

Otii Arc Pro

Product Specification



Qoitech's developer tool combines a power analyzer, power supply, and UART debug log sync, catering to developers dedicated to creating energy-efficient products. Otii Arc Pro is the ultimate tool for energy optimization of battery-driven devices. Made for hardware, firmware and software developers.

Otii Arc Pro

Otii Arc Pro is a multi-tool, power analyzer, power supply and log sync, all in one device. It is designed for everyday use on any developer's desktop. Otii Arc Pro is compact, portable and quiet yet comprehensive in the technical features needed for energy optimization of battery-driven devices.

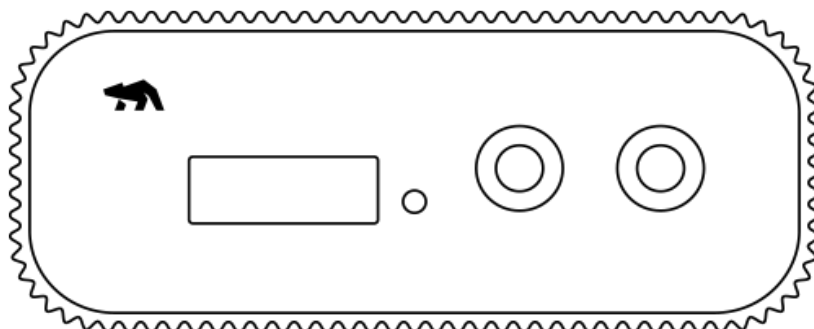
Otii Arc Pro can be upgraded with Otii Toolboxes, software licenses that elevate the instrument into specialized tools such as battery profiler and simulator, or automation tools. It can be used in product development, test and verification, quality assurance and maintenance (for example as part of continuous integration set-up), and in technical sales.

Otii Arc Pro measures 10.9 cm x 14.4 cm x 4.4 cm (W x L x H) and weighs 450 grams. It is designed for the office, lab, usage at home, and field measurements. The innovative mechanical design allows for efficient heat dissipation, so no fan is needed resulting in low noise. Made in Sweden.

A USB-A to μ B cable is included in the package.

Otii Software

Otii Arc Pro comes with Otii Software, a powerful and easy-to-use desktop application for Windows, Ubuntu and macOS.



Hardware spec in short

Current and voltage measurement

- $\pm(0,1\% + 50\text{nA})$ accuracy below 19mA and $\pm(0.1\%+150\text{uA})$ above 19mA
- 5nA current measurement resolution
- 24bit ADC with automatic switching between ranges
- Voltage measurement accuracy $\pm(0.1\% + 1.5 \text{ mV})$

Sample rate

- Up to 4ksps for main current channel
- 1ksps for all other channels (main voltage, adc current, adc voltage, sense+, sense-, UART RX, GPI1, GPI2)

Power supply

- 0.5-5.0V
- USB only (0.5-3.75V in auto range mode, 0.5-4.2V in high range mode)
- DC plug supply (0.5-4.55V in auto range mode, 0.5-5.0V in high range mode)
- 0-5A (depends on available current from USB or DC plug)
- Active voltage regulation, no burden voltage

Digital interface

- Digital IO voltage 1.2-5.0V

Software features in short

- Current, voltage and power measurements
- Unlimited recordings
- Sync and compare multiple recordings
- Add new recordings in existing projects
- Record UART output
- Sync data with UART output
- Run long measurements
- Run multiple Otii hardware in one Otii project
- Battery life calculator
- Support for 4-wire measurements
- Offline license mode
- GPI measurements
- ADC (sub-system) measurements
- Customize statistics
- Check statistics of the accumulated energy consumption while recording
- Select a part of recording for analysis, while recording continues in the background
- Name recordings
- Export data to CSV
- Save/load projects
- Offset calibration
- Downsampling
- Configurable UI
- Scale, hide and customize measurements
- Crop
- Unlimited do/redo functionality
- In-app help

and more!

