

FCC Radio Test Report

FCC ID: RWO-RZ090368QCNFA**This report concerns: Class II Permissive Changes**

Report No. : BTL-FCCP-5-2212C001
Equipment : Notebook PC
Model Name : RZ09-0482
Brand Name : RAZER
Applicant : Razer Inc.
Address : 9 Pasteur, Suite 100, Irvine, CA92618, USA.
Manufacturer : Razer Inc.
Address : 9 Pasteur, Suite 100, Irvine, CA92618, USA.

Equipment Class : 6XD - 15E 6 GHz Low Power Indoor Client

Radio Function : U-NII 6 GHz (U-NII 5, U-NII 6, U-NII 7, U-NII 8)

FCC Rule Part(s) : FCC CFR Title 47, Part15, Subpart E (15.407)
Measurement Procedure(s) : ANSI C63.10-2013

Date of Receipt : 2022/12/19
Date of Test : 2022/12/19 ~ 2023/2/1
Issued Date : 2023/4/24

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

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**BTL Inc.**

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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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REVISION HISTORY

Report No.	Version	Description	Issued Date	Note
BTL-FCCP-5-2212C001	R00	Original Report.	2023/2/10	Invalid
BTL-FCCP-5-2212C001	R01	Revised report to address TCB's comments.	2023/4/24	Valid

1 SUMMARY OF TEST RESULTS

Test procedures according to the technical standards.

Standard(s) Section	Description	Test Result	Judgement	Remark
15.407(b)(9)	AC power line conducted emissions	APPENDIX A	Pass	-----
15.407(b)(6)(9)	Undesirable emissions	APPENDIX B APPENDIX C	Pass	-----
15.407(a)(4)(5)(6)(7)(8)	Maximum E.I.R.P.	APPENDIX D	Pass	-----
15.203 15.407(a)(9)	Antenna requirement	NOTE (3)	Pass	-----
15.407(a)(12)	Maximum power spectral density	NOTE (3)	Pass	-----
15.407(b)(7)	In-band emission (Mask)	NOTE (3)	Pass	-----
15.407(b)(10)	Restricted bands of operation	NOTE (3)	Pass	-----
15.407(c)	Automatically discontinue transmission	NOTE (3)	Pass	-----
15.407(d)	Operational restrictions for 6 GHz U-NII devices	NOTE (3)	Pass	-----
15.407(d)(6)	Contention-based protocol	NOTE (3)	Pass	-----
15.407(g) 2.1055	Frequency stability	NOTE (3)	Pass	-----

NOTE:

- (1) "N/A" denotes test is not applicable in this Test Report.
- (2) The report format version is TP.1.1.1.
- (3) This item is demonstrated to full compliance referring to the test report number RF201119E01-6 of the integrated module (model name: QCNFA765, FCC ID: J9C-QCNFA765).
- (4) The antenna gain of EUT is smaller than that of the module. So in this report the worst cases of radiated spurious emissions and AC Power Line Conducted Emissions were evaluated and recorded. And evaluated the output power items and recorded in the report. For the test results of all other test items please refer to module test reports.

1.1 TEST FACILITY

The test locations stated below are under the TAF Accreditation Number 0659.

The test location(s) used to collect the test data in this report are:

No. 68-1, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan
(FCC DN: TW0659)

☒ C05 ☐ CB08 ☐ CB11 ☒ SR10 ☐ SR11

No. 72, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan

(FCC DN: TW0659)

☐ C06 ☒ CB21 ☐ CB22

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k = 2$, providing a level of confidence of approximately **95 %**. The measurement instrumentation uncertainty considerations contained in CISPR 16-4-2. The BTL measurement uncertainty is less than the CISPR 16-4-2 U_{CISPR} requirement.

A. AC power line conducted emissions test:

Test Site	Method	Measurement Frequency Range	U (dB)
C05	CISPR	150 kHz ~ 30MHz	3.44

B. Radiated emissions test:

Test Site	Measurement Frequency Range	U (dB)
CB21	0.03 GHz ~ 0.2 GHz	4.17
	0.2 GHz ~ 1 GHz	4.72
	1 GHz ~ 6 GHz	5.21
	6 GHz ~ 18 GHz	5.51
	18 GHz ~ 26 GHz	3.69
	26 GHz ~ 40 GHz	4.23

C. Conducted test :

Test Item	U,(dB)
Maximum E.I.R.P.	0.3669
Contention-based protocol	-

NOTE:

Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

1.3 TEST ENVIRONMENT CONDITIONS

Test Item	Environment Condition	Test Voltage	Tested by
AC Power Line Conducted Emissions	21°C, 65%	AC 120V/60Hz	Paul Shen
Radiated emissions below 1 GHz	23°C, 59%	AC 120V/60Hz	Mark Wang
Radiated emissions above 1 GHz	23°C, 59%	AC 120V/60Hz	Mark Wang
Maximum E.I.R.P.	22.2°C, 56%	AC 120V/60Hz	Tim Lee

1.4 TABLE OF PARAMETERS OF TEST SOFTWARE SETTING

Test Software	QRCT V4.0			
UNII-5				
Mode	5955 MHz	6175 MHz	6415 MHz	Data Rate
IEEE 802.11ax (HE20)	-0.5	-1	0	HE0
Mode	5965 MHz	6165 MHz	6405 MHz	Data Rate
IEEE 802.11ax (HE40)	2	3	3	HE0
Mode	5985 MHz	6145 MHz	6385 MHz	Data Rate
IEEE 802.11ax (HE80)	5	5	6	HE0
Mode	6025 MHz	6345 MHz		Data Rate
IEEE 802.11ax (HE160)	6.5	7		HE0

UNII-6				
Mode	6435 MHz	6475 MHz	6515 MHz	Data Rate
IEEE 802.11ax (HE20)	1	1	2	HE0
Mode	6445 MHz	6485 MHz		Data Rate
IEEE 802.11ax (HE40)	3.5	3		HE0
Mode	6465 MHz			Data Rate
IEEE 802.11ax (HE80)	6.5			HE0
Mode	6505 MHz			Data Rate
IEEE 802.11ax (HE160)	7.5			HE0

UNII-6+ UNII-7		
Mode	6525 MHz	Data Rate
IEEE 802.11ax (HE40)	4	HE0

UNII-7				
Mode	6535 MHz	6695 MHz	6855 MHz	Data Rate
IEEE 802.11ax (HE20)	1	0	1	HE0
Mode	6685 MHz	6845 MHz		Data Rate
IEEE 802.11ax (HE40)	4	4		HE0
Mode	6545 MHz	6625 MHz	6785 MHz	Data Rate
IEEE 802.11ax (HE80)	6	5	5	HE0
Mode	6665 MHz			Data Rate
IEEE 802.11ax (HE160)	8			HE0

UNII-8					
Mode	6875 MHz	6895 MHz	7095 MHz	7115 MHz	Data Rate
IEEE 802.11ax (HE20)	1	1.5	2.5	-7.5	HE0
Mode	6885 MHz	7085 MHz			Data Rate
IEEE 802.11ax (HE40)	4	5			HE0
Mode	6865 MHz	6945 MHz	7025 MHz		Data Rate
IEEE 802.11ax (HE80)	6.5	6.5	6.5		HE0
Mode	6985 MHz				Data Rate
IEEE 802.11ax (HE160)	8				HE0

2 GENERAL INFORMATION

2.1 DESCRIPTION OF EUT

Equipment	Notebook PC
Model Name	RZ09-0482
Brand Name	RAZER
Model Difference	N/A
Power Source	#1 DC voltage supplied from AC adapter. #2 Supplied from battery. Model: RC30-0482
Power Rating	#1 I/P: 100-240V~3.6A 50/60Hz O/P: 19.5V === 11.8A #2 DC 15.4V, 4422mAh, 68.1Wh
Products Covered	1* POWER Adapter: RC30-024801
Operation Band	UNII-5: 5925 MHz ~ 6425 MHz UNII-6: 6425 MHz ~ 6525 MHz UNII-7: 6525 MHz ~ 6875 MHz UNII-8: 6875 MHz ~ 7125 MHz
Modulation Technology	OFDMA
Transfer Rate	IEEE 802.11ax: up to 2402 Mbps
Maximum E.I.R.P. for UNII-5	IEEE 802.11ax (HE20): 7.50 dBm (0.0056 W) IEEE 802.11ax (HE40): 10.87 dBm (0.0122 W) IEEE 802.11ax (HE80): 13.44 dBm (0.0221 W) IEEE 802.11ax (HE160): 15.03 dBm (0.0318 W)
Maximum E.I.R.P. for UNII-6	IEEE 802.11ax (HE20): 8.30 dBm (0.0068 W) IEEE 802.11ax (HE40): 11.43 dBm (0.0139 W) IEEE 802.11ax (HE80): 14.37 dBm (0.0274 W) IEEE 802.11ax (HE160): 15.09 dBm (0.0323 W)
Maximum E.I.R.P. for UNII-7	IEEE 802.11ax (HE20): 8.60 dBm (0.0072 W) IEEE 802.11ax (HE40): 11.58 dBm (0.0144 W) IEEE 802.11ax (HE80): 13.71 dBm (0.0235 W) IEEE 802.11ax (HE160): 15.10 dBm (0.0324 W)
Maximum E.I.R.P. for UNII-6+ UNII-7	IEEE 802.11ax (HE40): 11.48 dBm (0.0141 W)
Maximum E.I.R.P. for UNII-8	IEEE 802.11ax (HE20): 8.14 dBm (0.0065 W) IEEE 802.11ax (HE40): 10.88 dBm (0.0122 W) IEEE 802.11ax (HE80): 13.26 dBm (0.0212 W) IEEE 802.11ax (HE160): 14.81 dBm (0.0302 W)
Test Model	RZ09-0482
Sample Status	Engineering Sample
EUT Modification(s)	N/A

NOTE:

- (1) The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.

(2) Channel List:

UNII-5							
IEEE 802.11ax (HE20)		IEEE 802.11ax (HE40)		IEEE 802.11ax (HE80)		IEEE 802.11ax (HE160)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	5955	3	5965	7	5985	15	6025
5	5975	11	6005	23	6065	47	6185
9	5995	19	6045	39	6145	79	6345
13	6015	27	6085	55	6225		
17	6035	35	6125	71	6305		
21	6055	43	6165	87	6385		
25	6075	51	6205				
29	6095	59	6245				
33	6115	67	6285				
37	6135	75	6325				
41	6155	83	6365				
45	6175	91	6405				
49	6195						
53	6215						
57	6235						
61	6255						
65	6275						
69	6295						
73	6315						
77	6335						
81	6355						
85	6375						
89	6395						
93	6415						

UNII-6							
IEEE 802.11ax (HE20)		IEEE 802.11ax (HE40)		IEEE 802.11ax (HE80)		IEEE 802.11ax (HE160)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
97	6435	99	6445	103	6465	111	6505
101	6455	107	6485				
105	6475	115	6525				
109	6495						
113	6515						

UNII-7							
IEEE 802.11ax (HE20)		IEEE 802.11ax (HE40)		IEEE 802.11ax (HE80)		IEEE 802.11ax (HE160)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
117	6535	123	6565	119	6545	143	6665
121	6555	131	6605	135	6625	175	6825
125	6575	139	6645	151	6705		
129	6595	147	6685	167	6785		
133	6615	155	6725				
137	6635	163	6765				
141	6655	171	6805				
145	6675	179	6845				
149	6695						
153	6715						
157	6735						
161	6755						
165	6775						
169	6795						
173	6815						
177	6835						
181	6855						

UNII-8							
IEEE 802.11ax (HE20)		IEEE 802.11ax (HE40)		IEEE 802.11ax (HE80)		IEEE 802.11ax (HE160)	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
185	6875	187	6885	183	6865	207	6985
189	6895	195	6925	199	6945		
193	6915	203	6965	215	7025		
197	6935	211	7005				
201	6955	219	7045				
205	6975	227	7085				
209	6995						
213	7015						
217	7035						
221	7055						
225	7075						
229	7095						
233	7115						

(3) Table for Filed Antenna:

Ant.	Manufacturer	P/N	Type	Connector	Gain (dBi)
1	Amphenol	BY5973-15-001-C	PIFA	N/A	4.57
2	Amphenol	BY5962-15-002-C	PIFA	N/A	3.46

Note:

- 1) This EUT supports MIMO 2X2, any transmit signals are uncorrelated with each other, so Directional gain= $10\log[(10^{G1/10}+10^{G2/10}+...10^{GN/10})/N]$ dBi, that is Directional gain= $10\log[(10^{4.57/10}+10^{3.46/10})/2]$ dBi= 4.05.
 - 2) Ant.1 refers to main antenna, Ant.2 refers to aux antenna.
 - 3) The AUX antenna connector of the module connected to the MAIN antenna of the EUT and the MAIN antenna connector of the module connected to the AUX antenna of the EUT.
- (4) The above Antenna information are derived from the antenna data sheet provided by manufacturer and for more detailed features description, please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

2.2 TEST MODES

Test Items	Test mode	Channel	Note
AC power line conducted emissions	Normal/Idle	-	-
Transmitter Radiated Emissions (below 1GHz)	IEEE 802.11ax (HE20)	233	-
Transmitter Radiated Emissions (above 1GHz)	IEEE 802.11ax (HE20)	233	Bandedge
	IEEE 802.11ax (HE160)	15/111/143/207	
	IEEE 802.11ax (HE20)	233	Harmonic
	IEEE 802.11ax (HE160)	15/111/143/207	
Maximum E.I.R.P.	IEEE 802.11ax (HE20)	1/45/93 97/105/113 117/149/181 185/189/229/233	-
	IEEE 802.11ax (HE40)	3/43/91 99/107/115 147/179 187/227	
	IEEE 802.11ax (HE80)	7/39/87 103 119/135/167 183/199/215	
	IEEE 802.11ax (HE160)	15/79 111 143 207	

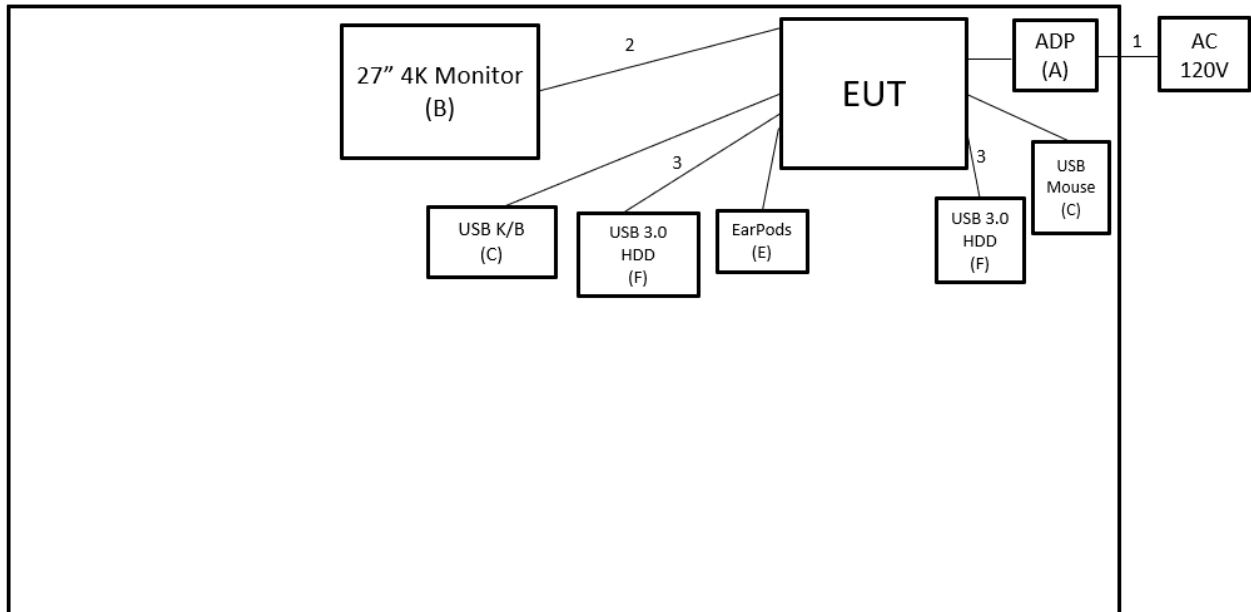
NOTE:

- (1) The Radiated emissions test was verified based on the worst conducted power and Bandwidth test results reported in the original report.
- (2) For radiated emission band edge test, both Vertical and Horizontal are evaluated, but only the worst case (Vertical) is recorded.

