



16x16 Multicast supportable HDMI / DVI IPKVM Extender, IPKVM-310-ED

User's Manual



Front

Back

※ The design can be changed without notice

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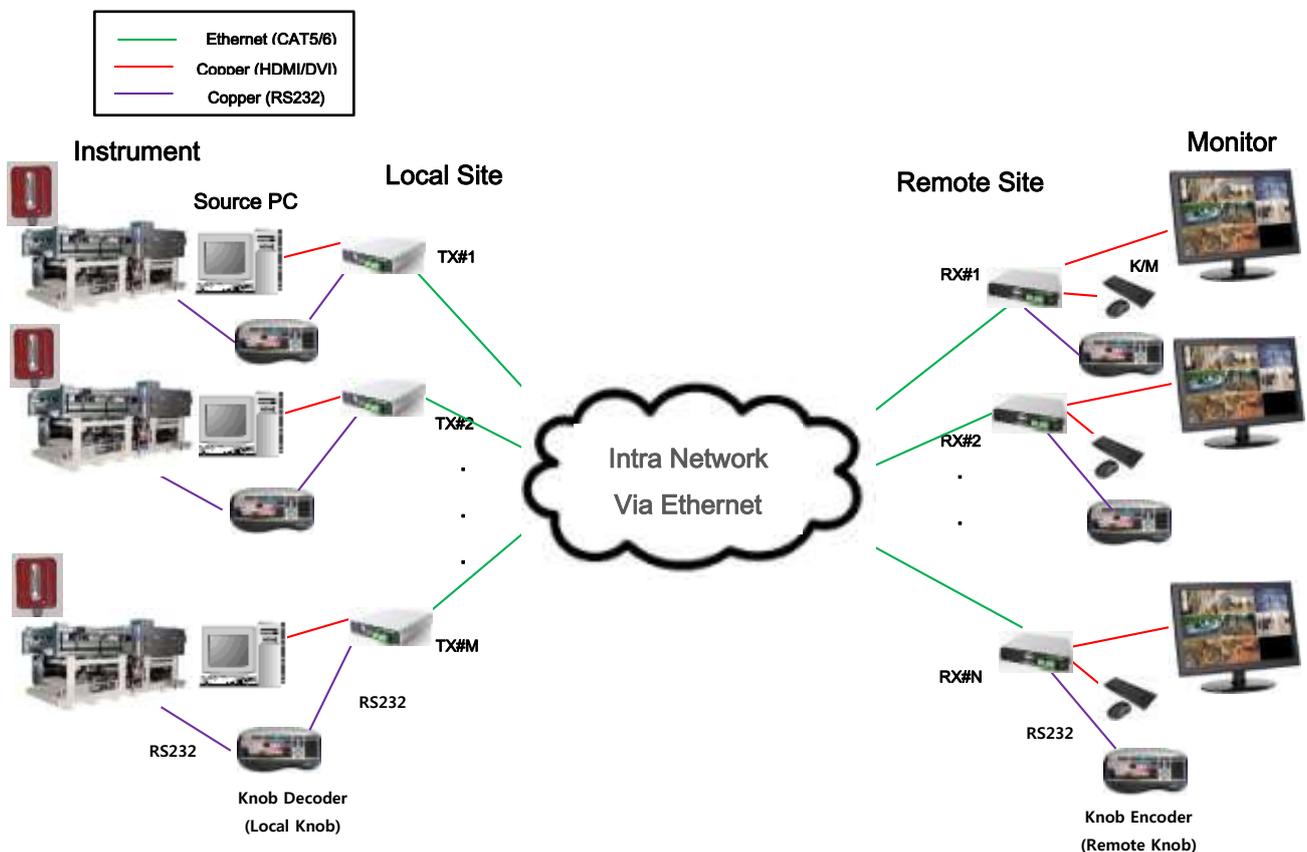
■ Welcome

Congratulations on your purchase of the IPKVM HDMI / DVI Extender, IPKVM-310ED. This manual contains information that will assist you in installing and operating the product.

■ Product Description

The IPKVM Extender, IPKVM-310ED is designed for extending of HDMI video, keyboard and mouse. IPKVM-310ED, composed of pairs of transmitters and receivers, works in conjunction to provide unicast (1 to 1) or multicast (16 to 16) streaming over an IP network. The transmitter, IPKVM-310E (Encoder), connected to a HDMI PC source, encodes the video signal by H.264 and transmits the video signal via Ethernet. The receiver, IPKVM-310D (Decoder), connected to a display monitor, receives the H.264 encoded video signal via the Ethernet and decodes video signal for HDMI display. The USB keyboard and mouse interface in the remote receiver, IPKVM-310D, also can be accessed to the source via transmitter IPKVM-310E, if it is connected to the source by USB interface.

The IPKVM-310-ED supports the digital video data of full HD up to 1920x1080p at 60Hz and stereo audio and transmits the signal via Internet / Intra network. It also enables to distribute sixteen (16) video sources up to sixteen (16) displays in the multi-screen mode or the single-screen HD mode on the remote displays and makes sixteen (16) local keyboard and mouse accesses to the source. By using GUI interface and PC program, user can control the transmitters for connecting in the receiver side. With these key features, 16 x 16 IP routing system can be configured.



■ Main Features

- ◆ LAN standard: 802.3 Ethernet 10/100Mbps (TBD)
- ◆ Video Resolution: up to 1920x1080p@60Hz
- ◆ Monitoring Mode: 640x480, 16CH Multi-screen
- ◆ HID KVM mode: 1920x1080, 1CH Single-screen with HID Keyboard/Mouse
- ◆ H.264 CODEC
- ◆ OSD GUI, Multi-screen mode / Single-screen HD mode supported
- ◆ Remote Manager: PC Program for User Setting & Control
- ◆ HDMI V1.3, DVI 1.0
- ◆ USB KVM via backchannel: USB HID mouse & keyboard on remote site or local site
- ◆ IPKVM-310E(Transmitter,Tx): Power Jack, RJ45, HDMI Input /HDMI Output (Loop-through) and mini USB port/Dual USB port
- ◆ IPKVM-310D (Receiver,Rx): Power Jack, RJ45, HDMI Output and Dual USB ports

■ Network components

- ◆ Source: A video source connected to a transmitter (encoder), a source can be a media player, personal computer, or camera.
- ◆ Transmitter (Encoder): An encoder is needed for each source and can broadcast to a single transmitter (decoder) or to multiple receivers (decoders).
- ◆ Receiver (Decoder): A decoder is needed for each display output.

Note: A personal computer using a video player such as VLC player can also be used to decoder the signal from an encoder.

◆ PC Controller: Via a PC connected to the network, RemoteManager (PC program) manages user accounts, configures IP addresses of IPKVM-310EDs and provides user informations about each IPKVM connection.

◆ IP Network: An IP network what IP devices is connected via Switching hub.

e.g Ethernet switching hub, Optical-Ethernet switch



■ Shipping Group

◆ IPKVM-310E: Transmitter (Encoder) or IPKVM-310D: Receiver (Decoder)

◆ AC/DC power adaptor: One (1) unit of 5V, 3A

◆ One (1) HDMI male to male cable (1.5m)

◆ One (1) Mini-USB Cable for PC

◆ User's manual

Option

◆ Two (2) RS232 cable: DB9 male to 3Pin terminal block

◆ Switch (Tx): Console Switch & RJ11 male to 3Pin terminal block

◆ Indicator(Rx): Console Indicator & RJ11 male to 3Pin terminal block

■ Supporting Video Resolutions for Input / Output (TBD)

IPKVM-310ED supports 3 kinds of resolutions and you have to fix one of them for same EDID. So a group of Rxs and TxS must have same resolution to display videos of TxS on 16ch multi-screen of Rxs.

- ◆ 1280x720p60
- ◆ 1280x1024p60
- ◆ 1920x1080p60

Note: Some PC resolutions may not be displayed properly.

■ Application

- ◆ KVM
- ◆ Video Control room
- ◆ RCS/ROS

■ Systems Requirements for Setup

◆ Hardware requirements

- ▶ You must have a HDMI graphic controller or card having a HDMI or DVI port in your PC or any other equipment being used.
- ▶ It should support the maximum graphic resolution feature of displays to be connected.
- ▶ No special requirements for memory size, CPU speed and chipsets, if you've already properly installed your HDMI graphic controllers or cards.

◆ Software requirements

- ▶ You need to check OS version of your PC or any other equipment being used. [TBD]

◆ Network requirements

- ▶ You may need Ethernet switch(L2 or L3) as a switching hub, Optical-Ethernet switch or router for connecting multiple IPKVM -310EDs in Local intranet or Internet. And also it is possible to communicate directly between one pair of IPKVM-310ED, point-to-point connection. Network speed of each port of Ethernet switch requires 100/1000Mbps

◆ Control PC requirements

- ▶ We provides a PC program for management and monitoring. The program manages user accounts, configure IP addresses of IPKVM-310EDs and help user to know about each IPKVM connection.
- ▶ Requirements: Windows XP and Window7 (or above OS)

◆ AC/DC Power Adapter Technical Advisory

- ▶ The IPKVM-310ED has a reverse voltage protection circuit and receiver (Rx) module also has overcurrent protection circuit.
- ▶ The IPKVM-310ED is designed to use mainly external +5V AC/DC power adaptor. The internal power supplied through a HDMI pin (#18) from the graphic source is used to identify normal connection between a source and transmitter, IPKVM-310E.

■ Installation

Important: Please keep the installation procedure below. Improper or no operation may result if the start-up sequence is not followed correctly.

Step 1

Carefully unpack the contents of the shipping group.

Step 2

Turn on the PC, display, and network server

Step 3

Connect HDMI IN port in IPKVM-310-E (Tx) to the PC by supplied HDMI cable.

Step 4

Connect mini USB port in IPKVM-310-E (Tx) to USB port in PC with supplied USB cable.

Step 5

Connect Local Display port in IPKVM-310-E (Tx) to HDMI port in a display with HDMI cable. Then, Connect the IPKVM-310-E (Tx) to PC over two (2) USB cables for Keyboard and Mouse. You may skip Step 5 if you don't need local control.

Step 6

Connect LAN port (RJ45) in IPKVM-310-E (Tx) to LAN port in Network server with LAN cable.

Step 7

Connect HDMI OUT port in IPKVM-310-D (Rx) to a display by supplied HDMI cable. Then, Attach keyboard and mouse for remote control.

Step 8

Connect LAN port (RJ45) in IPKVM-310-D (Rx) to LAN port in Network server with LAN cable.

Step 9

Plug the +5V power adaptors to both IPKVM-310-E (Tx) and IPKVM-310-D (Rx).

Note1: If you change an input source to another source, you have to reset the power of all Txs and Rxs by re-plugging of the +5V power adaptor.

Note2: Please see the page 11 for setting Local / Remote control.

■ Connection Ports

◆ Connector descriptions

▶ 5V AC/DC Power (Transmitter & Receiver)

Connect the 5V AC/DC Power Adaptor to the connector of each device. When the 5V AC/DC Power Adaptor is connected to the device, the power LED is turned on. For more information on LEDs, see "LED indication"

▶ HDMI IN (Transmitter)

Connect your video source (such as a PC) to this connector. If your video source doesn't support HDMI output, use an HDMI/DVI cable or an HDMI converter to connect it to your transmitter device. Note: To connect to this connector, you need a shielded HDMI cable.

▶ HDMI Out (Receiver)

Connect a digital monitor to this connector. If your digital monitor has not an HDMI input, use an HDMI/DVI cable or an HDMI adaptor to connect it to your receiver device. Note: To connect to this connector, you need a shielded HDMI cable.

▶ Local Display (Transmitter)

Connect a digital monitor to the HDMI output connector. If your digital monitor has not an HDMI input, use an HDMI/DVI cable or an HDMI converter to connect it to your transmitter device. Note: To connect to this connector, you need a shielded HDMI cable.

