# ODH-4 DAS Interrogator Unit

Delivering unmatched imaging and measurement performance

For applications requiring unmatched Distributed Acoustic Sensing (DAS) measurement performance and image resolution, the OptaSense ODH-4 DAS interrogator unit offers the ideal solution.

Superior imaging

Compared to our industry leading ODH-3 DAS interrogator unit, the ODH-4 provides a 6 dB improvement in signal-to-noise ratio—delivering the highest fidelity Vertical Seismic Profiling (VSP) measurements available, and making microseismic measurements with DAS an operational reality.

In addition to higher quality seismic imaging, the ODH-4 offers increased sensitivity and finer spatial resolution (1.3 m) for high-caliber image resolution.
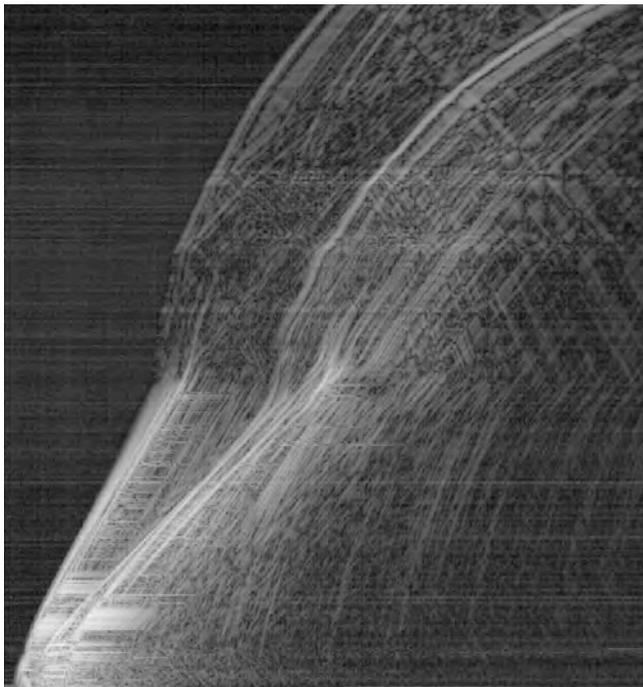
*Quality, high resolution seismic data*

Applications

- *Seismic profiling*
- *Hydraulic fracture monitoring*
- *Production flow monitoring*

Features and Benefits

- *Offers A 6 dB improvement in signal-to-noise ratio for quality VSP and microseismic measurements*
- *Provides increased sensitivity and finer spatial resolution (1.3 m) for high-caliber image resolution*
- *Delivers multiple lasers for superior imaging of multiple measurements, including fracture profiling and production flow monitoring*
- *Offers a high broadband frequency with a sample rate of 200 kHz*
- *Endures environmental conditions reaching 20,000psi and 300° C*
- *Delivers quantitative phase and amplitude output in HDF5, SEG Y or SEG D formats*
- *Easily integrated with external devices, such as DTS*
- *Provides continuous performance monitoring and real-time visualization software*

