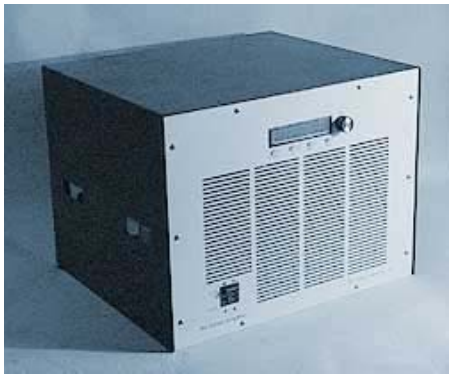
AG 1015
LF AMPLIFIER/GENERATOR



Up to 1100 Watts RF Power From 10 kHz to 6 MHz For Industrial, Laboratory And Medical Application.

FEATURING:

- **10 kHz to 2 MHz up to greater than 1000 W**
- **10 kHz to 6 MHz, 400 W**
- **Linear Output of 400W h3≤-20 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**

Model AG 1015 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 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 highest quality, incorporating current requirements for complete remote control and data acquisition.

OPERATION

The AG 1015 produces 400W linear power over a frequency range from lower than 20 kHz to higher than 4 MHz, with low harmonic and intermodulation distortion. It operates over the entire frequency range without band switching or other adjustments. Extended range to over 6 MHz is possible with reduced output power or in AGC mode. 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 1015's power measurement system provides an accurate reading of VSWR.
When used as amplifier, the AG 1015 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 1015 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 <-20 dBc (h3) harmonic distortion and output power stability.

OUTPUT PROTECTION

AG 1015 is protected by its internal control system for 1000W of total Forward Power and 250W 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.

Rev B, Feb. 2005

AG 1015 Specifications

Class Of Operation
Class “A”

Frequency Of Operation
10 kHz to 6 MHz

RF Power Output
50 Ohm load:
Up to 1000W for 20 kHz to 2 MHz
Up to 750W for 10 kHz to 4 MHz
Up to 400 W for 10 MHz to 6 MHz
Pulse and low duty cycle!
Any load:
Up to 400W , continues operation.

Gain
60 dB @ 1000W / 1.0 MHz
±1.5 dB 20 kHz to 2 MHz
-2 dB drop: 10kHz to 20kHz and 2 MHz to 6MHz

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: 10 kHz to 6 MHz, 1 kHz resolution

Input and Output Impedance
50 Ohm

2:1 max INPUT VSWR

3:1 max OUTPUT VSWR

Output VSWR Protection
250 W max reflected power limit for Load Impedance > 50 Ohm. Current level protection for Load Impedance < 50 Ohm.

Harmonic Level @ 400W
Better then - 20 dBc for 3-d harmonic, any other better then –30 dBc

Harmonic Level@950W
-14dBc

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=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
0.01 to 6 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 400W:
I ≤ 10A @ 220V
RF Out max 1000W:
I ≤ 16A @ 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 1015 Performance Chart