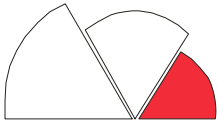
BTS IP Media Converter

User Manual



BIT-RAYON GROUP

We are thankful for you to purchase BTS IP Media Converter Series produced by our company. To use the products, read the user manual carefully.

Scope of Application

The user manual belonging to BTS IP media converter is exclusive user manual.

Notice

The manual with any form must not copied, pirated or delivery in any form in network, unless under the written authority of our company.

The consumer's manual related to landmark of ownership has been possessed on the landmark of owner.

Our company has rights to correct the quality of products and consumer's manual at any time instead of informing consumers ahead of time.

Our company will not take responsibility of the failure of product function, affecting another product or the human injury because of correction in any form for quality of products and the consumer's manual.

Within the quality insurance, due to the problem of quality of products itself, resulting in improper use, our company will be responsible for changing the products. The right to take back the products belongs to our company.

Version Released:

Time	Version	Remarks
November 23,2006	V1.0	Chinese Manual released
January 4, 2007	V1.0	English Manual released

Contents

Safe Operation Notice

Although BTS IP media converter has a reliable capacity in designed operation environment, damage for equipment should be avoided

- Read through this manual carefully and save it for later reference
- Don't place product nearby source of water or in a humid site
- Don't place anything on power cables and knot or wrap the cables. The cables should be placed in an unreachable corner
- Power supply socket and other equipment connector should be tightly connected with each other, please check it regularly
- Please connect power supply cable strictly according to post head's marks. The power supply being used should satisfy conditions indicated as follows

  1.For DC -48V type: -36V ~-72V

  2.For DC +24V type: +24 V±15%

  3.For DC -24V type: -24 V±15%

  4.For DC±24V type: +24 V±15%,-24 V±15%

  5.For AC 220V type: 220V±20%,50Hz
- Please keep equipment in a clean condition, if needed you can clean it with a soft cotton cloth

- Don't block the intake
- In these cases, please turn off the power immediately and timely keep in touch with our company:

  1. Water invades equipment.
  2. Equipment with damage or the damage of shell
  3. Equipment with working failure function or the quality for show with complete change
  4. Equipment to come out scent, smoke or noise.

- Please don't fix equipment in personal, unless with the exception of definite indication in manual.

1.Outline

BTS IP Media Converter series is a kind of Ethernet fiber-optic transmitter and receiver that supports remote network management. It can complete bi-directional Ethernet optical/electric signal transformation over a pair of fiber-optic, so it has the access capacity of Ethernet link with its longest transmission distance of 120km. Under the network platform, with the cooperation of local end equipment and user end equipment, flexible management functions such as information view for remote and local equipment, browsing current alarm, parameter configuration, system reset etc. we can integrate two fiber-optic transceiver in a single card., hence the integration density of fiber-optic transmitter and receiver is doubled.

BTS IP Media Converter series is easy to maintain and use, it can work instantly after powered on.

2.Features

- Powerful network management system that supports information view for local and remote device, browse current alarm, parameter configuration, system reset etc
- Support remote management control function such as working mode setting for Ethernet ports of local side equipment and remote side equipment, reset remote end equipment etc.
- Support data rate limitation and flow control for Ethernet port
- In accordance with IEEE802.3u (10/100Base-TX,10/100Base-FX; 100Base-TX,100Base-FX)international standard;
- Support 10/100Mbps;10,100Mbps self-adaptive, full-duplex /half-duplex transformation function;
- For MMF, the longest transmission distance is 5km;
  For SMF, the longest transmission distance is 120km;
- Fixed 100Mbps data rate for optical port.
- The default working mode is self-adaptive (DIP switched are all OFF)
- After reset or again powered after shutdown, it works in the mode that previously set by DIP switch;
- Can be either used in pairs or interconnected with other company's similar device that in accordance with 100Base-FX fiber-optic transmission standard
- Support AUTO-MDIX function
- In Central office the card style IP media converter can be plugged in the CHAS02 chassis together with other card style devices of our company and can realize unified management;
- support +24VDC, -24VDC, ±24VDC, -48VDC or 220VAC power supply.

