



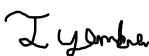
RADIO TEST REPORT


Test Report No. : 13532641S-R3

Applicant : NIDEC SANKYO CORPORATION
Type of EUT : RFID Module
Model Number of EUT : CLESS001
FCC ID : WJ6ICM0M002A-M
Test regulation : FCC Part 15 Subpart C: 2021
Test Result : Complied (Refer to SECTION 3.2)

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2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with the limits of the above regulation.
4. The test results in this test report are traceable to the national or international standards.
5. This test report must not be used by the customer to claim product certification, approval, or endorsement by any agency of the Federal Government.
6. This test report covers Radio technical requirements.
It does not cover administrative issues such as Manual or non-Radio test related Requirements. (if applicable)
7. The all test items in this test report are conducted by UL Japan, Inc. Shonan EMC Lab.
8. The opinions and the interpretations to the result of the description in this report are outside scopes where UL Japan has been accredited.
9. The information provided from the customer for this report is identified in SECTION 1.
10. This report is a revised version of 13532641S-R3. 13532641S-R3 is replaced with this report.

Date of test: January 25 to February 9, 2021

Representative test engineer: 
Toshinori Yamada
Engineer
Consumer Technology Division

Approved by: 
Kazuya Noda
Leader
Consumer Technology Division



CERTIFICATE 1266.03

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

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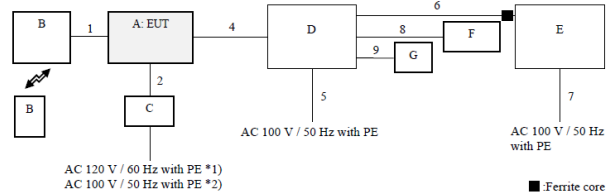
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Report Cover Page 13-EM-F0429 Issue # 18.0

REVISION HISTORY

Original Test Report No.: 13532641S

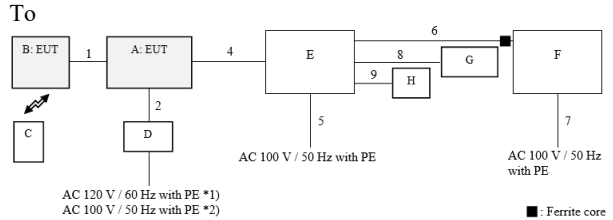
Revision	Test report No.	Date	Page revised	Contents
- (Original)	13532641S	March 30, 2021	-	-
1	13532641S-R1	April 14, 2021	1	Change of Approver: From “Hikaru Shirasawa, Engineer” To “Kazuya Noda, Leader”
			5	Correction of clock frequency: From “16 MHz (CPU)” to “27.12 MHz”
2	13532641S-R2	April 21, 2021	10	Correction of 4.2 Configuration and peripherals: From
				To
3	13532641S-R3	April 27, 2021	10	Correction of List of cables used, No.1 Antenna: From “Unshielded” to “Shielded”



* Test data was taken under worse case conditions.

Description of EUT and support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	RFID Module	CLESS001	DS R-0090001	NIDEC SANKYO	EUT
B	IC Card	EGC217701	-	Sankyo	-
C	DC Power Supply	PAN35-10A	NA000955	KIKUSUI	*1)
		TX030-10	25790003	TAKASAGO	*2)
D	Desktop Computer	T7CASQJJK8YADN	11214A2A05666	EPSON DIRECT	-
E	Monitor	LCD172VXM	25223529NJ	NEC	-
F	Keyboard	128872-103	0754	FUJITSU	-
G	Mouse	M-SBJ96	HSA41800712	FUJITSU	-



* Test data was taken under worse case conditions.

Description of EUT and support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	RFID Module	CLESS001	DS R-0090001	NIDEC SANKYO	EUT
B	Antenna	-	-	NIDEC SANKYO	EUT
C	IC Card	EGC217701	-	NIDEC SANKYO	-
D	DC Power Supply	PAN35-10A	NA000955	KIKUSUI	*1)
		TX030-10	25790003	TAKASAGO	*2)
E	Desktop Computer	T7CASQJJK8YADN	11214A2A05666	EPSON DIRECT	-
F	Monitor	LCD172VXM	25223529NJ	NEC	-
G	Keyboard	128872-103	0754	FUJITSU	-
H	Mouse	M-SBJ96	HSA41800712	FUJITSU	-

