



RADIO TEST REPORT

Test Report No. : 11734002M-H-R2

Applicant : G-Printec, Inc.
Type of Equipment : Card Printer
Model No. : CX-7000
Test regulation : FCC Part15 Subpart C: 2017
FCC ID : 2AL3XG6J001
Test Result : Complied

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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 above regulation.
4. The test results in this report are traceable to the national or international standards.
5. The opinions and the interpretations to the result of the description in this report are outside scopes where UL Japan has been accredited.
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. This report is a revised version of 11734002M-H-R1.

Date of test: May 19, 22, 2014

**Representative
test operator:**

H. Tanabe

Hiromitsu Tanabe
Engineer

Consumer Technology Division

Approved by :

T. Yamashita

Tomoyuki Yamashita
Engineer

Consumer Technology Division



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

UL Japan, Inc.

Kashima EMC Lab.

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

Telephone: +81-478-88-6500

Facsimile: +81-478-82-3373

REVISION HISTORY

Original Test Report No.: 11734002M-H

[illegible]

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SECTION 1: Customer information

Company Name : G-Printec, Inc.
Address : Kawasaki Tech Center 5F, 580-16 Horikawa-cho, Saiwai-ku,
Kawasaki-shi, Kanagawa 212-0013 Japan
Telephone Number : +81-44-540-3242
Facsimile Number : +81-44-540-3250
Contact Person : Makoto Hayase

SECTION 2: Equipment under test (E.U.T.)

2.1 Identification of E.U.T.

Type of Equipment : Card Printer
Model Number : CX-7000
Serial Number : Refer to clause 4.2
Rating : AC100 V-120 V, 50/60 Hz, 3.5 A
Country of Mass-production : Thailand
Condition of EUT : Production model
Receipt Date of Sample : May 16, 2014
Modification of EUT : No modification by the test lab.

Model: CX-7000 (referred to as the EUT in this report) is a Card Printer.

Clock frequency(ies) in the system : 25 MHz (LAN), 48 MHz (USB), 33.3 MHz (CPU), 30 MHz (USB)

<Radio part>

Equipment type : Transceiver
Frequency of operation : 13.56 MHz
Type of modulation : ASK
Antenna type : Loop
Antenna connector type : U.FL
ITU code : A1D
Operation temperature range : +15 deg.C.to +30 deg.C.

2.3 difference from the base model

CX-7000.....Single-side printing type, Both-side printing type
XID 83XX Printer.....Single-side printing type, Both-side printing type
CX-D80.....Single-side printing type, Both-side printing type
SR200.....Single-side printing type
SR300.....Both-side printing type
SR300B.....Single-side printing type, Both-side printing type

The models: CX-7000, XID 83XX Printer, CX-D80, SR300 and SR300B are different from model name and plastic enclosure.
However those electrical structures are all the same.

The difference between SR200 and SR300 is only their printing type (Single-side printing or Both-side printing).
SR300B is identical to Model CX-7000 except for brand name and model designation.

The test was performed with CX-7000 that is both-sides printing type.

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Kashima EMC Lab.

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

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SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part 15 Subpart C: 2017
FCC Part 15 final revised on August 29, 2017 and effective September 28, 2017

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 tests were performed by the test standard FCC Part 15 Subpart C: 2014 and ANSI C 63.4:2003.
Verifying the data in this test report based on the difference between FCC Part 15 Subpart C: 2014 and FCC Part 15 Subpart C: 2017, also between ANSI C 63.4:2003 and ANSI C 63.10:2013, it is judged that the EUT complies with FCC Part 15 Subpart C: 2017 and ANSI C 63.10:2013 without the additional test.

3.2 Procedures and results

Item	Test Procedure	Specification	Worst margin	Results	Remarks
Conducted emission	ANSI C63.4:2003 7. AC powerline conducted emission measurements	Section 15.207	10.0dB (against AV Limit) Freq.: 28.1660MHz Detector: QP Phase: L	Complied	-
	<ISED> RSS-Gen 7.2.2	<ISED> RSS-Gen 7.2.2			
Electric Field Strength of Fundamental Emission	ANSI C63.4:2003 13. Measurement of intentional radiators	Section 15.225(a)	73.3dB Polarization: Vertical	Complied	Radiated
	<ISED> RSS-Gen 4.8, 4.11	<ISED>RSS-210 A2.6			
Electric field strength of Spurious emission (within the 13.110 MHz - 14.010 MHz band)	ANSI C63.4:2003 13. Measurement of intentional radiators	FCC 15.225 (b)(c)	44.2dB Freq.: 13.110MHz Polarization: Vertical	Complied	Radiated
	<ISED>RSS-Gen 4.9, 4.11	<ISED>RSS-210 A2.6			
Electric field strength of Spurious emission (outside of the 13.110 MHz - 14.010 MHz band)	ANSI C63.4:2003 13. Measurement of intentional radiators	Section 15.209, Section 15.225 (d)	11.9dB Freq.: 71.83MHz Polarization: Vertical	Complied	Radiated
	<ISED>RSS-Gen 4.6, 4.11	<ISED>RSS-210 A2.6			
20dB Bandwidth	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.215(c)	See data	Complied	Radiated
	<ISED> RSS-Gen 4.6.1	<ISED> RSS-Gen 4.6.1			
Frequency Tolerance	ANSI C63.4:2003 13. Measurement of intentional radiators	Section 15.225(e)	See data	Complied	Radiated
	<ISED>RSS-Gen 4.7, 7.2.6	<ISED> RSS-210 A2.6			

