



T&C
Power Conversion

AG 1016

LF AMPLIFIER/GENERATOR



T&C POWER CONVERSION

Up to 600 Watts RF Power From 20 kHz to 6 MHz For Industrial, Laboratory And Medical Application.

FEATURING:

- **20 kHz to 6 MHz up to 600 W**
- **Low distortion Output @ 550W, h3≤-14 dBc. Better then -30dBc for other harmonics**
- **Digital Meter, measures forward, reflected and load power simultaneously**
- **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 Internal RF oscillator**



Power Supply Front Panel view

Model AG 1016 Amplifier/Generator is a robust source of RF power for ultrasonic, laser modulation, RFI/EMI, plasma generation, general laboratory and industrial applications. Featuring leading edge solid state design in all RF amplifier stages and a built-in DDS signal source, it provides everything for a complete and reliable, finely 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 features.

OPERATION

The AG 1016 produces up to 600W of RF Power over a frequency range from lower than 20 kHz to higher than 6 MHz, with low harmonic distortion. It operates 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 57 dB with a typical gain flatness of ±1.5 dB. 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 1016's

power measurement system provides an accurate reading of VSWR.

When used as amplifier, the AG 1016 is compatible with most signal and function generators, computer synthesizer cards and it 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 1016 is built to withstand a +5 dBm (1.1Vp-p) Input signal. The unit amplifies the inputs of AM, FM, SSB and pulse modulations with low harmonic distortion and output power stability.

OUTPUT PROTECTION

AG 1016 is protected by its internal monitoring system for greater than 600 Watts Forward Power, 80 Watts of Reflected Power and limits Output Power Amplifier current for High VSWRs below 50 Ohms. This is intended to 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 retuning.

110 Halstead Street
Rochester, New York 14610
USA
Tel: 585.482.5551
Fax: 585.482.8487
www.tcpowerconversion.com
sales@tcpowerconversion.com



AG 1016 Specifications



Class Of Operation

Class "B"

Frequency Of Operation

20 kHz to 6 MHz

RF Power Output

50 Ohm load:

Up to 400W for 20 kHz to 6 MHz
Up to 500W for 100 kHz to 5 MHz
Up to 600 W for 150 kHz to 4 MHz
Pulse and low duty cycle!

Any load:

Up to 250W , continuous operation.

Mismatch Power Output

Continuous Load Power at 20C:
2:1 VSWR (25 Ohm) 210W minimum
3:1 VSWR (15 Ohm) 145W minimum
Limited by heat protection circuit!

Burst and Pulse mode Load Power:
3:1 VSWR, 300W minimum
Limited by Reverse Power Limiter!

Gain

57 dB @ 500W / 0.75 MHz
±1.5 dB 20 kHz to 6 MHz

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
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 6 MHz,
1 kHz resolution

Input and Output Impedance

50 Ohm

2:1 max INPUT VSWR

3:1 max OUTPUT VSWR

Output VSWR Protection

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

Harmonic Level @ 550W

Better then - 14 dBc for 3-d harmonic,
any other better then -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,
- 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 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

Rear Panel RF Connectors

BNC Female

AC Power Connection

IEC Standard Power Entry followed
by RFI filter.
Filter range 0.1 to 30 MHz minimum

AC Input Current (RMS)

RF Out nominal 250W:

I ≤ 4A @ 220V

RF Out max 600W:

I ≤ 6.5A @ 220V

Maximum: 11.5 A

Product Features Power Factor
Correction (PFC)

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 35° C ambient

Humidity: 80%

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

T&C Power Conversion, Inc.

110 Halstead Street, Suite 7
Rochester, NY 14610, USA

Tel: 585-482-5551

Fax: 585-482-8487

www.tcpowerconversion.com

sales@tcpowerconversion.com

AG 1016 Performance Chart at 50 Ohm Load

