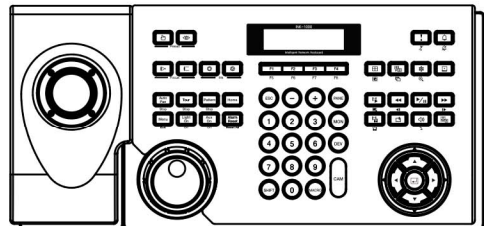


# INTELLIGENT NETWORK KEYBOARD

## USER'S MANUAL







## WARNING

RISK OF ELECTRIC SHOCK  
DO NOT OPEN



**WARNING:** TO REDUCE THE RISK OF ELECTRIC SHOCK,  
DO NOT REMOVE COVER (OR BACK).  
NO USER-SERVICEABLE PARTS INSIDE.  
REFER SERVICING TO QUALIFIED  
SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

### COMPLIANCE NOTICE OF FCC:


THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS A DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES. THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS. OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE, IN WHICH CASE USERS WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT THEIR OWN EXPENSE.

**WARNING:** CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

THIS CLASS OF DIGITAL APPARATUS MEETS ALL REQUIREMENTS OF THE CANADIAN INTERFERENCE-CAUSING EQUIPMENT REGULATIONS.

The information in this manual is believed to be accurate as of the date of publication. IDIS Co., Ltd. is not responsible for any problems resulting from the use thereof. The information contained herein is subject to change without notice. Revisions or new editions to this publication may be issued to incorporate such changes.

## Important Safeguards

<p><b>1. Read Instructions</b> All the safety and operating instructions should be read before the appliance is operated.</p> <p><b>2. Retain Instructions</b> The safety and operating instructions should be retained for future reference.</p> <p><b>3. Cleaning</b> Unplug this equipment from the wall outlet before cleaning it. Do not use liquid aerosol cleaners. Use a damp soft cloth for cleaning.</p> <p><b>4. Attachments</b> Never add any attachments and/or equipment without the approval of the manufacturer as such additions may result in the risk of fire, electric shock or other personal injury.</p> <p><b>5. Water and/or Moisture</b> Do not use this equipment near water or in contact with water.</p> <p><b>6. Accessories</b> Do not place this equipment on an unstable cart, stand or table. The equipment may fall, causing serious injury to a child or adult, and serious damage to the equipment. Wall or shelf mounting should follow the manufacturer's instructions, and should use a mounting kit approved by the manufacturer.</p> <div style="text-align: center;">  </div> <p>This equipment and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the equipment and cart combination to overturn.</p> <p><b>7. Power Sources</b> This equipment should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power, please consult your equipment dealer or local power company.</p> <p><b>8. Power Cords</b> Operator or installer must remove power and TNT connections before handling the equipment.</p> <p><b>9. Lightning</b> For added protection for this equipment during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the equipment due to lightning and power-line surges.</p> <p><b>10. Overloading</b> Do not overload wall outlets and extension cords as this can result in the risk of fire or electric shock.</p> <p><b>11. Objects and Liquids</b> Never push objects of any kind through openings of this equipment as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the equipment.</p> <p><b>12. Servicing</b> Do not attempt to service this equipment yourself. Refer all servicing to qualified service personnel.</p>	<p><b>13. Damage requiring Service</b> Unplug this equipment from the wall outlet and refer servicing to qualified service personnel under the following conditions:</p> <p>A. When the power-supply cord or the plug has been damaged. B. If liquid is spilled, or objects have fallen into the equipment. C. If the equipment has been exposed to rain or water. D. If the equipment does not operate normally by following the operating instructions, adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the equipment to its normal operation. E. If the equipment has been dropped, or the cabinet damaged. F. When the equipment exhibits a distinct change in performance — this indicates a need for service.</p> <p><b>14. Replacement Parts</b> When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.</p> <p><b>15. Safety Check</b> Upon completion of any service or repairs to this equipment, ask the service technician to perform safety checks to determine that the equipment is in proper operating condition.</p> <p><b>16. Field Installation</b> This installation should be made by a qualified service person and should conform to all local codes.</p> <p><b>17. Correct Batteries</b> Warning: Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.</p> <p><b>18. Tmra</b> A manufacturer's maximum recommended ambient temperature (Tmra) for the equipment must be specified so that the customer and installer may determine a suitable maximum operating environment for the equipment.</p> <p><b>19. Elevated Operating Ambient Temperature</b> If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (Tmra).</p> <p><b>20. Reduced Air Flow</b> Installation of the equipment in the rack should be such that the amount of airflow required for safe operation of the equipment is not compromised.</p> <p><b>21. Mechanical Loading</b> Mounting of the equipment in the rack should be such that a hazardous condition is not caused by uneven mechanical loading.</p> <p><b>22. Circuit Overloading</b> Consideration should be given to connection of the equipment to supply circuit and the effect that overloading of circuits might have on over current protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.</p> <p><b>23. Reliable Earthing (Grounding)</b> Reliable grounding of rack mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g., use of power strips).</p>
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## **WEEE (Waste Electrical & Electronic Equipment)**

### **Correct Disposal of This Product**

**(Applicable in the European Union and other European countries with separate collection systems)**



This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

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# Chapter 1 — Introduction

## 1.1 In This Manual

This manual is intended for users of the network keyboard and includes instructions for using and managing the network keyboard on the network.

## 1.2 Features

This network keyboard controls DVRs, MMXs, network transmitters, network receivers, network cameras and PTZ cameras remotely via RS485 or Ethernet connections. The network keyboard can be accessed, configured and managed by using the INIT (Integrated Network Installation Tool) program. This network keyboard offers the following features:

- Remote control of DVRs, MMXs, network transmitters, network receivers and network cameras via RS485 or Ethernet connections
- Remote control of various models of PTZ cameras via network connections
- Two-way audio communication
- Convenient firmware upgrades via either the USB port or Ethernet
- Firmware duplication and autorecovery functions to enhance system stability
- Management of multiple network keyboards via Ethernet connections
- Recalls of maximum 100 macros and function mapping of maximum 8
- Programmable through LCD screen (Basic Setup only)

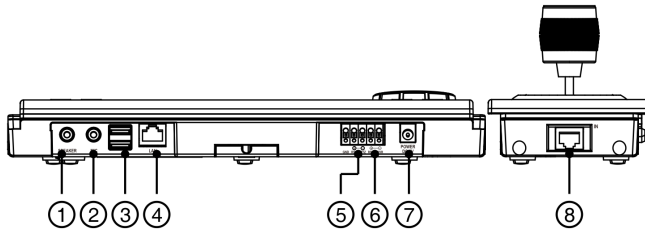
## Compatible Devices

- DVRs (Digital Video Recorder)
- MMX (Multi-Matrix Extension)
- Network Transmitters
- Network Receivers
- Network Cameras
- PTZ Cameras

## 1.3 Package Contents

- Network Keyboard
- Joystick (Removable)
- DC Adapter (5V)
- Power Cord
- Installation CD (INIT)
- User's Manual (This Document)
- INIT User's Manual
- Rack-mount Kits

## 1.4 Rear Panel



No.	Designation	Details
1	Speaker	Connect to an amplifier. (Line-out)
2	MIC	Connect to an audio source. (Line-in or Microphone)
3	USB Ports	Connect a USB flash drive to upgrade the software. Refer to INIT User's Manual – Management, Upgrade for details on software upgrades.
4	Network Port	Connect a UTP Cat5 cable with an RJ-45 jack. Refer to INIT User's Manual – Setup, IP Address Setup for details on network connection setup.
5	RS485 PTZ Port	Connect to PTZ cameras. Connect TX+/RX+ and TX-/RX- of the PTZ camera to the + and – (respectively) of the network keyboard. Refer to the PTZ camera manufacturer's manual for configuring the RS485 connection.
6	RS485 DVR Port	Connect to DVRs. Connect TX+/RX+ and TX-/RX- of the DVR to the + and – (respectively) of the network keyboard. Refer to the DVR manufacturer's manual for configuring the RS485 connection.
7	Power In	Connect the power adaptor to the network keyboard. The network keyboard starts booting as soon as power is applied.
8	Joystick	Connect a joystick cable to the network keyboard.

**NOTES:**

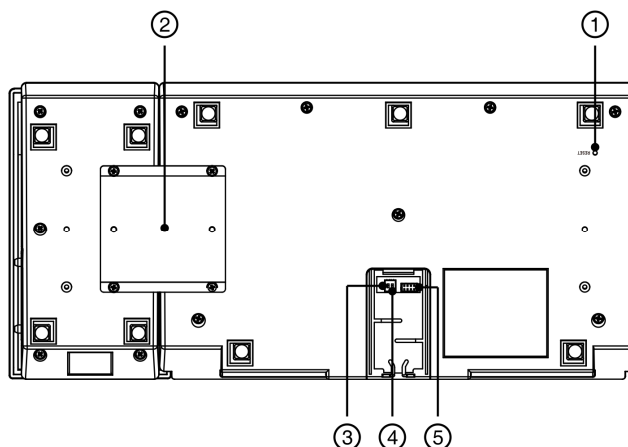
- The network keyboard does not have amplified audio output, so you will need a speaker with an amplifier.
- Audio surveillance may be prohibited by laws that vary by region. Check the laws in your area before using this product for surveillance purposes.

**CAUTION:** The network connector is not designed to be connected directly with cable or wire intended for outdoor use.

**WARNING:** ROUTE POWER CORDS SO THAT THEY ARE NOT A TRIPPING HAZARD. MAKE CERTAIN THE POWER CORD WILL NOT BE PINCHED OR ABRADED BY FURNITURE. DO NOT INSTALL POWER CORDS UNDER RUGS OR CARPET. THE POWER CORD HAS A GROUNDING PIN. IF YOUR POWER OUTLET DOES NOT HAVE A GROUNDING PIN RECEPTACLE, DO NOT MODIFY THE PLUG. DO NOT OVERLOAD THE CIRCUIT BY PLUGGING TOO MANY DEVICES INTO ONE CIRCUIT.



## 1.5 Bottom Panel



No.	Designation	Details
1	Factory Reset Switch	Use to return all settings to the original factory settings. See below for details.
2	Joystick Bracket	Attach the joystick by using the bracket provided with the product to control a PTZ camera.
3	RS485 DVR Termination	Set the switch to On if RS485 communication environment is not good when controlling a DVR via RS485 connection.
4	RS485 PTZ Termination	Set the switch to On if RS485 communication environment is not good when controlling a PTZ camera via RS485 connection.
5	Joystick Input Port	Connect the joystick cable.

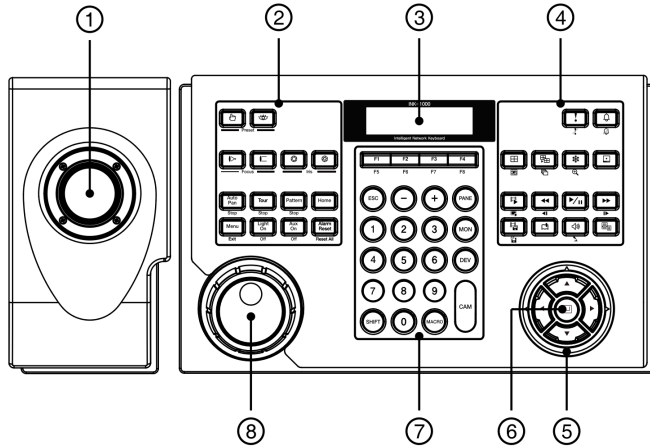
### Factory Reset

This switch will only be used on the rare occasions that you want to return all the settings to the original factory settings.