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

FCC Part 15.31 (e)

The tests were performed by adjusting the AC power since this EUT provides stable voltage (DC 3.3V) constantly to RF Module regardless of input voltage. Therefore, this EUT complies with the requirement.

FCC Part 15.203/212 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 15.203/212.

UL Japan, Inc.

Kashima EMC Lab.

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

Telephone: +81-478-88-6500

Facsimile: +81-478-82-3373

3.3 Addition to standard

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin	Results
1	99 % Occupied Band Width	RSS-Gen 4.6.1	-	Radiated	N/A	N/A	N/A

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

3.4 Uncertainty

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

Test Items	Frequency range	Uncertainty
Conducted emission (AC Mains) AMN	0.15 MHz - 30 MHz	2.8 dB
Radiated emission (Measurement distance: 3 m)	0.009 MHz - 30 MHz	2.7 dB
	30 MHz - 1000 MHz	5.9 dB

Conducted emission test

The data listed in this test report has enough margin, more than site margin.

Radiated emission test

The data listed in this test report has enough margin, more than site margin.

3.5 Test Location

UL Japan, Inc.
Kashima EMC Lab.
1614 Mushihata, Katori-shi, Chiba-ken, 289-0341 JAPAN
Telephone number : +81 478 88 6500
Facsimile number : +81 478 82 3373
JAB Accreditation No. : RTL02610

	ISED Registration No.	Width x Depth x Height (m)	Size of reference ground plane/horizontal conducting plane (m)	Maximum measurement distance
No.1 Open site	4659A-1	6.0 x 5.5 x 2.5	20 x 40	10 m
No.2 Open site	4659A-2	4.4 x 4.4 x 2.15	18 x 20	10 m
No.5 Open site	4659A-5	8.6 x 7.1 x 2.4	18 x 23	10 m
No.1 Shielded room	4659A-1	5.4 x 4.5 x 2.3	-	-
No.2 Shielded room	4659A-2	3.6 x 2.7 x 2.3	-	-
No.3 Shielded room	-	5.4 x 3.6 x 2.3	-	-
No.4 Shielded Room	-	6.1 x 6.1 x 3.1	-	-
No.5 Shielded Room	4659A-5	4.2 x 3.1 x 2.5	-	-
No.3 Fully Anechoic Chamber	-	7.0 x 3.5 x 3.5	-	-
No.6 Semi-anechoic Chamber	4659A-6	8.5 x 5.5 x 5.2	-	3 m
No.10 Semi-anechoic Chamber	4659A-10	18.4 x 9.9 x 7.7	-	10 m
No.11 Semi-anechoic Chamber	4659A-7	9.0 x 6.5 x 5.2	-	3 m
No.1 Measurement room	-	5.0 x 3.7 x 2.6	-	-
No.2 Measurement room	-	4.3 x 4.4 x 2.7	-	-
No.3 Measurement room	-	4.5 x 5.3 x 2.7	-	-

3.6 Test set up, Test data, and Test instruments

Refer to APPENDIX.

UL Japan, Inc.
Kashima EMC Lab.
1614, Mushihata, Katori-shi, Chiba-ken, 289-0341 Japan
Telephone: +81-478-88-6500
Facsimile: +81-478-82-3373

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

4.1 Operating Modes

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

Test item	Operating mode	Tested frequency
Conducted emission Spurious emission	Transmitting ISO/IEC 15693-2 • Modulation ASK100 % • Data transfer rate 6.62 kbps	13.56 MHz

The EUT has the power settings by the software as follows;

