

Eport-E30

Ethernet Serial Server

User Manual

V 1.1



Overview of Characteristic

- ✧ Cortex-M3 MCU with 2MB Flash and 128KB SRAM
- ✧ Use FreeRTOS Operation System
- ✧ Support TCP/IP/Telnet /Modbus TCP Protocol
- ✧ Support Serial To 10/100M Ethernet Conversion, Serial Speed Upto 460800 bps
- ✧ Support 10/100M Ethernet Auto-Negotiation
- ✧ Support Easy Configuration Through a Web Interface or PC IOTService Tools
- ✧ Support Security Protocol Such As TLS/AES/DES3
- ✧ Support Web OTA Wirelss Upgrade
- ✧ Support Industrial Temperature: -25 to +85° C
- ✧ Wide 5V~9V Power Supply
- ✧ Size: 45 x 32 x 8 mm (L x W x H)

TABLE OF CONTENTS TABLE OF CONTENTS

TABLE OF CONTENTS TABLE OF CONTENTS	2
LIST OF FIGURES.....	3
LIST OF TABLES	4
HISTORY.....	4
1. PRODUCT OVERVIEW.....	5
1.1. General Description	5
1.2. Device Features	5
1.3. Device Parameters.....	6
1.4. Key Application	7
2. HARDWARE INTRODUCTION	8
2.1. Pins Definition	8
2.2. Electrical Characteristics	10
2.3. Ethernet Interface	10
2.4. Mechanical Size	10
2.5. Order Information	11
2.6. Function.....	12

LIST OF FIGURES

Figure 1.	Eport-E30 Appearance	8
Figure 2.	Eport-E30 Pins Map.....	8
Figure 3.	Eport-E30 Mechanical Dimension.....	11
Figure 4.	Eport-E30 Product Number Defination	11

LIST OF TABLES

Table1.	Eport-E30 Module Technical Specifications	6
Table2.	Eport-E30 Pins Definition	9
Table3.	Absolute Maximum Ratings:	10
Table4.	Power Supply & Power Consumption:	10
Table5.	Ethernet Interface Definition	10

HISTORY

Ed. V1.0	05-25-2017	First Version
Ed. V1.1	12-14-2018	Fix working temperature

1. PRODUCT OVERVIEW

1.1. General Description

The Eport-E30 is a fully self-contained integrated solution, which provide a serial interface to Ethernet connectivity to web enable any device. The Eport-E30 integrate TCP/IP controller, memory, 10/100M Ethernet transceiver, high-speed serial port and integrates a fully developed TCP/IP network stack and FreeRTOS OS. The Eport-E30 also includes an embedded web server used to remotely configure, monitor, or troubleshoot the attached device.

1.2. Device Features

- Cortex-M3 MCU with 2MB Flash and 128KB SRAM
- Full Integrated RJ45 Solution
- Support FreeRTOS Operation System
- Support TCP/IP、UDP、DHCP、DNS、HTTP Server/Client、ARP、BOOTP、AutoIP、ICMP、Telnet、FTP、TFTP、uPNP、NTP、ModbusTCP Protocol
- Support Serial to 10/100M Ethernet Conversion, Serial Speed Upto 921600 bps
- Support 10/100M Ethernet Auto-Negotiation
- Support Easy Configuration Through a Web Interface
- Support Security Protocol Such As TLS/AES/DES3
- Support Web Wireless Upgrade
- Support Industrial Temperature: -25 to +85° C

