

## 1000 W - FM Amplifier

Designed for FM radio transposers and transmitters, this amplifier incorporates microstrip technology and LDMOS device to enhance ruggedness and reliability.

- 87.5 ÷ 108 MHz
- 48 Volts
- Input/Output 50 Ω
- P<sub>out</sub> : 1000 W min
- I<sub>quiescent</sub> 200mA
- Gain : 22 dB typ
- High linearity. Digital operation ready
- Devices: last LDMOS generation
- Single End Configuration
- Over drive self protected
- Output High Mismatch self protected



Dimension (L x W x H): 250 x 180 x 53 mm [9.842" x 7.080" x 2.086"]

This picture is a mere example, it does not bind the provided product

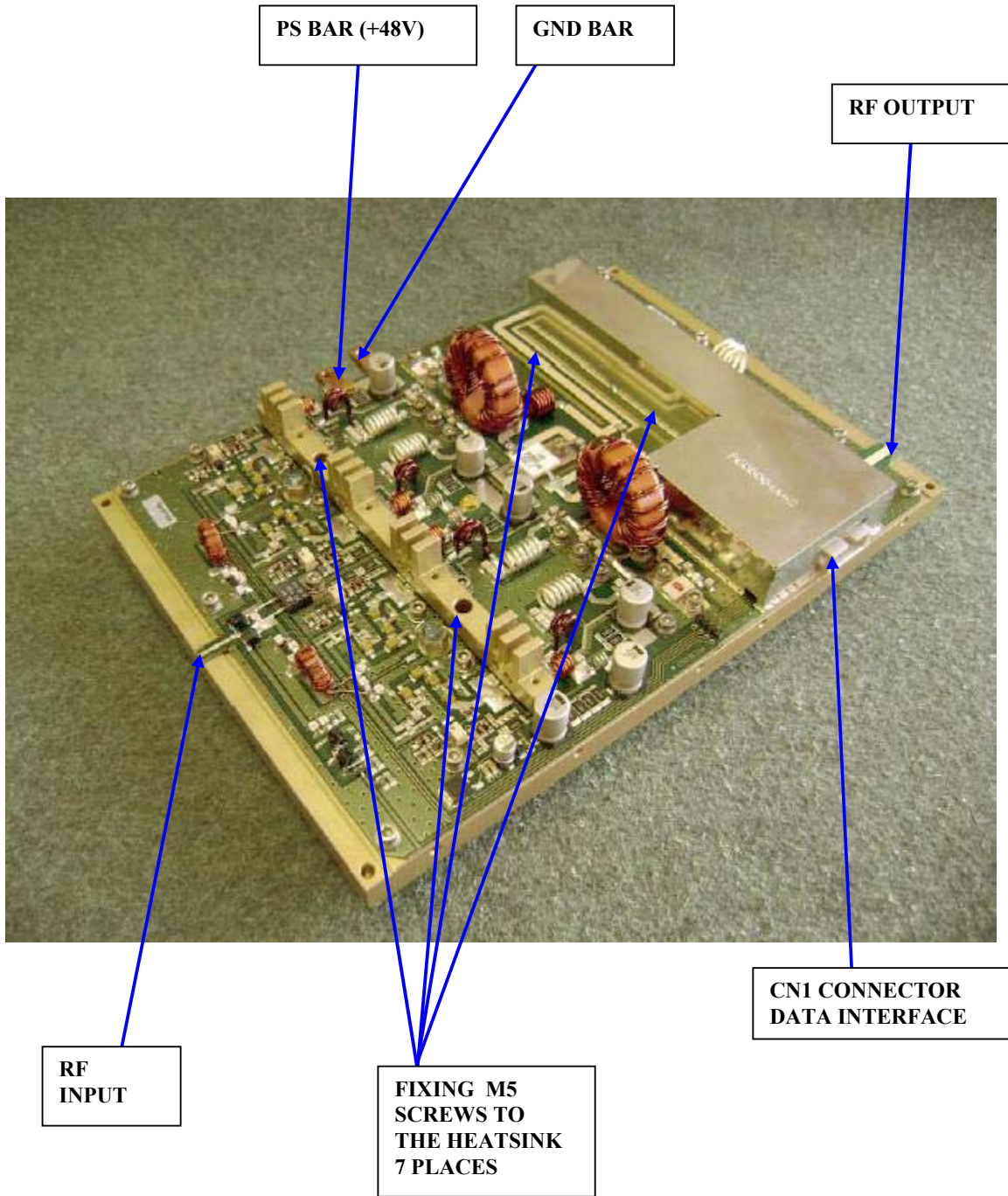
### ABSOLUTE MAXIMUM RATINGS (Base Plate T = 65 °C)

