UDP1000P

HDMI/DVI KVM Extender

Setup Guide

(For Firmware A6.3.1 up, 23 Sep. 2016)

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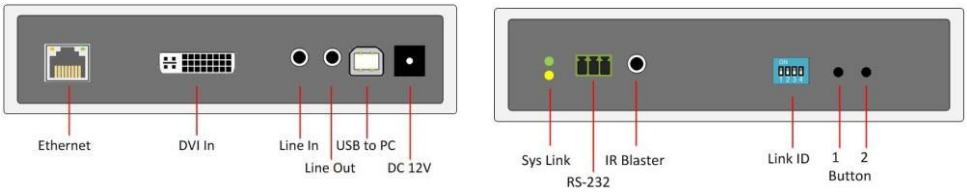
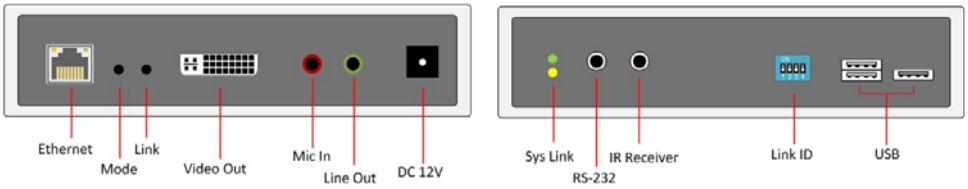
■ Panel and Connectors

UDP1000T Transmitter



No. Connector	Description	
1 Ethernet	Connect to Gigabit Ethernet switch or directly to UDP1000R.	
2 DVI In	Connect to HDMI or DVI Source.	
3 Line in	Audio line in, it will be extended to the Line Out of UDP1000R.	
4 Line out	Audio line out, it is extended from Mic. In of UDP1000R.	
5 USB-to-PC	Connect this USB to PC to provide Remote Virtual USB for UDP1000R.	
6 DC 12V In	System power input.	
7 System LED (Green) Link LED (Amber)	**Green Blinking/Amber Off:** System is starting up. **Green On/Amber Off:** System is ready, but TX/RX not connected. **Green On/Amber Blinking:** TX/RX connected, but waiting for HDMI input. **Green On/Amber On:** TX/RX connected, HDMI input is ready.	
8 RS-232	Provide Serial-over-IP function. (TxD, RxD, GND)	
9 IR Blaster	Connect to external IR LED	
10 Link ID	4 bit hardware Group ID. It can be overwritten by the software Group-ID of Setting program or Connection Manager.	
11 (Button 1)	Press and Hold at Power ON until **Green and Amber** LED blinking	1. Reset to the Factory default setting. 2. Enter Setup and Firmware upgrade mode in 192.168.0.88
12 (Button 2)	Short press	Set to Video/Graphic mode.
	Long press (3 sec.)	To Enable/Disable Anti-Dither. **Note:** For some of ATI graphic card with Dithering function enabled, you may enable Anti-Dither to achieve the better video quality.
	Press and Hold at Power ON until **Green** LED blinking	Get and Use EDID from Loop-out monitor

UDP1000R Receiver



No. Connector	Description	
1 Ethernet	Connect to Gigabit Ethernet switch or directly to UDP1000T.	
2 Mode button	Short press	Set to Video or Graphic mode.
	Long press (3 sec.)	To Enable/Disable Anti-Dither. **Note:** For some of ATI graphic card with Dithering function enabled, you may enable Anti-Dither to achieve the better video quality.
	Press and Hold at Power ON until **Green** LED blinking	Get and Use this RX's EDID as the system EDID
3 Link button	Short press	To enable/disable Transmitter List OSD
	Long press (3 sec.)	To get the USB access right.
	Press and Hold at Power ON until **Green and Amber** LED blinking	1. Reset to the Factory default. 2. Enter Setup and Firmware upgrade mode in 192.168.0.88
4 Video Out	This DVI-I connector supports HDMI/DVI-D and VGA output. Use DVI-to-DVI or DVI-to-HDMI or DVI-to-VGA cable for DVI/HDMI/VGA monitor.	
5 Mic. IN	Microphone Input, it will be extended to the Line Out of UDP1000T.	
6 Line OUT	Audio line out, it is extended from Line In of UDP1000T.	
7 DC 12V In	System power input.	
8 System LED (Green) Link LED (Amber)	**Green Blinking/Amber Off:** System is starting up. **Green On/Amber Off:** System is ready, but TX/RX not connected. **Green On/Amber Blinking:** TX/RX connected, but waiting for HDMI input. **Green On/Amber On:** TX/RX connected, HDMI input is ready.	
9 RS-232	Provide Serial-over-IP function (optional).	
10 IR Receiver	Remote Universal IR receiver (optional).	
11 Link ID	4 bit hardware Channel select ID. It can be overwritten by the software Ch-Select of Setting program or Connection Manager.	
12 USB Host	3 USB-A ports, the default setting are USB-over-IP mode can support USB Disk, Touch Screen, Printer, keyboard, mouse … (but not isochronous device)	

