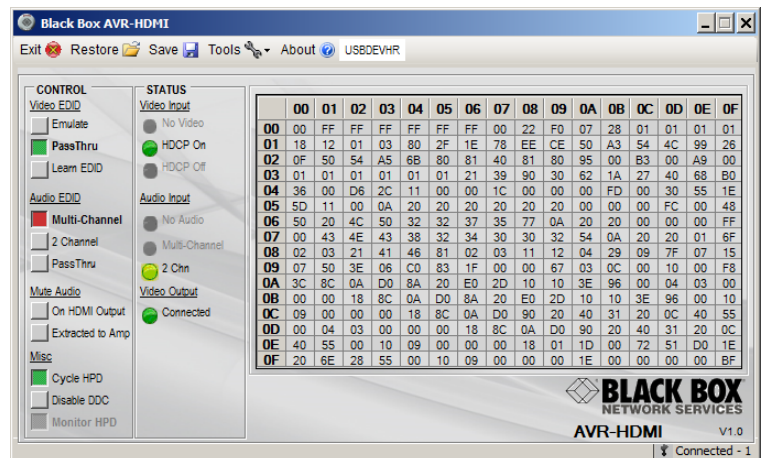


HDMI Audio Extractor with EDID Mgmt

- Functions as a pass-through HDMI extender
- Extracts audio from the HDMI video
- Provides both digital and analog audio outputs
- Can learn and Emulate EDID from any display
- USB port for device management with included software
- Supports HDCP, HDMI deep-color and 3D



**Customer
Support
Information**

Order toll-free in the U.S.: Call 877-877-BBOX (outside U.S. call 724-746-5500)
 FREE technical support 24 hours a day, 7 days a week: Call 724-746-5500 or fax 724-746-0746
 Mailing address: Black Box Corporation, 1000 Park Drive, Lawrence, PA 15055-1018
 Web site: www.blackbox.com • E-mail: info@blackbox.com

Federal Communications Commission and Industry Canada Radio Frequency Interference Statements

This equipment generates, uses, and can radiate radio-frequency energy, and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

Instrucciones de Seguridad (Normas Oficiales Mexicanas Electrical Safety Statement)

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.
2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.
3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.
4. Todas las instrucciones de operación y uso deben ser seguidas.
5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc..
6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.
7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.
8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.
9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.
10. El equipo eléctrico debe ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser conectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.
12. Precaución debe ser tomada de tal manera que la tierra física y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las líneas de energía.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.
17. Cuidado debe ser tomado de tal manera que objetos líquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
 - a. El cable de poder o el contacto ha sido dañado; u
 - b. Objetos han caído o líquido ha sido derramado dentro del aparato; o
 - c. El aparato ha sido expuesto a la lluvia; o
 - d. El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
 - e. El aparato ha sido tirado o su cubierta ha sido dañada.

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1.0 Introduction

Thank you for purchasing the Black Box AVR-HDMI. Use this device to extract the audio from any HDMI video signal for connection to audio equipment. The HDMI signal is reconditioned and boosted as it passes through the device, so it can also serve as an extender. The audio extractor also features EDID management (pass-thru or emulate), So it can emulate any HDMI display and is capable of extracting the audio even if no actual display is connected to the output. Both Toslink (digital) and two channel stereo analog outputs are available on the device. The AVR-HDMI is an HDMI transceiver, so it not only re-clocks the video data, it also separates and buffers the DDC channel on which EDID and HDCP are communicated. This can often resolve system-level HDMI signal-chain issues since the AVR-HDMI acts as an intelligent intermediary.

The AVR-HDMI can be powered from the HDMI source connected to its input and no additional power supply connection is needed for most applications.

The package includes a universal power supply in case the power from the HDMI input source is insufficient. The power supply is plugged in at the USB connector. When the USB port is connected to a PC (cable supplied), the unit is powered by the PC through the USB connection.

The AVR-HDMI also provides useful diagnostic information that can help in resolving compatibility of components in the video signal chain.

