PiXORD Media Converter (PMC600)

User's Manual

2008/08/19

Rev. 2.4

Contents

1 Overview

1.1 What You Should Get

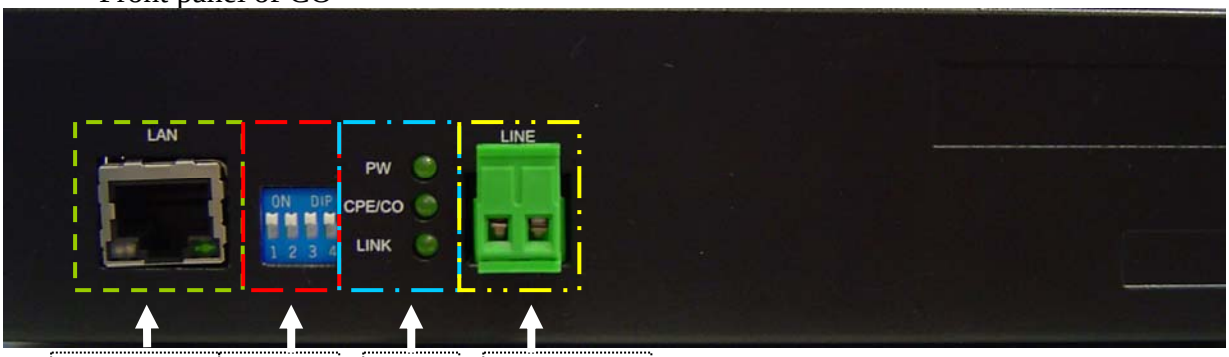
Thank you for purchasing the module。Please check the module before using it.

- PMC 600 _ Power feeding module
  - ✓ Module (CO side/CPE side)----------x2
  - ✓ Device Mounting----------x2
  - ✓ Φ2.9 screw----------x8
  - ✓ Φ4.8' screw----------x4
  - ✓ Terminal Block----------x3
  - ✓ User manual----------x1

1.2 External Architecture

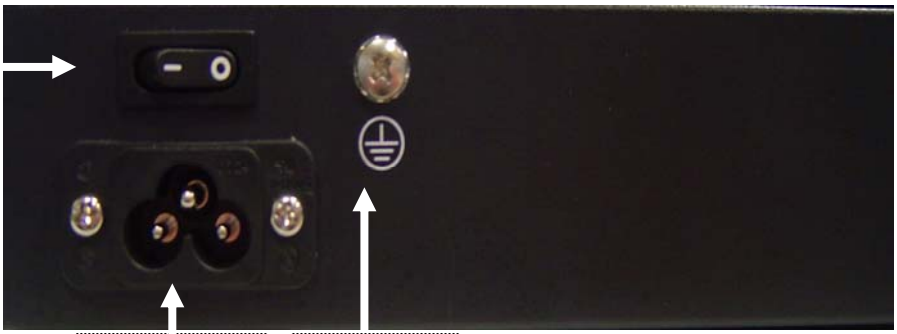
- PMC 600 Power feeding module

Front panel of CO



LAN Port (RJ-45) | DIP Switch | LED | Phone Port (Term)

