

EVA2400

TEST DATA IEC61000 SERIES

DWG No. IA754-58-01		
APPD	CHK	DWG
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INDEX

	PAGE
1. Electrostatic discharge immunity test (IEC61000-4-2)	R-1
2. Radiated radio-frequency electromagnetic field immunity test (IEC61000-4-3)	R-2
3. Electrical fast transient / burst immunity test (IEC61000-4-4)	R-3
4. Surge immunity test (IEC61000-4-5)	R-4
5. Conducted disturbances induced by radio-frequency field immunity test (IEC61000-4-6)	R-5
6. Power frequency magnetic field immunity test (IEC61000-4-8)	R-6
7. Voltage dips, short interruptions immunity test (IEC61000-4-11)	R-7

Terminology used

FG Frame GND

* Test results are reference data based on our standard measurement condition.

1. Electrostatic discharge immunity test (IEC61000-4-2)

EVA2400 SERIES

(1) Equipment used

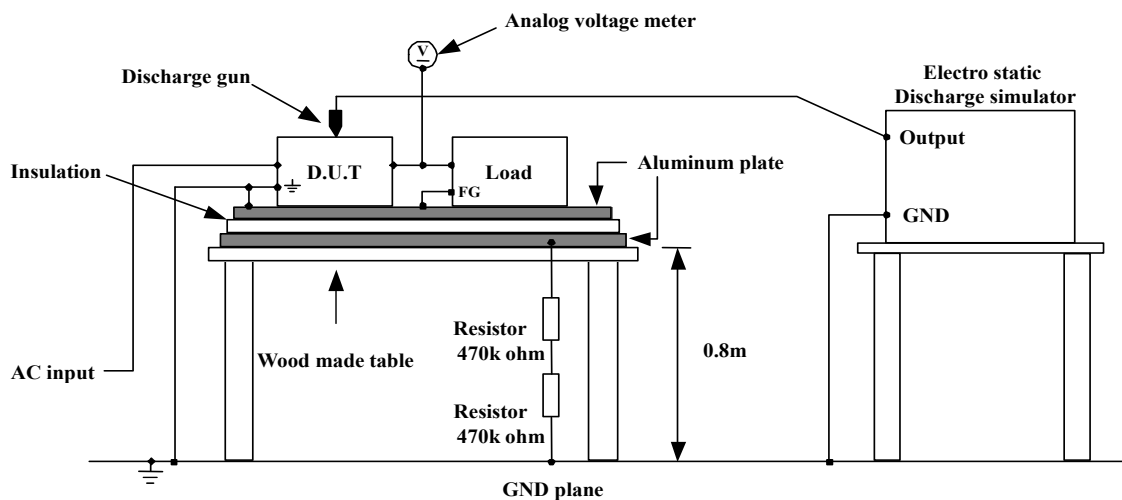
Electro static discharge simulator : ESS-2000 (Noiseken)
 Discharge resistance : 330Ω
 Capacity : 150pF

(2) Test conditions

• Input voltage	: 200VAC	• Output voltage	: Rated
• Output current	: 100%	• Polarity	: +, -
• Test times	: 10 Times	• Discharge interval	: >1 Second
• Ambient temperature	: 25°C		

(3) Test method and device test point

Contact discharge : \pm , mounting screw
 Air Discharge : Input and output terminal, \pm , mounting screw



(4) Acceptable conditions

1. Output voltage regulation not to exceed $\pm 5\%$ of initial (before test) value during test.
2. Output voltage to be within regulation specification after the test.
3. Along with 1 and 2, no discharge of fire or smoke, as well as no output failure.

