Otii Standard
PRODUCT SPECIFICATION

Otii Standard comprises Otii Arc (the hardware) and Otii desktop application (standard version).

Otii Arc

Otii Arc is a small, portable power supply, a current and voltage measurement unit and a data-acquisition module. It can be powered by USB or by using an external DC-adapter. See technical specification below.
Otii is shipped with a USB A cable.

Otii desktop application (standard version)

Otii Standard comes with a powerful and easy-to-use desktop application for Windows, Ubuntu & macOS. Use it to collect and analyze data from Otii Arc. It also exports the data to popular formats.

Download Otii at https://www.qoitech.com/download

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TECHNICAL SPECIFICATION Otii Arc

OPERATING ENVIRONMENT	Min	Typ	Max
Operating environment	15 °C / 60 °F		25 °C / 77 °F

USB POWER SUPPLY [1]	Min	Typ	Max
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 voltage accuracy		±1 %	
Output current		250 mA	

EXTERNAL 7.5 – 9 V POWER SUPPLY [2]	Min	Typ	Max
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 voltage accuracy		±1 %	
Output current, max continuous [3]		2.5 A	
Output current, max peak [3]		5.0 A	

PROGRAMMABLE CURRENT SINK	Min	Typ	Max
Sink current	0 A		2.5 A
Sink current, resolution		39 µA	
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	Min	Typ	Max
Accuracy		±(1 % + 0.5 µA)	
Sample rate in ±19 mA range		4 ksps	
Sample rate in ±2.7 A range		1 ksps	
Sample rate in 0 – 5 A range		1 ksps	
Analog bandwidth (3 dB)		400 Hz	

VOLTAGE MEASUREMENT	Min	Typ	Max
Total accuracy		±(1 % + 10 mV)	
Sample rate		1 ksps	

[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 www.otii.com/FAQ.
[3] Depends on chosen power supply. Otii Arc 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 0.5V if the sink current is below 1.9A. For currents below 19mA, the measurement will have a lot more noise when locked to high range than in auto range.

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UART	Min	Typ	Max
Bitrate	110 bps		5.25 Mbps

DIGITAL I/O; GPO1, GPO2, TX [5]	Min	Typ	Max
V_{IO} Expansion port operating voltage	1.2 V	V_{IO} [6]	5 V [7]
V_{IL} Low-level input voltage			$V_{IO} \times 0.2$ V
V_{IH} High-level input voltage	$V_{IO} \times 0.8$ V		
I_{max} Maximum sink/source current			10 mA

ADC, DIFFERENTIAL ANALOG DIGITAL CONVERSION PINS ADC-, ADC+ [8]	Min	Typ	Max
Voltage input	0 V		5 V
Shunt voltage range	-81.9175 mV		81.2 mV
Resolution		2.5 μV	
Accuracy		±(0.1 % + 10 μV)	
Input impedance		220 kΩ	

ADC, SINGLE ENDED ANALOG DIGITAL CONVERSION PIN ADC+	Min	Typ	Max
Voltage input	0 V		5 V
Resolution		1.25 mV	
Accuracy		±(0.1 % + 7.5 mV)	
Input impedance		830 kΩ	

SENSE, PINS SENSE-, SENSE+	Min	Typ	Max
Voltage input	0 V		5 V
Resolution		1.5 mV	
Accuracy		1 %	
Input impedance		1 MΩ	

[5] See Nexperia SN74LVC8T245 for details.
[6] Expansion Port Digital voltage level is set by user in Otii Software.
[7] Maximum voltage will depend on your USB power supply and USB cable.
[8] See TI INA226 for details.

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Qoitech AB 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.

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