

SECTION 1

Test Reports of Immunity

(EN55024/2010)

EN61000-4-2/2009
(EN 301 489-1 V1.9.2 <9.3>)
Electrostatic Discharge Immunity Test

<i>Equipment</i>	<i>Model</i>	<i>Serial No.</i>
Printer	ECOCYS P7040cdn	Z5Y4Z00055
Paper Feeder	PF-5100	ZC34900236
		ZC34900237
		ZC34900238
Printer NIC	IB-50	TEST-1
	IB-51	TEST-1
Hard Disk Drive	HD-6	TEST-1
	HD-7	TEST-1

Date : 18 February, 2015

Temperature : 24°C

Humidity : 54%

Atom. Pressure : 1020hPa

Testing Place : Kyocera Document Solutions CE Test Room

Power Input : AC230V, 50Hz

Tested by : Takayuki Matsuura

T. Matsuura

This test was applied as follows.

<i>Voltage</i>	<i>Discharging method</i>	<i>Criteria</i>	<i>Result</i>
± 4.0kV	Contact discharge	B	Pass
± 8.0kV	Air discharge	B	Pass
± 4.0kV	Indirect discharge	B	Pass

Test equipment used:

ESD Generator : ESS-200AX (Noise Laboratory Co., Ltd.)

ESD Gun : TC-815D (Noise Laboratory Co., Ltd.)

Electrostatic Discharge Immunity Test

Model : ECOSYS P7040cdn

(Test Date : 2015.February.)

◎Operation Mode

1. Stand by
2. USB Print
3. LAN Print (On Board)
4. Data Tx (Wireless)

◎Discharge Method

- C : Contact Discharge
A : Air Discharge
V : Discharge into VCP
H : Discharge into HCP

P. 1 / 2

No.	Discharged parts	Mode	Method	Result
	●Printer (Main)			
01	Operation Panel	1, 2, 3, 4	C, A	Worked Normal
02	Fixing Mount for Printer and Printer NIC	1, 2, 3, 4	C, A	Worked Normal
03	Connector for LAN Port Line	1, 2, 3, 4	C, A	Worked Normal
04	Connector for USB Port Line	1, 2, 3, 4	C, A	Worked Normal
05	Fixing Mount for AC Inlet	1, 2, 3, 4	C, A	Worked Normal
06	Metallic Parts for Bypass	1, 2, 3, 4	C, A	Worked Normal
07	Screws for left side	1, 2, 3, 4	C, A	Worked Normal
08	Screws for right side	1, 2, 3, 4	C, A	Worked Normal
09	Metallic cover for right side	1, 2, 3, 4	C, A	Worked Normal
10	Inner metallic parts in bypass part	1, 2, 3, 4	C, A	Worked Normal
11	Inner metallic parts inside back cover (*opened)	1	C, A	Worked Normal
12	Inner metallic parts inside top cover (*opened)	1	C, A	Worked Normal
13	Inner metallic parts in paper cassettes	1	C, A	Worked Normal
	●Paper Feeder			
19	Inner metallic parts in paper cassettes	1	C, A	Worked Normal

No.	*Indirect Discharge	Mode	Method	Result
01	Front Side	1, 2, 3, 4	V	Worked Normal
02	Rear Side	1, 2, 3, 4	V	Worked Normal
03	Left Side	1, 2, 3, 4	V	Worked Normal
04	Right Side	1, 2, 3, 4	V	Worked Normal

EN61000-4-4/2012
(EN 301 489-1 V1.9.2 <9.4>)

Electrical Fast Transient/Burst Immunity Test

<i>Equipment</i>	<i>Model</i>	<i>Serial No.</i>
Printer	ECOCYS P7040cdn	Z5Y4Z00055
Paper Feeder	PF-5100	ZC34900236
		ZC34900237
		ZC34900238
Printer NIC	IB-50	TEST-1
	IB-51	TEST-1
Hard Disk Drive	HD-6	TEST-1
	HD-7	TEST-1

Date : 19 February, 2015

Temperature : 27°C

Humidity : 58%

Atom. Pressure : 1016hPa

Testing Place : Kyocera Document Solutions CE Test Room

Power Input : AC230V, 50Hz

Tested by : Takayuki Matsuura

T. Matsuura

This test was applied as follows.

