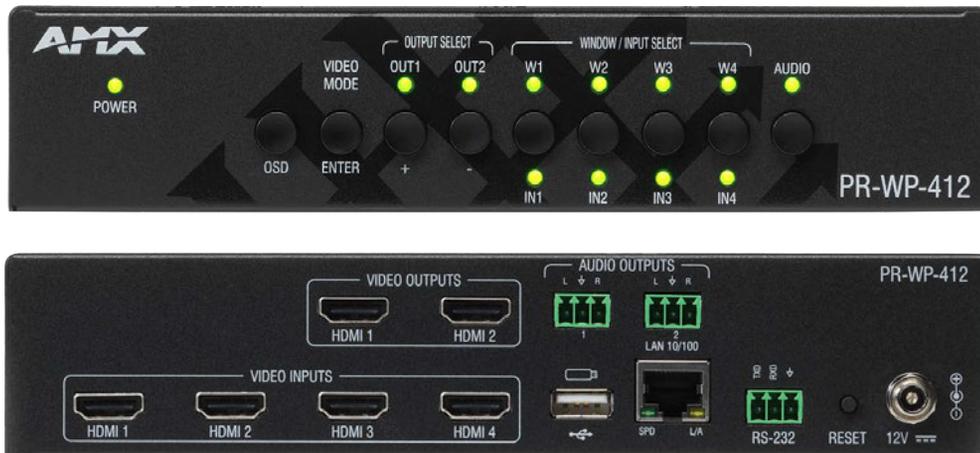# AMX 4x1+1 4K60 HDMI Windowing Processor

PR-WP-412 (FG# AMX-PR-WP-412)

Overview

The PR-WP-412 is an incredibly versatile and powerful AV solution that is both a fully featured 4x1+1 windowing processor and a 4x2 seamless matrix switcher. When configured as a windowing processor, the four video inputs can be arranged in any configuration and composited into a single output. In matrix switcher mode, the PR-WP-412 acts as a 4x2 seamless video switcher. It is loaded with best-in-class features, including truly seamless switching, class-leading 4K60 4:4:4 video quality, integrated audio breakaway, and extreme control flexibility with an open control API, a simple-to-manage web interface, and front panel controls.

When paired with the AMX UVC1-4K USB Capture Device, the PR-WP-412 is an ideal complement to software video conferencing systems such as Zoom and Teams as it enables multiple sources to be shared at the same time. With an open API and full 4K60 support, the PR-WP-412 can be leveraged to enable creative solutions to unique design requirements in all types of applications.

Common Applications

The PR-WP-412 is ideal for a variety of applications, including corporate campuses, colleges and universities, sports bars, casinos, courtrooms and other government applications as a cost-effective solution to switch or combine 4K60 4:4:4 HDMI sources on a single display.

Features

Perfect 4K60 4:4:4 Video - Ideal for users running critical viewing applications such as casinos and courtrooms that can benefit from processing the full fidelity of their displays

HDMI 2.0 & HDCP 2.2 - Supports the latest video standards to realize the full capabilities of HDMI interfaces

High Dynamic Range (HDR) Support – Support for Deep Color

Multi-Window Processing - Up to four simultaneous, freely scalable windows can be processed using the 4x1+1 multi-windowing mode

Seamless Switching – Ensures uninterrupted screen transitions during source selections when switching in 4x2 matrix mode

Audio Pass-Through & De-Embedding – Empowers independent audio source selection and routing to HDMI outputs in all modes

H-Control Upgradable – Ready to support H-control in the future by firmware re-writing via USB

Multiple Control Options – Multiple control options are available including: Open API Control over IP and Serial, full Web GUI console, and front panel buttons

