

PV monitoring solutions

μMPP trackers for laboratory solar cell testing

Valuable

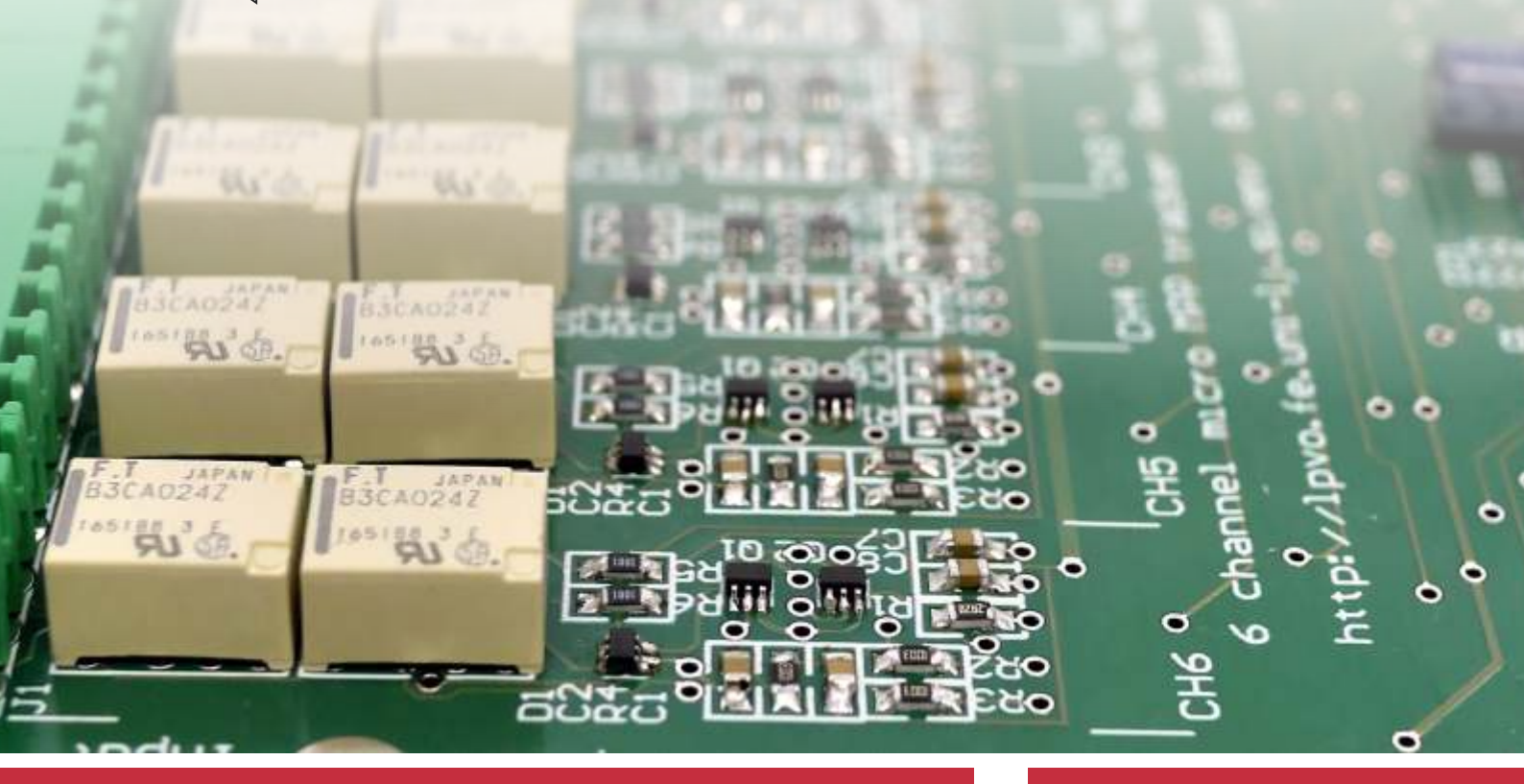
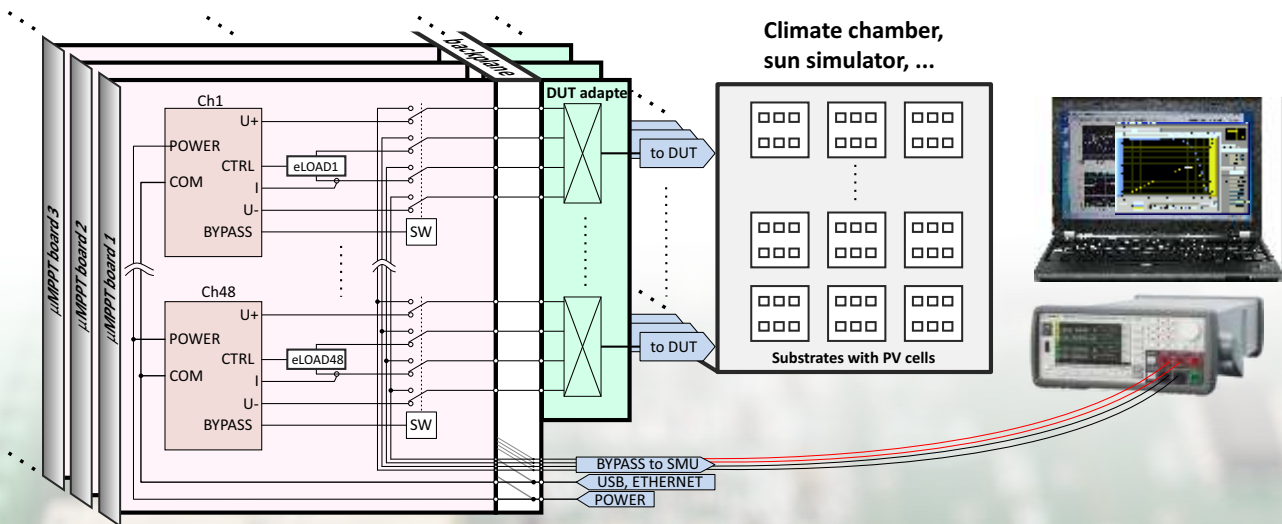
- Full 4-wire connection to each solar cell
- Automatic solar cell polarity detection
- Sequential 4-wire bypass switching to SMU
- SCPI compliant commands via USB, RS-485 or ethernet interface

