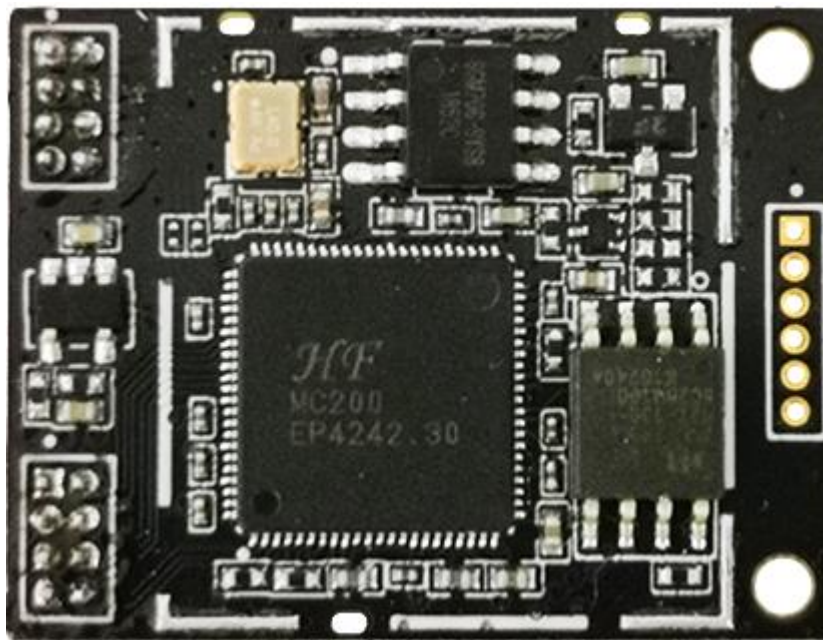


Eport Pro-EP40

Linux Ethernet Module

User Manual

V 1.0



Overview of Characteristic

- ✧ MIPS MCU(32MB SRAM) with 16MB Flash
- ✧ Use Linux 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
- ✧ Support Security Protocol Such As TLS/AES/DES3
- ✧ Support Web OTA Wirelss Upgrade

✧ **Single +3.3V Power Supply**

✧ **Size: 29mm x 22.5mm**

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HISTORY

Ed. V1.0 07-01-2019 First Version

1. PRODUCT OVERVIEW

1.1. General Description

The Eport Pro-EP40 is a fully self-contained small form-factor, most compact, integrated solution, which provide a serial interface to Ethernet connectivity to web enable any device. The Eport Pro-EP40 integrate TCP/IP controller, memory, 10/100M Ethernet PHY, high-speed serial port within a compact RJ45 package and integrates a fully developed TCP/IP network stack and Linux OS. The Eport Pro-EP40 Series also includes an embedded web server used to remotely configure, monitor, or troubleshoot the attached device. Need external transformer and RJ45 interface for usage.

1.2. Device Parameters

Table1. Eport Pro-EP40 Module Technical Specifications

Item	Parameters
System Information	
Processor/Frequency	MIPS/320MHz
Flash/SDRAM	16MB/32MB
Operating System	Linux
Ethernet Port	
Port Number	Ethernet PHY
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, uPNP, NTP, Modbus TCP
Security Protocol	TLS v1.2 AES 128Bit DES3
Serial Port	
Port Number	1
Interface Standard	3.3V TTL: 2 wire (TX,RX)
Data Bits	8
Stop Bit	1,2
Check Bit	None,Even,Odd
Baud Rate	TTL: 600 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

Log	Remote Realtime Log,
Configuration	Web CLI XML import Telnet IOTService PC Software UART Fast Config
Firmware Upgrade	Web, IOTService
SDK For Dev.	Support
Basic Parameter	
Size	29mm x 22.5mm
Operating Temp.	-25 ~ 70°C
Storage Temp.	-45 ~ 105°C, 5 ~ 95% RH (no condensation)
Input Voltage	3.3V
Working Current	~200mA
Power	<700mW

1.3. Key Application

The Eport Pro-EP40 Module 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

Through Ethernet cable connect router with Eport Pro-EP40 for data transfer, which makes the electromechanical integration very simple. Eport Pro-EP40 meet EMC Class B security level. It can pass every countries relevant certification test

