

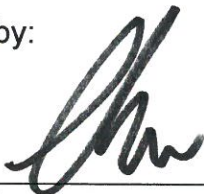
RF TEST REPORT

Test Equipment : LG Smart Thermostat
Model Name(HVIN) : TMCTAW5W
FCC ID : 2BO3L-TMCTAW5W
IC : 2703N-TMCTAW5W
Date of receipt : 2026-08-24
Test duration : 2026-08-31 ~ 2026-09-21
Date of issue : 2026-09-21

Applicant(FCC) : LG Electronics Inc.
222 LG-ro, Jinwi-myeon, Pyeongtaek-si
Gyeonggi-do 17709, South Korea
Applicant(IC) : LG Electronics Inc.
170, Seongsanpaechong-ro, Seongsan-gu, Changwon-si
Gyeongsangnam-do 51533, Korea (Republic Of)
Test Laboratory : Lab-T, Inc.
2182-42 Baegok-daero, Mohyeon-eup, Cheoin-gu, Yongin-si
Gyeonggi-do 17036, Republic of Korea
Test specification : FCC Part 15 Subpart E 15.407
RSS-247 Issue 4 (2025-07), RSS-GEN Issue 5 A2 (2021-02)
RF Output Power : 18.71 dBm
Test result : Pass

The above equipment was tested by Lab-T Testing Laboratory for compliance with the requirements of FCC, IC Rules and Regulations.
The test results presented in this test report are limited only to the sample supplied by applicant and the use of this test report is inhibited other than its purpose.
This test report shall not be reproduced except in full, without the written approval of Lab-T, Inc.
This test report is not related to KOLAS.

Tested by:



Engineer
HyunWoo Lee

Reviewed by:



Technical Manager
SangHoon Yu

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1. Revision history

Test Report No.	Date	Description
TRRFCC26-0014	2026-09-15	Initial issue
TRRFCC26-0014(1)	2026-09-21	Re-tested due to output power change

2. Information

2.1 Applicant Information(FCC)

Applicant name	LG Electronics Inc.
Address	222 LG-ro, Jinwi-myeon, Pyeongtaek-si Gyeonggi-do 17709, South Korea
Telephone No.	+82-31-8066-5538
Person in charge	Yongdeok Kwon / DL-FCC-Admin@lge.com
Manufacturer	LG Electronics Inc.
Address	170, Seongsanpaechong-ro, Seongsan-gu, Changwon-si Gyeongsangnam-do 51533, Korea (Republic Of)
Factory	HYUNDAI HT GLOBAL COMPANY LIMITED
Address	Lot M, Binh Xuyen Industrial Zone, Binh Nguyen Commune Phu Tho Province, Vietnam

2.2 Applicant Information (IC)

Applicant name	LG Electronics Inc.
Address	170, Seongsanpaechong-ro, Seongsan-gu, Changwon-si Gyeongsangnam-do 51533, Korea (Republic Of)
Telephone No.	+82-10-8473-0830
Person in charge	TaeYul Kim / taeyul.kim@lge.com
Manufacturer	LG Electronics Inc.
Address	170, Seongsanpaechong-ro, Seongsan-gu, Changwon-si Gyeongsangnam-do 51533, Korea (Republic Of)
Factory	HYUNDAI HT GLOBAL COMPANY LIMITED
Address	Lot M, Binh Xuyen Industrial Zone, Binh Nguyen Commune Phu Tho Province, Vietnam

2.3 Test Laboratory information

Corporate name	Lab-T, Inc.
Representative	Duke (Jongyoung) Kim
Address	2182-42 Baegok-daero, Mohyeon-eup, Cheoin-gu, Yongin-si, Gyeonggi-do 17036, Republic of Korea
FCC & IC MRA Designation No.	KR0159
ISED No.	22000
Telephone	+82-31-322-6767
Fax	+82-31-322-6768
E-mail	info@lab-t.net

2.4 Test Location

Test Site	used	Address
Building L	☒	2182-40 Baegok-daero, Mohyeon-eup, Cheoin-gu, Yongin-si, Gyeonggi-do 17036, Republic of Korea
Building T	☒	2182-42 Baegok-daero, Mohyeon-eup, Cheoin-gu, Yongin-si, Gyeonggi-do 17036, Republic of Korea
Building A	☐	2182-44 Baegok-daero, Mohyeon-eup, Cheoin-gu, Yongin-si, Gyeonggi-do 17036, Republic of Korea

3. Information About Test Equipment

3.1 Equipment Information

Equipment type	LG Smart Thermostat
Equipment model name	TMCTAW5W
Frequency range	5 180 MHz ~ 5 825 MHz
Modulation type	OFDM
Power supply	AC 24 V
H/W version	1.1
S/W version	1.1.0

Note 1 : The above EUT information was declared by the manufacturer.