▶ RJ45 (Transmitter & Receiver)

Connect a network cable (CAT5e/CAT6) to this connector.

▶ mini USB port (Transmitter)

Connect a source PC to this connector for the purpose of using HID mouse or Keyboard.

▶ USB A Type (Transmitter and Receiver)

Connect a mouse and/or a keyboard to this connector for the purpose of using HID mouse or Keyboard.

▶ RS232 (Transmitter & Receiver):

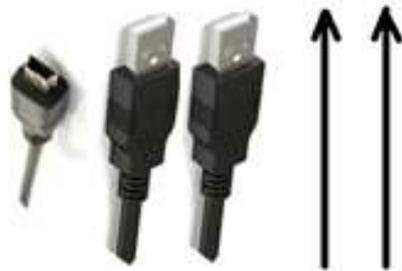
Optional - Connect a RS232 cable to this terminal block for the purpose of using a knob or controller (which controls an instrument or receive some data from an instrument).

▶ DIO (Transmitter & Receiver):

Optional - Connect a DIO cable to this terminal block for the purpose of using Knob or console switch/console indicator (which set and display an Local/Remote Authority).

Note: If you change a source to another source such as PC, Camcorder, you have to reset the power of all Tx's and Rx's by re-plugging of the +5V power adaptor.

◆ IPKVM-310E Transmitter Front



| | | | |
|----------|----------------|------------------|-------|
| Mini USB | USB A for | DIO | RS232 |
| for PC | Mouse/Keyboard | (Terminal Block) | |

◆ IPKVM-310E Transmitter Back



Power Jack (5V, 3.5mm) HDMI Input (Source) HDMI Output (Monitor) RJ45 JACK (LAN)

◆ IPKVM-310E Receiver front



USB A for Mouse/Keyboard DIO RS232 (Terminal Block)

◆ IPKVM-310E Receiver back



Power Jack (5V, 3.5mm) HDMI Output (Monitor) RJ45 JACK (LAN)

■ Setting Local/Remote Authority

Note: You can use KVM (including an HID mouse and/or a keyboard, or a knob (or controller)) under user's authority. You can access to the devices by a login with user ID and set user's authority to Local or Remote state for purpose using Keyboard/Mouse. And you can see whether you can access the devices on the display of monitors of a remote site.



◆ 3-state Slide Switch

You can set user's authority to Local, Remote, or Console (L/R/C) on the 3-state Slide Switch. "L" means Local state, "R" means Remote state, and "C" means Console state. Console State means a state which you can select a Local or Remote state on an external console switch. (Refer to "A.1 Externally Setting Local/Remote Authority")

■ LED Indication

IPKVM-310ED has two (2) LEDs for Power and Authority status located on the front

◆ Power status LED (Red)

When power is applied, the red LED will be turned on.

◆ Authority status LED (Green)

If green LED turns on on the transmitter, IPKVM-310E is ready to use HID Mouse/Keyboard and others (Knob, etc.) on the Local site. And also if green LED turns on the receiver, IPKVM-310D is ready to use HID Mouse/Keyboard and others (Knob, etc.) on the Remote site.

You can decide the authority on the 3-state slide switch of IPKVM-310E (Transmitter) among Local, Remote, or Console. If it set to Console on the 3-state slide switch, you can set the authority state to Local or Remote on the external console switch. And you can see same status via LEDs on the Console switch and Console Indicator. (Refer to “A.1 Externally Setting Local/Remote Authority”)

■ SW & Factory Reset

- ◆ SW Reset: Press the Reset switch on the back of devices shortly to reset the default software.
- ◆ Factory Reset: To recover the Factory setting, press and hold the Reset switch on the Back of devices until the LED is turned off after blinking approx.10sec.

■ Configuration & Operation

Note: Please keep the installation procedure below. Improper or no operation may result if the start-up sequence is not followed correctly.

Important: IPKVM-310ED supports static fixed IP on the network and a default IP is 192.168.0.100 on the Tx and 192.168.0.200 on the Rx. And also, Gateway is 192.168.0.1 and Subnet Mask is 255.255.255.0 in both Tx and Rx. So you need change the IP address to another one, which you want, by using PC Program.

■ Remote Manager (PC Program)

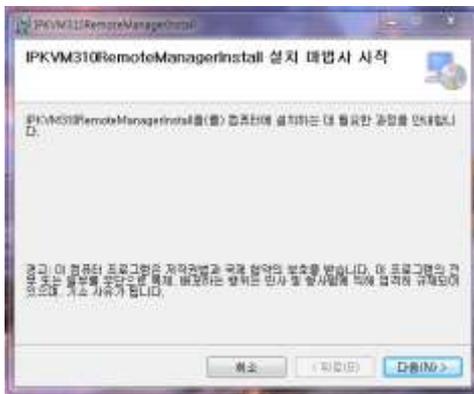
1) Installing PC Program

Important: First of all, you should check the IP address and Gateway of the PC which should be set to the same IP class of the devices, Tx's and Rx's on Network setting of PC.

eg. Tx 192.168.0.40 (GW 192.168.0.1), Rx 192.168.0.51 (GW 192.168.0.1)

=> PC 192.168.0.xxx (GW 192.168.0.1)

- (1) Run the setup.exe on the Window Operating System.
- (2) Carry out the procedure according to on-screen instructions.
 - ▶ It will take a few seconds installing procedure to be completed.
- (3) Firstly, uninstall on the Control Panel of Window OS to re-install or upgrade the PC Program.



2) Logging in

◆ If installation is completed, you can ready to access the PC program and setup system totally.

- (1) Run the PC program (RemoteManager).
- (2) Firstly, login as an admin ID & password to access the PC program.

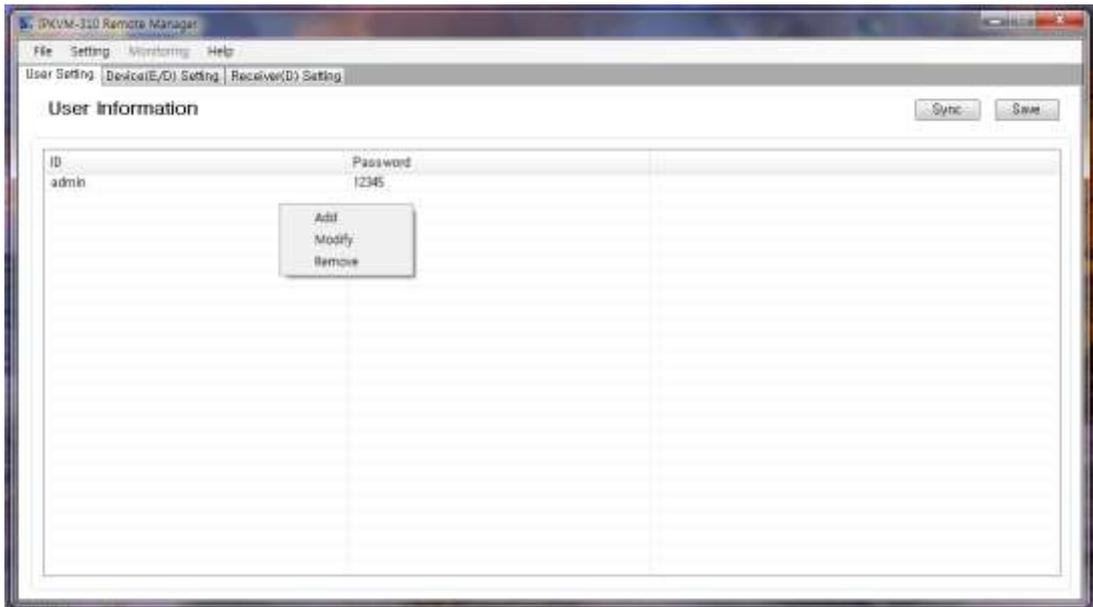
Note. A default value of administrator ID and Password are "admin" and "12345" for logging in.



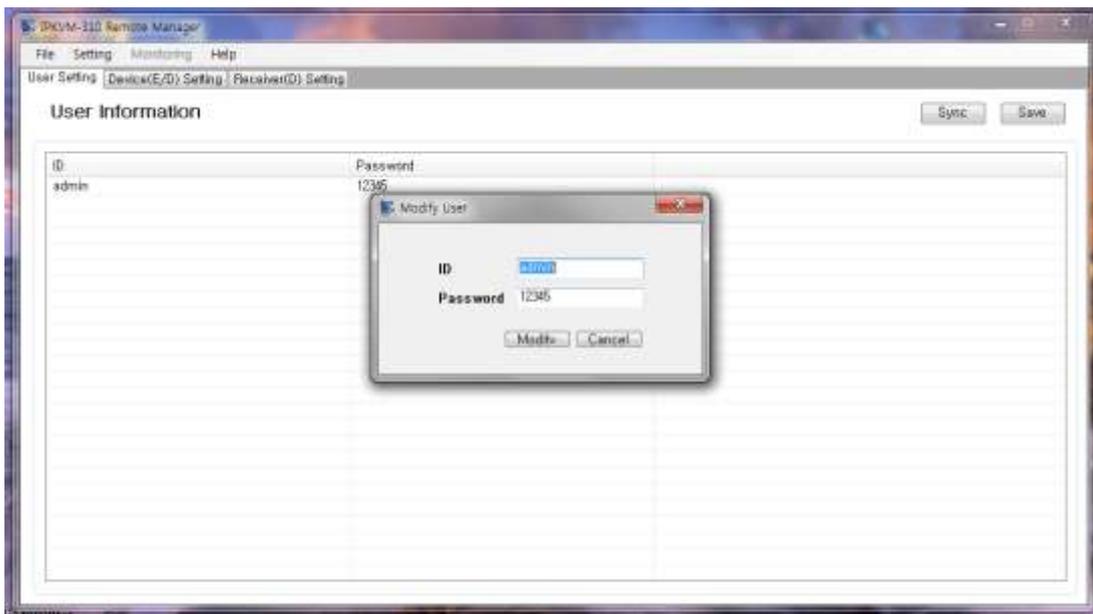
3) User account

Note. A default administrator ID & password are "admin" and "12345". You had better modify the password.

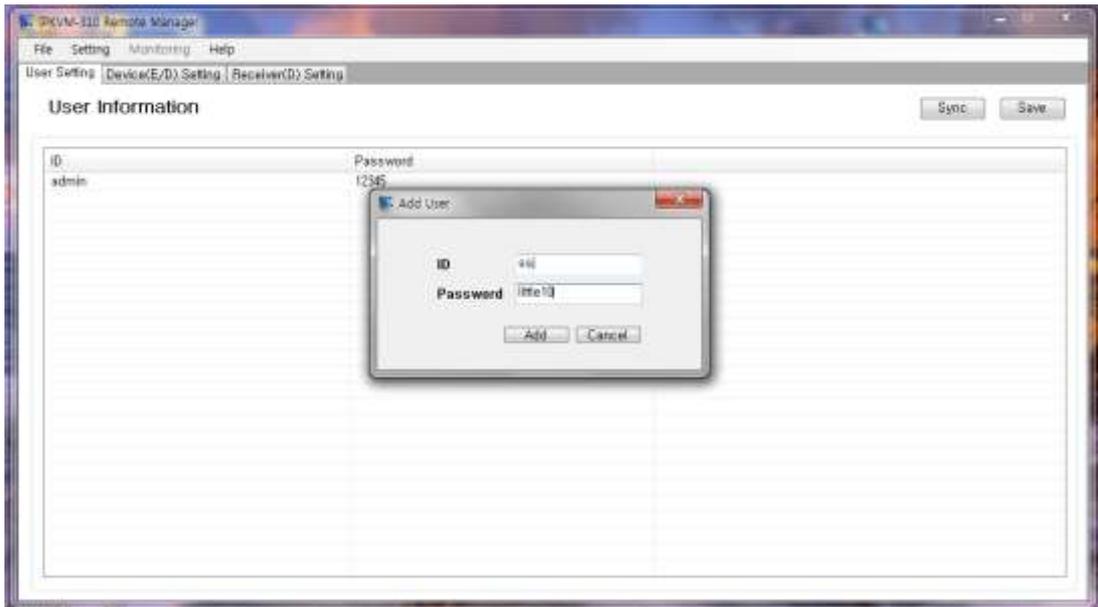
- (1) Click Mouse right button to modify the value.