		<i>Voltage</i>	<i>Duration</i>	<i>Criteria</i>	<i>Result</i>
E.U.T. Power Line	PE	$\pm 1.0\text{kV}$, 5kHz	1 min.	B	Pass
	L				
	N				
Communication Line		$\pm 0.5\text{kV}$, 5kHz	1 min.	B	Pass

Test equipment used:

EFT/B Test System : FNS-AX3-A16B (Noise Laboratory Co., Ltd.)

EFT/B Immunity Test

Model : ECOCYS P7040cdn

(Test Date: 2015.February.)

	Power Supply Port			Communication Port	*Remarks
	PE	L1	L2		
1. USB Print	Worked normal	Worked normal	Worked normal	LAN Cable/USB Cable	
2. LAN Print (On Board)	Worked normal	Worked normal	Worked normal	Worked normal	
3. Data Tx (Wireless)	Worked normal	Worked normal	Worked normal	Worked normal	

EN61000-4-5/2006
(EN 301 489-1 V1.9.2 <9.8>)
Surge Immunity Test

<i>Equipment</i>	<i>Model</i>	<i>Serial No.</i>
Printer	ECOCYS P7040cdn	Z5Y4Z00055
Paper Feeder	PF-5100	ZC34900236
		ZC34900237
		ZC34900238
Printer NIC	IB-50	TEST-1
	IB-51	TEST-1
Hard Disk Drive	HD-6	TEST-1
	HD-7	TEST-1

Date : 23 February, 2015

Temperature : 24°C

Humidity : 54%

Atom. Pressure : 1012hPa

Testing Place : Kyocera Document Solutions CE Test Room

Power Input : AC230V, 50Hz

Tested by : Takayuki Matsuura

T. Matsuura

This test was applied as follows.

		<i>Voltage</i>	<i>Degree</i>	<i>Criteria</i>	<i>Result</i>
E.U.T. Power Line	L1-L2	± 1.0kV	0 ° , 90 ° , 270 °	B	Pass
	L1-PE	± 2.0kV			Pass
	L2-PE	± 2.0kV			Pass

Test equipment used:

Surge Test System : LSS-F02C1 (Noise Laboratory Co., Ltd.)

Surge Immunity Test

Model: ECOCYS P7040cdn

(Test Date : 2015.February.)

Mode : (1) LAN Print (On Board)

Coupling	Surge Voltage	Phase		
		0 deg	90 deg	270 deg
L1 - L2	± 500V	<i>Worked normal</i>	<i>Worked normal</i>	<i>Worked normal</i>
	±1000V	<i>Worked normal</i>	<i>Worked normal</i>	<i>Worked normal</i>
L1 - PE	±1000V	<i>Worked normal</i>	<i>Worked normal</i>	<i>Worked normal</i>
	±2000V	<i>Worked normal</i>	<i>Worked normal</i>	<i>Worked normal</i>
L2 - PE	±1000V	<i>Worked normal</i>	<i>Worked normal</i>	<i>Worked normal</i>
	±2000V	<i>Worked normal</i>	<i>Worked normal</i>	<i>Worked normal</i>

Mode : (2) USB Print

Coupling	Surge Voltage	Phase		
		0 deg	90 deg	270 deg
L1 - L2	± 500V	<i>Worked normal</i>	<i>Worked normal</i>	<i>Worked normal</i>
	±1000V	<i>Worked normal</i>	<i>Worked normal</i>	<i>Worked normal</i>
L1 - PE	±1000V	<i>Worked normal</i>	<i>Worked normal</i>	<i>Worked normal</i>
	±2000V	<i>Worked normal</i>	<i>Worked normal</i>	<i>Worked normal</i>
L2 - PE	±1000V	<i>Worked normal</i>	<i>Worked normal</i>	<i>Worked normal</i>
	±2000V	<i>Worked normal</i>	<i>Worked normal</i>	<i>Worked normal</i>

