RF TEST REPORT

Project Number	**: EA2512C-063**
Test Report Number	**: TR-W2606-028**
Applicant	**: iRevo-ASSA ABLOY Korea**
Address	**: 10f of JEI PLATZ Bldg., 186, Gasan digital 1-ro, Geumcheon-gu, Seoul, Republic of Korea**
Manufacturer	**: iRevo-ASSA ABLOY Korea**
Address	**: 10f of JEI PLATZ Bldg., 186, Gasan digital 1-ro, Geumcheon-gu, Seoul, Republic of Korea**
Use of Report	**: FCC Approval**
Type of Equipment	**: Digital Lock**
Model Name	**: ML55RA**
Additional Model(s) Name	**: SENSE, SENSE+, SENSE PLUS**
Date of Receipt	**: December 8, 2025**
Date(s) of Tests	**: May 27, 2026 ~ May 27, 2026**
Test Method	**: FCC Part 15 Subpart C 15.225**
Test Result	**: Refer to the test results**

This test report only contains the result of a single test of the sample supplied for the examination.
It is not a generally valid assessment of the features of the respective products of the mass-production.

Prepared by Yoon-Seok, Choi / Staff Engineer	Signature	June 8, 2026 Date
Reviewed by Jong-Myung, Shin / Technical Manager	Signature	June 8, 2026 Date

ENG Co., Ltd. 135-60 Gyeongchung-daero, Gonjiam-eup, Gwangju-si, Gyeonggi-do, Korea 464-942 **Report Form_01 (Rev.3)**
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Release Control Record

Issue Report No.	Issued Date	Details/Revisions
TR-W2606-028	June 8, 2026	Initial Release

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1. Applicant & Manufacturer & Test Laboratory Information

1.1 Applicant Information

Applicant	iRevo-ASSA ABLOY Korea
Applicant Address	10f of JEI PLATZ Bldg.,, 186, Gasan digital 1-ro, Geumcheon-gu, Seoul, Republic of Korea
Contact Person	Jeonggeun Yang
Telephone No.	+82-1644-3526
Fax No.	-
E-mail	Jeonggeun.Yang@assaabloy.com

1.2 Manufacturer Information

Manufacturer	iRevo-ASSA ABLOY Korea
Manufacturer Address	10f of JEI PLATZ Bldg.,, 186, Gasan digital 1-ro, Geumcheon-gu, Seoul, Republic of Korea

1.3 Test Laboratory Information

Laboratory	ENG Co., Ltd.
Laboratory Address	135-60 Gyeongchung-daero, Gonjiam-eup, Gwangju-si, Gyeonggi-do
Contact Person	Yoon-seok, Choi
Telephone No.	+82 31-764-0800
Fax No.	+82 31 764 0800
FCC Designation No.	KR0160
FCC Registration No.	244522
IC Site Registration No.	12721A

2. Equipment under Test(EUT) Information

2.1 General Information

Product Name	Digital Lock
Model Name	ML55RA
FCC ID	2ABFG-ML55RA
Rated Voltage	DC 4.5 V
Operating Frequency	13.56 MHz
Number of channel	1
Modulation Type	ASK
Antenna Type	PCB Pattern Antenna
Serial Number	N/A
Firmware Version	V1.0
Hardware Version	V1.0
Test software	None

2.2 Additional Model

Model Name	Model Difference
ML55RA	Basic Model
SENSE, SENSE+, SENSE PLUS	The derivative models are electrically and mechanically identical to the basic model. The differences between the basic model and the derivative models are limited to the model designation only.
Note: The information about the additional models was listed by the manufacturer's declaration.	

2.3 Test Frequency

Test mode	Test Frequency (MHz)		
	Low Frequency	Middle Frequency	High Frequency
RFID	13.56	-	-

2.4 Used Test Software Setting Value

Test Mode	Setting Item
	Power
RFID	None

2.5 Mode of operation during the test

- The EUT was configured to operate in continuous transmission mode at the nominal operating frequency of 13.56 MHz during the test. To determine the maximum radiated emission levels, the EUT was rotated and investigated in the X, Y, and Z axes, and the measurement antenna polarization and height were varied to obtain the highest emission level.

