

PTX Universal PanTilt Head Model 2

Quick Setup Guide

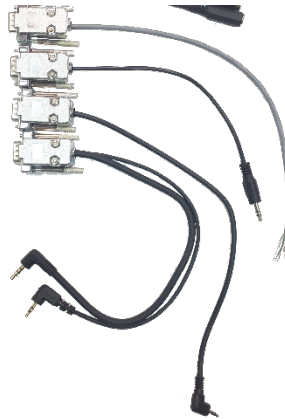
* in the PTX box *

NEMA 5-15p to powerCON connector cable. The power supply accepts AC110-240V 50/60Hz; Fuse T3 15A/250V; power consumption 60W.



The following four **HD15** short breakout cables are included to allow connectivity with most camera types:

- 1) RS 422/485
- 2) RS 232
- 3) LANC
- 4) Panasonic Remote (two wires)



Cable bundle clamp and screw (if used with Blackmagic Micro Studio 4K camera).



¼ x 20 x ½ thumb screw with washer for attaching camera to tilt plate through the horizontal adjustment slot.



The Ctrl+R User Guide, PTX QUICK SETUP Guide, Model 1 and 2 Specifications and VISCA/DMX Connectivity sheets are available on the PTX web page.

www.RUSHWORKS.tv/ptx.htm

Connecting your Camera to the Tilt Plate

Most cameras have a ¼ x 20 thread for mounting on tripods and stands. Use the included ¼ x 20 x ½ thumbscrew (with plastic washer) to mount your camera of choice to the tilt plate.

Shown here is the bottom of the Blackmagic Micro Studio Camera 4K ...



and the bottom of the Canon XA25 with a single threaded hole.



Note: Although the pictures here show a PTX Model 1, the procedure is the same when connecting a camera to the Model 2 tilt plate.

Some cameras, like the AJA RovoCam and Marshall CV models, have threaded mounts on both the bottom and the top ... so you can mount them “upside down” on the tilt plate then mount the PTX in an inverted position on truss or other structure if desired.



These pictures show the single thread on the TOP of the Micro Studio Camera 4K ...

and the thread on both the top and bottom of the Marshall CV-350.



NOTE: YOU MUST REMOVE THE HANDLE FROM CANON XA SERIES AND SIMILAR MODELS IN ORDER FOR THE PTX TO INITIALIZE AND OPERATE PROPERLY.

ALSO REMOVE THE HAND STRAP ON THE RIGHT SIDE OF THE CAMERA SO IT WILL MOUNT PROPERLY ON THE TILT CRADLE.



With the PTX powered OFF, tilt the plate forward and place the thumbscrew into the long adjustment slot on the tilt plate.

Note: the FRONT of the PTX has the PTX logo sticker on the yoke. The REAR does not have the sticker.



Tighten the thumbscrew to secure the camera, but only tight enough that the camera can slide forward and backward along the slot.



Move the tilt plate to the horizontal position, and slide the camera forward and back while gently tilting the plate in both directions. You want to find the best center of gravity for the camera and lens ... then tighten the thumbscrew, applying as much pressure with your fingers as possible to assure a solid and secure mount.



The PTX Model 2 Internal Wiring Bundle

To minimize torsional stress on wires and connectors in a housing that can spin 360°, the wires run through the core of the PTX chassis and pan/tilt yoke.

The BNC connections (IN and OUT) on the base of the Model 2 are connected internally to the two BNC connections on the rotating arm of the Model 2. The only wire emerging from the top of the tilt assembly is a Micro HDMI connector. If your camera outputs SDI, you'll connect the camera out to the IN BNC on the arm.



The SDI Out from the camera is then available on the full size BNC connector on the PTX chassis.

If the camera provides an HDMI output, the connector is available on the base, below the VISCA RS422 Phoenix connector.



Note: If your camera requires a GENLOCK source, use the SDI IN on the chassis for that signal, and run a short BNC cable from the OUT on the Model 2 arm for connection with the Genlock In on your camera.

DMX Control: If you're using more than one PTX head, connect the DMX OUT to the DMX IN of each fixture (daisy-chain) for control.



VISCA Control: Daisy-chain up to SEVEN PTX heads by connecting the RS422 OUT from the first to the RS422 IN of additional fixtures. **THE DMX ID (LED) MUST BE SET TO CHANNEL 1 ON ALL SEVEN FIXTURES!**



The **DMX/VISCA ID (DIP switch)** must be set to 1 – 7 on the respective fixtures.

The PTX PanTilt heads are designed to integrate seamlessly into any DMX hardware or software controlled system.

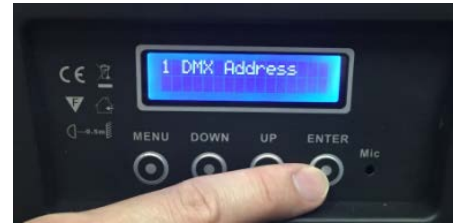
Set the DMX ID for each fixture as you would with any other DMX lighting fixture. When you turn on the power switch, the system will initialize, displaying head information, then turn off.



