

# Power electronics

## Test bench

OP1300



"Accelerate your development by going into the lab early to challenge your control in a real world environment."

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Modular, flexible and configurable, the power electronics test bench combines a state-of-the-art Hardware-in-the-Loop (HIL) simulator from OPAL-RT with Imperix's Rapid Control Prototyping (RCP) system and real power hardware. It enables rapid development of power electronics, drives and smart grid applications across industry and academia.

### PLATFORM OFFER FOR POWER ELECTRONICS TEST BENCH

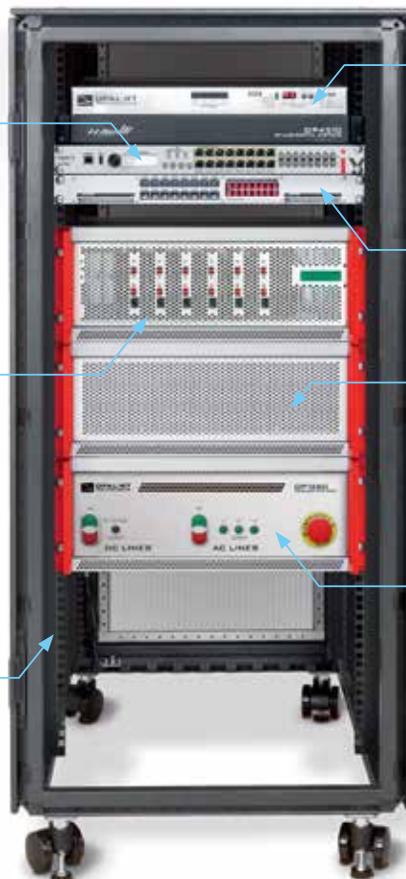
#### BOOMBOX RCP

- 16 analog inputs, 16 fiber optic outputs, 8+8 digital I/O, CAN
- Hardware protections
- 300 MHz TI DSP
- Up to 200 kHz sampling

#### POWER CONVERTER(S)

- Reconfigurable topology
- 6x PEB power modules max 800V / 32A or 400V / 46A
- Variable-speed cooling
- Up to 50 kHz switching

#### 19" CABINET



#### OPAL-RT OP4510

- 4-core CPU, Xeon E3 3.5 GHz
- Kintex-7 XILINX FPGA, 325T
- 32/32 digital, 16/16 analog I/O
- Interface for BoomBox RCP

#### HIL INTERFACE

#### PASSIVE ELEMENTS

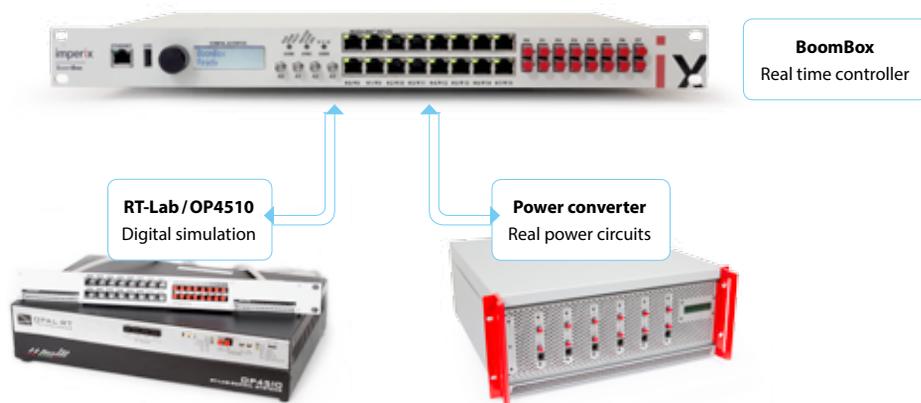
- 6x inductors (2.5mH, 20A)
- 2x LC-type common-mode EMC filters (3-phase)
- External voltage sensors
- External relays and breakers

#### AC / DC BREAKERS

- Circuit disconnectors
- AC / DC breakers
- Controllable relays
- DC voltage sensor
- 3x AC voltage sensors

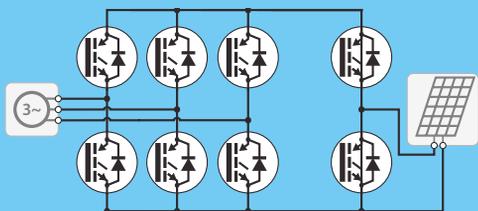


# OUR MULTI-PURPOSE TEST BENCH SUPPORTS BOTH HIL SIMULATION AND LOW-VOLTAGE EXPERIMENTATION WITH EASY-TO-USE RECONFIGURABLE HARDWARE



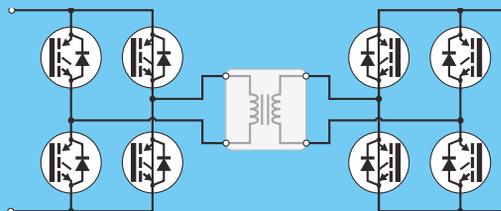
Users can use all six half-bridges to implement back-to-back converters, such as grid-tied var-speed drives, HVDC systems, etc. Alternately, fewer modules may be sufficient for applications such as PV inverters, battery chargers, etc.

Thanks to the complete flexibility in the connections of the modules, isolated DC/DC systems are also supported, such as DAB, resonant converters or similar topologies. Interleaved DC/DC systems are of course within reach as well.



## PV INVERTER

Grid-tied central inverter for photovoltaic application



## BATTERY CHARGER

Single-phase inverter with isolated DC/DC converter