



1.5kV ISO UART

DATASHEET

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Description

1.5kV ISO UART device is perfect solution for embedded engineers or operators who need safe, stable, and reliable connection to UART console and platform.

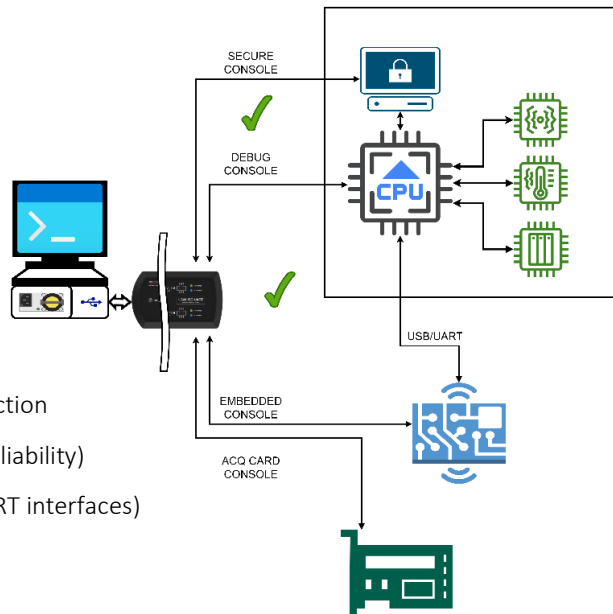
Key Features

- 4 isolated UART ports
- Up to 12Mbaud UART transfer data rate
- 1.5kV / 3kV isolation (60s / 1s test)
- USB-Type C host connection
- 1.8V/3.3V and ADJ version available
- 2 isolated domains (A & B)
- -40°C to +55°C operational temperature



Benefits

- Breaks GND loop in Host-Device connection
- Breaks AC mains loop in Multi-Host connection
- Improves electro-magnetic immunity
- Removes coupling between EM field and cabling
- Removes return current from Host-Device connection
- Ensures 1.5kV/3kV isolation barrier (safety and reliability)
- Improve cabling (one device supports up to 4 UART interfaces)



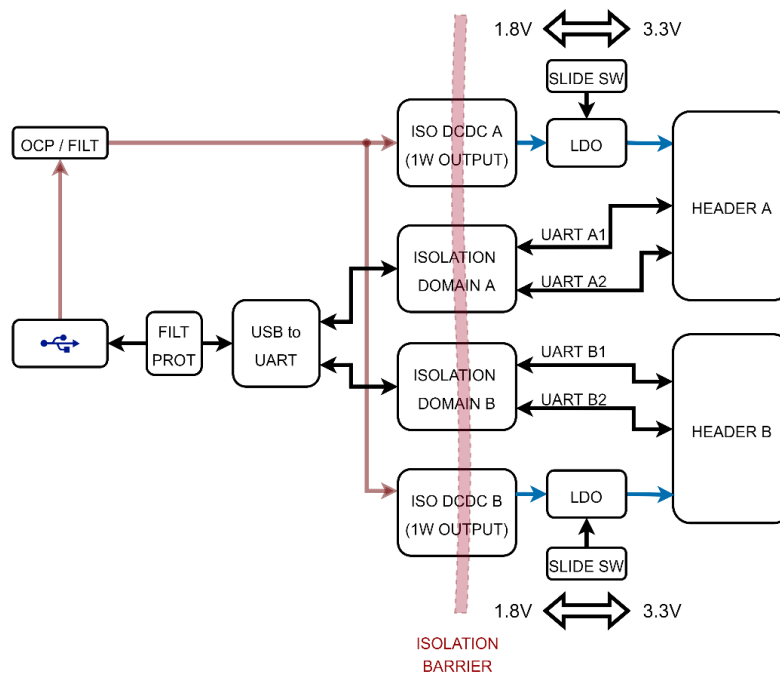
Applications

- IoT Embedded Systems
- SoC / CPU / FPGA Platforms
- Medical and Data Acquisition
- EMC & Immunity Testing

