

TEST REPORT



CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (1) / (62) pages

1. Applicant

- Name : 4SEILS Co., Ltd.
- Address : 904ho, 2497 Nambusunhwan ro, Seocho, Seoul, South Korea
- Date of Receipt : 2026-07-08

2. Manufacturer

- Name : 4SEILS Co., Ltd.
- Address : 904ho, 2497 Nambusunhwan ro, Seocho, Seoul, South Korea

3. Use of Report : For FCC Conformance

4. Test Sample / Model: VIVA AP / AP100

5. Date of Test : 2026-07-10 to 2026-07-22

6. Test Standard(method) used : FCC 47 CFR part 15 subpart C 15.247

7. Testing Environment: refer to 7 page

8. Test Results : Compliance

9. Location of Test : ☒ Permanent Testing Lab ☐ On Site Testing

(Address : (Unhak-Dong) 5, Dongbu-ro 221beon-gil, Cheoin-gu, Yong-in-si, Gyeonggi-do, Korea)

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
This report cannot be reproduced or copied without the written consent of CTK.

Approval	Tested by  Ji-Hye, Kim: (Signature)	Technical Manager  Wonjae Hwang: (Signature)
----------	--	---

2026-07-24

CTK Co., Ltd.



**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (2) / (62) pages

REPORT REVISION HISTORY

Date	Revision	Page No
2026-07-24	Issued (CTK-2026-02030)	all

***This report shall not be reproduced except in full, without the written approval of CTK Co., Ltd.
This document may be altered or revised by CTK Co., Ltd. personnel only, and shall be noted in the
revision section of the document. Any alteration of this document not carried out by CTK Co., Ltd.
will constitute fraud and shall nullify the document.***

**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (3) / (62) pages

CONTENTS

1. General Description	4
1.1 Applicant Information	4
1.2 Product Information	4
1.3 Peripheral Devices	5
1.4 Model Differences	5
2. Accreditations	6
2.1 Laboratory Accreditations and Listings	6
2.2 Calibration Details of Equipment Used for Measurement	6
3. Test Specifications	7
3.1 Standards	7
3.2 Testing Environment	7
3.3 Mode of operation during the test	8
3.4 Device Modifications	8
3.5 Measurement Uncertainty	8
3.6 Test Software	8
4. Technical Characteristic Test	9
4.1 6dB Bandwidth & 99% Bandwidth	9
4.2 Maximum peak Conducted Output Power	17
4.3 Transmitter Power Spectral Density	22
4.4 Conducted Spurious emission	27
4.5 Radiated Emission	34
4.6 AC Conducted Emissions	60
APPENDIX A – Test Equipment Used For Tests	62

**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (4) / (62) pages

1. General Description

1.1 Applicant Information

Company	4SEILS Co., Ltd.
Contact Point	904ho, 2497 Nambusunhwan ro, Seocho, Seoul, South Korea
Contact Person	Name : Hyeonjoon Ryu E-mail : hjryu@4seils.com Tel : +82-10-4953-2838 Fax : -

1.2 Product Information

FCC ID	2BWXS-AP100	
Product Description	VIVA AP	
Model name	AP100	
Variant Model name	-	
Operating Frequency	2.4GHz SRD : 2 401 MHz - 2 482 MHz	
RF Output Power	ANT CAM : 3.388 dBm (2.182 mW) ANT 0 : 4.582 dBm (2.872 mW) ANT 1 : 5.340 dBm (3.420 mW) ANT 2 : 3.335 dBm (2.155 mW) ANT 3 : 4.534 dBm (2.841 mW) ANT 4 : 4.382 dBm (2.743 mW)	
Antenna Specification	ANT CAM, ANT0, ANT1, ANT2, ANT3, ANT4	Antenna type : PCB antenna Peak Gain : 4.13 dBi
Number of channels	82	
Channel Spacing	1 MHz	
Type of Modulation	GFSK	
Power Source	DC 48 V (PoE), DC 5 V (USB)	
Test Software(Version)	Tera Term	
RF Power setting in Test SW	ANT CAM	2 401 MHz ~ 2 481 MHz : Power setting input "pos 5dBm" 2 482 MHz : Power setting input "neg 20dBm"
	ANT 2	2 401 MHz ~ 2 481 MHz : Power setting input "pos 4dBm" 2 482 MHz : Power setting input "neg 20dBm"
	ANT 0, ANT1, ANT3, ANT4	2 401 MHz ~ 2 481 MHz : Power setting input "pos 6dBm" 2 482 MHz : Power setting input "neg 20dBm"

**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (5) / (62) pages

1.3 Peripheral Devices

Device	Manufacturer	Model No.	Serial No.
Note Computer	HP	15-bs563TU	CND7253R6N
AC/DC Adapter	HP	HSTNN-CA40	-
Note Computer	Samsung Electronics Co Ltd	NT750XDA-X71AS	KP6L99YT2000QAM
AC/DC Adapter	SOLUM VINA COMPANY LIMITED	EP-TA865 R01	-
30W PoE Injector	River Network.	NX-1G30W	-

1.4 Model Differences

Not applicable

**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (6) / (62) pages

2. Accreditations

2.1 Laboratory Accreditations and Listings

Country	Agency	Registration Number
USA	FCC	805871
CANADA	ISED	CN : 8737A CAB ID : KR0025
KOREA	NRRA	KR0025

2.2 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.

**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (7) / (62) pages

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(b)	Maximum Output Power	C	
15.247(d)	Unwanted Emission(Conducted)	C	
15.247(e)	Transmitter Power Spectral Density	C	
15.209	Radiated Emissions	C	Radiated
15.207	AC Conducted Emissions	C	Line Conducted
<u>Note 1:</u> C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable			
<u>Note 2:</u> The data in this test report are traceable to the national or international standards.			
<u>Note 3:</u> The sample was tested according to the following specification: FCC Part 15.247, ANSI C63.10-2020+Cor 1-2023+C63.10a-2024+Errata to C63.10a-2024			

3.2 Testing Environment

Test Item		Test Date	Temperature (°C)	Relative Humidity (% R.H.)
6 dB Bandwidth Maximum output power Unwanted emission (Conducted) Transmitter Power Spectral Density		2026-07-22	25 ± 1	64 ± 3
Radiated emission	1) 9 kHz to 30 MHz	2026-07-10	23 ± 1	66 ± 3
	2) 30 MHz to 1 GHz			
	3) 1 GHz to 18 GHz	2026-07-20 ~ 2026-07-21	(25 ~ 26) ± 1	(61 ~ 68) ± 3
	4) Restricted Frequency Bands			
	5) 18 GHz to 25 GHz	2026-07-22	25 ± 1	62 ± 3
AC Conducted Emission		2026-06-24	25 ± 1	69 ± 3

**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (8) / (62) pages

3.3 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.

The EUT has been tested in a 100% duty cycle transmission situation using applicant supplied software.

The EUT is equipped with six antennas. These antennas operate independently and are not configured for simultaneous transmission (MIMO operation).

The EUT supports both PoE and USB power inputs. As PoE was determined to represent the worst-case operating condition, only the test results for the PoE power input are presented in this report.

The AC Conducted Emissions test was performed using the USB power input only.

The results are only attached worst cases.

Test Frequency

Lowest channel	Middle channel	Highest channel_1	Highest channel_2
2 401 MHz	2 440 MHz	2 481 MHz	2 482 MHz

3.4 Device Modifications

The following modifications were necessary for compliance:

Not applicable

3.5 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 (C.L.: Approx. 95 %, $k = 2$)
Power Spectral Density	1.5 dB (C.L.: Approx. 95 %, $k = 2$)
Occupied Bandwidth	0.1 MHz (C.L.: Approx. 95 %, $k = 2$)
Unwanted Emission(conducted)	3.0 dB (C.L.: Approx. 95 %, $k = 2$)
Radiated Emissions ($f \leq 1$ GHz)	4.11 dB (C.L.: Approx. 95 %, $k = 2$)
Radiated Emissions ($f > 1$ GHz)	4.34 dB (C.L.: Approx. 95 %, $k = 2$)
Line Conducted Emission	2.06 dB (C.L.: Approx. 95 %, $k = 2$)

3.6 Test Software

Automation program

Conducted Test	Ics Pro Ver. 6.0.3
Radiated Test	EP5RE Ver. 6.0.10, ES10 Ver. 2022.04.000
Line Conducted Test	EMC32 Ver. 10.50.00

**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (9) / (62) pages

4. Technical Characteristic Test

4.1 6dB Bandwidth & 99% Bandwidth

Test Procedures

KDB 558074 - Section 8.2
ANSI C63.10-2020 - Section 11.8.2

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 C63.10-2020 - Section 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 (6dB), 1% to 5% of the OBW (99%)
- b) VBW $\geq 3 \times$ 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.

Minimum Standard

6 dB Bandwidth > 500kHz

**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (10) / (62) pages

Test Data

Antenna	Frequency [MHz]	6 dB Bandwidth [MHz]	99 % Bandwidth [MHz]	Result
ANT CAM	2 401	0.729	1.058	Complies
	2 440	0.741	1.068	
	2 481	0.751	1.072	
	2 482	0.732	1.070	
ANT 0	2 401	0.748	1.063	
	2 440	0.735	1.056	
	2 481	0.753	1.063	
	2 482	0.720	1.051	
ANT 1	2 401	0.733	1.053	
	2 440	0.733	1.062	
	2 481	0.710	1.054	
	2 482	0.726	1.062	
ANT 2	2 401	0.704	1.054	
	2 440	0.723	1.059	
	2 481	0.713	1.060	
	2 482	0.745	1.063	
ANT 3	2 401	0.726	1.062	
	2 440	0.738	1.052	
	2 481	0.715	1.048	
	2 482	0.745	1.066	
ANT 4	2 401	0.728	1.057	
	2 440	0.717	1.061	
	2 481	0.715	1.058	
	2 482	0.724	1.052	

See next pages for actual measured spectrum plots.



CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (11) / (62) pages

[ANT CAM]

6 dB Bandwidth



99% Bandwidth





CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (12) / (62) pages

[ANT 0]

6 dB Bandwidth



99% Bandwidth





CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (13) / (62) pages

[ANT 1]

6 dB Bandwidth



99% Bandwidth





CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (14) / (62) pages

[ANT 2]

6 dB Bandwidth



99% Bandwidth





CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (15) / (62) pages

[ANT 3]

6 dB Bandwidth



99% Bandwidth





CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (16) / (62) pages

[ANT 4]

6 dB Bandwidth



99% Bandwidth



**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (17) / (62) pages

4.2 Maximum peak Conducted Output Power

Test Procedures

ANSI C63.10-2020 - Section 11.9.1.1

This procedure shall be used when the measurement instrument has available a resolution bandwidth that is greater 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)

**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (18) / (62) pages

Test Data

Antenna	Frequency [MHz]	Output Power		Result
		[dBm]	[mW]	
ANT CAM	2 401	3.358	2.167	Complies
	2 440	3.388	2.182	
	2 481	3.012	2.001	
	2 482	-22.572	0.006	
ANT 0	2 401	4.582	2.872	
	2 440	4.559	2.857	
	2 481	4.075	2.556	
	2 482	-22.960	0.005	
ANT 1	2 401	5.340	3.420	
	2 440	5.274	3.368	
	2 481	4.815	3.030	
	2 482	-21.746	0.007	
ANT 2	2 401	3.335	2.155	
	2 440	3.335	2.155	
	2 481	2.883	1.942	
	2 482	-22.399	0.006	
ANT 3	2 401	4.534	2.841	
	2 440	4.527	2.836	
	2 481	4.158	2.605	
	2 482	-22.243	0.006	
ANT 4	2 401	4.382	2.743	
	2 440	4.418	2.766	
	2 481	4.008	2.517	
	2 482	-23.113	0.005	

See next pages for actual measured spectrum plots.

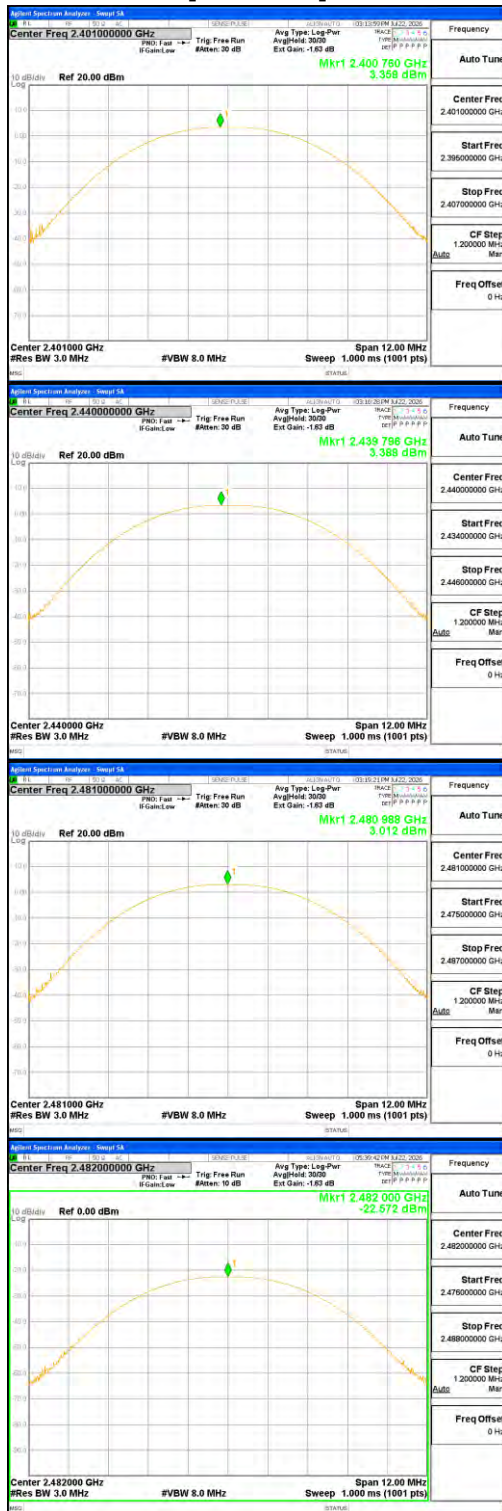


CTK Co., Ltd.

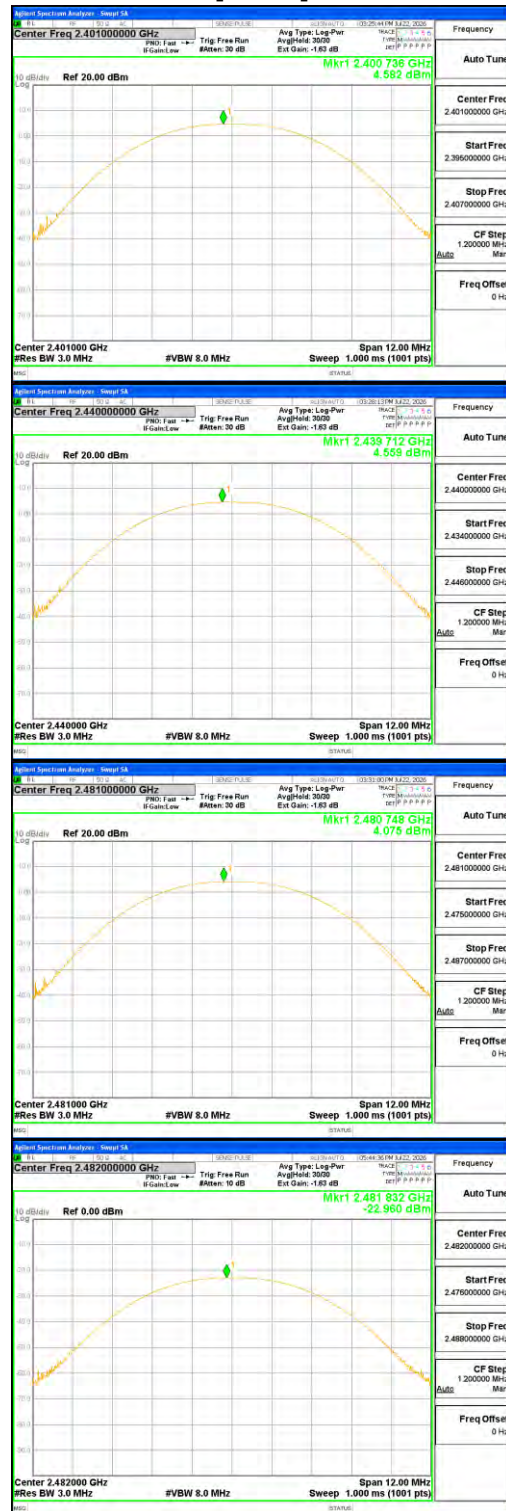
(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (19) / (62) pages

[ANT CAM]



[ANT 0]



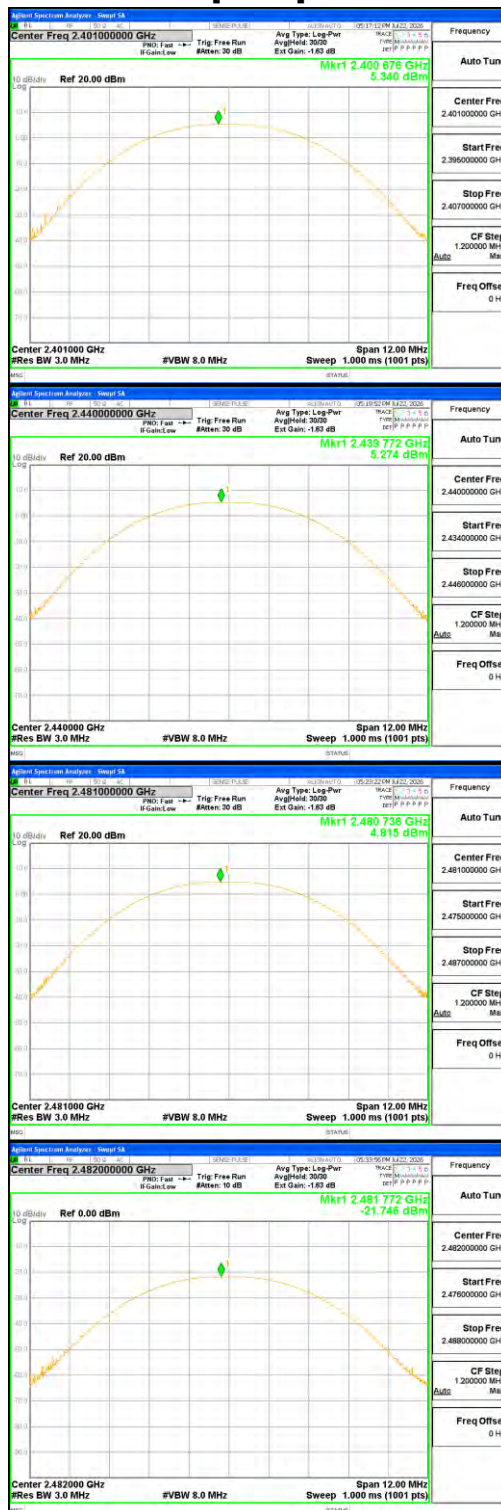


CTK Co., Ltd.

