

Protech DVR – CAP Series

Hardware Installation Guide

Rev. 1.5

Digital Video Security System
Digital Video Recorder

Protech

* All contents of this document may change without prior notice, and actual product appearance may differ from depicted herein

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Preface

This is a guide book that explains the hardware components and provides a step-by-step installation of DVR board.

For the software explanation, please refer to “Installation and User’s Guide”.

This guide book is applicable to, among Protech products, 3004S, 3004, and 6016 boards.

The pictures and names of the products are subject to change; however, the usage may be similar.

1. Specification of Protech

- **1~16 Camera Inputs / Output**

Up to 16 camera inputs are available on screen for digital handling.

Normal input condition: 75 Ohm, 1 Volt (p-p)

- **1~16 Sensor Inputs**

Up to 16 sensors can be linked to the system.

External DC 12 Volt power must be provided to the sensor input from outside.

- **1~4 Digital Outputs (Relay Outputs)**

Digital Outputs can be used to activate things like shutters and sirens, and activation can be linked to sensor and motion detection.

- **Sound Recording and Two-Way Communication Capabilities**

Sound can be recorded with video images. Two-way communication is possible between Protech main and Protech Net.

- **Display Features (w/ Multi-Viewing)**

Multi-Viewing allows 1, 4, 6, 9, 10, or 16 different camera shots to be displayed onscreen at the same time.

Other display features include enlarging all displayed cameras or just one.

- **PAN/TILT/ZOOM/FOCUS Capabilities**

Each connected camera can be manipulated through the Protech main program as long as each camera supports such capabilities.

- **Auto Rebooting System**

When Protech detects an error or malfunction within the system, it will automatically reboot the system in order to correct it.

- **Motion Detection and Sensor Trigger**

Detection features make it possible to record images only when movement is detected, preserving volume space and maximizing the use of physical storage space.

▪ **Scheduled Recording**

Scheduling allows the administrator to record images only during designated time periods, if so desired. Every combination of scheduling is available in the Protech program.

▪ **Manual and Auto Backup**

Data can be preserved through various formats (DAT, CD, or DVD) and data from specific cameras and/or time periods can be specifically isolated for backup as well. Much like scheduled recording, backup of data can be scheduled as well.

▪ **Digitalized Video Search**

Recorded data features digital playback for each camera simultaneously or one at a time. Playback features include advanced search features and image extracting, which allows portions of existing video to be extracted and saved as a separate file.

▪ **Network Support (PSTN, TCP/IP, LAN , Modem Protocol Support)**

Protech supports network access, which allows administrators to login to Protech main and remotely access all the features provided locally.

▪ **POS, Access Control, ATM Support**

Data from external devices (POS, Access Control, ATM, etc) can be recorded with DVR video images. Text Search allows to search data from external devices with DVR video image when event occurs. This will raise the level of integrity and security.

Feature	CAP Series
Camera Input	1~16 Port (NTSC/PAL)
Sound Input	1 or 2 Port
Sensor Input	1~16 Port
Relay Output	1~4 Port
Composite Output	1 Port (NTSC/PAL, 1 Channel Switching)
Image Format	Software MPEG-4
Recording Mode	Watch, Normal, Motion Detection, Sensor, Scheduled Recording
Remote Control	Full remote control PSTN, ISDN,ADSL, LAN and TCP/IP
Back-up	DAT, CD, DVD
PAN/TILT/ZOOM/FOCUS	RS-232/422/485 Interface

2. Products and Components

2.1 Protech CAP Series Board



3004S ¹



3004 ²



6016

2.2 Accessories



Pigtail Cable



RS-485 Board ¹



RS-232C Cable ¹



Reset Cable ²



Sensor Port (4ch) ²



Sensor Port (16ch)



Sensor Cable ²



Audio Cable ²



Back Panel (Optional)



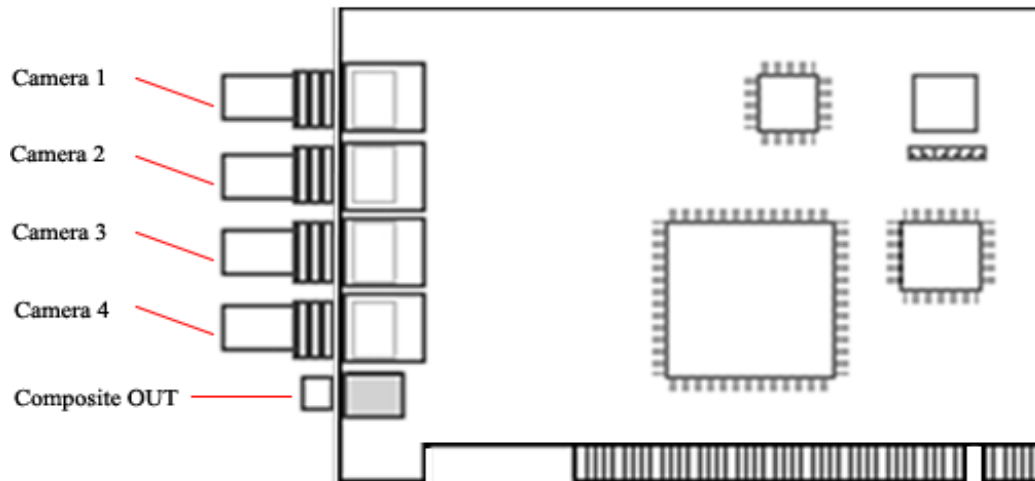
Video Cable (Optional)

¹ RS-485 and RS-232C Cable is optional for 3004S and 3004.

