



EMI TEST REPORT

Test Report No. : 26BE0123-HO-1b

Applicant : **KYOCERA MITA Corporation**
Type of Equipment : **RFID Reader/Writer**
Model No. : **B5J-0452**
Test standard : **FCC Part 15 Subpart C : 2005
Section 15.207 and 15.225**
FCC ID : **E52B5J0452**
Test Result : **Complied**

1. This test report shall not be reproduced in full or partial, without the written approval of UL Apex Co., Ltd.
2. The results in this report apply only to the sample tested.
3. This equipment is in compliance with above regulation. We hereby certify that the data contain a true representation of the EMC profile.
4. The test results in this report are traceable to the national or international standards.

Date of test: December 29, 2005 to January 26, 2006

Tested by:

Norihisa Hashimoto
EMC Services

Approved by :

Tetsuo Maeno
Site Manger of
EMC Services

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(01.06.05)

CONTENTS	PAGE
SECTION 1: Client information.....	3
SECTION 2: Equipment under test (E.U.T.)	3
SECTION 3: Test specification, procedures & results	4
SECTION 4: Operation of E.U.T. during testing.....	6
SECTION 5: Conducted emission	8
SECTION 6: Radiated emission (Fundamental , Spurious Emission and Spectrum Mask)	9
SECTION 7: 99% Occupied Bandwidth	10
SECTION 8: Frequency Tolerance	10
APPENDIX 1: Photographs of test setup.....	11
Conducted Emission	11
Radiated emission	12
Worst Case Position (X-axis)	13
APPENDIX 2: Test instruments	14
APPENDIX 3: Data of EMI test	15
Conducted emission	15
Radiated emission(Fundamental emission and Spectrum Mask)	16
Radiated emission (Spurious emission: below 30MHz).....	17
Radiated emission (Spurious emission: above 30MHz).....	18
99% Occpied Bandwidth.....	19
Frequency Tolerance	20
APPENDIX 4: Data of confirmation test data.....	21
Photographs of test setup (Conducted emission)	21
Photographs of test setup (Radiated emission)	22
EMI test equipment	24
Conducted emission	25
Radiated emission(Fundamental emission and Spectrum Mask)	26
Radiated emission (Spurious emission: below 30MHz).....	27
Radiated emission (Spurious emission: above 30MHz).....	28

SECTION 1: Client information

Company Name : KYOCERA MITA Corporation
Address : 2-28, 1-Chome, Tamatsukuri, Chuo-ku, Osaka, Japan.
Telephone Number : +81-6-6764-3333
Facsimile Number : +81-6-6764-3847
Contact Person : Yutaka Shigemura

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

2.1 Identification of E.U.T.

Type of Equipment : RFID Reader/Writer
Model No. : B5J-0452
Serial No. : 059
Rating : DC 3.3V/0.1A
Country of Manufacture : Japan
Receipt Date of Sample : December 29, 2005
Condition of EUT : Engineering Prototype
(Not for sale: This sample is equivalent to mass-produced items.)

2.2 Product Description

Model No: B5J-0452 is the RFID Reader/Writer.

Equipment Type : Transceiver
Frequency of Operation : 13.56 MHz
Type of modulation : ASK
Mode of operation : Simplex
Antenna Type : PWB Pattern Antenna
Method of Frequency Generation : Crystal

FCC 15.31 (e)

The EUT provides the voltage (DC3.3V) to the RF part. Testing of the variation of the input power (85% to 115% of 3.3V) was performed, and it was confirmed that the EUT complies the requirement. Please refer to page 22 for details.

FCC Part 15.203 Antenna requirement

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

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(01.06.05)

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part15 Subpart C : 2005
Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators
Section 15.207 Conducted limits
Section 15.225 : Operation within the band 13.110-14.010MHz

3.2 Procedures and results

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin	Results
1	Conducted emission	<FCC>ANSI C63.4:2003 7. AC powerline conducted emission measurements <IC>RSS-Gen 7.2.2	<FCC>Section 15.207 <IC>RSS-Gen 7.2.2	-	N/A	4.4dB (14.4838MHz, AV, L)	Complied
2	Electric Field Strength of Fundamental Emission	<FCC>ANSI C63.4:2003 13. Measurement of intentional radiators <IC>RSS-Gen 4.6	<FCC>Section 15.225(a) <IC>RSS-210 A2.6	Radiated	N/A	77.9dB (13.56MHz, 90deg., QP)	Complied
3	Spectrum Mask	<FCC>ANSI C63.4:2003 13. Measurement of intentional radiators <IC>RSS-Gen 4.7	<FCC>Section 15.225(a)(b)(c)(d) <IC>RSS-210 A2.6	Radiated	N/A	44.5dB (13.11MHz/14.01MHz, 90deg., QP)	Complied
4	Electric Field Strength of Spurious Emission	<FCC>ANSI C63.4:2003 13. Measurement of intentional radiators <IC>RSS-Gen 4.7	<FCC>Section15.209 and 15.225 (d) <IC>RSS-210 A2.6	Radiated	N/A	1.7dB (40.66MHz, Vert., QP)	Complied
5	Frequency Tolerance	<FCC>ANSI C63.4:2003 13. Measurement of intentional radiators <IC>RSS-Gen 4.5	<FCC>Section15.225 (e) <IC>RSS-210 A2.6	Radiated	N/A	See data	Complied

Note: UL Apex's EMI Work Procedures No.QPM05 and QPM15.

These tests were performed without any deviations from test procedure except for additions or exclusions.

