



USB-UART Isolator product photography

Feature summary

- Isolation Rating up to 3.75 kV
- Varies baud rate from 50 bps to 2 Mbps
- LED status indicators for easy power and data transmission monitoring
- Compact and portable design
- USB Type-C

Product description

The **USB to UART Isolator** is designed to protect your data transmission with up to 3.75 kV isolation.

With variable baud rates ranging from 50 bps to 2 Mbps, it flexibly adapts to your needs. LED indicators signify data transmission, while ESD-protected inputs and outputs ensure safety.

Its compact design, featuring a USB Type-C input and JST-PHP 4P output, allows for universal application.

With a 5 V input voltage and an operating range from -20 °C to 70 °C, it is suitable for any environment.

Specification overview

Description	Value
Input	
Input Voltage	5 V
Protection	
ESD Protection	yes
Digital Isolation	yes
Connector	
Input	USB Type-C
Output	JST-PH 4P
Mechanical	
Dimensions (mm)	32.5x18x8
Weight (gram)	3

Applications

- Serial communication for power supply units
- Suitable for projects with Arduino, Raspberry pi, ESP32 and many more
- Supports Windows, Linux and Mac





1 Functional description

1.1 Overview (Reproduced)

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1.2 Isolation

The USB to UART Isolator utilizes the CA-IS3722 digital isolator to ensure secure and reliable data transmission.

This isolation technology allows for the transmission of signals between the USB and UART ports while providing digital isolation of up to 3.75 kV.

This prevents potential electrical disturbances and damage between devices, ensuring the safety and integrity of your data transmission.

1.3 Interface

Utilizing the USB to serial UART interface CH340N, our device ensures secure data transmission.

With the widely-used CH340N chip integrated, it easily connects to PCs, offering broad compatibility with various operating systems and applications.

This combination of the CH340N chip and isolation provides a reliable solution for communication between PCs, embedded systems and other devices.

1.4 Ports

Enabling seamless integration across various devices and applications, this setup facilitates connection between a USB Type-C input and a JST-PH output.

The USB Type-C input offers a modern and universal interface, while the JST-PH output provides a compact and reliable connection tailored to specific needs.



2 Pinout

The pinout of the USB-UART Isolator is depicted in Figure 1.

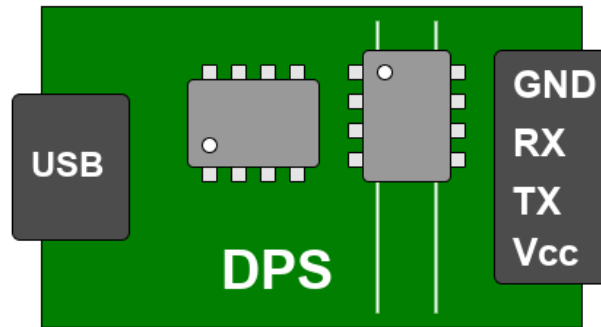


Figure 1: USB-UART Isolator Connection Diagram

Pin	Functional description
Input	
Connector	USB Type-C female
Output	
GND	Ground reference
RX	Receive Data
TX	Transmit Data
Vcc	Power





USB-UART Isolator

Digital isolation between a USB port and a UART

3 Specification

The specification is shown in the following table. If not otherwise specified the following parameters have been used: $T_{amb}=25^{\circ}\text{C}$.

	Min	Typ	Max	Unit
Eingang Input (USB)				
Eingangsspannung Input Voltage	4	5	5.3	V _{dc}
Eingangsstrombereich Input Current Range	8		24	mA
Ausgang Output (JST-PH)				
Spannung Voltage	2.375	3.3	6	V _{dc}
Isolierung Isolation				
Isolation Bewertungs Isolation Rating		3.75		kV
Sicherheitsfeatures Protection Features				
Elektrostatische Entladung Electro-Static-Discharge		available		
Digitale Isolierung Digital isolation		available		
Technische Merkmale Technical Characteristics				
Temperaturbereich Temperature Range	-20		70	°C
Steckverbinder Connectors				
USB-Typ-C USB Type-C		USB Type-C Female		
JST-PH JST-PH		4 poles, pitch 2mm		



4 Dimensions

The USB-UART Isolator Dimensions drawing is shown in Figure 2.

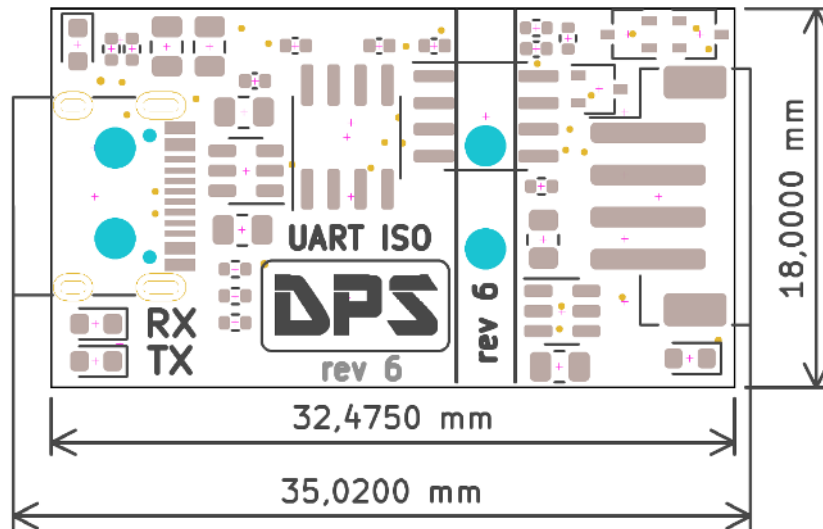


Figure 2: USB-UART Isolator Product Dimensions.

5 Product label

The Label for the USB-UART Isolator is depicted in the following Figure 3.

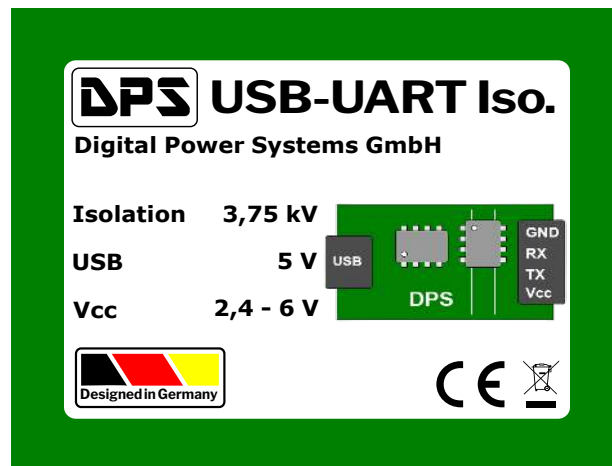


Figure 3: The product label of the USB-UART Isolator.





6 Document

6.1 Datasheet Quality

Digital Power Systems aims for the highest datasheet quality. We value your feedback to improve this document.

Please email: datasheet@digitalpowersystems.eu

6.2 Revision History

The revision history is depicted in the following table.

Date	Changes in Revision
07.04.2024	Initial release

6.3 Contact Information

This is a product of the Digital Power Systems GmbH (DPS).

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