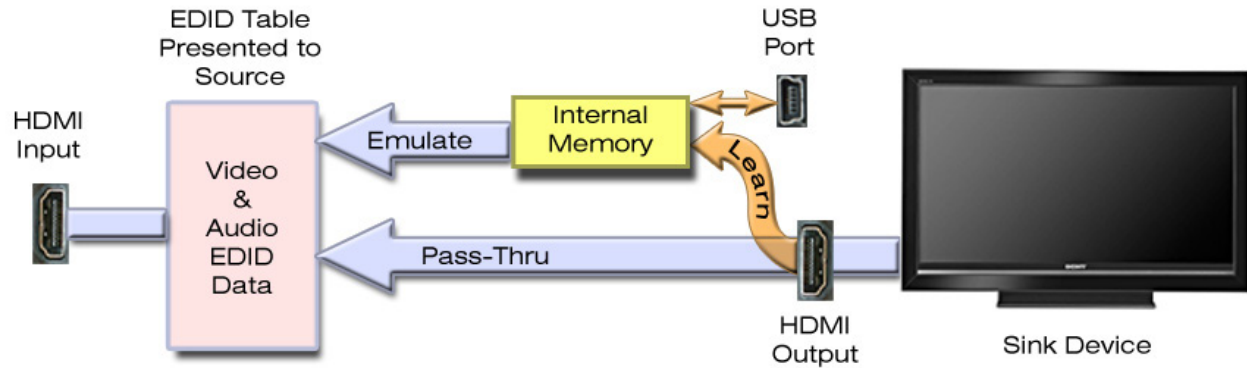
Multi-color LEDs on the unit indicate the mode of operation with regards to EDID routing, and also provide real-time status on the HDMI video and audio signals. For example the LEDs can identify presence of audio and whether it is 2-channel or multi-channel. Similarly the detection of video from source is indicated and it identifies whether there is HDCP on the video or not. When connected to a PC via the USB port, further details about the HDMI signal is available.

The extracted audio is output as analog stereo on a standard 3.5mm connector as well as in digital audio format (SPDIF) on an optical Toslink connector. Normally the audio is left intact on the HDMI output, however the user can remove or mute the audio that is on the HDMI output. Doing so may be advantageous in applications where the connected TV's speakers may be causing interference or echo due to the delay in the audio heard from the TV. Muting the audio output from the HDMI would ensure no sound is heard from the TV even if its volume is turned up.

The AVR-HDMI constructs an EDID table (capabilities list) for the connected source. This table is either copied verbatim from the connected display when the unit is in Pass-thru mode, or substitutes an internal EDID data from on board memory when in Emulate mode. The internal EDID data can be learned from any connected display by using the buttons on the box. EDID data can also be uploaded to the AVR-HDMI from a PC via the USB port. The device maintains HDCP compliance regardless of the EDID routing mode, so HDCP protected content passes through the system with protection intact even when the EDID is emulated from internal memory.

The AVR-HDMI is HDMI 1.3 and 1.4 (deep-color and 3D) compatible, and automatically compensates for the signal degradation caused by long cables of up to 50 ft (15 m) on its input and can drive HDMI cables on its output to 30 ft (10 m).

The package includes a universal power supply, a USB cable for connection to a PC, and a CD containing the User's Manual and Windows® PC. This software allows reading, saving, manipulating, and writing EDID tables to and from the device. The software can also be used to control the operational modes and provides diagnostic tools such as indication of the HDMI input signal's video and audio characteristics



