

DVR - AMX Series

Hardware Installation Guide

Rev. 1.0

Digital Video Security System
Digital Video Recorder

*All contents of this document may change without prior notice.

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Preface

This is a guide book that explains the hardware components and provides you the 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 DVR products, DVR MPG48016AMX and DVR MPG96032AMX.

The pictures and names of the products are subject to change depending on hardware upgrade. However, the usages may be similar.

For any question you have, please contact to the following address. When you are sending your concerned matter, please include your company name and phone number with detail description.

1. Specification of DVR

- **1~32 Camera Inputs / Output**

Up to 32 camera inputs are available on screen for digital handling.

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

- **1~32 Sensor Inputs**

Up to 32 sensors can be linked to the system

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

- **1~8 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 DVR Main and DVR Net.

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

Up to 1, 4, 6, 9, 10, 16 or 32 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 DVR main program as long as each camera supports such capabilities.

- **Auto Rebooting System**

When DVR 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 DVR program.

▪ **Data Backup 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)**

DVR supports network access, which allows administrators to login to DVR 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	MPG48016AMX	MPG96032AMX
Camera Input	1~16 Port (NTSC/PAL)	1~32 Port (NTSC/PAL)
Sound Input	1~16 Port	1~32 Port
Sensor Input	1~16 Port	1~32 Port
Relay Output	1~4 Port	1~8 Port
Composite Output	1 Port (NTSC/PAL, Normal)	
Image Format	MPEG4	
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	

