Mode: IEEE 802.11ac(VHT40) Mode					
Test Conditions				Frequency Range ( MHz )	
				f <sub>L</sub> CH151	f <sub>H</sub> CH159
T <sub>nom</sub> (°C)	25	V <sub>nom</sub> (V)	12.00	5736.6000	5813.2000
T <sub>min</sub> (°C)	0	V <sub>max</sub> (V)	13.20	5736.6000	5813.2000
		V <sub>min</sub> (V)	10.80	5736.6000	5813.2000
T <sub>max</sub> (°C)	40	V <sub>max</sub> (V)	13.20	5736.6000	5813.2000
		V <sub>min</sub> (V)	10.80	5736.6000	5813.2000
Min. f <sub>L</sub> / Max. f <sub>H</sub> Band Edges				5736.6000	5813.2000
Limits				f <sub>L</sub> > 5725.0 MHz	f <sub>H</sub> < 5875.0 MHz
Result				Pass	

Test Mode: IEEE 802.11ac(VHT40) Mode			
Test Conditions		Occupied Channel Bandwidth ( MHz )	
		CH151	CH159
T <sub>nom</sub> (°C)	25	36.00	36.00
F <sub>L</sub> OBW		5737.00	-
F <sub>H</sub> OBW		-	5813.00
Limits		f <sub>L</sub> > 5725.0 MHz	f <sub>H</sub> < 5875.0 MHz

Test Mode: IEEE 802.11ac(VHT80) Mode					
Test Conditions				Frequency Range ( MHz )	
				f <sub>L</sub> CH155	f <sub>H</sub> CH155
T <sub>nom</sub> (°C)	25	V <sub>nom</sub> (V)	12.00	5736.6000	5813.4000
T <sub>min</sub> (°C)	0	V <sub>max</sub> (V)	13.20	5736.6000	5813.4000
		V <sub>min</sub> (V)	10.80	5736.6000	5813.4000
T <sub>max</sub> (°C)	40	V <sub>max</sub> (V)	13.20	5736.6000	5813.4000
		V <sub>min</sub> (V)	10.80	5736.6000	5813.4000
Min. f <sub>L</sub> / Max. f <sub>H</sub> Band Edges				5736.6000	5813.4000
Limits				f <sub>L</sub> > 5725.0 MHz	f <sub>H</sub> < 5875.0 MHz
Result				Pass	

Test Mode: IEEE 802.11ac(VHT80) Mode		
Test Conditions		Occupied Channel Bandwidth ( MHz )
		CH155
T <sub>nom</sub> (°C)	25	76.00
F <sub>L</sub> OBW		5737.00
F <sub>H</sub> OBW		5813.00
Limits		f <sub>L</sub> > 5725.0 MHz      f <sub>H</sub> < 5875.0 MHz

Test Mode: IEEE 802.11ax(HE20) Mode					
Test Conditions				Frequency Range ( MHz )	
				f <sub>L</sub> CH149	f <sub>H</sub> CH165
T <sub>nom</sub> (°C)	25	V <sub>nom</sub> (V)	12.00	5735.4000	5834.6000
T <sub>min</sub> (°C)	0	V <sub>max</sub> (V)	13.20	5735.4000	5834.6000
		V <sub>min</sub> (V)	10.80	5735.4000	5834.6000
T <sub>max</sub> (°C)	40	V <sub>max</sub> (V)	13.20	5735.4000	5834.6000
		V <sub>min</sub> (V)	10.80	5735.4000	5834.6000
Min. f <sub>L</sub> / Max. f <sub>H</sub> Band Edges				5735.4000	5834.6000
Limits				f <sub>L</sub> > 5725.0 MHz	f <sub>H</sub> < 5875.0 MHz
Result				Pass	

Test Mode: IEEE 802.11ax(HE20) Mode			
Test Conditions		Occupied Channel Bandwidth ( MHz )	
		CH149	CH165
T <sub>nom</sub> (°C)	25	18.80	18.80
F <sub>L</sub> OBW		5735.60	-
F <sub>H</sub> OBW		-	5834.40
Limits		f <sub>L</sub> > 5725.0 MHz	f <sub>H</sub> < 5875.0 MHz

Test Mode: IEEE 802.11ax(HE40) Mode					
Test Conditions				Frequency Range ( MHz )	
				f <sub>L</sub> CH151	f <sub>H</sub> CH159
T <sub>nom</sub> (°C)	25	V <sub>nom</sub> (V)	12.00	5735.8000	5814.0000
T <sub>min</sub> (°C)	0	V <sub>max</sub> (V)	13.20	5735.8000	5814.0000
		V <sub>min</sub> (V)	10.80	5735.8000	5814.0000
T <sub>max</sub> (°C)	40	V <sub>max</sub> (V)	13.20	5735.8000	5814.0000
		V <sub>min</sub> (V)	10.80	5735.8000	5814.0000
Min. f <sub>L</sub> / Max. f <sub>H</sub> Band Edges				5735.8000	5814.0000
Limits				f <sub>L</sub> > 5725.0 MHz	f <sub>H</sub> < 5875.0 MHz
Result				Pass	

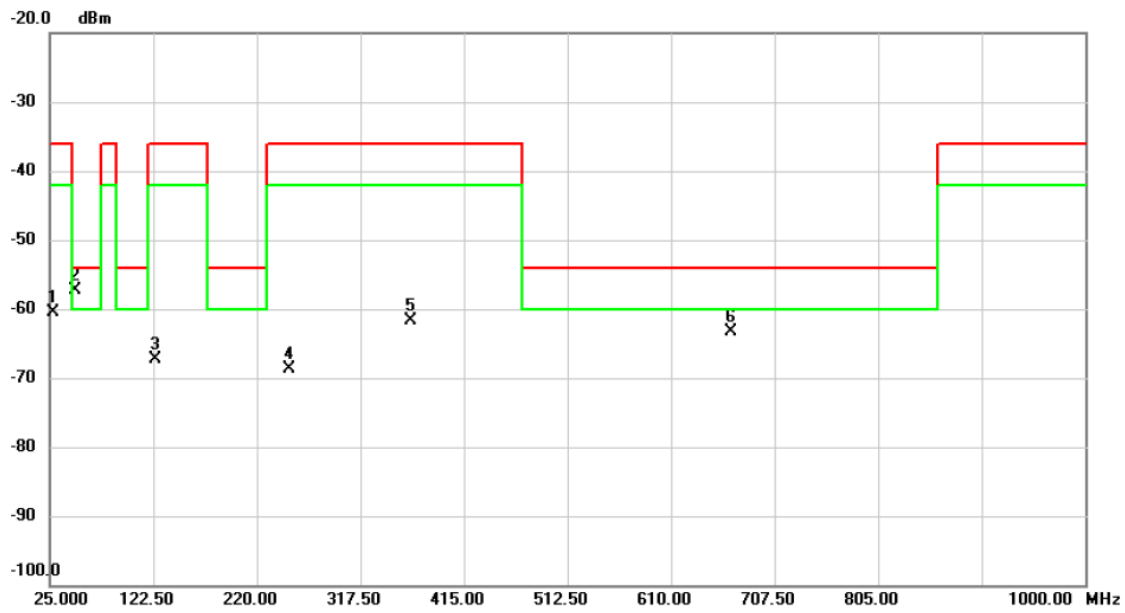
Test Mode: IEEE 802.11ax(HE40) Mode			
Test Conditions		Occupied Channel Bandwidth ( MHz )	
		CH151	CH159
$T_{nom}$ (°C)	25	37.60	37.60
$F_L$ OBW		5736.20	-
$F_H$ OBW		-	5813.80
Limits		$f_L > 5725.0$ MHz	$f_H < 5875.0$ MHz

Test Mode: IEEE 802.11ax(HE80) Mode					
Test Conditions				Frequency Range ( MHz )	
				f <sub>L</sub> CH155	f <sub>H</sub> CH155
T <sub>nom</sub> (°C)	25	V <sub>nom</sub> (V)	12.00	5735.8000	5814.2000
T <sub>min</sub> (°C)	0	V <sub>max</sub> (V)	13.20	5735.8000	5814.2000
		V <sub>min</sub> (V)	10.80	5735.8000	5814.2000
T <sub>max</sub> (°C)	40	V <sub>max</sub> (V)	13.20	5735.8000	5814.2000
		V <sub>min</sub> (V)	10.80	5735.8000	5814.2000
Min. f <sub>L</sub> / Max. f <sub>H</sub> Band Edges				5735.8000	5814.2000
Limits				f <sub>L</sub> > 5725.0 MHz	f <sub>H</sub> < 5875.0 MHz
Result				Pass	

Test Mode: IEEE 802.11ax(HE80) Mode		
Test Conditions		Occupied Channel Bandwidth ( MHz )
		CH155
T <sub>nom</sub> (°C)	25	77.20
F <sub>L</sub> OBW		5736.60
F <sub>H</sub> OBW		5813.80
Limits		f <sub>L</sub> > 5725.0 MHz      f <sub>H</sub> < 5875.0 MHz

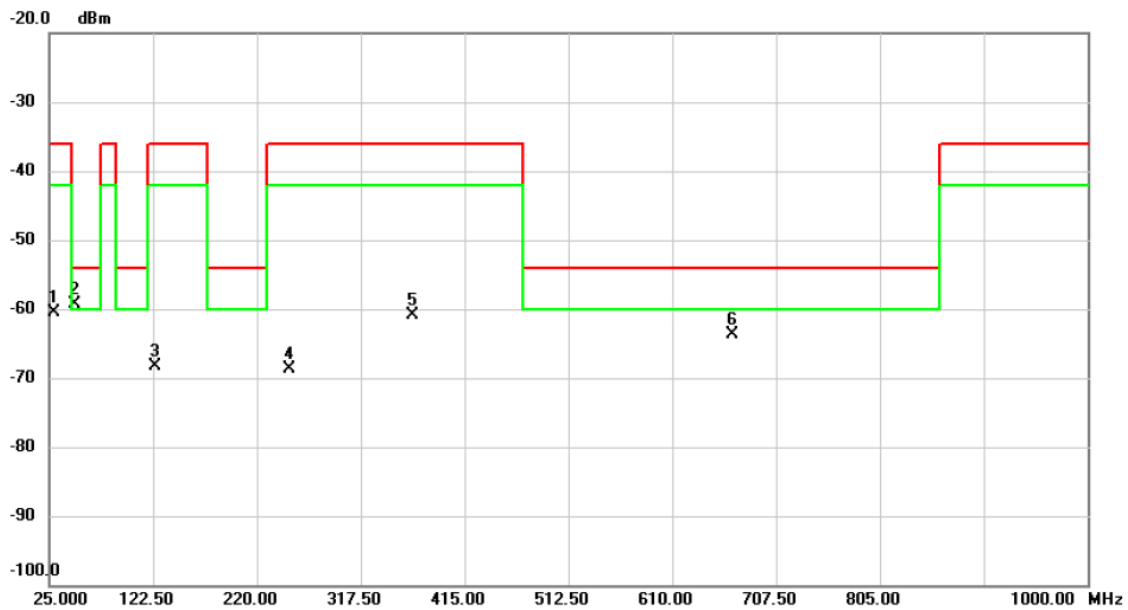
## **APPENDIX C - UNWANTED EMISSIONS IN THE SPURIOUS DOMAIN - OPERATING (25MHZ TO 1000MHZ)**

Test Mode	TX IEEE 802.11ac(VHT20) Mode 5745 MHz	Polarization	Vertical
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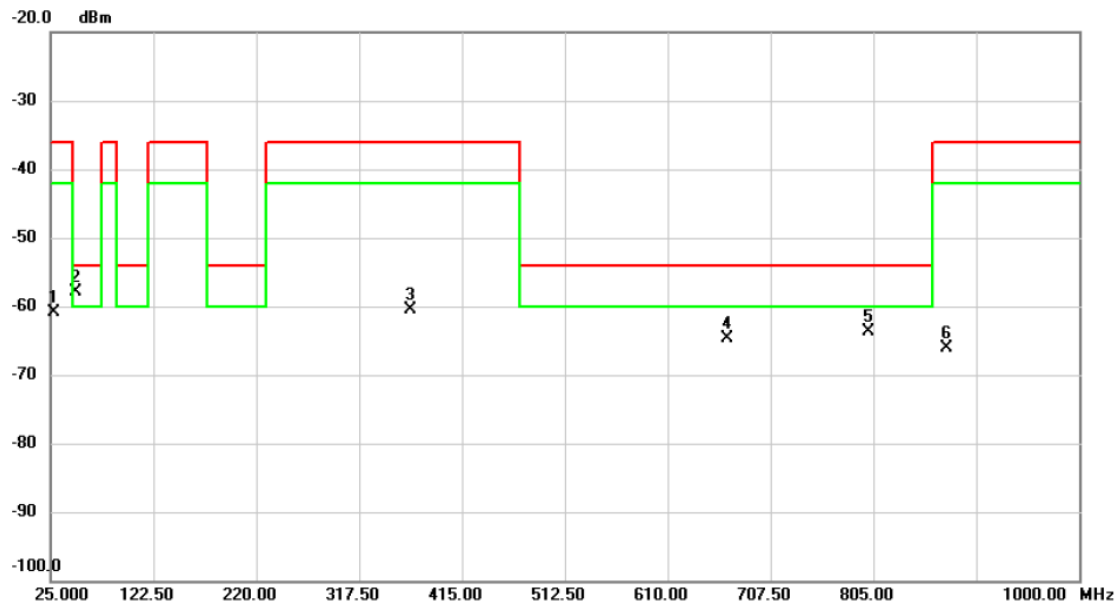
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		28.705	-58.33	-2.15	-60.48	-36.00	-24.48	peak	
2	*	48.790	-51.70	-5.60	-57.30	-54.00	-3.30	peak	
3		125.035	-59.46	-7.90	-67.36	-36.00	-31.36	peak	
4		250.030	-60.53	-8.24	-68.77	-36.00	-32.77	peak	
5		365.567	-55.94	-5.82	-61.76	-36.00	-25.76	peak	
6		666.160	-62.46	-0.86	-63.32	-54.00	-9.32	peak	

