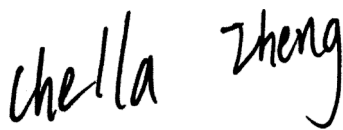


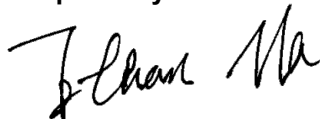
# ETSI EN 303 687 Test Report

**Project No.** : 2208C076  
**Equipment** : AX5700 Tri-Band Gigabit Wi-Fi 6E Router  
**Brand Name** : Tenda  
**Test Model** : RX27 Pro  
**Series Model** : TX27 Pro  
**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** : Aug. 12, 2022  
**Date of Test** : Aug. 15, 2022 ~ Oct. 15, 2022  
**Issued Date** : Nov. 03, 2022  
**Report Version** : R00  
**Test Sample** : Engineering Sample No.: DG20220812125 for radiated, DG20220817102 for conducted.  
**Standard(s)** : Draft ETSI EN 303 687 V0.0.13 (2021-06)

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



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**Declaration**

**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).

**BTL's** reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

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**BTL's** laboratory quality assurance procedures are in compliance with the **ISO/IEC 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

**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-4-2208C076	R00	Original Report.	Nov. 03, 2022	Valid

## 1. RF EMISSIONS MEASUREMENT

### 1.1 TEST FACILITY

The test facilities used to collect the test data in this report is **DG-CB15/TR15/TR17** at the location of No.3, Jinshagang 1st Road, Dalang, Dongguan, Guangdong, 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 90% 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 %,  $U=2 \times U_c(y)$ .

The BTL measurement uncertainty as below table:

Item	Uncertainty
Radio Frequency	$\pm 53.46$ Hz
RF Power, Conducted	$\pm 0.95$ dB
RF Power, Radiated	$\pm 3.84$ dB
Power Density	$\pm 0.86$ dB
Temperature	$\pm 0.08$ °C
Humidity	$\pm 1.5$ %
Time	$\pm 0.58$ %
Spurious Emissions, Conducted	$\pm 2.71$ dB
Spurious Emissions, Radiated $f \leq 1$ GHz	$\pm 3.50$ dB
Spurious Emissions, Radiated $1\text{GHz} < f \leq 18\text{GHz}$	$\pm 3.54$ dB
Spurious Emissions, Radiated $18\text{GHz} < f \leq 26.5\text{GHz}$	$\pm 3.94$ dB

### 1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Temperature	Humidity	Test Voltage	Tested By
Nominal centre frequencies	Normal & Extreme	59%	DC 12V	Mark Wu
RF output power	Normal & Extreme	53.6-69.8%	DC 12V	Berry jiang Complex Qin
Power spectral density	24°C	59%	DC 12V	Mark Wu
Transmitter unwanted emissions outside the 6 GHz RLAN band	23°C	45%	AC 230V/50Hz	Chef Zhang
Transmitter unwanted emissions within the 6 GHz RLAN band	24°C	59%	DC 12V	Mark Wu
Receiver spurious emissions	23°C	45%	AC 230V/50Hz	Chef Zhang
Channel access mechanism	25°C	53%	DC 12V	Mark Wu
Receiver blocking	22.6°C	59%	DC 12V	Mark Wu
Receiver adjacent channel selectivity	24°C	59%	DC 12V	Mark Wu
Mechanical and electrical design	24°C	59%	DC 12V	Mark Wu

## 1.4 TEST CHANNEL

IEEE 802.11ax(HE20)		
Test Channel	EUT Channel	Test Frequency
Low	CH01	5955 MHz
High	CH93	6415 MHz

IEEE 802.11ax(HE40)		
Test Channel	EUT Channel	Test Frequency
Low	CH03	5965 MHz
High	CH91	6405 MHz

IEEE 802.11ax(HE80)		
Test Channel	EUT Channel	Test Frequency
Low	CH07	5985 MHz
High	CH87	6385 MHz

IEEE 802.11ax(HE160)		
Test Channel	EUT Channel	Test Frequency
Low	CH15	6025 MHz
High	CH79	6345 MHz



## 1.5 TEST METHODOLOGY AND RESULTS


Harmonised Standard Draft ETSI EN 303 687					
Requirement			Requirement Conditionality		Observations
No	Description	Reference: Clause No	U/C	Condition	
1	Nominal centre frequencies/nominal bandwidth	4.3.1	U	-	Pass
2	RF output power	4.3.2	U	-	Pass
3	Power spectral density	4.3.3	U	-	Pass
4	Transmitter unwanted emissions outside the 6 GHz RLAN band	4.3.4.1 & 4.3.4.2	U	-	Pass
5	Transmitter unwanted emissions within the 6 GHz RLAN band	4.3.4.3	U	-	Pass
6	Receiver spurious emissions	4.3.5	U	-	Pass
7	Channel access mechanism	4.3.6	U	-	Pass
8	Receiver blocking	4.3.7	U	-	Pass
9	Receiver adjacent channel selectivity	4.3.8	U	-	Pass
10	Mechanical and electrical design	4.3.9	U	-	Pass (Note 3)

Note:

- 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 that it does not apply to this device.
- Equipment categories:
  - ☒ a) LPI category device
    - ☒ LPI AP/bridge sub-category device
      - ☒ Supplied from a wired connection
      - ☐ Designed with one or more integral antenna(s)
 (LPI AP/bridge sub-category devices shall be supplied from a wired connection and shall not be battery powered. And LPI AP/bridge sub-category devices shall be designed with one or more integral antenna(s) as a fixed part of the equipment, i.e., without externally accessible connectors to prevent the connection of another antenna by a user.)
    - ☐ LPI client sub-category device
  - ☐ b) VLP category device

## 2. GENERAL INFORMATION

### 2.1 GENERAL DESCRIPTION OF EUT

Equipment	AX5700 Tri-Band Gigabit Wi-Fi 6E Router
Brand Name	Tenda
Test Model	RX27 Pro
Series Model	TX27 Pro
Model Difference(s)	Only differ in model name.
Power Source	DC voltage supplied from AC adapter. Model: BN026-A24012E (EU) Model: BN026-A24012B (UK)
Power Rating	I/P: 100-240V~ 50/60Hz 0.7A    O/P: 12.0V  2.0A
Operation Frequency Band(s)	5945 MHz ~ 6425 MHz
Modulation Type	IEEE 802.11ax: OFDMA
Bit Rate of Transmitter	IEEE 802.11ax: up to 2402 Mbps
Max. e.i.r.p. _Non Beamforming	IEEE 802.11ax(HE20): 22.80 dBm (190.55 mW) IEEE 802.11ax(HE40): 22.96 dBm (197.70 mW) IEEE 802.11ax(HE80): 22.96 dBm (197.70 mW) IEEE 802.11ax(HE160): 22.97 dBm (198.15 mW)
Max. e.i.r.p. _Beamforming	IEEE 802.11ax(HE20): 22.69 dBm (185.78 mW) IEEE 802.11ax(HE40): 22.75 dBm (188.36 mW) IEEE 802.11ax(HE80): 22.78 dBm (189.67 mW) IEEE 802.11ax(HE160): 22.75 dBm (188.36 mW)

Note:

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

#### 2. Channel List:

Band 5					
IEEE 802.11ax(HE20)					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	5955	33	6115	65	6275
5	5975	37	6135	69	6295
9	5995	41	6155	73	6315
13	6015	45	6175	77	6335
17	6035	49	6195	81	6355
21	6055	53	6215	85	6375
25	6075	57	6235	89	6395
29	6095	61	6255	93	6415

Band 5					
IEEE 802.11ax(HE40)					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
3	5965	35	6125	67	6285
11	6005	43	6165	75	6325
19	6045	51	6205	83	6365
27	6085	59	6245	91	6405

Band 5					
IEEE 802.11ax(HE80)					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
7	5985	39	6145	71	6305
23	6065	55	6225	87	6385

Band 5					
IEEE 802.11ax(HE160)					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
15	6025	47	6185	79	6345

### 3. Table for Filed Antenna:

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	Tenda	RX27V1.0	Dipole	N/A	4.85
2	Tenda	RX27V1.0	Dipole	N/A	4.85

Note:

- 1) The EUT supports CDD. Physically, the EUT provides two completed transmitters and receivers (2T2R).
- 2) Beamforming Gain: 3 dB.
- 3) The antenna gain and beamforming gain are provided by the manufacturer.

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

Operating Mode	TX Mode	2TX
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)
IEEE 802.11ax(HE160)		V (Ant. 1+Ant. 2)

## 2.2 DESCRIPTION OF TEST MODES

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

Test	Clause	Test channels
		(5945 MHz to 6425 MHz)
Nominal centre frequencies	5.4.2	One of the declared channels.
RF output power	5.4.3	The lowest and highest declared channel for every declared nominal bandwidth.
Power spectral density	5.4.4	The lowest and highest declared channels for the lowest nominal bandwidth.
Transmitter unwanted emissions outside the 6 GHz RLAN band	5.4.5	Out-of-band domain: The lowest and highest declared channel for every declared nominal bandwidth. Spurious domain: One of the declared channels.
Transmitter unwanted emissions within the 6 GHz RLAN band	5.4.6	For multi-channel operation in adjacent channels where transmission occurs in all adjacent channels the lowest and highest declared channel for every declared nominal bandwidth. For multi-channel operation in adjacent channels where one or more of the adjacent channels is not used for transmission the highest declared channel for the highest declared nominal bandwidth. Channel transmission configurations to show each of the supported masks in Clause 4.3.4.3.2.2.
Receiver spurious emissions	5.4.7	One of the declared channels.
Channel access mechanism	5.4.8	One channel (in case of single channel testing) or a group of channels (in case of multi-channel testing) out of the declared channels.
Receiver blocking	5.4.9	For testing blocking frequencies below 5 945 MHz the lowest declared channel at the lowest supported nominal bandwidth.
Receiver adjacent channel selectivity	5.4.10	One of the declared channels at the lowest supported nominal bandwidth.
Mechanical and electrical design	5.4.11	Not applicable. Visual inspection only.

Note :

- (1) 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.
- (2) For radiated spurious emissions below 1 GHz and receiver spurious emissions above 1 GHz test, the IEEE 802.11ax(HE160) channel 15/79 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.

## 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.

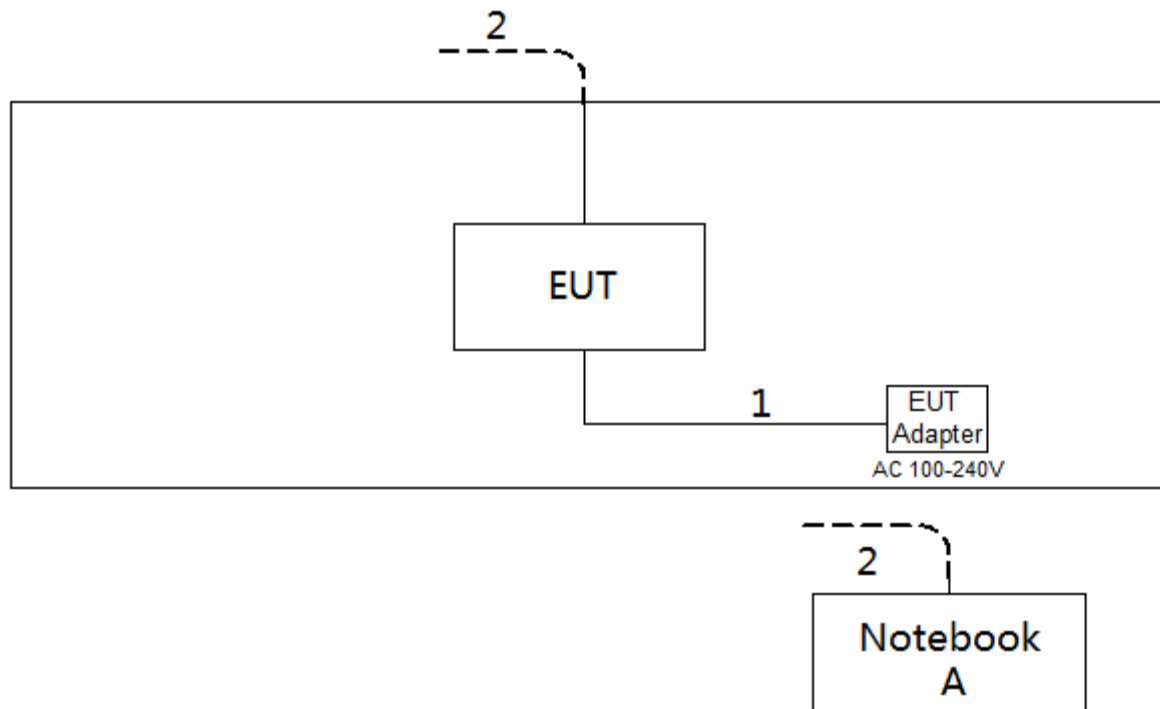
### Non Beamforming

Test Software Version	accessMTool_REL_3_2_1_3	
Frequency (MHz)	5955	6415
IEEE 802.11ax(HE20)	56	58
Frequency (MHz)	5965	6405
IEEE 802.11ax(HE40)	56	59
Frequency (MHz)	5985	6385
IEEE 802.11ax(HE80)	57	58
Frequency (MHz)	6025	6345
IEEE 802.11ax(HE160)	55	59

### Beamforming

Test Software Version	accessMTool_REL_3_2_1_3	
Frequency (MHz)	5955	6415
IEEE 802.11ax(HE20)	43	45
Frequency (MHz)	5965	6405
IEEE 802.11ax(HE40)	43	46
Frequency (MHz)	5985	6385
IEEE 802.11ax(HE80)	44	45
Frequency (MHz)	6025	6345
IEEE 802.11ax(HE160)	42	46

## 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.
A	Notebook	Dell	Inspiron 15-7559	N/A

Item	Cable Type	Shielded Type	Ferrite Core	Length
1	DC Cable	NO	NO	1.5m
2	RJ45 Cable	NO	NO	10m

## 2.6 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

### 3. NOMINAL CENTRE FREQUENCIES AND NOMINAL BANDWIDTH

#### 3.1 LIMIT

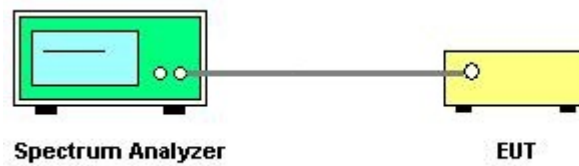
Clause	Test Item	Limit
4.3.1	Centre Frequencies	F(c) $\pm$ 20ppm

#### 3.2 TEST PROCEDURES

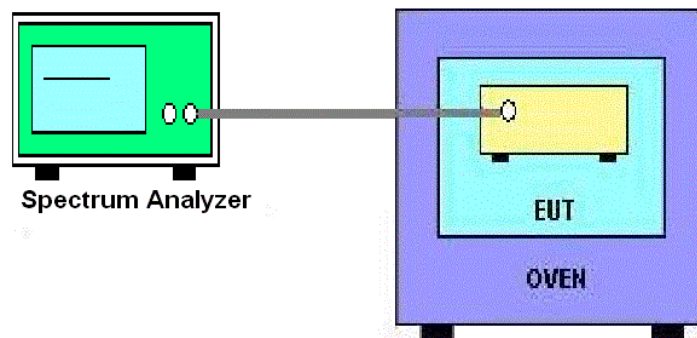
Refer to ETSI EN 303 687, clause 5.4.2.2.1.

#### 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. RF OUTPUT POWER

### 4.1 LIMIT

Mean EIRP limit for RF output power		
Frequency Range (MHz)	Level (dBm)	
	LPI usage	VLP usage
5945 to 6425	23	14

### 4.2 TEST PROCEDURES

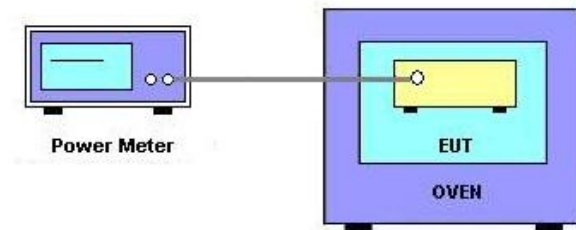
Refer to ETSI EN 303 687, clause 5.4.3.2.1.

### 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. POWER SPECTRAL DENSITY

### 5.1 LIMIT

Mean EIRP density limit		
Frequency Range (MHz)	Level (dBm/MHz)	
	LPI usage	VLP usage
5945 to 6425	10	1

### 5.2 TEST PROCEDURES

Refer to ETSI EN 303 687, clause 5.4.4.2.1.

### 5.3 TEST SETUP LAYOUT



### 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

Please refer to the Appendix C.

## 6. TRANSMITTER UNWANTED EMISSIONS OUTSIDE THE 6 GHZ RLAN BAND

### 6.1 LIMIT

Transmitter unwanted emissions in the out-of-band domain					
Clause	Limit				
4.3.4.1	Equipment	Frequency (MHz)	Limit	Out-of-band/spurious domain boundary separation from the nominal centre frequency under test (where applicable)	
				N < 100 MHz	N ≥ 100 MHz
	LPI	< 5 935	-22 dBm/MHz	±250 % × N	±150 % × N + 100 MHz
		> 6 425	Spectral power mask as defined by application of figure 1 and figure 2 (as applicable) in ETSI EN 303 687 clause 4.3.4.3.2.		
	VLP	< 5 935	-45 dBm/MHz		
		> 6 425	Spectral power mask as defined by application of figure 1 and figure 2 (as applicable) in ETSI EN 303 687 clause 4.3.4.3.2.		

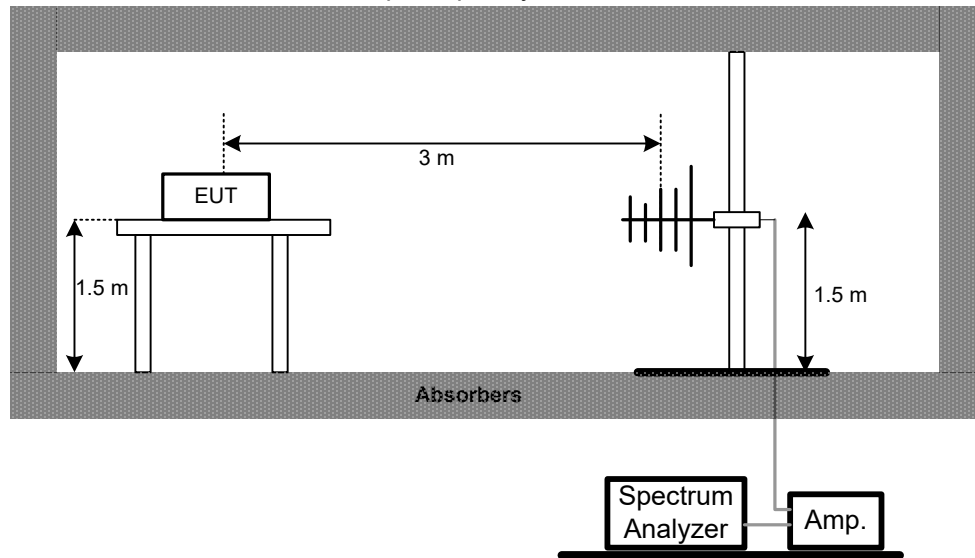
Transmitter unwanted emissions outside the 6 GHz RLAN band		
Clause	Frequency (MHz)	Limit
4.3.4.2	87,5 MHz to 118 MHz 174 MHz to 230 MHz 470 MHz to 694 MHz	-54 dBm
	Other frequencies Below 1GHz	-36 dBm
	1 GHz to 26 GHz (outside of the 6 GHz RLAN band and outside of the out-of-band domain)	-30 dBm

### 6.2 TEST PROCEDURES

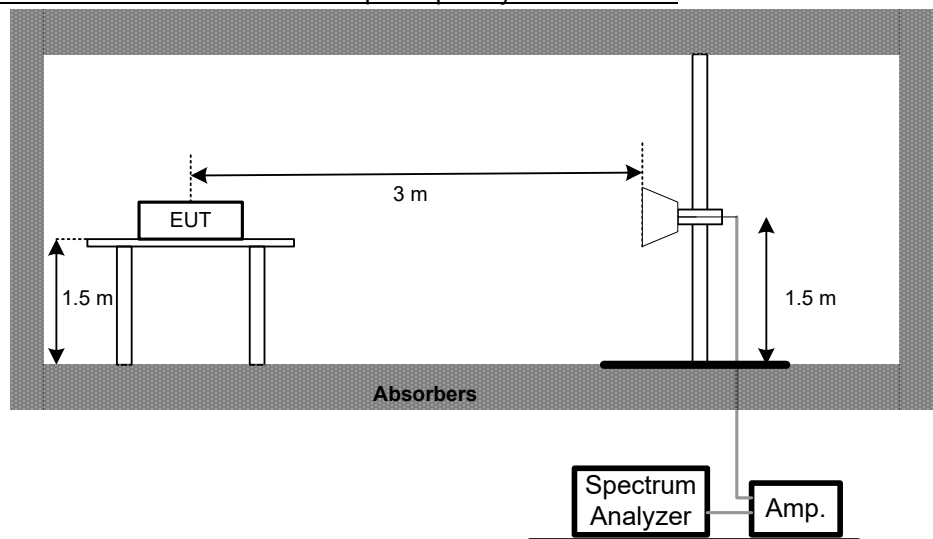
Refer to ETSI EN 303 687, clause 5.4.5.2.2.

### 6.3 TEST SETUP LAYOUT

#### Emission Radiated Measurement Test Set-Up Frequency Below 1 GHz



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



### 6.4 TEST DEVIATION

There is no deviation with the original standard.

### 6.5 EUT OPERATION DURING TEST

The measurements shall be performed during continuously transmitting.

### 6.6 TEST RESULTS (30MHZ TO 1000MHZ)

Please refer to the Appendix D.

### 6.7 TEST RESULTS (ABOVE 1000MHZ)

Please refer to the Appendix E.

## 7. TRANSMITTER UNWANTED EMISSIONS WITHIN THE 6 GHZ RLAN BAND

### 7.1 LIMIT

Clause	Test Item	Limit
4.3.4.3	Transmitter unwanted emissions within the 6 GHz RLAN band	Refer to ETSI EN 303 687, clause 4.3.4.3.2.

### 7.2 TEST PROCEDURES

Refer to ETSI EN 303 687, clause 5.4.6.2.1.

### 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 continuously transmitting.

### 7.6 TEST RESULTS

Please refer to the Appendix F.

## 8. RECEIVER SPURIOUS EMISSIONS

### 8.1 LIMIT

Clause	Test Item	Frequency(MHz)	Limit
4.3.5	Receiver spurious emissions	30-1000	-57dBm
		1000~26000	-47dBm

### 8.2 TEST PROCEDURES

Refer to ETSI EN 303 687, clause 5.4.7.2.2.

### 8.3 TEST SETUP LAYOUT

Please refer to clause 6.3.

### 8.4 TEST DEVIATION

There is no deviation with the original standard.

### 8.5 EUT OPERATION DURING TEST

The measurements shall be performed during continuously receiving.

### 8.6 TEST RESULTS (30 MHZ TO 1000 MHZ)

Please refer to the Appendix G.

### 8.7 TEST RESULTS (ABOVE 1000 MHZ)

Please refer to the Appendix H.

## 9. CHANNEL ACCESS MECHANISM

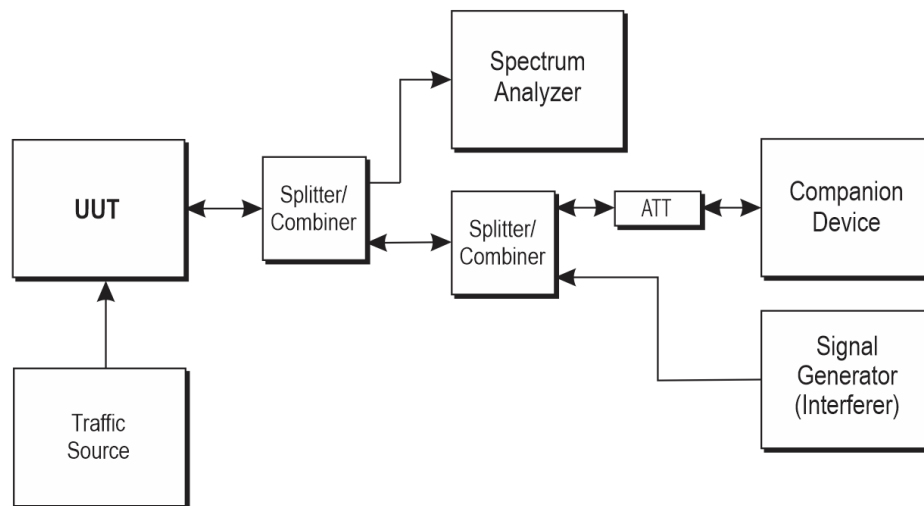
### 9.1 LIMIT

Refer to ETSI EN 303 687, clause 4.3.6.3

### 9.2 TEST PROCEDURES

Refer to ETSI EN 303 687, clause 5.4.8.3.2.

