

RADIO TEST REPORT

Test Report No. 15800110M-A-R1

Customer	AIOI-SYSTEMS CO.,LTD.
Description of EUT	Smart Card/Tag Reader/Writer
Model Number of EUT	SC2101
FCC ID	2BASX-SC2101
Test Regulation	FCC Part 15 Subpart C
Test Result	Complied
Issue Date	December 22, 2025
Remarks	-

Representative test engineerTomoyuki Watanabe
Engineer**Approved by**Kazuhiro Ando
Engineer

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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- For any test report referred in this report, the latest version (including any revisions) is always referred to.
- If the latest version is a revision, it replaces the previous version. See the table below for revisions and versions.

REVISION HISTORY

Revision	Test Report No.	Date	Page Revised Contents
- (Original)	15800110M-A	July 22, 2025	-
1	15800110M-A-R1	December 22, 2025	P.10: Updated configuration for 20 dB bandwidth and frequency tolerance. P.11: Changed EUT serial number to "001". P.16 - P.24: Changed serial number to "001".

Reference: Abbreviations (Including words undescribed in this report)

A2LA	The American Association for Laboratory Accreditation	ICES	Interference-Causing Equipment Standard
AC	Alternating Current	IEC	International Electrotechnical Commission
AFH	Adaptive Frequency Hopping	IEEE	Institute of Electrical and Electronics Engineers
AM	Amplitude Modulation	IF	Intermediate Frequency
Amp, AMP	Amplifier	ILAC	International Laboratory Accreditation Conference
ANSI	American National Standards Institute	ISED	Innovation, Science and Economic Development Canada
Ant, ANT	Antenna	ISO	International Organization for Standardization
AP	Access Point	JAB	Japan Accreditation Board
ASK	Amplitude Shift Keying	LAN	Local Area Network
Atten., ATT	Attenuator	LIMS	Laboratory Information Management System
AV	Average	MCS	Modulation and Coding Scheme
BPSK	Binary Phase-Shift Keying	MRA	Mutual Recognition Arrangement
BR	Bluetooth Basic Rate	N/A	Not Applicable
BT	Bluetooth	NIST	National Institute of Standards and Technology
BT LE	Bluetooth Low Energy	NS	No signal detect.
BW	BandWidth	NSA	Normalized Site Attenuation
Cal Int	Calibration Interval	NVLAP	National Voluntary Laboratory Accreditation Program
CCK	Complementary Code Keying	OBW	Occupied Band Width
Ch., CH	Channel	OFDM	Orthogonal Frequency Division Multiplexing
CISPR	Comite International Special des Perturbations Radioelectriques	P/M	Power meter
CW	Continuous Wave	PCB	Printed Circuit Board
DBPSK	Differential BPSK	PER	Packet Error Rate
DC	Direct Current	PHY	Physical Layer
D-factor	Distance factor	PK	Peak
DFS	Dynamic Frequency Selection	PN	Pseudo random Noise
DQPSK	Differential QPSK	PRBS	Pseudo-Random Bit Sequence
DSSS	Direct Sequence Spread Spectrum	PSD	Power Spectral Density
EDR	Enhanced Data Rate	QAM	Quadrature Amplitude Modulation
EIRP, e.i.r.p.	Equivalent Isotropically Radiated Power	QP	Quasi-Peak
EMC	ElectroMagnetic Compatibility	QPSK	Quadri-Phase Shift Keying
EMI	ElectroMagnetic Interference	RBW	Resolution Band Width
EN	European Norm	RDS	Radio Data System
ERP, e.r.p.	Effective Radiated Power	RE	Radio Equipment
EU	European Union	RF	Radio Frequency
EUT	Equipment Under Test	RMS	Root Mean Square
Fac.	Factor	RSS	Radio Standards Specifications
FCC	Federal Communications Commission	Rx	Receiving
FHSS	Frequency Hopping Spread Spectrum	SA, S/A	Spectrum Analyzer
FM	Frequency Modulation	SG	Signal Generator
Freq.	Frequency	SVSWR	Site-Voltage Standing Wave Ratio
FSK	Frequency Shift Keying	TR	Test Receiver
GFSK	Gaussian Frequency-Shift Keying	Tx	Transmitting
GNSS	Global Navigation Satellite System	VBW	Video BandWidth
GPS	Global Positioning System	Vert.	Vertical
Hori.	Horizontal	WLAN	Wireless LAN

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SECTION 1: Customer Information

Company Name	AIOI-SYSTEMS CO.,LTD.
Address	Omori Bellport E 9F, 6-22-7 Minami-Oi, Shinagawa-Ku, Tokyo 140-0013, Japan
Telephone Number	+81-3-3764-0228
Contact Person	Kazunori Takagishi

The information provided by the customer is as follows;

- Customer, Description of EUT, Model Number of EUT, FCC ID 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 4: Operation of EUT during testing

SECTION 2: Equipment Under Test (EUT)

2.1 Identification of EUT

Description	Smart Card/Tag Reader/Writer
Model Number	SC2101
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	May 12, 2025
Test Date	May 12 to June 4, 2025

2.2 Product Description

General Specification

Rating	DC 12 V
Operating Temperature	0 deg. C to 35 deg. C

Radio Specification

Equipment Type	Transceiver
Frequency of Operation	13.56 MHz
Type of Modulation	ASK

SECTION 3: Test Summary

3.1 Test Specification

Test Specification	FCC Part 15 Subpart C The latest version on the first day of the testing period
Title	FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators Section 15.207 Conducted limits Section 15.225 Operation within the band 13.110-14.010 MHz.

* The customer has declared that the EUT has complies with FCC Part 15 Subpart B as SDoC.

3.2 Reference Standards

ANSI/USEMCSC C63.2-2023
ANSI C63.4-2014+C63.4a-2017
ANSI C63.5-2017
ANSI C63.10-2020
ANSI/USEMCSC C63.10/Cor 1-2023
ANSI/USEMCSC C63.10a-2024 for ISED
ANSI C63.25.1-2018
RSS-Gen Issue 5/Amendment 1/Amendment 2 for ISED

3.3 Summary of Test Results

Item	Specification	Results	Remarks
Conducted Emission	<FCC> Section 15.207 ----- <ISED> RSS-Gen 8.8	Complied	-
Electric Field Strength of Fundamental Emission	<FCC> Section 15.225(a) ----- <ISED> RSS-210 B.6 (a)	Complied	Radiated
Spectrum Mask	<FCC> Section 15.225(b)(c) ----- <ISED> RSS-210 B.6 (a)	Complied	Radiated
20 dB Bandwidth	<FCC> Section15.215(c) ----- <ISED> -	Complied	Radiated
Electric Field Strength of Spurious Emission	<FCC> Section 15.209, Section 15.225 (d) ----- <ISED> RSS-210 B.6 (a) RSS-Gen 8.9	Complied	Radiated
Frequency Tolerance	<FCC> Section 15.225(e) ----- <ISED> RSS-210 B.6 (b)	Complied	Radiated
Note: UL Japan, Inc.'s EMI Work Procedures: Work Instructions-ULID-003591 and Work Instructions-ULID-003593.			

FCC Part 15.31 (e)

This EUT provides stable voltage constantly to RF Module regardless of input voltage.

Therefore, this EUT complies with the requirement.

However, the supply voltage was varied and tested at 85 % and 115 % of the nominal rated supply voltage during frequency tolerance test according to Section 15.225(e) .

FCC Part 15.203 Antenna requirement

It is impossible for end users to replace the antenna, because the antenna is mounted inside of the EUT. Therefore, the equipment complies with the antenna requirement of Section 15.203.

3.4 Addition to standard

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

3.5 Uncertainty

Measurement uncertainty is not taken into account when stating conformity with a specified requirement.

Note: When margins obtained from test results are less than the measurement uncertainty, the test results may exceed the limit.

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

Conducted emission

Frequency range	Uncertainty (+/-)
0.15 MHz to 30 MHz	3.3 dB

Radiated emission

Measurement distance	Frequency range	Uncertainty (+/-)
3 m	9 kHz to 30 MHz	3.3 dB
	30 MHz to 200 MHz	6.2 dB
	200 MHz to 1000 MHz	6.3 dB
	1 GHz to 6 GHz	4.7 dB
	6 GHz to 18 GHz	5.1 dB
	18 GHz to 40 GHz	5.5 dB
1 m	1 GHz to 18 GHz	5.2 dB
	18 GHz to 40 GHz	5.6 dB
0.5 m	26.5 GHz to 40 GHz	5.8 dB

Antenna Terminal test

Test Item	Uncertainty (+/-)
Frequency Tolerance (by Frequency Counter)	2.3×10^{-7}
20 dB Bandwidth / 99 % Occupied Bandwidth	0.012 %

3.6 Test Location

UL Japan, Inc. Kashima EMC Lab.

