TEST REPORT

Issued: March 6, 2015

Name and Address of the Customer:	Enagic, Inc. 1-40-1, Hoshida-kita, Katano-city, Osaka 576-0017, Japan
Test Item:	Electrolysis Water System
Identification:	LeveLuk K8 / A26-00
Serial No.:	E150206, E150220
FCC ID:	2AEBAA2600
IC Certification Number:	20009-A2600
Sample No.:	1
Sample Receipt Date:	February 6, 2015
Test Specification:	47 CFR Part 15 Subpart C RSS-210 Issue 8, RSS-Gen Issue 3
Period of Testing:	February 6, 2015 - February 24, 2015
Test Result:	PASS

Representative Test Personnel: T. Nakai (EMC Dept.) (2015-03-06)

Reviewed by: H. Onishi (EMC Dept.) iNARTE : EMC-003318-NT (2015-03-06)

Other Aspects:

Abbreviations:
PASS = passed
FAIL = failed
N/A = not applicable

Note:
This Test Report should not be reproduced except in full, without the written approval of Cosmos Corporation.
The test result of this Test Report is based on the tests made for sample provided, and it is not applicable to individual product identical to the sample or similar product.
The judgment of this test report validates the test item only specified in "4. Summary of Test Results".

Contents

Page

1. General Information

1.1 Test Methodology

All measurement subject to the present test report is carried out according to the procedures in ANSI C63.4:2003.

1.2 Test Facility

The measurement was carried out at the following facility.

Cosmos Corporation EMC Lab. Oonoki
3571-2 Oonoki, Watarai-cho, Watarai-gun, Mie-ken 516-2102, Japan

☒ Semi anechoic Chamber 3 m (COAC3M-01)
☒ Shielded Room (COSR-01)
☒ Measurement Room

Cosmos Corporation EMC Lab. Oonoki is accredited in accordance with the International Standard ISO/IEC 17025 by the following accreditation bodies and the test facility is registered by the following bodies.

Accreditation: A2LA Accredited Laboratory No. 2900.01
VLAC Accredited Laboratory No. VLAC-039-2
FCC Designation No. JP5182

Registration: Industry Canada Registration No. 3958B
Nemko Laboratory Authorisation. No. ELA 621

1.3 Traceability

The calibration of measurement equipment used in the test subject to the present report is designed and operated to ensure that the measurement is traceable to national standards of measurement or equivalent abroad.

2. Description of the Tested Sample

2.1 Product Description

Manufacturer	Enagic, Inc.
Model (referred to as the EUT)	LeveLuk K8 / A26-00
Type of the Equipment	☐ Stand-alone ☒ Combined Equipment ☐ Plug-in Radio Device ☐ Other ( )
Transmitter Type	☐ WLAN ☐ Bluetooth ( ) ☐ Zigbee ☒ RFID ☐ Other ( )
Nominal Voltage	AC 120 V
Type of Modulation	OOK
Emission Designator	1M27K1D
Antenna Type	☒ Integral Antenna ☐ Dedicated External Antenna
Operating Frequency	13.56 MHz
Type of Power Source	☒ AC Mains ☐ Dedicated AC Adaptor ☐ DC Voltage ☐ Battery
Type of Battery (if applicable)	N/A
Thermal Limitation	5℃ to 40℃

2.2 Antenna Description

Model	Gain	Antenna Type	Remarks
ENG-K8	-63.5 dBi	Spiral Antenna	Integral

2.3 EUT Description

Equipment under test is as follow:

Instrument	Model	Serial No.	Rating
Electrolysis Water System (EUT1)	LeveLuk K8 / A26-00	E150206	AC 100-240 V, 50/60Hz, 2.6-1.1 A
Electrolysis Water System (EUT2)	LeveLuk K8 / A26-00	E150220	AC 100-240 V, 50/60Hz, 2.6-1.1 A

3. Test Condition (Manufacturer's Specification)

3.1 Mode of Operation

Mode of operation: RFID Operating

Note:
The EUT makes communication emission with the maximum RF power by a special test program.
The test of Field Strength of Fundamental Emission was performed under the following condition:

Voltage: AC 120 V ±15%

The test of Frequency Stability was performed under the following condition:

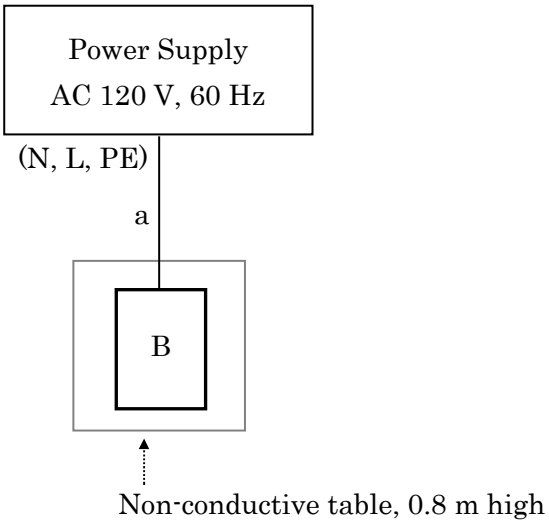
Temperature: -20℃ to +50℃
Voltage: AC 120 V ±15%

3.2 Configuration

	Instrument	Model		Cable	Length	Shield
A	EUT1 (Electrolysis Water System)	LeveLuk K8 / A26-00	a	AC Power Cord	2.2 m	×
B	EUT2 (Electrolysis Water System)	LeveLuk K8 / A26-00				

3.2 Configuration (Continued)

AC Power Line Conducted Emission / Transmitter Spurious Emission (Radiated)
Field Strength of Fundamental Emission

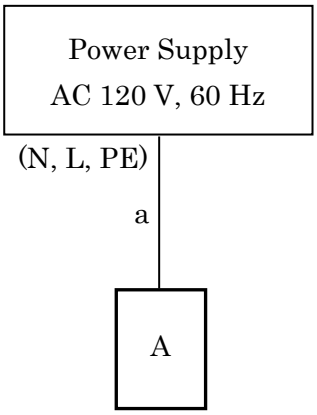


Excess cable arrangement

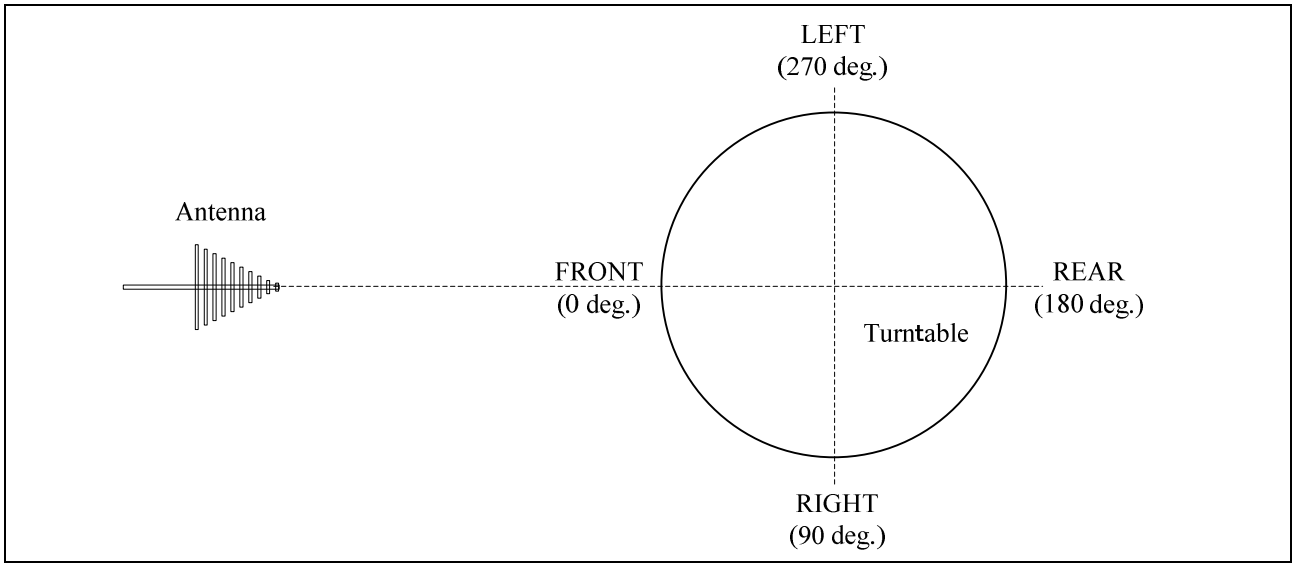
AC Power Line Conducted Emission

Symbol	Length	Position	Setting
a	0.4 m	Center	Bundle

20 dB Bandwidth / Frequency Stability / Occupied Bandwidth



3.3 EUT Angle



4. Summary of Test Results

These test results are the test results of the condition specified with “3. Test Condition”.