### 9.3 TEST SETUP



### 9.4 TEST DEVIATION

There is no deviation with the original standard.

### 9.5 EUT OPERATION DURING TEST

The measurements shall be performed during normal operation.

### 9.6 TEST RESULTS

Please refer to the Appendix I.

## 10. RECEIVER BLOCKING

### 10.1 LIMIT

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 %.

While maintaining the minimum performance criteria, the blocking levels at specified frequency offsets shall be equal to or greater than the limits defined in table below.

**LPI Receiver blocking parameters**

Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 2)	Type of blocking signal
$P_{\min} + 6 \text{ dB}$	5 875 (See note 3)	-53	Continuous Wave
$P_{\min} + 6 \text{ dB}$	5 675 (See note 3) 5 775 (See note 3)	-47	Continuous Wave

NOTE 1:  $P_{\min}$  is the minimum level of the wanted signal (in dBm) required to meet the minimum performance criteria as defined clause 4.2.7.2 in the absence of any blocking signal.

NOTE 2: The levels are specified at the UUT antenna connector(s). In case of radiated measurements on a UUT with an integral antenna equipment without external (temporary) antenna connector(s) provided, the equivalent power flux density (PFD) at the UUT is the ratio of the level specified and the antenna area of the UUT antenna. In case of radiated measurements with a substitution antenna, the equivalent PFD at the said antenna is the ratio of the level specified and the antenna area of the substitution antenna.

NOTE 3: Where the equipment also supports RLAN operation in the 5 GHz bands compliant with EN 301 893, this frequency is not to be tested.

## Vlp Receiver Blocking Parameters

Wanted signal mean power from companion device (dBm)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 2)	Type of blocking signal
$P_{\min} + 6 \text{ dB}$	5 875 (See note 3)	-58	Continuous Wave
$P_{\min} + 6 \text{ dB}$	5 675 (See note 3)		Continuous Wave
	5 775 (See note 3)		

NOTE 1:  $P_{\min}$  is the minimum level of the wanted signal (in dBm) required to meet the minimum performance criteria as defined clause 4.2.7.2 in the absence of any blocking signal.

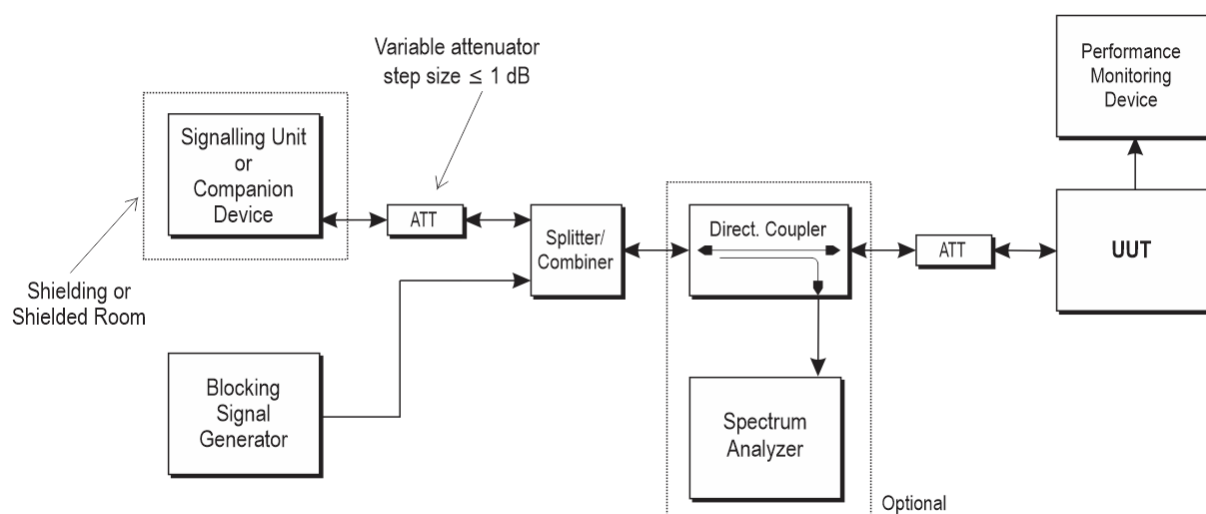
NOTE 2: The levels are specified at the UUT antenna connector(s). In case of radiated measurements on a UUT with an integral antenna equipment without external (temporary) antenna connector(s) provided, the equivalent power flux density (PFD) at the UUT is the ratio of the level specified and the antenna area of the UUT antenna. In case of radiated measurements with a substitution antenna, the equivalent PFD at the said antenna is the ratio of the level specified and the antenna area of the substitution antenna.

NOTE 3: Where the equipment also supports RLAN operation in the 5 GHz bands compliant with EN 301 893, this frequency is not to be tested.

## 10.2 TEST PROCEDURES

Refer to ETSI EN 303 687, clause 5.4.9.2.1.

## 10.3 TEST SETUP





**10.4 TEST DEVIATION**

There is no deviation with the original standard.

**10.5 EUT OPERATION DURING TEST**

The measurements shall be performed during normal receiving.

**10.6 TEST RESULTS**

Please refer to the Appendix J.

## 11. RECEIVER ADJACENT CHANNEL SELECTIVITY

### 11.1 LIMIT

The limits defined below apply when the equipment operates on a single 20 MHz channel and the interfering signal falls completely within the adjacent 20 MHz channel.

While maintaining the minimum performance criteria as defined in clause 4.3.8.2, the adjacent channel interferer level shall be equal to or greater than the limit defined in below corresponding to a frequency offset within the range specified in below.

Wanted signal mean power from companion device (dBm)	Interferer signal frequency offset range (MHz)	Interferer signal power (dBm) (see note 2 and note 3)	Type of interferer signal
$P_{\min} + 10 \text{ dB}$	$20 \pm 0,2$	$P_{\min} + 26 \text{ dB}$	Same as the wanted signal with an equivalent nominal bandwidth

NOTE 1:  $P_{\min}$  is the minimum level of the wanted signal (in dBm) required to meet the minimum performance criteria as defined clause 4.3.8.2 in the absence of any interfering signal.

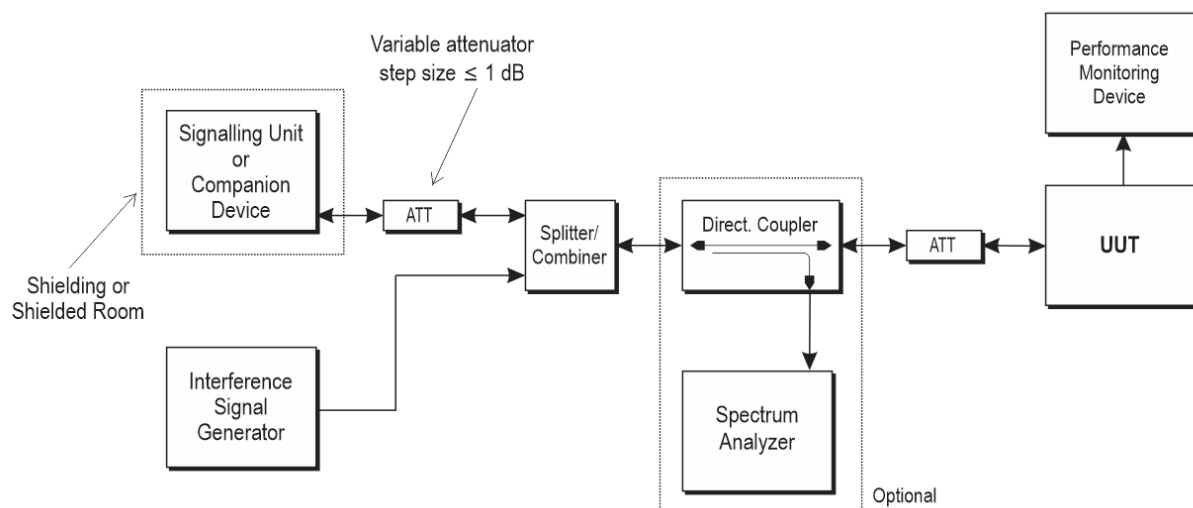
NOTE 2: The levels are specified at the UUT antenna connector(s). In case of radiated measurements on a UUT with an integral antenna equipment without external (temporary) antenna connector(s) provided, the equivalent power flux density (PFD) at the UUT is the ratio of the level specified and the antenna area of the UUT antenna. In case of radiated measurements with a substitution antenna, the equivalent PFD at the said antenna is the ratio of the level specified and the antenna area of the substitution antenna.

NOTE 3: The level specified for the interferer signal applies at the lowest data rate.

### 11.2 TEST PROCEDURES

Refer to ETSI EN 303 687, clause 5.4.10.2.1.

### 11.3 TEST SETUP



**11.4 TEST DEVIATION**

There is no deviation with the original standard.

**11.5 EUT OPERATION DURING TEST**

The measurements shall be performed during normal receiving.

**11.6 TEST RESULTS**

Please refer to the Appendix K.

## 12. MEASUREMENT INSTRUMENTS LIST

Nominal centre frequencies					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Agilent	N9010A	MY54200164	Jan. 22, 2023
2	Cable	emci	EMC104-SM-SM-9000(0.01GHz-26.5GHz)	N/A	N/A
3	Const Temp. & Humidity Chamber	CEPREI	CEEC-M64T-40	15-008	Jan. 22, 2023
4	Measurement Software	Keysight	IOT0047	N/A	N/A

RF output power					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Cable	emci	EMC104-SM-SM-9000(0.01GHz-26.5GHz)	N/A	N/A
2	USB Peak and Average Power Sensor	Keysight	U2063XA	MY58000233	Jul. 16, 2023
3	USB Peak and Average Power Sensor	Keysight	U2063XA	MY58000234	Jul. 16, 2023
4	USB Peak and Average Power Sensor	Keysight	U2063XA	MY58000236	Jul. 16, 2023
5	USB Peak and Average Power Sensor	Keysight	U2063XA	MY58000237	Jul. 16, 2023
6	Const Temp. & Humidity Chamber	CEPREI	CEEC-M64T-40	15-008	Jan. 22, 2023
7	Measurement Software	Keysight	IOT0047	N/A	N/A

Power spectral density & Transmitter unwanted emissions within the 6 GHz RLAN band					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Agilent	N9010A	MY54200164	Jan. 22, 2023
2	Cable	emci	EMC104-SM-SM-9000(0.01GHz-26.5GHz)	N/A	N/A
3	Measurement Software	Keysight	IOT0047	N/A	N/A

Receiver blocking & Receiver adjacent channel selectivity & Channel access mechanism					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	EXA Spectrum Analyzer	Keysight	N9010A	MY55150209	Jul. 03, 2023
2	MXG Vector Signal Generator	Keysight	N5182B	MY57300568	Jul. 03, 2023
3	Signal Conditioning Test Set	Keysight	X8749A	MY59400120	N/A
4	Cable	emci	EMC104-SM-SM-9000(0.01GHz-26.5GHz)	N/A	N/A
5	POWER SPLITTER	Mini-Circuits	ZFRSC-183-S+	SF601301339-2	Jan. 22, 2023
6*	POWER SPLITTER	Guangkuo	N/A	SZ201504789	Jul. 10, 2024
7	AXE5400 Wi-Fi 6E Bluetooth 5.2 PCIe Adapter	tp-link	Archer TXE75E	N/A	N/A
8	Measurement Software	Keysight	IOT0047	N/A	N/A

Transmitter and Receiver Spurious Emission (Radiated Measurement)					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Trilog-Broadband Antenna	Schwarzbeck	VULB9168	587	Nov. 08, 2022
2	DRG Horn Antenna	ETS	3117-PA	221576	Mar. 08, 2023
3*	DRG Horn Antenna	ETS	3116C	218942	Jan. 16, 2024
4	Amplifier	HP	8447D	2944A11203	Jan. 22, 2023
5	Preamplifier	ETS	3117-PA	221576	Jul. 03, 2023
6*	Low Noise Amplifier	CONNPHY	CLN-18G40G-4330-K	619413	Jul. 05, 2025
7	EXA Spectrum Analyzer	Agilent	N9010A	MY50520044	Jan. 22, 2023
8	Controller	Innco Systems Gmbh	CO3000-4port	CO3000/1155/45430119/P	N/A
9	Cable	Talent microwave	L6-NMNM-3M	19052129	N/A
10	Cable	Talent microwave	A81-SMAMSMAM-2M	19052134	N/A
11	Cable	Talent microwave	A81-SMAMSMAM-12.5M	19052135	N/A
12	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A

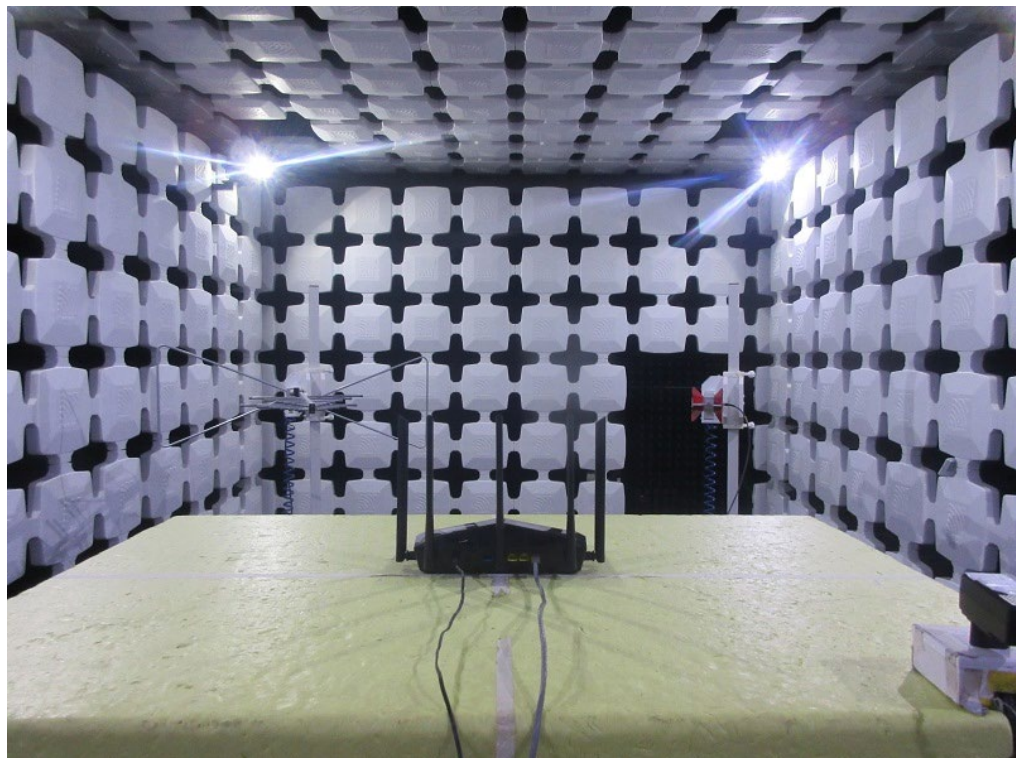
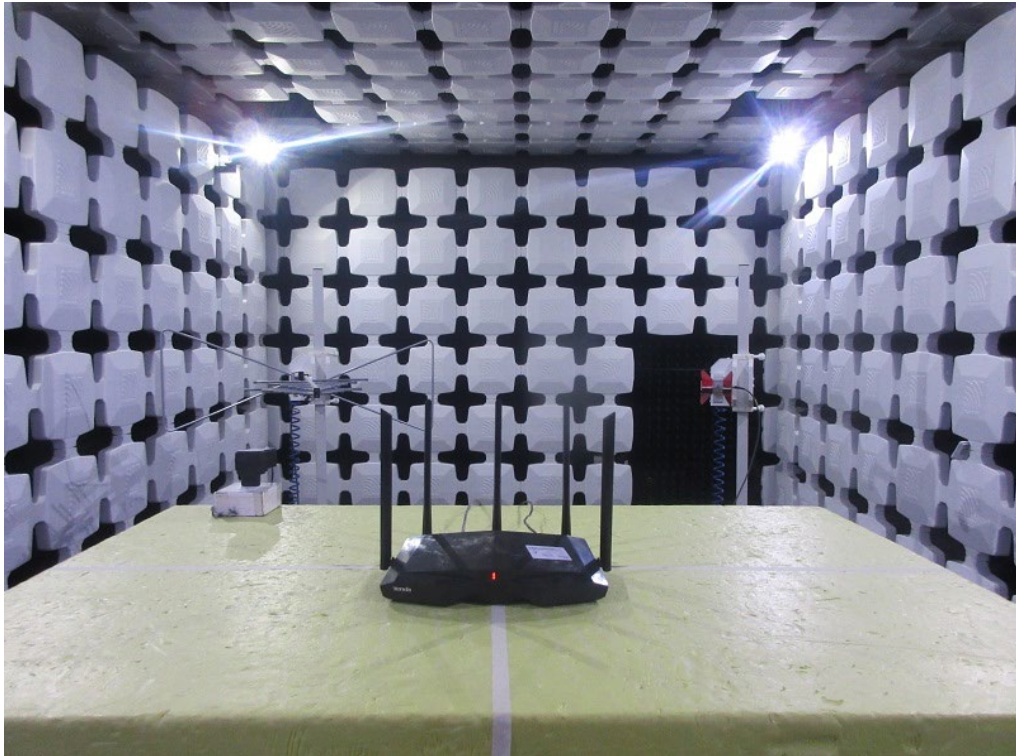
Remark: "N/A" denotes no model name, serial no. or calibration specified.

"\*\*" calibration period of equipment list is three year.

Except \* item, all calibration period of equipment list is one year.

### 13. EUT TEST PHOTO

**Radiated Emissions Test Photos**



## **APPENDIX A - CENTRE FREQUENCIES**

### Test Mode: IEEE 802.11ax(HE20) Mode

Test Conditions		Measurement Frequency (MHz)
		5955
T nom(°C)	24	5955.0498
T min(°C)	0	5955.0455
T max(°C)	40	5955.0469
Max. Deviation Frequency		0.0498
Max. Frequency Error (ppm)		8.3635
Limit (ppm)		±20.00
Result		Pass

### Test Mode: IEEE 802.11ax(HE40) Mode

Test Conditions		Measurement Frequency (MHz)
		5965
T nom(°C)	24	5965.0122
T min(°C)	0	5965.0102
T max(°C)	40	5965.0100
Max. Deviation Frequency		0.0122
Max. Frequency Error (ppm)		2.0464
Limit (ppm)		±20.00
Result		Pass

### Test Mode: IEEE 802.11ax(HE80) Mode

Test Conditions		Measurement Frequency (MHz)
		5985
T nom(°C)	24	5985.0322
T min(°C)	0	5985.0292
T max(°C)	40	5985.0310
Max. Deviation Frequency		0.0322
Max. Frequency Error (ppm)		5.3846
Limit (ppm)		±20.00
Result		Pass



Test Mode: IEEE 802.11ax(HE160) Mode		
Test Conditions		Measurement Frequency (MHz)
		6025
T nom(°C)	24	6025.0479
T min(°C)	0	6024.0039
T max(°C)	40	6024.0330
Max. Deviation Frequency		0.0479
Max. Frequency Error (ppm)		7.9422
Limit (ppm)		±20.00
Result		Pass

## **APPENDIX B - RF OUTPUT POWER**

### Non Beamforming

Test Mode: IEEE 802.11ax(HE20) Mode			
Test Conditions		e.i.r.p. ( dBm )	
		5955 MHz	6415 MHz
T nom (°C)	22.1-23.8	22.63	22.51
T min (°C)	0	22.80	22.75
T max (°C)	40	22.47	22.40
Max. e.i.r.p.		22.80	
Limit		23	
Result		Pass	

Test Mode: IEEE 802.11ax(HE40) Mode			
Test Conditions		e.i.r.p. ( dBm )	
		5965 MHz	6405 MHz
T nom (°C)	22.1-23.8	22.83	22.56
T min (°C)	0	22.96	22.76
T max (°C)	40	22.68	22.45
Max. e.i.r.p.		22.96	
Limit		23	
Result		Pass	

Test Mode: IEEE 802.11ax(HE80) Mode			
Test Conditions		e.i.r.p. ( dBm )	
		5985 MHz	6385 MHz
T nom (°C)	22.1-23.8	22.89	22.79
T min (°C)	0	22.96	22.92
T max (°C)	40	22.65	22.71
Max. e.i.r.p.		22.96	
Limit		23	
Result		Pass	

Test Mode: IEEE 802.11ax(HE160) Mode			
Test Conditions		e.i.r.p. ( dBm )	
		6025 MHz	6345 MHz
T nom (°C)	22.1-23.8	22.87	22.93
T min (°C)	0	22.97	22.97
T max (°C)	40	22.65	22.73
Max. e.i.r.p.		22.97	
Limit		23	
Result		Pass	

Note: e.i.r.p. = Conducted output power + G (Ant Gain)

### Beamforming

Test Mode: IEEE 802.11ax(HE20) Mode			
Test Conditions		e.i.r.p. ( dBm )	
		5955 MHz	6415 MHz
T nom (°C)	22.1-23.8	22.52	22.32
T min (°C)	0	22.69	22.63
T max (°C)	40	22.29	22.27
Max. e.i.r.p.		22.69	
Limit		23	
Result		Pass	

Test Mode: IEEE 802.11ax(HE40) Mode			
Test Conditions		e.i.r.p. ( dBm )	
		5965 MHz	6405 MHz
T nom (°C)	22.1-23.8	22.63	22.38
T min (°C)	0	22.75	22.57
T max (°C)	40	22.50	22.27
Max. e.i.r.p.		22.75	
Limit		23	
Result		Pass	

Test Mode: IEEE 802.11ax(HE80) Mode			
Test Conditions		e.i.r.p. ( dBm )	
		5985 MHz	6385 MHz
T nom (°C)	22.1-23.8	22.71	22.61
T min (°C)	0	22.78	22.75
T max (°C)	40	22.53	22.55
Max. e.i.r.p.		22.78	
Limit		23	
Result		Pass	

Test Mode: IEEE 802.11ax(HE160) Mode			
Test Conditions		e.i.r.p. ( dBm )	
		6025 MHz	6345 MHz
T nom (°C)	22.1-23.8	22.68	22.67
T min (°C)	0	22.75	22.75
T max (°C)	40	22.44	22.58
Max. e.i.r.p.		22.75	
Limit		23	
Result		Pass	

Note: e.i.r.p. = Conducted output power + G (Ant Gain) + Y (Beamforming Gain)

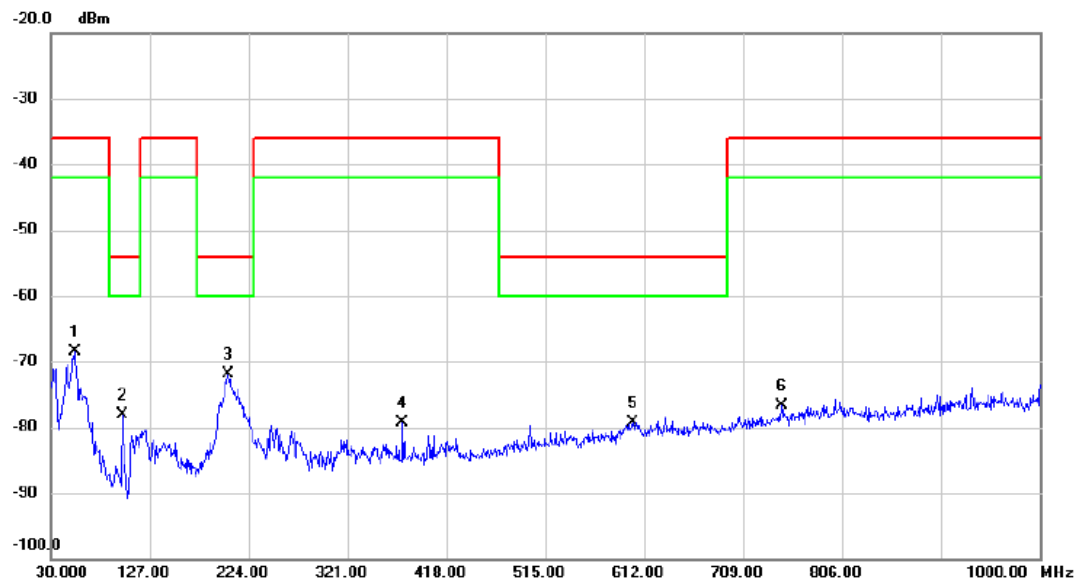
## **APPENDIX C - POWER SPECTRAL DENSITY**