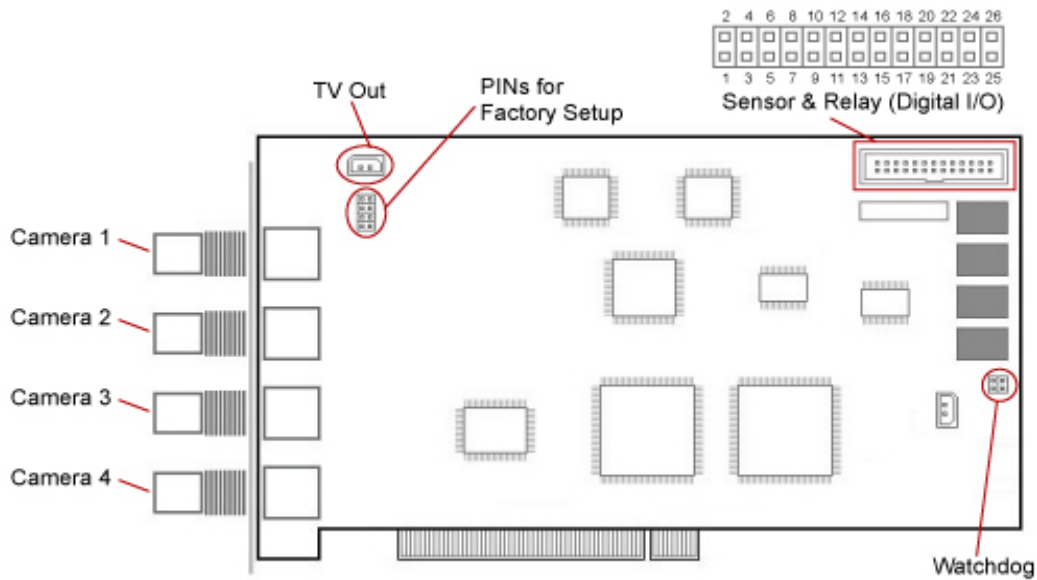
² Reset Cable, Sensor Port(4), Sensor Cable, and Audio Cable are not included nor supported by CAP3004S.