Unlimited

- Large scale lab size PV cell monitoring
- Standard 19" 6U rack system
48 channels per μMPPT board
12 μMPPT boards per crate
- Crate interconnection capabilities for upscaling

Customizable

- Customizable channel input ratings
- Backplane adapters for easy DUT connection
- Modes of operation
Open and short circuit
Constant voltage
Maximum power point tracking

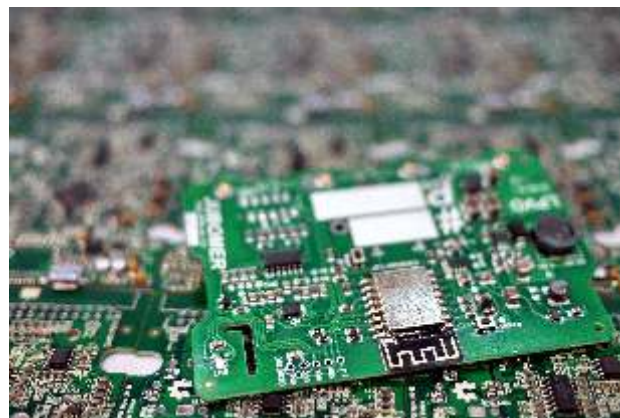
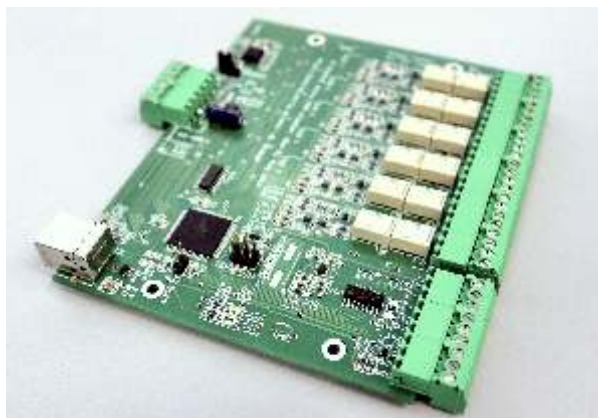


μMPPT RACK SYSTEM CHARACTERISTICS

- A large scale lab size solar cell monitoring system with maximum power point tracking system.
- Full 4-wire connection cell with automatic polarity detection.
- Sequential 4-wire bypass switching to SMU for IV scanning.
- Control and data logging via RS-485 or Ethernet.
- Standard 19" 6U rack system containing 12 boards with 48 channels per board.
- Backplane adapters with easy DUT connection.
- Crate interconnection capabilities for system upscaling.
- Adjustable MPPT algorithms to meet the DUT specifics (e. g. perovskites).

μMPPT EVALUATION KIT

CUSTOM DESIGNED SYSTEMS UPON REQUEST



μMPPT EVALUATION KIT ELECTRICAL PROPERTIES

Parameter	Value	
Power input	Voltage	±2 V
	Current	200 mA
	Power	300 mW
	Input resistance in short circuit	4.5 Ω typically for positive inputs 3.5 Ω typically for negative inputs
	Connection	Full 4-wire connection for MPPT and bypass
Bypass output	Voltage	48 V
	Maximum Current	1 A
Measurement	Input differential voltage	±2.047 V, resolution < 1 mV
	Input common mode voltage	GND – 0.1 V ... Vcc + 0.1 V Accuracy outside these limits is not guaranteed
	Input current range	± 58 mA, resolution 2 μA
	MPPT tracking interval	100 ms
	Modes of operation	Open circuit, short circuit, constant voltage, maximum power point
Communication	RS-485	Multi-drop device 125 kb/s
	USB	USB Communication Device Class
Power supply	Voltage range	24 V (for power of provided relays) 4.4 V – 24 V (when relays are not used)
	Current consumption	Typically 30 mA +10 mA for each relay activated
Dimension	Footprint	101 x 131 mm ² without connectors
	Height	Approximately 16 mm
	Mounting holes	four M3 holes spaced at 119.4 x 50.8 mm ²

REFERENCE