3.2 Antenna Information

Type	Model No.	Gain		Note.
		5 150 MHz ~ 5 350 MHz	5 470 MHz ~ 5 850 MHz	
Chip antenna	AMAN1003015ST12	0.10 dBi	3.09 dBi	-

3.3 Test frequency

Test mode	Test frequency (MHz)			
	Band	Lowest Frequency	Middle Frequency	Highest Frequency
802.11a /802.11n(HT20) /802.11ac(VHT20)	5 150 ~ 5 250	5 180	5 200	5 240
	5 250 ~ 5 350	5 260	5 280	5 320
	5 470 ~ 5 725	5 500	5 580	5 720
	5 725 ~ 5 850	5 745	5 785	5 825

3.4 Worst-case

802.11a	6 Mbps	802.11ac(VHT20)	MCS0
802.11n(HT20)	MCS0		

3.5 Tested Companion Device Information

Type	Manufacturer	Model	Note
Access Point	DASAN Zhone Solutions, Inc.	H680GM	DFS

3.6 Operating conditions for the EUT

Firmware state		1.1.0
Test software name(version)		Labtool (2.0.0.49)
Test power setting		5 150 ~ 5 250 : 18 5 250 ~ 5 350 : 18 5 470 ~ 5 725 : 16 5 725 ~ 5 850 : 17
Serial number (Setup mode)	EUT #1	607HTMN05267 (Conducted)
	EUT #2	607HTEU05268 (Radiated Emission)

4. Test Report

4.1 Summary

FCC Part 15E 407 / RSS-247				
FCC Rule	IC Rule	Parameter	Clause	Status
Transmitter Requirements				
15.203 15.407(a)	RSS-GEN 6.8	Antenna Requirement	4.3.1	C
15.407(a)	RSS-247 7.3.1.2 RSS-247 7.3.2.2	Maximum Conducted Output Power	4.3.2	C
15.407(a)	RSS-247 7.3.3.2 RSS-247 7.3.4.3	Maximum Power Spectral Density	4.3.3	N/T ^{Note3}
15.407(b) 15.205(a) 15.209(a)	RSS-247 7.3.1.3 RSS-247 7.3.2.3 RSS-247 7.3.3.3 RSS-247 7.3.4.4	Radiated Emission, Band Edge and Restricted bands	4.3.6	C
NOTE 1 : C = Comply N/C = Not Comply N/T = Not Tested N/A = Not Applicable				
NOTE 2 : Power measurements were taken to proceed with C2PC, and spot checks were conducted under worst-case conditions.				
NOTE 3 : For test results, please refer to the original test report.				

* The general test methods used to test this device is ANSI C63.10:2020+Cor.1-2023 + C63.10a-2024 + Errata to C63.10a-2024

4.2 Measurement Uncertainty

Mesurement items	Expanded Uncertainty	
RF Output Power	1.16 dB	(The confidence level is about 95 %, $k=2$)
Power Spectral Density	1.55 dB	(The confidence level is about 95 %, $k=2$)
Occupied Channel Bandwidth	13.41 kHz	(The confidence level is about 95 %, $k=2$)
Conducted Spurious Emissions	0.50 dB	(The confidence level is about 95 %, $k=2$)
Radiated Spurious Emissions (1 GHz under)	4.85 dB	(The confidence level is about 95 %, $k=2$)
Radiated Spurious Emissions (Above 1 GHz)	4.38 dB	(The confidence level is about 95 %, $k=2$)

4.3 Transmitter Requirements

4.3.1 Antenna Requirement

4.3.1.1 Regulation

According to §15.203 An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

And according to §15.407(a)(1)(2)(3), If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to §RSS-GEN 6.8 The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

4.3.1.2 Result

Comply

(The transmitter has a Internal Chip Antenna. The directional peak gain of the antenna is 3.09 dBi.)

4.3.1.3 Measurement data

Antenna	Directional Gain For Power(dBi)	Directional Gain For PSD(dBi)	Power Limit Reduction(dB)	PSD Limit Reduction(dB)
Band	5150 ~ 5350			
Chip antenna	0.10	0.10	0.00	0.00
Band	5470 ~ 5850			
Chip antenna	3.09	3.09	0.00	0.00

4.3.2 Maximum Conducted Output Power

4.3.2.1 Regulation

According to §15.407(a)(1)(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to §RSS-247 7.3.1.2 For other devices, the maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log_{10} B$, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

According to §15.407(a)(2) and RSS-247 7.3.2.2, RSS-247 7.3.3.2 For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to RSS-247 7.3.2.2, RSS-247 7.3.3.2 For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, The maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log_{10} B$, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

According to §15.407(a)(3) and RSS-247 7.3.4.3 For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

4.3.2.2 Measurement Procedure

These test measurement settings are specified in section E of 789033 D02 General UNII Test Procedures.

