

User Manual & Installation Checklist

WolfPack Modular 1080p HDMI Matrix Switcher over CAT6

Configurable from 8×8 up to 160×160 — over CAT6 to 450 Feet

Thank you for choosing a WolfPack modular HDMI matrix system from HDTV Supply. This guide walks you through planning, installing, and operating your matrix — from unboxing to routing your first video — with step-by-step checklists you can mark off as you go.

At a Glance	Details
System type	Modular card-based HDMI matrix switcher (build-your-own, 4 ports per card)
Capacity	From 8×8 up to 160×160 (HDMI inputs × RJ45 outputs), expandable in 4-port card steps
Video	1080p @ 60 Hz, uncompressed, with resolution scaling on the cards
Extension	LHDT™ long-distance technology over one category cable, up to 450 ft per display — solid-copper shielded CAT6A recommended
Receiver power	PoE — receivers at each TV are powered by the matrix (no AC adapter at the TV)
Switching speed	Fast 80 ms switching / 80 ms latency
Audio	3.5mm audio outputs on the input cards; Phoenix-connector audio output on the LHDT output cards; 3.5mm audio output on each receiver
Extras	Free video wall processing; optional quad-view output card
Control	Front panel, IR remote, WEB GUI, iOS/Android apps, RS-232, TCP/IP
Compliance	HDMI 2.0 sources supported; HDCP compliant (DirecTV, cable boxes, Roku, Apple TV, Firestick)
Warranty	2-year warranty

NOTE: This manual covers all configurations of the WolfPack modular CAT6 matrix family (8×8 up to 160×160). Your chassis, card count, and receiver count depend on the configuration you ordered. Questions during install? Call **833-WOLFPACK (833-965-3722)**.

1 Before You Begin — Planning Checklist

A few minutes of planning prevents most installation problems. Complete this checklist before mounting any hardware or pulling cable.

- ☐ **Count your sources and displays.** Each input card handles 4 HDMI sources; each output card handles 4 displays. Confirm your chassis has enough cards installed — and consider leaving spare slots for future growth.
- ☐ **Measure every cable run.** Each display run (matrix to TV) must be **450 feet or less** of category cable.
- ☐ **Use solid-copper shielded CAT6A cable.** We recommend shielded CAT6A for every run. Avoid CCA (copper-clad aluminum) cable — it is the #1 cause of picture dropouts on long runs.
- ☐ **Plan direct runs.** Every cable must be a single, unbroken run from the matrix to the receiver — no patch panels, wall jacks, couplers, or splices.
- ☐ **Keep away from interference.** Route category cable away from AC power lines, fluorescent lighting, and motors.
- ☐ **Reserve rack space.** The chassis is 19" rack-mountable. Allow ventilation clearance on the sides and rear — do not block the fan exhaust.
- ☐ **Plan source HDMI cables.** Keep HDMI cables from sources to the matrix as short as practical (up to ~25 ft of quality AWG24 cable). At the TV end, keep the receiver-to-TV HDMI cable short (6 ft or less is ideal).
- ☐ **Provide a network drop** near the rack if you plan to use the WEB GUI, iOS/Android apps, or TCP/IP control.
- ☐ **Confirm power.** Provide a grounded outlet (a surge protector or UPS is strongly recommended) for the chassis. Remember: the receivers at each TV need **no** power outlet — they are powered over the CAT6 cable.

Tools you may need: network cable tester, drill and mounting hardware, rack screws, quality HDMI cables, a laptop or tablet for setup, and a label maker (trust us — label everything).

2 Unboxing Checklist — What's in the Box

Quantities vary with the configuration you ordered. Check each item off as you unpack, and compare card and receiver counts against your order confirmation.

- ☐ WolfPack modular matrix chassis (with pre-installed backplane and power supply)
- ☐ 4-port HDMI **input** cards (qty. = your inputs ÷ 4) — usually pre-installed in the chassis
- ☐ 4-port RJ45/CAT6 **output** cards with PoE (qty. = your outputs ÷ 4) — usually pre-installed
- ☐ CAT6-to-HDMI receivers, one per display (PoE powered — no power adapters needed)
- ☐ IR remote control (15-button)
- ☐ AC power cord(s)
- ☐ Rack-mount ears and screws (if not factory-attached)
- ☐ Any optional items ordered (quad-view card, spare cards, wallplates, control drivers)

IMPORTANT: Inspect the chassis and all cards for shipping damage before installation. If anything is missing or damaged, contact HDTV Supply at 833-965-3722 before proceeding. Save the original packaging in case service is ever needed.

3 Installation Checklist

Step A — Mount the chassis

- ☐ Install the chassis in a 19" rack (or on a stable, ventilated shelf) close to your sources.
- ☐ Leave clearance for airflow; do not stack heat-producing equipment directly against the chassis.
- ☐ Do not connect AC power yet.

Step B — Verify the cards

- ☐ Confirm each input and output card is fully seated and its retaining screws are snug.
- ☐ Note which slots are inputs (HDMI ports) and which are outputs (RJ45 ports).
- ☐ To add, move, or replace a card later, power the system down completely first, then swap the card.

