TEST REPORT

KOSTEC CO., Ltd. 28(175-20, Annyeong-dong) 406-gil sejaro, Hwaseong-si, Gyeonggi-do, Korea Tel:031-222-4251, Fax:031-222-4252	Report No.: KST-FCR-160011	KOSTEC Co., Ltd. http://www.kostec.org

1. Applicant

   • Name : Dogtra Co., Ltd.

   • Address : #715-2(146BL-3L) Gojan-dong, Namdong-gu, Incheon, Korea

2. Test Item

   • Product Name: DOG TRAINING DEVICE

   • Model Name: E-Fence 3500

   • Brand: -

   • FCC ID: SWN-E-FENCE3500

3. Manufacturer

   • Name : Dogtra Co., Ltd.

   • Address : #715-2(146BL-3L) Gojan-dong, Namdong-gu, Incheon, Korea

4. Date of Test : 2016. 11. 07. ~ 2016. 11. 08.

5. Test Method Used : FCC CFR 47, Part 15. Subpart C-15.207 and 15.209

6. Test Result : Compliance

7. Note: None

Supplementary Information

The device bearing the brand name and FCC ID specified above has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with measurement procedures specified in ANSI C 63.10-2013.

We attest to the accuracy of data and all measurements reported herein were performed by KOSTEC Co., Ltd. and were made under Chief Engineer's supervision. We assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.

Affirmation	Tested by Name : Lee, Mi-Young (Signature)	Technical Manager Name : Park, Gyeong-Hyeon (Signature)

2016. 11. 14.

KOSTEC Co., Ltd.

Table of Contents

1. GENERAL INFORMATION 3
1.1 Test Facility 3
1.2 Location 3
1.3 Revision History of test report 4
2. EQUIPMENT DESCRIPTION 5
3. SYSTEM CONFIGURATION FOR TEST 6
3.1 Characteristics of equipment 6
3.2 Used peripherals list 6
3.3 Product Modification 6
3.4 Operating Mode 6
3.5 Test Setup of EUT 6
3.8 Used Test Equipment List 7
4. SUMMARY TEST RESULTS 9
5. MEASUREMENT RESULTS 10
5.1 Spurious RF Radiated emissions 10
5.2 AC Power Conducted emissions 14
5.3 20 dB bandwidth measurement 18

1. GENERAL INFORMATION

1.1 Test Facility

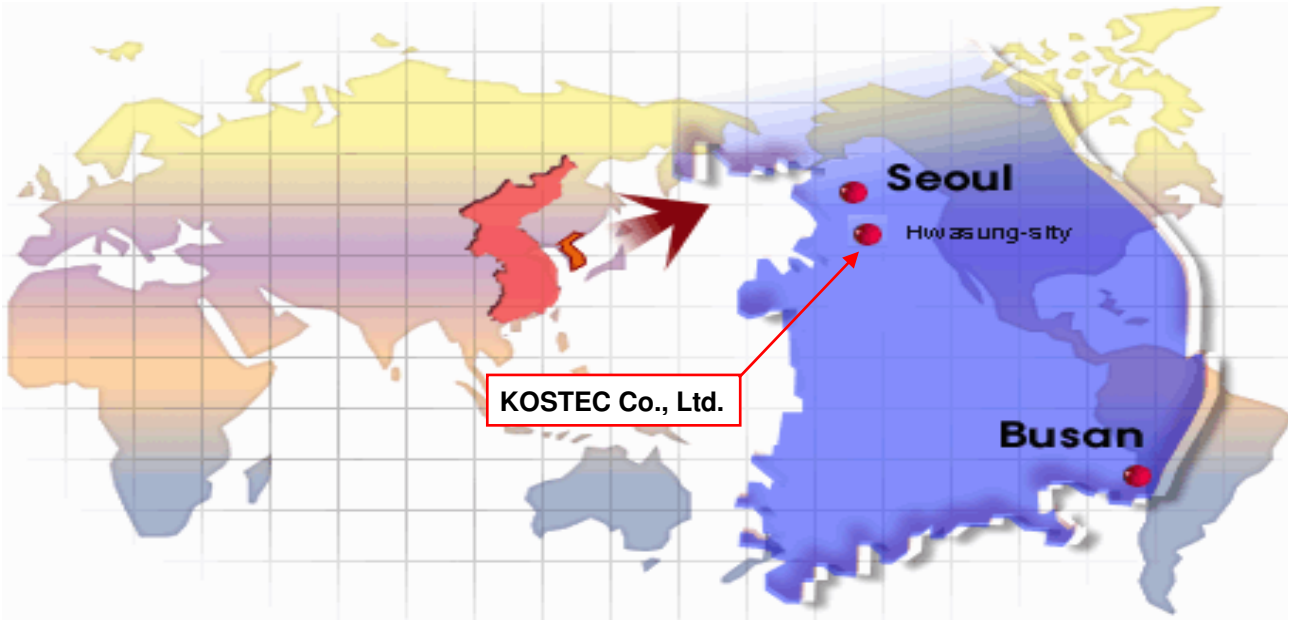
Test laboratory and address

KOSTEC Co., Ltd.
128(175-20,Annyeong-dong)406-gil sejaro, Hwaseong-si Gyeonggi-do, Korea