Test Mode	TX IEEE 802.11ac(VHT20) Mode 5745 MHz	Polarization	Horizontal
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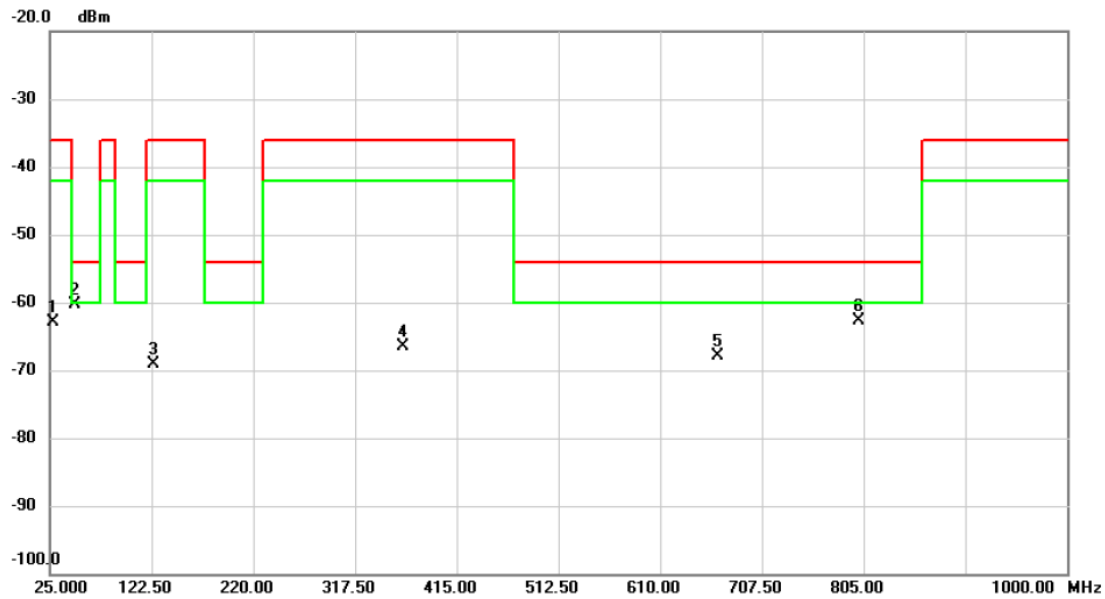
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1		29.095	-58.33	-2.15	-60.48	-36.00	-24.48	peak	
2	*	48.790	-51.58	-7.66	-59.24	-54.00	-5.24	peak	
3		125.035	-60.40	-7.93	-68.33	-36.00	-32.33	peak	
4		249.933	-60.27	-8.36	-68.63	-36.00	-32.63	peak	
5		366.250	-54.98	-5.82	-60.80	-36.00	-24.80	peak	
6		666.550	-62.86	-0.92	-63.78	-54.00	-9.78	peak	

Test Mode	TX IEEE 802.11ac(VHT20) Mode 5825 MHz	Polarization	Vertical
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No. Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1	28.218	-58.81	-2.15	-60.96	-36.00	-24.96	peak	
2 *	48.985	-52.36	-5.60	-57.96	-54.00	-3.96	peak	
3	365.665	-54.75	-5.82	-60.57	-36.00	-24.57	peak	
4	666.550	-63.78	-0.86	-64.64	-54.00	-10.64	peak	
5	800.028	-64.91	1.12	-63.79	-54.00	-9.79	peak	
6	875.005	-67.52	1.42	-66.10	-36.00	-30.10	peak	

Test Mode	TX IEEE 802.11ac(VHT20) Mode 5825 MHz	Polarization	Horizontal
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No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		28.705	-60.65	-2.15	-62.80	-36.00	-26.80	peak	
2	*	48.790	-52.72	-7.66	-60.38	-54.00	-6.38	peak	
3		125.035	-61.21	-7.93	-69.14	-36.00	-33.14	peak	
4		363.715	-60.62	-5.88	-66.50	-36.00	-30.50	peak	
5		665.575	-66.91	-0.93	-67.84	-54.00	-13.84	peak	
6		800.028	-63.80	1.04	-62.76	-54.00	-8.76	peak	

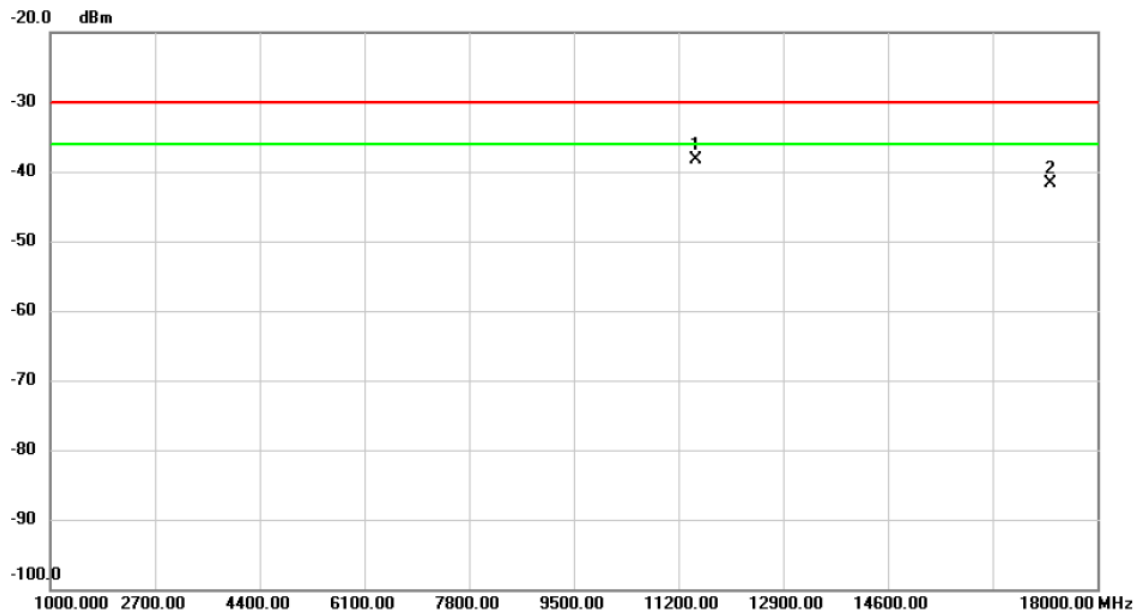
## **APPENDIX D - UNWANTED EMISSIONS IN THE SPURIOUS DOMAIN - STANDBY (25MHZ TO 1000MHZ)**

**Test Mode: N/A**

Note: "N/A" denotes test is not applicable to this device.

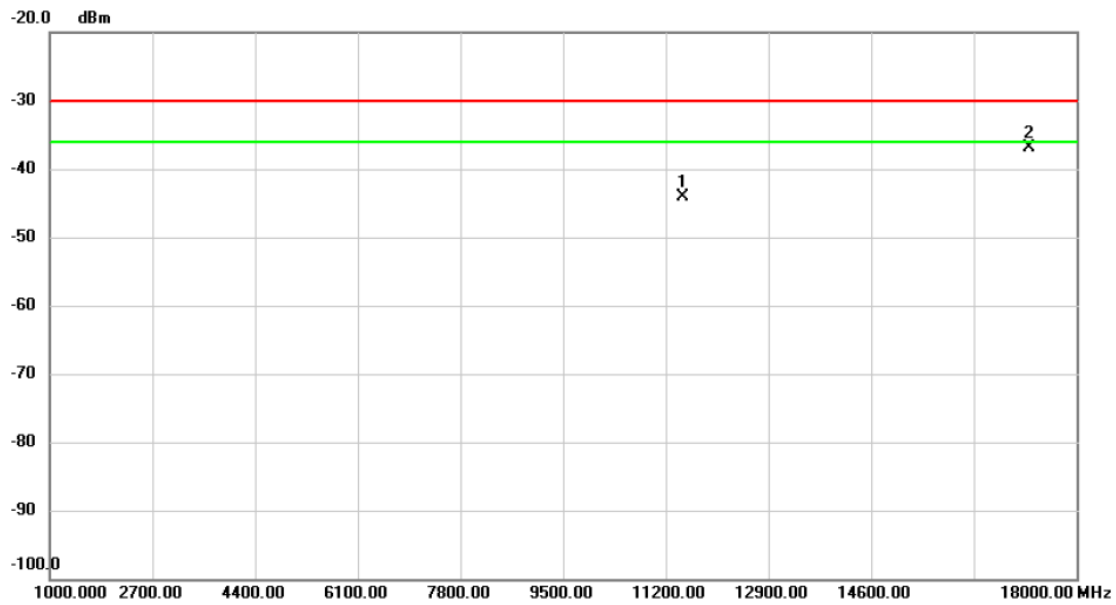
## **APPENDIX E - UNWANTED EMISSIONS IN THE SPURIOUS DOMAIN - OPERATING (ABOVE 1000MHZ)**

Test Mode	TX IEEE 802.11a Mode 5745 MHz	Polarization	Vertical
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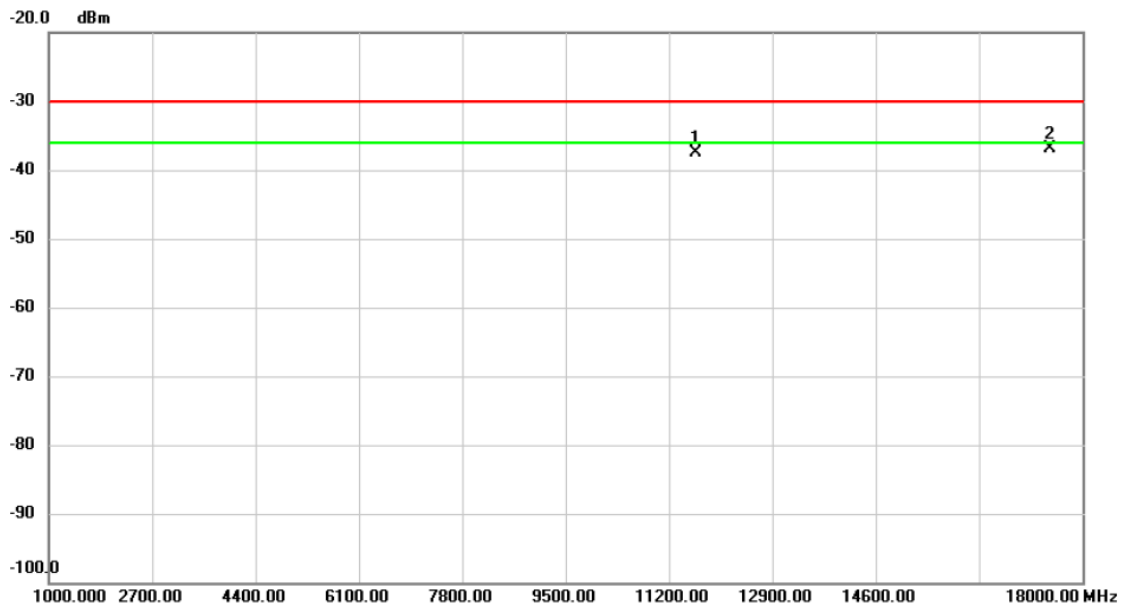
No. Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1 *	11489.000	-45.39	7.02	-38.37	-30.00	-8.37	peak	
2	17232.450	-57.98	16.22	-41.76	-30.00	-11.76	peak	

Test Mode	TX IEEE 802.11a Mode 5745 MHz	Polarization	Horizontal
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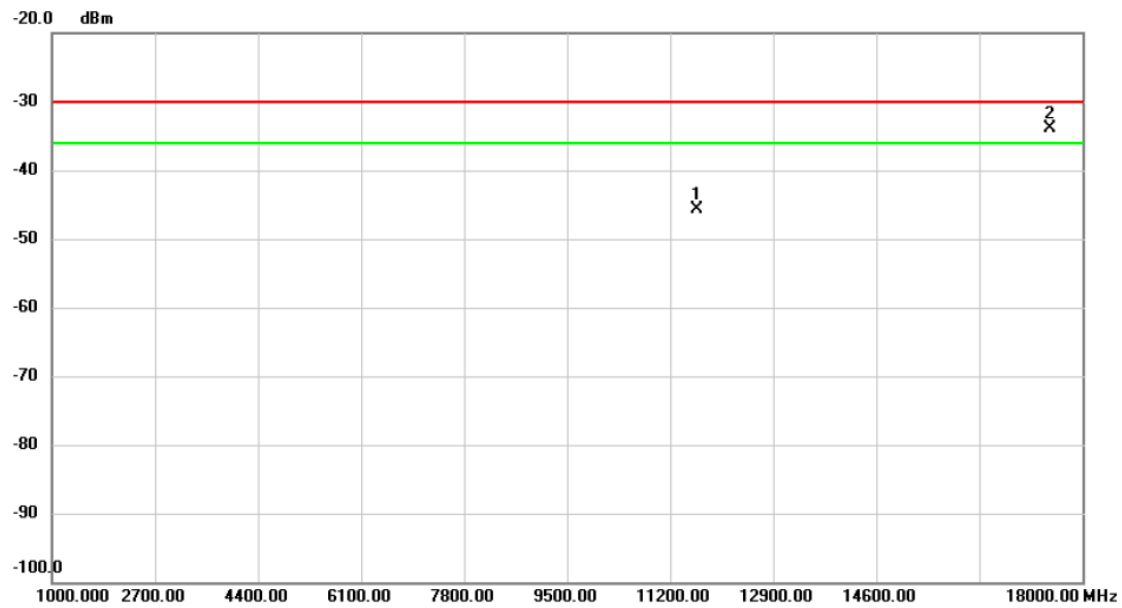
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		11485.600	-51.34	7.23	-44.11	-30.00	-14.11	peak	
2	*	17229.050	-53.23	16.27	-36.96	-30.00	-6.96	peak	

