



EMI TEST REPORT

Test Report No. : 14071548Y

Applicant : DENSO CORPORATION
Type of EUT : Cockpit Control Unit
Model Number of EUT : DNNS124
FCC ID : HYQDNNS124
Test regulation : FCC Part 15 Subpart B: 2021
Test Result : Complied (Refer to SECTION 3)

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2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with the limits of the above regulation.
4. The test results in this test report are traceable to the national or international standards.
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7. The all test items in this test report are conducted by UL Japan, Inc. Yokowa EMC Lab.
8. The opinions and the interpretations to the result of the description in this report are outside scopes where UL Japan, Inc. has been accredited.
9. The information provided from the customer for this report is identified in SECTION 1.

Date of test:

November 8 to 12, 2021

Representative test engineer:

Seigo Kakehi
Engineer

Approved by:

Masamichi Ishii
Leader



- The testing in which "Non-accreditation" is displayed is outside the accreditation scopes in UL Japan, Inc.
 There is no testing item of "Non-accreditation".

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REVISION HISTORY

Original Test Report No.: 14071548Y

Revision	Test report No.	Date	Page revised	Contents
- (Original)	14071548Y	November 25, 2021	-	-

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Reference: Abbreviations (Including words undescribed in this report)

AAN	Asymmetric Artificial Network	ISED	Innovation, Science and Economic Development Canada
AC	Alternating Current	ISN	Impedance Stabilization Network
AM	Amplitude Modulation	ISO	International Organization for Standardization
AMN	Artificial Mains Network	JAB	Japan Accreditation Board
Amp, AMP	Amplifier	LAN	Local Area Network
ANSI	American National Standards Institute	LCL	Longitudinal Conversion Loss
Ant, ANT	Antenna	LIMS	Laboratory Information Management System
AP	Access Point	LISN	Line Impedance Stabilization Network
ASK	Amplitude Shift Keying	MRA	Mutual Recognition Arrangement
Atten., ATT	Attenuator	N/A	Not Applicable
AV	Average	NIST	National Institute of Standards and Technology
BPSK	Binary Phase-Shift Keying	NS	No signal detect.
BR	Bluetooth Basic Rate	NSA	Normalized Site Attenuation
BT	Bluetooth	NVLAP	National Voluntary Laboratory Accreditation Program
BT LE	Bluetooth Low Energy	OBW	Occupied Band Width
BW	BandWidth	OFDM	Orthogonal Frequency Division Multiplexing
C.F	Correction Factor	PK	Peak
Cal Int	Calibration Interval	PLT	long-term flicker severity
CAV	CISPR AV	POHC(A)	Partial Odd Harmonic Current
CCK	Complementary Code Keying	Pol., Pola.	Polarization
CDN	Coupling Decoupling Network	PR-ASK	Phase Reversal ASK
Ch., CH	Channel	PST	short-term flicker severity
CISPR	Comite International Special des Perturbations Radioelectriques	QAM	Quadrature Amplitude Modulation
Corr.	Correction	QP	Quasi-Peak
CPE	Customer premise equipment	QPSK	Quadri-Phase Shift Keying
CW	Continuous Wave	r.m.s., RMS	Root Mean Square
DBPSK	Differential BPSK	RBW	Resolution Band Width
DC	Direct Current	RE	Radio Equipment
DET	Detector	REV	Reverse
Dmax	maximum absolute voltage change during an observation period	RF	Radio Frequency
DQPSK	Differential QPSK	RFID	Radio Frequency Identifier
DSSS	Direct Sequence Spread Spectrum	RSS	Radio Standards Specifications
EDR	Enhanced Data Rate	Rx	Receiving
e.i.r.p., EIRP	Equivalent Isotropically Radiated Power	SINAD	Ratio of (Signal + Noise + Distortion) to (Noise + Distortion)
EM clamp	Electromagnetic clamp	S/N	Signal to Noise ratio
EMC	ElectroMagnetic Compatibility	SA, S/A	Spectrum Analyzer
EMI	ElectroMagnetic Interference	SG	Signal Generator
EMS	ElectroMagnetic Susceptibility	SVSWR	Site-Voltage Standing Wave Ratio
EN	European Norm	THC(A)	Total Harmonic Current
e.r.p., ERP	Effective Radiated Power	THD(%)	Total Harmonic Distortion
EU	European Union	TR	Test Receiver
EUT	Equipment Under Test	Tx	Transmitting
Fac.	Factor	VBW	Video BandWidth
FCC	Federal Communications Commission	Vert.	Vertical
FHSS	Frequency Hopping Spread Spectrum	WLAN	Wireless LAN
FM	Frequency Modulation	xDSL	Generic term for all types of DSL technology (DSL: Digital Subscriber Line)
Freq.	Frequency		
FSK	Frequency Shift Keying		
Fund	Fundamental		
FWD	Forward		
GFSK	Gaussian Frequency-Shift Keying		
GNSS	Global Navigation Satellite System		
GPS	Global Positioning System		
Hori.	Horizontal		
ICES	Interference-Causing Equipment Standard		
I/O	Input/Output		
IEC	International Electrotechnical Commission		
IEEE	Institute of Electrical and Electronics Engineers		
IF	Intermediate Frequency		
ILAC	International Laboratory Accreditation Conference		

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CONTENTS

	PAGE
SECTION 1: Customer information	5
SECTION 2: Equipment under test (EUT)	5
SECTION 3: Test specification, procedures and results	7
SECTION 4: Operation of EUT during testing	10
SECTION 5: Radiated emission	14
SECTION 6: Antenna Terminal	17
APPENDIX 1: Photographs of test setup	18
APPENDIX 2: Data of EMI test	20
APPENDIX 3: Test Instruments	74

SECTION 1: Customer information

Company Name : DENSO CORPORATION
Address : 1-1 Showa-cho, Kariya-shi, Aichi ken, 448-8661 Japan
Telephone Number : +81-566-20-3304
Contact Person : Naoto Makino

The information provided from the customer is as follows:

- Applicant, Type of EUT, Model Number of EUT on the cover page and other relevant pages
- Operating/Test Mode(s) (Mode(s)) on all the relevant pages
- SECTION 1: Customer information
- SECTION 2: Equipment under test (EUT) other than the Receipt Date
- SECTION 4: Operation of EUT during testing

* The laboratory is exempted from liability of any test results affected from the information in SECTION 2 and 4.

SECTION 2: Equipment under test (EUT)

2. Identification of EUT

Type : Cockpit Control Unit
Model Number : DNNS124
Serial Number : Refer to Clause 4.2
Receipt Date : November 5, 2021
Condition : Production prototype
(Not for Sale: This sample is equivalent to mass-produced items.)
Modification : No modification by the test lab.

2.2 Product description

Model: DNNS124 (referred to as the EUT in this report) is a Cockpit Control Unit.

General Specification

Rating : DC 13.2 V
Clock frequency(ies) : 2.0 GHz
in the sytem

Radio Specification

Bluetooth (BR/EDR)	
Frequency of operation	2402 MHz - 2480 MHz
Channel spacing	1 MHz
Modulation	FHSS (GFSK, $\pi/4$ -DQPSK, 8DPSK)
Antenna type	External Antenna
Antenna Gain	2.55 dBi (Max)

	IEEE802.11b	IEEE802.11g	IEEE802.11n (20 MHz band)	IEEE802.11n (40 MHz band)
Frequency of operation	2412 MHz - 2462 MHz	2412 MHz - 2462 MHz	2412 MHz - 2462 MHz 5180 MHz - 5240 MHz 5745 MHz - 5825 MHz	5190 MHz - 5230 MHz 5755 MHz - 5795 MHz
Channel spacing	5 MHz		2.4 GHz band 5 MHz 5 GHz band 20 MHz	5 GHz band 40 MHz
Modulation	DSSS: DBPSK, DQPSK, CCK	OFDM: BPSK, QPSK, 16QAM, 64QAM		
	IEEE802.11a	IEEE802.11ac (20 MHz band)	IEEE802.11ac (40 MHz band)	IEEE802.11ac (80 MHz band)
Frequency of operation	5180 MHz - 5240 MHz 5745 MHz - 5825 MHz	5180 MHz - 5240 MHz 5745 MHz - 5825 MHz	5190 MHz - 5230 MHz 5755 MHz - 5795 MHz	5210 MHz 5775 MHz
Channel spacing	20 MHz		40 MHz	80 MHz
Modulation	OFDM BPSK, QPSK, 16QAM, 64QAM, 256QAM (*256QAM is only for IEEE802.11ac 80 MHz band)			
Antenna type	External Antenna			
Antenna Gain	Main Antenna: Chain0 : 2.55 dBi (2.4 GHz), 0.02 dBi (5 GHz) Sub Antenna: Chain1 : -2.10 dBi (2.4 GHz), -5.26 dBi (5 GHz)			

[AM/FM Radio]

	AM	FM (incl. RBDS)
Equipment type	Receiver	
Frequency of operation	522 kHz to 1629 kHz	87 MHz to 108 MHz

FM tuner specification
Intermediate frequency: 220 kHz

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SECTION 3: Test specification, procedures and results

3.1 Test Specification

Test Specification : FCC Part 15 Subpart B
FCC Part 15 final revised on May 3, 2021 and effective July 2, 2021
Title : FCC 47CFR Part15 Radio Frequency Device
Subpart B Unintentional Radiators

3.2 Procedures & results

Item	Test Procedure	Limits	Deviation	Worst margin	Result	Remarks
Conducted emission	ANSI C63.4: 2014 + C63.4a: 2017 7. AC power - line conducted emission measurements IEEE 187:2003	FCC 15.107 (a)	N/A	N/A	N/A	*1)
Radiated emission	ANSI C63.4: 2014 + C63.4a: 2017 8. Radiated emission measurements IEEE 187:2003	FCC 15.109 (a)	N/A	1.09 dB (3489.024 MHz, AV, Vert., FM Reception Analog (87 MHz), Sub, Local / 3448.974 MHz, AV, Vert., FM Reception Analog (108 MHz), Sub, Local / 3489.022 MHz, AV, Vert., FM Reception Analog (87 MHz), Sub, Other / 3448.974 MHz, AV, Vert., FM Reception Analog (108 MHz), Sub, Other)	Complied# a)	*2)
Antenna Terminal	ANSI C63.4: 2014 + C63.4a: 2017 12. Measurement of unintentional radiators other than ITE IEEE 187:2003	FCC 15.111 (a)	N/A	12.4 dB (3252.067 MHz, FM Reception (Main))	Complied b)	*2)

Note: UL Japan's EMI Work Procedures No. 13-EM-W0420

*1) The test is not applicable since the EUT is not the device that is designed to be connected to the public utility (AC) power line.

*2) Measurements were limited up to 30 GHz since the highest frequency of internal source of the EUT is 5825 MHz.

a) Refer to APPENDIX 2 (data of Radiated disturbance)

b) Refer to APPENDIX 2 (data of Antenna Terminal)

Symbols:

CompliedThe data of this test item has enough margin, more than the measurement uncertainty.

Complied#The data of this test item meets the limits unless the measurement uncertainty is taken into consideration.

3.3 Addition to standard

No addition, exclusion nor deviation has been made from the standard.

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3.4 Confirmation

UL Japan, Inc. hereby confirms that EUT, in the configuration tested, complies with the specifications FCC Part 15 Subpart B.

3.5 Uncertainty

There is no applicable rule of uncertainty in this applied standard. Therefore, the results are derived depending on whether or not laboratory uncertainty is applied.

The following uncertainties have been calculated to provide a confidence level of 95 % using a coverage factor $k = 2$.

Radiated emission

Site No.	Uncertainty (+/-)			Ucisp (±)	
	No.1	No.2	No.3		
3 m	9 kHz - 30 MHz	3.5 dB	3.5 dB	3.5 dB	Not Defined
	30 MHz - 200 MHz (Horizontal)	4.6 dB	4.8 dB	4.8 dB	6.3 dB
	(Vertical)	4.7 dB	4.9 dB	4.9 dB	6.3 dB
	200 MHz - 1000 MHz (Horizontal)	4.9 dB	5.1 dB	5.1 dB	6.3 dB
	(Vertical)	6.0 dB	6.2 dB	6.2 dB	6.3 dB
	1 GHz - 6 GHz	4.7 dB			5.2 dB
	6 GHz - 18 GHz	4.9 dB			5.5 dB
10 m	9 kHz - 30 MHz	3.4 dB	3.4 dB	3.4 dB	Not Defined
	30 MHz - 200 MHz (Horizontal)	4.6 dB	4.8 dB	4.8 dB	6.3 dB
	(Vertical)	4.6 dB	4.8 dB	4.8 dB	6.3 dB
	200 MHz - 1000 MHz (Horizontal)	4.7 dB	5.0 dB	5.0 dB	6.3 dB
	(Vertical)	4.8 dB	5.0 dB	5.0 dB	6.3 dB

Antenna Terminal Voltage

	Uncertainty (+/-)	Ucisp (±)
30 MHz - 1000 MHz	4.1 dB	Not Defined
1 GHz - 2.15 GHz	3.7 dB	Not Defined

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3.6 Test Location

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FCC Test Firm Registration Number: 788329

	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Other rooms
No.1 open area test site	-	40 x 20	-
No.2 open area test site	-	20 x 18	-
No.3 open area test site	-	20 x 18	-
No.1 shielded room	5.5 x 6.4 x 2.7	5.5 x 6.4	-
No.2 shielded room	4.5 x 3.6 x 2.7	4.5 x 3.6	-
No.3 shielded room	3.6 x 7.2 x 2.4	3.6 x 7.2	-
No.4 shielded room	5.5 x 5.0 x 2.4	4.35 x 3.35	-
No.5 shielded room	5.5 x 4.3 x 2.5	5.54 x 3.0	-
No.6 shielded room	5.2 x 3.2 x 2.9	5.2 x 3.2	-
No.7 shielded room	9.3 x 3.4 x 2.7	9.3 x 3.4	-
No.1 EMS lab. (Full-anechoic chamber)	5.0 x 8.0 x 3.5	-	-
No.2 EMS lab. (Full-anechoic chamber)	4.0 x 7.0 x 3.5	-	-

3.7 Test result

Refer to APPENDIX 2.

SECTION 4: Operation of EUT during testing

4.1 Operating modes

The EUT exercise program used during testing was designed to exercise the various system components in a manner similar to typical use.

Test sequence is used:

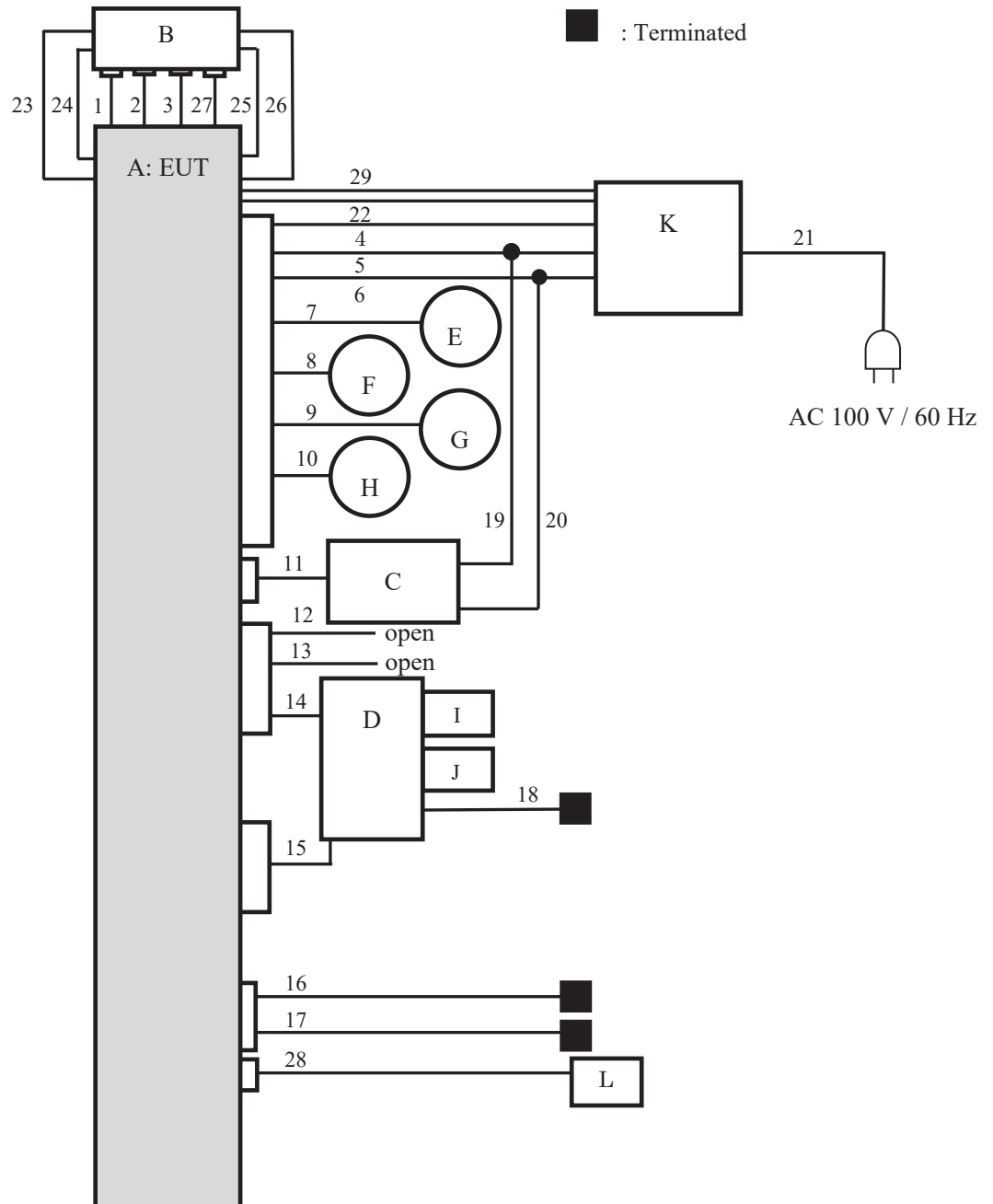
for Radiated emission	1. FM Reception Analog (87 MHz / 97.5 MHz / 108 MHz) (Main /Sub) Local / other
for Antenna Terminal	1. FM Reception Analog (Main / sub)

Software: MSoC:VerF67WHM010-708

Justification: The system was configured in typical fashion (as a customer would normally use it) for testing.

4.2 Configuration and peripherals

[RE: Radiated emission]



*Cabling and setup were taken into consideration and test data was taken under worse case conditions.

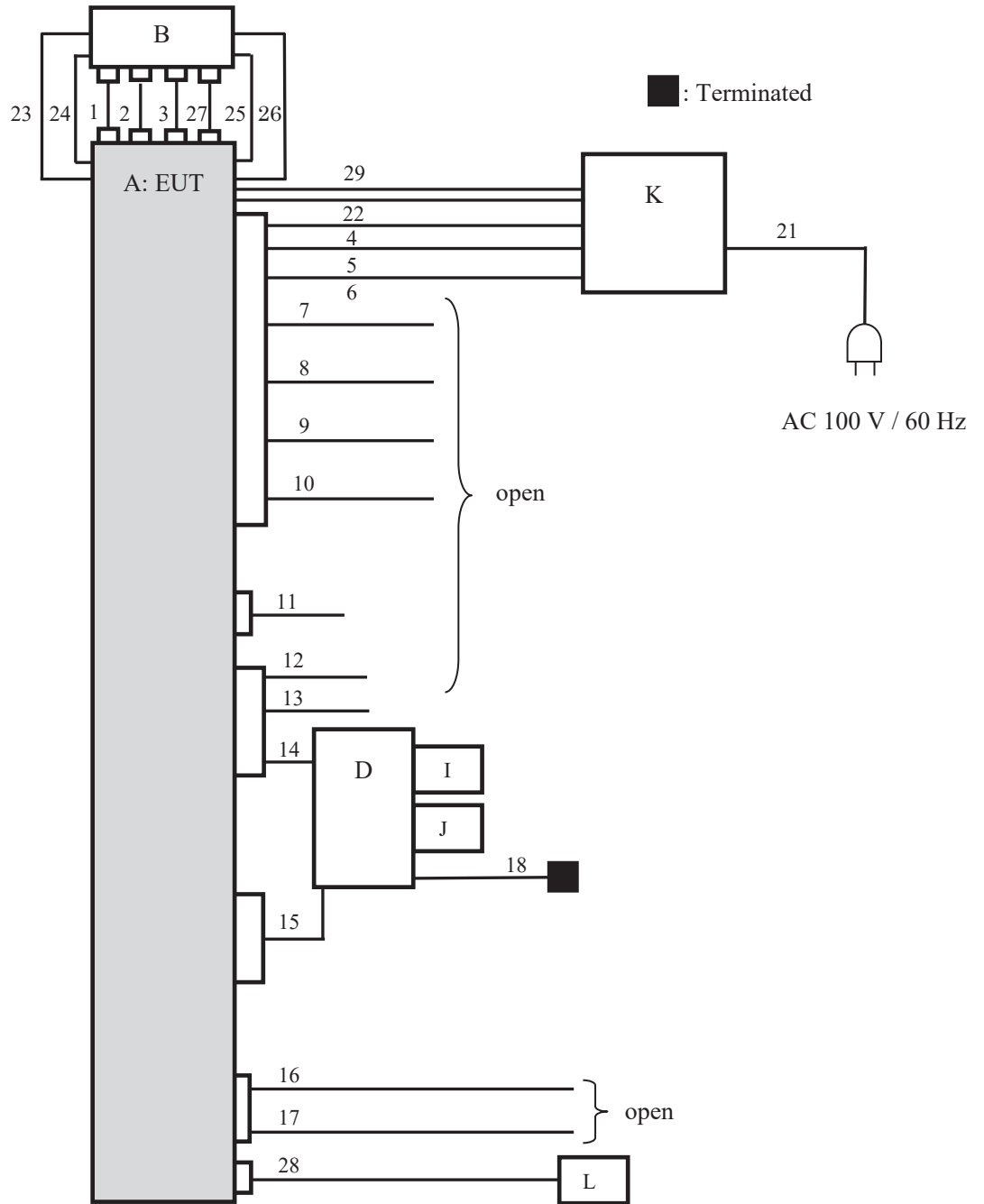
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[AT: Antenna power conduction]



*Cabling and setup were taken into consideration and test data was taken under worse case conditions.

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Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	Cockpit Control Unit	DNNS124	CP1.5-K3-TM3-ROW-High-205	DENSO CORPORATION	EUT
B	Center Information Display	DNNS132	GZ1-SD-HM LHD-077	DENSO CORPORATION	-
C	Meter	85002AN02A	-	DENSO CORPORATION	-
D	AUX-BOX	86257 AN00A	No.2	HOSIDEN	-
E	Speaker L	7b307a	No.7	DENSO CORPORATION	-
F	Speaker R	7b307a	No.8	DENSO CORPORATION	-
G	Speaker Rear L	20FHI-SPRE-03	No.16	DENSO CORPORATION	-
H	Speaker Rear R	20FHI-SPRE-03	No.22	DENSO CORPORATION	-
I	USB Memory	USM4GU B	14625B-1	SONY	-
J	USB Memory	USM4GU B	14625B-2	SONY	-
K	DC Power supply	PAN55-6	BK000161	KIKUSUI	-
L	GPS Antenna	86277AL150	03590040	SUBARU	-

List of cables used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	CCU-CID-POW	0.2	Unshielded	Unshielded	-
2	CCU-CID-LVDS	0.2	Unshielded	Unshielded	-
3	CCU-CID-BT	0.2	Unshielded	Unshielded	-
4	DC power (+B)	1.8	Unshielded	Unshielded	-
5	DC power (+IG)	1.8	Unshielded	Unshielded	-
6	DC power (GND)	1.8	Unshielded	Unshielded	-
7	Speaker L	1.8	Unshielded	Unshielded	-
8	Speaker R	1.8	Unshielded	Unshielded	-
9	Speaker Rear L	1.8	Unshielded	Unshielded	-
10	Speaker Rear R	1.8	Unshielded	Unshielded	-
11	Meter	3.0	Unshielded	Unshielded	-
12	USB (Blue)	1.5	Shielded	Shielded	-
13	USB (Brown)	0.15	Shielded	Shielded	-
14	USB (Green)	0.35	Shielded	Shielded	-
15	Power Supply	1.0	Unshielded	Unshielded	-
16	FM	2.0	Shielded	Shielded	-
17	FM	2.0	Shielded	Shielded	-
18	Mini Jack	2.0	Unshielded	Unshielded	-
19	DC power (+IG)	1.2	Unshielded	Unshielded	-
20	DC power (GND)	1.2	Unshielded	Unshielded	-
21	AC	3.0	Unshielded	Unshielded	-
22	GND	2.4	Unshielded	Unshielded	-
23	GND	0.2	Unshielded	Unshielded	-
24	GND	0.2	Unshielded	Unshielded	-
25	GND	0.1	Unshielded	Unshielded	-
26	GND	0.1	Unshielded	Unshielded	-
27	CCU-CID-Wifi	0.2	Unshielded	Unshielded	-
28	GPS	0.8	Shielded	Shielded	-
29	GND	2.4	Unshielded	Unshielded	-

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SECTION 5: Radiated emission

5.1 Operating environment

This test was carried out in open area test site.

Temperature : See data
Humidity : See data

5.2 Test configuration

EUT was placed on a table which was consisted by polystyrene foam, polypropylene foam and polycarbonate of nominal size, 1 m by 1.5 m, raised 0.8 m above the conducting ground plane.

The rear of EUT and its peripherals was aligned and flushed with rear of tabletop.

I/O cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle and were hanged 0.4 m height to the ground plane.

The measurements were performed for vertical or horizontal antenna polarization or both as necessary. The measurement antenna was varied in height above the conducting ground plane to obtain the maximum signal strength.

Photographs of the set up are shown in APPENDIX 1.

5.3 Test conditions

Frequency range : 30 MHz - 30000 MHz
Test distance : 3 m
EUT position : Table top

5.4 Test procedure

<Below 1 GHz>

The Radiated Electric Field Strength intensity has been measured on open area test site with a ground plane at a distance of 3 m*.

* Measuring distance

The boundary of the EUT is defined by an imaginary circular periphery.

Pre check measurements were performed in a screened room with a search coil at 30 MHz-1000 MHz to distinguish disturbances of EUT from the ambient noise

Measurements were performed with a quasi-peak detector.

The measuring antenna height was varied between 1 m and 4 m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.

The measurements were performed for vertical or horizontal antenna polarization or both as necessary.

<Above 1 GHz>

The Radiated Electric Field Strength intensity has been measured on open area test site with a ground plane.

The distance is shown in APPENDIX 2.

Pre check measurements were performed in a screened room with a horn antenna at 1000 MHz - 30000 MHz to distinguish disturbances of EUT from the ambient noise.

Measurements were performed with a Peak detector and an average detector.

Test antenna was aimed at the EUT for receiving the maximum signal and always kept within the illumination area of the 3 dB beamwidth of the antenna.

EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.

The measurements were performed for vertical or horizontal antenna polarization or both as necessary.

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The radiated emission measurements were made with the following detector function.

Frequency	: 30 MHz - 1000 MHz	1000 MHz - 26500 MHz *1)	26500 MHz - 30000 MHz *1)
Instrument us	: Test Receiver	Test Receiver	Spectrum Analyzer
Detector Type	: QP	AV	PK
IF Band width	: 120 kHz	1 MHz	1 MHz
			RBW: 1 MHz
			VBW: 3 MHz
			RBW: 1 MHz
			VBW: 10 Hz

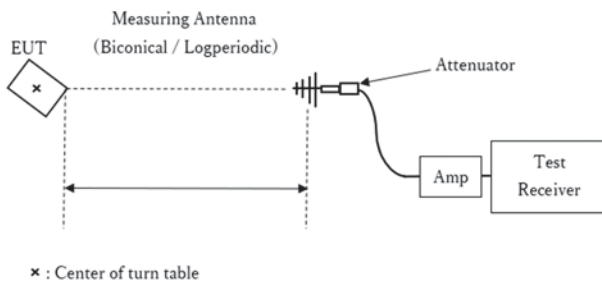
*1) The measurement data was adjusted to a 3 m distance using the following Distance Factor.

Distance factor: $20 \log (\text{Actual distance} / 3 \text{ m})$

Distance factor and actual distance are shown in APPENDIX 2

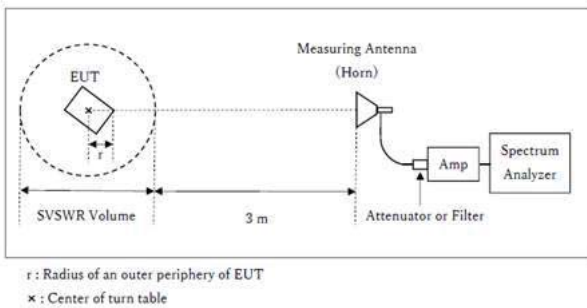
Figure 1: Test Setup

Below 1 GHz



Test Distance: 3 m

1 GHz - 30 GHz



Distance Factor: $20 \times \log (3.45 \text{ m}^*/3.0 \text{ m}) = 1.21 \text{ dB}$

* Test Distance: $(3 + \text{SVSWR} / 2) - r = 3.45 \text{ m}$

SVSWR: 2.5 m

(SVSWR has been calibrated based on CISPR 16-1-4.)

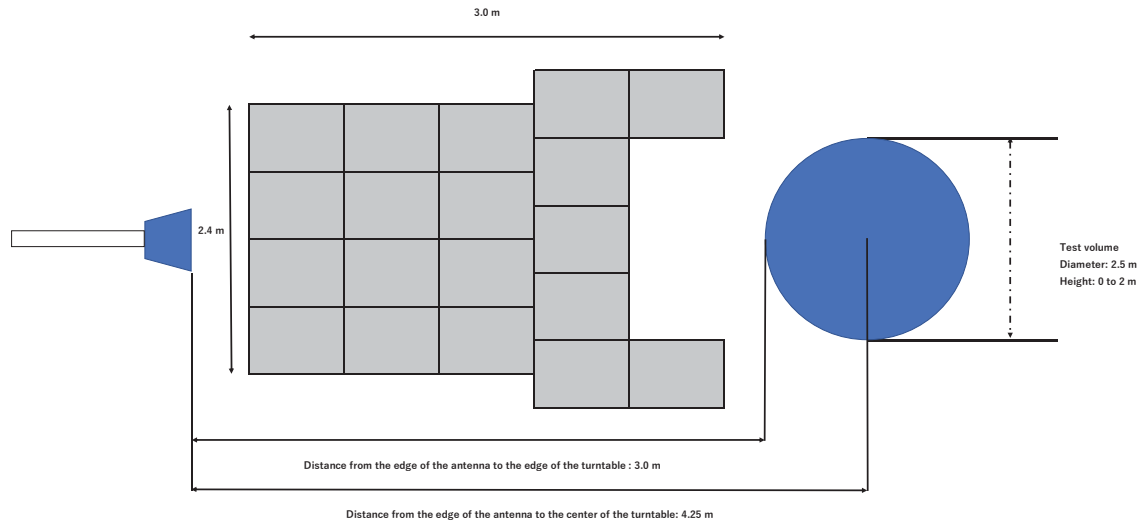
$r = 0.80 \text{ m}$

5.5 Results

Summary of the test results: Pass

Figure. Absorber arrangement

2Site



SECTION 6: Antenna Terminal

6.1 Operating environment

This test was carried out in shielded room.

