JQA File No. : KL80240251
Issue Date : June 27, 2024

TEST REPORT

Applicant	:	Teijin Frontier Co., Ltd.
Address	:	NBF Comodio Shiodome 2-14-1, Higashishimbashi, Minato-ku, Tokyo 105-0021, Japan
Products	:	RecoHand
Model No.	:	M920SRW
Serial No.	:	00011
Test Standard	:	CFR 47 FCC Rules and Regulations Part 15 Subpart B
FCC ID	:	2BEXRRHM920T001
Test Results	:	**Passed**
Date of Receipt	:	June 26, 2024
Date of Test	:	June 26, 2024

ilac-MRA VLAC Lab Accreditation VLAC-001-2

Hiroyuki Nakamura
Senior Manager
Japan Quality Assurance Organization
Kitakansai Testing Center
Saito EMC Branch
7-3-10, Saito-asagi, Ibaraki-shi, Osaka 567-0085, Japan

- 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
KL80240251	Initial Issue	June 27, 2024

TABLE OF CONTENTS

1 Summary of Test Results

Applied Standard : CFR 47 FCC Rules and Regulations Part 15 – Radio Frequency Devices
Subpart B – Unintentional Radiators

Item	Standard (Procedure)	Result	Note
AC Powerline Conducted Emission	ANSI C63.4-2014 FCC Part 15 Subpart B §15.107	Passed	
Radiated Emission	ANSI C63.4-2014 FCC Part 15 Subpart B §15.109	Passed	

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 / Deputy Senior Manager

Tested by
Yuji Shintaku / Assistant Manager

2 Description of Equipment Under Test (EUT)

Manufacturer	Teijin Frontier Co., Ltd. NBF Comodio Shiodome 2-14-1, Higashishimbashi, Minato-ku, Tokyo 105-0021, Japan
Products	RecoHand
Model No.	M920SRW
Serial No.	00011
Product Type	Mass Production
Date of Manufacture	October 19, 2023
Power Rating	3.7VDC (Lithium-ion Battery)
EUT Grounding	None
Type of Device	Class B Digital Device
EUT Authorization	Certification (FCC ID: 2BEXRRHM920T001)
Highest Internal Frequency used within the EUT	2480 MHz (Bluetooth)

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 ILAC MRA mark 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, 2026)
A2LA Accreditation No. : 5498.01 (Expiry date : November 30, 2025)

VCCI Registration No. : A-0002 (Expiry date : April 30, 2026)
FCC Registration No. : JP5008 (Expiry date : April 30, 2026)
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*)
AC Powerline Conducted Emission	150 kHz – 30 MHz	± 2.6 dB
Radiated Emission	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

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 %.
The expanded MIUs for CISPR measurement methods determined by JQA are less than U_{cispr} according to CISPR 16-4-2.

6 Setup of EUT

6.1 Test Configuration

The equipment under test (EUT) consists of :

	Item	Manufacturer	Model No.	Serial No.
A	RecoHand	Teijin Frontier Co., Ltd.	M920SRW	00011

The auxiliary equipment (AE) used for testing :

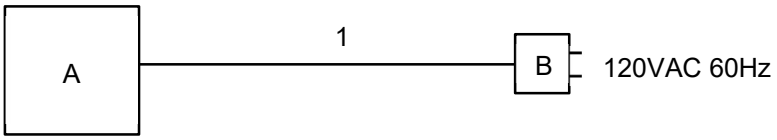
	Item	Manufacturer	Model No.	Serial No.
B	AC Adapter	Xtar	DBS15Q	--

Type of Cable:

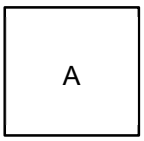
No.	Description	Identification (Manu. etc.)	Cable Shielded	Ferrite Core	Length (m)
1	USB Cable	--	Yes	No	1.0

6.2 Test Arrangement (Drawings)

Charging mode



Stand-by mode



6.3 Operating Condition

Test Mode

1) Charging mode (battery charged via USB)
2) Stand-by mode (wireless communications are OFF)

The radiated spurious emissions were checked under 2 style shown as follows:

- w/o Attachment
- w/ Attachment

Internal frequency used or generated within the EUT :

CPU	: 32 MHz
RFID	: 920 MHz
Bluetooth	: 2402 – 2480 MHz

7 Test Item

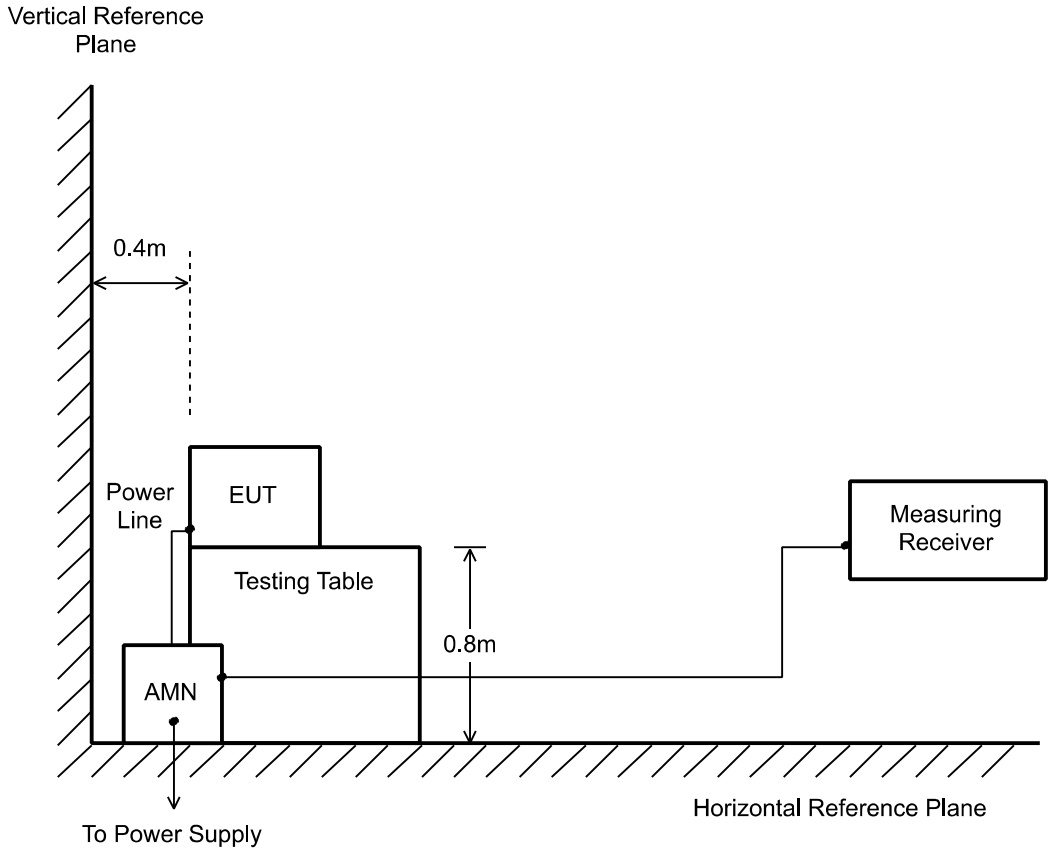
7.1 AC Powerline Conducted Emission

7.1.1 Test Site and Instruments

Test Site : Shielded Room S2					
Type	**Model**	**Serial No. (ID)**	**Manufacturer**	**Last Cal.**	**Cal. Due**
Test Receiver	ESCI 7	100811 (A-8)	Rohde & Schwarz	2023/11/07	2024/11/06
AMN (main)	TNW-407F2	12-20-209 (D-137)	Kyoritsu	2023/06/30	2024/06/29
EMC Software	EP9/CE	Ver.4.04.050	TOYO	--	--
RF Cable	RG223/U	--- (H-34)	HUBER+SUHNER	2023/07/03	2024/07/02
Thermo-Hygrometer	testo 608-H2	30050649 (F-70)	testo	2024/06/17	2025/06/16
Barometer	BAROMEX	02952 (F-48)	SATO	2023/08/16	2024/08/15