**CAUTION: When performing a Factory Reset, you will lose any settings you have saved.**

You can perform a factory reset while the network keyboard is turned on. Poke a straightened paperclip into the factory reset switch hole and hold the switch for about three seconds. Releasing the reset switch performs factory reset and restarts after completing the factory reset. A factory reset also can be performed remotely by running the INIT program and selecting the **Reset – Factory Reset** menu. The network keyboard restarts after completing the factory reset. Refer to INIT User's Manual for details on remote factory resetting.

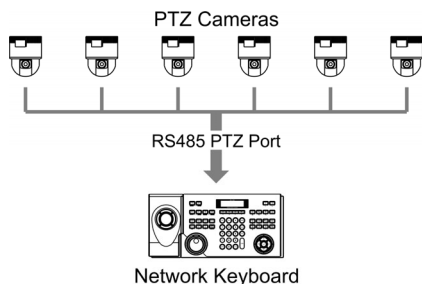
## 1.6 Front Panel



No.	Designation	Details
1	Joystick	Controls Pan, tilt and zoom of a PTZ camera.
2	PTZ Camera Control Buttons	Controls the PTZ camera by setting up presets or expanded PTZ features. See Appendix: Front Panel Buttons, PTZ Camera Control for details.
3	LCD Screen	Displays command for operations or menu for configuration. See Chapter 3 — Operation, Chapter 4 — LCD Menu Configuration for details.
4	Device Control Buttons	Controls remote devices. See Appendix: Front Panel Buttons, Device Control for details.
5	Arrow Buttons	Arrow buttons allows you to navigate through setup menus or adjust number's value during the LCD setup. They also are used to control Pan and Tilt when in the PTZ mode. In the playback mode, pressing the ◀ and ▶, plays video backward and forward. When in the pause mode, pressing the ⏸ button moves to the next image and pressing the ⏮ button moves to the previous image.
6	Enter Button	Pressing the ↵ (Enter) button selects an item or completes an entry that you have made during the LCD setup. In the live monitoring mode, pressing the ↵ button freezes the current screen. When in the playback mode, pressing the ↵ button pauses playing video.
7	Command Control Buttons	Commands the preset action. See Chapter 3 — Operation, 3.2 Operation Commands (p. 17) for details.
8	Jog Dial	The Jog Dial only functions when playback video has been paused. By turning the jog dial clockwise, you can play video forward image-by-image. By turning the jog dial counterclockwise, you play video backward image-by-image.
	Shuttle Ring	Functions only in the Playback mode. The shuttle ring is spring loaded and returns to the center position when released. Turning the ring clockwise plays video forward. Turning the ring counterclockwise plays video backward. Playback varies with the amount the ring is turned. The playback speeds are fast forward, rewind, step forward and step backward.

## 1.7 Typical Applications

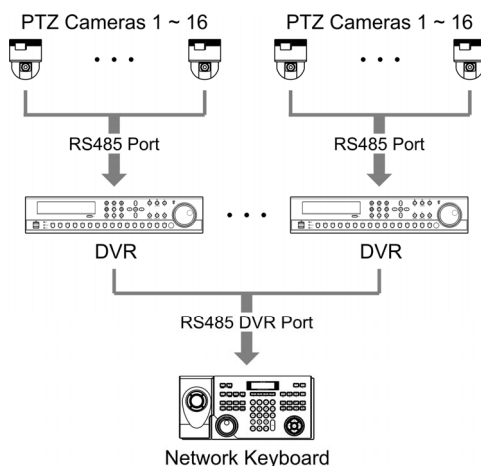
### PTZ Camera



- ✓ You can control PTZ cameras directly connected to a network keyboard via RS485 connections. The PTZ control buttons and joystick are provided for the PTZ control. See Chapter 2 — PTZ Camera (p. 9) section for details of the connections.

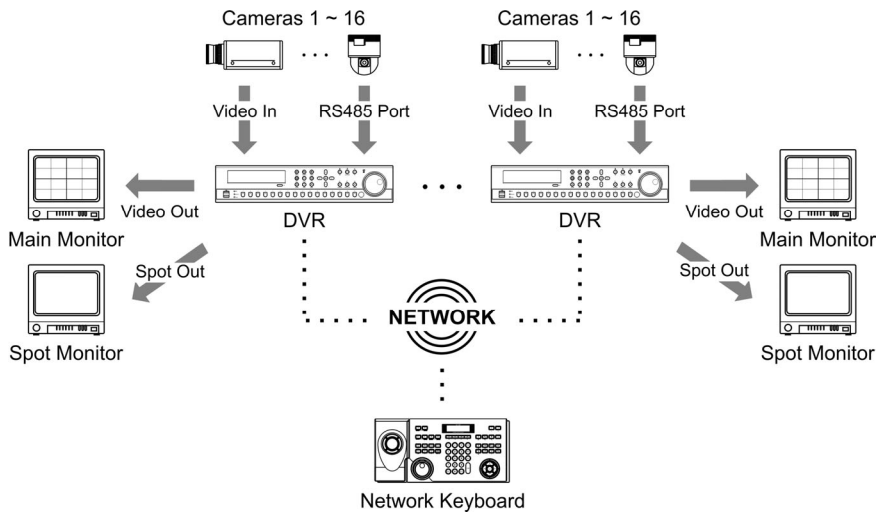
### DVR System

#### RS485 Connection



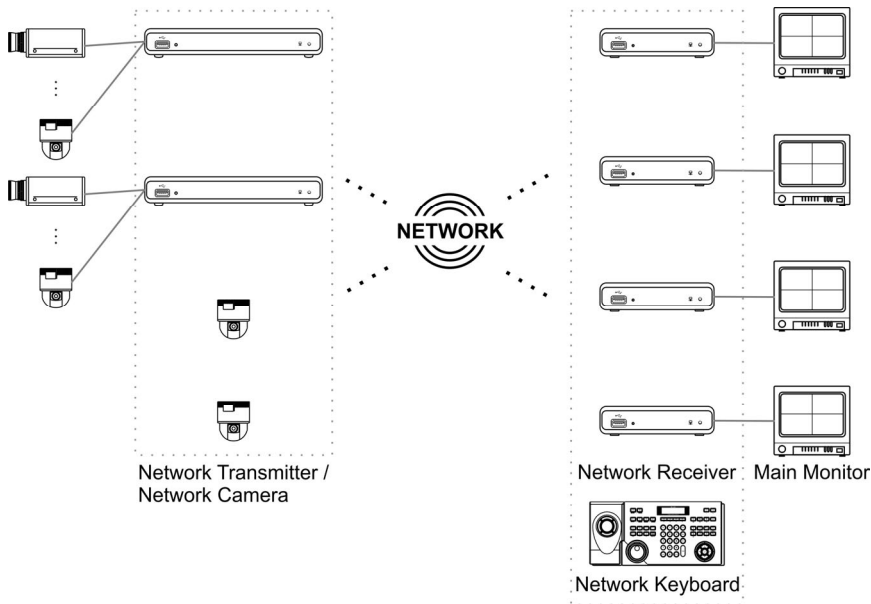
- ✓ You can control DVRs directly connected to a network keyboard via RS485 connections. The live or playback video is displayed on the main monitor connected to each DVR. See Chapter 2 — DVR System (p. 10) section for details of the connections.

## Ethernet Connection



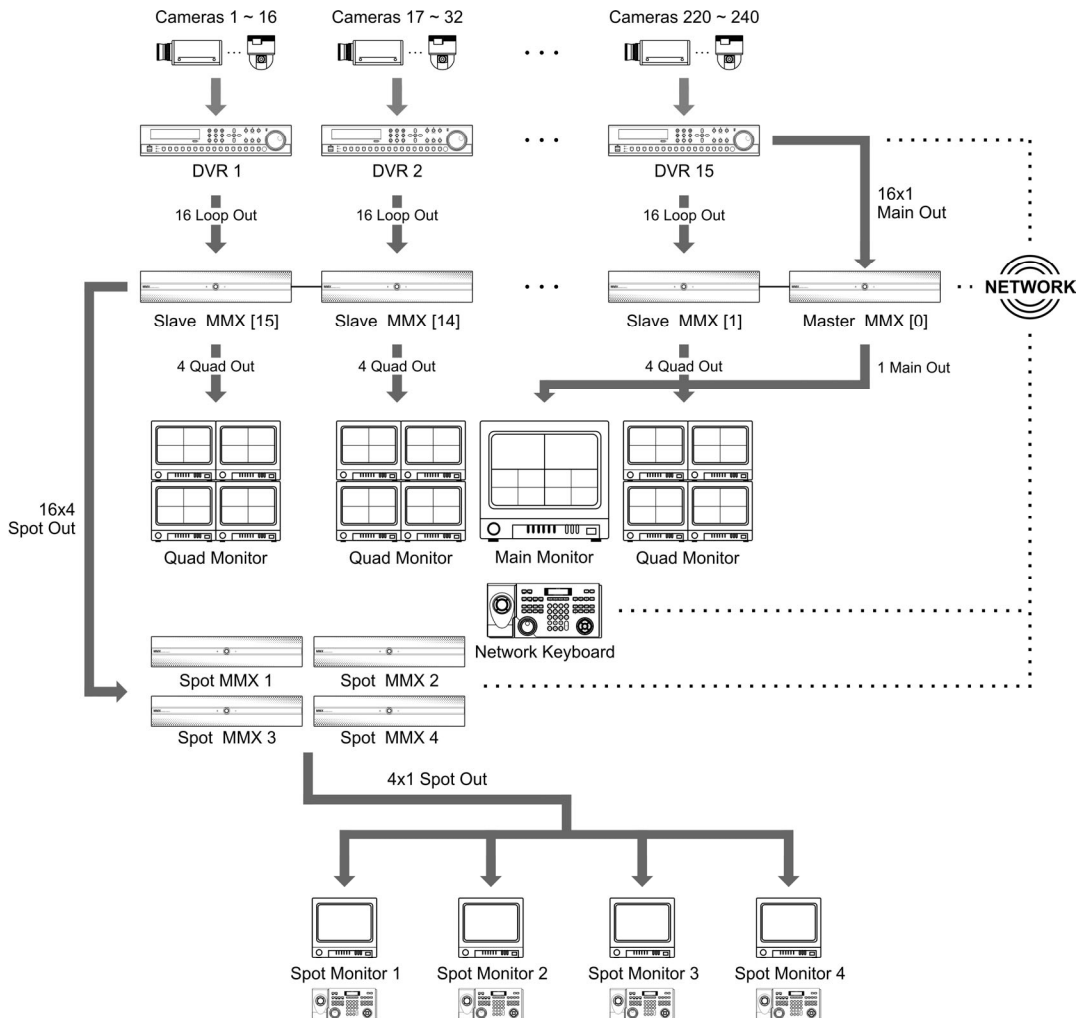
- ✓ You can control DVRs remotely by a network keyboard via Ethernet connections. The live or playback video is displayed on the main or spot monitor connected to each DVR, and you can change camera channels on the monitor remotely. See Chapter 2 — , DVR System (p. 10) section for details of the connections.

