

Product Data Sheet

HDMI Matrix Switches



Overview

The 4x4 or 8x8 HDMI Matrix Switch (VSW-HDMI4X4-B or VSW-HDMI8X8-B) from Black Box provides unrivaled versatility when managing high-resolution HDMI displays. Each input can be routed to any output, or the same input can be routed to all outputs or any combination, eliminating the need to manually move cables to display HDMI video from different sources on different screens. The AVSW-HDMI8X8-X offers all the features of the VSW-HDMI8X8-B, plus it also supports HDBaseT extension on the HDMI output. A matching receiver (AVSW-HDMI-RX) works with this model.

The switch supports sharp, highly defined video in HD resolutions of up to 1080p and carries the high-speed digital video signaling of TMDS formats for 10-, 12-, or 16-bit Deep Color. It's ideal for any venue where multiple high-definition displays must be managed: corporate theaters, meeting rooms, classrooms, and broadcasting studios. When used with digital signage, the switch enables you to quickly switch a display from one digital signage player to another.

Switching is easy—switch using front-panel buttons, the included IR remote controller, or an RS-232 connection. For the AVSW-HDMI8X8-X, you can also switch via IP.

Basic Features

- For VSW-HDMI4X4-B, switch high-resolution video plus audio from four sources to four displays in any combination.
- For VSW-HDMI8X8-B, switch high-resolution video plus audio from eight sources to eight displays in any combination.
- For AVSW-HDMI8X8-X, switch high-resolution video plus audio and HDBaseT extension from eight sources to eight displays in any combination.
- Supports screw-locking cables for increased reliability.
- Send digital signals to any or all outputs simultaneously.
- Control from the front panel, with the included IR remote controller, or via RS-232.
- Supports data rates up to 6.75 Gbps for resolutions up to 1920 x 1200/1080p.
- Supports HDMI resolutions of 480p, 720p, and 1080p as well as 3D.
- HDMI and HDCP compliant.
- Supports Digital Video TMDS formats in 10-, 12-, and 16-bit Deep Color.
- Ideal for corporate theaters, conference rooms, classroom and training facilities, video broadcasting, and digital signage applications.
- Support for 19:10 aspect ratio.
- VSW-HDMI4X4-B and VSW-HDMI8X8-B are 1U high. AVSW-HDMI8X8-X is 2U high. All models include rackmount ears.

Ordering Information

Item

Code

HDMI Matrix Switches
4 x 4
8 x 8
XR 8 x 8 with HDBaseT extension
HDBaseT Receiver

VSW-HDMI4X4-B
VSW-HDMI8X8-B
AVSW-HDMI8X8-X
AVSW-HDMI-RX

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Technical Specifications

Approvals	CE, FCC, RoHS, REACH
Audio Support	Supports DVI-Audio input and SPDIF output
Controls	IR remote control, IR extension port, Select and Function buttons on front panel, RS-232 series interface, AVSW-HDMI8X8-X also has: Ethernet series interface, (8) IR room remote controls
Color	Black
Digital Audio Support	Multi audio formats 5.1/7.1, MAT (MLP), Dolby Digital, Dolby TrueHD, Dolby Digital Plus, DTS, DTS-ES-6CH, DTS-HD, DTS-HD-HRA, DTS-HD Master, (PCM-2CH)
Digital Video Support	HD: 1080i, 1080p, up to 36-bit deep color; PC: Up to 1920 x 1200
Extension	AVSW-HDMI8X8-X: HDBaseT (up to 330 ft. [100 m])
Function Control Key	ALL/OFF/RECALL/ENTER/MEMORY/LOCK/EDID
HDCP/CEC Support	HDCP 2.0 compliant, CEC compliant
HDMI I/O Connector	HDMI Type A, SMD 19-pin female
HDMI Support	HD 1080p @ 60 Hz, H36-bit deep color, 3D (1.4a) formats
Infrared Frequency	38 kHz
IR External Distance	1000 feet (328 m) maximum
ESD Protection	Human body model: ± 10 kV (air-gap discharge); ± 6 kV (contact discharge)
Number of Rack Units	1U, fits in 19" rack (using the included rackmount brackets)
Source Status	Automatically scan sources inputs via LED
Video Bandwidth	Double data rates: 340 MHz, total 6.75 Gbps bandwidth
Connectors	VSW-HDMI4X4-B: Input: (4) HDMI (sources), Output: (4) HDMI (sinks); Control: (1) DB9 RS-232 for serial control, (1) IR extension port; VSW-HDMI8X8-B: Input: (8) HDMI (sources), Output: (8) HDMI (sinks); Control: (1) DB9 RS-232 for serial control, (1) IR extension port;

