



JAPAN QUALITY ASSURANCE ORGANIZATION

21-25, KINUTA 1-CHOME, SETAGAYA-KU, TOKYO 157-8573 JAPAN
PHONE (03) 3416-0111, TELEX 242-2531 JQA J FAX (03) 3416-9691

JQA APPLICATION NO.: 441-30938

Issue Date : January 14, 2004

Page 1 of 12

EMI TEST REPORT

JQA APPLICATION NO. : 441-30938

Model No. : RZ390UI

Type of Equipment : Duplicator with RFID System

Regulations Applied : CFR 47 FCC Rules and Regulations Part 15

FCC ID : RPARFM3L00

Applicant : RISO KAGAKU CORPORATION

Address : 127-7, Taninosawa, Fukuda, Ami-machi, Inashiki-gun
Ibaraki-ken 300-1156, Japan

Manufacture : RISO KAGAKU CORPORATION

Address : 127-7, Taninosawa, Fukuda, Ami-machi, Inashiki-gun
Ibaraki-ken 300-1156, Japan

Received date of EUT : January 14, 2000

Final Judgment : Passed

TEST RESULTS IN THIS REPORT are obtained in use of equipment that is traceable to National Institute of Advanced Industrial Science and Technology (AIST) of Japan and Communication Research Laboratory (CRL) of Japan.

The test results only responds to the tested sample.

THIS REPORT should not be reproduced, except in full, without the approval of the JQA Safety & EMC Center EMC Engineering Department TSURU EMC Branch

This report must not used by the client to claim product endorsement by NVLAP or any agency of the U.S. Government.



NVLAP LAB CODE : 200192-0



TABLE OF CONTENTS

	Page
1 Documentation	
1.1 Test Regulation	<u>3</u>
1.2 General Information	<u>3</u>
1.3 Test Condition	<u>4</u>
1.4 EUT Modifications / Deviation from Standard	<u>5</u>
1.5 Test results	<u>6</u>
1.6 Summary	<u>7</u>
1.7 Test Configuration / Operation of EUT	<u>8</u>
1.8 EUT Arrangement(Drawing)	<u>9</u>
1.9 Preliminary Test and Test-setup (Drawings)	<u>10</u>
1.10 EUT Arrangement (Photographs)	<u>11</u>
2 Test Data	
2.1 Radiated Emission (Electric Field)9 kHz - 30 MHz	<u>12</u>



1. DOCUMENTATION

1.1 TEST REGULATION

FCC Rules and Regulations Part 15 Subpart A and C Intentional Radiator.

Test procedure :

AC powerline conducted emissions and radiated emissions tests were performed according to the procedures in ANSI C63.4-2001.

1.2 GENERAL INFORMATION

1.2.1 Test facility :

- 1) Test Facility located at JQA Safety & EMC Center EMC Engineering Department
TSURU EMC Branch:
Open Site No.1, No.2, An Anechoic Chamber (3 m and 10 m, on common plane) and a Shielded Room

FCC Registration Number: 90728 (Date of Listing : April 2, 2002)

- 2) JQA Safety & EMC Center EMC Engineering Department TSURU EMC Branch is recognized under the National Voluntary Laboratory Accreditation Program for satisfactory compliance established in title 15, Part 285 Code of Federal Regulations.

NVLAP Lab Code : 200192-0 (Effective through : June 30, 2004)

1.2.2 Description of the Equipment Under Test (EUT) :

- | | |
|------------------------------|---|
| 1) Type of Equipment | : Duplicator with RFID System |
| 2) Product Type | : Pre-Production |
| 3) Category | : Low Power Communication Device |
| 4) EUT Authorization | : Certification |
| 5) FCC ID | : RPARFM3L00 |
| 6) Trade Name | : RISO |
| 7) Model No. | : RZ390UI |
| 8) Operating Frequency Range | : 13.56 MHz |
| 9) Serial No. | : 81340003 |
| 10) Date of Manufacture | : - |
| 11) Power Rating | : 120VAC, 60Hz |
| 13) EUT Grounding | : Grounded at the plug end of the powerline cord None |

1.2.3 Definitions for symbols used in this test report :

- x - indicates that the listed condition, standard or equipment is applicable for this report.
- indicates that the listed condition, standard or equipment is not applicable for this report.



