DRB120-24-1

TEST DATA

IEC61000 SERIES

INDEX

Terminology used

FG…… Frame GND

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

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 : DRB120-24-1

(1) Equipment Used

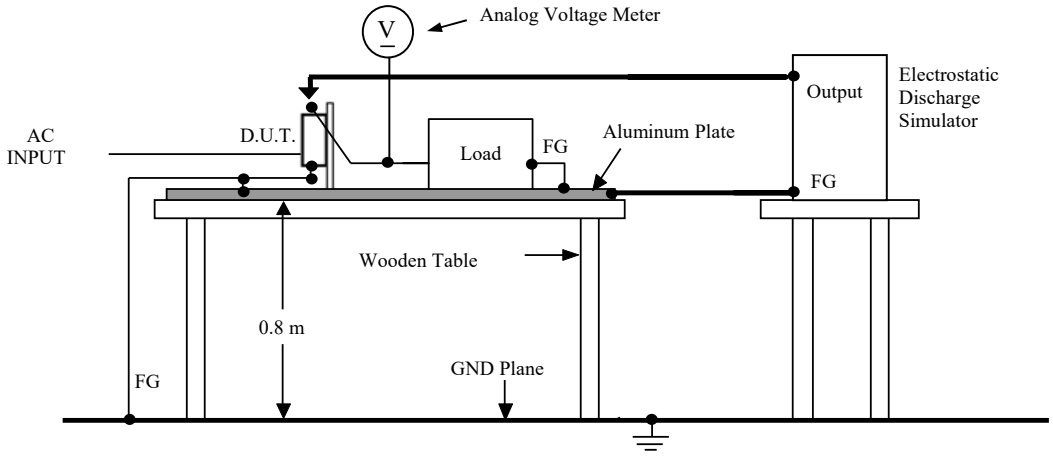
Noiseken ESD Generator	:	ESS-2000
Noiseken ESD Discharge Tip	:	TC-815R

(2) Test Conditions

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

(3) Test Method and Device Test Point

Contact Discharge	:	FG terminal, Chassis, Output terminal (DC OK)
Air Discharge	:	Input terminal, Output terminal (+V, -V), LED



(4) Acceptable Conditions (Criteria A)

1. Output voltage regulation not to exceed ±5% of initial (before test) value during test.
2. Output voltage must be within the regulation specification after the test.
3. Along with 1 and 2, smoke and fire are not allowed.

(5) Test Result

Contact Discharge (kV)	DRB120-24-1	Air Discharge (kV)	DRB120-24-1
4	PASS	4	PASS
8	PASS	8	PASS
-	-	12	PASS
-	-	15	PASS

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

MODEL : DRB120-24-1

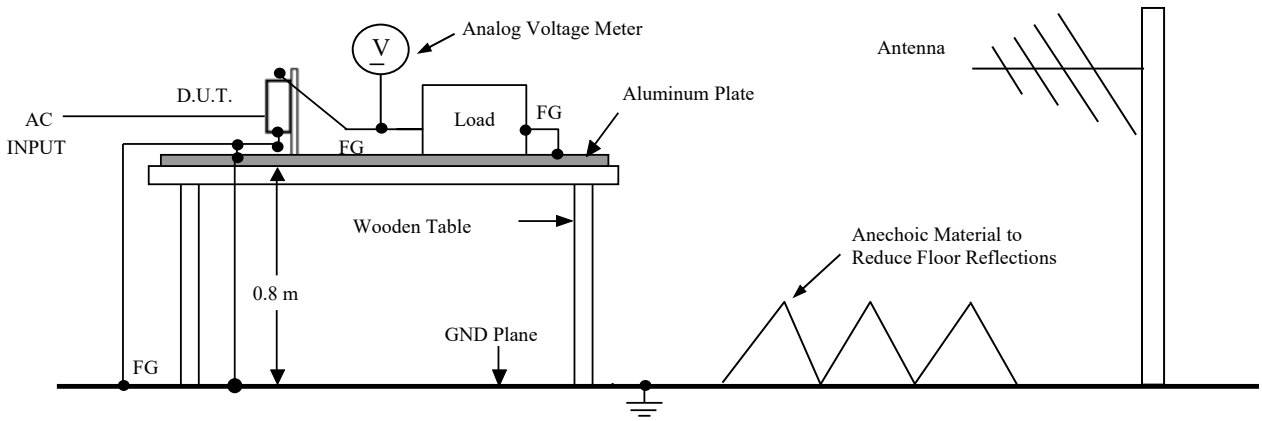
(1) Equipment Used

EPM-P series Dual Channel Power Meter	: E4417A
Rhode & Schwarz Signal Generator (10MHz-27GHz)	: SMR27
Agilent Power Sensor	: E9322A
Schaffner Power Amplifier (80MHz - 1GHz / 150W), (800MHz - 3GHz / 75W)	: CBA9413B/ CBA9429
Schwarzbeck Log Periodic Broadband Antenna	: VULP 9118E
Schwarzbeck Double Log-Per Antenna (0.7 – 10.5GHz)	: STLP 9149

