

RADIO TEST REPORT

Test Report No. 15921053M-A-R2

Customer	Yoshikawakogyo RF Semicon Co., Ltd.
Description of EUT	LAP TIME DETECTOR III
Model Number of EUT	YRCUKS58
FCC ID	2BK24YRCUKS58
Test Regulation	FCC Part 15 Subpart C
Test Result	Complied
Issue Date	October 28, 2025
Remarks	-

Representative test engineer	Approved by
	
Hiromitsu Tanabe Engineer	Kazuhiro Ando Engineer
 	
CERTIFICATE 1266.01	
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☒ 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)	15921053M-A	September 19, 2025	-
1	15921053M-A-R1	October 14, 2025	Addition of the Clock frequency (ies) in the system to Clause 2.2 Correction of the following in Clause 3.3; - FCC Part 15.31 (e) - FCC Part 15.203 Antenna requirement Deletion of the remark in Clause 4.1; - 'This EUT provides stable voltage constantly to RF Part regardless of input voltage' since there is no stable voltage. Changed the title for configuration in Clause 4.2; - To include additional test of Voltage variation. Addition of the data for Voltage variation test in APPENDIX 1 (p.22, 25 and 28) Addition of photographs in APPENDIX 3; - For Radiated Emission below 30 MHz test (p.37) - For Voltage variation test (p.39)
2	15921053M-A-R2	October 28, 2025	Revision of the Test Date in Clause 2.1 to include the latest tests. Correction of the following in Clause 3.3; - FCC Part 15.31 (e) Revision of configuration diagrams in Clause 4.2 Revision of data in APPENDIX 1; - Testing with power 5 V was retaken with power DC 5 V $\pm$ 15 % (p.20 to 27) Revision of photographs in APPENDIX 2; - To include retesting of Radiated Emission without the platform under the EUT (p.33 to 36)

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	Yoshikawakogyo RF Semicon Co., Ltd.
Address	Shinjuku Kifu Bldg. 8F, 7-2-4, Nishi-Shinjuku, Shinjuku-ku, Tokyo, 160-0023 Japan
Telephone Number	+81-3-6906-8856
Contact Person	Hayato Ishii

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	LAP TIME DETECTOR III
Model Number	YRCUKS58
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	August 20, 2025
Test Date	August 22 to October 20, 2025

2.2 Product Description

General Specification

Rating	DC 5.0 V, 150 mA
Operating Temperature	0 deg. C to +50 deg. C
Clock frequency (ies) in the system	USB: 480 Mbps (Max.)

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 (incl. Errata) for ISED
ANSI C63.25.1-2018

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 *1)
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. *1) Measurements were limited up to 2 GHz since the highest frequency of internal source of the EUT is between 108 MHz and 500 MHz.			

FCC Part 15.31 (e)

The battery voltage (DC 5 V) is provided to the EUT. Input voltage to RF part does not go through the regulator. So the test was performed with the supply voltage varied between 85 % and 115% of the nominal rated supply voltage (DC 5 V) and the variation of the input power does not affect the test result, therefore, this EUT complies with the requirement.

FCC Part 15.203 Antenna requirement

The antenna is not removable from the EUT. Therefore, the equipment complies with the antenna requirement of Section 15.203.

3.4 Addition to standard

Item	Test Procedure	Results	Remarks
99% emission bandwidth	<ISED>RSS-Gen 6.7	-	Radiated
Note: UL Japan, Inc.'s EMI Work Procedures: Work Instructions-ULID-003591 and Work Instructions-ULID-003593.			

Other than above, 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

Item	Frequency range	Unit	Calculated Uncertainty (+/-)
AMN (LISN)	0.15 MHz to 30 MHz	dB	3.3

Radiated emission

Measurement distance	Frequency range	Unit	Calculated Uncertainty (+/-)
3 m	9 kHz to 30 MHz	dB	3.3
	30 MHz to 200 MHz	dB	6.2
	200 MHz to 1000 MHz	dB	6.3
	1 GHz to 6 GHz	dB	4.7

Antenna Terminal test

Item	Unit	Calculated Uncertainty (+/-)
Frequency Tolerance	-	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	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	-	-

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) - with Tag (I-CODE SLI) - with Tag (I-CODE SLIX2) - without Tag	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: Version: 1.26B (Date: 2021.10.12, Storage location: EUT memory) *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.	

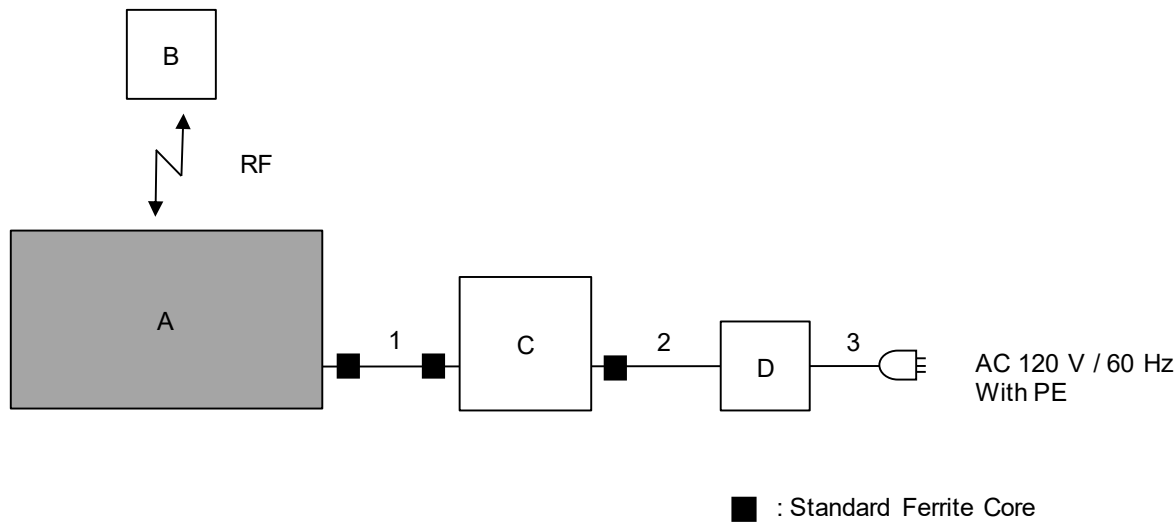
Test Item	Operating mode*
Conducted Emission	Tx Mod on, with Tag(I-CODE SLI) / without Tag
Electric Field Strength of Fundamental Emission	Tx Mod on, with Tag(I-CODE SLIX2) / without Tag
Spectrum Mask	Tx Mod on, with Tag(I-CODE SLIX2) / without Tag
20 dB Bandwidth and 99 % Occupied Bandwidth	Tx Mod on, with Tag(I-CODE SLI, I-CODE SLIX2) / without Tag
Electric Field Strength of Spurious Emission	Tx Mod on, with Tag(I-CODE SLI) / without Tag
Frequency Tolerance	Tx Mod on, without Tag

* The tests were performed with the worst case after comparing the test data between the I-CODE SLI Tag and I-CODE SLIX2 Tag.

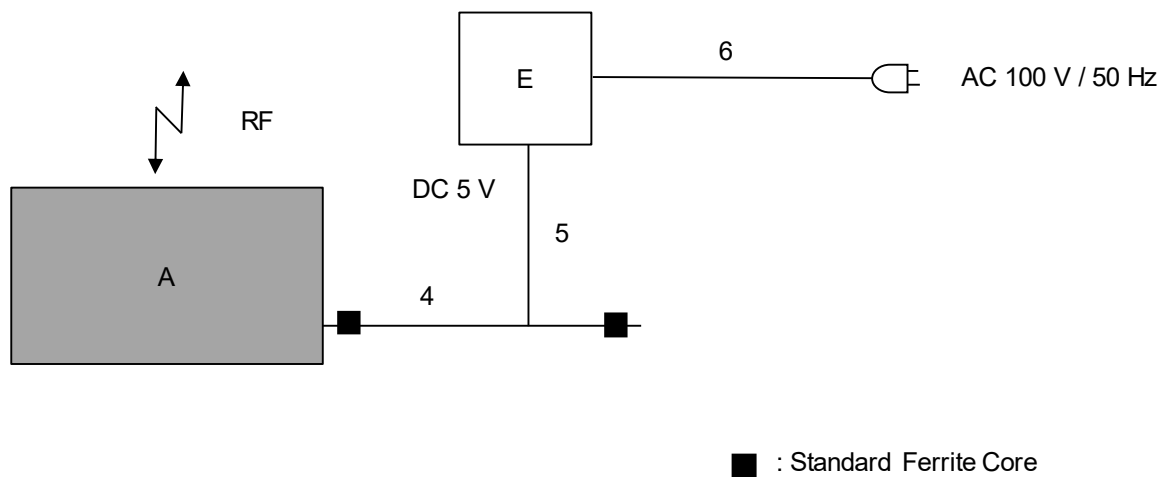
Frequency Tolerance	
Temperature	-20 deg. C to +50 deg. C Step 10 deg. C
Voltage	Normal Voltage DC 5 V Maximum Voltage DC 5.75 V (DC 5 V +15 %) Minimum Voltage DC 4.25 V (DC 5 V -15 %)

