EMI TEST REPORT

Test Report No. 14181454M-B-R1

Customer	**Hitachi, Ltd.**
Description of EUT	**Contactless Vein Authentication Unit**
Model Number of EUT	**PC-KCC300**
FCC ID	**ZQDPCKCC300**
Test Standard	**FCC Part15 Subpart B:2021, Class B**
Test Result	**Complied (Refer to SECTION 3)**
Issue Date	**March 15, 2022**
Remarks	**-**

Representative Test Engineer	**Approved By**
Makoto Ebato Engineer	Tadashi Kuroda Leader

CERTIFICATE 1266.01

☐ 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.: 14181454M-B

This report is a revised version of 14181454M-B. 14181454M-B is replaced with this report.

Revision	Test report No.	Date	Page revised Contents
- (Original)	14181454M-B	February 28, 2022	-
1	14181454M-B-R1	March 15, 2022	Add FCC ID for All pages

Reference: Abbreviations (Including words undescribed in this report)

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

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Section 1: Customer information

Company Name	Hitachi, Ltd.
Address	Hitachi Omori 2nd Building, 6-27-18, Minamioi, Shinagawa-ku, Tokyo, 140-8572 Japan
Telephone Number	+81-80-5931-7168
Contact Person	Keiji Kitane

The information provided from the customer is as follows;
- Applicant, Type of EUT, Model Number of EUT on the cover 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 and Test Date
- SECTION 3: Test specification, procedures and results, SECTION 3.3 Performance criteria
- SECTION 4: Operation of EUT during testing

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

Section 2: Equipment under test (EUT)

2.1 Identification of EUT

Description	Contactless Vein Authentication Unit
Model Number	PC-KCC300
Serial Number	Refer to SECTION 4.2
Condition	Production prototype (Not for Sale: This sample is equivalent to mass-produced items.)
Modification	No Modification by the test lab
Receipt Date	January 31, 2022
Test Date	February 02 and February 4, 2022

2.2 Product description

General Specification

Rating	AC 100 V to 240 V, 50 / 60 Hz DC 12 V, 3 A
Size	excluding cable: 96 × 135 × 83 (Width x Depth x Height (mm))
Clock frequency (ies) in the system	CPU:1.8 GHz, USB:240 MHz

Section 3: Test specifications, 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

* The EUT complies with ICES-003 Issue 7: 2020

3.2 Procedures & results

Test 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	FCC Part 15 Subpart B 15.107 Class B	N/A	16.5 dB Freq: 0.15000 MHz Detector: Quasi-Peak Phase: L	Complied a)	-
Radiated emission	ANSI C63.4: 2014 + C63.4a: 2017 8. Radiated emission measurements	FCC Part 15 Subpart B 15.109 Class B	N/A	7.6 dB Freq: 720.000 MHz Detector: Quasi-Peak Pola: Horizontal	Complied b)	*1)

Note: UL Japan, Inc.'s EMI Work Procedure No.: 13-EM-W0420.
*1) Measurements were limited up to 9 GHz since the highest frequency of internal source of the EUT is 1.8 GHz.

a) Refer to Appendix 2 (data of Conducted emission)
b) Refer to Appendix 2 (data of Radiated emission)

Symbols:
Complied The 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 standards

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

3.4 Confirmation

UL Japan, Inc. hereby confirm that EUT, in the configuration tested, complies with the specification(s) FCC Part15 Subpart B:2021, Class B.

3.5 Uncertainty

EMI
There is no applicable rule of uncertainty in this applied standard. Therefore, the results are derived depending on whether laboratory uncertainty is applied.

