TEST REPORT

Applicant	:	I&C Technology Co., Ltd.
Address	:	(Sampyeong-dong, I&C Building), 24, Pangyo-ro255beon-gil, Bundang-gu, Seongnam-si, South Korea
Products	:	Dual Module
Model No.	:	WFM60-SFP2501
Serial No.	:	--
Test Standard	:	CFR 47 FCC Rules and Regulations Part 15 Subpart E
FCC ID	:	2ADXS-WFM60-SFP2501
Test Results	:	**Passed (in partial testing, see test results)**
Date of Receipt	:	December 22, 2023
Date of Test	:	December 28, 2023 ~ January 10, 2024

Kosei Shibata
Deputy Director
Japan Quality Assurance Organization
Kitakansai Testing Center
Saito EMC Branch
7-3-10, Saito-asagi, Ibaraki-shi, Osaka 567-0085, Japan

Lab Accreditation
VLAC-001-2

- The test results in this test report was made by using the measuring instruments which are traceable to national standards of measurement in accordance with ISO/IEC 17025.
- The applicable standard, testing condition and testing method which were used for the tests are based on the request of the applicant.
- The test results presented in this report relate only to the offered test sample.
- The contents for the equipment under test (EUT) such as identification information in clause 2 and 6 of this report were provided by the applicant. JQA is not responsible for the test results affected by the incorrect information.
- The contents of this test report cannot be used for the purposes, such as advertisement for consumers.
- This test report shall not be reproduced except in full without the written approval of JQA.
- VLAC does not approve, certify or warrant the product by this test report.

REVISION HISTORY

File No.	Contents	Issue Date
KL80230910	Initial Issue	March 14, 2024
KL80230910R	Added orientation of the EUT below 1 GHz.	April 15, 2024

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1 Summary of Test Results

Applied Standard : CFR 47 FCC Rules and Regulations Part 15 – Radio Frequency Devices
Subpart E – Unlicensed National Information Infrastructure Devices

Item	FCC rules	Result	Note
Antenna Requirement	§15.203	Passed	1
99% Occupied Bandwidth	--	Not Tested	
26 dB Emission Bandwidth	§15.407(a)	Not Tested	
Peak Power Spectral Density	§15.407(a)	Not Tested	
Maximum Conducted Output Power	§15.407(a)	Passed	
Unwanted Emissions	§15.205, §15.209 and §15.407(b)	Passed	2
AC Powerline Conducted Emission	§15.207	Not Tested	
Dynamic Frequency Selection (DFS)	§15.407(h)	Not Tested	
RF Exposure	§1.1310, §2.1093 and §15.407(f)	Passed	3

1) The EUT is designed to ensure that no antenna other than that furnished by the manufacturer shall be used. Information for antenna type is described in clause 2.
2) The spot check tests were required according to KDB 996369 D04.
3) Refer to test report KL80230893.

In the approval of test results,
- No deviations were employed from the applied standard.
- No modifications were conducted by JQA to achieve compliance to the limitations.

Reviewed by
Yasuhisa Sakai / Project Manager

Y. Sakai

Tested by
Yuji Shintaku / Assistant Manager

Y. Shintaku

2 Description of Equipment Under Test (EUT)

2.1 General Information

Manufacturer	I&C Technology Co., Ltd. (Sampyeong-dong, I&C Building), 24, Pangyo-ro255beon-gil, Bundang-gu, Seongnam-si, South Korea
Products	Dual Module
Model No.	WFM60-SFP2501
Serial No.	--
Power Rating	3.3VDC
Modulation Type	OFDM (802.11a/n)
Transmit Power Control (TPC)	Not supported
Operating Frequency	UNII 1 : 5180 MHz (36CH) – 5240 MHz (48CH) UNII 2A : 5260 MHz (52CH) – 5320 MHz (64CH) UNII 2C : 5500 MHz (100CH) – 5700 MHz (140CH) UNII 3 : 5745 MHz (149CH) – 5825 MHz (165CH)
Antenna Type	WIFI Dual Band PCB Antenna
Antenna Gain	UNII 1 : 2.90 dBi UNII 2A : 3.50 dBi UNII 2C : 3.34 dBi UNII 3 : 3.01 dBi

2.2 Host Device Information

Manufacturer	Seiko Instruments Inc. 8, Nakase 1-chome, Mihama-ku, Chiba-shi, Chiba 261-8507, Japan
Products	Thermal Printer
Model No.	MP-B21L-W46JK1U
Serial No.	LB000009A0
Product Type	Pre-production
Date of Manufacture	November, 2023
Power Rating	12VDC (AC Adapter WB-18D12R) 7.4VDC (Lithium-ion Battery BP-A0720-B1)
Grounding	None

2.3 Channel List

2.3.1 UNII 1

4 channels are provided for 802.11a, 802.11n (HT20).

Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
40	5200	48	5240

2.3.2 UNII 2A

4 channels are provided for 802.11a, 802.11n (HT20).

Channel	Frequency (MHz)	Channel	Frequency (MHz)
52	5260	60	5300
56	5280	64	5320

2.3.3 UNII 2C

11 channels are provided for 802.11a, 802.11n (HT20).

Channel	Frequency (MHz)	Channel	Frequency (MHz)
100	5500	124	5620
104	5520	128	5640
108	5540	132	5660
112	5560	136	5680
116	5580	140	5700
120	5600	-	-

2.3.4 UNII 3

5 channels are provided for 802.11a, 802.11n (HT20).

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	161	5805
153	5765	165	5825
157	5785	-	-

3 Test Location

Japan Quality Assurance Organization (JQA)
Kitakansai Testing Center Saito EMC Branch
7-3-10, Saito-asagi, Ibaraki-shi, Osaka 567-0085, Japan

4 Accreditation of Test Laboratory

JQA Kitakansai Testing Center Saito EMC Branch is accredited under ISO/IEC 17025 by the following accreditation bodies and the test facility is registered by the following bodies. If the accreditation logo does not appear on this cover, it is outside the scope of ISO/IEC 17025.

VLAC Accreditation No. : VLAC-001-2 (Expiry date : April 30, 2024)
A2LA Accreditation No. : 5498.01 (Expiry date : November 30, 2025)

VCCI Registration No. : A-0002 (Expiry date : April 30, 2024)
FCC Registration No. : JP5008 (Expiry date : April 30, 2024)
ISED Registration No. : JP0014 (Expiry date : November 30, 2025)
BSMI Registration No. : SL2-IS-E-6006, SL2-IN-E-6006, SL2-R1/R2-E-6006, SL2-A1-E-6006 (Expiry date : September 14, 2025)

Accredited as conformity assessment body for Japan electrical appliances and material law by METI. (Expiry date : February 22, 2025)

5 Measurement Uncertainty

Item	Frequency	Uncertainty (*U*)
Emission Bandwidth	--	± 0.9 %
Maximum Conducted Output Power	--	± 0.9 dB
Unwanted Emissions (Radiated)	9 kHz – 30 MHz	± 3.0 dB
	30 MHz – 200 MHz	± 3.6 dB
	200 MHz – 1000 MHz	± 4.8 dB
	1 GHz – 6 GHz	± 4.7 dB
	6 GHz – 18 GHz	± 4.6 dB
	18 GHz – 40 GHz	± 5.1 dB
AC Powerline Conducted Emission	150 kHz – 30 MHz	± 2.6 dB

Determining compliance with the limits in this test report was based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty (MIU).
The reported expanded uncertainty of measurement, *U* is described with using the coverage factor k = 2, to give a level of confidence of approximately 95 %.

6 Setup of EUT

6.1 Test Configuration

The equipment under test (EUT) consists of :

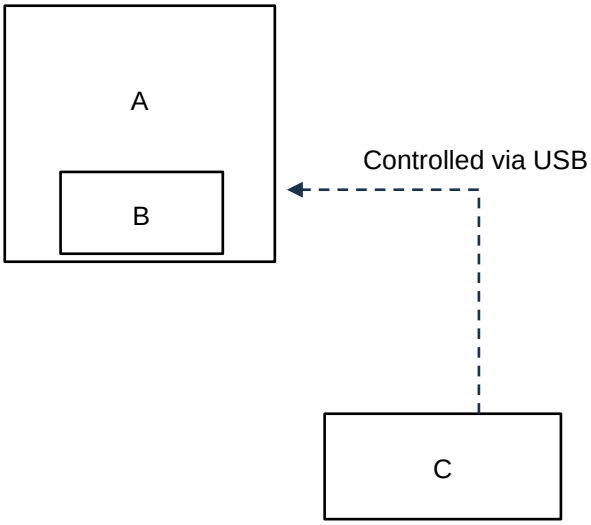
	Item	Manufacturer	Model No.	Serial No.
A	Thermal Printer	Seiko Instruments Inc.	MP-B21L-W46JK1U	LB000009A0
B	Li-ion Battery	Seiko Instruments Inc.	BP-A0720-B1	--

The auxiliary equipment (AE) used for testing :

	Item	Manufacturer	Model No.	Serial No.
C	Controller PC	lenovo	IdeaPad Y580 (2099)	CB19850852

Type of Cable:
None

6.2 Test Arrangement (Drawings)



6.3 Operating Condition

Test Mode

The EUT is set with the test mode, the specification of the test mode is as followings.

Transmitting frequency : 5180 MHz (36CH) – 5240 MHz (48CH) / UNII 1
5260 MHz (52CH) – 5320 MHz (64CH) / UNII 2A
5500 MHz (100CH) – 5700 MHz (140CH) / UNII 2C
5745 MHz (149CH) – 5825 MHz (165CH) / UNII 3

Modulation Type

1. 802.11a : OFDM
2. 802.11n : OFDM

The spot check tests were performed in the following worst condition.

Test Item	Mode	Data Rate	Channel
Band Edge Emission	802.11n (HT20)	MCS 0	36, 64, 100, 140, 149, 165
Other Spurious Emission	802.11a	6 Mbps	48, 60, 100, 149

Note: This is C2PC report to add the host and therefore, the output power was confirmed to be within the tune up level and radiated test was done against the worst condition determined based on the module test report HCT-RF-1808-FC007.