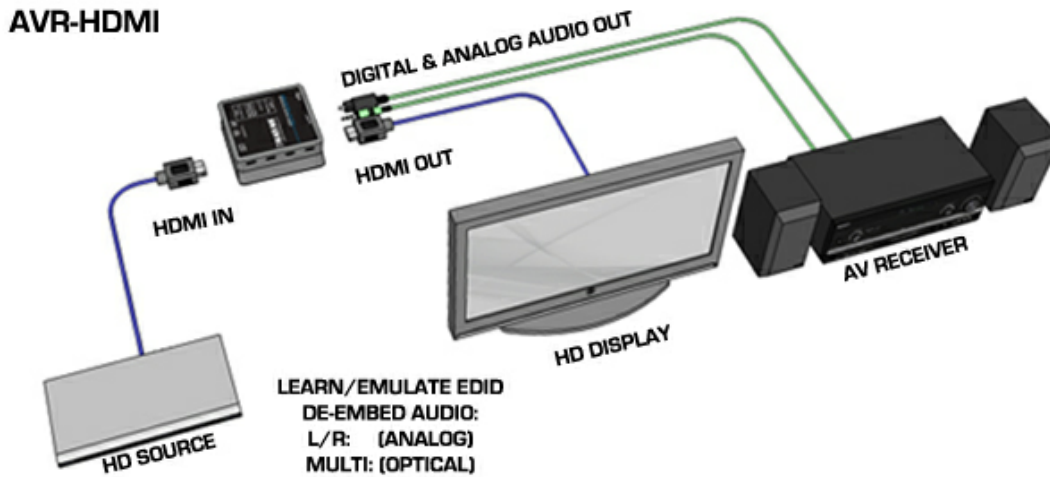
EDID Routing Modes

2.0 Features

- Extracts audio from the HDMI video
- Extract audio with or without an actual display connected
- Functions as a pass-through HDMI extender
- Provides both digital and analog audio outputs
- Can remove the audio from the HDMI output signal
- Can learn and Emulate EDID from any display
- LED indicators for Mode and HDMI status
- USB port for device management with free software
- Read and download any display's EDID to your PC
- Upload desired EDID to the device
- Surge protects HDMI input and output
- Supports HDCP, HDMI deep-color and 3D

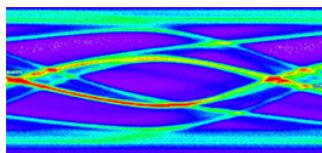
3.0 Installation

The AVR-HDMI connects between the video source and an optional display device.

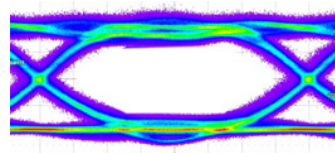


- Connect the included power supply to the mini-USB connector on the video output end of the unit if needed.
- Connect the HDMI or DVI video source to the AVR-HDMI video input.
- Connect the AVR-HDMI video output to the display device (not required for operation).
- Connect the AVR-HDMI 3.5 mm audio output and/or TOSLINK optical output to the external sound system.

Though designed to drive long cables on its output, when used as an extender, it is best to place the AVR-HDMI at the end of the long cable. In that way, its automatic equalizer can clean the output signal and open the TMDS “eye”.



TMDS Signal at end of long Cable



TMDS Signal after Equalization

In most applications the HDMI source should be able to provide enough power to allow the unit to operate without requiring connection of a separate power supply. The only way to find out for sure if a particular source can supply the required power is to try it. If a power supply is deemed necessary, the package includes one that will plug to its USB port. When the AVR-HDMI USB port is connected to a PC, it draws power from the USB and no additional power supply is needed.

Connect the video source to the AVR-HDMI video input (50 ft or 15 meters max). Connect the AVR-HDMI video output to the display device (30 ft or 10 meters max).

The AVR-HDMI LEDs show the current device settings. Refer to the operations section for more information.



Input, Output, and Top views

4.0 Default EMULATION resolutions

The following is a list of supported resolutions in the internal EDID of the AVR-HDMI as shipped from the factory – the native resolution is highlighted in grey. When the user “learns” a new EDID or uploads a new EDID to the box through the USB port, then this table is overwritten. However the default EDID table can be restored by performing a Factory Default reset (using the free Windows® software, or by pressing buttons as described in Section 7).

RESOLUTION	FREQUENCY	ASPECT RATIO	RESOLUTION	FREQUENCY	ASPECT RATIO
640x480	60, 67, 72, 75	(Aspect 4:3)	720x480i	59.94/60	(Aspect 4:3, 8:9)
800x600	56, 60, 72, 75	(Aspect 4:3)	720x480p	59.94/60	(Aspect 4:3, 8:9)
1024x768	60, 70, 75	(Aspect 4:3)	1280x720p	59.94/60	(Aspect 16:9, 1:1)
1280x720	60	(Aspect 16:9)	1920x1080i	59.94/60	(Aspect 16:9, 1:1)
1280x800	60	(Aspect 16:10)	1920x1080p	50, 59.94/60	(Aspect 16:9, 1:1)
1280x1024	60, 75, 85	(Aspect 5:4)			
1400x1050	60	(Aspect 4:3)			
1440x900	60	(Aspect 16:10)			
1600x1200	60	(Aspect 4:3)			
1680x1050	60	(Aspect 16:10)			
1920x1080	60	(Aspect 16:9)			
1920x1200	60	(Aspect 16:10)			

5.0 Power Requirements

This device requires 5 Volts DC which can be sourced through the mini-B USB connector (by connecting to the included power supply or a PC’s USB port), or from Pin 18 (+5 V) of the HDMI connector.