3. Board Description

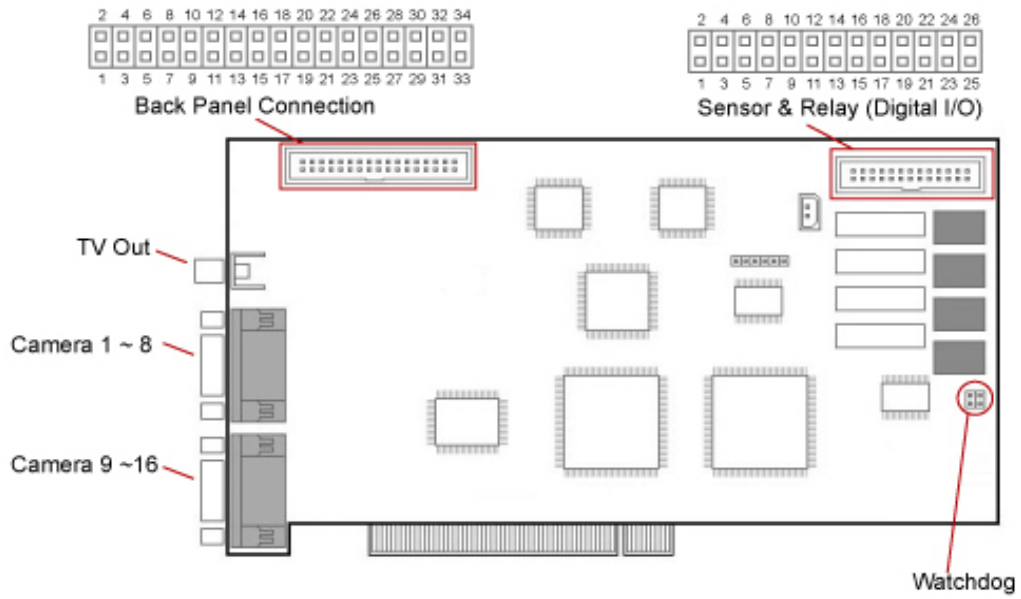
3-1. 3004S



3-2. 3004

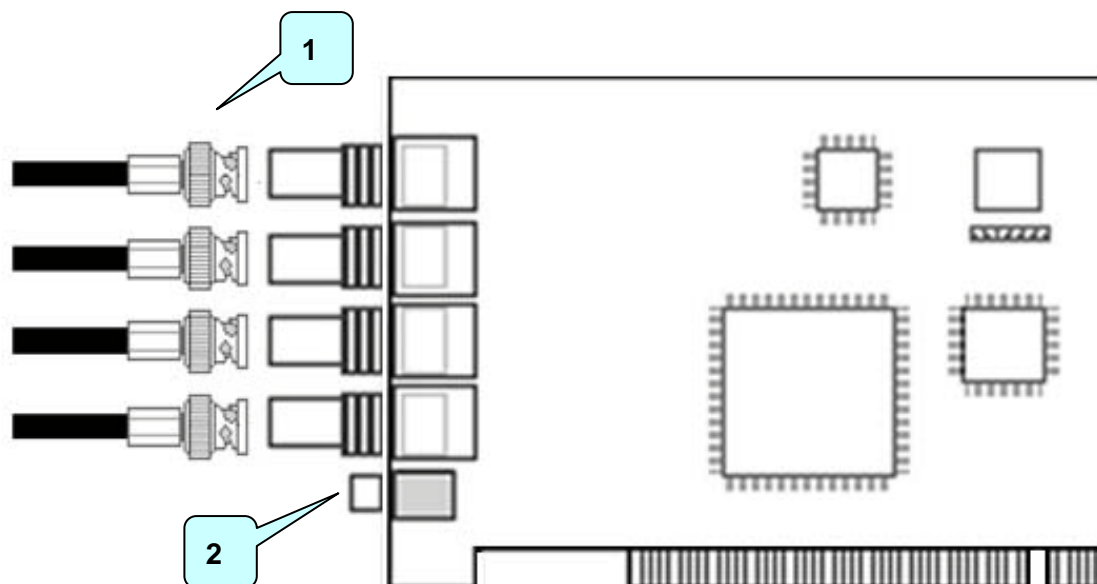


3-3. 6016



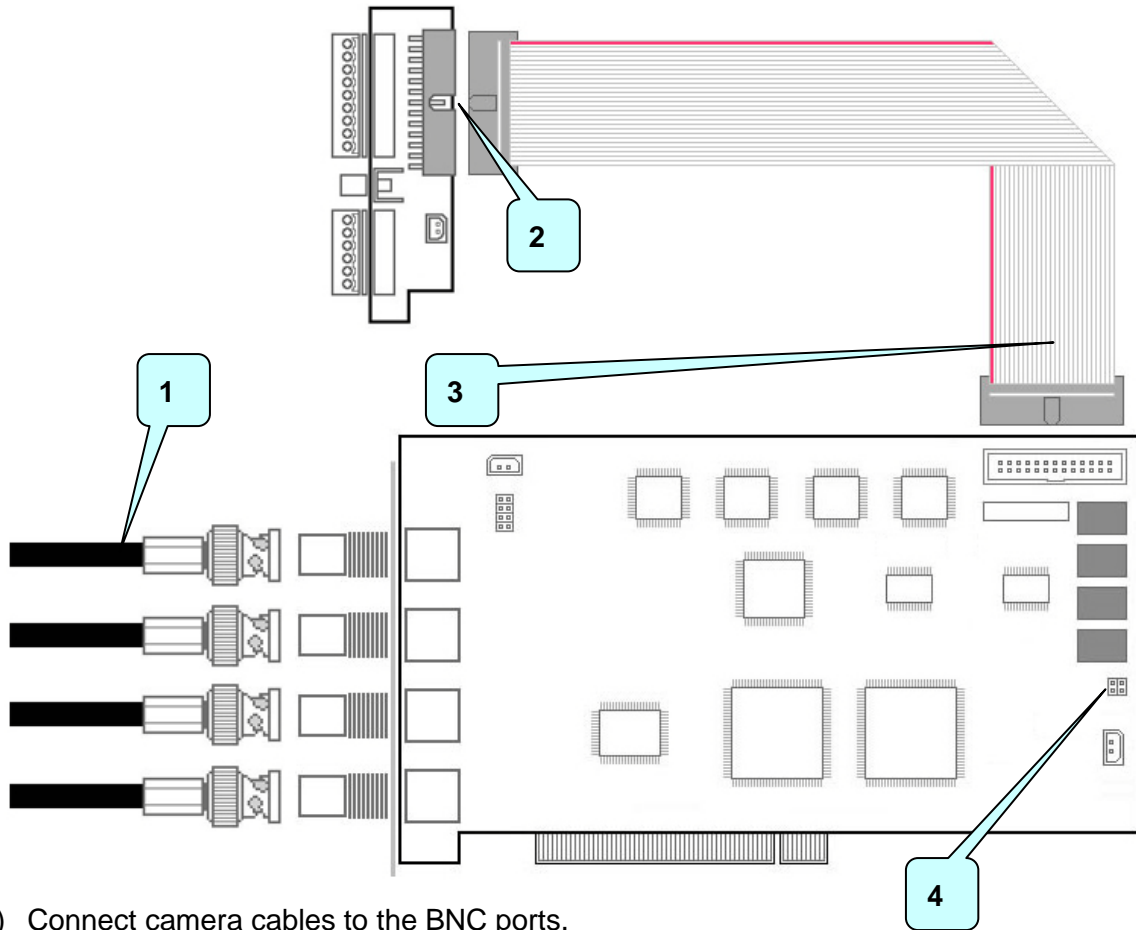
4. Installation

4-1. 3004S Installation

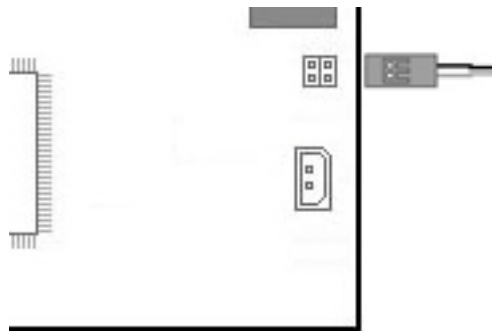


1. Connect camera cables to the BNC ports.