4.3.2.2.1 Measurement using a Power Meter (PM)

(i) Measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the conditions listed below are satisfied.

The EUT is configured to transmit continuously or to transmit with a constant duty cycle.

At all times when the EUT is transmitting, it must be transmitting at its maximum power control level.

The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.

(ii) If the transmitter does not transmit continuously, measure the duty cycle, x , of the transmitter output signal as described in section II.B.

(iii) Measure the average power of the transmitter. This measurement is an average over both the on and off periods of the transmitter.

(iv) Adjust the measurement in dBm by adding $10 \log (1/x)$ where x is the duty cycle (e.g., $10 \log (1/0.25)$ if the duty cycle is 25%).

4.3.2.3 Result

Comply (measurement data : refer to the next page)

4.3.2.4 Measurement data

Test mode : 802.11a

Freq. (MHz)	Result (dBm)	Result (mW)	Limit (mW)
5 180	18.58	72.11	1000.00
5 200	18.61	72.61	1000.00
5 240	18.54	71.45	1000.00
5 260	18.27	67.14	250.00
5 280	18.19	65.92	250.00
5 320	17.93	62.09	250.00
5 500	16.87	48.64	250.00
5 580	17.29	53.58	250.00
5 720	15.86	38.55	250.00
5 745	17.37	54.58	1000.00
5 785	17.41	55.08	1000.00
5 825	16.57	45.39	1000.00

Test mode : 802.11n(HT20)

Freq. (MHz)	Result (dBm)	Result (mW)	Limit (mW)
5 180	18.71	74.30	1000.00
5 200	18.64	73.11	1000.00
5 240	18.50	70.79	1000.00
5 260	18.23	66.53	250.00
5 280	18.14	65.16	250.00
5 320	17.91	61.80	250.00
5 500	16.90	48.98	250.00
5 580	17.34	54.20	250.00
5 720	16.01	39.90	250.00
5 745	17.40	54.95	1000.00
5 785	17.41	55.08	1000.00
5 825	16.50	44.67	1000.00

Note 1 : refer to 4.3.1 for information on limit reduction.

Note 2 : We took the insertion loss of the cable loss into consideration within the measuring instrument.

Note 3 : Result : Measured Value + Duty cycle Factor

Note 4 : Duty cycle Factor : $10 \cdot \log(1/(\text{on-time}/\text{Period}))$ refer to the original test report.

Note 5 : A power check was performed to proceed with C2PC.

Test mode : 802.11ac(VHT20)

Freq. (MHz)	Result (dBm)	Result (mW)	Limit (mW)
5 180	18.62	72.78	1000.00
5 200	18.59	72.28	1000.00
5 240	18.50	70.79	1000.00
5 260	18.21	66.22	250.00
5 280	18.13	65.01	250.00
5 320	17.90	61.66	250.00
5 500	16.89	48.87	250.00
5 580	17.34	54.20	250.00
5 720	15.79	37.93	250.00
5 745	17.38	54.70	1000.00
5 785	17.39	54.83	1000.00
5 825	16.54	45.08	1000.00

- Note 1 : refer to 4.3.1 for information on limit reduction.
 Note 2 : We took the insertion loss of the cable loss into consideration within the measuring instrument.
 Note 3 : Result : Measured Value + Duty cycle Factor
 Note 4 : Duty cycle Factor : $10 \cdot \log(1/(\text{on-time}/\text{Period}))$ refer to the original test report.
 Note 5 : A power check was performed to proceed with C2PC.