## Network Matrix System (Network Transmitter, Receiver and Camera)



- ✓ You can build a virtual matrix system with network transmitters, network receivers and network cameras via Ethernet connections. See Chapter 2 — Network Matrix System (Transmitter, Receiver and Camera) (p. 12) section for details of the connections.

## MMX Connections



- ✓ You can build a matrix system with MMXs and DVRs and control live monitoring and playback on the main and spot monitors by a network keyboard via Ethernet connections. You also can control PTZ cameras connected to DVRs. See Chapter 2 — MMX System (p. 14) section for details of the connections.



## Chapter 2 — Installation

The network keyboard provides two kinds of setup type for registration of devices: Basic setup and Advanced setup. The Basic setup supports RS485 connections only, and the Advanced setup supports both RS485 and Ethernet connections. The LCD setup menus are provided for the Basic setup, and the INIT program is provided for both the Advanced setup and Basic setup.

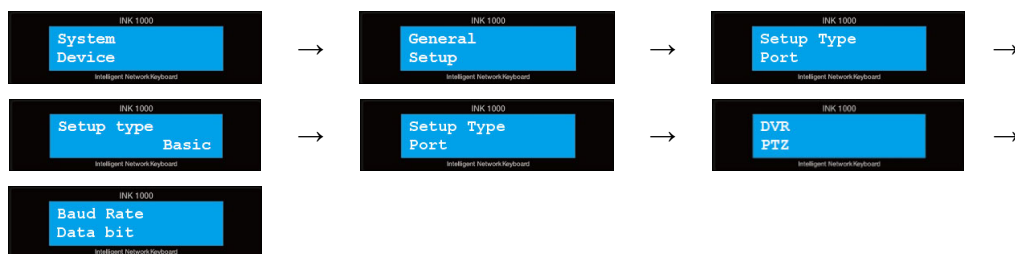
### 2.1 PTZ Camera

You can register PTZ cameras directly connected to a network keyboard via RS485 connections in both the Basic setup and the Advanced setup. The Basic setup does not support network connections of any devices while the Advanced setup support both RS485 connections and Ethernet connections.

#### Basic Setup

PTZ cameras can be registered on the network keyboard in the Basic setup locally through the LCD setup menus or remotely through the INIT program. See Chapter 5 — Remote Configuration, 5.3 Device for details on the remote registration through the INIT program.

1. Connect PTZ cameras to RS485 PTZ port of the network keyboard referring to the PTZ camera's User's Manual.
2. Enter the LCD setup menu. See Chapter 4 — LCD Menu Configuration for details on entering and configuring the LCD setup menu.
3. Go to the Device → General menu.
  - 3.1. Set up Setup Type to Basic.
  - 3.2. Set up Port to PTZ and set up port for RS485 communications referring to the settings on the PTZ camera.



4. Go to the Setup menu.
  - 4.1. Enter the number of cameras connected to the network keyboard in the Number of CAMS field.
  - 4.2. Enter the ID to distinguish the camera from others when controlling it by a network keyboard and then the 485 ID and model number for the RS485 communication. See Appendix: PTZ Camera Model Number for details on the model number of each PTZ camera.





## Advanced Setup

PTZ cameras can be registered on the network keyboard in the Advanced setup remotely through the INIT program. You can set up Baud Rate, Data bit, Stop bit and Parity differently for each PTZ camera when PTZ cameras have different settings in the Advanced setup while the settings are applied to all PTZ cameras in the Basic setup. See Chapter 5 — Remote Configuration, 5.3 Device for details on the remote registration through the INIT program.

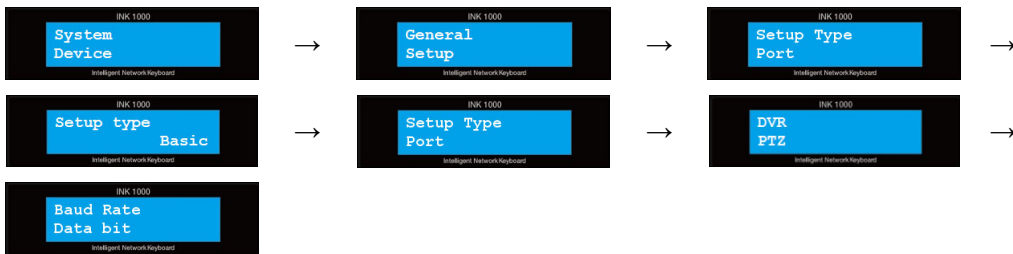
## 2.2 DVR System

You can register DVRs connected to a network keyboard via RS485 connections or Ethernet connections. The Basic setup does not support network connections of any devices while the Advanced setup support both RS485 connections and Ethernet connections.

### Basic Setup

DVRs can be registered on the network keyboard in the Basic setup locally through the LCD setup menus or remotely through the INIT program. See Chapter 5 — Remote Configuration, 5.3 Device for details on the remote registration through the INIT program.

1. Connect DVRs to RS485 DVR port of the network keyboard referring to the DVR's User's Manual.
2. Enter the LCD setup menu. See Chapter 4 — LCD Menu Configuration for details on entering and configuring the LCD setup menu.
3. Go to the Device → General menu.
  - 3.1. Set up Setup Type to Basic.
  - 3.2. Set up Port to DVR and set up port for RS485 communications referring to the settings on the DVR.



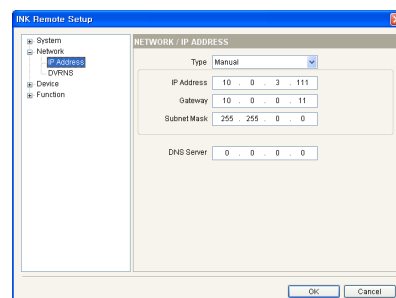
4. Check the DVR's system ID in the DVR settings for remote control by a network keyboard.



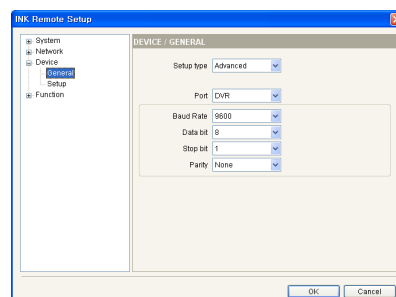
## Advanced Setup

DVRs can be registered on the network keyboard in the Advanced setup remotely through the INIT program. You can control DVRs with the user-defined ID registered on the network keyboard in the Advanced setup while you control DVRs with the DVR's system ID preset in each DVR in the Basic setup. You can also set up monitor ID for controlling the main monitor or spot monitors. See Chapter 5 — Remote Configuration, 5.3 Device for details on the remote registration through the INIT program.

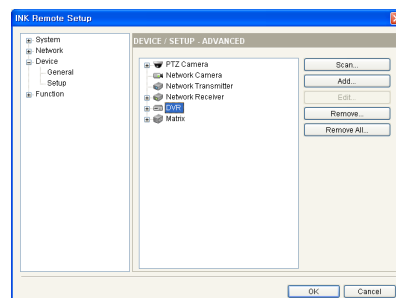
1. Connect DVRs to the RS485 DVR port of the network keyboard via RS485 connections, or to the network via Ethernet connections referring to the DVR's User's Manual
2. Connect the network keyboard to network via Ethernet connections See Chapter 1 — Rear Panel.
3. Run the INIT program and connect to the network keyboard to register the DVRs.
4. Go to the following menus: Setup → Remote Setup → Network → IP Address  
Set up the network keyboard's network connection information.



5. Go to the following menus: Setup → Remote Setup → Device → General  
Select Advanced from the Setup Type drop-down list.

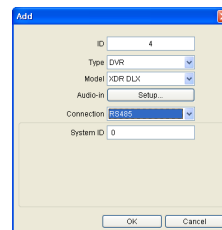


6. Go to the following menus: Setup → Remote Setup → Device → Setup
  - 6.1. Click DVR in the device list and the Add button to register the DVR on the network keyboard.

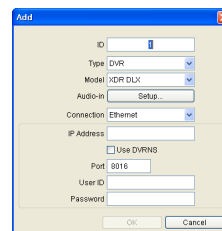


6.2. Set up the registration information.

- **ID:** The network keyboard assigns the ID automatically in registration order and you can change it. The ID will be used when controlling the device by a network keyboard.
- **Connection:** Select **RS485** or **Ethernet** depending on the connections to the network keyboard.
  - **RS485:** Enter the DVR's system ID preset in the DVR settings when the DVR is connected via RS485 connections.
  - **Ethernet:** Enter the IP address, port number, user ID and password for the connection to the DVR when the DVR is connected via RS485 connections.

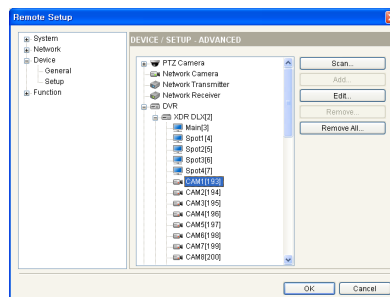


6.3. Click the OK button.



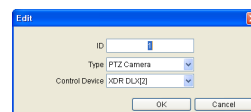
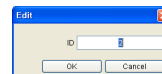
6.4. Click the DVR pull-down menu in the device list, then the registered DVR's pull-down menu. A list of monitors and cameras connected to the DVR is displayed.

6.5. Click a monitor or a camera in the list and click the Edit button.



6.6. Set up the monitor or camera information.

- **ID:** The network keyboard assigns the ID automatically in registration order when the DVR is registered and you can change it. The ID will be used when controlling the monitor or camera by a network keyboard.
- **Type:** Set up the camera type.
  - **Fixed:** Select if the camera is not a PTZ camera.
  - **PTZ Camera:** Select if the camera is a PTZ camera and set up the device that the PTZ camera is connected.



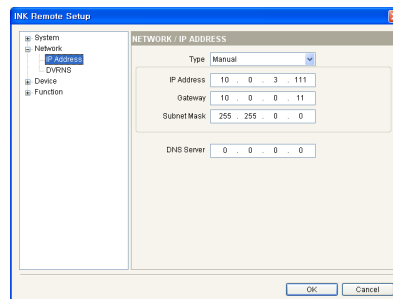
## 2.3 Network Matrix System (Transmitter, Receiver and Camera)

You can register network devices including network transmitters, receivers and cameras connected to a network keyboard via Ethernet connections. Only Advanced setup is supported remotely through the INIT program.

1. Connect the network devices to network via Ethernet connections referring to each device's User's Manual.
2. Run the INIT program and connect to the network keyboard to register the devices.

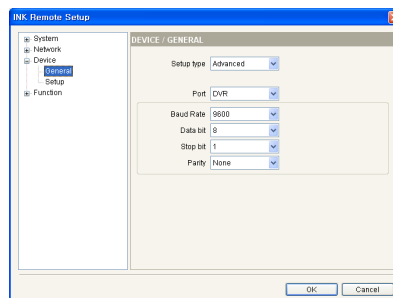
3. Go to the following menus: Setup → Remote Setup → Network → IP Address

Set up the network keyboard's network connection information.