■ Configuration

The TX/RX unit built with Web page for Setup mode and Operation mode configurations.

■ Setup Mode Configuration

1. Press and Hold the TX/RX's **[Button 1]/[Link]** button and Power ON until **Green and Amber** LED blinking then release the button. This will force TX/RX enter Setup mode.
2. Directly connect TX or RX to PC LAN port, set PC IP to 192.168.0.1, Net Mask 255.255.255.0.
3. Open PC's Web Browser (recommend Chrome) and enter **192.168.0.88** <Enter>
4. The Setup Mode Web page containing **[System]** tab with sub-tabs of **[Version Information]**, **[Update Firmware]**, **[Utilities]**, and **[Statistics]**.

■ Reset to Factory default (Setup Mode)

If the device settings lost, you can reset the device back to the factory default:

1. Enter Setup Mode Web page **[System]** ---> [**Utilities**] ---> [**Factory Default**]
   (The Factory default setting are shown on the label that under the TX/RX unit)

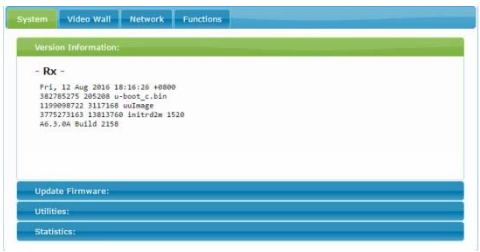
■ Firmware Upgrade (Setup Mode)

1. Enter Setup Mode Web page **[System]** ---> [**Update Firmware**] ---> navigate to the firmware file (.bin) then click [**Upload**] to start firmware upgrade.
2. The firmware upgrade takes about 3 min., it will display "DONE Rebooting…" to indicate the unit has been upgraded and rebooted.

■ Operation Mode Configuration

The TX/RX can be configured in Operation Mode through Ethernet Switch or direct connection. To enter Operation mode Web page:

1. Set PC IP 10.0.1.1, Net Mask 255.0.0.0.
2. Open Browser (recommend Chrome) then enter TX/RX IP: 10.xx.xx.xx
3. The TX/RX Operation Mode Web page are shown as the below screenshots. The TX contains 3 tab menus **[System], [Network], Functions]**, the RX contains 4 tab menus **[System], [Video Wall], [Network], Functions]**:



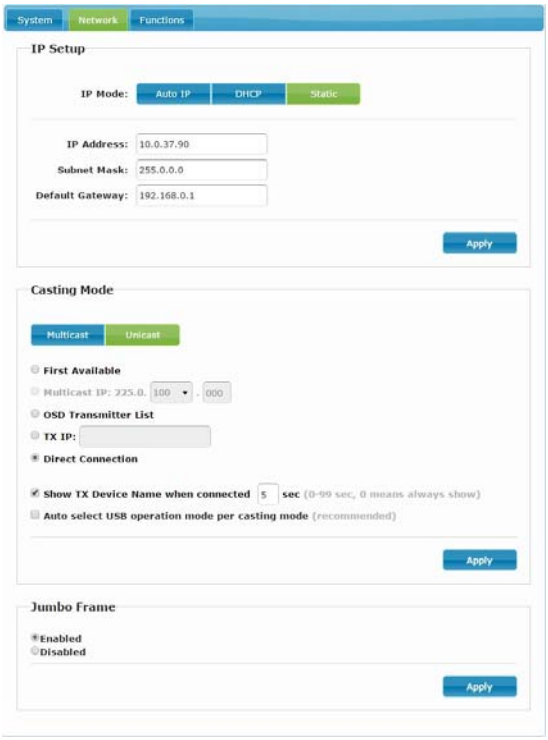
■ Firmware Upgrade (Operation Mode)

It is possible to do the firmware upgrade in Operation mode for TX/RX:

1. Enter Operation Mode Web page **[System] ---> [Update Firmware]** ---> navigate to the firmware file (.bin) then click **[Upload]** to start firmware upgrade.
2. The firmware upgrade takes about 3 min., it will display "DONE Rebooting…" to indicate the unit has been upgraded and rebooted.

