



UT-1304H 4-PORT RS-485/422 HUB USER MANUAL

I. Summary

With RISC design, UT-1304H is a RS-485/RS-422 hub, suit for large RS-485/RS-422 system under complex environment. Baudrate: up to 115.2 KBPS. With delicate built-in protection, 3,000A surge protection; isolation voltage: 2,500V; well protected from lightning strike and ESD. Outdoor usage.

Under RS-485/RS-422 mode, auto-adapt data stream. Max: 1.2km. Widely using at express way toll system, road monitoring system with excellent performance and competitive price.

RS-485/RS-422 star topology bus connection is provided by UT-1304H RS-485/RS-422 HUB. Photoelectric isolation of 2,500V is provided. Re-construction of RS-485/422 bus structure and network range splitting can be easily realized to improve communication reliability. In the case of lighting strike or equipment failure, the affected range shall be isolated to make sure the normal function of other ranges. This feature can increase greatly the reliability of existing RS-485/RS-422 with achievement of shorter time for network maintenance. Proper application of UT-1304H RS-485/RS-422 HUB can help you to design a high stability RS-485/RS-422 system.

II. Parameters

1. compliance with RS-485/RS-422 standards of EIA/TIA.
2. Electric interface: RS-485/RS-422 in binding post
3. Transmission media: twisted-pair cable or shielded cable.
4. Working mode: asynchronous half-duplex or full duplex.
5. Signal indication: 7 signal indicators including power (PWR), send (TXD), receive (RXD) and failure (E1-E4).
send (TXD), receive (RXD) and failure (E1-E4).
- Isolation voltage: 2,500V RMS 500VDC non-stop and DC/DC isolation module.
7. Baud rate : 300-115.2KBPS.
8. Rated power: 1W
9. Protection grade: each RS-485/RS-422 line with 3000A, 8/20 μs waveform for lightning strike surge protection
10. Transmission distance: 0-1.2km (115,200-300BPS)
11. Measurements: 210mm×30mm×3mm
12. Working environment: -40°C to 85°C, relative humidity 5% to 95%.

III. Panel and signal indicators

8 indicator lights on the front panel and on the back panel there are 1 5-pin terminal for RS-485 or RS-422 input and 8 ports 3-pin terminals for photoelectrical isolation output ports.

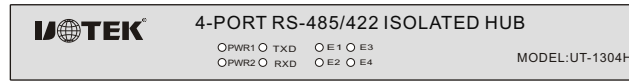


Figure 1. Front Panel of UT-1304H

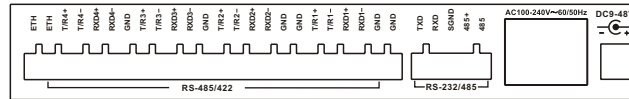


Figure 2. Back Panel of UT-1304H

Interpretation of front panel indicators:

- PWR--Power, green for power on.
- TXD--Data sending indication, green for normal transmission from INPUT port to OUTPUT ports 1-8.
- RXD--Data receiving indication, yellow for normal transmission from OUTPUT ports 1-4 to INPUT port.
- E1-E4--Failure alarm indicators for ports 1-4, the lights stay ON to indicate short circuit or wrong signal connection of ports 1-4. E1 is for port 1, E2 for port 2, and so on. Problems can be determined by the user according to different light indicators.

IV. Electric interfaces and definitions:

RS-232C/RS-485 definition

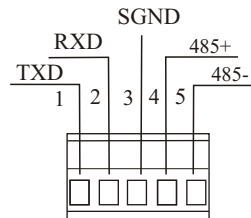


Fig 3. RS-232C/RS-485 input interface

1. RS-232C/RS-485 input interface definition

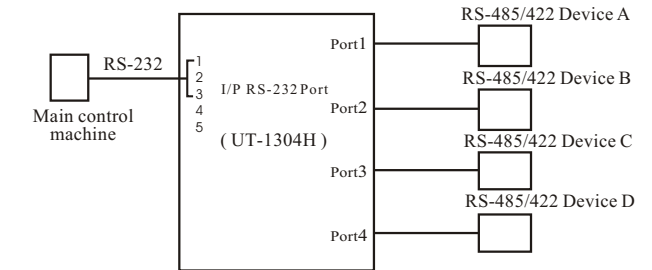
5-PIN Terminal Interface	Definition	Signal Direction
1	TXD	OUT
2	RXD	IN
3	SGND	
4	485+	
5	485-	

