



## RFG-AMNC-50-600



The **RFG-AMNC-50-600 (50-600W)** 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 and 'Automatic Matching Network Controller' combined into 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-AMNC-50 / 100 / 150 / 300 / 600 - 380 (380Khz)  
RFG-AMNC-50 / 100 / 150 / 300 / 600 - 2 (2Mhz)  
RFG-AMNC-50 / 100 / 150 / 300 / 600 - 13 (13.56Mhz)  
RFG-AMNC-50 / 100 / 150 / 300 / 600 - 27 (27.12Mhz)  
RFG-AMNC-50 / 100 / 150 / 300 / 600 - 40 (40.68MHz)

### Main features

- Efficient Class-E design
- Rack-mount design as standard.
- Combined RF Generator including the Automatic Matching Network Controller.
- 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
- External control of output voltage. (Useful in sputter coating applications).
- Feedback control system ensures that the set output power remains constant and repeatable.

***(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-AMNC-50 / 100 / 150 / 300 / 600 - 380 (380Khz) RFG-AMNC-50 / 100 / 150 / 300 / 600 - 2 (2Mhz) RFG-AMNC-50 / 100 / 150 / 300 / 600 - 13 (13.56Mhz) RFG-AMNC-50 / 100 / 150 / 300 / 600 - 27 (27.12Mhz) RFG-AMNC-50 / 100 / 150 / 300 / 600 - 40 (40.68MHZ)
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	11.2 Kg (24 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 REMOTE)	25-pin, Sub-Miniature 'D' Female, with 8mm 4-40 jack post
User Port Connector (AMN REMOTE)	15-pin, Sub-Miniature 'D' Male, with 8mm 4-40 jack post
Control Connector (AMN)	25-pin, Sub-Miniature 'D' Female, 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
Earth Connection	M4 Threaded Bush
<b>Electrical - General</b>	
Input Power	110-240 VAC, Single Phase (50/60Hz)
Output Power / Impedance	600-Watts Continuous / 50 $\Omega$
Output Frequency Options / Stability	380KHz / +/-38kHz 2MHz / +/-4.1kHz 13.56MHz / +/-1.4kHz. 27.12MHz / +/-2.7kHz. 40.68MHz / +/-4.1kHz
Interface Options	Analogue (Standard), RS-232 (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	N/A
Output Impedance Range	N/A
Phase Shift	N/A
Tuning Range	N/A
Frequency Range	N/A
Capacitors	N/A
Inductor	N/A
Specification is continued on the following page 	

### Local Control and Remote Interface – AMNC REMOTE

Local Control	<b>Push-button controls with VFD 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)

### Local Control and Remote Interface – RFG REMOTE

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>VFD 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.

### Environmental

Operating Temperature	0-40°C (32°F-104°F)
Storage Temperature	0-20°C to +65°C (-4 to 149°F)

### Cooling Requirements

Cooling	Forced-Air
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### Other

Standards	CE Certification BS EN ISO 9001:2008 EN61000-3-2: 2006 EN6100-3-3/A2: 2005 EN61326-1: 2006 EN61010-1: 2001
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### 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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