



TEST REPORT



Report No. : KES-EM241804-R1

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KES Co., Ltd.

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1. Client

Applicant : JTECH Global Enterprises Inc
Applicant Address : 1965 Evergreen Blvd, Ste 300, Duluth, Georgia 30096, United States

2. Sample Description

Product name : NoQ Transmitter
Model/Type No. : NQTX
Variant Model : -
Manufacturer : Lee Technology Korea Co.,Ltd.
Manufacturer Address : 47, Ojeong-ro, Ojeong-gu, Bucheon-si, Gyeonggi-do, Korea

3. FCC ID : 2BHHL-NQTX
IC Number : 32791-NQTX

4. Date of Receipt : May. 30, 2024

5. Test date : Jun. 12, 2024 ~ Jun. 13, 2024

6. Date of Issue : Jun. 25, 2024

7. Test Results : In Compliance

Tested by

[원동현]2024/07/25

Reviewed by

[장동훈]2024/07/25

Dong Hyun, Won
EMC Test Engineer

Dong Hun, Jang
EMC Technical Manager



REPORT REVISION HISTORY

Date	Test Report No.	Revision History
Jun. 17, 2024	KES-EM241804	Issued
Jun. 25, 2024	KES-EM241804-R1	Reissuance due to business name, address, FCC ID, and IC Number modification

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1.0 General Product Description

Main Specifications of EUT are:

Item		Issue
Frequency		(450.025 ~ 469.975) MHz
I/O Port		USB C Type 2 EA, 2 Pin 10 EA
Power		DC 5 V (Adapter)
Function	Product Features	Transmitter
	Wireless Function	(450.025 ~ 469.975) MHz



1.1 Test Voltage & Frequency

Unless indicated otherwise on the individual data sheet or test results, the test voltage and frequency was as indicated below.

☒ AC 120 V, 60 Hz (Adapter)

1.2 Variant Model Differences

Not applicable

1.3 Device Modifications

Not applicable

1.4 Equipment Under Test

Description	Model Number	Serial Number	Manufacturer	Remarks
NoQ Transmitter	NQTX	-	Lee Technology Korea Co.,Ltd.	EUT

1.5 Support Equipments

Description	Model Number	Serial Number	Manufacturer	Remarks
Adapter	SPE-N8TC21	-	Dongguan Yahui Electronic Technology Co., Ltd.	-
Pager 1	NQPG	-	Lee Technology Korea Co.,Ltd.	
Pager 2	NQPG	-	Lee Technology Korea Co.,Ltd.	
Smartphone	Moto g54 5G	-	Motorola	

1.6 External I/O Cabling

Start		END		Cable Spec.	
Description	I/O Port	Description	I/O Port	Length	Shield
NoQ Transmitter (EUT)	USB C Type	Adapter	USB	1.8	U
	2 Pin	Pager 1	2 Pin	-	-
	USB C Type	Smartphone	USB C Type	2.1	U
	Wireless	Pager 2	Wireless	-	-