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

Item	Frequency range	Calculate Uncertainty (+/-)	U*cispr* (+/-)
Conducted emission (AC Mains) AMN	9 kHz to 150 kHz	3.7 dB	3.8 dB
	150 kHz to 30 MHz	3.3 dB	3.4 dB
Conducted emission (Communication port) AAN	150 kHz to 30 MHz	4.6 dB	5.0 dB
Conducted emission (Communication port) Current probe	150 kHz to 30 MHz	2.5 dB	2.9 dB
Conducted emission (Communication port) Voltage probe	150 kHz to 30 MHz	2.5 dB	2.9 dB
Radiated emission (Measurement distance: 3 m)	9 kHz to 30 MHz	2.9 dB	Not Defined
	30 MHz to 200 MHz	6.1 dB	6.3 dB
	200 MHz to 1 GHz	6.2 dB	
	1 GHz to 6 GHz	5.0 dB	5.2 dB
	6 GHz to 18 GHz	5.4 dB	5.5 dB
	18 GHz to 40 GHz	5.5 dB	Not Defined
Radiated emission (Measurement distance: 10 m)	9 kHz to 30 MHz	2.7 dB	Not Defined
	30 MHz to 200 MHz	4.9 dB	5.2 dB
	200 MHz to 1 GHz	5.0 dB	
Radiated emission (Measurement distance: 1 m)	1 GHz to 18 GHz	5.4 dB	Not Defined
	18 GHz to 40 GHz	5.6 dB	
Radiated emission (Measurement distance: 0.5 m)	26.5 GHz to 40 GHz	5.9 dB	Not Defined
Disturbance power	9 kHz to 30 MHz	4.4 dB	4.5 dB
Radiated emission(LLAS)	9 kHz to 30 MHz	3.3 dB	3.3 dB

3.6 Test Location

UL Japan, Inc. Kashima EMC Lab.
1614 Mushihata, Katori-shi, Chiba-ken, 289-0341 JAPAN
Telephone: +81 478 88 6500, Facsimile: +81 478 82 3373
A2LA Certificate Number: 1266.01 / FCC Test Firm Registration Number: 910230
ISED Lab Company Number: 4659A / CAB identifier: JP0006

Test site	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Maximum measurement distance
No.1 Open site	6.0 x 5.5 x 2.5	20 x 40	10 m
No.5 Open site	8.6 x 7.1 x 2.4	18 x 23	10 m
No.1 Shielded room	5.4 x 4.5 x 2.3	-	-
No.5 Shielded Room	4.2 x 3.1 x 2.5	-	-
No.9 Shielded Room	6.1 x 3.6 x 2.8	-	-
No.6 Semi-anechoic Chamber	8.5 x 5.5 x 5.2	-	3 m
No.10 Semi-anechoic Chamber	18.4 x 9.9 x 7.7	-	10 m
No.11 Semi-anechoic Chamber	9.0 x 6.5 x 5.2	-	3 m
No.1 Measurement room	5.0 x 3.7 x 2.6	-	-
No.2 Measurement room	4.3 x 4.4 x 2.7	-	-
No.3 Measurement room	4.5 x 5.3 x 2.7	-	-

3.7 Test setup, Test Data & Test instruments

Refer to Appendix 1 to 3.

Section 4: Operation of EUT during testing

4.1 Operating mode

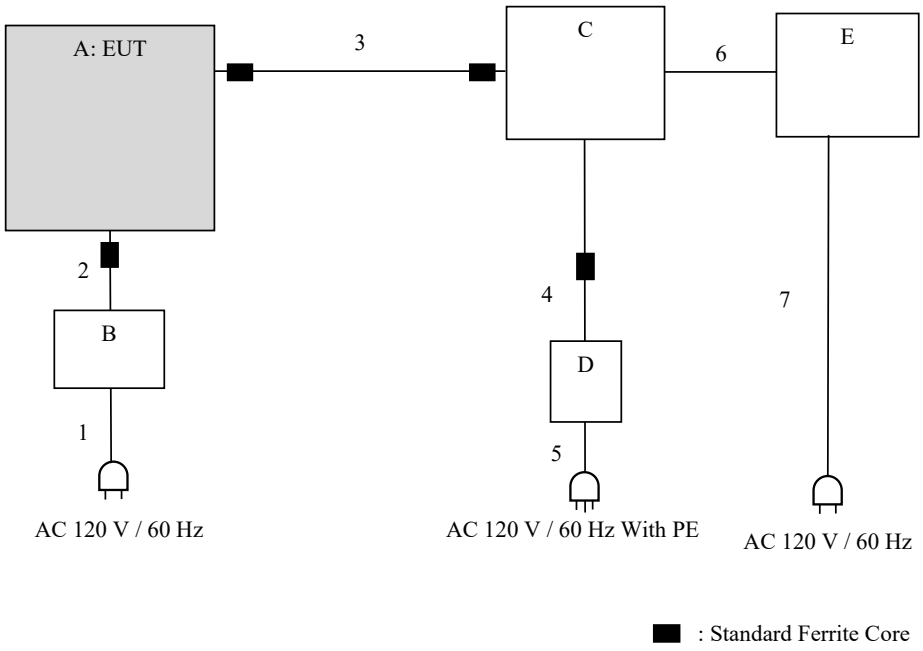
The EUT exercise program used during testing was designed to exercise the various system components in a manner similar to typical use.