Registration information

KOLAS No. : 232
FCC Designation No. : KR0041
IC Registration Site No. : 8305A

1.2 Location



1.3 Revision History of test report

Rev.	Revisions	Effect page	Reviewed	Date
-	Initial issue	All	Gyeong Hyeon, Park	2016. 11. 14.

2. EQUIPMENT DESCRIPTION

The product specification described herein was declared by manufacturer. And refer to user's manual for the details.

Equipment Name	DOG TRAINING DEVICE
Model No	E-Fence 3500
Usage	Electronic fence for dog
Serial Number	Proto type
Modulation type	ASK
Emission Type	A1D
Operated Frequency	10 kHz
Channel Number	1
Operation temperature	-10 ℃ ~ 55 ℃
Power Source	AC/DC Adapter Input: AC 100 - 240 V. 50/60 Hz Output: DC 24 V, 500mA
Antenna Description	Wire Loop Antenna
Remark	1. The device was operating at its maximum output power for all measurements. 2. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case (X) is shown in the report. 3. The above DUT's information was declared by manufacturer. Please refer to the specifications or user manual for more detailed description.
FCC ID	SWN-E-FENCE3500

3. SYSTEM CONFIGURATION FOR TEST

3.1 Characteristics of equipment

Electronic fence for dog

3.2 Used peripherals list

Description	Model No.	Serial No.	Manufacture	Remark

3.3 Product Modification

N/A

3.4 Operating Mode

Constantly transmitting with a modulated carrier at maximum power.

3.5 Test Setup of EUT

The measurements were taken in continuous transmit mode.

EUT
(Standalone)