Mode : (3) Data Tx (Wireless)

Coupling	Surge Voltage	Phase		
		0 deg	90 deg	270 deg
L1 - L2	± 500V	<i>Worked normal</i>	<i>Worked normal</i>	<i>Worked normal</i>
	±1000V	<i>Worked normal</i>	<i>Worked normal</i>	<i>Worked normal</i>
L1 - PE	±1000V	<i>Worked normal</i>	<i>Worked normal</i>	<i>Worked normal</i>
	±2000V	<i>Worked normal</i>	<i>Worked normal</i>	<i>Worked normal</i>
L2 - PE	±1000V	<i>Worked normal</i>	<i>Worked normal</i>	<i>Worked normal</i>
	±2000V	<i>Worked normal</i>	<i>Worked normal</i>	<i>Worked normal</i>

EN61000-4-11/2004
(EN 301 489-1 V1.9.2 <9.7>)
Voltage Dips, Short Interruption
and Voltage Variation Immunity Test

<i>Equipment</i>	<i>Model</i>	<i>Serial No.</i>
Printer	ECOCYS P7040cdn	Z5Y4Z00055
Paper Feeder	PF-5100	ZC34900236
		ZC34900237
		ZC34900238
Printer NIC	IB-50	TEST-1
	IB-51	TEST-1
Hard Disk Drive	HD-6	TEST-1
	HD-7	TEST-1

Date : 25 February, 2015

Temperature : 24°C

Humidity : 52%

Atom. Pressure : 1018hPa

Testing Place : Kyocera Document Solutions CE Test Room

Power Input : AC230V, 50Hz

Tested by : Takayuki Matsuura

T. Matsuura

This test was applied as follows.

	<i>Reduction</i>	<i>Term</i>	<i>Criteria</i>	<i>Result</i>
Voltage Dips	100%	0.5c/s	B	Pass
	30%	25c/s	C	Pass
Short Interruptions	100%	250c/s	C	Pass

Test equipment used:

Voltage Dip Simulator : VDS-220SB (Noise Laboratory Co., Ltd.)

Voltage Dips & Short Interruptions Test

Model: ECOCYS P7040cdn

(Test Date : 2015.February.)

Mode : (1) LAN Print (On Board)

	<i>Reduction</i>	<i>Term</i>	<i>Criteria</i>	<i>Result</i>	<i>Remarks</i>
Vol. Dips	100%	0.5c/s	B	<i>Pass</i>	<i>*Worked Normal</i>
	30%	25c/s	C	<i>Pass</i>	<i>*Worked Normal</i>
Short Int.	100%	250c/s	C	<i>Pass</i>	<i>*Maked Reset</i>

Mode : (2) USB Print

	<i>Reduction</i>	<i>Term</i>	<i>Criteria</i>	<i>Result</i>	<i>Remarks</i>
Vol. Dips	100%	0.5c/s	B	<i>Pass</i>	<i>*Worked Normal</i>
	30%	25c/s	C	<i>Pass</i>	<i>*Worked Normal</i>
Short Int.	100%	250c/s	C	<i>Pass</i>	<i>*Maked Reset</i>

EN61000-4-3/2006+A1/2008+A2/2010 + ENV50204/1996
(EN 301 489-1 V1.9.2 <9.2>)

Radiated RF Electromagnetic Field Immunity Test

<i>Equipment</i>	<i>Model</i>	<i>Serial No.</i>
Printer	ECOCYS P7040cdn	Z5Y4Z00055
Paper Feeder	PF-5100	ZC34900236
		ZC34900237
		ZC34900238
Printer NIC	IB-50	TEST-1
	IB-51	TEST-1
Hard Disk Drive	HD-6	TEST-1
	HD-7	TEST-1

Date : 24 February, 2015

Temperature : 23°C

Humidity : 54%

Atom. Pressure : 1014hPa

Testing Place : Kyocera Document Solutions Tamaki Factory

Power Input : AC230V, 50Hz

Tested by : Takayuki Matsuura

T. Matsuura

This test was applied as follows.