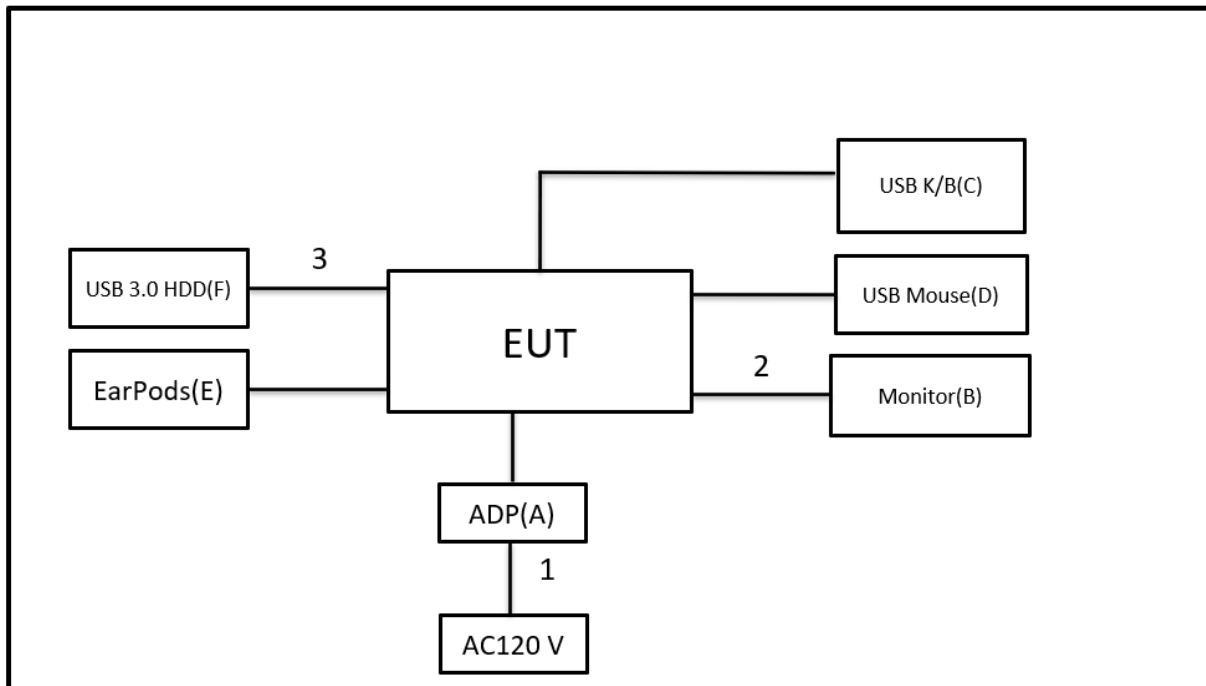
2.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Equipment letters and Cable numbers refer to item numbers described in the tables of clause 0.

AC power line conducted emissions



Radiated Emissions



2.4 SUPPORT UNITS

AC power line conducted emissions

Item	Equipment	Brand	Model No.	Series No.	Remarks
A	ADP	Razer	RC30-024801	N/A	Supplied by test requester.
B	27" 4K Monitor	DELL	U2720Q	CN-083VF-WSL00-0B7-332L	Furnished by test lab.
C	USB K/B	DELL	KB216t	CN-0W33XP-L0300-797-05TY-A03	Furnished by test lab.
D	USB Mouse	DELL	MOCZUL	CN-049TWY-PRC00-79E-01HA	Furnished by test lab.
E	EarPods	Apple	A1472	N/A	Furnished by test lab.
F	USB 3.0 HDD	WD	WDBC3C0010BSL-0B	WX81A88ALJUC	Furnished by test lab.

Item	Shielded	Ferrite Core	Length	Cable Type	Remarks
1	N/A	N/A	1m	Power Cord	Furnished by test lab.
2	N/A	N/A	1.7m	HDMI Cable	Furnished by test lab.
3	N/A	N/A	0.18m	Type C to Type C Cable	Furnished by test lab.

Radiated Emissions

Item	Equipment	Brand	Model No.	Series No.	Remarks
A	ADP	Razer	RC30-024801	N/A	Supplied by test requester.
B	27" 4K Monitor	DELL	U2720Q	CN-083VF-WSL00-0B7-332L	Furnished by test lab.
C	USB K/B	DELL	KB216t	CN-0W33XP-L0300-797-05TY-A03	Furnished by test lab.
D	USB Mouse	DELL	MOCZUL	CN-049TWY-PRC00-79E-01HA	Furnished by test lab.
E	EarPods	Apple	A1472	N/A	Furnished by test lab.
F	USB 3.0 HDD	WD	WDBC3C0010BSL-0B	WX81A88ALJUC	Furnished by test lab.

Item	Shielded	Ferrite Core	Length	Cable Type	Remarks
1	N/A	N/A	1m	Power Cord	Supplied by test requester.
2	N/A	N/A	1.7m	HDMI Cable	Furnished by test lab.
3	N/A	N/A	0.18m	Type C to Type C Cable	Furnished by test lab.

3 AC POWER LINE CONDUCTED EMISSIONS TEST

3.1 LIMIT

Frequency (MHz)	Limit (dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 - 56 *	56 - 46 *
0.50 - 5.0	56	46
5.0 - 30.0	60	50

NOTE:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.
- (3) The test result calculated as following:
 Measurement Value = Reading Level + Correct Factor
 Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor (if use)
 Margin Level = Measurement Value – Limit Value
 Calculation example:

Reading Level		Correct Factor		Measurement Value
38.22	+	3.45	=	41.67

Measurement Value		Limit Value		Margin Level
41.67	-	60	=	-18.33

The following table is the setting of the receiver.

Receiver Parameter	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 KHz

3.2 TEST PROCEDURE

- a. The EUT was placed 0.8 m above the horizontal ground plane with the EUT being connected to the power mains through a line impedance stabilization network (LISN).
 All other support equipment were powered from an additional LISN(s).
 The LISN provides 50 Ohm/50uH of impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle to keep the cable above 40 cm.
- c. Excess I/O cables that are not connected to a peripheral shall be bundled in the center.
 The end of the cable will be terminated, using the correct terminating impedance.
 The overall length shall not exceed 1 m.
- d. The LISN is spaced at least 80 cm from the nearest part of the EUT chassis.
- e. For the actual test configuration, please refer to the related Item – EUT TEST PHOTO.

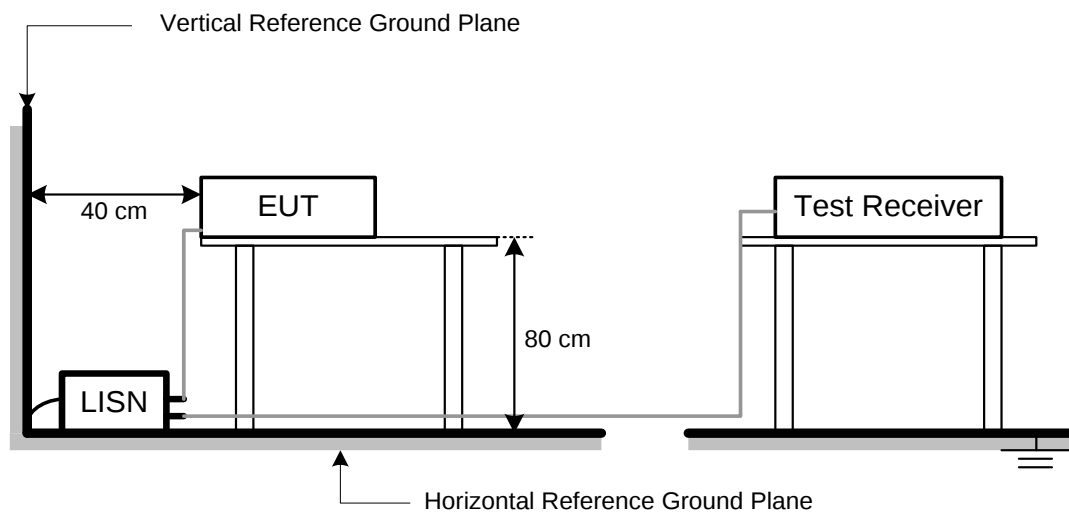
NOTE:

- (1) In the results, each reading is marked as Peak, QP or AVG per the detector used.
 BW=9 kHz (6 dB Bandwidth)
- (2) All readings are Peak unless otherwise stated QP or AVG in column of Note. Both the QP and the AVG readings must be less than the limit for compliance.

3.3 DEVIATION FROM TEST STANDARD

No deviation.

3.4 TEST SETUP



3.5 TEST RESULT

Please refer to the APPENDIX A.

4 UNDESIRABLE EMISSIONS TEST

4.1 LIMIT

According to 15.407(b)(6) the limits are as follows:

For transmitters operating within the 5.925-7.125 GHz band: Any emissions outside of the 5.925-7.125 GHz band must not exceed an E.I.R.P. of -27 dBm/MHz.

According to FCC KDB 987594 D02, clause G. Unwanted Emission Measurement:

Use guidance in KDB 789033 for measurements below 1000 MHz and above 1000 MHz. Unwanted emissions outside of restricted bands are measured with a RMS detector. In addition, 15.35(b) applies where the peak emissions must be limited to no more than 20 dB above the average limit

Item	Maximum E.I.R.P. Limit	Maximum field strength Limit @ 3m
Any emissions outside of the 5.925-7.125 GHz band	Peak: -7 dBm/MHz	88.2 dBuV/m
	Average: -27 dBm/MHz	68.2 dBuV/m

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

According to 15.407(b)(9) the limits are as follows:

Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in § 15.209.

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

NOTE:

(1) E.I.R.P. Limit (dBuV/m at 3m) = Power Limit(dBm) + 95.2. (Referring to FCC KDB 987594 D02, clause G.2.d)(iii))

(2) Emission level (dBuV/m) = 20log Emission level (uV/m).
3 m Emission level = 10 m Emission level + 20log(10 m/3 m).

(3) The test result calculated as following:

Measurement Value = Reading Level + Correct Factor

Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain (if use)

Margin Level = Measurement Value - Limit Value

Calculation example:

Reading Level		Correct Factor		Measurement Value
19.11	+	2.11	=	21.22

Measurement Value		Limit Value		Margin Level
21.22	-	68.2	=	-46.98

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 1/T for Average

Spectrum Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9KHz~90KHz for PK/AVG detector
Start ~ Stop Frequency	90KHz~110KHz for QP detector
Start ~ Stop Frequency	110KHz~490KHz for PK/AVG detector
Start ~ Stop Frequency	490KHz~30MHz for QP detector
Start ~ Stop Frequency	30MHz~1000MHz for QP detector

4.2 TEST PROCEDURE

Referring to FCC KDB 987594 D02, clause G. and FCC KDB 789033 D02, clause G. Unwanted Emission Measurement:

For measurements below 30 MHz:

- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- Parallel, perpendicular, and ground-parallel orientations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- The test-receiver system was set to Quasi-Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

For measurements 30 MHz to 40 GHz:

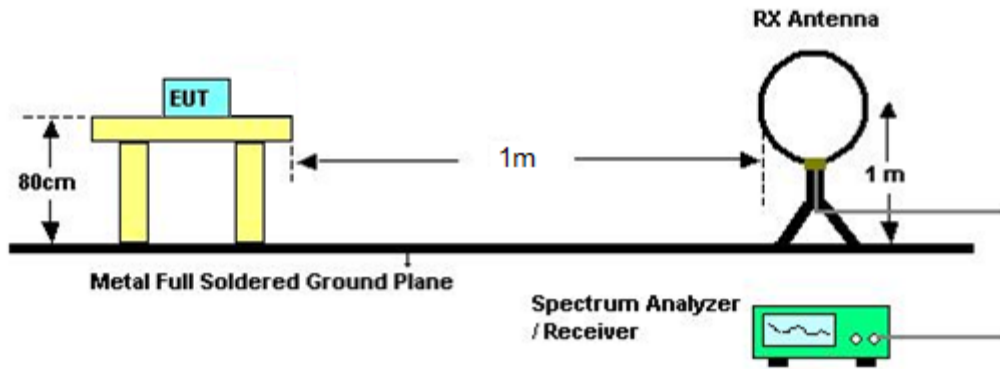
- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. (between 30 MHz to 1 GHz)
- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 1.5 meter above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. (between 1 GHz to 40 GHz)
- The height of the equipment or of the substitution antenna shall be 0.8 m or 1.5 m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights find the maximum reading (used Bore sight function).
- The receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1GHz.
- The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform. (between 30 MHz to 1 GHz)
- All readings are Peak Mode value unless otherwise stated AVG in column of Note. If the Peak Mode Measured value compliance with the Peak Limits and lower than AVG Limits, the EUT shall be deemed to meet both Peak & AVG Limits and then only Peak Mode was measured, but AVG Mode didn't perform. (between 30 MHz to 1 GHz)

4.3 DEVIATION FROM TEST STANDARD

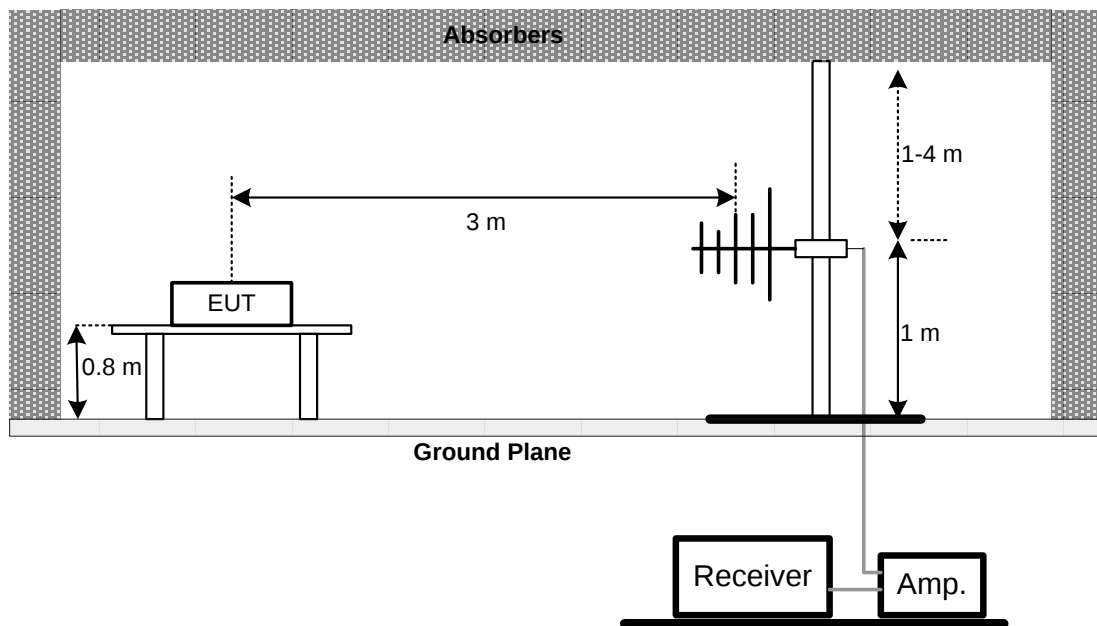
No deviation.