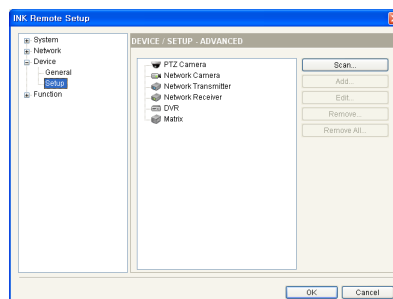
4. Go to the following menus: Setup → Remote Setup → Device → General

Select Advanced from the Setup Type drop-down list.



5. Go to the following menus: Setup → Remote Setup → Device → Setup

- 5.1. Click Network Camera, Network Transmitter or Network Receiver in the device list and the Scan or Add button to register the device on the network keyboard.

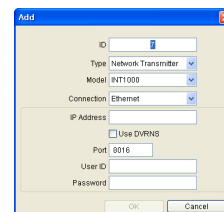


Clicking Scan button lists up all of network transmitters, receivers and cameras in a LAN environment. Checking the boxes of devices to register and clicking the Add button allows you to register more than one device at a time on the network keyboard. You can find a specific device by entering the network information and by clicking the Manual Scan button when the device is not listed up. Click the Add button to register the device on the network keyboard.



- 5.2. Set up the registration information.

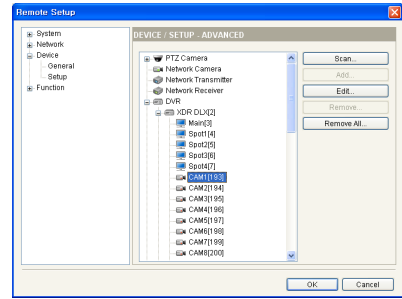
- ID: The network keyboard assigns the ID automatically in registration order and you can change it. The ID will be used when controlling the device by a network keyboard.
- Connection: Select Ethernet and enter the IP address, port number, user ID and password for the connection to the network device.



- 5.3. Click the OK button.

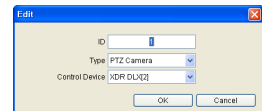
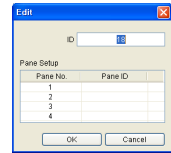
5.4. Click the device's pull-down menu in the device list, then the registered device's pull-down menu. A list of monitors or cameras connected to the device is displayed.

5.5. Click a monitor or a camera in the list and click the **Edit** button.



5.6. Set up the monitor or camera information.

- **ID:** The network keyboard assigns the ID automatically in registration order when the device is registered and you can change it. The ID will be used when controlling the monitor or camera by a network keyboard.
- **Pane ID:** You can set up a pane ID to each pane of the monitor. The pane ID provides a shortcut for selecting a pane during operation. Pressing a pane ID and the **PANE** button is the same as pressing a monitor ID and the **MON**, and then a pane number and **PANE** button.
- **Type:** Set up the camera type.
  - **Fixed:** Select if the camera is not a PTZ camera.
  - **PTZ Camera:** Select if the camera is a PTZ camera and set up the device that the PTZ camera is connected.

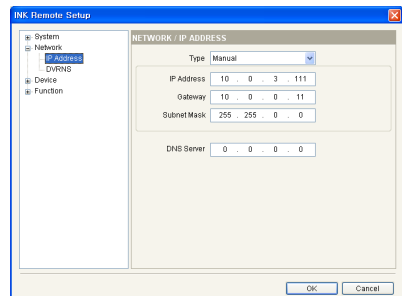


## 2.4 MMX System

You can register MMXs connected to a network keyboard via Ethernet connections. Only Advanced setup is supported remotely through the INIT program.

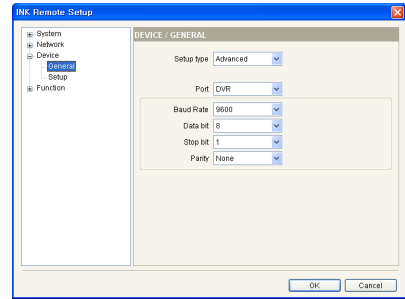
1. Connect the MMXs to network via Ethernet connections referring to MMX's User's Manual.
2. Run the INIT program and connect to the network keyboard to register the devices.
3. Go to the following menus: Setup → Remote Setup → Network → IP Address

Set up the network keyboard's network connection information.



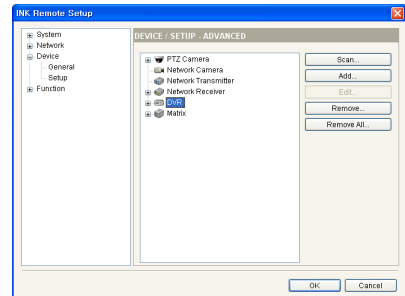
4. Go to the following menus: Setup → Remote Setup → Device → General

Select Advanced from the Setup Type drop-down list.



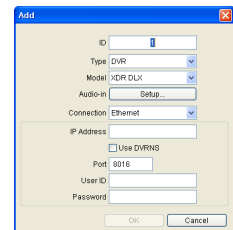
5. Go to the following menus: Setup → Remote Setup → Device → Setup

- 5.1. Click DVR in the device list and the Add button to register the DVR on the network keyboard. You should register DVRs to play back video recorded in the DVRs or change the DVR settings by a network keyboard.



- 5.2. Set up the registration information.

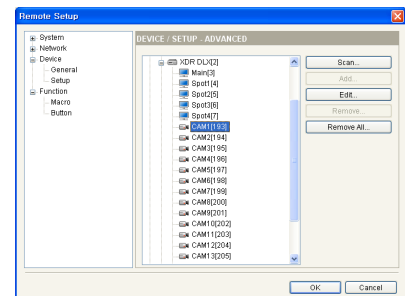
- ID: The network keyboard assigns the ID automatically in registration order and you can change it. The ID will be used when controlling the device by a network keyboard.
- Connection: Select Ethernet and enter the IP address, port number, user ID and password for the connection to the MMX.



- 5.3. Click the OK button.

- 5.4. Click the DVR pull-down menu in the device list, then the registered DVR's pull-down menu. A list of monitors and cameras connected to the DVR is displayed.

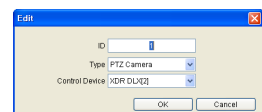
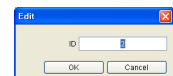
- Main [ID]: Indicates the ID of the main monitor connected to the DVR.
- Spot No. [ID]: Indicates the Spot out number and ID of the spot monitor connected to the DVR.
- CAM No. [ID]: Indicates the Video In number of the DVR and the camera ID.



- 5.5. Click a monitor or a camera in the list and click the Edit button.

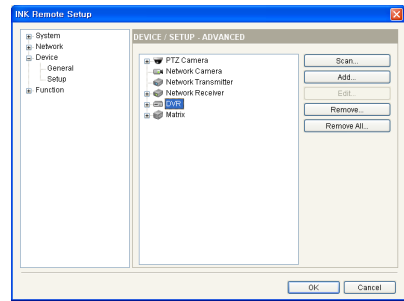
- 5.6. Set up the monitor or camera information.

- ID: The network keyboard assigns the ID automatically in registration order when the DVR is registered and you can change it. The ID will be used when controlling the monitor or camera by a network keyboard.
- Type: Set up the camera type.
  - Fixed: Select if the camera is not a PTZ camera.
  - PTZ Camera: Select if the camera is a PTZ camera and set up the device that the PTZ camera is connected.



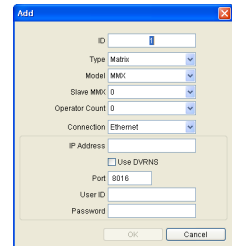
6. Go to the following menus: Setup → Remote Setup → Device → Setup

Click MMX in the device list and the Add button to register the master MMX on the network keyboard.



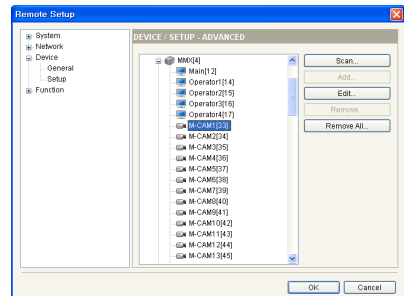
6.1. Set up the registration information.

- **ID:** The network keyboard assigns the ID automatically in registration order when the MMX is registered and you can change it. The ID will be used when controlling the monitor or camera by a network keyboard.
- **Slave MMX:** Enter the number of slave MMXs daisy chained to the master MMX.
- **Operator Count:** Select the number of spot MMX monitors.
- **IP Address, Port, User ID, Password:** Enter the IP address, port number, user ID and password for the connection to the MMX.



6.2. Click the MMX pull-down menu in the device list, then the registered MMX's pull-down menu. A list of monitors and cameras connected to the MMX is displayed.

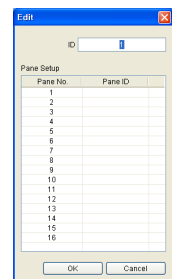
- **Main [ID]:** Indicates the ID of the main monitor connected to the master MMX
- **Operator No. [ID]:** Indicates the Spot Out number of the spot MMX and spot monitor ID.
- **M-CAM No. [ID]:** Indicates the Video In number and ID of the camera connected to the MMX. (M: master MMX, S1: slave MMX (1))



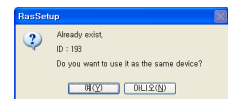
6.3. Click a monitor or a camera in the list and click the Edit button.

6.4. Set up the monitor or camera's ID. The network keyboard assigns the ID automatically in registration order when the MMX is registered and you can change it. The ID will be used when controlling the monitor or camera by a network keyboard.

6.5. Set up the camera type. You should select Device Output if the Main Out of the DVR instead of a camera is connected to the Video In port of the MMX. Select Fixed if the camera is not a PTZ camera, or select PTZ Camera if the camera is a PTZ camera and set up the device that the PTZ camera is connected.



6.6. Check the camera ID set up when registering a DVR. The camera ID of the MMX should be identical to the camera ID of the DVR. The number of possible cameras decreases if the camera ID of the MMX is different from the camera ID of the DVR. When clicking the OK button displays a message box to confirm using the same ID. Click the OK button to complete the changes.



## Chapter 3 — Operation

You have to install all devices properly and register devices on the network keyboard to control them. See Chapter 2 — and Chapter 5 — Remote Configuration for details on configuring the network keyboard.

The network keyboard provides two kinds of operation type: Basic setup operation and Advanced setup operation. The Basic setup operation is supported by RS485 connections only, and the Advanced setup operation is supported by both RS485 and Ethernet connections.