(5) Test result

Contact discharge (kV)	EVA150-16	EVA300-8	EVA600-4
4	PASS	PASS	PASS

Air discharge(kV)	EVA150-16	EVA300-8	EVA600-4
8	PASS	PASS	PASS

2. Radiated radio-frequency electromagnetic field immunity test (IEC61000-4-3)

EVA2400 SERIES

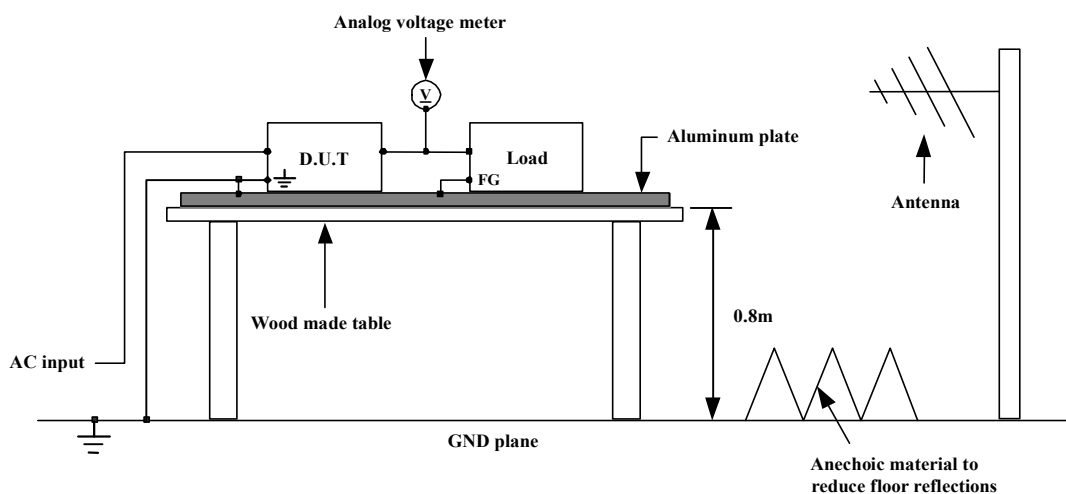
(1) Equipment used

Signal generator	: N5181A (Agilent)
Power amplifier system	: CBA 1G-250 (Teseq)
Electric field sensor	: HI-6005 (Holaday)
Bilog antenna	: VULP9118E (Schwarzbeck)

(2) Test conditions

• Input voltage	: 200VAC	• Output voltage	: Rated
• Output current	: 100%	• Amplitude modulated	: 80%, 1kHz
• Electromagnetic frequency	: 80~1000MHz	• Ambient temperature	: 25°C
• Wave angle	: Horizontal and vertical		
• Sweep condition	: 1.0% step up, 2.8 seconds hold		
• Test angle	: Top/Bottom, Both sides, Front/Back		
• Distance	: 3.0m		

(3) Test method



(4) Acceptable conditions

1. Output voltage regulation not to exceed $\pm 5\%$ of initial (before test) value during test.
2. Output voltage to be within regulation specification after the test.
3. Along with 1 and 2, no discharge of fire or smoke, as well as no output failure.

(5) Test result

Radiation field strength (V/m)	EVA150-16	EVA300-8	EVA600-4
3	PASS	PASS	PASS

3. Electrical fast transient / burst immunity test (IEC61000-4-4)

EVA2400 SERIES

(1) Equipment used

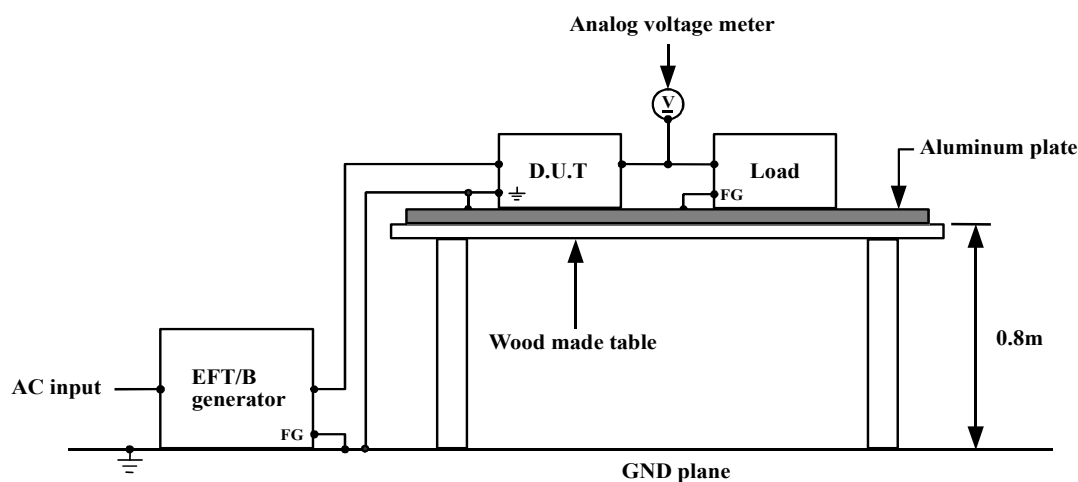
EFT/B generator : FNS-AX II (Noiseken)