Operating mode(s)	1. Continuous registration/authentication mode

Software	C-1 firmware, Version: V01-02

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

4.2 Configuration and peripherals



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

*As a result of comparing AC 120 V and AC 240 V at pre-check, conducted emission test was performed with AC 120 V of the worst voltage as representative.

EUT(s) and support equipment(s)

No.	Item	Model number	Serial number	Brand	Remarks
A	Contactless Vein Authentication Unit	PC-KCC300	No.13	Hitachi, Ltd.	EUT
B	AC Adapter	ATS036T-A120	-	Adapter Technology Co.,Ltd.	-
C	Laptop PC	Vostro 3500	4N3K6 A01	DELL	-
D	AC Adapter	LA45NM140	CN-0KXTTW-LOC00-13G-424B-A12	DELL	-
E	Printer	K10220	FBNN82506	CANON	-

Cable(s) used

No.	Cable name	Length [m]	Shield		Remarks
			Cable	Connector	
1	AC	2.1	Unshielded	Unshielded	2wire
2	DC	1.5	Unshielded	Unshielded	-
3	USB	1.8	Shielded	Shielded	-
4	DC	1.8	Unshielded	Unshielded	-
5	AC	0.8	Unshielded	Unshielded	-
6	USB	1.8	Shielded	Shielded	-
7	AC	1.8	Unshielded	Unshielded	-

Section 5: Conducted emission

5.1 Operating environment

Test room	Refer to data
Temperature	Refer to data
Humidity	Refer to data

5.2 Test configuration

EUT was placed on a wooden table of nominal size, 1.0 m by 2.0 m, raised 0.8 m above the conducting ground plane. The rear of tabletop was located 40 cm to the vertical conducting plane. The rear of EUT and its peripherals was aligned and flushed with rear of tabletop. All other surfaces of tabletop were at least 80 cm from any other grounded conducting surface. EUT was located 80 cm from the LISN/AMN and excess AC cable was bundled in center. I/O cables that were connected to the other peripherals were bundled in center. They were folded back and forth forming a bundle 30 cm to 40 cm long and were hanged at a 40 cm height to the ground plane. Each EUT current-carrying power lead, except the ground (safety) lead, was individually connected through a LISN/AMN to the input power source. All unused 50 ohm connectors of the LISN/AMN were resistivity terminated in 50 ohm when not connected to the measuring equipment. Photographs of the set up are shown in Appendix 1.

5.3 Test conditions

Frequency range	0.15 MHz to 30 MHz
EUT position	Table top
EUT operation	See Clause 4.1

5.4 Test procedure

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT within a shielded room.
The EUT was connected to a Line Impedance Stabilization Network (LISN) / Artificial Mains network (AMN).
An overview sweep with peak detection has been performed.
The measurements have been performed with a quasi-peak detector and if required, with an average detector.
The conducted emission measurements were made with the following detector function of the test receiver.

Detector Type	QP	CISPR AV
IF Bandwidth	9 kHz	9 kHz

5.5 Results

Summary of the test results	Pass

Section 6: Radiated emission

6.1 Operating environment

Test room	Refer to data
Temperature	Refer to data
Humidity	Refer to data

6.2 Test configuration

EUT was placed on a polystyrene foam of nominal size, 1.0 m by 2.0 m (below 1 GHz), 1.0 m by 1.5 m (above 1 GHz), raised 0.8 m above the conducting ground plane.
The EUT was set on the edge of the tabletop.
Test was made with the antenna positioned in both the horizontal and vertical planes of polarization.
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.

6.3 Test conditions

Frequency range	30 MHz to 9000 MHz
Test distance	3.0 m (below 1 GHz) 3.0 m (above 1 GHz)
EUT position	Table top

6.4 Test procedure

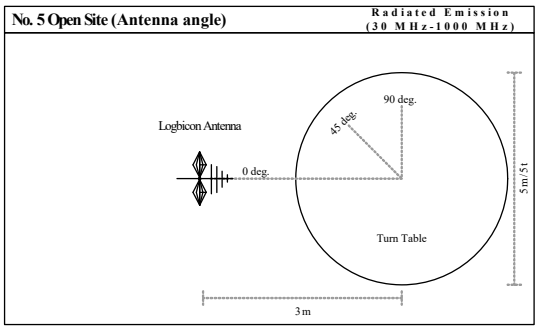
The height of the measuring antenna varied between 1 and 4 m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.
The measurements were performed for both vertical and horizontal antenna polarization with the Test Receiver, or the Spectrum Analyzer.
For above 1 GHz, test antenna was aimed at the EUT for receiving the maximum signal and always kept within the illumination area of the 3 dB beam width of the antenna.