FCC Section	IC Section	Test Item	FCC Result	IC Result
15.207	RSS-Gen 7.2.4	AC Power Line Conducted Emission	PASS	PASS
15.209, 15.225(d)	RSS-Gen 7.2.5	Transmitter Spurious Emission (Radiated)	PASS	PASS
15.215(c)	---	20 dB Bandwidth	PASS	---
15.225 (a) (b) (c) (d)	RSS-210 A2.6	Field Strength of Fundamental Emission	PASS	PASS
15.225(e)	RSS-210 A2.6	Frequency Stability	PASS	PASS
---	RSS-Gen 4.3	Occupied Bandwidth	---	PASS
---	RSS-Gen 6.1	Receiver Spurious Emission (Radiated)	---	N/A *

Note:
*: This item does not apply because this device receives some data only while the radio waves are transmitted.

5. Test Result

5.1 AC Power Line Conducted Emission (15.207, RSS-Gen 7.2.4)

Result: **PASS**

5.1.1 Setting Remarks

The conducted disturbance voltage of AC power line in the frequency range from 150 kHz to 30 MHz was measured in accordance with ANSI C63.4:2003.
The test setup was made in accordance with ANSI C63.4:2003 on the table installed in a shielded room. The non-conductive table, 0.8 m high, was placed on the reference ground plane, and the EUT was put on the non-conductive table. The used Line Impedance Stabilizing Network (LISN) has a rated impedance of 50 Ω/50 μH as specified in CISPR16-1-2. The test receiver with Quasi Peak and Average detector is in accordance with CISPR 16-1-1.
The conducted emission level is calculated by adding Cable Attenuation Factor and Insertion Loss of LISN.
Activate the EUT System and run the software prepared for the test.

Setting Condition of Test receiver

Frequency range	Detector	RBW
150 kHz to 30 MHz	Quasi Peak	9 kHz
	Average	9 kHz

5.1.2 Limit

Frequency range	Conducted Limit [dBμV]	
	Quasi Peak	Average
150 kHz to 500 kHz	66 to 56 *	56 to 46 *
500 kHz to 5 MHz	56	46
5 MHz to 30 MHz	60	50

Note:
*: Decrease with the logarithm of the frequency.

5.1.3 Test Detail

Uncertainty of measurement result	:	±3.45 dB
Date of testing	:	February 24, 2015
Room temperature	:	24℃
Relative humidity	:	37%

Calculation
Result = Reading + c.f
= 25.6 + 10.2
= 35.8

Margin = Limit - Result
= 61.6 - 35.8
= 25.8

Note:
c.f (Correction Factor) = Cable Attenuation Factor + LISN Factor

5.1.3 Test Detail (Continued)

Test Data

********** Cosmos Corporation **********
<<Conducted Emission EP5/CE Ver 5.3.20>>

24 February,2015 18:26
130078E CE03-1.dat

Limit : FCC 15.207
Model : LeveLuk K8 / A26-00
Serial : E150220
Operater : T.Ezaki
Power : AC 120V, 60Hz
Temp., Humi. : 24deg., 37%
Mode : RFID
Remark1 :
Remark2 :
Remark3 : RBW:9kHz

****

Final Result

--- L1 Phase ---

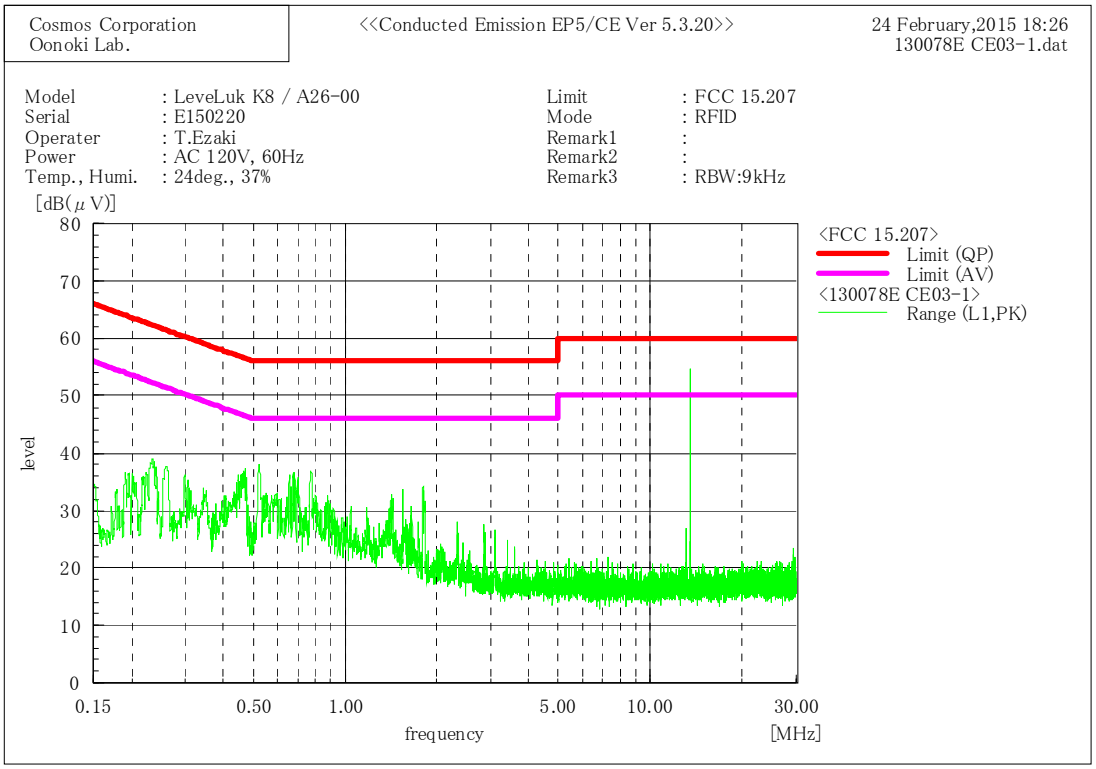
No.	Frequency	Reading QP	Reading AV	c.f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
	[MHz]	[dB(μV)]	[dB(μV)]	[dB]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]
1	0.25485	25.6	7.0	10.2	35.8	17.2	61.6	51.6	25.8	34.4
2	0.4687	20.8	30.6	10.2	31.0	40.8	56.5	46.5	25.5	5.7
3	0.51825	19.4	4.0	10.2	29.6	14.2	56.0	46.0	26.4	31.8
4	0.70363	19.5	5.0	10.1	29.6	15.1	56.0	46.0	26.4	30.9
5	1.80953	14.2	0.6	10.2	24.4	10.8	56.0	46.0	31.6	35.2
6	13.55895	40.1	36.4	10.8	50.9	47.2	60.0	50.0	9.1	2.8