* Unshielded = U, Shielded = S

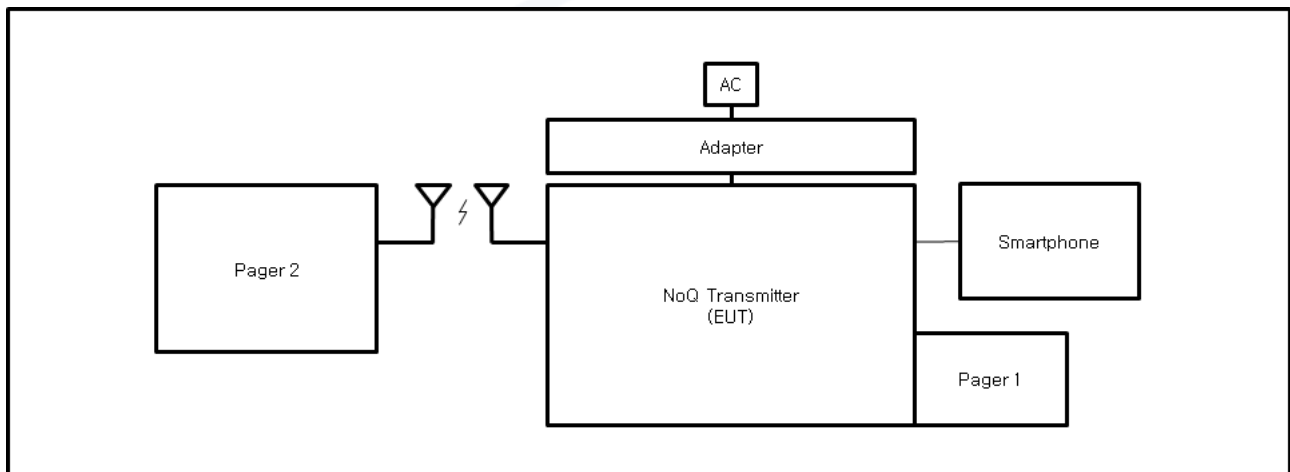


1.7 EUT Operating Mode(s)

Test mode	operating
Operating	1. Normal Charge was confirmed through EUT`s LED or Pager 1`s LED. 2. Checked the Wireless connection status through Pager 2`s LED.

EUT Test operating S/W		
Name	Version	Manufacture Company
-	-	-

1.8 Configuration



EUT – Pager 2 : (450 ~ 470) MHz



1.9 Remarks when standards applied

N/A

1.10 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. The maximum time between calibrations is one year or what is recommended by the manufacturer, whichever is less.

1.11 Test Facility

The measurement facility is located at 473-21, Gayeo-ro, Yeosu-si, Gyeonggi-do, 12658, Korea, Republic of. The sites are constructed in conformance with the requirements of ANSI C63.4a-2017 and CISPR 16-1-4:2019

1.12 Measurement Procedure

- Conducted Emissions

The conducted emission levels were measured on each current-carrying line with the spectrum analyzer operating in the CISPR quasi-peak mode (or peak mode if applicable). The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. If the conducted emission exceed the average limit with the instrument set to the quasi-peak mode, the measurements are made in the average mode. The emission spectrum was scanned from 150 kHz to 30 MHz. The highest emission amplitudes relative to the appropriate limits were measured and have been recorded. Quasi-peak readings are distinguished with a "QP".

- Radiated Electric Field Emissions

The test was done at a SEMI ANECHOIC CHAMBER with quasi-peak detector. The final test data was measured using a Quasi-Peak detector below 1 GHz at 10 m or 3 m distance and a Peak and Average detector above 1 GHz at 3 m distance. Test was proceeded worst case test mode and cable configuration.

Measurements were made with the antenna positioned in both the horizontal and vertical planes of polarization. The antenna height was varied from 1 m to 4 m and the EUT was rotated 360° to find the maximum emitting point for each frequency.

Measurement procedures was In accordance with ANSI C63.4-2014 7.3.3, 7.3.4, 8.3.1.1, 8.3.1.2, 8.3.2.1, 8.3.2.2



1.13 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Logo
KOREA	RRA	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 KR0100
International	KOLAS	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 KT489
USA	FCC	3 m & 10 m Semi-Anechoic Chamber Conducted test site to perform FCC Part 15/18 measurements.	 KR0100
Canada	ISED	3 m & 10 m Semi-Anechoic Chamber and Conducted test site	 23298
JAPAN	VCCI	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site)	 C-20136, T-20137, R-20181, G-20176
Europe	TÜV SÜD	EMI (3 m & 10 m Semi-Anechoic Chamber and conducted test site) EMS (ESD, RS, EFT/Burst, Surge, CS, Magnetic, Dips and interruptions)	 CARAT 001633 0008



2.0 Test Regulations

The emissions tests were performed according to following regulations:

☒ **47 CFR Part 15, Subpart B**

☐ CISPR 22:2009 +A1:2010

☐ Class A

☐ Class B

☒ ANSI C63.4a-2017

☒ Class A

☐ Class B

☒ **IC Regulation ICES-003 Issue 7**

☐ CAN/CSA-CISPR 32:17

☐ Class A

☐ Class B

☒ ANSI C63.4a-2017

☒ Class A

☐ Class B



2.1 Conducted Emissions at Mains Power Ports

Test Date

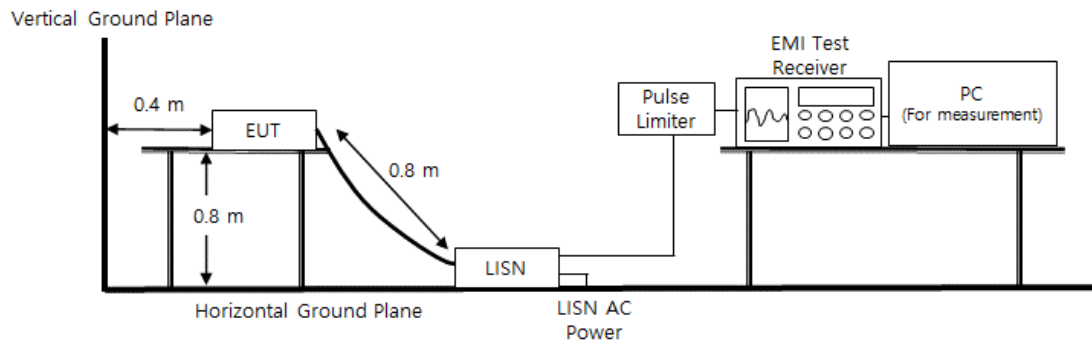
Jun. 12, 2024

Test Location

Electro wave Shieldroom #6

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due	calibration interval
☒	EMI Test S/W	EMC32	R & S	9.12.00	-	-
☒	EMI TEST RECEIVER	ESR3	R & S	101783	11, 08, 2024	1 Year
☒	LISN	ENV216	R & S	101787	11, 08, 2024	1 Year
☐	LISN	ENV216	R & S	101137	01, 10, 2025	1 Year
☒	PULSE LIMITER	ESH3-Z2	R & S	101915	11, 08, 2024	1 Year

Diagram of test setup



Test Conditions

Temperature: (23,0 ± 0,1) °C
Relative Humidity: (46,1 ± 0,1) % R.H.

Frequency Range of Measurement

150 kHz to 30 MHz

Instrument Settings

IF Band Width: 9 kHz

Test Results

The requirements are:

- ☒ PASS
- ☐ NOT PASS
- ☐ NOT APPLICABLE

Remarks

See Appendix A for test data.



2.2 Radiated Electric Field Emissions(Below 1 GHz)

Test Date

Jun. 12, 2024

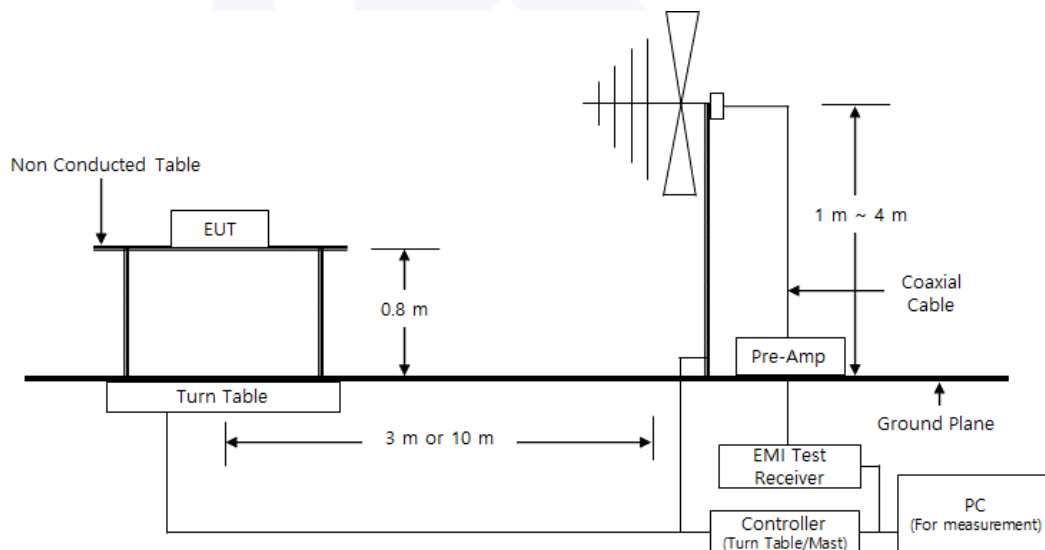
Test Location

☐ OPEN AREA TEST SITE #2☒ SEMI ANECHOIC CHAMBER #4(10m)

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due	calibration interval
☒	EMI Test S/W	EP5/RE	TOYO Corporation	6.0.0	-	-
☒	EMI TEST RECEIVER	ESU26	R & S	100551	02, 13, 2025	1 Year
☒	AMPLIFIER	SCU 01	R & S	100603	11, 08, 2024	1 Year
☒	TRILOG-BROADBAND ANTENNA	VULB9163	Schwarzbeck	715	11, 17, 2024	2 Year
☒	ATTENUATOR	8491A	HP	32173	02, 13, 2025	1 Year

Diagram of test setup





Test Conditions

Temperature: (23,2 ± 0,1) °C
Relative Humidity: (45,9 ± 0,1) % R.H.