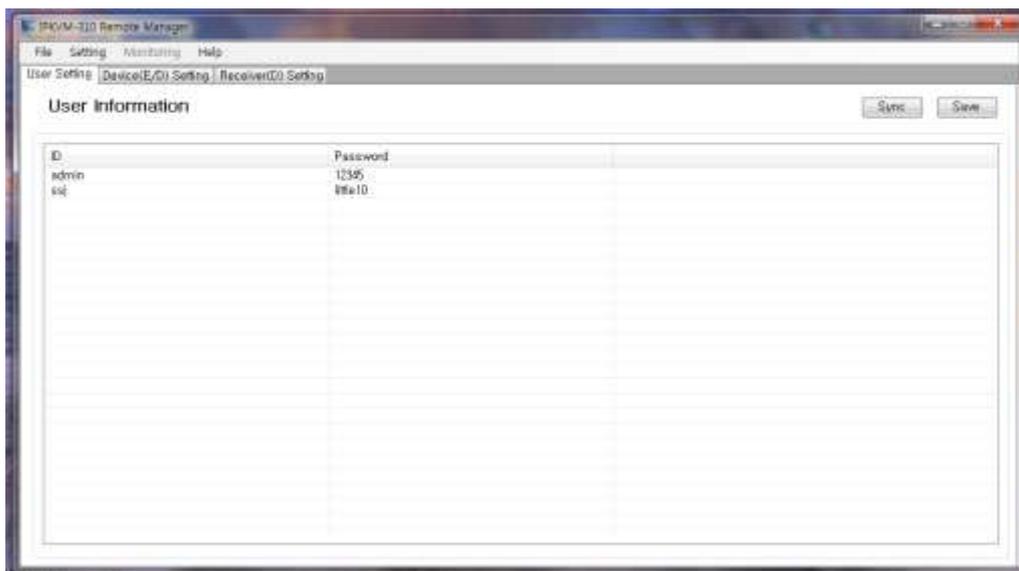
- (2) Change the value of the password to another one. It is limited to 10 characters including numbers and English alphabets.



- (3) Add user IDs and passwords for general users.
- ▶ Click Mouse right button to add or modify the values.
 - ▶ It is also limited to 20 characters including numbers and English alphabets.



(4) Press “Save” and “Sync” to save and use user accounts



4) Device(E/D) setting: to add, automatically detect and change device information.

Note: You can register the devices such as transmitters (IPKVM-310E encoders) and receivers (IPKVM-310D decoder) to connect as a group of network connection.

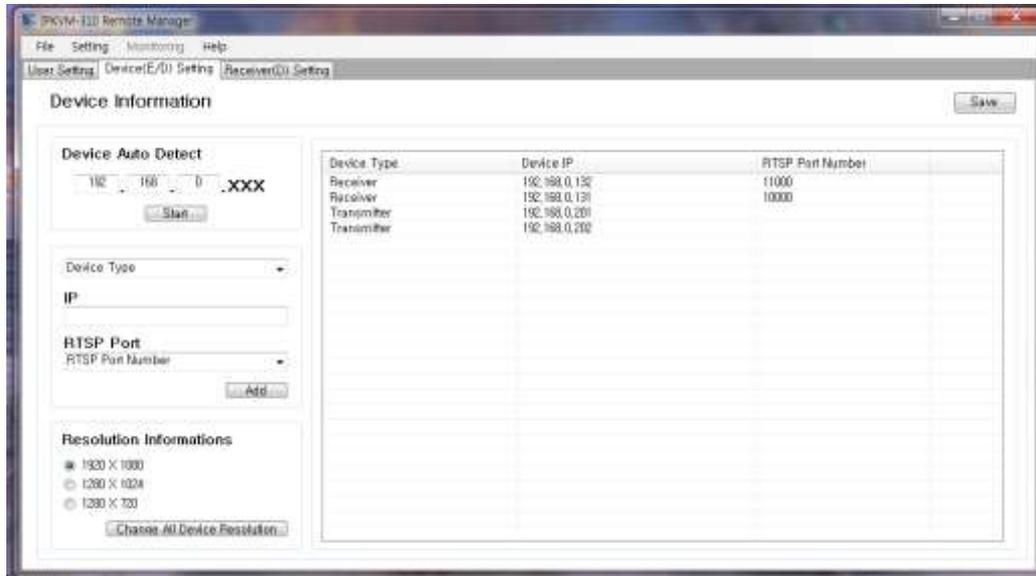
There are two methods:

- You can automatically detect in the network and change devices and register those.
- You can manually add or change devices and register those.

Note: To register the devices to Tx list and use Rx grouping, you should press 'Save' button to save the IP list after you add and change the devices.

- ◆ You can automatically detect the devices.

This method is to find devices automatically and register easily if the devices, Tx's and Rx's, are already connected in the network.



(1) Firstly, check and enter IP class to find easily. eg. 192.168.0.xxx

(2) Press "Start" button.

- ◆ You automatically detected devices so, you can see 4 IP Addresses connected to the network on the above figure.

- ◆ You can manually add IP address of a transmitter or a receiver.

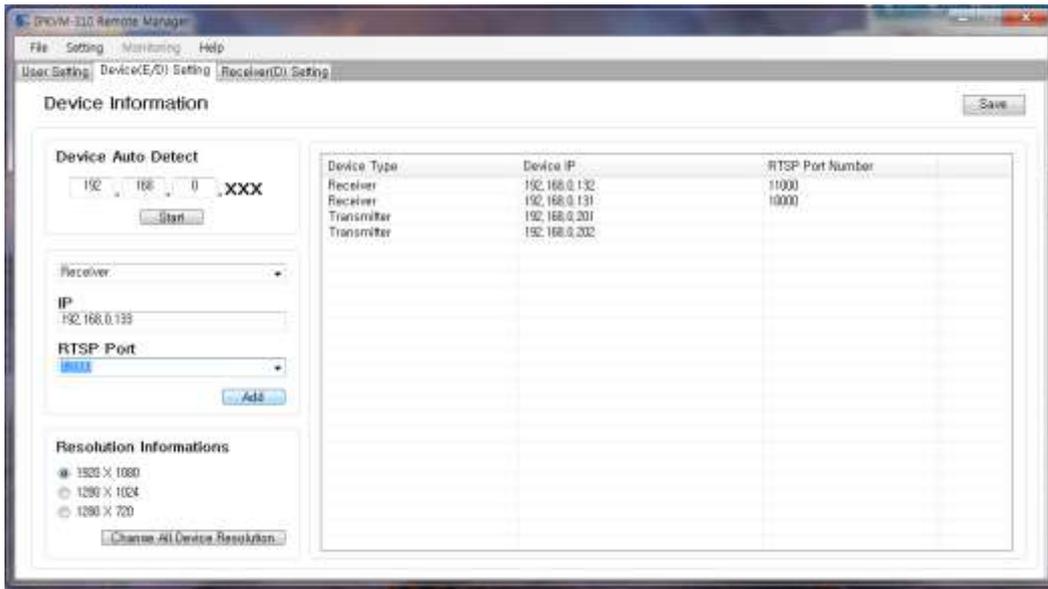
Note: Also you can add or change an IP address of each device in the condition of being directly connected to PC through LAN cable using this same PC program.

(3) Select Device type on the top left corner. : Select one of Transmitter(E) and Receiver(D)

(4) Enter IP address in case of Tx's. eg. 192.168.0.41

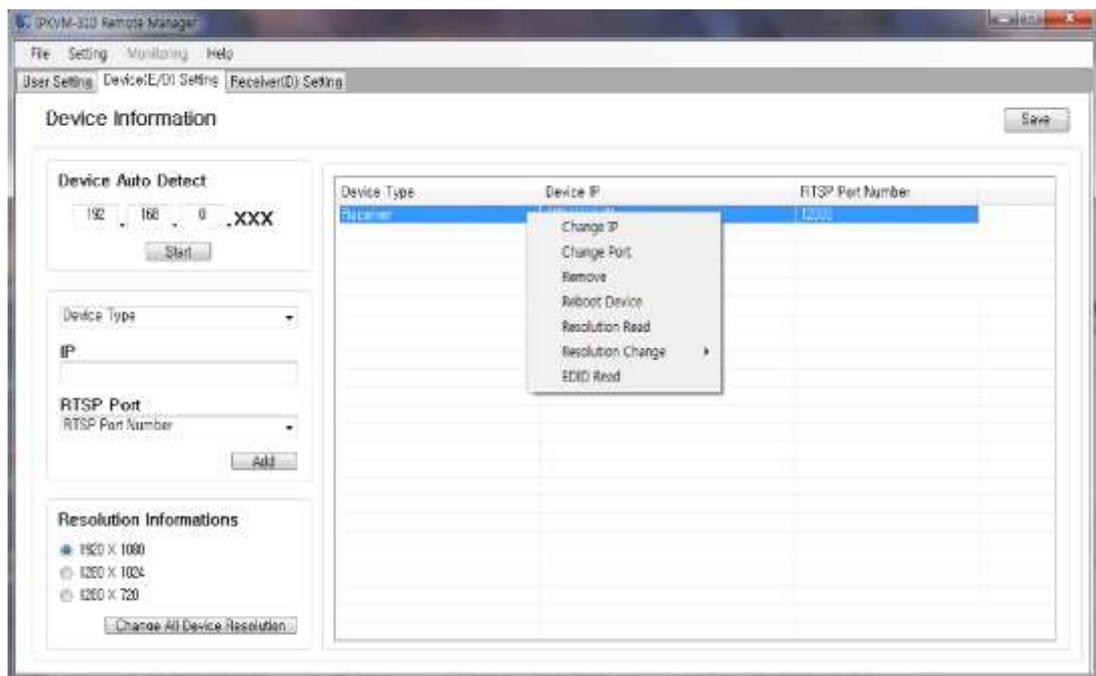
(5) Or enter IP address and select RTSP port from list(10000~25000) in case of Rx's
eg. 192.168.0.51, and 12000

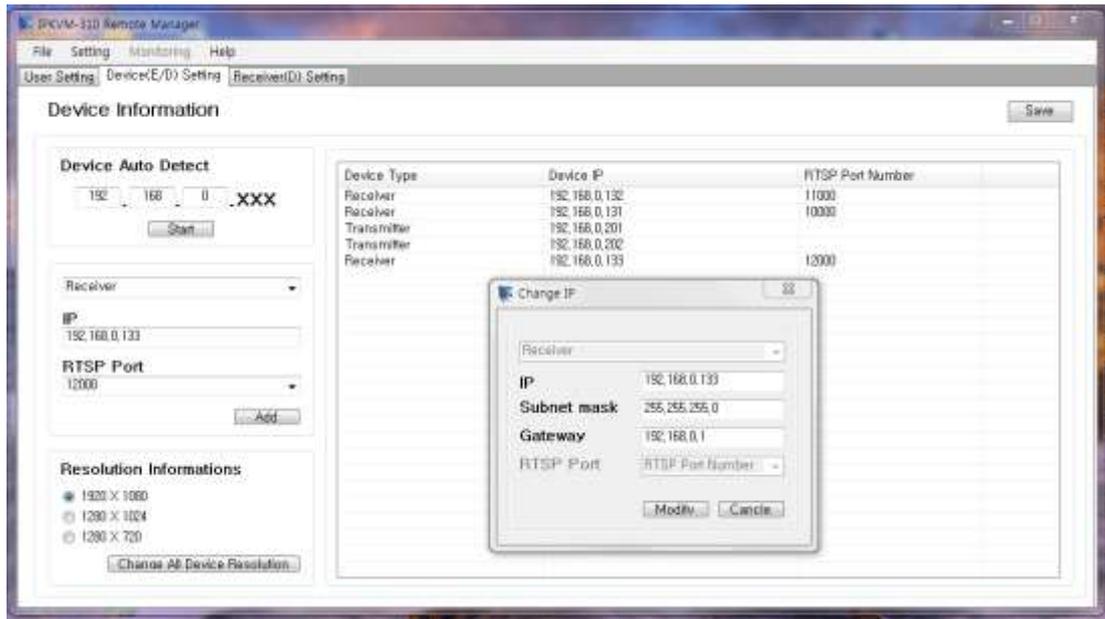
(6) Press "Add" button to apply the device to the list.



