GEN 2400 SERIES
TEST DATA
EN61000

DWG:		
APPD	CHK	DWG
Aug 21	21/08/08	21/08/08

NEMIC-LAMBDA LTD.

INDEX

PAGE

The above data is typical value.
The values are considered to be actual capability data.

1. ELECTRO-STATIC DISCHARGE TEST (EN61000-4-2)

(1) Equipment used:

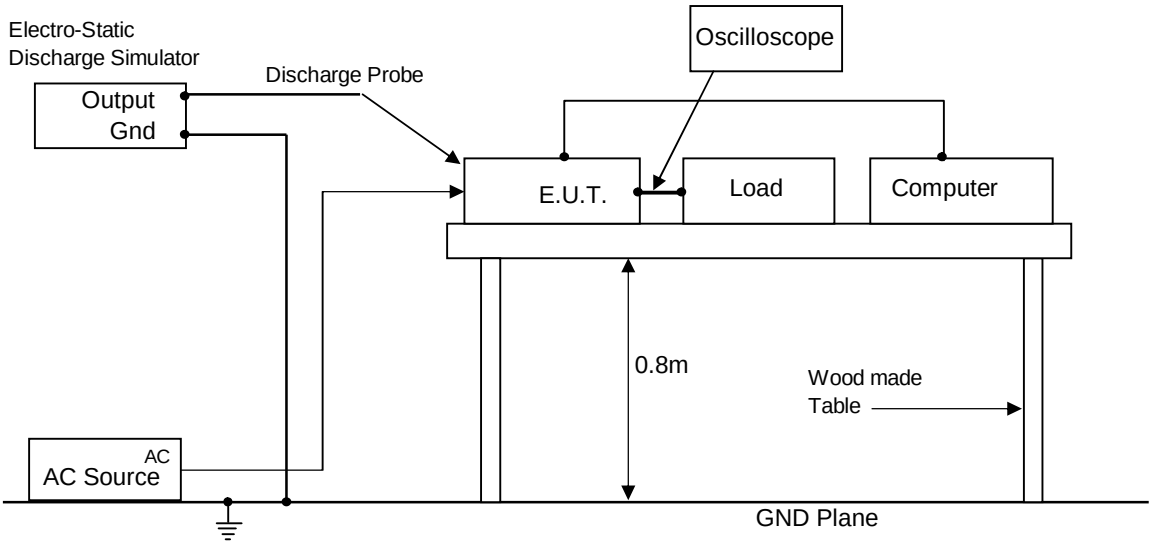
ESD simulator system: Noise Ken ESS 2000
Discharge resistance: 330 Ohm Capacity: 150pF

(2) Test conditions:

Input voltage:	Rated	Output voltage:	Rated
Output current:	100%	Polarity:	-,+
Number of tests:	10 times	Discharge interval:	>1 Second

(3) Test method and Device test point:

Contact discharge: FG, Case screw
Air discharge: Input and Output terminal



(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 failre.

(5) Test Result:

Contact Discharge (Kv)	GEN8-300	GEN60-40	GEN600-4	Air Discharge (Kv)	GEN8-300	GEN60-40	GEN600-4
2	PASS	PASS	PASS	4	PASS	PASS	PASS
4	PASS	PASS	PASS	8	PASS	PASS	PASS