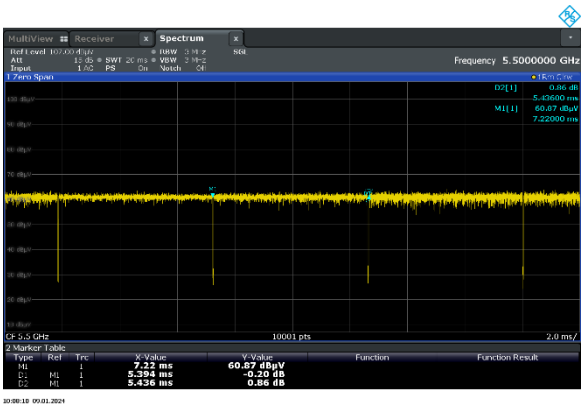
The tests were performed using the following test program supplied by applicant;

- Software Name : I&C Technology AlphaDM
- Software Version : Rev. 13.27
- Storage Location : Controller PC

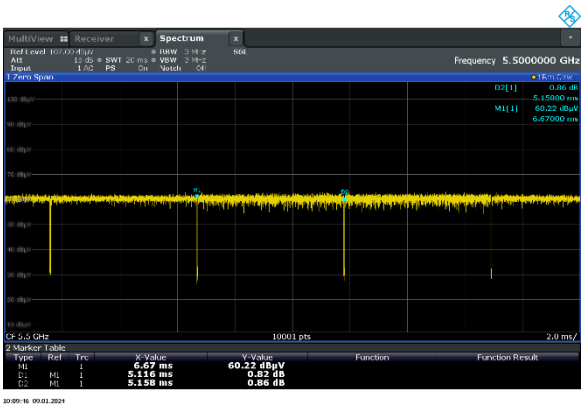
6.4 Duty Cycle

Mode	On Time (msec.)	On+Off Time (msec.)	Duty Cycle (%)	Duty Factor (dB)	VBW [>1/T] (kHz)
802.11a	5.394	5.436	99.2	0.03	> 0.01
802.11n (HT20)	5.116	5.158	99.2	0.04	> 0.01

802.11a



802.11n (HT20)



7 Test Item

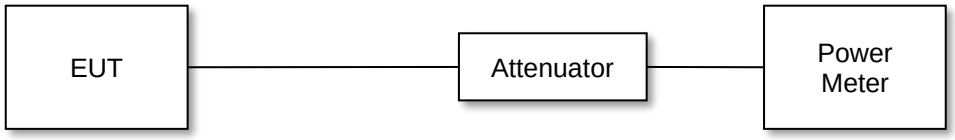
7.1 Maximum Conducted Output Power

7.1.1 Test Site and Instruments

Test Site : Shielded Room S3					
Type	**Model**	**Serial No. (ID)**	**Manufacturer**	**Last Cal.**	**Cal. Due**
Power Sensor	MA2491A	1409075 (B-17)	Anritsu	2023/08/14	2024/08/13
Power Sensor	MA2411B	1339136 (B-18)	Anritsu	2023/08/14	2024/08/13
Attenuator	54A-10	W5732 (D-30)	Weinschel	2023/05/26	2024/05/25
Thermo-Hygrometer	testo 608-H2	30050650 (F-71)	testo	2023/04/24	2024/04/23
Barometer	BAROMEX	02952 (F-48)	SATO	2023/08/16	2024/08/15

7.1.2 Test Method and Test Setup (Diagrammatic illustration)

The EUT is connected to the measuring equipment via a suitable attenuator.
The test conditions and methods comply with the following test standards.
- KDB 789033 D02 General UNII Test Procedures New Rules v02r01
- ANSI C63.10-2020 +Cor.1-2023 clause 12.4



7.1.3 Test Data

Test Date: December 28, 2023
Temp.: 22 °C, RH: 39 %, Atm.: 1002 hPa

UNII 1

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	Limits (dBm)
802.11a	36	5180	14.462	≤ 24.0
	40	5200	13.919	≤ 24.0
	48	5240	14.289	≤ 24.0
802.11n (HT20)	36	5180	13.465	≤ 24.0
	40	5200	11.868	≤ 24.0
	48	5240	12.458	≤ 24.0

UNII 2A

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	Limits (*) (dBm)
802.11a	52	5260	14.296	≤ 24.0
	60	5300	13.896	≤ 24.0
	64	5320	12.930	≤ 24.0
802.11n (HT20)	52	5260	12.495	≤ 24.0
	60	5300	13.846	≤ 24.0
	64	5320	14.464	≤ 24.0

*) The maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. (26 dB emission bandwidth is cited from the original test report.)

UNII 2C

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	Limits (*) (dBm)
802.11a	100	5500	13.447	≤ 24.0
	116	5580	13.456	≤ 24.0
	140	5700	10.955	≤ 24.0
802.11n (HT20)	100	5500	12.962	≤ 24.0
	116	5580	13.892	≤ 24.0
	140	5700	10.933	≤ 24.0

*) The maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. (26 dB emission bandwidth is cited from the original test report.)

UNII 3

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	Limits (dBm)
802.11a	149	5745	13.869	≤ 30.0
	157	5785	13.853	≤ 30.0
	165	5825	13.476	≤ 30.0
802.11n (HT20)	149	5745	13.428	≤ 30.0
	157	5785	13.467	≤ 30.0
	165	5825	13.494	≤ 30.0

7.2 Radiated Spurious Emission

7.2.1 Test Site and Instruments

Test Site : Anechoic Chamber A4					
Type	**Model**	**Serial No. (ID)**	**Manufacturer**	**Last Cal.**	**Cal. Due**
Test Receiver	ESR 26	101690 (A-7)	Rohde & Schwarz	2023/10/11	2024/10/10
Pre-Amplifier	APT4-00100600-1310-D6	118243 (A-61)	AmpliTech	2023/10/25	2024/10/24
Loop Antenna	HFH2-Z2	872096/25 (C-2)	Rohde & Schwarz	2023/05/25	2024/05/24
Log-periodic Antenna	VULP9118B	903 (C-84)	Schwarzbeck	2023/11/01	2024/10/31
Biconical Antenna	VHBB9124/BBA9106	01316 (C-87)	Schwarzbeck	2023/11/01	2024/10/31
Band Pass Filter	MBP301	203753 (D-127)	Microwave Factory	2023/12/11	2024/12/10
EMC Software	EP5/RE	Ver.6.00.120	TOYO	--	--
RF Cable	S 10162 B-11 etc.	--- (H-1)	HUBER+SUHNER	2023/10/25	2024/10/24
RF Cable	RG213/U	--- (H-28)	HUBER+SUHNER	2023/05/25	2024/05/24
Thermo-Hygrometer	testo 608-H2	41488568 (F-78)	testo	2023/10/31	2024/10/30
Barometer	BAROMEX	02952 (F-48)	SATO	2023/08/16	2024/08/15

Test Site : Anechoic Chamber A2					
Type	**Model**	**Serial No. (ID)**	**Manufacturer**	**Last Cal.**	**Cal. Due**
Test Receiver	ESW 44	101618 (A-3)	Rohde & Schwarz	2023/02/08	2024/02/07
Pre-Amplifier	BZR-01001800-201040-182323-HS	23804 (A-65)	B&Z	2023/02/03	2024/02/02
Double-Ridge Guide Horn Antenna	TR17206	73370006 (C-29)	ADVANTEST	2023/05/22	2024/05/21
Horn Antenna	3160-09	9808-1117 (C-48)	EMCO	2023/07/17	2024/07/16
Horn Antenna	3160-10	9808-1072 (C-49)	EMCO	2023/07/17	2024/07/16
Horn Antenna	3160-05	9902-1061 (C-56)	EMCO	2023/05/23	2024/05/22
RF Cable	SF102E	6683/2E (C-70)	HUBER+SUHNER	2023/04/03	2024/04/02
RF Cable	SF102E	10055/2E (C-75)	HUBER+SUHNER	2023/04/03	2024/04/02
Band Rejection Filter	BRM50716	063 (D-53)	MICRO-TRONICS	2023/10/05	2024/10/04
Thermo-Hygrometer	testo 608-H2	30050646 (F-68)	testo	2023/06/09	2024/06/08
Barometer	BAROMEX	02952 (F-48)	SATO	2023/08/16	2024/08/15

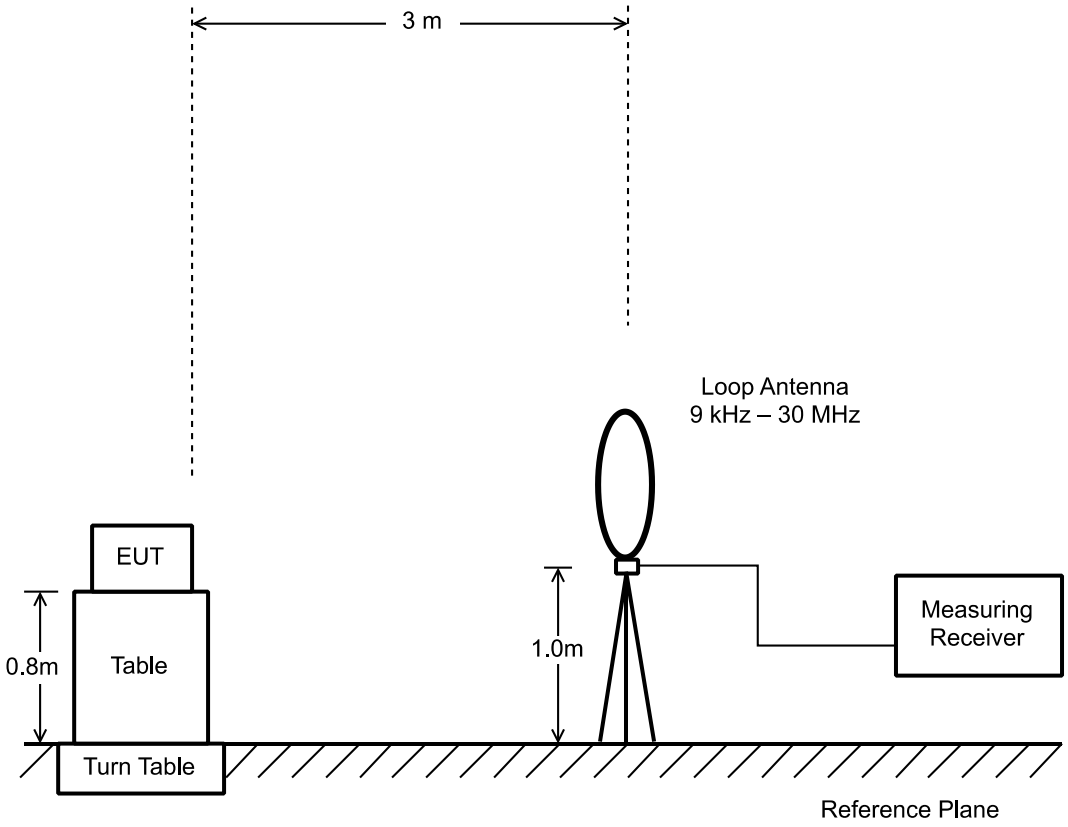
7.2.2 Test Method and Test Setup (Diagrammatic illustration)

The test conditions and methods comply with the following test standards.

