

SCE Model 4500 Power Supply

This unit, part of a shipboard radar system, was originally built by Cardion Electronics (NY), and was awarded to us as a build-to-print. The magnetic components manufacturer was no longer in business, therefore, the transformers were reverse engineered and built by SCE. Additionally during reverse engineering, design flaws in the original units were uncovered, and with Government approval, corrected.

The topology is somewhat unique in that a true sine wave at approx. 18KHz drives the output transformer which produces 12KV directly with no voltage multiplication. This technology provides low noise output, and good transient response, but is relatively inefficient.

SPECIFICATIONS

Electrical

Input:

- Voltage 23 to 25VDC
- Current Less than 1.2A at full load. Input ripple is less than 5% of total current

Output:

#1 (Anode):

- Voltage 12KV
- Current 500 μ A output
- Regulation $\pm 0.5\%$ load, $\pm 0.5\%$ line
- Ripple 0.4% (48V) p-p maximum
- Transient For load changes between 0% and 100%, will be <20% deviation, and stabilization to 0.5% within 30msec

#2 (Focus):

- Voltage 2700 - 3300V, adjustable
- Current 200 μ A output
- Regulation $\pm 0.5\%$ load, $\pm 0.5\%$ line
- Ripple 1% (30V) p-p, maximum
- Transient For load changes between 0% and 100%, will be <20% deviation, and stabilization to 0.5% within 30msec

#3:

- Voltage 400 - 600V, (adjustable)
- Current 200 μ A output
- Regulation $\pm 0.5\%$ load, $\pm 0.5\%$ line
- Ripple 1% (5V) p-p, maximum
- Transient For load changes between 0% and 100%, will be <20% deviation, and stabilization to 0.5% within 30msec
- Test Output 1000:1 divider for each output (100:1 for 500V)

Environmental

- Operating Temperature -25°C to +75°C
Maximum temperature coefficient 0.01%/°C
- Shock Per MIL-S-901D, Grade A, Type A, Class I
- Vibration Per MIL-STD 167-1 Type I
- Altitude To 100,000 feet