

FM Power Amplifiers

VL 5 – 5 KW

VL 10 – 10 KW

VL 20 – 20 KW

This innovative and compact amplifier is able to satisfy the strictest requests of all end-users who are looking for high reliable and top-quality equipment at competitive prices. All the declared operational parameters are assured in the entire frequency range and for extreme environmental conditions.

By means of the advanced approach in the design focused on low power consumption and linearity over the entire operative band, we estimate a 20% longer MTBF with respect to the average standard equipment available in the market. The equipment complies with the EN 302-018 European Requirement.

- Mosfet technology
- User friendly for monitoring and control
- Double stage power supply
- Fast and multiple protections
- Modular design for quick and easy maintenance
- Flexible telemetry system and remote control



The VL5 - 5 KW FM Power Amplifier is composed by two pieces of VL 3 - 2,5 kW FM Power amplifiers.

The VL10 - 10 KW FM Power Amplifier is composed by four pieces of VL 3 - 2,5 kW FM Power amplifiers.

The VL20 - 20 KW FM Power Amplifier is obtained by combining two VL 10-10 kW Power amplifiers

CODE	MODEL	DESCRIPTION
F870	VL 5	5 KW Power Amplifier 87,5-108 MHz
F871	VL 10	10 KW Power Amplifier 87,5-108 MHz
F871.02	VL 20	20 KW Power Amplifier 87,5-108 MHz
AVAILABLE OPTIONS	cabinet with air extraction hood	

Technical data

RF OUTPUT SPECIFICATIONS	
Range	87.5 ÷ 108 MHz
Overall efficiency	Better than 58 %
Impedance RF Connector	50 Ohm input and output
Output power stability	± 3 %
Harmonics suppression	≥ - 80 dBc (typically better than 90 dBc)
Spurious Emission	< 1 µW (without Modulation)
Residual Asynchrony AM	- 74 dB Weighed
Residual Synchrony AM	- 58 dB Weighed
Probe	BNC connector RF – 60 dBc
POWER SUPPLY	
Type	Switch mode (Double conversion voltage direct mains)
Protections	Overheating 70 °C (by means of the General Control stage) Over charge Short Circuit on the output voltage Crow – Bar protection: (Excessive output voltage limit) Excessive current consumption of the RF module Over-voltage
DESIGN DATA	
Display Meter	Forward power - Reflected power - DC supply voltage - DC supply current - Power supply temperature - Power amplifier voltage
Protections	RF Amplifier RF module over-temperature 70 Excessive reflected power Permissible VSWR ≤ 1.5
Programmable logic protection	Stopping of the unit after 8 alarms Stopping of the unit after 16 alarms
Logic protections reset	Manual , Remote or Automatically every 24 hours
Controls	Mains - DB 15 Connector (Stand-by and Reset command)
Alarm	Excessive output SWR (red led) 50 W adj. – Alarm (red led) - Stand –by (yellow led) - Mains - DC out – ALC
Type	Solid state direct FM frequency

REMOTE CONTROL	
Output Connector	RS232 interface Connector DB9 Male – Two DB9 Female programmable connectors – RS 485 - Connector DB15 Male
Output Connector Analogue	Signal proportional to the output voltage of the power supply module Signal proportional to the current supplied by the power supply module Signal proportional to the square root of the direct power Signal proportional to the square root of the reflected power
Output Connector Digital	“Stand-by” signal (contact is N.C. in normal operations, connected to GND in stand-by mode) “N.O.” alarm contact (contact is not connected in normal operation, connected to pin 15 in alarm) “N.C.” alarm contact (connected to pin 15 in alarm, contact is not connected in normal operation)
Input Connector	Stand-by command Reset command
Ethernet interface (option)	Connector RJ 46 WEB browser or SNMP client
STANDARDS COMPLIANCE	
Radio spectrum	ETS 302-018
EMC	ETS 301-489
Safety	EN 60950 - EN 60215
TEMPERATURE	
Operating range	0° to 45° C
Storage range	- 40° to 70° C
Maximum relative Humidity	90% @ 26 °C non condensing
Max Operating Altitude	2500 mt. a.s.l.