7.1.2 Test Method and Test Setup (Diagrammatic illustration)

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)

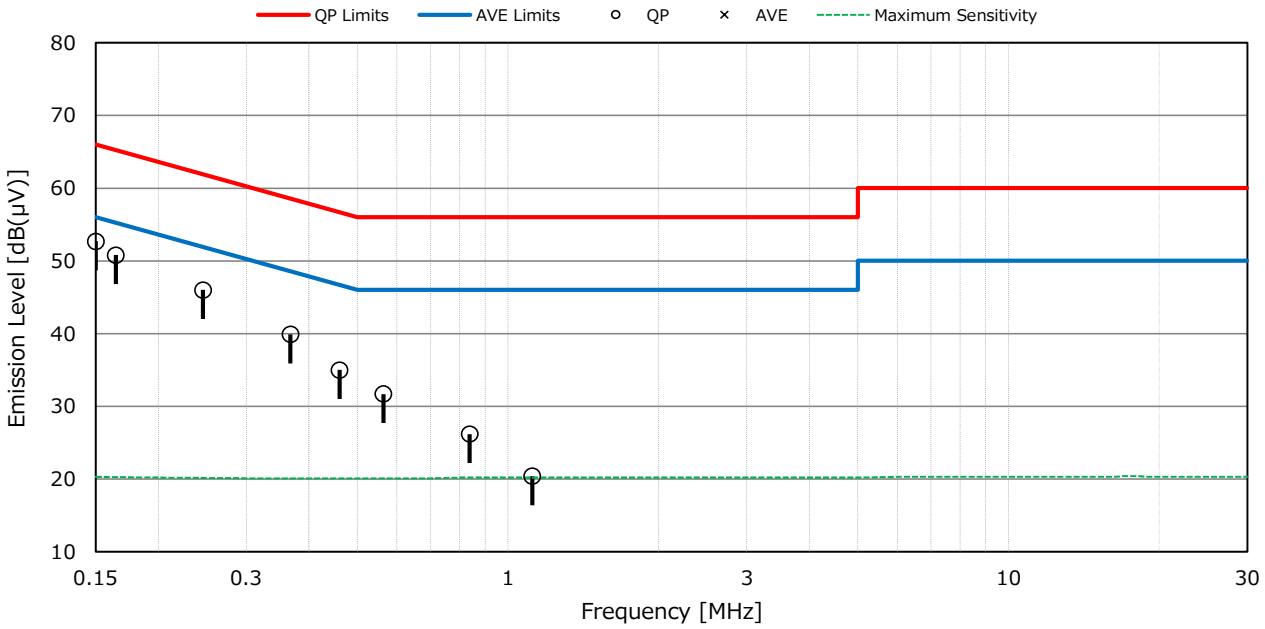


7.1.3 Test Data

Test voltage : 3.7VDC (AC Adapter 120VAC 60Hz)
Test condition : Charging mode
Measured phase : VA

Test Date: June 26, 2024
Temp.: 23 °C, RH: 60 %, Atm.: 1003 hPa

Frequency [MHz]	Factor [dB]	Readings [dB(μV)] QP	Readings [dB(μV)] AVE	Limits [dB(μV)] QP	Limits [dB(μV)] AVE	Results [dB(μV)] QP	Results [dB(μV)] AVE	Margin [dB] QP	Margin [dB] AVE	Remarks
0.1500	10.3	42.4	--	66.0	56.0	52.7	--	+ 13.3	--	-
0.1645	10.3	40.5	--	65.2	55.2	50.8	--	+ 14.4	--	-
0.2457	10.1	35.9	--	61.9	51.9	46.0	--	+ 15.9	--	-
0.3675	10.1	29.8	--	58.6	48.6	39.9	--	+ 18.7	--	-
0.4605	10.1	24.9	--	56.7	46.7	35.0	--	+ 21.7	--	-
0.5636	10.1	21.6	--	56.0	46.0	31.7	--	+ 24.3	--	-
0.8382	10.2	16.0	--	56.0	46.0	26.2	--	+ 29.8	--	-
1.1179	10.2	10.2	--	56.0	46.0	20.4	--	+ 35.6	--	-

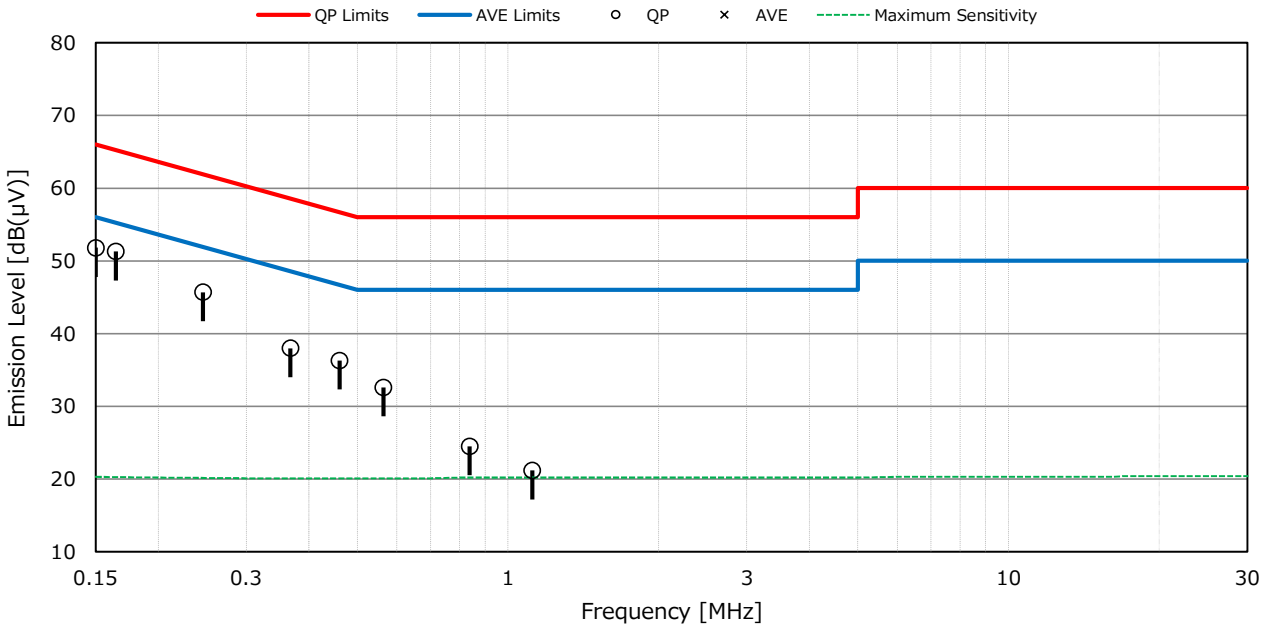


NOTES
1) The spectrum was checked from 150 kHz to 30 MHz.
2) The factor includes the AMN voltage division factor and the cable loss.
3) The symbol of "--" means "not applicable".
4) Calculated result as the worst point shown on underline :
   Factor + Reading (QP) = 10.3 + 42.4 = 52.7 dB(μV) at 0.1500 MHz
5) QP : Quasi-Peak detector, AVE : Average detector
6) Bandwidth : 9 kHz (150 kHz - 30 MHz)

Test voltage : 3.7VDC (AC Adapter 120VAC 60Hz)
Test condition : Charging mode
Measured phase : VB

Test Date: June 26, 2024
Temp.: 23 °C, RH: 60 %, Atm.: 1003 hPa

Frequency	Factor	Readings [dB(μV)]		Limits [dB(μV)]		Results [dB(μV)]		Margin [dB]		Remarks
[MHz]	[dB]	QP	AVE	QP	AVE	QP	AVE	QP	AVE	
0.1500	10.3	41.5	--	66.0	56.0	51.8	--	+ 14.2	--	-
0.1645	10.3	41.0	--	65.2	55.2	51.3	--	+ 13.9	--	-
0.2457	10.1	35.6	--	61.9	51.9	45.7	--	+ 16.2	--	-
0.3675	10.1	27.9	--	58.6	48.6	38.0	--	+ 20.6	--	-
0.4605	10.1	26.2	--	56.7	46.7	36.3	--	+ 20.4	--	-
0.5636	10.1	22.5	--	56.0	46.0	32.6	--	+ 23.4	--	-
0.8382	10.2	14.3	--	56.0	46.0	24.5	--	+ 31.5	--	-
1.1179	10.2	11.0	--	56.0	46.0	21.2	--	+ 34.8	--	-