Specifications

General	
Dimensions	8.07 in (20.5cm) depth 8.4 in (21.35cm) width 1.73 in (4.4cm) height
Weight	Approx. 3.1 lbs (1.4 kg)
Shipping Weight	Approx. 5.1 lbs (2.3 kg)
Mounting Options	V-Style surface mount brackets (AVB-VSTYLE-SURFACE-MNT) V Style Single Module Pole Mounting Kit (AVB-VSTYLE-POLE-MNT) V-Style Rack Shelf (NMX-VRK)
MTBF	357,865 hrs
Airflow Approvals	Forced air cooling from right to left (openings on sides of case)
Regulatory Compliance	FCC Part 15 Class B EN 55032 EN 55035 CB IEC/EN 60950 CB IEC/EN 62368-1 UL 62368-1 RoHS/REACH EMC (Australia) EMC (Canada) EMC (UKCA) Prop65
Included Accessories	1x 12V/3A DC Power Adapter 1x US Pins 1x EU Pins 1x UK Pins 1x AU Pins 3x 3-Pin Terminal Blocks 4x Shockproof Feet

Active Power Requirements	
AC Power	12 VDC 3A Max Output; 100-240V 50/60Hz AC Input
Power Consumption	22.6 Watts max
	8.3 Watts idle
Power Connector	2.5 mm Screw Down Locking Power Connector

Power Supply	
External, Included	Yes

Environmental	
Temperature (Operating)	32°F (0°C) to 122°F (50°C)
Temperature (Storage)	-4°F (-20°C) to 140°F (60°C)
Humidity (Operating)	10% to 90% RH (non-condensing)
Humidity (Storage)	10% to 90% RH (non-condensing)
Thermal Dissipation (Max)	77.1 BTU/hr

Back Connectors	
DC Power	2.5 mm Screw Down Locking Power Connector
HDMI Input	(4) HDMI Type A Port
HDMI Output	(2) HDMI Type A Port
LAN10/100 Ethernet Port	RJ-45 Connector, TCP/IP Port
Analog Stereo Output	(2) 3 Position 3.5mm pluggable Phoenix Terminal Block
RS-232 Port	(1) 3 Position 3.5 mm pluggable Phoenix Terminal Block

Front Indicators	
Power Indicator	(1) LED, Solid ON (green) when power is applied
Output Indicator	(2) LED, Solid ON (green) when selecting output from front panel
Input Indicator	(4) LED, Solid ON (green) when selecting input from front panel
Window Indicator	(4) LED, Solid ON (green) when selecting window from front panel
Audio Indicator	(1) LED, Solid ON (green) when selecting audio from front panel

Controls and Indicators	
Power Indicator	LED (Green) ON when the unit is powered on
Ethernet Link/Act Indicator	(1) Link/Activity LED (yellow) blinks when receiving Ethernet data packets, one on Ethernet RJ-45
Ethernet Speed Indicator	(1) Speed LED (green), ON when the Ethernet connection speed is 100 Mbps and OFF when the speed is 10 Mbps
OSD Button	Press to activate OSD Menu on output video, or to back out from Menu items
Video Mode / Enter Button	Press this button to sequentially switch the unit's operational mode between Matrix, P-in-P, 3-Stack, and Quad
	When OSD Menu is active, press to confirm (enter) a selection
Output Selection Buttons	(2) Key Buttons, (2) LED Indicator, press to select an output
	When OSD Menu is active, press to up (+) and down (-)
Window / Input Selection Buttons	(4) Key Buttons, (4) LED Indicator for windows, (4) LED Indicator for inputs, press to select a window or an input
Audio Button	Press to select an input audio or a window's audio for each output

Integrated Switcher & Windowing Processor	
Video Switching	In matrix mode, any of 4 inputs can be routed to each of 2 outputs
	In windowing mode (P-in-P, 3-Stack, and Quad), the same signal will be displayed on both outputs, any of 4 inputs can be routed to a window of the selected preset windowing mode
Video Inputs	(4) HDMI; supports HDMI/HDCP
Video Outputs	(2) HDMI; supports HDMI/HDCP
HDCP Support	Yes; HDCP 1.4 and 2.2
	Key Management System for Fast Switching
EDID Management	A preferred EDID can be selected for each input or any display EDID can be mirrored to any input independently

