datavideo

12G 4K 50/60 UHD

4K Robotic Pan Tilt Head

PTR-15

Pan-Tilt Load-Bearing Camera 4kg

Aluminum alloy structure

www.datavideo.com

4K Robotic Pan Tilt Head
PTR-15

Transform your handheld camera into a professional broadcast-grade motorized remote control camera

Datavideo's latest release, PTR-15, a 4K 12G-SDI robotic pan tilt head with FreeD functionality.

It employs an efficient driving system to achieve smooth and precise robotic pan and tilt movements. It can be paired with most models of broadcast-grade cameras available in the market, enabling remote control of camera parameters such as pan, tilt, zoom, and aperture.

The PTR-15 comes equipped with the built-in FreeD virtual tracking feature, which utilizes computer vision sensor technology to recognize and track the position and movements of the subject being filmed. This feature enables comprehensive control over virtual studio tracking.

Furthermore, the PTR-15 supports 12G input, ensuring high-definition image transmission and processing to maintain clarity and detail in captured footage.

Whether for sporting events, concerts, live broadcasting of activities, venue video system setups, high-end video conferences, emergency command information technology setups, and other domains, the PTR-15 excels.

The PTR-15 can be controlled using an IR controller, VISCA protocol controller, Datavideo RMC-180 MARK II camera controller, RMC-300A universal remote control panel, and is compatible with both serial and Ethernet (DVIP) connections.

- Sturdy aluminum frame
- Multiple interfaces: SDI, HDMI, RS-232, RS-422, DVIP, Tally, LANC
- Supports 12G-SDI and HDMI2.0
- Additional 3G-SDI for Datavideo AT-1 automatic tracking function
- Built-in timecode/genlock interface
- Supports multiple protocols for controlling compatible cameras
- Various controller options: RMC-180 MARK II, RMC-300A
- Built-in tally lights
- D-Type power output for powering cameras
- Selectable DC voltage output for different cameras
- Supports optional Datavideo ZEK-2 zoom control kit for Tilta Nucleus-M motors, actively driving and recording zoom positions of top cameras
- Controls Sony, Panasonic, Canon, JVC cameras
- Zoom, focus, aperture, shutter, white balance modes—all these commonly used functions can be easily controlled using Datavideo's remote controller.

High Cost-Performance Ratio

The PTR-15 offers excellent value for its price, with straightforward operation that allows a single individual to control multiple cameras for efficient program production, reducing the need for additional operators.

Transform Your Camera into a Robotic Pan Tilt Head

Control pan, tilt, and zoom movements of the pan-tilt head, supporting zoom control for lenses from major brands.

Lightweight and Durable

Weighing just 3.7 kilograms, the PTR-15 features an aluminum alloy structure that serves as a robust base for your camera. It can handle cameras weighing up to 4 kilograms, ensuring durability and stability.

Supports a Variety of Compatible Cameras

compatibility, making it suitable for a wide range of broadcast-grade and professional cameras. Choose the most suitable camera based on your requirements.

Panasonic Camera | Sony Camera | Canon Camera | JVC Camera

Multiple Controller Options

Compatible with serial ports, Ethernet, and LanC. RMC-180 MARK II, RMC-300A, and SHOWCAST 100 will fulfill your control needs.

RMC-180 MARK II

RMC-300A

SHOWCAST 100

Built-in Indicator Tally Lights

The tally light located at the front of the PTR-15 displays the camera's status, enabling subjects to clearly identify which camera is currently serving as the main output for broadcasting.

Dual-Voltage Output: 12V/24V

To accommodate the diverse range of camera power specifications, the PTR-15 provides dual-voltage power outputs. This feature easily adapts to the majority of business and professional-grade cameras available on the market. Through a toggle switch on the rear panel, you can switch between power output specifications, ensuring stable power supply. The design includes surge protection circuits for enhanced safety during use.