Reference: Abbreviations (Including words undescribed in this report)

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

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SECTION 1: Customer information

Company Name : NIDEC SANKYO CORPORATION
Address : 5329,Shimosuwa-machi,Suwa-gun,Nagano,393-8511 Japan
Telephone Number : +81-266-27-4715
Facsimile Number : +81-266-27-4620
Contact Person : Takahiro Matsuzawa

The information provided from the customer is as follows;

- Applicant, Type of Equipment, Model No., FCC ID on the cover and other relevant pages
 - SECTION 1: Customer information
 - SECTION 2: Equipment under test (E.U.T.) and other than the Receipt Date
 - SECTION 4: Operation of E.U.T. 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 (E.U.T.)

2.1 Identification of E.U.T.

Type of Equipment : RFID Module
Model No. : CLESS001
Serial No. : Refer to SECTION 4, SECTION 4.2
Rating : DC 24 V (DC 21.6 V - 26.4 V), 0.5 A
Receipt Date of Sample : January 7, 2021
Country of Mass-production : Japan
Condition of EUT : Production prototype
(Not for Sale: This sample is equivalent to mass-produced items.)
Modification of EUT : No Modification by the test lab.

2.2 Product description

Model: CLESS001 (referred to as the EUT in this report) is a RFID Module.

General Specification

Clock frequency(ies) in the system : 27.12 MHz

Radio Specification

Equipment type : Transceiver
Frequency of operation : 13.56 MHz
Type of modulation : ASK
Antenna type : Loop Antenna
Operating Temperature : 0 deg.C to 50 deg.C.

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SECTION 3: Test specification, procedures & results

3.1 Test specification

Test Specification : FCC Part 15 Subpart C
FCC Part 15 final revised on January 12, 2021 and effective February 11, 2021

Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators
Section 15.207 Conducted limits
Section 15.209 Radiated emission limits, general requirements
Section 15.215 Additional provisions to the general radiated emission limitations.
Section 15.225 Operation within the band 13.110 - 14.010 MHz.

3.2 Procedures & Results

Item	Test Procedure	Specification	Worst margin	Results	Remarks
Conducted Emission	ANSI C63.10:2013 6 Standard test methods <ISED>RSS-Gen 8.8	Section 15.207 <ISED>RSS-Gen 8.8	11.1 dB 27.12000 MHz, Vertical, AV, L1	Complied a)	-
Electric Field Strength of Fundamental Emission	ANSI C63.10:2013 6 Standard test methods <ISED> RSS-Gen 6.4, 6.12	Section 15.225(a) <ISED>RSS-210 B.6	53.2 dB 13.560 MHz, Vertical	Complied b)	Radiated
Electric Field Strength of Spurious Emission (within the 13.110-14.010 MHz band)	ANSI C63.10:2013 6 Standard test methods <ISED>RSS-Gen 6.4, 6.13	Section 15.225(b)(c) <ISED> RSS-210 B.6	33.2 dB 13.553 MHz Vertical	Complied b)	Radiated
20 dB Bandwidth	ANSI C63.10:2013 6 Standard test methods <ISED> -	Section15.215(c) <ISED> -	See data	Complied c)	Radiated
Electric Field Strength of Spurious Emission (outside of the 13.110-14.010 MHz band)	ANSI C63.10:2013 6 Standard test methods <ISED>RSS-Gen 6.4, 6.13	Section 15.209, Section 15.225 (d) <ISED>RSS-210 B.6	0.8 dB 40.680 MHz, Vertical	Complied# d)	Radiated
Frequency Tolerance	ANSI C63.10:2013 6 Standard test methods <ISED>RSS-Gen 6.11, 8.11	Section 15.225(e) <ISED> RSS-210 B.6	See data	Complied e)	Radiated

Note: UL Japan, Inc.'s EMI Work Procedures No. 13-EM-W0420 and 13-EM-W0422

- a) Refer to APPENDIX 1 (data of Conducted Emission)
b) Refer to APPENDIX 1 (data of Electric field strength of Fundamental emission and Spurious emission)
c) Refer to APPENDIX 1 (data of -20 dB Bandwidth and 99 % Occupied Bandwidth)
d) Refer to APPENDIX 1 (data of Radiated emission)
e) Refer to APPENDIX 1 (data of Frequency Tolerance)

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.

