

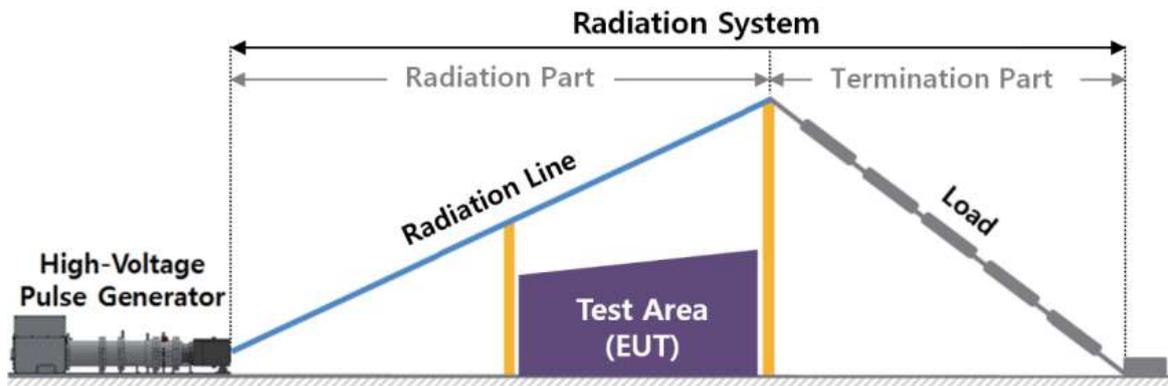
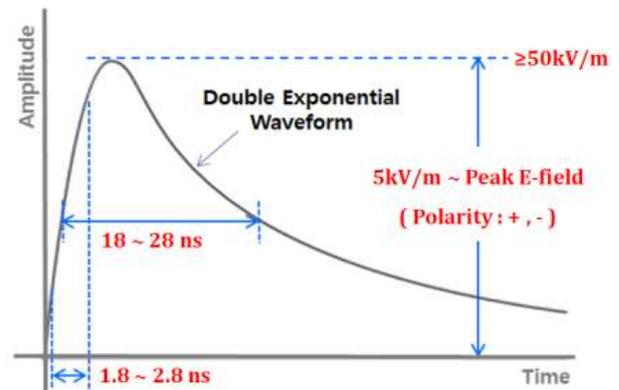
NEMP-DCG-100KV

(Middle sized NEMP Simulator)

- Nuclear EMP(NEMP) Simulator is used to simulate EMP signal which is reached on the earth surface by the nuclear weapon explodes at high-altitude(HEMP). NEMP Simulator can be used for EMP radiation immunity test for various electronic devices or systems by artificially creating EMP generation environment.
- Replex have developed the NEMP simulator using a high voltage pulse generator based on fast capacitor charging technology and triangular-type radiation system. it can generates high voltages pulse through digital control, making it easier to adjust polarity and magnitude of the E-field waveform.
- Replex's satisfies MIL-STD-461 E/F/G RS105 test requirements.

■ Features

- Order production according to EUT size
- Maximum electric field : 50kV/m or more
- E-field Variable : 5kV/m ~ Max. E-field Strength
- E-field Polarity : Plus(+), Minus(-)
- Rise Time (10~90%) : 1.8ns ~ 2.8ns
- Pulse Width (FWHM) : 18ns ~ 28ns
- Peak value of the E-field in the Test Area : 0dB ≤ magnitude ≤ 6dB above limit
- Insulation : Nitrogen(N2) , Transformer Oil