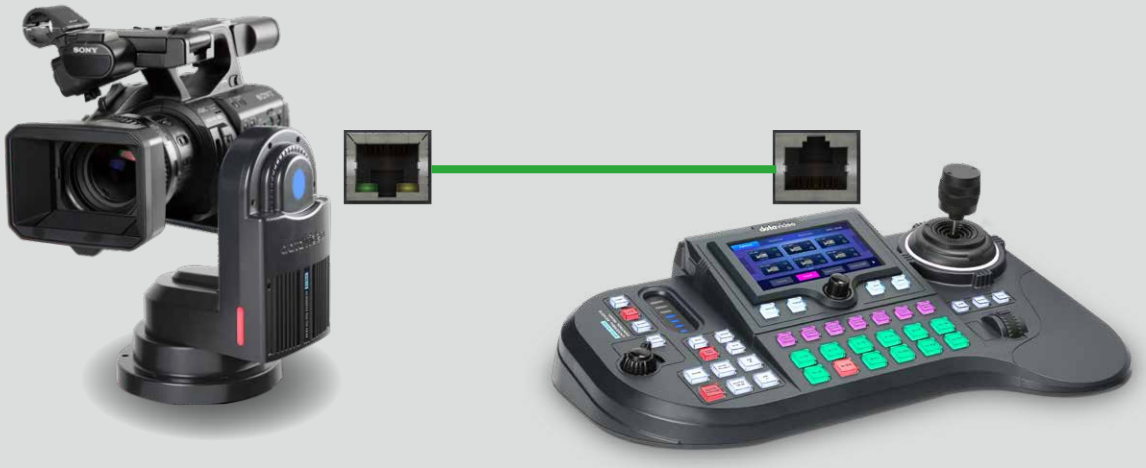
12V 24V

Selectable DC Voltage Output

An optional DC voltage output is available, catering to various camera requirements (12V/24V).

Comprehensive IP Control

In addition to the standard RS-232/422 control, the PTR-15 provides robust IP-based control, keeping up with the modern trend of IP-based systems. This technology migrates the camera control protocols and technical parameter adjustments used in high-end broadcast studios to an open IP environment. This transformation breaks away from the previous limitations of exclusive one-to-one control, enabling the free switching of different cameras and achieving precise adjustments of camera parameters such as aperture, shutter, red/blue gain, inflection point, and more. This advancement allows on-site camera operations to enter an unprecedented era of convenience.



Dual 12G-SDI and HDMI 2.0 Interfaces

The robust and stable nature of SDI interfaces makes them highly suitable for broadcast environments, while HDMI offers high compatibility with peripheral devices. The PTR-15 fully supports both 12G-SDI and HDMI 2.0 standards for broadcast and AV applications. Whether you require SDI or HDMI connections, it provides a complete 4K50/60P audiovisual transmission channel.

Genlock/Timecode Synchronization and Calibration

This is one of the criteria that differentiates broadcast-grade equipment from regular cameras. The genlock function allows interconnection of all cameras and display devices, ensuring precise synchronization at every frame, all operating on the same clock frequency. This prevents issues like tearing due to unstable frame transmission. The timecode calibration function enables the interconnection of all cameras and recording devices, providing the same time parameters. This establishes a unified time reference point for subsequent archiving or post-production, ensuring consistency.