FCC Part 15.31 (e)

The RFID transmitter has a regulator which regulates the supplied voltage of DC 24V to DC 3.3V and DC5.0V. Therefore, the equipment complies power supply regulation.

FCC Part 15.203/212 Antenna requirement

The EUT has a unique coupling/antenna connector (U.FL), Therefore the equipment complies with the requirement of 15.203.

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3.3 Addition to standard

Item	Test Procedure	Specification	Worst margin	Results	Remarks
99 % Occupied Band Width	<ISED>RSS-Gen 6.7	-	N/A	- c)	Radiated
Note: UL Japan, Inc.'s EMI Work Procedures No. 13-EM-W0420 and 13-EM-W0422. c) Refer to APPENDIX 1 (data of -20 dB Bandwidth and 99% Occupied Bandwidth)					
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.				

* Other than above, no addition, exclusion nor deviation has been made from the standard.

3.4 Uncertainty

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

The following uncertainties have been calculated to provide a confidence level of 95 % using a coverage factor $k=2$.
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Item	Frequency range	Uncertainty (+/-)			
		No. 1 SAC / SR	No. 2 SAC / SR	No. 3 SAC / SR	No. 4,5,6,8 SR
Conducted emission (AC Mains) LISN	150 kHz-30 MHz	2.6 dB	2.6 dB	2.5 dB	2.6 dB
Radiated emission (Measurement distance: 3 m)	9 kHz-30 MHz	3.0 dB	3.0 dB	3.0 dB	-
	30 MHz-200 MHz	4.6 dB	4.6 dB	4.6 dB	-
	200 MHz-1 GHz	6.0 dB	6.0 dB	6.0 dB	-
	1 GHz-6 GHz	4.9 dB	4.9 dB	4.9 dB	-
	6 GHz-18 GHz	5.5 dB	5.5 dB	5.5 dB	-
	18 GHz-40 GHz	5.4 dB	5.4 dB	5.4 dB	-
Radiated emission (Measurement distance: 1 m)	1 GHz-18 GHz	5.8 dB	5.8 dB	5.8 dB	-
	18 GHz-40 GHz	5.7 dB	5.7 dB	5.7 dB	-

SAC=Semi-Anechoic Chamber

SR= Shielded Room is applied besides radiated emission

Antenna terminal test	Uncertainty (+/-)
Power Measurement above 1 GHz (Average Detector)_SPM-06	0.98 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-06	1.75 dB
Power Measurement above 1 GHz (Average Detector)_SPM-07	0.89 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-07	1.12 dB
Power Measurement above 1 GHz (Average Detector)_SPM-13	1.06 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-13	1.24 dB
Spurious emission (Conducted) below 1GHz	0.9 dB
Spurious emission (Conducted) 1 GHz-3 GHz	0.9 dB
Spurious emission (Conducted) 3 GHz-18 GHz	2.9 dB
Spurious emission (Conducted) 18 GHz-26.5 GHz	2.6 dB
Spurious emission (Conducted) 26.5 GHz-40 GHz	2.0 dB
Bandwidth Measurement	0.07 %
Duty cycle and Time Measurement	0.262 %
Temperature	0.95 deg.C.
Voltage	0.83 %

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3.5 Test location

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A2LA Certificate Number: 1266.03

(FCC test firm registration number: 626366, ISED lab company number: 2973D / CAB identifier: JP0001)

Test site	IC Registration Number	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Maximum measurement distance
No.1 Semi-anechoic chamber	2973D-1	20.6 x 11.3 x 7.65	20.6 x 11.3	10 m
No.2 Semi-anechoic chamber	2973D-2	20.6 x 11.3 x 7.65	20.6 x 11.3	10 m
No.3 Semi-anechoic chamber	2973D-3	12.7 x 7.7 x 5.35	12.7 x 7.7	5 m
No.4 Semi-anechoic chamber	-	8.1 x 5.1 x 3.55	8.1 x 5.1	-
No.1 Shielded room	-	6.8 x 4.1 x 2.7	6.8 x 4.1	-
No.2 Shielded room	-	6.8 x 4.1 x 2.7	6.8 x 4.1	-
No.3 Shielded room	-	6.3 x 4.7 x 2.7	6.3 x 4.7	-
No.4 Shielded room	-	4.4 x 4.7 x 2.7	4.4 x 4.7	-
No.5 Shielded room	-	7.8 x 6.4 x 2.7	7.8 x 6.4	-
No.6 Shielded room	-	7.8 x 6.4 x 2.7	7.8 x 6.4	-
No.8 Shielded room	-	3.45 x 5.5 x 2.4	3.45 x 5.5	-
No.1 Measurement room	-	2.55 x 4.1 x 2.5	-	-

3.6 Test setup, Data of EMI & Test instruments

Refer to APPENDIX 1 to 3.