HDMI	
Compatible Formats	HDMI, HDCP
Signal Type Support	HDMI
HDMI Supported Input Resolutions	**VESA** 640 x 480p @ 60, 72, 75 Hz 720 x 400p @ 70, 85 Hz 800 x 600p @ 56, 60, 72, 75, 85 Hz 848 x 480p @ 60 Hz 1024 x 768p @ 60, 70, 75, 85 Hz 1152 x 864p @ 75 Hz 1280 x 768p @ 60 Hz, 75 Hz 1280 x 800p @ 60 Hz (Reduce Blanking) 1280 x 960p @ 60 Hz 1280 x 1024p @ 60, 85 Hz 1360 x 768p @ 60, 75, 85 Hz 1366 x 768p @ 60 Hz (Reduce Blanking) 1400 x 1050p @ 60 Hz (Reduce Blanking), 75 Hz 1440 x 900p @ 60 Hz (Reduce Blanking), 75, 85 Hz 1600 x 900p @ 60 Hz (Reduce Blanking) 1600 x 1200p @ 60 Hz 1680 x 1050p @ 60 Hz (Reduce Blanking) 1920 x 1200p @ 60 Hz (Reduce Blanking) 2048 x 1080p @ 50, 60 Hz 2560 x 1440p @ 60 Hz (Reduce Blanking) **CEA Information Code (VIC) Formats** 720 x 480i @ 59.94 60 Hz 720 x 576i @ 50 Hz 720 x 480p @ 59.94, 60 Hz 720 x 576p @ 50 Hz 1280 x 720p @ 50, 59.94, 60 Hz 1920 x 1080i @ 50, 59.94, 60 Hz 1920 x 1080p @ 24, 25, 29.97, 30, 50, 59.94, 60 Hz 2560 x 1080p @ 50, 60 Hz 3840 x 2160p @ 24, 25, 29.97, 30, 50, 59.94, 60 Hz 4096 x 2160p @ 24, 25, 29.97, 30, 50, 59.94, 60 Hz
Output Signal Type	HDMI, HDCP
Output Connector	HDMI Type A Port
Output Scaling	Yes, Auto or Manual
Output Scaling Resolutions	640 x 480p @ 60 Hz 720 x 480p @ 60 Hz 720 x 576p@ 50 Hz 800 x 600p @ 60 Hz 1280 x 720p @ 50/60 Hz 1024 x 768p @ 60 Hz 1280 x 768p, @ 60 Hz 1280 x 800p @ 60 Hz 1280 x 960p @ 60 Hz 1280 x 1024p @ 60 Hz 1360 x 768p @ 60 Hz 1366 x 768p @ 60 Hz 1400 x 1050p @ 60 Hz 1440 x 900p @ 60 Hz 1600 x 900p @ 60 Hz (Reduce Blanking) 1600 x 1200p @ 60 Hz 1680 x 1050p @ 60 Hz 1920 x 1080p @ 24, 25, 30, 50, 60 Hz 1920 x 1200p @ 60 Hz (Reduce Blanking) 3840 x 2160p @ 24, 25, 30, 50, 60 Hz 4096 x 2160p @ 24, 25, 30, 50, 60 Hz
Input Video Level	.8 - 1.2 V p-p
Data Rate (Max)	18 Gbps
Pixel Clock (Max)	Up to 600 Mhz

Resolution Support	Various up to 4096 x 2160@ 60 Hz - Reference User Manual For Specific Resolution Support
Audio Format Support	PCM 2-Channel, PCM Multi-Channel, Dolby Digital, Dolby Digital Plus, Dolby Atmos, Dolby TrueHD, DTS, DTS HD MA
Local Audio Support	Output Extraction
HDCP Support	Yes, HDCP 1.4, 2.2
CEC Support	Yes, Automatic or programmable

Stereo Audio Output	
Output Signal Types	Unbalanced stereo analog
Analog Audio Output Level(Max)	+1.6 dBu, unbalanced; >= 2kohm load
Analog Audio Output Frequency Response	< -0.5 dB to +0.2 dB, 30 Hz to 20 kHz or < -0.8 dB to +0.2 dB, 20 Hz to 20 kHz
Analog Audio Output THD+N	<0.06%, 1 kHz, -10 dBU to +2 dBU
Analog Audio Output SNR	>103 dB, 20 Hz to 20 kHz Vin=+2 dBU

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