3.8 Used Test Equipment List

No.	Instrument	Model	S/N	Manufacturer	Due to cal date	Cal interval	used
1	T & H Chamber	EY-101	90E14260	TABAI ESPEC	2017.09.07	1 year	☐
2	T & H Chamber	SH-641	92006831	ESPEC CORP	2017.02.04	1 year	☐
3	Spectrum Analyzer	8563E	3846A10662	Agilent Technology	2017.02.02	1 year	☐
4	Spectrum Analyzer	8593E	3710A02859	Agilent Technology	2017.02.02	1 year	☐
5	Spectrum Analyzer	FSV30	20-353063	Rohde& Schwarz	2017.02.02	1 year	☐
6	Signal Analyzer	N9010A	MY50410369	Agilent Technologies	2017.05.04	1 year	☐
7	EMI Test Receiver	ESCI7	100823	Rohde& Schwarz	2017.02.02	1 year	☒
8	EMI Test Receiver	ESI	837514/004	Rohde& Schwarz	2017.09.07	1 year	☐
9	Vector Signal Analyzer	89441A	3416A02620	Agilent Technology	2017.02.04	1 year	☐
10	Network Analyzer	8753ES	US39172348	AGILENT	2017.09.06	1 year	☐
11	EPM Series Power meter	E4418B	GB39512547	Agilent Technology	2017.02.03	1 year	☐
12	RF Power Sensor	E9300A	MY41496631	Agilent Technology	2017.02.03	1 year	☐
13	Microwave Frequency Counter	5352B	2908A00480	Agilent Technology	2017.02.01	1 year	☐
14	Modulation Analyzer	8901A	3538A07071	Agilent Technology	2017.02.03	1 year	☐
15	Audio Analyzer	8903B	3514A16919	Agilent Technology	2017.02.01	1 year	☐
16	Audio Telephone Analyzer	DD-5601CID	520010281	CREDIX	2017.02.04	1 year	☐
17	Digital storage Oscilloscope	TDS3052	B015962	Tektronix	2017.09.06	1 year	☐
18	ESG-D Series Signal Generator	E4436B	US39260458	Agilent Technology	2017.02.03	1 year	☐
19	Vector Signal Generator	SMBV100A	257557	Rohde & Schwarz	2017.02.03	1 year	☐
20	Signal Generator	SMB100A	179628	Rohde & Schwarz	2017.06.02	1 year	☐
21	Tracking Source	85645A	070521-A1	Agilent Technology	2017.02.02	1 year	☐
22	SLIDAC	None	0207-4	Myoung sung Ele.	2017.02.01	1 year	☐
23	DC Power supply	DRP-5030	9028029	Digital Electronic Co.,Ltd	2017.02.01	1 year	☐
24	DC Power supply	6038A	3440A12674	Agilent Technology	2017.02.01	1 year	☐
25	DC Power supply	E3610A	KR24104505	Agilent Technology	2017.02.01	1 year	☐
26	DC Power supply	UP-3005T	68	Unicon Co.,Ltd	2017.02.01	1 year	☐
27	DC Power Supply	SM 3004-D	114701000117	DELTA ELEKTRONIKA	2017.02.01	1 year	☐
28	Dummy Load	8173	3780	Bird Electronic Co., Corp	2017.02.03	1 year	☐
29	Attenuator	50FH-030-500	140410 9433	JEW Idustries Inc.	2017.02.03	1 year	☐
30	Attenuator	765-20	9703	Narda	2017.09.06	1 year	☐
31	Attenuator	24-30-34	BX5630	Aeroflex / Weinschel	2016.12.30	1 year	☐
32	Attenuator	8498A	3318A09485	HP	2017.02.03	1 year	☐
33	Step Attenuator	8494B	3308A32809	HP	2017.02.03	1 year	☐
34	Attenuator	18B50W-20F	64671	INMET	2017.02.17	1 year	☐
35	Attenuator	10 dB	1	Rohde & Schwarz	2017.05.31	1 year	☐
36	Attenuator	54A-10	74564	WEINSCHEL	2017.06.02	1 year	☐
37	Attenuator	56-10	66920	WEINSCHEL	2017.06.17	1 year	☐
38	Power divider	11636B	51212	HP	2017.02.02	1 year	☐
39	3Way Power divider	KPDSU3W	00070365	KMW	2017.09.06	1 year	☐
40	4Way Power divider	70052651	173834	KRYTAR	2017.02.02	1 year	☐
41	3Way Power divider	1580	SQ361	WEINSCHEL	2017.06.02	1 year	☐
42	White noise audio filter	ST31EQ	101902	SoundTech	2017.09.07	1 year	☐
43	Dual directional coupler	778D	17693	HEWLETT PACKARD	2017.02.03	1 year	☐
44	Dual directional coupler	772D	2839A00924	HEWLETT PACKARD	2017.02.03	1 year	☐
45	Band rejection filter	3TNF-0006	26	DOVER Tech	2017.02.04	1 year	☐
46	Band rejection filter	3TNF-0008	317	DOVER Tech	2017.02.04	1 year	☐
47	Band rejection filter	3TNF-0007	311	DOVER Tech	2017.02.04	1 year	☐

No.	Instrument	Model	S/N	Manufacturer	Due to cal date	Cal interval	used
48	Band rejection filter	WTR-BRF2442-84NN	09020001	WAVE TECH Co.,LTD	2017.02.03	1 year	☐
49	Band rejection filter	WRCJV12-5695-5725-5825-5855-50SS	1	Wainwright Instruments GmbH	2017.05.31	1 year	☐
50	Band rejection filter	WRCJV12-5120-5150-5350-5380-40SS	4	Wainwright Instruments GmbH	2017.05.31	1 year	☐
51	Band rejection filter	WRCGV10-2360-2400-2500-2540-50SS	2	Wainwright Instruments GmbH	2017.05.31	1 year	☒
52	Highpass Filter	WHJS1100-10EF	1	WAINWRIGHT	2017.02.03	1 year	☐
53	Highpass Filter	WHJS3000-10EF	1	WAINWRIGHT	2017.02.03	1 year	☐
54	Highpass Filter	WHNX6-5530-3000-26500-40CC	2	Wainwright Instruments GmbH	2017.06.17	1 year	☐
55	Highpass Filter	WHNX6-2370-7000-26500-40CC	4	Wainwright Instruments GmbH	2017.06.17	1 year	☐
56	WideBand Radio Communication Tester	CMW500	102276	Rohde & Schwarz	2017.02.04	1 year	☐
57	Radio Communication Tester	CMU 200	112026	Rohde & Schwarz	2017.02.03	1 year	☐
58	Bluetooth Tester	TC-3000B	3000B6A0166	TESCOM CO., LTD.	2017.02.03	1 year	☐
59	RF Up/Down Converter	DCP-1780	980901003	CREDIX	2017.02.03	1 year	☐
60	DECT Test set	8923B	3829U00364	HP	2017.02.04	1 year	☐
61	DECT Test set	CMD60	840677/005	Rohde& Schwarz	2017.09.06	1 year	☐
62	Loop Antenna	6502	9203-0493	EMCO	2017.06.04	2 year	☒
63	BiconiLog Antenna	3142B	9910-1432	EMCO	2018.04.25	2 year	☒
64	Horn Antenna	3115	2996	EMCO	2018.02.11	2 year	☐
65	Horn Antenna	3160-09	061591-21907	ETS LINDGREN	2018.05.03	2 year	☐
66	Horn Antenna	3160-10	061221-022	ETS LINDGREN	2018.05.03	2 year	☐
67	Antenna Master(3)	AT13	None	AUDIX	N/A	N/A	☐
68	Turn Table(3)	None	None	AUDIX	N/A	N/A	☐
69	PREAMPLIFIER(3)	8449B	3008A02577	Agilent	2017.02.01	1 year	☐
70	Low noise Amplifier	TK-PA1840H	160010-L	TESKTEK	2017.07.05	1 year	☐
71	Antenna Master(10)	MA4000-EP	None	inno systems GmbH	N/A	N/A	☒
72	Turn Table(10)	None	None	inno systems GmbH	N/A	N/A	☒
73	AMPLIFIER(10)	TK-PA6S	120009	TESTEK	2017.02.02	1 year	☒