Temperature : See data
Humidity : See data

6.2 Test configuration

EUT was placed on a wooden table of nominal size, 1.0 m by 1.5 m, raised 0.8 m from the ground. Photographs of the set up are shown in APPENDIX 1.

6.3 Test conditions

Frequency range : 30 MHz - 30000 MHz
Test distance : N/A
EUT position : Table top

6.4 Test procedure

The Antenna Terminal was measured with a spectrum analyzer connected to the antenna port.

The radiated emission measurements were made with the following detector function.

Frequency	: 30 MHz - 1000 MHz	1000 MHz - 30000 MHz
Instrument used	: Spectrum Analyzer	Spectrum Analyzer
Detector Type	: PK	PK
IF Band width	: RBW: 100 kHz / VBW: 300 kHz	RBW: 1 MHz / VBW: 3 MHz

6.5 Results

Summary of the test results: Pass

DATA OF RADIATED DISTURBANCE TEST

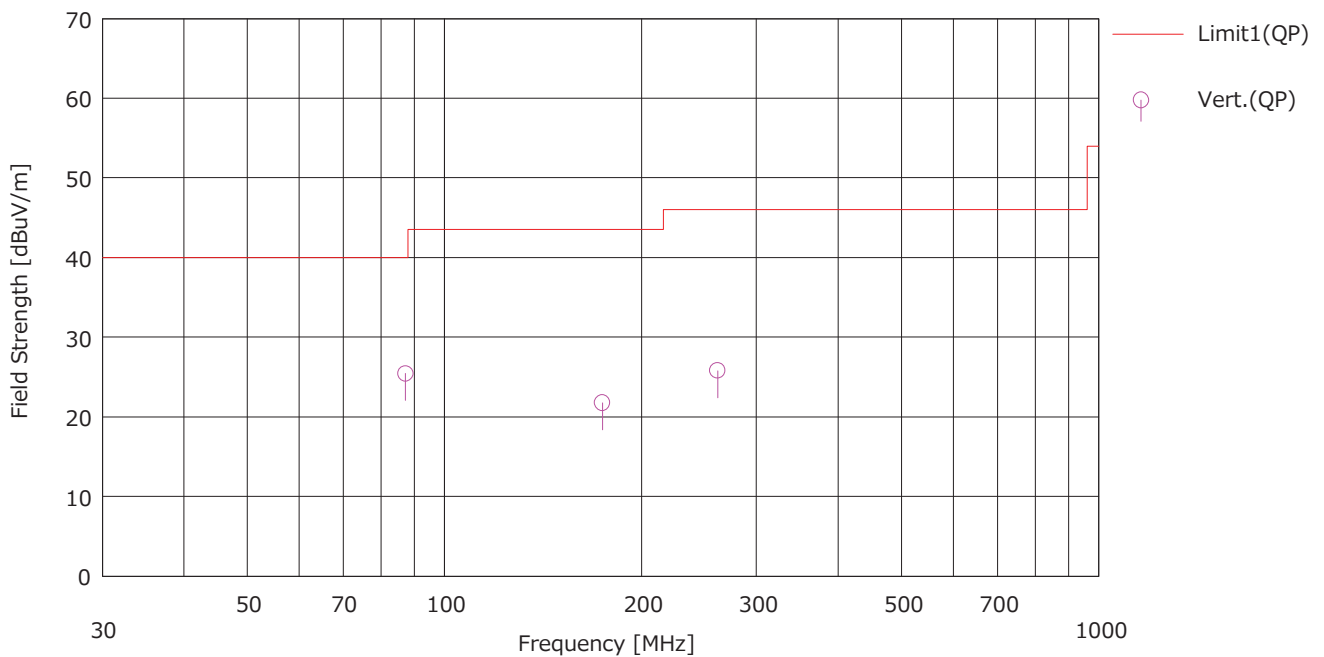
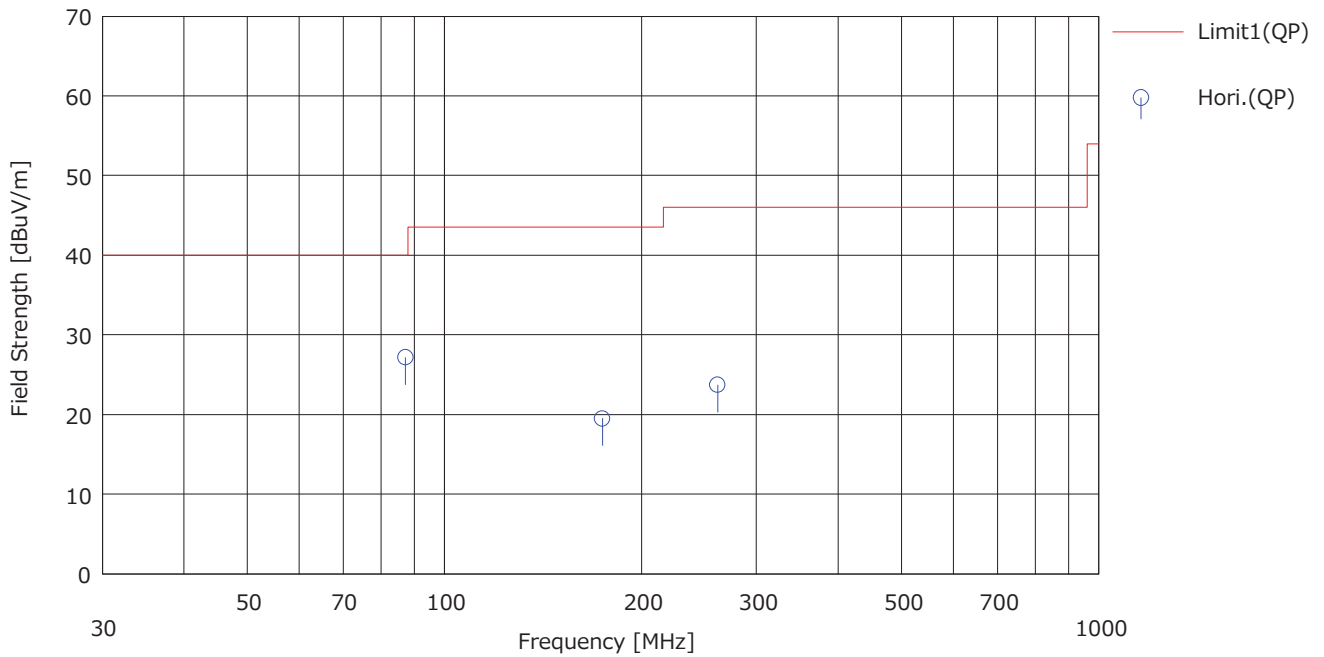
UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
 Date :11/09/2021

Mode : 1.FM Reception Analog (87 MHz)
 Order No. : 14071548
 Power : DC 13.2 V
 Temp. / Humi. : 25 deg. C / 64 % RH

Remarks : Port Main / Local Frequency

Limit : FCC Part 15B CLASS B (3m)

Engineer : Seigo Kakehi



DATA OF RADIATED DISTURBANCE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
Date :11/09/2021

Mode : 1.FM Reception Analog (87 MHz)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 25 deg. C / 64 % RH

Remarks : Port Main / Local Frequency

Limit : FCC Part 15B CLASS B (3m)

Engineer : Seigo Kakehi

<< QP DATA >>

No.	Freq. [MHz]	Reading <QP>	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result <QP>	Limit <QP>	Margin <QP>	Pola [H/V]	Ant. Type	Comment
		[dBuV]					[dBuV/m]	[dBuV/m]	[dB]			
1	87.226	37.30	9.04	8.11	29.19	0.18	25.44	40.00	14.56	Vert.	BA	
2	87.226	39.00	9.04	8.11	29.19	0.18	27.14	40.00	12.86	Hori.	BA	
3	174.451	26.50	12.65	9.23	29.15	0.24	19.47	43.50	24.03	Hori.	BA	
4	174.451	28.80	12.65	9.23	29.15	0.24	21.77	43.50	21.73	Vert.	BA	
5	261.677	35.00	12.62	7.36	29.18	0.00	25.80	46.00	20.20	Vert.	LA	
6	261.677	32.90	12.62	7.36	29.18	0.00	23.70	46.00	22.30	Hori.	LA	

DATA OF RADIATED DISTURBANCE TEST

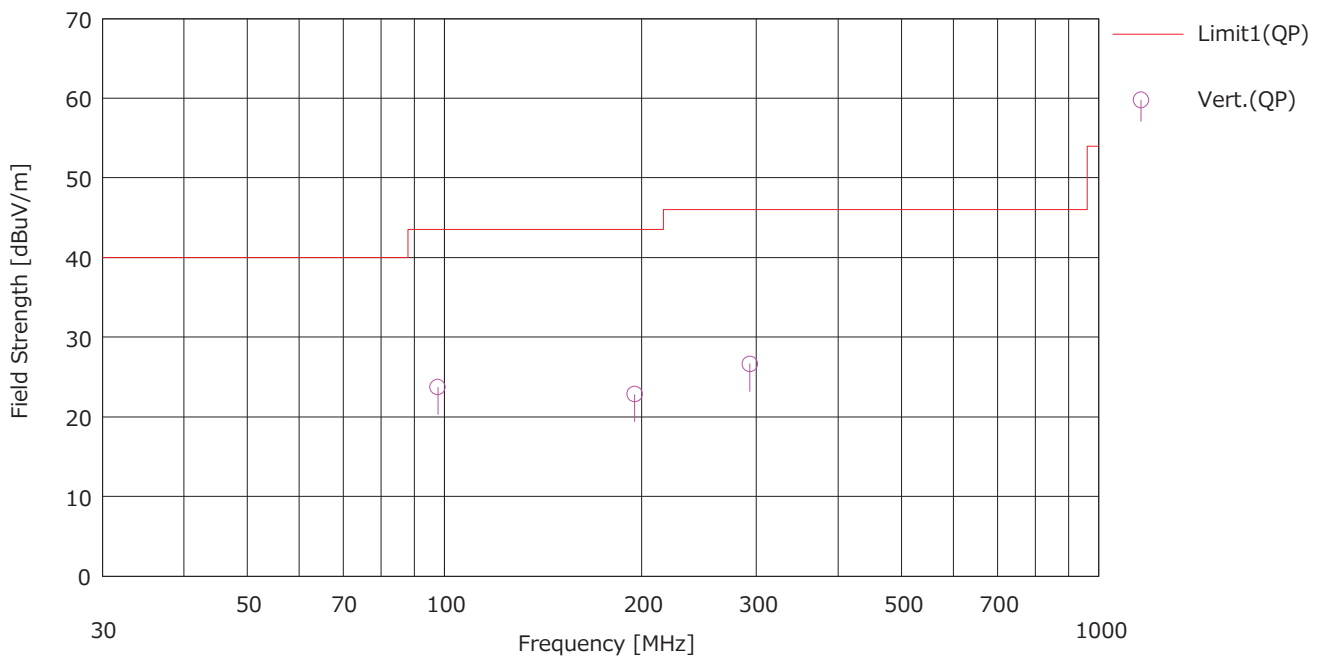
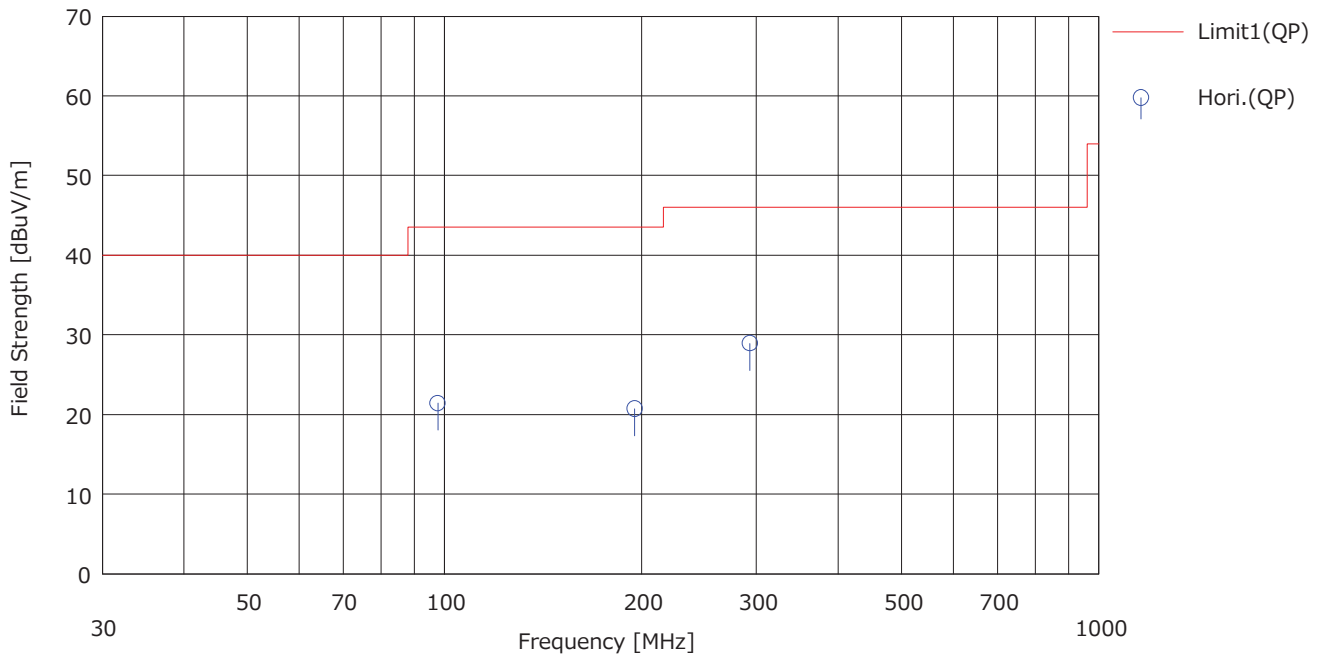
UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
 Date :11/09/2021

Mode : 1.FM Reception Analog (97.5 MHz)
 Order No. : 14071548
 Power : DC 13.2 V
 Temp. / Humi. : 25 deg. C / 64 % RH

Remarks : Port Main / Local Frequency

Limit : FCC Part 15B CLASS B (3m)

Engineer : Seigo Kakehi



DATA OF RADIATED DISTURBANCE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
Date :11/09/2021

Mode : 1.FM Reception Analog (97.5 MHz)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 25 deg. C / 64 % RH

Remarks : Port Main / Local Frequency

Limit : FCC Part 15B CLASS B (3m)

Engineer : Seigo Kakehi

<< QP DATA >>

No.	Freq. [MHz]	Reading <QP>	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result <QP>	Limit <QP>	Margin <QP>	Pola [H/V]	Ant. Type	Comment
		[dBuV]					[dBuV/m]	[dB]	[dB]			
1	97.726	32.60	9.54	8.27	29.18	0.17	21.40	43.50	22.10	Hori	BA	
2	97.726	34.90	9.54	8.27	29.18	0.17	23.70	43.50	19.80	Vert.	BA	
3	195.451	28.30	14.20	9.49	29.14	-0.03	22.82	43.50	20.68	Vert.	BA	
4	195.451	26.20	14.20	9.49	29.14	-0.03	20.72	43.50	22.78	Hori	BA	
5	293.177	36.70	13.71	7.72	29.21	0.00	28.92	46.00	17.08	Hori	LA	
6	293.177	34.40	13.71	7.72	29.21	0.00	26.62	46.00	19.38	Vert.	LA	

DATA OF RADIATED DISTURBANCE TEST

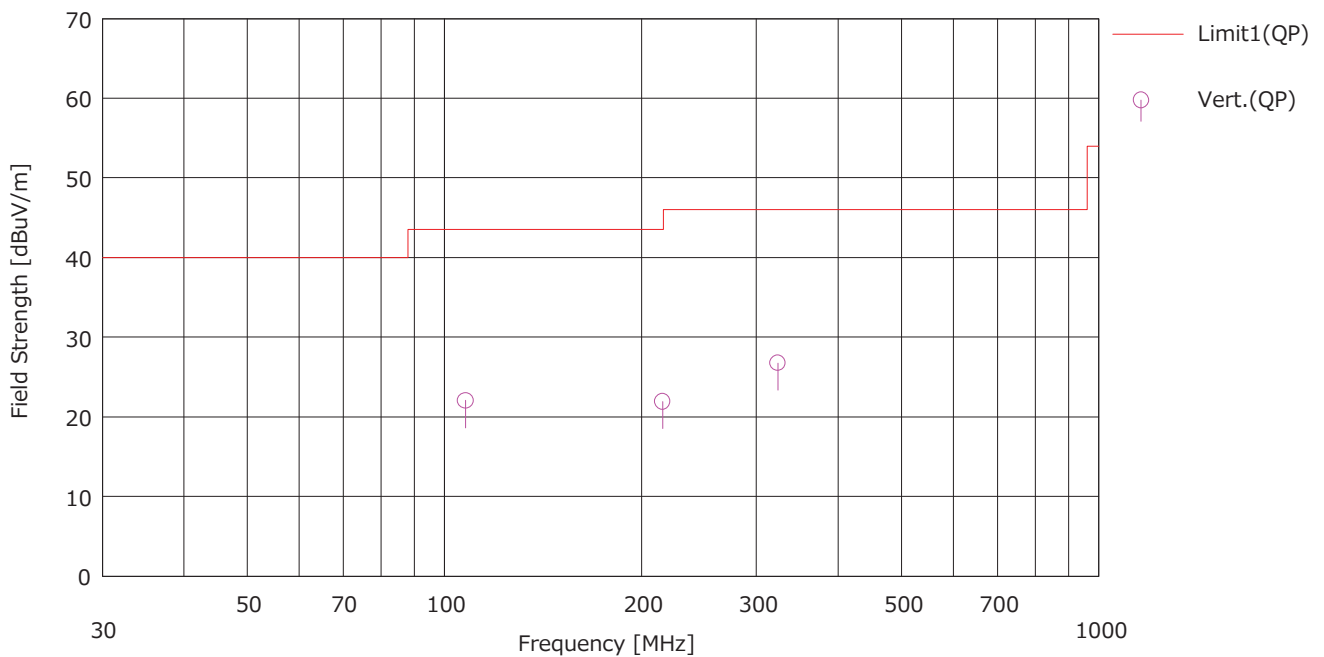
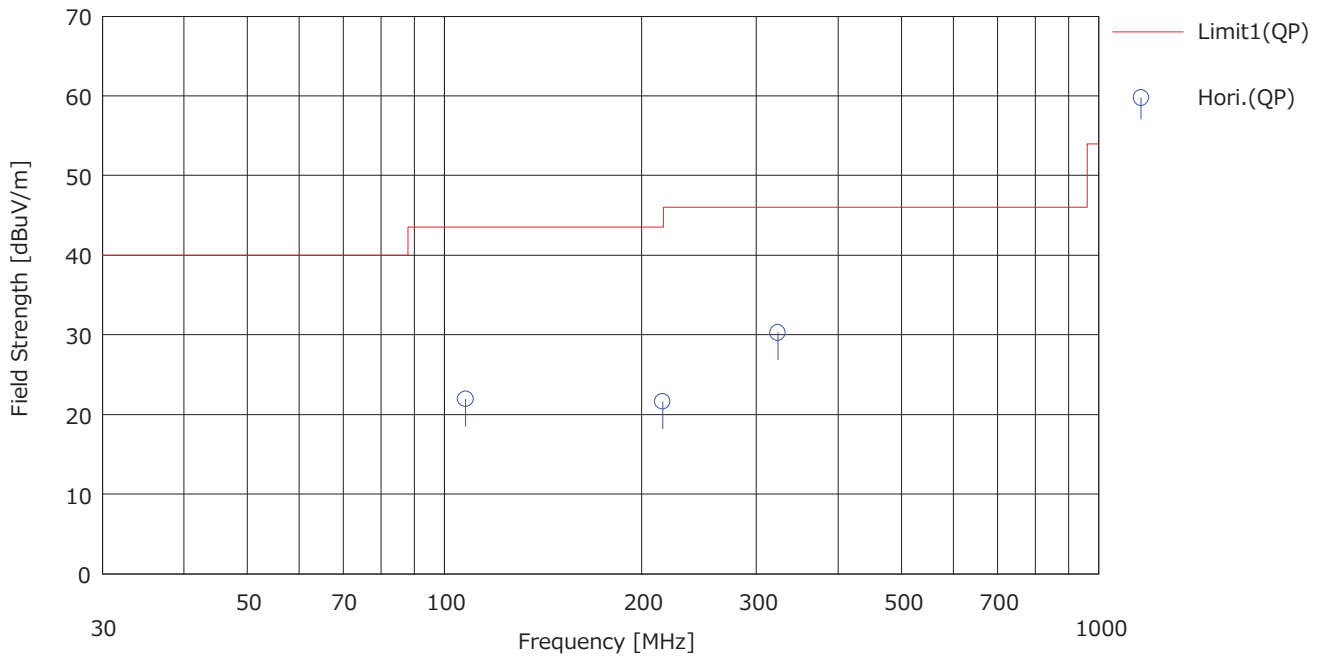
UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
 Date :11/09/2021

Mode : 1.FM Reception Analog (108 MHz)
 Order No. : 14071548
 Power : DC 13.2 V
 Temp. / Humi. : 25 deg. C / 64 % RH

Remarks : Port Main / Local Frequency

Limit : FCC Part 15B CLASS B (3m)

Engineer : Seigo Kakehi



DATA OF RADIATED DISTURBANCE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
Date :11/09/2021

Mode : 1.FM Reception Analog (108 MHz)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 25 deg. C / 64 % RH

Remarks : Port Main / Local Frequency

Limit : FCC Part 15B CLASS B (3m)

Engineer : Seigo Kakehi

<< QP DATA >>

No.	Freq. [MHz]	Reading <QP>	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result <QP>	Limit <QP>	Margin <QP>	Pola [H/V]	Ant. Type	Comment
		[dBuV]					[dBuV/m]	[dBuV/m]	[dB]			
1	107.781	32.60	10.14	8.40	29.18	0.07	22.03	43.50	21.47	Vert.	BA	
2	107.781	32.50	10.14	8.40	29.18	0.07	21.93	43.50	21.57	Hori.	BA	
3	215.562	32.60	11.35	6.82	29.15	0.00	21.62	43.50	21.88	Hori.	LA	
4	215.562	32.90	11.35	6.82	29.15	0.00	21.92	43.50	21.58	Vert.	LA	
5	323.344	33.40	14.61	7.99	29.24	0.00	26.76	46.00	19.24	Vert.	LA	
6	323.344	36.90	14.61	7.99	29.24	0.00	30.26	46.00	15.74	Hori.	LA	

DATA OF RADIATED DISTURBANCE TEST

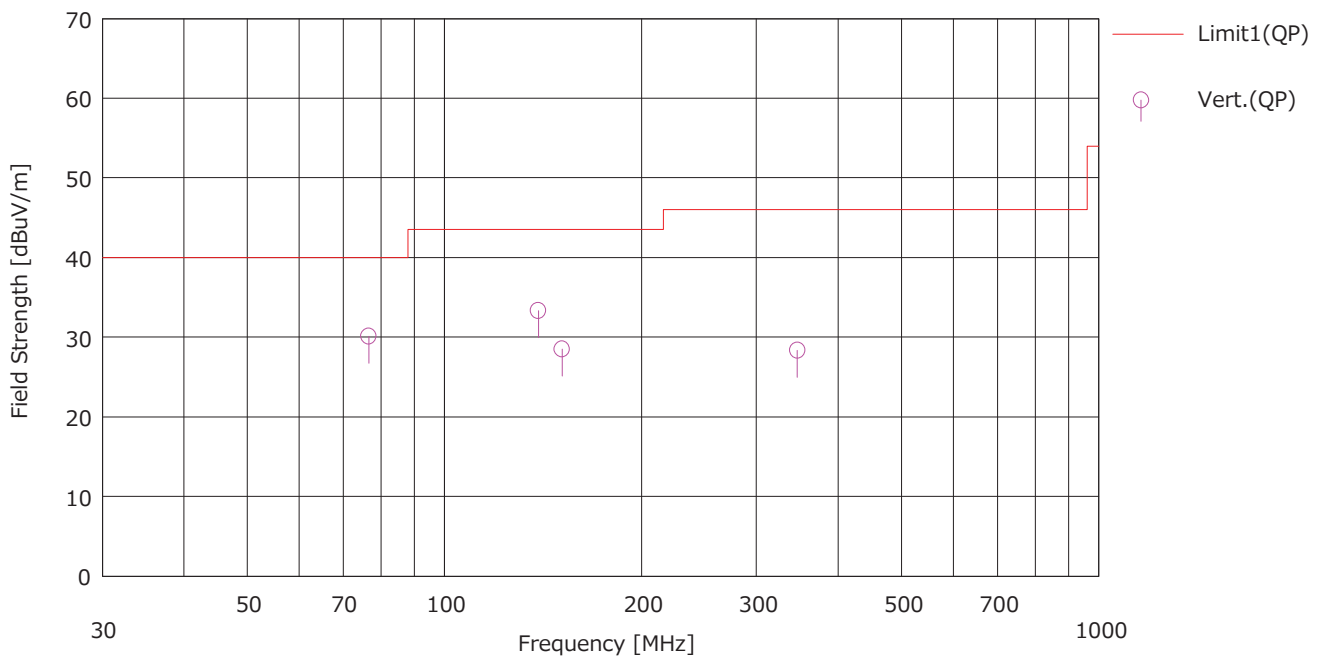
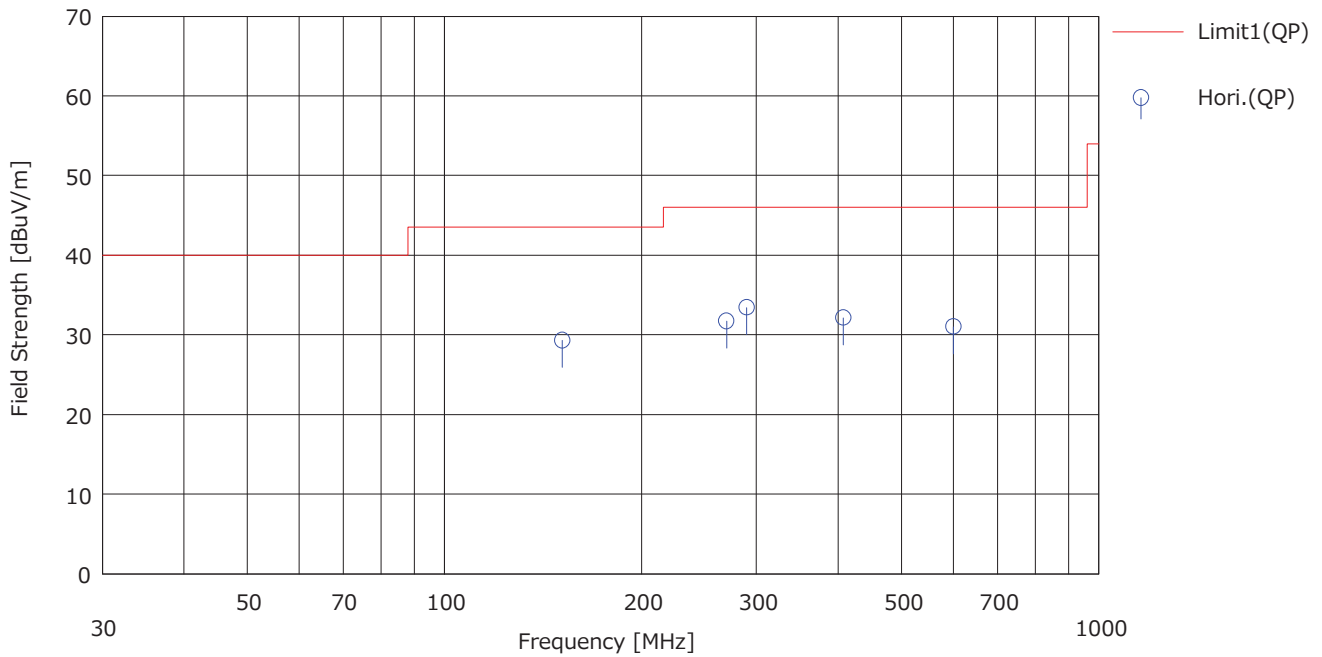
UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
 Date :11/09/2021

Mode : 1.FM Reception Analog (87 MHz)
 Order No. : 14071548
 Power : DC 13.2 V
 Temp. / Humi. : 25 deg. C / 64 % RH

Remarks : Port Main / Other

Limit : FCC Part 15B CLASS B (3m)

Engineer : Seigo Kakehi



DATA OF RADIATED DISTURBANCE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
Date :11/09/2021

Mode : 1.FM Reception Analog (87 MHz)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 25 deg. C / 64 % RH

Remarks : Port Main / Other

Limit : FCC Part 15B CLASS B (3m)

Engineer : Seigo Kakehi

<< QP DATA >>

No.	Freq. [MHz]	Reading <QP>	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result <QP>	Limit <QP>	Margin <QP>	Pola [H/V]	Ant. Type	Comment
		[dBuV]					[dBuV/m]	[dB]	[dB]			
1	76.643	42.50	8.91	7.94	29.21	-0.01	30.13	40.00	9.87	Vert.	BA	
2	139.144	42.10	11.67	8.79	29.16	-0.08	33.32	43.50	10.18	Vert.	BA	
3	151.346	36.60	12.02	8.95	29.16	0.09	28.50	43.50	15.00	Vert.	BA	
4	151.411	37.40	12.02	8.95	29.16	0.09	29.30	43.50	14.20	Hori.	BA	
5	270.014	40.20	13.25	7.45	29.19	0.00	31.71	46.00	14.29	Hori.	LA	
6	289.943	41.20	13.75	7.68	29.20	0.00	33.43	46.00	12.57	Hori.	LA	
7	346.357	34.10	15.33	8.18	29.27	0.00	28.34	46.00	17.66	Vert.	LA	
8	407.203	36.60	16.20	8.68	29.34	0.00	32.14	46.00	13.86	Hori.	LA	
9	599.840	31.20	19.37	9.97	29.52	0.00	31.02	46.00	14.98	Hori.	LA	

