

# TX 310k FH

10 kW HF Transmitter



## TX 310k FH 10 kW HF Transmitter

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 is particularly suitable for use in fixed military and land-based stations, providing for tactical and strategic HF communications. The TX 310K is designed for voice and data transmissions, compatible to all the military standardized waveforms as applicable for the HF Series 3000 family of radios.



100 %  
continuous operation

### FEATURES

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



**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 keyboard 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                                     |

### Modes of operation

|          |   |
|----------|---|
| Standard | AM (A3E), SSB (J3E USB/LSB),<br>Data USB/LSB/ISB, ISB (B9W), CW (A1A),<br>FSK (F1B), AME (R3E, H3E, H3W)  |
| Optional | Link 11 with external L11 modem, acc. to<br>MIL-STD-188-203-1A<br>Frequency hopping: (with optional FH<br>controller), acc. to STANAG 4444<br>L22 capability (with external L22<br>equipment) acc. to STANAG 5522 |

|  |  |
|--|--|
| <b>Input for external frequency standard</b> | 10 MHz, 0 dBm $\pm$ 10 dB, 50 $\Omega$ ,<br>BNC connector                          |
| <b>Control interface</b>                     | RS 232, RS 422, RS 485 and RS 422 Bus<br>1200, 2400, 4800, 9600, 19200, 38400 Baud |

|                          |   |
|--------------------------|---|
| <b>Frontpanel socket</b> | Microphone 2 mV / 150 $\Omega$<br>PTT (0V = transmit)<br>Serial interface for software updates/<br>upgrades |
|--------------------------|---|

### Comprehensive built-in test (BITE)

|   |   |
|---|---|
| <b>Suppression of unwanted sideband</b> | $> 60$ dB/PEP   |
| <b>Carrier suppression</b>              | J3E, ISB, Link 11: $> 50$ dB/PEP<br>H3E, H3W: $4.5$ dB to $6$ dB / PEP<br>R3E: $18$ dB $\pm 2$ dB / PEP |

|   |   |
|---|---|
| <b>Suppression of intermodulation products 3. order</b> | $> 36$ dB / PEP<br>(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:<br>$> 138$ dBc / Hz without interselector<br>$\Delta f = > 500$ kHz:<br>$> 145$ dBc / Hz without interselector |

### GENERAL DATA

|                                     |   |
|-------------------------------------|---|
| <b>Power supply</b>                 | AC power supply: 3-phase, 350 VAC –<br>440 VAC, 47 Hz to 63 Hz, approx. 50 kVA,<br>with neutral conductor |
| <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<br>MIL-STD-461 C/462   |

### Dimensions

|                       |   |
|-----------------------|---|
| 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<br>band pass filter, selectivity: min. 40 dB at<br>10 % frequency deviation, autom. tuning<br>within $< 10$ ms, $< 1.5$ MHz low pass filter |
| <b>STR 3000</b> | Link 11 / 22 side tone receiver   |
| <b>MDM 3003</b> | Internal data modem with ALE 2G / 3G<br>capabilities  |

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