

HF5142

Super Port User Manual

V 1.0



Overview of Characteristic

- ✧ Internal User Four Eport-E10 or EP10 module. Support 4 dependent RS232/422/485 Interface.
- ✧ After Ethernet Cascade, RS232/422/485 interface can be maximum to 32 channel.
- ✧ 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 TLS/AES/DES3
- ✧ Support Web OTA Wirelss Upgrade
- ✧ Support Industrial Temperature: -40 to +85° C
- ✧ Size: 197 x 165 x 25 mm (L x W x H)
- ✧ FCC/CE/RoHS Certificated

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HISTORY

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1. PRODUCT OVERVIEW

1.1. General Description

The HF5142 is a 4 channel RS232/RS422/RS485 Serial Server. Each channel is dependent work due to it integrate 4 Eport-E10 module.

The HF5142 support Ethernet Cascade to support 8,12,16, and max 32 Channel RS232/RS422/RS485.

1.2. Device Features

- Internal User Four Eport-E10 or EP10 module. Support 4 dependent RS232/422/485 Interface.
- After Ethernet Cascade, RS232/422/485 interface can be maximum to 32 channel.
- 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 TLS/AES/DES3
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- Support Industrial Temperature: -40 to +85° C
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- FCC/CE/RoHS Certificated

1.3. Device Parameters

Table1. HF5142 Technical Specifications

Item	Parameters
System Information	
Processor/Frequency	Cortex-M3/96MHz
Flash/SDRAM	2MB/128KB
Operating System	FreeRTOS
Ethernet Port	
Port Number	2 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	4
Interface Standard	RS232/RS422/RS485
Data Bits	5,6,7,8
Stop Bit	1,2
Check Bit	None,Even,Odd,
Baud Rate	TTL: 1200 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 IOTManager PC Software UART Fast Config
Firmware Upgrade	Web or IOTService Tools
SDK For Dev.	Not yet
Basic Parameter	
Size	197 x 165 x 25 mm
Operating Temp.	-40 ~ 85°C
Storage Temp.	-45 ~ 105°C, 5 ~ 95% RH (no condensation)
Input Voltage	9~48V
Working Current	~400mA

Power	<4W
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1.4. Key Application

The HF5142 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

2. HARDWARE INTRODUCTION

The HF5142 Ethernet cable connect to router for data transfer, which makes the electromechanical integration very simple. HF5142 meet EMC Class B security level,It can pass every countries relevant certification test



