

TX 500/S TX 1000/S "PLUS SERIES"

500 W – 1000 W

The TX 500/S PLUS and the TX 1000/S PLUS are complete FM Transmitters developed to connect the FM Mono, MPX, Stereo Exciter TX 25/S PLUS with the VL 500 PLUS or VL 1000 PLUS in the same mechanical rack 5 Unit.

This solution allows two independent units, an FM Exciter and a FM Power Supply fully redundant in the Power supply, to be placed in the same rack.

The best advantage of this solution is that is possible to switch off one of the two equipment and use the other one as a stand alone equipment.

This solution allows a reduction in price compared to the solution of two separate equipment (Exciter and Amplifier) and also represents the ideal solution for having a spare unit for High power Transmitter.



F685 TX 500/S PLUS
F686 TX 1000/S PLUS

500 W Stereo, Mono, MPX Transmitter
1 KW Stereo, Mono, MPX Transmitter

Technical data FM Exciter TX 25/S PLUS

FREQUENCY

Range	87,5 ± 108 MHz
Internal Setting mode	10 KHz steps
External Setting mode	10 KHz steps by remote control RS232-RS485
Generation	PLL synthesizer
Control	Microprocessor
Stability	± 300 Hx / 3months
Reference	TCXO 12,8 MHz
Nominal deviation	± 75 KHz
Stability of Frequency Deviation	± 2,5 % over 6 months
Variation of Sensitivity	± 1 dB (referred to 75 KHz Deviation) in all the frequency range

RF POWER

RF Connectors	Type N Female
Impedance	50 Ω output power
Output power	From 0 to 25 W

RF OUTPUT SPECIFICATIONS

Harmonics suppression	< - 75 dBc
Spurious Emission	< - 90 dBc
Off Lock Attenuation	> 60 dBc
S/N RATIO (weighted)	> 73 dB (referred to ± 75 KHz)
THD	0,10%
VSWR	Less then 1,5:1

MONO MPX SPECIFICATIONS

Mono/MPX Impedance	600 Ω bal. or 10 KΩ unbal., XLR female Connector
Mono Level	From - 6 to + 12 dBm
MPX Level	- 6 dBm
Audio Filter Response (Mono)	> 30 dB (from 19 KHz to 100 KHz)
THD	< 0,2% From 40 Hz to 15 KHz
Suppression of 19 KHz	> 46 dB
RDS and SCA Impedance	10 KΩ unbal., BNC Connector (with 30 Hz to 100 KHz Filter)

STEREO SPECIFICATIONS

Left, and Right Impedance	600 Ω bal. or 10 KΩ unbal., XLR female Connector
Left, Right Level	From - 6 to + 12 dBm
Crosstalk	> 50 dB (@ 19 KHz)
THD on Encoded channels	< 0,3 % (from 0,4 Hz to 15 KHz)
Suppression of 38 KHz	> 50 dB
Spurious suppression outside band	According to ETSI 300-384
Sub Carrier Generation	Internal Cristal
Pilot Frequency	19 KHz ± 1 Hz
Pilot Tone level	Adjustable from 8% to 10%

DESIGN DATA

Type	Solid state direct FM frequency
Pre-emphasis	Flat or 75 or 50 ms
Audio frequency response	± 0,2 dB (from 40 Hz to 15 KHz) (stereo) ± 0,3 dB (from 40 Hz to 100 KHz) (MPX)\
Unbalance rejection	> 40 dB
Modulation	Type: Direct VCO frequency modulation F3E/F8E Capability: Meets or exceeds all CE 99/ 05 R&TTE requirements

REMOTE CONTROL

Output Connector	RS 232 – PC connection (front panel)	RS 485 (rear panel)
Input Connector	RS 485 (rear panel)	

STANDARDS SATISFIED

Electrical characteristics	EN 300-384
EMC characteristics	EN 301 489-11
Safety characteristic	EN 60215

TEMPERATURE

Nominal range	0° to 45° C
Operating range	- 5° to 45° C
Storage range	- 40° to 60° C
Maximum relative Humidity	90% non condensing
Max Operating Altitude	2500 mt. a.s.l.

