



RADIO TEST REPORT

Test Report No. : 27HE0060-YK-A

Applicant : Shinsei industries co., ltd.
Type of Equipment : Mobile Printer
Model No. : DP-2
FCC ID : U6BP000001
Test Standard : FCC Part15 Subpart C: 2006
FCC Part15 Subpart B: 2006
Test Result : Complied

1. This test report shall not be reproduced except in full, without the written approval of UL Japan, Inc.
2. The results in this report apply only to the sample tested.
3. This equipment is in compliance with the above regulation.
4. The test results in this test report are traceable to the national or international standards.

Date of test: April 5 and 6, 2007

Tested by: M. Hosaka
Makoto Hosaka

Approved by: O. Watatani
Osamu Watatani
Manager of Yamakita EMC Lab.

UL Japan, Inc.

YAMAKITA EMC LAB.

907 Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken, 258-0124 JAPAN

Telephone: +81 465 77 1011 Facsimile: +81 465 77 2112

MF060b (26.04.07)

Table of Contents	Page
1 Applicant Information	3
2 Equipment under test (E.U.T.)	3
3 Test Specification, Procedures and Results	4
4 System Test Configuration	6
5 Conducted emission	7
6 Carrier Frequency Separation	8
7 20dB Bandwidth & Occupied Bandwidth (99%)	8
8 Number of Hopping Frequency	8
9 Dwell time	8
10 Maximum Peak Output Power	8
11 Out of Band Emissions (Antenna Port Conducted)	8
12 Out of Band Emissions (Radiated)	9
 <u>Contents of Appendixes</u>	 10
APPENDIX 1: Photographs of test setup	11
APPENDIX 2: Test Data	14
APPENDIX 3: Test instruments	51

1 Applicant Information

Company Name : Shinsei industries co., ltd.
Address : 4-12-15 Horihune, Kita-ku, Tokyo-to, 114-0004 Japan
Telephone Number : +81-3-3913-2643
Facsimile Number : +81-3-3913-0394
Contact Person : Junichi Sato

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

2.1 Identification of E.U.T.

Type of Equipment : Mobile Printer
Model No. : DP-2
Serial No. : No.3 (Radiated emission), No.2 (other test)
Rating : DC7.4V (AC adaptor: AC100-240V, 50/60Hz)
Country of Manufacture : Philippines
Receipt Date of Sample : April 2, 2007
Condition of EUT : Production model
Modification of EUT : No modification by the test lab.

2.2 Product Description

Model: DP-2 (referred to as the EUT in this report) is a Mobile Printer.

Equipment type : Transceiver
Frequency of operation : 2402-2480MHz
Clock frequency : 7.3728MHz, 14.7456MHz, 29.4912MHz, 117.9648MHz
Bandwidth & channel spacing : 79MHz & 1MHz
Type of modulation : FHSS
Antenna type : Chip dipole
Antenna connector type : N/A
Antenna gain : 2.0dBi max
ITU code : F1D
Operation temperature range : +5 ~ +35 deg.C.

FCC Part15.31 (e)

DP-2 provides the Bluetooth module with stable power supply (DC 3.3 V), therefore, the equipment complies power supply regulation.

FCC Part15.203 Antenna requirement

The equipment and its antenna comply with this requirement since this antenna is built in the module and it cannot be replaced by end users.

UL Japan, Inc.

YAMAKITA EMC LAB.

907 Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken, 258-0124 JAPAN

Telephone: +81 465 77 1011 Facsimile: +81 465 77 2112

MF060b (26.04.07)

3 Test Specification, Procedures and Results

3.1 Test specification

Test Specification : FCC Part 15 Subpart B: 2006
 Title : FCC 47CFR Part 15 Radio Frequency Device
 Subpart B Unintentional Radiators
 Test specification : FCC Part15 Subpart C: 2006
 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 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz,
 and 5725-5850MHz

3.2 Procedures & Results

Item	Test Procedure	Specification	Remarks	Deviation	Worst Margin	Results
Conducted emission	ANSI C63.4:2003 7. AC powerline conducted emission measurements	Section 15.207	-	N/A	9.6dB (0.5178MHz, AV, L1, Tx 2402MHz)	Complied
Carrier Frequency Separation	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247 (a)(1)	Conducted	N/A	-	Complied
20dB Bandwidth	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247 (a)(1)	Conducted	N/A		Complied
Number of Hopping Frequency	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247 (a)(1)(iii)	Conducted	N/A		Complied
Dwell time	ANSI C63.4:2003 13.Measurement of intentional radiators	Section15.247 (a)(1)(iii)	Conducted	N/A		Complied
Maximum Peak Output Power	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247 (b)(1)	Conducted	N/A		Complied
Spurious Emission	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.209 Section15.247 (d)	Conducted / Radiated	N/A	Tx: 0.2dB (206.44MHz, QP, Vertical, Tx 2441MHz) Rx: 0.9dB (206.44MHz, Vertical, Rx 2441MHz)	Complied

The measurements also referred to FCC Public Notice DA 00-705 "Guidance on Measurement for Frequency Hopping Spread Spectrum Systems".

* Other than mentioned in 3.3, no addition, exclusion nor deviation has been made from the standard.

3.3 Addition to standard

Item	Test Procedure	Specification	Remarks	Worst Margin	Results
Occupied Bandwidth (99%)	ANSI C63.4:2003 13. Measurement of intentional radiators RSS-Gen 4.4.1	RSS-Gen 4.4.1	Conducted -		Complied

UL Japan, Inc.

YAMAKITA EMC LAB.

907 Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken, 258-0124 JAPAN

Telephone: +81 465 77 1011 Facsimile: +81 465 77 2112

MF060b (26.04.07)

3.4 Uncertainty

Conducted emission

The measurement uncertainty (with 95% confidence level) for this test is ± 2.7 dB.

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

Antenna port conducted test

The measurement uncertainty (with 95% confidence level) for this test is ± 0.4 dB.

Spurious emission test (Radiated)

The measurement uncertainty (with 95% confidence level) for this test using Biconical antenna is ± 4.5 dB.

The measurement uncertainty (with 95% confidence level) for this test using Logperiodic antenna is ± 4.3 dB.

The measurement uncertainty (with 95% confidence level) for this test using Horn antenna is ± 5.2 dB.

The data listed in this report meets the limits unless the uncertainty is taken into consideration.

3.5 Test Location

UL Japan, Inc. Yamakita EMC Lab.

907, Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken 258-0124 JAPAN

Telephone number : +81 465 77 1011

Facsimile number : +81 465 77 2112

NVLAP Lab. code : 200441-0

No. 1 test site has been fully described in a report submitted to FCC office, and accepted on August 26, 2005 (Registration No.: 95486).

IC Registration No. : 2973B-1

No. 2 test site has been fully described in a report submitted to FCC office, and accepted on April 4, 2005 (Registration No.: 466226).

IC Registration No. : 2973B-3

No. 1 anechoic chamber has been fully described in a report submitted to FCC office, and accepted on November 2, 2005 (Registration No.: 95967).

IC Registration No. : 2973B-2

Test room	Width x Depth x Height (m)	Test room	Width x Depth x Height (m)
No.1 shielded room	8.0 x 5.0 x 2.5	No.1	10.0 x 7.5 x 5.7
No.2 shielded room	5.0 x 4.0 x 2.5	Semi-anechoic chamber	
No.3 shielded room	4.0 x 5.0 x 2.7		

Our company name was changed from "UL Apex Co., Ltd." to "UL Japan, Inc." on April 26, 2007.

UL Japan, Inc.

YAMAKITA EMC LAB.

907 Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken, 258-0124 JAPAN

Telephone: +81 465 77 1011

Facsimile: +81 465 77 2112

MF060b (26.04.07)

4 System Test Configuration

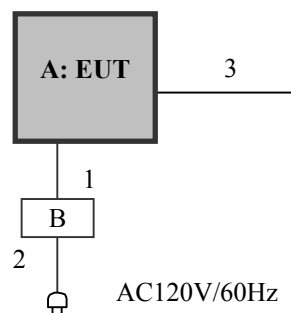
4.1 Justification

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

Test mode: Transmitting (Packet size: DH5)
- Low channel : 2402MHz
- Middle channel : 2441MHz
- High channel : 2480MHz
- Hopping
* The EUT has no operation of Inquiry mode and Page mode.
Receiving
- Middle channel : 2441MHz

*Remarks: Test was not performed at AFH mode, because the decrease of number of channel (min: 20ch) at AFH mode does not influence on the output power and bandwidth of the EUT.
However, the limit level 125mW of AFH mode was used for the test.

4.2 Configuration of Tested System



* Test data was taken under worse case conditions.

Description of EUT and support equipment

No.	Item	Model number	Serial number *1)	Manufacturer	FCC ID (Remark)
A	Mobile Printer	DP-2	No.2 No.3	Shinsei industries co., ltd.	U6PBP000001 (EUT)
B	AC Adaptor	CV-74	No.02	Shinsei industries co., ltd.	-

*1) No.3: Conducted emission & Radiated emission, No.2: other test

List of cables used *2)

No.	Name	Length (m)	Shield		Remark
			Cable	Connector	
1	DC cable	1.8	Unshielded	Unshielded	-
2	AC cable	1.5	Unshielded	Unshielded	-
3	Serial cable	1.0	Shielded	Shielded	-

*2) All cables used for the measurement are exclusive use or marketed.

UL Japan, Inc.

YAMAKITA EMC LAB.

907 Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken, 258-0124 JAPAN

Telephone: +81 465 77 1011 Facsimile: +81 465 77 2112

MF060b (26.04.07)

5 Conducted Emissions

5.1 Operating environment

The test was carried out in No.1 shielded room.

5.2 Test configuration

EUT was placed on a platform of nominal size, 0.7m by 0.8m, raised 80cm above the conducting ground plane. The rear of tabletop was located 40cm to the vertical conducting plane. The rear of the EUT and its peripherals was aligned and flushed with rear of tabletop. All other surfaces of tabletop were at least 80cm from any other grounded conducting surface. EUT was located 80cm from a Line Impedance Stabilization Network (LISN) and excess AC cable was bundled in center. I/O cable were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30cm to 40cm long and were hanged at a 40cm height to the ground plane. A drawing of the set up is shown in the photos of Appendix 1.

5.3 Test conditions

Frequency range : 0.15 - 30MHz
EUT operation mode : Transmitting, Receiving

5.4 Test procedure

The EUT was connected to a LISN (AMN). An overview sweep with peak detection has been performed. The Conducted emission measurements were made with the following detector function of the test receiver.

Detector: QP/AV
IF Bandwidth: 9kHz

5.5 Results

Summary of the test results : Pass

Date : April 6, 2007 Test engineer : Makoto Hosaka

6 Carrier Frequency Separation

Test Procedure

The carrier frequency separation was measured with a spectrum analyzer connected to the antenna port.

Summary of the test results: Pass

Date : April 6, 2007 Test engineer : Makoto Hosaka

7 20dB Bandwidth & Occupied Bandwidth (99%)

Test Procedure

The bandwidth was measured with a spectrum analyzer connected to the antenna port.

Summary of the test results: Pass

Date : April 6, 2007 Test engineer : Makoto Hosaka

8 Number of Hopping Frequency

Test Procedure

The Number of Hopping Frequency was measured with a spectrum analyzer connected to the antenna port.

Summary of the test results: Pass

Date : April 6, 2007 Test engineer : Makoto Hosaka

9 Dwell time

Test Procedure

The Dwell time was measured with a spectrum analyzer connected to the antenna port.

Pre-check was performed with the packet type of DH1, DH3 and DH5. DH5, which had the longest dwell time, was chosen for the final measurement.

Summary of the test results: Pass

Date : April 6, 2007 Test engineer : Makoto Hosaka

10 Maximum Peak Output Power

Test Procedure

The Maximum Peak Output Power was measured with a power meter connected to the antenna port.

Summary of the test results: Pass

Date : April 6, 2007 Test engineer : Makoto Hosaka

11 Out of Band Emissions (Antenna Port Conducted)

Test Procedure

The Out of Band Emissions was measured with a spectrum analyzer connected to the antenna port.

Summary of the test results: Pass

Date : April 6, 2007 Test engineer : Makoto Hosaka

UL Japan, Inc.

YAMAKITA EMC LAB.

907 Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken, 258-0124 JAPAN

Telephone: +81 465 77 1011 Facsimile: +81 465 77 2112

MF060b (26.04.07)

12 Out of Band Emissions (Radiated)

12.1 Operating environment

The test was carried out in No.1 anechoic chamber.

12.2 Test configuration

EUT was placed on a urethane platform of nominal size, 0.5m by 0.5m, raised 80cm above the conducting ground plane. A drawing of the set up is shown in the photos of Appendix 1.

12.3 Test conditions

Frequency range : 30MHz - 26.5GHz
Test distance : 3m
EUT operation mode : Transmitting, Receiving

12.4 Test procedure

The Radiated Electric Field Strength intensity has been measured with a ground plane and at a distance of 3m and 1m. The measuring antenna height was varied between 1 and 4m 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.

In any 100kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator confirmed 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on a radiated measurement.

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

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

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

Frequency	Below 1GHz	Above 1GHz
Instrument used	Test Receiver	Spectrum Analyzer
Detector IF Bandwidth	QP: BW 120kHz	PK: RBW: 1MHz/VBW: 1MHz, AV: RBW: 1MHz/VBW: 10Hz
Measuring antenna	Biconical (30-300MHz) Logperiodic (300MHz-1GHz)	Horn

The equipment was previously checked at each position of three axes X, Y and Z. The position in which the maximum noise occurred was chosen to put into measurement. See the table below and photographs in page 13. With the position, the noise levels of all the frequencies were measured.

	30-300MHz	300-1000MHz	Above 1GHz
Horizontal	Y	Z	Z
Vertical	Z	Y	Y

12.5 Results

Summary of the test results : Pass
No noise was detected above the 5th order harmonics.

Date : April 5 and 6, 2007 Test engineer : Makoto Hosaka

UL Japan, Inc.

YAMAKITA EMC LAB.

907 Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken, 258-0124 JAPAN

Telephone: +81 465 77 1011 Facsimile: +81 465 77 2112

MF060b (26.04.07)

APPENDIX 1: Photographs of test setup

Page 11	:	Conducted emission
Page 12	:	Radiated emission
Page 13	:	Pre check of worse-case position

APPENDIX 2: Test Data

Page 14 - 19	:	Conducted emission
Page 20	:	Carrier Frequency Separation
Page 21	:	20dB Bandwidth
Page 22 - 23	:	Number of Hopping Frequency
Page 24 - 25	:	Dwell time
Page 26	:	Maximum Peak Output Power
Page 27 - 36	:	Out of Band Emissions (Antenna Port Conducted)
Page 37 - 48	:	Out of Band Emissions (Radiated)
37-45	:	Transmitting
46-48	:	Receiving
Page 49 - 50	:	Occupied Bandwidth

APPENDIX 3: Test instruments

Page 51	:	Test instruments
---------	---	------------------

UL Japan, Inc.

YAMAKITA EMC LAB.

907 Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken, 258-0124 JAPAN

Telephone: +81 465 77 1011 Facsimile: +81 465 77 2112

MF060b (26.04.07)

Conducted emission



UL Japan, Inc.

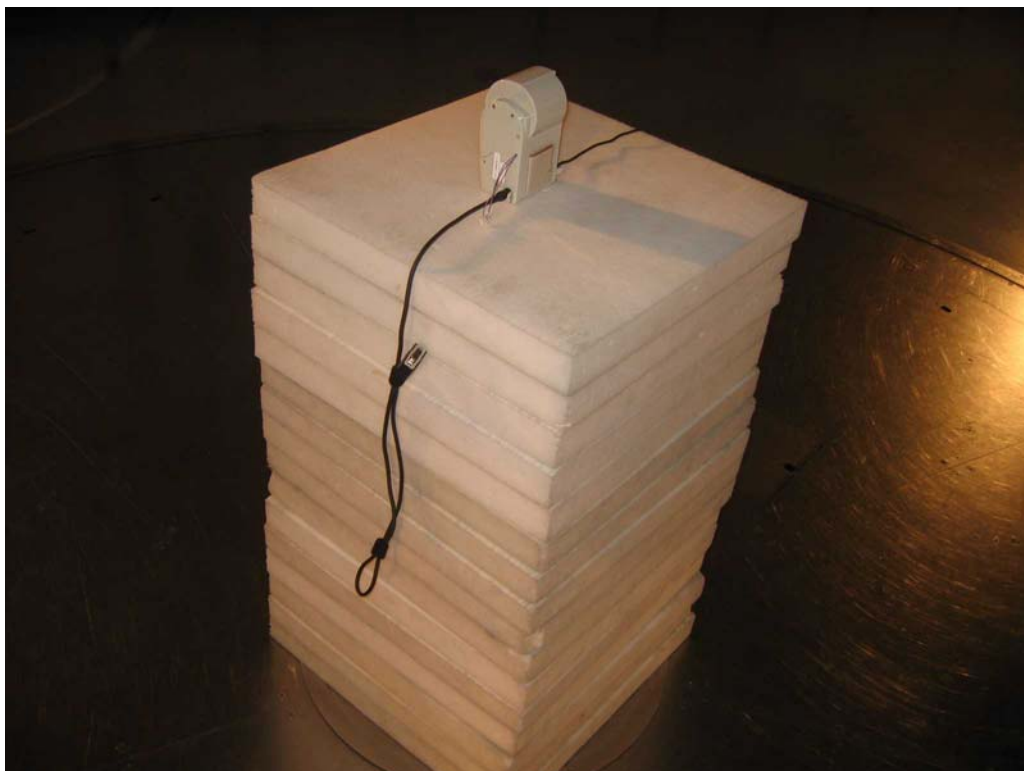
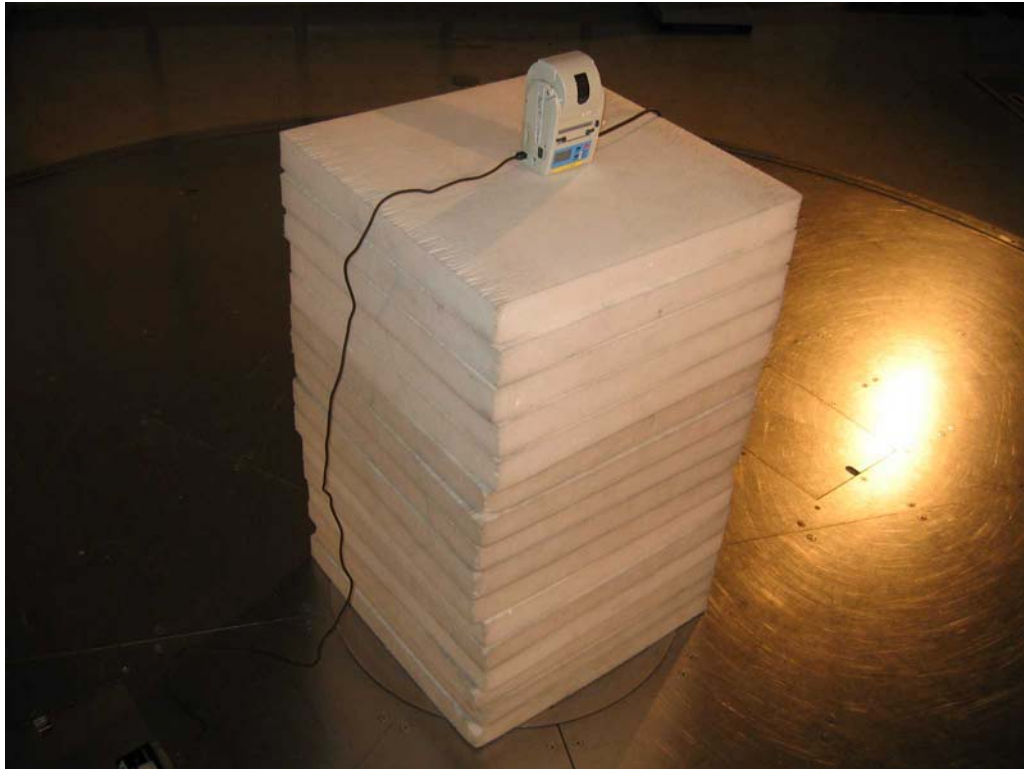
YAMAKITA EMC LAB.

