

TEST REPORT



CTK Co., Ltd.
(Ho-dong), 113, Yejik-ro, Cheoin-gu,
Yongin-si, Gyeonggi-do, Korea
Tel: +82-31-339-9970
Fax: +82-31-624-9501

Report No.:
CTK-2021-02141
Page (1) / (35) Pages

1. Client

- Name : BnCOM CO.LTD
- Address : 1106, M-Techno Center, 46, Gongdan-ro 140 Beon-gil, Gunpo-si, Gyeonggi-do, 15847, Korea
- Date of Receipt : 2021-05-14

2. Manufacturer

- Name : BnCOM CO.LTD
- Address : 1106, M-Techno Center, 46, Gongdan-ro 140 Beon-gil, Gunpo-si, Gyeonggi-do, 15847, Korea

3. Use of Report : For FCC Certification

4. Test Sample / Model : BLUETOOTH MODULE / BCM-DC100-AS

5. Date of Test : 2021-06-03 to 2021-06-08

6. Test Standard(method) used : FCC 47 CFR part 15 subpart C 15.247, ANSI C63.10-2013

7. Testing Environment : Temp.: (23 ± 1) °C, Humidity: (46 ± 3) % R.H.

8. Test Results : Compliance

The results shown in this test report refer only to the sample(s) tested unless otherwise stated. This Test Report cannot be reproduced, except in full.

Affirmation	Tested by Bongjun, Jang: (Signature) 	Technical Manager Young-taek Lee: (Signature) 
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2021-06-09

Republic of KOREA **CTK Co., Ltd.**



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Report No.:
CTK-2021-02141
Page (2) / (35) Pages

REPORT REVISION HISTORY

Date	Revision	Page No
2021-06-09	Issued (CTK-2021-02141)	all

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Report No.:
CTK-2021-02141
Page (3) / (35) Pages

CONTENTS

1. General Product Description	4
1.1 Client Information	4
1.2 Product Information.....	4
1.3 Peripheral Devices	4
2. Facility and Accreditations.....	5
2.1 Test Facility	5
2.2 Laboratory Accreditations and Listings.....	5
2.3 Calibration Details of Equipment Used for Measurement.....	5
3. Test Specifications	6
3.1 Standards	6
3.2 Mode of operation during the test	6
3.3 Maximum Measurement Uncertainty	7
4. Technical Characteristic Test.....	8
4.1 6dB Bandwidth & 99% Bandwidth.....	8
4.2 Maximum peak Conducted Output Power	11
4.3 Power Spectral Density	14
4.4 Band Edge & Conducted Spurious emission	17
4.5 Radiated Emission	21
4.6 AC Power Line Conducted Emissions.....	32
APPENDIX A – Test Equipment Used For Tests	35

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Page (4) / (35) Pages

1. General Product Description

1.1 Client Information

Company	BnCOM CO.LTD
Contact Point	1106, M-Techno Center, 46, Gongdan-ro 140 Beon-gil, Gunpo-si, Gyeonggi-do, 15847, Korea
Contact Person	Name : Moon Hyuk Jae E-mail : jay@bncomm.co.kr Tel : +82-70-5147-6034

1.2 Product Information

FCC ID	2APDI-BCM-DC100-AS
Product Description	BLUETOOTH MODULE
Model name	BCM-DC100-AS
Variant Model name	-
Operating Frequency	2 402 MHz - 2 480 MHz
RF Output Power	6.84 dBm (4.83 mW)
Antenna Specification	Antenna type : PCB Pattern Antenna Peak Gain : 1.33 dBi
Number of channels	40
Channel Spacing	2 MHz
Type of Modulation	GFSK
Power Source	DC 3.3 V
RF Power setting in Test SW	BLUETOOL_MI_1.9.4.5

1.3 Peripheral Devices

-For Conducted Measurement and Radiated Measurement

Device	Manufacturer	Model No.	Serial No.
Note Computer	Samsung Electronics Co., Ltd.	NT-R540	ZW3B93AZ900395N
AC/DC Adapter	Tech-Power Electric Co., Ltd.	NT01	09708530



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Report No.:
CTK-2021-02141
Page (5) / (35) Pages

2. Facility and Accreditations

2.1 Test Facility

The measurement facility is located at (Ho-dong), 113, Yejik-ro, Cheoin-gu, Yong-in-si, Gyeonggi-do, Korea.

2.2 Laboratory Accreditations and Listings

Country	Agency	Registration Number
USA	FCC	805871
CANADA	ISED	8737A-2
KOREA	NRRA	KR0025

2.3 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. All test equipment calibrations are traceable to the Korea Research Institute of Standards and Science (KRISS), therefore, all test data recorded in this report is traceable to KRISS.

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3. Test Specifications

3.1 Standards

Section in FCC	Requirement(s)	Status (Note 1)	Test Condition
15.247(a)	6 dB Bandwidth	C	Conducted
15.247(e)	Transmitter power spectral density	C	
15.247(b)	Maximum peak conducted output power	C	
15.247(d)	Unwanted emission	C	
15.209	Transmitter emission	C	Radiated
15.207(a)	AC Conducted Emission	C	Line Conducted

Note 1: C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable

Note 2: The data in this test report are traceable to the national or international standards.

Note 3: The sample was tested according to the following specification: FCC Part 15.247, ANSI C63.10-2013

Note 4: The tests were performed according to the method of measurements prescribed in KDB No.558074.

3.2 Mode of operation during the test

The EUT is operated in a manner representative of the typical of the equipments. During at testing, system components were manipulated within the confines of typical usage to maximize each emission. All modulation modes were tests. The results are only attached worst cases.

Test Frequency

Lowest channel	Middle channel	Highest channel
2 402 MHz	2 440 MHz	2 480 MHz

Test mode

Modulation	Duty Cycle
GFSK	63.5 %



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Report No.:
CTK-2021-02141
Page (7) / (35) Pages

3.3 Maximum Measurement Uncertainty

The value of the measurement uncertainty for the measurement of each parameter.
Coverage factor $k = 2$, Confidence levels of 95 %

Description	Uncertainty
Conducted RF Output Power	1.5 dB
Occupied Bandwidth	0.1 MHz
Unwanted Emission(conducted)	3.0 dB
Radiated Emissions ($f \leq 1$ GHz)	4.0 dB
Radiated Emissions ($f > 1$ GHz)	5.0 dB



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Report No.:
CTK-2021-02141
Page (8) / (35) Pages

4. Technical Characteristic Test

4.1 6dB Bandwidth & 99% Bandwidth

Test Procedures(ANSI C63.10-2013 6.9.2)

Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Test Procedures(ANSI C63.10-2013 6.9.3)

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission.

Use the 99% power bandwidth function of the instrument and report the measured bandwidth.

Test Settings :

Center frequency = the highest, middle and the lowest channels

- a) RBW = 100 kHz
- b) VBW \geq 3 x RBW
- c) Detector = peak
- d) Trace mode = Max hold
- e) Sweep = auto couple
- f) Allow trace to fully stabilize
- g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

Limit :

6 dB Bandwidth > 500 kHz

Test Results :

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	99 % Bandwidth [MHz]	Result
Low	2 402	0.718	1.080	Complies
Middle	2 440	0.721	1.081	Complies
High	2 480	0.720	1.081	Complies

See next pages for actual measured spectrum plots.



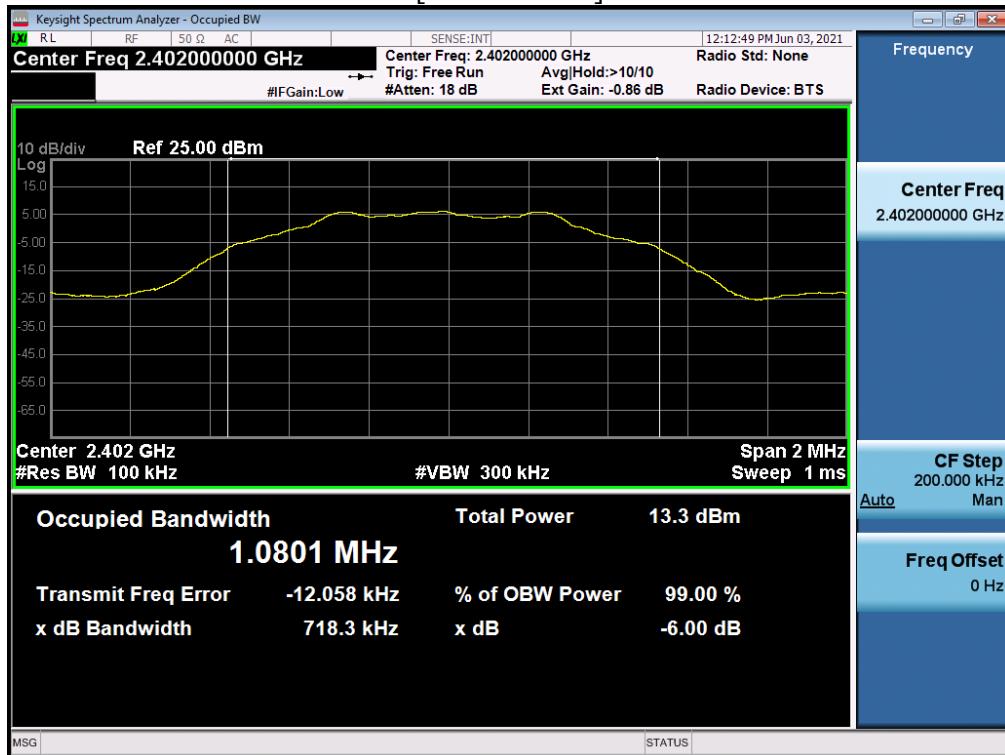
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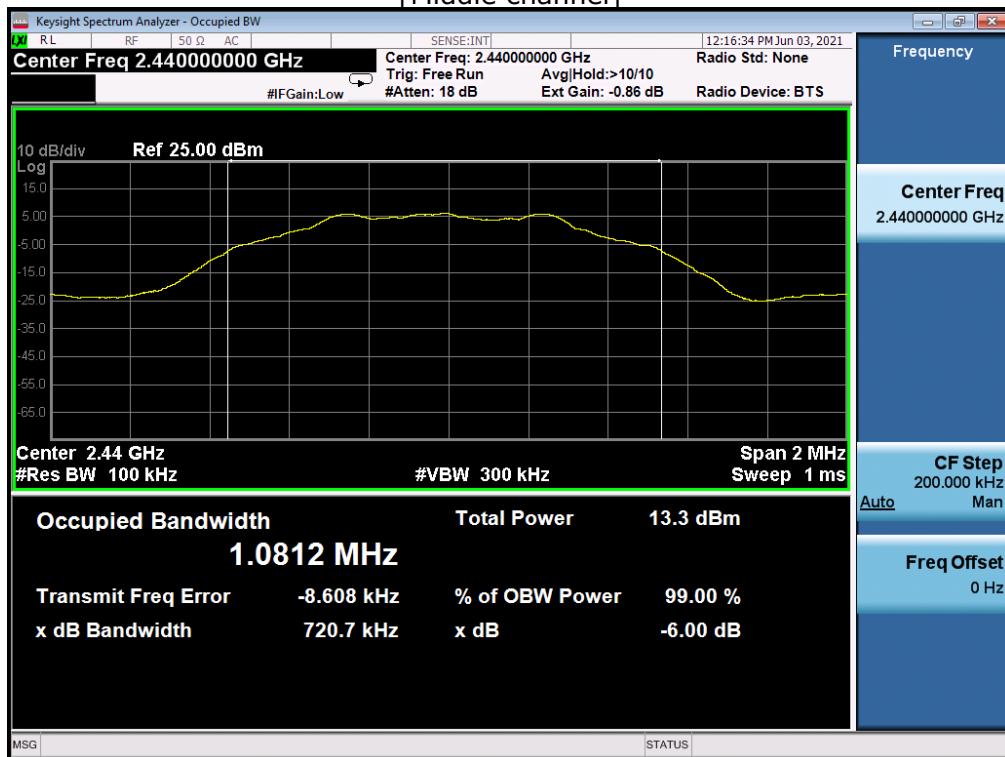
Report No.:
CTK-2021-02141
Page (9) / (35) Pages