Frequency Range of Measurement

30 MHz to 1 GHz

Instrument Settings

IF Band Width: 120 kHz

Test Results

The requirements are:

- ☒ PASS
- ☐ NOT PASS
- ☐ NOT APPLICABLE

Remarks

See Appendix A for test data.



2.3 Radiated Electric Field Emissions(Above 1 GHz)

Test Date

Jun. 13, 2024

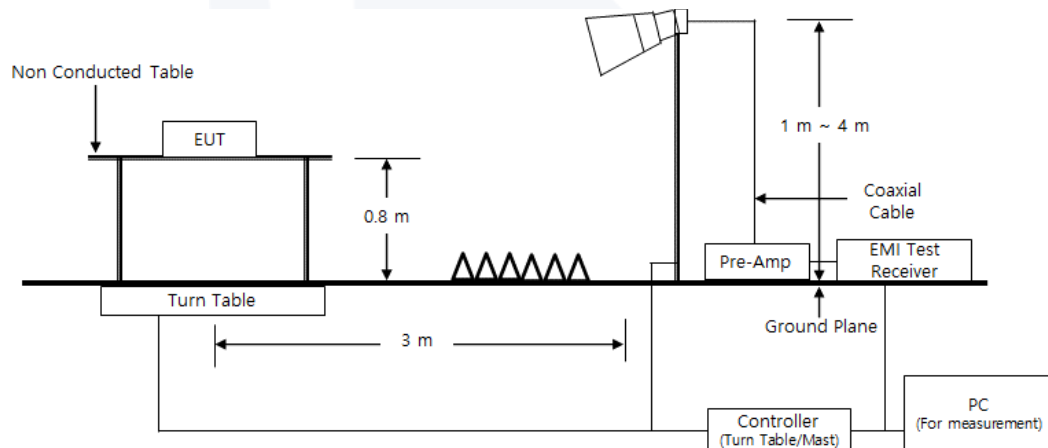
Test Location

SEMI ANECHOIC CHAMBER #5

Test Equipment

Used	Description	Model Number	Manufacturer	Serial Number	Cal. Due	calibration interval
☒	EMI Test SW	ES10/RE	TOYO Corporation	2022.01.000	-	-
☒	EMI TEST RECEIVER	ESU26	Rohde & Schwarz	100552	02, 13, 2025	1 Year
☒	HORN ANTENNA	BBHA 9120D	SCHWARZBECK	9120D-1802	11, 03, 2024	1 Year
☒	PREAMPLIFIER	8449B	HP	3008A00538	04, 30, 2025	1 Year
☒	ATTENUATOR	8491B	HP	23094	02, 13, 2025	1 Year

Diagram of test setup





Test Conditions

Temperature: (24,3 ± 0,1) °C
Relative Humidity: (46,4 ± 0,1) % R.H.

Frequency Range of Measurement

1 GHz to 2 GHz

Instrument Settings

IF Band Width: 1 MHz

Test Results

The requirements are:

- ☒ PASS
- ☐ NOT PASS
- ☐ NOT APPLICABLE

Remarks

- See Appendix A for test data.
- The Average of the test data is the cispr average result.



