



T&C

Power Conversion

# AG 1007

## AMPLIFIER/GENERATOR



T&C POWER CONVERSION

Up to 300 Watts of RF Power From 20 kHz to 1 MHz For Industrial, Laboratory And Medical Application.

### FEATURING:

- 20 kHz to 2 MHz up to greater than 200 W
- Output of 200 Watts  $h3 \leq -20$  dBc
- Digital Meter, measures forward, reflected and load power
- Automatic Frequency Recall
- 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
- Pulse and Sweep of RF internal signal generator



RF Power Source  
Front Panel View

Amplifier/Generator AG 1007 is a robust source of RF power for ultrasonic, laser modulation, RFI/EMI, plasma generation, laboratory and general industrial applications.

Featuring leading edge solid state design for all RF amplifier stages and a built-in DDS signal source, it provides everything for a complete and reliable, controlled RF power delivery system. This unit features "Frequency Recall" when the unit is turned off/on, the unit resets to the last frequency used. Another ongoing T&C commitment to provide RF power products of the highest quality, incorporating the current requirements for complete remote control and data acquisition.

### OPERATION

The AG 1007 produces up to 300 Watts of RF power over a frequency range from 20 kHz to 1 MHz. It operates over the entire frequency range without band switching or other adjustments. Extended range is possible with reduced output power. Gain is rated at 55 dB with a typical gain flatness of  $\pm 1$  dB.

The Front Panel offers a LCD display of Forward, Reflected and Load Power readings, RF Status, MGC/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 1007's power measurement system provides an accurate reading of VSWR.

When used as amplifier, the AG 1007 is compatible with most signal and function generators, computer synthesizer cards 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 1007 is built to withstand a +5 dBm maximum input. The unit amplifies the inputs of AM, FM, SSB and pulse modulations.

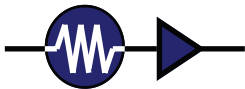
### OUTPUT PROTECTION

AG 1007 is protected by its internal control system for 300 Watts of total Forward Power and 70 Watts of Reflected Power. This will protect the amplifier output stage from accidental overdrive at the input and an 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.

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# AG 1007 Specifications



## Class Of Operation

Class "B"

## Frequency Of Operation

20 kHz to 2 MHz

## RF Power Output

### 50 Ohm load:

Up to 200W for 20 kHz to 2 MHz  
Up to 300W for 20 kHz to 1.0 MHz

### Any load:

Up to 150W, continuous operation.

## Mismatch Power Output

### Continuous Load Power at 20C:

2:1 VSWR (25 Ohm) 180W minimum  
3:1 VSWR (15 Ohm) 115W minimum  
Limited by heat protection circuit!

Burst and Pulse mode Load Power:

3:1 VSWR, 115W minimum

Limited by Reverse Power Limiter!

## Gain

55 dB @ 300W / 0.45 MHz  
±1 dB 50 kHz to 2 MHz (@ 200 W)

## 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 2 MHz,  
1 kHz resolution,  
Factory setting for 450 kHz.

## Input and Output Impedance

50 Ohm

2:1 max INPUT VSWR

3:1 max OUTPUT VSWR

## Output VSWR Protection

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

## Harmonic Level @ 200W

Better than -20 dBc for 3-d harmonic,  
any other better than -25 dBc

## Harmonic Level @ 300W

Better than -18 dBc

## Spurious Output

- 26 dBm equivalent noise level  
generated by internal circuits

## 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=100W. 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 2 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: Back Panel

## AC Power Connection

IEC Standard Power Entry followed  
by RFI filter.

Filter range 0.1 to 30 MHz minimum

## AC Input Current (RMS)

100 - 120 V ac, 50 - 60 Hz, 9.0 A  
200 - 240 V ac, 50 - 60 Hz, 4.5 A

## 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 Panel: T&C off-white.  
Cover: T&C black.

## Dimensions

135mm x 254 mm x 385 mm  
( H 5.25" x W 10" x L 15" )

## Weight:

12 kg, 26 lbs.

## Mounting

Table top, stand alone unit.  
Optional: Rack Mount Kit.

## Environmental conditions

Temp.: 10° to 30° C ambient

Humidity: 80%

Equipment intended for ISM applica-  
tions in laboratory and light industrial  
environment.

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## AG 1007 Performance Chart