Click the MENU button once to turn it on. The only setting you'll be changing, if at all, is the DMX Address.



To change the DMX Address, click the ENTER button beneath the LED display. You'll see the first menu item, DMX Address.



Click the ENTER button again ...



... then click the UP or DOWN buttons to increase or decrease the current Address assignment.



Click the ENTER button a final time to Save the DMX Address setting.



Note: be sure to set the **MODE** and **DMX/VISCA ID** DIP switches on the top base of the PTX at the same time you set the DMX ID on the front panel. Following is a chart showing the corresponding camera numbers, DMX Values and DMX/VISCA ID DIP settings.

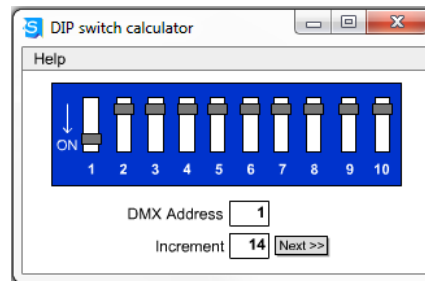
It's good practice to set the corresponding DIP switches at the same time you set the DMX ID for each fixture. The **MODE** switch settings are discussed on the next page.



PTX Number	DMX Value	DMX/VISCA ID DIP POSITION	PTX Number	DMX Value	DMX/VISCA ID DIP POSITION
1	1		7	85	
2	15		8	99	
3	29		9	113	
4	43		10	127	
5	57		11	141	
6	71		12	155	

To configure additional PTX heads, select and enter the **DMX/VISCA ID** for each head. Increment each head based on the number of channels in the profile. For 14 channels the second fixture would be DMX ID 15, the third 29, etc. as indicated in the graphic.

To help you determine appropriate DIP settings we've included a small file, **dipcalc.exe**, on the USB card included in the PTX box. It's also available on the **Ctrl+R** page on the website. Use the Increment function with the profile channel number to obtain consecutive DMX addresses.



After you've entered the Increment value, click **Next >>** to obtain addresses, starting from the DMX Address you enter in the field.

SETTING THE MODE DIP SWITCH



There are currently TWO methods of controlling the PTX Universal PanTilt Heads: DMX control from a console or software; and VISCA control, using a number of controllers that support VISCA serial control output.

It's important to understand the distinction between CONTROLLER and CAMERA. The Controller is the device that connects to either the DMX IN (XLR), or the green 9-pin Phoenix connector that supports two-way RS-422 serial communications with the controller.

The Camera is a camera or camcorder connected to the tilt plate on the PTX fixture. Cameras are controlled using the internal protocols supported by the PTX. These include LANC, Panasonic Remote and VISCA connections.

LANC is a single-wire, one-way digital protocol used by Sony, Canon, JVC and Blackmagic on many of their cameras.

Panasonic Remote is a two-wire, one-way analog protocol for many Panasonic models.

Both of these are limited because they provide no feedback to the controller regarding the position of the zoom, or the current focus or iris settings.

VISCA is a bi-directional serial protocol that uses three types of physical connections depending on the controlled device: RS232, RS422 and RS485.

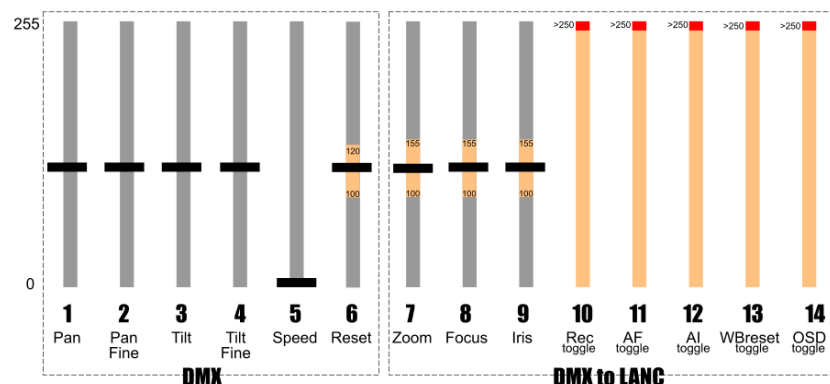
So you use the **MODE** switch to select both the CONTROLLER and the CAMERA. This label is affixed to the top base of the PTX so you can set the DIP switches to the appropriate positions.

SW1	CONTROLLER	ON for VISCA Control OFF for DMX Control from a console or computer/software
SW2	CAMERA	ON for VISCA (only active if SW1 is ON) OFF for LANC and Panasonic Remote controlled cameras
SW3	CAMERA	ON for 38400 Baud rate (only active if SW 1 and 2 are ON) OFF for 9600 Baud rate (only active if SW 1 and 2 are ON)
SW4	CAMERA	ON for RS422 or RS285 serial connection (if SW1 and SW2 ON) OFF for RS232 (if SW1 and SW2 ON)
SW5	CAMERA	ON for RS422 (if SW1, SW2 and SW4 ON) OFF for RS485 (if SW1, SW2 and SW4 ON)
SW6	OP MODE	ON for NORMAL operation OFF for firmware (FW) updates

DMX Control: There are three profiles you can load into your DMX console and/or DMX software control system. These profiles are also saved as files on the USB card included in the PTX box (**DMX-LANC Profile.ssl2**, **DMX-Panasonic Profile.ssl2**, and **DMX-VISCA Profile.ssl2**).