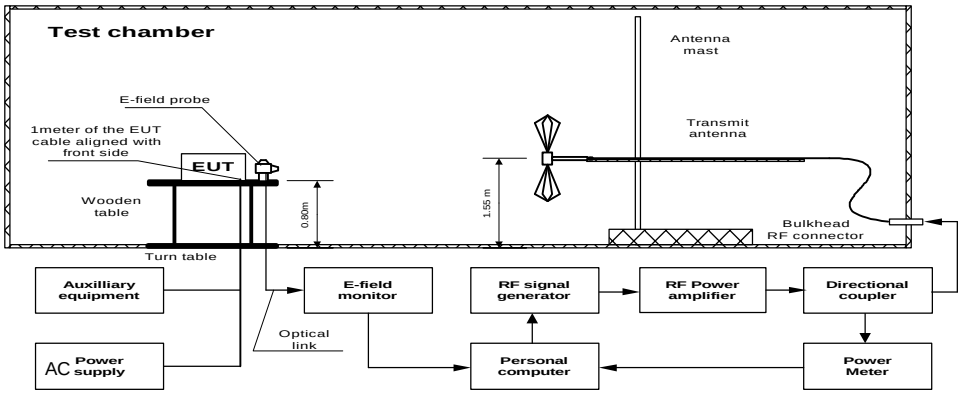
2. ELECTROMAGNETIC RADIATION SUSCEPTIBILITY TEST (EN61000-4-3)

(1) Equipment used:

Anechoic test chamber	Hermon Labs AC-2
Antenna, biconical, high power 20-300MHz, 1kW	A.H.Systems inc. SAS-200/543
Antenna, double-ridged waveguide horn, 1-18GHz, 300W	EMC Test Systems 3115
Synthesized RF signal generator, 10kHz-1.05GHz	Fluke 6061A
Monitor, field, 10kHz-1GHz, 1-300V/m, w/fiberoptic	Amplifier Research FM1000
Coupling-decoupling network according to ENV 50141 (S1)	Hermon Labs 50141S1
RF amplifier, 10kHz-220MHz, 150W	Amplifier Research 150L
RF amplifier, 500MHz to 1000MHz, 120W	Hermon Labs A-120
RF amplifier, 1 to 4 GHz, 55W	Milmega AS 0104-55/55B
RF power meter	Boonton 4200

(2) Test conditions:

Input voltage:	Rated	Output voltage:	Rated
Output current:	100%	Amplitude Modulated:	80%,1kHz
Electromagnetic Frequency:	80~1000MHz	Ambient temperature:	25°C
Sweep Condition:	1.5×10^{-3} Decade/Second,1.0 Second Hold		



(3) 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 failre.

(4) Test Result:

Radiated Field Strength (V/m)	GEN8-300	GEN150-16	GEN600-4
1	PASS	PASS	PASS
2	PASS	PASS	PASS
3	PASS	PASS	PASS

3. ELECTRICAL FAST TRANSIENT BURST TEST (EN61000-4-4)

(1) Equipment used:

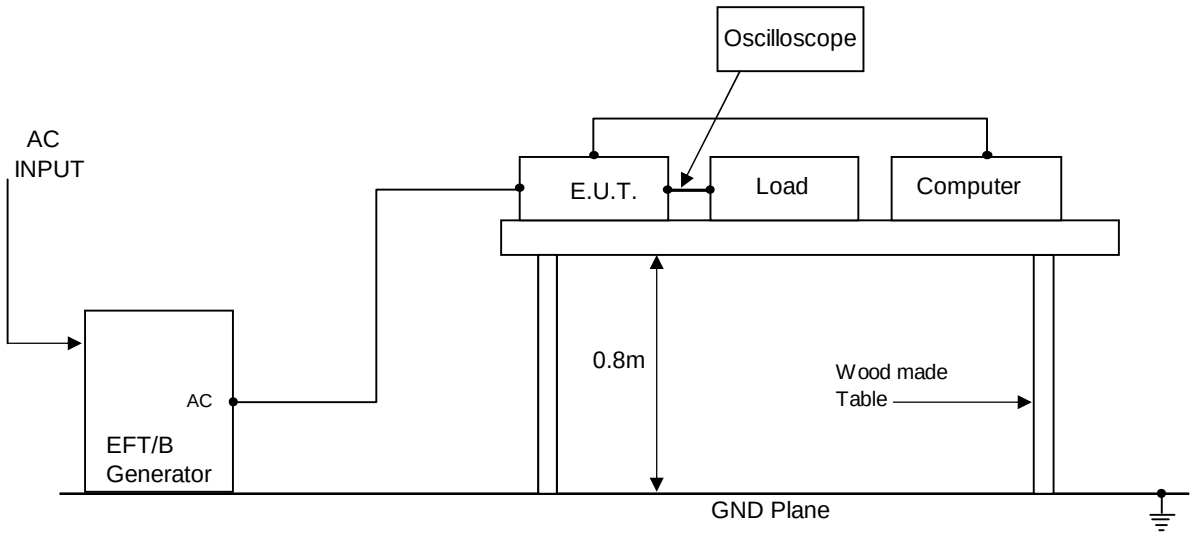
EFT/B Generator: SCHAFFNER NSG2025

(2) Test conditions:

Input voltage:	Rated	Output voltage:	Rated
Output current:	100%	Test time:	1minute
Polarity:	-,+	Ambient temperature:	25°C
Number of tests:	3 times		

(3) Test method and Device test point: 1ph PS- (N,L,FG)
3ph PS- (L1,L2,L3,FG)

Apply to points listed above separately, as well as, all at the same time.



(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 failre.

(5) Test Result:

Test Voltage (kV)	Repitition Rate (kHz)	GEN8-300	GEN150-16	GEN600-4
0.5	5	PASS	PASS	PASS
1	5	PASS	PASS	PASS

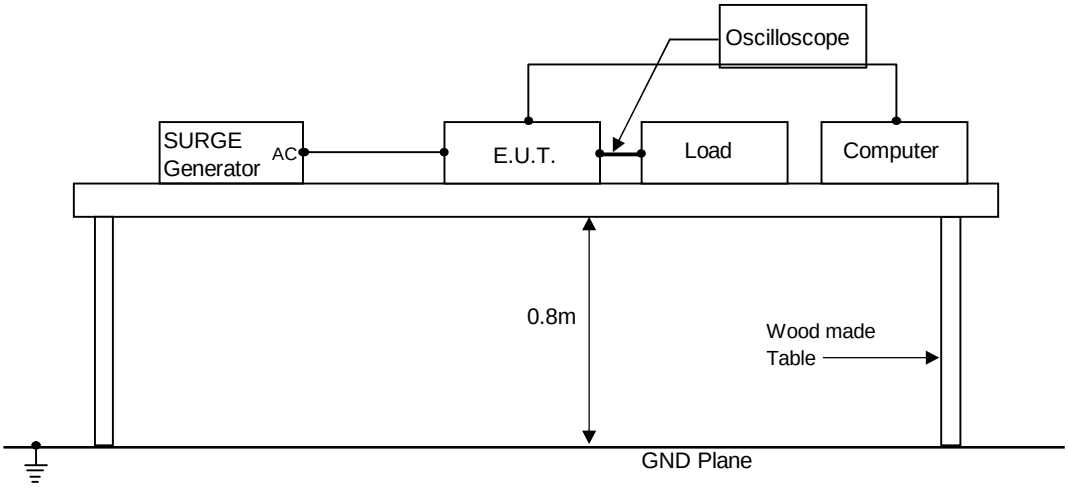
4. SURGE TEST (EN61000-4-5)

(1) Equipment used:

Surge Generator:	SCHAFFNER- NSG651
Coupling impedance:	Common - 12 OHm
	Normal - 2 OHm
Coupling capacitance:	Common - 9uF
	Normal - 18uF
Coupling network:	SCHAFFNER- CDN110

(2) Test method and device test point:

Input voltage:	Rated	Output voltage:	Rated
Output current:	100%	Number of tests:	5 times
Polarity:	-,+	Mode: Common, Normal	
Phase:	0,90 DEG.	Ambient temperature: 25°C	



(3) 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 failre.