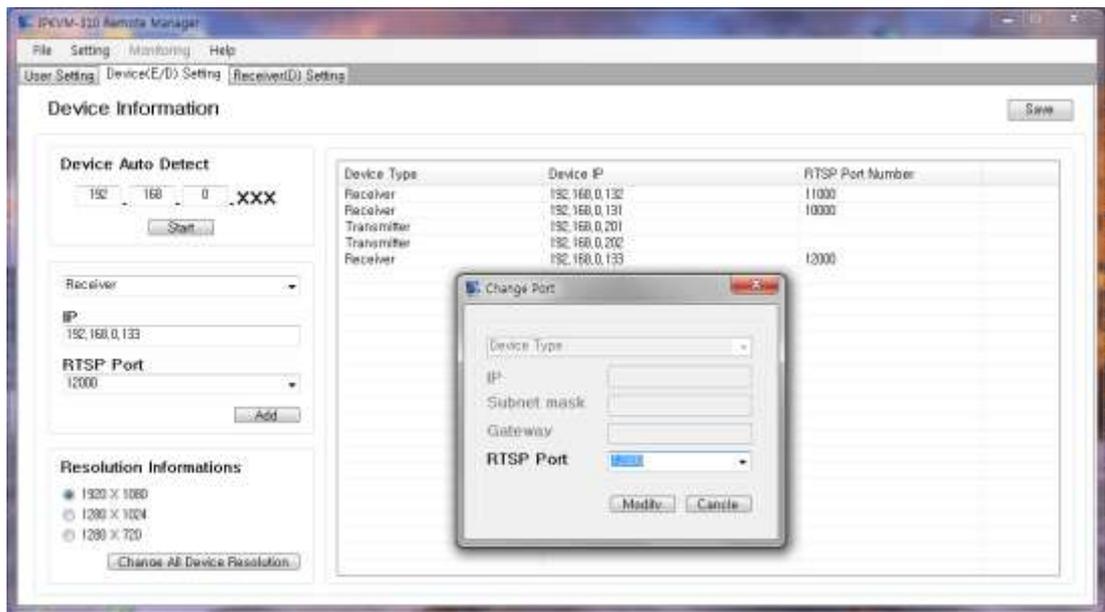
◆ You can change IP address of a transmitter or a receiver.

(7) Click Mouse right button and select 'change IP' to change to another IP address.

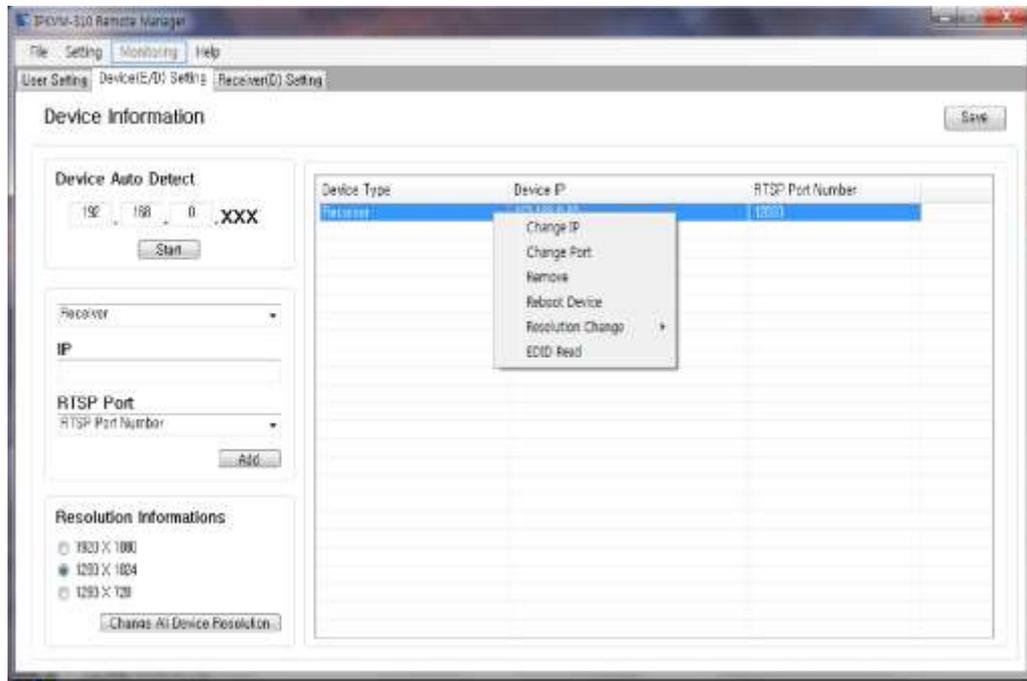




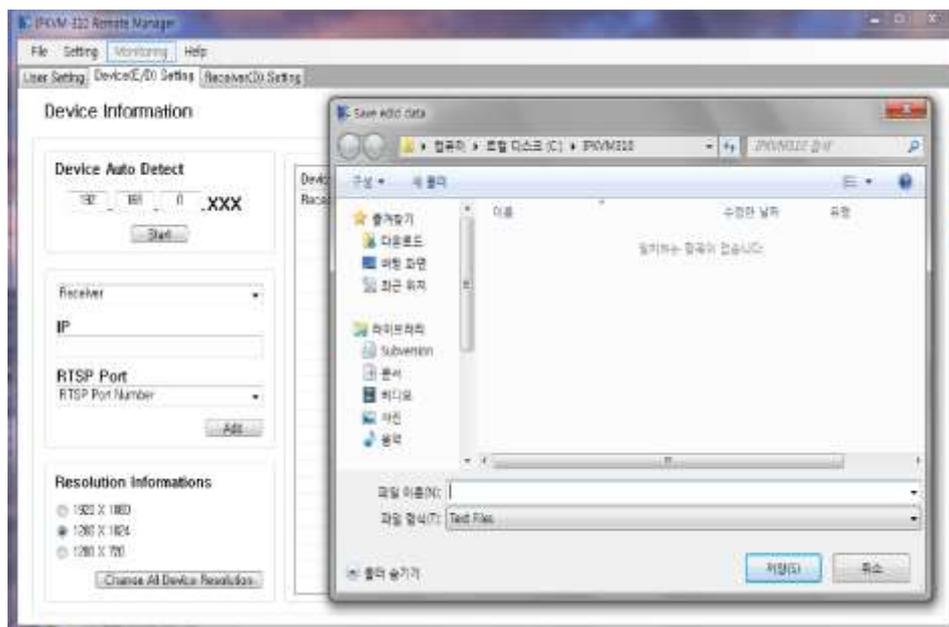
- ◆ You may change to another port of change IP address in case of Rx device.
- (8) Click Mouse right button and select 'change port'



- ◆ You can read and write the EDID of the connected monitor without using built-in EDID.
- (11) Connect a monitor to HDMI/DVI port of the Receiver and recycle the power supply of selected device
- (12) Click Mouse right button and select “EDID read”

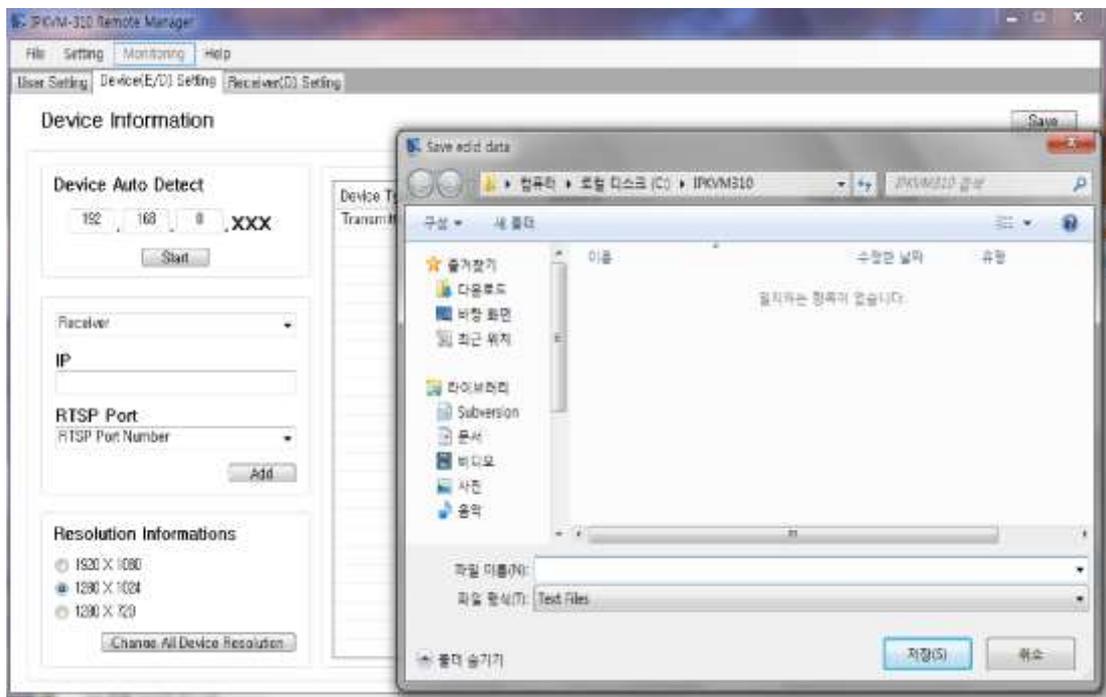
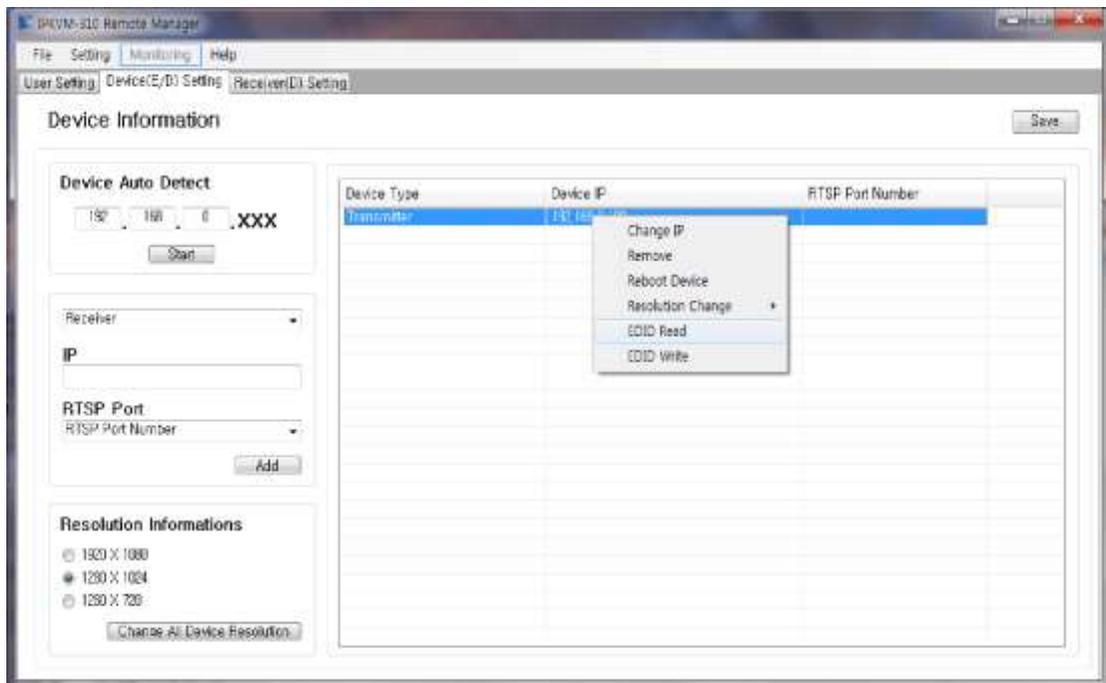


