

RF TEST REPORT

Test Equipment : LG Smart Deadbolt Lock
Model Name(HVIN) : TMCDD15G
FCC ID : 2BO3L-TMCDD15
IC : 2703N-TMCDD15
Date of receipt : 2026-07-27
Test duration : 2026-07-29 ~ 2026-09-04
Date of issue : 2026-09-04

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 C 15.225
RSS-210 Issue 11 (2024-06), RSS-GEN Issue 5 A2 (2021-02)
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
TRRFCC26-0012	2026-08-24	Initial issue
TRRFCC26-0012(1)	2026-09-04	Modify Applicant Information(IC) & 20dB Bandwidth

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 Site

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 Deadbolt Lock
Model Name	TMCDD15G
Variant model name ^{Note2}	TMCDD15S
Frequency Range	13.56 MHz
Modulation Type	ASK
Power Supply	DC 6 V
H/W version	1.0
S/W version	1.1.00

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

Note 2 : The variant model has identical hardware and RF circuitry to the basic model, differing only in the exterior
(Basic: Graphite, Variant: Silver)

3.2 Antenna Information

Type	Model No.	Gain	Note.
PCB Antenna	-	-	-

3.3 Test Frequency

Test Mode	Test Frequency[MHz]
ASK	13.56

3.4 Tested Companion Device Information

Type	Manufacturer	Model	Note.
-	-	-	-

3.5 Operating conditions for the EUT

Firmware state	Ncilib_NFC_Forum_DTA_ComplApp		
Test software name(version)	-		
Test power setting	-		
Serial number (Setup mode)	EUT #1	607HTGM00031 (20dB Bandwidth, Frequency Tolerance of Carrier Signal, Radiated)	

4. Test Report

4.1 Summary

FCC Part 15 & RSS-210 Issue 11 & RSS-GEN Issue 5				
FCC Rule	IC Rule	Parameter	Clause	Status
Transmitter Requirements				
15.203	-	Antenna Requirement	4.3.1	C
15.215(c)	-	20 dB Bandwidth	4.3.2	C
-	RSS-GEN 6.7	Occupied Bandwidth	4.3.2	C
15.225(e)	RSS-210 B.6 (b)	Frequency Tolerance of Carrier Signal	4.3.3	C
15.225(a) 15.225(b) 15.225(c) 15.225(d) 15.205(a) 15.209(a)	RSS-210 B.6 (a)	In-band Fundamental Emission, In-band and Out-band Spurious Emission	4.3.4	C
15.207(a)	RSS-GEN 8.8	Conducted Emissions	4.3.5	N/A ^{NOTE2}
Note 1 : C = Comply N/C = Not Comply N/T = Not Tested N/A = Not Applicable				
Note 2 : This device only uses Battery (DC 6 V)				

* 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
99% Occupied Bandwidth	6.44 kHz (The confidence level is about 95 %, $k=2$)
Frequency Error	5.82 kHz (The confidence level is about 95 %, $k=2$)
Radiated Spurious Emissions (30 MHz under)	4.03 dB (The confidence level is about 95 %, $k=2$)
Radiated Spurious Emissions (30 MHz ~ 1 GHz)	4.85 dB (The confidence level is about 95 %, $k=2$)

4.3 Transmitter Requirements

4.3.1 Antenna Requirements

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.

4.3.1.2 Result

Comply (The antenna of this EUT is Inductive Loop Coil Antenna Type. Therefore the antenna is permanently attached.)

4.3.2 20 dB Bandwidth

4.3.2.1 Regulation

According to §15.215(c) Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. In the case of intentional radiators operating under the provisions of subpart E, the emission bandwidth may span across multiple contiguous frequency bands identified in that subpart. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

According to RSS-GEN 6.7 The occupied bandwidth or the “99% emission bandwidth” is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

4.3.2.2 Measurement Procedure

These test measurement settings are specified in section 6.9.2 of ANSI C63.10-2020