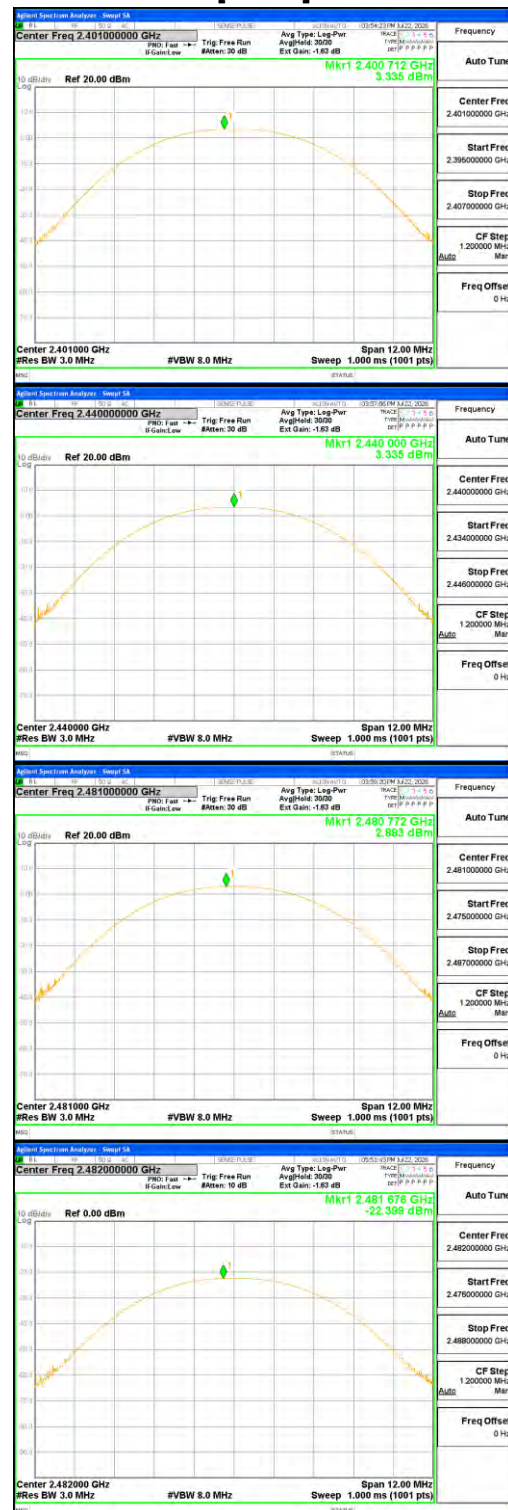
(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (20) / (62) pages

[ANT 1]



[ANT 2]



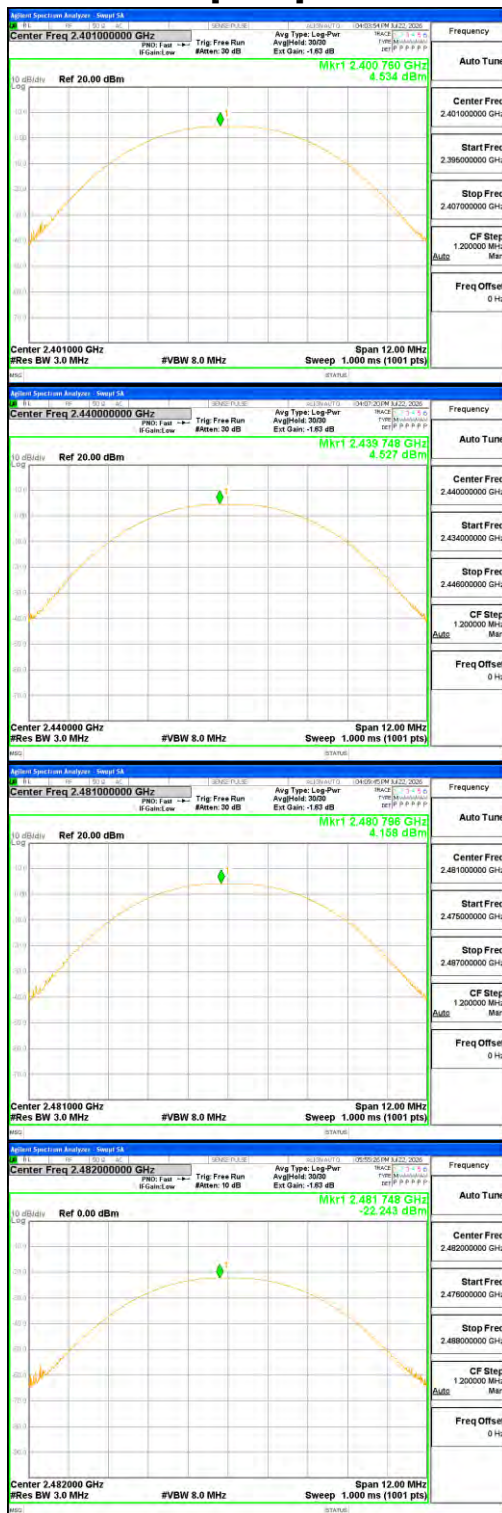


CTK Co., Ltd.

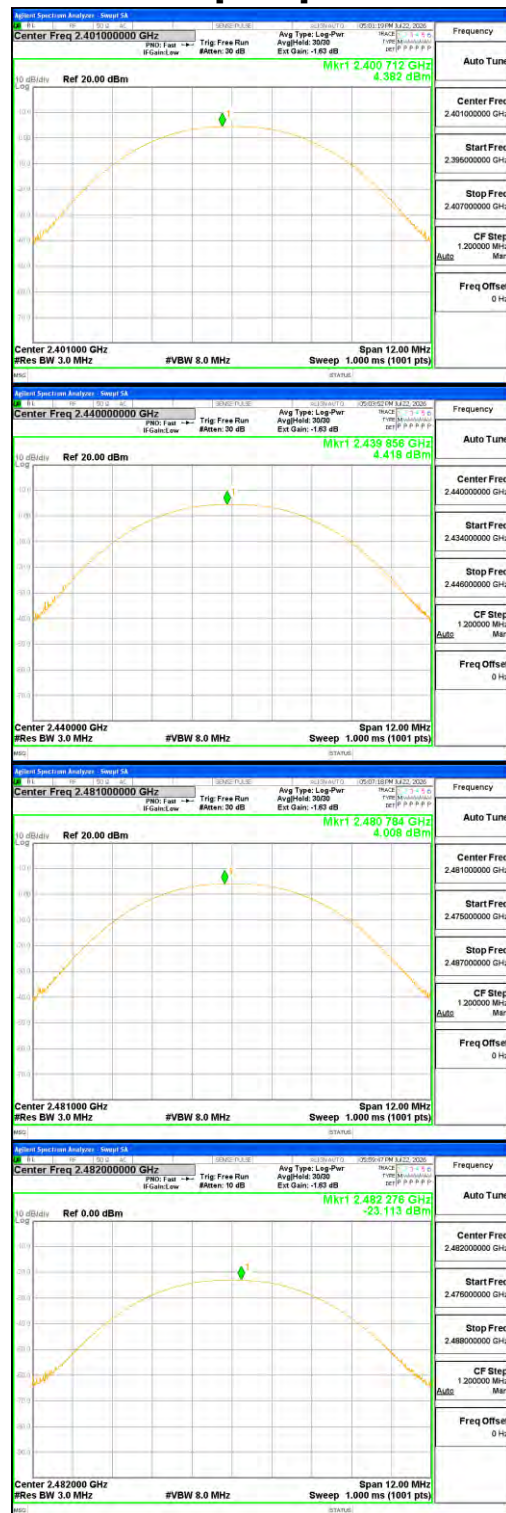
(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (21) / (62) pages

[ANT 3]



[ANT 4]



**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (22) / (62) pages

4.3 Transmitter Power Spectral Density

Test Procedures

ANSI C63.10-2020 - Section 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 < 8dBm @ 3 kHz BW

**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (23) / (62) pages

Test Data

Antenna	Frequency [MHz]	Power Spectral Density [dBm]	Result
ANT CAM	2 401	-9.703	Complies
	2 440	-10.935	
	2 481	-9.979	
	2 482	-35.699	
ANT 0	2 401	-8.938	
	2 440	-8.108	
	2 481	-9.470	
	2 482	-36.429	
ANT 1	2 401	-7.691	
	2 440	-9.049	
	2 481	-8.700	
	2 482	-34.047	
ANT 2	2 401	-8.985	
	2 440	-9.645	
	2 481	-9.497	
	2 482	-33.987	
ANT 3	2 401	-9.300	
	2 440	-9.395	
	2 481	-8.862	
	2 482	-35.774	
ANT 4	2 401	-8.700	
	2 440	-9.461	
	2 481	-9.279	
	2 482	-36.818	

See next pages for actual measured spectrum plots.

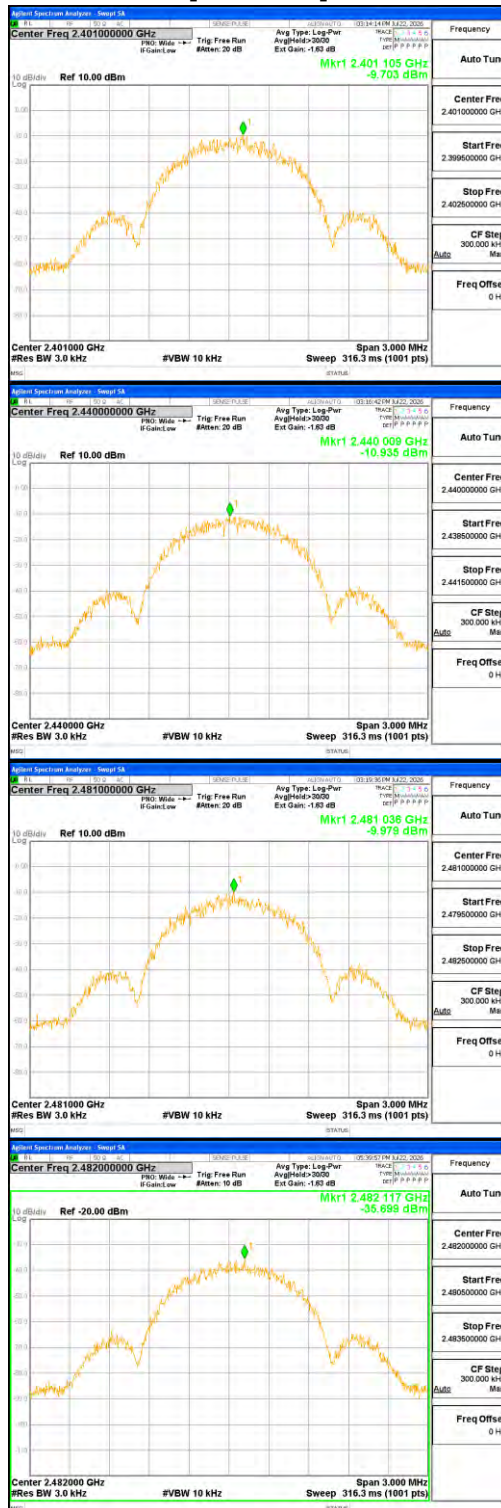


CTK Co., Ltd.

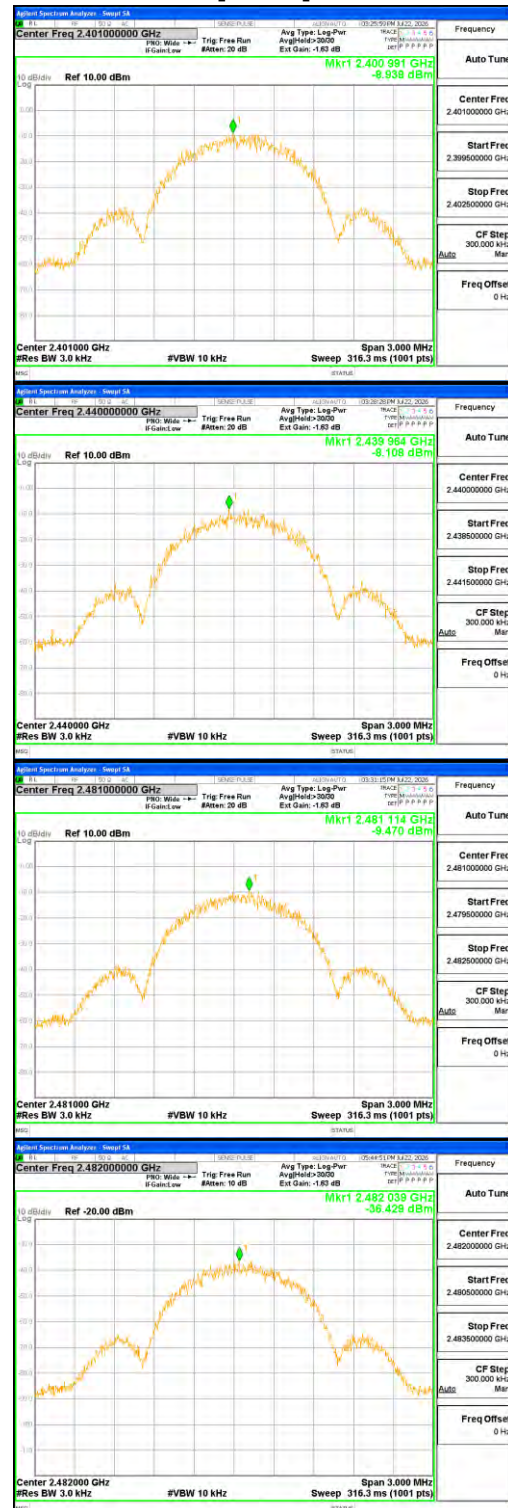
(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (24) / (62) pages

[ANT CAM]



[ANT 0]



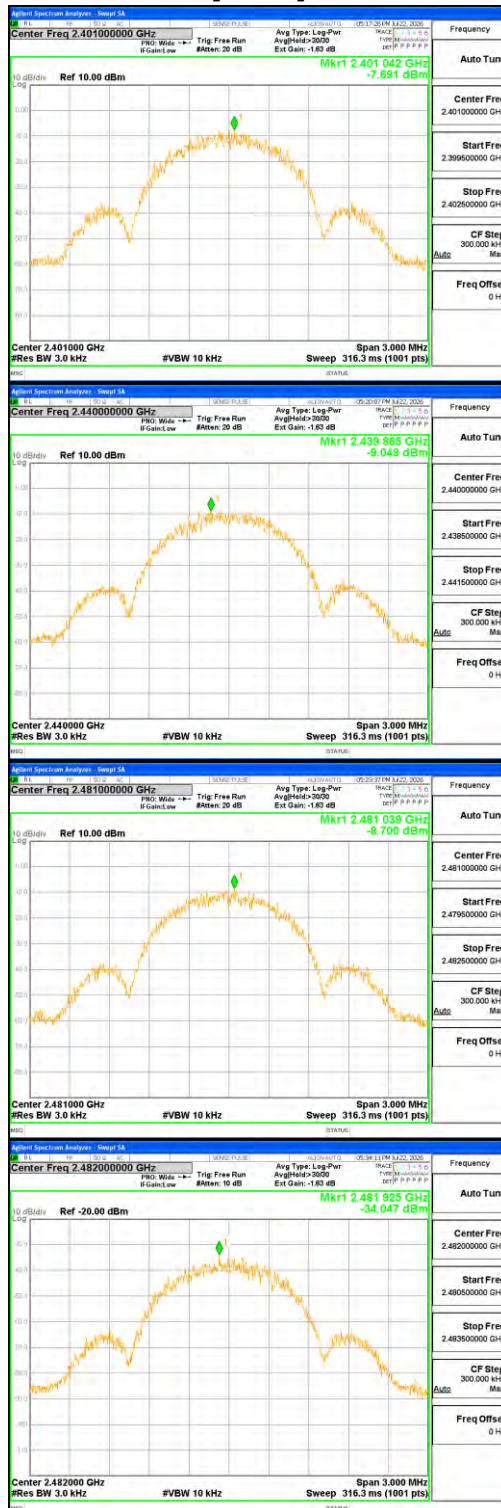


CTK Co., Ltd.

