



630L POWER AMPLIFIER

A Controllable,
Linear UHF
Amplifier For
Testing, ATE
& Lab Applications,
Featuring:

- 30W Power Output
- 400-1000MHz Freq. Range
- Class A Linearity
- Automatic Level Control
- 1W Display Resolution
- IEEE 488.2 & RS232/422

The 630L Broadband Power Amplifier is a rugged source of RF power for broadband component and system EMC testing, communications transmission, ATE and general laboratory use. With Class A linearity, Automatic Level Control, outstanding display resolution and standard IEEE interface, the 630L redefines the state-of-the-art for a full-featured, solid state UHF amplifier.

HIGH FREQUENCY POWER

The 630L produces 30 Watts of linear RF power output over an instantaneous frequency range of 400 to 1000MHz. Small signal gain is rated at 53dB nominal with ± 2.0 dB maximum flatness in the ALC Off mode. In the ALC On mode, power output level is controlled by the front panel Power Adjust Knob or the remote interface over a 30dB range. The internal ALC can be AM and pulse modulated through the front panel modulation input port.

The amplifier will withstand a +13dBm input signal (1 Volt RMS) and is fully protected

without causing a power cutoff. The 630L amplifies the inputs of CW and AM, Pulse, FM and phase-modulated signals with -20dBc minimum harmonic distortion, and provides unconditional RF stability within the specified performance ratings.

DIGITAL POWER CONTROL

The amplifier's Automatic Level Control (ALC), operating through a servo loop feedback system, maintains power output flatness with an accuracy of ± 0.3 dB. For easy link-up to ATE components, the 630L is equipped with a standard IEEE 488.2 GPIB interface for remote computer RF power control.

A microprocessor-controlled, alphanumeric vacuum fluorescent display clearly indicates forward, reflected and set power with a resolution of 1 Watt or 0.1dB. Bright LEDs on the front panel indicate operating parameters such as RF On, Modulation On/Off, Remote and Fault.

EASY INSTALLATION

The 630L weighs only 55 lbs., measures 7.0 x 16.6 x 24.4 inches, and is equipped with front panel Type N input/output connectors. The amplifier's modular, solid state design facilitates maintenance and service. Although packaged for bench mounting, the unit may be rack-mounted with the optional rack-mounting brackets.

Both the forced-air cooling system (front panel in, rear panel out) and the integral power supply are conservatively rated to permit operation over a wide range of temperature and AC line conditions. For testing applications, the 630L incorporates extensive RFI shielding to restrict RF emissions from the amplifier.

The 630L Amplifier is backed by ENI's one-year warranty and worldwide network of service and technical support. Rugged, compact and reliable, the 630L provides the ultimate in flexibility and versatility for broadband testing and general laboratory use.



against RF input overdrive, out-of-band operation, output load VSWR and over-temperature. Load VSWR protection folds back the forward power above 3:1 VSWR

630L Amplifier Specifications

Class Of Operation

Class A

Frequency Range - Instantaneous

400 to 1000MHz

Rated Linear Power Output

30W (44.8dBm), minimum, at 1dB gain compression point (ALC Off)

Saturated Power Output

36W, minimum (ALC Off)

Harmonic Distortion

-20dBc, minimum, at rated power output

Third Order IM Intercept Point

+55dBm, typical, with respect to RF output

Small Signal Gain

50dB, minimum; 53dB, nominal

Small Signal Gain Flatness

±2.0dB, maximum (ALC Off)

Power Output Flatness

±0.3dB up to rated power, for RF input power of -3dBm to +8.0dBm (ALC On)

Noise Figure

14dB, maximum

Load Impedance For Ratings

50Ω nominal at 1.1:1 VSWR, maximum

Input & Output VSWR

Input: 3.0:1, maximum

Output: 2.0:1, maximum

Input Overdrive Limit

+13dBm or 1 V_{rms}, maximum

Power Level Control

30dB, minimum (ALC On)

RF Stability

Unconditional (within performance ratings)

Protection

Fully protected against out-of-band operation, RF input overdrive, output load VSWR and over-temperature

Spurious Output

-60dBc, minimum

Modulation Input Impedance

600Ω, ±5%

Modulation Input Level

1.0 Volt peak, typical, for rated modulation (ALC On)

Modulation

Formats (ALC On)

SQUAREWAVE MODULATION:

1000Hz

AM MODULATION:

DC-20kHz at -3dB at 80%, typical

PULSE MODULATION:

50μs rise / fall time, typical

Primary AC Power Input

Voltage: 90 to 132 / 175 to 264V_{ac}

Frequency: 47 to 440Hz

Power: 900VA, maximum, single phase

Display Type

Alphanumeric Vacuum Fluorescent

RF Power Indicator

Indicates Forward and Reverse RF Power Output in Watts (or dBm) with a resolution of 1W (or 0.1dB)

Operating Temperature

0° to +45°C, ambient

Cooling System

Forced air: front panel in, rear panel out

Size (H x W x D)*

7.0" x 16.6" x 24.4" nominal

(17.7 x 42.0 x 61.8 cm)

*exclusive of handles, connectors & feet

Weight

55 lbs nominal (24.7 kg)

Front Panel

Controls: AC Power Switch;
RF Power Level Knob;
ALC On/Off;
RF On/Off; Modulation On/Off;
Fault Reset; Watts/dBm;
Remote Enable.

Indicators: LED's:
Fault (red); Remote (green);
RF On (green);
LED's (Push-Button Switch):
ALC (green);
Modulation (green);
Remote Enable (green).

Display: Forward & Reflected Power,
Set Power (Watts or dBm);
Operating Status & Faults.

Front Panel Connectors

RF Input/Output: Type N, Female

Modulation Input: Type BNC, Female

Rear Panel Connectors

AC Input: IEC 320 (10 Amp), Male

Chassis Ground Stud: M6 thread

IEEE-488 Interface Connector

IEEE-488 Address Switch

RS-232/422 Serial Interface:

9-pin, Female "D" connector

Options

19" EIA Rack Mounting Brackets

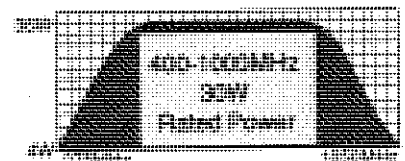
19" EIA Rack Mounting Slides

JIS Rack Mounting

Rear Panel Input/Output Connectors

Multiband Single Output RF Relay (remote interface controlled)

Typical Extended Performance



Saturated Power Range

Note: Operation outside of rated power range may affect other performance characteristics; consult with the ENI factory beforehand.



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