To power the AVR-HDMI from the HDMI or DVI input, the source must be able to supply a minimum of 100 mA (@ 5 vDC). Using a video source with insufficient power capabilities will result in erratic operation and loss of video. If this happens, the user must connect the USB port to a PC or a power supply.

6.0 Operation

The AVR-HDMI recessed buttons prevent inadvertent changes to its settings.

Changing the settings requires a pointed device inserted into the hole to depress the button. Some functions require depressing the button for several seconds.

VIDEO LEDS

Two LEDs are used to indicate whether the unit is going to use and pass-through the display's EDID connected at the output to the source, or emulate the EDID from data stored in its internal memory. The same LEDs blink to indicate presence of video and the blink rate is an indication of HDCP on the input video.



- **EMULATE**
 - All portions of the EDID pertaining to video are from internally stored memory.
- **PASS-THRU**
 - All portions of the EDID pertaining to video are duplicated from the attached SINK.
- **Video input Status Indication**
 - A slow blink (~1/sec) indicates NON-HDCP content; a fast blink (~2/sec) indicates HDCP content, no blinking indicates no video detected.

Note: If the video EDID is set for Pass- Thru but there is nothing connected to the output port, the emulator will automatically revert to internal EDID (as if it were in Emulate mode) so the source is able to read proper EDID. This assures that the source will "detect" a display and output video even if there is no physical display connected.

Audio LEDS

- **MULTI CH**
 - All portions of the EDID pertaining to audio are constructed in such a way to indicate that the device supports compressed multi-channel (bitstream). This by itself does not guaranty that the source will send multi-channel audio, as some sources such as blu-ray players have a menu setting to select the audio output mode.
- **2 CH**
 - All portions of the EDID pertaining to audio are constructed in such a way to indicate that the device only supports 2-channel LPCM.
- **PASS-THRU**
 - The audio portion of the EDID is directly derived from the audio capabilities of attached display (sink).
- **Audio input Status Indication**
 - When Audio is embedded on the input HDMI signal, either the MULTI or the 2CH LED positions will be blinking to indicate the type of Audio that is being received. Note that the Analog output (3.5 mm) is muted if the received HDMI audio is multi-channel. In other words, the 3.5mm analog output is only active when the audio in the HDMI signal is 2-channel. If the source is sending multi-channel audio, it is only extracted to the Toslink digital audio output.



