F5-8513 10/100Mbps Ethernet to 8E1 Converter

Standalone/Module/Chassis User Manual

(Version: V1.5)

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1. General

F5-8513 is the most newly promoted product that can convert 100Base-TX or 10Base-T Ethernet to 8E1 signals, and vice versa. This protocol converter can extend the bandwidth to 16.384Mbps. It not only provide completed indicators to show the status and alarm messages of the E1 line and Ethernet port, but also support BER Stat. of E1 and flow Stat. of Ethernet port. It is widely used in two LAN connecting, remote monitor and video broadcasting.

2. Features

- Compatible with ITU-T G703, G704 and G823
- Support 10Base-T, 100Base-TX protocol
- 4096 pieces of MAC address list and with address filter function
- Ethernet port support MDI/MDI-X auto-detect
- Enable any group of CH1-CH8 E1 channel to transmit the data at will
- Extend the bandwidth to 16.384Mbps when using 4E1 channels
- Support auto-inspection of effective E1 channel without interruption of data transfer.
- Automatically cut off the E1 Channel when it has LOS and AIS alarm, and inform the remote end simultaneously.
- Support Bi-directional Local Loop
- 75ohm unbalanced E1 channel impedance
- Standalone and Chassis Module optional, Chassis support SNMP-based management
- Internal power supply, AC160V-260V or DC –48V optional

3. Specification:

3.1. E1 Port

- Bit rate: 2.048 Mbps
- Line code: HDB3
- Standard: Compatible with ITU-T G703, G704
- Impedance: 75ohm
- Connector: BNC
- Number of E1: 8
- Jitter Performance: compatible with G.742 and G.823
- Timing Mode: Internal Clock or Recovered from E1

3.2. Ethernet Port

- Port Speed: 10/100Mbps Auto-Selection
- Auto-negotiation with half/full duplex
- Standard: Compatible with IEEE802.3, 802.3u
- Connector: RJ45 (MDI/MDI-X auto-detect)
- Number of Ports: 1 or 3 or 4ports

3.3. Size:

- 483mm (W) ×44mm (H) ×140mm (D)

3.4. Power

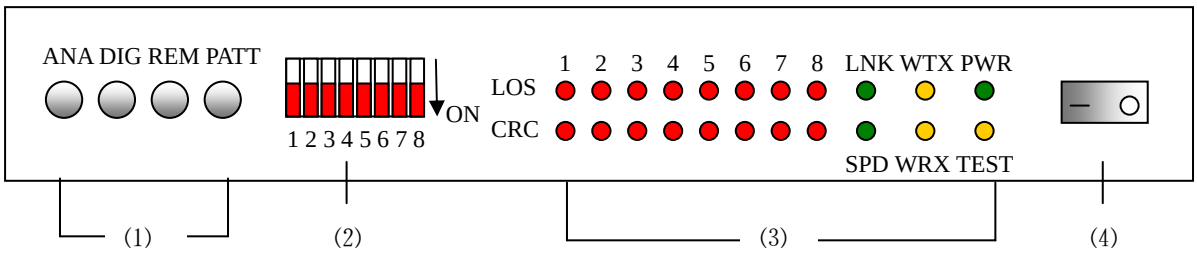
- AC Power: 100V-240V, 0.4-0.2A, 50-60 Hz
- DC Power: -48V, 0.4A
- Consumption: Less than 3 Watts