2. Connect Composite-OUT cable.

4-2. 3004 Installation

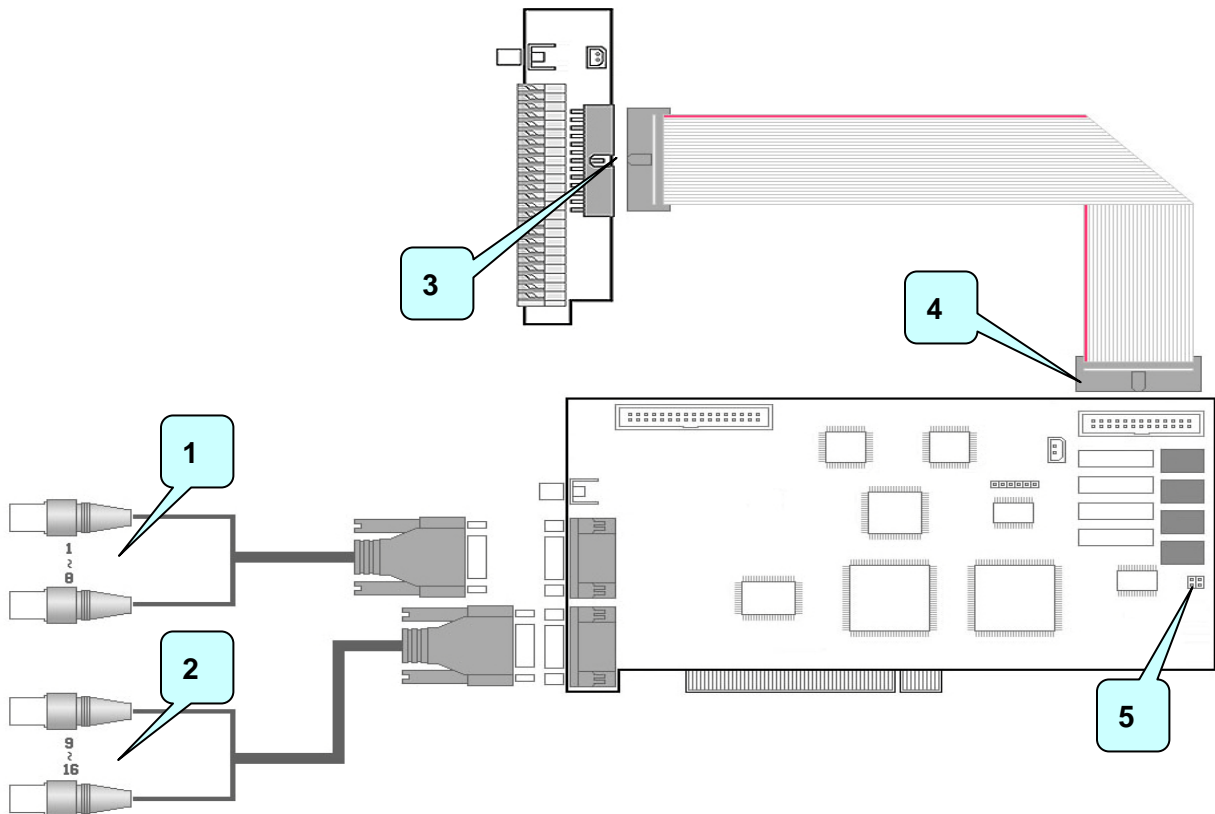


- 1) Connect camera cables to the BNC ports.
- 2) Sensor cable connects to Sensor port.
- 3) The other side of sensor cable connects to IO socket on the DVR board.
- 4) Connect Watchdog cable. Make Watchdog cable connection as shown below.

