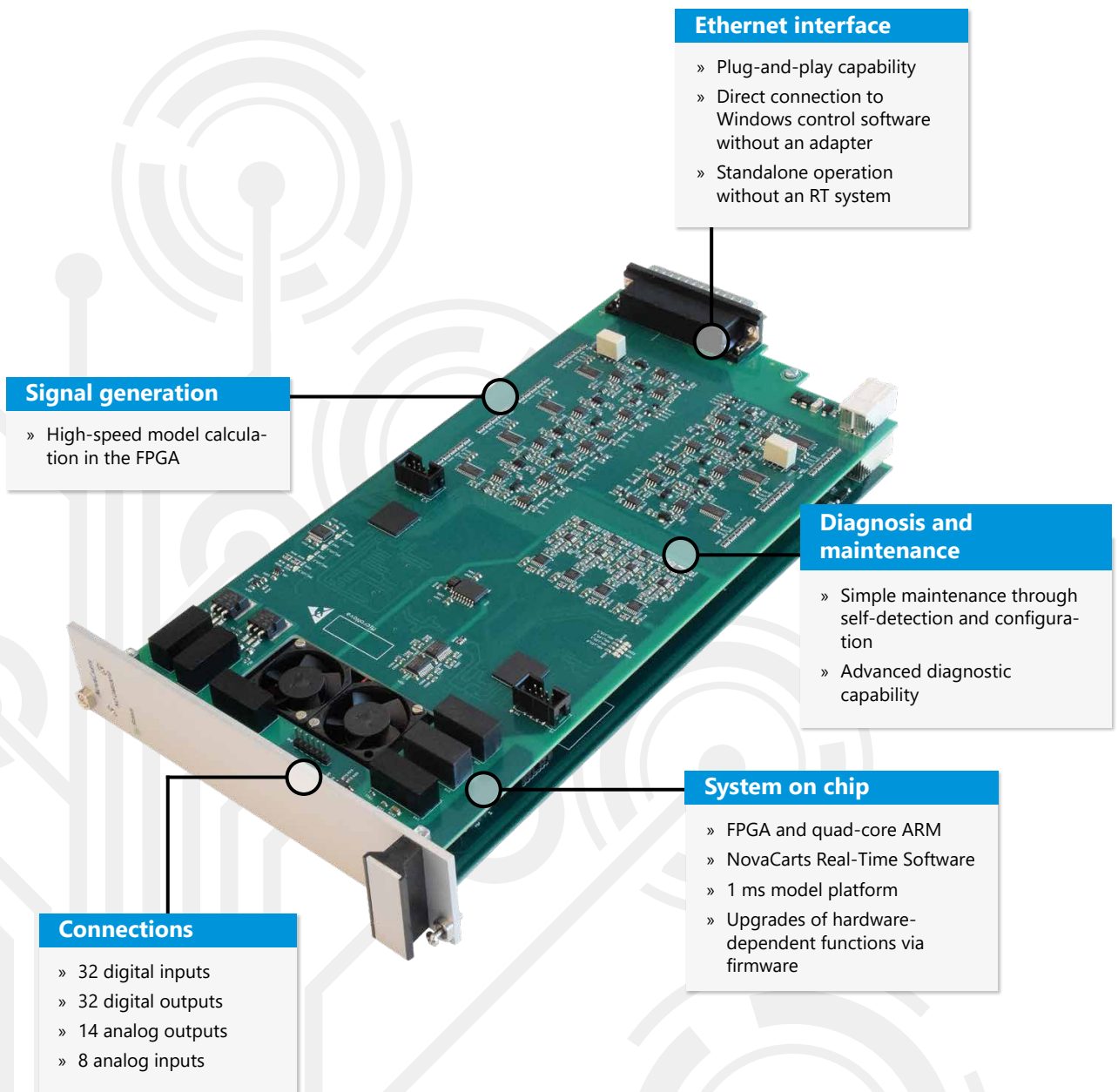


NovaCarts High Speed I/O Board

This high speed I/O board has been designed for the simulation of electrical motors. It contains a system-on-chip module (SoC), which consists of a sophisticated FPGA and a quad-core processor (Zynq UltraScale+). This allows the simulation models for electrical motors to be split into two parts: a high-speed part running on the FPGA and a low-speed part running on the processor or on a separate simulation node. It is also possible to simulate phase currents as well as signals of rotatable shafts and inverters. The board offers a high number of high-speed digital and analog signals.

The board is suitable for the simulation of DC/DC converters or electronic control units for inductive charging. The board offers eight analog inputs with a sampling frequency of 4 MHz. Additionally, the board provides 32 digital outputs and 32 digital inputs that can be operated with a frequency of up to 20 Mhz.



Ethernet interface

- » Plug-and-play capability
- » Direct connection to Windows control software without an adapter
- » Standalone operation without an RT system

Signal generation

- » High-speed model calculation in the FPGA

Diagnosis and maintenance

- » Simple maintenance through self-detection and configuration
- » Advanced diagnostic capability

System on chip

- » FPGA and quad-core ARM
- » NovaCarts Real-Time Software
- » 1 ms model platform
- » Upgrades of hardware-dependent functions via firmware

Connections

- » 32 digital inputs
- » 32 digital outputs
- » 14 analog outputs
- » 8 analog inputs

Data Sheet

Module name: **NC-GMB3010**

Data sheet version: **1V1**

Features

Analog inputs	8
Analog outputs (total)	14
Thereof: analog outputs for resolver	4
Digital inputs	32
Digital outputs	32
Operating temperature	0 to +55 °C
Storage temperature	-20 to +70 °C
Humidity	10 to 90 % (no condensation)
Dimensions	Height: 4 U, Width: 8 U
Connection to RT system	Ethernet

Specifications

Analog Outputs

Output voltage	+/- 10 V
Resolution	14 bit
Output current	20 mA

Analog Inputs

Input voltage	+/- 10 V
Resolution	14 bit

Digital Outputs

Voltage	3.3 V / 5 V
Current	5 mA

Digital Inputs

Voltage	3.3 V / 5 V
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