(2) Test conditions

• Input voltage	: 200VAC	• Output voltage	: Rated
• Output current	: 100%	• Test time	: 1 Minute
• Polarity	: +, -	• Ambient temperature	: 25°C
• Number of tests	: 3 Times		

(3) Test method and device test point

Apply to (N, L, \perp), (N, L), (N), (L), (\perp).



(4) Acceptable conditions

1. Output voltage regulation not to exceed $\pm 5\%$ of initial (before test) value during test.
2. Output voltage to be within regulation specification after the test.
3. Along with 1 and 2, no discharge of fire or smoke, as well as no output failure.

(5) Test result

Test voltage (kV)	Repetition rate (kHz)	EVA150-16	EVA300-8	EVA600-4
2	5	PASS	PASS	PASS

4. Surge immunity test (IEC61000-4-5)

EVA2400 SERIES

(1) Equipment used

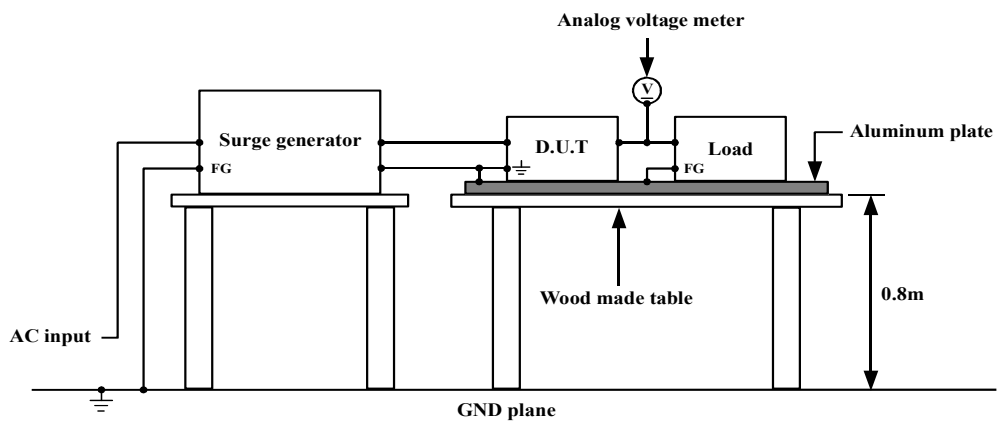
Surge generator	: LSS-15AX (Noiseken)		
Coupling impedance :	Common 12Ω	Coupling capacitance :	Common 9μF
	Normal 2Ω		Normal 18μF

(2) Test conditions

•Input voltage	: 200VAC	•Output voltage	: Rated
•Output current	: 0, 100%	•Test times	: 3 Times
•Polarity	: +, -	•Mode	: Common and normal
•Phase	: 0, 90 deg	•Ambient temperature	: 25°C

(3) Test method and device test points

Apply to common mode (N- $\frac{\pm}{\pm}$, L- $\frac{\pm}{\pm}$) and normal mode (N-L).



(4) Acceptable conditions

1. Output voltage regulation not to exceed $\pm 5\%$ of initial (before test) value during test.
2. Output voltage to be within regulation specification after the test.
3. Along with 1 and 2, no discharge of fire or smoke, as well as no output failure.