Figure 1. HF5142 Appearance

2.1. Interface Definition

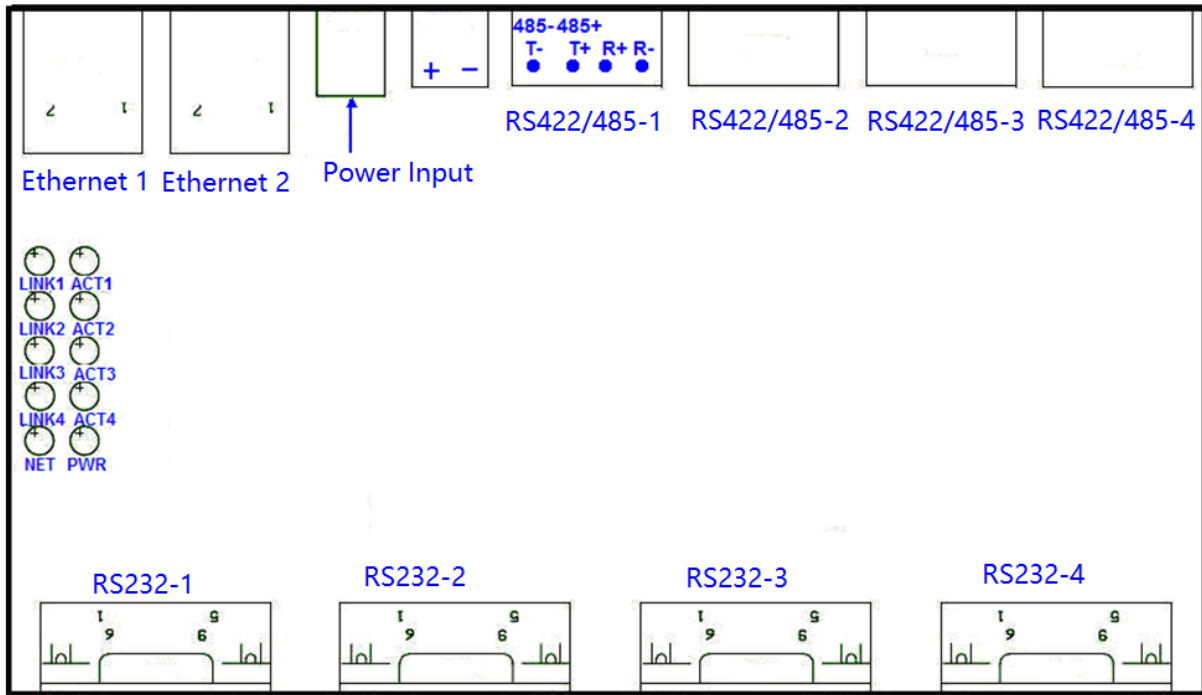


Figure 2. HF5142 Interface Picture

Table2. HF5142 Interface

Function	Name	Description
External Interface	Ethernet 1	10/100M Ethernet. Can be used to connect to router LANN port or cascaded to another HF5142
	Ethernet 2	10/100M Ethernet. Can be used to connect to router LANN port or cascaded to another HF5142
	Power Input	DC Power Input
	RS232 RS485 RS422	4 Channel RS232/RS485/RS422
LED Indicator	PWR	Internal Power Supply Indicator On : Power is OK Off : Power is NG
	NET	Ethernet status
	LINKX	4 Channel network communication status
	ACTX	4 Channel UART communication status

2.2. RS232 Interface

Device serial port is male(needle), RS232 voltage level(can connect to PC directly), Pin Order is consistent with PC COM port. Use cross Cable connected with PC(2-3 cross, 7-8 cross, 5-5 direct, 7-8 no connection), see the following table for pin definition.



Figure 3. RS232 Pin Definition(Male/Needle Type)

Figure 4. RS232 Interface

Pin Number	Name	Description
2	RXD	Receive Data
3	TXD	Send Data
5	GND	GND
7	RTS	Request to Send
8	CTS	Clear to Send

2.3. RS485 Interface

RS485 use two wire links, A(DATA+), B(DATA-). Connect A(+) to A(+), B(-) to B(-) for communication.

The RS485 interface support maximum 32 485 device, special hardware version can support max 255 device. The cable maximum length is 1200 meters. Need to add 120Ohm terminal resistor for over 300 meters.

2.4. RS422 Interface

RS422 interface use T+/T-/R+/R-, cross connect to device as the following picture.

Name	Description
TX+	Transfer Data+
TX-	Transfer Data-
RX+	Receive Data+
RX-	Receive Data-

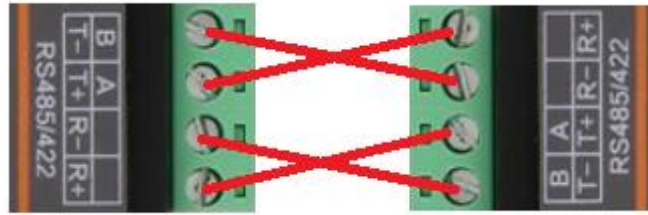


Figure 5. HF2211 RS422 Connection

2.5. RJ45 Interface

Ethernet port is 10M/100M adaptive, support AUTO MDI/MDIX which means it support direct connecting to PC with Ethernet cable.

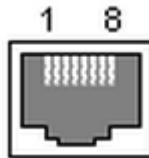


Figure 6. RJ45 Pin Defination

Table3. RJ45 Interface

Pin Number	Name	Description
1	TX+	Transfer Data+
2	TX-	Transfer Data-
3	RX+	Receive Data+
4	PHY-VCC	Transformer Tap Voltage
5	PHY-VCC	Transformer Tap Voltage
6	RX-	Receive Data-
7	N.C.	None Connect
8	N.C.	None Connect

2.6. Cascade Method

HF5142 support Ethernet Cascade. RS232/RS422/RS485 can be extended to max 32 channel.

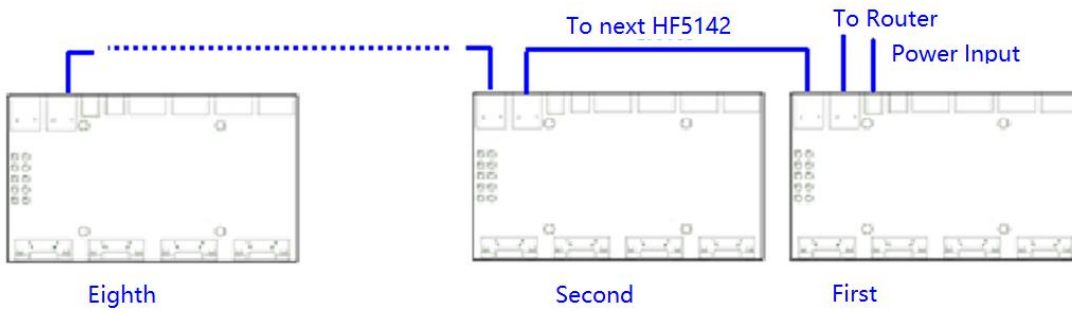


Figure 7. HF5142 Cascade

2.7. Mechanical Size

The dimensions of HF5142 are defined as following picture (mm):

