AG 1012 AMPLIFIER/GENERATOR

Up to 1,000 Watts RF Power From 20 kHz to 6 MHz For Industrial, Laboratory And Medical Application.

FEATURING:

- **20 kHz to 6 MHz up to 1,000 W**
- **Output of 750 Watts h3≤-15 dBc**
- **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 ±0..5 dB**
- **Pulse and Sweep of RF internal signal generator**

Amplifier Model AG 1012 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. 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 1012 produces 1,000 Watts of linear power over a frequency range from lower than 20 kHz to higher than 6 MHz, with low harmonic and intermodulation distortion. It operates over the entire frequency range without band switching or other adjustments. Extended range to over 3 MHz is possible with reduced output power. Gain is rated at 60 dB with a typical gain flatness of ±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 1012's power measurement system provides an accurate reading of VSWR.
When used as amplifier, the AG 1012 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 1012 is built to withstand a +13 dBm (2.8Vp-p) Input signal. The unit amplifies the inputs of AM, FM, SSB, pulse and other complex modulations with <-15 dBc (h3) harmonic distortion and output power stability.

OUTPUT PROTECTION

AG 1012 is protected by its internal control system for 1,000 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.

AG 1012 Specifications

Class Of Operation
Class B to 1000 Watts

Frequency Of Operation
20 kHz to 6 MHz

RF Power Output
600W from 0.02 MHz to 6 MHz of continues output into any load.
Up to 1000W max from 0.4 MHz to 5 MHz, 50 Ohm load only, 20C, Pulsing and low duty cycle only!

Gain
60 dB @ 200W / 0.5 MHz
±1.5 dB 20 kHz to 6 MHz (200W 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 computer output capable of up to 1 Vp-p @ 50 Ohm (+5 dBm)

Internal RF Source
DDS oscillator: 20 kHz to 6 MHz, 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 @ 750W
Better then - 15 dBc for 3rd harmonic, any other < -20 dBc

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
- RS232 port for GUI or other computer communication. Rear Panel.
- SubD 25 Analog and Digital I/O . Port power scale 1V=100W. 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
0.02 to 6 MHz. Min time 10 ms, max 10s. Settings and activation from GUI only.

RF Connectors
INPUT BNC Female
OUTPUT N Female
Rear Panel

AC Power Source
200 - 240 VAC, +/- 10%, 47 - 63 Hz

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)
RF Out nominal 600W:
I ≤ 8A @ 220V
RF Out max 1000W:
I ≤ 13A @ 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 Panel: T&C off-white.
Cover: T&C black.

Dimensions
H178mm x W363 mm x L388mm
(7" x 14¼" x 15¼")

Weight
25 kg (54 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 1012 Performance Chart