10x4 All-In-One Presentation Switchers (Multi-Format, HDMI, DXLink Inputs)

DVX-3155HD-SP (FG1905-16) 2x25W 8-Ohm
DVX-3155HD-T (FG1905-18) 75W 70/100V

Overview

The Enova DVX-3155HD is an all-in-one controller, AV matrix switcher, scaler, analog to digital signal converter, twisted pair transmitter and amplifier with built-in professional grade audio processing. Easily integrate HDCP into system designs and enjoy hassle free plug-and-play operation. No tools, no delays, and no key constraints – it just works with AMX's exclusive InstaGate Pro® Technology. Designed to simplify system design and provide a future proof solution, the DVX-3155HD's multi-format video inputs support analog and digital signals including HDMI with HDCP sources - all in the same connector. The state-of-the-art professional grade audio DSP delivers quality audio throughout a room. Built-in SmartScale® Technology outputs video that is perfectly scaled for each connected display, eliminating the integration challenges that can occur when sources and displays have different optimal resolutions - making the DVX-3155HD easy to specify, easy to install and easy to use.

Common Applications

Ideal All-In-One Presentation Switcher designed to dramatically simplify AV control and distribution in medium and large conference rooms, classrooms and auditoriums. The flexible DVX-3155HD is perfect for any room with a mix of analog and digital sources, multiple displays, or rooms that require support for video conferencing.

Features

- **All-In-One Presentation Switcher in a 3RU Box** – Controller, matrix switcher, scaler, analog to digital converter, amplifier, plus twisted pair distribution and professional-grade audio DSP
- **HDMI/HDCP Switching with Simplicity of Analog** – End-to-end distribution of HDMI/HDCP without interruption or key constraints using InstaGate Pro Technology
- **Matrix Switching** – Freely route any input to any or all outputs without blocking – 14x4 video switcher and 14x4 audio switcher with audio breakaway
- **SmartScale Technology** – Automatically responds to the display's declared EDID information and scales the video to the best resolution and video parameters for that display without manual setup; this prevents inferior video quality when sources are forced to lower resolutions to support the least capable display in the system
- **AV and Control Over Twisted Pair** – Send audio, video, bi-directional control and Ethernet up to 100m over one standard twisted pair cable
- **Analog to Digital Video Conversion With Scaled Outputs** – Converts any source signal to digital and uses SmartScale Technology to automatically output video that is perfectly scaled for each connected display
- **Game Changing Device** – Standardizing on this box reduces Total Cost of Ownership

Dealer Benefits

- **HDCP Made Easy as Analog** - No more time-consuming, cumbersome work-around tools to address HDCP key caching and resolution incompatibilities
- **Fully Integrated Solution** – All-in-one design simplifies system design, reduces programming time, and saves time and effort in installation
- **Professional Grade Audio** – Simplifies installation with built-in DSP, eliminating the need for an external audio processor

Customer Benefits

- **Reduce Costs and Save Space** – Realize significant cost savings and space savings with the DVX-3155's all-in-one-design compared to purchasing individual components
- **Picture Perfect with No Delay** – Delivers clean, crisp digital video to any display immediately upon request
- **Designed with Flexibility For the Future** - Built for today's AV needs, but ready for tomorrow's future advanced needs including 3D video and surround sound

Additional Features

- **All-In-One Presentation Switcher** – Replaces the need for numerous individual components and equipment, allowing installers to save time and effort in configuring and programming
- **InstaGate Pro Technology** – Easily integrate HDCP into system designs and enjoy hassle-free matrix switching to all compliant displays; no tools, no delays, and no key constraints – it just works
- **Multi-Format Ports** – Built for analog signals - RGBHV, Component, S-Video, and Composite, and digital HDMI/HDCP and DVI signals - all on the same connector
- **Built-in Professional Grade Audio DSP** – Integrated digital signal processor's advanced capabilities, like independent 10-band parametric EQ, independent input gain adjustments and variable compression, allow precision tuning to match unique source and room attributes
- **3D Support** - Pass through latest video formats including 3D and Deep Color
- **Surround Sound Support** - Pass through high definition surround sound including DTS-HD and Dolby TrueHD
- **DXLink^{TM} Twisted Pair Output** - Send audio, video, bi-directional control, Ethernet and power to remote destinations up to 100m away over one twisted pair cable
- **DXLink Twisted Pair Inputs** – Receive audio and video from remote transmitters and deliver bi-directional control, Ethernet and power to remote transmitters up to 100m away over one twisted pair cable

