GWS250

TEST DATA

IEC61000 SERIES

DWG. No. PA589-58-01		
APPD	CHK	DWG
18 Jan 11	18 Jan 11	18 Jan 2011

TDK-Lambda

INDEX

※ Test results are typical data. Nevertheless the following results are considered to be actual capability data because all units have nearly the same characteristics.

1. Electrostatic Discharge Immunity Test (IEC61000-4-2)

MODEL : GWS250

(1) Equipment Used

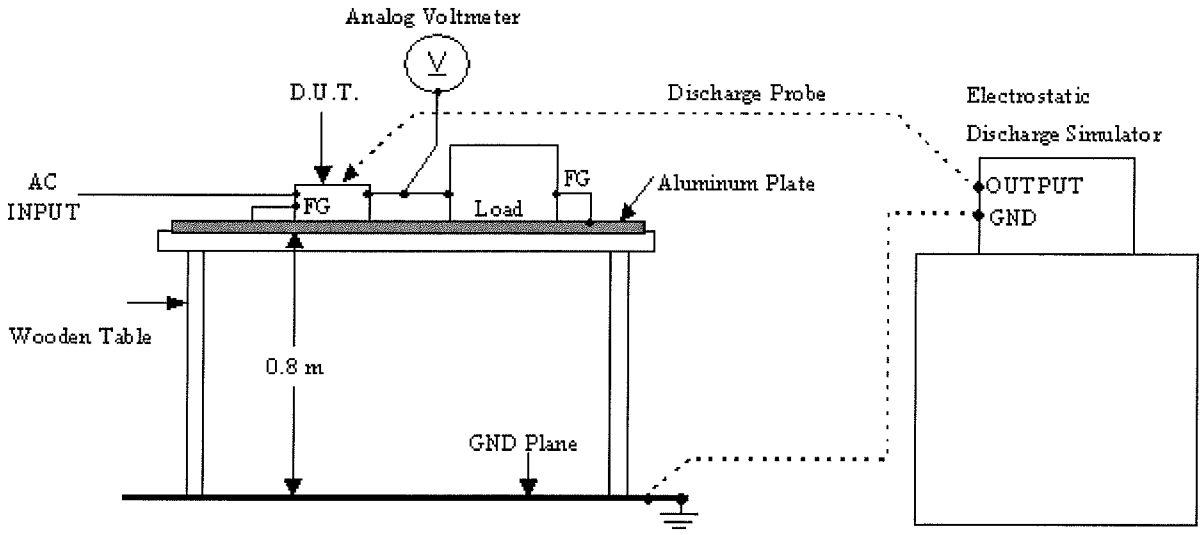
Electrostatic Discharge Simulator	:	NSG435	(SCHAFFNER)		
Discharge Resistance	:	330Ω	Capacitor	:	150pF

(2) Test Conditions

Input Voltage	:	230VAC	Output Voltage	:	Rated
Output Current	:	100%	Polarity	:	+, -
Number of Tests	:	10 times	Ambient Temperature	:	25°C
Discharge Interval	:	>1 Second			

(3) Test Method and Device Test Point

Contact Discharge	:	FG, Case Screw
Air Discharge	:	Input and Output Terminal, FG, Case Screw



(4) Acceptable Conditions

1. Output voltage regulation not to exceed ±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 Results

Contact Discharge (kV)	GWS250-12	Air Discharge (kV)	GWS250-12
2	PASS	2	PASS
4	PASS	4	PASS
6	PASS	8	PASS