(5) Test result

Common			
Test voltage (kV)	EVA150-16	EVA300-8	EVA600-4
2	PASS	PASS	PASS

Normal			
Test voltage (kV)	EVA150-16	EVA300-8	EVA600-4
1	PASS	PASS	PASS

5. Conducted disturbances induced by radio-frequency field immunity test (IEC61000-4-6)

EVA2400 SERIES

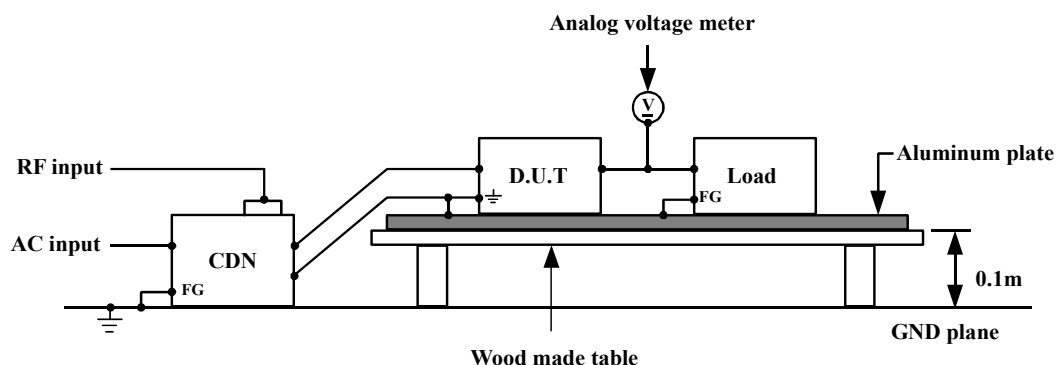
(1) Equipment used

RF power amplifier	: 116FC-CE (Kalmus)
Signal generator	: N5181A (Agilent)
Coupling de-coupling network (CDN)	: M316 (Schaffner)

(2) Test conditions

• Input voltage	: 200VAC	• Output voltage	: Rated
• Output current	: 100%	• Electromagnetic frequency	: 150kHz~80MHz
• Ambient temperature	: 25°C		
• Sweep condition	: 1.0% step up, 2.8 seconds hold		

(3) Test method



(4) Acceptable conditions

1. Output voltage regulation not to exceed $\pm 5\%$ of initial (before test) value during test.
2. Output voltage to be within regulation specification after the test.
3. Along with 1 and 2, no discharge of fire or smoke, as well as no output failure.

