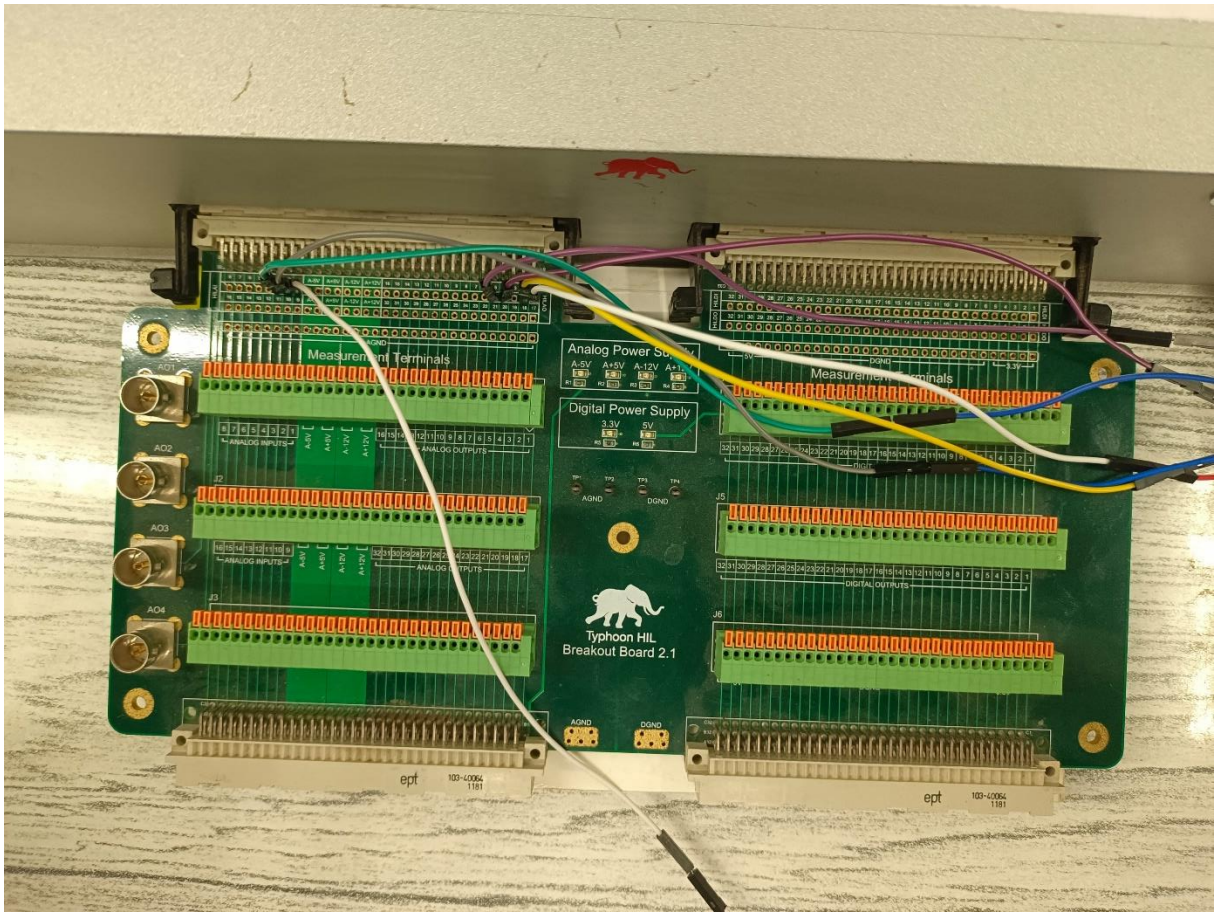
Breakout Board Typhoon 2.1

The Typhoon HIL Breakout Board 2.1 is an interface tool designed to expand the I/O capabilities of Typhoon HIL real-time simulators, such as the HIL602 and HIL404. It allows users to easily connect external devices like controllers,



sensors, and actuators to the simulator's I/O ports. The board provides access to digital and analog inputs and outputs, PWM signals, and encoder interfaces, enabling detailed hardware-in-the-loop (HIL) testing for power electronics, control systems, and motor drives. The Breakout Board 2.1 supports rapid prototyping and accurate real-time simulations in power and energy systems.

Typhoon HIL602+.

Ultimate versatility in prototyping, testing and precertification.
Upgraded and refined.

Applications

Typhoon HIL602+ is an ideal all-around tool for development, automated testing, optimization, and automated standardized pre-certification of grid connected converters, automotive converters, electric propulsion drives for terrestrial and marine vehicles, and smaller microgrids.

Why upgrade?

Although the HIL602+ looks similar to its predecessor, it boasts significant upgrades under the hood which allow even easier interfacing with controllers under test and high-fidelity real-time emulation of more complex models.

For example, the bit-depth of analog inputs has jumped from 12 to 16 bits and their voltage ranges has doubled from ± 5 V to ± 10 V. Connectivity has also been expanded with RS-232, CAN and two Ethernet connectors on the back. Combine this with a new CPU and what you get is a fast, high-fidelity, versatile HIL simulator whose capabilities fit the model-based methodology for virtually any power electronics applications, ranging from grid-tied converters to mid-sized microgrids.

Features and Benefits

- Emulate of up to 6 converters with the new 6-core processor at a timestep of 500 ns.
- Emulate your power stage with up to 2 MHz update rate
- Give your controller an ultra-high-fidelity testing with 20 ns PWM resolution.
- Parallel up to 4 HIL602+ units for testing of smaller microgrids
- Interface to any controller by means of 32 analog outputs, 16 analog inputs, 32 digital inputs, and 32 digital outputs, all featuring over-voltage and short-circuit protection.
- Build your power-stage models with a constantly expanding library of power electronics components and prepackaged examples.
- Automate testing with Typhoon HIL API and Python scripts
- Integrate HIL into your existing test scenarios with support for language agnostic RCP API based on JSON-RCP 2.0
- Let your emulation communicate with external units and systems with standardized protocols, such as IEC 61850, Modbus, DNP3 and OPC UA
- Connect to host PC via USB2.0 .