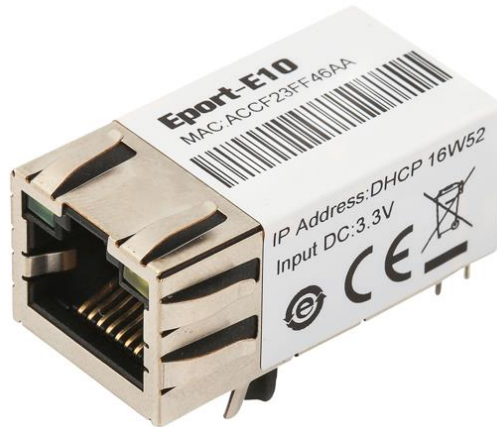


Eport-E10

Super Port User Manual

V 1.4



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 921600 bps**
- ✧ **Support 10/100M Ethernet Auto-Negotiation**
- ✧ **Support Easy Configuration Through a Web Interface**
- ✧ **Support Security Protocol Such As SSL/AES/DES3**
- ✧ **Support Web OTA Wirelss Upgrade**
- ✧ **Support Industrial Temperature: -40 to +85° C**
- ✧ **Single +3.3V Power Supply**
- ✧ **Size: 33 x 18.6 x 15 mm (L x W x H)**
- ✧ **FCC/CE/RoHS Certificated**

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HISTORY

Ed. V1.2	09-06-2016	Update product appearance. Add more description of AES/DES3 encryption..
Ed. V1.3	10-12-2016	Update shipping information. Update TLS encryption.(Firmware version 1.6)
Ed. V1.4	02-06-2017	Add auto-ip, heartbeat,ntp,UART fast config function(Firmware 1.07c Version)

1. PRODUCT OVERVIEW

1.1. General Description

The Eport-E10 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-E10 integrate TCP/IP controller, memory, 10/100M Ethernet transceiver, high-speed serial port within a compact RJ45 package and integrates a fully developed TCP/IP network stack and FreeRTOS OS. The Eport-E10 also includes an embedded web server used to remotely configure, monitor, or troubleshoot the attached device.

The Eport-E10 using highly integrated hardware and software platform, It has been optimized for all kinds of applications in the industrial control, smart grid, personal medical application and remote control that have lower data rates, and transmit or receive data on an infrequent basis. By simply adding an Eport-E10 unit to a product Design, device manufacturers can reduce their Design cycle and speed up Time-To-Market with very low risk.

The Eport-E10 integrates all serial to Ethernet functionality into a low-profile, 33 x 18.6 x 15mm standard RJ45 module package that can be easily mounted on main PCB with application specific circuits and even not change your original Design.

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 SSL/AES/DES3
- Support Web Wireless Upgrade
- Support Industrial Temperature: -40 to +85° C
- Single +3.3V Power Supply
- Size: 33 x 18.6 x 15mm (L x W x H)
- FCC/CE/RoHS Certificated

1.3. Device Parameters

Table1. Eport-E10 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	SSL v3 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: 600 bps~921600 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 IOTManager PC Software UART Fast Config
Firmware Upgrade	Web or IOTManager
SDK For Dev.	Not yet
Basic Parameter	
Size	33 x 18.6 x 15 mm
Operating Temp.	-45 ~ 85°C
Storage Temp.	-45 ~ 105°C, 5 ~ 95% RH (no condensation)
Input Voltage	3.3V
Working Current	~100mA
Power	<400mW

Other Information	
Certificate	CE, FCC, RoHS
Material	Metal shell, thermoplastic case

1.4. Key Application

The Eport-E10 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-E10 unit is a complete solution for serial port device connecting to network. Packaged into a RJ45 connector, 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 –E10 serial server for data transfer, which makes the electromechanical integration very simple. Eport-E10 meet EMC Class B security level, It can pass every countries relevant certification test

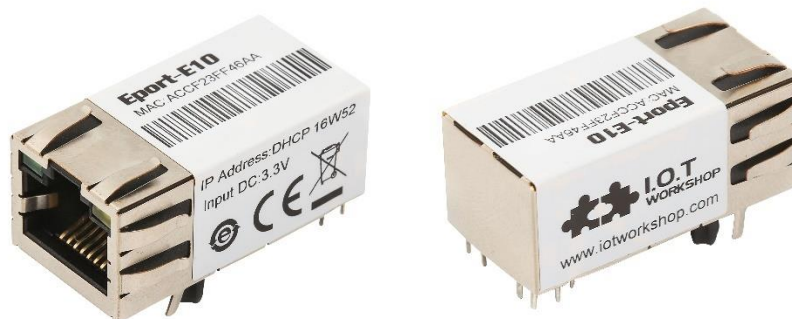


Figure 1. Eport-E10 Appearance

2.1. Pins Definition

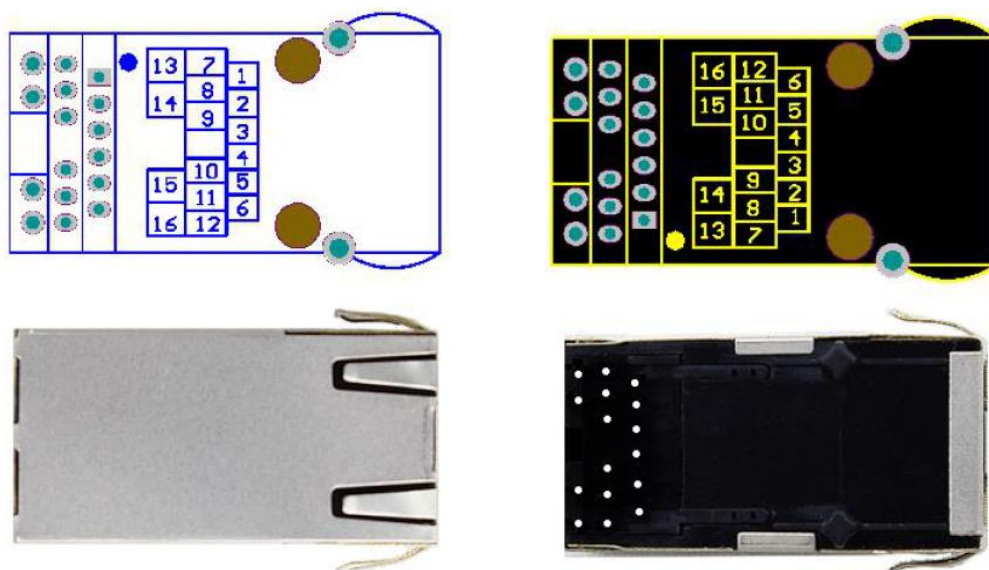


Figure 2. Eport-E10 Pins Map

Table2. Eport-E10 Pins Definition

Pin	DES3cription	Net Name	Signal Type	Comments
1	GPIO	GPIO1	I/O	Can be configured to UART1:TXD2
2	GPIO	GPIO2	I/O	Can be configured to UART1:RXD2
3	UART0	CTS	I	Can be configured to GPIO3 Pin
4	External Reset In	nRST	I, PU	“Low” effective reset input.
5	UART0	RTS	O	Can be configured as RS485 control function
6	Multi-Function Pin	nReload	I,PU	Detailed functions see <Notes>
7	LED indicator	LED2_Data	O	If use product's LED, must connect this Pin to Pin13, If don't use the product's LED, may connect this Pin to external LED circuit. Detailed functions see <Notes>
8	UART0	RXD	I	3.3V, TTL.
9	UART0	TXD	O	3.3V, TTL.
10	Ground	GND	GND	Power Ground
11	+3.3V Power	DVDD	Power	+3.3V
12	LED indicator	LED1_Link	O	If use product's LED, must connect to Pin16. If don't use the product's LED, may connect this Pin to external LED circuit. Detailed functions see <Notes>
13	LED indicator	LED2	I	If use product's LED, connect to Pin7. If not use the product's LED, leave it unconnected.
14	LED power	LED_3V3	Power	LED_Data Power 3.3V, If don't use the product's LED, leave it unconnected.
15	LED power	LED_3V3	Power	LED_Link Power 3.3V, If don't use the product's LED, leave it unconnected.
16	LED indicator	LED1	I	If use product's LED, connect to Pin12. If don't use the product's LED, leave it unconnected.

<Notes>

nReload Pin function:

1. 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.
2. 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

1. 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

1. 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		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		3.0	3.3	3.6	V
Operating Temperature Range		-45		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-E10 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	NC		
5	NC		
6	Receive Data -	RX-	I
7	NC		

Pin	DES3cription	Net Name	Signal Type
8	NC		
9	Case Ground	SHIELD	

2.4. Ethernet LED Interface

The device contains two bi-color Ethernet LED indicator (Detailed postion is in dimension drawing .)

Table6. LED Interface Definition

Link LED (Left Side)		Activity LED (Right Side)	
Color	Meaning	Color	Meaning
Off	No Connection	Off	No Data
Green	10/100Mbps	Yellow	Have Data

2.5. Mechanical Size

The dimensions of Eport-E10 are defined as following picture (mm):

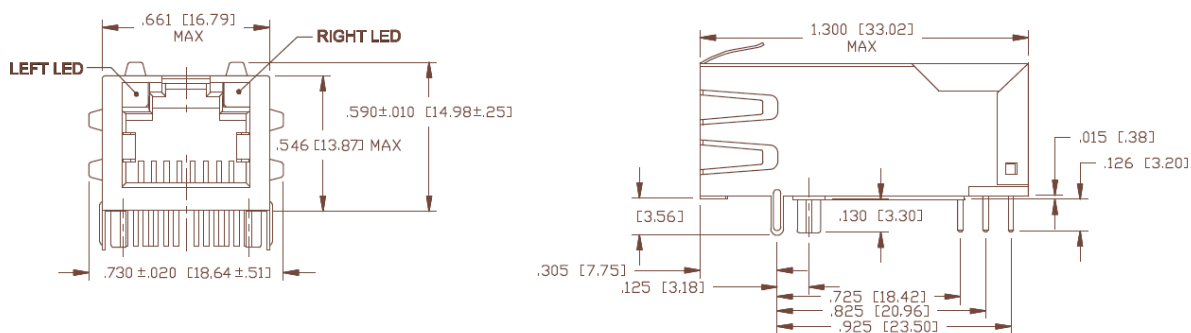


Figure 3. Eport-E10 Mechanical Dimension

2.6. Recommended PCB Layout

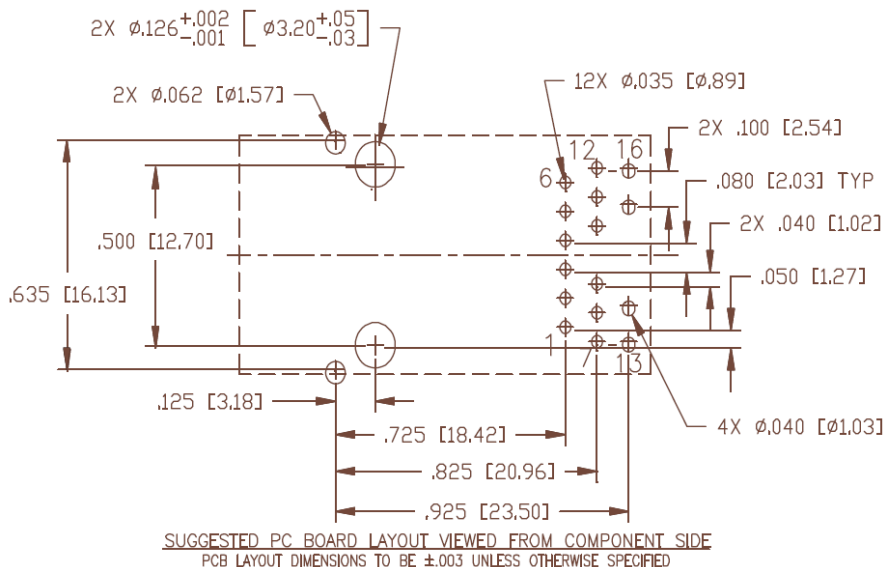


Figure 4. Eport-E10 PCB Layout

PCBA should have approximately 2.54cm x 2.54cm large plane GND to connect with product GND for heat dissipation, The device's metal shell is also a important way of heat dissipation.

2.7. Evaluation Kits

We provide evaluation kit for user to learn to use Eport-E10. Evaluation kit picture is as following, User can use RS232, USB Serial or Ethernet interface to configure parameters, manage equipment and do some function test. (onboard FT232R chip switch, its driver can be download from high flying website, When using USB Serial, the top right corner jumper need to all jump to the left side). .

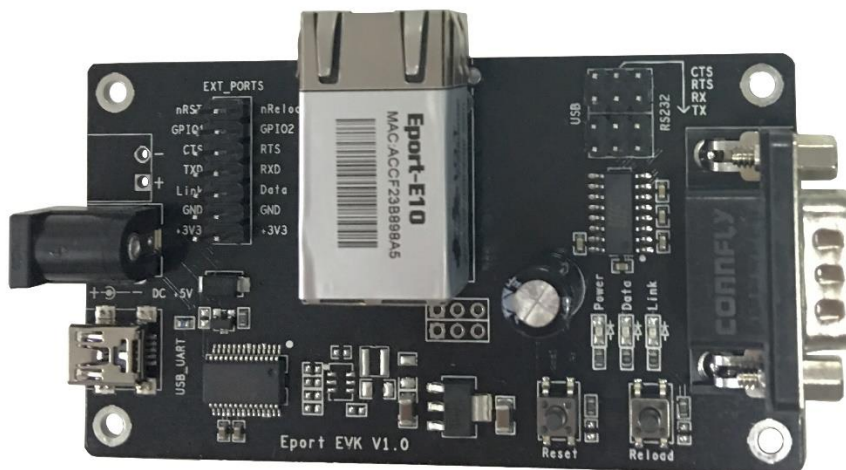


Figure 5. Eport-E10 EVK

Evaluation kit interface details as following:

Table7. Eport-E10 EVK Interface

Function	Name	Describe
External Interface	COM	Main data/command RS-232 interface
	USB_UART	UART to USB debug interface (Used for PC debug envirement which without RS232 interface, Need load drivers to use) , Can be power supply port
	DC5	DC 5V input
	EXT PORT	GPIO Pin interface
	JMP	4Pin USB or RS232 jumper. All jump to left choose USB Serial.. All jump to right choose RS232
LED	Power	3.3V Power Indicate
	Link	Network indicator, Detailed functions see LED1_Link Pin<Notes>
	Data	Communication indicator, Detailed functions see LED2_Data Pin<Notes>
Button	Reset	"Reset" Button
	Reload	Press down the button more than 3s and then loose

Function	Name	Describe
		to restore factory setting

2.8. Order Information

Base on customer detailed requirement, Eport-E10 provide different configuration version, Details as below:

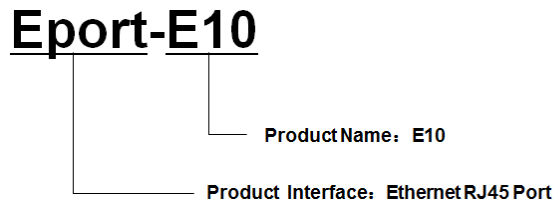


Figure 6. Eport-E10 Product Number Defination

2.9. Typical Application

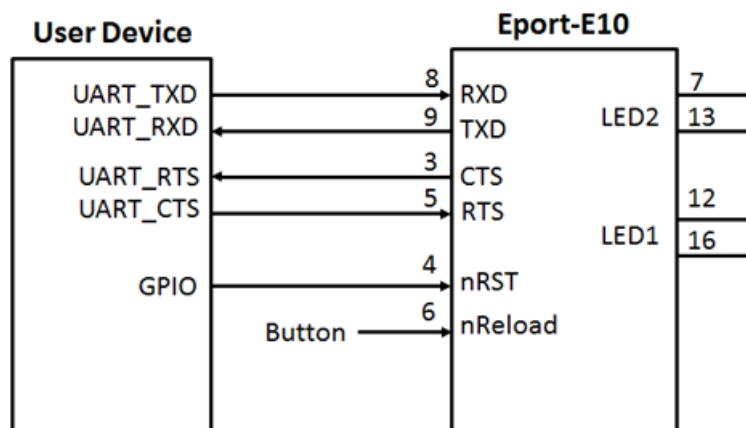


Figure 7. Eport-E10 Hardware Typical Application

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.