<i>Frequency</i>	<i>Polarity</i>	<i>RF Level</i>	<i>Criteria</i>	<i>Result</i>
80~1000 MHz	Vertical	3V/m, 80%, 1kHz AM Modulation	A	Pass
	Horizontal			Pass
900±5 MHz	Vertical	3V/m, 100%, 1kHz Frequency 200Hz Duty Cycle 50% PulseMod.	A	Pass
	Horizontal			Pass

We tested at Tamaki EMC Laboratory of KYOCERA Document Solutions Tamaki Factory.

Test equipment used : See the attached documents for details.

EN 301 489-1 V1.9.2 <9.2>
Radiated RF Electromagnetic Field
Immunity Test

<i>Equipment</i>	<i>Model</i>	<i>Serial No.</i>
Printer	ECOCYS P7040cdn	Z5Y4Z00055
Paper Feeder	PF-5100	ZC34900236
		ZC34900237
		ZC34900238
Printer NIC	IB-50	TEST-1
	IB-51	TEST-1
Hard Disk Drive	HD-6	TEST-1
	HD-7	TEST-1

This test was applied as follows.

<i>Frequency</i>	<i>Polarity</i>	<i>RF Level</i>	<i>Criteria</i>	<i>Result</i>
1400~2700 MHz	Vertical	3V/m, 80%, 1kHz AM Modulation	A	Pass
	Horizontal			Pass

We tested at Labotech International Co., Ltd.

Test equipment used : See the attached documents for details.

Radiated RF Electromagnetic Field Immunity Test

Model: ECOCYS P7040cdn

(Test Date : 2015.February.)

Mode : (1) LAN Print (On Board)

<i>Test Face</i>	<i>Polar.</i>	<i>Result</i>	<i>Remarks</i>
Front	Vertical	EUT worked normal.	
	Horizontal	EUT worked normal.	
Right	Vertical	EUT worked normal.	
	Horizontal	EUT worked normal.	
Rear	Vertical	EUT worked normal.	
	Horizontal	EUT worked normal.	
Left	Vertical	EUT worked normal.	
	Horizontal	EUT worked normal.	

