

Retrofit: RF20M to Paramount Plus MF

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 RF20M unit to the Paramount® Plus MF, 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 RF20M to Paramount Plus MF 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 RFPP product line, including the RF20M model, is no longer in production. Retrofitting your RF20M generator 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 (TCO)

TCO 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 RF20M

Return on Investment (ROI)¹

The AE Quality Advantage – Maximizing Uptime

With a retrofit of RF20M to Paramount Plus MF:

- Save up to **73%** annually on repair and maintenance costs with new units²
- See a five-year ROI³ of **81%**
- Break even in **2.77** 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 – RF20M to Paramount Plus MF

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	RF20M	Paramount Plus MF	Benefits to Retrofit
Output Power	2000 W	5 W to 2000 W	No change
Power Accuracy	± 1%	± 1W or ± 1%	Tighter process control
Reflected Power	300 W	300 W	No change
Frequency	1.700 to 2.100 MHz, 1.800 MHz Nominal ± 0.005%	1.800 to 2.170 MHz, 1.985 MHz Nominal ± 0.005%	Higher frequency range available
Sag / Surge Protection	Not Available	SEMI F47	Fewer process interruptions
Pulsing	Level-to-Level	Level-to-Level	No change
Analog Interface	38-pin ELCO	25-pin RFG type	Adapter cable provided
RF Output Connector	HN Female	HN Female	No change to output cable
Input Power	190 to 262 VAC or 380/415 VAC	200 to 208 VAC ± 10% or 400 to 480 VAC ± 10%	No electrical panel rewiring
Height	210 mm	128 mm	Smaller footprint
Width	430 mm	450 mm	Fits in standard 19" rack
Depth	534 mm	567 mm	No change to rack installation
Cooling	Water / Air	Water / Air	Mixed cooling
Coolant Rate	2.5 gpm	2.0 gpm	Lower water consumption
Water Fittings	1/8" NPT	3/8" tube union adapters	Adapters provided
Efficiency	53%	> 60%	Decreased operating costs

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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