

Features At A Glance

- Adopt original FT232RNL chip, fast communicating, stable and reliable, better compatibility
- Supports multiple communication interface conversion: USB to RS232, USB to RS485, USB to RS422, USB to TTL
- Onboard unibody power supply isolation, provides stable isolated voltage, needs no extra power supply for the isolated terminal

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- Onboard unibody digital isolation, allows signal isolation, high reliability, strong anti-interference, low power consumption
- Onboard TVS (Transient Voltage Suppressor), effectively suppress surge voltage and transient spike voltage in the circuit, lightningproof & ESD protection
- Onboard self-recovery fuse and protection diodes, ensures the current/voltage stable outputs, provides over-current/over-voltage proof, improves shock proof performance
- Fully automatic transceiver circuit with no delay, ensures the USB port communicates with different interfaces fastly and stably, without interfering with each other
- Onboard TTL serial 3.3V/5V voltage translator, config the TTL level via switch
- 3 LEDs for indicating the power and transceiver status
- High quality USB-B and RS232 connectors, smoothly plug/pull
- Industrial grade metal case, supports wall-mount and rail-mount installations, solid and beautiful, easy to install

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Specifications

PRODUCT TYPE	Industrial grade digital isolated converter	
USB	Operating voltage	5V
	Connector	USB-B
	Protection	200mA self-recovery fuse, isolated output
RS232	Connector	DB9 male
	Protection	TVS diode, surge protection & ESD protection
	Transmission mode	Point-to-point
	Baud rate	300bps ~ 921600bps

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RS485/422	Connector	Screw terminal
	Direction control	Hardware automatic control
	Protection	600W lightningproof and surge-suppress, 15KV ESD protection (reserved two 120R balancing resistors, enabled/disabled via jumper)
	Transmission mode	Point-to-multipoints (485 mode: up to 32 nodes, it is recommended to use repeaters for 16 nodes or more； 422 mode: up to 256 nodes, it is recommended to use repeaters for 16 nodes or more)
	Baud rate	300bps ~ 2Mbps
TTL (UART)	Operating voltage	3.3V / 5V
	Connector	Screw terminal
	Pins	TXD, RXD, GND, 5V/3.3V
	Protection	clamp protection diode, over-voltage/negative-voltage proof, shock proof
	Transmission mode	Point-to-point
	Baud rate	300bps ~ 2Mbps

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INDICATORS	PWR	Red power indicator, light up when there is USB connection and voltage is detected
	TXD	TX indicator, light up when the USB port sends data
	RXD	RX indicator, light up when the device ports send data back
OPERATING ENVIRONMENT	Temperature	-40℃ ~ 85℃
	Humidity	5%RH ~ 95%RH
OPERATING SYSTEM	Mac, Linux, Android, Windows 11 / 10 / 8.1 / 8 / 7	

Original Industrial Grade Chip

Onboard Original FT232RNL Chip,

Fast Communication, Stable & Reliable, Better Compatibility

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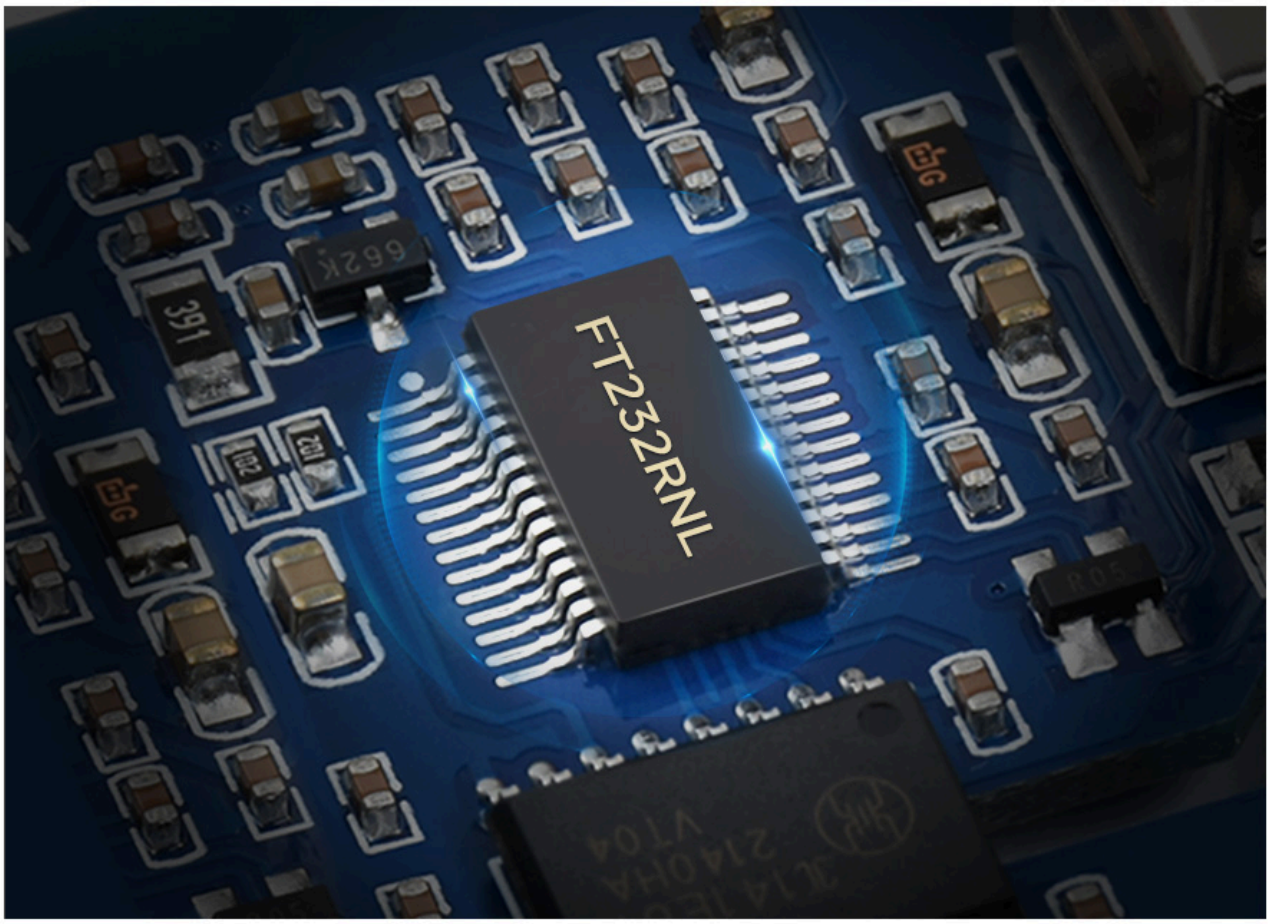

