



## RFG5K - 5kW RF GENERATOR

The **RFG5K, 5,000-Watt output RF generator** is a precision unit intended for both scientific and industrial applications. The robust construction, using tried and tested components together with the latest design techniques, ensure a long and trouble-free life even in harsh environments. The generator is totally air cooled which considerably reduces its service requirements and allows simple installation.

It is recommended that the generator be used in conjunction with either a manual or automatic impedance matching network. Both types are available from Coaxial Power Systems Ltd – please see the separate brochure for details. If an automatic network is used, the controller can be fitted to the generator cabinet.

The main features of the generator are:

- Proven design and track record
- Air cooled
- Individual LED displays for incident (forward) and reflected power.
- Precision power control +/- 1% of set point.
- Common exciter input/output
- 13.56MHz, 27.12MHz and 40.68MHz frequencies available as standard. Non-standard frequencies are available – please contact factory for details.
- Fast pulse operation from TTL/CMOS input (Optional)
- Solid State/Power Tube design for reliable performance



The output power of the 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 controlled rather than the RF power.

## General Specifications

### Model RFG5K RF Generator

#### Output frequency

13.56MHz , 27.12MHz.or 40.68MHz  
crystal controlled or common  
exciter/external signal source input  
(BNC on rear panel.)  
Consult factory for other frequencies

#### Output power

5000 Watts CW

#### Frequency stability

Crystal controlled:  
13.56MHz +/-1.4kHz  
27.12MHz +/-2.7kHz  
40.68MHz=+-4.1kHz

#### Output impedance

50Ω

#### Output connection

7/16 type/50Ω

#### Power control

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

#### Meters

3 1/2 digit LED display of incident  
(forward) and reflected power.

#### VSWR capability

Can withstand any VSWR at any  
phase angle

#### Harmonic output

Better than 40dB below fundamental

#### Common exciter

BNC input 50Ω (max 13 dBm)

#### Output envelope ripple

Less than 1% of full amplitude

#### Front panel controls

Line on/off; Machine on/off; RF  
on/off; Reflected power limit; Output  
power set; Overload set;  
Remote/Local.

#### Front panel indicators

Line; Machine on/off; RF on/off;  
Overload; Remote control; Incident  
output power; Reflected power;  
Interlock status

#### Diagnostics

Analogue meter/LED indicator show  
the following parameters:  
All internal power supply voltages  
Driver output incident/reflected  
power  
PA anode current  
PA grid current

#### Amplifier Line-up

Solid state crystal oscillator and RF  
driver. Thermionic vacuum power  
tube power amplifier.

#### Cooling

Forced air

#### Remote control

Accessed via rear panel 15 way

'D' type socket indicators:

RF on/off (open collector 100mA)

Incident power

Reflected power

BNC output 50( 7dBm

RF on/off (contact closure)

Interlock (contact closure)

Output set 0-5Volts = 0-100%

Remote output set request

External feedback

Remote RF on/off request

#### Line

380/415 Vac 3-phase 50/60Hz 5  
Wire

#### Size

Standard Version  
28U (H) x800mm(D) enclosure with  
lockable castors.

#### Environment

90% humidity (non evaporating).  
10,000 feet above sea level

#### Standards

Safety: EN601010

Emissions:

EN 61000-6-4

Immunity:

EN 61000-6-1

#### Option - Pulse operation

BNC TTL input on rear panel. Minimum pulse width 10μs. The external power control signal should vary the peak output from 0% to 100%, with a pulse-on duty cycle from zero to continuous DC (100% duty cycle.)

Front panel power meters automatically display pulse output levels by utilising sample/hold technology

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### Other Products Manufactured By Coaxial Power Systems Ltd Include:

- Low Power RF Generators – 50Watts to 600Watts
- Medium Power RF Generators – 1kWatt to 3kWatt
- High Power RF Generators – 5kWatt to 25kWatt
- Very High Power Generators – 30kW to 100kWatt
- Wide Band Generators – 100Watts and 300Watts, 10MHz to 100MHz
- Impedance Matching Networks for all sizes of generator
- Plastic Welding Power Supplies
- Wood Glue Curing Systems
- Vacuum Deposition Systems:-
  - Sputter Coating
  - Plasma Etching
  - Reactive Ion Etching
  - Ashing
  - PECVD
  - Diamond Deposition

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