3. FUNCTIONAL DESCRIPTION

The Eport-E10 has the following feature:

- Connect customer's device with PC or server via TCP/UDP/Telnet.
- Contain a HTTP web server allow user to configure through browser with PC or phone.
- Have multi-programmable I/O pins used to monitor or control device directly.

3.1. Basic Network Protocol

The Eport-E10 device uses the IP address for network communications. It uses the TCP to assure that no data is lost or duplicated. It uses UDP to assure that data can be fast and effective to destination address.

Supported protocols include:

- ARP, UDP, TCP, ICMP, DHCP, Telnet, DHCP, HTTP Server/Client Web socket
- Telnet command configuration, Web server configuration
- Security Protocol: SSL/TLS, AES, DES3 encryption

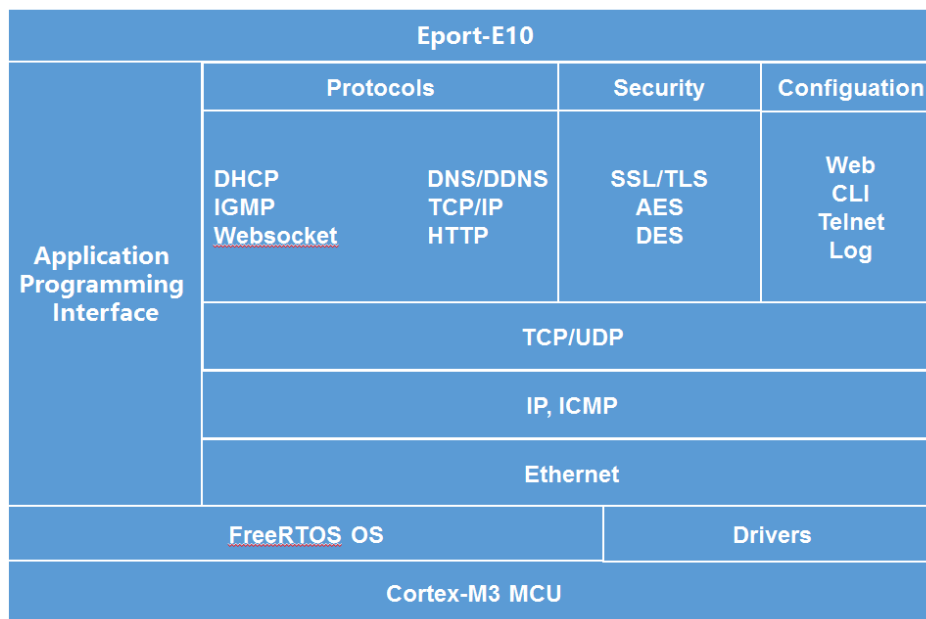


Figure 8. Eport-E10 Software Protocol Structure

3.2. Ethernet Interface Function

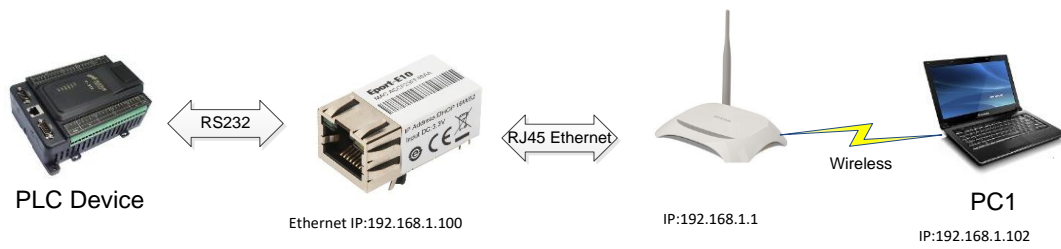


Figure 9. Ethernet Interface Function

The Eport-E10 device Ethernet interface work in WANN function by default. When connect to router, it will get IP address from router(as picture 192.168.1.100). Then the device and the PC1 are in the same local area network(LAN) for network communication, The data of communication finally pass from UART to network to control or collect PLC device.

Notes:

The device UART is TTL Level voltage. If connect to RS232 interface device, Need to add the external chip to transfer TTL UART to RS232 UART.

3.3. Typical Network Architecture

As the following picture, Eport-E10 and mobile device all connect to the same Router AP. At the same time, Eport-E10 connect to user equipment by RS232 interface(RS485 function can be customized to support, still need additional 485 chip). The whole wireless network is easily to extend in this kind of network structure.

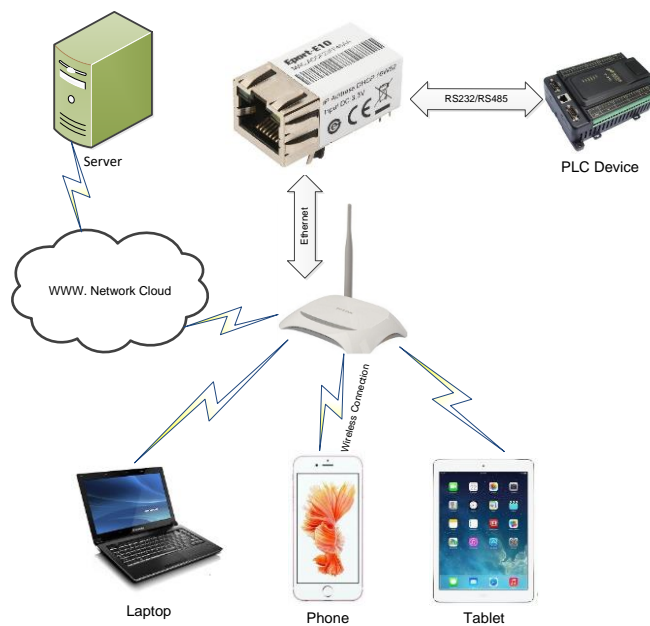


Figure 10. Network application

3.4. GPIO Function(Reserved)

Eport-E10 device can provide many GPIOs, which include max 5 GPIO control pins. User devices can read/write GPIO pins status.

Table8. Eport-E10 GPIO Pin Mapping Table

Pin	Configured Function	Default: Setting	Type
Pin 1	UART2-TXD / GPIO1	GPIO1	I/O
Pin 2	UART2-RXD / GPIO2	GPIO2	I/O
Pin 3	UART-CTS / GPIO3	UART-CTS	I/O
Pin 5	UART-RTS / GPIO5	UART-RTS	I/O
Pin 6	Multi-Function Pin	nReload	I, PU

3.5. Working Mode

3.5.1. Transparent Transmission Mode

The Eport-E10 Device support transparent transmission mode of serial interface, In this mode, User only need to set some necessary parameter(network communication parameter). After power on, the device can auto connect to default socket setting(TCP/UDP). Use web page or PC IOTManager software to set commucation parameter.

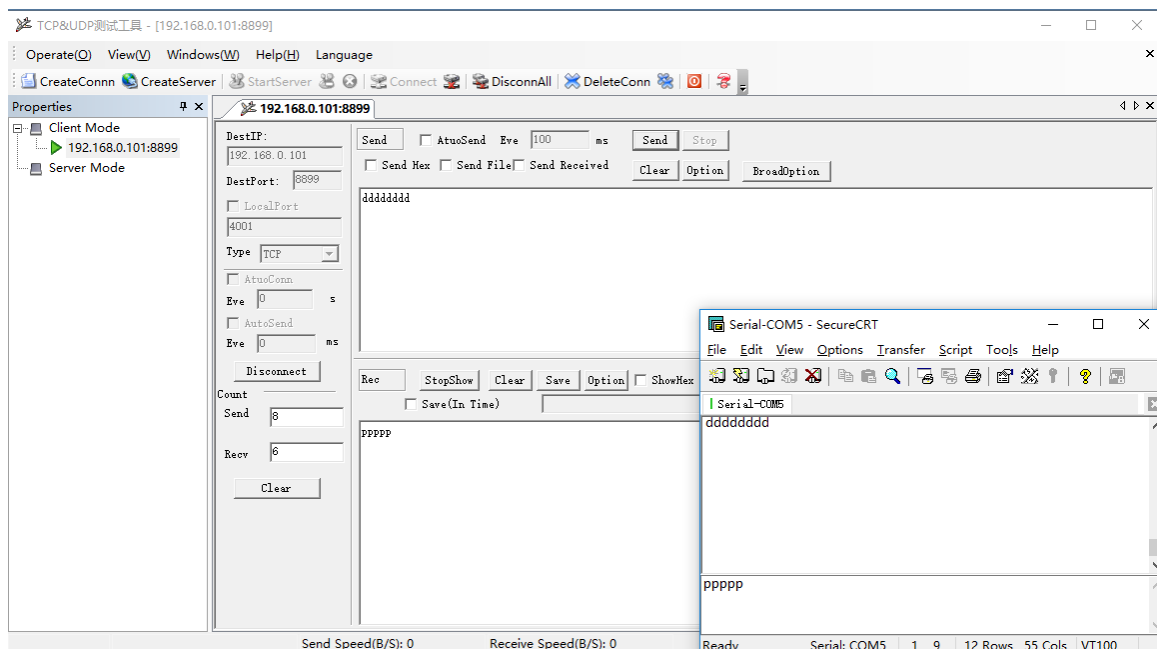


Figure 11. Transparent data transmission example

3.5.2. TCP Server

Transparent transmission mode support TCP Server、TCP Client、UDP Server、UDP Client communication application, UDP Server is special function, Details see following Cli instruction. There is a default tcp server socket created. The Socket can be modified to work at one of the above working mode. When Socket works as TCP server, It will support multiple TCP connection(max 5 TCP client). Multiple TCP connection will work in below structure:

Upload data flow: All the different TCP connection or the Client's data will be continuously transmitter to UART.

Download data flow: All data received from UART will be copied and broadcast to every TCP client.

Detailed multiple TCP connection structure drawing as below:

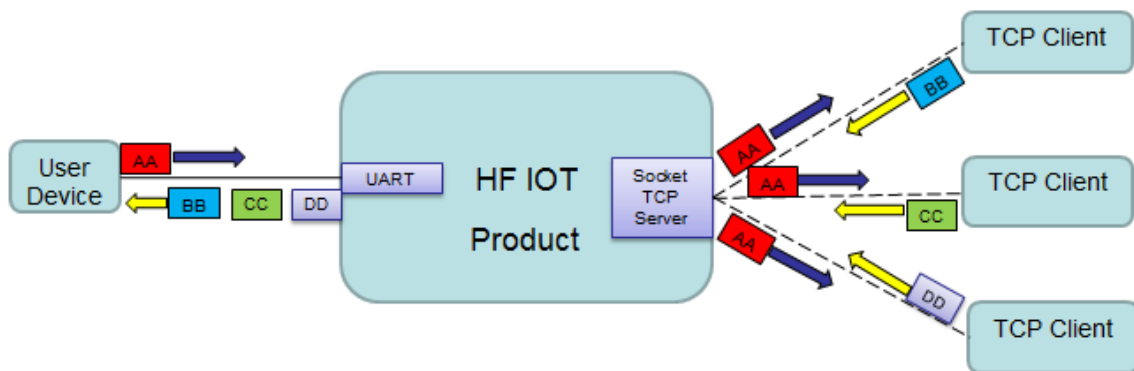


Figure 12. TCP Server data transmission example

The device support max 5 Socket channel, each socket can work individual at TCP/UDP, Multi Socket simultaneous communication of data stream is as following.

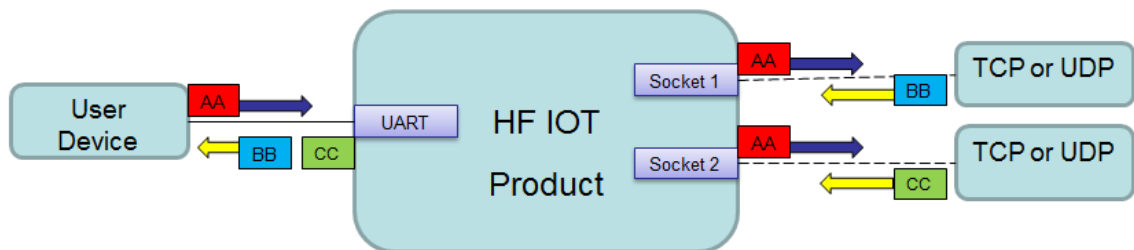


Figure 13. Multi Socket data transmission example

Multi Socket can be created through software configure or webpage configure. The below set up 3 socket channel.

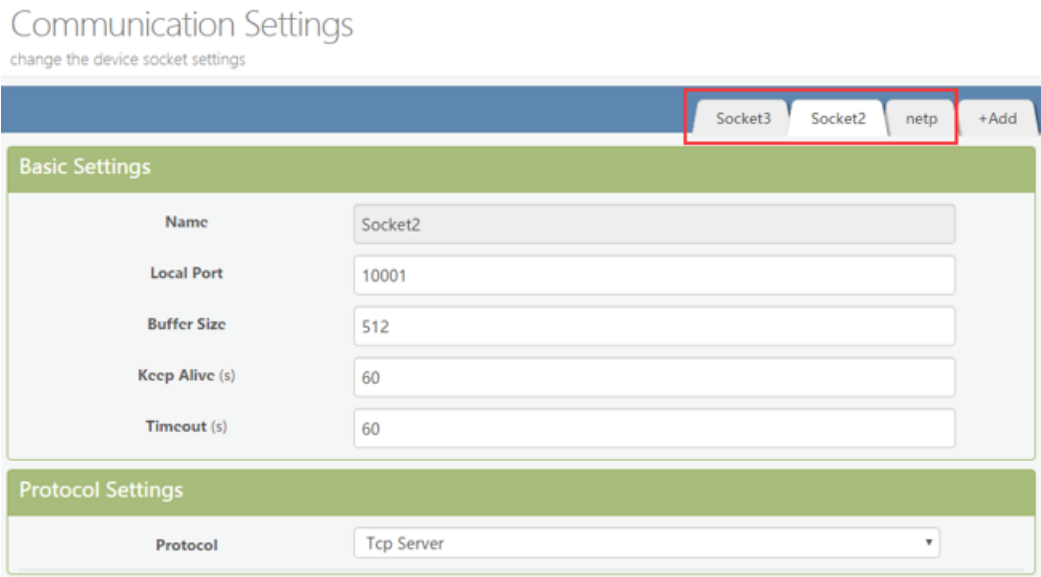


Figure 14. Webpage set up multi Socket channel

3.5.3. HTTP Mode

Eport –E10 device support sending data in HTTP format to HTTP server(Set product working mode by IOTManager software or webpage). When device socket works in HTTP mode, All received UART data will automaticly transform to HTTP format(add HTTP header) and transmit to HTTP server. For the received HTTP data from HTTP server, will automatically remove HTTP header and only output the data packet to UART.

