
Hardware & Accessories

- [Hardware Guide](#)
- [How to Use the I/O Ports of a Video Capture Card](#)
- [IOC-0404P Card Guide](#)
- [IOB-0805 BOX Guide](#)
- [IOB-1616 BOX Guide](#)
- [LB-16 Input Video Loopback Card](#)

Hardware Guide

Capture Card Models

4404SL⁺ Video Capture Card

Accessories

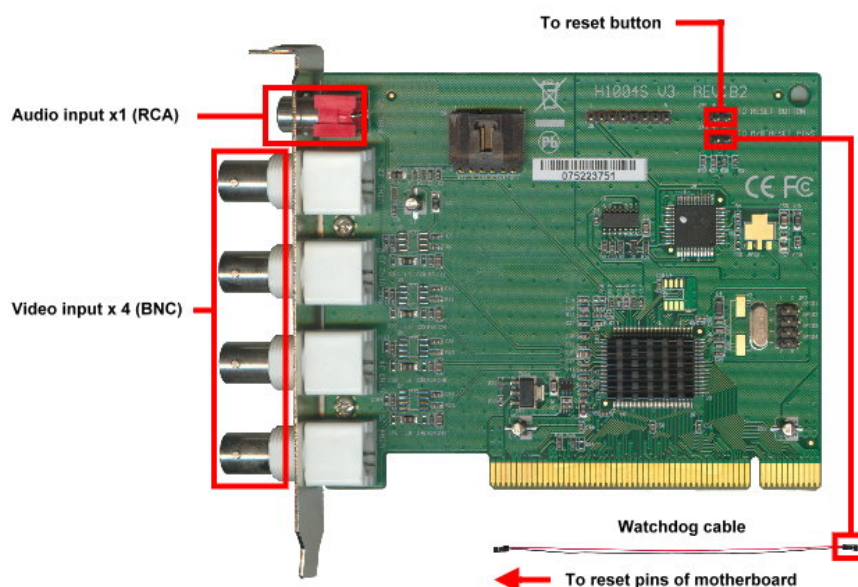
Watchdog Cable	x 1
----------------	-----

Specifications

Video Input / Audio Input	4 (BNC) / 1 (RCA)
Display & Recording Rate*	40 fps (NTSC: 320x240)
	30 fps (PAL: 320x240)
	30 fps (NTSC: 720x480)
	25 fps (PAL: 720x576)
Max. Stack Card / Channel	4 Cards / 16 CH
PC Interface	PCI

Notes:

- Display & recording Rates present the maximum frame rates per card. The exact frame rates may vary across hardware environments.
- Frame rates in Plus Series DVR cards show maximum frame rates at Turbo Capture Mode.



4416SL⁺ Video Capture Card

Accessories

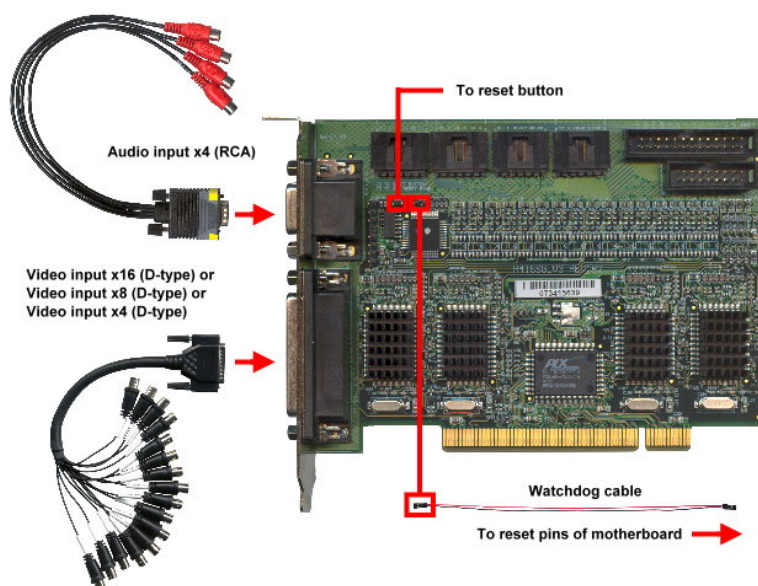
Watchdog Cable	x 1
----------------	-----

Specifications

Video Input	4 (D-Sub)	8 (D-Sub)	16 (D-Sub)
Audio Input	4 (RCA)		
Display & Recording Rate *	120 fps (NTSC: 320x240) 100 fps (PAL: 320x240)	120 fps (NTSC: 320x240) 100 fps (PAL: 320x240)	160 fps (NTSC: 320x240) 120 fps (PAL: 320x240)
	120 fps (NTSC: 640x480) 100 fps (PAL: 640x480)	60 fps (NTSC: 720x480) 55 fps (PAL: 720x576)	60 fps (NTSC: 720x480) 55 fps (PAL: 720x576)
Max. Stack Card / Channel	2 Cards / 8 CH	2 Cards / 16 CH	2 Cards / 32 CH
PC Interface	PCI		

Notes:

- Display & recording Rates present the maximum frame rates per card. The exact frame rates may vary across hardware environments.
- Frame rates in Plus Series DVR cards show maximum frame rates at Turbo Capture Mode.



4416SL⁺-PCIeVideo Capture Card

Accessories

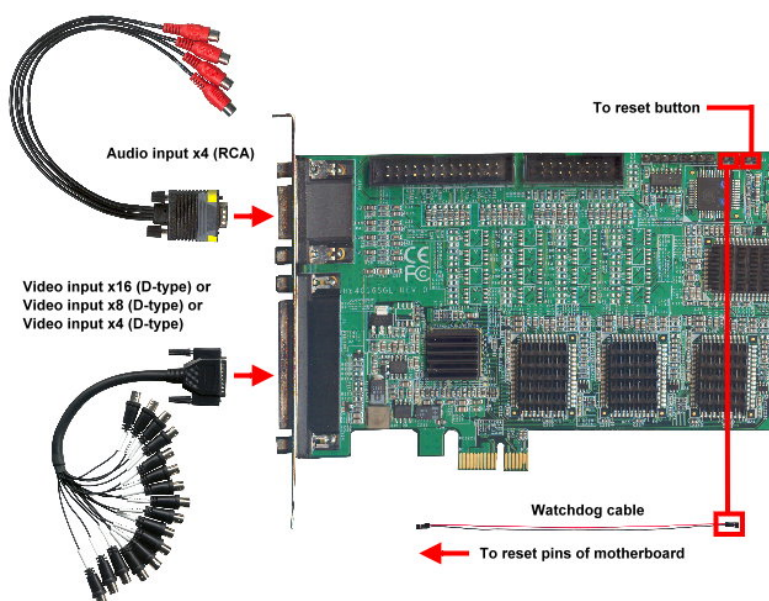
Watchdog Cable	x 1
----------------	-----

Specifications

Video Input	4 (D-Sub)	8 (D-Sub)	16 (D-Sub)
Audio Input	4 (RCA)		
Display & Recording Rate *	120 fps (NTSC: 320x240) 100 fps (PAL: 320x240)	120 fps (NTSC: 320x240) 100 fps (PAL: 320x240)	160 fps (NTSC: 320x240) 120 fps (PAL: 320x240)
	120 fps (NTSC: 640x480) 100 fps (PAL: 640x480)	60 fps (NTSC: 720x480) 55 fps (PAL: 720x576)	60 fps (NTSC: 720x480) 55 fps (PAL: 720x576)
Max. Stack Card / Channel	2 Cards / 8 CH	2 Cards / 16 CH	2 Cards / 32 CH
PC Interface	PCI Express		

Notes:

- Display & recording Rates present the maximum frame rates per card. The exact frame rates may vary across hardware environments.
- Frame rates in Plus Series DVR cards show maximum frame rates at Turbo Capture Mode.



4408Q-PCIe Video Capture Card

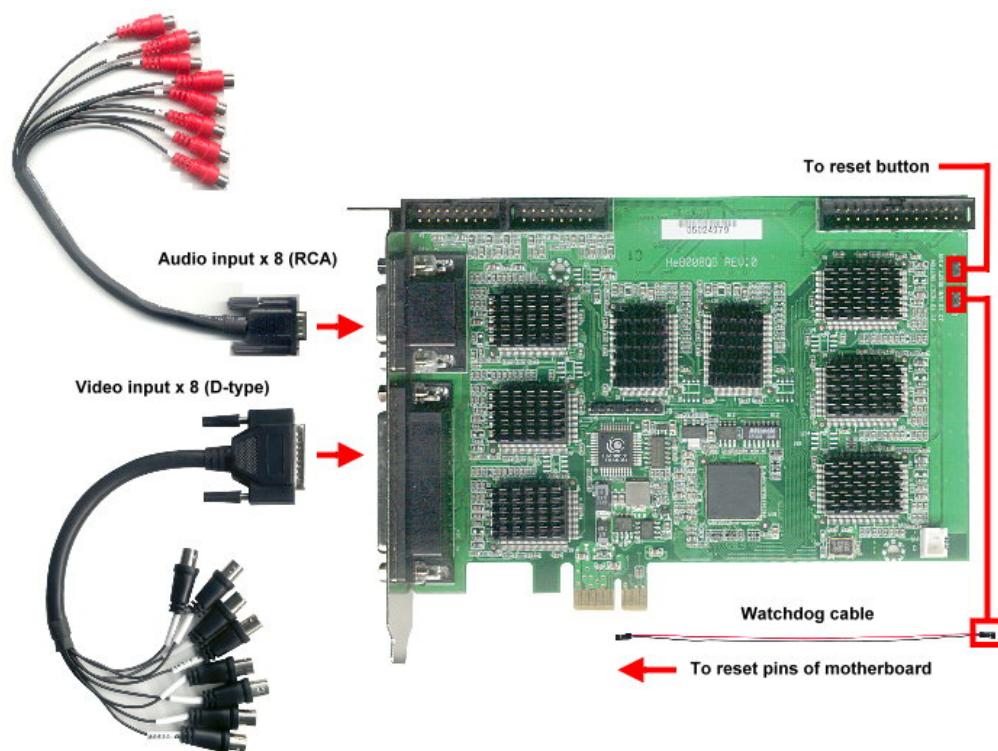
Accessories

Watchdog Cable	x 1
----------------	-----

Specifications

Video Input / Audio Input	8 (D-Sub) / 8 (RCA)
Display & Recording Rate *	240 fps (NTSC: 320x240) 200 fps (PAL: 320x240)
Max. Stack Card / Channel	4 Cards / 32 CH
PC Interface	PCI Express

Note: Display & recording Rates present the maximum frame rates per card. The exact frame rates may vary across hardware environments.



4604Q-PCIe Video Capture Card

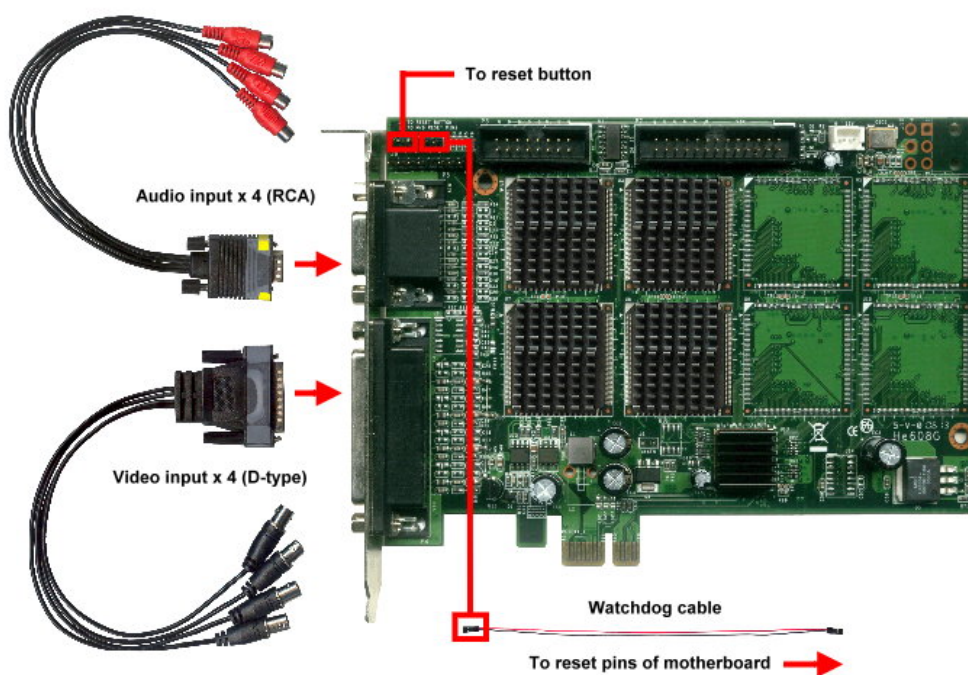
Accessories

Watchdog Cable	x 1
----------------	-----

Specifications

Video Input / Audio Input	4 (D-Sub) / 4 (RCA)
Display & Recording Rate *	120 fps (NTSC: 720x480) 100 fps (PAL: 720x576)
Max. Stack Card / Channel	4 Cards / 16 CH
PC Interface	PCI Express

Note: Display & recording Rates present the maximum frame rates per card. The exact frame rates may vary across hardware environments.



4606Q-PCIe Video Capture Card

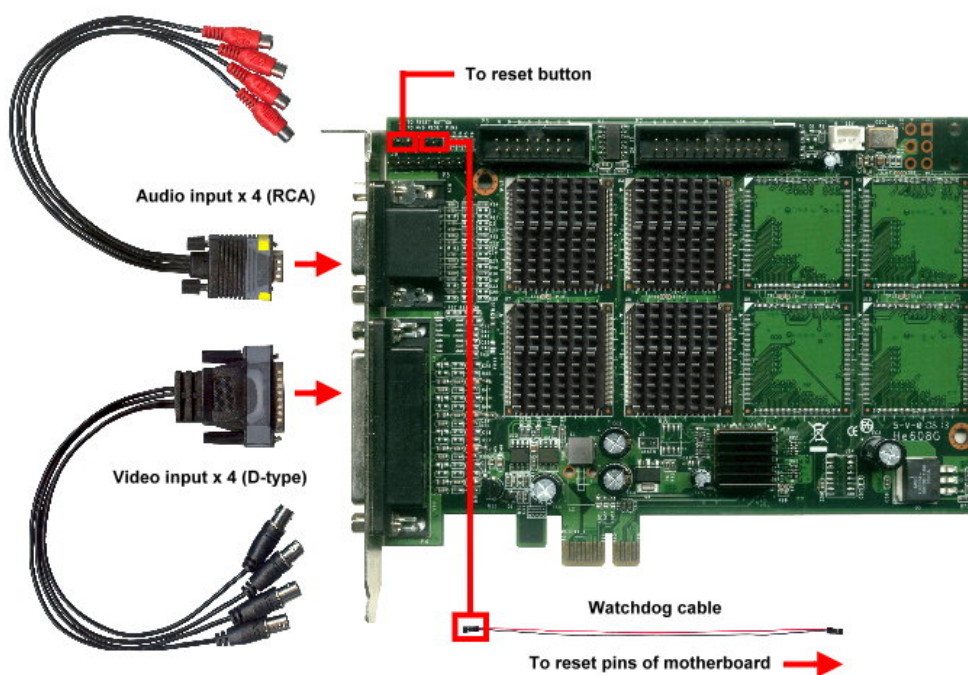
Accessories

Watchdog Cable	x 1
----------------	-----

Specifications

Video Input / Audio Input	6 (D-Sub) / 6 (RCA)
Display & Recording Rate *	180 fps (NTSC: 720x480) 150 fps (PAL: 720x576)
Max. Stack Card / Channel	3 Cards / 18 CH
PC Interface	PCI Express

Note: Display & recording Rates present the maximum frame rates per card. The exact frame rates may vary across hardware environments.



4704Q Video Capture Card

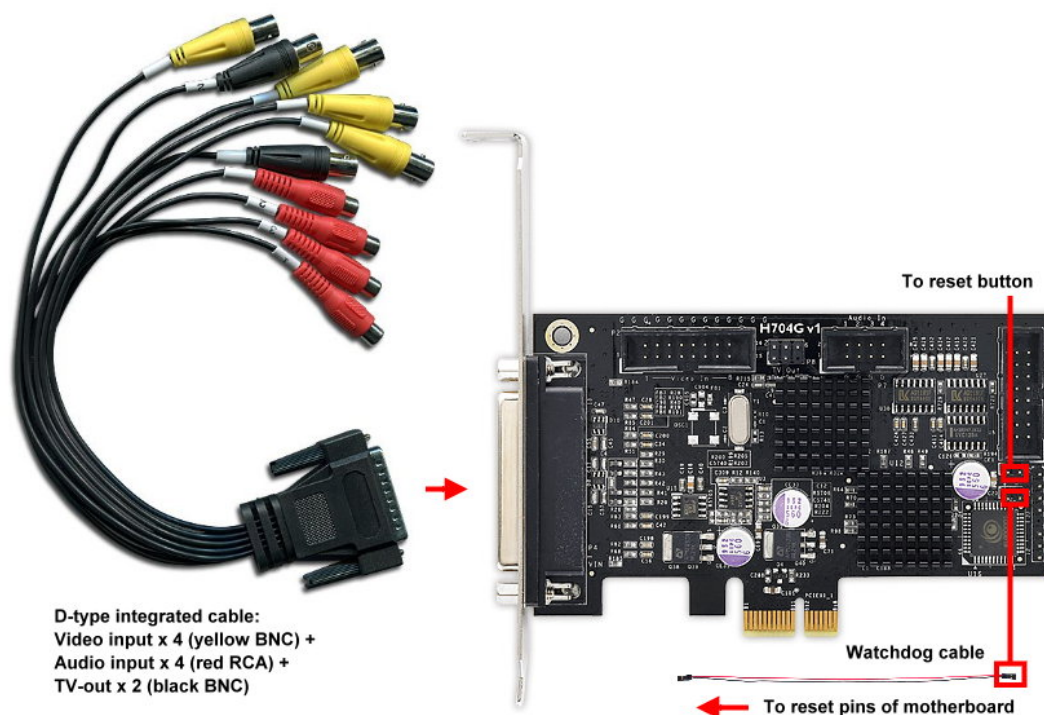
Accessories

Watchdog Cable	x 1
----------------	-----

Specifications

Video Input / Audio Input / TV-out	4 (BNC) / 4 (RCA) / 2 (BNC)
Display & Recording Rate *	
4704Q-120	120 fps (NTSC: 720x480) 100 fps (PAL: 720x576)
4704Q-60	60 fps (NTSC: 720x480) 50 fps (PAL: 720x576)
4704Q-30	30 fps (NTSC: 720x480) 25 fps (PAL: 720x576)
4704Q-15	15 fps (NTSC: 720x480) 12.5 fps (PAL: 720x576)
Max. Stack Card / Channel	4 Cards / 16 CH
PC Interface	PCI Express

Note: Display & recording Rates present the maximum frame rates per card. The exact frame rates may vary across hardware environments.



4708Q Video Capture Card

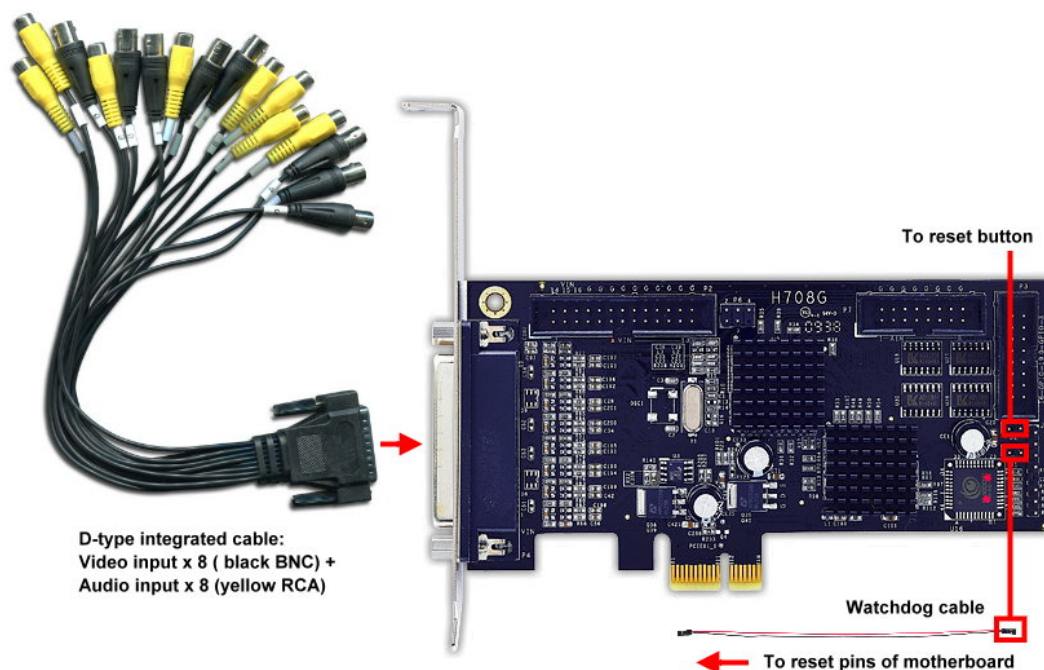
Accessories

Watchdog Cable	x 1
----------------	-----

Specifications

Video Input / Audio Input / TV-out	8 (BNC) / 8 (RCA) / 2 (BNC)
Display & Recording Rate *	
4708Q-240	240 fps (NTSC: 720x480) 200 fps (PAL: 720x576)
4708Q-120	120 fps (NTSC: 720x480) 100 fps (PAL: 720x576)
4708Q-60	60 fps (NTSC: 720x480) 50 fps (PAL: 720x576)
4708Q-30	30 fps (NTSC: 720x480) 25 fps (PAL: 720x576)
Max. Stack Card / Channel	4 Cards / 32 CH
PC Interface	PCI Express

Note: Display & recording Rates present the maximum frame rates per card. The exact frame rates may vary across hardware environments.