4.3.2.5 Measurement data_E.I.R.P_IC

Test mode : 802.11a

Freq. (MHz)	Output Power (dBm)	Result eirp (dBm)	Result eirp (mW)	Limit (mW)
5 180	18.58	18.68	73.79	200.00
5 200	18.61	18.71	74.30	200.00
5 240	18.54	18.64	73.11	200.00
5 260	18.27	18.37	68.71	1000.00
5 300	18.19	18.29	67.45	1000.00
5 320	17.93	18.03	63.53	1000.00
5 500	16.87	19.96	99.08	1000.00
5 580	17.29	20.38	109.14	1000.00
5 720	15.86	18.95	78.52	1000.00
5 745	17.37	20.46	111.17	4000.00
5 785	17.41	20.50	112.20	4000.00
5 825	16.57	19.66	92.47	4000.00

Test mode : 802.11n(HT20)

Freq. (MHz)	Output Power (dBm)	Result eirp (dBm)	Result eirp (mW)	Limit (mW)
5 180	18.71	18.81	76.03	200.00
5 200	18.64	18.74	74.82	200.00
5 240	18.50	18.60	72.44	200.00
5 260	18.23	18.33	68.08	1000.00
5 300	18.14	18.24	66.68	1000.00
5 320	17.91	18.01	63.24	1000.00
5 500	16.90	19.99	99.77	1000.00
5 580	17.34	20.43	110.41	1000.00
5 720	16.01	19.10	81.28	1000.00
5 745	17.40	20.49	111.94	4000.00
5 785	17.41	20.50	112.20	4000.00
5 825	16.50	19.59	90.99	4000.00

Note 1 : refer to 4.3.1 for information on limit reduction and Antenna gain

Note 2 : Result eirp(dBm) : Output Power(dBm) + Antenna gain(dBi)

Test mode : 802.11ac(VHT20)

Freq. (MHz)	Output Power (dBm)	Result eirp (dBm)	Result eirp (mW)	Limit (mW)
5 180	18.62	18.72	74.47	200.00
5 200	18.59	18.69	73.96	200.00
5 240	18.50	18.60	72.44	200.00
5 260	18.21	18.31	67.76	1000.00
5 300	18.13	18.23	66.53	1000.00
5 320	17.90	18.00	63.10	1000.00
5 500	16.89	19.98	99.54	1000.00
5 580	17.34	20.43	110.41	1000.00
5 720	15.79	18.88	77.27	1000.00
5 745	17.38	20.47	111.43	4000.00
5 785	17.39	20.48	111.69	4000.00
5 825	16.54	19.63	91.83	4000.00

Note 1 : refer to 4.3.1 for information on limit reduction and Antenna gain

Note 2 : Result eirp(dBm) : Output Power(dBm) + Antenna gain(dBi)

4.3.3 Maximum Power Spectral Density(PSD)

4.3.3.1 Regulation

According to §15.407(a)(1)(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to §RSS-247 7.3.1.2 For other devices, the maximum e.i.r.p. shall not exceed 200 mW or $10 + 10 \log_{10} B$, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz. The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

According to §15.407(a)(2) and RSS-247 7.3.2.2, RSS-247 7.3.3.2 For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10 \log B$, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to §15.407(a)(3) and RSS-247 7.3.4.3 For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

4.3.3.2 Measurement Procedure

These test measurement settings are specified in section F of 789033 D02 General UNII Test Procedures.

4.3.3.2.1 Maximum Power Spectral Density (PSD)

The rules requires “maximum power spectral density” measurements where the intent is to measure the maximum value of the time average of the power spectral density measured during a period of continuous transmission.

1. Create an average power spectrum for the EUT operating mode being tested by following the instructions in section II.E.2. for measuring maximum conducted output power using a spectrum analyzer or EMI receiver: select the appropriate test method (SA-1, SA-2, SA-3, or alternatives to each) and apply it up to, but not including, the step labeled, “Compute power...” (This procedure is required even if the maximum conducted output power measurement was performed using a power meter, method PM.)

2. Use the peak search function on the instrument to find the peak of the spectrum and record its value.

3. Make the following adjustments to the peak value of the spectrum, if applicable:

- a) If Method SA-2 or SA-2 Alternative was used, add $10 \log (1/x)$, where x is the duty cycle, to the peak of the spectrum.
- b) If Method SA-3 Alternative was used and the linear mode was used in step II.E.2.g)(viii), add 1 dB to the final result to compensate for the difference between linear averaging and power averaging.

4. The result is the Maximum PSD over 1 MHz reference bandwidth.

5. For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 kHz bandwidth, the following adjustments to the procedures apply:

- a) Set $RBW \geq 1/T$, where T is defined in section II.B.I.a).
- b) Set $VBW \geq 3$ RBW.
- c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10 \log (500 \text{ kHz}/RBW)$ to the measured result, whereas $RBW (< 500 \text{ kHz})$ is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
- d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add $10 \log (1\text{MHz}/RBW)$ to the measured result, whereas $RBW (< 1 \text{ MHz})$ is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter, it is recommended to use reduced RBW of 100 kHz for the sections 5.c) and 5.d) above, since $RBW=100 \text{ kHz}$ is available on nearly all spectrum analyzers.