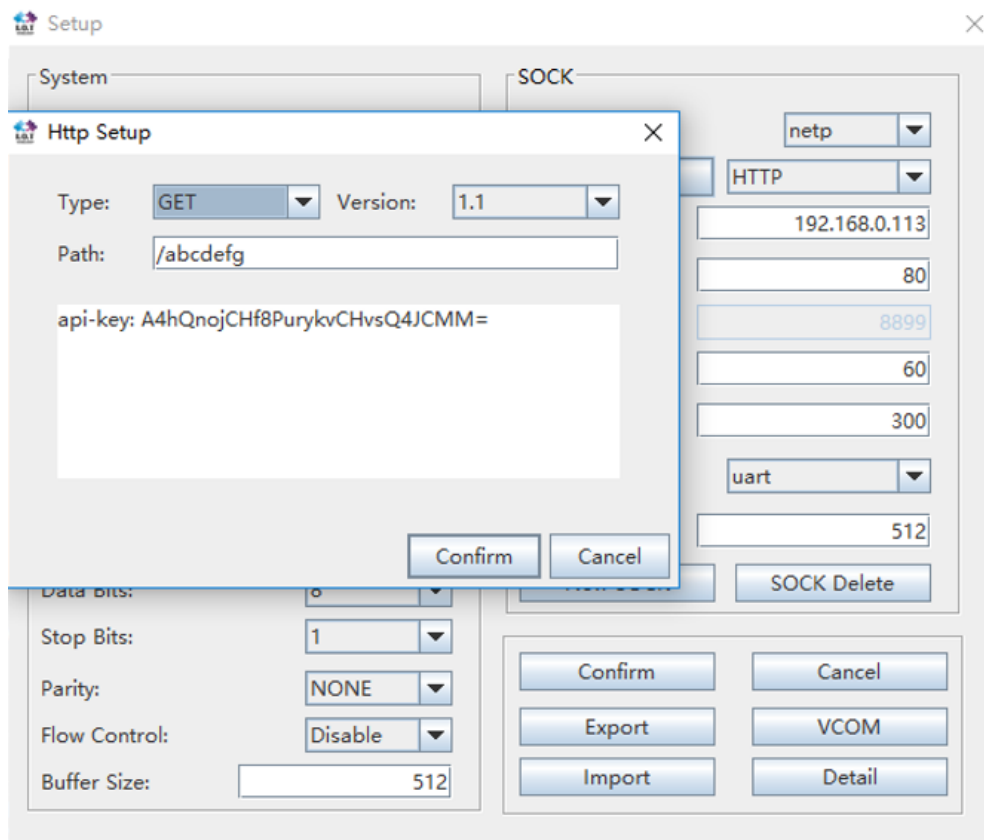


Figure 15. IOTManager Software Configure

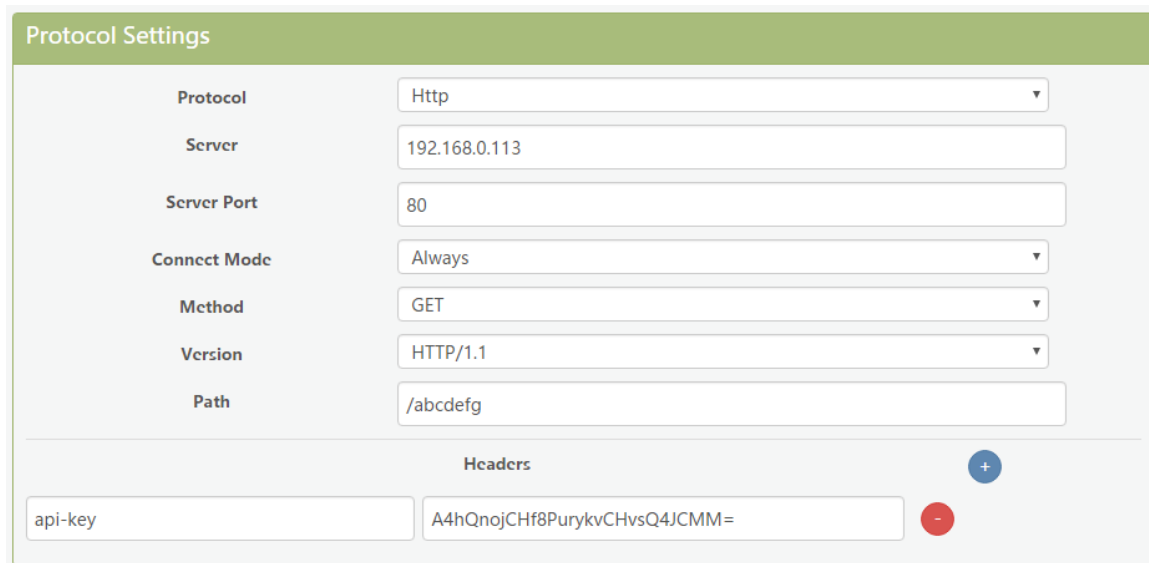


Figure 16. Web Page Configure

Eport-E10 UART received“pppp”data, send below data to HTTP Server.

GET /abcdefg HTTP/1.1

api-key: A4hQnojCHf8PurykvCHvsQ4JCMM=

pppp

HTTP Server send below data, Eport-E10 serial output“abcde”

GET /abcdefg HTTP/1.1

api-key: A4hQnojCHf8PurykvCHvsQ4JCMM=

abcde

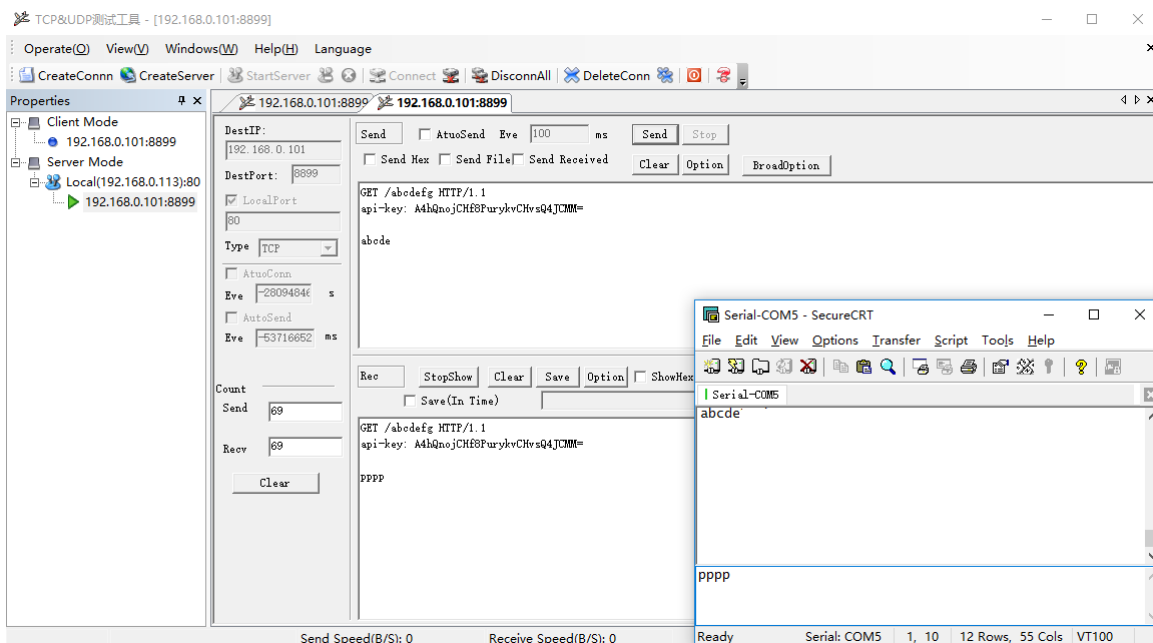


Figure 17. HTTP transmit example

3.5.4. Telnetd Mode

When device work in Telnetd mode, UART port can connect to user device console port(some gateway and switch device may have this console port to set parameters of its working mode). May use Eport-E10 to config user device via Telnetd mode.

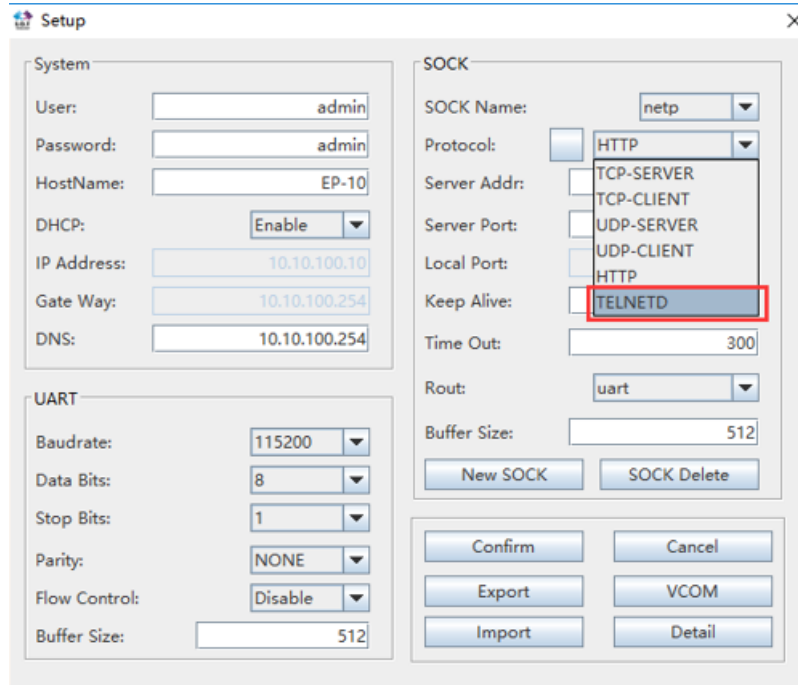


Figure 18. IOTManager Software Configure Protocol

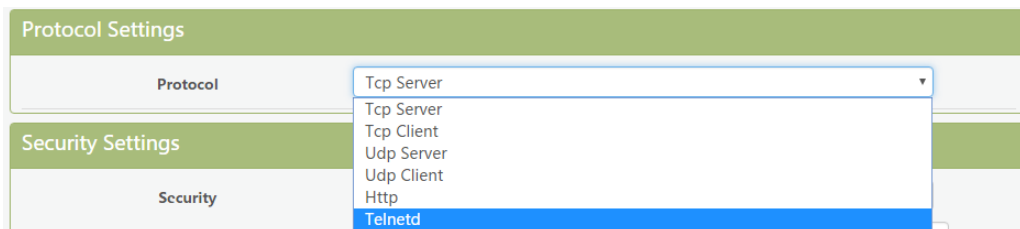


Figure 19. Web page configure protocol

Connect device UART to user device console port(The example use NC916) and create Telnet connection. Then It can directly configure user device.

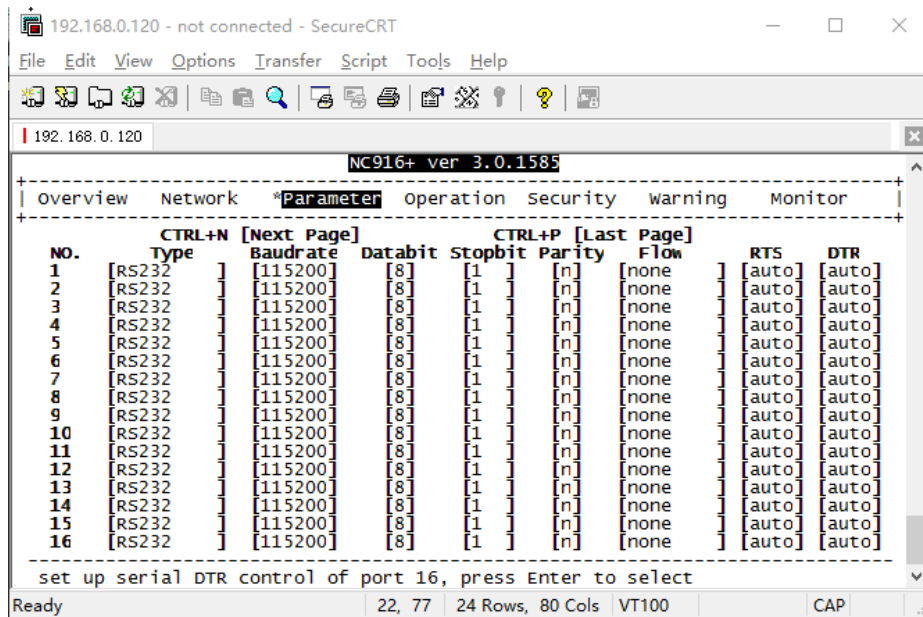


Figure 20. Telnet details example

3.6. AES/DES3/TLS Data Encryption

To improve device security and ensure the data won't be cracked and illegal used, The Eport-E10 device can do encryption to UART data before transmit to network.

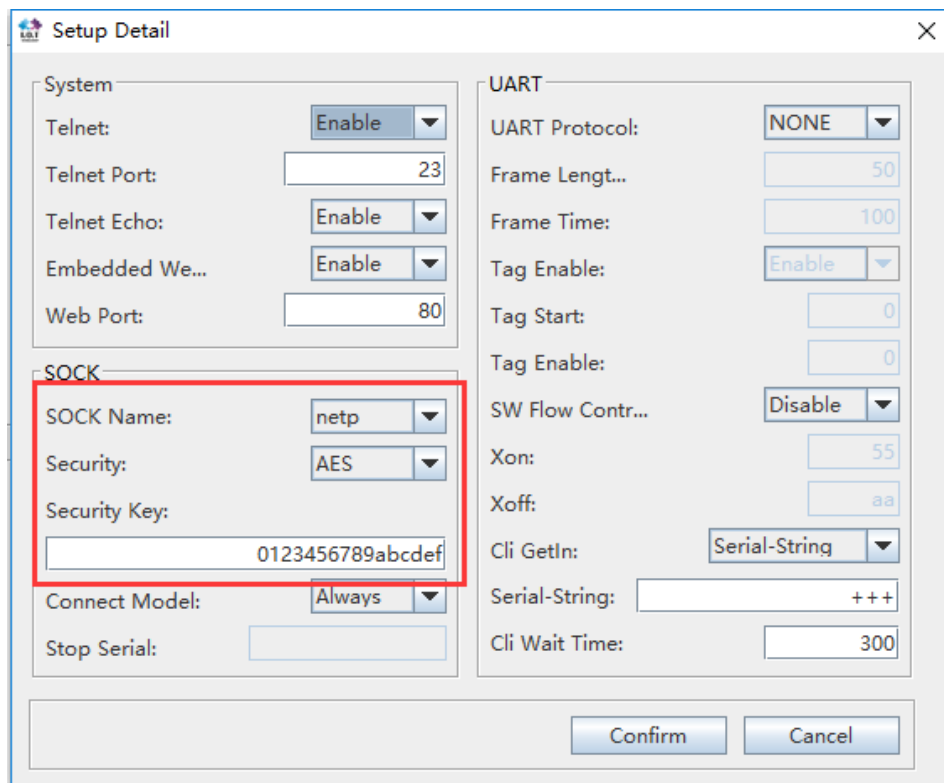
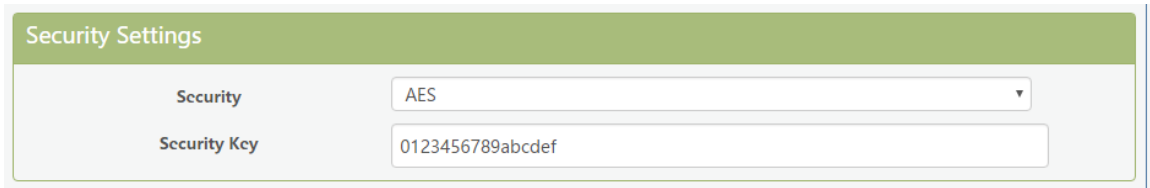


Figure 21. IOTManager Software Configure Encryption

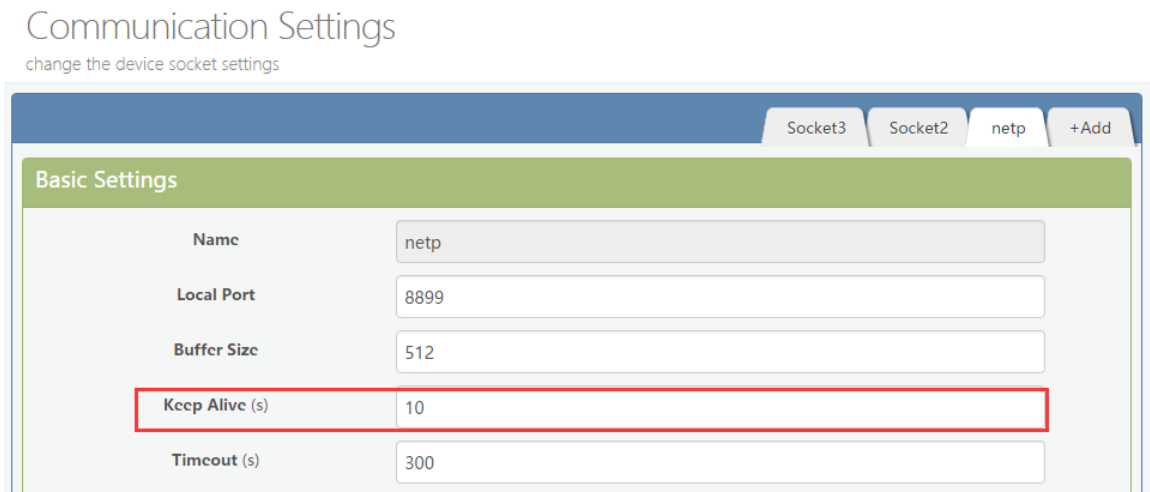


The screenshot shows a web page titled "Security Settings" with a green header. Below the header, there are two configuration fields: "Security" is a dropdown menu set to "AES", and "Security Key" is a text input field containing "0123456789abcdef".