### 3.1 Overview

















- ✓ Entering a user password unlocks the network keyboard. Pressing the **SHIFT** and **ESC** buttons lock the network keyboard.
- ✓ The command operates in order of **MON** → **PANE** → **DEV** → **CAM** and lasts until you control the selected device, and you can change the command in the current level without cancelling the current command.
- ✓ Pressing the **ESC** button after entering a number cancels the entry, and pressing the **ESC** button after pressing a command button cancels the command and returns to the default screen.
- ✓ A **CAM** number after the **DEV** command indicates the camera number, and a **CAM** number after the **MON** or **PANE** command indicates the camera ID.
- ✓ When pressing the **DEV** button allows you to control the device including playback and menu setup.
- ✓ Commands on LCD screen indicates as follows:
  - A capital letter C: Indicates the camera ID which is a user-defined camera number to distinguish the camera from others when controlling the camera by the network keyboard.
  - A small letter c: Indicates the camera number which is a Video In number of the DVR that the camera is connected.
  - A capital letter P: Indicates the pane ID which is a user-defined pane number on a specific monitor to provide a shortcut for selecting a pane during operation. Pressing a pane ID and the **PANE** button is the same as pressing a monitor ID and **MON**, and then a pane number and **PANE** button.
  - A small letter p: Indicates the pane number which is displayed on a main monitor.

### 3.2 Operation Commands

You have to register devices to the network keyboard to command operations at first. See Chapter 5 — Remote Configuration, 5.3 Device for details.

**NOTE:** You cannot command operations while the network keyboard is connected remotely.

Button	Designation	Operation
	Number (1 to 9)	<ul style="list-style-type: none"> <li>• Buttons:  (ID number) → <b>CAM</b>, <b>PANE</b>, <b>MON</b>, <b>DEV</b> or <b>MACRO</b></li> <li>• Action: Selects a camera, pane, monitor or device to control or macro to perform.</li> </ul>
	Number (0)	<ul style="list-style-type: none"> <li>• Buttons:  → <b>DEV</b> →  or </li> <li>• Action: Pressing  button starts or stops panic recording of all camera channels of all devices. Pressing  button activates or deactivates alarms of all alarm-out devices of all devices.</li> </ul>

	SHIFT	<ul style="list-style-type: none"> <li>Buttons: Button → </li> <li>Action: Performs the second function when the button has more than two functions.</li> </ul>
	ESC	<ul style="list-style-type: none"> <li>Buttons:  (Cancel or Previous Menu) or <b>SHIFT</b> → <b>ESC</b> (Lock)</li> <li>Action: Cancels the command during the command operation, returns to the previous menu during the menu configuration, or locks buttons on the front panel.</li> </ul>
	Monitor	<ul style="list-style-type: none"> <li>Buttons: Monitor No. → </li> <li>Action: Selects a monitor to control.</li> </ul>
	Pane	<ul style="list-style-type: none"> <li>Buttons: Pane No. → </li> <li>Action: Selects a pane to control.</li> </ul>
	Device	<ul style="list-style-type: none"> <li>Buttons: Device No. → </li> <li>Action: Selects a device to control.</li> </ul>
	Camera	<ul style="list-style-type: none"> <li>Buttons: Camera No. → </li> <li>Action: Selects a camera to control.</li> </ul>
	Macro	<ul style="list-style-type: none"> <li>Buttons: Macro No. → </li> <li>Action: Selects a macro to perform.</li> </ul>
	+ / -	<ul style="list-style-type: none"> <li>Action: Moves to the previous or next menu during setting menu or selects the previous or next camera, pane, monitor, device or macro.</li> </ul>
	Function (1 to 8)	<ul style="list-style-type: none"> <li>Action: Performs preset macro. (5 to 8: 1 to 4 → <b>SHIFT</b>)</li> </ul>

### 3.3 PTZ Camera

You can control PTZ cameras connected to the network keyboard by a network keyboard via RS485 connection.

#### PTZ Camera Control



1. Press the PTZ camera ID registered on the network keyboard.
2. Press the **CAM** button. You can control the PTZ camera by using the PTZ camera control buttons and joystick. See **Appendix: Front Panel Buttons** for details on the functions of the PTZ camera control buttons and joystick.

### 3.4 DVR System

You can control PTZ cameras and DVRs connected to the network keyboard by a network keyboard via RS485 or Ethernet connections.



## PTZ Camera Control



1. Press the PTZ camera ID registered on the network keyboard.



2. Press the **CAM** button. You can control the PTZ camera by using the PTZ camera control buttons and joystick. See Appendix: Front Panel Buttons for details on the functions of the PTZ camera control buttons and joystick.

## DVR Control on Main Monitor



1. Press the DVR's system ID. You can check the DVR's system ID on the DVR's setting.



2. Press the **DEV** button. You can control the DVR on the main monitor by using the device control buttons, arrow button, jog dial and shuttle ring.



3. Press the camera number of the DVR.



4. Press the **CAM** button. Video from the selected camera is displayed on the main monitor connected to the DVR, and you can control the camera if the camera is a PTZ camera by using the PTZ control buttons and joystick.

## DVR Control on Monitor (Advanced Setup Installation Only)



1. Press the main monitor's ID.



2. Press the **MON** button. If the selected monitor is a main monitor, you can control the DVR on the main monitor by using the device control buttons, arrow button, jog dial and shuttle ring.



3. Press the camera ID.



4. Press the **CAM** button. Video from the user-defined camera is displayed on the main monitor connected to the DVR, and you can control the camera if the camera is a PTZ camera by using the PTZ control buttons and joystick.

## 3.5 Network Matrix System (Transmitter, Receiver and Camera)

You can control PTZ cameras connected to the network devices and the network devices including network transmitters, receivers and cameras by a network keyboard via Ethernet connections.

## PTZ Camera Control



1. Press the PTZ camera ID registered on the network keyboard.



2. Press the **CAM** button. You can control the PTZ camera by using the PTZ camera control buttons and joystick. See [Appendix: Front Panel Buttons](#) for details on the functions of the PTZ camera control buttons and joystick.

## Camera Control on Main Monitor



1. Press the monitor ID.



2. Press the **MON** button. You can control the network device that the selected monitor is connected.



3. Press the camera ID.



4. Press the **CAM** button. Video from the user-defined camera is displayed on the main monitor, and you can control the camera if the camera is a PTZ camera by using the PTZ control buttons and joystick.

## Camera Control on Pane



1. Press the monitor ID.



2. Press the **MON** button. You can control the network device that the selected monitor is connected.



3. Press the pane number.



4. Press the **PANE** button.



5. Press the camera ID.



6. Press the **CAM** button. Video from the user-defined camera is displayed in the selected pane on the main monitor, and you can control the camera if the camera is a PTZ camera by using the PTZ control buttons and joystick.

## 3.6 MMX System

You can control PTZ cameras connected to MMXs or DVRs, DVRs connected to MMXs by a network keyboard via Ethernet connections.

### PTZ Camera Control



1. Press the PTZ camera ID registered on the network keyboard.



2. Press the **CAM** button. You can control the PTZ camera by using the PTZ camera control buttons and joystick. See Appendix: Front Panel Buttons for details on the functions of the PTZ camera control buttons and joystick.

### DVR Control on Main Monitor



1. Press the monitor ID.



2. Press the **MON** button. You can control the main monitor.



3. Press the DVR ID.



4. Press the **DEV** button. You can control the DVR on the main monitor by using the device control buttons, arrow button, jog dial and shuttle ring.



5. Press the camera number of the DVR.



6. Video from the selected camera is displayed on the main monitor connected to the DVR, and you can control the camera if the camera is a PTZ camera by using the PTZ control buttons and joystick.

### Camera Control on Main or Spot Monitor



1. Press the main or spot monitor ID.



2. Press the **MON** button. You can control the main monitor.



3. Press the camera ID.



4. Press the **CAM** button. Video from the user-defined camera is displayed on the main or spot monitor connected to the DVR, and you can control the camera if the camera is a PTZ camera by using the PTZ control buttons and joystick.

## DVR Control on Pane

### Example I

You can control DVRs in the selected pane on the main monitor.



1. Press the main monitor's ID.



2. Press the **MON** button. You can control the main monitor.



3. Press the pane number.



4. Press the **PANE** button.



5. Press the DVR ID.



6. Press the **DEV** button. You can control the DVR on the main monitor by using the device control buttons, arrow button, jog dial and shuttle ring.



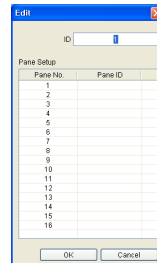
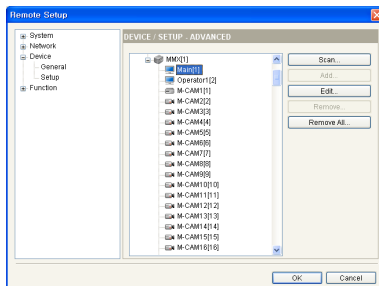
7. Press the camera number of the DVR.



8. Press the **CAM** button. Video from the selected camera is displayed in the selected pane on the main monitor connected to the DVR, and you can control the camera if the camera is a PTZ camera by using the PTZ control buttons and joystick.

### Example II

When the pain ID is set up for a main monitor connected to the MMX in Remote Setup → Devices → Setup, you can control DVRs in the user-defined pane on the main monitor with a unique pane ID without pressing the monitor ID.



1. Press the pane ID.



2. Press the **PANE** button. You can control the main monitor.



3. Press the DVR ID.



4. Press the **DEV** button. You can control the DVR on the user-defined pane by using the device control buttons, arrow button, jog dial and shuttle ring.



5. Press the camera number of the DVR.



6. Press the **CAM** button. Video from the selected camera is displayed in the user-defined pane, and you can control the camera if the camera is a PTZ camera by using the PTZ control buttons and joystick.

## Camera Control on Pane

### Example I

You can control cameras in the selected pane on the main monitor.



1. Press the monitor ID.



2. Press the **MON** button. You can control the main monitor.



3. Press the pane number.



4. Press the **PANE** button.



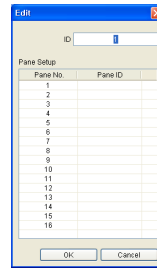
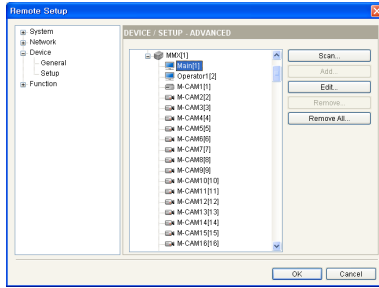
5. Press the camera ID.



6. Press the **CAM** button. Video from the user-defined camera is displayed in the selected pane on the main monitor connected to the DVR, and you can control the camera if the camera is a PTZ camera by using the PTZ control buttons and joystick.

### Example II

When the pane ID is set up for a main monitor connected to the MMX in **Remote Setup** → **Devices** → **Setup**, you can control cameras in the user-defined pane on the main monitor with a unique pane ID without pressing the monitor ID.



1. Press the pane ID.



2. Press the **PANE** button. You can control the main monitor.



3. Press the camera ID.



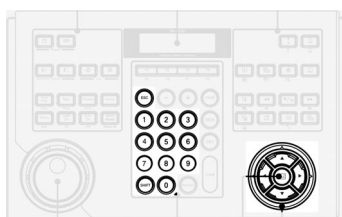
4. Press the **CAM** button. Video from the user-defined camera is displayed in the user-defined pane, and you can control the camera if the camera is a PTZ camera by using the PTZ control buttons and joystick.

## Chapter 4 — LCD Menu Configuration

The LCD screen displays configuration menus and allows you to change the settings for the Basic setup operation. You also can change the settings for Basic setup operation remotely by running the INIT program. See Chapter 5 — Remote Configuration (p. 27) for details on the remote setup for Basic setup operation.

