

SECTION 1

Test Reports of Immunity

(EN55024/2010)

EN61000-4-2/1995

Electrostatic Discharge Immunity Test

<i>Equipment</i>	<i>Model</i>	<i>Serial No.</i>
Multi-Function Printer	ECOCYS M3560idn	ZSS3X00020
Paper Feeder	PF-320	NUS3525018
		NUS3525035
		NUS3525092
		NUS3524709
Printer NIC	IB-50	TEST-1
	IB-51	TEST-1
Hard Disk Drive	HD-6	TEST-1
	HD-7	TEST-1

Date : 19 November, 2013

Temperature : 24°C

Humidity : 56%

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 M3560idn

(Test Date : 2013.November.)

◎Operation Mode

1. Stand by
2. Copy
3. LAN Print (On Board)
4. FAX Tx + USB Print

◎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
	●MFP (Main)			
01	Screws for Operation Panel	1, 2, 3, 4	C, A	Worked Normal
02	Fixing Mount for Printer , Printer NIC and FAX Kit	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	Fixing Mount for Modular Connector	1, 2, 3, 4	C, A	Worked Normal
07	Metallic Parts for Bypass	1, 2, 3, 4	C, A	Worked Normal
08	Screws for Top Side	1, 2, 3, 4	C, A	Worked Normal
09	Screws for right side	1, 2, 3, 4	C, A	Worked Normal
10	Screws for back side	1, 2, 3, 4	C, A	Worked Normal
11	Metallic cover for left side	1, 2, 3, 4	C, A	Worked Normal
12	Inner metallic parts in bypass part	1	C, A	Worked Normal
13	Inner metallic parts inside front cover (*opened)	1	C, A	Worked Normal
14	Inner metallic parts in paper cassettes	1	C, A	Worked Normal
	●DP			
15	Left / right hinge	1, 2, 3, 4	C, A	Worked Normal
16	Metallic parts for convey part	1, 2, 3, 4	C, A	Worked Normal
17	Inner metallic parts inside top cover	1	C, A	Worked Normal
18	Metallic parts for bottom side	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

EN61000-4-4/1995

Electrical Fast Transient/Burst Immunity Test

<i>Equipment</i>	<i>Model</i>	<i>Serial No.</i>
Multi-Function Printer	ECOCYS M3560idn	ZSS3X00020
Paper Feeder	PF-320	NUS3525018
		NUS3525035
		NUS3525092
		NUS3524709
Printer NIC	IB-50	TEST-1
	IB-51	TEST-1
Hard Disk Drive	HD-6	TEST-1
	HD-7	TEST-1

Date : 20 November, 2013

Temperature : 23°C

Humidity : 55%

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>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 M3560idn

(Test Date: 2013.November.)

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

EN61000-4-5/1995

Surge Immunity Test

<i>Equipment</i>	<i>Model</i>	<i>Serial No.</i>
Multi-Function Printer	ECOCYS M3560idn	ZSS3X00020
Paper Feeder	PF-320	NUS3525018
		NUS3525035
		NUS3525092
		NUS3524709
Printer NIC	IB-50	TEST-1
	IB-51	TEST-1
Hard Disk Drive	HD-6	TEST-1
	HD-7	TEST-1

Date : 21 November, 2013

Temperature : 24°C

Humidity : 53%

Atom. Pressure : 1014hPa

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 M3560idn

(Test Date : 2013.November.)

Mode : (1) Copy

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) 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) FAX Tx + 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>

EN61000-4-11/1994

Voltage Dips, Short Interruption and Voltage Variation Immunity Test

<i>Equipment</i>	<i>Model</i>	<i>Serial No.</i>
Multi-Function Printer	ECOCYS M3560idn	ZSS3X00020
Paper Feeder	PF-320	NUS3525018
		NUS3525035
		NUS3525092
		NUS3524709
Printer NIC	IB-50	TEST-1
	IB-51	TEST-1
Hard Disk Drive	HD-6	TEST-1
	HD-7	TEST-1

Date : 21 November, 2013

Temperature : 24°C

Humidity : 53%

Atom. Pressure : 1014hPa

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 M3560idn

(Test Date : 2013.November.)

Mode : (1) Copy

	<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) 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 : (3) FAX Tx + 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>

EN61000-4-3/1996 + ENV50204/1995

Radiated RF Electromagnetic Field Immunity Test

<i>Equipment</i>	<i>Model</i>	<i>Serial No.</i>
Multi-Function Printer	ECOCYS M3560idn	ZSS3X00020
Paper Feeder	PF-320	NUS3525018
		NUS3525035
		NUS3525092
		NUS3524709
Printer NIC	IB-50	TEST-1
	IB-51	TEST-1
Hard Disk Drive	HD-6	TEST-1
	HD-7	TEST-1

Date : 25,26 November, 2013
 Temperature : 24°C
 Humidity : 54%
 Atom. Pressure : 1020hPa
 Testing Place : Kyocera Document Solutions Tamaki Factory
 Power Input : AC230V, 50Hz
 Tested by : Takayuki Matsuura *J. 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.

Radiated RF Electromagnetic Field Immunity Test

Model: ECOCYS M3560idn

(Test Date : 2013.November.)

