UNDERWATER
COMMUNICATION & NAVIGATION
LABORATORY

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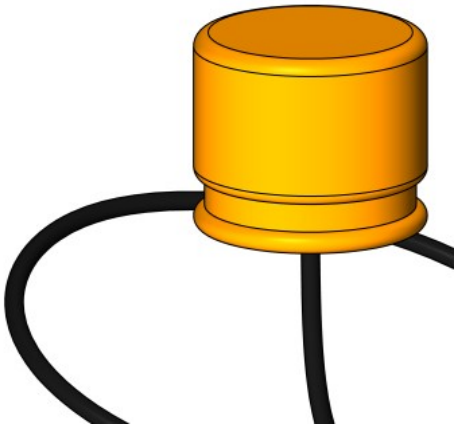

uWAVE Underwater acoustic modem specifications

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KEY FEATURES

- **Extremely small size and weight**
- **Reliable data transmission with 78 bit/s**
- **Operating range up to 3000[1] m**
- **Subscribers code division**
- **Propagation time measurement**
- **Reliable and noise-immune technology of digital broadband acoustic communication**
- **Low power consumption (Rx/Tx) 0.33/6 W**
- **Open & easy interfacing protocol**
- **Built-in depth/temperature sensor**

Using **uWAVE Max**, the user can:

- transfer arbitrary user data between **uWAVE USBL Modem**, **uWAVE Max** and **uWAVE** modems in any combination;
- transmit up to 9 short code telecontrol user commands;
- request from remote modems **uWAVE USBL Modem**, **uWAVE Max** and **uWAVE** their depth, temperature and voltage;
- measure own depth, temperature and voltage;

uWAVE family devices use a simple open NMEA-like configuration protocol, and the supplied open-source **uWAVELib** library allows for the fastest and easiest integration of devices into user solutions.

[1] While working with uWAVE USBL Modem or uWAVE Max. Max operating range with uWAVE modems is 1000 m.

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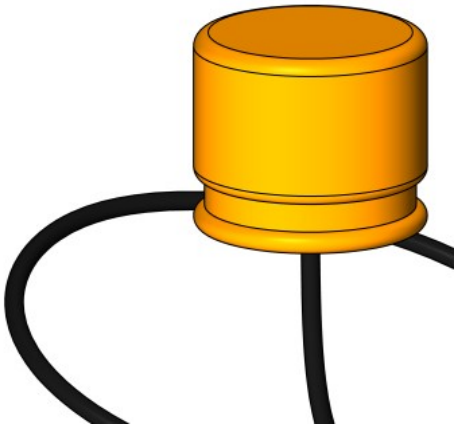

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TECHNICAL SPECIFICATIONS

DIMENSIONS (Φ x h)	**64 x 62 mm**
WEIGHT (dry)	**0.36 kg**
DEPTH RATING	**300 m**
MAX OPERATING RANGE	**3000[2] m**
PAYLOAD DATA RATE	**78 bit/s**
POWER CONSUMPTION Rx/Tx	**0.33/6 W**
POWER SUPPLY[3]	**5..12 V**
DATA LINES VOLTAGE	**0 .. 3.3 V**
FREQUENCY BAND	**10 .. 30 kHz**
BIT ERROR RATE	**10^{-6}**
SNR[4]	**-2 dB**
MAX RELATIVE VELOCITY	**+/- 1 m/s**
RATED START-UP TIME	**100 ms**
OPERATING TEMPERATURE RANGE	**-5 .. 50 °C**
INTERFACE[5]	**UART 9600 bit/s**
CONFIGURATION PROTOCOL	**NMEA 0183 PUWV**
CABLE LENGTH[6]	**0.5 m**
SUBSCRIBERS CODE DIVISION	**20 code channels**
COMMAND MODE	**16 predefined messages (9 for user applications)**

[2] While working with uWAVE USBL Modem or uWAVE Max. Max operating range with uWAVE modems is 1000 m.
[3] Maximum output power can be achieved with 12V power supply
[4] This value is obtained without the presence of the multipath effect
[5] Port speed can be changed by special request
[6] Length can be increased by special request