The radiated emission measurements were made with the following detector function of the Test Receiver and the Spectrum Analyzer.

Frequency	30 MHz to 1000 MHz	1000 MHz to 9000 MHz *1)	
Instrument used	Test receiver	Spectrum analyzer	
Detector Type	QP	AV *2)	PK
IF Band width	120 kHz	RBW 1 MHz/ VBW 10 Hz	RBW 1 MHz/ VBW 3 MHz

*1) The measurement data was adjusted to a 3.0 m distance using the following Distance Factor.
Distance Factor: See Figure 2.
*2) When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

Figure 1: Antenna angle and Absorber placement



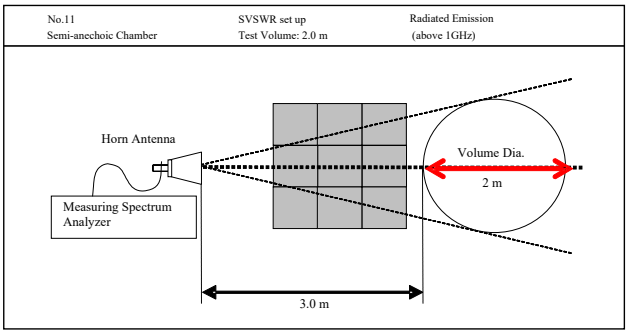
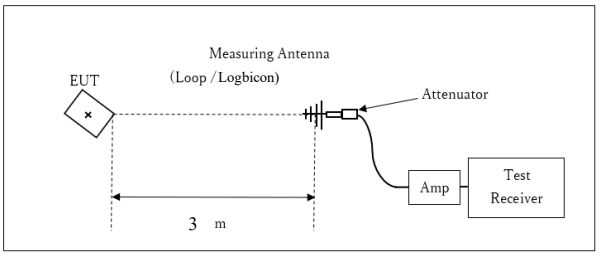


Figure 2: Test Setup

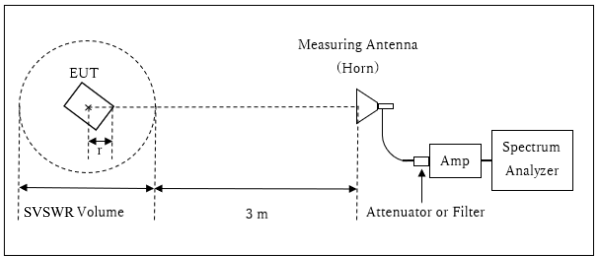
Below 1 GHz



× : Center of turn table

*Test Distance: 3.0 m

1 GHz to 9 GHz



r : Radius of an outer periphery of EUT
× : Center of turn table

Distance Factor: 20 x log (3.20 m / 3 m) = 0.56 dB
*Test Distance: (3 + SVSWR Volume /2) -r = 3.2 m

SVSWR Volume: 2 m
(SVSWR Volume has been calibrated based on CISPR 16-1-4.)
r= 0.8 m

The test was made on EUT at the normal use position.