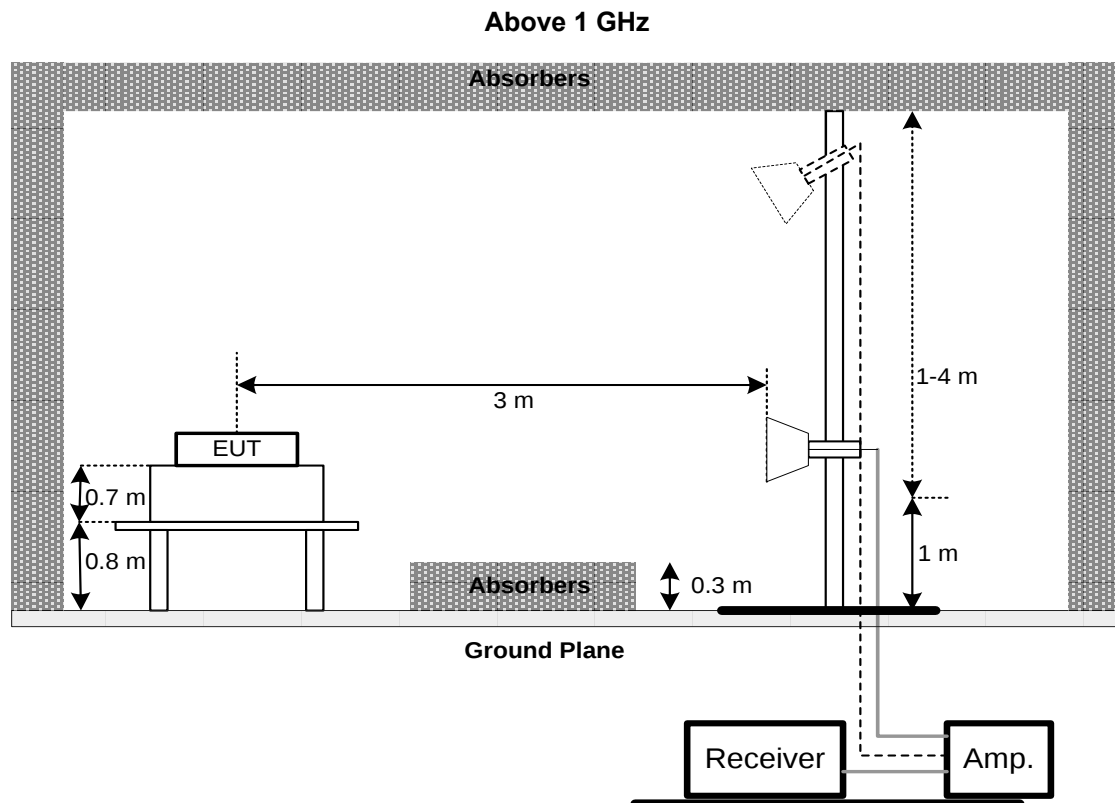
4.4 TEST SETUP

9 kHz to 30 MHz



30 MHz to 1 GHz





4.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

NOTE:

- (1) Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB).
- (2) Limit line = specific limits (dBuV) + distance extrapolation factor.

4.6 TEST RESULT – BELOW 30 MHZ

There were no emissions found below 30 MHz within 20 dB of the limit.

4.7 TEST RESULT – 30 MHZ TO 1 GHZ

Please refer to the APPENDIX B.

4.8 TEST RESULT – ABOVE 1 GHZ

Please refer to the APPENDIX C.

NOTE:

- (1) No limit: This is fundamental signal, the judgment is not applicable.
For fundamental signal judgment was referred to Peak output test.

5 MAXIMUM E.I.R.P. TEST

5.1 LIMIT

Equipment Category	Band	Maximum E.I.R.P. Limit
Indoor access point client devices	U-NII 5 (5.925-6.425 GHz)	24 dBm
	U-NII 6 (6.425-6.525 GHz)	
	U-NII 7 (6.525-6.875 GHz)	
	U-NII 8 (6.875-7.125 GHz)	
* For outdoor devices, the maximum E.I.R.P. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).		

According to 15.407(a)(11):

The maximum conducted output power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.

5.2 TEST PROCEDURE

Referring to FCC KDB 987594 D02, clause E. and FCC KDB 789033 D02, clause E. 3 Measurement using a Power Meter (PM):

- a. The maximum peak conducted output power was performed in accordance with method of clause E. 3.
- b) Method PM-G (Measurement using a gated RF average power meter):
Measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

Referring to FCC KDB 987594 D02, clause H. Measurement of emission at elevation angles higher than 30° from horizon:

Note: Elevation angle is defined as 0° is horizontal and 90° is straight-up.

For fixed infrastructure, not electrically or mechanically steerable beam antenna

- a. If elevation plane radiation pattern is available:
 - (i) Determine the device intended mounting elevation angle and define 0° reference angle on the elevation plane radiation pattern.
 - (ii) Indicate any radiation pattern between 30° and 90° which has the highest gain.
 - (iii) Calculate the EIRP based on this highest gain and conducted output power.
 - (iv) Compare to the 125 mW limit to establish compliance.
 - (v) Include the elevation pattern data in the application filing with the test report to show how the calculations are made.

Note: For MIMO devices, take the maximum gain of each antenna and apply the guidance in KDB Publication 662911 for calculating the overall gain including directional gain for the maximum EIRP calculation.
- b. If the elevation plane radiation pattern is not available, but the antenna type (such as dipole omnidirectional, Yagi, parabolic, or sector antenna) has a symmetrical elevation plane pattern referenced at the main beam and all lobes on the main beam elevation plane have highest gains, then the following measurement method is acceptable to determine compliance:
 - (i) Determine the device's intended mounting elevation angle referenced to the horizon.
 - (ii) Rotate the EUT antenna by 90° around the main beam axis in a horizontal position to transform the measurement in elevation angle into an azimuth angle and define a 0° reference angle based on the device's intended mounting elevation angle.
 - (iii) Move the test antenna along the horizontal arc, or rotate the turntable with the EUT antenna placed at the center, between 30° and 90° relative to the 0° reference angle, and then continuing down from 90° to 30° on the other side of the pattern, while maintaining the test antenna pointing with constant distance to the EUT antenna. Search for the spot which has the highest measured emission. Both horizontal and vertical polarization shall be investigated to determine the maximum radiated emission level.

Note: Moving the test antenna along the horizontal arc, or rotating the turntable, shall be performed in an angular step size as small as possible, but not larger than 3°.

- (iv) Calculate the EIRP based on the highest measured emission. Compare to the limit of 125 mW to determine compliance.
- (v) The antenna pattern measurements must be included in the filing.

For All Other Antenna Types

For all other antenna types (such as patch antennas, array antennas, antennas with irregular radiator shapes, etc.) which have any combination of following characteristics:

- Asymmetrical, complex radiation patterns
- 2-D or 3-D steerable beam
- Portable/mobile, not fixed infrastructure device

Provide the following information in the report:

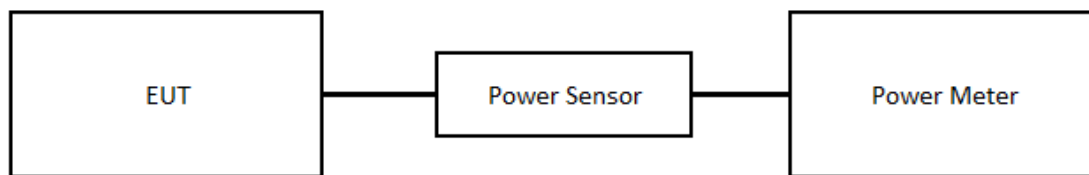
- a. Describe what type of antenna is used.
- b. Determine by calculation, measurement or simulation, all radiation lobes/beams, which have EIRP higher than 125 mW within a 3-dB elevation beamwidth.

Provide an explanation of how these antenna beams are controlled to be kept below the 30° elevation angle. The explanation should include device installation instructions, mechanical control, electro-mechanical control or software algorithms, if the beams are electrically controlled by software.

5.3 DEVIATION FROM TEST STANDARD

No deviation.

5.4 TEST SETUP



5.5 EUT OPERATING CONDITIONS

The EUT was programmed to be in continuously transmitting mode.

5.6 TEST RESULT

Please refer to the APPENDIX D.

6 LIST OF MEASURING EQUIPMENTS

AC Power Line Conducted Emissions						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	TWO-LINE V-NETWORK	R&S	ENV216	101521	2022/9/28	2023/9/27
2	Test Cable	EMCI	EMCCFD300-BM-BMR-5000	220331	2022/3/31	2023/3/30
3	EMI Test Receiver	R&S	ESR 7	101433	2022/11/16	2023/11/15
4	Measurement Software	EZ	EZ_EMC (Version NB-03A1-01)	N/A	N/A	N/A

Radiated Emissions						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Preamplifier	EMCI	EMC330N	980850	2022/9/19	2023/9/18
2	Preamplifier	EMCI	EMC118A45SE	980819	2022/3/8	2023/3/7
3	Preamplifier	EMCI	EMC184045SE	980882	2022/2/9	2023/2/8
4	Preamplifier	EMCI	EMC001340	980579	2022/9/30	2023/9/29
5	Test Cable	EMCI	EMC104-SM-SM-1000	220319	2022/3/15	2023/3/14
6	Test Cable	EMCI	EMC104-SM-SM-3000	220322	2022/3/15	2023/3/14
7	Test Cable	EMCI	EMC104-SM-SM-7000	220324	2022/3/15	2023/3/14
8	EXA Signal Analyzer	keysight	N9020B	MY57120120	2022/3/7	2023/3/6
9	Loop Ant	Electro-Metrics	EMCI-LPA600	291	2022/9/19	2023/9/18
10	Horn Antenna	RFSPIN	DRH18-E	211202A18EN	2022/5/18	2023/5/17
11	Horn Ant	Schwarzbeck	BBHA 9170D	1136	2022/5/18	2023/5/17
12	Log-bicon Antenna	Schwarzbeck	VULB9168	1369	2022/5/20	2023/5/19
13	6dB Attenuator	EMCI	EMCI-N-6-06	AT-N0625	2022/5/20	2023/5/19
14	Test Cable	EMCI	EMC101G-KM-KM-3000	220329	2022/3/15	2023/3/14
15	Test Cable	EMCI	EMC102-KM-KM-1000	220327	2022/3/15	2023/3/14
16	Measurement Software	EZ	EZ_EMC (Version NB-03A1-01)	N/A	N/A	N/A

Maximum E.I.R.P.						
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated Date	Calibrated Until
1	Power Meter	Anritsu	ML2495A	1128008	2022/6/1	2023/5/31
2	Power Sensor	Anritsu	MA2411B	1126001	2022/6/1	2023/5/31

Remark: "N/A" denotes no model name, no serial no. or no calibration specified.
All calibration period of equipment list is one year.

7 EUT TEST PHOTO

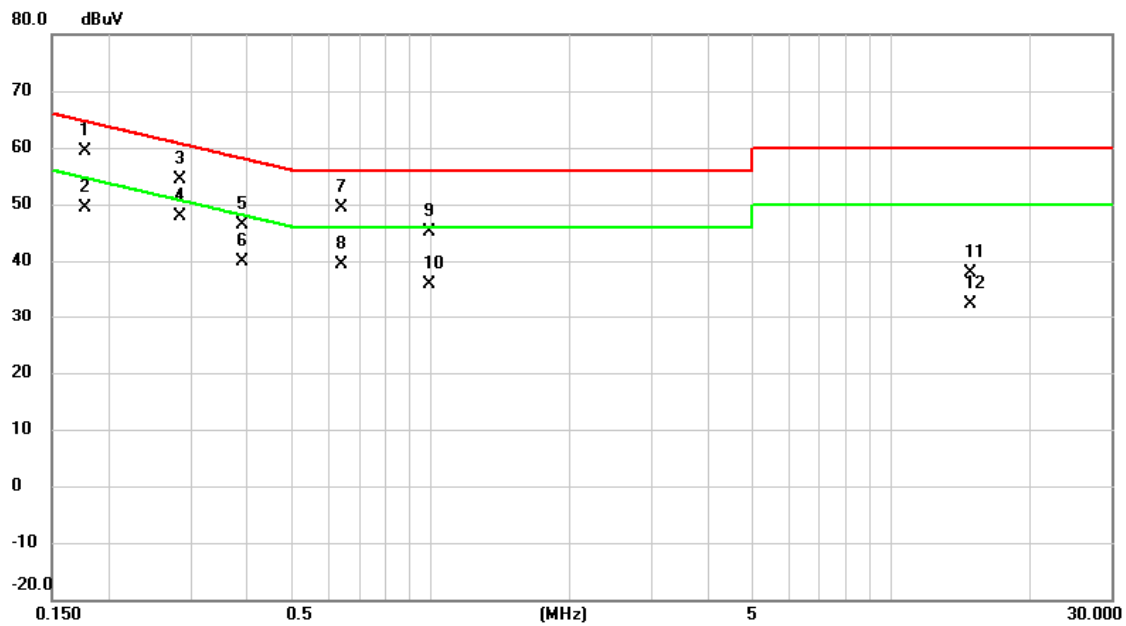
Please refer to document Appendix No.: TP-2212C001-1 (APPENDIX-TEST PHOTOS).

8 EUT PHOTOS

Please refer to document Appendix No.: EP-2212C001-1 (APPENDIX-EUT PHOTOS).