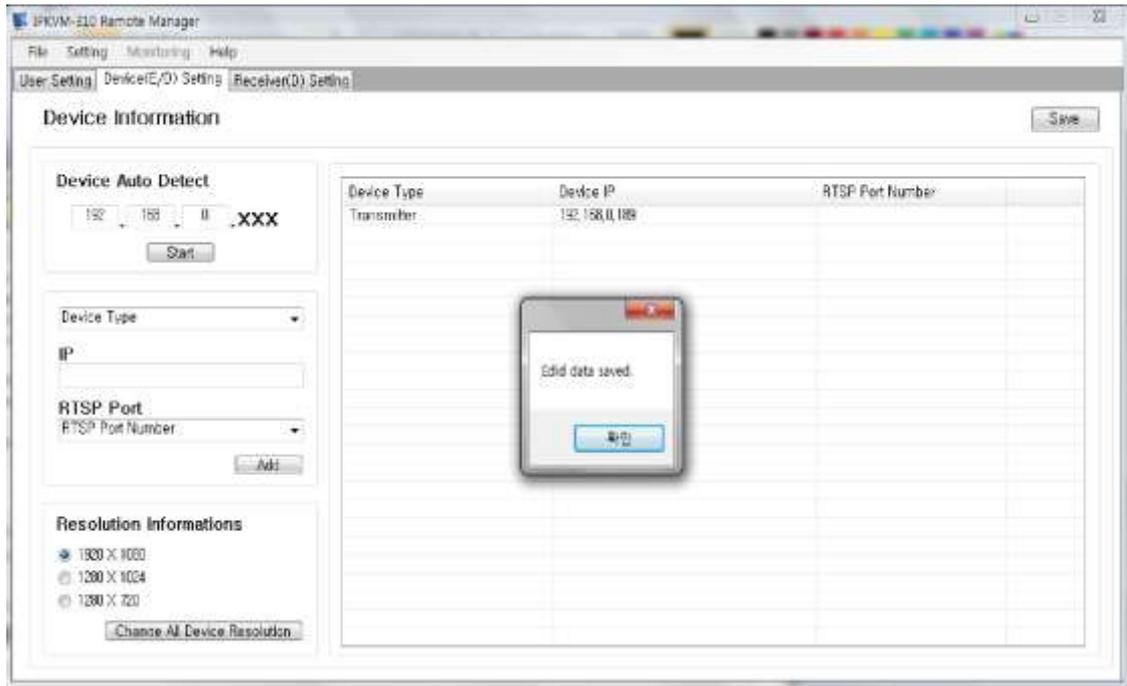
- (13) You can read and the EDID of the connected monitor



- (14) You can save the red EDID to PC for writing the EDID to a transmitter.

- ◆ You can repeat [11]~[14] to read EDID of a transmitter except connecting a monitor to HDMI/DVI Loop-through port of the Transmitter



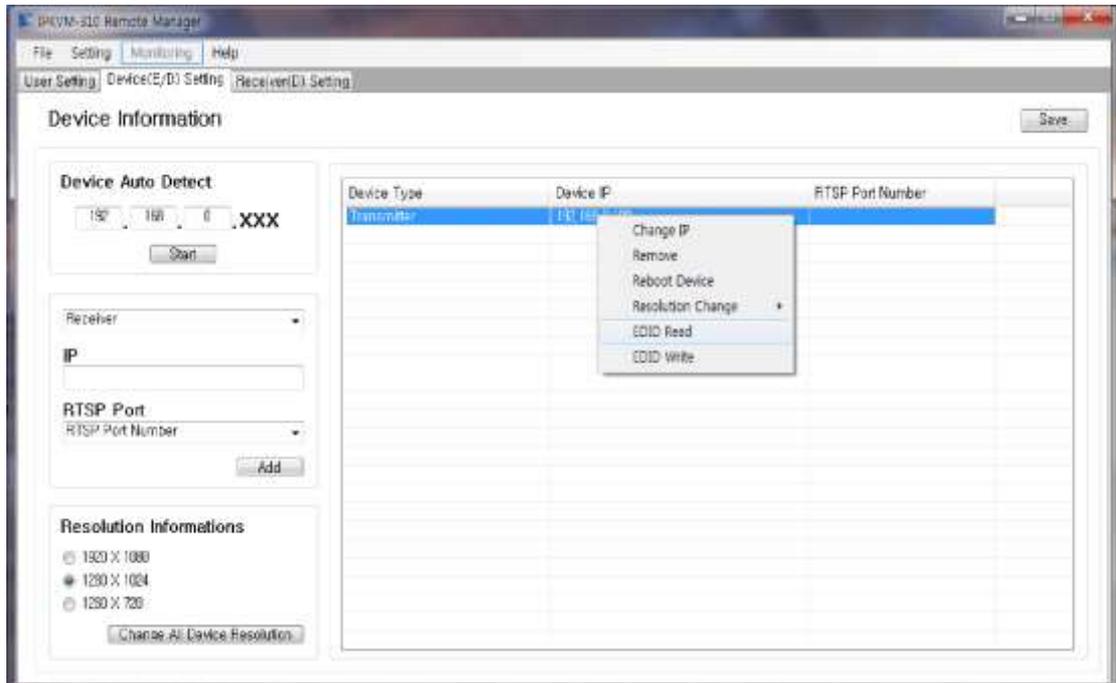


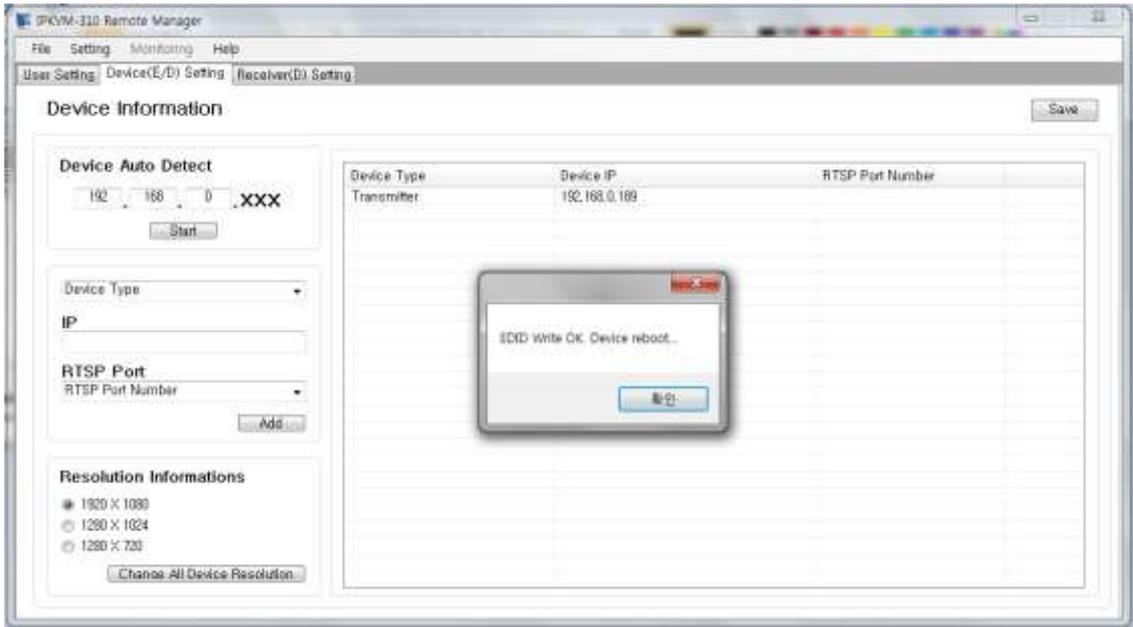
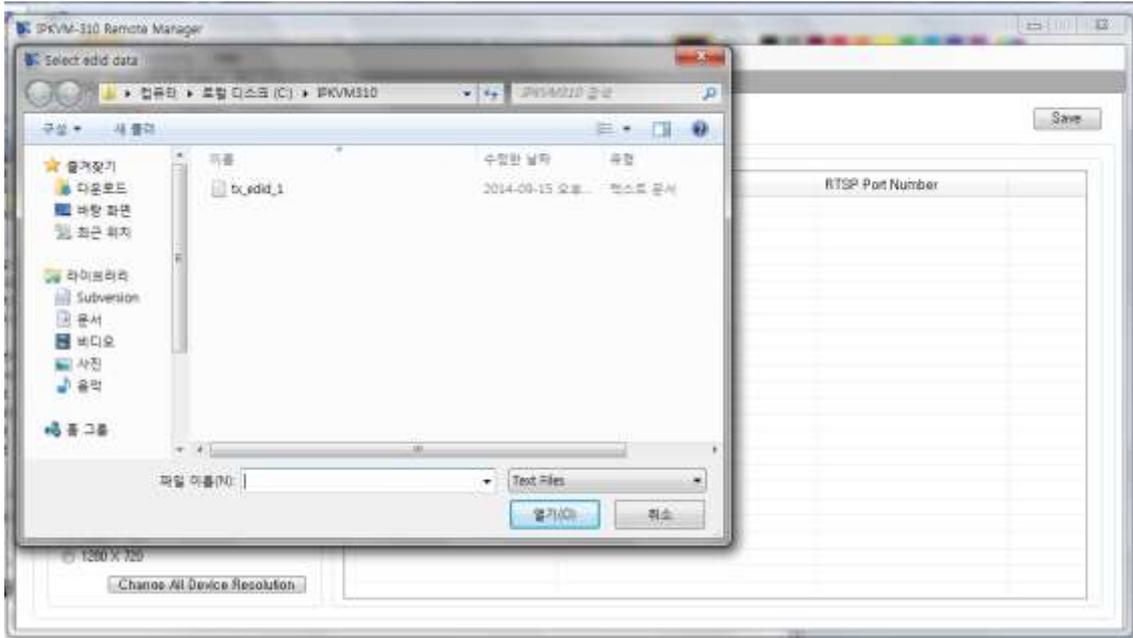
◆ You can write the EDID to the transmitter from previously saved EDID data in PC.

(15) Click Mouse right button and select “EDID write”

(16) Select the EDID to the transmitter from previously saved EDID data in PC.

And then you can see a message ,“EDID write OK, Device reboot”





- ◆ You can reset device to reboot or recycle the power supply of selected device.
(17)Click Mouse right button and select “reset device”
 - ◆ You can select ‘change resolution’ of device individually.
(18)Click Mouse right button and select “resolution change”
 - ◆ You can also change resolution of all devices in the network as one of 1920x1080, 1280x1024, and 1280x720 (TBD) when you need to change the resolution for consideration of a source or a monitor.
- Note: This function apply to all device in the network at a time.

(19) Check another resolution and press the button, "Change All device resolution"

Note: In cases of (17), (18) and (19), the devices are rebooted if those function is applied.

5) Receiver(D) setting

◆ You have to register a group of transmitters up to max. 16 to each receiver.

Note: Before add the Tx IP to the list, firstly insert the name to each transmitter.