SECTION 4: Operation of E.U.T. during testing

4.1 Operating mode

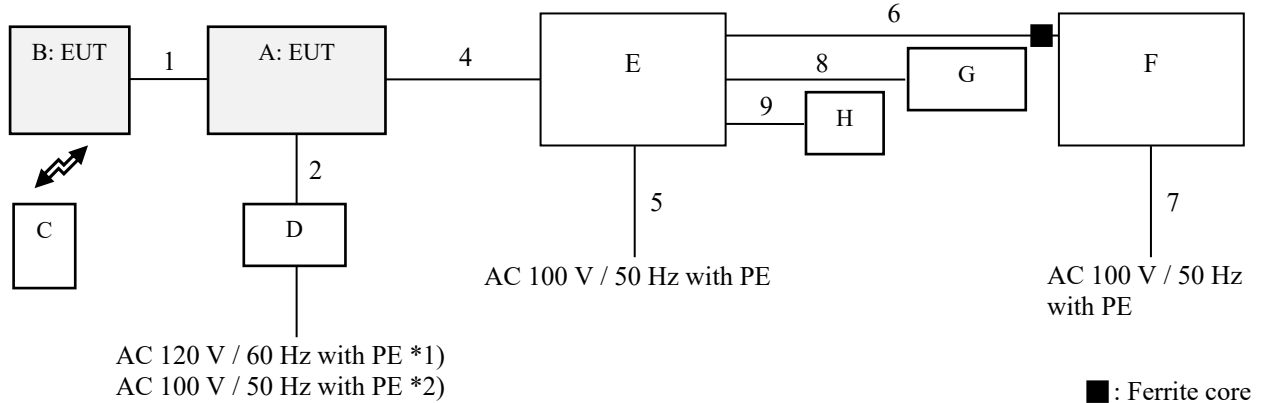
The EUT exercise program used during testing was designed to exercise the various system components in a manner similar to typical use.

Operation : NFC Communication (13.56 MHz)
Software : UHTest for ICM0M0-0050, Version: 1.0.0.1
Power settings : Fixed

The carrier level and noise levels were confirmed with and without Tag, and the test was made with the condition that has the maximum noise.

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

4.2 Configuration and peripherals



* Test data was taken under worse case conditions.

Description of EUT and support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	RFID Module	CLESS001	DS R-0090001	NIDEC SANKYO	EUT
B	Antenna	-	-	NIDEC SANKYO	EUT
C	IC Card	EGC217701	-	NIDEC SANKYO	-
D	DC Power Supply	PAN35-10A	NA000955	KIKUSUI	*1)
		TX030-10	25790003	TAKASAGO	*2)
E	Desktop Computer	T7CASQJJK8YADN	11214A2A05666	EPSON DIRECT	-
F	Monitor	LCD172VXM	25223529NJ	NEC	-
G	Keyboard	128872-103	0754	FUJITSU	-
H	Mouse	M-SBJ96	HSA41800712	FUJITSU	-

List of cables used

No.	Cable	Length (m)	Shield-Cable	Shield-Connector	Remarks
1	Antenna	0.08	Shielded	Shielded	-
2	DC	0.9	Unshielded	Unshielded	-
3	AC	2.0 *1), 1.8 *2)	Unshielded	Unshielded	-
4	USB	1.8	Shielded	Shielded	-
5	AC	3.0	Unshielded	Unshielded	-
6	RGB	1.5	Shielded	Shielded	-
7	AC	1.8	Unshielded	Unshielded	-
8	Keyboard	1.5	Shielded	Shielded	-
9	Mouse	1.8	Shielded	Shielded	-

*1) Used for Conducted emission test

*2) Used for Radiated emission test

SECTION 5: Conducted emission

Test Procedure and conditions

EUT was placed on a platform of nominal size, 1.0 m by 1.5 m, raised 80 cm above the conducting ground plane. The table is made of expanded polystyrol and expanded polypropylene and the table top is covered with polycarbonate. That has very low permittivity.

