µArt USB to UART Adapter Datasheet

Issue date 2022.09.29.

Product Overview

The µArt 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 µArt 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.

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

COMPLIANCE

DoC and test report available on product website.

UART Features

- *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*

ADDITIONAL INFORMATION

More information, drivers, and resources can be found at: 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	Intputs	

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 for up to date information.

Technical Specifications

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