Test Mode: IEEE 802.11ax(HE20) Mode			
Test Conditions		Spectral Power Density e.i.r.p. ( dBm / MHz )	
		5955 MHz	6415 MHz
T nom (°C)	24	8.67	8.11
Limit		10	
Result		Pass	



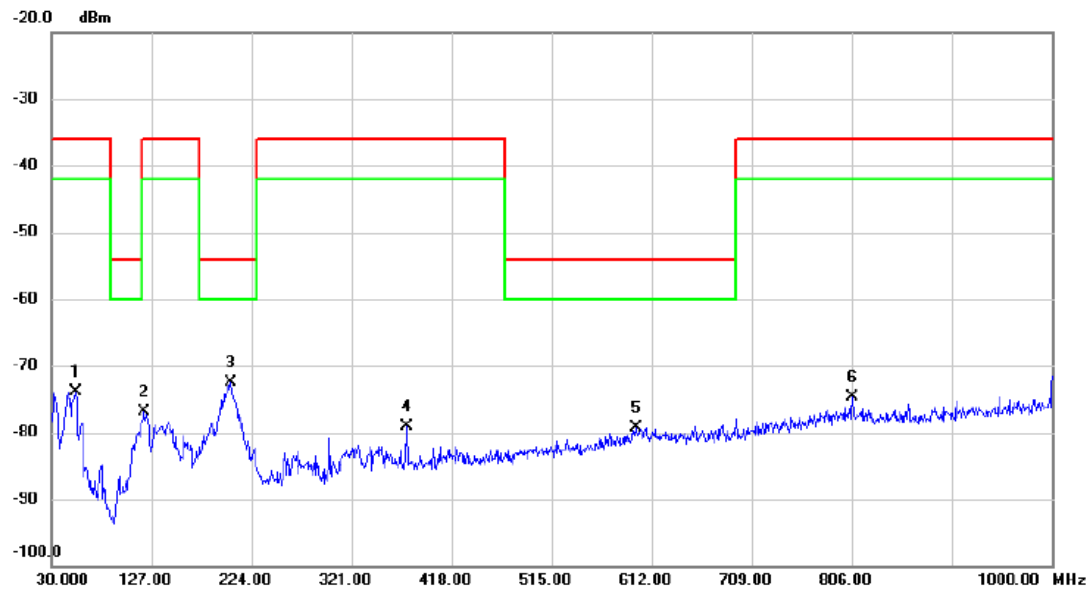
## **APPENDIX D - TRANSMITTER UNWANTED EMISSIONS OUTSIDE THE 6 GHZ RLAN BAND (30MHZ TO 1000MHZ)**

Test Mode	TX Mode IEEE 802.11ax(HE160)_6025MHz	Polarization	Vertical
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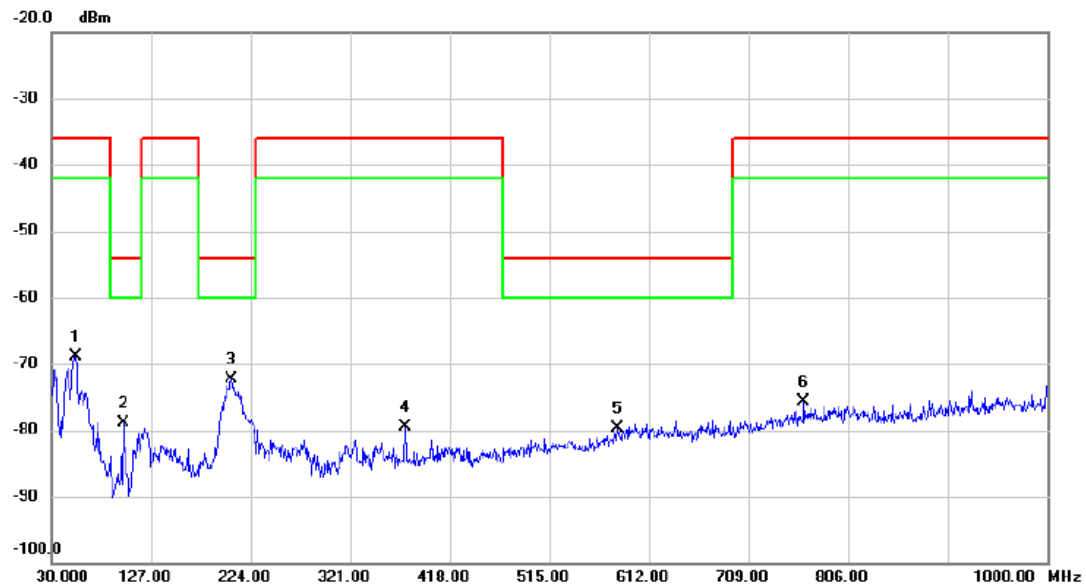
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		53.377	-66.37	-2.09	-68.46	-36.00	-32.46	RMS	
2		100.325	-68.53	-9.62	-78.15	-54.00	-24.15	RMS	
3	*	203.921	-64.38	-7.60	-71.98	-54.00	-17.98	RMS	
4		374.932	-77.56	-1.81	-79.37	-36.00	-43.37	RMS	
5		600.457	-81.51	2.18	-79.33	-54.00	-25.33	RMS	
6		746.927	-81.06	4.32	-76.74	-36.00	-40.74	RMS	

Test Mode	TX Mode IEEE 802.11ax(HE160)_6025MHz	Polarization	Horizontal
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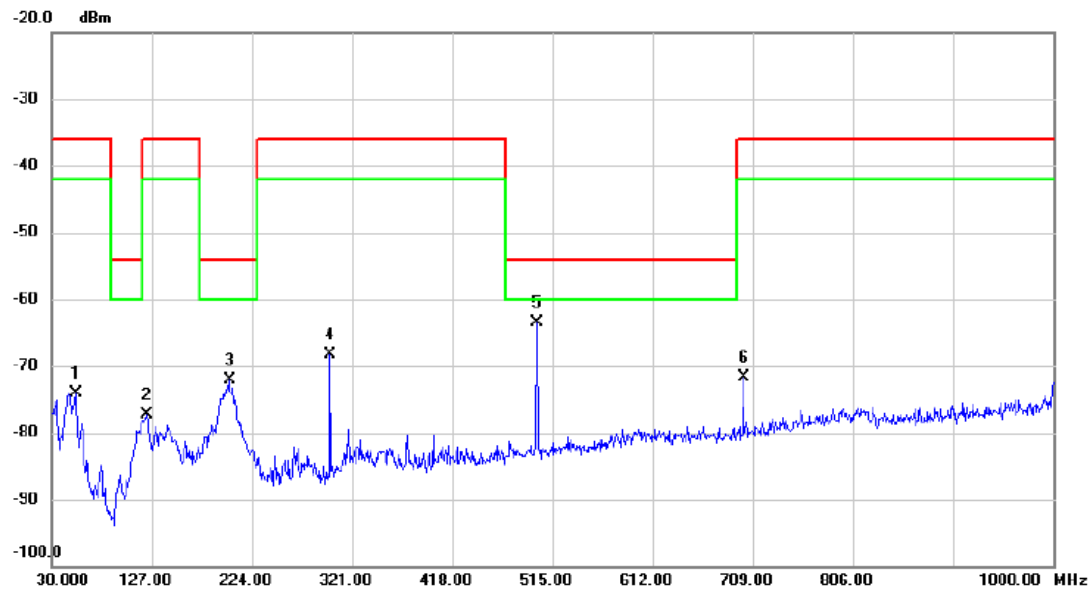
No. Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1	54.153	-68.90	-4.90	-73.80	-36.00	-37.80	RMS	
2	120.210	-69.32	-7.51	-76.83	-36.00	-40.83	RMS	
3 *	203.824	-65.60	-6.84	-72.44	-54.00	-18.44	RMS	
4	375.223	-77.13	-1.96	-79.09	-36.00	-43.09	RMS	
5	597.062	-81.28	1.92	-79.36	-54.00	-25.36	RMS	
6	806.194	-80.31	5.51	-74.80	-36.00	-38.80	RMS	

Test Mode	TX Mode IEEE 802.11ax(HE160)_6345MHz	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	54.153	-66.63	-2.21	-68.84	-36.00	-32.84	RMS	
2	100.616	-69.27	-9.59	-78.86	-54.00	-24.86	RMS	
3 *	205.279	-64.65	-7.55	-72.20	-54.00	-18.20	RMS	
4	374.932	-77.64	-1.81	-79.45	-36.00	-43.45	RMS	
5	581.542	-81.12	1.36	-79.76	-54.00	-25.76	RMS	
6	762.932	-80.28	4.64	-75.64	-36.00	-39.64	RMS	

Test Mode	TX Mode IEEE 802.11ax(HE160)_6345MHz	Polarization	Horizontal
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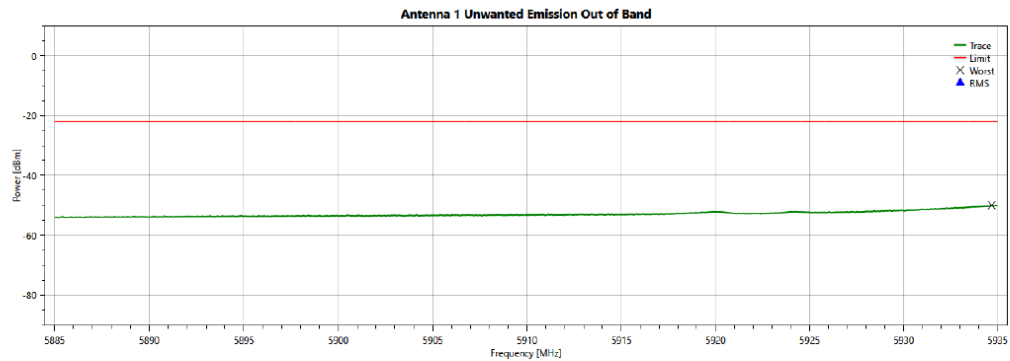
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		53.765	-69.21	-4.80	-74.01	-36.00	-38.01	RMS	
2		122.926	-70.45	-6.82	-77.27	-36.00	-41.27	RMS	
3		202.466	-65.18	-6.86	-72.04	-54.00	-18.04	RMS	
4		299.951	-64.44	-3.81	-68.25	-36.00	-32.25	RMS	
5	*	499.965	-62.91	-0.51	-63.42	-54.00	-9.42	RMS	
6		699.979	-74.30	2.62	-71.68	-36.00	-35.68	RMS	

## **APPENDIX E - TRANSMITTER UNWANTED EMISSIONS OUTSIDE THE 6 GHZ RLAN BAND (ABOVE 1000MHZ)**

### Out-of-band domain

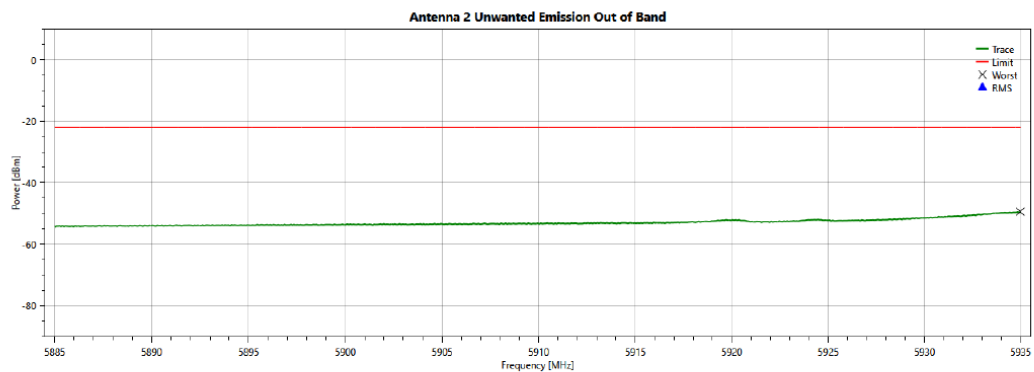
Test Mode	TX Mode IEEE 802.11ax(HE20)
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#### TX Mode\_5955MHz



Worst

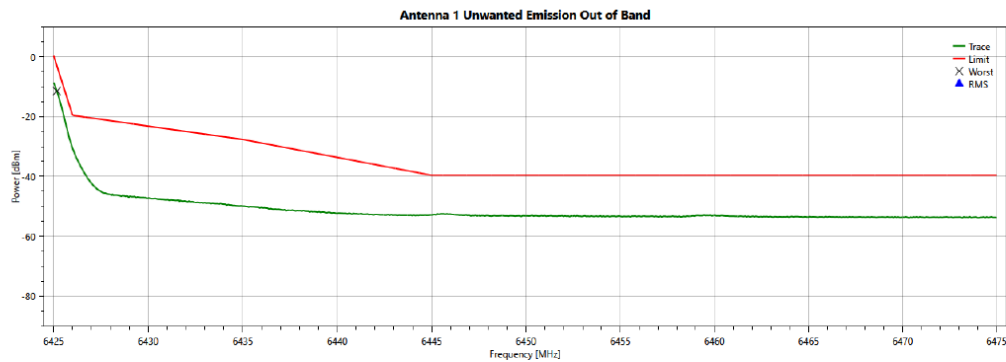
MHz	Emission(dBm)	Limit(dBm)	OverLimit(dB)	Status
5,934.69	-49.98	-22.00	-27.98	Pass



Worst

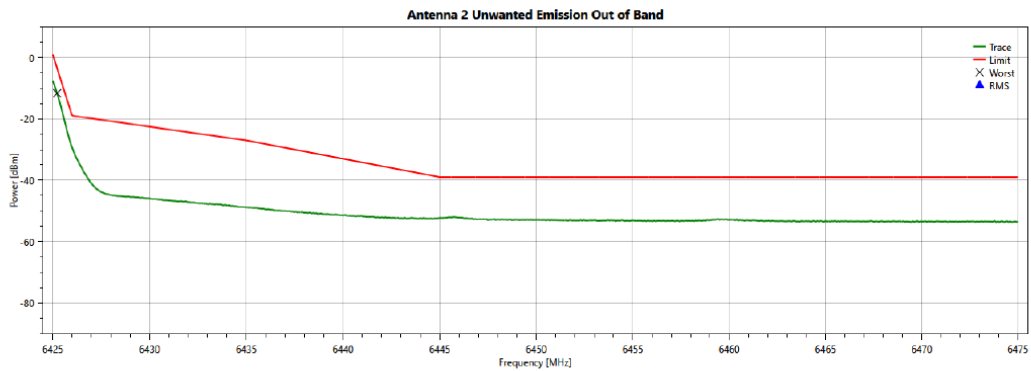
MHz	Emission(dBm)	Limit(dBm)	OverLimit(dB)	Status
5,934.98	-49.41	-22.00	-27.41	Pass

## TX Mode\_6415MHz



### Worst

MHz	Emission(dBm)	Limit(dBm)	OverLimit(dB)	Status
6,425.17	-11.46	-3.00	-8.46	Pass



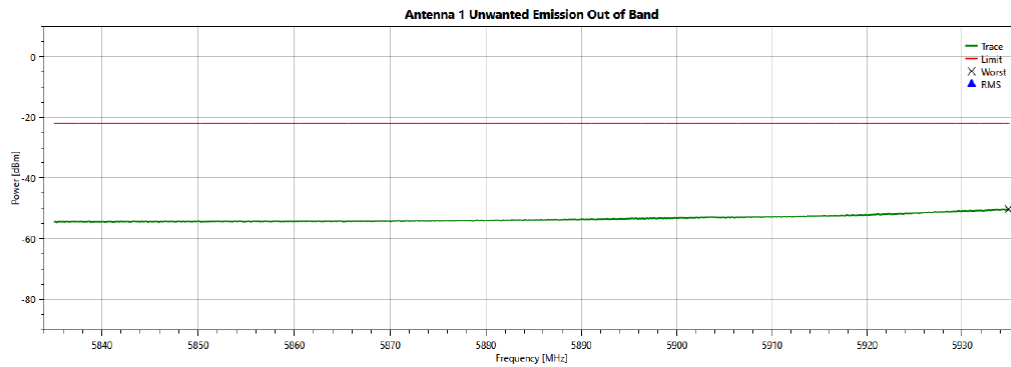
### Worst

MHz	Emission(dBm)	Limit(dBm)	OverLimit(dB)	Status
6,425.23	-11.66	-3.51	-8.15	Pass



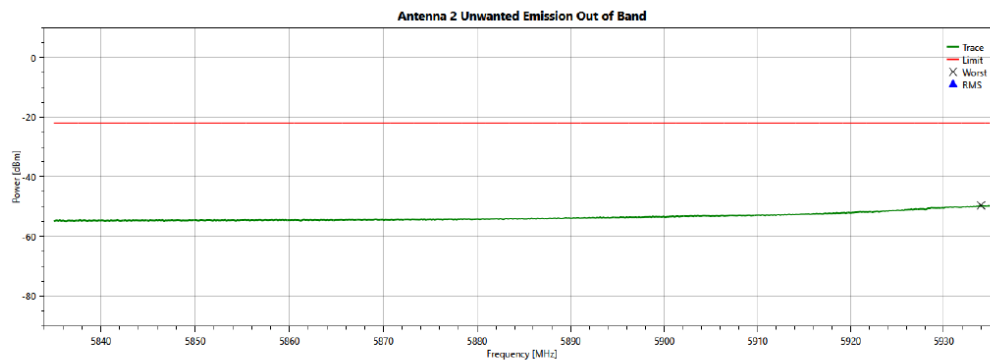
Test Mode	TX Mode IEEE 802.11ax(HE40)
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### TX Mode\_5965MHz



Worst

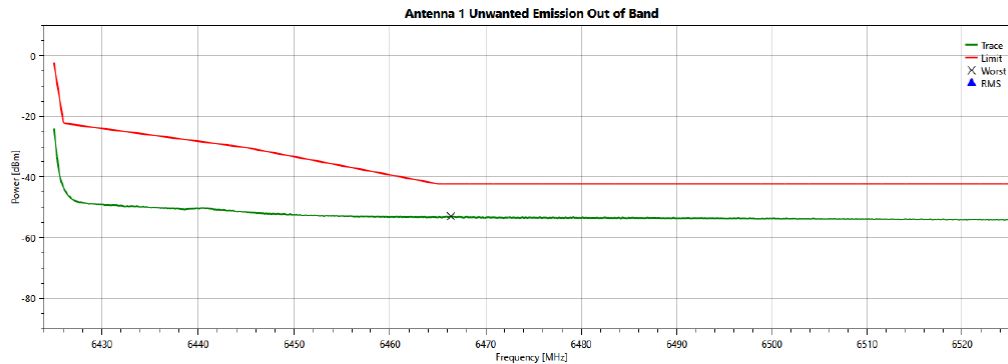
MHz	Emission(dBm)	Limit(dBm)	OverLimit(dB)	Status
5,934.91	-50.25	-22.00	-28.25	Pass



Worst

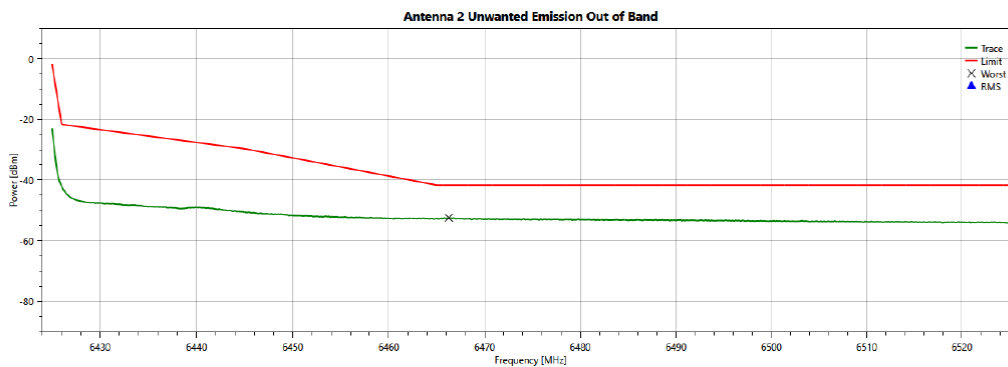
MHz	Emission(dBm)	Limit(dBm)	OverLimit(dB)	Status
5,934.02	-49.57	-22.00	-27.57	Pass

# TX Mode\_6405MHz



Worst

MHz	Emission(dBm)	Limit(dBm)	OverLimit(dB)	Status
6,466.35	-52.95	-42.26	-10.69	Pass

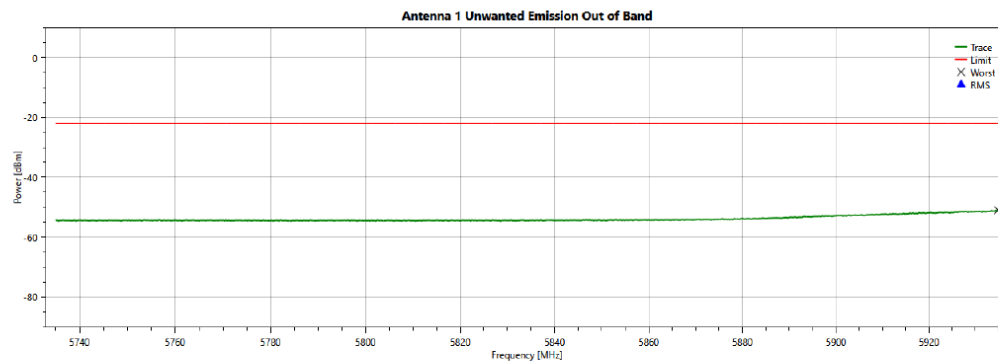


Worst

MHz	Emission(dBm)	Limit(dBm)	OverLimit(dB)	Status
6,466.25	-52.45	-41.67	-10.78	Pass

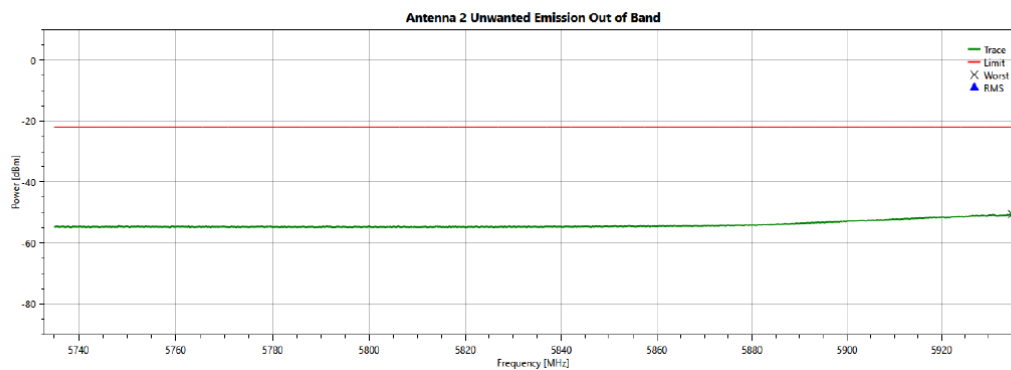
Test Mode	TX Mode IEEE 802.11ax(HE80)
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### TX Mode\_5985MHz



Worst

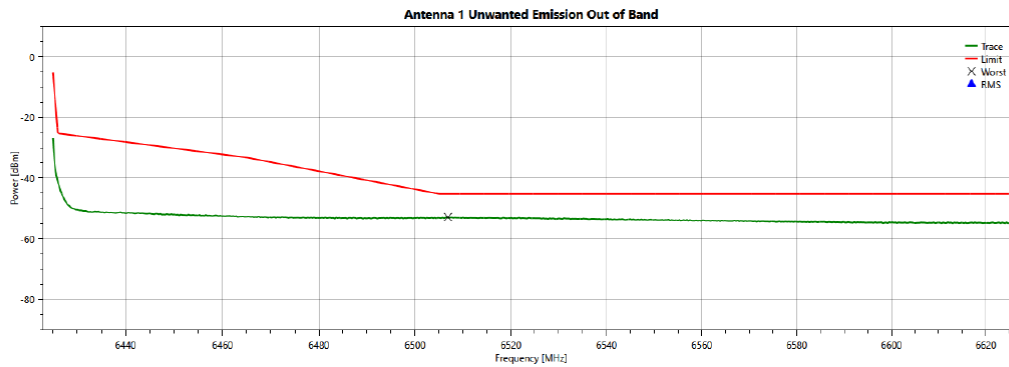
MHz	Emission(dBm)	Limit(dBm)	OverLimit(dB)	Status
5,934.93	-51.00	-22.00	-29.00	Pass



