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PRODUCT DATASHEET

# iSwitch 401MV

4K60 4x1 Multiviewer Seamless UHD Video Switcher



|                      |                 |                                    |
|----------------------|-----------------|------------------------------------|
| <b>4K@60Hz</b>       | <b>18 Gbps</b>  | <b>8 Layouts</b>                   |
| 4X1 VIDEO RESOLUTION | VIDEO BANDWIDTH | SINGLE / PIP / PBP / TRIPLE / QUAD |

## OVERVIEW

The iSwitch 401MV is a 4K60 4x1 multiviewer and seamless UHD video switcher that combines up to four HDMI sources onto a single UHD or HD display. It is HDMI 2.0b and HDCP 2.2/1.x compliant, supporting 18 Gbps video bandwidth and resolutions up to 4K@60Hz.

Eight display modes are available — SINGLE, PIP, PBP (1), PBP (2), Triple (1), Triple (2), Quad (1), and Quad (2) — with seamless switching on single-screen mode and fast switching on multiview modes. Each input can be freely assigned to any display window, with independent audio selection and volume control.

Control is available via front-panel buttons, an IR remote with full OSD menu navigation, or RS-232 ASCII commands, making the iSwitch 401MV suitable for integration with third-party control systems.

## KEY FEATURES

- HDMI 2.0b, HDCP 2.2 / 1.x Compliant — 18 Gbps video bandwidth with input/output resolutions up to 4K@60Hz
- 8 Display Modes — SINGLE, PIP, PBP (1), PBP (2), Triple (1), Triple (2), Quad (1), Quad (2)
- Seamless Switching — no black-screen interval when switching sources in single-screen mode
- Fast Switching on Multiview — quick source changes within any of the multi-window layouts
- Multi-Format Audio Pass-Through — LPCM, AC3, DD+, DTS, DTS-HD, up to 7.1 channel
- Audio De-Embedding — independent analog (3.5mm L/R) and optical (S/PDIF) audio outputs with volume control
- Advanced EDID Management — 18 selectable EDID modes covering resolutions from 720p to 4K 7.1CH
- OSD Menu Navigation — full on-screen configuration via IR remote (MENU/EXIT/UP/DOWN/LEFT/RIGHT/OK)
- Triple Control Paths — front-panel buttons, IR remote, or RS-232 ASCII commands
- Compact Metal Chassis — designed for easy, flexible rack or under-table installation

## SPECIFICATIONS

| TECHNICAL        |                                            |
|------------------|--------------------------------------------|
| HDMI Compliance  | HDMI 2.0b                                  |
| HDCP Compliance  | HDCP 2.2 / 1.x                             |
| Video Bandwidth  | 18 Gbps                                    |
| Video Resolution | Up to 4K@60Hz (input and output)           |
| Color Space      | RGB, YCbCr 4:4:4, YCbCr 4:2:2, YCbCr 4:2:0 |

|                       |                                                                                                                                                                           |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Color Depth           | 8-bit                                                                                                                                                                     |
| Audio Formats         | HDMI: PCM 2.0/5.1/7.1CH, Dolby Digital/Plus, DTS, DTS High Res. Analog (3.5mm L/R): PCM 2.0. SPDIF (Optical): Dolby Digital, DTS 5.1, PCM 2.0. (HBR audio not supported.) |
| IR Level / Frequency  | 5 Vp-p, 38 kHz                                                                                                                                                            |
| ESD Protection        | Human body model: $\pm 8$ kV (air-gap discharge), $\pm 4$ kV (contact discharge)                                                                                          |
| CONNECTIONS           |                                                                                                                                                                           |
| Input Ports           | 4x HDMI IN [Type A, 19-pin female]                                                                                                                                        |
| Output Ports          | 1x HDMI OUT [Type A, 19-pin female], 1x L/R OUTPUT [RCA], 1x OPTICAL OUTPUT [S/PDIF]                                                                                      |
| Control Ports         | 1x RS-232 [3-pin, 3.81mm phoenix connector], 1x IR EXT [3.5mm stereo mini-jack]                                                                                           |
| MECHANICAL            |                                                                                                                                                                           |
| Housing               | Metal enclosure                                                                                                                                                           |
| Colour                | Black                                                                                                                                                                     |
| Dimensions            | 220 mm [W] x 100 mm [D] x 30 mm [H]                                                                                                                                       |
| Weight                | 620 g                                                                                                                                                                     |
| POWER                 |                                                                                                                                                                           |
| Power Supply          | Input: AC 100-240V 50/60Hz. Output: DC 12V/2.5A (US/EU standard, CE/FCC/UL certified)                                                                                     |
| Power Consumption     | 10 W (Max)                                                                                                                                                                |
| ENVIRONMENTAL         |                                                                                                                                                                           |
| Operating Temperature | 32°F ~ 104°F / 0°C ~ 40°C                                                                                                                                                 |
| Storage Temperature   | -4°F ~ 140°F / -20°C ~ 60°C                                                                                                                                               |
| Relative Humidity     | 20% ~ 90% RH (non-condensing)                                                                                                                                             |

## COMPLIANCE

|                |                                                                                          |
|----------------|------------------------------------------------------------------------------------------|
| Certifications | Power supply CE/FCC/UL certified; full-unit compliance TBD — not stated in source manual |
|----------------|------------------------------------------------------------------------------------------|

## COMMAND REFERENCE

The iSwitch 401MV supports RS-232 ASCII command control. Connect the RS-232 port of the product to a PC or control system with a 3-pin phoenix connector cable, then send commands with a serial terminal tool.