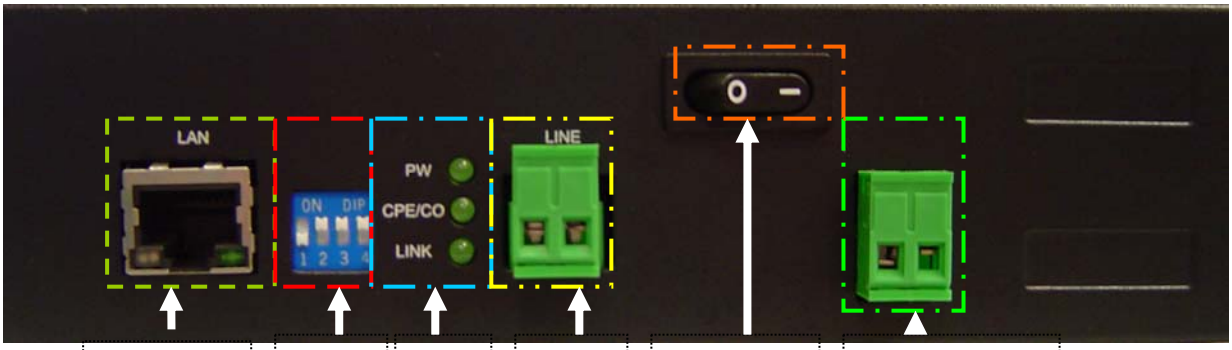
Back panel of CO



Switch On

AC Socket | GUN

The front of RT



RJ-45 Connector | DIP witch | LED | Line Term | Switch On | Power feeding Port (Term)

1.3 Size & Weight

PMC-600 Power feeding module

Dimension: (CO) 133 (W) x 195 (D) x 43(H) (mm)
(RT)122 (W) x 164 (D) x 43(H)

CO

Weight: Approx (CO) 786 ± 2g,
(RT) 636 ± 2g

Material: metal

RT

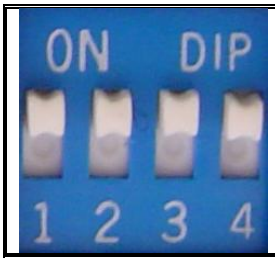
1.4 Connectors and Switches

(1) Power Input

- PMC-600/
  AC 90~240V。

CAUTION!: Be sure to follow the specified power requirement to avoid damaging the equipment.

(2) Dip Switch Settings



DIP Switch #	Function	ON Position	OFF Position
1	Master/Slave	CPE	CO
2	Transmission	Fast Mode	Interleave mode
3	Rate Limit	No Limit	Limited
4	SNR	6 dB	9 dB

DIP 1：CO, CPE switch

CO: PMC module acts as Central Office (CO) side.
CPE: PMC module acts as Customer Premises Equipment (APE) side.

DIP2: Impulse noise protection

Interleave mode: Provides communication protection for up to 250ms impulse noise with latency of less than 6 ms.
Fast mode: Direct data transmission with latency of less than 1ms.

DIP 3: Rate limit control

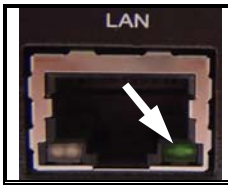
Limited: Line rate limited to 50/20 Mbps.
No limit: Provides up to 100Mbps/60Mbps line rate in short line.

DIP 4: General protection

9dB: Better channel noise protection with SNR of up to 9 dB.
6dB: Original channel noise protection with SNR of 6 dB SNR.

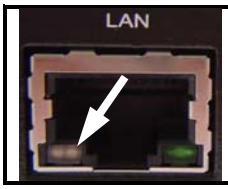
(3) LED Indicators

LAN Port (RJ-45) bottom right LED status



LED Status	Function
Off	Off-Line
Blinking	Transmitting data
Lights On	Idle

LAN Port (RJ-45) bottom left LED status



LED Status	Bandwidth Speed
Off	Full-Duplex 100Mbps
Lights On	Half-Duplex 10Mbps

Front Panel LED status

LED Position	OFF	Blinking	Lights On
Top (PW)	Power Off	Don't care	Power On
Middle (CPE/CO)	CO Mode	Don't care	CPE mode
Bottom (LINK)	Don't care	Training (handshaking)	Slave & Master successfully connected

1.5 Product Configuration

Model Number	Power Supply	Interface	Special Feature	Ideal Locations of Application
PMC 600	0.5A ~0.9A 90~240V AC	RJ-11/2-Wire Terminal Block	Remote Power Feeding (RPF) support	Remote farmlands / reservoirs / forests / deserts with poor power resources

2 Introduction

The PiXORD Media Converter (PMC) modules which include models that utilize new built-in IP camera device or are capable of upgrading analog camera into IP camera, are ideal devices for centralized surveillance and control. Furthermore, its installation cost is cut to minimum due to reduced installation man-hour and cable/wiring requirements. Through splitter, the PMC modules can be connected to the security network through existing coaxial cables or telephone wirings. PMC modules are also capable of extending its surveillance capability to about 2 kilometer from control center through a single Ethernet port (RJ-45) and an RJ-11or wire terminal block port.