Technical Specifications (continued)

Connectors (continued)	<p>AVSW-HDMI8X8-X:</p> <p>Input:</p> <ul style="list-style-type: none"> (8) HDMI (sources), (8) 3.5-mm analog audio, (8) DB9 RS-232 for extension, (9) IR extension ports (1 to all, 8 for each); <p>Output:</p> <ul style="list-style-type: none"> (8) HDMI (sinks), (8) RJ-45 CATx (HDBaseT via Category 5e/6/6a cable), (8) SPDIF audio, (9) IR extension ports (1 to all, 8 for each); <p>Control:</p> <ul style="list-style-type: none"> (1) DB9 RS-232 for serial control, (1) RJ-45 for telnet control, (1) IR extension port; <p>AVSW-HDMI-RX:</p> <p>Input:</p> <ul style="list-style-type: none"> (1) HDBaseT port, (1) IR extension port; <p>Output:</p> <ul style="list-style-type: none"> (1) HDMI (sink), (1) 3.5-mm analog audio, (1) RS-232 (control), (1) IR extension port, (2) RJ-45 (unused)
Environment	Temperature: 32 to 100° F (0 to 38° C)
Power	<p>AVSW-HDMI8X8-X input: 100-240 VAC, 50/60 Hz, internal power supply; Consumption: 10 A maximum;</p> <p>AVSW-HDMI-RX:</p> <ul style="list-style-type: none"> Input: 100–250 VAC, 60/60 Hz, external PSU, Output: 12 VDC, 2 A max., Consumption: 1750 mA max.; <p>VSW-HDMI4X4-B:</p> <ul style="list-style-type: none"> Input: 100–250 VAC, 50/60 Hz, 1.2 A external power supply; Output: 12 VDC, 3 A max. <p>VSW-HDMI8X8-B:</p> <ul style="list-style-type: none"> Input: 100–250 VAC, 50/60 Hz, 1.2 A external power supply, Output: 12 VDC, 5 A max.
Dimensions	<p>VSW-HDMI4X4-B, VSW-HDMI8X8-B: 1.75"H x 19"W x 9.85"D (4.4 x 48.2 x 25 cm);</p> <p>AVSW-HDMI8X8-X: 3.5"H x 19"W x 12"D (8.9 x 19 x 12 cm);</p> <p>AVSW-HDMI-RX: 1.1"H x 5.2"W x 5.4"D (2.7 x 13 x 13.6 cm)</p>
Weight	<p>VSW-HDMI4X4-B: 10 lb. (4.5 kg);</p> <p>VSW-HDMI8X8-B: 13 lb. (5.9 kg);</p> <p>AVSW-HDMI8X8-X: 19 lb. (8.6 kg);</p> <p>AVSW-HDMI-RX: 2 lb. (0.9 kg)</p>

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Comparison Chart: HDMI Matrix Switches

	VSW-HDMI4X4-B	VSW-HDMI8X8-B	AVSW-HDMI8X8-X
HDMI input ports	(4)	(8)	(8)
HDMI output ports	(4)	(8)	(8)
Control ports	(1) DB9 RS-232	(1) DB9 RS-232; (1) IR sensor extension	(1) DB9 RS-232; (1) IR sensor extension
IR Extension Ports	No	No	(9) in: (1) per input + (1) all; (9) out: (1)per output + (1) all
HDBaseT extension	No	No	Yes
Number of remote controls	1	1	(1) main + (8) room controls
Audio support	Yes, Embedded HDMI	Yes, Embedded HDMI	Yes, Embedded HDMI, Analog audio (input), SPDIF (local output), Analog (-RX output)
Control	Front panel, with the included IR remote control, or via RS-232	Front panel, with the included IR remote control, or via RS-232	Front panel, with the included IR remote control, via RS-232, or via Ethernet
Data Rates	6.75 Gbps for resolutions up to 1920 x 1200/1080p	6.75 Gbps for resolutions up to 1920 x 1200/1080p	6.75 Gbps for resolutions up to 1920 x 1200/1080p

Dimensional diagrams of the HDMI Matrix Switches.