4K Video Capture

4K Recording

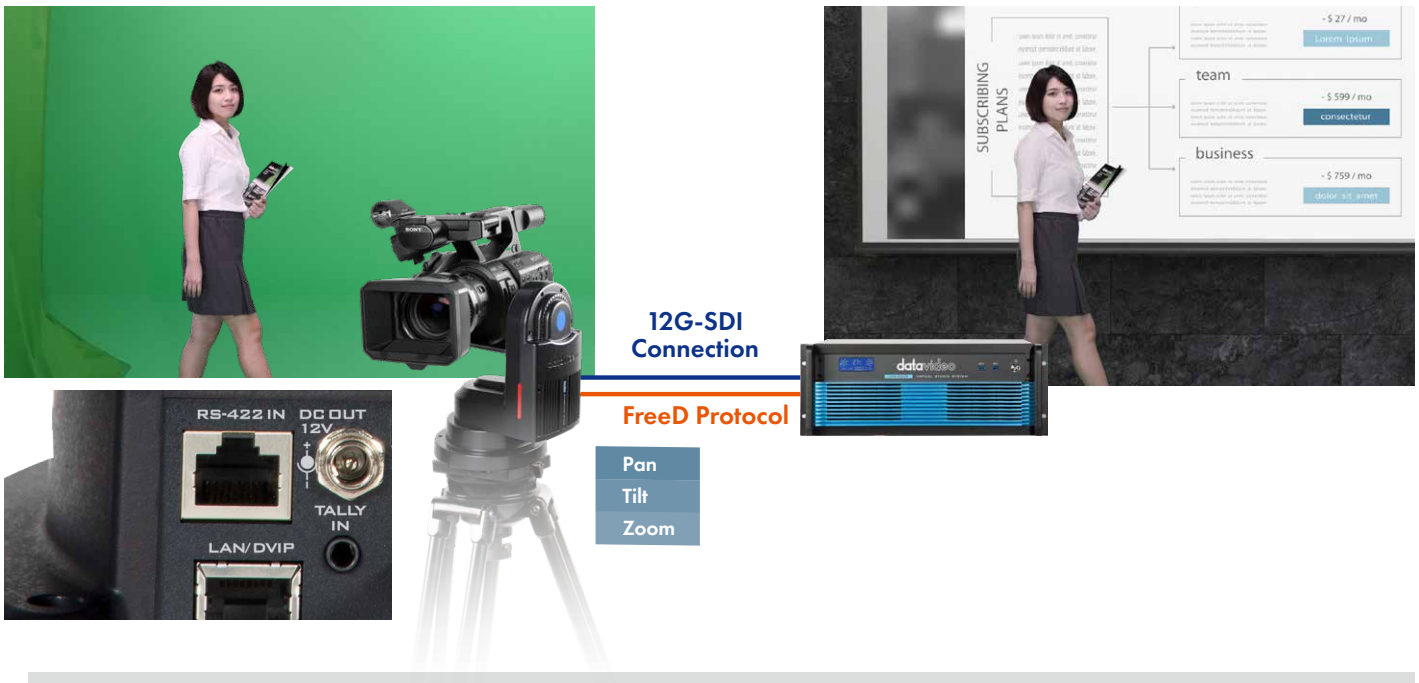
Post-Production Editing

Free-D Virtual Studio Camera Position Awareness System Communication

Drawing upon years of advanced pan-tilt development and production technology, combined with the latest AR/VR (Augmented Reality / Virtual Reality) systems, Datavideo has introduced the innovative PTR-15 pan-tilt head with integrated camera tracking protocol, Free-D functionality.

During video shooting in virtual environments, the PTR-15 camera pan-tilt head uses its serial RS-422 interface to output position information (pan, tilt, zoom, etc.), which is then directly sent to the TVS-3000 Virtual Studio Production System. This integration allows the pan-tilt camera and virtual system to collaborate seamlessly.

For different cameras and lenses, the pan-tilt head supports lens tracking data acquisition using compatible ZEK-1 or ZEK-2 zoom data sensors. This enables control of lens zoom, recognition of lens-embedded tracking data delay, synchronization of motor tracking delay, and output of tracking data. Through RS-422 output, 8-bit precision Free-D protocol tracking data is available, supporting widely used Free-D protocol virtual systems in the market.



ZEK-1

ZEK-2

Pan, tilt, zoom, and various other operations are precisely positioned, with adjustable motion trajectories and speed settings that can be freely recorded. The pan range is ±340 degrees with speeds ranging from 0.12 to 15 degrees per second, achieving a precision of 0.35 degrees. The tilt range is ±45 degrees with speeds ranging from 0.06 to 10 degrees per second, and a precision of 0.35 degrees.

Built on Datavideo's original DVIP protocol, it's compatible with standard TCP/IP network protocols, supporting third-party device control and enabling interconnected automation. You can optionally choose the RMC-300A IP control panel with a 5-inch UI touchscreen or the RMC-180 MARK II serial control panel, allowing for dual-system control and providing various safeguards for security and reliability.

PTR-15 Rear Interface Panel

Remote Control:
Control zoom/focus or other functions of multiple camera brands through different remote control cables.

RS-232/422 Output:
Provides serial port control signals to the camera.

LED Indicators:
For D-tap connectors' voltage output (Red: 24V, Green: 12V).

Power Output:
Delivers power to the camera.

Tally Switch:
Used for PTR-15 settings and adjustments.

Zoom Sensor:
When connected to Datavideo ZEK-1/ZEK-2, it detects and sends back camera zoom position information.

USB Port:
For firmware upgrades and updates.

Genlock/TC:
Input and output for genlock or timecode synchronization.

Tally Output:
Sends Tally signals to the camera.

3G-SDI Input:
Receives video signals from HD cameras.

LAN:
Camera IP Control

12G-SDI Input:
Receives video signals from 4K cameras.

HDMI 2.0 Input:
Receives video signals from 4K cameras.