(5) Test result

Voltage level (V)	EVA150-16	EVA300-8	EVA600-4
3	PASS	PASS	PASS

6. Power frequency magnetic field immunity test (IEC61000-4-8)

EVA2400 SERIES

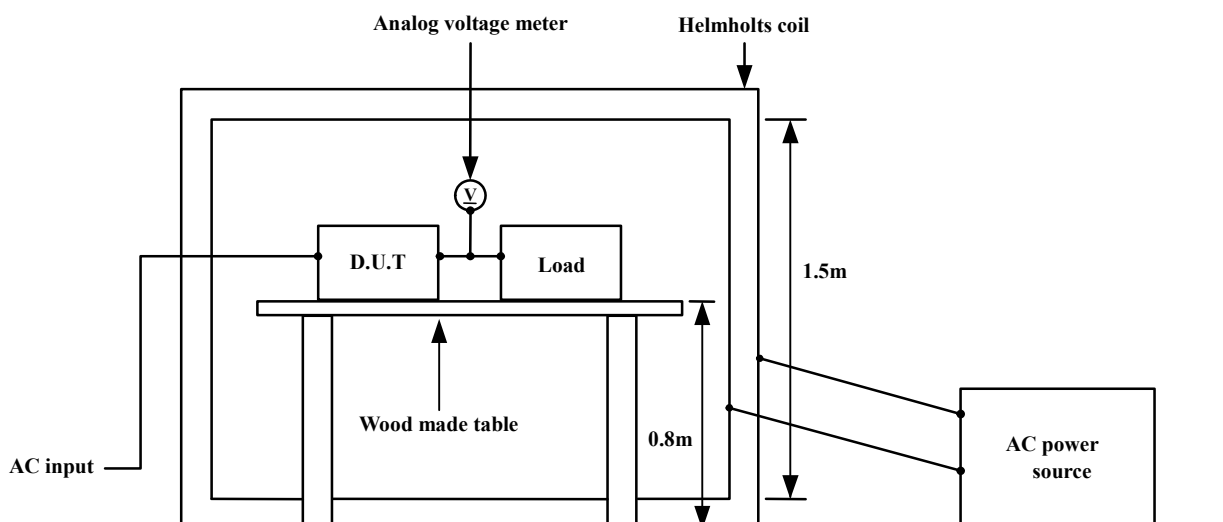
(1) Equipment used

AC power source : AA2000XG (Takasago)
Helmholts coil : HHS5215 (Spulen)

(2) Test conditions

• Input voltage	: 200VAC	• Output voltage	: Rated
• Output current	: 100%	• Magnetic frequency	: 50Hz
• Ambient temperature	: 25°C	• Direction	: X, Y, Z
• Test time	: More than 10 seconds (each direction)		

(3) Test method and device test point



(4) Acceptable conditions

1. Output voltage regulation not to exceed $\pm 5\%$ of initial (before test) value during test.
2. Output voltage to be within regulation specification after the test.
3. Along with 1 and 2, no discharge of fire or smoke, as well as no output failure.

(5) Test result

Magnetic field strength (A/m)	EVA150-16	EVA300-8	EVA600-4
1	PASS	PASS	PASS

7. Voltage dips, short interruptions immunity test (IEC61000-4-11)

EVA2400 SERIES

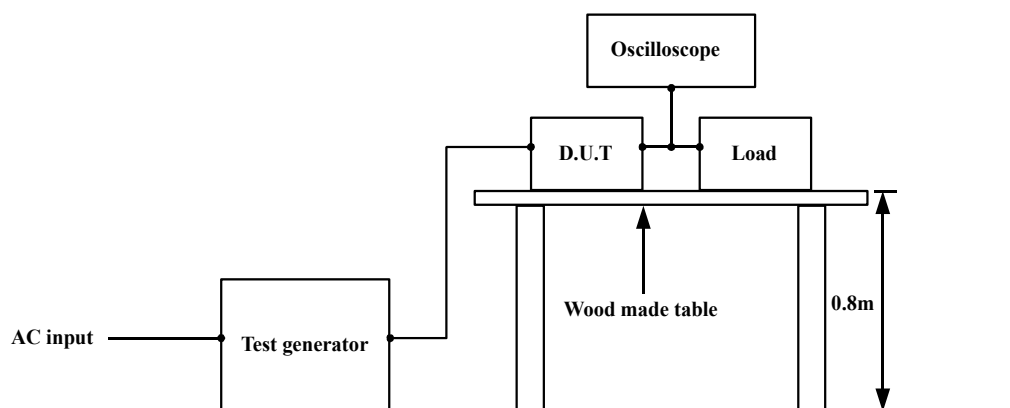
(1) Equipment used

Test generator : PCR6000LA (KIKUSUI)

(2) Test conditions

• Input voltage	: 200VAC	• Output voltage	: Rated
• Output current	: 100%	• Ambient temperature	: 25°C
• Number of tests	: 3 Times	• Interval	: More than 10 seconds

(3) Test method and device test point



(4) Acceptable conditions

1. Output voltage to be within output voltage regulation specification after the test.
2. No discharge of fire or smoke.

(5) Test result

Test level	Dip rate	Continue time	EVA150-16	EVA300-8	EVA600-4	
70%	30%	500ms	PASS	PASS	PASS	(criteria B)
40%	60%	200ms	PASS	PASS	PASS	(criteria B)
0%	100%	20ms	PASS	PASS	PASS	(criteria B)
0%	100%	5000ms	PASS	PASS	PASS	(criteria B)