3.3 Addition to standards

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin	Results
1	99% Occupied Band Width	<IC>RSS-Gen 4.4.1	<IC>RSS-Gen 4.4.1	Radiated	N/A	N/A	Complied
2*	APPENDIX 4: Confirmation Test data	<FCC>Section15.225	<FCC>Section15.225	Radiated	N/A	See data	Complied

*Note: Confirmation test data for a host printer(KM-C3232) with the RFID Reader/Writer installed inside. Confirmation test found that the host printer with the RFID Reader/Writer complied with FCC requirement.

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(01.06.05)

3.4 Uncertainty

Conducted Emission

The measurement uncertainty (with a 95% confidence level) for this test is ± 1.3 dB.

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

Spurious Emission (Radiated)

The measurement uncertainty (with a 95% confidence level) for this test using Loop antenna is ± 1.9 dB(3m)/ ± 1.8 dB(10m).

The measurement uncertainty (with a 95% confidence level) for this test using Biconical antenna is ± 4.5 dB(3m)/ ± 4.7 dB(10m).

The measurement uncertainty (with a 95% confidence level) for this test using Logperiodic antenna is ± 5.2 dB(3m)/ ± 3.8 dB(10m).

The measurement uncertainty (with a 95% confidence level) for this test using Horn antenna is ± 6.6 dB.

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

Other test except Conducted Emission and Spurious Emission (Radiated)

The measurement uncertainty (with a 95% confidence level) for this test is ± 3.0 dB.

3.5 Test Location

UL Apex Co., Ltd. Head Office EMC Lab. *NVLAP Lab. code: 200572-0

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

	FCC Registration Number	IC Registration Number	Width x Depth x Height (m)	Size of reference ground plane (m)	Other rooms
No.1 semi-anechoic chamber	313583	IC4247A	19.2 x 11.2 x 7.7m	7.0 x 6.0m	Preparation room
No.2 semi-anechoic chamber	846015	IC4247A-2	7.5 x 5.8 x 5.2m	4.0 x 4.0m	-
No.3 shielded room	-	-	4.7 x 7.5 x 2.7m	4.7 x 7.5m	-
No.4 measurement room	-	-	3.1 x 5.0 x 2.7m	N/A	-

* Size of vertical conducting plane (for Conducted Emission test) : 2.0 x 2.0m for No.1 and No.2 semi-anechoic and No.3 shielded room.

3.6 Test set up, Test instruments and Data of EMI

Refer to APPENDIX 1 to 3.

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(01.06.05)

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

4.1 Operating Modes

The EUT was operated in a manner similar to typical use during the tests.

The mode used for testing: Continuous transmitting mode

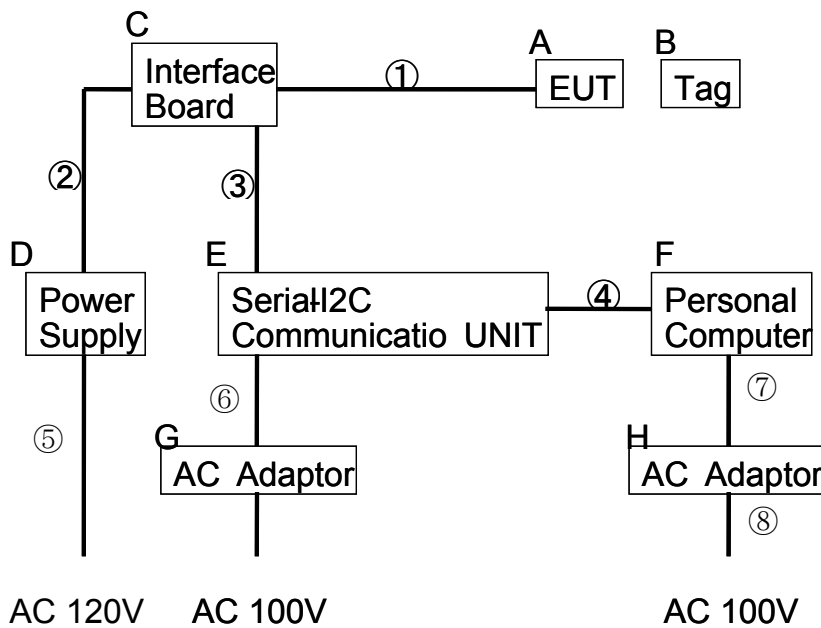
Frequency Tolerance:

- Temperature for the extreme tests : -20 deg.C.(minimum) to + 50deg.C.(maximum)
- Voltage for the extreme tests : DC 2.8V (minimum) to DC3.8V.(maximum)

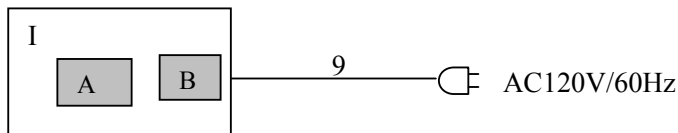
Justification: The system was configured in typical fashion (as a customer would normally use it) for testing.

4.2 Configuration and peripherals

Radiated Emission & Conducted Emission



APPENDIX4:Confirmation test data



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

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(01.06.05)

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	FCC ID
A	RFID Reader/Writer	B5J-0452	059	OMRON	E52B5J0452
B	RFID Tag	V720-S-D13P50F	-	OMRON	-
C	Interface Board	-	-	OMRON	-
D	Power supply	HWS15-3/A	2P6-612CAC-0007W3705	DENSEI LAMBDA	-
E	Serial-I2C UNIT	MIIC-203	2193	TOYO	-
F	PC	2609-31J	BA-ZFFHL	IBM	-
G	AC Adaptor	3A-161WP05	DMS050260-P6P-SZ	TOYO	-
H	AC Adaptor	-	FRU02K654811S02 K6547ZJ16B	IBM	-
I	Printer	KM-C3232	SPL5900033	KYOCERA MITA	-

List of cables used

No.	Name	Length (m)	Shield	Remark
1	Interface Cable	0.3	N	-
2	DC Power Cable	0.8	N	-
3	I2C Cable	1.3	Y	-
4	Serial Cable	0.2	Y	-
5	AC Power Cable	3.0	N	-
6	DC Power Cable	1.8	N	-
7	DC Power Cable	1.8	N	-
8	AC Power Cable	1.8	N	-
9	AC Power Cable	2.6	N	-

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(01.06.05)

SECTION 5: Conducted emission

5.1 Operating environment

Test place : No.2 semi anechoic chamber
Temperature : See data
Humidity : See data

5.2 Test configuration

EUT was placed on a platform of nominal size, 1m by 1.5m, raised 80cm above the conducting ground plane. The rear of tabletop was located 40cm to the vertical conducting plane. The rear of 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 LISN/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 30cm to 40cm long and were hanged at a 40cm height to the ground plane. Each EUT current-carrying power lead, except the ground (safety) lead, was individually connected through a LISN/ an AMN to the input power source. All unused 50ohm connectors of the LISN/ AMN were resistively terminated in 50ohm when not connected to the measuring equipment. The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT on a horizontal conducting plane 4.0 x 4.0m and a vertical conducting plane 2.0 x 2.0m in a No.2 semi Anechoic Chamber. A drawing of the set up is shown in the photos of APPENDIX 1.

5.3 Test conditions

Frequency range : 0.15MHz – 30MHz
EUT position : Table top
EUT operation mode : Continuous Transmitting mode

5.4 Test procedure

The AC Mains Terminal Continuous disturbance Voltage had been measured with the EUT in the semi Anechoic Chamber. The EUT was connected to a Line Impedance Stabilization Network (LISN)/ Artificial Mains Network (AMN). An overview sweep with peak detection has been performed. The measurements had been performed with a quasi-peak detector and if required, with an average detector. The conducted emission measurements were made with the following detector function of the test receiver.

Detector Type : QP and AV
IF Bandwidth : 9kHz

5.5 Test result

Summary of the test results : Pass

Date : December 31, 2005 Test engineer : Norihisa Hashimoto

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(01.06.05)

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

6.1 Operating environment

Test place : No.2 semi anechoic chamber
Temperature : See data
Humidity : See data

6.2 Test Procedure

The Radiated Electric Field Strength intensity has been measured on No.1 semi anechoic chamber with a ground plane and at a distance of 3m.

Frequency : From 9kHz to 30MHz at distance 3m
The EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.
The measurements were performed for each antenna angle 0deg. , 45deg. and 90deg.

Frequency : From 30MHz to 1GHz at distance 3m
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.

Measurements were performed with a QP, PK, and AV detector.
The radiated emission measurements were made with the following detector function of the test receiver.

	From 9kHz to 90kHz and From 110kHz to 150kHz	From 90kHz to 110kHz	From 150kHz to 490kHz	From 490kHz to 30MHz	From 30MHz to 1GHz
Detector Type	PK/AV	QP	PK/AV	QP	QP
IF Bandwidth	200Hz	200Hz	9kHz	9kHz	120kHz

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

* Part 15 Section 15.31 (f)(2) (9kHz-30MHz)
9kHz – 490kHz [Limit at 3m]=[Limit at 300m]-40log (3[m]/300[m])
490kHz – 30MHz[Limit at 3m]=[Limit at 30m]-40log (3[m]/30[m])

6.3 Test result

Summary of the test results : Pass

Date : December 30, 2005 Test engineer : Norihisa Hashimoto

SECTION 7: 99% Occupied Bandwidth

Test Procedure

The measurement was performed in the antenna height to gain the maximum of Electric field strength.

Test data : APPENDIX 3
Test result : Pass

SECTION 8: Frequency Tolerance

Test Procedure

The measurement was performed in the antenna height to gain the maximum of Electric field strength.

Test data : APPENDIX 3
Test result : Pass

APPENDIX 1: Photographs of test setup

This page has been submitted as a separate exhibit.

This page has been submitted as a separate exhibit.

This page has been submitted as a separate exhibit.

APPENDIX 2: Test instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
MLS-06	LISN(AMN)	Schwarzbeck	NSLK8127	CE (EUT)	2005/02/04 * 12
MLS-07	LISN(AMN)	Schwarzbeck	NSLK8127	CE(AE)	2005/02/04 * 12
MSA-04	Spectrum Analyzer	Agilent	E4448A	RE / CE	2005/05/19 * 12
MPA-09	Pre Amplifier	Agilent	8447D	RE	2005/09/07 * 12
MTR-02	Test Receiver	Rohde & Schwarz	ESCS30	RE / CE	2005/02/02 * 12
LP-01	Loop Antenna	Rohde & Schwarz	HFH2-Z2	RE	2005/10/31 * 12
MAT-07	Attenuator(6dB)	Weinschel Corp	2	RE	2005/12/16 * 12
MBA-02	Biconical Antenna	Schwarzbeck	BBA9106	RE	2005/10/10 * 12
MLA-02	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2005/10/14 * 12
MCC-12	Coaxial Cable	Fujikura/Agilent	-	RE	2005/02/24 * 12
MCC-13	Coaxial Cable	Fujikura/Agilent	-	CE / RE	2005/02/24 * 12

