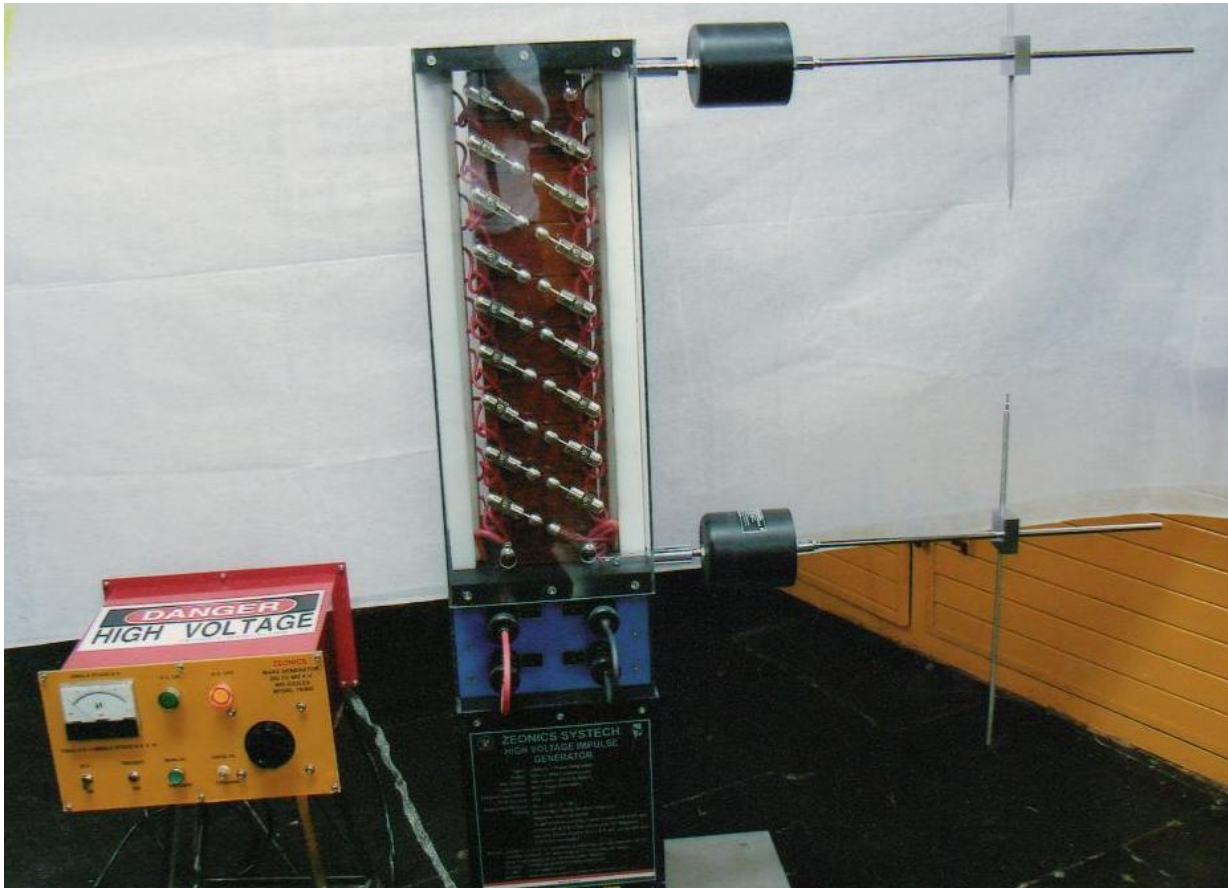




**ZEONICS SYSTECH**  
DEFENCE & AEROSPACE ENGINEERS (P) LTD.



# Mini Marx Generators and Impulse Generators



Traditionally High Voltage is generated in several methods. When compact high voltage is required in pulse form, typically impulse generator or Marx Generator is the most suitable equipment. These Generators typically charge in parallel and discharge in series. The generators are used for a wide variety of applications and are designed for different kind of applications depending upon the customer's requirement. The Generators can be designed for different impedance as well as Voltage and Current requirements.

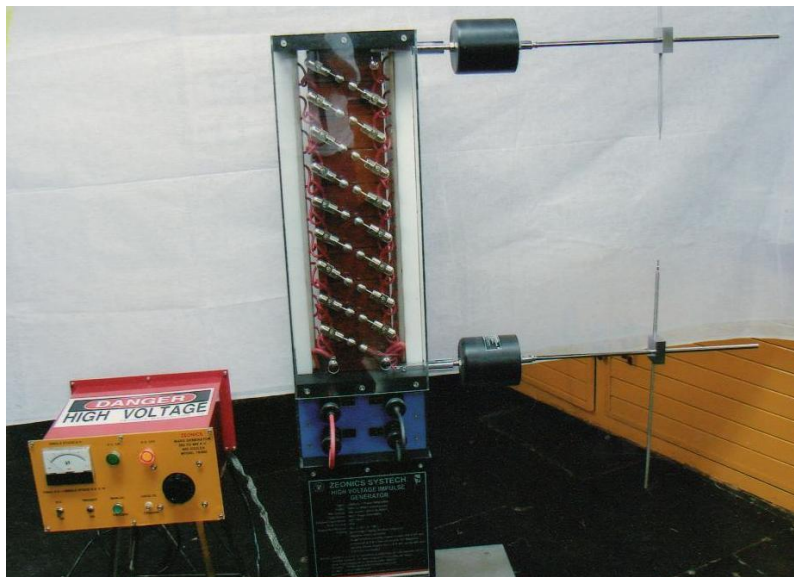
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### Impulse Generator (MARX) with wave shaping system