Mode : (2) USB Print

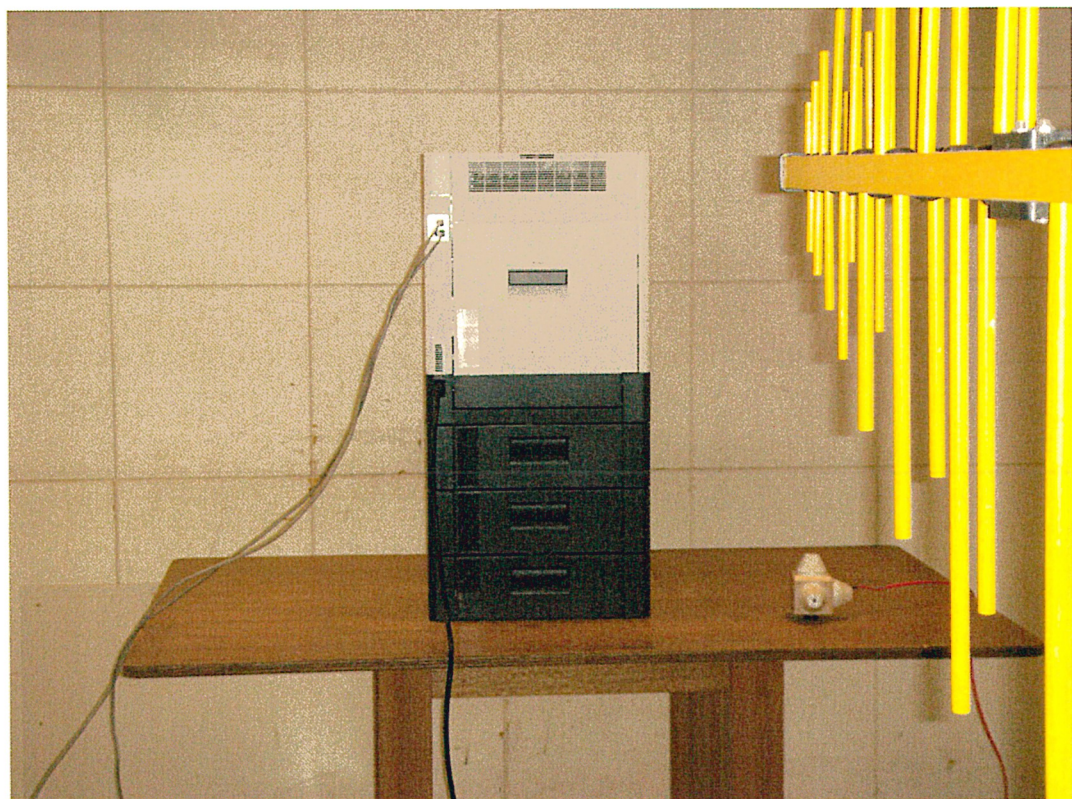
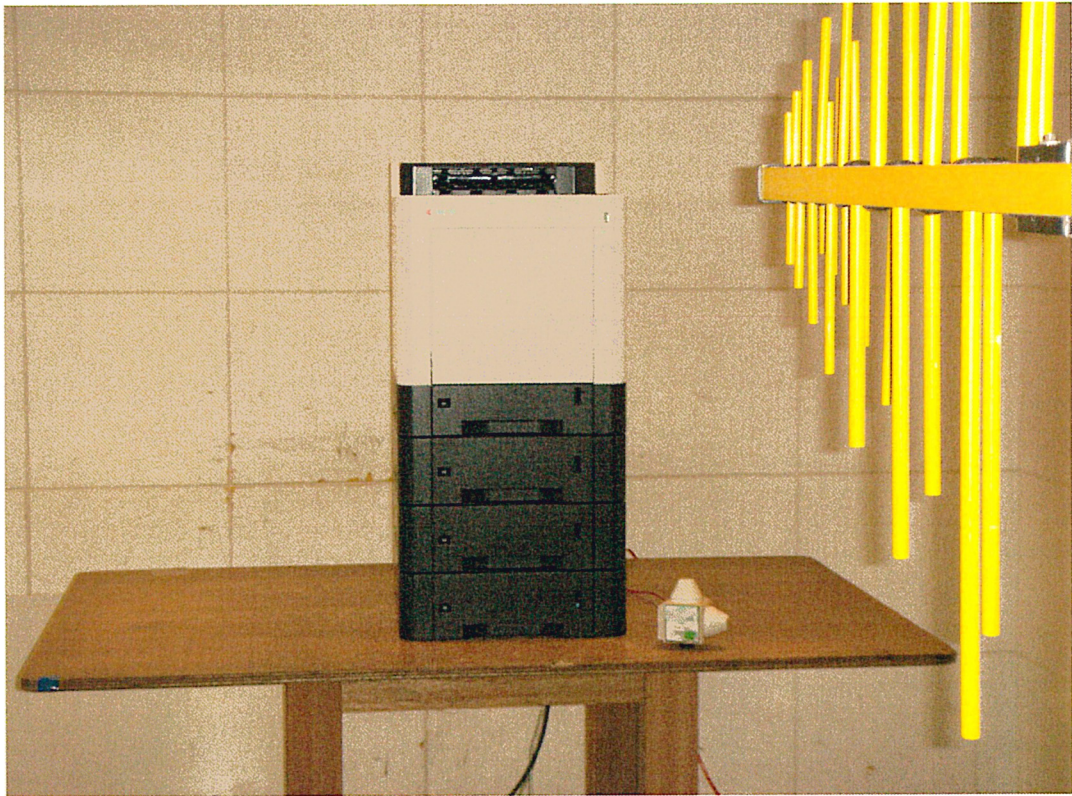
<i>Test Face</i>	<i>Polar.</i>	<i>Result</i>	<i>Remarks</i>
Front	Vertical	EUT worked normal.	
	Horizontal	EUT worked normal.	
Right	Vertical	EUT worked normal.	
	Horizontal	EUT worked normal.	
Rear	Vertical	EUT worked normal.	
	Horizontal	EUT worked normal.	
Left	Vertical	EUT worked normal.	
	Horizontal	EUT worked normal.	

