



Nemko Korea Co., Ltd.

155, 153 and 159, Osan-ro, Mohyeon-eup, Cheoin-gu, Yongin-si, Gyeonggi-do 16885 Republic of Korea
TEL : + 82 31 330 1700 FAX : + 82 31 322 2332

Supplier's Declaration of Conformity

Applicant :

KAONMEDIA Co., Ltd.

Dates of Issue : May 21, 2019

KAONMEDIA Building, 884-3, Seongnam-daero,

Test Report No. : NK-19-E-0107

Bundang-gu, Seongnam-si, Gyeonggi-do, 13517

Test Site : Nemko Korea Co., Ltd.

Attn : Mr. Hee Sung Park

EMC site, Korea

Model

CG3000

Variant Model

CG3000-LD42J, CG3000-LD4NJ, SR820ac

Trade Mark

KAONMEDIA Co., Ltd.

Contact Person

KAONMEDIA Co., Ltd.
KAONMEDIA Building, 884-3, Seongnam-daero, Bundang-gu,
Seongnam-si, Gyeonggi-do, 13517, South Korea
Mr. Hee Sung Park
Telephone No. : +82 31 724 8500

Applied Standard : FCC 47 CFR Part 15 Subpart B & Part 2, ICES-003 Issue 6

Classification : FCC Class B Device

EUT Type : DOCSIS3.1 Gateway (IT)

The device bearing the brand name and model specified above has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4-2014.

The test results of this report are deemed satisfactory evidence of compliance with Industry Canada Interference-causing Equipment Standard ICES-003.

I attest to the accuracy of data and all measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

 May 21, 2019

Tested By : Kyounghoon Lee
Engineer

 May 21, 2019

Reviewed By : Hyojung Lee
Technical Manager

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SCOPE

Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission under FCC part 15.

Responsible Party :	KAONMEDIA Co., Ltd.
Contact Person :	Mr. Hee Sung Park Tel No.: +82 31 724 8500
Manufacturer :	KAONMEDIA Co., Ltd. KAONMEDIA Building, 884-3, Seongnam-daero, Bundang-gu, Seongnam-si, Gyeonggi-do, 13517, South Korea

- Model: CG3000
- Variant Model: CG3000-LD42J, CG3000-LD4NJ, SR820ac
- EUT Type: DOCSIS3.1 Gateway (IT)
- Trade Mark: KAONMEDIA Co., Ltd.
- Rating:
 - Configuration 1
 - Input : a.c. (100-240) V, 50 Hz and 60 Hz, 1.2 A max
 - Output : d.c. 12 V, 3.33 A
 - Configuration 2
 - Input : a.c. (100-240) V, 50 Hz and 60 Hz, 0.8 A
 - d.c. 12 V, 2.5 A
- Test Voltage & Power Frequency: a.c. 120 V, 60 Hz
- Clock: 512 MB
- Classification: FCC Class B Device
- Applied Standard: FCC 47 CFR Part 15 Subpart B & Part 2, ICES-003 Issue 6
- Test Procedure(s): ANSI C63.4-2014
- Dates of Test: February 19, 2018 to March 24, 2019
- Place of Tests: Nemko Korea Co., Ltd. EMC Site
- Test Report No.: NK-19-E-0107
- Remark:
 - The model CG3000-LD42J was tested and was recorded in this test report configuration 1.
 - The model CG3000-LD4NJ was tested and was recorded in this test report configuration 2.

INTRODUCTION

The measurement procedure described in American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz (ANSI C63.4-2014) was used in determining radiated and conducted emissions emanating from **KAONMEDIA Co., Ltd.**

MODEL : **CG3000, DOCSIS3.1 Gateway (IT)**

These measurement tests were conducted at **Nemko Korea Co., Ltd. EMC Laboratory**.
The site address is 155, 153 and 159, Osan-ro, Mohyeon-eup, Cheoin-gu, Yongin-si, Gyeonggi-do 16885 Republic of Korea

The area of Nemko Korea Corporation Ltd. EMC Test Site is located in a mountain area at 80 kilometers (48 miles) southeast and Incheon International Airport (Incheon Airport), 30 kilometers (18 miles) south-southeast from central Seoul.

The Nemko Korea Co., Ltd. Has been accredited as a Conformity Assessment Body (CAB).



Nemko Korea Co., Ltd.
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Fig. 1. The map above shows the Seoul in Korea vicinity area.
The map also shows Nemko Korea Corporation Ltd. EMC Lab and Incheon Airport.

TEST CONDITIONS & EUT INFORMATION

Operating During Test

[Configuration 1]

- ① Ping + 2.4 GHz + Tel 1 + Tel 2
- ② Ping + 5.0 GHz + Tel 1 + Tel 2

[Configuration 2]

- ① Ping + 2.4 GHz
- ② Ping + 5.0 GHz

Support Equipment

[Configuration 1]

DOCSIS3.1 Gateway (IT) (EUT)	KAONMEDIA Co., Ltd. Model : CG3000-LD42J	FCC Supplier DoC S/N : N/A
AC Adaptor	MOSO Model : MSA-C3330IS12.0-40X-US	S/N : 9076U0901321000017
Laptop Computer	Samsung Electronics Co., Ltd. Model : NT500R5K	S/N : 0FLY91LG300186P
Adaptor	Chicony Power Technology (SUZHOU) co., Ltd. Model : CPA09-004A	S/N : CN60BA4400297ADON84C2095J
USB Flash Drive	Sandisk Model : SDCZ48-016G	S/N : N/A
Telephone 1	shinwoo electronics Model : GS-460WA*	S/N : 304VNUQ033926
Telephone 2	shinwoo electronics Model : GS-460	S/N : 211KS17847

[Configuration 2]

DOCSIS3.1 Gateway (IT) (EUT)	KAONMEDIA Co., Ltd. Model : CG3000-LD4NJ	FCC Supplier DoC S/N : N/A
Switching Mode Power Adaptor	ChenZhou Fecom electronics Co., Ltd. Model : F30L9-120250SPAU	S/N : 30WJ2K99034A
Laptop Computer	Samsung Electronics Co., Ltd. Model : NT500R5K	S/N : 0FLY91LG300186P
Adaptor	Chicony Power Technology (SUZHOU) co., Ltd. Model : CPA09-004A	S/N : CN60BA4400297ADON84C2095J
USB Flash Drive	Sandisk Model : SDCZ48-016G	S/N : N/A

Component List

[Configuration 1]

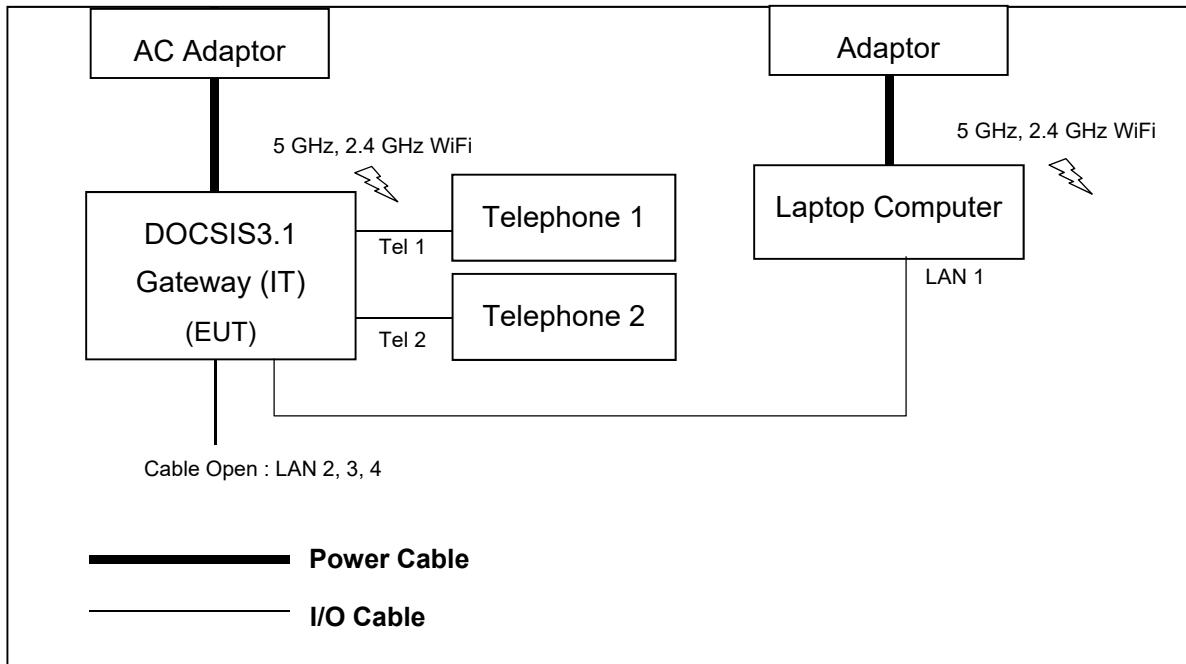
Item	Model	Manufacturer	Serial Number
Main Board	BCM3390R	KAONMEDIA Co., Ltd.	N/A
WiFi Aantenna	N/A	KAONMEDIA Co., Ltd.	N/A

[Configuration 2]

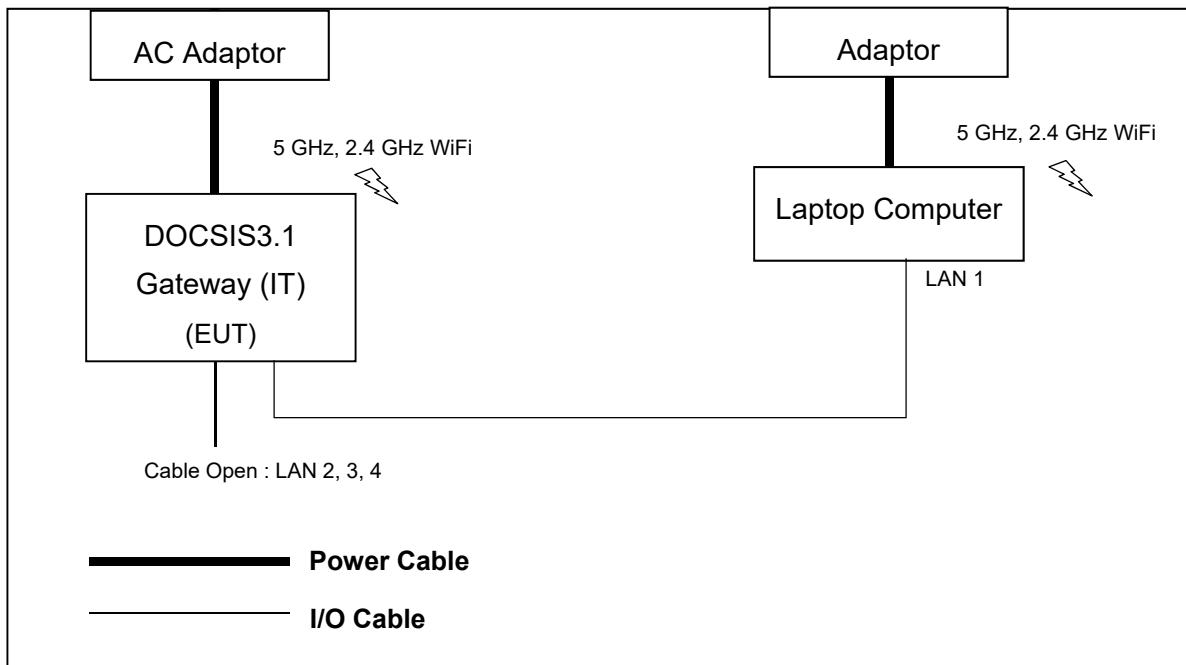
Item	Model	Manufacturer	Serial Number
Main Board	BCM3390R	KAONMEDIA Co., Ltd.	N/A
WiFi Aantenna	N/A	KAONMEDIA Co., Ltd.	N/A

Setup Drawing

[Configuration 1]



[Configuration 2]



SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specification:

Name of Test	Paragraph No.	Result	Remark
Conducted Emission	15.107(a)	Complies	-
Radiated Emission	15.109(g)	Complies	Below 1 GHz
Radiated Emission	15.109(a)	Complies	Above 1 GHz

RECOMMENDATION/CONCLUSION

The data collected shows that the **KAONMEDIA Co., Ltd.**

[Configuration 1]

MODEL : CG3000-LD42J, DOCSIS3.1 Gateway (IT).

The highest emission observed was at **0.15 MHz** for conducted emissions with a QP margin of **18.8 dB**, at **328.56 MHz** for radiated emissions with a QP margin of **8.72 dB**.

[Configuration 2]

MODEL : CG3000-LD4NJ, DOCSIS3.1 Gateway (IT).

The highest emission observed was at **0.40 MHz** for conducted emissions with a QP margin of **12.6 dB**, at **355.88 MHz** for radiated emissions with a QP margin of **12.58 dB**.

SAMPLE CALCULATION

$$\text{dB}_{\mu\text{V}} = 20 \log_{10} (\mu\text{V}/\text{m})$$

$$\mu\text{V} = 10^{(\text{dB}_{\mu\text{V}}/20)}$$

EX. 1.

@165.0 MHz

Class B limit = 30.0 dB_{μV/m}

Reading = 38.2 dB_{μV}(calibrated level)

Antenna factor + Cable Loss + Amplifier Gain = -12.9 dB

Total = 25.30 dB_{μV/m}

Margin = 30.0 – 25.30 = 4.70

4.70 dB below the limit

DESCRIPTION OF TESTS

Conducted Emissions

The Line conducted emission test facility is located inside a 5.1 x 8.1 x 4.6 m shielded enclosure.

It is manufactured by SY corporation. The shielding effectiveness of the shielded room is in accordance with MIL-STD-285 or NSA 65-6.

A 1 m x 1.5 m wooden table 0.8 m height is placed 0.4 m away from the vertical wall and 0.5 m away from the side of wall of the shielded room Rohde & Schwarz (ENV216) of the 50 ohm / 50 uH Line Impedance Stabilization Network(LISN) are bonded to the shielded room. The EUT is powered from the Rohde & Schwarz (ENV216) LISN.

Power to the LISNs are filtered by high-current high insertion loss power line filters.

The purpose of filter is to attenuate ambient signal interference and this filter is also bonded to shielded enclosure. All electrical cables are shielded by tinned copper zipper tubing with inner diameter of 1/2 ".

If d.c. power device, power will be derived from the source power supply it normally will be powered from and this supply lines will be connected to the LISNs,

All interconnecting cables more than 1 m were shortened by non-inductive bundling (serpentine fashion) to a 1 m length.

Sufficient time for EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the spectrum analyzer to determine the frequency producing the maximum EME from the EUT. The spectrum was scanned from 150 kHz to 30 MHz with 200 ms sweep time.