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

Test Item :

- CE: Conducted emission,
- RE: Radiated emission,
- H/F: Harmonics and voltage fluctuation
- RFI: RFI Power test,
- AT: Antenna terminal disturbance voltage

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

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(01.06.05)

APPENDIX 3: Data of EMI test

Conducted emission

DATA OF CONDUCTED EMISSION TEST

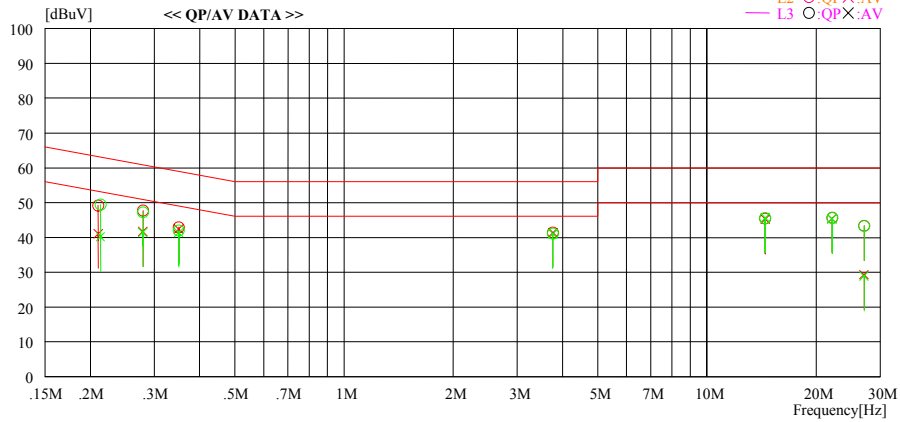
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/12/31 01:27:22

Applicant : KYOCERA MITA Corporation Report No. : 26BE0123-HO
Kind of EUT : RFID Reader/Writer Power : AC120V/60Hz
Model No. : B5J-0452 Temp°C/Humi% : 23 / 39
Serial No. : 059 Operator : Norihisa Hashimoto

Mode / Remarks : Transmitting

LIMIT : FCC15C § 15.207 (QP)
FCC15C § 15.207 (AV)

+ QP X AV
- QP X AV
L2 QP X AV
L3 QP X AV



Frequency [MHz]	Reading Level		Corr. Factor [dB]	Results		Limit		Margin		Phase
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]	
0.21310	49.3	40.1	0.1	49.4	40.2	63.1	53.1	13.7	12.9	-
0.21000	49.1	41.0	0.1	49.2	41.1	63.2	53.2	14.0	12.1	+
0.27900	47.2	41.4	0.1	47.3	41.5	60.8	50.8	13.5	9.3	-
0.27900	47.6	41.6	0.1	47.7	41.7	60.8	50.8	13.1	9.1	+
0.35000	41.9	41.3	0.1	42.0	41.4	59.0	49.0	17.0	7.6	-
0.35000	42.8	42.3	0.1	42.9	42.4	59.0	49.0	16.1	6.6	+
3.76000	40.1	40.0	1.1	41.2	41.1	56.0	46.0	14.8	4.9	-
3.76000	40.3	40.3	1.1	41.4	41.4	56.0	46.0	14.6	4.6	+
14.48380	44.1	44.0	1.3	45.4	45.3	60.0	50.0	14.6	4.7	+
14.48380	44.3	44.3	1.3	45.6	45.6	60.0	50.0	14.4	4.4	-
22.12600	44.1	43.9	1.5	45.6	45.4	60.0	50.0	14.4	4.6	-
22.12600	44.2	43.9	1.5	45.7	45.4	60.0	50.0	14.3	4.6	+
27.12330	41.6	27.2	1.7	43.3	28.9	60.0	50.0	16.7	21.1	-
27.12330	41.7	27.6	1.7	43.4	29.3	60.0	50.0	16.6	20.7	+

CHART: WITHOUT FACTOR, Peak hold data. Data is uncorrected.
Except for the above table : adequate margin data below the limits.

Radiated emission(Fundamental emission and Spectrum Mask)

UL Apex Co., Ltd.
Head Office EMC Lab. No2 Semi Anechoic Chamber

COMPANY : KYOCERA MITA Corporation REPORT NO. : 26BE0123-HO
EQUIPMENT : RFID Reader/Writer REGULATION : FCC 15.225
MODEL : B5J-0452 TEST DISTANCE : 3m
S/ N : 059 DATE : 30/12/2005
POWER : DC3.3V TEMPERATURE : 23 deg.C.
MODE : Transmitting HUMIDITY : 45 %
ENGINEER : Norihisa Hashimoto

With CLi Feeder

FREQ [MHz]	T/R Reading [dBuV]	Ant Factor [dB/m]	C.F [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Antenna angle [deg.]
13.1100	27.0	20.0	-22.0	25.0	69.5	44.5	0
13.4100	26.9	20.0	-22.0	24.9	80.5	55.6	0
13.5530	32.9	20.0	-22.0	30.9	90.4	59.5	0
13.5600	47.9	20.0	-21.9	46.0	123.9	77.9	0
13.5670	35.3	20.0	-21.9	33.4	90.4	57.0	0
13.7100	26.9	20.0	-21.9	25.0	80.5	55.5	0
14.0100	26.9	20.0	-21.9	25.0	69.5	44.5	0

Calculation : Reading + Ant. Factor + C.F(Cable loss + Attenuator - AMP.Gain + Atten).