* Note: MPG96032AMX consists of one of MPG48016AMX and MPG96032AMX Slave

2. Product and Components

2-1. DVR AMX Series Board



DVR MPG48016AMX



DVR MPG96032AMX Slave

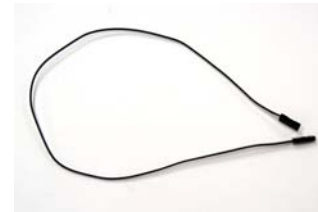
2-2. Accessories



Video Pigtail Cable



Sound Pigtail Cable



Reset Cable

2-3. Optional Accessories



RS-485 Board



Sensor Port



I/O board



RS-232C Cable



Sensor & Relay Cable



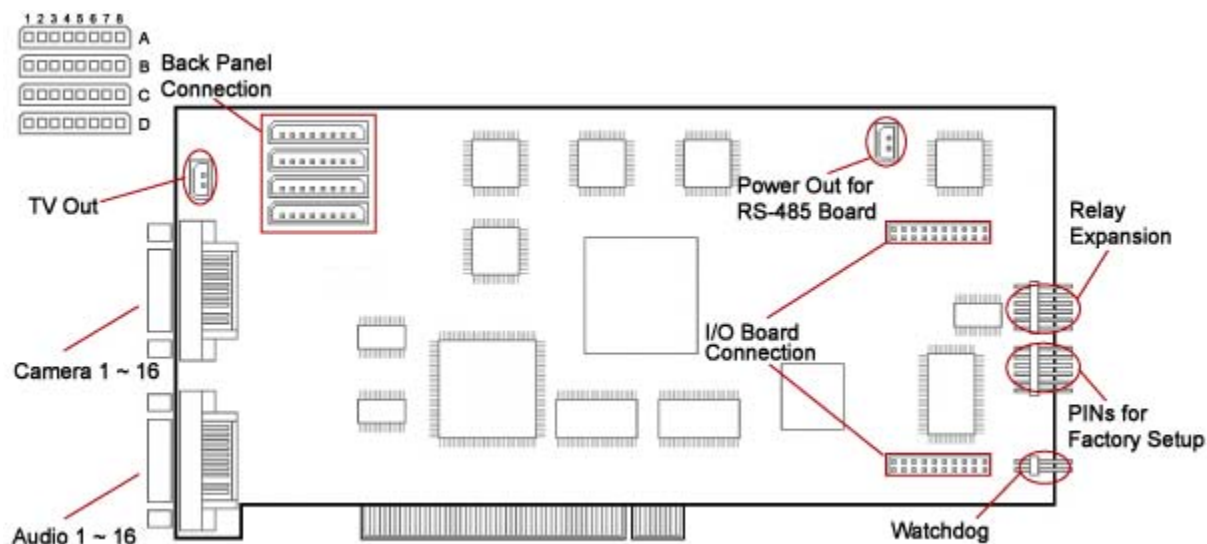
Back Panel



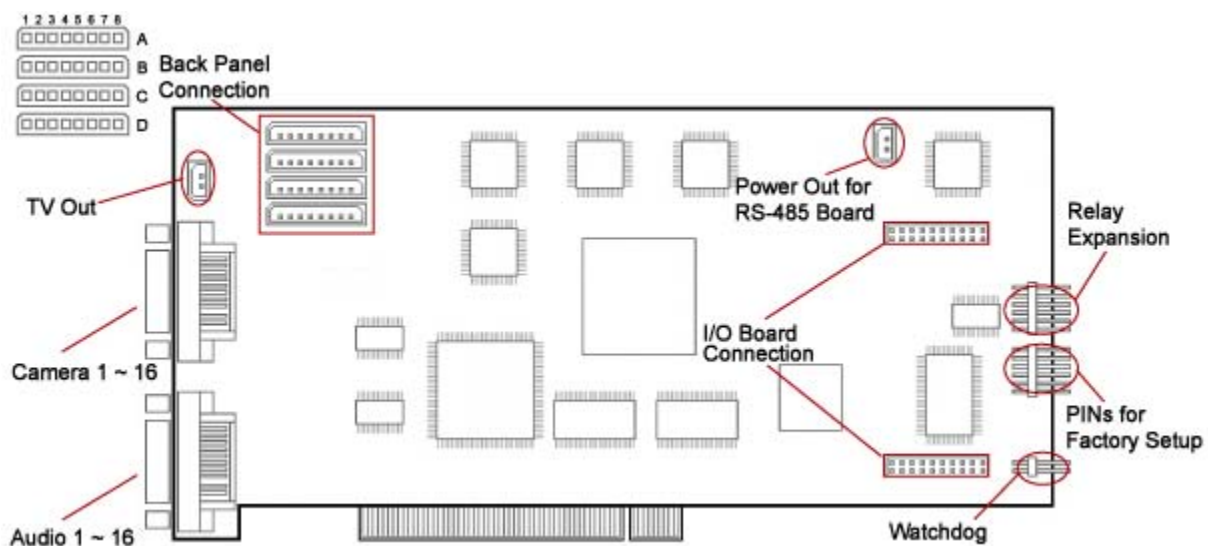
Video Cable

3. Board Description

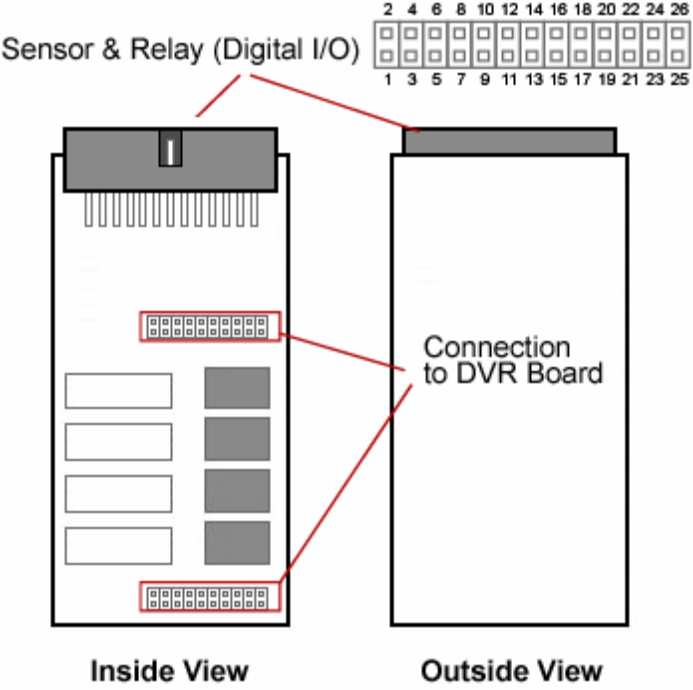
3-1. DVR MPG 48016AMX



3-2. DVR MPG 96032AMX Slave



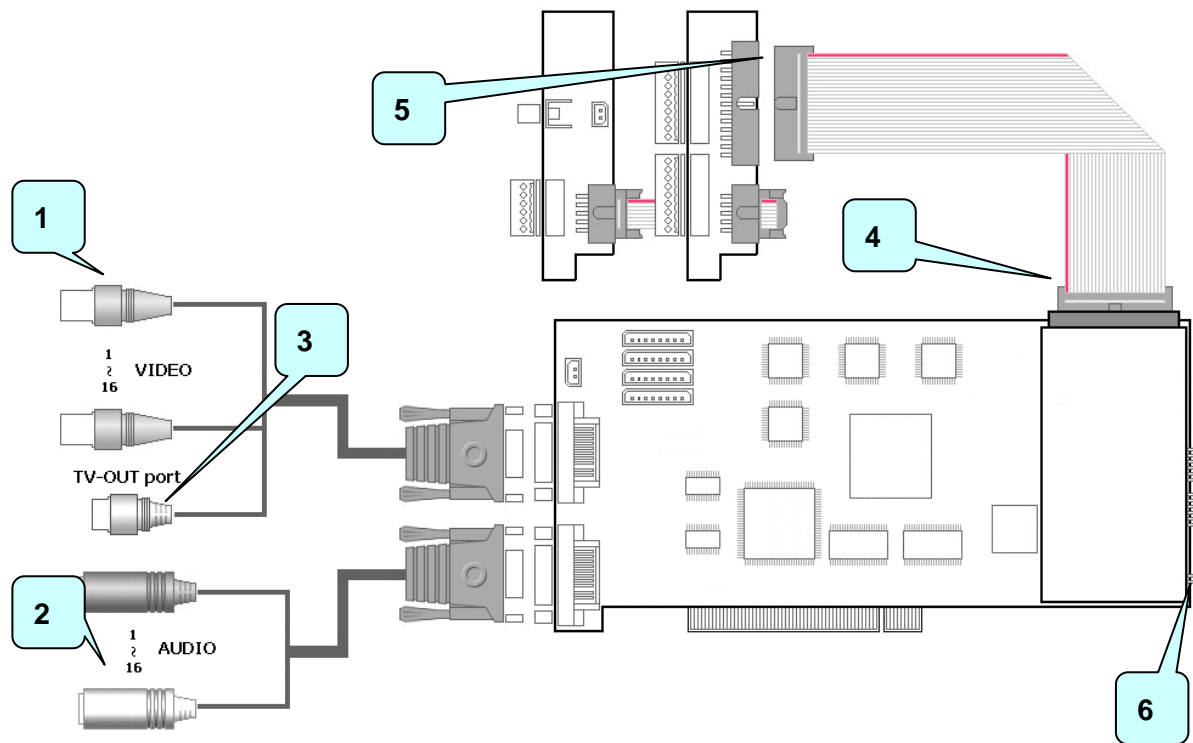
3-3. I/O board



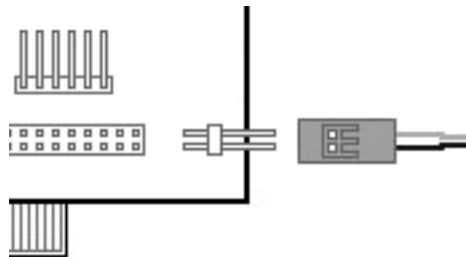
4. Installation

4-1. DVR MPG48016AMX

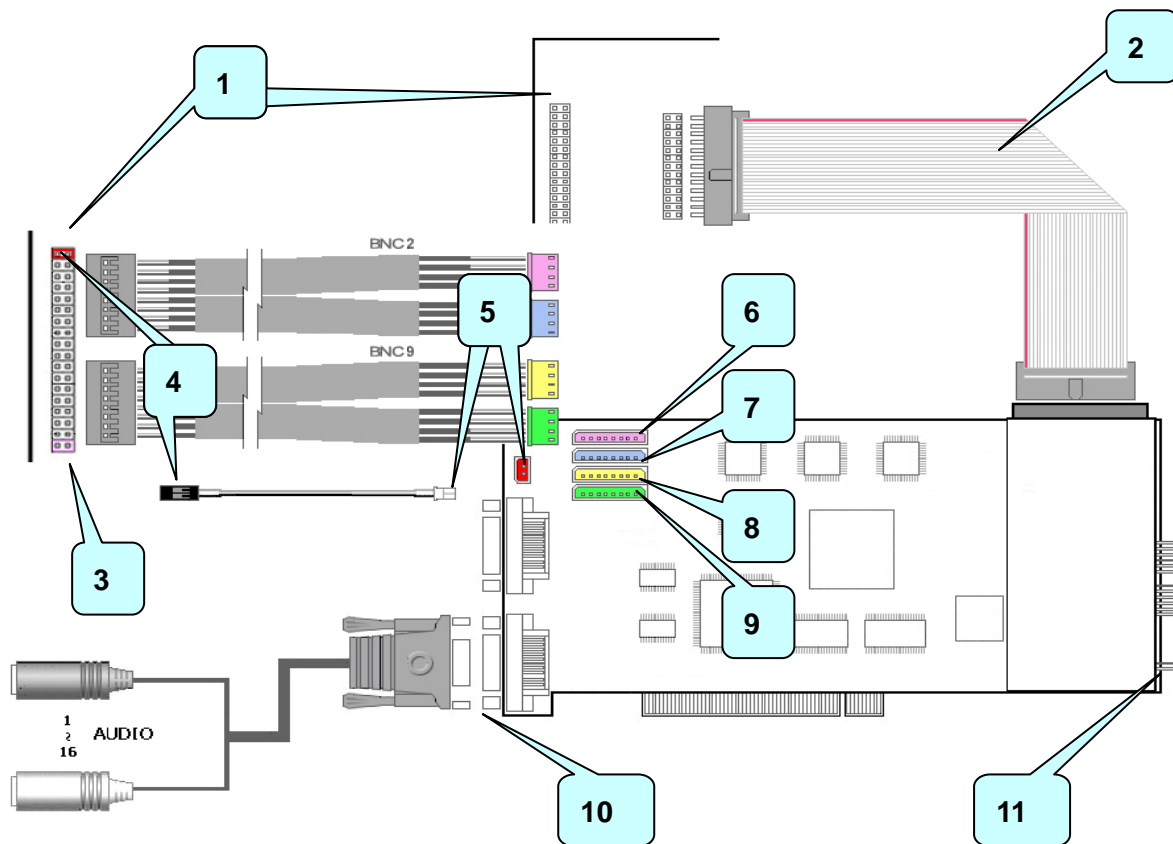
4-1-1. Pigtail type



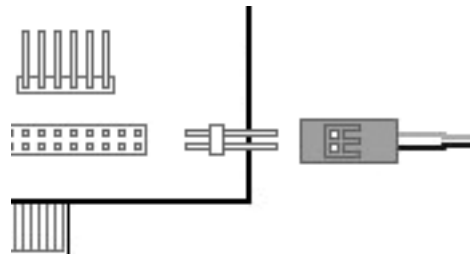
- 1) Connect 1~16 channel video pigtail cable to the top connector.
- 2) Connect 1~16 channel audio pigtail cable to the bottom connector.
- 3) Connect CCTV monitor.
- 4) Connect I/O cable to the sensor port.
- 5) Connect the other side of the I/O cable to the I/O connector.
- 6) Connect watchdog cable. (Black cable must go bottom of the connector)