DATA OF RADIATED DISTURBANCE TEST

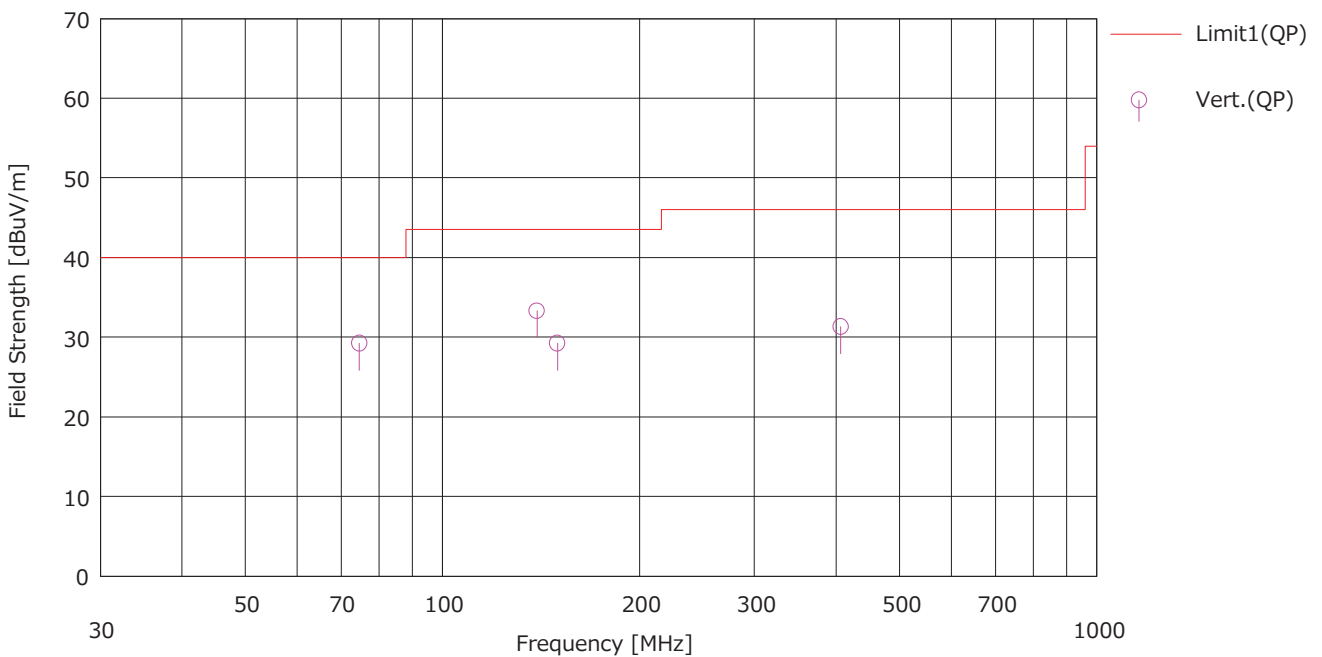
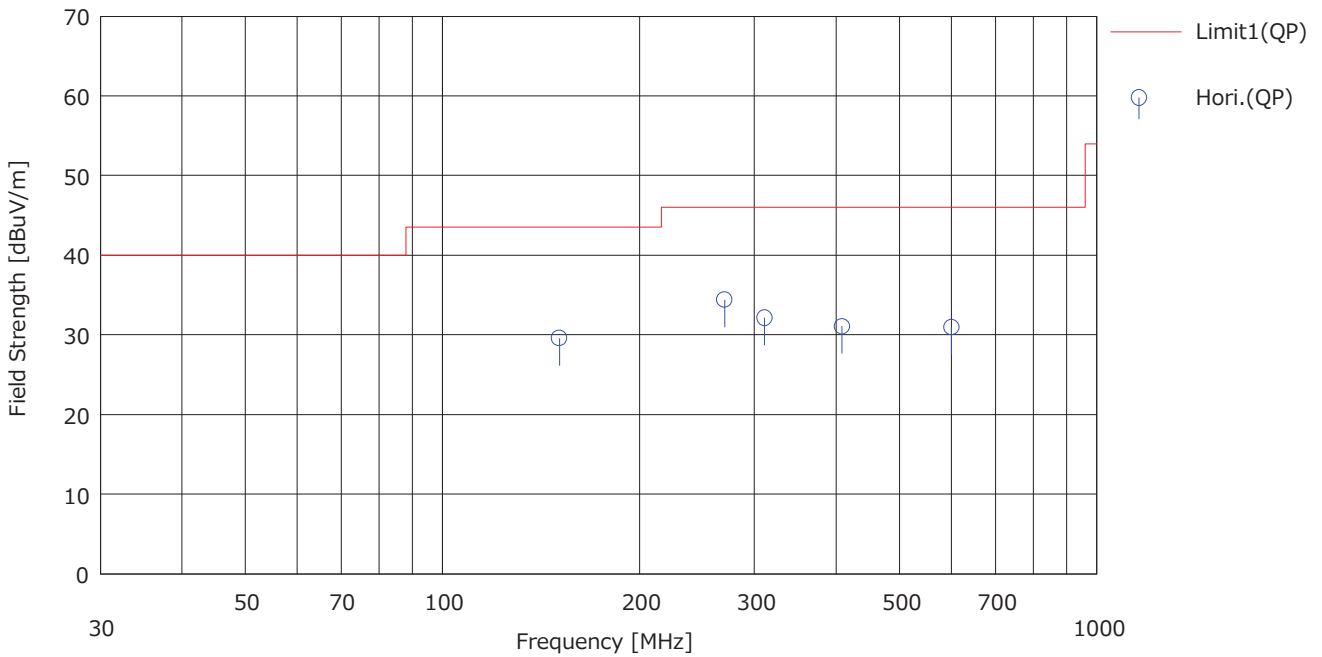
UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
 Date :11/09/2021

Mode : 1.FM Reception Analog (97.5 MHz)
 Order No. : 14071548
 Power : DC 13.2 V
 Temp. / Humi. : 25 deg. C / 64 % RH

Remarks : Port Main / Other

Limit : FCC Part 15B CLASS B (3m)

Engineer : Seigo Kakehi



DATA OF RADIATED DISTURBANCE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
Date :11/09/2021

Mode : 1.FM Reception Analog (97.5 MHz)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 25 deg. C / 64 % RH

Remarks : Port Main / Other

Limit : FCC Part 15B CLASS B (3m)

Engineer : Seigo Kakehi

<< QP DATA >>

No.	Freq. [MHz]	Reading <QP>	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result <QP>	Limit <QP>	Margin <QP>	Pola [H/V]	Ant. Type	Comment
		[dBuV]					[dBuV/m]	[dB]				
1	74.712	41.70	8.90	7.92	29.21	-0.06	29.25	40.00	10.75	Vert.	BA	
2	139.517	42.10	11.65	8.79	29.16	-0.07	33.31	43.50	10.19	Vert.	BA	
3	149.870	37.60	11.82	8.92	29.16	0.07	29.25	43.50	14.25	Vert.	BA	
4	150.960	37.70	12.03	8.94	29.16	0.08	29.59	43.50	13.91	Hori.	BA	
5	270.014	42.90	13.25	7.45	29.19	0.00	34.41	46.00	11.59	Hori.	LA	
6	310.740	39.40	14.05	7.89	29.22	0.00	32.12	46.00	13.88	Hori.	LA	
7	406.299	35.80	16.18	8.67	29.34	0.00	31.31	46.00	14.69	Vert.	LA	
8	407.925	35.50	16.21	8.68	29.34	0.00	31.05	46.00	14.95	Hori.	LA	
9	599.840	31.10	19.37	9.97	29.52	0.00	30.92	46.00	15.08	Hori.	LA	

DATA OF RADIATED DISTURBANCE TEST

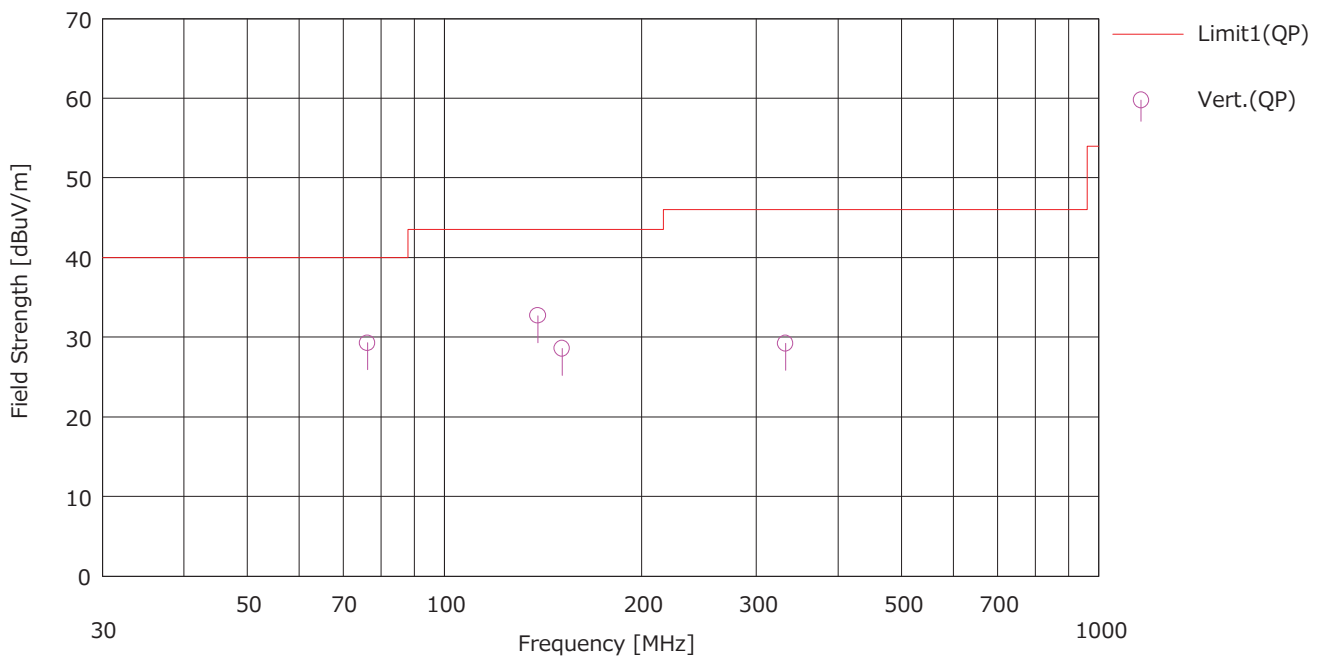
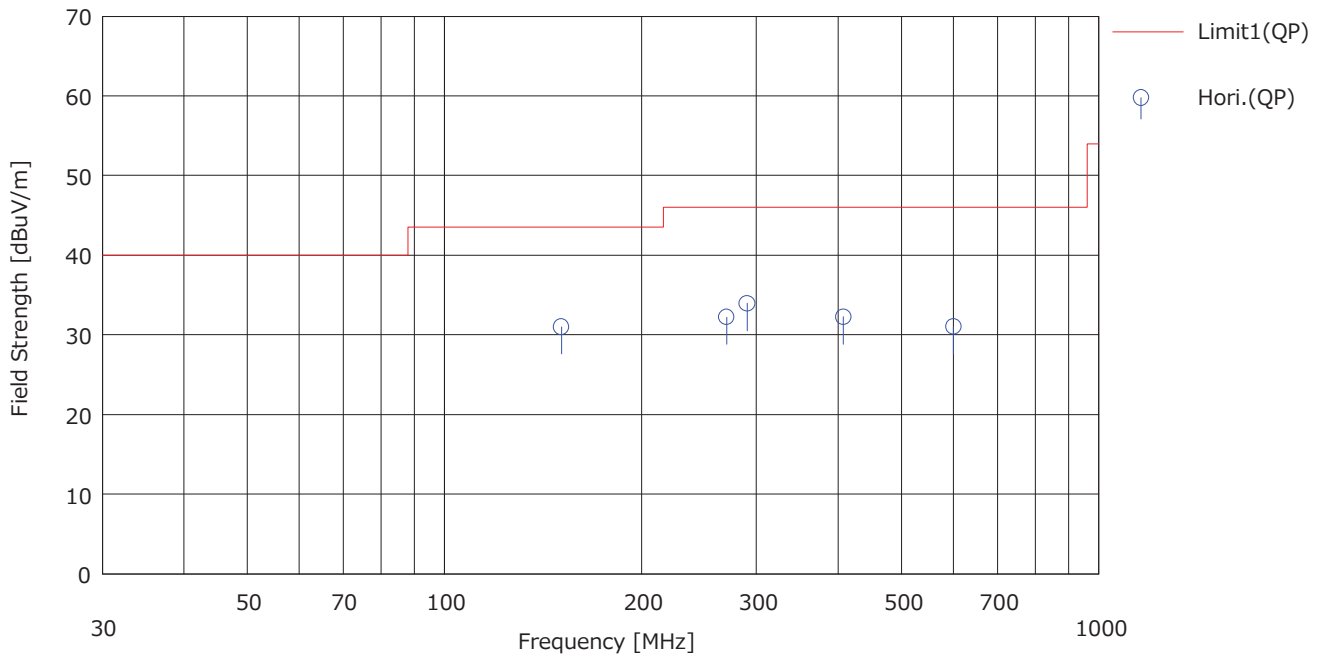
UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
 Date :11/09/2021

Mode : 1.FM Reception Analog (108 MHz)
 Order No. : 14071548
 Power : DC 13.2 V
 Temp. / Humi. : 25 deg. C / 64 % RH

Remarks : Port Main / Other

Limit : FCC Part 15B CLASS B (3m)

Engineer : Seigo Kakehi



DATA OF RADIATED DISTURBANCE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
Date :11/09/2021

Mode : 1.FM Reception Analog (108 MHz)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 25 deg. C / 64 % RH

Remarks : Port Main / Other

Limit : FCC Part 15B CLASS B (3m)

Engineer : Seigo Kakehi

<< QP DATA >>

No.	Freq. [MHz]	Reading <QP>	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result <QP>	Limit <QP>	Margin <QP>	Pola [H/V]	Ant. Type	Comment
		[dBuV]					[dBuV/m]	[dB]	[dB]			
1	76.333	41.60	8.97	7.94	29.21	-0.02	29.28	40.00	10.72	Vert.	BA	
2	138.975	41.50	11.68	8.78	29.16	-0.08	32.72	43.50	10.78	Vert.	BA	
3	150.945	39.10	12.03	8.94	29.16	0.08	30.99	43.50	12.51	Hori.	BA	
4	151.313	36.70	12.02	8.95	29.16	0.09	28.60	43.50	14.90	Vert.	BA	
5	270.014	40.70	13.25	7.45	29.19	0.00	32.21	46.00	13.79	Hori.	LA	
6	290.343	41.70	13.74	7.69	29.20	0.00	33.93	46.00	12.07	Hori.	LA	
7	332.338	35.40	15.01	8.07	29.25	0.00	29.23	46.00	16.77	Vert.	LA	
8	407.163	36.70	16.20	8.68	29.34	0.00	32.24	46.00	13.76	Hori.	LA	
9	599.840	31.20	19.37	9.97	29.52	0.00	31.02	46.00	14.98	Hori.	LA	

DATA OF RADIATED DISTURBANCE TEST

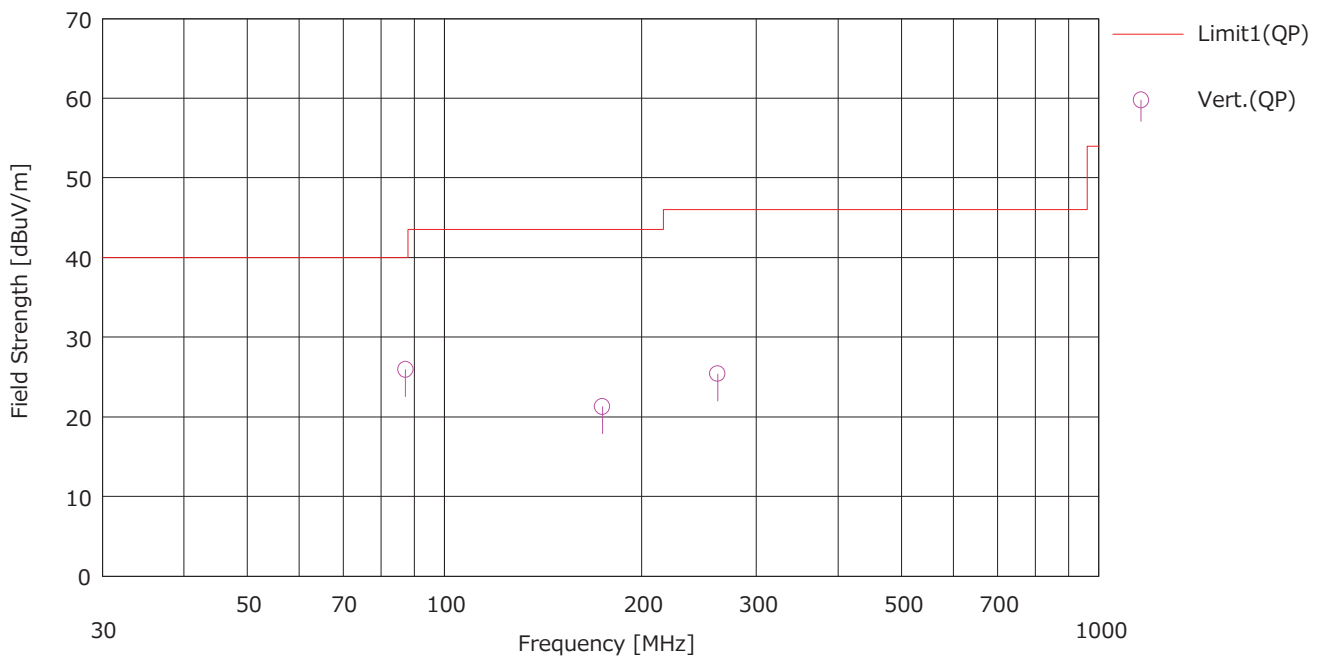
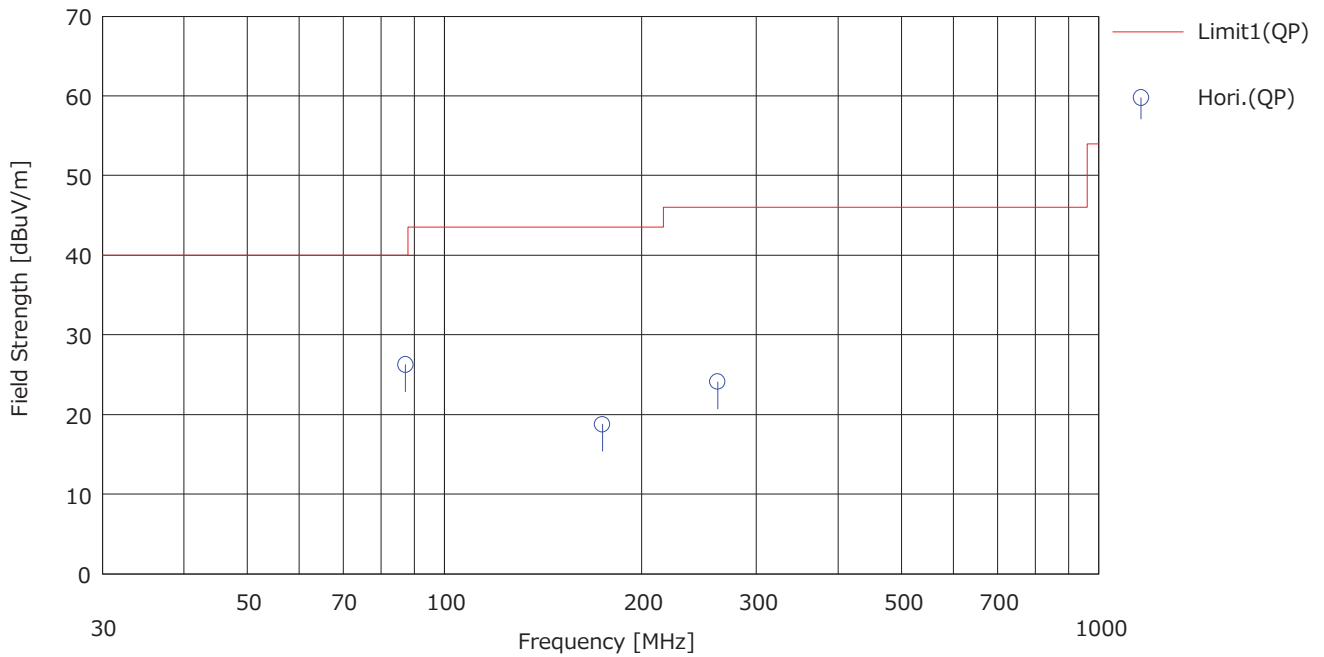
UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
 Date :11/09/2021

Mode : 1.FM Reception Analog (87 MHz)
 Order No. : 14071548
 Power : DC 13.2 V
 Temp. / Humi. : 25 deg. C / 64 % RH

Remarks : Port Sub / Local Frequency

Limit : FCC Part 15B CLASS B (3m)

Engineer : Seigo Kakehi



DATA OF RADIATED DISTURBANCE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
Date :11/09/2021

Mode : 1.FM Reception Analog (87 MHz)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 25 deg. C / 64 % RH

Remarks : Port Sub / Local Frequency

Limit : FCC Part 15B CLASS B (3m)

Engineer : Seigo Kakehi

<< QP DATA >>

No.	Freq. [MHz]	Reading <QP>	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result <QP>	Limit <QP>	Margin <QP>	Pola [H/V]	Ant. Type	Comment
		[dBuV]					[dBuV/m]	[dB]	[dB]			
1	87.226	37.80	9.04	8.11	29.19	0.18	25.94	40.00	14.06	Vert.	BA	
2	87.226	38.10	9.04	8.11	29.19	0.18	26.24	40.00	13.76	Hori	BA	
3	174.451	25.80	12.65	9.23	29.15	0.24	18.77	43.50	24.73	Hori	BA	
4	174.451	28.30	12.65	9.23	29.15	0.24	21.27	43.50	22.23	Vert.	BA	
5	261.677	34.60	12.62	7.36	29.18	0.00	25.40	46.00	20.60	Vert.	LA	
6	261.677	33.30	12.62	7.36	29.18	0.00	24.10	46.00	21.90	Hori	LA	

DATA OF RADIATED DISTURBANCE TEST

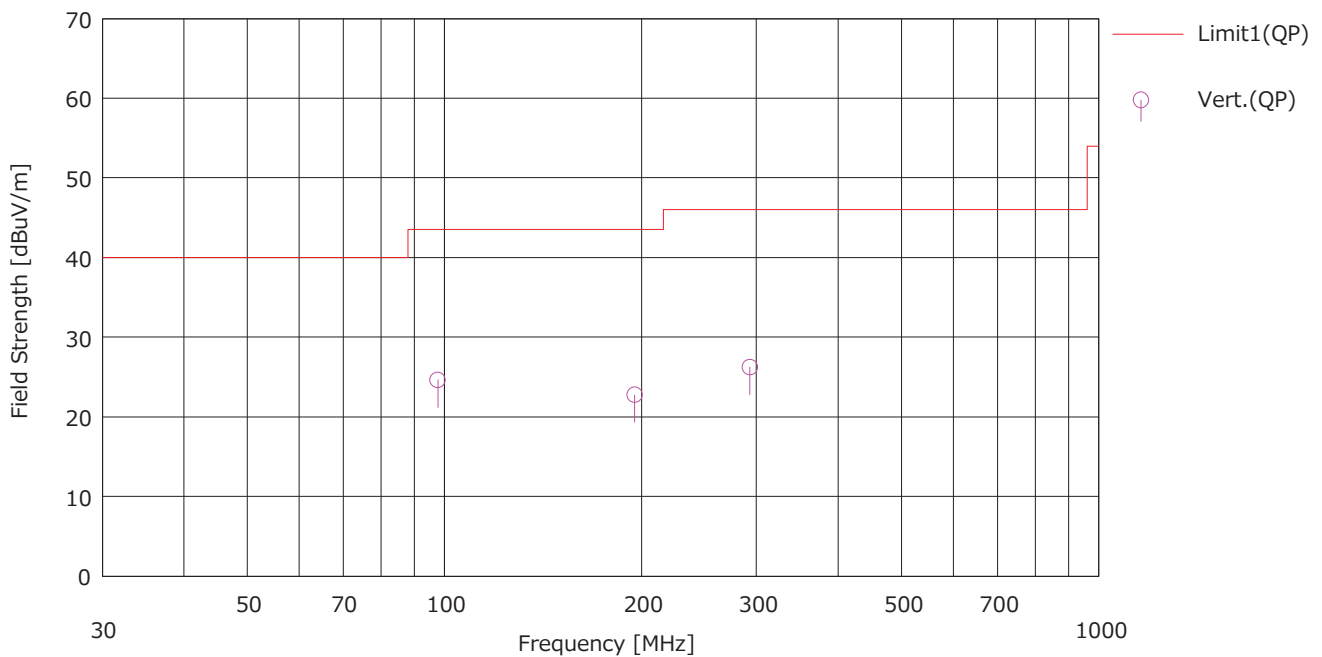
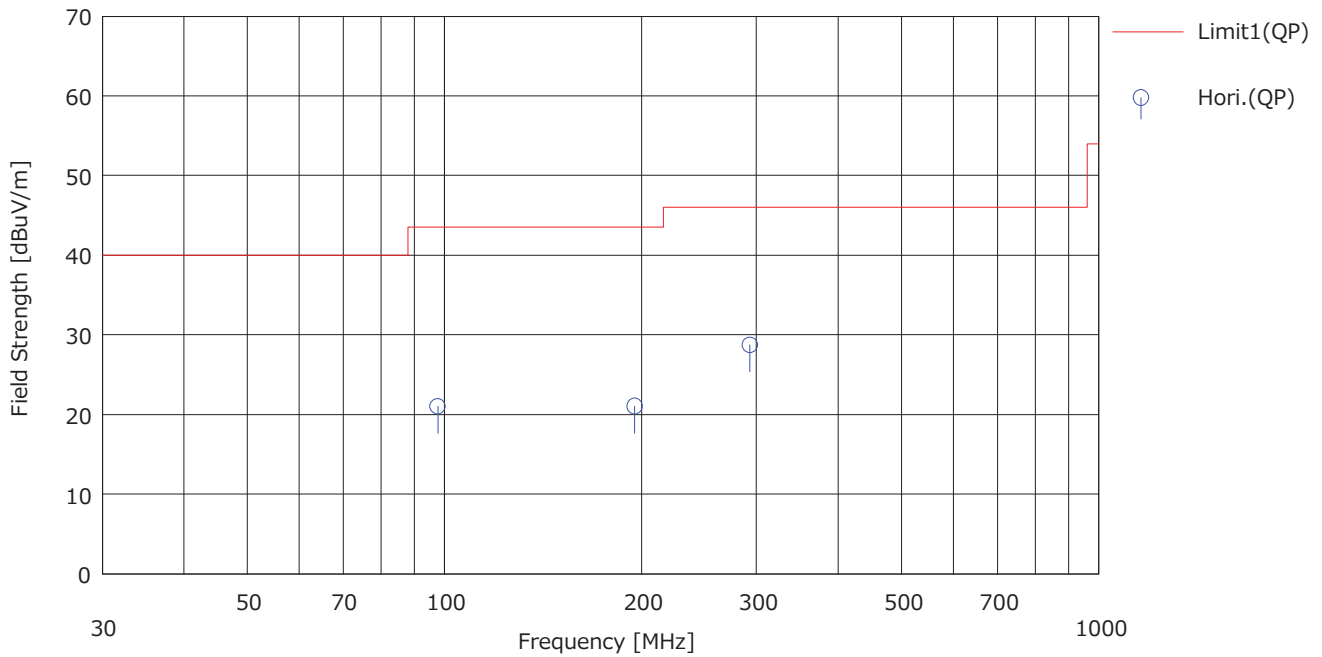
UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
 Date :11/09/2021

Mode : 1.FM Reception Analog (97.5 MHz)
 Order No. : 14071548
 Power : DC 13.2 V
 Temp. / Humi. : 25 deg. C / 64 % RH

Remarks : Port Sub / Local Frequency

Limit : FCC Part 15B CLASS B (3m)

Engineer : Seigo Kakehi



DATA OF RADIATED DISTURBANCE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
Date :11/09/2021

Mode : 1.FM Reception Analog (97.5 MHz)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 25 deg. C / 64 % RH

Remarks : Port Sub / Local Frequency

Limit : FCC Part 15B CLASS B (3m)

Engineer : Seigo Kakehi

<< QP DATA >>

No.	Freq. [MHz]	Reading <QP>	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result <QP>	Limit <QP>	Margin <QP>	Pola [H/V]	Ant. Type	Comment
		[dBuV]					[dBuV/m]	[dB]	[dB]			
1	97.726	32.20	9.54	8.27	29.18	0.17	21.00	43.50	22.50	Hori	BA	
2	97.726	35.80	9.54	8.27	29.18	0.17	24.60	43.50	18.90	Vert.	BA	
3	195.451	28.20	14.20	9.49	29.14	-0.03	22.72	43.50	20.78	Vert.	BA	
4	195.451	26.50	14.20	9.49	29.14	-0.03	21.02	43.50	22.48	Hori	BA	
5	293.177	36.50	13.71	7.72	29.21	0.00	28.72	46.00	17.28	Hori	LA	
6	293.177	34.00	13.71	7.72	29.21	0.00	26.22	46.00	19.78	Vert.	LA	