Video Input

12G-SDI
3G-SDI
HDMI2.0

Control Output

Remote LanC
RS-232/422
IP

Power Output

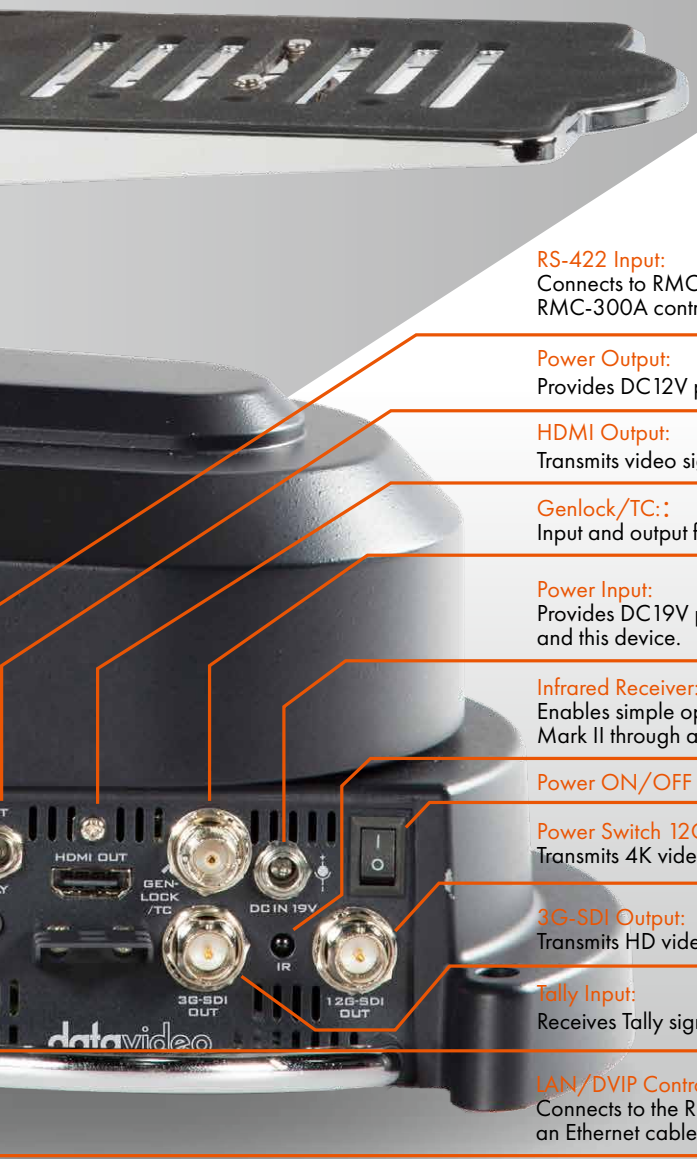
12/24V

Other Professional Interfaces

Tally Output
Genlock/
Timecode

Multiple Signal Interfaces

The PTR-15 series supports various signal interfaces, including SDI, HDMI, RS-232, RS-422, DVIP, tally lights, and LANC.



RS-422 Input:
Connects to RMC-180 MARK II and RMC-300A controllers for camera control.

Power Output:
Provides DC12V power to AT-1.

HDMI Output:
Transmits video signals to switchers.

Genlock/TC::
Input and output for genlock or timecode

Power Input:
Provides DC19V power to the camera and this device.

Infrared Receiver:
Enables simple operation of PTR-15/T Mark II through an infrared remote control.

Power ON/OFF

Power Switch 12G-SDI Output:
Transmits 4K video signals to the switcher.

3G-SDI Output:
Transmits HD video signals to AT-1.

Tally Input:
Receives Tally signals from the switcher.

LAN/DVIP Control:
Connects to the RMC-300A controller via an Ethernet cable.

Video Output

12G-SDI
3G-SDI
HDMI2.0
HDBaseT
(PTR-15T only)

Control Input

RS-422
RMC-180 MARK II/
RMC-300A
DVIP
RMC-300A

Power Input

19V
PoE (15T only)