2. Radiated Radio-Frequency Electromagnetic Field Immunity Test (IEC61000-4-3)

MODEL : GWS250

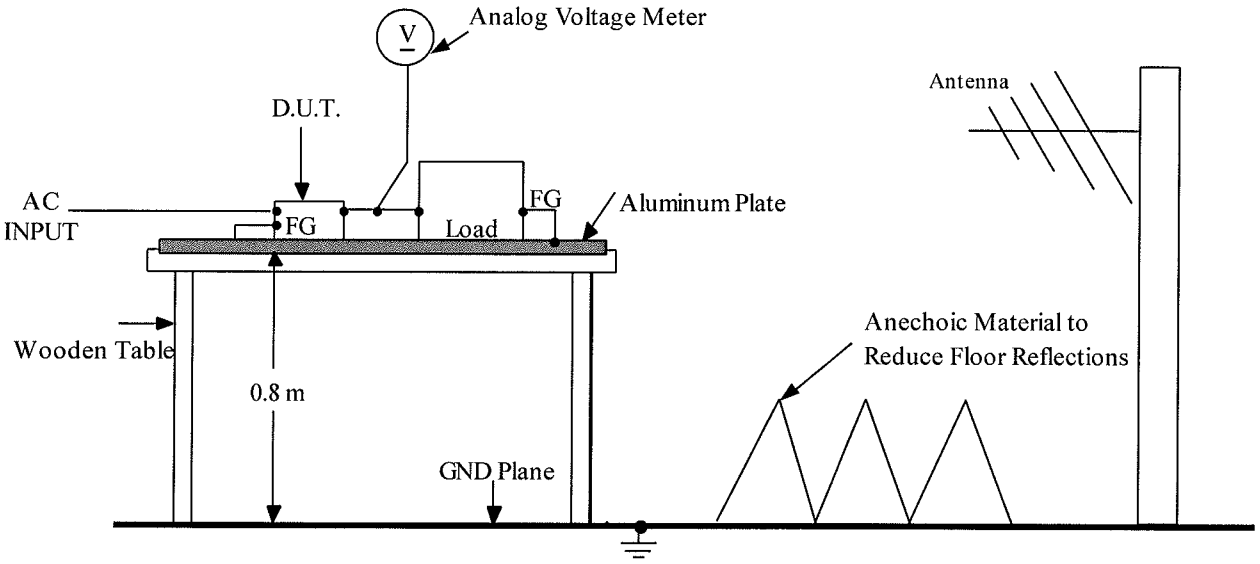
(1) Equipment Used

Narda Field Meter	:	EMR-20C
Narda E Field Probe (100k – 3GHz)	:	2244/90.21
Agilent Signal Generator (9k – 3200MHz)	:	8648C
Agilent EPM Series Power Meter	:	E4419B
Agilent E-Series Avg Power Sensor 1nW – 100mW (-60 to +20dBm) 9kHz – 6GHz	:	E9304A
Agilent 20MHz Function/Arbitrary Waveform Generator	:	33220A
TDK RF Solution Log Periodic Dipole Antenna (80MHz – 3GHz)	:	LPDA 08030
AR Directional Coupler		
Schaffner Directional Coupler (80MHz–1GHz)	:	CHA9652B
Schaffner Power Amplifier (80MHz–1GHz)	:	CBA9433

(2) Test Conditions

Input Voltage	:	230VAC / 50Hz	Output Voltage	: Rated
Output Current	:	100%	Amplitude Modulated	: 80%, 1kHz
Electromagnetic Frequency	:	80~1000MHz	Ambient Temperature	: 25°C
Distance	:	3.0m	Wave Angle	: Horizontal and Vertical
Sweep Conditions	:	1.0% Step Up, 2.8 Seconds Hold		
Test Angle	:	Both Sides, Front/Back		

