

## TSM-4E1/ETH Unframed 4E1 to Ethernet Converter

### Product Overview:

TSM-4E1/ETH Converter is based on FPGA, providing 4 unframed E1 interfaces and one Ethernet interface to achieve 10/100Base-T Ethernet data transmission on the E1 channel.

It is

a high performance, self-learning Ethernet bridge. This device is the extension device of Ethernet, using network (PDH/SDH/Microwave) that provide E1 channel to achieve local and remote Ethernet interconnecting with serial interfaces at a lower cost. The device has inter-set loop test function to facilitate the project launching and daily maintenance.



### Features:

1. Based on self -copyright IC
2. Can realize monitor and control of remote equipment, OAM management data didnot take up user's timeslot and save E1 bandwidth
3. E1 supports any timeslot set, the rate is 64K-2048K
4. The local device can forced the remote device rate follow it
5. Have the function of E1 interface loop back check, avoid the converter crashed because of interface loop return
6. Have indicators when the device is power-off or E1 line is broken or lose signal
7. Can set the E1 line that not to send the LINK signal to Ethernet interface while E1 line is broken
8. The Ethernet interface supports jumbo frames (2036 Bytes)
9. Inter-set dynamic Ethernet MAC address (4,096) with local data frame filtering
10. Ethernet interface supports 10M/100M, half/full duplex auto- Negotiation and AUTO-MDIX (crossed line and straightly connected line self-adaptable )
11. Have Ethernet monitor self-reset function, the equipment will not dead
12. Can achieve the remote device setting any 5 mode of Ethernet and can closed the AUTO-MDIX function
13. Provide 2 clock types: E1 master clock and E1 line clock
14. Have three Loop Back Mode: E1 interface Loop Back (ANA)、 Ethernet interface Loop Back(DIG)、 Command the remote Ethernet interface Loop Back(REM)
15. Provide 2 impedances: 75 Ohm unbalance and 120 Ohm balance
16. Can realize monitor of remote equipment temperature and voltage from local equipment
17. Can form the structure: Ethernet E1 Bridge(A) — — -E1 Optical Fiber Modem(B) — — -Ethernet Optical Fiber Modem (C)
18. Can form the structure: Ethernet E1 Bridge(A) — — -Optical Ethernet Modem(B) — — -Ethernet Optical Fiber Transceiver (C), can manage (B) and (C) at (A)

### Specification:

#### E1 Interface:

Interface Standard: comply with ITU-T G.703.

Interface Rate:  $n \times 64\text{Kbps} \pm 50\text{ppm}$ .

Interface Code: HDB3.

E1 Impedance:  $75\Omega$  (unbalance),  $120\Omega$  (balance).

Jitter tolerance: In accord with ITU-T G.742 and G.823

Allowed Attenuation: 0~6dBm

#### Ethernet interface (10/100M):

Interface rate: 10/100 Mbps, half/full duplex auto-negotiation

Interface Standard: Compatible with IEEE 802.3, IEEE 802.1Q (VLAN)

MAC Address Capability: 4096

Connector: RJ45, support Auto-MDIX

#### Power:

Power supply: AC180V ~ 260V; DC -48V; DC +24V

Power consumption:  $\leq 3\text{W}$

#### Dimension & Weight

Mini Type: 216(width)\*140(depth)\*31(height)mm & 0.65kg

19 inch 1U: 483(width)\*138(depth)\*44(height)mm & 1.2kg

#### Working environment:

Working temperature:  $-10^{\circ}\text{C} \sim 50^{\circ}\text{C}$

Working Humidity: 5%~95 % (no condensation)

Storage temperature:  $-40^{\circ}\text{C} \sim 80^{\circ}\text{C}$

Storage Humidity: 5%~95 % (no condensation)

### Applications:

