

FROST & SULLIVAN

HYDRO ELECTRONIC DEVICES, INC.

2022
PRODUCT
LEADER

*NORTH AMERICAN OFF-HIGHWAY
TELEMATICS INDUSTRY*

Best Practices Criteria for World-Class Performance

Frost & Sullivan applies a rigorous analytical process to evaluate multiple nominees for each award category before determining the final award recipient. The process involves a detailed evaluation of best practices criteria across two dimensions for each nominated company. HED excels in many of the criteria in the off-highway telematics space.

AWARD CRITERIA	
<i>Product Portfolio Attributes</i>	<i>Business Impact</i>
Match to Needs	Financial Performance
Reliability and Quality	Customer Acquisition
Product/Service Value	Operational Efficiency
Positioning	Growth Potential
Design	Human Capital

Comprehensive Off-highway Vehicle Control and Telematic Solutions

Frost & Sullivan estimates the connected off-highway (OHW) equipment market will reach over \$2.14 billion in 2030 from \$1.01 billion in 2021, with a compound annual growth rate of about 8.7% from 2021

“Through a collaborative and iterative product development process, HED delivers highly configurable and value-driven solutions - improving enterprises’ vehicle performance, reducing their time to market, ruggedizing hardware, and lowering system costs.”

**- Krishna Achuthan,
Industry Analyst**

to 2030.¹ Hydro Electronic Devices, Inc. (HED) uniquely leverages its intelligent vehicle control solutions to create unique customer solutions. Working with on and off-highway vehicle OEM’s, HED is well-positioned to capitalize on new growth opportunities, cementing its leadership position in the on and off-highway telematics industry.

Founded in 1986 and headquartered in Hartford, Wisconsin, HED is a developer and provider of intelligent vehicle controls, including a comprehensive

hardware and software portfolio. The company offers a comprehensive suite of solutions, including control modules, displays, jog dials, and keypads, as well as telematics modules, configuration tools, and software services. HED’s solutions are found in agriculture, construction, cranes and aerial, mining, emergency rescue, transportation and fleet vehicles, and many others.

¹ *Connected Off-highway Equipment Growth Opportunities* (Frost & Sullivan, September 2022)

Meeting Customers' Needs through Reliable and Quality Design

A pioneer and transformational leader, HED's corporate culture revolves around using purpose to drive innovation. Its product roadmap (i.e., planning, development) and implementation strategies ensure their product portfolio keeps pace with ever-changing, dynamic market needs. Through a collaborative and iterative product development process, HED delivers highly configurable and value-driven solutions - improving enterprises' vehicle performance, reducing their time to market, ruggedizing hardware, and lowering system costs.

Backed by over 35 years of industry-leading expertise, the company's solution suite takes vehicle controls and OHW telematics one step further than any competing solution. The company's trusted vehicle control portfolio include:

- **Control modules** with multiplexed and stand-alone applications and a variety of input/output (I/O) types and counts
- **Graphical displays** with video and integrated I/O
- **CAN hardware** with telematics Wi-Fi, and smart data logger modules to monitor and track assets
- **CAN keypads and jog dial** in various configurations, integrated I/O, and custom icons.
- **Cameras** that are ruggedized with ingress protection IP68/69 seals for operating in variable environments and temperature
- **Software tools** that are programmable and diagnostic for all component parts

HED also offers a robust telematics portfolio, called CANect™, with a complete suite of hardware, software, and web portal tools. Customers achieve total control to track, remotely diagnose, perform predictive maintenance, and otherwise interact with assets. The CANect® Telematics portfolio includes:

- **CANect® Hardware** is a cellular, Wi-Fi, or combination smart data logger module that mounts in- or outside OEM-delivered equipment
- **CANect Composer™** allows developers to build and deploy telematics solutions to field assets
- **CANect View™** provides on-site access to equipment data from any enabled device, allowing direct interaction with equipment - providing anything from health dashboards, diagnostic & historical data, troubleshooting insights, remote equipment function control, and service collateral
- **CANect Reflector™** offers the same access to vehicle data as the CANect View™ from anywhere in the world, allowing customers to easily monetize remote service offerings
- **CANect Portal™** enables the processing, presentation, and archiving of asset data for efficient fleet management through a cloud-based and secure web portal

Enterprises' solutions must keep pace with the short life cycle and rapid evolution of technology. The company builds its technologies with upgrade capabilities, flexibility for easy component changes (rather than complete system rebuilds), and solution longevity. This continuous system support ensures longer product life cycles without incurring additional costs to customers and the company.