3.5. Environment

- Temperature: 0℃-50℃
- Humidity: 30%-90%

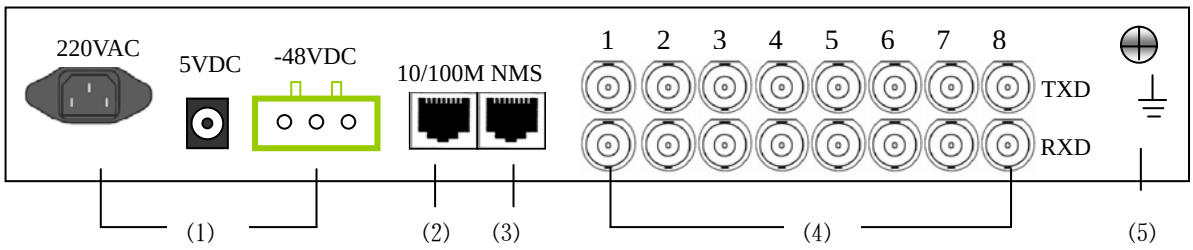
4. Installation Reference

4.1. Front Panel of the Standalone



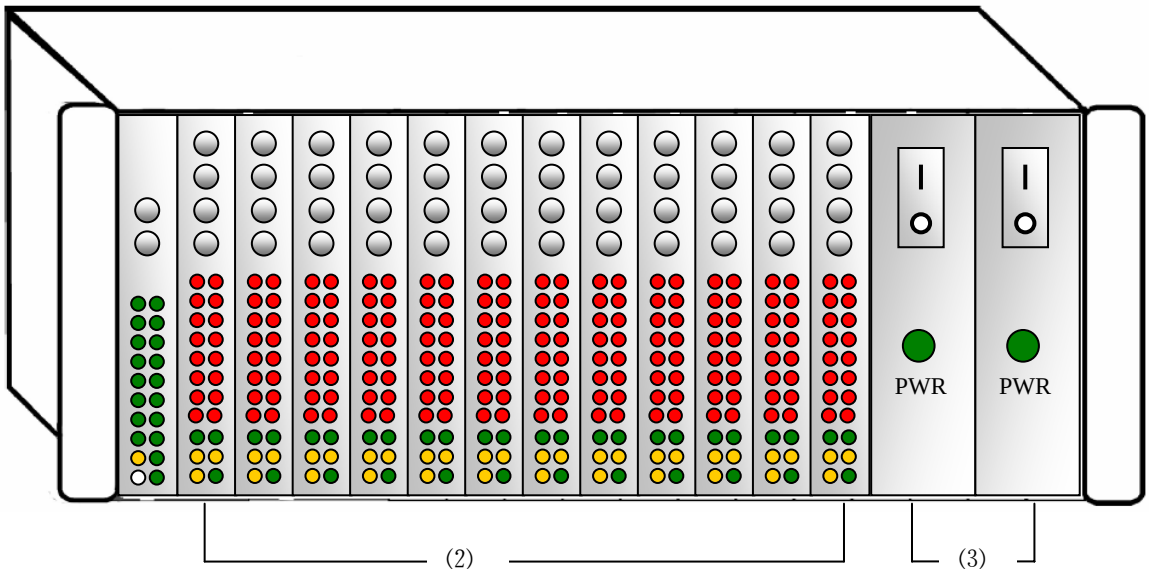
(1) Buttons, see **4.8.1** (2) DIP Switches, see **4.8.1** (3) LEDs , see **4.7.1** (4) Power Switch

4.2. Back Panel of the Standalone



(1) Power Supply Input (2) Ethernet Port (3) NMS: N.A. (4) E1 Channel
(5) Protecting GND

