

# FM RADIO EQUIPMENT

## CONDENSED GUIDE

The information contained in this guide is intended to give a brief overview of AEV products

For more details please visit our web site at [www.aev.net](http://www.aev.net) or [www.aev-usa.com](http://www.aev-usa.com) and require our CD ROM or refer to your nearest AEV dealer



## BROADCAST EQUIPMENT

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## BROADCAST EQUIPMENT



FM

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# Twister STL EQUIPMENT

1600+ 2500 MHz

## TWISTER 5T



- High Stability Synthesized transmitter with micro-processor control
- Programmable with 200 KHz steps \*\*
- 2 Watt \* Output Power continuously adjustable.
- Final stage protection for excessive SWR and with exclusive "APRS" system, for proportional automatic reduction at a minimum level of output power
- LCD Display for setting and control of all the operations of the equipment
- 24 Volt DC power supply
- Comply with ETSI ETS 300-454 (limited to the band portion allowed in Italy)

Frequency Range	1600+2500 Mhz
Power Output	0x2 W on 50W
Modulation Type	Directly synthesized on fundamental frequency
Frequency Stability after 1 hour	0.2 ppm
A.F. Input	0 dB on 47kOhm MPX Bandwidth 30 Hz, 80 KHz
Preemphasis	50/75 µs
In/Out Connectors	Bnc / N-Type
Harmonic Suppression	Better than - 60 dB
S/N Ratio	- 70 dB
Total Distortion	0.1 % dev. ± 75 KHz
Cooling	Forced Ventilation
Power Supply	110/230 AC ±10% 50/60 Hz and 24 Volt DC
Power Consumption	Max. 70 VA at 230 V
Rack Dimensions	19" 2 RU
Weight	8 Kg - 17.6 lb

\* Max Power 6W on request

\*\* 20 KHz steps on request

## TWISTER 5R



- High stability Synthesized receiver with micro-processor control.
  - Programmable with 200 KHz \* steps.
  - LCD Display for setting and controls of all the operations of the equipment.
  - Headphone output.
  - 24 Volt DC Power Supply
  - Comply with ETSI ETS 300-454 (limited to the band portion allowed in Italy)
- \* 20 KHz steps on request

Frequency Range	1600+2500 Mhz
Sensitivity	-70 dB for - 57 dB S/N
Frequency Stability after 1 hour	0.2 ppm
Input Connector	N-Type on 50 ohm
A.F output	0 dB on 1Kohm
Output Connector	BNC
De-emphasis	50/75 mS
IF out	-20 dB
Frequency Linearity	± 0.5 dB 20 , 80 KHz
THD ( ± 75 KHz dev.)	Better than 0.2 %
S/N Ratio	- 70 dB
Power Supply	110/230 AC ±10% 50/60 Hz and 24 Volt DC
Power Consumption	Max. 70 VA at 230 V
Rack Dimensions	15 VA approx.
Weight	6 Kg - 13.2 lb

## STL AMPLIFIERS

### TWISTER 40/80



- 40/80 W Amplifiers in the band 1900+2500 MHz.
- Output Power stage with GaAs -Fet Technology
- Power Supply 110/230 AC ±10% 50/60 Hz and 24 Volt DC
- Weight TW40 10 Kg - 22 lb / TW80 15 Kg - 33.1 lb

*Twister*

## MODULATORS

### TWISTER 20/60



- FM 87.5–108 MHz "State of the Art" Modulator
- Micro processor control of all the functions
- Final stage protection for excessive SWR and with exclusive "APRS" system, for proportional automatic reduction at a minimum level of output power
- LCD Display for setting and controls of all the operations of the equipment
- Available at 20 and 60W Output Power
- Outstanding Audio Quality
- Comply with ETSI ETS 300-384

Frequency Range	87.5 – 108 Mhz	
Output Power	0÷20 W Adjustable 0÷60 W Adjustable	
Frequency steps	100 KHz*	
Frequency stability	500 Hz	
AMAsynchronousS/NRatio	- 55 dB	
AMSynchronousS/NRatio	- 65 dB	
RF output	N - Type on 50 ohm	
Mains	110/230AC±10%/50/60Hz	
Power Consumption	220 VA	
ServiceTemperature	Up to + 48 °C	
Rack Dimensions	19" 3U	
Stereo Input Mode	Level	± 10 dB Adjustable
	Impedance	10 KΩ / 600 Ω
	Connector	XLR
	THD	0.1 %
	S/N Ratio	Better than 75 dB
Mono/MPX Input Mode	Level	± 10 dB Adjustable
	Impedance	10 KΩ / 600 Ω
	Connector	XLR
	THD	0.1 %
	S/N Ratio	Better than 75 dB
Weight	TW20 12 Kg - 26.4 lb / TW60 15 Kg - 33.1 lb	