(2) Test Conditions

Input Voltage	: 230VAC	Output Voltage	: Rated
Output Current	: 100%	Ambient Temperature	: 25°C
Electromagnetic Frequency	: 80~1000MHz, 1GHz~3GHz, 1% Frequency Step, 3s per step		
Modulation	: Amplitude Modulation with 1KHz Sine Wave to a depth of 80%		
Polarity	: Horizontal and Vertical in different Angle (Left, Right, Front, Rear)		

(3) Test Method and Device Test Point



(4) Acceptable Conditions (Criteria A)

1. Output voltage regulation not to exceed ±5% of initial (before test) value during test.
2. Output voltage must be within the regulation specification after the test.
3. Along with 1 and 2, smoke and fire are not allowed.

(5) Test Result

Radiation Field Strength (Vrms)	DRB120-24-1
10	PASS

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

MODEL : DRB120-24-1

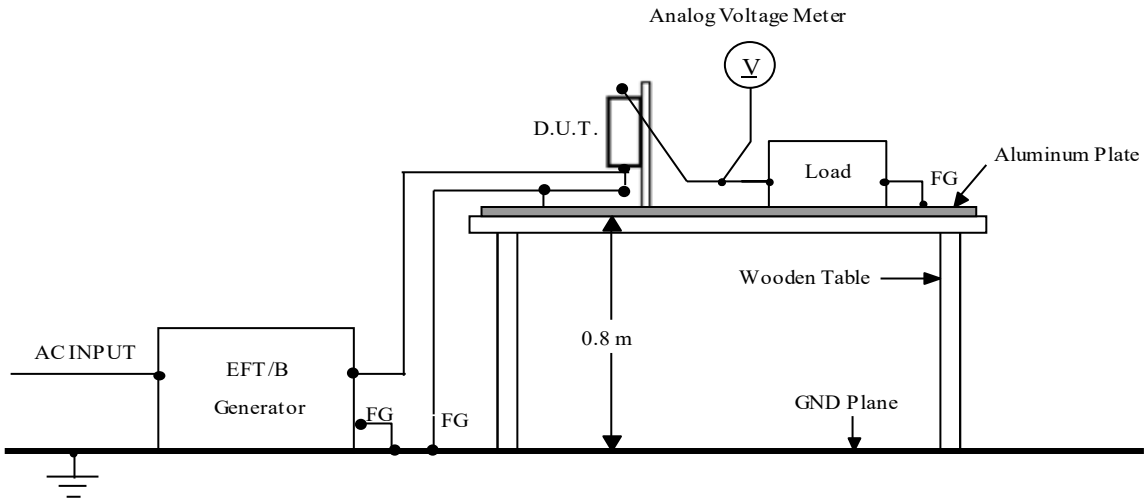
(1) Equipment Used

Haefely PEFT Generator	:	PEFT 4010
Haefely Capacitive Coupling Clamp	:	IP4A
A.C Source	:	6830

(2) Test Conditions

Input Voltage	:	230VAC	Output Voltage	:	Rated
Output Current	:	100%	Polarity	:	+ , -
Burst Duration	:	15 ms	Test Duration	:	1 minute
Burst Period	:	300ms	Repetition Rate	:	5 kHz

(3) Test Method



(4) Acceptable Conditions (Criteria A)

1. Output voltage regulation not to exceed ±5% of initial (before test) value during test.
2. Output voltage must be within the regulation specification after the test.
3. Along with 1 and 2, smoke and fire are not allowed.