NOTES
1) The spectrum was checked from 150 kHz to 30 MHz.
2) The factor includes the AMN voltage division factor and the cable loss.
3) The symbol of "--" means "not applicable".
4) Calculated result as the worst point shown on underline :
Factor + Reading (QP) = 10.3 + 41.0 = 51.3 dB(μV) at 0.1645 MHz
5) QP : Quasi-Peak detector, AVE : Average detector
6) Bandwidth : 9 kHz (150 kHz - 30 MHz)

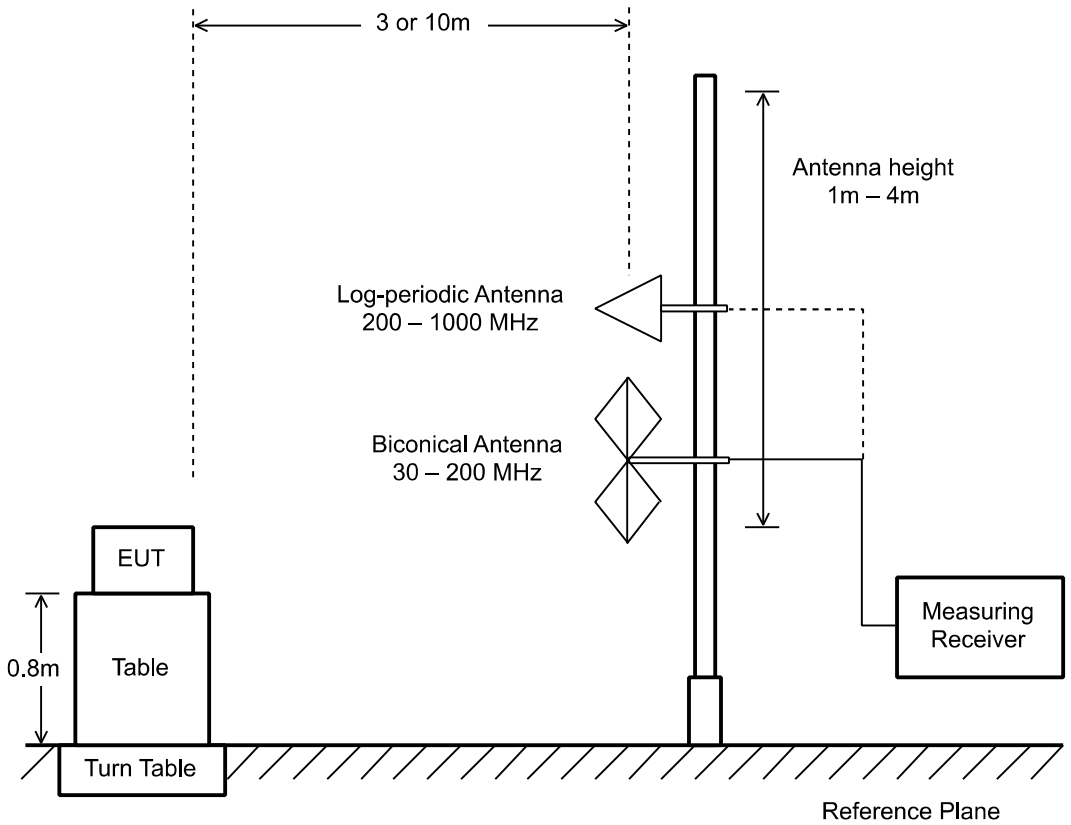
7.2 Radiated Emission 30 MHz – 1000 MHz

7.2.1 Test Site and Instruments

Test Site : Anechoic Chamber A4					
Type	**Model**	**Serial No. (ID)**	**Manufacturer**	**Last Cal.**	**Cal. Due**
Test Receiver	ESU 26	100170 (A-6)	Rohde & Schwarz	2023/12/12	2024/12/11
Pre-Amplifier	APT4-00100600-1310-D6	118243 (A-61)	AmpliTech	2023/10/25	2024/10/24
Log-periodic Antenna	VULP9118B	871 (C-39)	Schwarzbeck	2023/11/01	2024/10/31
Biconical Antenna	VHBB9124 /BBA9106	01314 (C-85)	Schwarzbeck	2023/11/01	2024/10/31
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
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

7.2.2 Test Method and Test Setup (Diagrammatic illustration)

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)

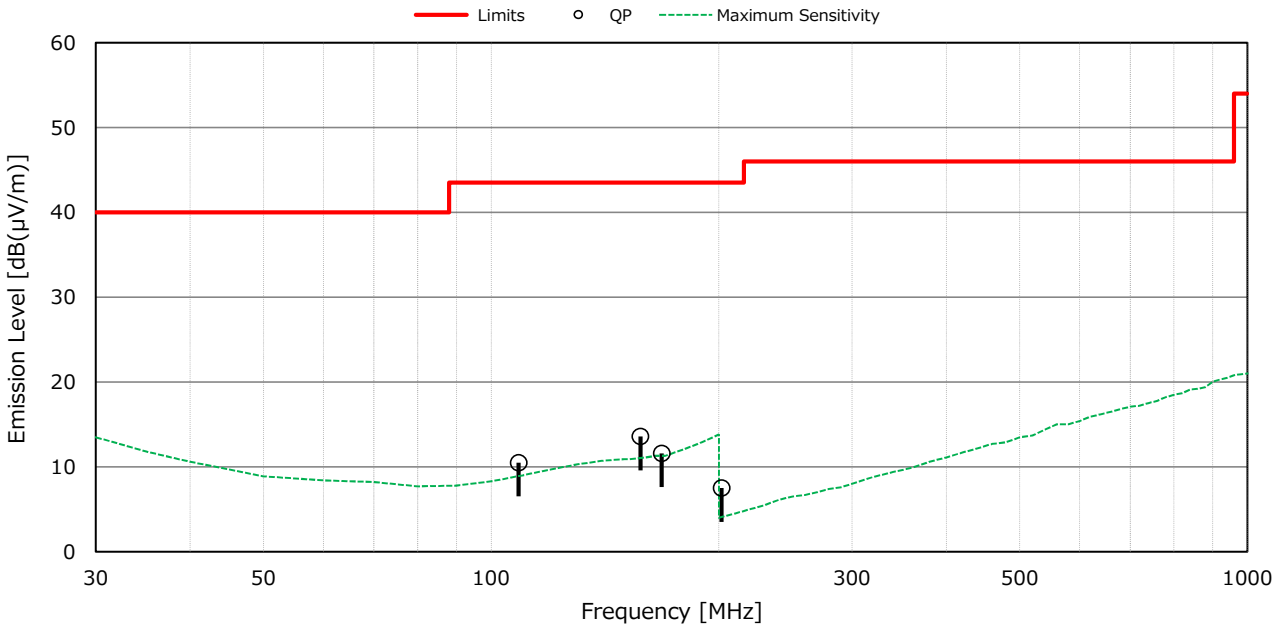


7.2.3 Test Data

Test voltage : 3.7VDC (AC Adapter 120VAC 60Hz)
Test condition : Charging mode
Antenna polarization : Horizontal

Test Date: June 26, 2024
Temp.: 24 °C, RH: 50 %, Atm.: 1003 hPa

Frequency [MHz]	Factor [dB]	Readings [dB(μV)]	Limits [dB(μV/m)]	Results [dB(μV/m)]	Margin [dB]	Remarks
108.710	-26.2	36.7	43.5	10.5	+ 33.0	-
157.543	-24.0	37.6	43.5	13.6	+ 29.9	-
168.082	-23.7	35.3	43.5	11.6	+ 31.9	-
201.718	-30.9	38.4	43.5	7.5	+ 36.0	-