6.5 Results

Summary of the test results	Pass

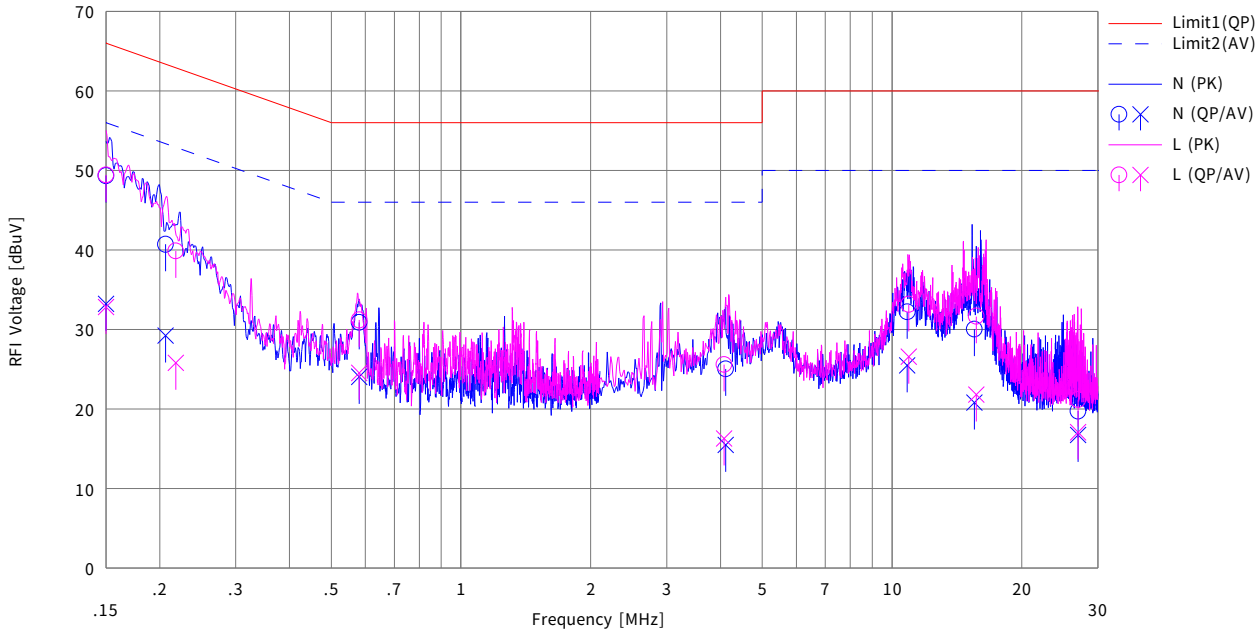
DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Kashima EMC Lab. No.5 Shielded Room
Date : 2022/02/02

Company	: Hitachi,Ltd.	Mode	: Continuous registration/authentication mode
Kind of EUT	: Contactless Vein Authentication Unit	Order No.	: 14181454M
Model No.	: PC-KCC300	Power	: AC 120V / 60Hz
Serial No.	: No.13	Temp./Humi.	: 23deg.C / 38%RH
Remarks	: -		

Limit : FCC_Part 15 Subpart B(15.107)_Class B

Tested by : Makoto Ebato



No.	Freq.	Reading		C.Fac	Results		Limit		Margin		Phase	Comment
		<QP>	<AV>		<QP>	<AV>	<QP>	<AV>	<QP>	<AV>		
	[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
1	0.15000	39.23	23.11	10.11	49.34	33.22	66.00	56.00	16.6	22.7	N	
2	0.20630	30.59	19.10	10.12	40.71	29.22	63.35	53.35	22.6	24.1	N	
3	0.58092	20.71	13.87	10.18	30.89	24.05	56.00	46.00	25.1	21.9	N	
4	4.11125	14.57	5.00	10.48	25.05	15.48	56.00	46.00	30.9	30.5	N	
5	10.84565	21.30	14.55	10.92	32.22	25.47	60.00	50.00	27.7	24.5	N	
6	15.51679	18.78	9.54	11.26	30.04	20.80	60.00	50.00	29.9	29.2	N	
7	27.00000	8.00	5.00	11.74	19.74	16.74	60.00	50.00	40.2	33.2	N	
8	0.15000	39.32	22.70	10.11	49.43	32.81	66.00	56.00	16.5	23.1	L	
9	0.21792	29.75	15.68	10.13	39.88	25.81	62.90	52.90	23.0	27.0	L	
10	0.58090	21.01	14.36	10.18	31.19	24.54	56.00	46.00	24.8	21.4	L	
11	4.07806	15.11	5.80	10.50	25.61	16.30	56.00	46.00	30.3	29.7	L	
12	10.93045	22.10	15.54	11.05	33.15	26.59	60.00	50.00	26.8	23.4	L	
13	15.67010	20.17	10.32	11.49	31.66	21.81	60.00	50.00	28.3	28.1	L	
14	27.00000	9.10	5.00	12.08	21.18	17.08	60.00	50.00	38.8	32.9	L	