DATA OF RADIATED DISTURBANCE TEST

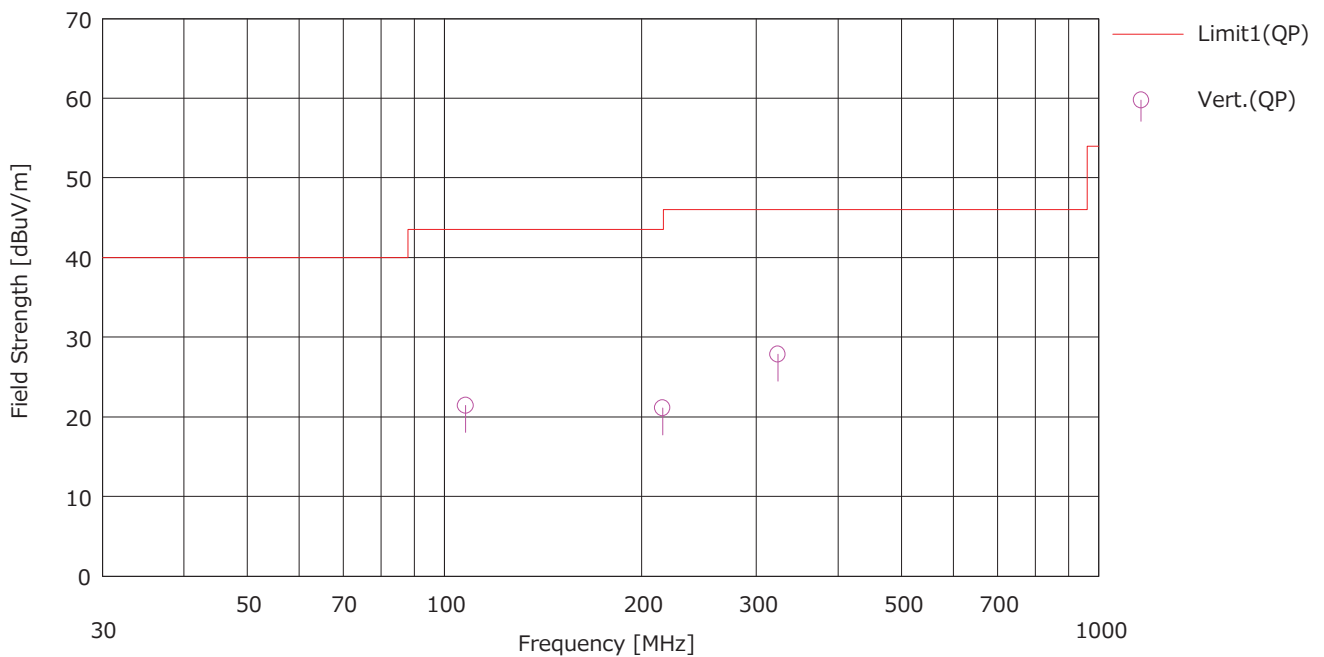
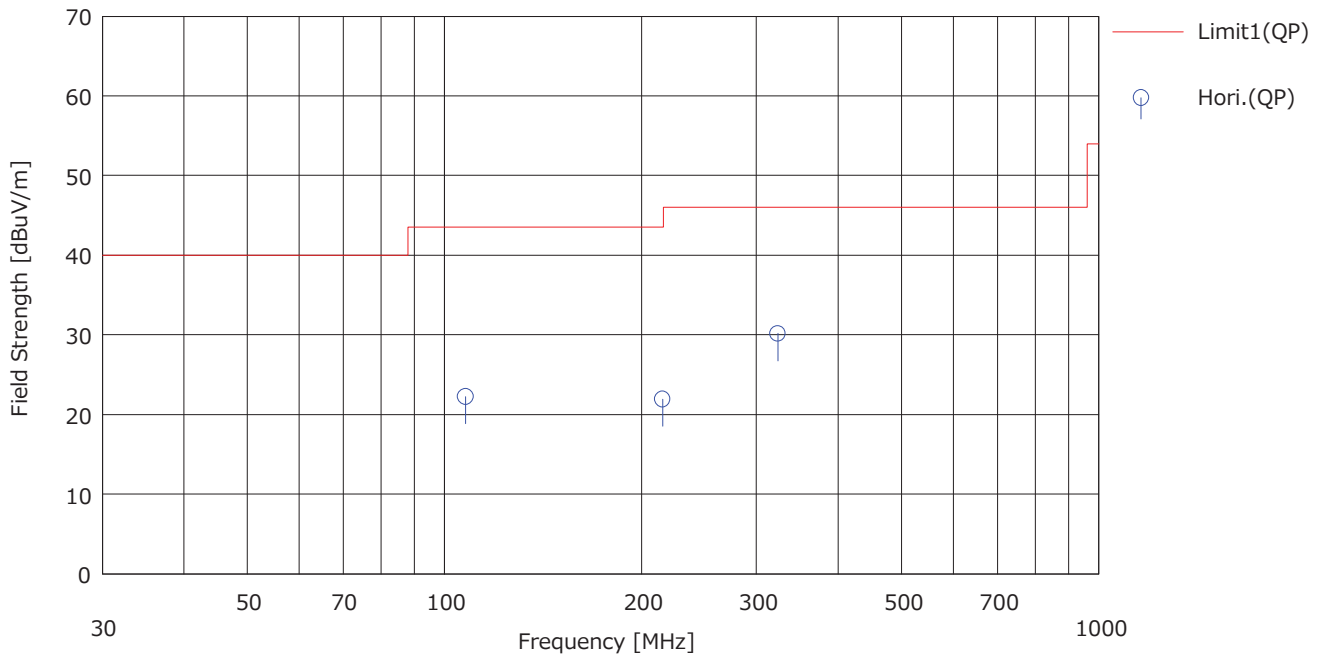
UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
 Date :11/09/2021

Mode : 1.FM Reception Analog (108 MHz)
 Order No. : 14071548
 Power : DC 13.2 V
 Temp. / Humi. : 25 deg. C / 64 % RH

Remarks : Port Sub / Local Frequency

Limit : FCC Part 15B CLASS B (3m)

Engineer : Seigo Kakehi



DATA OF RADIATED DISTURBANCE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
Date :11/09/2021

Mode : 1.FM Reception Analog (108 MHz)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 25 deg. C / 64 % RH

Remarks : Port Sub / Local Frequency

Limit : FCC Part 15B CLASS B (3m)

Engineer : Seigo Kakehi

<< QP DATA >>

No.	Freq. [MHz]	Reading <QP>	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result <QP>	Limit <QP>	Margin <QP>	Pola [H/V]	Ant. Type	Comment
		[dBuV]					[dBuV/m]	[dB]	[dB]			
1	107.781	32.00	10.14	8.40	29.18	0.07	21.43	43.50	22.07	Vert.	BA	
2	107.781	32.80	10.14	8.40	29.18	0.07	22.23	43.50	21.27	Hori.	BA	
3	215.562	32.90	11.35	6.82	29.15	0.00	21.92	43.50	21.58	Hori.	LA	
4	215.562	32.10	11.35	6.82	29.15	0.00	21.12	43.50	22.38	Vert.	LA	
5	323.344	34.50	14.61	7.99	29.24	0.00	27.86	46.00	18.14	Vert.	LA	
6	323.344	36.80	14.61	7.99	29.24	0.00	30.16	46.00	15.84	Hori.	LA	

DATA OF RADIATED DISTURBANCE TEST

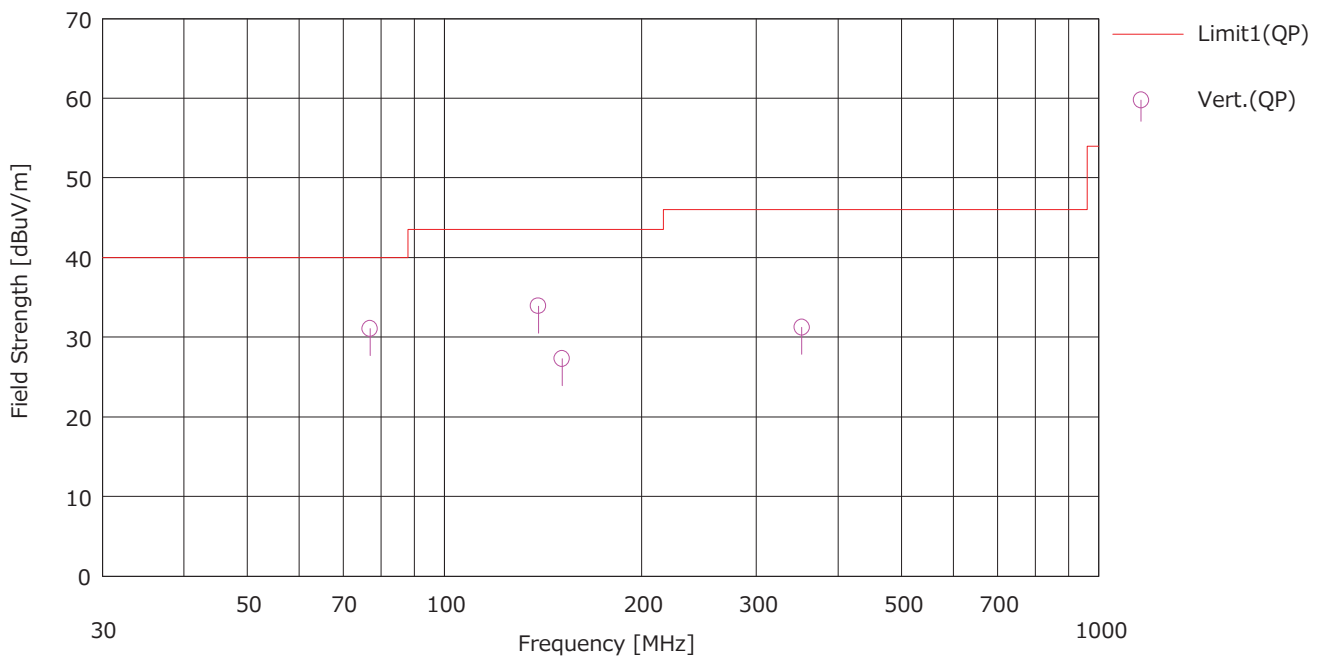
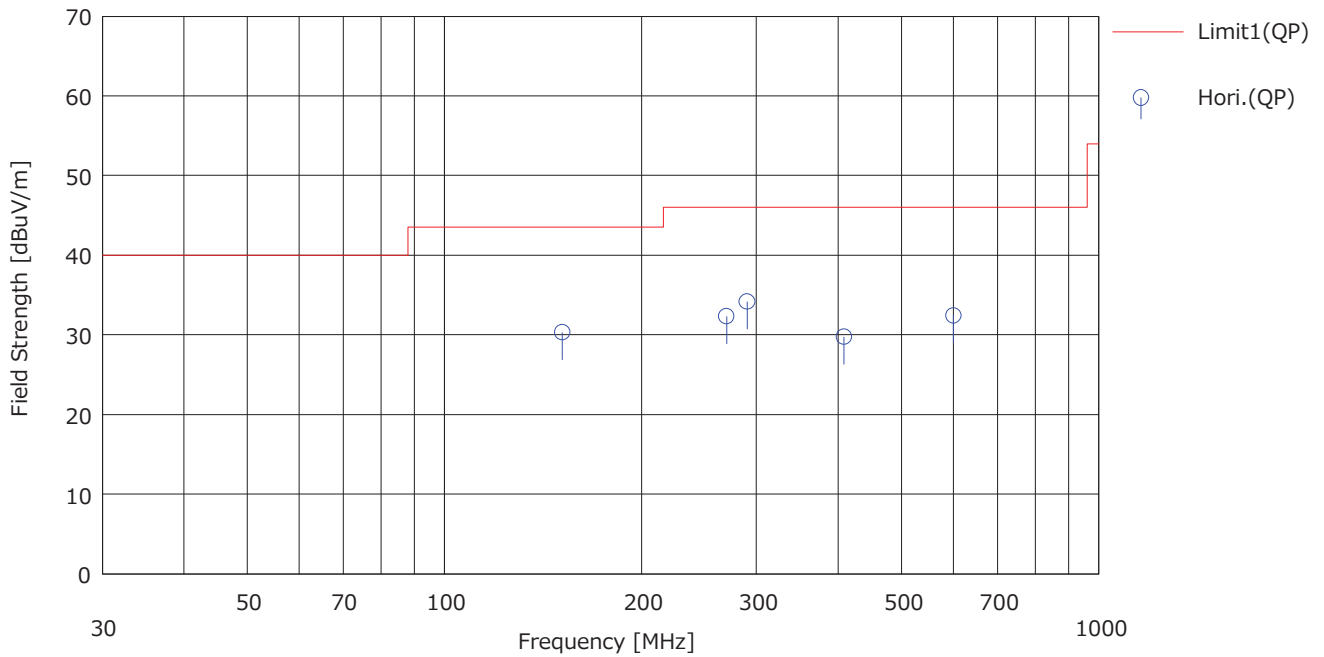
UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
 Date :11/09/2021

Mode : 1.FM Reception Analog (87 MHz)
 Order No. : 14071548
 Power : DC 13.2 V
 Temp. / Humi. : 25 deg. C / 64 % RH

Remarks : Port Sub / Other

Limit : FCC Part 15B CLASS B (3m)

Engineer : Seigo Kakehi



DATA OF RADIATED DISTURBANCE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
Date :11/09/2021

Mode : 1.FM Reception Analog (87 MHz)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 25 deg. C / 64 % RH

Remarks : Port Sub / Other

Limit : FCC Part 15B CLASS B (3m)

Engineer : Seigo Kakehi

<< QP DATA >>

No.	Freq. [MHz]	Reading <QP>	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result <QP>	Limit <QP>	Margin <QP>	Pola [H/V]	Ant. Type	Comment
		[dBuV]					[dBuV/m]	[dB]	[dB]			
1	76.993	43.50	8.84	7.95	29.21	0.00	31.08	40.00	8.92	Vert.	BA	
2	139.205	42.70	11.67	8.79	29.16	-0.08	33.92	43.50	9.58	Vert.	BA	
3	151.346	35.40	12.02	8.95	29.16	0.09	27.30	43.50	16.20	Vert.	BA	
4	151.411	38.40	12.02	8.95	29.16	0.09	30.30	43.50	13.20	Hori.	BA	
5	270.014	40.80	13.25	7.45	29.19	0.00	32.31	46.00	13.69	Hori.	LA	
6	290.343	41.90	13.74	7.69	29.20	0.00	34.13	46.00	11.87	Hori.	LA	
7	351.710	37.00	15.28	8.23	29.27	0.00	31.24	46.00	14.76	Vert.	LA	
8	408.229	34.20	16.21	8.68	29.35	0.00	29.74	46.00	16.26	Hori.	LA	
9	599.840	32.60	19.37	9.97	29.52	0.00	32.42	46.00	13.58	Hori.	LA	

DATA OF RADIATED DISTURBANCE TEST

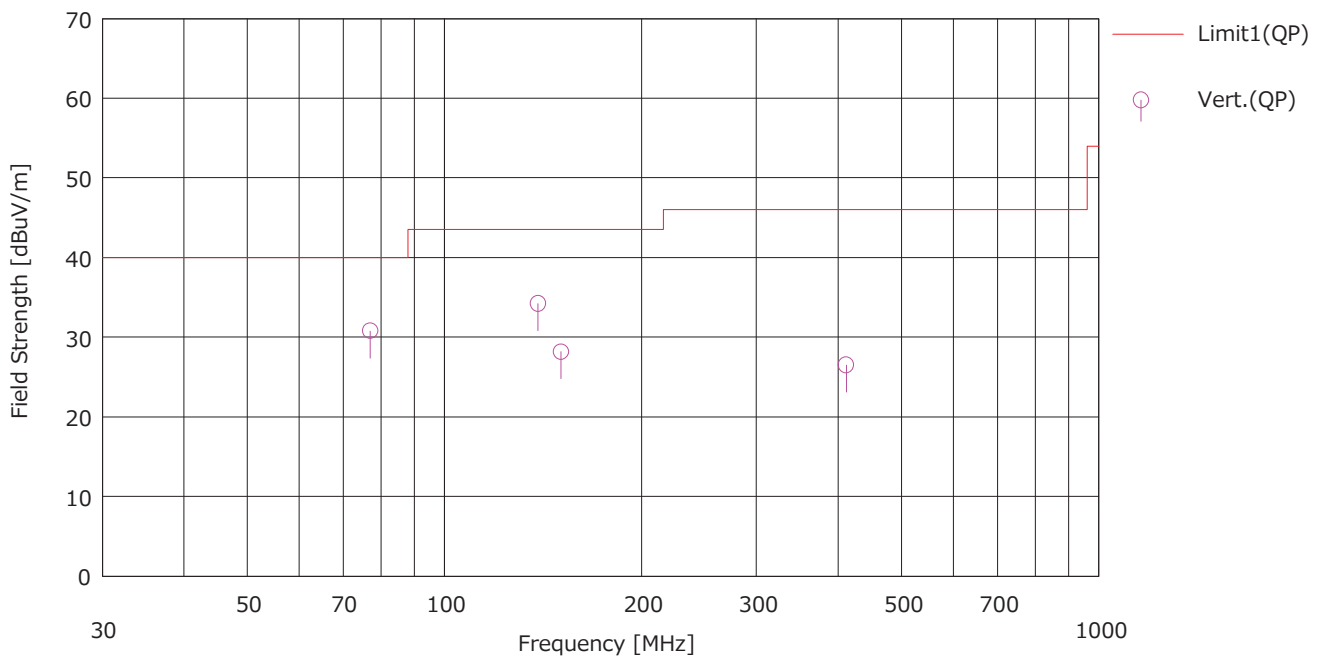
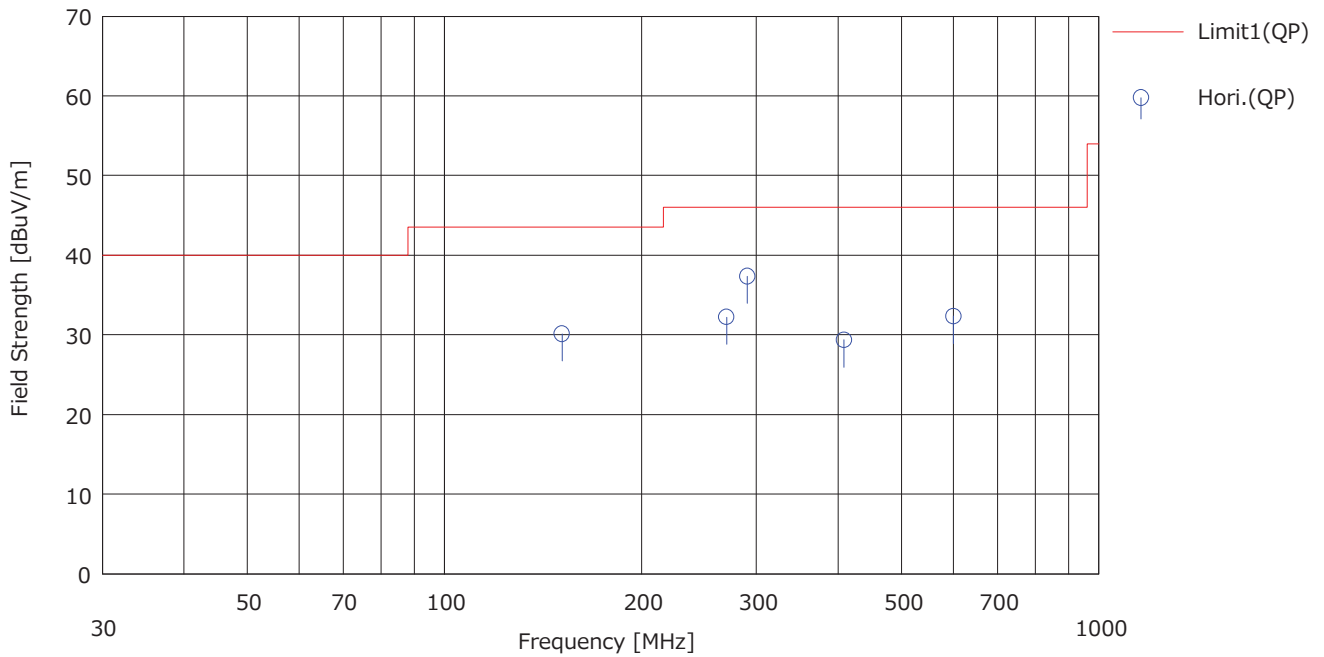
UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
 Date :11/09/2021

Mode : 1.FM Reception Analog (97.5 MHz)
 Order No. : 14071548
 Power : DC 13.2 V
 Temp. / Humi. : 25 deg. C / 64 % RH

Remarks : Port Sub / Other

Limit : FCC Part 15B CLASS B (3m)

Engineer : Seigo Kakehi



DATA OF RADIATED DISTURBANCE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
Date :11/09/2021

Mode : 1.FM Reception Analog (97.5 MHz)
Order No. : 14071548
Power : DC 13.2 V
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Remarks : Port Sub / Other

Limit : FCC Part 15B CLASS B (3m)

Engineer : Seigo Kakehi

<< QP DATA >>

No.	Freq. [MHz]	Reading <QP>	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result <QP>	Limit <QP>	Margin <QP>	Pola [H/V]	Ant. Type	Comment
		[dBuV]					[dBuV/m]	[dB]	[dB]			
1	77.035	43.20	8.84	7.95	29.21	0.00	30.78	40.00	9.22	Vert.	BA	
2	139.135	43.00	11.67	8.79	29.16	-0.08	34.22	43.50	9.28	Vert.	BA	
3	150.818	36.30	12.00	8.94	29.16	0.08	28.16	43.50	15.34	Vert.	BA	
4	151.362	38.20	12.02	8.95	29.16	0.09	30.10	43.50	13.40	Hori.	BA	
5	270.014	40.70	13.25	7.45	29.19	0.00	32.21	46.00	13.79	Hori.	LA	
6	290.520	45.10	13.74	7.69	29.20	0.00	37.33	46.00	8.67	Hori.	LA	
7	408.085	33.80	16.21	8.68	29.35	0.00	29.34	46.00	16.66	Hori.	LA	
8	411.379	30.90	16.25	8.71	29.35	0.00	26.51	46.00	19.49	Vert.	LA	
9	599.840	32.50	19.37	9.97	29.52	0.00	32.32	46.00	13.68	Hori.	LA	

DATA OF RADIATED DISTURBANCE TEST

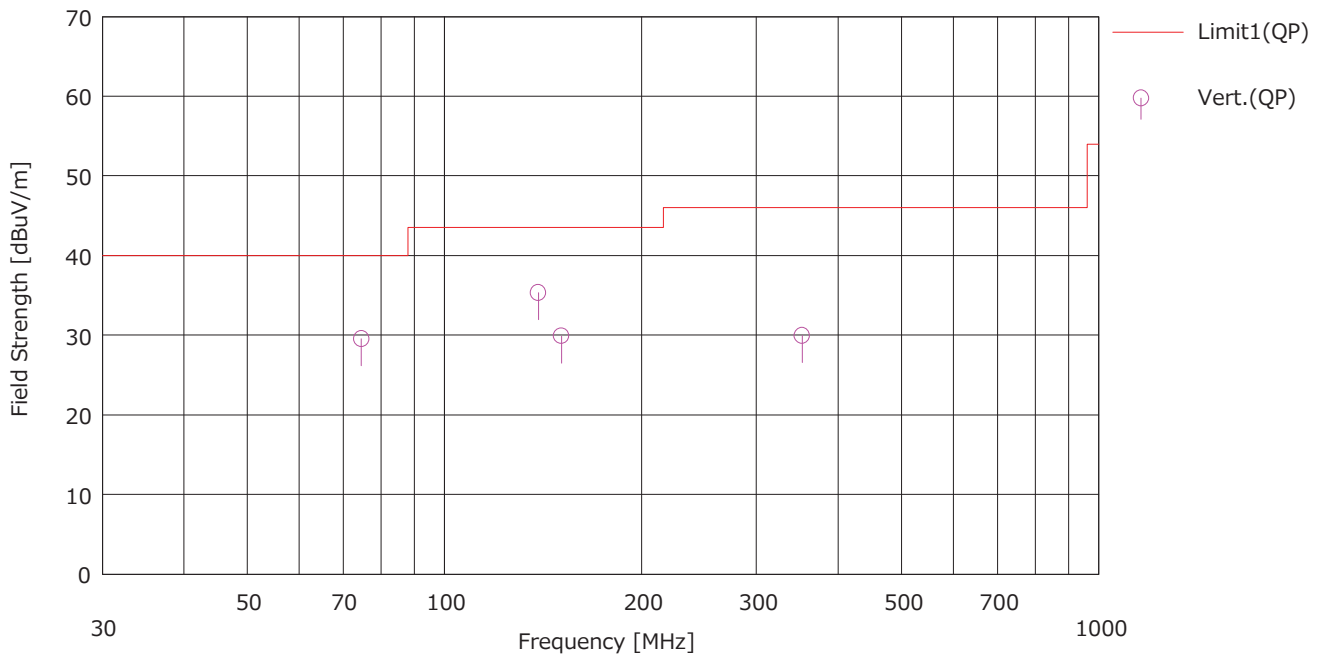
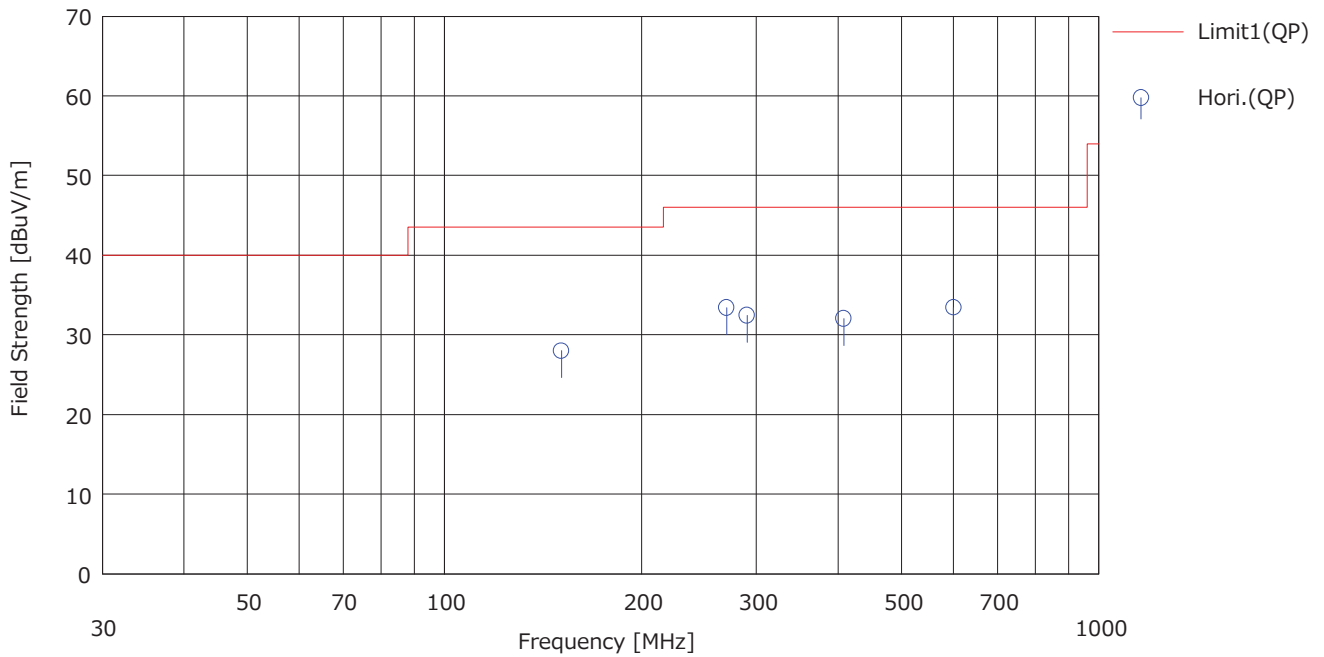
UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
 Date :11/09/2021

Mode : 1.FM Reception Analog (108 MHz)
 Order No. : 14071548
 Power : DC 13.2 V
 Temp. / Humi. : 25 deg. C / 64 % RH

Remarks : Port Sub / Other

Limit : FCC Part 15B CLASS B (3m)

Engineer : Seigo Kakehi



DATA OF RADIATED DISTURBANCE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
Date :11/09/2021

Mode : 1.FM Reception Analog (108 MHz)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 25 deg. C / 64 % RH

Remarks : Port Sub / Other

Limit : FCC Part 15B CLASS B (3m)

Engineer : Seigo Kakehi

<< QP DATA >>

No.	Freq. [MHz]	Reading <QP>	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	S.Fac [dB]	Result <QP>	Limit <QP>	Margin <QP>	Pola [H/V]	Ant. Type	Comment
		[dBuV]					[dBuV/m]	[dB]	[dB]			
1	74.722	42.00	8.90	7.92	29.21	-0.06	29.55	40.00	10.45	Vert.	BA	
2	139.167	44.10	11.67	8.79	29.16	-0.08	35.32	43.50	8.18	Vert.	BA	
3	150.945	36.10	12.03	8.94	29.16	0.08	27.99	43.50	15.51	Hori.	BA	
4	151.025	38.00	12.04	8.94	29.16	0.08	29.90	43.50	13.60	Vert.	BA	
5	270.014	41.90	13.25	7.45	29.19	0.00	33.41	46.00	12.59	Hori.	LA	
6	290.103	40.20	13.75	7.69	29.20	0.00	32.44	46.00	13.56	Hori.	LA	
7	352.221	35.70	15.28	8.23	29.28	0.00	29.93	46.00	16.07	Vert.	LA	
8	407.547	36.50	16.20	8.68	29.34	0.00	32.04	46.00	13.96	Hori.	LA	
9	599.840	33.60	19.37	9.97	29.52	0.00	33.42	46.00	12.58	Hori.	LA	