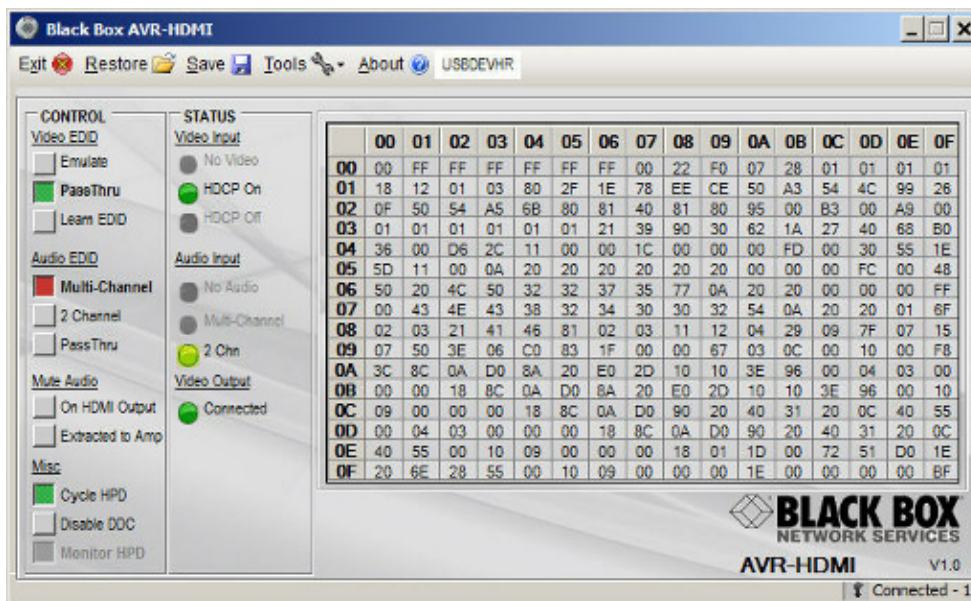
LEARNING an EDID

- Press and hold the VIDEO button for approximately 3~5 seconds until the EMULATE LED starts blinking
- Release the button, the EMULATE LED will continue blinking while the unit reads the EDID from the connected output.
- If the EDID read process is successful, then ALL LEDs will illuminate one at a time in a sequential pattern 5 times.
- If the EDID was NOT successfully read, the PASS-THRU and EMULATE VIDEO LEDs will alternately flash 5 times to indicate the error. This usually indicates that either a cable issue exists or the connected OUTPUT device has an invalid EDID.

SET FACTORY DEFAULTS

- Simultaneously press and hold BOTH the AUDIO and VIDEO buttons for approximately 3~5 seconds until BOTH the VIDEO EMULATE and AUDIO MULTI LEDs start blinking together.
- Release both buttons.
- After restoring factory defaults, ALL LEDs will illuminate one at a time in a circular pattern 5 times.

7.0 Windows GUI



The AVR-HDMI is controllable via a free Windows® based.

All of the device features, and more, are accessible from the GUI. EDID files can be exported or imported. The device is also capable of writing custom EDID data back to compatible display devices.

Software Installation Prerequisites

- A PC with Windows XP® OS or later
- USB port
- Microsoft® .NET Framework 2.0 or later (most recent OS including Windows 7 and 8 typically include this and no action is required). If .NET Framework 2.0 or later is not installed on your PC, the Microsoft™ website has free downloads available.

Software Installation

If an earlier version of this particular software was previously installed, UNINSTALL the program first from either the Add/Remove Programs section of the control panel or by running the previous installation's SETUP.EXE and selecting "remove application".

- Install the software by executing the SETUP.EXE program from the installation source directory
- Accept the default settings, but if you want to specify a particular installation directory other than the default, you may do so.
- Once the VR-DVI software installation has completed, either click the desktop icon or navigate the Start Menu to Start ⇒ Programs ⇒ Black Box ⇒ AVR-HDMI HDMI Audio Extractor

8.0 Using the Software

General

In most installations the use of the software is not needed as most functions can be performed using the push-buttons on the product as described in the previous section.

You can use the software to import/export EDID files from the device. Custom EDID data can also be written to devices connected to the output if they support that function. You can also mute the extracted audio, or remove the audio from the HDMI output.

It is possible to connect more than one AVR-HDMI to the PC (using several USB ports of the PC). The same instance of the software detects all connected devices and allows control from the same interface.

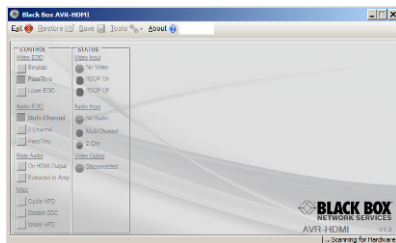
USB Device Detection

The AVR-HDMI software uses standard Windows® drivers to automatically configure the USB port after connection and does not require any special USB drivers to be installed.

The first time you connect the extender to the PC, you may experience a short delay and a windows notification pop-up message may be shown.

This detection and auto installation only occurs once. Thereafter, reconnected devices are detected with no delay or message.

- The software scans the AVR-HDMI settings continuously in real time, so all changes are immediately reflected on the screen
- If no AVR-HDMI device is attached to the system, the on-screen fields are disabled (grayed out)




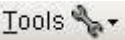
- Only one instance of the program can run at a time. Executing the application more than once will result in an error message..

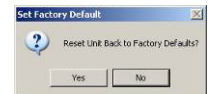


Tool Bar Menu

RESTORE  Restore device settings from file
Used to select previously saved files

SAVE  Save device settings to a file
Save file to any location on the PC.