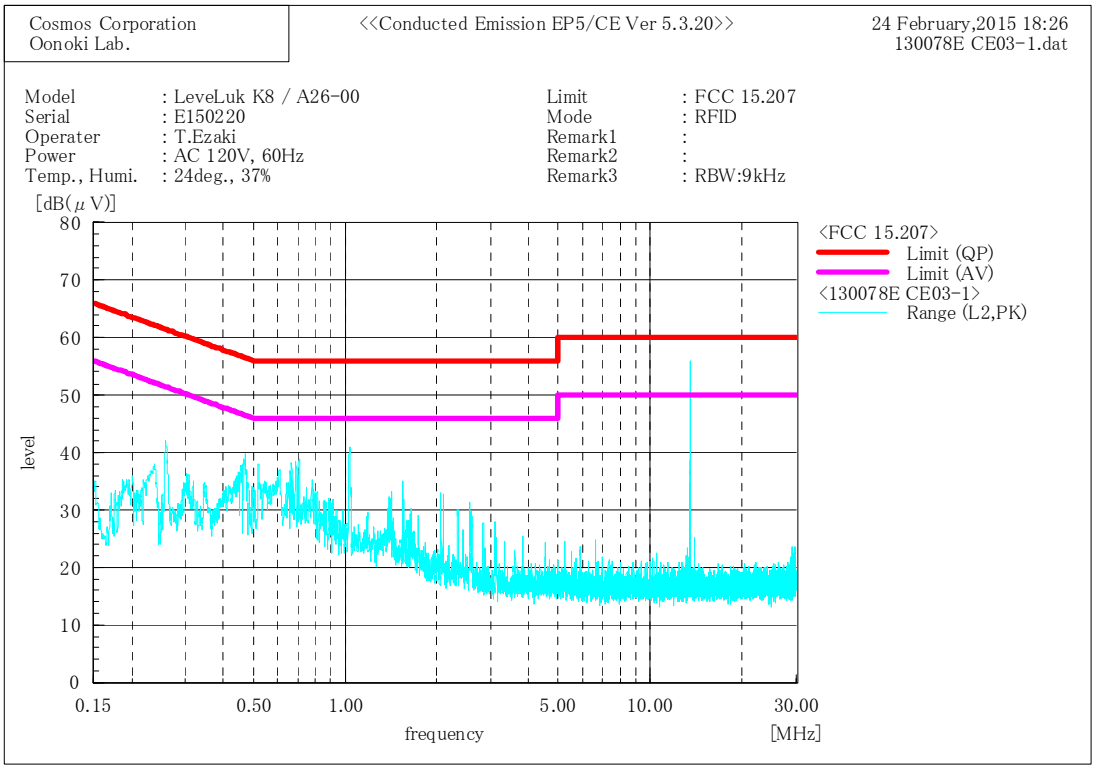
--- L2 Phase ---

No.	Frequency	Reading QP	Reading AV	c.f	Result QP	Result AV	Limit QP	Limit AV	Margin QP	Margin AV
	[MHz]	[dB(μV)]	[dB(μV)]	[dB]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB(μV)]	[dB]	[dB]
1	0.2582	28.4	9.4	10.2	38.6	19.6	61.5	51.5	22.9	31.9
2	0.4706	23.5	4.5	10.2	33.7	14.7	56.5	46.5	22.8	31.8
3	0.70825	20.7	7.1	10.2	30.9	17.3	56.0	46.0	25.1	28.7
4	1.04178	21.2	16.0	10.2	31.4	26.2	56.0	46.0	24.6	19.8
5	1.55843	17.6	2.8	10.2	27.8	13.0	56.0	46.0	28.2	33.0
6	13.55895	41.1	37.7	10.8	51.9	48.5	60.0	50.0	8.1	1.5

5.1.3 Test Detail (Continued)

Test Data





5.2 Transmitter Spurious Emission (Radiated) (15.209, 15.225(d), RSS-Gen 7.2.5)

Result: **PASS**

5.2.1 Setting Remarks

In the frequency range from 9 kHz to 1 GHz (over 10th harmonics), the electric field strength was measured in accordance with ANSI C63.4:2003.
The test setup was made in accordance with ANSI C63.4:2003 on the table installed in a semi-anechoic chamber. The non-conductive table, 0.8 m high, was placed on the turntable, and the EUT was put on the non-conductive table. The EUT was measured at 1 m to 4 m height of the antenna above 30 MHz. The turntable was fully rotated. The highest radiation from the equipment was recorded. The measurement above 30 MHz was carried out with both horizontal and vertical antenna polarization. The test receiver with Quasi Peak detector is in accordance with CISPR 16-1-1. The measurement was carried out with the measuring distance of 3 m. Then the limit of 30 m distance below 30 MHz was converted to the limit of 3 m distance with the 40log(30 m/3 m).

Setting Condition of Test receiver

Frequency range	Detector	RBW
9 kHz to 90 kHz	Peak	200 Hz
	Average	200 Hz
90 kHz to 110 kHz	Quasi Peak	200 Hz
110 kHz to 150 kHz	Peak	200 Hz
	Average	200 Hz
150 kHz to 490 kHz	Peak	9 kHz
	Average	9 kHz
490 kHz to 30 MHz	Quasi Peak	9 kHz

5.2.2 Limit

The emission limits shown in the following table are based on measurements employing a CISPR Quasi Peak detector except for the frequency bands 9 - 90 kHz, 110 - 490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an Average detector. The limit on Peak radio frequency emissions is 20 dB above the maximum permitted Average emission limit applicable to the equipment under test.

Frequency range	Field Strength (Distance)			
	[μV/m]		[dBμV/m]	
9 kHz to 490 kHz	2400/F (kHz) 266.6 to 4.89	(300 m)	128.5 to 93.8	(3 m)
490 kHz to 1.705 MHz	24000/F (kHz) 48.9 to 14.0	(30 m)	73.8 to 62.9	(3 m)
1.705 MHz to 30 MHz	30	(30 m)	69.5	(3 m)
30 MHz to 88 MHz	100	(3 m)	40.0	(3 m)
88 MHz to 216 MHz	150	(3 m)	43.5	(3 m)
216 MHz to 960 MHz	200	(3 m)	46.0	(3 m)
Above 960 MHz	500	(3 m)	53.9	(3 m)

5.2.3 Test Detail

Uncertainty of measurement result	:	±5.08 dB	
Date of testing	:	February 20, 2015	February 23, 2015
Room temperature	:	20℃	23℃
Relative humidity	:	34%	41%

Calculation
Result = Reading + c.f
= 41.8 + 20.2
= 62.0

Margin = Limit - Result
= 119.2 - 62.0
= 57.2

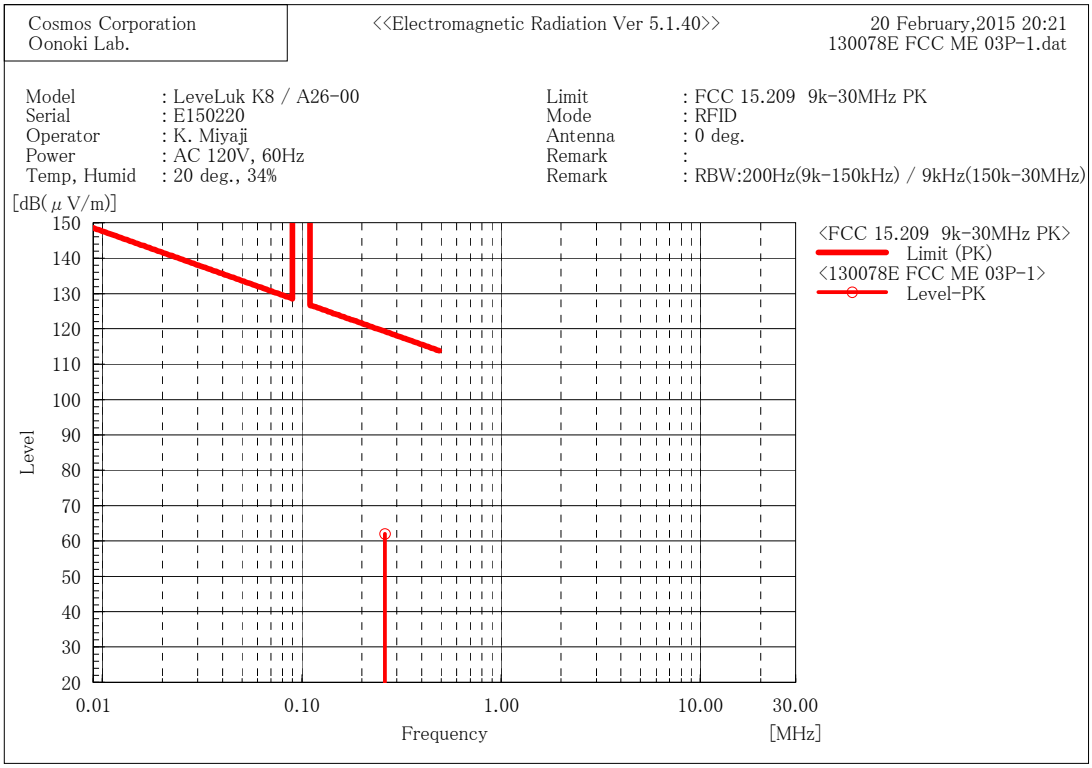
Note:
[Below 30 MHz]
c.f (Correction Factor) = Cable Attenuation Factor + Antenna Factor

[Above 30 MHz]
c.f (Correction Factor) = Cable Attenuation Factor + Antenna Factor + Amplifier Gain

5.2.3 Test Detail (Continued)

<Below 30 MHz>

Test Data (Antenna: 0° , Detector: Peak)



