

# DS Vision® HDMI

## User Guide



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## QUICK INSTALLATION GUIDE

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### User Guide Feedback

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Please include the following information: Guide name, part number and version number (as appears on the front cover).

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## **1. Introduction**

The DS Vision HDMI system extends High-Definition Multimedia Interface (HDMI) or Digital Visual Interface (DVI) signals to a distance of 60m/200ft over CAT5/6/7 cable.

DS Vision® HDMI delivers rich multimedia content in real-time, without degrading video or sound quality.

DS Vision HDMI supports virtually all types of media players including computers with HDMI video cards, Blu-ray disk players and game consoles. Since DS Vision HDMI provides digital sound it is perfect for applications requiring top sound quality.

## **2. System components**

The DS Vision HDMI system consists of the following components:

- Transmitter
- Receiver

## **3. Features**

- As well as HDMI signals, DS Vision HDMI supports DVI (digital visual interface) equipment. DVI support is without audio
- DS Vision HDMI supports DDC emulation that optimizes player-screen interaction for the best visual experience
- High-bandwidth Digital Content Protection (HDCP) and Consumer Electronics Control (CEC) support (using 2 CAT5 cables in extension solution)

## 4. DS Vision HDMI units

The figures below illustrate the two sides of the Transmitter.

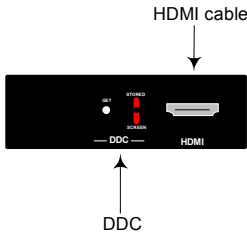


Figure 1 Transmitter – side 1

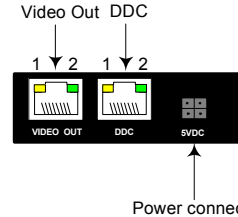


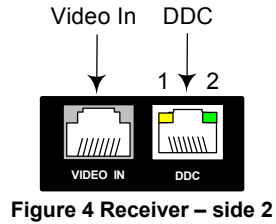
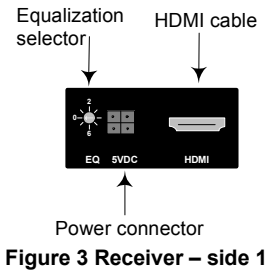
Figure 2 Transmitter – side 2

### 4.1. Transmitter LEDS

VIDEO OUT port	
LED	Indication when lit
1	DDC is from the screen. When LED not lit DDC is from stored (see section 9)
2	The Transmitter is connected to a powered player

DDC port	
LED	Indication when lit
1	The CATx cable from the Transmitter is connected to the Receiver and the Receiver is connected to a screen. Note that it does not indicate whether the screen is powered on or off.
2	Power

The figures below illustrate the two sides of Receiver.



## 4.2. Receiver LEDs

DDC connector	
LED	Indication when lit
1	The Receiver detects a video signal from the Transmitter
2	Power

## 5. Compatible cabling

DS Vision HDMI works with CAT5/5e/6/7 data cabling.

Some skew-free CAT5 cabling is specific to a particular vendor and is not compatible with Minicom products.

Due to the manufacturing methods, CAT6 cable can exhibit greater skew than standard CAT5/5e and may require skew compensation beyond what DS Vision HDMI offers.

**Note!** Transmission distance and performance depend on the cables signal resolution graphic card, and display used in the system we suggest testing the cable with the product before installation.

For maximum distance runs and/or uptime critical applications, we recommend using screened twisted pair Belden 7989R CAT6 UTP cable and compatible screened RJ45 connectors. This minimizes EMI interference from external sources.

## 6. Pre-installation guidelines

Ensure that the player and the screens are compatible. Check that they work together before connecting the DS Vision HDMI system.

## 7. DS Vision HDMI configurations

The figure below illustrates the DS Vision HDMI configurations.

The figures below illustrate HDMI extensions. Figure 5 illustrates HDMI: Video + audio transmission with DDC emulation and Figure 6 illustrates Video + audio transmission, plus HDMI: HDCP, CEC support with direct DDC.