1.3. Device Parameters

Table1. Eport-E30 Module Technical Specifications

Item	Parameters
System Information	
Processor/Frequency	Cortex-M3/96MHz
Flash/SDRAM	2MB/128KB
Operating System	FreeRTOS
Ethernet Port	
Port Number	1 RJ45 with LED
Interface Standard	10/100 Base-T Auto-Negotiation
Protection	2KV Isolation
Transformer	Integrated
Network Protocol	IP, TCP, UDP, DHCP, DNS, HTTP Server/Client, ARP, BOOTP, AutoIP, ICMP, Web socket, Telnet, FTP, TFTP, uPNP, NTP, Modbus TCP
Security Protocol	TLS v1.2 AES 128Bit DES3
IPV6 Support	No
Serial Port	
Port Number	1 + 1 debug
Interface Standard	3.3V TTL: 2 wire (TX,RX)
Data Bits	5,6,7,8
Stop Bit	1,2
Check Bit	None,Even,Odd,Space,Mark
Baud Rate	TTL: 2400 bps~460800 bps
Flow Control	No Flow control Hardware RTS/CTS、DSR/DTR Software Xon/ Xoff flow control
Software	
Web Pages	Http Web Configuration Customization of HTTP Web Pages
Configuration	Web CLI XML import Telnet IOTService PC Software UART Fast Config
Firmware Upgrade	Web or IOTService
SDK For Dev.	Not yet
Basic Parameter	
Size	45 x 32 x 8 mm
Operating Temp.	-25 ~ 85°C
Storage Temp.	-45 ~ 105°C, 5 ~ 95% RH (no condensation)
Input Voltage	5V~9V
Working Current	~100mA

Power	<400mW
-------	--------

1.4. Key Application

The Eport-E30 device connects serial device to Ethernet networks using the TCP/IP protocol:

- Remote equipment monitoring
- Asset tracking and telemetry
- Security Application
- Industrial sensors and controls
- Medical devices
- ATM machines
- Data collection devices
- Universal Power Supply (UPS) management units
- Telecommunications equipment
- Data display devices
- Handheld instruments
- Modems
- Time/attendance clocks and terminals

2. HARDWARE INTRODUCTION

The Eport-E30 unit is a complete solution for serial port device connecting to network. This powerful device supports a 10/100BASE-T Ethernet connection, a reliable and proven operating system stored in flash memory, an embedded web server, a full TCP/IP protocol stack, and standards-based (AES) encryption.

Through Ethernet cable connect router with Eport-E30 serial server(RJ45 connector needed) for data transfer, which makes the electromechanical integration very simple. Eport-E30 meet EMC Class B security level, It can pass every countries relevant certification test