4. SUMMARY TEST RESULTS

Description of Test	FCC Rule	Reference Clause	Used	Test Result
Spurious RF radiated emissions	15.205, 15.209	Clause 5.1	☒	Compliance
AC Power Conducted emissions	15.207	Clause 5.2	☒	Compliance
20 dB Bandwidth & 99% Occupied Bandwidth	15.215	Clause 5.3	☒	Compliance
Compliance/pass : The EUT complies with the essential requirements in the standard. Not Compliance : The EUT does not comply with the essential requirements in the standard. N/A : The test was not applicable in the standard.				

Procedure Reference

FCC CFR 47, Part 15. Subpart C-15.205 & 15.207

ANSI C 63.10-2013

5. MEASUREMENT RESULTS

5.1 Spurious RF Radiated emissions

5.1.1 Standard Applicable [FCC §15.209]

The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table;

§15.209 limits for radiated emissions measurements (distance at 3 m)

Frequency Band [㎒]	DISTANCE[Meters]	Limit [㎶/m]	Limit [dB㎶/m]	Detector
0.009 ~ 0.490	300	2400/F(㎑)	67.6-20log(F)	Peak
0.490 ~ 1.705	30	24000/F(㎑)	87.6-20log(F)	Peak
1.705 ~ 30.0	30	30	29.54	Peak
30 - 88	3	100 **	40.00	Quasi peak
88 - 216	3	150 **	43.52	Quasi peak
216 - 960	3	200 **	46.02	Quasi peak
Above 960	3	500	54.00	Average
Above 1 000	3	74.0 dB㎶/m (Peak), 54.0 dB㎶/m (Average)		
** fundamental emissions from intentional radiators operation under this Section shall not be located in the frequency bands 54-72 ㎒, 76-88 ㎒, 174-216 ㎒, or 470-806 ㎒. However, operation within these Frequency bands is permitted under other sections of this Part Section 15.231 and 15.241				

§15.205. Restrict Band of Operation for FCC

[㎒]	[㎒]	[㎒]	[㎓]
0.090 - 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.
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 - 8.38 6 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			

** Until February 1, 1999, this restricted band shall be 0.490-0.510

5.1.2 Test Environment conditions

• Ambient temperature : (21 ~ 22) ℃ • Relative Humidity : (50 ~ 52) % R.H.

5.1.3 Measurement Procedure

The measurements procedure of the Spurious RF Radiated emissions is as following describe method.

1. The EUT was placed on the top of a rotating table (0.8 meters for below 1 ㎓ and 1.5 meters for above 1 ㎓) above the ground at a 3 meter camber. The table was rotated 360 degree to determine the position of the highest radiation.
2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna master.
3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both Horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotating table was turned from 0 - 360 degrees to find the maximum reading.
5. The measuring receiver was set to peak detector and specified bandwidth with max hold function.
6. Low, Middle and high channels were measured, and radiation measurements are performed in X, Y, Z axis positioning. And found the worst axis position and only the test worst case mode is recorded in the report.

• The measurement results are obtained as described below:
Result(㏈㎶/m) = Reading(㏈㎶) + Antenna factor(㏈/m)+ CL(㏈) + other applicable factor (㏈)

• The resolution bandwidth of test receiver/spectrum analyzer is 1 ㎒ and the video bandwidth is 3 ㎒ for RMS Average (Duty cycle < 98 %) for Average detection (AV) at frequency above 1 ㎓, then the measurement results was added to a correction factor (10 log(1/duty cycle)).

• The resolution bandwidth of test receiver/spectrum analyzer is 1 ㎒ and the video bandwidth is 10 ㎐ (Duty cycle ≥ 98 %) for Average detection (AV) at frequency above 1 ㎓.