The frequency producing the maximum level was re-examined using the EMI test receiver. (Rohde & Schwarz ESCI).

The detector functions were set to quasi-peak mode & CISPR average mode.

The bandwidth of receiver was set to 9 kHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each EME emission.

Each emission was maximized by; switching power lines; varying the mode of operation or resolution; clock or data exchange speed; scrolling H pattern to the EUT and of support equipment, and powering the monitor from the floor mounted outlet box and computer aux a.c. outlet, if applicable; whichever determined the worst case emission.

Each EME reported was calibrated using the R&S signal generator.

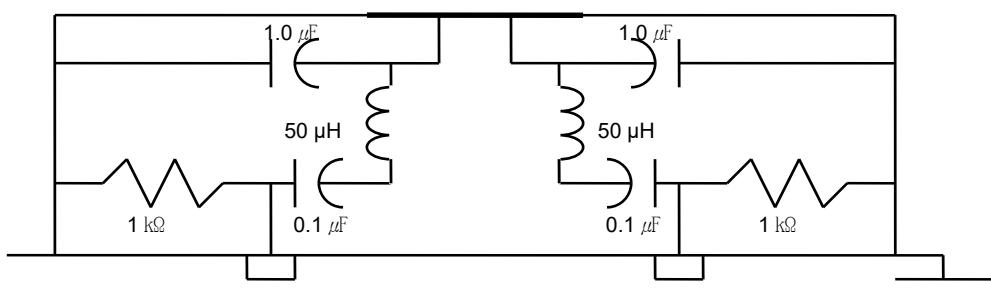


Fig. 2. LISN Schematic Diagram

DESCRIPTION OF TESTS

Radiated Emissions

Measurement were made indoors at 10 m & 3 m using antenna, signal conditioning unit and EMI test receiver to determine the frequency producing the maximum EME.

Appropriate precaution was taken to ensure that all EME from the EUT were maximized and investigated. The Technology configuration, clock speed, mode of operation or video resolution, turntable azimuth with respect to the antenna was note for each frequency found.

The test receiver was scanned from 30 MHz to 1 000 MHz using TRILOG Broadband Test Antenna (Schwarzbeck, VULB 9163). Above 1 GHz, Double Ridged Broadband Horn Antenna (Schwarzbeck, HF907) was used.

The test equipment was placed on a wooden table.

Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition.

Each frequency found during scan measurements was reexamined and investigated using EMI test receiver. (ESW 8 (Below 1 GHz), ESU 40 (Above 1 GHz)).

The detector function were set to Quasi-peak and peak, CISPR average mode and the bandwidth of the receiver were set to 120 kHz and 1 MHz depending on the frequency or type of signal.

The EUT support equipment and interconnecting cables were re configured to the setup producing the maximum emission for the frequency and were placed on top of a 0.8 m high non- metallic 1.0 m x 1.5 m table.

The EUT, support equipment and interconnecting cables were re-arranged and manipulated to maximize each EME emission.

The turn table containing the Technology was rotated; the antenna height was varied 1 to 4 meter and stopped at the azimuth or height producing the maximum emission. Each emission was maximized by : switching power lines; varying the mode of operation or resolution; clock or data exchange speed; scrolling H pattern to the EUT and of support equipment, and powering the monitor from the floor mounted outlet box and computer aux a.c. outlet, if applicable; whichever determined the worst case emission.

Each EME reported was calibrated using the R/S signal generator.

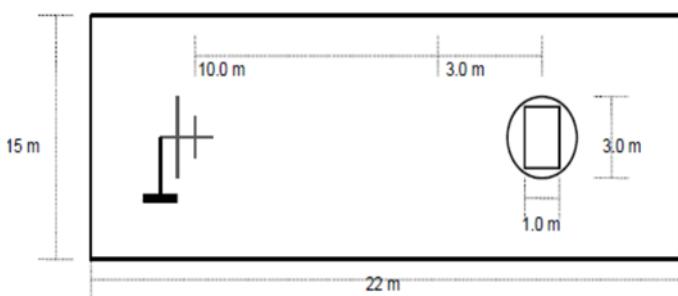


Fig. 3. Dimensions of 10 semi anechoic chamber

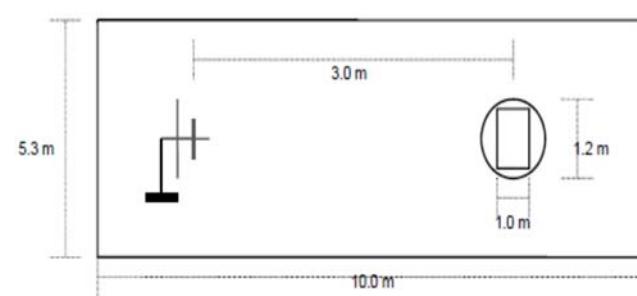


Fig. 4. Dimensions of 3 m full anechoic chamber

TEST DATA

Conducted Emissions

[Configuration 1 _2.4 GHz + LAN]

EMI Auto Test(9)

1 / 2

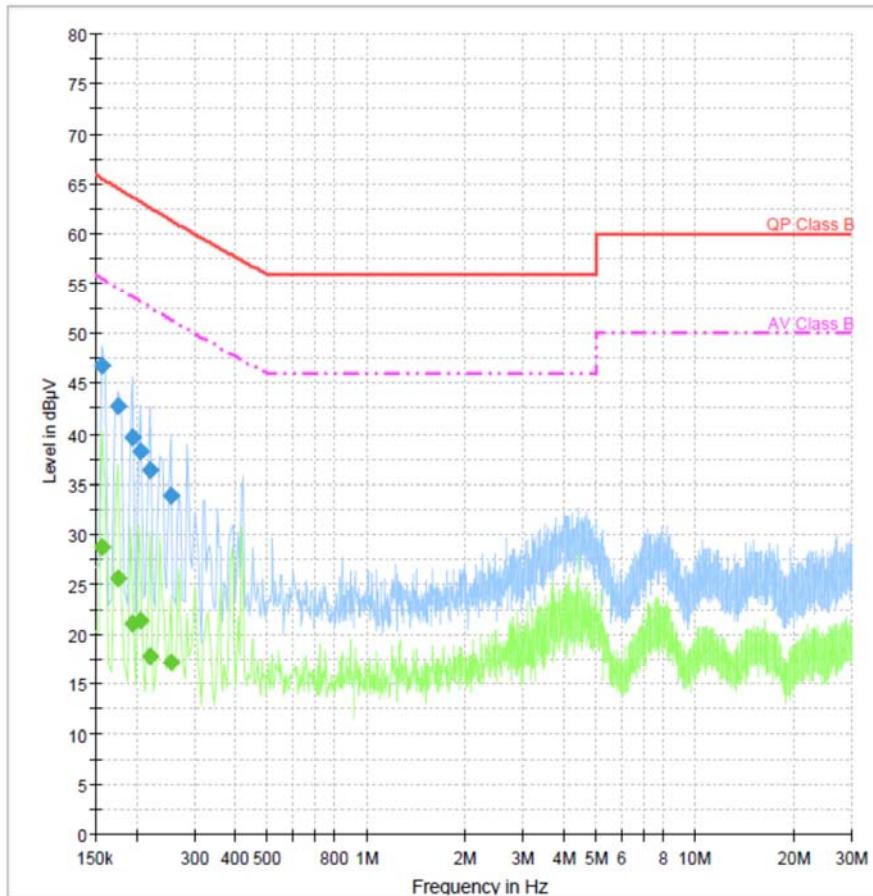
Test Report

Common Information

Test Description: Conducted emission (NK-19-E-0107)
Test Site: 3rd building shielded room
Test Standard: FCC Part 15 Subpart B Class B
Environment Conditions: a.c. 120 V, 60 Hz
Operator Name: Kyoung-Hoon, Lee
Comment: CG3000 (Configuration 1)
2.4 GHz +LAN

1.EMI Auto Test_2-Line Voltage LISN

1.EMI Auto Test_2-Line Voltage LISN



3/22/2019

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EMI Auto Test(9)

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Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.157462	46.8	15000.0	9.000	On	L1	9.9	18.8	65.6	
0.176119	42.8	15000.0	9.000	On	N	10.0	21.8	64.6	
0.194775	39.6	15000.0	9.000	On	N	9.9	24.1	63.7	
0.205969	38.2	15000.0	9.000	On	L1	9.8	25.0	63.2	
0.220894	36.3	15000.0	9.000	On	L1	9.8	26.3	62.6	
0.254475	33.8	15000.0	9.000	On	N	9.6	27.6	61.4	

Final Result 2

Frequency (MHz)	CAverage (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.157462	28.7	15000.0	9.000	On	L1	9.9	26.9	55.6	
0.176119	25.6	15000.0	9.000	On	N	10.0	29.0	54.6	
0.194775	21.0	15000.0	9.000	On	N	9.9	32.7	53.7	
0.205969	21.3	15000.0	9.000	On	L1	9.8	31.9	53.2	
0.220894	17.8	15000.0	9.000	On	L1	9.8	34.7	52.6	
0.254475	17.1	15000.0	9.000	On	N	9.6	34.3	51.4	

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Table 1. Line Conducted Emissions Tabulated Data

[Configuration 1 _5 GHz + LAN]

EMI Auto Test(9)

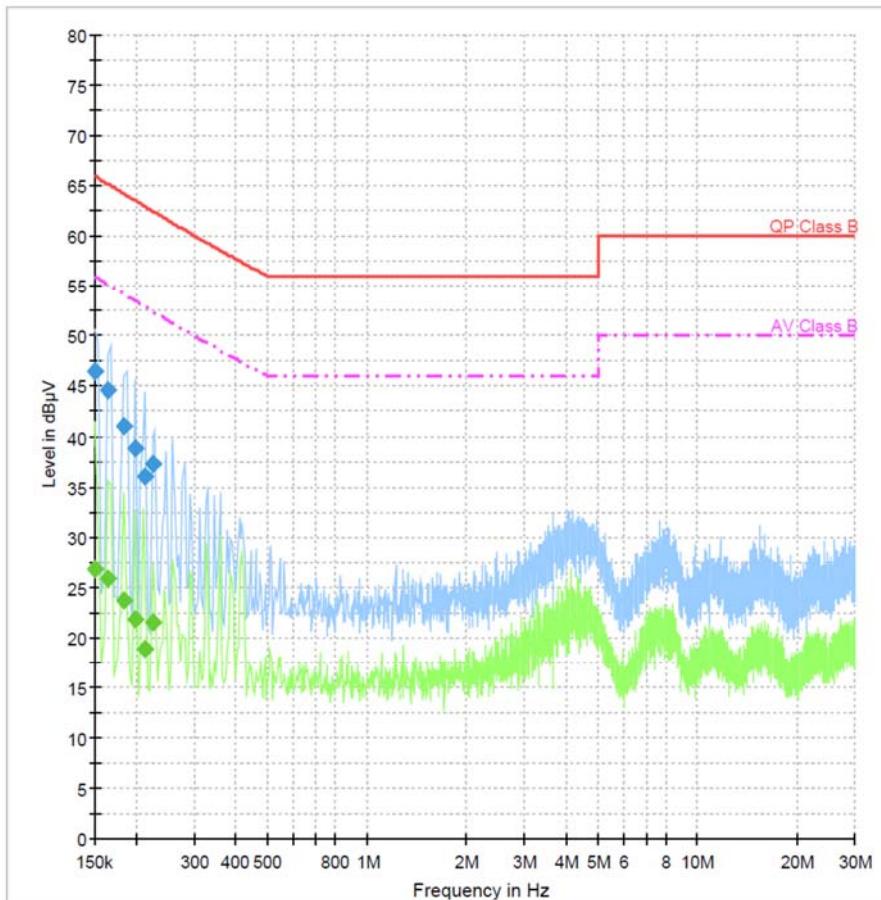
1 / 2

Test Report**Common Information**

Test Description: Conducted emission (NK-19-E-0107)
Test Site: 3rd building shielded room
Test Standard: FCC Part 15 Subpart B Class B
Environment Conditions: a.c. 120 V, 60 Hz
Operator Name: Kyoung-Hoon, Lee
Comment: CG3000 (Configuration 1)
5.0 GHz +LAN

1. EMI Auto Test 2-Line Voltage LISN

1.EMI Auto Test_2-Line Voltage LISN



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EMI Auto Test(9)

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Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.150000	46.4	15000.0	9.000	On	N	9.8	19.6	66.0	
0.164925	44.6	15000.0	9.000	On	L1	10.0	20.6	65.2	
0.183581	41.1	15000.0	9.000	On	L1	9.9	23.1	64.2	
0.198506	38.8	15000.0	9.000	On	L1	9.9	24.7	63.5	
0.213431	36.0	15000.0	9.000	On	L1	9.8	26.9	62.9	
0.224625	37.3	15000.0	9.000	On	L1	9.7	25.2	62.5	

Final Result 2

Frequency (MHz)	CAverage (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.150000	26.8	15000.0	9.000	On	N	9.8	29.2	56.0	
0.164925	25.9	15000.0	9.000	On	L1	10.0	29.3	55.1	
0.183581	23.7	15000.0	9.000	On	L1	9.9	30.5	54.2	
0.198506	21.8	15000.0	9.000	On	L1	9.9	31.7	53.5	
0.213431	18.9	15000.0	9.000	On	L1	9.8	33.9	52.9	
0.224625	21.5	15000.0	9.000	On	L1	9.7	31.0	52.4	

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Table 2. Line Conducted Emissions Tabulated Data

[Configuration 2 _2.4 GHz + LAN]

EMI Auto Test(9)