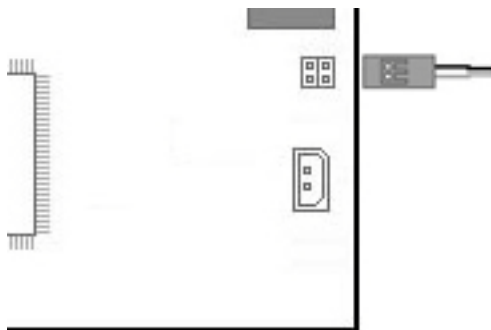


4-3. 6016 Installation

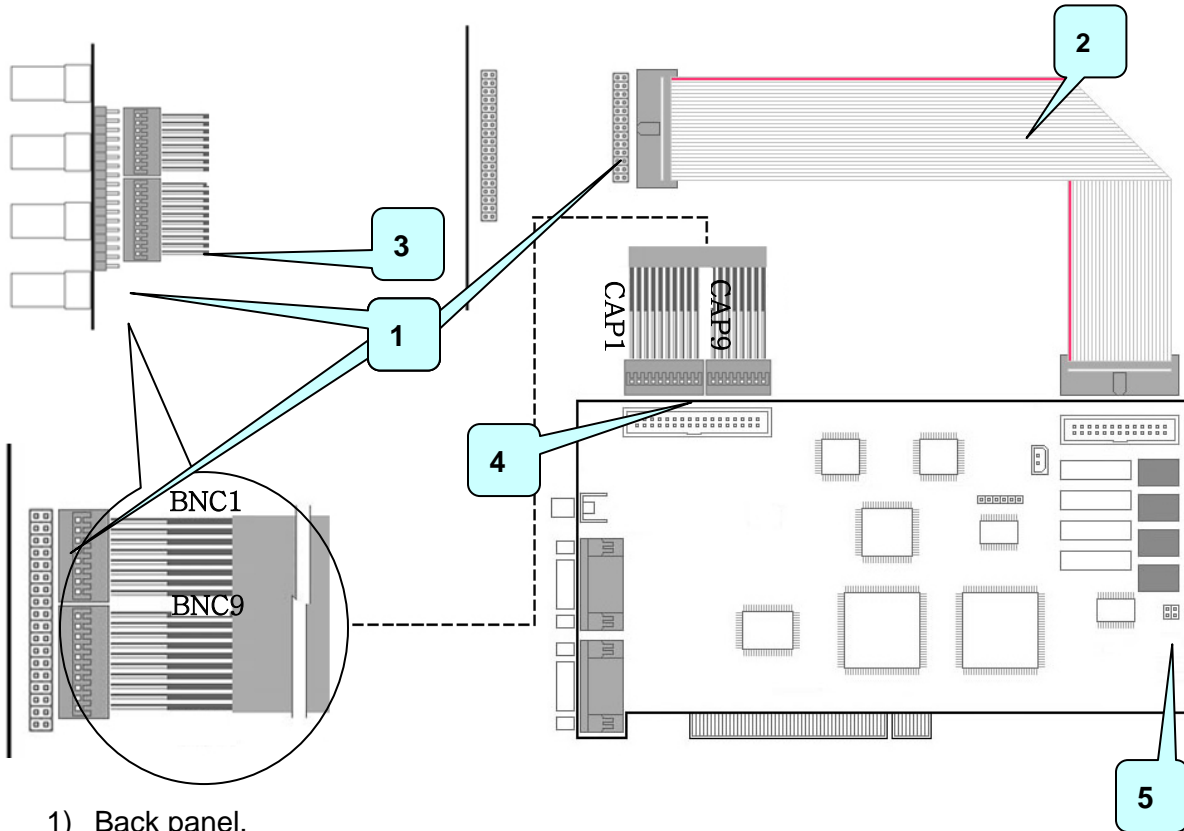
4-2-1. Pigtail Type



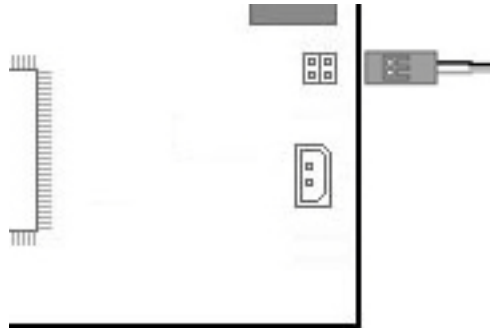
- 1) 1~8 channel pigtail goes to the upper socket.
- 2) 9~16 channel pigtail goes to the lower socket.
- 3) Sensor cable connects to Sensor port.
- 4) The other side of sensor cable connects to IO socket on the DVR board.
- 5) Connect Watchdog cable. Make Watchdog cable connection as shown below.