■ Specifications

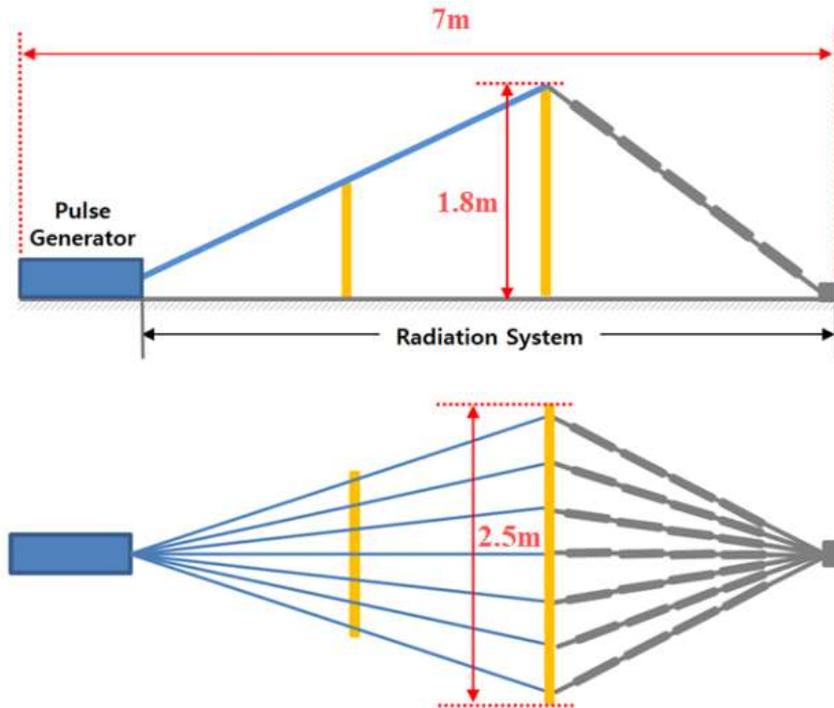


Parameter	Value
Model Name	NEMP-DCG-100KV
Standard	MIL-STD-461 E/F/G RS-105
Pulse Generator Voltage Range(Open Circuit)	10kV~100kV
Radiating Line Type/Impedance	Transmission Line/110Ω
Termination Type	Distributed Resistance
E-field waveform	Double exponential
E-field Pulse Rise Time(10%~90%)	1.8ns ~ 2.8ns
E-field Pulse Width(FWHM)	18ns ~ 28ns
Max. E-field Strength	50kV/m or more
E-field Polarization	Vertical
E-field Polarity	Positive(+), Negative(-)
Pulse Repetition Rate	1/min
Insulation of HV Pulse Generator	Transformer Oil
Power Rating	220VAC / 50Hz~60Hz
Storage/Working Temperature	5°C~50°C / 15°C~45°C
Dimension(L×W×H)	7m × 2.5m × 1.8m
Max. Test Volume(L×W×H)	50cm × 50cm × 50cm
Weight	~65kg

