

ULTRA 2021 LF / HF LINEAR AMPLIFIER



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

FEATURING:

- 200 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
- Remote 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 2021 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 all RF amplifier stages it provides everything for a complete and reliable, accurately 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 ULTRA 2021 produces 100 Watts of linear power over a frequency range from lower than 10 kHz to higher than 14 MHz, with low harmonic and intermodulation distortion. It operates over the entire frequency range without band switching or other adjustments. Extended range to over 20 MHz is possible with reduced output power or in AGC mode. Gain is rated at 53 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 Status.

Power meters are calibrated into 50 Ohms and are accurate when unit operates into a matched load. Outside of a

matched condition, the model ULTRA 2021's power measurement system provides an accurate calculation of VSWR.

The ULTRA 2021 is compatible with most signal and function generators, computer synthesizer cards and accurately reproduces all waveforms within its output and bandwidth limitations.

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 2021 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

ULTRA 2021 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.

ULTRA 2021 Linear Amplifier Specifications

Class Of Operation

Class A to 100 Watts

Frequency Of Operation

10 kHz to 20 MHz

RF Power Output

300W from 200 kHz to 4 MHz
100W from 4 MHz to 14 MHz
<100W from 14 MHz to 20 MHz and
20 kHz down to 10 kHz

Gain

53 dB @ 100W / 1 MHz
±1 dB 75 kHz to 14 MHz
±2 dB 10 kHz to 16 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 than -20 dBc for 3rd harmonic,
any other > -30 dBc

Harmonic Level @ 250W

-15 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: Front Panel

Third Order Intercept

+57 dBm

External Communication

SubD 25 Analog and/or Optional
Digital I/O SubD 9 RS232 I/O for
Graphic User Interface or com-
puter communication. Rear Panel

AC Power Source

90 - 130 VAC, 180 - 240 VAC,
47 - 63 Hz
Switches automatically

AC Power Connection

IEC Standard Power Entry

Cooling

Forced air, temperature con-
trolled.

Dimensions

H135mm x W360mm x L385mm
(5.25" x 14" x 15")

Weight

13 kg, 28 lbs.

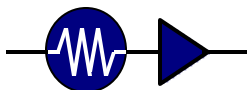
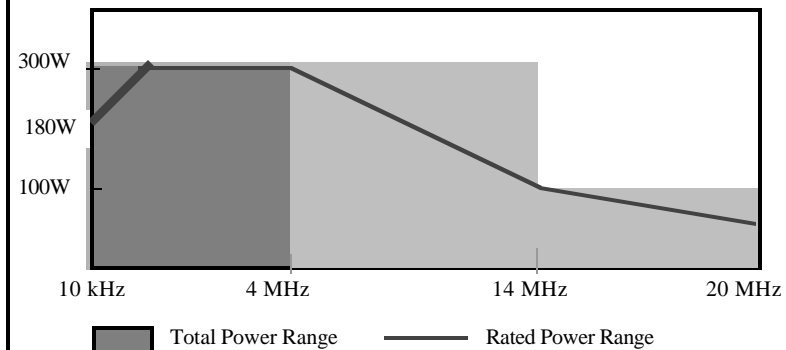
Mounting

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

Operating Temperature

10° to 35° C ambient air

ULTRA 2021 Performance Chart



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