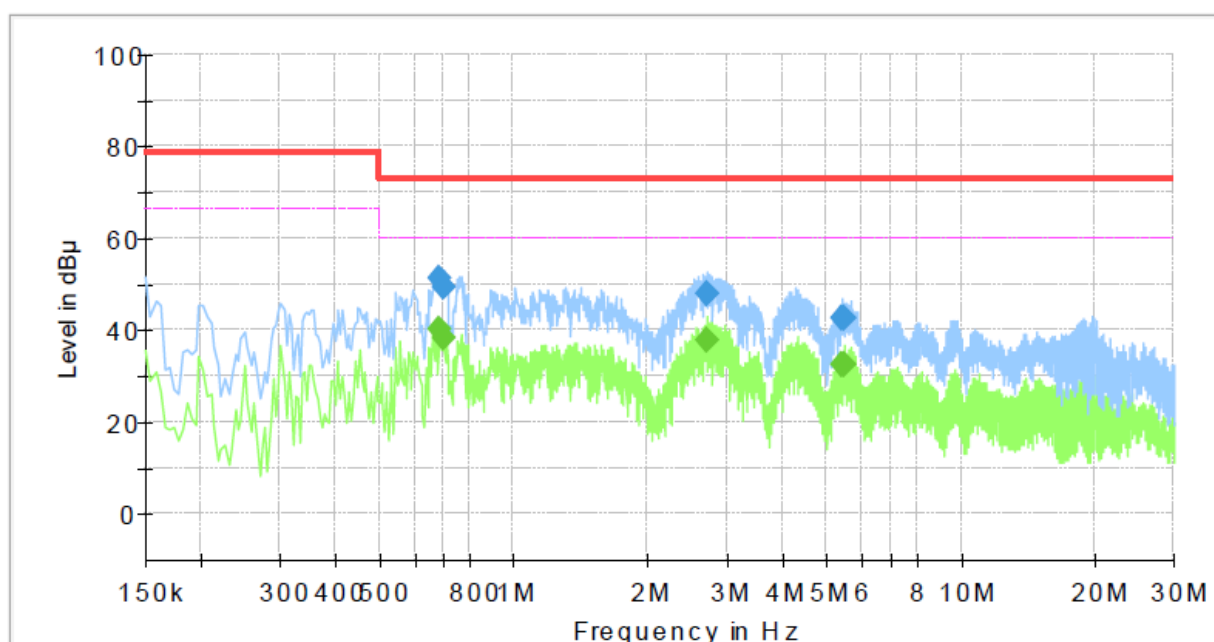
APPENDIX A – TEST DATA

Conducted Emissions at Mains Power Ports

HOT LINE

Common Information

Test Description: Conducted Emission
Job No.: KES-EM241804
Phase: L1
Mode:
Operator Name: KES



Final Result

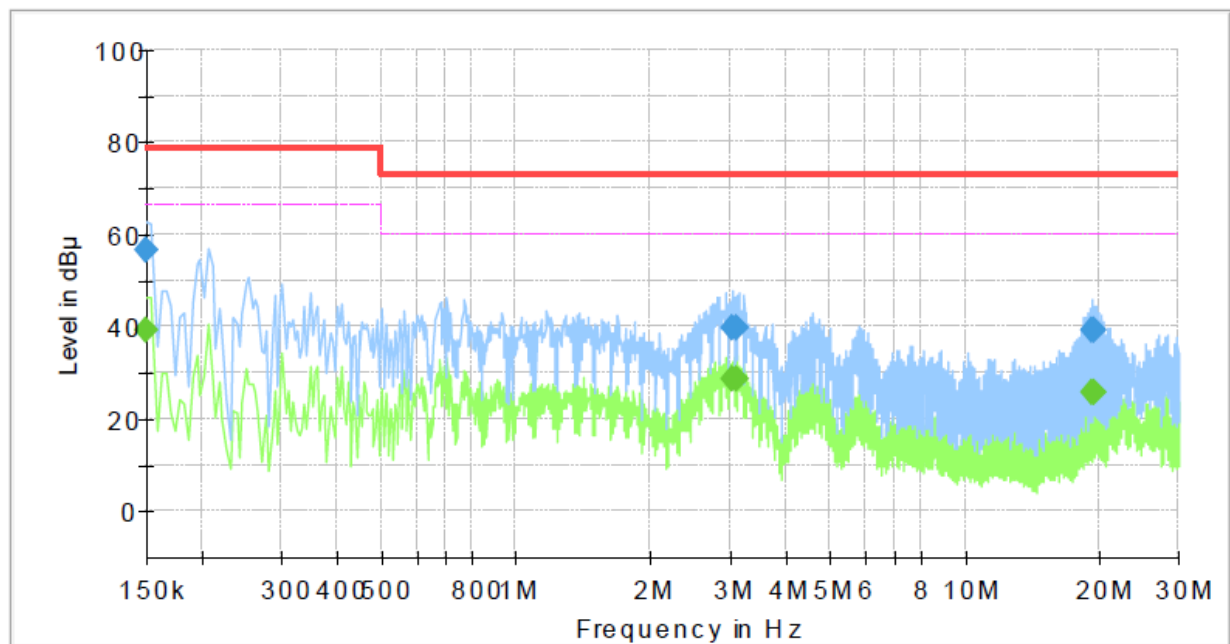
Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.686000	---	40.18	60.00	19.82	1000.0	9.000	L1	19.5
0.686000	51.42	---	73.00	21.58	1000.0	9.000	L1	19.5
0.698000	---	38.08	60.00	21.92	1000.0	9.000	L1	19.5
0.698000	49.29	---	73.00	23.71	1000.0	9.000	L1	19.5
2.702000	---	37.87	60.00	22.13	1000.0	9.000	L1	19.7
2.702000	47.95	---	73.00	25.05	1000.0	9.000	L1	19.7
5.422000	---	32.64	60.00	27.36	1000.0	9.000	L1	20.0
5.422000	42.68	---	73.00	30.32	1000.0	9.000	L1	20.0
5.486000	---	32.69	60.00	27.31	1000.0	9.000	L1	20.0
5.486000	42.56	---	73.00	30.44	1000.0	9.000	L1	20.0