4.3. Front Channel of the Chassis

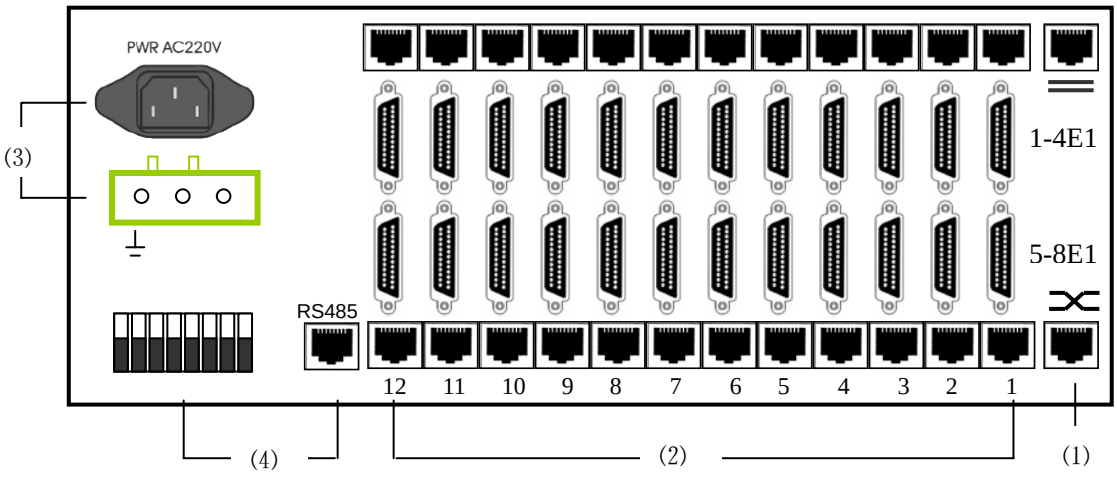


(1) Managed Module

(2) 12 pieces of F5-8513M Modules

(3) 2 pieces of Power Supply Modules

4.4. Back Channel of the Chassis



(1) Managed Port Connectors of Managed Module.

The upper RJ45 is MDI connector, the below RJ45 is MDI-X connector.

(2) E1 & Ethernet port Connectors of F5-8513M Modules.

DB37 is for E1 ports, Upper RJ45 is for Ethernet ports. The below RJ45 is not available.

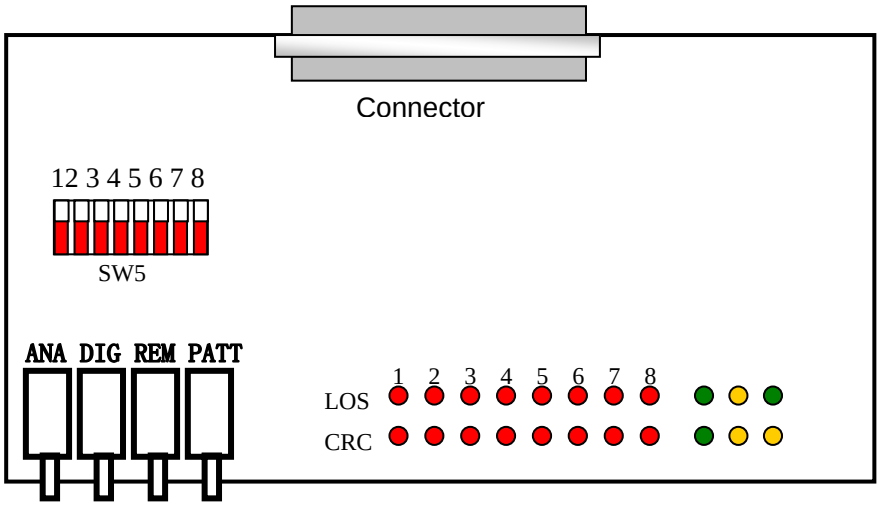
(3) Power Supply Input Connector.

The upper is for 220VAC, the below is for -48VDC.

(4) DIP switch and RS485

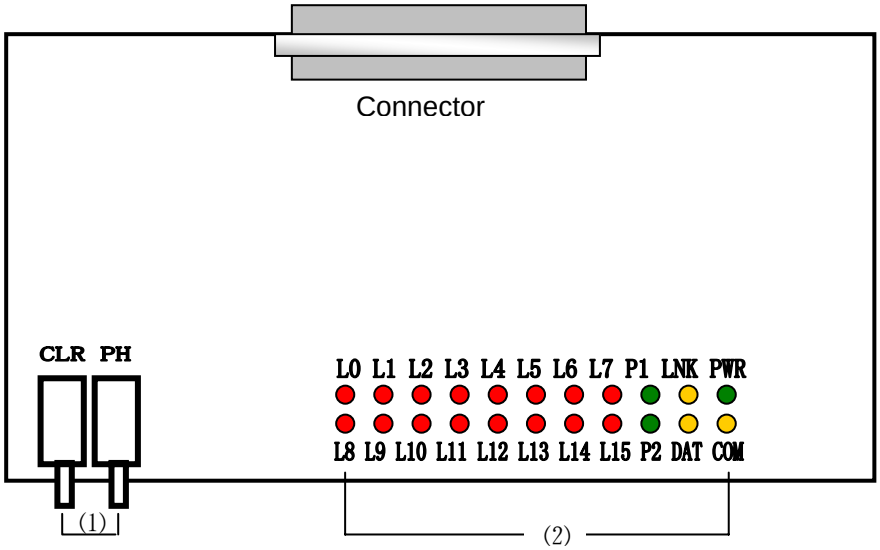
They are reserved and are not available for current version. The first 2 bit of the DIP switch should be reserved to ON.