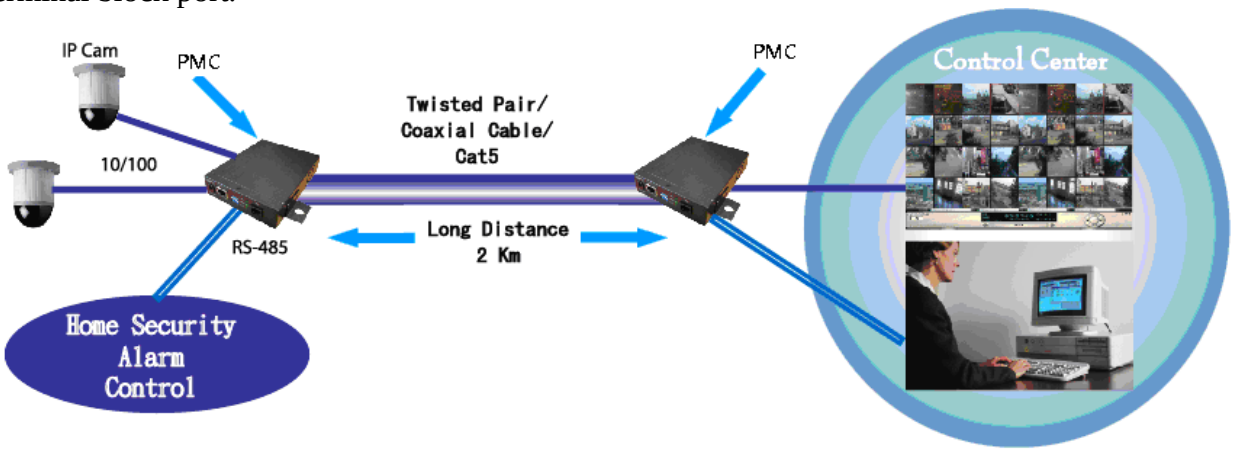


Figure 1、Application Environment

PMC modules are plug-n-play as they do not require software. For long range connections, the modules offer up to 100/60 Mbps transition bandwidth for the distance of within 300 meters and 25/5 Mbps for 1.6 kilometers using existing telephone line at ultra-high performance. Being a plug-n-play device, it provides minimum installation time as well as minimum expense by allowing video streaming and data sharing with existing telephone twisted-pair or coaxial cable without interference.

With its ultra-high performance, the PMC modules are capable of transmitting high definition images; such as High Definition Television (HDTV). This makes the device most suitable for hotel/motel rooms TV network application. PMC modules also support Ethernet Bridge and switching functions and are compatible with optical fiber device.

In suppressing radio interference in tunnel or elevator, as well as in long distance surveillance in farmlands or of bridges across bays, the PMC modules are capable of meeting these challenges as long as telephone line or cable networks already exist in these locations. Furthermore, the modules are also equipped with RS485 interfaces for Emergency/Security Control application.

Lastly, PMC modules feature the Remote Power Feeding (RPF) capability that enables the device to transmit and provide power over telephone lines. This is an ideal option for applying surveillance network in remote areas where power source is not available.

3 Unique Features

1. **No new wiring network required:** Uses existing phone lines (Twisted pair) cables
2. **Fast Upgrade**: Upgrade analog camera to IP camera.
3. **Long distance transmission**: Up to 100/60 Mbps transition bandwidth within 300m without interference.
4. **Support multi-camera at the same time**: Support Twenty-five cameras at the same time within 200m in sufficient bandwidth.
5. **Easy to Install**: Plug-n-play device, no software installation required
6. **Auto-detect & adapts itself with environmen**t: Can readjust itself to adapt with complicated wiring environment, such as elevator or tunnel.
7. **Cost saving**: Saves material and labor cost due no new wiring required. Hence no wiring installation man-hour required.