Calculation:Result[dBuV]=Reading[dBuV]+C.Fac(AMN+Cable+ATT)[dB]
AMN:CLS-11

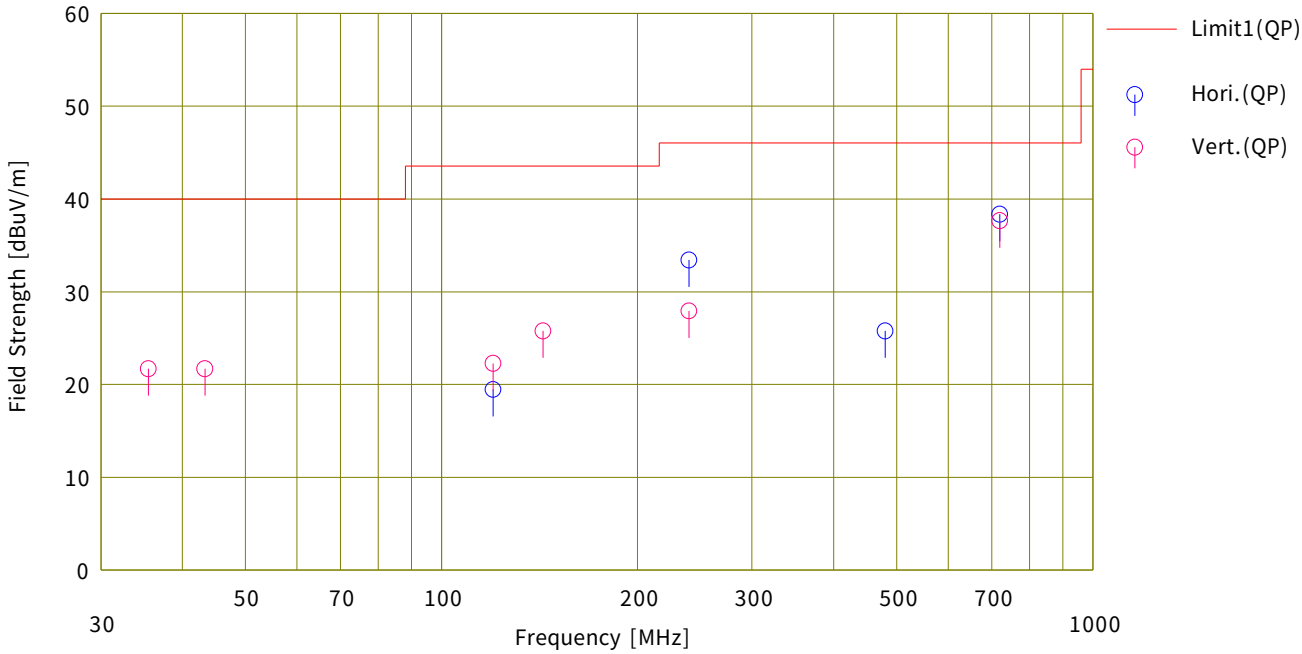
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Kashima EMC Lab. No.5 Open area test site
Date : 2022/02/02

Company	: Hitachi,Ltd.	Mode	: Continuous registration/authentication mode
Kind of EUT	: Contactless Vein Authentication Unit	Order No.	: 14181454M
Model No.	: PC-KCC300	Power	: AC 120V / 60Hz
Serial No.	: No.13	Temp./Humi.	: 20deg.C / 41%RH
Remarks	: -		

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Tested by : Makoto Ebato



No.	Freq. [MHz]	Reading <QP> [dBuV]	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result <QP> [dBuV/m]	Limit <QP> [dBuV/m]	Margin <QP> [dB]	Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
1	120.000	28.80	10.96	7.29	27.59	19.46	43.52	24.0	Hori.	280	0	HB	
2	240.000	40.90	11.30	8.42	27.20	33.42	46.02	12.6	Hori.	172	170	HB	
3	480.000	26.70	17.50	10.08	28.51	25.77	46.02	20.2	Hori.	100	47	HB	
4	720.000	34.60	21.22	11.37	28.85	38.34	46.02	7.6	Hori.	120	163	HB	
5	35.504	30.80	12.49	6.10	27.71	21.68	40.00	18.3	Vert.	100	120	HB	
6	43.348	29.90	13.23	6.25	27.70	21.68	40.00	18.3	Vert.	100	240	HB	
7	120.000	31.60	10.96	7.29	27.59	22.26	43.52	21.2	Vert.	100	60	HB	
8	143.203	33.00	12.76	7.55	27.54	25.77	43.52	17.7	Vert.	100	0	HB	
9	240.000	35.40	11.30	8.42	27.20	27.92	46.02	18.1	Vert.	100	185	HB	
10	720.000	33.90	21.22	11.37	28.85	37.64	46.02	8.3	Vert.	100	185	HB	