1614 Mushihata, Katori-shi, Chiba-ken, 289-0341 Japan

Telephone: +81-478-88-6500

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 (OS1)	6.0 x 5.5 x 2.5	20 x 40	10 m
No.5 Open site (OS5)	8.6 x 7.1 x 2.4	18 x 23	10 m
No.1 Shielded room (SR1)	5.4 x 4.5 x 2.3	-	-
No.5 Shielded Room (SR5)	4.2 x 3.1 x 2.5	-	-
No.9 Shielded Room (SR9)	6.1 x 3.6 x 2.8	-	-
No.6 Semi-anechoic Chamber (SAC6)	8.5 x 5.5 x 5.2	-	3 m
No.10 Semi-anechoic Chamber (SAC10)	18.4 x 9.9 x 7.7	-	10 m
No.11 Semi-anechoic Chamber (SAC11)	9.0 x 6.5 x 5.2	-	3 m
No.1 Measurement room (MR1)	5.0 x 3.7 x 2.6	-	-
No.2 Measurement room (MR2)	4.3 x 4.4 x 2.7	-	-

3.7 Test data, Test instruments, and Test set up

Refer to APPENDIX.

SECTION 4: Operation of EUT during testing

4.1 Operating Mode(s)

The mode is used:

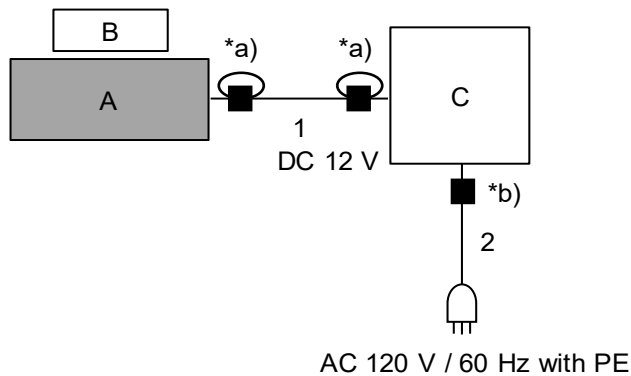
Test mode	Remarks
1) Transmitting mode (Tx) - without Tag - with Tag(SC1029L)	The EUT Transmits and Receives at the same time and there is no receiving mode.
The EUT was operated in a manner similar to typical use during the tests.	
*Power of the EUT was set by the software as follows; Software: Flowlight Version: 1.7.0 (Date: 2025.05 12, Storage location: Driven by connected PC) *This setting of software is the worst case. Any conditions under the normal use do not exceed the condition of setting. In addition, end users cannot change the settings of the output power of the product. Justification: The system was configured in typical fashion (as a user would normally use it) for testing.	

Test Item	Operating mode*
Conducted Emission	Transmitting mode, without Tag / with Tag(SC1029L) / Antenna Terminated
Electric Field Strength of Fundamental Emission	Transmitting mode, without Tag / with Tag(SC1029L)
Spectrum Mask	Transmitting mode, without Tag / with Tag(SC1029L)
20 dB Bandwidth	Transmitting mode, without Tag / with Tag(SC1029L)
Electric Field Strength of Spurious Emission	Transmitting mode, without Tag / with Tag(SC1029L)
Frequency Tolerance	Transmitting mode

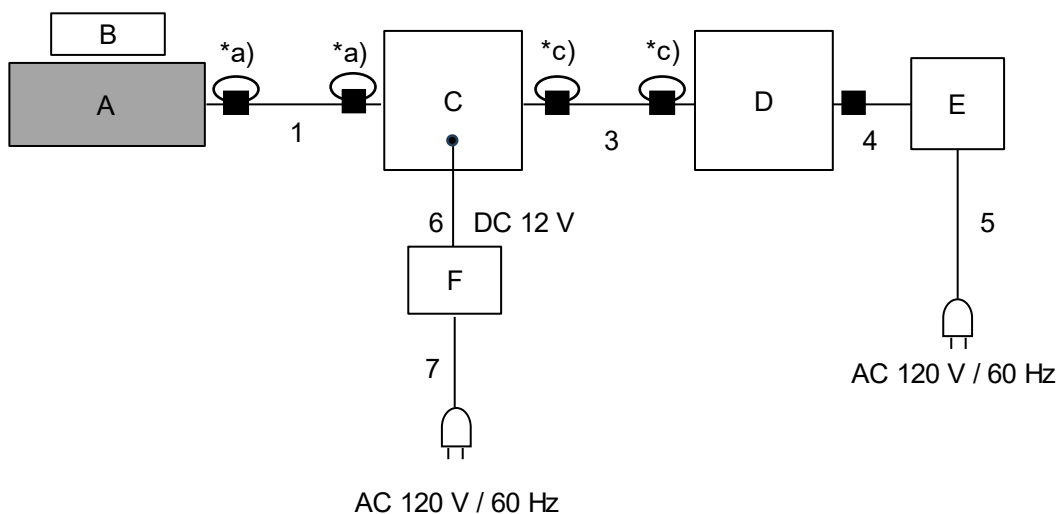
Frequency Tolerance	
Temperature	-20 deg. C to +50 deg. C Step 10 deg. C
Voltage	Normal Voltage DC 12 V Maximum Voltage DC 13.8 V (DC 12 V +15 %) Minimum Voltage DC 10.2 V (DC 12 V -15 %)
*This EUT provides stable voltage constantly to RF Part regardless of input voltage	

4.2 Configuration and peripherals

Conducted Emission, Radiated Emission



20 dB Bandwidth, Frequency Tolerance



■ : Standard Ferrite Core

* 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.

Description of EUT and Support Equipment

No.	Item	Model number	Serial Number	Manufacturer	Remark
A	Smart Card/Tag Reader/Writer	SC2101	1001	AIOI-SYSTEMS CO.,LTD.	EUT
B	Smart Card	SC1029L	02FE0000313100665E	AIOI-SYSTEMS CO.,LTD.	-
C	Ethernet Junction Box	eP2208	MM250004192s	AIOI-SYSTEMS CO.,LTD.	-
D	Laptop PC	CF-NX2RWJCS	4BKSA67506	Panasonic	-
E	AC Adapter	CF-AA6412C M3	6412CM314103800D	Panasonic	-
F	DC Power Supply	GSV3000	1708192899	DIAMOND ANTENNA	-

List of Cables Used

No.	Name	Length (m)	Shield		Remark
			Cable	Connector	
1	Signal Cable	2.9	Unshielded	Unshielded	-
2	AC Cable	2.0	Unshielded	Unshielded	3 wires
3	LAN Cable	10.6	Unshielded	Unshielded	Cat. 5e
4	DC Cable	1.0	Unshielded	Unshielded	-
5	AC Cable	0.9	Unshielded	Unshielded	2 wires
6	DC Cable	1.1	Unshielded	Unshielded	-
7	AC Cable	1.8	Unshielded	Unshielded	2 wires

Notes for Ferrite core(s)

No.	Model number	Manufacturer	Distance from the item [cm]	Turn(s)	Remarks
*a)	E04SR482648	SEIWA	10	4	-
*b)	E04SR301334	SEIWA	5	1	-
*c)	E04SR301334	SEIWA	5	3	-

SECTION 5: Conducted Emission

Test Procedure and conditions

EUT was placed on the platform of nominal size, 1.0 m by 1.5 m, raised 0.8 m above the conducting ground plane.

The rear of the platform was located 40 cm to the vertical conducting plane. The rear of EUT, including peripherals aligned and flushed with rear of the platform. All other surfaces of the platform were at least 80 cm from any other grounded conducting surface. EUT was located 80 cm from a Line Impedance Stabilization Network (LISN)/ Artificial mains Network (AMN) and excess AC cable was bundled in center.

For the tests on EUT with other peripherals (as a whole system)

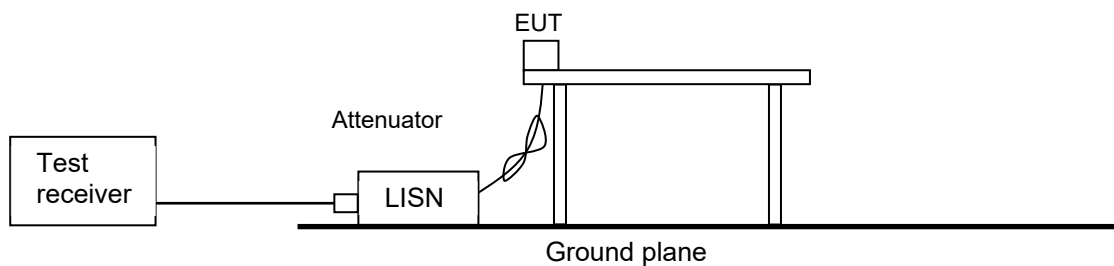
I/O cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30 cm to 40 cm long and were hanged at a 40 cm height to the ground plane. All unused 50 ohm connectors of the LISN (AMN) were resistivity terminated in 50 ohm when not connected to the measuring equipment.

