



## MML 432/100, 100 WATT 432 MHz LINEAR POWER AMPLIFIER



- 100 WATTS MINIMUM OUTPUT
- 10 dB MINIMUM GAIN
- FULLY PROTECTED AGAINST POOR LOAD VSWR, OVERHEATING AND EXCESSIVE OR REVERSE SUPPLY RAILS
- EQUIPPED WITH RF VOX AND MANUAL OVERRIDE
- SUPPLIED WITH POWER LEAD AND ALL CONNECTORS

### SPECIFICATION

Power Gain	: 10 dB minimum	RF Input Connector	: 50 ohm BNC
Power output	: 100 watts RMS output @ 1 dB compression	RF Output connector	: 50 ohm 'N' type
Power input	: 10 watts nominal for 100 watts output	Weight	: 4 kg (8 lb. 13 oz.).
Frequency bandwidth	: 435 MHz $\pm$ 15 MHz @ -1 dB	Overall Size	: 315 x 142 x 105 mm (12 $\frac{3}{8}$ x 5 $\frac{5}{8}$ x 4 $\frac{1}{8}$ " )
Power requirements	: 12.5 V nominal @ 20 amps for 100 watts output. 13.8 V maximum		

### DESCRIPTION

This solid state 432 MHz linear power amplifier, MML432/100, is intended for use with any existing 432 MHz equipment having an output power of 10 watts. When used in conjunction with such a drive source this linear amplifier will provide a power output of 100 watts minimum.

The inclusion of the latest state of the art power transistors (each of the final transistors being rated at 145 W dissipation), guarantees a highly reliable and ultra-linear unit which is suitable for all modes of operation. (SSB, FM, AM, CW, RTTY and TV).

The amplifier utilises recently developed matching techniques which allow safe operation even when improperly subjected simultaneously to 50% overdrive and a supply voltage of 15 V.

However, as a further safeguard against damage to the final transistors, the following protection circuitry has been included to shutdown the unit in cases of poor load VSWR, overheating, and excessive or reverse supply rails.

- (i) **HIGH VSWR:** The amplifier will automatically shutdown into the straight through mode should the sensing circuitry detect a load VSWR of worse than 2.5: 1 at the antenna socket.  
The mode of shutdown will be indicated by the illumination of an LED status light on the front panel.  
The sensing circuitry will test for an improvement in the load VSWR every 8 seconds. When the load VSWR returns to less than 2.5:1 the sensing circuitry will allow the unit to return to normal operation.
- (ii) **THERMAL:** Should the heatsink temperature reach 65°C or more, the amplifier will automatically shutdown into the straight through mode, until the heatsink falls well below this temperature.  
This mode of shutdown will be indicated by the illumination of an LED status light on the front panel.
- (iii) **OVERVOLTAGE AND REVERSE POLARITY:** The incorporation of a crowbar circuit protects the transistors against reverse polarity or an excessive supply voltage. This will automatically shutdown the unit should the supply voltage exceed 15 V or should the supply be reversed.

By means of an internal RF vox circuit the linear will automatically switch onto transmit when 432 MHz drive is applied to the input socket. However, this facility may be overridden by the application of an earth to the phono socket located on the rear panel. This may be achieved by connection to the transceiver PTT switching line.

An integrated circuit network provides a well-regulated bias supply for the final transistors, and each transistor is individually thermally tracked against ambient temperature variation and operational temperature rise.

All RF circuitry is constructed on high quality double-sided TEFLON PC board and the use of broadband stripline techniques gives the unit a bandwidth of 420-450 MHz, without the need to re-tune.

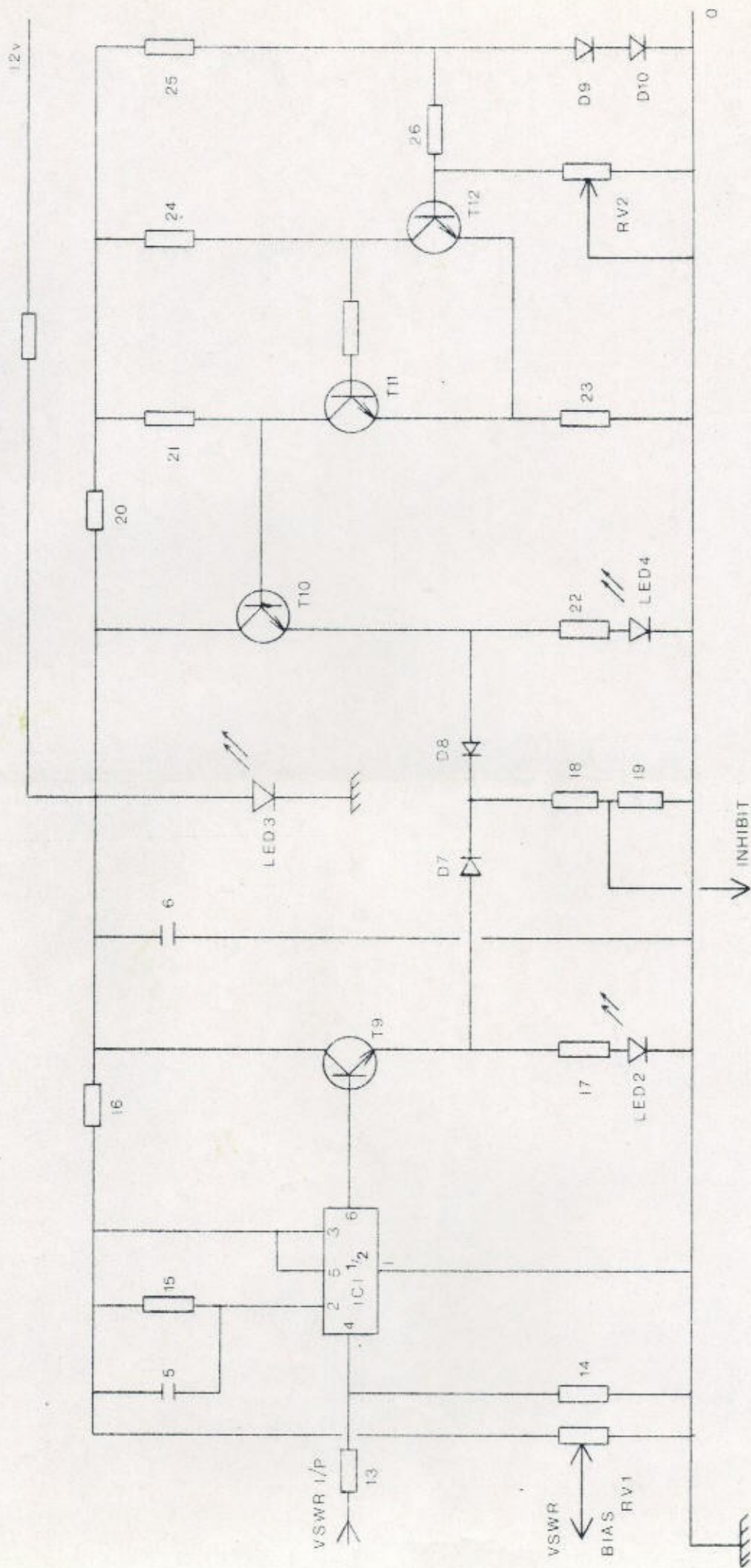
The unit is housed in a highly durable, black steel case, RF input and output sockets are located on the rear panel, together with the 12 volt supply fuse, and the push to talk line phono socket. The unit is supplied fitted with a 12 V supply cable, plugs for both input and output connectors, a phono plug for the PTT line, and a spare fuse.