(3) Test Method



(4) Acceptable Conditions

1. Output voltage regulation not to exceed ±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 Results

Radiation Field Strength (V/m)	GWS250-12
1	PASS
3	PASS

3. Electrical Fast Transient / Burst Immunity Test (IEC61000-4-4)

MODEL : GWS250

(1) Equipment Used

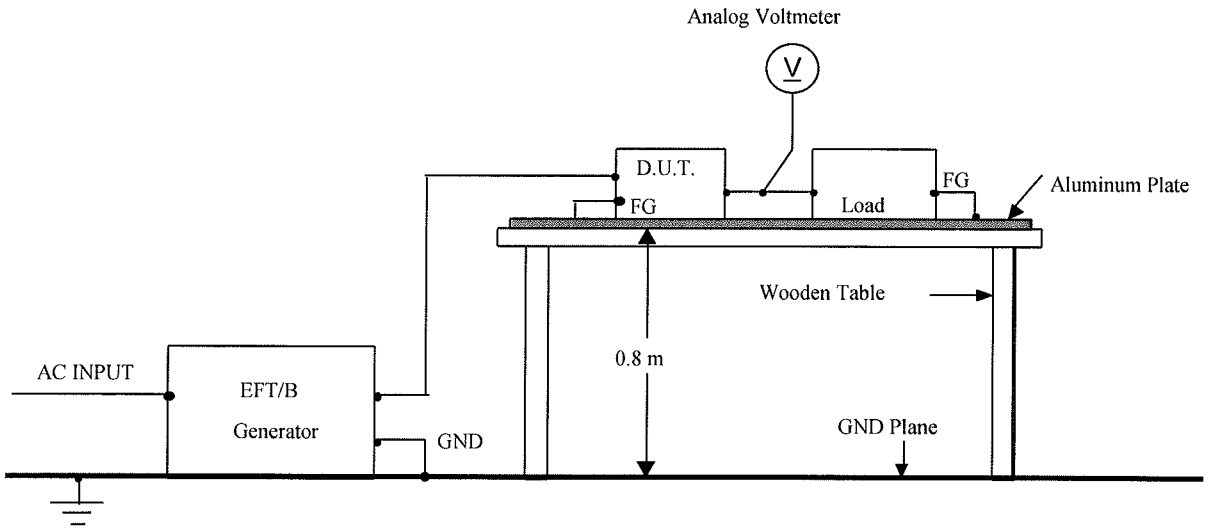
EFT/B (Generator) : NSG-2025 (SCHAFFNER)

(2) Test Conditions

Input Voltage	:	230VAC	Output Voltage	:	Rated
Output Current	:	100%	Polarity	:	+, -
Number of Tests	:	3 times	Ambient Temperature	:	25°C
Test time	:	1 minute			

(3) Test Method and Device Test Points

Apply to (N,L,FG), (NL), (N), (L), (FG)



(4) Acceptable Conditions

1. Output voltage regulation not to exceed ±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 Results

Test Voltage (kV)	Repetition Rate (kHz)	GWS250-12
0.5	5.0	PASS
1.0	5.0	PASS
2.0	5.0	PASS

4. Surge Immunity Test (IEC61000-4-5)

MODEL : GWS250

(1) Equipment Used

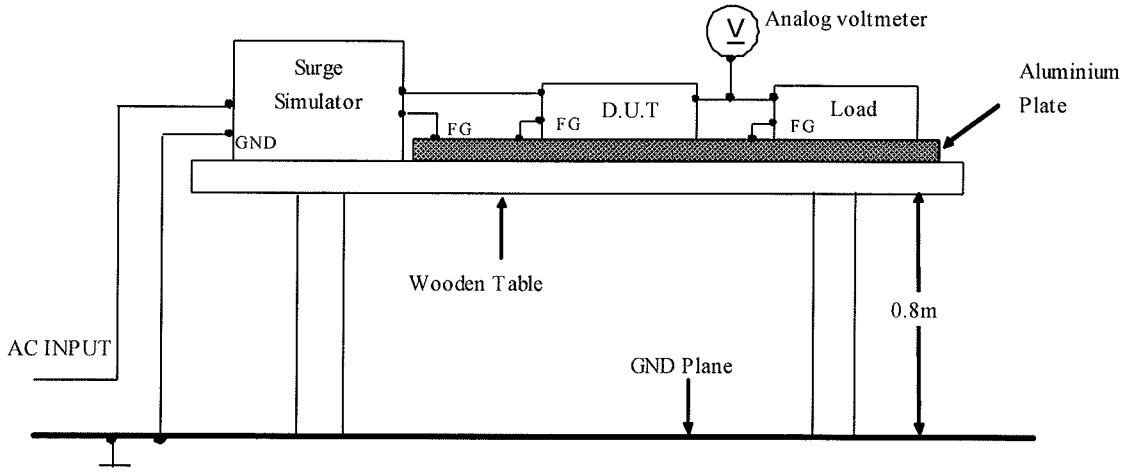
Impulse Network	:	PNW2050					
Pulse Coupling Network		CDN 133					
Coupling Impedance	:	Common	12Ω	Coupling Capacitance	:	Common	9μF
		Normal	2Ω			Normal	18μF