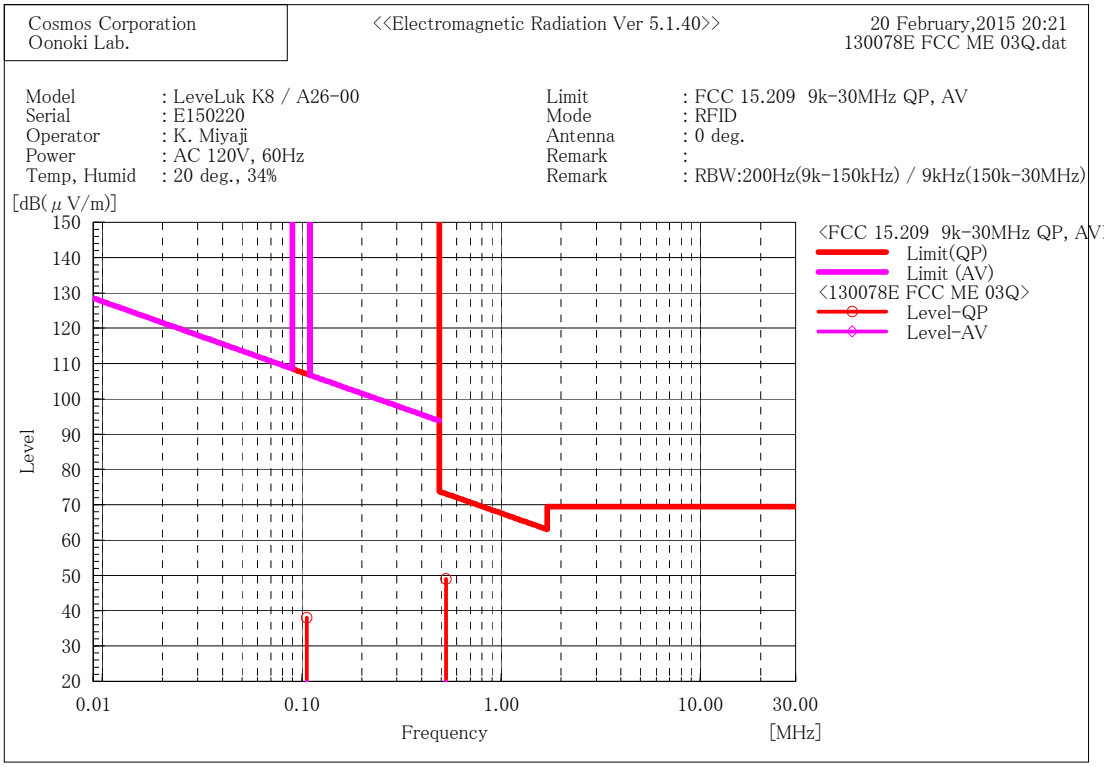
Final Result

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Angle [°]
1	0.261998	41.8	20.2	62.0	119.2	57.2	171.0

5.2.3 Test Detail (Continued)

<Below 30 MHz>

Test Data (Antenna: 0° , Detector: Quasi Peak)



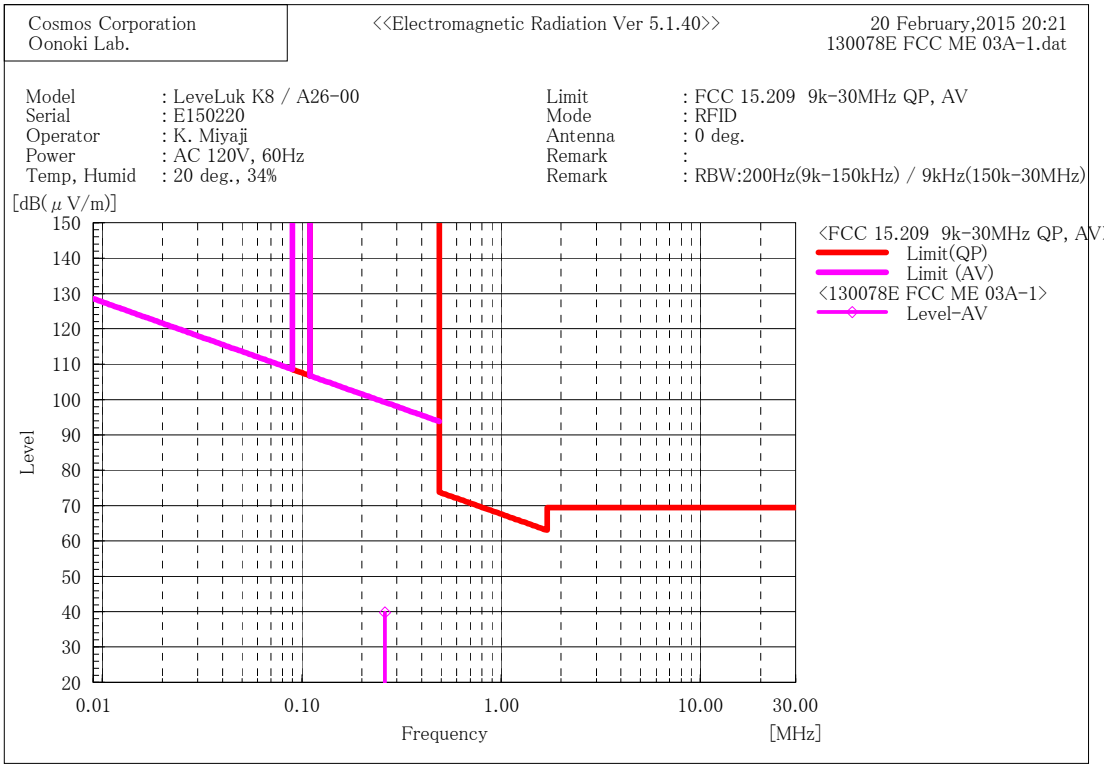
Final Result

No.	Frequency [MHz]	Reading QP [dB(μV)]	c.f [dB(1/m)]	Result QP [dB(μV/m)]	Limit QP [dB(μV/m)]	Margin QP [dB]	Angle [°]
1	0.10585	17.5	20.6	38.1	107.0	68.9	161.0
2	0.52735	28.3	20.7	49.0	73.2	24.2	156.0

5.2.3 Test Detail (Continued)

<Below 30 MHz>

Test Data (Antenna: 0° , Detector: Average)



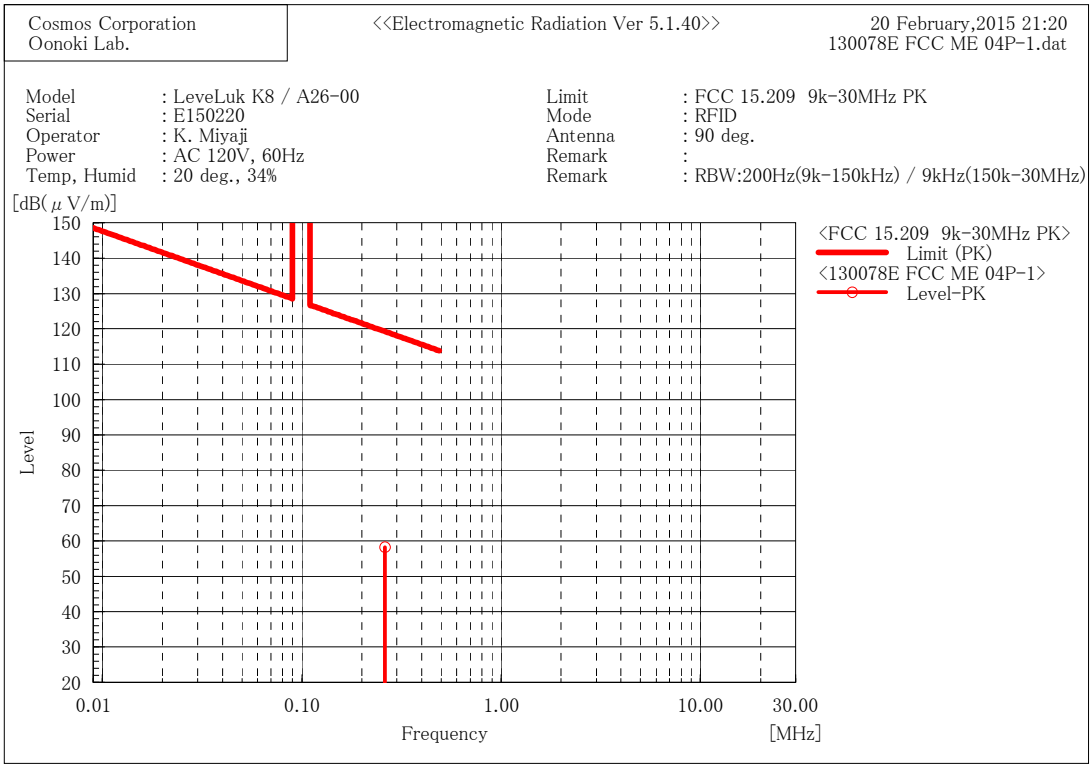
Final Result

No.	Frequency	Reading AV	c.f	Result AV	Limit AV	Margin AV	Angle
	[MHz]	[dB(μV)]	[dB(1/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB]	[°]
1	0.261998	19.6	20.2	39.8	99.2	59.4	171.0

5.2.3 Test Detail (Continued)

<Below 30 MHz>

Test Data (Antenna: 90° , Detector: Peak)



