# 10/100Base-Tx to 100Base-Fx Media Converter

## 1 GENERAL DESCRIPTION

The media converter transform the transmission media of Ethernet signal from CAT5 to optical fiber. it can extend the transmission distance to several kilometer or hundred kilometer.

Using media converter is a economical solution to achieve long distance transmission base on current status.

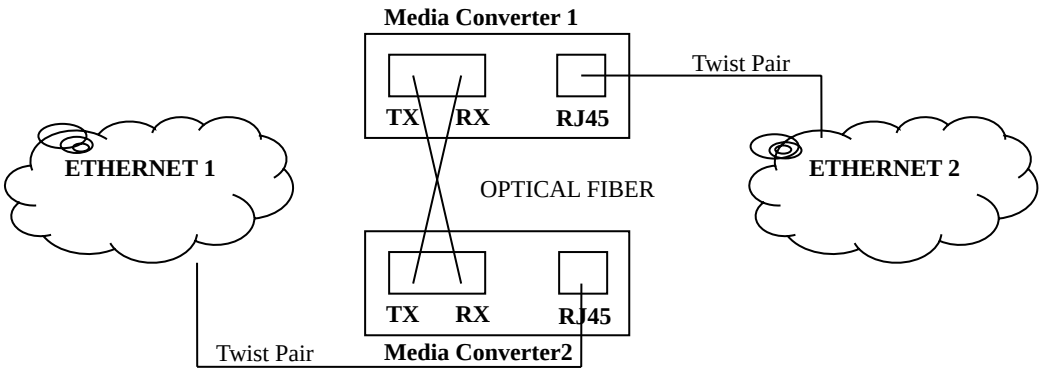


**FIGURE 1.1 Media converter application**

## 2 FEATURES

1.Built in a 2-port switch:

- Pass all packets without address and CRC check (optional)；
- Supports modified cut-through frame forwarding for low latency；

- Supports pure converter mode data forwarding for extreme low latency;
- Supports flow control for full and halt duplex operation;
- Bandwidth control;
- Forward 1600 bytes packet for management;
- Optional forward fragments。

2. Supports 100Base-FX standard;
3.Built in 128Kb RAM for data buffer;
4.Supports auto MDI-MDIX function;
5. Supports link fault pass through function (LFP);
6. Supports for end fault function (optional);
7. LED display for link/activity, full/half, 10/100M
8. Support EEPROM configuration (optional);
9. the longest transmission distance reach 120 kilometers;

## 3 STANDARD

IEEE802.3 ETHERNET STANDARD
IEEE802.3u FAST ETHERNET STANDARD

## 4 PRODUCTS CLASSIFICATION & LEDs

1. ACCORDING TO OUTLINE:
   200V/110V AC input power standalone media converter;
   +5V DC input power standalone media converter;
   Optional USB PORT or +5V DC input power standalone media converter;
   media converter Card;
   Rack System Chassis(2U);
2. ACCORDING TO QUANTITY of FIBER:
   Single fiber bidirection media converter,
   Dual fiber media converter;
3. ACCORDING TO TYPE OF FIBER:
   Mutimode media converter, Singlemode media converter;
4. +5V DC input power standalone media converter can be applied for 14 slots rack mounted chassis, media converter Card applied for 16 slots rack mounted chassis