4716Q Video Capture Card

Accessories

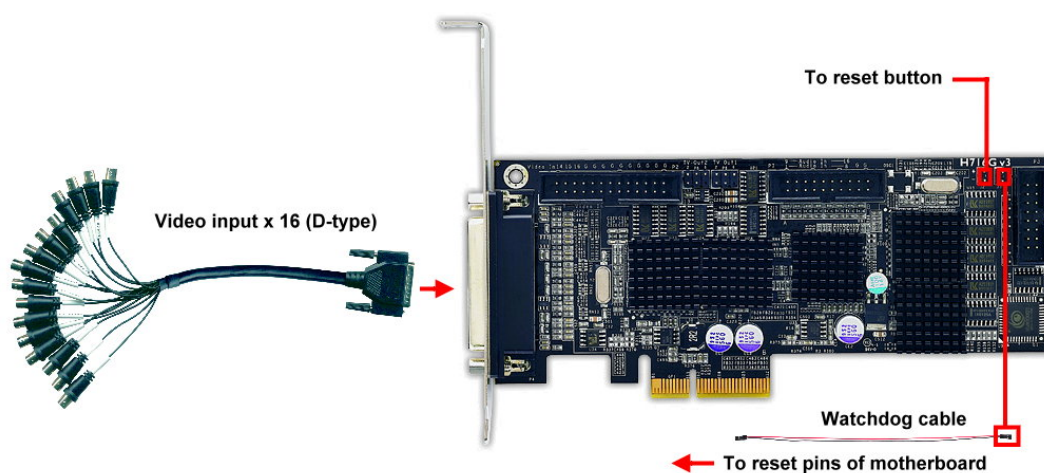
Watchdog Cable	x 1
----------------	-----

Specifications

Video Input / Audio Input / TV-out * ¹	16 (BNC) / 16 (RCA) / 4 (BNC)
Display & Recording Rate * ²	
4716Q-480	480 fps (NTSC: 720x480) 400 fps (PAL: 720x576)
4716Q-240	240 fps (NTSC: 720x480) 200 fps (PAL: 720x576)
4716Q-120	120 fps (NTSC: 720x480) 100 fps (PAL: 720x576)
4716Q-60	60 fps (NTSC: 720x480) 50 fps (PAL: 720x576)
Max. Stack Card / Channel	2 Cards / 32 CH
PC Interface	PCI Express

Notes:

- Display & recording Rates present the maximum frame rates per card. The exact frame rates may vary across hardware environments.
- The 16CH audio + 4 TV-out connector requires extra purchase.



4704Q-Me Video Capture Card

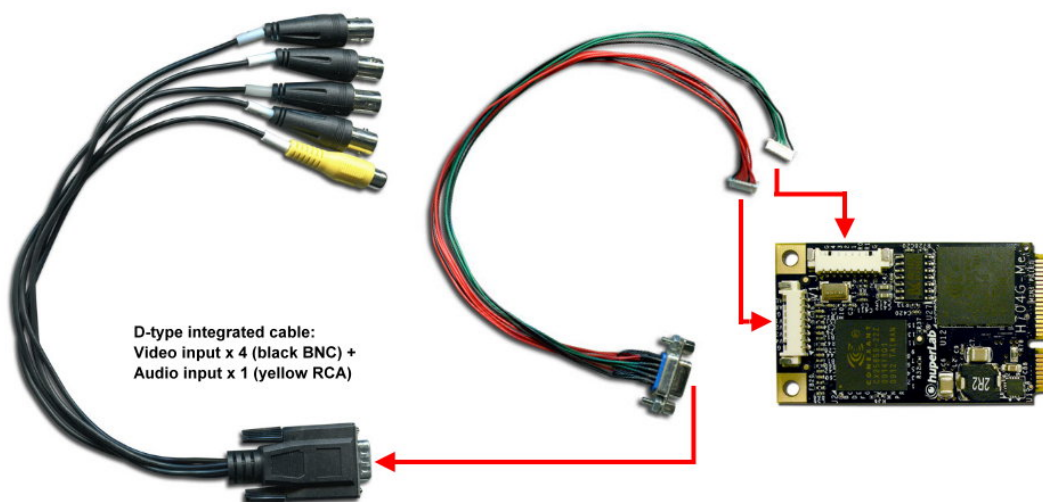
Accessories

Watchdog Cable	x 1
----------------	-----

Specifications

Video Input / Audio Input	4 (BNC) / 1 (RCA)
Display & Recording Rate *	
4704Q-Me-120	120 fps (NTSC: 720x480) 100 fps (PAL: 720x576)
4704Q-Me-60	60 fps (NTSC: 720x480) 50 fps (PAL: 720x576)
4704Q-Me-30	30 fps (NTSC: 720x480) 25 fps (PAL: 720x576)
4704Q-Me-15	15 fps (NTSC: 720x480) 12.5 fps (PAL: 720x576)
Max. Stack Card / Channel	1 Cards / 4 CH
PC Interface	Mini PCI Express

Note: Display & recording Rates present the maximum frame rates per card. The exact frame rates may vary across hardware environments.



Hybrid DVR Card Models

4408Q-Hybrid Card

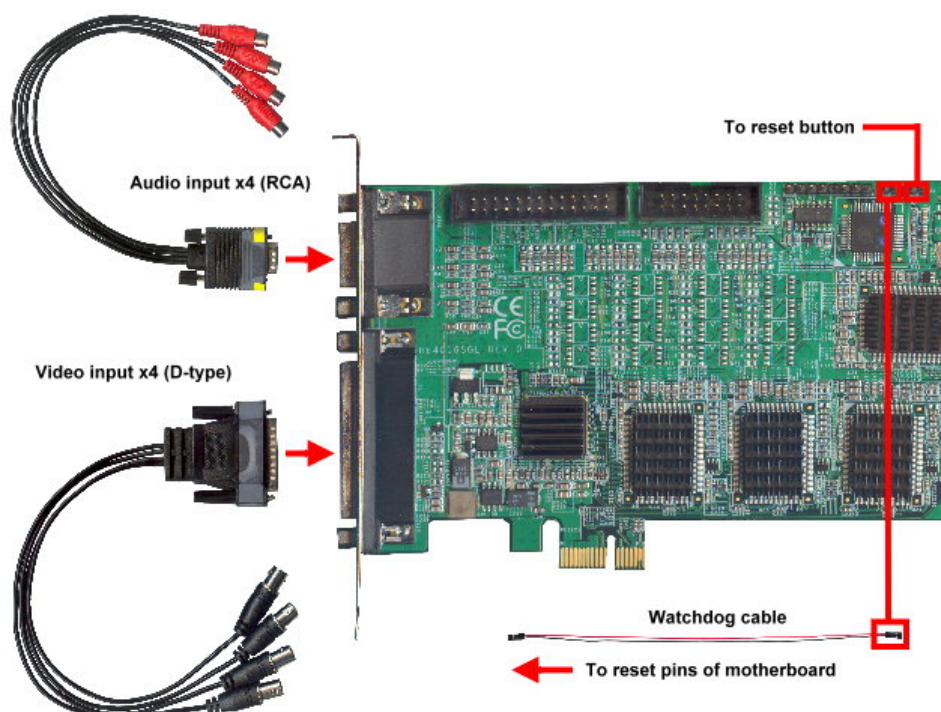
Accessories

Watchdog Cable	x 1
----------------	-----

Specifications

Video Input / Audio Input	4 (D-Sub) / 4 (RCA)
IP Camera Channel	4
Display & Recording Rate *	240 fps (NTSC: 320x240) 200 fps (PAL: 320x240)
Max. Stack Card / Channel	4 Cards / 32 CH
PC Interface	PCI Express

Note: Display & recording Rates present the maximum frame rates per card. The exact frame rates may vary across hardware environments.



4416Q-Hybrid Card

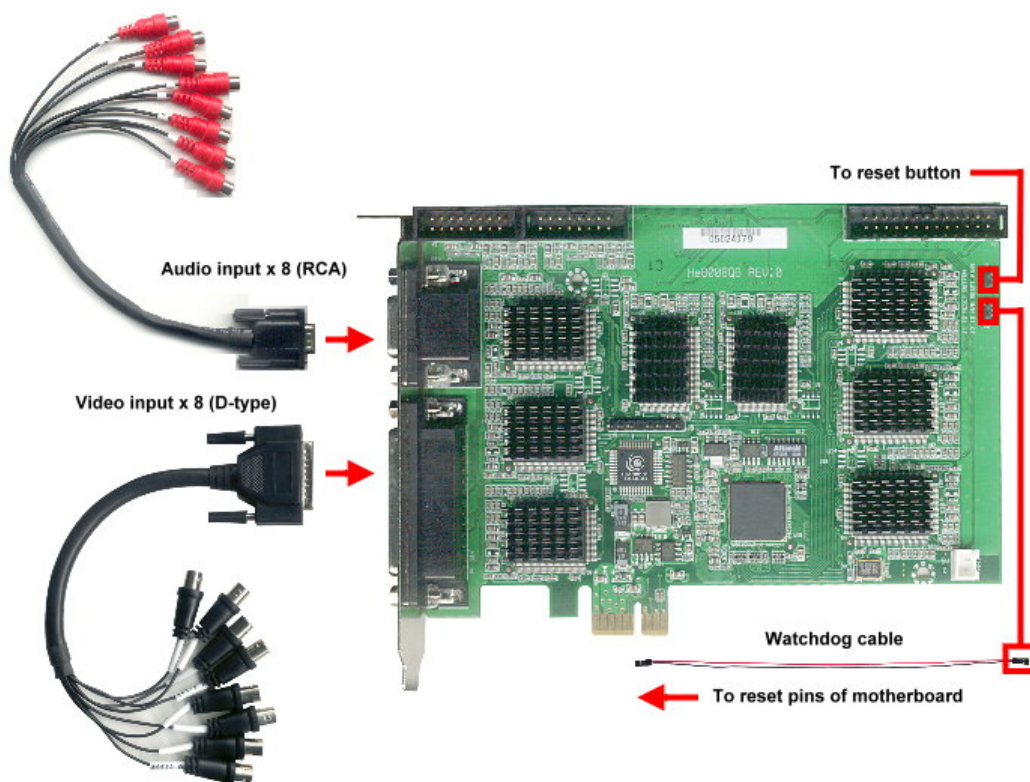
Accessories

Watchdog Cable	x 1
----------------	-----

Specifications

Video Input / Audio Input	8 (D-Sub) / 8 (RCA)
IP Camera Channel	8
Display & Recording Rate*	240 fps (NTSC: 320x240) 200 fps (PAL: 320x240)
Max. Stack Card / Channel	2 Cards / 32 CH
PC Interface	PCI Express

Note: Display & recording Rates present the maximum frame rates per card. The exact frame rates may vary across hardware environments.



License Card Models

4432IP/4416IP/4408IP/4404IP License Card

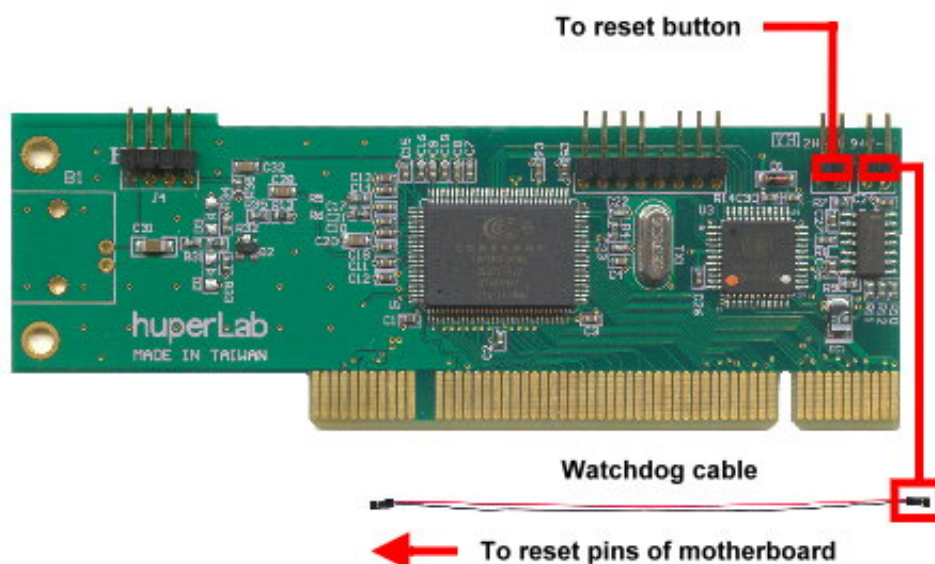
Accessories

Watchdog Cable	x 1
----------------	-----

Specifications

	4432IP	4416IP	4408IP	4404IP
Display & Recording Rate *	960 fps (NTSC) 800 fps (PAL)	480 fps (NTSC) 400 fps (PAL)	240 fps (NTSC) 200 fps (PAL)	120 fps (NTSC) 100 fps (PAL)
Max. Stack Card / Channel	1 Card / 32 CH	2 Cards / 32 CH	4 Cards / 32 CH	4 Cards / 16 CH
PC Interface	PCI			

Note: Display & recording Rates present the maximum frame rates per card. The exact frame rates may vary across hardware environments.

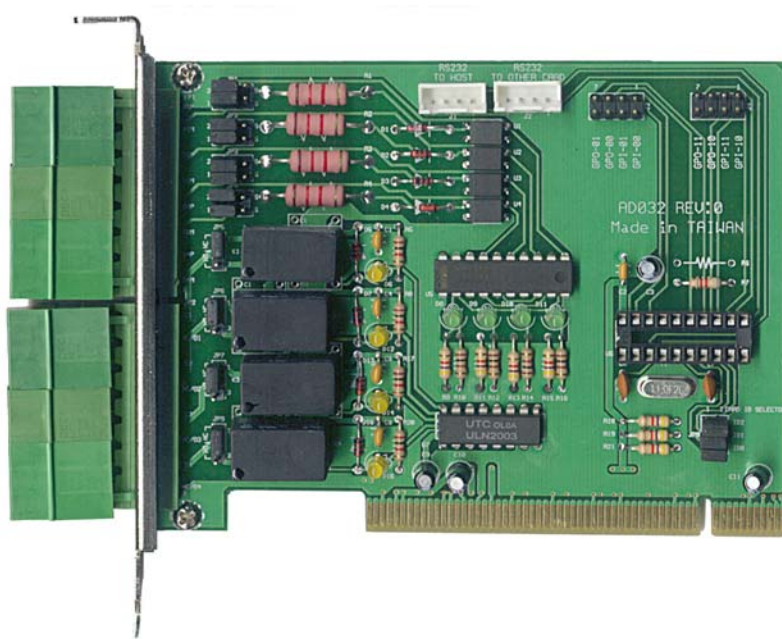


Accessories

IOC-0404P I/O Card

Specifications

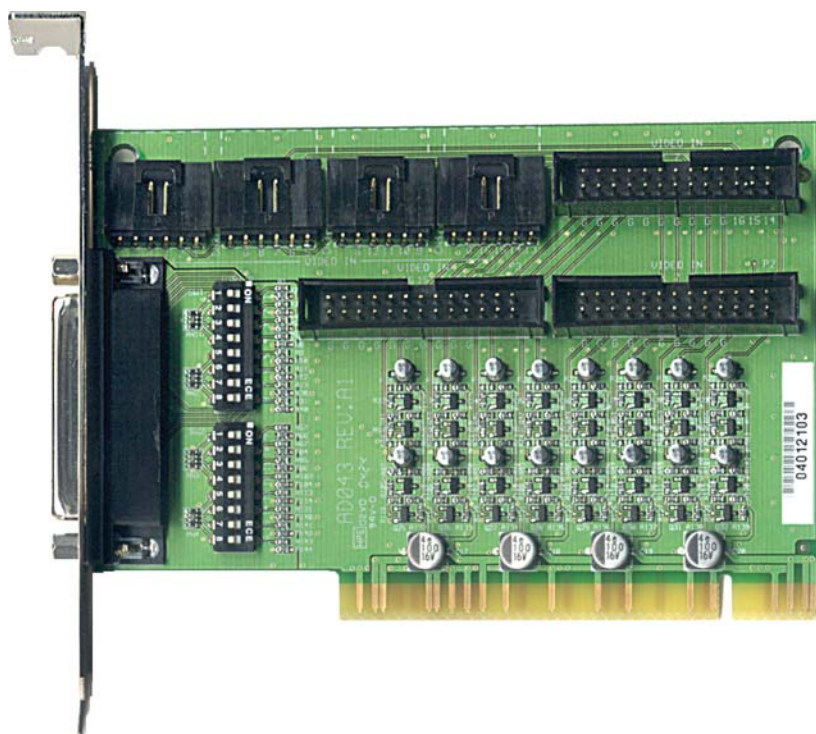
Description	32-bit PCI card with 4 digital inputs and 4 relay outputs
System	32-bit 5V PCI card
Dimensions	93 mm X 120 mm
Digital input	
Channels	4
Input voltage	Dry Contact Logic level 0: Close to GND Logic level 1: Open Optical Isolation: 24VDC Dry Contact & Optical Isolation: Selectable
Power consumption	200 mW each channel
Relay output	
Channel	4-channel/relay output with Form C
Contact rating	AC 125 V @ 0.6 A; 250 V @ 0.3 A DC 30 V @ 1 A; 110 V @ 0.6 A NO & NC selectable by jumper



LB-16 Video Loop Through Card

Specifications

Description	PCI card with 16CH video loop through
System	32-bit 5V PCI card
Video Input	4-center crimp terminal houses up to 16 channel video inputs One box header (2 x 13 pins) supports 16 channel video inputs Two box header (2 x 13 pins) supports 8 channel video inputs
Video Output	D-sub 25 connector supports 16 channel video outputs
Video signal	1 Vpp, 75Ω switch optional
Dimensions	119.88 mm x 85.09 mm




IOB-0805 Box

Specifications

Digital Contact Input	8	
Isolation	5000Vrms	
Digital Level 0	Open Digital	
Level 1	Close Relay	
Output	5	
Relay Type	Form A	
Contact Rating	10A@125VAC, 5A@250VAC/30VDC	
Operate Time	8 ms	
Release Time	5 ms	
Dielectric Strength	2500VAC	
Electrical life(min.)	1 x 10 ⁵	
Mechanical life(min.)	1 x 10 ⁷	
Power Consumption	110 / 220 VAC or 5VDC, 5W°C	
Communication Port	RS232 / RS485 (Protocol : Huper RTU ASCII) RS232:1200-115, 200 bps; RS485 : 1200-921.6K bps	
Communication Distance	RS232: 50 feet RS485: 4000 feet	
Input Power Supply	110 / 220 VAC or 5VDC, Digital Input: 5/12/24 VDC	
Dimension	150 x 100 x 40 mm	
Weight	360 g	
Approved Standards	CE	

IOB-1616 Box

Specifications

Digital Contact Input	16	
Isolation	5000Vrms	
Digital Level 0	Open	
Digital Level 1	Close	
Open Collector Output	16	
Isolation	5000 Vrms	
Load Voltage	5/12/24 VDC	
Max Load Current	500 ma (2A Per Common Group)	
Power Consumption	5W	
Communication port	RS232 / RS485 (Protocol : Huper RTU ASCII) RS232 : 1200-115,200 bps; RS485 : 1200-921.6K bps	
Communication distance	RS232 : 50 feet RS485 : 4000 feet	
Input Power Supply	12 VDC (9 ~ 12), 5W	
Dimension	150 x 100 x 40 mm	
Weight	360 g	
Approved Standards	CE	

How to Use the I/O Ports of a Video Capture Card

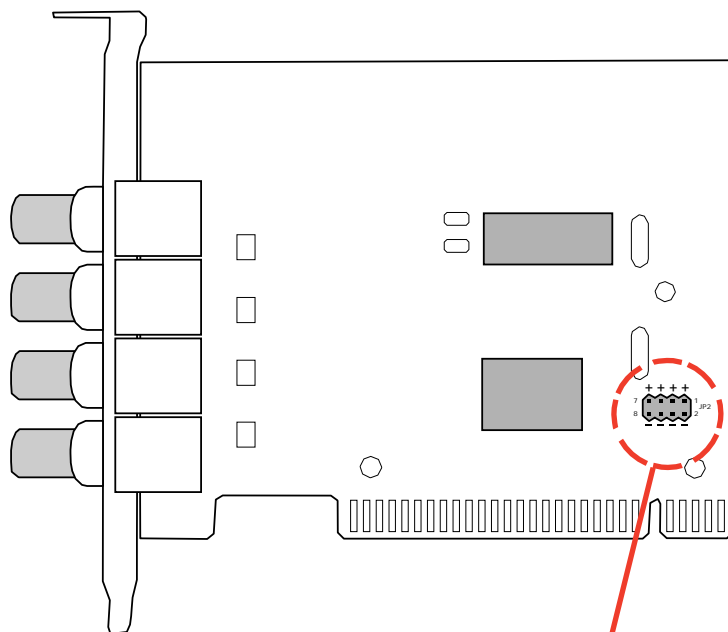
The Specification of I/O Ports

Each video capture card provides four I/O ports. Each I/O port can connect to an Input Device (e.g. Infra-red sensor) or an Output Device (e.g. Alarm). The H1004S video capture card has four I/O ports, each marked by "GPIO1", "GPIO2", "GPIO3" and "GPIO4" (Please refer Figure 1-1 and 1-2). Every I/O port has two pins, a positive pole pin marked with "+" and a negative pole pin marked with "-". For other models of video capture cards (Please refer Figure 1-3 and 1-4), positive pole pins are at the side marked with "GPIO1-GPIO4", negative pole pins are at the opposite side marked with "G". The left-most pin pair are the first I/O port, the following pin pairs are numbered accordingly (second I/O port, third I/O port...). The I/O ports link directly to the BT878 GPIO* ports. Below are their specifications:

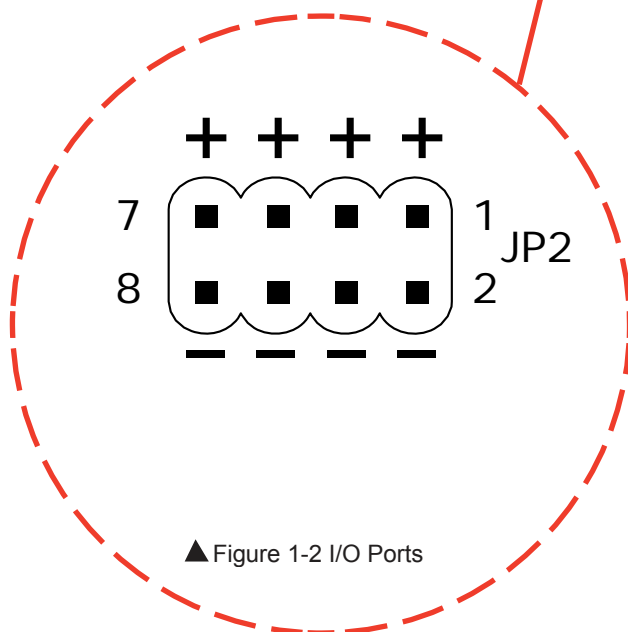
Digital Input/Output		Min.	Max.
GPIO Input	Input High Voltage	2.0V	5.5V
	Input Low Voltage	-0.5V	0.8V
GPIO Output	Output High Voltage (I _L =1.2mA)	2.4V	5V
	Output Low Voltage (I _L =8mA)	-	0.4V

Note:

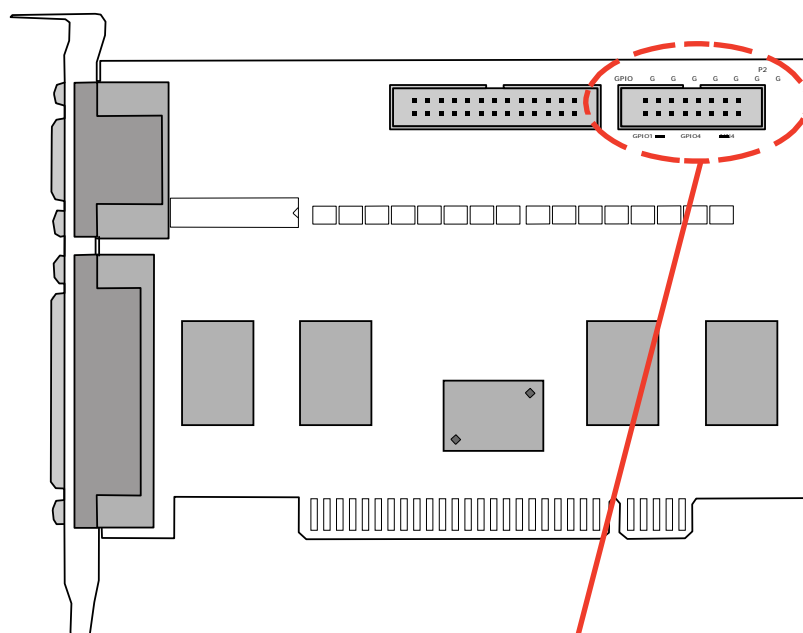
1. GPIO: General Purpose Input/Output ports.
2. Detail GPIO specifications. Please read the specifications of the Bt878 chip.