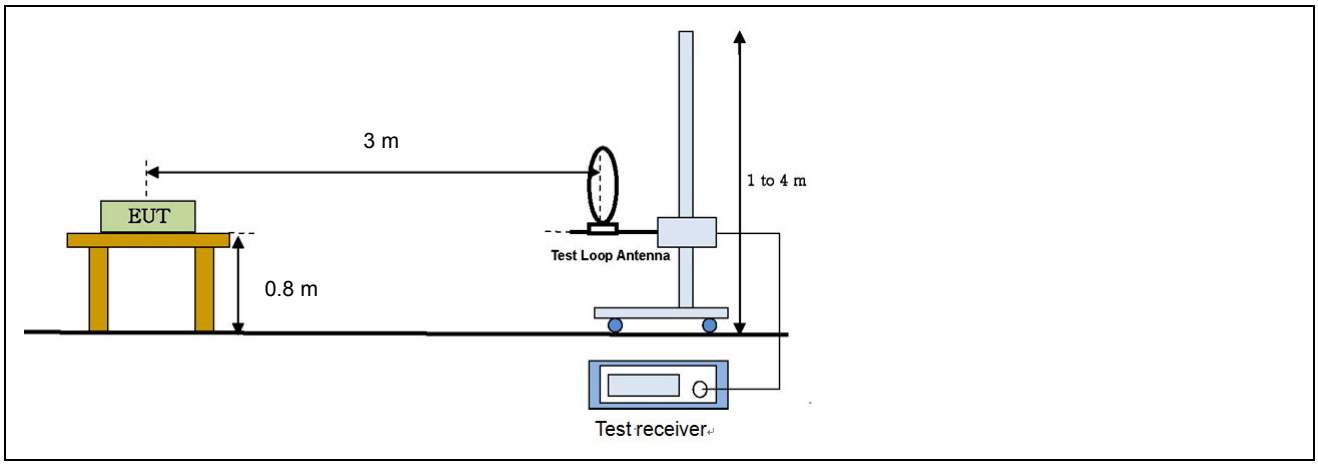
5.1.4 Measurement Uncertainty

All measurements involve certain levels of uncertainties. The factors contributing to uncertainties are test receiver, Cable loss, Antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, Antenna frequency interpolation, measurement distance variation, Site imperfection, mismatch, and system repeatability based on NIS 80,81.

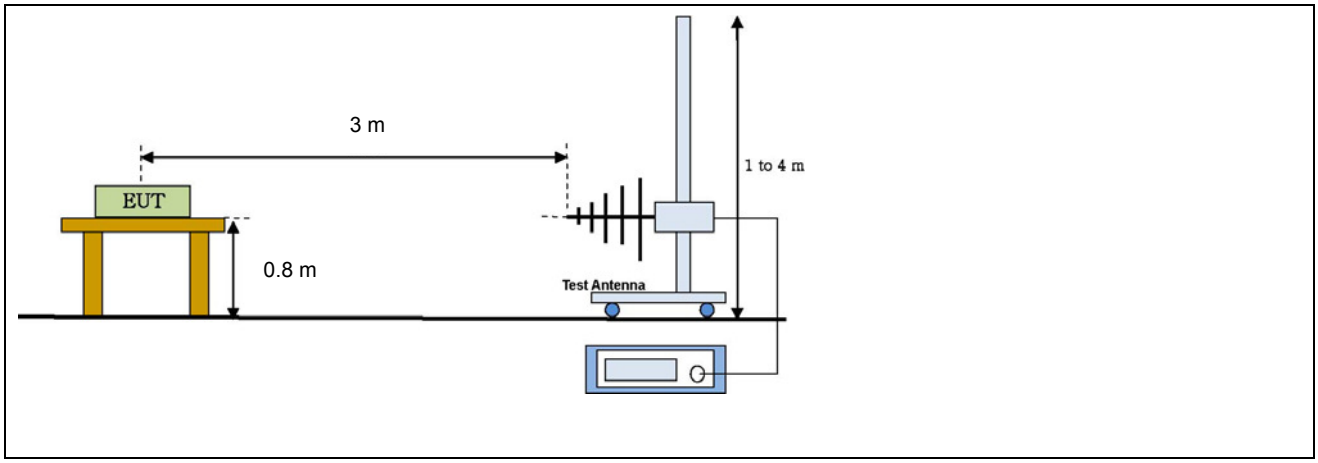
Radiated Emission measurement: 30 - 1000 MHz: 4.4 dB (CL: Approx 95 %, *k*=2)
Above 1 GHz: 4.88 dB (CL: Approx 95 %, *k*=2)

