EMP & HPEM

TEST SOLUTIONS PROVIDER

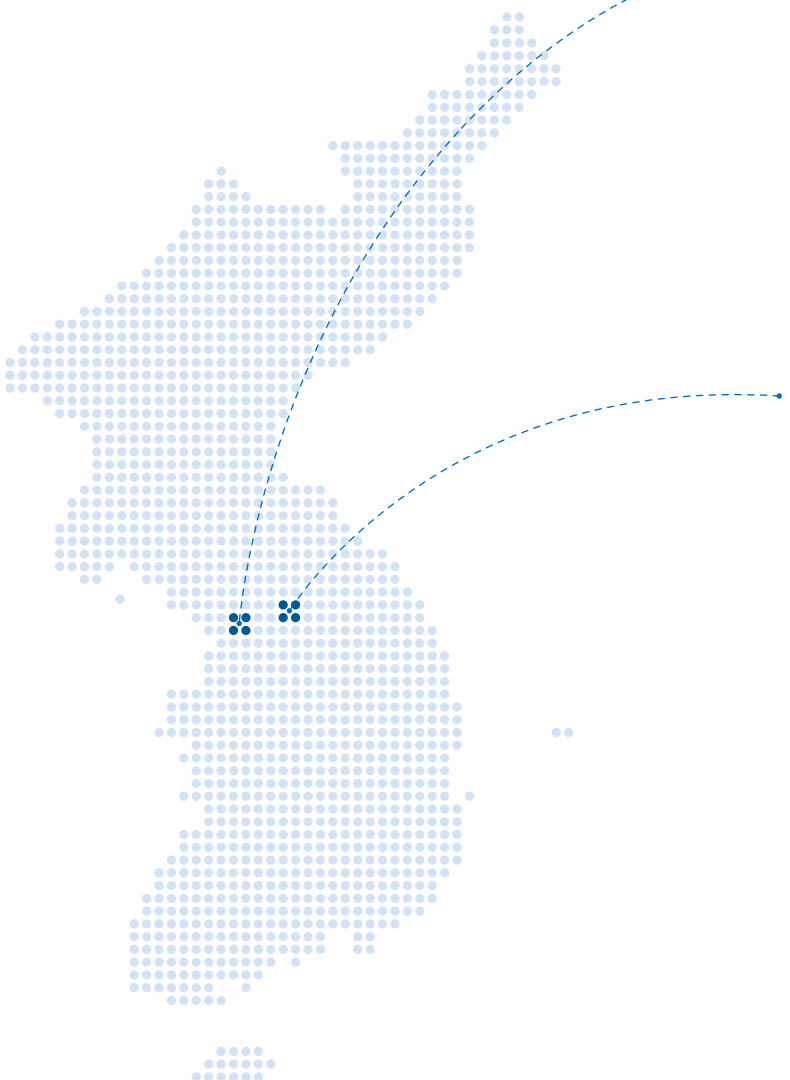
REPLEX
www.replex.co.kr

Emctestlab
www.emctestlab.ru

EMP & HPEM

Test Solutions Provider

Since its foundation in 2001, we have focused on the research of compact high-voltage pulse generation technology based on Marx Generator & Tesla transformer.
Now, **Replex** offers compact high-voltage pulse generator, EMP test systems that satisfy MIL-STD requirements, and HPEM simulator for IEMI immunity test by IEC 61000-4-36 requirements.



Main Office(Seoul)

Branch Office(R&D Test Site)

Core Technology

High-Voltage Pulse Generation

- High-Voltage Generation based on Marx Generator, Tesla Transformer
- Compact , Battery-Powered Operation
- Output Voltage : up to 1MV

Pulse Compression & Forming Technology

- Exponential, Monopolar, Bi-polar Pulse Forming
  > Picosecond Pulse Rise Time
  > Nanosecond Pulse Width

High-Power UWB Antenna

- UWB Antenna Design & Development
- Antenna Feed Voltage : up to 800kV
- TEM Horn, Fat-Dipole, Helical, Etc.
- Antenna Array Technology

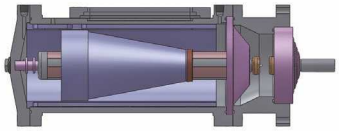
Mechanical Manufacturing

- Self-Design & Processing
- Machine Tools & Expert Staff Reserved
- Metal & Plastic Processing
- High Pressure Vessel , Spark-Gap , Etc.