- KDB 789033 D02 General UNII Test Procedures New Rules v02r01
- ANSI C63.10-2020 +Cor.1-2023 clause 12.7

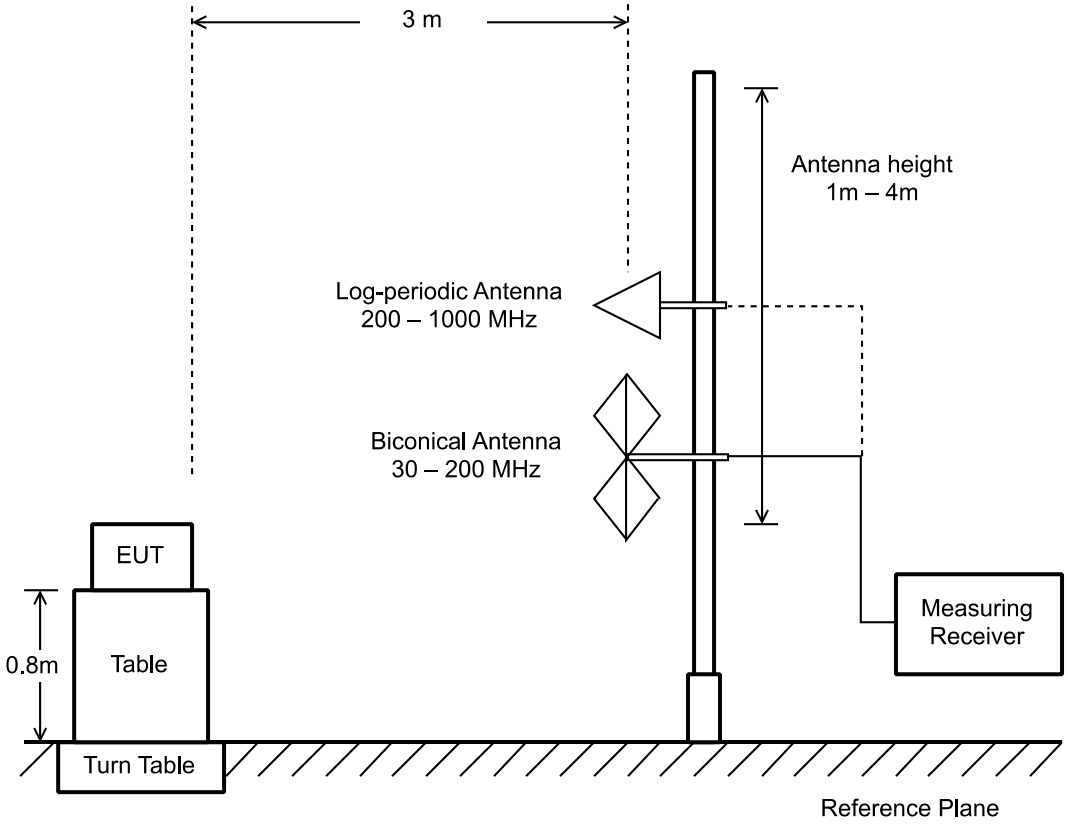
7.2.2.1 Radiated Spurious Emission 9 kHz – 30 MHz

The pre-scan measurements were performed using the scan mode of test receiver or spectrum analyzer to observe the emissions characteristics of the EUT. The EUT configuration, cable configuration and mode of operation were determined for producing the maximum level of emissions.
The measurement were performed about three antenna orientations (parallel, perpendicular, and ground-parallel).
According to KDB 414788, a used anechoic chamber were equivalent to those on an open fields site based on comparison measurements.
This configurations was used for formal measurements.
(Reference divisional instruction No. G703649)



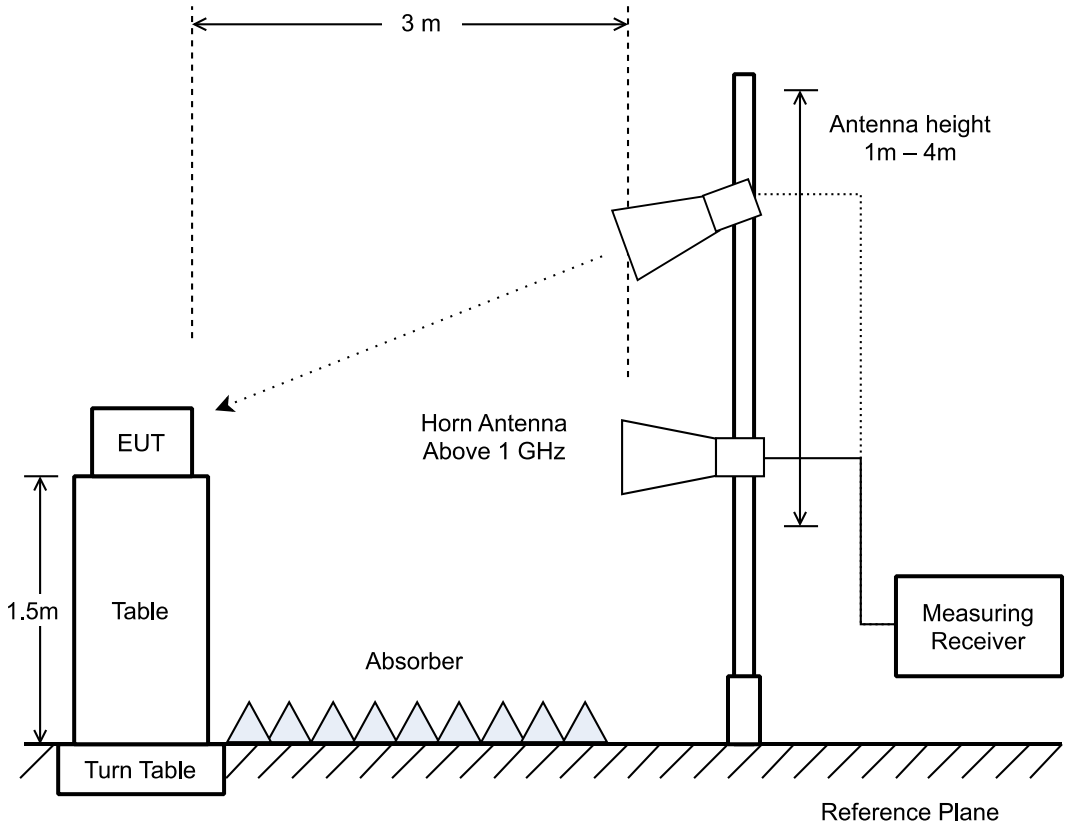
7.2.2.2 Radiated Spurious Emission 30 MHz – 1000 MHz

The pre-scan measurements were performed using the scan mode of test receiver or spectrum analyzer to observe the emissions characteristics of the EUT. The EUT configuration, cable configuration and mode of operation were determined for producing the maximum level of emissions.
This configurations was used for formal measurements.
(Reference divisional instruction No. G703649)



7.2.2.3 Radiated Spurious Emission above 1 GHz

The pre-scan measurements were performed using the scan mode of test receiver or spectrum analyzer to observe the emissions characteristics of the EUT. The EUT configuration, cable configuration and mode of operation were determined for producing the maximum level of emissions.
This configurations was used for formal measurements.
(Reference divisional instruction No. G703649)

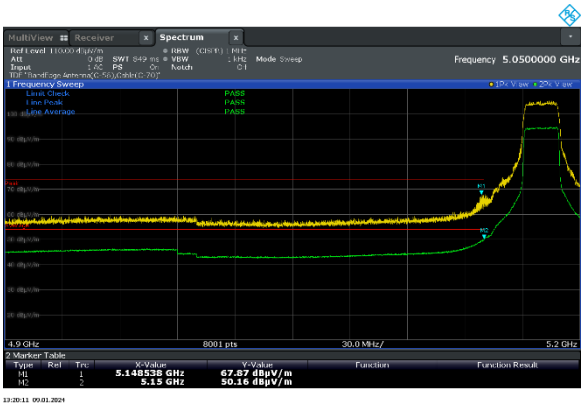
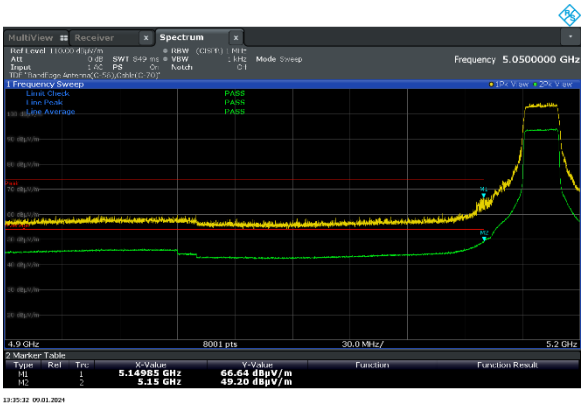


NOTE
When the EUT is manipulated through three different orientations (for example, X, Y and Z axis), the scan height upper range for the measurement antenna is limited to 2.5 m or 0.5 m above the top of the EUT.

7.2.3 Test Data

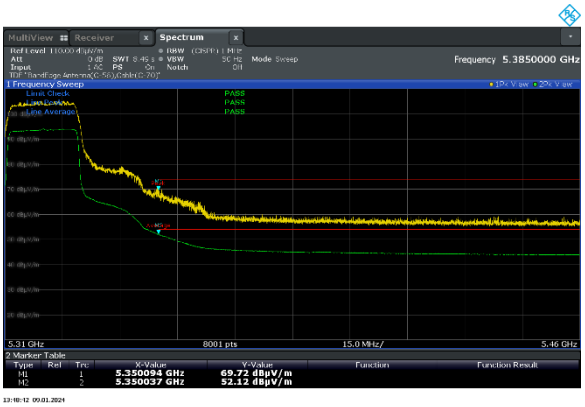
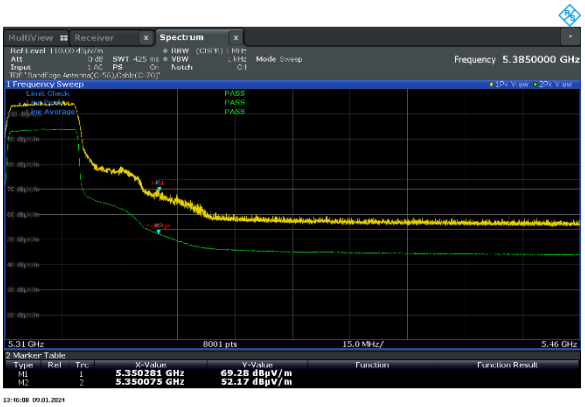
7.2.3.1 Band-edge Emission