(5) Test Result

Test Voltage (kV)	Repetition Rate (kHz)	DRB120-24-1
4	5.0	PASS

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

MODEL : DRB120-24-1

(1) Equipment Used

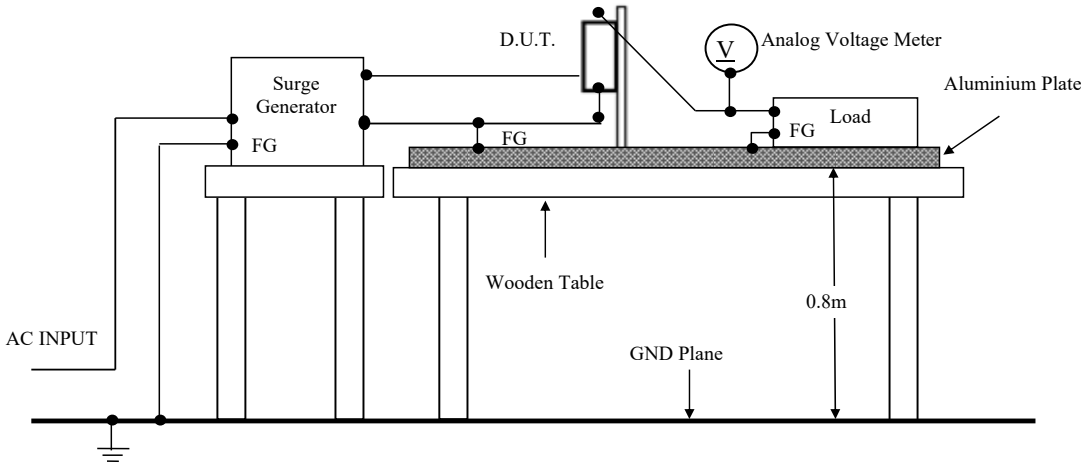
A.C. Source	: 6813B		
Surge Impulse Network	: NSG2050	CDN for Telecom Line	: CDN118
Pulse Coupling Network	: INA 172	High Energy Hybrid Surge Pulse Network (1.2/50us-8/20us, 10/700us-0.5/700us)	: PNW2050/51

(2) Test Conditions

Input Voltage	:	230VAC	Output Voltage	:	Rated
Output Current	:	100%	Number of Tests	:	5 times
Polarity	:	+, -	Mode	:	Common, Normal
Phase	:	0, 90, 180, 270 deg	Ambient Temperature	:	25°C

(3) Test Method and Device Test Point

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



(4) Acceptable Conditions (Criteria A)

1. Output voltage regulation not to exceed ±5% of initial (before test) value during test.
2. Output voltage must be within the regulation specification after the test.
3. Along with 1 and 2, smoke and fire are not allowed.

(5) Test Result

Test Voltage (kV) Common	DRB120-24-1	Test Voltage (kV) Normal	DRB120-24-1
4	PASS	2	PASS

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

MODEL : DRB120-24-1

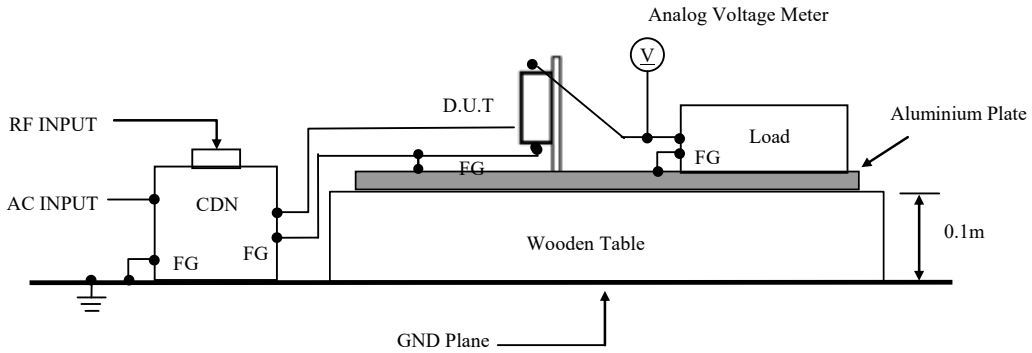
(1) Equipment Used

AC Source	:	6830
EM Test Sine Wave Generator	:	CWS 500A
EM Clamp	:	EM101
EM Test CDN	:	T2-TEL, M2, S4-USB

(2) Test Conditions

Input Voltage	:	230VAC	Output Voltage	:	Rated
Output Current	:	100%	Frequency Step	:	1%
Test Frequencies	:	150kHz~80MHz			
Modulation	:	Amplitude Modulation with 1 kHz Sine Wave to a Depth of 80%			
Dwell Time	:	3s per step			

(3) Test Method and Device Test Point



(4) Acceptable Conditions (Criteria A)

1. Output voltage regulation not to exceed ±5% of initial (before test) value during test.
2. Output voltage must be within the regulation specification after the test.
3. Along with 1 and 2, smoke and fire are not allowed.