5.1.5 Test Configuration

Radiated emission setup, Below 30 MHz



Radiated emission setup, Below 1 000 MHz



5.1.6 Measurement Result

Below 30 MHz

Freq. (MHz)	Reading (dBμV/m)	Table (Deg)	Antenna			CL (dB)	AMP (dB)	Meas Result (dBμV/m)	Limit (dBμV/m)	Mgn (dB)	Detector Mode
			Height (m)	Pol.	Fctr. (dB/m)						
0.01*	23.17	180	1.0	X	18.71	0.07	-	41.95	127.6	85.65	PK
0.05	10.67	180	1.0	X	10.29	0.13	-	21.09	127.6	106.51	PK
0.07	21.46	180	1.0	X	10.82	0.10	-	32.38	127.6	95.22	PK
0.11	23.76	180	1.0	X	10.52	0.13	-	34.41	127.6	93.19	PK
0.37	24.68	180	1.0	X	10.35	0.13	-	35.16	127.6	92.44	PK
13.17	17.50	180	1.0	X	9.95	0.61	-	28.06	69.5	41.44	QP
Result	Compliance										

* is fundamental frequency

Note1. above measured frequency have been done at 3 m distance

∴ Extrapolation distance factor : 40log(3/30) = 40 dB (If Measurement distance is 3 m and mandatory requirement distance is 30 m at 30 MHz or less, extrapolation distance factor(dB) is 40 / decade = 40 $\log_{10}^{(MRD/MD)}$)

MRD is Mandatory requirement distance and MD is Measured distance

∴ Extrapolation distance factor : 40log(3/300) = 80 dB (If Measurement distance is 3 m and Mandatory requirement distance is 300 m)

Note2. All measurements were performed using a loop antenna. The antenna was positioned in three orthogonal positions (X front, Y side, Z top) and the position with the highest emission level was recorded.

30 MHz ~ 1 GHz

Freq. (MHz)	Reading (dBμV/m)	Table (Deg)	Antenna			CL (dB)	AMP (dB)	Meas Result (dBμV/m)	Limit (dBμV/m)	Mgn (dB)	Result
			Height (m)	Pol. (H/V)	Fctr. (dB/m)						
41.42	53.09	180	1.0	V	10.90	1.02	-40.74	24.26	40.0	15.74	Compliance
60.01	52.26	180	1.0	V	6.38	1.22	-42.02	17.84	40.0	22.16	Compliance
63.98	46.83	180	2.0	H	6.06	1.26	-42.02	12.13	40.0	27.87	Compliance
385.28	48.21	170	2.0	H	17.02	2.62	-40.99	26.86	46.0	19.14	Compliance
787.85	40.42	170	2.0	H	23.79	3.85	-38.75	29.31	46.0	16.69	Compliance
919.28	39.91	180	1.8	H	25.39	4.09	-38.26	31.13	46.0	14.87	Compliance

Freq.(MHz) : Measurement frequency
Reading(dBμV /m) : Indicated value for test receiver
Table (Deg) : Directional degree of Turn table
Antenna (Height, Pol, Fctr) : Antenna Height, Polarization and Factor
CL(dB) : Cable loss
AMP(dB) : Preamplifier gain(dB)
Meas Result (dBμV /m) :Reading(dBμV /m)+ Antenna factor.(dB/m)+ CL(dB) - AMP(dB)
Limit(dBμV /m): Limit value specified with FCC Rule
Mgn(dB) : FCC Limit (dBμV /m) – Meas Result(dBμV /m)

5.2 AC Power Conducted emissions

5.2.1 Standard Applicable [FCC §15.207(a)]

For 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 frequencies hopping mode within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms 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.

§15.207 limits for AC line conducted emissions;

Frequency of Emission(㎒)	Conducted Limit (dBμV)	
	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

5.2.2 Test Environment conditions

• Ambient temperature : (21 ~ 22) ℃ • Relative Humidity : (50 ~ 52) % R.H.

5.2.3 Measurement Procedure

EUT was placed on a non- metallic table height of 0.8 m above the reference ground plane. Cables connected to EUT were fixed to cause maximum emission. Test was made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna was varied in height above the conducting ground plane to obtain the Maximum signal strength.