Worst

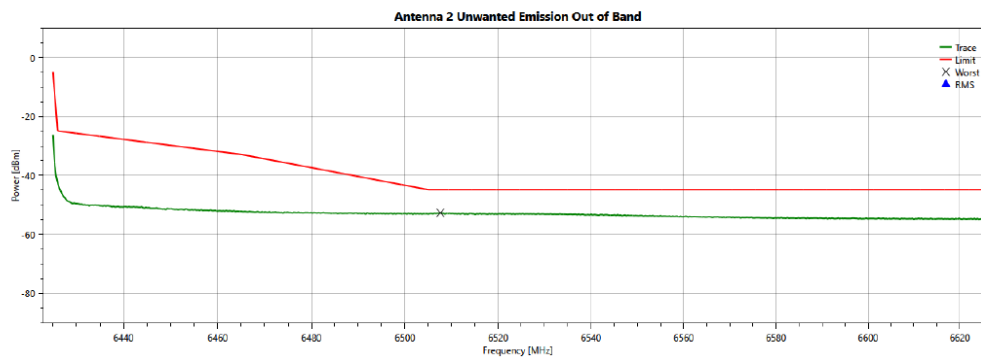
MHz	Emission(dBm)	Limit(dBm)	OverLimit(dB)	Status
5,934.99	-50.54	-22.00	-28.54	Pass

## TX Mode\_6385MHz



Worst

MHz	Emission(dBm)	Limit(dBm)	OverLimit(dB)	Status
6,506.85	-52.90	-45.22	-7.68	Pass

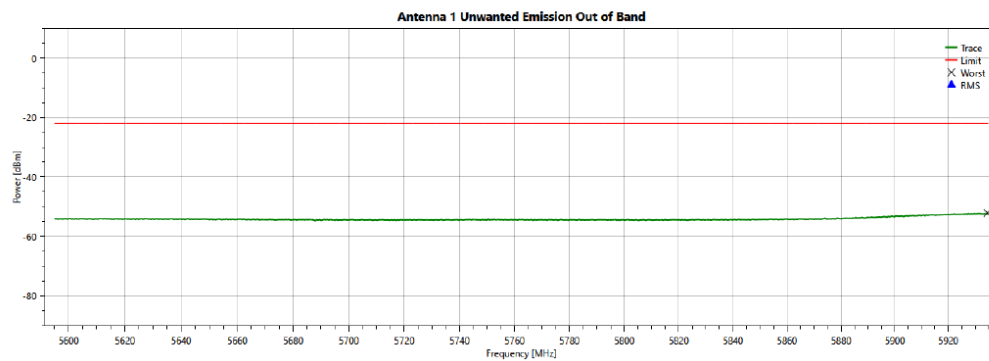


Worst

MHz	Emission(dBm)	Limit(dBm)	OverLimit(dB)	Status
6,507.59	-52.67	-44.83	-7.84	Pass

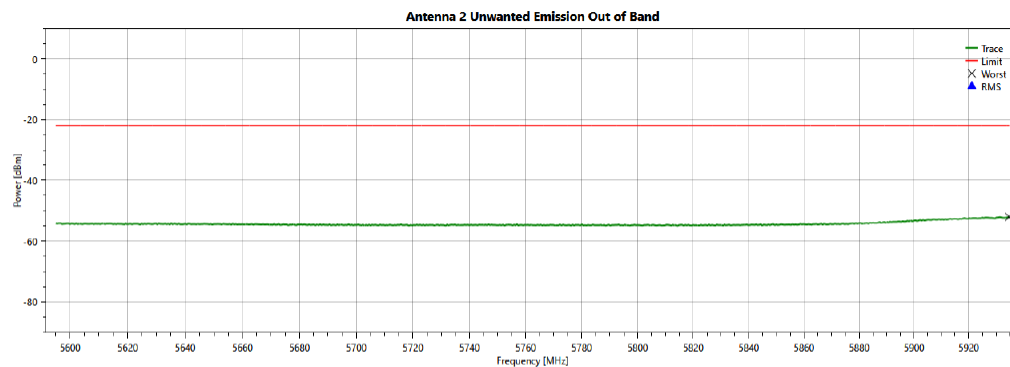
Test Mode	TX Mode IEEE 802.11ax(HE160)
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### TX Mode\_6025MHz



Worst

MHz	Emission(dBm)	Limit(dBm)	OverLimit(dB)	Status
5,934.68	-52.15	-22.00	-30.15	Pass

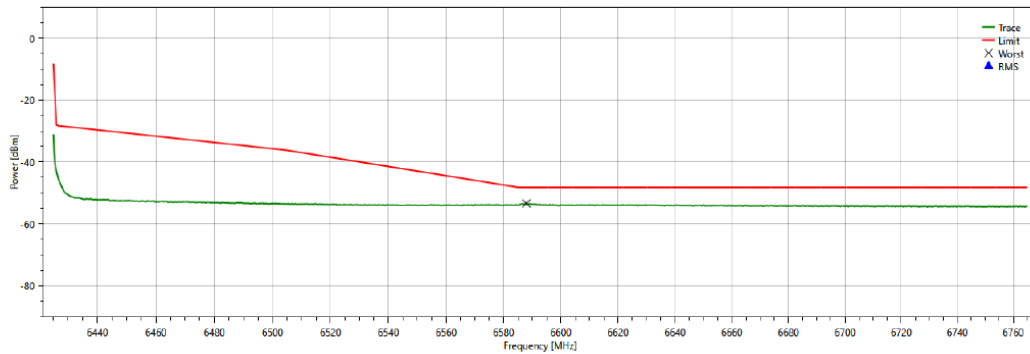


Worst

MHz	Emission(dBm)	Limit(dBm)	OverLimit(dB)	Status
5,934.83	-52.04	-22.00	-30.04	Pass

## TX Mode\_6345MHz

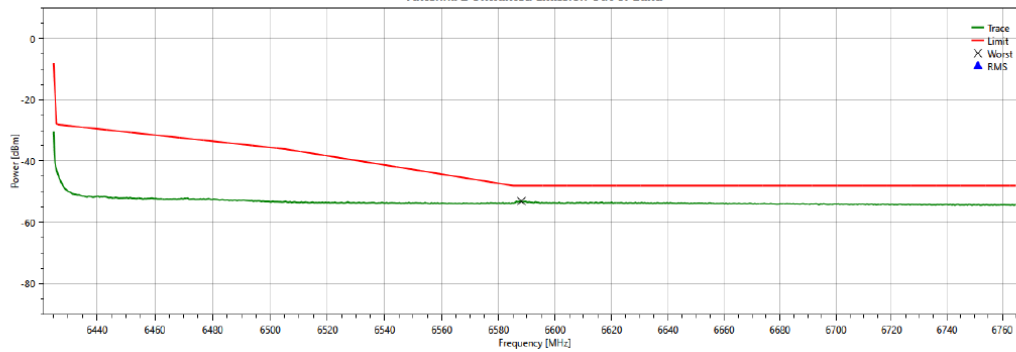
Antenna 1 Unwanted Emission Out of Band



### Worst

MHz	Emission(dBm)	Limit(dBm)	OverLimit(dB)	Status
6,587.96	-53.42	-48.20	-5.22	Pass

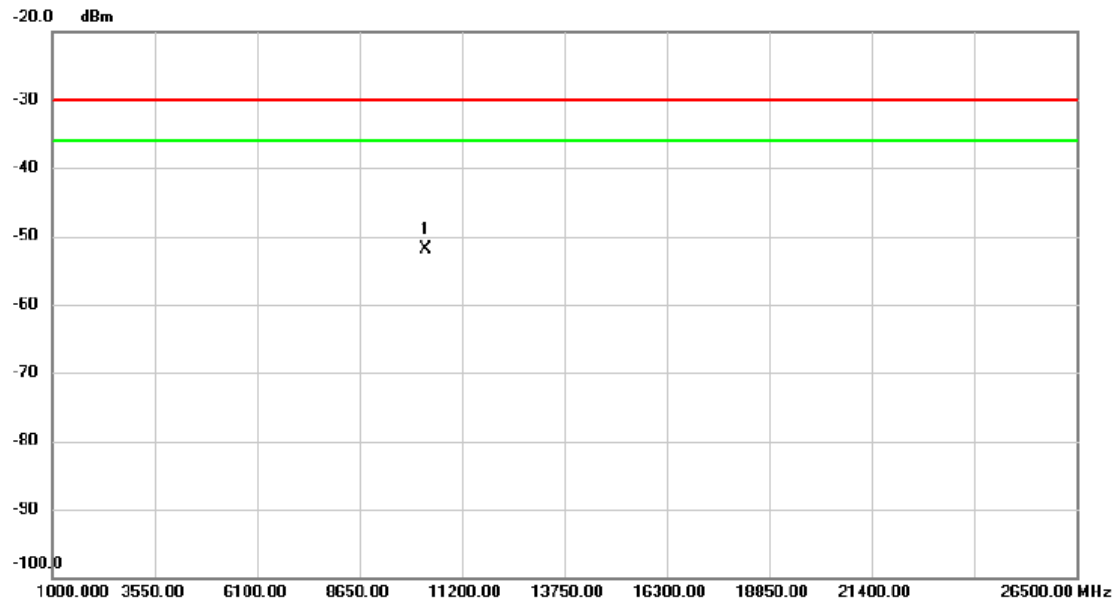
Antenna 2 Unwanted Emission Out of Band



### Worst

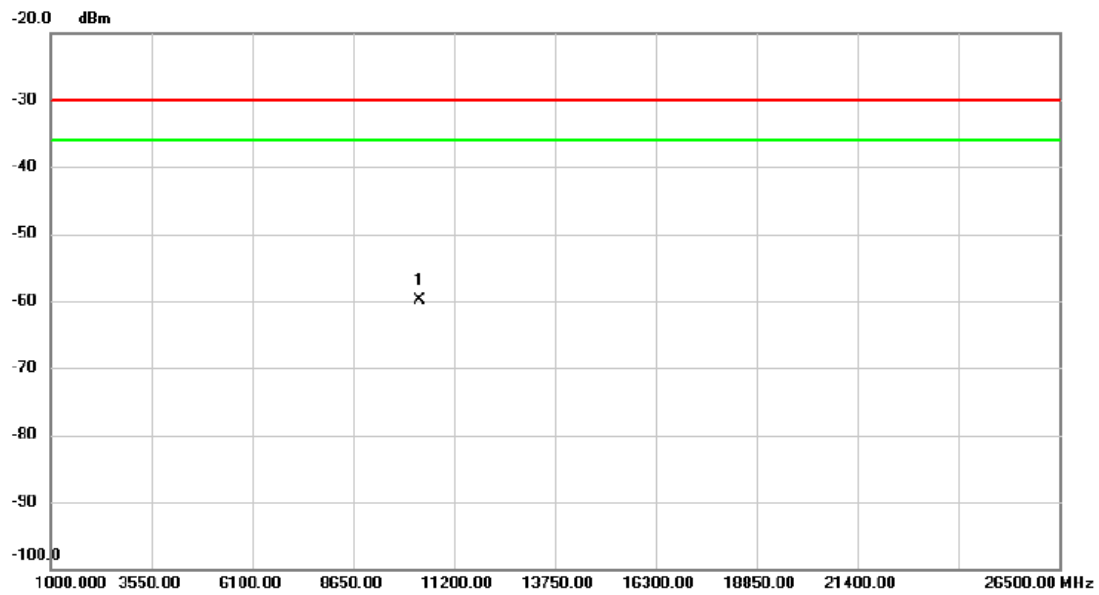
MHz	Emission(dBm)	Limit(dBm)	OverLimit(dB)	Status
6,588.08	-53.09	-48.03	-5.06	Pass

Test Mode	TX Mode IEEE 802.11ax(HE20)_5955MHz	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	*	10312.600	-57.71	5.86	-51.85	-30.00	-21.85	RMS	

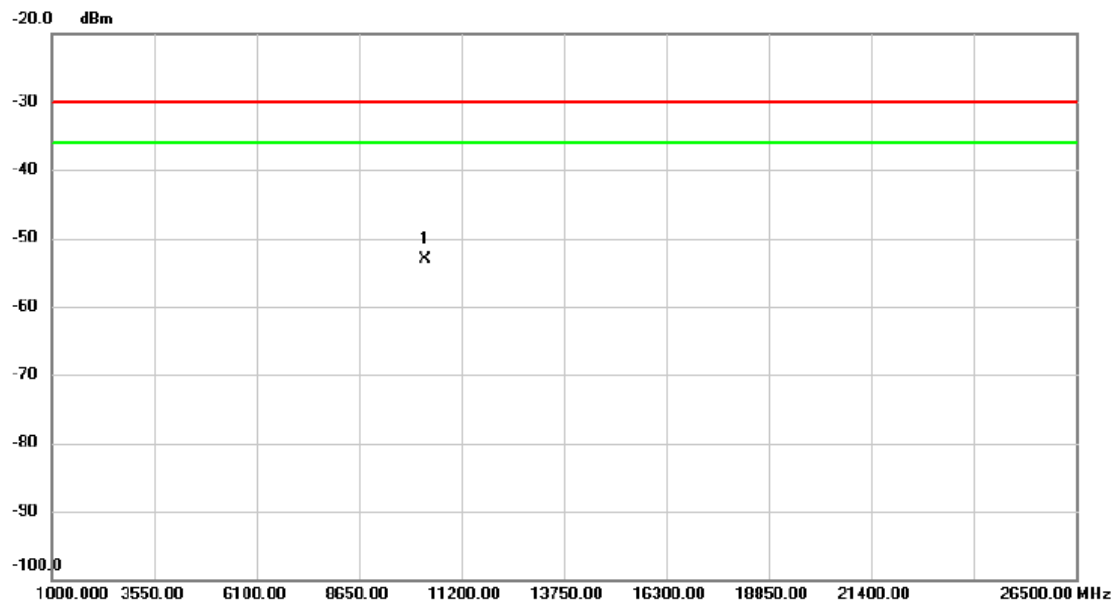
Test Mode	TX Mode IEEE 802.11ax(HE20)_5955MHz	Polarization	Horizontal
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No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	10318.975	-65.61	5.81	-59.80	-30.00	-29.80	RMS	

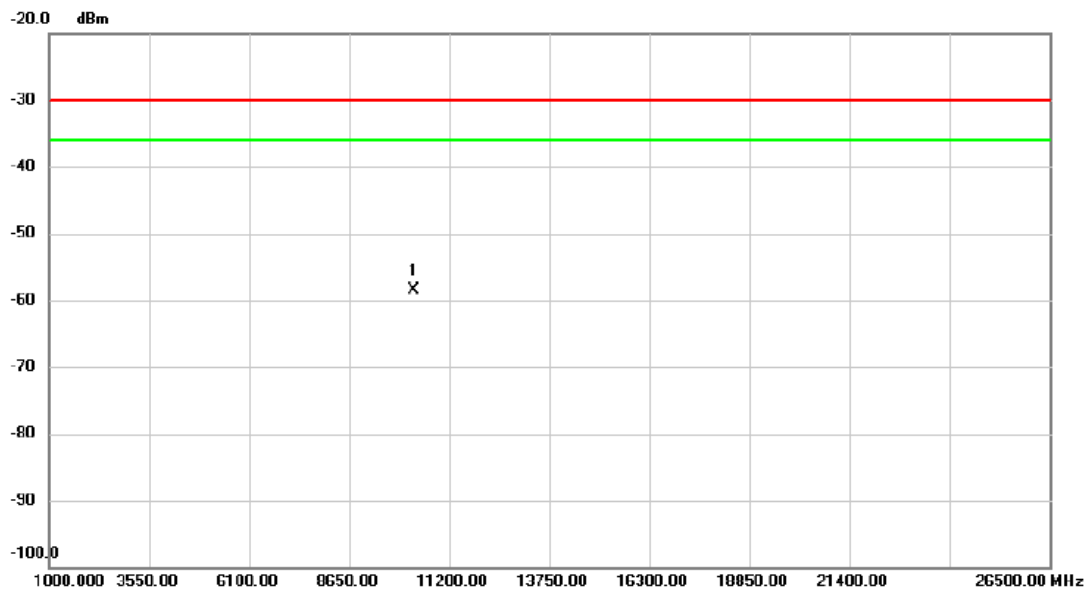


Test Mode	TX Mode IEEE 802.11ax(HE20)_6415MHz	Polarization	Vertical
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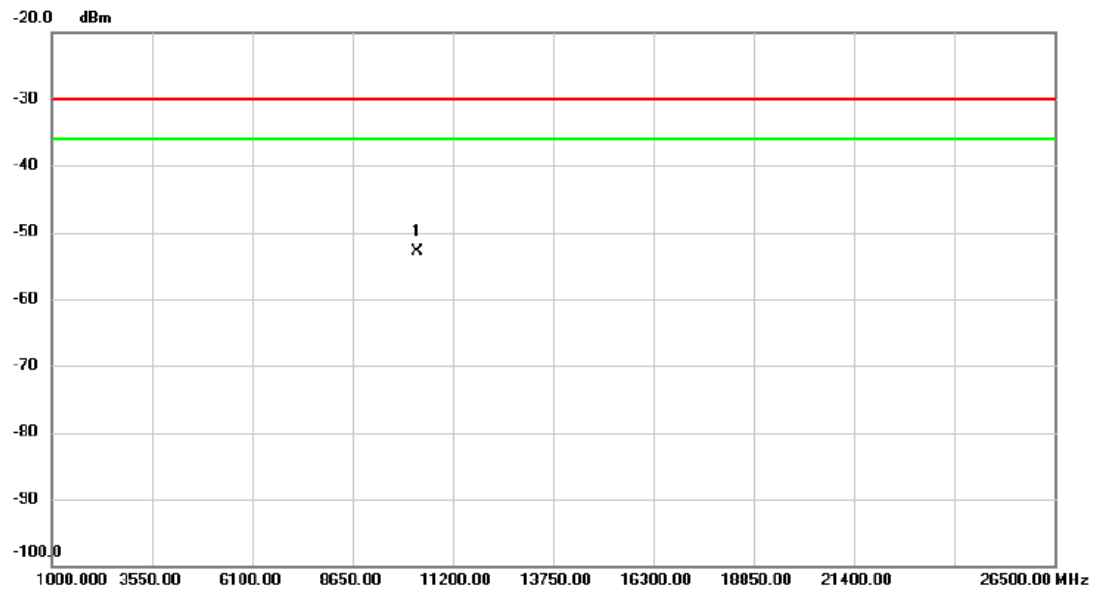
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1	*	10312.600	-58.86	5.86	-53.00	-30.00	-23.00	RMS	

Test Mode	TX Mode IEEE 802.11ax(HE20)_6415MHz	Polarization	Horizontal
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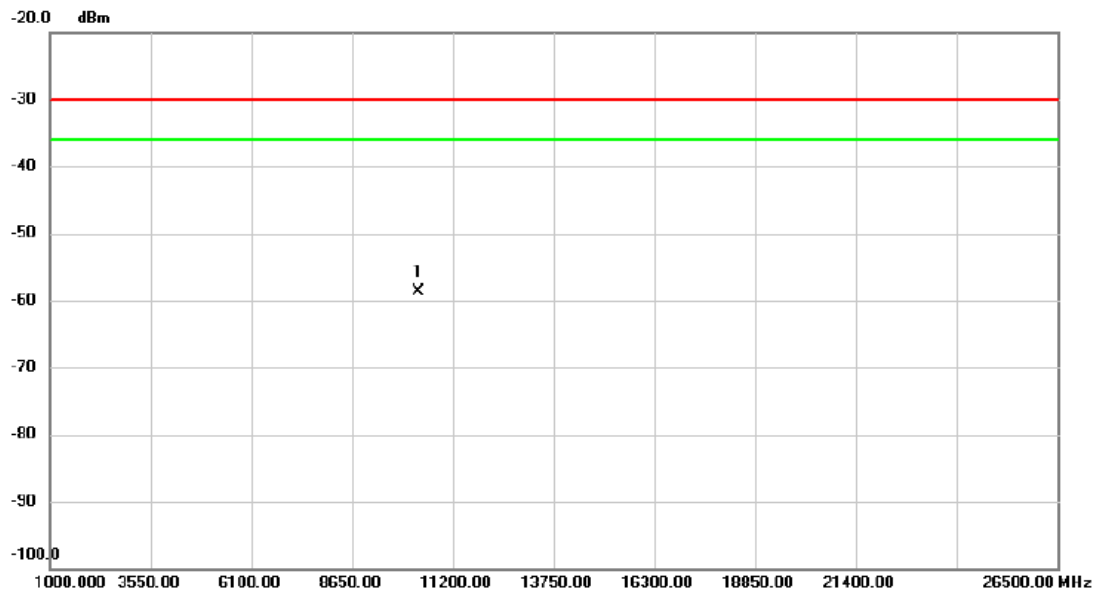
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	10312.600	-64.21	5.81	-58.40	-30.00	-28.40	RMS	

Test Mode	TX Mode IEEE 802.11ax(HE40)_5965MHz	Polarization	Vertical
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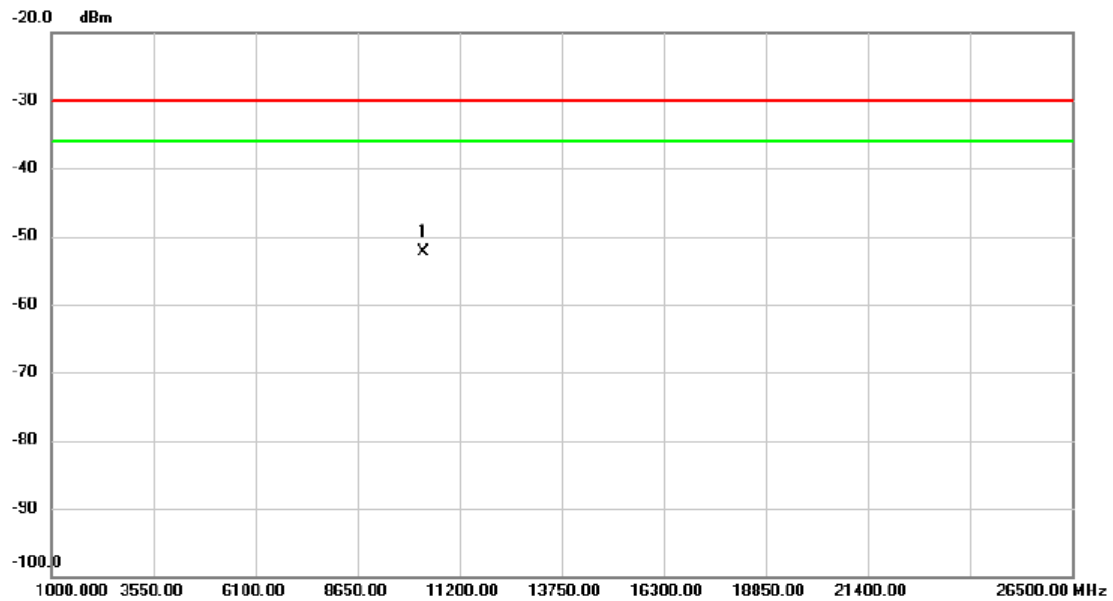
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	10312.600	-58.67	5.86	-52.81	-30.00	-22.81	RMS	

