

# TX 310k FH

10 kW HF Transmitter



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The TX 310k FH is a software-based HF transmitter rated at 10 kW PEP/average output power for communication in the short wave (HF) frequency band.

The Transmitter comprises the exciter/receiver unit ERX 3000 T (exciter mode activated only), the power amplifier control unit PAC 310k, twelve all-solid-state power amplifier modules PA 3100 (each incl. an harmonic filter), and three power combiners with a balancing load. All devices are supplied by a 3-phase nominal 400 VAC power supply consisting of several modules.



100 %  
continuous operation

### FEATURES

<b>Frequency range</b>	1.5 MHz to 30 MHz	<b>Software defined</b>	Easy upgrade of waveforms
<b>Output power</b>	10 kW PEP and average	<b>ALE</b>	Optional 2 <sup>nd</sup> and/or 3 <sup>rd</sup> generation ALE
<b>Touch screen control</b>	Usable with gloves	<b>Frequency hopping</b>	ECCM capability acc. to STANAG 4444
<b>LAN interface</b>	For remote control and voice over IP	<b>Remote control</b>	Full remote control capability
<b>Duty cycle</b>	100 % continuous operation	<b>Built-in test</b>	Comprehensive built-in test



**Hagenuk Marinekommunikation**

A company of the ATLAS ELEKTRONIK Group

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### TRANSMIT DATA

<b>Frequency range</b>	1.5 MHz – 30 MHz
<b>Frequency resolution</b>	1 Hz
<b>Frequency tuning</b>	Via touchscreen and / or single knob flywheel
<b>RF output power</b>	10 kW $\pm$ 1 dB, PEP/average at 50 $\Omega$
<b>Reducing of output power in steps of</b>	-3 dB, -6 dB, -10 dB, -20 dB
<b>Adjustment of maximum power</b>	In 0.1 dB steps down to -9.9 dB
<b>Channel memory</b>	1000
<b>Frequency stability</b>	$< 1 \times 10^{-8}$ per day, options on request
<b>Frequency changing time</b>	$\leq 10$ ms
<b>Modes of operation</b>	
Standard	AM (A3E), SSB (J3E USB/LSB), Data USB/LSB/ISB, ISB (B9W), CW (A1A), FSK (F1B), AME (R3E, H3E, H3W)
Optional	Link 11 with external L11 modem, acc. to MIL-STD-188-203-1A Frequency hopping: (with optional FH controller), acc. to STANAG 4444 L22 capability (with external L22 equipment) acc. to STANAG 5522
<b>Input for external frequency standard</b>	10 MHz, 0 dBm $\pm$ 10 dB, 50 $\Omega$ , BNC connector
<b>Control interface</b>	RS 232, RS 422, RS 485 and RS 422 Bus 1200, 2400, 4800, 9600, 19200, 38400 Baud
<b>LAN interface</b>	Remote control + audio (VoIP)
<b>Frontpanel socket</b>	Microphone 2 mV / 150 $\Omega$ PTT (0V = transmit) Serial interface for software updates/ upgrades
<b>Comprehensive built-in test (BITE)</b>	
<b>Suppression of unwanted sideband</b>	$> 60$ dB/PEP
<b>Carrier suppression</b>	J3E, ISB, Link 11: $> 50$ dB/PEP H3E, H3W: 4.5 dB to 6 dB / PEP R3E: 18 dB $\pm$ 2 dB / PEP

<b>Suppression of intermodulation products 3. order</b>	$> 36$ dB / PEP (two-tone signal with power amp.)
<b>Harmonics suppression</b>	$> 56$ dB / PEP
<b>Noise suppression (inband)</b>	80 dBc / Hz
<b>Noise suppression</b>	$\Delta f = > 50$ kHz: $> 138$ dBc / Hz without interselector $\Delta f = > 500$ kHz: $> 145$ dBc / Hz without interselector

### GENERAL DATA

<b>Power supply</b>	AC power supply: 3-phase, 350 VAC – 440 VAC, 47 Hz to 63 Hz, approx. 50 kVA, neutral phase connected
<b>Environmental specifications</b>	
- Operating temp.	0 °C to +55 °C
- Humidity	Max. 85 % at 25 °C
- EMI/EMC	Acc. to VG 95373/IEC 945 and MIL-STD-461 C/462
<b>Dimensions</b>	
Height	2100 mm (45 U)
Depth	750 mm
Width	2334 mm (4 individual 19" sections)
<b>Weight</b>	Approx. 1450 kg
<b>Noise emission</b>	$< 70$ dBA, temperature controlled fans
<b>Air flow</b>	Approx. 7000 m <sup>3</sup> /h

### INTERNAL OPTIONS

<b>PSI 3000</b>	HF pre- / interselector, 1.5 MHz - 30 MHz band pass filter, selectivity: min. 40 dB at 10 % frequency deviation, autom. tuning within $< 10$ ms, $< 1.5$ MHz low pass filter
<b>STR 3000</b>	Link 11 / 22 side tone receiver

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