

ULTRA 2020 LF / HF LINEAR AMPLIFIER



50 Watts of Basic Linear RF Power From 10 kHz to 20 MHz For Industrial, Laboratory and Medi- cal Applications.

FEATURING:

- 10 kHz to 4 MHz up to 175 W of total RF Power
- 10 kHz to 14 MHz, 50 W
- Linear Output of 50W h3f -20 dBc
- Digital Meter, measures forward and reflected power
- External Control of Amplifier functions
- Data acquisition: Status Monitoring & Power Measurement at Analog Port
- Optional RS232 communication: Full Control Of Amplifier Functions
- AGC or Power Leveling: Gain Control to better than ± 0.5 dB

Amplifier Model ULTRA 2020 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 in all RF amplifier stages this unit provides everything for a reliable, controlled RF power delivery system. It reflects the ongoing T&C commitment to provide RF power products of the highest quality, incorporating the industry's current requirements for remote control and data acquisition.

OPERATION

The ULTRA 2020 produces 50W of linear power over a frequency range from less than 10 kHz to more than 14 MHz, with low harmonic and intermodulation distortion. It operates over the entire frequency range without band switching or adjustments. Extended range to over 20 MHz is possible in the AGC mode. Gain is rated at 52 dB with a typical gain flatness of ± 1 dB.

The Front Panel offers two LED displays of Forward and Reflected Power readings, RF Enable Status, Remote Control and Reflected Limit. Power meters are calibrated into a 50 Ohm Load and are accurate when the unit operates into a matched load. Outside of matched condition, the model ULTRA 2020's power measurement

system provides an accurate reading of VSWR.

The ULTRA 2020 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 ULTRA 2020 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

The ULTRA 2020 is protected by its internal monitoring system for up to 175 Watts of Forward Power and 65W of 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.

ULTRA 2020 Linear Amplifier Specifications

Class Of Operation

Class A to 50 Watts

Frequency Of Operation

10 kHz to 20 MHz

RF Power Output

175W from 20 kHz to 4 MHz
50W from 4 MHz to 20 MHz

Gain

52 dB @ 50W / 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

65 W max reflected power limit

Harmonic Level @ 50W

Better than -20 dBc for 3rd har-
monic, any other > -30 dBc

Harmonic Level @ 150W

-16 dBc

Spurious Output

-76 dBm equivalent noise level
generated by internal circuits
-26 dBm continuous level noise
present at the amplifier output in 70
kHz to 150 kHz band

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: Back Panel

Third Order Intercept

+55 dBm

External Communication

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

AC Power Source

90 - 130 VAC, 190 - 240 VAC
47 - 63 Hz

AC Power Connection

IEC Standard Power Entry

Cooling

Forced air, temperature controlled.

Dimensions

H135mm x W254 mm x L385mm
(5.25" x 10" x 15")

Weight

12 kg, 26 lbs.

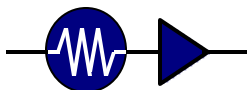
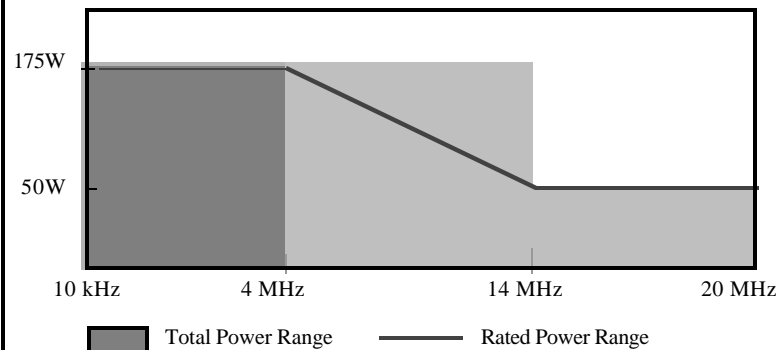
Mounting

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

Operating Temperature

0° to 35° C ambient air

ULTRA 2020 Performance Chart



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