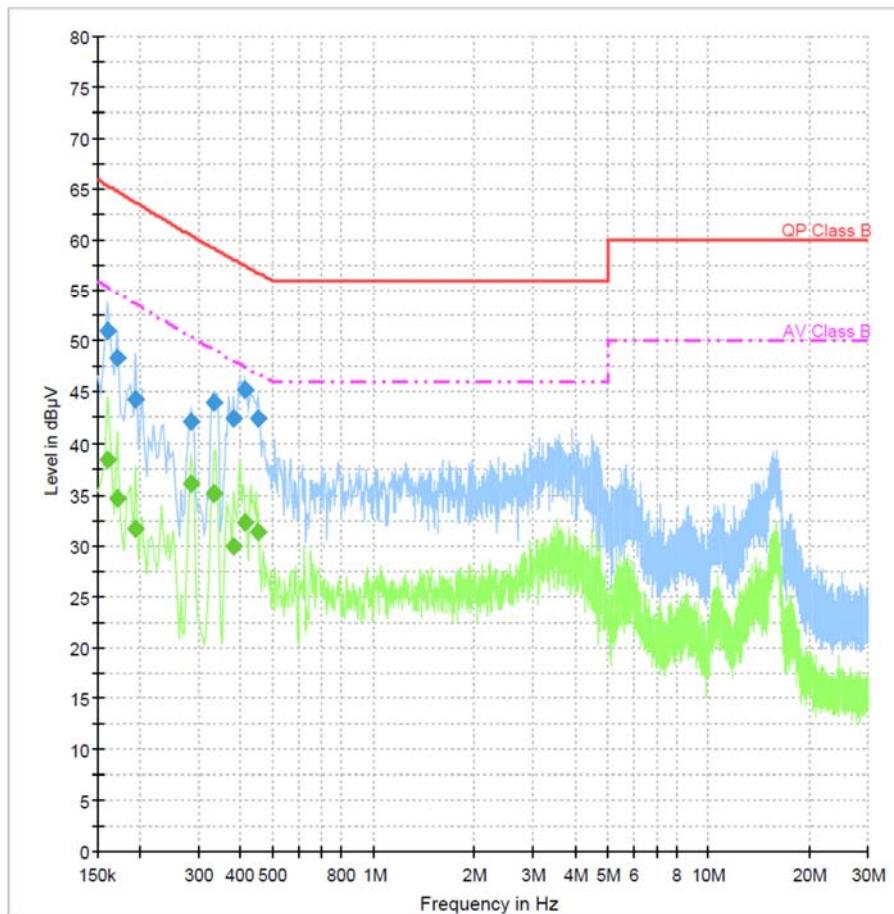
1 / 2

Test Report**Common Information**

Test Description: Conducted emission (NK-19-E-0107)
Test Site: 3rd building shielded room
Test Standard: FCC Part 15 Subpart B Class B
Environment Conditions: a.c. 120 V, 60 Hz
Operator Name: Kyoung-Hoon, Lee
Comment: CG3000 (Configuration 2)
2.4 GHz +LAN

1. EMI Auto Test 2-Line Voltage LISN

1.EMI Auto Test_2-Line Voltage LISN



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EMI Auto Test(9)

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Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.161194	51.0	15000.0	9.000	On	L1	9.9	14.3	65.4	
0.172388	48.3	15000.0	9.000	On	L1	10.0	16.5	64.8	
0.194775	44.3	15000.0	9.000	On	N	9.9	19.4	63.7	
0.284325	42.1	15000.0	9.000	On	L1	9.7	18.4	60.5	
0.332831	44.0	15000.0	9.000	On	L1	9.8	15.2	59.2	
0.381338	42.4	15000.0	9.000	On	N	9.9	15.7	58.1	
0.414919	45.2	15000.0	9.000	On	L1	9.9	12.3	57.4	
0.452231	42.4	15000.0	9.000	On	L1	9.9	14.4	56.8	

Final Result 2

Frequency (MHz)	CAverage (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.161194	38.3	15000.0	9.000	On	L1	9.9	17.1	55.3	
0.172388	34.6	15000.0	9.000	On	L1	10.0	20.2	54.7	
0.194775	31.6	15000.0	9.000	On	N	9.9	22.1	53.7	
0.284325	36.0	15000.0	9.000	On	L1	9.7	14.4	50.4	
0.332831	35.2	15000.0	9.000	On	L1	9.8	14.0	49.2	
0.381338	29.9	15000.0	9.000	On	N	9.9	18.2	48.1	
0.414919	32.3	15000.0	9.000	On	L1	9.9	15.1	47.4	
0.452231	31.3	15000.0	9.000	On	L1	9.9	15.5	46.8	

3/22/2019

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Table 3. Line Conducted Emissions Tabulated Data

[Configuration 2 _5 GHz + LAN]

EMI Auto Test(9)

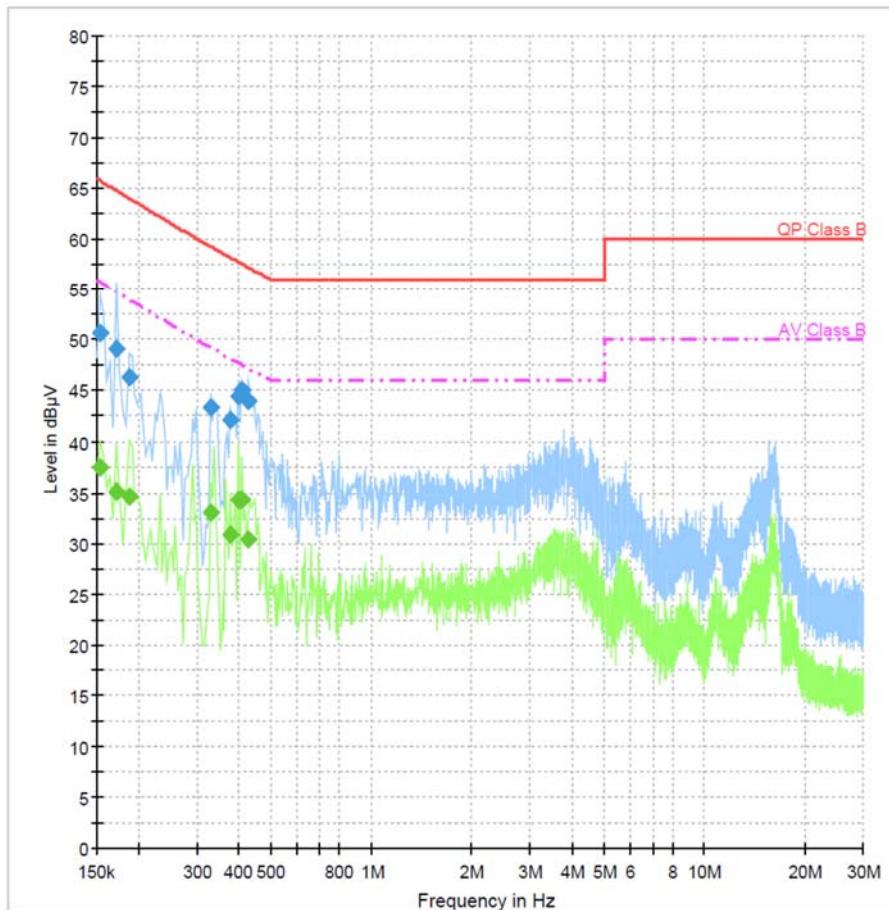
1 / 2

Test Report**Common Information**

Test Description: Conducted emission (NK-19-E-0107)
Test Site: 3rd building shielded room
Test Standard: FCC Part 15 Subpart B Class B
Environment Conditions: a.c. 120 V, 60 Hz
Operator Name: Kyoung-Hoon, Lee
Comment: CG3000 (Configuration 2)
5.0 GHz +LAN

1. EMI Auto Test 2-Line Voltage LISN

1.EMI Auto Test_2-Line Voltage LISN



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EMI Auto Test(9)

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Final Result 1

Frequency (MHz)	QuasiPeak (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.153731	50.6	15000.0	9.000	On	L1	9.8	15.1	65.8	
0.172388	49.1	15000.0	9.000	On	L1	10.0	15.6	64.8	
0.187312	46.3	15000.0	9.000	On	L1	9.9	17.7	64.0	
0.329100	43.4	15000.0	9.000	On	L1	9.8	15.9	59.3	
0.377606	42.0	15000.0	9.000	On	N	9.8	16.1	58.2	
0.399994	44.5	15000.0	9.000	On	L1	9.9	13.3	57.7	
0.407456	45.0	15000.0	9.000	On	L1	9.9	12.6	57.6	
0.426112	44.0	15000.0	9.000	On	L1	9.9	13.2	57.2	

Final Result 2

Frequency (MHz)	CAverage (dB μ V)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dB μ V)	Comment
0.153731	37.5	15000.0	9.000	On	L1	9.8	18.3	55.8	
0.172388	35.2	15000.0	9.000	On	L1	10.0	19.6	54.7	
0.187312	34.6	15000.0	9.000	On	L1	9.9	19.4	54.0	
0.329100	33.0	15000.0	9.000	On	L1	9.8	16.2	49.3	
0.377606	30.8	15000.0	9.000	On	N	9.8	17.3	48.2	
0.399994	34.3	15000.0	9.000	On	L1	9.9	13.4	47.7	
0.407456	34.3	15000.0	9.000	On	L1	9.9	13.2	47.6	
0.426112	30.4	15000.0	9.000	On	L1	9.9	16.9	47.2	

3/22/2019

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Table 4. Line Conducted Emissions Tabulated Data

NOTES:

1. Measurements using CISPR quasi-peak mode & average mode.
2. All modes of operation were investigated and the worst -case emission are reported.
3. LINE : L1 = Line , N = Neutral
4. The limit for Class B device is on the FCC Part section 15.107(a).



Tested by : Kyoungsoon Lee

TEST DATA

Radiated Emissions (Below 1 GHz)

[Configuration 1 _2.4 GHz + LAN]

EMI Auto Test(6)

1 / 2

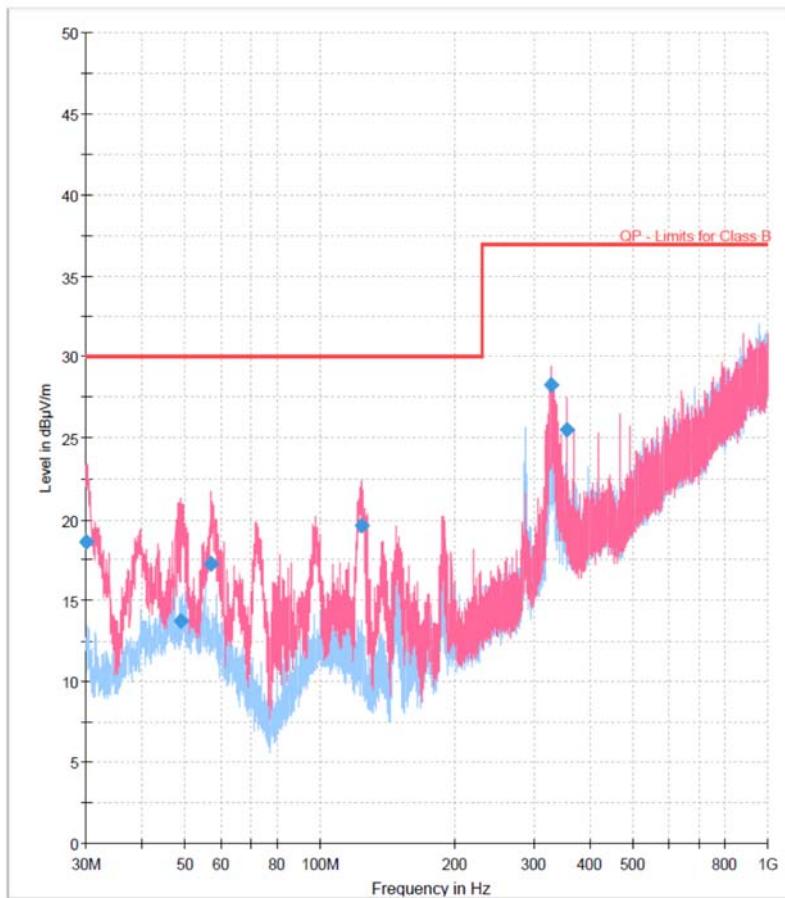
Test Report

Common Information

Test Description : Radiated Emission(NK-19-E-0107)
Test Site : 3rd Building 10 m Chamber
Test Standard : FCC Part 15 Subpart B Class B
Environment Conditions : a.c. 120 V, 60 Hz
Operator Name : Kyoung-Hoon, Lee
Modl: CG3000 (Configuration 1)
LAN+2.4 GHz

Full Spectrum

Full Spectrum



3/17/2019

EMI Auto Test(6)

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Final Result

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.032333	18.65	30.00	11.35	15000.0	120.000	302.0	V	31.0	-24.2
48.656333	13.77	30.00	16.23	15000.0	120.000	130.0	V	184.0	-20.6
56.869000	17.31	30.00	12.69	15000.0	120.000	130.0	V	202.0	-21.2
123.346333	19.60	30.00	10.40	15000.0	120.000	170.0	V	28.0	-23.9
328.566000	28.28	37.00	8.72	15000.0	120.000	100.0	V	293.0	-16.3
355.920000	25.53	37.00	11.47	15000.0	120.000	400.0	V	71.0	-15.2

(continuation of the "Final_Result" table from column 16 ...)

Frequency (MHz)	Comment
30.032333	
48.656333	
56.869000	
123.346333	
328.566000	
355.920000	

3/17/2019

Table 5. Radiated Measurements at 10 meters

[Configuration 1 _5 GHz + LAN]

EMI Auto Test(6)

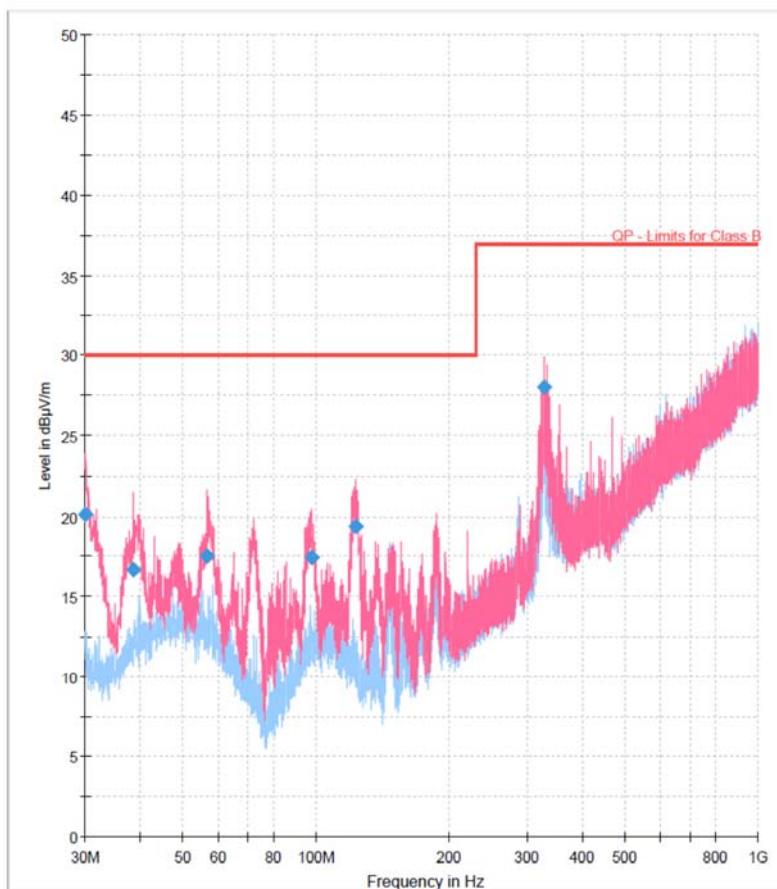
1 / 2

Test Report**Common Information**

Test Description : Radiated Emission(NK-19-E-0107)
Test Site : 3rd Building 10 m Chamber
Test Standard : FCC Part 15 Subpart B Class B
Environment Conditions : a.c. 120 V, 60 Hz
Operator Name : Kyoung-Hoon, Lee
Model: CG3000 (Configuration 1)
LAN+5.0 GHz

Full Spectrum

Full Spectrum



3/17/2019

EMI Auto Test(6)

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Final Result

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
30.097000	20.17	30.00	9.83	15000.0	120.000	130.0	V	220.0	-24.2
38.536000	16.71	30.00	13.29	15000.0	120.000	130.0	V	23.0	-22.4
56.642667	17.54	30.00	12.46	15000.0	120.000	130.0	V	239.0	-21.3
97.835333	17.43	30.00	12.57	15000.0	120.000	130.0	V	98.0	-22.1
122.732000	19.36	30.00	10.64	15000.0	120.000	130.0	V	51.0	-23.8
328.889333	27.99	37.00	9.01	15000.0	120.000	100.0	V	287.0	-16.3

(continuation of the "Final_Result" table from column 16 ...)