4 x 4 HDMI Matrix Switch (VSW-HDMI4X4-B)



8 x 8 HDMI Matrix Switch (VSW-HDMI8X8-B)



Dimensional diagram of the HDMI Matrix Switch and HDBaseT Receiver.

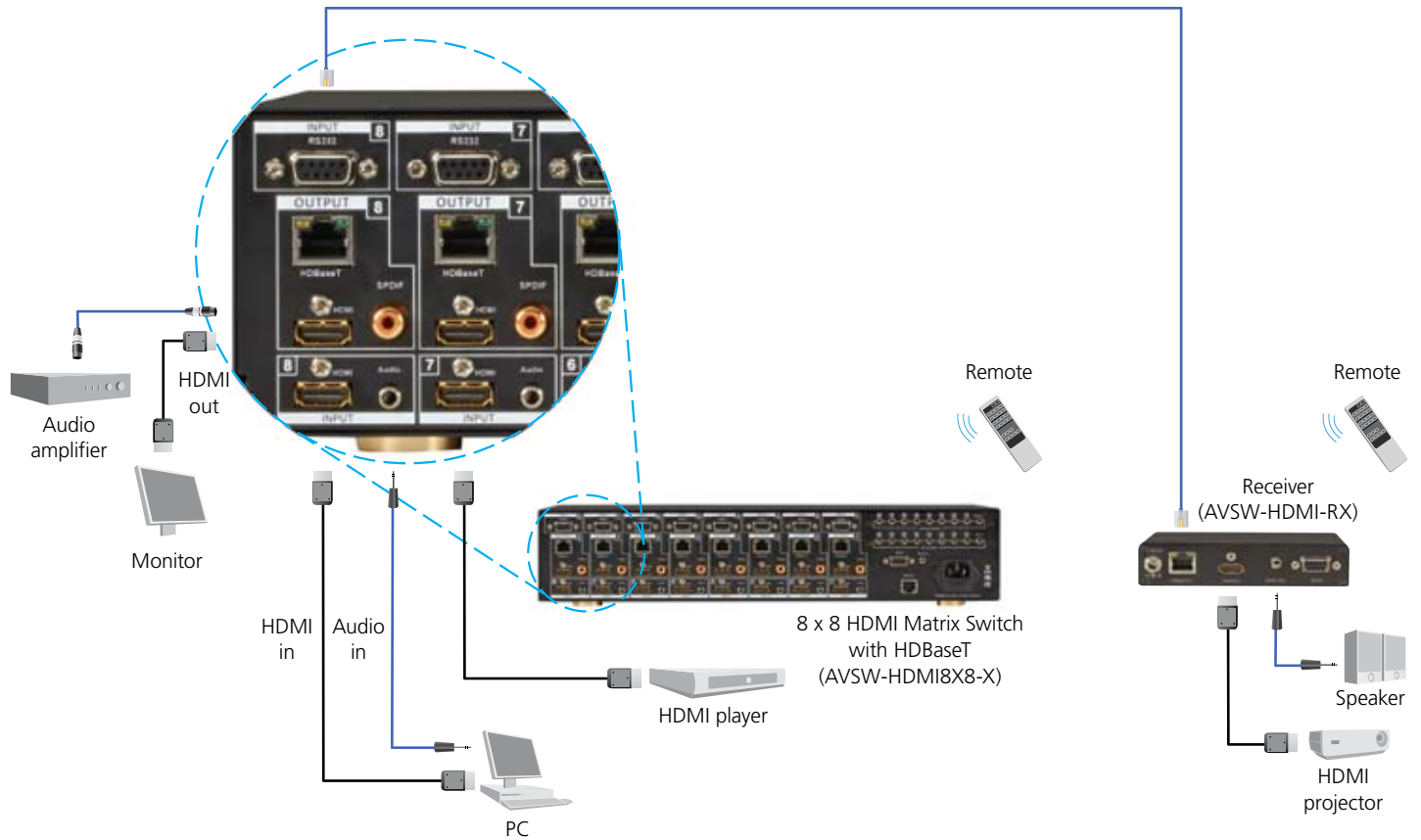
8 x 8 HDMI Matrix Switch (AVSW-HDMI8X8-X)