\* 10 KHz steps on request

## TUBE AMPLIFIERS

### TWISTER 1000

*Twister*

### TWISTER 2000



- Tube Amplifiers, 87.5÷108 MHz, available in the versions 1KW, 2KW
- Designed for Heavy Duty Service
- Excellent overall efficiency
- High Impedance low pass band filter
- Protected for excessive pressure / temperature air, grid and plate overcurrent, excessive SWR.
- Accurate meter for direct and reflected Power, Grid and Plate current.
- Automatic shut-off in case of trouble. The protection control realizes up to 10 attempts to restore the regular operation condition, before arresting the amplifier
- Display of the last nine troubles
- Comply with ETSI ETS 300-384

## TWISTER 5000/8000



*Twister*

- Tube Amplifiers, 87,5+108 MHz, available in the versions 5KW and 8KW
- Designed for Heavy Duty Service
- Excellent overall efficiency
- High Impedance low pass band filter
- Protected for excessive pressure / temperature air, grid and plate overcurrent, excessive SWR.
- Accurate meter for direct and reflected Power, Grid and Plate current.
- Automatic shut-off in case of trouble. The protection control realizes up to 10 attempts to restore the regular operation condition, before arresting the amplifier
- Display of the last nine troubles
- Comply with ETSI ETS 300-384

## MODULATORS

### Typhoon30/50



- State of the art performances at moderate cost.
- $\mu$ P controlled - external PC-programmable via RS232.
- RS485 for setting and control Typhoon Amplifier
- All Setup protected with password
- Four alternative OnAir memories. All setting included in each memories can be configured
- Extremely low distortion THD, IMD & TIM
- Built-in stereo encoder
- Easy to use: comprehensive monitoring of all relevant parameters and setting values.
- ETSI ETS 300-384, CCIR & FCC compliant.
- Software upgradable via internet.

Frequency Range	87.5 + 108 MHz	
Output Power	0+30 W Adjustable 0+50 W Adjustable	
Frequency steps	100 KHz	
Frequency stability	2.5 ppm	
AM Asynchronous S/N Ratio	70 dB	
AM Synchronous S/N Ratio	50 dB	
Spurious and harmonic suppression	-10 dBu @ $\pm$ 1MHz min. out of carrier.	
RF output	N - Type on 50 ohm	
Mains	85/264 V single phase AC( $\pm$ 10%) 50/60Hz/ $\pm$ 5%	
Power Consumption	100 VA	
Service Temperature	Up to + 48 °C	
Rack Dimensions	1 U	
Stereo Input Mode	Level	- 3,75 dBm + 12 dBm
	Impedance	10 K $\Omega$ / 600 $\Omega$
	Connector	XLR
	THD	< 0.1 % 30 Hz TO 15 KHz
Mono/MPX Input Mode	S/N Ratio	Weighted 83dB/50 $\mu$ s 79dB/flat
	Separation	20 Hz+15KHz > 60dB
	Composite	+6 dBm 30Hz+100KHz 600K Unbal.
	SCA/RDS	-20 dBm .5dB 40KHz+100KHz -2K $\Omega$ Unbal.
	AUX	-6 dBm .5dB 40KHz+100KHz -2K $\Omega$ Unbal.
	Connector	Bnc
Weight	THD	0.1 %
	S/N Ratio	Better than 75 dB
	TY30 10 Kg - 22 lb / TY50 12 Kg - 26.4 lb	

\* 10 / 50 KHz steps on request

*Typhoon*

## TUBE AMPLIFIERS

Typhoon 5000 / 8000 / 10000



- Cavity tube amplifiers with integrated Mosfet solid state driver, available in the 5 KW, 8 and 10 KW versions for the FM 87.5-108 MHz band.
- Motor driven tuned output with soft touch buttons on the front panel.
- High gain, a 20W exciter is more than enough even for 10 KW.
- Fully protected against pressure lack, over temperature, over currents, high VSWR, phase missing.
- Shut down circuit with self restart and safety permanent block.
- Accurate readings of power levels, SWR all the important parameters.