DATA OF RADIATED DISTURBANCE TEST

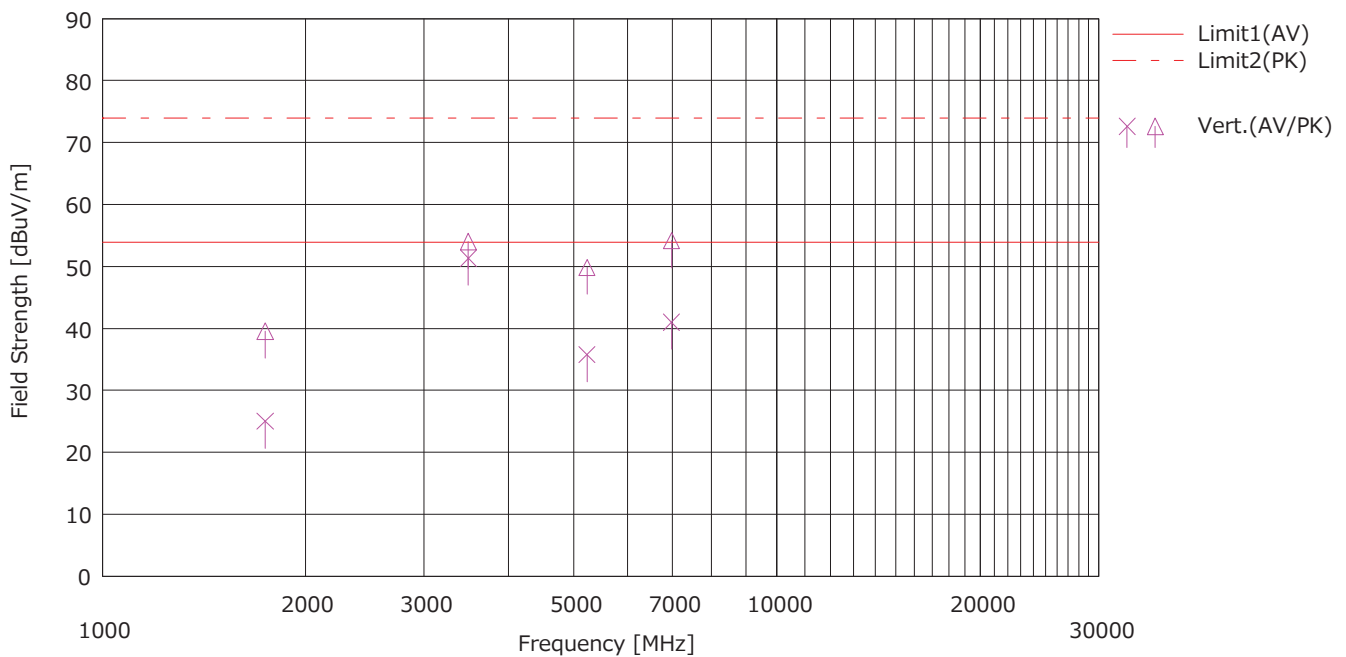
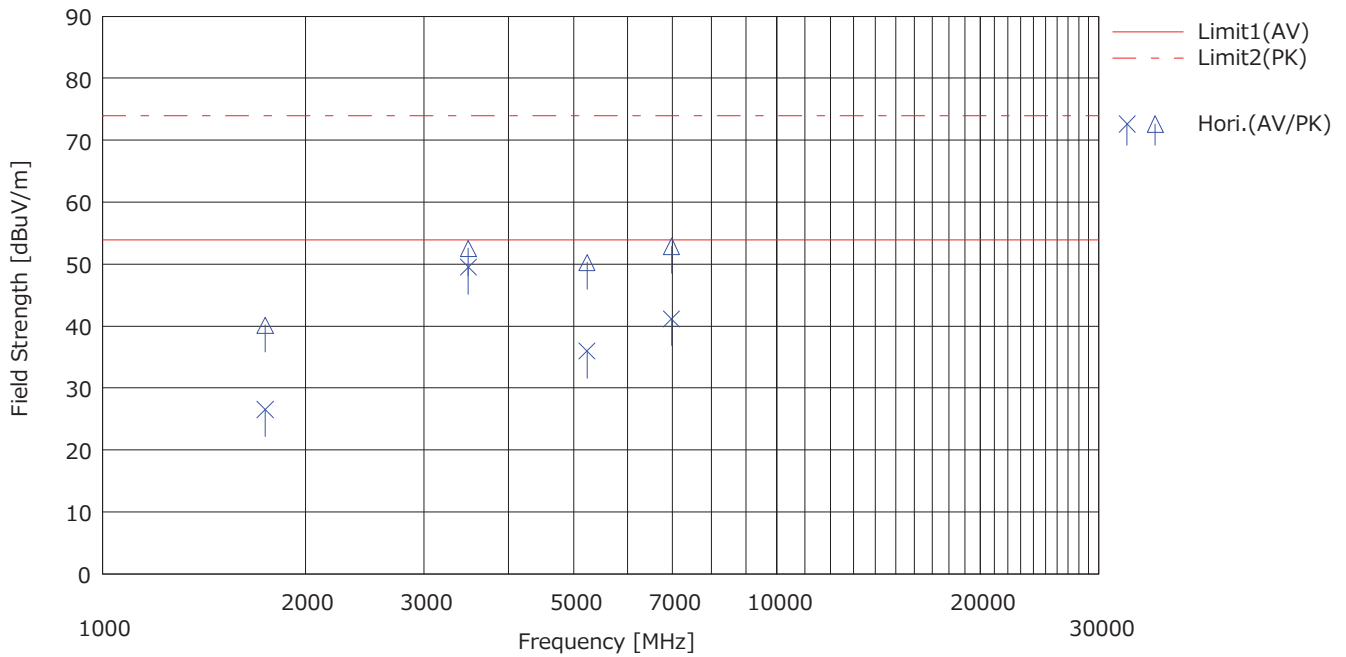
UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
 Date :11/08/2021

Mode : 1.FM Reception Analog (87 MHz)
 Order No. : 14071548
 Power : DC 13.2 V
 Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : Port Main / Local Frequency

Limit : FCC Part 15B CLASS B (GHz, 3m)

Engineer : Seigo Kakehi



DATA OF RADIATED DISTURBANCE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
Date :11/08/2021

Mode : 1.FM Reception Analog (87 MHz)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : Port Main / Local Frequency

Limit : FCC Part 15B CLASS B (GHz, 3m)

Engineer : Seigo Kakehi

<< AV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pda. [H/V]	Ant. Type	Comment
		<AV>	<PK>					<AV>	<PK>	<AV>	<PK>	<AV>	<PK>			
		[dBuV]	[dBuV]					[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]			
1	1744.512	34.20	48.70	25.10	3.89	39.37	1.21	25.03	39.53	53.90	73.90	28.87	34.37	Vert.	HA	
2	1744.512	35.70	49.30	25.10	3.89	39.37	1.21	26.53	40.13	53.90	73.90	27.37	33.77	Hori.	HA	
3	3489.024	53.10	56.10	28.75	5.67	39.22	1.21	49.51	52.51	53.90	73.90	4.39	21.39	Hori.	HA	
4	3489.024	54.90	57.60	28.75	5.67	39.22	1.21	51.31	54.01	53.90	73.90	2.59	19.89	Vert.	HA	
5	5233.536	35.00	49.10	31.60	7.11	39.18	1.21	35.74	49.84	53.90	73.90	18.16	24.06	Vert.	HA	
6	5233.536	35.20	49.50	31.60	7.11	39.18	1.21	35.94	50.24	53.90	73.90	17.96	23.66	Hori.	HA	
7	6978.048	35.30	47.00	35.82	8.27	39.43	1.21	41.17	52.87	53.90	73.90	12.73	21.03	Hori.	HA	
8	6978.048	35.10	48.30	35.82	8.27	39.43	1.21	40.97	54.17	53.90	73.90	12.93	19.73	Vert.	HA	

DATA OF RADIATED DISTURBANCE TEST

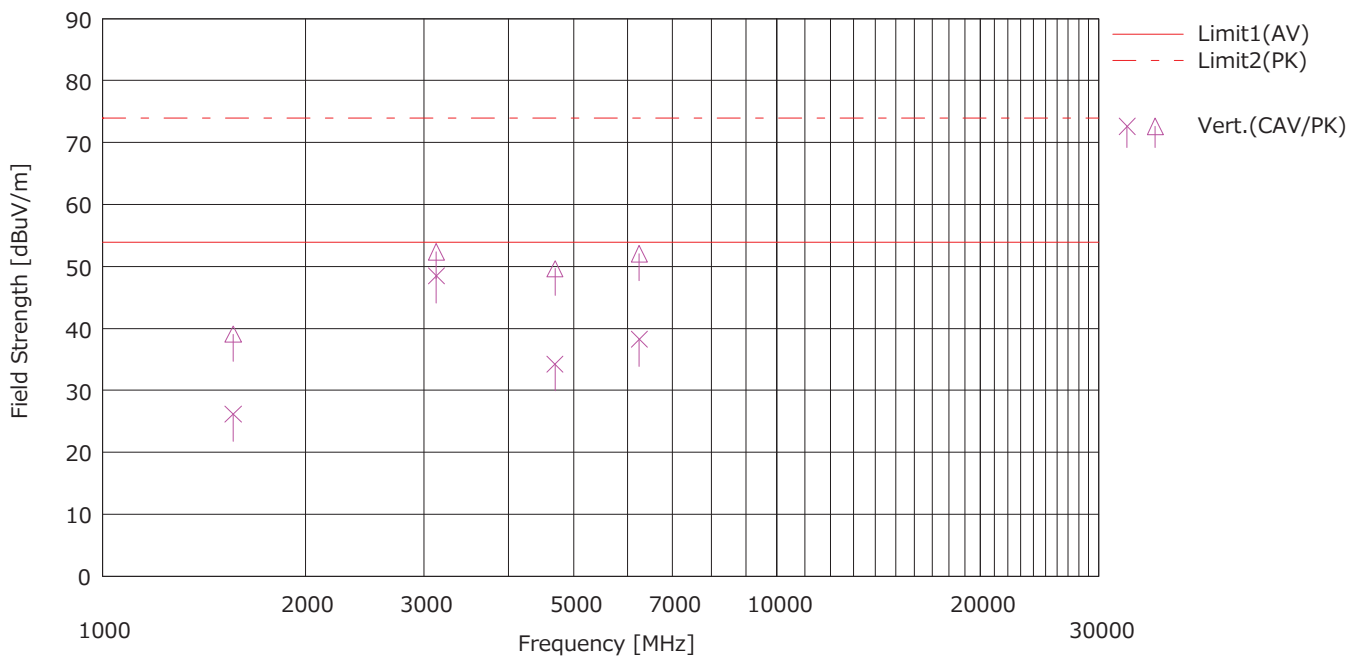
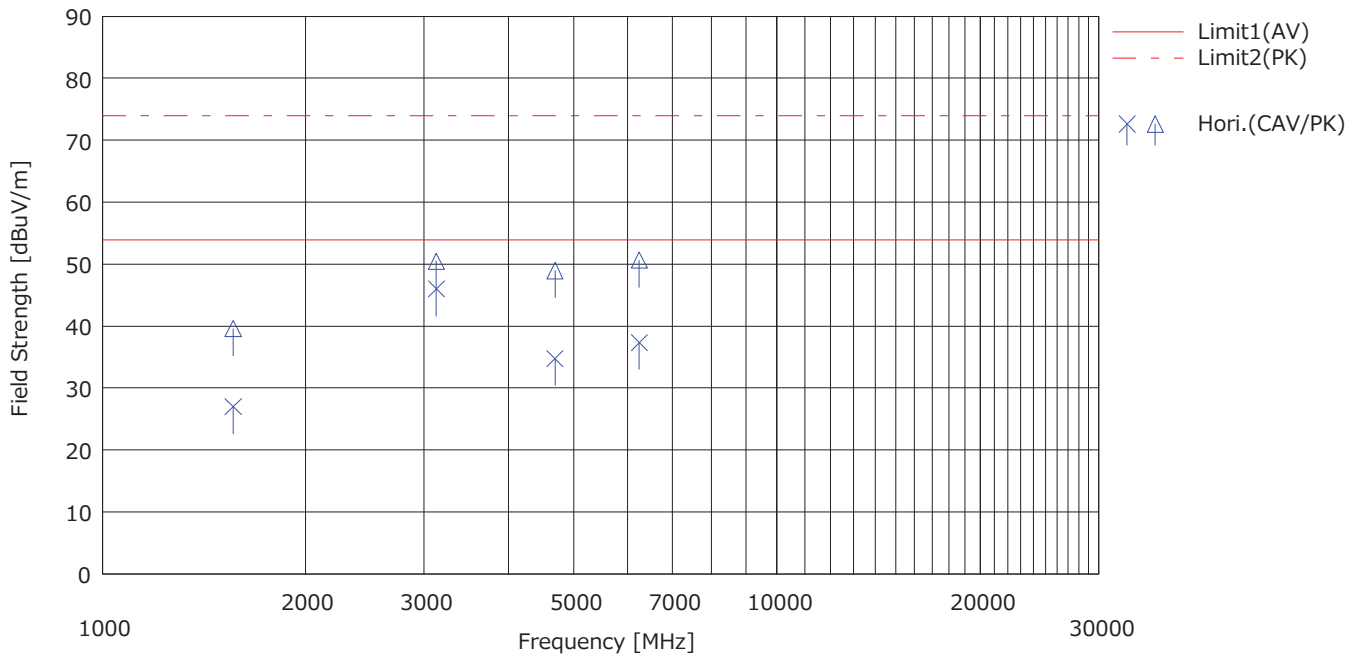
UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
 Date :11/08/2021

Mode : 1.FM Reception Analog (97.5 MHz)
 Order No. : 14071548
 Power : DC 13.2 V
 Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : Port Main / Local Frequency

Limit : FCC Part 15B CLASS B (GHz, 3m)

Engineer : Seigo Kakehi



DATA OF RADIATED DISTURBANCE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
Date :11/08/2021

Mode : 1.FM Reception Analog (97.5 MHz)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : Port Main / Local Frequency

Limit : FCC Part 15B CLASS B (GHz, 3m)

Engineer : Seigo Kakehi

<< CAV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pda. [H/V]	Ant. Type	Comment
		<CAV>	<PK>					<CAV>	<PK>	<AV>	<PK>	<AV>	<PK>			
		[dBuV]	[dBuV]					[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]			
1	1563.609	36.50	49.10	25.23	3.66	39.64	1.21	26.96	39.56	53.90	73.90	26.94	34.34	Hori.	HA	
2	1563.609	35.70	48.60	25.23	3.66	39.64	1.21	26.16	39.06	53.90	73.90	27.74	34.84	Vert.	HA	
3	3127.217	52.50	56.40	28.72	5.36	39.33	1.21	48.46	52.36	53.90	73.90	5.44	21.54	Vert.	HA	
4	3127.217	50.00	54.50	28.72	5.36	39.33	1.21	45.96	50.46	53.90	73.90	7.94	23.44	Hori.	HA	
5	4690.826	35.10	49.30	30.89	6.67	39.13	1.21	34.74	48.94	53.90	73.90	19.16	24.96	Hori.	HA	
6	4690.826	34.60	50.00	30.89	6.67	39.13	1.21	34.24	49.64	53.90	73.90	19.66	24.26	Vert.	HA	
7	6254.434	35.10	48.90	33.34	7.87	39.29	1.21	38.23	52.03	53.90	73.90	15.67	21.87	Vert.	HA	
8	6254.434	34.20	47.50	33.34	7.87	39.29	1.21	37.33	50.63	53.90	73.90	16.57	23.27	Hori.	HA	

DATA OF RADIATED DISTURBANCE TEST

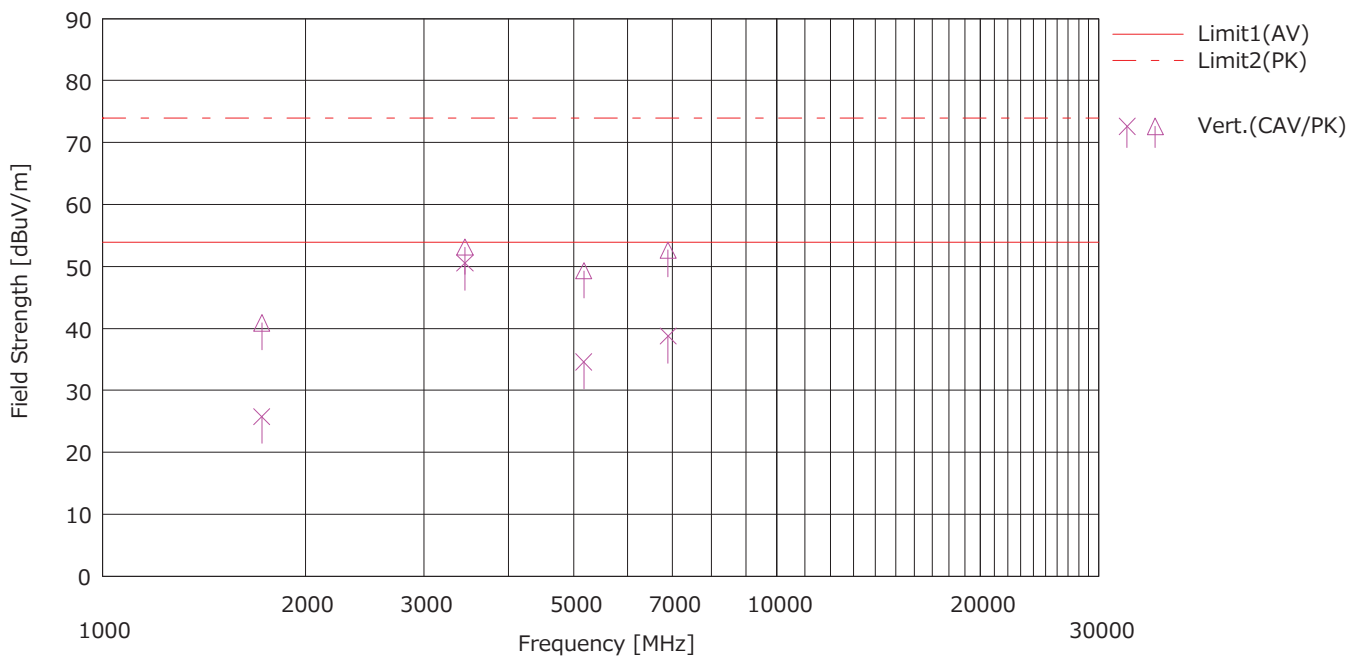
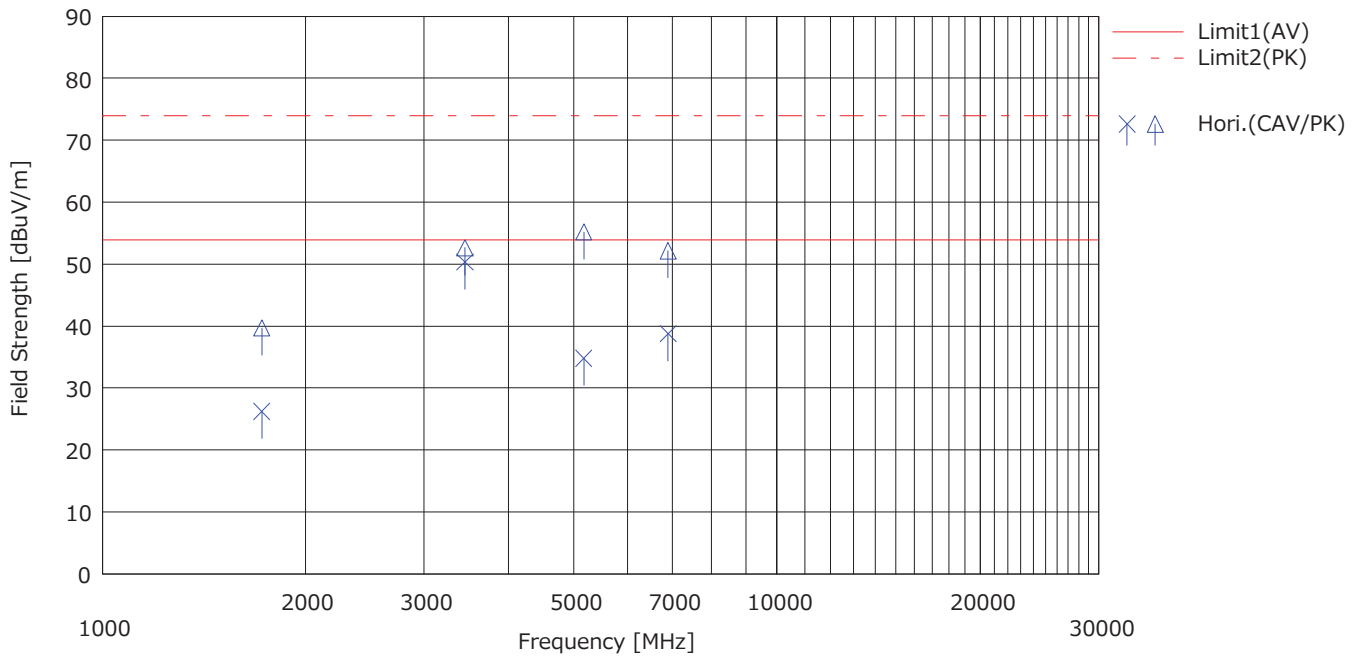
UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
 Date : 11/08/2021

Mode : 1.FM Reception Analog (108 MHz)
 Order No. : 14071548
 Power : DC 13.2 V
 Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : Port Main / Local Frequency

Limit : FCC Part 15B CLASS B (GHz, 3m)

Engineer : Seigo Kakehi



DATA OF RADIATED DISTURBANCE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
Date :11/08/2021

Mode : 1.FM Reception Analog (108 MHz)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : Port Main / Local Frequency

Limit : FCC Part 15B CLASS B (GHz, 3m)

Engineer : Seigo Kakehi

<< CAV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pda. [H/V]	Ant. Type	Comment
		<CAV>	<PK>					<CAV>	<PK>	<AV>	<PK>	<AV>	<PK>			
		[dBuV]	[dBuV]					[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]			
1	1724.499	35.20	48.70	25.32	3.86	39.40	1.21	26.19	39.69	53.90	73.90	27.71	34.21	Hori.	HA	
2	1724.499	34.80	49.90	25.32	3.86	39.40	1.21	25.79	40.89	53.90	73.90	28.11	33.01	Vert.	HA	
3	3448.997	54.60	57.20	28.31	5.63	39.24	1.21	50.51	53.11	53.90	73.90	3.39	20.79	Vert.	HA	
4	3448.997	54.40	56.70	28.31	5.63	39.24	1.21	50.31	52.61	53.90	73.90	3.59	21.29	Hori.	HA	
5	5173.496	33.80	54.20	31.87	7.06	39.17	1.21	34.77	55.17	53.90	73.90	19.13	18.73	Hori.	HA	
6	5173.496	33.60	48.30	31.87	7.06	39.17	1.21	34.57	49.27	53.90	73.90	19.33	24.63	Vert.	HA	
7	6897.994	33.40	47.30	35.31	8.23	39.41	1.21	38.74	52.64	53.90	73.90	15.16	21.26	Vert.	HA	
8	6897.994	33.40	46.80	35.31	8.23	39.41	1.21	38.74	52.14	53.90	73.90	15.16	21.76	Hori.	HA	

DATA OF RADIATED DISTURBANCE TEST

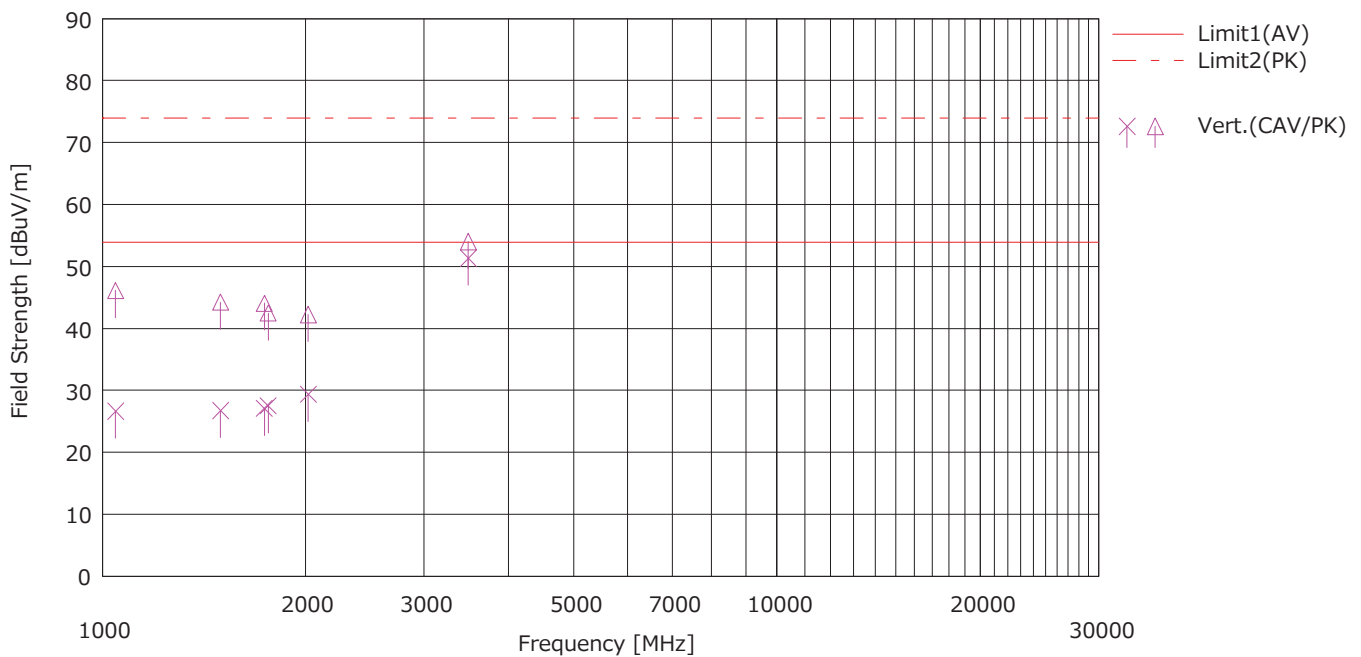
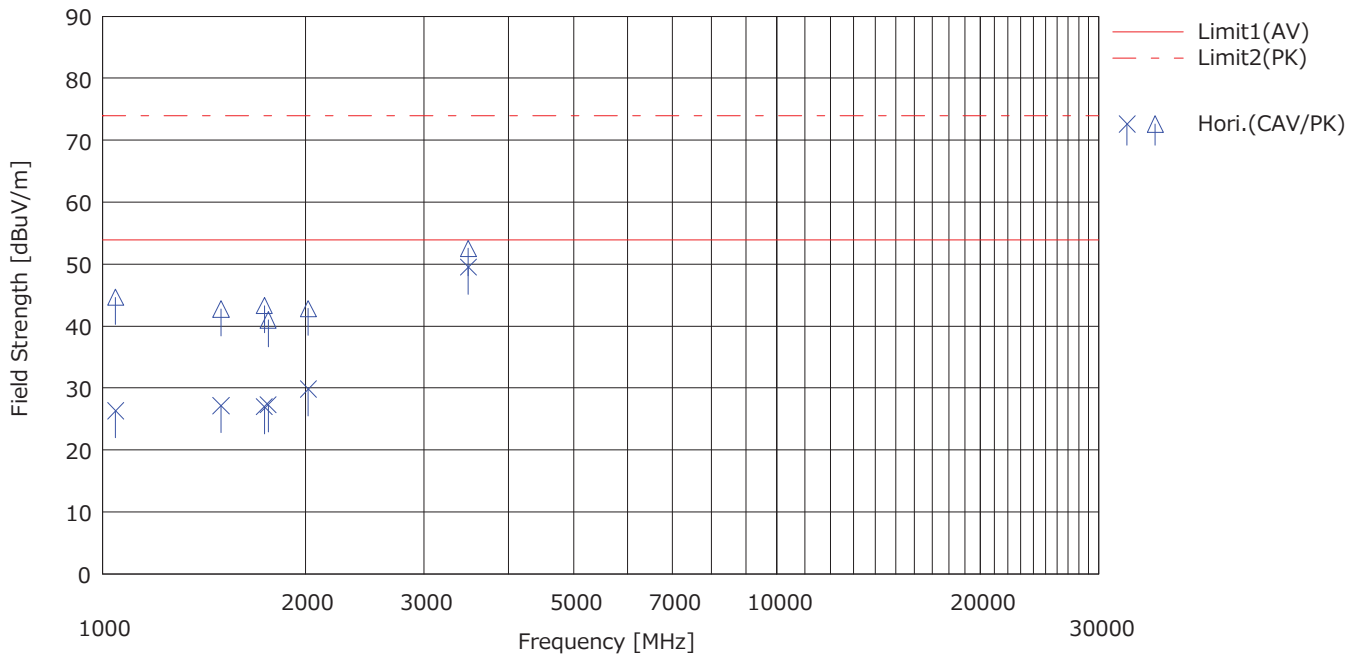
UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
 Date :11/08/2021

Mode : 1.FM Reception Analog (87 MHz)
 Order No. : 14071548
 Power : DC 13.2 V
 Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : Port Main / Other

Limit : FCC Part 15B CLASS B (GHz, 3m)

Engineer : Seigo Kakehi



DATA OF RADIATED DISTURBANCE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
Date :11/08/2021

Mode : 1.FM Reception Analog (87 MHz)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : Port Main / Other

Limit : FCC Part 15B CLASS B (GHz, 3m)

Engineer : Seigo Kakehi

<< CAV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pda. [H/V]	Ant. Type	Comment
		<CAV>	<PK>					<CAV>	<PK>	<AV>	<PK>	<AV>	<PK>			
		[dBuV]	[dBuV]					[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]			
1	1046.626	37.60	57.10	25.20	3.01	40.40	1.21	26.62	46.12	53.90	73.90	27.28	27.78	Vert.	HA	
2	1046.626	37.30	55.60	25.20	3.01	40.40	1.21	26.32	44.62	53.90	73.90	27.58	29.28	Hori.	HA	
3	1497.402	36.80	54.30	24.87	3.57	39.73	1.21	26.72	44.22	53.90	73.90	27.18	29.68	Vert.	HA	
4	1499.677	37.20	52.80	24.89	3.57	39.73	1.21	27.14	42.74	53.90	73.90	26.76	31.16	Hori.	HA	
5	1739.722	36.20	53.20	25.15	3.89	39.38	1.21	27.07	44.07	53.90	73.90	26.83	29.83	Vert.	HA	
6	1739.722	36.10	52.40	25.15	3.89	39.38	1.21	26.97	43.27	53.90	73.90	26.93	30.63	Hori.	HA	
7	1762.996	36.60	51.60	25.09	3.91	39.34	1.21	27.47	42.47	53.90	73.90	26.43	31.43	Vert.	HA	
8	1762.996	36.40	50.10	25.09	3.91	39.34	1.21	27.27	40.97	53.90	73.90	26.63	32.93	Hori.	HA	
9	2020.691	36.70	49.70	26.68	4.23	39.00	1.21	29.82	42.82	53.90	73.90	24.08	31.08	Hori.	HA	
10	2020.691	36.20	49.10	26.68	4.23	39.00	1.21	29.32	42.22	53.90	73.90	24.58	31.68	Vert.	HA	
11	3489.024	53.10	56.10	28.75	5.67	39.22	1.21	49.51	52.51	53.90	73.90	4.39	21.39	Hori.	HA	
12	3489.024	54.90	57.60	28.75	5.67	39.22	1.21	51.31	54.01	53.90	73.90	2.59	19.89	Vert.	HA	

