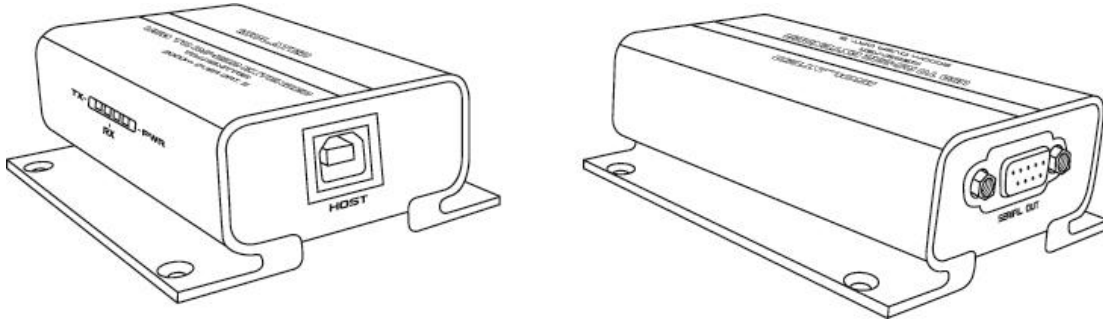


Industrially Isolated USB to RS-232 Extender

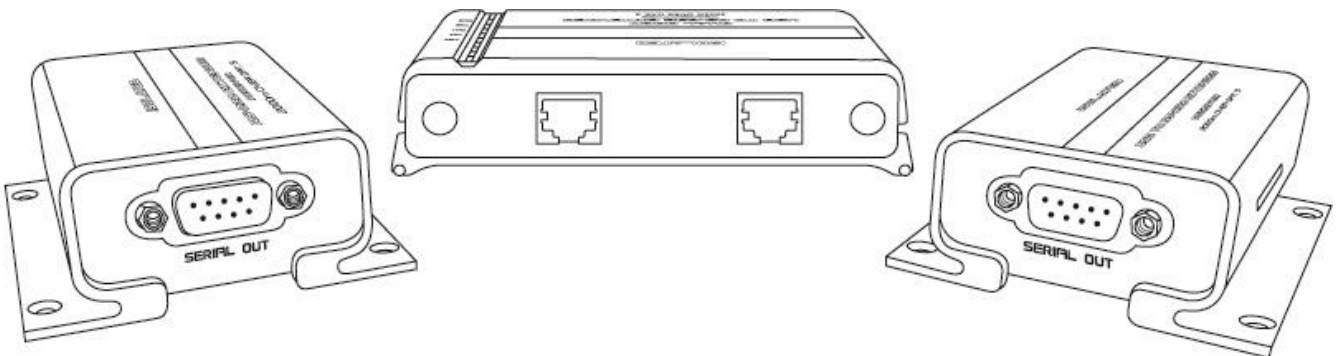
Quick Installation Guide

UTS-i101 / UTS-i102

UTS-i101



UTS-i102



1. Introduction

The Industrially Isolated USB to 1/2-Port RS-232 Cat.5 extender is a low cost and durable serial solution that will extend your RS-232 via a single standard Cat.5 / 5e / 6 UTP cable. It features 2.5kV isolation to ensure sensitive controls and devices for long extending serial signal won't be damaged. It provides full-duplex remote access and control of any RS-232 protocol device. The isolated USB to 1/2-Port RS-232 Cat.5 extender kit consists of a local transmitter and 1 or 2 remote receivers. Allows you placing RS-232 devices in any location you want and to control them remotely up to 2000 meters (6600 feet).

2. Features

- Compatible with all RS-232 protocols.
- Extend RS-232 peripherals up to 2000 meters upon transfer rate at 115kbps. (1700m upon 230kbps; 700m upon 921.6kbps)
- Fully Compliant with USB specification 1.1 and 2.0
- Supports transfer rate up to 921.6kbps.
- Supports ±15kV (air), ±8kV (contact) ESD protection; Isolated ground loops
- Supports 40A (5/50ns) & Peak Pulse Power 250 W (8/20 us) Surge and Transient spikes protection
- Supports 2.5kV Isolation; Bus powered for local transmitter, external power for remote receiver
- Compatible with Windows XP SP3 / Vista / 7 / 8 / 8.1 / 10 / 11, Windows Server 2003 / 2008 / 2008R2 / 2012 / 2012R2, Mac OS 8.6, Linux 1.5.0 or higher
- Rugged & cambered Aluminum shell and wall mountable