SPECIFICATIONS	VL 5	VL 10	VL 20
RF output power	5 KW	10 KW	20 KW
Nr. of Transistors	16 MOS-FET SD 2942	32 MOS-FET SD 2942	64 MOS-FET SD 2942
RF Input (Nominal Level)	80 W	150 W	250 W
Output Connector	1-5/8 EIA	1-5/8 EIA	3-1/8 EIA
Dimensions (WxHxD) mm	540 x 1380 x 1000	540 x 2000 x 1000	540 x 2000 x 1000 (2 pcs)
Weight	150 Kg	250 Kg	500 Kg
Power consumption	Approx. < 9500 VA	Approx. < 19000 VA	Approx. < 38000 VA
Power supply req.	three-phase 380 Vac ± 15%	three-phase 380 Vac ± 15%	three-phase 380 Vac ± 15%
Nr. of power supply boards	6	12	24
Number of fans	2 blowers for each PA & PS module	2 blowers for each PA & PS module	2 blowers for each PA & PS module

FM Power Amplifier

VL 10/HP – 10 KW

VL 20/HP – 20 KW

The VL 10K/HP belongs to the High Power VHF product family of FM Radio Transmitters fully solid state technology designed to obtain wide band, reliability, and high efficiency. These transmitters have been specifically designed to comply with the latest international standards and the requirements of advanced broadcasters, meeting tighter specifications than usually required, at an affordable cost.

Great care went into producing a Hi-Fi-quality modulated signal, with low residual noise and distortion.

The RF signal is also free from spurious and harmonic components to a higher degree than required by CCIR and most international standards.

The RF amplifier is made up by five RF modules (for the 10 KW) installed in the rack with HOT PLUGGABLE system, the nominal output power for each module is 2 KW; each RF module has its own independent switch-mode power supply , as well the overtemperature, overdrive and VSWR for RF parameters.

Remote control facility by GSM or standard modem is available.



CODE	MODEL	DESCRIPTION
F673	VL 10/HP	10 KW Power Amplifier 87.5-108 MHz (40U cabinet included)
F688	VL 20/HP	20 KW Power Amplifier 87.5-108 MHz (2 x 40U cabinet included)
AVAILABLE OPTIONS	cabinet with air extraction hood	

Technical data

RF OUTPUT SPECIFICATIONS	
Range	87.5 ÷ 108 MHz
Overall efficiency	Better than 52 %
Impedance RF Connector	50 Ohm input and output
Output power stability	± 3 %
Harmonics suppression	≥ - 70 dBc
Spurious Emission	< -90 dBc
Residual Asynchrony AM	- 60 dB Weighed
Residual Synchrony AM	- 50 dB Weighed
Probe	BNC connector RF – 60 dBc
POWER SUPPLY	
Type	One power supply DC/DC each RF module
Protections	Overheating 70 °C (by means of the General Control stage) Over charge Short Circuit on the output voltage Crow – Bar protection: (Excessive output voltage limit) Excessive current consumption of the RF module Over-voltage
DESIGN DATA	
Display Meter	Forward power - Reflected power - DC supply voltage - DC supply current - Power supply temperature - Power amplifier voltage
Protections	RF Amplifier RF module over-temperature 70 Excessive reflected power Permissible VSWR ≤ 1.5
Programmable logic protection	Trimmer which selects the RF alarm threshold
Logic protections reset	Manual , Remote or Automatically every 24 hours

Controls	Mains - DB 15 Connector
Alarm	Excessive output SWR (red led) – Alarm (red led) – Stand –by (yellow led) - Mains - DC out – ALC
Type	Solid state direct FM frequency
Pre –emphasis	Flat or 75 or 50 µs
REMOTE CONTROL	
Output Connector	DB 25F Connector for the Remote control – DB 25M Connector for equipment control - DB9 Female programmable – DB15F Connector for Check Panel – DB 37F Connector for auxiliary
Input Connector	Stand-by command Reset command
STANDARDS COMPLIANCE	
Radio spectrum	ETSI 300-384
EMC	ETSI 447
Safety	EN 60950 - EN 60215
TEMPERATURE	
Nominal range	0° to 45° C (Meets ETS 300 019 norms)
Operating range	- 5° to 45° C
Storage range	- 40° to 70° C
Maximum relative Humidity	90% @ 26 °C non condensing
Max Operating Altitude	2500 mt. a.s.l.



SPECIFICATIONS	VL 10/HP	VL 20/HP
RF output power	10 KW	20 KW
Nr. of Transistors	40 MOS-FET BLF 278	80 MOS FET BLF 278
RF Input (Nominal Level)	20 W	20 W
Output Connector	1-5/8 EIA	3-1/8 EIA
Dimensions (WxHxD) mm	600 x 2000 x 1200	600 x 2000 x 1200 (2 pcs)
Weight	630 Kg	1100 Kg
Power consumption	Approx. < 19000 VA	Approx. < 38000 VA
Power supply req.	three-phase 380 Vac ± 15%	three-phase 380 Vac ± 15%
Nr. of power supply boards	5 DC/DC	10 DC/DC
Number of fans	2 blowers for each PA & PS module	2 blowers for each PA & PS module