4-2-2. Back Panel Type

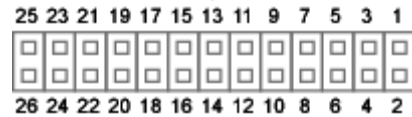
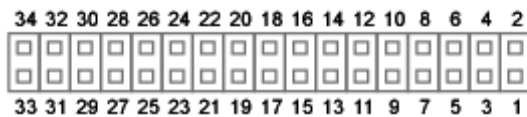
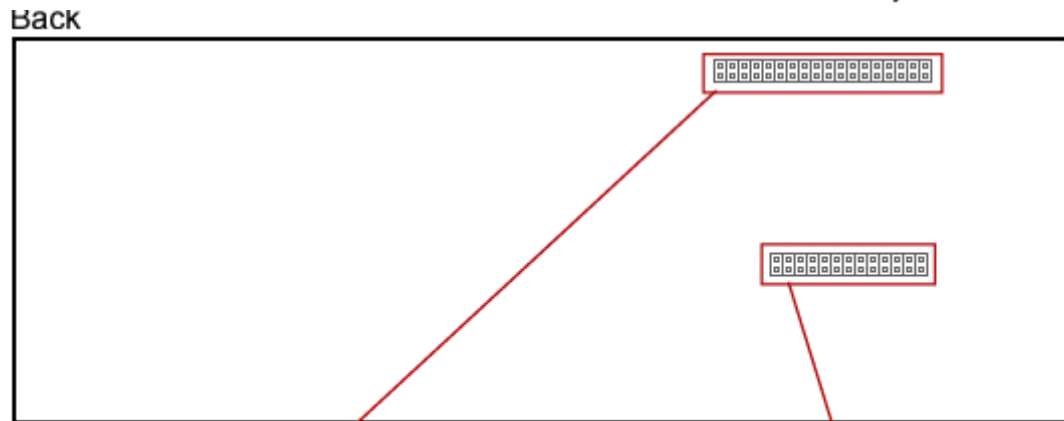
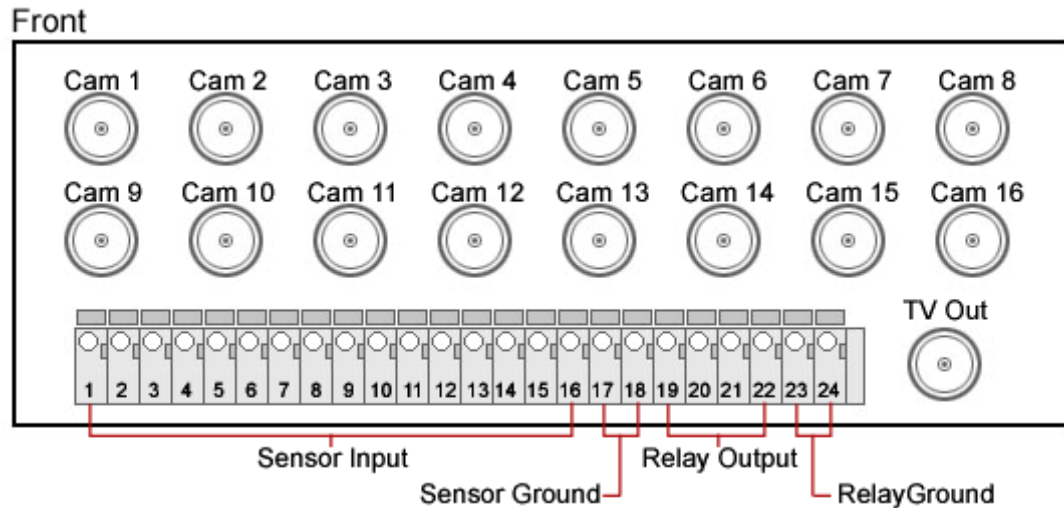


- 1) Back panel.
- 2) Sensor Cable.
- 3) When connecting cable to back panel make sure to leave one pin on left side.
(White cable should be facing up)
- 4) Connect video cables. Make sure the cable with CAP1 label goes to the left.
- 5) Connect Watchdog cable. Make Watchdog cable connection as shown below.