JQA Application No. :441-30938
Model No. :RZ390UI
Standard :CFR 47 FCC Rules Part 15

FCC ID :RPARFM3L00
Issue Date :January 14, 2004
Page 4 of 12

1.3 TEST CONDITION

1.3.1 The measurement of the Radiated Emission(9 kHz - 30 MHz)

- ☒ - was performed in the following test site.
☐ - was not applicable.

Test location :

JQA Safety & EMC Center EMC Engineering Department TSURU EMC Branch
2096 Ohata, Tsuru-shi Yamanashi-ken 402-0045, JAPAN

- ☒ - Anechoic Chamber
☐ - Open Site No.1
☐ - Open Site No.2

Used test instruments :

	<u>Type</u>	<u>Model No.</u>	<u>Manufacturer</u>	<u>Serial No.</u>	<u>Last Cal.</u>	<u>Interval</u>
☒	Test Receiver(R-7)	ESI7	Rohde & Schwarz	100059	2003/10	1 Year
☐	Test Receiver(R-8)	ESCS30	Rohde & Schwarz	100203	2003/2	1 Year
☐	Test Receiver(R-1)	ESHS30	Rohde & Schwarz	842053/001	2003/11	1 Year
☒	Loop Antenna(A-17)	HFH2-Z2	Rohde & Schwarz	879284/14	2003/5	1 Year



JQA Application No. :441-30938
Model No. :RZ390UI
Standard :CFR 47 FCC Rules Part 15

FCC ID :RPARFM3L00
Issue Date :January 14, 2004
Page 5 of 12

1.4 EUT MODIFICATION / Deviation from Standard

1.4.1 EUT MODIFICATION

- ☒ - No modifications were conducted by JQA to achieve compliance to applicable limits.
☐ - To achieve compliance to applicable limits, the following changes were made by JQA during the compliance test.

The modifications will be implemented in all production models of this equipment.

Applicant :

Date :

Typed Name :

Position :

1.4.2 Deviation from Standard:

- ☒ - No deviations from the standard described in clause 1.1.
☐ - The following deviations were employed from the standard described in clause 1.1:



JQA Application No. :441-30938

Model No.

:RZ390UI

Standard

:CFR 47 FCC Rules Part 15

FCC ID :RPARFM3L00

Issue Date :January 14, 2004

Page 6 of 12

1.5 TEST RESULTS

Radiated Emission [§15.225(a)(b)(c)(d)] x - **Applicable** - **NOT Applicable**

The requirements are

 x - **PASSED** - **NOT PASSED**

Remarks:



JQA Application No. :441-30938
Model No. :RZ390UI
Standard :CFR 47 FCC Rules Part 15

FCC ID :RPARFM3L00
Issue Date :January 14, 2004
Page 7 of 12

1.6 SUMMARY

General Remarks :

The EUT was tested according to the requirements of FCC Rules and Regulations Part 15 Subpart A and C under the test configuration, as shown in clause 1.7 to 1.10. The conclusion for the test items of which are required by the applied regulation is indicated under the final judgment.

Final Judgment :

The "as received" sample;

- x - fulfill the test requirements of the regulation mentioned on clause 1.1.
- fulfill the test requirements of the regulation mentioned on clause 1.1, but with certain qualifications.
- doesn't fulfill the test regulation mentioned on clause 1.1.

Begin of testing : January 14, 2004

End of testing : January 14, 2004

- JAPAN QUALITY ASSURANCE ORGANIZATION -
Approved / Issued by:

Takaharu Hada
Director
TSURU EMC Branch
JQA EMC Engineering Dept.