4.2 Configuration and peripherals

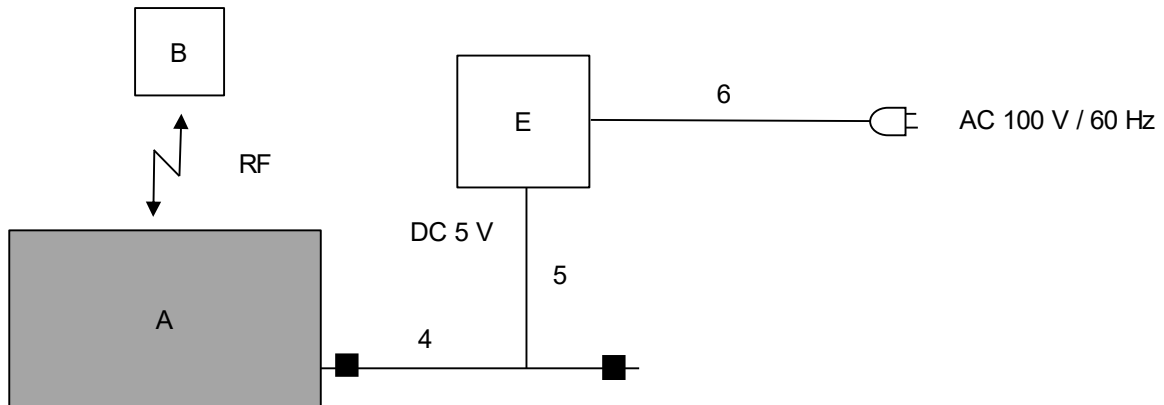
Conducted Emission test



Frequency Tolerance test



Except for Conducted Emission test and Frequency Tolerance test



■ : Standard Ferrite Core

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

Description of EUT and Support Equipment

No.	Item	Model number	Serial Number	Manufacturer	Remark
A	LAP TIME DETECTOR III	YRCUKS58	No.2 *1) No.3 *2)	Yoshikawakogyo RF Semicon Co., Ltd.	EUT
B	Tag	I-CODE SLI	76	TOPPAN Edge IT Solution Inc.	-
		I-CODE SLIX2	194	TOPPAN Edge IT Solution Inc.	
C	Laptop PC	Vostro 3590	JD0FC33	DELL	-
D	AC Adapter	HA45NM140	CN-00285K-CH200 -03H-0MPY-A07	DELL	-
E	DC Power Supply	GSV3000	1708192900	DIAMOND ANTENNA	-

*1) Used for Conducted Emission test (Antenna Terminated)

*2) Used for tests other than Conducted Emission (Antenna Terminated)

List of Cables Used

No.	Name	Length (m)	Shield		Remark
			Cable	Connector	
1	USB Cable	1.5	Shielded	Shielded	-
2	DC Cable	1.8	Unshielded	Unshielded	-
3	AC Cable	0.9	Unshielded	Unshielded	-
4	USB Cable	1.5	Shielded	Shielded	-
5	DC Cable	3.1	Unshielded	Unshielded	-
6	AC Cable	1.8	Unshielded	Unshielded	-

SECTION 5: Conducted Emission

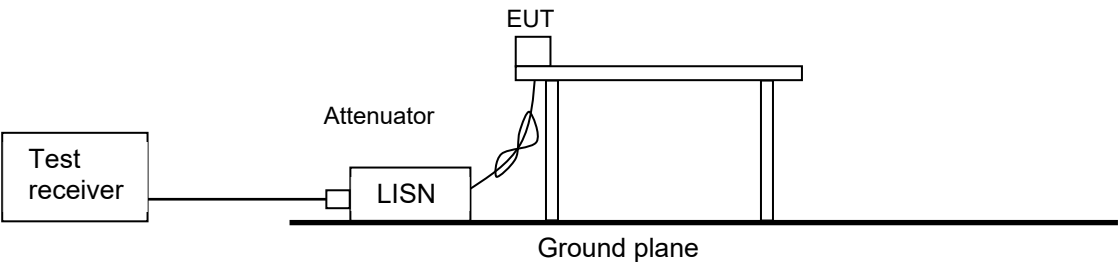
Test Procedure and conditions

EUT was placed on the platform of nominal size, 1.0 m by 1.5 m + 0.8 m by 1.0 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 Shielded room.
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 + 0.5 m by 0.5 m raised 0.8 m above the conducting ground plane (Below 1 GHz) and 0.5 m by 0.5 m + 0.5 m by 0.5 m raised 1.5 m above the conducting ground plane (Above 1 GHz). 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.

[Frequency: 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 beamwidth of the antenna.

[Test instruments and test settings]

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

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	Above 1 GHz	
Instrument used	Test Receiver					Spectrum Analyzer	
Detector	PK / AV	QP	PK / AV	QP	QP	PK	AV
IF Bandwidth	200 Hz	200 Hz	9 kHz	9 kHz	120 kHz	RBW: 1 MHz VBW: 3 MHz	RBW: 1 MHz VBW: 10 Hz
Test Distance	3 m *1)	3 m *1)	3 m *1)	3 m *2)	3 m	3 m	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

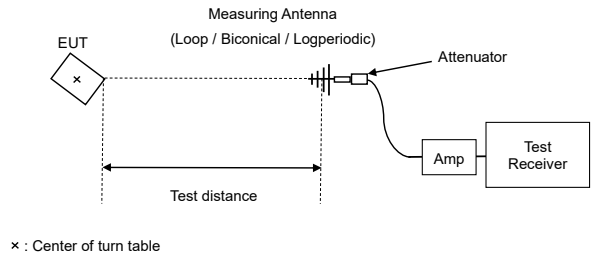
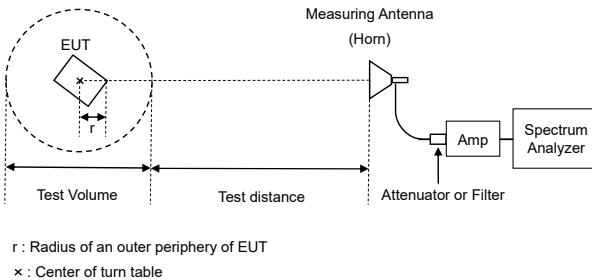
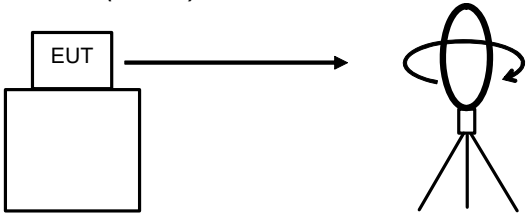
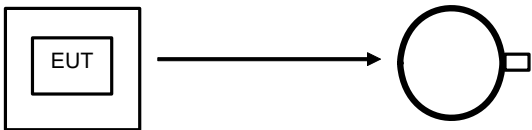
Below 1 GHz	
 × : Center of turn table	Test Distance: 3 m
1 GHz to 2 GHz	
 r : Radius of an outer periphery of EUT × : Center of turn table	Distance Factor: $20 \times \log (3.69 \text{ m}^* / 3.0 \text{ m}) = 1.8 \text{ dB}$ *(Test Distance + SVSWR Volume / 2) - r = 3.69 m Test Distance: 3 m SVSWR Volume: 3 m (SVSWR Volume has been calibrated based on CISPR 16-1-4.) r: 0.81 m

Figure 3: Direction of the Loop Antenna

Side View (Vertical)

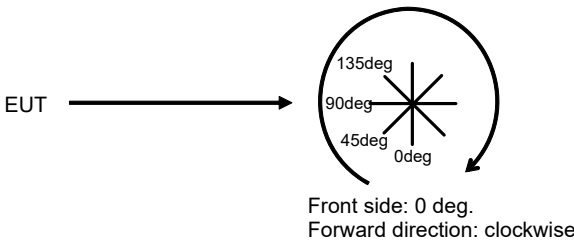


Top View (Horizontal)



Antenna was not rotated.

Top View (Vertical)



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

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

Measurement range : 9 kHz to 2 GHz
Test data : APPENDIX
Test result : Pass

SECTION 7: Other tests

Test	Span	RBW	VBW	Sweep	Detector	Trace	Instrument used
20 dB Bandwidth	10 kHz	1 kHz	3 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
99 % Occupied Bandwidth	Enough width to display emission skirts	1 to 5 % of OBW	Three times of RBW	Auto	Peak *1)	Max Hold *1)	Spectrum Analyzer
Frequency Tolerance	-	-	-	-	-	-	Frequency counter and 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 the Reference Signal of the Frequency counter into the Marker Frequency Counter Function of the Spectrum Analyzer.							

