

# WAVE 20000 - 20kW FM TRANSMITTER

## SINGLE/DUAL DRIVER, MULTI AMPLIFIER



### Adaptive Efficiency Boost

Efficiency up to 75% with adaptive optimization

### Easy Care

Hot pluggable PSU - Easy to replace fans

Full redundant Power Supply modules in each amplifier

### Digital Processing

Unique performances thanks to DDS digital modulator

### Controls

LCD display, Web GUI and SNMP

### Stereo coder & Soft clipper

Always included

### Integrated unique features

Micro SD card slot

FM/DAB/HD Radio Receiver

Satellite/Terrestrial receiver

Audio processor

Full telemetry with 3G/4G router

RDS coder

MPX over TS & IP

AES/EBU, MPX over AES

AES67, Web Radio receiver

## GENERAL SPECIFICATION

Output frequency range	87.5 to 108MHz in 1Hz steps
Output Power	20kW (tol. +0/-0.5dB)
Output connector	EIA 3+1/8" flange, other on request
Spurious and harmonic suppression	Compliant with ETSI and FCC specification
Analog input	2x XLR female (Balanced; impedance 600Ω/10KΩ selectable)
MPX/SCA/RDS input	2x BNC female (Unbalanced; impedance 50Ω/10KΩ selectable)
Soft Clipper with band limitation	Included
Power consumption	Typ. 27,8kVA - Max. <30.4kVA
Number of LDMOS in each amplifier	5
AEB - Adaptive Efficiency Boost	Included
AC Input voltage and frequency	400Vac three phase star conn. (with power neutral) and 230Vac three phase delta conn. (without power neutral)
AC/DC Power Supplies	N.3 fully redundant power supplies, hot pluggable from the front panel (each amplifier)
Operative temperature & fans	-5°C to +45°C @MSL. N.2 fans on the rear panel (each amplifier)
Maximum operative altitude	3000m ASL. For higher altitudes please contact our sales dept.
Maximum operative humidity	95% non-condensing
Housing	Rack Cabinet 19" 38U - dimensions: 570 x 1900 x 1000 mm (W x H x D)
Weight	<350Kg



Amplifier with fully redundant hot-plug power supply

## SOFTWARE OPTIONS

<b>S-AM-UN</b>	Audio monitor for input or on-air signal + test tone generator	Included in <b>S-FULL-UN</b>
<b>S-SD-UN</b>	Micro SD card slot	
<b>S-AES-UN</b>	Digital AES/EBU & AES192 (MPX over AES) inputs	
<b>S-FMRX-UN</b>	FM receiver input (for regenerative FM repeater/ translator)	
<b>S-SWI-UN</b>	Automatic input switching (n.3 MPX profiles – audio/ RDS)	
<b>S-RDS-UN</b>	Static RDS coder	
<b>S-IP-UN</b>	IP input (Icecast2 streaming & AES67)	
<b>S-DMPX-UN</b>	Digital MPX over TS & Digital MPX over IP in/out	
<b>S-ISO-UN</b>	SFN/Isofrequency operation	

## HARDWARE OPTIONS

<b>H-HS</b>	High Stability ( $\pm 50\text{Hz}$ )
<b>H-SAT</b>	Embedded Satellite receiver demodulator. DVB-S/S2 (L-band input) Low Symbol Rate with loop through
<b>H-SATDTT</b>	Embedded Satellite and Terrestrial receiver demodulator. DVB-S/S2 (L-band input) and DVB-T/T2 and ISDB-T (VHF/UHF band input)
<b>H-SATDTT2</b>	Second Redundant Embedded Satellite and/or Terrestrial receiver demodulator with seamless switching
<b>H-3G; H-4G</b>	2G/3G or 3G/4G modem router for remote connection/telemetry and SMS
<b>H-I/O</b>	GPIO interface with n.3 isolated clean contact out, n.4 optoisolated in, n.4 analog out (0 to 5V), RF filter for router
<b>H-ASI</b>	ASI T.S. input (or output) interface
<b>H-REF</b>	10MHz and 1pps inputs
<b>H-GNS</b>	High stability reference oscillator GNSS (GPS + GLONASS) locked, oven clock 10MHz + 1pps outputs
<b>H-AGNS</b>	GPS/GLONASS receiving antenna (gain 26dB typ.) + 15 meters cable
<b>H-AP-PRO-L</b>	Audio Processor card with professional software license & Advanced Dynamics (Auto EQ & dynamic ratios), bass effects, dual multiband processor (up to 9 bands), AGC, compressor and advanced composite clipper, RDS coder
<b>H-AP-PRO</b>	H-AP-PRO-L + Declipper & Natural Dynamics

The software-based audio processor can be integrated in any Wave Transmitter, from low and medium compact versions to high power line. **H-AP-PRO Audio Processor** offers outstanding audio quality and comes with many unique features.



### FM Composite Clipper

Up to 140% audio level at 100% modulation gives 2-3 dB extra headroom for highs. Improve your audio, being the loudest and cleanest station on the dial!

### Stereo & RDS Coder

Built-in stereo and RDS encoder  
RT+

### Advanced Dynamics & EQ

Increases the dynamics for music that lacks dynamics. Adjusts the spectrum without compression, making it possible to generate a very consistent sound without sounding compressed

### Dehummer

Improves the sound of MPEG2/MP3 style lossy compressed files, removing unwanted constant sounds, such as a 50/60 Hz hum from bad cables

### Better FM reception

Improves stereo reception area up to 30Km

### Declipper & Natural Dynamics

Repairs clipped audio, removes distortion  
Restores Natural Dynamics

### Delossifier

Improves the sound quality of MPEG2/MP3 style lossy compressed files

*All specifications contained in this document may be changed without prior notice*