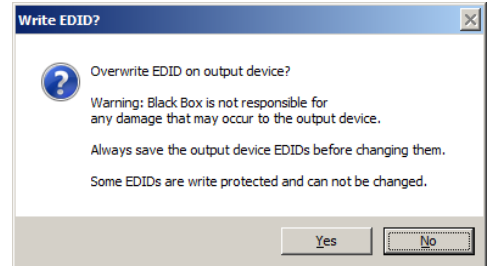
TOOLS  **Factory Defaults**
Restore the device to factory default settings.
The user must confirm the action.




Import EDID
Import an EDID (256-byte binary or XML file) into the unit.

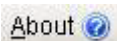
Export EDID
Save the current EDID as a 256-byte binary file
Modified files may be reloaded using the 'Import EDID' tool selection.

Write EDID
Writes the current 256-byte EDID to the currently connected output device. The user must confirm the action. This command tries to alter the EDID of whatever is connected to the HDMI output of the Extender. Most displays such as LCDs or projectors may have a Write-Protected EDID, in which case this command will not be able to alter the EDID in the display. The user must confirm the action and take all necessary precautions to prevent loss of data. Black Box is not responsible for any damage that may occur from the user attempting to modify the EDID of the sink device



Firmware Update
Allows users to field upgrade the device application firmware. Application firmware that does not support this function will disable this option. Only valid firmware files can upload into the AVR-HDMI.

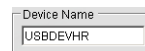
EXIT  Exits the application

ABOUT  Displays screen with software versions, website link, legal disclaimer and copyright information. The Serial # information displayed is a time/date stamp referenced to GMT (Greenwich Mean Time) and has no reference to the serial number sticker on the actual device.



Device Name

Assigns a descriptive name to the AVR-HDMI device that is a maximum 8 characters long. The user is not allowed to change the device name with multiple devices connected. The FACTORY DEFAULT name is USBDEVHR.

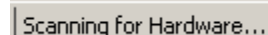


Status Bar

The bottom bar of the screen shows the current USB status as follows:

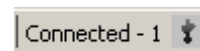
“Scanning for Hardware...”

The GUI software is looking for AVR-HDMI devices.
Screen controls disable until a valid AVR-HDMI device attached



“Connected – XX”

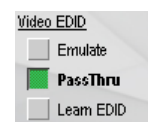
Where XX is the number of AVR-HDMI devices connected to the PC.



CONTROL GROUP

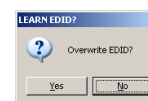
VIDEO EDID

Clicking these controls selects to either PASS-THRU or EMULATE the EDID. PASS-THRU uses the EDID from the display connected to the output, while EMULATE uses the internal EDID saved in the AVR-HDMI. PASS-THRU is the FACTORY DEFAULT setting.



Learn EDID

Clicking this control will extract the EDID from device connected to the output connector and save it in the unit. The user must confirm the action.



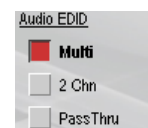
AUDIO EDID

Clicking these controls selects either PASS-THRU, 2 CHN or MULTI modes

Multi-Channel – EDID from SINK is set for LPCM, DTS and Dolby audio with multiple speakers.

2 Channel – EDID from SINK is set for 2 channel LPCM audio with 2 speakers. This is the FACTORY DEFAULT setting.

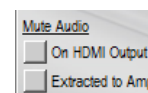
Pass Thru – EDID from SINK is used.



Mute Audio

On HDMI Output

Clicking this control mutes the HDMI Audio.
FACTORY DEFAULT is not muted.



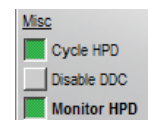
Extracted to Amp

Clicking this control mutes the 3.5mm L/R and TOSLINK Audio.
FACTORY DEFAULT is not muted.

Misc

Cycle HPD

Clicking this control sends a 500 ms HPD (Hot Plug Detect) signal to the Input video source. This indicator filled in green when the HPD signal to the video source is being asserted by extender. Clicking this button simulates disconnecting and re-connecting the AVR-HDMI from the source.



Disable/Enable DDC

Disabling this control will turn off the DDC communication with the SOURCE device. The SOURCE will receive no response from any I²C HDMI or EDID requests. This effectively disables the SOURCE from attempting to display HDCP content. FACTORY DEFAULT is enabled.