6 dB bandwidth & 99% Bandwidth

[Low channel]



[Middle channel]



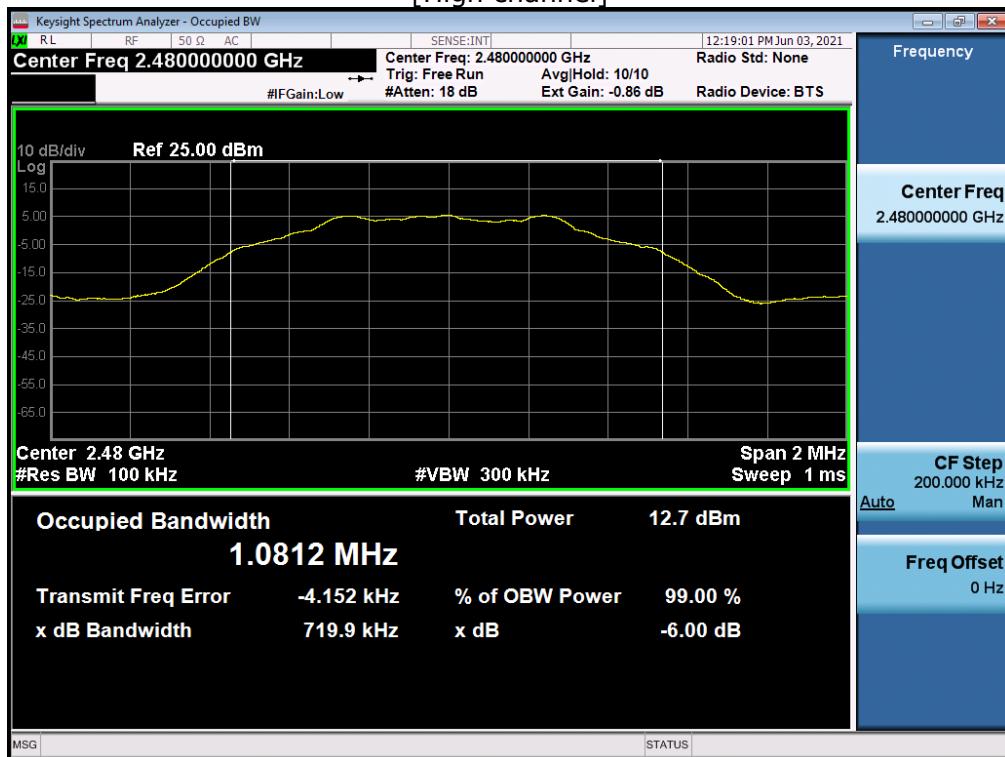


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CTK-2021-02141
Page (10) / (35) Pages

[High channel]



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4.2 Maximum peak Conducted Output Power

Test Procedures(ANSI C63.10-2013 11.9.1)

The following procedure can be used when the maximum available RBW of the instrument is less than the DTS bandwidth:

Test Settings:

Center frequency = the highest, middle and the lowest channels

a) RBW \geq DTS Bandwidth	b) VBW $\geq 3 \times$ RBW
c) span $\geq 3 \times$ RBW	d) Sweep time = auto couple
e) Detector = peak	f) Trace mode= max hold
g) Allow trace to fully stabilize	
h) Use peak marker function to determine the peak amplitude level.	

Limit :

Maximum Output Power < 1 W (30 dBm)

Test Results :

Channel	Frequency [MHz]	Measurement data [dBm]	Limit [dBm]	Result
Low	2 402	6.84	30	Complies
Middle	2 440	6.83	30	Complies
High	2 480	6.17	30	Complies

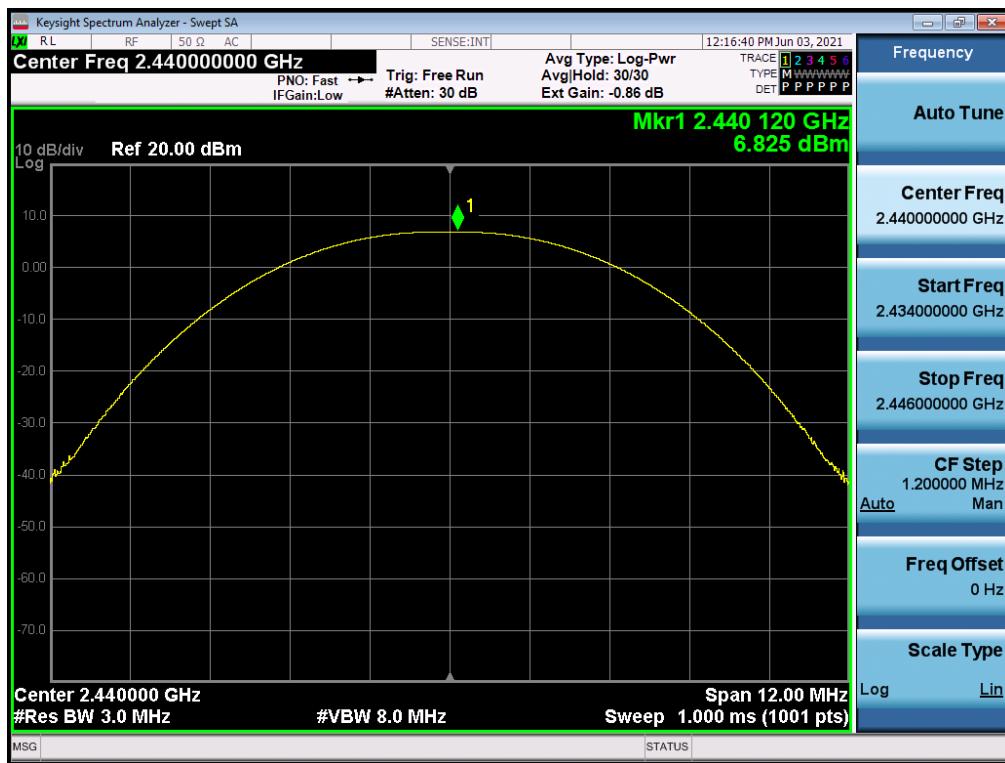
See next pages for actual measured spectrum plots.