**NOTE:** The LCD configuration does not support the settings for the Advanced setup operation. See Chapter 5 — Remote Configuration (p. 27) for the settings for the Advanced setup operation.

### 4.1 Buttons for LCD Menu Configuration

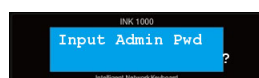


- **[ESC]**: Returns to the previous menu without applying the change of the current setting. Pressing the button until the screen displays **Save Setup** allows you to save or cancel the changes.
- **0 to 9**: Enters a number value (0 to 999).
- **[SHIFT]**: Enters the LCD setup menu when pressing the button together with the **[↵]** button.
- **[↵]**: Enters the LCD setup menu when pressing the button together with the **[SHIFT]** button, goes to the submenu, selects an item, or completes an entry that you have made.
- **◀▶▶▶▶**: Moves to the other field or adjusts setting values.

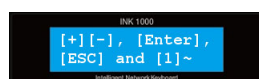
### 4.2 Entering or Exiting LCD Setup Menu



1. Press the **[SHIFT]** and **[↵]** button together.



2. Enter the admin password by using the number button and press the **[↵]** button. There is no default password.



3. Pressing the **[↵]** button enters the LCD setup menu.



4. You can change the settings.



5. Pressing the **[ESC]** button until the screen displays **Save Setup** and selecting **Yes** by pressing the **[↵]** button saves the settings and exits the LCD setup menu.

## 4.3 Setup Menu



### System


General	Version	Displays the network keyboard's software version.
	Password	Allows you to change the Admin password for connection to the network keyboard or the User password for controlling the network keyboard. Entering the current password allows you to enter a new password.
	Default Settings	Setting the value to Yes returns all except network related settings to the original factory settings.
	MAC Address	Displays the network keyboard's MAC address.
Button	Beep	Setting the value to ON make a sound when pressing buttons on the front panel of the network keyboard.
	Lock	Allows you to enter the time (min.) for buttons on the front panel to be considered as working during the time. The buttons will be locked when there is no action during the preset time after the last action. Unlocking the buttons asks entering the User password, and this function does not work if the User password is not set up or the time is set to 0.
LCD	Contrast	Allows you to enter the contrast of the LCD screen. (1: Low, 2: Medium, 3: High)
	Backlight Off	Allows you to enter the backlight expiration time (min.) of the LCD screen. This function does not work if the time is set to 0.
Audio	Volume	Allows you to enter the volume of audio input and output.
Upgrade		Setting the value to Yes upgrades the software.

### Device

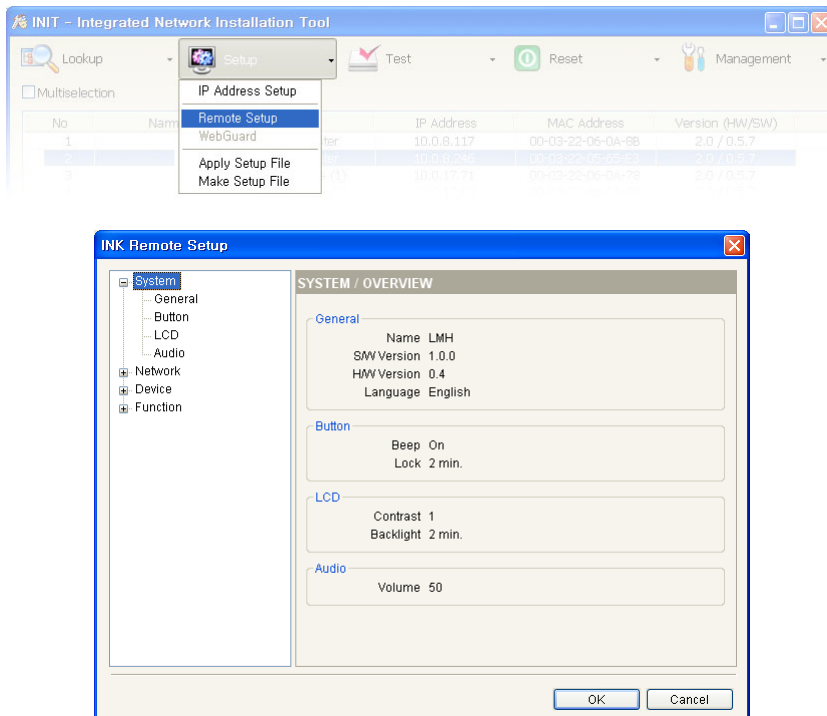
General	Setup Type	Allows you to select the setup type. Select <b>Basic</b> for RS485 connection. The <b>Advanced</b> type is not supported for the LCD configuration.
	Port	Allows you to set up port for the RS485 communication between PTZ cameras and the network keyboard or DVRs and the network keyboard. The Advanced setup type is not supported in the LCD setup menu. You can set up the Advanced setup by run the INIT program. When using a PTZ camera that has different settings, register the PTZ camera in the <i>Advanced</i> setup type during the remote configuration.
Setup	Number of CAMs	Allows you to enter the number of cameras connected to the network keyboard via RS485 connections for remote control.
	ID, 485 ID, Model	Allows you to assign an ID to each PTZ camera to distinguish the PTZ camera from others when controlling the PTZ camera by the network keyboard. Enter 485 ID assigned to the PTZ camera and model of the PTZ camera for RS485 communication.



## Chapter 5 — Remote Configuration

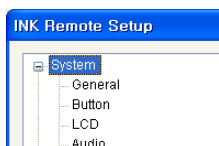
Remote Setup allows you to change all settings of the network keyboard. Run the INIT program, select a network keyboard to change settings and click the Setup icon  on the Main screen. Select Remote Setup from the Setup menu and the Remote Setup screen appears.

**NOTE:** The *Multiselection* option for selecting network keyboards is not available for the remote setup.



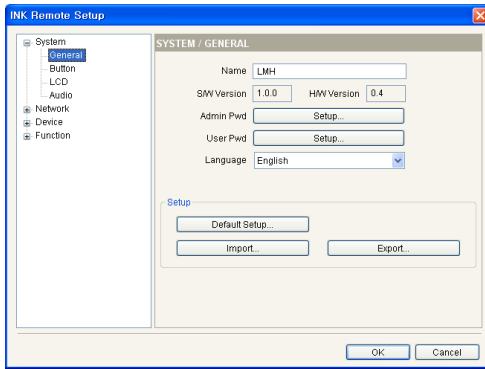
Clicking a menu in the left of the Remote Setup screen displays the current settings for that menu on the right side of the screen. Clicking submenus under each menu allows you to change the settings. Clicking the OK button closes the Remote Setup screen and applies the changes.

### 5.1 System



You can change system information, import or export all setting values, change a password and adjust audio volume. When you click the **System** menu on the Remote Setup screen, the current System settings are displayed on the right side of the screen.

#### General

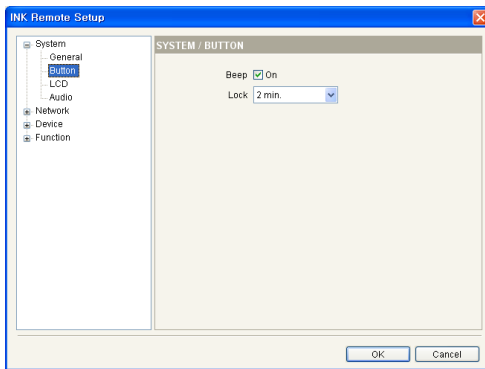


- **Name:** Enter the network keyboard's name (up to 31 characters including spaces).
- **SW Version, HW Version:** These fields display the network keyboard's software and hardware versions.
- **Admin Pwd:** Click to change a password for connection to the network keyboard. Entering the current password allows you to enter a new password.
- **User Pwd:** Click to change a password for controlling the network keyboard. Entering the current password allows you to enter a new password.
- **Language:** Choose the language to be used during remote setup.

• **Setup**

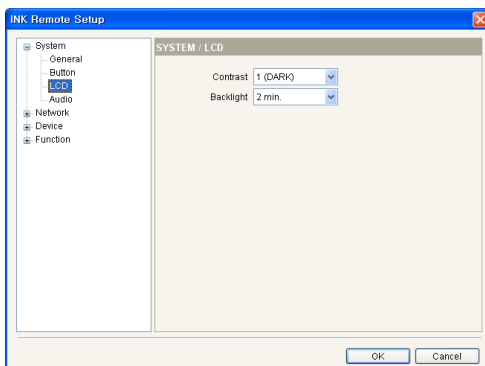
- **Default Setup...:** Clicking the button returns all except network related settings to the original factory settings.
- **Import Setup...:** Click to apply the settings saved as a .dat file format to the network keyboard. A setup screen appears allowing you to select the setup file. You can select whether or not network settings (IP address, port number, DVRNS) will be included when the setup is applied.
- **Export Setup...:** Click to save the current network keyboard settings as a .dat file format. A setup screen appears allowing you to name the setup file.

## Button



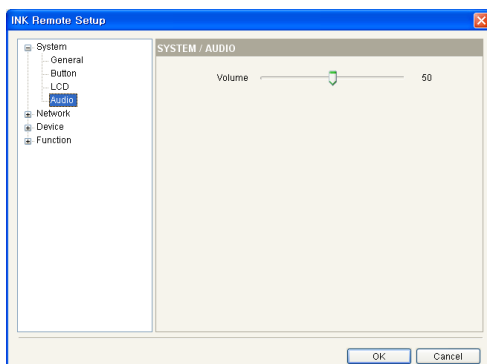
- **Beep:** Check the box to make a sound when pressing buttons on the front panel of the network keyboard.
- **Lock:** Select the time from the drop-down list for buttons on the front panel to be considered as working. The buttons will be locked when there is no action during the preset time after the last action. Unlocking the buttons asks entering the User password, and this function does not work if the User password is not set up or the time is set to 0.

## LCD



- **Contrast:** Select the contrast of the LCD on the network keyboard from the drop-down list.
- **Backlight Off:** Select the backlight expiration time of the LCD on the network keyboard. This function does not work if the time is set to 0.

## Audio



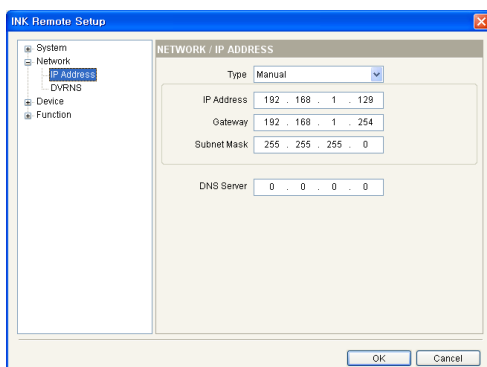
Adjust the volume of audio input and output by using the slide bar.

## 5.2 Network



You can change the network settings and set up DVRNS function. When you click the **Network** menu on the Remote Setup screen, the current Network settings are displayed on the right side of the screen.