DATA OF RADIATED DISTURBANCE TEST

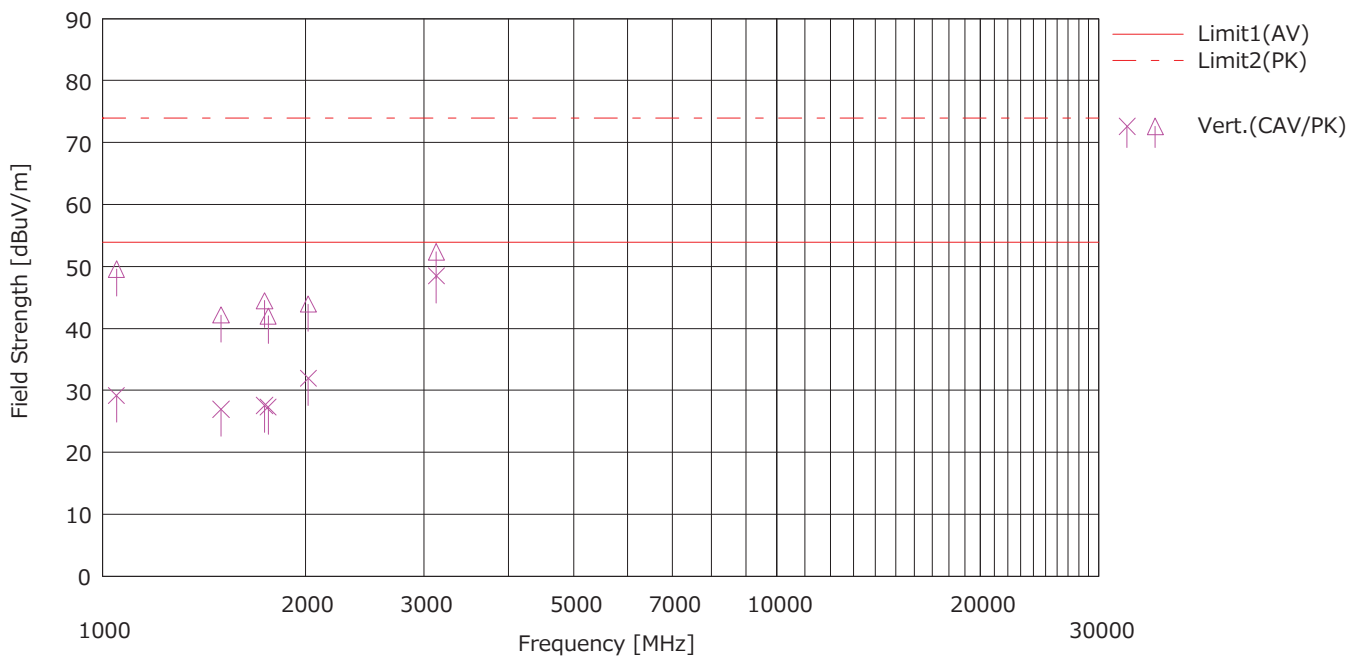
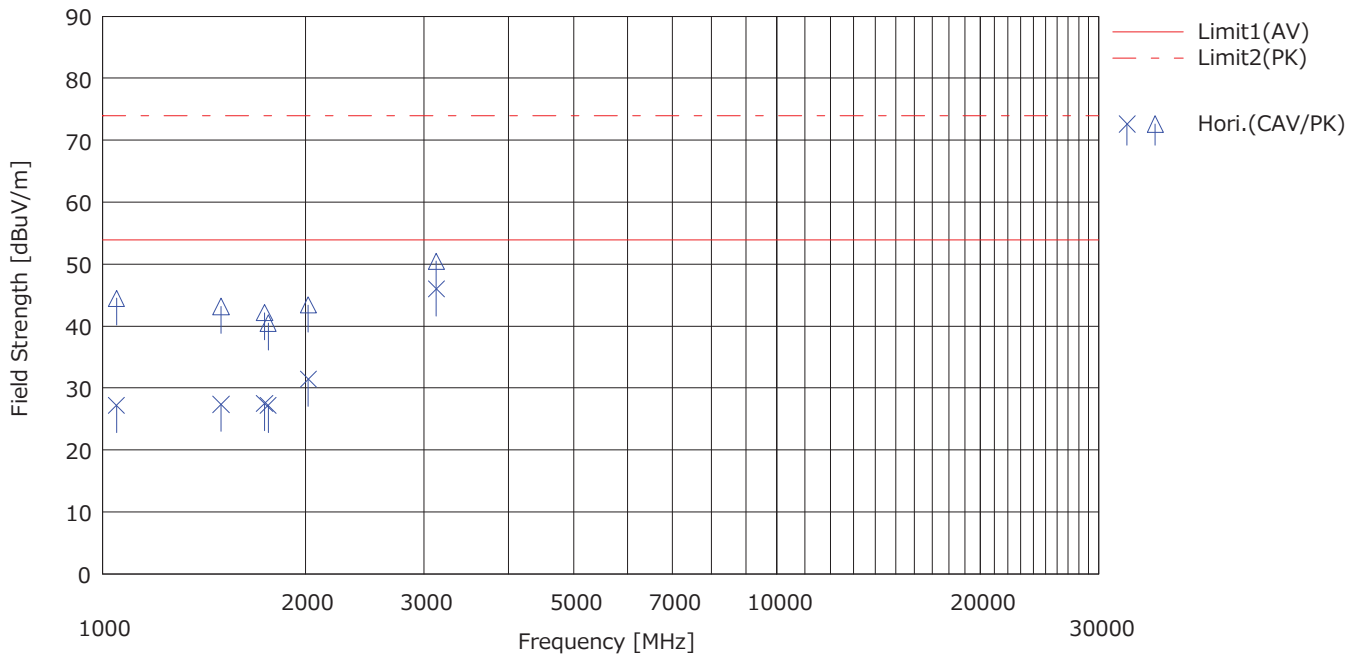
UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
 Date :11/08/2021

Mode : 1.FM Reception Analog (97.5 MHz)
 Order No. : 14071548
 Power : DC 13.2 V
 Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : Port Main / Other

Limit : FCC Part 15B CLASS B (GHz, 3m)

Engineer : Seigo Kakehi



DATA OF RADIATED DISTURBANCE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
Date :11/08/2021

Mode : 1.FM Reception Analog (97.5 MHz)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : Port Main / Other

Limit : FCC Part 15B CLASS B (GHz, 3m)

Engineer : Seigo Kakehi

<< CAV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pda. [H/V]	Ant. Type	Comment
		<CAV>	<PK>					<CAV>	<PK>	<AV>	<PK>	<AV>	<PK>			
		[dBuV]	[dBuV]					[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]			
1	1050.166	38.00	55.30	25.36	3.01	40.40	1.21	27.18	44.48	53.90	73.90	26.72	29.42	Hori.	HA	
2	1050.166	40.00	60.40	25.36	3.01	40.40	1.21	29.18	49.58	53.90	73.90	24.72	24.32	Vert.	HA	
3	1499.685	37.00	52.20	24.89	3.57	39.73	1.21	26.94	42.14	53.90	73.90	26.96	31.76	Vert.	HA	
4	1499.685	37.40	53.20	24.89	3.57	39.73	1.21	27.34	43.14	53.90	73.90	26.56	30.76	Hori.	HA	
5	1740.765	36.70	53.60	25.14	3.89	39.37	1.21	27.57	44.47	53.90	73.90	26.33	29.43	Vert.	HA	
6	1740.765	36.60	51.30	25.14	3.89	39.37	1.21	27.47	42.17	53.90	73.90	26.43	31.73	Hori.	HA	
7	1762.723	36.40	51.10	25.09	3.91	39.34	1.21	27.27	41.97	53.90	73.90	26.63	31.93	Vert.	HA	
8	1762.723	36.30	49.60	25.09	3.91	39.34	1.21	27.17	40.47	53.90	73.90	26.73	33.43	Hori.	HA	
9	2020.562	38.30	50.30	26.68	4.23	39.00	1.21	31.42	43.42	53.90	73.90	22.48	30.48	Hori.	HA	
10	2020.562	38.80	50.80	26.68	4.23	39.00	1.21	31.92	43.92	53.90	73.90	21.98	29.98	Vert.	HA	
11	3127.217	52.50	56.40	28.72	5.36	39.33	1.21	48.46	52.36	53.90	73.90	5.44	21.54	Vert.	HA	
12	3127.217	50.00	54.50	28.72	5.36	39.33	1.21	45.96	50.46	53.90	73.90	7.94	23.44	Hori.	HA	

DATA OF RADIATED DISTURBANCE TEST

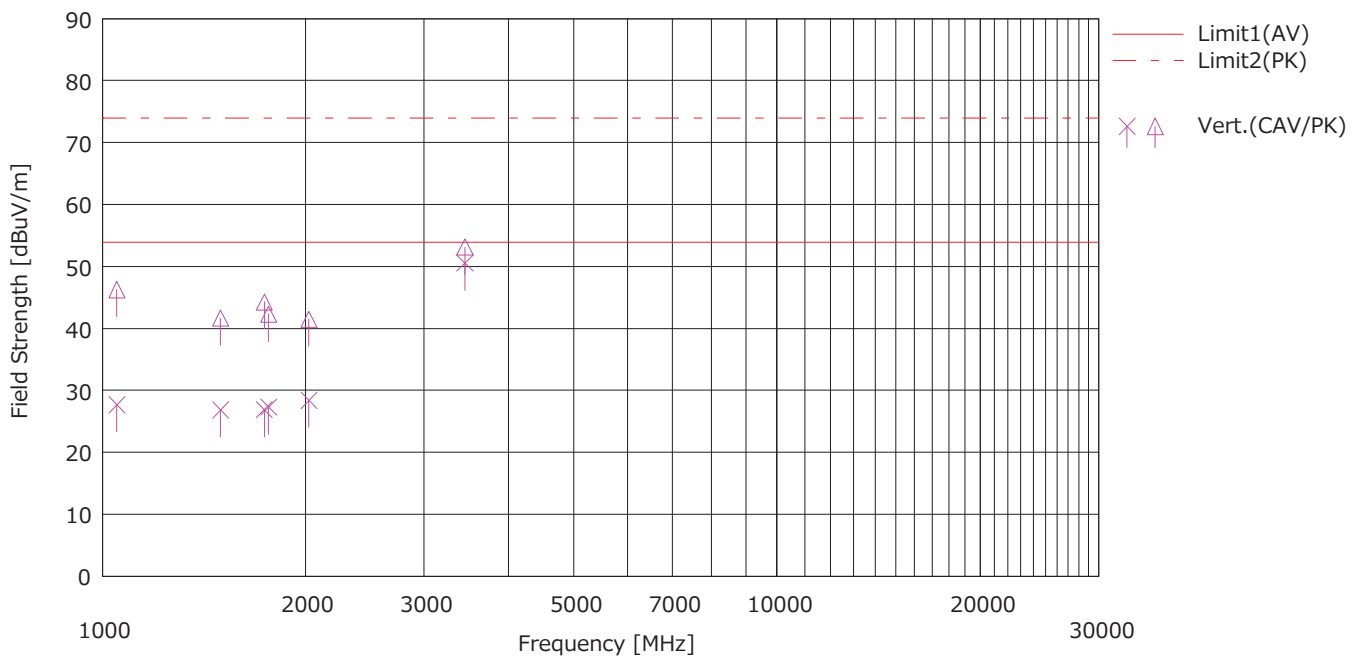
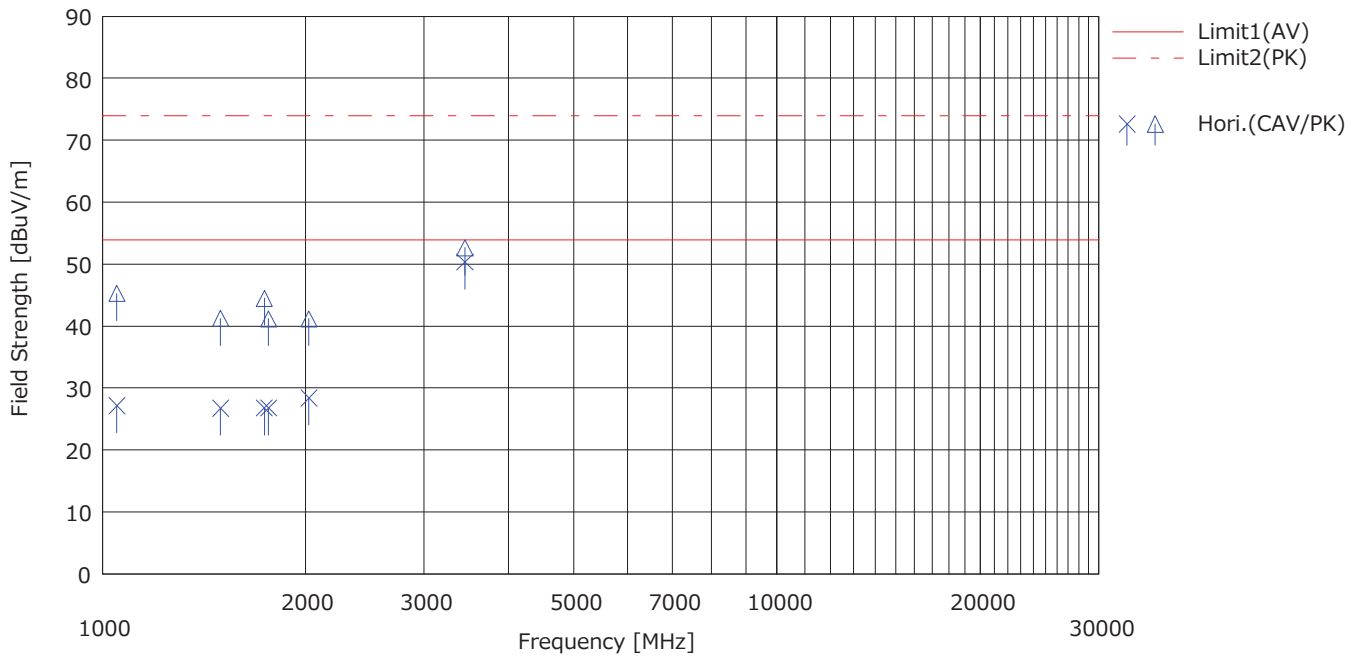
UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
 Date :11/08/2021

Mode : 1.FM Reception Analog (108 MHz)
 Order No. : 14071548
 Power : DC 13.2 V
 Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : Port Main / Other

Limit : FCC Part 15B CLASS B (GHz, 3m)

Engineer : Seigo Kakehi



DATA OF RADIATED DISTURBANCE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
Date :11/08/2021

Mode : 1.FM Reception Analog (108 MHz)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : Port Main / Other

Limit : FCC Part 15B CLASS B (GHz, 3m)

Engineer : Seigo Kakehi

<< CAV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pda. [H/V]	Ant. Type	Comment
		<CAV>	<PK>					<CAV>	<PK>	<AV>	<PK>	<AV>	<PK>			
		[dBuV]	[dBuV]					[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]			
1	1051.098	38.50	57.10	25.33	3.01	40.39	1.21	27.66	46.26	53.90	73.90	26.24	27.64	Vert.	HA	
2	1051.098	38.00	56.10	25.33	3.01	40.39	1.21	27.16	45.26	53.90	73.90	26.74	28.64	Hori.	HA	
3	1497.402	36.90	51.70	24.87	3.57	39.73	1.21	26.82	41.62	53.90	73.90	27.08	32.28	Vert.	HA	
4	1497.402	36.80	51.30	24.87	3.57	39.73	1.21	26.72	41.22	53.90	73.90	27.18	32.68	Hori.	HA	
5	1739.542	35.90	53.60	25.15	3.89	39.38	1.21	26.77	44.47	53.90	73.90	27.13	29.43	Hori.	HA	
6	1739.542	36.00	53.40	25.15	3.89	39.38	1.21	26.87	44.27	53.90	73.90	27.03	29.63	Vert.	HA	
7	1763.862	36.40	51.40	25.10	3.91	39.34	1.21	27.28	42.28	53.90	73.90	26.62	31.62	Vert.	HA	
8	1763.862	35.90	50.30	25.10	3.91	39.34	1.21	26.78	41.18	53.90	73.90	27.12	32.72	Hori.	HA	
9	2025.115	35.30	48.10	26.64	4.23	39.00	1.21	28.38	41.18	53.90	73.90	25.52	32.72	Hori.	HA	
10	2025.115	35.30	48.40	26.64	4.23	39.00	1.21	28.38	41.48	53.90	73.90	25.52	32.42	Vert.	HA	
11	3448.997	54.60	57.20	28.31	5.63	39.24	1.21	50.51	53.11	53.90	73.90	3.39	20.79	Vert.	HA	
12	3448.997	54.40	56.70	28.31	5.63	39.24	1.21	50.31	52.61	53.90	73.90	3.59	21.29	Hori.	HA	

DATA OF RADIATED DISTURBANCE TEST

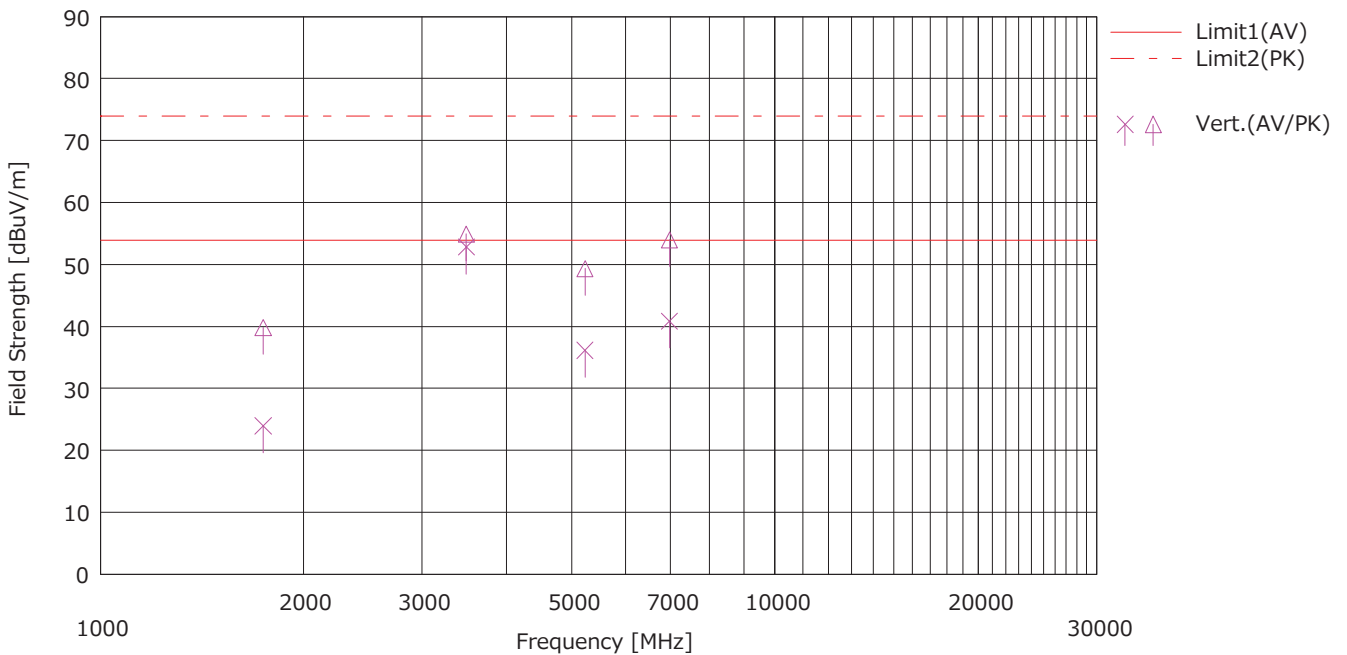
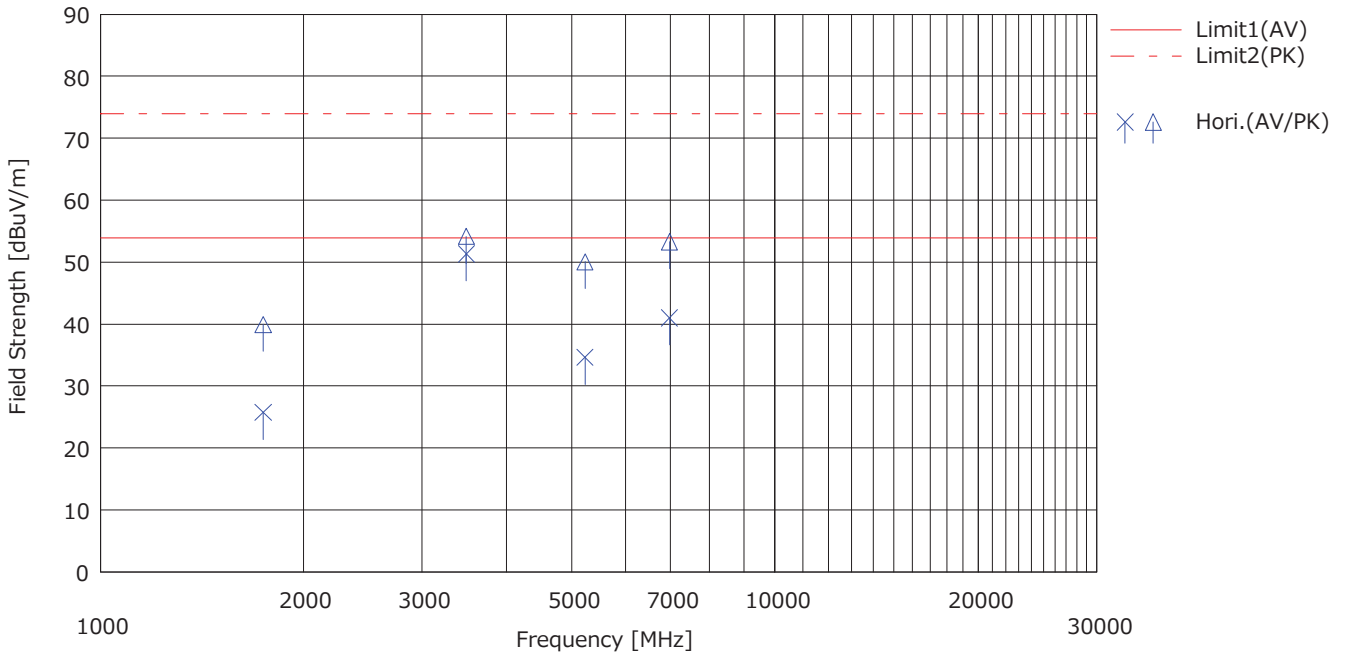
UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
 Date :11/08/2021

Mode : 1.FM Reception Analog (87 MHz)
 Order No. : 14071548
 Power : DC 13.2 V
 Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : Port Sub / Local Frequency

Limit : FCC Part 15B CLASS B (GHz, 3m)

Engineer : Seigo Kakehi



DATA OF RADIATED DISTURBANCE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
Date :11/08/2021

Mode : 1.FM Reception Analog (87 MHz)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : Port Sub / Local Frequency

Limit : FCC Part 15B CLASS B (GHz, 3m)

Engineer : Seigo Kakehi

<< AV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pda. [H/V]	Ant. Type	Comment
		<AV> [dBuV]	<PK> [dBuV]					<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dBuV/m]	<PK> [dBuV/m]	<AV> [dB]	<PK> [dB]			
		1	1744.512					33.10	49.00	25.10	3.89	39.37	1.21			
2	1744.512	34.90	49.10	25.10	3.89	39.37	1.21	25.73	39.93	53.90	73.90	28.17	33.97	Hori.	HA	
3	3489.024	54.90	57.70	28.75	5.67	39.22	1.21	51.31	54.11	53.90	73.90	2.59	19.79	Hori.	HA	
4	3489.024	56.40	58.50	28.75	5.67	39.22	1.21	52.81	54.91	53.90	73.90	1.09	18.99	Vert.	HA	
5	5233.536	35.40	48.60	31.60	7.11	39.18	1.21	36.14	49.34	53.90	73.90	17.76	24.56	Vert.	HA	
6	5233.536	33.90	49.30	31.60	7.11	39.18	1.21	34.64	50.04	53.90	73.90	19.26	23.86	Hori.	HA	
7	6978.048	35.10	47.40	35.82	8.27	39.43	1.21	40.97	53.27	53.90	73.90	12.93	20.63	Hori.	HA	
8	6978.048	35.00	48.10	35.82	8.27	39.43	1.21	40.87	53.97	53.90	73.90	13.03	19.93	Vert.	HA	

DATA OF RADIATED DISTURBANCE TEST

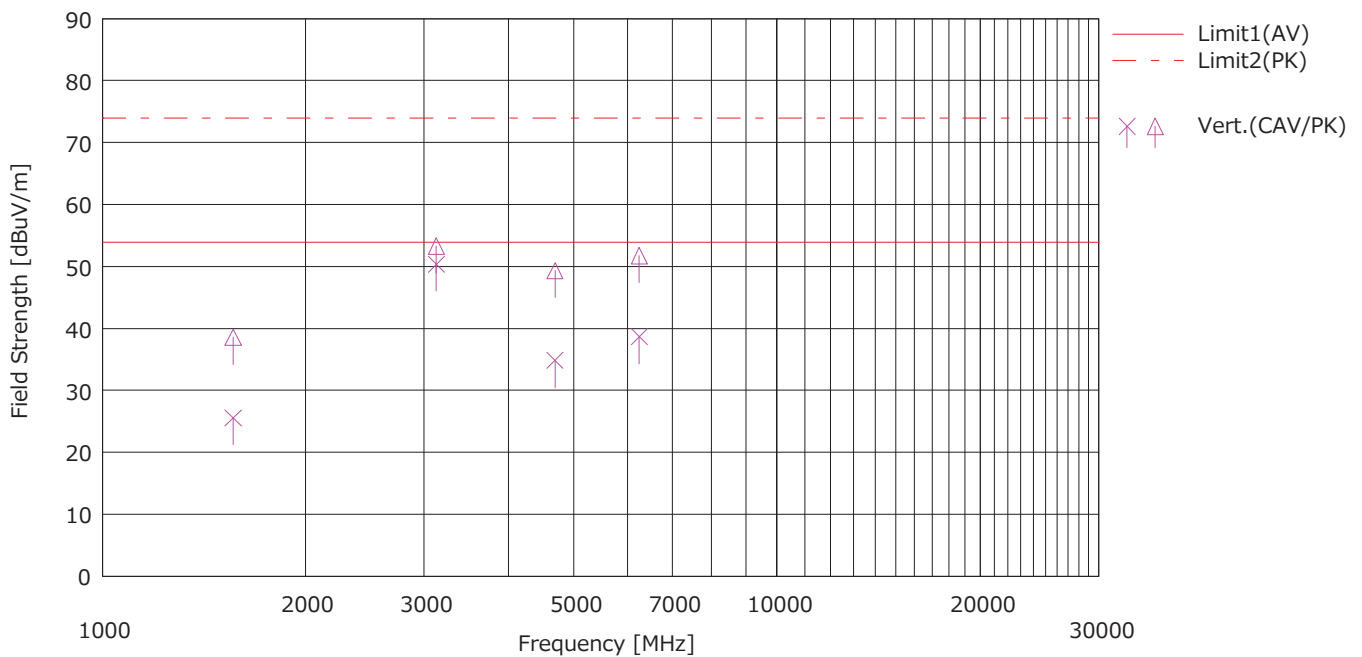
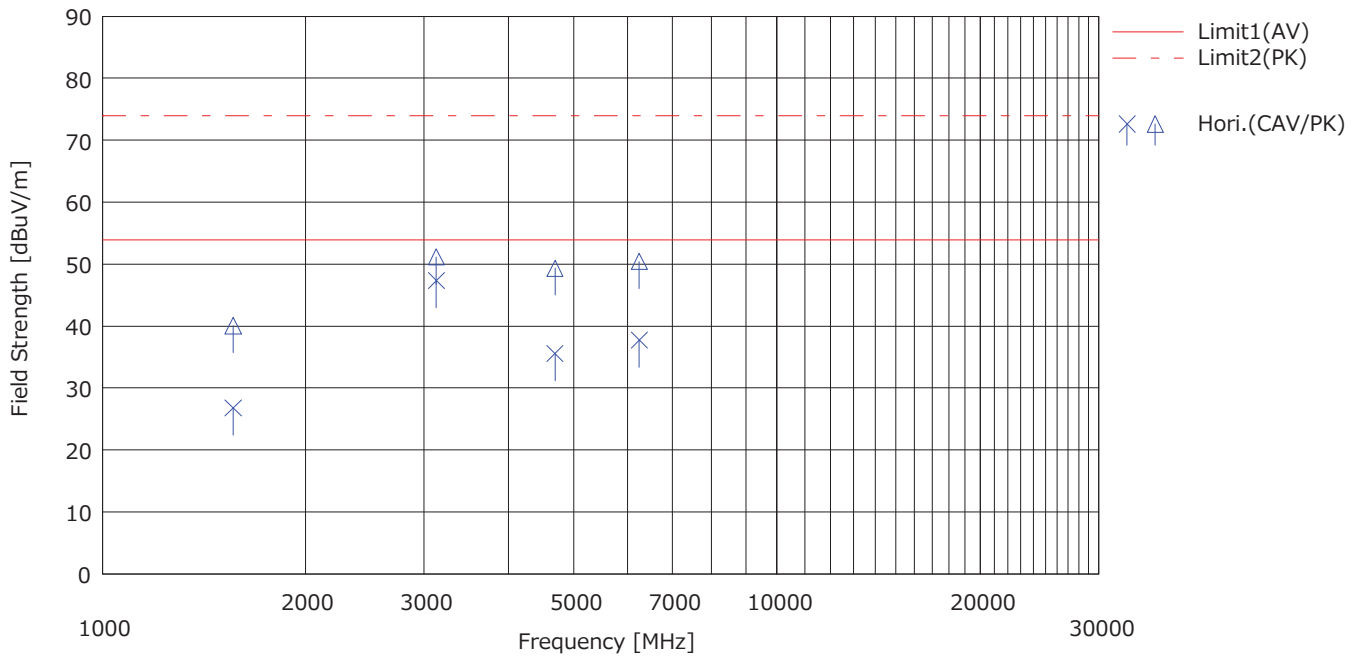
UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
 Date : 11/08/2021

Mode : 1.FM Reception Analog (97.5 MHz)
 Order No. : 14071548
 Power : DC 13.2 V
 Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : Port Sub / Local Frequency

Limit : FCC Part 15B CLASS B (GHz, 3m)

Engineer : Seigo Kakehi



DATA OF RADIATED DISTURBANCE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
Date :11/08/2021

Mode : 1.FM Reception Analog (97.5 MHz)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : Port Sub / Local Frequency

Limit : FCC Part 15B CLASS B (GHz, 3m)

Engineer : Seigo Kakehi

<< CAV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pda. [H/V]	Ant. Type	Comment
		<CAV>	<PK>					<CAV>	<PK>	<AV>	<PK>	<AV>	<PK>			
		[dBuV]	[dBuV]					[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]			
1	1563.609	36.30	49.60	25.23	3.66	39.64	1.21	26.76	40.06	53.90	73.90	27.14	33.84	Hori.	HA	
2	1563.609	35.10	48.10	25.23	3.66	39.64	1.21	25.56	38.56	53.90	73.90	28.34	35.34	Vert.	HA	
3	3127.217	54.40	57.30	28.72	5.36	39.33	1.21	50.36	53.26	53.90	73.90	3.54	20.64	Vert.	HA	
4	3127.217	51.40	55.20	28.72	5.36	39.33	1.21	47.36	51.16	53.90	73.90	6.54	22.74	Hori.	HA	
5	4690.826	35.90	49.70	30.89	6.67	39.13	1.21	35.54	49.34	53.90	73.90	18.36	24.56	Hori.	HA	
6	4690.826	35.20	49.70	30.89	6.67	39.13	1.21	34.84	49.34	53.90	73.90	19.06	24.56	Vert.	HA	
7	6254.434	35.50	48.60	33.34	7.87	39.29	1.21	38.63	51.73	53.90	73.90	15.27	22.17	Vert.	HA	
8	6254.434	34.60	47.30	33.34	7.87	39.29	1.21	37.73	50.43	53.90	73.90	16.17	23.47	Hori.	HA	