4 Application Case Examples

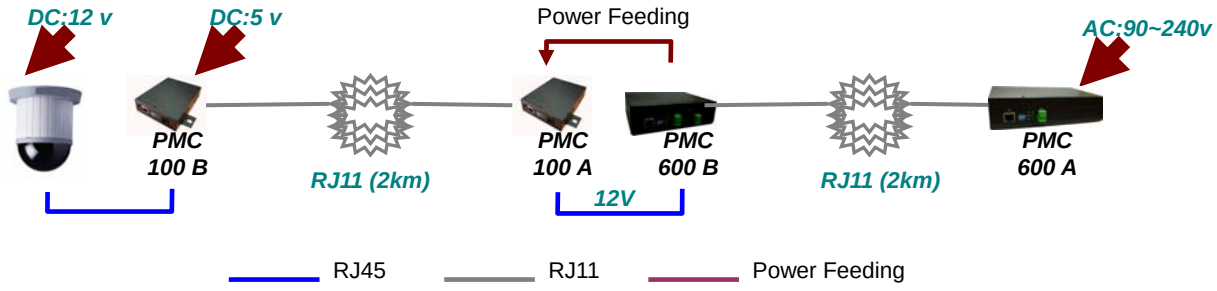
4.1 Case 1: Remote Power Feeding Relay with PMC Module to Extend Surveillance Distance from 2 Km to 4 Km (PMC 600)

◆ **Objective:**

Using PMC 600 module to relay and supply power to remote PMC module in order to extend surveillance distance from 2KM to 4 KM without the use of repeater.

◆ **Network Architecture:**

A PMC 600 module is used to relay power to a remote PMC 100 module (located 2Km away at a location with no available power source) to enable the later to extend its surveillance distance by another of 2Km without using any repeater.



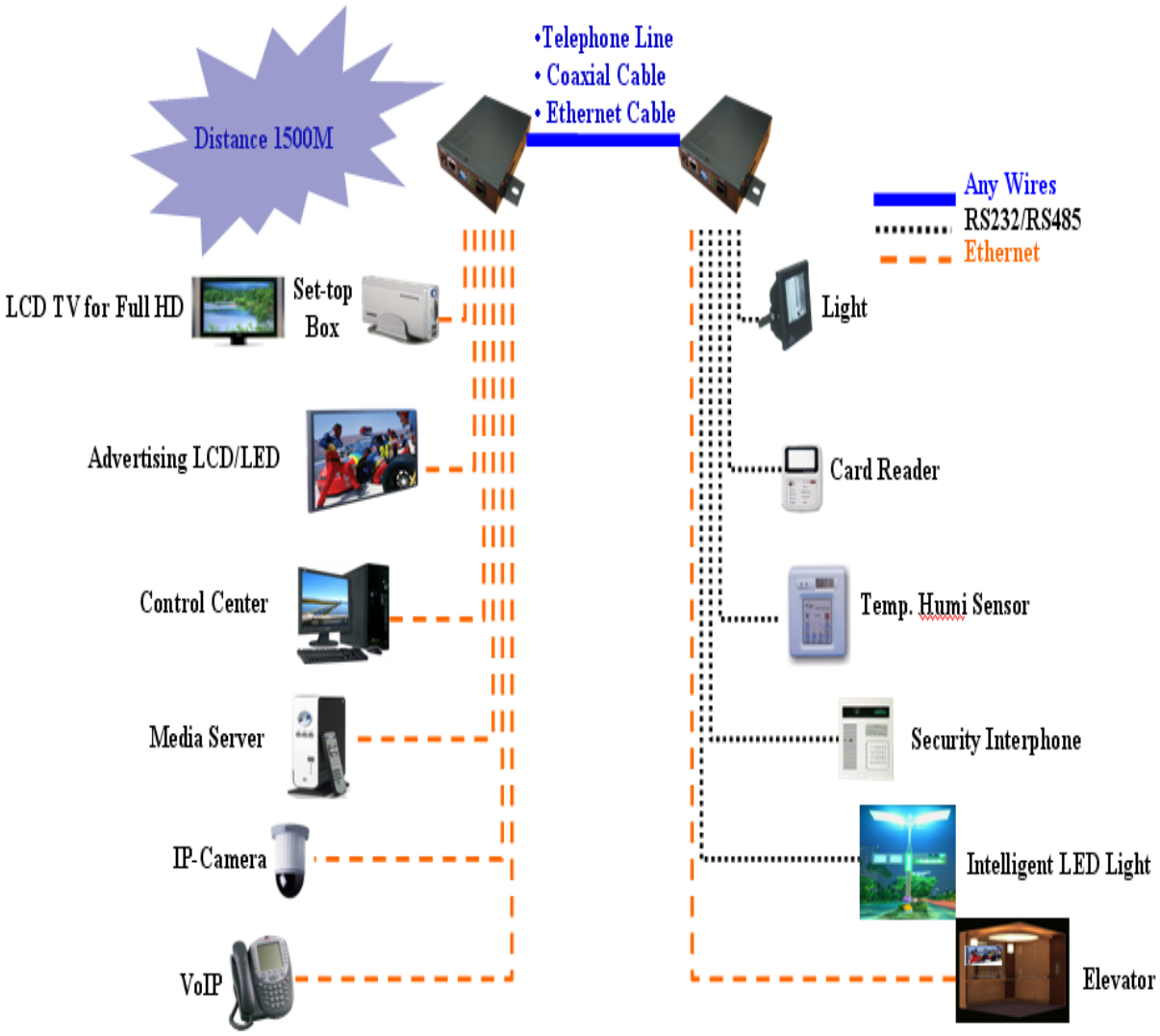
Where:

- PMC 600A is the PMC 600 module OT side terminal (set CPE), and has its own power source of 90~240v AC.
- PMC 600B is the remote PMC 600 module RT side terminal (set CO), without its own power source. It derives its power from PMC 600A (located 2Km away) via phone line (RJ11)，
- PMC 100A is the PMC 100 module (set CPE) without its own power source. It derives its required power (5v DC) from PMC 600B via phone line (RJ11). Hence it is able to work with PMC 100B (located another 2Km away).
- PMC 100B is the PMC 100 module (set CO), and its power source is DC (5v).

BEWARE!!

Be careful! High-voltage power supply (hvps) may be present in phone line.

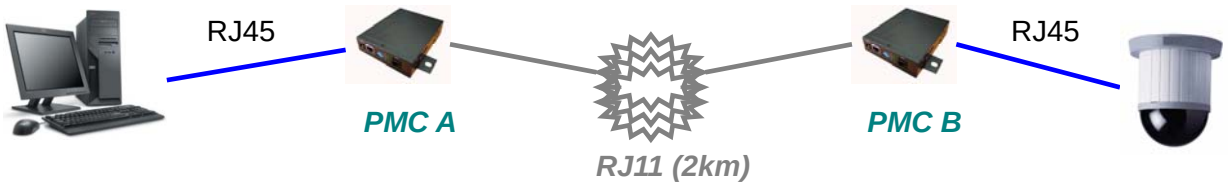
5 Integrating Other Products with PMC



6 Q&A

Q1. How to select CO side and CPE side mode PMC?

A1. Referring to the figure below, the PMC B module (nearest to IP camera) is the CO side and PMC A module (nearest to control center) is the CPE side for valid operation bandwidth.



Q2. How to identify fast and interleaved mode?

A2. Fast mode guarantees a minimum end to end latency of less than 1 ms. Interleaved mode provides protection from any impulse noise with duration of less than 250 μs. Interleaved mode has a maximum end to end latency of 10 ms. Interleaved mode is the default mode.

Q3. How to select target data rate and target SNR margin:

A3. User can select fixed SNR margin (9 dB) or fixed target data rate. When fixed SNR margin is selected, the systems will maintain the SNR margin at 9 dB across all usable loop length. When fixed target data rate is selected, the system will lock the data rate at 50Mbps/30Mbps whenever the calculated SNR margin is higher than 9 dB. This provides the best system stability and is the default mode.

Q4. Why PMC modules cannot link each other after training?

A4: 1) A pair of PMC modules should consist of a CO side mode module and a CPE side mode module. They cannot be of the same mode modules.

2) RJ-11 jack and connector may have loose contact.

3) The distance between 2 PMCs modules should not exceed 2Km.