5. Accessories

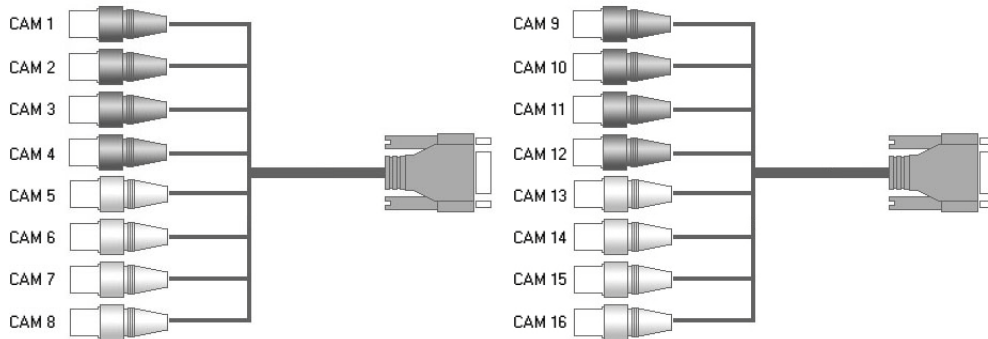
5-1. Back Panel



Camera I/O	
Camera Ground	3, 5, ~ 31, 33
Camera Signal	4, 6, ~ 32, 34
TV Out Ground	1
TV Out Signal	2

Sensor & Relay (Digital I/O)	
Sensor Input 0~15	1~16
Input Common 0~1	17, 18
Relay Output 0~3	19~22
Output Common 0~1	23, 24

5-2. Pigtail

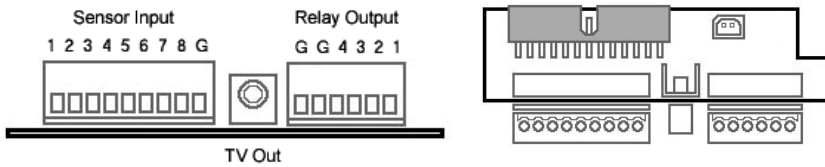


Pigtail cable

1 ~ 4, 9 ~ 13 : Black BNC

5 ~ 8, 13 ~ 16 : White BNC

5-3. Sensor Board (4 channel)



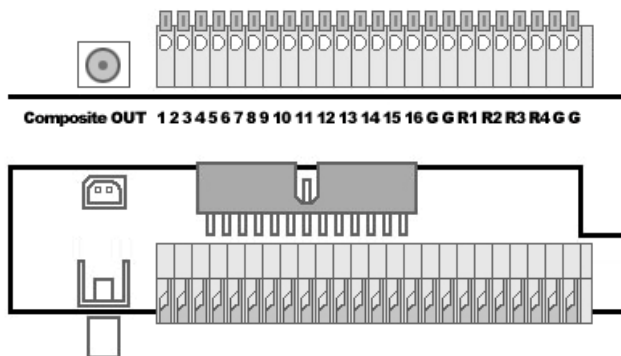
Sensor port pin number

1 ~ 8: Signal input

G: Ground

4, 3, 2, 1: Relay output

5-4. Sensor Board (16 channel)