◆ You can insert device name to each transmitter by double clicking an area of the device name (top right). (Eg. No 1 or Hitach16.)

(1) Double click an area of device name

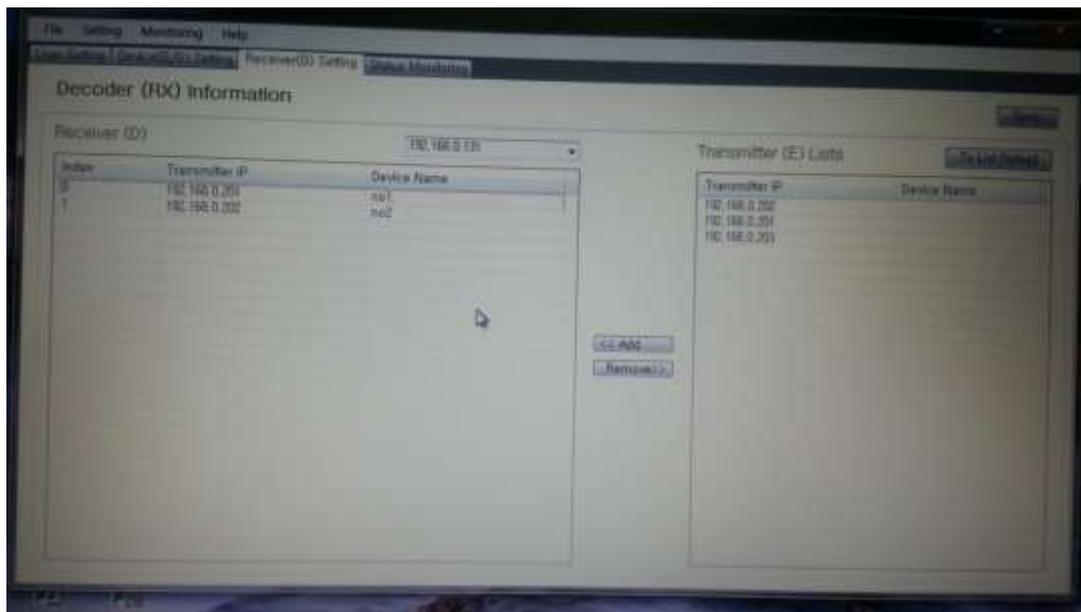
(2) Insert a name to the area of the device name (top right)

(3) Select a receiver (including IP address) from the list of Rx's

(4) Click "Tx List Reload" and add a transmitter from transmitter (E) list.

(5) Or, remove a transmitter from selected transmitters.

(6) Repeat (3)-(4) to add another transmitter.

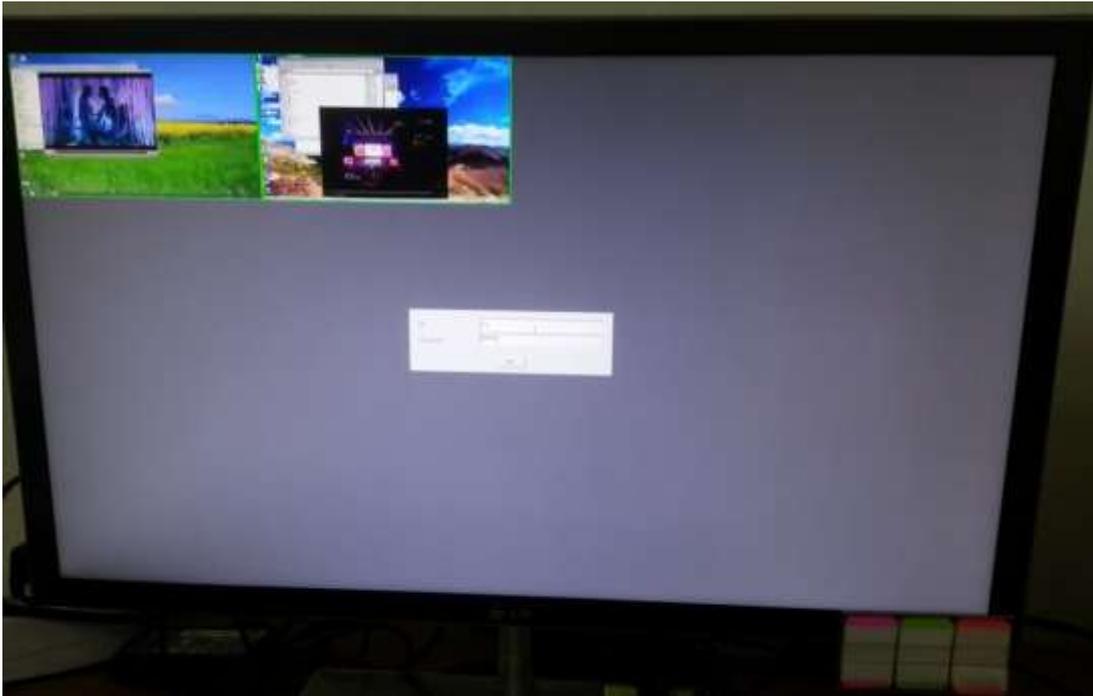


◆ You can change the order of the transmitters in the group of receiver on the multi-screen.

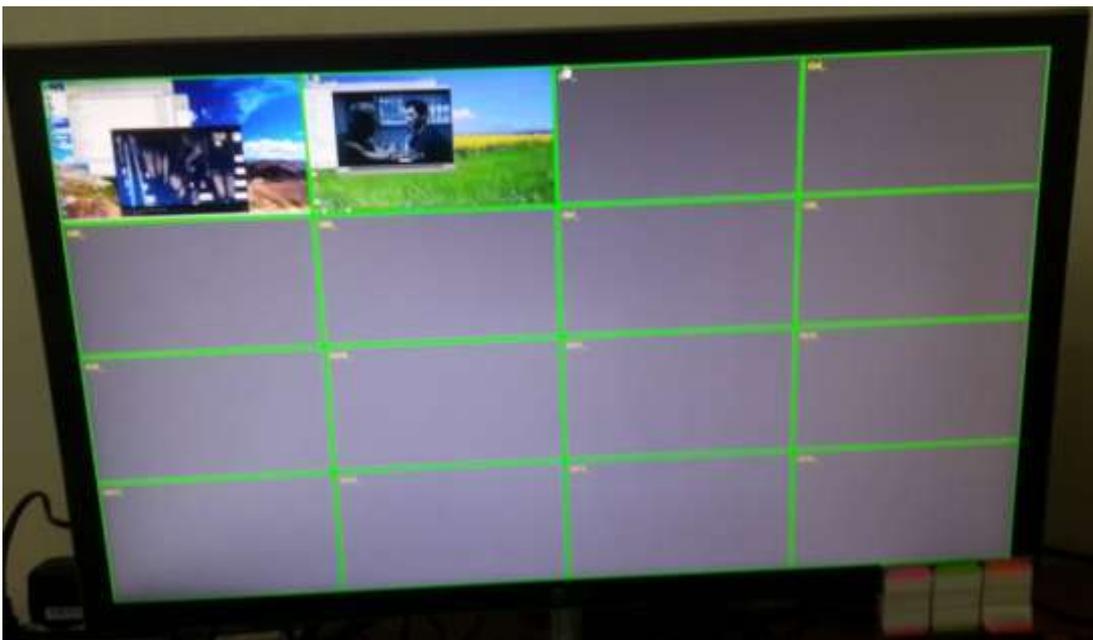
(7) Double click an area of the index

(8) Change the number and then the number and matched number change all together.

Eg. it changes to Index0 (no. 2) and index1 (no.1) on the above figure.



(9) Press "Sync" button to save and use as a group of the list to each receiver.



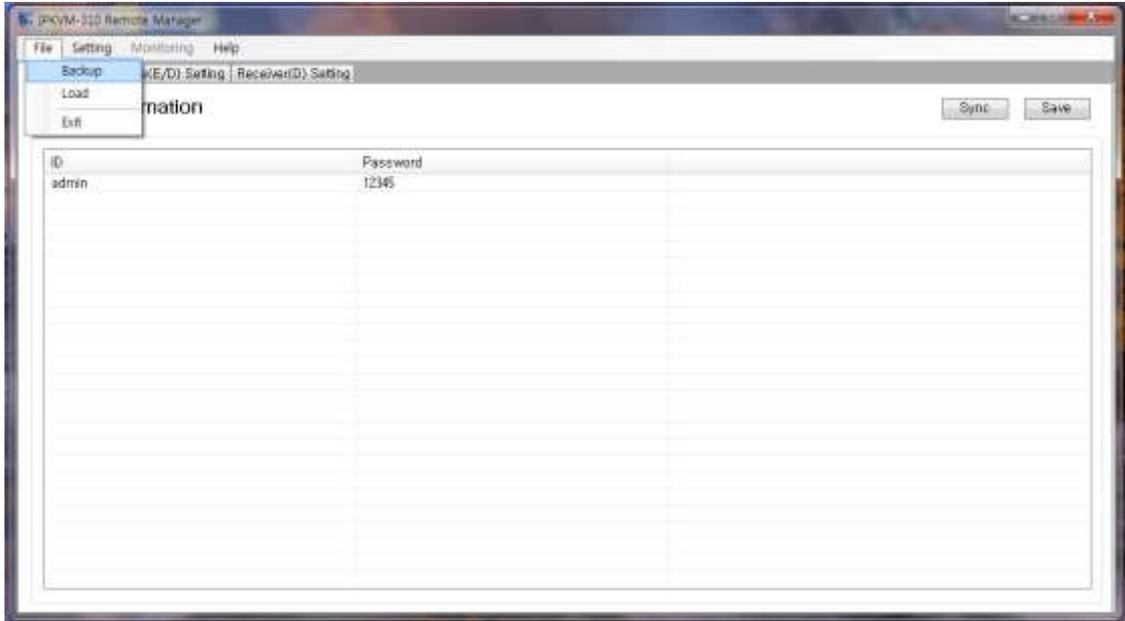
◆ You can see the device name on each channel after login.

(10) Backup and load of Setup environment which was already set in other PC

You can easily use previous setup environment without complicated steps. So, firstly you need copy files from previous PC and load the setup environment on new PC.

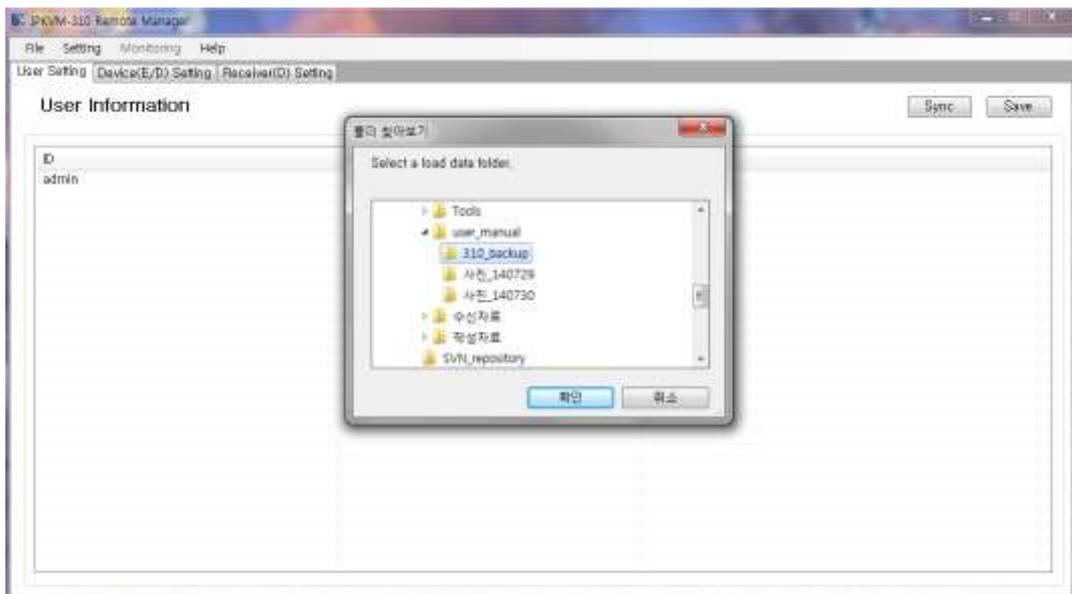
◆ Backup

- (1) Select “backup” button on the top menu.
- (2) Select a file folder on the PC which you want to backup.