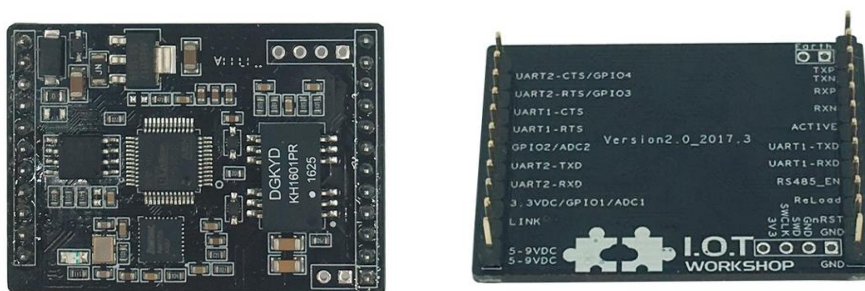


Figure 1. Eport-E30 Appearance

2.1. Pins Definition

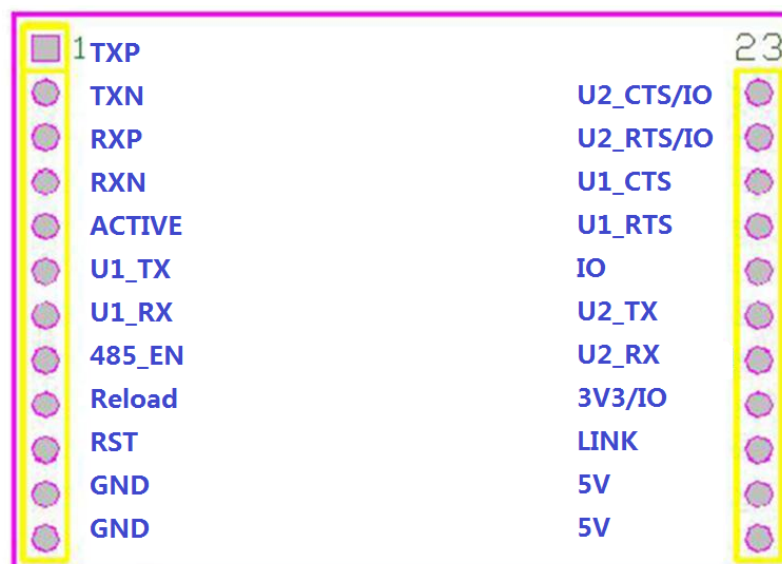


Figure 2. Eport-E30 Pins Map

Table2. Eport-E30 Pins Definition

Pin	Description	Net Name	Signal Type	Comments
1	Ethernet TX+	TXP	O	TXP
2	Ethernet TX-	TXN	O	TXN
3	Ethernet RX+	RXP	I	RXP
4	Ethernet RX-	RXN	I	RXN
5	LED_ACTIVE	ACTIVE	O	Low Active
6	UART1	U1_TX	O	3.3V TTL
7	UART1	U1_RX	I	3.3V TTL
8	485_EN	485_EN	I	Can be configured as 485 enable pin
9	nReload	nReload	I, PU	See following for details
10	Reset	nRST	I, PU	Hardware reset, low active
11	Ground	GND	GND	
12	Ground	GND	GND	
13	+5V Power	DVDD	Power	+5V~9V
14	+5V Power	DVDD	Power	+5V~9V
15	LED_LINK	LINK	O	Low Active
16	3V3/IO	3V3/IO		3.3V Output Or modify hardware to use it as GPIO
17	GPIO	U2_RX	I/O	UART2_RX Debug UART(Reserved)
18	GPIO	U2_TX	I/O	UART2_TX Debug UART(Reserved)
19	GPIO	IO	I/O	IO
20	UART1	U1_RTS	I	
21	UART1	U1_CTS	O	
22	UART2	U2_RTS/IO	I/O	
23	UART2	U2_CTS/IO	I/O	

<Notes>

nReload Pin function:

- After device is powered up, If put this pin to low more than 3 seconds and then put to High, It will restore the product parameters to factory setting.

We strongly suggest user to fan out this pin.

ACTIVE Pin

- When there are data transmitting and receiving, This LED will flashing. If there is no data transmit and receive, It will output High.

LINK Pin

- When Ethernet connected normal, It will output Low, If there is no Ethernet connection, It will output High.

2.2. Electrical Characteristics

Table3. Absolute Maximum Ratings:

Parameter	Condition	Min.	Typ.	Max.	Unit
Storage Temperature Range		-45		125	°C
Maximum Soldering Temperature	IPC/JEDEC J-STD-020			260	°C
Supply Voltage		0		12	V
ESD (Human Body Model HBM)	TAMB=25°C			2	KV
ESD (Charged Device Model, CDM)	TAMB=25°C			1	KV

Table4. Power Supply & Power Consumption:

Parameter	Condition	Min.	Typ.	Max.	Unit
Operating Supply Voltage			5	9	V
Operating Temperature Range		-40		85	°C
Supply Current (10BASE-T activity)@ 96MHz	Without data transmit and receive		40		mA
Supply Current (100BASE-T activity)@ 96MHz	5KB/S data		140		mA
Input Leakage Current	Ii	-10		10	uA
Output high voltage	@IOH=2mA	2.8			V
Output Low Voltage	@IOL=2mA			0.3	V
Input High Voltage		1.6		3.6	V
Input Low Voltage		-0.3		1.4	V
GPIO Input pull-up resistor			200		kΩ
GPIO Input pull-down resistor			200		kΩ

2.3. Ethernet Interface

The 10/100 Ethernet magnetics, network status LEDs, and RJ45 connector are all integrated into the Eport-E30 unit.