Frequency (MHz)	Comment
30.097000	
38.536000	
56.642667	
97.835333	
122.732000	
328.889333	

3/17/2019

Table 6. Radiated Measurements at 10 meters

[Configuration 2 _2.4 GHz + LAN]

EMI Auto Test(6)

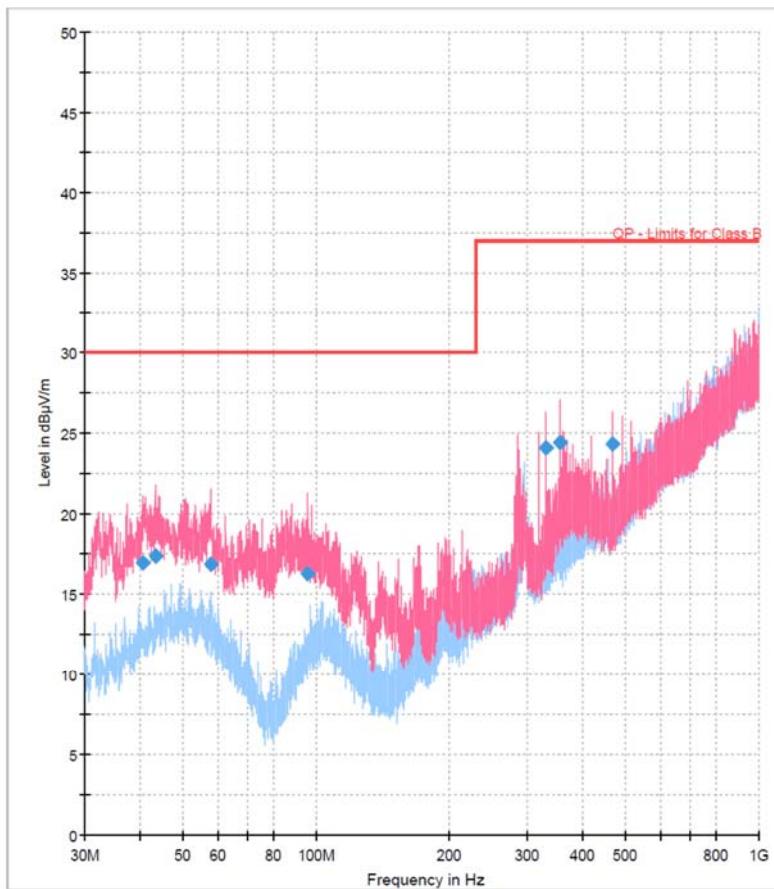
1 / 2

Test Report**Common Information**

Test Description : Radiated Emission(NK-19-E-0107)
Test Site : 3rd Building 10 m Chamber
Test Standard : FCC Part 15 Subpart B Class B
Environment Conditions : a.c. 120 V, 60 Hz
Operator Name : Kyoung-Hoon, Lee
Model: CG3000 (Configuration 2)
LAN+2.4 GHz

Full Spectrum

Full Spectrum



3/17/2019

EMI Auto Test(6)

2 / 2

Final Result

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
40.637667	16.96	30.00	13.04	15000.0	120.000	100.0	V	318.0	-21.7
43.256667	17.39	30.00	12.61	15000.0	120.000	177.0	V	87.0	-21.1
57.806667	16.86	30.00	13.14	15000.0	120.000	100.0	V	-30.0	-21.4
95.895333	16.26	30.00	13.74	15000.0	120.000	130.0	V	173.0	-22.3
331.379000	24.06	37.00	12.94	15000.0	120.000	400.0	V	147.0	-16.0
355.887667	24.42	37.00	12.58	15000.0	120.000	376.0	V	50.0	-15.1
466.370667	24.35	37.00	12.65	15000.0	120.000	177.0	V	12.0	-11.9

(continuation of the "Final_Result" table from column 16 ...)

Frequency (MHz)	Comment
40.637667	
43.256667	
57.806667	
95.895333	
331.379000	
355.887667	
466.370667	

3/17/2019

Table 7. Radiated Measurements at 10 meters

[Configuration 2 _5 GHz + LAN]

EMI Auto Test(6)

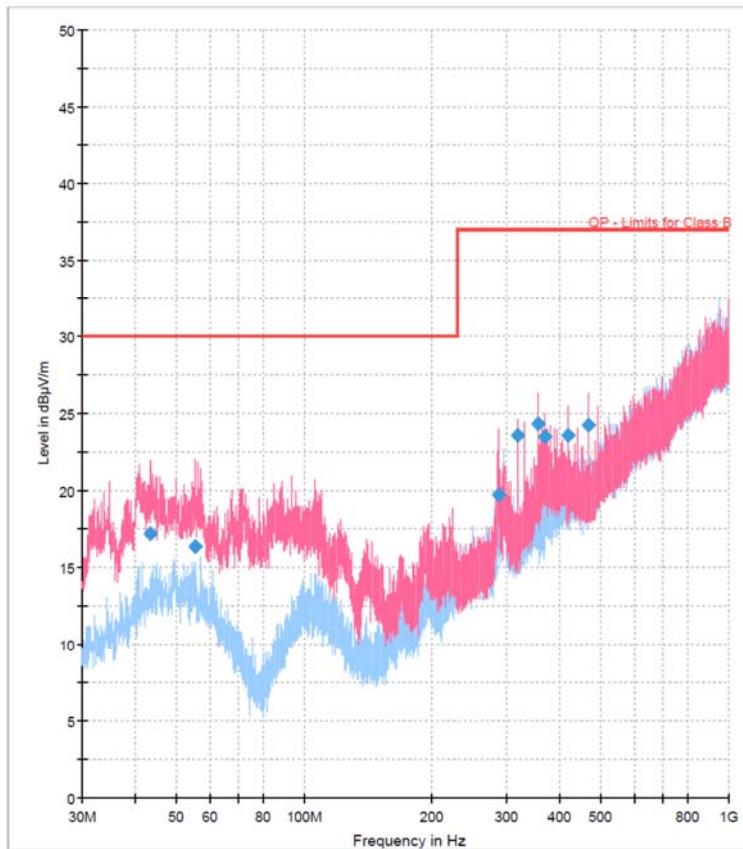
1 / 2

Test Report**Common Information**

Test Description : Radiated Emission(NK-19-E-0107)
Test Site : 3rd Building 10 m Chamber
Test Standard : FCC Part 15 Subpart B Class B
Environment Conditions : a.c. 120 V, 60 Hz
Operator Name : Kyoung-Hoon, Lee
Model: CG3000 (Configuration 2)
LAN+5.0 GHz

Full Spectrum

Full Spectrum



3/17/2019

EMI Auto Test(6)

2 / 2

Final Result

Frequency (MHz)	QuasiPeak (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
43.547667	17.16	30.00	12.84	15000.0	120.000	302.0	V	78.0	-21.1
55.446333	16.37	30.00	13.63	15000.0	120.000	400.0	V	64.0	-21.0
286.662000	19.75	37.00	17.25	15000.0	120.000	130.0	V	50.0	-17.8
319.092333	23.60	37.00	13.40	15000.0	120.000	302.0	V	-17.0	-16.8
355.920000	24.33	37.00	12.67	15000.0	120.000	106.0	V	357.0	-15.2
368.142000	23.53	37.00	13.47	15000.0	120.000	400.0	V	266.0	-15.0
417.256333	23.55	37.00	13.45	15000.0	120.000	130.0	V	26.0	-12.9
466.338333	24.21	37.00	12.79	15000.0	120.000	177.0	V	226.0	-11.9

(continuation of the "Final_Result" table from column 16 ...)

Frequency (MHz)	Comment
43.547667	
55.446333	
286.662000	
319.092333	
355.920000	
368.142000	
417.256333	
466.338333	

3/17/2019

Table 8. Radiated Measurements at 10 meters

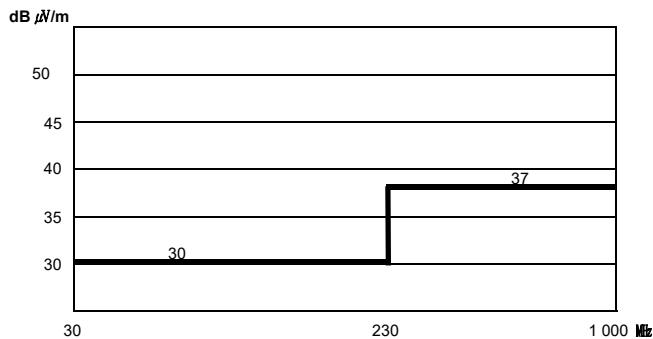


Fig. 5. Limits at 10 meters

NOTES:

1. Below 1 GHz, the radiated limits are shown on Figure 5.
2. CISPR 22 limit will be applied for radiated emission test

NOTES : 1. Polarization : H = Horizontal, V = Vertical

2. Corr. = Antenna Factor + Cable Loss + Amplifier.

3. Measurements using quasi-peak mode below 1 GHz.

4. The limit for Class B device is on the FCC Part section 15.109(g).



Tested by : Kyounghoon Lee

TEST DATA**Radiated Emissions (Above 1 GHz)****[Configuration 1 _2.4 GHz + LAN]**

EMI Auto Test(4)

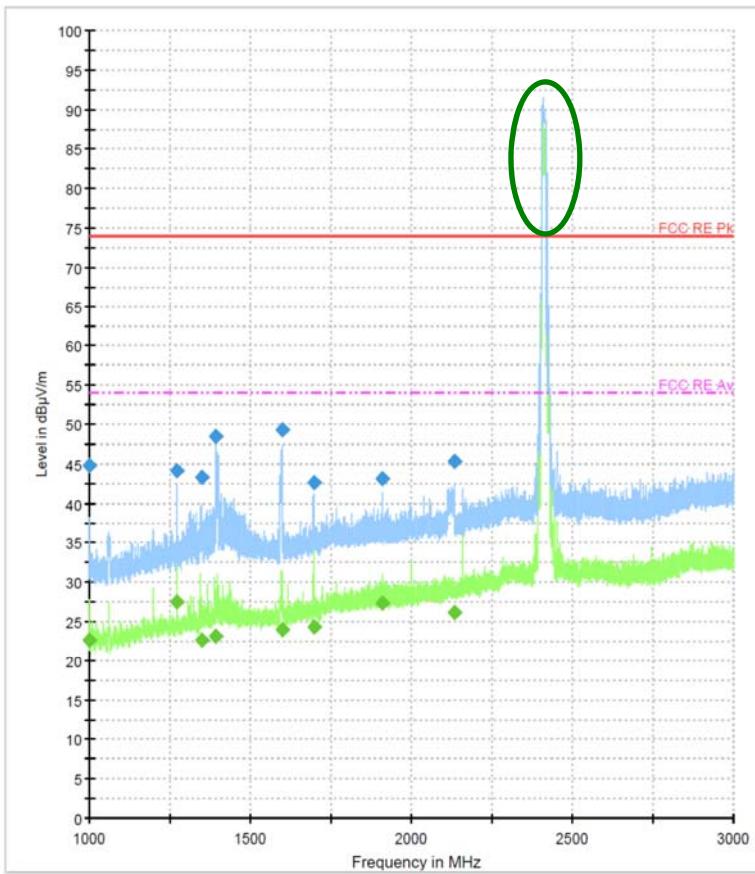
1 / 2

Test Report**Common Information**

Test Description: Radiated Emission(NK-19-E-0107)
Test Site: 3rd building 3m chamber
Test Standard: FCC Part 15 Subpart B Class B
Environment Conditions: a.c. 120 V, 60 Hz
Operator Name: Kyoung-Hoon,Lee
CG3000 (Configuration 1)
2.4 GHz+LAN

Full Spectrum

Full Spectrum

**Exclusion Band**

3/24/2019

3:47:55 PM

EMI Auto Test(4)

2 / 2

Final_Result

Frequency (MHz)	MaxPeak (dB μ V/m)	CAverage (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol
1000.066667	---	22.68	54.00	31.32	15000.0	1000.000	300.1	H
1000.066667	44.74	---	74.00	29.26	15000.0	1000.000	300.1	H
1272.466667	44.05	---	74.00	29.95	15000.0	1000.000	400.0	V
1272.466667	---	27.59	54.00	26.41	15000.0	1000.000	400.0	V
1347.133333	43.23	---	74.00	30.77	15000.0	1000.000	400.1	H
1347.133333	---	22.72	54.00	31.28	15000.0	1000.000	400.1	H
1393.466667	---	23.15	54.00	30.85	15000.0	1000.000	400.1	H
1393.466667	48.49	---	74.00	25.51	15000.0	1000.000	400.1	H
1599.666667	---	23.98	54.00	30.02	15000.0	1000.000	400.0	V
1599.666667	49.39	---	74.00	24.61	15000.0	1000.000	400.0	V
1697.733333	---	24.32	54.00	29.68	15000.0	1000.000	200.0	V
1697.733333	42.63	---	74.00	31.37	15000.0	1000.000	200.0	V
1908.933333	---	27.29	54.00	26.71	15000.0	1000.000	99.9	V
1908.933333	43.10	---	74.00	30.90	15000.0	1000.000	99.9	V
2131.800000	---	26.22	54.00	27.78	15000.0	1000.000	99.9	V
2131.800000	45.38	---	74.00	28.62	15000.0	1000.000	99.9	V

(continuation of the "Final_Result" table from column 14 ...)