4.3.3.3 Result

N/T (Measurement data: Refer to the original test report.)

4.3.4 Spurious Emission, Band Edge, and Restricted bands

4.3.4.1 Regulation

According to §15.407(b) Undesirable emission limits. Except as shown in paragraph (b)(10) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

(4) For transmitters operating solely in the 5.725-5.850 GHz band: All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(5) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.

(6) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.

(7) The provisions of §15.205 apply to intentional radiators operating under this section.

According to §RSS-247 7.3.1.3 For transmitters with operating frequencies in the band 5150-5250 MHz, all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. Any unwanted emissions that fall into the band 5250-5350 MHz shall be attenuated below the channel power by at least 26 dB, when measured using a resolution bandwidth between 1 and 5% of the occupied bandwidth (i.e. 99% bandwidth), if the occupied bandwidth also falls within the 5250-5350 MHz band, the transmission is considered as intentional and the devices shall comply with all requirements in the band 5250-5350 MHz including implementing DFS (see section 7.3.6) and TPC, on the portion of the emission that resides in the 5250-5350 MHz band.

According to §RSS-247 7.3.2.3 a) All emissions outside the band 5250-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p.; or

b) All emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. and its power shall comply with the spectral power density for operation within the band 5150-5250 MHz. The device, except devices installed in vehicles, shall be labelled or include in the user manual the following text "for indoor use only."

According to §RSS-247 7.3.3.3 Equipment operating in the bands 5470-5725 MHz shall comply with the following unwanted emission limits:

- a) for devices with fundamental emissions fully contained within the 5470-5725 MHz band, all unwanted emissions outside the band 5470-5725 MHz shall not exceed -27 dBm/MHz peak e.i.r.p. spectral density.
- b) for devices with bandwidth overlapping the band edge of 5725 MHz, all unwanted emissions shall not exceed -27 dBm/MHz peak e.i.r.p. spectral density at 5850 MHz instead of 5725 MHz.

According to §RSS-247 7.3.4.4 Equipment operating in the band 5725-5850 MHz shall comply with the following peak e.i.r.p. spectral density limits:

- a) 27 dBm/MHz at frequencies from the band edges decreasing linearly to 15.6 dBm/MHz at 5 MHz above or below the band edges;
- b) 15.6 dBm/MHz at 5 MHz above or below the band edges decreasing linearly to 10 dBm/MHz at 25 MHz above or below the band edges;
- c) 10 dBm/MHz at 25 MHz above or below the band edges decreasing linearly to -27 dBm/MHz at 75 MHz above or below the band edges; and
- d) -27 dBm/MHz at frequencies more than 75 MHz above or below the band edges.

According to §15.209(a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009 - 0.490	2 400/F(kHz)	300
0.490 - 1.705	24 000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100**	3
88 - 216	150**	3
216 - 960	200**	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54–72 MHz, 76–88 MHz, 174–216 MHz or 470–806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§15.231 and 15.241.

According to §15.205(a) and (b), only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.009 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
0.495 - 0.505	16.694 75 - 16.695 25	608 - 614	5.35 - 5.46
2.173 5 - 2.190 5	16.804 25 - 16.804 75	960 – 1 240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1 300 – 1 427	8.025 - 8.5
4.177 25 - 4.177 75	37.5 - 38.25	1 435 – 1 626.5	9.0 - 9.2
4.207 25 - 4.207 75	73 - 74.6	1 645.5 – 1 646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1 660 – 1 710	10.6 - 12.7
6.267 75 - 6.268 25	108 - 121.94	1 718.8 – 1 722.2	13.25 - 13.4
6.311 75 - 6.312 25	123 - 138	2 200 – 2 300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2 310 – 2 390	15.35 - 16.2
8.362 - 8.366	156.524 75 - 156.525 25	2 483.5 – 2 500	17.7 - 21.4
8.376 25 - 8.386 75	156.7 - 156.9	2 690 – 2 900	22.01 - 23.12
8.414 25 - 8.414 75	162.012 5 - 167.17	3 260 – 3 267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3 332 – 3 339	31.2 - 31.8
12.519 75 - 12.520 25	240 - 285	3 345.8 – 3 358	36.43 - 36.5
12.576 75 - 12.577 25	322 - 335.4	3 600 – 4 400	Above 38.6
13.36 - 13.41			

The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurement

According to RSS-GEN 8.10(c) Unwanted emissions that do not fall within the restricted frequency bands listed in table 7 shall comply either with the limits specified in the applicable RSS or with those specified in table 5 and table 6.