2.6 Modifications of EUT

- None

3. TEST SUMMARY

Applied	FCC Rule	Test Items	Test Condition	Note
☒	15.203	Antenna Requirement	-	C
☒	15.215 (c)	20 dB Bandwidth	Radiated	C
☒	-	Occupied Bandwidth (99%)		C
☒	15.225 (a)	In-Band Emissions (13.553 – 13.567 MHz)		C
☒	15.225 (b)	In-Band Emissions (13.410 – 13.553 MHz, 13.567 – 13.710 MHz)		C
☒	15.225 (c)	In-Band Emissions (13.110 – 13.410 MHz, 13.710 – 14.010 MHz)		C
☒	15.209, 15.225 (d)	Out-of-Band Emissions		C
☒	15.225 (e)	Frequency Stability		C
☐	15.207	Conducted Emissions	AC Line Conducted	NA[Note 2]

Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable
Note 2: This product is only using DC Power. So, AC conducted emission test has not been performed.

The sample was tested according to the following specification: ANSI C63.10:2020.
Compliance was determined by specification limits of the applicable standard according to customer requirements.

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4. Used equipment on test

	Description	Manufacturer	Model Name	Serial Name	Next Cal.
☐	Signal&Spectrum Analyzer	Rohde & Schwarz	FSW 43	100578	2026-12-09
☐	OSCILLO SCOPE	Rohde & Schwarz	RTO 1044	201006	2026-12-11
☒	Signal Generator	Rohde & Schwarz	SMF100A	101441	2026-12-17
☐	Vector Signal Generator	Rohde & Schwarz	SMBV100A	257560	2026-12-08
☐	Power Module	Rohde & Schwarz	OSP 120	101389	2026-12-09
☐	Attenuator	Rohde & Schwarz	10dB	ENG-1	2026-12-09
☐	Attenuator	Rohde & Schwarz	10dB	ENG-2	2026-12-09
☐	Attenuator	Rohde & Schwarz	10dB	ENG-3	2026-12-09
☐	Attenuator	Rohde & Schwarz	10dB	ENG-4	2026-12-09
☐	Attenuator	WEINSCHEL	56-10	58769	2026-12-10
☒	DC Power Supply	AGILENT	E3610A	MY40005644	2026-12-08
☐	Directional Coupler	AAMCS	AAMCS-UDC-0.5G-18G-SF	757	2026-12-09
☐	Splitter	Minicircuits	ZFRSC-42-S+	UU90901305	2026-12-09
☐	Audio Analyzer	Rohde & Schwarz	UPL	100080	2026-12-09
☐	Arbitrary Waveform Generator	Agilent	33120A	MY40026605	2026-12-08
☐	Microwave Counter	HP	5347A	3009A00350	2026-12-11, 2026-12-17
☐	Attenuator	HP	8494B	3308A38821	2026-12-09
☐	Attenuator	HP	8496B	3308A37988	2026-12-09
☐	Temperature & Humidity Chamber	Espec	SH-241	92012087	2026-12-08
☐	UHF-Halbwellendipol	Schwarzbeck	UHA9105	N/A	2026-07-05

☐	Modulation Analyzer	HP	8901B	2086A01868	2026-12-08
☐	Band Stop filter	MICRO-TRONICS	HPM17543	019	2026-06-26
☐	Band Stop filter	MICRO-TRONICS	HPS17542	019	2026-06-26
☐	Band Stop filter	MICRO-TRONICS	LPS17541	018	2026-06-26
☐	DC POWER SUPPLY	Agilent	U8001A	MY51080019	2026-06-26
☐	MOBILE CORDER	YOKOGAWA	MV100	SSD906150	2026-12-17
☐	Horn Antenna	Schwarzbeck	BBHA 9170	783	2027-06-27
☐	PRE AMPLIFIER	CERNEX	CBL18265035	28706	2026-12-10
☐	PRE AMPLIFIER	CERNEX	CBL26405040	28707	2026-12-10
☐	Bluetooth Tester	TESCOM	TC-3000C	3000C000534	2026-06-26
☐	Notch Filter	MICRO-TRONICS	BRM50702	G318	2026-06-26
☐	Notch Filter	MICRO-TRONICS	BRC50703	G139	2026-06-26
☐	Notch Filter	MICRO-TRONICS	BRC50704	G122	2026-06-26
☐	Notch Filter	MICRO-TRONICS	BRC50705	G126	2026-06-26
☐	Wideband Radio Communication Tester	Rohde & Schwarz	CMW 500	1201.0002K50	2027-01-06
☐	Attenuator	MIDWEST MICROWAVE	ATT-0392-30-NNN-07	30dB	2026-12-09
☐	System Power Supply	AGILENT	6032A	SG41000637	2026-12-08
☐	Dipole Antenna	EMCO	3121C-DB1	9002-530	2026-07-05
☐	Dipole Antenna	EMCO	3121C-DB2	9001-509	2026-07-05
☐	Dipole Antenna	EMCO	3121C-DB3	9002-530	2026-07-05 2026-12-08
☐	Signal Generator	AGILENT	N5182A	MY46240207	
☐	Tunable Band Reject Filter	Wainwright Instruments GmbH	WTRCT10-2300-2500-10-20-40SSK	2	2026-12-10
☐	High Pass Filter	Wainwright Instruments GmbH	WHW2-13500-18000-33000-40CC	4	2026-12-10