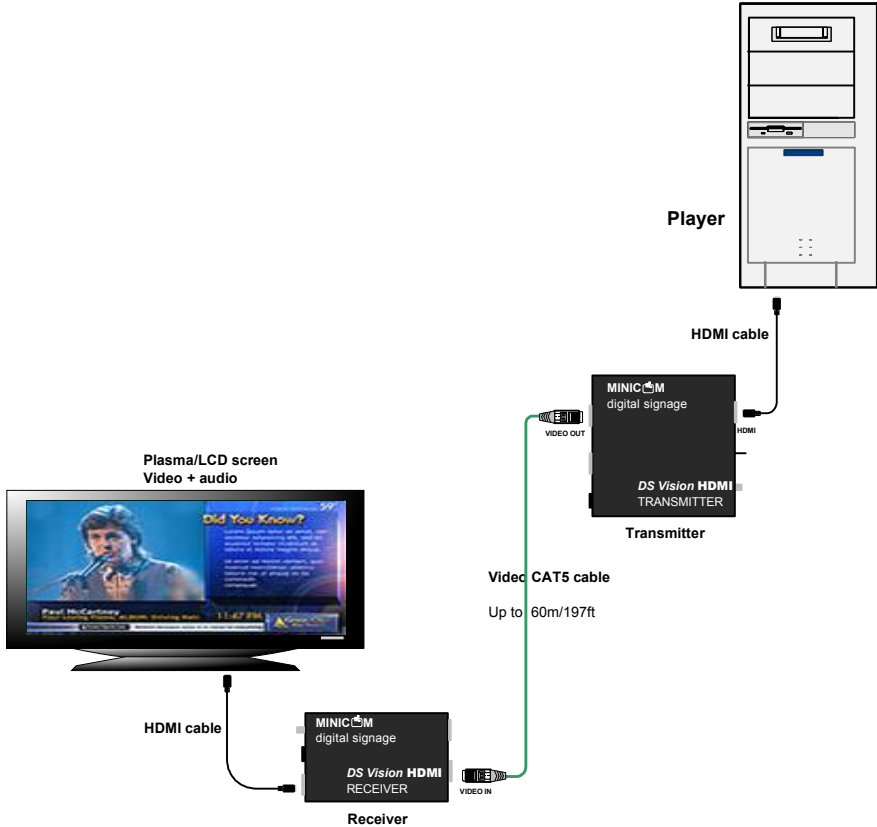


Figure 5 HDMI: Video + audio transmission



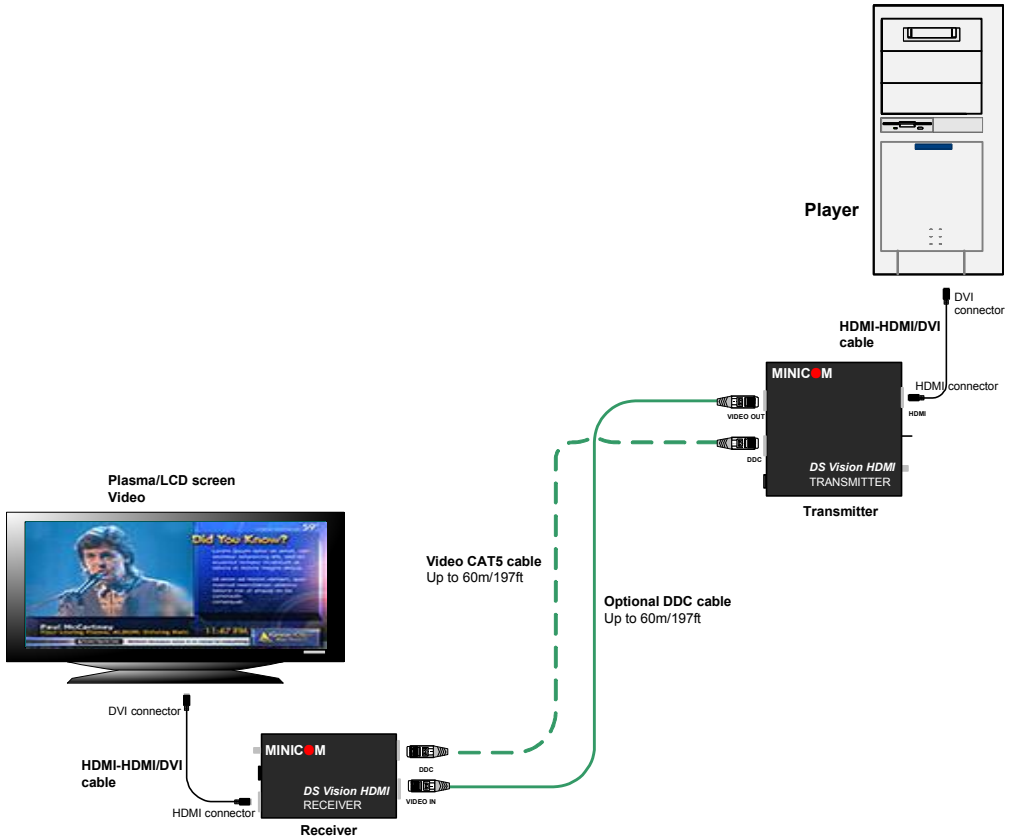
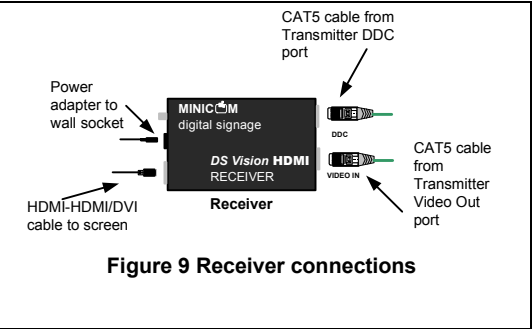
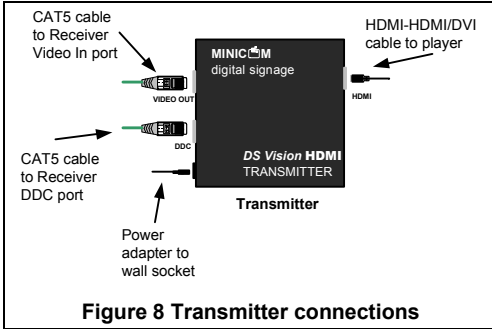


Figure 7 DVI transmission

## 8. Connecting the DS Vision HDMI system

Connect the Video CAT5 cable as follows:

Connect a CAT5 cable up to 60m/197ft to the VIDEO OUT port of the Transmitter and the VIDEO IN port of the Receiver. See the figures below.



## 8.1. Connecting the player and screen

### HDMI extension

For HDMI extension (see Figure 6 and Figure 5):

Connect the player to the Transmitter HDMI port using an HDMI cable.

Connect the screen to the Receiver HDMI port using an HDMI cable.

### DVI extension

The DS Vision HDMI can be used to connect players and screens of HDMI or DVI ports, by using standard HDMI to DVI cables/adapters. HDMI players can be connected to DVI screens and vice versa. Note! In DVI extensions only video is transferred.

For DVI extension (see Figure 7):

Connect the player to the Transmitter HDMI port using an HDMI to DVI cable/adaptor.

Connect the screen to the Receiver HDMI port using an HDMI to DVI cable/adaptor.

## 9. Selecting the DDC source

Display Data Channel (DDC) is a VESA standard for communication between a monitor and a video adapter.

The player can read DDC data either from:

- The screen

Or

- Data previously stored in the Transmitter - explained below

Use the Transmitter's Stored/Screen selector switch (see Figure 1) to choose between the two options.

Depending on where you select the DDC from, you may or may not have to connect the DDC CAT5 cable. This is explained below.

**Note!** For HDCP and CEC support the DDC CAT5 cable must be connected between the Transmitter and Receiver and the Stored/Screen selector set to Screen.

### **9.1. Storing the screen's DDC**

To store the screen's DDC, connect a CAT5 cable between the DDC ports of the Transmitter and Receiver. The position of the STORED/SCREEN selector switch position is not relevant.

**Note.** There is **no need** to connect:

- A Video CAT5 cable between the Transmitter and Receiver
- The Transmitter to a player

Press the Transmitter's GET button for less than 3 seconds. The Transmitter reads the screen's DDC and stores it. The DDC port's LED #1(see Figure 2) blinks twice. If unsuccessful, the LED blinks rapidly ten times.