Mode : (3) LAN Print (Option)(Wired)

<i>Test Face</i>	<i>Polar.</i>	<i>Result</i>	<i>Remarks</i>
Front	Vertical	EUT worked normal.	
	Horizontal	EUT worked normal.	
Right	Vertical	EUT worked normal.	
	Horizontal	EUT worked normal.	
Rear	Vertical	EUT worked normal.	
	Horizontal	EUT worked normal.	
Left	Vertical	EUT worked normal.	
	Horizontal	EUT worked normal.	

Photograph of Tested Device Configuration

(Radiated RF Electromagnetic Field Immunity Test)



EN61000-4-6/2009
(EN 301 489-1 V1.9.2 <9.5>)
Conducted RF Electromagnetic Field
Immunity Test

<i>Equipment</i>	<i>Model</i>	<i>Serial No.</i>
Printer	ECOCYS P7040cdn	Z5Y4Z00055
Paper Feeder	PF-5100	ZC34900236
		ZC34900237
		ZC34900238
Printer NIC	IB-50	TEST-1
	IB-51	TEST-1
Hard Disk Drive	HD-6	TEST-1
	HD-7	TEST-1

Date : 24 February, 2015

Temperature : 23°C

Humidity : 54%

Atom. Pressure : 1014hPa

Testing Place : Kyocera Document Solutions Tamaki Factory

Power Input : AC230V, 50Hz

Tested by : Takayuki Matsuura

T. Matsuura

This test was applied as follows.

	<i>Frequency</i>	<i>RF Level</i>	<i>Criteria</i>	<i>Result</i>
E.U.T. Power Line	0.15~80 MHz	3V/m, 80%, 1kHz AM Modulation	A	Pass
Communication Line				

We tested at Tamaki EMC Laboratory of KYOCERA Document Solutions Tamaki Factory.

Test equipment used : See the attached documents for details.

Conducted RF Electromagnetic Field Immunity Test

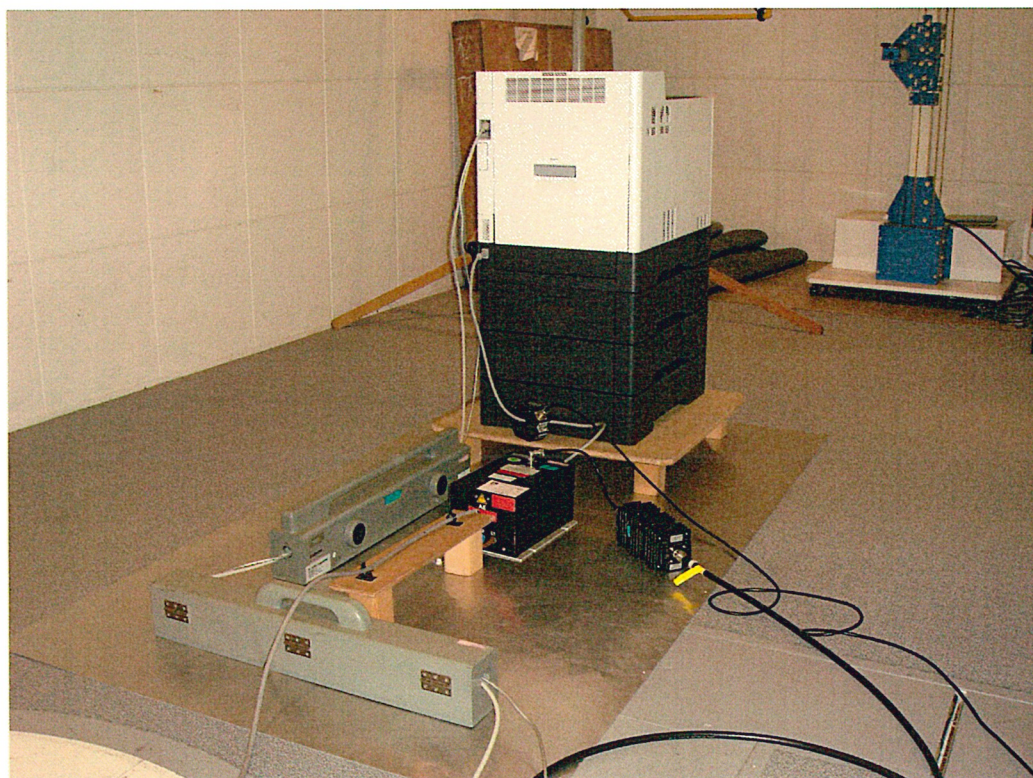
Model : ECOCYS P7040cdn

(Test Date: 2015.February.)