4.3.2.3 Result

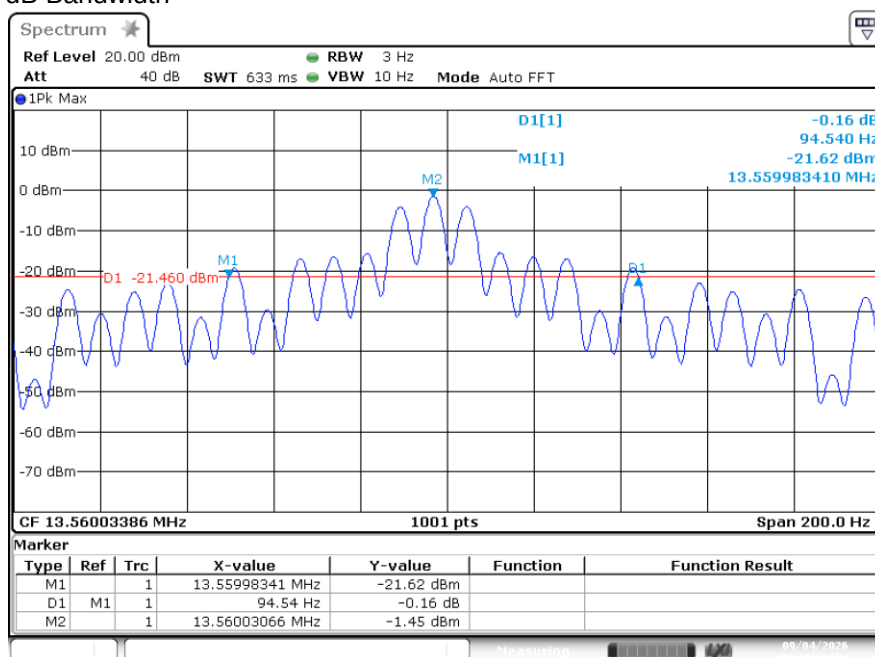
Comply (Measurement data : Refer to the next page)

4.3.2.4 Measurement Data

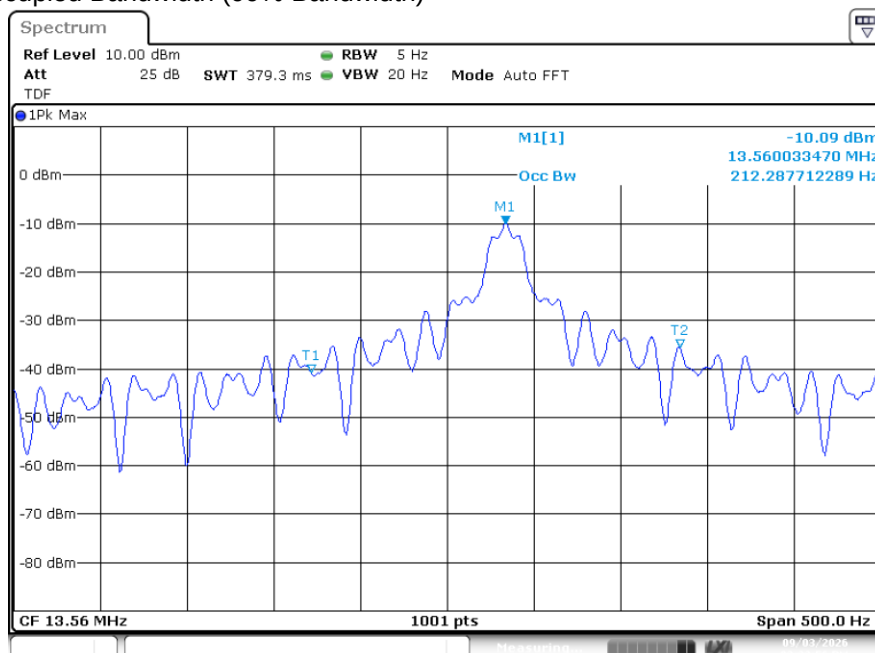
Test mode : ASK

Frequency [MHz]	Result [kHz]	Lowest Frequency [MHz]	Highest Frequency [MHz]	Occupied Bandwidth [kHz]
13.56	0.095	13.560 0	13.560 1	0.212

20 dB Bandwidth



Occupied Bandwidth (99% Bandwidth)



4.3.3 Frequency Tolerance of Carrier Signal

4.3.3.1 Regulation

According to §15.225(e) and RSS-210 B.6 (b) The frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ of the operating frequency over a temperature variation of -20 degrees to $+ 50$ degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

4.3.3.2 Measurement Procedure

These test measurement settings are specified in section 6.8.1 and 6.8.2 of ANSI C63.10-2020

4.3.3.3 Result

Comply (Measurement data : Refer to the next page)