Test data : APPENDIX
Test result : Pass

APPENDIX 1: Test data

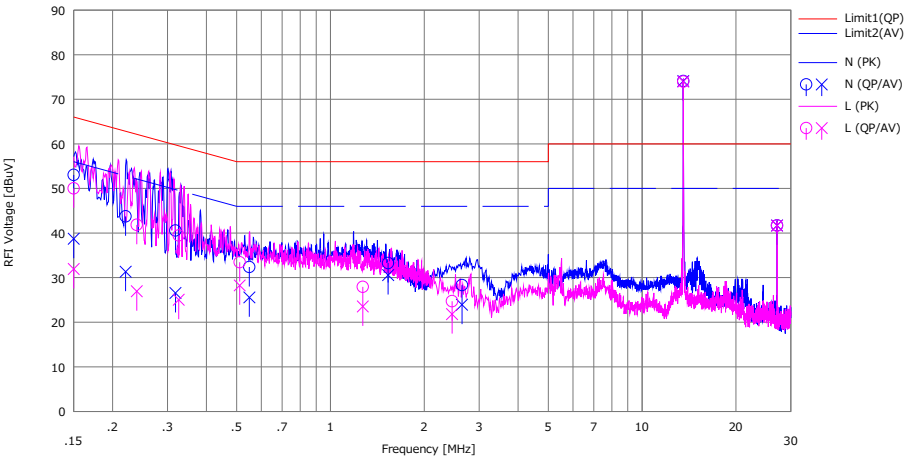
Conducted Emission

DATA OF CONDUCTED EMISSION TEST

UL Japan,Inc. Kashima EMC Lab. No.1 Shielded Room
Date : 2025/08/22

Company : Yoshikawakogyo RF Semicon Co., Ltd. Mode : Transmitting (13.56 MHz) mode
Kind of EUT : LAP TIME DETECTOR III Order No. : 15921053
Model No. : YRCUKS58 Power : DC 5 V (PC : AC 120V / 60 Hz)
Serial No. : No.3 Temp./Humi. : 22 deg.C / 59 %RH
Remarks : Without Tag

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]		
1	0.15000	43.40	29.10	9.63	53.03	38.73	66.00	56.00	12.9	17.2	N	
2	0.22020	34.10	21.70	9.64	43.74	31.34	62.81	52.81	19.0	21.4	N	
3	0.31820	30.90	16.90	9.65	40.55	26.55	59.75	49.75	19.2	23.2	N	
4	0.54925	22.70	15.90	9.67	32.37	25.57	56.00	46.00	23.6	20.4	N	
5	1.53150	23.50	20.80	9.76	33.26	30.56	56.00	46.00	22.7	15.4	N	
6	2.64400	18.50	14.10	9.83	28.33	23.93	56.00	46.00	27.6	22.0	N	
7	13.56000	63.90	63.90	10.21	74.11	74.11	60.00	50.00	-14.2	-24.2	N	Carrier
8	27.12000	31.20	31.20	10.51	41.71	41.71	60.00	50.00	18.2	8.2	N	
9	0.15000	40.40	22.30	9.63	50.03	31.93	66.00	56.00	15.9	24.0	L	
10	0.23907	32.20	17.30	9.64	41.84	26.94	62.13	52.13	20.2	25.1	L	
11	0.32605	29.80	15.40	9.65	39.45	25.05	59.55	49.55	20.1	24.5	L	
12	0.51150	23.80	18.60	9.67	33.47	28.27	56.00	46.00	22.5	17.7	L	
13	1.27000	18.20	13.80	9.74	27.94	23.54	56.00	46.00	28.0	22.4	L	
14	2.45600	14.90	12.00	9.82	24.72	21.82	56.00	46.00	31.2	24.1	L	
15	13.56000	63.80	63.80	10.18	73.98	73.98	60.00	50.00	-14.0	-24.0	L	Carrier
16	27.12000	31.30	31.30	10.37	41.67	41.67	60.00	50.00	18.3	8.3	L	

alculation: Result[dBuV]=Reading[dBuV]+C.Fac(AMN+Cable)[dB]
AMN: 204501

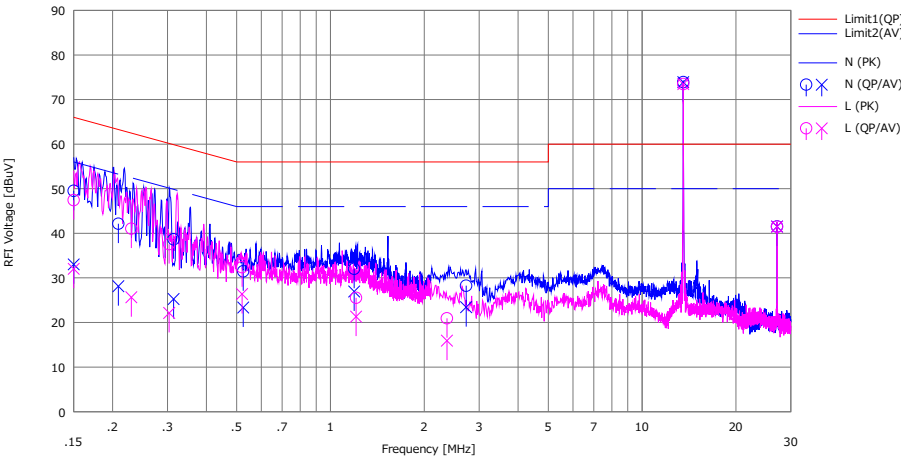
Conducted Emission

DATA OF CONDUCTED EMISSION TEST

UL Japan,Inc. Kashima EMC Lab. No.1 Shielded Room
Date : 2025/08/22

Company : Yoshikawakogyo RF Semicon Co., Ltd. Mode : Transmitting (13.56 MHz) mode
Kind of EUT : LAP TIME DETECTOR III Order No. : 15921053
Model No. : YRCUKS58 Power : DC 5 V (PC : AC 120V / 60 Hz)
Serial No. : No.3 Temp./Humi. : 22 deg.C / 59 %RH
Remarks : With Tag: I-CODE SLI

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



No.	Freq. [MHz]	Reading		C.Fac	Results		Limit		Margin		Phase	Comment
		[QP] [dBuV]	[AV] [dBuV]		[QP] [dBuV]	[AV] [dBuV]	[QP] [dBuV]	[AV] [dBuV]	[QP] [dB]	[AV] [dB]		
1	0.15000	39.90	23.40	9.63	49.53	33.03	66.00	56.00	16.4	22.9	N	
2	0.20880	32.50	18.50	9.64	42.14	28.14	63.25	53.25	21.1	25.1	N	
3	0.31380	29.00	15.60	9.65	38.65	25.25	59.87	49.87	21.2	24.6	N	
4	0.52475	21.80	13.70	9.67	31.47	23.37	56.00	46.00	24.5	22.6	N	
5	1.19200	22.30	17.20	9.73	32.03	26.93	56.00	46.00	23.9	19.0	N	
6	2.72600	18.40	13.60	9.84	28.24	23.44	56.00	46.00	27.7	22.5	N	
7	13.56000	63.70	63.70	10.21	73.91	73.91	60.00	50.00	-14.0	-24.0	N	Carrier
8	27.12000	31.00	31.00	10.51	41.51	41.51	60.00	50.00	18.4	8.4	N	
9	0.15000	37.80	22.40	9.63	47.43	32.03	66.00	56.00	18.5	23.9	L	
10	0.22962	31.40	16.00	9.64	41.04	25.64	62.46	52.46	21.4	26.8	L	
11	0.30382	27.90	12.50	9.65	37.55	22.15	60.14	50.14	22.5	27.9	L	
12	0.52050	22.70	16.70	9.67	32.37	26.37	56.00	46.00	23.6	19.6	L	
13	1.20900	15.80	11.60	9.73	25.53	21.33	56.00	46.00	30.4	24.6	L	
14	2.36500	11.10	6.10	9.82	20.92	15.92	56.00	46.00	35.0	30.0	L	
15	13.56000	63.30	63.30	10.18	73.48	73.48	60.00	50.00	-13.5	-23.5	L	Carrier
16	27.12000	31.10	31.10	10.37	41.47	41.47	60.00	50.00	18.5	8.5	L	