■ Network Configuration

The TX/RX provides the following Network related settings:



➢ **To change IP**

Enter TX/RX Operation Mode Web page **[Network] ---> [IP Setup]** ---> select Auto IP, DHCP, Static ---> enter device IP, Subnet Mask, Default Gateway ---> **[Apply]**.

➢ **To change Casting Mode**

The UDP1000T/R factory default is **Unicast**. To change, enter TX/RX Operation Mode Web page **[Network] ---> [Casting Mode]** ---> select [Multicast] or [Unicast] ---> **[Apply]**.

➢ **Connection Method (RX only)**

There are 4 Connection Methods f**or Multicast RX:** First Available, Multicast IP, OSD Transmitter List, and Direct Connection.

There are 3 Connection Methods for **Unicast RX:** OSD Transmitter List, TX IP and Direct Connection.

First Available: the RX will connect to the first available TX.

Multicast IP: 225.0.xxx.xxx: the RX will connect to the TX that is using the same Multicast IP address. (You can setup TX Multicast IP on the TX [Network] ---> [Casting Mode])

OSD Transmitter List: the RX will show up the available Transmitters for user to select. **TX IP:** x.x.x.x: the RX will connect to this dedicated TX only.

Direct Connection: this setting enables RX to connect TX by the same subnet, same Casting Mode, Jumbo Frame will be enabled.

➢ **To show TX Device name when connected (RX only)**

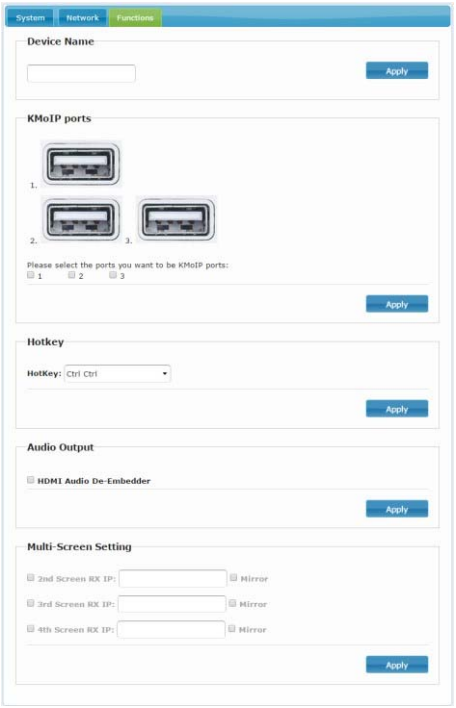
This feature enable RX to pop up the TX name (or IP) when connected. Default is enabled with 5 seconds.

➢ **To Enable/Disable Jumbo Frame**

To enable or disable it, enter TX/RX Operation mode Web page ---> **[Network]** ---> **[Jumbo Frame]** --> Enable/Disable ---> **[Apply]** ---> the unit will save the setting and reboot automatically.

■ **Functions Configuration**

The TX/RX provides Operation mode Web page for Functions Configuration. The following screenshot shows RX Web page as an example (TX is similar):



➢ **To change Device Name**

Enter TX/RX Operation mode Web page ---> **[Functions]** ---> **[Device Name]** ---> enter name (8 characters) ---> [**Apply**] to save the device name.

➢ **To Enable/Disable KM over IP**

The system supports both USB-over-IP and KM-over-IP for USB extension. The USB-over-IP works as a virtual 5-port USB HUB when TX is connected to PC, it is compatible with most of USB devices such as keyboard, mouse, Pen Drive, Touch Screen… etc.

The KM-over-IP is a HID emulation built for multiple RXs to share keyboard/mouse for one PC, it takes one port of the 5 virtual ports. The KM-over-IP setting is different for TX and RX:

For TX: enter TX Operation mode Web page ---> **[Functions]** ---> **[USB over IP]** ---> **[Compatibility Mode]** ---> check/uncheck [K/M over IP] to Enable/Disable ---> **[Apply] (default enabled)**.