907 Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken, 258-0124 JAPAN

Telephone: +81 465 77 1011 Facsimile: +81 465 77 2112

MF060b (26.04.07)

Radiated emission



UL Japan, Inc.

YAMAKITA EMC LAB.

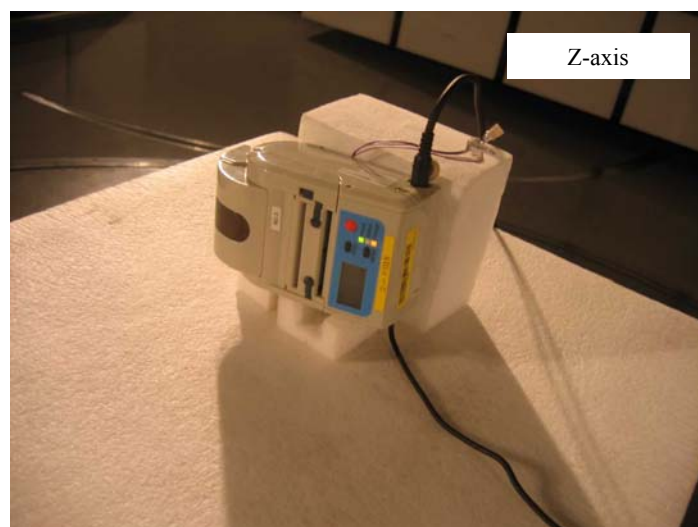
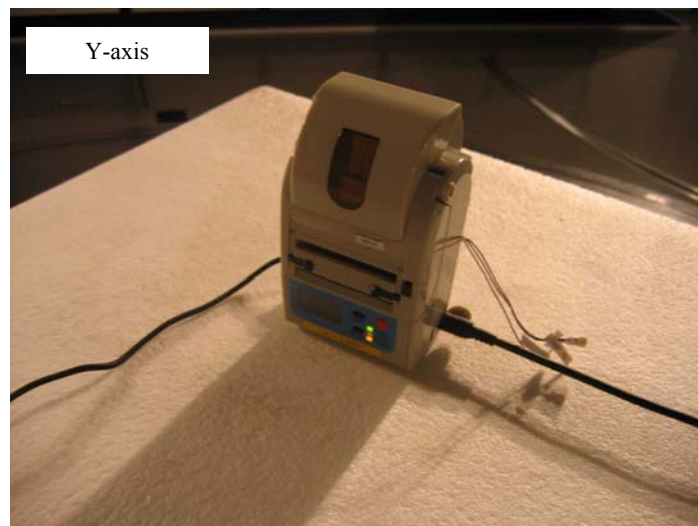
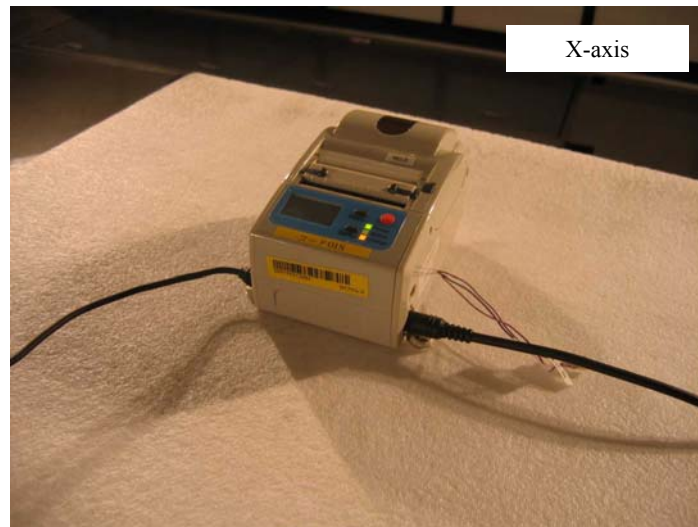
907 Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken, 258-0124 JAPAN

Telephone: +81 465 77 1011

Facsimile: +81 465 77 2112

MF060b (26.04.07)

Pre-check of the worst position



UL Japan, Inc.

YAMAKITA EMC LAB.

907 Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken, 258-0124 JAPAN

Telephone: +81 465 77 1011

Facsimile: +81 465 77 2112

MF060b (26.04.07)

DATA OF CONDUCTION TEST

UL Apex Co.,Ltd.

YAMAKITA No.1 SHIELD ROOM

Report No. : 27HE0060-YK-A

Applicant : Shinsei industries co., ltd.
Kind of Equipment : Mobile printer
Model No. : DP-2
Serial No. : No.3
Power : AC120V/60Hz
Mode : Tx 2402MHz
Remarks : -
Date : 4/6/2007
Phase : Single Phase
Temperature : 23 °C
Humidity : 33 %
Regulation : FCC Part15C § 15.207. (CISPR Pub.22)
Engineer : Makoto Hosaka

No.	FREQ. [MHz]	READING (N)		READING (L1)		LISN FACTOR [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS		MARGIN	
		QP [dB μ V]	AV	QP [dB μ V]	AV				QP [dB]	AV [dB μ V]	QP [dB μ V]	AV [dB μ V]	QP [dB]	AV [dB]
1.	0.1500	34.8	-	35.1	-	0.1	0.1	0.0	35.3	-	66.0	56.0	30.7	-
2.	0.1949	36.3	-	35.7	-	0.1	0.1	0.0	36.5	-	63.8	53.8	27.3	-
3.	0.4535	33.2	-	33.1	-	0.1	0.2	0.0	33.5	-	56.8	46.8	23.3	-
4.	0.5178	35.8	34.8	37.1	36.1	0.1	0.2	0.0	37.4	36.4	56.0	46.0	18.6	9.6
5.	1.2931	28.0	-	28.8	-	0.1	0.3	0.0	29.2	-	56.0	46.0	26.8	-
6.	2.3264	26.3	-	28.6	-	0.1	0.4	0.0	29.1	-	56.0	46.0	26.9	-
7.	27.5847	26.4	-	27.6	-	0.8	1.9	0.0	30.3	-	60.0	50.0	29.7	-

CALCULATION: READING + LISN FACTOR + CABLE LOSS + ATTEN.

■ LISN: KLS-01 (NSLK8126) ■ COAXIAL CABLE: KCC-14/15/16/18
■ PULSE LIMITTER: KPL-01 (PL01) ■ EMI RECEIVER: KTR-02 (ESCS30)

DATA OF CONDUCTION TEST

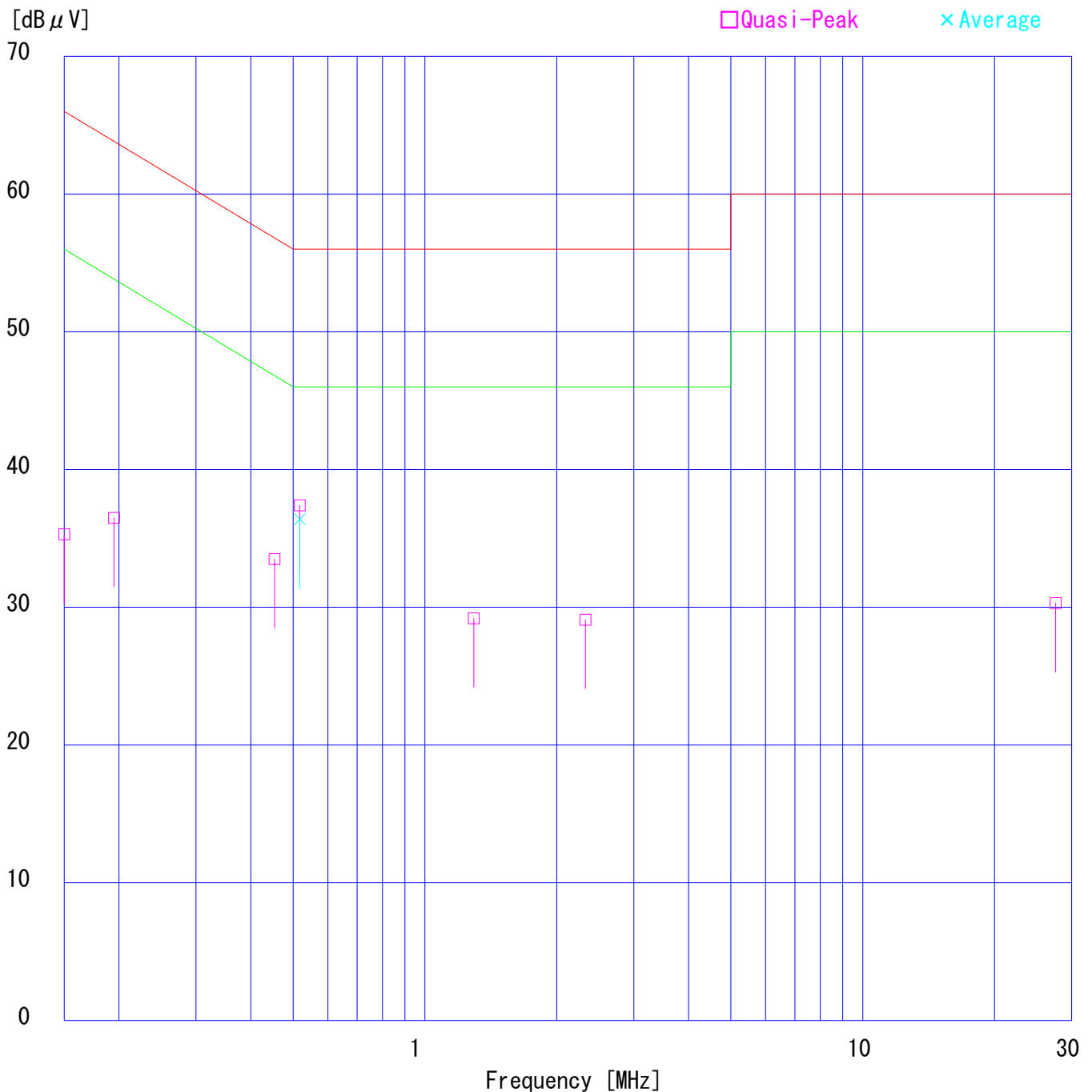
UL Apex Co.,Ltd.

YAMAKITA No.1 SHIELD ROOM

Report No. : 27HE0060-YK-A

Applicant : Shinsei industries co., ltd.
Kind of Equipment : Mobile printer
Model No. : DP-2
Serial No. : No. 3
Power : AC120V/60Hz
Mode : Tx 2402MHz
Remarks : -
Date : 4/6/2007
Phase : Single Phase
Temperature : 23 °C
Humidity : 33 %
Regulation : FCC Part15C § 15.207. (CISPR Pub.22)

Engineer : Makoto Hosaka



DATA OF CONDUCTION TEST CHART

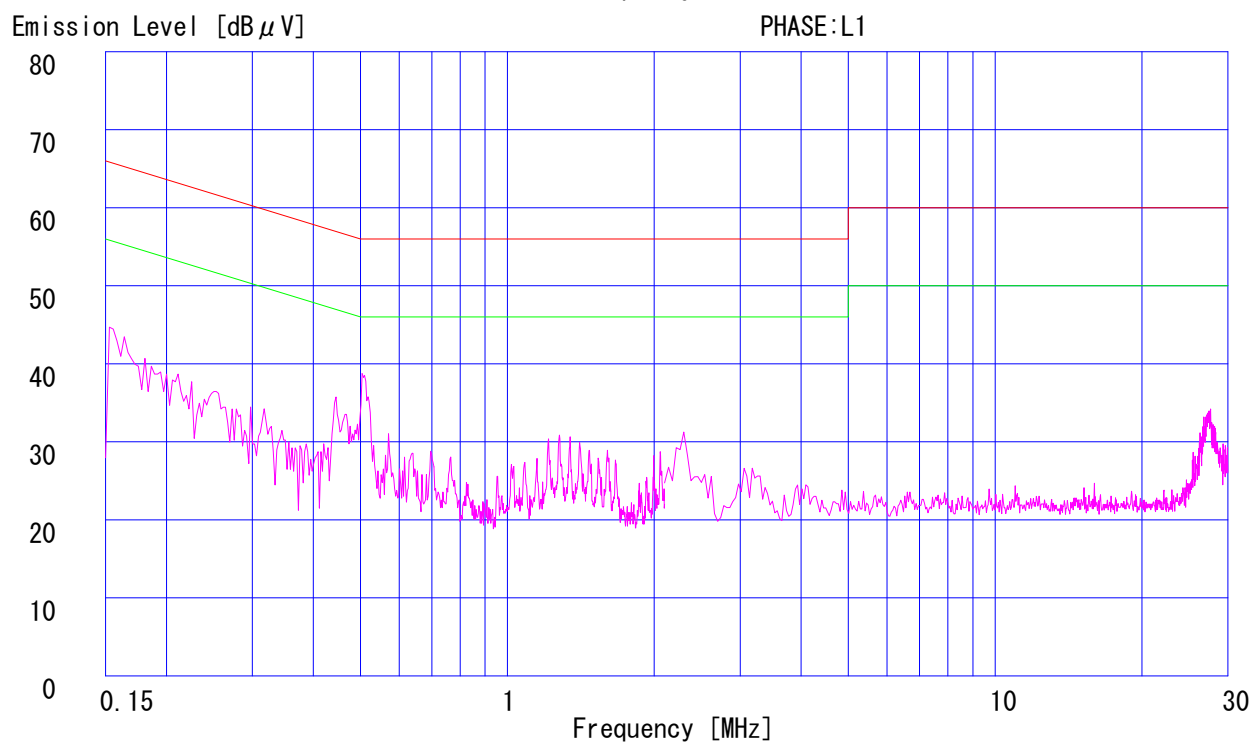
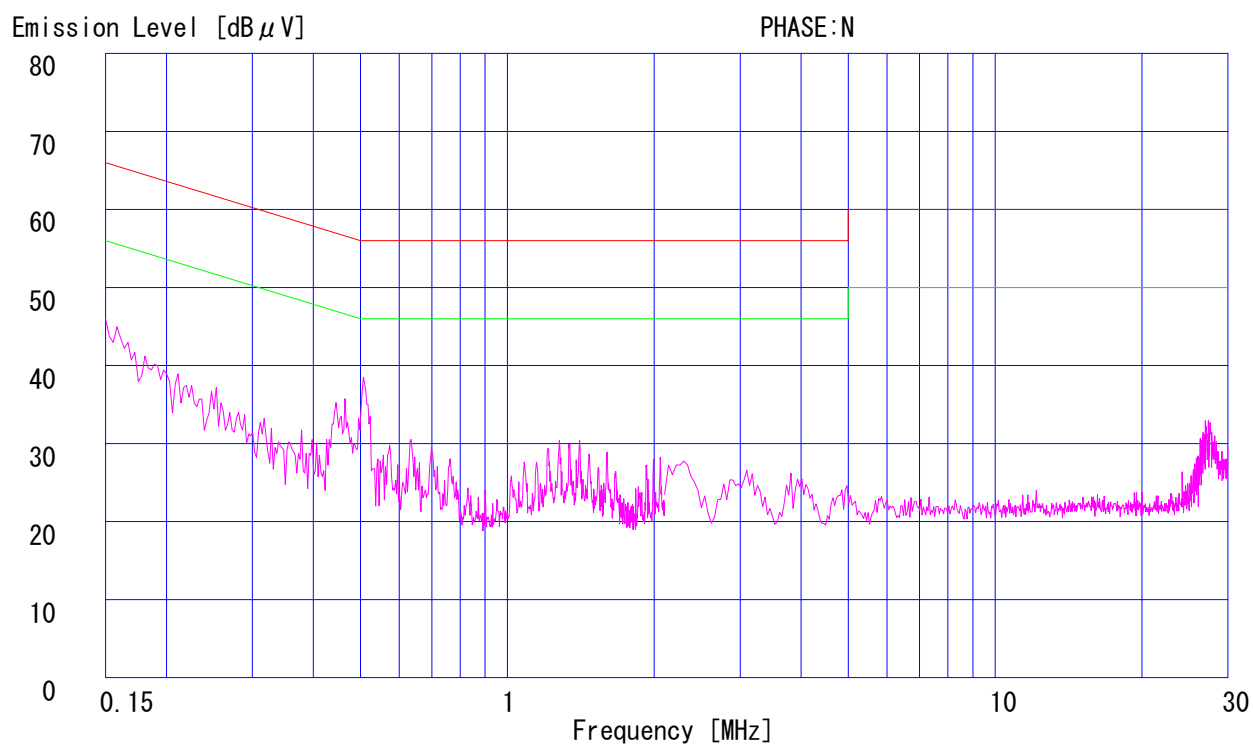
UL Apex Co.,Ltd.

