



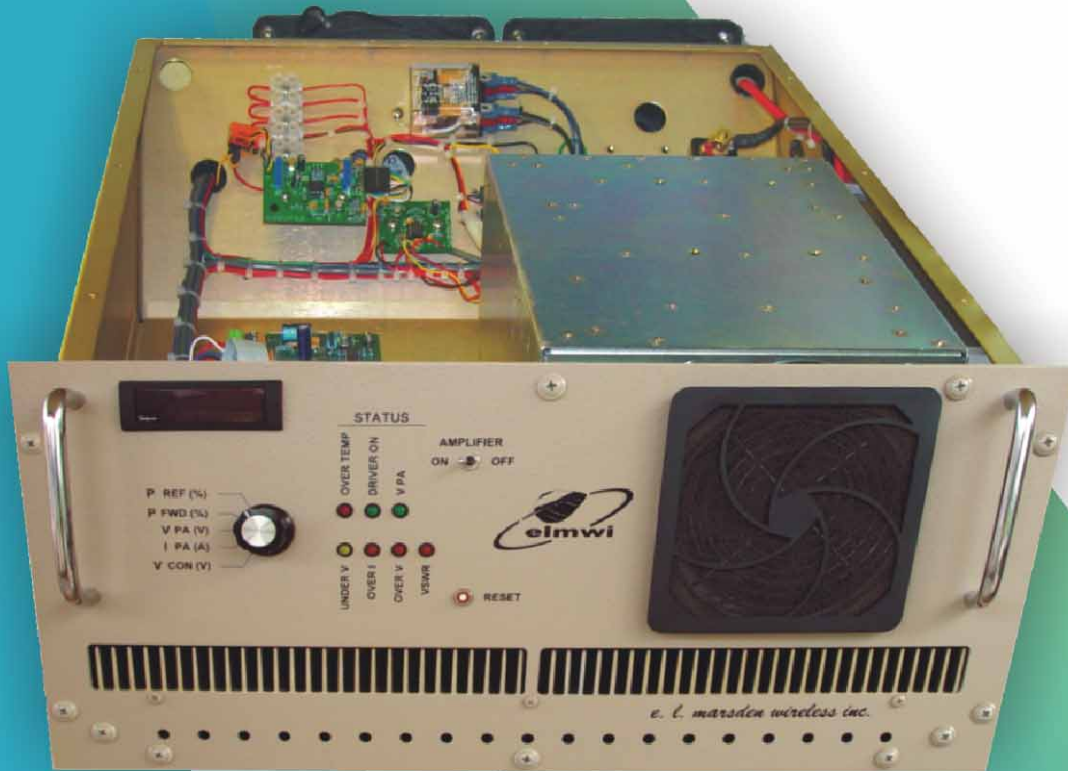
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A700WSATU

700 Watt

Solid State

UHF Amplifier



Description of the Equipment

The A700WSATU RF Amplifier is a fully self-contained assembly designed to be mounted in a standard 19 inch equipment rack with other A700WSATU amplifiers and the appropriate driver, and interface assemblies. It can be operated as either a stand-alone power amplifier or as part of a larger system. The amplifier can produce more than 700W CW with relatively low drive level. It features self-contained monitoring and protection so as to allow for a variety of combining schemes. The A700WSATU is a linear and broadband device suitable for both analog and digital service. Although initially designed for broadcast service, its robust and predictable performance makes it easily adaptable to industrial and scientific applications as well.

All active components are solid state and conservatively rated to insure long-life and trouble-free operation. Virtually all of the metering and control circuitry is built with precision components, eliminating the need for numerous adjustments and compensating circuitry. Light emitting diodes (LEDs) give a quick, visual indication of the condition of the equipment and, in most instances, will help isolate a fault to a particular area within the circuitry. The digital panel meter gives accurate readings of the important voltages and currents associated with the power amplifier. In addition to the extensive protection circuitry, high power components have been utilized to ensure that the equipment will give good service under adverse conditions.