AC POWER REQUIREMENT

from 80 to 265 Vac, single phase; Direct Mains Switching Mode

CONSUMPTION

Approx < 75 VA

Technical data TX 500/S PLUS – TX 1000/S PLUS

AC POWER REQUIREMENT

230 V ± 15% (47–63 Hz), single phase

CONSUMPTION

Approximate 1900 VA (stand-by consumption 50 VA)

DIMENSIONS AND WEIGHT

Rack	(5 U) 22 H x 44,8 W x 60 D cm.	Weight: 42 Kg
Packaging with no cabinet	Wooden Crate: 33 H x 66 W x 78 D cm.	
Total weight of the equipment	52 Kg.	

COOLING

Forced air cooling: 2 blowers 24 V DC 12 x 12 cm.

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The Transmitter is equipped with a very innovative technology of Power Supply with high performance

«switching-mode mains direct» without mains transformer.

Major features include high insulation from mains, high efficiency and compliance with European norms EN61000-4-3.

In the FM Transmitter an AGC audio circuit control is included which allows the modulation to be kept near to the maximum value allowed in compliance with CEPT/ERC 5401 E. The functioning of the transmitter is extremely simple thanks to two LCD display (one for the Exciter and one for the Power Amplifier).

The friendly interface of the display allows control of operating parameters and all unauthorised operations are avoided by installing a password, giving access to only non-operative menus.

The RF output specifications have been improved further obtaining values comparable to digital emitters in according with the R&TTE standard.

The FM Transmitter incorporates an interface for telemetry.

The functioning parameters are controlled either via modem or GSM connection by using Windows communications program.

Technical data FM Power Amplifier VL 500 PLUS – VL 1000 PLUS

FREQUENCY RANGE	87,5 ÷ 108 MHz
RF POWER	
RF Connectors	N type for RF input, 7/16" type for RF output
Impedance	50 Ω input and output power
Input power	VL1000 PLUS - Max 20 W; ALC setting from 500 W to 1KW VL 500 PLUS - Max 10 W; ALC setting from 250 W to 500 W
Output power	VL1000 PLUS - 1KW – ALC SELF REDUNDANCY (composed by 4 MOS-FET BLF 278) VL500 PLUS - 500W – ALC SELF REDUNDANCY (composed by 2 MOS-FET BLF 278)
Overall efficiency	Better than 52 %
RF OUTPUT SPECIFICATIONS	
Output power stability	± 3 %
Harmonics suppression	≥ - 80 dBc (typically better than 90 dBc)
Spurious Emission	< 1 mW (without Modulation)
Residual Asynchrony AM	- 74 dB Weighed
Residual Synchrony AM	- 58 dB Weighed
RF PROBE	- 60 dBc
POWER SUPPLY	
Type	Switch mode (Double conversion voltage mains direct)
Protections	Overheating 70 °C (by means the General Control) Over charge Short Circuit of the output voltage Crow – Bar protection: (Exceeding higher output voltage limit) Excessive "consumption" of the RF module (25 A max.) Over-voltage (253 V max.) Under-voltage (165 V off – 187 V 0n)
DESIGN DATA	
Display Meter	Forward power : 2 KW f.s. with log. scale Reflected power : 200 W f.s. with log. Scale DC supply voltage: 50 V f.s. with linear scale DC supply current: 50 A f.s. with linear scale Power supply temperature Power amplifier voltage
Protection 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
REMOTE CONTROL (BNC AND DB 15 CONNECTORS)	
Connectors	Type BNC and DB 15
Input	Stand-by command Reset command
Analog output	Signal proportional to the output voltage of the power supply module (1 V ÷ 10 V) Signal proportional to the current supplied by the power supply module (1 V ÷ 10 A) Signal proportional to the square root of the direct power (5 V ÷ 500 W) Signal proportional to the square root of the reflected power (4 V ÷ 500 W)
Digital output	"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)
TEMPERATURE	
Ambient range	0 ° to 45 ° C (operating - 10° to 50°)
Storage range	-40 ° to 70 ° C
Humidity	90 % @ 26 °C
Altitude	< 2500 mt. above sea level
CONSUMPTION	Approx. 1800 VA (stand-by consumption 50 VA)
AC POWER REQUIREMENT	230 V ± 15% (47–63 Hz), single phase

Specifications and characteristics are subject to change without notice.