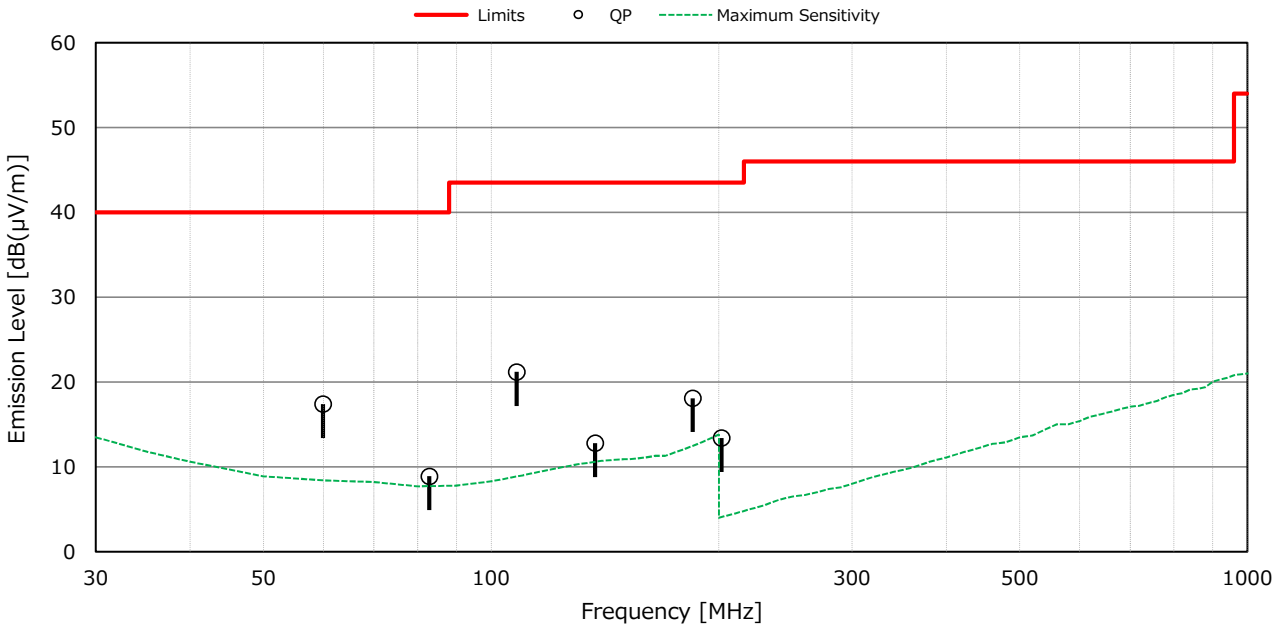


NOTES
1) Measurement Distance : 3 m
2) The spectrum was checked from 30 MHz to 1000 MHz.
3) The factor includes the antenna factor, the pre-amplifier gain and the cable loss.
4) Calculated result as the worst point shown on underline :
   Factor + Reading (QP) = -24.0 + 37.6 = 13.6 dB(μV) at 157.543 MHz
   Antenna Height : 207 cm, Turntable Rotation Position : 158 °
5) QP : Quasi-Peak detector
6) Bandwidth : 120 kHz (30 MHz - 1000 MHz)

Test voltage : 3.7VDC (AC Adapter 120VAC 60Hz)
Test condition : Charging mode
Antenna polarization : Vertical

Test Date: June 26, 2024
Temp.: 24 °C, RH: 50 %, Atm.: 1003 hPa

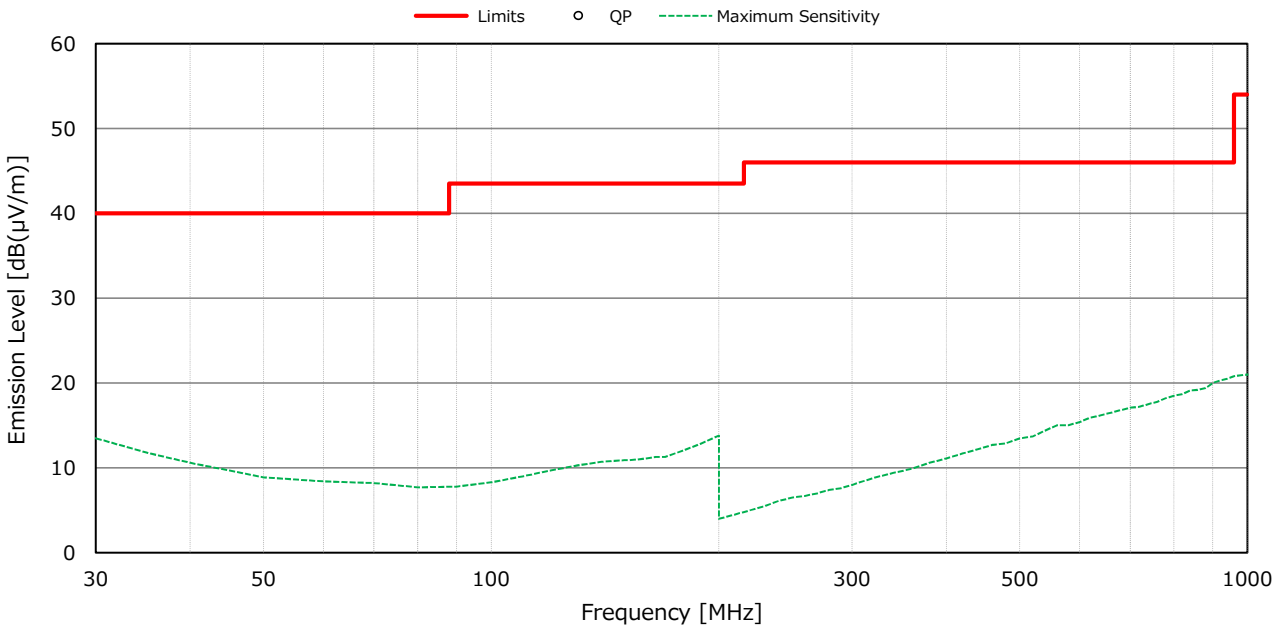
Frequency [MHz]	Factor [dB]	Readings [dB(μV)]	Limits [dB(μV/m)]	Results [dB(μV/m)]	Margin [dB]	Remarks
59.933	-26.6	44.0	40.0	17.4	+ 22.6	-
82.862	-27.4	36.3	40.0	8.9	+ 31.1	-
108.098	-26.3	47.5	43.5	21.2	+ 22.3	-
137.255	-24.3	37.1	43.5	12.8	+ 30.7	-
184.794	-22.6	40.7	43.5	18.1	+ 25.4	-
201.718	-30.9	44.3	43.5	13.4	+ 30.1	-



NOTES
1) Measurement Distance : 3 m
2) The spectrum was checked from 30 MHz to 1000 MHz.
3) The factor includes the antenna factor, the pre-amplifier gain and the cable loss.
4) Calculated result as the worst point shown on underline :
   Factor + Reading (QP) = -26.3 + 47.5 = 21.2 dB(μV) at 108.098 MHz
   Antenna Height : 100 cm, Turntable Rotation Position : 249 °
5) QP : Quasi-Peak detector
6) Bandwidth : 120 kHz (30 MHz - 1000 MHz)

Test voltage : 3.7VDC
Test condition : Stand-by mode (w/o Attachment)
Antenna polarization : Horizontal