☐	Power Sensor	HP	E9300A	US39210391_JW	2026-12-08
☐	Power Sensor	Agilent	E9300A	MY41499519	2026-12-08
☐	EPM-P Series	Agilent	E4417A	MY45101122_JW	2026-12-08
☐	Spectrum Analyzer	AGILENT	E4405B	MY41440716	2026-06-26
☐	Temperature & Humidity Chamber	Espec	SH-261	92002283	2026-12-08
☐	Digital Recorder	YOKOGAWA	FX-106-4	S5E906616	2026-12-17
☒	Temperature & Humidity Chamber	YUASA	CL09	J0000062	2026-12-08
☐	RF Termination	Agilent	902C	53865	2026-06-30
☐	Signal Analyzer	Rohde & Schwarz	FSVA40	101698	2027-01-08
☐	Attenuator	NONE	NONE	ENG-5	2027-01-08
☐	Attenuator	NONE	NONE	ENG-6	2027-01-08
☐	Power Divider	ACE RF COMM	P-M508.S220.1	20260002	2027-01-28
☐	Directional Coupler	EXYNOD	PSDC-00501800-10S30	260104	2027-01-28
☒	Signal & Spectrum Analyzer	Rohde & Schwarz	FSVA3044	100946	2026-12-19
☐	Slidacs	DAEKWANG ELCTRONIC SLI	SV-5023	-	N/A
☐	RF Switch	T&M System	TMX81D	TM21020001	N/A
☒	Test Receiver	Rohde & Schwarz	ESU26	100303	2026-12-12
☒	TRILOG Broadband Antenna	Schwarzbeck	VULB9163	9163-770	2027-08-05
☒	Loop Antenna	Rohde & Schwarz	HFH2-Z2	100341	2027-05-22
☒	PRE-AMPLIFIER	Sonoma Instrument	310N	344015	2026-12-09
☐	TRILOG Broadband Antenna	Schwarzbeck	VULB9163	9163-474	2027-08-05
☐	Loop Antenna	Rohde & Schwarz	HFH2-Z2	100147	2027-07-03
☐	Horn Antenna	Rohde & Schwarz	HF 907	102426	2026-06-27

☐	PRE-AMPLIFIER	Rohde & Schwarz	SCU 18D	19006450	2026-12-09
☒	6 dB Attenuators	Pasternack	PE7390-6	1818	2027-08-05
☐	LISN	Rohde & Schwarz	ENV4200	100203	2026-12-08
☐	LISN	SchwarzBeck	NNLK8130	8130-157	2026-06-26
☐	LISN	AFJ	LS16C	16011403310	2026-07-16
☐	V-LISN	Schwarzbeck	NNBM 8124	6670	2026-06-26
☐	V-LISN	Schwarzbeck	NNBM 8124	6671	2026-06-26
☐	LISN	Rohde & Schwarz	ENV216	102572	2026-12-08
☒	Turn Table	DT3000-3t	INNCO SYSTEM	1310814	N/A
☒	Antenna Master	MA4000-EP	INNCO SYSTEM	4600814	N/A
☒	Antenna Master	MA4000-XP-ET	INNCO SYSTEM	-	N/A
☒	Camera Controller	HDCon4102	PONTIS	6531445048	N/A
☒	CO3000 Controller	Co3000-4Port	INNCO SYSTEM	CO3000/806/ 34130814/L	N/A
☒	CO3000 Controller	Co3000-4Port	INNCO SYSTEM	CO3000/807/ 34130814/L	N/A

5. Antenna Requirement

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.

5.1 Result

Complies

The transmitter utilizes a permanently attached PCB pattern antenna. The antenna is integrated into the circuit board design and is not accessible for replacement by the end user. No external antenna provision or standard antenna connector is provided. Therefore, the device complies with the antenna requirement of FCC §15.203.

6. 20 dB Bandwidth & Occupied Bandwidth (99%)

6.1 Test Setup

Refer to the APPENDIX I.

