iStream PTZ-Link PTZ Camera IP Joystick Controller User Guide

User Guide PTZ-link v1.0
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Introduction

PTZ-link is a flexible, multi-protocol PTZ controller, for both serial and IP-controlled PTZ cameras. It can control up to 8 cameras, each with up to 8 presets. Next to this, lots of camera settings can be adjusted. Settings are made with a.o. 3 rotary buttons and a 1.3-inch OLED display.
Unique is the option to link the controller to a video switcher: selecting a camera in the PTZ-link also selects it as preview input in the video switcher, and/or vice versa. Both vMix and Blackmagic design ATEM switchers are supported.
By linking PTZ-link to a switcher, you avoid accidentally moving the camera that is 'life'.
PTZ-link is designed to be an easy and fast to operate PTZ controller, without sacrificing functionality.

Features

– compact form factor: 19.5 x 19 x 12 cm
– powered over Ethernet or with an AC adapter
– can be linked to ATEM switchers or vMix systems
– easy to operate, stand-alone or combined with a switcher panel
– both serial and IP protocols supported: Visca 9600, PelcoD 2400, Visca over IP, PTZ optics IP, Everet IP, Panasonic CGI, Blackmagic SDI, Onvif, vMix virtual PTZ
– future proof, user updatable

The 'link' of PTZ-link
In a typical multi-PTZ camera setup, separate controllers are used for the video switcher and PTZ cameras. These can be operated by one person in a small setup, or by multiple people in larger setups. Both controllers allow you to select cameras, which makes it easy to make mistakes like adjusting the camera that is 'life'.
PTZ-link allows 'linking' both controllers in a few ways, to reduce errors:
In a one-man operation, 'peer mode' will be most useful – selecting a camera on either controller is communicated to the other. The link bus will be set to preview – the camera that is selected is shown in the preview window. After the camera is adjusted, 'cut' takes it to 'program'.
In 'master mode', PTZ-link dictates the video switcher which camera is selected for preview. In 'slave mode' camera selection in PTZ-link follows the selection of the video switcher. These modes may be more convenient when different people operate the switcher and PTZ controllers. In addition, the link bus can be set to an auxiliary output.
During operation, the 'link' button toggles the linking of controllers on and off. When a link is off, 'cam select' is used to choose the camera to adjust with PTZ-link.

Getting started

Connections
In order to operate, the controller needs both power and a connection to the camera(s).
Power can be supplied by the 7.5V AC adapter, or via Power over Ethernet (PoE) if the unit is connected to a PoE switch or router.
For serial-controlled cameras (PelcoD 2440 baud and Visca 9600 baud), a connector block is available
IP-controlled cameras receive their signals via the ethernet port (that may also supply power). See also Side panel tour
After powering the controller, either by the AC adapter or via PoE, the unit starts up and will display the start screen, showing the system status: selected camera and rotary functions.

Menu navigation
Pressing the menu rotary(9) below the joystick enters the PTZ-link controller setup menu, which comprises a system menu, camera menu, and link menu.
Clicking this rotary will enter a selection, turning it will change the value of that selection.
Clicking once again will store the value and take you to the next selection.

Serial cameras
If you have only serial-controlled cameras, navigate to the CAMERA MENU, and select the correct protocol (PelcoD 2400 or Visca 9600) for each connected camera. Next, you may have to change the camera address (depending on the connection configuration). When you select 'return' (following 'camera 8'), the status display returns and you can start controlling your cameras.

IP cameras
In order to work with IP cameras, both the PTZ-link and the IP cameras need to be in the same IP subnet. To put it shortly, the first 3 of the 4 parts of the address have to be the same, for instance, 192.168.010… The last part is unique for each device. Select 'SYSTEM MENU' and 'IP address' to change the address of the PTZ-link. Netmask will be 255.255.255.000 in most cases. Next, if you set 'Lock subnet' to 'yes', the subnet part of the PTZ-link IP address will be used for all other IP addresses. Select 'Save and return' to store the IP configuration.
Next, enter the 'CAMERA MENU' to set protocols and IP addresses for each connected camera.