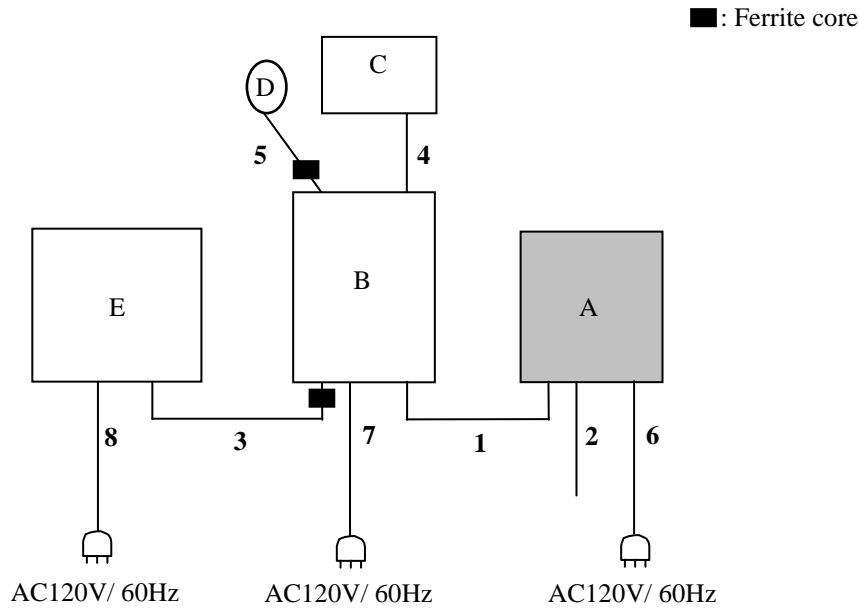
Power settings: Setting is controlled by the firmware and cannot be changed.

Software: CX-7000 TEST TOOL

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

The all tests were performed on with tag that was worst case as a result of verifying the both of conditions with/without tag.

4.2 Configuration and peripherals



* 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	Remarks
A	Card Printer	CX-7000	135V2080	G-Printec, Inc.	EUT
B	PC	DC5100SFF	JPA61108Z4	hp	-
C	Keyboard	KB-0316	B942A0AGASP0LT	hp	-
D	Mouse	MO19KCA	346C30433	Microsoft	-
E	LCD Monitor	Hp1502	CNC5030CMD	hp	-

List of cables used

No.	Item	Length(m)	Shield		Remarks
			Cable	Connector	
1	USB	2.0	Shielded	Shielded	-
2	Ethernet	1.0	Shielded	Shielded	Cat.5e
3	VGA	1.5	Shielded	Shielded	-
4	Keyboard	1.8	Shielded	Shielded	-
5	Mouse	1.6	Shielded	Shielded	-
6	AC	2.0	Unshielded	Unshielded	EUT
7	AC	2.0	Unshielded	Unshielded	PC
8	AC	1.8	Unshielded	Unshielded	LCD Monitor

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Kashima EMC Lab.

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SECTION 5: Conducted emission

Test Procedure and conditions

EUT was placed on a urethane platform of nominal size, 1.0 m by 2.0 m, raised 0.8 m above the conducting ground plane. The rear of tabletop was located 40 cm to the vertical conducting plane. The rear of EUT, 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.

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.

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

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

Test Procedure

EUT was placed on a urethane platform of nominal size, 1.0 m by 2.0 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.

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: 0deg.to 360deg.) and horizontal polarization.

*Refer to Figure 1 about Direction of the Loop Antenna.

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.

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.

Test Antennas are used as below;

Frequency	Below 30 MHz	30 MHz to 200 MHz	200 MHz to 1 GHz
Antenna Type	Loop	Biconical	Logperiodic

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

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.

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 - 1 GHz

Test data : APPENDIX 1

Test result : Pass

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Kashima EMC Lab.

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

Telephone: +81-478-88-6500

Facsimile: +81-478-82-3373

SECTION 7: Other test

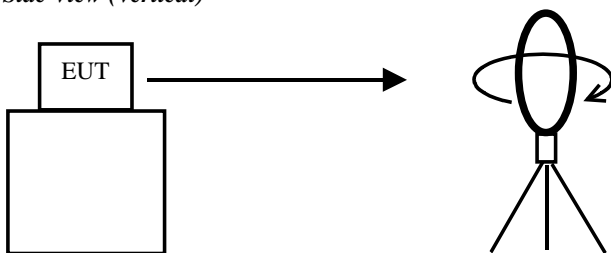
Test	Span	RBW	VBW	Sweep	Detector	Trace	Instrument used
20 dB Bandwidth	20 kHz	1 kHz	3 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
99 % Occupied Bandwidth	Enough width to display emission skirts	1 to 5 % of OBW	Three times of RBW	Auto	Peak	Max Hold *1)	Spectrum Analyzer
Frequency Tolerance	-	-	-	-	-	-	Frequency counter *2)

*1) The measurement was performed with 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.