3.Principle for equipment

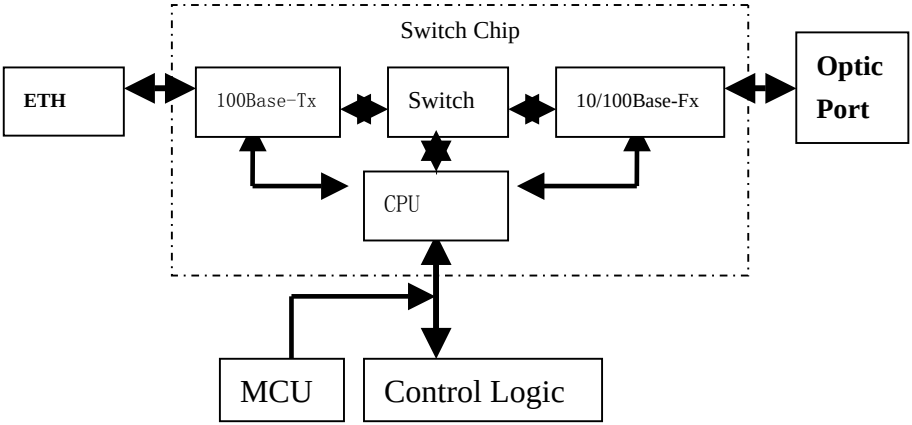


Figure 3.1 principles for equipment

4.Product Installation

4.1 unpacking

1. When you fix the installation position of the equipment, clean it up and move the paper box with the equipment in it near this installation site.
2. Please pay attention to the direction of packing case, ensuring right up side.
3. Open the box and take out the equipment and accessories.

The equipment is packaged by special box with anti-vibration protection. There is one machine in each packing case, including corresponding accessories. Please remember to examine and check whether it accords with packaging sheet.

【There is precision instrument inside the equipment, please carefully load and avoid excessive vibration lest affecting the equipment performance. If you find it damaged or losing any part during transportation, please notify the company service department so that we can settle it adequately as soon as possible.】

4.2 Equipment check

Check whether the equipment is intact and damaged or not, and verify the power condition.

4.3 equipment installation

1. Take out the equipment; check whether the façade is damaged. Fix it to the frame or other device to make sure that it is stably fixed.
2. Select the input power according to the equipment arrangement, and connect the power line correctly. Check whether the power supply is normal when powered on (the green indicator light POWER shines if the power is normal). If the optical fiber is not connected, the synchronous lost indicator light LOSS (red) shines.
3. Connect the optical fire linked to peer equipment, the light module working indicator L/A (green) shines in normal condition and the LOSS (red) extinguished if it is not normal, please check whether the light channel is normal, the end fiber can receive and transmit and the peer equipment is powered.
4. Connect the Ethernet port of equipment and PC together with Ethernet wire, if both PC and this user end equipment work normally the corresponding green 100/10 indicator light is ON

4.4 equipment testing

1. Power supply: connect the line of the power supply correctly, turn on the power, the POWER light (Green) should be on, which indicates that the power works properly.

2. Equipment operation: When the power is on, the equipment undergoes initialization process.
3. Fiber Interface: When the equipment operates normally, use tail fiber to circulate the fiber interface. If the L/A light (Green) of the light module is on and the LOSS (Red) is off, it indicates that the fiber interface works properly
4. Ethernet interface: When the equipment works properly, use two computers that have NIC card, to connect the Ethernet interfaces of the equipment. Ping one computer from another computer to test whether the receiving/sending packet is correct.

5.Alarm Indicator, DIP and Interface

BTS IP Media Converter series provides a complete emergency alarm report and situation instructions. The red light is on means serious alarm and the system couldn't work normally. And the green light shows the system works properly. The detailed definition of each instruction light is as follows:

Figure 5.1 Desktop IP Media Converter Front

Figure 5.2 Desktop IP Media Converter Back

Desktop equipment alarm indicator

Indicator	ON	OFF	Blinking
POWER	Normal	Abnormal	
LOSS	Loss of optical signal	Normal	
Left L/A	Optical Connection	Optical	Data

	Normal	Connection abnormal	transmitting or Receiving
Left FULL	Full-duplex for optical port	Half-duplex for optical port	
Right L/A	UTP port connection normal	UTP port connection abnormal	Data transmitting or Receiving
Right FULL	Full-duplex for UTP port	Half-duplex for UTP port	
100/10	100M	10M	
RUN	Blinking for device with network management, off for device without network management.		

Define for DIP switch of desktop equipment (1/0)(ON/OFF):

1: Ethernet working mode selection: force/self-adaptive

2: Full/half-duplex mode selection: Full-duplex/half-duplex

3: Rate selection:100M/10M

4: Packet length selection:1552/1536

Packet length selection	DIP4
1536	OFF
1552	ON

Working mode	DIP1	DIP2	DIP3
Self-adaptive	OFF	N/A	N/A
Force 100M/FULL	ON	ON	ON
Force 10M/FULL	ON	ON	OFF
Force 100M/HALF	ON	OFF	ON
Force 10M/HALF	ON	OFF	OFF