3. Specifications

Model No.		UTS-i101		DB-9M Pin Assignment	
Chip		FTDI			
Unit Category		Transmitter	Receiver	Pin No.	Definition
Connector	Host	USB Type B Female	x	1	
	Output	RJ-45 Female	x	2	RXD
	Input	x	RJ-45 Female	3	TXD
	Device	x	DB-9 Male	4	DTR
Interconnection Cable		Standard Cat.5 / 5e / 6		5	GND
LED		3 (TX / RX / PWR)	3 (TX / RX / PWR)	6	DSR
Power Mode		Bus powered	DC5V	7	RTS
Operating/Storage Temperature		-40 to 85°C (-40 to 185°F)		8	CTS
Housing		Aluminum		9	
Dimension (L x W x H)		90 x 73 x 31mm	90 x 73 x 31mm		

Model No.	UTS-i102	DB-9M Pin Assignment
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Chip		FTDI			
Unit Category		Transmitter	Receiver x 2	Pin No.	Definition
Connector	Host	USB Type B Female x 1	x	1	
	Output	RJ-45 Female x 2	x	2	RXD
	Input	x	RJ-45 Female	3	TXD
	Device	x	DB-9 Male	4	DTR
Interconnection Cable		Standard Cat.5 / 5e / 6		5	GND
LED		5 (2TX / 2RX / ACT)	3 (TX / RX / PWR)	6	DSR
Power Mode		Bus powered	DC5V	7	RTS
Operating/Storage Temperature		-40 to 85°C (-40 to 185°F)		8	CTS
Housing		Aluminum		9	
Dimension (L x W x H)		130 x 74 x 30mm	90 x 73 x 31mm		

4. Package Contents

- Transmitter x 1
- Receiver x 1 or 2
- 5VDC Power adapter x 1 or 2 (for Receiver only)
- USB 2.0 AM/BM Cable 0.6m
- Rack mountable screws

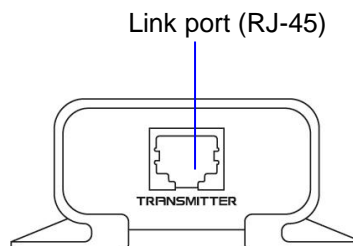
5. Physical Diagram

5.1 Transmitter (Local Unit) – UTS-i101T

Top view



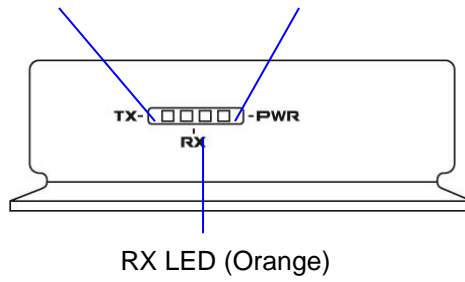
Front view



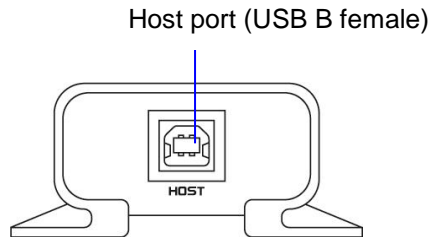
TX LED (Green)

Power LED (Red)