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT in a Semi Anechoic Chamber.

The EUT was connected to a LISN (AMN).

An overview sweep with peak detection has been performed.

Figure 1: Test Setup



The test results and limit are rounded off to one decimal place, so some differences might be observed.

Detector	: QP and CISPR AV
Measurement range	: 0.15 MHz to 30 MHz
Test data	: APPENDIX
Test result	: Pass

SECTION 6: Radiated Emission (Fundamental, Spurious Emission and Spectrum Mask)

Test Procedure

EUT was placed on the platform of nominal size, 1.0 m by 1.5 m, raised 0.8 m above the conducting ground plane. The Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with a ground plane.

[Limit conversion]

The limits in CFR 47, Part 15, Subpart C, paragraph 15.209(a), are identical to those in RSS-Gen section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377 Ohms. For example, the measurement at frequency 9 kHz resulted in a level of 45.5 dBuV/m, which is equivalent to $45.5 - 51.5 = -6.0$ dBuA/m, which has the same margin, 3 dB, to the corresponding RSS-Gen Table 6 limit as it has to 15.209(a) limit.

[Frequency: From 9 kHz to 30 MHz]

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

The measurements were performed for vertical polarization (antenna angle: 0 deg., 45 deg., 90 deg., and 135 deg.) and horizontal polarization.

*Refer to Figure 3 about Direction of the Loop Antenna.

Although these tests were performed other than open field test site, adequate comparison measurements were confirmed against 30 m open field test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

These tests were performed in semi anechoic chamber. Therefore the measured level of emissions may be higher than if measurements were made without a ground plane. However test results were confirmed to pass against standard limit.

[Frequency: From 30 MHz to 1 GHz]

The measuring antenna height 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.

[Test instruments and test settings]

Frequency	Below 30 MHz	30 MHz to 1 GHz
Antenna Type	Loop	Hybrid

The test was made with the detector (RBW/VBW) in the following table.

When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

Frequency	From 9 kHz to 90 kHz and From 110 kHz to 150 kHz	From 90 kHz to 110 kHz	From 150 kHz to 490 kHz	From 490 kHz to 30 MHz	From 30 MHz to 1 GHz
Instrument used	Test Receiver				
Detector	PK / AV	QP	PK / AV	QP	QP
IF Bandwidth	200 Hz	200 Hz	9 kHz	9 kHz	120 kHz
Test Distance	3 m *1)	3 m *1)	3 m *1)	3 m *2)	3 m

*1) Distance Factor: $40 \times \log (3 \text{ m} / 300 \text{ m}) = -80 \text{ dB}$

*2) Distance Factor: $40 \times \log (3 \text{ m} / 30 \text{ m}) = -40 \text{ dB}$

Figure 2: Test Setup

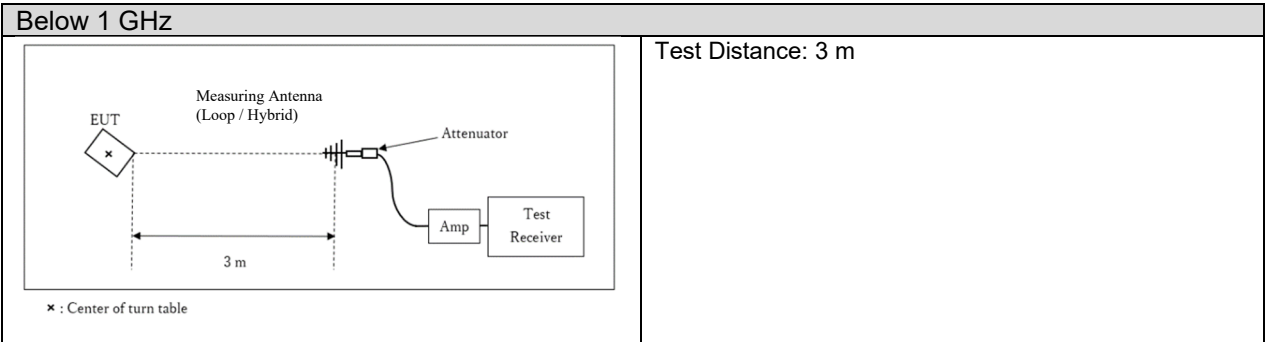
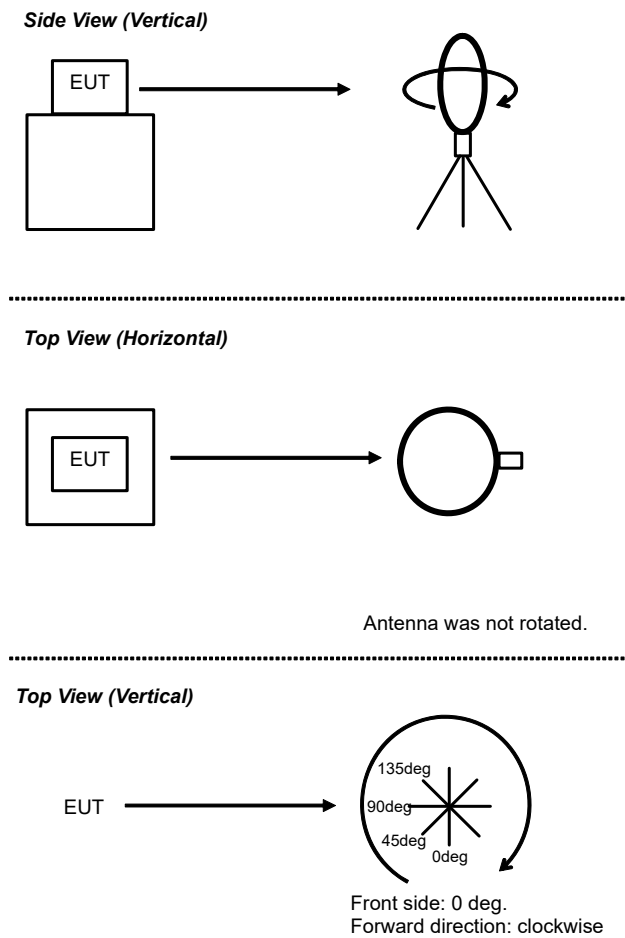


Figure 3: Direction of the Loop Antenna



- The carrier level and noise levels were confirmed at each position of X, Y and Z axes of EUT to see the position of maximum noise, and the test was made at the position that has the maximum noise.

Below 30 MHz	Z-axis
Above 30 MHz	Z-axis

The test results and limit are rounded off to one decimal place, so some differences might be observed.

Measurement range : 9 kHz to 1 GHz
Test data : APPENDIX
Test result : Pass

SECTION 7: Other tests

Test	Span	RBW	VBW	Sweep	Detector	Trace	Instrument used
20 dB Bandwidth	1 MHz	10 kHz	30 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
Frequency Tolerance	-	-	-	-	-	-	Spectrum Analyzer *2)
*1) The measurement was performed with Peak detector, Max Hold since the duty cycle was not 100 %. Peak hold was applied as Worst-case measurement. *2) The measurement was performed with Marker Frequency Counter Function.							

Test data : APPENDIX
Test result : Pass

APPENDIX 1: Test data

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

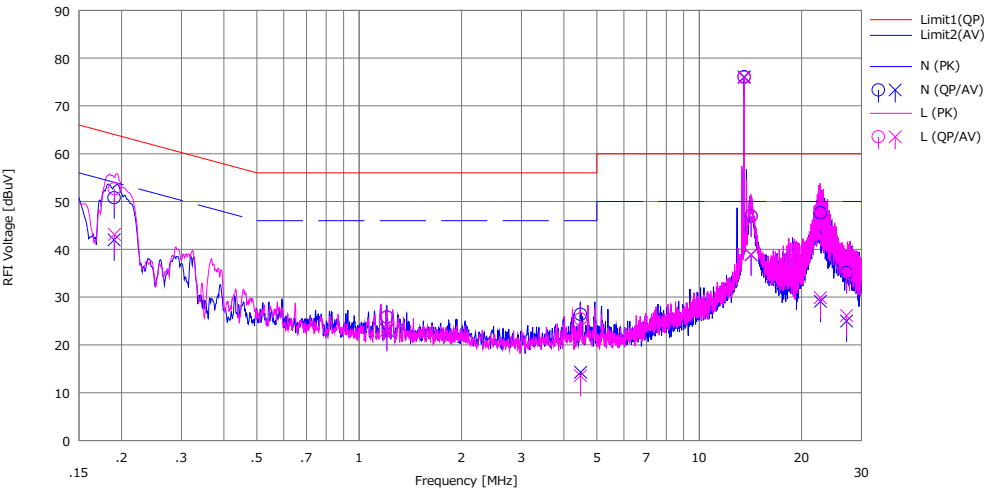
UL Japan, Inc. Kashima EMC Lab. No.10 Semi-Anechoic Chamber
Date : 2025/05/29