◆ Load

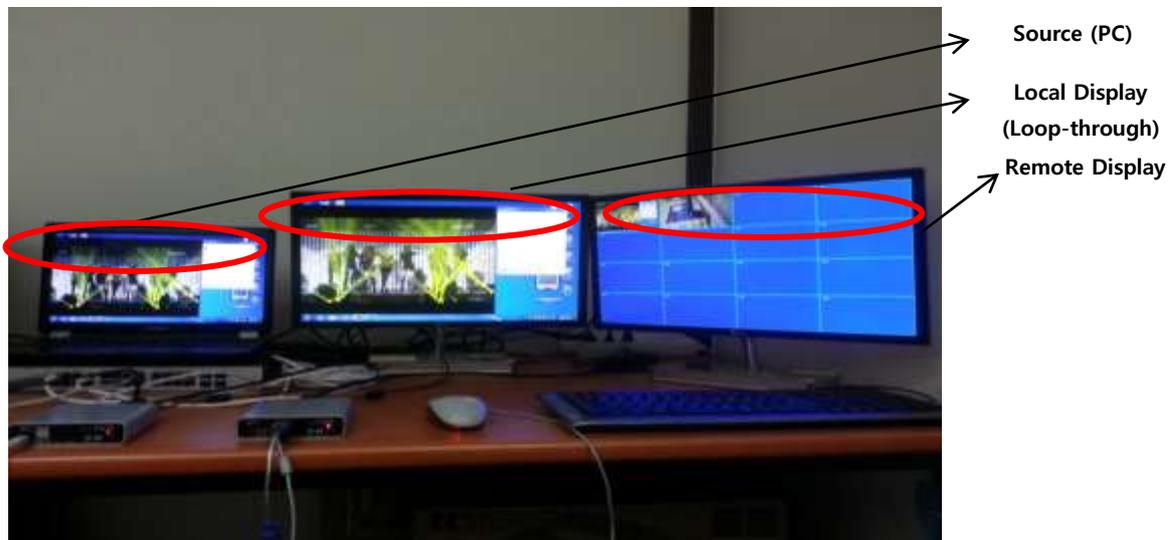
- (3) Firstly, copy and paste to the files backed up to a file folder on new PC.
- (4) Select “load” from file on the top menu.
- (5) Select the file folder on the PC which you backed up the setup environment.



■ Getting started

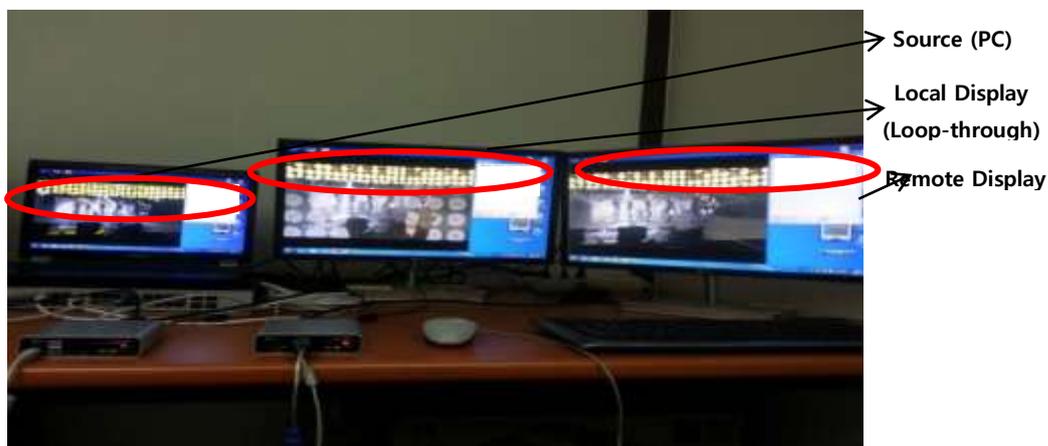
1) How IPKVM-310 works: 16CH multi-screen mode

- ◆ When 2 pairs of IPKVM-310ED have been connected, it will be totally showed as below.
 - ▶ A Source (PC) is connected to the input port, HDMI IN, of the transmitter (E).
 - ▶ A Local Display monitor is connected to the HDMI output port as a Loop-through port of the transmitter (E).
 - ▶ A Remote display monitor is connected to the output port, HDMI OUT of the receiver(D)
 - ▶ The Remote display shows as 16CH multi-screen mode.



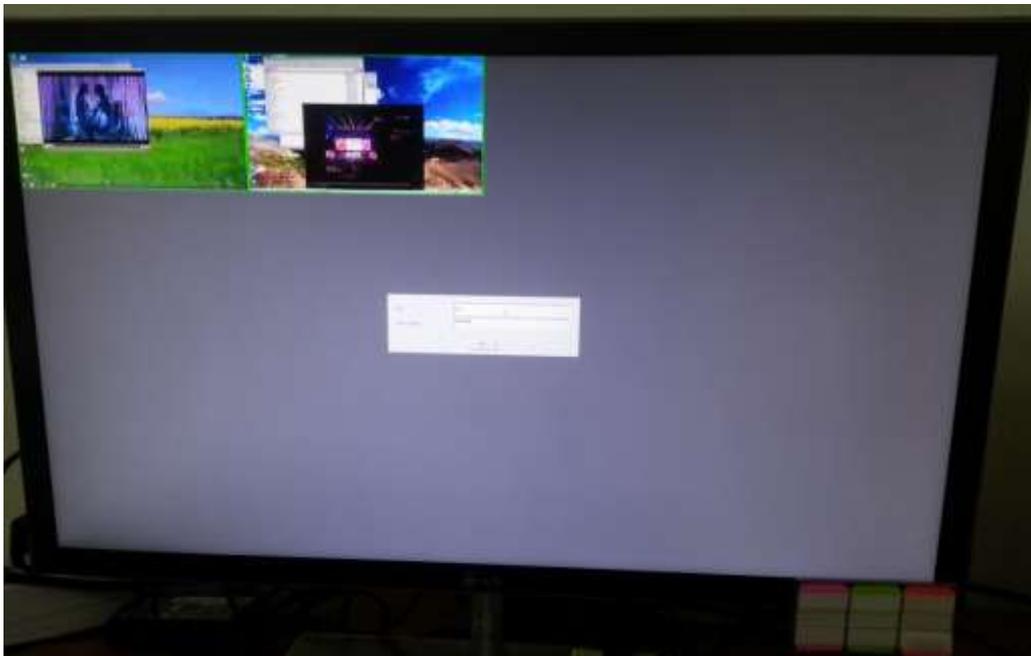
2) How IPKVM-310 works: 1CH Single-screen HD mode

- ▶ The Remote display shows as 1CH single-screen HD mode.



3) Logging in

- ◆ When multi-pairs of IPKVM-310EDs (e.g 2 or 3 pairs) have been connected, it will be showed as below.
 - ◆ On the remote (Receiver) site, 2 transmitters have been connected and it shows an initial view before logging in.
- (1) To access the Remote display, first, login with a user ID which is register in PC Program (RemoteManager).
 - ◆ After finishing work in the remote site, it is available to log out.
 - (2) Click Mouse right button, and select “logout”



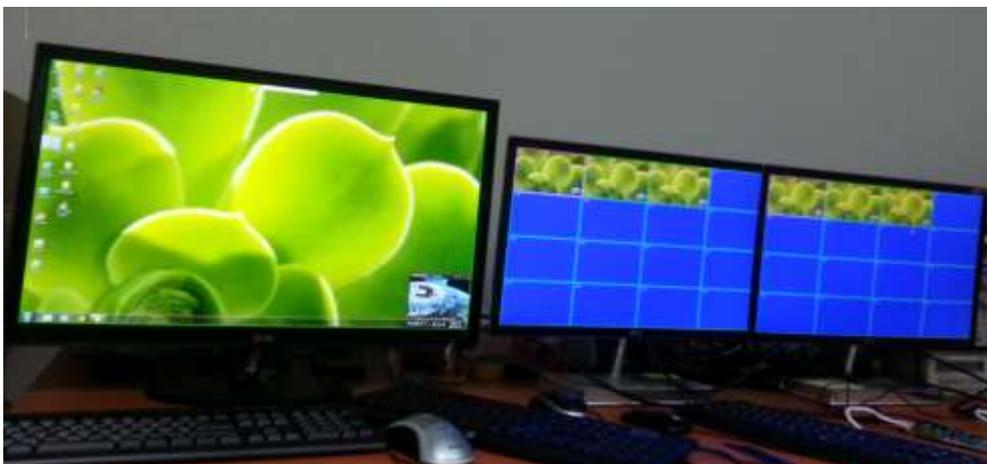
4) Mode Change

- (1) To change to 1CH single screen mode, click mouse right button and select "Mode change" or double click on selected channel.



- ◆ You can see on left corner that it operates as HID mode in the 1CH single-screen HD mode.

Note: If you select a transmitter and change it to the single-screen HD mode for using it in HID KVM mode on a remote (receiver) site, you cannot use the transmitter on other receivers. So, you can see that the color of the framework of CH1 (No.1 transmitter) is changed from green to magenta. It let users know that the transmitter is not available for HID KVM mode.



5) HID KVM mode

- ◆ You can use a keyboard and mouse in the HID KVM mode as below.
 - ▶ You have to use the “Handy point” type mouse as main mouse in the HID mode.



- (1) To exit 1CH single-screen mode to 16CH multi-screen mode, move up “Hand type” mouse and click the “mode change” mark.



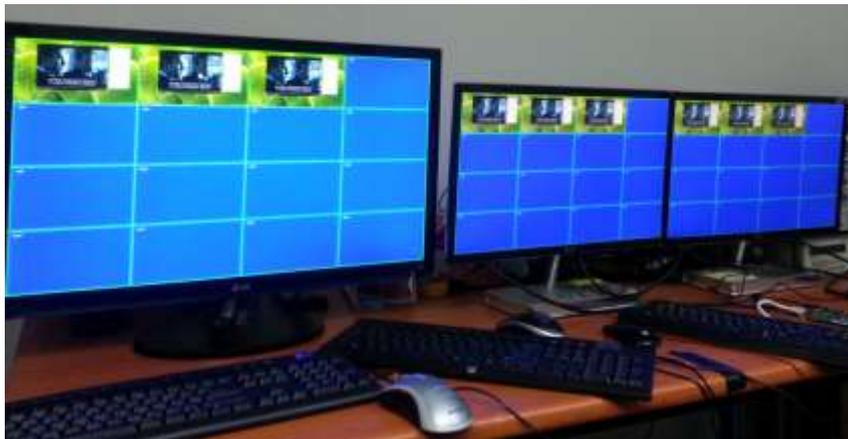
- ◆ You sees that the transmitter return to the 16CH multi-screen mode as below.
Note. You can see that the color of the framework of CH1 (No.1 transmitter) is changed “Magenta” to “green”.

- ◆ If the color of each framework is green, it says that you can work with the transmitter.

Note.

- ▶ Green (available): You can work with the transmitter (Source) on the remote (receiver) site.
- ▶ Magenta (not available): You cannot work with the transmitter (Source) on the remote (receiver) site.

There are two cases. One is that another user (receiver) uses it in HID KVM mode. Another case is that the transmitter is worked in Local site. Refer to “Setting Local/Remote Authority”.



- ◆ You can insert device name to each transmitter (Eg. No 1 or Hitach16.)