HED is ISO 9001:2015 certified, ensuring it maintains a high-quality management system to design and manufacture electronic controls for mobile equipment. The company constructs its technologies in a cell-based assembly environment for component traceability and complete functional testing of all products. HED also uses other reliability and quality control measures, including end-of-line testing for every module. It is also moving towards implementing a complete test automation suite that will enable it to test and scale its hardware and software end-to-end.

HED's purpose-built solution suite sets it apart from its competitors, with superior design, reliability, and quality as its central pillars.

Customer-focused Growth Strategy

With its product-led customer-focused strategy, HED consistently brings best-in-class OHW vehicle control and telematic solutions to the market. The company's optimized control solutions reduce the total cost of OHW vehicle ownership, improve workers' productivity, safety, and connectivity, and are simple to use with broad functionality. Additionally, its highly configurable solutions make the company's market reach wide. HED's solutions are not devoted to any specific vertical - rather focused on vehicle types and capabilities positioned to support customer initiatives like Electrification and Autonomy. This approach broadens its industry applications to include OHW vehicles in construction, mining, military, fire/emergency, agriculture, transport buses, and alike.

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***- Elizabeth Whyntott,
Best Practices Research Analyst***

At the same time, HED incorporates customer feedback into its product roadmap to maximize short-term growth opportunities while providing a path to future revenues. During consultations, the company identifies the customer and industry needs and works towards addressing these challenges. For example, as enterprises move towards a digital business model, HED provides a roadmap for adopting tools and developing comprehensive digital solutions that extend beyond the sale of OHW vehicles.

While evolving from an intelligent vehicle control standpoint, HED never loses sight of its customers' perspectives. Its brand maintains a strong North American presence while meeting customer-specific needs globally. Given today's landscape, Frost & Sullivan believes the company is in a prime position to increase its market share in this highly competitive OHW telematics industry.

HED: On A Growth Trajectory

HED demonstrates high-growth potential. The company is well-positioned in the market, with industry-leading products that provide tremendous value in high-demand sectors. As the adoption of OHW telematics increases along with its engagements currently on the books, HED forecasts it will achieve significant year-over-year growth, a metric it has delivered on in the last couple of years. The company's fiscal growth also enables it to continue to grow and expand its telematics solutions.

A Leading Position with Continuous Enhancement

Through customer consultation and knowledgeable staff, HED consistently improves and expands its solutions' functionality, ensuring it meets and exceeds customer needs and performs optimally compared to competing technologies. The company purpose-builds its products based on customer-specific needs while also enabling configurability. That is, customers select and apply the features and functionalities that best address their challenges. For example, with telematic data, customers choose the type of data to collect, the frequency of collection, where to send, share, and post-process data, and how the data is presented. With highly configurable solutions, customers can get technologies to market quickly and cost-efficiently, driving revenue to enterprises faster.

With its intelligent OHW vehicle control and telematic solutions, HED addresses an unmet market need not easily replicated by competitors. With over 35 years in the industry, the company's sterling reputation drives new business opportunities for implementing its technologies. Additionally, HED showcases its solutions with trade shows, blog posts, digital content, and traditional print advertisements. Its robust solution suite drives efficiency and functionality and positions HED as a OHW vehicle control and telematics leader.