Link Menu

You can 'link' the PTZ controller to a switcher (ATEM or vMix), in master, slave or peer mode. In that way, the camera selection on the controller will follow the selection on the video switcher and/or vice versa.

Navigate to the 'Link menu' to select which video switcher you want to link to (vMix, ATEM or none), and next enter the IP address.

In the next menu entry, select 'master' mode when you want to send camera selection commands to the switcher, 'peer' if you want both to send and receive these, and 'slave' if the switcher defines which camera is selected. Which switcher output is affected is determined with the next selection 'link bus', preview is most used.

With 'key mapping' you can set to which inputs the buttons 1-4 (and 5-8) connect. You can also disable input selection for a key. Camera 1 may not be input 1 on the switcher.

Save the selections by selecting 'return'.

Operation

To enable link operation, press the 'link' button (3) on the controller. If no link can be established, the switch will light up red. The switch lights up yellow if the link option is enabled.

A camera can be selected by first pressing 'cam select'(5), and next one of the select buttons 1-4 (1). With the sequence 'cam select' – 'shift' – 1-4 you can select camera 5-8.

The sequence 'shift' – 'cam select' will lock the 'cam select' button. Buttons 1-4 (1) can now be used to select the camera, and if 'link'(3) is selected also control the switcher together with 'cut' (6). Pressing 'cam select' once will end the cam select mode.

The number of the selected camera is displayed on the OLED display (12).

If 'cam select' is not on, buttons 1-4 are used to recall preset 1-4 (with shift 5-8). To store a preset, move to the desired position with the joystick, then press 'set preset', followed by the number of the preset (1-4 or shift – 1-4 for preset 5-8).

Rotary (10) controls the focus of the camera: toggle between auto and manual focus by clicking the rotary, and adjust the manual focus by turning.

Rotary (11) controls exposure parameters: click it to enter selection, rotate to select the desired parameter. Click one again to change the selected parameter.

OSD menu

You cannnot control all camera settings with the PTZ-link joystick, rotaries, and buttons. Some less common settings are only available in the camera menu. PTZ link offers you access to the camera On Screen Display menu by pressing the button on the joystick. You can now navigate the menu with the joystick to alter specific settings. End the OSD menu display by pressing the button once more.

Front panel tour
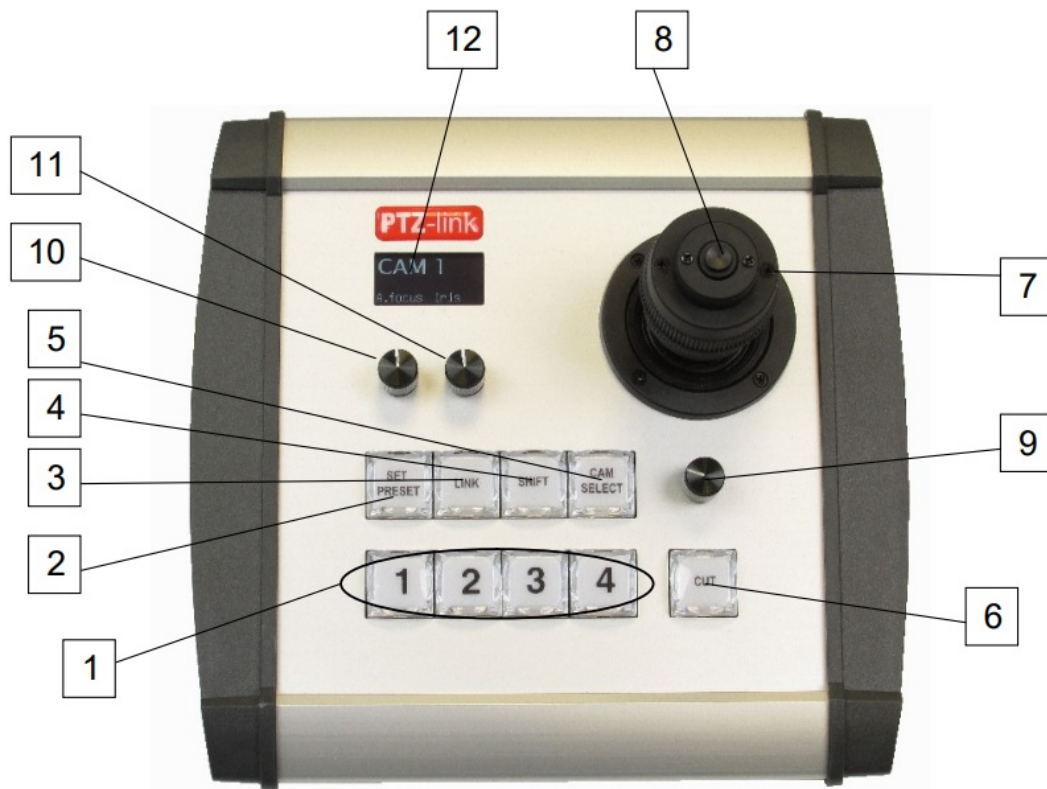
1. Preset/camera select buttons 1-4: pressing these buttons recalls the presets for the selected camera. In combination with 'shift', presets 5-8 can be recalled.