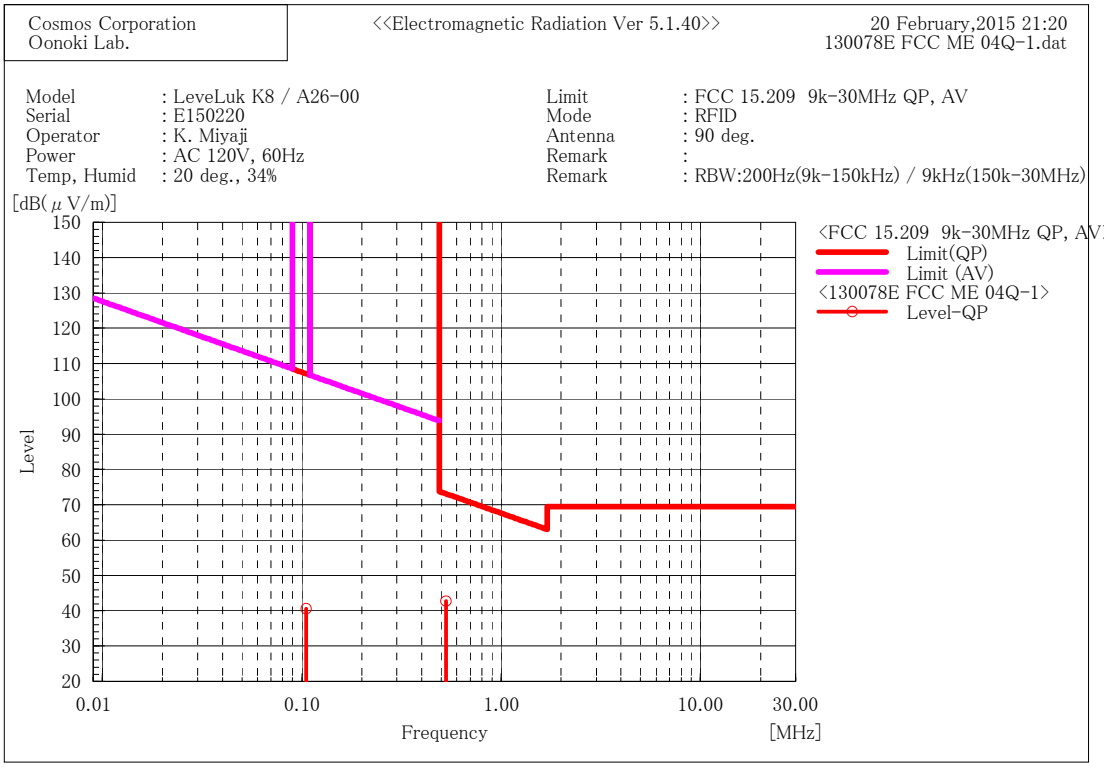
Final Result

No.	Frequency	Reading	c.f	Result	Limit	Margin	Angle
	[MHz]	[dB(μV)]	[dB(1/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB]	[°]
1	0.260822	38.1	20.2	58.3	119.2	60.9	289.0

5.2.3 Test Detail (Continued)

<Below 30 MHz>

Test Data (Antenna: 90° , Detector: Quasi Peak)



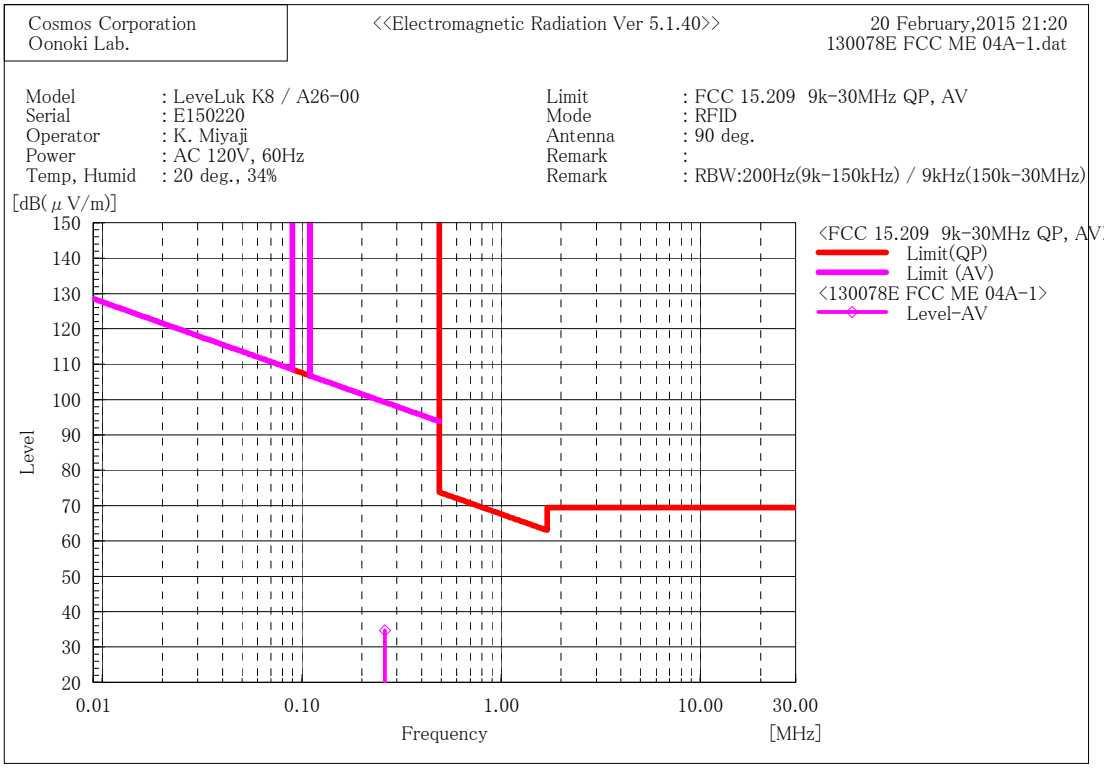
Final Result

No.	Frequency	Reading QP	c.f	Result QP	Limit QP	Margin QP	Angle
	[MHz]	[dB(μV)]	[dB(1/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB]	[°]
1	0.10514	20.0	20.6	40.6	107.1	66.5	239.0
2	0.52773	22.1	20.7	42.8	73.2	30.4	231.0

5.2.3 Test Detail (Continued)

<Below 30 MHz>

Test Data (Antenna: 90° , Detector: Average)



Final Result

No.	Frequency [MHz]	Reading AV [dB(μV)]	c.f [dB(1/m)]	Result AV [dB(μV/m)]	Limit AV [dB(μV/m)]	Margin AV [dB]	Angle [°]
1	0.260822	14.5	20.2	34.7	99.2	64.5	289.0

5.2.3 Test Detail (Continued)

<Above 30 MHz>

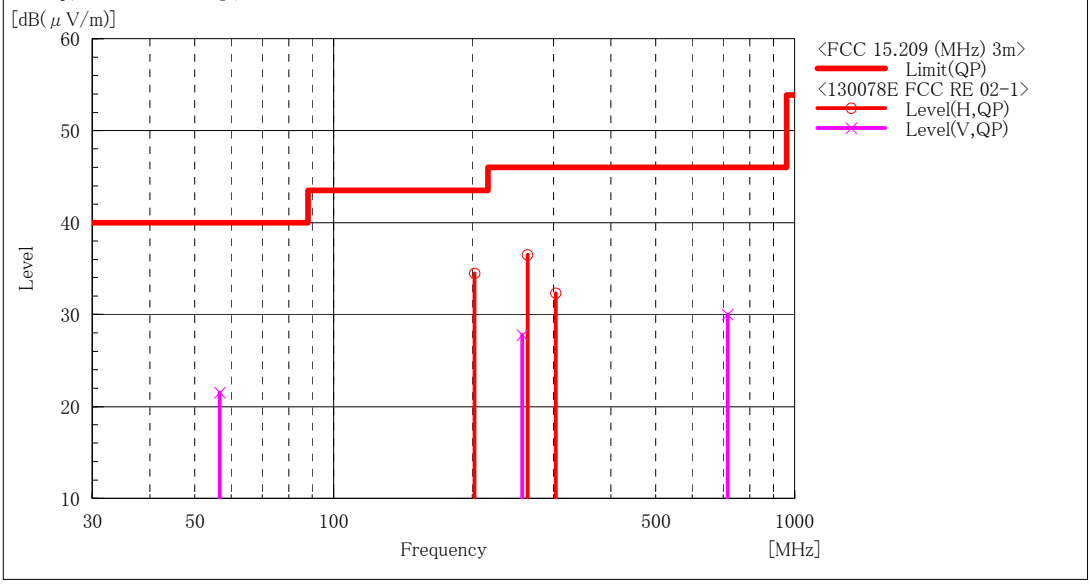
Test Data

Cosmos Corporation
Oonoki Lab.