* The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

Radiated emission (Spurious emission: below 30MHz)

UL Apex Co., Ltd.
Head Office EMC Lab. No2 Semi Anechoic Chamber

COMPANY	: KYOCERA MITA Corporation	REPORT NO.	: 26AE0123-HO
EQUIPMENT	: RFID Reader/Writer	REGULATION	: FCC 15.225
MODEL	: B5J-0452	TEST DISTANCE	: 3m
S/ N	: 059	DATE	: 30/12/2005
POWER	: DC3.3V	TEMPERATURE	: 24 deg.C.
MODE	: Transmitting	HUMIDITY	: 45 %
		ENGINEER	: Norihisa Hashimoto

With CLi Feeder

FREQ	T/R Reading	Ant Factor	C.F	Result	Limit	Margin	Antenna angle
[MHz]	[dBuV]	[dB/m]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[deg.]
27.1200	42.8	19.9	-21.6	41.1	69.5	28.4	0

Calculation : Reading + Ant. Factor + C.F(Cable loss + Attenuator - AMP.Gain + Atten).

* The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

Radiated emission (Spurious emission: above 30MHz)

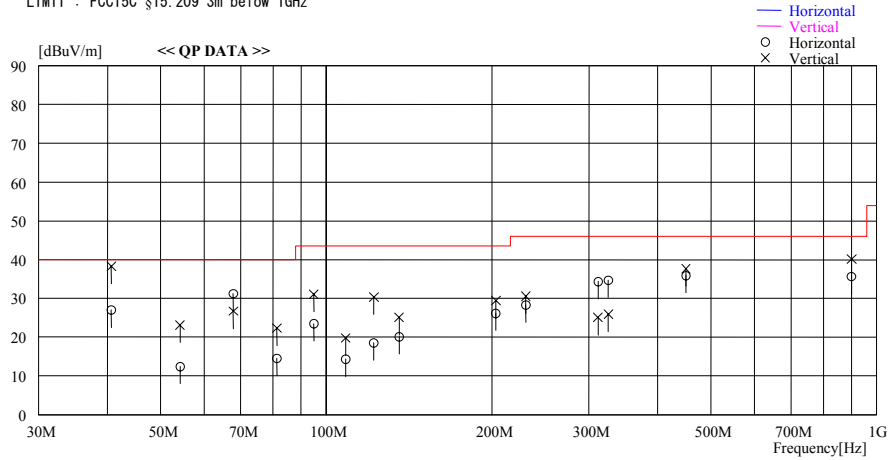
DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date :

Company : KYOCERA MITA Corporation
Kind of EUT : RFID Reader/Writer
Model No. : B5J-0452
Serial No. : 059
Report No. : 26BE0123-HO
Power : DC 3.3V
Temp./Humi. : 23deg.C / 34%
Operator : Norihisa Hashimoto

Mode / Remarks : Transmitting

LIMIT : FCC15C §15.209 3m below 1GHz



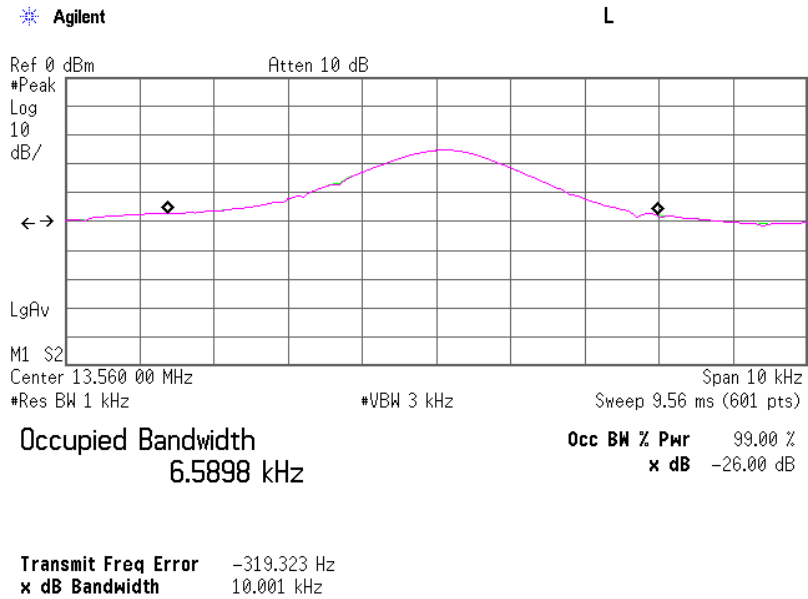
Frequency [MHz]	Reading [dBuV]	DET	Antenna		Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]
			Factor [dB/m]	Loss& Gain [dB]						
40.680	47.5	QP	13.3	-22.5	38.3	0	0	Vert.	40.0	1.7
40.680	36.2	QP	13.3	-22.5	27.0	0	0	Hori.	40.0	13.0
54.240	36.2	QP	9.3	-22.4	23.1	0	0	Vert.	40.0	16.9
54.240	25.5	QP	9.3	-22.4	12.4	0	0	Hori.	40.0	27.6
67.800	42.1	QP	6.9	-22.3	26.7	0	0	Vert.	40.0	13.3
67.800	46.6	QP	6.9	-22.3	31.2	0	0	Hori.	40.0	8.8
81.360	37.8	QP	6.5	-22.0	22.3	0	0	Vert.	40.0	17.7
81.360	30.0	QP	6.5	-22.0	14.5	0	0	Hori.	40.0	25.5
94.920	44.3	QP	8.9	-22.1	31.1	0	0	Vert.	43.5	12.4
94.920	36.7	QP	8.9	-22.1	23.5	0	0	Hori.	43.5	20.0
108.480	30.4	QP	11.1	-21.7	19.8	0	0	Vert.	43.5	23.7
108.480	24.9	QP	11.1	-21.7	14.3	0	0	Hori.	43.5	29.2
122.040	39.2	QP	12.7	-21.6	30.3	0	0	Vert.	43.5	13.2
122.040	27.4	QP	12.7	-21.6	18.5	0	0	Hori.	43.5	25.0
135.600	32.0	QP	13.9	-20.8	25.1	0	0	Vert.	43.5	18.4
135.600	27.0	QP	13.9	-20.8	20.1	0	0	Hori.	43.5	23.4
203.400	33.3	QP	16.6	-20.5	29.4	0	0	Vert.	43.5	14.1
203.400	30.1	QP	16.6	-20.5	26.2	0	0	Hori.	43.5	17.3
230.520	34.2	QP	16.9	-20.6	30.5	0	0	Vert.	46.0	15.5
230.520	32.0	QP	16.9	-20.6	28.3	0	0	Hori.	46.0	17.7
311.880	39.0	QP	14.6	-19.3	34.3	0	0	Hori.	46.0	11.7
311.880	29.8	QP	14.6	-19.3	25.1	0	0	Vert.	46.0	20.9
325.447	38.5	QP	15.1	-18.9	34.7	0	0	Hori.	46.0	11.3
325.447	29.7	QP	15.1	-18.9	25.9	0	0	Vert.	46.0	20.1
450.500	39.6	QP	17.8	-19.8	37.6	0	0	Vert.	46.0	8.4
450.500	37.9	QP	17.8	-19.8	35.9	0	0	Hori.	46.0	10.1
901.010	32.5	QP	20.8	-17.7	35.6	0	0	Hori.	46.0	10.4