(2) Test Conditions

Input Voltage	:	230VAC	Output Voltage	:	Rated
Output Current	:	100%	Number of Tests	:	3 times
Polarity	:	+, -	Mode	:	Common, Normal
Phase	:	0, 90 deg	Ambient Temperature	:	25°C

(3) Test Method and Device Test Points

Apply to Common mode (N-FG, L-FG) and Normal mode (N-L).



(4) Acceptable Conditions

1. Output voltage regulation not to exceed ±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 Results

Test Voltage (kV) Common	GWS250-12	Test Voltage (kV) Normal	GWS250-12
0.5	PASS	0.5	PASS
1.0	PASS	1.0	PASS
2.0	PASS	2.0	PASS
4.0	PASS	-	-

5. Conducted Disturbances Induced by Radio-Frequency Field Immunity Test (IEC61000-4-6)

MODEL : GWS250

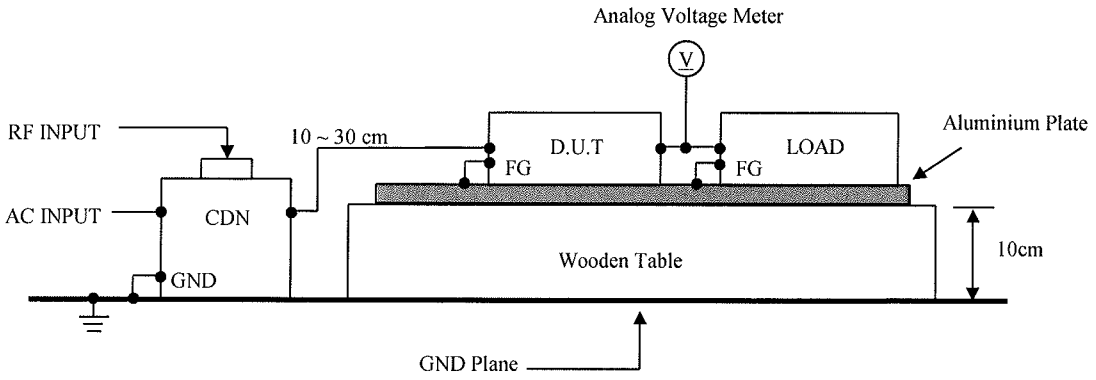
(1) Equipment Used

Schaffner RF Generator	:	NSG2070
Schaffner Immunity Injection Clamp	:	KEMZ801
Schaffner 4dB/40W Attenuator	:	INA 2070-1

(2) Test Conditions

Input Voltage	:	230VAC/50Hz	Output Voltage	:	Rated
Output Current	:	100%	Electromagnetic Frequency	:	150kHz~80MHz
Ambient Temperature	:	25°C			
Sweep Conditions	:	1.0% Step Up, 2.8 Seconds Hold			

