



## Solutions for Forestry machinery



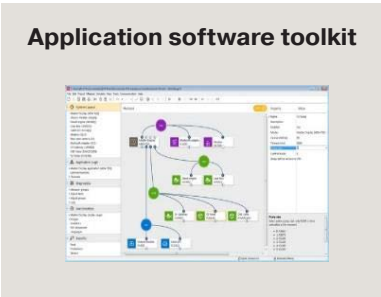
ENGINEERING YOUR SUCCESS.





# Motion & Control Devices for the next generation forestry machinery


Parker's extensive knowledge of the forestry industry help to shape integrated products and services that simplify installation and equipment service, reduce noise and drive performance. Doing so enables OEM to improve energy efficiency, commissioning costs, circuit simplification with electronics devices, life cycle cost and reduce maintenance costs through predictive maintenance.





# Dedicated solutions for both hybrid and full electric machines

Whether it is a forwarder or a skidder, a log handler or a harvester, Parker has the products for all your applications. With over 500,000 electrotechnical, hydraulic and pneumatic parts, and thanks to our worldwide distribution, we can be considered as the primary source supplier for the motion & control technology of the next generation of forestry machines.

IQAN Module	
	MC4xFS
Description	The IQAN-MC4x is a family of master controllers in the IQANdesign platform
Resolution Control	1 mA
Application memory	1 MB
CAN channels	Up to 5
Inputs	Up to 50
Output	Up to 36

## MC4xFS Functional Safety SIL2


Control systems must be designed and constructed in such a way as to prevent hazardous situations from arising. Above all, they must be designed and constructed in such a way that:


- they can withstand the intended operating stresses and external influences,
- a fault in the hardware or the software of the control system does not lead to hazardous situations,
- errors in the control system logic do not lead to hazardous situations,
- reasonably foreseeable human error during operation does not lead to hazardous situations.

## Efficient solution for hybrid and full electric machines

High power Permanent Magnet AC motors (PMAC) offer the best solution to meet the requirements of vehicle duty performance. With a ten year legacy and thousands of units sold in the GVM series, the high power density and speed capabilities of Parker GVM Power Series motors combined with a matched inverter provide the speed and torque required to achieve breakthrough performance in a variety of vehicle platforms.

Finally, the high efficiency of the GVM Permanent Magnet motors / generators results in a longer battery duration, increasing productivity.

Motor and Generator	
	GVM
Magnet materials	Rare earth magnets
Battery voltage	24 to 800 VDC
Power range	Up to 228 kW continuous 409 kW peak power
Torque range	up to 1430 Nm (peak)
Speed range	up to 9 500 rpm

Electro-Hydraulic Pump	
	EHP
Description	Electro-Hydraulic Pump designed for hybrid electric and all electric mobile applications
Electric motor	GVM synchronous motor (PMAC)
Hydraulic pump	Gear, Vane, Bent Axis, Variable Axial Piston
Input voltage	24 to 800 VDC

## Electro-Hydraulic Pump

The Electro-Hydraulic Pumps (EHP) are designed to simplify hydraulic power availability in all hybrid and electric mobile applications (e.g.: electric power steering systems and work functions).

EHP systems consist of an electric motor directly coupled to a hydraulic pump controlled by the high performance mobile GVI hardened drive.

Product benefits:

- Complete pre-engineered Electro-Hydraulic Pump solutions
- Wide range of motor/pump combinations adaptative to every battery pack providing greater flexibility
- Reduced energy consumption and emissions through flow on demand
- Instantly available hydraulic power thanks to the low inertia of components
- Reduced noise pollution


## Dedicated inverter for mobile applications

The Global Vehicle Inverter (GVI) is available in low voltage (24 V - 96 V nominal) and high voltage (650 V nominal) versions for compatibility with battery systems.

The GVI provides the highest efficiency when use in combination with the Parker GVM range of motors, while maintaining superior reliability in the most demanding applications.

Product features:

- High and Low voltage versions
- IQAN, J1939 and CAN Open
- Up to IP6K9K protection class
- Sin/Cos or resolver feedback variants
- Advanced software commissioning tools
- Motor Torque Off and HVIL (high voltage only)

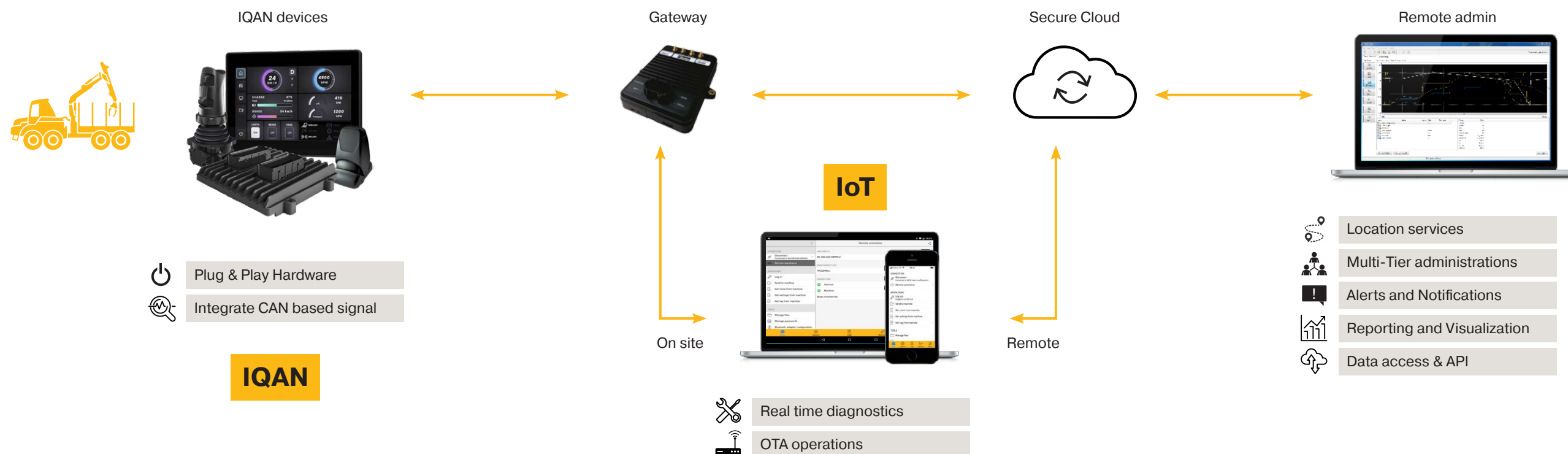
Inverter	
	GVI
Description	Mobile Inverters designed for Traction, Electro Hydraulic Pumps (EHP) and Auxiliary Systems
Battery voltage	24 to 650 VDC
Peak current	500 Arms
Peak power	300 kVA
Switching freq.	1 to 16 kHz (depending on size)
Communications	IQAN, J1939, CAN Open