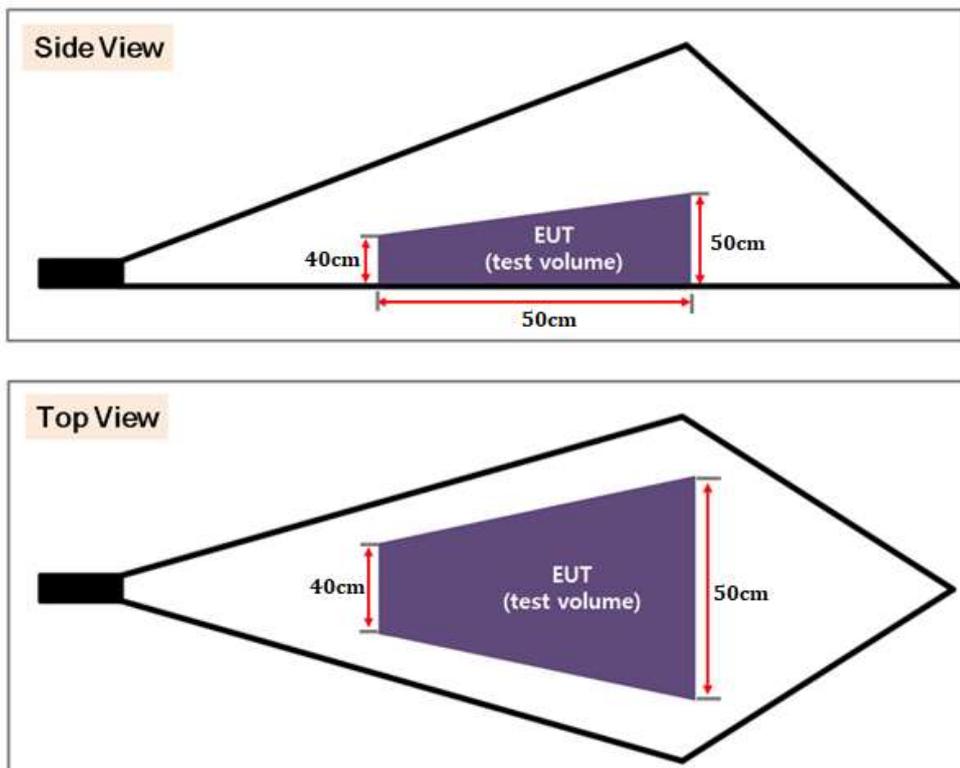
■ Recommendation

The distance between top of the radiating line and the closest metallic ground(including ceiling, shielded room walls, and so forth) should be at least 2 times of the maximum height of the radiating line by the MIL-STD-461 E/F/G RS105. And, the installation is recommended with the clearance distances as the following table and diagram to avoid distortions from reflections.