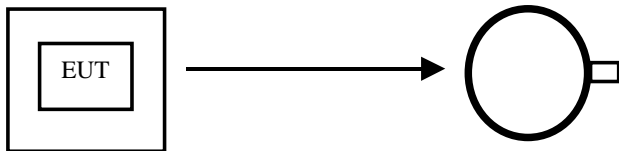
Test data : APPENDIX
Test result : Pass

Figure 1: Direction of the Loop Antenna

Side View (Vertical)

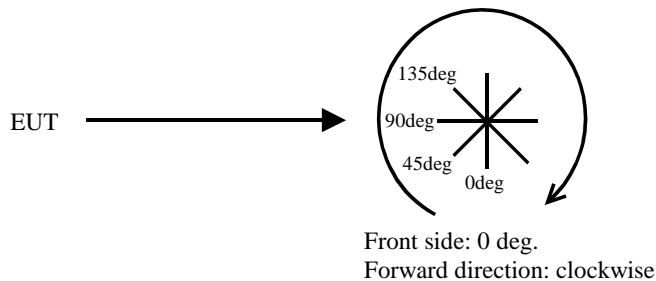


Top View (Horizontal)



Antenna was not rotated.

Top View (Vertical)



Conducted Emission Test

(0.15MHz - 30MHz at Mains Ports)

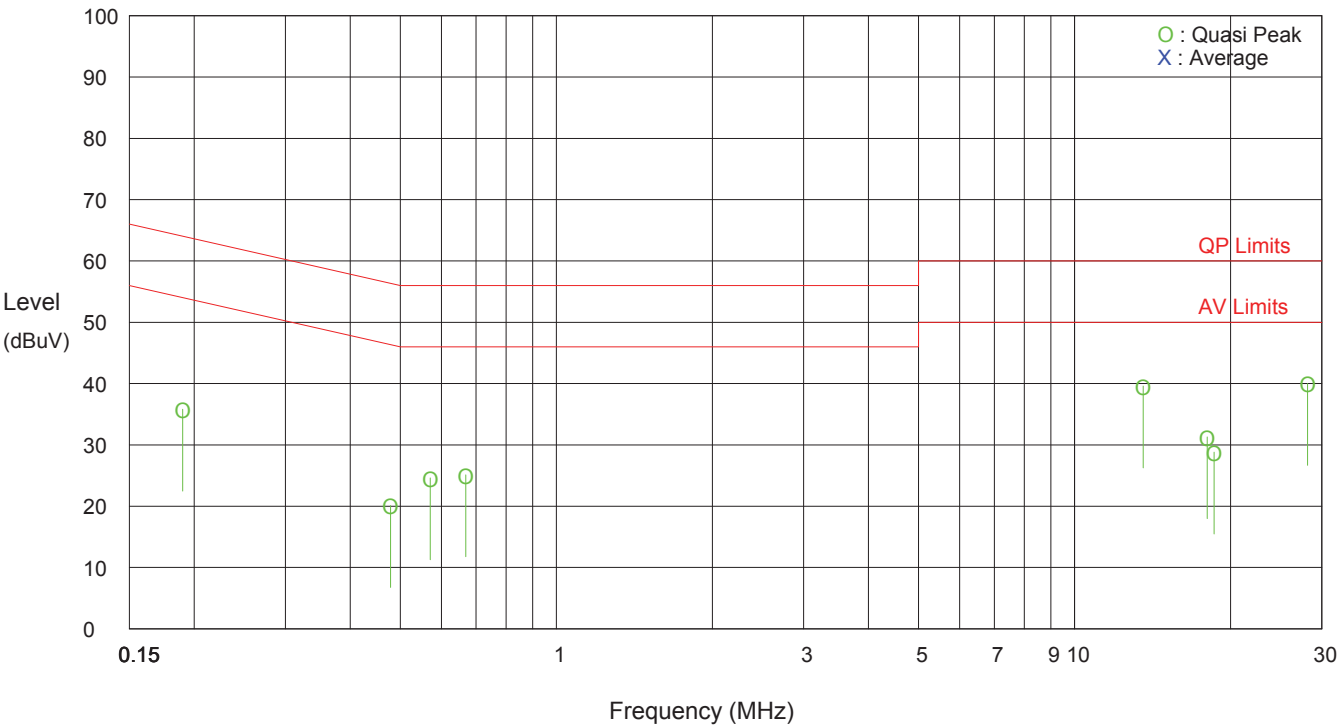
Report No. : 11734002M
Tested Date : 2014/05/19
Temperature : 22°C
Humidity : 46 %
Atmos. Press. : 1012 hPa

Test place : Kashima EMC Lab. No.6 Semi-anechoic Chamber
Standard : FCC Part15C (0.15MHz-30MHz)