Frequency (MHz)	Azimuth (deg)	Corr. (dB)	Comment
1000.066667	315.0	-18.2	
1000.066667	315.0	-18.2	
1272.466667	0.0	-16.3	
1272.466667	0.0	-16.3	
1347.133333	315.0	-15.9	
1347.133333	315.0	-15.9	
1393.466667	315.0	-15.5	
1393.466667	315.0	-15.5	
1599.666667	0.0	-14.5	
1599.666667	0.0	-14.5	
1697.733333	180.0	-14.0	
1697.733333	180.0	-14.0	
1908.933333	180.0	-12.0	
1908.933333	180.0	-12.0	
2131.800000	270.0	-11.5	
2131.800000	270.0	-11.5	

3/24/2019

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Table 9. Radiated Measurements at 3 meters

[Configuration 1 _5 GHz + LAN]

EMI Auto Test(4)

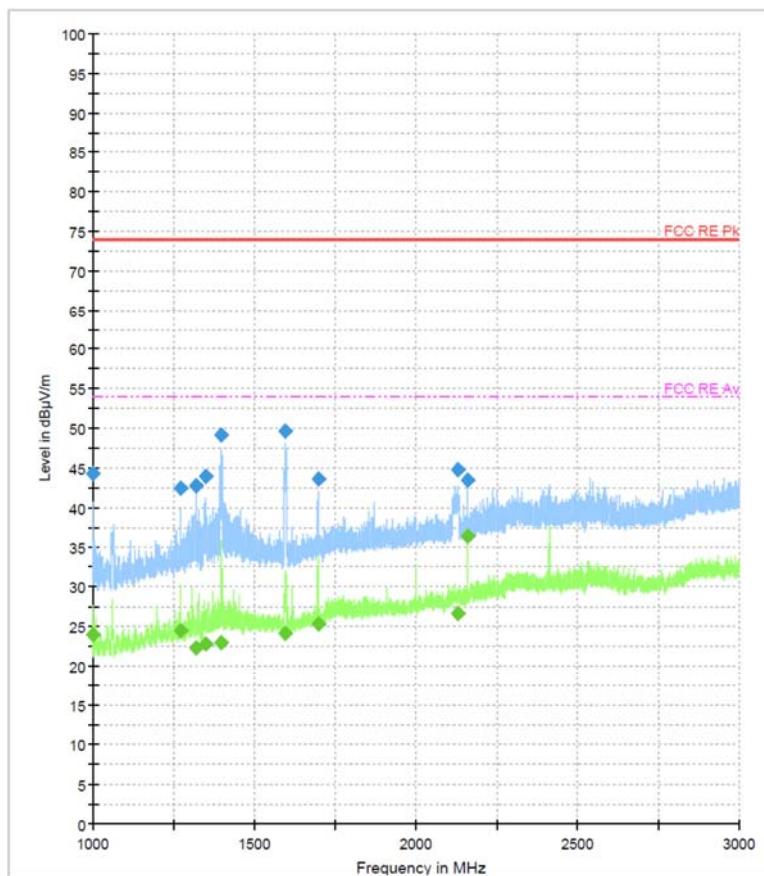
1 / 2

Test Report**Common Information**

Test Description: Radiated Emission(NK-19-E-0107)
Test Site: 3rd building 3m chamber
Test Standard: FCC Part 15 Subpart B Class B
Environment Conditions: a.c. 120 V, 60 Hz
Operator Name: Kyoung-Hoon,Lee
CG3000 (Configuration 1)
5.0 GHz+LAN

Full Spectrum

Full Spectrum



3/24/2019

2:55:39 PM

EMI Auto Test(4)

2 / 2

Final_Result

Frequency (MHz)	MaxPeak (dB μ V/m)	CAverage (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol
1000.133333	---	23.93	54.00	30.07	15000.0	1000.000	99.9	H
1000.133333	44.36	---	74.00	29.64	15000.0	1000.000	99.9	H
1271.933333	42.53	---	74.00	31.47	15000.0	1000.000	400.1	V
1271.933333	---	24.42	54.00	29.58	15000.0	1000.000	400.1	V
1317.200000	---	22.28	54.00	31.72	15000.0	1000.000	400.1	H
1317.200000	42.81	---	74.00	31.19	15000.0	1000.000	400.1	H
1347.133333	---	22.88	54.00	31.12	15000.0	1000.000	400.1	H
1347.133333	43.98	---	74.00	30.02	15000.0	1000.000	400.1	H
1397.066667	---	23.00	54.00	31.00	15000.0	1000.000	300.1	V
1397.066667	49.21	---	74.00	24.79	15000.0	1000.000	300.1	V
1594.400000	---	24.23	54.00	29.77	15000.0	1000.000	400.1	V
1594.400000	49.75	---	74.00	24.25	15000.0	1000.000	400.1	V
1697.333333	---	25.30	54.00	28.70	15000.0	1000.000	100.0	V
1697.333333	43.60	---	74.00	30.40	15000.0	1000.000	100.0	V
2129.066667	---	26.66	54.00	27.34	15000.0	1000.000	100.0	V
2129.066667	44.88	---	74.00	29.12	15000.0	1000.000	100.0	V
2160.133333	43.43	---	74.00	30.57	15000.0	1000.000	299.9	H
2160.133333	---	36.40	54.00	17.60	15000.0	1000.000	299.9	H

(continuation of the "Final_Result" table from column 14 ...)

Frequency (MHz)	Azimuth (deg)	Corr. (dB)	Comment
1000.133333	315.0	-18.2	
1000.133333	315.0	-18.2	
1271.933333	180.0	-16.3	
1271.933333	180.0	-16.3	
1317.200000	315.0	-16.0	
1317.200000	315.0	-16.0	
1347.133333	315.0	-15.9	
1347.133333	315.0	-15.9	
1397.066667	225.0	-15.5	
1397.066667	225.0	-15.5	
1594.400000	0.0	-14.5	
1594.400000	0.0	-14.5	
1697.333333	180.0	-14.0	
1697.333333	180.0	-14.0	
2129.066667	270.0	-11.5	
2129.066667	270.0	-11.5	
2160.133333	270.0	-11.3	
2160.133333	270.0	-11.3	

3/24/2019

2:55:39 PM

Table 10. Radiated Measurements at 3 meters

[Configuration 2 _2.4 GHz + LAN]

EMI Auto Test(4)

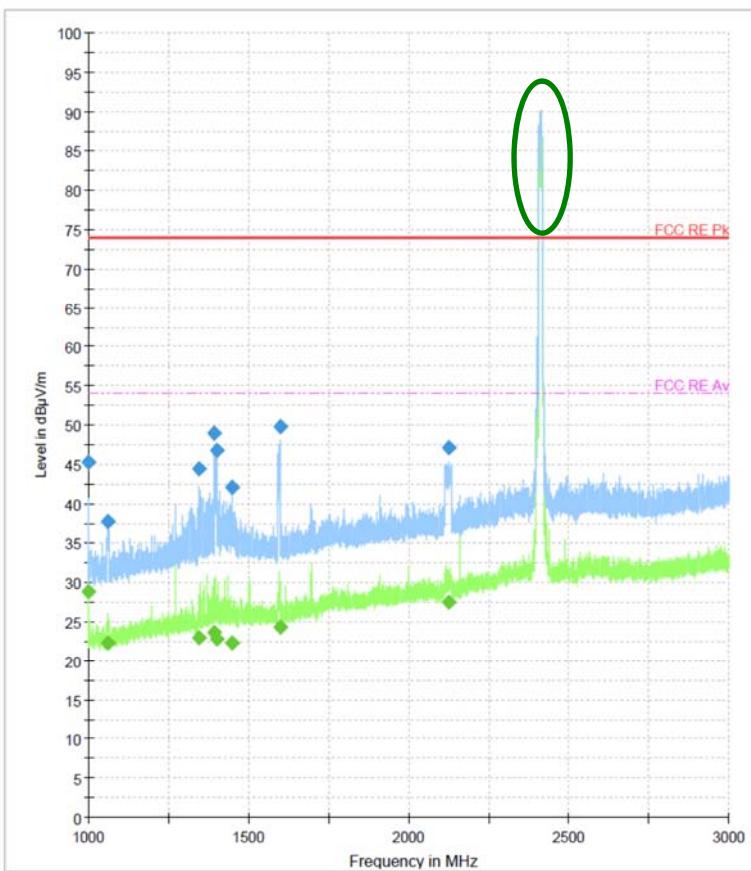
1 / 2

Test Report**Common Information**

Test Description: Radiated Emission(NK-19-E-0107)
Test Site: 3rd building 3m chamber
Test Standard: FCC Part 15 Subpart B Class B
Environment Conditions: a.c. 120 V, 60 Hz
Operator Name: Kyoung-Hoon, Lee
CG3000 (Configuration 2)
2.4 GHz+LAN

Full Spectrum

Full Spectrum

**Exclusion Band**

3/24/2019

2:05:23 PM

EMI Auto Test(4)

2 / 2

Final_Result

Frequency (MHz)	MaxPeak (dB μ V/m)	CAverage (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol
1000.133333	---	28.86	54.00	25.14	15000.0	1000.000	300.0	H
1000.133333	45.23	---	74.00	28.77	15000.0	1000.000	300.0	H
1061.800000	37.74	---	74.00	36.26	15000.0	1000.000	300.0	V
1061.800000	---	22.24	54.00	31.76	15000.0	1000.000	300.0	V
1346.133333	44.47	---	74.00	29.53	15000.0	1000.000	400.1	H
1346.133333	---	23.04	54.00	30.96	15000.0	1000.000	400.1	H
1393.933333	49.08	---	74.00	24.92	15000.0	1000.000	400.1	H
1393.933333	---	23.61	54.00	30.39	15000.0	1000.000	400.1	H
1399.733333	---	22.86	54.00	31.14	15000.0	1000.000	300.0	V
1399.733333	46.78	---	74.00	27.22	15000.0	1000.000	300.0	V
1448.266667	---	22.25	54.00	31.75	15000.0	1000.000	400.0	V
1448.266667	42.11	---	74.00	31.89	15000.0	1000.000	400.0	V
1599.000000	---	24.40	54.00	29.60	15000.0	1000.000	400.0	V
1599.000000	49.82	---	74.00	24.18	15000.0	1000.000	400.0	V
2124.066667	47.14	---	74.00	26.86	15000.0	1000.000	100.0	V
2124.066667	---	27.49	54.00	26.51	15000.0	1000.000	100.0	V

(continuation of the "Final_Result" table from column 14 ...)

Frequency (MHz)	Azimuth (deg)	Corr. (dB)	Comment
1000.133333	315.0	-18.2	
1000.133333	315.0	-18.2	
1061.800000	315.0	-17.8	
1061.800000	315.0	-17.8	
1346.133333	315.0	-15.9	
1346.133333	315.0	-15.9	
1393.933333	315.0	-15.5	
1393.933333	315.0	-15.5	
1399.733333	225.0	-15.5	
1399.733333	225.0	-15.5	
1448.266667	225.0	-15.3	
1448.266667	225.0	-15.3	
1599.000000	0.0	-14.5	
1599.000000	0.0	-14.5	
2124.066667	270.0	-11.5	
2124.066667	270.0	-11.5	

3/24/2019

2:05:23 PM

Table 11. Radiated Measurements at 3 meters

[Configuration 2 _5 GHz + LAN]

EMI Auto Test(4)

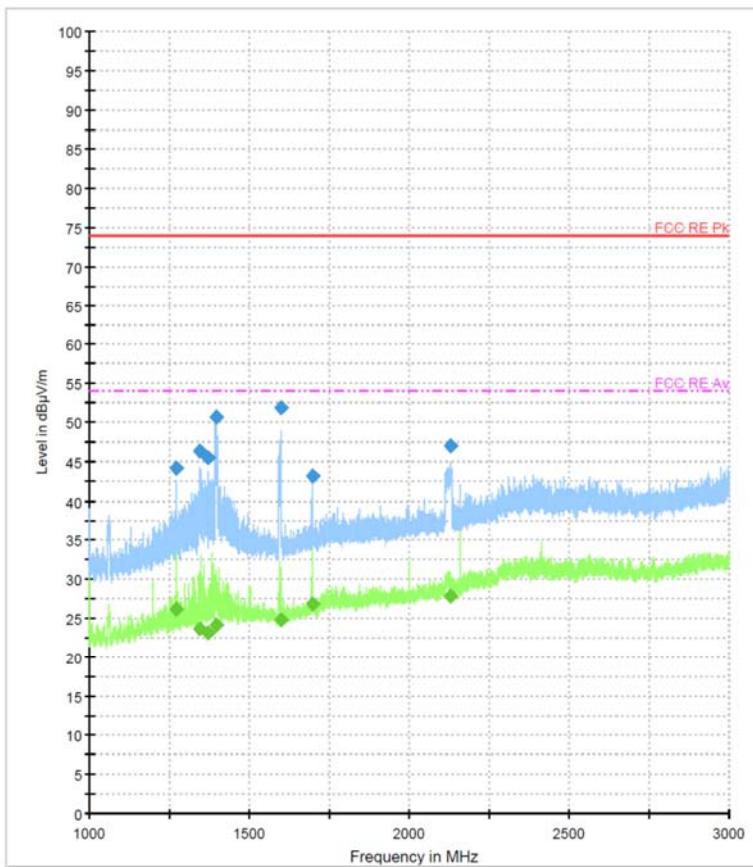
1 / 2

Test Report**Common Information**

Test Description: Radiated Emission(NK-19-E-0107)
Test Site: 3rd building 3m chamber
Test Standard: FCC Part 15 Subpart B Class B
Environment Conditions: a.c. 120 V, 60 Hz
Operator Name: Kyoung-Hoon,Lee
CG3000 (Configuration 2)
5.0 GHz+LAN

Full Spectrum

Full Spectrum



3/24/2019

1:15:01 PM

EMI Auto Test(4)

2 / 2

Final_Result

Frequency (MHz)	MaxPeak (dB μ V/m)	CAverage (dB μ V/m)	Limit (dB μ V/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol
1272.133333	---	26.16	54.00	27.84	15000.0	1000.000	200.0	V
1272.133333	44.06	---	74.00	29.94	15000.0	1000.000	200.0	V
1345.400000	46.37	---	74.00	27.63	15000.0	1000.000	400.1	H
1345.400000	---	23.58	54.00	30.42	15000.0	1000.000	400.1	H
1369.600000	45.41	---	74.00	28.59	15000.0	1000.000	400.1	H
1369.600000	---	23.17	54.00	30.83	15000.0	1000.000	400.1	H
1397.266667	---	24.16	54.00	29.84	15000.0	1000.000	400.1	H
1397.266667	50.72	---	74.00	23.28	15000.0	1000.000	400.1	H
1599.000000	---	24.87	54.00	29.13	15000.0	1000.000	400.0	V
1599.000000	51.86	---	74.00	22.14	15000.0	1000.000	400.0	V
1697.200000	---	26.85	54.00	27.15	15000.0	1000.000	99.9	V
1697.200000	43.16	---	74.00	30.84	15000.0	1000.000	99.9	V
2129.333333	---	27.82	54.00	26.18	15000.0	1000.000	99.9	V
2129.333333	46.92	---	74.00	27.08	15000.0	1000.000	99.9	V

(continuation of the "Final_Result" table from column 14 ...)