Test Date: January 9, 2024
Temp.: 21 °C, RH: 41 %, Atm.: 1003 hPa

802.11n (HT20) – Channel 36 (5180 MHz)	
Horizontal – Z axis	Vertical – X axis
	

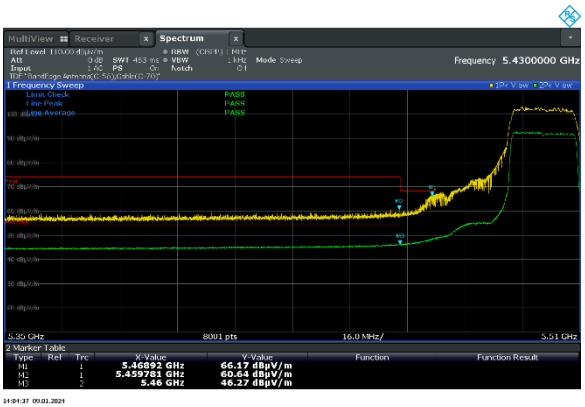
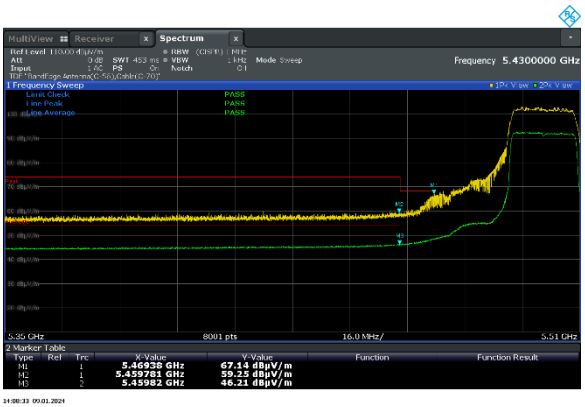
Peak Average

Peak detector is set to RBW 1 MHz and VBW 3 MHz.

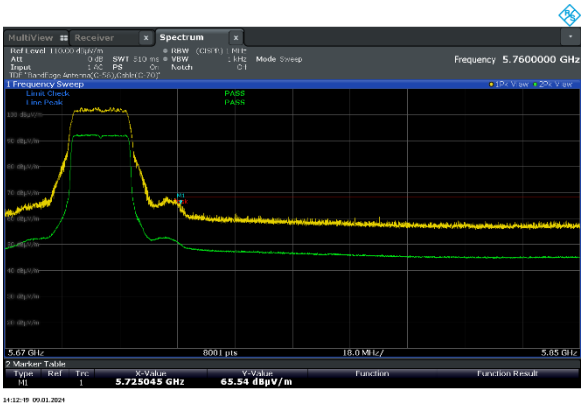
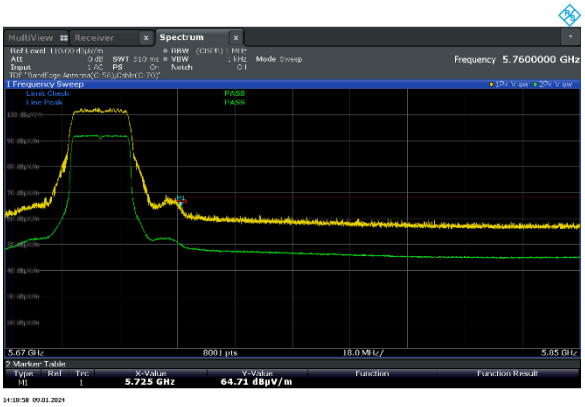
802.11n (HT20) – Channel 64 (5320 MHz)	
Horizontal – Z axis	Vertical – X axis
	

Peak Average

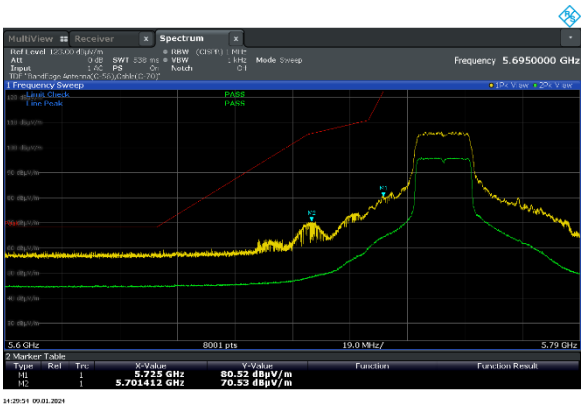
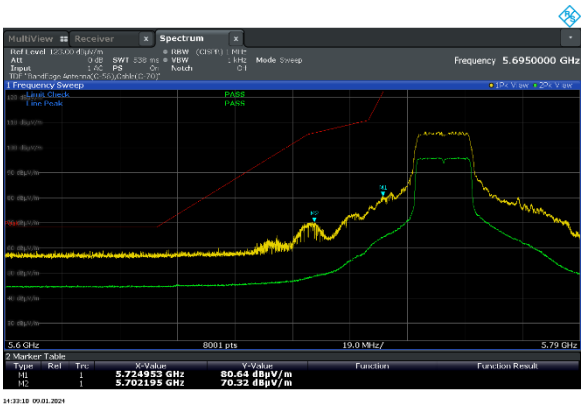
Peak detector is set to RBW 1 MHz and VBW 3 MHz.

802.11n (HT20) – Channel 100 (5500 MHz)	
Horizontal – Z axis	Vertical – X axis
	

Peak detector is set to RBW 1 MHz and VBW 3 MHz.

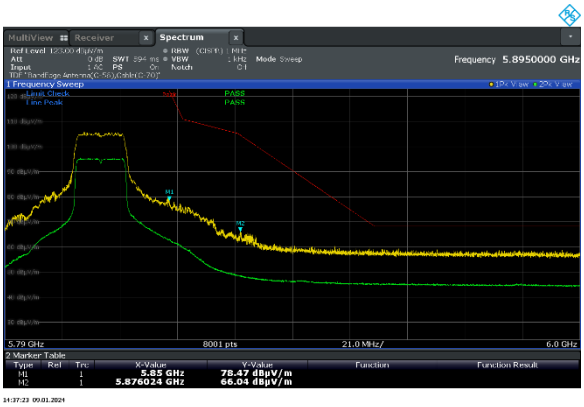
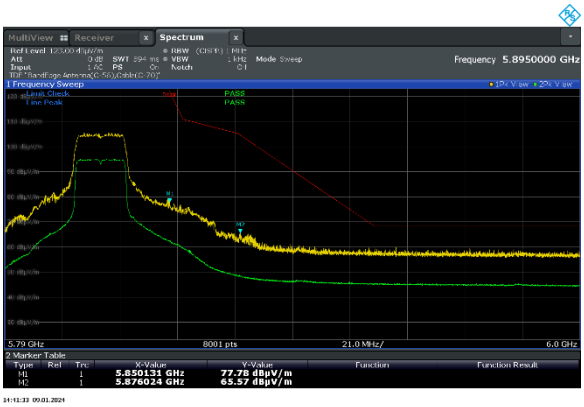
802.11n (HT20) – Channel 140 (5700 MHz)	
Horizontal – Z axis	Vertical – X axis
	

Peak detector is set to RBW 1 MHz and VBW 3 MHz.

802.11n (HT20) – Channel 149 (5745 MHz)	
Horizontal – Z axis	Vertical – X axis
	

Peak Average

Peak detector is set to RBW 1 MHz and VBW 3 MHz.

802.11n (HT20) – Channel 165 (5825 MHz)	
Horizontal – Z axis	Vertical – X axis
	

Peak Average

Peak detector is set to RBW 1 MHz and VBW 3 MHz.

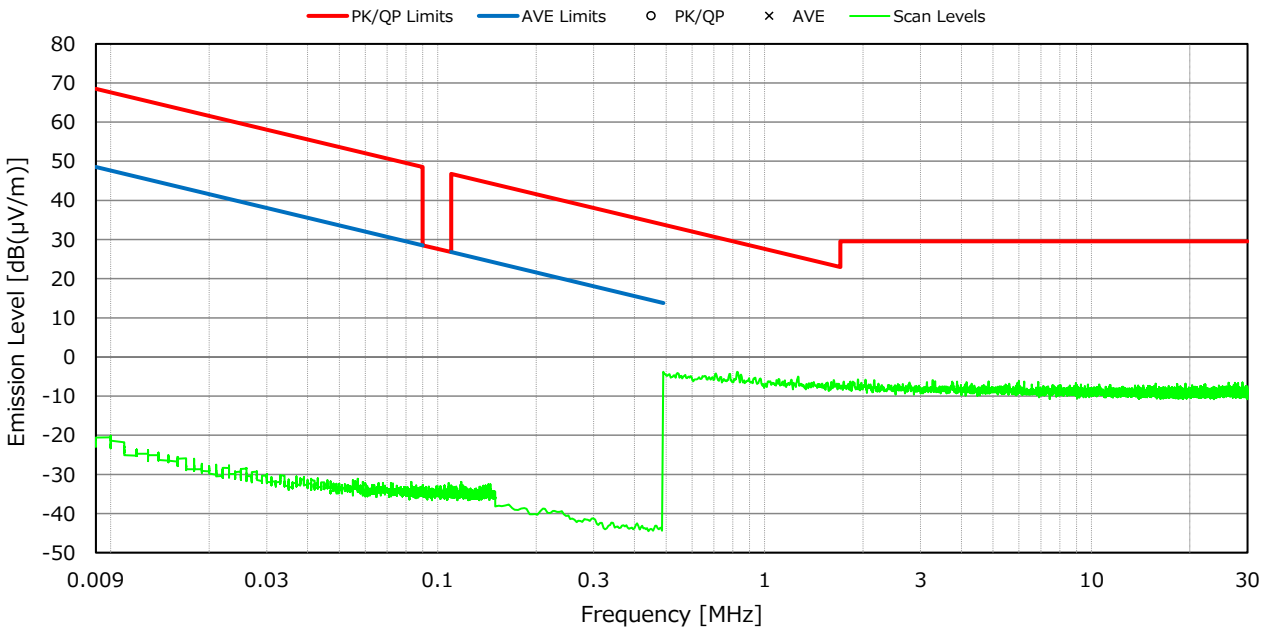
7.2.3.2 Radiated Spurious Emission 9 kHz – 30 MHz

All modes have been investigated and the worst case mode has been listed.
The orientation of the EUT have been fixed to X axis.

Test voltage : 7.4VDC

Test Date: December 28, 2023
Temp.: 23 °C, RH: 39 %, Atm.: 1002 hPa

Antenna polarization : perpendicular to measurement axis



NOTES
1) Measurement Distance : 3 m (Specified Distance : 30 m)
2) The spectrum was checked from 9 kHz to 30 MHz.
3) PK/QP : Quasi-Peak detector, AVE : Average detector
4) Bandwidth : 200 Hz (9 kHz - 150 kHz), 9 kHz (150 kHz - 30 MHz)
5) All emission levels were below the noise floor, or more than 15 dB below the applied limits.