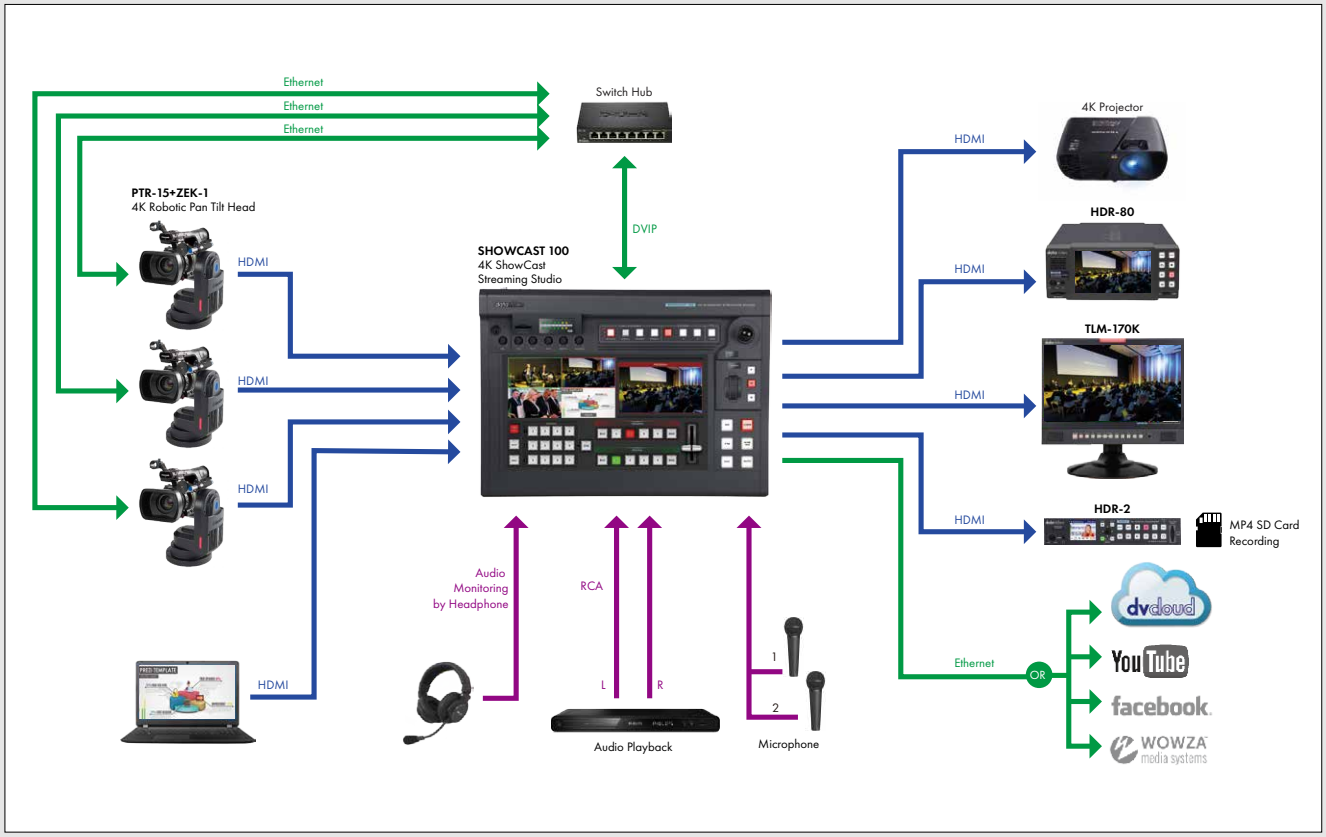
Other Professional Interfaces

Tally Input
Genlock/
Timecode

PTR-15+ZEK-1

DVIP Control

SHOWCAST 100 Single-Person Broadcasting Solution

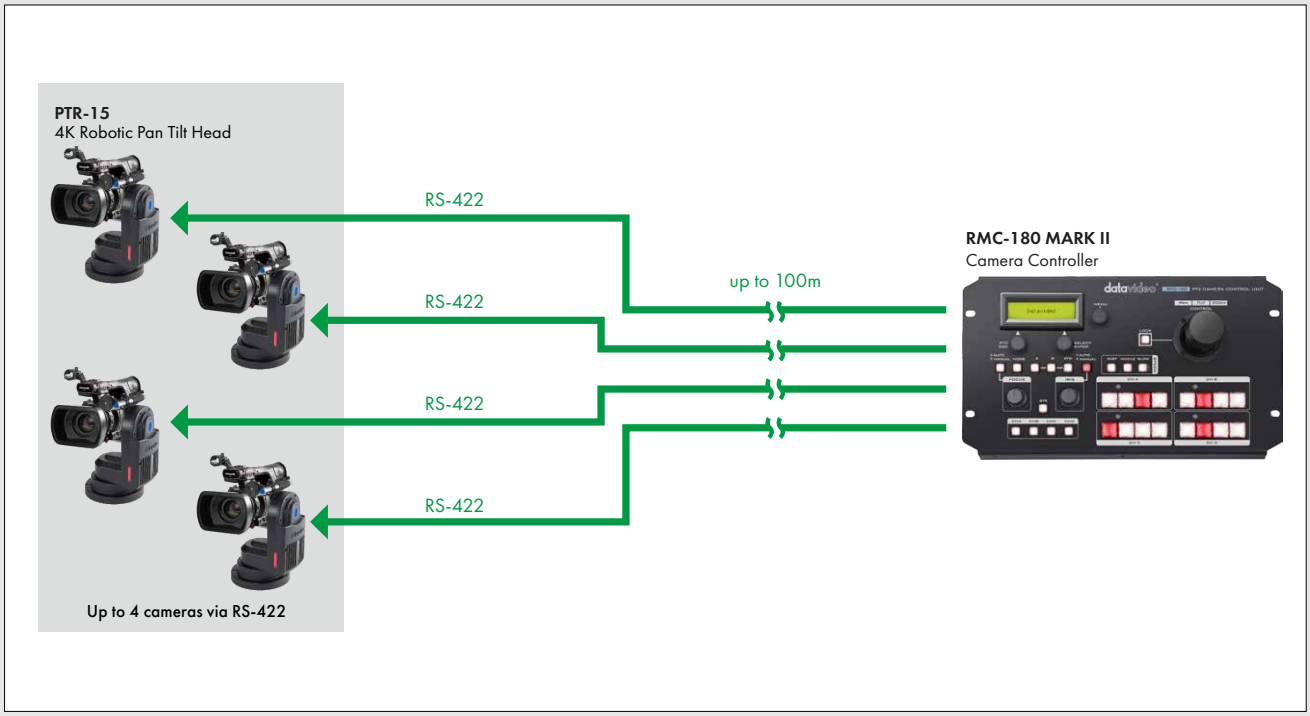


PTR-15+ZEK-1

Control up to 4 cameras

RS-422 Control

Control using RMC-180 MARK II series controllers through serial signals

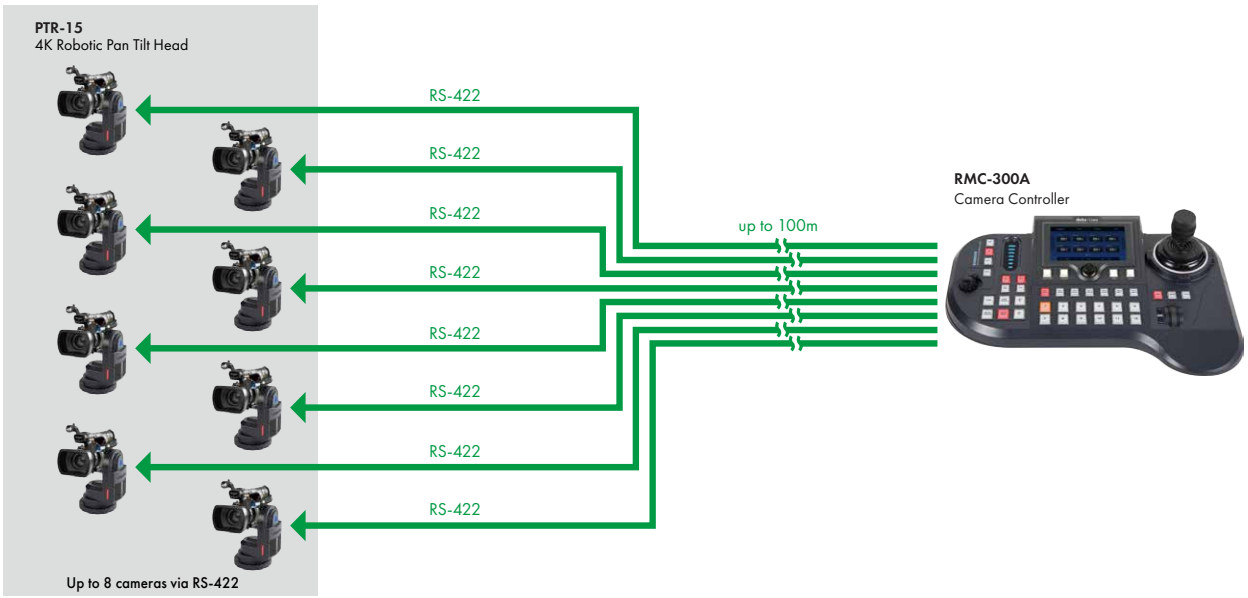


PTR-15+ZEK-1

Control up to 8 cameras

RS-422 Control

Use RMC-300A controller to control via serial signals

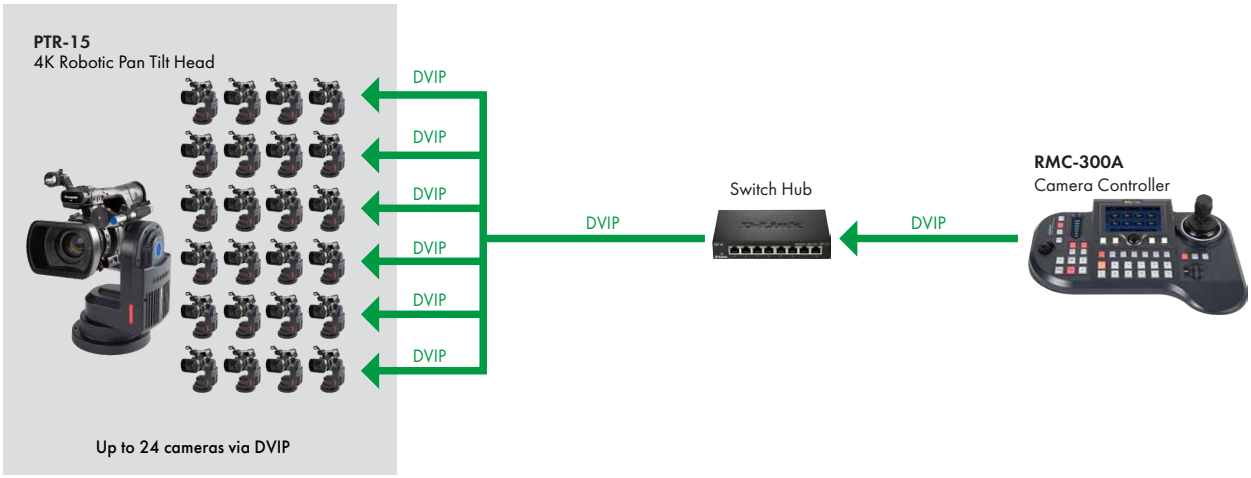


PTR-15+ZEK-1

Control up to 24 cameras

DVIP Control

Use RMC-300A controller to control via DVIP protocol



Optional Accessories

ZEK-1

Zoom Data Sensor

ZEK-1 is your professional solution for controlling camera zoom. PTR-15 can read the pan-tilt's panoramic position and store it for easy recall. With the ZEK-1 zoom data sensor, you can detect, set, and store zoom positions, allowing the controller to easily recall the stored zoom positions.

How Does ZEK-1 Work?