Output Power

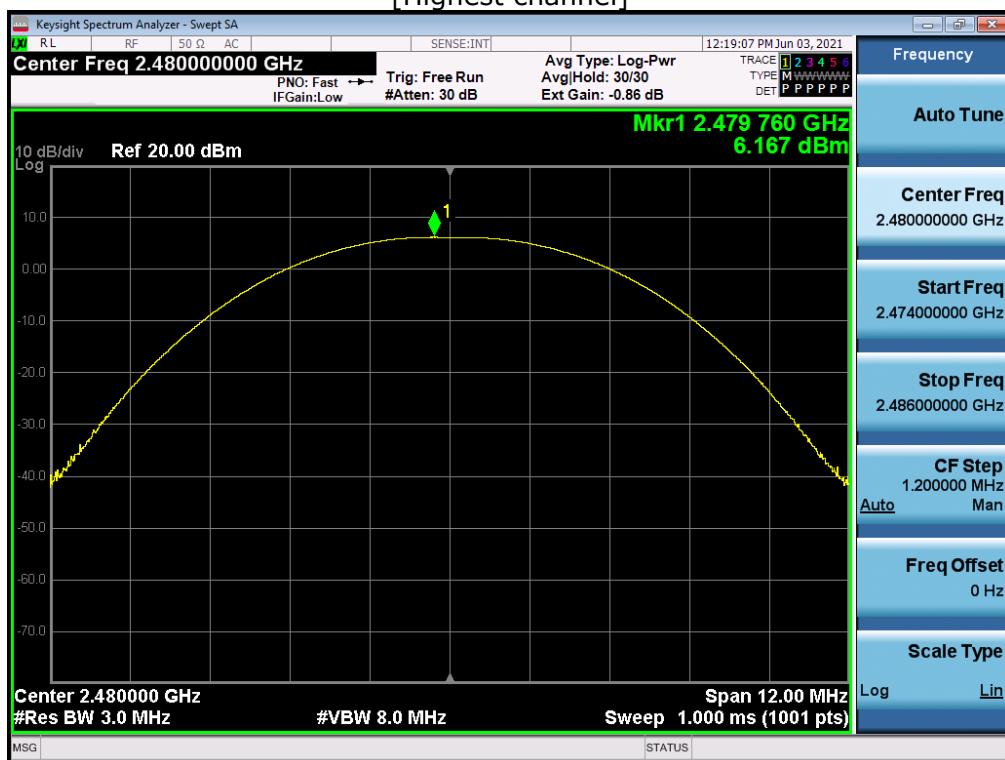
[Lowest channel]



[Middle channel]



[Highest channel]





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Report No.:
CTK-2021-02141
Page (14) / (35) Pages

4.3 Power Spectral Density

Test Procedures(ANSI C63.10-2013 11.10.2)

This procedure shall be used if maximum peak conducted output power was used to demonstrate compliance.

Test Settings:

Center frequency = the highest, middle and the lowest channels

- a) RBW : $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$
- b) VBW $\geq 3 \times \text{RBW}$
- c) span $\geq 1.5 \times \text{DTS bandwidth}$
- d) Sweep time = auto couple
- e) Detector = peak
- f) Trace mode= max hold
- g) Allow trace to fully stabilize
- h) Use the peak marker function to determine the maximum amplitude level within the RBW.

Limit :

Power Spectral Density < 8 dBm @ 3 kHz BW

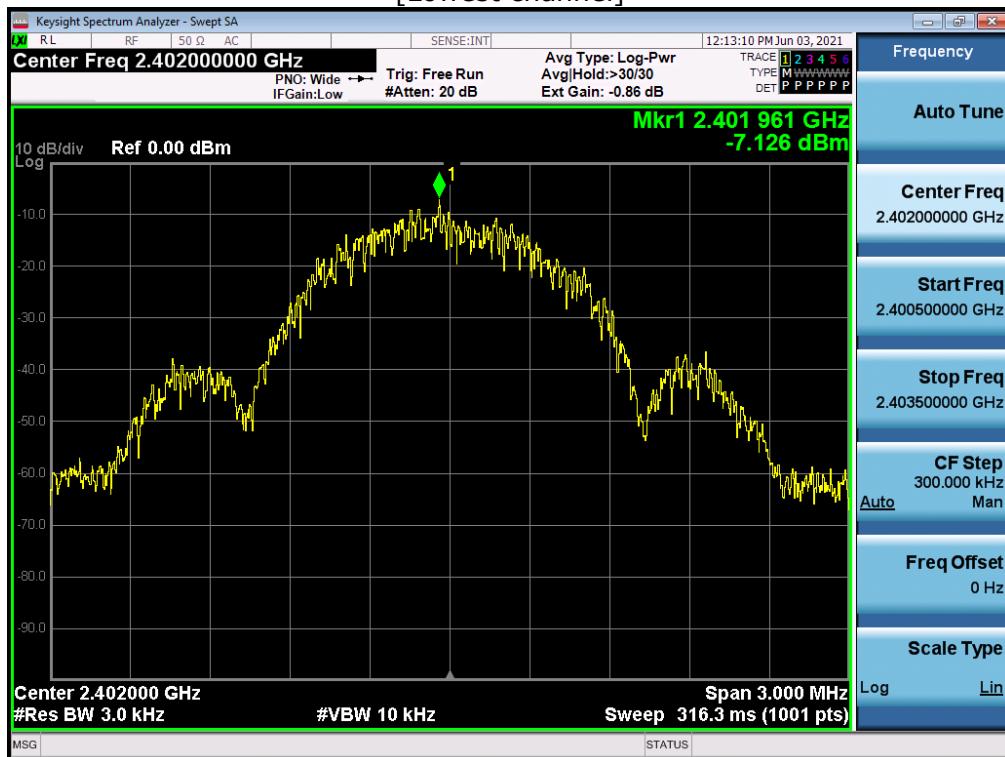
Test Results :

Channel	Frequency [MHz]	Measurement data [dBm]	Limit [dBm]	Result
Low	2 402	-7.13	8	Complies
Middle	2 440	-7.20	8	Complies
High	2 480	-7.90	8	Complies

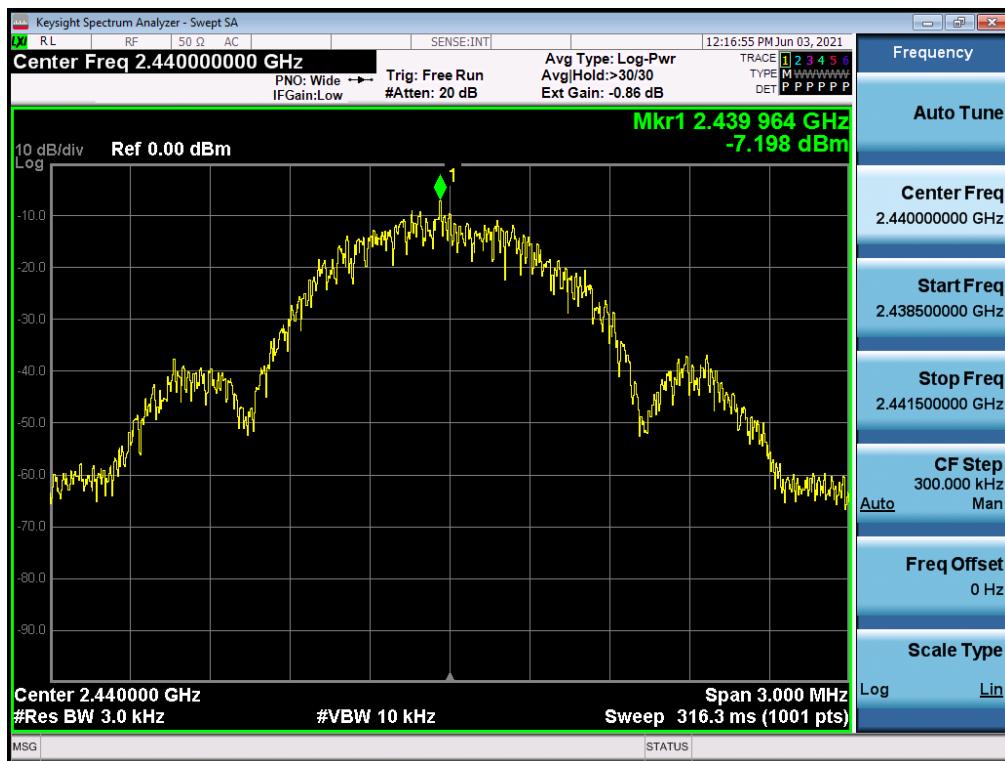
See next pages for actual measured spectrum plots.

Power Spectral Density

[Lowest channel]



[Middle channel]





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Report No.:
CTK-2021-02141
Page (16) / (35) Pages

[Highest channel]





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Report No.:
CTK-2021-02141
Page (17) / (35) Pages

4.4 Band Edge & Conducted Spurious emission

Test Procedures(ANSI C63.10-2013 11.11.3)

The Unwanted emission from the EUT were measured according to the dictates PKPSD measurement procedure in section 11.11 of ANSI C63.10-2013.

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under Section 5.4(4), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

Test Settings:

Center frequency = the highest, middle and the lowest channels

- a) RBW = 100 kHz
- b) VBW \geq 3 x RBW
- c) Detector = peak
- d) Sweep time = auto couple
- e) Trace mode= max hold
- f) Allow trace to fully stabilize
- g) Use the peak marker function to determine the maximum amplitude level.

Limit :

Emission level < 20 dBc

Test results : Complies

- All conducted emission in any 100kHz bandwidth outside of the spread spectrum band was at least 20dB lower than the highest in-band spectral density. Therefore the applying equipment meets the requirement.

See next pages for actual measured spectrum plots.



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CTK-2021-02141
Page (18) / (35) Pages

Conducted Band-Edge



Conducted Spurious Emission

[Lowest channel]



[Middle Channel]





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Report No.:
CTK-2021-02141
Page (20) / (35) Pages

[Highest Channel]





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Report No.:
CTK-2021-02141
Page (21) / (35) Pages

4.5 Radiated Emission

Test Location

- 10 m SAC (test distance : 10 m, 3 m)
- 3 m SAC (test distance : 3 m)

Test Procedures

- 1) In the frequency range of 9 kHz to 30 MHz, magnetic field is measured with Loop Antenna. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.
- 2) In the frequency range above 30 MHz, Bi-Log Test Antenna(30 MHz to 1 GHz) and Horn Test Antenna(above 1 GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is carried from 1m to 4m above the ground to determine the maximum value of the field strength. The emissions levels at both horizontal and vertical polarizations should be tested.