CHART: WITH FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - GAIN (AMP)

99% Occpied Bandwidth

Company : KYOCERA MITA Corporation	Report No. : 26BE0123-HO
Equipment : RFID Reader/Writer	Regulation : FCC Part15 Subpart C 15.225
Model : B5J-0452	Date : 30/12/2005
Serial No. : 059	Humidity : 44%
Power : DC 3.30V	Temperature : 24deg.C
Mode : Transmitting	Engineer : Norihisa Hashimoto

FREQ [MHz]	99% Occpied Bandwidth [kHz]
13.56	6.59



Frequency Tolerance

Company : KYOCERA MITA Corporation	Report No. : 26BE0123-HO
Equipment : RFID Reader/Writer	Regulation : FCC Part 15 Subpart C 15.22
Model : BSI-0452	Date : 29/12/2005
Serial No. : 059	Humidity : 38%
Power : DC 3.30V / DC2.80V / DC3.80V	Temperature : 24deg C
Mode : Transmitting	Engineer : Norihisa Hashimoto

Limits

Operating frequency	13.56 MHz	±	0.01%	±	0.001356 MHz
	MHz				
Lower Limit	13.558644				
Upper Limit	13.561356				

Frequency stability vs. temperature

Ambient temperature (deg.C)	Measured Frequency (MHz)				Result
	Start	2 minutes	5 minutes	10 minutes	
-30deg.C	13.560081	13.560081	13.560080	13.560079	Complied
Margin	0.001275	0.001275	0.001276	0.001277	
-20deg.C	13.560094	13.560091	13.560088	13.560079	Complied
Margin	0.001262	0.001265	0.001268	0.001277	
-10deg.C	13.560073	13.560072	13.560072	13.560070	Complied
Margin	0.001283	0.001284	0.001284	0.001286	
0deg.C	13.560071	13.560072	13.560075	13.560080	Complied
Margin	0.001285	0.001284	0.001281	0.001276	
+10deg.C	13.560087	13.560091	13.560096	13.560100	Complied
Margin	0.001269	0.001265	0.001260	0.001256	
+20deg.C	13.560104	13.560108	13.560112	13.560117	Complied
Margin	0.001252	0.001248	0.001244	0.001239	
+30deg.C	13.560126	13.560129	13.560133	13.560136	Complied
Margin	0.001230	0.001227	0.001223	0.001220	
+40deg.C	13.560138	13.560139	13.560140	13.560142	Complied
Margin	0.001218	0.001217	0.001216	0.001214	
+50deg.C	13.560144	13.560144	13.560144	13.560145	Complied
Margin	0.001212	0.001212	0.001212	0.001211	

*1 Frequency stability vs. input voltage

% of Rated Supply	Supply Voltage	Measured Frequency (MHz)				Result
		Start	2 minutes	5 minutes	10 minutes	
Nr DC	3.30	13.560145	13.560145	13.560145	13.560284	Complied
Margin		0.001039	0.000981	0.001047	0.001072	
85% DC	2.80	13.560139	13.560138	13.560139	13.560139	Complied
Margin		0.001152	0.001166	0.001113	0.001146	
115% DC	3.80	13.560154	13.560154	13.560153	13.560153	Complied
Margin		0.000915	0.000815	0.000875	0.001236	

Note: Test Procedure ANSI C63.4-2000 Annex L.5.2 and L.5.3

APPENDIX 4: Data of confirmation test data

This page has been submitted as a separate exhibit.