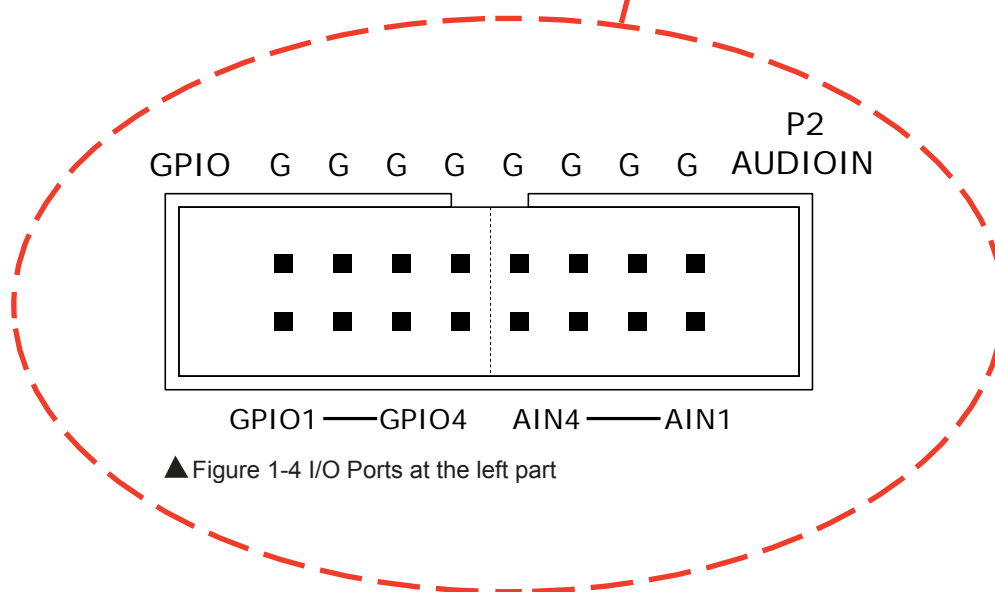
▲ Figure 1-1 H1004S Video Capture Card



▲ Figure 1-2 I/O Ports



▲ Figure 1-3 H4004Q Video Capture Card



▲ Figure 1-4 I/O Ports at the left part

Installing the Cable

You need to install a cable to connect I/O ports to I/O devices. You can purchase a cable from any PC accessory store or use the cable that comes with the video capture card. Please note that some models of video capture cards do not include cables. You can purchase the cable from the dealer where you purchased the product.

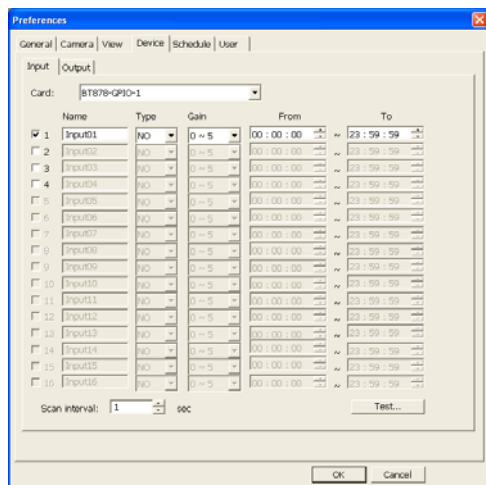
Connecting to I/O Devices

Each I/O port can connect to an input device or an output device. If the input/output voltage from/to the I/O devices does not match the specifications of I/O ports, the video capture card or output devices may be damaged due to overrunning of the voltage limit. An extra circuit for increasing/decreasing the voltage from the input device or to the I/O port can solve the problem. Please note that I/O ports can only accept DC (Direct Current).

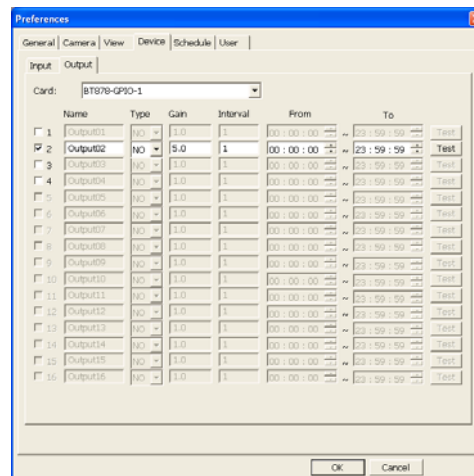
Setting I/O Devices

I/O devices and I/O ports should have their corresponding positive pole pins connected and corresponding negative pole pins connected. If the first I/O port is connected to an input device, please select the first option on the "Device/Input" tab of the "Preferences" dialog box then specify the device type (either NC or NO). (Please refer to figure "Enable the input" below.)

If the first I/O port is connected to an output device, please select the first option on the "Device/Output" tab of the "Preferences" dialog box then specify the device type (either NC or NO). (Please refer to figure "Enable the output" below.) If you installed other I/O devices, follow the rule above for the "Preferences dialog box: Device tab"



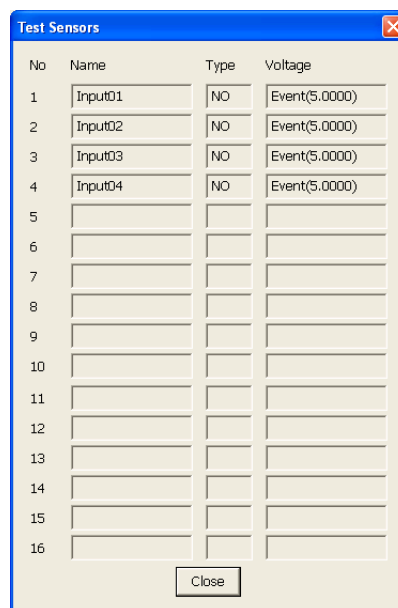
Enable the Input



Enable the Output

Testing the I/O Device

After connecting the I/O ports to I/O devices and finalizing the settings, click the "Test" button on the "Preferences/Device" tab to check the connection and settings. Click the "Test" button on the "Preferences/Device/Input" tab to launch a dialog box displaying the current input voltage of input devices. (Please refer to the right figure.) You can trigger the input device and track the changes of input voltage in this dialog box. Click the "Test" button on the "Preferences/Device/Output" tab to change the output voltage. You can check the behavior of output devices to make sure the connections and settings are correct.



Including I/O Devices to the operation of DVR Site Server

When an input device has been triggered to issue an event, Site Server can have three reactions

1. In the event recording mode, starts the video recording and Site Server keeps recording till the event ends.
2. In non-event recording mode, the event time segment is recorded to enable searching of video recordings later.
3. Issue event notifications.

In order to include input devices to the normal operation of Site Server, you need to select the "Sensor detection" option in the "Detect events by" group on the "Preferences/Camera" tab for certain cameras. Then click the "Settings" button behind the option "Sensor detection" to assign input devices.

Output devices are for event notification. You can select the "External devices" option in the "Respond to events by" group on "Preferences/Camera" tab for certain cameras. Then click the "Settings" button behind the option "External devices" to assign output

IOC-0404P Card Guide

The IOC-0404P is a 4-ch digital input and 4-ch. relay output module. IOC-0404P supports two interfaces with host controller, general-purpose input/output interface and RS232 interface to meet different requirements from the host controller.

IOC-0404P is a digital input module built with 5000VDC optical isolation, and it is suitable for noise environment or floating potential. Also, the 4 isolated inputs provide the best method to prevent the ground loop problem. The IOC-0404P supports dry contact wiring for simple implementation. Moreover, users can read the current input status from the green LED indicators on-board. Each input channel is jumper selectable to either isolated or non-isolated input.

The IOC-0404P provides four channels with Form C relay. IOC-0404P is excellent for ON/ OFF control or low-power switching applications.

For easy monitoring, each relay is equipped with one yellow LED to reflect its ON/OFF status.

Technical Specifications

Digital Input	
Channel	4-channel / digital inputs
Optical Isolation	5000 Vrms
Optical-isolator response time	18 us
Over-voltage Protect	70 VDC
LED Indicator	On: Active Off : Non-active
Input Voltage	Dry Contact Logic level 0 : Close to GND Logic level 1 : Open Optical Isolation : 24VDC (Normal) Dry Contact & Optical Isolation selectable
Power consumption	200 mW each channel

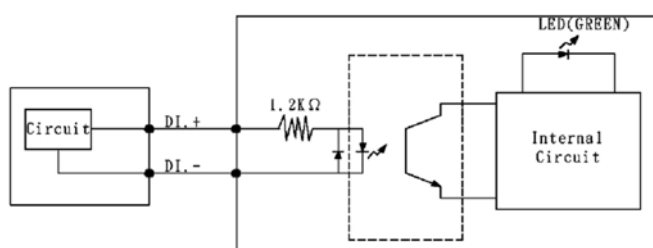
Relay Output	
Channel	4-channel / relay output with Form C
LED Indicator	On: Non-active Off : Active
Contact Rating	AC 125 V @ 0.6 A 250 V @ 0.3 A DC 30 V @ 1 A;

Application Wiring

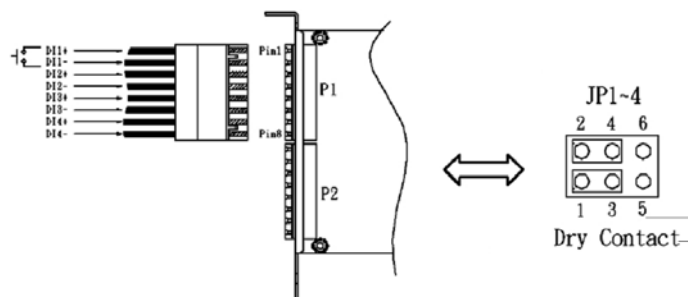
The following are examples on how to connect the cable to your IOC-0404P modules

Input wiring

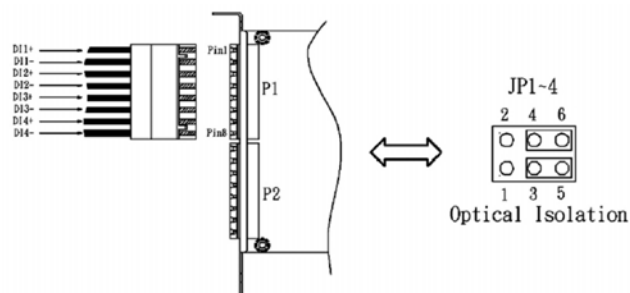
Diagram



Dry Contact Input

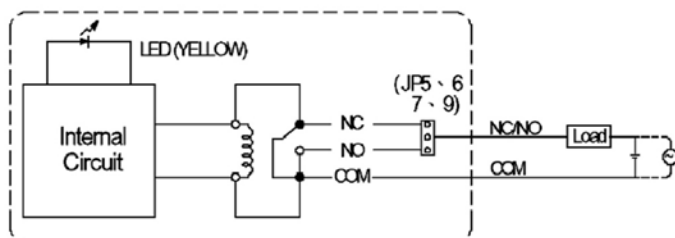


Isolation Digital Input

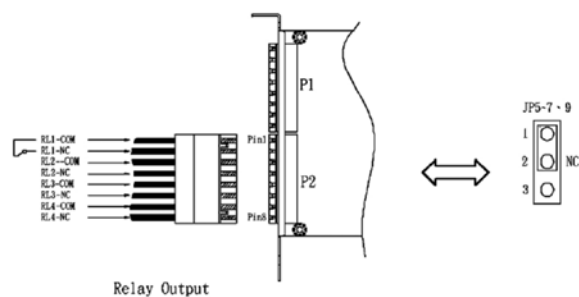


Output wiring

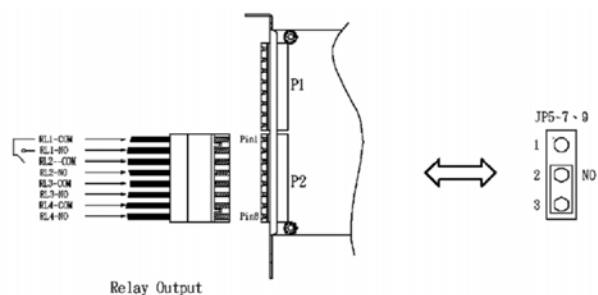
Diagram



NC (Normal Close) setting



NO (Normal Open) setting



Installation

1. Before installing the IOC-0404P into the system, remove the terminator housing from the IOC-0404P as illustrated in Figure 1.
2. Secure the IOC-0404P using a screw.
3. Connect the input/output cable to the terminator block as desired.
4. Plug the terminal block into the IOC-0404P as illustrated in Figure 2.
5. Check whether the INPUT/ OUTPUT module is fitted in the right terminal and right position.



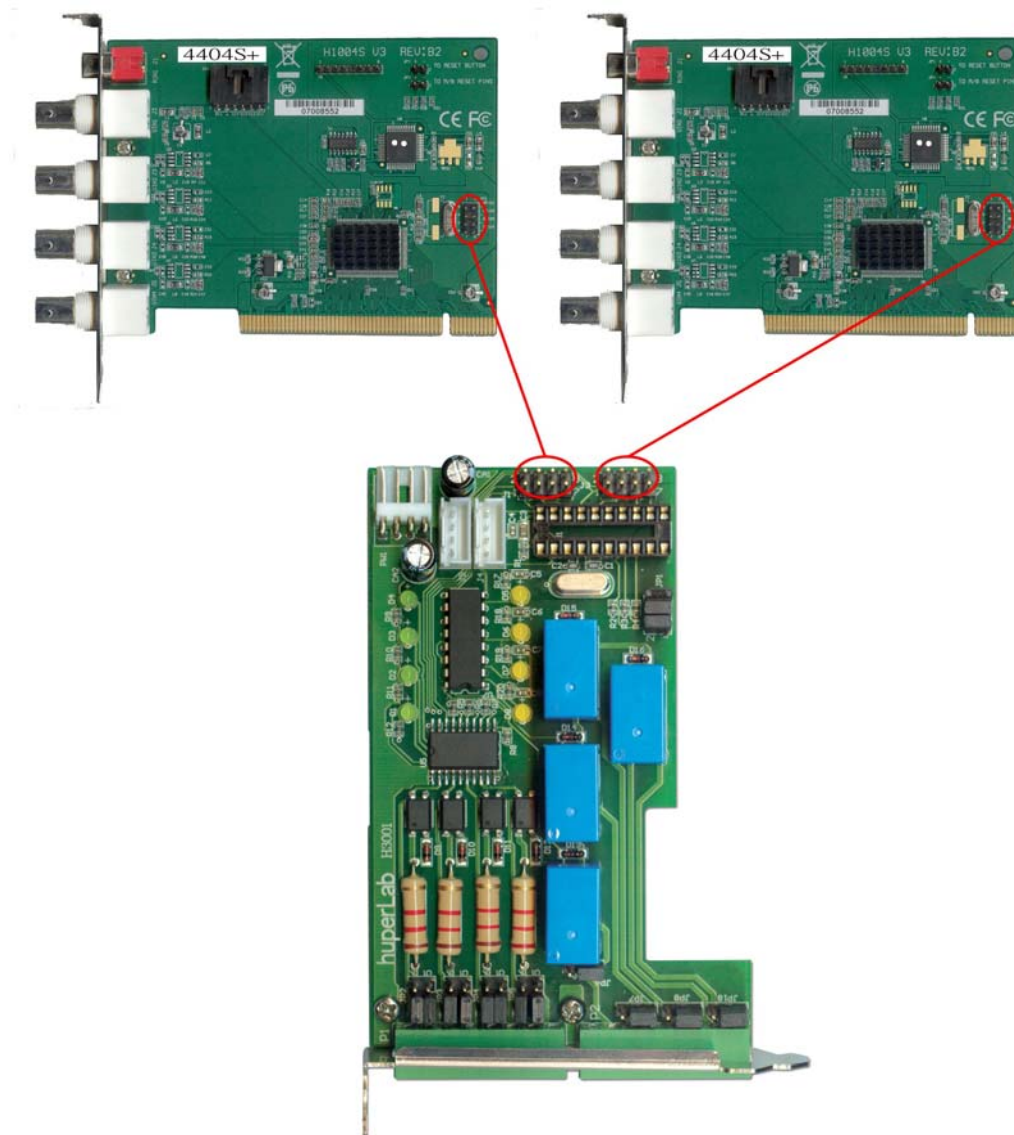
Figure 1



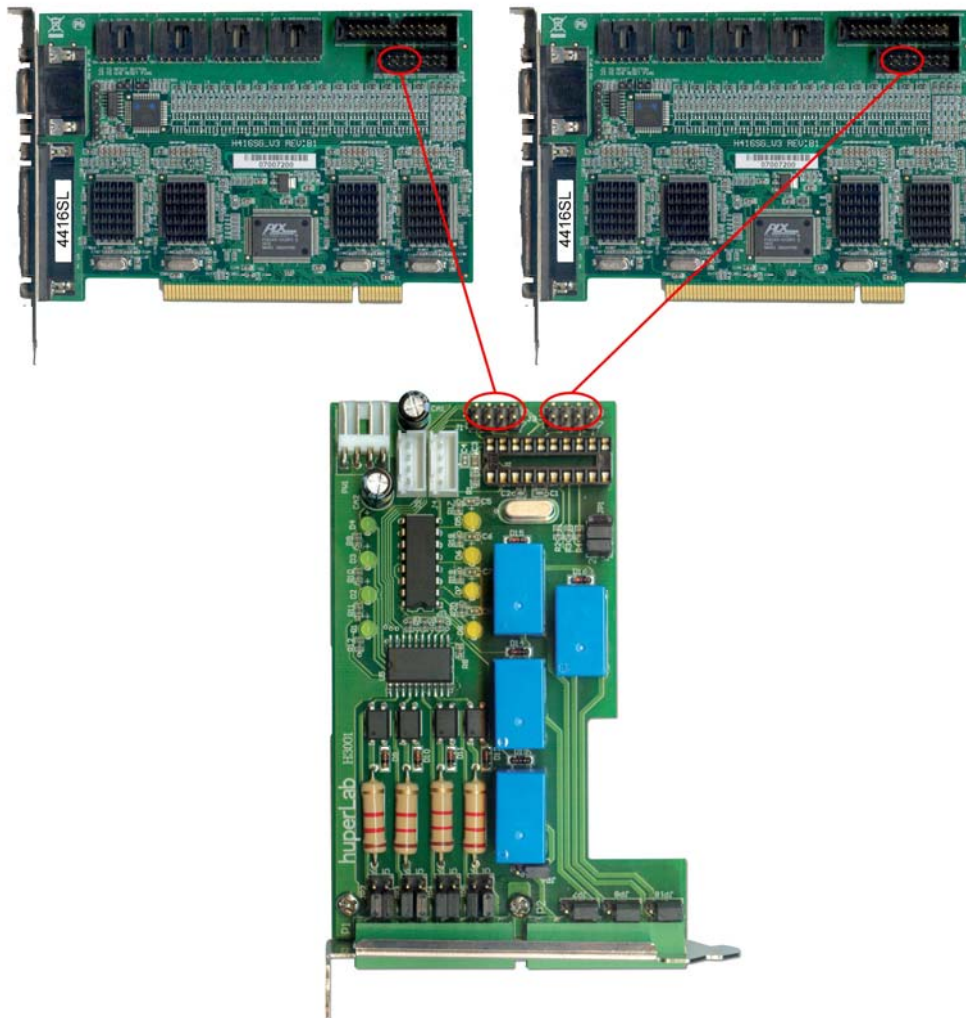
Figure 2

Host wiring

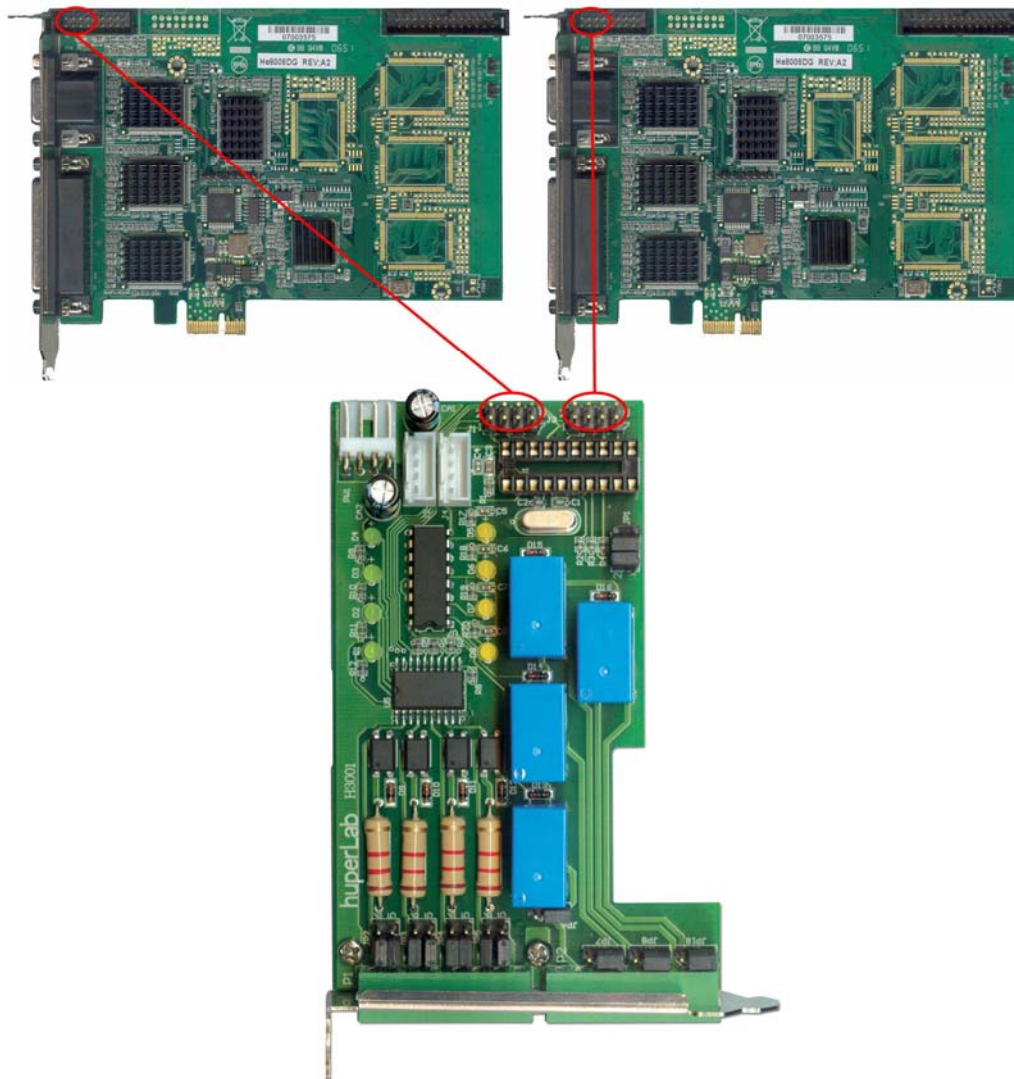
1. IOC-0404P to 4404S+: Take note that the red line of the cable should connect to Pin2 on the IOC-0404P card and the 4404S+ card.