HDBaseT Receiver (AVSW-HDMI-RX)

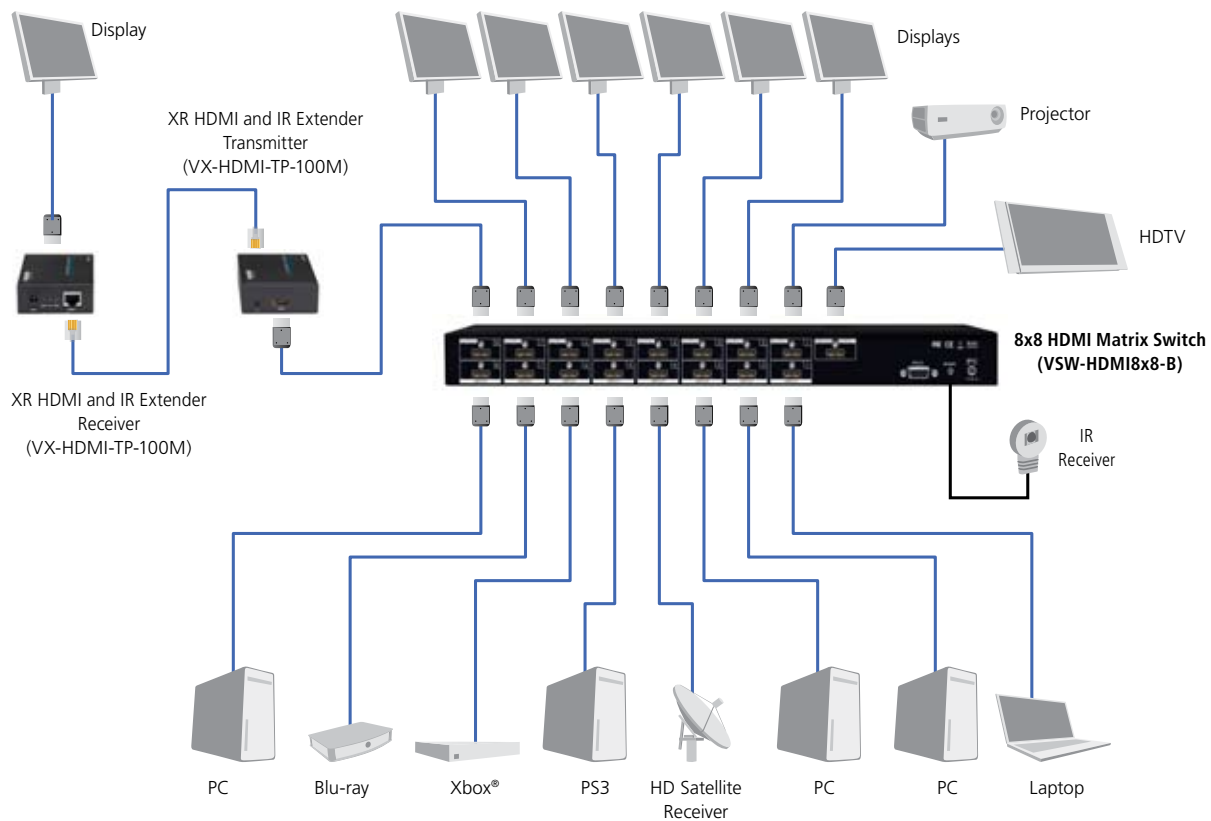


A typical application of the AVSW-HDMI8X8-X and AVSW-HDMI-RX is shown below.



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A typical application of the VSW-HDMI8x8-B is shown below.



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