NEUTRAL LINE

Common Information

Test Description: Conducted Emission
Job No.: KES-EM241804
Phase: N
Mode:
Operator Name: KES

**Final Result**

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)
0.150000	---	38.99	66.00	27.01	1000.0	9.000	N	19.5
0.150000	56.48	---	79.00	22.52	1000.0	9.000	N	19.5
3.050000	---	28.53	60.00	31.47	1000.0	9.000	N	19.8
3.050000	39.80	---	73.00	33.20	1000.0	9.000	N	19.8
3.090000	---	28.61	60.00	31.39	1000.0	9.000	N	19.8
3.090000	39.56	---	73.00	33.44	1000.0	9.000	N	19.8
19.246000	---	25.76	60.00	34.24	1000.0	9.000	N	20.9
19.246000	39.45	---	73.00	33.55	1000.0	9.000	N	20.9
19.362000	---	25.49	60.00	34.51	1000.0	9.000	N	21.0
19.362000	39.44	---	73.00	33.56	1000.0	9.000	N	21.0

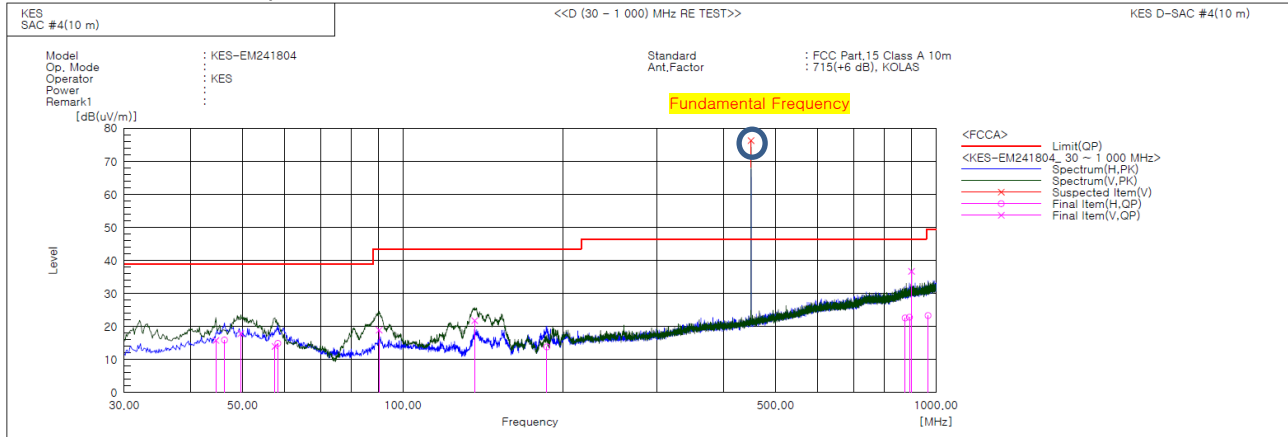
♦ Calculation

QuasiPeak[dBuV] / CAverage [dBuV] = Reading Value[dBuV] + Corr. [dB]

QuasiPeak / CAverage : The Final Value

Reading Value : Not shown in the table.

Corr. : Correction values (LISN FACTOR + (Cable Loss + Pulse Limiter FACTOR))