Test Mode	TX IEEE 802.11a Mode 5825 MHz	Polarization	Vertical
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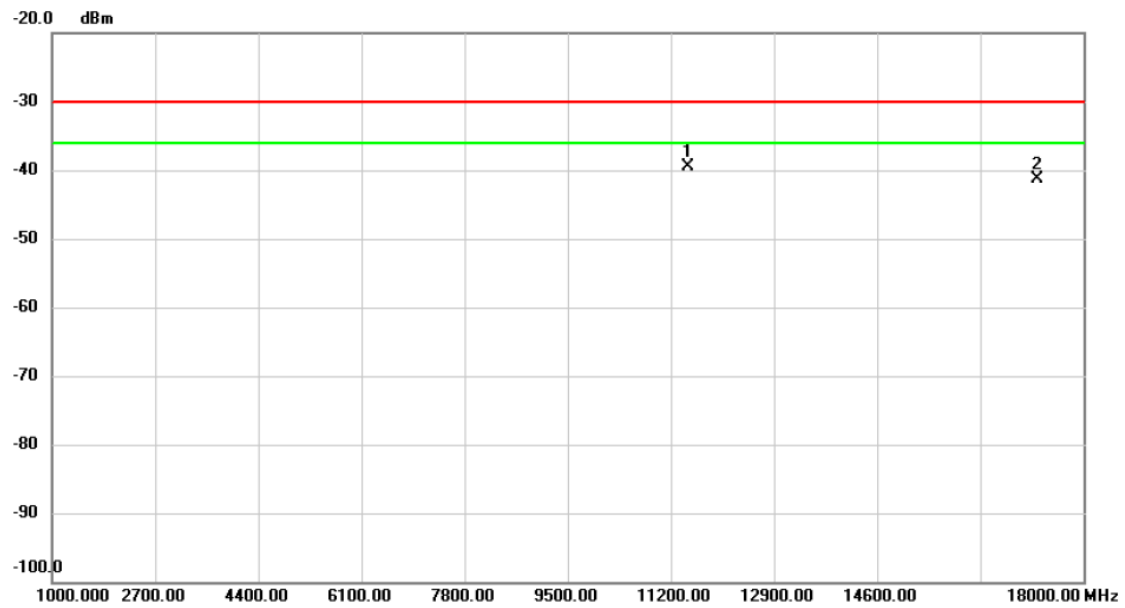
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		11651.350	-44.80	7.34	-37.46	-30.00	-7.46	peak	
2	*	17476.400	-54.16	17.31	-36.85	-30.00	-6.85	peak	

Test Mode	TX IEEE 802.11a Mode 5825 MHz	Polarization	Horizontal
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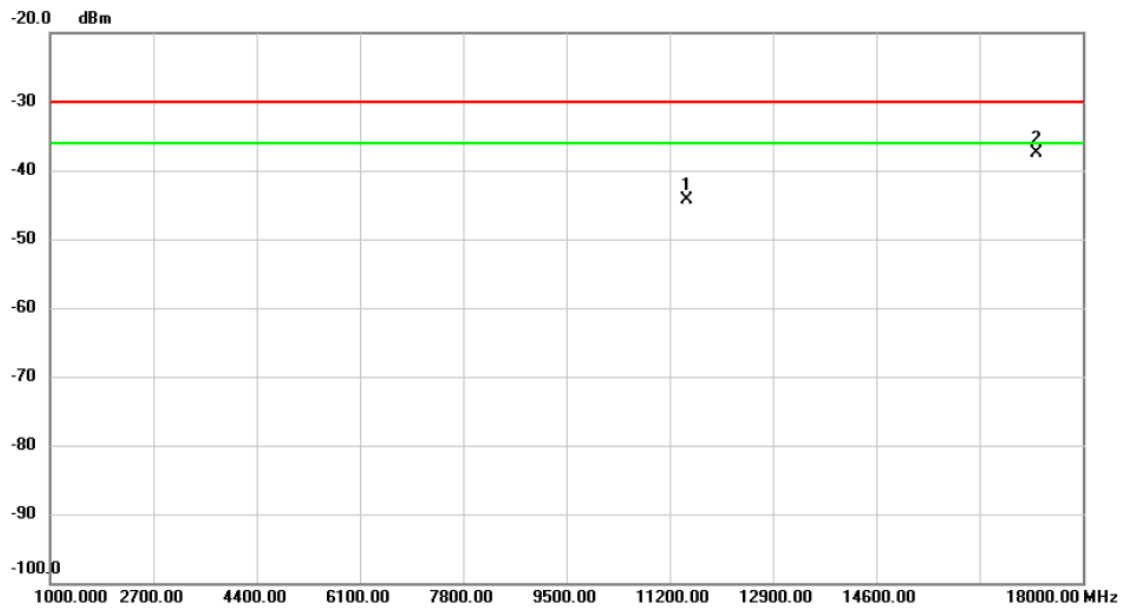
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		11651.350	-53.26	7.51	-45.75	-30.00	-15.75	peak	
2	*	17472.150	-51.03	17.11	-33.92	-30.00	-3.92	peak	

Test Mode	TX IEEE 802.11ac(VHT20) Mode 5745 MHz	Polarization	Vertical
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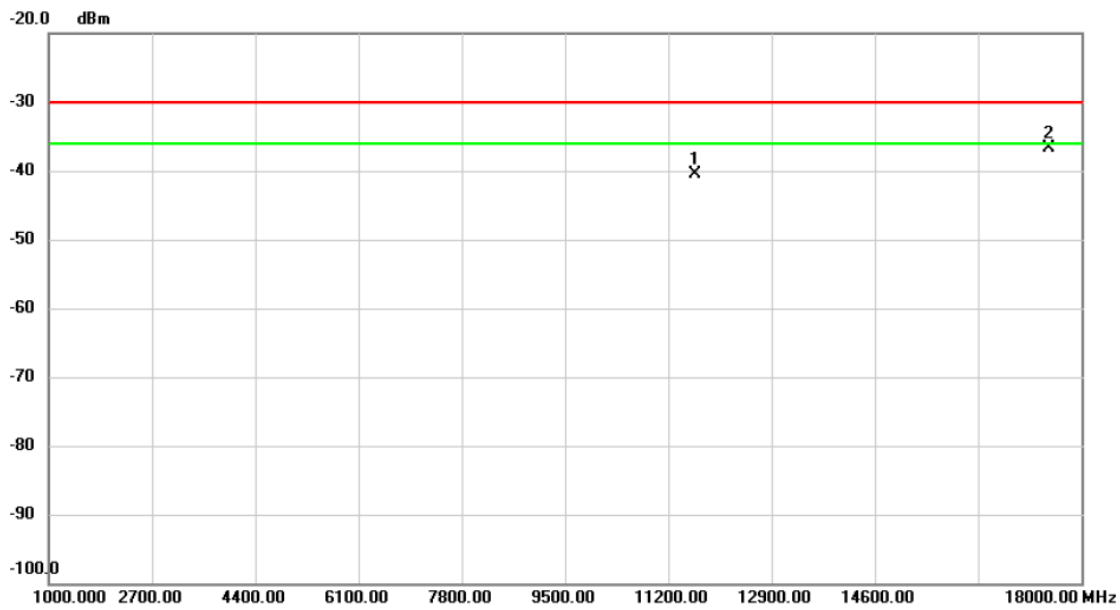
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	*	11488.150	-46.54	7.02	-39.52	-30.00	-9.52	peak	
2		17235.000	-57.47	16.23	-41.24	-30.00	-11.24	peak	

Test Mode	TX IEEE 802.11ac(VHT20) Mode 5745 MHz	Polarization	Horizontal
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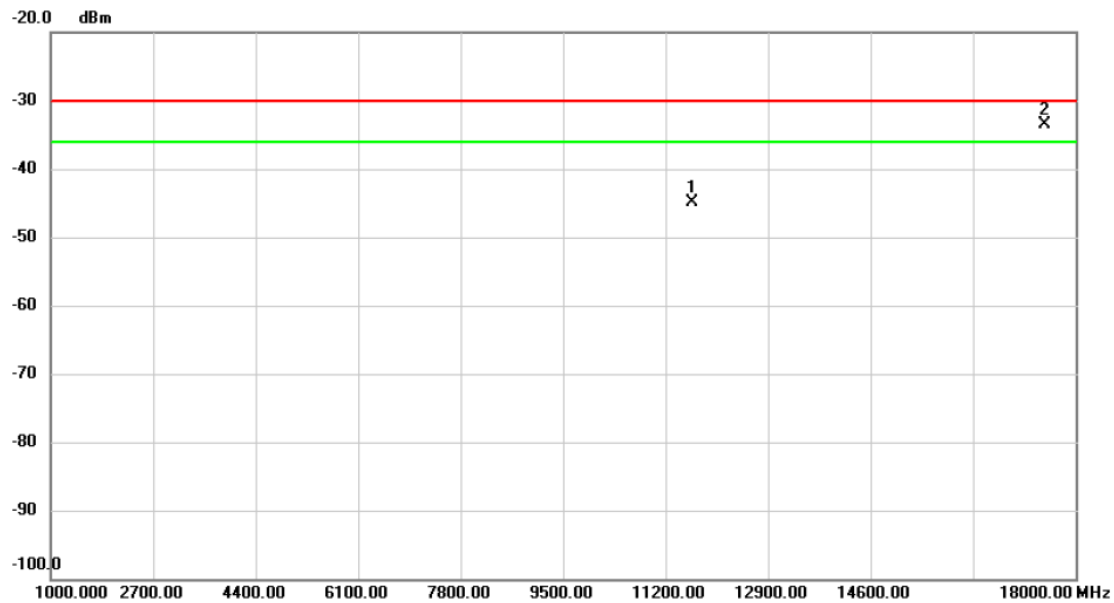
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1		11492.400	-51.60	7.24	-44.36	-30.00	-14.36	peak	
2	*	17235.000	-53.73	16.29	-37.44	-30.00	-7.44	peak	

Test Mode	TX IEEE 802.11ac(VHT20) Mode 5825 MHz	Polarization	Vertical
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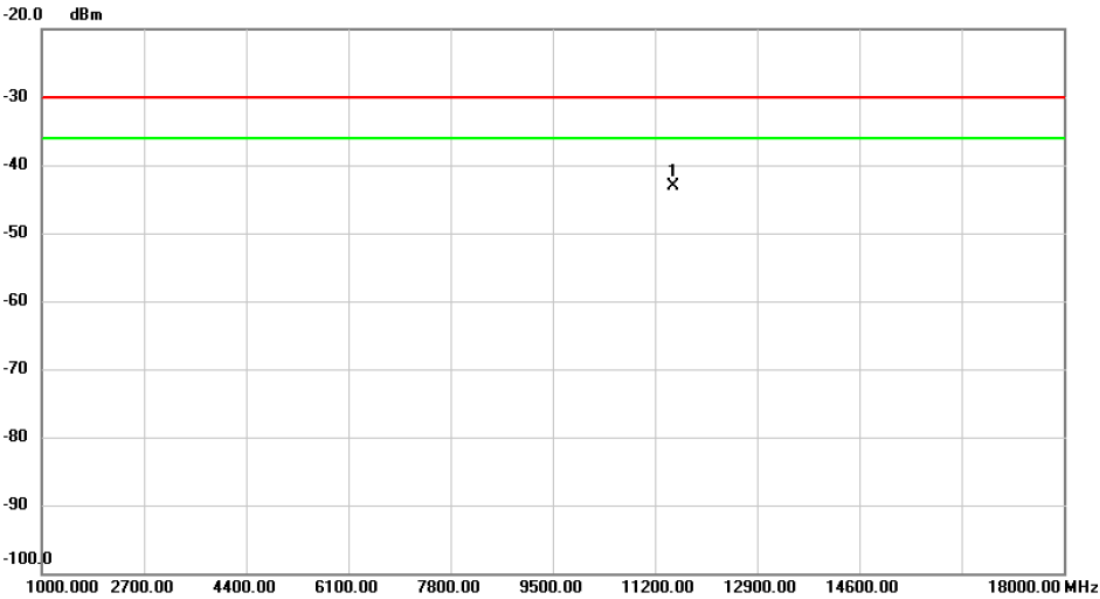
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		11647.950	-47.84	7.33	-40.51	-30.00	-10.51	peak	
2	*	17473.850	-53.93	17.29	-36.64	-30.00	-6.64	peak	

Test Mode	TX IEEE 802.11ac(VHT20) Mode 5825 MHz	Polarization	Horizontal
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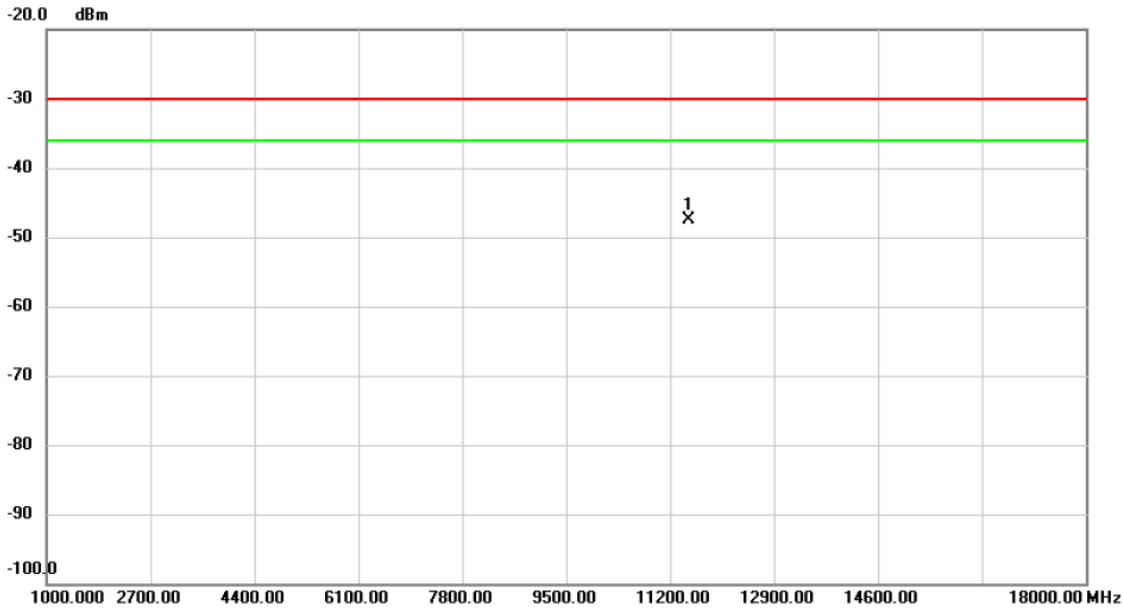
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		11644.550	-52.36	7.50	-44.86	-30.00	-14.86	peak	
2	*	17481.500	-50.65	17.15	-33.50	-30.00	-3.50	peak	