For RX, enter RX Operation mode Web page ---> **[Functions]** ---> **[KMoIP ports]** ---> check/uncheck 1, 2, 3 to Enable/Disable KM-over-IP ports **(default all disabled)** ---> **[Apply]**.

➢ **To define Hotkey (RX only)**

The RX supports Hotkey for OSD Menu. You can choose the Hotkey: enter RX Operation mode Web page ---> **[Functions]** ---> **[Hotkey]** ---> select the Hotkey of <Ctrl><Ctrl>, <Shift> <Shift>, <Alt> <Alt>, or <Scroll> <Scroll> **(default Ctrl Ctrl)**.

➢ **To Enable/Disable USB over IP (TX only)**

Enter TX Operation mode Web page ---> **[Functions]** ---> **[USB over IP]** ---> **[Enable USB over IP] --->** check/uncheck to Enable/Disable **(default Enable).**

Auto select mode: Auto select “Active on link” if unit is in Unicast, select “Active per request” if unit is in Multicast.

Active on link: USB over IP will be established in sharing mode when TX/RX connection established.

Active per request: USB over IP can be manually requested in exclusive mode, the former RX of the USB over IP connection will be stopped if the current request is succeeded.

➢ **To Enable/Disable Serial over IP, and select Operation Mode**

Enter TX/RX Operation mode Web page ---> **[Functions]** ---> **[Serial over IP]** ---> check/uncheck to Enable/Disable **(default Enable).**

Enter TX/RX Operation mode Web page ---> **[Functions]** ---> **[Serial over IP]** ---> **[Operation Mode]** ---> select options of Type 1, Type 2, Type 1 guest mode, Type 2 guest mode **(default Type 2).**

Note: Type 1 is mainly for Unicast application where user can dynamically link with any target RX. Type 2 is mainly for Multicast application where TX RS-232 will link with all of connected RXs (**default).**

Type 1 guest mode is similar to type 1 but using PC to link with RX’s RS-232.

Type 2 guest mode is similar to type 2 but using PC to link with RX’s RS-232.

For details, please refer to “How to Use RS232 over IP” manual.

➢ **To define RS-232 parameters for Type 2**

Enter TX/RX Operation mode Web page ---> **[Functions]** ---> **[Serial over IP]** ---> **[Baudrate Setting for Type 2]** ---> select Baudrate, Data bits, Parity, Stop bits. (default 115200, 8-n-1)

➢ **Audio Output (RX only)**

If the TX's input audio is HDMI, you can select the Audio to be output on Line Out:
Enter RX Operation mode Web page ---> **[Functions]** ---> **[Audio Output]** ---> check **"HDMI Audio De-Embedder"** for the audio output to Line-Out. Click **[Apply]** to save the setting and reboot.

➢ **Multi-Screen Setting**

The system supports Multi-Screen feature for PC with multiple screens. Each TX/RX can define its associated 2nd, 3rd, 4th TX/RX IP. So, when the Main RX switches to a new TX, its associated RXs will also be switched to that new TX's associated TXs automatically.
Enter TX/RX Operation mode Web page ---> **[Functions]** ---> **[Multi-Screen Setting]** ---> then enter IP address for the associated 2nd, 3rd, 4th TX/RX IP.
There is an option of **"Mirror"**, when enabled, the associated RXs will connect to the same TX as the Main RX is connecting. This enables multiple RXs to display the same TX as a splitter.

■ **Installation**

2. By factory default, the UDP1000T/R is pre-configured with **Unicast, Direct Connection** and **Jumbo Frame**. It is configured for one-to-one as pairing connection. The maximum distance between TX and RX is 170 meters by using CAT6 cable.
3. Connects RX DVI-I to HDMI/DVI/VGA screen by a DVI-to-HDMI/DVI-to-DVI/DVI-to-VGA cable.
4. The RX will get EDID from screen and send to TX during connection with TX.
5. The RX will display the following start-up messages when powered on:
   FW: 15-Nov-18 A5.3.4 ---> Firmware version
   Local IP: 10.0.29.72 ---> RX's IP address
   Remote IP: 10.0.29.73 ---> Connecting TX IP address
   ID: 0020FE001122 ---> RX's MAC address
   Connection Method ---> Direct Connection
6. Attach HDMI/DVI source (PC or Blue-Ray) to the TX's DVI-In then power ON the TX unit. The TX's **Green** LED will blink then ON indicating ready and waiting for connection with RX.
7. As long as TX/RX connection established, both of TX and RX Amber LED will start to blink indicating wait for video input source (Green LED is ON).
8. If you are using PC as video source, it is recommended to check if the correct screen EDID shown on PC graphic card control panel?
9. Activate video source with audio to TX, then check if RX correctly display. In this step, both Green and Amber LED should be ON indicating the unit is ready and video source is also ready.