Frequency (MHz)	Azimuth (deg)	Corr. (dB)	Comment
1272.133333	180.0	-16.3	
1272.133333	180.0	-16.3	
1345.400000	315.0	-15.9	
1345.400000	315.0	-15.9	
1369.600000	315.0	-15.7	
1369.600000	315.0	-15.7	
1397.266667	315.0	-15.5	
1397.266667	315.0	-15.5	
1599.000000	0.0	-14.5	
1599.000000	0.0	-14.5	
1697.200000	180.0	-14.0	
1697.200000	180.0	-14.0	
2129.333333	270.0	-11.5	
2129.333333	270.0	-11.5	

3/24/2019

1:15:01 PM

Table12. Radiated Measurements at 3 meters

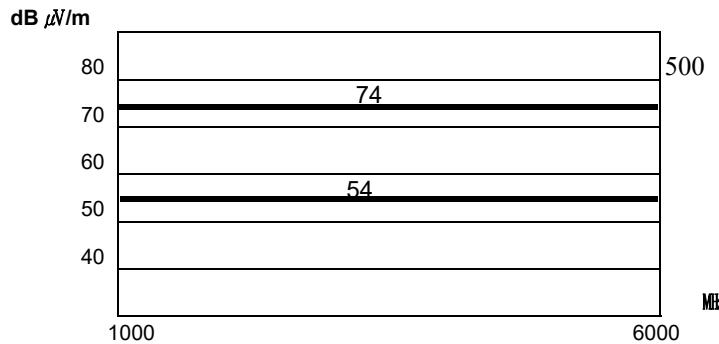


Fig. 6. Limits at 3 meters

NOTES:

1. Above 1 GHz, the radiated limits are shown on Figure 6.

NOTES:

1. **Polarization : H = Horizontal, V= Vertical**
 2. **Corr. = Antenna Factor + Cable Loss + Amplifier.**
 3. **The limit for Class B device is on the FCC Part section 15.109(a).**
 4. **Above 1 GHz, peak detector function mode is used using a resolution bandwidth of 1 MHz and a video bandwidth of 1 MHz, average detector function mode is used using a resolution bandwidth of 1 MHz and a video bandwidth of 1 MHz.**
- Peak mode is used with linearly polarized horn antenna and low-loss microwave cable.**



Tested by : Kyounghoon Lee

ACCURACY OF MEASUREMENT

The Measurement Uncertainties stated were calculated in accordance with the requirements of measurement uncertainty contained in CISPR 16-4-2 with the confidence level of 95 %

1. Conducted Uncertainty Calculation

Source of Uncertainty	X_i	Uncertainty of X_i		Coverage factor k	$u(X_i)$ (dB)	C_i	$C_i u(X_i)$ (dB)
		Value (dB)	Probability Distribution				
Receiver reading	R _i	± 0.01	normal 1	1.00	0.01	1	0.01
AMN Voltage division factor	LAMN	± 1.6	normal 2	2.00	0.80	1	0.80
Sine wave voltage	dVSW	± 0.17	normal 2	2.00	0.09	1	0.09
Pulse amplitude response	dVPA	± 0.39	normal 2	2.00	0.20	1	0.20
Pulse repetition rate response	dVPR	± 0.39	normal 2	2.00	0.20	1	0.20
Noise floor proximity	dVNF	± 0.00	rectangular	$\sqrt{3}$	0.00	1	0.00
AMN VDF frequency interpolation	dVFI	± 0.10	rectangular	$\sqrt{3}$	0.06	1	0.06
AMN Impedance	dZ	+ 2.60 - 2.70	Triangular	$\sqrt{6}$	1.10	1	1.10
Mismatch : AMN-Receiver	M	± 0.07	U-Shaped	$\sqrt{2}$	0.05	1	0.05
Remark	Using 50 Ω / 50 μH AMN						
Combined Standard Uncertainty	Normal			$u_c = 1.39$ dB			
Expended Uncertainty U	Normal ($k = 2$)				$U = 2.8$ dB (CL is 95 %)		

2. Radiation Uncertainty Calculation (Below 1 GHz)

Source of Uncertainty	Xi	Uncertainty of Xi		Coverage factor k	u(Xi) (dB)	Ci	Ci u(Xi) (dB)
		Value (dB)	Probability Distribution				
Receiver reading	Ri	± 0.15	normal 1	1.00	0.15	1	0.15
Sine wave voltage	dVsw	± 0.17	normal 2	2.00	0.09	1	0.09
Pulse amplitude response	dVpa	± 0.54	normal 2	2.00	0.27	1	0.27
Pulse repetition rate response	dVpr	± 0.54	normal 2	2.00	0.27	1	0.27
Noise floor proximity	dVnf	± 0.50	normal 2	2.00	0.29	1	0.29
Antenna Factor Calibration	AF	± 1.50	rectangular	2.00	0.75	1	0.75
Antenna Directivity	AD	± 0.50	rectangular	$\sqrt{3}$	0.29	1	0.29
Antenna Factor Height Dependence	AH	± 0.50	rectangular	$\sqrt{3}$	0.29	1	0.29
Antenna Phase Centre Variation	AP	± 0.20	rectangular	$\sqrt{3}$	0.12	1	0.12
Antenna Factor Frequency Interpolation	Ai	± 0.3	rectangular	$\sqrt{3}$	0.17	1	0.17
Site Imperfections	Si	± 4.00	triangular	$\sqrt{6}$	1.63	1	1.63
Measurement Distance Variation	DV	± 0.60	rectangular	$\sqrt{3}$	0.35	1	0.35
Antenna Balance	Dbal	± 1.00	rectangular	$\sqrt{3}$	0.58	1	0.58
Cross Polarisation	DCross	± 0.90	rectangular	$\sqrt{3}$	0.52	1	0.52
Mismatch	M	+ 1.32 - 1.57	U-Shaped	$\sqrt{2}$	1.11	1	1.11
EUT Volume Diameter	Vd	0.33	normal 1	1.00	0.33	1	0.33
Combined Standard Uncertainty	Normal			$uc = 2.40 \text{ dB}$			
Expended Uncertainty U	Normal ($k = 2$)			$U = 4.8 \text{ dB} \text{ (CL is 95 %)}$			

3. Radiation Uncertainty Calculation (Above 1 GHz)

Source of Uncertainty	X_i	Uncertainty of X_i		Coverage factor k	$u(X_i)$ (dB)	C_i	$C_i u(X_i)$ (dB)
		Value (dB)	Probability Distribution				
Receiver Reading 1)	R_i	0.25	normal 1	1.00	0.25	1	0.25
Preamplifier gain 2)	G_p	± 0.23	normal 2	2	0.12	1	0.12
Receiver Sine Wave 3)	$dVsw$	± 0.27	normal 2	2	0.14	1	0.14
Instability of preamp gain 4)	dG_{pw}	± 1.2	rectangular	$\sqrt{3}$	0.70	1	0.70
Noise Floor Proximity 5)	$dVnf$	± 0.70	rectangular	$\sqrt{3}$	0.40	1	0.40
Antenna Factor Calibration 6)	A_F	± 1.50	normal 2	2	0.75	1	0.75
Directivity difference 7)	A_D	± 3.00	rectangular	$\sqrt{3}$	0.87	1	0.87
Phase Centre location 8)	A_P	± 0.30	rectangular	$\sqrt{3}$	0.17	1	0.17
Antenna Factor Frequency Interpolation 9)	A_I	± 0.30	rectangular	$\sqrt{3}$	0.17	1	0.17
Site Imperfections 10)	S_i	± 3.00	triangular	$\sqrt{6}$	1.22	1	1.22
Effect of setup table material 11)	dA_{NT}	± 1.50	rectangular	$\sqrt{3}$	0.87	1	0.87
Separation distance 12)	$d\delta$	± 0.30	rectangular	$\sqrt{3}$	0.17	1	0.17
Cross Polarization 13)	D_{Cross}	± 0.90	rectangular	$\sqrt{3}$	0.52	1	0.52
Mismatch (antenna-Preamplifier) 14)	M	+ 1.30 - 1.50	U-Shaped	$\sqrt{2}$	1.06	1	1.06
Mismatch (preamplifier-receiver) 15)	M	+ 1.20 - 1.40	U-Shaped	$\sqrt{2}$	0.99	1	0.99
Combined Standard Uncertainty	Normal			$uc = 2.86 \text{ dB}$			
Expended Uncertainty U	Normal ($k = 2$)			$U = 5.8 \text{ dB} (\text{CL is } 95\%)$			

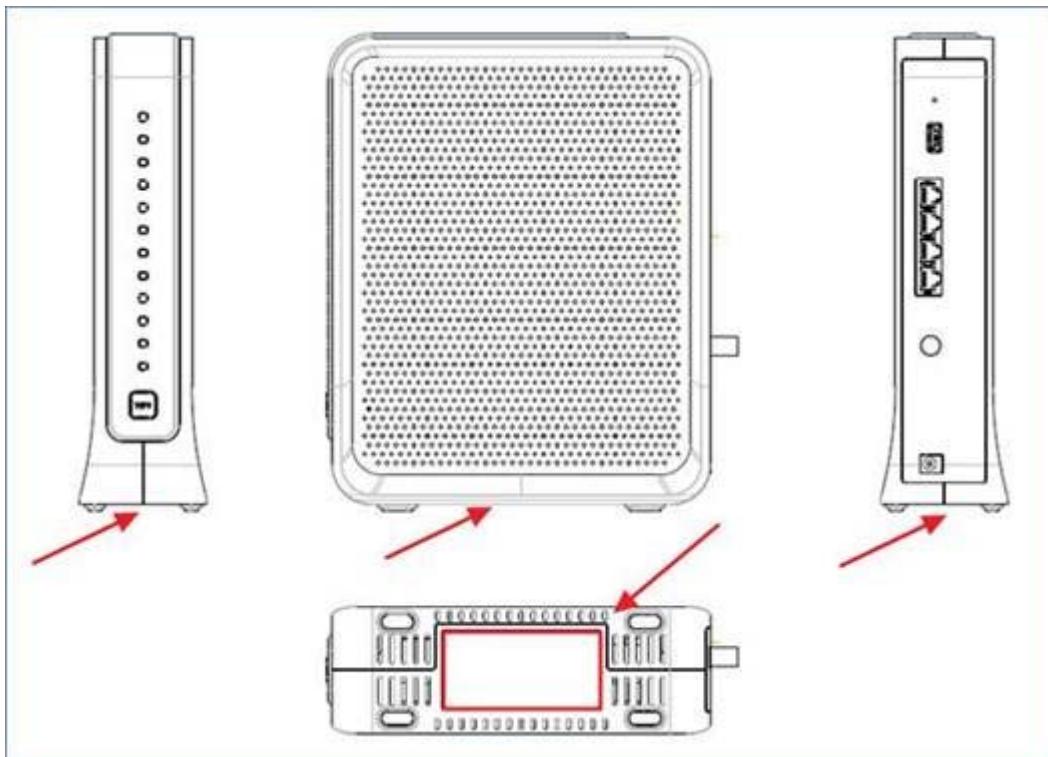
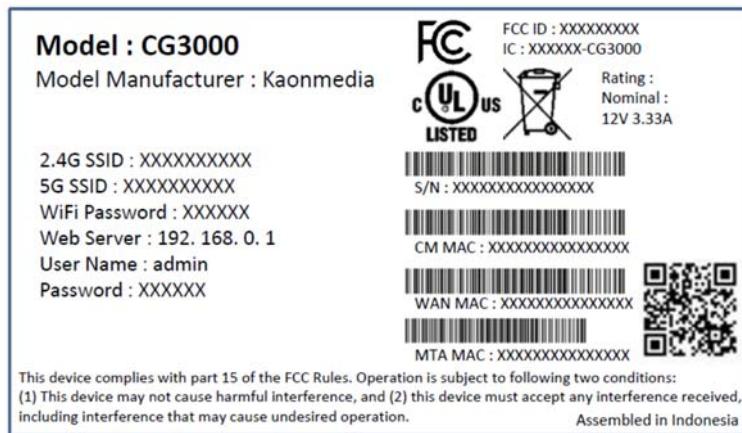
LIST OF TEST EQUIPMENT

No.	Instrument	Manufacturer	Model	Serial No.	Due to Calibration	Calibration Interval
1	EMI TEST RECEIVER	Rohde & Schwarz	ESCI	101041	Apr. 03 2019	1 year
2	Software	Rohde & Schwarz	EMC32	Version 8.53.0	-	-
3	TWO-LINE V-NETWORK	Rohde & Schwarz	ENV216	101156	Apr. 04 2019	1 year
4	EMI TEST ECEIVER	R&S	ESW8	100994	Apr. 03 2019	1 year
5	Software	R&S	EMC32	Version 10.10.01	-	-
6	TRILOG Broadband Test Antenna	SCHWARZBECK	VULB 9163	9163-01027	Jan. 31 2020	2 year
7	CONTROLLER	innco systems GmbH	CO2000-G	CO2000/562/23890210/L	-	-
8	OPEN SWITCH AND CONTROL UNIT	R&S	OSP-120	100015	-	-
9	ANTENNA MAST (LEFT)	innco systems GmbH	MA4000-EP	N/A	-	-
10	Turn Table	innco systems GmbH	DT3000-3T	N/A	-	-
11	Signal Conditioning Unit	R&S	SCU 01	10030	Apr. 03 2019	1 year
12	ATTENUATOR	FAIRVIEW	SA3N5W-06	N/A	Jan. 08 2020	1 year
13	EMI TEST RECEIVER	Rohde & Schwarz	ESU 40	100202	May. 24 2019	1 year
14	Signal Conditioning Unit	R&S	SCU 01	10029	Apr. 03 2019	1 year
15	TRILOG Broadband Test Antenna	SCHWARZBECK	VULB 9163	946	May. 18 2019	2 year
16	DOUBLE RIDGED HORN ANTENNA	R&S	HF907	100197	Jun. 28 2019	2 year
17	OPEN SWITCH AND CONTROL UNIT	R&S	OSP-120	101766	-	-
18	Signal Conditioning Unit	R&S	SCU 18	10065	Apr. 02 2019	1 year
19	ATTENUATOR	FAIRVIEW	SA3N5W-06	N/A	Apr. 04 2019	1 year
20	WiFi Filter Bank	R&S	U082	N/A	-	-
21	TILT ANTENNA MAST	innco systems GmbH	MA4640-XP-EP	N/A	-	-
22	CONTROLLER	innco systems GmbH	CO3000	CO3000/937/3 8330516/L	-	-
23	Turntable	innco systems GmbH	DT2000-2t	N/A	-	-

APPENDIX A – SAMPLE LABEL

Labeling Requirements

The sample label shown shall be *permanently affixed* at a conspicuous location on the device and be readily visible to the user at the time of purchase.