Company : AIOI-SYSTEMS CO., LTD.
Kind of EUT : Smart Card/Tag Reader/Writer
Model No. : SC2101
Serial No. : 1001
Remarks : without Tag

Mode : Transmitting mode
Order No. : 15800110
Power : DC 12 V (AC 120 V / 60 Hz)
Temp./Humi. : 20 deg.C / 60 %RH

Limit : FCC_Part 15 Subpart C(15.207)

Tested by : Tomoyuki Watanabe



No.	Freq. [MHz]	Reading		C.Fac	Results		Limit		Margin		Phase	Comment
		<QP>	<AV>		<QP>	<AV>	<QP>	<AV>	<QP>	<AV>		
		[dBuV]	[dBuV]		[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
1	0.19030	40.58	31.76	10.21	50.79	41.97	64.02	54.02	13.2	12.0	N	
2	1.20550	15.49	12.70	10.36	25.85	23.06	56.00	46.00	30.1	22.9	N	
3	4.47675	15.71	3.60	10.67	26.38	14.27	56.00	46.00	29.6	31.7	N	
4	13.56000	64.82	64.78	11.31	76.13	76.09	60.00	50.00	-16.2	-26.1	N	Carrier
5	14.21350	35.59	27.45	11.37	46.96	38.82	60.00	50.00	13.0	11.1	N	
6	22.72175	35.73	17.23	11.89	47.62	29.12	60.00	50.00	12.3	20.8	N	
7	27.12000	23.11	13.01	11.99	35.10	25.00	60.00	50.00	24.9	25.0	N	
8	0.19061	42.41	32.88	10.22	52.63	43.10	64.01	54.01	11.3	10.9	L	
9	1.20597	15.44	12.75	10.37	25.81	23.12	56.00	46.00	30.1	22.8	L	
10	4.47360	14.73	2.89	10.71	25.44	13.60	56.00	46.00	30.5	32.4	L	
11	13.56000	64.43	64.40	11.52	75.95	75.92	60.00	50.00	-16.0	-26.0	L	Carrier
12	14.19054	35.32	27.28	11.60	46.92	38.88	60.00	50.00	13.0	11.1	L	
13	22.71900	36.23	17.67	12.21	48.44	29.88	60.00	50.00	11.5	20.1	L	
14	27.12000	23.02	13.78	12.36	35.38	26.14	60.00	50.00	24.6	23.8	L	

Calculation: Result[dBuV]=Reading[dBuV]+C.Fac(AMN+Cable+ATT)[dB]
AMN:143498

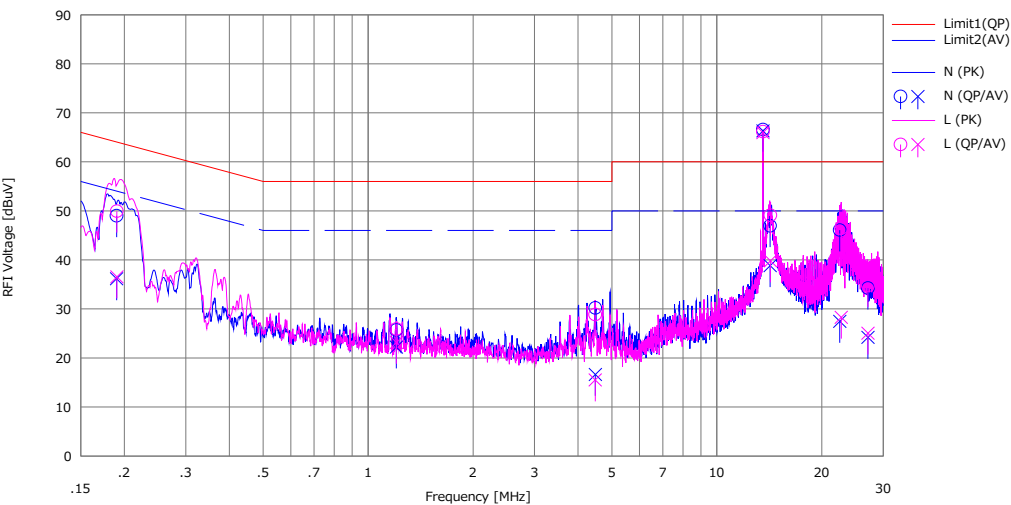
Conducted Emission

DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Kashima EMC Lab. No.10 Semi-Anechoic Chamber
Date : 2025/05/29

Company : AIOI-SYSTEMS CO., LTD.
Kind of EUT : Smart Card/Tag Reader/Writer
Model No. : SC2101
Serial No. : 1001
Remarks : with Tag(SC1029L)
Mode : Transmitting mode
Order No. : 15800110
Power : DC 12 V (AC 120 V / 60 Hz)
Temp./Humi. : 20 deg.C / 60 %RH

Limit : FCC_Part 15 Subpart C(15.207)
Tested by : Tomoyuki Watanabe



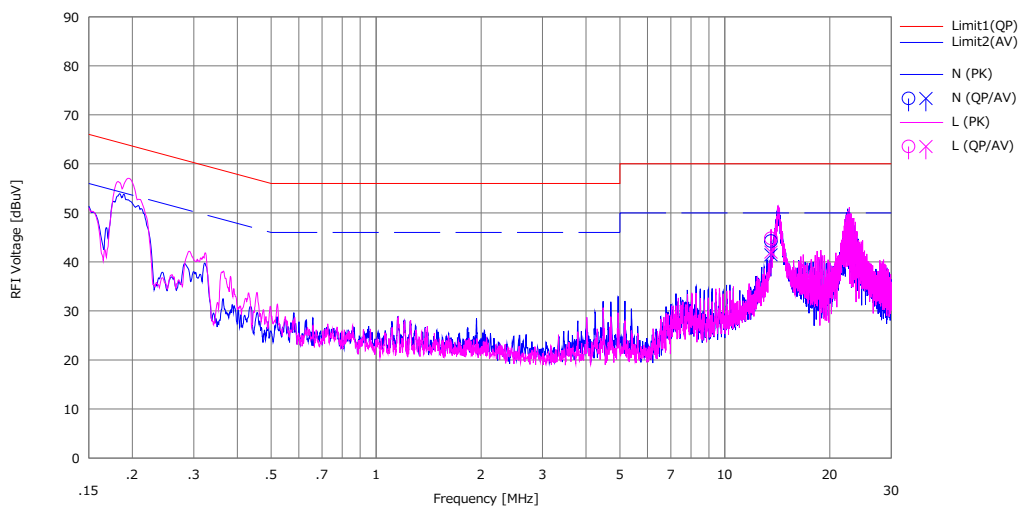
No.	Freq. [MHz]	Reading		C.Fac [dB]	Results		Limit		Margin		Phase	Comment
		<QP> [dBuV]	<AV> [dBuV]		<QP> [dBuV]	<AV> [dBuV]	<QP> [dBuV]	<AV> [dBuV]	<QP> [dB]	<AV> [dB]		
1	0.19020	38.80	25.94	10.21	49.01	36.15	64.03	54.03	15.0	17.8	N	
2	1.20560	15.36	11.85	10.36	25.72	22.21	56.00	46.00	30.2	23.7	N	
3	4.48310	19.53	5.97	10.67	30.20	16.64	56.00	46.00	25.8	29.3	N	
4	13.56000	55.27	55.00	11.31	66.58	66.31	60.00	50.00	-6.6	-16.4	N	Carrier
5	14.21350	35.59	27.45	11.37	46.96	38.82	60.00	50.00	13.0	11.1	N	
6	22.51430	34.21	15.57	11.88	46.09	27.45	60.00	50.00	13.9	22.5	N	
7	27.12000	22.26	12.20	11.99	34.25	24.19	60.00	50.00	25.7	25.8	N	
8	0.19042	39.71	26.31	10.22	49.93	36.53	64.02	54.02	14.0	17.4	L	
9	1.20552	15.51	12.81	10.37	25.88	23.18	56.00	46.00	30.1	22.8	L	
10	4.48080	18.13	4.80	10.71	28.84	15.51	56.00	46.00	27.1	30.4	L	
11	13.56000	54.63	54.41	11.52	66.15	65.93	60.00	50.00	-6.2	-16.0	L	Carrier
12	14.24325	37.51	28.19	11.60	49.11	39.79	60.00	50.00	10.8	10.2	L	
13	22.74875	34.24	16.07	12.22	46.46	28.29	60.00	50.00	13.5	21.7	L	
14	27.12000	22.40	12.71	12.36	34.76	25.07	60.00	50.00	25.2	24.9	L	

