



T&C

Power Conversion

AG 0613 RF GENERATOR



T&C POWER CONVERSION

600 Watts RF Power at 13.56 MHz for Industrial and Laboratory Applications.

FEATURING:

- **Low harmonic level at 550W $h_{2\leq-50}$ dBc, h_3 and higher < -55 dBc**
- **Digital Metering: measures forward, reflected and load power simultaneously**
- **Front Panel Control of Generator and Amplifier functions**
- **Data acquisition: Status Monitoring & Power Measurement at Analog Port**
- **RS232 communication: Full Control Of Generator /Amplifier Functions**
- **AGC Power Leveling: Output Control to better than ± 3 W of set value.**
- **Pulse operation**



*Power Supply
Front Panel View*

Generator Model AG 0613 is a robust source of RF power for laser modulation, plasma generation, general laboratory and general industrial applications.

Featuring leading edge solid state design for all generator stages, it provides everything for a complete and reliable, controlled RF power delivery system. It reflects the T&C ongoing commitment to provide RF power products of the highest quality, incorporating the current requirements for complete remote control and data acquisition features

OPERATION

The AG 0613 produces 600W of RF power at a frequency of 13.56 MHz, with low harmonic distortion.

Front Panel offers a LCD display of Forward, Reflected and Load Power readings, RF Status, AGC setups and operating frequency in Generator Mode.

Power meters are calibrated into a 50 Ohm Load and are accurate when unit operates into matched load. Outside of matched condition, the model AG 0613's power measurement system provides an accurate reading of VSWR.

When used as an amplifier, the

AG 0613 is compatible with most signal and function generators, computer synthesizer cards and it accurately reproduces all waveforms within its output and bandwidth limits.

The Forced-air cooling system and the internal power supply are designed to permit operation over a wide range of temperature and global AC line conditions.

The AG 0613 is built to withstand a +5 dBm (1.1Vp-p) Input signal. The unit amplifies the inputs of AM, narrow band FM and pulse modulations.

OUTPUT PROTECTION

AG 0613 is protected by its internal monitoring system for 610 Watts of total Forward Power and 80 Watts of Reflected Power. This will protect the generator output stage from extreme mismatch at the Output.

GENERAL

T&C generators are designed to be reliable, compact and light in weight. The use of conservatively rated components ensures high reliability and eliminates the need for periodic retuning.

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AG 0613 RF Power Source Specifications

Class Of Operation

Class B

Frequency Of Operation

13.56 MHz

Frequency Stability

0.005% or better

RF Power Output

600 Watts nominal into 50 Ohms

Operation as amplifier. Contact T&C for further details.

Output as amplifier in MGC/Burst Mode

0 dBm IN, 1V (5 or 10V) CTL IN pin 5
100W +/-2W

RF Input Drive (as amplifier)

Typical range -20 dBm to 0 dBm
1V (5 or 10V) CTL IN pin 5

RF Input Drive for AGC

Recommended +0 to +3 dBm for the best operation

Input Drive Source(amplifier)

Signal or function generator, analog computer input capable of up to 2 Vp-p @ 50 Ohm

Internal RF Source

Crystal oscillator at 13.56 MHz

Input and Output Impedance

50 Ohm

IN / OUT VSWR

1.2:1 max - input
3:1 max - output

Output VSWR Protection

80 Watts max reflected power limit. Automatic, limits typically within 0.5 ms after reverse power reaches 80 Watts or power amplifier current preset limit.

Harmonic Level @ 600 W

Better than - 40 dBc

Spurious Output

- 50 dBc

Output Blanking

For pulsed applications, T&C amplifiers and generators offer blanking of the output signal for minimum noise RF spectrum

Dynamic Power Range

1 to 600 W, settings within +/- 3W
NOTE! Output cutoff below 1W.

Output Settings & Control (Communications)

SubD 25 Analog and Digital I/O .Rear Panel

NOTE! Check which scale is selected for your unit. Available scales:

1 V=100 W
5 V=nominal power (default, analog port)
10 V=nominal power (default, software)

D-COM "Digital Communication"

Port:
RS-232
RS-485
USB 2.0

Pulse Specifications

Pulse Width from 2 μ s to continuous, user defined.

RF Power Margin

(Open Loop Max Power/Rated Power)-1)*100
20 %

RF Connectors

INPUT BNC Female
OUTPUT N Female
BLANKING BNC Female
Rear Panel

AC Power Connection

IEC Standard Power Entry followed by RFI filter.

Filter range 0.1 to 30 MHz min.

AC Circuit Protection

Internally fused on the main DC Power Supply, 15 A.

AC Input Current (RMS)

RF Out 550 W:

100-120 V ac, 50-60 Hz, 11 A
200-240 V ac, 50-60 Hz, 5.5 A

Cooling

Forced air, temperature controlled, heatsink temperature monitored for equipment safety at 70C limit.

Dimensions

L 458 mm x W 216 mm x H 140 mm
(18" x 8.5" x 5.5")

Weight

9.0 kg, 20 lbs.

Case

Front Panel: T&C White - Powder Coated Steel.
Stainless Steel Covers and Chassis.
Chassis designed to meet EMI RFI shielding requirements

Mounting

Half Rack, 3U high.

Optional: Rack Mount Kit, Adapter Kit, Coupling Screws.

Environmental conditions

Temp.: 10° to 40° C ambient

Humidity: 80%

Equipment intended for ISM applications in laboratory and light industrial environment.