APPENDIX B – PHOTOGRAPHS OF TEST SET-UP

The **Conducted Test Picture** and **Radiated Test Picture** and show the worst-case configuration and cable placement.

- **Conducted Test Picture(Front)_Configuration 1**



- **Conducted Test Picture(Side)_Configuration 1**



- **Conducted Test Picture(Front)_Configuration 2**



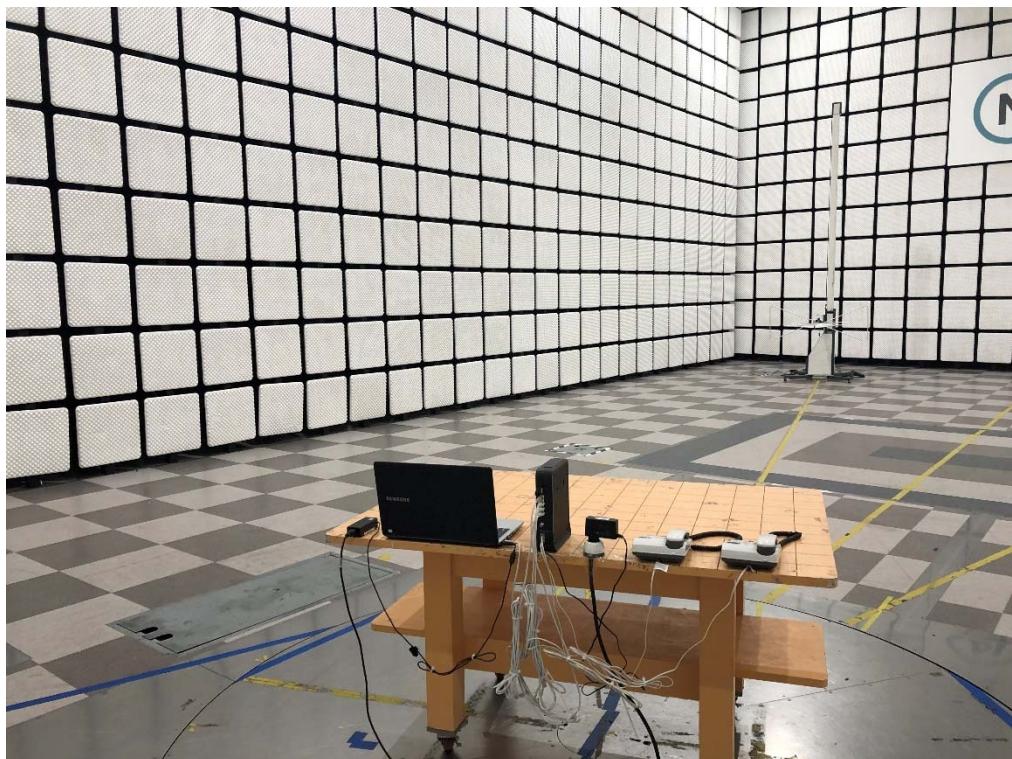
- **Conducted Test Picture(Side)_Configuration 2**



- **Radiated Test Picture(Below 1 GHz_Front)_Configuration 1**



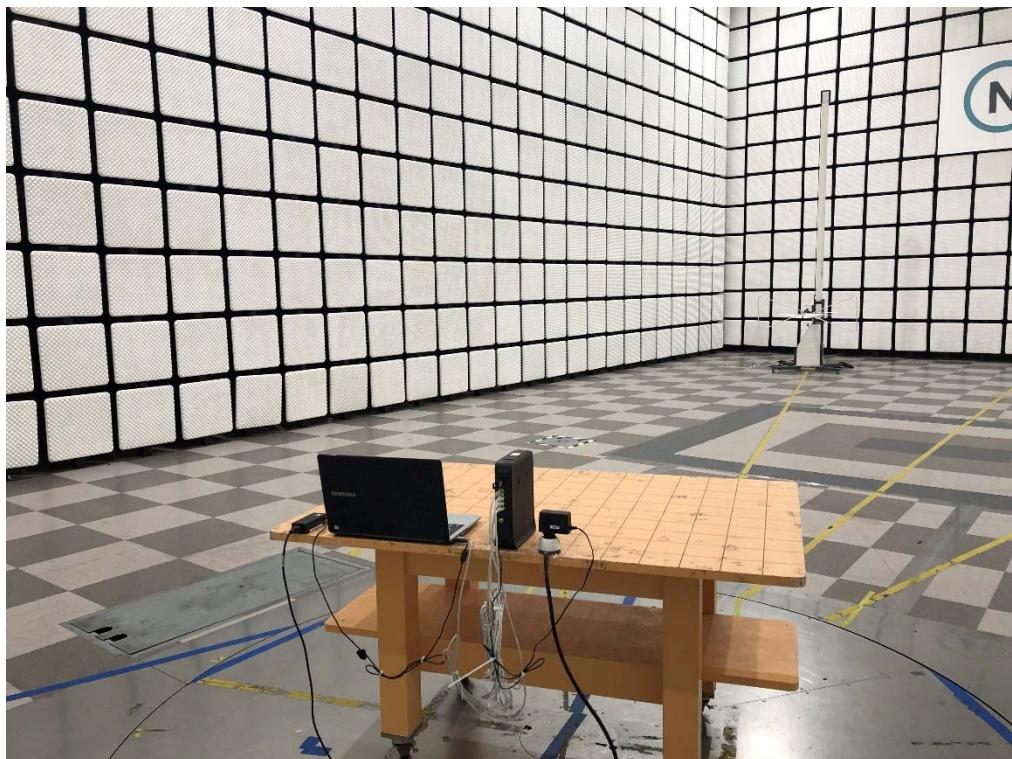
- **Radiated Test Picture(Below 1 GHz_Rear)_Configuration 1**



- **Radiated Test Picture(Below 1 GHz_Front)_Configuration 2**



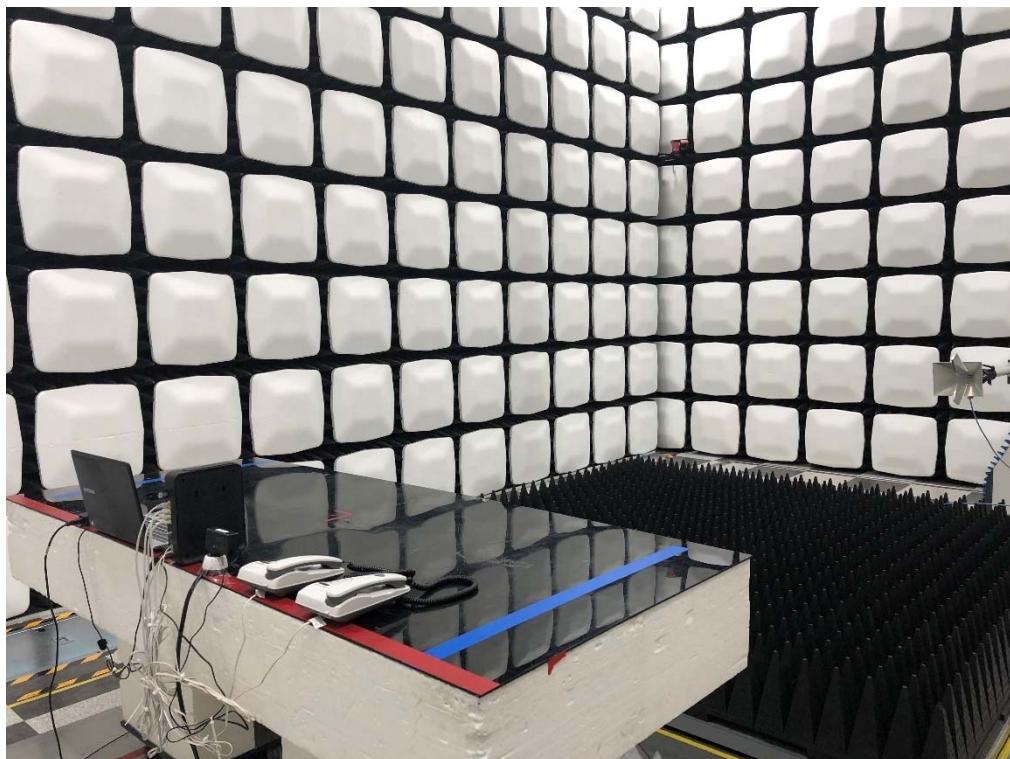
- **Radiated Test Picture(Below 1 GHz_Rear)_Configuration 2**



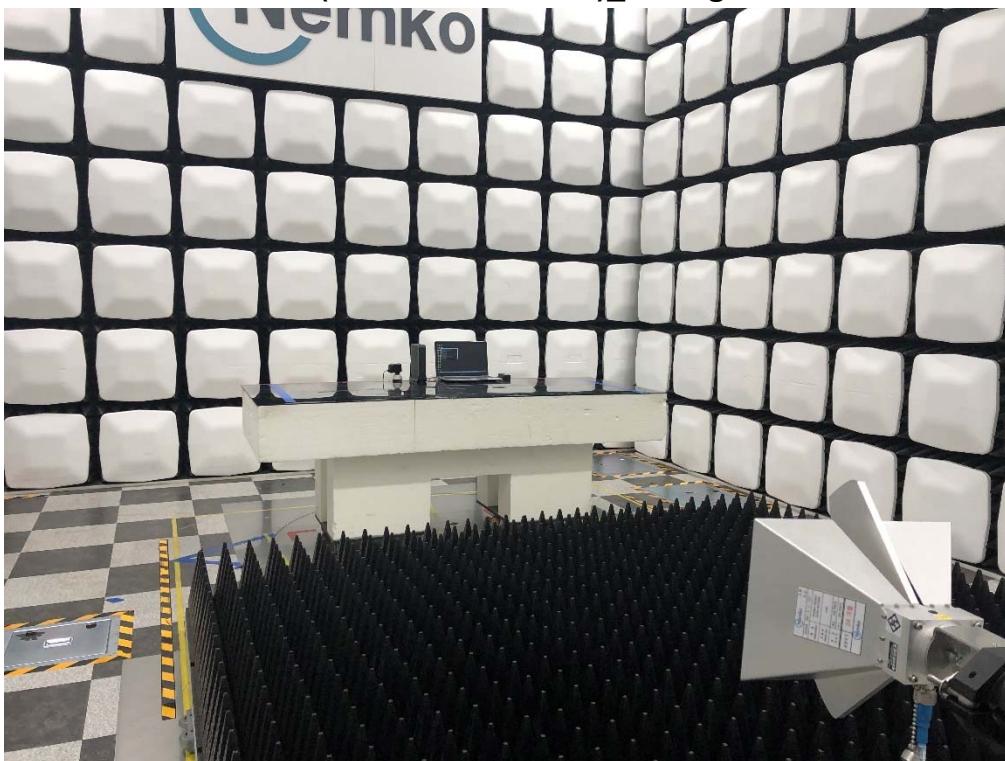
- Radiated Test Picture(Above 1 GHz_Front)_Configuration 1



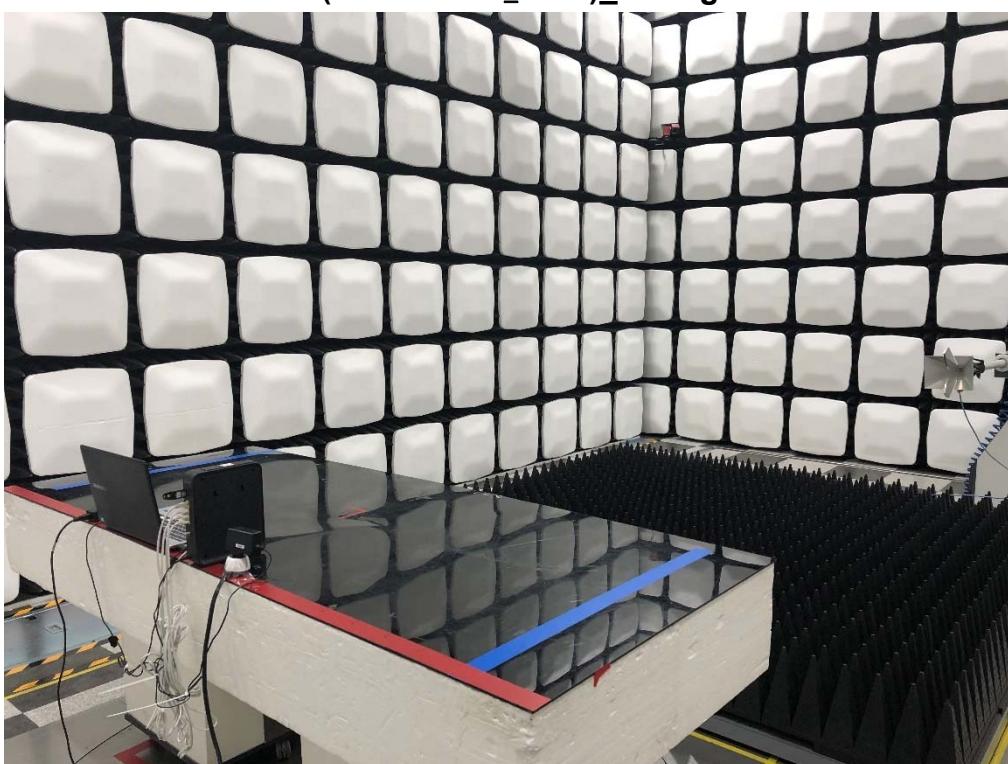
- Radiated Test Picture(Above 1 GHz_Rear)_Configuration 1