Tested by : Hiromitsu Tanabe

No.	Frequency (MHz)	N		L		Correction Factor (dB)	Result		Limits		Margin	
		QP (dBuV)	AV	QP (dBuV)	AV		QP (dBuV)	AV	QP (dBuV)	AV	QP (dB)	AV
1	0.1901	25.7	-	25.3	-	10.1	35.8	-	64.0	54.0	28.2	-
2	0.4787	10.0	-	10.0	-	10.1	20.1	-	56.4	46.4	36.3	-
3	0.5711	14.5	-	13.9	-	10.1	24.6	-	56.0	46.0	31.4	-
4	0.6687	15.0	-	14.3	-	10.1	25.1	-	56.0	46.0	30.9	-
5	13.5600	28.5	-	27.3	-	11.1	39.6	-	60.0	50.0	20.4	-
6	18.0242	18.7	-	20.0	-	11.3	31.3	-	60.0	50.0	28.7	-
7	18.5858	17.5	-	17.3	-	11.3	28.8	-	60.0	50.0	31.2	-
8	28.1660	26.3	-	28.3	-	11.7	40.0	-	60.0	50.0	20.0	-

Result = Reading(higher data of N or L) + Correction Factor(AMN factor + cable loss)



Data of Electric field strength of Fundamental emission and Spurious emission within the band: FCC15.225(a)(b)(c)

Kashima EMC Lab.
No.6 Semi-Anechoic Chamber

Mode: Transmitting

Regulation: FCC Part15 SubpartC 15.225
Test Distance: 3m
Date: May 19, 2014
Temperature: 22 deg.C
Humidity: 1012 %RH
Tested by: Hiromitsu Tanabe

Remarks:

Fundamental emission

No.	FREQ [MHz]	Test Receiver Reading		Antenna Factor [dB/m]	LOSS [dB]	AMP GAIN [dB]	Distance factor [dB]	RESULT		LIMIT (30m) [dBuV/m]	MARGIN	
		Hor [dBuV]	Ver [dBuV]					Hor [dBuV/m]	Ver [dBuV/m]		Hor [dB]	Ver [dB]
1	13.560	20.5	30.7	19.6	0.3	0.0	-40.0	0.4	10.6	83.9	83.5	73.3

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable+ATT)[dB]-Gain(AMP)[dB]+Distance factor[dB]

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

Limits (30m)

• 13.553MHz to 13.567MHz : 83.9dBuV/m (FCC 15.225(a))

((reference) worst carrier @3m)

50.6 dBuV/m

Spurious emission within the band

No.	FREQ [MHz]	Test Receiver Reading		Antenna Factor [dB/m]	LOSS [dB]	AMP GAIN [dB]	Distance factor [dB]	RESULT		LIMIT (30m) [dBuV/m]	MARGIN	
		Hor [dBuV]	Ver [dBuV]					Hor [dBuV/m]	Ver [dBuV/m]		Hor [dB]	Ver [dB]
1	13.110	-	5.4	19.6	0.3	0.0	-40.0	-	-14.7	29.5	-	44.2
2	13.410	-	5.4	19.6	0.3	0.0	-40.0	-	-14.7	40.5	-	55.2
3	13.553	8.2	14.3	19.6	0.3	0.0	-40.0	-11.9	-5.8	50.4	62.3	56.2
4	13.567	7.2	12.6	19.6	0.3	0.0	-40.0	-12.9	-7.5	50.4	63.3	57.9
5	13.710	-	5.4	19.6	0.3	0.0	-40.0	-	-14.7	40.5	-	55.2
6	14.010	-	5.4	19.6	0.3	0.0	-40.0	-	-14.7	29.5	-	44.2

Calculation: Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable+ATT)[dB]-Gain(AMP)[dB]+Distance factor[dB]

Outside filed strength frequencies

- Fc±7kHz: 13.553MHz to 13.567MHz
 - Fc±150kHz: 13.410MHz to 13.710MHz
 - Fc±450kHz: 13.110MHz to 14.010MHz
- Fc = 13.56MHz

Limits (30m)

- 13.410MHz to 13.553MHz and 13.567MHz to 13.710MHz : 50.4dBuV/m (FCC 15.225(b))
- 13.110MHz to 13.410MHz and 13.710MHz to 14.010MHz : 40.5dBuV/m (FCC 15.225(c))
- Below 13.110MHz and Above 14.010MHz : 29.5dBuV/m (FCC 15.225(d)and FCC 15.209)

Radiated Emission

Kashima EMC Lab.
No.6 Semi-Anechoic Chamber

Regulation: FCC Part15 SubpartC 15.225
Test Distance: 3m
Date: May 19, 2014
Temperature: 22 deg.C
Humidity: 1012 %RH
Tested by: Hiromitsu Tanabe