4.3.3.4 Measurement Data

Test mode : 0 min

Nominal Frequency ^{Note 1} [MHz]	Temp [°C]	Center Frequency [Hz]	Tolerance [%]
13.56	-20	13 560 073	0.000 538
	-10	13 560 072	0.000 531
	0	13 560 074	0.000 546
	10	13 560 072	0.000 531
	20	13 560 021	0.000 155
	30	13 560 042	0.000 310
	40	13 560 025	0.000 184
	50	13 559 989	-0.000 081
	Voltage[%] ^{Note 2}		
	85	13 560 058	0.000 428
	115	13 560 056	0.000 413

Note 1 : The center frequency measured at room temperature and rated voltage was declared as the Nominal frequency, and then the frequency stability was tested.

Note 2 : This test was measured at room temperature of +20 degrees

Note 3 : This test was performed using a DC power supply.

Test mode : 2 min

Nominal Frequency ^{Note 1} [MHz]	Temp [°C]	Center Frequency [Hz]	Tolerance [%]
13.56	-20	13 560 073	0.000 538
	-10	13 560 072	0.000 531
	0	13 560 074	0.000 546
	10	13 560 071	0.000 524
	20	13 560 021	0.000 155
	30	13 560 034	0.000 251
	40	13 560 020	0.000 147
	50	13 559 991	-0.000 066

Note 1 : The center frequency measured at room temperature and rated voltage was declared as the Nominal frequency, and then the frequency stability was tested.

Test mode : 5 min

Nominal Frequency ^{Note 1} [MHz]	Temp [°C]	Center Frequency [Hz]	Tolerance [%]
13.56	-20	13 560 072	0.000 531
	-10	13 560 071	0.000 524
	0	13 560 074	0.000 546
	10	13 560 069	0.000 509
	20	13 560 020	0.000 147
	30	13 560 032	0.000 236
	40	13 560 016	0.000 118
	50	13 559 987	-0.000 096

Note 1 : The center frequency measured at room temperature and rated voltage was declared as the Nominal frequency, and then the frequency stability was tested

Test mode : 10 min

Nominal Frequency ^{Note 1} [MHz]	Temp [°C]	Center Frequency [Hz]	Tolerance [%]
13.56	-20	13 560 070	0.000 516
	-10	13 560 072	0.000 531
	0	13 560 075	0.000 553
	10	13 560 069	0.000 509
	20	13 560 020	0.000 147
	30	13 560 030	0.000 221
	40	13 560 013	0.000 096
	50	13 559 990	-0.000 074

Note 1 : The center frequency measured at room temperature and rated voltage was declared as the Nominal frequency, and then the frequency stability was tested

4.3.4 In-band Fundamental Emission, In-band and Out-band Spurious Emission

4.3.4.1 Regulation

According to §15.225(a),(b),(c),(d) and RSS-210 B.6 (a)

(a) The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.

(b) Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

(c) Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

(d) The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in §15.209.

According to §15.209(a) and RSS-GEN 8.9 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	$2\,400/F[\text{kHz}]$	300
0.490 - 1.705	$24\,000/F[\text{kHz}]$	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.

4.3.4.2 Measurement Procedure

- 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.
- 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.

- Note 1 : The resolution bandwidth of test receiver/spectrum analyzer is 200 Hz for Quasi-peak detection (QP) at frequency below 150 kHz.
- Note 2 : The resolution bandwidth of test receiver/spectrum analyzer is 9 kHz for Quasi-peak detection (QP) at frequency 150 kHz to 30 MHz
- Note 3 : The resolution bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection (QP) at frequency below 1 GHz.
- Note 4 : The video bandwidth of test receiver/spectrum analyzer is three times as much as resolution bandwidth

4.3.4.3 Result

Comply (Measurement data : Refer to the next page)

4.3.4.4 Measurement Data

Test mode : 9 kHz ~ 30 MHz

Frequency [MHz]	Detector	Note 1	Pol. [V/H]	Reading [dBμV]	Ant Factor [dB]	Cable Loss [dB]	Result at 3m [dBμV/m]	Result at 30m [dBμV/m]	Limit at 30m [dBμV/m]	Margin [dB]
13.56	QP	F	H	41.00	20.50	0.60	62.10	22.10	84.00	61.90
13.56	QP	F	V	34.20	20.50	0.60	55.30	15.30	84.00	68.70

