



GROW CONTROL
POWER TECH PVT. LTD.

We Provide Solutions....

AN ISO 9001:2015 COMPANY



CATHODE PULSE POWER SUPPLY

GROW CONTROL Cathode Pulse Power Supply for TWT (Traveling Wave Tube) Testing is a specialized, high-performance solution designed to meet the stringent requirements of TWT testing for defense, aerospace, and communication systems. As a critical component in high-frequency, high-power radar and communication systems, TWTs need precise and reliable pulse power during testing to ensure optimal performance in real-world applications.

This **Cathode Pulse Power Supply** provides meticulously controlled pulse outputs, ensuring accurate simulation and evaluation of TWT performance in environments where reliability and precision are paramount.

Features

- **Pulse Output Voltage:** Adjustable voltage range up to 15kV to support a variety of TWT types.
- **Pulse Output Power:** High-power output from 5kW to 50kW, tailored for high-performance TWT testing.
- **Pulse Frequency:** Wide frequency range from 100 Hz to 10 kHz for flexible testing scenarios.
- **Pulse Width:** Adjustable pulse width from microseconds to milliseconds for accurate pulse shaping.
- **High Stability:** Ultra-stable pulse generation with minimal jitter and ripple, ensuring precise TWT testing.
- **Efficiency:** Energy-efficient design with up to 95% power conversion efficiency, reducing operational costs and heat dissipation.
- **Rugged & Reliable:** Designed to meet **MIL-STD-810** standards, ensuring durability in harsh environmental conditions like defense research labs and field test environments.
- **EMI/EMC Compliance:** Certified to **EN 55022**, ensuring electromagnetic compatibility and minimal interference with sensitive TWT electronics.
- **Advanced Pulse Control:** Digital control of pulse parameters including voltage, frequency, and duty cycle for highly accurate and reproducible testing conditions.
- **Integrated Protection:** Protection features include over-voltage, short-circuit, over-temperature, and overload safeguards to protect the TWT and the power supply during critical testing phases.



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- **Modular & Compact:** Compact and modular design, allowing easy integration into existing testing setups

Key Advantages

1. **Indigenous Technology:**
GROW CONTROL fully indigenous design and manufacturing ensure high reliability and support for defense and aerospace sectors, promoting self-reliance in advanced technology.
2. **Precision Testing:**
The **Cathode Pulse Power Supply** provides highly stable and precise pulse generation, critical for testing TWTs used in high-power radar and communication systems, ensuring their optimal performance under operational conditions.
3. **High Voltage & Power Output:**
Capable of delivering up to 15kV and 50kW of pulsed power, the supply is ideal for a wide range of TWT types, from low to high-power applications in both defense and industrial sectors.
4. **Energy Efficient:**
With up to 95% efficiency, this power supply reduces energy losses and minimizes heat, resulting in lower cooling requirements and extended equipment life.
5. **Ruggedized for Extreme Conditions:**
Designed for military-grade durability, the power supply withstands environmental challenges such as high temperatures, shock, and vibration, making it suitable for both lab and field testing environments.
6. **Customizable Solutions:**
GROW CONTROL offers customization options for voltage, power, and pulse control to match specific TWT testing requirements, ensuring versatile and adaptable testing capabilities.

Applications

1. **TWT Testing for Radar Systems:**

Provides precise pulsed power for testing TWTs used in high-power radar systems deployed in military and aerospace applications.

2. **Communication System Testing:**

Ideal for evaluating TWTs used in satellite and terrestrial communication systems, ensuring reliable performance under various conditions.

3. **Defense Research & Development:**

Utilized in defense research labs for the development and testing of next-generation TWTs used in radar, electronic warfare, and communication systems.

4. **Aerospace Testing:**

Supports the rigorous testing requirements of TWTs used in aviation and space applications, where reliability and precision are crucial for mission success.

5. **Field Testing in Harsh Environments:**

Designed to handle the demands of field testing in rugged environments, ensuring that TWTs can operate reliably in extreme conditions.

Customization Options

GROW CONTROL provides extensive customization options to suit the specific requirements of TWT testing for various defense and industrial applications. Customization options include:

- Output Voltage & Power Configurations
- Pulse Frequency & Width Customization
- Form Factor Adaptations for Space-Constrained Environments
- Cooling Options (Air or Liquid)
- Additional Protection Features for Enhanced Safety

We work closely with our clients in defense, aerospace, and communication sectors to develop tailored solutions that address their unique TWT testing needs.

Why Choose **GROW CONTROL**?

- **Indigenous Expertise:** Developed and manufactured in India, **GROW CONTROL** power supply solutions are trusted for their reliability, precision, and compliance with national defense standards.
- **Precision Pulse Power:** The supply delivers accurate, stable pulses with minimal jitter and ripple, ensuring consistent and reliable TWT testing for high-performance applications.
- **Durability in Harsh Environments:** Designed to meet military standards for environmental stress, the power supply ensures continuous, reliable operation even under challenging conditions.
- **Efficiency & Performance:** With a high level of efficiency, the power supply reduces energy waste, making it both cost-effective and environmentally friendly.
- **Customer Support:** From design to post-delivery, **GROW CONTROL** provides full customer support, including customization, training, and maintenance services to ensure smooth operation

Certifications

- **EN 55022** – EMI Compliance
- **ISO 9001:2015** – Quality Management Systems

Technical Specification

Model no.	GC1503CCPS
Input	230V $\pm 10\%$, 50Hz $\pm 3\%$, 1 phase
Pulsed high voltage beam supply	
Pulsed voltage (KV)	-1 to -16
Peak current (A)	0 to 1
Pulse width (μs)	10
Repetition rate (Hz)	100
Rise time (μs)	1 to 2
Fall time (μs)	2 to 4
Heater supply	
Isolation (KV)	20
Voltage (V)	0 to 10
Regulation (%)	± 1
Current (A)	0 to 5
Time delay (minutes)	5
Ion pump power supply	
Voltage (KV)	5
Current (mA)	50
Calibrated output	
Cathode pulse voltage	1000:1 ratio
Cathode pulse current (V/A)	1
Helix pulse current (V/A)	1



OUR CLIENTS



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