<i>Tested Port</i>	<i>Coupling</i>	<i>Operation Mode</i>	<i>Result</i>	<i>Remarks</i>
AC Power Cord for Printer	CDN M3	LAN Print (On Board)	<i>EUT worked normal.</i>	
LAN Cable	EM Clamp	LAN Print (Option) LAN Print (Wireless)	<i>EUT worked normal.</i>	
USB Cable	EM Clamp	FAX Tx + USB Print	<i>EUT worked normal.</i>	

Photograph of Tested Device Configuration

(Conducted RF Electromagnetic Field Immunity Test)



EN61000-4-8/2010
Power-Frequency Magnetic Field
Immunity Test

<i>Equipment</i>	<i>Model</i>	<i>Serial No.</i>
Printer	ECOCYS P7040cdn	Z5Y4Z00055
Paper Feeder	PF-5100	ZC34900236
		ZC34900237
		ZC34900238
Printer NIC	IB-50	TEST-1
	IB-51	TEST-1
Hard Disk Drive	HD-6	TEST-1
	HD-7	TEST-1

Date : 24 February, 2015

Temperature : 23°C

Humidity : 54%

Atom. Pressure : 1014hPa

Testing Place : Kyocera Document Solutions Tamaki Factory

Power Input : AC230V, 50Hz

Tested by : Takayuki Matsuura *T. Matsuura*

This test was applied as follows.

<i>Frequency</i>	<i>Level</i>	<i>Criteria</i>	<i>Result</i>
50 Hz	1A/m	A	Pass

We tested at Tamaki EMC Laboratory of KYOCERA Document Solutions Tamaki Factory.

Test equipment used : See the attached documents for details.

Power-Frequency Magnetic Field Immunity Test

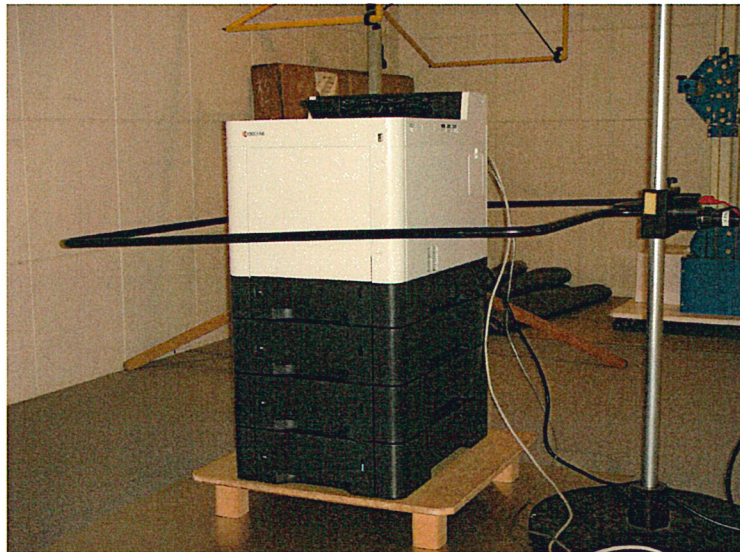
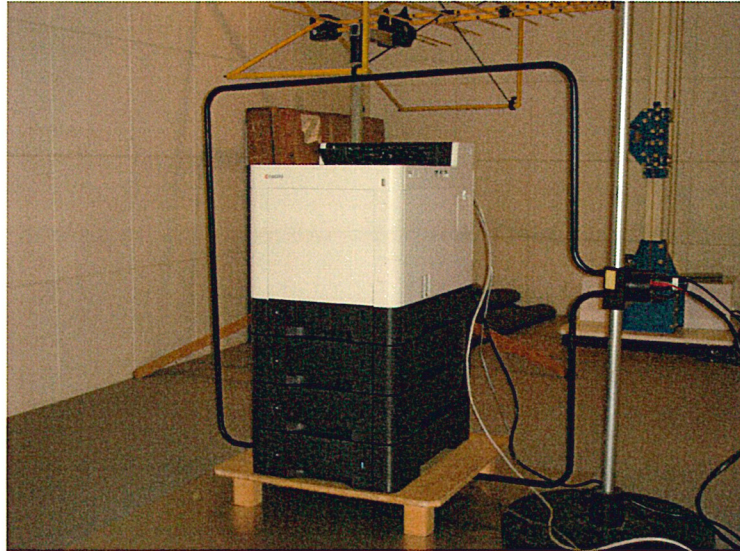
Model : ECOCYS P7040cdn