alculation:Result[dBuV]=Reading[dBuV]+C.Fac(AMN+Cable)[dB]
AMN: 204501

Conducted Emission

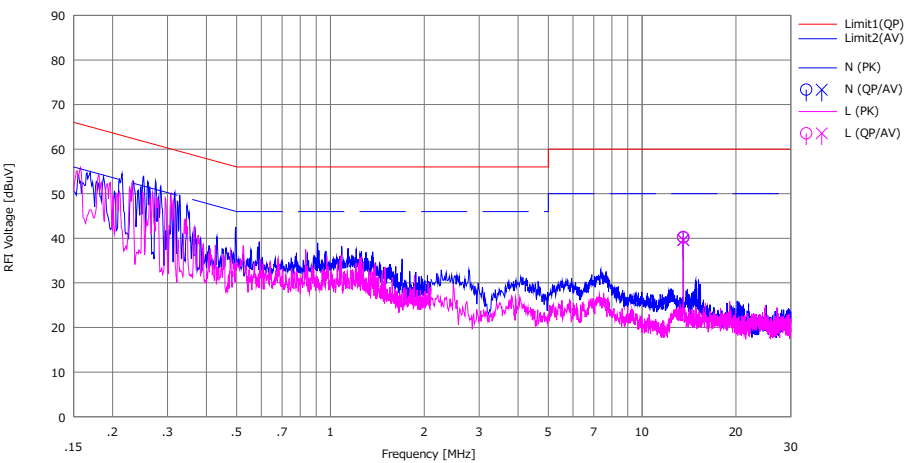
DATA OF CONDUCTED EMISSION TEST

UL Japan,Inc. Kashima EMC Lab. No.1 Shielded Room
Date : 2025/08/22

Company : Yoshikawakogyo RF Semicon Co., Ltd. Mode : Transmitting (13.56 MHz) mode
Kind of EUT : LAP TIME DETECTOR III Order No. : 15921053
Model No. : YRCUKS58 Power : DC 5 V (PC : AC 120V / 60 Hz)
Serial No. : No.2 Temp./Humi. : 22 deg.C / 59 %RH
Remarks : Antenna Terminated

Limit : FCC_Part 15 Subpart C(15.207)

Tested by : Tomoyuki Watanabe



No.	Freq. [MHz]	Reading		C.Fac	Results		Limit		Margin		Phase	Comment
		<QP> [dBuV]	<AV> [dBuV]		<QP> [dBuV]	<AV> [dBuV]	<QP> [dBuV]	<AV> [dBuV]	<QP> [dB]	<AV> [dB]		
1	13.56000	30.00	29.40	10.21	40.21	39.61	60.00	50.00	19.7	10.3	N	
2	13.56000	30.10	29.40	10.18	40.28	39.58	60.00	50.00	19.7	10.4	L	

alculation:Result[dBuV]=Reading[dBuV]+C.Fac(AMN+Cable)[dB]
AMN: 204501

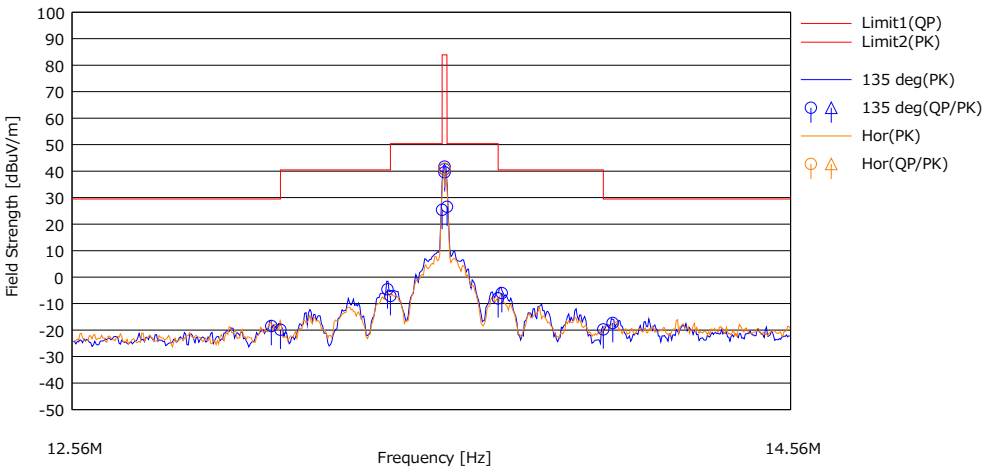
Fundamental Emission and Spectrum Mask

DATA OF RADIATED EMISSION(below 30MHz) TEST

UL Japan, Inc. Kashima EMC Lab. No.10 Semi-Anechoic Chamber
Date : 2025/10/20

Company : Yoshikawakogyo RF Semicon Co.,Ltd. Mode : Transmitting (13.56 MHz) mode
Kind of EUT : LAP TIME DETECTOR III Order No. : 15921053
Model No. : YRCUKS58 Power : DC 5.75 V (PS: AC 100 V / 60 Hz)
Serial No. : No.3 Temp./Humi. : 20 deg.C / 57 %RH
Remarks : Without Tag

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 : Hiromitsu Tanabe



No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Antenna [deg]	Table [deg]	Comment
		(QP)	(PK)				(QP)	(PK)	(QP)	(PK)	(QP)	(PK)			
		[dBuV]	[dBuV]				[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]			
1	13.08553	29.06	---	9.68	-33.03	24.21	-18.50	---	29.50	---	48.0	---	135 deg	90	
2	13.11000	27.70	---	9.68	-33.03	24.21	-19.86	---	29.50	---	49.3	---	135 deg	90	
3	13.40190	42.97	---	9.64	-33.01	24.22	-4.62	---	40.50	---	45.1	---	135 deg	90	
4	13.41000	40.42	---	9.64	-33.01	24.22	-7.17	---	40.50	---	47.6	---	135 deg	90	
5	13.55300	72.98	---	9.62	-33.00	24.23	25.37	---	50.40	---	25.0	---	135 deg	90	
6	13.56000	89.30	---	9.62	-33.00	24.23	41.69	---	83.90	---	42.2	---	135 deg	90	DC 5.75 V
7	13.56000	88.32	---	9.62	-33.00	24.23	40.71	---	83.90	---	43.1	---	135 deg	90	DC 5 V
8	13.56000	87.14	---	9.62	-33.00	24.23	39.53	---	83.90	---	44.3	---	135 deg	90	DC 4.25 V
9	13.56700	74.13	---	9.62	-33.00	24.23	26.52	---	50.40	---	23.8	---	135 deg	90	
10	13.71000	39.60	---	9.60	-33.00	24.23	-8.03	---	40.50	---	48.5	---	135 deg	90	
11	13.72070	41.57	---	9.60	-33.00	24.24	-6.07	---	40.50	---	46.5	---	135 deg	90	
12	14.01000	27.90	---	9.56	-32.99	24.25	-19.78	---	29.50	---	49.2	---	135 deg	90	
13	14.03706	30.30	---	9.56	-32.99	24.25	-17.38	---	29.50	---	46.8	---	135 deg	90	
14	13.56000	88.50	---	9.62	-33.00	24.23	40.89	---	83.90	---	43.0	---	Hor	84	

Calculation:Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable+ATT)[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
135	13.56000	QP	89.30	9.62	7.00	24.23	-	81.69	-	-	Fundamental

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

Fundamental Emission and Spectrum Mask

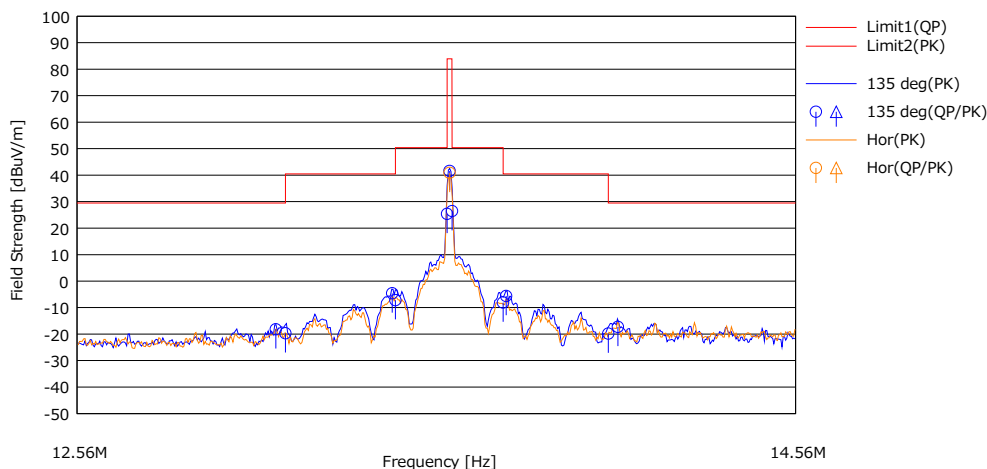
DATA OF RADIATED EMISSION(below 30MHz) TEST

UL Japan, Inc. Kashima EMC Lab. No.10 Semi-Anechoic Chamber
Date : 2025/10/20

Company : Yoshikawakogyo RF Semicon Co.,Ltd.
Kind of EUT : LAP TIME DETECTOR III
Model No. : YRCUKS58
Serial No. : No.3
Remarks : With Tag, I-CODE SLIX2