1.7 TEST CONFIGURATION / OPERATION OF EUT

1.7.1 Test Configuration

The equipment under test (EUT) consists of :

Symbol	Item	Manufacturer	Model No.	Serial No.
A	Duplicator	RISO KAGAKU CORPORATION	RZ370UI	FG01
B	Exclusive Table	RISO KAGAKU CORPORATION	RISO STAND N TYPE	-
C	Automatic Document Feeder	RISO KAGAKU CORPORATION	AF Unit V	15062436
D	Printer Controller	RISO KAGAKU CORPORATION	Printer Control Board RISORINC3n	-
E	Network Interface Card	RISO KAGAKU CORPORATION	RISO PRINTER Network Interface Card RISORINC-NET-C	3030103
F	Key/Card Counter	RISO KAGAKU CORPORATION	Key/Card Counter IV	10301838
G	Sorter	RISO KAGAKU CORPORATION	Job Separator IV	17284912

The measurement was carried out with the following support equipment connected :

Symbol	Item	Manufacturer	Model No.	FCC ID	Serial No.
H	Personal Computer (1)	Conpaq	U98M010	DoC	1J2BKVB1X00E
	AC Adaptor (for PC 1)	Conpaq	Series PPP009L		-
D	LCD Display		FlexScan L375	DoC	37856102B
E	Personal Computer (2)	Gateway	SOL09100LS	-	BC399160737
F	AC Adaptor (for PC 2)	Gateway	ADP-50FB	-	AC299193289
G	10M/100M Switching HUB	PCi	FX-05P2	-	01CD03638
H	AC Adaptor(for HUB)	PCi	DSA-0101A-05A	-	-

Type of Cable :

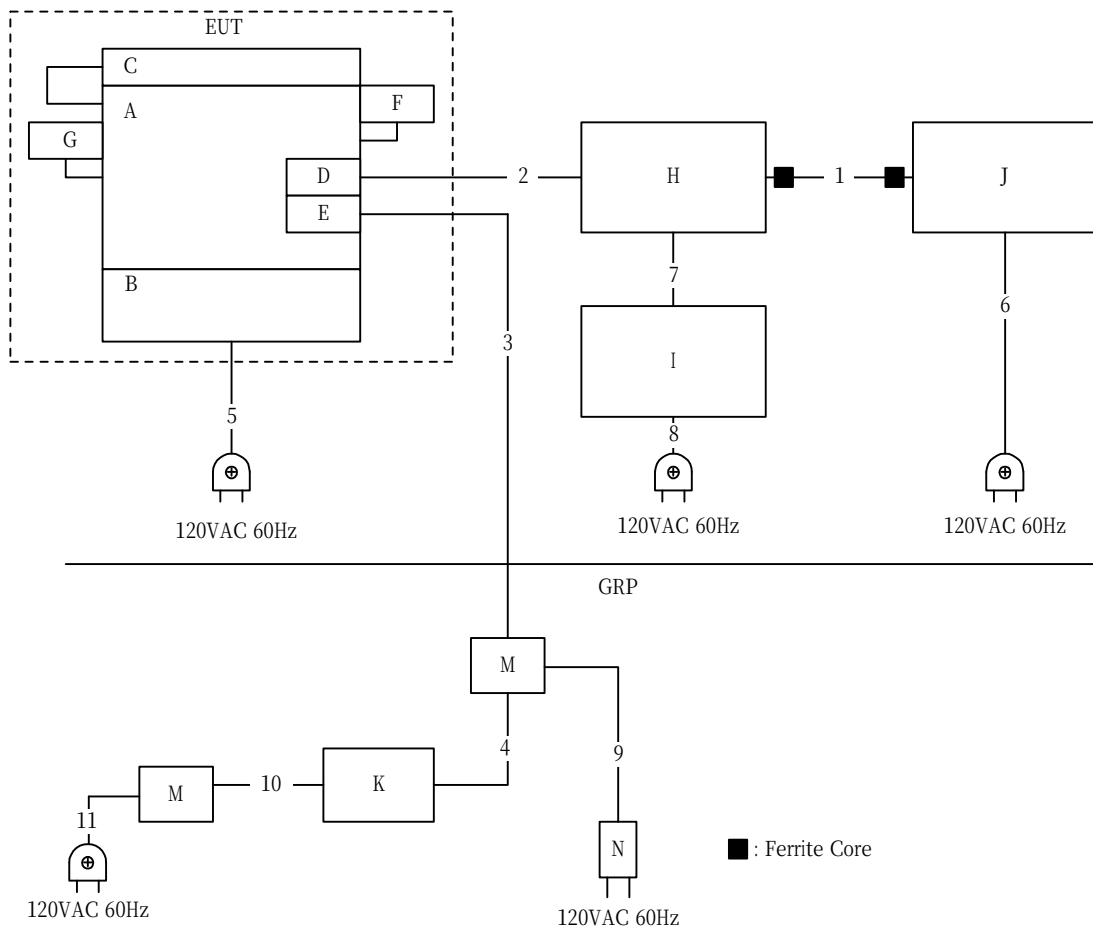
Symbol	Description	Identification (Manufacturer etc.)	Shielded YES / NO	Ferrite Core	Connector type Shielded YES / NO	Length (m)
1	VGA Cable	-	YES	YES	YES	1.8
2	Parallel Cable	-	YES	NO	YES	3.0
3	LAN Cable (1)	-	NO	NO	YES	3.1
4	LAN Cable (2)	-	YES	NO	YES	6.4
5	AC Cable (EUT)	-	NO	NO	NO	3.0
6	AC Cable (LCD)	-	NO	NO	NO	2.0
7	DC Cable (PC1)	-	NO	NO	NO	2.0
8	AC Cable (PC1)	-	NO	NO	NO	2.0
9	DC Cable (HUB)	-	NO	NO	YES	0.9
10	DC Cable (PC2)	-	NO	NO	YES	1.8
11	AC Cable (PC2)	-	NO	NO	NO	1.8