Monitor/Ignore HPD

Clicking this control to 'Ignore HPD', allows the source to ignore changes to the OUTPUT HPD line. The default behavior is to restart the HDMI/HDCP communications to the SOURCE if a SINK device reconnects after becoming disconnected. This re-initializing of the connection to the source may cause a momentary drop-out in the Video and Audio output. If this selection is set to "ignore" HPD, then the signal from the source is uninterrupted. FACTORY DEFAULT is to monitor the SINK HPD.

STATUS Group

Video Input

No Video

Indicates the system is not receiving an INPUT video signal.

HDCP On

Indicates video received has HDCP Encryption enabled.

HDCP Off

Indicates video received has HDCP Encryption disabled.



Audio Input

No Audio

Indicates no audio received (DVI mode)

Multi-Channel

Indicates HDMI audio received is not LPCM format.

2 Chn

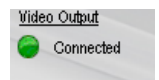
Indicates HDMI audio received is LPCM format.



Video Output

Connected or Disconnected

Indicates the state of the device connected to the AVR-HDMI OUTPUT. When a display is detected the button will be green and the word Connected will be shown next to it. When no display is detected (or the display is not sending an HPD signal), then the indicator on the screen changes to a dark red color and the word Disconnected will be shown next to it.



EDID Data Display

The data shown in the EDID table is continually scanned to ensure that the checksums for each block is valid.

When wrong checksums are detected, the invalid checksum byte is highlighted in RED.

If an action is performed that affects the EDID such as initiating a "learn" process, The checksum field might momentarily flash 'RED' during the this process, but should go back to normal once the entire table is updated.

	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
00	00	FF	FF	FF	FF	FF	FF	FF	22	49	00	02	00	00	00	00
01	08	18	01	03	00	00	8C	EA	EE	91	A3	54	4C	89	26	
02	0F	55	54	5F	1F	00	81	C5	94	5F	01	00	05	00	00	40
03	83	00	D1	C0	D1	00	2E	1D	10	00	51	00	1C	20	49	80
04	26	00	00	00	00	00	1E	00	00	00	00	00	00	00	00	1F
05	48	80	36	00	00	00	00	00	00	00	00	00	00	00	00	00
06	24	40	70	A0	20	00	00	00	00	00	00	00	00	00	00	00
07	62	1A	27	40	88	88	36	00	00	00	00	00	00	00	00	00
08	02	03	20	F2	48	88	04	8E	10	3F	78	08	0F	07	05	
09	07	50	3C	06	C0	65	1F	00	00	00	00	00	00	00	00	00
0A	20	40	00	20	45	00	00	00	00	00	00	00	00	00	00	00
0B	72	38	20	40	30	25	45	80	00	00	00	00	00	00	00	00
0C	00	00	1E	01	1D	00	72	51	00	1E	20	0E	28	05	00	
0D	00	00	00	00	1E	01	1D	00	00	00	00	00	00	00	00	00
0E	95	40	00	00	00	00	1E	00	00	00	00	00	00	00	00	00
0F	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

NOTE *You cannot “LEARN” an EDID that has an invalid checksum. If you try to learn an EDID that has a checksum error, the PASS-THRU and EMULATE LEDs on the unit will alternately flash 5 times to indicate the error.*

No other checks are performed on the EDID to determine that it is valid per the EDID standard.

However the GUI software can import and upload to the AVR-HDMI, EDID’s that contain invalid checksum for testing purposes.

A note regarding EDID Mixing

First of all, it is important to understand that any display device only has one EDID table that has information on all of its video and audio capabilities. The AVR-HDMI gives the user the capability to independently control or alter the video and audio portions of the EDID. This process is called EDID mixing. At power up, the default EDID stored within the device is loaded. This could be either the factory default or a ‘Learned’ EDID.

If a functioning and valid SINK device is connected to the AVR-HDMI ‘Output’ connector *and* the VIDEO EDID mode is set to PASS-THRU, the EDID from the SINK will be read and loaded into memory.

If the SINK EDID read is a simple 128 byte EDID (like some DVI monitors), a CEA-861 extension block (2nd 128 bytes) will be added to the EDID with a default native resolution of 480p and with LPCM 2 channel audio.