2.1. Appearance

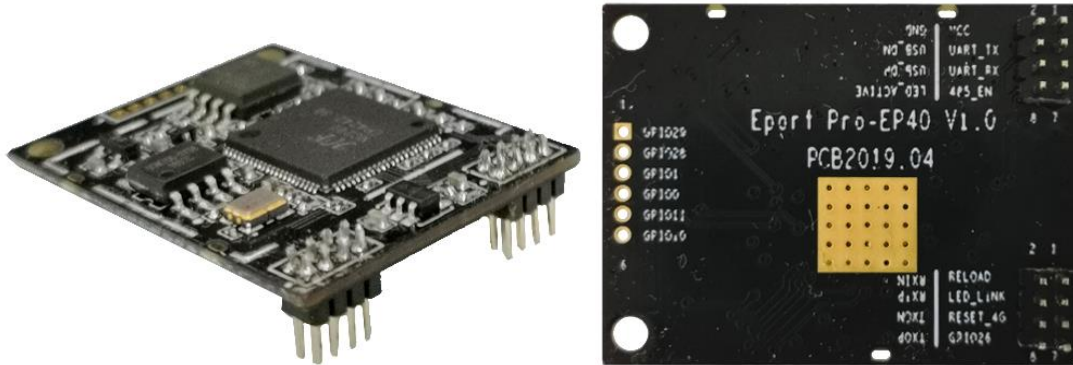


Figure 1. Eport Pro-EP40 Appearance

2.2. Pins Definition

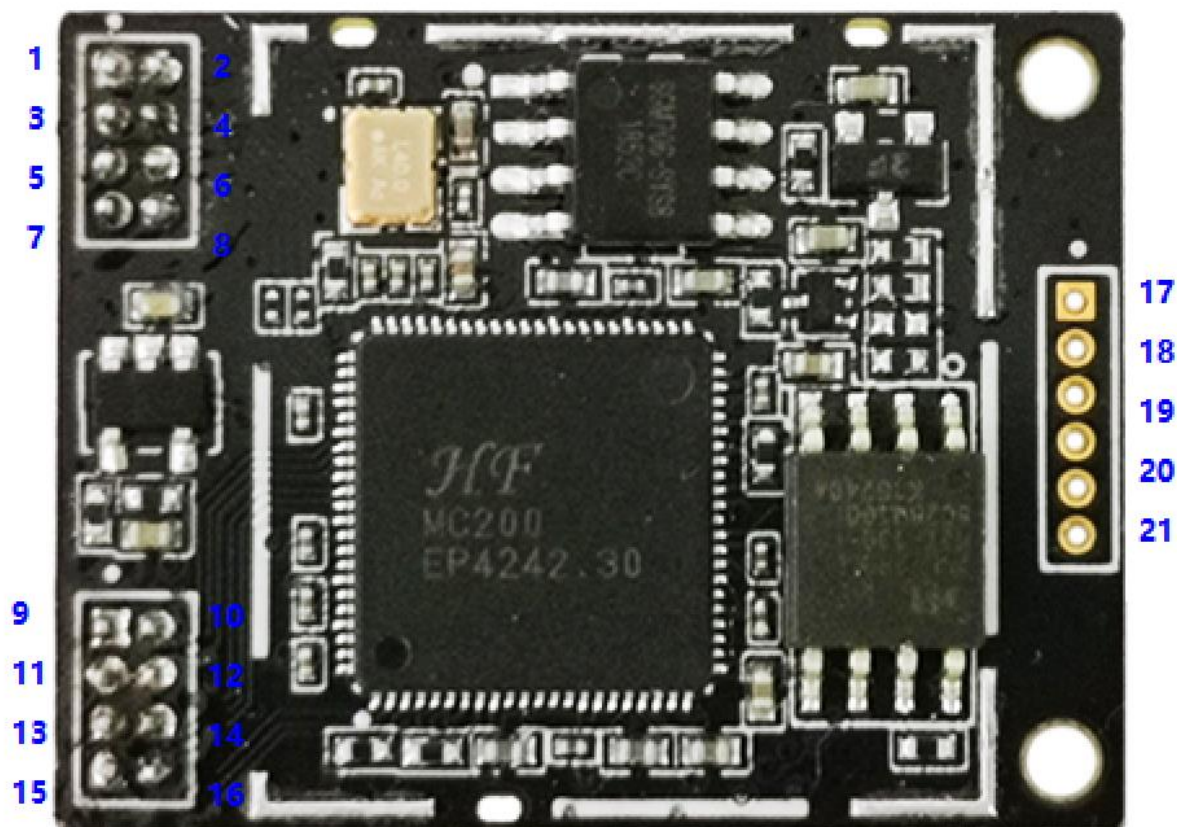


Figure 2. Eport Pro-EP40 Pins Map

Table2. Eport Pro-EP40 Pins Definition

Pin	Description	Net Name	Signal Type	Comments
1	+3.3V Power	DVDD	Power	+3.3V
2	Ground	GND	GND	Power Ground
3	UART0	TXD	O	3.3V, TTL.
4	USB_DM	USB_DM	I/O	
5	UART0	RXD	I	3.3V, TTL.
6	USB_DP	USB_DP	I/O	
7	GPIO03	GPIO03	I/O	
8	LED indicator	LED2_Data	O	Detailed functions see <Notes>
9	Multi-Function Pin	nReload	I,PU	Detailed functions see <Notes>
10	Ethernet Interface	PHY_RX-	I	Ethernet Interface Need connect to network transformer
11	LED indicator	LED1_Link	O	Detailed functions see <Notes>
12	Ethernet Interface	PHY_RX+	I	Ethernet Interface Need connect to network transformer
13	GPIO27	GPIO27	I/O	
14	Ethernet Interface	PHY_TX-	O	Ethernet Interface Need connect to network transformer

Pin	Description	Net Name	Signal Type	Comments
15	GPIO26	GPIO26	I/O	
16	Ethernet Interface	PHY_TX+	O	Ethernet Interface Need connect to network transformer
17	GPIO29	GPIO29	I/O	Reserved
18	GPIO28	GPIO28	I/O	
19	GPIO01	GPIO01	I/O	
20	GPIO11	GPIO11	I/O	
21	GPIO10	GPIO10	I/O	

<Notes>

nReload Pin function:

- Put this pin low before the device powered on (or Reset), This device works in mass production mode to upgrade its firmware, this mode is used for upgrade customized firmware. The corresponding PC tools can be download on High Flying website.
- 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.

LED2_Data Pin

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

LED1_Link Pin

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

2.3. 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		3.8	V
Voltage on any I/O pin		0		3.3	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		3.1	3.3	3.6	V
Operating Temperature Range		-25		70	°C
Supply Current (10BASE-T activity)@ 96MHz	Without data transmit and receive		150		mA

Supply Current (100BASE-T activity)@ 96MHz	5KB/S data		200		mA
Input Leakage Current	li	-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

2.4. Eport Pro-EP40 Mechanical Size

The dimensions of Eport Pro-EP40 are defined as following picture (mm):