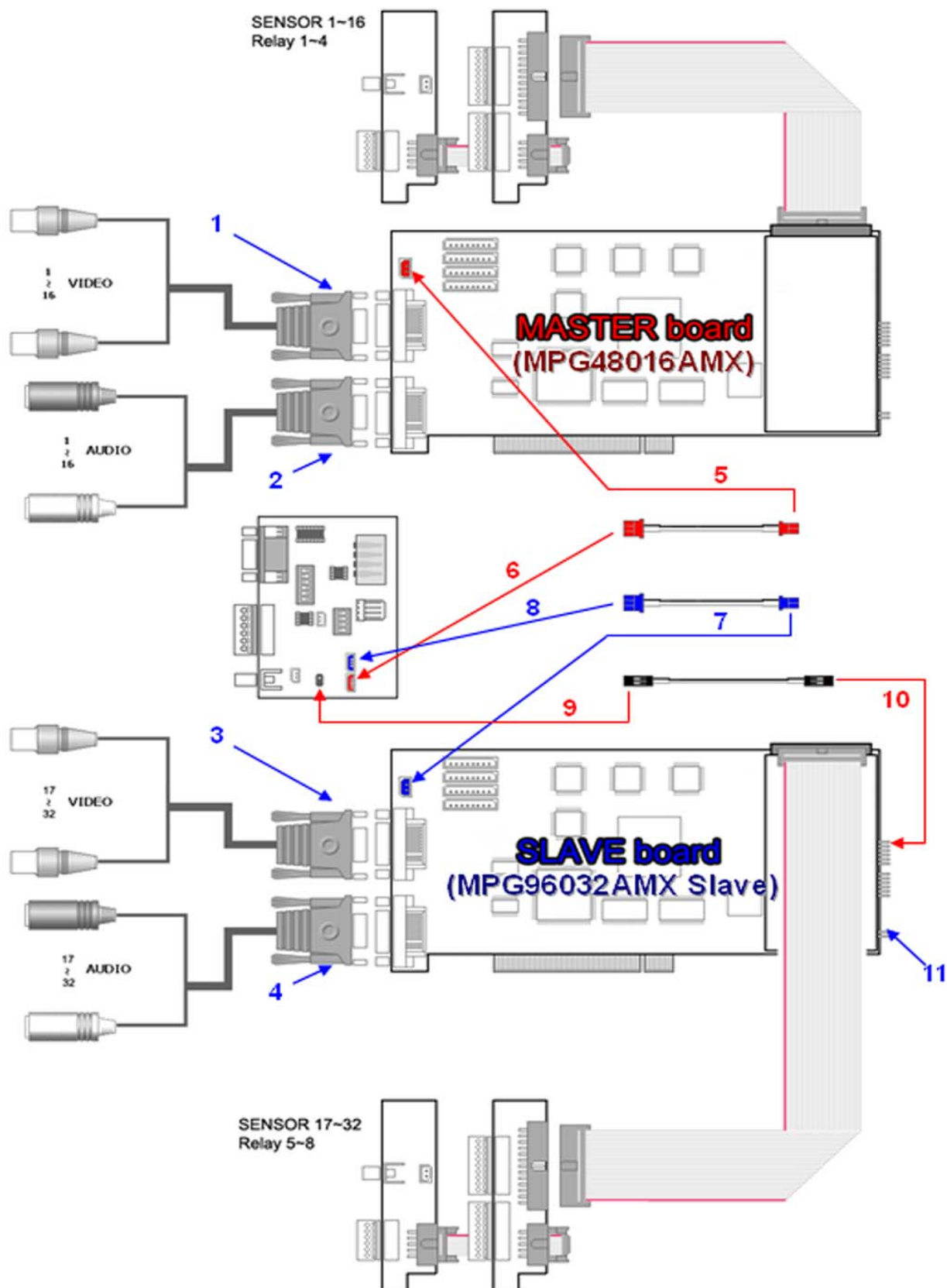
4-1-2. Back Panel Type



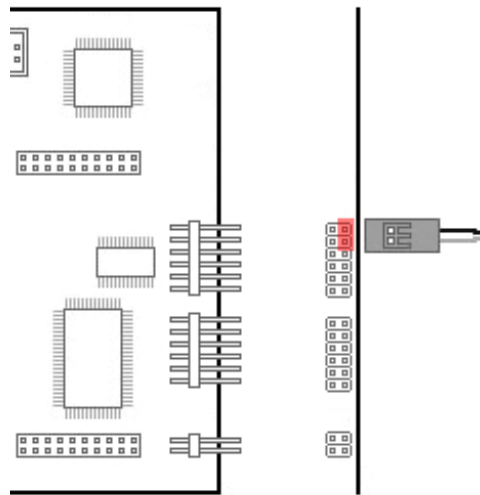
- 1) Back Panel.
- 2) Sensor Cable.
- 3) When connecting video cables to back panel, make sure to leave the bottom pin on the back panel and have white cables facing up.
- 4) Connect TV-Out cable to the top pin on back panel. (make sure to have the white cable facing up)
- 5) Connect the other side of the TV-Out cable to the capture board.
- 6) Connect the video cable with BNC2 label.
- 7) Connect the remaining cable with BNC2 label.
- 8) Connect the video cable with BNC9 label.
- 9) Connect the remaining cable with BNC2 label.
- 10) Connect audio pigtail cable.
- 11) Connect watchdog cable. (Make sure to have the black cable facing down)



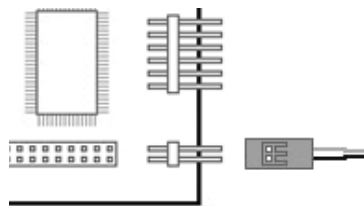
4-2. DVR MPG96032AMX



- 1) Connect 1~16 channel video pigtail cable to the top connector of the master board.
- 2) Connect 1~16 channel audio pigtail cable to the bottom connector of the master board.
- 3) Connect 17~32 channel video pigtail cable to the top connector of the slave board.
- 4) Connect 17~32 channel audio pigtail cable to the bottom connector of the slave board.
- 5) Connect TV-out cable to the master board.
- 6) Connect the other side of the TV-out cable to the master connector on TV-Out board.
- 7) Connect TV-out cable to the slave board.
- 8) Connect the other side of the TV-out cable to the slave connector on TV-Out board.
- 9) Make sure to have the white cable of the TV-out cable facing up on the TV-Out board.
- 10) Make sure to have the white cable of the TV-out cable facing down on the Slave board.