Test Date: June 26, 2024
Temp.: 24 °C, RH: 50 %, Atm.: 1003 hPa

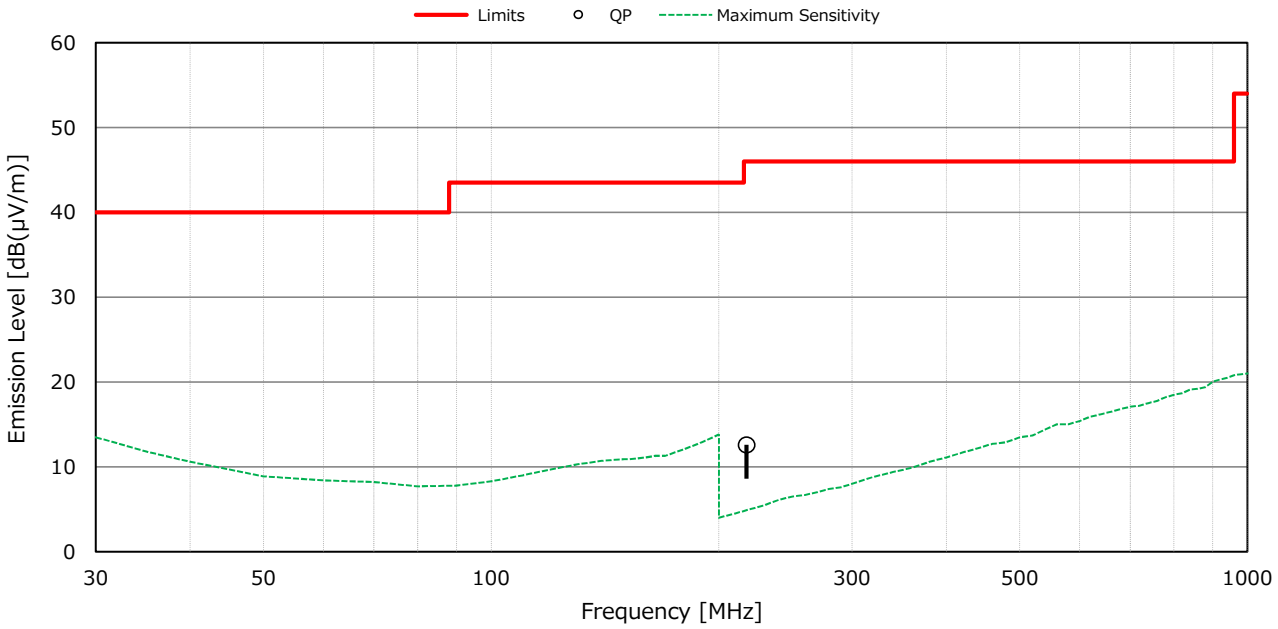


NOTES
1) Measurement Distance : 3 m
2) The spectrum was checked from 30 MHz to 1000 MHz.
3) QP : Quasi-Peak detector
4) Bandwidth : 120 kHz (30 MHz - 1000 MHz)
5) All emission levels were below the noise floor, or more than 15 dB below the applied limits.

Test voltage : 3.7VDC
Test condition : Stand-by mode (w/o Attachment)
Antenna polarization : Vertical

Test Date: June 26, 2024
Temp.: 24 °C, RH: 50 %, Atm.: 1003 hPa

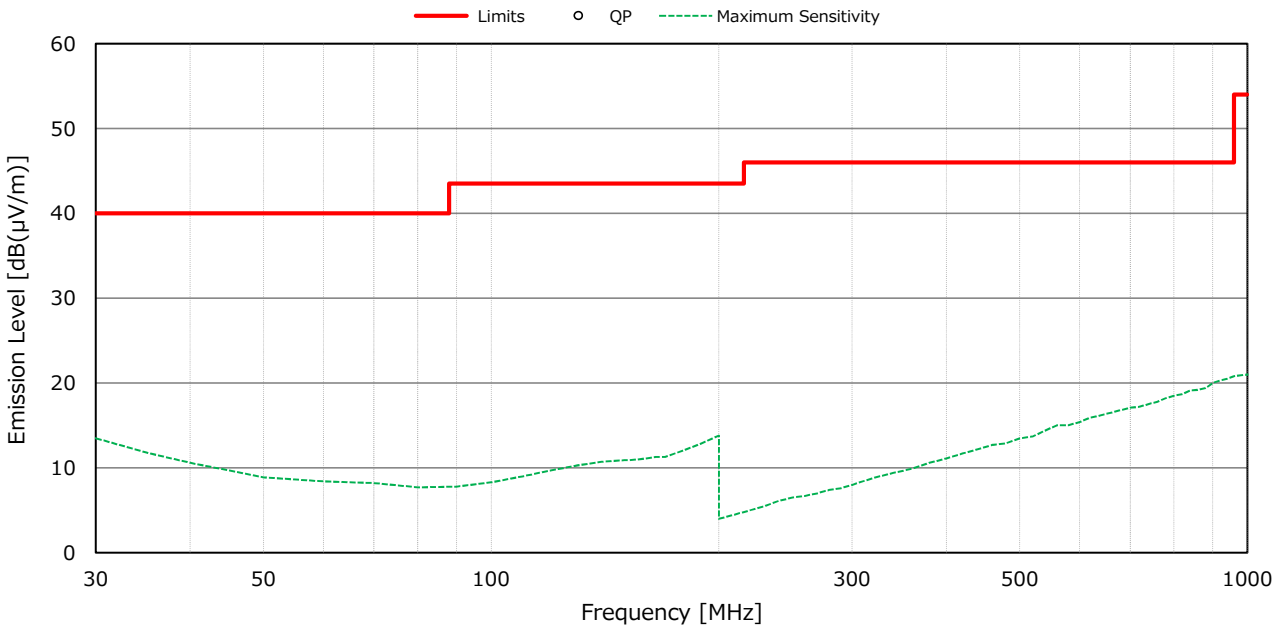
Frequency [MHz]	Factor [dB]	Readings [dB(μV)]	Limits [dB(μV/m)]	Results [dB(μV/m)]	Margin [dB]	Remarks
217.663	-30.1	42.7	46.0	12.6	+ 33.4	-



NOTES
1) Measurement Distance : 3 m
2) The spectrum was checked from 30 MHz to 1000 MHz.
3) The factor includes the antenna factor, the pre-amplifier gain and the cable loss.
4) Calculated result as the worst point shown on underline :
   Factor + Reading (QP) = -30.1 + 42.7 = 12.6 dB(μV) at 217.663 MHz
   Antenna Height : 100 cm, Turntable Rotation Position : 143 °
5) QP : Quasi-Peak detector
6) Bandwidth : 120 kHz (30 MHz - 1000 MHz)

Test voltage : 3.7VDC
Test condition : Stand-by mode (w/ Attachment)
Antenna polarization : Horizontal