YAMAKITA No.1 SHIELD ROOM

Report No. : 27HE0060-YK-A

Applicant : Shinsei industries co., ltd.
Kind of Equipment : Mobile printer
Model No. : DP-2
Serial No. : No. 3
Power : AC120V/60Hz
Mode : Tx 2402MHz
Remarks : -
Date : 4/6/2007
Phase : Single Phase
Temperature : 23 °C
Humidity : 33 %
Regulation 1 : FCC Part15C § 15.207. (CISPR Pub. 22)
Regulation 2 : None

Engineer : Makoto Hosaka



DATA OF CONDUCTION TEST CHART

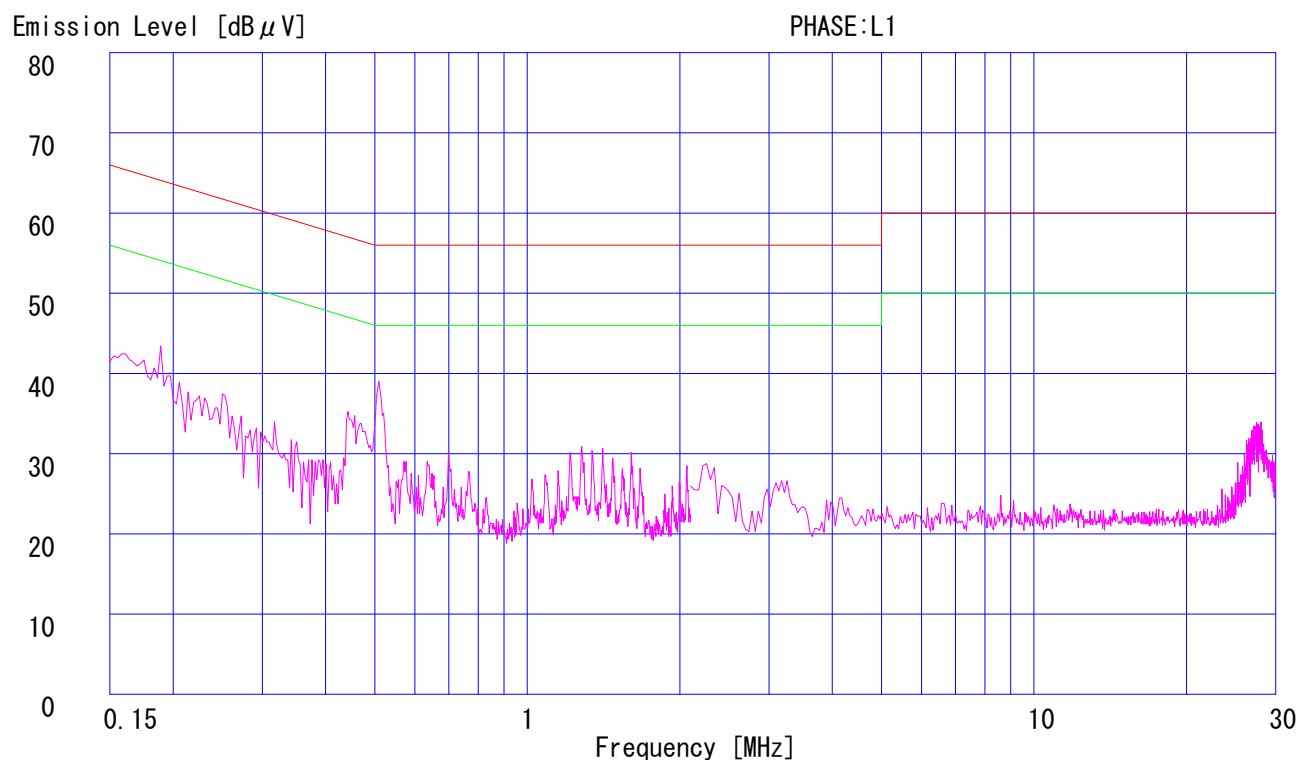
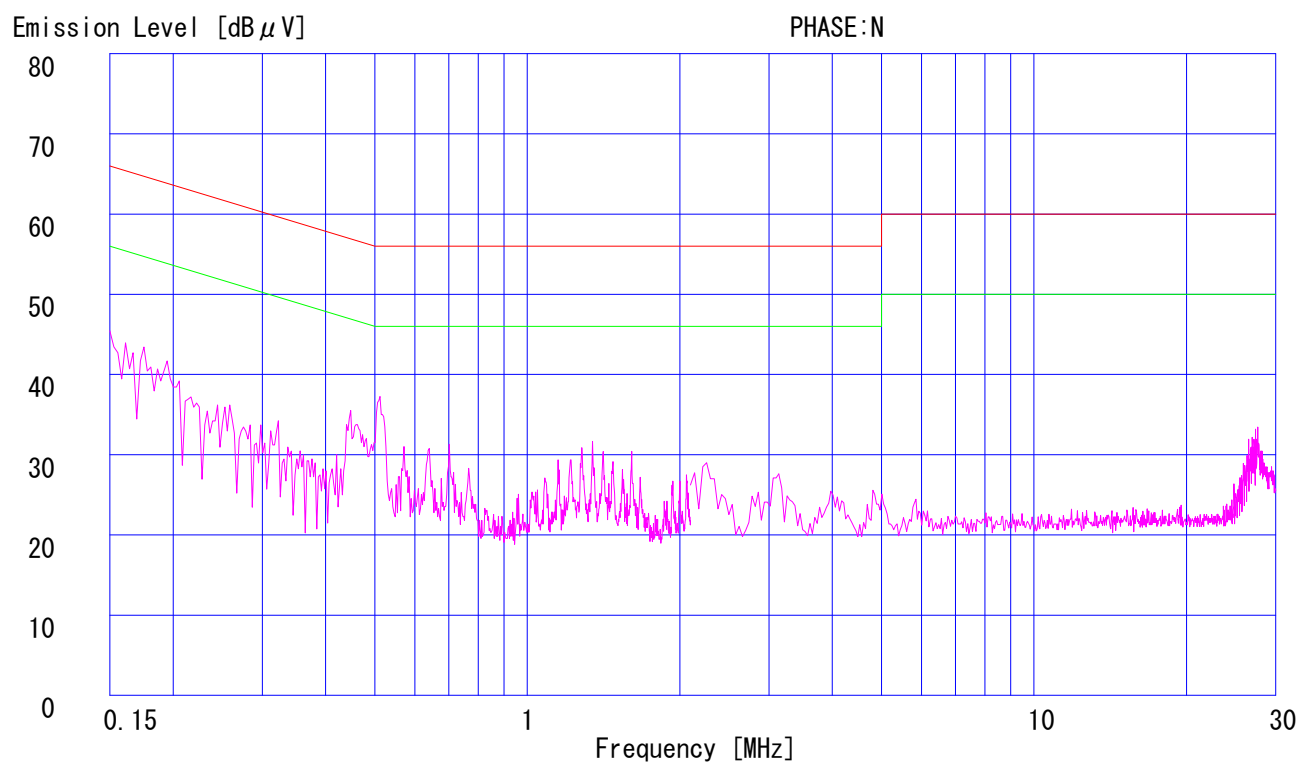
UL Apex Co.,Ltd.

YAMAKITA No.1 SHIELD ROOM

Report No. : 27HE0060-YK-A

Applicant : Shinsei industries co., ltd.
Kind of Equipment : Mobile printer
Model No. : DP-2
Serial No. : No. 3
Power : AC120V/60Hz
Mode : Tx 2441MHz
Remarks : -
Date : 4/6/2007
Phase : Single Phase
Temperature : 23 °C
Humidity : 33 %
Regulation 1 : FCC Part15C § 15.207. (CISPR Pub. 22)
Regulation 2 : None

Engineer : Makoto Hosaka



DATA OF CONDUCTION TEST CHART

UL Apex Co.,Ltd.

YAMAKITA No.1 SHIELD ROOM

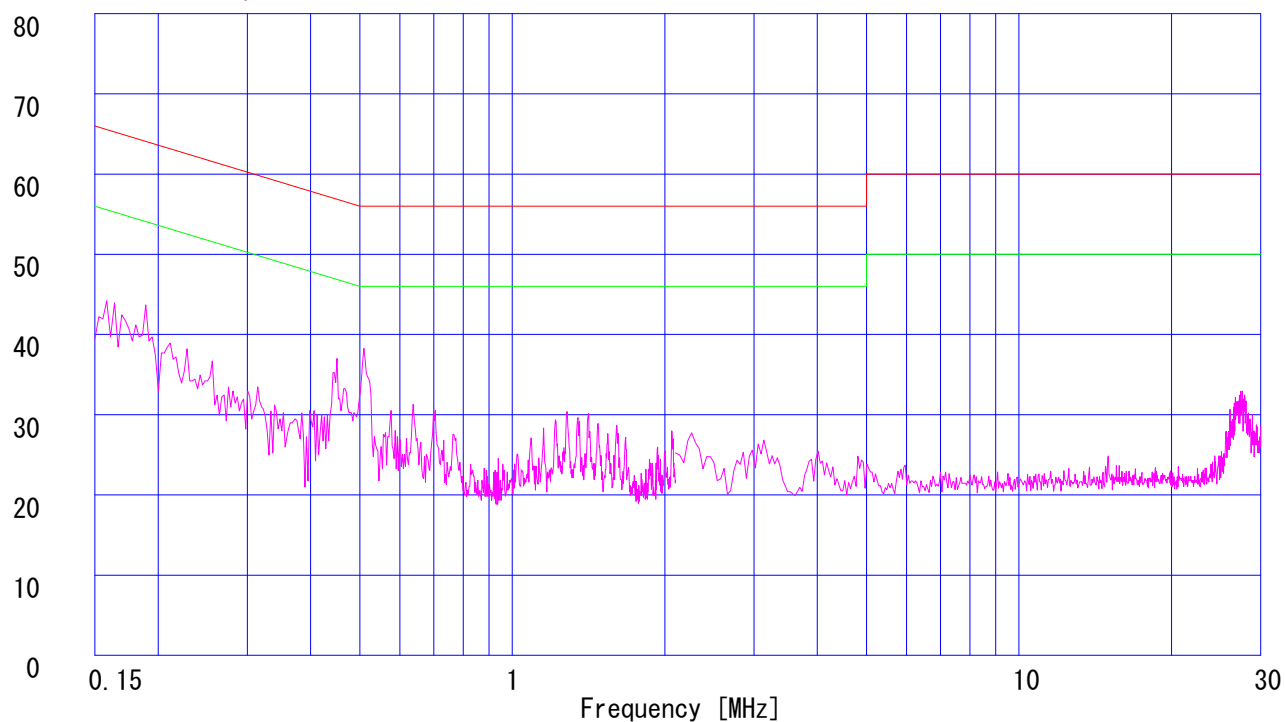
Report No. : 27HE0060-YK-A

Applicant : Shinsei industries co., ltd.
Kind of Equipment : Mobile printer
Model No. : DP-2
Serial No. : No. 3
Power : AC120V/60Hz
Mode : Tx 2480MHz
Remarks : -
Date : 4/6/2007
Phase : Single Phase
Temperature : 23 °C
Humidity : 33 %
Regulation 1 : FCC Part15C § 15.207. (CISPR Pub. 22)
Regulation 2 : None

Engineer : Makoto Hosaka

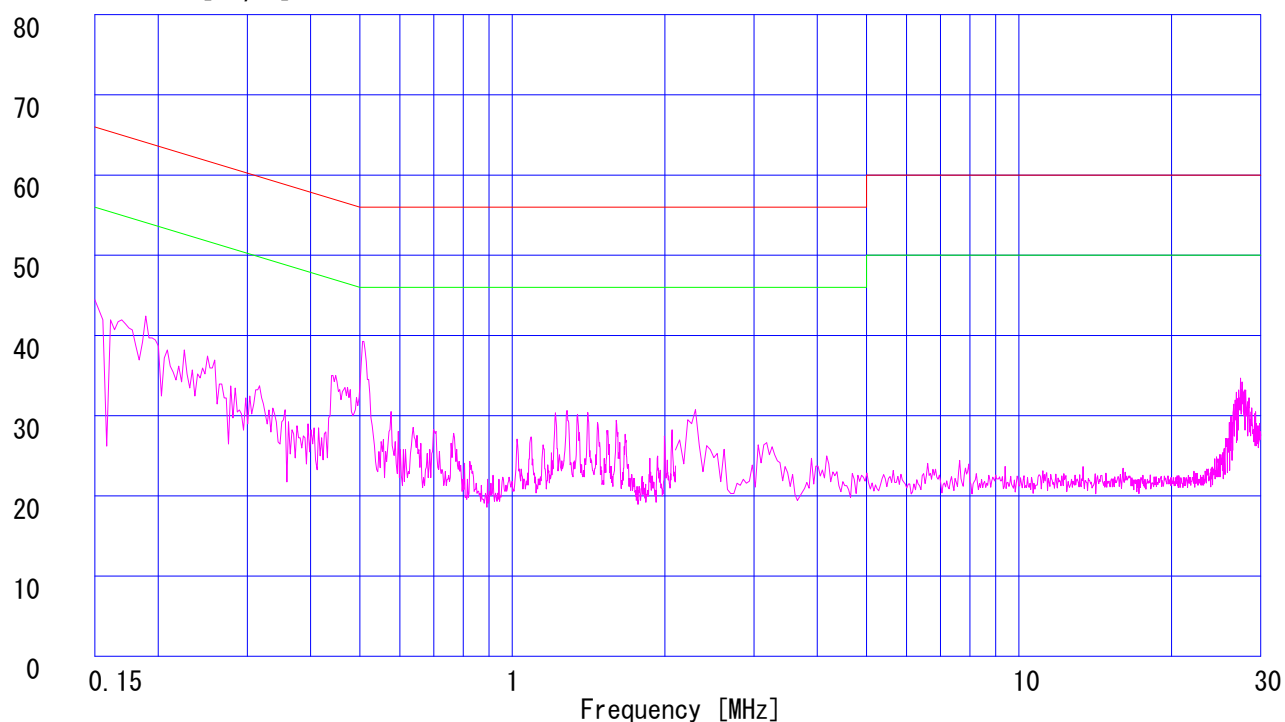
Emission Level [dB μ V]

PHASE:N



Emission Level [dB μ V]

PHASE:L1



DATA OF CONDUCTION TEST CHART

UL Apex Co.,Ltd.