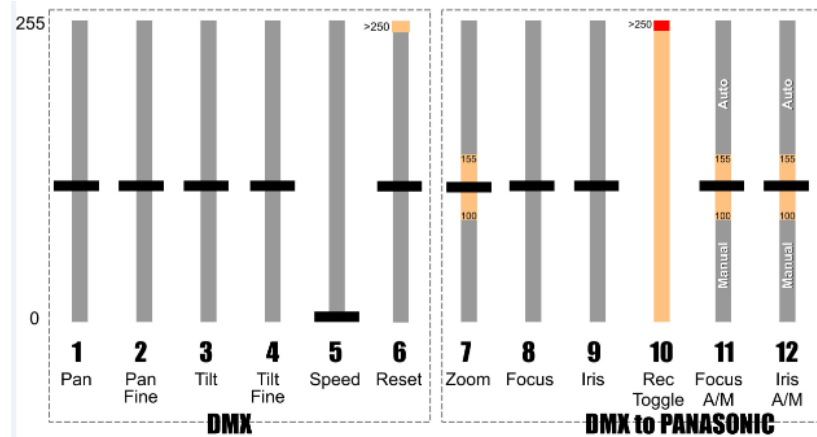
DMX-LANC profile 14 channel map:

- 1 Pan
- 2 Pan Fine
- 3 Tilt
- 4 Tilt Fine
- 5 Speed
- 6 Reset
- 7 Zoom
- 8 Focus
- 9 Iris
- 10 Record Toggle
- 11 Auto Focus Toggle
- 12 Auto Iris Toggle
- 13 White Balance Reset
- 14 OSD (On Screen Display) Toggle



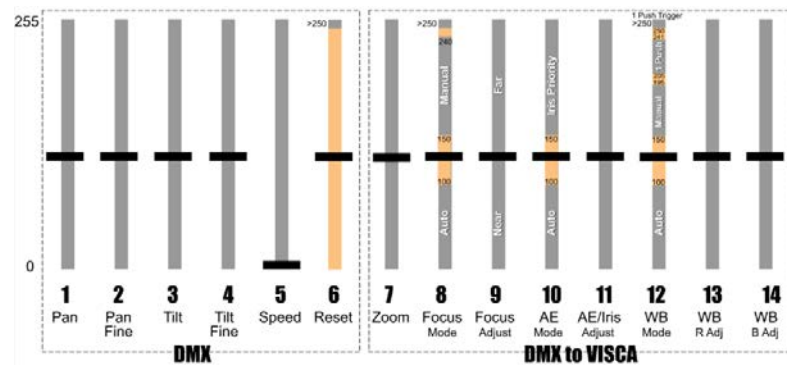
DMX-Panasonic profile 12 channel map:

- 1 Pan
- 2 Pan Fine
- 3 Tilt
- 4 Tilt Fine
- 5 Speed
- 6 Reset
- 7 Zoom
- 8 Focus
- 9 Iris
- 10 Record Toggle
- 11 Focus Auto/Manual
- 12 Iris Auto/Manual



DMX-VISCA profile 14 channel map:

- 1 Pan
- 2 Pan Fine
- 3 Tilt 1 Pan
- 2 Pan Fine
- 3 Tilt
- 4 Tilt Fine
- 5 Speed
- 6 Reset
- 7 Zoom
- 8 Focus
- 9 Iris
- 10 AE Mode (Auto/Iris Priority)
- 11 AE/Iris Adjust (based on 10 setting)
- 12 White Balance Mode (Auto/Manual/1Push/1Push Trigger)
- 13 White Balance (Red Adjust – based on 12 setting)
- 14 White Balance (Blue Adjust – based on 12 setting)



VISCA Control: The heads can be controlled via RS422 connections using VISCA control protocol. RUSHWORKS offers its **Ctrl+R** Camera Control Utility, which includes a four-port USB-to-RJ45 MUX that provides serial and 12VDC on CAT5 cables to each camera and/or PTX fixture. Additionally, the **VDESK** and **REMO** Integrated PTZ/PTX Production Systems include the same camera control, along with multi-input mixing, transitions, effects, program and ISO recording, and much more. The Sony RM-BR300 joystick controller is also a good candidate.

RUSHWORKS software applications run on Windows (32 or 64 bit) devices. However, you can also use the Boot Camp utility built into Mac OSX and install Windows on that computer.

Blackmagic Design has incorporated the PTX pan and tilt commands into its ATEM switcher User Interface. Now you can use the ATEM software for comprehensive camera setup and motion control.

RUSHWORKS Support
support@RUSHWORKS.tv
888.894.7874 option 2

INTERNATIONAL
+1 469.293.1024

