

TR-ORCA

UNDERWATER DATA ACQUISITION



CAPTURE, RECORD, & PROCESS IN REAL TIME.

TR-Orca is an underwater data acquisition and recording instrument that supports multiple input channels and extremely high sampling rates so that it can be used to capture, record and process, in real time, the richest underwater data sets possible. TR-Orca supports five synchronously sampled analog and hydrophone inputs in its standard configuration. Sampling rates are configurable up to 884 kHz with 2 TB of internal solid state storage. This product features an open Application Programming Interface (API) so that researchers and scientists are free to program the electronics with their own custom algorithms, or use Turbulent Research's constantly growing library supporting spectral analysis, detection, directional signal processing and more to build unique applications.

This underwater instrument is easy to use, deploy and configure, while at the same time is flexible enough to be useful in almost any underwater measurement and real time signal processing scenario. Record and process data autonomously, or stream data or messages real time over Ethernet or serial interfaces. The base electronics supports super low noise front end circuitry, as well as optimized hardware for underwater, low power, recording and signal processing. This instrument not only lets users record pristine data sets, but also allows them to develop their own real time underwater instruments.



☎ 902 417 2015
🌐 TURBULENTRESEARCH.COM
✉ SALES@TURBULENTRESEARCH.COM

Turbulent Research designs and develops marine electronics products for rich & robust real time data acquisition and signal processing. Our company was founded by engineers with a passion for design, signal processing and delivering world class products.



KEY FEATURES

- **MULTIPLE SYNCHRONOUSLY SAMPLED** Input Channels
- **FLEXIBLE SAMPLING RATES** from 24 KHz to 768 KHz
- **SUPPORTS MULTIPLE SENSOR TYPES:** Hydrophones, Vibrational Sensors, Seismic Inputs
- **DEEP SOLID STATE RECORDING**
- Open API For Users to Program **CUSTOM ALGORITHMS IN REAL TIME**
- **LOW POWER CONSUMPTION** for Long Deployments
- **REAL TIME DATA STREAMING** or Messaging over Ethernet or Serial Interfaces

PRODUCT APPLICATIONS

Acoustics Detection, Localization and Classification
Marine Mammal Studies and Real Time Monitoring
Multi Sensor Ocean Observation
Ambient Noise Monitoring
Wind And Tidal Renewable Energy Monitoring

TECHNICAL SPECIFICATIONS

POWER Internal Power: 72 Alkaline D Cells (user replaceable)
External Power: 12.6-26 vDc
Average Power Consumption: 300 mW – 3W (depending on use)

ANALOG INPUT CHANNELS Number of Channels: 5 – Standard
ADC Number of Bits: 16 – Standard
Dynamic Range Per Channel: 95.5 dB
(full bandwidth, better at lower sampling rates)
Sampling Rates Supported:
24 KHz, 48 KHz, 96 KHz, 192 KHz, 384 KHz

HYDROPHONE OPTIONS Can be used with multiple hydrophone vendors
Hydrophones mounted on end cap, or connectorized with custom cable lengths
Customized sensitivities and bandwidths available on request

MEMORY Integrated 1 TB SD Card and 2 TB Solid State Drive for Standard version
(Fat32 Formatted File System .wav) Upgradeable to 6TB
Configurable recording, schedule and duty cycling

COMMUNICATIONS Ethernet
High Speed USB for Download
RS422 (232 available with external converter) for real time monitoring

ENVIRONMENTAL 750m and 2500m depth standard (deeper options available on request)
Material Delrin Titanium
Operating Temperature: -10°C to +50°C

**Specifications subject to change without notice.*