## IP Address

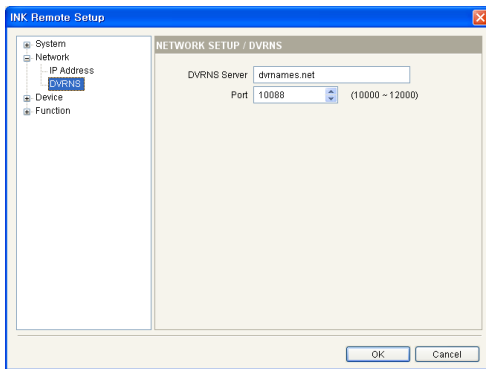


- **Type:** Select the type of network configuration. Ask your network provider for details about the network connection type and connection information for the network keyboard.
  - **Manual:** Select when the network keyboard is using a static IP address for network connection, and set up LAN parameters manually.
  - **DHCP:** Select when the network keyboard is networked via DHCP (Dynamic Host Configuration Protocol). Click the **OK** button, and a temporary IP address is automatically assigned to the network keyboard. The network keyboard periodically will be issued a new IP address automatically.

- **DNS Server:** Enter the IP address of the DNS server. If you set up the DNS server, the domain name of the server can be used instead of the IP address when the DVRNS server is set up. Ask your Internet service provider for the IP Address of the DNS Server.

## DVRNS

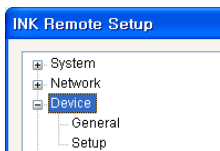
The DVRNS (DVR Name Service) allows you to register devices on the network keyboard using either the dynamic IP addresses or the name of the device when registering the devices to control on the network keyboard. For the DVRNS feature to work properly, the devices should be registered on the DVRNS server, and the DVRNS server settings in the INIT program for the devices should match the settings registered on the DVRNS server. Any changes on the DVRNS server might cause improper operation.



- **DVRNS Server:** Enter the IP address or domain name of the DVRNS server.
- **Port:** Set up the port number of the DVRNS server.

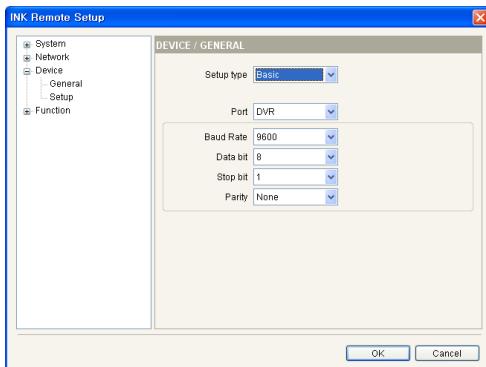
**NOTE:** You will need to get the IP address or domain name of the DVRNS server from your network administrator. You can use the domain name instead of IP address if you set up the DNS server during the IP Address setup.

## 5.3 Device



You can register PTZ cameras, network cameras, network transmitters, network receivers, DVRs and MMXs to control through a network keyboard. When you click the **Device** menu on the Remote Setup screen, the current Device settings are displayed on the right side of the screen.

### General



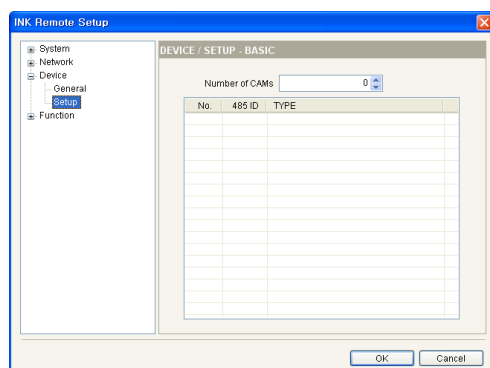
- **Setup type:** Select the setup type from the drop-down list. Select **Basic** for RS485 connection only or **Advanced** for Ethernet and RS485 connection depending on the device's connection type to the network keyboard.
  - **Port:** Select the device from the drop-down list to set up port numbers separately for the RS485 communication between PTZ cameras and the network keyboard or DVRs and the network keyboard. The settings applied to all devices in the Basic setup type and the RS485 communication for PTZ cameras is not supported in the Advanced setup type. When using a PTZ camera that has different settings, register the PTZ camera in the *Advanced* setup type.
  - **Baud Rate, Data bit, Stop bit, Parity:** Set up the baud rate, data bit, stop bit and parity for RS485 communication between the network keyboard and the device.

**NOTE:** The settings of *Baud Rate, Data bit, Stop bit* and *Parity* are applied to all devices. When using a PTZ camera that has different settings, register the PTZ camera in the *Advanced* setup type.

## Setup

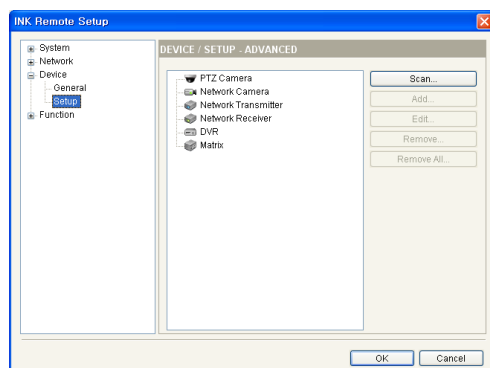
The setup screen changes depending on the setup type set during the Device – General setup.

### General – Basic



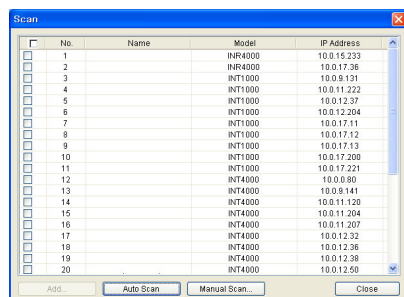
- **Number of CAMs:** Set up the number of cameras connected to the network keyboard via RS485 connection for remote control.
- **ID:** Assign an ID to each PTZ camera to distinguish the PTZ camera from others when controlling the PTZ camera by the network keyboard. You can change the ID by clicking the field and adjusting the number.
- **485 ID:** Enter the ID assigned to the PTZ camera for RS485 communication.
- **Model:** Select the PTZ camera's model.

### General – Advanced



- **Scan:** See below.
- **Add:** See below.
- **Edit:** Select a device in the list and click the button to edit the setting. Selecting a monitor or camera connected to the device and clicking the Edit button allows you to change the information including an ID of the monitor or camera. Assigning a pane ID to each pane in the main monitor allows you to control the user-defined pane with a unique pane ID. (Four-channel network receiver and MMX only)
- **Remove / Remove All:** Select a device in the list and click the Remove button to delete it. Clicking the Remove All button deletes all devices from the list.

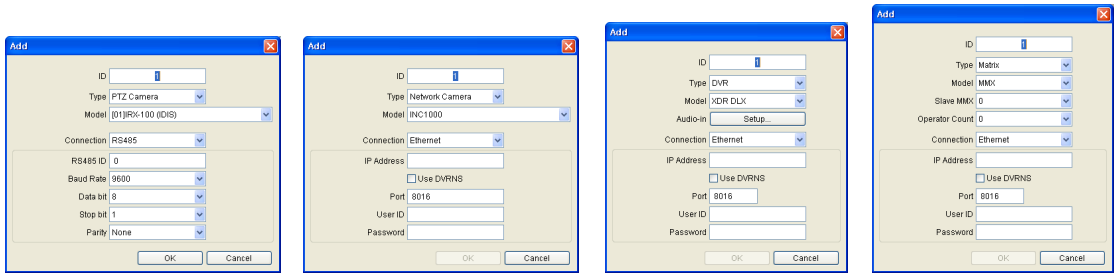
- **Scan:** Click to find and list up devices connected to the network keyboard via Ethernet.



– **Auto Scan:** Click to reload the list of the device networked via LAN.

– **Manual Scan:** Click the button and register the device manually by entering the IP address of the device when the device is not networked via WAN or temporarily disconnected from the network.

- **Add:** Click to register the device on the network keyboard for remote control. A setup screen appears and the setup screen changes depending on the device.



PTZ Camera

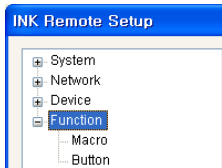
Network Camera, Network Transmitter, Network Receiver

DVR

MMX

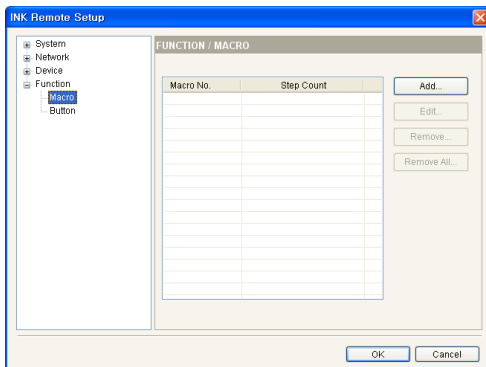
- ID: Assign an ID to the device to distinguish it from others when controlling it by the network keyboard.
- Type: Select the device type.
- Model: Select the device model.
- Audio-in: Clicking the Setup button allows you to select the camera to be associated with each audio channel if the device supports more than one audio input.
- Slave MMX: Select the number of slave MMXs daisy-chained to the master MMX.
- Operator Count: Select the number of spot monitors connected to spot MMXs.
- Connection: Select the device's connection type to the network keyboard, and configure the settings. When a DVR is connected to the network keyboard via RS485 connection, you will be asked to enter the system ID assigned to the DVR during the DVR setting.

## 5.4 Function



You can register more than 100 macros on eight function buttons for quick action.

## Macro



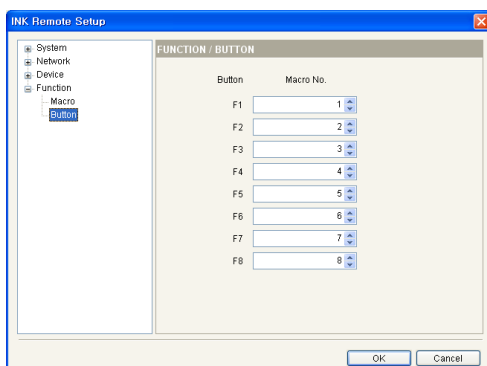
- Add: See below.
- Edit: Select a macro in the list and click the button to edit the setting.
- Remove / Remove All: Select a macro in the list and click the Remove button to delete it. Clicking the Remove All button deletes all macros from the list.

- Add: Click to register a macro, and a setup screen appears.



- **No.:** Displays the order of the macro. The network keyboard takes actions according to the order when performing the macro.
- **Button:** Double click the field and click a button to perform on the front panel image in the left.
- **Dwell Time:** Enter dwell time (second) for the action to last.

## Button



- **Button:** Displays the function on the front panel.
- **Macro No.:** Assign the macro number to be associated with the function button. Pressing the function button on the front panel of the network keyboard performs the preset macro.





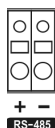
## Appendix

### Troubleshooting

Problem	Possible Solution
The <b>CAM</b> command does not work.	Check the camera setting. The camera type should be set to PTZ Camera. (INIT program → Setup → Remote Setup → Device → Setup → Camera type: PTZ Camera)
The PTZ camera is not controllable.	<ul style="list-style-type: none"> <li>• Check PTZ camera settings in the DVR if the PTZ camera is connected to a DVR.</li> <li>• Check that the PTZ camera is registered on the network keyboard if the PTZ camera is connected to a network keyboard.</li> </ul>
Connection to the INIT program is not available because of wrong password.	If you lost the password, do a factory reset. The factory reset returns all the settings including network settings to the original factory settings. You must customize all settings including network settings after a factory reset.

