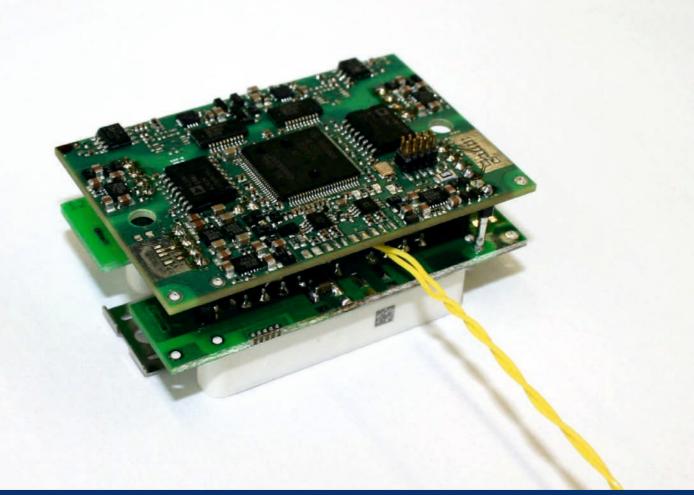


FRAUNHOFER INSTITUTE FOR INTEGRATED SYSTEMS AND DEVICE TECHNOLOGY IISB

Power Control via Novel 2-wire Interface for future Industry 4.0 Applications





Example:

full bridge 650V IGBT power module safe insulated controlled **and** auxiliary supplied **and** programmed via novel 2-wire control technique

Realized Applications

Technical Data

- Only 2 wires to control, supply and program intelligent power modules
- Safe galvanic isolation
- 8 Channels (easy control of 32 power switches)
- Easy to extend
- 500 kbit per channel
- ca. 5W per channel auxiliary power supply for gate drive, measurements, microcontroller
- 16.7 kHz refresh rate
- Noise immunity > 100 kV/us
- Lowest possible parasitic capacitive coupling by using only 2-wires
- Full duplex (integrated feedback channel)
- Graphical user Interface (for converter type and basic settings)

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• Intelligent Power Unit (IPU) for variable use in power converters (AC/DC, DC/DC, buck, boost, resonant ...)

• DC Micro Grid Control System for optimized usage of renewable energy in buildings

1x 3.7 kW bidirectional AC/DC 2x 3.7 kW MPPT DC/DC 1x 7.4 kW bidirectional DC/DC

 Multiport DC/DC Converter for complex energy distribution

6x independent buck/boost DC/DC



HV DC