Side view

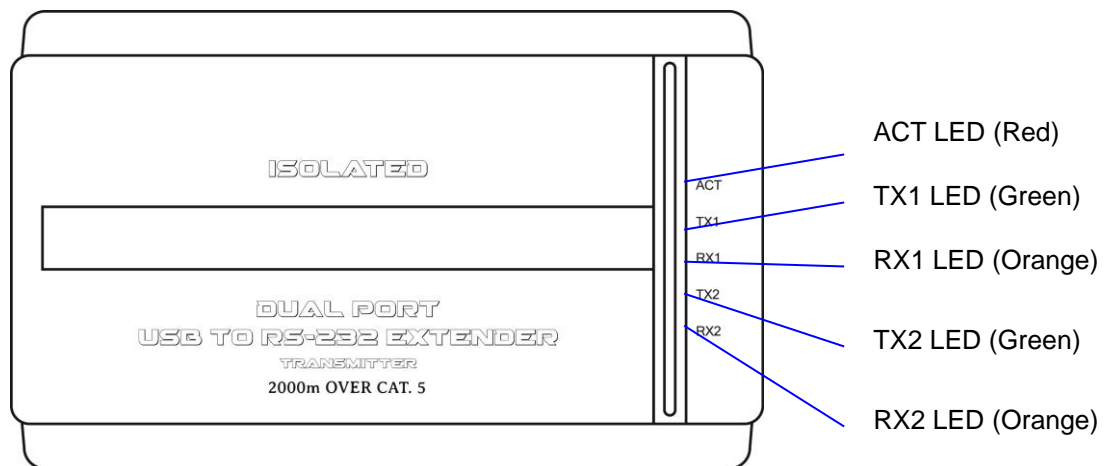


Rear view

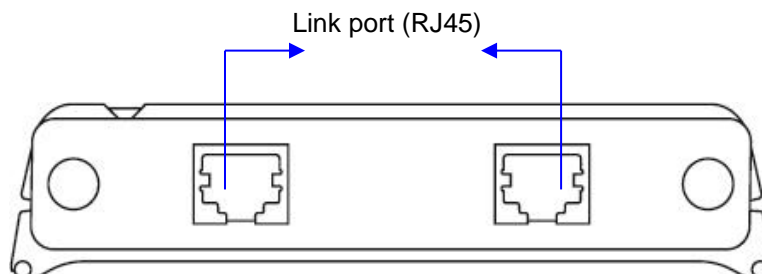


5.2 Transmitter (Local Unit) – UTS-i102T

Top view

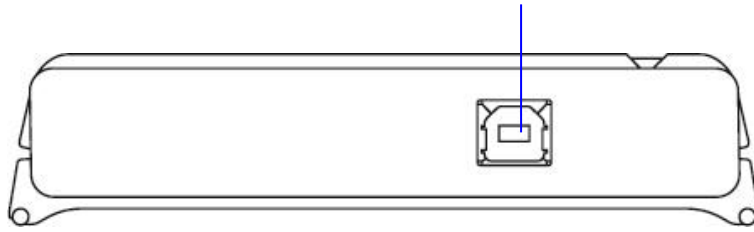


Front view



Rear view

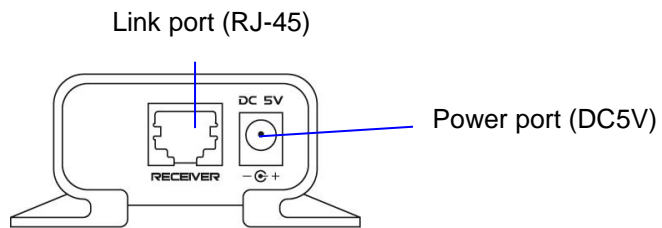
Host port (USB B female)



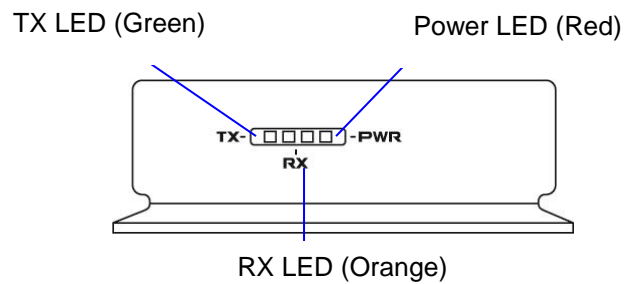
5.3 Receiver (Remote Unit)
Top view



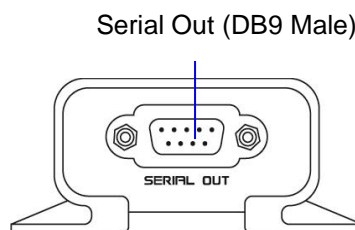
Front view



Side view



Rear view



6. Driver Installation thru the FTDI Driver Package

Driver can be installed through the FTDI driver package of the CD-ROM provided.

