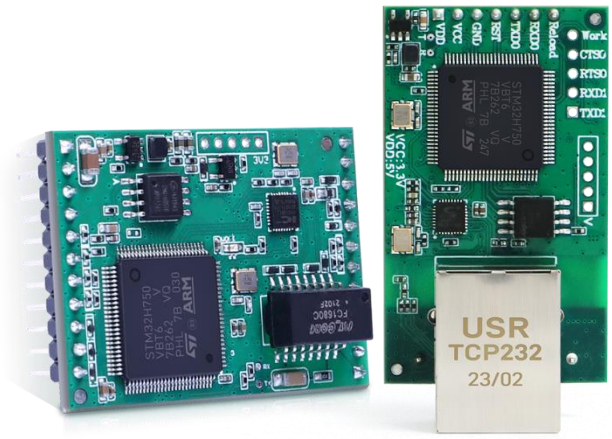
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Ethernet Module Specification

USR-TCP232-E2/ED2



Introduction

USR-TCP232-E2/ED2 is a multi-functional serial-to-Ethernet module that enables bidirectional transparent data transmission between Ethernet port and TTL. USR-TCP232-E2 provides 2 TTL serial ports while the USR-TCP232-ED2 provides 3 TTL serial ports. Both modules adopt ST Cortex-M7 core with a high frequency of up to 400MHz, which has a faster processing and more stable data transmission.

The module supports various working modes such as TCP Server, TCP Client, UDP, Httpd Client, WebSocket, and can be easily configured via built-in webpage or Config Software. At the same time, it integrates TCP/IP protocol stack, which allows users to easily complete the serial-to-Ethernet conversation, saving manpower and development time, making products faster to market and enhancing competitiveness. It supports MQTT protocol easily accessing to mainstream platform like Thingboard, AWS etc. For user's data security, the module also integrates SSL/TLS protocol.

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Product Features

- New ARM core, Cortex-M7 solution, equipped with deeply optimized TCP/IP protocol stack. It has low latency and strong scalability, stable and reliable.
- Supports custom webpage function to help users improve brand influence.
- Built-in network electromagnetic isolation.
- Supports Modbus RTU to Modbus TCP protocol conversion and multi-host polling.
- Supports keepalive mechanism to quickly detect the dead connections and reconnect.
- Supports hardware watchdog, automatically restarts when the device goes down.
- 10/100Mbps Ethernet port and support Auto MDI/MCIX.
- Supports a wide industrial operating temperature, -40℃~85℃.
- Versatile operation modes: TCP Server, TCP Client, UDP, HTTP client, WebSocket Server.
- Support virtual COM, COM Port Redirector USR-VCOM (windows).
- High security via certificate verification SSL/TLS encryption for secure data Transmission, HTTPS, TCPS, MQTTS
- Cloud support: MQTT via AWS IOT, Thingsboard, Alibaba Cloud, EMQX and so on.