Applications

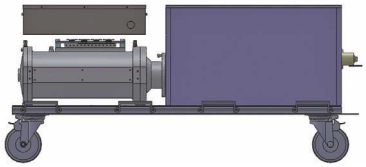
High-Voltage Pulse Generator

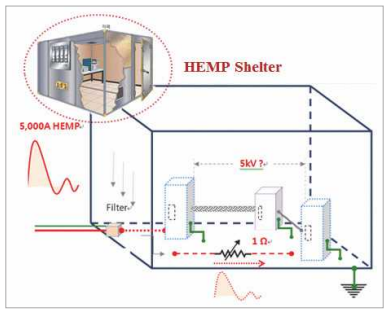
All design can be adopted customer's requirement (Order Production)



EMP Standard Test System

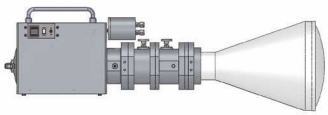
MIL-STD-188-125-1&2
HEMP PCI Test System (Standard Test Equipment)





UWB/DS HPEM Simulator

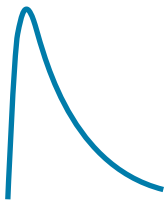
IEC61000-4-36
IEMI Immunity Test System
(Standard Test Equipment)



World Smallest High-Voltage Pulse Generator

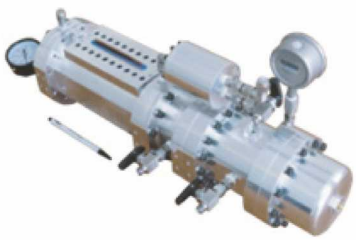
- High-Voltage Pulse Generation based on Tesla Transformer & Marx Generator
- Compact Size, Battery-Powered Operation, Portable
- All design can be adopted customer's requirement(Order Production)

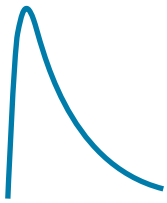
MODEL : HVPG-MGN-500kV — Marx-Type High-Voltage Pulse Generator



Prime Power Supply	AC220V or Battery
Output Voltage(Max.)	500kV
Pulse Rise Time	5~10ns
Number of Stages	10~12 stages
Capacitance per Stage	400~2,100pF
P.R.F.	1~10Hz
Pulse Shape	Exponential

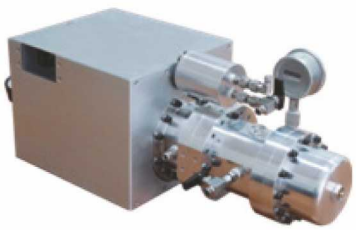
MODEL : HVPG-TGN-700kV — Tesla-Type High-Voltage Pulse Generator

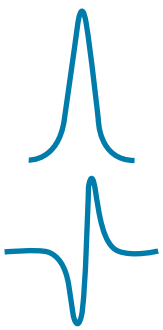




Prime Power Supply	AC220V or Battery
Output Voltage(Max.)	700kV
Pulse Rise Time	1~2ns
Pulse Width(FWHM)	2~500ns
P.R.F.	1~100Hz
Pulse Shape	Exponential

