

# Underwater Communication System UT 2000

**Multifunction Underwater Acoustic System**

**Frequency Range 1 to 60 kHz**

**Sector/Omnidirectional Operation**

**Menu-Guided System with Keyboard and EL-Display**



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The UT 2000 is a compact microprocessor controlled multifunction underwater acoustic system with graphic EL display and keyboard. It offers besides the obligatory telephony and telegraphy modes a large quantity of additional functions and features such as pinger, transponder or distance measurement mode in a wide and variable frequency range. The output power is adjustable and sector or omnidirection operation is possible. These features allow depending on the water sound conditions far or close range communication with the shortest possible intercept range, which is essential especially for submarines.

Operating modes and parameters can be selected menu-guided via the keyboard, while the EL-display always presents a Fourier analysis of the received signals with a resolution of 1 kHz over the whole frequency range of 1 to 60 kHz. Besides this, all operational parameters are shown according to the selected mode (e.g. output power, carrier frequency, modulation control etc.).

The control of the UT 2000 is simplified by an automatic switchover from receive to transmit. And the use of upper and lower sideband respectively with suppressed carrier (SSB-operation) guarantees a high

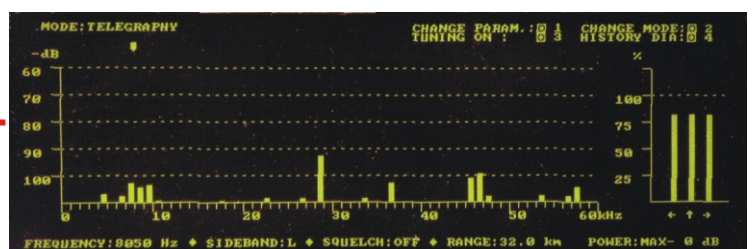
signal-to-noise ratio at a high transmission band width. To cover the frequency range from 1 to 60 kHz it is necessary to operate the system with sets of transducers; low frequency for far range communication, high frequency for reduced range of intercept or for communication with divers, which can further be improved by adjusting the transmitting power to the distance of transmission.

Used on surface vessels an omnidirectional outboard transducer which can be lowered to the required water depth guarantees perfect communication even under unfavorable acoustic conditions.

The built-in test equipment (BITE) together with plug-in type PC boards developed and manufactured according to AQAP-I standard result in a very low MTTR.

The UT 2000 exceeds STANAG 1074 requirements.

Within NATO the UT 2000 is registered under the NATO-Code Designator DSQC-I2.



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## TECHNICAL DATA

Frequency range:	1 kHz to 60 kHz, tunable in steps of 50 Hz; NATO standard carrier frequency (separate quartz-oscillator);
Power output:	LF operation: 300W (3 transducer groups with 2 x TSE 4 each 100 W) resp. 100 W (single transducer TSE 5), reducible in four 10 dB steps HF operation: 45W (3 x LSE 258 each 15 W), reducible in four 10 dB steps
Telephony signal:	300 Hz to 3 kHz (audio band)
Telegraphy signal:	712 Hz (reduced bandwidth of 700 Hz)
Audio output:	1 W, 4 Ohm
Optional:	NATO emergency channel
Power supply:	115V AC or 230V AC 24V DC (with reduced transmit power only)
Power consumption:	max. 1000V A (at 300W continuous transmitting signal) 100VA (receiving mode) 160VA (emergency mode)
Anti-condensation heating:	115V AC or 230V AC or 160 to 330V DC to be specified) approx. 15W
<b>Interfaces:</b>	Recorder Two additional listen/talk stations LG 14 Intercom
<b>Environmental standards:</b>	
Temperature (inboard equipment)	operational: -10 to +55 °C storage: -40 to +70 °C
Humidity:	DEF STAN 07-55, 3/80
Surface protection:	resistant against corrosion; PC boards protected against mildew and fungus (tropicalized)
Barometric pressure:	600 to 1400 mb
Shock:	BV 043, 5/73 (SEE 11 with 6 shock mounts) BV 043, 3/85 (SEE 11 with 8 shock mounts)
Vibration:	BV 044, 09/87
Climatic test:	DEF STAN 07-55, 3/80
Corrosion test (salt spray):	DEF STAN 07-55, 3/80
Degree of protection:	IP 44 DIN 40 050, 7/80
EMC:	BV 3012, 9/79
Non-magnetism:	BV 3013, 9/79
<b>Dimensions:</b>	Control and Display Unit SEE 11: 192 x 500 x 400 mm (without shock-mounts)
<b>Weight:</b>	Control and Display Unit SEE 11: approx. 33 kg