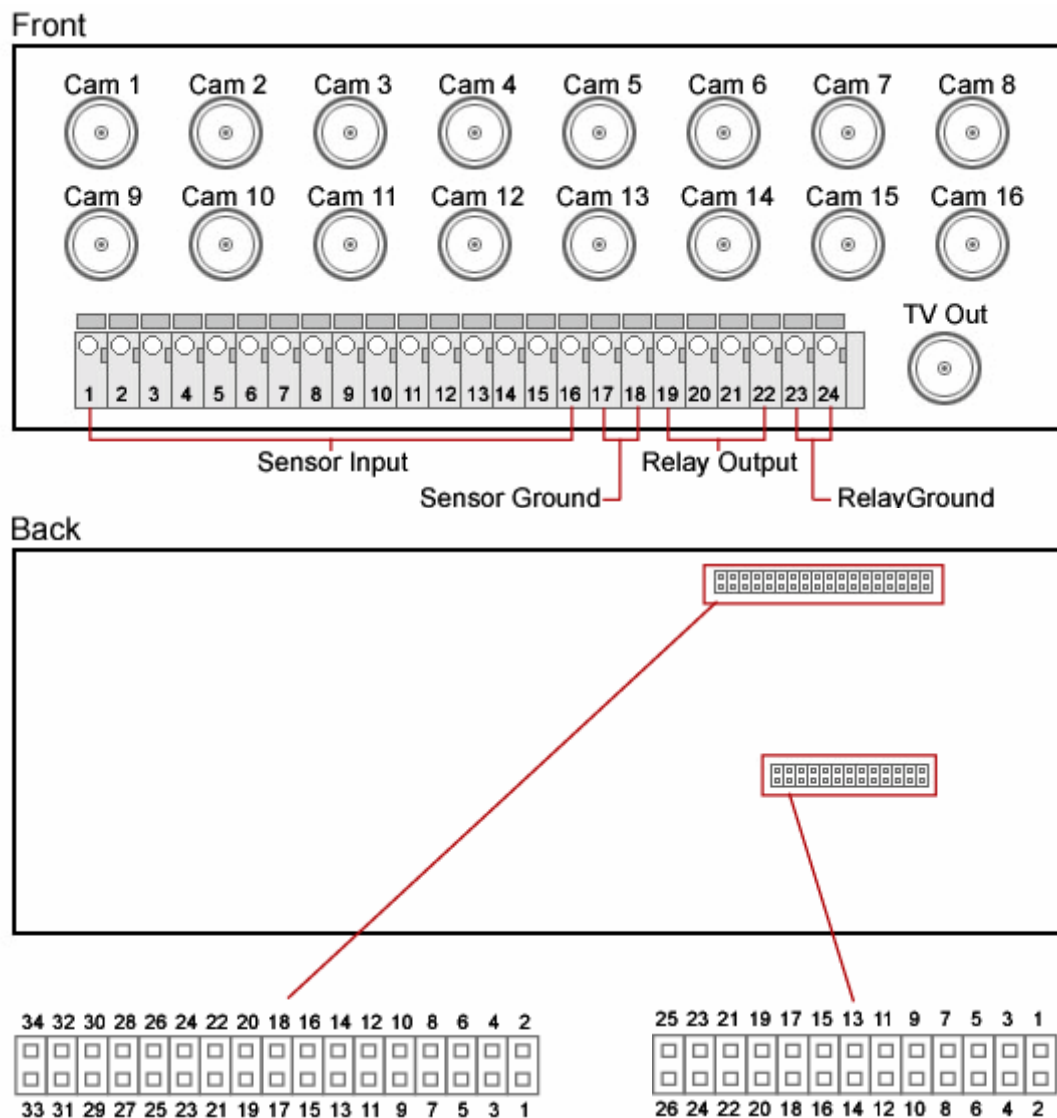


- 11) Connect the watchdog cable. Make sure to have the black cable facing down.



5. Accessories

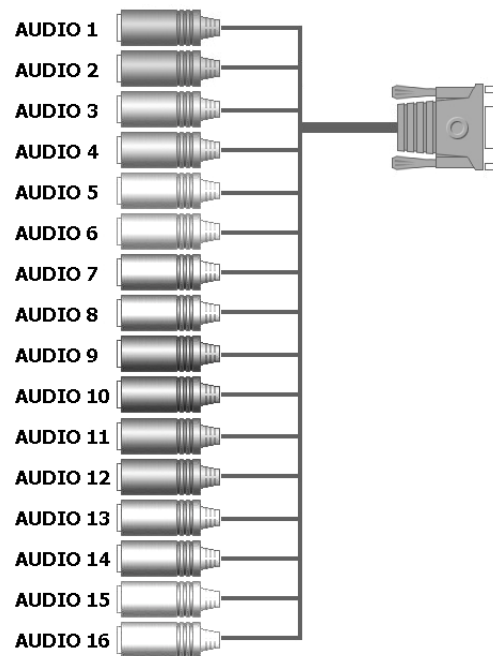
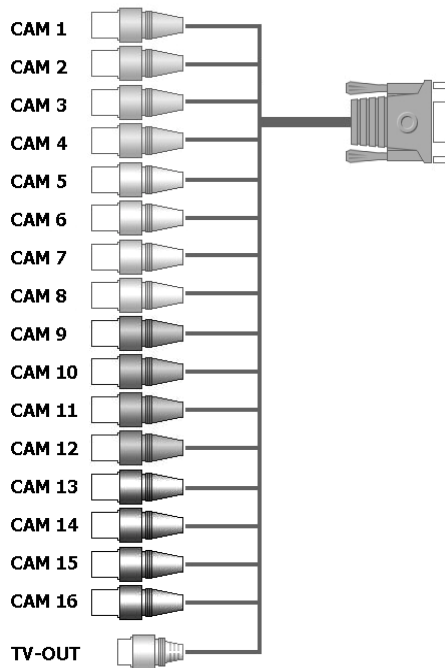
5-1. Back Panel



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. Video and Audio Pigtail cable



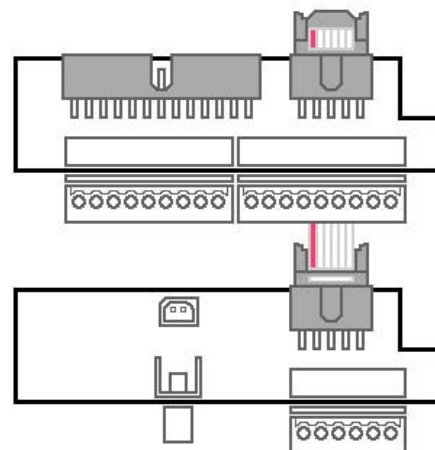
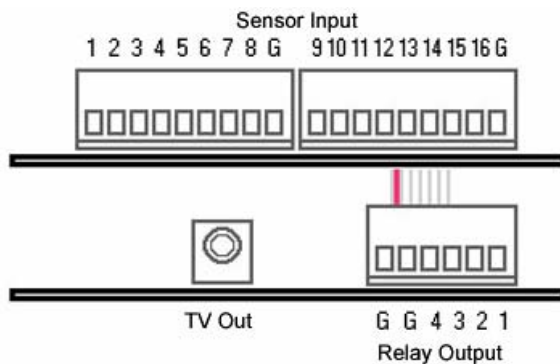
Video Pigtail cable

1 ~ 4 : Blue BNC
 5 ~ 8 : Orange BNC
 9 ~ 12 : Violet BNC
 13 ~ 16 : Gray BNC

Audio Pigtail cable

1, 9 : Red con	5, 13 : Blue con
2, 10 : Orange con	6, 14 : Violet con
3, 11 : Yellow con	7, 15 : Gray con
4, 12 : Green con	8, 16 : White con

