

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. $\leq 30.4\text{kVA}$
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	$\leq 350\text{Kg}$



Amplifier with fully redundant hot-plug power supply

SOFTWARE OPTIONS

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

HARDWARE OPTIONS

H-HS	High Stability (± 50 Hz)
H-SAT	Embedded Satellite receiver demodulator. DVB-S/S2 (L-band input) Low Symbol Rate with loop through
H-SATDTT	Embedded Satellite and Terrestrial receiver demodulator. DVB-S/ S2 (L-band input) and DVB-T/T2 and ISDB-T (VHF/UHF band input)
H-SATDTT2	Second Redundant Embedded Satellite and/or Terrestrial receiver demodulator with seamless switching
H-3G; H-4G	2G/3G or 3G/4G modem router for remote connection/telemetry and SMS
H-I/O	GPIO interface with n.3 isolated clean contact out, n.4 optoisolated in, n.4 analog out (0 to 5V), RF filter for router
H-ASI	ASI T.S. input (or output) interface
H-REF	10MHz and 1pps inputs
H-GNS	High stability reference oscillator GNSS (GPS + GLONASS) locked, oven clock 10MHz + 1pps outputs
H-AGNS	GPS/GLONASS receiving antenna (gain 26dB typ.) + 15 meters cable
H-AP-PRO-L	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
H-AP-PRO	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