By engaging the ZEK-1 gear with the camera's zoom ring, it can read changes in the camera's zoom ring rotation. Therefore, the gear must be tightly meshed with the camera's zoom ring to obtain accurate data.

The M0.8 gear is pre-installed on the zoom encoder and can be used with cameras equipped with M0.8 gears (typically cine lenses) or with a gear belt.

We also provide M0.6 gears for replacement. Cameras like Sony X200, Z280, and others using Fujinon lenses often use M0.6 gears.

Zoom Control Ring (M0.8 Gear)
The gear should match the camera's zoom ring and connect the 4-pin mini-DIN connector to the PTR-15's zoom sensor interface.

Metal Bracket
The metal bracket secures the zoom control ring in place.

M0.6 Gear
If you're using a camera with an M0.6 gear on the zoom ring (e.g., Sony X200), an additional M0.6 gear can directly match the lens.

Gear Belt Designed for M0.8 Gears
If your camera's zoom ring isn't M0.6 or M0.8 as on PTR-15, you can wrap the gear belt around the zoom ring.

The zoom control ring is compatible with most cameras, with the exception of:

Cameras with a single-ring design.
Cameras where the zoom ring is obstructed by the servo motor box.

For more information about camera compatibility, please visit the official Datavideo website.

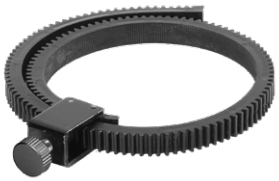
ZEK-2

Zoom Data Sensor

The PTR-15 now supports control of the Lumix BGH-1 modular cinema live streaming camera. Using the standard LanC protocol, the PTR-15 can be installed on the Lumix BGH-1 and control the Focus and IRIS of M4/3 lenses. With the Tilta Nucleus-M motor kit, Datavideo's RMC-180 MARK II controller can also control zoom functions. Pre-stored zoom positions can be called, and four PTR-15 + Lumix BGH1 units can be controlled simultaneously.

- Professional Pan Tilt Zoom Control
- Use RMC-180 MARK II for push-pull, pan, tilt control, and preset position recall
- Supports manual focus and manual IRIS control
- Compatible with M4/3 manual zoom lenses
- Transform manual zoom cameras into fully automatic pan-tilt-zoom remote cameras
- RMC-180 MARK II can simultaneously control four PTR-15 + Lumix BGH1 setups

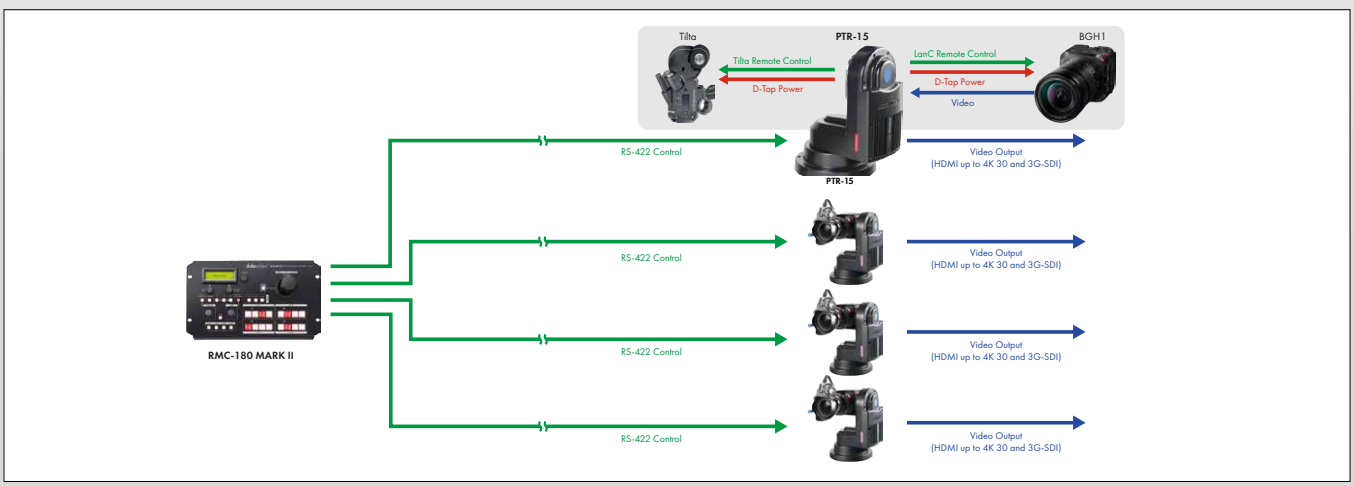
Metal Bracket
The metal bracket secures the zoom control ring in place.