Test Mode	TX IEEE 802.11ac(VHT40) Mode 5755 MHz	Polarization	Vertical
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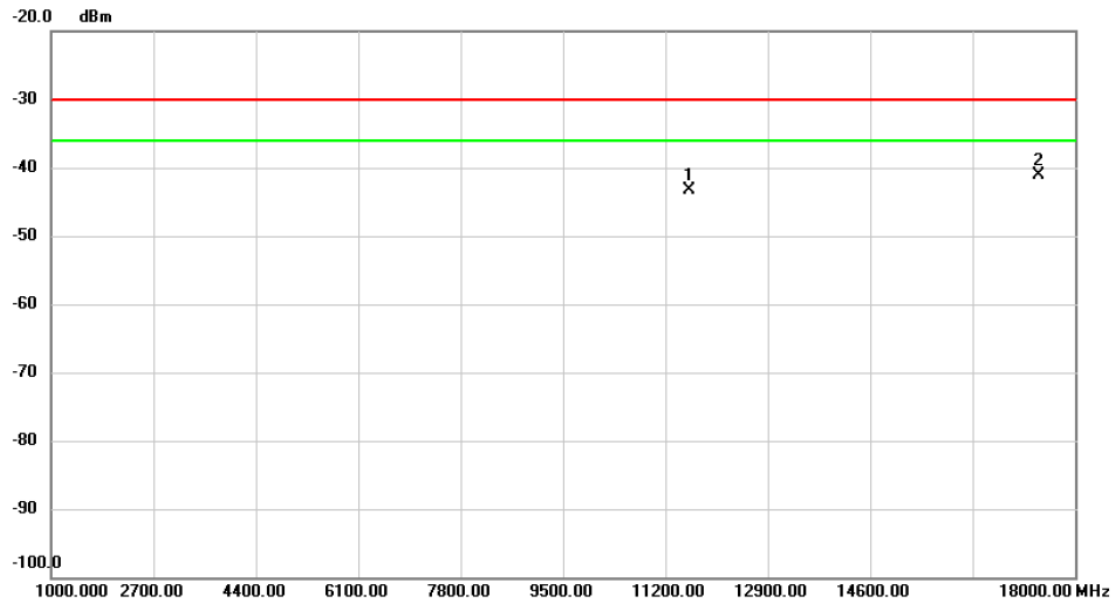
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	11509.400	-50.07	7.07	-43.00	-30.00	-13.00	peak	

Test Mode	TX IEEE 802.11ac(VHT40) Mode 5755 MHz	Polarization	Horizontal
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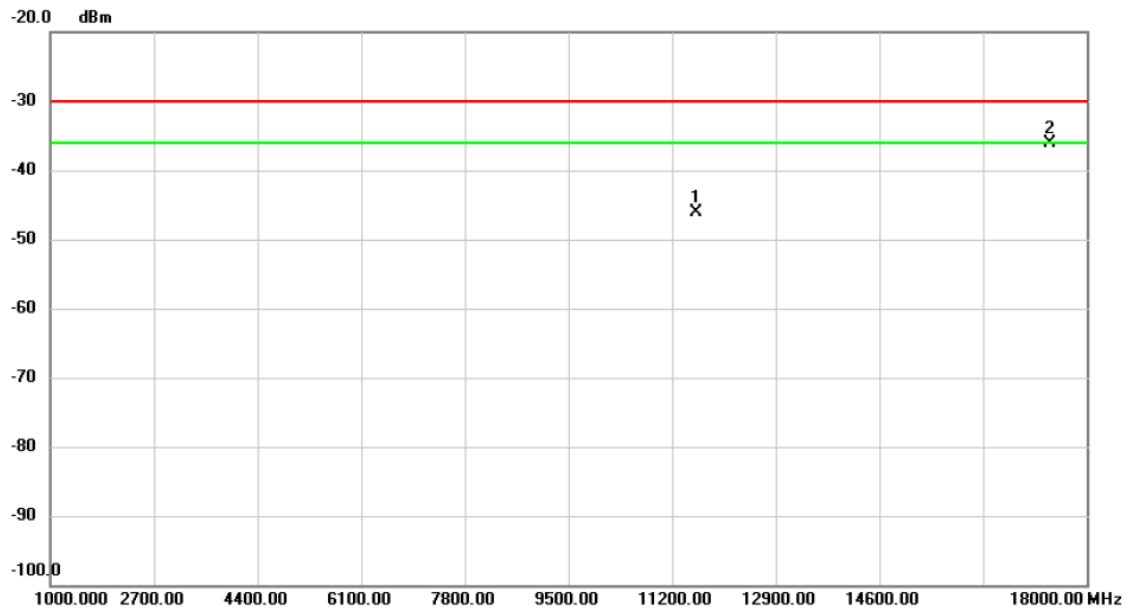
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	11507.700	-54.71	7.26	-47.45	-30.00	-17.45	peak	

Test Mode	TX IEEE 802.11ac(VHT40) Mode 5795 MHz	Polarization	Vertical
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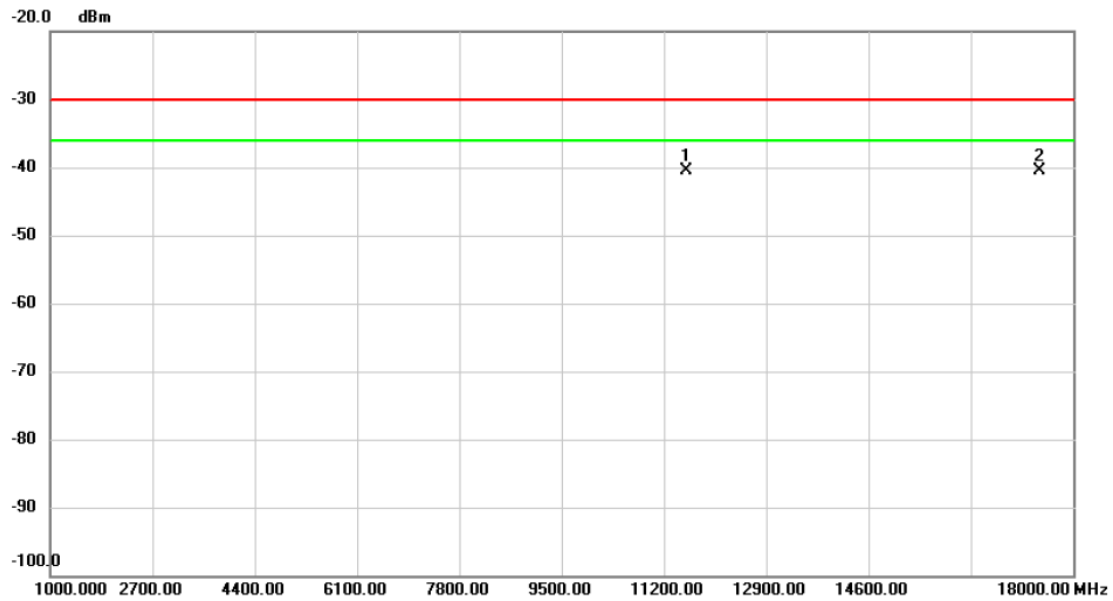
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		11595.250	-50.52	7.23	-43.29	-30.00	-13.29	peak	
2	*	17392.250	-57.94	16.93	-41.01	-30.00	-11.01	peak	

Test Mode	TX IEEE 802.11ac(VHT40) Mode 5795 MHz	Polarization	Horizontal
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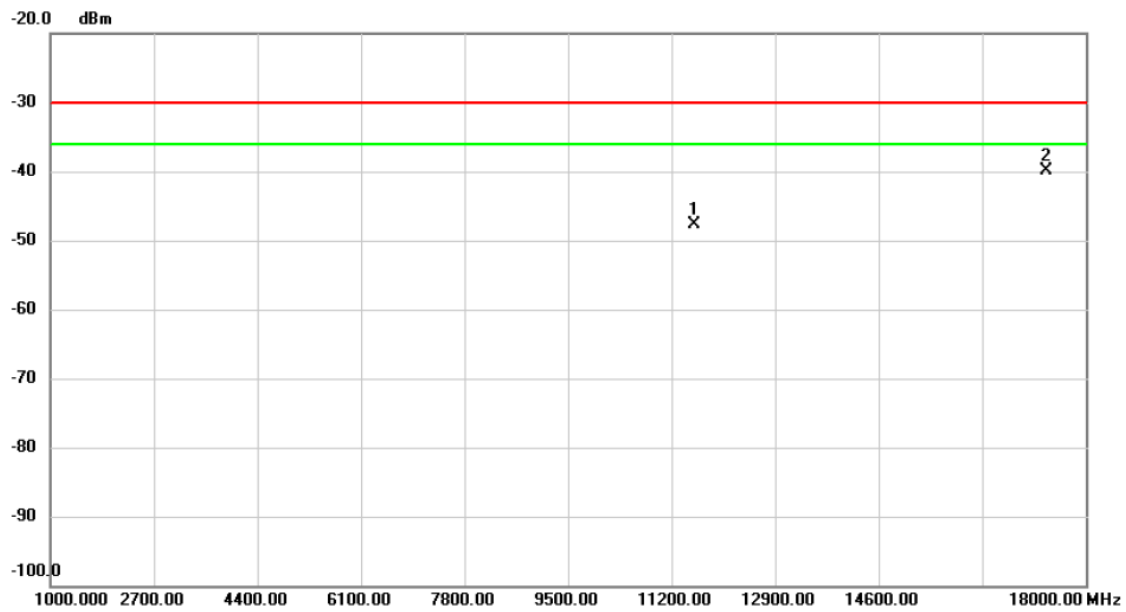
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		11588.450	-53.49	7.40	-46.09	-30.00	-16.09	peak	
2	*	17395.650	-52.91	16.85	-36.06	-30.00	-6.06	peak	

Test Mode	TX IEEE 802.11ac(VHT80) Mode 5775 MHz	Polarization	Vertical
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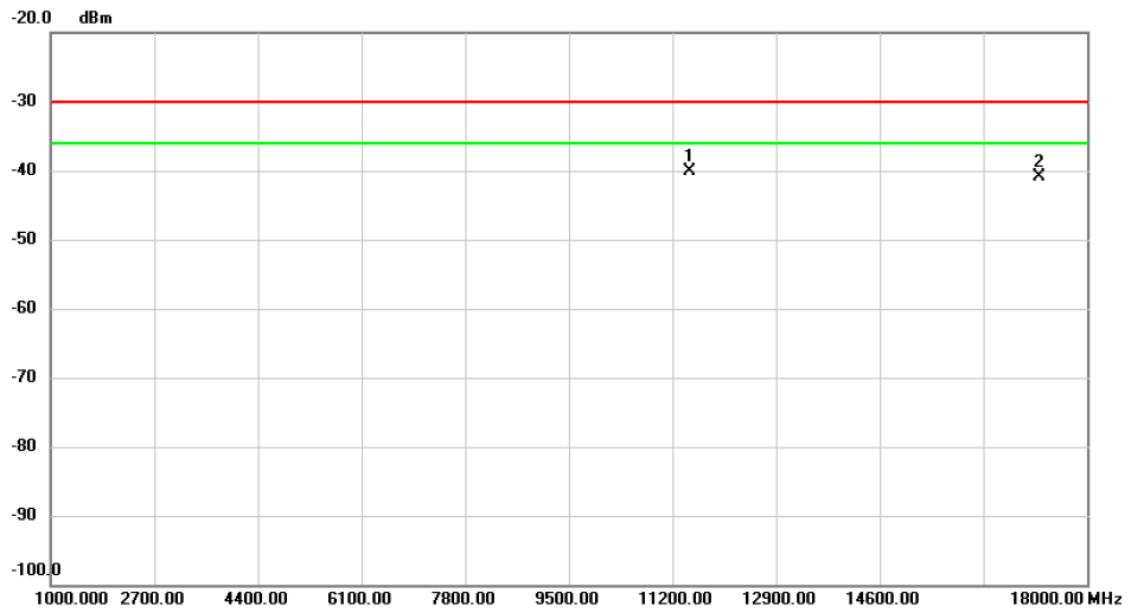
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		11582.500	-47.69	7.21	-40.48	-30.00	-10.48	peak	
2	*	17451.750	-57.61	17.20	-40.41	-30.00	-10.41	peak	

Test Mode	TX IEEE 802.11ac(VHT80) Mode 5775 MHz	Polarization	Horizontal
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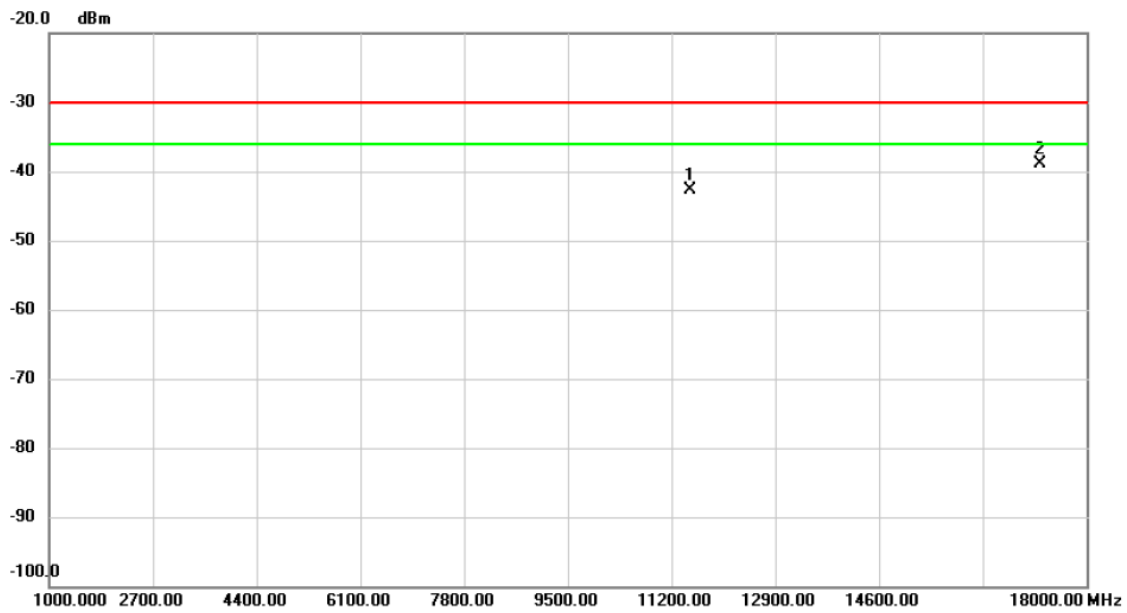
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		11566.350	-54.97	7.36	-47.61	-30.00	-17.61	peak	
2	*	17348.900	-56.59	16.69	-39.90	-30.00	-9.90	peak	