Mode : Transmitting (13.56 MHz) mode
Order No. : 15921053
Power : DC 5.75 V (PS: AC 100 V / 60 Hz)
Temp./Humi. : 20 deg.C / 57 %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 : Hiromitsu Tanabe



No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Antenna	Table	Comment
		(QP)	(PK)				(QP)	(PK)	(QP)	(PK)	(QP)	(PK)			
		[dBuV]	[dBuV]				[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]			
1	13.08418	29.37	---	9.68	-33.03	24.21	-18.19	---	29.50	---	47.6	---	135 deg	90	
2	13.11000	27.84	---	9.68	-33.03	24.21	-19.72	---	29.50	---	49.2	---	135 deg	90	
3	13.40111	42.97	---	9.64	-33.01	24.22	-4.62	---	40.50	---	45.1	---	135 deg	90	
4	13.41000	40.39	---	9.64	-33.01	24.22	-7.20	---	40.50	---	47.7	---	135 deg	90	
5	13.55300	72.96	---	9.62	-33.00	24.23	25.35	---	50.40	---	25.0	---	135 deg	90	
6	13.56000	89.17	---	9.62	-33.00	24.23	41.56	---	83.90	---	42.3	---	135 deg	90	
7	13.56700	74.01	---	9.62	-33.00	24.23	26.40	---	50.40	---	24.0	---	135 deg	90	
8	13.71000	39.50	---	9.60	-33.00	24.23	-8.13	---	40.50	---	48.6	---	135 deg	90	
9	13.71888	42.00	---	9.60	-33.00	24.24	-5.64	---	40.50	---	46.1	---	135 deg	90	
10	14.01000	27.86	---	9.56	-32.99	24.25	-19.82	---	29.50	---	49.3	---	135 deg	90	
11	14.03744	30.38	---	9.56	-32.99	24.25	-17.30	---	29.50	---	46.8	---	135 deg	90	
12	13.56000	88.46	---	9.62	-33.00	24.23	40.85	---	83.90	---	43.0	---	Hor	84	

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable+ATT)[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
135	13.56000	QP	89.17	9.62	7.00	24.23	-	81.56	-	-	Fundamental

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

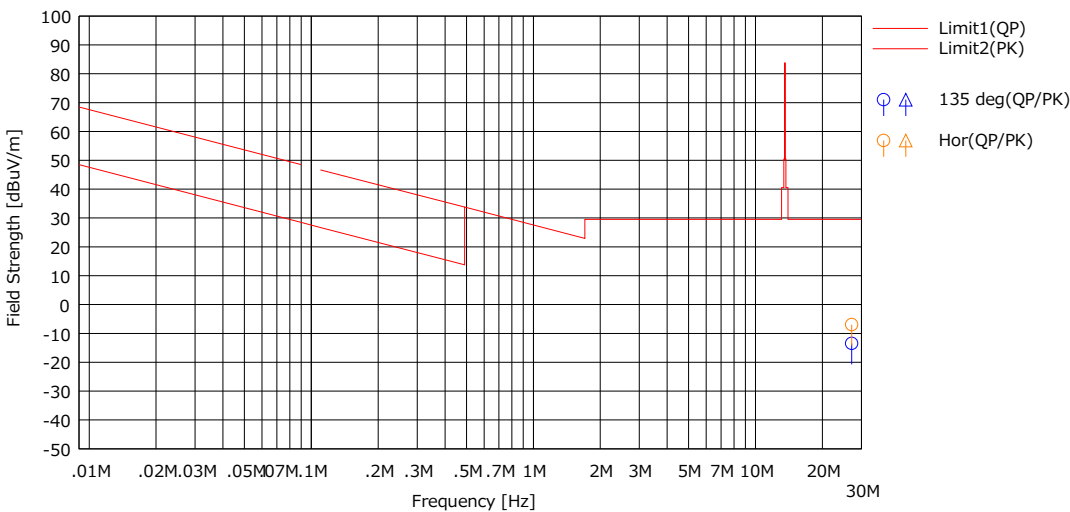
Spurious Emission

DATA OF RADIATED EMISSION(below 30MHz) TEST

UL Japan, Inc. Kashima EMC Lab. No.10 Semi-Anechoic Chamber
Date : 2025/10/20

Company : Yoshikawakogyo RF Semicon Co.,Ltd. Mode : Transmitting (13.56 MHz) mode
Kind of EUT : LAP TIME DETECTOR III Order No. : 15921053
Model No. : YRCUKS58 Power : DC 5.75 V (PS: AC 100 V / 60 Hz)
Serial No. : No.3 Temp./Humi. : 20 deg.C / 57 %RH
Remarks : Without Tag

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 : Hiromitsu Tanabe



No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result		Limit		Margin		Antenna [deg]	Table	Comment
		<QP> [dBuV]	<PK> [dBuV]				<QP> [dBuV/m]	<PK> [dBuV/m]	<QP> [dBuV/m]	<PK> [dBuV/m]	<QP> [dB]	<PK> [dB]			
1	27.12000	36.60	---	6.85	-32.51	24.42	-13.48	---	29.50	---	42.9	---	135 deg	310	
2	27.12000	43.12	---	6.85	-32.51	24.42	-6.96	---	29.50	---	36.4	---	Hor	261	

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

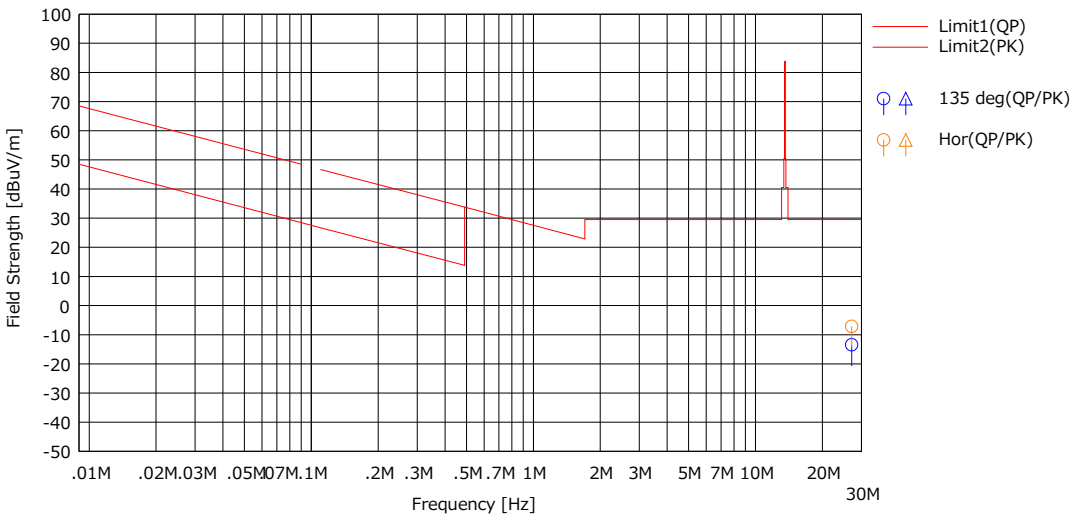
Spurious Emission

DATA OF RADIATED EMISSION(below 30MHz) TEST

UL Japan, Inc. Kashima EMC Lab. No.10 Semi-Anechoic Chamber
Date : 2025/10/20

Company : Yoshikawakogyo RF Semicon Co.,Ltd. Mode : Transmitting (13.56 MHz) mode
Kind of EUT : LAP TIME DETECTOR III Order No. : 15921053
Model No. : YRCUKS58 Power : DC 5.75 V (PS AC 100 V / 60 Hz)
Serial No. : No.3 Temp./Humi. : 20 deg.C / 57 %RH
Remarks : With Tag, I-CODE SLI

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 : Hiromitsu Tanabe



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	27.12000	36.62	---	6.85	-32.51	24.42	-13.46	---	29.50	---	42.9	---	135 deg	328	
2	27.12000	42.95	---	6.85	-32.51	24.42	-7.13	---	29.50	---	36.6	---	Hor	278	

