



10/100BT-E1 Converter

MODEL AN-E1-ETH

USER MANUAL



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To Customer:

Thanks for using AD-NET TECHNOLOGY product. This manual provides most of the information, please do read up the technical setup and safe keep the manual for future usage.



1 GENERAL INFORMATION

Model E1-F is a single port E1 with Ethernet Bridging that provides high-speed LAN-to-WAN connectivity. Plugging directly into the 10/100Base-T port of a hub or LAN switch, the E1-F provides E1 access at connection data rates of 2.048 Mbps. The E1-F is an excellent choice for internet access as well as LAN-to-LAN services

2 PRODUCT CHARACTERISTIC

- Based on self-copyright IC.
- Ethernet port 10/100M half/full duplex self adaptable, supporting VLAN.
- RJ45 interface supports AUTO-MDIX.
- Provides 2 clock types: E1 master clock, E1 line clock.
- Provide LAN auto reset function, run more stably.
- Has the function of pseudo-random code testing, convenient for opening of the circuit, and can be used as an error code instrument.
- Have three LoopBack Modes: E1 interface LoopBack (ANA)、LAN interface LoopBack (DIG)、command the remote LAN interface LoopBack (REM) .
- 75-ohm dual coax and 120-ohm twisted-pair G.703 connections provided, only push the switch at the back panel of the device to adjust it.



- With abundant presentation function of Ethernet data, can detect real-time data communication status.
- Can realize SNMP management

3 ENVIRONMENT REQUIREMENT

The temperature requirement is not very strict, the device can be working well under terrible environment.

- working temperature: 0°C - 50°C
- relative humidity: 95%(without coagulation)
- No erosive and impregnant gas, no rising dust, no strong magnetic field disturbing

3.1 Power

Adapting module power, voltage range can be wide, with strong ant-jamming function.

With good insulation, stable working status is available

- power: -48V type, input voltage: -36V~-72V
- power: 220V type, input voltage: 175V~250V

3.2 Power consumption

Total power consumption: <5W



3.3 E1 Interface

- Line Rate: 2.048Mbps±50ppm
- Line Code : HDB3
- Interface Standard: ITU-T G.703
- E1 Impedance : 75Ω(unbalance) and 120Ω(balance)
- Connections : dual coax and 120-ohm twisted-pair (RJ45)
- Jitter tolerance : finer than G.742 and G.823

3.4 10/100Base-T Interface

Rate: 10/100M, full/duplex auto-negotiation

Protocol: Support IEEE 802.3, IEEE 802.1Q (VLAN)

MAC Address Entries: 4096 Entries

Total Memory Sizes: 64Mbits SDRAM

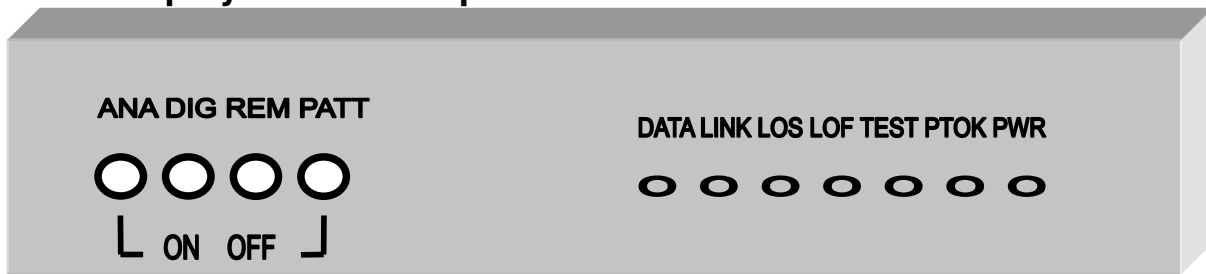
Physical interface: RJ45, support AUTO-MDIX

4. DIMENSIONS

210(W) × 140 (L) × 30(H) mm

5. CONFIGURATION AND OPERATION

5.1 Display of the front panel



5.2 LED Indicator

DATA——Yellow, wink signifying data receive or transmit in LAN

LINK——Active Green, signifying a valid 10/100BaseT connection.