MODEL : HVPG-TGP-1000kV — Tesla-Type High-Voltage Picosecond Pulse Generator





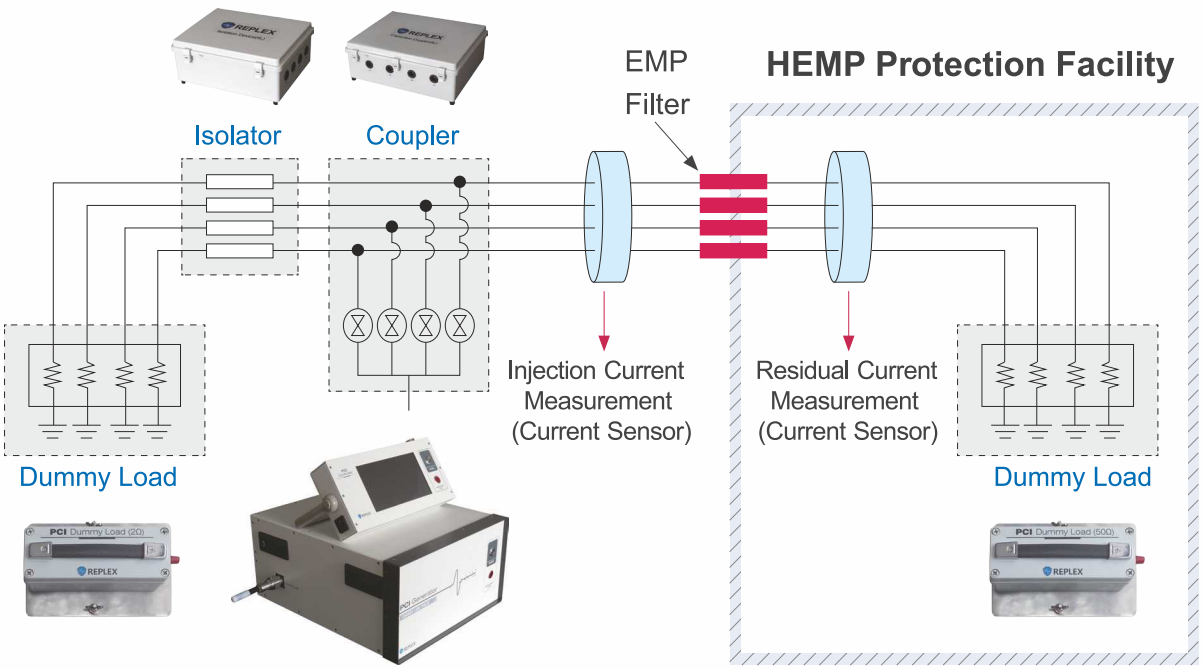
Prime Power Supply	AC220V or Battery
Output Voltage(Max.)	1,000kV
Pulse Rise Time	150~200ps
Pulse Width(FWHM)	1~2ns
P.R.F.	1~100Hz
Pulse Shape	Monopolar, Bi-polar

EMP PCI Test System

Replex offers PCI generator and accessories for PCI(Pulsed Current Injection) test according to MIL-STD-188-125-1&2 requirement.

PCI Pulse Generators and Accessories

- E1 Pulse Generator can produce peak current up to 5kA for E1 pulse test.
- E2 Pulse Generator can produce peak current up to 270A for E2 pulse test.
- Charge Line pulse generator can produce peak current up to 450A for antenna line test.
- Test accessories : Capacitive/Inductive Coupler, Isolator, Dummy Load(50).



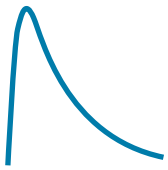
[PCI Pulse Generator]

Feature

- Easy mobility by Compact, Lightweight
- Convenient operation by Touch-Screen (built-in embedded operation system)
- Low cost, maintenance cost saving
- Additional built-in Function
  - Self-diagnosis, Recording of history data

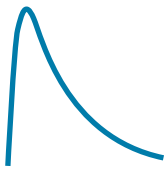
PCI Pulse Generator

MODEL : HEMP-E1-1KA



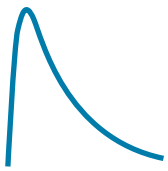
Voltage Range (open circuit)	3kV-80kV
Current Range (short circuit)	100A~1.2kA
Current Pulse Rise Time (short circuit)	<20ns
Current Pulse Width (short circuit)	500ns~550ns
Dimensions(L×W×H)/ Weight	67×55×23㎝ / 40kg

MODEL : HEMP-E1-2.5KA



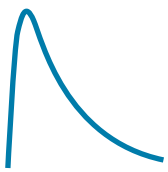
Voltage Range (open circuit)	10kV-170kV
Current Range (short circuit)	250A~2.5kA
Current Pulse Rise Time (short circuit)	<20ns
Current Pulse Width (short circuit)	500ns~550ns
Dimensions(L×W×H)/ Weight	75×67×29㎝ / 100kg

MODEL : HEMP-E1-5KA



Voltage Range (open circuit)	50kV-350kV
Current Range (short circuit)	1kA~5kA
Current Pulse Rise Time (short circuit)	<20ns
Current Pulse Width (short circuit)	500ns~550ns
Dimensions(L×W×H)/ Weight	164×57×45㎝ / 250kg

