

uWAVE Underwater acoustic  
modem specifications

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## KEY FEATURES

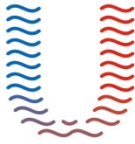
- Extremely small size and weight
- Can be applied in underwater wireless sensor networks
- Reliable data transmission with 78 bit/s
- Operating range up to 1000 m
- Subscribers code division
- Propagation time measurement
- Reliable and noise-immune technology of digital broadband acoustic communication
- Low power consumption (Rx/Tx) 0.33/6 W
- Open configuration protocol
- Built-in depth/temperature sensor

uWAVE is the world smallest<sup>1</sup> underwater acoustic digital modem, which allows to communicate up to 20 subscribers in area 1000 x 1000 meters with both transparent channel and predefined code messages/telemetry transmission.

Extremely small size, low power consumption and simplicity of usage make uWAVE an ideal solution for AUV control as well as data transmission, where dimensions and weight are the bottleneck.

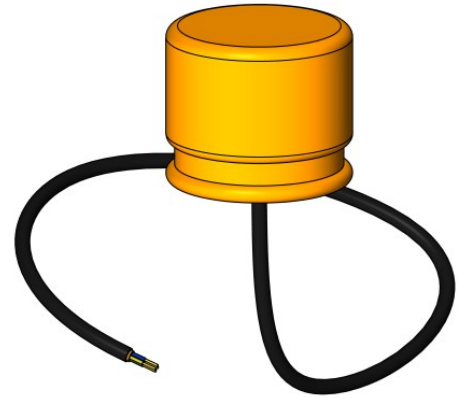
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<sup>1</sup> According to open sources, July 2018



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## TECHNICAL SPECIFICATIONS

<b>DIMENSIONS (<math>\Phi</math> x h)</b>	<b>40 x 45 mm</b>
<b>WEIGHT (dry)</b>	<b>0.16 kg</b>
<b>DEPTH RATING</b>	<b>300 m</b>
<b>MAX OPERATING RANGE</b>	<b>1000 m</b>
<b>PAYLOAD DATA RATE</b>	<b>78 bit/s</b>
<b>POWER CONSUMPTION Rx/Tx</b>	<b>0.33/6 W</b>
<b>POWER SUPPLY<sup>2</sup></b>	<b>5..12 V</b>
<b>DATA LINES VOLTAGE</b>	<b>0 .. 3.3 V</b>
<b>FREQUENCY BAND</b>	<b>10 .. 30 kHz</b>
<b>BIT ERROR RATE</b>	<b><math>10^{-6}</math></b>
<b>SNR<sup>3</sup></b>	<b>-2 dB</b>
<b>MAX RELATIVE VELOCITY</b>	<b>+/- 1 m/s</b>
<b>RATED START-UP TIME</b>	<b>100 ms</b>
<b>OPERATING TEMPERATURE RANGE</b>	<b>-5 .. 50 °C</b>
<b>INTERFACE<sup>4</sup></b>	<b>UART 9600 bit/s</b>
<b>CONFIGURATION PROTOCOL</b>	<b>NMEA 0183 PUWV</b>
<b>CABLE LENGTH<sup>5</sup></b>	<b>0.5 m</b>
<b>SUBSCRIBERS CODE DIVISION</b>	<b>20 code channels</b>
<b>COMMAND MODE</b>	<b>16 predefined messages (9 for user applications)</b>

<sup>2</sup> Maximum output power can be achieved with 12V power supply

<sup>3</sup> This value is obtained without the presence of the multipath effect

<sup>4</sup> Port speed can be changed by special request

<sup>5</sup> Length can be increased by special request