



# AG 1024

## LF AMPLIFIER/GENERATOR

**Up to 2,000 Watts RF Power for Industrial, Laboratory and Medical Applications.**

### FEATURING:

- **20 kHz to 1 MHz at greater than 2,000 Watts**
- **Digital Meter, measures forward and reflected power**
- **Front Panel Control of Amplifier and Generator functions**
- **Data acquisition: Status Monitoring & Power Measurement at Analog Port**
- **RS232 communication: Full Control Of Amplifier & Generator Functions**
- **AGC or Power Leveling: Gain Control to better than  $\pm 0.5$  dB**
- **Controllable internal DDS signal source**
- **Pulse and Sweep of RF internal signal generator**



Model AG 1024 is a robust source of RF power for ultrasonic, laser modulation, RFI/EMI, plasma generation, laboratory and general industrial applications.

Featuring state-of-the-art design of all amplifier stages and a built-in DDS signal source, 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 latest standard for remote control and data acquisition.

### OPERATION

The AG 1024 produces 2,000 Watts of linear power over a frequency range from lower than 20 kHz to over 1 MHz, with low harmonic and intermodulation distortion. It operates without band switching or adjustment. Extended range to over 2 MHz is possible at reduced power. Gain is rated at 63 dB with a typical gain flatness of  $\pm 1.5$  dB. The Front Panel offers a LCD display of Forward, Reflected and Load Power readings, RF Status, MGC/AGC setups and operating frequency when in Generator Mode.

Power meters are calibrated into

50 Ohms and are accurate when operated into a matched load. Outside of matched condition, the model AG 1024's measurement system provides an accurate reading of VSWR.

When used as an amplifier, the AG 1024 is compatible with most signal and function generators, computer synthesizer cards and accurately reproduces all waveforms within its limits.

The Forced-air cooling system and the internal power supply are designed to support operation over most temperature and AC conditions.

The unit amplifies the inputs of AM, FM, SSB, pulse and other complex modulations with  $< -20$  dBc (h3) harmonic distortion and output power stability.

### OUTPUT PROTECTION

AG 1024 is protected by its internal control system for 2,000 Watts Forward and 400 Watts Reflected Power. This protects the amplifier output stage from overdrive at the input and extreme mismatch at the Output.

### GENERAL

T&C's products 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 calibration.



# AG 1024 Specifications

## Class Of Operation

Class "B"

## Frequency Of Operation

20 kHz to 3 MHz

## RF Power Output

### 50 Ohm load:

Up to 2000W for 20 kHz to 1 MHz

Up to 1000W for 1 MHz to 2 MHz

Up to 400 W for 2 MHz to 3 MHz

Pulse and low duty cycle!

### Any load:

Up to 1800W, continues operation.

## Gain

63 dB @ 2000W / 0.5 MHz

±1.5 dB 20 kHz to 1 MHz

## RF Input Drive for AGC

Recommended -5 dBm to 0 dBm for ±0.5 dB gain flatness

## Input Drive Source

Signal or function generator, analog computer input capable of up to 1 Vp-p @ 50 Ohm

Input range: -30 to 0 dBm typical, +5 dBm maximum

## Internal RF Source

DDS oscillator: 20 kHz to 3 MHz, 1 kHz resolution

## Input and Output Impedance

50 Ohm

2:1 max INPUT VSWR

3:1 max OUTPUT VSWR

## Output VSWR Protection

400 W max reflected power limit for Load Impedance > 50 Ohm. Current level protection for Load Impedance < 50 Ohm.

## Harmonic Level @ 1750W

Better than -13 dBc for 3-d harmonic, any other better than -20 dBc

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## Spurious Output

- 26 dBm equivalent noise level generated by internal circuits

## RF Output Settings & Control

- Front Panel EDITOR and function switches for manual control,  
- RS232 port for GUI or other computer communication. Rear Panel.

- SubD 25 Analog and Digital I/O .  
Port power scale 1V=250W. Rear Panel

## BURST operation

Pulse range: 1 to 500 usec

Period: 1 to 50 milliseconds

User settings via GUI and RS232

## BURST - external

DC to > 200 kHz. User defined

BURST scheme via SubD-25.

See analog port description for more details.

## SWEEP operation

0.02 to 1 MHz. Min time 10 ms, max 10s. Settings and activation from GUI only.

## Output Blanking

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

## RF Connectors

BNC Female: RF In

HN Female: RF Out

## AC Power Source

200 - 240 VAC, +/- 10%, 47 - 63 Hz,  
no adjustment required

## AC Power Connection

See manual for details

## AC Input Current (RMS)

RF Out nominal 1800W:

I = 30A @ 220V

RF Out max 2000W:

I = 35A @ 220V

## Cooling

Forced air, temperature controlled, heatsink temperature monitored via RS232 GUI interface.

## Acoustic level:

45dBa @ Max Fan Speed @ temp.

## Case

Designed to meet EMI and RFI shielding requirements AL chassis, yellow conductive finish.  
Front & Back Panel: T&C off-white.  
Cover: T&C black.

## Dimensions

405mm x 520 mm x 470 mm  
( H 16" x W 20.5" x L 18.5" )

## Weight:

59 kg, 130 lbs.

## Mounting

Stand alone unit.

## Environmental conditions

Temp.: 10° to 35° C ambient

Humidity: 80%

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

## AG 1024 Performance Chart