1.7.2 Operating condition

Power supply Voltage : 120 VAC, 60Hz(for AC Adaptor)

The tests have been carried out under the Copy mode.

1.8 EUT ARRANGEMENT (DRAWINGS)

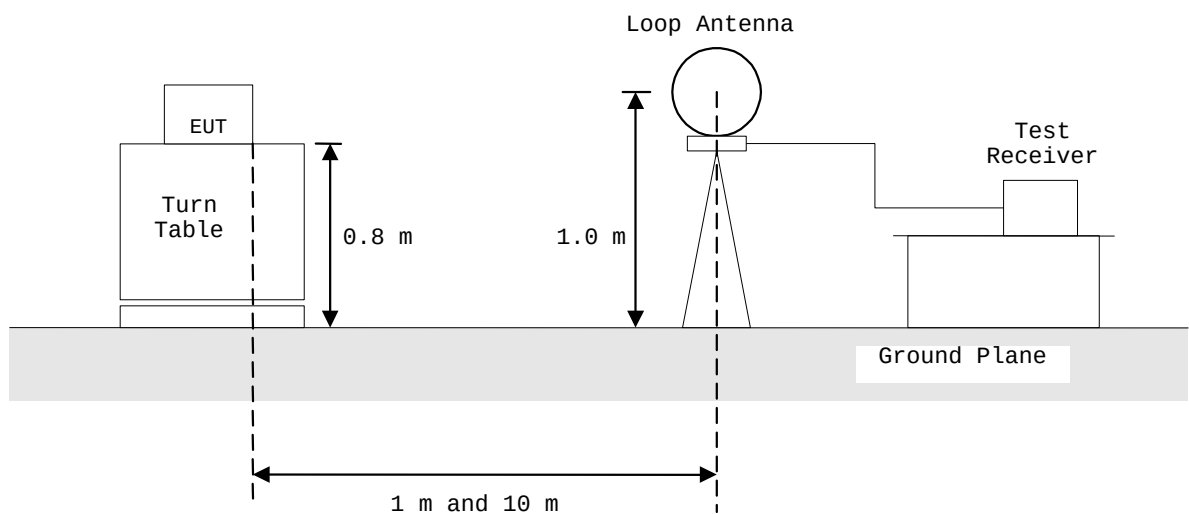


1.9 PRELIMINARY TEST AND TEST-SETUP (DRAWINGS)

1.9.1 Radiated Emission (9 kHz - 30 MHz) :

According to description of ANSI C63.4-1992 sec.13.1.4.1, the preliminary radiated emissions measurement were carried out. The preliminary radiated measurements were performed at the measurement distance that specified for compliance to determine the emission characteristics of the EUT.

The EUT configuration, cable configuration and mode of operation were determined for producing the maximum level of emissions. These configurations were used for the final radiated emissions measurements.