7. USB to Serial Application Operation

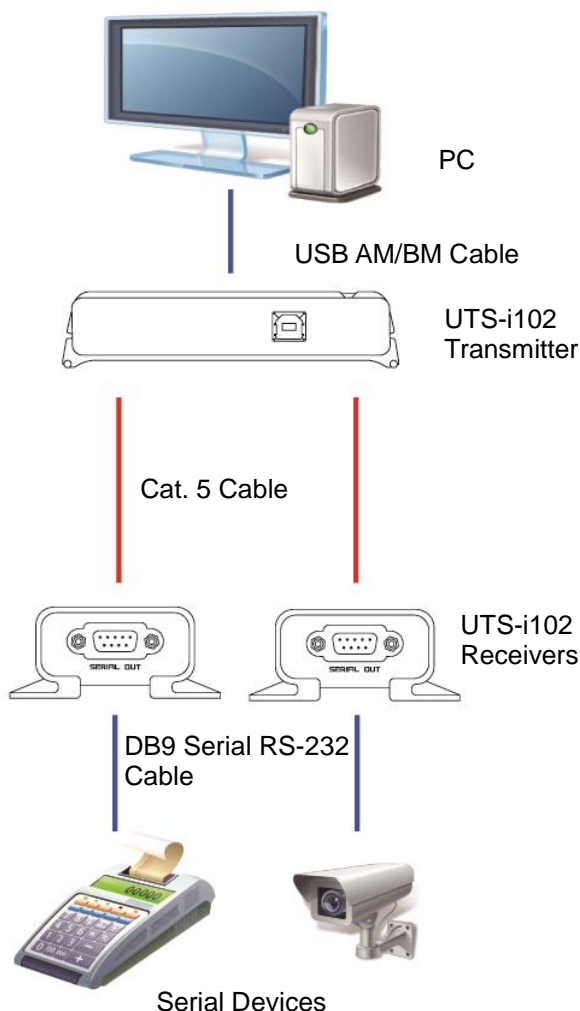
Note: The application programmer 'USB_RS232_AP.exe' Complies with Windows XP SP3 / Vista / 7 / 8 / 8.1 / 10 or higher only.

You may see detail for the driver & application programmer's installation steps from the User Manual of CD-ROM.

Note: Some of host computers have built in USB 3.0 hub may not detect USB to Serial devices well. In order to prevent detecting failure, to connect to USB 2.0 port would be better.

8. Connecting

8.1 Typical Application



8.2 Installing the Transmitter & Receiver

8.2.1. Preparing for Installation

Follow these steps to prepare your site:

1. Determine where the host computer will be located and set up the computer.
2. Determine where you want to locate the remote USB device(s).
3. The Isolated serial extender supports a maximum distance of 6600 ft (2000m). Make sure that Cat5 cabling is installed, with Cat. 5 outlets located near both computer and Serial device. The total length of this cable, including patch cords, must not be longer than 6600 ft (2000m).

Note: If the Cat. 5 cabling is extended over 2000m, the transmission would be affected by signal attenuation and lower the transfer rate under 115kbps.

8.2.2. Installing the Transmitter (Local Unit)

1. Plug the USB cable into the transmitter (Host) and connect an available USB port of computer.
2. Power LED or ACT LED indicator lights on.
3. Plug one end of the Cat. 5 cable(s) into the Link port (RJ-45) on the transmitter. (Please see **Category cable wiring**)

8.2.3. Installing the Receiver (Remote Unit)

1. Plug the other end of the Cat. 5 cable(s) into the Link port (RJ-45) on the receiver(s).
2. Plug the 5VDC power adapter into the receiver(s), and AC plug into the power receptacle.
3. Power LED indicator lights on.
4. Connect the serial device(s) through DB9 serial RS232 cable into the DB9 port (Serial Out) of receiver.

LED for UTS-i101		Status
Definition	Color	
Power	Red	USB cable connected to the transmitter and powered by host computer. The 5VDC power adapter is plugged in (Receiver only)
TX	Green	Either transmitter or receiver is sending data.
RX	Orange	Either transmitter or receiver is receiving data.

LED for UTS-i102		Status
Definition	Color	
ACT	Red	USB cable connected to the transmitter and powered by host computer.
TX1/TX2	Green	Transmitter is sending data.
RX1/RX2	Orange	Transmitter is receiving data.
Power	Red	The 5VDC power adapter is plugged in (Receivers only)
TX	Green	Receiver is sending data.
RX	Orange	Receiver is receiving data.

9. Category cable wiring

Take precaution selecting the Cat. 5 wires before connecting; use a cable tester to check the wires are correctly terminated. (Incorrect Termination may cause damage to the receiver unit). Recommend to use T568B wiring as shown below



Regulatory Compliance

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CE Certification

This equipment complies with the requirements relating to electromagnetic compatibility.

It has been manufactured under the scope of RoHS compliance.

FCC Compliance Statement

This equipment generates and uses radio frequency and may cause interference to radio and television reception if not installed and used properly. This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

You are cautioned that changes or modification not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation



WEEE (Waste of Electrical and Electronic Equipment), Recycling of Electronic Products

In 2006 the European Union introduced regulations (WEEE) for the collection and recycling of all waste electrical and electronic equipment. It is no longer allowable to simply throw away electrical and electronic equipment. Instead, these products must enter the recycling process.

Each individual EU member state has implemented the WEEE regulations into national law in slightly different ways. Please follow your national law when you want to dispose of any electrical or electronic products. More details can be obtained from your national WEEE recycling agency.