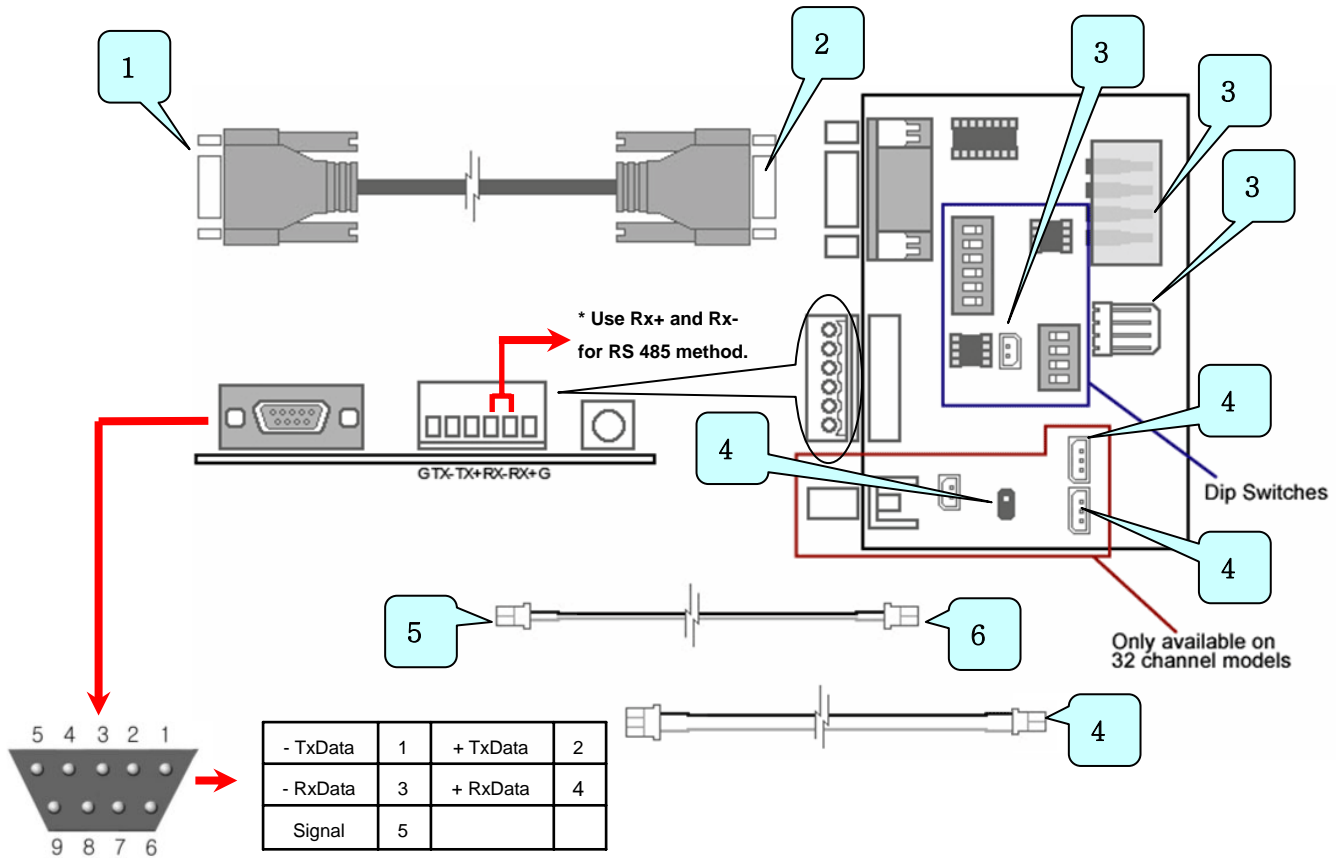
5-3. Sensor Port



Sensor port pin number

1 ~ 8, 9 ~ 16 : Signal input
 G : Ground
 4, 3, 2, 1 : Relay output

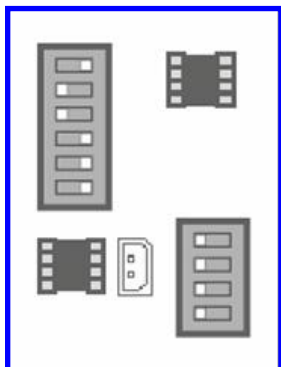
5-4. RS232 to RS422/485 Converter



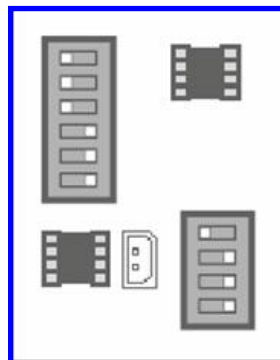
- 1) Connect to system's Com port.
 - 2) Connect to PTZ port converter RS-485 + TV-OUT board
 - 3) Connect a power source to any one of these power sockets.
 - 4) TV-Out Connection for 32 Channel board only. Refer to the installation diagram on Chapter 4-2
 - 5) If you choose to use included power supply cable, connect it to (3)
 - 6) Connect it to the DVR board.
- If one of power supplies (3) has been connected there is no need to connect this cable.