### Connector Pin Outs

#### RS485 Connector

















Master Unit		Slave Unit	
+	→ To	→	TX+/RX+
-	→ To	→	TX-/RX-

### Front Panel Buttons






























#### PTZ Camera Control
















Depending on the PTZ camera specifications, some features may not work. Refer to the PTZ camera manufacturer's manual for details of each feature.

Button	Designation	Operation
	Set Preset	<ul style="list-style-type: none"> <li>• Buttons: 'Preset No. of the current position' → </li> <li>• Action: Move the PTZ camera to the desired position and assign the preset number to set the current position as a preset by pressing the buttons.</li> </ul>
	View Preset	<ul style="list-style-type: none"> <li>• Buttons: 'Preset No. to move the camera' → </li> <li>• Action: The PTZ camera moves to the preset position.</li> </ul>
 	Focus Near/Far	<ul style="list-style-type: none"> <li>• Action: Press and hold the button to adjust focus, and the PTZ camera focuses the lens of a camera on near or far image.</li> </ul>

	Iris Open/Close	<ul style="list-style-type: none"> <li>Action: Press and hold the button to adjust iris, and the PTZ camera opens or closes the iris of a camera lens.</li> </ul>
	Auto Pan	<ul style="list-style-type: none"> <li>Buttons:  (On) or <b>SHIFT</b> →  (Off)</li> <li>Action: Performs auto pan of the PTZ camera.</li> </ul>
	Tour	<ul style="list-style-type: none"> <li>Buttons: 'Tour No.' →  (On) or <b>SHIFT</b> →  (Off)</li> <li>Action: Performs tour function of the PTZ camera.</li> </ul>
	Pattern	<ul style="list-style-type: none"> <li>Buttons: 'Pattern No.' →  (On) or <b>SHIFT</b> →  (Off)</li> <li>Action: Performs pattern function of the PTZ camera.</li> </ul>
	Home	<ul style="list-style-type: none"> <li>Action: Press the button to perform home function of the PTZ camera.</li> </ul>
	PTZ Menu	<ul style="list-style-type: none"> <li>Buttons:  (On) or <b>SHIFT</b> →  (Off)</li> <li>Action: Enters or exits menu mode of the PTZ camera.</li> </ul>
	Joystick	<ul style="list-style-type: none"> <li>Controls Pan, tilt and zoom of a PTZ camera.</li> </ul>

### Device Control

Button	Designation	Operation
	Panic On/Off	<ul style="list-style-type: none"> <li>Buttons:  (On) or <b>SHIFT</b> →  (Off)</li> <li>Action: Starts or stops panic recording of all camera channels of the selected device.</li> </ul>
	Alarm On/Off	<ul style="list-style-type: none"> <li>Buttons: 'Alarm-out device No.' →  (On) or <b>SHIFT</b> →  (Off)</li> <li>Action: Activates or deactivates alarms of all alarm-out devices of the selected device.</li> </ul>
	Display/Cameo	<ul style="list-style-type: none"> <li>Buttons: ('Layout No.' →)  (Display) or <b>SHIFT</b> →  (Cameo)</li> <li>Action: Changes screen layout (1: full, 2: 2x2, 3: 3+3, 4: 3x3, 5: 2+8, 6: 1+12, 7: 4x4, 8: PIP, 9: 1+5, 10: 1+12) or enters cameo mode. The screen layout number is defined by user's setting if the device is a MMX. Pressing the  button without pressing a layout number changes screen layout according to the DVR's screen layout.</li> </ul>
	Group/Sequence	<ul style="list-style-type: none"> <li>Buttons: ('Group No.' →)  (Group) or <b>SHIFT</b> →  (Sequence)</li> <li>Action: Changes a screen group or displays sequence groups sequentially.</li> </ul>
	Freeze/Zoom	<ul style="list-style-type: none"> <li>Buttons:  (Freeze) or <b>SHIFT</b> →  (Zoom)</li> <li>Action: Freezes or zooms in the current live images on the screen.</li> </ul>
	Spot	<ul style="list-style-type: none"> <li>Buttons: 'Spot monitor No.' →  → 'Camera No.' →  (default spot monitor) → 'Camera No.' → </li> <li>Action: Changes the camera on the spot monitor.</li> </ul>
	Search/Triplex	<ul style="list-style-type: none"> <li>Buttons:  (Search) or <b>SHIFT</b> →  (Triplex)</li> <li>Action: Searches video recorded in the device or enters triplex mode.</li> </ul>
	Fast Backward Play/ Backward Step	<ul style="list-style-type: none"> <li>Buttons:  (Fast Backward Play) or <b>SHIFT</b> →  (Backward Step)</li> <li>Action: Plays video backward at high speed or goes back one frame of the video.</li> </ul>
	Play/Pause	<ul style="list-style-type: none"> <li>Buttons:  (Play) or <b>SHIFT</b> →  (Pause)</li> <li>Action: Plays back or pauses video.</li> </ul>

	Fast Forward Play/ Forward Step	<ul style="list-style-type: none"> <li>Buttons:  (Fast Forward Play) or <b>SHIFT</b> →  (Forward Step)</li> <li>Action: Plays video forward at high speed or goes next one frame of the video.</li> </ul>
	Clip Copy	<ul style="list-style-type: none"> <li>Action: Starts clip copy in Playback mode.</li> </ul>
	Bookmark	<ul style="list-style-type: none"> <li>Buttons: 'Bookmark No.' →  (Add) or <b>SHIFT</b> →  (Move)</li> <li>Action: Adds the current playback point to the bookmark list or moves to the registered bookmark point.</li> </ul>
	Audio Out/In	<ul style="list-style-type: none"> <li>Buttons:  (Out) or <b>SHIFT</b> →  (In)</li> <li>Action: Enables audio communication with the remote site where the device is installed in Live monitoring mode or plays back recorded audio in Playback mode.</li> </ul>
	Menu	<ul style="list-style-type: none"> <li>Action: Enters menu mode of the device and allows you change its settings.</li> </ul>
	Enter Button	<ul style="list-style-type: none"> <li>Action: Selects an item or completes an entry that you have made during system setup of the device when controlling a device by a network keyboard. In the live monitoring mode, pressing the button freezes the current screen. When in the playback mode, pressing the button pauses playing video</li> </ul>
	Arrow Buttons	<ul style="list-style-type: none"> <li>Action: Allows you to navigate through menus and GUI of the device when controlling a device by a network keyboard. They also are used to control Pan and Tilt when in the PTZ mode. In the playback mode, pressing the  and , plays video backward and forward. When in the pause mode, pressing the  button moves to the next image and pressing the  button moves to the previous image</li> </ul>
	Jog Dial	<ul style="list-style-type: none"> <li>Action: Functions only in the playback mode of a device when controlling a device by a network keyboard. By turning the jog dial clockwise when playback video has been paused, you can play video forward image-by-image. By turning the jog dial counterclockwise when playback video has been paused, you play video backward image-by-image</li> </ul>
	Shuttle Ring	<ul style="list-style-type: none"> <li>Action: Functions only in the Playback mode of a device when controlling a device by a network keyboard. The shuttle ring is spring loaded and returns to the center position when released. Turning the ring clockwise plays video forward. Turning the ring counterclockwise plays video backward. Playback varies with the amount the ring is turned. The playback speeds are fast forward, rewind, step forward and step backward</li> </ul>

## PTZ Camera Model Number

No.	Model	No.	Model
1	IRX-100 (IDIS)	2	WJ-SX550A (Panasonic)
3	SpeedDome (HiTron)	4	D-protocol (Pelco)
5	Receiver/MPU (Sungjin)	6	KTD-312 (Kalatel)
7	Samsung Dome (Samsung)	8	CRR-1660s (Fine)
9	CRD-J6416 (Chilsung)	10	MRX-1000 (Samsung)
11	G3 Basic AutoDome (Philips)	12	Orbiter Microsphere (Ademco video)
13	Delta Dome II/Ultra IV (Sensormatic)	14	Spectra Dome (Pelco)
15	KD6 (Ultrak)	16	SPD 1600 (Samsung Techwin)
17	Zoom Camera (Samsung)	18	WV-CS850/854 (Panasonic)
19	GRU604A (LG Honeywell)	20	PIH-717 (Linlin)
21	HSD-25X (LG Honeywell)	22	Fastrax (HiTron)
23	KD6 Z-Series (Ultrak)	24	VC-C4 (Canon)
25	TK-S576 (JVC)	26	Power Controller (Dongyang)
27	CDC2400 (DynaColor)	28	Ultra VI (Sensormatic)
29	ZC-SD622J (CBC)	30	Siemens SCU (Siemens)
31	PTC-200C/CVAS (ELMO)	32	DRX-500 (Dongyang Unitech)
33	GHSD-7425 Series (GSP)	34	GHSD-7344 Series (GSP)
35	GHSD-7448 Series (GSP)	36	VisionDome (360Vision)
37	Vicon (Vicon)	38	HSDN-251 (Honeywell)
39	HDC-655 (Honeywell)	40	Pacom 2036 (Pacom)
41	CDC 2500 (Costar)	42	VRX-2201 (Inter-M)
43	DY-255RXC (Dongyang)	44	VC-C50i (Canon)
45	DMP-1223 (Tokina)	46	LPT-A100L (LG)
47	SRX-100B (Samsung Techwin)	48	22x AF Zoom (Hitron)
49	SIC722V (Costar)	50	Dennard2060 (Dennard)
51	PTC-250C (ELMO)	52	ORX_1000 (SysMania)
53	NOVUS-C	54	CRX-1401 (ERAESEEDS)
55	Fastrax2 (HiTron)	56	Solaris
57	C-CC501 (TOA)	58	LG Speed Dome
59	PTC-400 (ELMO)	60	CCDA (Siemens)
61	HRX-1000 (Honeywell)	62	GSD series(G4S)
63	A730HM (LG)	64	NIKO (New Born Hightech)
65	PTC-1000 (ELMO)	66	Remote PTZ (IDIS)
67	EPT-6000S (Yujin)		

## Specifications

INPUTS/OUTPUTS	
Network Connectivity	10/100 Mbps Ethernet
Audio Input	1 line in or Microphone
Audio Output	1 line out

CONNECTORS	
Audio In/Out	Mono / Stereo
Ethernet Port	RJ-45
RS-485 PTZ Serial Port	Terminal block
RS-485 DVR Serial Port	Terminal block
USB Port	2 on back panel (2.0)

GENERAL	
Dimensions (W x H x D)	14.8" x 3.7" x 70.0" (376.9mm x 95mm x 177.6mm)
Shipping Dimensions (W x H x D)	179.1" x 63.0" x 100.4" (455mm x 160mm x 255mm)
Unit Weight	2.41 lbs. (1.1Kg)
Shipping Weight	4.71 lbs. (2.1Kg)
Operating Temperature	32°F to 122°F (0°C to 50°C)
Operating Humidity	0% to 90%
Power Supply	5 VDC, 3A
Power Consumption	Max. 6W
Approval	FCC, CE

Specifications are subject to change without notice.