Figure 22. Web Page Configure Encryption

3.7. Keepalive

When TCP connection between device and server became abnormal. The device will check the obnormal status and reconnect to server (when the device working in TCP Client Mode), When the device working in TCP Server, It will break the TCP client and wait for next connection.

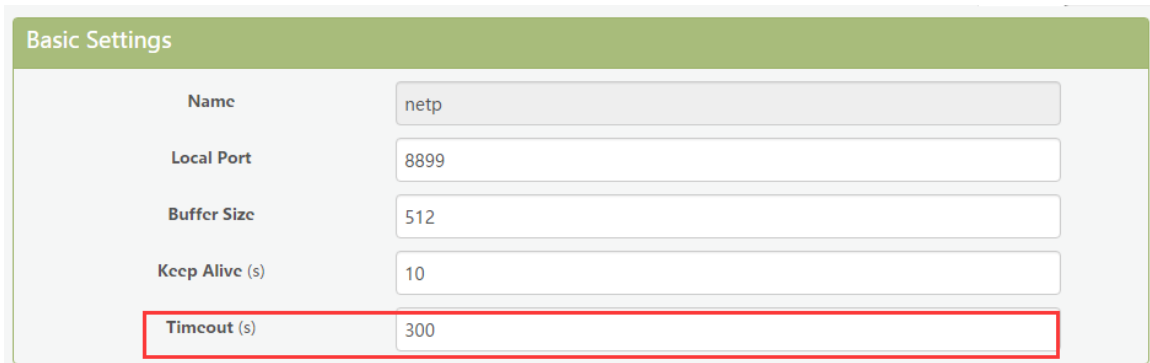


The screenshot shows a web page titled "Communication Settings" with the subtitle "change the device socket settings". The page has a blue header with tabs for "Socket3", "Socket2", "netp", and "+Add". The "netp" tab is selected. Below the header is a "Basic Settings" section with a green header. It contains five configuration fields: "Name" (netp), "Local Port" (8899), "Buffer Size" (512), "Keep Alive (s)" (10, highlighted with a red box), and "Timeout (s)" (300).

Figure 23. Web Page Config Keepalive

3.8. Timeout

The device will break the TCP connection after some time(default is 300 seconds and it can be modified)if there is no data packet received from Destination TCP target . It will reconnect to server(When device works in TCP Client mode). When device working in TCP Server, It will disconnect with TCP Clie. This mechanism can effectively restore TCP abnormal connection.If set it to "0", this function will be close.



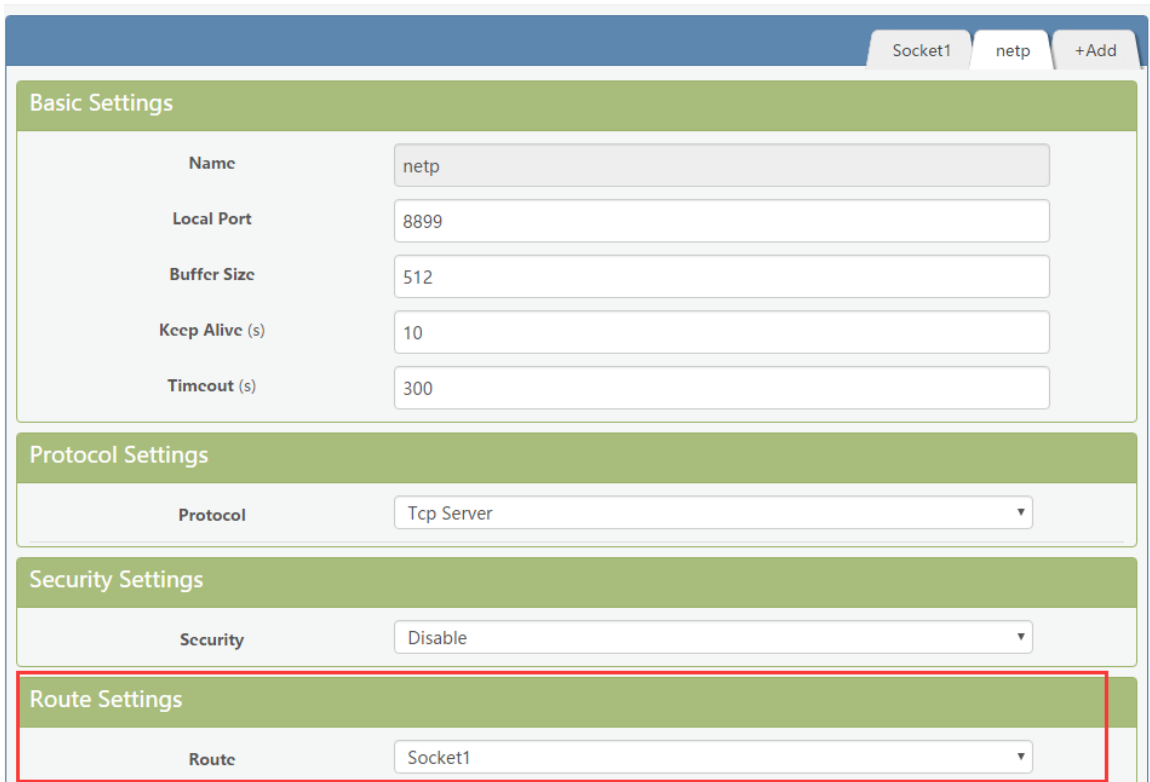
Name	netp
Local Port	8899
Buffer Size	512
Keep Alive (s)	10
Timeout (s)	300

Figure 24. Web Page Configure Timeout

3.9. Route Setup

The data received from Socket channel can be set to another socket channel. (Default: socket Destination channel is UART, It also can be other Socket channel, Or take the Socket as log print usage)

The below example shows the default netp Socket channel route setting to Socket1, Socket1 configure as TCP Server mode and route setting to UART. So the netp Socket channel received UART data will output to Socket1, and Socket1 channel will output to serial output.



Name	netp
Local Port	8899
Buffer Size	512
Keep Alive (s)	10
Timeout (s)	300

Protocol	Tcp Server
----------	------------

Security	Disable
----------	---------

Route	Socket1
-------	---------

Figure 25. Route function setup example

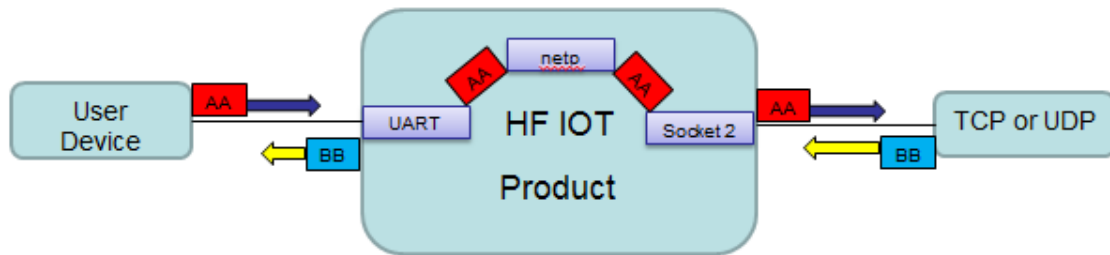


Figure 26. Route Function Data Flow Example

3.10. UART Frame Scheme

3.10.1. UART Free-Frame

Eport-E10 support UART Free-Frame function, If user select to open this function, Module will check the intervals between any two bytes when receiving UART data, If the interval time exceed the setting value, It will think it as the end of one frame, Or it will receive data until greater than internal buffer bytes(Default: 512, the largest 1400 bytes), then transfer to Socket Channel.

Module default UART Free-Frame interval time is 50ms, it will packaged into another frame if received UART data interval time is greater than 50ms. User also can set this interval time to minimum 10ms through Cli command and webpage.

If interval time is set to 10ms and customer MCU can't send next byte within 10ms, The serial data will be break into two frame.

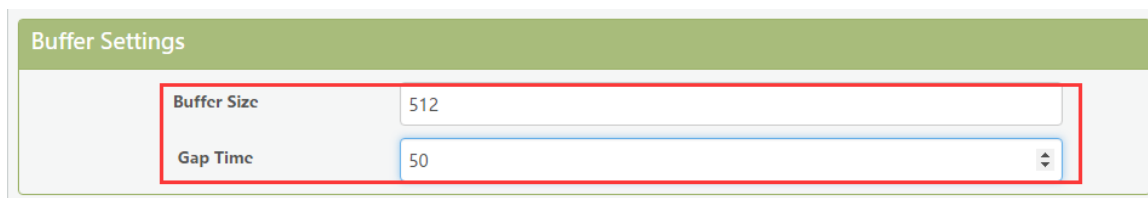


Figure 27. UART free-frame function

3.10.2. UART Auto-Frame

Eport-E10 support UART Auto-Frame function, If user select to open this function, setting frame trigger length and auto frame trigger time parameters, Then the product will auto framing the data which received from UART port and transmitting to the network as pre-defined data structure.

Auto-Frame trigger length: The fixed data length that product used to transmitting to the network.

Auto-Frame trigger time: After the trigger time, If UART port received data can't reach auto-frame trigger length, Then product will transmitting available data to network and bypass the auto-frame trigger length condition.

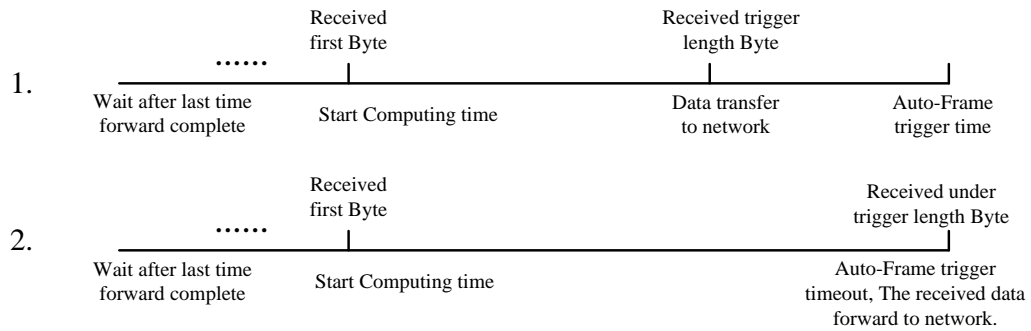


Figure 28. UART Auto-Frame Function

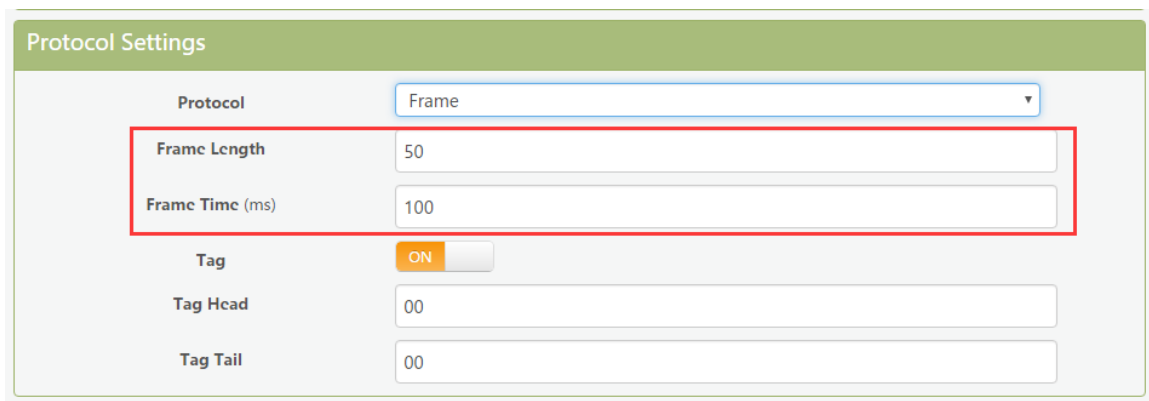


Figure 29. UART Auto-Frame Function

3.10.3. Tag Function

Eport E10 support lable function, If user select to open this function, The UART port will send all suitable one frame data to network.

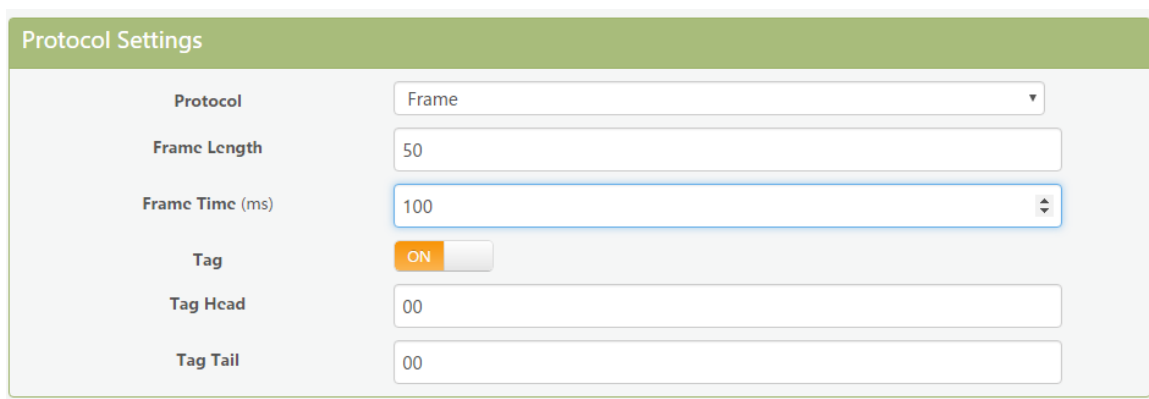
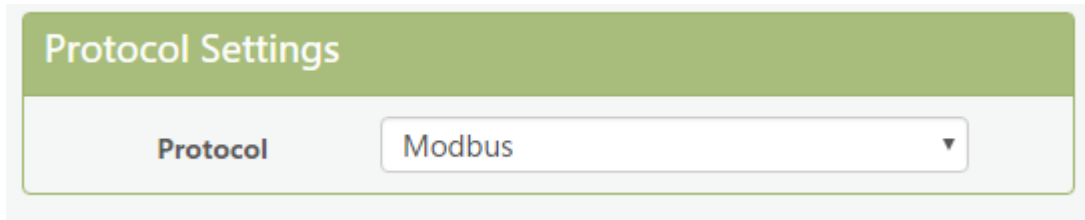


Figure 30. UART Auto-Frame Tag Function

3.11. Modbus Protocol

Eport-E10 support ModbusRTU to ModbusTCP and ModbusTCP to ModbusRTU. It's very convenient to connect with Modbus device. Modbus protocol setting as below:

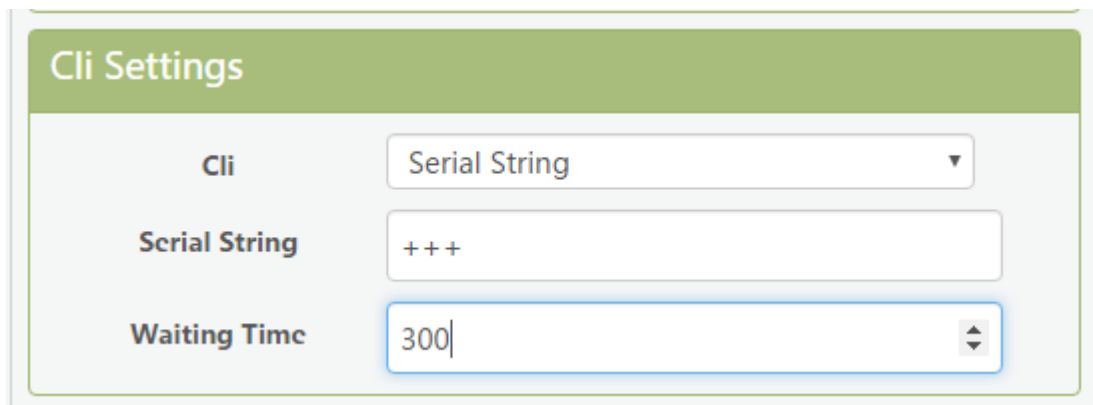


The screenshot shows a web interface titled "Protocol Settings". Below the title is a dropdown menu labeled "Protocol" with "Modbus" selected.