■ **USB and KM over IP installation:**

10. Connect TX USB-B to PC, OS will detect a Generic USB Virtual Hub Device.
11. The system can support both "USB-over-IP" and "KM-over-IP".
    The USB-over-IP works as a Virtual 5-port HUB when connected to TX, it is compatible with most kind of USB devices such as keyboard, mouse, Pen Drive, Touch Screen… The USB-over-IP connection can be configured in "Active on link" (Sharing) mode or in "Active per request" (Exclusive) mode (default). In "Active on link" mode, the maximum USB-over-IP connection for a

TX is 5 due to the 5 ports of Virtual HUB. The KM-over-IP means that port will work as HID device only for keyboard/mouse emulation, the PC don't get BIOS "Keyboard Error" if there is no real keyboard attached during boot up. It is not necessary to gain USB access right for the KM-over-IP port. The TX (PC) can be shared with multiple RXs for keyboard/mouse access in KM-over-IP mode.

12. There are 3 USB-A ports on the RX. The factory default setting for the TX is both of USB-over-IP and KM-over-IP enabled, all 3 USB ports of RX are in USB-over-IP mode (KM-over-IP disabled).

13. There are 2 methods to gain the access right for a USB-over-IP port:
    12.1 Long press (3 sec.) the RX **[Link button]**
    12.2 Press "U" key to toggle during Transmitter List OSD menu.
    The RX display "Requesting USB" to indicate starting USB-over-IP connection, and message of "Starting USB" will be displayed if it successfully gained the USB access right. Meanwhile, the previous USB Master unit will show an OSD message of "USB Stopping".

■ **RX OSD Main Menu**

The RX supports OSD menu, press the RX's **[Link]** button to get the OSD Main menu: **[Hotkey Setting]** and [**Connection Method]**.

■ **RX OSD Hotkey selection Sub-Menu**

From the OSD Main Menu, press **[Link]** button to move the highlight arrow to [Hotkey Setting]. Wait a few seconds, the sub-menu will show up with 4 possible selections: "Ctrl Ctrl", "Shift Shift", "Alt Alt", or "Scroll Scroll". Press **[Link]** button again to move the highlight arrow to the desired selection. The RX unit will be re-booted.

■ **RX OSD Connection Method Sub-Menu**

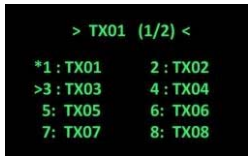
From the OSD Main Menu, press **[Link]** button to move the highlight arrow to [Connection Method]. Wait a few seconds, either the **Multicast** or **Unicast Connection Method** sub-menu will show up depending on the RX's Multicast/Unicast setting:

The Multicast RX supports 3 possible connection methods: 4-bits DIP xxxx, Multicast IP, Transmitter List, as the right picture:
The 4-bits DIP xxxx means the RX will connect to the same 4-bits DIP of TX. The Multicast IP 225.0.100.000 means the RX will connect to the TX with the same Multicast IP. The OSD Transmitter List means the RX will show up the available Transmitters for user to select when <Hotkey> <Hotkey> is pressed.

The Unicast RX supports 2 possible connection methods: OSD Transmitter List, Dedicated TX IP, as the right picture:

Press the **[Link]** button to move the highlight arrow to the desired selection and wait a while to confirm the selection. Please note the Sub-Menu only provide selection, the Multicast IP or TX IP can only be changed by the Web page setting.

■ **RX OSD Transmitter List**



Attach a keyboard to the RX's any USB port, then press <hotkey>. The Transmitter List with maximum 8 <hotkey> Transmitters will be shown, as the right-hand picture indicates, the top line "TX01 (1/2)" means the current connection is "TX01" and there are 2 pages and currently it's on page 1. The TX with an asterisk (*) mark indicates the current connected TX.

1. You can select TX by the↑↓←→key and <Enter>, or 1 ~ 8 key to immediately connect to that TX.
2. Press F5 to refresh Transmitter List.
3. Press U to request (or release) USB-over-IP.
4. To end of OSD, press <ESC>