This page has been submitted as a separate exhibit.

This page has been submitted as a separate exhibit.

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
MAEC-02	Anechoic Chamber	TDK	Semi Anechoic Chamber 3m	RE/CE	2005/04/11 * 12
MRENT-23	Spectrum Analyzer	Advantest	R3273	RE/CE	2006/01/10 * 12
MTR-02	Test Receiver	Rohde & Schwarz	ESCS30	RE/CE	2005/02/02 * 12
MLPA-02	Loop Antenna	Rohde & Schwarz	HFH2-Z2	RE	2005/12/06 * 12
MPA-09	Pre Amplifier	Agilent	8447D	RE	2005/09/07 * 12
MCC-13	Coaxial Cable	Fujikura/Agilent	-	RE/CE	2005/02/24 * 12
MCC-31	coaxial cable	ULApex	-	RE	2005/06/02 * 12
MAT-07	Attenuator(6dB)	Weinschel Corp	2	RE	2005/12/16 * 12
MCC-12	Coaxial Cable	Fujikura/Agilent	-	RE	2005/02/24 * 12
MBA-02	Biconical Antenna	Schwarzbeck	BBA9106	RE	2005/10/10 * 12
MLA-02	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2005/10/14 * 12
MLS-06	LISN(AMN)	Schwarzbeck	NSLK8127	CE	2005/02/04* 12

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

Test Item :

RE: Radiated emission

CE: Conducted emission

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(01.06.05)

Conducted emission

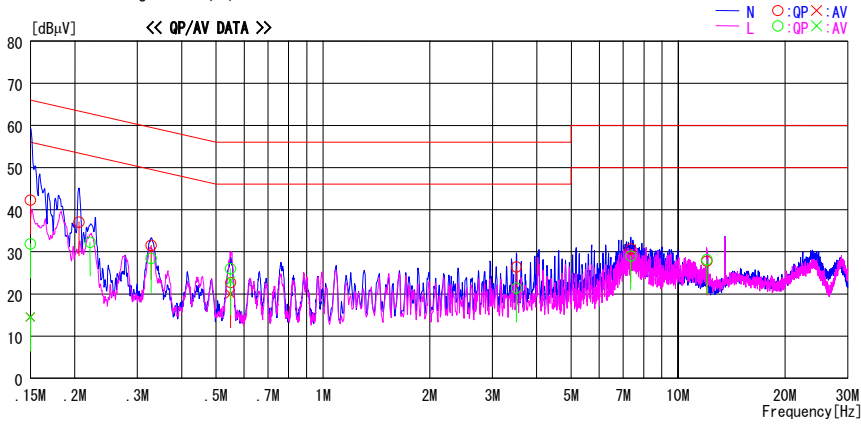
DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2006/01/26 19:09:33

Applicant : KYOCERA MITA Corporation
Kind of EUT : MFP (RFID Reader/Writer)
Model No. : KM-C3232 (B5J-0452)
Serial No. : SPL5900033 (059)
Report No. : 26BE0123-HO
Power : AC120V/60Hz
Temp/C/Humi% : 25deg.C / 28%
Operator : Norihisa Hashimoto

Mode / Remarks : Transmitting / Usual Condition

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)



Frequency [MHz]	Reading Level		Corr. Factor	Results		Limit		Margin		Phase
	QP [dBµV]	AV [dBµV]		QP [dBµV]	AV [dBµV]	QP [dBµV]	AV [dBµV]	QP [dB]	AV [dB]	
0.15000	42.2	14.4	0.1	42.3	14.5	66.0	56.0	23.7	41.5	N
0.20525	37.0	---	0.1	37.1	---	63.4	---	26.3	---	N
0.32850	31.4	---	0.1	31.5	---	59.5	---	28.0	---	N
0.54950	22.5	19.8	0.2	22.7	20.0	56.0	46.0	33.3	26.0	N
3.50200	25.8	---	0.6	26.4	---	56.0	---	29.6	---	N
7.35394	29.7	---	1.0	30.7	---	60.0	---	29.3	---	N
0.15000	31.8	14.4	0.1	31.9	14.5	66.0	56.0	34.1	41.5	L
0.22093	32.2	---	0.1	32.3	---	62.8	---	30.5	---	L
0.32850	28.3	---	0.1	28.4	---	59.5	---	31.1	---	L
0.54865	25.8	22.9	0.2	26.0	23.1	56.0	46.0	30.0	22.9	L
3.50200	20.8	---	0.6	21.4	---	56.0	---	34.6	---	L
7.35394	28.0	---	1.0	29.0	---	60.0	---	31.0	---	L
12.04005	26.5	---	1.3	27.8	---	60.0	---	32.2	---	N
12.04005	26.8	---	1.3	28.1	---	60.0	---	31.9	---	L

CHART: WITHOUT FACTOR, Peak hold data. Data is uncorrected.
Except for the above table : adequate margin data below the limits.