Figure 31. UART Modbus Function

3.12. Cli Command

Cli command is used for setting module configure parameters. Detailed command function and setting is in next chapter, Cli command can be set through UART port or Telnet function (Appendix C), The waiting time of below picture means use timeout time. If it exceed default 300s when no Cli command is input, it will exit Cli command mode. When the Eport-E10 receive continuous UART data of “+++”, it will enter into Cli command mode. (The device working in transparent transmission mode by default) May also set the device working in Cli command mode by default or disable this function .

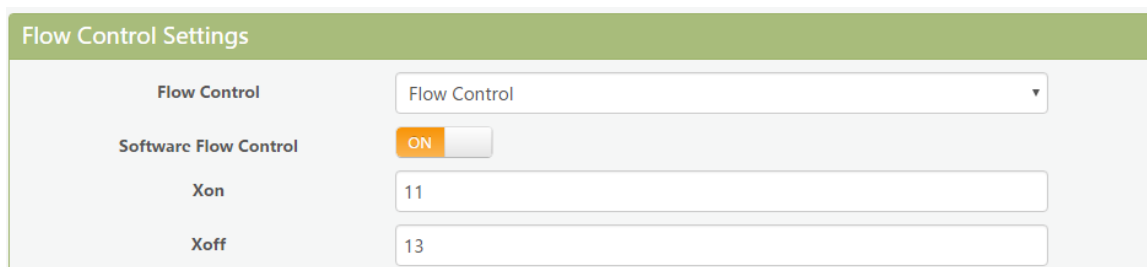


The screenshot shows a web interface titled "Cli Settings". It contains three settings: "Cli" set to "Serial String", "Serial String" set to "+++", and "Waiting Time" set to "300".

Figure 32. Cli Command Setting

3.13. UART Flow Control and RS485 Function

Eport-E10 support software and hardware UART flow control. If use hardware follow control, CTS/RTS Pin are used to control UART data. If use software follow control, then It allowed the device output UART data after receive single UART 0x11 data(Default: value can be modified). It will stop output UART data after receive single UART 0x13 data(Default: value can be modified).



The screenshot shows a web interface titled "Flow Control Settings". It contains four settings: "Flow Control" set to "Flow Control", "Software Flow Control" set to "ON", "Xon" set to "11", and "Xoff" set to "13".

Figure 33. UART Flow Control

If set to “Half Duplex”, UART0_RTS pin is used for RS485 control, the default is “Half Duplex”.

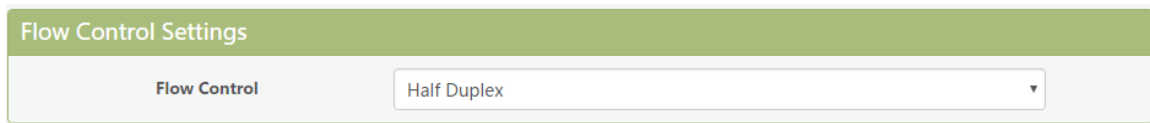


Figure 34. UART Half Duplex Function

RS485 reference schematic is as following.

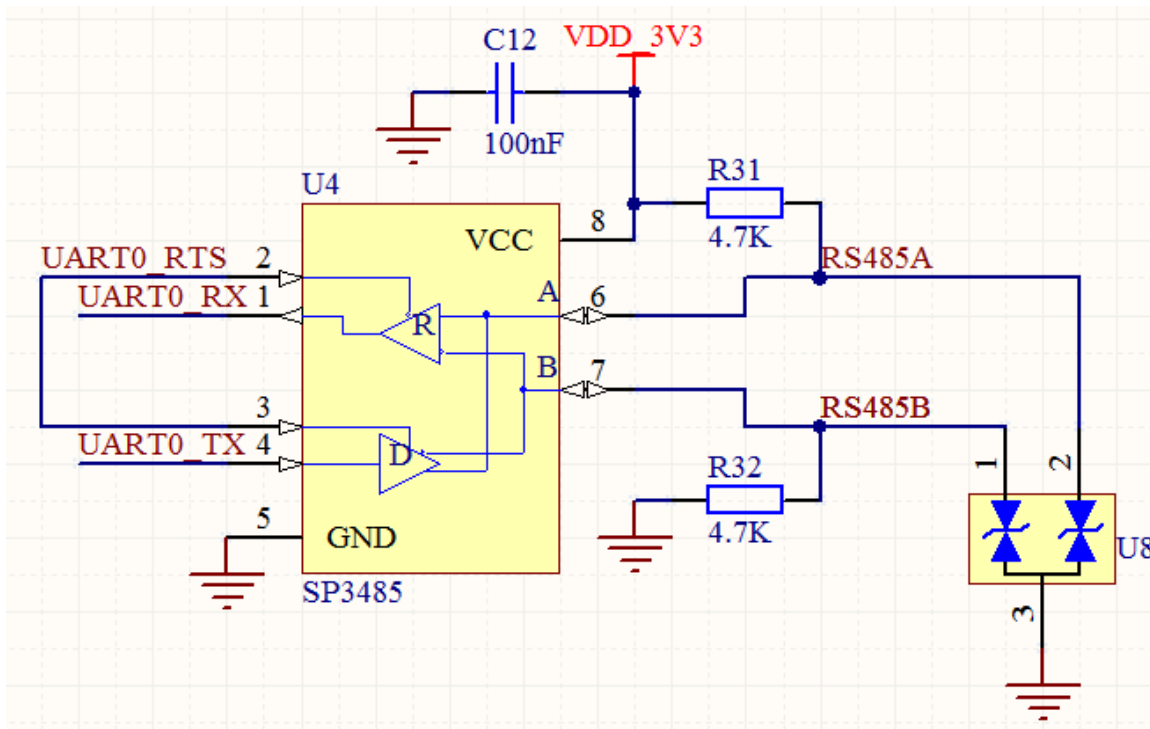


Figure 35. RS485 Reference Schematic

3.14. Firmware Upgrade

Eport-E10 support OTA(over the air) firmware upgrade. User can use webpage to upgrade its firmware, whether external or internal webpage(192.168.0.101/hide. Internal webpage can be used for upgrade external webpage). Please check below example. IP address is assigned by router.



Figure 36. External web page



Figure 37. Internal web page

3.15. Web Page Function

Web page function can be enabled or disabled.

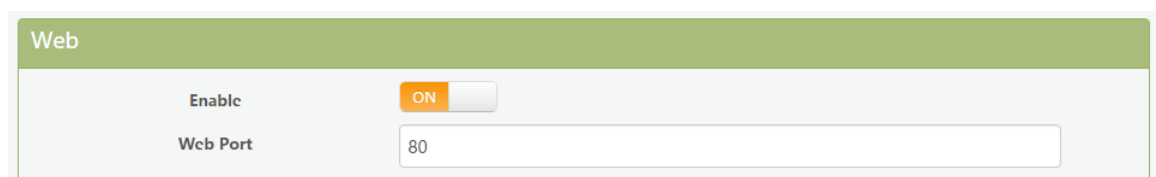


Figure 38. Web Page Function Setting

3.16. Auto-IP Function

Connect device Ethernet with PC, the device will use default auto IP. The PC may use this IP to config the device or transfer data(PC will need about 15 seconds to use default 169.254.xxx.xxx IP, then this communication can be created). As the following example, 169.254.173.207(If occur IP conflict, it will use other ip instead)

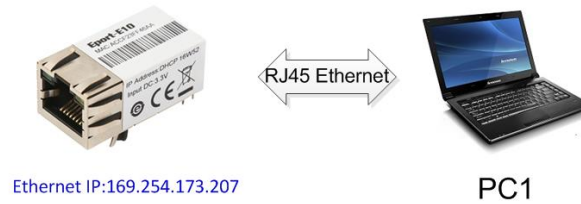


Figure 39. AUTO-IP Connection

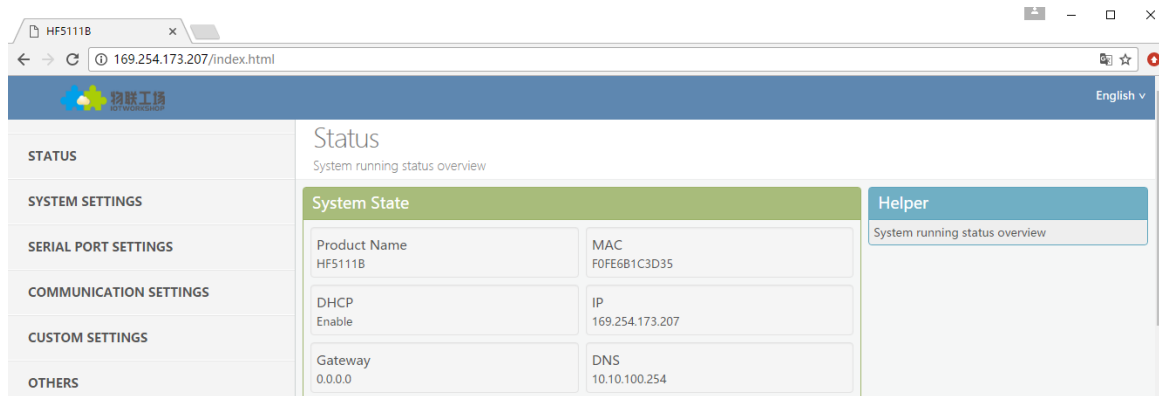


Figure 40. AUTO-IP Config Device

```

EPORT>Show

===System State===
Product ID:HF5111B
Software Version:v1.07c
Config Protected:OFF
System time:NTP Disabled
Up Time: 0-Day 0:1:36
Total Free Memory: 40320
MAX Block Size:38568

===NETWORK===
MAC:FOFE6B1C3D35
Ip Address:169.254.173.207
Gateway:0.0.0.0

```

Figure 41. Cli Command Query Device IP

3.17. Other Function

The Eport-E10 device parameters can be exported and loaded into other equipment..

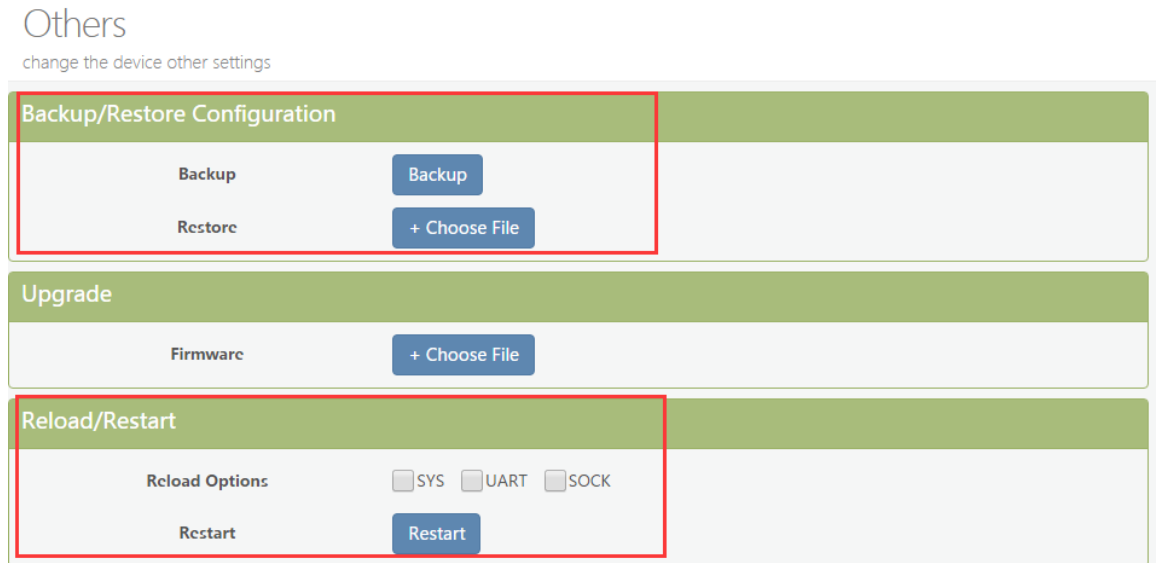


Figure 42. Other Function

3.18. NTP Function

Support NTP function(default is disabled). Support set NTP server, port, time zone information, more detailed usage see application document of "UART Fast Config".(112.124.43.15 is High-Flying test NTP server)

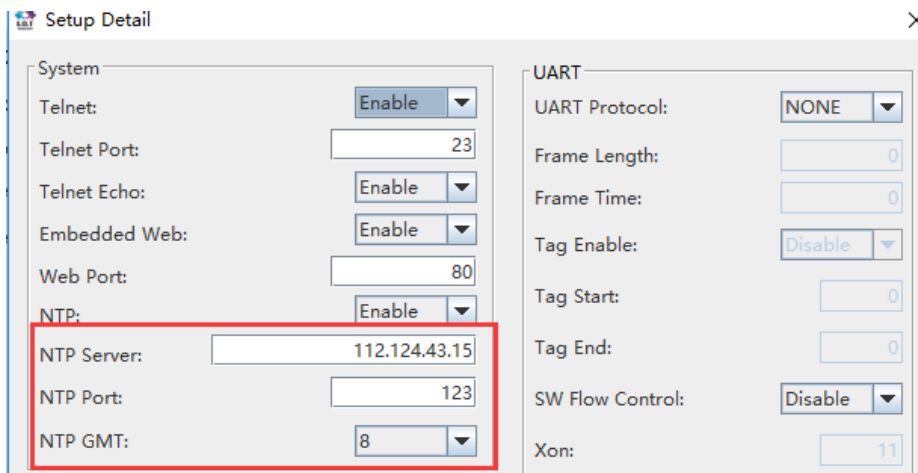


Figure 43. IOTManager Tools NTP Setting

```

EPORT>SYS NTP
Enable
Server:112.124.43.15
Port:123
GMT:8
EPORT>Show

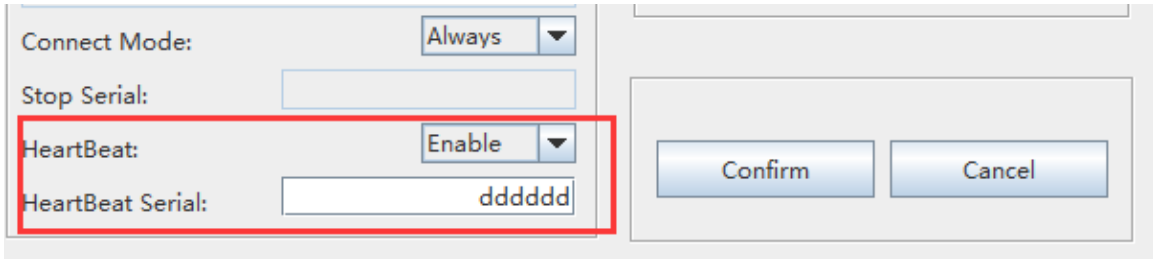
===System State===
Product ID:HF5111B
Software Version:V1.07c
Config Protected:OFF
System time:2017-1-23 13:48:38 Mon
Up Time: 0-Day 2:44:32
Total Free Memory: 32880
MAX Block size:31164

```

Figure 44. Cli Command NTP Setting and Query

3.19. Heartbeat Function

Support heartbeat function, can set the heartbeat time and content(heartbeat time is the same as keepalive setting), if the product does not receive data from TCP server within heartbeat time, it will send heartbeat to server. The heartbeat function can only be enabled when socket is set as TCP client.



The screenshot shows a configuration window for the Heartbeat Function. It includes the following fields and controls:

- Connect Mode:** A dropdown menu set to "Always".
- Stop Serial:** An empty text input field.
- HeartBeat:** A dropdown menu set to "Enable", highlighted with a red rectangular box.
- HeartBeat Serial:** A text input field containing "dddddd".
- Buttons:** "Confirm" and "Cancel" buttons are located on the right side of the window.

Figure 45. Heartbeat Function

3.20. UART Fast Config

Product support Cli command to config its parameters, but also support special HEX format UART data for fast config, see application manual for detailed usage.