Instrument Settings

Frequency Range = 9 kHz ~ 25 GHz (2.4 GHz 10th harmonic)

- a) RBW = 1 MHz for $f \geq 1$ GHz, 100 kHz for $f < 1$ GHz, 9 kHz for $f < 30$ MHz
- b) VBW \geq RBW
- c) Sweep time = auto couple



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Report No.:
CTK-2021-02141
Page (22) / (35) Pages

Limit :

FCC Part 15 § 15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

Table 1. Restricted Frequency Bands

MHz	MHz	MHz	MHz	MHz	GHz
0.09-0.11	8.37626-8.38675	73-74.6	399.9-410	2690-2900	10.6-12.7
¹ 0.495-0.505	8.41425-8.41475	74.8-75.2	608-614	3260-3267	13.25-13.4
2.1735-2.1905	12.29-12.293	108-121.94	960-1240	3332-3339	14.47-14.5
4.125-4.128	12.51975-12.52025	123-138	1300-1427	3345.8-3358	15.35-16.2
4.17725-4.17775	12.57675-12.57725	149.9-150.05	1435-1626.5	3600-4400	17.7-21.4
4.20725-4.20775	13.36-13.41	156.52475-156.52525	1645.5-1646.5	4500-5150	22.01-23.12
6.215-6.218	16.42-16.423	156.7-156.9	1660-1710	5350-5460	23.6-24
6.26775-6.26825	16.69475-16.69525	162.0125-167.17	1718.8-1722.2	7250-7750	31.2-31.8
6.31175-6.31225	16.80425-16.80475	167.72-173.2	2200-2300	8025-8500	36.43-36.5
8.291-8.294	25.5-25.67	240-285	2310-2390	9000-9200	² Above 38.6
8.362-8.366	37.5-38.25	322-335.4	2483.5-2500	9300-9500	

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

² Above 38.6

§ 15.205 (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.



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Report No.:
CTK-2021-02141
Page (23) / (35) Pages

FCC Part 15 § 15.209 (a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table :

Except when the requirements applicable to a given device state otherwise, emissions from licence-exempt transmitters shall comply with the field strength limits shown in Table 2. Additionally, the level of any transmitter emission shall not exceed the level of the transmitter's fundamental emission.

Table 2. General Field Strength Limits for Licence-Exempt Transmitters

Frequency(MHz)	Field Strength (μ V/m)	Field Strength (dB μ V/m)	Measurement Distance (meters)
0.009-0.490	2400/F(kHz)	48.5 – 13.8	300
0.490-1.705	24000/F(kHz)	33.8 – 23	30
1.705-30	30	29.5	30
30-88	100**	40	3
88-216	150**	43.5	3
216-960	200**	46	3
Above 960	500	54	3

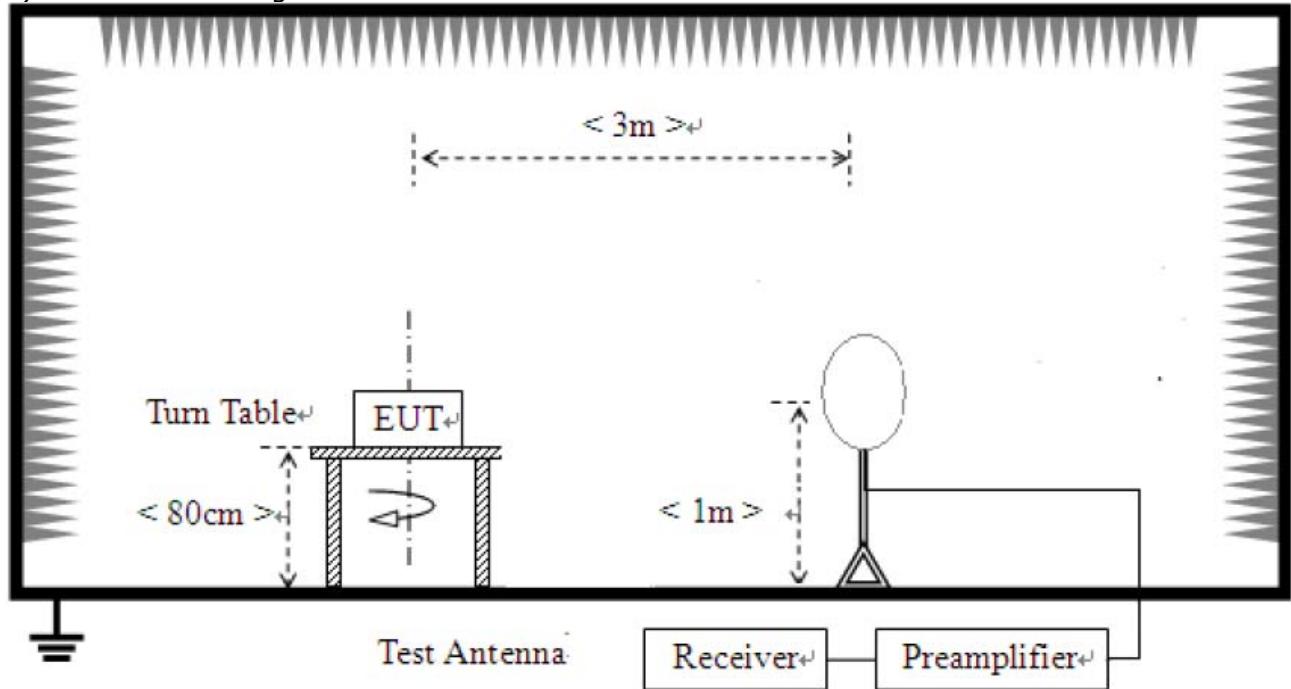
** Except as provided in 15.209(g).fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72MHz, 76-88MHz, 174-216MHz, 470-806MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g.15.231 and 15.241.

Note :

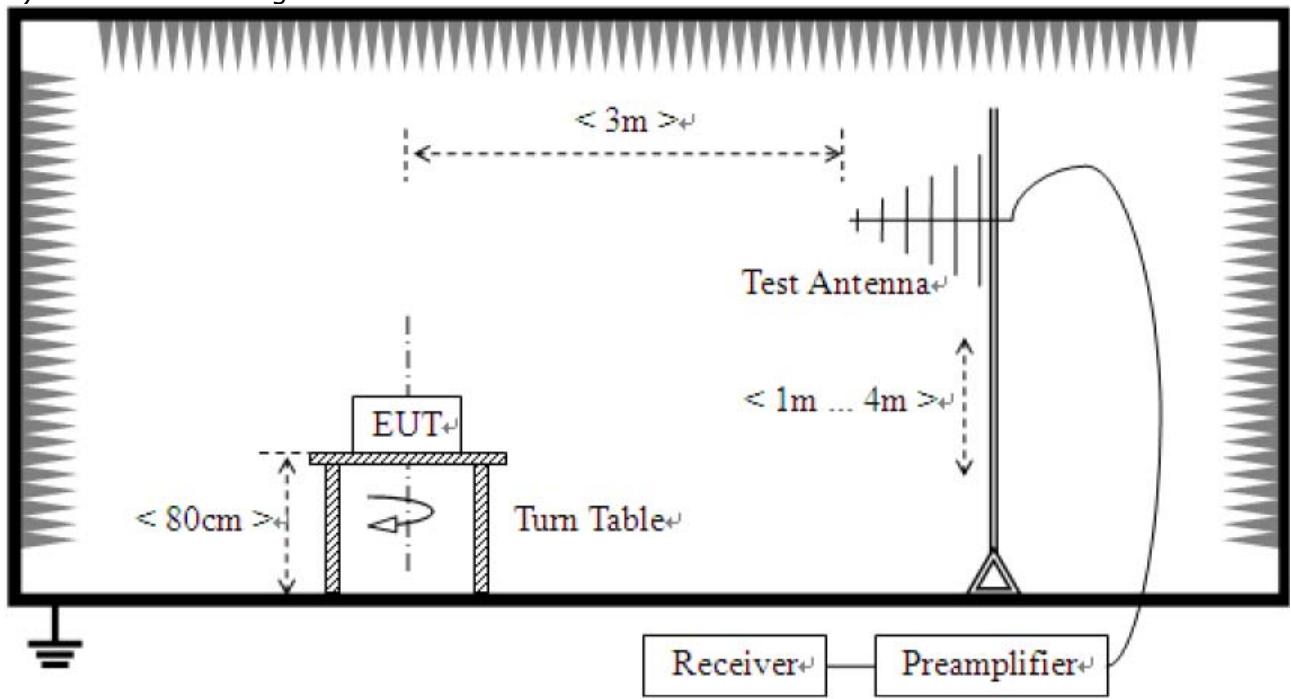
- 1) For above 1 GHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.
- 2) For above 1 GHz, limit field strength of harmonics : 54 dB μ V/m@3m (AV) and 74 dB μ V/m@3m (PK)
- 3) For measurement above 1GHz, the resolution bandwidth is set to 1 MHz and video bandwidth is set to 3 MHz and detector is peak for peak measurement and detector RMS and Trace Averaging type for average measurement.