MHz	MHz	MHz	GHz
0.009 - 0.110	13.36 – 13.41	960 – 1427	9.0 – 9.2
0.495 - 0.505	16.42 – 16.423	1435 – 1626.5	9.3 – 9.5
2.173 5 - 2.190 5	16.69475 – 16.69525	1645.5 - 1646.5	10.6 – 12.7
3.020 – 3.026	16.80425 - 16.80475	1660 – 1710	13.25 – 13.4
4.125 – 4.128	25.5 – 25.67	1718.8 – 1722.2	14.47 – 14.5
4.17725 – 4.17775	37.5 – 38.25	2200 – 2300	15.35 – 16.2
4.20725 – 4.20775	73 – 74.6	2310 - 2390	17.7 – 21.4
5.677 – 5.683	74.8 – 75.2	2483.5 – 2500	22.01 – 23.12
6.215 – 6.218	108 – 138	2655 – 2900	23.6 – 24.0
6.26775 – 6.26825	149.9 – 150.05	3260 – 3267	31.2 – 31.8
6.31175 – 6.31225	156.52475 – 156.52525	3332 – 3339	36.43 – 36.5
8.291 – 8.294	156.7 – 156.9	3345.8 - 3358	Above 38.6
8.363 – 8.366	162.0125 – 167.17	3500 – 4400	-
8.37625 – 8.38675	167.75 – 173.2	4500 – 5150	-
8.41425 – 8.41475	240 – 285	5350 – 5460	-
12.29 – 12.293	322 – 335.4	7250 - 7750	-
12.51975 – 12.52025	399.9 – 410	8025 – 8500	-
12.57675 – 12.57725	608 – 614	-	-

4.3.4.2 Measurement Procedure

These test measurement settings are specified in section G of 789033 D02 General UNII Test Procedures

For all radiated emissions tests, measurements must correspond to the direction of maximum emission level for each measured emission (see ANSI C63.10 for guidance).

4.3.4.2.1 Unwanted Emissions in the Restricted Bands & Outside of the Restricted Bands

(1) For all measurements, follow the requirements in section II.G.3.,
“General Requirements for Unwanted Emissions Measurements”.

(2) At frequencies below 1000 MHz, use the procedure described in section II.G.4.,
“Procedure for Unwanted Emissions Measurements Below 1000 MHz”.

(3) At frequencies above 1000 MHz, measurements performed using the peak and average measurement procedures described in sections II.G.5. and II.G.6, respectively, must satisfy the respective peak and average limits. If all peak measurements satisfy the average limit, then average measurements are not required.

(4) Unwanted Emissions that fall Outside of the Restricted Bands

As specified in §15.407(b), emissions above 1000 MHz that are outside of the restricted bands are subject to a maximum emission limit of -27 dBm/MHz (or -17 dBm/MHz as specified in §15.407(b)(4)).

However, an out-of-band emission that complies with both the peak and average limits of §15.209 is not required to satisfy the -27 dBm/MHz or -17 dBm/MHz maximum emission limit.

a) If radiated measurements are performed, field strength is then converted to EIRP as follows:

(i) $EIRP = (E \cdot d)^2 / 30$

where: • E is the field strength in V/m;

• d is the measurement distance in meters;

• EIRP is the equivalent isotropically radiated power in watts.

(ii) Working in dB units, the above equation is equivalent to:

$EIRP[dBm] = E[dB\mu V/m] + 20 \log(d[meters]) - 104.77$

(iii) or, if d is 3 meters:

$EIRP[dBm] = E[dB\mu V/m] - 95.2$

4.3.4.2.2 Radiated Spurious Emissions

- 1) The preliminary and final radiated measurements were performed to determine the frequency producing the maximum emissions in at a 10m anechoic chamber. The EUT was tested at a distance 3 meters.
- 2) The EUT was placed on the top of the 0.8-meter height, 1 × 1.5 meter non-metallic table. To find the maximum emission levels, the height of a measuring antenna was changed and the turntable was rotated 360°.
- 3) The antenna polarization was also changed from vertical to horizontal. The spectrum was scanned from 9 kHz to 30 MHz using the loop antenna, and from 30 to 1 000 MHz using the TRILOG broadband antenna, and from 1 000 MHz to 40 000 MHz using the horn antenna.
- 4) Each frequency found during preliminary measurements was re-examined and investigated. The test-receiver system was set up to average, peak, and quasi-peak detector function with specified bandwidth.
- 5) For multiple antennas, the maximum simultaneous operating conditions were declared the worst case condition. The test was performed under the worst condition.