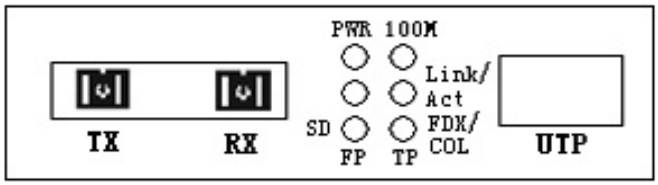

Table 1 : Front panel for dual fiber media converter

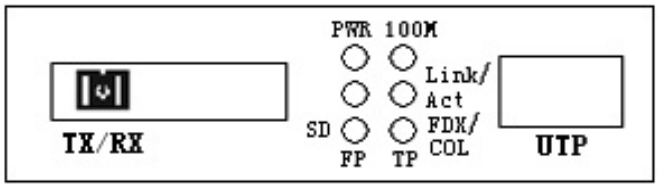


Table 2 : Front panel for single fiber media converter

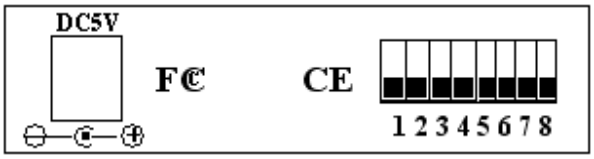


Table 3 : Back panel for single/dual fiber media converter

## 5 SWITCH SETING

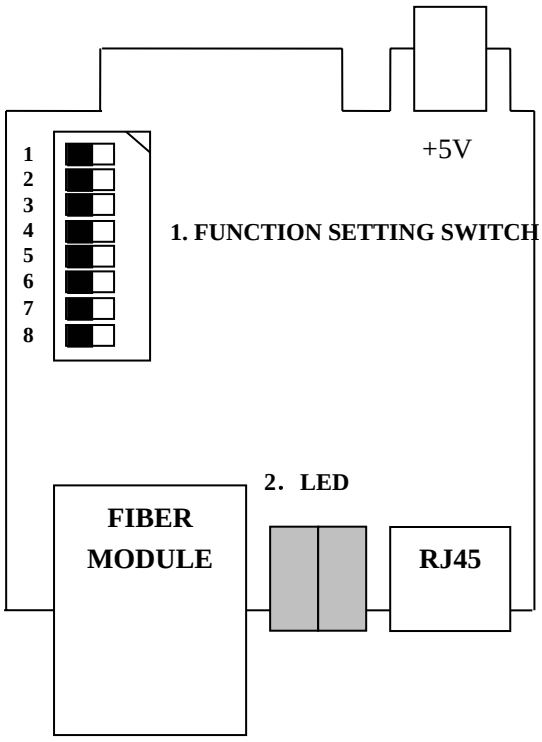


**FIGURE 5.1 media converter card outline**

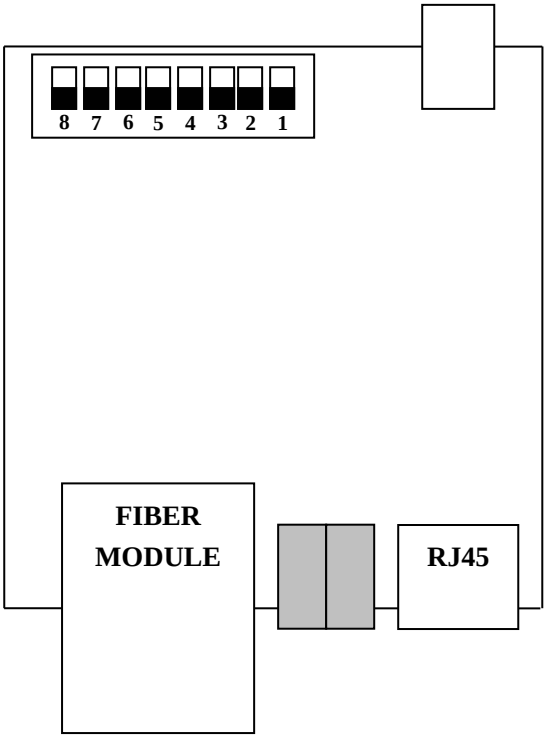


**FIGURE 5.2 Stand alone media converter outline**

1. Function setting switch

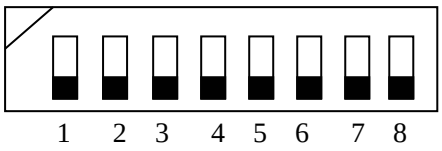


**FIGURE 5.3 Switch**

**TABLE 5.1 SWITCH SETTING DISCRIPTION FOR MEDIA CONVERTER CARD**

| NO. | FUNCTION | DISCRIPTION |
|---|---|---|
| 1 | LFP | UP: Link fault pass through(LFP)<br>DOWN: LFP function disabled (default) |
| 2 | Direct_Wire | Direct_Wire Fast_FWD |
| 3 | Fast_FWD | DOWN DOWN Store and forward switch mode (default) |

| | | |
|---|---|---|
| | | DOWN UP Modified cut-through switch mode<br>UP DOWN Converter mode<br>UP UP Converter mode with auto-change-forward function |
| 5 | FX_Full | DOWN: fiber port full duplex ( default ), UP: half duplex |
| 6 | X_EN | DOWN: IEEE802.3X enabled (default), UP: disabled |
| 4 | TP_Force | TP_Force Speed_Mode Duplex_Mode |
| 7 | Speed_Mode | DOWN DOWN DOWN 100M/10M, FDX/HDX with auto negotiation |
| 8 | Duplex_Mode | DOWN DOWN UP 100M/10M, HDX with auto negotiation<br>DOWN UP DOWN 10M, FDX/HDX with auto negotiation<br>DOWN UP UP 10M, HDX with auto negotiation<br>UP DOWN DOWN 100M, FDX with auto negotiation<br>UP DOWN UP 100M, HDX with auto negotiation<br>UP UP DOWN 10M, FDX with auto negotiation<br>UP UP UP 10M, HDX with auto negotiation |