4. CLI COMMAND NOTES

4.1. Working Mode

The device will enter into default transparent transmission mode after powered on. User can switch to Cli command mode through special UART data. Module default UART parameters are as below:

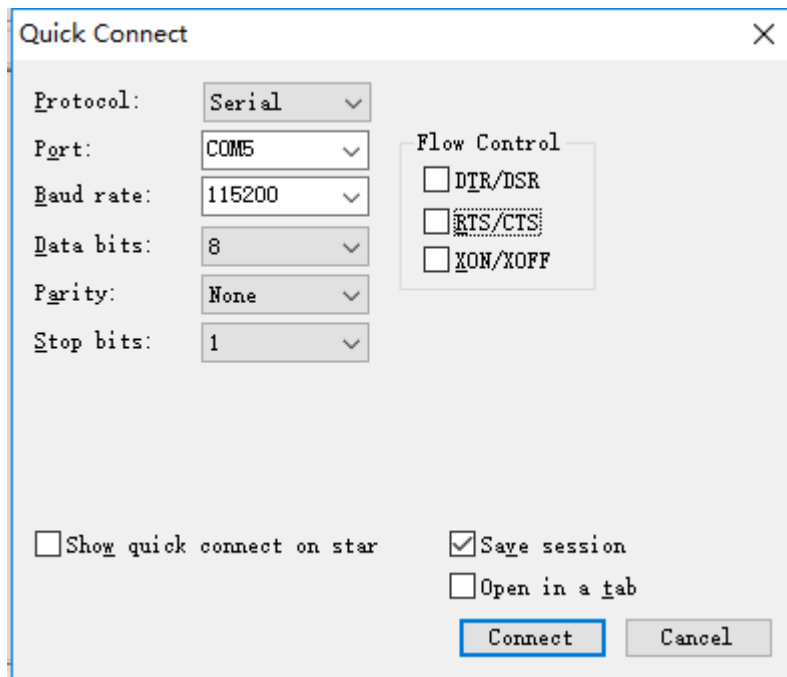


Figure 46. Eport-E10 Default: UART Parameters

In Command mode, User can use UART port to set module through Cli command.

Notes:

We recommend to use SecureCRT for UART debug tools.

4.1.1. Switch Transparent Transmission Mode to Cli Command Mode

Steps:

- Input “+++” via UART tools, the device will output “EPORT>” after received “+++”. Then the device already enters into Cli command mode.

Notes:

”+++” should be in one frame. Other data is not allowed before or after “+++”

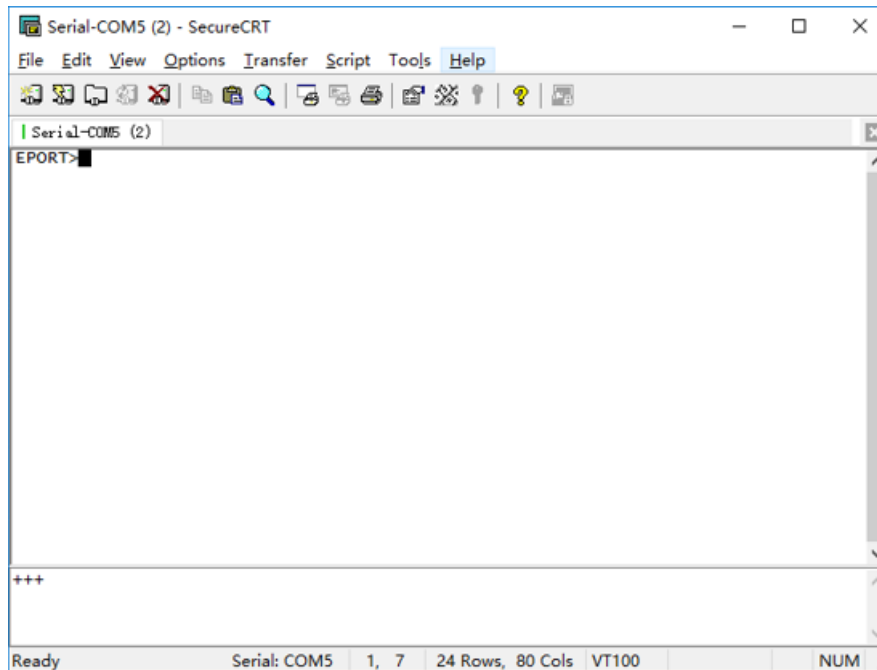


Figure 47. Switch Transparent Transmission Mode to Cli Command Mode

<Notes>:

In Cli command mode, users can set or query parameters. Cli command details see next chapter

4.2. Cli Command Overview

Cli command can be input through terminal (SecureCRT or other UART tools) or by user device MCU programming. As below picture, we use SecureCRT tool. Press "Tab" key, it will list current available Cli command or directory. If input first character and then press "Tab" key, it will show the Cli command fit with the first character.

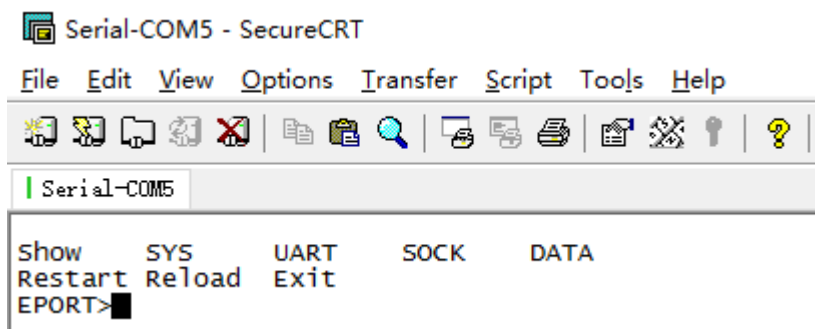


Figure 48. Cli Command Root Directory

SYS	Version		
	Auth	user	
		password	
		quit	
	Network	Show	
		DHCP	Enable
			Disable
		ip address	
		gateway	
		DNS	
		HostName	
	Quit		
	Telnet	Enable	port number
		echo	
	Web	Disable	
		Enable	port number
	MAC		
	JCMD	Enable	
		Disable	
	NTP	Enable	NTP Server Address
			NTP Server port
			GMT
	Disable		
Quit			

Figure 49. Cli Command SYS Tree

UART	Show		
	Baudrate		
	Databits		
	Stopbits		
	Parity		
	Buf	BufSize	
		GapTime	
		Quit	
	FlowCtrl	FlowCtrl	
		Half-Duplex	
		Disable	
	SWFlowCtrl	Enable	
		Disable	
	Cli-Getin	Disable	
		Serial-String	
		Always	
	Cli-WaitTime		
	Proto	NONE	
		Modbus	
		Frame	
	Frame	FrameLen	
		FrameTime	
		Tag	
Quit			
Edit			
Clean			
Quit			

Figure 50. Cli Command UART Tree

SOCK	New	Show	
		Proto	Name
			TCP-SERVER
			TCP-CLIENT
			UDP-SERVER
			UDP-CLIENT
			HTTP
		Telneted	
		Server	
		ServerPort	
		LocalPort	
		BufSize	
		KeepAlive	
		Timeout	
		HeartBeat	
	Security	Disable	
		TLS	
		AES	
	ConnectMode	DES	
		Always	
		Burst	
	Rout	uart	
		log	
		netp	
	netp	Show	
		Name	
		Proto	TCP-SERVER
			TCP-CLIENT
			UDP-SERVER
			UDP-CLIENT
HTTP			
Telneted			
Server			
ServerPort			
LocalPort			
BufSize			
KeepAlive			
Timeout			
HeartBeat			
Security	Disable		
	AES		
	DES		
ConnectMode	TLS		
	Always		
	Burst		
Rout	uart		
	log		
	netp		
Save			
Clean			
Del			
Quit			
Quit			

Figure 51. Cli Command SOCK Tree

DATA	Str
	Hex
	Quit
FwUpgrade	
Restart	
Reload	
Exit	

Figure 52. Cli Other Command

4.2.1. Cli Command Format

Cli command is in ASCII format. The usage is similar to Linux terminal. Command format as following:

- Format Notes
 - <>: Cli command name or directory.
 - []: Cli command parameters.

- Command Message

<CMD> [para-2 para-3 para-4...]<CR>

- <CMD>: Main directory or command name;
- [para-n] : command parameters. If have multiple directory, it can also can be the son directory. As below example;

```
EPORT>SYS Auth
User          Passwrod      Quit
```

- <CR>: Command Terminator, "Enter" key, HEX data: 0x0a or 0x0d

<Notes>

If the input command not existed, UART will output again "EPORT>" to allow next command input. The Cli command is case sensitive.

```
EPORT>sys
EPORT>SYS
EPORT/SYS>
```

If need enter into son directory, press "space" key between the directories.

```
EPORT>SYS Auth
EPORT/SYS/Auth>
```

If need to display all the directory or commands in the current directory, press "Tab" key to query.

```
EPORT/SYS>
Auth   Network Telnet web   Ipv6
MAC    JCMD    Quit
```

If need to display current command parameter, press Tab key to query.

```
EPORT/SYS/Network>DHCP
Enable Disable
```

4.2.1.1. Show Command

- Function: Show all system information, including the system running status, Network status, UART status and socket status.
- Format:
 - ◆ Query

Show [SYS/UART/SOCK]

- Parameter:
 - Show all information if no parameters. Parameter can be one of the following:
 - ◆ SYS: System running status
 - ◆ UART: UART status
 - ◆ SOCK: Socket status

```

EPORT>Show
===System State===
Product ID:E-10
Software Version:V1.04
Up Time: 0-Day 0:21:39
Total Free Memory: 48400
MAX Block Size:46816

===NETWORK===
MAC:ACCF23FF4771
Ip Address:192.168.0.106
Gateway:192.168.0.1

===UART Status===
Config:115200,8,1,NONE,NONE
State:In CLI
Recv Bytes:26   Recv Frames:24
Send Bytes:0   Send Frames:0
Failed Bytes:0 Failed Frames:0

===SOCK Status===
SOCK Name:netp
State:Server Created
Client IP:
Recv Bytes:0   Recv Frames:0
Send Bytes:0   Send Frames:0
Failed Bytes:0 Failed Frames:0
  
```

4.2.1.2. SYS Directory

- Function: Display/Set all system related information
- Format:
 - ◆ Tab Query

```

EPORT/SYS>
Version Auth   Network Telnet  web
NTP          MAC          JCMD          Quit
  
```

4.2.1.3. SYS/Auth Directory

- Function: Display/Set web or Telnet Cli command login directory. (see appendix for detail)
- Format:
 - ◆ Tab Query

```

EPORT/SYS/Auth>
User          Password      Quit
  
```

4.2.1.4. SYS/Auth/User Command

- Function: Display/Set web or Telnet Cli command login user name. (function see appendix)
- Format:
 - ◆ Query
 - <User>
 - ◆ Set
 - <User> [value]
- Parameter:
 - Setting is valid immediately.
 - ◆ User: Login user name. Default: **admin**

- ◆ value: set value. Length range 1~29 characters

4.2.1.5. SYS/Auth/Password Command

- Function: Display/Set web or Telnet Cli command login password(function see appendix)
- Format:
 - ◆ Query
 - <Password>
 - ◆ Set
 - <Password> [value]
- Parameter:
 - Setting is valid immediately
 - ◆ Password: Login password. Default: **admin**
 - ◆ value: set value. Length range 1~29 characters

4.2.1.6. SYS/Network Directory

- Function: Display/Set related network information.
- Format:
 - ◆ Tab Query

EPORT/SYS/Network>				
Show	DHCP	DNS	HostName	Quit

4.2.1.7. SYS/Network/Show Command

- Function: Display network related information
- Format:
 - ◆ Query
 - <Show>

4.2.1.8. SYS/Network/DHCP Command

- Function: Display/Set DHCP Client function
- Format:
 - ◆ Query
 - <DHCP>
 - ◆ Set
 - <DHCP> [Enable/Disable]
- Parameter:
 - Setting is valid after reboot.
 - ◆ Enable: Enable DHCP function. The device will get DHCP IP from router when Ethernet port is connected to router LANN port. Default: **Enable**.
 - ◆ Disable: Disable DHCP function. Allocate device static IP address according to the hit of inputting IP and gateway address.

4.2.1.9. SYS/Network/DNS Command

- Command: Display/Set DNS IP address.
- Format:
 - ◆ Query

<DNS>

- ◆ Set

<DNS> [IP]

- Parameter:
When DHCP function is Disabled, this setting is valid. Setting is valid after reboot.
 - ◆ IP Address: DNS server address. Default: **10.10.100.254**.

4.2.1.10. SYS/Network/Hostname Instruction

- Function: Display/Set Hostname.
- Format:
 - ◆ Query

<Hostname>

- ◆ Set

<Hostname> [name]

- Parameter:
Hostname is the name which show in router DHCP client list. Setting is valid immediately.
 - ◆ Name Address: Hostname, length range: 1~30 characters. Default: **Eport-E10**.

4.2.1.11. SYS/Telnet Instruction

- Function: Display/Set Telnet function.
- Format:
 - ◆ Query

<Telnet>

- ◆ Set

<Telnet> [Enable/Disable]

- Parameter:
See appendix for detailed Telnet function usage. Telnet is used for remote send Cli command or transmit data, Setting is valid after reboot.
 - ◆ Enable: Enable Telnet function. Default: **Enable**.
 - Input Port Numbver: Telnet Port Number. Default: **23**
 - Input Echo Mode: Enable/Disable Cli command echo function. Default: **Enable**
 - ◆ Disable: Disable Telnet function.

4.2.1.12. SYS/Web Instruction

- Function: Display/Set Web config function.
- Format:
 - ◆ Query

<Web>

- ◆ Set

<Web> [Enable/Disable]

- Parameter:
Webpage is used for config module working parameters. Setting is valid after reboot.
 - ◆ Enable: Enable Web config function. Default: **Enable**.

- Input Port Number: Web Port Number. Default: **80**
- ◆ Disable: Disable Web config function

4.2.1.13. SYS/MAC Instruction

- Function: Display/Set MAC address.
- Format:
 - ◆ Query
 - <MAC>
 - ◆ Set
 - <MAC> [8888 value]
- Parameter:
 - Global unique MAC Address. It is not allowed to modify it.
 - ◆ value: MAC address value.

4.2.1.14. SYS/JCMD Instruction

- Function: Display/Set Jason command function.
- Format:
 - ◆ Query
 - <JCMD>
 - ◆ Set
 - <JCMD> [Enable/Disable]
- Parameter:
 - Jason command is used for config module. IOTManage software use this mechanism. If disable JCMD function, IOTManage is no longer valid. Setting is valid after reboot.
 - ◆ Enable: Enable JCMD function. Default: **Enable**.
 - ◆ Disable: Disable JCMD function.

4.2.1.15. SYS/NTP Instruction

- Function: Display/Set NTP function.
- Format:
 - ◆ Query
 - <NTP>
 - ◆ Set
 - <NTP> [Enable/Disable]
- Parameter:
 - NTP is used for product to get and output real time. See uart fast config application manual to fast query. Setting is valid immediately.
 - ◆ Enable: Enable NTP Function.
 - NTP Server Address: NTP Server address, domain name or IP address
 - NTP Server Port: port number, Default:123, Range;0~127
 - GMT: Time zone, default is 0, Range:-12~12.
 - ◆ Disable: Disable NTP Function, Default value.

4.2.1.16. UART Directory

- Function: Display/Set UART information directory.

- Format:
 - ◆ Tab key query

EPORT/UART>	Baudrate	Databits	Stopbits	Parity
Show	FlowCtrl	SWFlowCtrl	Cli-GetIn	Cli-waitTime
Buf	Frame	Edit	Clean	Quit
Proto				

4.2.1.17. UART/Show Instruction

- Function: Display UART information function.
- Format:
 - ◆ Query

<Show>

4.2.1.18. UART/Baudrate Instruction

- Function: Display/Set UART baud rate function.
- Format:
 - ◆ Query

<Baudrate>

- ◆ Set

<Baudrate> [value]

- Parameter:
 - Setting is valid immediately.
 - ◆ Value: Default: **115200**. Can choose 2400, 4800, 9600, 38400, 57600, 115200, 230400, 460800, 921600

4.2.1.19. UART/Databits Instruction

- Function: Display/Set UART data bits function.
- Format:
 - ◆ Query

<Databits>

- ◆ Set

<Databits> [value]

- Parameter:
 - Setting is valid immediately.
 - ◆ Value: Default: **8bits**. Can choose 5, 6, 7, 8.