Test Mode	TX Mode IEEE 802.11ax(HE40)_5965MHz	Polarization	Horizontal
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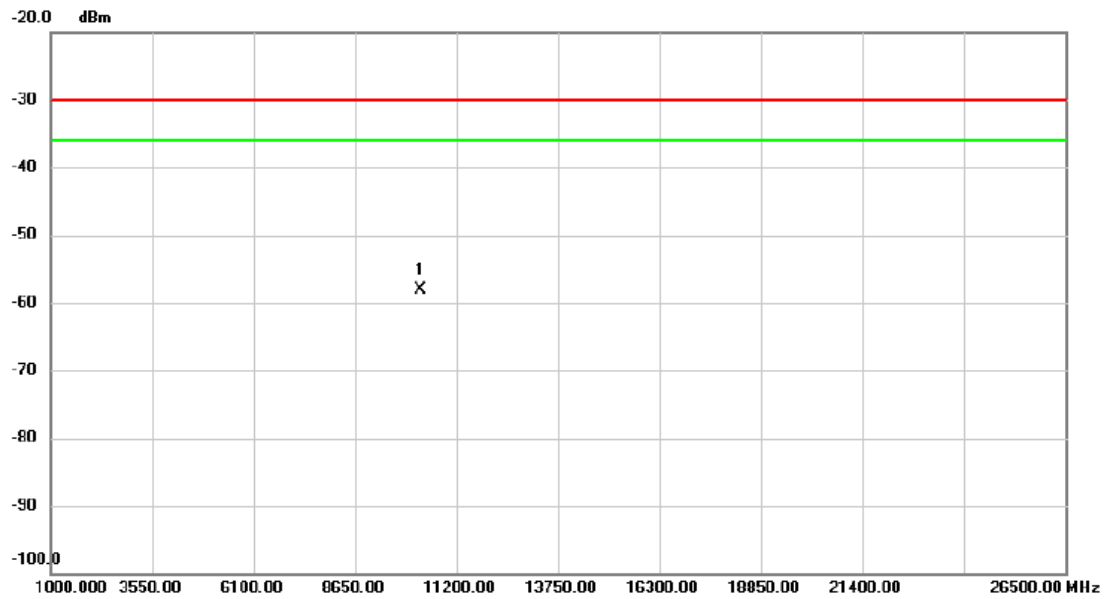
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	10330.450	-64.57	5.81	-58.76	-30.00	-28.76	RMS	

Test Mode	TX Mode IEEE 802.11ax(HE40)_6405MHz	Polarization	Vertical
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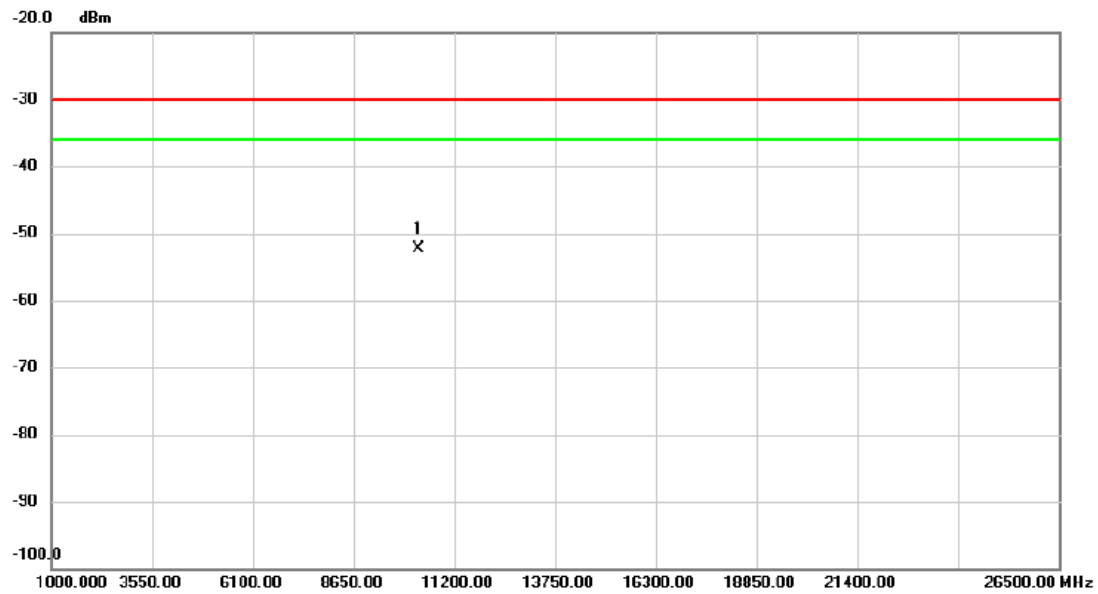
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	10312.600	-58.12	5.86	-52.26	-30.00	-22.26	RMS	

Test Mode	TX Mode IEEE 802.11ax(HE40)_6405MHz	Polarization	Horizontal
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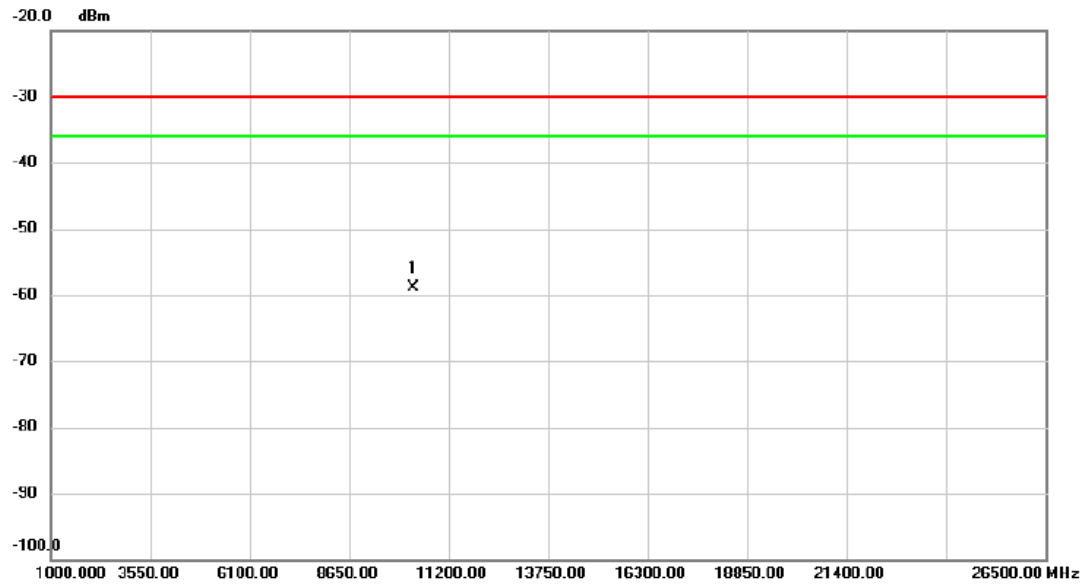
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	10312.600	-63.92	5.81	-58.11	-30.00	-28.11	RMS	

Test Mode	TX Mode IEEE 802.11ax(HE80)_5985MHz	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	*	10312.600	-58.14	5.86	-52.28	-30.00	-22.28	RMS	

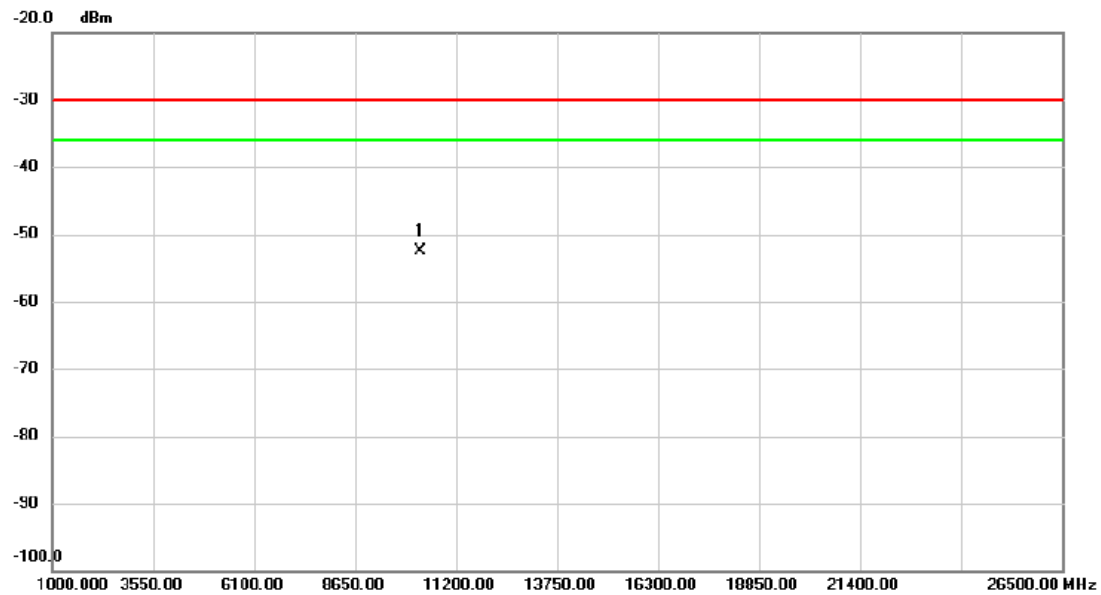
Test Mode	TX Mode IEEE 802.11ax(HE80)_5985MHz	Polarization	Horizontal
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No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	10307.500	-64.60	5.80	-58.80	-30.00	-28.80	RMS	

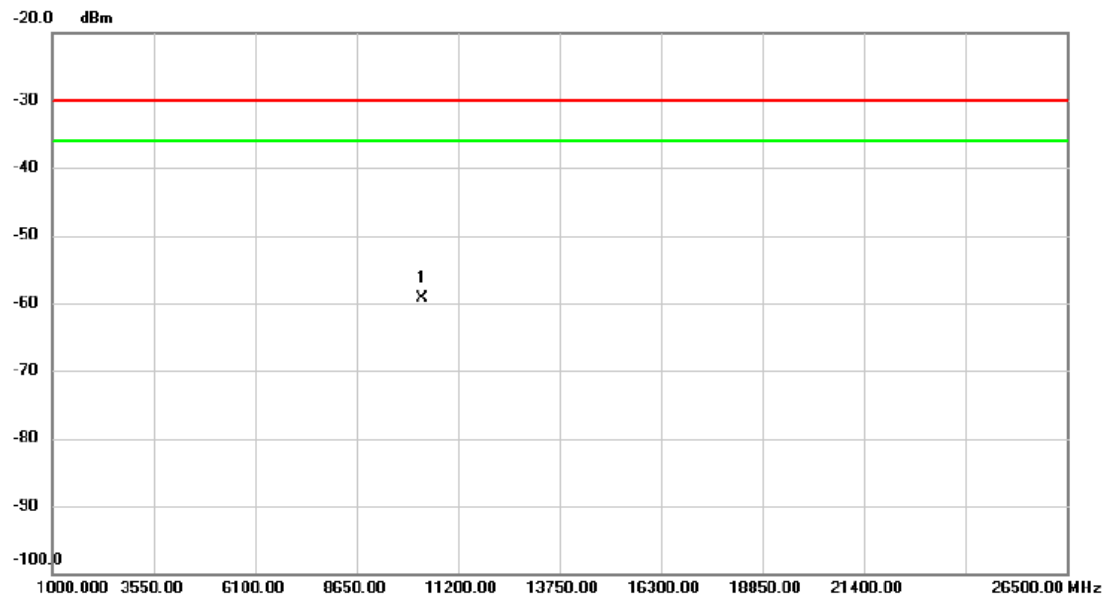


Test Mode	TX Mode IEEE 802.11ax(HE80)_6385MHz	Polarization	Vertical
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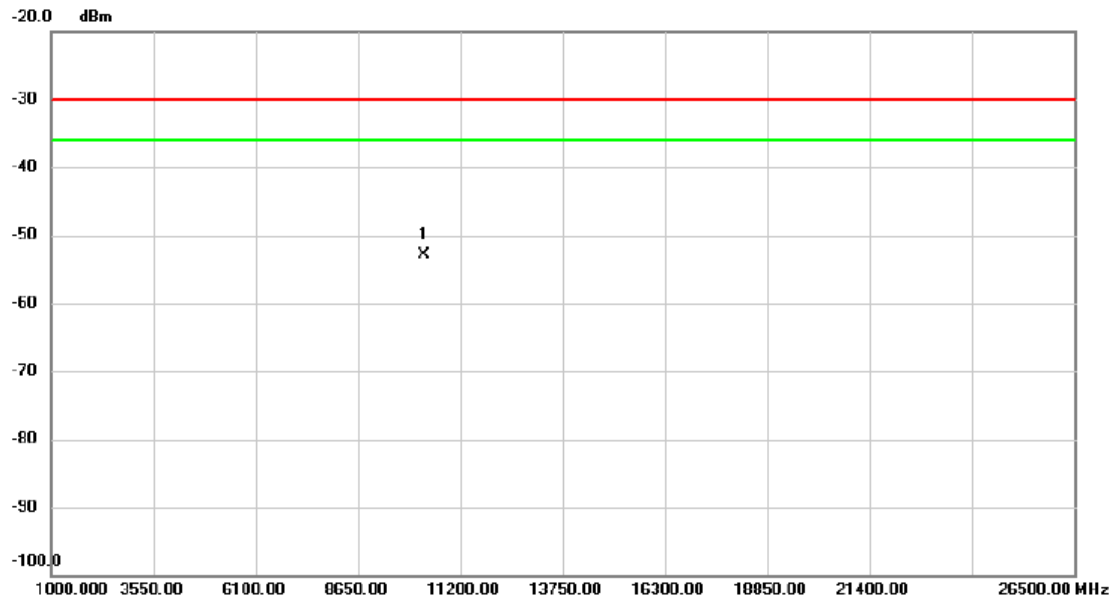
No. Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
	MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1 *	10312.600	-58.45	5.86	-52.59	-30.00	-22.59	RMS	

Test Mode	TX Mode IEEE 802.11ax(HE80)_6385MHz	Polarization	Horizontal
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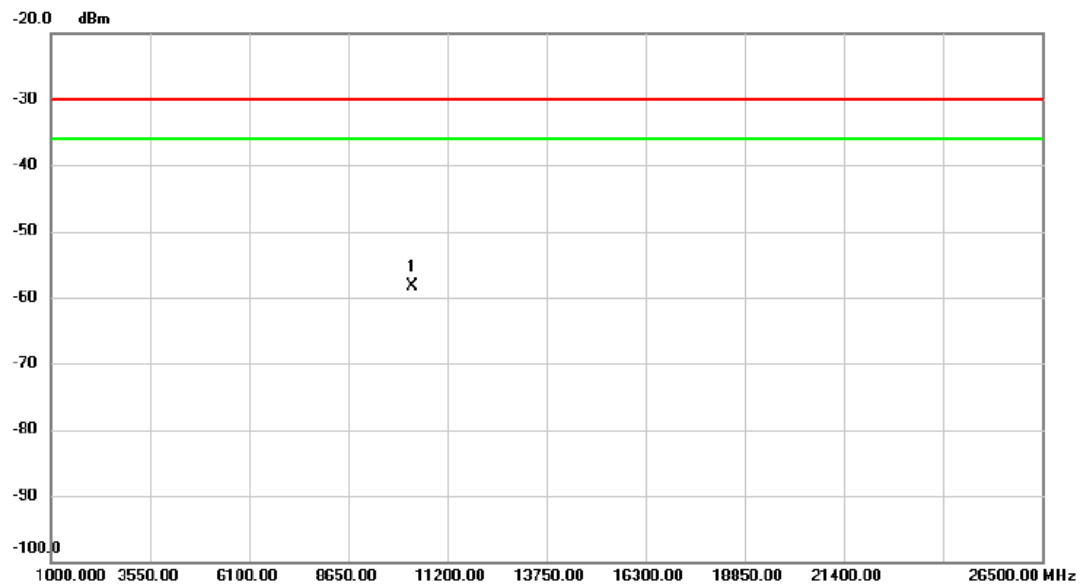
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1	*	10312.600	-65.17	5.81	-59.36	-30.00	-29.36	RMS	

Test Mode	TX Mode IEEE 802.11ax(HE160)_6025MHz	Polarization	Vertical
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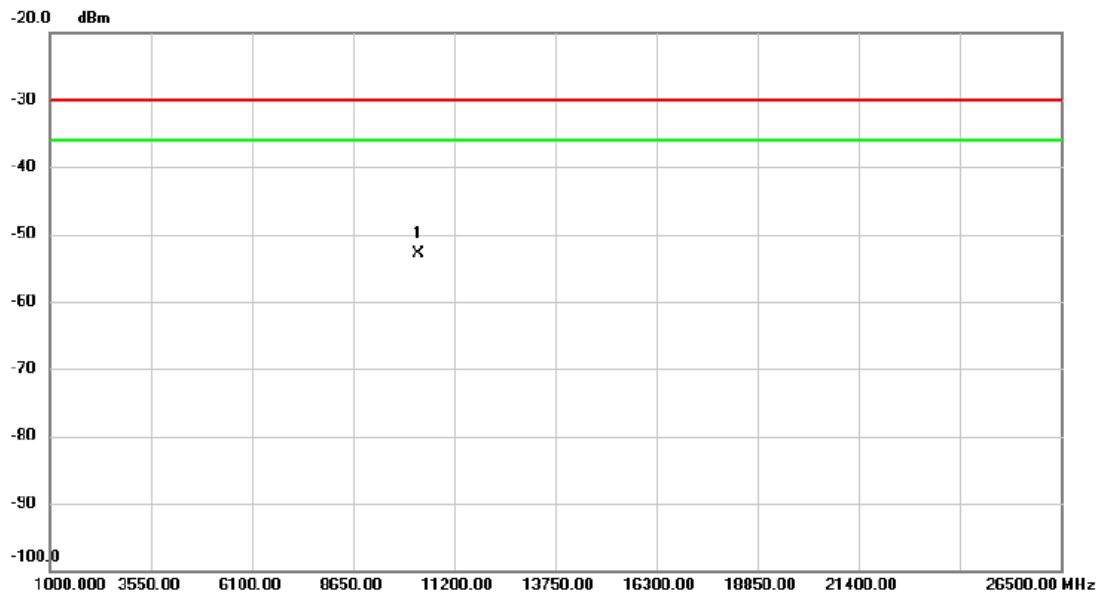
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1	*	10312.600	-58.74	5.86	-52.88	-30.00	-22.88	RMS	

Test Mode	TX Mode IEEE 802.11ax(HE160)_6025MHz	Polarization	Horizontal
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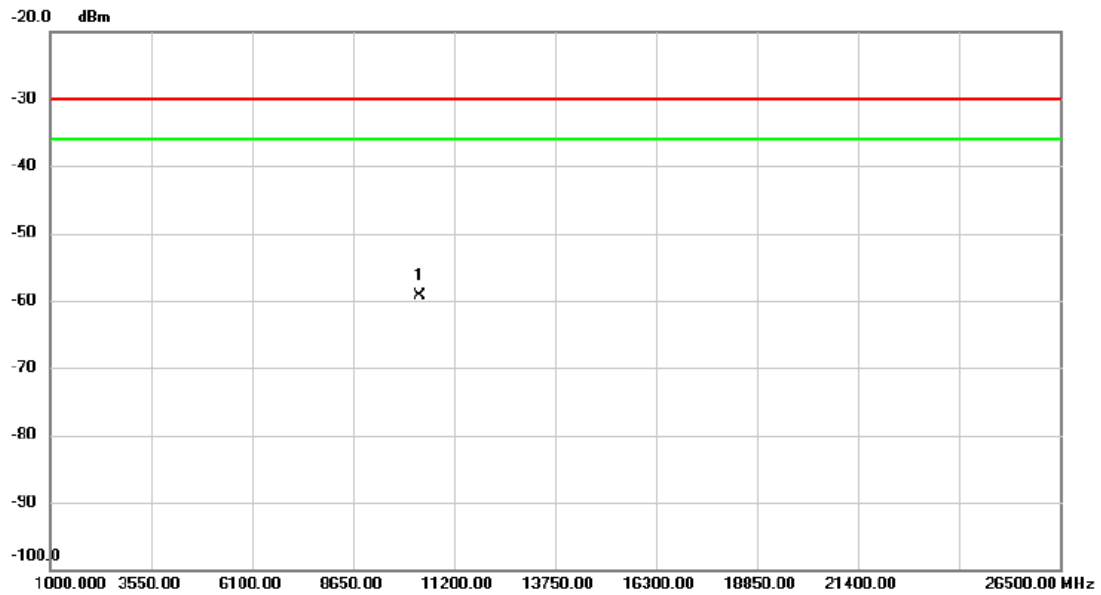
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1	*	10311.325	-64.17	5.81	-58.36	-30.00	-28.36	RMS	

Test Mode	TX Mode IEEE 802.11ax(HE160)_6345MHz	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	*	10312.600	-58.69	5.86	-52.83	-30.00	-22.83	RMS	

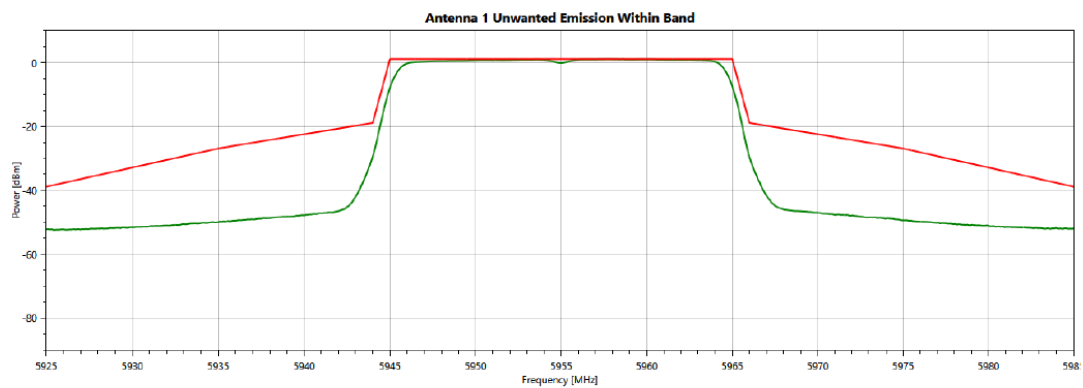
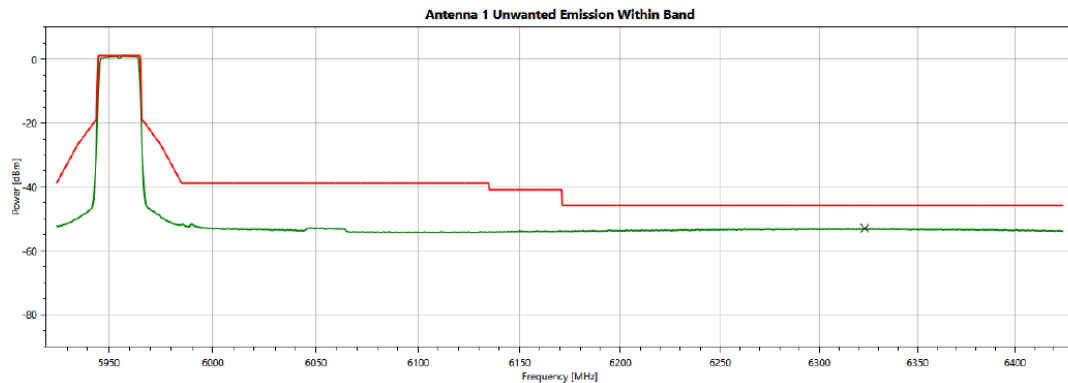
Test Mode	TX Mode IEEE 802.11ax(HE160)_6345MHz	Polarization	Horizontal
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No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1	*	10329.175	-65.08	5.81	-59.27	-30.00	-29.27	RMS	