(5) Test Result

Test Voltage (Vrms)	DRB120-24-1
10	PASS

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

MODEL : DRB120-24-1

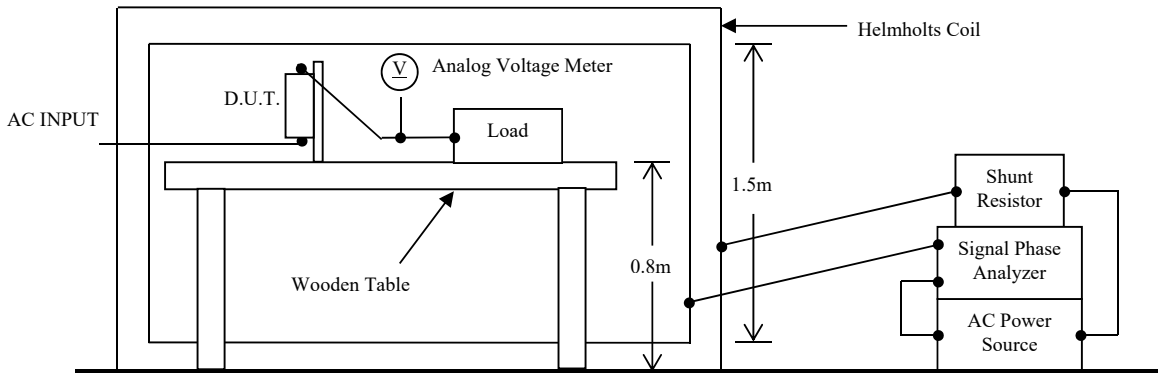
(1) Equipment Used

PMM Magnetic Field Generator	:	PMM 1008
Integrity Design & Research Corp Gausmeter (AC)	:	IDR-109

(2) Test Conditions

Input Voltage	:	230VAC	Output Voltage	:	Rated
Output Current	:	100%	Magnetic Frequency	:	50 Hz
Direction	:	X, Y, Z	Ambient Temperature	:	25°C
Test Duration	:	10 minites			

(3) Test Method and Device Test Point



(4) Acceptable Conditions (Criteria A)

1. Output voltage regulation not to exceed ±5% of initial (before test) value during test.
2. Output voltage must be within the regulation specification after the test.
3. Along with 1 and 2, smoke and fire are not allowed.

(5) Test Result

Magnetic Field Strength (A/m)	DRB120-24-1
30 (Continuous)	PASS
300 (Short Duration)	PASS

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

MODEL : DRB120-24-1

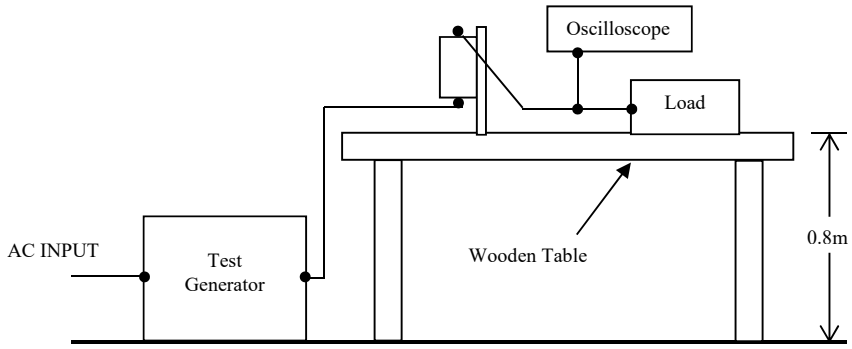
(1) Equipment Used

HP AC Power Source / Analyzer	:	6814B
Schaffner PQT Simulator	:	Modula 6100

(2) Test Conditions

Input Voltage	:	230VAC	Output Voltage	:	Rated
Output Current	:	100%	Ambient Temperature	:	25°C

(3) Test Method and Device Test Point



(4) Acceptable Conditions

Criteria A

1. Output voltage regulation not to exceed ±5% of initial (before test) value during test.
2. Output voltage must be within the regulation specification after the test.
3. Along with 1 and 2, smoke and fire are not allowed.

Criteria B

1. Must not have temporary function degradation that requires input restart.
2. Output voltage must be within the regulation specification after the test.
3. Along with 1 and 2, smoke and fire are not allowed

(5) Test Result

Test Level	Dip Rate	Continue Time	Criteria	DRB120-24-1
70%	30%	10ms	A	PASS
40%	60%	500ms	A	PASS
0%	100%	5000ms	B	PASS