If the SINK is disconnected from the VSA-HA-DP connector, the internally saved EDID will be presented to the SOURCE mixed according to the AUDIO settings. Each time the VIDEO or AUDIO EDID GUI controls are pressed, the EDID presented to the SOURCE would be as shown in the following table:

VIDEO MODE	AUDIO MODE	EDID EFFECT
PASS	PASS	SINK EDID PASSED WITH CEC ADDRESS MODIFICATION
PASS	2CHN	SINK EDID PASSED WITH 2CHN AUDIO AND CEC ADDRESS MODIFICATION
PASS	MULTI	SINK EDID PASSED WITH 2CHN, DTS AND DOLBY AUDIO AND CEC ADDRESS MODIFICATION
EM	PASS	NOT POSSIBLE
EM	2CHN	INTERNAL EDID PASSED WITH 2CHN AUDIO AND CEC ADDRESS MODIFICATION
EM	MULTI	INTERNAL EDID PASSED WITH 2CHN, DTS AND DOLBY AUDIO AND CEC ADDRESS MODIFICATION

A note regarding CEC Physical Addressing

CEC Address modification consists of taking the SINK or INTERNAL EDID and modifying the address to insert the AVR-HDMI CEC Physical address into the CEC chain. (The AVR-HDMI device does not understand any CEC commands).

For example: SINK EDID has CEC address of 0.0.0.0

EDID given to source will show the AVR-HDMI as CEC address 1.0.0.0 and the display still with its original CEC address of 0.0.0.0

9.0 Troubleshooting

No LEDs illuminate **Verify cabling and check power supply**

Device will not remember settings or will not LEARN and EDID or the LEDs only momentarily FLASH when buttons are pushed.

No Video..... **Verify cabling and check power supply.**

Verify HDCP compliant display for HDCP content.

Verify the GUI DDC control is enabled if HDCP is required.

No Audio **Verify source audio and video formats**

Verify EDID has audio capabilities

- If neither MULTI nor 2CH LEDs are blinking, input may be DVI rather than HDMI video.
- Ensure GUI 'MUTE' controls are set correctly and not MUTED.
- The 3.5mm stereo audio is only active when the HDMI audio format is LPCM.
- No 'Down Conversion' of the digital audio is possible.
- LPCM, Dolby and DTS audio comes from the TOSLink connector.

EDID Not Learned Correctly **Ensure VIDEO & AUDIO modes not changed**

When an EDID is learned, the AVR-HDMI will be in Pass-Thru mode for both Video and Audio. In these modes, the EDID will remain un-touched and can be exported, if desired.

If either VIDEO or AUDIO modes are changed; the EDID will be mixed to have audio capabilities. The previous 'un-touched' EDID will no longer be available unless previously exported.

10.0 Returning unit for Repair

If you need to transport or ship your unit: Package it carefully. We recommend that you use the original container.

The AVR-HDMI has no user serviceable parts. Opening the unit will void the warranty.

Before you ship the units back to Black Box for repair or return, contact us to get a Return Authorization (RMA) number.

11.0 Specifications

Power Supply.....	5 vDC, 1.2 ADC Integral mini-B cable 90-264 VAC, 47-63 HZ CE/FCC/UL Inter-changeable blades
Size.....	2.71" (W) x 2.825" (D) x 1.25" (H) (68.83 mm) x (71.76 mm) x (31.75 mm)
Weight.....	1 Lb (0.453 kg)
Operating Temperature	32 to 122DegF (0 to 50 DegC)
Storage Temperature.....	-40 to 185 DegF (-40 to 85 DegC)
Humidity.....	10 to 90% non-condensing
Cooling.....	Convection
Enclosure type	Black Plastic ABS-94VO, UL File #56070
Vibration.....	ISTA 1A in carton (International Safe Transit Association)
Safety.....	CE
EMI/EMC	CE, FCC Class A
MTBF	90,000 hours
Warranty	2 years parts and labor
USB	1.1 Full Speed
Supported video formats.....	DVI 1.0 HDMI™ 1.4 HDCP 1.0
Supported audio formats	LPCM (2, 5 and 7 channel) Dolby 5.1 or 7.1 DTS 5.1 16, 20, 24 bit

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