General Technical Description

The A700WSATU is a highly integrated system consisting of very few discrete components and a relatively simple interconnect harness. A single control and protection board, stripline input and output boards, and pallet amplifiers are assembled in a two-sided chassis to deliver excellent performance and reliability in a compact form. The entire amplifier may be easily shipped if factory service is required; however, a technically competent person can service the unit in the field with the appropriate tools and test equipment.

The amplifier is available in either a horizontal or a vertical mounting orientation. The front panel controls and labeling are correct for each orientation, however the internal configuration is unchanged. The vertically oriented model requires a mounting adapter for installation in a standard equipment rack.

700 Watt PA

The 700 Watt amplifier is a self-contained assembly requiring 220 VAC main power, +24VDC control voltage, and a +24VDC "ON" command to function. It is capable of more than 700 Watts CW. The main +30VDC switching power supply is contained in the assembly along with the amplifier cards, splitting / combining boards, cooling fans, amplifier protection board, SWR sensor and front panel monitoring. This assembly uses four pallet amplifier cards mounted on the main heatsink located in the RF section of the cabinet, along with a microstrip splitter and a microstrip combiner. The amplifier features a built in circulator with a 500 Watt load to protect against bad load conditions. The power supply, control and protection circuits are mounted in the opposite side of the cabinet. The gain of this assembly is nominally 25dB with 50 Ohm input and output impedances.

Amplifier Stage

Each of the four amplifier cards in the A700WSATU has two LDMOS dual transistors operating in a class “AB” mode for the best linearity. Each amplifier card has a temperature compensated, regulated bias supplies for each transistor.

The amplifier cards are broadband to eliminate the need for tuning or alignment. The cards have a 50 Ohm input and output impedance.

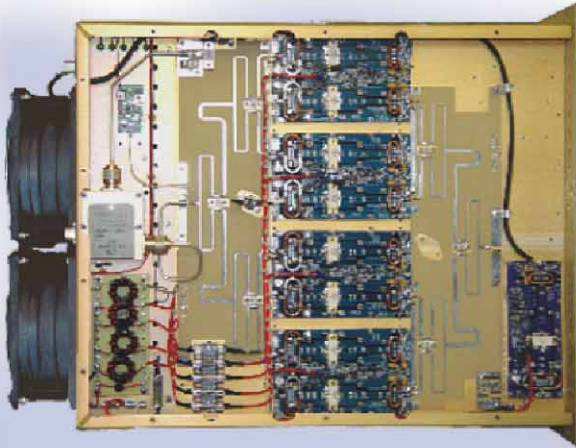
Specifications

700 Watt Solid State UHF Amplifier

Power Output	700 W (peak), 500 W (CW)
Frequency Range	480 - 806 MHz in 3 subbands (Other UHF/VHF bands available)
Output Impedance	50 Ohms
Output Connector	“N” female
Driver	LDMOS Dual Transistor
Output Stage	8 x LDMOS Dual Transistors
Maximum Altitude	3600 Meters (12,000 Feet)
Ambient Temperature Range	-15° C to +40° C (full performance) -30° C to +50° C (reduced output performance)
Relative Humidity	0 to 95%, Non-Condensing
Primary Power	220 VAC, 50/60 Hz Nominal
Cooling	Forced Air
Dimensions (W x H x D):	48.3 x 22.2 x 61 cm (19" x 8.75" x 24")
Weight	~33kg (72 lbs.)
Power Consumption	~1.5 kW Maximum (Channel Dependent)
Heat Load @ Full Output (Typical)	4200 BTU/Hr

Additional Options:

Similar Amplifiers are available across the UHF/VHF range



PA Side

- Dual High Performance Fans
- Circulator Isolated Output
- 500 Watt Circulator Load
- Isolated Input/Output Combining
- Large Capacity Heat Sink
- Individually Fused Amplifiers

Control Side

- Digital Metering
- 1500 Watt Main Supply (Higher Capacity Supplies Available)
- Protection:
 - Over Voltage
 - Under Voltage
 - Over Current
 - SWR
 - Heat Sink Sensor
 - Cooling Air Flow Sensor