NOTE1 : The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1 GHz.

NOTE2 : The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection and frequency above 1 GHz.

The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 1 kHz(1/T) for Average detection (AV) at frequency above 1 GHz. (where T = pulse width)

4.3.4.3 Note

- Below 1GHz

Note 1 : Loss : Cable loss - Amp gain

Note 2 : Result : Reading + Ant Factor + Loss

Note 3 : Measured distance : 3 m

- Above 1GHz

Note 1 : Factor : Ant Factor + Cable loss - Amp gain + Distance Factor

Note 2 : Peak Result : Reading + Factor

Note 3 : Average Result : Average Reading + Factor + Average Factor

Note 4 : Average Factor : $10\log(1/\text{Duty cycle})$ * Refer to the original test report.

Note 5 : 1G-18GHz Measured distance : 3 m

Note 6 : Above 18GHz Measured distance : 1 m, Distance Factor = $20\log(1/3) = -9.54$

Note 7 : Average measurement did not take place because the peak data did not exceed Average Limit.

Note 8 : Not Detected means that peak data does not exceed the average limit.

4.3.4.4 Result

Comply (measurement data : refer to the next page)

4.3.4.5 Measurement data

- Above 1GHz

Test mode : 802.11a 5180 MHz

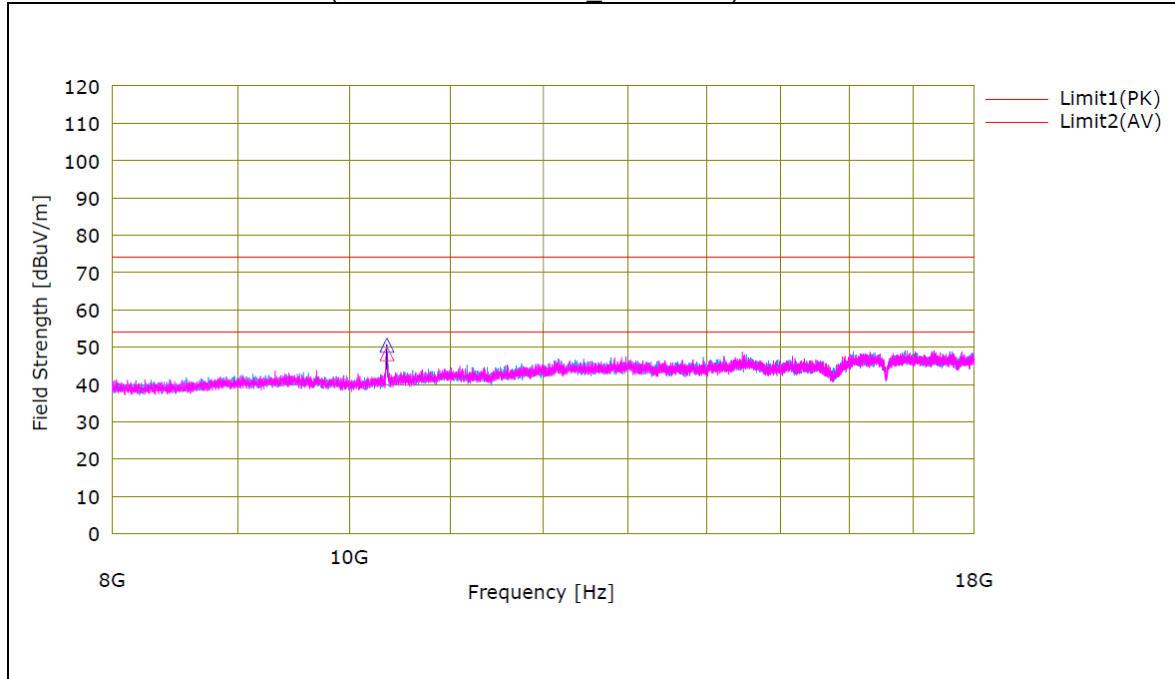
Frequency (MHz)	Detector	Pol. (V/H)	Reading (dBμV)	Factor (dB)	Dutycycle Factor (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
10 358.66	PK	H	44.00	6.60	-	50.60	74.00	23.40
10 359.86	PK	V	41.70	6.60	-	48.30	74.00	25.70