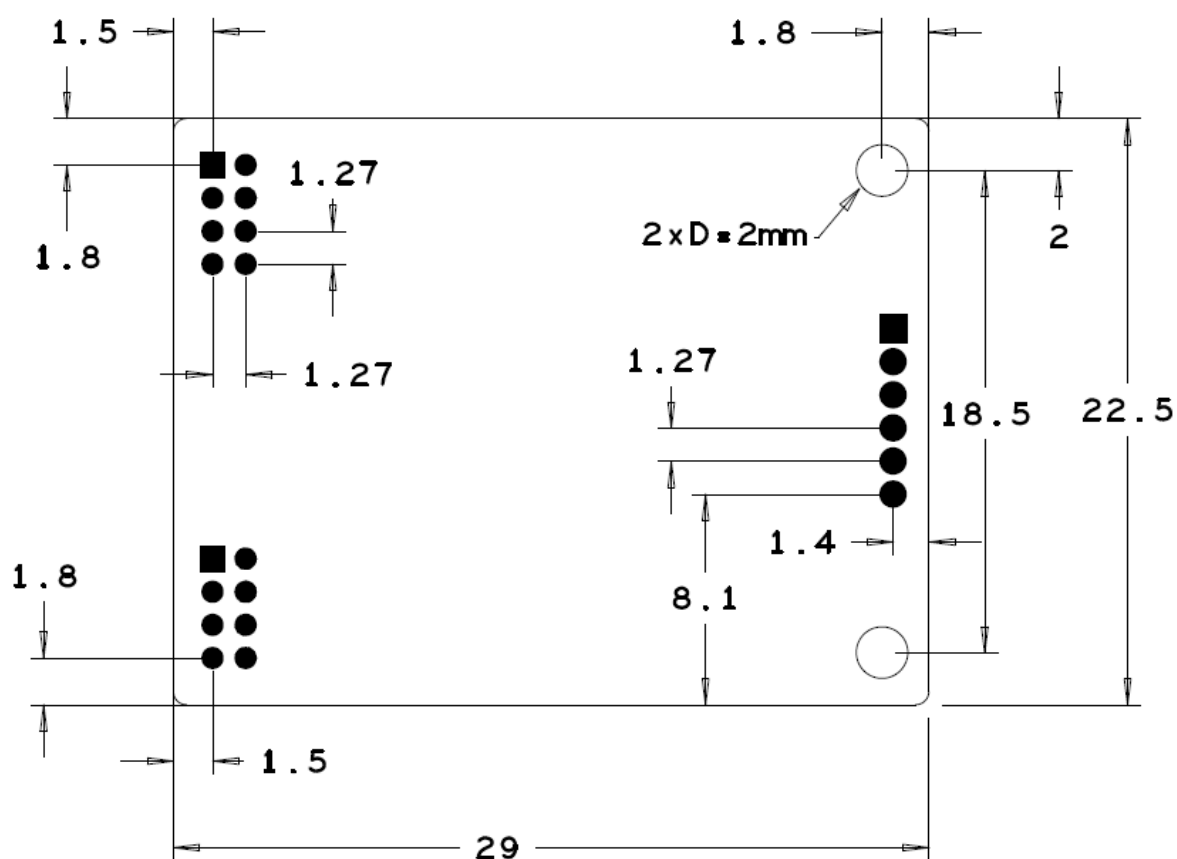


Figure 3. Eport Pro-EP40 Mechanical Dimension

2.5. Order Information

Base on customer detailed requirement, Eport Pro-EP40 provide different configuration version, Details as below:

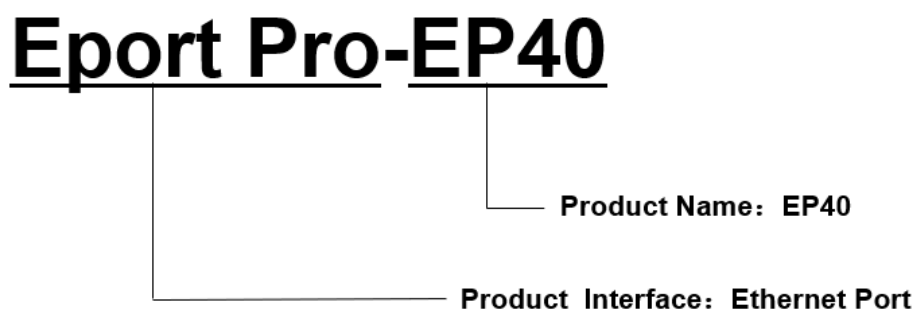


Figure 4. Eport Pro-EP40 Product Number Defination

2.6. Typical Application

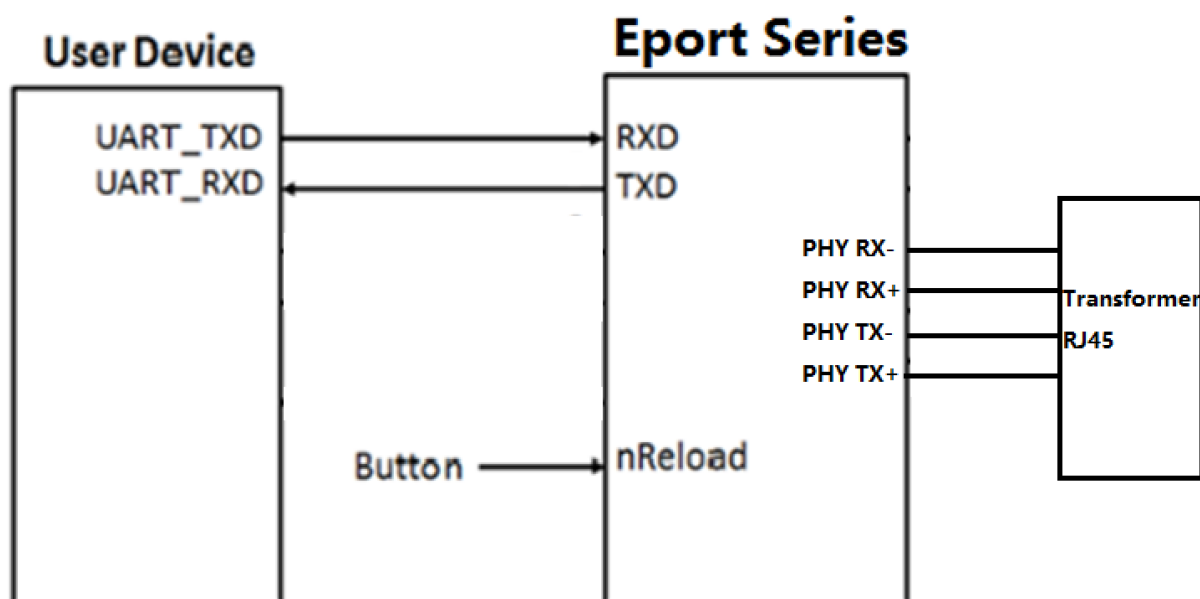


Figure 5. Eport Pro-EP40 Hardware Typical Application

Notes:

nRST- Input.Hardware reset signal. Effective Low.

There is internal pull-up resistor to 3.3V and no external pull-up resistor needed. MCU put nRST signal to low for at least 10ms if need to reset the device.

nReload- Input.Device restore to factory default configuration. Effective Low; (**Recommend this pin to connect button or jumper header, Used for batch upgrade and configuration**)

Can connect with external button or chip pin, When press nReload button, pull the pin to Low level more than 3s, then loose, device will restore to factory default setting and restart itself. If nReload function is not required, Can leave this pin open, Don't need any connection.

TXD/RXD- UART port data transmit and receive signal.

2.7. Software Function

Refer to “IOT_Device_Series_Software_Funtion” document for detailed usage.

APPENDIX A: HW REFERENCE DESIGN

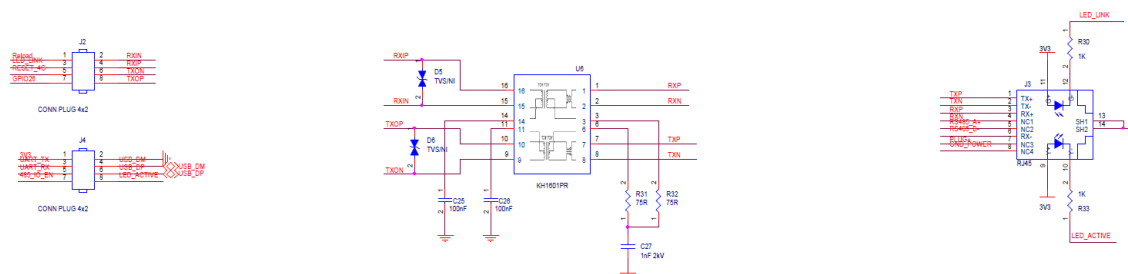


Figure 6. HW REFERENCE DESIGN

APPENDIX B: CONTACT INFORMATION

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For more information about IOTworkshop modules, applications, and solutions, please visit our web
site www.iotworkshop.com

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