Test Date: June 26, 2024
Temp.: 24 °C, RH: 50 %, Atm.: 1003 hPa

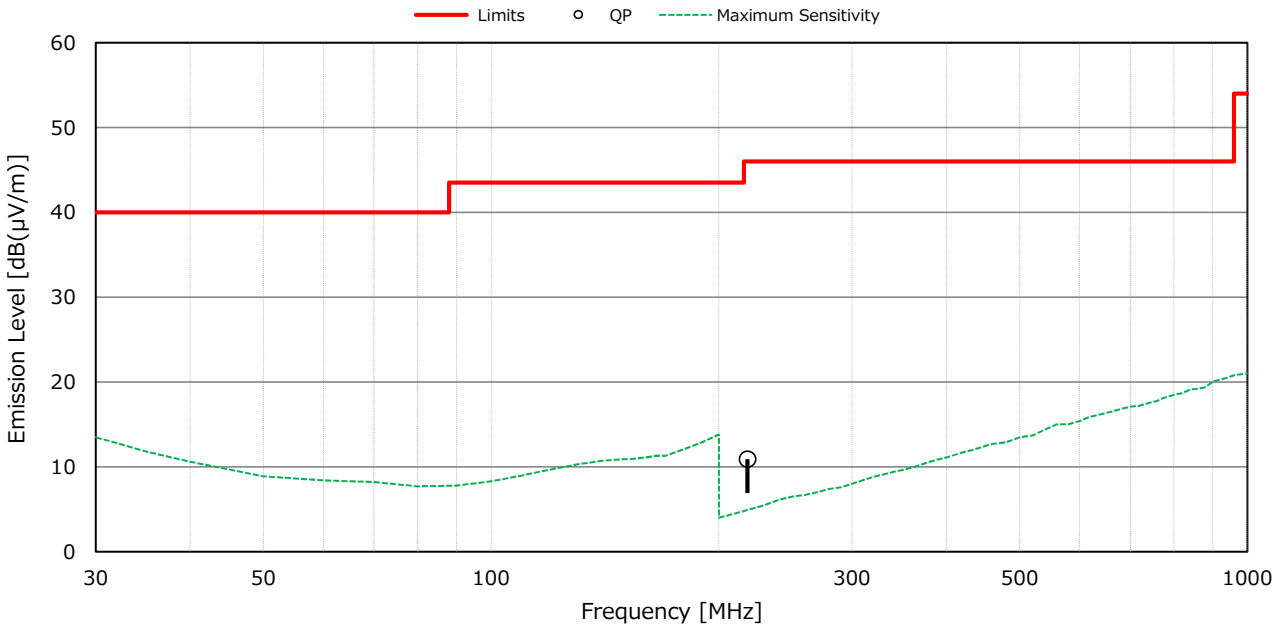


NOTES
1) Measurement Distance : 3 m
2) The spectrum was checked from 30 MHz to 1000 MHz.
3) QP : Quasi-Peak detector
4) Bandwidth : 120 kHz (30 MHz - 1000 MHz)
5) All emission levels were below the noise floor, or more than 15 dB below the applied limits.

Test voltage : 3.7VDC
Test condition : Stand-by mode (w/ Attachment)
Antenna polarization : Vertical

Test Date: June 26, 2024
Temp.: 24 °C, RH: 50 %, Atm.: 1003 hPa

Frequency [MHz]	Factor [dB]	Readings [dB(μV)]	Limits [dB(μV/m)]	Results [dB(μV/m)]	Margin [dB]	Remarks
218.363	-30.1	41.0	46.0	10.9	+ 35.1	-



NOTES
1) Measurement Distance : 3 m
2) The spectrum was checked from 30 MHz to 1000 MHz.
3) The factor includes the antenna factor, the pre-amplifier gain and the cable loss.
4) Calculated result as the worst point shown on underline :
   Factor + Reading (QP) = -30.1 + 41.0 = 10.9 dB(μV) at 218.363 MHz
   Antenna Height : 100 cm, Turntable Rotation Position : 142 °
5) QP : Quasi-Peak detector
6) Bandwidth : 120 kHz (30 MHz - 1000 MHz)

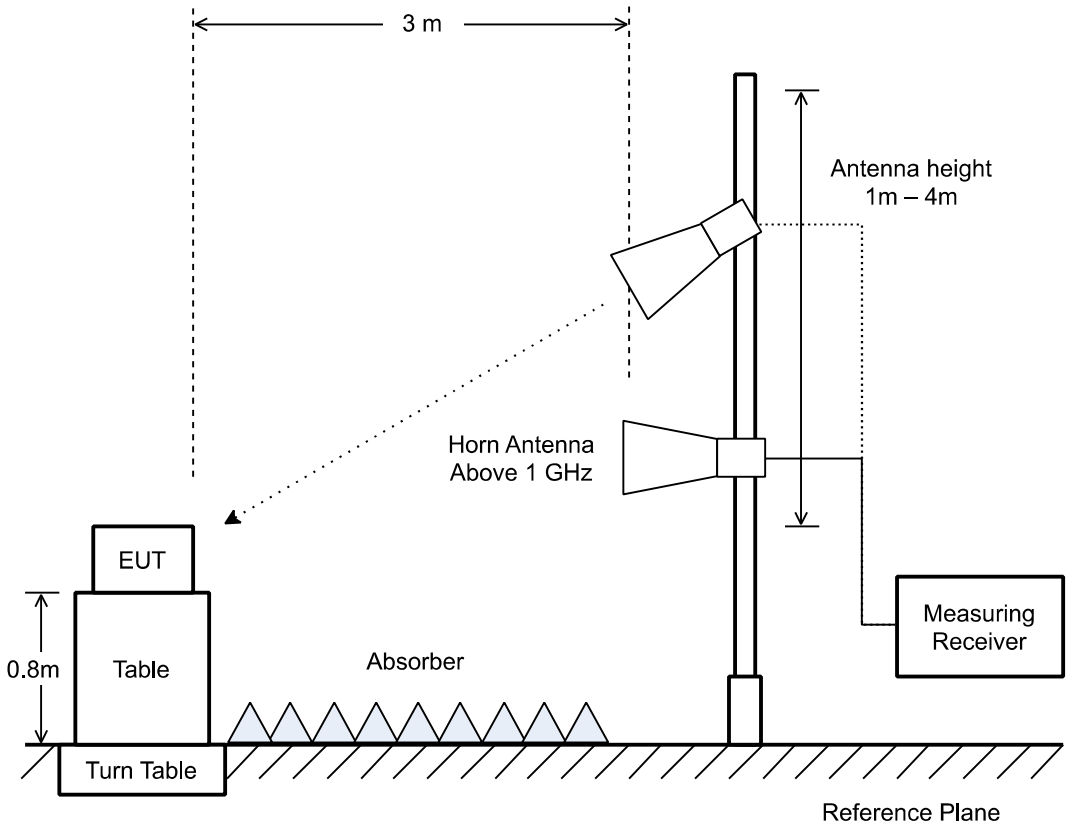
7.3 Radiated Emission 1 GHz – 12.5 GHz

7.3.1 Test Site and Instruments

Test Site : Anechoic Chamber A4					
Type	**Model**	**Serial No. (ID)**	**Manufacturer**	**Last Cal.**	**Cal. Due**
Test Receiver	ESU 26	100170 (A-6)	Rohde & Schwarz	2023/12/12	2024/12/11
Pre-Amplifier	APT4-00100600-1310-D6	118243 (A-61)	AmpliTech	2023/10/25	2024/10/24
Pre-Amplifier	BZR-01001800-201040-182323-HS	23804 (A-65)	B&Z	2024/02/07	2025/02/06
RF Cable	SF104	267415/4 (C-68)	HUBER+SUHNER	2024/02/07	2025/02/06
RF Cable	SF126	MY4596/26 (C-78)	HUBER+SUHNER	2024/02/07	2025/02/06
Double-Ridge Guide Horn Antenna	3115	00227684 (C-103)	ETS LINDGREN	2024/05/08	2025/05/07
Band Rejection Filter	BRM50702	371 (D-121)	MICRO-TRONICS	2023/10/05	2024/10/04
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
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