Test Setup:

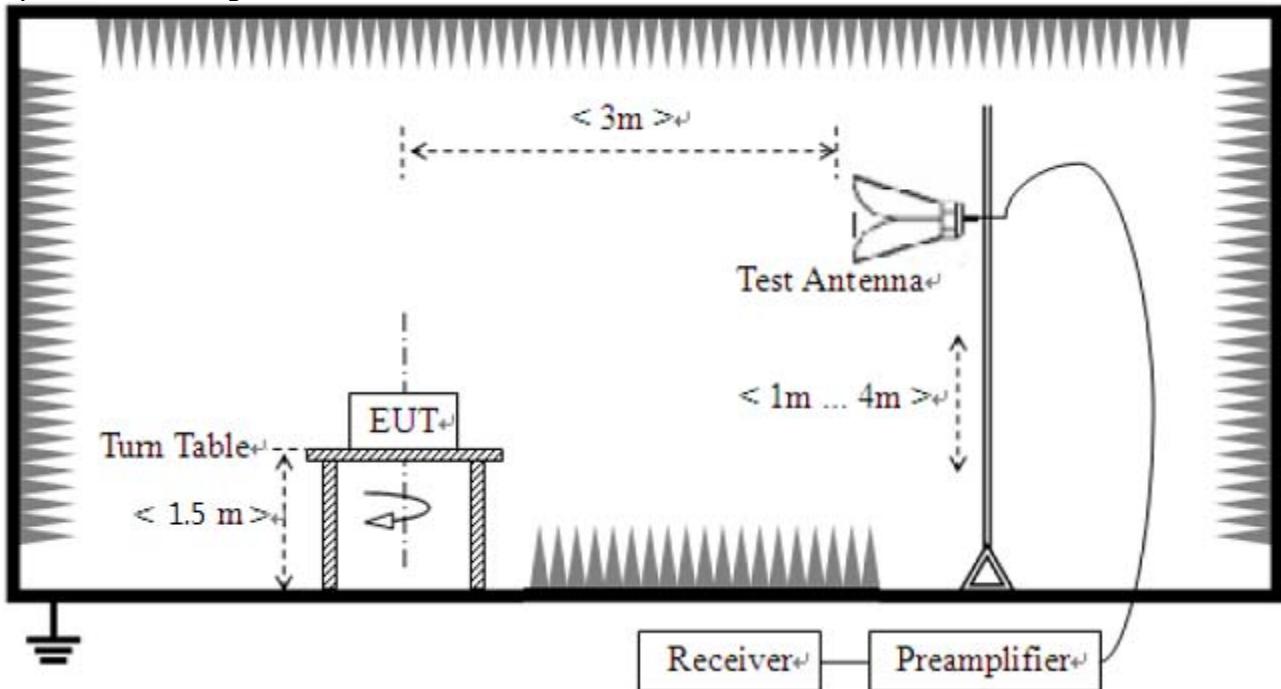
- 1) For field strength of emissions from 9 kHz to 30 MHz



- 2) For field strength of emissions from 30 MHz to 1 GHz



3) For field strength of emissions above 1 GHz



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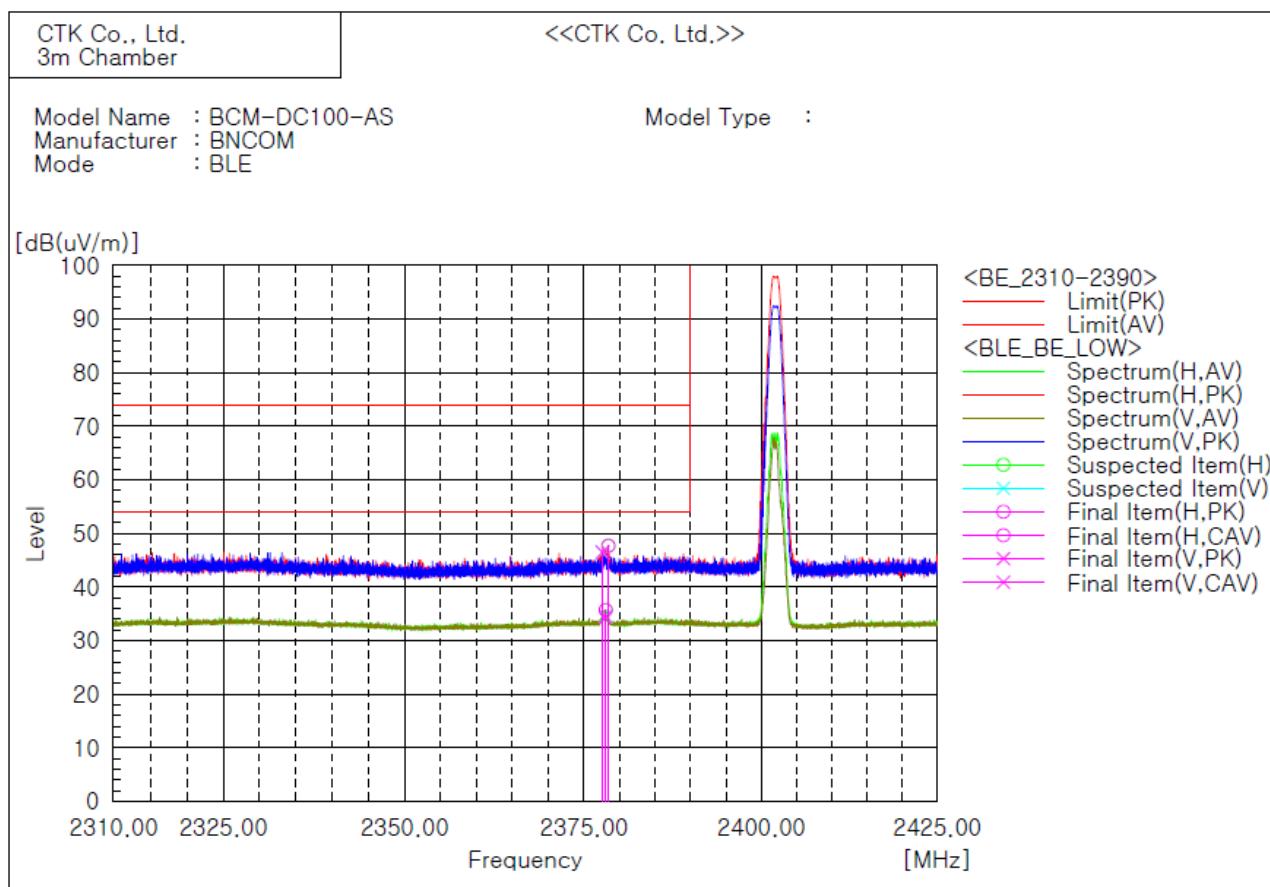
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Report No.:
CTK-2021-02141
Page (26) / (35) Pages

Test Results :

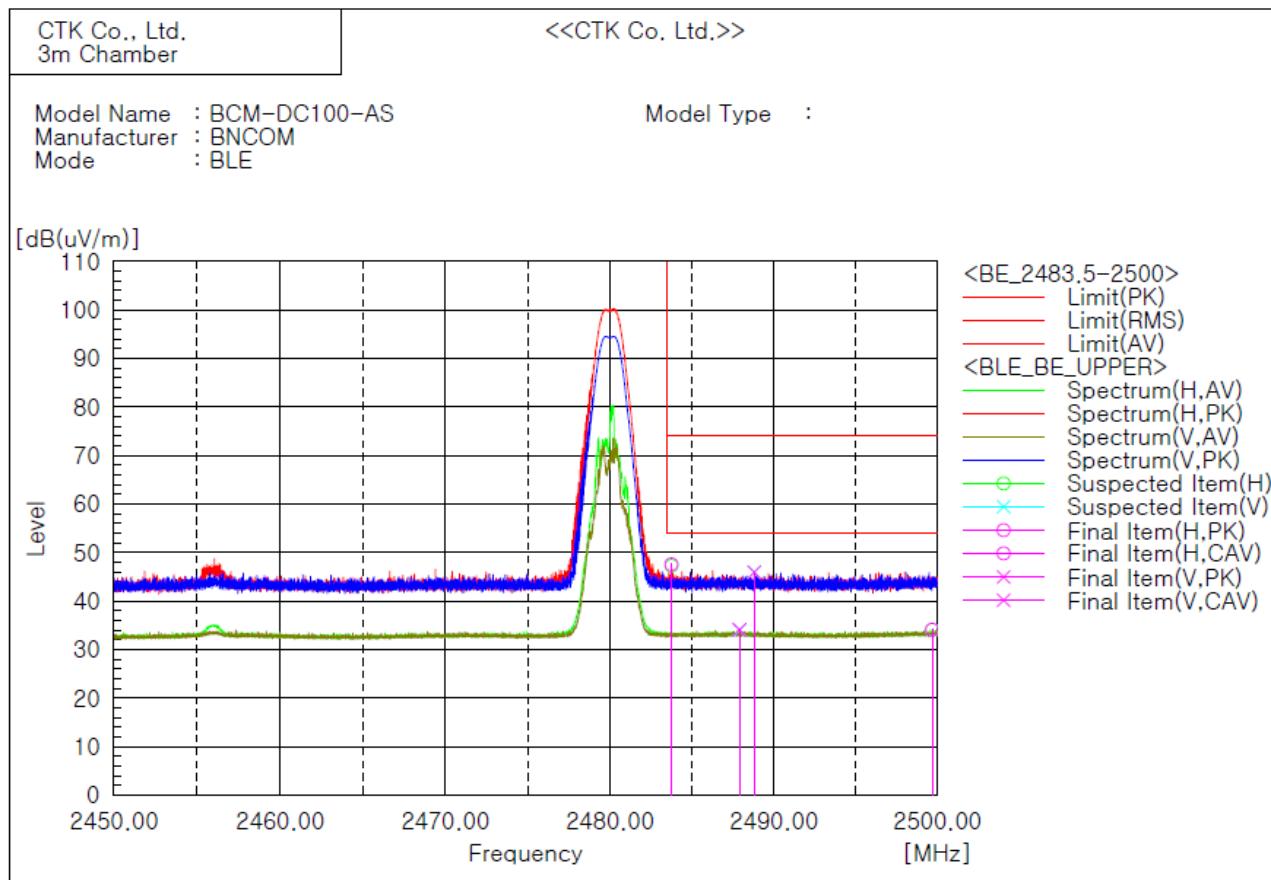
The requirements are:

Complies

1) Restricted Frequency Bands**1. 2 310 MHz to 2 390 MHz****Final Result**

No.	Frequency [MHz]	(P)	Reading PK [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB(1/m)]	Result PK [dB(uV/m)]	Result CAV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [deg]
1	2377.606	V	40.4	-----	6.1	46.5	-----	74.0	54.0	27.5	-----	464.2	135.1
2	2378.051	V	-----	28.4	6.1	-----	34.5	74.0	54.0	-----	19.5	464.2	135.1
3	2378.066	H	-----	29.6	6.1	-----	35.7	74.0	54.0	-----	18.3	99.8	126.7
4	2378.439	H	41.6	-----	6.1	47.7	-----	74.0	54.0	26.3	-----	99.8	166.9

