RFExpert s.r.l
Strada delle Conce,7 05018 - Orvieto (TR)
ITALY P.IVA, C.F. e Reg. Impr. Terni 01548200557 VAT
Identification n° IT 01548200557
R.E.A. TR - 105787 Cap. Soc. € 10.000,00 i.v.

www.radiofrequencyexpert.com

Summary:

1 CHAPTER 1: GENERAL INFORMATION 4
1.1 APPLICABILITY 4
1.2 GENERAL INFORMATION 4
TECHNICAL SPECIFICATIONS 7
1.3 FUNCTIONAL DESCRIPTION 8
1.3.1 RF section 8
1.3.2 Control logic section 9
1.3.3 Power supply section 10

RFExpert s.r.l
Strada delle Conce,7 05018 - Orvieto (TR)
ITALY P.IVA, C.F. e Reg. Impr. Terni 01548200557 VAT Identification n° IT 01548200557
R.E.A. TR - 105787 Cap. Soc. € 10.000,00 i.v.

www.radiofrequencyexpert.com

CHAPTER 1:
GENERAL INFORMATION

RFExpert s.r.l
Strada delle Conce,7 05018 - Orvieto (TR)
ITALY P.IVA, C.F. e Reg. Impr. Terni 01548200557 VAT
Identification n° IT 01548200557
R.E.A. TR - 105787 Cap. Soc. € 10.000,00 i.v.

www.radiofrequencyexpert.com

1 CHAPTER 1: GENERAL INFORMATION

1.1 APPLICABILITY

This manual provides important information relating to the amplifier stage
TAF$_{2000}$ RF power amplifier air cooled
For clarity and simplicity, throughout this manual, the amplifier will be identified as **TAF$_{2000}$**.

1.2 GENERAL INFORMATION

TAF$_{2000}$ (see Picture 1) is produced using devices of last generation, which guarantee remarkable efficiency and reliability.
It is able to cover the frequency band 87.5 ÷ 108 MHz with the following performance:

- 2000W with FM signal

TAF$_{2000}$ shows a typical gain of **21 dB** (under ALC control) and it is self-protected against:

- Abnormal input power (OVER-DRIVE)
- Abnormal reflected power (VSWR MAX)
- Abnormal heat-sink temperature (OVER-TEMPERATURE)
- RF Section fault (RF FAULT/LOW POUT)
- Power supply Fault (PSU FAULT)

The protections are performed both through dedicated hardware circuits (for maximum speed of action) both via the logic section of the module. The remote connections can be performed by RS485/422, by RJ-45 (Web Server or SNMP) or by USB.

The status of the amplifier module can be also monitored using the display on the frontal panel. **TAF$_{2000}$** consists of three main sections (see Picture 1):

- Control logic section which contains:
  - HPA Control Logic
  - Interface Board
  - Power supply interface
- RF section which contains
  - 2 way FM divider
  - FM Final Stages
  - FM Low Pass Filters
  - 2 way FM combiner
  - Directional coupler
- Power supply section which contains one AC/DC converter