7.3.2 Test Method and Test Setup (Diagrammatic illustration)

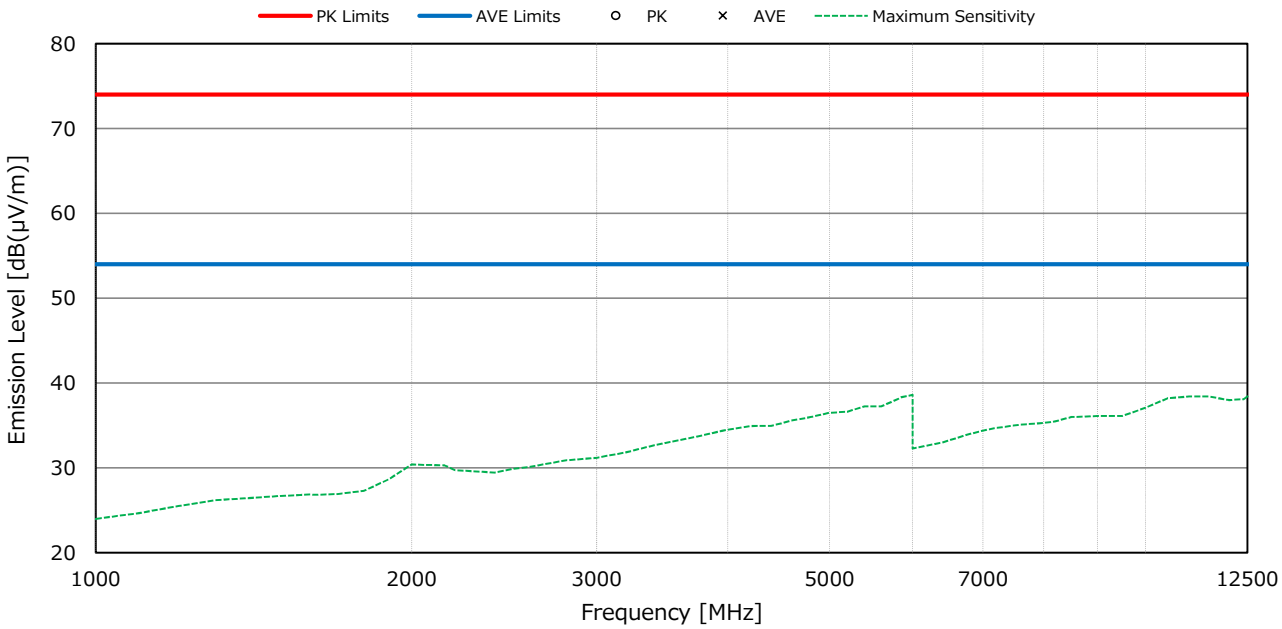
The pre-scan measurements were performed using the scan mode of test receiver or spectrum analyzer to observe the emissions characteristics of the EUT. The EUT configuration, cable configuration and mode of operation were determined for producing the maximum level of emissions.
This configurations was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



7.3.3 Test Data

Test voltage : 3.7VDC (AC Adapter 120VAC 60Hz)
Test condition : Charging mode
Antenna polarization : Horizontal

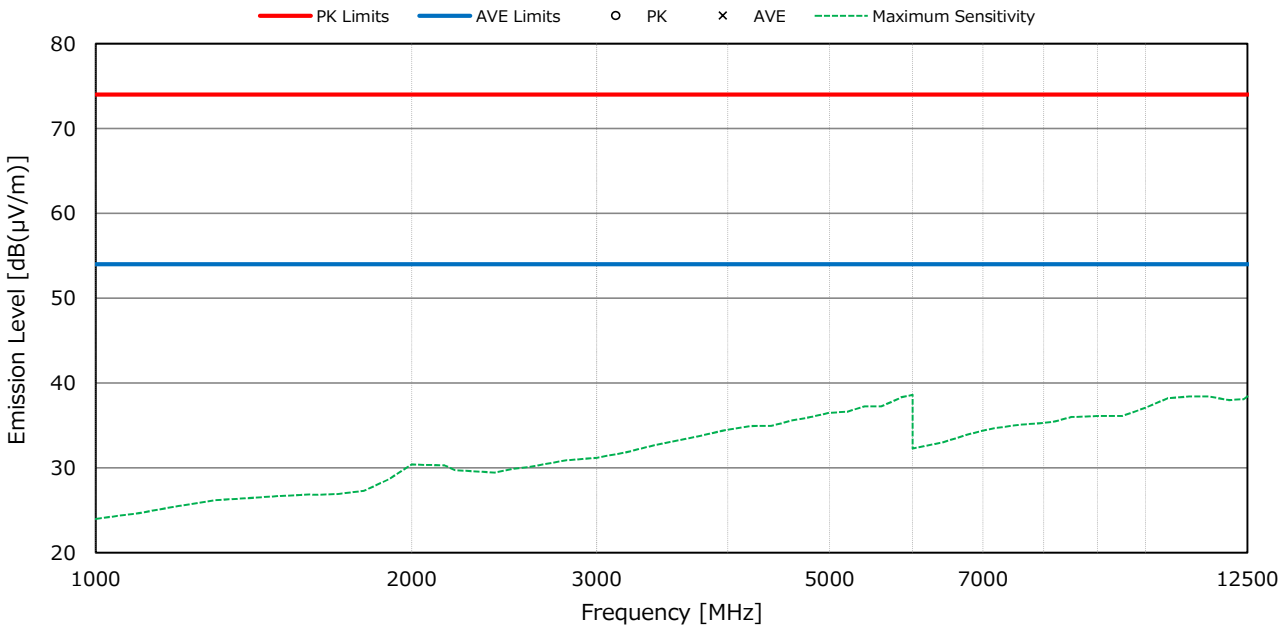
Test Date: June 26, 2024
Temp.: 24 °C, RH: 50 %, Atm.: 1003 hPa



NOTES
1) Measurement Distance : 4.2 m (Specified Distance : 3 m)
2) The spectrum was checked from 1 GHz to 12.5 GHz.
3) PK : Peak detector, AVE : Average detector
4) Bandwidth : 1 MHz (1 GHz - 12.5 GHz)
5) All emission levels were below the noise floor, or more than 15 dB below the applied limits.

Test voltage : 3.7VDC (AC Adapter 120VAC 60Hz)
Test condition : Charging mode
Antenna polarization : Vertical

Test Date: June 26, 2024
Temp.: 24 °C, RH: 50 %, Atm.: 1003 hPa



NOTES
1) Measurement Distance : 4.2 m (Specified Distance : 3 m)
2) The spectrum was checked from 1 GHz to 12.5 GHz.
3) PK : Peak detector, AVE : Average detector
4) Bandwidth : 1 MHz (1 GHz - 12.5 GHz)
5) All emission levels were below the noise floor, or more than 15 dB below the applied limits.

Test voltage : 3.7VDC
Test condition : Stand-by mode (w/o Attachment)
Antenna polarization : Horizontal

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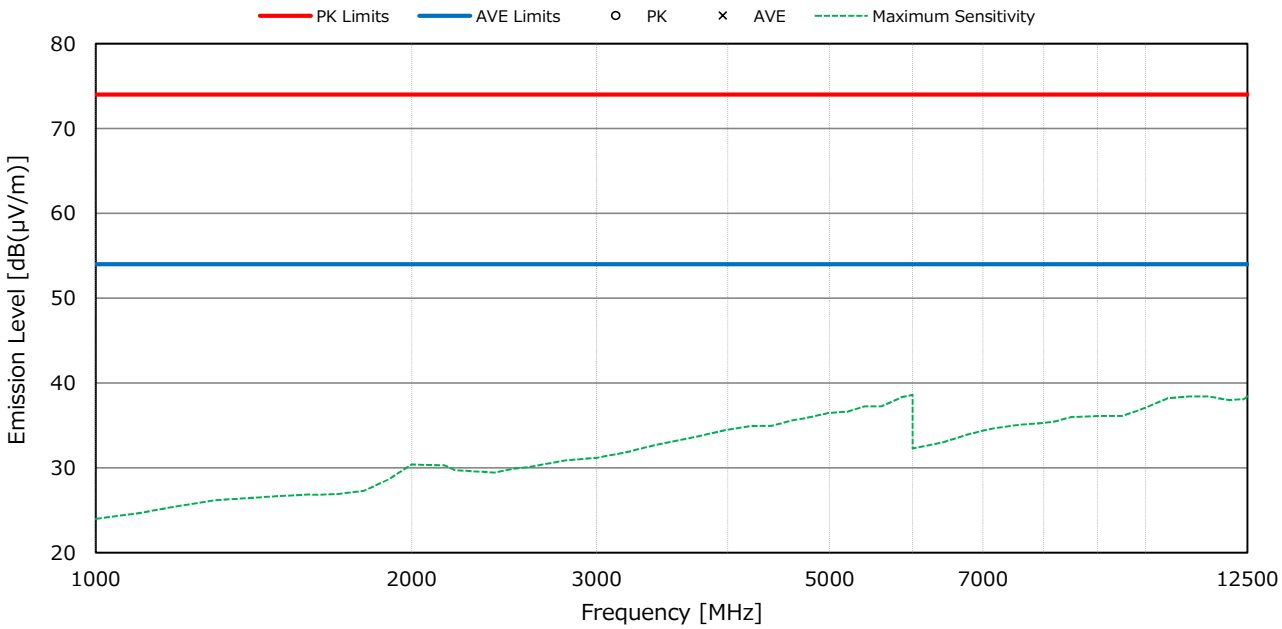