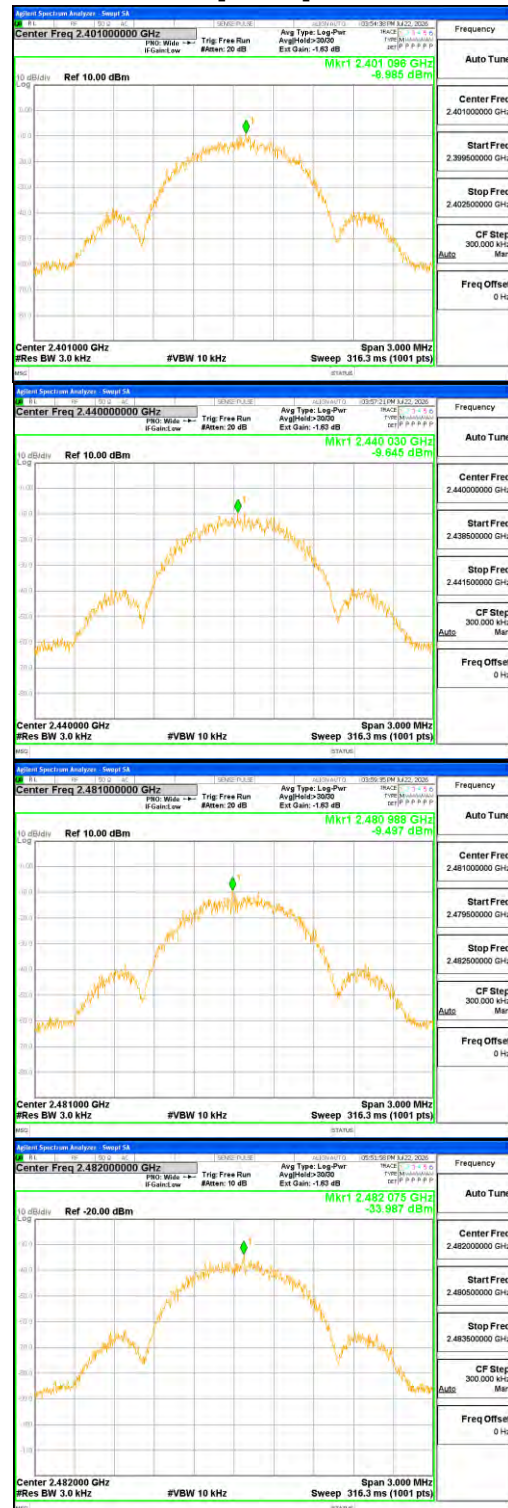
(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (25) / (62) pages

[ANT 1]



[ANT 2]



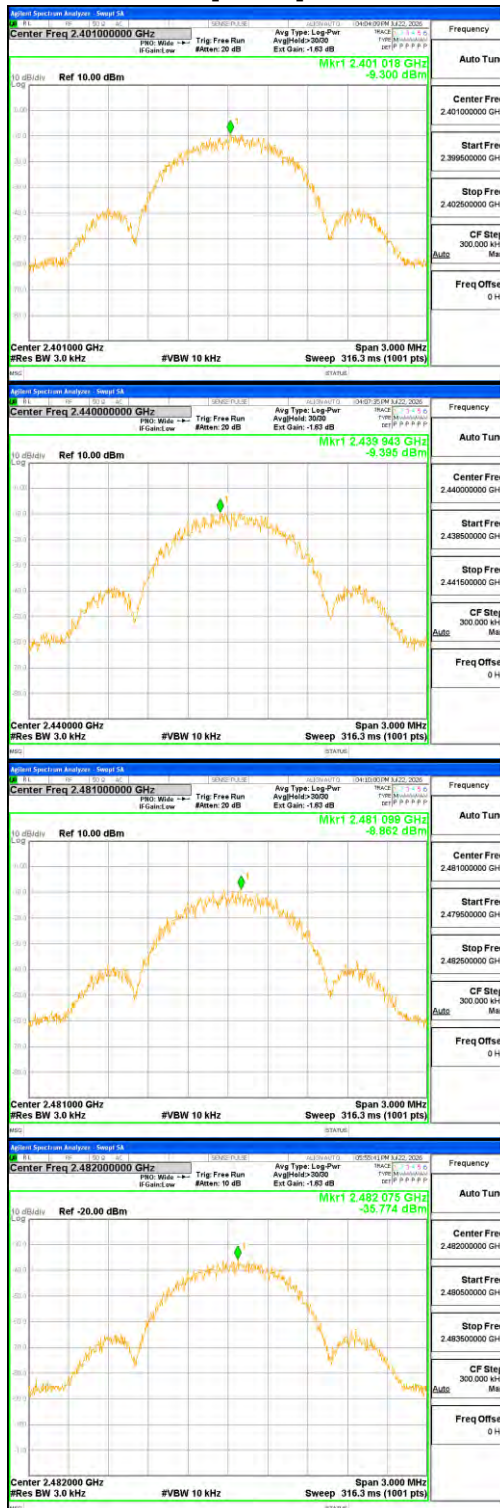


CTK Co., Ltd.

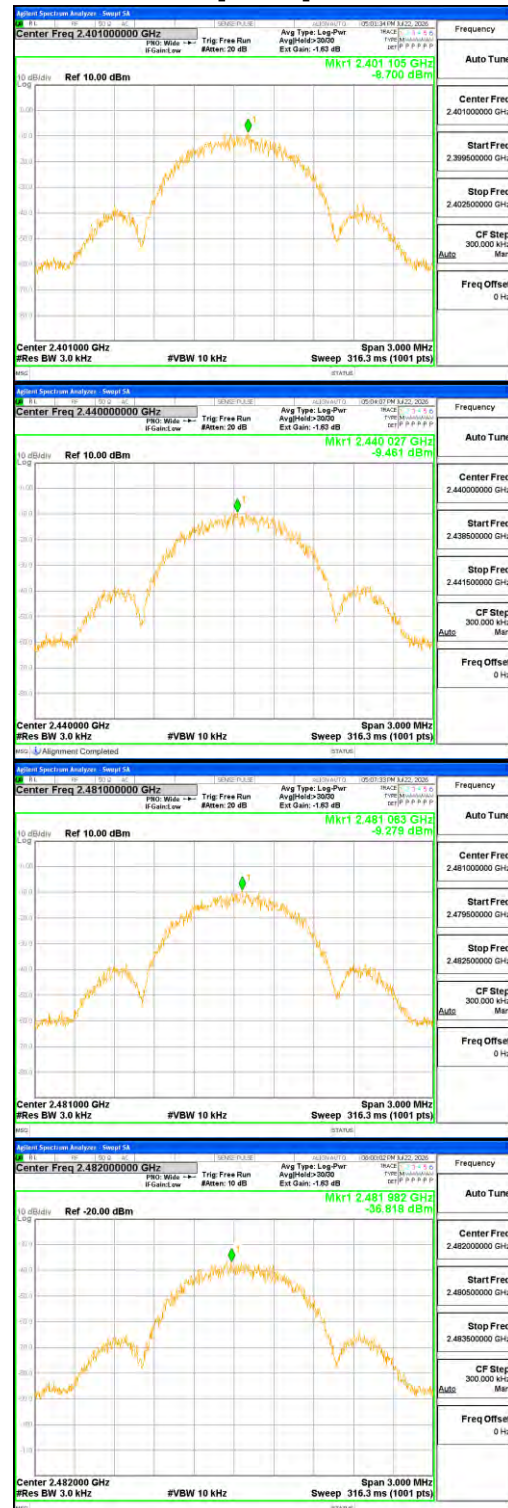
(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (26) / (62) pages

[ANT 3]



[ANT 4]



**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (27) / (62) pages

4.4 Conducted Spurious emission

Test Procedures

ANSI C63.10-2020 - Section 11.11.3

The Unwanted emission from the EUT were measured according to the dictates PKPSD measurement procedure in section 11.11 of ANSI C63.10-2020.

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 $\geq 3 \times$ 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 Data

- 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.



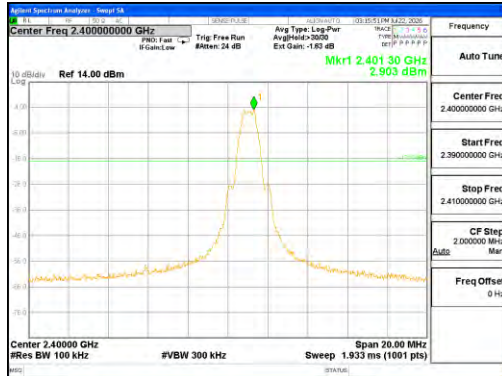
CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

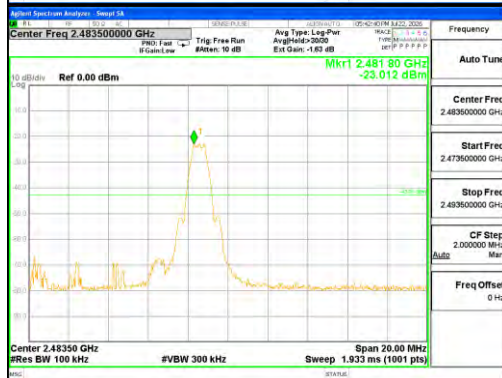
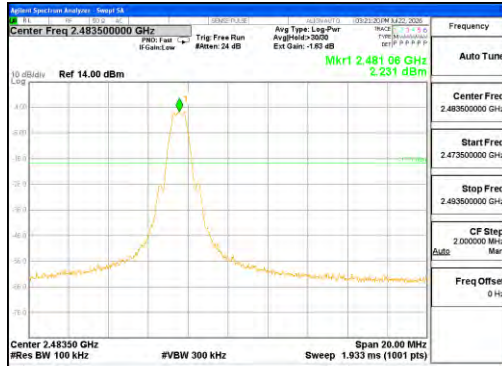
REPORT No.:
CTK-2026-02030
Page (28) / (62) pages

[ANT CAM]

[Conducted Band-Edge]



[Conducted Spurious Emission]





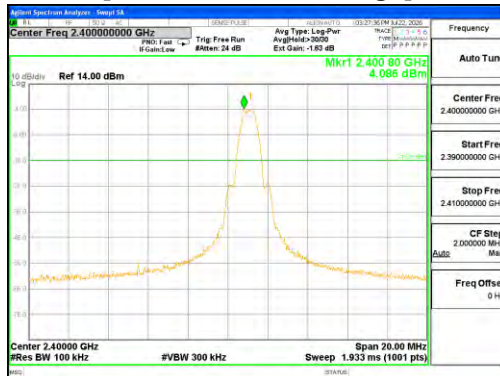
CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

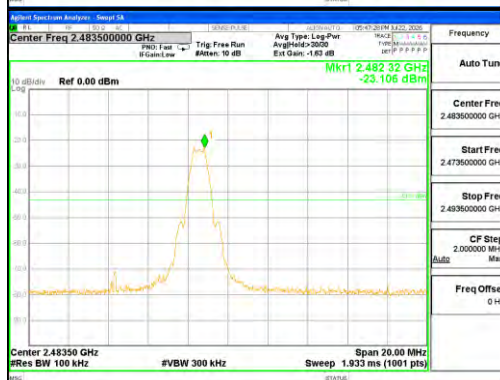
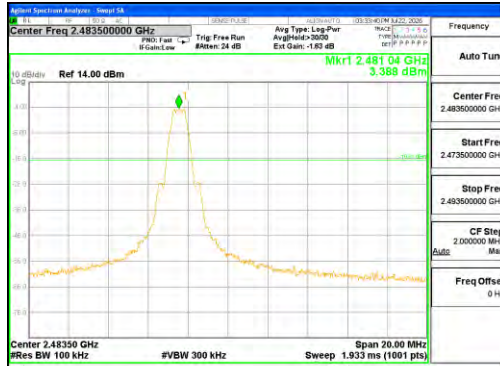
REPORT No.:
CTK-2026-02030
Page (29) / (62) pages

[ANT 0]

[Conducted Band-Edge]



[Conducted Spurious Emission]





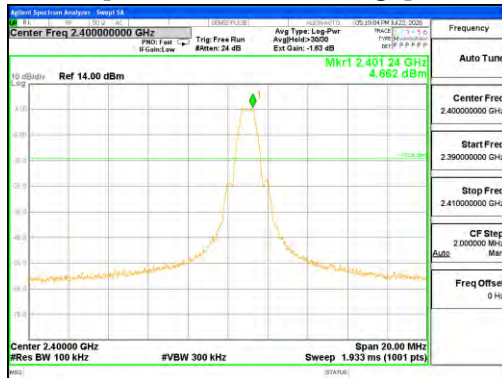
CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

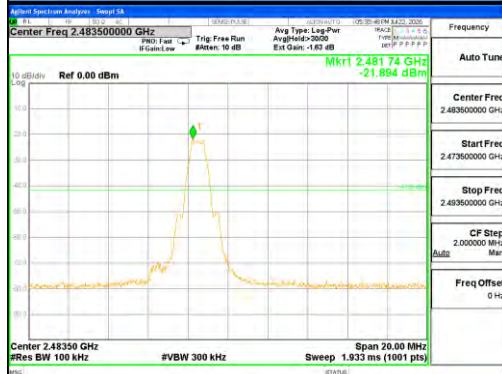
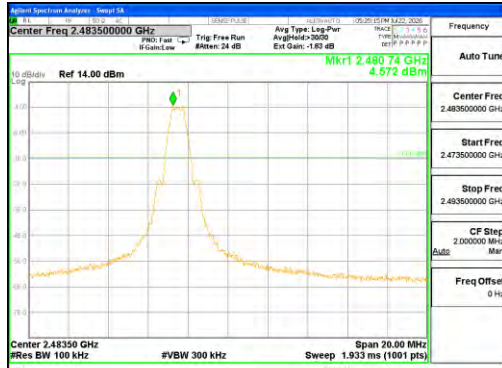
REPORT No.:
CTK-2026-02030
Page (30) / (62) pages

[ANT 1]

[Conducted Band-Edge]



[Conducted Spurious Emission]





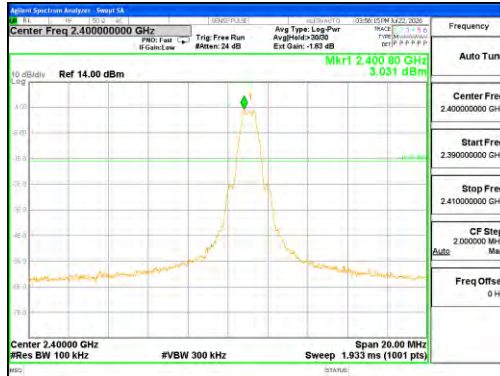
CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

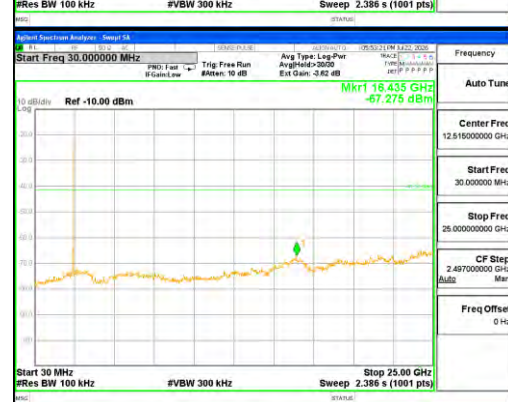
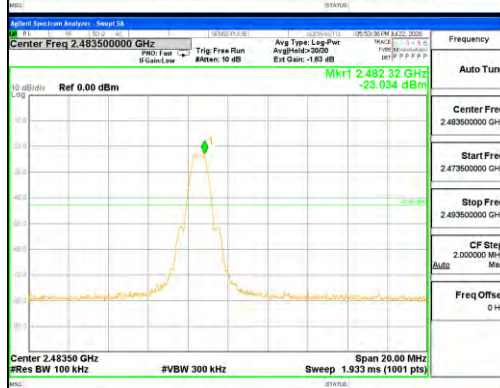
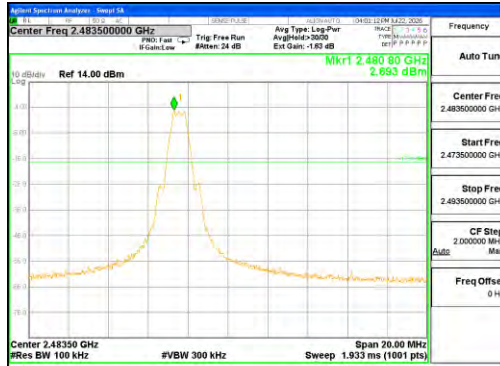
REPORT No.:
CTK-2026-02030
Page (31) / (62) pages