APPENDIX A AC POWER LINE CONDUCTED EMISSIONS

Test Mode	Normal	Tested Date	2023/1/6
Test Frequency	-	Phase	Line



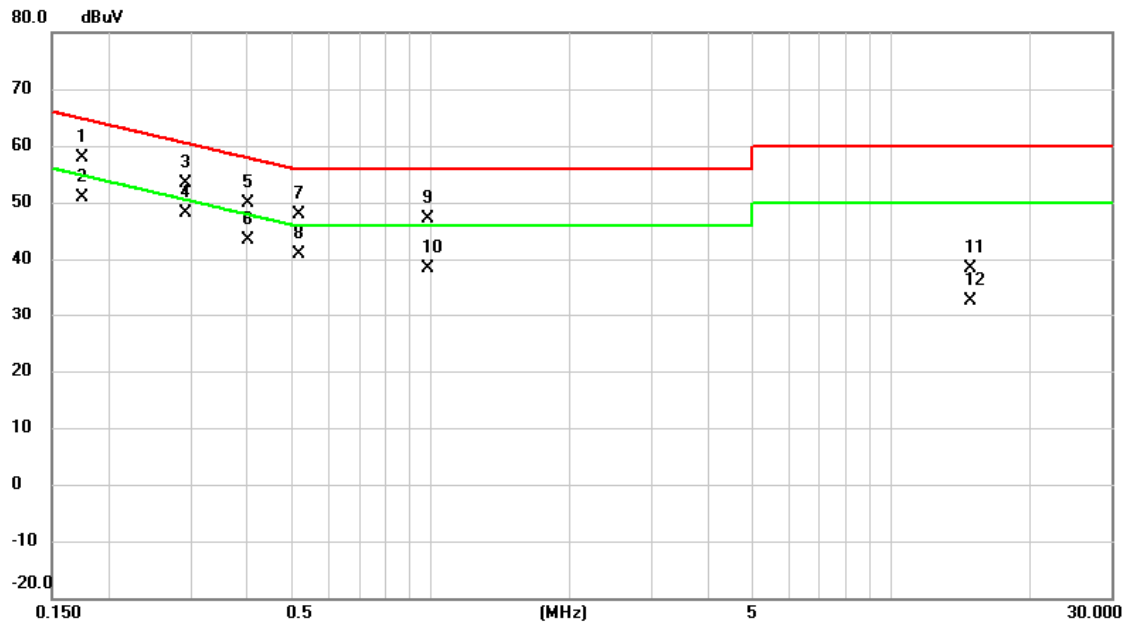
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1770	49.65	9.63	59.28	64.63	-5.35	QP	
2		0.1770	39.72	9.63	49.35	54.63	-5.28	AVG	
3		0.2850	44.70	9.63	54.33	60.67	-6.34	QP	
4	*	0.2850	38.24	9.63	47.87	50.67	-2.80	AVG	
5		0.3907	36.82	9.63	46.45	58.05	-11.60	QP	
6		0.3907	30.37	9.63	40.00	48.05	-8.05	AVG	
7		0.6405	39.69	9.64	49.33	56.00	-6.67	QP	
8		0.6405	29.65	9.64	39.29	46.00	-6.71	AVG	
9		0.9960	35.34	9.67	45.01	56.00	-10.99	QP	
10		0.9960	26.10	9.67	35.77	46.00	-10.23	AVG	
11		14.8830	27.99	9.89	37.88	60.00	-22.12	QP	
12		14.8830	22.40	9.89	32.29	50.00	-17.71	AVG	

REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Test Mode	Normal	Tested Date	2023/1/6
Test Frequency	-	Phase	Neutral

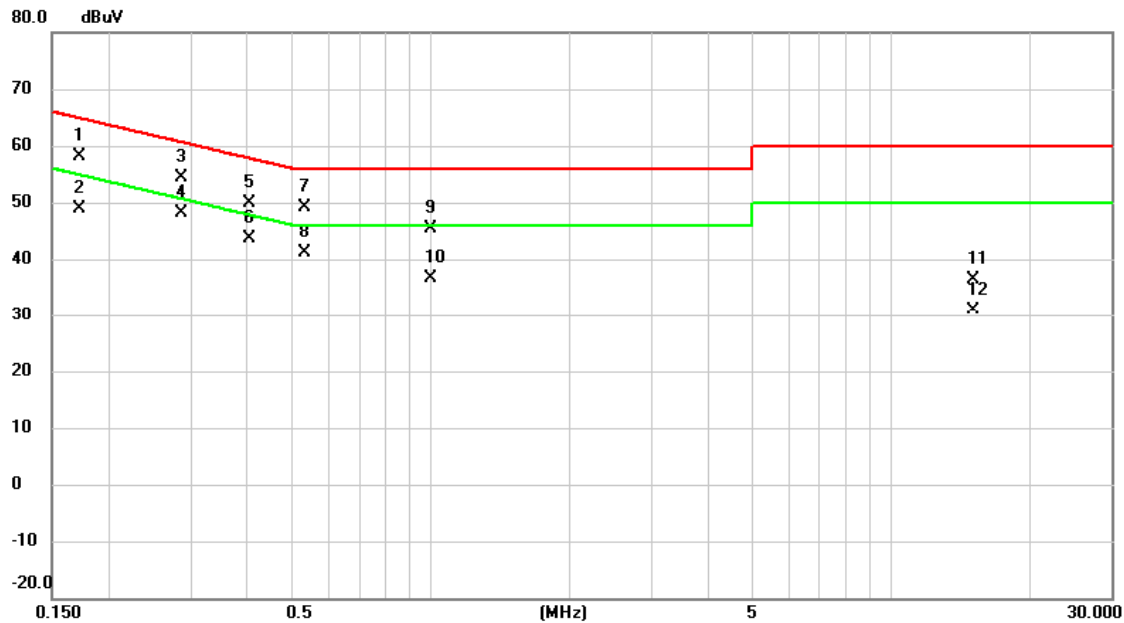


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1748	48.22	9.65	57.87	64.73	-6.86	QP	
2		0.1748	41.29	9.65	50.94	54.73	-3.79	AVG	
3		0.2917	43.65	9.64	53.29	60.48	-7.19	QP	
4	*	0.2917	38.42	9.64	48.06	50.48	-2.42	AVG	
5		0.4020	40.26	9.64	49.90	57.81	-7.91	QP	
6		0.4020	33.83	9.64	43.47	47.81	-4.34	AVG	
7		0.5167	38.22	9.64	47.86	56.00	-8.14	QP	
8		0.5167	31.16	9.64	40.80	46.00	-5.20	AVG	
9		0.9870	37.34	9.68	47.02	56.00	-8.98	QP	
10		0.9870	28.65	9.68	38.33	46.00	-7.67	AVG	
11		14.8853	28.53	9.97	38.50	60.00	-21.50	QP	
12		14.8853	22.73	9.97	32.70	50.00	-17.30	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	Idle	Tested Date	2023/1/6
Test Frequency	-	Phase	Line



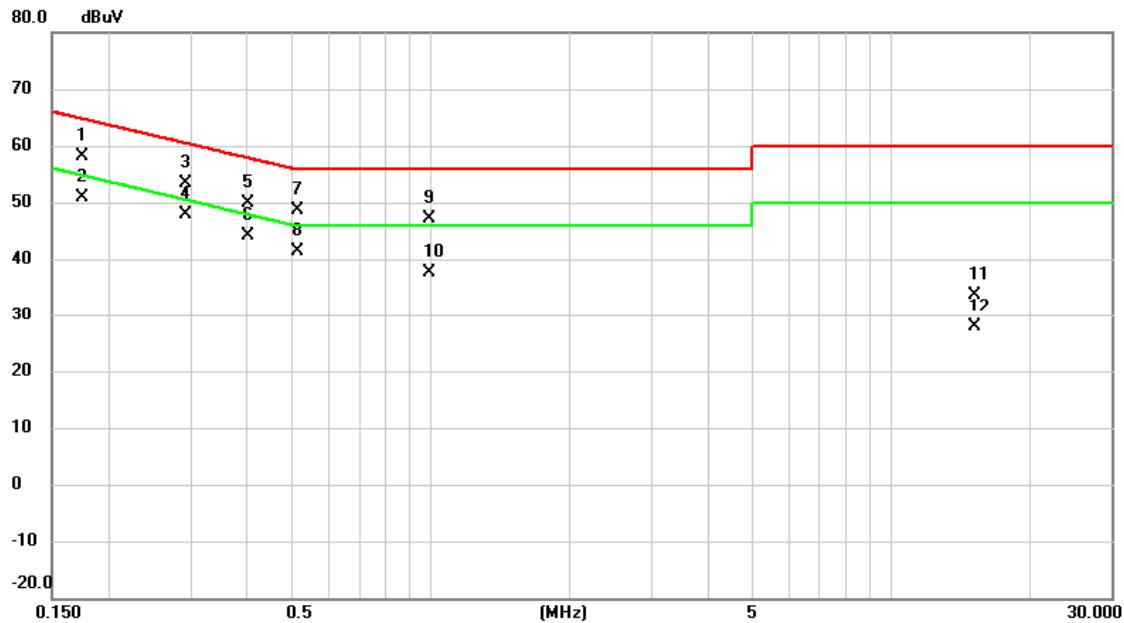
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1725	48.52	9.64	58.16	64.84	-6.68	QP	
2		0.1725	39.22	9.64	48.86	54.84	-5.98	AVG	
3		0.2872	44.76	9.63	54.39	60.60	-6.21	QP	
4	*	0.2872	38.54	9.63	48.17	50.60	-2.43	AVG	
5		0.4042	40.28	9.63	49.91	57.77	-7.86	QP	
6		0.4042	33.88	9.63	43.51	47.77	-4.26	AVG	
7		0.5325	39.43	9.63	49.06	56.00	-6.94	QP	
8		0.5325	31.52	9.63	41.15	46.00	-4.85	AVG	
9		1.0005	35.62	9.67	45.29	56.00	-10.71	QP	
10		1.0005	27.04	9.67	36.71	46.00	-9.29	AVG	
11		15.0833	26.54	9.90	36.44	60.00	-23.56	QP	
12		15.0833	20.95	9.90	30.85	50.00	-19.15	AVG	

REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Test Mode	Idle	Tested Date	2023/1/6
Test Frequency	-	Phase	Neutral



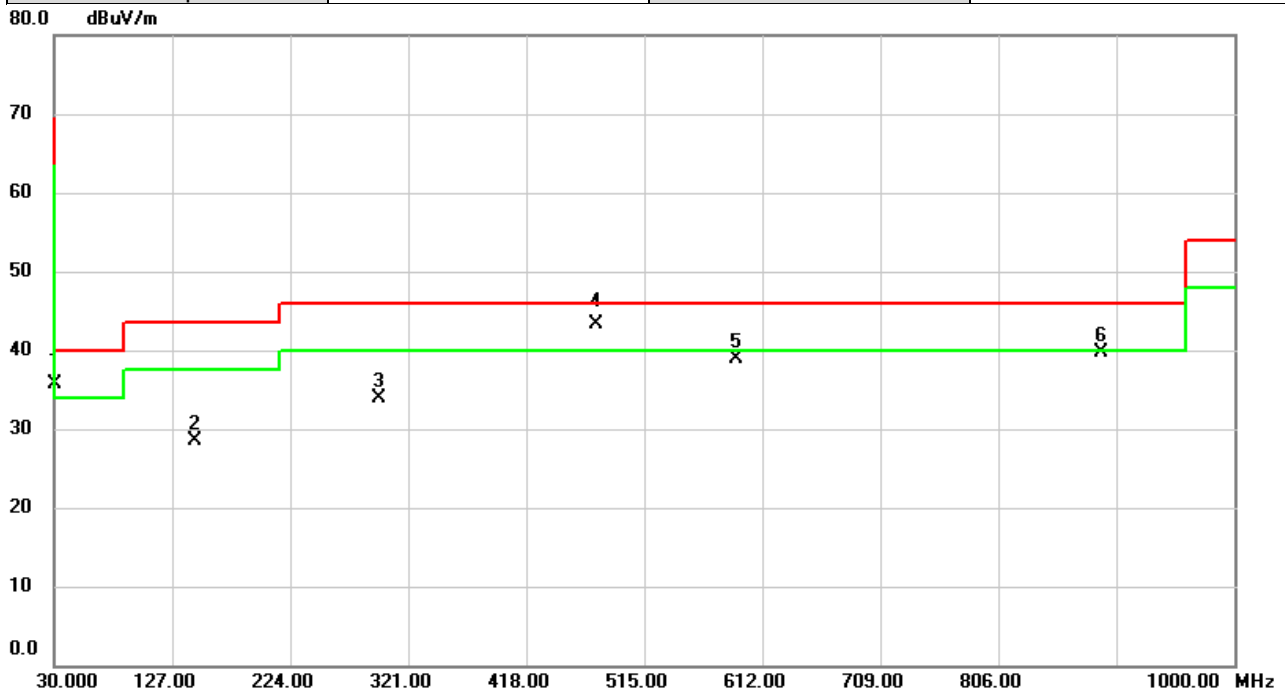
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1748	48.52	9.65	58.17	64.73	-6.56	QP	
2		0.1748	41.23	9.65	50.88	54.73	-3.85	AVG	
3		0.2917	43.65	9.64	53.29	60.48	-7.19	QP	
4	*	0.2917	38.19	9.64	47.83	50.48	-2.65	AVG	
5		0.4020	40.23	9.64	49.87	57.81	-7.94	QP	
6		0.4020	34.52	9.64	44.16	47.81	-3.65	AVG	
7		0.5144	38.91	9.64	48.55	56.00	-7.45	QP	
8		0.5144	31.62	9.64	41.26	46.00	-4.74	AVG	
9		0.9892	37.42	9.68	47.10	56.00	-8.90	QP	
10		0.9892	28.06	9.68	37.74	46.00	-8.26	AVG	
11		15.1463	23.61	9.98	33.59	60.00	-26.41	QP	
12		15.1463	17.83	9.98	27.81	50.00	-22.19	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

APPENDIX B UNDESIRABLE EMISSIONS - 30 MHZ TO 1 GHZ

Test Mode	IEEE 802.11ax (HE20)	Test Date	2023/1/5
Test Frequency	7115MHz	Polarization	Vertical
Temp	23°C	Hum.	59%

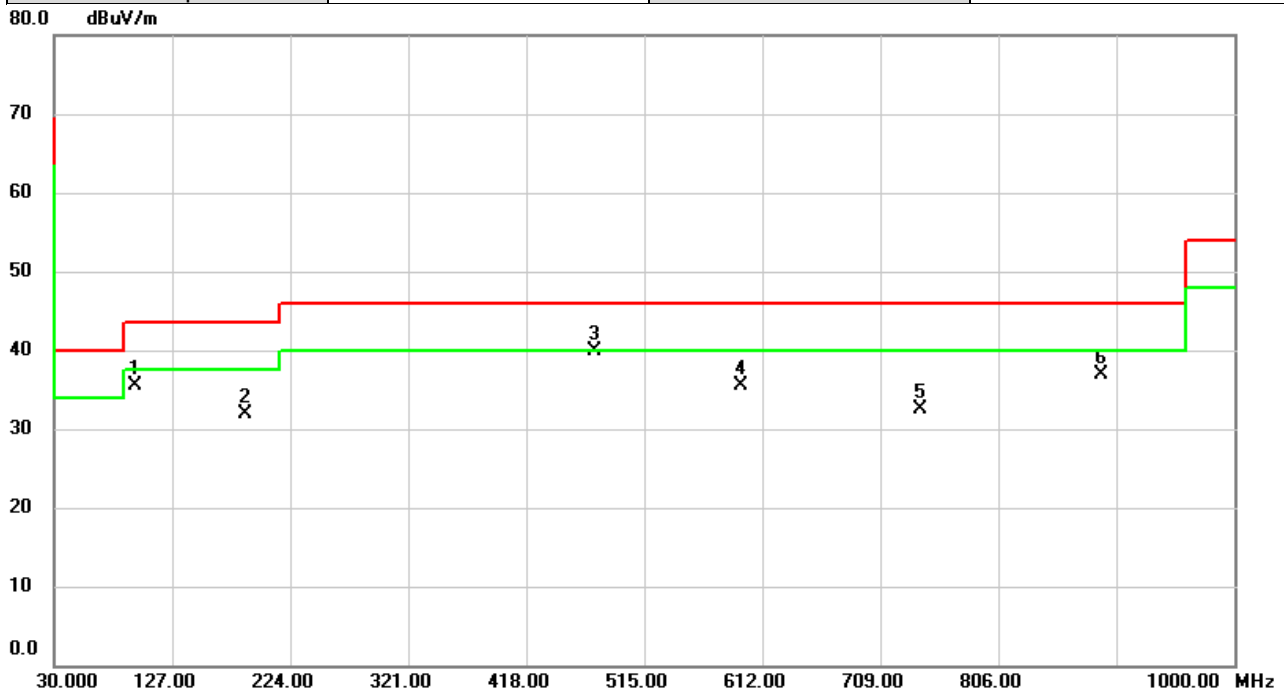


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	!	31.1640	48.49	-12.72	35.77	40.00	-4.23	QP	
2		145.8503	40.51	-12.09	28.42	43.50	-15.08	peak	
3		297.0087	45.40	-11.51	33.89	46.00	-12.11	peak	
4	*	475.6755	50.15	-6.94	43.21	46.00	-2.79	QP	
5		590.8540	43.32	-4.44	38.88	46.00	-7.12	peak	
6		891.0043	39.83	-0.04	39.79	46.00	-6.21	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	IEEE 802.11ax (HE20)	Test Date	2023/1/5
Test Frequency	7115MHz	Polarization	Horizontal
Temp	23°C	Hum.	59%