**Radiated Electric Field Emissions(Below 1 GHz)****- 47 CFR Part 15, Subpart B****Final Result**

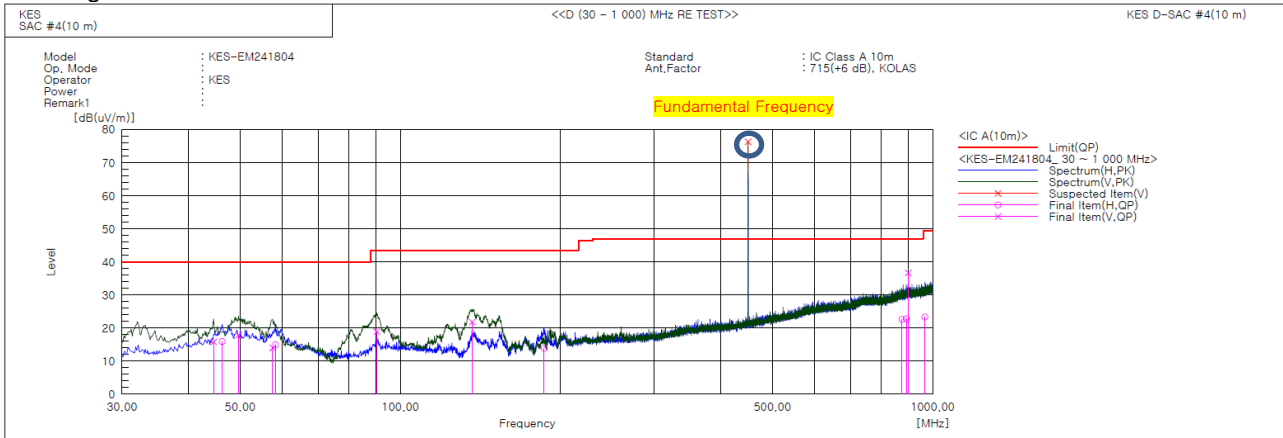
No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	44.550	V	37.4	-21.6	15.8	39.0	23.2	114.0	112.0	
2	46.248	H	37.3	-21.4	15.9	39.0	23.1	299.0	73.0	
3	49.643	V	39.0	-21.1	17.9	39.0	21.1	148.0	161.0	
4	57.524	V	35.7	-21.7	14.0	39.0	25.0	129.0	73.0	
5	58.251	H	36.7	-21.8	14.9	39.0	24.1	210.0	1.0	
6	90.261	V	43.0	-24.1	18.9	43.5	24.6	152.0	153.0	
7	136.336	V	47.1	-25.3	21.8	43.5	21.7	100.0	105.0	
8	186.170	H	36.3	-22.5	13.8	43.5	29.7	302.0	269.0	
9	875.598	H	26.0	-3.4	22.6	46.5	23.9	385.0	337.0	
10	891.603	H	26.0	-3.2	22.8	46.5	23.7	398.0	204.0	
11	900.090	V	39.8	-3.1	36.7	46.5	9.8	150.0	334.0	
12	967.020	H	25.8	-2.5	23.3	49.5	26.2	400.0	221.0	
13	450.010	V	-----	-12.7	-----	46.5	-----	100.0	334.0	

* Exclusion bands

- Fundamental Frequency: 450 MHz



- IC Regulation ICES-003 Issue 7



Final Result

No.	Frequency [MHz]	(P)	Reading QP [dB(uV)]	c.f [dB(1/m)]	Result QP [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]	Remark
1	44.550	V	37.4	-21.6	15.8	40.0	24.2	114.0	112.0	
2	46.248	H	37.3	-21.4	15.9	40.0	24.1	299.0	73.0	
3	49.643	V	39.0	-21.1	17.9	40.0	22.1	148.0	161.0	
4	57.524	V	35.7	-21.7	14.0	40.0	26.0	129.0	73.0	
5	58.251	H	36.7	-21.8	14.9	40.0	25.1	210.0	1.0	
6	90.261	V	43.0	-24.1	18.9	43.5	24.6	152.0	153.0	
7	136.336	V	47.1	-25.3	21.8	43.5	21.7	100.0	105.0	
8	186.170	H	36.3	-22.5	13.8	43.5	29.7	302.0	269.0	
9	875.598	H	26.0	-3.4	22.6	47.0	24.4	385.0	337.0	
10	891.603	H	26.0	-3.2	22.8	47.0	24.2	398.0	204.0	
11	900.090	V	39.8	-3.1	36.7	47.0	10.3	150.0	334.0	
12	967.020	H	25.8	-2.5	23.3	49.5	26.2	400.0	221.0	
13	450.010	V	-----	-12.7	-----	47.0	-----	100.0	334.0	