Test mode : 802.11n(HT20) 5500 MHz

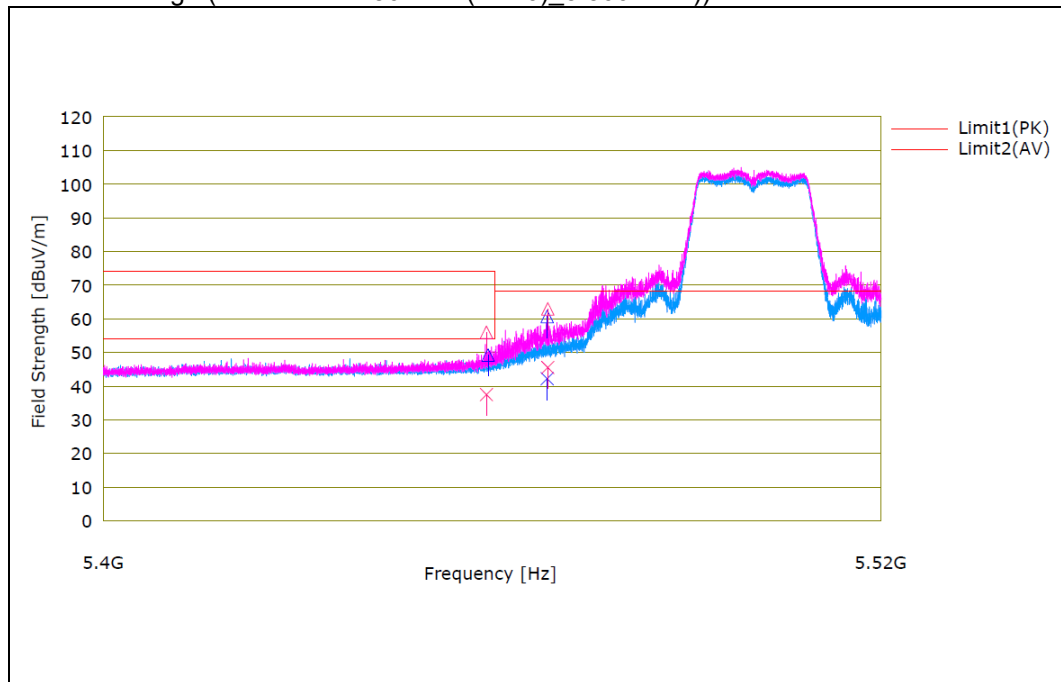
Frequency (MHz)	Detector	Pol. (V/H)	Reading (dBμV)	Factor (dB)	Dutycycle Factor (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
5 458.77	PK	V	58.30	-2.28	-	56.02	74.00	17.98
	AV	V	39.80	-2.28	-	37.52	54.00	16.48
5 459.03	PK	H	51.50	-2.28	-	49.22	74.00	24.78
5 468.15	PK	H	63.00	-2.31	-	60.69	68.20	7.51
	AV	H	44.50	-2.31	-	42.19	68.20	26.01
5 468.25	PK	V	65.20	-2.31	-	62.89	68.20	5.31
	AV	V	47.80	-2.31	-	45.49	68.20	22.71

4.3.4.6 Measurement Plot

Test mode : 8 GHz ~ 18 MHz (Worst case : 802.11a_5 180 MHz)



Test mode : Bandedge (Worst case : 802.11n(HT20)_5 500 MHz))



APPENDIX I

TEST EQUIPMENT USED FOR TESTS

To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment.

Equipment	Manufacturer	Model	Serial No.	Cal. Date (yy.mm.dd)	Next Cal.Date (yy.mm.dd)
EMI Test Receiver	ROHDE&SCHWARZ	ESU40	100445	2026-08-18	2027-08-18
ATTENUATOR	INMET	26A-20	TR010	2025-10-01	2026-10-01
Digital MultiMeter	HP	34401A	US36025428	2025-12-23	2026-12-23
Power Sensor	KEYSIGHT	U2022XA	MY55320008	2026-08-06	2027-08-06
DC Power Supply	AGILENT	E3632A	MY51160055	2026-04-01	2027-04-01
Signal Generator	ROHDE&SCHWARZ	SMB100A	178384	2025-10-01	2026-10-01
High pass filter	Wainwright Instruments GmbH	WHNX6-5840-8000- 26500-60CC	4	2025-12-23	2026-12-23
RF Cable	Radiall	1800920922000KE	CON-R006	2026-07-20	2027-01-20
Antenna Mast	Innco	MA4640-XPET-0800	578	-	-
Controller	TOKIN	5909L	141909L-1	-	-
Controller	Innco	CO3000	40040217	-	-
Turn Table	TOKIN	5983-1.5	-	-	-
Double Ridge Horn Antenna	ETS	3117	00168719	2026-05-21	2027-05-21
Low Noise amplifier	TESTEK	TK-PA18H	170004-L	2026-03-26	2027-03-26

-End-