

HighTek HU-03
USB to RS-485\422 Interface Converter
User Manual

CONTENTS

I.Summary.....	2
II.Functions.....	2
III. Hardware installment and application.....	2
IV. Performance parameters.....	2
V. Connector and signal.....	3
VI. Communication Connection Chart.....	3
VII. Problems and troubleshooting.....	4
VIII. Product image.....	4
IX. Driver installation.....	5

I. Summary

With rapid development of computer industry, USB is taking the place of various kinds of traditional low speed peripheral interfaces. However, RS-485\422 interface designs are still used in many of the important facilities under current industrial environment; therefore, converter is used by many users to implement the data transmission from USB of a computer to RS-485\422 equipment.

HighTek HU-03 is a universal USB to RS-485\422 interface converter. No external power supply needed. Compatible with USB and RS-485\422 standards, HU-03 is capable to perform the conversion from single-ended USB signal into UART signal of RS-485\422. DB9 male connectors are used for connection from RS-422\485 interface. The unique I/O circuit of the internal zero delay auto transceiver contained in the converter controls the data stream direction automatically.

The converter is plug-and-play. All these features ensure a universal application on all the existing communication software and hardware interfaces.

The data communication rate can be as high as 300-921.6Kbps by the point-to-point communication by HU-03 interface. Power indicator light and data traffic indicator light are also available with the converter for malfunction indication. Conversion from USB to RS-485\422 is supported.

II. Functions

HU-03 interface converter supports the following communication mode:

1. Point-to-point communication mode.

III. Hardware installment and application

Read the user manual carefully before installing the HU-03 interface converter. Put the signal cable of the equipment into the USB socket.

USB/DB9 male connectors are adopted for input/output interface connection for this product.

IV. Performance parameters

1. Standards: conforming to USBV1.1 and 1.0, EIA RS-485 and RS-422, backwards compatible.
2. USB signals: VCC DATA+ DATA- GND FG
3. RS-485 signals: T+, T-, GND.
4. RS-422 signals: T+, T-, R+, R-, GND.
5. Working modes: asynchronous, point-to-point or point-to-multipoint, 2-line half duplex and 4-line full duplex.
6. Direction control: adoption of automatic data stream control for automatic recognition and control of data transmission direction.
7. Baud rate: 300-128,000bps, automatic detection of the transmission rate of the serial interface signal.
8. Workload ability: point-to-multipoint supported a maximum of 32 RS-422 or RS-485 interface equipment is supported.
9. Transmission interface: USB A type male connector and DB9 male connector.

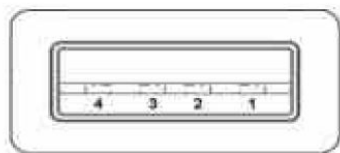
10. Transmission distance: 1200 meters for RS-485/422 end (when 9,600bps) and a maximum of 5 meters for USB.
11. Signal indication: 3 indicator lights for Power (PWR), Send (TXD) and Receive (RXD).
12. Transmission media: twisted-pair cable or shielded cable.
13. Transmission rate: 128,000bps to 300M.
38,400bps to 600M.
9,600bps to 1200M.
14. Dimensions: 1555mm 36mm 16mm.
15. Working environment: -25 to 70 Celsius degree, relative humidity5% to 95%.
16. Transmission distance: 0-1200meters (128,000bps-9,600bps)
17. Windows95/98/2000/XP/Vista/Win7/Linux and IMAG are supported.

V. Connector and signal

1. RS-485/RS-422 output signals and PIN assignment

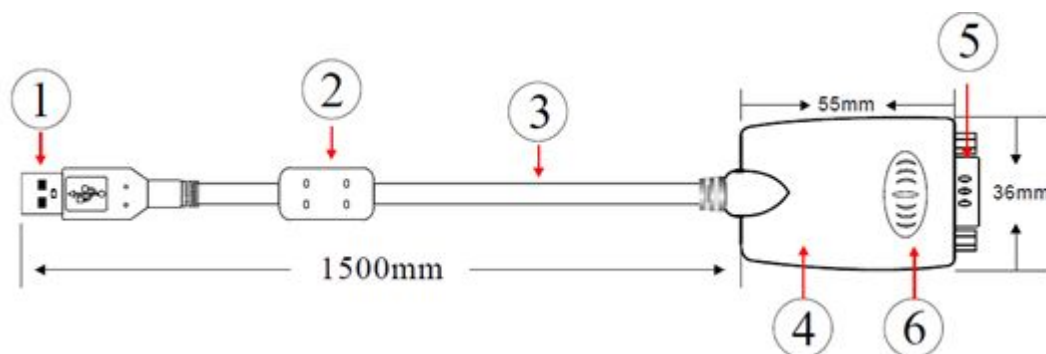
DB9 connector (PIN)	Output signal	RS-422 full duplex cabling	RS-485 half duplex cabling
1	T/R+	Sending(A+)	RS-485(A+)
2	T/R-	Sending(B-)	RS-485(B-)
3	RXD+	Receiving(A+)	Null
4	RXD-	Receiving(B-)	Null
5	GND	Grounding	Grounding
6	N/A		
7	N/A		
8	N/A		
9	N/A		