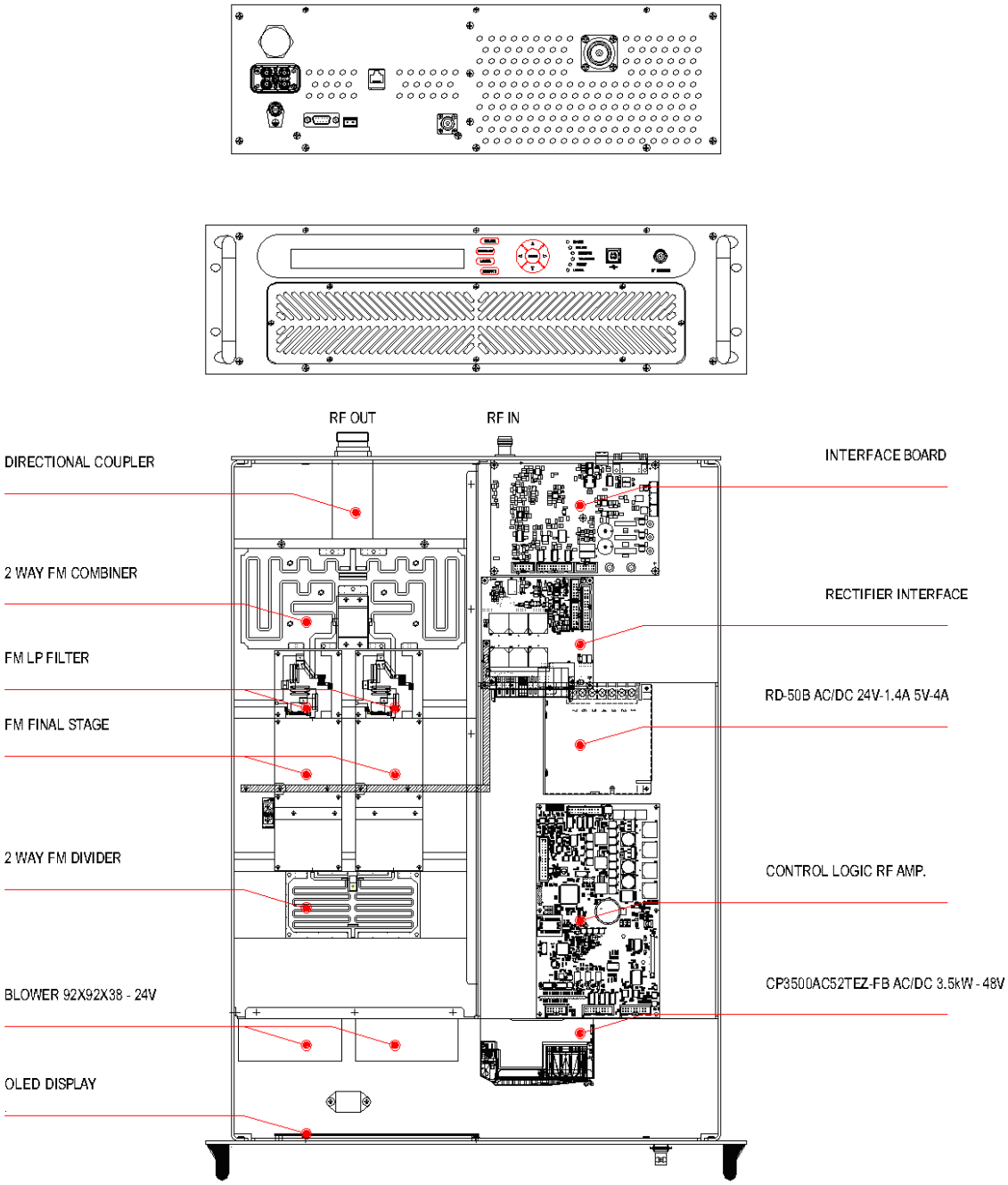
RFExpert s.r.l
Strada delle Conce,7 05018 - Orvieto (TR)
ITALY P.IVA, C.F. e Reg. Impr. Terni 01548200557 VAT
Identification n° IT 01548200557
R.E.A. TR - 105787 Cap. Soc. € 10.000,00 i.v.

www.radiofrequencyexpert.com

Two DC blowers ensure the cooling of the amplifier which is assembled on a high efficiency heat sink.

RFExpert s.r.l
Strada delle Conce,7 05018 - Orvieto (TR)
ITALY P.IVA, C.F. e Reg. Impr. Terni 01548200557 VAT Identification n° IT 01548200557
R.E.A. TR - 105787 Cap. Soc. € 10.000,00 i.v.

www.radiofrequencyexpert.com



Picture 1 : TAF_{2000} Top view and front/rear panels

RFExpert s.r.l
Strada delle Conce,7 05018 - Orvieto (TR)
ITALY P.IVA, C.F. e Reg. Impr. Terni 01548200557 VAT
Identification n° IT 01548200557
R.E.A. TR - 105787 Cap. Soc. € 10.000,00 i.v.

www.radiofrequencyexpert.com

TECHNICAL SPECIFICATIONS

In this section, we summarize the main features of **TAF_{2000}**.

▪ Frequency Band	87,5 ÷ 108 MHz
▪ Input Return Loss	< - 20 dB
▪ Output Return Loss	< - 20 dB
▪ Nominal Input Power	15W (+41.8 dB_m)
▪ Nominal Output Power	2000W (+63.0 dB_m)
▪ Maximum Power Consumption	3000VA @ 2000W
▪ Harmonic Level	≤ - 70 dB_c
▪ Spurious Emissions	≤ - 75 dB_c
▪ Working Class	C
▪ Supply Voltage	230V_{ac} (110-264V_{ac} 47/64 Hz)
▪ Input RF Connector	N female
▪ Output RF Connector	7/16 female
▪ Dimensions (mm)	132.5 x 611 x 483 (H x L x W)
▪ Weight (Kg)	18
▪ Admissible ambient temperature	0 ÷ 45 °C
▪ Admissible relative humidity	90 %

ALARMS AND PROTECTIONS

- Abnormal input power (OVER-DRIVE)
- Abnormal reflected power (VSWR MAX)
- Abnormal heat-sink temperature (OVER-TEMPERATURE)
- RF Section fault (RF FAULT/LOW POUT)
- Power supply Fault (PSU FAULT)

RFExpert

RFExpert s.r.l
Strada delle Conce,7 05018 - Orvieto (TR)
ITALY P.IVA, C.F. e Reg. Impr. Terni 01548200557 VAT Identification n° IT 01548200557
R.E.A. TR - 105787 Cap. Soc. € 10.000,00 i.v.

www.radiofrequencyexpert.com