Step C — Connect your sources

- ☐ Connect each source (cable/satellite box, Roku, Apple TV, media player, PC, etc.) to an HDMI input port using a quality HDMI cable.
- ☐ Label each input (e.g., "Input 1 – DirecTV 1"). Keep a written input list — you will want it when setting up the app and WEB GUI.
- ☐ If a source outputs 4K, set its output resolution to **1080p** in the source's settings menu (this is a 1080p system).

Step D — Run and terminate the CAT6 cable

- ☐ Pull one solid-copper shielded CAT6A cable (recommended) from the rack to each TV location as a single, direct run — no patch panels, wall jacks, or couplers (max 450 ft each).
- ☐ Terminate both ends to the **TIA/EIA-568B** standard using shielded connectors. Avoid standard crimp-on RJ45 and "EZ-RJ45" pass-through plugs. Verify every run with a cable tester before connecting it to the matrix.
- ☐ Label both ends of every cable with the output number and TV location.

Step E — Install a receiver at each TV

- ☐ Mount the receiver behind or near the TV (hook-and-loop or screws).
- ☐ Connect the CAT6 run to the receiver's RJ45 input.
- ☐ Connect a short HDMI cable from the receiver's HDMI output to the TV.
- ☐ Optional: connect the receiver's 3.5mm audio de-embed output to a local amplifier or soundbar.
- ☐ No power adapter is needed — the receiver is powered over the CAT6 cable from the matrix (PoE).

Step F — Connect control and power up

- ☐ Connect the matrix's LAN1 port to your network for WEB GUI/app/TCP-IP control (LAN1 is set to DHCP and will get an IP address from your network automatically), and/or connect its RS-232 port to a third-party control system.
- ☐ Turn on all sources and TVs, and set each TV to the HDMI input the receiver is connected to.
- ☐ Connect the AC power cord and power on the chassis. Allow about a minute for the system to fully boot.

AUDIO OPTIONS: Stereo audio is available from three places: the 3.5mm outputs on the HDMI input cards, the Phoenix (terminal-block) audio output on the LHDT output cards, and the 3.5mm output on each receiver behind the TV.

4 First Power-Up — System Test Checklist

- ☐ Front panel LCD lights up and shows system status.
- ☐ Using the front panel buttons (or IR remote), route **Input 1 to Output 1** and confirm picture and sound on the first TV.
- ☐ Route Input 1 to **every** output, one at a time, confirming each TV shows a stable picture. This validates every cable run and receiver.
- ☐ Route each **source** to a nearby test TV, one at a time, confirming every input works.
- ☐ Check audio on each display; test any 3.5mm de-embedded audio feeds.
- ☐ Let the system run 15–30 minutes and re-check the longest cable runs for a stable picture.
- ☐ Record your final input/output list and tape a copy inside the rack.

If any output fails this test, swap the suspect CAT6 run to a known-good receiver (and vice-versa) to isolate whether the issue is the cable, the receiver, or the card port — then see Troubleshooting (Section 8).

5 Controlling Your Matrix

Method	How it works
Front panel	LCD + push buttons on the chassis. Best for quick local switching and reading system/IP status.
IR remote	Included 15-button remote. Point at the front panel IR window to switch sources/outputs.
WEB GUI	LAN1 is set up as DHCP, so the matrix gets an IP address from your network automatically. Find the assigned IP on the front panel (or in your router's connected-devices list) and browse to it to set routing, presets, labels, video walls, and network settings.
iOS / Android apps	Free iPad, iPhone, Android, and Galaxy apps switch any source to any TV from anywhere on your Wi-Fi. Ideal for sports bars and conference rooms.
RS-232 / TCP-IP	Serial and network command protocols for automation (command list available from HDTV Supply).
Third-party drivers	Control4, Crestron, RTI, Elan, and URC drivers/modules are available — contact HDTV Supply for details.

Network setup checklist (for WEB GUI & apps):

- ☐ Connect the matrix's LAN1 port to your router or switch. LAN1 is set up as DHCP, so it will automatically receive an IP address from your network.
- ☐ Find the assigned IP address on the front panel display or in your router's connected-devices list.
- ☐ Reserve the matrix's IP address in your router (DHCP reservation) so apps never lose the unit.
- ☐ Install the free app on your phone/tablet, enter the matrix IP, and name your inputs and outputs.

6 Video Wall Setup (Optional)

Your matrix includes free video wall processing, letting groups of TVs act as one large display (2×2, 3×3, and other layouts).

- ☐ Mount the video wall TVs and note which matrix output feeds each screen position.
- ☐ Open the video wall configuration in the WEB GUI.
- ☐ Drag-and-drop to define your wall layout (rows × columns) and assign the correct output to each position.
- ☐ Assign a source to the wall and confirm the image maps correctly across the screens.
- ☐ Save the layout as a preset so you can switch between “video wall” and “individual TVs” modes on demand (switchable from the tablet app).
- ☐ Fine-tune bezel compensation if the image appears misaligned at screen edges.