Radiated emission(Fundamental emission and Spectrum Mask)

UL Apex Co., Ltd.
Head Office EMC Lab. No2 Semi Anechoic Chamber

COMPANY	: KYOCERA MITA Corporation	REPORT NO.	: 26BE0123-HO
EQUIPMENT	: MFP (RFID Reader/Writer)	REGULATION	: FCC15.225
MODEL	: KM-C3232 (B5J-0452)	TEST DISTANCE	: 3m
S/ N	: SPL5900033 (059)	DATE	: 24/01/2006
POWER	: AC120V/60Hz	TEMPERATURE	: 25 deg.C.
MODE	: Transmitting / Usual Condition	HUMIDITY	: 28 %
		ENGINEER	: Norihisa Hashimoto

With CLi Feeder

FREQ [MHz]	T/R Reading [dBuV]	Ant Factor [dB/m]	C.F [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Antenna angle [deg.]
13.1100	32.2	20.4	-27.8	24.8	69.5	44.7	0
13.4100	32.2	20.4	-27.8	24.8	80.5	55.7	0
13.5530	34.6	20.5	-27.8	27.3	90.4	63.1	0
13.5600	47.0	20.5	-27.7	39.8	123.9	84.1	0
13.5670	35.5	20.5	-27.7	28.3	90.4	62.1	0
13.7100	32.2	20.5	-27.7	25.0	80.5	55.5	0
14.0100	32.2	20.5	-27.7	25.0	69.5	44.5	0

Calculation : Reading + Ant. Factor + C.F(Cable loss - AMP.Gain + Atten).

* The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

Radiated emission (Spurious emission: below 30MHz)

UL Apex Co., Ltd.
Head Office EMC Lab. No2 Semi Anechoic Chamber

COMPANY	: KYOCERA MITA Corporation	REPORT NO.	: 26BE0123-HO
EQUIPMENT	: MFP (RFID Reader/Writer)	REGULATION	: FCC15.225
MODEL	: KM-C3232 (B5J-0452)	TEST DISTANCE	: 3m
S/ N	: SPL5900033 (059)	DATE	: 24/01/2006
POWER	: AC120V/60Hz	TEMPERATURE	: 25 deg.C.
MODE	: Transmitting / Usual Condition	HUMIDITY	: 28 %
		ENGINEER	: Norihisa Hashimoto

With CLi Feeder

FREQ	T/R Reading	Ant Factor	C.F	Result	Limit	Margin	Antenna angle
[MHz]	[dBuV]	[dB/m]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[deg.]
27.1200	31.8	21.3	-27.3	25.8	69.5	43.7	0

Calculation : Reading + Ant. Factor + C.F(Cable loss - AMP.Gain + Atten).

* The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

Radiated emission (Spurious emission: above 30MHz)

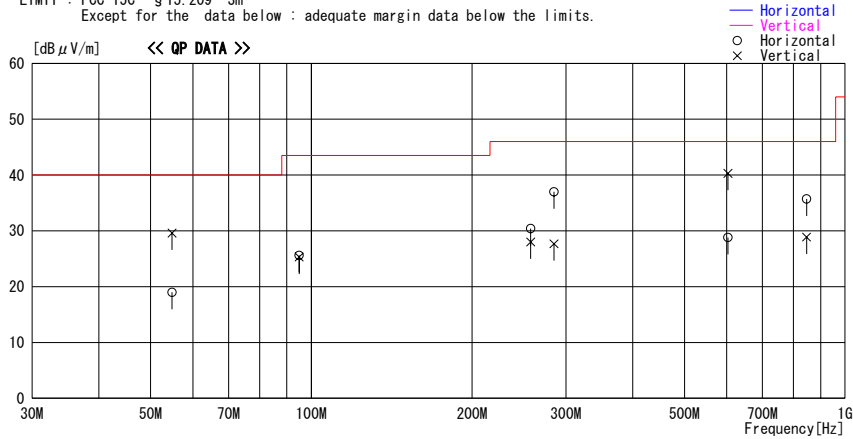
DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2006/01/24 22:31:26

Applicant : KYOCERA MITA Corporation Report No. : 26BE0123-HO
Kind of EUT : MFP (RFID Reader/Writer) Power : AC120V / 60Hz
Model No. : KM-C3232 (B5J-0452) Temp°C/Humi% : 25deg. C / 28%
Serial No. : SPL5900033 (059) Operator : Norihisa Hashimoto

Mode / Remarks : Transmitting / Usual Condition

LIMIT : FCC 15C §15.209 3m
Except for the data below : adequate margin data below the limits.



Frequency [MHz]	Reading [dBμV]	DET	Antenna		Level [dBμV/m]	Polar.	Limit [dBμV/m]	Margin [dB]
			Factor [dB/m]	Loss& Gain [dB]				
54.850	32.3	QP	9.1	-22.4	19.0	Hori.	40.0	21.0
54.850	42.9	QP	9.1	-22.4	29.6	Vert.	40.0	10.4
94.920	38.8	QP	8.9	-22.1	25.6	Hori.	43.5	17.9
94.920	38.5	QP	8.9	-22.1	25.3	Vert.	43.5	18.2
257.640	30.6	QP	17.6	-20.2	28.0	Vert.	46.0	18.0
257.640	33.0	QP	17.6	-20.2	30.4	Hori.	46.0	15.6
284.760	37.8	QP	19.2	-20.0	37.0	Hori.	46.0	9.0
284.760	28.5	QP	19.2	-20.0	27.7	Vert.	46.0	18.3
603.300	40.6	QP	19.2	-19.5	40.3	Vert.	46.0	5.7
603.300	29.1	QP	19.2	-19.5	28.8	Hori.	46.0	17.2
846.710	32.5	QP	21.1	-17.9	35.7	Hori.	46.0	10.3
846.710	25.7	QP	21.1	-17.9	28.9	Vert.	46.0	17.1

CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz Dipole, 1000MHz- HORN