Frequency [MHz]	Detector	Note 1	Pol. [V/H]	Reading [dBμV]	Ant Factor [dB]	Cable Loss [dB]	Result at 3m [dBμV/m]	Result at 300m [dBμV/m]	Limit at 300m [dBμV/m]	Margin [dB]
Spurious	Not detected	S	-	-	-	-	-	-	-	-

Note 1 : "F" : Fundamental, "S" : Spurious

Note 2 : Result : Reading + Ant factor + Cable loss

Note 3 : According to §15.31 (f)(2);

Result at 30m[dBμV/m] = Result at 3m[dBμV/m] - 40*log(30/3)[dBμV/m]

Result at 300m[dBμV/m] = Result at 3m[dBμV/m] - 40*log(300/3)[dBμV/m]

Note 4 : Not detected means peak measurement did not take place because it is more than 20dB difference in the limit

Test mode : 30 MHz ~ 1 GHz

Frequency [MHz]	Detector	Note 1	Pol. [V/H]	Reading [dBμV]	Ant Factor [dB]	Loss [dB]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]
461.03	QP	S	V	32.60	23.40	-26.70	29.30	46.00	16.70
488.16	QP	S	V	33.50	23.60	-26.70	30.40	46.00	15.60
515.26	QP	S	V	31.70	24.20	-26.60	29.30	46.00	16.70
542.40	QP	S	V	30.30	24.50	-26.60	28.20	46.00	17.80
596.61	QP	S	H	31.10	25.80	-26.60	30.30	46.00	15.70
596.68	QP	S	V	29.10	25.80	-26.60	28.30	46.00	17.70
664.37	QP	S	V	28.80	26.60	-26.70	28.70	46.00	17.30
664.52	QP	S	H	33.60	26.60	-26.70	33.50	46.00	12.50
678.11	QP	S	H	31.90	26.80	-26.80	31.90	46.00	14.10
691.56	QP	S	H	32.30	27.20	-26.80	32.70	46.00	13.30

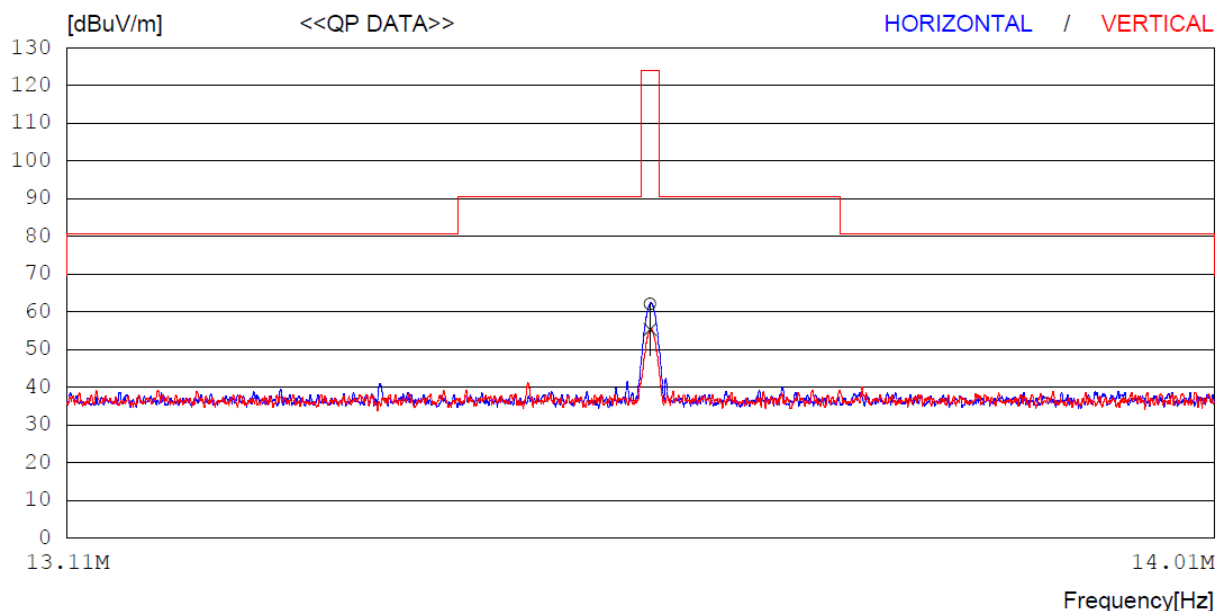
Note 1 : "F" : Fundamental, "S" : Spurious