Test Mode	TX IEEE 802.11ax(HE20) Mode 5745 MHz	Polarization	Vertical
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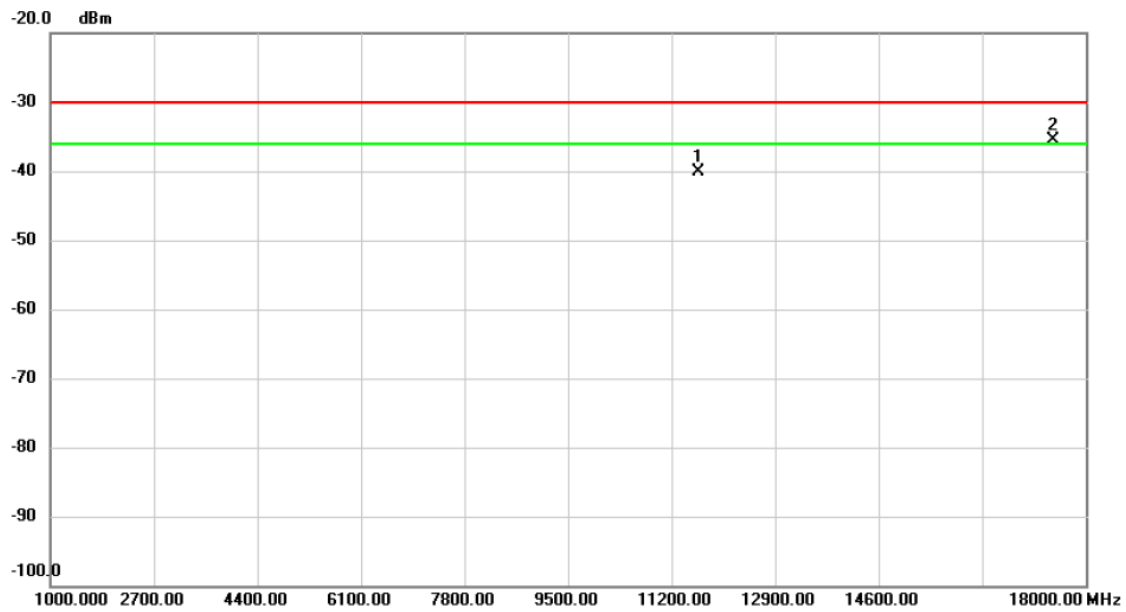
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	11489.000	-47.10	7.02	-40.08	-30.00	-10.08	peak	
2		17218.000	-57.03	16.16	-40.87	-30.00	-10.87	peak	

Test Mode	TX IEEE 802.11ax(HE20) Mode 5745 MHz	Polarization	Horizontal
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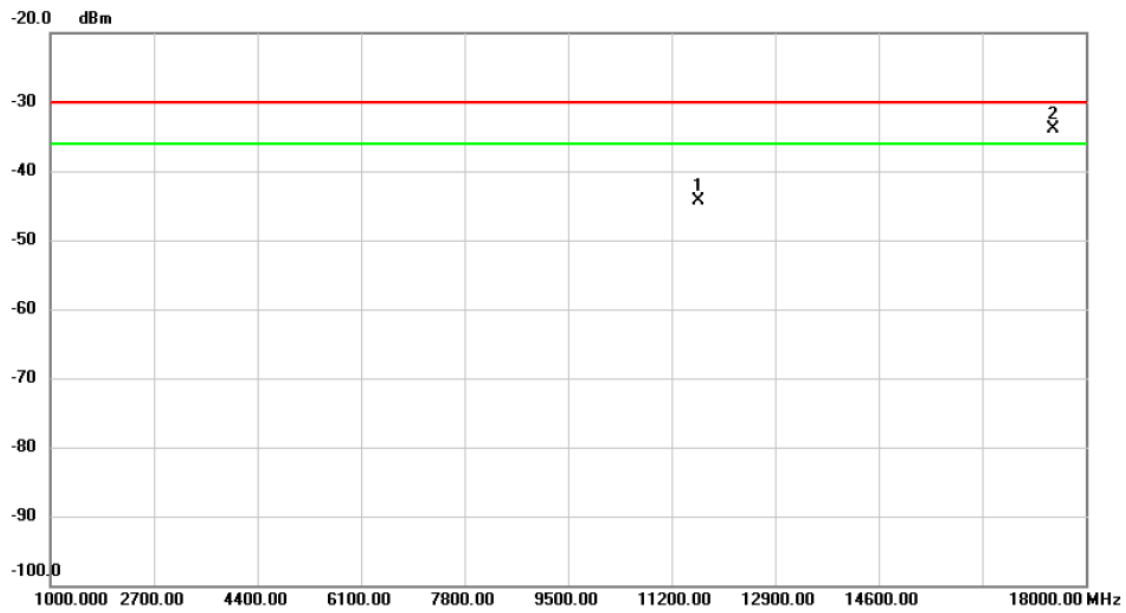
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		11494.950	-49.94	7.24	-42.70	-30.00	-12.70	peak	
2	*	17242.650	-55.14	16.32	-38.82	-30.00	-8.82	peak	

Test Mode	TX IEEE 802.11ax(HE20) Mode 5825 MHz	Polarization	Vertical
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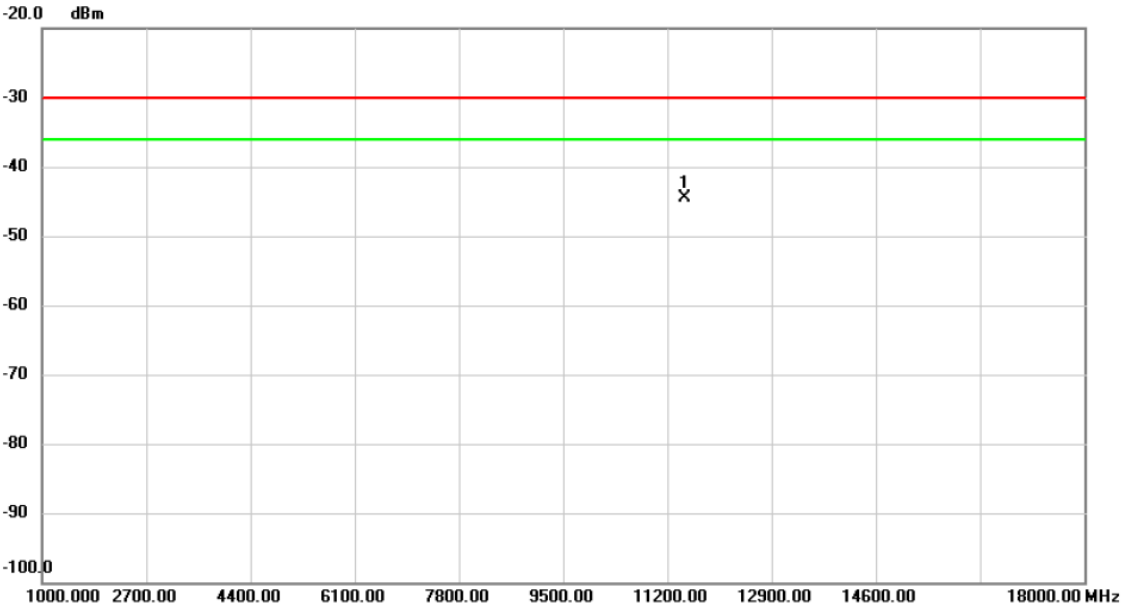
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1		11649.650	-47.48	7.33	-40.15	-30.00	-10.15	peak	
2	*	17474.700	-52.76	17.30	-35.46	-30.00	-5.46	peak	

Test Mode	TX IEEE 802.11ax(HE20) Mode 5825 MHz	Polarization	Horizontal
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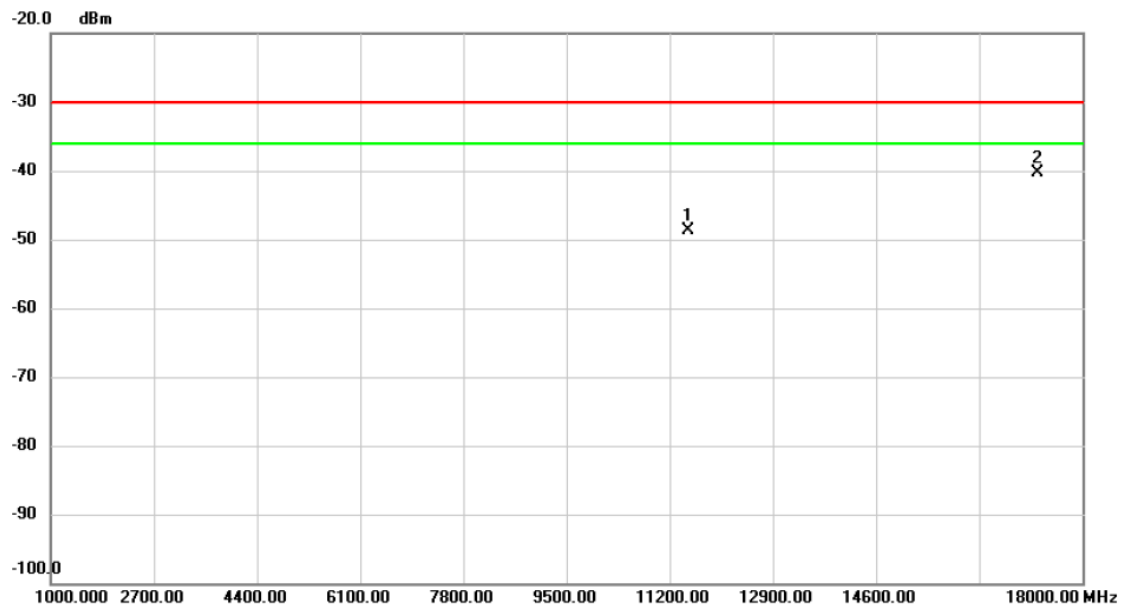
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		11649.650	-51.79	7.50	-44.29	-30.00	-14.29	peak	
2	*	17469.600	-51.01	17.10	-33.91	-30.00	-3.91	peak	

Test Mode	TX IEEE 802.11ax(HE40) Mode 5755 MHz	Polarization	Vertical
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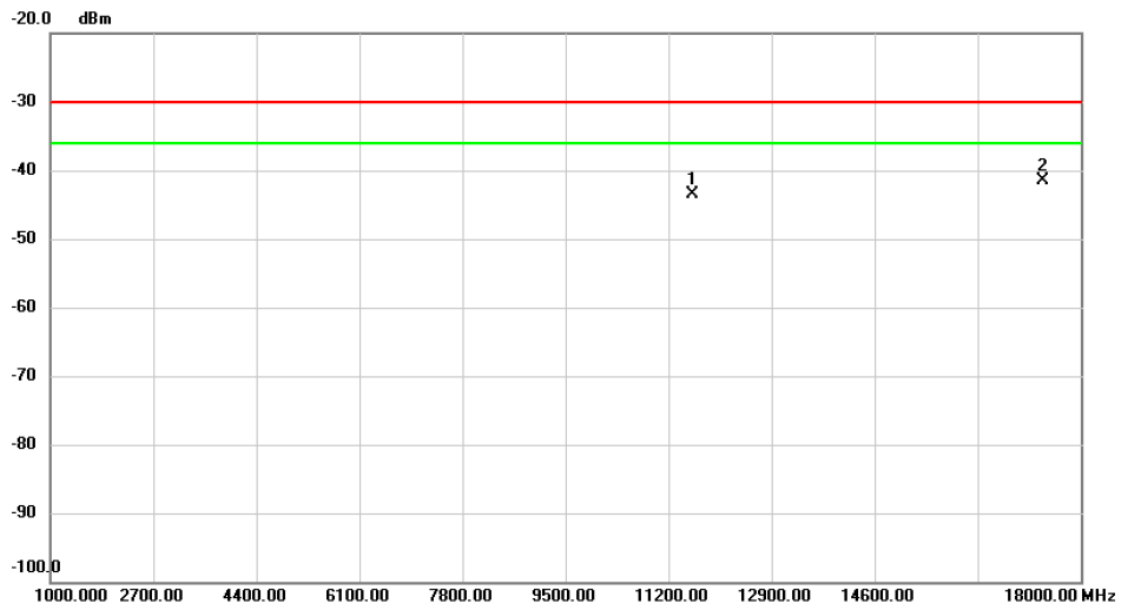
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	11489.850	-51.58	7.02	-44.56	-30.00	-14.56	peak	

Test Mode	TX IEEE 802.11ax(HE40) Mode 5755 MHz	Polarization	Horizontal
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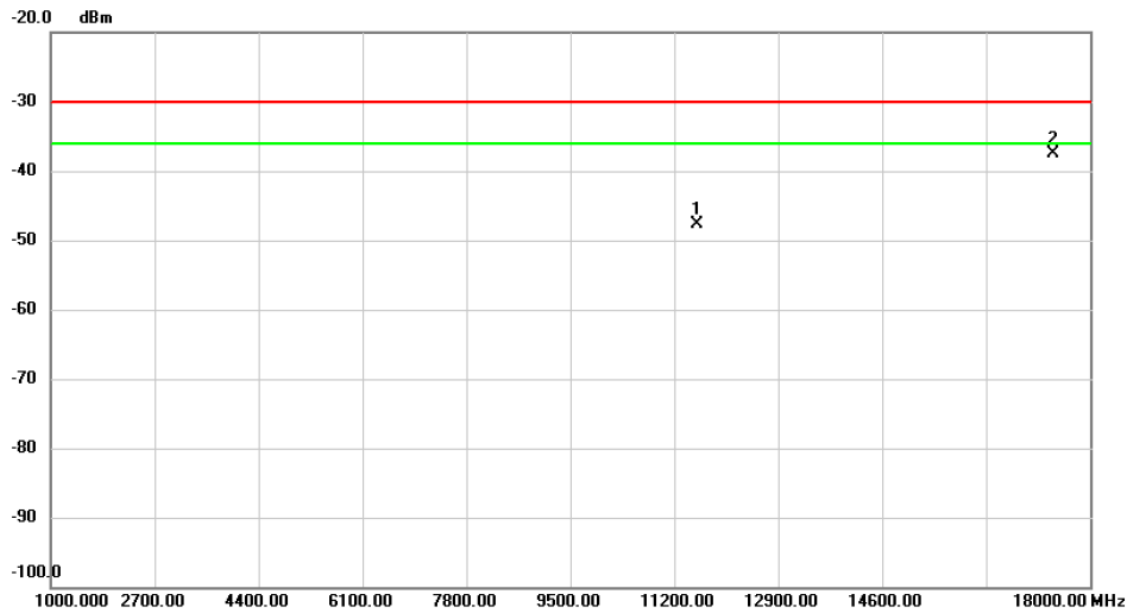
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		11500.900	-55.85	7.25	-48.60	-30.00	-18.60	peak	
2	*	17252.000	-56.60	16.35	-40.25	-30.00	-10.25	peak	

