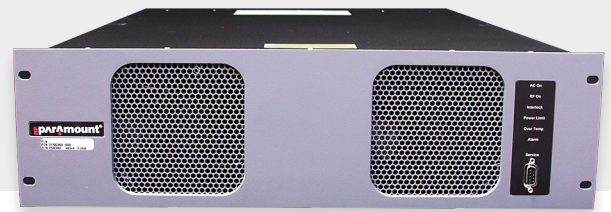


Retrofit: RFG 5500 to Paramount 5513

Digitally Controlled RF Power Supply with Increased Reliability, Efficiency, and Functionality

The Advanced Energy (AE) Retrofit Program aims to replace existing, aged AE legacy products with a new drop-in solution. With a retrofit of your existing RFG 5500 units to the Paramount® 5513, Total Cost of Ownership improvements can be realized through reduced tool down time, improved process and wafer yields, and efficiency gains.



Overview

As semiconductor tools and process power components age, factories are seeing increases in failure rates and repair costs of those components. A retrofit of RFG 5500 to Paramount 5513 provides a reset of the unit life, and an upgrade in unit capability and reliability. A retrofit maximizes tool uptime while reducing overall maintenance costs.

The RFG product line is no longer in production. Retrofitting your RFG is the preferred service option as:

- Used equipment available on the market is in unknown condition
- Repairing existing units could be limited in the future due to obsolete components

Total Cost of Ownership (TCoO)

TCoO in the process power space on a semiconductor tool extends beyond the transactional cost of a repair:

- Tool down time: lost production dollars
- Wafer scrap
- Wafer yield
- Operational costs (efficiency)

Benefits

- Increased uptime with longer mean time between failures (MTBF)
- Lower overall maintenance costs
- Performance equivalent to processes with new tools
- Additional features allow for enhanced process control or new process development
- Higher efficiency
- Enhanced plasma stability and process repeatability
- CEX and pulsing options available

Features

- Includes 12-month, whole-box warranty
- Supports wafer fabrication with partnership of AE refurbishment experts
- Resets the clock on aging tools
- Provides cost-effective, modern replacements for discontinued or aging plasma generators
- Presents an efficient upgrade process that is replicable for subsequent tools
- Retrofit kit designed to be a seamless drop-in replacement for RFG 5500

Return on Investment (ROI)¹

The AE Quality Advantage - Maximizing Uptime

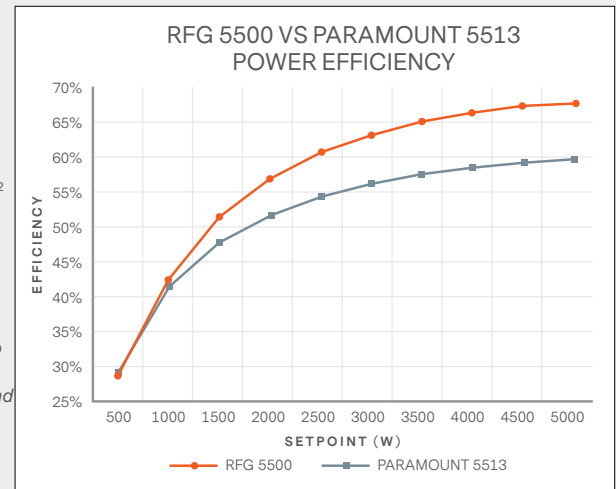
With a retrofit of RFG 5500 to Paramount 5513:

- Save up to 45% annually on repair and maintenance costs with new units²
- See a five-year ROI³ of 80%
- Break even in 2.78 years

¹ Figures are for illustrative purposes only. Contact AE for a customized ROI calculation specific to your install base. Trade-in and volume discounts are also available.

² Annual savings achieved through reduced tool downtime, improved process and wafer yields, and efficiency gains.

³ Figures calculated off of 30-unit population.



Specification Comparison - RFG 5500 to Paramount 5513

With the inclusion of a retrofit kit, which contains all required interfaces and adapters, transitioning to a newer product is made seamless by eliminating equipment changes.

Feature	RFG 5500	Paramount 5513	Benefits to Retrofit
Arc Management	Not Available	Detection & Suppression	Minimized arc damage
Dynamic Response	< 50 ms	< 10 ms	Faster process / higher throughput
Power Threshold	100 to 5000 W	60 to 5000 W	Lower power range available
Power Accuracy	± 1%	± 1%	Tighter process control
Reflected Power	850 W	1000 W	Increased capability
Sag / Surge Protection	Option -115 only	SEMI F47	Fewer process interruptions
Pulsing	Not Available	Available	Expanded process capability
Analog Interface	15-pin D-sub	25-pin D-sub	Adapter cable provided
RF Output Connector	Type LC	Type LC	No change to output cable
Input Power	208 V – 3 ph	208 V – 3 ph	No electrical panel rewiring
Weight	< 57 kg	< 36.5 kg	Lower weight with Paramount
Height	180 mm	133 mm	Smaller footprint
Width	432 mm	483 mm	Fits in standard 19" rack
Depth	585 mm	585 mm	No change to rack installation
Cooling	Water	Water / Air	Mixed cooling
Coolant Rate	4 gpm	2.5 gpm	Lower water consumption
Water Fittings	1/2" NPT	3/8" NPT	Adapter provided

Get in Touch

To learn more about your retrofit options, contact Advanced Energy Technical Support at technical.support@aei.com or reach out to your local Service Center.

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