Calculation: Result[dBuV]=Reading[dBuV]+C.Fac(AMN+Cable+ATT)[dB]
AMN:143498

Mode : Transmitting mode
Order No. : 15800110
Power : DC 12 V (AC 120 V / 60 Hz)
Temp./Humi. : 20 deg.C / 60 %RH

Limit : FCC_Part 15 Subpart C(15.207)

Tested by : Tomoyuki Watanabe



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	13.56000	32.93	30.11	11.31	44.24	41.42	60.00	50.00	15.7	8.5	N	
2	13.56000	33.28	30.48	11.52	44.80	42.00	60.00	50.00	15.2	8.0	L	

Calculation: Result[dBuV]=Reading[dBuV]+C.Fac(AMN+Cable+ATT)[dB]
AMN:143498

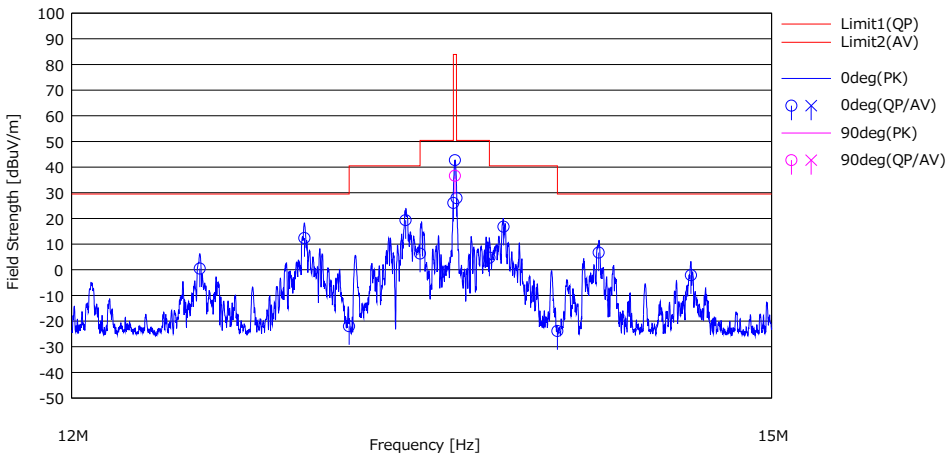
Fundamental Emission and Spectrum Mask

DATA OF RADIATED EMISSION(below 30MHz) TEST

UL Japan, Inc. Kashima EMC Lab. No.10 Semi-Anechoic Chamber
Date : 2025/05/28

Company : AIOI-SYSTEMS CO., LTD.
Kind of EUT : Smart Card/Tag Reader/Writer
Model No. : SC2101
Serial No. : 1001
Remarks : without Tag, EUT Position: Z-axis
Mode : Transmitting mode
Order No. : 15800110
Power : DC 12 V
Temp./Humi. : 21 deg.C / 55 %RH

Limit : FCC15.225,PK/AV/QP,9-90 kHz:PK/AV,110-490 kHz:PK/AV,other:QP(<490 kHz:300 m,>490 kHz:30 m)
Tested by : Tomoyuki Watanabe



No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Antenna	Table	Comment
		(QP) [dBuV]	(AV) [dBuV]				(QP) [dBuV/m]	(AV) [dBuV/m]	(QP) [dBuV/m]	(AV) [dBuV/m]	(QP) [dB]	(AV) [dB]			
1	12.50082	47.90	---	9.75	-33.04	24.18	0.43	---	29.50	---	29.0	---	0deg	186	
2	12.92453	59.86	---	9.70	-33.01	24.21	12.34	---	29.50	---	17.1	---	0deg	186	
3	13.11000	25.52	---	9.68	-33.01	24.21	-22.02	---	29.50	---	51.5	---	0deg	186	
4	13.34817	66.87	---	9.65	-33.00	24.22	19.30	---	40.50	---	21.2	---	0deg	186	
5	13.41000	53.86	---	9.64	-33.00	24.22	6.28	---	40.50	---	34.2	---	0deg	186	
6	13.55300	73.60	---	9.62	-32.99	24.23	26.00	---	50.40	---	24.4	---	0deg	186	
7	13.56000	90.30	---	9.62	-32.99	24.23	42.70	---	83.90	---	41.2	---	0deg	186	
8	13.56700	75.52	---	9.62	-32.99	24.23	27.92	---	50.40	---	22.4	---	0deg	186	
9	13.71000	52.30	---	9.60	-32.99	24.23	4.68	---	40.50	---	35.8	---	0deg	186	
10	13.77191	64.40	---	9.59	-32.98	24.24	16.77	---	40.50	---	23.7	---	0deg	186	
11	14.01000	23.77	---	9.56	-32.97	24.25	-23.89	---	29.50	---	53.3	---	0deg	186	
12	14.19574	54.36	---	9.54	-32.96	24.25	6.69	---	29.50	---	22.8	---	0deg	186	
13	14.61934	45.59	---	9.49	-32.94	24.27	-2.13	---	29.50	---	31.6	---	0deg	186	
14	13.56000	84.20	---	9.62	-32.99	24.23	36.60	---	83.90	---	47.3	---	90deg	84	

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

Result of the fundamental Emission at 3 m without Distance factor

QP											
Ant Deg [deg]	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
0	13.56000	QP	90.30	9.62	7.01	24.23	-	82.70	-	-	Fundamental

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amplifier)

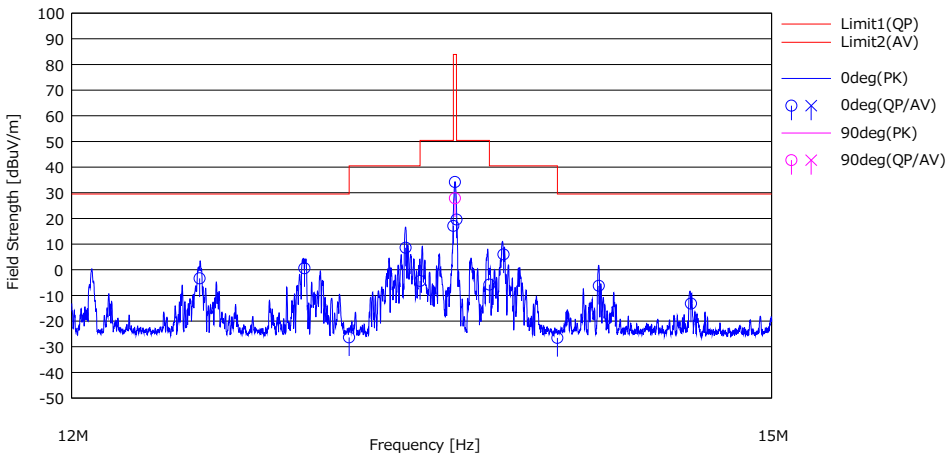
Fundamental Emission and Spectrum Mask

DATA OF RADIATED EMISSION(below 30MHz) TEST

UL Japan, Inc. Kashima EMC Lab. No.10 Semi-Anechoic Chamber
Date : 2025/05/28

Company : AIOI-SYSTEMS CO., LTD. Mode : Transmitting mode
Kind of EUT : Smart Card/Tag Reader/Writer Order No. : 15800110
Model No. : SC2101 Power : DC 12 V
Serial No. : 1001 Temp./Humi. : 21 deg.C / 55 %RH
Remarks : with Tag(SC1029L), EUT Position: Z-axis

Limit : FCC15.225,PK/AV/QP,9-90 kHz:PK/AV,110-490 kHz:PK/AV,other:QP(<490 kHz:300 m,>490 kHz:30 m)
Tested by : Tomoyuki Watanabe



No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Antenna	Table	Comment
		(QP) [dBuV]	(AV) [dBuV]				(QP) [dBuV/m]	(AV) [dBuV/m]	(QP) [dBuV/m]	(AV) [dBuV/m]	(QP) [dB]	(AV) [dB]			
1	12.50019	44.10	---	9.75	-33.04	24.18	-3.37	---	29.50	---	32.8	---	0deg	186	
2	12.92476	48.11	---	9.70	-33.01	24.21	0.59	---	29.50	---	28.9	---	0deg	186	
3	13.11000	21.18	---	9.68	-33.01	24.21	-26.36	---	29.50	---	55.8	---	0deg	186	
4	13.34887	56.12	---	9.65	-33.00	24.22	8.55	---	40.50	---	31.9	---	0deg	186	
5	13.41000	43.21	---	9.64	-33.00	24.22	-4.37	---	40.50	---	44.8	---	0deg	186	
6	13.55300	64.66	---	9.62	-32.99	24.23	17.06	---	50.40	---	33.3	---	0deg	186	
7	13.56000	81.77	---	9.62	-32.99	24.23	34.17	---	83.90	---	49.7	---	0deg	186	
8	13.56700	67.16	---	9.62	-32.99	24.23	19.56	---	50.40	---	30.8	---	0deg	186	
9	13.71000	41.83	---	9.60	-32.99	24.23	-5.79	---	40.50	---	46.2	---	0deg	186	
10	13.77180	53.58	---	9.59	-32.98	24.24	5.95	---	40.50	---	34.5	---	0deg	186	
11	14.01000	21.06	---	9.56	-32.97	24.25	-26.60	---	29.50	---	56.1	---	0deg	186	
12	14.19649	41.40	---	9.54	-32.96	24.25	-6.27	---	29.50	---	35.7	---	0deg	186	
13	14.61971	34.51	---	9.49	-32.94	24.27	-13.21	---	29.50	---	42.7	---	0deg	186	
14	13.56000	75.44	---	9.62	-32.99	24.23	27.84	---	83.90	---	56.0	---	90deg	78	