Hardware specifications

	Min	Typical	Max
Operating environment			
Operating environment temperature	15 °C / 60 °F		30 °C / 86 °F
Humidity	30%		60%

USB Power Supply⁽¹⁾			
Output voltage (auto range)	0.5 V		3.75 V
Output voltage (locked to high current range)	0.5 V		4.2 V
Output voltage setting resolution		1 mV	
Output current	250mA	up to 1A ⁽¹⁾	

External 7.5 – 9 V Power Supply⁽²⁾			
Output voltage (auto range)	0.5 V		4.55 V
Output voltage (locked to high current range)	0.5 V		5.0 V
Output voltage setting resolution		1 mV	
Output current, max continuous ⁽³⁾		2.5 A	
Output current, max peak ⁽³⁾		5 A	

Programmable Current Sink (requires an Otii Battery Toolbox license)			
Sink current	0 A		2.5 A
Sink current, resolution		39 μ A	
Sink voltage, USB power supply	0.85 V ⁽⁴⁾		4.2 V
Sink voltage, external power supply	0.85 V ⁽⁴⁾		5.0 V

Current measurement			
Accuracy		$\pm(0.1\% + 50 \text{ nA})^{(5)}$	
Sample Rate in $\pm 19 \text{ mA}$ range		4 ksps	
Sample Rate in $\pm 2.7 \text{ A}$ range		1 ksps	
Sample Rate in $\pm 5.0 \text{ A}$ range		1 ksps	
Analog bandwidth (3 dB)		400 Hz	

Voltage measurement			
Total accuracy		$\pm(0.1\% + 1.5 \text{ mV})$	
Sample Rate		1 ksps	

UART			
Bitrate	110 bps		5.25 Mbps

Digital I/O; GPO1, GPO2, TX⁽⁶⁾

V_{IO} Expansion port operating voltage	1.2 V	$V_{IO}^{(7)}$	5.0 V ⁽⁸⁾
V_{IL} Low-level input voltage			$V_{IO} * 0.2$ V
V_{IH} High-level input voltage	$V_{IO} * 0.8$ V		
I_{max} Maximum sink/source current			10 mA

ADC, Differential Analog/Digital Conversion pins ADC-, ADC+ ⁽⁹⁾

Voltage input	0 V		5 V
Shunt voltage range	-81.9175 mV		81.2 mV
Resolution		2.5 μ V	
Accuracy		$\pm(0.1\% + 10 \mu\text{V})$	
Input impedance		220 k Ω	

ADC, Single Ended Analog/Digital Conversion pin ADC+

Voltage input	0 V		5 V
Resolution		1.25 mV	
Accuracy		$\pm(0.1\% + 7.5 \text{ mV})$	
Input impedance		830 k Ω	

SENSE, pins SENSE- and SENSE+

Voltage input	0 V		5 V
Resolution		1.5 mV	
Accuracy		1%	
Input impedance		1 M Ω	

⁽¹⁾ USB power capacity and reliability in laptops and desktops greatly depend on host USB port/cable design.

⁽²⁾ See list of recommended external power supplies and powered USB hubs at our FAQ

⁽³⁾ Depends on chosen power supply. Otii Arc Pro will monitor internal temperature and cut off if temperature limit is reached.

⁽⁴⁾ Sink voltage can go below this specification if locked to high range. It is possible to go down to 0.5 V if the sink current is below 1.9 A. For currents below 19 mA, the measurement will have a lot more noise when locked to high range than in auto range.

⁽⁵⁾ Up to 19 mA current in auto range, for higher currents, the accuracy is $\pm(0.1\% + 150 \mu\text{A})$. Average > 1 s.

⁽⁶⁾ See Nexperia SN74LVC8T245 for details.

⁽⁷⁾ Expansion Port Digital voltage level is set by user in Otii SW.

⁽⁸⁾ Maximum voltage will depend on your USB power supply and USB cable.

⁽⁹⁾ See TI INA226 for details.

Qoitech is a Swedish company bringing to market the most effective developer tools for visualisation, measurement and analysis of energy consumption of battery driven products. By enabling ease of use, our toolboxes help developers, throughout the stack, to develop for longer battery life, shorter development time and increased product quality.

Learn more at www.qoitech.com.