YAMAKITA No.1 SHIELD ROOM

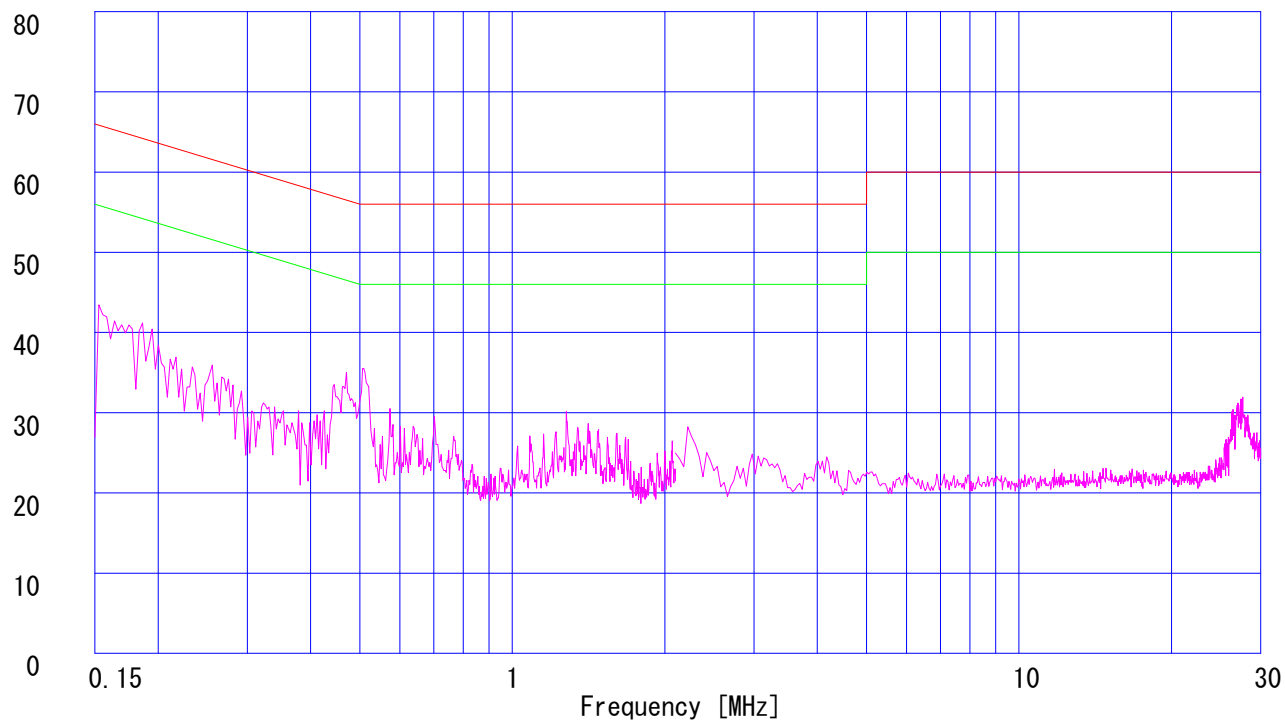
Report No. : 27HE0060-YK-A

Applicant : Shinsei industries co., ltd.
Kind of Equipment : Mobile printer
Model No. : DP-2
Serial No. : No. 3
Power : AC120V/60Hz
Mode : Rx 2441MHz
Remarks : -
Date : 4/6/2007
Phase : Single Phase
Temperature : 23 °C
Humidity : 33 %
Regulation 1 : FCC Part15B CLASS B (CISPR Pub. 22)
Regulation 2 : None

Engineer : Makoto Hosaka

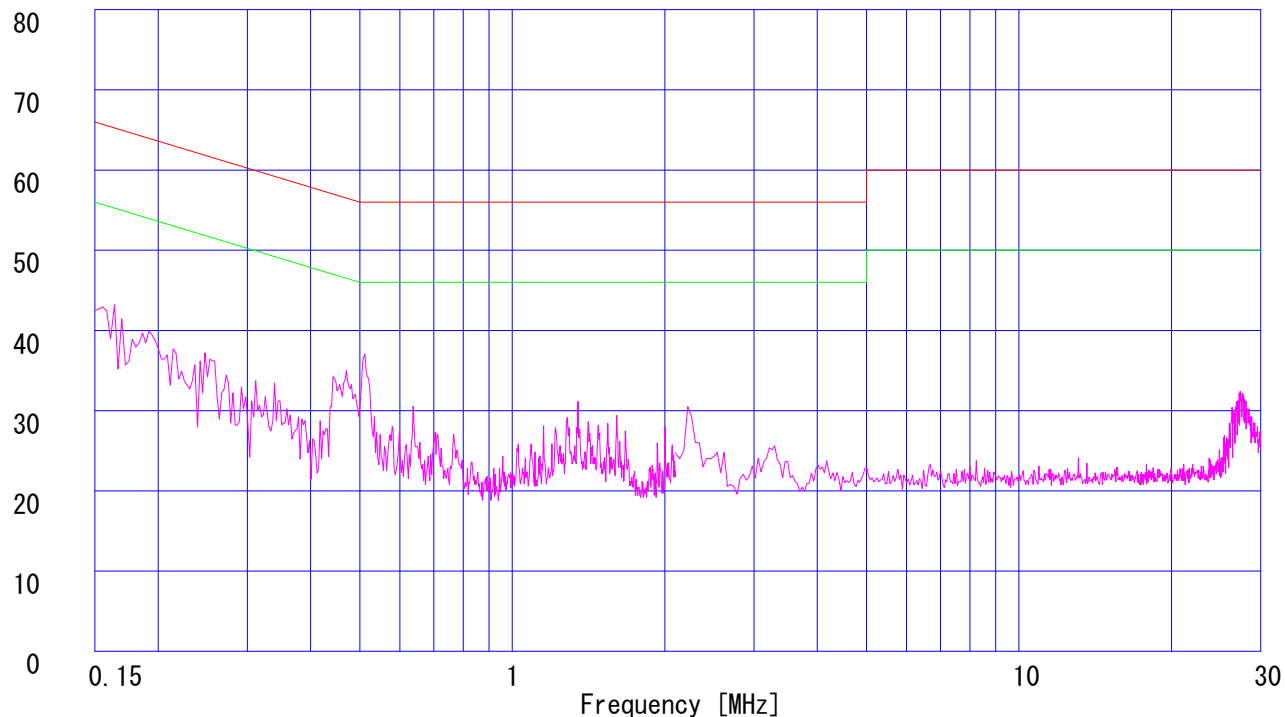
Emission Level [dB μ V]

PHASE:N



Emission Level [dB μ V]

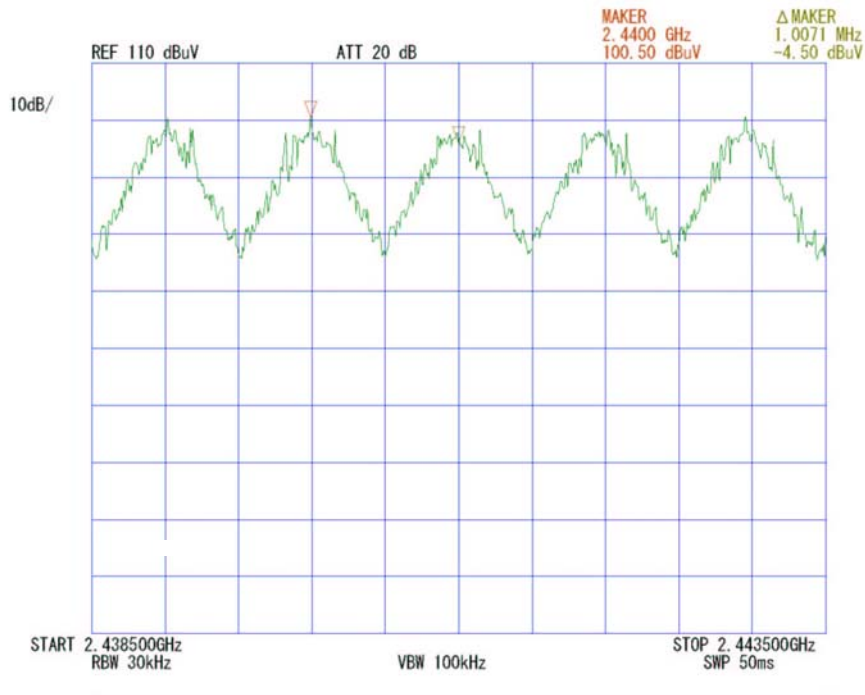
PHASE:L1



Channel Separation: FCC 15.247(a)(1)

COMPANY	: Shinsei industries co., ltd.	UL Apex Co.,Ltd. Yamakita No.2 Shielded Room
EQUIPMENT	: Mobile printer	REPORTNO : 27HE0060-YK-A
MODEL NUMBER	: DP-2	REGULATION : Fcc Part15SubpartC 247(a)(1)
SERIAL NUMBER	: No.2	DATE : 2007/04/06
FCC ID	: U6PBP000001	TEMP./HUMI : 22deg.C./32%
POWER	: AC120V/60Hz	TEST MODE : Transmitting
		ENGINEER : Makoto Hosaka

1. Hopping:1007.1kHz

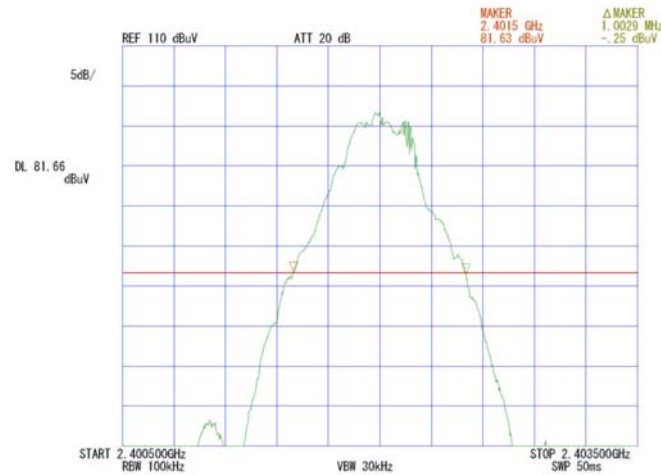


20dB Bandwidth: FCC 15.247(a)(1)

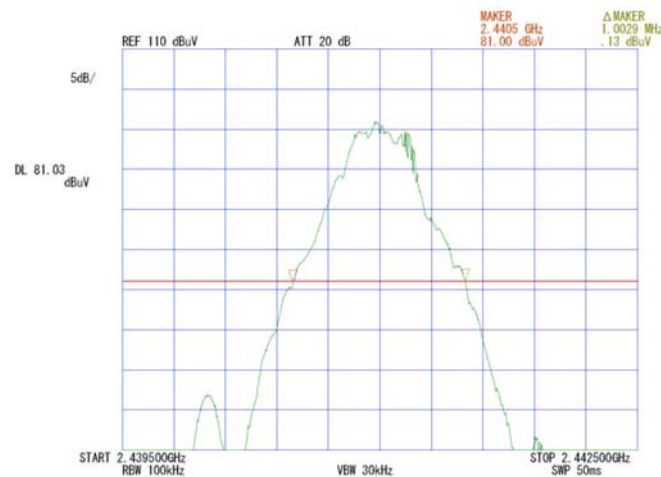
COMPANY : Shinsei industries co., ltd.
EQUIPMENT : Mobile printer
MODEL NUMBER: DP-2
SERIAL NUMBER: No.2
FCC ID : U6PBP000001
POWER : AC120V/60Hz

UL Apex Co.,Ltd. Yamakita No.2 Shielded Room
REPORTNO : 27HE0060-YK-A
REGULATION : Fcc Part15SubpartC 247(a)(1)
DATE : 2007/04/06
TEMP./HUMI : 22deg.C./32%
TEST MODE : Transmitting(Hopping off)
ENGINEER : Makoto Hosaka

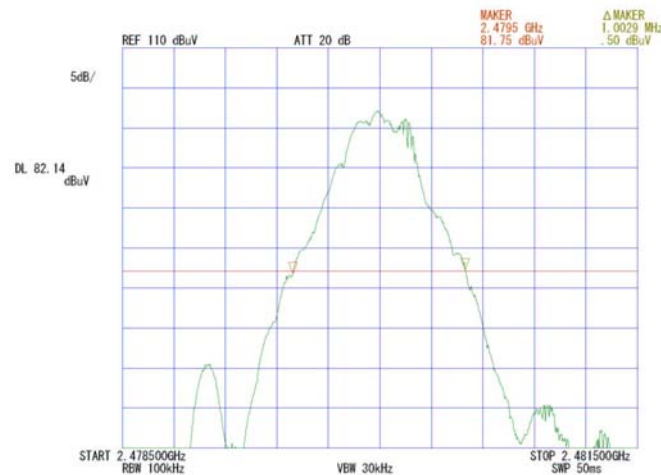
1. ch : 2402MHz/20dB Bandwidth:1002.9kHz



2. ch : 2441MHz/20dB Bandwidth:1002.9kHz



3. ch : 2480MHz/20dB Bandwidth:1002.9kHz



Channel Utilization: FCC 15.247(a)(1)(iii)

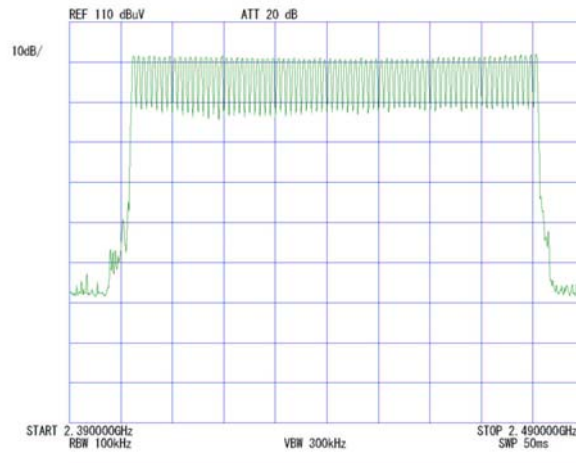
COMPANY : Shinsei industries co., ltd.
EQUIPMENT : Mobile printer
MODEL NUMBER : DP-2
SERIAL NUMBER : No.2
FCC ID : U6PBP000001
POWER : AC120V/60Hz

UL Apex Co.,Ltd. Yamakita No.2 Shielded Room

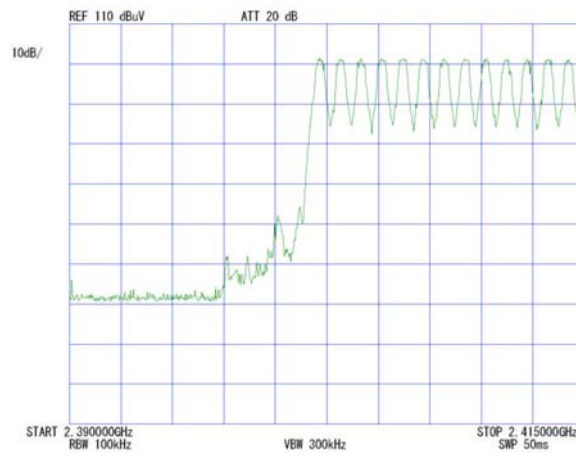
REPORTNO : 27HE0060-YK-A
REGULATION : Fcc Part15SubpartC 247(a)(1)(iii)
DATE : 2007/04/06
TEMP./HUMI : 22deg.C./32%
TEST MODE : Transmitting
ENGINEER : Makoto Hosaka

Hopping: 79ch

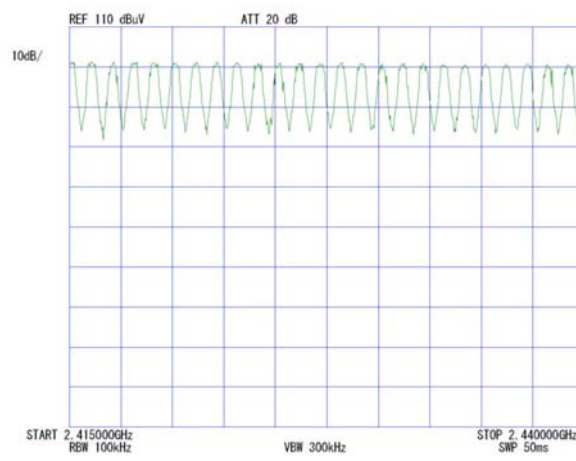
1.



2.



3.



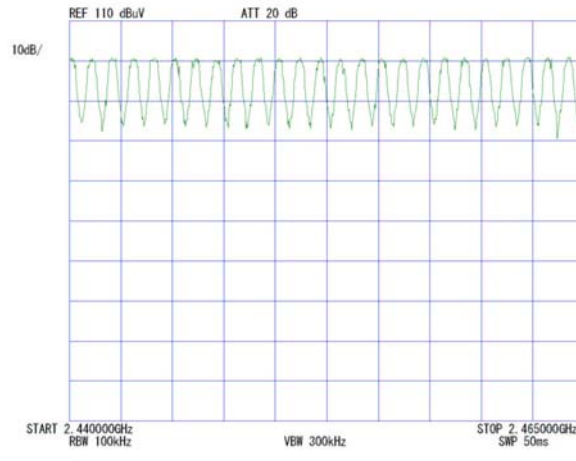
Channel Utilization: FCC 15.247(a)(1)(iii)

COMPANY : Shinsei industries co., ltd.
EQUIPMENT : Mobile printer
MODEL NUMBER : DP-2
SERIAL NUMBER : No.2
FCC ID : U6PBP000001
POWER : AC120V/60Hz

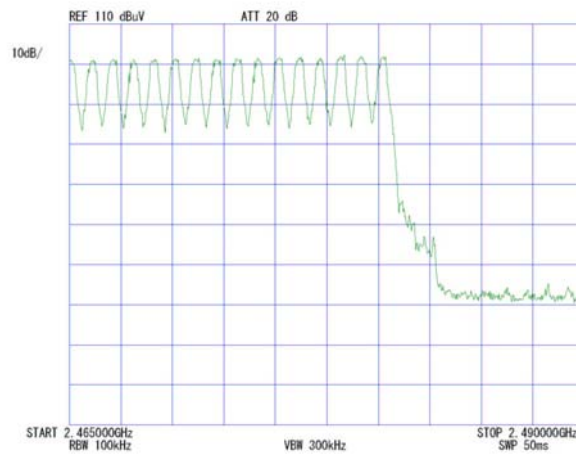
UL Apex Co.,Ltd. Yamakita No.2 Shielded Room

REPORTNO : 27HE0060-YK-A
REGULATION : Fcc Part15SubpartC 247(a)(1)(iii)
DATE : 2007/04/06
TEMP./HUMI : 22deg.C./32%
TEST MODE : Transmitting
ENGINEER : Makoto Hosaka

4.



5.

