AG 1021
LF/HF LINEAR AMPLIFIER

100 Watts of Linear RF Power From 10 kHz to 20 MHz For Industrial, Laboratory And Medical Application.

FEATURING:

- **20 kHz to 4 MHz, up to 300 W of total RF Power**
- **10 kHz to 14 MHz, 100 W**
- **Linear Output of 100W 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**

Model AG1021 is a robust source of RF power for ultrasonic, laser modulation, RFI/EMI, plasma generation, general laboratory and general industrial applications. Featuring leading edge solid state design for RF amplifier stages and 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 demands for complete remote control and data acquisition.

OPERATION

The AG 1021 produces 100W of linear power over a frequency range lower than 10 kHz to more than 14 MHz, with low harmonic and intermodulation distortion. It operates over the frequency range without band switching or adjustments. Extended range to over 20 MHz is possible with reduced output power or in AGC mode. Gain is rated at 53 dB with typical gain flatness of ±1 dB.

Front Panel offers a LCD display of Forward, Reflected and Load Power, RF Status, MGC/AGC setups and operating frequency in Generator Mode.

Power meters are calibrated into 50 Ohms and are accurate when unit operates into matched load. Outside of matched condition, the model AG1021's power metering system provides an accurate calculation of VSWR.

When used as amplifier, the AG 1021 is compatible with most signal and function generators, synthesizer cards and accurately reproduces all waveforms within its output and bandwidth limitations.

The Forced-air cooling and the internal power supply are designed to permit operation over a wide range of temperature and global AC line conditions.

The AG1021 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 1021 is protected by its internal control system to limits of 300W total Forward Power and 75W Reflected Power. This will protect the amplifier output stage from accidental overdrive and an extreme mismatch at the Output.

OPERATION

T&C amplifiers and generators 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 1021 Linear Amplifier Specifications

Class Of Operation
Class A to 100 Watts

Frequency Of Operation
10 kHz to 20 MHz

RF Power Output
300W from 0.2 MHz to 4 MHz,
>150W from 10 kHz to 0.2 Mhz
100W max from 4 MHz to 14 MHz

Gain
53 dB @ 100W / 1 MHz
±1 dB 10 kHz to 14 MHz

RF Input Drive
Typical range -20 dBm to 5 dBm

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 2 Vp-p @ 50 Ohm

Input and Output Impedance
50 Ohm

Input VSWR
2:1 max

Output VSWR
3:1 max

Output VSWR Protection
75 W max reflected power limit

Harmonic Level @ 100W
Better then - 20 dBc for 3rd harmonic, any other > -30 dBc

3-rd Harmonic Level @ 250W
- 14 dBc

Spurious Output
- 76 dBm equivalent noise level generated by internal circuits
- 30 dBm broadband thermal noise present at the output

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

Pulse Specifications
Pulse Duration: 1 to 500 usec
Period: 1 to 50 milliseconds

RF Connectors
BNC Female: Front Panel

External Communication
SubD 25 Analog and Digital I/O
SubD 9 RS232 I/O for Graphic User Interface or other computer communication. Rear Panel.

AC Power Source
90 - 240 VAC 47 - 63 Hz

AC Power Connection
IEC Standard Power Entry

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

Dimensions
H135mm x W360 mm x L385mm
(5.25" x 14" x 15")

Weight
13 kg, 28 lbs.

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

Operating Temperature
0° to 35° C ambient air

AG 1021 Performance Chart