MODEL : HEMP-E2-270A



Voltage Range (open circuit)	300V-3kV
Current Range (short circuit)	20A~270A
Current Pulse Rise Time (short circuit)	<1.5㎲
Current Pulse Width (short circuit)	3~5ms
Dimensions(L×W×H)/ Weight	67×55×23㎝ / 55kg

MODEL : EMP-CLP-450A

Voltage Range (open circuit)	0.2kV-25kV
Current Range (short circuit)	40A~450A
Current Pulse Rise Time (50□)	<5ns
Equivalent Frequency of Charge Line	30~200MHz
Dimensions(L×W×H)/ Weight	40×49×23㎝ / 15kg

EMP PCI Test System : Test Accessories

MODEL : HEMP-CCA-4L — Capacitive Coupler (4 Line)

Normal Voltage/Current (DC-400Hz)	230V /60A
Maximum Pulse Voltage (500ns)	80kV
Maximum DC voltage	35kV
Maximum Peak Current	5kA
Dimensions(L×W×H)/ Weight	50×60×22㎝ / 7.3kg

MODEL : HEMP-ICA-65D — Inductive Coupler

Maximum Pulse Voltage (500ns)	100kV
Maximum Peak Current	5kA
Maximum diameter of the test cable	65mm
Dimensions(L×W×H)/ Weight	85×25×25㎝ / 55kg

MODEL : HEMP-DCA-4L — Isolator (4 Line)

Normal Voltage/Current (DC-400Hz)	230V /10A
Maximum Pulse Voltage (500ns)	80kV
Maximum Peak Current	5kA
Signal Cut-off Frequency	3kHz (-3dB)
Dimensions(L×W×H)/ Weight	40×50×22㎝ / 13kg

MODEL : HEMP-DLA-2R — Dummy Load 2 Ω

Resistance Value	2Ω ±10%
Energy	16kJ
Peak Voltage (Short Pulse)	30kV
Power	70W
Dimensions(L×W×H)/ Weight	22×15×9㎝㎝/2kg

MODEL : HEMP-DLA-50R — Dummy Load 50 Ω

Resistance Value	50Ω ±10%
Energy	16kJ
Peak Voltage (Short Pulse)	30kV
Power	70W
Dimensions(L×W×H)/ Weight	22×15×9㎝ / 2kg

DS/UWB HPEM Simulator

DS/UWB HPEM Simulatorcan be used to vulnerability assessment electric device for the high-power electromagnetic(HPEM). Also our product optimized to radiation immunity testing of electric device to intentional electromagnetic interference(IEMI) according to IEC61000-4-36 requirement.

DS HPEM Simulatorradiates a electromagnetic field with a DS(damped sinusoidal) waveform according to IEC61000-4-36 mesoband test requirement.

UWB HPEM Simulatorradiates a electromagnetic field with a UWB(ultra-wide band) waveform according to IEC61000-4-36 hyperband test requirement.

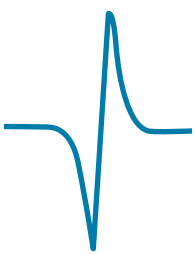
MODEL : HPEM-DMS-120KV

DS HPEM Simulator, Far Voltage(rE) : 120kV

Peak E-field Strength	12kV/m@10m
Center Frequency	80MHz ~500MHz
Damping Factor	1~20
Burst Duration	1~10sec
PRF(Pulse Repetition Frequency)	1~10Hz
Waveform	Damped Sinusoidal
Dimensions(L×W×H)/ Weight	180×100×235㎝/150kg

MODEL : HEMP-UTS-060KV

UWB HPEM Simulator, Far Voltage(rE) : 60kV



Peak E-field Strength	6kV/m@10m
90% Energy Band	50MHz ~2.1GHz
Pulse Rise Time(10~90%)	200ps±10%
Pulse Width(FWHM)	1ns±10%
Burst Duration	1~10sec
PRF(Pulse Repetition Frequency)	1~100Hz
Waveform	Bi-polar Pulse
Dimensions(L×W×H)/Weight	68×50×165㎝/35kg

REPLEX

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