## **APPENDIX F - TRANSMITTER UNWANTED EMISSIONS WITHIN THE 6 GHZ RLAN BAND**

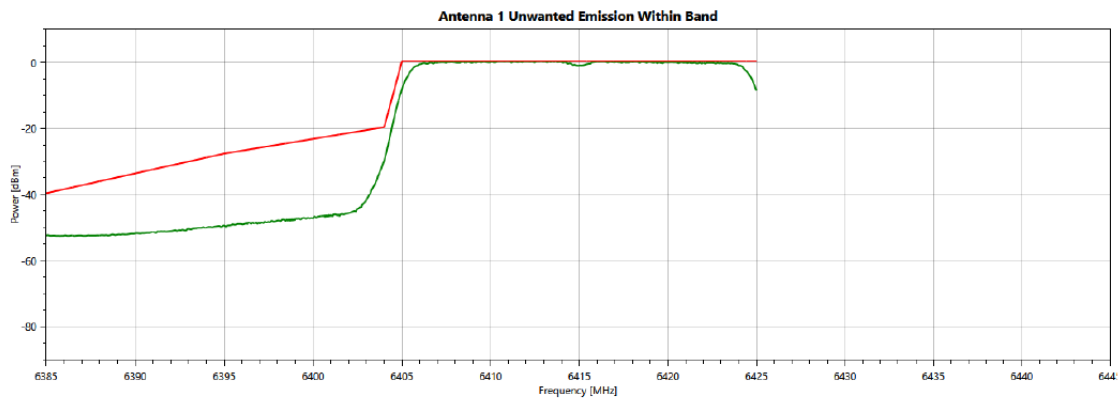
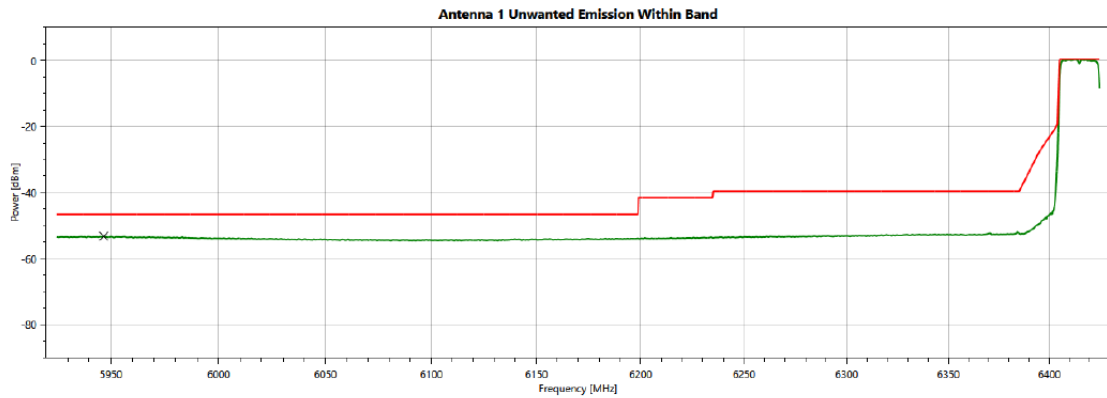
Test Mode :	IEEE 802.11ax(HE20)_5955MHz
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MHz	Emission(dBm)	Limit(dBm)	OverLimit(dB)	Status
6,323.08	-52.98	-45.87	-7.11	Pass

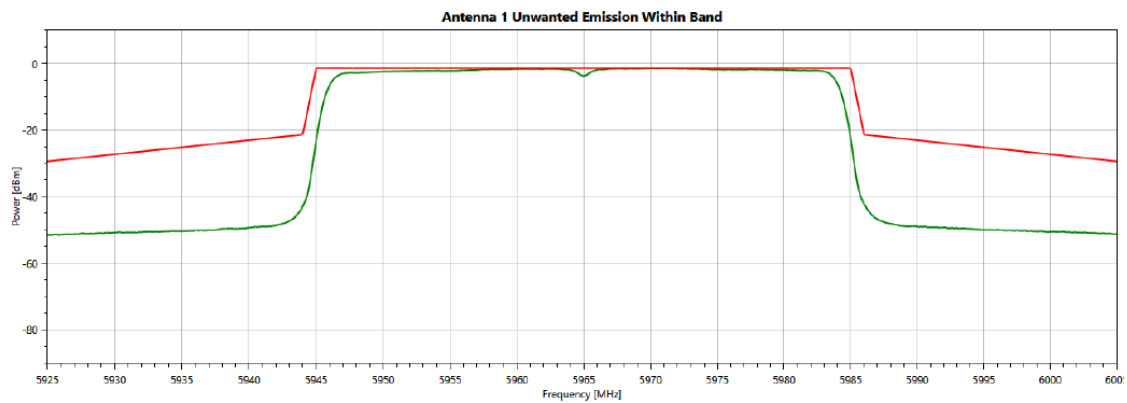
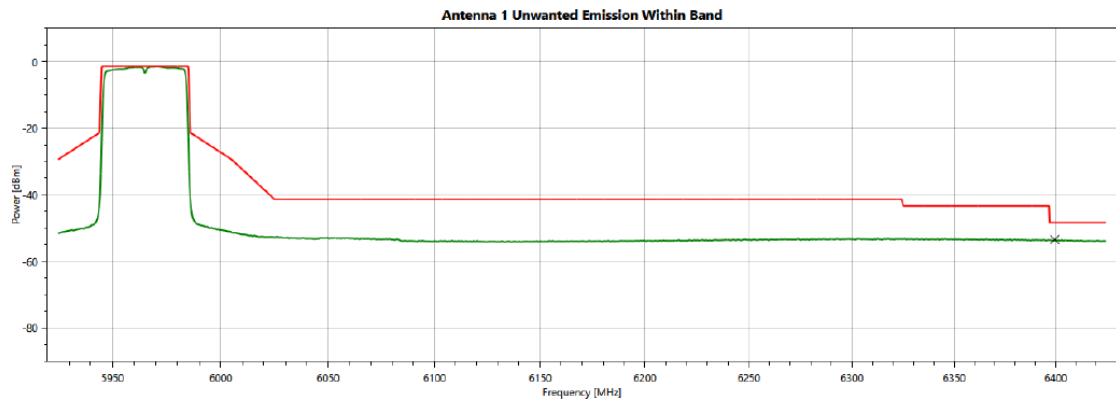


Test Mode : IEEE 802.11ax(HE20)\_6415MHz



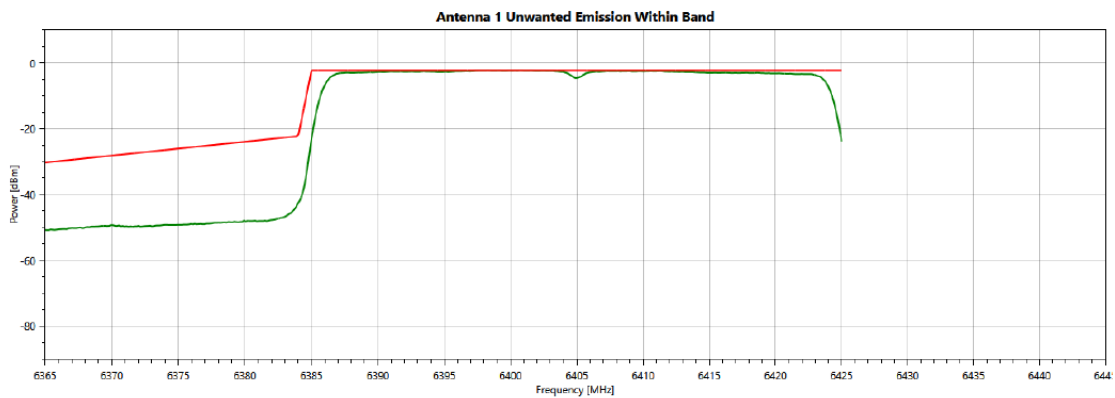
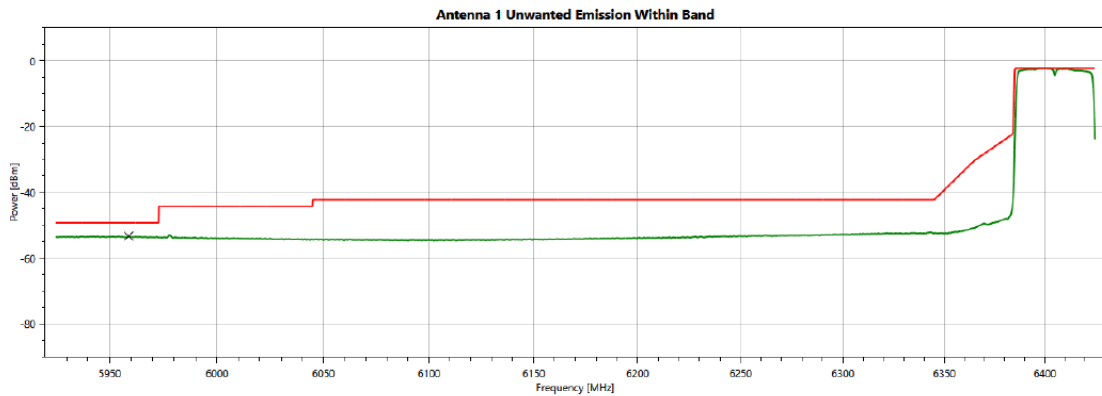
MHz	Emission(dBm)	Limit(dBm)	OverLimit(dB)	Status
5,946.67	-53.25	-46.60	-6.65	Pass

Test Mode : IEEE 802.11ax(HE40)\_5965MHz



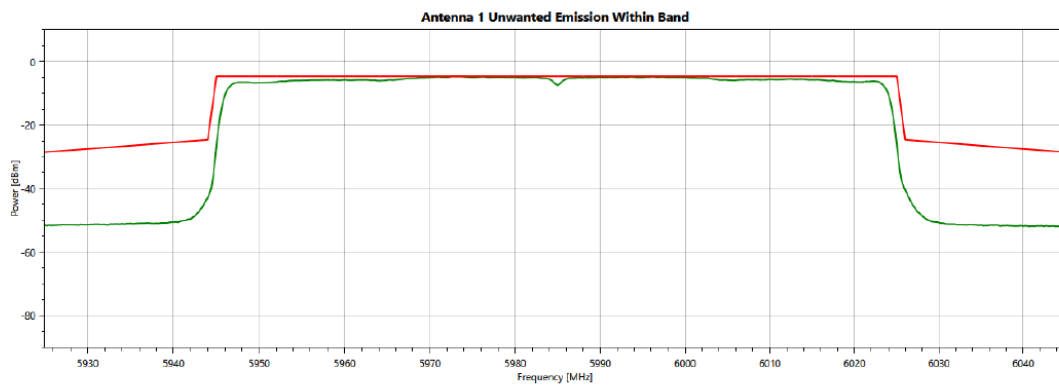
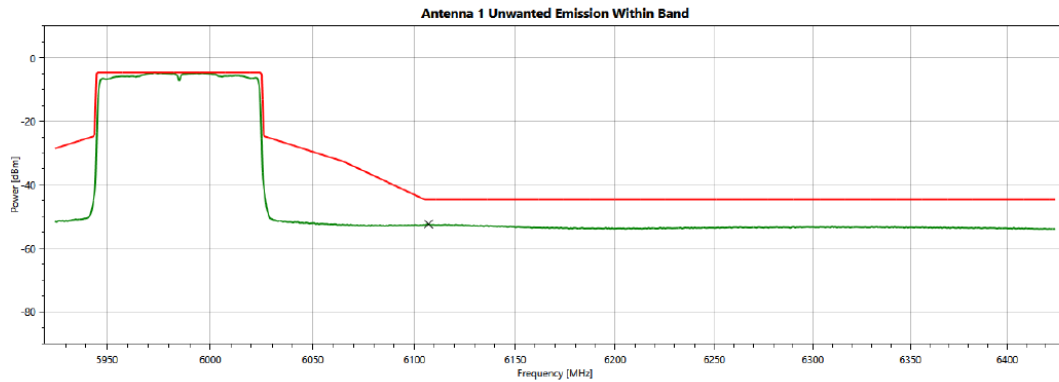
MHz	Emission(dBm)	Limit(dBm)	OverLimit(dB)	Status
6,399.52	-53.47	-48.37	-5.10	Pass

Test Mode : IEEE 802.11ax(HE40)\_6405MHz



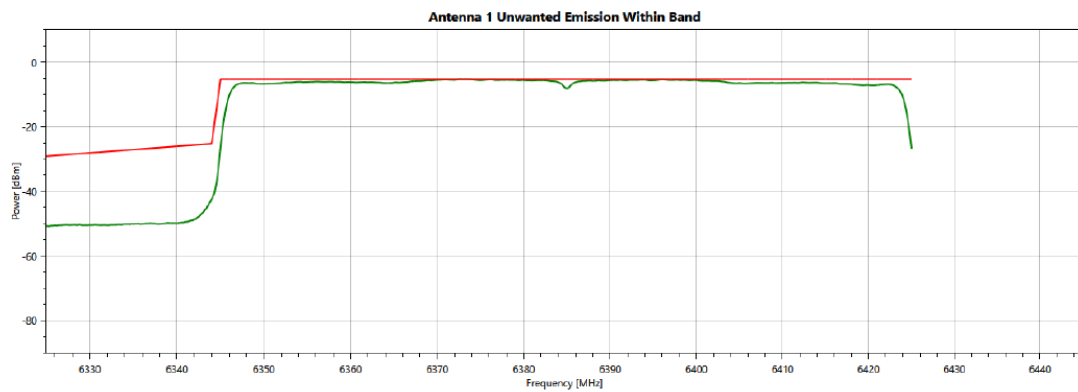
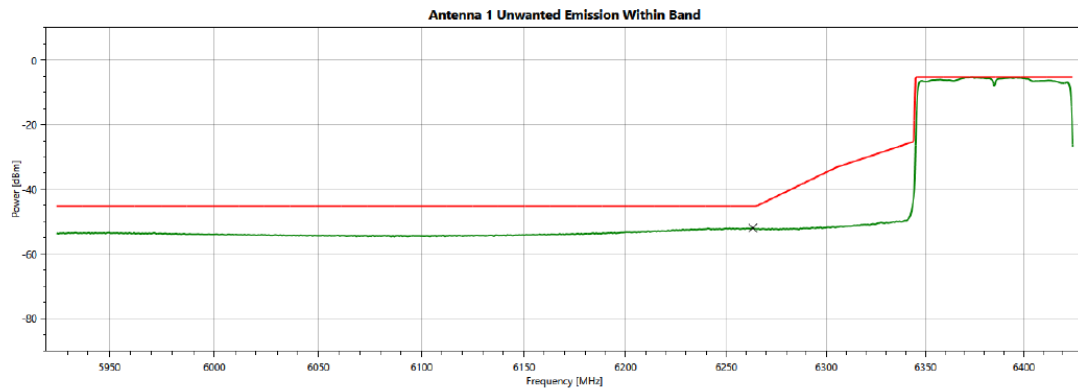
MHz	Emission(dBm)	Limit(dBm)	OverLimit(dB)	Status
5,958.83	-53.31	-49.26	-4.05	Pass

Test Mode : IEEE 802.11ax(HE80)\_5985MHz



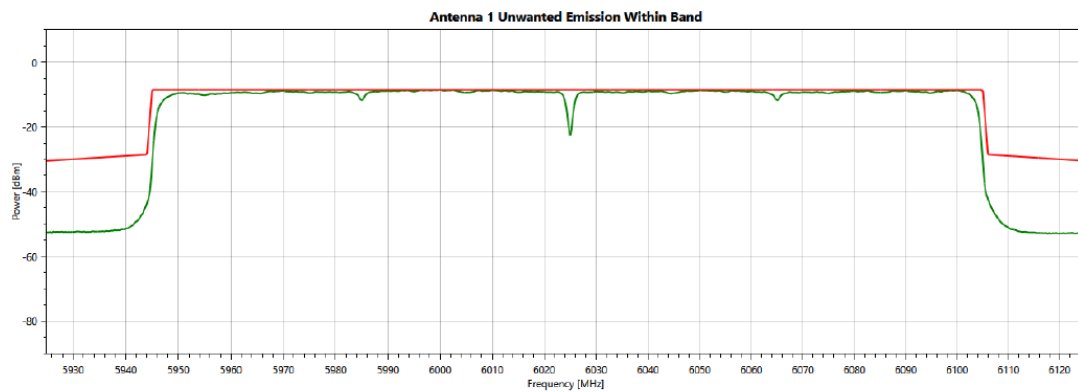
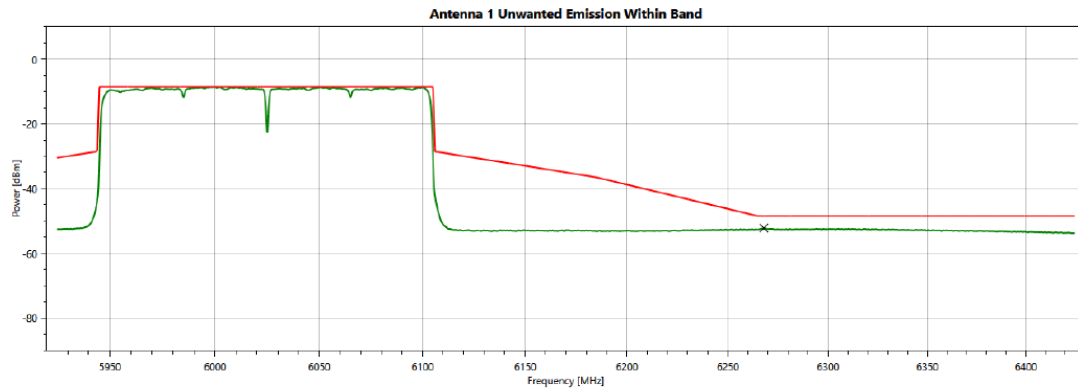
MHz	Emission(dBm)	Limit(dBm)	OverLimit(dB)	Status
6,107.00	-52.39	-44.64	-7.75	Pass

Test Mode :	IEEE 802.11ax(HE80)_6385MHz
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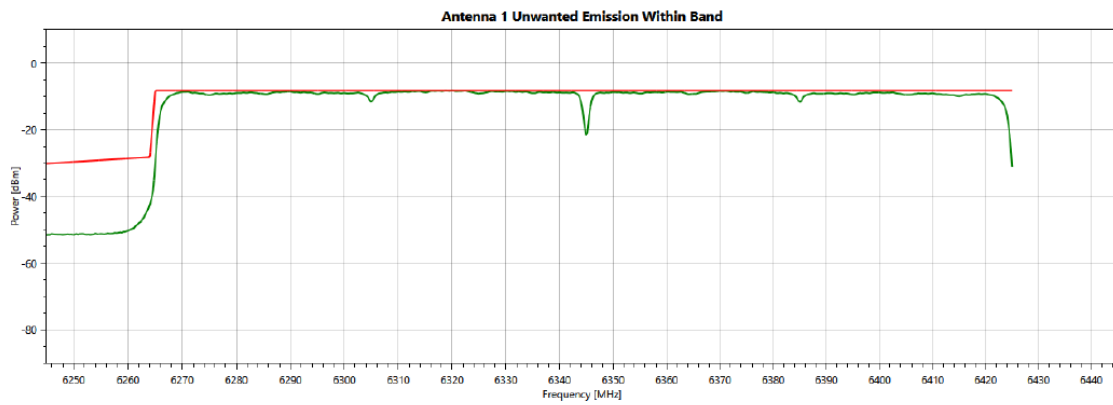
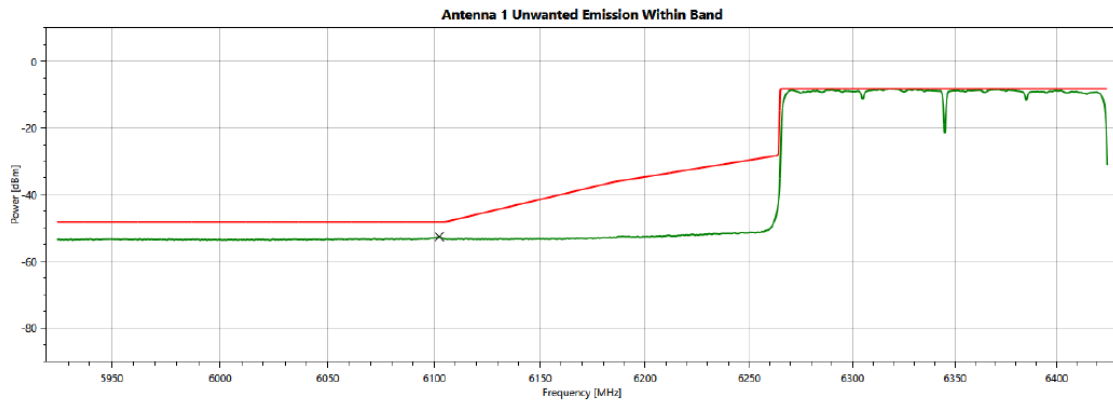
MHz	Emission(dBm)	Limit(dBm)	OverLimit(dB)	Status
6,263.20	-51.99	-45.22	-6.77	Pass

Test Mode : IEEE 802.11ax(HE160)\_6025MHz



MHz	Emission(dBm)	Limit(dBm)	OverLimit(dB)	Status
6,267.88	-52.18	-48.52	-3.66	Pass

Test Mode : IEEE 802.11ax(HE160)\_6345MHz

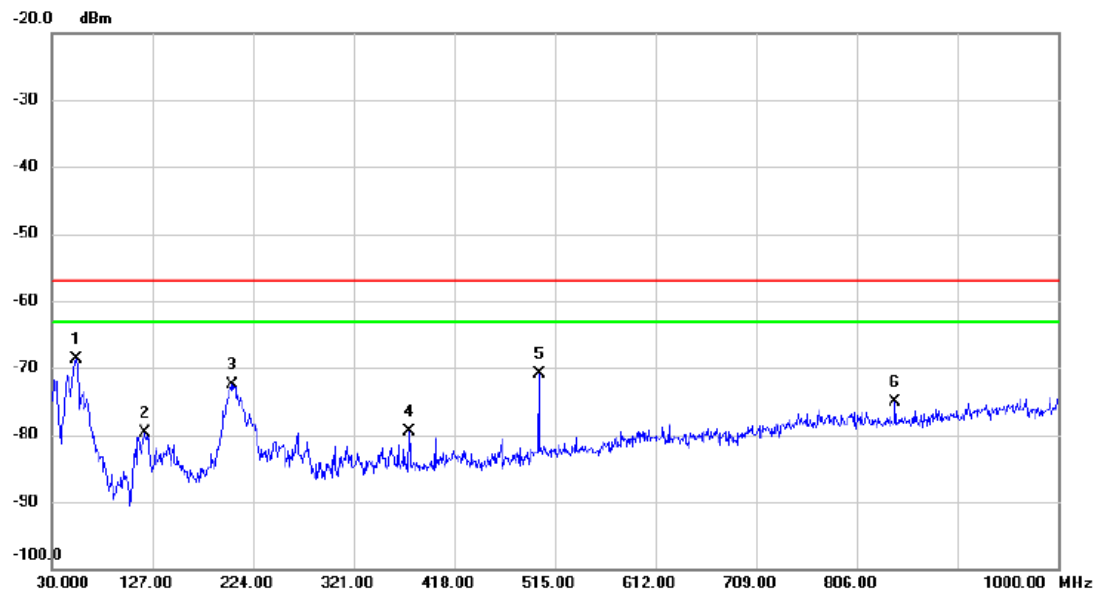


MHz	Emission(dBm)	Limit(dBm)	OverLimit(dB)	Status
6,102.30	-52.62	-48.20	-4.42	Pass