M0.8 Gear Belt
Wrap this gear belt around the zoom ring of the Panasonic Lumix DC-BGH-1 camera, covering it. Then, position the TILTA Nucleus-M Motor close to and meshed with the gear belt.

TILTA Control Cable
The Tilta control cable connects the zoom sensor of PTR-15 robotic pan tilt head to the TILTA Nucleus-M Motor.

D-Tap Power Supply Cable
Connect the D-Tap end of the power supply cable to the DC output port of PTR-15. One of the other ends with two connectors connects to the TILTA Nucleus-M Motor, and the other connects to the power port of the Panasonic Lumix DC-BGH-1 camera.



Optional Accessory

Wall Mount Installation

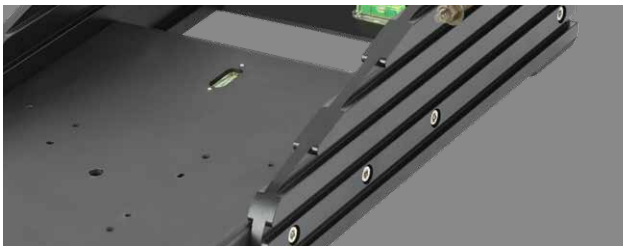
WM-11

Professional PTR Robotic Pan Tilt Head Mount

Weight of WM-11 ： 4.0 Kg
Maximum Load Weight Limit ： 50 Kg

WM-11 is a professional PTR Robotic Pan Tilt Head mount designed specifically for Datavideo PTR-15 and Datavideo pan tilt camera series (including PTC-150/PTC-150T). Constructed from 6063 aluminum and 3mm thick carbon steel bracket, WM-11 can hold a weight of up to 10 kg and maintains excellent stability. The included bolts ensure a secure installation. Due to the substantial rotational force of PTR-15, it's essential to use a professional and sturdy mounting bracket like WM-11. Additionally, WM-11 features three bubble level indicators to assist users in adjusting both horizontal and vertical alignment during installation.

Three Bubble Level Indicators



Sturdy Bolts

Inverted Mode

Wall Mount Installation

WM-11

Professional PTR Robotic Pan Tilt Head Mount

Inverted L-shaped Tray Bracket

Ceiling Mount Installation

CM-10

Ceiling Suspended Bracket

Inverted L-shaped Tray Bracket

	PTR-15
Product Name	4K Robotic Pan Tilt Head
Video Interfaces	HDMI 2.0 x 1 12G-SDI x 1 3G-SDI x 1
Video Output	2160p 60/59.94/50 2160p 30/29.97/25 1080p 60/59.94/50 1080i 60/59.94/50 720p 60/59.94/50
Genlock	Yes
Timecode	Yes
Controllers	RMC-180 MARK II RMC-300A RMC-300C SHOWCAST 100 VISCA Protocol Controller IP Control IR remote
Control Protocal	Sony VISCA DVIP
Control Input	RS-422 DVIP
Panning / Tilting Range	Pan: 340° Tilt: ±45°
Panning / Tilting Speed	Pan: 0.12~15° /Sec Tilt: 0.06~10° /Sec
Accuracy	0.35°
Acceleration	Low/Mid/Hig/Auto
Audible Noise	40 dB(A) max
Preset	Pan/Tilt position 199
Payload Capacity	4 KG Max
Control Outputs	RS-232 / RS-422 / IP Control / BX-Lens / LanC
Power Requirements	Red/Green
Payload Capacity	TBD..
Power Output	DC 24/12V, 36W Max
Weight	4 KG
Dimensions	191 x 241 x 300 mm
Optional Accessories	ZEK-1, ZEK-2, PCB-1 WM-10, WM-11, CM-10 HBT-18

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