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

Result of the fundamental Emission at 3 m without Distance factor

QP											
Ant Deg [deg]	Frequency [MHz]	Detector	Reading [dBuV]	Ant Factor [dB/m]	Loss [dB]	Gain [dB]	Duty Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
0	13.56000	QP	81.77	9.62	7.01	24.23	-	74.17	-	-	Fundamental

Result = Reading + Ant Factor + Loss (Cable+Attenuator+Filter) - Gain(Amplifier)

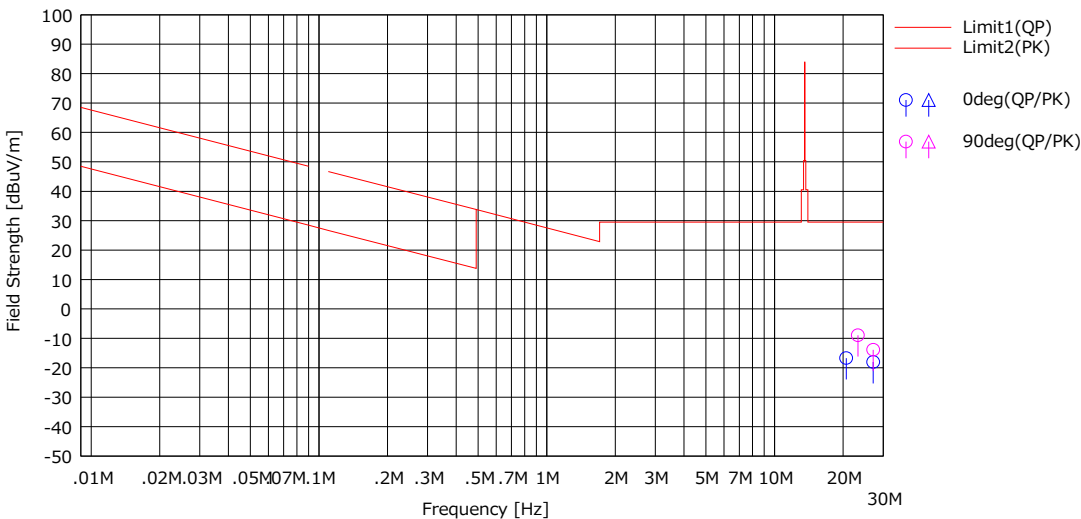
Spurious Emission

DATA OF RADIATED EMISSION(below 30MHz) TEST

UL Japan, Inc. Kashima EMC Lab. No.10 Semi-Anechoic Chamber
Date : 2025/05/28

Company : AIOI-SYSTEMS CO., LTD.
Kind of EUT : Smart Card/Tag Reader/Writer
Model No. : SC2101
Serial No. : 1001
Remarks : without Tag, EUT Position: Z-axis
Mode : Transmitting mode
Order No. : 15800110
Power : DC 12 V
Temp./Humi. : 21 deg.C / 55 %RH

Limit : FCC15.225,PK/AV/QP,9-90 kHz:PK/AV,110-490 kHz:PK/AV,other:QP(<490 kHz:300 m,>490 kHz:30 m)
Tested by : Tomoyuki Watanabe



No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Antenna	Table	Comment
		(QP) [dBuV]	(PK) [dBuV]				(QP) [dBuV/m]	(PK) [dBuV/m]	(QP) [dBuV/m]	(PK) [dBuV/m]	(QP) [dB]	(PK) [dB]			
1	20.63375	31.93	---	8.42	-32.70	24.38	-16.73	---	29.50	---	46.2	---	0deg	168	
2	27.12000	32.03	---	6.85	-32.50	24.43	-18.05	---	29.50	---	47.5	---	0deg	95	
3	23.21224	40.19	---	7.85	-32.61	24.40	-8.97	---	29.50	---	38.4	---	90deg	311	
4	27.12000	36.18	---	6.85	-32.50	24.43	-13.90	---	29.50	---	43.4	---	90deg	86	

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

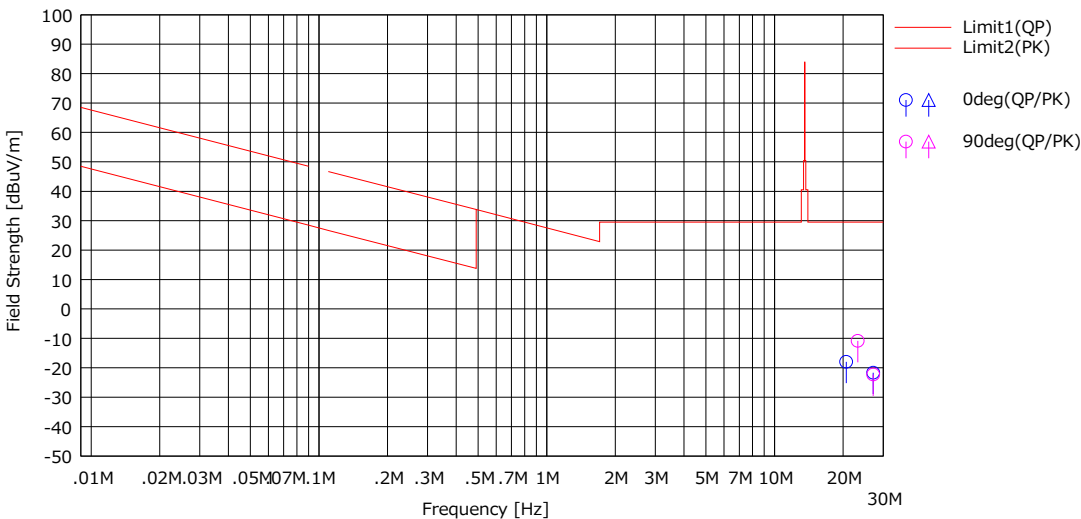
Spurious Emission

DATA OF RADIATED EMISSION(below 30MHz) TEST

UL Japan, Inc. Kashima EMC Lab. No.10 Semi-Anechoic Chamber
Date : 2025/05/28

Company : AIOI-SYSTEMS CO., LTD.
Kind of EUT : Smart Card/Tag Reader/Writer
Model No. : SC2101
Serial No. : 1001
Remarks : with Tag(SC1029L), EUT Position: Z-axis
Mode : Transmitting mode
Order No. : 15800110
Power : DC 12 V
Temp./Humi. : 21 deg.C / 55 %RH

Limit : FCC15.225,PK/AV/QP,9-90 kHz:PK/AV,110-490 kHz:PK/AV,other:QP(<490 kHz:300 m,>490 kHz:30 m)
Tested by : Tomoyuki Watanabe



No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Antenna	Table	Comment
		(QP) [dBuV]	(PK) [dBuV]				(QP) [dBuV/m]	(PK) [dBuV/m]	(QP) [dBuV/m]	(PK) [dBuV/m]	(QP) [dB]	(PK) [dB]			
1	20.63400	30.67	---	8.42	-32.70	24.38	-17.99	---	29.50	---	47.4	---	0deg	101	
2	27.12000	28.39	---	6.85	-32.50	24.43	-21.69	---	29.50	---	51.1	---	0deg	0	
3	23.20587	38.29	---	7.85	-32.61	24.40	-10.87	---	29.50	---	40.3	---	90deg	289	
4	27.12000	27.77	---	6.85	-32.50	24.43	-22.31	---	29.50	---	51.8	---	90deg	121	