[ANT 2]

[Conducted Band-Edge]



[Conducted Spurious Emission]





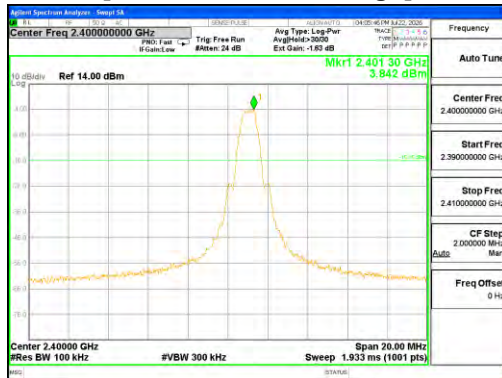
CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

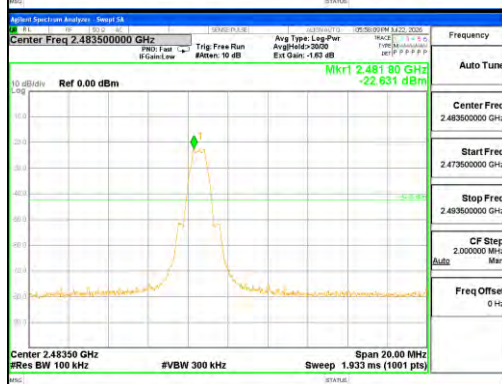
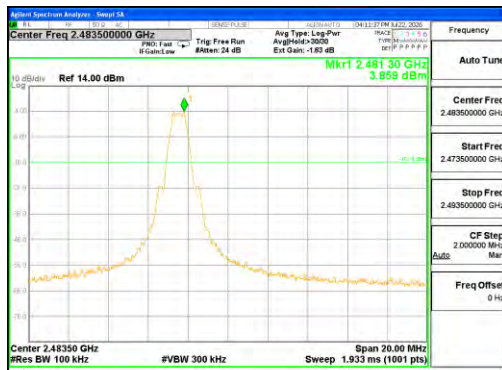
REPORT No.:
CTK-2026-02030
Page (32) / (62) pages

[ANT 3]

[Conducted Band-Edge]



[Conducted Spurious Emission]





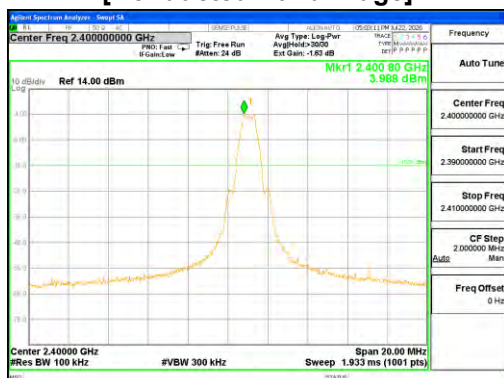
CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

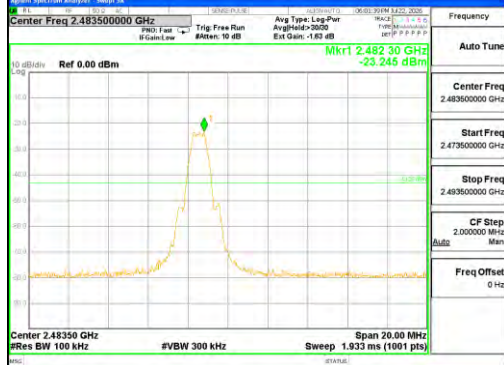
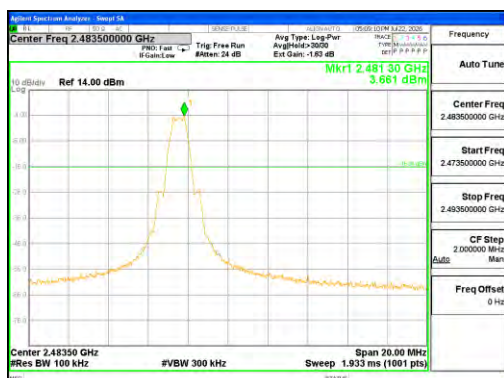
REPORT No.:
CTK-2026-02030
Page (33) / (62) pages

[ANT 4]

[Conducted Band-Edge]



[Conducted Spurious Emission]



**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (34) / (62) 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

ANSI C63.10-2020 - Section 11.11, 11.12

- 1) In the frequency range of 9 kHz to 30 MHz, magnetic field is measured with Loop Antenna. The Test Antenna is positioned with its plane vertical at 1m distance from the EUT. 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.

Test Settings:

Frequency Range = 9 kHz ~ 1 GHz

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

- Peak

Frequency Range = 1 GHz ~ 25 GHz (2.4 GHz 10th harmonic)

- a) RBW = 1 MHz
b) VBW $\geq 3 \times$ RBW
c) Detector = Peak
d) Sweep time = auto
e) Trace mode = max hold

- Average (duty cycle $\geq 98\%$)

Frequency Range = 1 GHz ~ 25 GHz (2.4 GHz 10th harmonic)

- a) RBW = 1 MHz
b) VBW $\geq 3 \times$ RBW
c) Detector = RMS
d) Sweep time = auto
e) Averaging type = power (i.e., RMS)
f) Trace mode = average (at least 100 traces)

**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (35) / (62) 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 (FCC)

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

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

The provisions in § 15.35 apply to these measurements.

**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (36) / (62) pages

FCC Part 15 § 15.209(a) and RSS-GEN § 8.9 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 3 :

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 3 Additionally, the level of any transmitter emission shall not exceed the level of the transmitter's fundamental emission.

Table 3. General Field Strength Limits for Licence-Exempt Transmitters

Frequency(MHz)	Field Strength uV/m@3m	Field Strength dBuV/m@3m	Measurement Distance (meters)
0.009-0.490	2400/F(kHz)	-	300
0.490-1.705	24000/F(kHz)	-	30
1.705-30	30	-	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.

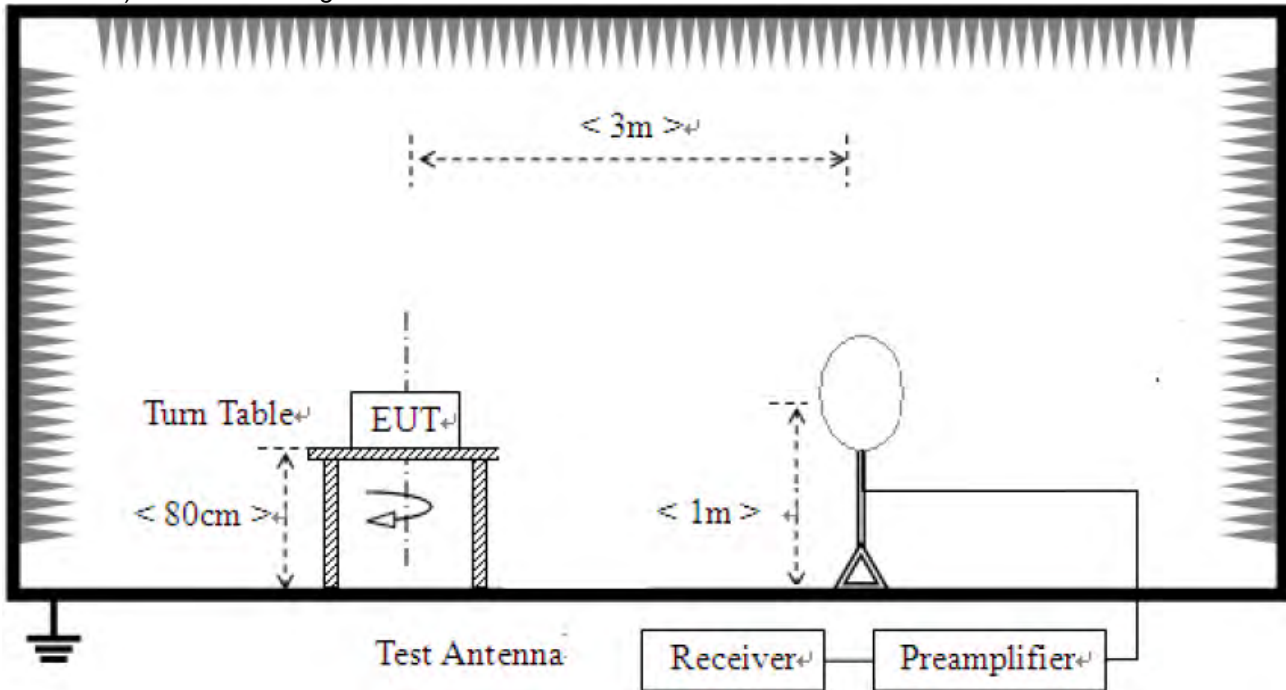
** Except as provided in RSS-GEN § 8.9. The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

Note :

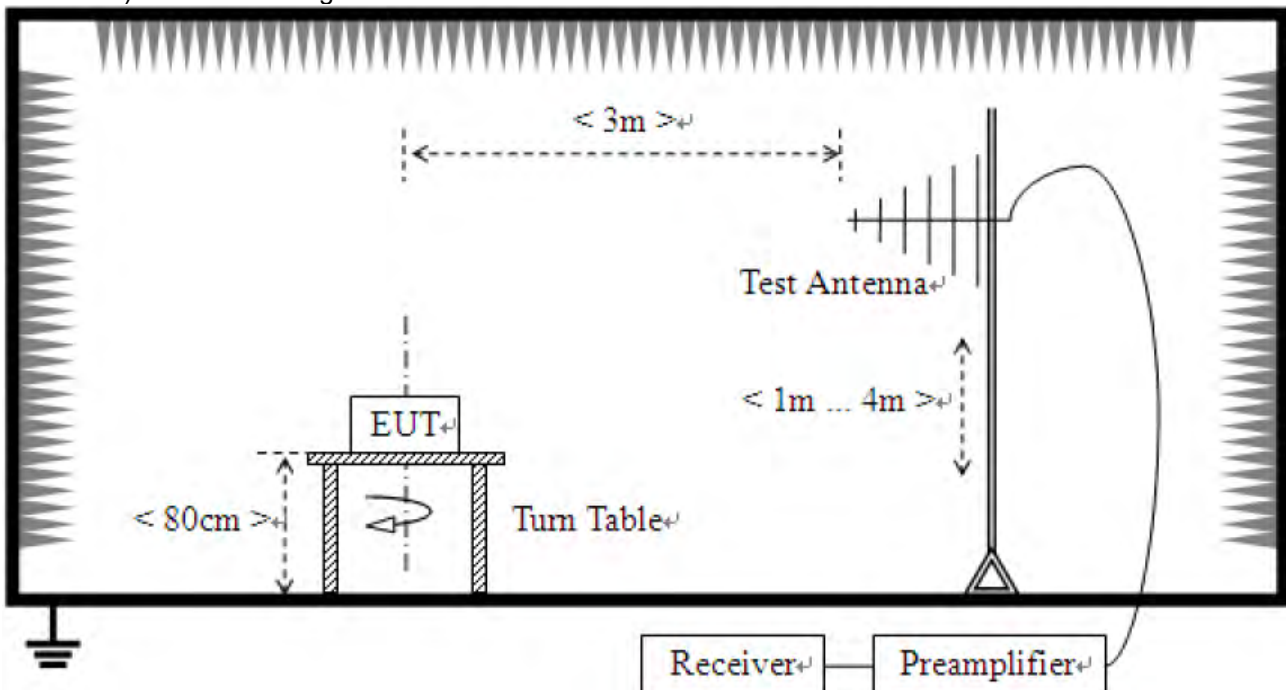
- 1) For above 1 GHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.
- 2) For above 1 GHz, limit field strength of harmonics : 54 dBuV/m@3m (AV) and 74 dBuV/m@3m (PK)

Test Setup:

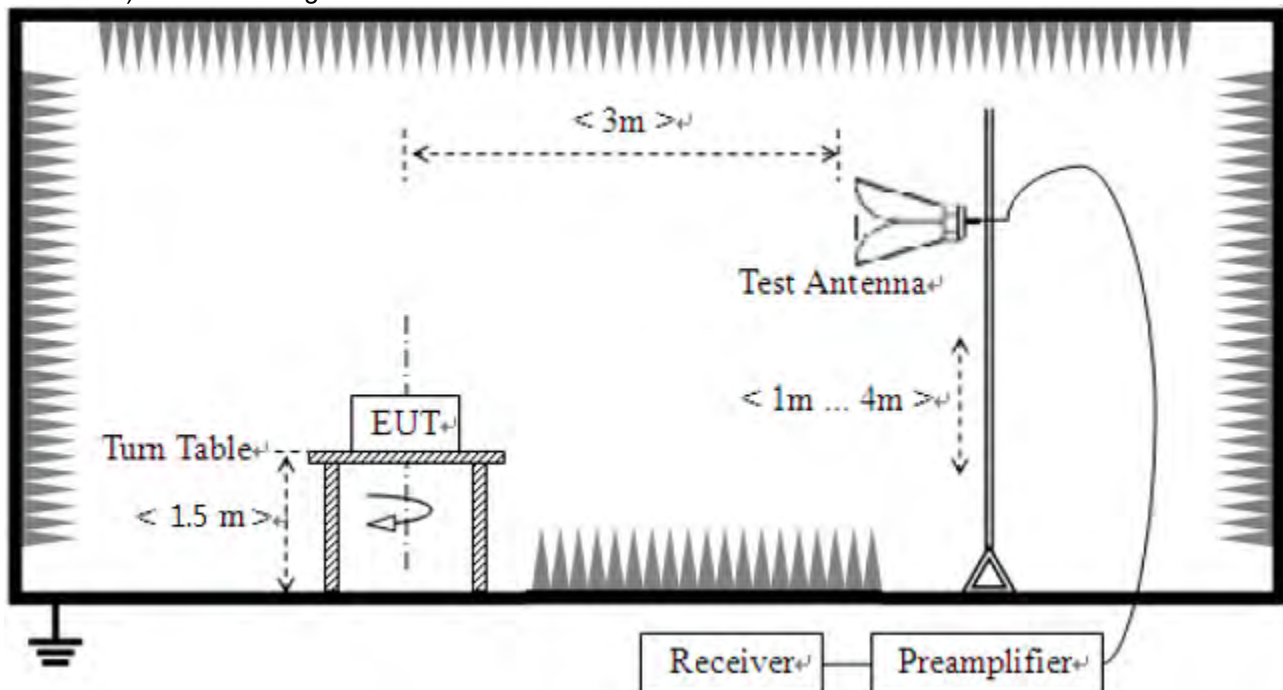
- 1) For field strength of emissions from 9 kHz to 30 MHz



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



3) For field strength of emissions above 1 GHz





CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (39) / (62) pages

Test Data

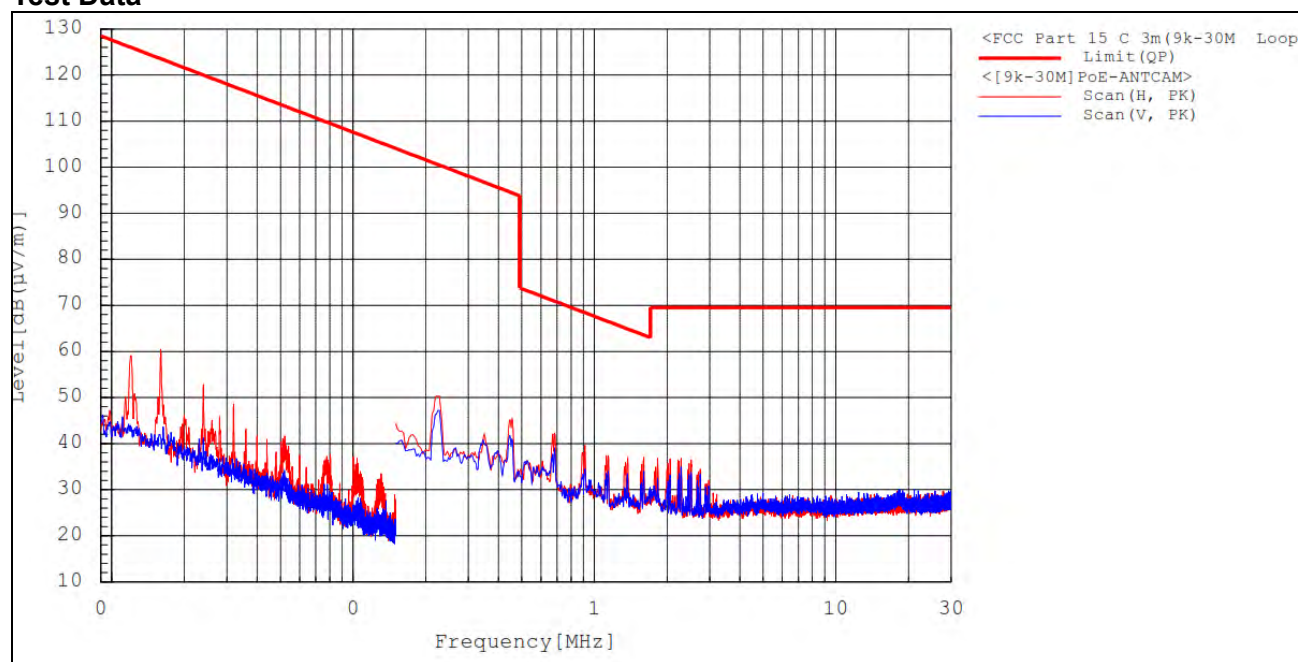
1) 9 kHz to 30 MHz

Test mode : Transmitter_Middle Channel_ANT CAM (Worst Case)

The requirements are:

☒ Complies

Test Data



Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Level [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]
-----------------	-----	----------------	---------------	------------------	------------------	-------------

The emissions 9 kHz to 30 MHz were 20 dB lower than the limit.