Once stored, there is no need to keep the DDC CAT5 cable connected.

#### **9.1.1. Reading the stored DDC**

To read the stored DDC, move the STORED/SCREEN selector to STORED.

### **9.2. Reading the DDC from screen**

To read the DDC from the screen:

1. The DDC CAT5 cable must be connected between the Transmitter and Receiver.
2. Move the STORED/SCREEN selector to SCREEN.

### **9.3. Restoring the default DDC data**

The Transmitter comes with a stored factory default DDC.

**Note!** Only use the default DDC if you can't use the screen's DDC data, i.e. where the DDC CAT5 cable between the Transmitter and Receiver is not connected and the screen's DDC was not saved in the Transmitter's memory.

The player will choose one of the resolutions listed in the default DDC data. Note! If the screen does not support the resolution chosen by the player, no video will be displayed.

To restore the default data:

Press and hold down the GET button on the Transmitter for more than 4 seconds. The DDC port's LED #1 (see Figure 2) blinks twice. If unsuccessful, the LED blinks rapidly ten times.

## **10. Connecting to the power supply**

Connect the Transmitter and Receiver to the power supply with the 5VDC Power adapters provided.

Once connected, the system is ready to transmit the video and audio signals.

## **11. Adjusting the video and audio**

The longer the cable length between the Transmitter and the Receiver more adjustment required for audio and video signals.

To adjust the HDMI picture quality, use the Receiver's Equalization (EQ) selector – see Figure 3. In general, the longer the cable, the higher the number that has to be set. Adjust the EQ selector one step at a time, up to position '7'. After each adjustment, wait to see the results of the adjustment at the screen.

### **11.1. Video - Troubleshooting**

Q. The system isn't broadcasting?

A. Ensure that the player and the screens are compatible. Check that they work together before connecting the DS Vision HDMI system.

Q. What do I do when there are lost pixels?

A 1. Check that the video is OK at the source.

A 2. Try retuning using the EQ selector as explained above.

A 3. Check that the cable is not too long.

A 4. The cable type may be unsuitable for the distance.

Q. No video even with a short cable

A 1. 1. Check that the video is OK at the source.

A 2. Check the DDC CAT5 cable or try replacing it.

Q. No video

A 1. If there is no DDC cable is connected, check the DDC selector position.

A 2. Ensure the screens support the resolution that has been selected.

Q. Restoring default DDC to Tx failed.

A. Check the DDC CATx cable is connected.

## 12. Technical specifications

<b>Components</b>	The DS Vision® HDMI consists of the following components: <ul style="list-style-type: none"> <li>▪ Transmitter</li> <li>▪ Receiver</li> </ul>
<b>Maximum Resolution</b>	HDTV 1080p (depends on cable length) 1920x1080 @ 60Hz(16:09) HD
<b>System Cable</b>	CAT5/6/7 UTP/FTP/STP cable 2x4x24 AWG Solid Wire
<b>Video Amplifier Bandwidth</b>	165MHz
<b>Input Video Signal</b>	1.2 Volt P-P
<b>Input DDC Signal</b>	5 Volt P-P (TTL)
<b>HDMI Connector</b>	Type A 19 pin, Female
<b>System Connector Type</b>	RJ-45
<b>Power Supply</b>	Switching Power supply 100-240VAC 5V DC
<b>Maximum CAT5 Cable Length</b>	60m/200ft
<b>Audio</b>	HDMI formats
<b>Operating Temperature</b>	5°C to 40°C / 41°F to 104°F
<b>Storage Temperature</b>	-40°C to 70°C / -40°F to 158°F
<b>Warranty</b>	3 Years

	<b>Transmitter</b>	<b>Receiver</b>
<b>Connectors</b>	System In - HDMI System Out -2xRJ45: Video and DDC	System In - 2xRJ45: Video and DDC Screen - HDMI
<b>Indicator</b>	LED – (on RJ45)	LED – (on RJ45)
<b>Dimensions</b>	81.4x67.7x25.5mm	47.3x67.7x25.5mm

Specifications are subject to change without notice

All nominal levels are at ±10%