Table5. Ethernet Interface Definition

Pin	Description	Net Name	Signal Type
1	Transmit Data +	TX+	O
2	Transmit Data -	TX-	O
3	Receive Data +	RX+	I
4	Receive Data -	RX-	I
15	LED_Link	LINK	O

2.4. Mechanical Size

The dimensions of Eport-E30 are defined as following picture (mm):

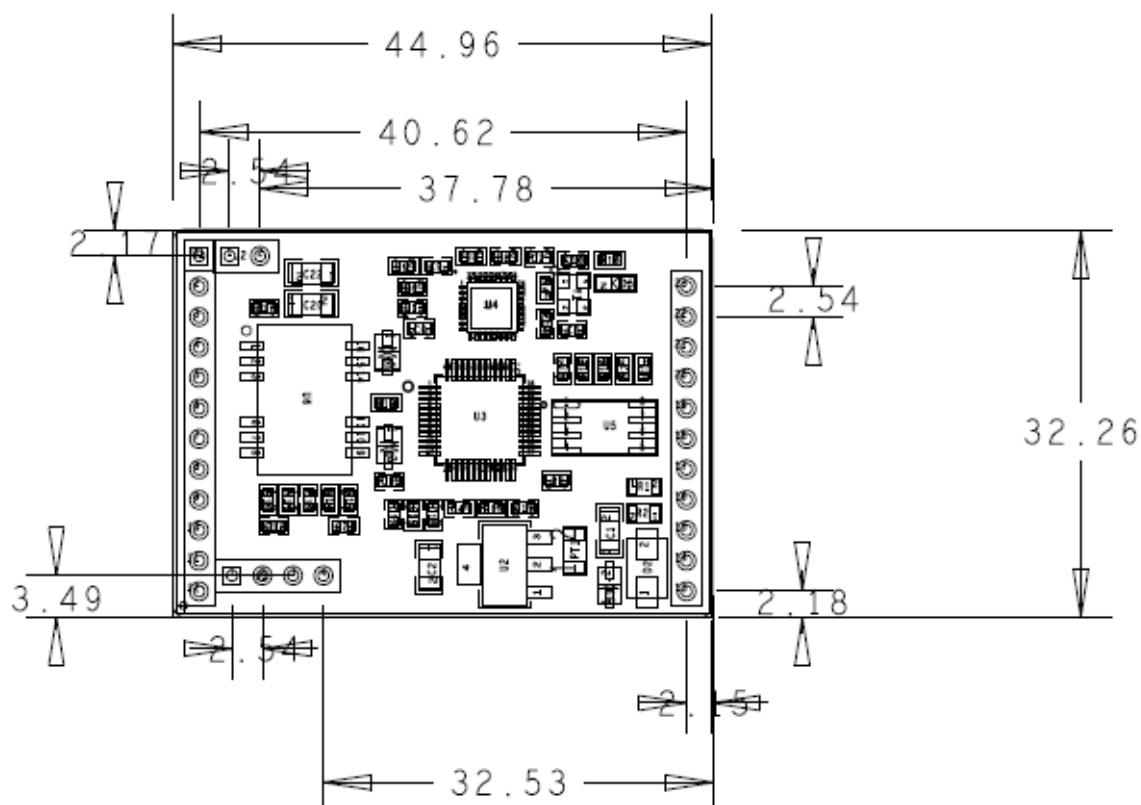


Figure 3. Eport-E30 Mechanical Dimension

2.5. Order Information

Base on customer detailed requirement, Eport-E30 provide different configuration version, Details as below:

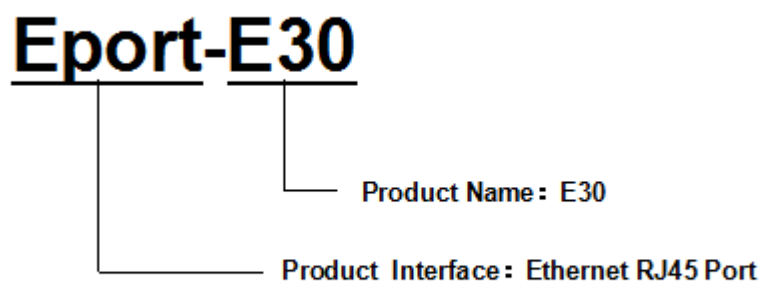


Figure 4. Eport-E30 Product Number Definition

2.6. Function

See Eport-E10 manual for detailed usage. This module hardware and software solution is the same as E10.