## **APPENDIX G - RECEIVER SPURIOUS EMISSIONS (30MHZ TO 1000MHZ)**

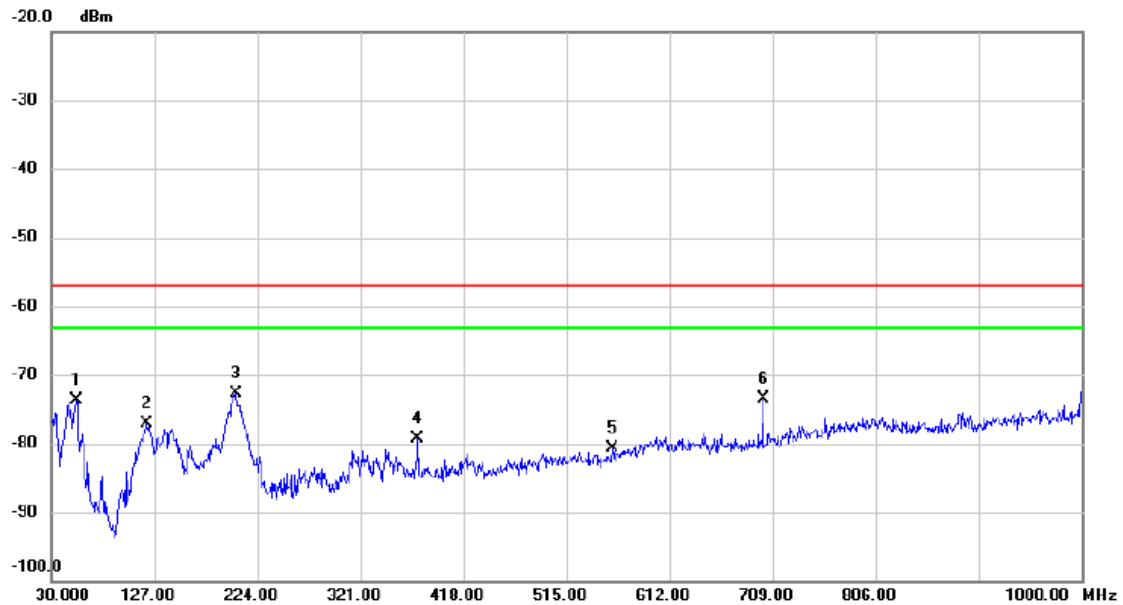


Test Mode	RX Mode IEEE 802.11ax(HE160)_6025MHz	Polarization	Vertical
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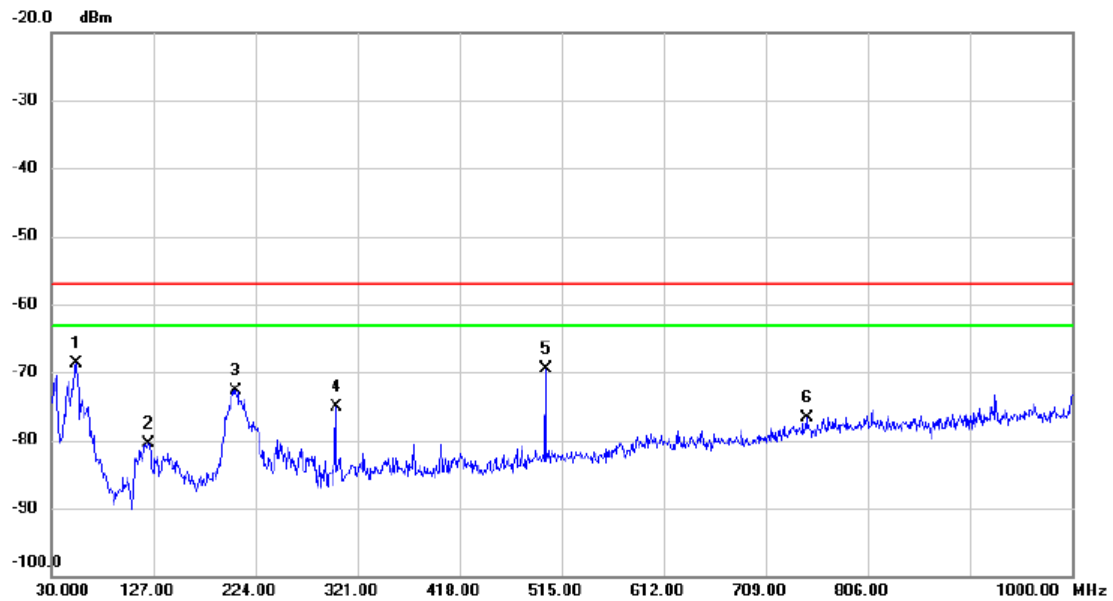
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1	*	53.862	-66.58	-2.16	-68.74	-57.00	-11.74	RMS	
2		119.725	-71.48	-8.22	-79.70	-57.00	-22.70	RMS	
3		203.339	-64.81	-7.63	-72.44	-57.00	-15.44	RMS	
4		374.932	-77.62	-1.81	-79.43	-57.00	-22.43	RMS	
5		499.965	-70.59	-0.28	-70.87	-57.00	-13.87	RMS	
6		843.345	-80.11	5.00	-75.11	-57.00	-18.11	RMS	

Test Mode	RX Mode IEEE 802.11ax(HE160)_6025MHz	Polarization	Horizontal
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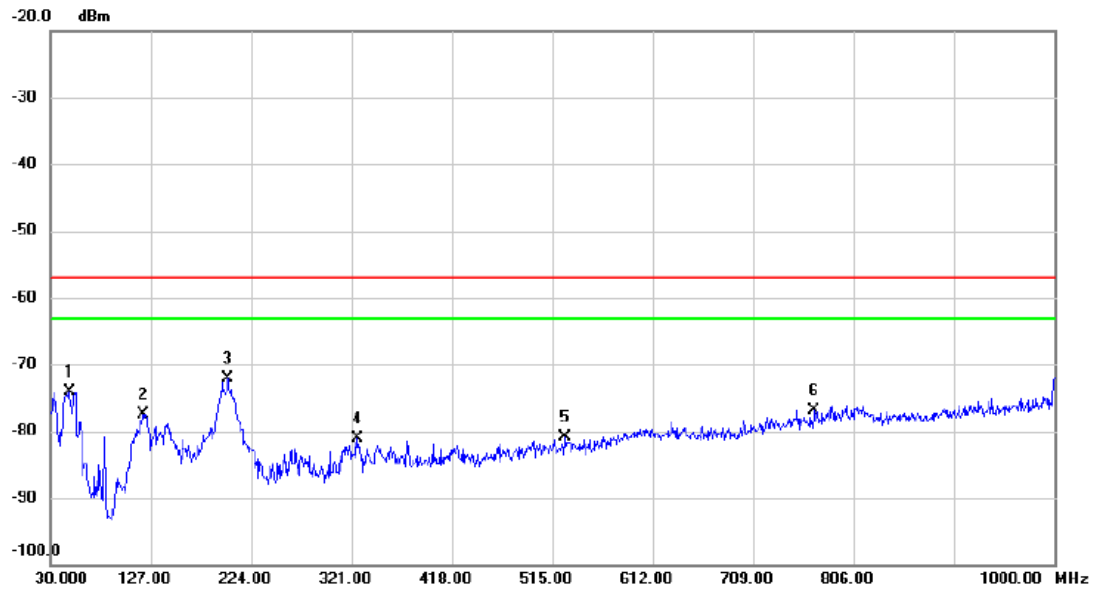
No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		53.474	-68.91	-4.72	-73.63	-57.00	-16.63	RMS	
2		119.628	-69.56	-7.61	-77.17	-57.00	-20.17	RMS	
3	*	204.503	-65.90	-6.83	-72.73	-57.00	-15.73	RMS	
4		374.932	-77.43	-1.96	-79.39	-57.00	-22.39	RMS	
5		557.777	-81.06	0.37	-80.69	-57.00	-23.69	RMS	
6		700.076	-76.07	2.62	-73.45	-57.00	-16.45	RMS	

Test Mode	RX Mode IEEE 802.11ax(HE160)_6345MHz	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	*	53.280	-66.63	-2.07	-68.70	-57.00	-11.70	RMS	
2		122.635	-73.00	-7.52	-80.52	-57.00	-23.52	RMS	
3		204.697	-65.13	-7.57	-72.70	-57.00	-15.70	RMS	
4		300.339	-71.39	-3.75	-75.14	-57.00	-18.14	RMS	
5		500.062	-69.12	-0.28	-69.40	-57.00	-12.40	RMS	
6		748.576	-81.10	4.37	-76.73	-57.00	-19.73	RMS	

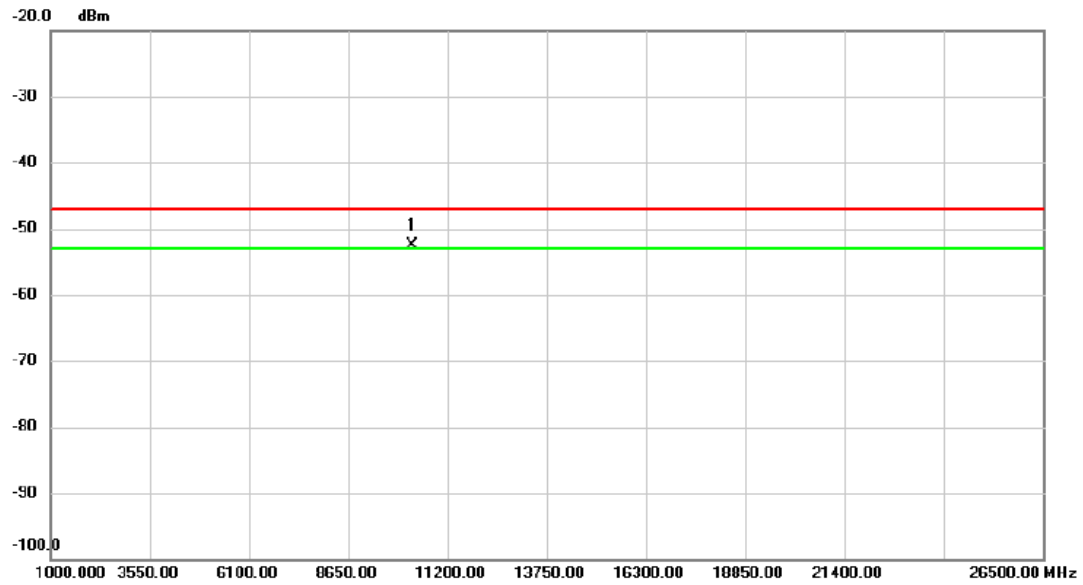
Test Mode	RX Mode IEEE 802.11ax(HE160)_6345MHz	Polarization	Horizontal
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No. Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1	48.915	-70.63	-3.52	-74.15	-57.00	-17.15	RMS	
2	119.531	-69.82	-7.62	-77.44	-57.00	-20.44	RMS	
3 *	200.720	-65.25	-6.88	-72.13	-57.00	-15.13	RMS	
4	326.820	-78.28	-2.82	-81.10	-57.00	-24.10	RMS	
5	527.707	-80.79	-0.19	-80.98	-57.00	-23.98	RMS	
6	768.364	-81.49	4.66	-76.83	-57.00	-19.83	RMS	

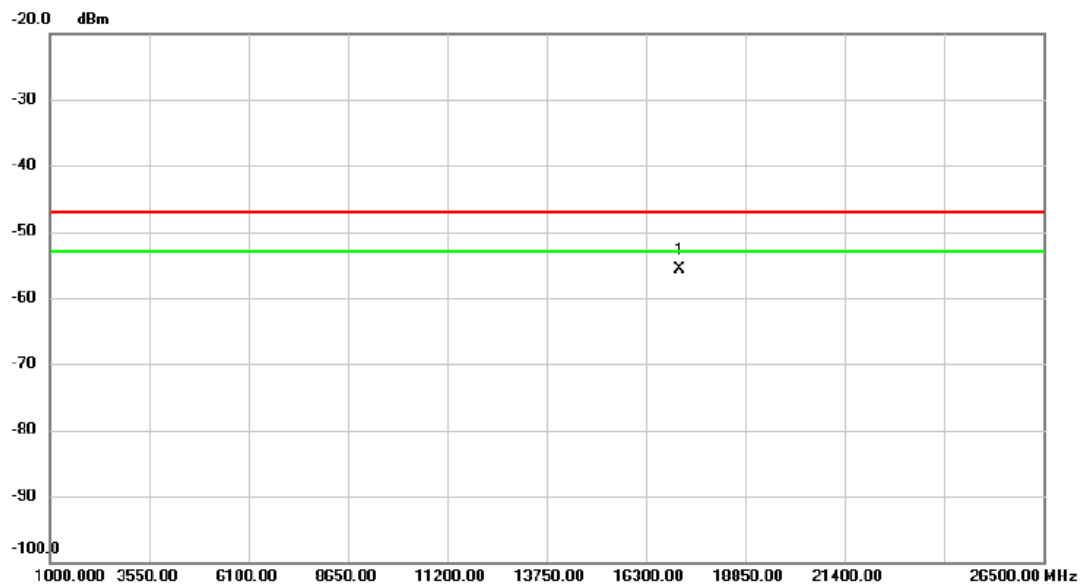
## **APPENDIX H - RECEIVER SPURIOUS EMISSIONS (ABOVE 1000MHZ)**

Test Mode	RX Mode IEEE 802.11ax(HE160)_6025MHz	Polarization	Vertical
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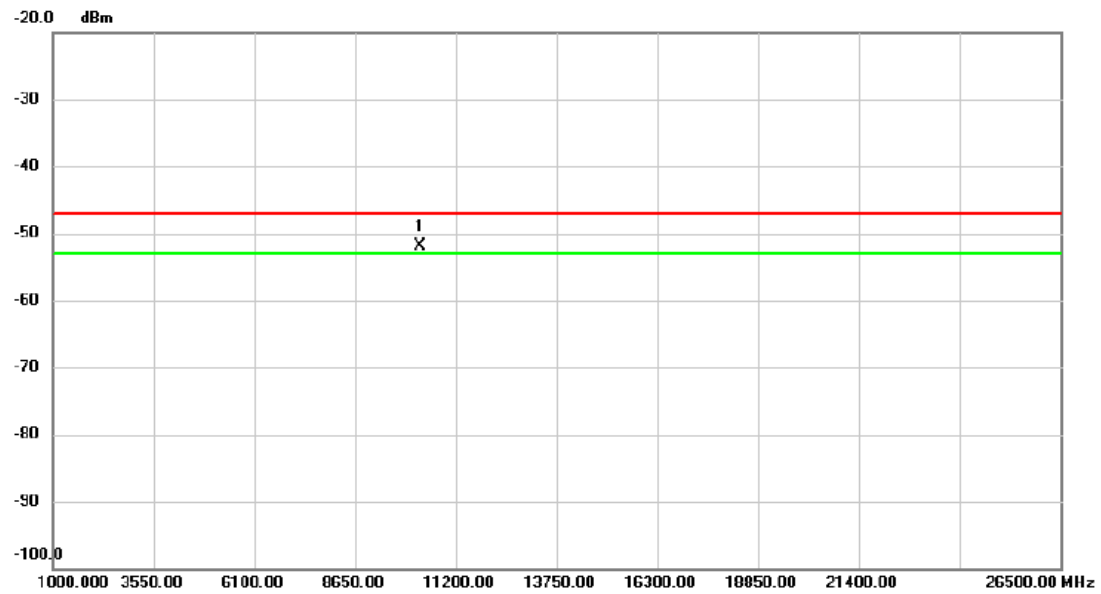
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1	*	10312.600	-58.26	5.86	-52.40	-47.00	-5.40	RMS	

Test Mode	RX Mode IEEE 802.11ax(HE160)_6025MHz	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	*	17168.275	-68.79	13.08	-55.71	-47.00	-8.71	RMS	

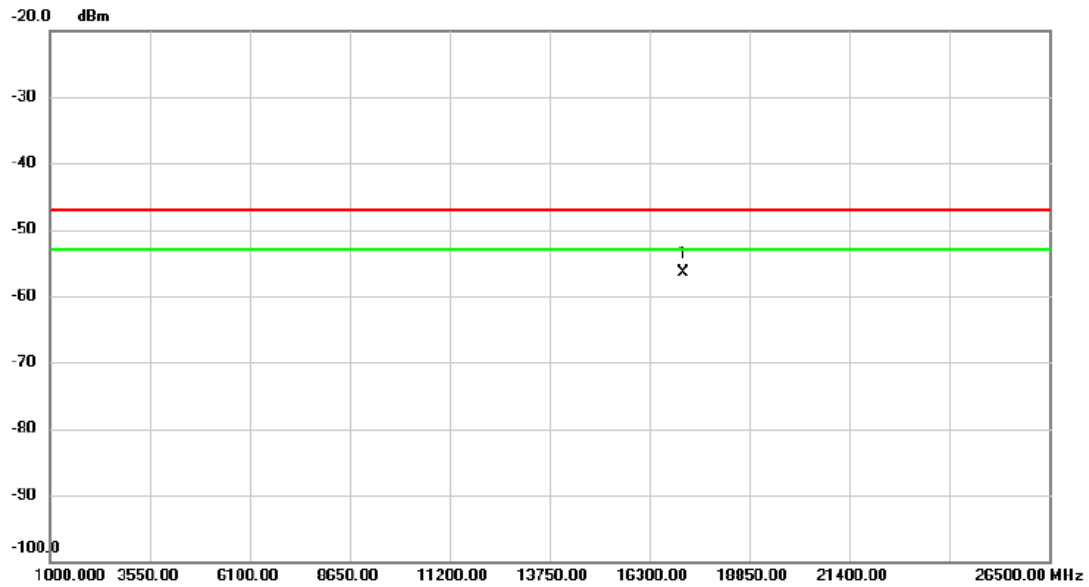
Test Mode	RX Mode IEEE 802.11ax(HE160)_6345MHz	Polarization	Vertical
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No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1	*	10312.600	-57.78	5.86	-51.92	-47.00	-4.92	RMS	



Test Mode	RX Mode IEEE 802.11ax(HE160)_6345MHz	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	*	17159.350	-69.57	13.06	-56.51	-47.00	-9.51	RMS	

## **APPENDIX I - CHANNEL ACCESS MECHANISM**

Test Mode:	TX Mode_ IEEE 802.11ax(HE20)_5955MHz, IEEE 802.11ax(HE40)_5965MHz
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### Channel access mechanism Results

Detection Threshold Level			-83.97 dBm/MHz	
Interference Signal	Freq.(MHz)		Short Control Signalling Transmissions (ms)	Number of Short Control Signalling Transmissions
AWGN	AX20	5955	0	0
OFDM1		5955	0	0
OFDM2		5955	0	0
AWGN	AX40	5955	0	0
		5975	0	0
Limit			2.5	≤ 50
Result			Pass	

#### Note:

1. A channel is an occupied channel as long as transmissions in that channel are present at a power level greater than the ED Threshold (EDT). The power level is determined by integrating the received power over the channel, and then normalized to per MHz power. The received power shall be measured at the interface between the equipment and the antenna assembly. If no transmissions are present at a power level greater than the EDT, the channel is an unoccupied channel. The EDT is proportional to the equipment's maximum configured transmit power ( $P_{max}$ ):

For  $P_{max} \leq 14$  dBm:

EDT = -75 dBm/MHz

For  $14 \text{ dBm} < P_{max} \leq 24$  dBm:

EDT = -85 dBm/MHz + (24 dBm -  $P_{max}$ )

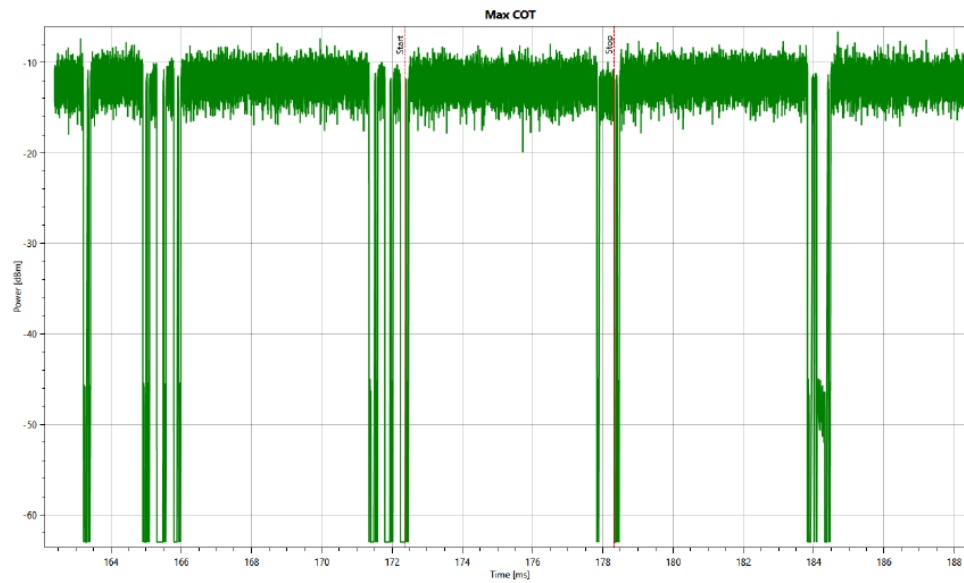
For  $P_{max} \geq 24$  dBm:

EDT = -85 dBm/MHz

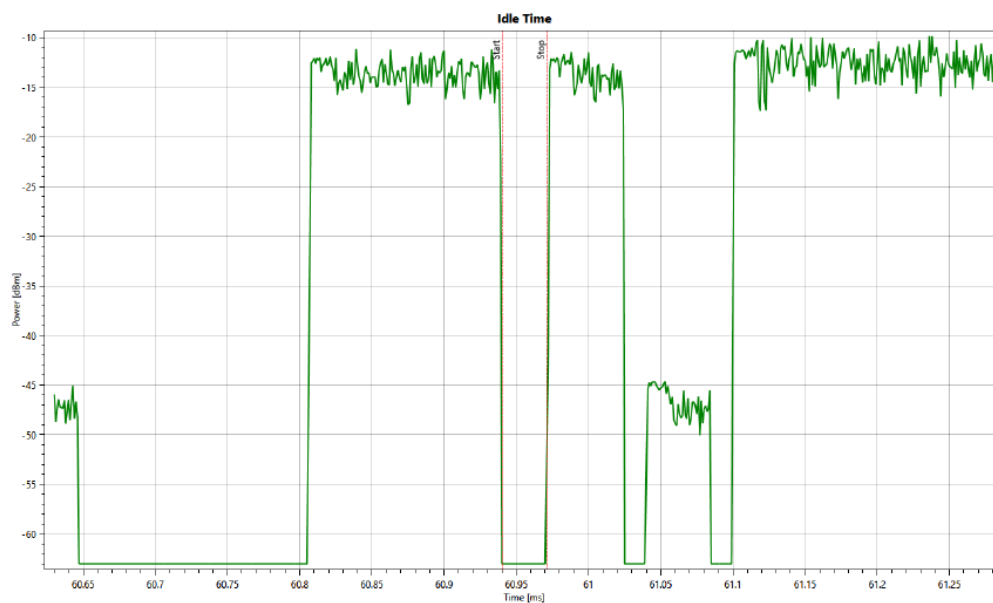
2. Short Control Signalling Transmissions = 50 (ms) \* Duty cycle (%)

# Single Channel device test results

## IEEE 802.11aX(HE20) Mode 5955 MHz

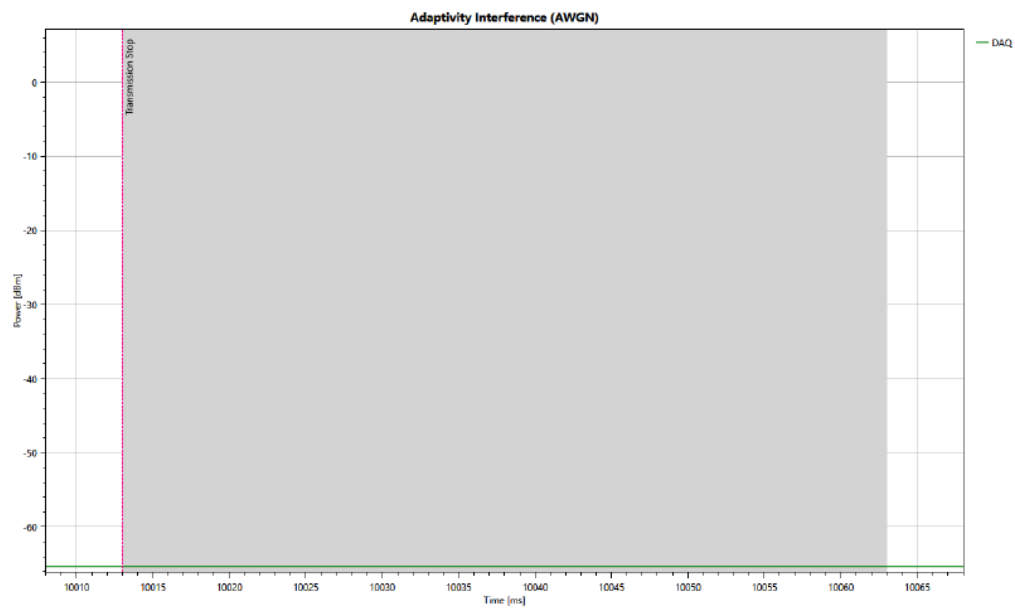
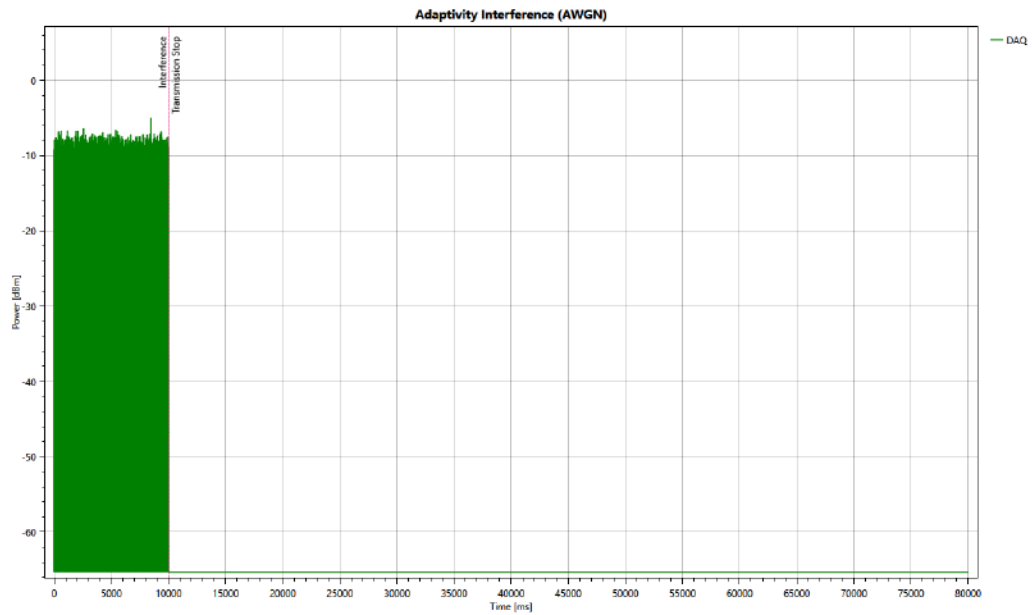


