



**T&C**  
Power Conversion

# AG 1010-2HF AMPLIFIER/GENERATOR



**T&C POWER CONVERSION**

Up to 1,200 Watts RF Power  
From 50 kHz to 500 kHz for  
Industrial, Laboratory  
and Drop-in Replacement  
Markets.

## FEATURING:

- 50 kHz to 500 kHz up to 1,200 W
- Output of 900 Watts better than -19 dBc for any harmonic
- Digital Meter, measures forward and reflected power
- Front Panel Control of Amplifier and Generator functions
- Data acquisition: Status Monitoring & Power Measurement at Analog Port
- Features 9 pin Accessory Connector for direct replacement in established systems
- Optional 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



*Power Supply  
Front Panel View*

**Amplifier Model AG 1010-2HF is a robust source of RF power for ultrasonic, laser modulation, RFI/EMI, plasma generation, laboratory, general industrial and established drop-in replacement markets.**

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. 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.

### OPERATION

The AG 1010-2HF produces up to 1,200 Watts of power over a frequency range from lower than 50 kHz to higher than 500 kHz. It operates over the entire frequency range without band switching or other adjustments. Extended range to over 500 kHz is possible with reduced output power. Gain is rated at 62 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 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 1010-2HF's power measurement system provides an accurate reading of VSWR.

When used as amplifier, the AG 1010-2HF is compatible with most signal and function generators, computer synthesizer cards and 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 1010-2HF is built to withstand a +5 dBm (1.2Vp-p) Input signal. The unit amplifies the inputs of AM, FM, SSB, pulse and other complex modulations.

### OUTPUT PROTECTION

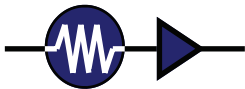
AG 1010-2HF is protected by its internal control system for 1,200 Watts of total Forward Power and 160 Watts of Reflected Power. This will protect the amplifier output stage from accidental overdrive at the input and an extreme mismatch at the Output.

### 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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**Industrial, Laboratory and Drop-in Replacement Markets**



# AG 1010-2HF Specifications



## Class Of Operation

Class B to 1200 Watts

## Frequency Of Operation

50 kHz to 500 kHz

## RF Power Output

600 W from 50 kHz to 500 kHz of continues output into any load.  
Up to 1200 W max from 50 kHz to 500 kHz, 50 Ohm load only, 20 C, Pulsing and low duty cycle only!

## Gain

62 dB @ 1200 W / 500 kHz  
±1.5 dB 50 kHz to 500 kHz (600 W Out)

## RF Input Drive

Typical range -20 dBm to 0 dBm, +5 dBm max

## RF Input Drive for AGC

Recommended -3 dBm to 0 dBm for ±0.3 dB gain flatness

## Input Drive Source

Signal or function generator, analog output capable of up to 1 Vp-p @ 50 Ohm (+5 dBm)

## Internal RF Source

DDS oscillator: 50 kHz to 500 kHz, 1kHz resolution

## Input and Output Impedance

50 Ohm

## Input / Output VSWR

2:1 max Input  
3:1 max Output

## Output VSWR Protection

160 W max reflected power limit

## Harmonic Level @ 900 W

Better then - 19 dBc for any harmonic

## Spurious Output

- 26 dBm equivalent noise level generated by internal circuits

## RF Output Settings & Control

- Front Panel EDITOR and function switches for manual control

## RF Output ... continued

- Optional RS232 port for GUI or other computer communication. Rear Panel  
- Optional SubD 25 Analog and Digital I/O . Port power scale 1V=100 W. Rear Panel

## RF Power Meter accuracy

± 3% typical

## Output Blanking (Pulsing)

For pulsed applications, T&C amplifiers and generators offer blanking of the output signal for minimum noise RF spectrum. Less then 1µs Rise/Fall time

## BURST:

### Internal Settings

Pulse range: 1 to 500 usec  
Period: 1 to 50 milliseconds  
User settings via GUI and RS232

### External Settings

DC to > 200 kHz. User defined BURST scheme via SubD-25. See analog port description for more details.

## SWEEP operation

50 kHz to 500 kHz. Min time 10 ms, max 10s. Settings and activation from GUI only.

## Rear Panel Connectors

INPUT BNC Female  
OUTPUT C Female  
9 pin Accessory Connector (Military style MS3102A)  
Analog Interface 25 pin (Optional)  
RS 232 Interface (Optional )  
Impedance Switch Selectable 50,75,100, 200, 300, 450 and 600 Ohm settings

## AC Power Connection

Non-detachable power cord anchored with compression bushing

followed by RFI filter. Back Panel

## AC Circuit Protection

20 A, double pole switch/circuit breaker on the Front Panel. Internally fused on the main DC Power Supplies, 15A.

## AC Input Current (RMS)

100 - 120 V ac, 50-60 Hz, 22 A  
200 - 240 V ac, 50-60 Hz, 12 A

Product Features Power Factor Correction (PFC)

## Cooling

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

## Acoustic level:

45dBa @ Max Fan Speed @ temp.

## Case

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

## Dimensions

H178mm x W362 mm x L584mm  
( 7" x 14¼" x 23" )

**Weight** 25 kg (55 lbs)

## Mounting

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

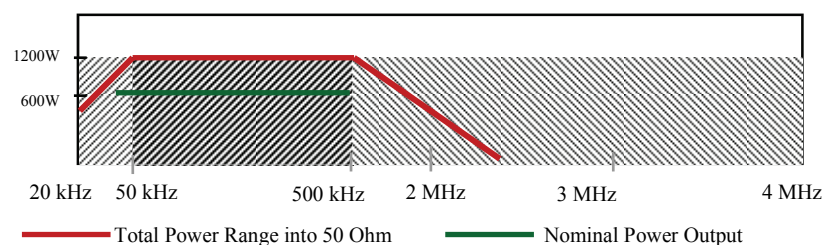
## Environmental conditions

**Temp.:** 10° to 35° C ambient

**Humidity:** 80%

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

### AG 1010-2HF Performance Chart



Industrial, Laboratory and Drop-in Replacement Markets