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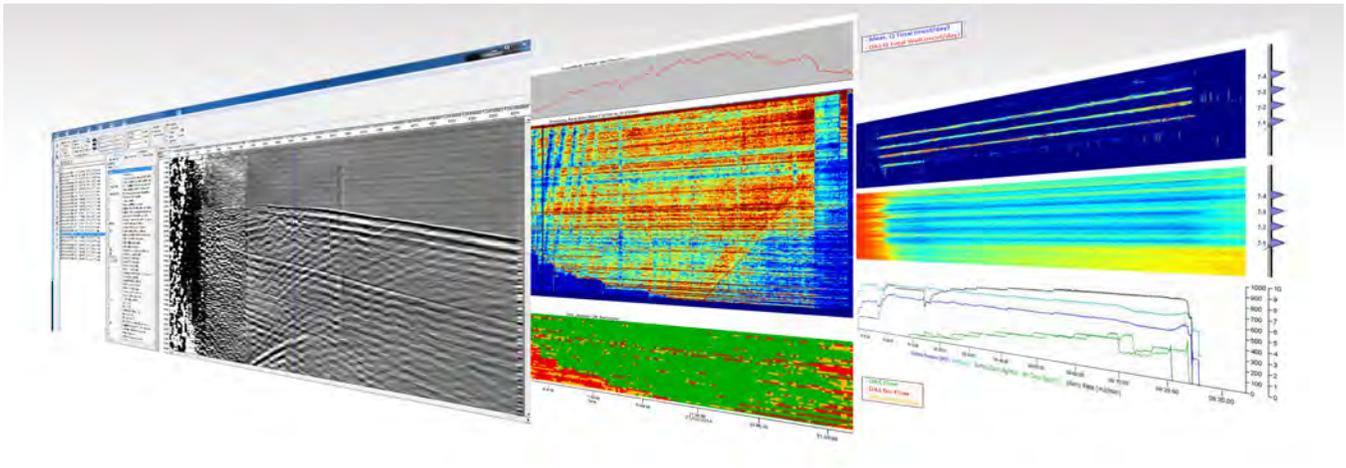
Multiple measurements

The ODH-4 is a four laser interrogator. With four unique wavelengths, the ODH-4 not only provides superior imaging, it provides operators the opportunity to take full advantage of available DAS data by recording multiple measurements, such as fracture profiling and production flow monitoring, at the same time.

System performance

The ODH-4 provides robust system performance, including a variety of data outputs, enduring high-pressure, high-temperature conditions, and continuous performance monitoring.

- **Broad frequency range:** With a higher broadband frequency, the ODH-4 processing unit provides finer imaging at a sample rate of 200 kHz.

- **Robust operating range:** The ODH-4 is capable of enduring environmental conditions reaching 20,000psi and 300° C. OptaSense technology is robust, with more than 400 interrogator units operating in-field over the last 10 years at a nominal failure rate.

- **Real-time phase and amplitude coherent data:** The ODH-4 delivers DAS measurements with quantitative phase and amplitude output. Data can also be output in HDF5, SEG Y or SEG D formats.

- **Optimal recording:** The interrogator enables recording at every location along a single-mode or multimode optical fiber, including passive recording. For optimal measurements, the ODH-4 offers a system interface that leverages GPS to assign a spatial coordinate from surface to depth—ensuring microsecond accuracy across each segment of fiber.

- **Installation:** The unit fits a standard 19 inch rack mounting. It can be easily integrated with external devices, such as Distributed Temperature Sensing (DTS) and other downhole gauges, while providing a common time stamp and single display view.

- **Continuous performance monitoring:** The ODH-4 provides preventative features and alerts for critical events, including power failure, stop recording, fiber break and exceeded temperatures.

Real-time visualization and control

What sets our DAS technology apart is our understanding of the importance of operator control. In addition to acquiring DAS, OptaSense provides operators the ability to visualize and interpret their data, in real time.

The OptaSense DxS software suite provides an in depth analysis of acquired DAS data by applying processing algorithms, integrating large sets of distributed data, filtering critical data and enabling advanced workflows.

The software suite allows users to easily integrate large distributed data sets into workflows, including 3D depth, time and measurement data, while managing quality control, analysis and interpretation.

The DxS software is designed to handle industry standard distributed data sets, including:

- DAS
- DTS
- Time and depth live access server (LAS)
- Comma-separated values (CSV) data

So you can focus more on results, the suite down-samples larger data sets from terabytes to megabytes by allowing users to generate and extract filtered waterfall information. This software puts quality control in the hand of the operators, including verifying depth calibration, visualizing and qualifying generated results, and re-working data sets.

The software will also allow reprocessing and handling of large data sets by running proprietary algorithms and producing key metrics in industry standard data formats.

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