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 stand-up position(Z axis) and the worst case was recorded.
2. Result = Reading + c.f(Correction factor)
3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator



CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

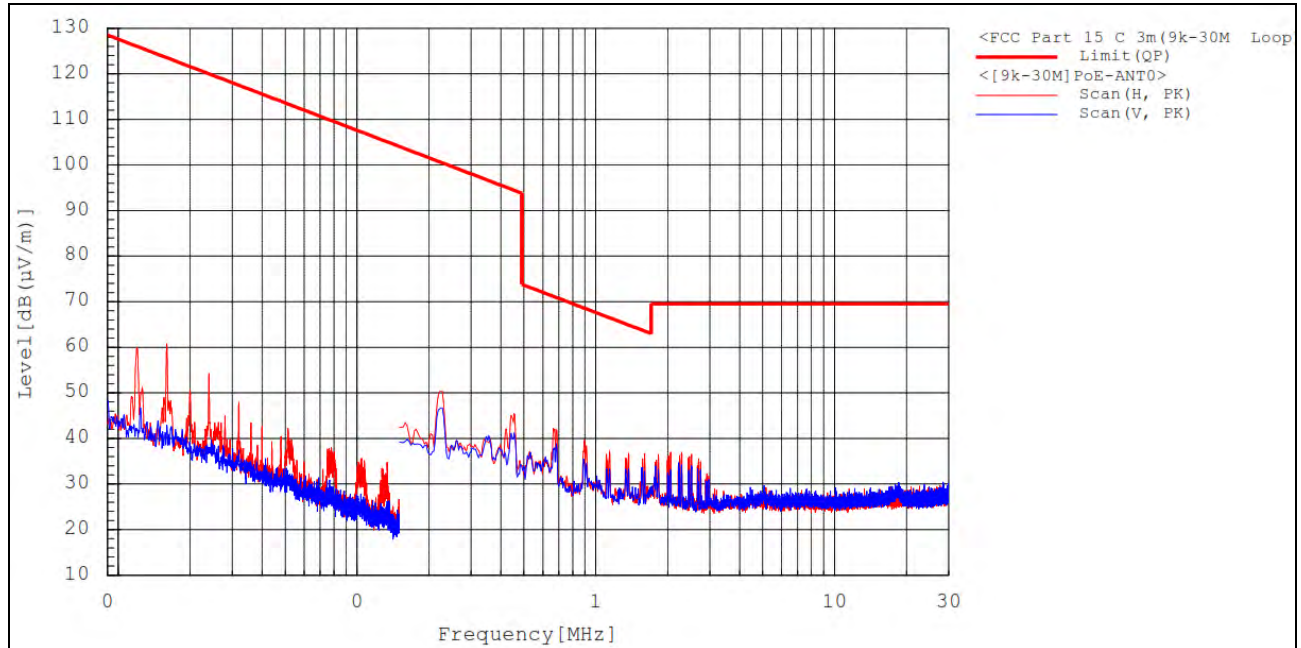
REPORT No.:
CTK-2026-02030
Page (40) / (62) pages

Test mode : Transmitter_Middle Channel_ANT 0 (Worst Case)

The requirements are:

☒ Complies

Test Data



Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Level [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]
--------------------	-----	-------------------	------------------	---------------------	---------------------	-------------

The emissions 9 kHz to 30 MHz were 20 dB lower than the limit.

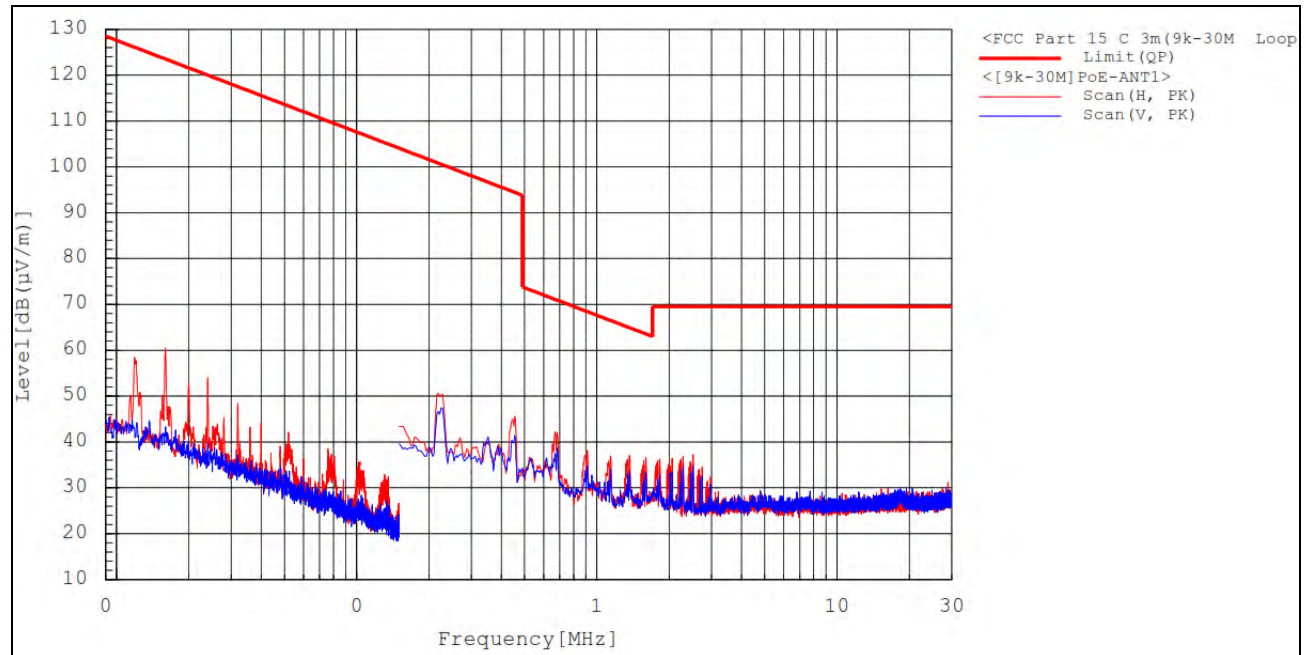
Remark :

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 stand-up position(Z axis) and the worst case was recorded.
2. Result = Reading + c.f(Correction factor)
3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator

Test mode : Transmitter_Middle Channel_ANT 1 (Worst Case)

The requirements are:

☒ Complies

Test Data


Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Level [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]
-----------------	-----	----------------	---------------	------------------	------------------	-------------

The emissions 9 kHz to 30 MHz were 20 dB lower than the limit.

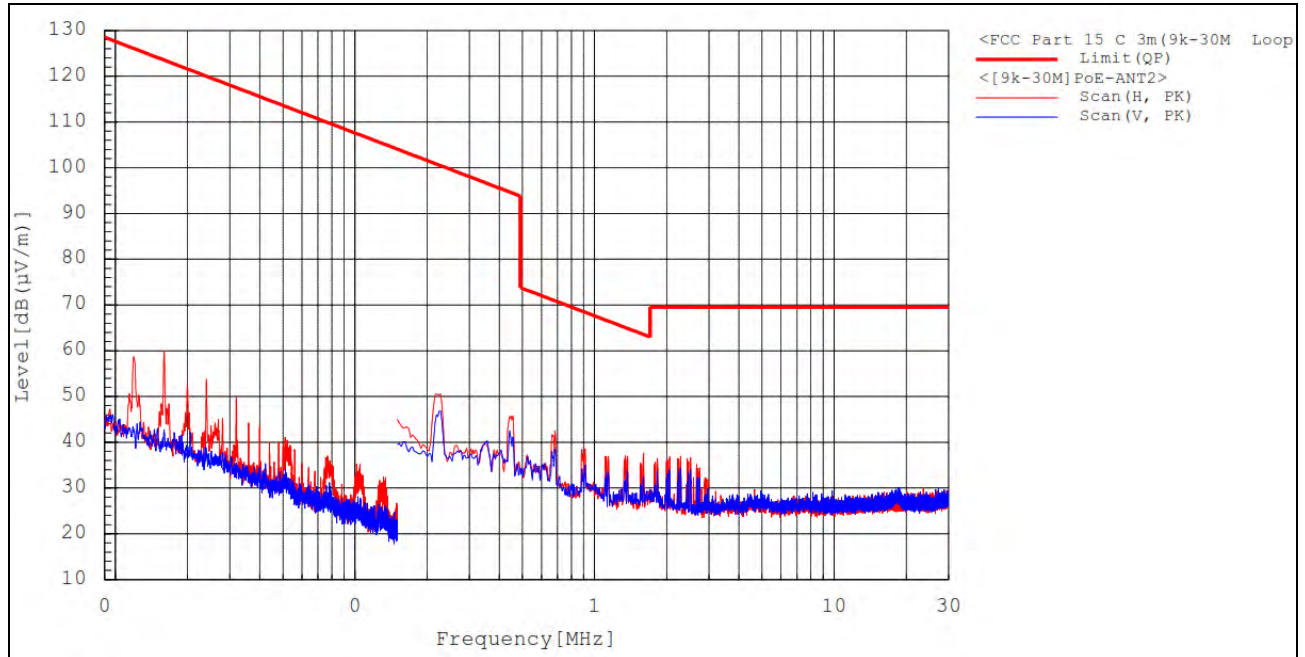
Remark :

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(X axis) and the worst case was recorded.
2. Result = Reading + c.f(Correction factor)
3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator

Test mode : Transmitter_Middle Channel_ANT 2 (Worst Case)

The requirements are:

☒ Complies

Test Data


Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Level [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]
-----------------	-----	----------------	---------------	------------------	------------------	-------------

The emissions 9 kHz to 30 MHz were 20 dB lower than the limit.

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 stand-up position(Z axis) and the worst case was recorded.
2. Result = Reading + c.f(Correction factor)
3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator



CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

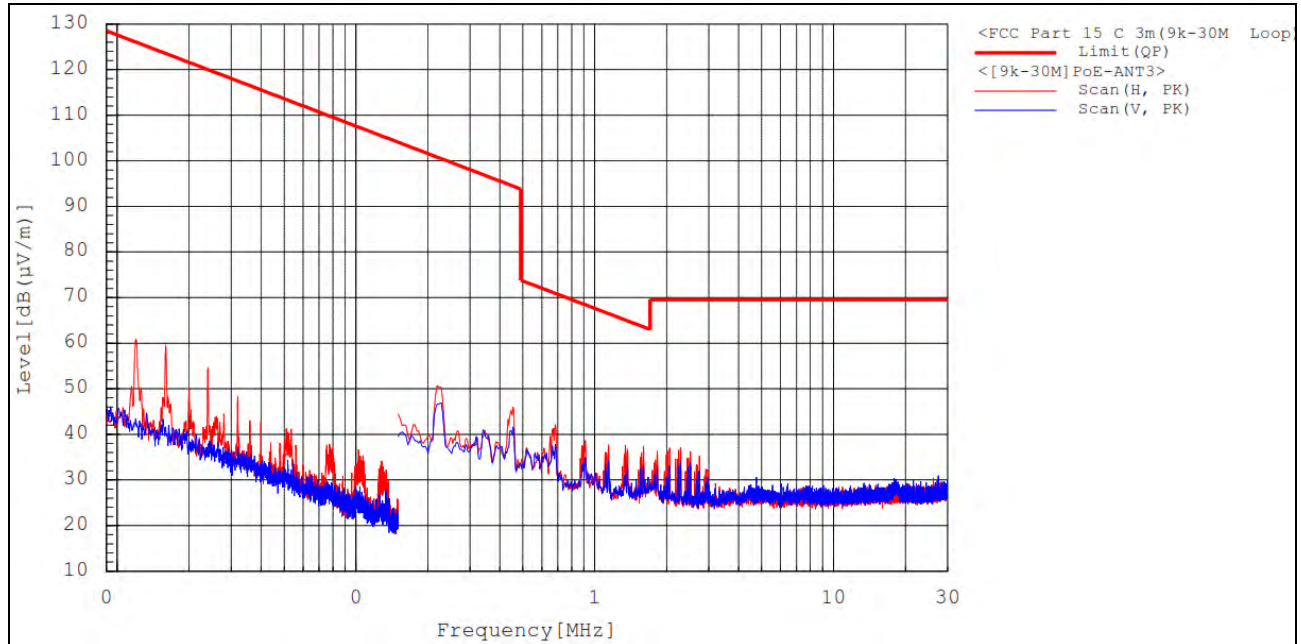
REPORT No.:
CTK-2026-02030
Page (43) / (62) pages

Test mode : Transmitter_Middle Channel_ANT 3 (Worst Case)

The requirements are:

☒ Complies

Test Data



Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Level [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]
--------------------	-----	-------------------	------------------	---------------------	---------------------	-------------

The emissions 9 kHz to 30 MHz were 20 dB lower than the limit.

Remark :

- 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(X axis) and the worst case was recorded.
- Result = Reading + c.f(Correction factor)
- Correction factor = Antenna factor + Cable loss + 6 dB attenuator



CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

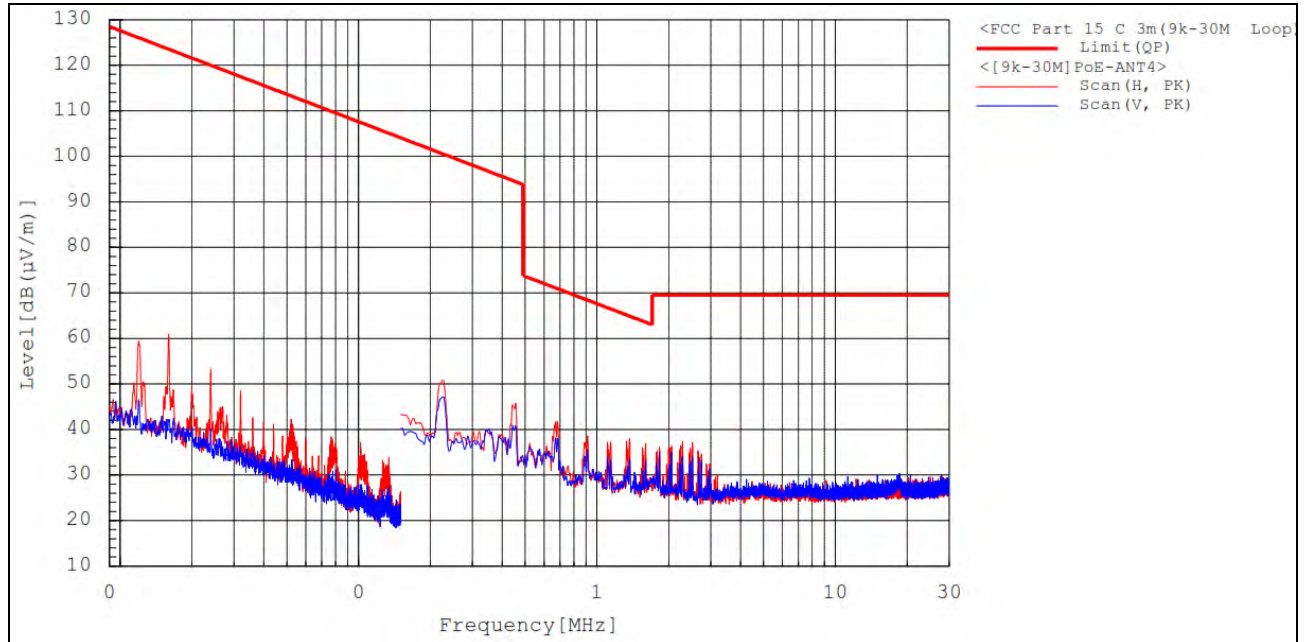
REPORT No.:
CTK-2026-02030
Page (44) / (62) pages

Test mode : Transmitter_Middle Channel_ANT 4 (Worst Case)

The requirements are:

☒ Complies

Test Data



Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Level [dB(uV/m)]	Limit [dB(uV/m)]	Margin [dB]
-----------------	-----	----------------	---------------	------------------	------------------	-------------

The emissions 9 kHz to 30 MHz were 20 dB lower than the limit.