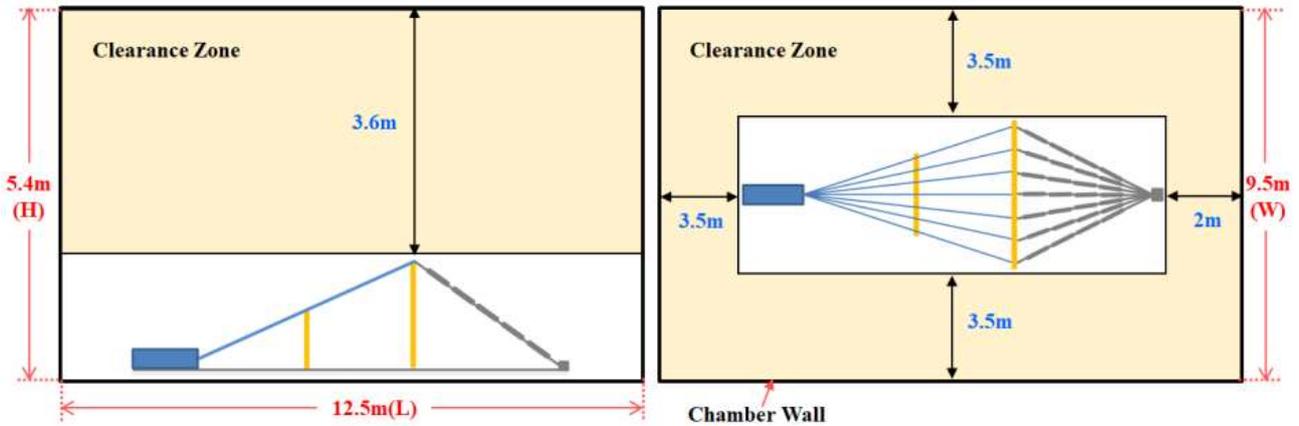
■ NEMP Simulator Size



■ Test Volume Size

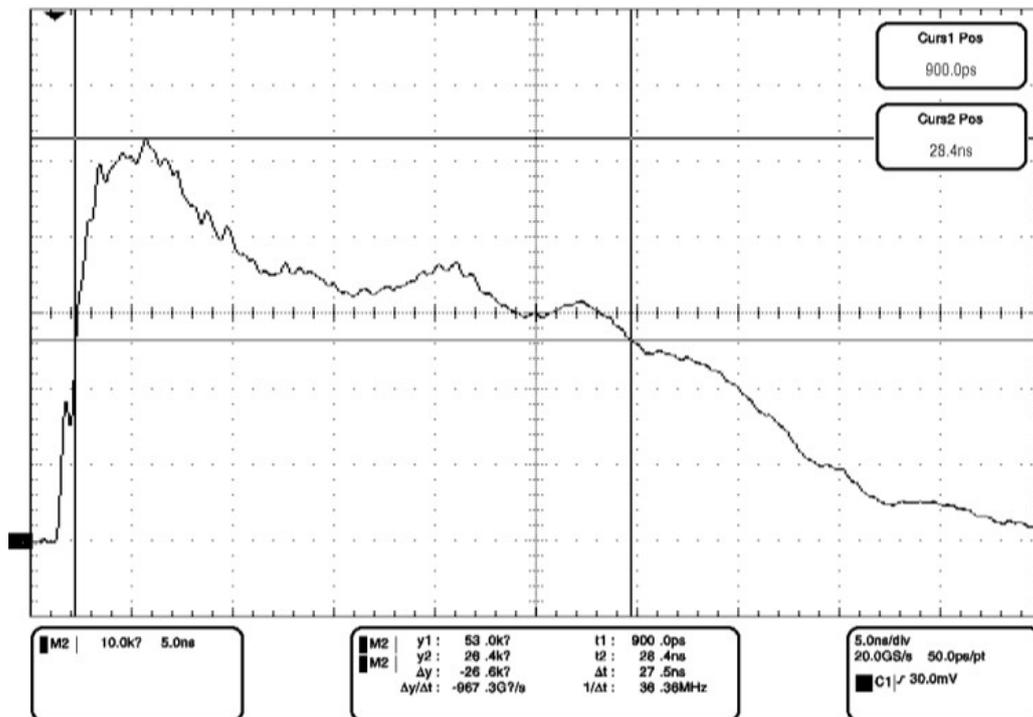


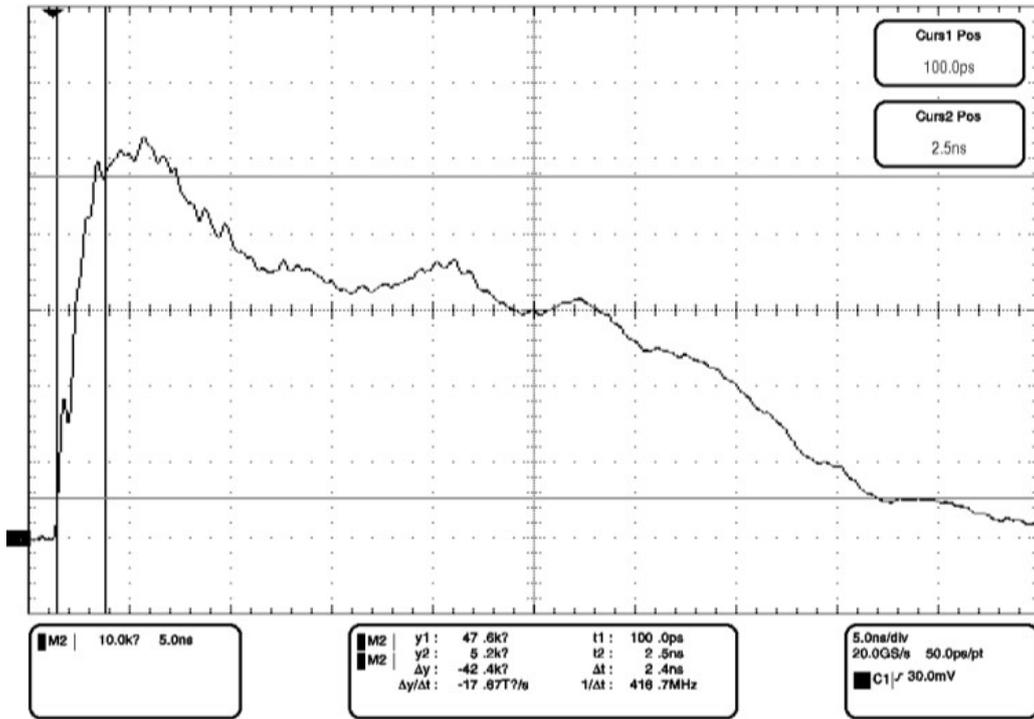
■ Minimum Recommended Clearance Distances



