

# DAS-H



## DISTRIBUTED ACOUSTIC SENSOR HIGH-FIDELITY

**MIDFIELD ESTATE, MIDSTREAM**

NETWORKSENSE.TECH

CONTACT: **083 376 8427**

INFO@**NETWORKSENSE.TECH**

JOHN@**NETWORKSENSE.TECH**



PIONEERING ADVANCED FIBER OPTIC SENSING TECHNOLOGY

# KEY FEATURES



## VIBRATION, STRAIN & TEMPERATURE MONITORING

The system measures vibration, strain, and temperature simultaneously, providing real-time insights for enhanced security and structural health monitoring.

## EXTENDED REACH

With a range of up to 70 km, it ensures long-distance coverage for large-scale installations without compromising performance.

## ULTRA-SENSITIVE STRAIN DETECTION

With an impressive sensitivity of  $1 \text{ n}\epsilon$ , even the smallest strain variations are detected, ensuring reliable monitoring.

## DISTORTION-FREE, LINEAR MEASUREMENTS

The system maintains precise linear measurements with no signal distortion, guaranteeing consistent and accurate data.

## SINGLE MODE OPTICAL FIBER SENSOR

A Single Mode Optical Fiber Cable serves as the sensor, providing a cost-effective, scalable, and maintenance-free solution.

## DUAL-CHANNEL CAPABILITY

Equipped with two channels, the system enhances redundancy and performance, ensuring continuous and uninterrupted monitoring.

## ADVANCED CHIRPED PULSE PHASE OTDR TECHNOLOGY

DAS-H utilizes Chirped Pulse Phase OTDR Technology, ensuring linear and quantitative measurements for superior accuracy. Measurement changes occur in direct proportion to input disturbances, providing precise and reliable data.

# KEY FEATURES



## DISTORTION-FREE, HIGH-FIDELITY MEASUREMENTS

Unlike traditional DAS systems, DAS-H does not introduce harmonics, ensuring a clean and undistorted signal. Its high-fidelity measurements enable advanced pattern analysis, significantly reducing misclassifications and improving detection accuracy.

## QUANTITATIVE MEASUREMENT FOR MEANINGFUL INSIGHTS

DAS-H delivers measurable variations as strain or temperature values, making the data more actionable. By providing quantitative insights, it simplifies thresholding, reducing false alarms and enhancing security response.

## CONSISTENT SIGNAL-TO-NOISE RATIO (SNR)

While non-linear DAS and phase DAS systems experience SNR degradation over distance, DAS-H maintains a stable SNR across the entire fiber length, ensuring reliable detection even at long ranges.

## NO FADING POINTS – RELIABLE EVENT DETECTION

Unlike non-linear DAS technologies, which suffer from fading points—temporary blind spots in detection—DAS-H eliminates fading points, ensuring no critical event goes unnoticed.

## SEAMLESS INTEGRATION WITH CLIENT APPLICATIONS

Equipped with a fully functional TCP/IP protocol, DAS-H allows seamless integration with client applications. The system can be remotely controlled, enabling users to configure measurement parameters, start and stop measurements, and manage data transmission efficiently.

## FLEXIBLE DATA PROCESSING & VISUALIZATION

DAS-H transmits data via TCP, encapsulating traces in packets for easy client-side processing. This allows users to apply custom processing algorithms and visualize data in tailored graphical formats, ensuring maximum flexibility and usability.

# KEY FEATURES



## SEAMLESS INTEGRATION WITH CLIENT APPLICATIONS

DAS-H features a fully functional TCP/IP protocol, enabling smooth integration with client systems for efficient data management and remote control.

## REMOTE OPERATION FOR MAXIMUM CONVENIENCE

The system can be controlled remotely, allowing users to configure measurement parameters, start or stop measurements, and choose to save data locally or transmit it via TCP. This flexibility ensures real-time monitoring and easy adaptability to different operational needs.

## EFFICIENT DATA TRANSMISSION & PROCESSING

All measurement data is securely received via TCP, with traces encapsulated in packets for structured and reliable delivery. This ensures accurate and uninterrupted data flow to client applications.

## CUSTOMIZABLE DATA ANALYSIS & VISUALIZATION

DAS-H allows clients to apply different processing algorithms and visualize data using custom graphics, providing tailored insights that enhance decision-making and security response.

# APPLICATIONS OF USE

- o Perimeter intrusion detection
- o Third-party interference (TPI) detection
- o Power cable monitoring
- o Traffic monitoring (roads, railway, subway)
- o Seismic activity monitoring
- o Sub-sea / Marine cable health monitoring
- o Asset integrity
- o Leak detection / monitoring on Oil, Gas & Water pipelines

# FUNCTIONAL SPECIFICATIONS

<b>WAVELENGTH:</b>	1550 nm
<b>STRAIN RESOLUTION (NOISE RMS):</b>	< 1 ne
<b>SPATIAL RESOLUTION:</b>	10 ± 2 meter
<b>SAMPLING RATE</b>	0.5 KHZ - 20 KHz
<b>RANGE:</b>	30 KMs   50 KMs   70 KMs

# SYSTEM INTERFACE

## DAS-H OPTICAL UNIT

## DAS-H PROCESSING UNIT

<b>DEFAULT OUTPUT OPTICAL CONNECTOR:</b>	FC / APC   SC / APC	
<b>EXTERNAL INTERFACE:</b>	Ethernet :1 Gb (x2)   USB 3.0 (x2) + USB 2.0 (x2)	
<b>VIDEO OUTPUT:</b>	VGA   HDMI	
<b>SIZE:</b>	19 in. rackable   5U   50 cm depth	19 in. rackable   4U   40 cm depth
<b>WEIGHT:</b>	< 20 kg	< 15 kg
<b>POWER REQUIREMENTS:</b>	100 / 110 / 220 V   50 / 60 Hz	
<b>POWER CONSUMPTION:</b>	< 800 W	

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