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

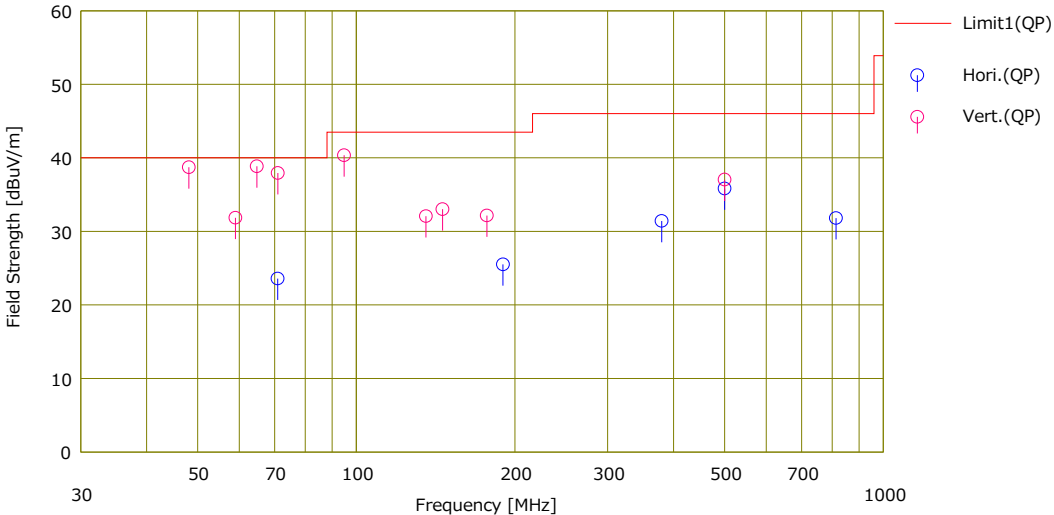
Spurious Emission

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Kashima EMC Lab. No.10 Semi-Anechoic Chamber
Date : 2025/05/12

Company : AIOI-SYSTEMS CO., LTD.
Kind of EUT : Smart Card/Tag Reader/Writer
Model No. : SC2101
Serial No. : 1001
Remarks : without Tag, EUT Position: Z-axis
Mode : Transmitting mode
Order No. : 15800110
Power : DC 12 V
Temp./Humi. : 20 deg.C / 60 %RH

Limit : FCC15.209 3 m, below 1 GHz:QP, above 1 GHz:AV/PK
Engineer : Tomoyuki Watanabe



No.	Freq. [MHz]	Reading (QP) [dBuV]	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result (QP) [dBuV/m]	Limit (QP) [dBuV/m]	Margn (QP) [dB]	Pola	Height [cm]	Angle [deg]	Ant. Type	Comment
		[dBuV]	[dB/m]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[H/V]	[cm]	[deg]		
1	70.934	36.89	11.46	6.35	31.12	23.58	40.00	16.4	Hori.	100	274	HB	
2	189.840	38.67	10.31	7.44	30.90	25.52	43.50	17.9	Hori.	160	42	HB	
3	379.680	38.03	15.33	8.83	30.77	31.42	46.00	14.5	Hori.	100	340	HB	
4	500.000	39.21	17.84	9.49	30.70	35.84	46.00	10.1	Hori.	184	72	HB	
5	813.600	29.02	22.53	10.68	30.41	31.82	46.00	14.1	Hori.	100	192	HB	
6	48.135	50.25	13.56	6.05	31.14	38.72	40.00	1.2	Vert.	100	355	HB	
7	58.990	43.60	13.19	6.21	31.14	31.86	40.00	8.1	Vert.	100	355	HB	
8	64.757	51.03	12.67	6.28	31.13	38.85	40.00	1.1	Vert.	100	355	HB	
9	70.955	51.24	11.46	6.35	31.12	37.93	40.00	2.0	Vert.	100	290	HB	
10	94.804	56.75	8.06	6.60	31.06	40.35	43.50	3.1	Vert.	100	321	HB	
11	135.600	43.87	12.21	6.99	30.99	32.08	43.50	11.4	Vert.	100	327	HB	
12	145.765	44.09	12.83	7.08	30.98	33.02	43.50	10.4	Vert.	100	327	HB	
13	176.950	43.82	11.94	7.34	30.94	32.16	43.50	11.3	Vert.	100	350	HB	
14	500.000	40.41	17.84	9.49	30.70	37.04	46.00	8.9	Vert.	100	170	HB	

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

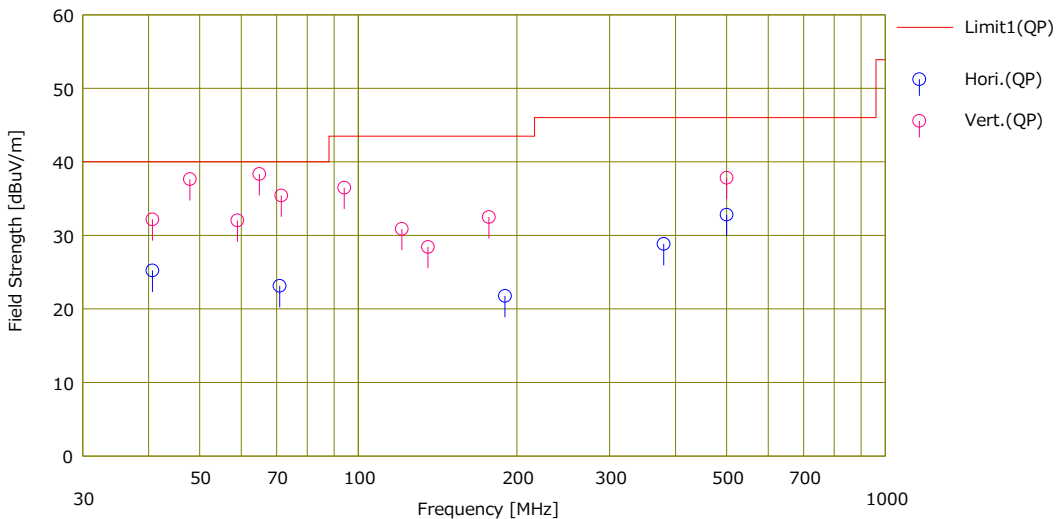
Spurious Emission

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Kashima EMC Lab. No.10 Semi-Anechoic Chamber
Date : 2025/05/12

Company : AIOI-SYSTEMS CO., LTD.
Kind of EUT : Smart Card/Tag Reader/Writer
Model No. : SC2101
Serial No. : 1001
Remarks : with Tag(SC1029L), EUT Position: Z-axis
Mode : Transmitting mode
Order No. : 15800110
Power : DC 12 V
Temp./Humi. : 20 deg.C / 60 %RH

Limit : FCC15.209 3 m, below 1 GHz:QP, above 1 GHz:AV/PK
Engineer : Tomoyuki Watanabe



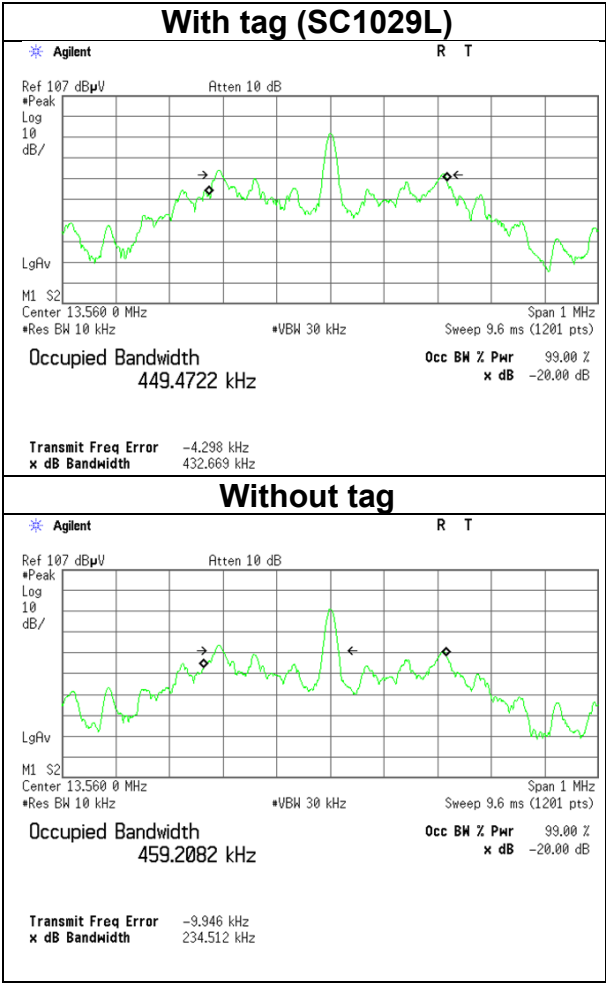
No.	Freq. [MHz]	Reading (QP)	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result	Limit	Margn	Pola	Height [cm]	Angle [deg]	Ant. Type	Comment
		[dBuV]				[dBuV/m]	[dBuV/m]	[dB]					
1	40.680	37.37	13.05	5.95	31.15	25.22	40.00	14.7	Hori.	241	0	HB	
2	70.934	36.44	11.46	6.35	31.12	23.13	40.00	16.8	Hori.	100	0	HB	
3	189.840	34.92	10.31	7.44	30.90	21.77	43.50	21.7	Hori.	117	218	HB	
4	379.680	35.45	15.33	8.83	30.77	28.84	46.00	17.1	Hori.	100	350	HB	
5	500.000	36.18	17.84	9.49	30.70	32.81	46.00	13.1	Hori.	186	58	HB	
6	40.680	44.32	13.05	5.95	31.15	32.17	40.00	7.8	Vert.	100	280	HB	
7	47.923	49.20	13.55	6.04	31.14	37.65	40.00	2.3	Vert.	100	350	HB	
8	58.990	43.79	13.19	6.21	31.14	32.05	40.00	7.9	Vert.	100	353	HB	
9	64.913	50.55	12.64	6.28	31.13	38.34	40.00	1.6	Vert.	100	353	HB	
10	71.448	48.83	11.35	6.36	31.12	35.42	40.00	4.5	Vert.	100	355	HB	
11	94.051	52.95	8.01	6.59	31.06	36.49	43.50	7.0	Vert.	100	0	HB	
12	120.990	44.07	10.97	6.85	31.01	30.88	43.50	12.6	Vert.	100	0	HB	
13	135.600	40.23	12.21	6.99	30.99	28.44	43.50	15.0	Vert.	100	352	HB	
14	176.950	44.16	11.94	7.34	30.94	32.50	43.50	11.0	Vert.	100	337	HB	
15	500.000	41.21	17.84	9.49	30.70	37.84	46.00	8.1	Vert.	100	0	HB	