7.2.3.3 Radiated Spurious Emission 30 MHz – 1000 MHz

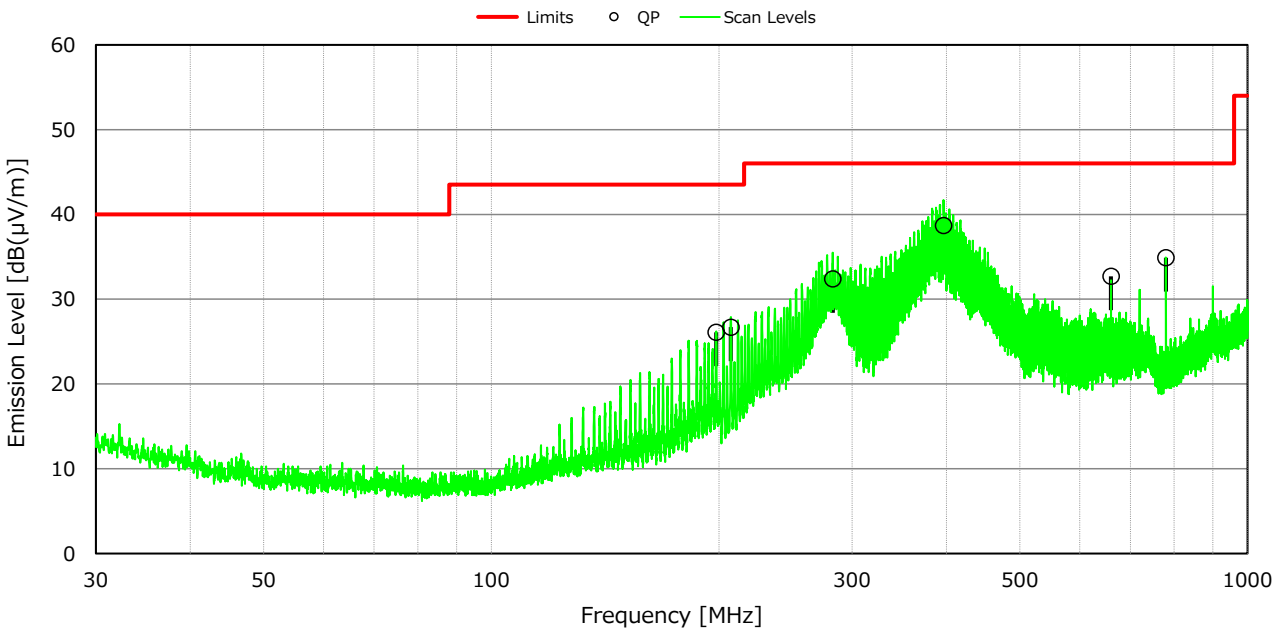
All modes have been investigated and the worst case mode has been listed.
The orientation of the EUT have been fixed to X axis.

Test voltage : 7.4VDC

Test Date: December 28, 2023
Temp.: 23 °C, RH: 39 %, Atm.: 1002 hPa

Antenna polarization : Horizontal

Frequency [MHz]	Factor [dB]	Readings [dB(μV)]	Limits [dB(μV/m)]	Results [dB(μV/m)]	Margin [dB]	Remarks
198.378	-20.9	47.0	43.5	26.1	+ 17.4	-
207.429	-29.9	56.6	43.5	26.7	+ 16.8	-
282.857	-26.6	59.0	46.0	32.4	+ 13.6	-
396.457	-23.2	61.9	46.0	38.7	+ 7.3	-
659.994	-17.5	50.2	46.0	32.7	+ 13.3	-
779.990	-15.6	50.5	46.0	34.9	+ 11.1	-



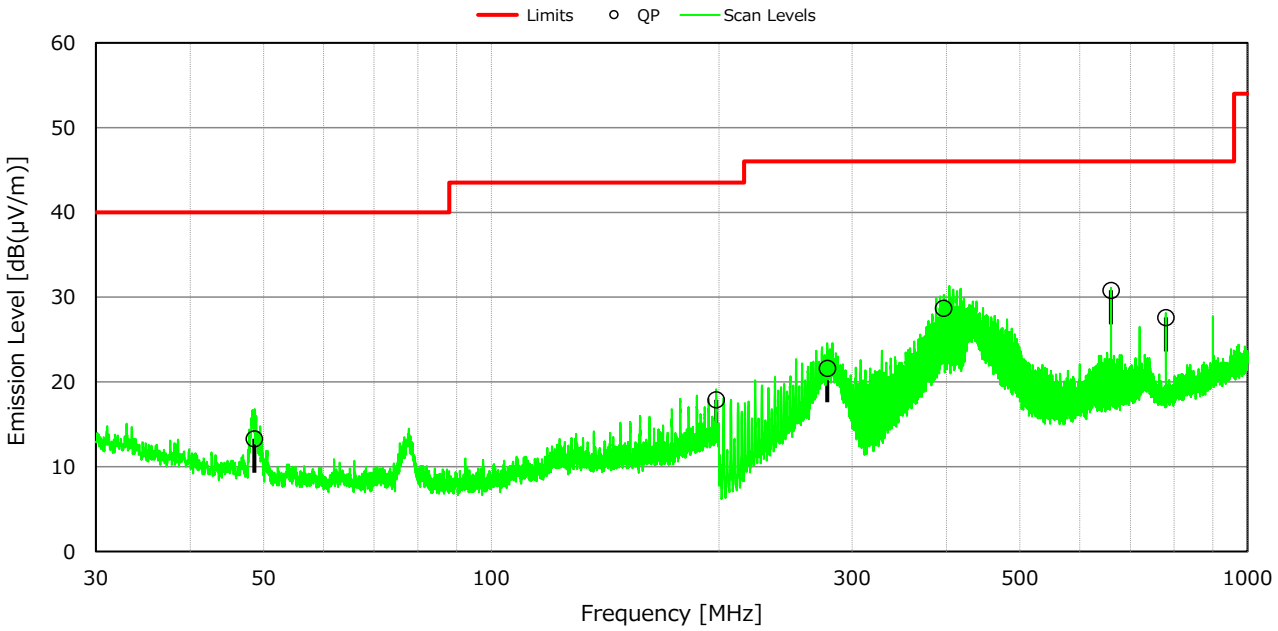
NOTES
1) Measurement Distance : 3 m
2) The spectrum was checked from 30 MHz to 1000 MHz.
3) The factor includes the antenna factor and the cable loss.
4) Calculated result as the worst point shown on underline :
   Factor + Reading (QP) = -23.2 + 61.9 = 38.7 dB(μV) at 396.457 MHz
   Antenna Height : 100 cm, Turntable Rotation Position : 130 °
5) QP : Quasi-Peak detector
6) Bandwidth : 120 kHz (30 MHz - 1000 MHz)

Test voltage : 7.4VDC

Test Date: December 28, 2023
Temp.: 23 °C, RH: 39 %, Atm.: 1002 hPa

Antenna polarization : Vertical

Frequency [MHz]	Factor [dB]	Readings [dB(μV)]	Limits [dB(μV/m)]	Results [dB(μV/m)]	Margin [dB]	Remarks
48.597	-25.6	38.9	40.0	13.3	+ 26.7	-
198.378	-20.9	38.8	43.5	17.9	+ 25.6	-
278.201	-26.9	48.5	46.0	21.6	+ 24.4	-
396.457	-23.2	51.9	46.0	28.7	+ 17.3	-
659.994	-17.5	48.3	46.0	30.8	+ 15.2	-
779.990	-15.6	43.2	46.0	27.6	+ 18.4	-



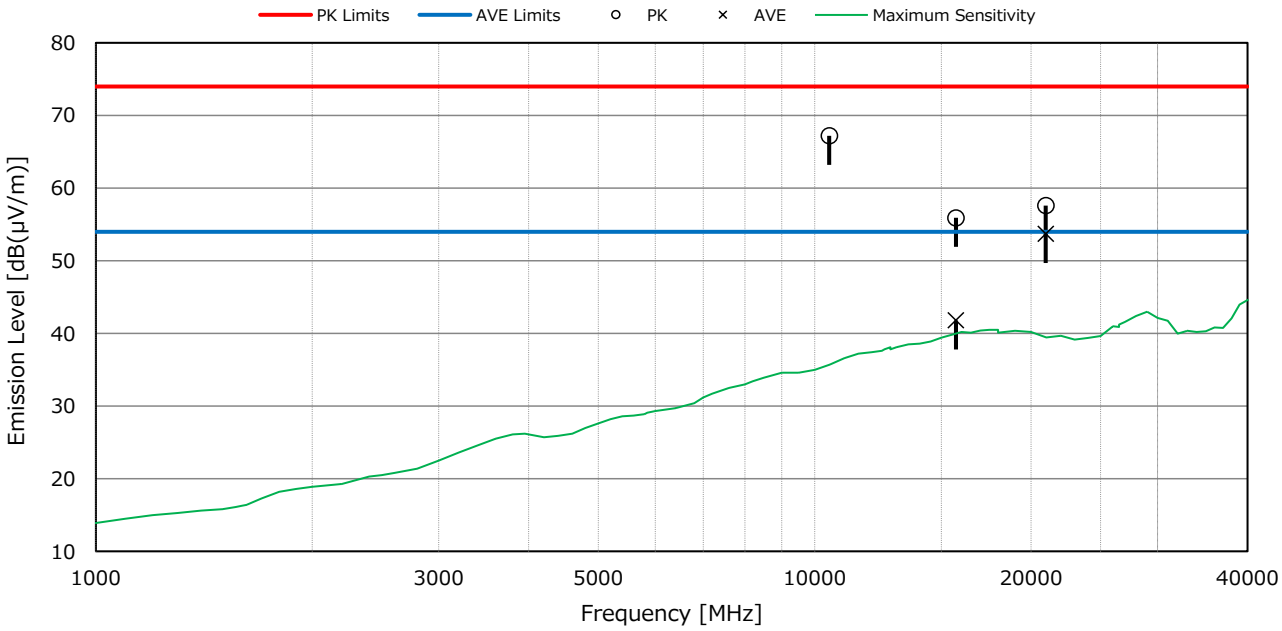
NOTES
1) Measurement Distance : 3 m
2) The spectrum was checked from 30 MHz to 1000 MHz.
3) The factor includes the antenna factor and the cable loss.
4) Calculated result as the worst point shown on underline :
   Factor + Reading (QP) = -17.5 + 48.3 = 30.8 dB(μV) at 659.994 MHz
   Antenna Height : 100 cm, Turntable Rotation Position : 277 °
5) QP : Quasi-Peak detector
6) Bandwidth : 120 kHz (30 MHz - 1000 MHz)