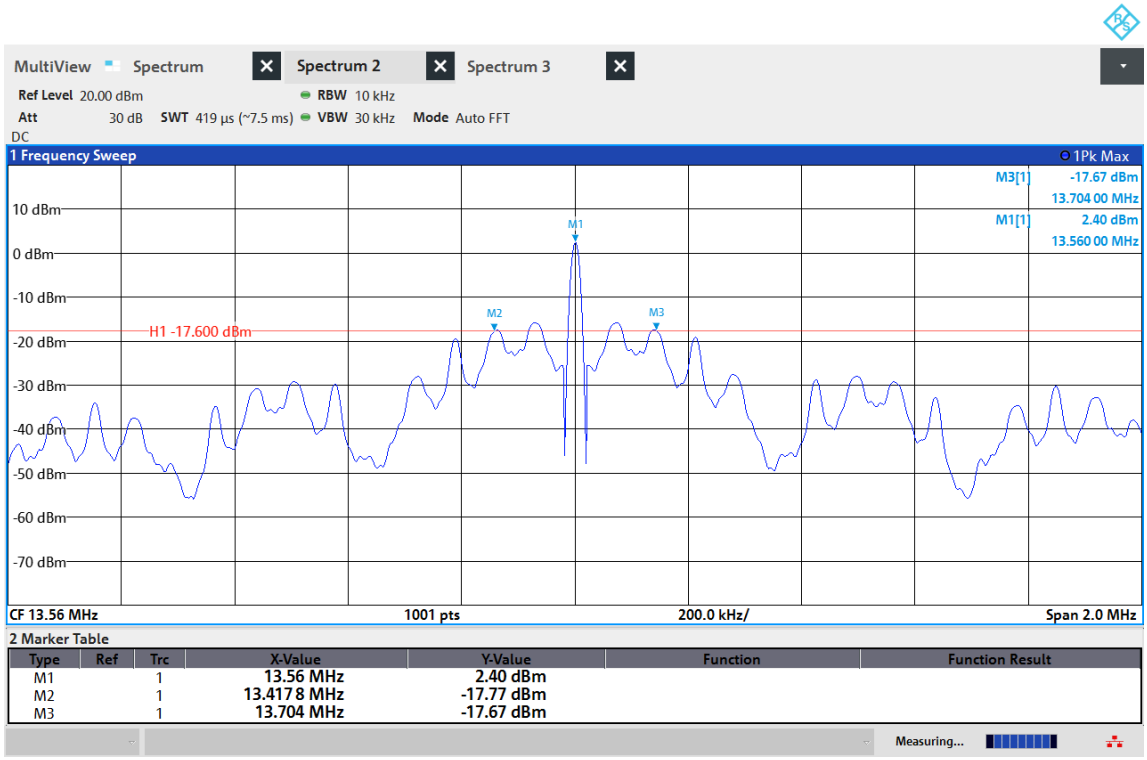
6.2 Test Procedure

1. The 20 dB Bandwidth is measured with a spectrum analyzer connected via a receive antenna placed near the EUT while the EUT is operating in transmission mode.

2. Spectrum analyzer setting use following test procedure
   RBW = 1 % ~ 5 % OBW
   VBW ≥ 3 × RBW
   Span = Span = 2 ~ 5 times the OBW
   Sweep = Auto
   Detector = Peak
   Trace = Max hold
3. The trace was allowed to stabilize
4. Determine the reference value = Set the spectrum analyzer marker to the highest level of the displayed trace
5. Using the marker-delta function of the instrument, determine the "－xx dB down amplitude" using [(reference value) － xx].
6. Reset the marker-delta function and move the marker to the other side of the emission until the delta marker amplitude is at the same level as the reference marker amplitude.
   The marker-delta frequency reading at this point is the specified emission bandwidth.

6.3 Test Result

20 dB Bandwidth



Occupied Bandwidth

7. In-Band Emissions

7.1 Test Setup

Refer to the APPENDIX I.

7.2 Limit

Part 15.225(a),(b),(c)

Frequency Band (MHz)	Limit at 30 m measurement distance	
	(uV/m)	(dBuV/m)
13.553 ~ 13.567	15,848	84.00
13.410 ~ 13.553 13.567 ~ 13.710	334	50.47
13.110 ~ 13.410 13.710 ~ 14.010	106	40.51

7.3 Test Procedure

The radiated emission was tested according to the section 6.4 of the ANSI C63.10-2020.

The EUT was placed on a 0.8 m high non-conductive table and it was placed at 3m distance from the antenna. Measurements were performed for each of the three antenna orientations. (ie. parallel, perpendicular, and ground-parallel) Also, measurements were performed with the EUT oriented in 3 orthogonal axis and rotated 360 degrees to determine worst-case orientation for maximum emissions.

RBW = As specified in below table

VBW ≥ 3 x RBW

Sweep = Auto

Detector = Peak

Trace mode = Max Hold until the trace stabilizes.