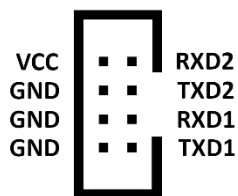
Ordering Information

Part Number	Description
EPED001A-10-STD	Standard ISO UART Device with selectable 1.8V/3.3V UART Voltage
EPED001A-10-180	ISO UART Device with fixed 1.8V UART Voltage
EPED001A-10-250	ISO UART Device with fixed 2.5V UART Voltage
EPED001A-10-330	ISO UART Device with fixed 3.3V UART Voltage
EPED001A-10-ADJ	ISO UART Device with UART interface voltage set by target board
EPED001A-10-CUS-X	Customized version of ISO UART device on special request

Functional Block Diagram



UART Header Pinout



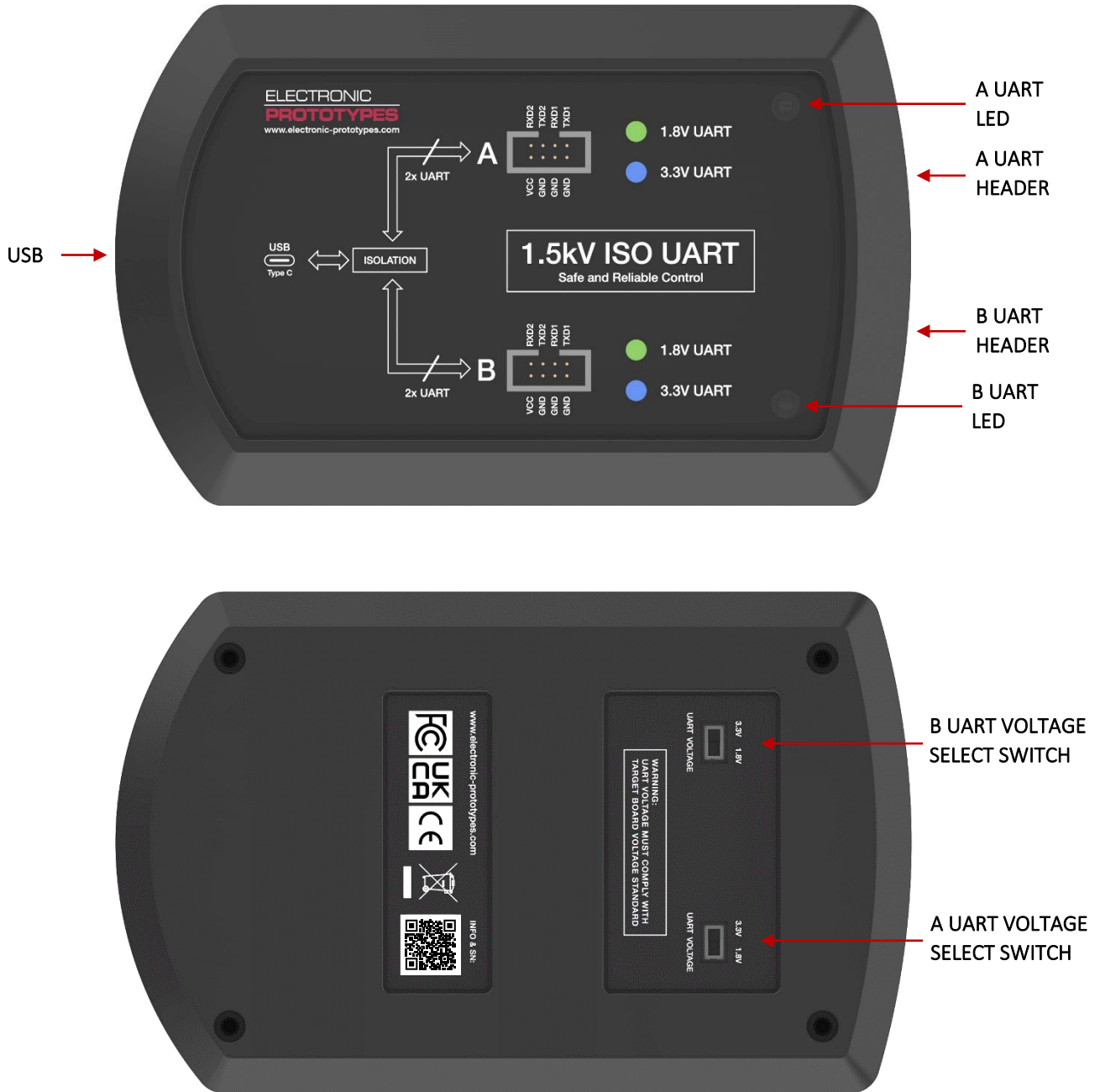
Name	Type	Cable Color	Description
VCC	PWR	Red	Voltage Input ¹ /Output ² (limited to 50mA)
GND	GND	Black	Ground, connect to device GND
RXD2	Input	Blue	Connect to device2 TX
TXD2	Output	Green	Connect to device2 RX
RXD1	Input	Yellow	Connect to device1 TX
TXD1	Output	Orange	Connect to device1 RX