The rear of tabletop was located 40 cm to the vertical conducting plane. The rear of EUT, including peripherals 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 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)

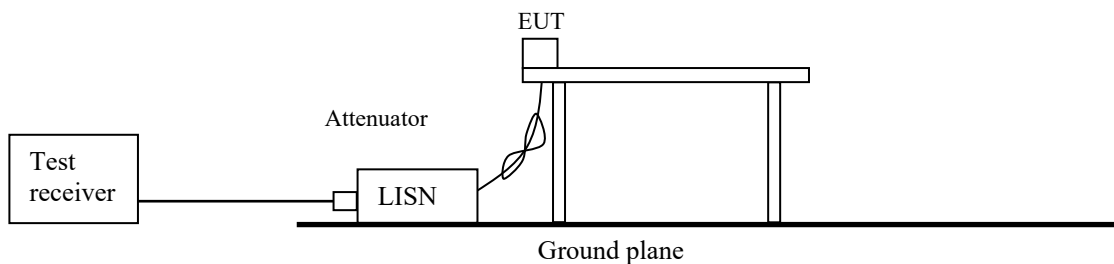
I/O cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30 cm to 40 cm long and were hanged at a 40 cm height to the ground plane. All unused 50 ohm connectors of the LISN were resistively terminated in 50 ohm when not connected to the 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) via AC adaptor. An overview sweep with peak detection has been performed.

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 - 30 MHz
Test data : APPENDIX
Test result : Pass

Figure 1: Test Setup



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SECTION 6: Radiated emission (Fundamental and Spurious emission)

6.1 Operating environment

Test place : See test data (APPENDIX 1)
Temperature : See test data (APPENDIX 1)
Humidity : See test data (APPENDIX 1)

6.2 Test configuration

EUT was placed on a platform of nominal size, 1.0 m by 1.5 m, raised 0.8 m above the conducting ground plane. The table is made of expanded polystyrol and expanded polypropylene and the table top is covered with polycarbonate. That has very low permittivity.
The rear of EUT, including its peripherals was aligned and flushed with rear of tabletop.
Photographs of the set up are shown in APPENDIX 3.

6.3 Test procedure

The Radiated Electric Field Strength intensity has been measured on a semi-anechoic chamber with a ground plane at a distance of 3 m.

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open area 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.

The Radiated Electric Field Strength intensity has been measured with a ground plane and at a distance of 3 m.

Frequency: From 9 kHz to 30 MHz at distance 3 m (Refer to Figure 2)

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. Drawing of the antenna direction is shown in Figure 1.

Frequency: From 30 MHz to 1 GHz at distance 3 m (Refer to Figure 2).

The measuring antenna height was 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.

Measurements were performed with QP, PK, and AV detector.

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

	9 kHz to 90 kHz & 110 kHz to 150 kHz	90 kHz to 110 kHz	150 kHz to 490 kHz	490 kHz to 30 MHz	30 MHz to 1 GHz
Detector Type	PK/AV	QP	PK/AV	QP	QP
IF Bandwidth	200 Hz	200 Hz	10 kHz	9 kHz	120 kHz
Distance factor *1)	-80 dB	-80 dB	-80 dB	-40 dB	-
Measuring antenna	Loop antenna				Biconical (30 MHz - 199.999 MHz) Logperiodic (200 MHz - 1 GHz)

*1) FCC 15.31 (f)(2) (9 kHz-30 MHz)

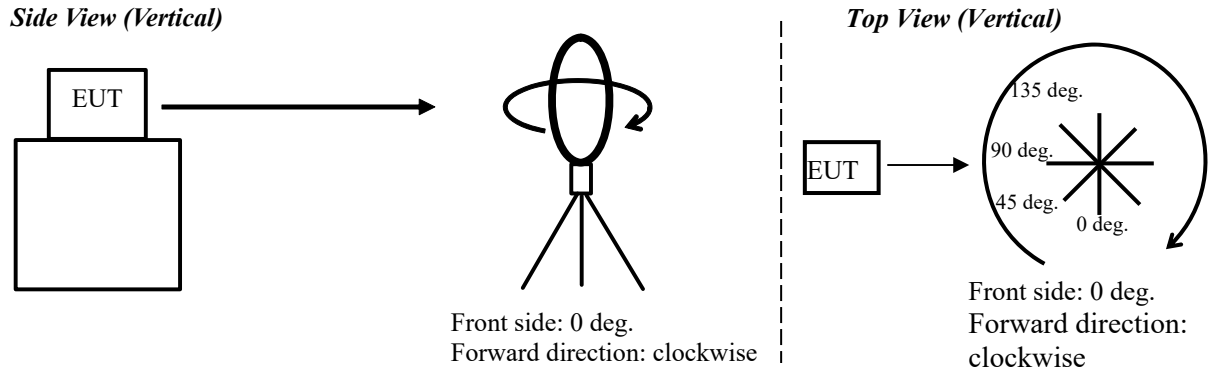
Distance Factor: $40 \times \log(3 \text{ m} / 300 \text{ m}) = -80 \text{ dB}$