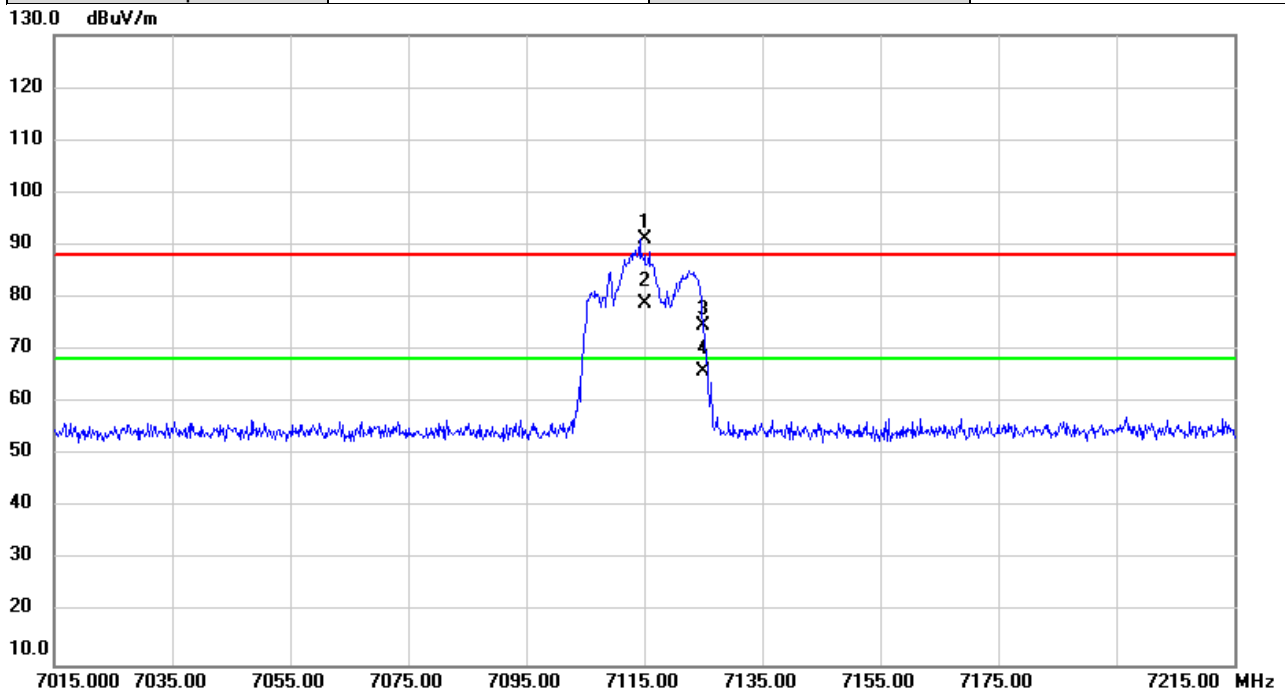
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		96.0570	52.29	-16.81	35.48	43.50	-8.02	peak	
2		187.4957	46.20	-14.28	31.92	43.50	-11.58	peak	
3	*	474.7450	46.89	-6.97	39.92	46.00	-6.08	peak	
4		594.0550	39.91	-4.33	35.58	46.00	-10.42	peak	
5		742.4973	34.34	-1.74	32.60	46.00	-13.40	peak	
6		891.0367	36.88	-0.04	36.84	46.00	-9.16	peak	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

APPENDIX C UNDESIRABLE EMISSIONS - ABOVE 1 GHZ

Test Mode	IEEE 802.11ax (HE20)	Test Date	2023/2/1
Test Frequency	7115MHz	Polarization	Vertical
Temp	23°C	Hum.	59%



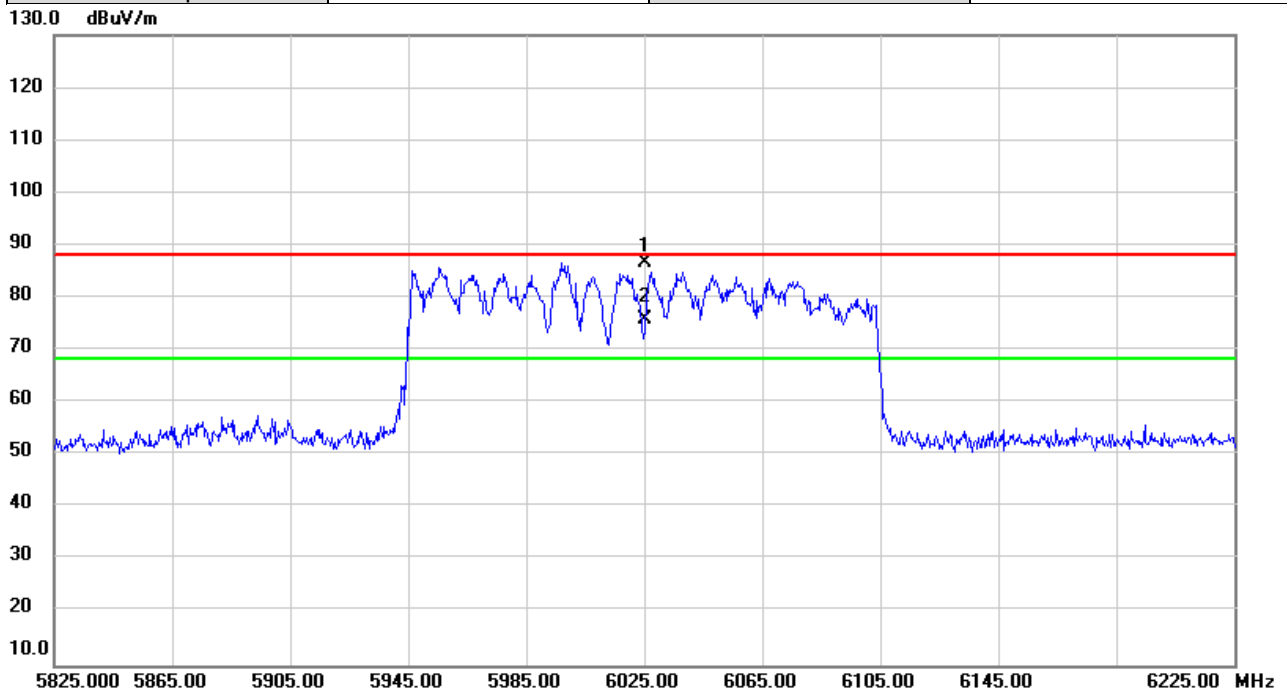
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	7115.000	85.64	5.51	91.15	88.20	2.95	peak	NoLimit
2	*	7115.000	73.38	5.51	78.89	68.20	10.69	AVG	NoLimit
3		7125.000	69.13	5.52	74.65	88.20	-13.55	peak	
4		7125.000	60.31	5.52	65.83	68.20	-2.37	AVG	

REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Test Mode	IEEE 802.11ax (HE160)	Test Date	2023/2/1
Test Frequency	6025MHz	Polarization	Vertical
Temp	23°C	Hum.	59%



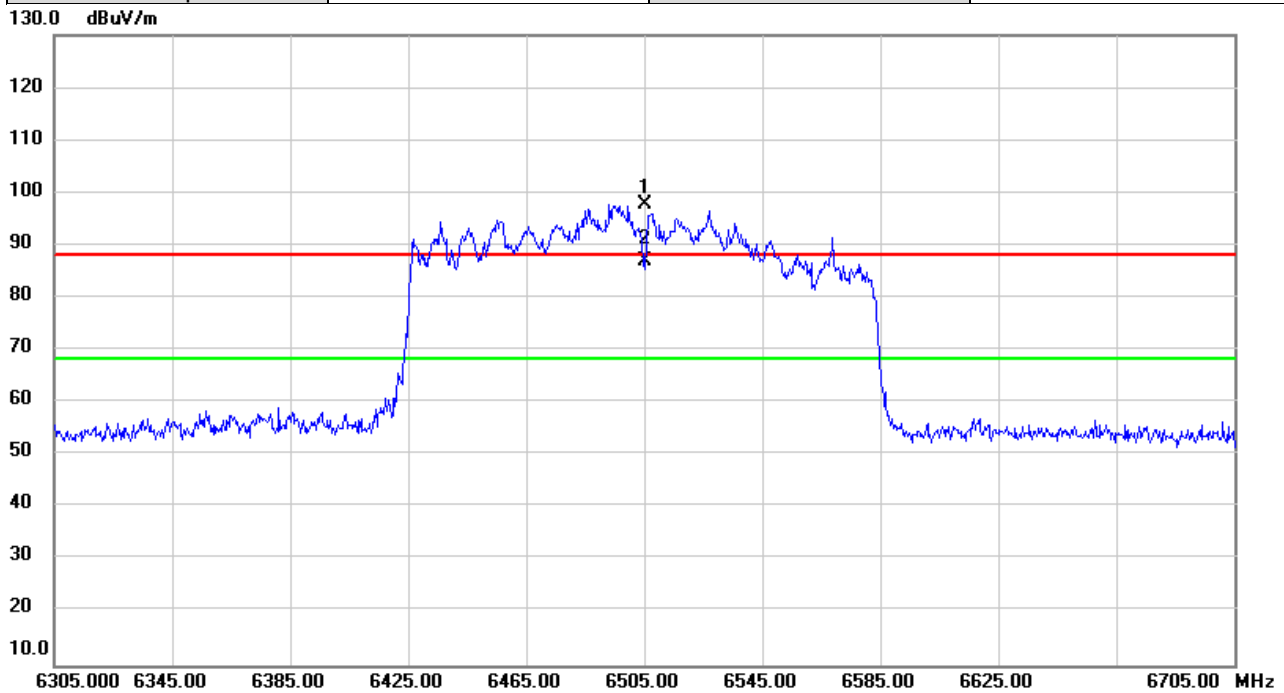
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		6025.000	83.98	2.62	86.60	88.20	-1.60	peak	NoLimit
2	*	6025.000	73.14	2.62	75.76	68.20	7.56	AVG	NoLimit

REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Test Mode	IEEE 802.11ax (HE160)	Test Date	2023/2/1
Test Frequency	6505MHz	Polarization	Vertical
Temp	23°C	Hum.	59%

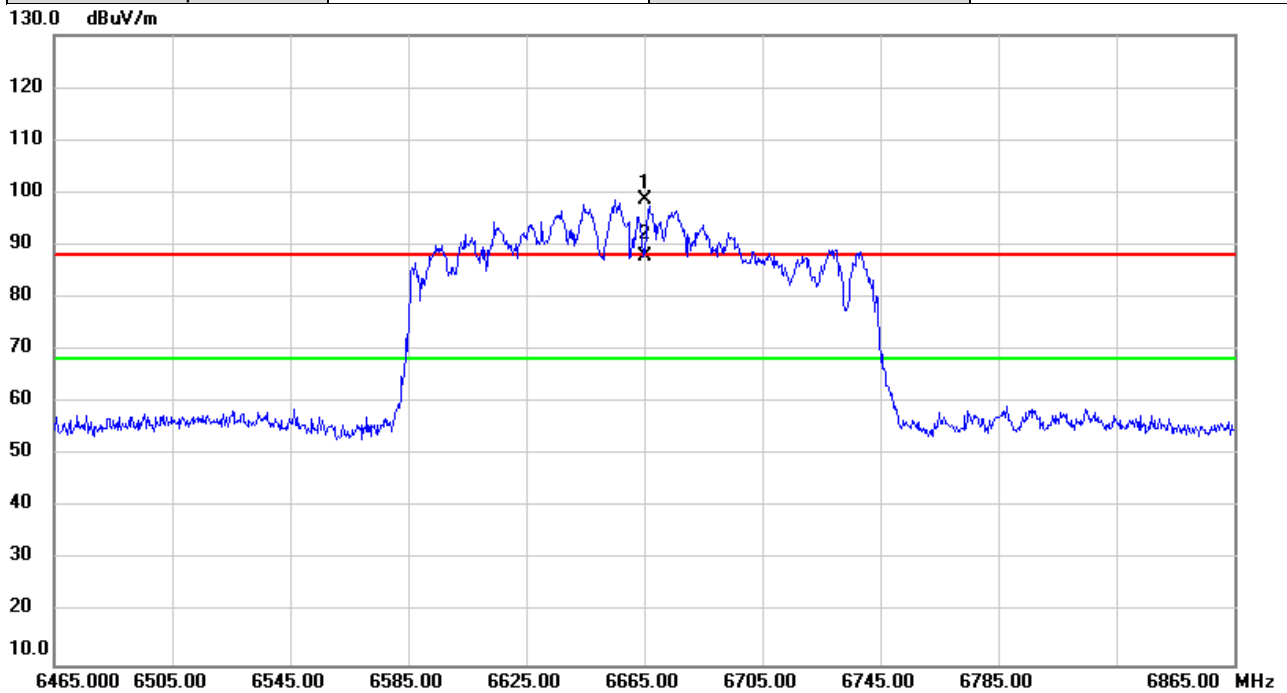


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	6505.000	92.57	5.05	97.62	88.20	9.42	peak	NoLimit
2	*	6505.000	82.01	5.05	87.06	68.20	18.86	AVG	NoLimit

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	IEEE 802.11ax (HE160)	Test Date	2023/2/1
Test Frequency	6665MHz	Polarization	Vertical
Temp	23°C	Hum.	59%

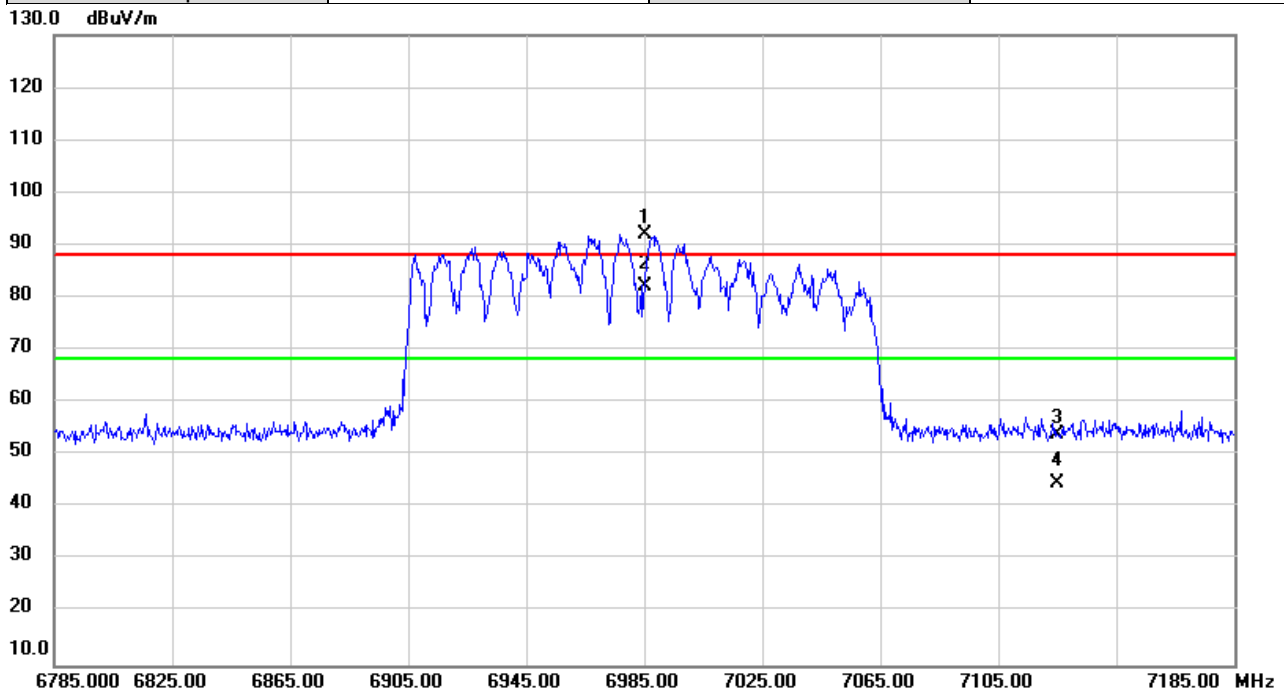


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	X	6665.000	93.56	5.19	98.75	88.20	10.55	peak	NoLimit
2	*	6665.000	82.52	5.19	87.71	68.20	19.51	AVG	NoLimit