2. 2 483.5 MHz – 2 500 MHz



Final Result

No.	Frequency [MHz]	(P)	Reading PK [dB(uV)]	Reading CAV [dB(uV)]	c.f [dB(1/m)]	Result PK [dB(uV/m)]	Result CAV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin CAV [dB]	Height [cm]	Angle [deg]
1	2483.744	H	41.4	—	6.2	47.6	—	74.0	54.0	26.4	—	99.8	162.1
2	2487.894	V	—	27.8	6.3	—	34.1	74.0	54.0	—	19.9	464.3	0.1
3	2488.794	V	39.7	—	6.3	46.0	—	74.0	54.0	28.0	—	464.3	189.5
4	2499.688	H	—	27.8	6.3	—	34.1	74.0	54.0	—	19.9	99.8	0.0

Remark :

1. The Unwanted emission was measured in the following position: EUT stand-up position(Z axis), lie-down position(X,Y axis). The worst emission was found in lie-down position(Y axis) and the worst case was recorded.
2. Result = Reading + c.f(correction factor)
3. Correction factor = Antenna factor + Cable loss - Amp Gain



CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu,
Yongin-si, Gyeonggi-do, Korea
Tel: +82-31-339-9970
Fax: +82-31-624-9501

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CTK-2021-02141
Page (28) / (35) Pages

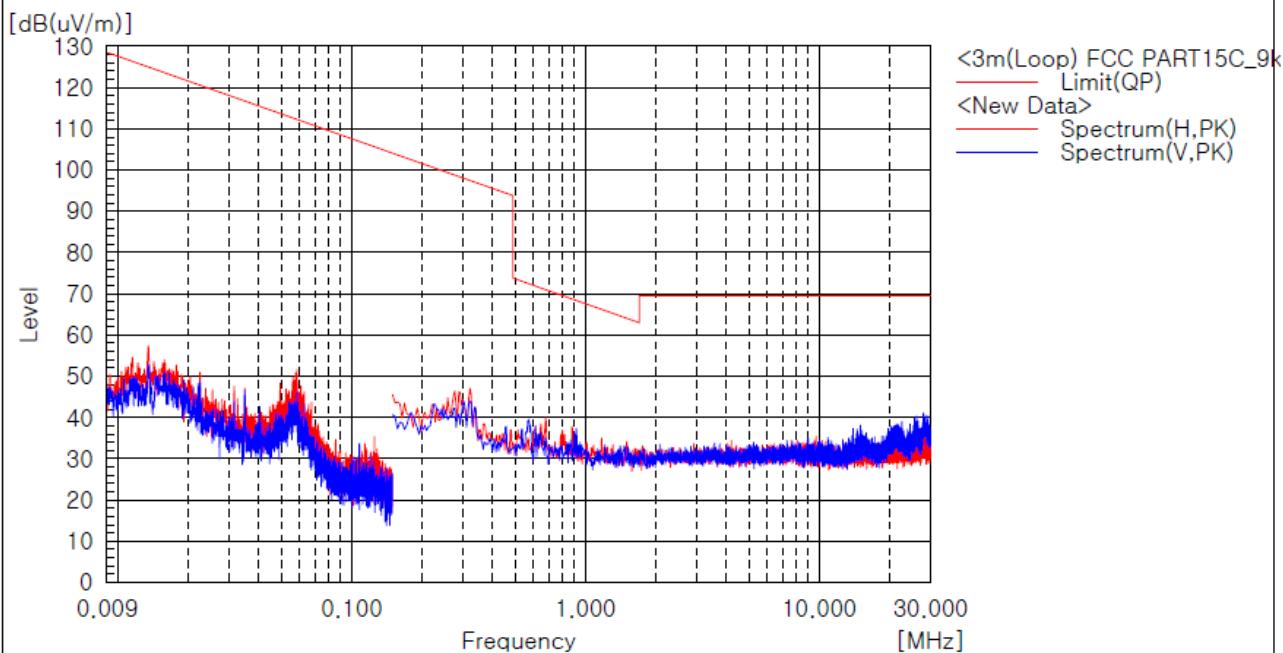
2) Spurious

1. 9 kHz to 30 MHz

Test mode : Transmit, Low Channel(Worst case)

<<Radiated Emission>>

Test Model : BCM-DC100-AS
Test Mode : BLE
Tester : JANG BONG JUN



Frequency [MHz]	(P)	Reading QP [dBuV]	dB [1/m]	Result QP [dBuV/m]	Limit QP [dBuV/m]	Margin QP [dB]
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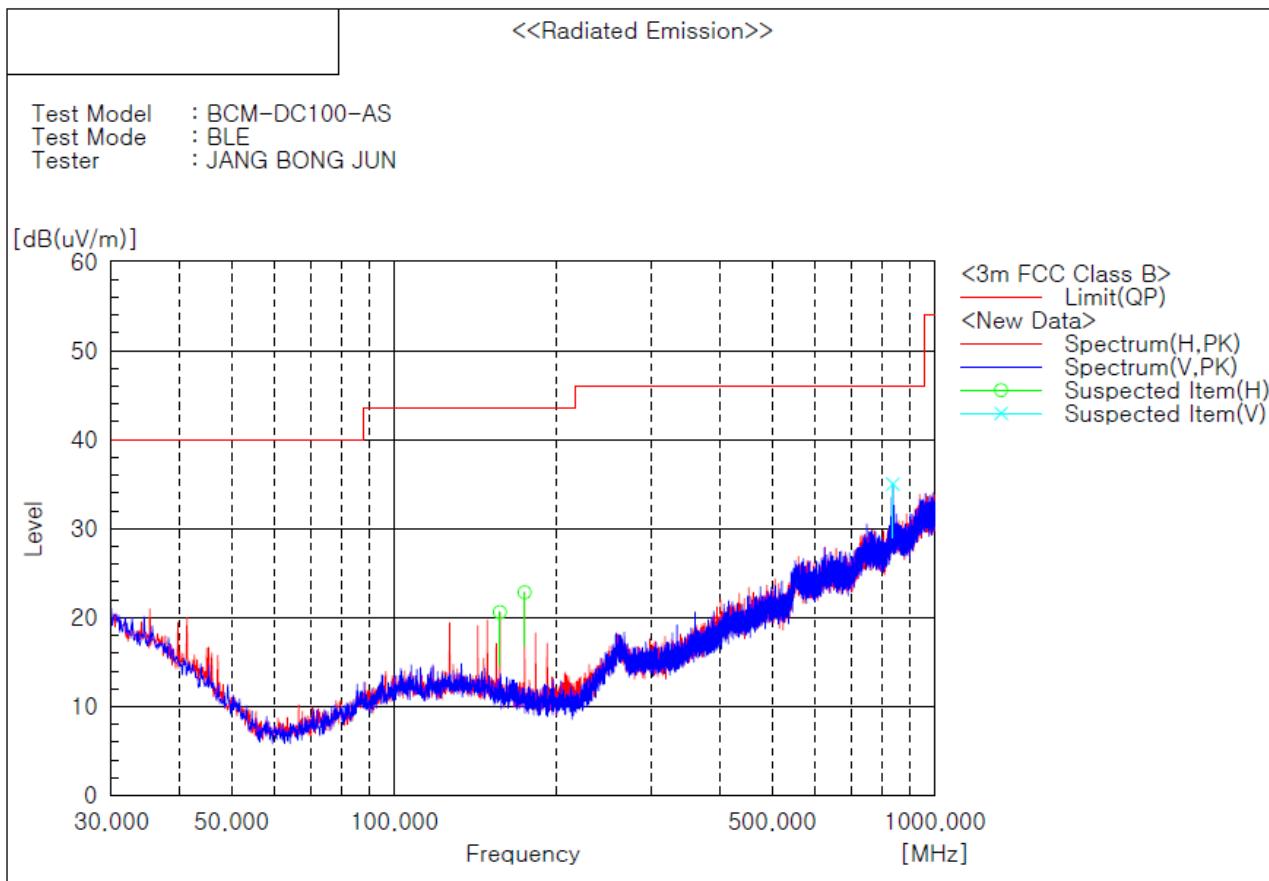
The emissions 9 kHz to 30MHz were 20 dB lower than the limit.

Note :

1. The Unwanted emission was measured in the following position: EUT stand-up position(Z axis), lie-down position(X,Y axis). The worst emission was found in lie-down position(Y axis) and the worst case was recorded.
2. Distance extrapolation factor = $40 \log (\text{specific distance} / \text{test distance})$ (dB)

2. 30 MHz to 1 GHz

Test mode : Transmit, Low Channel(Worst case)



Spectrum Selection

No.	Frequency [MHz]	(P) Reading [dB(uV)]	c.f [dB(1/m)]	Result PK [dB(uV/m)]	Limit QP [dB(uV/m)]	Margin QP [dB]	Height [cm]	Angle [deg]
1	174.409	H 36.2	-13.4	22.8	43.5	20.7	101.0	0.0
2	156.949	H 33.3	-12.7	20.6	43.5	22.9	101.0	274.0
3	836.919	V 29.4	5.6	35.0	46.0	11.0	399.0	297.0

Remark :

1. The Unwanted emission was measured in the following position: EUT stand-up position(Z axis), lie-down position(X,Y axis). The worst emission was found in lie-down position(Y axis) and the worst case was recorded.
2. Result = Reading + c.f(Correction factor)
3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator - Amp Gain

* Reading data is the peak value.