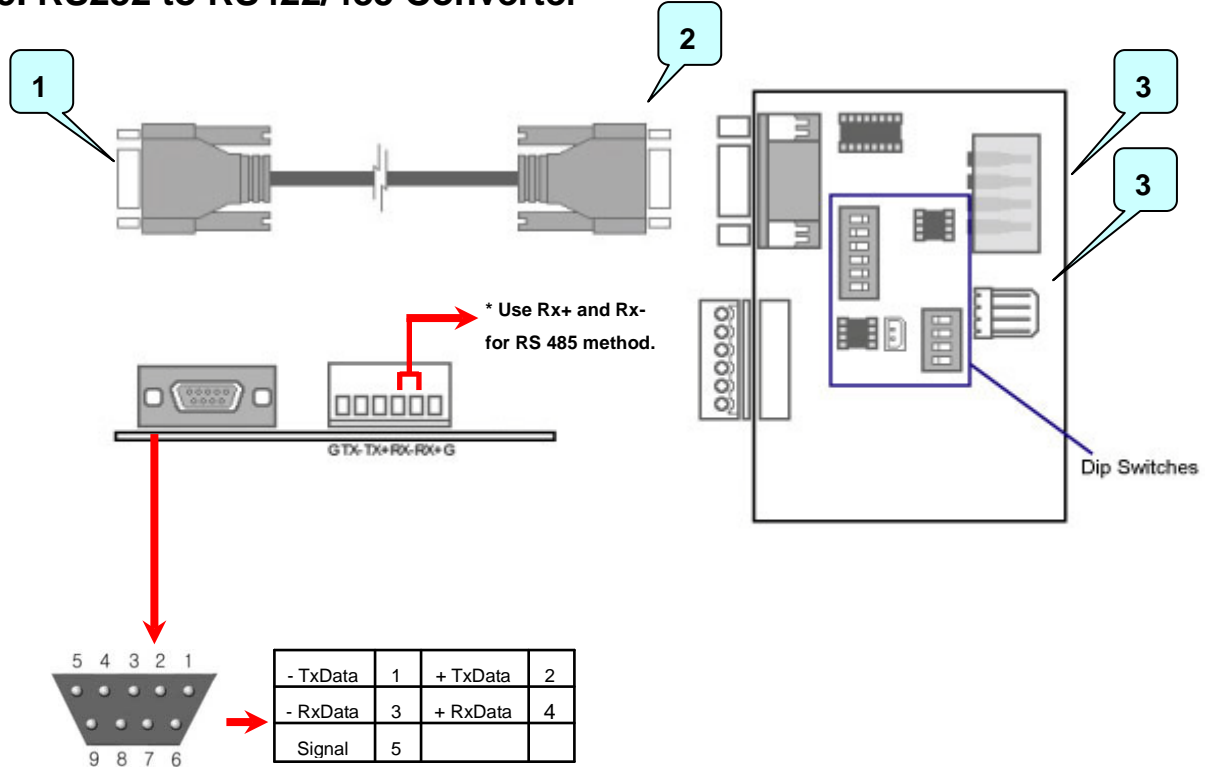
Sensor port pin number

1 ~16: Signal input

G: Ground

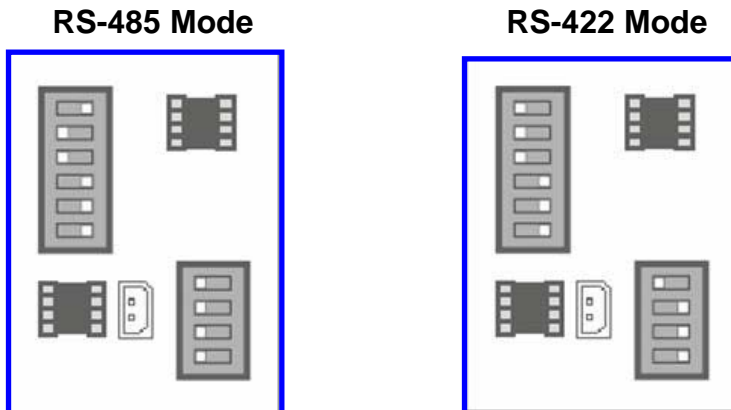
R1, R2, R3, R4: Relay output

5-5. RS232 to RS422/485 Converter



- 1) Connect to system's Com port.
- 2) Connect to PTZ port converter RS-485.
- 3) These are power supply sockets. Need to connect only one of them.

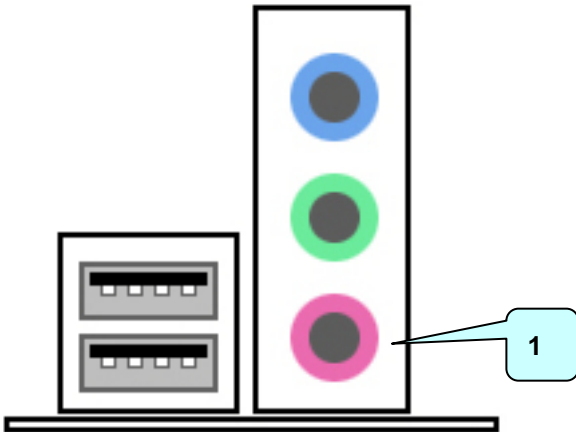
Dip Switches



5-6. Sound Recording

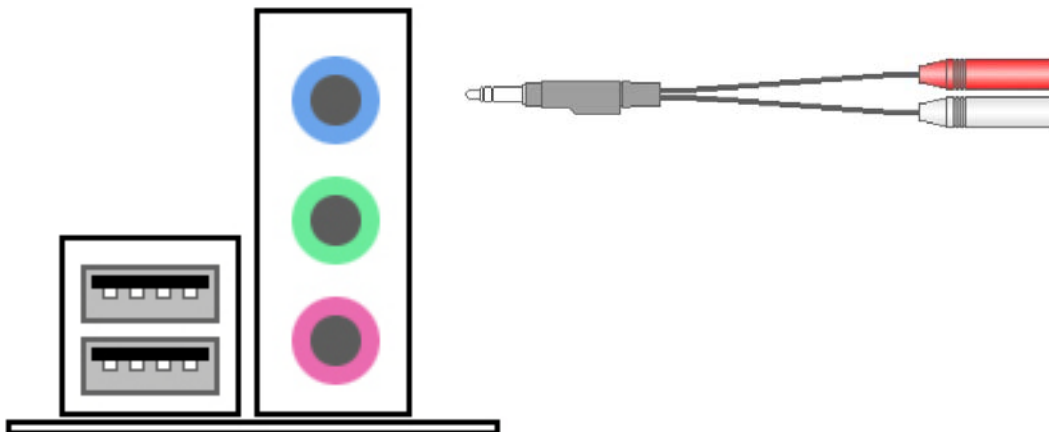
After connecting Microphone, ensure that “Line In” and “Microphone In” is not muted in the Windows sound setting. It is required to *have Direct X 8.0 or higher.*

5-6-1. 1 Channel sound



1) Connect to “Microphone In” of sound card.

5-6-2. 2 Channel sound



- 1) Connect to “Line In” of sound card with included 2 channel audio cable.
- 2) Connect microphones to the audio cable.
 - Must use amplified microphone.