- Radiated Test Picture(Above 1 GHz_Front)_Configuration 2



- Radiated Test Picture(Above 1 GHz_Rear)_Configuration 2



APPENDIX C – EUT PHOTOGRAPHS

Front View of EUT_Configuration 1

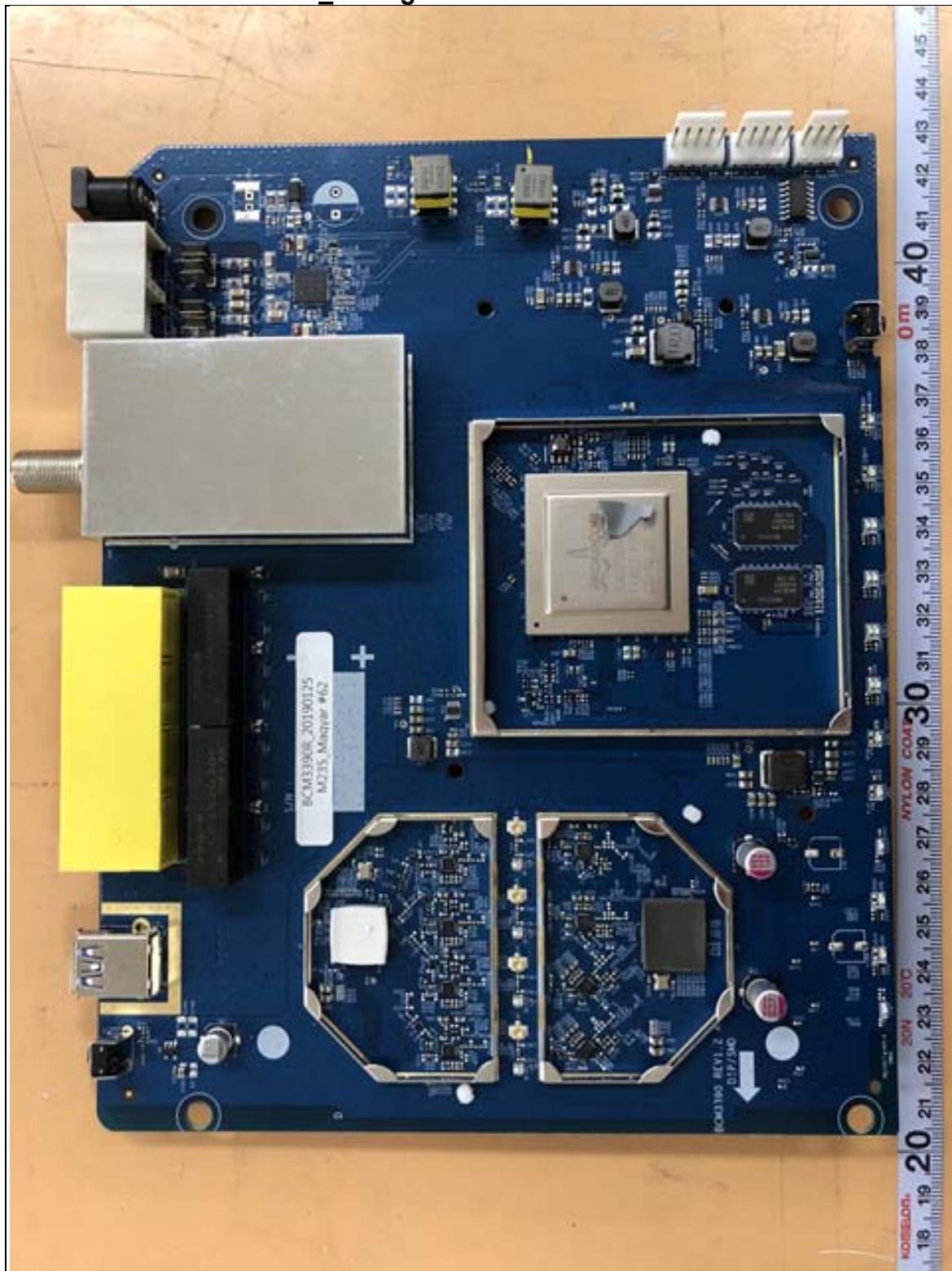


Rear View of EUT_Configuration 1

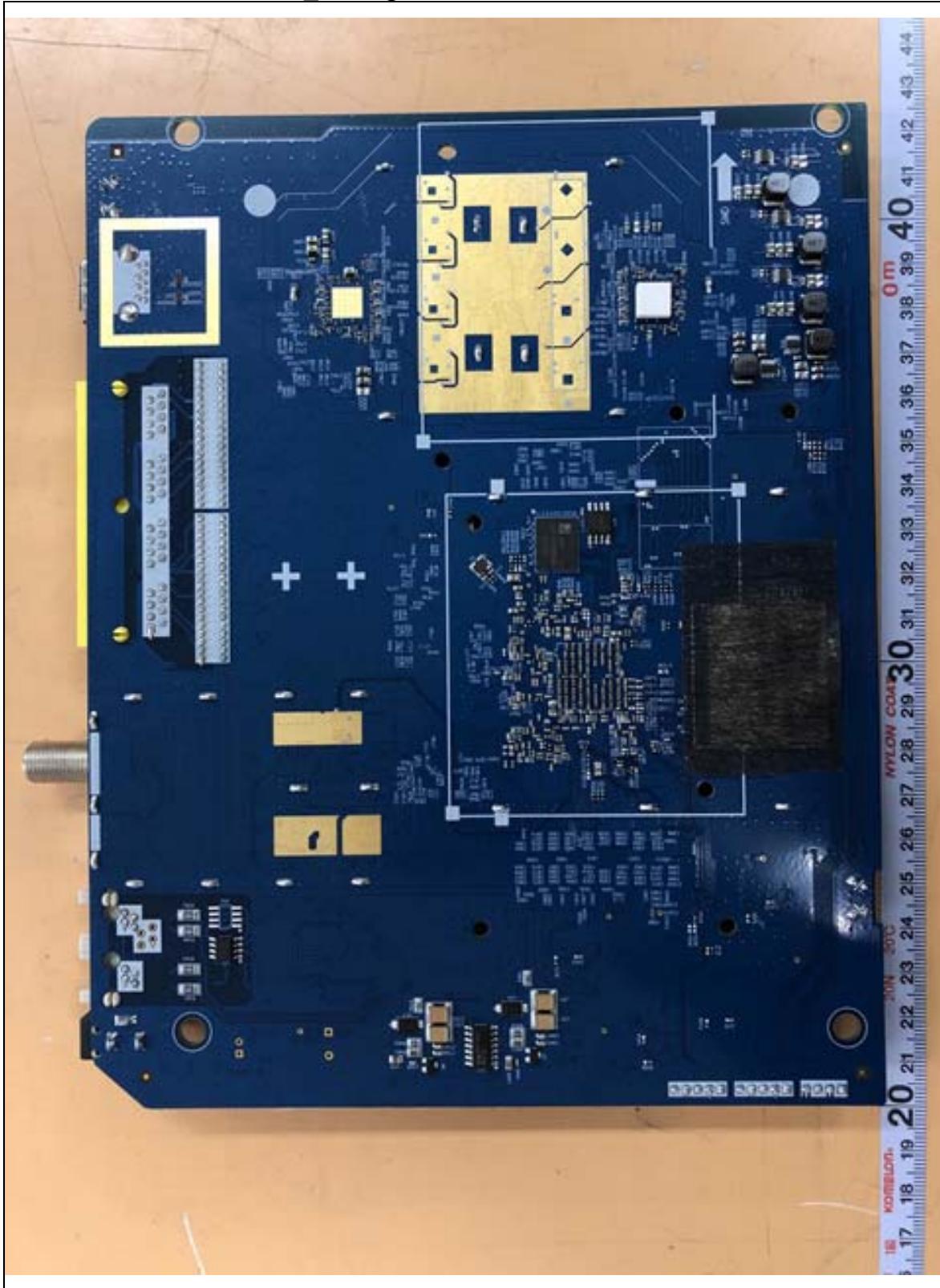


View of Inside_Configuration 1

Front View of Main Board_Configuration 1



Rear View of Main Board_Configuration 1



Front View of WiFi antenna_Configuration 1

Rear View of WiFi antenna_Configuration 1

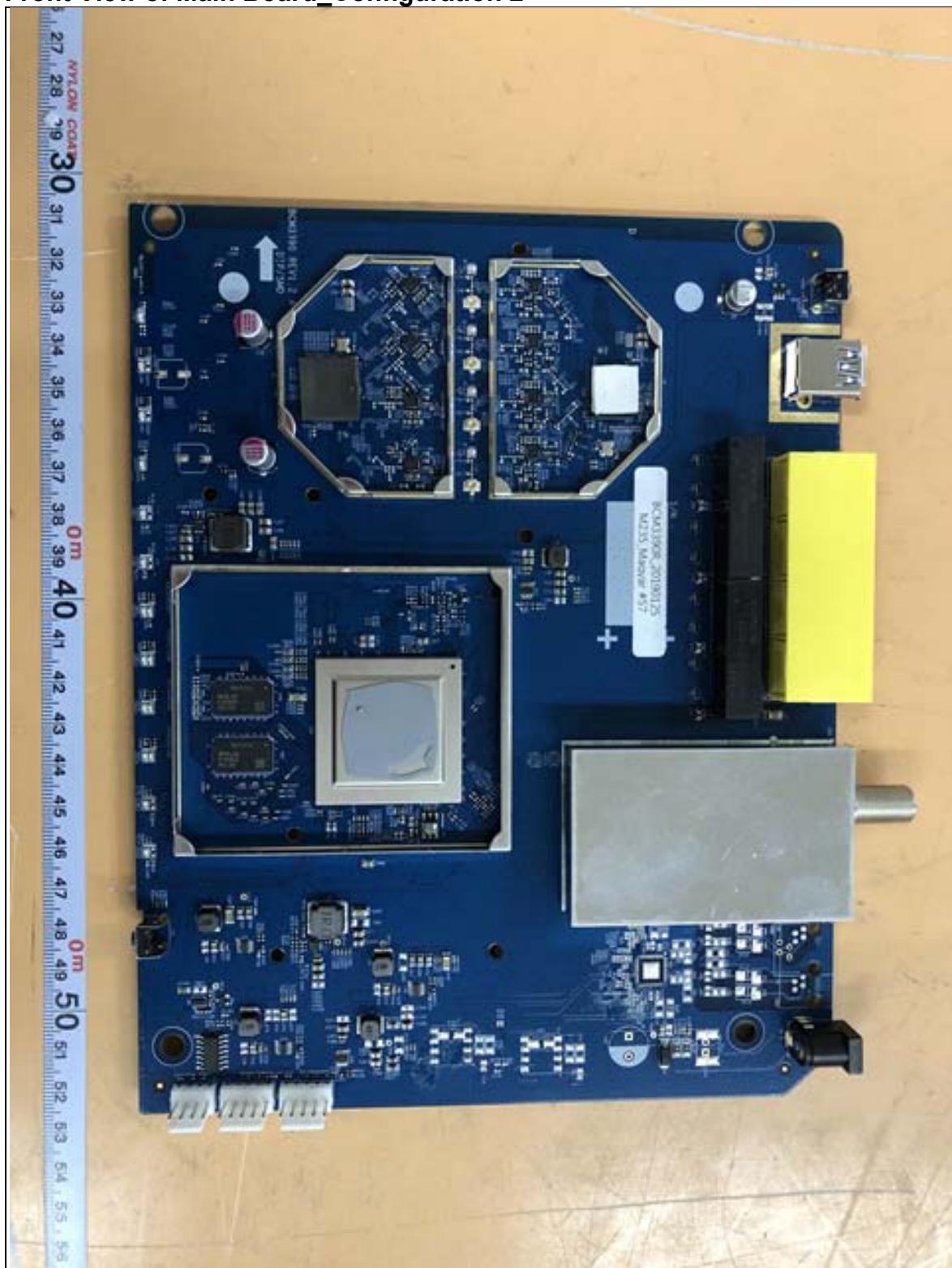
Front View of EUT_Configuration 2

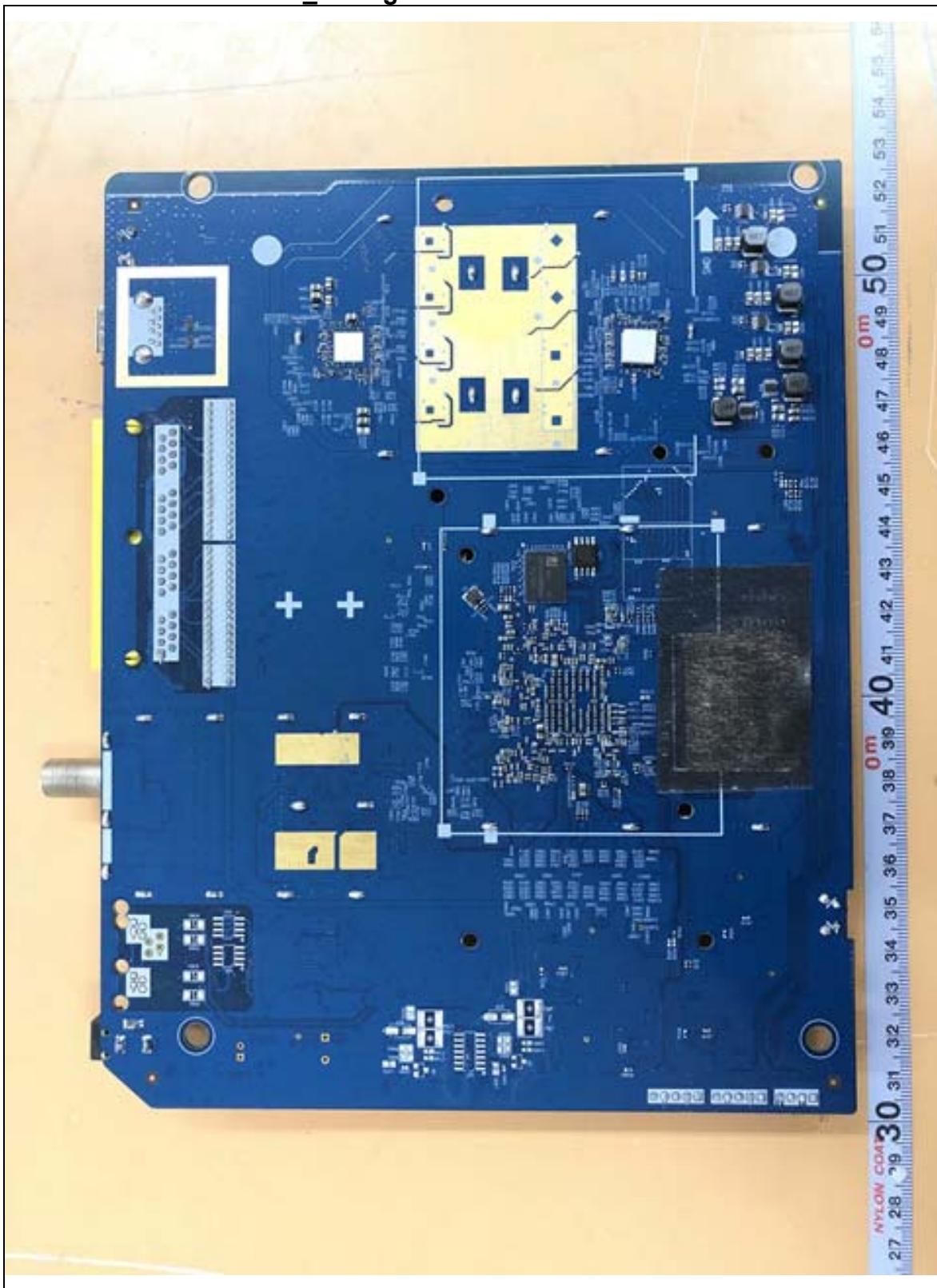


Rear View of EUT_Configuration 2

View of Inside_Configuration 2

Front View of Main Board_Configuration 2



Rear View of Main Board_Configuration 2

Front View of WiFi antenna_Configuration 2



Rear View of WiFi antenna_Configuration 2