4.2.1.20. UART/Stopbits Instruction

- Function: Display/Set UART stop bits function.
- Format:
 - ◆ Query

<Stopbits>

- ◆ Set

<Stopbits> [value]

- Parameter:
 - Setting is valid immediately.
 - ◆ Value: Default: **1bits**. Can choose 1, 1.5, 2.

4.2.1.21. UART/Parity Instruction

- Function: Display/Set UART parity function.
- Format:
 - ◆ Query
`<Parity>`
 - ◆ Set
`<Parity> [value]`
- Parameter:
 - Setting is valid immediately.
 - ◆ Value: Default: **None**. Can choose NONE, EVEN, ODD.

4.2.1.22. UART/Buf Directory

- Function: Display/Set UART Buffer directory.
- Format:
 - ◆ Tab key query

```
EPORT/UART/Buf>
BufSize GapTime Quit
```

4.2.1.23. UART/Buf/Bufsize Instruction

- Function: Display/Set UART buffer size function.
- Format:
 - ◆ Query
`<Bufsize>`
 - ◆ Set
`<Bufsize> [value]`
- Parameter:
 - Buffer is used for cache UART received data. If the received data of one frame is larger than buffer size. The data frame will be break into two packet send to network. Setting is valid after reboot.
 - ◆ Value: Default: **512**. Length range: 32~1400 bytes.

4.2.1.24. UART/Buf/GapTime Instruction

- Function: Display/Set UART free frame gap time.
- Format:
 - ◆ Query
`<GapTime>`
 - ◆ Set
`<GapTime> [value]`
- Parameter:
 - GapTime is used for setting UART free frame time gap. If the received data gap time is more than setting value, the data packet will be broken into two frame.
 - ◆ Value: Default: **50ms**. Length Range: 10~1000ms.

4.2.1.25. UART/Buf/FlowCtrl Command

- Function: Display/Set UART flow control function.
- Format:
 - ◆ Query
 - <FlowCtrl>**
 - ◆ Set
 - <FlowCtrl> [Enable/Disable]**
- Parameter:

Flow control includes software flow control and hardware flow control. Software flow control priority is higher than hardware. If enable software flow control, the hardware flow control pin(CTS/RTS) will be useless. Software flow control use special UART data for control. Hardware flow control use CTS/RTS pin control. Setting is valid immediately.

 - ◆ Flow Control: Flow control function.
 - ◆ Half-Duplex: Enable RS485 half-duplex function, UART0_RTS is used for RS485 chip control function.
 - ◆ Disable: Flow control function. Default: **Disable**.

4.2.1.26. UART/Buf/SWFlowCtrl Command

- Function: Display/Set UART software flow control function.
- Format:
 - ◆ Query
 - <SWFlowCtrl>**
 - ◆ Set
 - <SWFlowCtrl> [Enable/Disable]**
- Parameter:

Enable software flow control function. The device UART can output data After UART received Xon single-byte enable data. When UART received Xoff single-byte disable data. It will disable the device UART output data.

 - ◆ Enable: Enable software flow control function, When in enable status, it allow UART data output when bootup by default.
 - Xon: Enable UART output data. Default: **0x11**.
 - Xoff: Disable UART output data. Default: **0x13**.
 - ◆ Disable: disable software flow control function. Default: **Disable**.

4.2.1.27. UART/Cli-Getin Command

- Function: Display/Set Cli command function
- Format:
 - ◆ Query
 - <Cli-Getin>**
 - ◆ Set
 - <Cli-Getin> [Serial-String/Always/Disable]**
- Parameter:

Set Cli command parameters. Setting is valid immediately.

 - ◆ Serial-String: Enable specific data to enter into Cli command mode.

- [Input Serial String]: Default: **+++**, Range 1~10 bytes. Also can input hex format data. The HEX data are separated by Spaces, Like **【30 31 32 33 34】**, When it received string data "01234", then It can enter into Cli command.
- ◆ Always: Always work in Cli command mode when device power on.
- ◆ Disable: Disable Cli command mode. UART and Telnet both can't use Cli Command.

4.2.1.28. UART/Cli-WaitTime Command

- Function: Display/Set Cli command wait time
 - ◆ Format
 - <Cli-WaitTime>**
 - ◆ Set
 - <Cli-WaitTime> [timeout]**
 - Parameter:

Set Cli command mode timeout exit time. If there is no Cli command sent for the waittime, It will exit Cli command mode to transparent transmission, Setting is valid immediately.

 - ◆ timeout: Default: **300s**, Range 0: Disable WaitTime function, 1~300s.

4.2.1.29. UART/Proto command

- Function: Display/Set UART protocol function
- Format:
 - ◆ Query
 - <Proto>**
 - ◆ Set
 - <Proto> [NONE/Modbus/Frame]**
 - Parameter:

Setting is valid immediately.

 - ◆ NONE: Default: **None**, transparent transmission, the received UART data will be directly sent to network.
 - ◆ Modbus: Modbus RTU to Modbus TCP.
 - ◆ Frame: Enable auto-frame function. Relevant parameters are set in Frame command.

4.2.1.30. UART/Frame Directory

- Function: Display/Set UART frame directory.
- Format:
 - ◆ Tab key query

```
EPORT/UART/Frame>
FrameLen      FrameTime      Tag            quit
```

4.2.1.31. UART/Frame/FrameLen Command

- Function: Display/Set UART auto-frame frame length
- Format:
 - ◆ Query

<FrameLen>

- ◆ Set

<FrameLen> [value]

- Parameter:
 - Set UART auto-frame length, Setting is valid immediately.
 - ◆ value: Default: **8**, Range: 8~1400.

4.2.1.32. UART/Frame/FrameTime Command

- Function: Display/Set UART auto-frame time
- Format:
 - ◆ Query

<FrameTime>

- ◆ Set

<FrameTime> [value]

- Parameter:
 - Set UART auto-frame time, Setting is valid immediately.
 - ◆ value: Default: **100ms**, Range: 100~10000.

4.2.1.33. UART/Frame/Tag Command

- Function: Display/Set UART auto-frame Tag
- Format:
 - ◆ Query

<Tag>

- ◆ Set

<Tag> [Enable/Disable]

- Parameter:
 - Set UART auto-frame tag. Only transmit data from tag head to tag tail. Filter the other datas. Setting is valid immediately.
 - ◆ Enable: Enable auto-frame tag function.
 - TagHead: LabelHead. Default: **0x55**, Single byte data.
 - TagTail: LabelTail. Default: **0xAA**, Single byte data.
 - ◆ Disable: Default: Value.

4.2.1.34. UART/Edit Command

- Function: Set UART parameter
- Format:
 - ◆ Set

<Edit> [baudrate databits stopbits parity]

- Parameter:
 - Set all UART communication parameter including baud rate, data bit, stop bit and parity.

4.2.1.35. UART/Clean Command

- Function: Clear UART transmit-receive data information
- Format:
 - ◆ Set

<Clean>

- Parameter:
Clear the UART data count(Data packet/Frame/Error packet and so on) shown in webpage.

4.2.1.36. SOCK Directory

- Function: Display/Set Socket channel directory.
- Format:
 - ◆ Tab key query

```
EPORT/SOCK>
Show      New      netp     UDP      quit
```

Netp and UDP are created socket channel. Itsupport maximum 5 Sockets.

4.2.1.37. SOCK/Show Command

- Function: Display Socket information function.
- Format:
 - ◆ Query

<Show>

4.2.1.38. SOCK/New Command

- Function: Set new Socket information
- Format:
 - ◆ Set

<New> [name]

- Parameter:
There is a default socket created(netp). It support max 5 socket channel. Every channel can be set as TCP/UDP/HTTP and so on. Setting is valid immediately.
 - ◆ Name: Socket name. Range 1~19 characters.
 - Input Sock Proto: Choose one communication method of the following.
 - TCP-SERVER: TCP Server Mode. It support max 5 TCP Client connection.
 - TCP-CLIENT: TCP Client Mode. It is used for connecting server.
 - UDP-SERVER: UDP Server Mode. Special function. Product will record the last received UDP package source IP and Port information. The received UART data will be send to this IP and port, not the setting Destination.
 - UDP-CLIENT: UDP Client Mode.
 - HTTP: HTTP Protocol transmission. The received UART data will transform to HTTP format and it will remove the HTTP header information and only output the HTTP data to UART.
 - TELNETD: Telnetd Mode. Use Telnet to config the UART Console equipment.
 - SSL: **Function is reserved. We will update it soon.**

TCP Server Mode:

- Input Local Port[0]: Set local port, Range 1~65535, 0 is random port. For TCP Server and UDP application, set it to a fixed 1~65535(TCP port 80 is used for its webpage). For TCP Client application, usually set it to 0.
- Input Buffer size[512]: Set Buffer size. Default: 512 bytes, Range:1~1400.
- Input KeepAlive[60]: Set TCP keepalive, Heartbeat time, Defalut 60s, Range: >=0.
- Input Timeout[300]: Set TCP timeout, If exceed setted time and don't received any network data package, It will break TCP connection. If working in TCP client mode, it will reconnect immediately. If it work in TCP server mode, the TCP client need to create the connction. Set this value to 0 is to close the function. The function is used for TCP to restore abnormal connection. Recommend to enable. Default: 300s, Range 0~600.
- Input Sock Security[Disable]: Security options, Used for data special encryption. Default: disable no encryption.
 - Disable: No encryption
 - TLS: TLS1.2 encryptioin, only support in TCP client mode.
 - AES: AES encryption, TCP/UDP all support this.
 - DES3: DES3 encryption, TCP/UDP all support this.
 - ◆ Input key: AES or DES3 key. For AES encryption, the key is fixed 16 bytes length, the IV value is the same as key. For DES3 encryption, the key is fixed 24 bytes length, the IV value the first 8 Bytes of key. The key can be ASCII or Hex format data. Hex format data need to use "space" character as separator, ex, "01 02 03..."
- Input Rout[uart]: Set the Socket channel output, Can choose UART and other created Socket or use as Log print using.

TCP Client Mode (Only list out difference)

- Input Server Address: Set server IPv4 address or domain name.
- Input Server Port: Set server port
- Input Local Port[0]: Same as above
- Input Buffer size[512]: Same as above
- Input KeepAlive[60]: Same as above
- Input Timeout[300]: Same as above.
- Input Sock Security[Disable]: Same as above
- Set HeartBeat[Disable]: Set Heartbeat function, default is Disable
- Input HeartBeat Serial[F0FE6B1C3D35]: Set Heartbeat content, default is MAC address
- Input Connect Mode[Always]: Set TCP Client connection mode
 - Always: TCP persistent connection. If TCP break, it will reconnect immediately.
 - Burst: It will establish connection once UART received data. If set stop function, It will disconnect after network received stop data.
 - ◆ Input Stop Serial: Set Burst Mode Stop bits. It can be ASCII or Hex format data, Hex format data need use space as separator , 1~10 bytes.

- Input Rout[uart]: Same as above

UDP Server/ UDP Client

HTTP Mode

- Input HTTP type[POST]: HTTP request type. Default: POST. Can choose POST or GET.
- Input HTTP path[/]: HTTP request path, Need start by"/". The longest byte is 63 bytes.
- Input HTTP version[1.0]: HTTP Protocol Version. Default: 1.0, Can choose 1.0 or 1.1
- Input HTTP parameters: Add HTTP head information, end by "Enter" key.If want to end the input, direct input "Enter" key. All HTTP header data length should be less than 250 bytes.

4.2.1.39. SOCK/netp directory

- Function: Display/Set Socket netp channel directory.
- Format:
 - ◆ Tab key query

EPORT/SOCK/netp>				
Show	Name	Proto	Server	ServerPort
LocalPort	BufSize	KeepAlive	Timeout	Security
HeartBeat	ConnectMode	Rout	Save	Clean
Del	Quit			

Every created Socket channel can be modified through name. The above command function is the same as New Socket command description

4.2.1.40. SOCK/netp/clean Command

- Function: Clear netp channel data packets information
- Format:
 - ◆ Set

<Clean>

- Parameter:

The network data packets information can be checked from webpage. The command will reset the data count.

4.2.1.41. DATA Directory

- Function: Display/Set Cli command mode communication
- Format:
 - ◆ Tab Query

EPORT/DATA-Str>
Hex Quit

Default: data sent in ASCII format. Also can change to send by HEX, The command is used for Cli command mode to transfer data.

4.2.1.42. Restart Command

- Function: Restart instruction.
- Format:

- ◆ Set

<Restart>

4.2.1.43. Reload Instruction

- Function: Restore Factory setting instruction.

- Format:

- ◆ Set

Reload [SYS/UART/SOCK]

- Parameter:

Reload to factory setting, if add the following parameters, it will only restore corresponding parameters. Parameter can including one of the below three:

- ◆ SYS: Restore system setting relevant paramter
- ◆ UART: Restore UART setting relevant paramter
- ◆ SOCK: Restore Socket relevant paramter

4.2.1.44. Exit Command

- Function: Exit Cli Command mode instruction

- Format:

- ◆ Set

<Exit>

4.2.1.45. Quit Command

- Function: Quit the current and go the father Cli command directory.

- Format:

- ◆ Set

<Quit>

4.2.1.46. FwUpgrade Instruction

- Function: Upgrade product firmware.

- Format:

- ◆ Set

FwUpgrade [url]

- Parameter:

Do upgrade function, if upgrade success, it will feedback "Upgrade OK", if fail, output "Upgrade FAIL", reboot to run with new firmware if success

- ◆ url: firmware url resources, Ex: http://192.168.0.101/mfw.bin

5. PACKAGE INFORMATION

5.1. Recommended Soldering

Wave soldering, temperate less than 180℃.

5.2. Shipping Information

Tray

Size:396*347*24 mm



Box

Size: 420x370x270 mm



Figure 53. Shipping information

Notes:

1 tray = 90pcs

1 box= 10 tray=10 X 90=900pcs

5.3. EVK Shipping Information



Figure 54. Shipping Information

Note:

1 box includes the following accessories.