NOTE: An optional quad-view output card can also display 4 sources on one TV — great for sports. Call HDTV Supply if you'd like to add one to your system.

7 EDID Management & Resolution Scaling

The matrix manages EDID (the digital handshake between sources and displays) automatically in most systems, so sources output a format all displays accept. In addition, the input and output cards include resolution scaling with DIP-switch selection on the cards.

- ☐ Leave EDID and scaling at factory defaults for initial testing — they work for most installations.
- ☐ If one display shows no image or a wrong resolution while others work, check that display's supported resolutions and the card's DIP switch/scaling setting for that port.
- ☐ If a source insists on outputting 4K, force it to 1080p in the source's own settings menu.
- ☐ Changed DIP switches? Power-cycle the affected source (or re-route the input) so the new EDID is re-read.

8 Troubleshooting

Symptom	What to check
No picture on one TV	Confirm the TV is on the correct HDMI input. Check the receiver's link/power LED. Re-terminate or re-test the CAT6 run (568B both ends). Swap with a known-good receiver to isolate cable vs. receiver vs. card port.
Picture flickers or drops out	Usually cable-related: verify solid-copper (not CCA) cable, confirm the run is under 450 ft, remove couplers/patch points, and re-route away from AC power lines. Use shielded cable near interference.
Issues with self-made cables	If you terminated your own cables and are having an issue, try a store-bought pre-terminated cable in its place and see if that resolves the problem. If it does, re-terminate the original run.
One source shows no picture anywhere	Power-cycle the source (HDCP handshake refresh). Try a different HDMI cable and input port. Set the source's output to 1080p / RGB.
4K source — black screen	This is a 1080p distribution system. Set the source's output resolution to 1080p in its settings menu.
No audio on a TV	Check the TV's volume/input. If using de-embedded audio, verify the 3.5mm connections. Set the source's audio output to PCM/stereo if the display or amp doesn't decode surround formats.
Can't reach the WEB GUI / app	Verify the matrix IP on the front panel. Ensure your device is on the same network/subnet. Try a direct laptop-to-matrix connection to reconfigure network settings. Reboot the matrix and router.
IR remote unresponsive	Aim directly at the front-panel IR window within range; replace the battery; make sure the panel isn't locked from the GUI.
Video wall image misaligned	Re-check the output-to-position assignments in the wall layout and adjust bezel compensation. Confirm every wall display uses the same receiver settings.
Slow or delayed switching	Normal switching is ~80 ms. DirecTV boxes: open the receiver's resolution settings and check whether 1080i is checked — if it is, uncheck it. For other sources, power-cycle the source and check its HDMI cable.

NOTE: Still stuck? Don't spend hours on it — call HDTV Supply at **833-WOLFPACK (833-965-3722)** with your order number and a description of the issue.

9 Quick Reference Specifications

Specification	Value
Model family	WolfPack Modular 1080p HDMI Matrix over CAT6 — configurable from 8×8 up to 160×160
Inputs	Up to 160 HDMI inputs via 4-port input cards (3.5mm audio output on each card)
Outputs	Up to 160 RJ45 outputs via 4-port PoE LHDT output cards (Phoenix audio output on each card)
Max resolution	1080p @ 60 Hz, uncompressed video and audio
Extension distance	Up to 450 ft (137 m) per output — solid-copper shielded CAT6A recommended, single direct run
Receiver power	PoE from the matrix — no power supply required at the display; 3.5mm audio output on each receiver
Switching / latency	80 ms / 80 ms
Audio	3.5mm outputs on input cards; Phoenix-connector outputs on LHDT output cards; 3.5mm outputs on receivers; audio also carried in HDMI
Scaling	Resolution scaling on input and output cards (DIP-switch selectable)
Video wall	Built-in, free — drag-and-drop layout via the WEB GUI
HDCP / HDMI	HDCP compliant; works with HDMI 2.0 sources (DirecTV, cable, Roku, Apple TV, Firestick)
Control	Front panel, IR remote, WEB GUI (LAN1 set up as DHCP), iOS/Android apps, RS-232, TCP/IP; Control4/Crestron/RTI/Elan/URC drivers available
Card service	Power the system down before adding, moving, or replacing cards
Mounting	19" rack-mountable chassis; keep fan exhaust clear
Warranty	2-year warranty

10 Installer Record — Fill In & Keep

Complete this section during installation and keep this page with the rack. It will save enormous time on any future service call.

Item	Record here
Date installed	
Installed by / company	
Order number	
Configuration (inputs × outputs)	
Matrix IP address	
Network / Wi-Fi used for control	
WEB GUI login	
Longest cable run (ft)	
Video wall layout(s)	
Notes	

Warranty & Support

Your WolfPack system includes a **2-year warranty**.

Phone: 833-WOLFPACK (833-965-3722) **Web:** www.hdtvsupply.com **Email:** customerservice@hdtvsupply.com

Please have your order number ready when you call.

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