Frequency	RBW
9-150 kHz	200 ~ 300 Hz
0.15-30 MHz	9 ~ 10 kHz
30-1000 MHz	100 ~ 120 kHz
>1 000 MHz	1 MHz

7.4 Test Result

- Test Frequency: 13.56 MHz

- Measurement Distance: 3 m

Test Frequency Band (MHz)	Freq. (MHz)	Reading Value (dBμV)	Ant	T.F (dB/m)	Field Strength @3m (dBμV/m)	Field Strength @30m (dBμV/m)	Limit (dBμV/m)	Margin (dB)
13.110 ~ 13.410	13.308	40.90	H	-12.30	28.60	-11.40	40.51	51.91
13.410 ~ 13.553	13.493	41.20	H	-12.30	28.90	-11.10	50.47	61.57
13.553 ~ 13.567	13.560	62.30	H	-12.30	50.00	10.00	84.00	74.00
13.567 ~ 13.710	13.623	41.70	H	-12.30	29.40	-10.60	50.47	61.07
13.710 ~ 14.010	13.846	38.10	H	-12.30	25.80	-14.20	40.51	54.71
13.110 ~ 13.410	13.308	40.10	V	-12.30	27.80	-12.20	40.51	52.71
13.410 ~ 13.553	13.493	39.80	V	-12.30	27.50	-12.50	50.47	62.97
13.553 ~ 13.567	13.560	56.40	V	-12.30	44.10	4.10	84.00	79.90
13.567 ~ 13.710	13.621	39.40	V	-12.30	27.10	-12.90	50.47	63.37
13.710 ~ 14.010	13.846	40.60	V	-12.30	28.30	-11.70	40.51	52.21

Note 1: Loop antenna orientation

"H": Horizontal, "V": Vertical

Note 2: This test item was performed at 3 m and the data were extrapolated to the specified measurement distance of 30 m using the square of an inverse linear distance extrapolation factor (40 dB/decade) as specified in §15.31(f)2.

▪ Extrapolation Factor = 20 log10(30/3)2 = 40 dB

Note 3: All data were recorded using a spectrum analyzer employing a peak detector.

If PK results were meet Quasi-peak limit, Quasi-peak measurements were omitted.

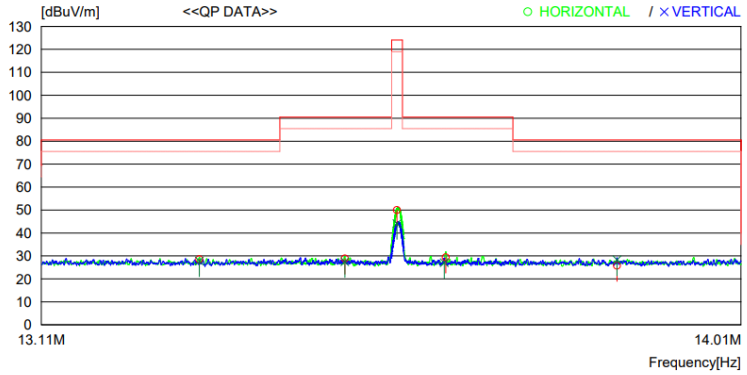
Note 4: Sample Calculation.

Margin = Limit – Field Strength @ 30 m / Field Strength @ 30 m = Field Strength @ 3 m – 40 dB

Field Strength @ 3 m = Reading + T.F / T.F = AF + CL

Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss

In-Band Emissions



No.	FREQ [MHz]	READING QP [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	0.016	64.9	20.1	0.4	32.0	53.4	123.5	70.1	0	175
2	13.308	40.9	19.8	0.5	32.6	28.6	80.5	51.9	0	0
3	13.493	41.2	19.8	0.5	32.6	28.9	90.5	61.6	0	76
4	13.560	62.3	19.8	0.5	32.6	50.0	124.0	74.0	0	0
5	13.623	41.7	19.8	0.5	32.6	29.4	90.5	61.1	0	75
6	13.846	38.1	19.8	0.5	32.6	25.8	80.5	54.7	0	277
----- Vertical ------										
7	0.016	64.3	20.1	0.4	32.0	52.8	123.5	70.7	0	20
8	13.308	40.1	19.8	0.5	32.6	27.8	80.5	52.7	0	40
9	13.493	39.8	19.8	0.5	32.6	27.5	90.5	63.0	0	359
10	13.560	56.4	19.8	0.5	32.6	44.1	124.0	79.9	0	0
11	13.621	39.4	19.8	0.5	32.6	27.1	90.5	63.4	0	296
12	13.846	40.6	19.8	0.5	32.6	28.3	80.5	52.2	0	337

8. Out-of-Band Emissions

8.1 Test Setup

Refer to the APPENDIX I.