Dip Switches

RS-485 Mode



RS-422 Mode

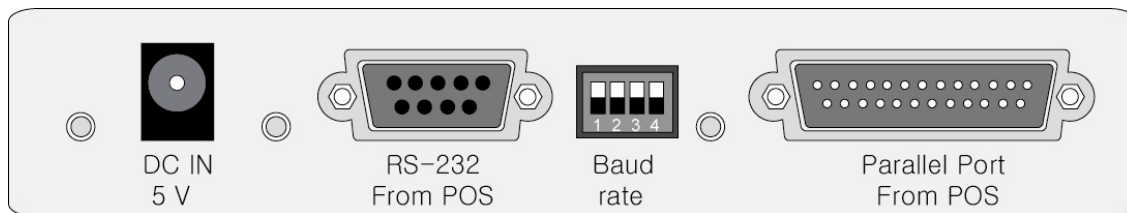


5-5. PORT Converter

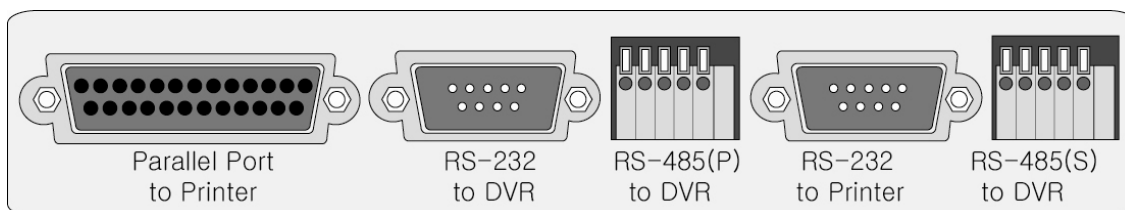
5-5-1. Specification

Input		RS-232 from POS	DB9 Female
		Parallel Port from POS	DB25 Male
Output	Serial	RS-232 to Printer	DB9 Male
		RS-485(S) to DVR	TX(+)(-), RX(+)(-), GND
	Parallel	Parallel Port to Printer	DB25 Female
		RS-232 to DVR	DB9 Male
		RS-485(P) to DVR	TX(+)(-), RX(+)(-), GND
Power		DC 5V	
Cable	Serial	RS-232 from POS	DB9 Female to DB9 Male Direct
		RS-485(S) to DVR	DB9 Female to DB9 Female Cross
		RS-485(P) to DVR	DB9 Female to DB9 Female Cross
	Parallel	Parallel Port from POS	DB25 Male to DB25 Female Direct
		Parallel Port to Printer	DB25 Female to IEEE 1284

5-5-2. Layout Description



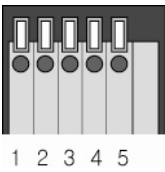
- 1, DC IN 5V
- 2, Rs-232 From POS : Connect to the serial port in POS
- 3, Baud rate : Select the Baud rate
- 4, Parallel Port from POS : Connect to the parallel port in POS



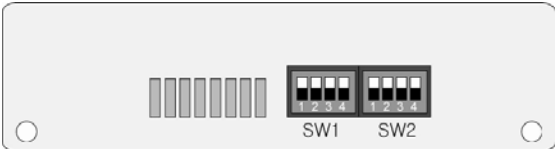
- 5, Parallel Port to Printer : Used by Parallel printer
- 6, RS-232 to DVR : Used by Serial port in DVR
- 7, RS-485(P) to DVR : Used by RS-485 board in DVR
- 8, Rs-232 to Printer : Used by Serial Printer

9, Rs-485(S) to DVR : Used by RS-485 board in DVR

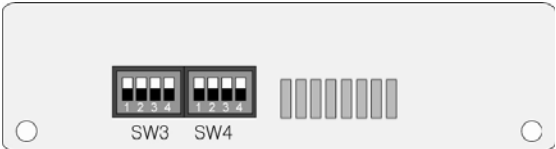
10, Terminal Block



- (1): TX-
- (2): TX+
- (3): RX-
- (4): RX+
- (5): GND



11, SW1, SW2: Used in output of Parallel port



12, SW3, SW4: Used in output of Serial

5-6-3. Baud Rate



1,200 BPS



2,400 BPS



4,800 BPS



9,600 BPS



19,200 BPS



38,400 BPS



57,600 BPS



115,200 BPS

5-5-4. Jumper Selection

Output of parallel port	Output of serial port
<p>RS-232</p> <p>SW1 SW2</p>	<p>RS-232</p> <p>SW3 SW4</p>
<p>RS-422</p> <p>SW1 SW2</p>	<p>RS-422</p> <p>SW3 SW4</p>
<p>RS-485</p> <p>SW1 SW2</p>	<p>RS-485</p> <p>SW3 SW4</p>