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	IEEE 802.11ax (HE160)	Test Date	2023/2/1
Test Frequency	6985MHz	Polarization	Vertical
Temp	23°C	Hum.	59%



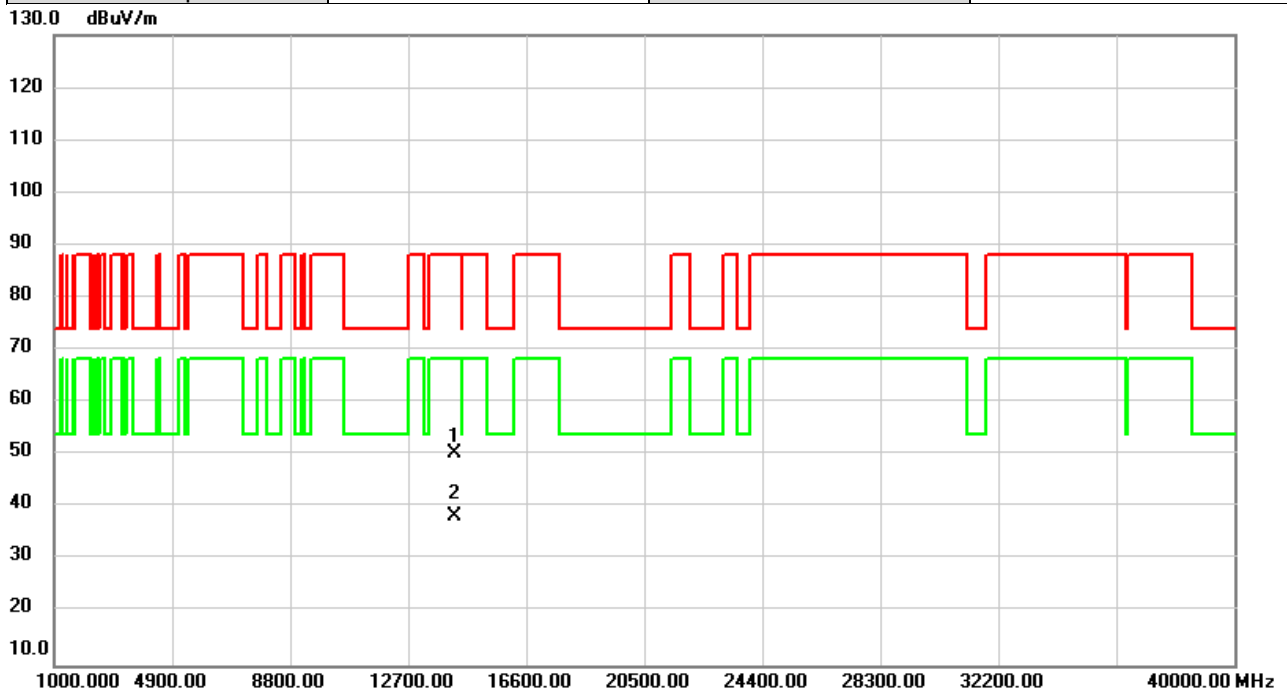
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Comment
1	X	6985.000	86.48	5.47	91.95	88.20	3.75	peak	NoLimit
2	*	6985.000	76.63	5.47	82.10	68.20	13.90	AVG	NoLimit
3		7125.000	48.51	5.52	54.03	88.20	-34.17	peak	
4		7125.000	39.13	5.52	44.65	68.20	-23.55	AVG	

REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Test Mode	IEEE 802.11ax (HE20)	Test Date	2023/2/1
Test Frequency	7115MHz	Polarization	Vertical
Temp	23°C	Hum.	59%



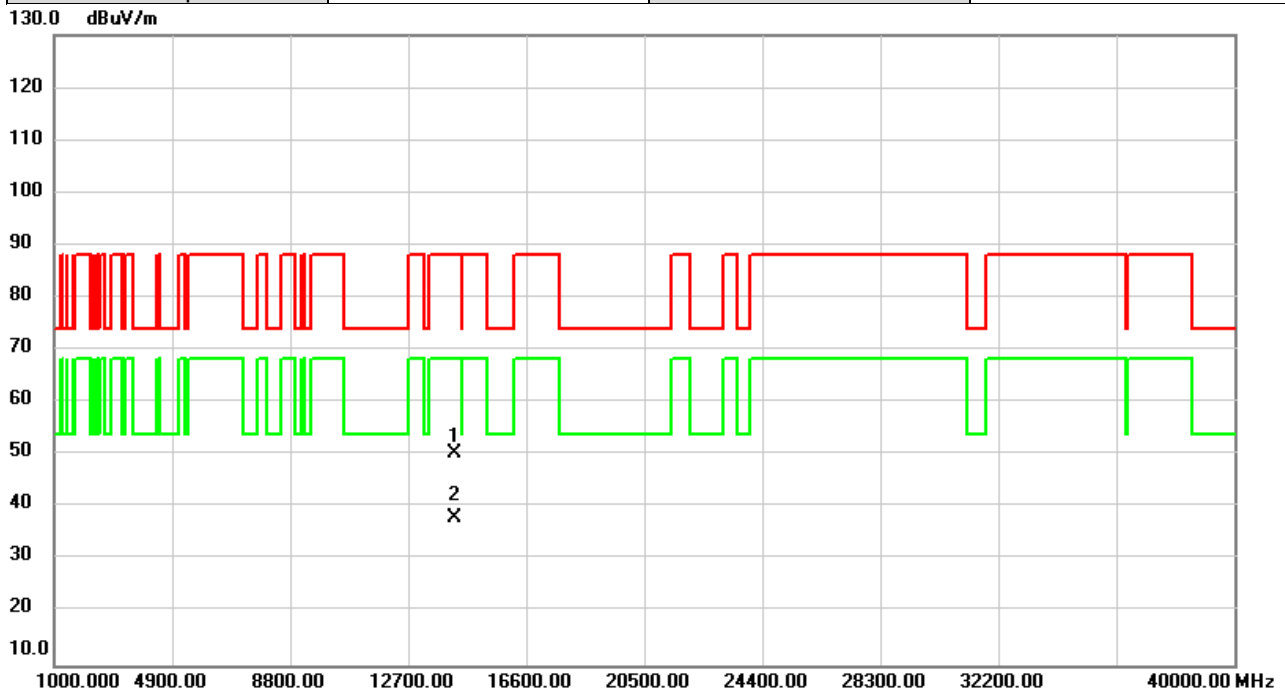
No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		14230.00	43.20	7.24	50.44	88.20	-37.76	peak	
2	*	14230.00	31.24	7.24	38.48	68.20	-29.72	AVG	

REMARKS:

(1) Measurement Value = Reading Level + Correct Factor.

(2) Margin Level = Measurement Value - Limit Value.

Test Mode	IEEE 802.11ax (HE20)	Test Date	2023/2/1
Test Frequency	7115MHz	Polarization	Horizontal
Temp	23°C	Hum.	59%

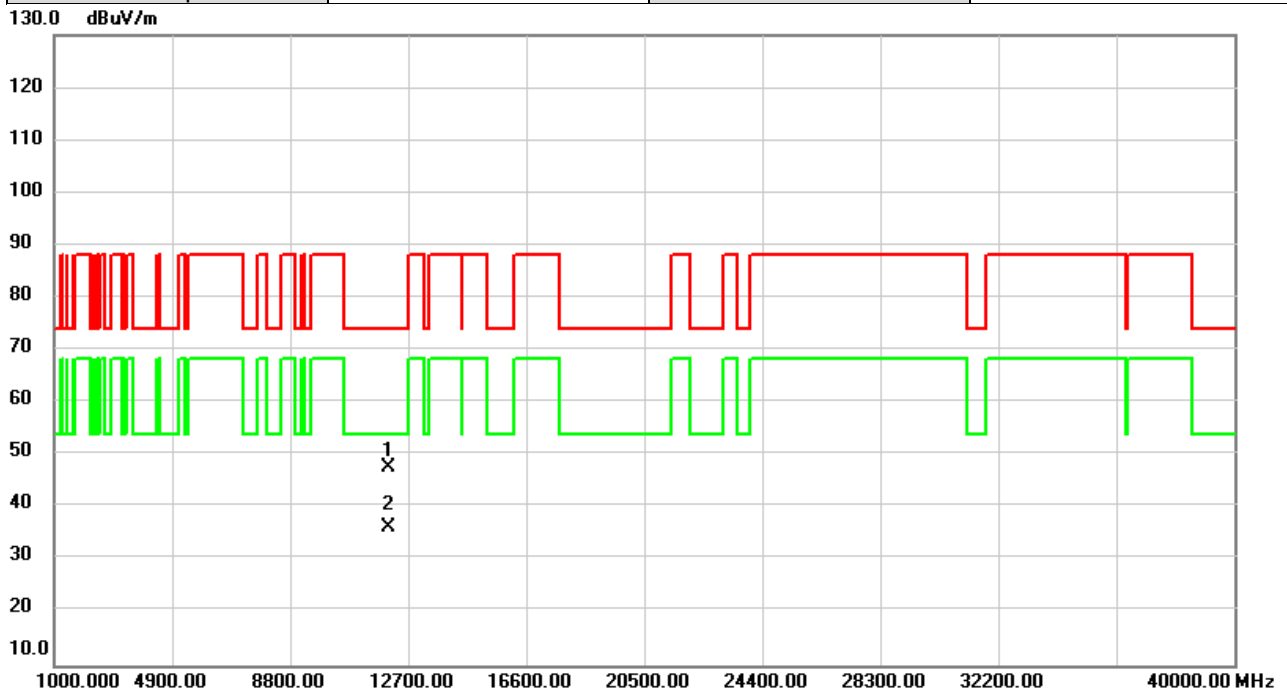


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		14230.00	43.08	7.24	50.32	88.20	-37.88	peak	
2	*	14230.00	30.68	7.24	37.92	68.20	-30.28	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	IEEE 802.11ax (HE160)	Test Date	2023/2/1
Test Frequency	6025MHz	Polarization	Vertical
Temp	23°C	Hum.	59%

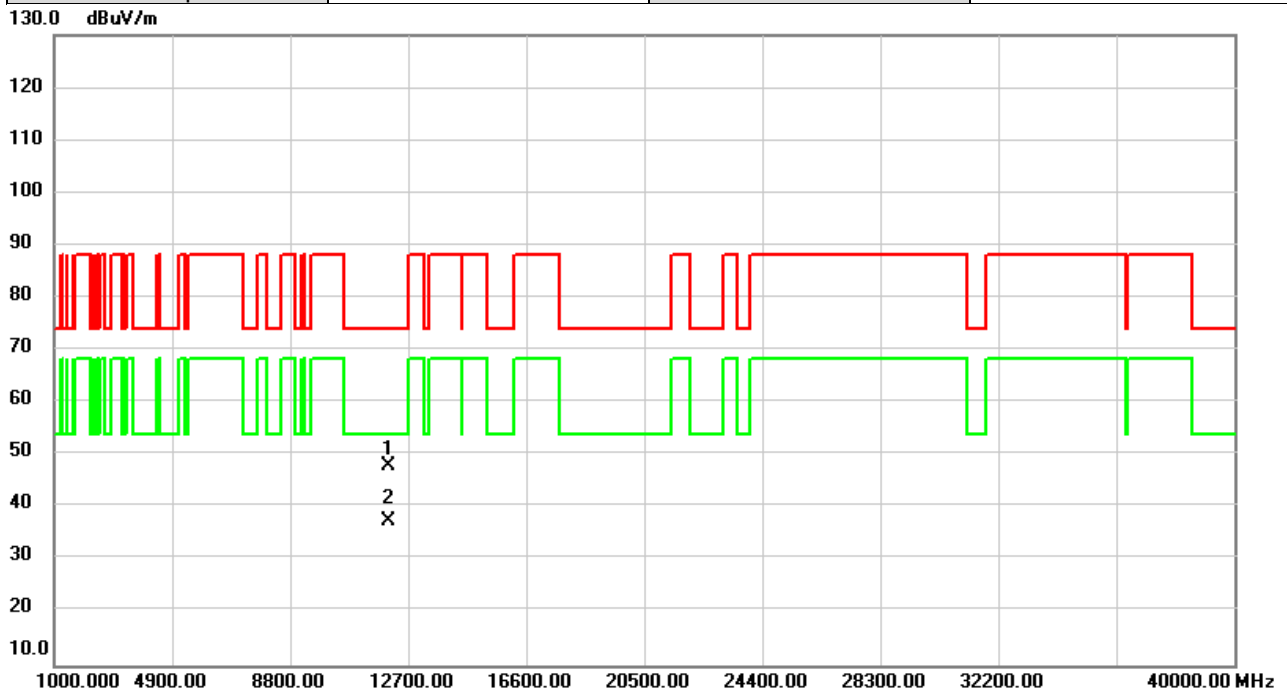


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		12050.00	40.91	6.66	47.57	74.00	-26.43	peak	
2	*	12050.00	29.55	6.66	36.21	54.00	-17.79	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	IEEE 802.11ax (HE160)	Test Date	2023/2/1
Test Frequency	6025MHz	Polarization	Horizontal
Temp	23°C	Hum.	59%