Max COT (ms): 5.943



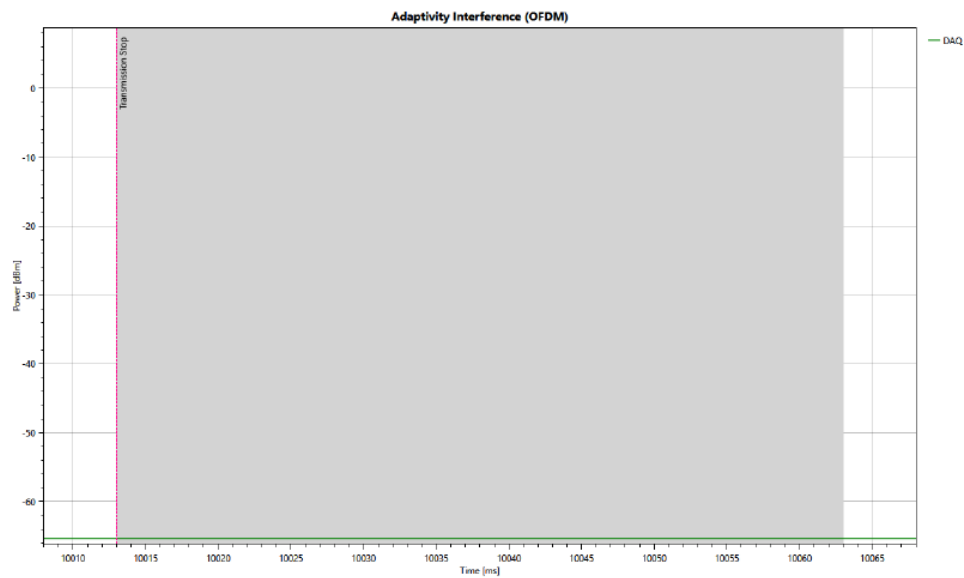
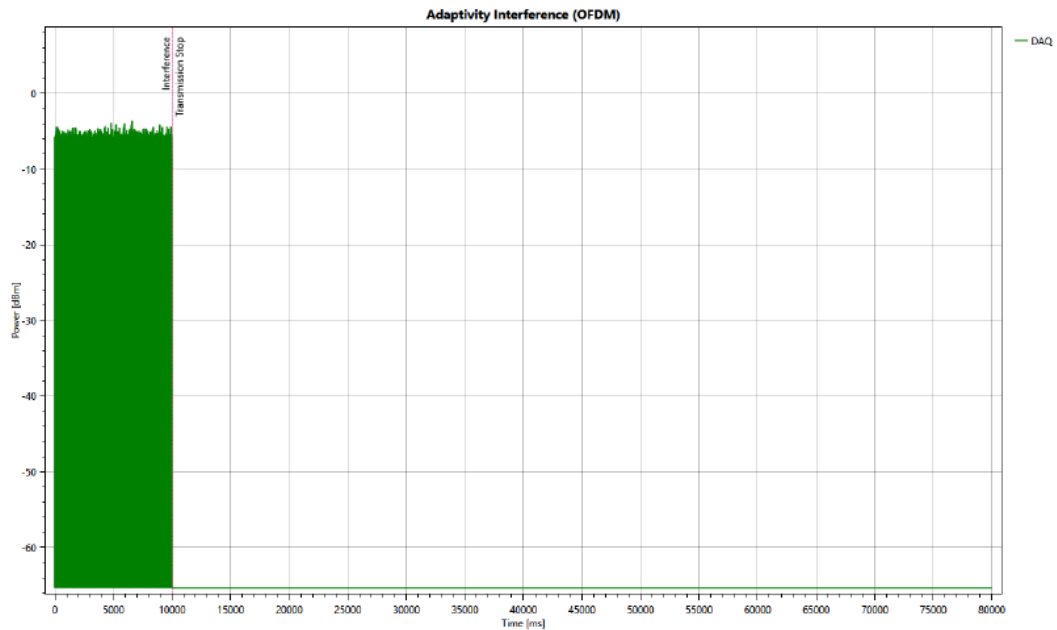
Min Idle (us): 31.00

# IEEE 802.11ax(HE20) Mode 5955 MHz Interference Signal(AWGN)



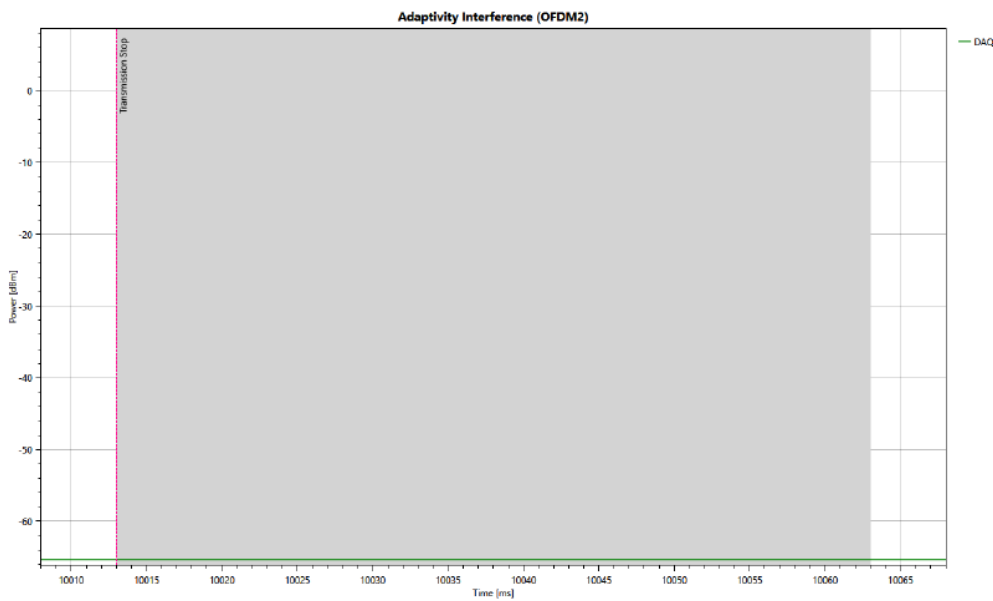
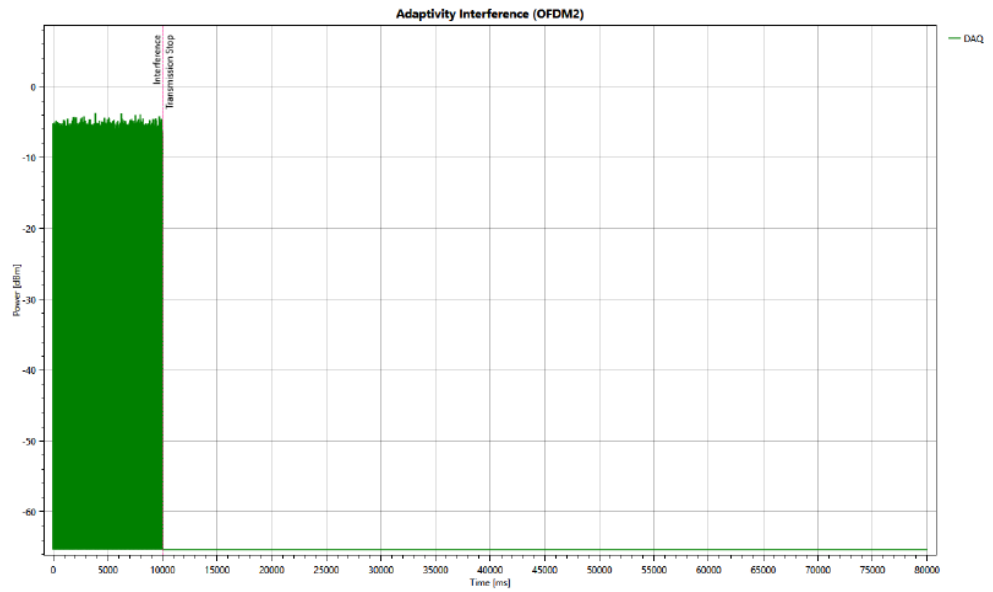
Test Result :	Pass	Max Duty (%) :	0.0000
Interference add (s) :	10.00	SCST Time (ms) :	0.0000
XMSN Stop (s) :	10.01	Start (ms) :	10,013
XMSN COTs (ms) :	13.00	Stop (ms) :	10,063

## IEEE 802.11ax(HE20) Mode 5955 MHz Interference Signal(OFDM1)



Test Result :	Pass	Max Duty (%) :	0.0000
Interference add (s) :	10.00	SCST Time (ms) :	0.0000
XMSN Stop (s) :	10.01	Start (ms) :	10,013
XMSN COTs (ms) :	13.00	Stop (ms) :	10,063

# IEEE 802.11ax(HE20) Mode 5955 MHz Interference Signal(OFDM2)



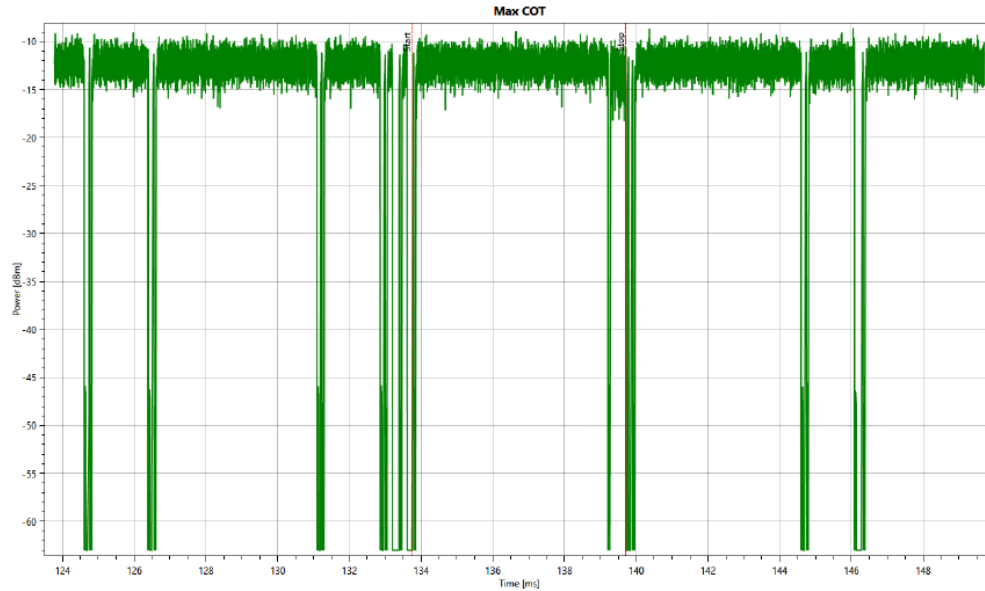
Test Result :	Pass	Max Duty (%) :	0.0000
Interference add (s) :	10.00	SCST Time (ms) :	0.0000
XMSN Stop (s) :	10.01	Start (ms) :	10,013
XMSN COTs (ms) :	13.00	Stop (ms) :	10,063

## Multi-Channel device test results

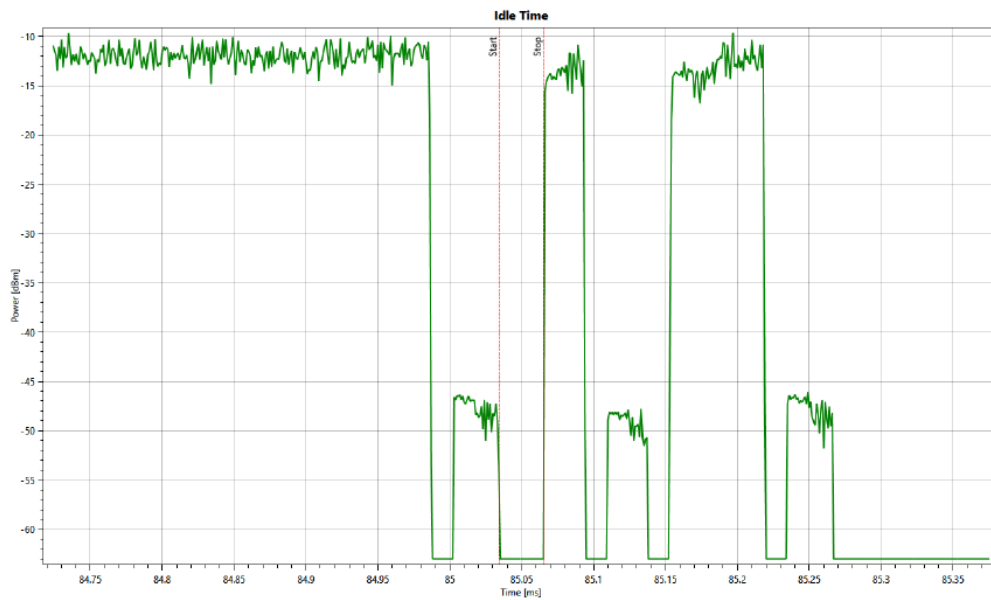
### Option 2:

The EUT is set to a channel bandwidth of 40MHz with the primary operating channel 5955MHz. One additional adjacent 20MHz operating channel that constructs the full 40 MHz channel bandwidth is located at 5975 MHz. Data traffic is started and then an interfering signal is injected into the EUT at 5975 MHz.

### IEEE 802.11ax(HE40) Mode 5955 MHz



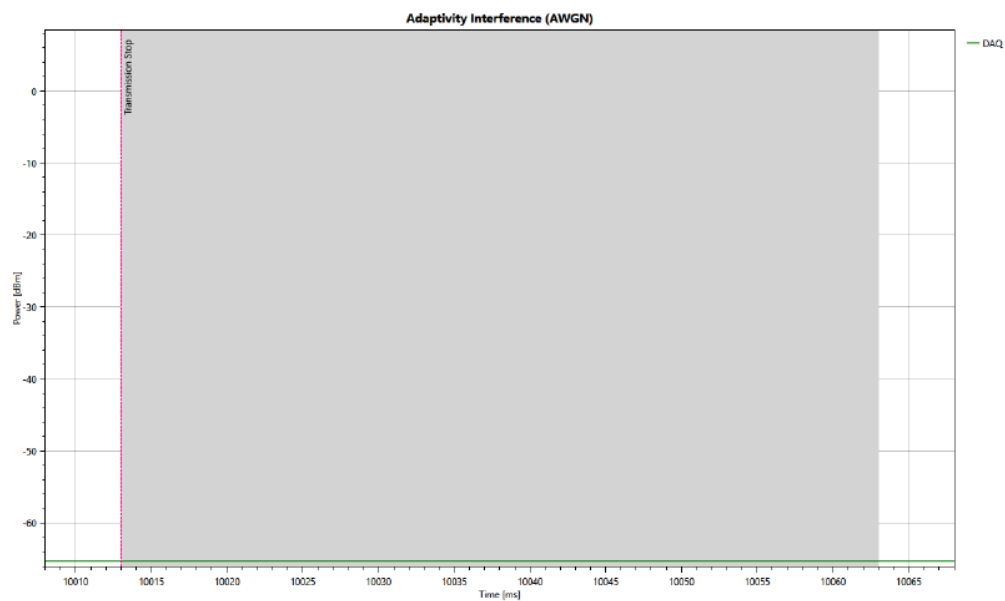
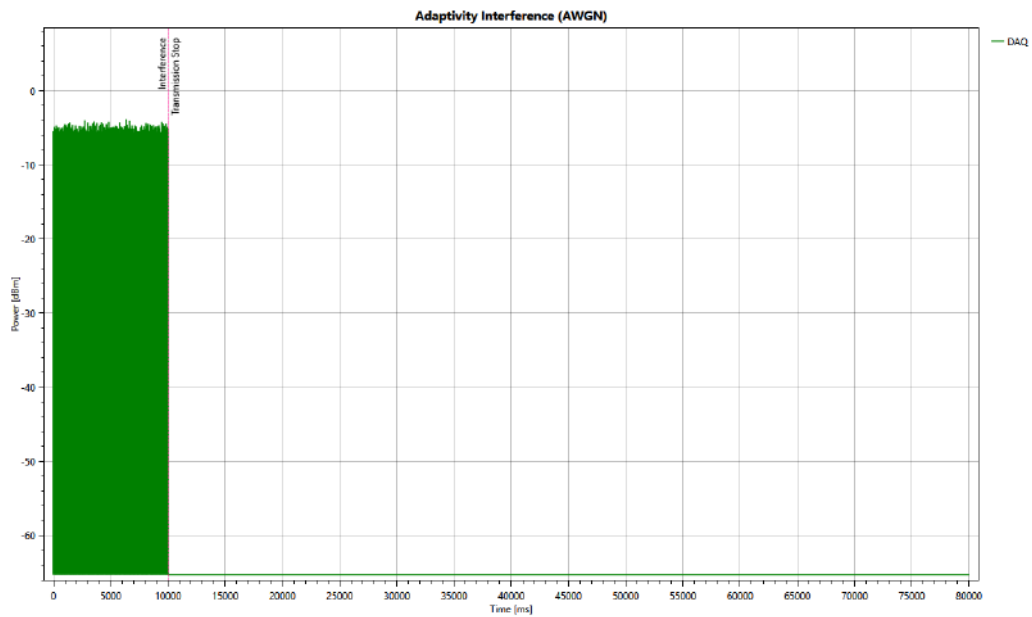
Max COT (ms): 5.943



Min Idle (us): 31.00

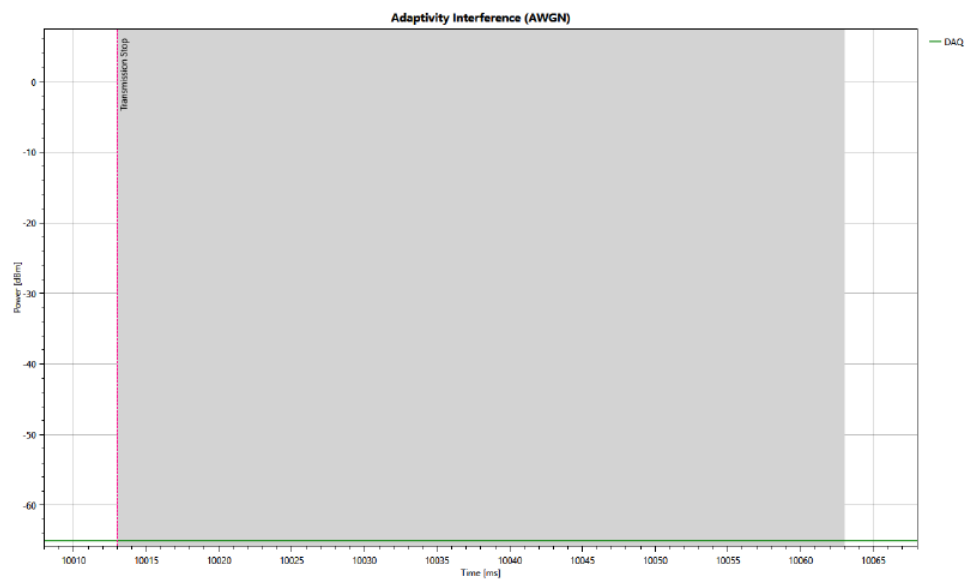
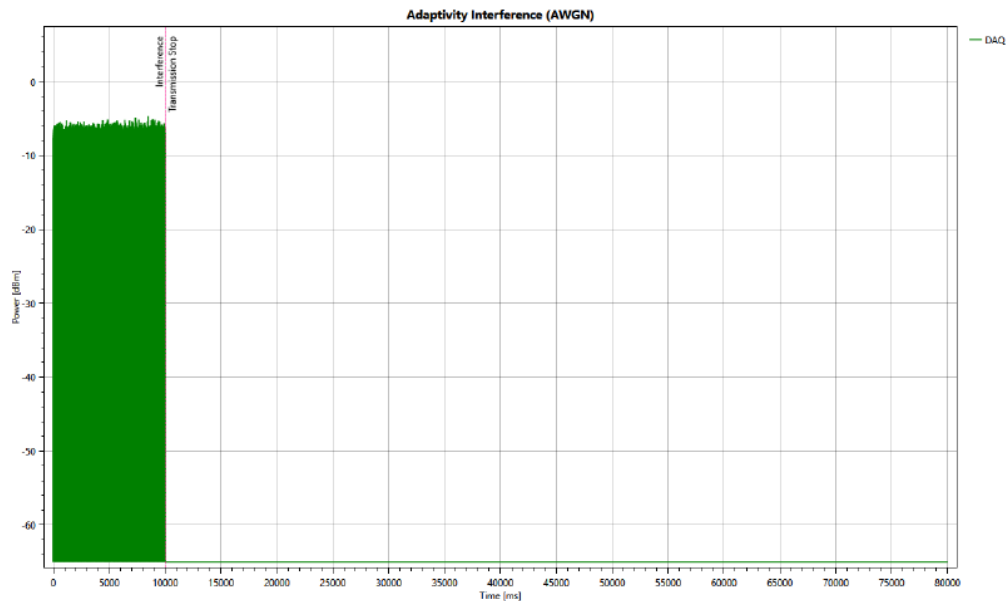


## IEEE 802.11ax(HE40) Mode 5955 MHz Interference Signal(AWGN)



Test Result :	Pass	Max Duty (%) :	0.0000
Interference add (s) :	10.00	SCST Time (ms) :	0.0000
XMSN Stop (s) :	10.01	Start (ms) :	10,013
XMSN COTs (ms) :	13.00	Stop (ms) :	10,063

# IEEE 802.11ax(HE40) Mode 5975 MHz Interference Signal(AWGN)



Test Result :	Pass	Max Duty (%) :	0.0000
Interference add (s) :	10.00	SCST Time (ms) :	0.0000
XMSN Stop (s) :	10.01	Start (ms) :	10,013
XMSN COTs (ms) :	13.00	Stop (ms) :	10,063

## **APPENDIX J - RECEIVER BLOCKING**

Receiver Blocking Result						
P <sub>min</sub> (dBm)	-83.65					
Modulation Mode	Operation Freq. (MHz)	Wanted Signal Mean Power from Companion Device (dBm) P <sub>min</sub> + 6 dB	Blocking Signal Freq. (MHz)	Receiver Blocking Power (dBm)	PER (%)	Blocking Signal Level at which the Performance Criteria is no longer met(dBm) (See Note)
IEEE 802.11a 6 Mbps	5955	-77.65	5875	-53.00	4.38	-42.00
			5675	-47.00	2.40	-44.00
			5775	-47.00	5.99	-46.00
Limit	PER(Packet Error Rate) ≦ 10%					N/A
Result	Pass					Record Only

**Note:**

The performance criteria had been met, the level of the blocking signal at the UUT were further increased in steps of 1 dB until the level whereby the performance criteria were no longer met.

## **APPENDIX K - RECEIVER ADJACENT CHANNEL SELECTIVITY**

Receiver Adjacent Channel Selectivity Result						
P <sub>min</sub> (dBm)	-83.65					
Modulation Mode	Operation Freq. (MHz)	Wanted Signal Mean Power from Companion Device (dBm) P <sub>min</sub> + 6 dB	Interferer Signal Freq. (MHz)	Interferer Signal Power (dBm)	PER (%)	Interferer Signal Level at which the Performance Criteria is no longer met(dBm) (See Note)
IEEE 802.11a 6 Mbps	5955	-77.65	5975	-57.65	8.55	-56.65
			5935	-57.65	9.90	-55.65
Limit	PER(Packet Error Rate) ≧ 10%					N/A
Result	Pass					Record Only

**Note:**

The performance criteria had been met, the level of the interference source at the UUT were further increased in steps of 1 dB until the level whereby the performance criteria were no longer met.

**End of Test Report**