8.2 Limit

Part 15.209, 15.225(d)

FCC Part 15.209(a):

Frequency (MHz)	Limit (uV/m)	Measurement Distance (meter)
0.009 ~ 0.490	2400/F (kHz)	300
0.490 ~ 1705	24000/F (kHz)	30
1705 ~ 30.0	30	30
30 ~ 88	100 **	3
88 ~ 216	150 **	3
216 ~ 960	200 **	3
Above 960	500	3

** Except as provided in 15.209(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.

FCC Part 15.209(b): In the emission table above, the tighter limit applies at the band edges.

8.3 Test Procedure

The radiated emission was tested according to the section 6.4 of the ANSI C63.10-2020.

The EUT was tested from 9 kHz up to the 1 GHz excluding the band 13.110-14.010 MHz.

The EUT was placed on a 0.8 m high non-conductive table and it was placed at 3m distance from the antenna.

For measurements below 30MHz were performed for each of the three antenna orientations. (ie. parallel, perpendicular, and ground-parallel) For measurements above 30MHz were performed for each of the both horizontal and vertical polarizations.

Also, measurements were performed with the EUT oriented in 3 orthogonal axis and rotated 360 degrees to determine worst-case orientation for maximum emissions.

RBW = As specified in below table

VBW ≥ 3 x RBW

Sweep = Auto

Detector = Peak

Trace mode = Max Hold until the trace stabilizes.

Frequency	RBW
9-150 kHz	200-300 Hz
0.15-30 MHz	9-10 kHz
30-1000 MHz	100-120 kHz
>1 000 MHz	1 MHz

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8.4 Test Result

- Test Frequency: 13.558 9 MHz

- Measurement Distance: 3 m

Frequency (MHz)	Ant	Reading Value (dBμV)	T.F (dB/m)	Distance Factor (dBμV/m)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
0.02	64.90	H	-11.50	80.00	-26.60	43.52	70.12
677.96	35.30	V	-1.00	0.00	34.30	46.02	11.72
705.12	36.50	V	-0.70	0.00	35.80	46.02	10.22
732.27	38.60	V	-0.20	0.00	38.40	46.02	7.62
759.43	39.00	V	0.30	0.00	39.30	46.02	6.72
813.75	35.80	V	1.40	0.00	37.20	46.02	8.82
840.91	34.00	V	1.90	0.00	35.90	46.02	10.12
868.07	33.90	V	2.60	0.00	36.50	46.02	9.52

Note 1: The radiated emissions were inverstigated 9 kHz to 1 ㎓. And no other spurious and harmonic emissions were found above listed frequencies.

Note 2: Loop antenna orientation (below 30 MHz)

"H": Horizontal, "V": Vertical

Bilog antenna polarization (above 30 MHz)

Note 3: All data were recorded using a spectrum analyzer employing a peak detector.

If PK results were meet Quasi-peak limit, Quasi-peak measurements were omitted.

Note 4: Sample Calculation.

Margin = Limit – Field Strength

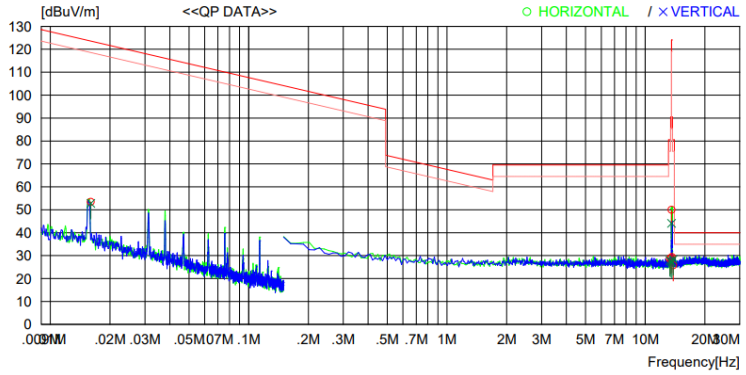
Field Strength = Reading + T.F – Distance factor

Distance factor = 40log(Measurement distance / The measured distance) = 40log(300/3) = 80 dB