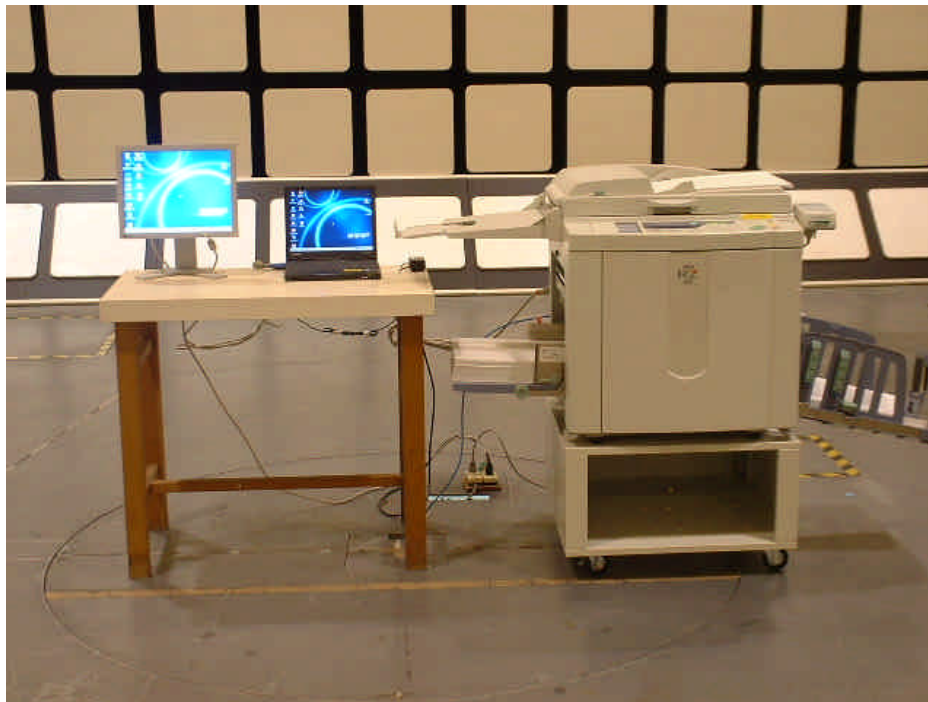
- Side View -

1.10 TEST ARRANGEMENT (PHOTOGRAPHS)

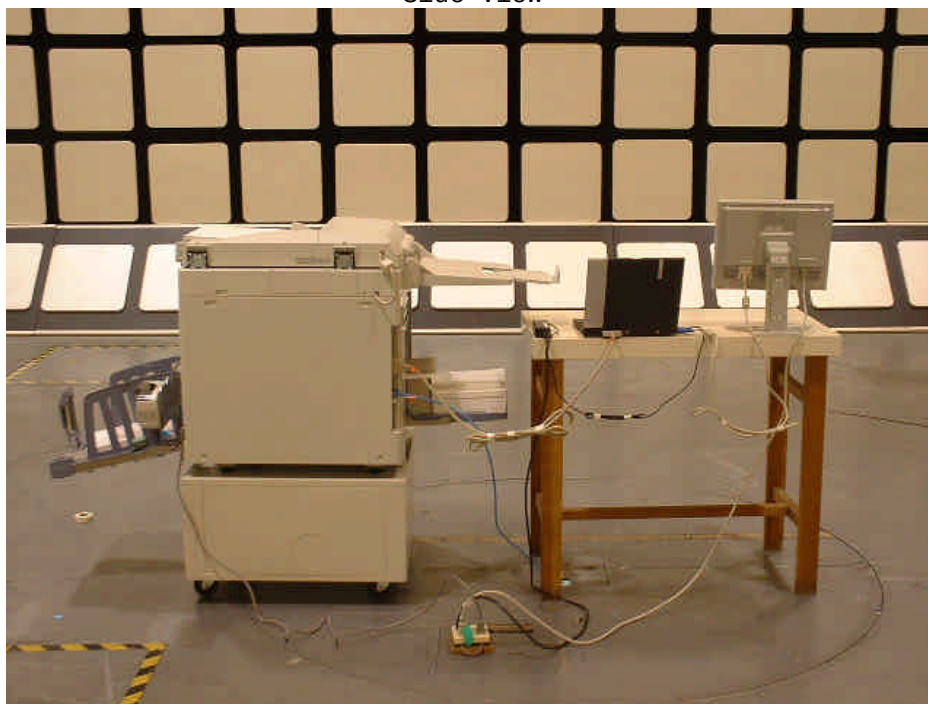
PHOTOGRAPHS OF EUT CONFIGURATION FOR RADIATED EMISSIONS MEASUREMENT

Photograph present configuration with maximum emission

- Front View -



- Side View -





TEST DATA

2.1 Radiated Emissions Measurement(9 kHz - 30 MHz)

Date : January 14, 2004
Temp.: 10 °C Humi.: 28 %

Operating Frequency : 13.56 MHz
Distance of Measurement : 10 meters

Frequency (MHz)	Field Strength (dBμV/m)
Fundamental 13.56	< 27.0
Harmonic Frequency 27.12	< 27.0

The distance of measurements was reduced to 1 meters.

Operating Frequency : 13.56 MHz
Distance of Measurement : 1 meters

Frequency (MHz)	Field Strength (dBμV/m)
Fundamental 13.56	33.7
Harmonic Frequency 27.12	< 27.0

- Note: 1. Meter reading value shows field strength, because the value includes antenna factor.
2. The symbol of "<" means "or less".
3. Measuring Instrument Setting:
Detector Function : CISPR Quasi-peak Peak
IF Band width : 9 kHz

For fundamental, the measured field strength was extrapolated to distance 30 meters, using the formula that field strength varies as the inverse distance square(40 dB per decade of distance).

Calculation :

$$\begin{aligned}\text{Fundamental: } 33.7 \text{ dB}\mu\text{V/m} - 20\log_{10}((30/1)^2) &= 33.7 - 59.0 \\ &= -25.3 \text{ dB}\mu\text{V/m at 30 meters}\end{aligned}$$

$$\text{Limits for fundamental}(\S 15.225(a)) = 20\log_{10}(15848) = 84 \text{ dB}\mu\text{V/m}$$

$$\begin{aligned}\text{Second Harmonic: } < 27.0 \text{ dB}\mu\text{V/m} - 20\log_{10}((30/1)^2) &= < 27.0 - 59.0 \\ &= < -32.0 \text{ dB}\mu\text{V/m at 30 meters}\end{aligned}$$

$$\text{Limits for fundamental}(\S 15.225(d)) = 20\log_{10}(30) = 29.5 \text{ dB}\mu\text{V/m}$$

Tested by : _____

Eiichi Saegusa