7.2.3.4 Radiated Spurious Emission above 1 GHz

Test voltage : 7.4VDC
Test condition : 802.11a 48ch (5240MHz)
Antenna polarization : Horizontal

Test Date: January 10, 2024
Temp.: 20 °C, RH: 36 %, Atm.: 998 hPa

Frequency [MHz]	Factor [dB]	Readings [dB(μV)] PK	Readings [dB(μV)] AVE	Limits [dB(μV/m)] PK	Limits [dB(μV/m)] AVE	Results [dB(μV/m)] PK	Results [dB(μV/m)] AVE	Margin [dB] PK	Margin [dB] AVE	Remarks
10480.00	3.4	63.8	--	68.2	--	67.2	--	+ 1.0	--	Y
15720.00	5.6	50.3	36.2	74.0	54.0	55.9	41.8	+ 18.1	+ 12.2	Y
20960.00	5.5	52.1	48.2	74.0	54.0	57.6	53.7	+ 16.4	+ 0.3	Y



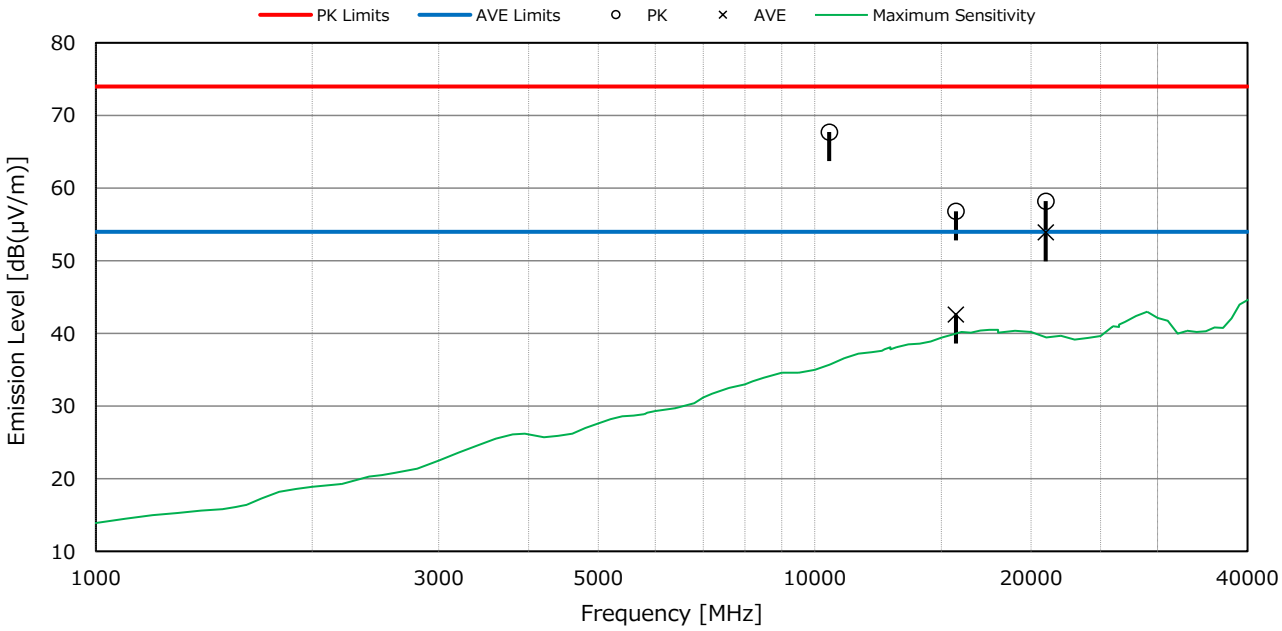
NOTES
1) Measurement Distance : 3 m
2) The spectrum was checked from 1 GHz to 40 GHz.
3) The factor includes the antenna factor, the pre-amplifier gain and the cable loss.
4) The symbol of "--" means "not applicable".
5) Calculated result as the worst point shown on underline :
   Factor + Reading (AVE) = 5.5 + 48.2 = 53.7 dB(μV) at 20960.00 MHz
6) PK : Peak detector, AVE : Average detector
7) Bandwidth : 1 MHz (1 GHz - 40 GHz)
8) The peak emissions except for restricted bands shall not exceed an EIRP of -27 dBm/MHz.
9) The measurement result (worst point) is within the range of measurement uncertainty.

Spectrum Analyzer Setting(s) :
Peak : RBW 1 MHz, VBW 3 MHz / Average : RBW 1 MHz, VBW 1 kHz

Test voltage : 7.4VDC
Test condition : 802.11a 48ch (5240MHz)
Antenna polarization : Vertical

Test Date: January 10, 2024
Temp.: 20 °C, RH: 36 %, Atm.: 998 hPa

Frequency [MHz]	Factor [dB]	Readings [dB(μV)] PK	Readings [dB(μV)] AVE	Limits [dB(μV/m)] PK	Limits [dB(μV/m)] AVE	Results [dB(μV/m)] PK	Results [dB(μV/m)] AVE	Margin [dB] PK	Margin [dB] AVE	Remarks
10480.00	3.4	64.3	--	68.2	--	67.7	--	+ 0.5	--	X
15720.00	5.6	51.2	37.0	74.0	54.0	56.8	42.6	+ 17.2	+ 11.4	Z
20960.00	5.5	52.7	48.4	74.0	54.0	58.2	53.9	+ 15.8	+ 0.1	X



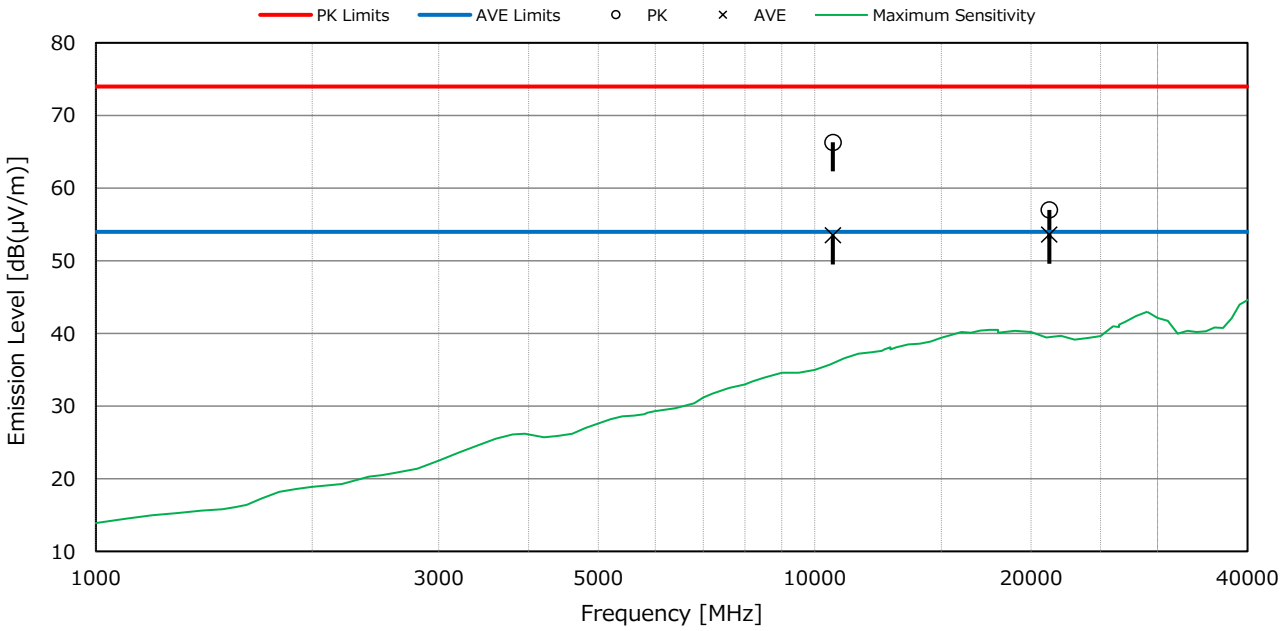
NOTES
1) Measurement Distance : 3 m
2) The spectrum was checked from 1 GHz to 40 GHz.
3) The factor includes the antenna factor, the pre-amplifier gain and the cable loss.
4) The symbol of "--" means "not applicable".
5) Calculated result as the worst point shown on underline :
   Factor + Reading (AVE) = 5.5 + 48.4 = 53.9 dB(μV) at 20960.00 MHz
6) PK : Peak detector, AVE : Average detector
7) Bandwidth : 1 MHz (1 GHz - 40 GHz)
8) The peak emissions except for restricted bands shall not exceed an EIRP of -27 dBm/MHz.
9) The measurement result (worst point) is within the range of measurement uncertainty.

Spectrum Analyzer Setting(s) :
Peak : RBW 1 MHz, VBW 3 MHz / Average : RBW 1 MHz, VBW 1 kHz

Test voltage : 7.4VDC
Test condition : 802.11a 60ch (5300MHz)
Antenna polarization : Horizontal

Test Date: January 10, 2024
Temp.: 20 °C, RH: 36 %, Atm.: 998 hPa

Frequency [MHz]	Factor [dB]	Readings [dB(μV)] PK	Readings [dB(μV)] AVE	Limits [dB(μV/m)] PK	Limits [dB(μV/m)] AVE	Results [dB(μV/m)] PK	Results [dB(μV/m)] AVE	Margin [dB] PK	Margin [dB] AVE	Remarks
10600.00	3.5	62.8	50.0	74.0	54.0	66.3	53.5	+ 7.7	+ 0.5	Y
21200.00	5.5	51.5	48.1	74.0	54.0	57.0	53.6	+ 17.0	+ 0.4	Y