Test Mode	TX IEEE 802.11ax(HE40) Mode 5795 MHz	Polarization	Vertical
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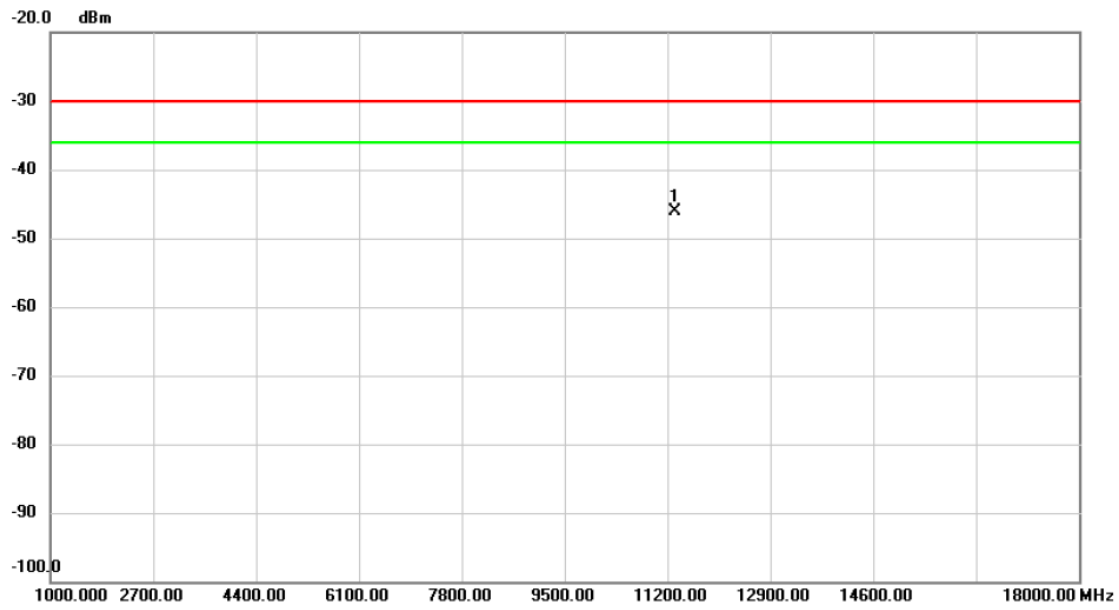
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1		11591.000	-50.76	7.22	-43.54	-30.00	-13.54	peak	
2	*	17386.300	-58.41	16.91	-41.50	-30.00	-11.50	peak	

Test Mode	TX IEEE 802.11ax(HE40) Mode 5795 MHz	Polarization	Horizontal
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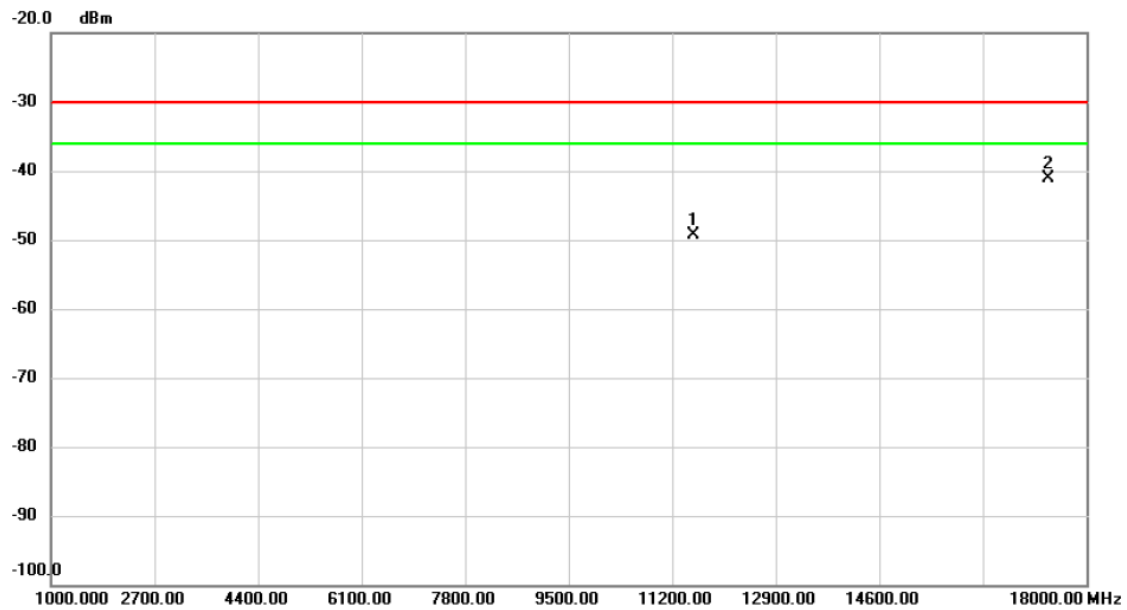
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		11574.850	-55.16	7.38	-47.78	-30.00	-17.78	peak	
2	*	17388.850	-54.27	16.83	-37.44	-30.00	-7.44	peak	

Test Mode	TX IEEE 802.11ax(HE80) Mode 5775 MHz	Polarization	Vertical
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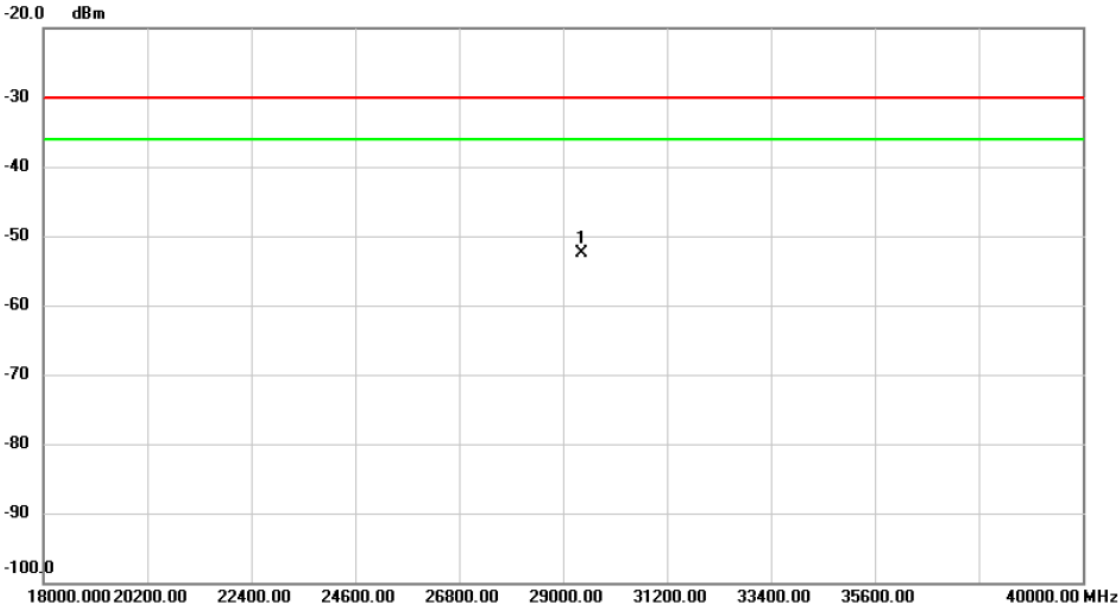
No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
	MHz	dBm	dB	dBm	dBm	dB		
1 *	11315.600	-52.71	6.59	-46.12	-30.00	-16.12	peak	

Test Mode	TX IEEE 802.11ax(HE80) Mode 5775 MHz	Polarization	Horizontal
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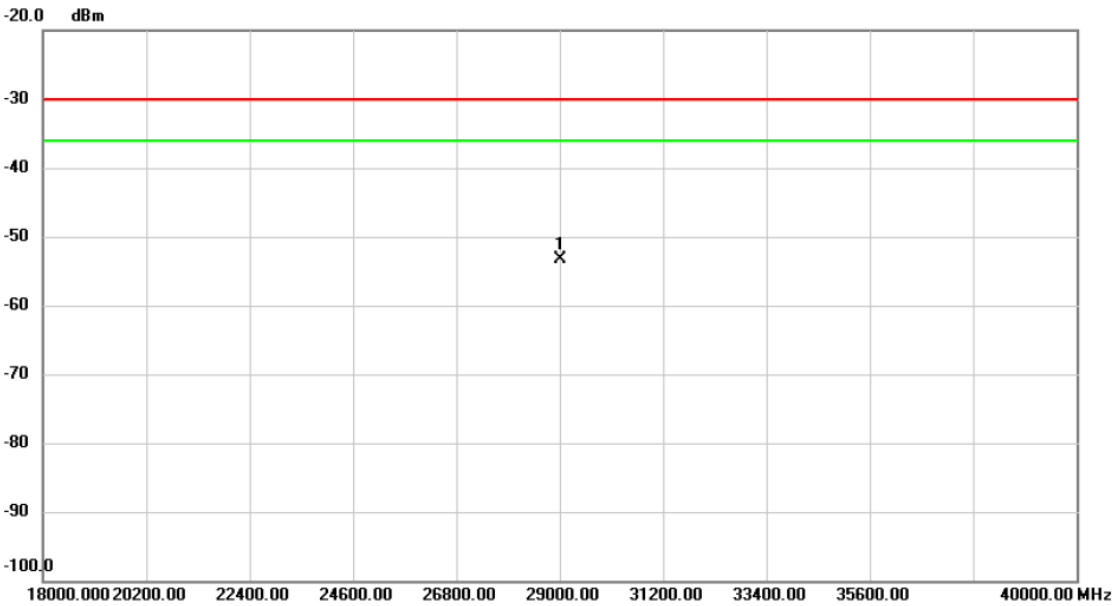
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		11548.500	-56.68	7.33	-49.35	-30.00	-19.35	peak	
2	*	17372.700	-57.79	16.77	-41.02	-30.00	-11.02	peak	

Test Mode	TX IEEE 802.11ac(VHT20) Mode 5825 MHz	Polarization	Vertical
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No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	29392.700	-54.27	1.69	-52.58	-30.00	-22.58	peak	

Test Mode	TX IEEE 802.11ac(VHT20) Mode 5825 MHz	Polarization	Horizontal
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No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	29003.300	-54.64	1.42	-53.22	-30.00	-23.22	peak	

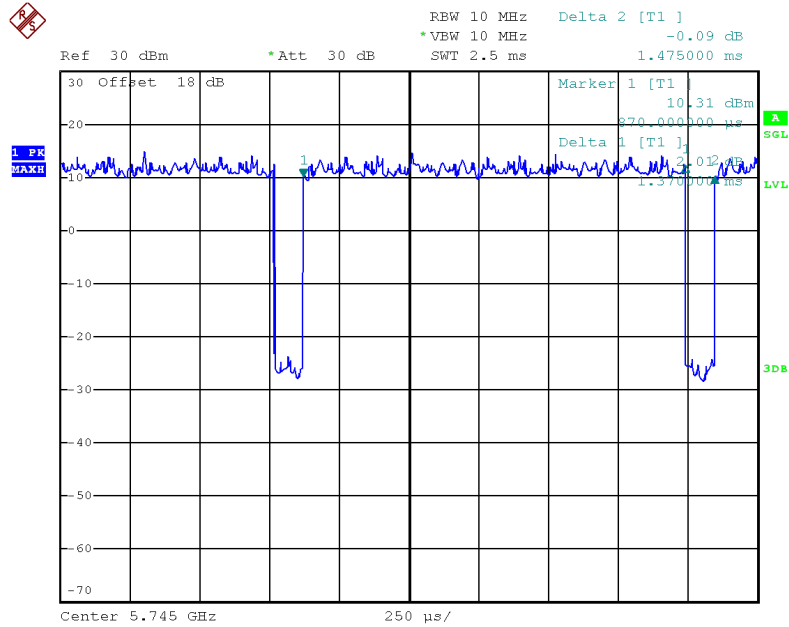
## **APPENDIX F - UNWANTED EMISSIONS IN THE SPURIOUS DOMAIN - STANDBY (ABOVE 1000MHZ)**

**Test Mode: N/A**

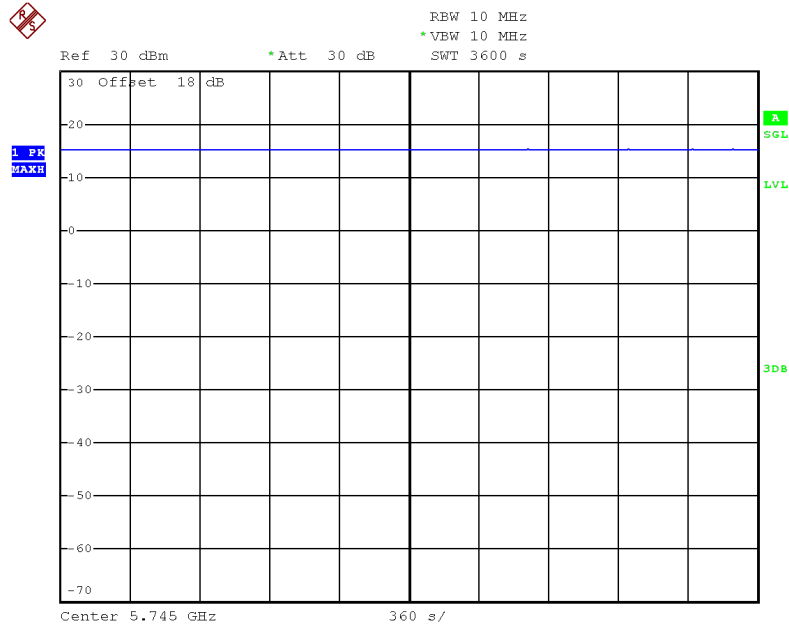
Note: "N/A" denotes test is not applicable to this device.