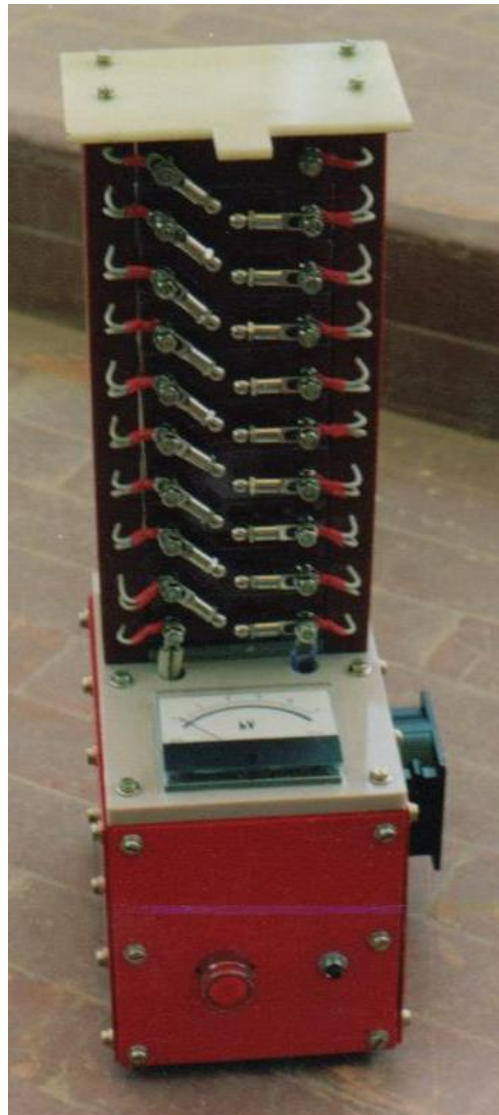
1. HV Pulse Max output : 200kV
2. Open circuit : 200kV output, 20 Joules
3. Maximum PRR : 5ppm
4. Rise Time :  $1.2\mu\text{Sec} \pm 20\%$
5. Pulse Width :  $50\mu\text{Sec} \pm 20\%$
6. Operating Pressure : 20 PSI Air maximum
7. Weight :  $\approx < 45\text{Kgs}$
8. Type No. : Z/34/139



### Reversible High Voltage Marx Generator (10/45)

1. Input : 230 volts, 50Hz, Single Phase

- |                        |                               |
|------------------------|-------------------------------|
| 2. Output              | : Maximum 400kV at 4kA        |
| 3. Impedance           | : Typically 10 to 20 $\Omega$ |
| 4. Maximum PRR         | : 1 ppm                       |
| 5. Erected capacitance | : 4nF                         |
| 6. No. of Stages       | : 10                          |
| 7. Capacitance / Stage | : 40nF                        |
| 8. Polarity            | : Reversible                  |
| 9. Type                | : ZHS/01/44                   |



### Mini Marx Generator High Voltage

- |                        |                      |                   |
|------------------------|----------------------|-------------------|
| 1. Erected capacitance | : (a) 1nF/ 200kV     | (b) 2nfF/200kV    |
| 2. Capacitor per stage | : (a) 10nF/20kV      | (b) 20nF/20kV     |
| 3. Power supply        | : Input 0-18kVDC     |                   |
| 4. Max. output         | : (a) 180kV DC pulse | (b) 80kV DC pulse |
| 5. Energy              | : (a) 4.5 Joules     | (b) 9.0 Joules    |
| 6. Rise Time           | : (a) $\leq$ 40nSec  | (b) $\leq$ 50nSec |
| 7. Indication          | : Voltage Ammeter    |                   |
| 8. Type No.            | : ZHS/001/075        |                   |

## Applications

Whenever you require a high voltage pulse source for electron acceleration, particle physics, testing of equipment, testing of transformer and cables, etc., where you require a pulse voltage a Marx Generator is used. It is very difficult to generate these kind of voltages in small spaces but Marx generators can do it. These generators can be used for material testing, testing of insulators, etc.

## Advantages

Marx Generators are compact & low cost compared to their substitutes like huge Power supplies. They can generate very high peak currents, and also very high voltages right up to Millions of Volts. Despite this, they are light weight and mobile and can be shifted from one place to another.

## Installation

All Marx Generators may not require installation. Some of the small Mini-Marx Generators of capacity 20 joules to 500 joules are mobile and can be supplied on Castor wheels and moved from one place to another.

Specific Generators can be designed for specific needs like vertical, horizontal, coaxially mounted, etc., depending on the customer's requirement. Hence these Generators can also have wide variety of application like generation of broad pulse, generation of narrow pulse, pulse compression can be done and pulse forming line can be attached in the front and the generator can be used as a simple source.

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