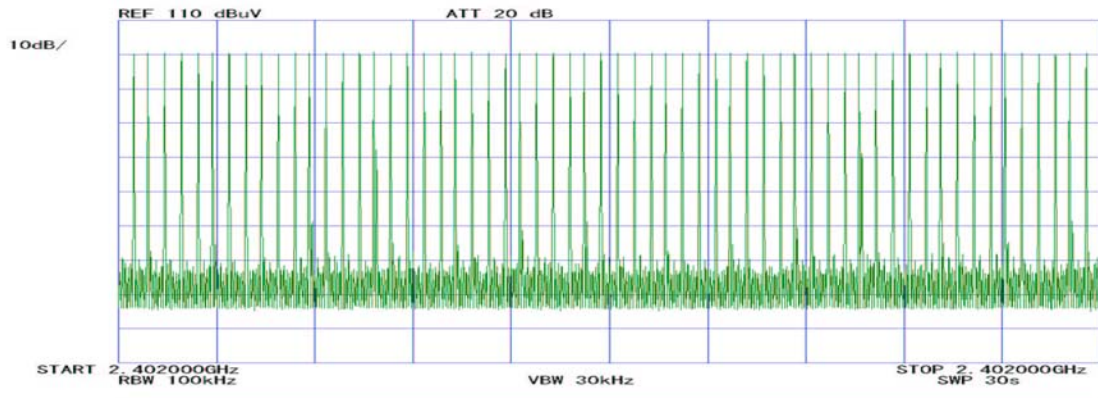


Dwell Time: FCC 15.247(a)(1)(iii)

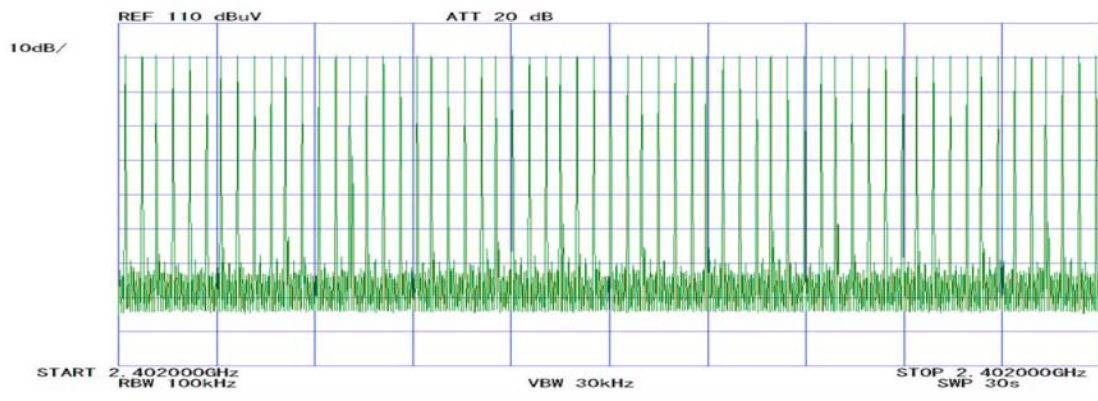
COMPANY : Shinsei industries co., ltd.
EQUIPMENT : Mobile printer
MODEL NUMBER: DP-2
SERIAL NUMBER: No.2
FCC ID : U6PBP000001
POWER : AC120V/60Hz

UL Apex Co.,Ltd. Yamakita No.2 Shielded Room
REPORTNO : 27HE0060-YK-A
REGULATION : Fcc Part15SubpartC 247(a)(1)(iii)
DATE : 2007/04/06
TEMP./HUMI : 22deg.C./32%
TEST MODE : Transmitting
ENGINEER : Makoto Hosaka

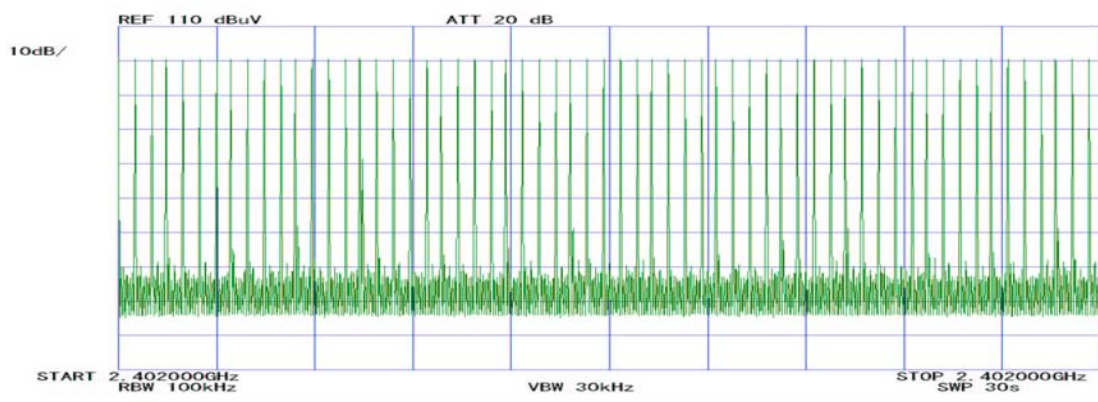
Hopping:
Count 1



Count 2



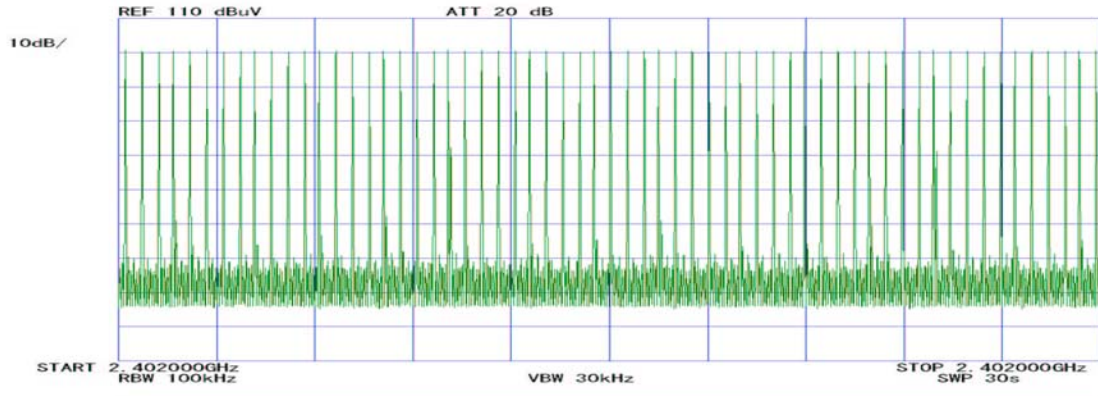
Count 3



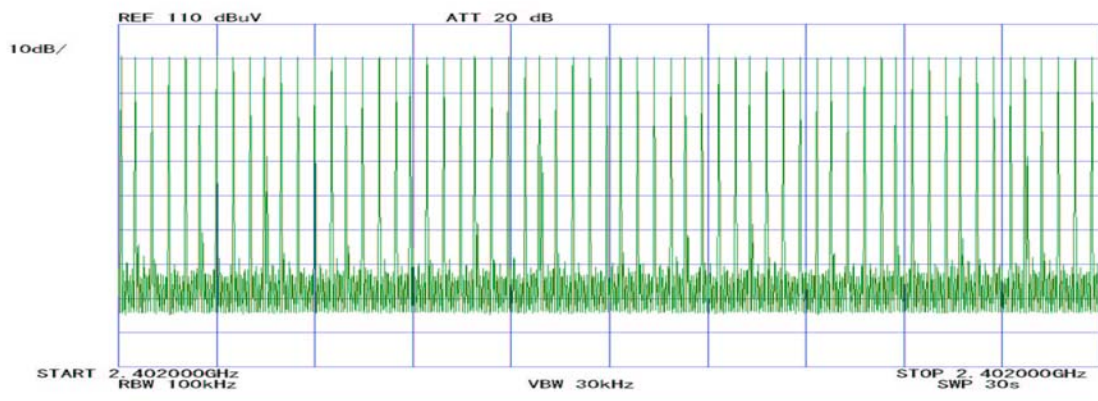
Dwell Time: FCC 15.247(a)(1)(iii)

COMPANY : Shinsei industries co., ltd.
EQUIPMENT : Mobile printer
MODEL NUMBER: DP-2
SERIAL NUMBER: No.2
FCC ID : U6PBP000001
POWER : AC120V/60Hz
Count 4

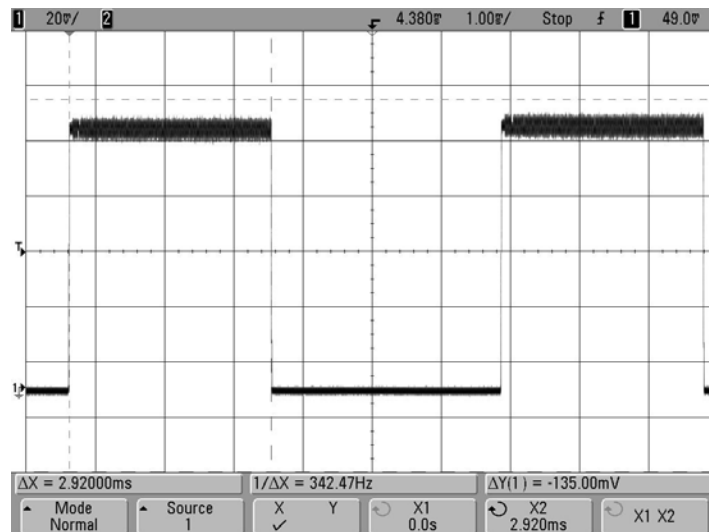
UL Apex Co.,Ltd. Yamakita No.2 Shielded Room
REPORTNO : 27HE0060-YK-A
REGULATION : Fcc Part15SubpartC 247(a)(1)(iii)
DATE : 2007/04/06
TEMP./HUMI : 22deg.C./32%
TEST MODE : Transmitting
ENGINEER : Makoto Hosaka



Count 5



Duty cycle(Hopping)



Average times of rising in 30 sec. of sweep = $(60 + 61 + 61 + 61 + 61) / 5 = 60.8$

Average times of rising in 1 sec. = $60.8 / 30s = 2.03$

Average times of rising in 0.4x = $0.4 * 79ch * 2.03 = 64.15$

Dwell time = $64.15 * 2.92 = 187.32 [ms]$

Limit : Dwell Time < 0.4[s]

Maximum Peak Conducted Output Power

UL Apex Co.,Ltd
YAMAKITA No.2 Shielded Room

COMPANY : Shinsei industries co., ltd.
EQUIPMENT : Mobile printer
MODEL NUMBER : DP-2
SERIAL NUMBER : No.2
FCC ID : U6PBP000001
POWER : AC120V/60Hz
TEST MODE : Transmitting

REPORT NO : 27HE0060-YK-A
REGULATION : Fcc Part15SubpartC 247(b)(1)
DATE : 2007/04/06
TEMP./HUMI : 22deg.C/32%

ENGINEER : Makoto Hosaka

CH	FREQ [GHz]	P/M Reading [dBm]	Cable Loss [dB]	Results [dBm]	Limit (125mW) [dBm]	MARGIN [dB]
Low	2402.00	-4.92	2.40	-2.52	20.96	23.48
Mid	2441.00	-5.42	2.40	-3.02	20.96	23.98
High	2480.00	-3.97	2.30	-1.67	20.96	22.63
Hopping	-	-7.14	2.40	-4.74	20.96	25.70

Limit: 125mW=20.96dBm

P/M: Power Meter

CABLE LOSS:KCC-D7+client's cable

Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

COMPANY : Shinsei industries co., ltd.
EQUIPMENT : Mobile printer
MODEL NUMBER: DP-2
SERIAL NUMBER: No.2
FCC ID : U6PBP000001
POWER : AC120V/60Hz

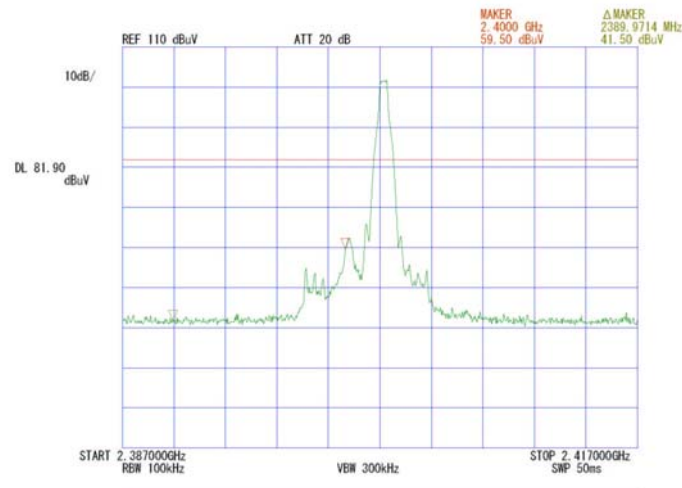
UL Apex Co.,Ltd. Yamakita No.2 Shielded Room

REPORTNO : 27HE0060-YK-A
REGULATION : Fcc Part15SubpartC 247(d)
DATE : 2007/04/06
TEMP./HUMI : 22deg.C./32%

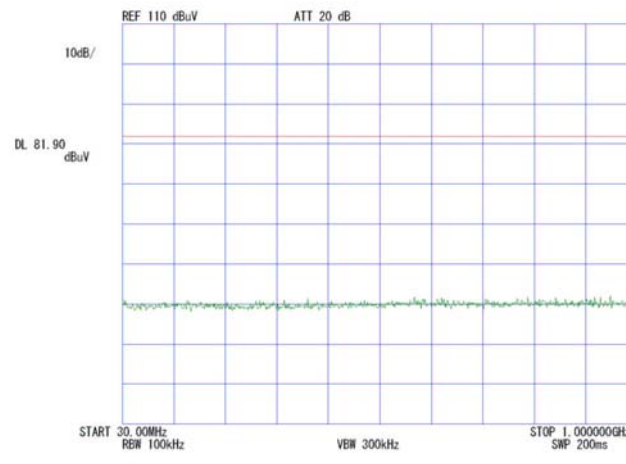
ENGINEER : Makoto Hosaka

[Transmitting]
Ch:2402MHz

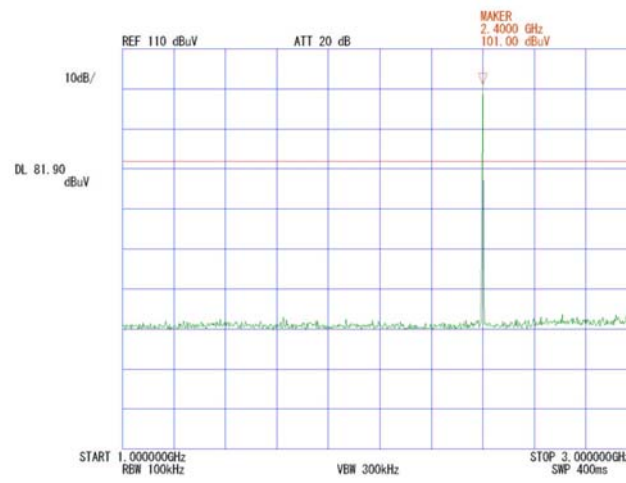
1.



2.



3.



Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

COMPANY : Shinsei industries co., ltd.
EQUIPMENT : Mobile printer
MODEL NUMBER: DP-2
SERIAL NUMBER: No.2
FCC ID : U6PBP000001
POWER : AC120V/60Hz

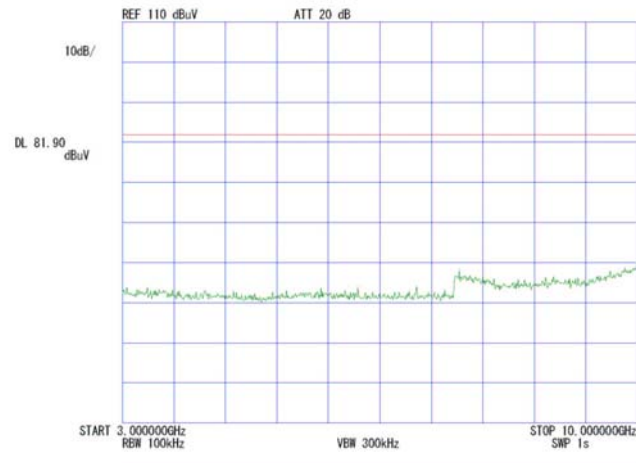
UL Apex Co.,Ltd. Yamakita No.2 Shielded Room

REPORTNO : 27HE0060-YK-A
REGULATION : Fcc Part15SubpartC 247(d)
DATE : 2007/04/06
TEMP./HUMI : 22deg.C./32%

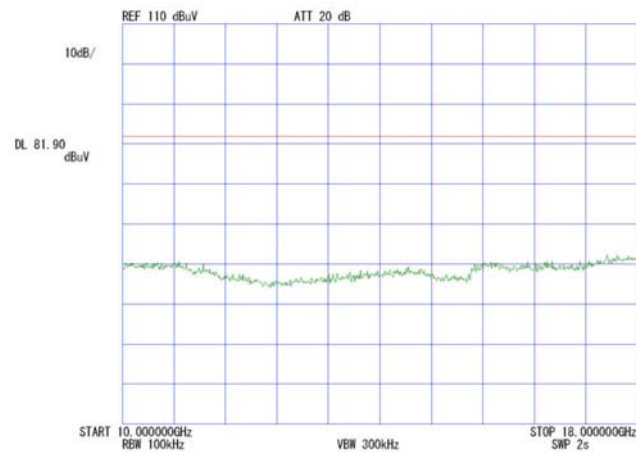
ENGINEER : Makoto Hosaka

[Transmitting]
Ch:2402MHz

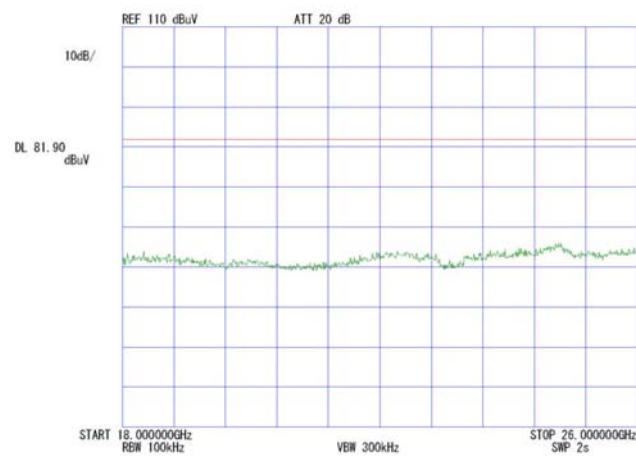
4.



5.



6.



Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

COMPANY : Shinsei industries co., ltd.
EQUIPMENT : Mobile printer
MODEL NUMBER: DP-2
SERIAL NUMBER: No.2
FCC ID : U6PBP000001
POWER : AC120V/60Hz

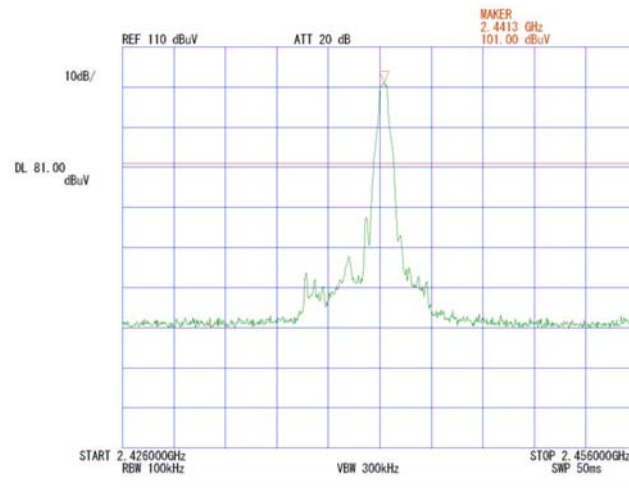
UL Apex Co.,Ltd. Yamakita No.2 Shielded Room

REPORTNO : 27HE0060-YK-A
REGULATION : Fcc Part15SubpartC 247(d)
DATE : 2007/04/06
TEMP./HUMI : 22deg.C./32%

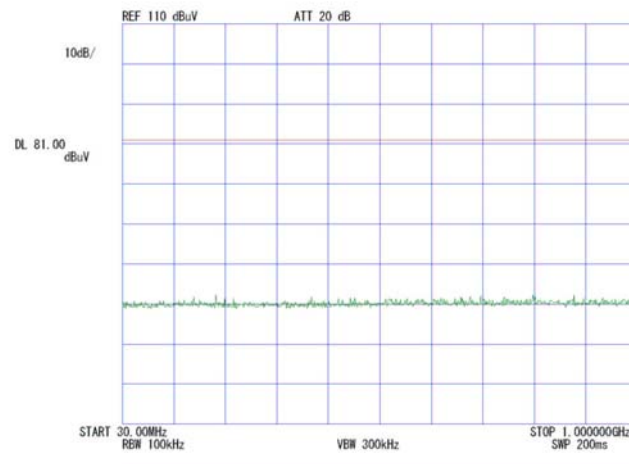
ENGINEER : Makoto Hosaka

[Transmitting]
Ch:2441MHz

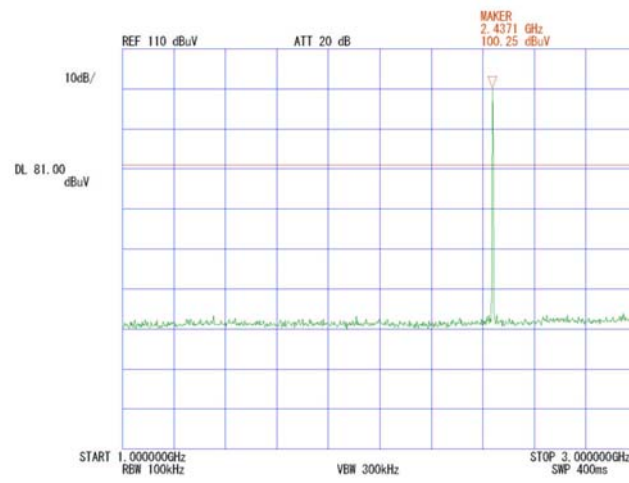
1.



2.



3.



Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

COMPANY : Shinsei industries co., ltd.
EQUIPMENT : Mobile printer
MODEL NUMBER: DP-2
SERIAL NUMBER: No.2
FCC ID : U6PBP000001
POWER : AC120V/60Hz

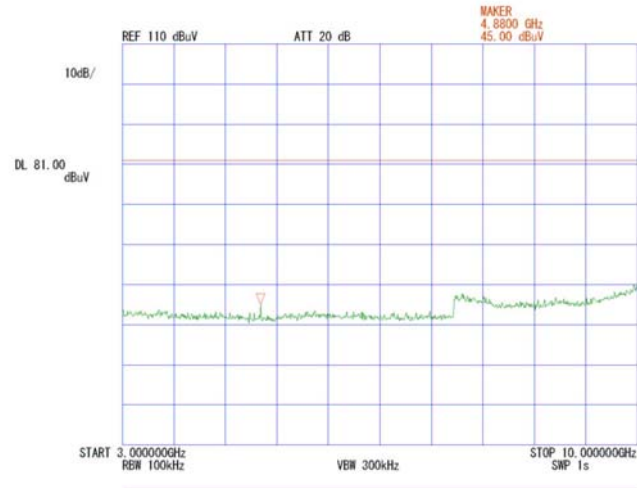
UL Apex Co.,Ltd. Yamakita No.2 Shielded Room

REPORTNO : 27HE0060-YK-A
REGULATION : Fcc Part15SubpartC 247(d)
DATE : 2007/04/06
TEMP./HUMI : 22deg.C./32%

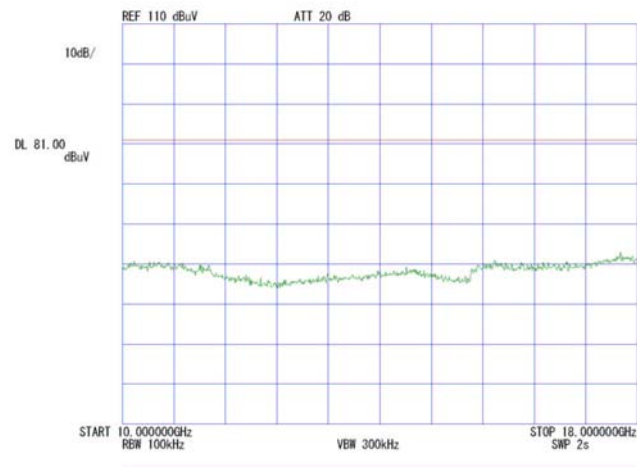
ENGINEER : Makoto Hosaka

[Transmitting]
Ch:2441MHz

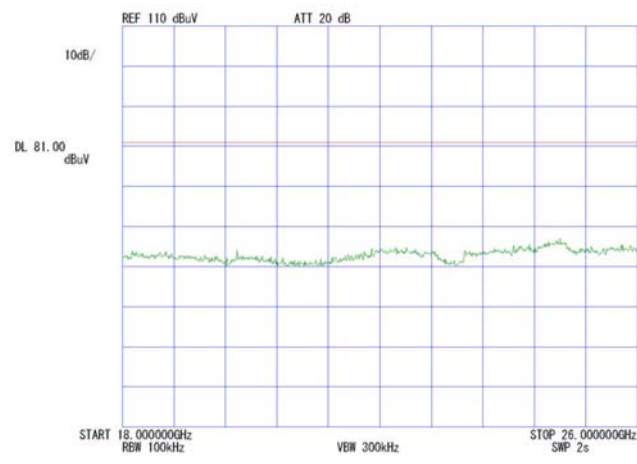
4.



5.



6.



Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

COMPANY : Shinsei industries co., ltd.
EQUIPMENT : Mobile printer
MODEL NUMBER: DP-2
SERIAL NUMBER: No.2
FCC ID : U6PBP000001
POWER : AC120V/60Hz

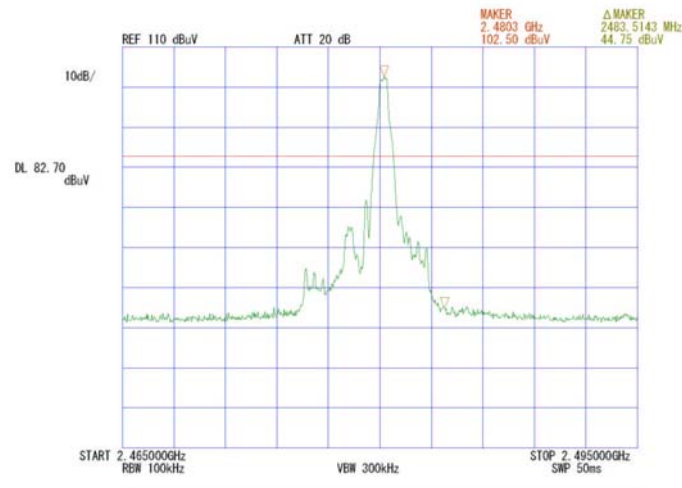
UL Apex Co.,Ltd. Yamakita No.2 Shielded Room

REPORTNO : 27HE0060-YK-A
REGULATION : Fcc Part15SubpartC 247(d)
DATE : 2007/04/06
TEMP./HUMI : 22deg.C./32%

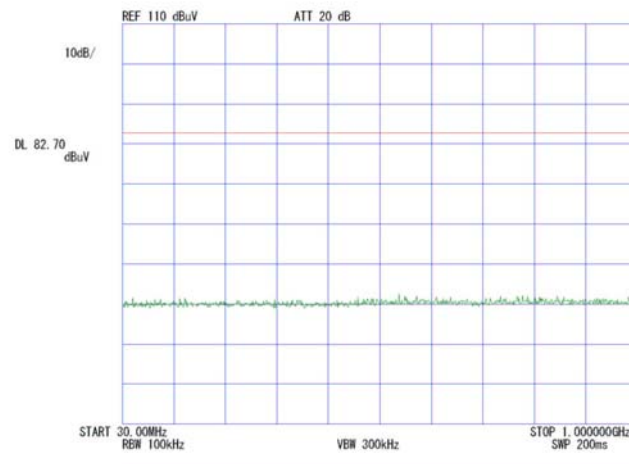
ENGINEER : Makoto Hosaka

[Transmitting]
Ch11:2480MHz

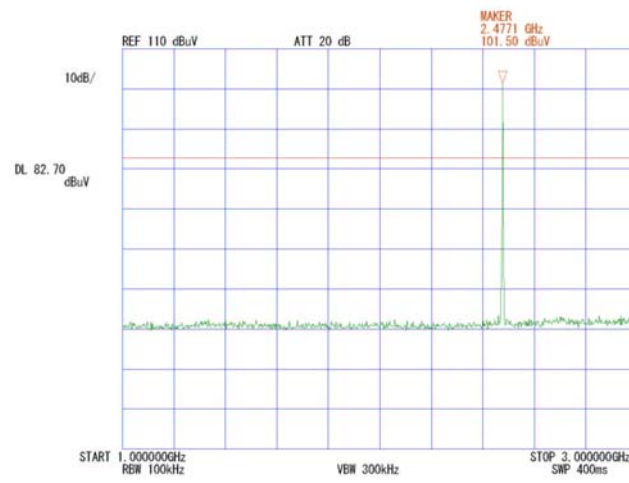
1.



2.



3.



Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

COMPANY : Shinsei industries co., ltd.
EQUIPMENT : Mobile printer
MODEL NUMBER: DP-2
SERIAL NUMBER: No.2
FCC ID : U6PBP000001
POWER : AC120V/60Hz

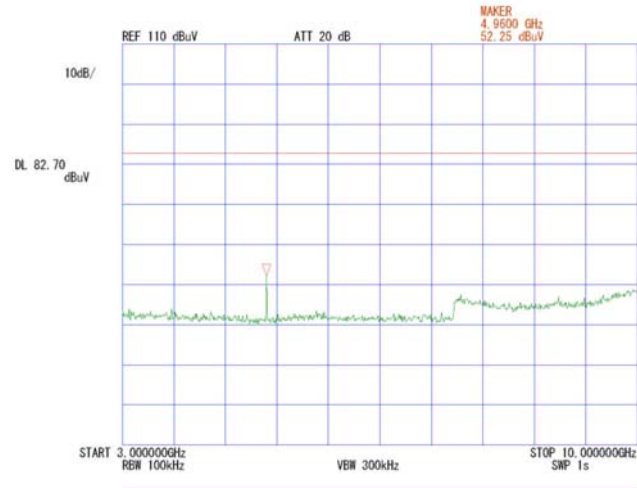
UL Apex Co.,Ltd. Yamakita No.2 Shielded Room

REPORTNO : 27HE0060-YK-A
REGULATION : Fcc Part15SubpartC 247(d)
DATE : 2007/04/06
TEMP./HUMI : 22deg.C./32%

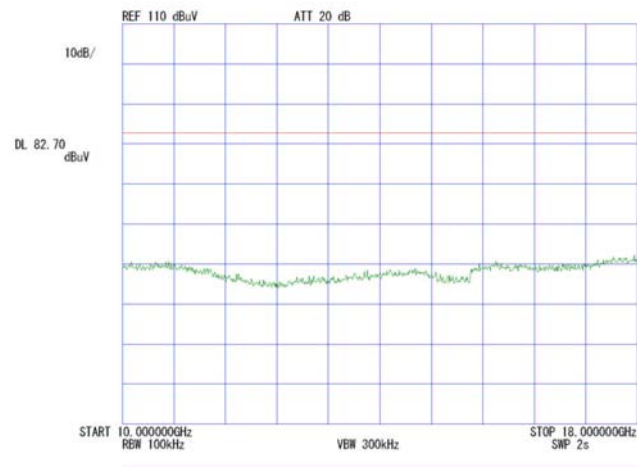
ENGINEER : Makoto Hosaka

[Transmitting]
Ch:2480MHz

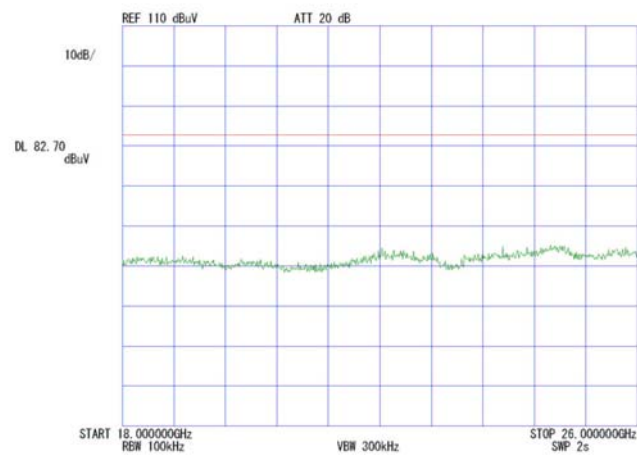
4.



5.



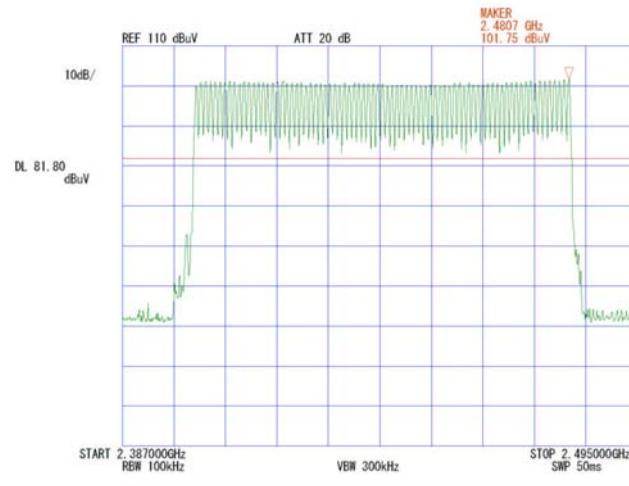
6.



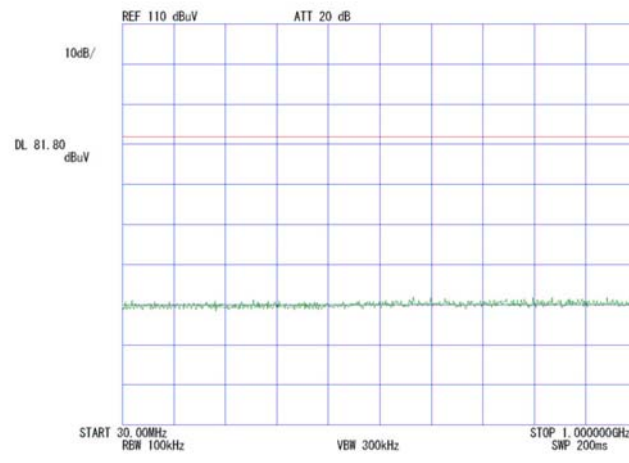
Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

COMPANY : Shinsei industries co., ltd.
EQUIPMENT : Mobile printer
MODEL NUMBER: DP-2
SERIAL NUMBER: No.2
FCC ID : U6PBP000001
POWER : AC120V/60Hz
[Hopping]
1.

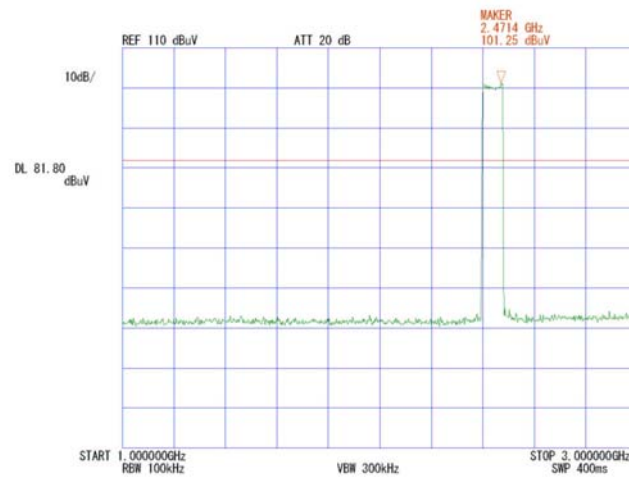
UL Apex Co.,Ltd. Yamakita No.2 Shielded Room
REPORTNO : 27HE0060-YK-A
REGULATION : Fcc Part15SubpartC 247(d)
DATE : 2007/04/06
TEMP./HUMI : 22deg.C./32%
ENGINEER : Makoto Hosaka



2.



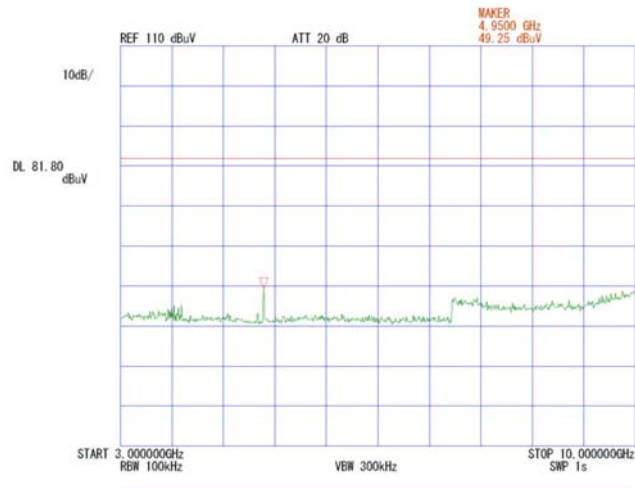
3.