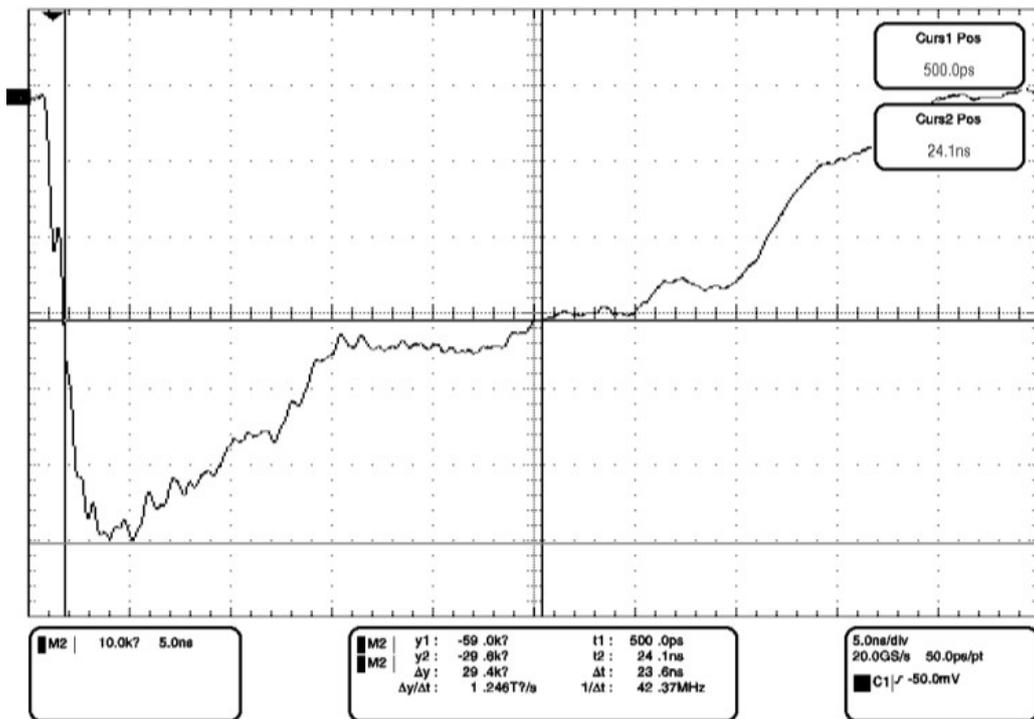
Parameter	Length(m)	Width(m)	Height(m)
NEMP Simulator Dimension	7	2.5	1.8
Anechoic Chamber Dimension	12.5	9.5	5.4
Max. Test Volume Size	0.5	0.5	0.5

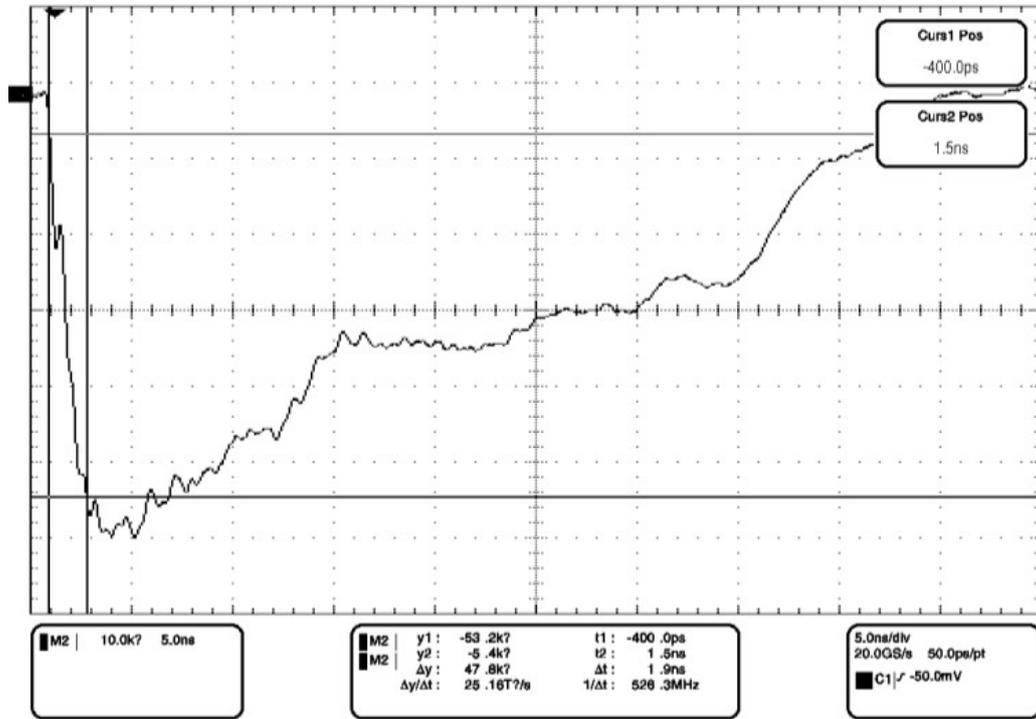
■ Measurement Waveform : Positive, 50kV/m(Maximum E-field Strength), FWHM & Rise Time