* Exclusion bands

- Fundamental Frequency: 450 MHz

◆ Calculation

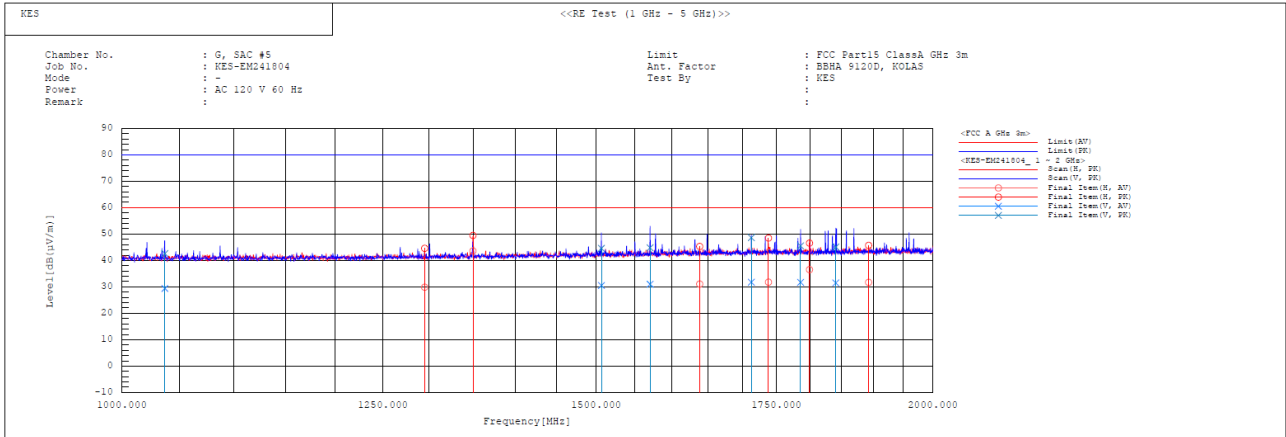
$$\text{Result(QP)} [\text{dB}(\mu\text{V/m})] = (\text{Reading(QP)} [\text{dB}(\mu\text{V})] + \text{c.f} [\text{dB}(1/\text{m})])$$
$$\text{Margin(QP)} [\text{dB}] = \text{Limit} [\text{dB}(\mu\text{V/m})] - \text{Result(QP)} [\text{dB}(\mu\text{V/m})]$$

Reading(QP) : Reading value, Result(QP) : Reading value + Factor value

Limit(QP) : Limit value, c.f : (ANT Factor + Cable Loss - Preamp Factor), Margin: Margin value

**Radiated Electric Field Emissions(Above 1 GHz)**

- (1 ~ 2) GHz

**Final Result**

No.	Frequency [MHz]	Pol	Reading AV [dB(μV)]	Reading PK [dB(μV)]	c.f [dB(1/m)]	Result AV [dB(μV/m)]	Result PK [dB(μV/m)]	Limit AV [dB(μV/m)]	Limit PK [dB(μV/m)]	Margin AV [dB]	Margin PK [dB]	Height [cm]	Angle [deg]	Remark
1	1037.350	V	30.7	43.9	-1.3	29.4	42.6	60.0	80.0	30.6	37.4	150.0	347.1	
2	1295.205	H	29.8	44.5	0.1	29.9	44.6	60.0	80.0	30.1	35.4	285.0	140.0	
3	1349.747	H	43.2	49.1	0.4	43.6	49.5	60.0	80.0	16.4	30.5	400.0	355.2	
4	1506.419	V	29.4	43.5	1.1	30.5	44.6	60.0	80.0	29.5	35.4	146.0	275.0	
5	1570.439	V	29.6	43.4	1.4	31.0	44.8	60.0	80.0	29.0	35.2	128.0	315.4	
6	1638.412	H	29.4	43.6	1.7	31.1	45.3	60.0	80.0	28.9	34.7	198.0	338.8	
7	1712.400	V	29.8	46.6	2.0	31.8	48.6	60.0	80.0	28.2	31.4	100.0	183.0	
8	1737.625	H	29.7	46.4	2.1	31.8	48.5	60.0	80.0	28.2	31.5	299.0	3.4	
9	1785.889	V	29.4	43.2	2.3	31.7	45.5	60.0	80.0	28.3	34.5	102.0	325.7	
10	1799.526	H	34.2	44.3	2.3	36.5	46.6	60.0	80.0	23.5	33.4	303.0	5.8	
11	1840.402	V	29.0	42.6	2.5	31.5	45.1	60.0	80.0	28.5	34.9	100.0	245.1	
12	1892.800	H	28.9	42.9	2.8	31.7	45.7	60.0	80.0	28.3	34.3	199.6	249.2	

◆ Calculation
$$\text{Result(PK/CAV)} [\text{dB}(\mu\text{V/m})] = (\text{Reading(PK/CAV)} [\text{dB}(\mu\text{V})] + \text{c.f} [\text{dB}(1/\text{m})])$$
$$\text{Margin(PK/CAV)} [\text{dB}] = \text{Limit} [\text{dB}(\mu\text{V/m})] - \text{Result(PK/CAV)} [\text{dB}(\mu\text{V/m})]$$

Reading(PK/CAV) : Reading value, Result(PK/CAV) : Reading value + Factor value

Limit(QP) : Limit value, c.f : (ANT Factor + Cable Loss - Preamp Factor), Margin: Margin value