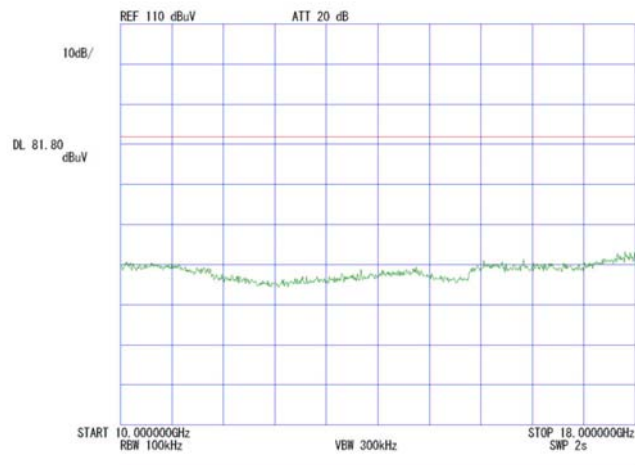
Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

COMPANY : Shinsei industries co., ltd.
EQUIPMENT : Mobile printer
MODEL NUMBER: DP-2
SERIAL NUMBER: No.2
FCC ID : U6PBP000001
POWER : AC120V/60Hz
[Hopping]
4.

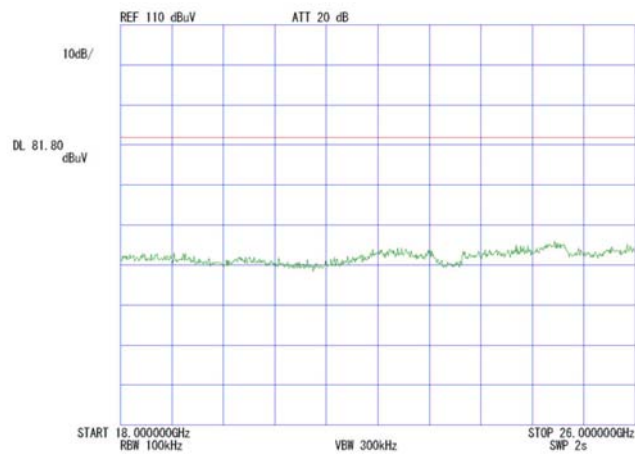
UL Apex Co.,Ltd. Yamakita No.2 Shielded Room
REPORTNO : 27HE0060-YK-A
REGULATION : Fcc Part15SubpartC 247(d)
DATE : 2007/04/06
TEMP./HUMI : 22deg.C./32%
ENGINEER : Makoto Hosaka



5.



6.



Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

COMPANY : Shinsei industries co., ltd.
EQUIPMENT : Mobile printer
MODEL NUMBER: DP-2
SERIAL NUMBER: No.2
FCC ID : U6PBP000001
POWER : AC120V/60Hz

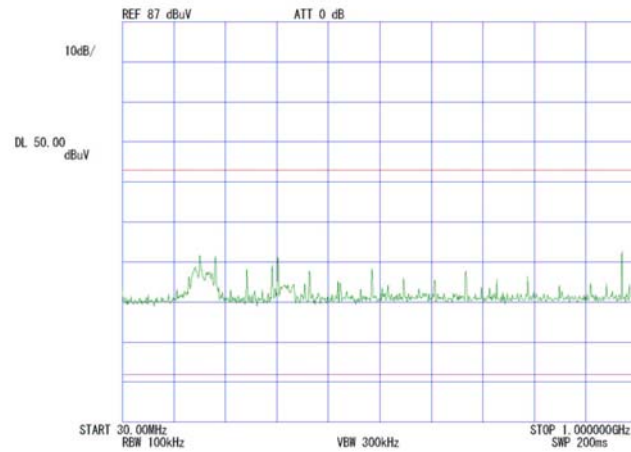
UL Apex Co.,Ltd. Yamakita No.2 Shielded Room

REPORTNO : 27HE0060-YK-A
REGULATION : Fcc Part15SubpartC 247(d)
DATE : 2007/04/06
TEMP./HUMI : 22deg.C./32%

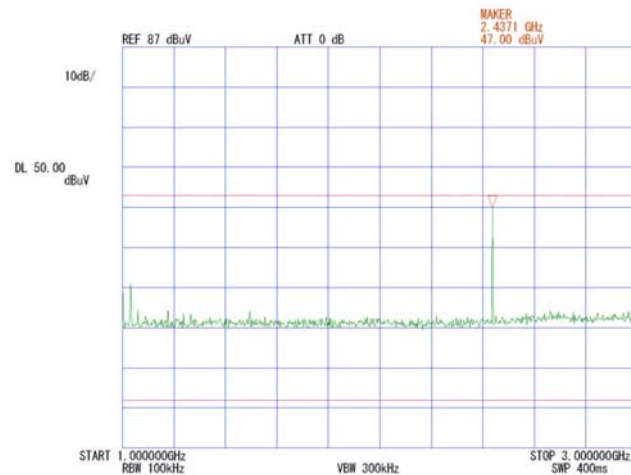
ENGINEER : Makoto Hosaka

[Receiving]
Ch:2441MHz

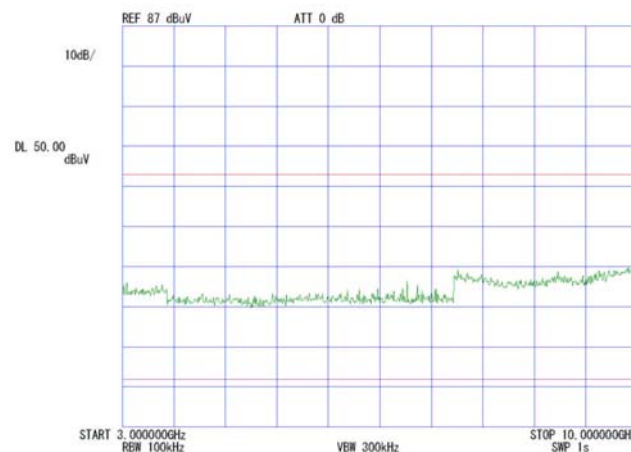
1.



2.



3.



Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

COMPANY : Shinsei industries co., ltd.
EQUIPMENT : Mobile printer
MODEL NUMBER: DP-2
SERIAL NUMBER: No.2
FCC ID : U6PBP000001
POWER : AC120V/60Hz

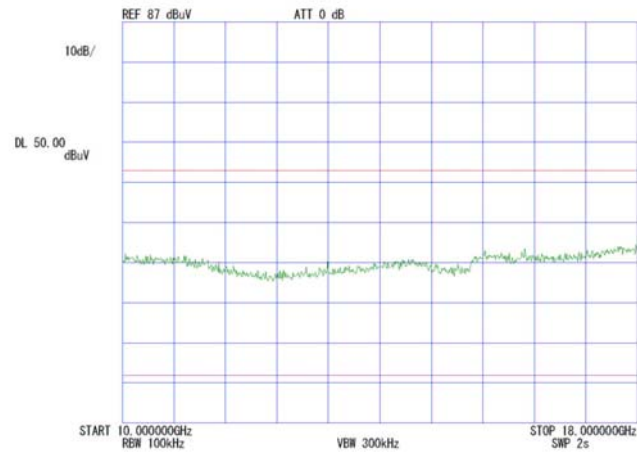
UL Apex Co.,Ltd. Yamakita No.2 Shielded Room

REPORTNO : 27HE0060-YK-A
REGULATION : Fcc Part15SubpartC 247(d)
DATE : 2007/04/06
TEMP./HUMI : 22deg.C./32%

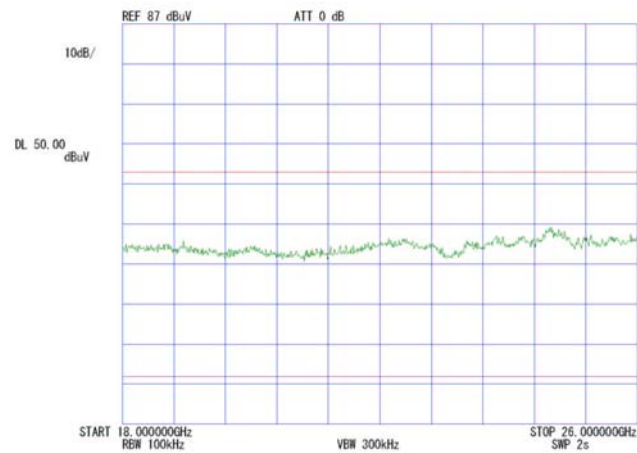
ENGINEER : Makoto Hosaka

[Receiving]
Ch:2441MHz

4.



5.



DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.1 ANECHOIC CHAMBER

Report No. : 27HE0060-YK-A

Applicant : Shinsei industries co., ltd.
Kind of Equipment : Mobile printer
Model No. : DP-2
Serial No. : No.3
Power : AC120V/60Hz
Mode : Tx 2402MHz
Remarks : -
Date : 4/5/2007
Test Distance : 3 m
Temperature : 21 °C
Humidity : 45 %
Regulation : FCC Part15C § 15.209

Engineer : Makoto Hosaka

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	176.95	BB	31.6	40.0	16.3	28.1	2.8	5.8	28.4	36.8	43.5	15.1	6.7
2.	206.44	BB	42.8	45.2	16.9	27.9	3.0	5.8	40.6	43.0	43.5	2.9	0.5
3.	265.43	BB	31.3	39.0	18.4	27.6	3.5	5.8	31.4	39.1	46.0	14.6	6.9
4.	678.29	BB	39.5	37.6	20.0	29.2	5.8	5.9	42.0	40.1	46.0	4.0	5.9
5.	737.29	BB	35.7	32.5	20.5	29.1	6.1	5.9	39.1	35.9	46.0	6.9	10.1
6.	914.23	BB	30.8	32.6	22.2	28.8	6.8	5.9	36.9	38.7	46.0	9.1	7.3

CALCULATION: READING + ANT. FACTOR + CABLE LOSS - AMP. GAIN + ATTEN.

■ ANTENNA: KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz

■ CABLE: KCC-30/31/32/34 ■ PREAMP: KAF-05 (8447D) ■ EMI RECEIVER: KTR-02 (ESCS30)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.1 ANECHOIC CHAMBER

Report No. : 27HE0060-YK-A

Applicant : Shinsei industries co., ltd.
Kind of Equipment : Mobile printer
Model No. : DP-2
Serial No. : No.3
Power : AC120V/60Hz
Mode : Tx 2402MHz
Remarks : PK RBW:1MHz, VBW:1MHz
Date : 4/6/2007
Test Distance : 3 m
Temperature : 24 °C Engineer : Makoto Hosaka
Humidity : 30 %
Regulation : FCC Part15C § 15.209(PK Detection)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	1091.17	BB	50.6	49.9	23.8	37.6	2.9	10.0	49.7	49.0	74.0	24.3	25.0
2.	2390.00	BB	43.5	43.4	29.8	36.8	4.0	9.9	50.4	50.3	74.0	23.6	23.7
3.	4804.00	BB	59.7	59.1	33.8	37.1	5.8	0.5	62.7	62.1	74.0	11.3	11.9
4.	7206.00	BB	40.9	41.9	37.5	36.9	6.6	0.5	48.6	49.6	74.0	25.4	24.4
5.	9608.00	BB	42.4	41.5	38.9	37.0	7.6	1.0	52.9	52.0	74.0	21.1	22.0
6.	12010.00	BB	41.5	40.6	40.7	36.2	9.0	0.4	55.4	54.5	74.0	18.6	19.5

CALCULATION: READING + ANT. FACTOR + CABLE LOSS - AMP. GAIN + ATTEN.

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz

■ CABLE: KCC-D3/D7 ■ PREAMP: KAF-02 (8449B) ■ SPECTRUM ANALYZER: KSA-04 (R3271A)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.1 ANECHOIC CHAMBER

Report No. : 27HE0060-YK-A

Applicant : Shinsei industries co., ltd.
 Kind of Equipment : Mobile printer
 Model No. : DP-2
 Serial No. : No.3
 Power : AC120V/60Hz
 Mode : Tx 2402MHz
 Remarks : AV RBW:1MHz, VBW:10Hz
 Date : 4/6/2007
 Test Distance : 3 m
 Temperature : 24 °C
 Humidity : 30 %
 Regulation : FCC Part15C § 15.209(AV Detection)

Engineer : Makoto Hosaka

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	1091.17	BB	45.8	45.0	23.8	37.6	2.9	10.0	44.9	44.1	54.0	9.1	9.9
2.	2390.00	BB	33.8	33.8	29.8	36.8	4.0	9.9	40.7	40.7	54.0	13.3	13.3
3.	4804.00	BB	43.8	43.0	33.8	37.1	5.8	0.5	46.8	46.0	54.0	7.2	8.0
4.	7206.00	BB	31.0	31.5	37.5	36.9	6.6	0.5	38.7	39.2	54.0	15.3	14.8
5.	9608.00	BB	32.0	31.7	38.9	37.0	7.6	1.0	42.5	42.2	54.0	11.5	11.8
6.	12010.00	BB	31.1	31.2	40.7	36.2	9.0	0.4	45.0	45.1	54.0	9.0	8.9

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz

■ CABLE: KCC-D3/D7 ■ PREAMP: KAF-02 (8449B) ■ SPECTRUM ANALYZER: KSA-04 (R3271A)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.1 ANECHOIC CHAMBER

Report No. : 27HE0060-YK-A

Applicant : Shinsei industries co., ltd.
 Kind of Equipment : Mobile printer
 Model No. : DP-2
 Serial No. : No. 3
 Power : AC120V/60Hz
 Mode : Tx 2441MHz
 Remarks : -
 Date : 4/5/2007
 Test Distance : 3 m
 Temperature : 21 °C
 Humidity : 45 %
 Regulation : FCC Part15C § 15.209

Engineer : Makoto Hosaka

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	176.95	BB	34.4	40.9	16.3	28.1	2.8	5.8	31.2	37.7	43.5	12.3	5.8
2.	206.44	BB	40.7	45.5	16.9	27.9	3.0	5.8	38.5	43.3	43.5	5.0	0.2
3.	265.43	BB	37.1	38.8	18.4	27.6	3.5	5.8	37.2	38.9	46.0	8.8	7.1
4.	678.29	BB	38.1	35.6	20.0	29.2	5.8	5.9	40.6	38.1	46.0	5.4	7.9
5.	737.29	BB	36.6	34.4	20.5	29.1	6.1	5.9	40.0	37.8	46.0	6.0	8.2
6.	914.23	BB	31.8	32.0	22.2	28.8	6.8	5.9	37.9	38.1	46.0	8.1	7.9

CALCULATION: READING + ANT. FACTOR + CABLE LOSS - AMP. GAIN + ATTEN.

■ ANTENNA: KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz

■ CABLE: KCC-30/31/32/34 ■ PREAMP: KAF-05 (8447D) ■ EMI RECEIVER: KTR-02 (ESCS30)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.1 ANECHOIC CHAMBER

Report No. : 27HE0060-YK-A

Applicant : Shinsei industries co., ltd.
Kind of Equipment : Mobile printer
Model No. : DP-2
Serial No. : No.3
Power : AC120V/60Hz
Mode : Tx 2441MHz
Remarks : PK RBW:1MHz, VBW:1MHz
Date : 4/6/2007
Test Distance : 3 m
Temperature : 20 °C Engineer : Makoto Hosaka
Humidity : 30 %
Regulation : FCC Part15C § 15.209 (PK Detection)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	1091.17	BB	47.5	51.0	23.8	37.6	2.9	10.0	46.6	50.1	74.0	27.4	23.9
2.	4882.00	BB	59.3	56.8	34.0	37.2	5.8	0.5	62.4	59.9	74.0	11.6	14.1
3.	7323.00	BB	40.4	39.4	37.6	37.0	6.7	0.5	48.2	47.2	74.0	25.8	26.8
4.	9764.00	BB	42.4	42.9	38.8	37.0	7.6	0.9	52.7	53.2	74.0	21.3	20.8
5.	12205.00	BB	42.4	42.2	40.5	35.8	8.8	0.5	56.4	56.2	74.0	17.6	17.8

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ ANTENNA:KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz

■ CABLE:KCC-D3/D7 ■ PREAMP:KAF-02 (8449B) ■ SPECTRUM ANALYZER:KSA-04 (R3271A)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.1 ANECHOIC CHAMBER

Report No. : 27HE0060-YK-A

Applicant : Shinsei industries co., ltd.
Kind of Equipment : Mobile printer
Model No. : DP-2
Serial No. : No.3
Power : AC120V/60Hz
Mode : Tx 2441MHz
Remarks : AV RBW:1MHz, VBW:10Hz
Date : 4/6/2007
Test Distance : 3 m
Temperature : 24 °C Engineer : Makoto Hosaka
Humidity : 30 %
Regulation : FCC Part15C § 15.209(AV Detection)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	1091.17	BB	37.9	44.3	23.8	37.6	2.9	10.0	37.0	43.4	54.0	17.0	10.6
2.	4882.00	BB	42.8	42.0	34.0	37.2	5.8	0.5	45.9	45.1	54.0	8.1	8.9
3.	7323.00	BB	30.5	29.4	37.6	37.0	6.7	0.5	38.3	37.2	54.0	15.7	16.8
4.	9764.00	BB	32.1	32.4	38.8	37.0	7.6	0.9	42.4	42.7	54.0	11.6	11.3
5.	12205.00	BB	31.8	31.8	40.5	35.8	8.8	0.5	45.8	45.8	54.0	8.2	8.2

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ ANTENNA:KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz

■ CABLE:KCC-D3/D7 ■ PREAMP:KAF-02 (8449B) ■ SPECTRUM ANALYZER:KSA-04 (R3271A)

Page:

DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.1 ANECHOIC CHAMBER

Report No. : 27HE0060-YK-A

Applicant : Shinsei industries co., ltd.
Kind of Equipment : Mobile printer
Model No. : DP-2
Serial No. : No. 3
Power : AC120V/60Hz
Mode : Tx 2480MHz
Remarks : -
Date : 4/5/2007
Test Distance : 3 m
Temperature : 21 °C
Humidity : 45 %
Regulation : FCC Part15C § 15.209

Engineer : Makoto Hosaka

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	176.95	BB	32.6	40.4	16.3	28.1	2.8	5.8	29.4	37.2	43.5	14.1	6.3
2.	206.44	BB	42.5	45.0	16.9	27.9	3.0	5.8	40.3	42.8	43.5	3.2	0.7
3.	265.43	BB	35.4	39.0	18.4	27.6	3.5	5.8	35.5	39.1	46.0	10.5	6.9
4.	678.29	BB	38.9	36.2	20.0	29.2	5.8	5.9	41.4	38.7	46.0	4.6	7.3
5.	737.29	BB	37.2	33.3	20.5	29.1	6.1	5.9	40.6	36.7	46.0	5.4	9.3
6.	914.23	BB	31.7	32.8	22.2	28.8	6.8	5.9	37.8	38.9	46.0	8.2	7.1

CALCULATION: READING + ANT. FACTOR + CABLE LOSS - AMP. GAIN + ATTEN.