4.5. Sketch map of the F5-8513M Module



Please refer to the standalone products to get the definition.

4.6. Sketch map of the FC-812-M Module (Management Module)



(1) Buttons, see **4.8.3** (2) LEDs, see **4.7.2**

4.7. LED Description

4.7.1. LED Status Description of standalone/Module products

Indicator	Color	Stat.	Description
PWR	Green	ON	Power supply OK
TEST	Yellow	ON	Any of 4 buttons-ANA, DIG, REM, PATT is pressed down
WTX	Yellow	Blink	E1 channel is transmitting data
WRX	Yellow	Blink	E1 channel is receiving data
LNK	Green	ON	Ethernet port link OK
		OFF	Ethernet port link Loss
SPD	Green	ON	Ethernet port works on 100Mbps speed
		OFF	Ethernet port works on 10Mbps speed
E1 LOS 1~8	RED	ON	1-8 E1 channel loss signal
		Blink	1-8 E1 Line link protocol is being created
		OFF	1-8 E1 is OK
E1 CRC 1~8	RED	ON	1-8 E1 CRC error
		Blink	1-8 E1 transfer delay over the limitation
		OFF	1-8 E1 have no CRC error

4.7.2. LED Status Description of Management Module FC-812-M

Indicator	Color	Stat.	Description
PWR	Green	ON	Power supply OK
COM	Red/Green	Blink	Managed Module is communicating with F5-8513M Modules
		ON or OFF	Managed Module is idle or Power is off.
LNK	Green	ON	Ethernet port link OK
		OFF	Ethernet port link Loss
		OFF	Ethernet port works on 10Mbps speed
DATA	Yellow	ON	Ethernet is transmitting or receiving data
P1, P2	Green	ON	Power Module is communicating with Managed Card
		OFF	Power Module isn't communicating with Managed Card
L0-L11	Green	ON	Module 1 to 12 is communicating with Managed Card
		OFF	Module 1 to 12 isn't communicating with Managed Card

L12-L15	Green	Not Available

4.8. DIP Switch & Button

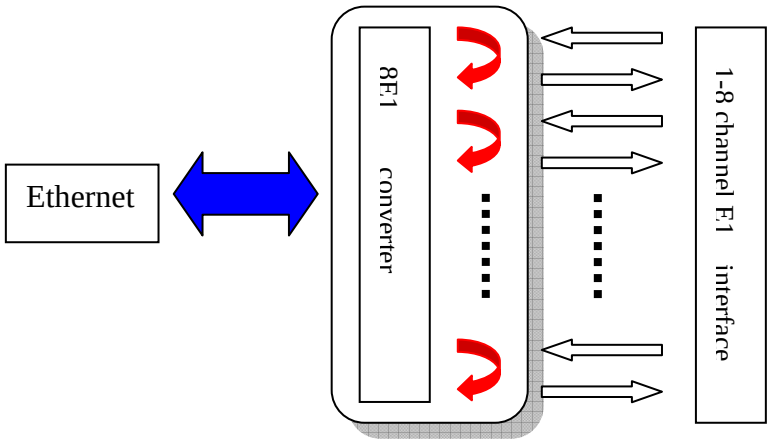
4.8.1. DIP Switch Setting of F5-8513 and F5-8513M

Bit	Description
1-2	CRC alarm limitation setting ON,ON : no setting OFF,ON : 1×10-4 ON,OFF : 1×10-5 OFF,OFF: 1×10-6 (default)
3	OFF->ON or ON->OFF change will reset local device
4	OFF->ON or ON->OFF change will reset remote device
5-8	Reserved

4.8.2. Button Description of the F5-8513 and F5-8513M

- ANA:

  Local loop of E1, used to test if local device and connect wire is normal

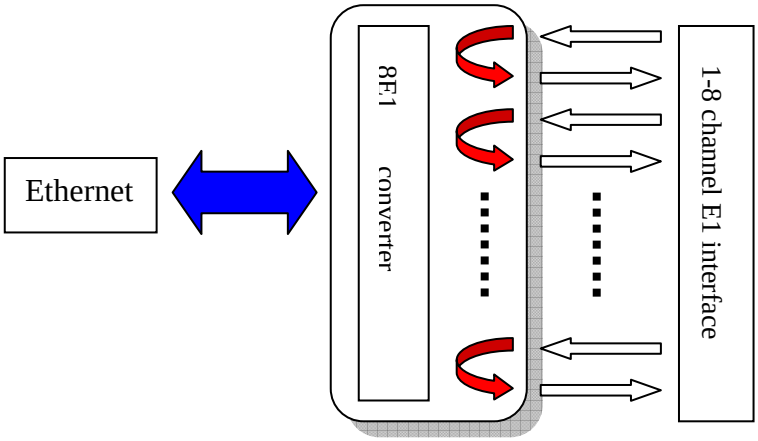


- DIG

  Not Available.

- REM

  E1 Loop: from local to remote side.



- PATT：

  Not Available.

4.8.3. Button Description of the FC-812-M

- CLR

If press CLR button down and reset the management module FC-812-M, some configuration will be set to factory setting as below:

IP address:	192.168.0.140
Subnet Mask:	255.255.255.0
Gateway:	192.168.0.1
WEB type login user's name:	user
WEB type password:	pass

- PH

  Not Available.

4.9. Port Description

4.9.1. Power input

Type	Description	NOTE
220V	For 220VAC power supply input	One product can only support one kind of Power Supply
+5V	For +5VDC power supply input	
-48V	For -48VDC power supply input	

4.9.2. 10/100M

Ethernet port

10/100Mbps, Half/Full Duplex auto-negotiate, MDI/MDI-X auto-detective.

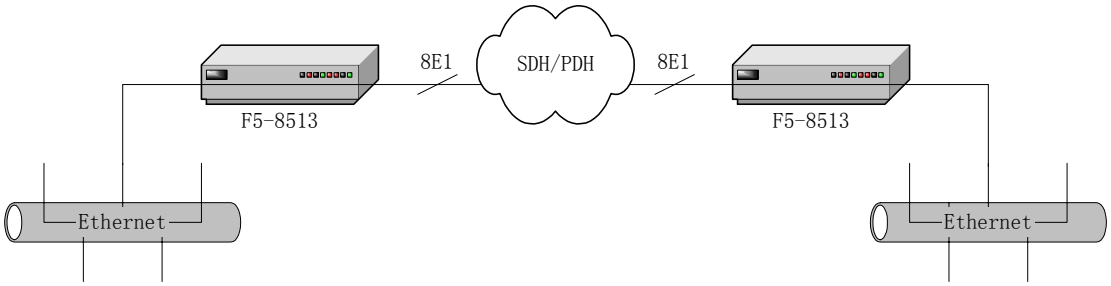
4.9.3. NMS

Not available.

4.9.4. TXD&RXD 1-8

1-8 channels of E1. TXD means OUT, RXD means IN.

5. Application



The F5-8513 is widely used to connect two Ethernet, its 16.384Mbps bandwidth makes it adapt to mostly application. F5-8513 should be used in pairs and only support point-to-point application.

6. Order Information

6.1. Module

F5-4511 Ethernet to 1-8 E1 Protocol Converter Series

6.2. Part Number (P/N)

F5-8513A 10/100Mbps Ethernet to 8E1 Protocol Converter, Standalone, AC220V power supply

F5-8513D 10/100Mbps Ethernet to 8E1 Protocol Converter, Standalone, DC-48V power supply

F5-8513M 10/100Mbps Ethernet to 8E1 Protocol Converter, Module (Card)

FC-812 12-slot Chassis, 6U height

FP-8100A 100W AC220V Power Module for FC-812 chassis

FP-8100D 100W DC-48V Power Module for FC-812 chassis

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