Communication defaults: baud rate 115200 (also selectable: 57600, 38400, 19200, 9600), 8 data bits, 1 stop bit, no parity. Each command is terminated with an exclamation mark "!".

**Verified cross-reference:** *This command set matches the 56-command RS-232 protocol (device\_id=16) captured in the Infobit Simulator database (infobit\_api.db), confirming baud rate 115200,8,N,1 and command syntax against the user manual.*

### Command table (representative subset — full list in the RS-232 command manual)

| Command                | Description                                     | Feedback                         |
|------------------------|-------------------------------------------------|----------------------------------|
| <b>SYSTEM SETTINGS</b> |                                                 |                                  |
| power z!               | Power on/off the device (z=0 off, z=1 on)       | System Initializing...           |
| r power!               | Get current power state                         | power on / power off             |
| reboot!                | Reboot the device                               | Reboot... System Initializing... |
| help!                  | List all commands                               | —                                |
| r type!                | Get device model                                | 4x1 HDMI Multiviewer             |
| r fw version!          | Get firmware version                            | MCU / SCALER FW version          |
| <b>OUTPUT SETTING</b>  |                                                 |                                  |
| s output hdcp x!       | Set output HDCP (x=1 HDCP1.4, 2 HDCP2.2, 3 OFF) | output HDCP: HDCP 1.4            |
| r output hdcp!         | Get output HDCP status                          | output HDCP: HDCP 1.4            |

| Command                     | Description                                              | Feedback                                            |
|-----------------------------|----------------------------------------------------------|-----------------------------------------------------|
| r output res!               | Get output resolution                                    | out resolution:<br>3840x2160p60                     |
| s output res x!             | Set output resolution (x=1~14, e.g. 3=3840x2160p60)      | out resolution:<br>3840x2160p60                     |
| s output vka x!             | Set output video-keep-active pattern (1 black, 2 blue)   | output VKA<br>pattern: black<br>screen              |
| s output itc x!             | Set output video mode (1 video mode, 2 PC mode)          | output ITC: video<br>mode                           |
| <b>EDID / AUDIO SETTING</b> |                                                          |                                                     |
| r input EDID!               | Get input EDID mode                                      | input<br>EDID:4K2K60_444,<br>Stereo Audio 2.0       |
| s input EDID x!             | Set HDMI input EDID mode (x=1~18)                        | input EDID: ...                                     |
| s output audio x!           | Set output audio source (x=0 follow win1, 1-4 HDMI 1-4)  | output audio:<br>follow window 1<br>selected source |
| s output audio vol x!       | Set output audio volume (x=0~100)                        | output audio<br>volume: 30                          |
| s output audio mute x!      | Set output audio mute (x=0 off, 1 on)                    | output audio<br>mute: off                           |
| <b>MULTIVIEW / ROUTING</b>  |                                                          |                                                     |
| s multiview x!              | Set multiviewer display mode (1 single ... 5 quad)       | single screen                                       |
| r multiview!                | Get multiviewer display mode                             | single screen                                       |
| s in source x!              | Route input source to output (x=1~4, single-screen mode) | HDMI 1                                              |
| s window x in y!            | Select input y for display window x (multiview mode)     | window 1 select<br>HDMI 1                           |
| s auto switch x!            | Enable/disable auto switch (x=0 off, 1 on)               | auto switch off                                     |
| s PIP size x!               | Set PIP window size (1 small, 2 middle, 3 large)         | PIP size: large                                     |

| Command                                           | Description                                          | Feedback         |
|---------------------------------------------------|------------------------------------------------------|------------------|
| s PIP position x!                                 | Set PIP window position (1~4 corners)                | PIP on right top |
| s PBP mode x! / s triple mode x! / s quad mode x! | Set PBP / triple / quad window display mode (1 or 2) | PBP mode 1       |

## APPLICATION EXAMPLE

*Typical deployment: up to four HDMI sources feed the iSwitch 401MV, which combines them into a single quad or PIP layout on one UHD display, with IR remote or RS-232 control.*

A common command-center or classroom application connects a PC, DVD/Blu-ray player, TV box, and a fourth HDMI source to the iSwitch 401MV. Front-panel buttons, the included IR remote, or a control system over RS-232 select among SINGLE, PIP, PBP, Triple, or Quad layouts to display multiple sources simultaneously on one UHD monitor, with audio de-embedded to an amplifier and speakers.

- Up to 4 HDMI sources connect to the HD 1-4 input ports
- The HDMI OUTPUT port feeds a single UHD or HD display or projector
- Optical or analog L/R audio output feeds an amplifier and speaker system
- An IR receiver cable connects to IR EXT for remote control when the front panel is out of line-of-sight
- A control system connects via RS-232 to switch layouts and select input sources programmatically

## ORDERING INFORMATION

| Model         | Description                                                                               |
|---------------|-------------------------------------------------------------------------------------------|
| iSwitch 401MV | 4K60 4x1 Multiviewer Seamless UHD Video Switcher with RS-232, IR, and front-panel control |

*Specifications are subject to change without notice. For the latest product information, visit [www.infobitav.com](http://www.infobitav.com) or contact your Infobit AV representative.*