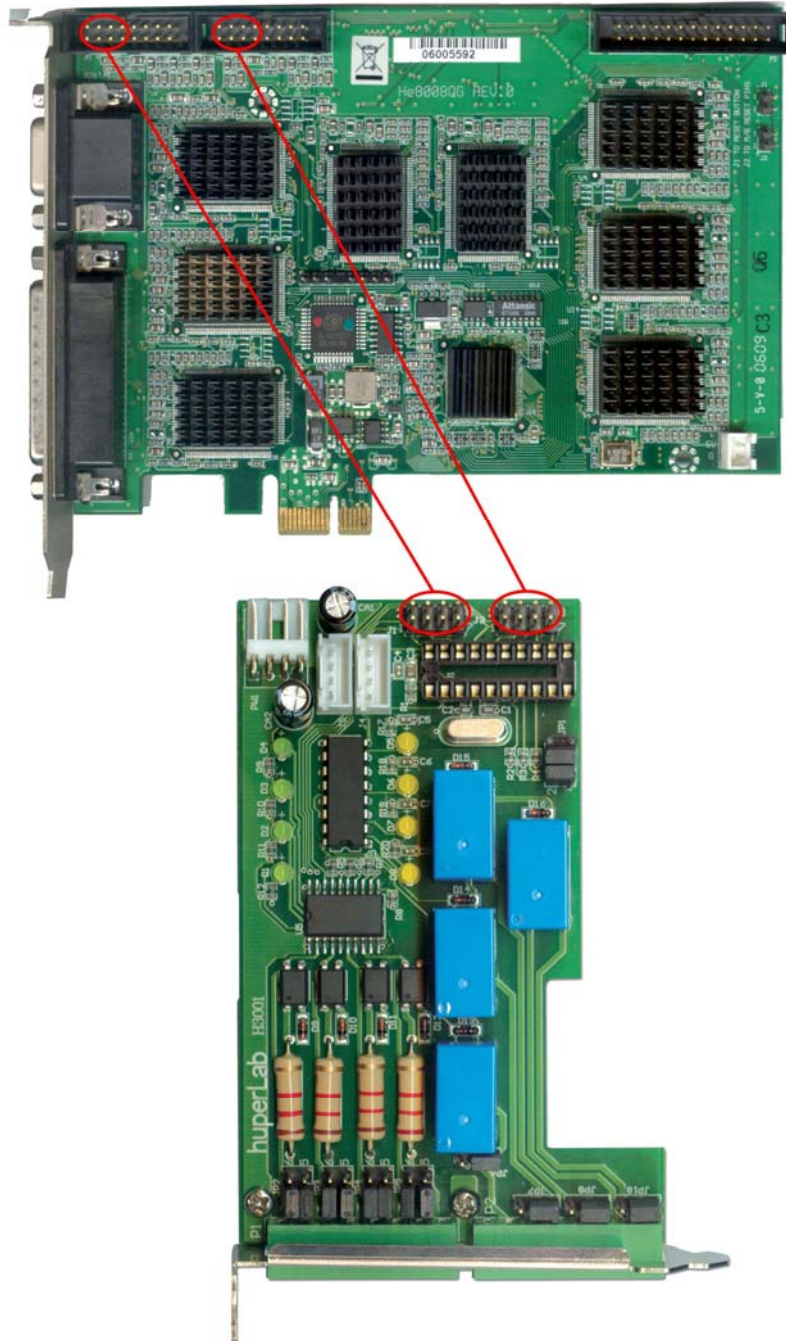
2. IOC-0404P to 4416SL: Take note that the red line of the cable should connect to Pin2 on the IOC-0404P card and to the "G" pin on the 4416SL card.
(The same wiring for 4416SB, 4408DB, 4416SG and 4408DG)



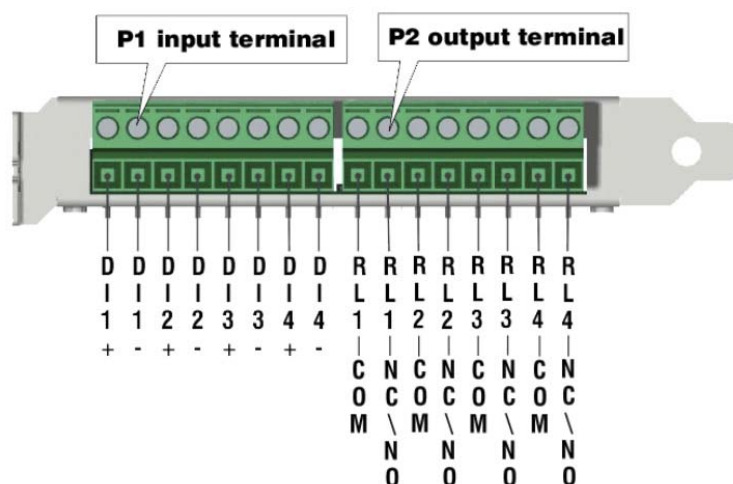
3. IOC-0404P to 4416S+-PCIe: Take note that the red line of the cable should connect to Pin2 on the IOC-0404P card and to the "G" pin on the 4416S+-PCIe card.



4. IOC-0404P to 4408Q-PCle: Take note that the red line of the cable should connect to Pin2 of the IOC-0404P card and to the "G" pin on the 4408Q-PCle card.



Pin Assignment



Pin no.	P1 General purpose input	Description
1	DI1+	Input channel 1 +
2	DI1-	Input channel 1 -
3	DI2+	Input channel 2 +
4	DI2-	Input channel 2 -
5	DI3+	Input channel 3 +
6	DI3-	Input channel 3 -
7	DI4+	Input channel 4 +
8	DI4-	Input channel 4 -

Pin no.	P2 Relay output	Description
1	RL1-COM	Relay output channel 1- common
2	RL1-NC/NO	Relay output channel 1- NC or NO
3	RL2-COM	Relay output channel 2- common
4	RL2-NC/NO	Relay output channel 2- NC or NO
5	RL3-COM	Relay output channel 3- common
6	RL3-NC/NO	Relay output channel 3- NC or NO
7	RL4-COM	Relay output channel 4- common
8	RL4-NC/NO	Relay output channel 4- NC or NO

Jumper & connector

Input module dry contact / optical isolation select (JP1 ~ 4)

Channels	Dry contact	Optical isolation
Channel 1 (JP1)	1-3,2-4	3-5,4-6
Channel 2 (JP2)	1-3,2-4	3-5,4-6
Channel 3 (JP3)	1-3,2-4	3-5,4-6
Channel 4 (JP4)	1-3,2-4	3-5,4-6

Relay output NC / NO select (JP5 ~7, 9)

Channels	Normal close (NC)	Normal open (NO)
Channel 1 (JP5)	1-2	2-3
Channel 2 (JP6)	1-2	2-3
Channel 3 (JP7)	1-2	2-3
Channel 4 (JP9)	1-2	2-3

ID selector (JP8)

Card ID	JP8
Card ID 0	1-2,3-4,5-6
Card ID 1	3-4,5-6
Card ID 2	1-2,5-6
Card ID 3	5-6
Card ID 4	1-2,3-4
Card ID 5	3-4
Card ID 6	1-2
Card ID 7	Open

Host interface-RS232 (J1)

Signals	J1
Transmission data (TXD)	1
Ground	2,3
Receive data (RXD)	4

Interface to next IOC-0404P-RS232 (J2)

Signals	J2
Transmission data (TXD)	1
Ground	2,3
Receive data (RXD)	4

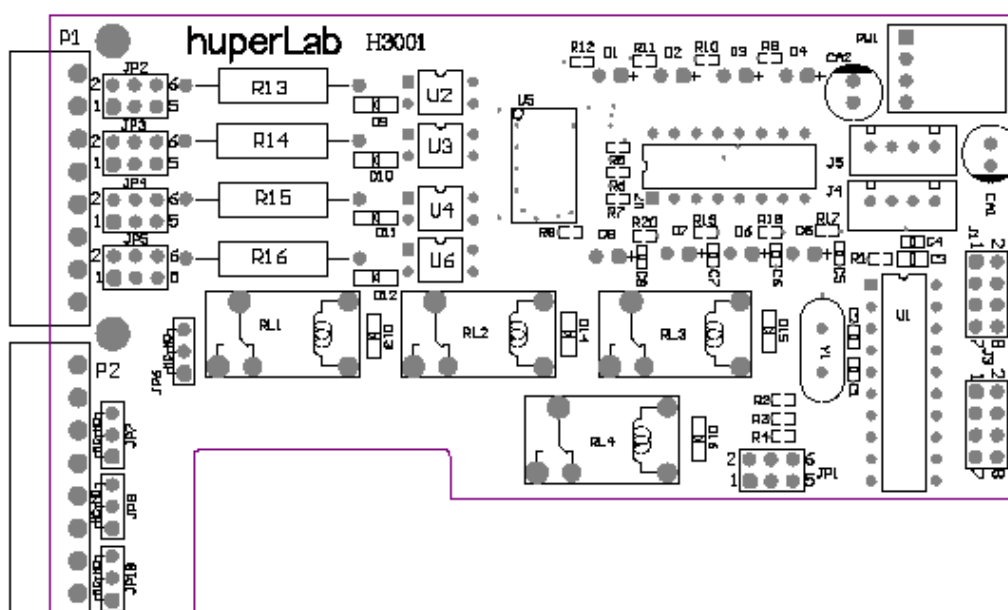
Host interface-GPIO (J3)

Signals	J3
Input channel 1-data	1
Input channel 1-ground	2
Input channel 2-data	3
Input channel 2-ground	4
Output channel 1-data	5
Output channel 1-ground	6
Output channel 2-data	7
Output channel 2-ground	8

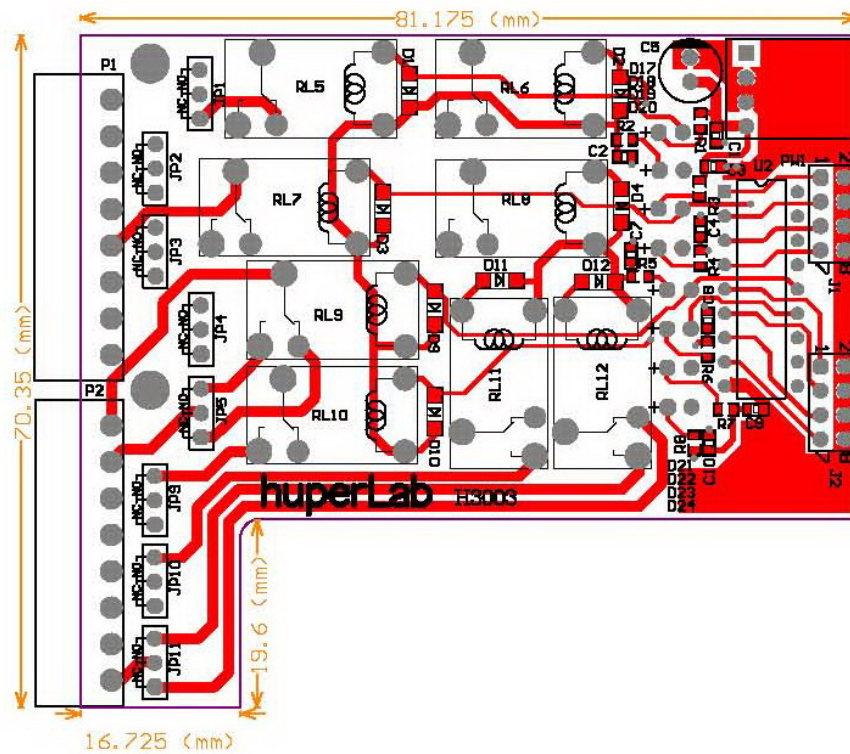
Host interface-GPIO (J4)

Signals	J4
Input channel 3-data	1
Input channel 3-ground	2
Input channel 4-data	3
Input channel 4-ground	4
Output channel 3-data	5
Output channel 3-ground	6
Output channel 4-data	7
Output channel 4-ground	8

Drawing and connection



IOP-0404P (H3001) Dimension

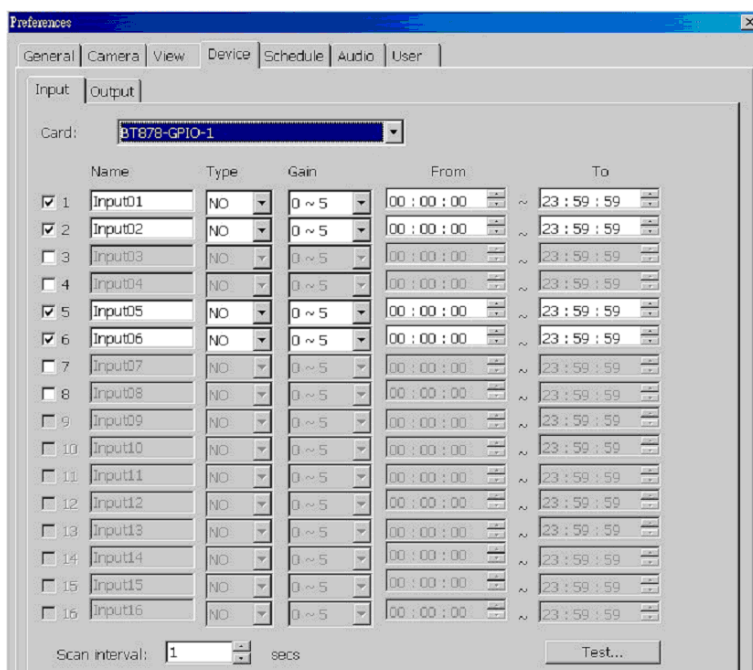


Settings at huperVision

After installing the IOC-0404P I/O card, you can open the Preferences dialog box: Device tab of huperVision to customize I/O settings.

Input Settings

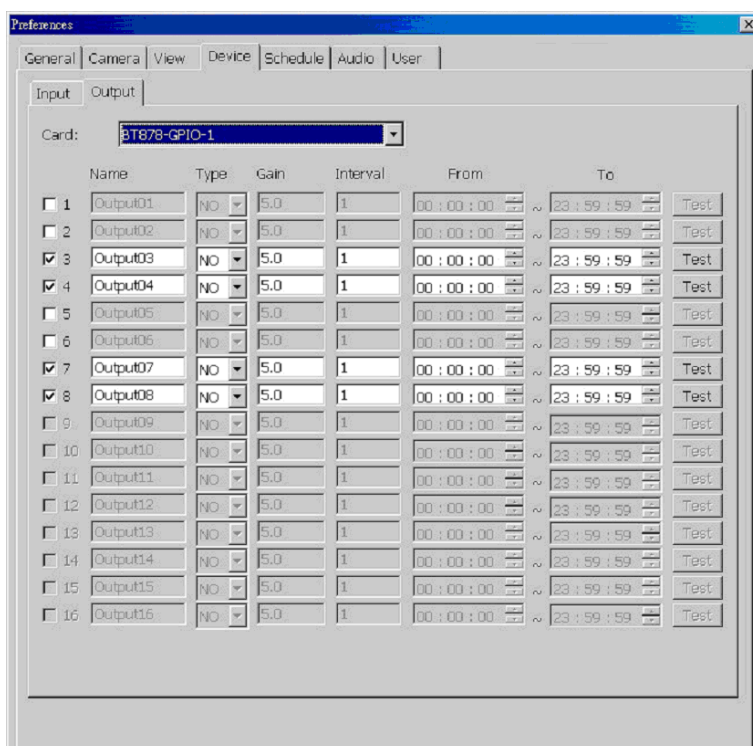
- Step 1: Open the Preferences dialog box, then click the Device/Input tab.
- Step 2: Select "BT878-GPIO-1" item from the Card list.
- Step 3: The 4 input ports of IOC-0404P map to input 1, 2, 5 and 6 in the settings.
Please do not select input 3, 4, 7 and 8 in the settings.
- Step 4: Click the Test button to open the "Sensor test" dialog box to examine correct input value and status.



Note: If IO-0404P connects to two capture cards, the number of input pins is 8. They are input 1, 2, 5, 6, 9, 10, 13 and 14.

Output Settings

- Step 1: Open the Preferences dialog box, then click the Device/Output
- Step 2: Select "BT878-GPIO-1" from the Card
- Step 3: The 4 output ports of IOC-0404P map to output 3, 4, 7 and 8 in the settings.
Please do not select output 1, 2, 5 and 6 in the settings.
- Step 4: Click the Test button to examine the response of connected output devices.



Note: If IO-0404P connects to two capture cards, there are total 8 output pins. They are output 3, 4, 7, 8, 11, 12, 15 and 16.

IOB-0805 BOX Guide

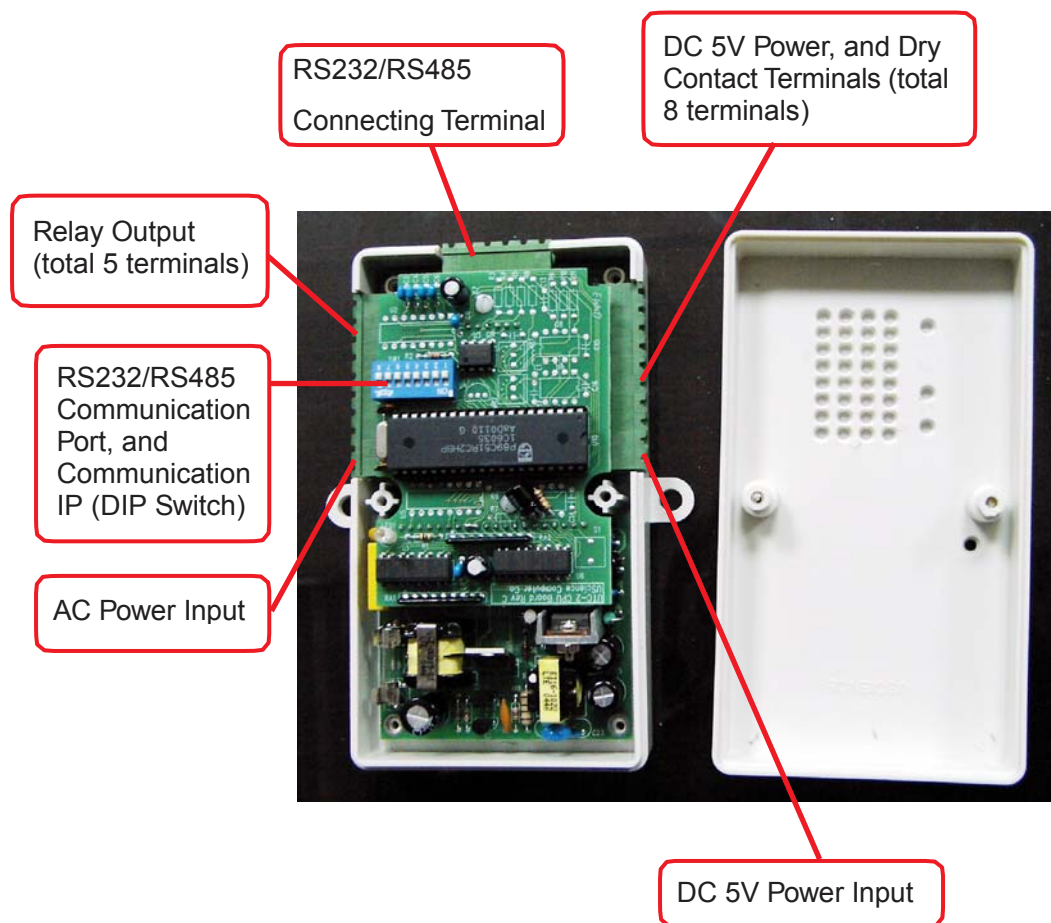


CE Approved

Technical Specifications

Digital Contact Input Isolation	8
5000Vrms Digital Level 0	Open
Digital Level 1	Close
Relay Output	5
Relay Type	Form A
Contact Rating	10A@125VAC, 5A@250VAC/30VDC Operate
Time	8 ms
Release Time	5 ms Dielectric
Strength	2500VAC Electrical
life(min.)	1×10^5
Mechanical life(min.)	1×10^7
Power Consumption	110 / 220 VAC or 5VDC, 5W°C
Communication Port	RS232 / RS485 (Protocol : Huper RTU ASCII) RS232:1200 – 115, 200 bps; RS485 : 1200 – 921.6K bps
Communication Distance	RS232: 50 feet RS485: 4000 feet

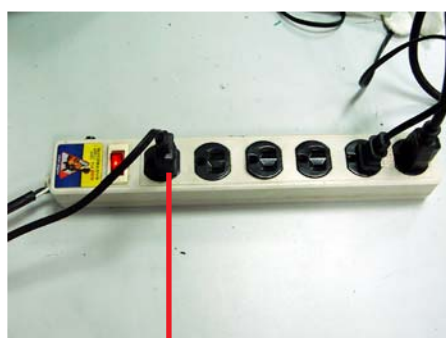
Input Power Supply	110 / 220 VAC or 5VDC, Digital Input;G 5/12/24 VDC
Dimension	150 x 100 x 40 mm
Weight	360 g
Approved Standards	CE