Mode: Transmitting

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance factor[dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	59.56	QP	32.1	8.9	4.3	28.4		16.9	40.0	23.1	250	255	at 3m
Hori.	71.83	QP	38.0	9.4	4.5	28.3		23.6	40.0	16.4	250	55	at 3m
Hori.	126.43	QP	30.0	10.5	5.0	28.1		17.4	43.5	26.1	200	200	at 3m
Hori.	250.01	QP	43.5	11.3	6.0	27.5		33.3	46.0	12.7	140	190	at 3m
Hori.	375.00	QP	34.0	14.5	6.9	27.9		27.5	46.0	18.5	100	350	at 3m
Hori.	465.00	QP	23.0	16.2	7.4	28.5		18.1	46.0	27.9	100	0	at 3m
Vert.	27.12	QP	1.5	22.8	0.4	0.0	-40.0	-15.3	29.5	44.8	100	0	at 3m
Vert.	30.00	QP	32.7	14.4	3.9	28.4		22.6	40.0	17.4	100	245	at 3m
Vert.	33.00	QP	30.3	13.1	4.0	28.4		19.0	40.0	21.0	100	180	at 3m
Vert.	59.56	QP	40.7	8.9	4.3	28.4		25.5	40.0	14.5	100	210	at 3m
Vert.	71.83	QP	42.5	9.4	4.5	28.3		28.1	40.0	11.9	100	0	at 3m
Vert.	81.36	QP	36.0	9.5	4.6	28.3		21.8	40.0	18.2	100	340	at 3m
Vert.	250.01	QP	39.7	11.3	6.0	27.5		29.5	46.0	16.5	100	30	at 3m
Vert.	375.00	QP	32.0	14.5	6.9	27.9		25.5	46.0	20.5	100	170	at 3m
Vert.	465.00	QP	24.3	16.2	7.4	28.5		19.4	46.0	26.6	100	243	at 3m

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

*Other frequency noises omitted in this report were not seen or have enough margin (more than 20dB).

Data of Frequency Tolerance: FCC 15.225(e)

Kashima EMC Lab.
No.6 site

Regulation: FCC Part15 SubpartC 15.225

Date: May 22, 2014
Temperature: 23 deg.C
Humidity: 30 %RH
Tested by: Hiromitsu Tanabe

Mode: Transmitting

Temperature Variation: 50deg.C

Test Conditions	Original Frequency (MHz)	Measured Frequency (MHz)	Frequency Error (MHz)	Frequency Tolerance (%)	Limit (%)
startup	13.56	13.56000	0.00000	0.00000	0.01
after 2minutes	13.56	13.55998	-0.00002	-0.00015	0.01
after 5minutes	13.56	13.55997	-0.00003	-0.00022	0.01
after 10minutes	13.56	13.55996	-0.00004	-0.00029	0.01

Temperature Variation: 40deg.C

Test Conditions	Original Frequency (MHz)	Measured Frequency (MHz)	Frequency Error (MHz)	Frequency Tolerance (%)	Limit (%)
startup	13.56	13.56002	0.00002	0.00015	0.01
after 2minutes	13.56	13.56001	0.00001	0.00007	0.01
after 5minutes	13.56	13.56001	0.00001	0.00007	0.01
after 10minutes	13.56	13.56000	0.00000	0.00000	0.01

Temperature Variation: 30deg.C

Test Conditions	Original Frequency (MHz)	Measured Frequency (MHz)	Frequency Error (MHz)	Frequency Tolerance (%)	Limit (%)
startup	13.56	13.56007	0.00007	0.00052	0.01
after 2minutes	13.56	13.56006	0.00006	0.00044	0.01
after 5minutes	13.56	13.56006	0.00006	0.00044	0.01
after 10minutes	13.56	13.56005	0.00005	0.00037	0.01

Temperature Variation: 20deg.C

Test Conditions	Original Frequency (MHz)	Measured Frequency (MHz)	Frequency Error (MHz)	Frequency Tolerance (%)	Limit (%)
startup	13.56	13.56011	0.00011	0.00081	0.01
after 2minutes	13.56	13.56011	0.00011	0.00081	0.01
after 5minutes	13.56	13.56011	0.00011	0.00081	0.01
after 10minutes	13.56	13.56011	0.00011	0.00081	0.01

Data of Frequency Tolerance: FCC 15.225(e)

Kashima EMC Lab.
No.6 site

Regulation: FCC Part15 SubpartC 15.225

Date: May 22, 2014
Temperature: 23 deg.C
Humidity: 30 %RH
Tested by: Hiromitsu Tanabe