1) Input in ADJ version

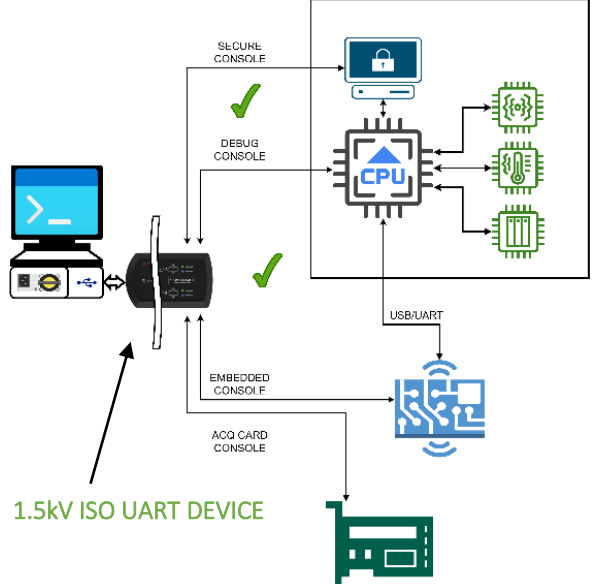
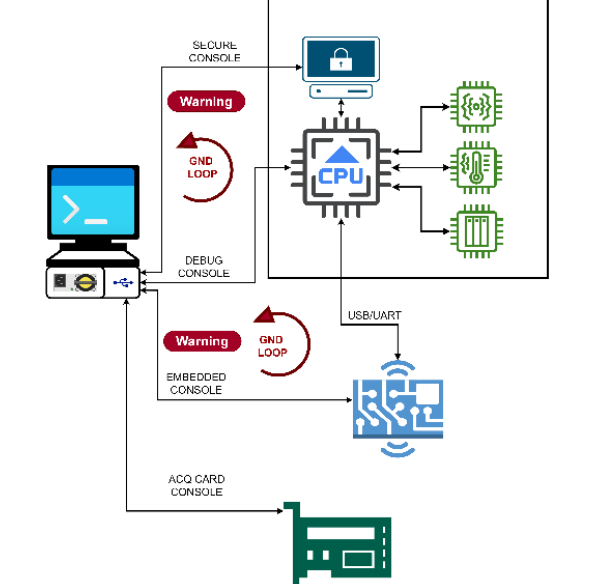
2) Voltage value depends on exact device configuration and ordered part number