**TABLE 5.2 SWITCH SETTING DISCRIPTION FOR STAND ALONE MEDIA CONVERTER**

| NO. | FUNCTION | DISCRIPTION |
|---|---|---|
| 1 | LFP | UP: Link fault pass through(LFP)<br>DOWN: LFP function disabled (default) |
| 2 | Direct_Wire | Direct_Wire Fast_FWD |
| 3 | Fast_FWD | DOWN DOWN Store and forward switch mode (default)<br>DOWN UP Modified cut-through switch mode<br>UP DOWN Converter mode<br>UP UP Converter mode with auto-change-forward function |
| 8 | FX_Full | DOWN: fiber port full duplex ( default ), UP: half duplex |
| 5 | X_EN | DOWN: IEEE802.3X enabled (default), UP: disabled |
| 4 | TP_Force | TP_Force Speed_Mode Duplex_Mode |
| 6 | Speed_Mode | DOWN DOWN DOWN 100M/10M, FDX/HDX with auto negotiation |
| 7 | Duplex_Mode | DOWN DOWN UP 100M/10M, HDX with auto negotiation<br>DOWN UP DOWN 10M, FDX/HDX with auto negotiation<br>DOWN UP UP 10M, HDX with auto negotiation<br>UP DOWN DOWN 100M, FDX with auto negotiation<br>UP DOWN UP 100M, HDX with auto negotiation<br>UP UP DOWN 10M, FDX with auto negotiation<br>UP UP UP 10M, HDX with auto negotiation |
| ● | | |

# 6 LED FUNCTION DISCRIPTION

**TABLE 6.1 LED FUNCTION DISCRIPTION**

| LED | | STATUS |
|---|---|---|
| PWR | ON | POWER ON |
| | OFF | POWER OFF |
| FX-SD | ON | RECEIVER OPTICAL SIGNAL |
| | OFF | NO OPTICAL SIGNAL INPUT |
| FX-LINK/ACT | ON | LINKED ON FIBER PORT |
| | FLASH | ACTIVITY |
| | OFF | NOT LINKED |
| TX-SPD | ON | 100M BASE-TX |
| | OFF | 10M BASE-TX |
| TX-LINK/ACT | ON | LINKED ON UTP PORT |
| | FLASH | ACTIVITY |
| | OFF | NOT LINKED |
| TX-FDX/COL | ON | FULL DUPLEX |
| | OFF | HALF DUPLEX |

# 7 PARAMETER

**TABLE 8.1 PARAMETER**

| | 10/100M multimode media converter | 10/100M singlemode media converter |
|---|---|---|
| Cable | MM Fiber / Twist Pair | SM Fiber / Twist Pair |
| Transmission Type | 10/100M FDX/HDX | 10/100M FDX/HDX |
| MTBF | >3 years | >3 years |
| BER | <1E-8 | <1E-8 |
| Data Buffer | 128Kb | 128Kb |
| Power temperature variation | 0．2mw/℃ | 0．2mw/℃ |
| Input Power Range（dBm） | 0~-30 | 0~-40 |
| Operate Temperature | 0℃~70℃ | 0℃~70℃ |
| Storage Temperature | -45℃~80℃ | -45℃~80℃ |
| Imax | 800mA | 800mA |
| Power | 2．5w | 2．5w |
| EMC | FCC Part15 | FCC Part15 |
| Size | 95×70×26mm (external power ) | 95×70×26mm (external power ) |
| | 140×110×30mm (internal power ) | 140×110×30mm (internal power ) |

# 8 ORDERING INFOMATION

**TABLE 9.1 ORDERING INFOMATION**

| Part Number | λ tx nm | λ rx nm | Ptx dBm | SEN dBm | Overload dBm | Distance Km | Loss dB/Km | Connector |
|---|---|---|---|---|---|---|---|---|
| 6C-0102 | 1310 | 1310 | -22~-12 | ≤-30 | ≥-3 | 2 | 2 | MM Duplex SC |
| 6C-0125 | 1310 | 1310 | -15~-8 | ≤-38 | ≥0 | 25 | 0.35 | SM Duplex SC |
| 6C-0140 | 1310 | 1310 | -8~-3 | ≤-38 | ≥0 | 40 | 0.35 | SM Duplex SC |
| 6C-0160 | 1310 | 1310 | -3~0 | ≤-38 | ≥0 | 60 | 0.35 | SM Duplex SC |
| 6C-0180 | 1550 | 1550 | -5~0 | ≤-38 | ≥0 | 80 | 0.25 | SM Duplex SC |
| 6C-01100 | 1550 | 1550 | ≥-1 | ≤-38 | ≥0 | 100 | 0.25 | SM Duplex SC |
| 6C-01120 | 1550 | 1550 | ≥1 | ≤-40 | ≥0 | 120 | 0.25 | SM Duplex SC |
| 6C-BIDI-0120A | 1310 | 1550 | -15~-8 | ≤-36 | ≥0 | 20 | 0.35 | SM BIDI SC |
| 6C-BIDI-0120B | 1550 | 1310 | -8~-3 | ≤-36 | ≥0 | 20 | 0.25 | SM BIDI SC |
| 6C-BIDI-0140A | 1310 | 1550 | -3~0 | ≤-36 | ≥0 | 40 | 0.35 | SM BIDI SC |
| 6C-BIDI-0140B | 1550 | 1310 | -5~0 | ≤-36 | ≥0 | 40 | 0.25 | SM BIDI SC |
| 6C-BIDI-0160A | 1310 | 1550 | -3~0 | ≤-36 | ≥0 | 60 | 0.35 | SM BIDI SC |
| 6C-BIDI-0160B | 1550 | 1310 | -3~0 | ≤-36 | ≥0 | 60 | 0.25 | SM BIDI SC |