## SOLID STATES

Typhoon 1000/1000T

*Typhoon*



- Solid state broadband amplifier, 1KW FM 87.5 + 108 MHz.
- LCD Display for setting and controls of all the operations of the equipment
- High gain, a 30W exciter is more than enough even for 1 KW.
- Fully protected against , over temperature, over currents, high VSWR, phase missing.
- Shut down circuit with self restart and safety permanent block.
- Accurate readings of power levels, SWR all the important parameters.
- $\mu$ P controlled - external PC-programmable via RS232.
- RS485 for setting and control Typhoon Modulators
- CCIR & FCC compliant.
- \* 1000T Version: same characteristics but Complete Solid state broadcast transmitter.

## Typhoon 2000/2000T

- TY2000 Version: same characteristics but 2KW
- TY2000T Version: same characteristics but Complete Solid state broadcast transmitter.



# COMPARATIVE TABLE

Frequency range	Twister 1000 / 1000P 87.5 + 108MHz	Twister 2000 87.5 + 108 MHz	Twister 5000 87.5 + 108 MHz	Twister 8000 87.5 + 108 MHz
Power output	3W/1000 100 W / Twister 100W	2000 W	5000 W	8000 W
Power input	30 W	60 W	300 W	400 W
Input Connector	"N" type	"N" type	"N" type	"N" type
Output Connector	LC	"EIA 7/8"	"EIA 7/8"	"EIA 1 + 5/8"
Tube	3 CPX 800	YC 236	YU 148 / 3C30000	YU 148
Harmonic Suppression	Better than -65 dB	Better than -65 dB	Better than -67 dB	Better than -67 dB
Cooling	Forced Cooling	Forced Cooling	Forced Cooling	Forced Cooling
Power Supply	Single phase	Single 3phase	3phase	3phase
Power Consumption	1700 VA	3600 VA	10 KVA	15 KVA
Rack Dimensions	6 U	7 U	Rack 150 cm.	Rack 150 cm.
Max Service Altitude	4000 Mt.	4000 Mt.	4000 Mt.	4000 Mt.
Max Service Temperature	45 ° C	45 ° C	45 ° C	45 ° C
MAX Relative Humidity	95% Not condensed	95% Not condensed	95% Not condensed	95% Not condensed
Weight	45 Kg - 98.2 lb	60 Kg - 132.2 lb	180 Kg - 396.8 lb	210 Kg - 463 lb

Frequency range	Typhoon 1000 / 2000 87.5 + 108 MHz	Typhoon 5000 87.5 + 108 MHz	Typhoon 8000 87.5 + 108 MHz	Typhoon 10000 87.5 + 108 MHz
Power output	TY1000 1KW / TY2000 2KW	5000 W	8000 W	10000 W
Power input	20 W (nominal)	10 W (nominal)	12 W (nominal)	15 W (nominal)
Input Connector	"N" type	"N" type	"N" type	"N" type
Output Connector	"EIA 7/8"	"EIA 1 + 5/8"	"EIA 1 + 5/8"	"EIA 1 + 5/8"
Tube	Solid State	3C30000 / YU 148 (optimal)	YU 148	YU 148
Harmonic Suppression	Better than -65 dB	Better than -65 dB	Better than -65 dB	Better than -65 dB
Cooling	Forced Cooling	Forced Cooling	Forced Cooling	Forced Cooling
Power Supply	Single phase	3 phases	3 phases	3 phases
Power Consumption	6 U	10 KVA	15 KVA	18 KVA
Rack Dimensions	4000 Mt.	Rack 170 cm.	Rack 170 cm.	Rack 170 cm.
Max Service Altitude	4000 Mt.	4000 Mt.	4000 Mt.	4000 Mt.
Max Service Temperature	45 ° C	45 ° C	45 ° C	45 ° C
MAX Relative Humidity	95% Not condensed	95% Not condensed	95% Not condensed	95% Not condensed
Weight		180 Kg - 396.8 lb	200 Kg - 440.9 lb	220 Kg - 485 lb