2. 'set preset' – selecting this button first, and next 1-4 (or shift, 1-4) stores the current position as a preset in the selected camera. If 'shift' is pressed, followed by 'set preset', this button lights up red and the preset is deleted (not supported by all cameras).

3. 'link' – enables the link to a video switcher, in master, peer, or slave mode (Link menu)
   – Master: PTZ-link acts as master, and sends camera selection and 'cut' commands to the video switcher.
   – Peer: the controller both sends and receives camera selection information
   – Slave: PTZ-link 'follows' the camera selection on the switcher, 'cut' is not operational.

4. 'shift' is used to add 4 to the selection buttons 1-4, resulting in selecting 5-8. The shift in combination with other buttons triggers additional functions.

5. 'cam select' – change buttons 1-4 (in combination with the shift: 5-8) to camera select buttons. When this button is lit, press a button 1-4 to select a camera, or first press shift and next 1-4 to select camera 5-8.
   Press 'shift' and next 'cam select' lock the camera select mode – the controller remains in camera select mode, and the 'cam select' button stays lit. Press 'cam selects' once more to end this mode.
   The camera that is selected can be controlled with a joystick and rotaries. When 'link' is on, it also selects the camera on the switcher (or vice versa).

6. 'cut' – switching the preview to program on the video switcher (when 'link' is enabled in master or peer mode) In combination with 'shift': start/stop recording in vMix. This button lights up red while the recording is in progress.

7. Joystick – for rotating the camera in the horizontal and vertical directions, zoom in by turning the joystick CW, and zoom out CCW. Speed of operation is determined by the displacement of the joystick combined with the rotary below it (shown in OLED upper right corner) value 1-7.

8. Button on top of the joystick: press to toggle the On Screen Display (OSD) in the camera, and navigate with a joystick to make settings. Shift + joystick button: toggle between power on and standby for the selected camera.

9. menu/speed rotary; set the pan/tilt/zoom speed by turning this rotary. The selected speed is displayed in the upper right corner of the OLED display. When pressed, you enter the controller menu. (see separate chapter) Navigating is done by rotating, and selecting by pressing.

– System menu

Device setup: ip address, gateway, netmask, etc.

– Camera menu

Per camera: protocol, ip address, or serial address

– Link Menu

Switcher protocol: ATEM, switcher, none

The IP address of switcher

Master/peer/slave mode bus selection key mapping

10. Focus adjustment rotary – press for switching between auto and manual focus, turn to adjust focus in manual mode.

11. Exposure rotary – with this rotary, exposure settings can be changed, dependent on the camera settings. Click this rotary, and turn to select the parameter you want to adjust (iris, shutter, gain, bright, exp. comp, will). Click again to start adjusting. When you select the white balance (wb), you can subselect auto, 3200, 5600, push, or manual.