Calculation:Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable+ATT)[dB]-Gain(AMP)[dB]
Ant.Type=HB:Hybrid Antenna

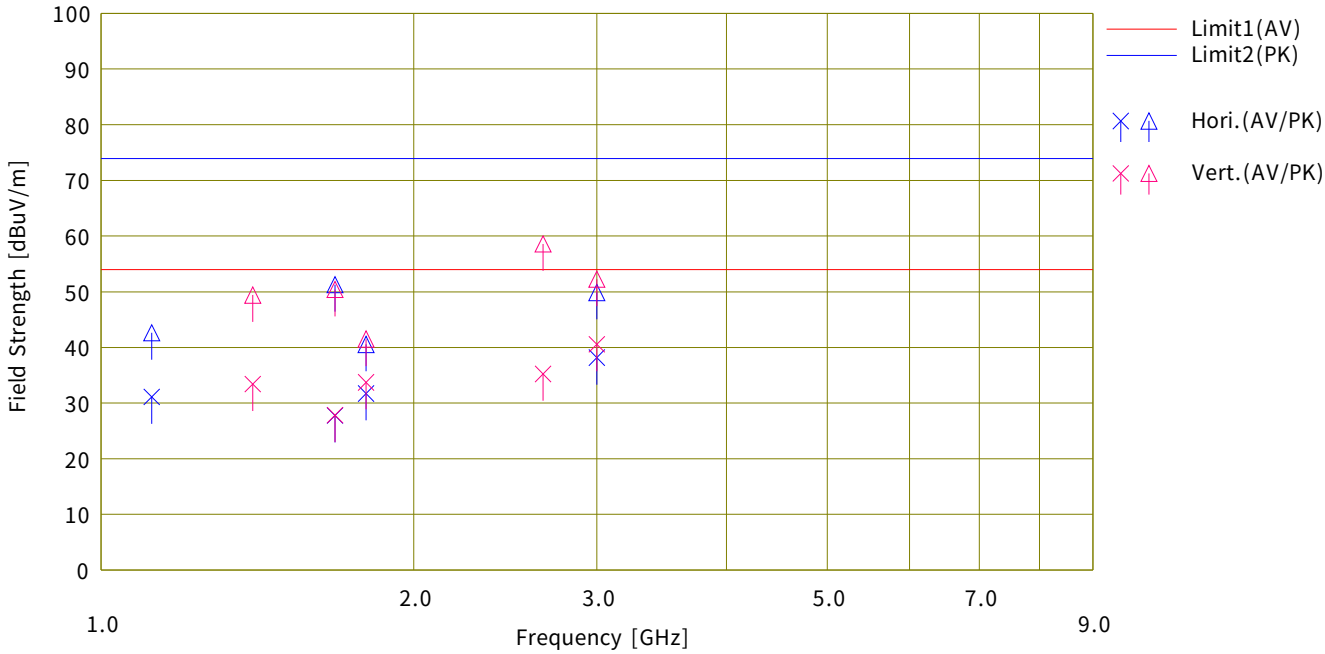
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Kashima EMC Lab. No.11 Semi-Anechoic Chamber
Date : 2022/02/04

Company	: Hitachi,Ltd.	Mode	: Continuous registration/authentication mode
Kind of EUT	: Contactless Vein Authentication Unit	Order No.	: 14181454M
Model No.	: PC-KCC300	Power	: AC 120V / 60Hz
Serial No.	: No.13	Temp./Humi.	: 23deg.C / 37%RH
Remarks	: Test Distance=3.2m		