Dimensions

Unit: mm

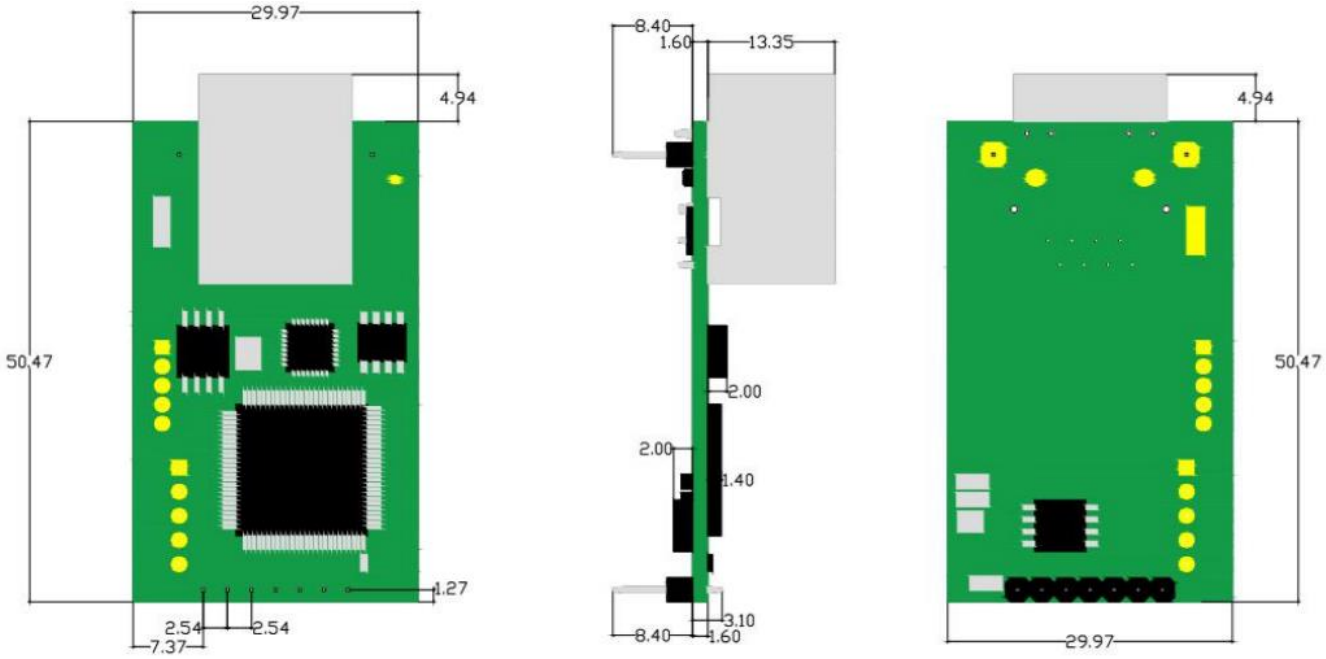


Fig.1 Dimension of E2 module

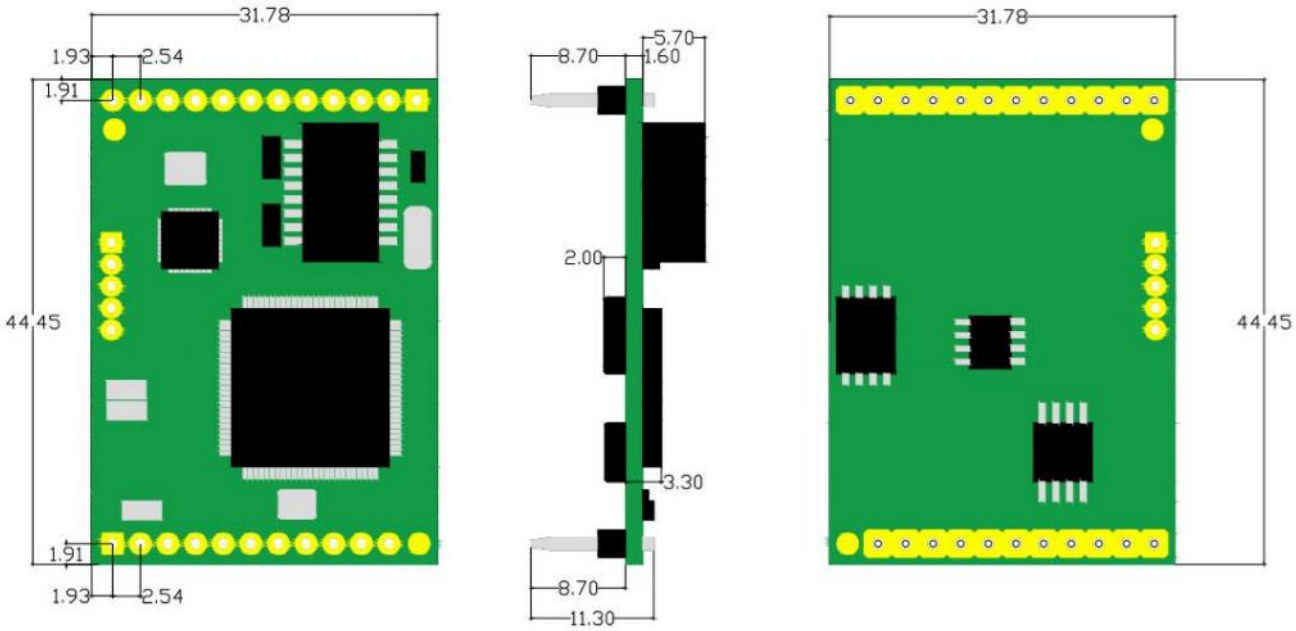


Fig.2 Dimension of ED2 module

Specifications

Model	USR-TCP232-E2	USR-TCP232-ED2
Processor	STM32H750VBT6RT	
Frequency	400 Mbps	
Power		
Power Supply	VCC: 3.0~3.6V(3.3V is recommended) VDD: 4.75~5.5V(5.0V is recommended)	
Consumption	210mA@3.3V 155mA@5.0V	210mA@3.3V 175mA@5.0V
Ethernet		
Port Number	1 x RJ45	1 x 6pin interface
Rate	10 /100 Mbps, auto MDI/MDX	
Protection	1.5KV electromagnetic isolation	
Serial Port		
Port Number	2 x TTL (3.3V)	3 x TTL（3.3V）
Baud rate	600 bps~1 Mbps	
Data Bit	5,6,7,8	
Stop Bit	1,2	
Parity Bit	None, Even, Odd, Space, Mark	
Flow Control	Hardware: RTS/CTS(TTL0) Software：XON/XOFF	Hardware: RTS/CTS(TTL0,TTL1) Software：XON/XOFF
Physical Character		
Dimensions(mm)	50.5x30.0x23.2(L*W*H)	44.5x31.8x15.4(L*W*H)
Operating Temperature	-40～85℃	
Storage Temperature	-40~105℃	
Operating Humility	5%～95%（Non-condensing）	
Storage Humility	5%～95%（Non-condensing）	
Basic Features		
Network protocol	IP,TCP,UDP,HTTP,HTTPS,MQTT,SSL/TLS,SNMP,ICMP,ARP,DNS,Telnet,NTP,DHCP	

IP Assignment	Static/DHCP
Built-in Webpage	√
Config Method	Built-in Webpage, Config Software, AT Command
Work Mode	TCP Server/TCP client/UDP Server/UDP Client/HTTPD client
MQTT	Standard MQTT protocol, Easy access to mainstream paltform: Thingsboard, AWS,Azure,etc.
Modbus Gateway	Modbus Protocol Conversion: Modbus TCP and Modbus RTU Multi-host polling: up to 16 hosts
WebSocket	√
Custom Webpage	√
SSL Encryption	√
Serial Packet Cache	Dynamic packet cache. For example: When the packet length is 10 byte, the serial port can cache 450 packets(4.5KB). When the packet length is 1460 bytes, the serial port can cache 10 packets(14.6KB).
Ethernet Packet Cache	48KBytes
Others	
Certificate	CE, FCC, *RoHS, *WEEE
Warranty	1 year

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