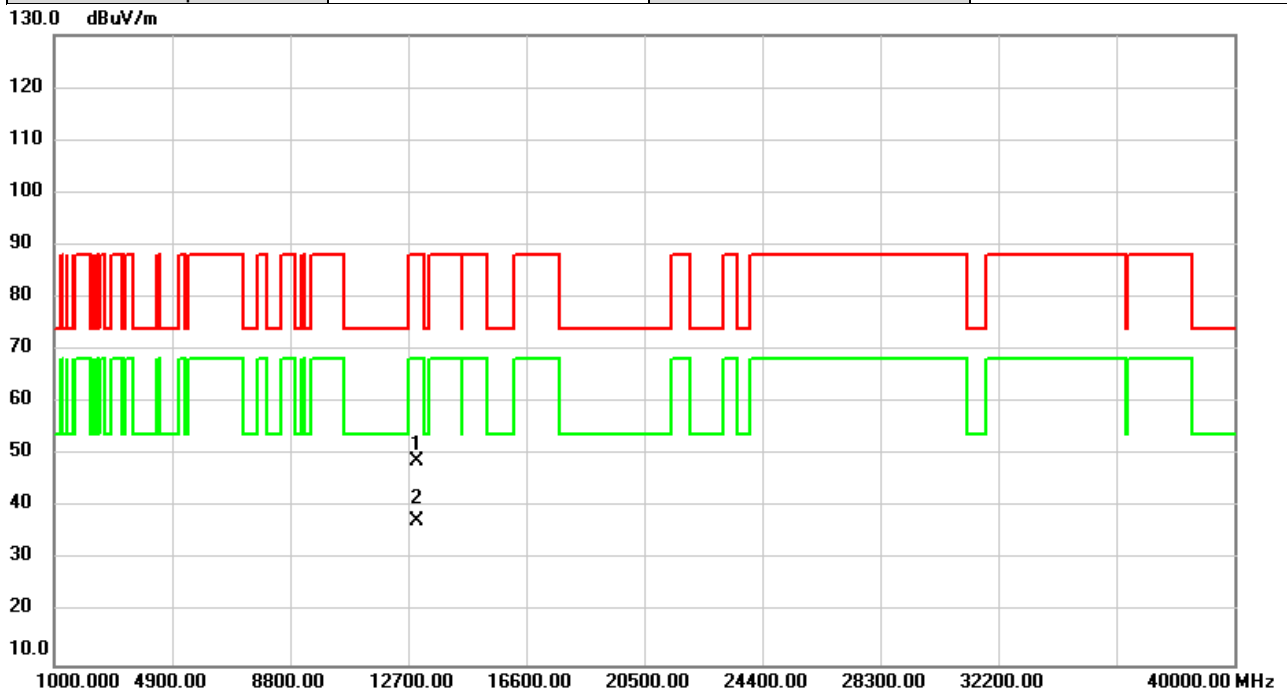


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		12050.00	41.19	6.66	47.85	74.00	-26.15	peak	
2	*	12050.00	30.71	6.66	37.37	54.00	-16.63	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	IEEE 802.11ax (HE160)	Test Date	2023/2/1
Test Frequency	6505MHz	Polarization	Vertical
Temp	23°C	Hum.	59%

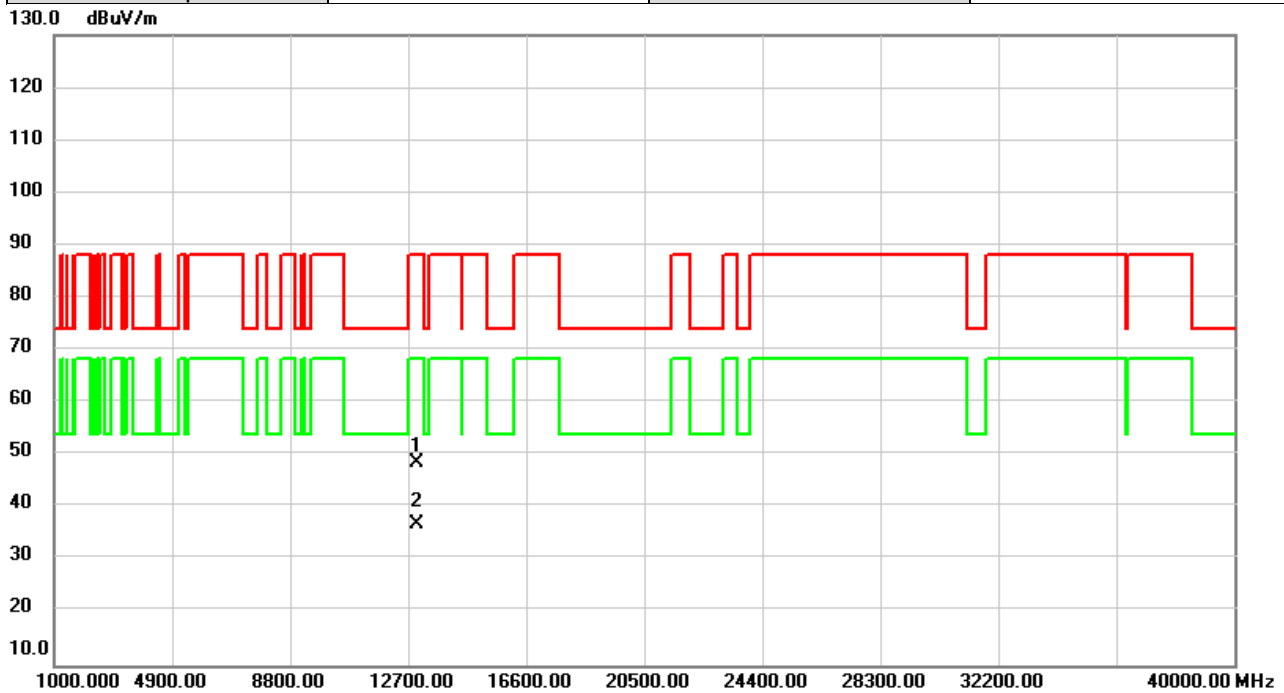


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		13010.00	41.16	7.66	48.82	88.20	-39.38	peak	
2	*	13010.00	29.86	7.66	37.52	68.20	-30.68	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	IEEE 802.11ax (HE160)	Test Date	2023/2/1
Test Frequency	6505MHz	Polarization	Horizontal
Temp	23°C	Hum.	59%

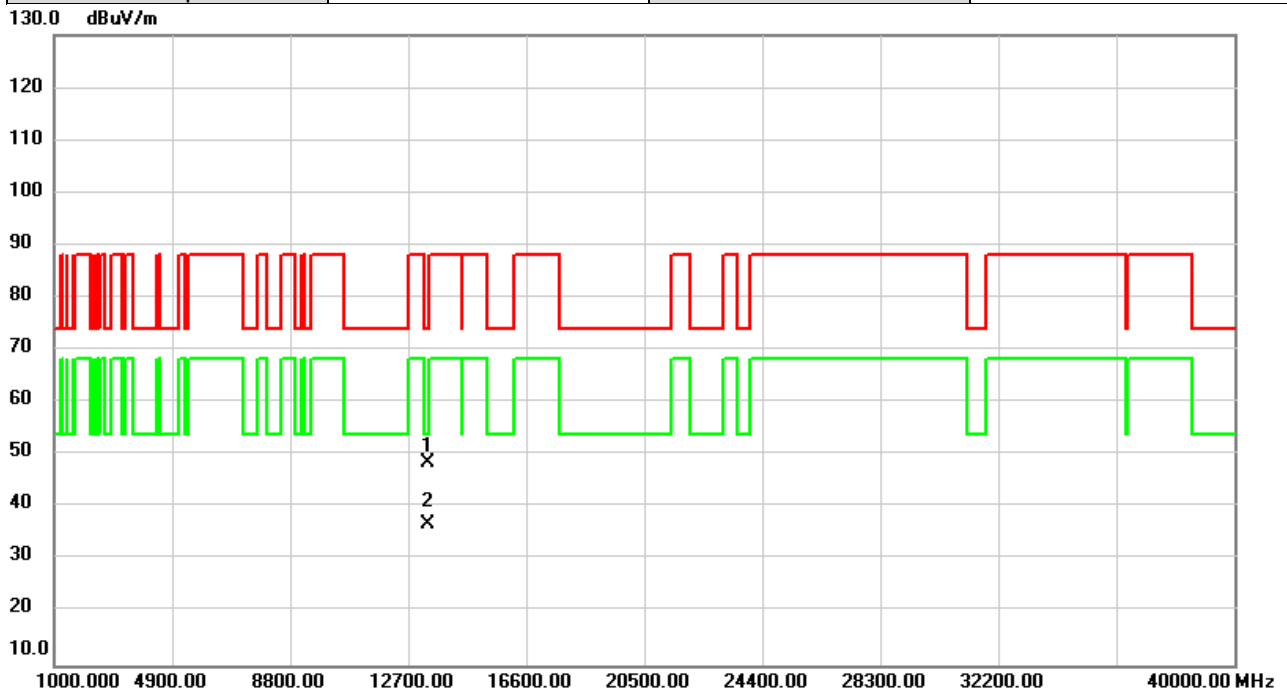


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		13010.00	40.90	7.66	48.56	88.20	-39.64	peak	
2	*	13010.00	29.13	7.66	36.79	68.20	-31.41	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	IEEE 802.11ax (HE160)	Test Date	2023/2/1
Test Frequency	6665MHz	Polarization	Vertical
Temp	23°C	Hum.	59%

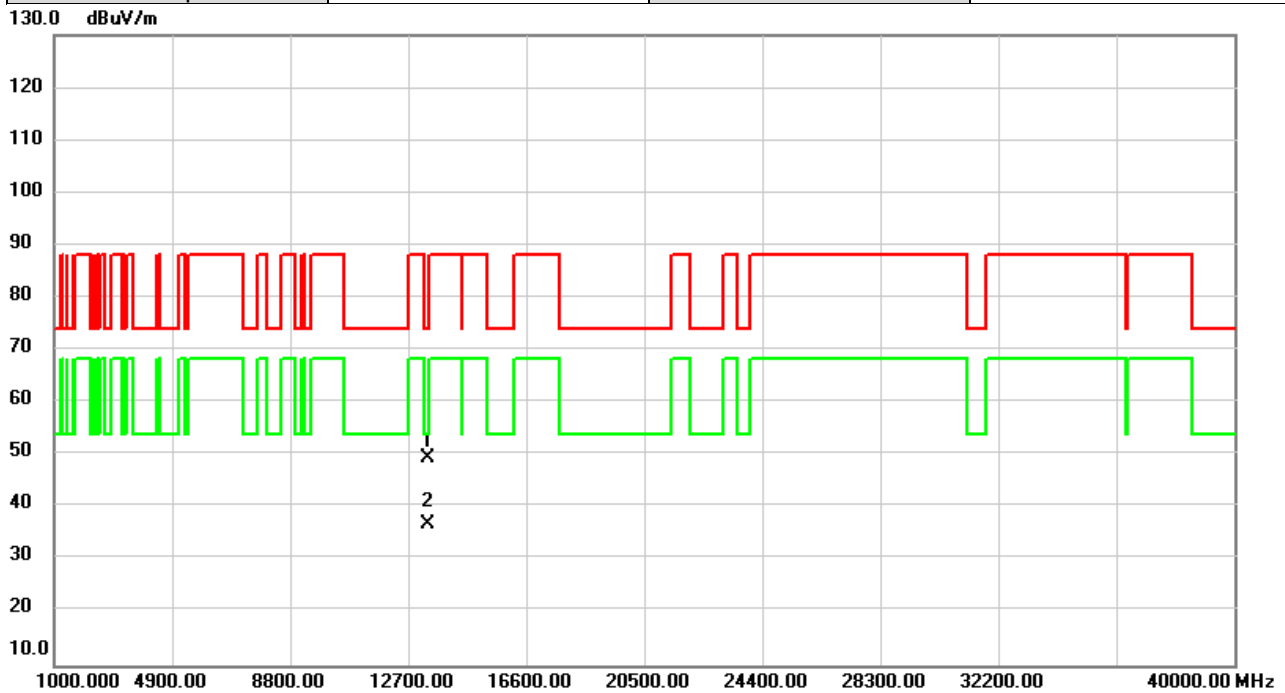


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		13330.00	41.30	7.23	48.53	74.00	-25.47	peak	
2	*	13330.00	29.60	7.23	36.83	54.00	-17.17	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

Test Mode	IEEE 802.11ax (HE160)	Test Date	2023/2/1
Test Frequency	6665MHz	Polarization	Horizontal
Temp	23°C	Hum.	59%

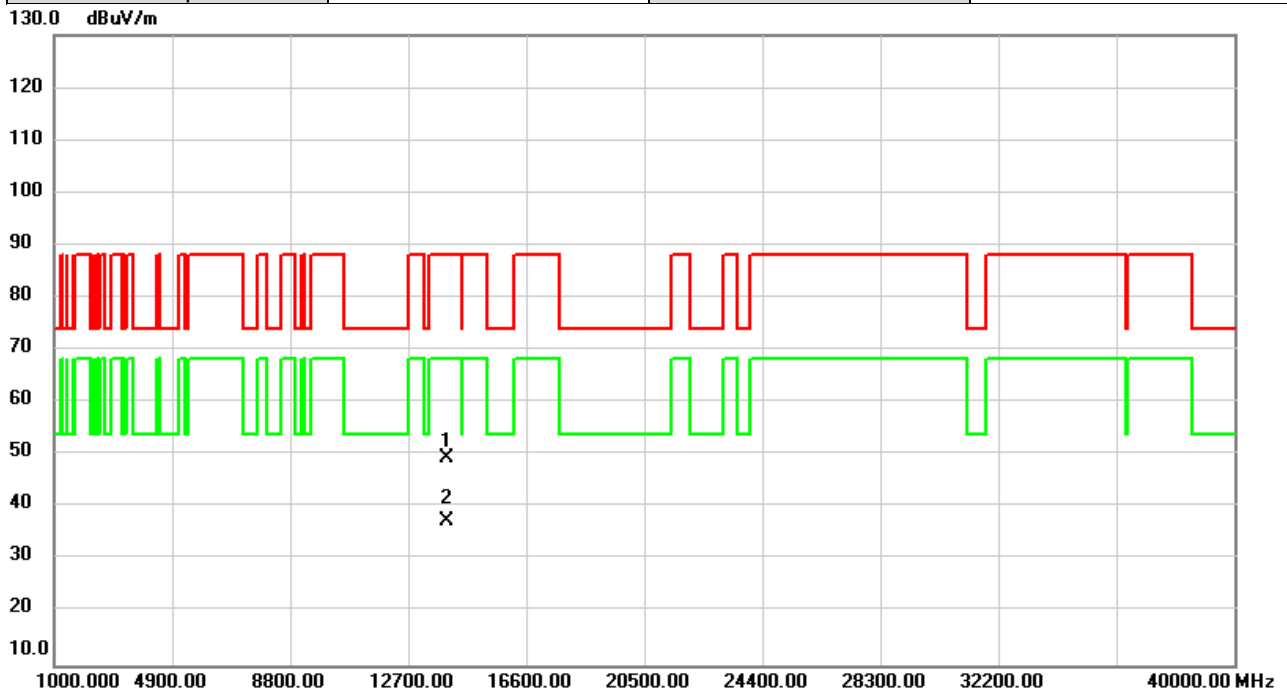


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		13330.00	42.23	7.23	49.46	74.00	-24.54	peak	
2	*	13330.00	29.69	7.23	36.92	54.00	-17.08	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	IEEE 802.11ax (HE160)	Test Date	2023/2/1
Test Frequency	6985MHz	Polarization	Vertical
Temp	23°C	Hum.	59%

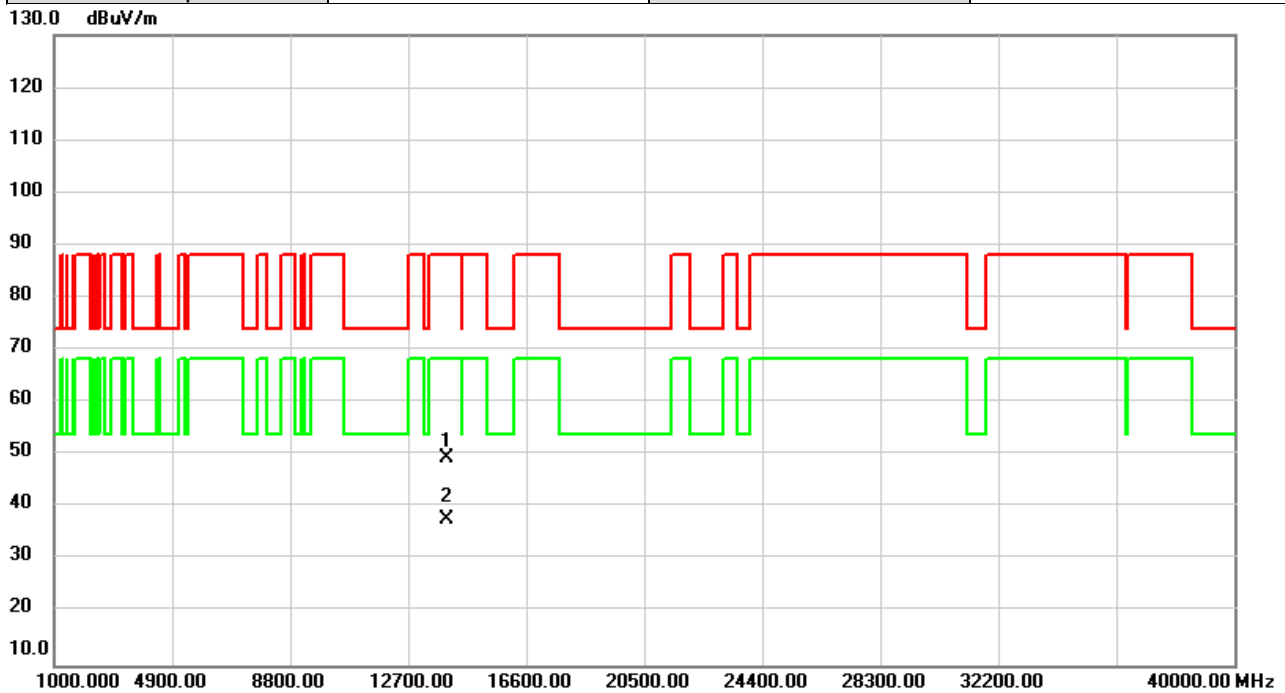


No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		13970.00	42.22	7.22	49.44	88.20	-38.76	peak	
2	*	13970.00	30.33	7.22	37.55	68.20	-30.65	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
- (2) Margin Level = Measurement Value - Limit Value.