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

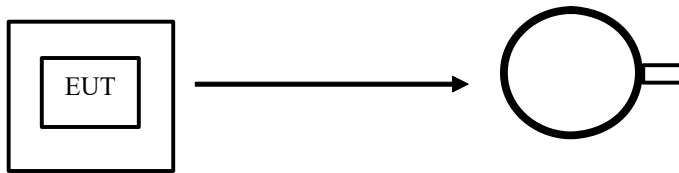
The test was made at the fixed position according to the customer's request.

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.

Figure 1: Direction of the Loop Antenna

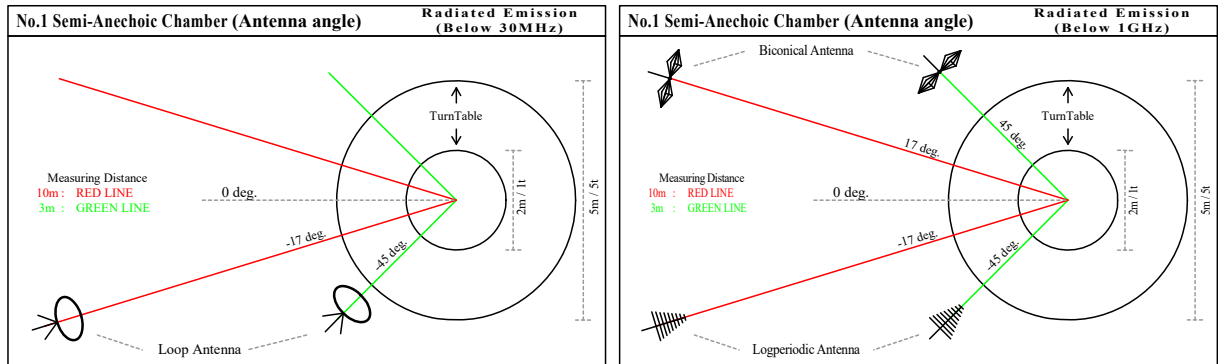


Top View (Horizontal)

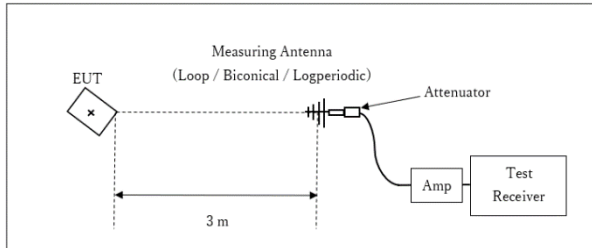


Antenna was not rotated.

Figure 2. Antenna angle



[Test Setup]
 Below 1 GHz



* : Center of turn table

Test Distance: 3 m

6.4 Results

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

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

SECTION 7: 20 dB bandwidth & 99 % Occupied bandwidth

Test procedure

The test was measured with a spectrum analyzer using a test fixture.

Test	Span	RBW	VBW	Sweep	Detector	Trace	Instrument used
20 dB Bandwidth	100 kHz	1 kHz	3 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
99 % Occupied Bandwidth (OBW)	Enough width to display	1 to 5 % of OBW	Three times of RBW	Auto	Peak *1)	Max Hold *1)	Spectrum Analyzer

*1) The measurement was performed with Peak detector, Max Hold since the duty cycle was not 100%.

Summary of the test results:Pass
Refer to APPENDIX 1

SECTION 8: Frequency Tolerance

Test procedure

The test was measured with a spectrum analyzer (with marker frequency counter function) using a test fixture.
The temperature test was started after the temperature stabilization time of 30 minutes.
The test was begun from 50 deg.C and the temperature was lowered each 10 deg.C.

Summary of the test results:Pass
Refer to APPENDIX 1