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

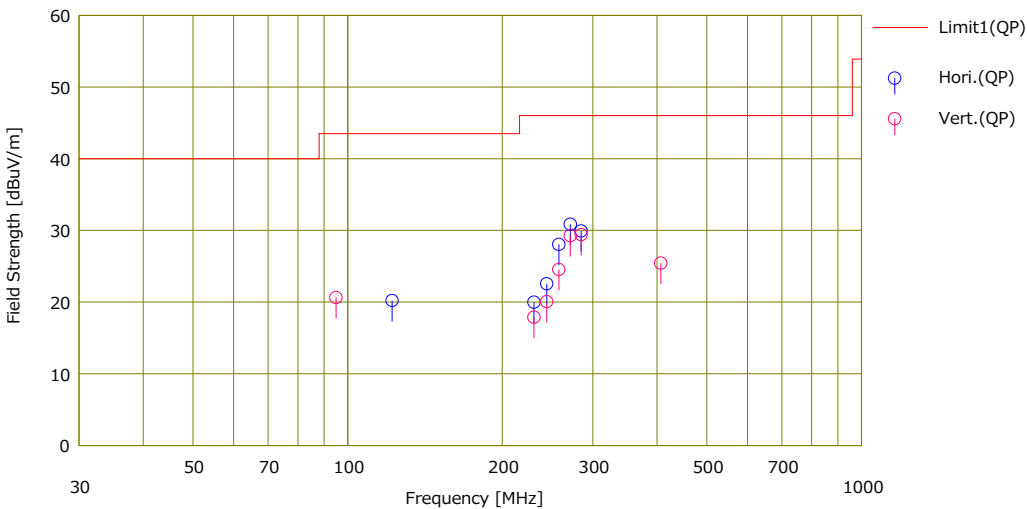
Spurious Emission

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Kashima EMC Lab. No.10 Semi-Anechoic Chamber
Date : 2025/10/20

Company : Yoshikawakogyo RF Semicon Co., Ltd. Mode : Transmitting (13.56 MHz) mode
Kind of EUT : LAP TIME DETECTOR III Order No. : 15921053
Model No. : YRCUKS58 Power : DC 5.75 V (PS: AC 100 V / 60 Hz)
Serial No. : No.3 Temp./Humi. : 20 deg.C / 57 %RH
Remarks : Without Tag

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



No.	Freq. [MHz]	Reading	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result	Limit	Margan	Pola [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(QP) [dBuV]				(QP) [dBuV/m]	(QP) [dBuV/m]	(QP) [dB]					
1	122.040	33.30	11.05	6.88	31.01	20.22	43.50	23.2	Hori.	260	329	HB	
2	230.520	33.10	9.96	7.78	30.85	19.99	46.00	26.0	Hori.	135	303	HB	
3	244.080	34.10	11.44	7.89	30.87	22.56	46.00	23.4	Hori.	267	114	HB	
4	257.640	39.00	11.92	7.99	30.87	28.04	46.00	17.9	Hori.	164	243	HB	
5	271.200	41.00	12.63	8.08	30.86	30.85	46.00	15.1	Hori.	143	246	HB	
6	284.760	39.50	13.08	8.18	30.85	29.91	46.00	16.0	Hori.	160	250	HB	
7	94.920	37.00	8.07	6.61	31.06	20.62	43.50	22.8	Vert.	100	168	HB	
8	230.520	31.00	9.96	7.78	30.85	17.89	46.00	28.1	Vert.	100	22	HB	
9	244.080	31.60	11.44	7.89	30.87	20.06	46.00	25.9	Vert.	346	194	HB	
10	257.640	35.50	11.92	7.99	30.87	24.54	46.00	21.4	Vert.	100	16	HB	
11	271.200	39.40	12.63	8.08	30.86	29.25	46.00	16.7	Vert.	200	180	HB	
12	284.760	39.00	13.08	8.18	30.85	29.41	46.00	16.5	Vert.	100	50	HB	
13	406.800	31.20	15.77	9.21	30.75	25.43	46.00	20.5	Vert.	134	99	HB	

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

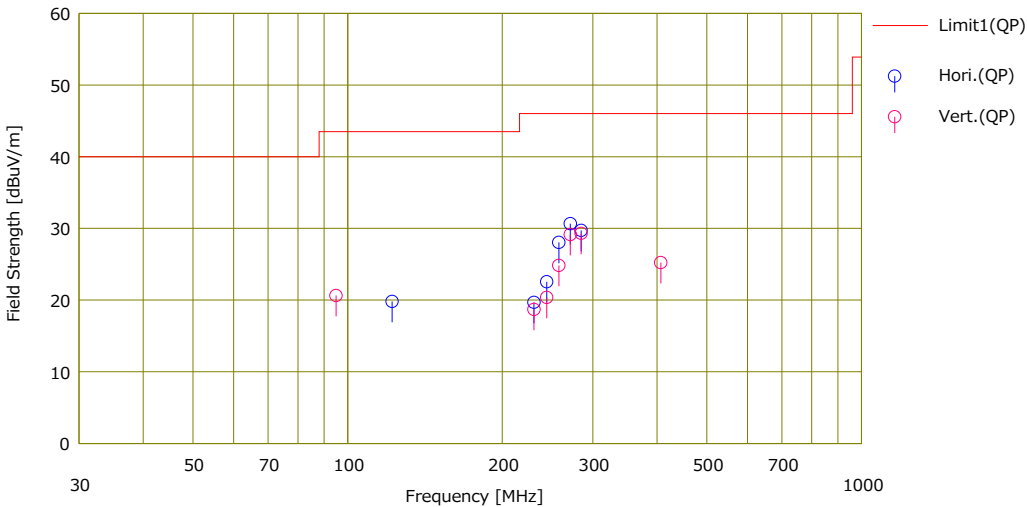
Spurious Emission

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Kashima EMC Lab. No.10 Semi-Anechoic Chamber
Date : 2025/10/20

Company : Yoshikawakogyo RF Semicon Co., Ltd.
Kind of EUT : LAP TIME DETECTOR III
Model No. : YRCUKS58
Serial No. : No.3
Remarks : With Tag,: I-CODE SLI
Mode : Transmitting (13.56 MHz) mode
Order No. : 15921053
Power : DC 5.75 V (PS: AC 100 V / 60 Hz)
Temp./Humi. : 20 deg.C / 57 %RH

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



No.	Freq. [MHz]	Reading (QP) [dBuV]	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result (QP) [dBuV/m]	Limit (QP) [dBuV/m]	Margen (QP) [dB]	Pola [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
1	122.040	32.90	11.05	6.88	31.01	19.82	43.50	23.6	Hori.	260	219	HB	
2	230.520	32.80	9.96	7.78	30.85	19.69	46.00	26.3	Hori.	140	300	HB	
3	244.080	34.10	11.44	7.89	30.87	22.56	46.00	23.4	Hori.	245	108	HB	
4	257.640	39.00	11.92	7.99	30.87	28.04	46.00	17.9	Hori.	180	248	HB	
5	271.200	40.80	12.63	8.08	30.86	30.65	46.00	15.3	Hori.	137	246	HB	
6	284.760	39.30	13.08	8.18	30.85	29.71	46.00	16.2	Hori.	125	238	HB	
7	94.920	37.00	8.07	6.61	31.06	20.62	43.50	22.8	Vert.	100	158	HB	
8	230.520	31.80	9.96	7.78	30.85	18.69	46.00	27.3	Vert.	100	20	HB	
9	244.080	31.90	11.44	7.89	30.87	20.36	46.00	25.6	Vert.	326	184	HB	
10	257.640	35.80	11.92	7.99	30.87	24.84	46.00	21.1	Vert.	100	16	HB	
11	271.200	39.30	12.63	8.08	30.86	29.15	46.00	16.8	Vert.	198	175	HB	
12	284.760	38.90	13.08	8.18	30.85	29.31	46.00	16.6	Vert.	100	50	HB	
13	406.800	31.00	15.77	9.21	30.75	25.23	46.00	20.7	Vert.	134	93	HB	

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

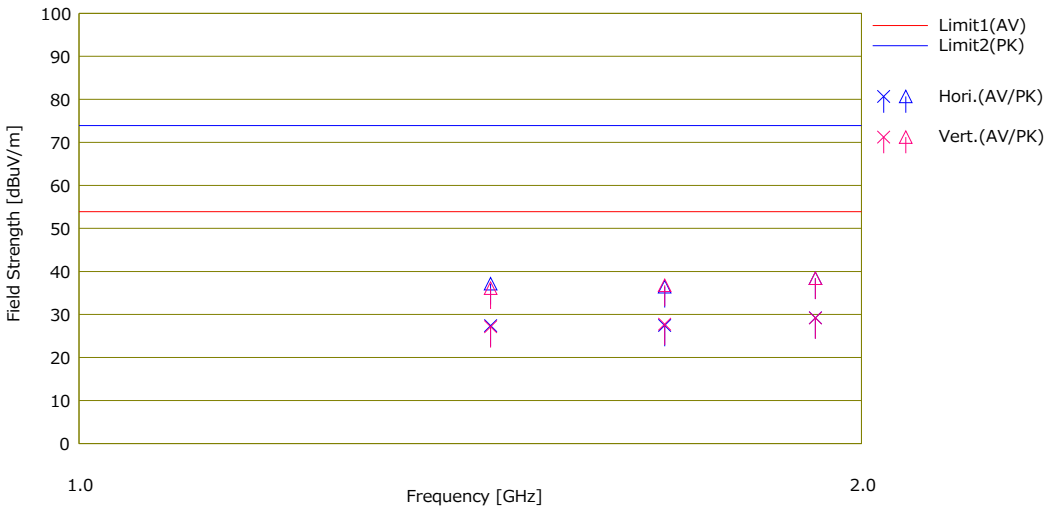
Spurious Emission

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Kashima EMC Lab. No.10 Semi-Anechoic Chamber
Date : 2025/10/20