Superior Operational Efficiency in Delivering Customer Benefits

HED strives to achieve operational efficiency using an agile product development process. During the stage-gate process, the company determines the product fit and ensures it will be a solid return on investment. High touch points throughout the development process validate each aspect of the product's design. After development of new solutions, HED reviews the process to identify inefficiencies and thus improve them. The company's systematic approach benefits customers by improving efficiencies in the product development process, ensuring reliability in its services and a faster time-to-market for customers.

The company's development process is also a core aspect of the organization's culture. HED values open communication and collaboration between its hardware engineers and software, firmware, and application developers, facilitating idea sharing and empowering employees to bring to light the inefficiencies they come across. This collaborative environment ensures highly reliable and quality solutions, bringing value to its customers.

Conclusion

To be a product leader, a company needs to understand the market's needs and deliver a solid solution designed and embedded with high-quality and reliable performance. Frost & Sullivan finds that Hydro Electronic Devices, Inc. (HED) embodies this concept and exemplifies it with best practice implementation. HED offers a robust telematics portfolio with a complete suite of hardware, software, and web portal tools, giving customers total control to track, remote diagnose, perform predictive maintenance, and interact with assets in the field and remotely. With its product-led customer-focused strategy, HED consistently brings best-in-class off-highway (OHW) vehicle control and telematics solutions to the market. The company's optimized control solutions reduce the total cost of OHW vehicle ownership, improve workers' productivity, safety, and connectivity, and are simple to use with broad functionality.

With its strong overall performance, HED earns Frost & Sullivan's 2022 North American Product Leadership Award in the off-highway telematics industry.

What You Need to Know about the Product Leadership Recognition

Frost & Sullivan's Product Leadership Award recognizes the company that offers a product or solution with attributes that deliver the best quality, reliability, and performance in the industry.

Best Practices Award Analysis

For the Product Leadership Award, Frost & Sullivan analysts independently evaluated the criteria listed below.

Product Portfolio Attributes

Match to Needs: Customer needs directly influence and inspire the product portfolio's design and positioning

Reliability and Quality: Products consistently meet or exceed customer expectations for performance and length of service

Product/Service Value: Products or services offer the best value for the price compared to similar market offerings

Positioning: Products serve a unique, unmet need that competitors cannot easily replicate

Design: Products feature innovative designs, enhancing both visual appeal and ease of use

Business Impact

Financial Performance: Strong overall financial performance is achieved in terms of revenues, revenue growth, operating margin, and other key financial metrics

Customer Acquisition: Customer-facing processes support efficient and consistent new customer acquisition while enhancing customer retention

Operational Efficiency: Company staff performs assigned tasks productively, quickly, and to a high-quality standard

Growth Potential: Growth is fostered by a strong customer focus that strengthens the brand and reinforces customer loyalty

Human Capital: Commitment to quality and to customers characterize the company culture, which in turn enhances employee morale and retention

About Frost & Sullivan

Frost & Sullivan is the Growth Pipeline Company™. We power our clients to a future shaped by growth. Our Growth Pipeline as a Service™ provides the CEO and the CEO's growth team with a continuous and rigorous platform of growth opportunities, ensuring long-term success. To achieve positive outcomes, our team leverages over 60 years of experience, coaching organizations of all types and sizes across 6 continents with our proven best practices. To power your Growth Pipeline future, visit Frost & Sullivan at <http://www.frost.com>.

The Growth Pipeline Engine™

Frost & Sullivan's proprietary model to systematically create ongoing growth opportunities and strategies for our clients is fuelled by the Innovation Generator™.

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Key Impacts:

- **Growth Pipeline:** Continuous Flow of Growth Opportunities
- **Growth Strategies:** Proven Best Practices
- **Innovation Culture:** Optimized Customer Experience
- **ROI & Margin:** Implementation Excellence
- **Transformational Growth:** Industry Leadership



The Innovation Generator™

Our 6 analytical perspectives are crucial in capturing the broadest range of innovative growth opportunities, most of which occur at the points of these perspectives.

Analytical Perspectives:

- **Mega Trend (MT)**
- **Business Model (BM)**
- **Technology (TE)**
- **Industries (IN)**
- **Customer (CU)**
- **Geographies (GE)**

