



## RFG-C-50-600



The **RFGC-600 (600W)** RF generator is a precision unit intended for both 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.

This is a combined unit, which consists of the RF Generator, Automatic Matching Network and Controller Unit in a 2U Full-Rack chassis.

The generator is totally air-cooled which considerably reduces its service requirements and allows simple installation.

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. Both types are available from Coaxial Power Systems Ltd – please see the separate brochure for details.

### Available models

#### **Model Numbers:**

**RFG-C 050-13 or 27MHz**  
**RFG-C 100-13 or 27MHz**  
**RFG-C 150-13 or 27MHz**  
**RFG-C 300-13 or 27MHz**  
**RFG-C 600-13 or 27MHz**

### Main features

- Efficient Class-E design
- Rack-mount design as standard.
- Compact (ideal for restricted rack space).
- 110/240 VAC single phase – As standard (other voltages are available)
- 19 Inch Rack, 2U (89mm) high.
- Analog and RS-232 interfaces available.
- 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
- Combined unit consisting of the Generator, Matching Network and Controller.
- External control of output voltage. (Useful in sputter coating applications).
- Feedback control system ensures that the set output power remains constant and repeatable.
- Internally calibrated power measurements for high accuracy throughout the power range.
- 380KHz, 2MHz, 13.56MHz, 27.12MHz and 40.68MHz frequencies available as standard.

***(Non-standard frequencies are available - please contact factory for details).***

#### **Option (please enquire)**

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

<b>Physical</b>	
Model Variants	RFG-C-50 / 100 / 150 / 300 / 600 - 13 (13.56Mhz) RFG-C-50 / 100 / 150 / 300 / 600 - 27 (27.12Mhz)
Dimensions	<b>Full rack mounting - 2U high</b> Length: 502 mm, Height: 89mm, Width (Not inc Front Panel) 445mm Width (Inc Front Panel) 482mm
Weight	13.5 Kg (30 lb) max.
Front panel Material / Colour	Aluminium, RAL7135 Light Grey.
Chassis and Cover Material	Stainless Steel.
<b>Connector and Cable Specifications</b>	
RF Output Connector	N type / 50 $\Omega$
User Port Connector (RFG)	25-pin, Sub-Miniature 'D' Female, with 8mm 4-40 jack post
User Port Connector (AMN)	15-pin, Sub-Miniature 'D' Male, with 8mm 4-40 jack post
AC Power Input Connector / Cable	IEC Socket
Input + Output CEX / Drive Connector	<b>Input:</b> SMA, Coaxial Sub-Miniature / <b>Output:</b> SMA, Coaxial Sub-Miniature
Pulse Input Connector	SMA, Coaxial Sub-Miniature
AMNC Readout connector (Optional)	Lemo – Circular Connector, 3 contacts.
Earth Connection	M4 Threaded Bush
<b>Electrical - General</b>	
Input Power	110-240 VAC, Single Phase (50/60Hz) <b>Other options are available, please contact us for more information.</b>
Output Power / Impedance	Up to 600-Watts Continuous / 50 $\Omega$ (options include 0-50W / 0-100W / 0-150W / 0-300W / 0-600W)
Output Frequency Options / Stability	13.56MHz / +/-1.4kHz. 27.12MHz / +/-2.7kHz.
Interface Options	Analogue (Standard), RS-232 (Optional), Device-Net (Optional).
Efficiency	Up to 90%
Output Envelope Ripple	Less than 1% of full amplitude.
VSWR Capability	Can withstand VSWR at any phase angle.
Harmonic Output	Better than 40 dB below fundamental.
Pulse Operation via SMA input on rear panel	Minimum pulse width 40 $\mu$ s ( <b>micro-seconds</b> ). The external power control signal should vary the peak output from 0 to MAX-power with a pulse-on duty cycle from 0 to continuous (100% duty cycle).
<b>Electrical – Network Data</b>	
Network	Configuration 'L', 'Pi' or 'T' <b>Supplied configured as 'L' network unless requested otherwise.</b>
Output Impedance Range	'L' Network – 5-20 Ohms 'Pi' Network – 10-200 Ohms 'T' Network – <b>Please consult factory</b>
Phase Shift	0 to +/- 160
Tuning Range	Depends on unit frequency and the tuning coil installed.
Frequency Range	Frequency options range between 380khz-84mhz. <b>The network frequency is configured to user required frequency / range and requirements.</b>
Capacitors	Load: Air-Vane type Tune: Air-Vane type
Inductor	Air-cooled fixed inductor
Specification is continued on the following page 	

<b>Local Control and Remote Interface – AMNC SIDE</b>	
Local Control	<b>Push-button controls with LCD display indicators for:</b> Manual/Automatic selection push-button for each capacitor Drive push-buttons (max/min) for each capacitor Tuning Capacitor position readout Loading Capacitor position readout Setting of capacitor base positions readout Dark Space Bias voltage readout (if fitted)
Remote Interface	<b>External source indicators for:</b> Tuning Capacitor position Loading Capacitor position Setting of capacitor base positions Dark Space Bias voltage (If fitted)
<b>Local Control and Remote Interface – RFG SIDE</b>	
Local Control	<b>Accessed via Front-Panel Controls:</b> Line ON/OFF. RF ON/OFF. Digital output power set / Menu Control dial. Menu Switches. Remote switches: RF on/off control enable, O/P set on/off. Local switches: x0.1 / x1 (output range), CEX-OSC, PULSE-CW. Timer.  <b>LCD display showing:</b> Forward (Incident) power / Reflected power / Reflected power exceed limit. Remote operation. Timer. Interlock status (cooling and external) AMN Readout on main display (optional)
Remote Interface	<b>Accessed via User-Port.</b> RF ON/OFF Incident Power indication Reflected Power indication Output set 0-5volts = 0-100% Remote output set request.
<b>Environmental</b>	
Operating Temperature	0-40°C (32°F-104°F)
Storage Temperature	0-20°C to +65°C (-4 to 149°F)
<b>Cooling Requirements</b>	
Cooling	Forced-Air
<b>Other</b>	
Standards	CE Certification BS EN ISO 9001:2008 EN61000-3-2: 2006 EN6100-3-3/A2: 2005 EN61326-1: 2006 EN61010-1: 2001

## Warranty

Coaxial Power Systems Ltd offer a warranty for parts and labour (if returned to factory) for 1 year from date of despatch. The warranty is invalidated if the generator has suffered inappropriate treatment i.e. excessive vibration, mechanical denting or dropping, accidental liquid spill, excessive applied voltage to remote connectors etc. Coaxial Power Systems Ltd should be notified of all warranty claims before return of equipment.

## Contact

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