## **APPENDIX G - DUTY CYCLE**

Test Mode TX IEEE 802.11a Mode 5745 MHz



Date: 18.FEB.2024 14:00:42



Date: 18.FEB.2024 15:03:53

On time (ms)	Total time (ms)	1H On time (s)	Duty Cycle (%)	Limit	Test Result
1.370	1.475	3600	92.88	No Restriction	Pass

## **APPENDIX H - ADJACENT CHANNEL SELECTIVITY**

Test Mode	RX IEEE 802.11a Mode 5785 MHz
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Frequency (MHz)	99% OBW (MHz)				
5785	16.40				
Adjacent channel centre freq. (MHz)		k(-40<k<0) (dB)	Power level of unwanted signal (dBm)	Limit (dBm)	Result
Lower	5765	-27.36	-41.00	-57.36	Complies
Upper	5805	-27.42	-40.00	-57.42	Complies

## **APPENDIX I - BLOCKING**

Test Mode	RX IEEE 802.11a Mode 5745 MHz
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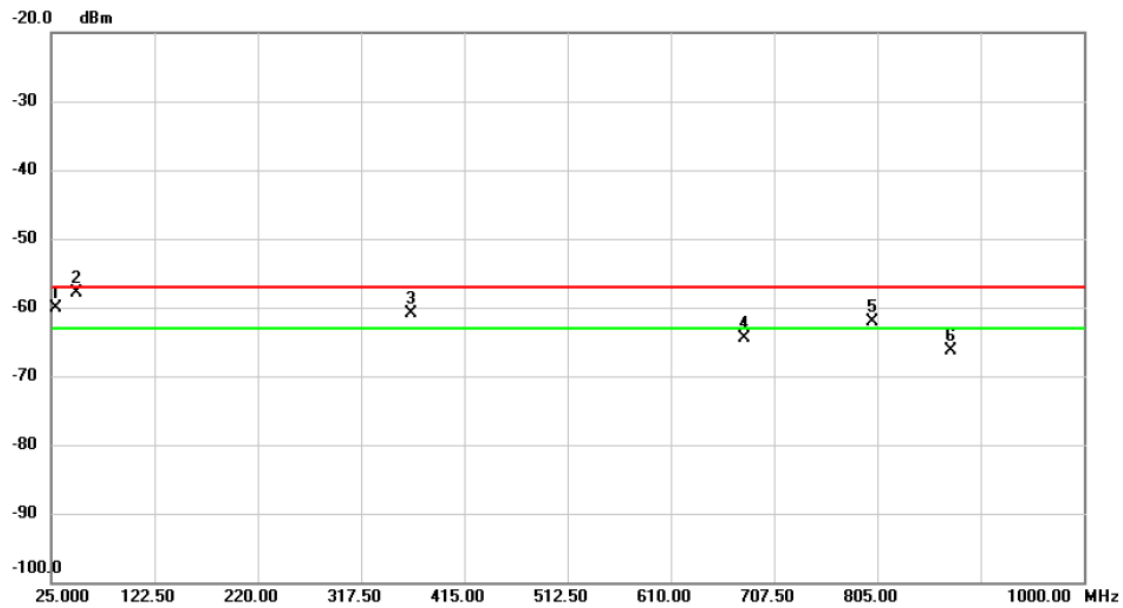
Frequency (MHz)	99% OBW (MHz)	99% OBW-F <sub>L</sub> (MHz)	99% OBW-F <sub>H</sub> (MHz)		
5745	16.40	5736.80	5753.20		
Times of OBW	Unwanted signal freq. (MHz)	k(-40<k<0) (dB)	Power level of unwanted signal (dBm)	Limit (dBm)	Result
10	5572.80	-27.07	-31.00	-57.07	Complies
	5917.20	-27.59	-33.00	-57.59	Complies
20	5408.80	-26.81	-26.00	-56.81	Complies
	6081.20	-27.83	-25.00	-57.83	Complies
50	4916.80	-25.98	-23.00	-55.98	Complies
	6573.20	-28.50	-27.00	-58.50	Complies

Test Mode	RX IEEE 802.11a Mode 5825 MHz
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Frequency (MHz)	99% OBW (MHz)	99% OBW-F <sub>L</sub> (MHz)	99% OBW-F <sub>H</sub> (MHz)		
5825	16.40	5816.80	5833.20		
Times of OBW	Unwanted signal freq. (MHz)	k(-40<k<0) (dB)	Power level of unwanted signal (dBm)	Limit (dBm)	Result
10	5652.80	-27.19	-34.00	-57.19	Complies
	5997.20	-27.71	-25.00	-57.71	Complies
20	5488.80	-26.94	-23.00	-56.94	Complies
	6161.20	-27.94	-26.00	-57.94	Complies
50	4996.80	-26.12	-21.00	-56.12	Complies
	6653.20	-28.61	-24.00	-58.61	Complies

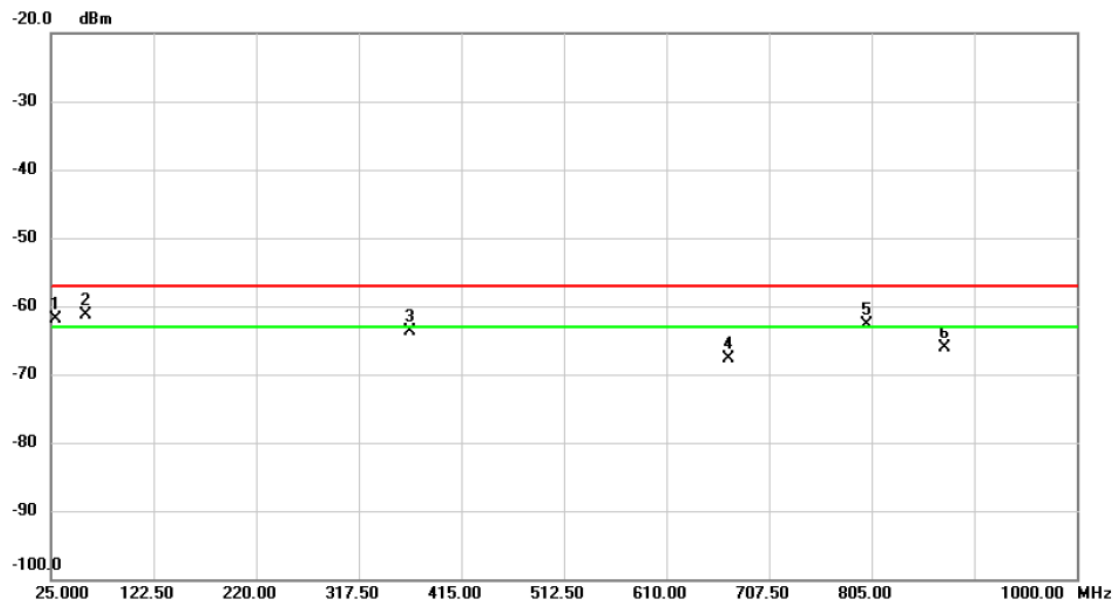
## **APPENDIX J - SPURIOUS EMISSIONS - RECEIVER (25MHZ TO 1000MHZ)**

Test Mode	RX IEEE 802.11ac(VHT20) Mode 5745 MHz	Polarization	Vertical
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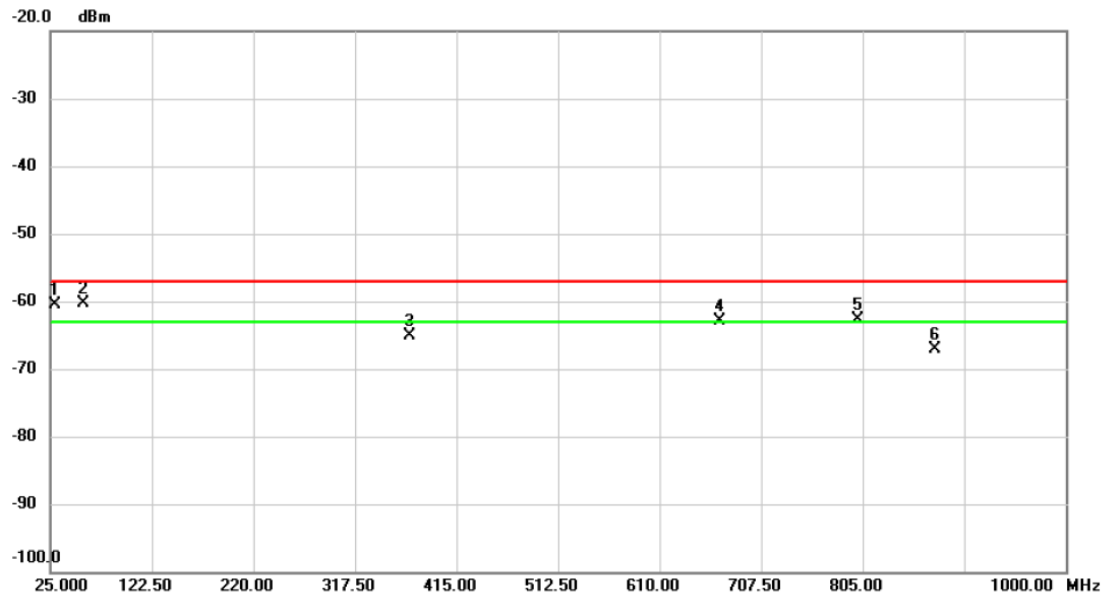
No. Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1 !	28.997	-57.86	-2.15	-60.01	-57.00	-3.01	peak	
2 *	48.888	-52.37	-5.60	-57.97	-57.00	-0.97	peak	
3 !	365.567	-55.17	-5.82	-60.99	-57.00	-3.99	peak	
4	679.322	-63.74	-0.74	-64.48	-57.00	-7.48	peak	
5 !	800.028	-63.31	1.12	-62.19	-57.00	-5.19	peak	
6	875.005	-67.65	1.42	-66.23	-57.00	-9.23	peak	

Test Mode	RX IEEE 802.11ac(VHT20) Mode 5745 MHz	Polarization	Horizontal
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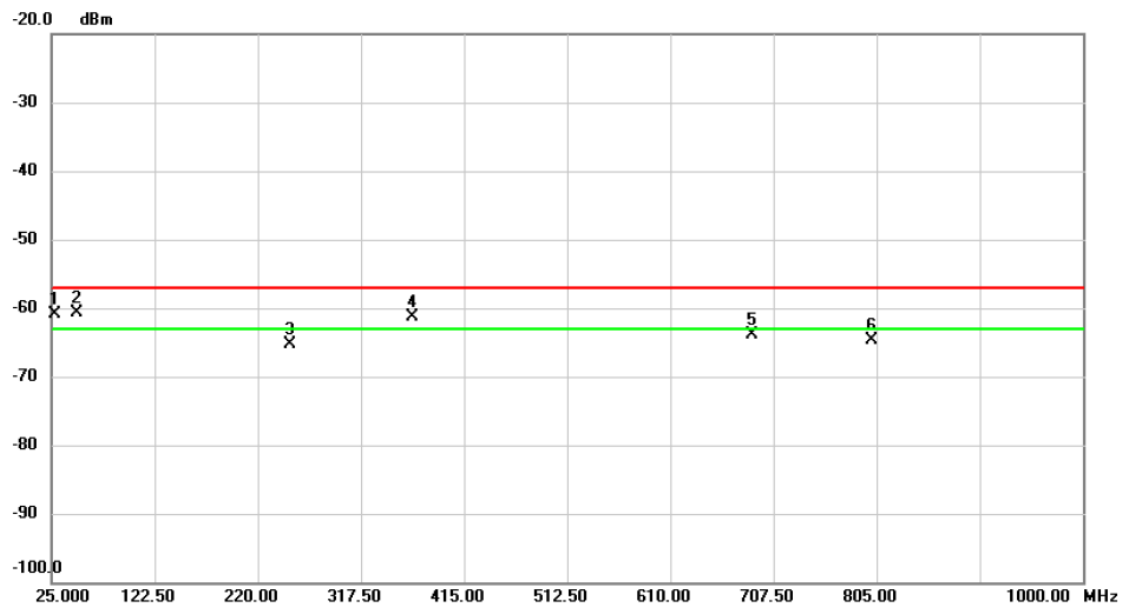
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	!	29.095	-59.74	-2.15	-61.89	-57.00	-4.89	peak	
2	*	58.053	-51.98	-9.35	-61.33	-57.00	-4.33	peak	
3		366.543	-57.87	-5.82	-63.69	-57.00	-6.69	peak	
4		668.987	-66.83	-0.91	-67.74	-57.00	-10.74	peak	
5	!	800.028	-63.72	1.04	-62.68	-57.00	-5.68	peak	
6		875.005	-67.54	1.48	-66.06	-57.00	-9.06	peak	

Test Mode	RX IEEE 802.11ac(VHT20) Mode 5825 MHz	Polarization	Vertical
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No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin	Detector	Comment
		MHz	dBm	dB	dBm	dBm	dB		
1	!	29.192	-58.39	-2.15	-60.54	-57.00	-3.54	peak	
2	*	57.078	-53.51	-6.75	-60.26	-57.00	-3.26	peak	
3		370.150	-59.54	-5.62	-65.16	-57.00	-8.16	peak	
4	!	667.525	-61.97	-0.85	-62.82	-57.00	-5.82	peak	
5	!	800.028	-63.80	1.12	-62.68	-57.00	-5.68	peak	
6		875.005	-68.52	1.42	-67.10	-57.00	-10.10	peak	