Company : Yoshikawakogyo RF Semicon Co., Ltd.
Kind of EUT : IC Tag Lap Counter III
Model No. : YRCUKS58
Serial No. : No.3
Remarks : Without Tag, Test Distance = 3.69 m
Mode : Transmitting (13.56 MHz) mode
Order No. : 15921053
Power : DC 5.75 V (PS: AC 100 V / 60 Hz)
Temp./Humi. : 20 deg.C / 57 %RH

Limit : FCC15.247(d)(FCC15.209),3 m, below 1 GHz:QP, above 1 GHz:AV/PK
Engineer : Hiromitsu Tanabe



No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]					(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
1	1440.000	41.39	51.11	25.31	2.73	43.81	1.80	27.42	37.14	53.90	73.90	26.4	36.7	Hori.	150	0	Horn	Floor noise
2	1680.000	41.28	50.27	25.35	2.94	43.93	1.80	27.44	36.43	53.90	73.90	26.4	37.4	Hori.	150	0	Horn	Floor noise
3	1920.000	41.13	50.32	26.99	3.15	43.84	1.80	29.23	38.42	53.90	73.90	24.6	35.4	Hori.	150	0	Horn	Floor noise
4	1440.000	41.12	50.10	25.31	2.73	43.81	1.80	27.15	36.13	53.90	73.90	26.7	37.7	Vert.	150	0	Horn	Floor noise
5	1680.000	41.58	50.62	25.35	2.94	43.93	1.80	27.74	36.78	53.90	73.90	26.1	37.1	Vert.	150	0	Horn	Floor noise
6	1920.000	41.07	50.31	26.99	3.15	43.84	1.80	29.17	38.41	53.90	73.90	24.7	35.4	Vert.	150	0	Horn	Floor noise

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

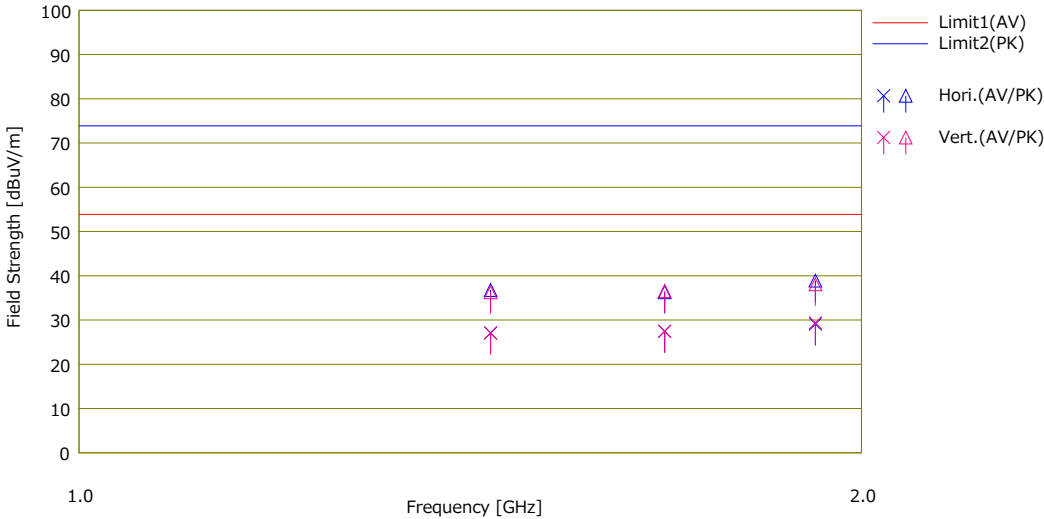
Spurious Emission

DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Kashima EMC Lab. No.10 Semi-Anechoic Chamber
Date : 2025/10/20

Company : Yoshikawakogyo RF Semicon Co., Ltd. Mode : Transmitting (13.56 MHz) mode
Kind of EUT : IC Tag Lap Counter III Order No. : 15921053
Model No. : YRCUKS58 Power : DC 5.75 V (PS: AC 100 V / 60 Hz)
Serial No. : No.3 Temp./Humi. : 20 deg.C / 57 %RH
Remarks : With Tag: I-CODE SLI, Test Distance = 3.69 m

Limit : FCC15.247(d)(FCC15.209),3 m, below 1 GHz:QP, above 1 GHz:AV/PK
Engineer : Hiromitsu Tanabe



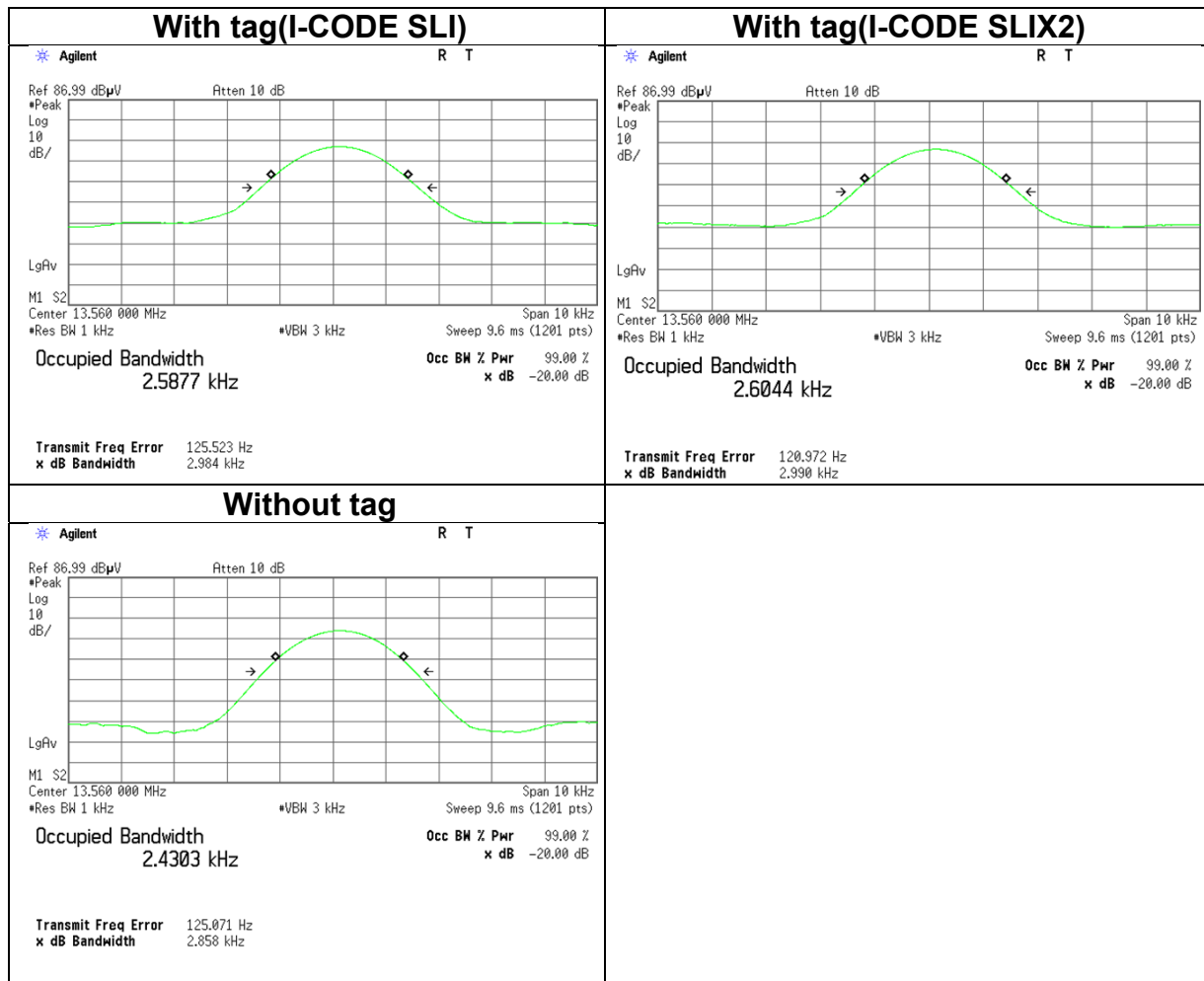
No.	Freq. [MHz]	Reading		Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	D.Fac [dB]	Result		Limit		Margin		Pola. [H/V]	Height [cm]	Angle [deg]	Ant. Type	Comment
		(AV) [dBuV]	(PK) [dBuV]					(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dBuV/m]	(PK) [dBuV/m]	(AV) [dB]	(PK) [dB]					
		[dBuV]	[dBuV]					[dBuV/m]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]					
1	1440.000	41.06	50.76	25.31	2.73	43.81	1.80	27.09	36.79	53.90	73.90	26.8	37.1	Hori.	150	0	Horn	Floor noise
2	1680.000	41.27	50.13	25.35	2.94	43.93	1.80	27.43	36.29	53.90	73.90	26.4	37.6	Hori.	150	0	Horn	Floor noise
3	1920.000	41.00	50.80	26.99	3.15	43.84	1.80	29.10	38.90	53.90	73.90	24.8	35.0	Hori.	150	0	Horn	Floor noise
4	1440.000	41.05	50.23	25.31	2.73	43.81	1.80	27.08	36.26	53.90	73.90	26.8	37.6	Vert.	150	0	Horn	Floor noise
5	1680.000	41.32	50.42	25.35	2.94	43.93	1.80	27.48	36.58	53.90	73.90	26.4	37.3	Vert.	150	0	Horn	Floor noise
6	1920.000	41.28	49.98	26.99	3.15	43.84	1.80	29.38	38.08	53.90	73.90	24.5	35.8	Vert.	150	0	Horn	Floor noise