(4) Test Result:

Test Voltage (kV) Common	GEN8-300	GEN150-16	GEN600-4	Test Voltage (kV) Normal	GEN8-300	GEN150-16	GEN600-4
0.5	PASS	PASS	PASS	0.5	PASS	PASS	PASS
1.0	PASS	PASS	PASS	1.0	PASS	PASS	PASS
2.0	PASS	PASS	PASS				

5. CONDUCTED SUSCEPTIBILITY TEST (EN61000-4-6)

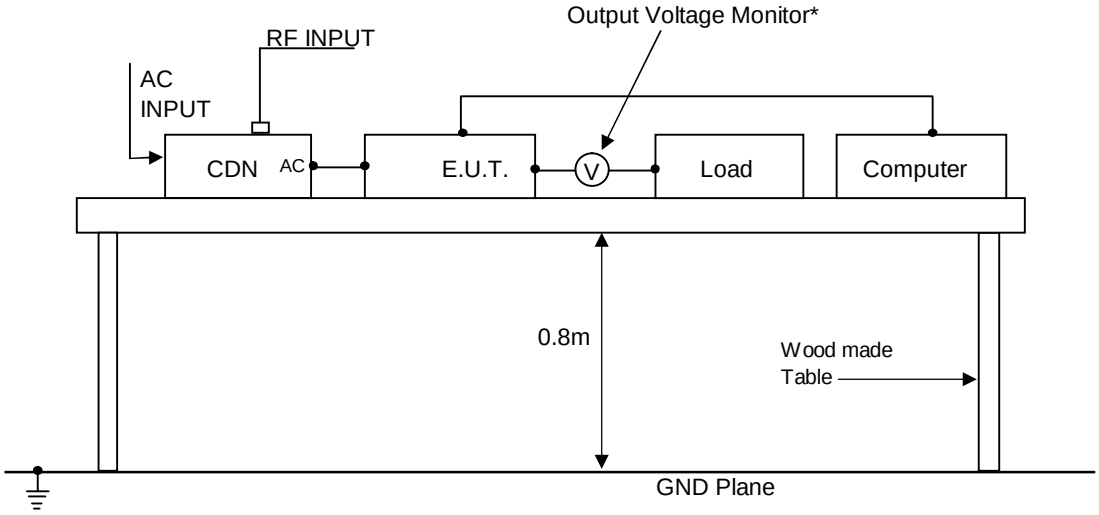
(1) Equipment used:

RF Signal Generator 9kHz-1.2GHz	Marconi Instruments 2023
RF Amplifier 10kHz-220MHz,150W	Amplifier Research, 150L
Coupling/Decoupling Network	HL 230-M3
Coupling/Decoupling Network	HL 230-M2
Attenuator 6 dB, 150W, DC-1000MHz, with 230VAC/12VDC adapter	HL 6-150

(2) Test Condition:

Input voltage: Rated Output voltage: Rated
Output current: 100% Electromagnetic
Frequency: 150kHz~80MHz
Sweep Condition: 1.0% Step Up, 2.0 Seconds Hold
Ambient temperature:25°C

(3) Test Method:



*Used Oscilloscope or Analog Voltage Meter

(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 Result:

Voltage Level (V)	GEN8-300	GEN150-16	GEN600-4
1	PASS	PASS	PASS
2	PASS	PASS	PASS
3	PASS	PASS	PASS

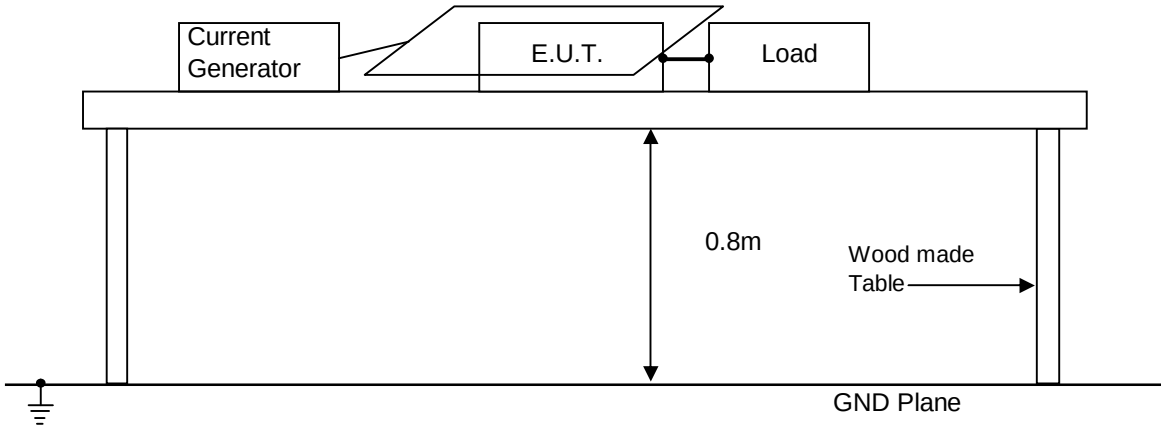
7. IMMUNITY TO MAGNETIC FIELD (EN61000-4-8)

(1) Equipment used:

Current Generator:	F-1000-4-8-125A	FCC
Magnetic Loop:	F-1000-4-8/9/10-L-1M	FCC

(2) Test Condition:

Input voltage:	Rated
Output current:	100%
Output voltage:	Rated
Ambient temperature:	25°C



(3) 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 failre.

(4) Test Result:

Position	Strenght of magnetic field (A/m)	Resoult
Vertical	1	PASS
Vertical at 90^0	1	PASS
Horizontal	1	PASS

8. VOLTAGE DIPS AND SHORT INTERRUPTION (EN61000-4-11)

(1) Equipment used:

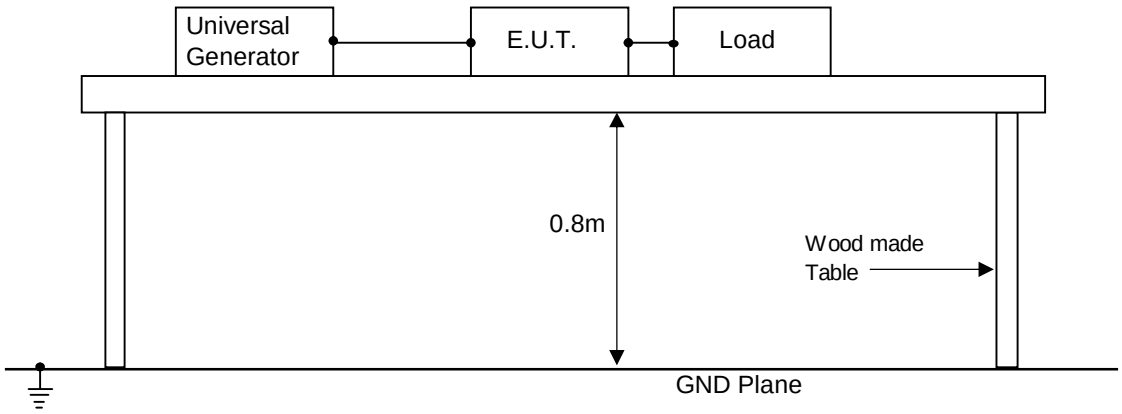
Surge Generator:	UCS500 -M4	EM TEST
AC Power Sourse:	UCS500 -M4	EM TEST

(2) Test Condition:

Input voltage: Rated
Output current: 100%
Output voltage: Rated
Ambient temperature: 25°C
Number of tests: 3 Times.

(3) Test method and device test point:

Voltage dip: 0.5 period, reduction of > 95% of $U_{t.}$
Voltage dip: 25 periods, reduction of 30% of Ut.
Voltage interruptions: 250 periods, reduction of > 95% of Ut.



(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	GEN60-55
5%	95%	10ms	PASS (criteria A)
70%	30%	500ms	PASS (criteria B)
5%	95%	5000ms	PASS (criteria B)