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

20 dB Bandwidth

Mode	Transmitting mode			
Date	Test site	Temperature	Humidity	Engineer
June 4, 2025	MR2	23 deg. C	47 % RH	Hiromitsu Tanabe

FREQ [MHz]	Mode	20dB Bandwidth [kHz]
13.56	With Tag (SC1029L)	432.669
	Without Tag	234.512



Frequency Tolerance

Mode	Transmitting mode			
Date	Test site	Temperature	Humidity	Engineer
June 2, 2025	MR2	23 deg. C	55 % RH	Hiromitsu Tanabe

Test condition		Tested timing	Measured frequency [MHz]	Frequency error [MHz]	Result		Limit [+/- %]
Temp. [deg. C]	Voltage [V]				[%]	[ppm]	
50	12	Power on	13.560182	0.000182	0.00134	13.4	0.01
		+ 2 min.	13.560237	0.000237	0.00175	17.5	0.01
		+ 5 min.	13.560258	0.000258	0.00190	19.0	0.01
		+ 10 min.	13.560269	0.000269	0.00198	19.8	0.01
40	12	Power on	13.560192	0.000192	0.00142	14.2	0.01
		+ 2 min.	13.560194	0.000194	0.00143	14.3	0.01
		+ 5 min.	13.560201	0.000201	0.00148	14.8	0.01
		+ 10 min.	13.560204	0.000204	0.00150	15.0	0.01
30	12	Power on	13.560212	0.000212	0.00156	15.6	0.01
		+ 2 min.	13.560185	0.000185	0.00136	13.6	0.01
		+ 5 min.	13.560184	0.000184	0.00136	13.6	0.01
		+ 10 min.	13.560184	0.000184	0.00136	13.6	0.01
20	12	Power on	13.560232	0.000232	0.00171	17.1	0.01
		+ 2 min.	13.560197	0.000197	0.00145	14.5	0.01
		+ 5 min.	13.560193	0.000193	0.00142	14.2	0.01
		+ 10 min.	13.560192	0.000192	0.00142	14.2	0.01
20	10.2 (12V -15%)	Power on	13.560228	0.000228	0.00168	16.8	0.01
		+ 2 min.	13.560199	0.000199	0.00147	14.7	0.01
		+ 5 min.	13.560193	0.000193	0.00142	14.2	0.01
		+ 10 min.	13.560191	0.000191	0.00141	14.1	0.01
20	13.8 (12V +15%)	Power on	13.560233	0.000233	0.00172	17.2	0.01
		+ 2 min.	13.560199	0.000199	0.00147	14.7	0.01
		+ 5 min.	13.560193	0.000193	0.00142	14.2	0.01
		+ 10 min.	13.560191	0.000191	0.00141	14.1	0.01
10	12	Power on	13.560248	0.000248	0.00183	18.3	0.01
		+ 2 min.	13.560222	0.000222	0.00164	16.4	0.01
		+ 5 min.	13.560215	0.000215	0.00159	15.9	0.01
		+ 10 min.	13.560213	0.000213	0.00157	15.7	0.01
0	12	Power on	13.560250	0.000250	0.00184	18.4	0.01
		+ 2 min.	13.560242	0.000242	0.00178	17.8	0.01
		+ 5 min.	13.560237	0.000237	0.00175	17.5	0.01
		+ 10 min.	13.560235	0.000235	0.00173	17.3	0.01
-10	12	Power on	13.560230	0.000230	0.00170	17.0	0.01
		+ 2 min.	13.560253	0.000253	0.00187	18.7	0.01
		+ 5 min.	13.560252	0.000252	0.00186	18.6	0.01
		+ 10 min.	13.560251	0.000251	0.00185	18.5	0.01
-20	12	Power on	13.560180	0.000180	0.00133	13.3	0.01
		+ 2 min.	13.560242	0.000242	0.00178	17.8	0.01
		+ 5 min.	13.560248	0.000248	0.00183	18.3	0.01
		+ 10 min.	13.560250	0.000250	0.00184	18.4	0.01

Calculation formula: Frequency error = Measured frequency - Tested frequency
Result [%] = Frequency error / Tested frequency * 100

Tested frequency: 13.56 MHz
Limit (+/-): 0.01 % (+/- 100ppm)

*The test was begun from 50 deg. C and the temperature was lowered each 10 deg. C.

APPENDIX 2: Test instruments

Test Equipment

Test Item	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
CE	143498	A.M.N.	Rohde & Schwarz	ESH3-Z5	828874/019	2024/07/01	12
CE	143157	10 Site CE System	UL-KAS EMC	none	none	2024/08/09	12
CE	144199	Test Receiver	Keysight Technologies Inc	N9038A	MY53290016	2024/07/05	12
RE	245073	Loop(Active) Antenna	ETS-Lindgren	6502	00262457	2025/04/04	12
RE	144245	6dB Fixed Atten.	Suhner	6906.01.A	none	2024/07/02	12
RE	171927	Pre Amplifier	UL-KAS EMC	GALI-84+	001	2024/07/02	12
RE	143157	10 Site CE System	UL-KAS EMC	none	none	2024/08/09	12
RE	143161	Coaxial Cable	Fujikura,HP,Mini-Circuits,Fujikura	3D2W	none	2025/05/07	12
RE	143121	LOGBICON	Schwarzbeck Mess-Elektronik OHG	VULB 9168	343	2025/04/10	12
RE	178806	5dB Fixed Atten.	Pasternack Enterprises	PE7047-5	none	2025/04/21	12
RE	143165	10 Site RE 3m System	UL-KAS EMC	none	none	2024/08/09	12
RE	183880	Pre-Amplifier	UL-KAS EMC	ZKL-2	001	2025/04/04	12
RE	144199	Test Receiver	Keysight Technologies Inc	N9038A	MY53290016	2024/07/05	12
RE	144632	Semi Anechoic Chamber	TDK	NSA (No.10)	10	2025/05/01	12
FT, BW	143643	Spectrum Analyzer	Keysight Technologies Inc	E4448A	MY52490024	2024/10/17	12
FT	143181	Temperature and Humidity Chamber	Espec	PL-1J	15004059	2024/10/08	12
FT	143423	Frequency Counter	Keysight Technologies Inc	53151A	US40511823	2024/11/14	12
BW, FT	143942	Near Field Probe	Langer	LF-R400	02-0815	-	-
CE, RE	222745	Measure	SHINWA RULES CO., LTD.	80862	none	-	-
CE, RE	143542	Temperature & Humidity Indicator	HIOKI E. E. CORPORATION	3641/9680-50	090999895/090905406	2024/06/25	12
CE, RE	143133	Barometer	Sanoh Co., Ltd	SBR-151	001439	2023/03/10	36
CE, RE	144216	Digital Multimeter	Fluke Corporation	115	994460954	2024/10/23	12
CE, RE	178804	EMI Software	TSJ (Techno Science Japan)	TEPTO-DV3(RE,CE,ME,PE)	Ver 3.1.0546	-	-
BW, FT	222747	Measure	SHINWA RULES CO., LTD.	80862	none	-	-
BW, FT	144210	Digital Multimeter	Fluke Corporation	112	89790193	2024/10/15	12
BW, FT	200034	Temperature & Humidity Logger	HIOKI E. E. CORPORATION	LR5001/LR9504	200636456/200699552	2024/07/23	12
BW, FT	143133	Barometer	Sanoh Co., Ltd	SBR-151	001439	2023/03/10	36

*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

BW: 20 dB Bandwidth

FT: Frequency Tolerance