5.2.4 Used equipment

Equipment	Model No.	Serial No.	Manufacturer	Next cal date	Cal interval	Used
Test receiver	ESCS30	100111	Rohde & Schwarz	2017. 02. 02	1 year	☒
LISN	ESH2-Z5	100044	R&S	2017. 02. 02	1 year	☐
	ESH3-Z5	100147	R&S	2017. 02. 02	1 year	☒

*Test Program: “ ESXS-K1 V2.2”
Measurement uncertainty
Conducted Emission measurement: 3.5 dB (CL: Approx 95%, *k*=2)

5.2.5 Measurement Result

Freq.	Factor [dB]		POL	QP			CISPR AV		
				Limit	Reading	Result	Limit	Reading	Result
[MHz]	LISN	CABLE +P/L		[dBμV]	[dBμV]	[dBμV]	[dBμV]	[dBμV]	[dBμV]
0.162	0.10	10.05	L	65.38	46.36	46.46	55.38	22.02	22.12
0.173	0.10	10.05	L	64.79	42.46	42.56	54.79	19.33	19.43
0.185	0.10	10.04	L	64.25	43.56	43.66	54.25	21.62	21.72
0.271	0.10	10.05	L	61.08	43.05	43.15	51.08	31.52	31.62
0.357	0.10	10.05	L	58.80	30.98	31.08	48.80	19.10	19.20
0.814	0.11	10.08	L	56.00	24.76	24.87	46.00	17.05	17.16
1.771	0.13	10.13	L	56.00	27.16	27.29	46.00	21.36	21.49
5.060	0.24	10.25	L	60.00	24.62	24.86	50.00	19.33	19.57
0.158	0.09	10.05	N	65.58	46.22	46.31	55.58	21.34	21.43
0.185	0.09	10.04	N	64.25	43.06	43.15	54.25	20.94	21.03
0.275	0.09	10.05	N	60.97	41.67	41.76	50.97	29.85	29.94
0.310	0.09	10.05	N	59.97	28.94	29.03	49.97	14.33	14.42
0.408	0.10	10.06	N	57.69	27.37	27.47	47.69	18.87	18.97
1.052	0.11	10.09	N	56.00	26.17	26.28	46.00	18.56	18.67
1.724	0.13	10.12	N	56.00	27.62	27.75	46.00	23.21	23.34
8.720	0.35	10.34	N	60.00	21.81	22.16	50.00	17.13	17.48

* LISN: LISN insertion Loss, Cable: Cable Loss, P/L:pulse limiter factor
* L: Line. Live, N: Line. Neutral
* Reading: test receiver reading value (with cable loss & pulse limiter factor)
* Result = LISN + Reading

Line. Live

Kostec Co., Ltd. 07 Nov 2016 16:17

Conducted Emission

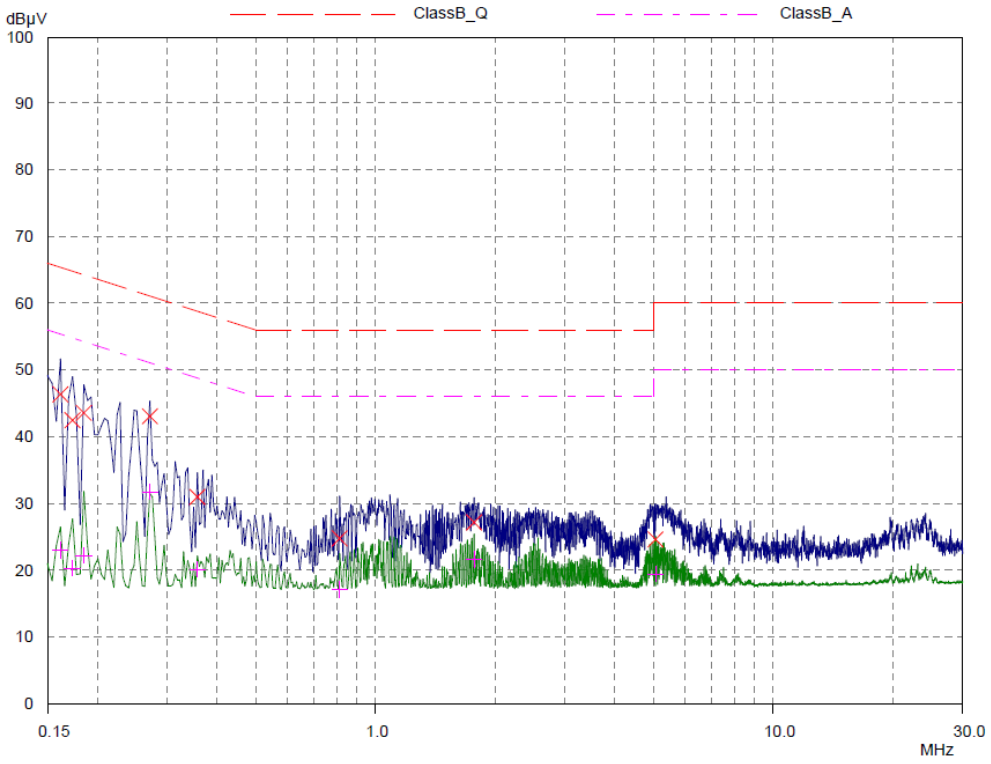
EUT:
Manuf:
Op Cond: A.C. 120 V, 60 Hz
Operator:
Test Spec: FCC
Comment: Live