Safer Isolated Design

- Onboard unibody power supply isolation, provides stable isolated voltage, needs no extra power supply for the isolated terminal
- Onboard unibody digital isolation, allows signal isolation, high reliability, strong anti-interference, low power consumption

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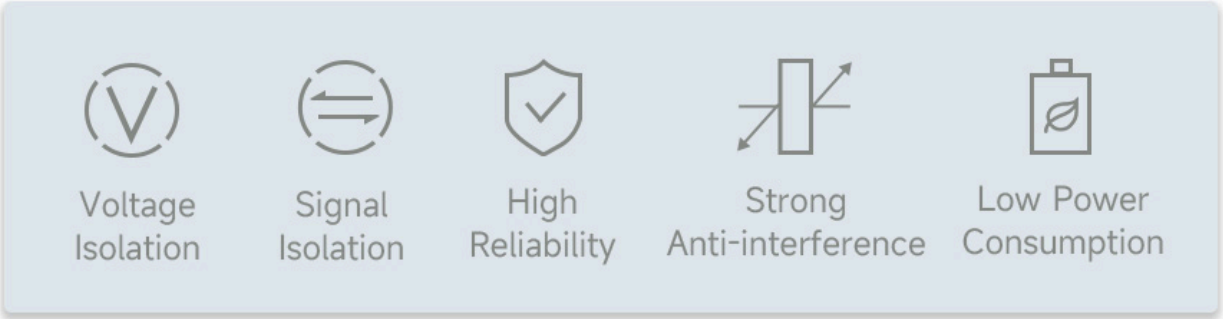

Multiple Protection, Safe And Stable

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Onboard TVS (Transient Voltage Suppressor), effectively suppress surge voltage and transient spike voltage in the circuit, lightningproof & ESD protection. Onboard self-recovery fuse and protection diodes, ensures the current/voltage stable outputs, provides over-current/over-voltage proof, improves shock proof performance.



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Multi System Support

Supports Mac, Linux, Android, Windows 11 / 10 / 8.1 / 8 / 7, Etc.



Aluminium Alloy Enclosure

Aluminium Alloy Enclosure With Sand Blasting And Anodic Oxidation

Solid And Durable, Fashionable And Good Hand Feeling

Wall-Mount And Rail-Mount Support, More Flexible For Industrial Installation

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Interface Introduction

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WAVESHARE
USB TO
RS232/485/422/TTL
Industrial-Isolated Converter
RS232
PWR
RXD
TXD
USB
RS232 Port
Indicators
USB & Power Supply


WAVESHARE
USB TO
RS232/485/422/TTL
Industrial Isolated Converter
5V
3.3V
RS485/RS422
Screw Terminal
TTL Level Selection
TTL (UART) Screw Terminal

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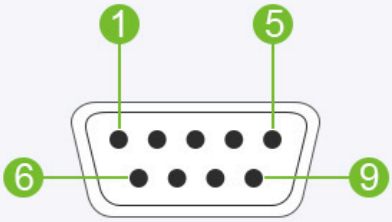

RS232 pinout

RS232 pinout	
DB9 Male (PIN)	Description
2	Receiving data (RXD)
3	Sending data (TXD)
5	Ground GND
1,4,6,7,8,9	N/C



RS485/422 Pinout	
Screw Terminal (PIN)	Description
PE	485/422 signal ground
TA	RS422 send differential signal positive RS485 differential signal positive A+
TB	RS422 send differential signal negative RS485 differential signal negative B-
RA	RS422 receive differential signal positive
RB	RS422 receive differential signal negative

TTL (UART) Pinout	
Screw Terminal (PIN)	Description
TXD	TTL transmit data pin, connect to MCU.RXD
RXD	TTL receive data pin, connect to MCU.TXD
GND	Connect to GND
VCC	5V / 3.3V power supply output, configurable via 5V/3.3V level switch
5V/3.3V level switch	TTL level selection

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Product Show



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Outline Dimensions

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Unit: mm

Resources & Services

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User Manual



Circuit Diagram



Example Code



Dev Resources

WIKI:

www.waveshare.com/wiki/USB_TO_RS232/485/422/TTL

* Resources for different product may vary, please check the wiki page to confirm the actually provided resources.

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