12. OLED display. This shows the status of the controller: the selected camera, and focus, exposure, and OSD mode. Also provides visual feedback when moving/turning the joystick and adjusting the PTZ speed. Finally, when you enter the controller menu, menu choices are displayed here.

Side panel tour
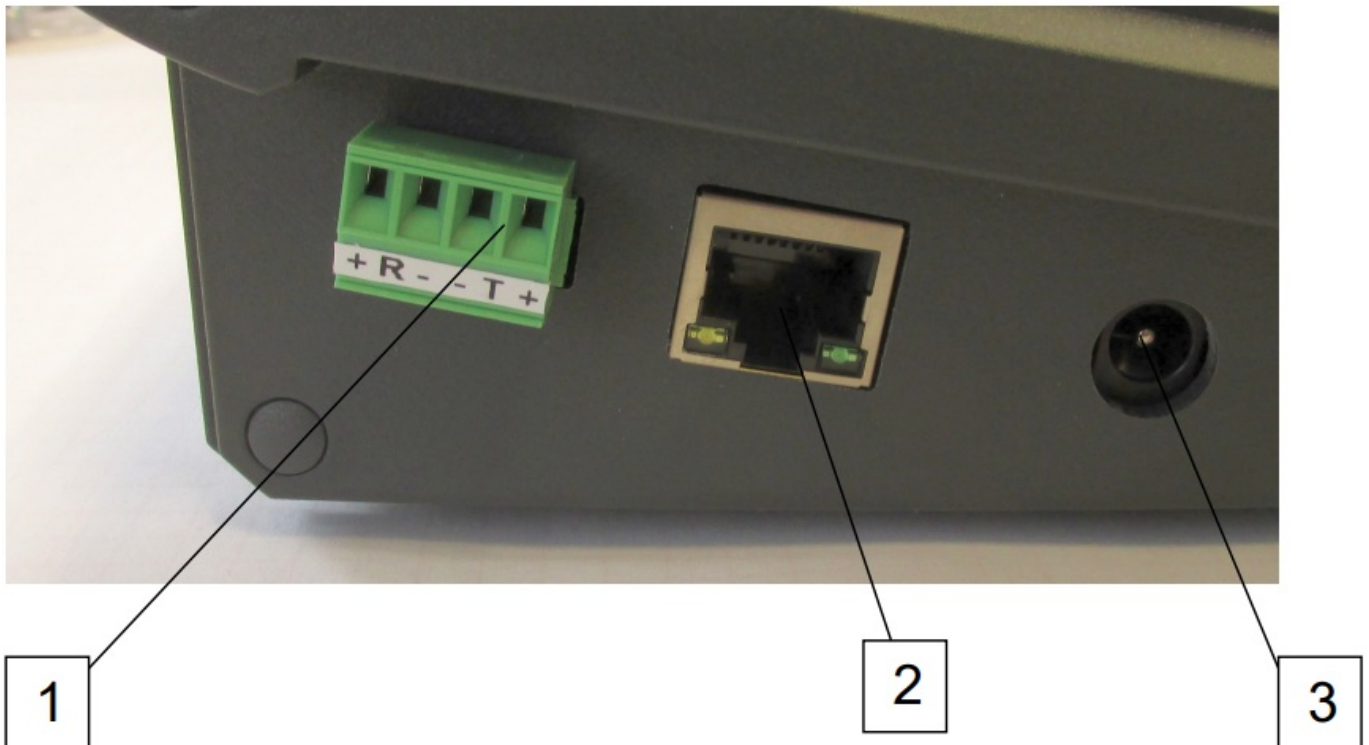
1. RS422 connector – for connecting serial PelcoD and Visca cameras. Pelco-D uses RS485, and connects to + and – T of the (removable) connection block. All cameras are connected to these 'bus' lines.