# Electronic Controls for environmentally friendly productivity

Parker IoT (Internet of Things) is a digital ecosystem that enables Parker's smart hydraulic, electric and electronic products to easily connect and work together. Dedicated cloud service tools enable customers to remotely control the machine, update the software and configure alerts and alarms for an accurate preventive maintenance of the system. With Parker's IoT, the end user will be able to improve the efficiency while respecting the environment.

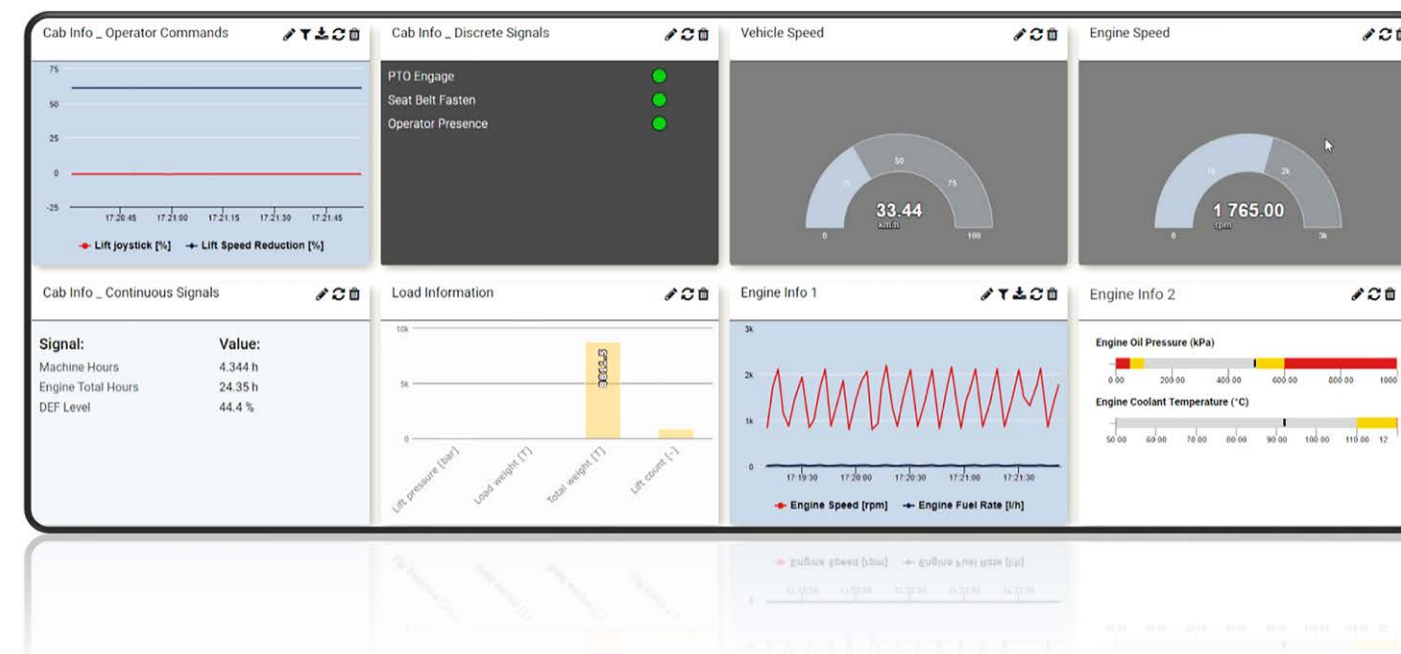


Mobile IoT is the state of the art of electro-hydraulic monitoring cloud-based solution specifically designed to provide sophisticated data, monitoring and performance control capabilities.

Mobile IoT makes it easy for forestry equipment OEMs and fleet managers to collect and analyze data to identify usage trends and field-based problems with unparalleled intellectual design and operational insight. We are taking telematics and simple location tracking to remote diagnostics and programming.

Most forestry equipment manufacturers or fleet managers have connected equipment with built-in telematics sensors, however, IoT solutions take it a step further with customized data to show recommendations to business operations on how to maximize performance and longevity.

In addition to the features of a traditional telematics solution and data insights, IoT solutions for forestry equipment offer remote diagnostics and programming, automated reports and frequency and duration use.





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