Note 2 : Loss : Cable loss - Amp gain

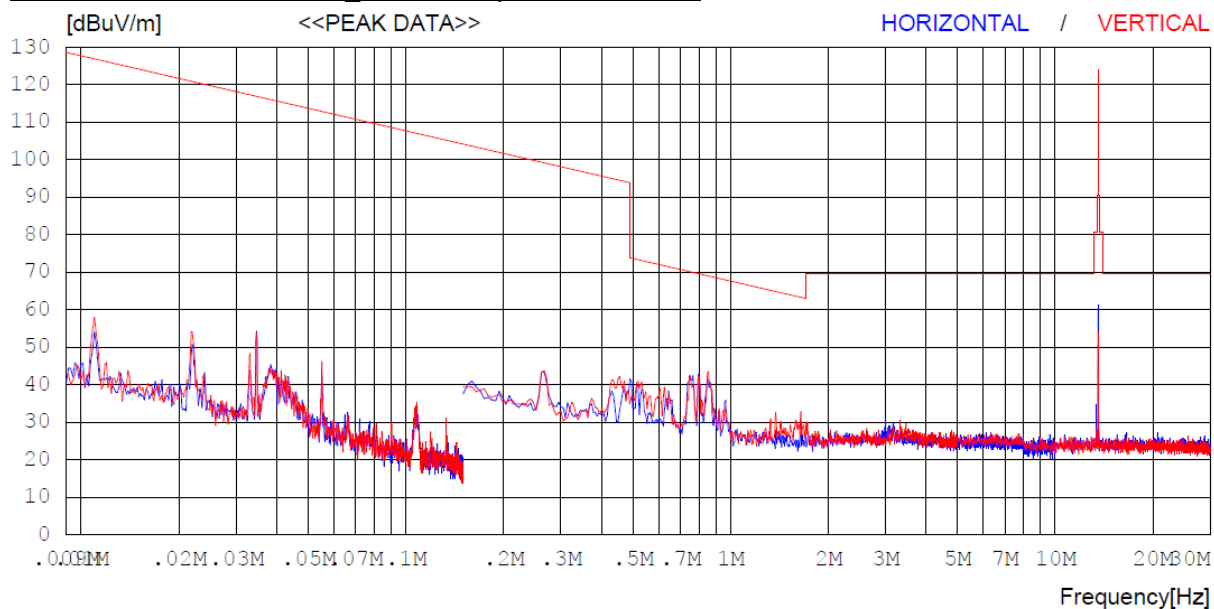
Note 3 : Result : Reading + Ant factor + Loss

4.3.4.5 Measurement Plot

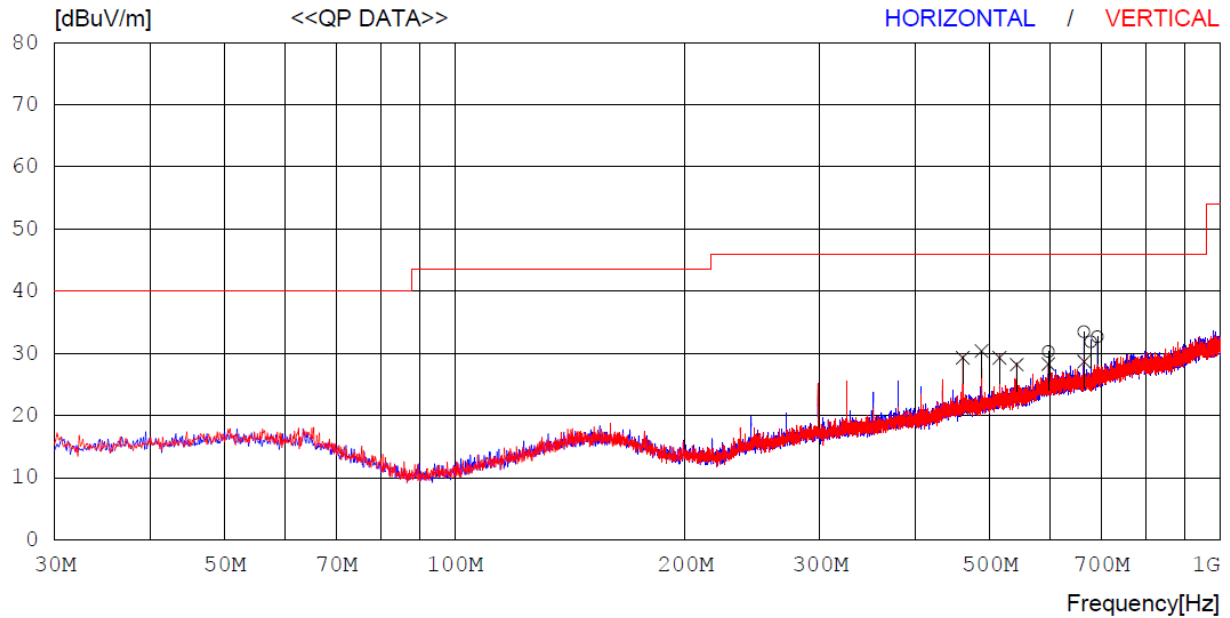
Test mode : 9 kHz ~ 30 MHz In-band Fundamental, Spurious Emission