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

20 dB Bandwidth and 99% Occupied Bandwidth

Date	Test site	Temperature	Humidity	Engineer
August 26, 2025	MR2	23 deg. C	58 % RH	Hiromitsu Tanabe

FREQ [MHz]	Mode	20dB Bandwidth [kHz]	99% Occupied Bandwidth [kHz]
13.56	With Tag(I-CODE SLI)	2.984	2.5877
	With Tag(I-CODE SLIX2)	2.990	2.6044
	Without Tag	2.858	2.4303



Since the transmitter signal is CW-like it is impractical to use a RBW setting of 1 – 5% of the emission bandwidth since the emission bandwidth will be proportional to the RBW.

Frequency Tolerance

Date	Test site	Temperature	Humidity	Engineer
August 26, 2025	MR2	23 deg. C	58 % RH	Hiromitsu Tanabe

Test condition Temp. [deg. C]	Voltage [V]	Tested timing	Measured frequency [MHz]	Frequency error [MHz]	Result		Limit [+/- %]
					[%]	[ppm]	
50	5	Power on	13.560044	0.000044	0.00032	3.2	0.01
		+ 2 min.	13.560043	0.000043	0.00032	3.2	0.01
		+ 5 min.	13.560041	0.000041	0.00030	3.0	0.01
		+ 10 min.	13.560040	0.000040	0.00029	2.9	0.01
40	5	Power on	13.560079	0.000079	0.00058	5.8	0.01
		+ 2 min.	13.560074	0.000074	0.00055	5.5	0.01
		+ 5 min.	13.560071	0.000071	0.00052	5.2	0.01
		+ 10 min.	13.560070	0.000070	0.00052	5.2	0.01
30	5	Power on	13.560125	0.000125	0.00092	9.2	0.01
		+ 2 min.	13.560116	0.000116	0.00086	8.6	0.01
		+ 5 min.	13.560112	0.000112	0.00083	8.3	0.01
		+ 10 min.	13.560111	0.000111	0.00082	8.2	0.01
20	5	Power on	13.560169	0.000169	0.00125	12.5	0.01
		+ 2 min.	13.560158	0.000158	0.00117	11.7	0.01
		+ 5 min.	13.560155	0.000155	0.00114	11.4	0.01
		+ 10 min.	13.560154	0.000154	0.00114	11.4	0.01
20	4.25 (5V -15%)	Power on	13.560167	0.000167	0.00123	12.3	0.01
		+ 2 min.	13.560160	0.000160	0.00118	11.8	0.01
		+ 5 min.	13.560158	0.000158	0.00117	11.7	0.01
		+ 10 min.	13.560156	0.000156	0.00115	11.5	0.01
20	5.75 (5V +15%)	Power on	13.560170	0.000170	0.00125	12.5	0.01
		+ 2 min.	13.560158	0.000158	0.00117	11.7	0.01
		+ 5 min.	13.560155	0.000155	0.00114	11.4	0.01
		+ 10 min.	13.560151	0.000151	0.00111	11.1	0.01
10	5	Power on	13.560205	0.000205	0.00151	15.1	0.01
		+ 2 min.	13.560197	0.000197	0.00145	14.5	0.01
		+ 5 min.	13.560195	0.000195	0.00144	14.4	0.01
		+ 10 min.	13.560194	0.000194	0.00143	14.3	0.01
0	5	Power on	13.560226	0.000226	0.00167	16.7	0.01
		+ 2 min.	13.560223	0.000223	0.00164	16.4	0.01
		+ 5 min.	13.560222	0.000222	0.00164	16.4	0.01
		+ 10 min.	13.560221	0.000221	0.00163	16.3	0.01
-10	5	Power on	13.560227	0.000227	0.00167	16.7	0.01
		+ 2 min.	13.560228	0.000228	0.00168	16.8	0.01
		+ 5 min.	13.560229	0.000229	0.00169	16.9	0.01
		+ 10 min.	13.560229	0.000229	0.00169	16.9	0.01
-20	5	Power on	13.560195	0.000195	0.00144	14.4	0.01
		+ 2 min.	13.560204	0.000204	0.00150	15.0	0.01
		+ 5 min.	13.560207	0.000207	0.00153	15.3	0.01
		+ 10 min.	13.560208	0.000208	0.00153	15.3	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	204501	A.M.N.	Rohde & Schwarz	ENV216	102650	2025/03/12	12
CE	143155	1 Site CE System	N/A	none(No.1 CE SR)	-	2025/07/08	12
CE	144196	Test Receiver	Rohde & Schwarz	ESCI	100608	2024/10/08	12
CE	222613	Measure	SHINWA RULES CO., LTD.	80862	none	-	-
CE	222852	Temperature & Humidity Logger	HIOKI E. E. CORPORATION	LR5001/LR9504	220811599/220799187	2025/07/11	12
CE	204469	Barometer	Sanoh Co., Ltd	SBR-151	004119	2023/03/10	36
CE	144207	Digital Multimeter	Fluke Corporation	112	89790157	2024/10/15	12
CE	178804	EMI Software	TSJ (Techno Science Japan)	TEPTO-DV3(RE,CE,ME,PE)	Ver 3.1.0546	-	-
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	2025/08/07	12
RE	183880	Pre-Amplifier	UL-KAS EMC	ZKL-2	001	2025/04/04	12
RE	144199	Test Receiver	Keysight Technologies Inc	N9038A	MY53290016	2025/07/22	12
RE	144632	Semi Anechoic Chamber	TDK	NSA (No.10)	10	2025/05/01	12
RE	245073	Loop(Active) Antenna	ETS-Lindgren	6502	00262457	2025/04/04	12
RE	143161	Coaxial Cable	Fujikura,HP,Mini-Circuits,Fujikura	3D2W	none	2025/05/07	12
RE	144245	6dB Fixed Atten.	Suher	6906.01.A	none	2025/07/01	12
RE	171927	Pre Amplifier	UL-KAS EMC	GALI-84+	001	2025/07/02	12
RE	143157	10 Site CE System	UL-KAS EMC	none	none	2025/08/07	12
RE	222745	Measure	SHINWA RULES CO., LTD.	80862	none	-	-
RE	143542	Temperature & Humidity Indicator	HIOKI E. E. CORPORATION	3641/9680-50	090999895/090905406	2025/06/18	12
RE	143133	Barometer	Sanoh Co., Ltd	SBR-151	001439	2023/03/10	36
RE	144216	Digital Multimeter	Fluke Corporation	115	994460954	2024/10/23	12
RE	143455	Double Ridged Wave Guide	ETS-Lindgren (Cedar Park, Texas)	3115	'00204569	2025/01/10	12
RE	144199	Test Receiver	Keysight Technologies Inc	N9038A	MY53290016	2025/07/22	12
RE	142940	Pre-Amplifier	Micro Wave Factory	MPR-1G26.5-35	161399	2025/06/04	12
RE	143140	Micro Wave Cable	Junkosha	MWX221	1407S222	2024/11/18	12
RE	144633	Semi Anechoic Chamber	TDK	SVSWR(No.10)	10	2025/05/01	12
RE	231901	Micro Wave Cable	Junkosha	MWX221	FEB-20-23-020	2025/03/15	12
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	2025/07/11	12
BW,FT	143133	Barometer	Sanoh Co., Ltd	SBR-151	001439	2023/03/10	36
BW,FT	143181	Temperature and Humidity Chamber	Espec	PL-1J	15004059	2024/10/08	12
BW,FT	143423	Frequency Counter	Keysight Technologies Inc	53151A	US40511823	2024/11/14	12
BW,FT	143942	Near Field Probe	Langer	LF-R400	02-0815	-	-
BW,FT	143643	Spectrum Analyzer	Keysight Technologies Inc	E4448A	MY52490024	2024/10/17	12

*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