DATA OF RADIATED DISTURBANCE TEST

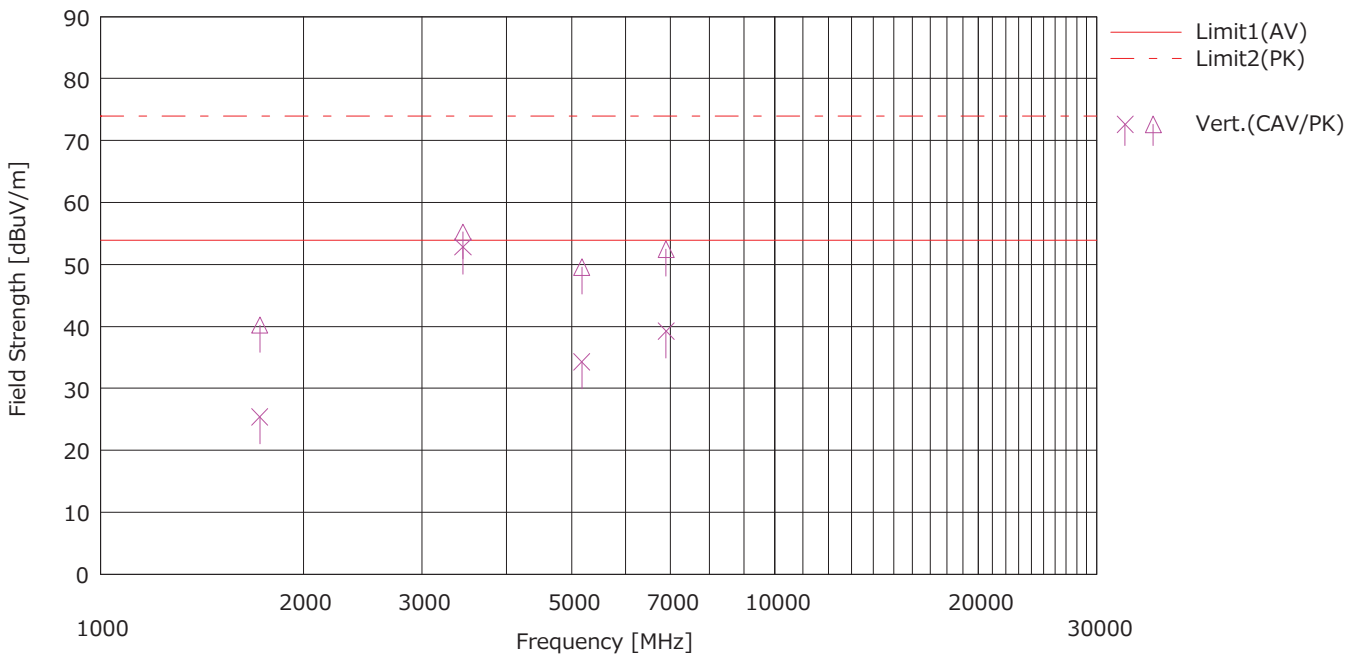
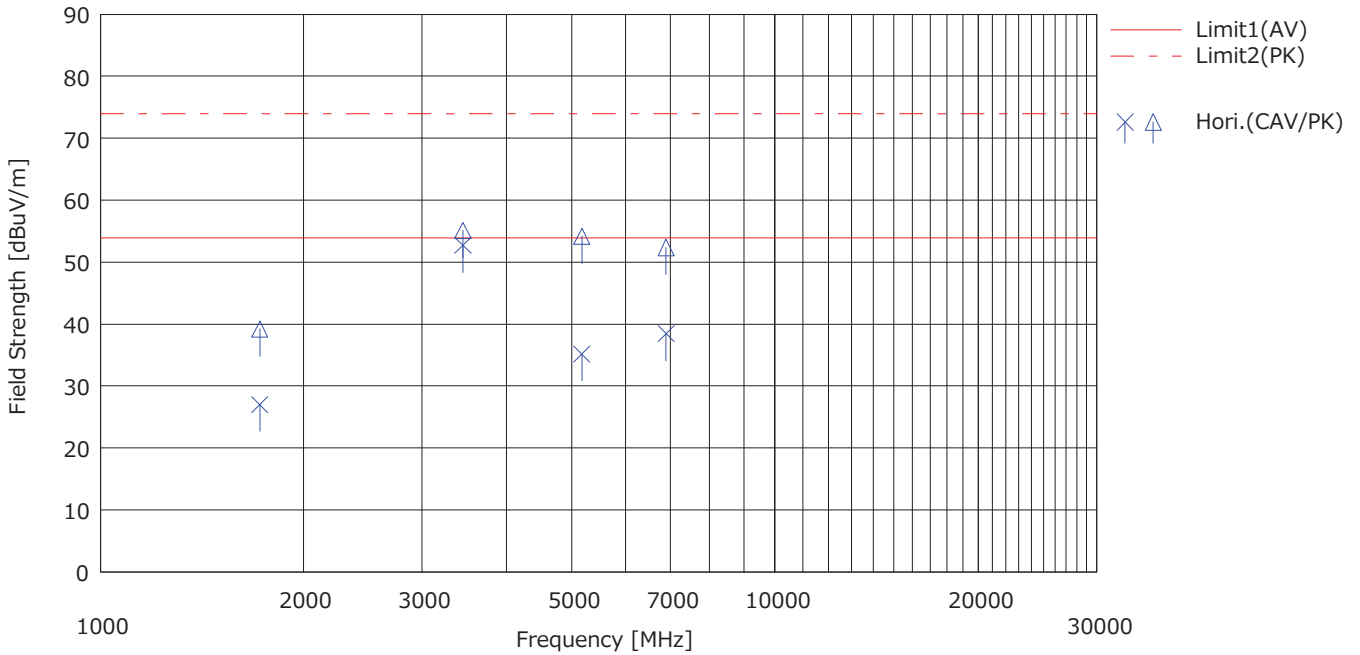
UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
 Date :11/08/2021

Mode : 1.FM Reception Analog (108 MHz)
 Order No. : 14071548
 Power : DC 13.2 V
 Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : Port Sub / Local Frequency

Limit : FCC Part 15B CLASS B (GHz, 3m)

Engineer : Seigo Kakehi



DATA OF RADIATED DISTURBANCE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
Date :11/08/2021

Mode : 1.FM Reception Analog (108 MHz)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : Port Sub / Local Frequency

Limit : FCC Part 15B CLASS B (GHz, 3m)

Engineer : Seigo Kakehi

<< CAV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pda. [H/V]	Ant. Type	Comment
		<CAV>	<PK>					<CAV>	<PK>	<AV>	<PK>	<AV>	<PK>			
		[dBuV]	[dBuV]					[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]			
1	1724.499	36.00	48.20	25.32	3.86	39.40	1.21	26.99	39.19	53.90	73.90	26.91	34.71	Hori.	HA	
2	1724.499	34.40	49.20	25.32	3.86	39.40	1.21	25.39	40.19	53.90	73.90	28.51	33.71	Vert.	HA	
3	3448.974	56.90	59.30	28.31	5.63	39.24	1.21	52.81	55.21	53.90	73.90	1.09	18.69	Vert.	HA	
4	3448.974	56.80	59.20	28.31	5.63	39.24	1.21	52.71	55.11	53.90	73.90	1.19	18.79	Hori.	HA	
5	5173.496	34.20	53.20	31.87	7.06	39.17	1.21	35.17	54.17	53.90	73.90	18.73	19.73	Hori.	HA	
6	5173.496	33.30	48.60	31.87	7.06	39.17	1.21	34.27	49.57	53.90	73.90	19.63	24.33	Vert.	HA	
7	6897.994	33.90	47.10	35.31	8.23	39.41	1.21	39.24	52.44	53.90	73.90	14.66	21.46	Vert.	HA	
8	6897.994	33.10	47.00	35.31	8.23	39.41	1.21	38.44	52.34	53.90	73.90	15.46	21.56	Hori.	HA	

DATA OF RADIATED DISTURBANCE TEST

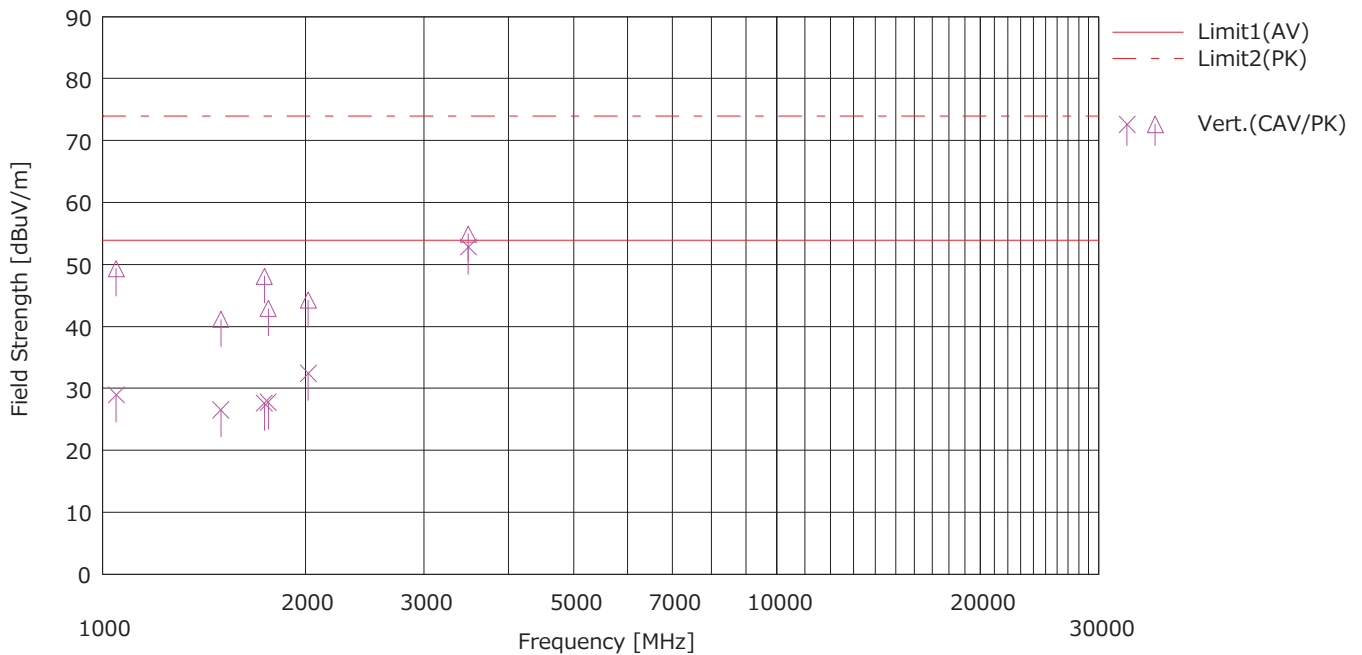
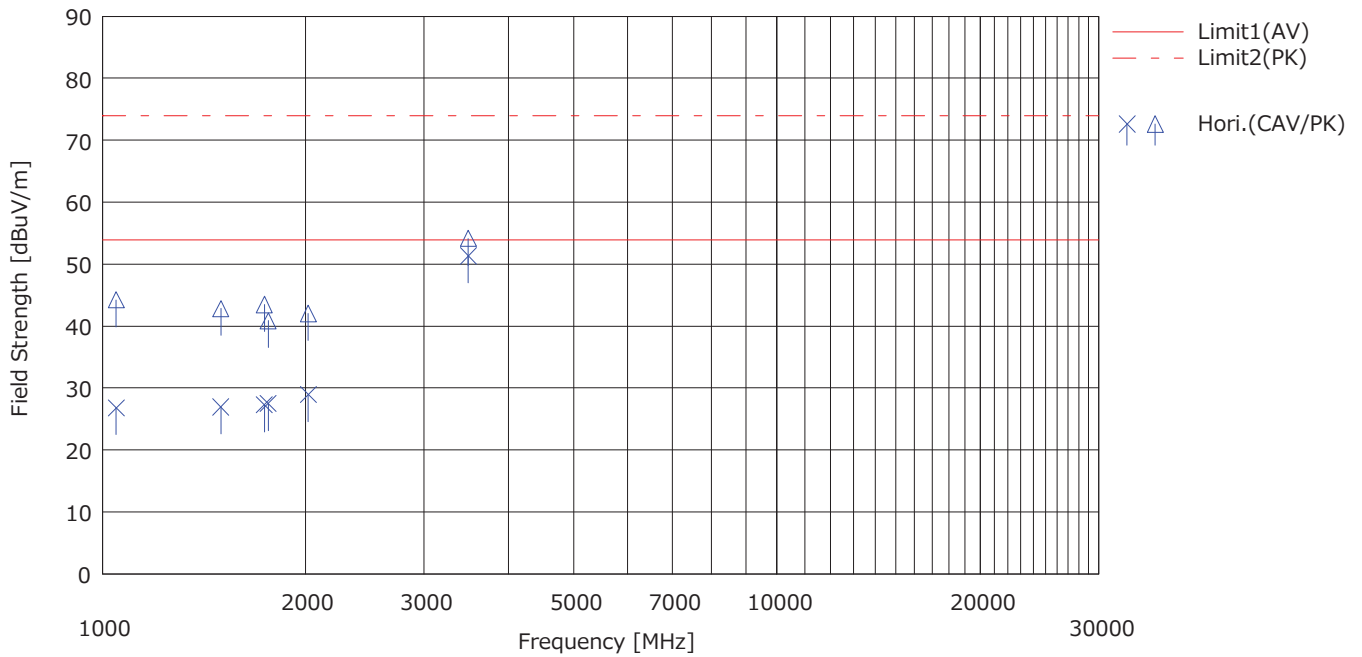
UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
 Date :11/08/2021

Mode : 1.FM Reception Analog (87 MHz)
 Order No. : 14071548
 Power : DC 13.2 V
 Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : Port Sub / Other

Limit : FCC Part 15B CLASS B (GHz, 3m)

Engineer : Seigo Kakehi



DATA OF RADIATED DISTURBANCE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
Date :11/08/2021

Mode : 1.FM Reception Analog (87 MHz)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : Port Sub / Other

Limit : FCC Part 15B CLASS B (GHz, 3m)

Engineer : Seigo Kakehi

<< CAV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pda. [H/V]	Ant. Type	Comment
		<CAV>	<PK>					<CAV>	<PK>	<AV>	<PK>	<AV>	<PK>			
		[dBuV]	[dBuV]					[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]			
1	1048.437	39.80	60.20	25.29	3.01	40.40	1.21	28.91	49.31	53.90	73.90	24.99	24.59	Vert.	HA	
2	1048.437	37.70	55.10	25.29	3.01	40.40	1.21	26.81	44.21	53.90	73.90	27.09	29.69	Hori.	HA	
3	1498.246	36.60	51.20	24.88	3.57	39.73	1.21	26.53	41.13	53.90	73.90	27.37	32.77	Vert.	HA	
4	1498.246	37.00	52.90	24.88	3.57	39.73	1.21	26.93	42.83	53.90	73.90	26.97	31.07	Hori.	HA	
5	1740.017	36.70	57.20	25.15	3.89	39.37	1.21	27.58	48.08	53.90	73.90	26.32	25.82	Vert.	HA	
6	1740.017	36.40	52.60	25.15	3.89	39.37	1.21	27.28	43.48	53.90	73.90	26.62	30.42	Hori.	HA	
7	1762.803	36.60	50.00	25.09	3.91	39.34	1.21	27.47	40.87	53.90	73.90	26.43	33.03	Hori.	HA	
8	1762.803	36.90	52.00	25.09	3.91	39.34	1.21	27.77	42.87	53.90	73.90	26.13	31.03	Vert.	HA	
9	2020.223	35.80	48.90	26.68	4.23	39.00	1.21	28.92	42.02	53.90	73.90	24.98	31.88	Hori.	HA	
10	2020.223	39.30	51.10	26.68	4.23	39.00	1.21	32.42	44.22	53.90	73.90	21.48	29.68	Vert.	HA	
11	3489.022	54.90	57.70	28.75	5.67	39.22	1.21	51.31	54.11	53.90	73.90	2.59	19.79	Hori.	HA	
12	3489.022	56.40	58.50	28.75	5.67	39.22	1.21	52.81	54.91	53.90	73.90	1.09	18.99	Vert.	HA	

DATA OF RADIATED DISTURBANCE TEST

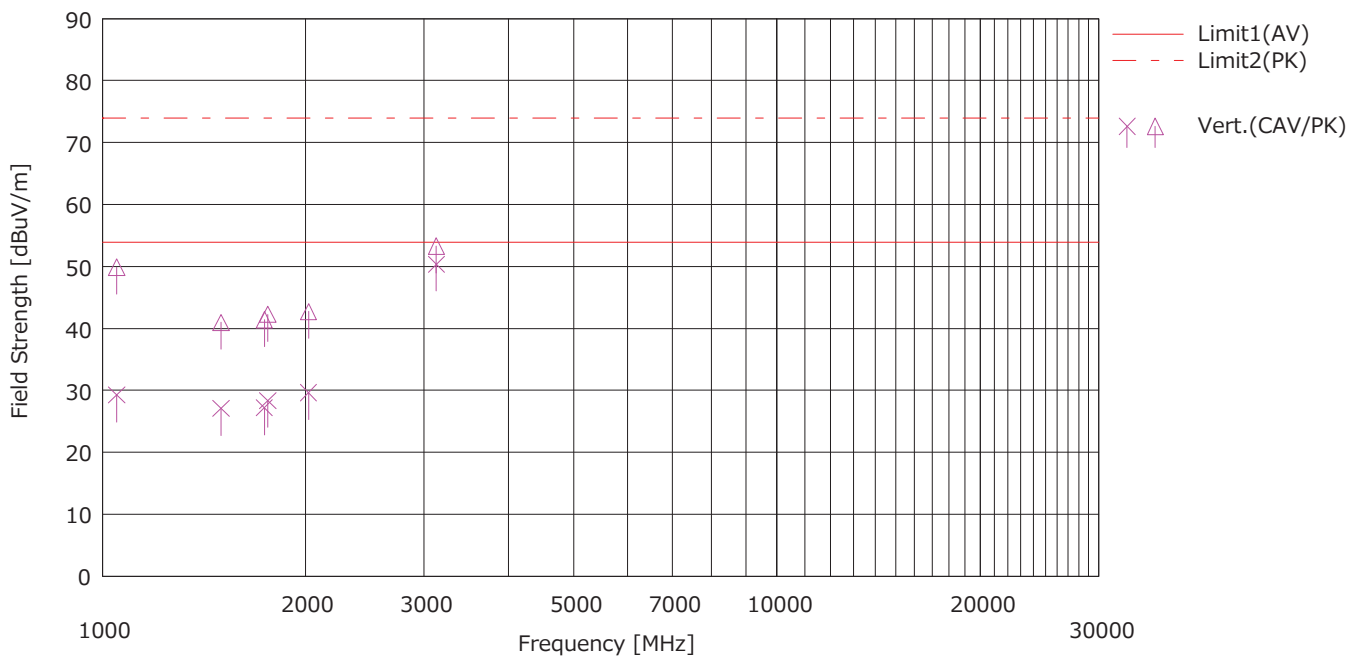
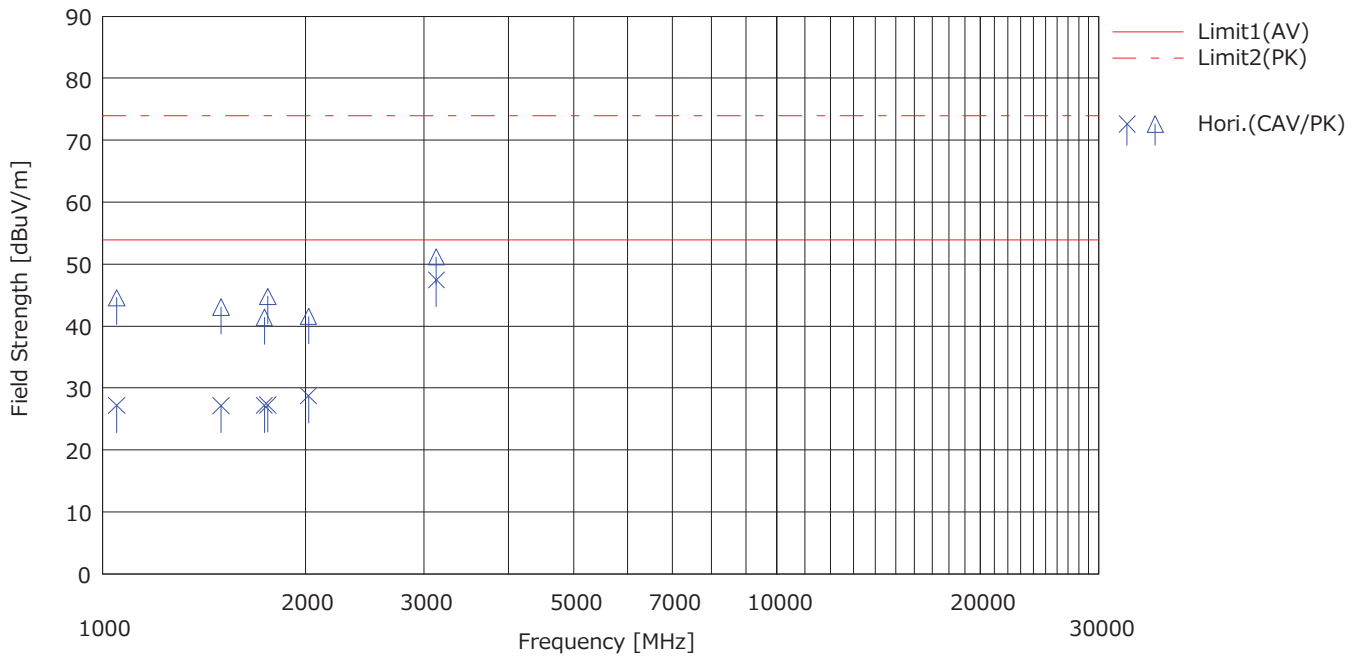
UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
 Date :11/08/2021

Mode : 1.FM Reception Analog (97.5 MHz)
 Order No. : 14071548
 Power : DC 13.2 V
 Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : Port Sub / Other

Limit : FCC Part 15B CLASS B (GHz, 3m)

Engineer : Seigo Kakehi



DATA OF RADIATED DISTURBANCE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
Date :11/08/2021

Mode : 1.FM Reception Analog (97.5 MHz)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : Port Sub / Other

Limit : FCC Part 15B CLASS B (GHz, 3m)

Engineer : Seigo Kakehi

<< CAV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pda. [H/V]	Ant. Type	Comment
		<CAV>	<PK>					<CAV>	<PK>	<AV>	<PK>	<AV>	<PK>			
		[dBuV]	[dBuV]					[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]			
1	1050.407	40.10	60.70	25.35	3.01	40.40	1.21	29.27	49.87	53.90	73.90	24.63	24.03	Vert.	HA	
2	1050.407	38.00	55.40	25.35	3.01	40.40	1.21	27.17	44.57	53.90	73.90	26.73	29.33	Hori.	HA	
3	1500.165	37.10	51.00	24.89	3.59	39.73	1.21	27.06	40.96	53.90	73.90	26.84	32.94	Vert.	HA	
4	1500.165	37.20	53.10	24.89	3.59	39.73	1.21	27.16	43.06	53.90	73.90	26.74	30.84	Hori.	HA	
5	1738.772	36.30	50.50	25.16	3.89	39.38	1.21	27.18	41.38	53.90	73.90	26.72	32.52	Vert.	HA	
6	1738.772	36.30	50.50	25.16	3.89	39.38	1.21	27.18	41.38	53.90	73.90	26.72	32.52	Hori.	HA	
7	1760.046	37.50	51.40	25.08	3.91	39.35	1.21	28.35	42.25	53.90	73.90	25.55	31.65	Vert.	HA	
8	1760.046	36.40	53.90	25.08	3.91	39.35	1.21	27.25	44.75	53.90	73.90	26.65	29.15	Hori.	HA	
9	2021.324	36.50	49.60	26.67	4.23	39.00	1.21	29.61	42.71	53.90	73.90	24.29	31.19	Vert.	HA	
10	2021.324	35.60	48.40	26.67	4.23	39.00	1.21	28.71	41.51	53.90	73.90	25.19	32.39	Hori.	HA	
11	3127.217	54.40	57.30	28.72	5.36	39.33	1.21	50.36	53.26	53.90	73.90	3.54	20.64	Vert.	HA	
12	3127.217	51.50	55.20	28.72	5.36	39.33	1.21	47.46	51.16	53.90	73.90	6.44	22.74	Hori.	HA	

DATA OF RADIATED DISTURBANCE TEST

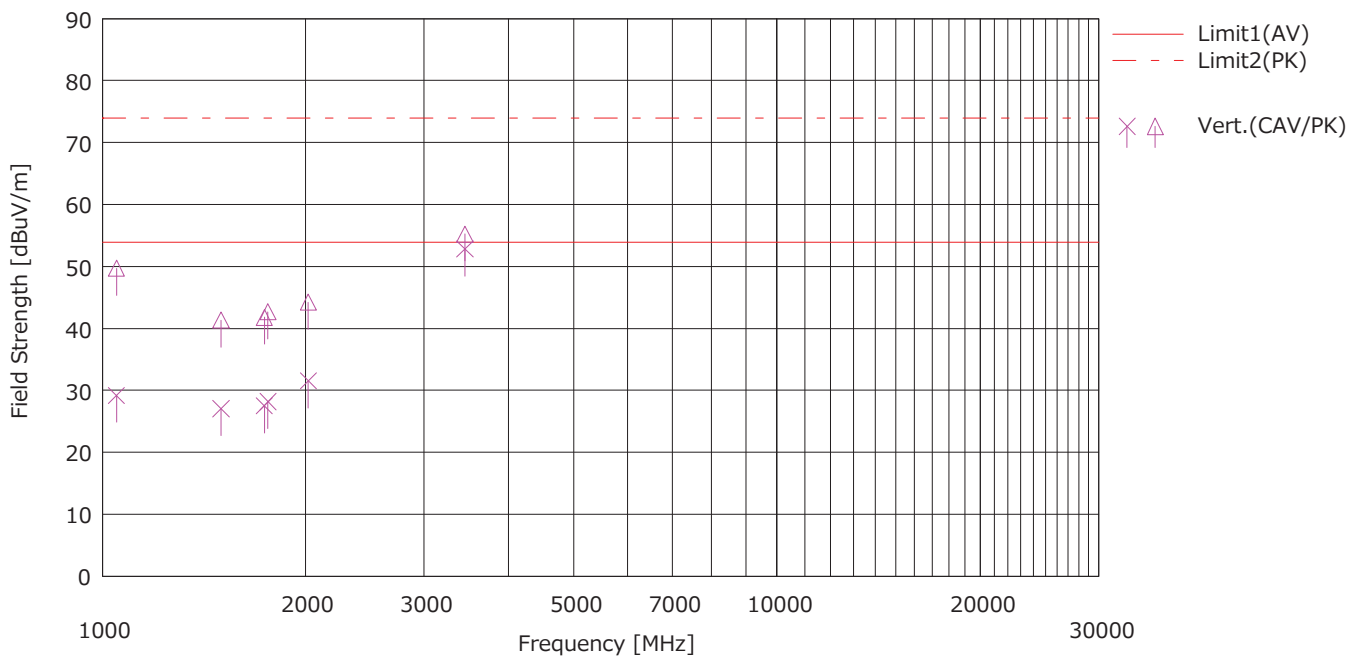
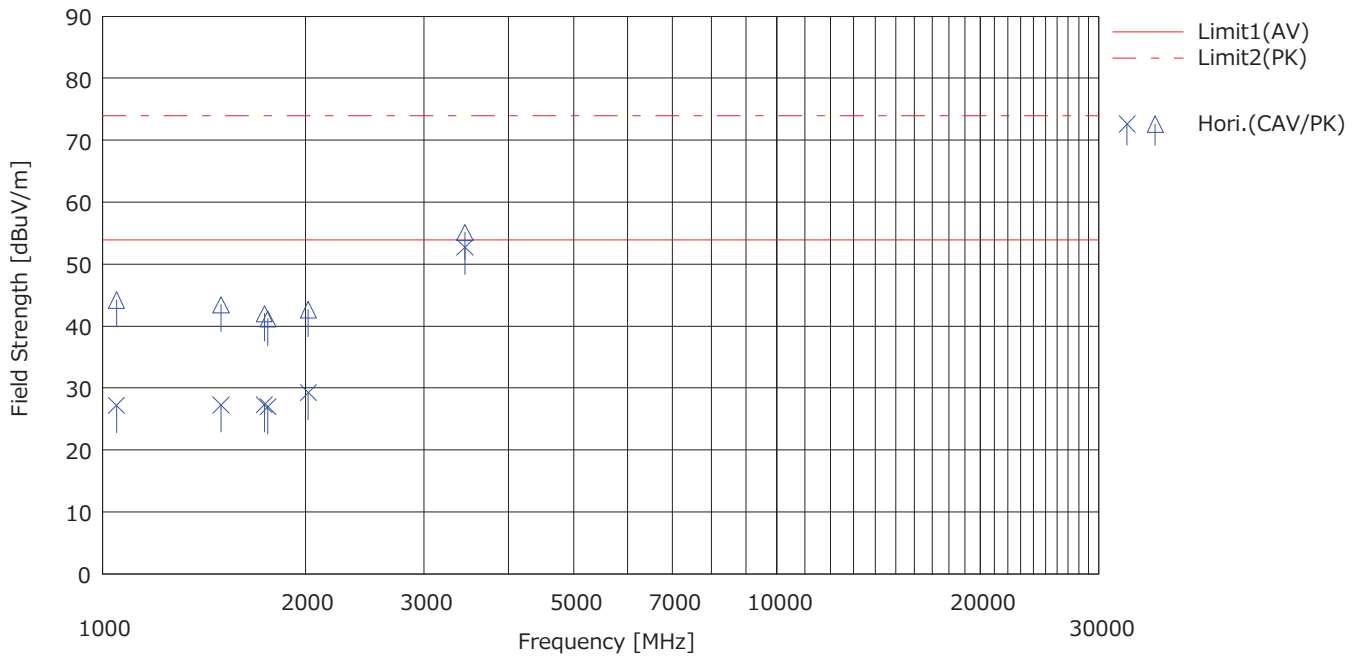
UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
 Date :11/08/2021