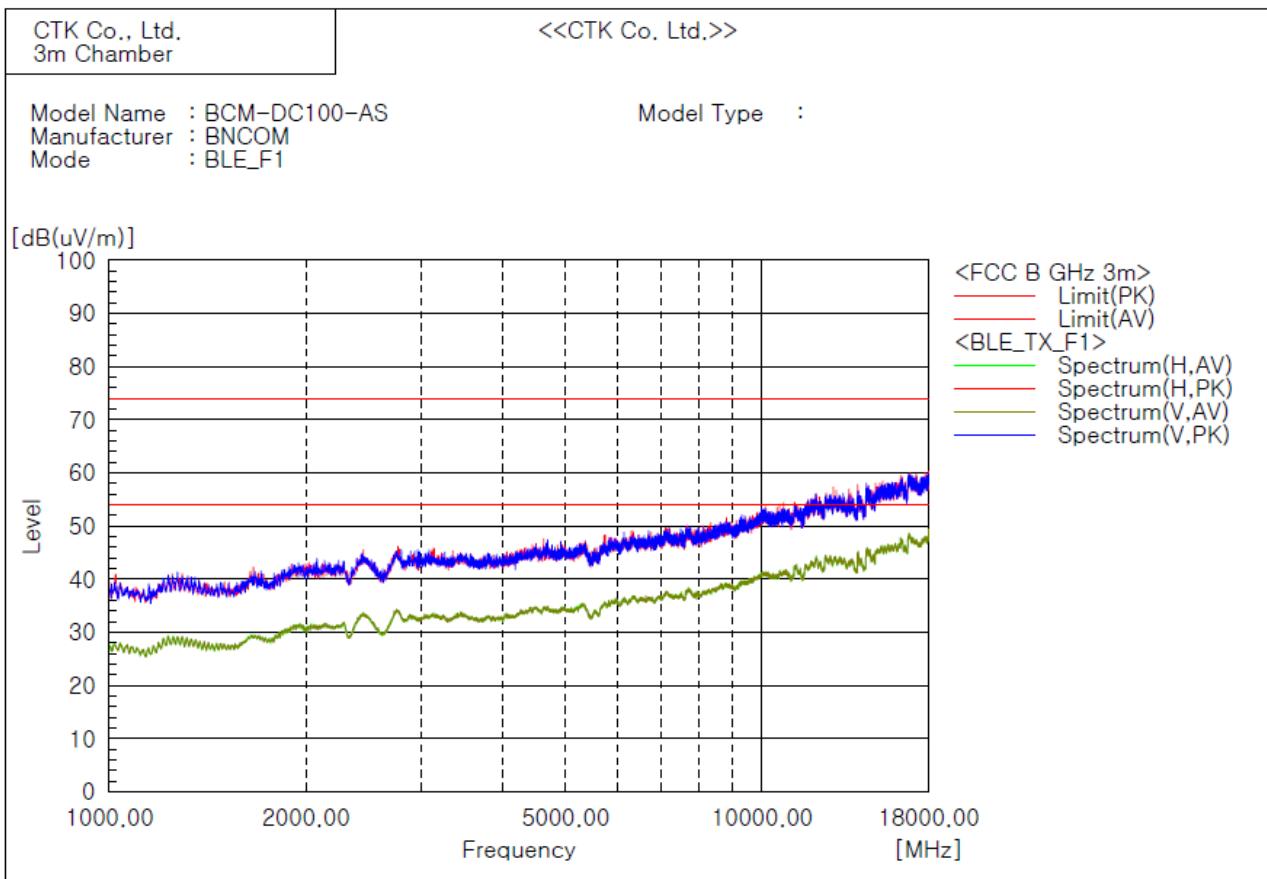
**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu,
Yongin-si, Gyeonggi-do, Korea
Tel: +82-31-339-9970
Fax: +82-31-624-9501

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CTK-2021-02141
Page (30) / (35) Pages

3. 1 GHz to 18 GHz

Test mode : Transmit, Low Channel(Worst case)



Frequency [MHz]	(P)	Reading QP [dBuV]	dB [1/m]	Result QP [dBuV/m]	Limit QP [dBuV/m]	Margin QP [dB]
No peak found.						

Remarks

1. The Unwanted emission was measured in the following position: EUT stand-up position(Z axis), lie-down position(X,Y axis). The worst emission was found in lie-down position(Y axis) and the worst case was recorded.

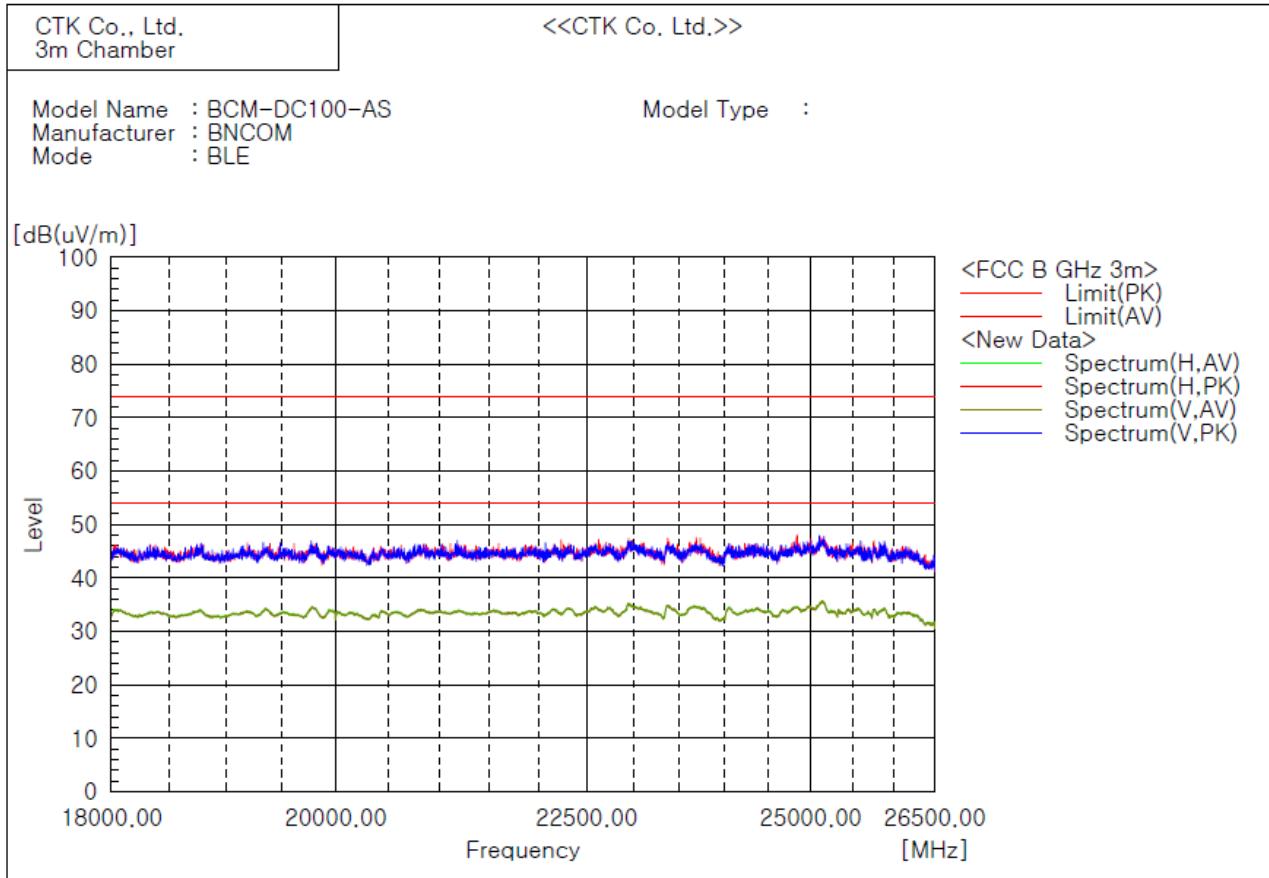
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(Ho-dong), 113, Yejik-ro, Cheoin-gu,
Yongin-si, Gyeonggi-do, Korea
Tel: +82-31-339-9970
Fax: +82-31-624-9501

Report No.:
CTK-2021-02141
Page (31) / (35) Pages

4. 18 GHz to 26.5 GHz

Test mode : Transmit, Low Channel(Worst case)



Frequency [MHz]	(P)	Reading QP [dBuV]	dB [1/m]	Result QP [dBuV/m]	Limit QP [dBuV/m]	Margin QP [dB]
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No peak found.

Remarks

1. The Unwanted emission was measured in the following position: EUT stand-up position(Z axis), lie-down position(X,Y axis). The worst emission was found in lie-down position(Y axis) and the worst case was recorded.



CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu,
Yongin-si, Gyeonggi-do, Korea
Tel: +82-31-339-9970
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CTK-2021-02141
Page (32) / (35) Pages

4.6 AC Power Line Conducted Emissions

A radio apparatus that is designed to be connected to the public utility (AC) power line shall ensure that the radio frequency voltage, which is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz-30 MHz, shall not exceed the limits.

Instrument Settings

IF Band Width: 9 kHz

Test Procedures

The EUT was placed on a non-metallic table 0.8m above the metallic, grounded floor and 0.4m from the reference ground plane wall. The distance to other metallic surfaces was at least 0.8m.

Amplitude measurements were performed with a quasi-peak detector and an average detector.

Limit

Frequency (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average**
0.15 ~ 0.5	66 to 56*	56 to 46*
0.5 ~ 5	56	46
5 ~ 30	60	50

* The level decreases linearly with the logarithm of the frequency.