Test Mode	IEEE 802.11ax (HE160)	Test Date	2023/2/1
Test Frequency	6985MHz	Polarization	Horizontal
Temp	23°C	Hum.	59%



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		13970.00	42.15	7.22	49.37	88.20	-38.83	peak	
2	*	13970.00	30.46	7.22	37.68	68.20	-30.52	AVG	

REMARKS:

- (1) Measurement Value = Reading Level + Correct Factor.
(2) Margin Level = Measurement Value - Limit Value.

APPENDIX D MAXIMUM E.I.R.P.

Test Mode	IEEE 802.11ax (HE20)_Ant. 1	Tested Date	2023/1/15
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Test Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	E.I.R.P. (dBm)	E.I.R.P. (W)	E.I.R.P. Limit (dBm)	E.I.R.P. Limit (W)	Result
5955	0.63	0.0012	5.20	0.0033	24.00	0.2512	Pass
6175	-0.55	0.0009	4.02	0.0025	24.00	0.2512	Pass
6415	-1.47	0.0007	3.10	0.0020	24.00	0.2512	Pass
6435	0.12	0.0010	4.69	0.0029	24.00	0.2512	Pass
6475	-0.74	0.0008	3.83	0.0024	24.00	0.2512	Pass
6515	0.35	0.0011	4.92	0.0031	24.00	0.2512	Pass
6535	0.93	0.0012	5.50	0.0035	24.00	0.2512	Pass
6695	-0.72	0.0008	3.85	0.0024	24.00	0.2512	Pass
6855	-0.17	0.0010	4.40	0.0028	24.00	0.2512	Pass
6875	-0.33	0.0009	4.24	0.0027	24.00	0.2512	Pass
6995	-1.77	0.0007	2.80	0.0019	24.00	0.2512	Pass
7095	-0.91	0.0008	3.66	0.0023	24.00	0.2512	Pass
7115	-11.29	0.0001	-6.72	0.0002	24.00	0.2512	Pass

Test Mode	IEEE 802.11ax (HE20)_Ant. 2	Tested Date	2023/1/15
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Test Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	E.I.R.P. (dBm)	E.I.R.P. (W)	E.I.R.P. Limit (dBm)	E.I.R.P. Limit (W)	Result
5955	-0.92	0.0008	3.65	0.0023	24.00	0.2512	Pass
6175	-0.51	0.0009	4.06	0.0025	24.00	0.2512	Pass
6415	-0.55	0.0009	4.02	0.0025	24.00	0.2512	Pass
6435	0.36	0.0011	4.93	0.0031	24.00	0.2512	Pass
6475	0.27	0.0011	4.84	0.0030	24.00	0.2512	Pass
6515	1.06	0.0013	5.63	0.0037	24.00	0.2512	Pass
6535	1.11	0.0013	5.68	0.0037	24.00	0.2512	Pass
6695	0.22	0.0011	4.79	0.0030	24.00	0.2512	Pass
6855	-0.22	0.0010	4.35	0.0027	24.00	0.2512	Pass
6875	-0.01	0.0010	4.56	0.0029	24.00	0.2512	Pass
6995	0.57	0.0011	5.14	0.0033	24.00	0.2512	Pass
7095	1.66	0.0015	6.23	0.0042	24.00	0.2512	Pass
7115	-9.52	0.0001	-4.95	0.0003	24.00	0.2512	Pass

Test Mode	IEEE 802.11ax (HE20)_Total	Tested Date	2023/1/15
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Test Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	E.I.R.P. (dBm)	E.I.R.P. (W)	E.I.R.P. Limit (dBm)	E.I.R.P. Limit (W)	Result
5955	2.93	0.0020	7.50	0.0056	24.00	0.2512	Pass
6175	2.48	0.0018	7.05	0.0051	24.00	0.2512	Pass
6415	2.02	0.0016	6.59	0.0046	24.00	0.2512	Pass
6435	3.25	0.0021	7.82	0.0061	24.00	0.2512	Pass
6475	2.80	0.0019	7.37	0.0055	24.00	0.2512	Pass
6515	3.73	0.0024	8.30	0.0068	24.00	0.2512	Pass
6535	4.03	0.0025	8.60	0.0072	24.00	0.2512	Pass
6695	2.79	0.0019	7.36	0.0054	24.00	0.2512	Pass
6855	2.82	0.0019	7.39	0.0055	24.00	0.2512	Pass
6875	2.84	0.0019	7.41	0.0055	24.00	0.2512	Pass
6995	2.57	0.0018	7.14	0.0052	24.00	0.2512	Pass
7095	3.57	0.0023	8.14	0.0065	24.00	0.2512	Pass
7115	-7.31	0.0002	-2.74	0.0005	24.00	0.2512	Pass

Test Mode	IEEE 802.11ax (HE40)_Ant. 1	Tested Date	2023/1/15
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Test Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	E.I.R.P. (dBm)	E.I.R.P. (W)	E.I.R.P. Limit (dBm)	E.I.R.P. Limit (W)	Result
5965	1.90	0.0015	6.47	0.0044	24.00	0.2512	Pass
6165	3.11	0.0020	7.68	0.0059	24.00	0.2512	Pass
6405	2.49	0.0018	7.06	0.0051	24.00	0.2512	Pass
6445	3.18	0.0021	7.75	0.0060	24.00	0.2512	Pass
6485	3.09	0.0020	7.66	0.0058	24.00	0.2512	Pass
6525	3.28	0.0021	7.85	0.0061	24.00	0.2512	Pass
6685	3.34	0.0022	7.91	0.0062	24.00	0.2512	Pass
6845	2.67	0.0018	7.24	0.0053	24.00	0.2512	Pass
6885	3.15	0.0021	7.72	0.0059	24.00	0.2512	Pass
7085	1.37	0.0014	5.94	0.0039	24.00	0.2512	Pass

Test Mode	IEEE 802.11ax (HE40)_Ant. 2	Tested Date	2023/1/15
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Test Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	E.I.R.P. (dBm)	E.I.R.P. (W)	E.I.R.P. Limit (dBm)	E.I.R.P. Limit (W)	Result
5965	2.67	0.0018	7.24	0.0053	24.00	0.2512	Pass
6165	3.42	0.0022	7.99	0.0063	24.00	0.2512	Pass
6405	3.97	0.0025	8.54	0.0071	24.00	0.2512	Pass
6445	4.43	0.0028	9.00	0.0079	24.00	0.2512	Pass
6485	4.59	0.0029	9.16	0.0082	24.00	0.2512	Pass
6525	4.61	0.0029	9.18	0.0083	24.00	0.2512	Pass
6685	3.55	0.0023	8.12	0.0065	24.00	0.2512	Pass
6845	3.21	0.0021	7.78	0.0060	24.00	0.2512	Pass
6885	3.44	0.0022	8.01	0.0063	24.00	0.2512	Pass
7085	3.41	0.0022	7.98	0.0063	24.00	0.2512	Pass

Test Mode	IEEE 802.11ax (HE40)_Total	Tested Date	2023/1/15
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Test Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	E.I.R.P. (dBm)	E.I.R.P. (W)	E.I.R.P. Limit (dBm)	E.I.R.P. Limit (W)	Result
5965	5.31	0.0034	9.88	0.0097	24.00	0.2512	Pass
6165	6.28	0.0042	10.85	0.0122	24.00	0.2512	Pass
6405	6.30	0.0043	10.87	0.0122	24.00	0.2512	Pass
6445	6.86	0.0049	11.43	0.0139	24.00	0.2512	Pass
6485	6.91	0.0049	11.48	0.0141	24.00	0.2512	Pass
6525	7.01	0.0050	11.58	0.0144	24.00	0.2512	Pass
6685	6.46	0.0044	11.03	0.0127	24.00	0.2512	Pass
6845	5.96	0.0039	10.53	0.0113	24.00	0.2512	Pass
6885	6.31	0.0043	10.88	0.0122	24.00	0.2512	Pass
7085	5.52	0.0036	10.09	0.0102	24.00	0.2512	Pass

Test Mode	IEEE 802.11ax (HE80)_Ant. 1	Tested Date	2023/1/15
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Test Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	E.I.R.P. (dBm)	E.I.R.P. (W)	E.I.R.P. Limit (dBm)	E.I.R.P. Limit (W)	Result
5985	5.45	0.0035	10.02	0.0100	24.00	0.2512	Pass
6145	5.83	0.0038	10.40	0.0110	24.00	0.2512	Pass
6385	4.93	0.0031	9.50	0.0089	24.00	0.2512	Pass
6465	6.28	0.0042	10.85	0.0122	24.00	0.2512	Pass
6545	5.51	0.0036	10.08	0.0102	24.00	0.2512	Pass
6625	4.21	0.0026	8.78	0.0076	24.00	0.2512	Pass
6785	4.72	0.0030	9.29	0.0085	24.00	0.2512	Pass
6865	5.92	0.0039	10.49	0.0112	24.00	0.2512	Pass
6945	5.57	0.0036	10.14	0.0103	24.00	0.2512	Pass
7025	5.51	0.0036	10.08	0.0102	24.00	0.2512	Pass

Test Mode	IEEE 802.11ax (HE80)_Ant. 2	Tested Date	2023/1/15
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Test Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	E.I.R.P. (dBm)	E.I.R.P. (W)	E.I.R.P. Limit (dBm)	E.I.R.P. Limit (W)	Result
5985	5.57	0.0036	10.14	0.0103	24.00	0.2512	Pass
6145	5.21	0.0033	9.78	0.0095	24.00	0.2512	Pass
6385	6.62	0.0046	11.19	0.0132	24.00	0.2512	Pass
6465	7.25	0.0053	11.82	0.0152	24.00	0.2512	Pass
6545	6.68	0.0047	11.25	0.0133	24.00	0.2512	Pass
6625	5.92	0.0039	10.49	0.0112	24.00	0.2512	Pass
6785	5.37	0.0034	9.94	0.0099	24.00	0.2512	Pass
6865	5.24	0.0033	9.81	0.0096	24.00	0.2512	Pass
6945	5.72	0.0037	10.29	0.0107	24.00	0.2512	Pass
7025	5.84	0.0038	10.41	0.0110	24.00	0.2512	Pass

Test Mode	IEEE 802.11ax (HE80)_Total	Tested Date	2023/1/15
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Test Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	E.I.R.P. (dBm)	E.I.R.P. (W)	E.I.R.P. Limit (dBm)	E.I.R.P. Limit (W)	Result
5985	8.52	0.0071	13.09	0.0204	24.00	0.2512	Pass
6145	8.54	0.0071	13.11	0.0205	24.00	0.2512	Pass
6385	8.87	0.0077	13.44	0.0221	24.00	0.2512	Pass
6465	9.80	0.0096	14.37	0.0274	24.00	0.2512	Pass
6545	9.14	0.0082	13.71	0.0235	24.00	0.2512	Pass
6625	8.16	0.0065	12.73	0.0187	24.00	0.2512	Pass
6785	8.07	0.0064	12.64	0.0184	24.00	0.2512	Pass
6865	8.60	0.0073	13.17	0.0208	24.00	0.2512	Pass
6945	8.66	0.0073	13.23	0.0210	24.00	0.2512	Pass
7025	8.69	0.0074	13.26	0.0212	24.00	0.2512	Pass

Test Mode	IEEE 802.11ax (HE160)_Ant. 1	Tested Date	2023/1/15
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Test Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	E.I.R.P. (dBm)	E.I.R.P. (W)	E.I.R.P. Limit (dBm)	E.I.R.P. Limit (W)	Result
6025	7.45	0.0056	12.02	0.0159	24.00	0.2512	Pass
6345	5.71	0.0037	10.28	0.0107	24.00	0.2512	Pass
6505	6.91	0.0049	11.48	0.0141	24.00	0.2512	Pass
6665	7.39	0.0055	11.96	0.0157	24.00	0.2512	Pass
6985	6.98	0.0050	11.55	0.0143	24.00	0.2512	Pass

Test Mode	IEEE 802.11ax (HE160)_Ant. 2	Tested Date	2023/1/15
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Test Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	E.I.R.P. (dBm)	E.I.R.P. (W)	E.I.R.P. Limit (dBm)	E.I.R.P. Limit (W)	Result
6025	7.45	0.0056	12.02	0.0159	24.00	0.2512	Pass
6345	8.43	0.0070	13.00	0.0200	24.00	0.2512	Pass
6505	8.03	0.0064	12.60	0.0182	24.00	0.2512	Pass
6665	7.65	0.0058	12.22	0.0167	24.00	0.2512	Pass
6985	7.46	0.0056	12.03	0.0160	24.00	0.2512	Pass

Test Mode	IEEE 802.11ax (HE160)_Total	Tested Date	2023/1/15
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Test Frequency (MHz)	Conducted Power (dBm)	Conducted Power (W)	E.I.R.P. (dBm)	E.I.R.P. (W)	E.I.R.P. Limit (dBm)	E.I.R.P. Limit (W)	Result
6025	10.46	0.0111	15.03	0.0318	24.00	0.2512	Pass
6345	10.29	0.0107	14.86	0.0306	24.00	0.2512	Pass
6505	10.52	0.0113	15.09	0.0323	24.00	0.2512	Pass
6665	10.53	0.0113	15.10	0.0324	24.00	0.2512	Pass
6985	10.24	0.0106	14.81	0.0302	24.00	0.2512	Pass

End of Test Report