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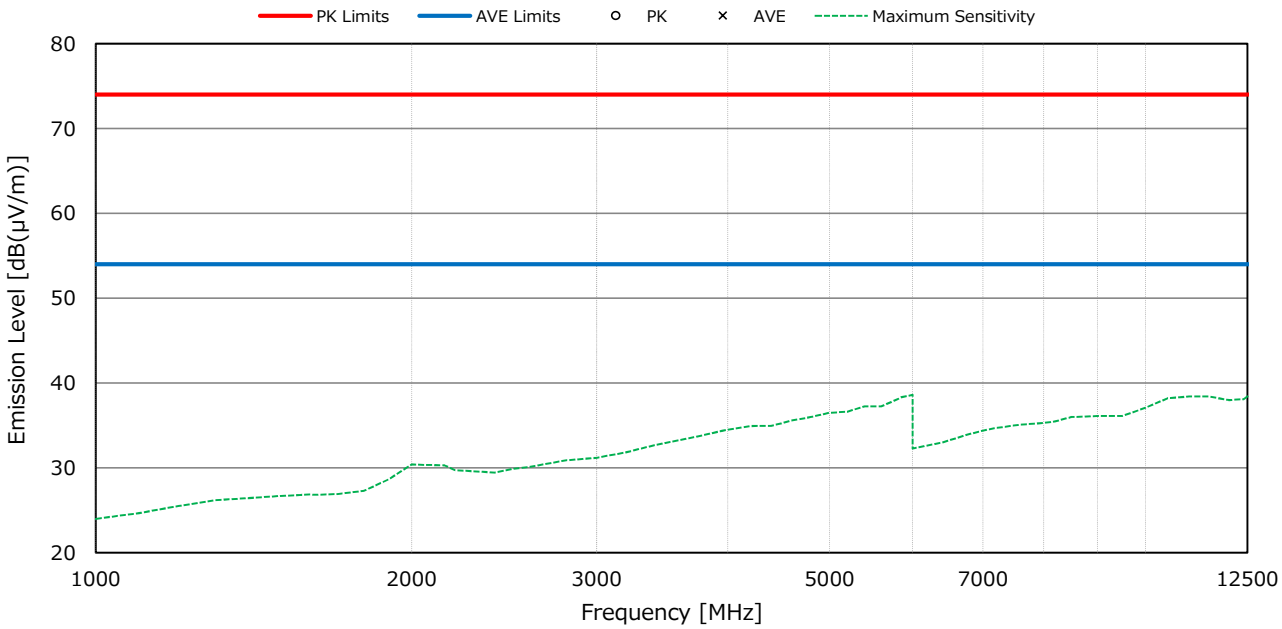

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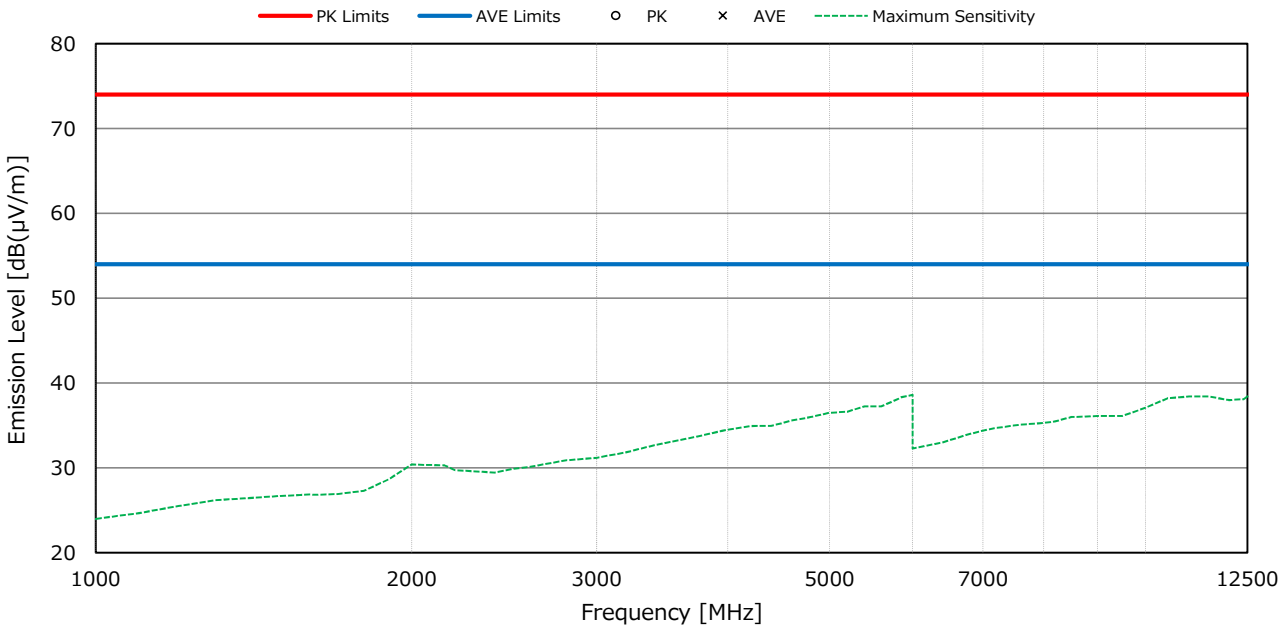

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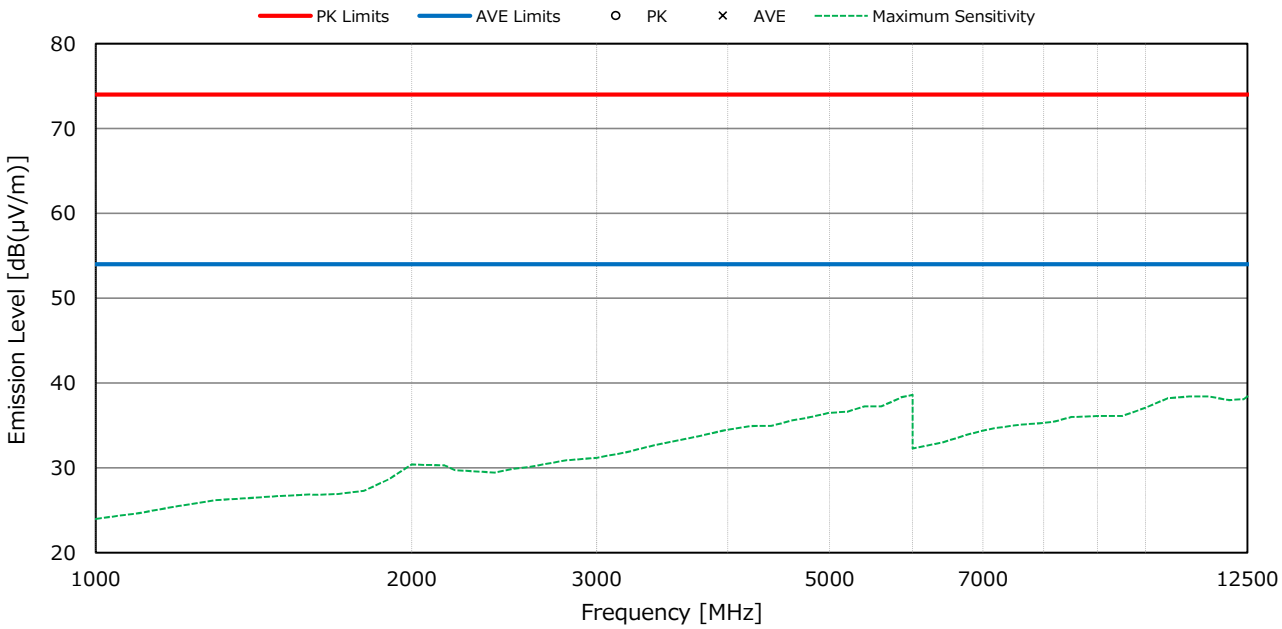

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