Coaxial Power Systems Ltd
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High Efficiency RF Generators
Model RFG1K-13, 1000Watts at 13.56MHz
Model RFG1K-27, 1000Watts at 27.12MHz

These RF generators are precision units intended for scientific and industrial applications. The robust construction using the latest in switch mode and solid-state design techniques ensure a long and trouble free life even in harsh environments.
The small size of the unit makes it ideal for use where there is restricted rack space.
It is recommended that the generator be used in conjunction with either a manual or automatic impedance matching network.

The main features of all models are:

- Efficient Class-E design
- 19-inch rack, 2U (89mm) high
- Microprocessor display of incident (forward) power, reflected power and unit status
- Precision power control +/- 1% of set point.
- Fast pulse operation from TTL/CMOS input.
- 13.56MHz and 27.12MHz frequencies as standard

The output power of each generator is fully adjustable between zero and maximum power. The feedback control system ensures that the set output power remains constant and repeatable. Incident (forward) and reflected power measurements are internally calibrated to give high accuracy throughout the power range.

An external voltage of 0 to 5Volts can be used to control the output. This is particularly useful in sputter coating applications where the D.C. voltage developed across the plasma dark space can be regulated rather than the RF power.

Technical Specifications

Model RFG1K-13
Model RFG1K-27

Class of operation
Class E

Output frequency
RFG1K-13, 13.56MHz
RFG1K-27, 27.12MHz

Output power
1000Watts into 50 Ohm load

Frequency stability
Crystal controlled:
13.56MHz+/-1.4kHz
27.12MHz+/-2.7kHz

Output impedance
50Ω

Output connection
N type/50Ω

Power control
Analogue control system allows power or external feedback control. Output stability is +/-1% for +/-15% variation in line.

VSWR capability
Can withstand any VSWR at any phase angle

Harmonic output
Better than 40dB below fundamental

Output envelope ripple
Less than 1% of full amplitude

Pulse operation
TTL input via SMA socket on rear panel.
Minimum pulse width 40μs, with a recommended pulse-on duty cycle from 1% to continuous (100% duty cycle.)
The front panel display automatically shows pulse output levels by utilising sample/hold technology

Front panel controls
RF on
RF off
Output power set
Pulse/CW switch
Remote switches
Menu switches

Front panel indicator
RF power on
RF power off

Front panel display
Vacuum fluorescent display showing:
Forward (Incident) Power
Reflected Power
Reflected power exceed limit
Remote operation
Timer
Cooling interlock
External interlock
AMN display (option)

Rear panel switches/connectors
Remote connector (25-way 'D')
Common exciter output(SMA)
Common exciter input/external signal source(SMA)(max. 13dBm)
Pulse input connector (SMA)
Line input (I.E.C.)
AMN display(option)
RF output connector (N50Ω)
Mains switch

Remote control
Accessed via rear panel 25-way 'D' type socket
indicators:
RF on/off (open collector 100mA)
Incident power
Reflected power
RF on/off (contact closure)
Interlock (contact closure)
Output set 0-5Volts = 0-100%
Remote output set select
External feedback
Remote RF on/off select
True power control select

Cooling
Forced air - air intake through rear, exhaust around chassis cover

Line
110/230 VAC single-phase 50/60Hz

Size
19-inch rack mounting 2U high 500mm deep (external connectors may protrude an extra 50mm)

Weight
18kg

Finish
Front Panel -RAL7135 light grey
Rear Panel - Stainless Steel
Cover - Stainless Steel

Environment
Operating temperature: 0-40°C (-20° to +65° C storage)

Standards
EN61000-3-2:2006
EN61000-3-3/A2:2005
EN61326-1:2006
EN61010-1:2001

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