Mode: Transmitting

Temperature Variation: 10deg.C

Test Conditions	Original Frequency (MHz)	Measured Frequency (MHz)	Frequency Error (MHz)	Frequency Tolerance (%)	Limit (%)
startup	13.56	13.56016	0.00016	0.00118	0.01
after 2minutes	13.56	13.56016	0.00016	0.00118	0.01
after 5minutes	13.56	13.56016	0.00016	0.00118	0.01
after 10minutes	13.56	13.56016	0.00016	0.00118	0.01

Temperature Variation: 0deg.C

Test Conditions	Original Frequency (MHz)	Measured Frequency (MHz)	Frequency Error (MHz)	Frequency Tolerance (%)	Limit (%)
startup	13.56	13.56025	0.00025	0.00184	0.01
after 2minutes	13.56	13.56025	0.00025	0.00184	0.01
after 5minutes	13.56	13.56025	0.00025	0.00184	0.01
after 10minutes	13.56	13.56024	0.00024	0.00177	0.01

Temperature Variation: -10deg.C

Test Conditions	Original Frequency (MHz)	Measured Frequency (MHz)	Frequency Error (MHz)	Frequency Tolerance (%)	Limit (%)
startup	13.56	13.56028	0.00028	0.00206	0.01
after 2minutes	13.56	13.56028	0.00028	0.00206	0.01
after 5minutes	13.56	13.56028	0.00028	0.00206	0.01
after 10minutes	13.56	13.56028	0.00028	0.00206	0.01

Temperature Variation: -20deg.C

Test Conditions	Original Frequency (MHz)	Measured Frequency (MHz)	Frequency Error (MHz)	Frequency Tolerance (%)	Limit (%)
startup	13.56	13.56029	0.00029	0.00214	0.01
after 2minutes	13.56	13.56029	0.00029	0.00214	0.01
after 5minutes	13.56	13.56029	0.00029	0.00214	0.01
after 10minutes	13.56	13.56029	0.00029	0.00214	0.01

Data of Frequency Tolerance: FCC 15.225(e)

Kashima EMC Lab.
No.6 site

Regulation: FCC Part15 SubpartC 15.225

Date: May 22, 2014

Temperature: 23 deg.C

Humidity: 30 %RH

Tested by: Hiromitsu Tanabe

Mode: Transmitting

Input Voltage:AC102V (85%)

Temperature Variation: 20deg.C

Test Conditions	Original Frequency (MHz)	Measure Frequency (MHz)	Frequency Error (MHz)	Frequency Tolerance (%)	Limit (%)
startup	13.56	13.56011	0.00011	0.00081	0.01
after 2minutes	13.56	13.56011	0.00011	0.00081	0.01
after 5minutes	13.56	13.56011	0.00011	0.00081	0.01
after 10minutes	13.56	13.56011	0.00011	0.00081	0.01

Input Voltage:AC138V (115%)

Temperature Variation: 20deg.C

Test Conditions	Original Frequency (MHz)	Measure Frequency (MHz)	Frequency Error (MHz)	Frequency Tolerance (%)	Limit (%)
startup	13.56	13.56011	0.00011	0.00081	0.01
after 2minutes	13.56	13.56011	0.00011	0.00081	0.01
after 5minutes	13.56	13.56011	0.00011	0.00081	0.01
after 10minutes	13.56	13.56011	0.00011	0.00081	0.01

20dB bandwidth & 99% Occupied bandwidth: FCC 15.215 / RSS-Gen

Kashima EMC Lab.