** A linear average detector is required.



CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu,
Yongin-si, Gyeonggi-do, Korea
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Fax: +82-31-624-9501

Report No.:
CTK-2021-02141
Page (33) / (35) Pages

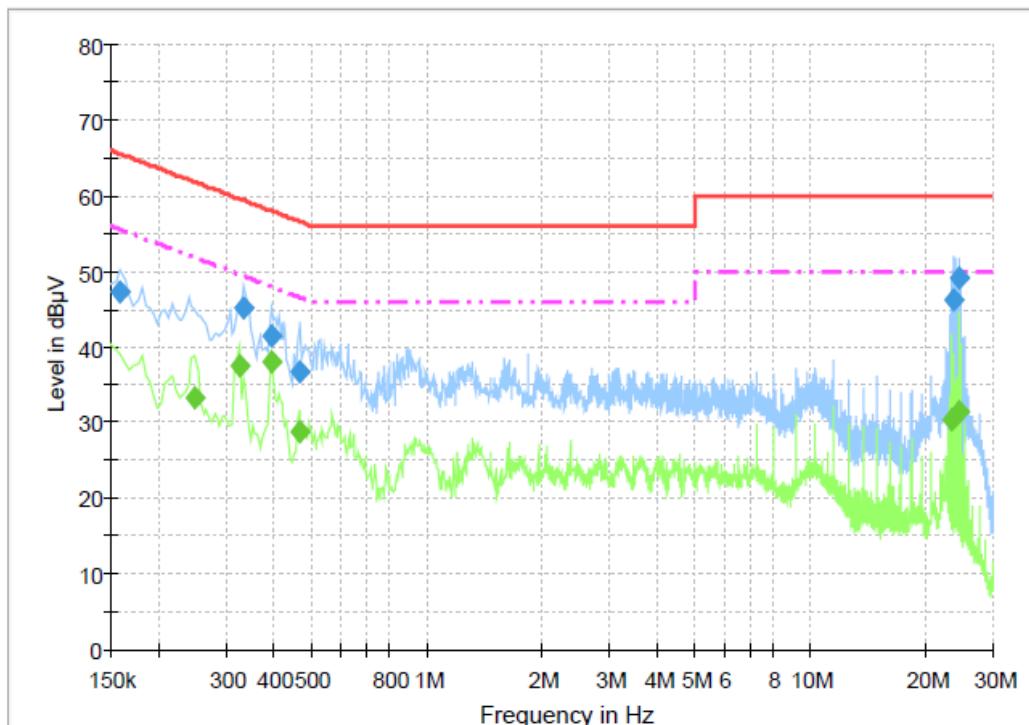
Test Results :

The requirements are:

Complies

Test mode : Transmit Mode
[L1]

3CE_Class B_L1



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.159000	47.4	1000.0	9.000	On	L1	9.9	18.2	65.5
0.334500	45.1	1000.0	9.000	On	L1	9.9	14.2	59.3
0.393000	41.5	1000.0	9.000	On	L1	9.9	16.5	58.0
0.469500	36.7	1000.0	9.000	On	L1	9.9	19.9	56.5
23.748000	46.2	1000.0	9.000	On	L1	10.1	13.8	60.0
24.454500	49.1	1000.0	9.000	On	L1	10.1	10.9	60.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.249000	33.3	1000.0	9.000	On	L1	9.6	18.4	51.8
0.325500	37.5	1000.0	9.000	On	L1	9.8	12.0	49.6
0.393000	37.9	1000.0	9.000	On	L1	9.9	10.1	48.0
0.465000	28.8	1000.0	9.000	On	L1	9.9	17.8	46.6
23.469000	30.5	1000.0	9.000	On	L1	10.1	19.5	50.0
24.454500	31.5	1000.0	9.000	On	L1	10.1	18.5	50.0



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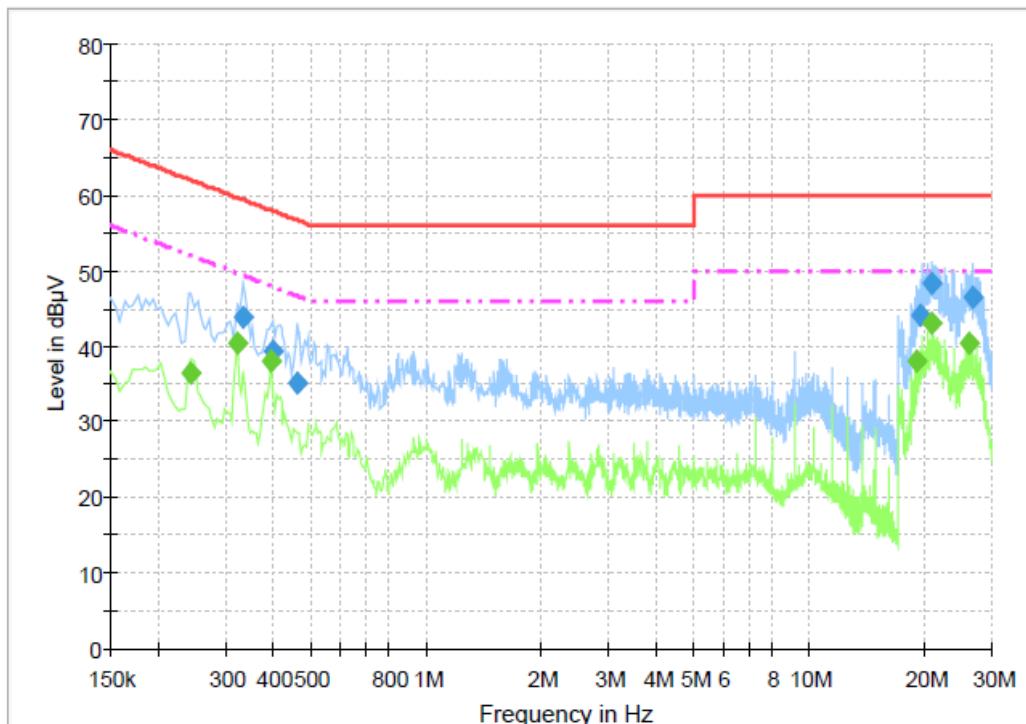
CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu,
Yongin-si, Gyeonggi-do, Korea
Tel: +82-31-339-9970
Fax: +82-31-624-9501

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CTK-2021-02141
Page (34) / (35) Pages

[NEUTRAL]

3CE_Class B_N



Final Result 1

Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.334500	43.9	1000.0	9.000	On	N	9.9	15.5	59.3
0.397500	39.3	1000.0	9.000	On	N	9.9	18.7	57.9
0.460500	35.2	1000.0	9.000	On	N	9.9	21.5	56.7
19.522500	44.0	1000.0	9.000	On	N	10.1	16.0	60.0
20.836500	48.4	1000.0	9.000	On	N	10.1	11.6	60.0
26.745000	46.4	1000.0	9.000	On	N	10.2	13.6	60.0

Final Result 2

Frequency (MHz)	CAverage (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.244500	36.5	1000.0	9.000	On	N	9.7	15.5	51.9
0.321000	40.4	1000.0	9.000	On	N	9.9	9.3	49.7
0.393000	38.0	1000.0	9.000	On	N	9.9	10.0	48.0
19.185000	38.1	1000.0	9.000	On	N	10.1	11.9	50.0
20.836500	43.0	1000.0	9.000	On	N	10.1	7.0	50.0
26.151000	40.4	1000.0	9.000	On	N	10.2	9.6	50.0

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(Ho-dong), 113, Yejik-ro, Cheoin-gu,
Yongin-si, Gyeonggi-do, Korea
Tel: +82-31-339-9970
Fax: +82-31-624-9501

Report No.:
CTK-2021-02141
Page (35) / (35) Pages

APPENDIX A – Test Equipment Used For Tests

No.	Name of Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	Signal Analyzer	Agilent	N9020A	MY50200512	2021-04-07	2022-04-07
2	DC Power Supply	Agilent	E3632A	MY40011638	2020-10-12	2021-10-12
3	Signal Generator	R&S	SMB100A	175528	2021-04-12	2022-04-12
4	EMI Test Receiver	Rohde & Schwarz	ESCI7	100814	2019-10-20	2021-10-20
5	Bilog Antenna	Schaffner	CBL6111C	2551	2021-03-22	2023-03-22
6	Active Loop Antenna	SCHWARZBECK	FMZB 1513	1513-126	2020-05-20	2022-05-20
7	6dB Attenuator	R&S	DNF	272.4110.50-2	2020-10-23	2021-10-23
8	6dB Attenuator	BIRD	5W 6dB	1744	2020-12-16	2021-12-16
9	AMPLIFIER	SONOMA	310	291721	2021-01-22	2022-01-22
10	EMI Test Receiver	Rohde & Schwarz	ESU40	100336	2021-01-12	2022-01-12
11	Double Ridged Guide Antenna	ETS-Lindgren	3117	00154525	2020-10-14	2021-10-14
12	Horn Antenna	SCHWARZBECK	BBHA9170	00967	2020-06-02	2021-10-14
13	Low Noise Amplifier	TESTEK	TK-PA1840H	200115-L	2021-05-21	2022-05-21
14	Preamplifier	Agilent	8449B	3008A02011	2020-11-30	2021-11-30
15	Band Reject Filter	Micro Tronics	BRM50702	363	2021-03-30	2022-03-30
16	LISN	Rohde & Schwarz	ENV216	101235	2021-01-12	2022-01-12
17	EMI Test Receiver	Rohde & Schwarz	ESCI3	100032	2021-01-15	2022-01-15

No.	Name of Equipment	Manufacturer	Model No.	Serial No.	Check Date
1	RF Cable (conducted)	Junkosha Inc.	MWX221	1510S087	2020-02-02
2	3m Loop Cable (Radiated)	HUBER+SUHNER	N/A	N/A	2019-10-25
3	3 m 1GHz Above RF Cable (Radiated)	HUBER+SUHNER	SUCOFLEX 104	MY27558/4	2020-01-28
4	3 m 1GHz Below RF Cable (Radiated)	HUBER+SUHNER	SUCOFLEX 104	N/A (below 1GHz)	2020-01-28
5	3 m 1GHz Above RF Cable (Radiated)	HUBER+SUHNER	SUCOFLEX 104	MY27573/4	2019-12-12
6	3 m 1GHz Above RF Cable (Radiated)	HUBER+SUHNER	SUCOFLEX 104	801924/4	2019-12-12
7	3 m 1GHz Above RF Cable (Radiated)	HUBER+SUHNER	SUCOFLEX 102	MY4728/2	2020-02-02
8	3 m 1GHz Above RF Cable (Radiated)	HUBER+SUHNER	SUCOFLEX 102	MY2374/2	2020-02-02