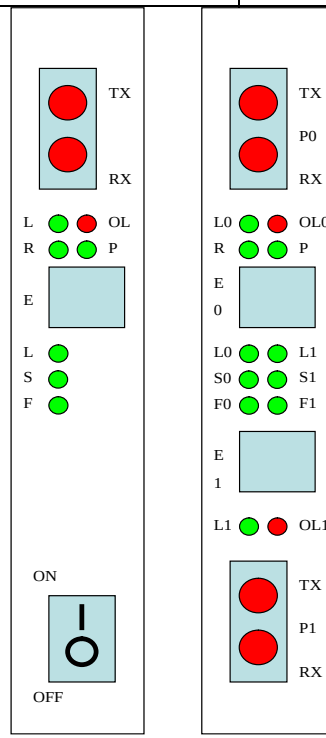


Figure5.3 single-port, dual-port Card style Media Converter

Card style equipment alarm indicator

Indicator	ON	OFF
P	Normal	Abnormal
OL	Loss of optic signal	Optic is normal
Upper L	Optic connection normal	Optic connection abnormal
Lower L	UTP port connection normal	UTP port connection abnormal
S	100M	10M
F	Full-duplex	Half-duplex
R	Blinking for device with network management, off for device without network management.	

Note: Dual-port IP media converter has two groups of indicators which are labeled "0" for one group and "1" for another group.

Define for DIP switch (1/0)(ON/OFF):

1: Ethernet working mode selection: force/self-adaptive

2: Full/half-duplex mode selection: Full-duplex/half-duplex

3: Rate selection: 100M/10M

4: Packet length selection: 1552/1536

Working mode	DIP1	DIP2	DIP3
Self-adaptive	OFF	N/A	N/A
Force 100M/FULL	ON	ON	ON
Force 10M/FULL	ON	ON	OFF
Force 100M/HALF	ON	OFF	ON
Force 10M/HALF	ON	OFF	OFF

Packet length selection	DIP4
1536	OFF
1552	ON

Note: the number of DIP switch for dual-port IP media converter is 8 (eight)

6. Solutions for common problems

6.1 LOSS/OL indicator ON

- Check the connection between fiber and optical transmitter and receiver
- Check if the transmit/receive fiber is oppositely connected
- Check the optical port of the device
- Check the optical link. Test the optical receiving power. If you have no optical power meter, then exchange the receiving and transmitting fiber with the corresponding terminal simultaneity and check.

7.Technical Specifications

7.1 Power supply requirement

- DC power supply -48VDC,tolerance range -36V~-72V,power supply ripple ≤240mVp-p
- DC power supply +24VDC,tolerance range +24V±15%
- DC power supply -24VDC,tolerance range -24V±15%
- DC power supply ±24VDC,tolerance range +24V±15%,-24V±15%
- AC power supply: 220VAC±20%, 50HZ
- Power consumption: ≤ 5W

7.2 Working condition

- Environment temperature: 0℃~45℃;
- Relative humidity: ≤90% (when environment temperature is 35℃);
- Atmospheric pressure: 86~106Kpa

8.examples for typical application

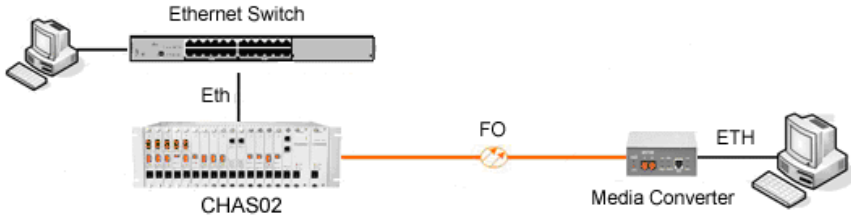


Figure 8.1 Typical application 1

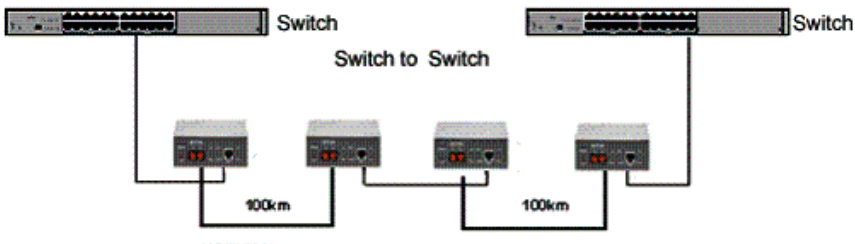


Figure 8.2 Typical application 2

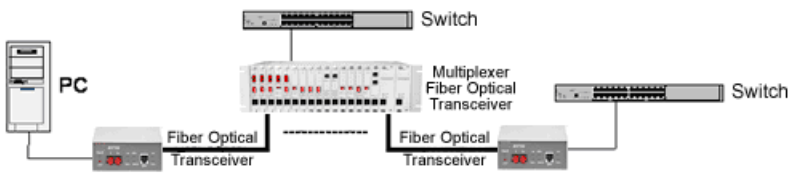


Figure 8.3 Typical application 3