2. RS-485/RS-422 output interface

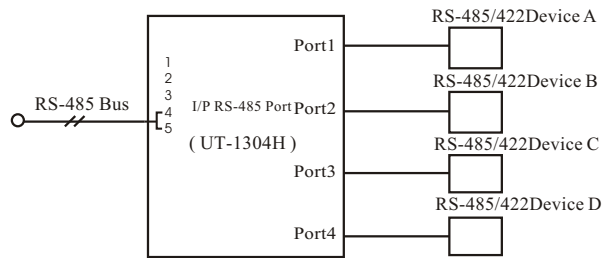
Pin	422	Pin	422	Pin	422
1	GND	9	RXD2-	17	T/R3+
2	GND	10	RXD2+	18	GND
3	RXD1-	11	T/R2-	19	RXD4-
4	RXD1+	12	T/R2+	20	RXD4+
5	T/R1-	13	GND	21	T/R4-
6	T/R1+	14	RXD3-	22	T/R4+
7	GND	15	RXD3+	23	ETH
8	GND	16	T/R3-	24	ETH

V. Application of UT-1304H 4-Port RS-485/RS-422 HUB

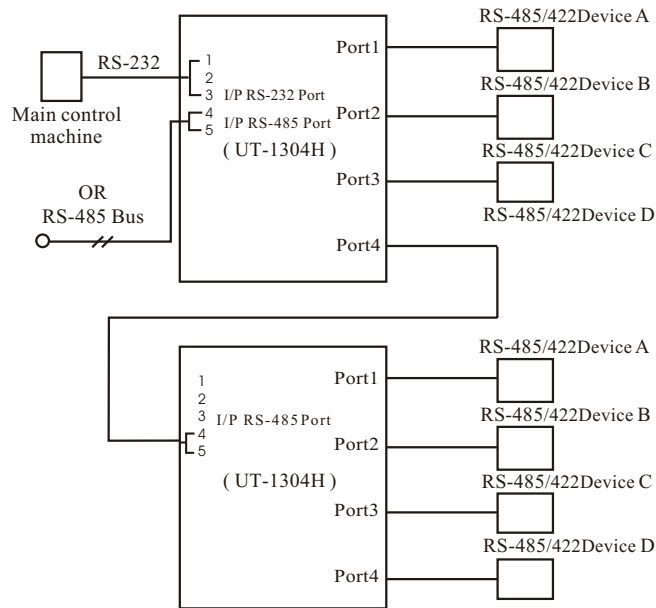
1. Application of expansion from existing RS-232C BUS to 4 RS-485/RS-422 interface. Maximum of 128 RS-485/RS-422 hubs can be connected simultaneously to RS-485/RS-422 BUS.



2. Applications of connection from RS-485 serial port of host to multiple RS-485/RS-422 interfaces, and a maximum of 128 RS-485/RS-422 hubs can be connected simultaneously to RS-485 BUS.



3. Applications in connection from RS-232C serial port of main control machine to multiple RS-485/422 interfaces, or in expansion from existing RS-485 BUS to multiple RS-485/422 interfaces, and a maximum of 128 RS-485/422 hubs can be connected simultaneously to RS-485 BUS.



VII. Protection of Power and Lighting Strike

Power adapter: DC 9-48V or other AC 100-240V~60/50Hz power supply. 3000A lightning strike protection for all RS-485/RS-422 interfaces of UT-1304H. Make sure well grounding before installation.

VI. Warning and Protection for RS-485/RS-422 Port Failures

Efficient solutions of RS-485/RS-422 ports failures shall greatly increase the liability of RS-485/RS-422 device connections. The short circuit protection function of all the 4 ports for terminal device shall work under turn-off mode. Any failure of any specific RS-485/RS-422 port shall only influence the RS-485/RS-422 BUS system connected to that port, all systems connected to other ports will not be affected. Failed ports and other devices connected can be determined easily for solution by users based on the alarm indicators.