Symbol	Parameter	Value	Unit
V <sub>S</sub>	Drain Voltage Supply	55	V dc
I <sub>S</sub>	Supply Current	40	A dc
VSWR	Load Mismatch (all phase angles, T <sub>c</sub> =40°C, I <sub>d</sub> =10A)	3:1	
T <sub>stg</sub>	Storage Temperature Range	-30 + 100	°C
T <sub>c</sub>	Operating Temperature	-10 +50	°C

### ELECTRICAL SPECIFICATIONS (Base Plate T. = 45 °C, 50Ω loaded, V<sub>d</sub> = 48 V)

ELECTRICAL CHARACTERISTICS				
Characteristics	Min	Typ.	Max	Unit
Operating Frequency Range	87.5		108	MHz
Fundamental Output Power	1000			W
Power Input		5	8	W
Power Gain (1000W output)	20.5	22		dB
I Drain		30	36	A
Collector Efficiency (Load 50Ω)	69	74		%
Input VSWR		1.3:1	1.7:1	
Insertion Phase Variation (Unit to Unit)		±10		Degrees
Power Gain Variation (Unit to Unit)		±1		dB
F2 Second Harmonic	-35	-40		dB
F3 Third Harmonic		-40		dB

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## PIN FUNCTION TABLE

CN1	Function	Note / Parameters
Pin 1	Ground	
Pin 2	Ground	
Pin 3	Ground	
Pin 4	Ground	
Pin 5	Maximum Reflected Power	Factory setting = 100W. / 5V = Alarm; 0V = OK
Pin 6	Input Level	
Pin 7	Output Power	DC directly related to the O/P with +/- 5% Accuracy
Pin 8	Reflected Power	DC directly related to the R/P with +/- 5% Accuracy
Pin 9	Maximum Output Power	Factory setting = 1100W. / 5V = Alarm; 0V = OK
Pin 10	Heatsink temp	DC directly related to temp. with +/- 5% Accuracy
Pin 11	RF Enable	At +5V the O/P is reduced by 10dB
Pin 12	Maximum Heatsink temperature	Factory setting +65C. / 5V = Alarm; 0V = OK
Pin 13	PA working properly:	5V = OK; 0V = Alarm
Pin 14	Overdrive	Factory setting 8W P/Input. / 5V = Alarm; 0V = OK

## PHYSICAL LAYOUT AND HEATSINK MOUNTING/HARDWARE

### 1. HEATSINK TOOLING

- Planarity: typical value 0.8μ
- Roughness: better than 0.03 mm

### 2. THERMAL COMPOUND

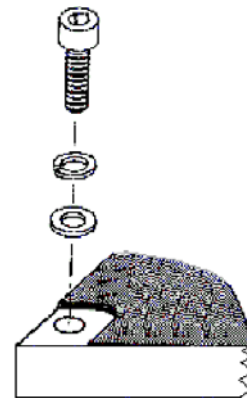
- Paste with silicones
- Thickness: optimum between 0.06 mm and 0.15 mm, on the whole back surface of the amplifier.