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	3.9063kHz	9kHz	PK+AV	10msec	15 dB	OFF	60dB

Transducer	No.	Start	Stop	Name
	12	9kHz	30MHz	CNEFactor

Final Measurement:
Detectors: X QP / + AV
Meas Time: 1sec
Subranges: 25
Acc Margin: 50 dB



PAGE 1

Line. Neutral

Kostec Co., Ltd. 07 Nov 2016 16:24

Conducted Emission

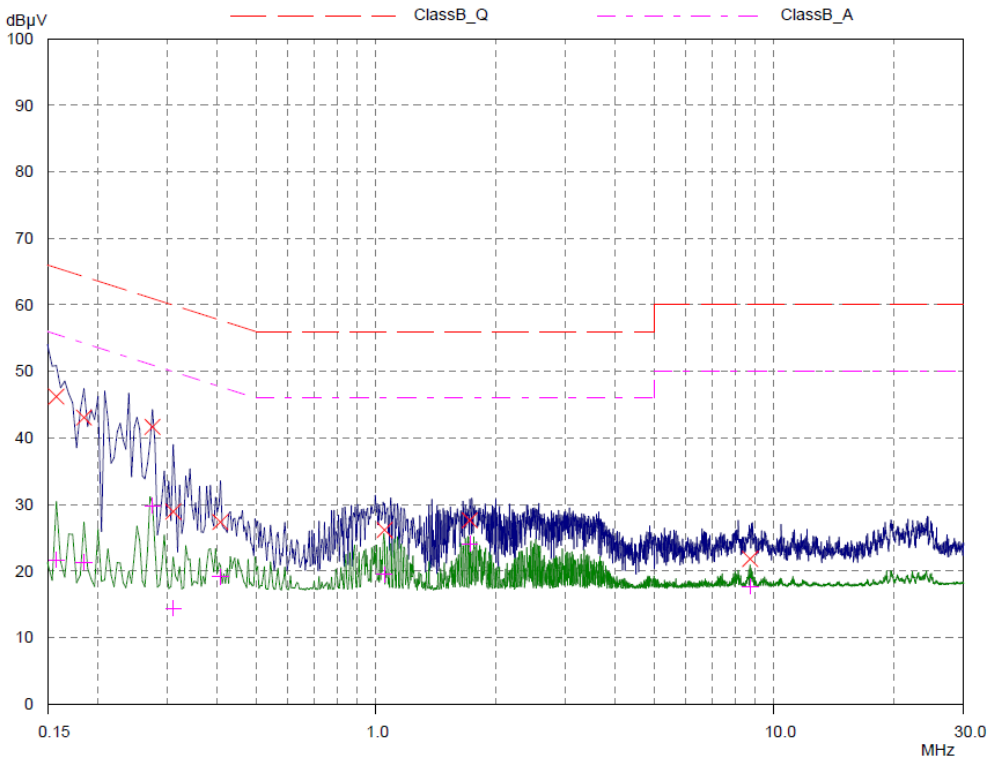
EUT:
Manuf:
Op Cond: A.C. 120 V, 60 Hz
Operator:
Test Spec: FCC
Comment: N

Scan Settings (1 Range)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150kHz	30MHz	3.9063kHz	9kHz	PK+AV	10msec	15 dB	OFF	60dB

Transducer	No.	Start	Stop	Name
	12	9kHz	30MHz	CNEFactor

Final Measurement: Detectors: X QP / + AV
Meas Time: 1sec
Subranges: 25
Acc Margin: 50 dB



PAGE 1

5.3 20 dB bandwidth measurement

5.3.1 Standard applicable [FCC §2.1049]

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.

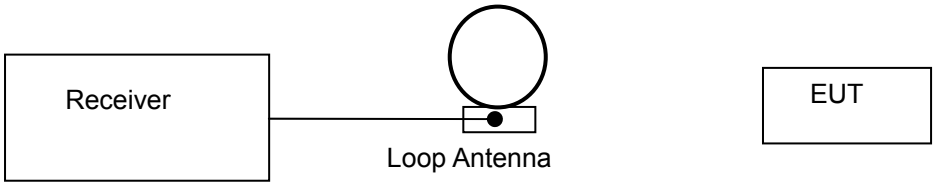
5.3.2 Test Environment conditions

• Ambient temperature : (21 ~ 22) ℃ • Relative Humidity : (50 ~ 52) % R.H.

5.3.3 Measurement Procedure

Refer 5.3.1

5.3.4 Test setup



5.3.5 Measurement Result

Frequency (kHz)	20 dB bandwidth (kHz)
10	2.6

5.3.6 Test plot