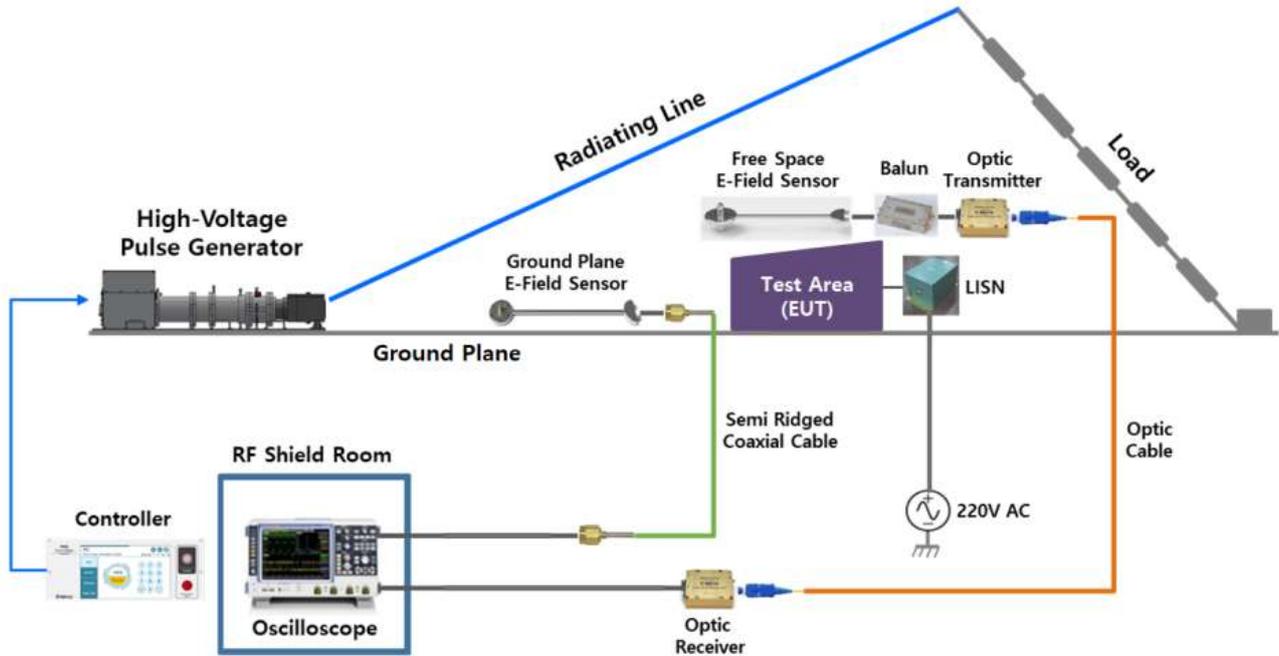


■ Measurement Waveform : Negative, 50kV/m(Maximum E-field Strength), FWHM & Rise Time