<<Radiated Emission EP5/RE Ver 5.7.1>>

23 February,2015 19:08
130078E FCC RE 02-1.dat

Model	: LeveLuk K8 / A26-00	Limit	: FCC 15.209 (MHz) 3m
Serial	: E150220	Mode	: RFID
Operator	: K. Miyaji	Remark	:
Power	: AC 120V, 60Hz	Remark	:
Temp, Humid	: 23 deg., 41%	Remark	: RBW:120kHz



Final Result

--- Horizontal Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	202.501	41.3	-6.8	34.5	43.5	9.0	100.0	300.0
2	263.250	41.0	-4.5	36.5	46.0	9.5	122.0	335.0
3	303.755	39.0	-6.7	32.3	46.0	13.7	100.0	18.0

--- Vertical Polarization (QP)---

No.	Frequency [MHz]	Reading [dB(μV)]	c.f [dB(1/m)]	Result [dB(μV/m)]	Limit [dB(μV/m)]	Margin [dB]	Height [cm]	Angle [°]
1	56.710	35.0	-13.5	21.5	40.0	18.5	100.0	357.0
2	256.501	32.6	-4.8	27.8	46.0	18.2	180.0	262.0
3	715.507	29.2	0.8	30.0	46.0	16.0	189.0	263.0

5.3 20 dB Bandwidth (15.215(c))

Result: **PASS**

5.3.1 Setting Remarks

The both side of 20 dB down value from peak power were measured by using 20 dB bandwidth measurement function of the spectrum analyzer.
The spectrum analyzer is set as following:

・Resolution Bandwidth	: 1% to 5% of the OBW (not less than 1 kHz)
・Video Bandwidth	: greater than RBW
・Detector Mode	: Peak
・Trace Mode	: Max Hold

5.3.2 Limit

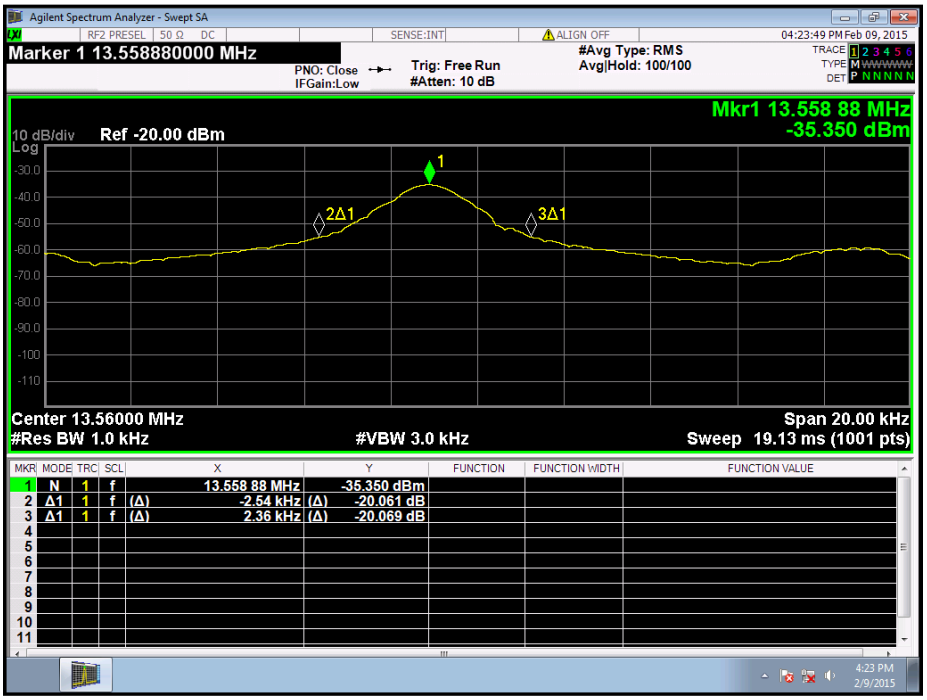
Intentional radiators must be designed to ensure that the 20 dB bandwidth of the emission is contained within the frequency band designated in the rule section under which the equipment is operated.

5.3.3 Test Detail

Uncertainty of measurement result	:	±0.011%
Date of testing	:	February 9, 2015
Room temperature	:	20℃
Relative humidity	:	35%

5.3.3 Test Detail (Continued)

Test Data



5.4 Field Strength of Fundamental Emission (15.225(a) (b) (c) (d), RSS-210 A2.6)

Result: **PASS**

5.4.1 Setting Remarks

The test setup was made in accordance with ANSI C63.4:2003 on the table installed in a semi-anechoic chamber. The non-conductive table, 0.8 m high, was placed on the turntable, and the EUT was put on the non-conductive table. The turntable was fully rotated. The highest radiation from the equipment was recorded. The measurement was carried out with the measuring distance of 3 m. The test receiver with Quasi Peak detector is in accordance with CISPR 16-1-1. Then the limit of 30 m distance was converted to the limit of 3 m distance with the 40log(30 m/3 m).

5.4.2 Limit

Frequency range	Field Strength (Distance)			
	[μV/m]		[dBμV/m]	
13.553 MHz to 13.567 MHz	15848	(30 m)	123.9	(3 m)
13.410 MHz to 13.553 MHz and 13.567 MHz to 13.710 MHz	334	(30 m)	90.4	(3 m)
13.110 MHz to 13.410 MHz and 13.710 MHz to 14.010 MHz	106	(30 m)	80.5	(3 m)
Outside of 13.110 MHz to 14.010 MHz	30	(30 m)	69.5	(3 m)

5.4.3 Test Detail

Uncertainty of measurement result	:	±4.64 dB
Date of testing	:	February 20, 2015
Room temperature	:	20℃
Relative humidity	:	34%

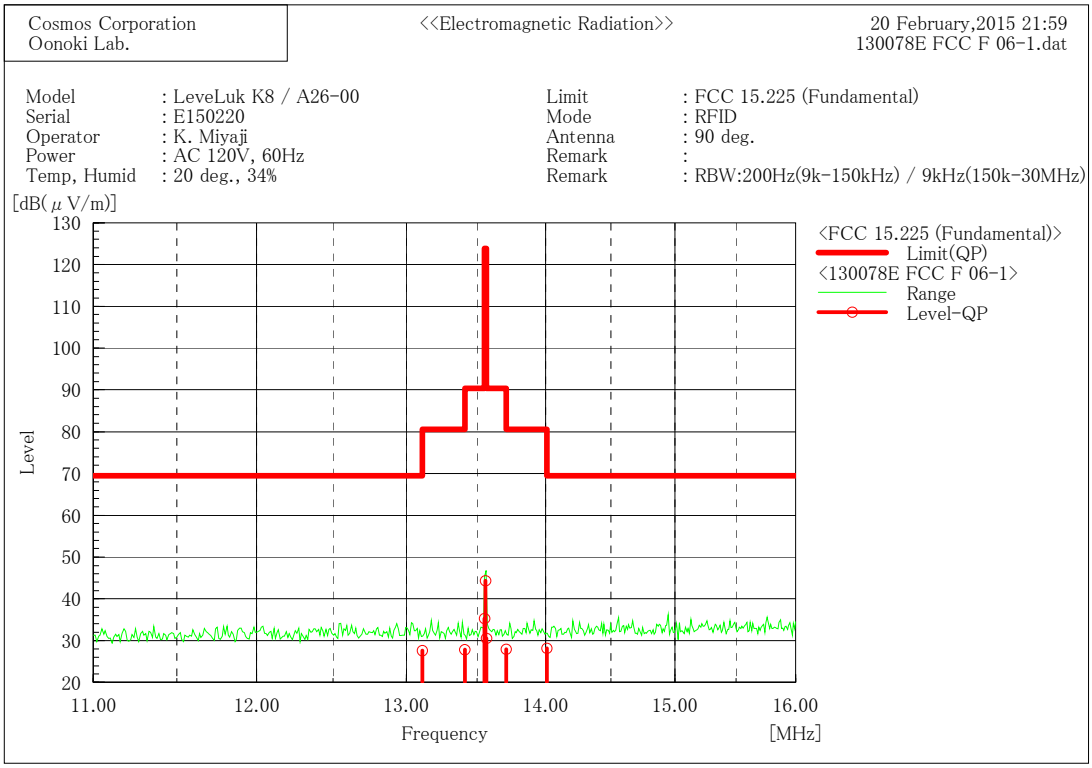
5.4.3 Test Detail (Continued)

Calculation
Result = Reading + c.f
= 5.1 + 22.5
= 27.6

Margin = Limit - Result
= 69.5 - 27.6
= 41.9

Note:
c.f (Correction Factor) = Cable Attenuation Factor + Antenna Factor

Test Data (Power Supply: AC 120 V, 60Hz)