Test mode : 9 kHz ~ 30 MHz Out-band Spurious Emission



Test mode : 30 MHz ~ 1 GHz



4.3.5 Conducted Emission

4.3.5.1 Regulation

According to §15.207(a), for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 μ H/50 Ω line impedance stabilization network (LISN).

Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of emission [MHz]	Conducted Limit[dB μ V]	
	Quasi-Peak	Average
0.15 – 0.5	66 to 56 *	56 to 46 *
0.5 – 5	56	46
5 - 30	60	50

* Decreases with the logarithm of the frequency.

According to §15.107(a), for unintentional device, except for Class A digital devices, line conducted emission limits are the same as the above table.

4.3.5.2 Measurement Procedure

- 1) The EUT was placed on a wooden table of size, 1 m by 1.5 m, raised 80 cm in which is located 40 cm away from the vertical wall and 1.5 m away from the side wall of the shielded room.
- 2) Each current-carrying conductor of the EUT power cord was individually connected through a 50 Ω /50 μ H LISN, which is an input transducer to a Spectrum Analyzer or an EMI/Field Intensity Meter, to the input power source.
- 3) Exploratory measurements were made to identify the frequency of the emission that had the highest amplitude relative to the limit by operating the EUT in a range of typical modes of operation, cable position, and with a typical system equipment configuration and arrangement. Based on the exploratory tests of the EUT, the one EUT cable configuration and arrangement and mode of operation that had produced the emission with the highest amplitude relative to the limit was selected for the final measurement.
- 4) The final test on all current-carrying conductors of all of the power cords to the equipment that comprises the EUT (but not the cords associated with other non-EUT equipment is the system) was then performed over the frequency range of 0.15 MHz to 30 MHz.
- 5) The measurements were made with the detector set to PEAK amplitude within a bandwidth of 10 kHz or to QUASIPeAK and AVERAGE within a bandwidth of 9 kHz. The EUT was in transmitting mode during the measurements.

4.3.5.3 Result

N/A (The device only uses Battery, so it was not tested)

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)
FSV Signal Analyzer	ROHDE&SCHWARZ	FSV30	103370	2025-10-01	2026-10-01
DC POWER SUPPLY	AGILENT	E3632A	MY51160055	2026-04-01	2027-04-01
Digital MultiMeter	HP	34401A	US36025428	2025-12-23	2026-12-23
Signal Generator	ROHDE&SCHWARZ	SMB100A	178384	2025-10-01	2026-10-01
Temp & Humi Test Chamber	SJ SCIENCE	SJ-TH-S50	170719	2026-04-01	2027-04-01
RF Cable	Radiall	1800920922000KE	CON-R006	2026-07-20	2027-01-20
EMI Test Receiver	ROHDE&SCHWARZ	ESU40	100445	2025-09-01	2026-09-01
LOOP ANTENNA	Schwarzbeck	FMZB1519-60D	00239	2026-05-20	2028-05-20
BiLog Antenna	Schwarzbeck	VULB9168	00821	2025-03-05	2027-03-05
ATTENUATOR	JFW	50F-006	6 dB-3	2025-12-22	2026-12-22
Low Noise Preamplifier	TSJ	MLA-10k01-b01-27	1870367	2026-03-25	2027-03-25
Controller	TOKIN	5909L	141909L-1	-	-
Turn Table	TOKIN	5983-1.5	-	-	-

-End-