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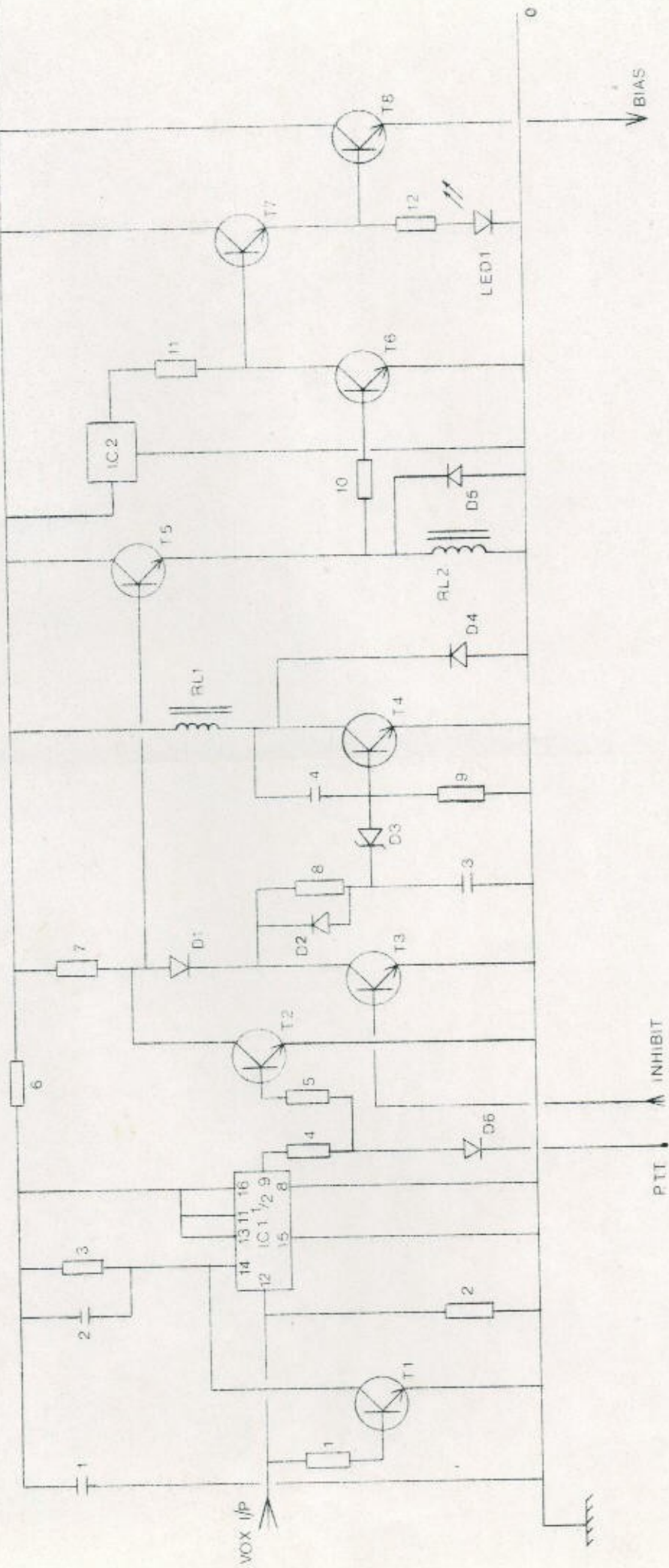
# MARITIME

MML432/100 VSWR & THERMAL SHUTOFF DETAIL



MPL432/100 VOX, RELAY & BIAS DETAIL

12.5v



MML432/100 RF AMPLIFIER DETAIL

12v