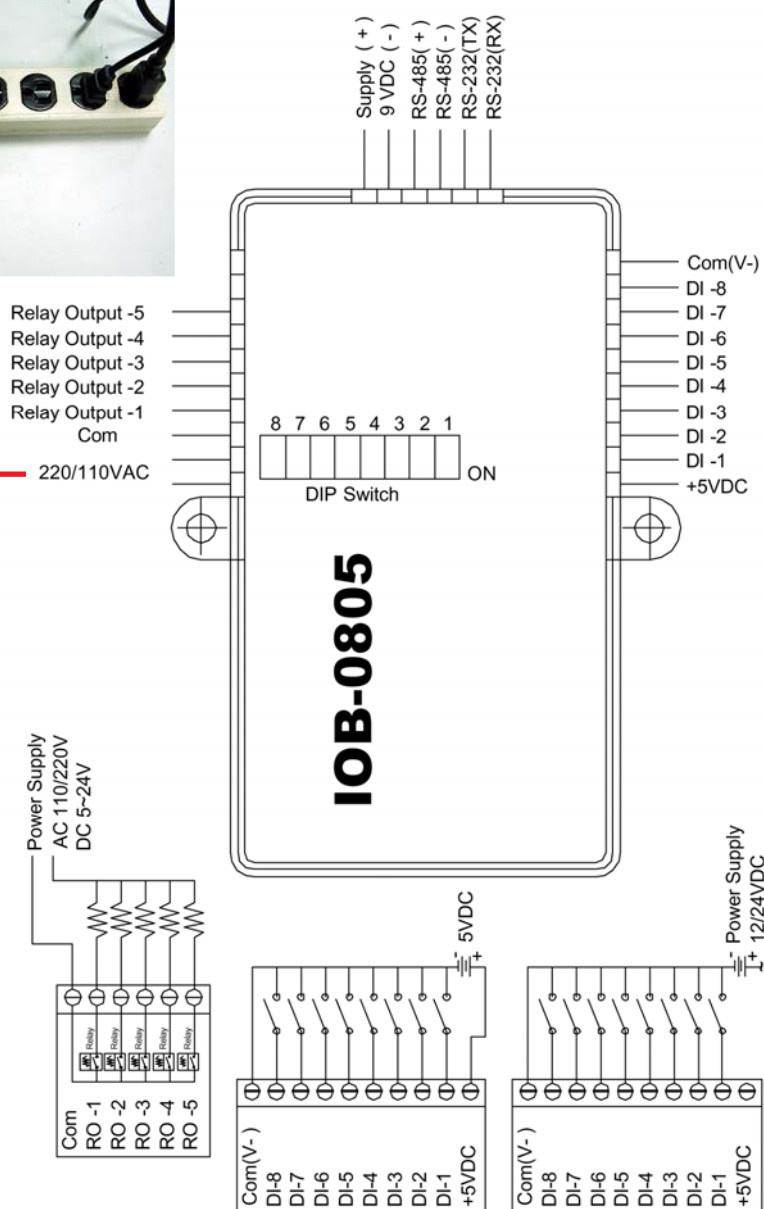
Installation

110 / 220 VAC Power Supply Wiring

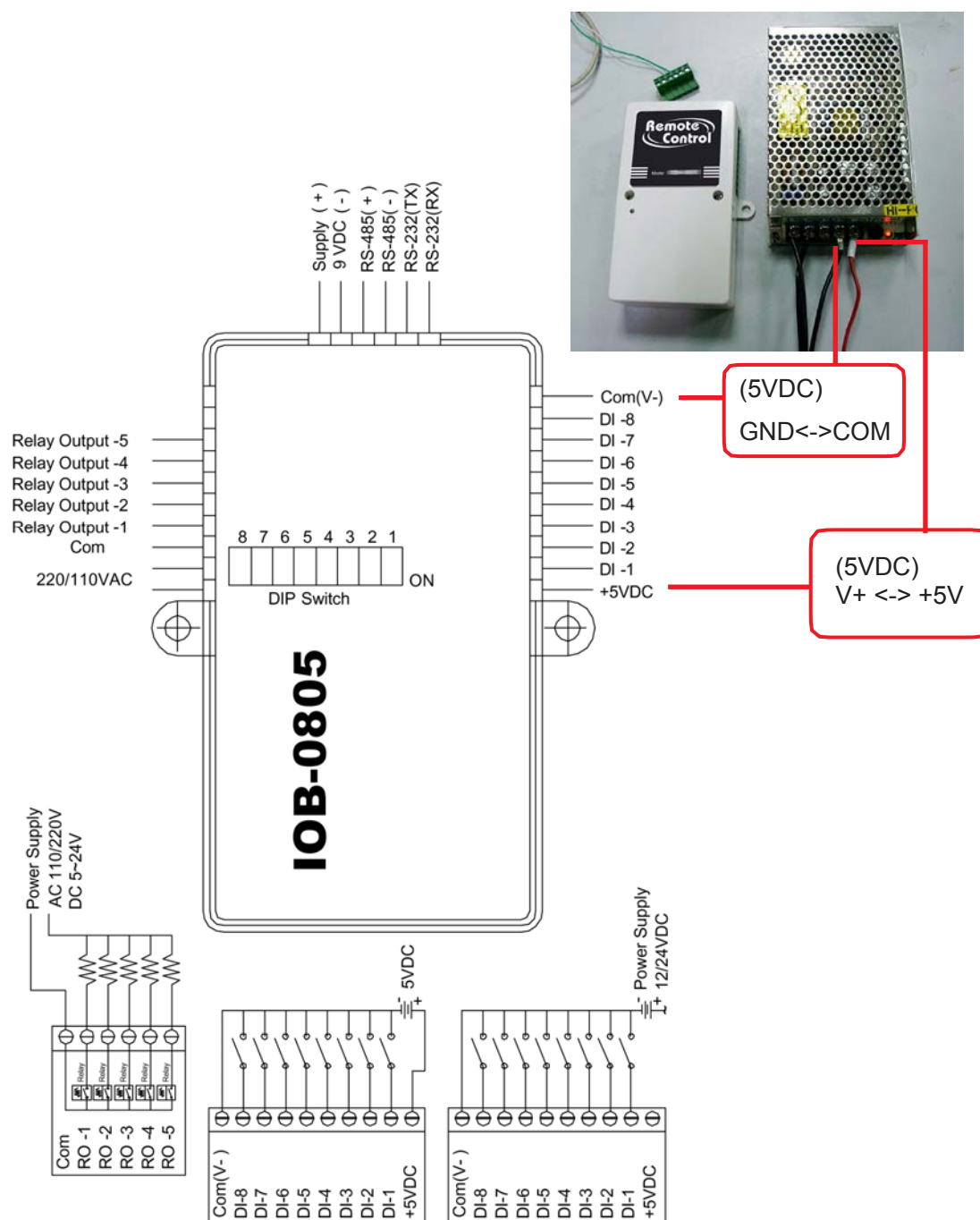
DC+5V power supply CANNOT be used together with the AC power supply.



Connect to AC
power supply



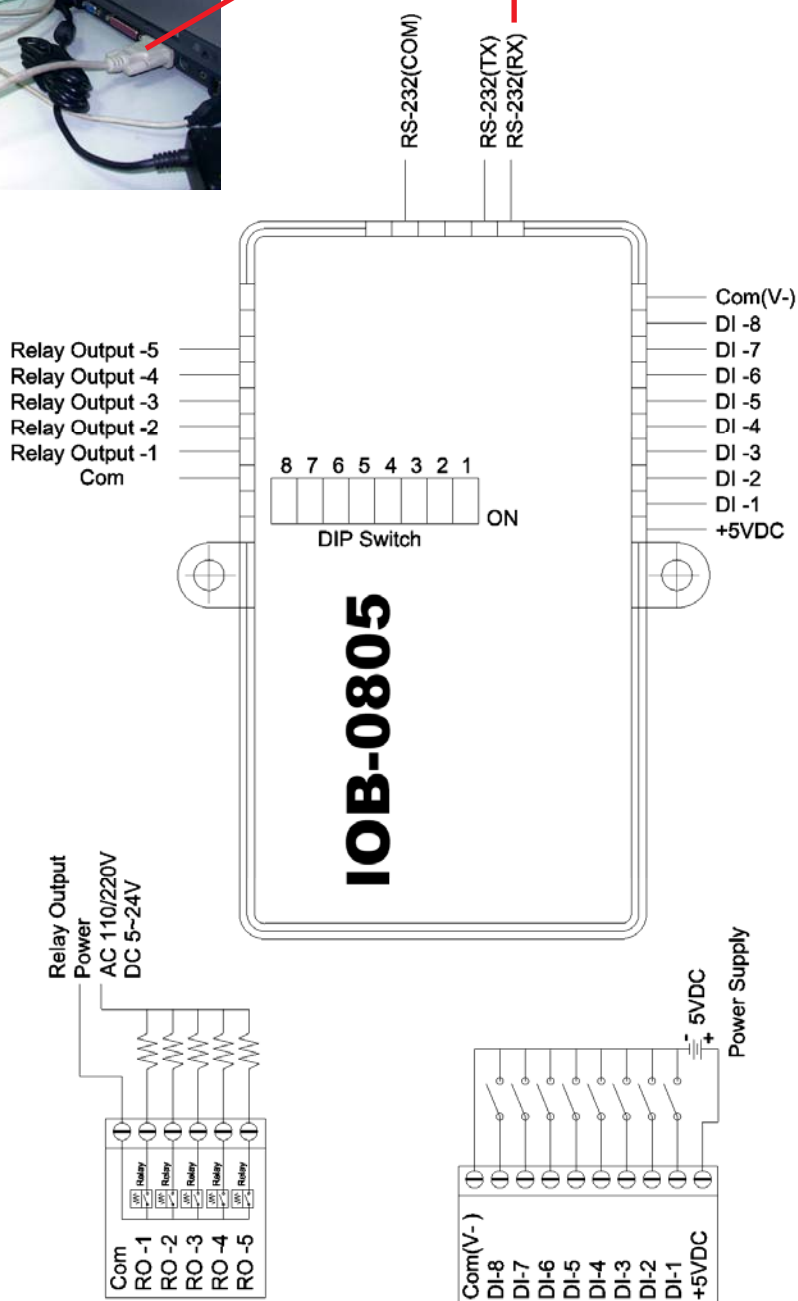
DC +5V Power Supply Wiring (When 5 relays are concurrently in use for a long time.
DC+5V power supply CANNOT be used together with the AC power supply.



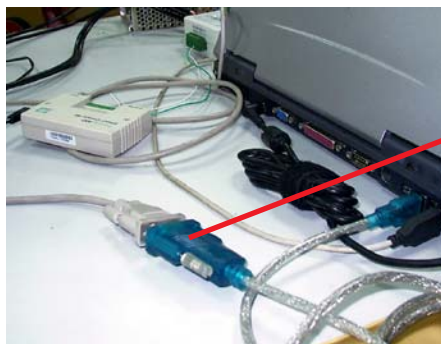
DVR Using RS232 Com Port



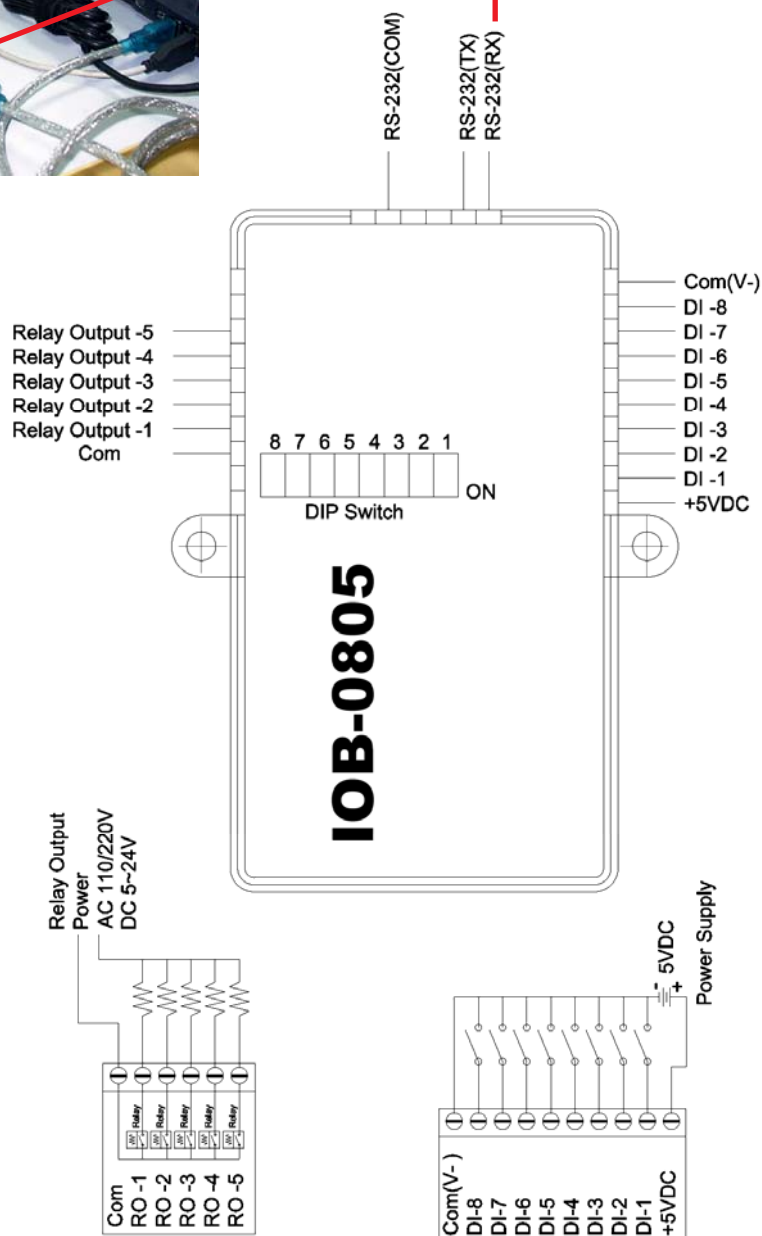
Connect to RS232 Port
(DVR using COM Port)



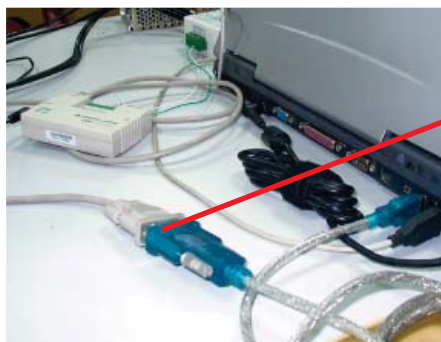
DVR Using USB to Connect to RS232 Com Port



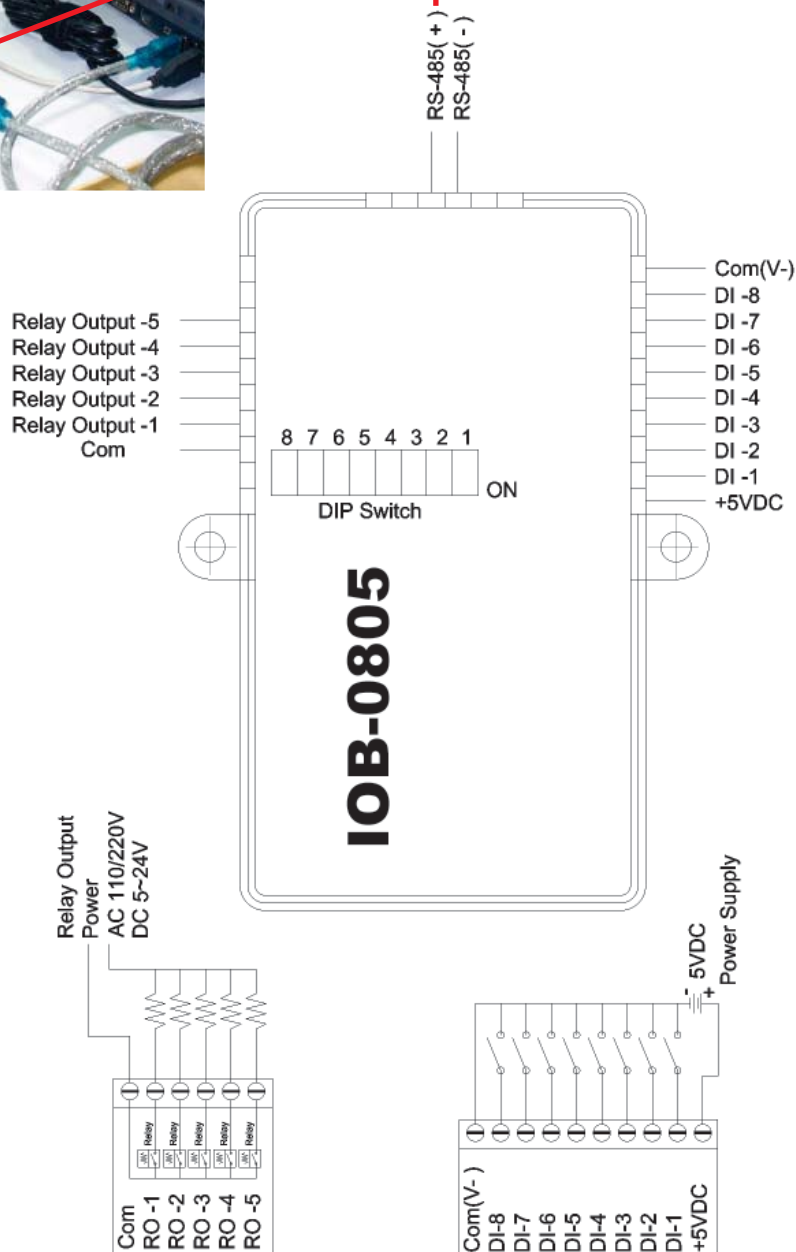
Connect to USB/RS232
converter (DVR without



DVR Using USB to Connect to RS485 Com Port

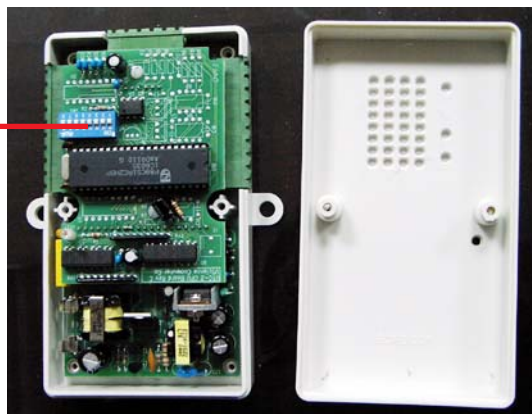


Connect to USB/RS485 converter
(DVR without COM Port or for
long distance usage)



RS232/RS485 Communication Port and IP (DIP Switch) Settings

RS232/RS485
Communication Port,
and DIP Switch



- DIP Switch Default: RS232, ID=1
- DIP Switch Setting: The DIP Switch is “OFF” by default which locates at the ID display side. Shift to the other side to turn the DIP Switch “ON.”

Options for Communication Ports:

DIP Switch Comm. Port	NO. 1	NO. 2
	NO. 1	NO. 2
RS-232	OFF	ON
OFF	ON	OFF

Notes:

NO.1 and NO.2 cannot be turned on at the same time; i.e. RS-232 and RS-485 cannot be used concurrently.

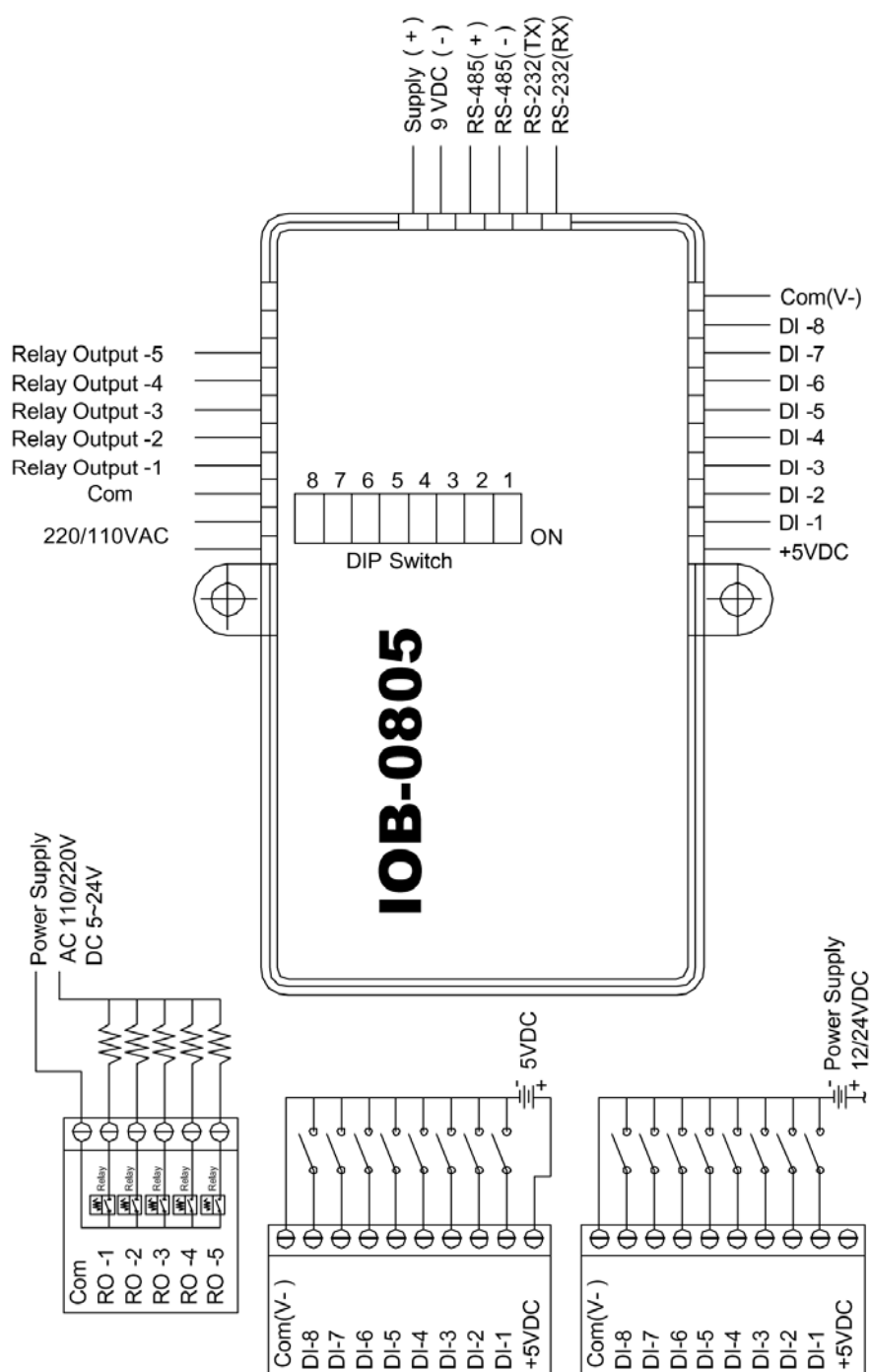
1. NO.3 ~ NO.8 are node ID (a binary system)
2. If NO.3 is ON and others are OFF, it means 01.
3. If NO.4 is ON and others are OFF, it means 02.
4. If NO.5 is ON and others are OFF, it means 04.
5. If NO.6 is ON and others are OFF, it means 08.
6. If NO.7 is ON and others are OFF, it means 16.
7. If NO.8 is ON and others are OFF, it means 32.

Example:

- If node ID is 1, the DIP Switch setting should be NO.3 is ON and others are OFF.
- If node ID is 3, the DIP Switch setting should be NO.3 and NO.4 are ON, and others are OFF.