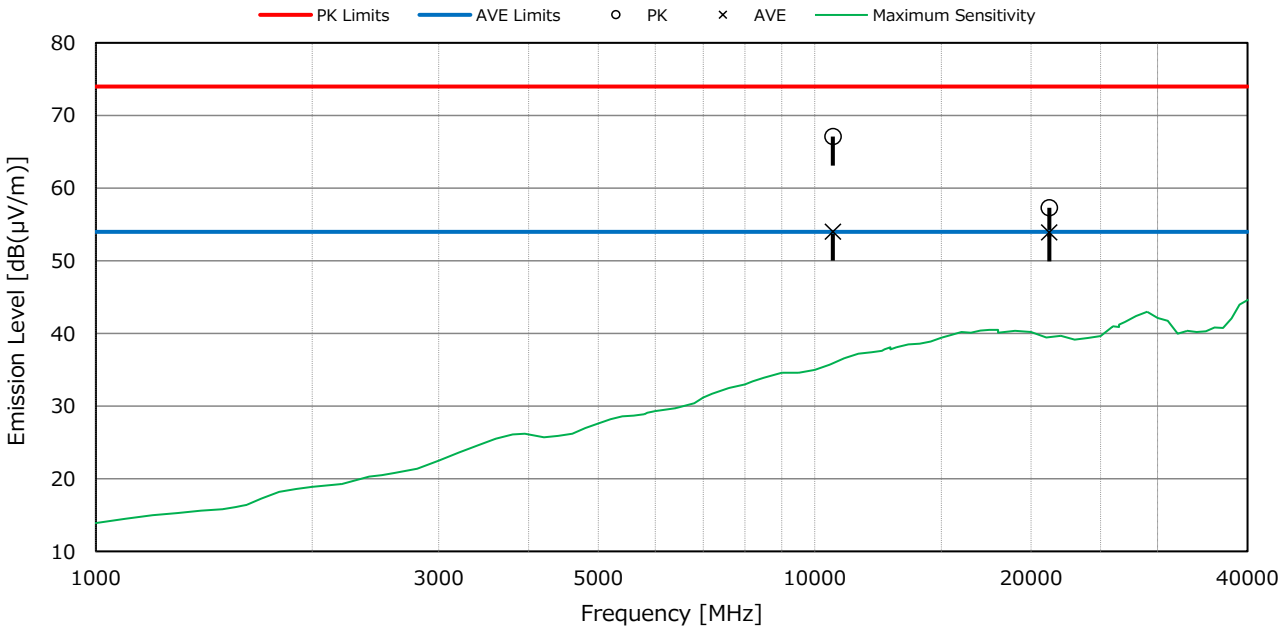
NOTES
1) Measurement Distance : 3 m
2) The spectrum was checked from 1 GHz to 40 GHz.
3) The factor includes the antenna factor, the pre-amplifier gain and the cable loss.
4) Calculated result as the worst point shown on underline :
   Factor + Reading (AVE) = 5.5 + 48.1 = 53.6 dB(μV) at 21200.00 MHz
5) PK : Peak detector, AVE : Average detector
6) Bandwidth : 1 MHz (1 GHz - 40 GHz)
7) The peak emissions except for restricted bands shall not exceed an EIRP of -27 dBm/MHz.
8) The measurement result (worst point) is within the range of measurement uncertainty.

Spectrum Analyzer Setting(s) :
Peak : RBW 1 MHz, VBW 3 MHz / Average : RBW 1 MHz, VBW 1 kHz

Test voltage : 7.4VDC
Test condition : 802.11a 60ch (5300MHz)
Antenna polarization : Vertical

Test Date: January 10, 2024
Temp.: 20 °C, RH: 36 %, Atm.: 998 hPa

Frequency [MHz]	Factor [dB]	Readings [dB(μV)] PK	Readings [dB(μV)] AVE	Limits [dB(μV/m)] PK	Limits [dB(μV/m)] AVE	Results [dB(μV/m)] PK	Results [dB(μV/m)] AVE	Margin [dB] PK	Margin [dB] AVE	Remarks
10600.00	3.5	63.6	50.5	74.0	54.0	67.1	54.0	+ 6.9	+ 0.0	X
21200.00	5.5	51.8	48.4	74.0	54.0	57.3	53.9	+ 16.7	+ 0.1	X



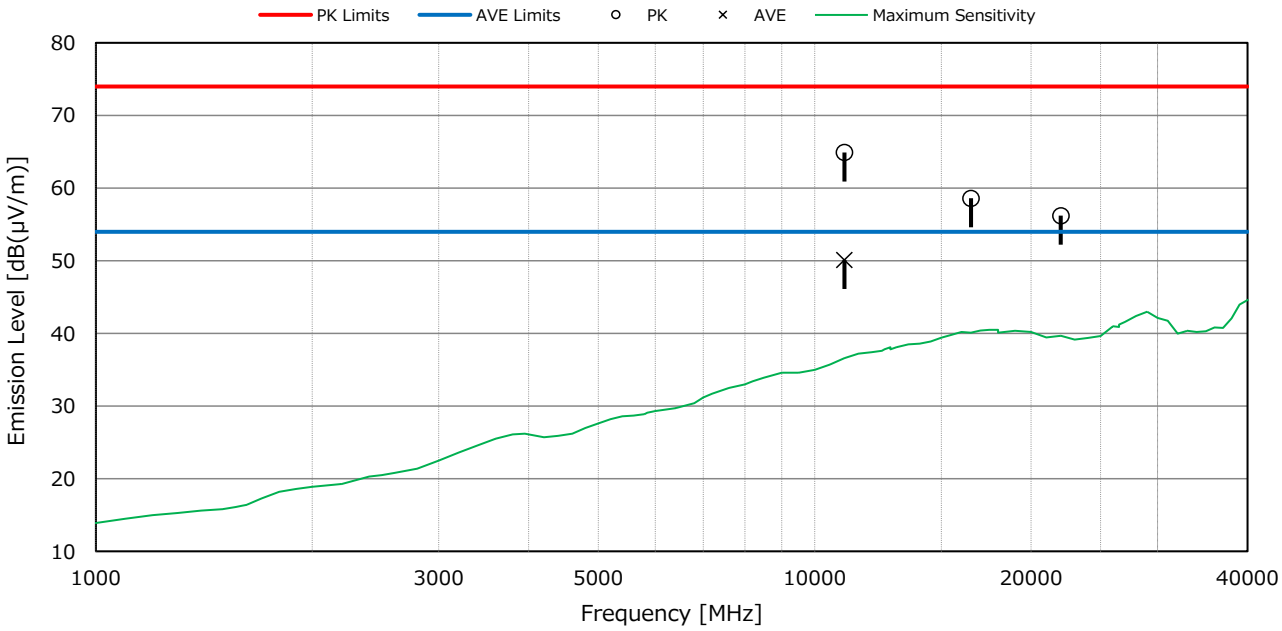
NOTES
1) Measurement Distance : 3 m
2) The spectrum was checked from 1 GHz to 40 GHz.
3) The factor includes the antenna factor, the pre-amplifier gain and the cable loss.
4) Calculated result as the worst point shown on underline :
   Factor + Reading (AVE) = 3.5 + 50.5 = 54.0 dB(μV) at 10600.00 MHz
5) PK : Peak detector, AVE : Average detector
6) Bandwidth : 1 MHz (1 GHz - 40 GHz)
7) The peak emissions except for restricted bands shall not exceed an EIRP of -27 dBm/MHz.
8) The measurement result (worst point) is within the range of measurement uncertainty.

Spectrum Analyzer Setting(s) :
Peak : RBW 1 MHz, VBW 3 MHz / Average : RBW 1 MHz, VBW 1 kHz

Test voltage : 7.4VDC
Test condition : 802.11a 100ch (5500MHz)
Antenna polarization : Horizontal

Test Date: January 10, 2024
Temp.: 20 °C, RH: 36 %, Atm.: 998 hPa

Frequency [MHz]	Factor [dB]	Readings [dB(μV)] PK	Readings [dB(μV)] AVE	Limits [dB(μV/m)] PK	Limits [dB(μV/m)] AVE	Results [dB(μV/m)] PK	Results [dB(μV/m)] AVE	Margin [dB] PK	Margin [dB] AVE	Remarks
11000.00	4.4	60.5	45.7	74.0	54.0	64.9	50.1	+ 9.1	+ 3.9	Y
16500.00	5.6	53.0	--	68.2	--	58.6	--	+ 9.6	--	Y
22000.00	6.1	50.1	--	68.2	--	56.2	--	+ 12.0	--	Y



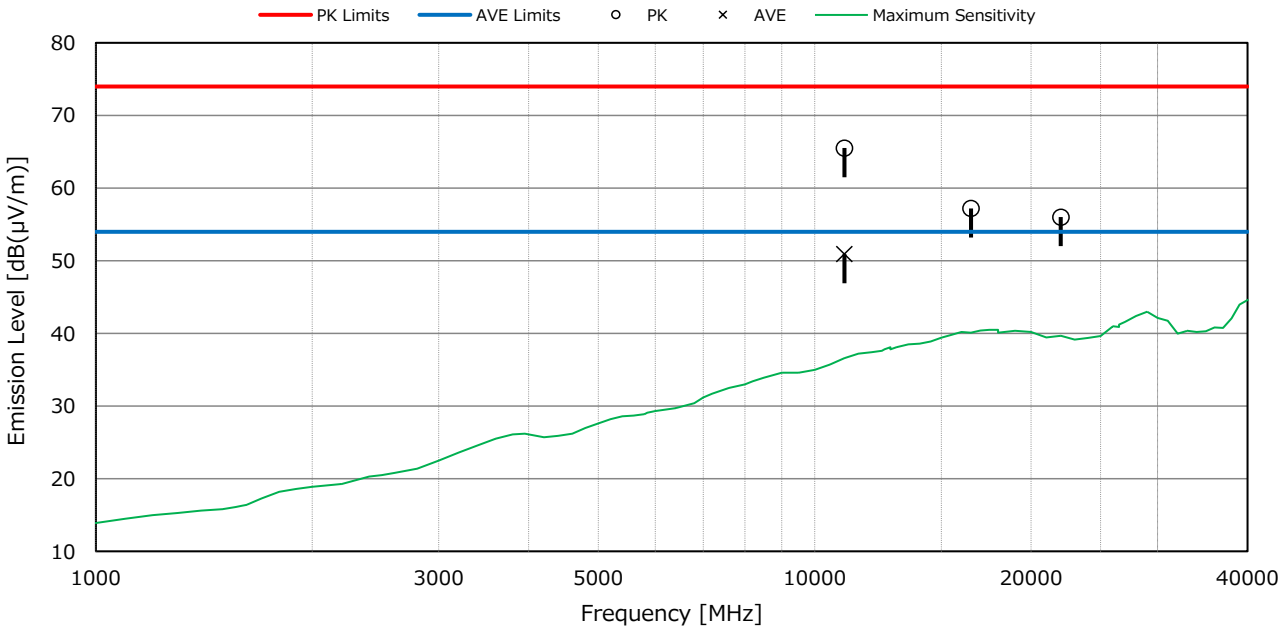
NOTES
1) Measurement Distance : 3 m
2) The spectrum was checked from 1 GHz to 40 GHz.
3) The factor includes the antenna factor, the pre-amplifier gain and the cable loss.
4) The symbol of "--" means "not applicable".
5) Calculated result as the worst point shown on underline :
   Factor + Reading (AVE) = 4.4 + 45.7 = 50.1 dB(μV) at 11000.00 MHz
6) PK : Peak detector, AVE : Average detector
7) Bandwidth : 1 MHz (1 GHz - 40 GHz)
8) The peak emissions except for restricted bands shall not exceed an EIRP of -27 dBm/MHz.
9) The measurement result (worst point) is within the range of measurement uncertainty.