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 stand-up position(Z axis) and the worst case was recorded.
2. Result = Reading + c.f(Correction factor)
3. Correction factor = Antenna factor + Cable loss + 6 dB attenuator



CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (45) / (62) pages

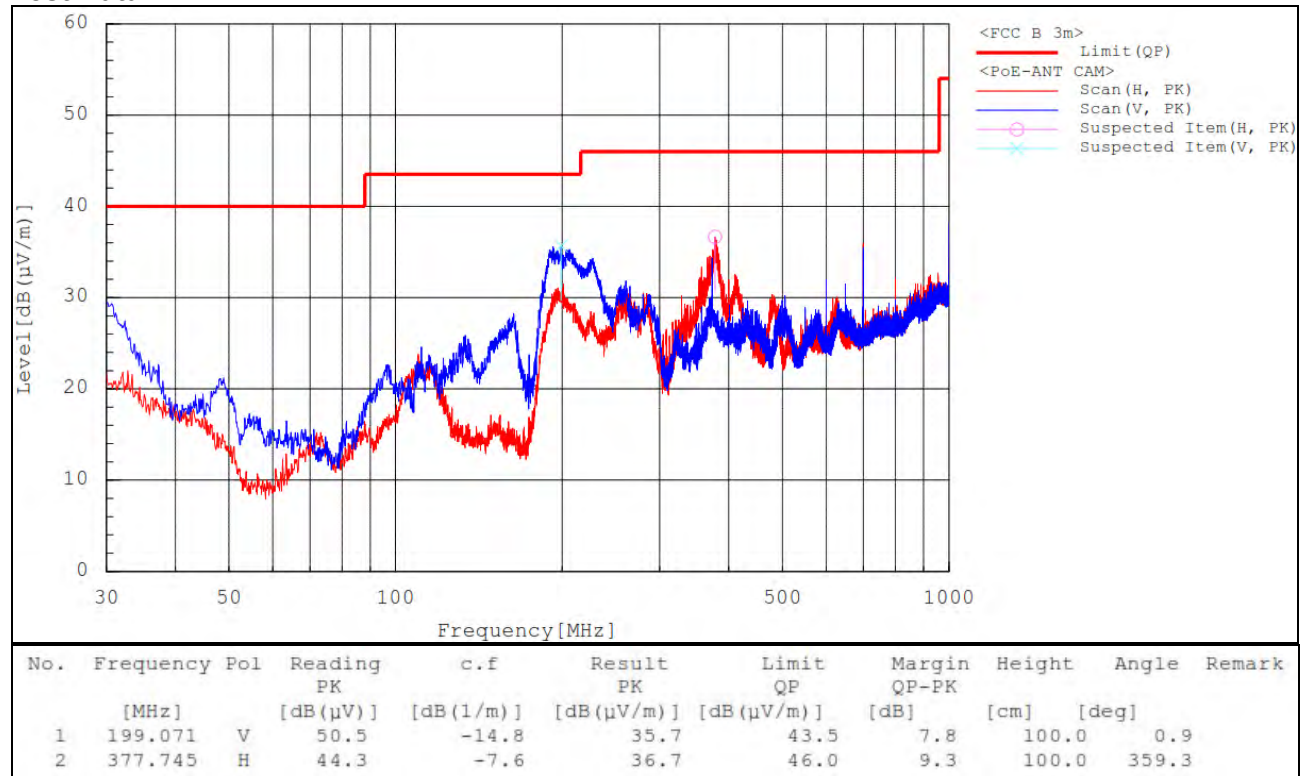
2) 30 MHz to 1 GHz

Test mode : Transmitter_Middle Channel_ANT CAM (Worst Case)

The requirements are:

☒ Complies

Test Data



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 stand-up position(Z 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
4. Reading data is the peak value.



CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

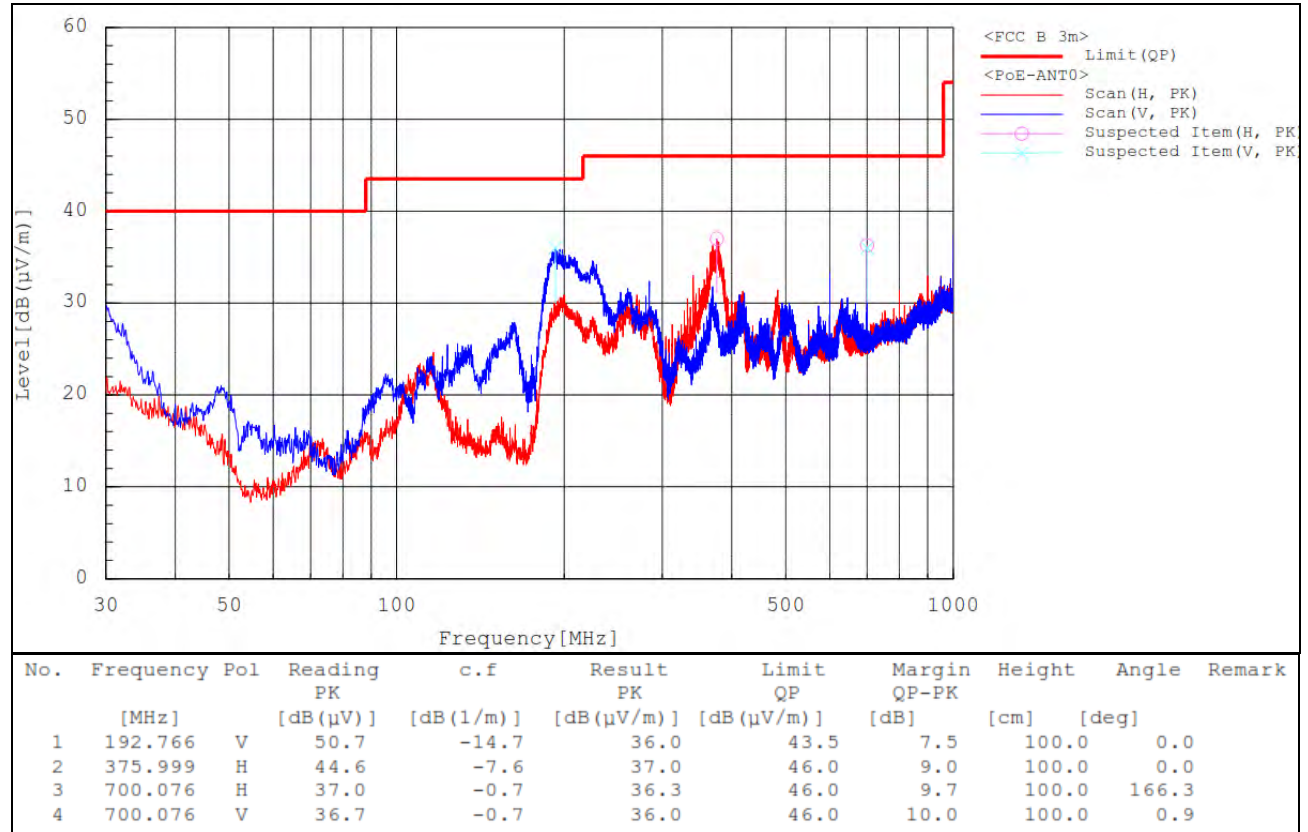
REPORT No.:
CTK-2026-02030
Page (46) / (62) pages

Test mode : Transmitter_Middle Channel_ANT 0 (Worst Case)

The requirements are:

☒ Complies

Test Data



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 stand-up position(Z 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
4. Reading data is the peak value.



CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

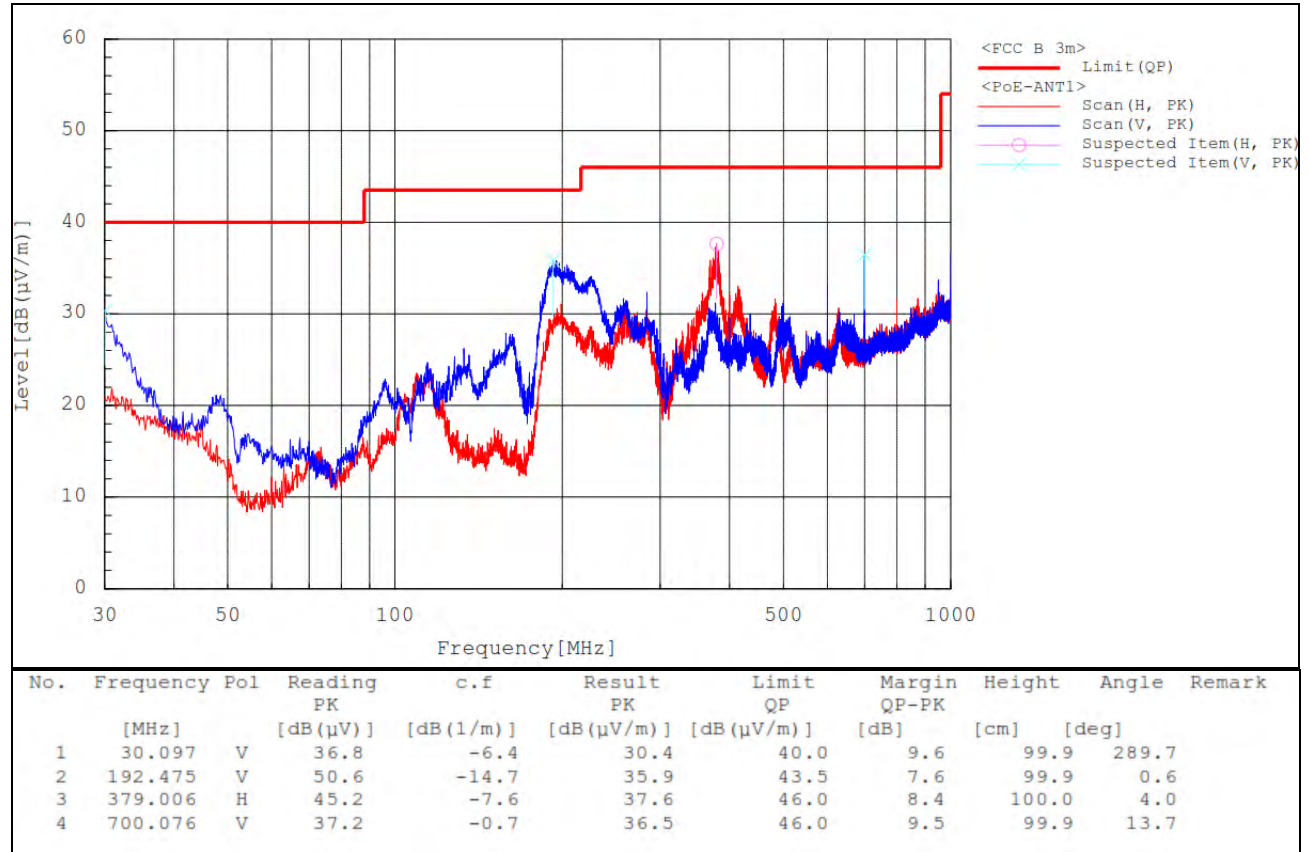
REPORT No.:
CTK-2026-02030
Page (47) / (62) pages

Test mode : Transmitter_Middle Channel_ANT 1 (Worst Case)

The requirements are:

☒ Complies

Test Data



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(X 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
4. Reading data is the peak value.



CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

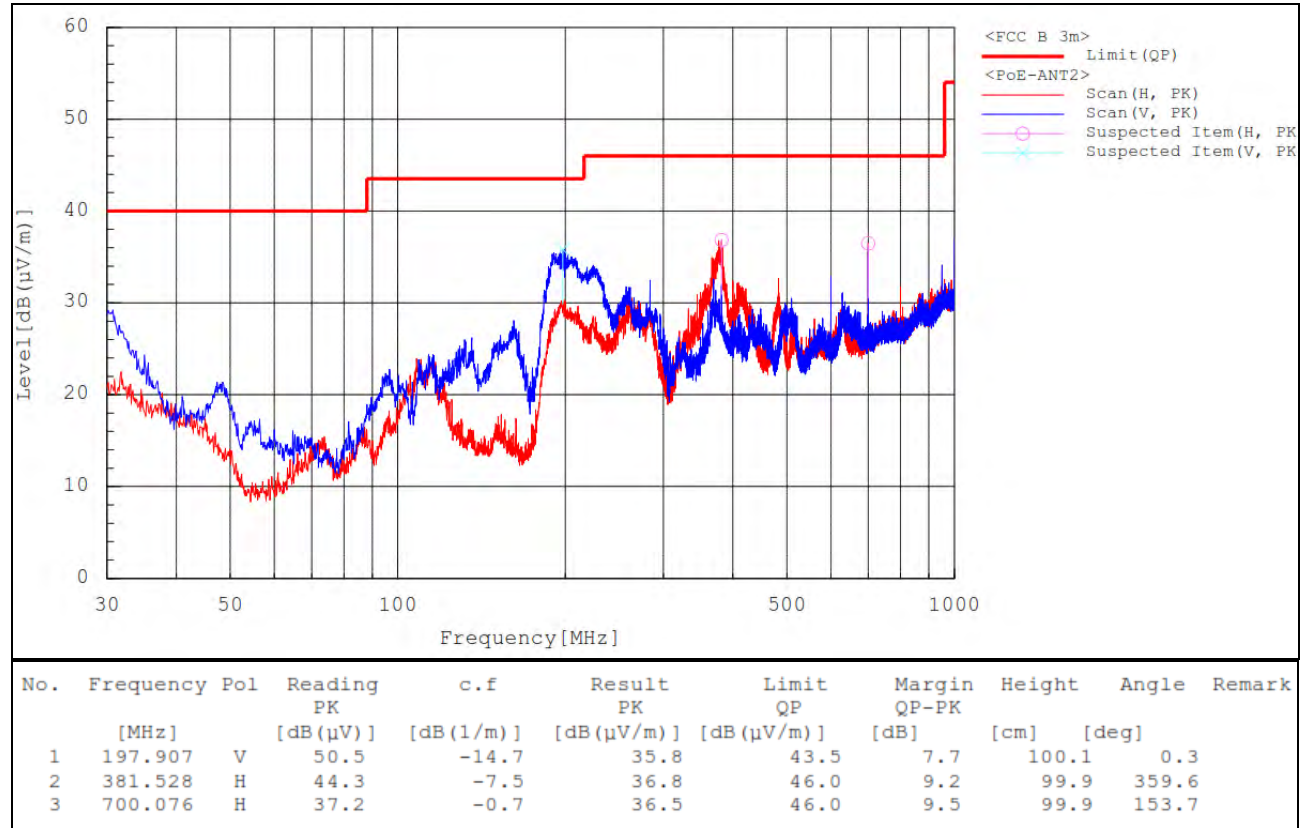
REPORT No.:
CTK-2026-02030
Page (48) / (62) pages

Test mode : Transmitter_Middle Channel_ANT 2 (Worst Case)

The requirements are:

☒ Complies

Test Data



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 stand-up position(Z 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
4. Reading data is the peak value.



CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

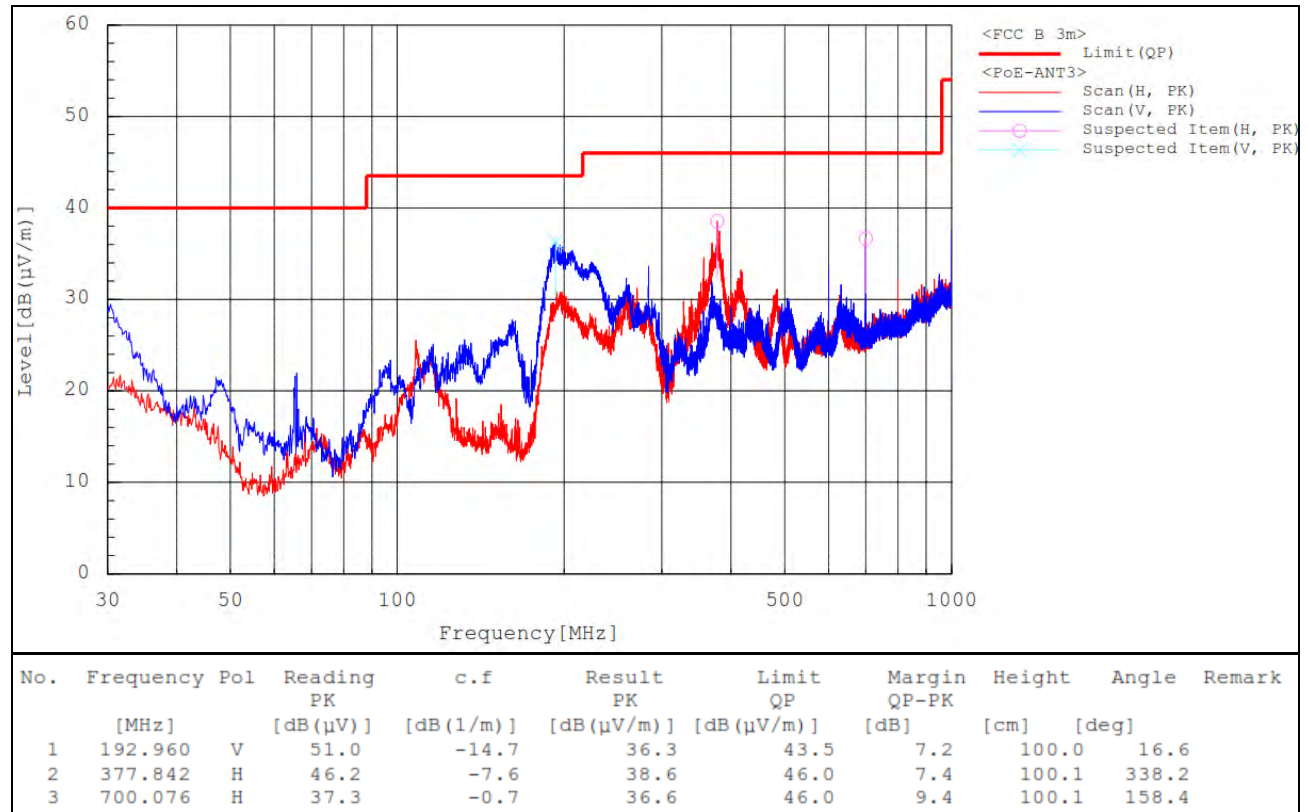
REPORT No.:
CTK-2026-02030
Page (49) / (62) pages

Test mode : Transmitter_Middle Channel_ANT 3 (Worst Case)

The requirements are:

☒ Complies

Test Data



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(X 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
4. Reading data is the peak value.



CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

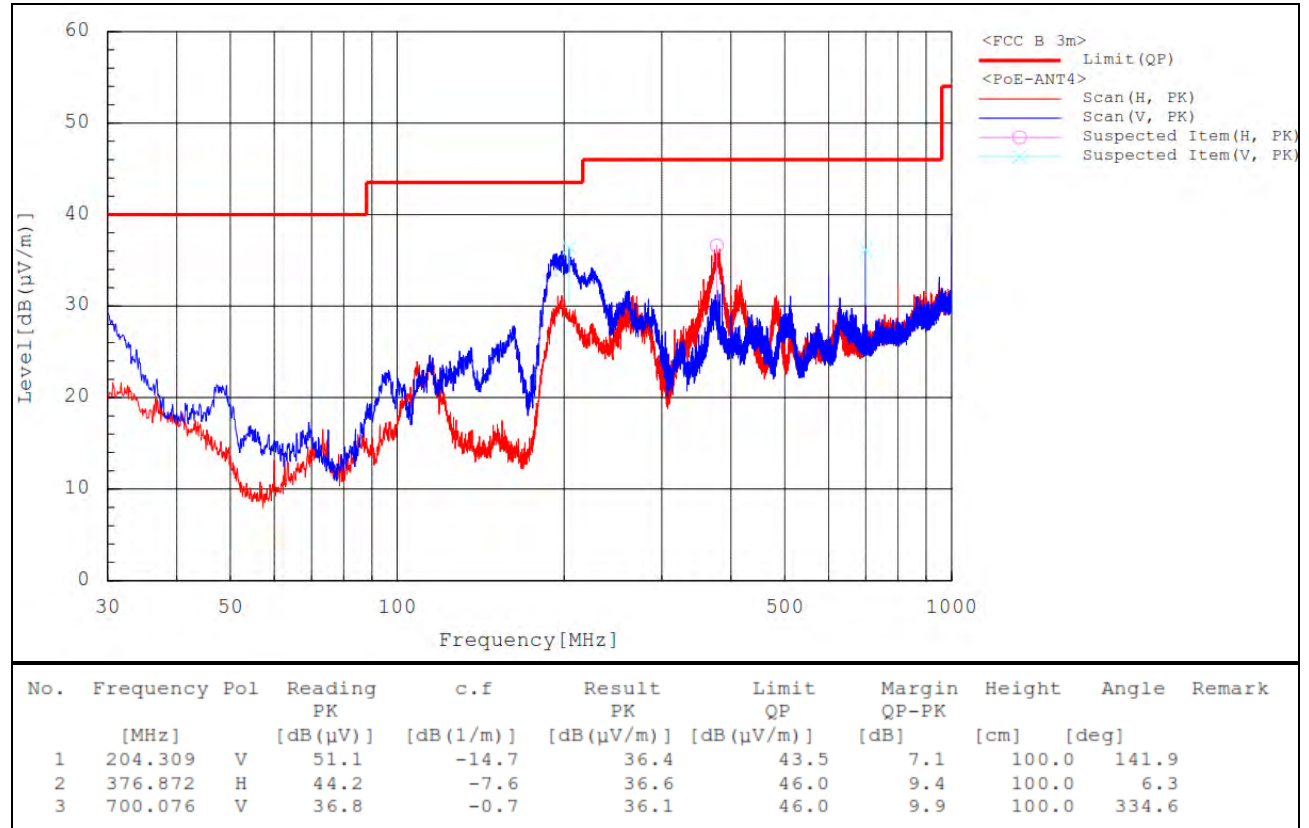
REPORT No.:
CTK-2026-02030
Page (50) / (62) pages

Test mode : Transmitter_Middle Channel_ANT 4 (Worst Case)

The requirements are:

☒ Complies

Test Data



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 stand-up position(Z 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
4. Reading data is the peak value.



CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

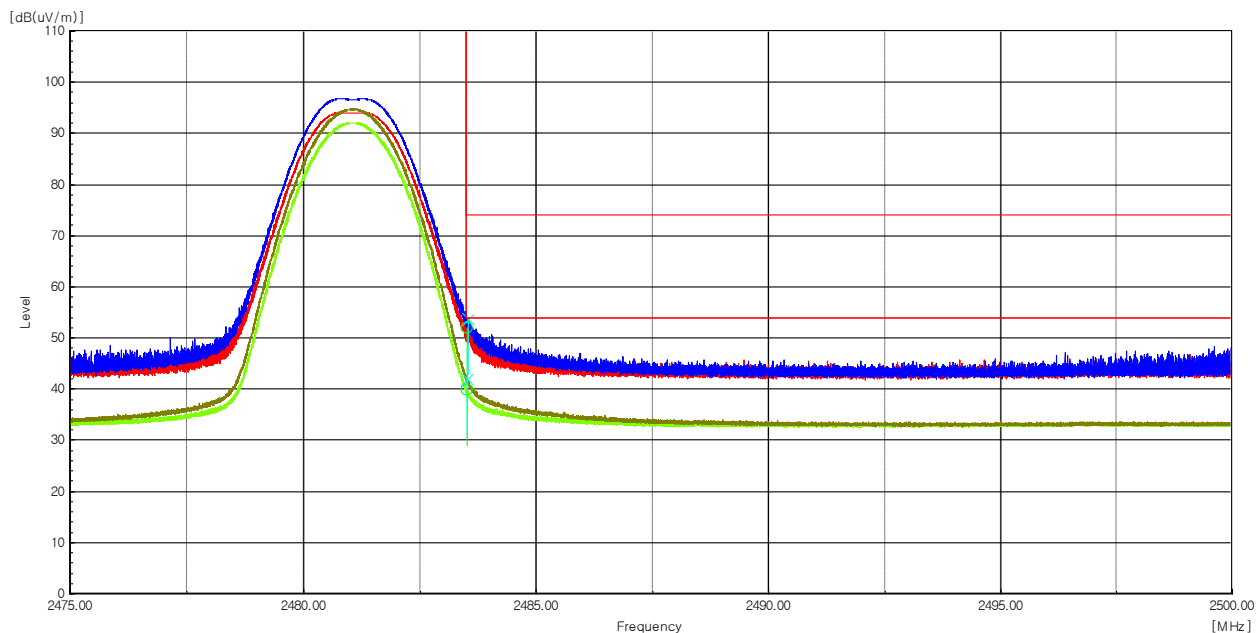
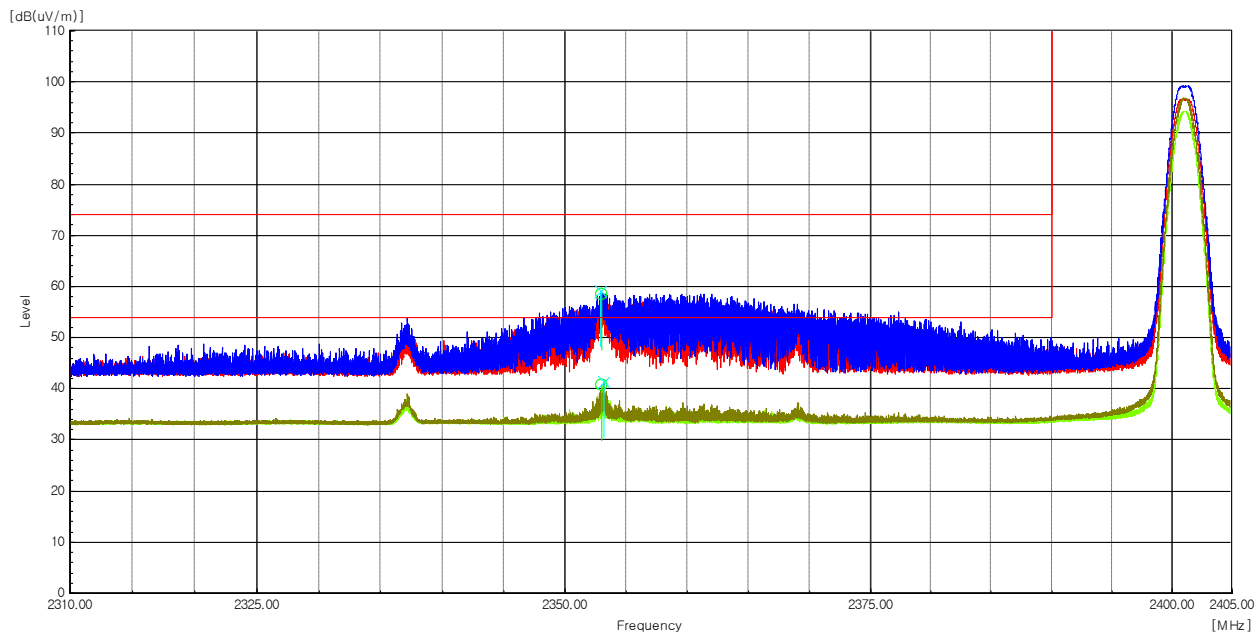
REPORT No.:
CTK-2026-02030
Page (51) / (62) pages

3) above 1 GHz

The requirements are:

☒ Complies

Test Data

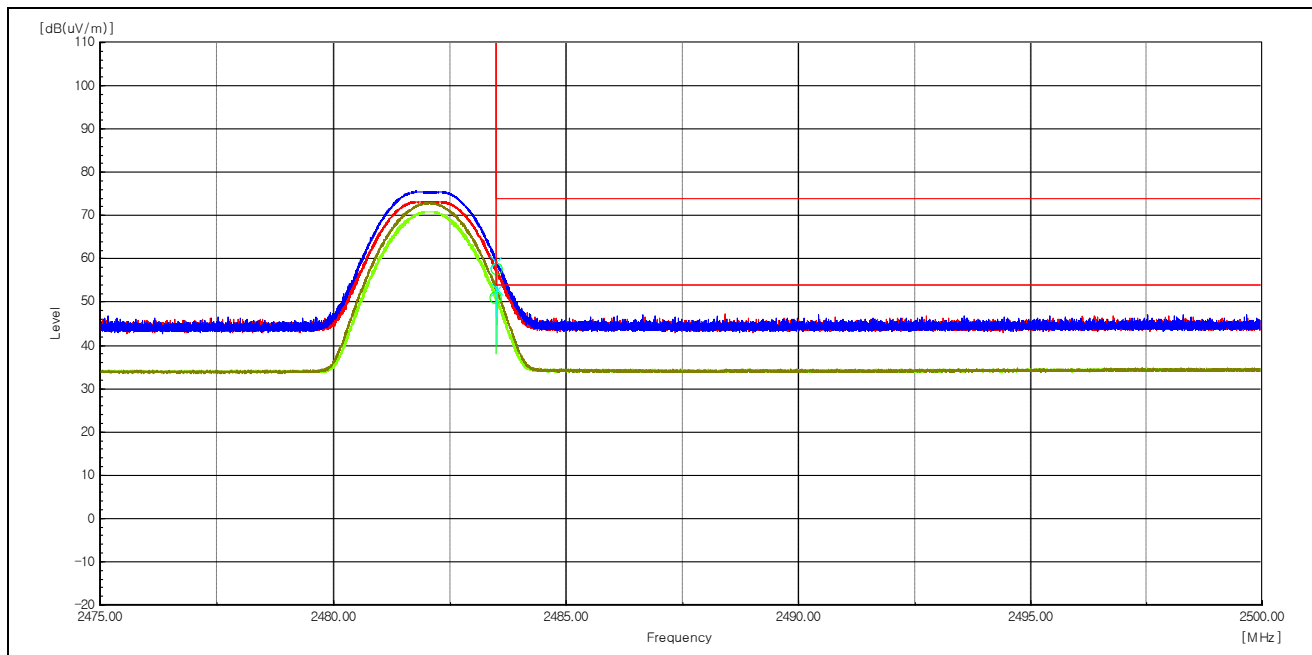




CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (52) / (62) pages

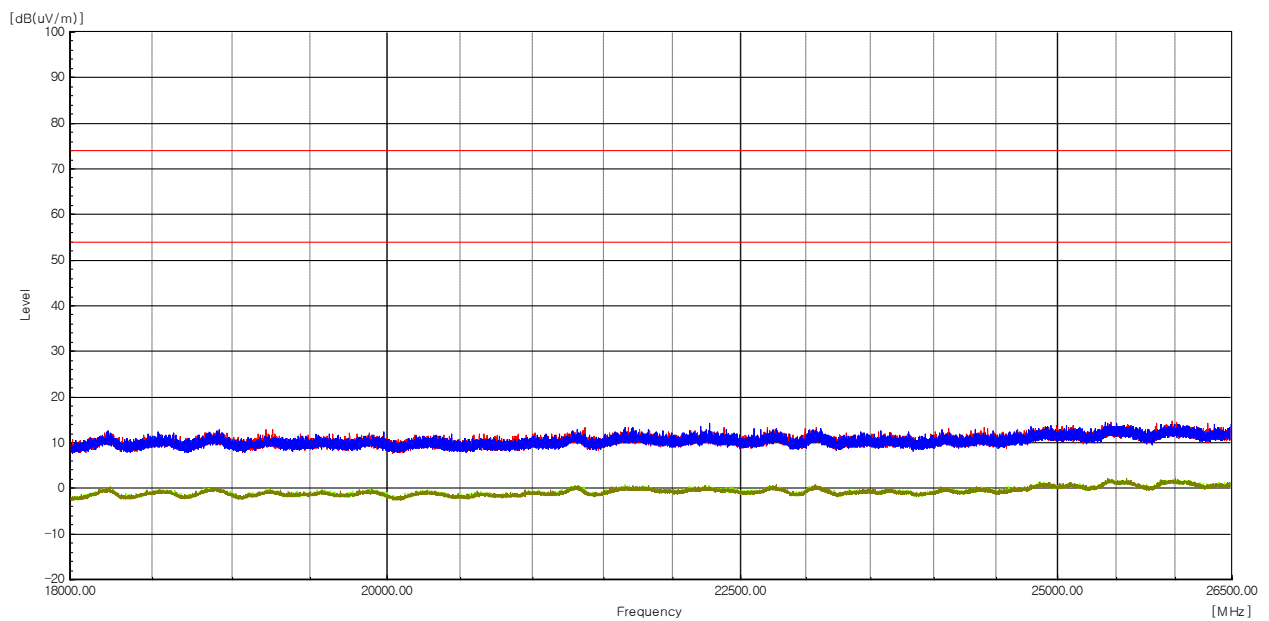
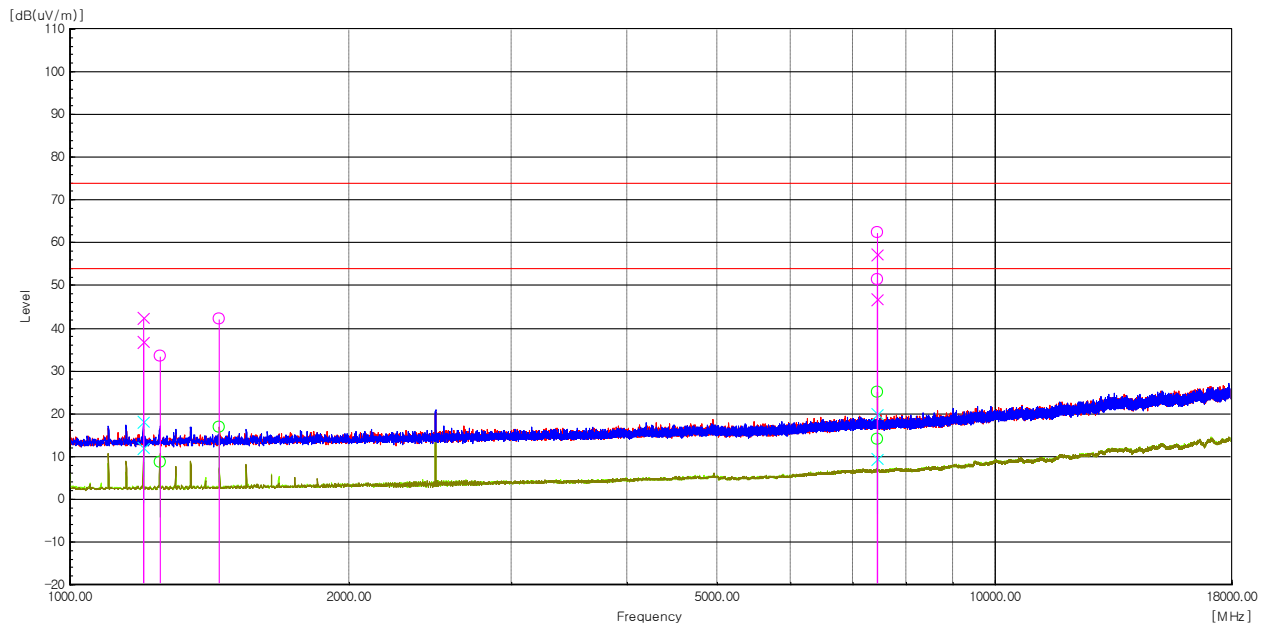




CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (53) / (62) pages



**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (54) / (62) pages

Test mode : Transmitter_ANT CAM**Lowest channel (2 401 MHz)**

Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
7 203.95	H	51.7	9.1	-----	60.8	-----	74.0	-----	13.2	-----	Peak
7 202.63	H	42.9	9.1	-----	-----	52.0	-----	54.0	-----	2.0	Average
7 203.91	V	49.7	9.1	-----	58.8	-----	74.0	-----	15.2	-----	Peak
7 202.59	V	39.6	9.1	-----	-----	48.7	-----	54.0	-----	5.3	Average

Middle channel (2 440 MHz)

Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
7 320.77	H	51.8	9.2	-----	61.0	-----	74.0	-----	13.0	-----	Peak
7 320.67	H	42.1	9.2	-----	-----	51.3	-----	54.0	-----	2.7	Average
7 319.47	V	49.4	9.2	-----	58.6	-----	74.0	-----	15.4	-----	Peak
7 320.65	V	39.6	9.2	-----	-----	48.8	-----	54.0	-----	5.2	Average

Highest channel_1 (2 481 MHz)

Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
7 442.16	H	51.0	9.4	-----	60.4	-----	74.0	-----	13.6	-----	Peak
7 442.76	H	42.1	9.4	-----	-----	51.5	-----	54.0	-----	2.5	Average
7 442.74	V	48.3	9.4	-----	57.7	-----	74.0	-----	16.3	-----	Peak
7 443.62	V	37.8	9.4	-----	-----	47.2	-----	54.0	-----	6.8	Average

Highest channel_2 (2 482 MHz)

Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
-----------------	-----	----------------	---------------	------------------------	---------------------	---------------------	---------------------	---------------------	----------------	----------------	------

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 stand-up position(Z axis) and the worst case was recorded.
2. Peak Result = Reading + c.f(Correction factor)
Average 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, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (55) / (62) pages

Test mode : Transmitter_ANT 0**Lowest channel (2 401 MHz)**

Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
7 202.51	H	50.7	9.1	-----	59.8	-----	74.0	-----	14.2	-----	Peak
7 202.41	H	42.5	9.1	-----	-----	51.6	-----	54.0	-----	2.4	Average
7 202.35	V	48.7	9.1	-----	57.8	-----	74.0	-----	16.2	-----	Peak
7 202.51	V	39.0	9.1	-----	-----	48.1	-----	54.0	-----	5.9	Average

Middle channel (2 440 MHz)

Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
7 319.59	H	51.5	9.2	-----	60.7	-----	74.0	-----	13.3	-----	Peak
7 320.85	H	43.7	9.2	-----	-----	52.9	-----	54.0	-----	1.1	Average
7 320.21	V	48.9	9.2	-----	58.1	-----	74.0	-----	15.9	-----	Peak
7 319.55	V	39.1	9.2	-----	-----	48.3	-----	54.0	-----	5.7	Average

Highest channel_1 (2 481 MHz)

Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
7 442.44	H	50.8	9.4	-----	60.2	-----	74.0	-----	13.8	-----	Peak
7 442.54	H	42.3	9.4	-----	-----	51.7	-----	54.0	-----	2.3	Average
7 443.26	V	49.2	9.4	-----	58.6	-----	74.0	-----	15.4	-----	Peak
7 442.62	V	39.1	9.4	-----	-----	48.5	-----	54.0	-----	5.5	Average

Highest channel_2 (2 482 MHz)

Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
-----------------	-----	----------------	---------------	------------------------	---------------------	---------------------	---------------------	---------------------	----------------	----------------	------

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 stand-up position(Z axis) and the worst case was recorded.
2. Peak Result = Reading + c.f(Correction factor)
Average 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, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (56) / (62) pages

Test mode : Transmitter_ANT 1**Lowest channel (2 401 MHz)**

Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
7 203.41	H	49.9	9.1	-----	59.0	-----	74.0	-----	15.0	-----	Peak
7 203.85	H	41.0	9.1	-----	-----	50.1	-----	54.0	-----	3.9	Average
7 204.03	V	49.4	9.1	-----	58.5	-----	74.0	-----	15.5	-----	Peak
7 202.57	V	40.5	9.1	-----	-----	49.6	-----	54.0	-----	4.4	Average

Middle channel (2 440 MHz)

Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
7 320.97	H	49.5	9.2	-----	58.7	-----	74.0	-----	15.3	-----	Peak
7 319.77	H	40.0	9.2	-----	-----	49.2	-----	54.0	-----	4.8	Average
7 320.85	V	50.7	9.2	-----	59.9	-----	74.0	-----	14.1	-----	Peak
7 319.51	V	42.3	9.2	-----	-----	51.5	-----	54.0	-----	2.5	Average

Highest channel_1 (2 481 MHz)

Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
7 444.10	H	49.2	9.4	-----	58.6	-----	74.0	-----	15.4	-----	Peak
7 442.30	H	40.3	9.4	-----	-----	49.7	-----	54.0	-----	4.3	Average
7 442.86	V	51.7	9.4	-----	61.1	-----	74.0	-----	12.9	-----	Peak
7 442.46	V	40.2	9.4	-----	-----	49.6	-----	54.0	-----	4.4	Average

Highest channel_2 (2 482 MHz)

Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
-----------------	-----	----------------	---------------	------------------------	---------------------	---------------------	---------------------	---------------------	----------------	----------------	------

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(X axis) and the worst case was recorded.
2. Peak Result = Reading + c.f(Correction factor)
Average 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, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (57) / (62) pages

Test mode : Transmitter_ANT 2**Lowest channel (2 401 MHz)**

Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
7 203.81	H	51.0	9.1	-----	60.1	-----	74.0	-----	13.9	-----	Peak
7 202.55	H	43.1	9.1	-----	-----	52.2	-----	54.0	-----	1.8	Average
7 203.71	V	50.6	9.1	-----	59.7	-----	74.0	-----	14.3	-----	Peak
7 202.41	V	43.1	9.1	-----	-----	52.2	-----	54.0	-----	1.8	Average

Middle channel (2 440 MHz)

Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
7 319.35	H	51.8	9.2	-----	61.0	-----	74.0	-----	13.0	-----	Peak
7 320.67	H	43.5	9.2	-----	-----	52.7	-----	54.0	-----	1.3	Average
7 319.27	V	50.3	9.2	-----	59.5	-----	74.0	-----	14.5	-----	Peak
7 320.97	V	41.0	9.2	-----	-----	50.2	-----	54.0	-----	3.8	Average

Highest channel_1 (2 481 MHz)

Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
7 442.26	H	52.8	9.4	-----	62.2	-----	74.0	-----	11.8	-----	Peak
7 442.78	H	43.2	9.4	-----	-----	52.6	-----	54.0	-----	1.4	Average
7 443.16	V	51.3	9.4	-----	60.7	-----	74.0	-----	13.3	-----	Peak
7 442.56	V	42.8	9.4	-----	-----	52.2	-----	54.0	-----	1.8	Average

Highest channel_2 (2 482 MHz)

Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
-----------------	-----	----------------	---------------	------------------------	---------------------	---------------------	---------------------	---------------------	----------------	----------------	------

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 stand-up position(Z axis) and the worst case was recorded.
2. Peak Result = Reading + c.f(Correction factor)
Average 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, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (58) / (62) pages

Test mode : Transmitter_ANT 3**Lowest channel (2 401 MHz)**

Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
7 202.19	H	49.8	9.1	-----	58.9	-----	74.0	-----	15.1	-----	Peak
7 202.51	H	39.2	9.1	-----	-----	48.3	-----	54.0	-----	5.7	Average
7 202.55	V	50.7	9.1	-----	59.8	-----	74.0	-----	14.2	-----	Peak
7 202.47	V	40.2	9.1	-----	-----	49.3	-----	54.0	-----	4.7	Average

Middle channel (2 440 MHz)

Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
7 319.61	H	50.8	9.2	-----	60.0	-----	74.0	-----	14.0	-----	Peak
7 319.41	H	41.4	9.2	-----	-----	50.6	-----	54.0	-----	3.4	Average
7 320.97	V	49.4	9.2	-----	58.6	-----	74.0	-----	15.4	-----	Peak
7 319.31	V	39.7	9.2	-----	-----	48.9	-----	54.0	-----	5.1	Average

Highest channel_1 (2 481 MHz)

Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
7 442.40	H	50.8	9.4	-----	60.2	-----	74.0	-----	13.8	-----	Peak
7 443.76	H	42.1	9.4	-----	-----	51.5	-----	54.0	-----	2.5	Average
7 442.24	V	49.6	9.4	-----	59.0	-----	74.0	-----	15.0	-----	Peak
7 443.70	V	40.3	9.4	-----	-----	49.7	-----	54.0	-----	4.3	Average

Highest channel_2 (2 482 MHz)

Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
-----------------	-----	----------------	---------------	------------------------	---------------------	---------------------	---------------------	---------------------	----------------	----------------	------

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(X axis) and the worst case was recorded.
2. Peak Result = Reading + c.f(Correction factor)
Average 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, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (59) / (62) pages

Test mode : Transmitter_ANT 4**Lowest channel (2 401 MHz)**

Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
7 202.59	H	52.0	9.1	-----	61.1	-----	74.0	-----	12.9	-----	Peak
7 202.55	H	42.5	9.1	-----	-----	51.6	-----	54.0	-----	2.4	Average
7 202.39	V	51.0	9.1	-----	60.1	-----	74.0	-----	13.9	-----	Peak
7 203.83	V	41.1	9.1	-----	-----	50.2	-----	54.0	-----	3.8	Average

Middle channel (2 440 MHz)

Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
7 319.47	H	50.7	9.2	-----	59.9	-----	74.0	-----	14.1	-----	Peak
7 320.77	H	42.2	9.2	-----	-----	51.4	-----	54.0	-----	2.6	Average
7 319.51	V	50.1	9.2	-----	59.3	-----	74.0	-----	14.7	-----	Peak
7 319.27	V	41.3	9.2	-----	-----	50.5	-----	54.0	-----	3.5	Average

Highest channel_1 (2 481 MHz)

Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
7 442.39	H	51.5	9.4	-----	60.9	-----	74.0	-----	13.1	-----	Peak
7 443.41	H	42.4	9.4	-----	-----	51.8	-----	54.0	-----	2.2	Average
7 442.81	V	50.0	9.4	-----	59.4	-----	74.0	-----	14.6	-----	Peak
7 442.63	V	41.6	9.4	-----	-----	51.0	-----	54.0	-----	3.0	Average

Highest channel_2 (2 482 MHz)

Frequency [MHz]	(P)	Reading [dBuV]	c.f [dB(1/m)]	Duty Cycle Factor [dB]	Level PK [dB(uV/m)]	Level AV [dB(uV/m)]	Limit PK [dB(uV/m)]	Limit AV [dB(uV/m)]	Margin PK [dB]	Margin AV [dB]	Note
-----------------	-----	----------------	---------------	------------------------	---------------------	---------------------	---------------------	---------------------	----------------	----------------	------

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 stand-up position(Z axis) and the worst case was recorded.
2. Peak Result = Reading + c.f(Correction factor)
Average 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, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (60) / (62) pages

4.6 AC Conducted Emissions

Frequency Range of Measurement

150 kHz to 30 MHz

Instrument Settings

IF Band Width: 9 kHz

Test Procedures

ANSI C63.10-2020 - Section 6.2

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.

Test Results

The requirements are:

☒ Complies



CTK Co., Ltd.

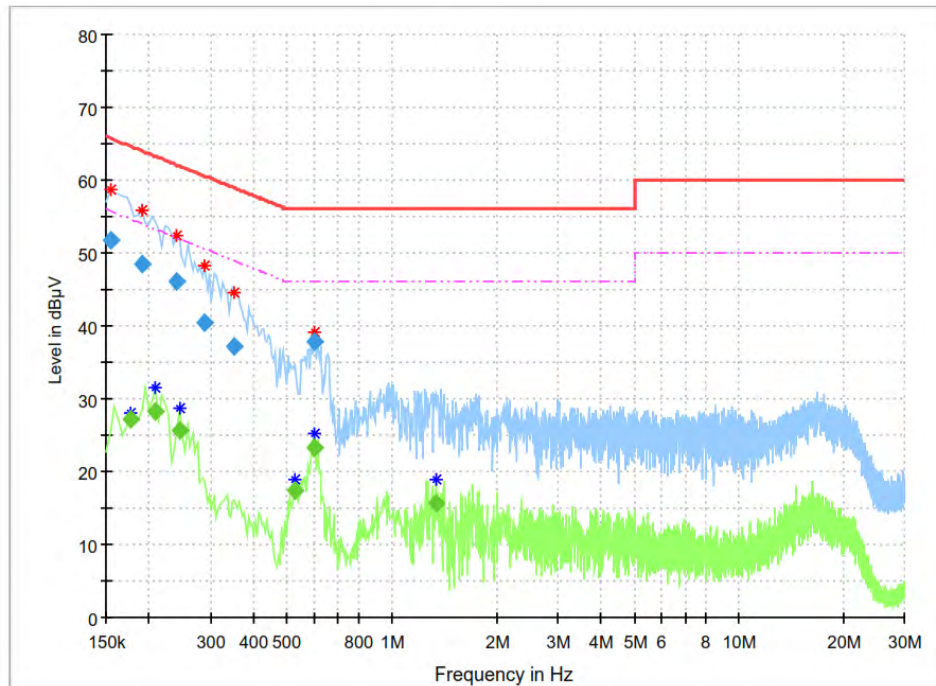
(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (61) / (62) pages

Test Data

Test mode : Transmitter_Middle Channel_ANT 1 (Worst Case)

Full Spectrum



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.154500	51.78	---	65.75	13.97	15000.0	9.000	N	ON	9.9
0.177000	---	27.25	54.63	27.38	15000.0	9.000	N	ON	10.0
0.190500	48.47	---	64.02	15.54	15000.0	9.000	L1	ON	10.1
0.208500	---	28.32	53.27	24.94	15000.0	9.000	L1	ON	10.1
0.240000	46.17	---	62.10	15.92	15000.0	9.000	L1	ON	10.0
0.244500	---	25.56	51.94	26.38	15000.0	9.000	L1	ON	10.0
0.289500	40.51	---	60.54	20.03	15000.0	9.000	L1	ON	10.0
0.352500	37.07	---	58.90	21.83	15000.0	9.000	L1	ON	10.2
0.523500	---	17.33	46.00	28.67	15000.0	9.000	L1	ON	10.2
0.600000	37.82	---	56.00	18.18	15000.0	9.000	L1	ON	10.2
0.600000	---	23.35	46.00	22.65	15000.0	9.000	L1	ON	10.2
1.338000	---	15.76	46.00	30.24	15000.0	9.000	L1	ON	10.0

**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 17142, Korea
Tel: +82-1551-9871
Fax: +82-31-624-9501

REPORT No.:
CTK-2026-02030
Page (62) / (62) pages

APPENDIX A – Test Equipment Used For Tests

	Name of Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	Signal Analyzer	Agilent	N9020A	MY49101016	2025-09-18	2026-09-18
2	Signal Generator	Rohde & Schwarz	SMB100A	175528	2026-03-12	2027-03-12
3	EMI TEST RECEIVER	Rohde & Schwarz	ESW44	102039	2026-04-27	2027-04-27
4	BILOG ANTENNA	TESEQ	CBL6111D	60654	2025-08-21	2027-08-21
5	Active Loop Antenna	SCHWARZBECK	FMZB 1513	1513-125	2026-03-25	2028-03-25
6	6dB Attenuator	PASTERNAK	PE7AP006-06	L20210504000023	2025-07-28	2026-07-28
7	6dB Attenuator	NONE	6dB	190557	2025-09-18	2026-09-18
8	AMPLIFIER	SONOMA INSTRUMENT	310N	411011	2025-07-28	2026-07-28
9	Spectrum Analyzer	R&S	FSV40	101574	2026-01-13	2027-01-13
10	PRE AMPLIFIER	HP	8449B	3008A00620	2026-03-11	2027-03-11
11	Double Ridged Guide Antenna	ETS-Lindgren	3115	00078895	2026-03-13	2027-03-13
12	HORN ANTENNA	SCHWARZBECK	BBHA9170	1153	2025-09-30	2026-09-30
13	LOW NOISE AMPLIFIER	TESTEK	TK-PA1840H	210124-L	2025-09-30	2026-09-30
14	Band Reject Filter	Micro Tronics	BRM50702	G233	2025-11-25	2026-11-25
15	EMI Test Receiver	R&S	ESR3	102826	2026-04-27	2027-04-27
16	LISN	R&S	ENV216	102698	2026-04-27	2027-04-27

-END-