Installation Requirements:

a) 230V 50Hz plug 5A
b) Air Compressor 100psi 15 litre capacity
c) Open room of dimensions at least 20' x 20' or 25' x 25'
d) Probably an EMI shielded chamber to get proper waveforms

Types of High Voltage NEMP Simulatorsavailable:

At this moment we have 2 commonly used NEMP Simulators,

1. Z/31/126 – 10kV Output Pulse Voltage
2. Z/39/142 – 25kV Output Pulse Voltage
3. Z/AMJI - 100kV to 500kV also available

Simulators with higher current and voltages are also available on request with slight modification in the structural parts.

Testing:

This test system is as per MIL-STD-461RS-105. This ensures that if any object in this zone of 2.3/23nano seconds is tested, and works okay then the item may survive a NEMP pulse.
A basic simulator designed for a low cost application to be used in all types of EMP test labs. Field Strength of the pulse will be ≥50kV/metre.

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ZEONICS SYSTECH
DEFENCE & AEROSPACE ENGINEERS (P) LTD.

HIGH VOLTAGE NEMP SIMULATOR

NEMP setup for 2.3n sec/23n sec

ForE1 test as per MIL-STD-461 RS105 Field Strength of 50kV/metre

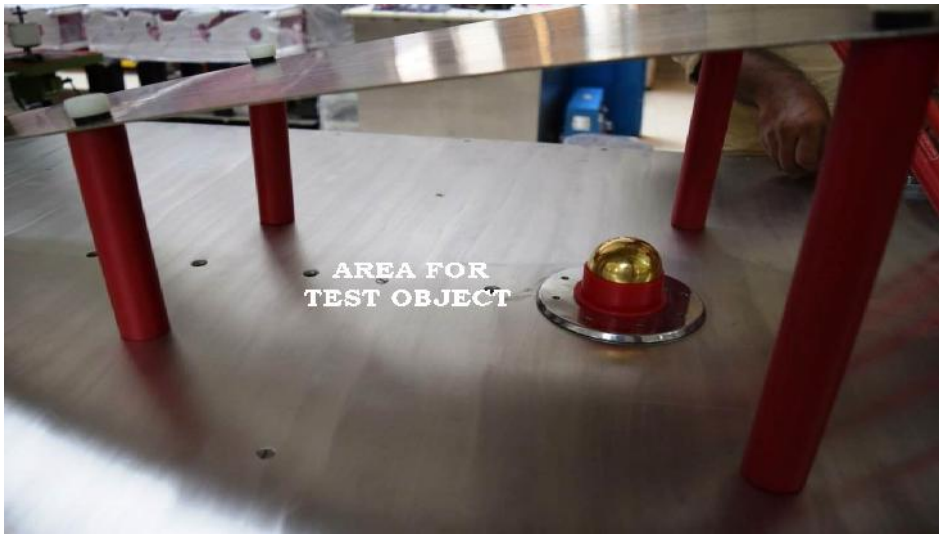
Proudly Made in INDIA

Introduction:

EMP is a burst of electromagnetic radiation. Nuclear explosions create a characteristic pulse of electromagnetic radiation called a nuclear EMP or NEMP. The E1 Pulse is what we are simulating here on the test system.

The resulting rapidly changing electric fields and magnetic fields may couple with electrical/electronic systems to produce damaging current and voltage surges. The specific characteristics of any particular nuclear EMP event vary according to a number of factors. The greatest of these factors is the Altitude of the detonation. In military terminology, a nuclear warhead detonated hundreds of kilometres above the Earth's surface is known as a high-Altitude electromagnetic pulse (HEMP) device.

This is an E1 Simulator. E1 pulse is produced when gamma radiation from the nuclear detonation ionizes (strips electrons from) atoms in the upper atmosphere. This is known as the Compton Effect and the resulting current is called the "Compton current". The electrons travel in a generally downward direction at relativistic speeds (more than 90 percent of the speed of light). In the absence of a magnetic field, this will produce a large, vertical pulse of electric current over the entire affected area. The Earth's magnetic field deflects the electron flow at a right angle to the field. This interaction produces a very large, but very brief, electromagnetic pulse over the affected area. E1 pulses are in thenano-metre range.



Applications:

Testing of all small test objects measuring 70x70x70 mm (Object Under Test – OUT) should be 70x70x70 or 30x100x150 mm (like a PCB card).

Advantages:

- Can test as per MIL-STD-461 RS105 (world standard)
- Proven performance with excellent expertise of pulsers
- Indoor and outdoor transportable, light weight
- Low risk of Operator's handling mistakes
- Battery model is also available for Field portability with upto 300kV output

Specifications:

1.) Rise time : 2.3nsec ± 20%
2.) Pulse width : 23nsec ± 20%