No.6 site

Regulation: FCC Part15 Subpart C 15.215

Date: May 22, 2014

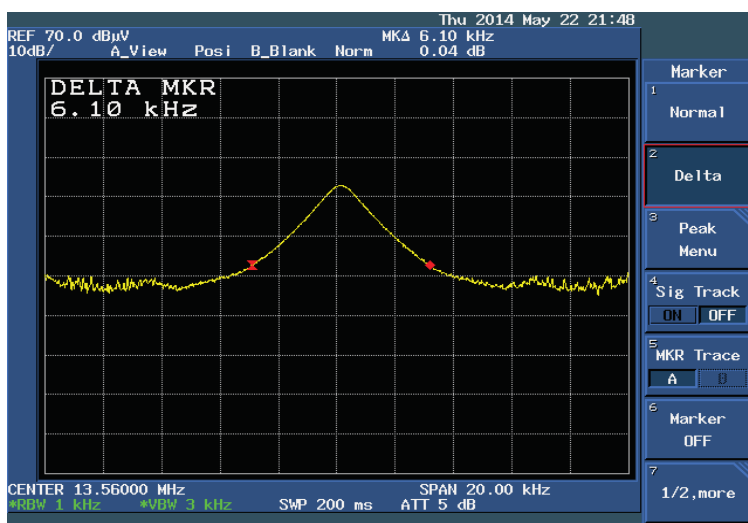
Temperature: 23 deg.C

Humidity: 30 %RH

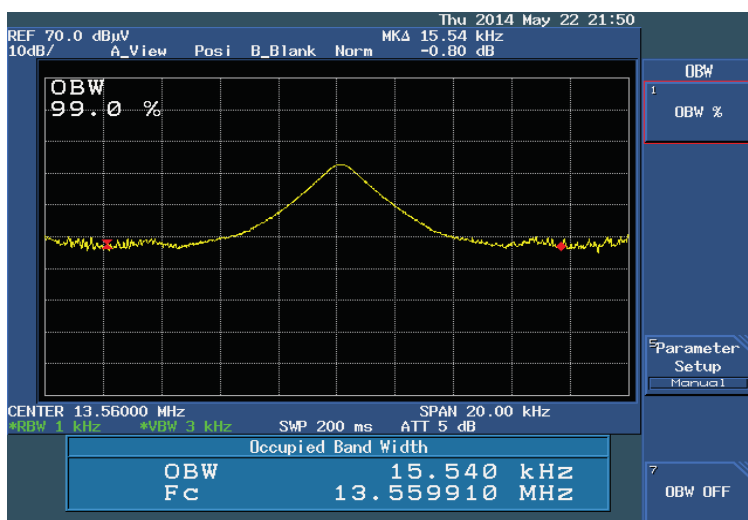
Tested by: Hiromitsu Tanabe

Mode: Transmitting

20dB Bandwidth: 6.10 kHz



99% Occupied Bandwidth: 15.540 kHz



APPENDIX 2: Test Instruments

No.6 Test site (Conducted Emission)

Instrument	Manufacturer	Model	Internal Code	Cal. Date	Due Date
Test Receiver	Rohde & Schwarz	ESCI	RCV06	2013/10/02	2014/10/31
AMN	Rohde & Schwarz	ESH3-Z5	LSN08	2013/07/19	2014/07/31
AMN (for EUT)	Rohde & Schwarz	ESH3-Z5	LSN11	2013/07/19	2014/07/31
Spectrum Analyzer	Hewlett Packard	8567A	SPR13	2013/10/14	2014/10/31
Coaxial Cable	Fujikura	5D-2W	6CSAC	2013/08/09	2014/08/31

No.6 Test site (Radiated Emission: 9kHz – 30MHz)

Instrument	Manufacturer	Model	Internal Code	Cal. Date	Due Date
Loop Antenna	Rohde & Schwarz	HFH2-Z2	LPA01	2013/06/25	2014/06/30
Coaxial Cable	Fujikura	3D-2W	MG5m	2013/05/10	2014/05/31
Test Receiver	Rohde & Schwarz	ESHS10	RCH02	2014/03/13	2015/03/31

No.6 Test site (Radiated Emission: 30MHz – 1000MHz)

Instrument	Manufacturer	Model	Internal Code	Cal. Date	Due Date
Test Receiver	Rohde & Schwarz	ESCI	RCV06	2013/10/02	2014/10/31
Biconical Antenna	Schwarzbeck	VHBB 9124	BCA07	2013/05/27	2014/05/31
Logperiodic Antenna	Schwarzbeck	VULP 9118-B	LGA07	2013/05/27	2014/05/31
Spectrum Analyzer	Hewlett Packard	8567A	SPR13	2013/10/14	2014/10/31
Pre-Amplifier	Hewlett Packard	8447D	PRA01	2013/08/08	2014/08/31
Coaxial Cable	SUHNER	RG 214/U	6R3m	2013/08/09	2014/08/31

No.6 Test site (Test Fixture tests)

Instrument	Manufacturer	Model	Internal Code	Cal. Date	Due Date
Spectrum Analyzer	ADVANTEST	R3162	SPTG02	2013/05/10	2014/05/31
Frequency Counter	Anritsu	MF2412B	FRC01	2013/07/29	2014/07/31
Temperature Chamber	ESPEC	PR-4KPH	TMPC02	2013/11/22	2015/11/30
MULTIMETER	FLUKE	FLK-83-V	MTM38	2013/10/09	2014/10/31
Coaxial Cable	SUHNER	SUCOFLEX104	MWC6m01	2013/07/08	2014/07/31
Search Coil	Langer	LF-R 400	EMP05	-	-

UL Japan, Inc. Kashima EMC Lab.

1614, Mushihata, Katori-shi, Chiba-ken, 289-0341 Japan
Telephone: +81-478-88-6500
Facsimile: +81-478-82-3373