Spectrum Analyzer Setting(s) :
Peak : RBW 1 MHz, VBW 3 MHz / Average : RBW 1 MHz, VBW 1 kHz

Test voltage : 7.4VDC
Test condition : 802.11a 100ch (5500MHz)
Antenna polarization : Vertical

Test Date: January 10, 2024
Temp.: 20 °C, RH: 36 %, Atm.: 998 hPa

Frequency [MHz]	Factor [dB]	Readings [dB(μV)] PK	Readings [dB(μV)] AVE	Limits [dB(μV/m)] PK	Limits [dB(μV/m)] AVE	Results [dB(μV/m)] PK	Results [dB(μV/m)] AVE	Margin [dB] PK	Margin [dB] AVE	Remarks
11000.00	4.4	61.1	46.5	74.0	54.0	65.5	50.9	+ 8.5	+ 3.1	Z
16500.00	5.6	51.6	--	68.2	--	57.2	--	+ 11.0	--	X
22000.00	6.1	49.9	--	68.2	--	56.0	--	+ 12.2	--	X



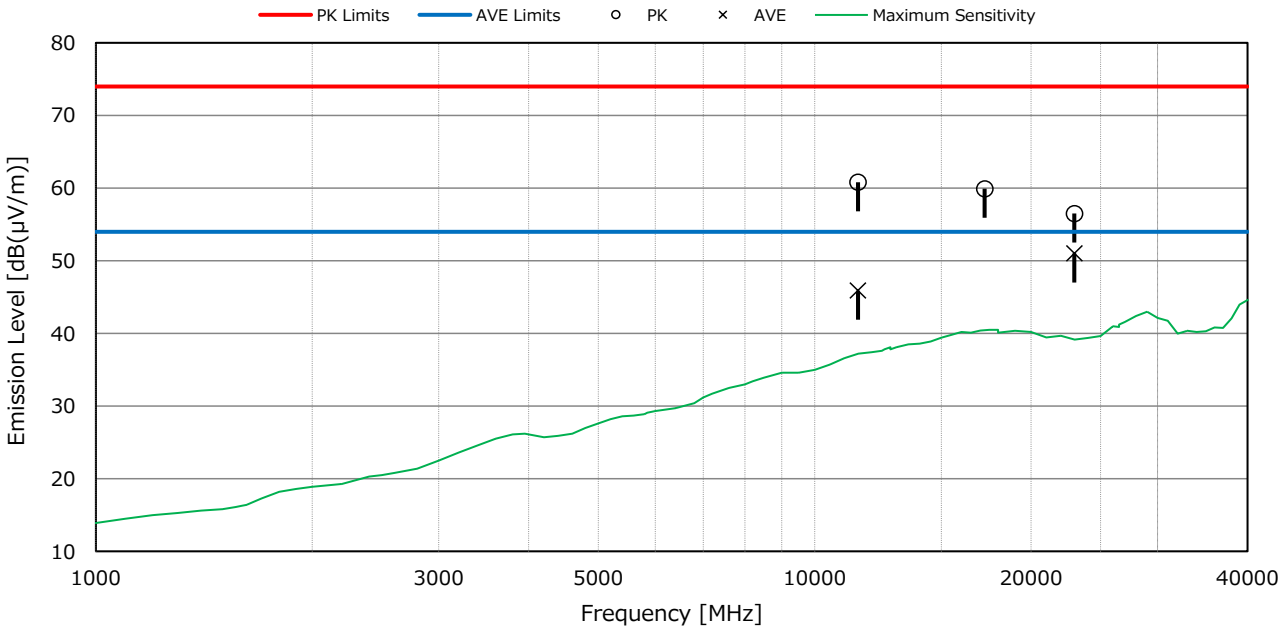
NOTES
1) Measurement Distance : 3 m
2) The spectrum was checked from 1 GHz to 40 GHz.
3) The factor includes the antenna factor, the pre-amplifier gain and the cable loss.
4) The symbol of "--" means "not applicable".
5) Calculated result as the worst point shown on underline :
   Factor + Reading (AVE) = 4.4 + 46.5 = 50.9 dB(μV) at 11000.00 MHz
6) PK : Peak detector, AVE : Average detector
7) Bandwidth : 1 MHz (1 GHz - 40 GHz)
8) The peak emissions except for restricted bands shall not exceed an EIRP of -27 dBm/MHz.
9) The measurement result (worst point) is within the range of measurement uncertainty.

Spectrum Analyzer Setting(s) :
Peak : RBW 1 MHz, VBW 3 MHz / Average : RBW 1 MHz, VBW 1 kHz

Test voltage : 7.4VDC
Test condition : 802.11a 149ch (5745MHz)
Antenna polarization : Horizontal

Test Date: January 10, 2024
Temp.: 20 °C, RH: 36 %, Atm.: 998 hPa

Frequency [MHz]	Factor [dB]	Readings [dB(μV)] PK	Readings [dB(μV)] AVE	Limits [dB(μV/m)] PK	Limits [dB(μV/m)] AVE	Results [dB(μV/m)] PK	Results [dB(μV/m)] AVE	Margin [dB] PK	Margin [dB] AVE	Remarks
11490.00	4.8	56.0	41.1	74.0	54.0	60.8	45.9	+ 13.2	+ 8.1	Z
17235.00	6.2	53.7	--	68.2	--	59.9	--	+ 8.3	--	Y
22980.00	5.9	50.6	45.1	74.0	54.0	56.5	51.0	+ 17.5	+ 3.0	Y



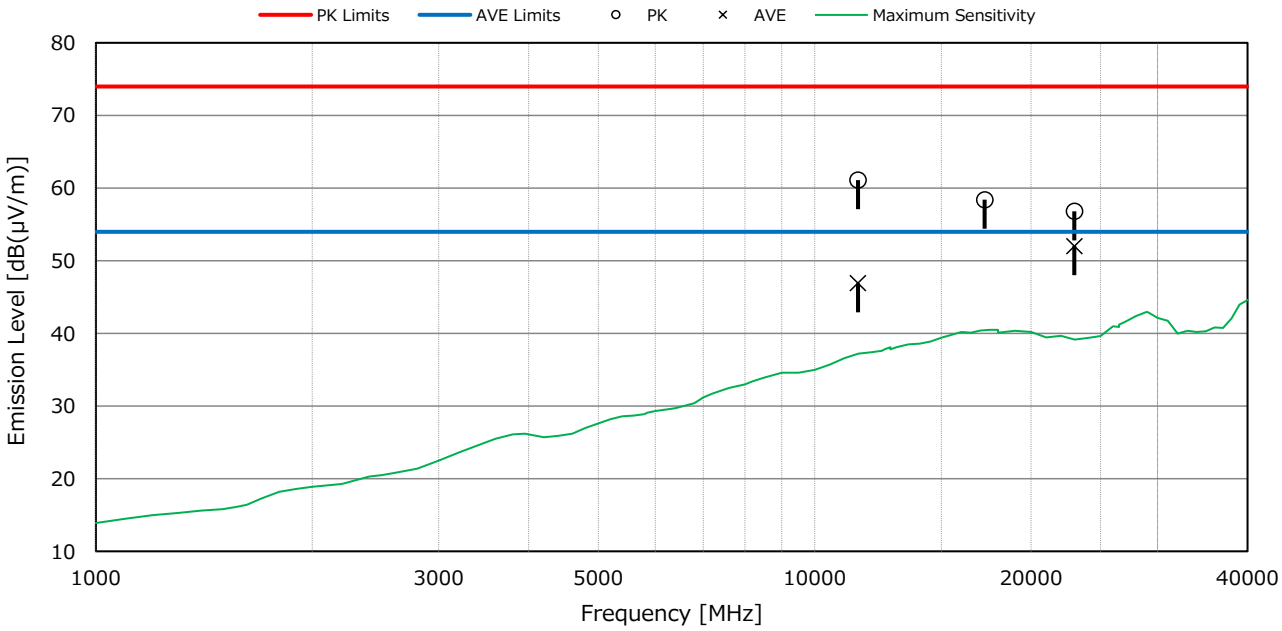
NOTES
1) Measurement Distance : 3 m
2) The spectrum was checked from 1 GHz to 40 GHz.
3) The factor includes the antenna factor, the pre-amplifier gain and the cable loss.
4) The symbol of "--" means "not applicable".
5) Calculated result as the worst point shown on underline :
   Factor + Reading (AVE) = 5.9 + 45.1 = 51.0 dB(μV) at 22980.00 MHz
6) PK : Peak detector, AVE : Average detector
7) Bandwidth : 1 MHz (1 GHz - 40 GHz)
8) The peak emissions except for restricted bands shall not exceed an EIRP of -27 dBm/MHz.
9) The measurement result (worst point) is within the range of measurement uncertainty.

Spectrum Analyzer Setting(s) :
Peak : RBW 1 MHz, VBW 3 MHz / Average : RBW 1 MHz, VBW 1 kHz

Test voltage : 7.4VDC
Test condition : 802.11a 149ch (5745MHz)
Antenna polarization : Vertical

Test Date: January 10, 2024
Temp.: 20 °C, RH: 36 %, Atm.: 998 hPa

Frequency [MHz]	Factor [dB]	Readings [dB(μV)] PK	Readings [dB(μV)] AVE	Limits [dB(μV/m)] PK	Limits [dB(μV/m)] AVE	Results [dB(μV/m)] PK	Results [dB(μV/m)] AVE	Margin [dB] PK	Margin [dB] AVE	Remarks
11490.00	4.8	56.3	42.1	74.0	54.0	61.1	46.9	+ 12.9	+ 7.1	Z
17235.00	6.2	52.2	--	68.2	--	58.4	--	+ 9.8	--	Z
22980.00	5.9	50.9	46.1	74.0	54.0	56.8	52.0	+ 17.2	+ 2.0	Z



NOTES
1) Measurement Distance : 3 m
2) The spectrum was checked from 1 GHz to 40 GHz.
3) The factor includes the antenna factor, the pre-amplifier gain and the cable loss.
4) The symbol of "--" means "not applicable".
5) Calculated result as the worst point shown on underline :
   Factor + Reading (AVE) = 5.9 + 46.1 = 52.0 dB(μV) at 22980.00 MHz
6) PK : Peak detector, AVE : Average detector
7) Bandwidth : 1 MHz (1 GHz - 40 GHz)
8) The peak emissions except for restricted bands shall not exceed an EIRP of -27 dBm/MHz.
9) The measurement result (worst point) is within the range of measurement uncertainty.

Spectrum Analyzer Setting(s) :
Peak : RBW 1 MHz, VBW 3 MHz / Average : RBW 1 MHz, VBW 1 kHz