



# $\mu$ Art USB to UART Adapter Datasheet

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## Product Overview

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### KEY FEATURES

- Wide voltage range
- Handshaking pins
- Custom baudrates
- Protected interfaces
- Galvanic isolation
- Integrated pull-ups
- High-speed UART
- USB GPIO
- LED comm. and GPIO feedback

### KEY BENEFITS

- For all electronics 1.8 – 5.4 V
- Fast comm. speeds
- Allows fully automatic FW flashing
- Low-noise
- Isolates and protects connected equipment

### CERTIFICATIONS



Test reports available on product website.

*The  $\mu$ Art is a USB to UART adapter for all electronics operating at 1.8 – 5.4 volts. UART pins RTS, CTS, DTR enable reliable high-speed data exchange up to 3Mbaud and allow fully automatic firmware flashing of connected electronics. Galvanic isolation not only efficiently prevents faults from propagating between devices, but coupled with the included power and signal filters, allows low-noise operation for use with sensitive applications. Built-in ESD, overcurrent and reverse-polarity protections extend device lifetime and avoid damage to self or other equipment in case of common user errors. Integrated pull-ups help prevent floating signals.*

*The  $\mu$ Art also incorporates two GPIO pins – 1 input and 1 output – that are not part of the UART interface and can be read/written by the USB host as desired in parallel to the UART communication. The input pin's state is visible via an on-board LED even without host support.*

*Driver support is provided for Windows, Linux, and MacOS.*

## UART Features

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- RXD, TXD, CTS, RTS and DTR pins
- Baudrate range: 183 – 3M baud
- Support for standard and non-standard baudrates
- Handshake support: None, hardware, Xon/Xoff
- 7 and 8 data bits support
- Support for 1 and 2 stop bits
- Parity support: odd, even, mark, space, no parity
- Transmit/receive buffers: 512 bytes
- Virtual COM port drivers provided

## Technical Specifications

### ADDITIONAL INFORMATION

More information, drivers, and resources can be found at: [uart-adapter.com](http://uart-adapter.com)

### IO HEADER PINOUT

1. GND	2. VIN	Power
3. TXD	4. RXD	Data
5. DTR	6. NC	DTR
7. RTS	8. CTS	Handshake
9. GPO	10. GPI	GPIO

Outputs
Inputs

### LED INFORMATION

**PWR** On if USB, VIN and GND are connected

**RX** Blinks during UART data receival

**TX** Blinks during UART data transmission

**GPI** On if GPI is low

### HOW TO ORDER

Visit [uart-adapter.com](http://uart-adapter.com) for up to date information.

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### Mechanical specifications

	Remarks	Value
Dimensions	± 0.1mm	58 x 33 x 14 mm
Mass	± 1 g	15 g

### Environmental specifications

	Min	Max
Operating temperature	-20°C	80°C
Storage temperature	-30°C	85°C

### ESD protection

	Conditions	Value
Electrostatic Discharge Immunity	IEC 61000-4-2	± 8 kV air ± 4 kV contact

### Electrical specifications

	Conditions	Min	Max
V <sub>IN</sub> Working voltage		1.8 V	5.4 V
V <sub>IO</sub> IO voltage	RXD, TXD, CTS, RTS, DTR	0 V	V <sub>IN</sub>
I <sub>VIN</sub> Current consumption	V <sub>IN</sub> = 5 V	12 mA (typ.)	
I <sub>VBUS</sub> Current consumption	TX @ 115200 baud GPI = high	19 mA (typ.)	
	TX @ 3 Mbaud GPI = low	29 mA (typ.)	
V <sub>OH</sub> Output high voltage	I <sub>IO</sub> = 300 µA	V <sub>IN</sub> -0.5V	
V <sub>OL</sub> Output low voltage	I <sub>IO</sub> = 300 µA		0.3 V
V <sub>IH</sub> Input high voltage		0.7x V <sub>IN</sub>	
V <sub>IL</sub> Input low voltage	1.80 V ≤ V <sub>IN</sub> ≤ 1.89 V		0.6 V
	2.25 V ≤ V <sub>IN</sub> ≤ 5.40 V		0.8 V
V <sub>HYS</sub> Input hysteresis		410 mV (typ.)	
I <sub>L</sub> Input leakage current			1.2 µA
R <sub>PU</sub> Pull-up resistance	RXD, CTS, GPI	9.5 kΩ	10.5 kΩ
I <sub>IO LIM</sub> IO current limiting	V <sub>IN</sub> = 5.0 V		16.2 mA
	V <sub>IN</sub> = 3.3 V		11.7 mA
	V <sub>IN</sub> = 1.8 V		5.8 mA
V <sub>ISO</sub> Isolation voltage per IEC 60950-1	pollution degree 2	t = ∞	443 Vrms
		t = 60 s	2750 Vrms
		t = 1 s	3252 Vrms

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