- If node ID is 5, the DIP Switch setting should be NO.3 and NO.5 are ON, and NO.4 and others are OFF.
- If node ID is 7, the DIP Switch setting should be NO.3~NO.5 are ON, and NO.6 ~ NO.8 are OFF.
- The Node ID is the sum of DIP Switch NO.3 to NO.8.

Input/Output Pin



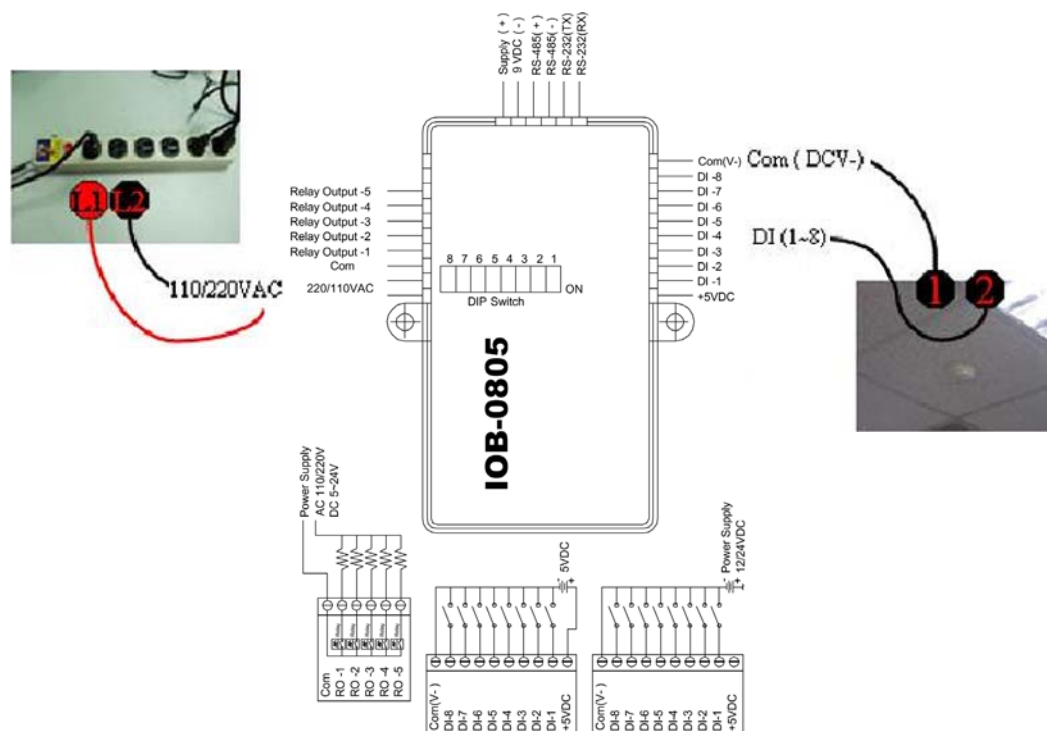
DI Input Control

1. Connect the COM port to –VDC. The COM port cannot be connected to +VDC. The acceptable voltage is DC5V~DC24V.
2. 8 DI controls share the same power supply which accepts different levels of voltage starting from DC5V to DC24V.
3. IOB-0805 provides 5VDC for DI input control when the power supply is 110/220 VAC. No extra DC power supply is necessary.
4. When 5 relay output controls are in long-term use, an extra 5VDC power supply is necessary
5. Please DO NOT turn on the AC power supply while the DC +5V is in use.

Application Example: Alarm Detection (Contact Input)

IOB-0805 provides 5VDC for DI input control when the power supply is 110/220 VAC. No extra DC power supply is necessary.

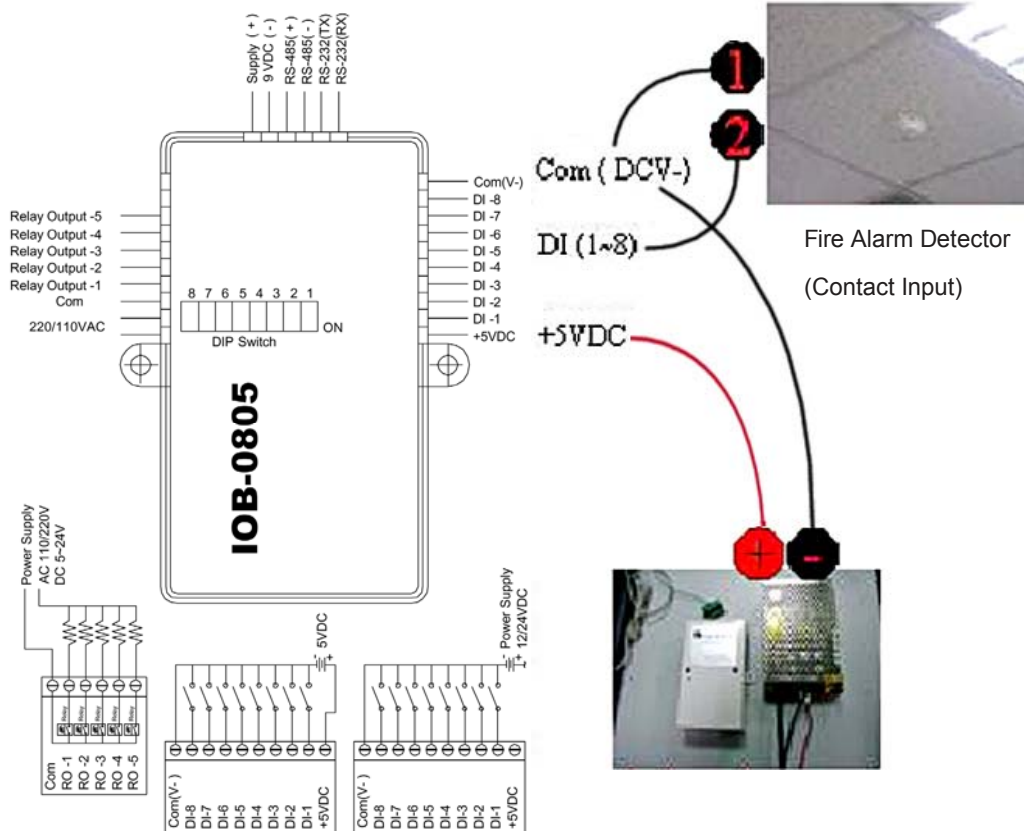
IOB-0805 DI Wiring Example A: Fire Alarm Detection (Contact Input) Using AC Power Supply



Application Example: Alarm Detection (Contact Input)

When 5 relay output controls are in long-term use, an extra 5VDC power supply is necessary.

IOB-0805 DI Wiring Example B: Fire Alarm Detection (Contact Input) Using DC Power Supply.

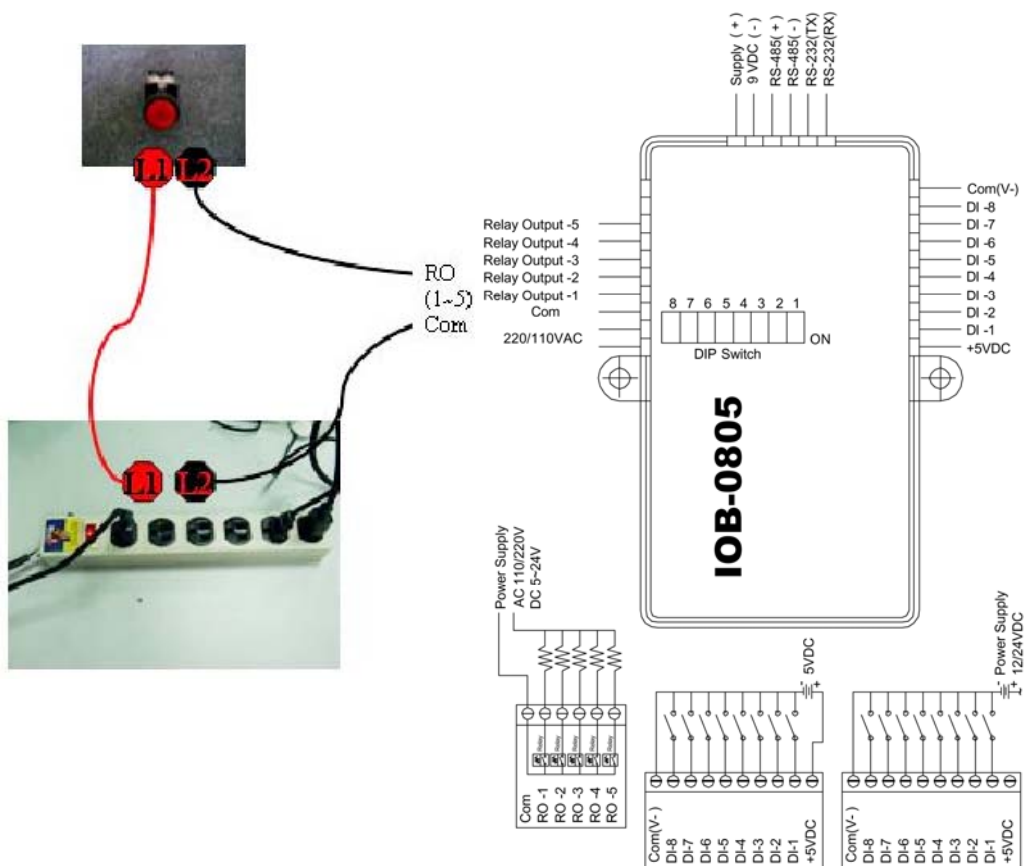


RO (5A Relay Dry Contact) Output Control

5 RO controls share the same power supply, and accept different levels of voltage. All the power supplies must be the same type, i.e. AC or DC.

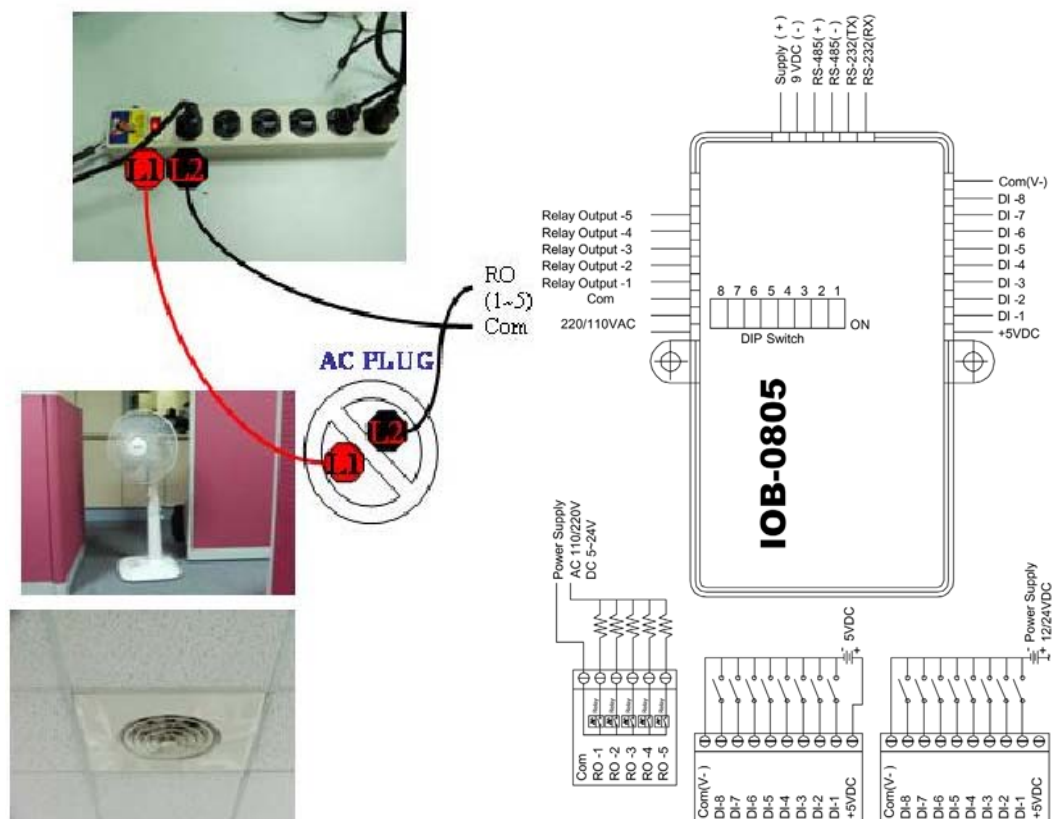
Application Example: Alarm Indicator (AC)

IOB-0805 RO Wiring Example A: Alarm Indicator (AC)



Application Example: Small Fan or TV Set (under 5A)

IOB-0805 RO Wiring Example B: Small Fan or TV Set (under 5A)



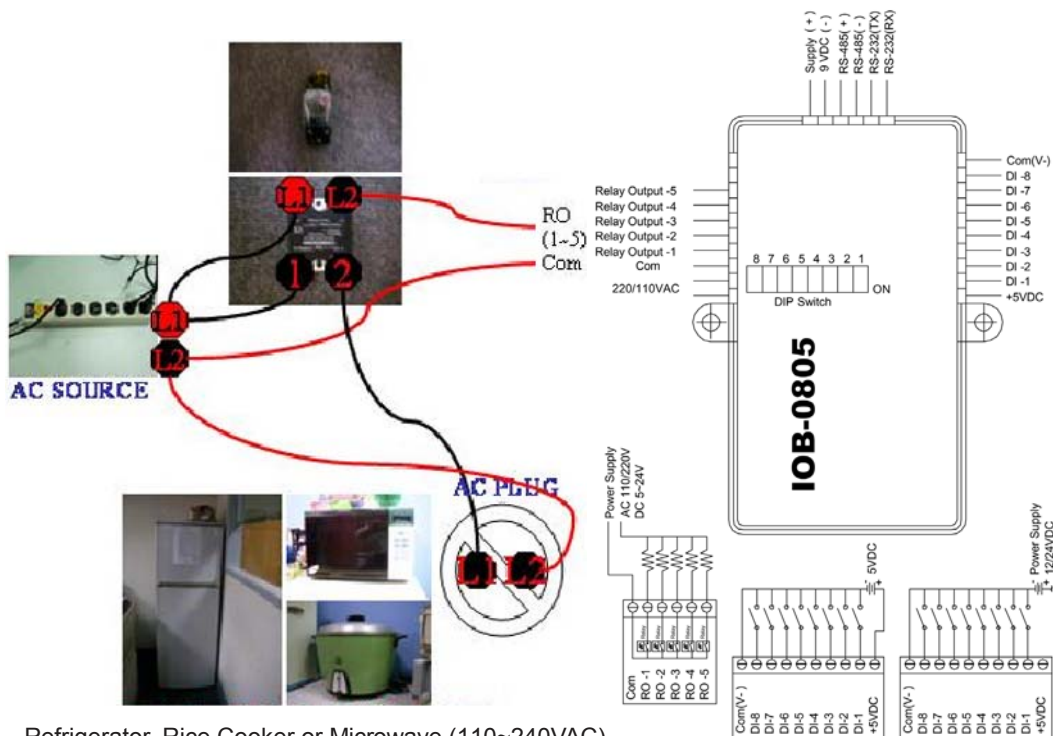
Application Example: Refrigerator, Rice Cooker or Microwave (70~240VAC)

Note: Please use the relay, SSR or AC power supply with enough contact ratings to avoid danger.

The AC wire should be 3.5 mm when the power consumption is above 15A.

1. For the appliances whose power consumption is under 15A, such as refrigerators, rice cookers, microwaves, washers, small coolers and heaters, the AC wire needs to be 2.0 mm.
2. As for the large-sized appliances, like air conditioners and heaters, etc. whose power consumption is above 15A, the AC wire must be at least 3.5 mm or above.

IOB-0805 RO Wiring Example C: 15A/240V AC SSR or Relay (AC Control)



Refrigerator, Rice Cooker or Microwave (110~240VAC)

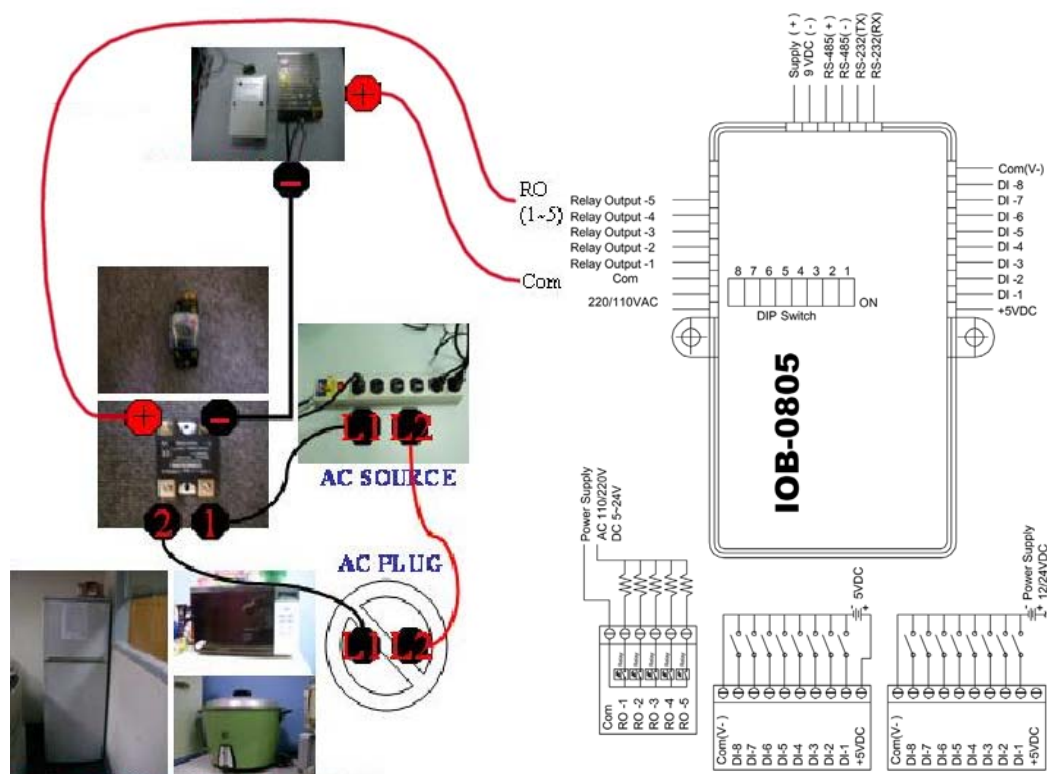
Application Example: Refrigerator, Rice Cooker or Microwave (70~240VAC)

Note: Please use the relay, SSR or AC power supply with enough contact ratings to avoid danger.

The AC wire should be 3.5 mm when the power consumption is above 15A.

1. For the appliances whose power consumption is under 15A, such as refrigerators, rice cookers, microwaves, washers, small coolers and heaters, the AC wire needs to be 2.0 mm.
2. As for the large-sized appliances, like air conditioners and heaters, etc. whose power consumption is above 15A, the AC wire must be at least 3.5 mm or above.

IOB-0805 RO Wiring Example D: 15A/240V AC SSR or Relay (DC Control)

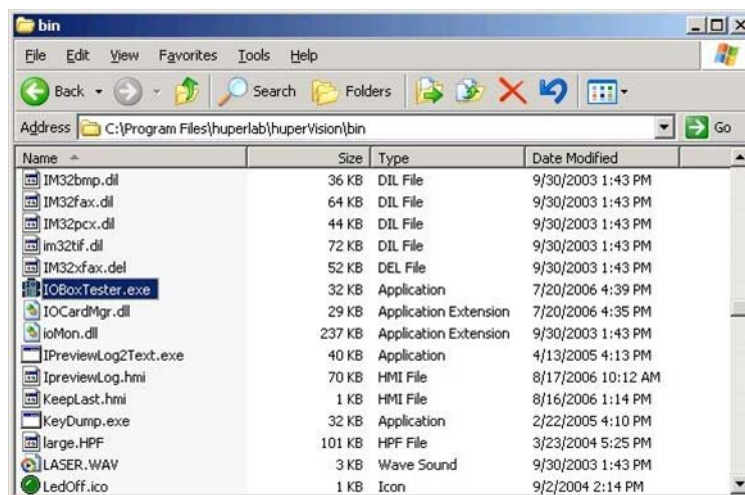


Refrigerator, Rice Cooker or Microwave (110~240VAC)

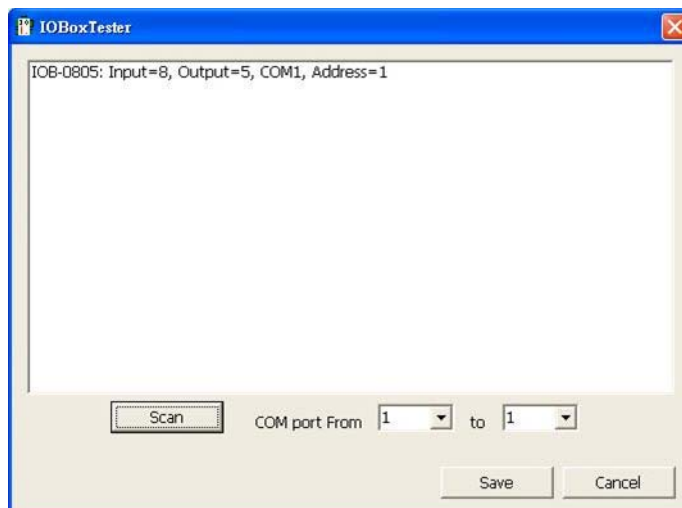
Settings at huperVision

After installing the IOB-0805 I/O box, follow the steps below.

1. Please find the bin folder in the directory C:/Program Files/huperLab/huperVision/bin. (Close the DVR server).
2. Open the bin folder, then find the IOBoxTester.exe file. (See below).



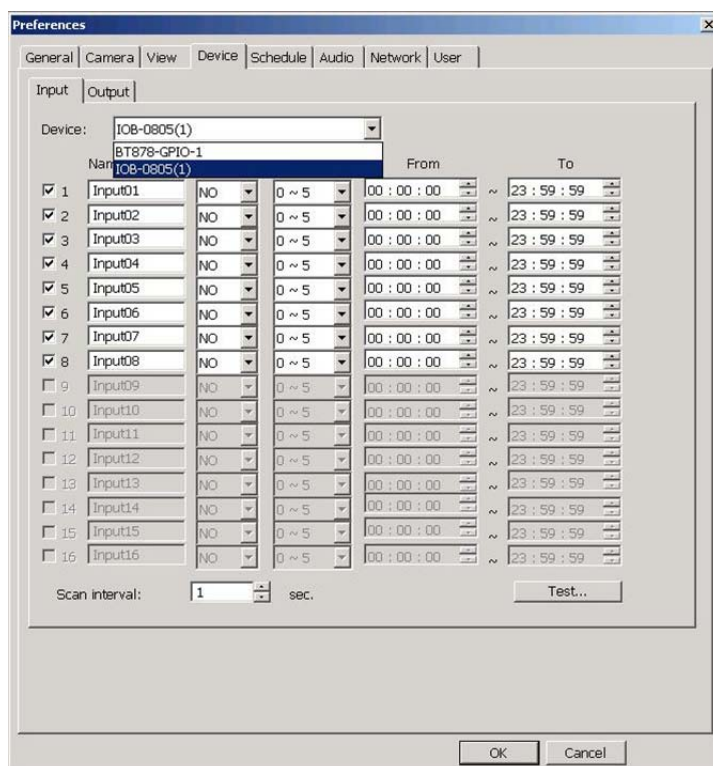
3. Double-click to run IOBoxTester.exe, then click the Scan button (see below).