Limit : FCC_Part 15 Subpart B(15.109)_Class B

Tested by : Makoto Ebato



No.	Freq.	Reading <AV>	Reading <PK>	Ant.Fac	Loss	Gain	D.Fac	Result <AV>	Result <PK>	Limit <AV>	Limit <PK>	Margin <AV>	Margin <PK>	Pola.	Height	Angle	Ant. Type	Comment
	[MHz]	[dBuV]	[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]	[H/V]	[cm]	[deg]		
1	1120.000	50.69	62.20	24.07	2.26	46.47	0.56	31.11	42.62	53.97	73.97	22.8	31.3	Hori.	130	50	Horn	
2	1680.000	45.35	68.85	25.42	2.80	46.38	0.56	27.75	51.25	53.97	73.97	26.2	22.7	Hori.	100	226	Horn	
3	1800.000	48.93	57.72	25.69	2.91	46.37	0.56	31.72	40.51	53.97	73.97	22.2	33.4	Hori.	100	205	Horn	
4	3000.000	50.28	62.00	29.25	3.82	45.77	0.56	38.14	49.86	53.97	73.97	15.8	24.1	Hori.	100	148	Horn	
5	1400.000	51.51	67.49	25.21	2.54	46.41	0.56	33.41	49.39	53.97	73.97	20.5	24.5	Vert.	283	326	Horn	
6	1680.000	45.42	68.00	25.42	2.80	46.38	0.56	27.82	50.40	53.97	73.97	26.1	23.5	Vert.	100	155	Horn	
7	1800.000	50.94	58.70	25.69	2.91	46.37	0.56	33.73	41.49	53.97	73.97	20.2	32.4	Vert.	100	185	Horn	
8	2662.802	48.00	71.33	28.91	3.59	45.84	0.56	35.22	58.55	53.97	73.97	18.7	15.4	Vert.	339	45	Horn	
9	3000.000	52.69	64.36	29.25	3.82	45.77	0.56	40.55	52.22	53.97	73.97	13.4	21.7	Vert.	100	65	Horn	

Calculation:Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable)[dB]+D.Fac[dB]-Gain(AMP)[dB]
Ant.Type=Horn:Horn Antenna

Appendix 3 : Test Instruments

Test Name	Local Id	LIMS ID	Description	Manufacturer	Model	Serial	Last Cal Date	CalInt
CE	CLS-08	143502	A.M.N.	Rohde & Schwarz	ESH3-Z5	847265/011	2021/07/15	12
CE	CLS-11	143505	A.M.N.	Rohde & Schwarz	ESH3-Z5	835239/022	2021/07/15	12
CE	CTM-28	143705	Terminator	Suhner	65_BNC-50-0-2/133_NE	none	2021/11/17	12
CE	CCC-S5-C(SR)	143167	5 Site CE (SR) System	None	none(No.5 CE SR)	-	2021/07/09	12
CE	CTR-04	144195	Test Receiver	Rohde & Schwarz	ESCI	100053	2021/09/10	12
RE	CCC-S5-RL	142985	5 Site RE System	None	none(No.5 RE)	none	2022/01/12	12
RE	CBL-06	143119	LOGBICON	Schwarzbeck Mess-Elektronik OHG	VULB 9168	130	2021/04/26	12
RE	CAF-06	142928	Pre-Amplifier	Hewlett Packard	8447D	2944A09906	2021/07/09	12
RE	CAT5-02	178805	5dB Fixed Atten.	Pasternack Enterprises	PE7047-5	none	2021/04/21	12
RE	CTR-04	144195	Test Receiver	Rohde & Schwarz	ESCI	100053	2021/09/10	12
RE(GHz)	CHA-25	143456	Double Ridged Wave Guide	ETS-Lindgren (Cedar Park, Texas)	3115	00204573	2021/02/06	12
RE(GHz)	CTR-01	144193	Test Receiver	Rohde & Schwarz	ESU40	100426	2021/04/23	12
RE(GHz)	TPA-14	175395	Pre Amplifier	Erzia Technologies S.L.	ERZ-LNA-0100-2700-45-4	16A2001702002	2021/12/07	12
RE(GHz)	CCC-G14	192241	Microwave Cable	Huber+Suhner	SF104/PC35m/PC35m/1000mm	805411/4	2022/01/18	12
RE(GHz)	CCC-G17	192244	Microwave Cable	Huber+Suhner	SF104/11N/11PC35/8000MM	808996/4	2022/01/18	12
EMI	CSCL-13	143654	Ruler	TAJIMA	L19-55	none	-	-
EMI	COS-05	143537	Temperature & Humidity Indicator	A&D Company	AD-5681	6975761	2021/07/27	12
EMI	CBM-05	143128	Barometer	OTA	No.11	15404	2021/11/24	36
EMI	CTS-09	144211	Digital Multimeter	Fluke Corporation	112	89790194	2021/10/20	12
EMI	COTS-CEMI-03	PRE0189702	EMI Software	TSJ (Techno Science Japan)	TEPTO-DV3(RE,CE,ME,PE)	-	-	-

*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 :
CE:Conducted emission
RE:Radiated emission

End of Report