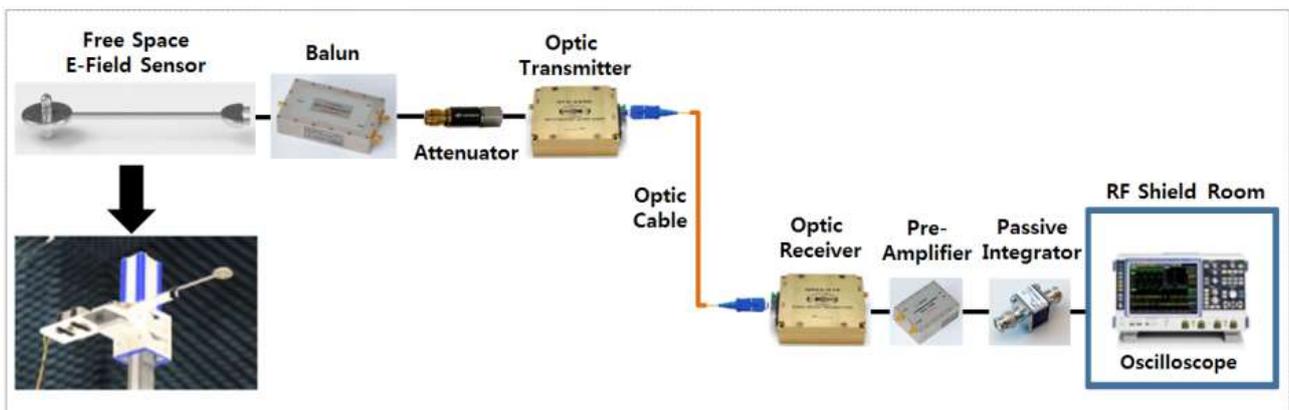
NEMP Simulator Test & Measurement Configuration



1. E-field Monitor System

- E-field monitor system is configure of the Free Space E-field monitor system and Ground Plane E-field monitor system.

● Free Space E-field Monitoring System



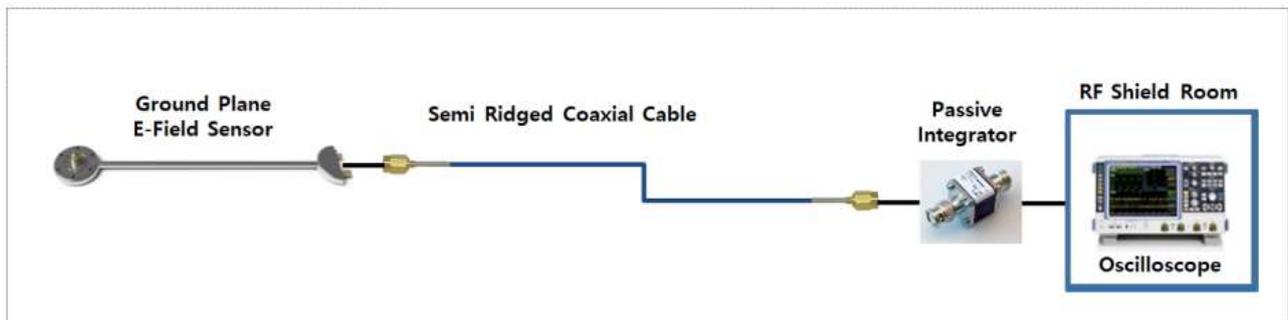
[Free Space E-field Monitoring System]

- Free space E-field monitor are made of derivative field sensors which can be place anywhere

under the transmission line and are connected to the oscilloscope through optical link.

- Since the free space E-field sensor(D-dot sensor) has the characteristics to derivative the acquired waveform, it can be restored by connecting an passive integrator(H/W) to the oscilloscope's input channel or by means of a mathematical integral(S/W) of the oscilloscope's measured waveforms via the sensor.

● Ground Plane E-field Monitor System



[Ground Plane E-field Monitoring System]

- Ground plane E-field monitor are made of derivative field sensors directly placed on the ground plane and are connected to the oscilloscope through coaxial cables and passive integrators. we recommend using a measurement with passive integrator.

2. Device Protection System

● RF Shield Room(or Shield Box)

- It is recommended that the oscilloscope be installed and operated inside a shield room or shielded box to protect it from the powerful noise generated by the operation of the EMP generator.

● LISN

- The LISN(Line Impedance Stabilization Network) are used to provide standardized impedance in common mode to the lines connected to the EUT.