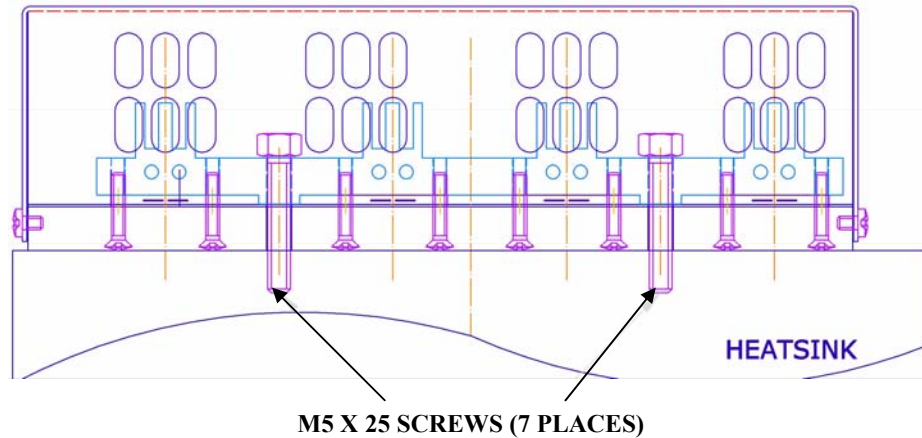
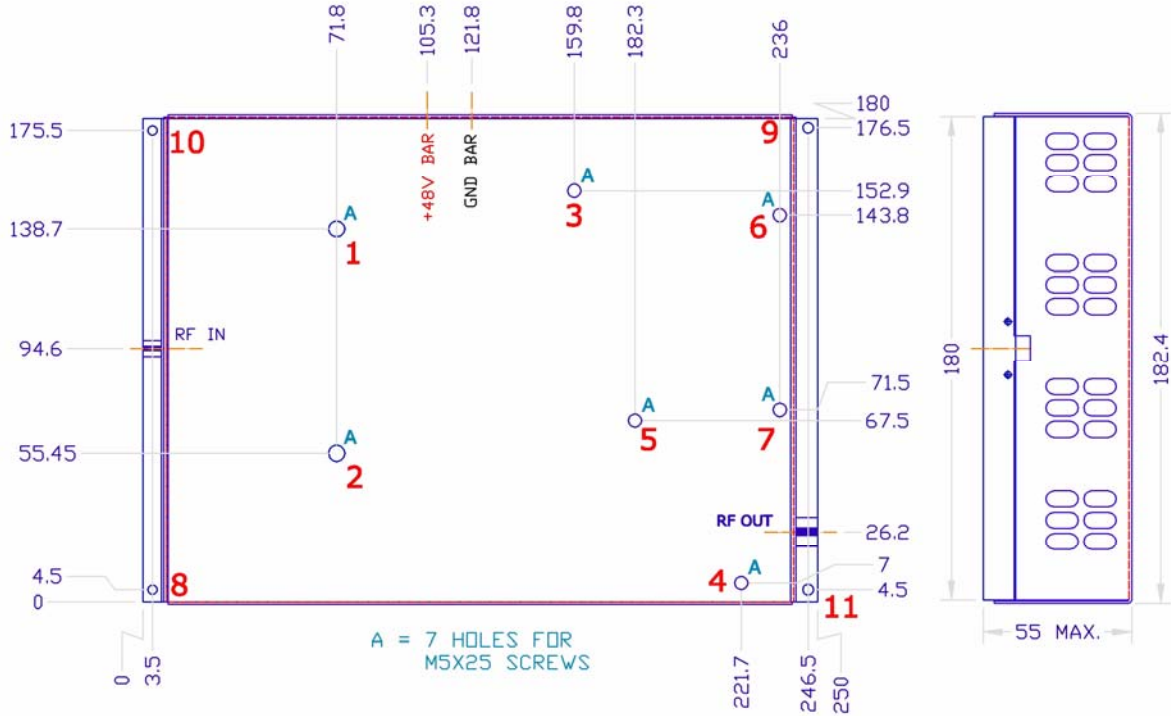
### 3. SCREWS

- M3 and M5 x 30 hexagon socket head cap screws.
- The recommended Torque is 0.9 N-m for M3 or 4-40 type screws and 1.3 N/m for M5 x 30.
- The screw tightening must be done at ambient temperature.

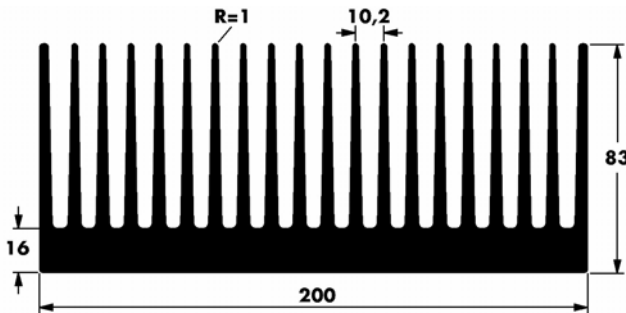
### 4. TIGHTENING ORDER

- See next figure:





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**SUGGESTED HEATSINK:**

Model: PADA 8320 or equivalent  
Dimensions: 200x250x83 [mm] (7.9x9.9x3.3inch)  
20 fins, step 10.2mm  
Air Flow: 180 m<sup>3</sup>/h

**Res-Ingenium**

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**PRELIMINARY**



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FM1K-108	Issue: 0 Date: 07/03/2008	Rev: 1 Date: 2 October	Page6/5
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