2. USB-A male: USB output signals and PIN assignment



- 1、VCC
- 2、DATA-(DM)
- 3、DATA+(DP)
- 4、GND

VI. Communication Connection Chart



- 1- Standard USB A type male connector
- 2- Filter magnetic pole

- 3- Transparent and shielded standard 2.0 communication line
- 4- Fine shell(blue)
- 5- Standard DB9 male connector
- 6- MCU adopts the product of the Taiwan chip

VII. Problems and troubleshooting

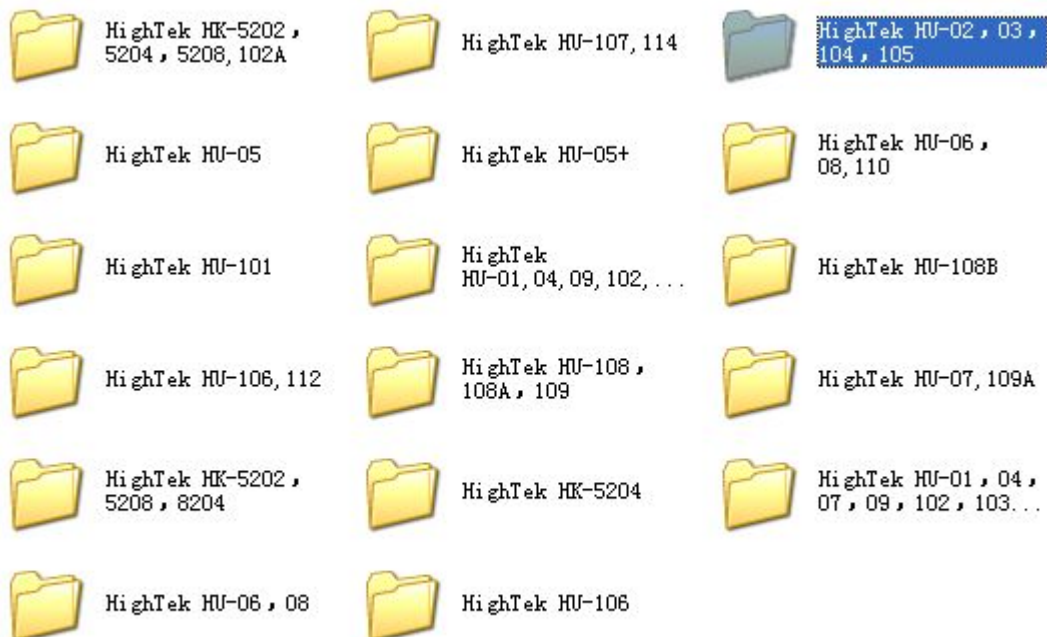
- 1. Data communication failure
 - A. Check to make sure USB cable is OK.
 - B. Make sure RS-485\422 output interface connection is correct.
 - C. Make sure power supply is OK.
 - D. Make sure the wire terminal connection is OK.
 - E. Make sure the indicator lights flash when receiving.
 - F. Make sure the indicator lights flash when sending.
- 2. Data missing or incorrect
 - A. Check to see whether the data rate and format at both ends of the communication equipment are consistent.

VIII. Product image



IX. Driver installation

Once a HU-03 converter is connected with the USB port, open the CD file and find Driver\USB-to-Serial, then open this file:



Find the driver which is fit to your system, For Example, if you system is Windows XP, open this file:



Click this program:



Then you will complete the driver installation.

After installation, you can open Device Manager to check if there are COM ports available now, if no USB drivers have been installed previously. System default COM ports are COM3, as illustrated below. Now, all the installation is finished.

The following shows the USB Serial Port installation is finished. Up to now, all the drivers for HU-03 are installed.