T.F = AF + CL -AG

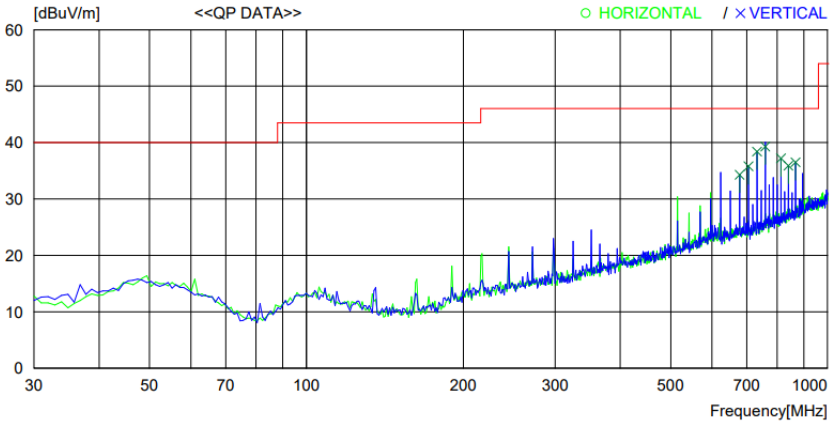
Where, T.F = Total Factor, AF = Antenna Factor, CL = Cable Loss, AG = Amplifier Gain

Out-of-Band Emissions (Below 30 MHz)



No.	FREQ [MHz]	READING QP [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal ------										
1	0.016	64.9	20.1	0.4	32.0	53.4	123.5	70.1	0	175
2	13.308	40.9	19.8	0.5	32.6	28.6	80.5	51.9	0	0
3	13.493	41.2	19.8	0.5	32.6	28.9	90.5	61.6	0	76
4	13.560	62.3	19.8	0.5	32.6	50.0	124.0	74.0	0	0
5	13.623	41.7	19.8	0.5	32.6	29.4	90.5	61.1	0	75
6	13.846	38.1	19.8	0.5	32.6	25.8	80.5	54.7	0	277
----- Vertical ------										
7	0.016	64.3	20.1	0.4	32.0	52.8	123.5	70.7	0	20
8	13.308	40.1	19.8	0.5	32.6	27.8	80.5	52.7	0	40
9	13.493	39.8	19.8	0.5	32.6	27.5	90.5	63.0	0	359
10	13.560	56.4	19.8	0.5	32.6	44.1	124.0	79.9	0	0
11	13.621	39.4	19.8	0.5	32.6	27.1	90.5	63.4	0	296
12	13.846	40.6	19.8	0.5	32.6	28.3	80.5	52.2	0	337

Out-of-Band Emissions (Below 1 GHz)



No.	FREQ [MHz]	READING QP [dBuV]	ANT FACTOR [dB]	LOSS [dB]	GAIN [dB]	RESULT [dBuV/m]	LIMIT [dBuV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Vertical ------										
1	677.956	35.3	25.6	6.1	32.7	34.3	46.0	11.7	100	0
2	705.115	36.5	25.8	6.2	32.7	35.8	46.0	10.2	100	0
3	732.274	38.6	26.1	6.3	32.6	38.4	46.0	7.6	100	325
4	759.433	39.0	26.4	6.4	32.5	39.3	46.0	6.7	100	0
5	813.752	35.8	27.1	6.7	32.4	37.2	46.0	8.8	100	0
6	840.911	34.0	27.4	6.8	32.3	35.9	46.0	10.1	100	14
7	868.070	33.9	27.8	6.9	32.1	36.5	46.0	9.5	100	0

9. Frequency Stability

9.1 Test Setup

Refer to the APPENDIX I.

9.2 Limit

Part 15.225(e)

The frequency tolerance of the carrier signal shall be maintained within ±0.01 % of the operating frequency.

9.3 Test Procedure

Part 15.225 requires that devices operating in the 13.553 ~ 13.567 MHz shall maintain the carrier frequency within 0.01 % of the operating frequency over the temperature variation of -20 degrees to + 50 degrees C at normal supply voltage.

9.4 Test Result

Voltage		Temp	Frequency	Deviation	
(%)	(Vdc)	(℃)	(Hz)	(Hz)	(%)
100	4.50	-20	13 560 910	910	0.006 7
100		-10	13 560 904	904	0.006 7
100		0	13 560 883	883	0.006 5
100		10	13 560 881	881	0.006 5
100		+20(Ref)	13 560 853	853	0.006 3
100		30	13 560 845	845	0.006 2
100		40	13 560 856	856	0.006 3
100		50	13 560 876	876	0.006 5
115	5.18	20	13 560 862	862	0.006 4
85	3.83	20	13 560 880	880	0.006 5

10. Conducted Emission

10.1 Test Setup

See test photographs for the actual connections between EUT and support equipment.

10.2 Limit

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 uH/50 ohm line impedance stabilization network (LISN).