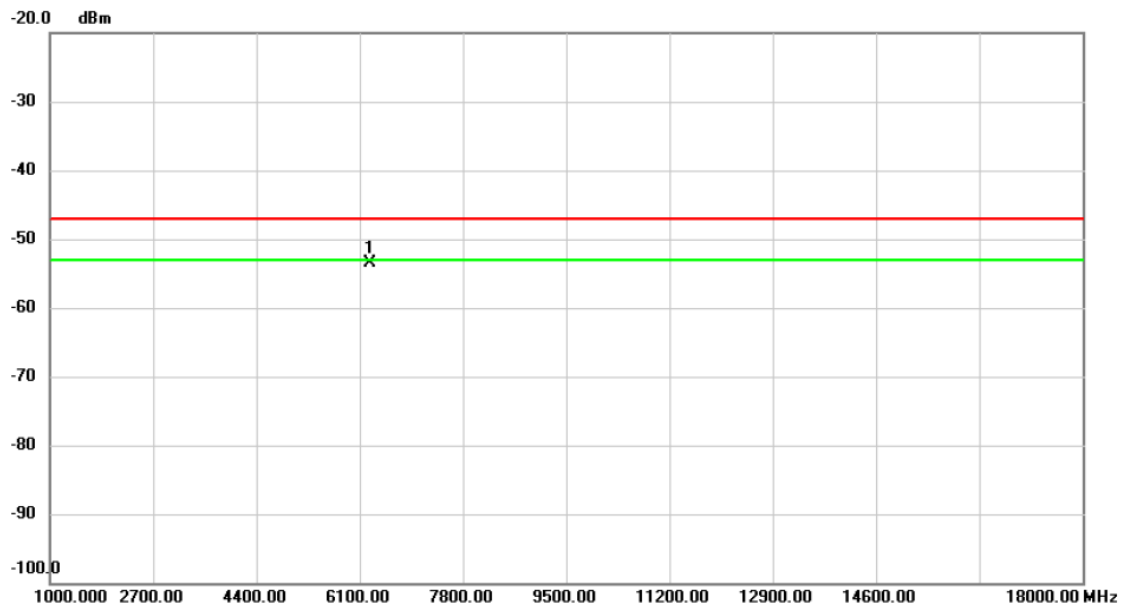
Test Mode	RX IEEE 802.11ac(VHT20) Mode 5825 MHz	Polarization	Horizontal
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No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1	!	28.608	-58.67	-2.15	-60.82	-57.00	-3.82	peak	
2	*	48.400	-53.13	-7.60	-60.73	-57.00	-3.73	peak	
3		250.030	-56.86	-8.36	-65.22	-57.00	-8.22	peak	
4	!	365.762	-55.45	-5.83	-61.28	-57.00	-4.28	peak	
5		687.513	-63.04	-0.80	-63.84	-57.00	-6.84	peak	
6		800.028	-65.80	1.04	-64.76	-57.00	-7.76	peak	

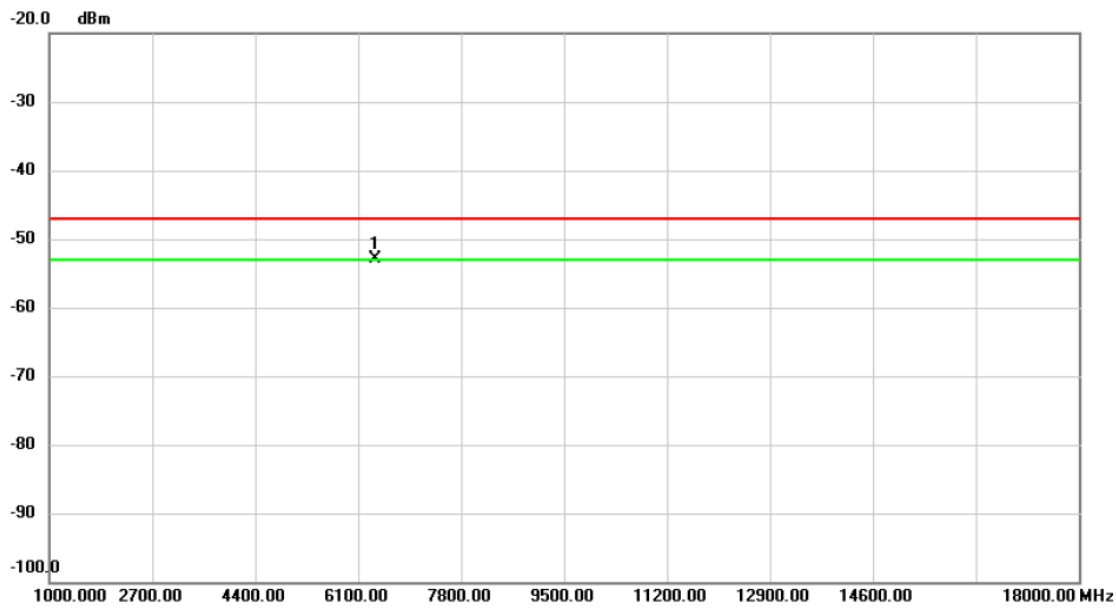
## **APPENDIX K - SPURIOUS EMISSIONS - RECEIVER (ABOVE 1000MHZ)**

Test Mode	RX IEEE 802.11ac(VHT20) Mode 5745 MHz	Polarization	Vertical
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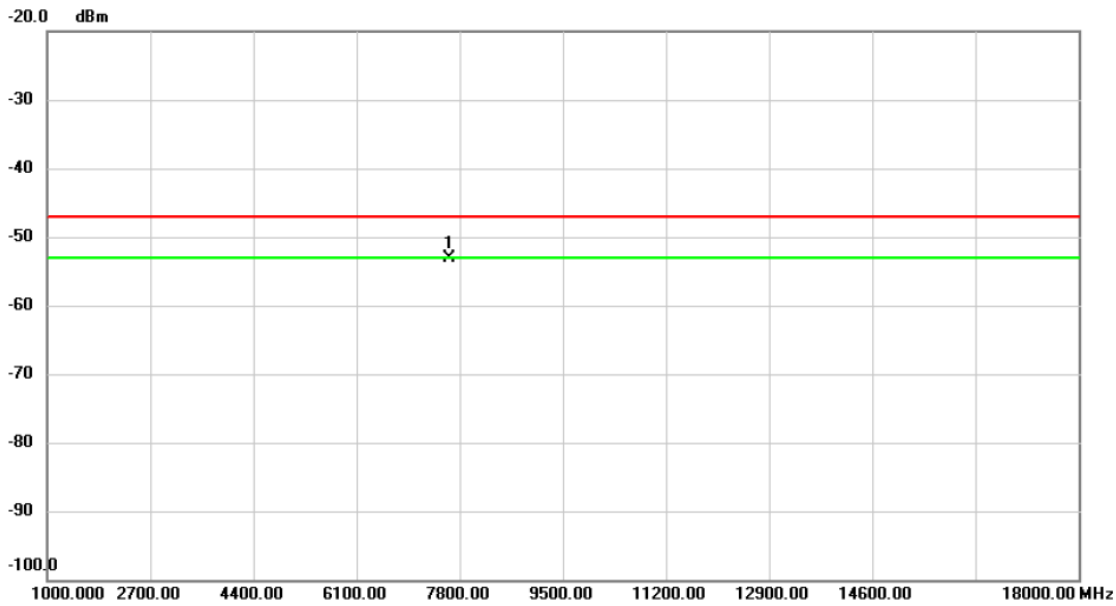
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	6261.500	-54.09	0.56	-53.53	-47.00	-6.53	peak	

Test Mode	RX IEEE 802.11ac(VHT20) Mode 5745 MHz	Polarization	Horizontal
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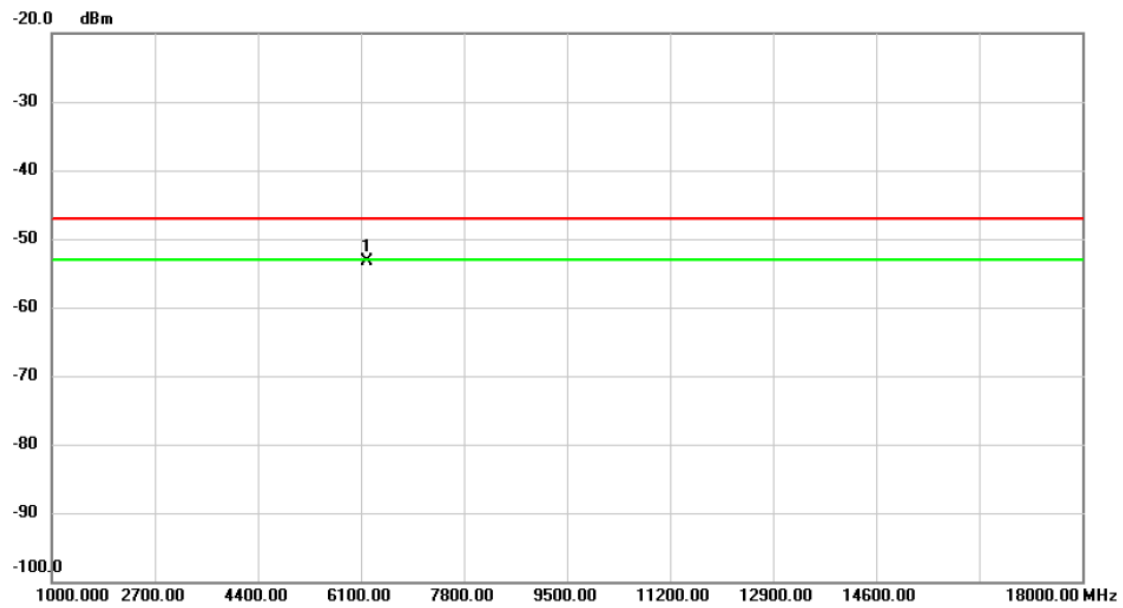
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	6382.200	-53.43	0.44	-52.99	-47.00	-5.99	peak	

Test Mode	RX IEEE 802.11ac(VHT20) Mode 5825 MHz	Polarization	Vertical
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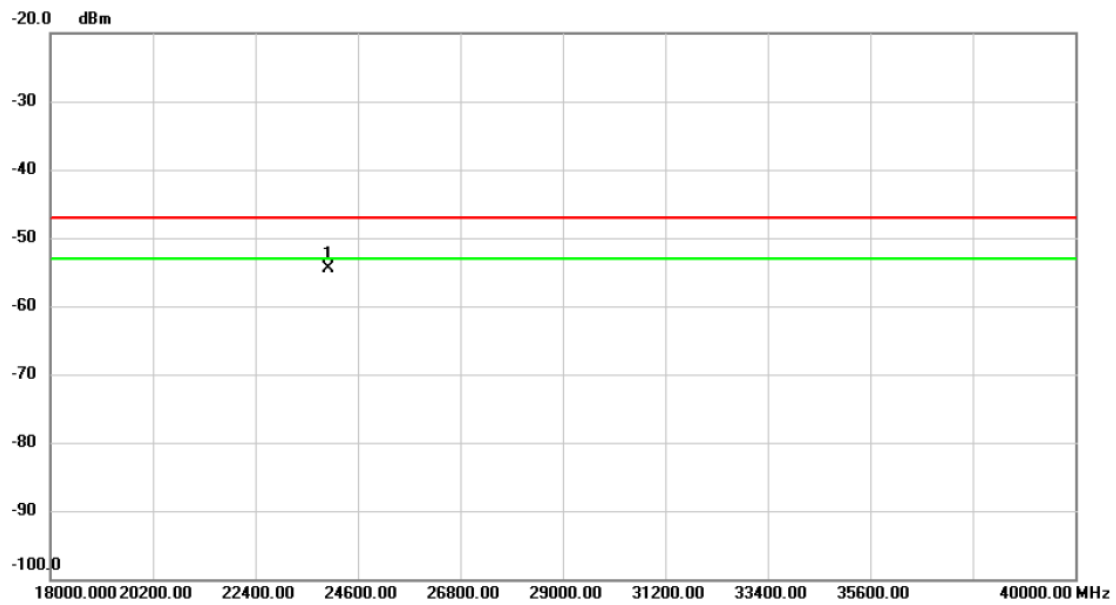
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1	*	7634.250	-54.56	1.38	-53.18	-47.00	-6.18	peak	

Test Mode	RX IEEE 802.11ac(VHT20) Mode 5825 MHz	Polarization	Horizontal
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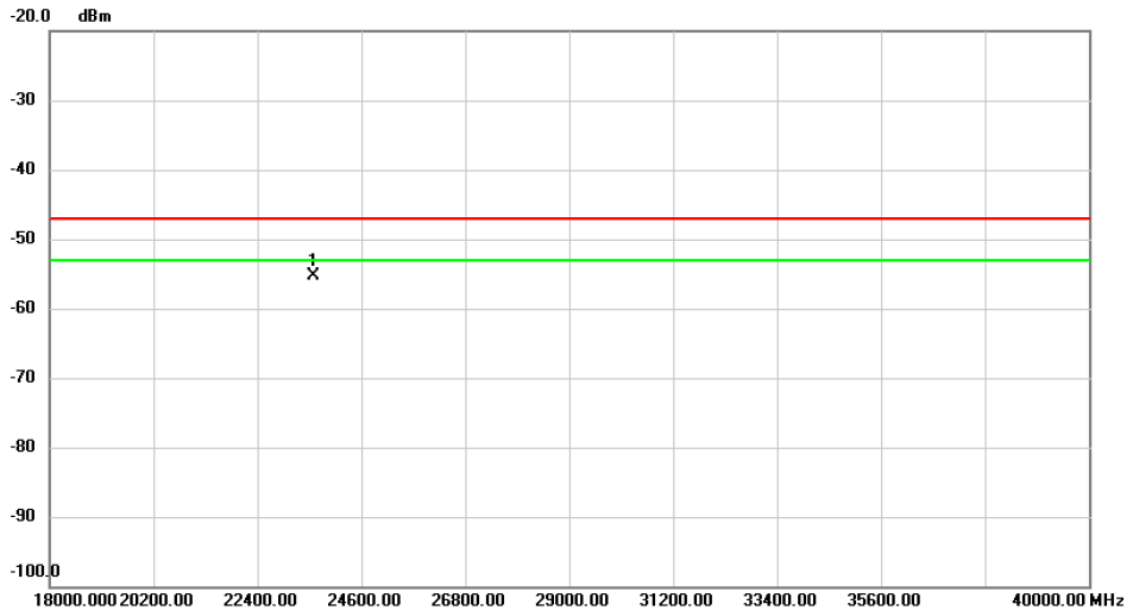
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	6206.250	-54.18	0.85	-53.33	-47.00	-6.33	peak	

Test Mode	RX IEEE 802.11ac(VHT20) Mode 5825 MHz	Polarization	Vertical
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No. Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1 *	23967.500	-58.22	3.72	-54.50	-47.00	-7.50	peak	

Test Mode	RX IEEE 802.11ac(VHT20) Mode 5825 MHz	Polarization	Horizontal
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No. Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1 *	23600.100	-57.88	2.51	-55.37	-47.00	-8.37	peak	

End of Test Report