Overview

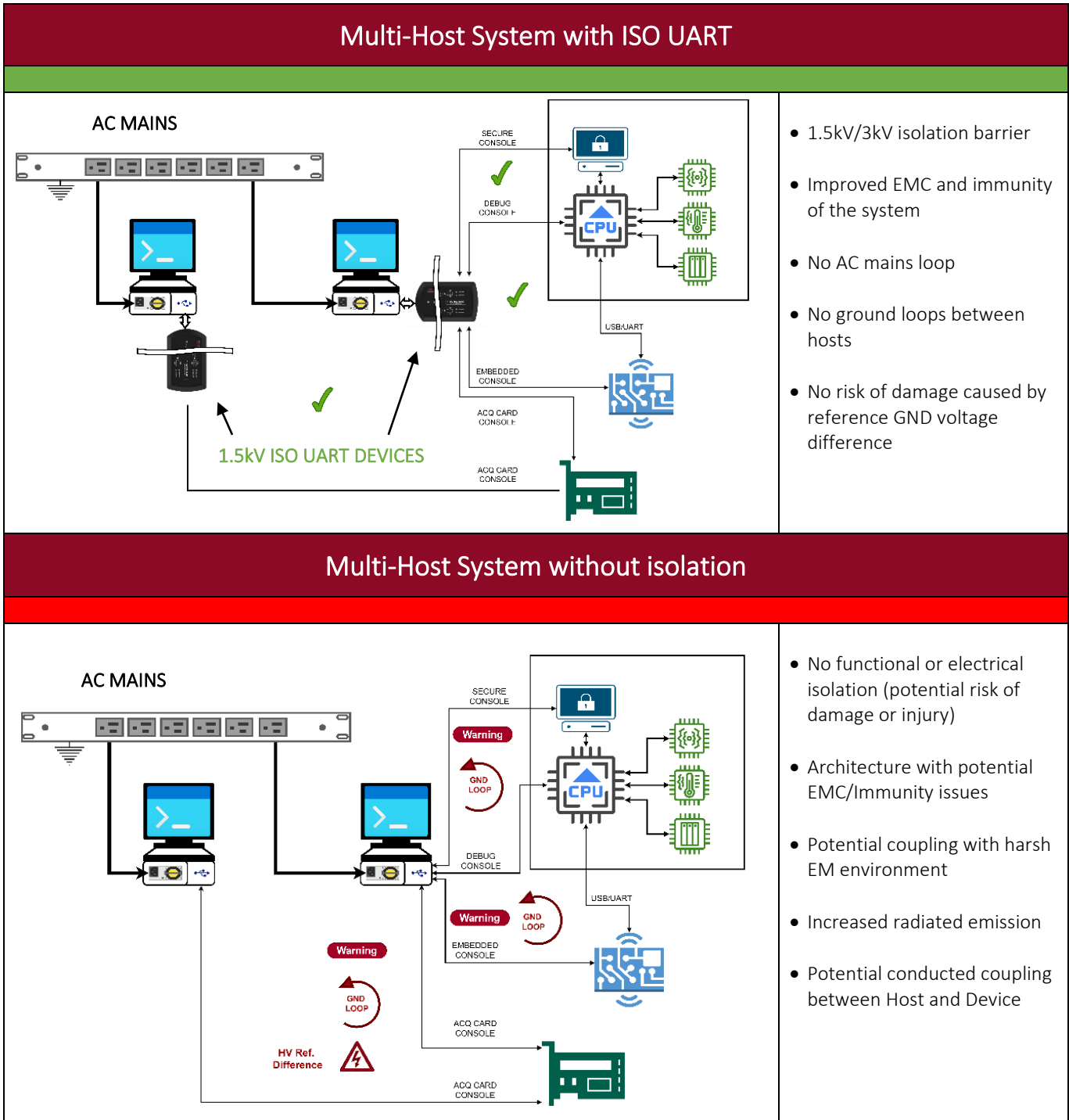
Dimensions: L:107mm W:67mm H:25mm



1.5kV ISO UART Application - System without isolation

ISO UART Application Example	System without Interfaces isolation
 <p>1.5kV ISO UART DEVICE</p>	
SAFETY	
<ul style="list-style-type: none"> • 1.5kV/3kV isolation barrier between Host – Device • No risk of damage caused by reference GND voltage difference 	<ul style="list-style-type: none"> • No functional or electrical isolation (potential risk of damage or injury)
EMC / IMMUNITY	
<ul style="list-style-type: none"> • No ground loops between Host – Device • No AC mains loop • Improved USB interface connection (fully compliant with EMC and USB standard) • Removed conducted emission from Host-Device connection 	<ul style="list-style-type: none"> • Architecture with potential EMC/Immunity issues • Potential coupling with harsh EM environment • Increased radiated emission • Potential conducted coupling between Host - Device

1.5kV ISO UART Application - Multi-Host System without isolation



Kit Content

#	Item	QTY
1	1.5kV ISO UART	1
2	2m USB 2.0 Type C Cable	1
3	4x2 UART Harness	2

Document Revision History

The following table shows the revision history for this document

Date	Version	Description
2023-12-29	1.0	Initial Release
2024-01-08	1.1	Formatted table headers