(Test Date: 2015.February.)

<i>Polarization</i>	<i>Operation Mode</i>	<i>Result</i>	<i>Remarks</i>
X	LAN Print (On Board)	<i>EUT worked normal.</i>	
Y	LAN Print (On Board)	<i>EUT worked normal.</i>	
Z	LAN Print (On Board)	<i>EUT worked normal.</i>	

Photograph of Tested Device Configuration

(Power-Frequency Magnetic Field Immunity Test)



List of Tests and Measurement Equipment

『Test Clause』

EN61000-4-3/ENV50204
EN61000-4-6

: Radiated RF Electromagnetic Field Immunity Test
: Conducted RF Electromagnetic Field Immunity Test

<i>Equipment</i>	<i>Type</i>	<i>Manufacturer</i>	<i>Serial No.</i>
RF Signal Generator	HP8648B	Hewlett Packard	3642U01646
RF Power Amplifier	757LCB	Kalmas Engineering	8289-1
Amplifier Interface	IF-488	Kalmas Engineering	8289-2
Power Reflection Meter	NRT	Rohde&Schwarz	825490 / 003
Power Head	NAP-Z5	Rohde&Schwarz	847424 / 027
Field Sensor	HI-4422	Comtest International	96168
O/E Converter	HI-4413P	Comtest International	800—9205
Birog Antenna	CBL6140	Schaffner Chase EMC	1107
Pulse Generator	2416A	Pragmatic Instruments	818314 820344
Current Sensor Probe	CSP9160	Schaffner Chase EMC	1059
Millivolt Meter	URV55	Rohde&Schwarz	846100 / 028
Insertion Unit	URV5-Z4	Rohde&Schwarz	848566 / 018
Spectrum Analyzer	HP8568B	Hewlett Packard	2517A01396
EM Injection Clamp	T/EM-801-23mm	Fisher Custom Communication	102
Decoupling Network	T/EM-DCN-23mm	Fisher Custom Communication	313
Calibration Fixture	T/EM-801-CF-23mm	Fisher Custom Communication	338
CDN	TCDN-801-M3-32	Fisher Custom Communication	9851
CDN	TCDN-801-S25	Fisher Custom Communication	9850
CDN(Calibration tools)	TCDN-801-150-50	Fisher Custom Communication	9852, 9853

『Test Clause』

EN61000-4-8 : Power-Frequency Magnetic Field Immunity Test

(MFP/Printer : A3 Model)

<i>Equipment</i>	<i>Type</i>	<i>Manufacturer</i>	<i>Serial No.</i>
Immunity Test System	<i>*Handmade</i>	---	---
Coupling Clamp	<i>*Not used</i>	---	---
Magnetic Field Coil	<i>*Handmade</i>	---	---

(MFP/Printer : A4 Model)

<i>Equipment</i>	<i>Type</i>	<i>Manufacturer</i>	<i>Serial No.</i>
Conducted immunity test system	BEST Plus 1	SCHAFFNER	199848-001SC
Magnetic field coil	INA 702	SCHAFFNER	199815-004SC
Coupling clamp	CDN126	SCHAFFNER	130