Mode : 1.FM Reception Analog (108 MHz)
 Order No. : 14071548
 Power : DC 13.2 V
 Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : Port Sub / Other

Limit : FCC Part 15B CLASS B (GHz, 3m)

Engineer : Seigo Kakehi



DATA OF RADIATED DISTURBANCE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 2 Open area test site
Date :11/08/2021

Mode : 1.FM Reception Analog (108 MHz)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : Port Sub / Other

Limit : FCC Part 15B CLASS B (GHz, 3m)

Engineer : Seigo Kakehi

<< CAV/PK DATA >>

No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pda. [H/V]	Ant. Type	Comment
		<CAV>	<PK>					<CAV>	<PK>	<AV>	<PK>	<AV>	<PK>			
		[dBuV]	[dBuV]					[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]			
1	1049.702	40.00	60.50	25.35	3.01	40.40	1.21	29.17	49.67	53.90	73.90	24.73	24.23	Vert.	HA	
2	1049.702	38.00	55.00	25.35	3.01	40.40	1.21	27.17	44.17	53.90	73.90	26.73	29.73	Hori.	HA	
3	1499.573	37.30	53.50	24.89	3.57	39.73	1.21	27.24	43.44	53.90	73.90	26.66	30.46	Hori.	HA	
4	1499.677	37.10	51.40	24.89	3.57	39.73	1.21	27.04	41.34	53.90	73.90	26.86	32.56	Vert.	HA	
5	1739.852	36.60	50.90	25.15	3.89	39.38	1.21	27.47	41.77	53.90	73.90	26.43	32.13	Vert.	HA	
6	1739.852	36.40	51.10	25.15	3.89	39.38	1.21	27.27	41.97	53.90	73.90	26.63	31.93	Hori.	HA	
7	1761.329	36.10	50.30	25.09	3.91	39.34	1.21	26.97	41.17	53.90	73.90	26.93	32.73	Hori.	HA	
8	1761.329	37.30	51.80	25.09	3.91	39.34	1.21	28.17	42.67	53.90	73.90	25.73	31.23	Vert.	HA	
9	2020.562	36.10	49.50	26.68	4.23	39.00	1.21	29.22	42.62	53.90	73.90	24.68	31.28	Hori.	HA	
10	2020.562	38.40	51.10	26.68	4.23	39.00	1.21	31.52	44.22	53.90	73.90	22.38	29.68	Vert.	HA	
11	3448.974	56.90	59.30	28.31	5.63	39.24	1.21	52.81	55.21	53.90	73.90	1.09	18.69	Vert.	HA	
12	3448.974	56.80	59.20	28.31	5.63	39.24	1.21	52.71	55.11	53.90	73.90	1.19	18.79	Hori.	HA	

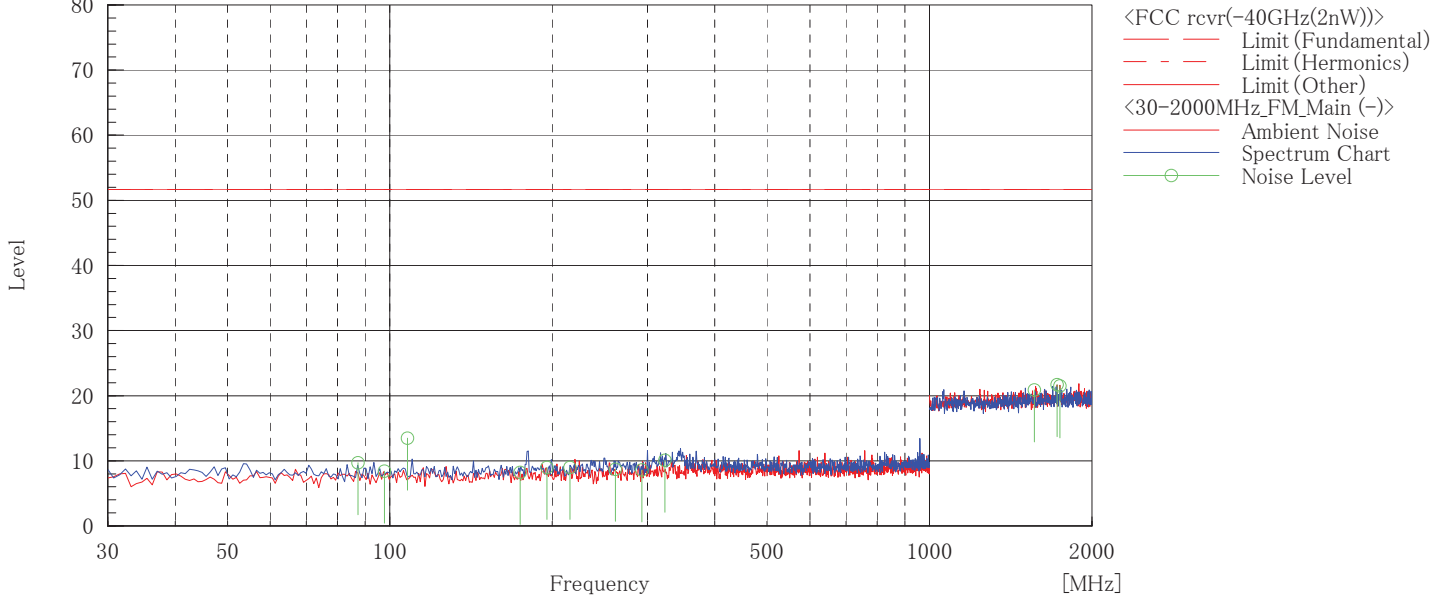
UL Japan, Inc.
 Yokowa No.6 S/R

<<ANTENNA TERMINAL VOLTAGE TEST>>

11/12/2021

EUT Power : DC 13.2 V
 [dB(μV)]

Limit : FCC Part15 SubpartB
 Mode : 1.FM Reception Analog (Main)
 Temp./Hum. : 21 deg.C / 35 % RH
 Engineer : Seigo Kakehi
 Test Room : No.6 Shielded Room



Spectrum Selection (Peak Value)

Ch. [MHz]	No.	Frequency [MHz]	Reading [dB(μV)]	c. f [dB]	Result [dB(μV)]	Limit [dB(μV)]	Margin [dB]
87.0	1	87.226	29.1	-19.4	9.7	51.7	42.0
97.5	2	97.726	27.8	-19.4	8.4	51.7	43.3
108.0	3	107.781	32.9	-19.4	13.5	51.7	38.2
87.0	4	174.451	27.1	-18.9	8.2	51.7	43.5
97.5	5	195.451	27.8	-18.8	9.0	51.7	42.7
108.0	6	215.562	27.7	-18.7	9.0	51.7	42.7
87.0	7	261.677	27.2	-18.5	8.7	51.7	43.0
97.5	8	293.177	27.0	-18.4	8.6	51.7	43.1
108.0	9	323.344	28.4	-18.3	10.1	51.7	41.6
97.5	10	1563.609	46.7	-25.8	20.9	51.7	30.8
108.0	11	1724.499	47.1	-25.4	21.7	51.7	30.0
87.0	12	1744.512	46.9	-25.4	21.5	51.7	30.3

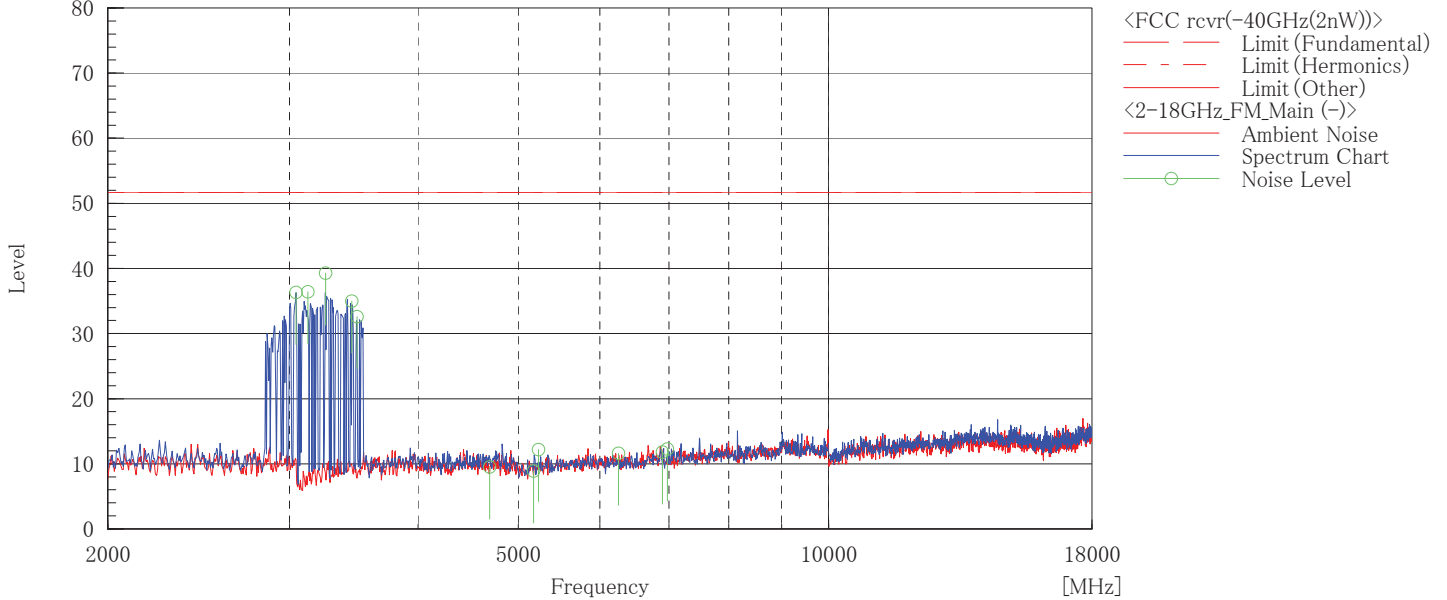
UL Japan, Inc.
 Yokowa No.6 S/R

<<ANTENNA TERMINAL VOLTAGE TEST>>

11/12/2021

EUT Power : DC 13.2 V
 [dB(μV)]

Limit : FCC Part15 SubpartB
 Mode : 1.FM Reception Analog (Main)
 Temp./Hum. : 21 deg.C / 35 % RH
 Engineer : Seigo Kakehi
 Test Room : No.6 Shielded Room



Spectrum Selection (Peak Value)

Ch. [MHz]	No.	Frequency [MHz]	Reading [dB(μV)]	c. f [dB]	Result [dB(μV)]	Limit [dB(μV)]	Margin [dB]
95.4	1	3046.067	69.8	-33.5	36.3	51.7	15.4
97.5	2	3127.217	69.9	-33.5	36.4	51.7	15.3
101.4	3	3252.067	72.7	-33.4	39.3	51.7	12.4
108.0	4	3448.997	68.1	-33.1	35.0	51.7	16.7
87.0	5	3489.024	65.7	-33.1	32.6	51.7	19.1
97.5	6	4690.826	41.8	-32.3	9.5	51.7	42.2
108.0	7	5173.496	41.2	-32.3	8.9	51.7	42.8
87.0	8	5233.536	44.5	-32.3	12.2	51.7	39.5
97.5	9	6254.434	43.8	-32.2	11.6	51.7	40.2
108.0	10	6897.994	44.0	-32.2	11.8	51.7	39.9
87.0	11	6978.048	44.5	-32.2	12.3	51.7	39.4

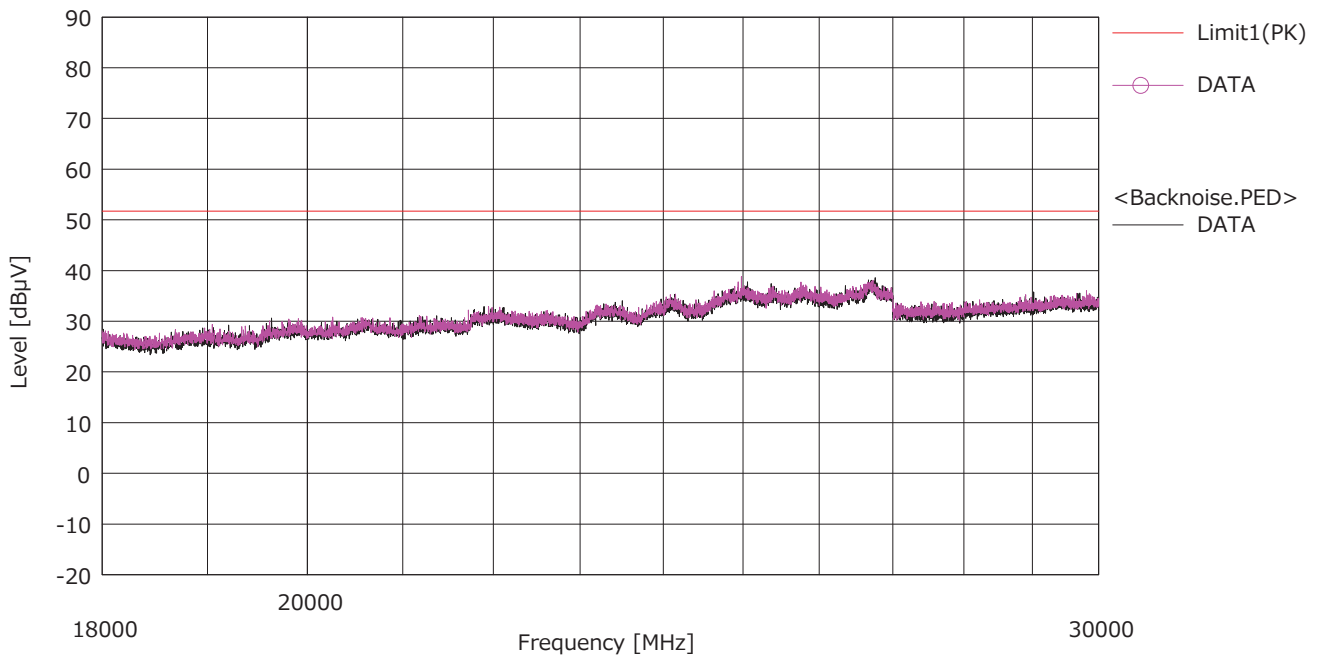
ANTENNA TERMINAL VOLTAGE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 6 Shielded room
Date : 2021/11/12

Mode : 1.FM Reception Analog (Main)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : -

Limit : FCC Part15 SubpartB



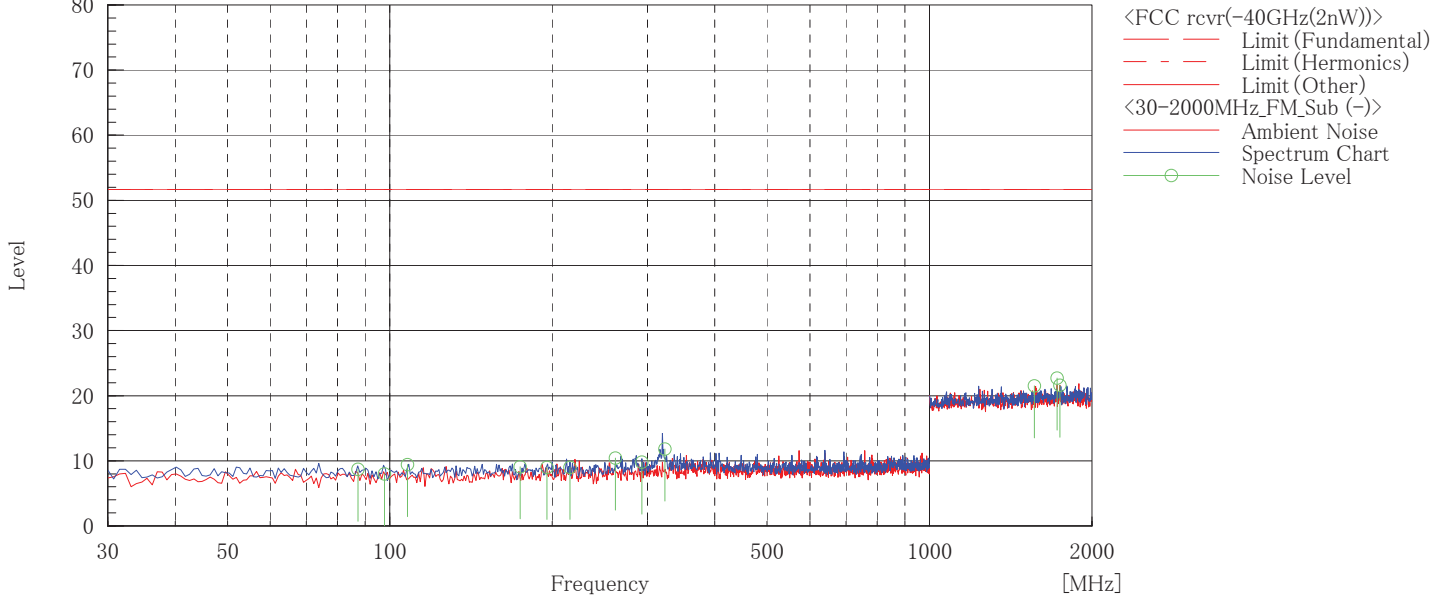
UL Japan, Inc.
 Yokowa No.6 S/R

<<ANTENNA TERMINAL VOLTAGE TEST>>

11/12/2021

EUT Power : DC 13.2 V
 [dB(μ V)]

Limit : FCC Part15 SubpartB
 Mode : 1.FM Reception Analog (Sub)
 Temp./Hum. : 21 deg.C / 35 % RH
 Engineer : Seigo Kakehi
 Test Room : No.6 Shielded Room



Spectrum Selection (Peak Value)

Ch. [MHz]	No.	Frequency [MHz]	Reading [dB(μ V)]	c. f [dB]	Result [dB(μ V)]	Limit [dB(μ V)]	Margin [dB]
87.0	1	87.226	28.1	-19.4	8.7	51.7	43.0
97.5	2	97.726	27.4	-19.4	8.0	51.7	43.7
108.0	3	107.781	28.8	-19.4	9.4	51.7	42.3
87.0	4	174.451	28.0	-18.9	9.1	51.7	42.6
97.5	5	195.451	27.8	-18.8	9.0	51.7	42.7
108.0	6	215.562	27.7	-18.7	9.0	51.7	42.7
87.0	7	261.677	28.9	-18.5	10.4	51.7	41.3
97.5	8	293.177	28.2	-18.4	9.8	51.7	41.9
108.0	9	323.344	30.1	-18.3	11.8	51.7	39.9
97.5	10	1563.609	47.3	-25.8	21.5	51.7	30.2
108.0	11	1724.499	48.1	-25.4	22.7	51.7	29.0
87.0	12	1744.512	47.0	-25.4	21.6	51.7	30.1

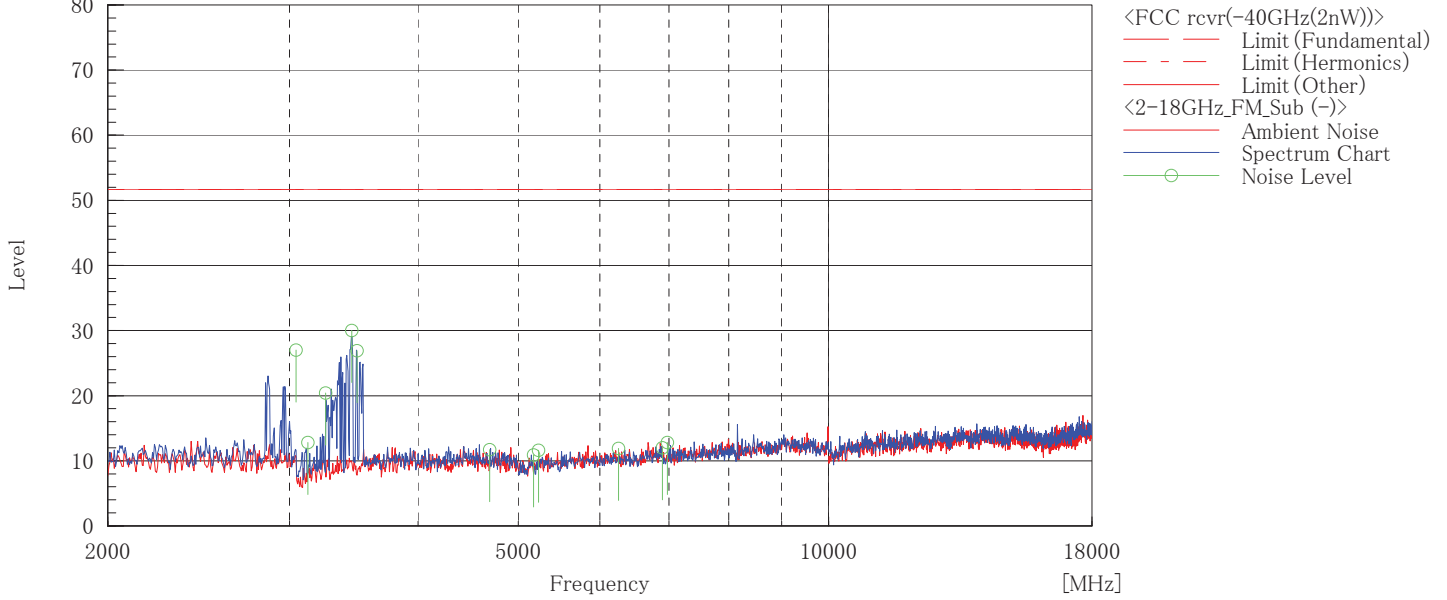
UL Japan, Inc.
 Yokowa No.6 S/R

<<ANTENNA TERMINAL VOLTAGE TEST>>

11/12/2021

EUT Power : DC 13.2 V
 [dB(μ V)]

Limit : FCC Part15 SubpartB
 Mode : 1.FM Reception Analog (Sub)
 Temp./Hum. : 21 deg.C / 35 % RH
 Engineer : Seigo Kakehi
 Test Room : No.6 Shielded Room



Spectrum Selection (Peak Value)

Ch.	No.	Frequency [MHz]	Reading [dB(μ V)]	c. f [dB]	Result [dB(μ V)]	Limit [dB(μ V)]	Margin [dB]
95.4	1	3046.067	60.5	-33.5	27.0	51.7	24.7
97.5	2	3127.217	46.3	-33.5	12.8	51.7	38.9
101.4	3	3252.067	53.8	-33.4	20.4	51.7	31.3
108.0	4	3448.997	63.1	-33.1	30.0	51.7	21.7
87.0	5	3489.024	60.0	-33.1	26.9	51.7	24.8
97.5	6	4690.826	44.0	-32.3	11.7	51.7	40.0
108.0	7	5173.496	43.2	-32.3	10.9	51.7	40.9
87.0	8	5233.536	43.9	-32.3	11.6	51.7	40.1
97.5	9	6254.434	44.1	-32.2	11.9	51.7	39.8
108.0	10	6897.994	44.2	-32.2	12.0	51.7	39.7
87.0	11	6978.048	45.0	-32.2	12.8	51.7	38.9

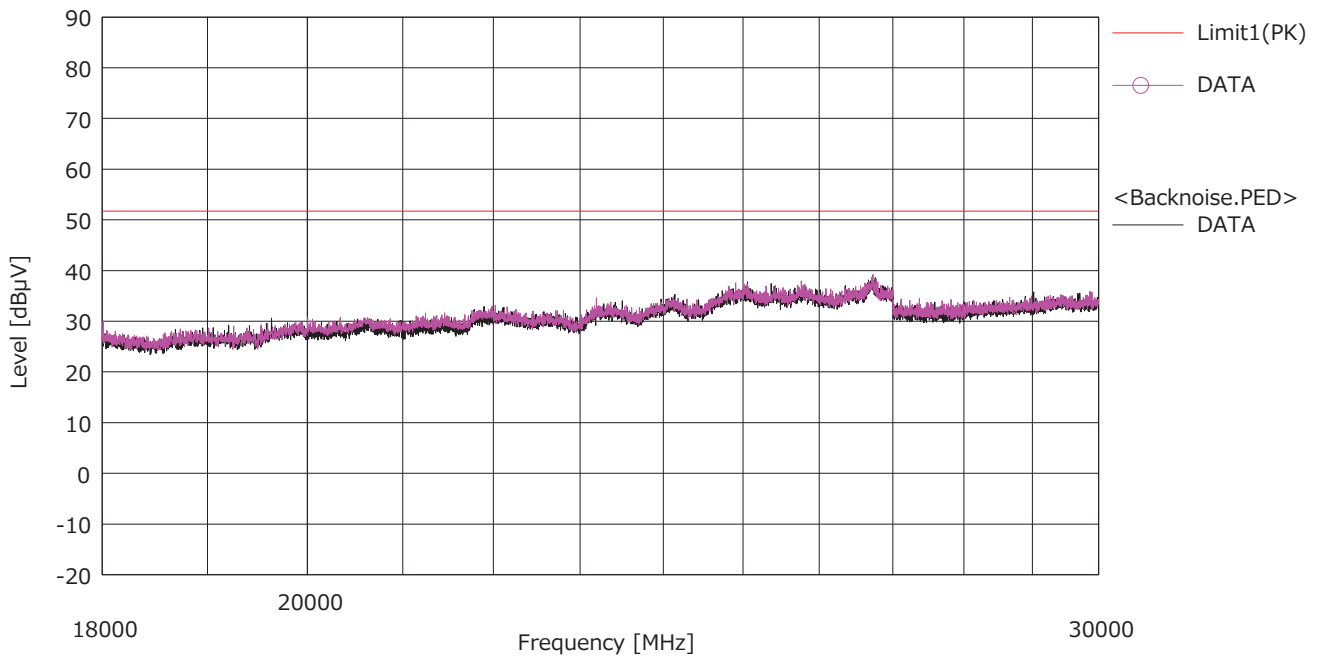
ANTENNA TERMINAL VOLTAGE TEST

UL Japan, Inc. Yokowa EMC Lab. No. 6 Shielded room
Date : 2021/11/12

Mode : 1.FM Reception Analog (Sub)
Order No. : 14071548
Power : DC 13.2 V
Temp. / Humi. : 20 deg. C / 65 % RH

Remarks : -

Limit : FCC Part15 SubpartB



APPENDIX 3

Test Instruments

***Hyphens for Last Calibration Date and Cal Int (month) are instruments that Calibration is not required (e.g. software), or instruments checked in advance before use.**

The expiration date of the calibration is the end of the expired month.

As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.

All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or international standards.

Test item

RE : Radiated disturbance

AT : Antenna terminal conducted disturbance

Test Item	Local ID	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
AT	OS-35	197080	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	510Q05R-5	2021/03/22	12
AT	DM-06	146650	Tester	SANWA	PC500	7019239	2021/06/02	12
AT	YJM-17	147545	Measure	Baumer	-	-	-	-
AT	APMAT07	146634	Matching Pad	TME	ZT-130	500101	2021/07/02	12
AT	ATS-02	160511	75Ω Cable	ULJapan	-	-	2020/11/16	12
AT	YATCC-C01	198948	Coaxial cable	Huber+Suhner	Sucoflex 104	805849/4	2021/05/18	12
AT	YATCC-C02	198943	Coaxial cable	Huber+Suhner	Sucoflex 104	805251/4	2021/05/18	12
AT	KAF-03	151789	Pre Amplifier	Hewlett Packard	8447D	2944A09947	2021/03/30	12
AT	COTS-YW-AT	146723	Software for Antenna Terminal Voltage	Toyo Corporation	-	-	-	-
AT	SA-15	146760	Spectrum Analyzer	EMC Instruments Corporation	E4440A	MY46187096	2021/09/13	12
AT	AF-04	146600	Pre Amplifier	Hewlett Packard	8449B	3008A01207	2021/07/01	12
RE AT	MSA-03	141884	Spectrum Analyzer	Keysight Technologies Inc	E4448A	MY44020357	2021/03/10	12
RE AT	MCC-55	141326	Microwave Cable	Suhner	SUCOFLEX101	2874(1m) / 2877(5m)	2021/03/02	12
RE AT	MPA-03	141577	Microwave System Power Amplifier	Keysight Technologies Inc	83050A	MY39500610	2021/10/28	12
RE	MHA-03	141504	Horn Antenna 26.5-40GHz	EMCO	3160-10	1150	2021/09/03	12

Test Item	Local ID	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
RE	BM-1A01	146833	Barometer	Sunoh	SBR121	002347	2021/09/09	36
RE	AF-03	146611	Pre Amplifier	Anritsu Corporation	MH648A	M97457	2021/07/08	12
RE	AT-02	146625	Attenuator	Anritsu Corporation	MP721A	6200239014	2021/07/07	12
RE	AT-40	146572	Attenuator	Anritsu Corporation	MP721B	6201150481	2021/07/07	12
RE	CC-2ORC	146806	Yokowa No.2 open coaxial(0.1-1000MHz)	UL Japan	CC-21,CC-22,CC-24,CC-25,CC-27,SW-21,SW-22	YO0201	2021/09/09	12
RE	YOATS-02(NSA)	146944	Open area test site	JSE	3m、10m	2	2021/09/22	12
RE	BA-14	159920	Biconical Antenna	Schwarzbeck Mess-Elektronik OHG	VHBB 9124 + BBA 9106	9124-1022	2021/03/15	12
RE	LA-15	146964	Logperiodic Antenna	Schwarzbeck Mess-Elektronik OHG	VUSLP9111B	185	2021/03/15	12
RE	TR-12	146893	EMI Test Receiver	Rohde & Schwarz	ESU 26	100413	2021/09/10	12
RE AT	COTS-YW-EMI-TSJ	146923	EMI measurement program	TSJ (Techno Science Japan)	TEPTO-DV	-	-	-
RE	DM-02	146648	Tester	SANWA	PC500	7019227	2021/06/02	12
RE	YJM-21	176229	Measure	Shinwa Sokutei	80814	-	-	-
RE	SC-02	147517	Search Coil	UL Japan	-	-	-	-
RE	OS-36	197155	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	510Q05R-6	2021/03/22	12
RE	AF-06	146601	Pre Amplifier	Keysight Technologies Inc	HP8449B	3008A01672	2020/11/16	12

Test Item	Local ID	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
RE	HA-07	146712	Broad-Band Horn Antenna	Schwarzbeck Mess-Elektronik OHG	BBHA 9120 D	9120D-684	2021/05/14	12
RE	YOATS-02(SVSWR)	146820	Open area test site	JSE	3m,10m	2	2021/02/04	12
RE	YCC-C01	199203	Microwave Cable	Huber+Suhner	Sucoflex 126EA	802271/126EA	2021/05/18	12
RE	YCC-C02	199204	Microwave Cable	Huber+Suhner	Sucoflex 126EA	802274/126EA	2021/05/18	12
RE	YAJ-01	147319	Antenna Tilt Jig	Intelligent System Engineering Co., Ltd	Antenna Tilt Jig	T-0004	-	-

End of Report