There are several Visca variants available. If you use the RS422 daisy chain setup (official Sony), connect the first camera to this connector, the daisy chain to the next, and so on. Connect transmit of the controller to receive on the camera (+ to + and – to -) and vice versa. When powering up the controller, the position in the

chain sets the camera address. On other Visca cameras, an RS485-like bus is implemented: Connect controller + and – T to + and -R of the cameras.

2. Ethernet connector, PoE

   This connector is a dual purpose: it connects the controller to the network that contains the cameras, and optionally can also power the controller (PoE). In order to use this power option, you have to connect to a PoE switch or router. When connected to a switch or router, the yellow link-led should light.

3. DC power connector 7v5

   If there is no PoE connection available, or you don't use Ethernet-controlled cameras, you can use the supplied AC adapter 7.5V to power the unit.

Controller settings

SYSTEM MENU

IP address:	– the IP address of PTZ-link
Netmask:	– netmask to be used
Lock subnet:	– use subnet of above IP address y/n
Gateway address:	– optional gateway
Save & return	– store IP settings
MAC address:	– read-only
Save startup	– startup state of cam select and link
Version info	– firmware version
Update firmware	– when there is a new version of the firmware
Factory reset:	– restore factory settings
return	– to the status screen

CAMERA MENU
camera: 1-8, return – select camera
protocol: – select protocol
Visca 9600 SER
Pelco-D 2400 SER
Visca over IP
PTZoptics IP
ITEM SDI
Everet IP
Panasonic CGI (vMix virt.PTZ)
(ONVIF)
(Datavideo IP) none
IP address/ser # – set ip address/serial no.

LINK MENU
link to: – switcher to link to
none vMix ATEM (OBS)
(Wirecast)
IP address:

link mode: Master
Peer
Slave none
link bus: – switcher output to show the selected camera
PVW/PVW – ATEM/vMix
PGM/FULSCN
AUX1/FULSCN2
AUX2/OUTP2
AUX3/OUTP3
AUX4/OUTP4
AUX5/EXT2
AUX6
key mapping: – link switcher inputs to PTZ-link camera numbers
Key: 1-8, return
Input: Off, 1-20, Macro: 1-10
send tally: – TBA
return

Update firmware

The current version of the firmware can be checked in the PTZ-link with rotary (9) – system menu – version info, this shows the PTZ-link firmware version.
The firmware can be updated via Ethernet. First, you need to download a zip file containing the firmware file together with the update tool for your PC or Mac from the support website.

- Before continuing, note down the address of your PTZ link.
- Install the software on the PC
- Double click the 'updater' icon
- Be sure that the PC is in the same subnet as the PTZ link
- Now enter the IP address of the PTZ link in the uploader tool.
- In the PTZ-link, enable updating in the system menu – Update firmware, – OK
- The display should show 'updating'
- (If you power cycle the unit now, it resumes normal operation)
- Now press 'connect' in the update tool
- If the update tool is able to establish a connection, it shows 'Connected'
- You now click 'send' in the update tool.
- The firmware transfer is started.
- When the transfer is done, the update tool shows 'upload finished, disconnected', and the PTZ-link restarts

You have now completed the firmware transfer. You can check the firmware version in the system menu – version info.

Specifications

Input	Network – RJ45, PoE enabled Power – DC jack 5.5/2.1mm
Output	Serial port – RS 422
Supported Video	All Blackmagic design ATEM switchers
Switchers	All vMix systems (> v21)
Power Consumption Operating	7.5V/0.2A (1.5W)
Temperature	0~50°C [32~114°F]
Storage Temperature	-10~ +60°C
Dimension	195mm(W) x 190mm(L) x 120mm(H)
Certifications	Tba

For more information on PTZ-link, check the website **http://www.artivisuals.nl/ptzlink.htm.** Here you can find the latest news, the pdf manual and information on updates. Suggestions and remarks are welcome at **info@artivisuals.nl**

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Documents / Resources

iStream PTZ-Link PTZ Camera IP Joystick Controller [pdf] User Guide
PTZ-Link, PTZ Camera IP Joystick Controller, IP Joystick Controller, PTZ Camera, Joystick Controller, PTZ-Link, Controller