■ ANTENNA: KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz

■ CABLE: KCC-30/31/32/34 ■ PREAMP: KAF-05 (8447D) ■ EMI RECEIVER: KTR-02 (ESCS30)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.1 ANECHOIC CHAMBER

Report No. : 27HE0060-YK-A

Applicant : Shinsei industries co., ltd.
Kind of Equipment : Mobile printer
Model No. : DP-2
Serial No. : No.3
Power : AC120V/60Hz
Mode : Tx 2480MHz
Remarks : PK RBW:1MHz, VBW:1MHz
Date : 4/6/2007
Test Distance : 3 m
Temperature : 24 °C Engineer : Makoto Hosaka
Humidity : 30 %
Regulation : FCC Part15C § 15.209(PK Detection)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	1091.17	BB	51.0	50.5	23.8	37.6	2.9	10.0	50.1	49.6	74.0	23.9	24.4
2.	2483.50	BB	53.2	51.5	29.7	36.8	4.0	9.9	60.0	58.3	74.0	14.0	15.7
3.	4960.00	BB	60.5	58.7	34.2	37.3	5.8	0.4	63.6	61.8	74.0	10.4	12.2
4.	7440.00	BB	40.9	40.5	37.8	37.0	6.7	0.5	48.9	48.5	74.0	25.1	25.5
5.	9920.00	BB	42.6	43.0	38.7	36.9	7.6	0.8	52.8	53.2	74.0	21.2	20.8
6.	12400.00	BB	42.6	41.2	40.4	35.4	8.6	0.6	56.8	55.4	74.0	17.2	18.6

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ ANTENNA:KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz

■ CABLE:KCC-D3/D7 ■ PREAMP:KAF-02 (8449B) ■ SPECTRUM ANALYZER:KSA-04 (R3271A)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.1 ANECHOIC CHAMBER

Report No. : 27HE0060-YK-A

Applicant : Shinsei industries co., ltd.
Kind of Equipment : Mobile printer
Model No. : DP-2
Serial No. : No. 3
Power : AC120V/60Hz
Mode : Tx 2480MHz
Remarks : AV RBW:1MHz, VBW:10Hz
Date : 4/6/2007
Test Distance : 3 m
Temperature : 24 °C Engineer : Makoto Hosaka
Humidity : 30 %
Regulation : FCC Part15C § 15.209 (AV Detection)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	1091.17	BB	45.4	45.4	23.8	37.6	2.9	10.0	44.5	44.5	54.0	9.5	9.5
2.	2483.50	BB	41.8	41.3	29.7	36.8	4.0	9.9	48.6	48.1	54.0	5.4	5.9
3.	4960.00	BB	43.4	42.4	34.2	37.3	5.8	0.4	46.5	45.5	54.0	7.5	8.5
4.	7440.00	BB	30.9	30.7	37.8	37.0	6.7	0.5	38.9	38.7	54.0	15.1	15.3
5.	9920.00	BB	32.1	33.1	38.7	36.9	7.6	0.8	42.3	43.3	54.0	11.7	10.7
6.	12400.00	BB	32.0	31.9	40.4	35.4	8.6	0.6	46.2	46.1	54.0	7.8	7.9

CALCULATION: READING + ANT. FACTOR + CABLE LOSS - AMP. GAIN + ATTEN.

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz

■ CABLE: KCC-D3/D7 ■ PREAMP: KAF-02 (8449B) ■ SPECTRUM ANALYZER: KSA-04 (R3271A)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.1 ANECHOIC CHAMBER

Report No. : 27HE0060-YK-A

Applicant : Shinsei industries co., ltd.
 Kind of Equipment : Mobile printer
 Model No. : DP-2
 Serial No. : No. 3
 Power : AC120V/60Hz
 Mode : Rx 2441MHz
 Remarks : -
 Date : 4/5/2007
 Test Distance : 3 m
 Temperature : 21 °C
 Humidity : 45 %
 Regulation : FCC Part15B § 15.109(a)

Engineer : Makoto Hosaka

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	176.95	BB	33.5	41.6	16.3	28.1	2.8	5.8	30.3	38.4	43.5	13.2	5.1
2.	206.44	BB	41.1	44.8	16.9	27.9	3.0	5.8	38.9	42.6	43.5	4.6	0.9
3.	265.43	BB	36.3	37.6	18.4	27.6	3.5	5.8	36.4	37.7	46.0	9.6	8.3
4.	678.29	BB	40.2	36.1	20.0	29.2	5.8	5.9	42.7	38.6	46.0	3.3	7.4
5.	737.28	BB	35.9	35.2	20.5	29.1	6.1	5.9	39.3	38.6	46.0	6.7	7.4
6.	914.23	BB	31.1	33.0	22.2	28.8	6.8	5.9	37.2	39.1	46.0	8.8	6.9

CALCULATION: READING + ANT. FACTOR + CABLE LOSS - AMP. GAIN + ATTEN.

■ ANTENNA: KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz

■ CABLE: KCC-30/31/32/34 ■ PREAMP: KAF-05 (8447D) ■ EMI RECEIVER: KTR-02 (ESCS30)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.1 ANECHOIC CHAMBER

Report No. : 27HE0060-YK-A

Applicant : Shinsei industries co., ltd.
Kind of Equipment : Mobile printer
Model No. : DP-2
Serial No. : No.3
Power : AC120V/60Hz
Mode : Rx 2441MHz
Remarks : PK RBW:1MHz, VBW:1MHz
Date : 4/5/2007
Test Distance : 3 m
Temperature : 21 °C
Humidity : 45 %
Regulation : FCC Part15B CLASS B (PK)

Engineer : Makoto Hosaka

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	1032.29	BB	56.6	58.5	23.6	37.7	2.9	0.0	45.4	47.3	74.0	28.6	26.7
2.	1091.23	BB	57.0	59.5	23.8	37.6	2.9	0.0	46.1	48.6	74.0	27.9	25.4
3.	1445.10	BB	51.6	48.2	25.4	37.0	3.3	0.0	43.3	39.9	74.0	30.7	34.1
4.	2241.43	BB	47.2	46.0	29.9	36.7	3.9	0.0	44.3	43.1	74.0	29.7	30.9

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ ANTENNA:KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz

■ CABLE:KCC-D3/D7 ■ PREAMP:KAF-02 (8449B) ■ SPECTRUM ANALYZER:KSA-04 (R3271A)

Page:

DATA OF RADIATION TEST

UL Apex Co.,Ltd.

YAMAKITA No.1 ANECHOIC CHAMBER

Report No. : 27HE0060-YK-A

Applicant : Shinsei industries co., ltd.
Kind of Equipment : Mobile printer
Model No. : DP-2
Serial No. : No.3
Power : AC120V/60Hz
Mode : Rx 2441MHz
Remarks : AV RBW:1MHz, VBW:10Hz
Date : 4/5/2007
Test Distance : 3 m
Temperature : 21 °C
Humidity : 45 %
Regulation : FCC Part15B § 15.109(a)

Engineer : Makoto Hosaka

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER [dB μ V]					HOR [dB μ V/m]	VER [dB μ V/m]		HOR [dB]	VER [dB]
1.	1032.29	BB	53.2	56.0	23.6	37.7	2.9	0.0	42.0	44.8	54.0	12.0	9.2
2.	1091.23	BB	54.0	57.3	23.8	37.6	2.9	0.0	43.1	46.4	54.0	10.9	7.6
3.	1445.10	BB	46.9	43.2	25.4	37.0	3.3	0.0	38.6	34.9	54.0	15.4	19.1
4.	2241.43	BB	40.3	36.7	29.9	36.7	3.9	0.0	37.4	33.8	54.0	16.6	20.2

CALCULATION: READING + ANT. FACTOR + CABLE LOSS - AMP. GAIN + ATTEN.

■ ANTENNA:KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz

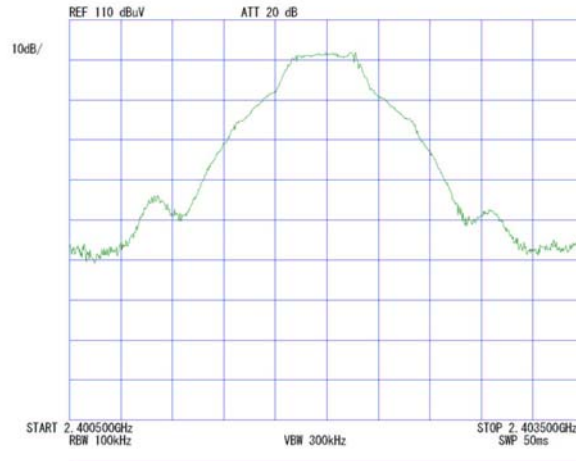
■ CABLE:KCC-D3/D7 ■ PREAMP:KAF-02 (8449B) ■ SPECTRUM ANALYZER:KSA-04 (R3271A)

Occupied Bandwidth(99%)

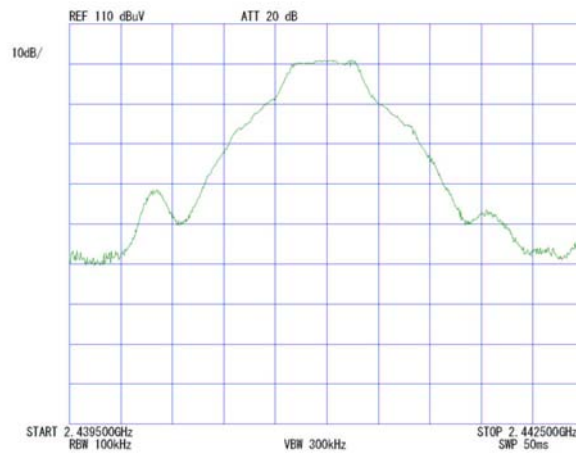
COMPANY : Shinsei industries co., ltd.
EQUIPMENT : Mobile printer
MODEL NUMBER: DP-2
SERIAL NUMBER: No.2
FCC ID : U6PBP000001
POWER : AC120V/60Hz

UL Apex Co.,Ltd. Yamakita No.2 Shielded Room
REPORTNO : 27HE0060-YK-A
REGULATION : RSS-210
DATE : 2007/04/06
TEMP./HUMI : 22deg.C./32%
TEST MODE : Transmitting
ENGINEER : Makoto Hosaka

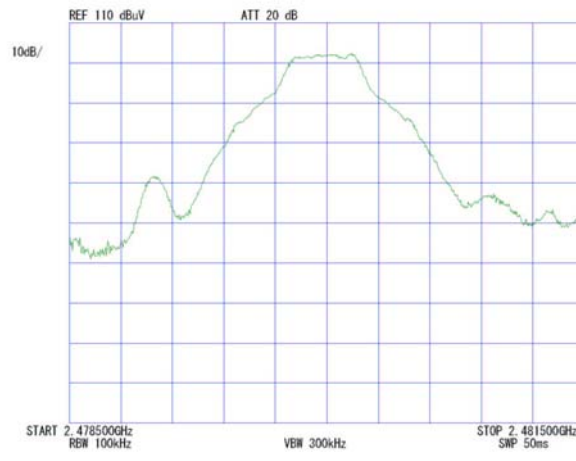
1. ch : 2402MHz/Occupied Bandwidth:931kHz



2. ch : 2441MHz/Occupied Bandwidth:934kHz



3. ch : 2480MHz/Occupied Bandwidth:939kHz

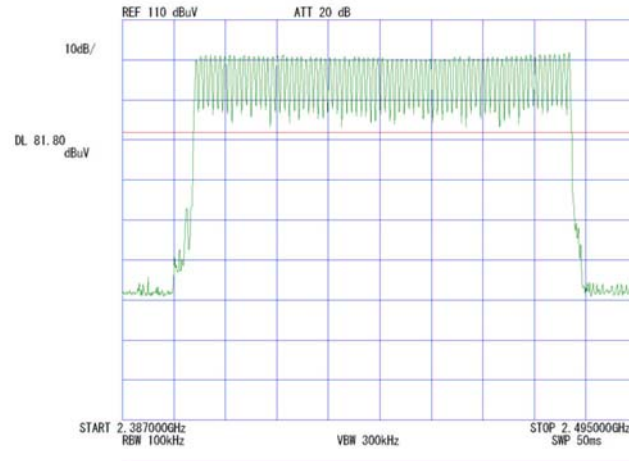


Occupied Bandwidth(99%)

COMPANY : Shinsei industries co., ltd.
EQUIPMENT : Mobile printer
MODEL NUMBER : DP-2
SERIAL NUMBER : No.2
FCC ID : U6PBP000001
POWER : AC120V/60Hz

UL Apex Co.,Ltd. Yamakita No.2 Shielded Room
REPORTNO : 27HE0060-YK-A
REGULATION : RSS-210
DATE : 2007/04/06
TEMP./HUMI : 22deg.C./32%
TEST MODE : Transmitting
ENGINEER : Makoto Hosaka

4. Hopping/Occupied Bandwidth:78.3MHz



APPENDIX 3 Test Instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
YA-CE	Conducted emission(software)	UL-Apex	CE(Ver.1.6)	CE	-
KCC-14/15/16 /18/KPL-01/K RM-01	Coaxial Cable/Pulse Limiter/RF Relay Matrix	Fujikura/Suhner/PMM/ TSJ	5D-2W/8D-2W/S04272 B/S04272B/PL01/-	CE	2006/05/16 * 12
KLS-01	LISN(AMN)	Schwarzbeck	NSLK8126	CE	2006/04/19 * 12
KSA-01	Spectrum Analyzer	Advantest	R3365	CE/RE	2006/07/01 * 12
KTR-02	Test Receiver	Rohde & Schwarz	ESCS30	CE	2006/11/25 * 12
KOS-04	Humidity Indicator	SATO	PC-5000TRH	CE	2006/07/14 * 24
KJM-03	Measure	TAJIMA	GL19-55	CE	-
YA-RE	Radiated emission(software)	UL-Apex	RE(Ver.1.5)	RE	-
KAEC-01(NSA)	Anechoic Chamber	JSE	Semi 3m	RE	2006/08/31 * 12
KAF-05	Pre Amplifier	Agilent	8447D	RE	2006/04/21 * 12
KAT6-01	Attenuator	INMET	18N-6dB	RE	2007/03/28 * 12
KBA-03	Biconical Antenna	Schwarzbeck	BBA9106	RE	2007/01/06 * 12
KCC-30/31/32 /34/KRM-03	Coaxial Cable/RF Relay Matrix	Fujikura/Suhner/TSJ	5D-2W/S04272B/RFM- E421	RE	2006/11/27 * 12
KLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2007/01/06 * 12
KSA-04	Spectrum Analyzer	Advantest	R3271A	RE/AT 1,2,3,4,6	2006/09/05 * 12
KOS-02	Humidity Indicator	Custom	CTH-190	CE	2006/07/10 * 24
KAF-02	Pre Amplifier	Hewlett Packard	8449B	RE	2006/04/24 * 12
KAT10-S1	Attenuator	Agilent	8449D 010	RE	2006/04/11 * 12
KCC-D7	Coaxial Cable	Advantest	A01002	AT 1,2,3,4,5,6	2006/04/11 * 12
KCC-D3/D7	Coaxial Cable	Rosenberger/Advantest	2201/JUN-08-01-061	RE	2006/04/11 * 12
KFL-01	Highpass Filter	Hewlett Packard	84300 80038	RE	2006/04/11 * 12
KHA-01	Horn Antenna	A.H.Systems	SAS-200/571	RE	2006/08/17 * 12
KHA-03	Horn Antenna	EMCO	3160-09	RE	2006/04/10 * 12
MPM-05	Power Reflection meter	Rohde & Schwarz	NRVD	AT 5	2006/07/01 * 12
MPSE-03	Power sensor	Agilent	E9327A	AT 5	2007/01/10 * 12
KST-08	Oscilloscope	Agilent	DSO6052A	AT 4	2006/05/18 * 12

The expiration date of the calibration is the end of the expired month .

All equipment is calibrated with traceable calibrations . Each calibration is traceable to the national or international standards .

Test Item :

CE: Conducted Emission

RE: Out of Band Emission (Radiated)

AT: Antenna Terminal Conducted Test

1: Carrier Frequency Separation

2: 20dB Bandwidth

3: Number of Hopping Frequency

4: Dwell time

5: Maximum Peak Output Power

6: Out of Band Emission (Conducted)