(3) Test Method



(4) Acceptable Conditions

1. Output voltage regulation not to exceed ±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 Results

Test Voltage (V)	GWS250-12
1	PASS
3	PASS

6. Power Frequency Magnetic Field Immunity Test (IEC61000-4-8)

MODEL : GWS250

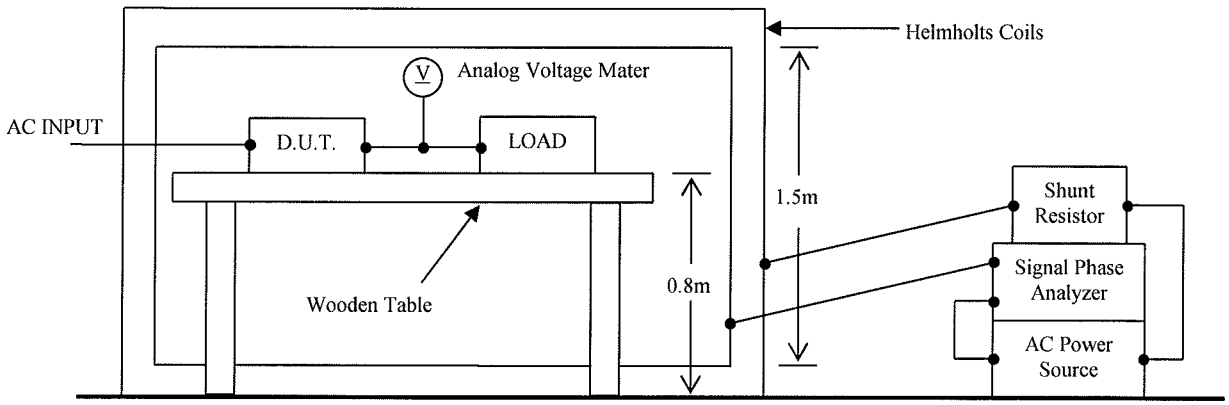
(1) Equipment Used

Narda Magnetic Field Generator : 1008

(2) Test Conditions

Input Voltage	:	230VAC / 50Hz	Output Voltage	:	Rated
Output Current	:	100%	Magnetic Frequency	:	50 Hz / 60Hz
Test Time	:	> 10 sec (Each direction)	Ambient Temperature	:	25°C
Direction	:	X, Y, Z			

(3) Test Method and Device Test Point



(4) Acceptable Conditions

1. Output voltage regulation not to exceed ±5% of initial (before test) value during test.
2. Output voltage to be within output voltage 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)	GWS250-12
1	PASS
3	PASS

7. Voltage Dips, Short Interruptions Immunity Test (IEC61000-4-11)

MODEL : GWS250

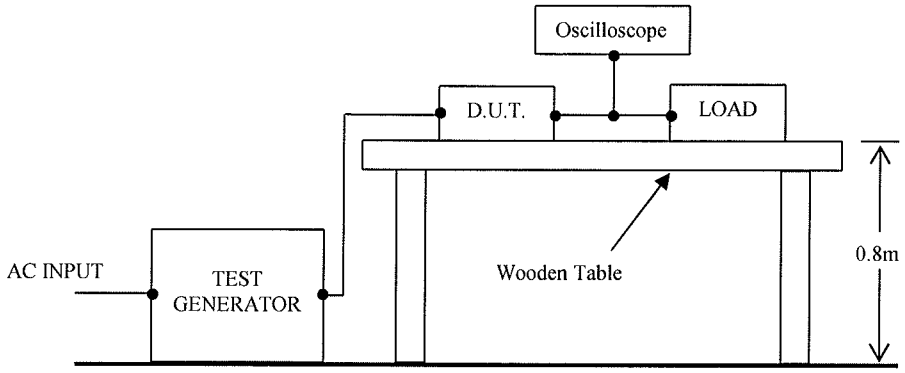
(1) Equipment Used

Test Generator	:	Programmable AC Source Model 61505	(CHROMA)

(2) Test Conditions

Input Voltage	:	230VAC	Output Voltage	:	Rated
Output Current	:	100%	Ambient Temperature	:	25°C
Number of Tests	:	3 times	Test Interval	:	> 10 sec.

(3) Test Method and Device Test Point



(4) Acceptable Conditions

At Test level 70%

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

At Test level 40%, 0%

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	GWS250-12
70%	30%	10ms	PASS
40%	60%	100ms	PASS
0%	100%	5000ms	PASS