LOS——Active Red, signifying E1 signal Lost

LOF——Active Red, signifying E1 Frame lost

PTOK——Active Green, signifying PBRS check OK

TEST——Active Yellow, signifying Device is on test status

PWR——Have two status : Green ,Power is on, Salmon pink signifying device is control by Netman, DIP and Push Switch is unused

Caution: there may be some mistakes when all indicating lights winks, (except for the PWR light)

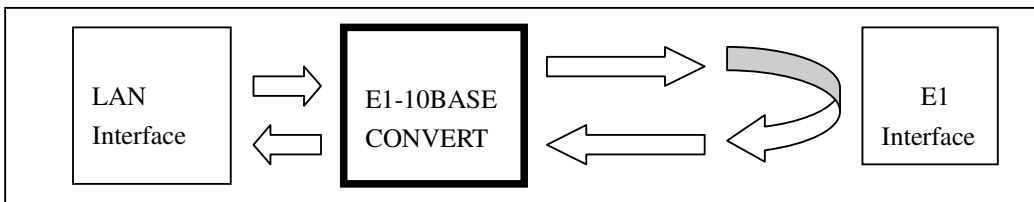
- both of the device are on the status of line clock;
- both of the device are on the status of master clock while the rate setting is different;

- the test key connecting are incorrect which cause into the dead cycle.

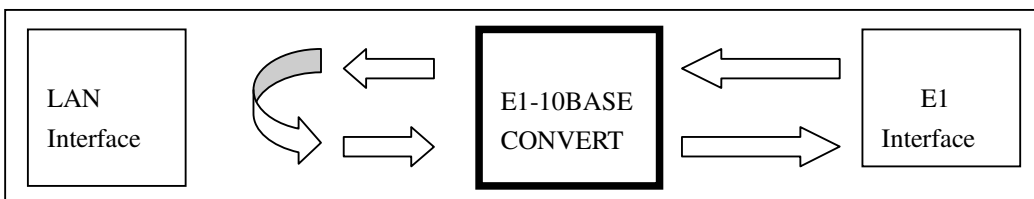
5.3 Button switch

There are four button switchers on the front panel, they are as following from the left to right,

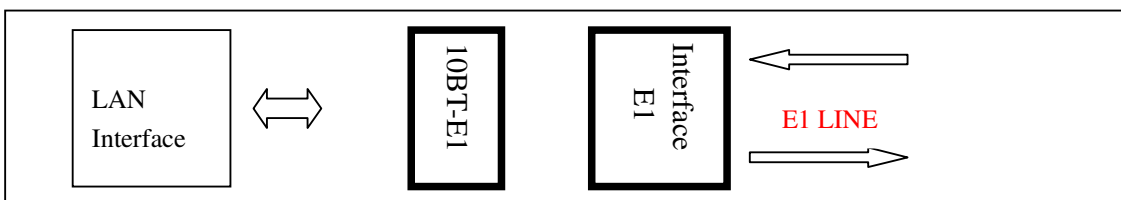
ANA: E1 Interface local loop, to check whether local device and its connecting circuit correct



DIG: 10/100BASE-T Local loop, to check the opposite device and optical circuit

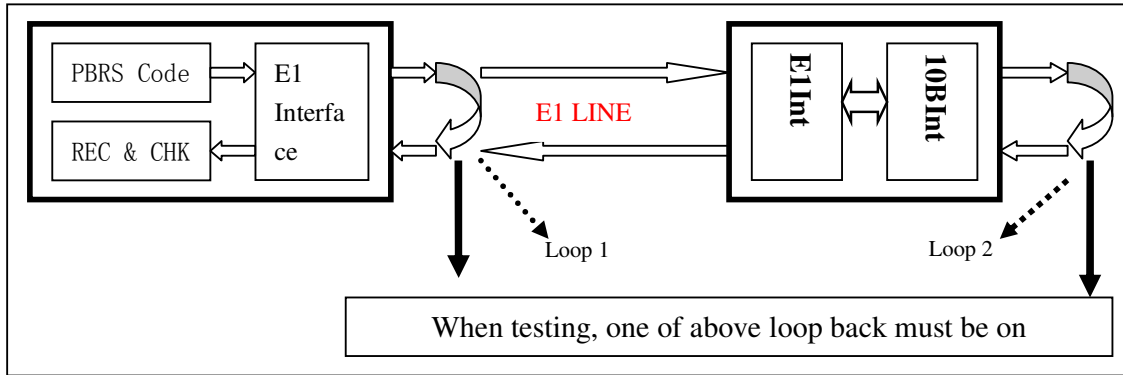


REM: E1 interface loopback outward to test E1 line



PATT: V.54 testing. To produce and transmit the PBRS to the 10/100BASE

input connector, and to check whether the output signal of the 10/100BASE accord with PBRs standard. If according, the PTOK light on, otherwise, off. By this way, the status of E1 Line can be tested.