4. After the scan is completed, click the Save button.
5. After you restart the DVR site server. IO Box will be detected by the DVR in the Device tab of the Preferences dialog box.

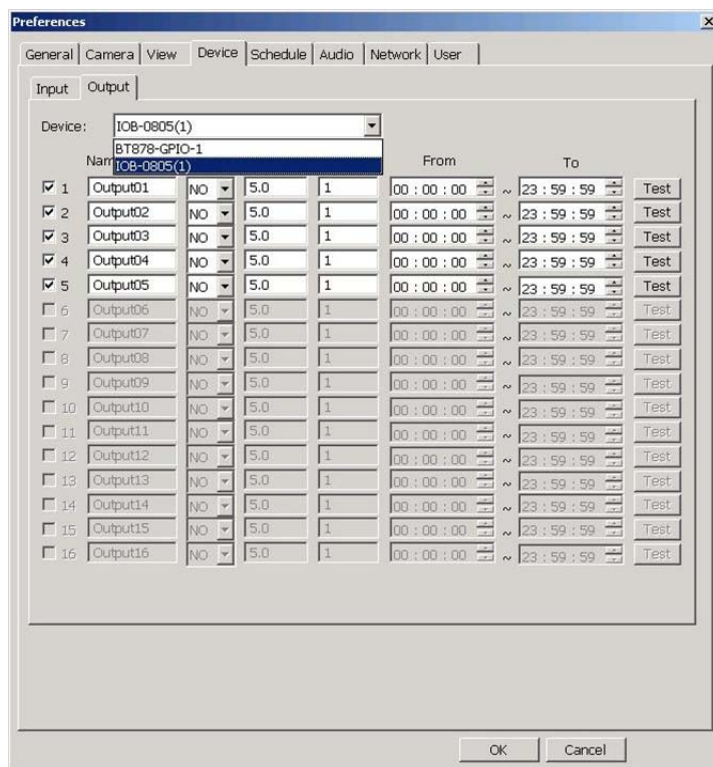
Input Settings

- Step 1: Open the Preferences dialog box, click the Device/Input tab.
- Step 2: Select the item "IOB-0805(1)" from the Device drop-down list.
- Step 3: 8 input ports are then displayed, and their assigned numbers start from 1 to 8.



Output Settings

- Step 1: Open the Preferences dialog box, click the Device/Output tab.
- Step 2: Select the item "IOB-0805(1)" from the Device drop-down list.
- Step 3: 5 output ports are then displayed, and their assigned numbers start from 1 to 5.



IOB-1616 BOX Guide

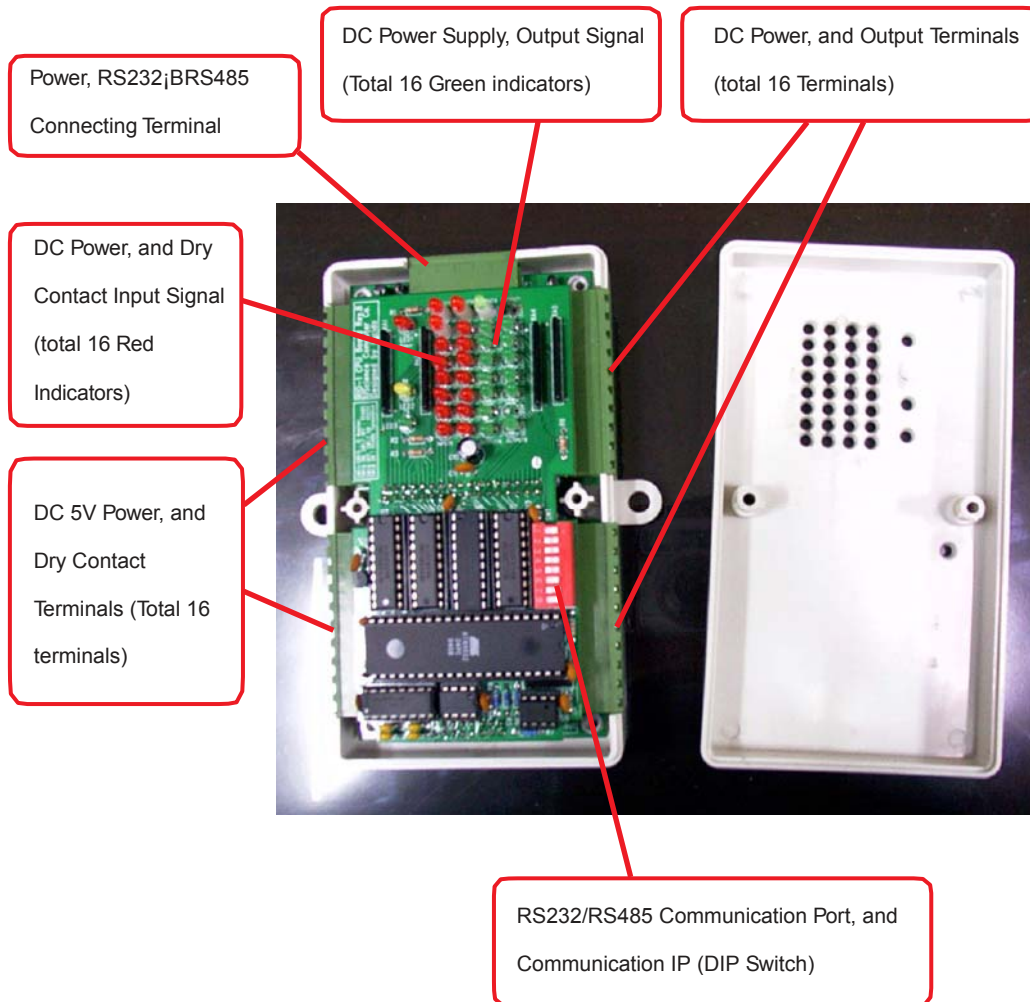


CE Approved

Technical Specifications

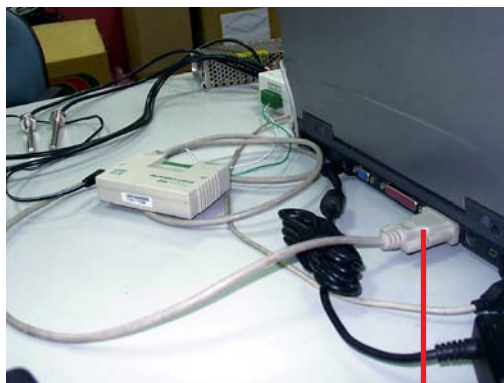
Digital Contact Input Isolation	16
5000Vrms Digital Level 0	Open
Digital Level 1	Close
Open Collector Output	16
Isolation	5000 Vrms
Load Voltage	5/12/24 VDC
Max Load Current	500 ma (2A Per Common Group) Power
Consumption	5W
Communication port	RS232 / RS485 (Protocol : Huper RTU ASCII) RS232 : 1200 – 115,200 bps ; RS485 : 1200 – 921.6K bps
Communication distance	RS232 : 50 feet RS485 : 4000 feet
Input Power Supply	12 VDC (9 ~ 12V), 5 W
Dimension	150 x 100 x 40 mm
Weight	360 g
Approved Standards	CE

Introduction



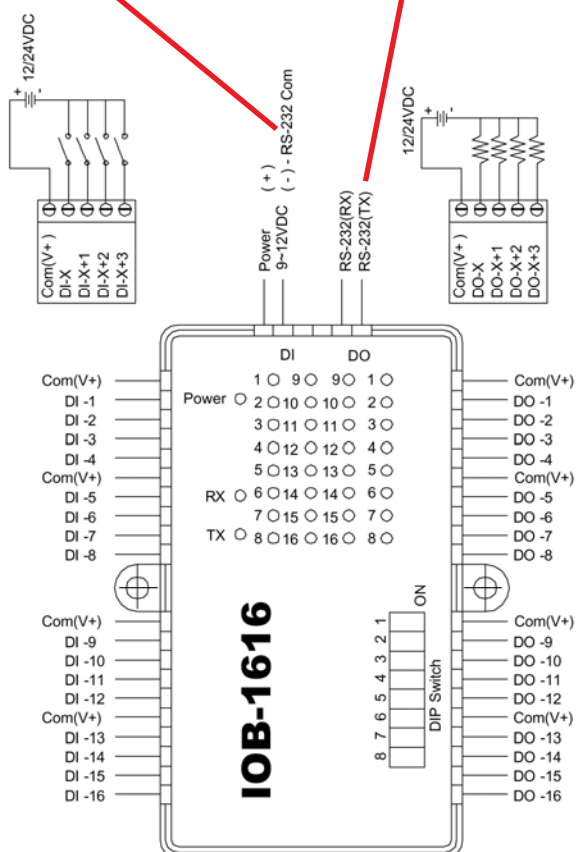
Installation

DVR Using RS232 Com Port



Connect to DC power supply

Connect to RS232 Port (DVR



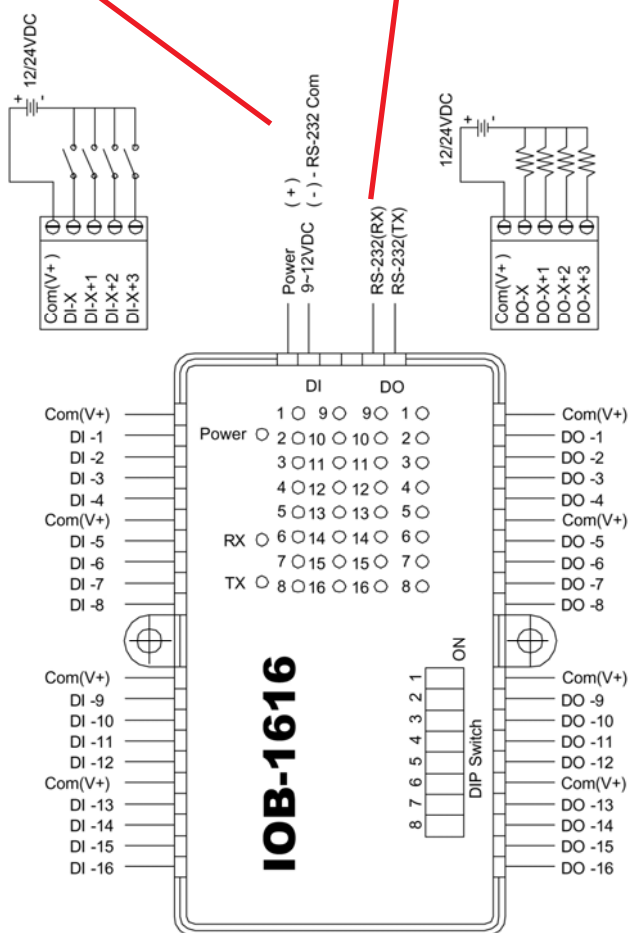
DVR Using USB to Connect to RS232 Com Port



Connect to DC power supply (Power consumption: 12VDC)



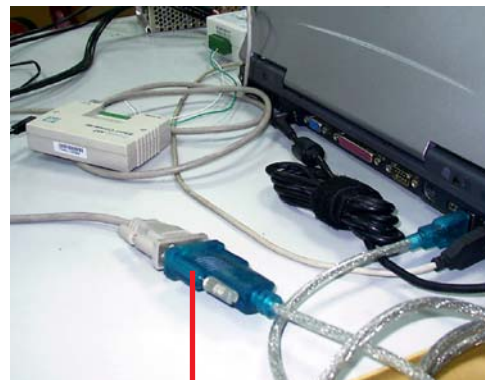
Connect to USB/RS232 converter (DVR without COM Port)



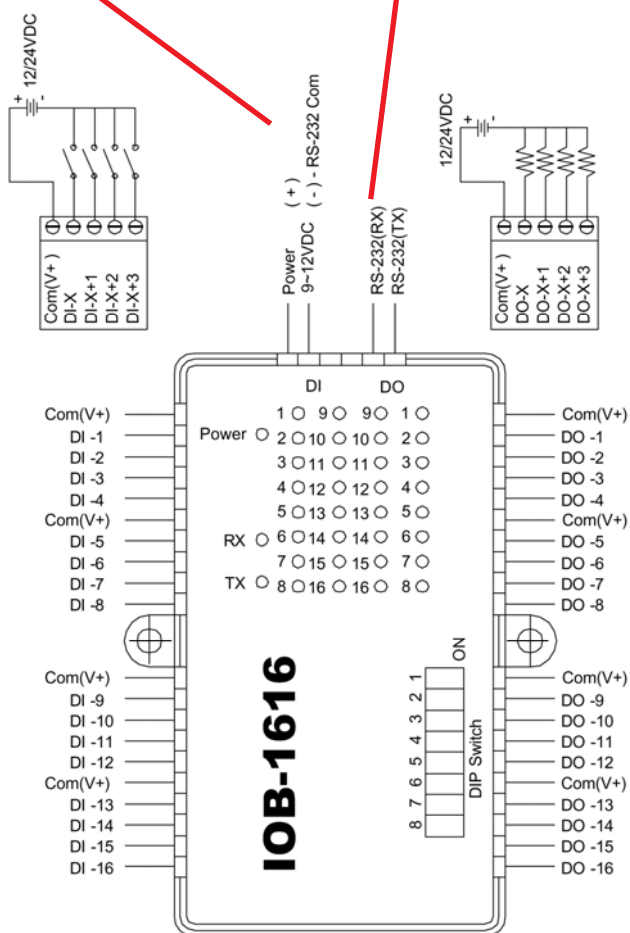
DVR Using USB to Connect to RS232 Com Port



Connect to DC power supply (Power consumption: 12VDC)



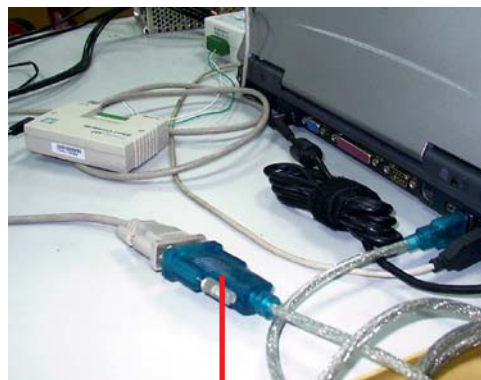
Connect to USB/RS232 converter (DVR without COM Port)



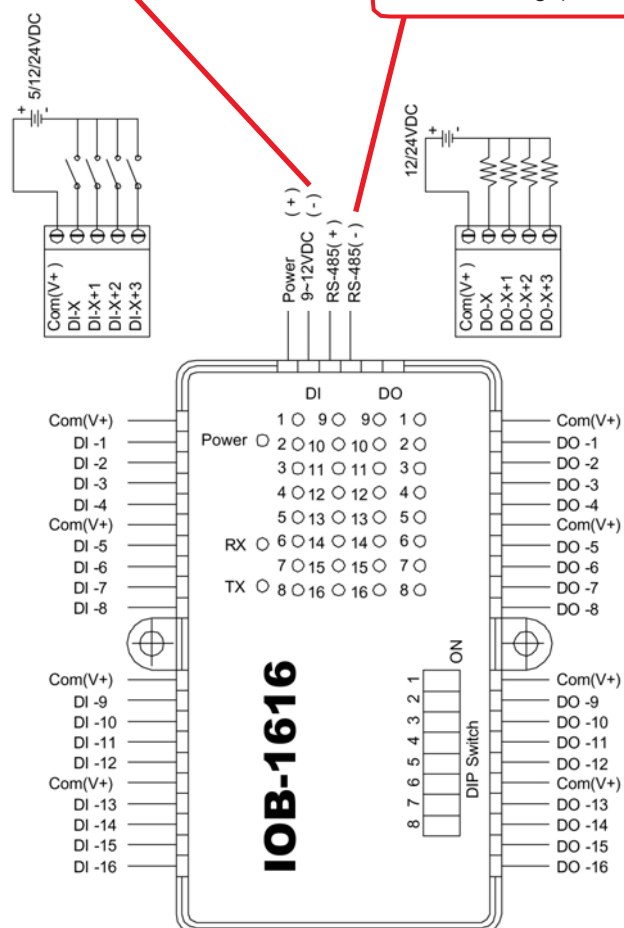
DVR Using USB to Connect to RS485 Com Port



Connect to DC power supply
(Power consumption: 12VDC)

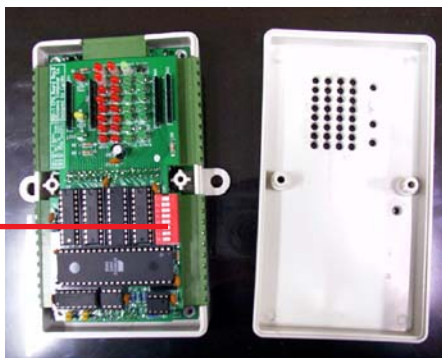


Connect to USB/RS485 converter
(DVR without COM Port or for long distance usage)



RS232/RS485 Communication Port and IP (DIP Switch) Settings

RS232/RS485
Communication Port, and
DIP Switch



- DIP Switch Default: RS232, ID=1
- DIP Switch Setting: The DIP Switch is “OFF” by default which locates at the ID display side. Shift to the other side to turn the DIP Switch “ON.”

Options for Communication Ports:

DIP Switch Comm. Port	NO. 6	NO. 7	NO. 8
RS-232	OFF	ON	OFF
RS-485	ON	OFF	ON

Notes:

NO.6, NO.7 and NO.8 cannot be turned on at the same time; i.e. RS-232 and RS-485 cannot be used concurrently.

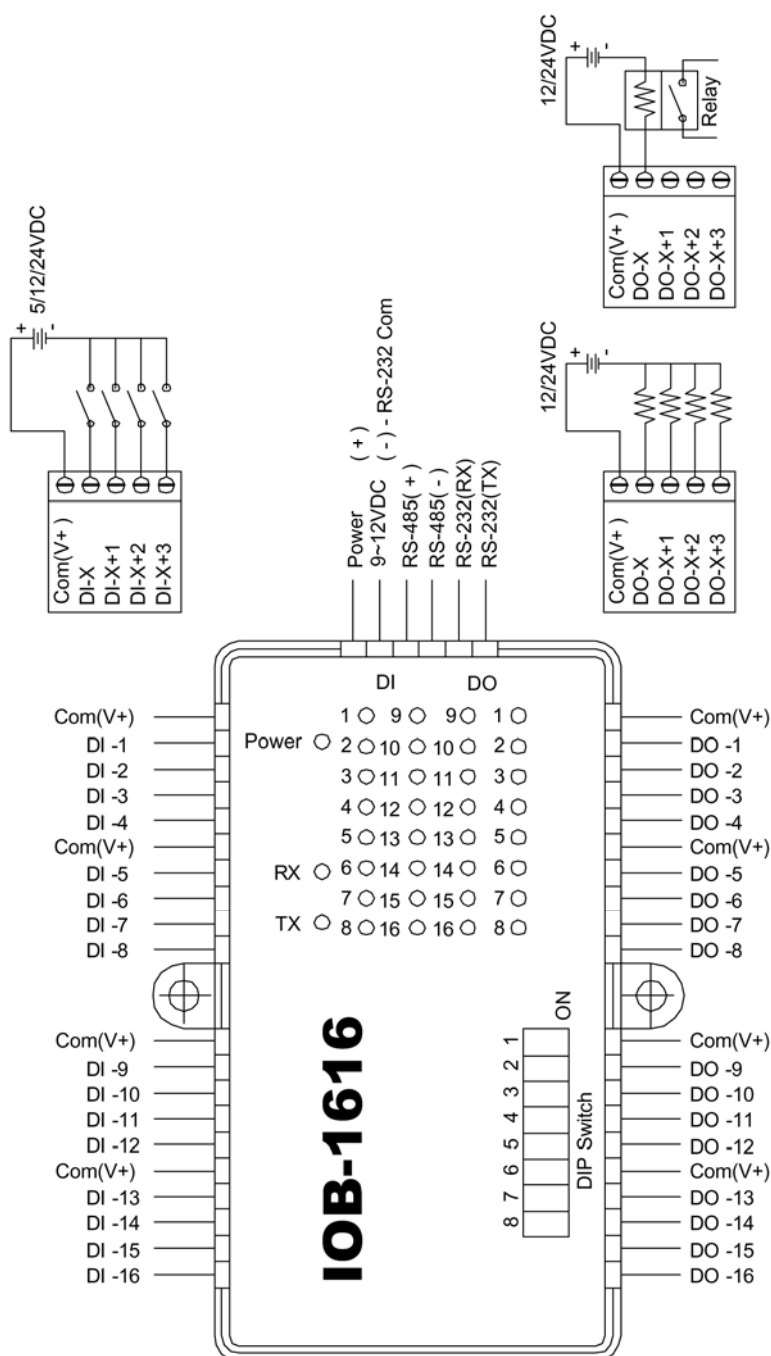
1. NO.1 ~ NO.5 are node ID (a binary system)
2. If NO.1 is ON and others are OFF, it means 01.
3. If NO.2 is ON and others are OFF, it means 02.
4. If NO.3 is ON and others are OFF, it means 04.
5. If NO.4 is ON and others are OFF, it means 08.
6. If NO.5 is ON and others are OFF, it means 16.

Example:

- If node ID is 1, the DIP Switch setting should be NO.1 is ON and others are OFF.
- If node ID is 3, the DIP Switch setting should be NO.1 and NO.2 are ON, and others are OFF.
- If node ID is 5, the DIP Switch setting should be NO.1 and NO.3 are ON, NO.2, NO.4 and NO.5 are OFF.

- If node ID is 7, the DIP Switch setting should be NO.1, NO.2 and NO.3 are ON, NO.4 and NO.5 are OFF.
- The Node ID is the sum of DIP Switch NO.1 to NO.5.