			
1pcs Eport EVB	1~5pcs Eport-E10	1pcs USB Cable	1pcs Ethernet Cable

APPENDIX A: HW REFERENCE DESIGN

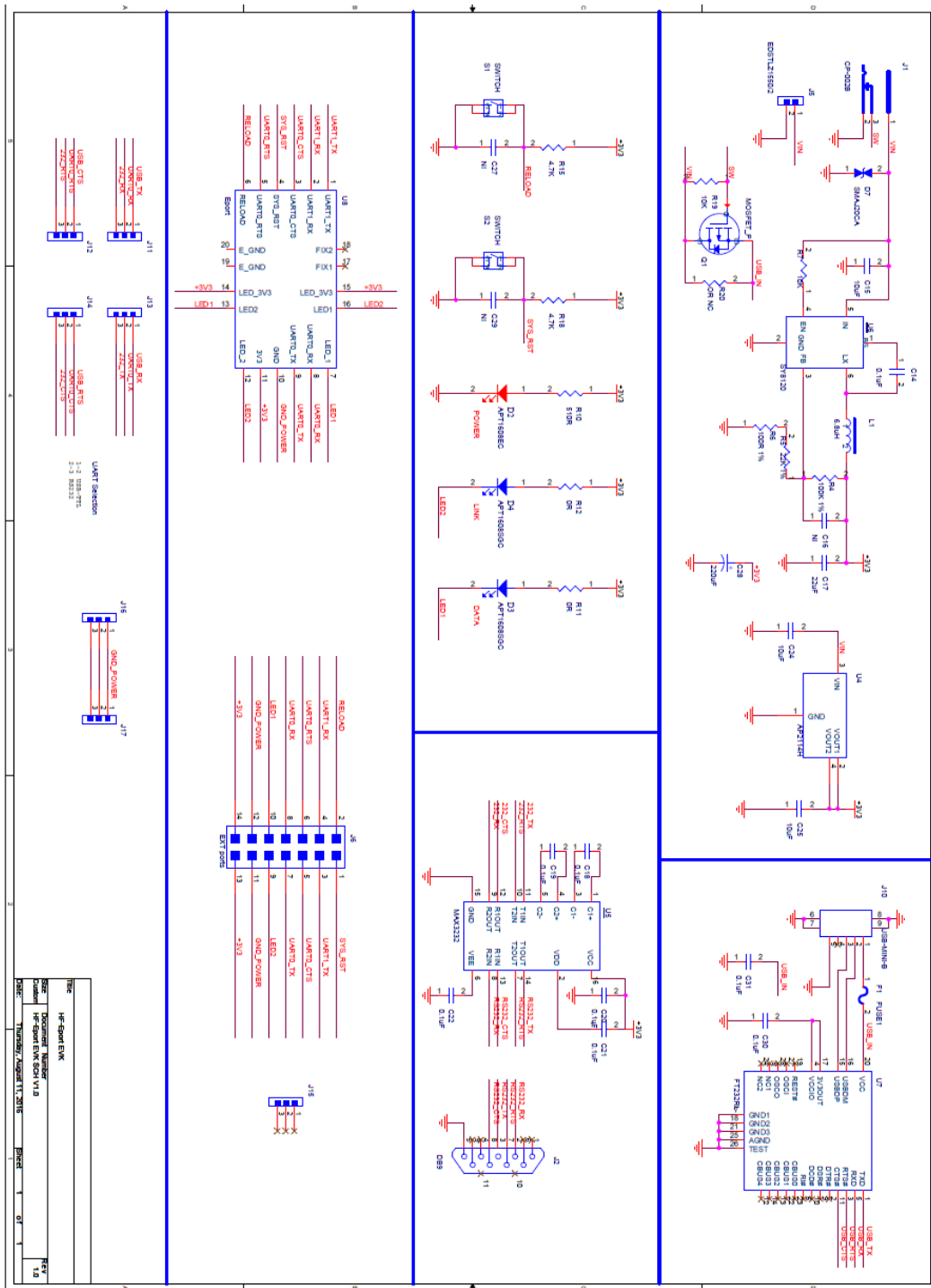


Figure 55. HW REFERENCE DESIGN

Detailed Eport-E10 Evaluation Board Design source files, pls access IOTworkshop or High-Flying web download page or contact with High-Flying technical support people to acquire.

APPENDIX B: REFERENCES

B.1. Test Tools

IOTManager Configure Software:

<http://gb.hi-flying.com/downloadsfront.do?method=picker&flag=all&id=8c366199-b599-47a4-8d9c-20fa0b68bfcf&fileId=89&v=0.zip>

Overview of Characteristic	Parameters	Documents	Order Information
Data Sheet			
Title	Description	Version	Time
HF5111B User Manual	HF5111B User Manual	1.0	2016.11.16
Eport&HF51 Series Function and Cli Command	Eport&HF51 Series Function and Cli Command	1.0	2016.10.21
Eport&HF51 Series Application Manual	Eport&HF51 Series Application Manual	1.0	2016.08.31
IOTManager Config Tools	IOTManager Config Tools	2.5	2017.01.20

UART、Network Test software:

http://www.hi-flying.com/download_list_dc/&downloadcategoryid=14&isMode=false&comp_stats=comp-FrontDownloadsCategory_show01-1376450727769.html

B.2. Evaluation kits quick start manual

See our product application on website:

http://www.hi-flying.com/products_detail/productId=89.html

APPENDIX C: TELNET COMMUNICATION FUNCTION

C.1. Telnet Use Scene:

- a) Remote management device
- b) Remote management uart equipment

C.2. Telnet Features:

- a) Telnet support echo mode,
- b) Telnet only support one Client port.
- c) Telnet port number is 23
- d) Telnet connected with TCP, If Client port don't transmit data in 300s, It will auto disconnect.

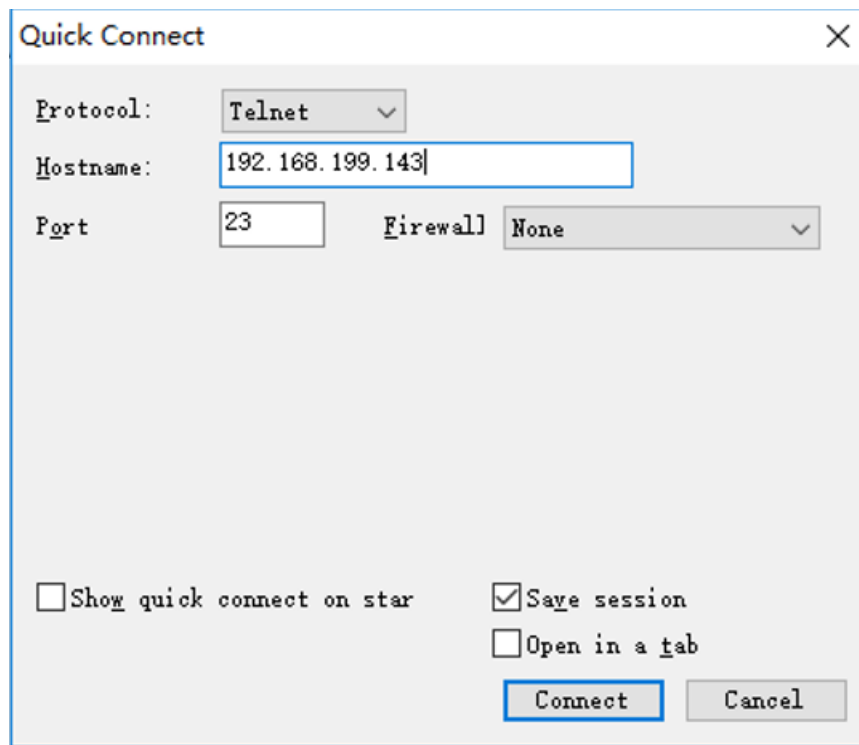
C.3. Telnet Usage:

Telnet function default as ON, If can't connect, Pls use webpage or configuration to check the function is on or off.

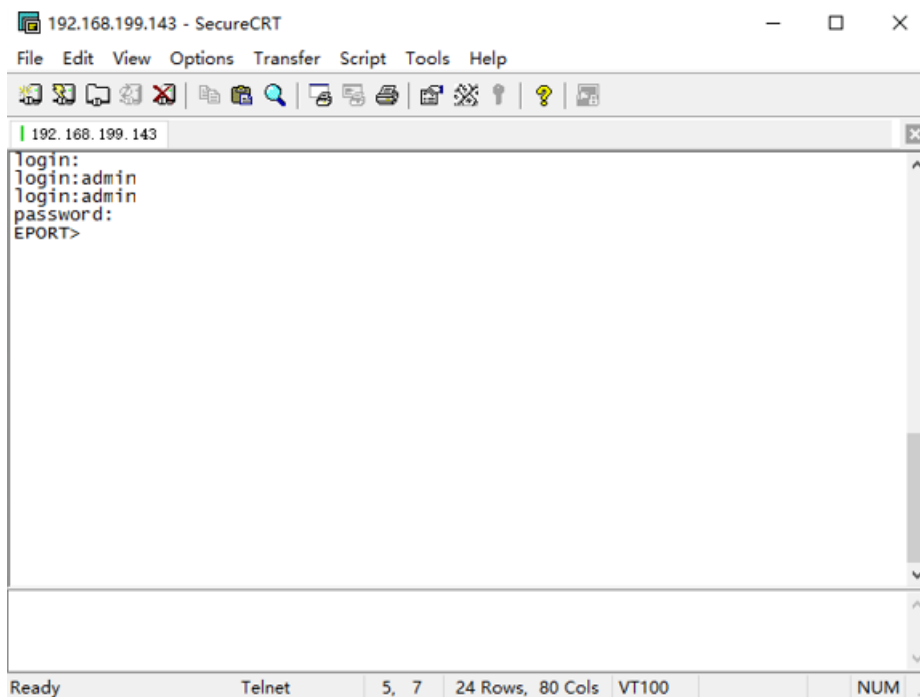


Telnet	
Enable	<input checked="" type="checkbox"/>
Telnet Port	<input type="text" value="23"/>
Echo	<input checked="" type="checkbox"/>

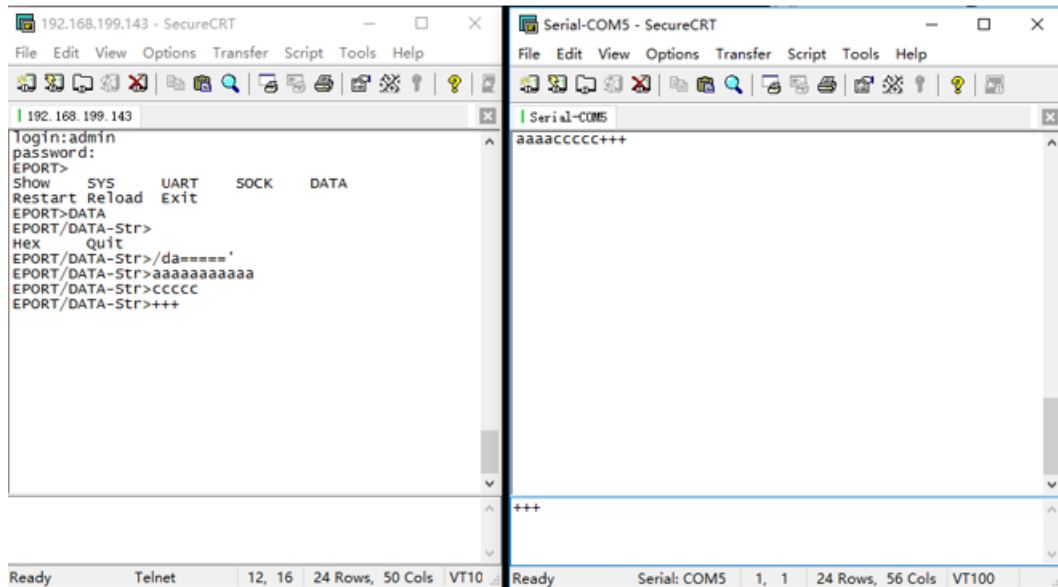
- a) Configure Secure CRT module and connect parameter, Equipment need to connect with LAN, Can use equipment LAN IP to access , If need remote to access the equipment, It need router have public IP address as port and mapped to internal website, Then can remote access equipment.



b) Use webpage account and password login in module, Then interface will show “EPORT>” .



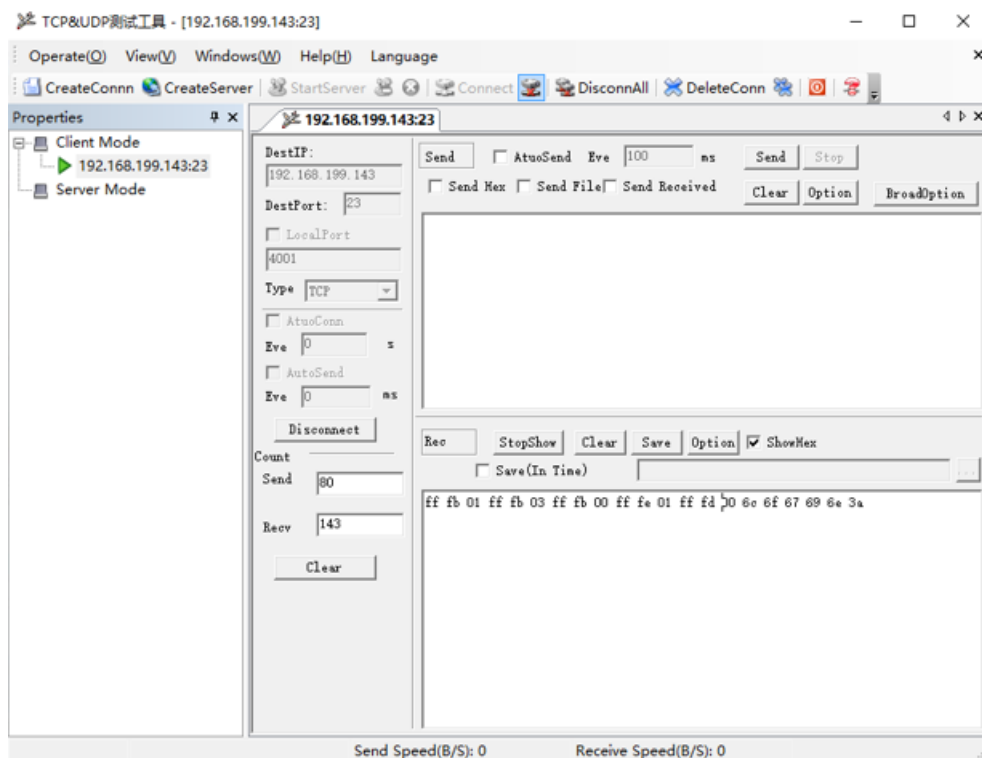
c) Later use are same as UART cli command, And can realise Telnet data with UART data transparent transmission application.,



Telnet Software implementation principle:

Step 1 Establish TCP connection with module

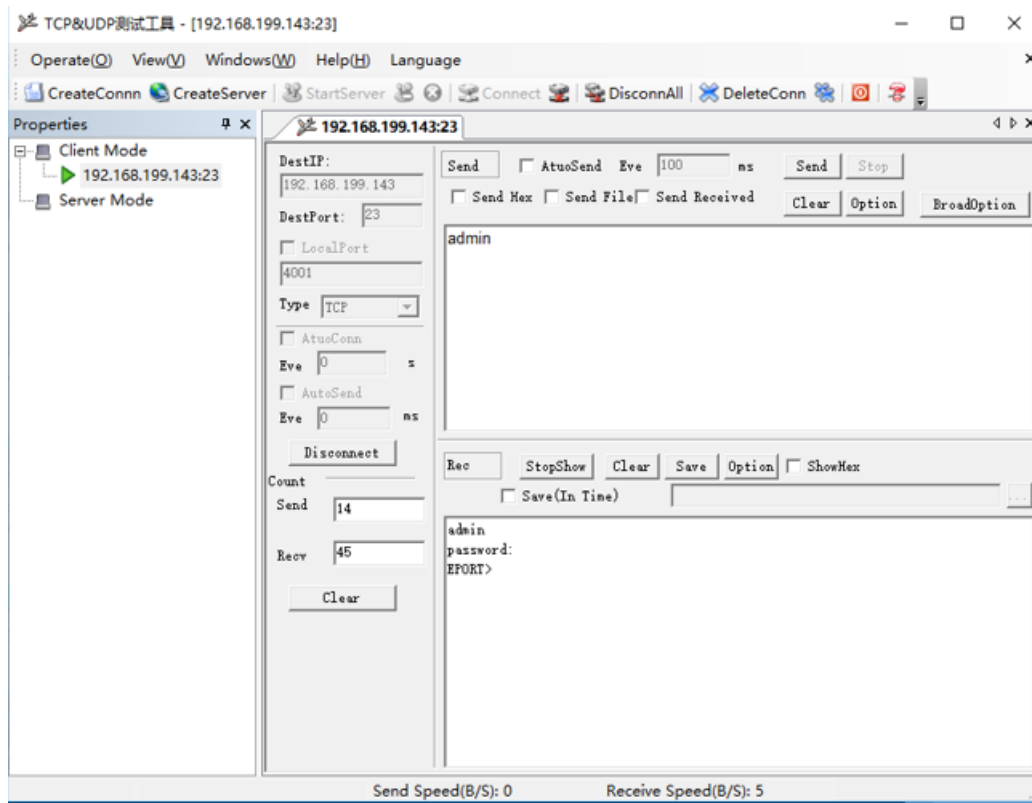
Step 2 Module send “login”, Client port send user name(need end with Enter key,Tools can type Ctrl+Enter)



Step 3 Module send 0xFF 0xFB 0x01 Close telnet input display.

Step 4 Module send password, Client port send login password

Step 5 Module send 0xFF 0xFC 0x01 Open telnet input display



Step 6 It can send and receive Cli command After Enter into Cli command mode.

APPENDIX D: CONTACT INFORMATION

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Support: support@iotworkshop.com

Service: service@iotworkshop.com

Business: business@iotworkshop.com

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

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