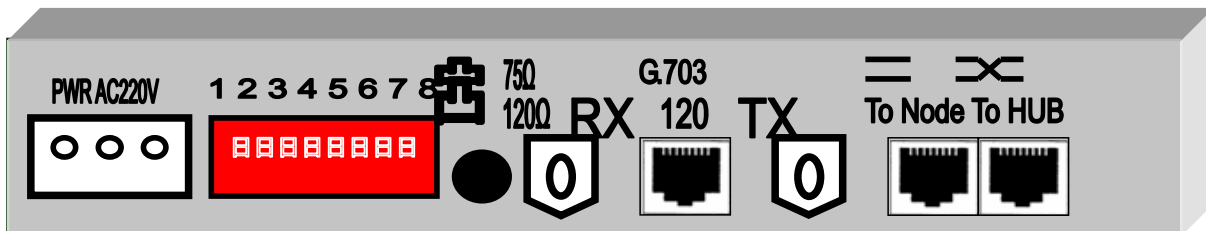


Push the PATT button, when loop circuit 1 is on, If PTOK is on, indicates device works well; loop circuit 1 off and loop circuit 2 on, indicates that fiber transmission circuit and both side device work well

Note:

- when the test LED on, the normal communication will be terminated
- During the PATT model testing, the circuit should be cycle by itself, otherwise, the PATT code can't come back.

5.4 Display of the rear panel



Note:

TX — E1 75Ω unbalance, Transmit BNC Interface



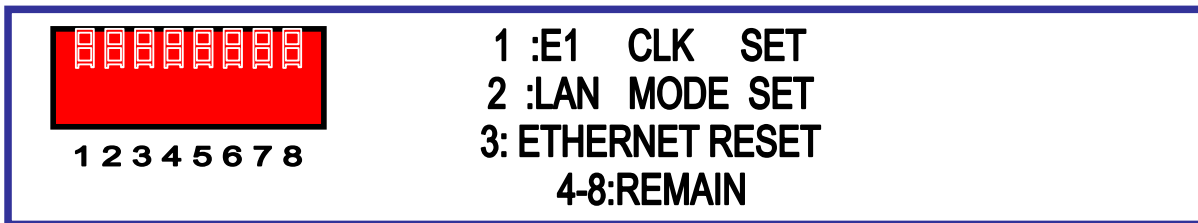
RX — E1 75Ω unbalance, Receive BNC Interface

10/100Base-T — 10/100Base-T Interface, RJ45

120Ω/E1 — E1 120Ω Balance Interface, RJ45

5.5 Dial code in the panel

On the panel, there are 8 digital dial code switches to set E1 clk.



1 (clk1):E1 master clk and line clk set

E1 clk set	Clk1
Master (master clk)	OFF
Slave (line clk)	ON
Note pls: during communicating, one master and one slave is necessary and the rate of the slave will follow the master	

2 (clk2):

LAN set	Clk2
10/100M full/duplex auto-negotiation	OFF
10M full/duplex auto-negotiation	ON

NOTE:

- If clk mode is slave, the rate of the device will follow the master

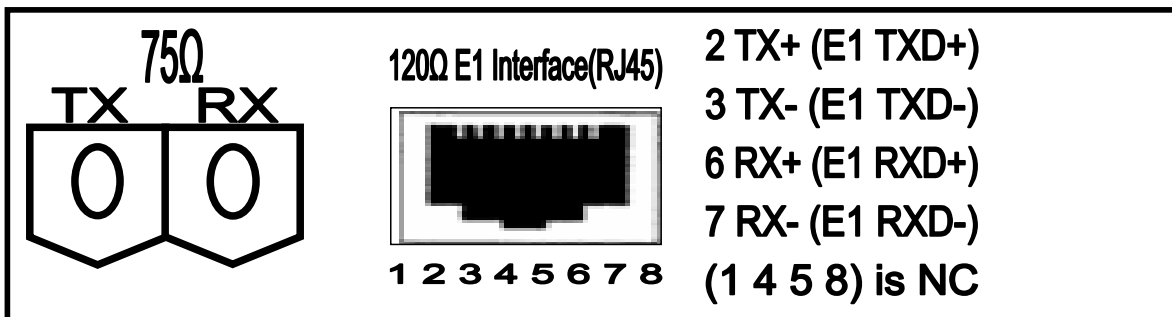
5.6 Description of E1 connector

E1 connector

75Ω/RX: 75Ω unbalance receive in

75Ω/TX: 75Ω unbalance transmit out

120ΩE1: 120Ω balance receive and transmit.



E1 Interface impedance set

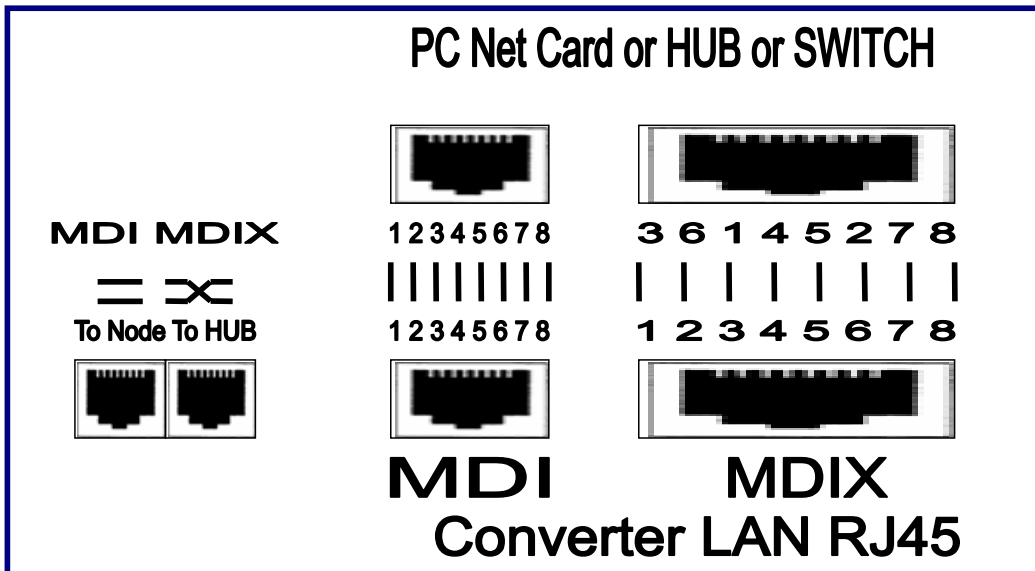
The push button sets E1 impedance



impedance	Button
120Ω	Push UP
75Ω	Push Down

LAN Interface

In the back panel there are two RJ45 jack, one is for DTE mode (MDI) the other is for DCE mode (MDIX), easy for you to use it



6 PACKING

6.1 Packing pattern

The following are things listed in each package:

- E1-10/100BT Converter 1
- Power Line (220AC) 1
- User's manual 1



6.2 Power Installing

Power of AC220V/ DC-48V is suitable for the device. If the power of DC-48V is used, the positive and negative terminal can be optional because there is the self-test circuit for the polarity inside the optical modem.

7 MALFUNCTION DIAGNOSES AND ELIMINATION

When the device works well, the light of PWR and LINK should be on and DATA should be wink, and others should be off

Serial	Phenomena of the malfunction	Causation	Solution
1	Light of PWR off		Check power supply line connection normal or not
2	Light of LOS on	E1 signal missing on the E1 RX terminal	Check the E1 signal, Line connector clean or not, Line break or not, opposite device power on or off, loopback from the E1 input and output conncector with the E1 line connecting. the light off means the device work well, then please check the opposite device and E1 line .



3	Light of LINK off		check Ethernet line connection correct or not
4	the light work correctly, but no data	maybe the problem lies in the E1 channel	Press the PATT and REM buttons, (or make the opposite device loop back the LAN data), if the PTOK light off, it means the E1 transmission channel has problem.
5	there is data, but also there is missing of data	maybe the device clock has problem; maybe The LAN has a great lot COL occur	Confirm all devices set into the salve, if yes, make one or two of them into the master clock check the LAN network

Remark:

1.) PATT: the button set into the ON. Produce and transmit the PBRS codes into the input connector the LAN, and confirm whether the output signal from the LAN accords the PATT standard, by this way, it can test the periphery circuit, setting and device.

2.1 PATT button set into ON, and ask for the data loop back from opposite side to this side. If the light of PTOK is off, it means the fiber circuit has some problems.

2.2 PATT button set into ON, the light of PTOK off, and ANA button set into ON, at that time, if the light of PTOK on, it means that the Converter work well.

2.3 PATT button set into on, PTOK light off, and press the REM or set the DIG button of the remote device on, at that time, if the PTOK light on, it means that the both of the device and E1 Line circuit work well.