Input/Output Pin

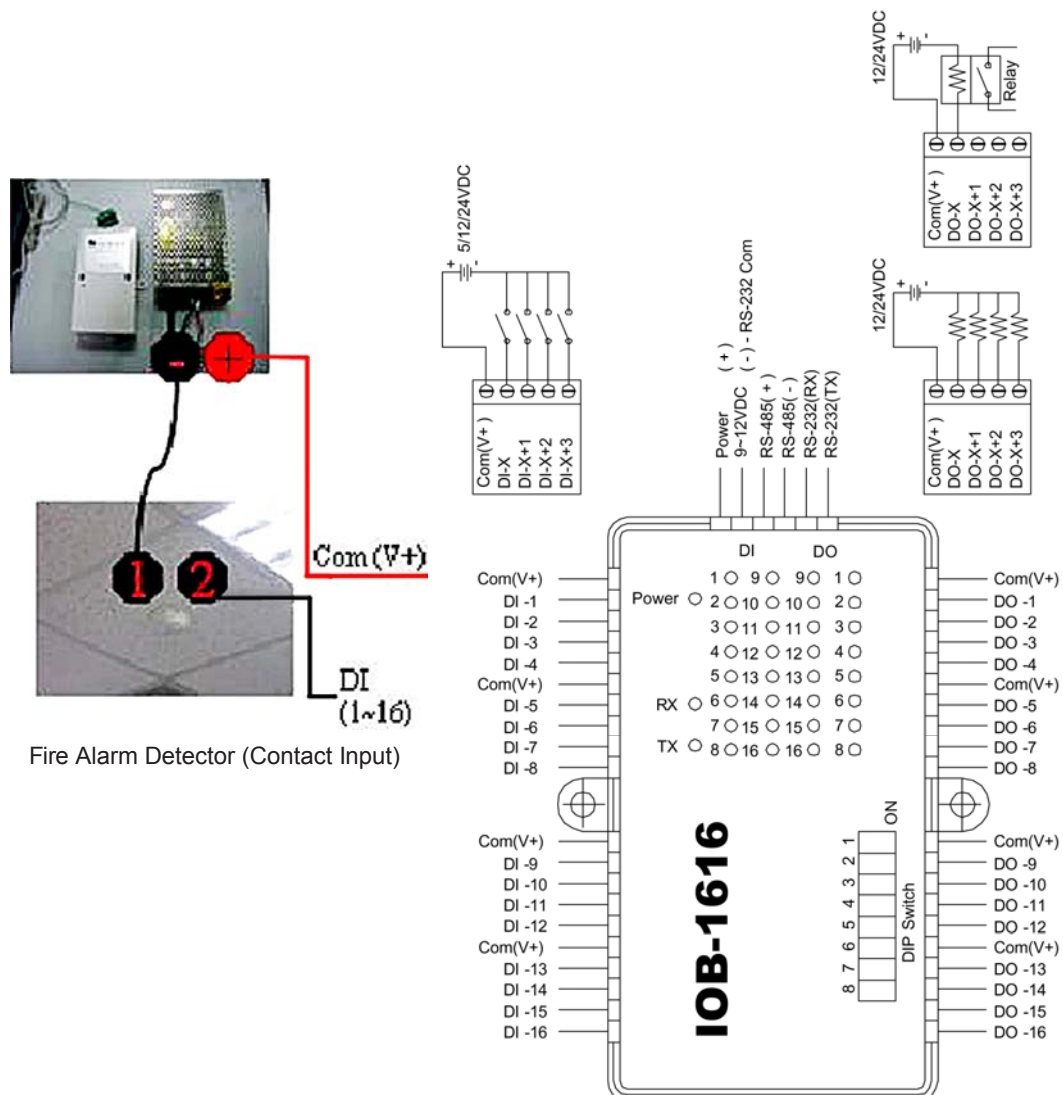


DI Input Control

1. Connect the COM port to +VDC. It's not allowed to connect to -VDC. The acceptable voltage is DC5V~DC24V.
2. 4 DI controls share the same power supply which accepts different levels of voltage starting from DC5V to DC24V

Application Example: Alarm Detection (Contact Input)

IOB-1616 DI Wiring Example A: Fire Alarm Detection (Contact Input)

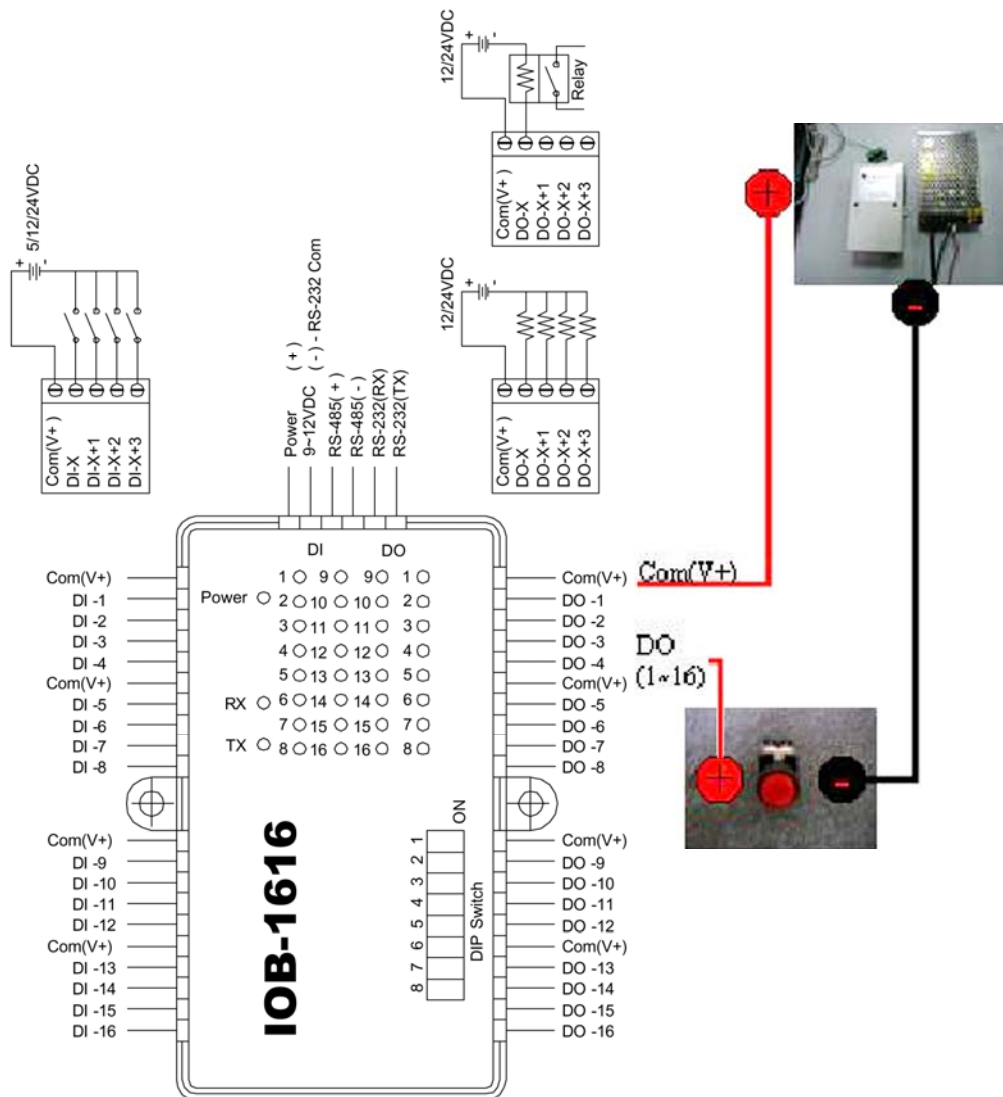


DO Output Control

1. Connect the COM port to +VDC. It's not allowed to connect to -VDC. The acceptable voltage is DC5V~DC24V.
2. 4 DI controls share the same power supply which accepts different levels of voltage starting from DC5V to DC24V

Application Example: Alarm Indicator (DC)

IOB-1616 DO Wiring Example A: Alarm Indicator (DC)



Application Example: Refrigerator, Rice Cooker or Microwave (70~240VAC)

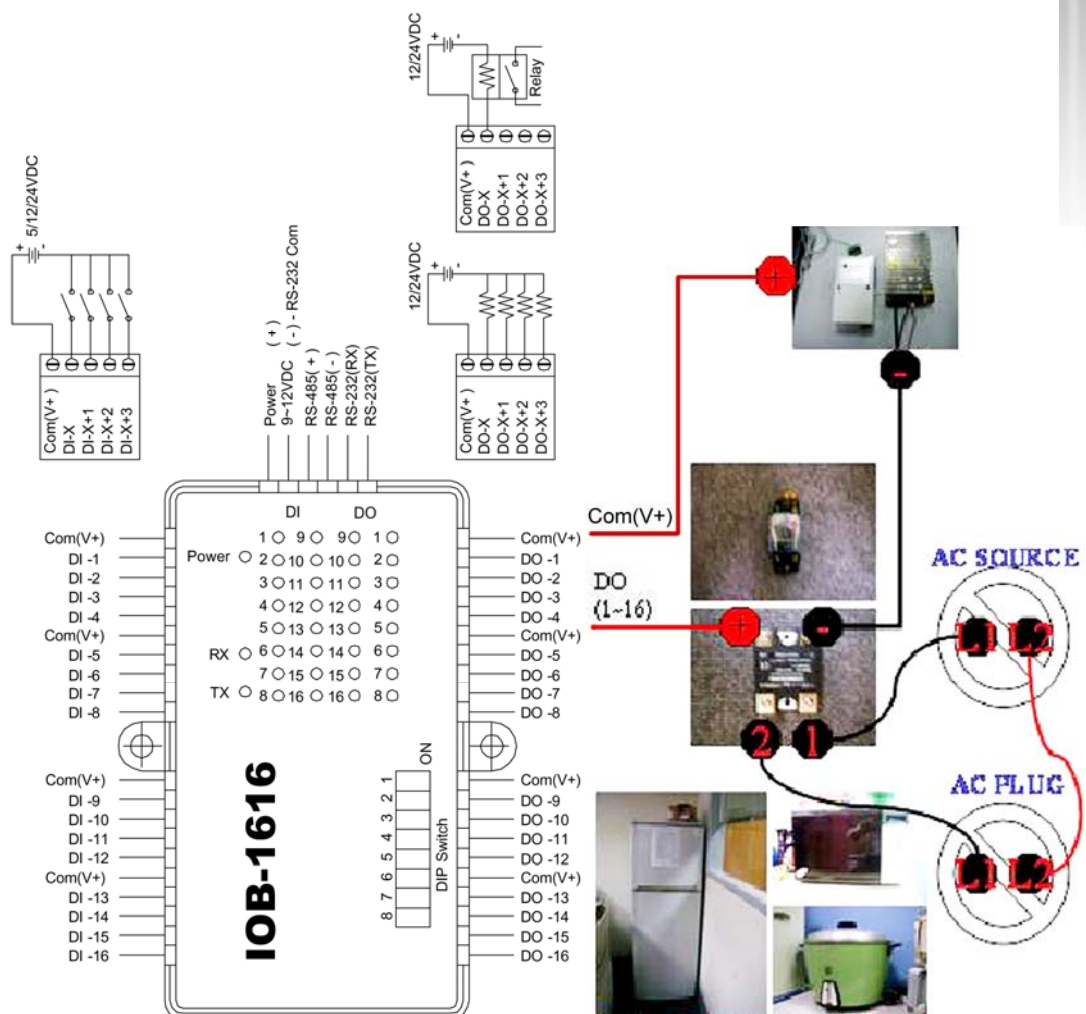
Notes:

Please use the relay, SSR or AC power supply with enough contact ratings to avoid danger.

The AC wire should be 3.5 mm when the power consumption is above 15A.

1. For the appliances whose power consumption is under 15A, such as refrigerators, rice cookers, microwaves, washers, small coolers and heaters, the AC wire needs to be 2.0 mm.
2. As for the large-sized appliances, like air conditioners and heaters, etc. whose power consumption is above 15A, the AC wire must be at least 3.5 mm or above.

IOB-1616 DO Wiring Example B: 15A/240V AC SSR or Relay (DC Control)

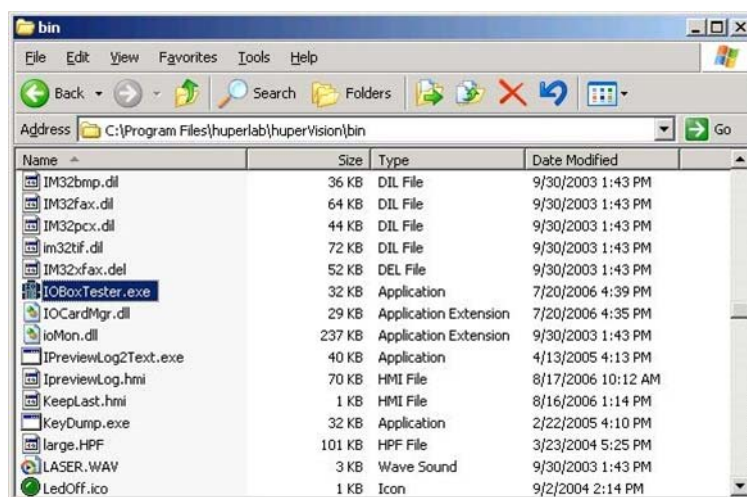


Refrigerator, Rice Cooker or Microwave (110~240VAC)

Settings at huperVision

After installing the IOB-1616 I/O box, follow the steps below.

1. Please find the bin folder in the directory C:/Program Files/huperLab/huperVision/bin. (Close the DVR server).
2. Open the bin folder, then find the IOBoxTester.exe file. (See below).



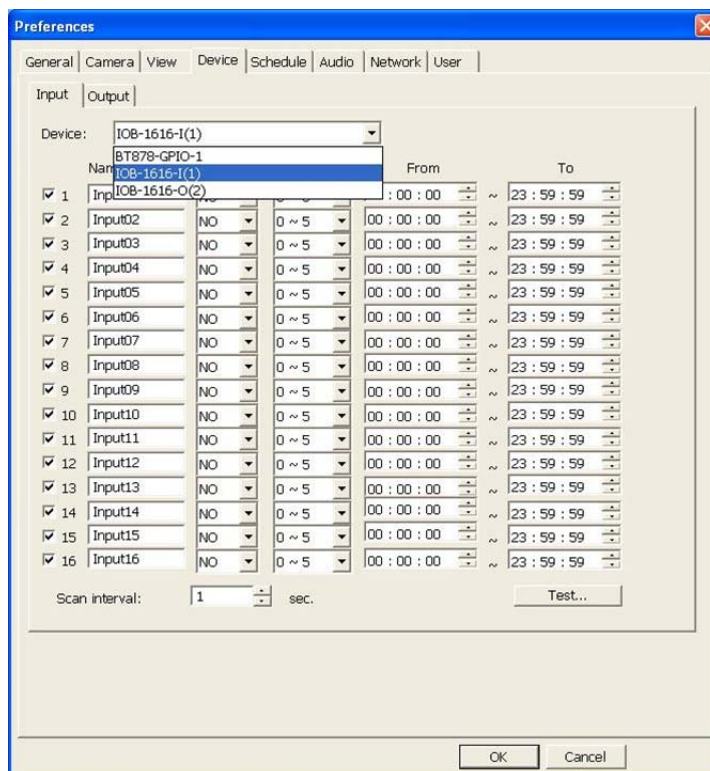
3. Double-click to run IOBoxTester.exe, then click the Scan button (see below).



4. After the scan is completed, click the Save button.
5. After you restart the DVR site server. IO Box will be detected by the DVR in the Device tab of the Preferences dialog box.

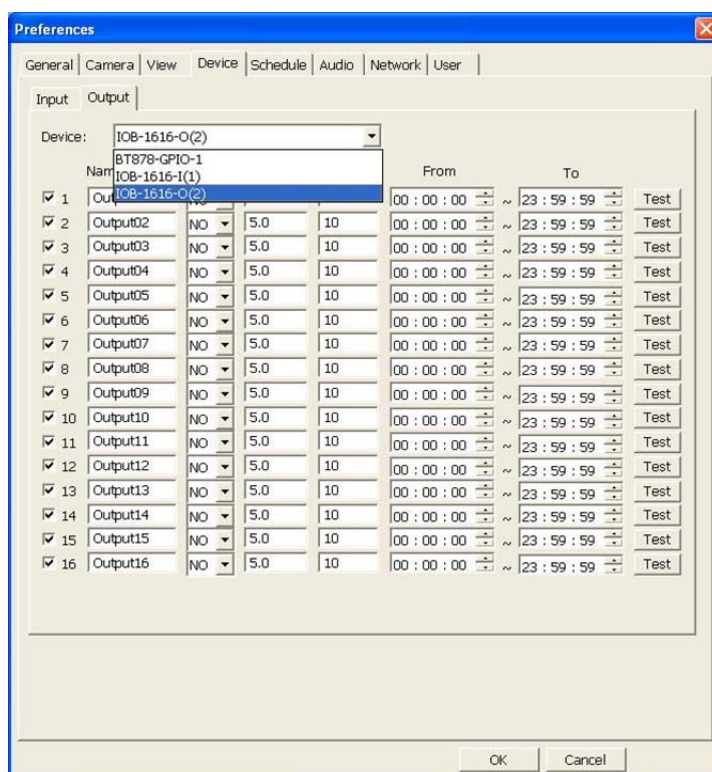
Input Settings

- Step 1: Open the Preferences dialog box, click the Device/Input tab.
- Step 2: Select the item "IOB-1616-I(1)" from the Device drop-down list.
- Step 3: 16 input ports are then displayed, and their assigned numbers start from 1 to 16.



Output Settings

- Step 1: Open the Preferences dialog box, click the Device/Output tab.
- Step 2: Select the item "IOB-1616-O(2)" from the Device drop-down list.
- Step 3: 16 output ports are then displayed, and their assigned numbers start from 1 to 16.



LB-16 Input Video Loopback Card

Video loop back card connects to huperVision capture cards to loop back video signals. Camera video can through the video loop back card to the monitor set or to the quad processor for monitoring purpose or other special applications.

Specifications

Model name	LB-16 (AD043)
System	32 bits 5V PCI card
Video Input	Four center crimp terminal housing up to 16 channel video input One box header (2*13 pin) support 16 channel video input Two box header (2*13 pin) support 8 channel video input
Video Output	D-sub 25 connector support 16 channel video output
Video signal	1 Vpp, 75Ω switch
Dimension	119.88*85.09 mm

Connector Pin Assignment

Center crimp terminal housing for 4 channel video input (CN1,2,3,4)

Pin no.(CN1)	Signal	Pin no. (CN1)	Signal
1	X	4	Video 3
2	Ground	5	Video 2
3	Video 4	6	Video 1

Pin no.(CN2)	Signal	Pin no. (CN2)	Signal
1	X	4	Video 7
2	Ground	5	Video 6
3	Video	6	Video 5

Pin no.(CN3)	Signal	Pin no. (CN3)	Signal
1	X	4	Video 11
2	Ground	5	Video 10
3	Video 12	6	Video 9

100

Box header for 16 channel video input (P1)

25	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		1
26	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		2

Pin no.(P1)	Signal	Pin no.(P1)	Signal
1	Video 1	14	Ground
2	Video 14	15	Video 8
3	Video 2	16	Ground
4	Video 15	17	Video 9
5	Video 3	18	Ground
6	Video 16	19	Video 10
7	Video 4	20	Ground
8	Ground	21	Video 11
9	Video 5	22	Ground
10	Ground	23	Video 12
11	Video 6	24	Ground
12	Ground	25	Video 13
13	Video 7	26	Ground

Box header for 8 channel video input (P2)

[illegible]

Pin no.(P2)	Signal	Pin no.(P2)	Signal
1	Video 1	14	Ground
2	X	15	Video 8
3	Video 2	16	Ground
4	X	17	X
5	Video 3	18	Ground
6	X	19	X
7	Video 4	20	Ground
8	Ground	21	X

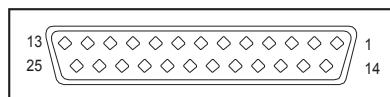
9	Video 5	22	Ground
10	Ground	23	X
11	Video 6	24	Ground
12	Ground	25	X
13	Video 7	26	Grounds

Box header for 8 channel video input (P3)



Pin no.(P3)	Signal	Pin no.(P3)	Signal
1	Video 9	14	Ground
2	X	15	Video 16
3	Video 10	16	Ground
4	X	17	X
5	Video 11	18	Ground
6	X	19	X
7	Video 12	20	Ground
8	Ground	21	X
9	Video 13	22	Ground
10	Ground	23	X
11	Video 14	24	Ground
12	Ground	25	X
13	Video 15	26	Ground

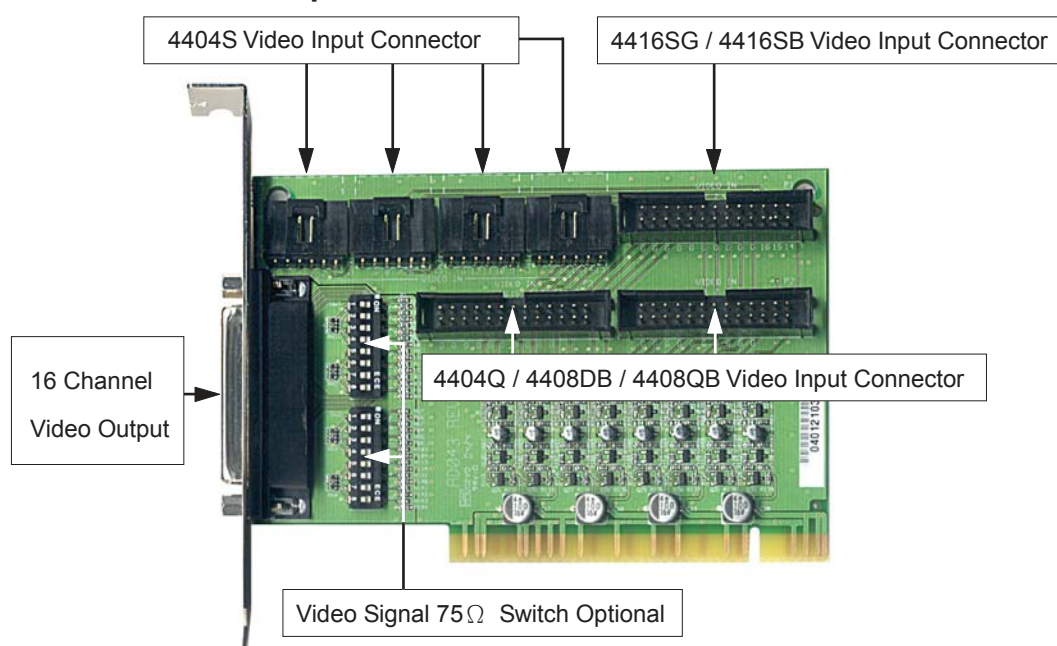
D-sub 25 connector for 16 channel video output (P4)



Pin no.(P4)	Signal	Pin no.(P4)	Signal
1	Ground	14	Video 1
2	Video 5	15	Ground
3	Video 9	16	Video 13
4	Ground	17	Video 2
5	Video 6	18	Ground
6	Video 10	19	Video 14

7	Ground	20	Video 3
8	Video 7	21	Ground
9	Video 11	22	Video 15
10	Ground	23	Video 4
11	Video 8	24	Ground
12	Video 12	25	Video 16
13	Ground		

Connect to video capture card



Capture Card Model / Max Number	Slots for connection	# of Loop Back Channels
4404S x 4	P4, P5, P6, P7	4, 8, 12, 16
4416SG x 1	P1	16
4416SB x 1	P1	16
4404Q x 2	P2, P3	4, 8
H4008DB x 2	P2, P3	8, 16
H8008DB x 2	P2, P3	8, 16