Compliance with the provision of this paragraph shall on the measurement of the radio frequency voltage between each power line and ground at the power terminal.

The lower applies at the boundary between the frequency ranges.

Frequency Range (MHz)	Conducted Limit (dBuV)	
	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

10.3 Test Procedure

Conducted emissions from the EUT were measured according to the ANSI C63.10.

1. The test procedure is performed in a 6.5 m × 3.5 m × 3.5 m (L × W × H) shielded room.

   The EUT along with its peripherals were placed on a 1.0 m (W) × 1.5 m (L) and 0.8 m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane.

2. The EUT was connected to power mains through a line impedance stabilization network (LISN) which provides 50 ohm coupling impedance for measuring instrument and the chassis ground was bounded to the horizontal ground plane of shielded room.

3. All peripherals were connected to the second LISN and the chassis ground also bounded to the horizontal ground plane of shielded room.

4. The excess power cable between the EUT and the LISN was bundled. The power cables of peripherals were unbundled. All connecting cables of EUT and peripherals were moved to find the maximum emission.

10.4 Test Result

Not Applicable

(This product is only using DC Power. So, AC conducted emission test has not been performed.)

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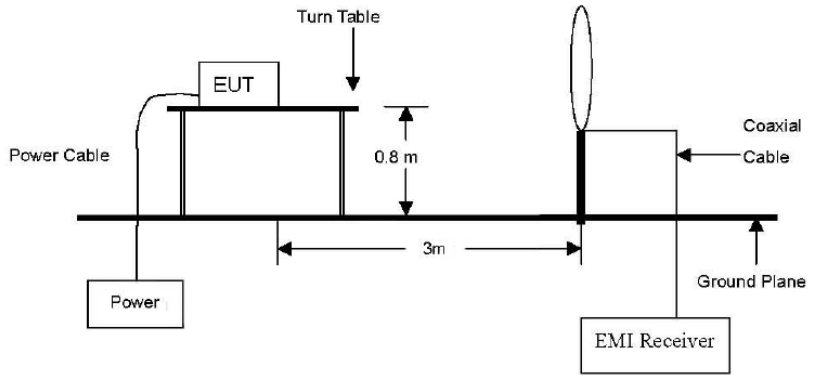
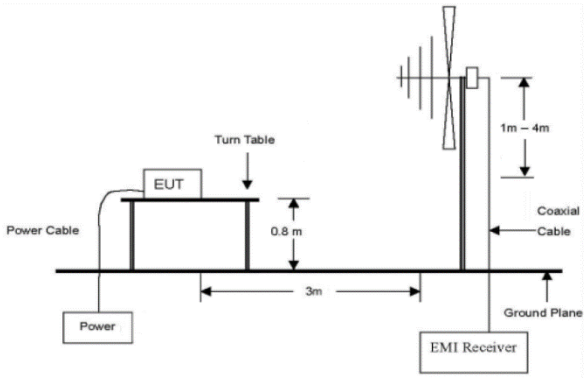
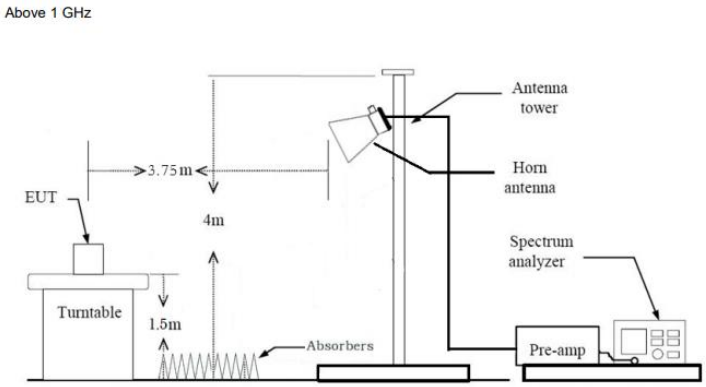
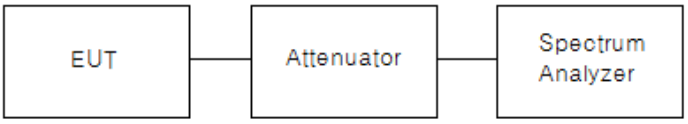
APPENDIX I

TEST SETUP

- Radiated Measurement

below 30 MHz	
below 1 GHz	
above 1 GHz	

- **Conducted Measurement**

Conducted	

APPENDIX II

UNCERTAINTY

Measurement Item	Expanded Uncertainty U = kUc (k=2)
Radiated Spurious Emissions	4.89 dB
Conducted Emissions	1.52 dB

(End of Test report)

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