Note: Before add the Tx IP, firstly insert the name to each transmitter.

- ⇒ Refer to 3.4 ([PC] Remote Manager/Receiver Setting)

■ Product Specifications

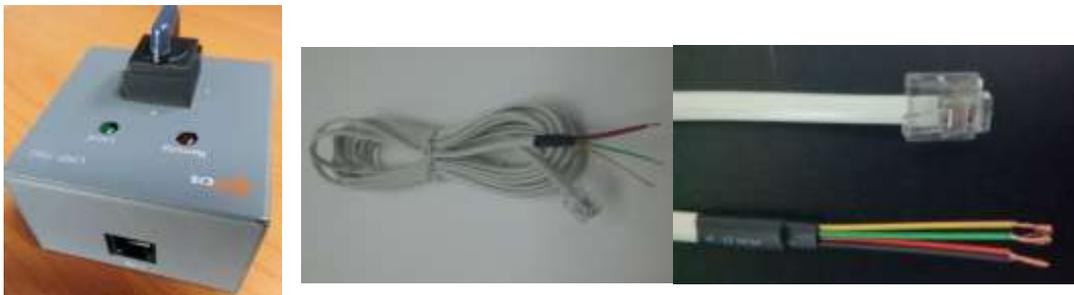
| Item | Description |
|---|---|
| Display mode | Multi-screen mode(16CH): VGA, 16CH simultaneously Monitoring mode |
| | Single-screen HD mode(1CH):1920x1080, 1CH HID KVM mode |
| Network(LAN) | 10/100 Base-T Ethernet: TCP/IP based wired network with CAT5e/ CAT6 Cables |
| Video Streaming protocol | RTSP, RTP, RTCP, UDP / TCPIP |
| Video Codec | MPEG-4 Part 10/AVC (H.264) |
| Resolution | Up to 1080p@60Hz |
| Video Interface Standard | HDMI 1.3 and DVI1.0 |
| Tx Video Interface | Input: 1 HDMI/DVI Input Output: 1 HDMI/DVI Output (Loop-Through) |
| Rx Video Interface | Output: 1 HDMI/DVI Output |
| Keyboard/Mouse (Tx) | 1x mini USB B type to PC 2x USB A type (for Local HID Keyboard/Mouse) |
| Keyboard /Mouse (Rx) | 2x USB USB A type (for Remote HID Keyboard/Mouse) |
| LAN Port | RJ-45 (Tx/Rx 1 port) |
| RS 232 Port | 3 Pin Terminal Block for Knob & alarm interface |
| Digital I/O Port | Terminal Block for Console Switch & Console Indicator |
| 3 Stage Slide Switch(Tx) | Local/Remote/Console for Control Authority |
| Reset Switch | SW reset & Factory reset |
| External Console Switch (Tx, Optional) | When 3-State Slide Switch set with console, you can select Local/Remote Authority on the switch pad externally. |
| External Console Indicator (Rx, Optional) | When 3-State Slide Switch set with console, you can check Local/Remote Authority on the pad externally with LED status. |
| Configuration access | OSD GUI via Mouse/Keyboard PC Program (RemoteManager) for user account, device setting, status monitoring |
| EDID | Built-in EDID & EDID Read/Write |
| Dimension | Tx: 112x28x104mm (WHD), Rx: 112x28x104mm (WHD) |
| Power | 100-240VAC, 50-60Hz |
| | 5V 3A Adaptor |
| Power Consumption (TBD) | Transmitter <10W Receiver <10W |
| Operating Temperature | 0~50°C |
| Storage Temperature | -30~70°C |
| Certification | FCC, CE |

■ Externally Setting Local/Remote Authority (Option)

◆ Console Switch & Console Indicator

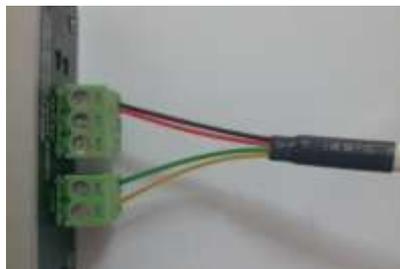
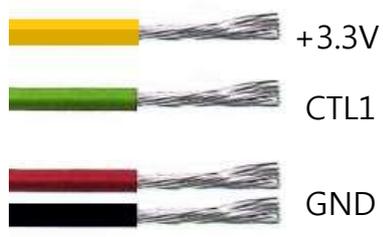
▶ Console Switch (Tx)

The Console switch is to set a Local or Remote state of control authority on an external switch for user's convenience. Connect the console switch (left image) to DIO terminal block of the transmitter device by using a cable (right image). You can set a Local or Remote state of control authority by rotating the switch and see the state through LED indication.



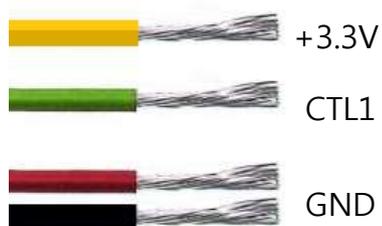
1) 2pin Terminal Block

Refer to below figures to know an method and order to 2pin terminal block



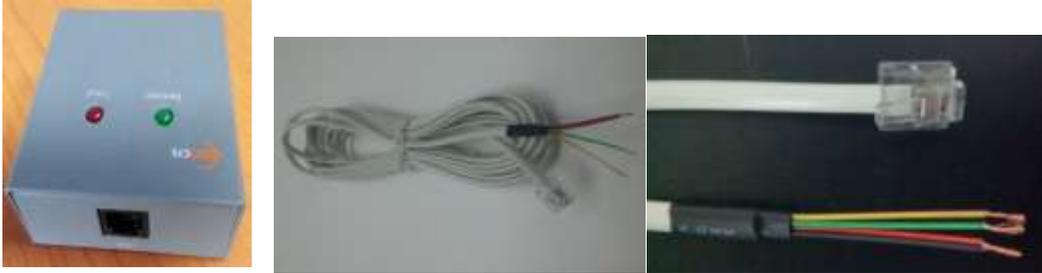
2) 3pin Terminal Block

Refer to below figures to know an method and order to 3pin terminal block



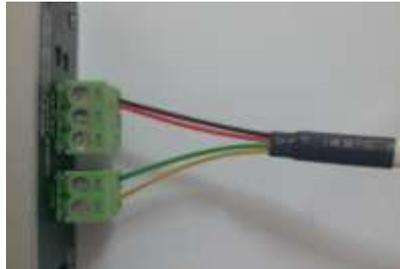
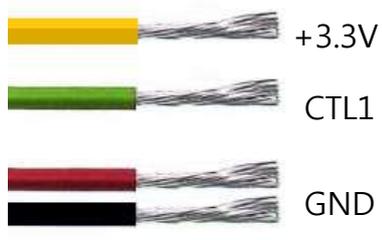
▶ Console Indicator (Receiver)

Connect the console indicator (left image) to DIO terminal block of the receiver device by using a cable (right image). And then, you can see the Local or Remote state of control authority through LED indication on the remote site.



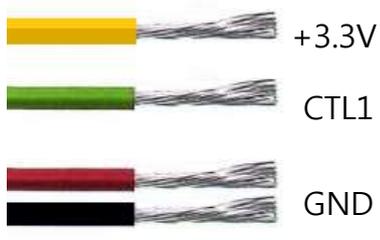
1) 2pin Terminal Block

Refer to below figures to know an method and order to 2pin terminal block



3) 3pin Terminal Block

Refer to below figures to know an method and order to 3pin terminal block



■ Troubleshooting

| Problem | Remedy Action | Causes |
|--|--|-----------------------------------|
| No video on the display (16CH multi-screen mode) | <ul style="list-style-type: none"> - Wait several seconds for the system booting. After the power is applied, Power status LED will turn on (Red). - Check the connection of all cables. - Check the connection of the LAN cable to RJ45 connector - Check if the graphic resolution of Source PCs is properly set. Go to the display properties and tap the settings. Max. Resolution (1920 * 1080 @60Hz) | Cables are connected incorrectly. |
| No video on the display (1CH single-screen mode) | <ul style="list-style-type: none"> - Change mode to 16CH multi-screen mode and re-change to 1CH single-screen mode. - Reset the power of all TxS and RXs again by re-plugging the power adaptor or by reboot on the PC program. | Network connectivity issues |
| Video quality: - Freezing or collapse - Mosaic pattern - Jitter | <ul style="list-style-type: none"> - Check network connectivity. - Check if the graphic resolution is properly set. Go to the display properties and tap the settings. Max. Resolution (1920 * 1080 @60Hz) - Reset the power of all TxS and RxS again by re-plugging the power adaptor or by reboot on the PC program. | Network connectivity issues |
| Keyboard or Mouse doesn't work properly. | <ul style="list-style-type: none"> - Ensure the USB cables are connected properly between Source PC and USB port of a transmitter - Reset the power of all TxS and RxS again by re-plugging the power adaptor or by reboot on the PC program. - Change USB cable, if it doesn't work properly after reconnecting the cable and reset.- | Cables are connected incorrectly. |
| Abnormal operation occurs in playing audio/video or USB Keyboard/Mouse | <ul style="list-style-type: none"> - Reset the power of all TxS and RxS again by re-plugging the power adaptor or by reboot on the PC program. | |
| After changing input source, the video clip does not play. | <ul style="list-style-type: none"> - Execute window media player again. - Reset the power of all TxS and RxS again by re-plugging the power adaptor. | |

■ Warranty Information

1 (One) Year Warranty

Opticis warrants this IPKVM-310ED HDMI extender to be free from defects in workmanship and materials, under normal use and service, for a period of one (1) year from the date of purchase from Opticis or its authorized resellers.

If a product does not work as warranted during the applicable warranty period, Opticis shall, at its option and expense, repair the defective product or part, deliver to customer an equivalent product or part to replace the defective item or refund to customer the purchase price paid for the defective product.

All products that are replaced will become the property of Opticis.

Replacement products may be new or reconditioned.

Any replaced or repaired product or part has a ninety (90) day warranty or the remainder of the initial warranty period, whichever is longer.

Opticis shall not be responsible for any software, firmware, information, or memory data of customer contained in, stored on, or integrated with any products returned to Opticis for repair under warranty or not.

Warranty Limitation and Exclusion

Opticis shall have no further obligation under the foregoing limited warranty if the product has been damaged due to abuse, misuse, neglect, accident, unusual physical or electrical stress, unauthorized modifications, tampering, alterations, or service other than by Opticis or its authorized agents, causes

other than from ordinary use or failure to properly use the product in the application for which said product is intended.

Dispose of Old Electrical & Electronic Equipment

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



This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product.

The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

■ FCC/CE Statement

This device complies with part 15 of FCC Rules and EN 55022/55024/61000-3 for CE certification.

Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 and 2 of FCC Rules and EN 55022/55024/61000-3 for CE certification. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction guide, may cause harmful interference to radio communications. However, there is no

guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- ◆ Re-orient or relocate the receiving antenna.
- ◆ Increase the separation between the equipment and the receiver.
- ◆ Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- ◆ Consult a service representative for help.

Properly shielded and grounded cables and connectors must be used in order to comply with FCC/CE emission limits. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.



Opticis Locations

HQ

16Fl. Kins Tower, 8 Seongnam-daero, 331 beon-gil,
Bundang-gu,
Seongnam-si, Gyeonggi-o, 463-844
Rep. of KOREA
Tel: +82 (31) 719-8033
Fax: +82 (31) 719-8032

Factory

#501 Byoksan Technopia, 560,
Dunchon-daero,
Jungwon-gu,
Seongnam-si, Gyeonggi-do, 462-716
Rep. of KOREA
Tel: +82 (31) 737-8033
Fax: +82 (31) 737-8039

For order support, please contact your Distributor or Reseller.

For technical support, visit Opticis web site, www.opticis.com or contact techsupp@opticis.com