Mode : (1) Copy

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

Mode : (2) LAN Print (On Board)

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

Mode : (3) FAX Tx + USB Print

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

Photograph of Tested Device Configuration

(Radiated RF Electromagnetic Field Immunity Test)



EN61000-4-6/1996

Conducted RF Electromagnetic Field Immunity Test

<i>Equipment</i>	<i>Model</i>	<i>Serial No.</i>
Multi-Function Printer	ECOCYS M3560idn	ZSS3X00020
Paper Feeder	PF-320	NUS3525018
		NUS3525035
		NUS3525092
		NUS3524709
Printer NIC	IB-50	TEST-1
	IB-51	TEST-1
Hard Disk Drive	HD-6	TEST-1
	HD-7	TEST-1

Date : 26 November, 2013

Temperature : 24°C

Humidity : 56%

Atom. Pressure : 1028hPa

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

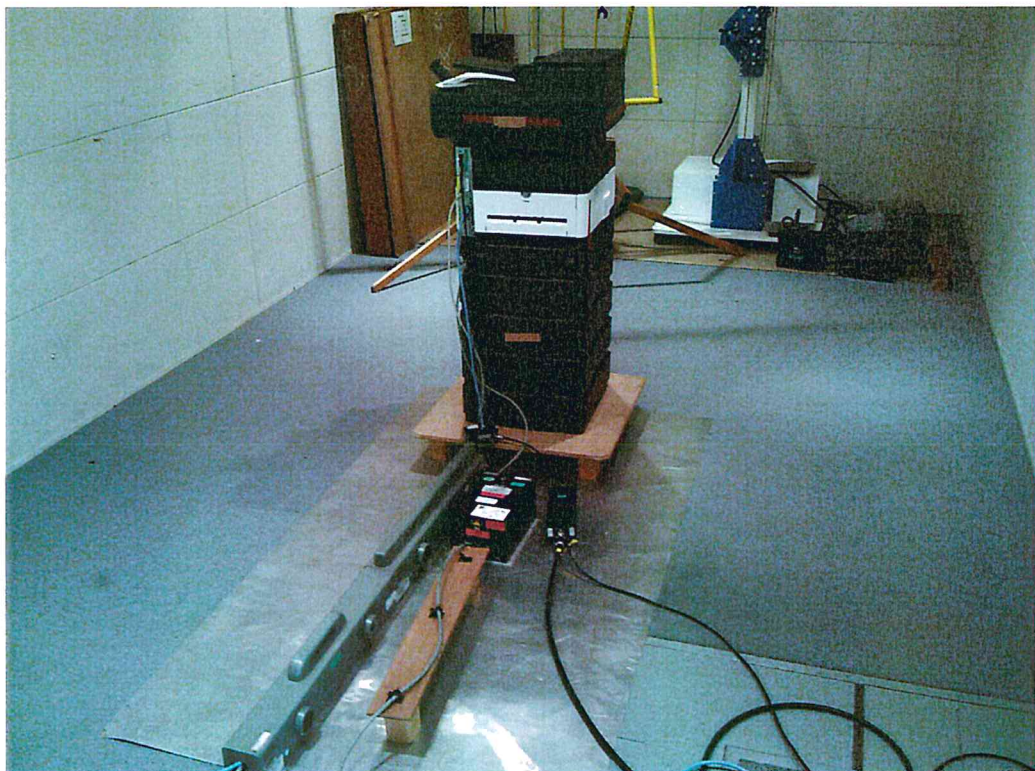
Model : ECOCYS M3560idn

(Test Date: 2013.November.)

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



EN61000-4-8/1993
Power-Frequency Magnetic Field
Immunity Test

<i>Equipment</i>	<i>Model</i>	<i>Serial No.</i>
Multi-Function Printer	ECOCYS M3560idn	ZSS3X00020
Paper Feeder	PF-320	NUS3525018
		NUS3525035
		NUS3525092
		NUS3524709
Printer NIC	IB-50	TEST-1
	IB-51	TEST-1
Hard Disk Drive	HD-6	TEST-1
	HD-7	TEST-1

Date : 26 November, 2013

Temperature : 26°C

Humidity : 56%

Atom. Pressure : 1028hPa

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

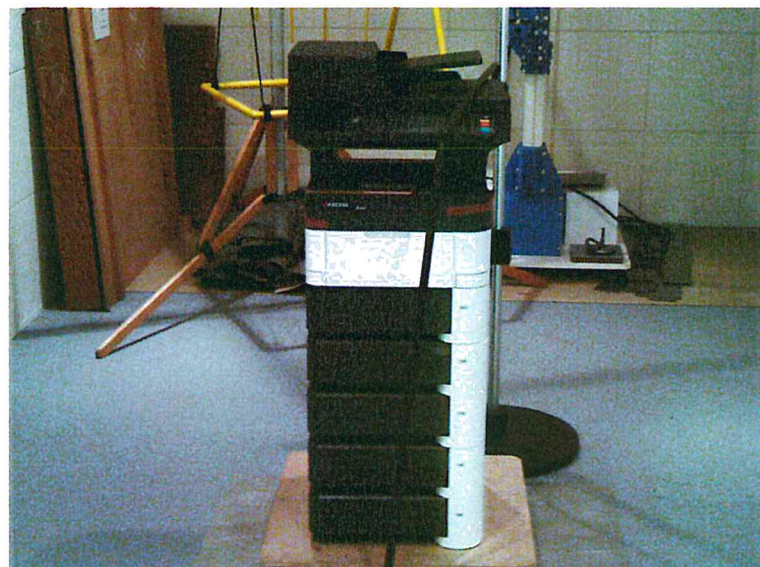
Model : ECOCYS M3560idn

(Test Date: 2013.November.)

<i>Polarization</i>	<i>Operation Mode</i>	<i>Result</i>	<i>Remarks</i>
X	Copy	<i>EUT worked normal.</i>	
Y	Copy	<i>EUT worked normal.</i>	
Z	Copy	<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
Bilog 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	*Handmade	---	---
Coupling Clamp	*Not used	---	---
Magnetic Field Coil	*Handmade	---	---

(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