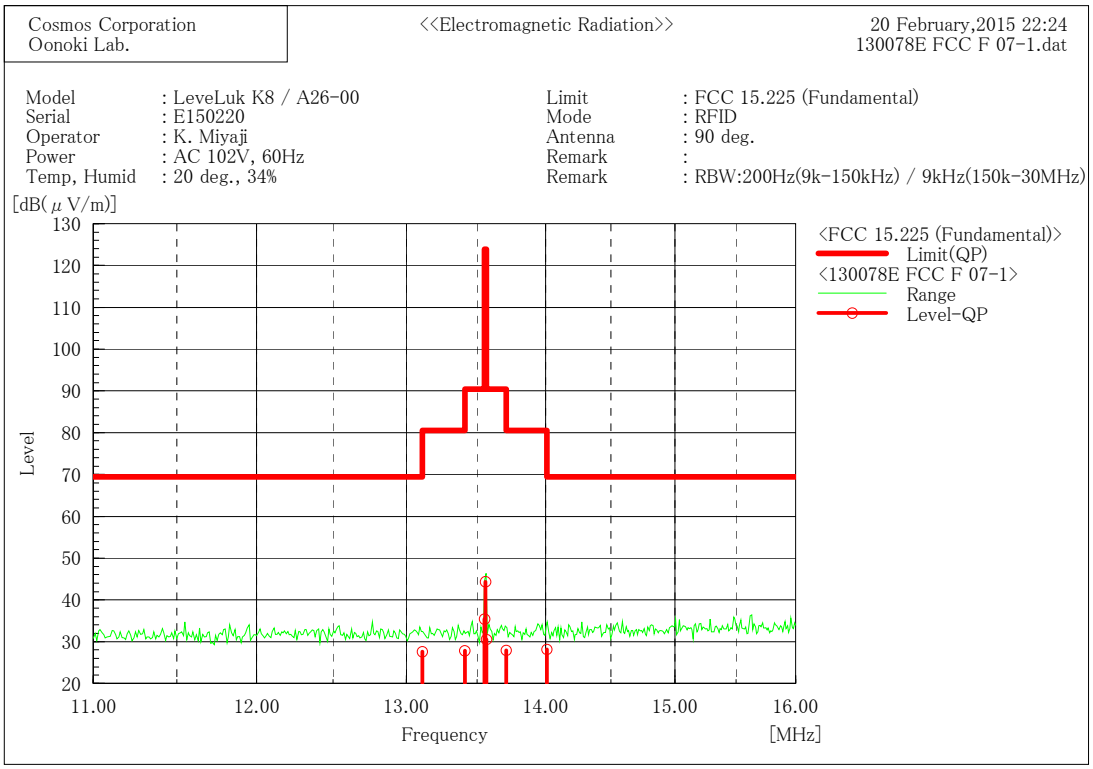


Final Result

No.	Frequency	Reading	c.f	Result	Limit	Margin	Angle
	[MHz]	[dB(μV)]	[dB(1/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB]	[°]
1	13.110	5.1	22.5	27.6	69.5	41.9	100.0
2	13.410	5.1	22.7	27.8	80.5	52.7	100.0
3	13.553	12.6	22.7	35.3	90.4	55.1	100.0
4	13.559	21.6	22.7	44.3	123.9	79.6	100.0
5	13.567	7.7	22.8	30.5	90.4	59.9	100.0
6	13.710	5.1	22.8	27.9	80.5	52.6	100.0
7	14.010	5.1	23.0	28.1	69.5	41.4	100.0

5.4.3 Test Detail (Continued)

Test Data (Power Supply: AC 102 V, 60Hz)

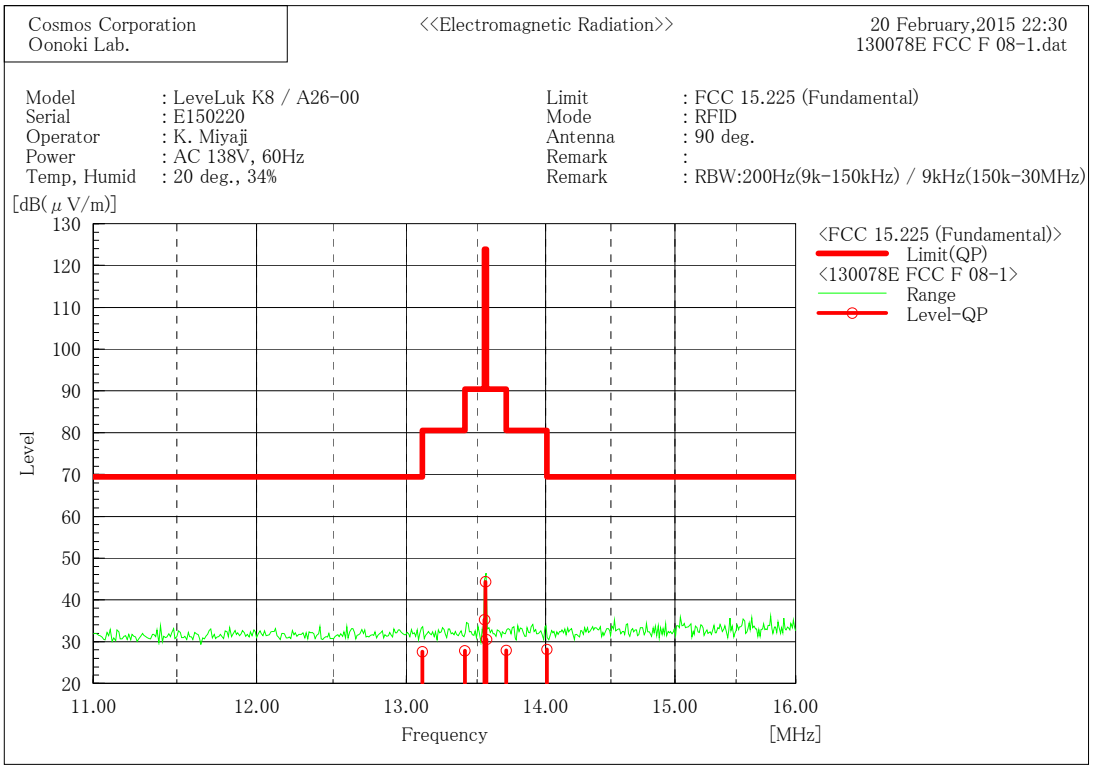


Final Result

No.	Frequency	Reading	c.f	Result	Limit	Margin	Angle
	[MHz]	[dB(μV)]	[dB(1/m)]	[dB(μV/m)]	[dB(μV/m)]	[dB]	[°]
1	13.110	5.1	22.5	27.6	69.5	41.9	100.0
2	13.410	5.1	22.7	27.8	80.5	52.7	100.0
3	13.553	12.7	22.7	35.4	90.4	55.0	100.0
4	13.559	21.6	22.7	44.3	123.9	79.6	100.0
5	13.567	7.7	22.8	30.5	90.4	59.9	100.0
6	13.710	5.1	22.8	27.9	80.5	52.6	100.0
7	14.010	5.1	23.0	28.1	69.5	41.4	100.0

5.4.3 Test Detail (Continued)

Test Data (Power Supply: AC 138 V, 60Hz)



Final Result

No.	Frequency [MHz]	Reading [dBμV]	c.f [dB(1/m)]	Result [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Angle [°]
1	13.110	5.1	22.5	27.6	69.5	41.9	100.0
2	13.410	5.1	22.7	27.8	80.5	52.7	100.0
3	13.553	12.6	22.7	35.3	90.4	55.1	100.0
4	13.559	21.6	22.7	44.3	123.9	79.6	100.0
5	13.567	7.7	22.8	30.5	90.4	59.9	100.0
6	13.710	5.1	22.8	27.9	80.5	52.6	100.0
7	14.010	5.1	23.0	28.1	69.5	41.4	100.0

5.5 Frequency Stability (15.225(e), RSS-210 A2.6)

Result: **PASS**

5.5.1 Setting Remarks

The EUT was placed in an environmental test chamber, exposed in extreme temperatures until its temperature is stabilized. The measurement was carried out at every 10℃ from -20℃ to +50℃ in the most common nominal supply voltage and the measurement was carried out at ±15% of rated voltage at 20℃.

5.5.2 Limit

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

5.5.3 Test Detail

Uncertainty of measurement result	:	±0.0021 Hz
Date of testing	:	February 9, 10 and 13, 2015
Room temperature	:	Refer to Test Data

Calculation

Deviation [Hz] = Measured Frequency - Center Frequency
= 13558827.9 - 1356000
= -1172.1

Deviation [ppm] = Deviation [Hz] ÷ Center Frequency × 1000000
= |-1172.1| ÷ 13560000 × 1000000
≒ 86.4

