



## 20000A225A-L

- 20,000 Watts CW
- 10kHz–225MHz

### Features

The Model 20000A225A-L is a self-contained, broadband, completely solid state amplifier designed for applications where instantaneous bandwidth and high gain are required. The amplifier is liquid-cooled for high performance and reliability (majority of the heat is removed via liquid cooling). Push-pull LDMOS circuitry is utilized in all high power stages in the interest of lowering distortion and improving stability.

The Model 20000A225A-L is equipped with a Digital Control Panel (DCP) which provides both local and remote control of the amplifier. The DCP uses a color LCD touch screen and a single rotary knob to offer status reporting and control capability. The display provides operational presentation of Forward Power and Reflected Power plus control status and reports of internal amplifier status. Special features include a gain control, pulse input capability, forward RF sample port, and a reflective RF sample port for convenient power measurements.

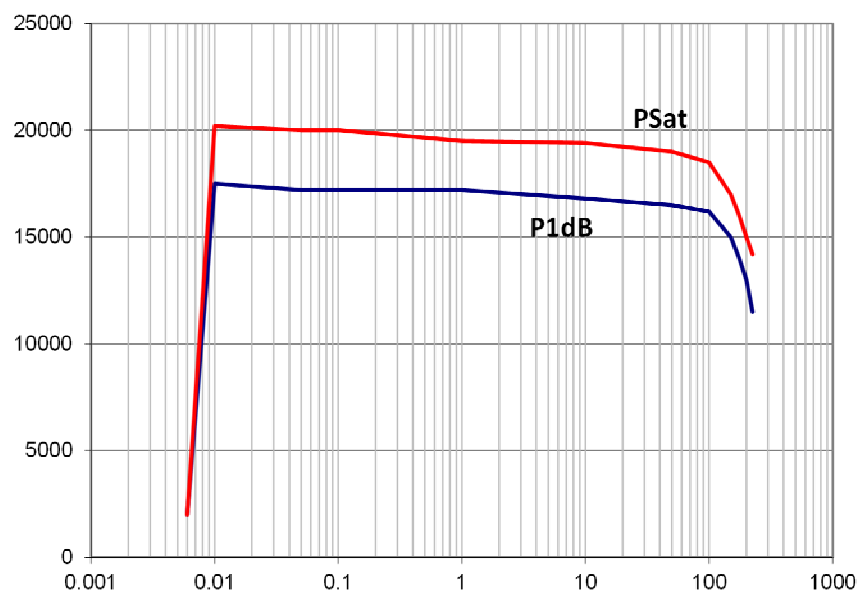
All amplifier control functions and status indications are available remotely in GPIB/IEEE-488, RS-232, RS-232 fiber optic, Ethernet and USB format. The buss interface connectors are located on the back panel and positive control of local or remote operation is assured by a switch on the front panel of the amplifier.

High efficiency universal input, power factor corrected switching power supplies provides DC to all internal sub-assemblies.

Housed in a stylish, contemporary enclosure, the Model 20000A225A-L provides readily available RF power for typical applications such as RF susceptibility testing, antenna and component testing, watt meter calibration, particle accelerators, plasma generation, communications and use as a driver for higher power amplifiers.

The export classification for this equipment is EAR99. These commodities, technology or software are controlled for export in accordance with the U.S. Export Administration Regulations. Diversion contrary to U.S. law is prohibited.

MODEL 20000A225A-L TYPICAL POWER OUTPUT



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## Specifications

### RATED OUTPUT POWER:

Nominal: 20,000 watts  
Minimum: 18,000 watts, .01-100 MHz  
13,000 watts, 100–225 MHz

**INPUT FOR RATED OUTPUT:** 1.0 milliwatt maximum

### POWER OUTPUT @ 1 dB COMPRESSION:

Nominal: 17,000 watts  
Minimum: 16,000 watts, .01-100 MHz  
10,000 watts, 100–225 MHz

**FREQUENCY RESPONSE:** 10kHz-225MHz instantaneously

**GAIN (at maximum setting):** 72.5 dB minimum

**FLATNESS:**  $\pm 3.0$ dB maximum;  $\pm 1.0$ dB with internal leveling

**GAIN ADJUSTMENT:** 20 dB minimum

**INPUT IMPEDANCE:** 50 ohms, VSWR 2.0:1 maximum

**OUTPUT IMPEDANCE:** 50 ohms, nominal

**MISMATCH TOLERANCE:** 100% rated power without foldback up to 6.0:1 mismatch above which may limit to 9000 watts reflected power from 10kHz-100MHz. Limited to 7000 watts reflected power from 100MHz-225MHz.

**MODULATION CAPABILITY:** Will faithfully reproduce AM, FM or Pulse modulation appearing on the input signal.

**HARMONIC DISTORTION:** Minus 20 dBc maximum at 12,000 watts power output

**THIRD ORDER INTERCEPT POINT:** 77 dBm typical

**RF POWER DISPLAY:** 0–25,000 watts full scale

**RF RISE/FALL TIME:** 150 nanoseconds maximum

### PRIMARY POWER (User must specify):

380-480 VAC, Delta (4 wire)  
47-63 Hz, 3-phase  
85,000 watts maximum at .95 P.F. typical

### CONNECTORS:

RF Input: N female, rear  
RF Output: EIA 3-1/8 male, rear  
Forward Sample: N female, front (coupling factor 84dB typical)  
Reverse Sample: N female, front (coupling factor 84dB typical)  
Pulse Modulation Input: BNC female, rear  
Safety Interlock: 15 pin female Type D on rear panel

### REMOTE CONTROL:

IEEE-488: 24 pin female, rear  
RS-232: 9 pin female D, rear  
RS-232 (fiber optic): Type ST, rear  
USB 2.0: Type B female, rear  
Ethernet: RJ-45

### COOLING REQUIREMENTS:

Forced air (self-contained fans), 10,000 watts maximum;  
Liquid cooling, 40 GPM (151 liters/minute) minimum, 15-30°C maximum, cooling capacity 75,000W minimum

**WEIGHT (maximum):** 997 kg (2200 lb)

**SIZE (W x D x H):** 226.7 x 99.1 x 177.8 cm (89.25 x 39 x 70 in)

**EXPORT CLASSIFICATION:** EAR99