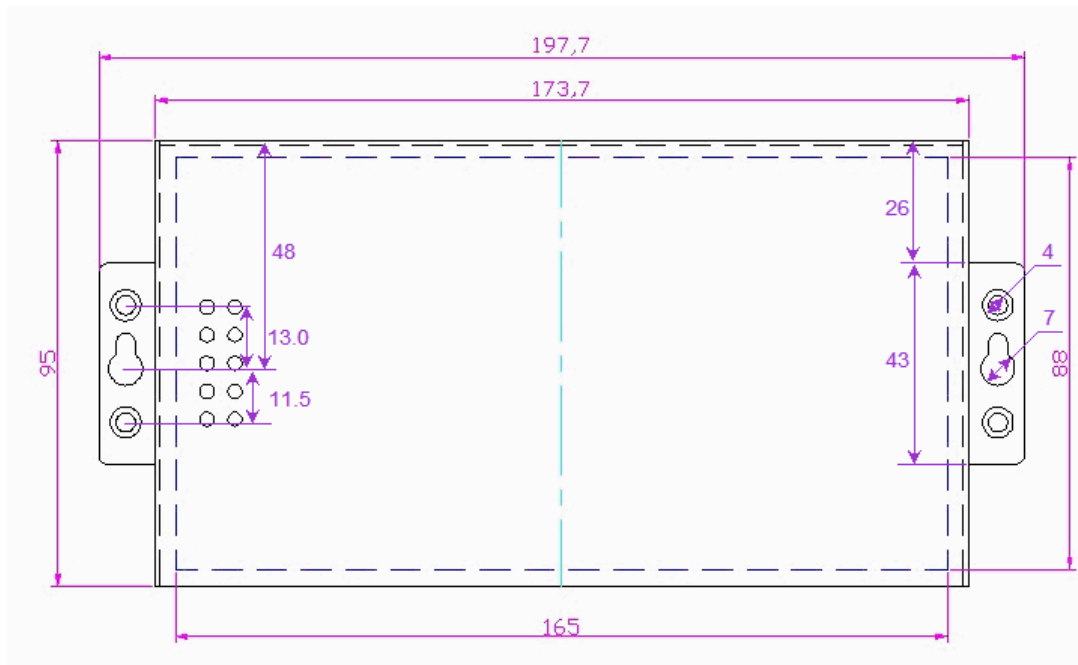


Figure 8. HF5142 Mechanical Dimension

2.8. Order Information

Base on customer detailed requirement, HF5142 provide different configuration version, Details as below:

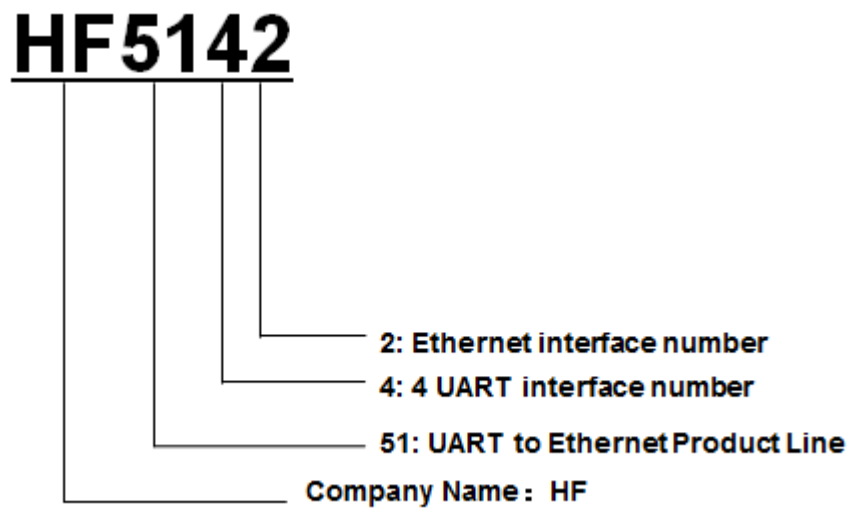


Figure 9. HF5142 Product Number Defination

2.9. Application

See Eport-E10 manual for detailed usage..