Margin = Limit - Deviation [ppm]
= 100 - 86.4
= 13.6

5.5.3 Test Detail (Continued)

Test Data

Temp [℃]	Operation Time	Measured Frequency [Hz]	Deviation [Hz]	Deviation [ppm]	Limit [ppm]	Margin [ppm]
50	Startup	13558827.9	-1172.1	86.4	100	13.6
	2 min	13558872.5	-1127.5	83.1	100	16.9
	5 min	13558826.7	-1173.3	86.5	100	13.5
	10 min	13559187.6	-812.4	59.9	100	40.1
40	Startup	13558854.1	-1145.9	84.5	100	15.5
	2 min	13558833.1	-1166.9	86.1	100	13.9
	5 min	13558898.2	-1101.8	81.3	100	18.7
	10 min	13558848.2	-1151.8	84.9	100	15.1
30	Startup	13558868.5	-1131.5	83.4	100	16.6
	2 min	13558876.4	-1123.6	82.9	100	17.1
	5 min	13558865.7	-1134.3	83.7	100	16.3
	10 min	13558864.6	-1135.4	83.7	100	16.3
20	Startup	13558868.6	-1131.4	83.4	100	16.6
	2 min	13558971.1	-1028.9	75.9	100	24.1
	5 min	13558881.3	-1118.7	82.5	100	17.5
	10 min	13558869.5	-1130.5	83.4	100	16.6
10	Startup	13558868.6	-1131.4	83.4	100	16.6
	2 min	13558873.5	-1126.5	83.1	100	16.9
	5 min	13558876.9	-1123.1	82.8	100	17.2
	10 min	13558877.0	-1123.0	82.8	100	17.2
0	Startup	13558851.6	-1148.4	84.7	100	15.3
	2 min	13558980.4	-1019.6	75.2	100	24.8
	5 min	13558894.5	-1105.5	81.5	100	18.5
	10 min	13558884.8	-1115.2	82.2	100	17.8
-10	Startup	13558816.5	-1183.5	87.3	100	12.7
	2 min	13558834.3	-1165.7	86.0	100	14.0
	5 min	13558838.7	-1161.3	85.6	100	14.4
	10 min	13558981.2	-1018.8	75.1	100	24.9
-20	Startup	13558773.9	-1226.1	90.4	100	9.6
	2 min	13558796.4	-1203.6	88.8	100	11.2
	5 min	13558803.4	-1196.6	88.2	100	11.8
	10 min	13558825.0	-1175.0	86.7	100	13.3

5.5.3 Test Detail (Continued)

Test Data

Temp [℃]	Supply Voltage [V]	Measured Frequency [Hz]	Deviation [Hz]	Deviation [ppm]	Limit [ppm]	Margin [ppm]
20	102	13558881.2	-1118.8	82.5	100	17.5
	120	13558869.5	-1130.5	83.4	100	16.6
	138	13558869.9	-1130.1	83.3	100	16.7

Test Data

Temp [℃]	Supply Voltage [V]	Measured Frequency [Hz]	Deviation [Hz]	Deviation [ppm]	Limit [ppm]	Margin [ppm]
50	120	13559187.60	318.1	23.5	100.0	76.5
20	120	13558869.50	reference value			
-20	120	13558825.00	-44.5	3.3	100.0	96.7
20	102	13558881.20	11.7	0.9	100.0	99.1
	138	13558869.90	0.4	0.0	100.0	100.0

5.6 Occupied Bandwidth (RSS-Gen 4.3)

Result: **PASS**

5.6.1 Setting Remarks

EUT directly connects to the spectrum analyzer via calibrated coaxial cable and 10 dB attenuator. The spectrum analyzer is set-up as following;

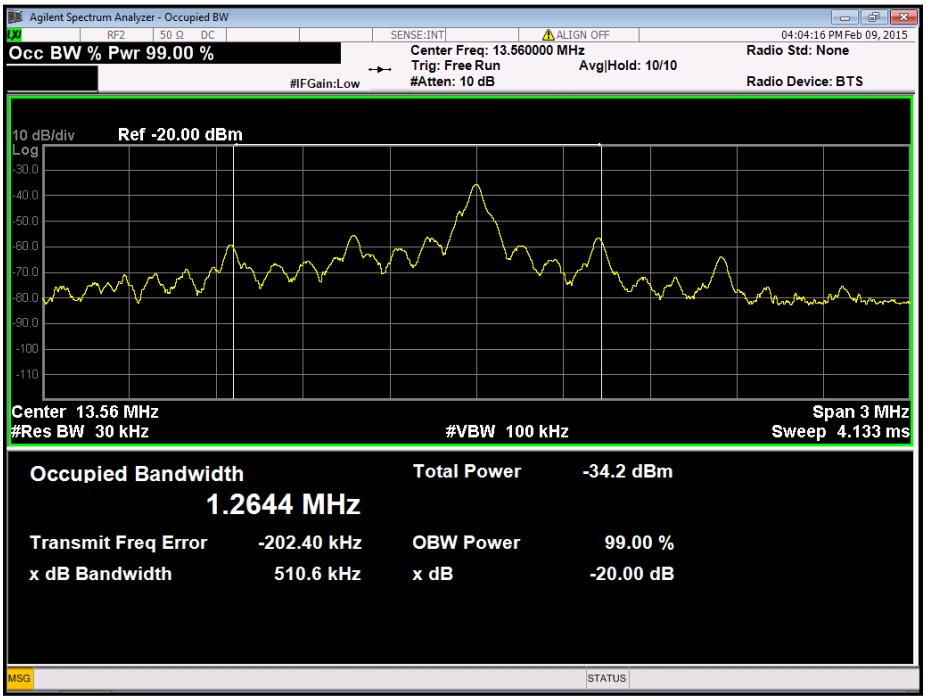
・Resolution Bandwidth	: Approx. 1% of the span
・Video Bandwidth	: 3 × RBW
・Sweep	: Auto
・Detector Mode	: RMS
・Trace Mode	: Max Hold

5.6.2 Test Detail

Uncertainty of measurement result	:	±0.011%
Date of testing	:	February 9, 2015
Room temperature	:	20℃
Relative humidity	:	35%

5.6.2 Test Detail (Continued)

Test Data



6. List of Test and Measurement Instruments

AC Power Line Conducted Emission

Instruments	Manufacturer	Model	Serial No.	Calibrated Date/Until
EMI Test Receiver	ROHDE& SCHWARZ	ESCI	100413	2014/11/27 2015/11/26
Artificial-Mains Network /Highpass Filter /Attenuator 10 dB	Kyoritsu /Kyoritsu /TAMAGAWA	KNW-341C (F) /KFL-007 /CFA-03	8-1659-1 /8-1708-10 /---	2015/01/27 2016/01/26
RF Cable	Fujikura	3D-2W	OC01	2014/04/07 2015/04/06
	SUHNER	RG223/U	OC02 OC04	
RF Selector	TSJ	RFM-E221	3148	2014/04/07 2015/04/06
Software	TOYO	EP5/CE (ver5.3.20)	---	---

Transmitter Spurious Emission (Radiated) (Below 30 MHz) / Field Strength of Fundamental Emission

Instruments	Manufacturer	Model	Serial No.	Calibrated Date/Until
EMI Test Receiver	ROHDE& SCHWARZ	ESIB40	100211	2014/03/24 2015/03/23
Loop Antenna (9 kHz to 30 MHz)	SCHAFFNER	HLA6120	1137	2014/10/05 2015/10/04
Anechoic Chamber 3 m	JSE	COAC3M-01	---	2014/05/19 2015/05/18
RF Cable (9 kHz to 30 MHz)	Fujikura	5D-2W	OC09	2014/10/08 2015/10/07
	SUHNER	RG223/U	OC10 OC11 OC12	
RF Selector	TSJ	RFM-E121	03149	2014/10/08 2015/10/07
Thermostatic Chamber	ESPEC	PU-2KP	14010409	2014/08/21 2015/08/20
Software	TOYO	EP5/ME (ver 5.1.40)	---	---

6. List of Test and Measurement Instruments (Continued)

Transmitter Spurious Emission (Radiated) (Above 30 MHz)

Instruments	Manufacturer	Model	Serial No.	Calibrated Date/Until
EMI Test Receiver	ROHDE & SCHWARZ	ESIB40	100211	2014/03/24 2015/03/23
Pre-Amplifier	HEWLETT PACKARD	8447D OPT 010	2944A 07891	2014/04/14 2015/04/13
Biconical Antenna (30 MHz to 300 MHz)	SCHWARZBECK	VHBB9124 / BBA9106	9124-311	2014/08/30 2015/08/29
Log-Periodic Antenna (300 MHz to 1 GHz)	SCHWARZBECK	UHALP9108-A	0645	2014/08/30 2015/08/29
Anechoic Chamber 3 m	JSE	COAC3M-01	---	2014/05/19 2015/05/18
Attenuator 3 dB	JFW	50FP-003-H2	---	2014/04/14 2015/04/13
RF Cable	Fujikura	8D-2W	OC14	2014/05/22 2015/05/21
	SUHNER	RG223/U	OC11	
		RG214/U	OC15 OC16	
		RG400/U	OC17	
RF Selector	TSJ	RFM-E121	03149	2014/05/22 2015/05/21
Software	TOYO	EP5/RE (ver 5.7.1)	---	---

20 dB Bandwidth / Frequency Stability / Occupied Bandwidth

Instruments	Manufacturer	Model	Serial No.	Calibrated Date/Until
EMI Test Receiver	Agilent Technologies	N9038A	MY54130015	2014/06/13 2015/06/12
Thermostatic Chamber	ESPEC	PU-2KP	14010409	2014/08/21 2015/08/20

7. Appendix

Refer to separated files for the following appendixes.
Appendix 1: Photograph of EUT
Appendix 2: External Photographs
Appendix 3: Photographs of the Test Setup