- **Audio Breakaway** - Stereo audio from any analog input or de-embedded from any HDMI input can be broken away from its associated video, processed through the DSP, and switched independently to any analog, HDMI or S/PDIF audio output
- **Audio Matrix Switching** – Four independently switched and processed audio paths provide four unique volume, EQ, ducking and mixing configurations for perfectly tuned room audio as well as integration with audio/video conferencing, induction loop systems, voice re-enforcement speakers and audio recording devices
- **Enhanced Microphone Processing** – Independent 3-band parametric EQ, compression, gathering, auto-ducking, and limiting on each microphone input ensures crystal clear communication
- **HDCP Compliant**

Specifications

GENERAL	
Enclosure	Metal with black matte finish
Dimensions (HWD)	5 3/16" x 17" x 14" (13.2 cm x 43.2 cm x 35.6 cm)
Weight	18.2 lb. (8.31 Kg)
AC Power	110-240 V, 47/63 Hz AC supply
Power Consumption	90 Watts typical without amplifier 95 to 100 Watts typical average with amplifier 30 Watts typical in low-power mode
Power Connector IEC Power Cord Connector	100-240 VAC 47-63 Hz
Certifications	RoHS/WEEE compliant FCC Part 15 Class A IC CISPR 22 Class A C-Tick CISPR 22 Class A CE EN 55022 Class A and EN 55024 LVD EN 60950-1 IEC 60950-1 cULus UL 60950-1
Included Accessories	1 CC-NIRC, IR Emitter w/3.5mm Phoenix (FG10-000-11) 1 CC-DVIM-VGAF, DVI to VGA Adapter (FG10-2170-13) 2 Front Rack Mounting Brackets (62-1905-15) Enova DVX-3155HD All-In-One Presentation Switcher Installation Guide
Optional Accessories	CC-DVI-5BNCM, DVI to 5 BNC Male Cable (FG10-2170-08) CC-DVI-RCA3M, DVI to 3 RCA Male Cable (FG10-2170-09) CC-DVIM-VGAF, DVI to HD-15 Female Adapter (FG10-2170-13) CC-DVI-SVID, DVI to S-Video Cable (FG10-2170-10) CC-3.5ST5-RCA2F, 5-pin 3.5mm Phoenix to 2 RCA Female Cable (FG10-003-20) AVB-RX-DXLINK-HDMI, DXLink HDMI Receiver Module (FG1010-500)

	AVB-TX-HDMI-DXLINK, DXLink HDMI Transmitter Module (FG1010-300)
	AVB-TX-MULTI-DXLINK, DXLink Multi-Format Transmitters (FG1010-310)
	AVB-WP-TX-MULTI-DXLINK, DXLink Multi-Format Wallplate Transmitters (FG1010-320-BL/WH)
	EXB-IRS4, ICSLan IR/S Interface, 4 IR/S and 4 Inputs (FG2100-23)
	EXB-COM2, ICSLan Serial Interface, 2 Ports (FG2100-22)
	EXB-REL8, ICSLan Relay Interface, 8 Channels (FG2100-20)
	EXB-I/O8, ICSLan Input/Output Interface, 8 Channels (FG2100-21)
	EXB-MP1, ICSLan Multi-Port, 1 COM, 1 IR/S, 2 I/O, 1 IR RX (FG2100-26)

ENVIRONMENTAL	
Temperature (Operating)	0° C to 40° C (32° F to 104° F)
Temperature (Storage)	-10° C to 70° C (14° F to 158° F)
Humidity (Operating)	5% to 85% RH

INTEGRATED CONTROLLER	
Controller	Integrated Controller is the equivalent of a NetLink NI-2100 Central Controller
Processor	404 MIPS PowerPC
Memory	256 MB SDRAM 1 MB Non-volatile (NV) SRAM 256 MB FLASH
Ethernet	(1) 10/100 Port RJ-45 connector provides TCP/IP communication. This is an Auto MDI/MDI-X enabled port, which allows you to use either straight-through or crossover Ethernet cables. The Ethernet Port LEDs show communication activity, connection status, speeds, and mode information: SPD (speed) - Yellow LED lights On when the connection speed is 100 Mbps and turns Off when the speed is 10 Mbps L/A (link/activity) - Green LED lights On when the Ethernet cables are connected and terminated correctly, and blinks when receiving Ethernet data packets
AxLink	(1) AxLink Port: 1 3.5 mm captive-wire connector provides data and power to external control devices. The AxLink LED (green) indicates the state of the AxLink port

Program	(1) DB-9 connector that supports RS-232 communications to a PC for system configuration and diagnostics
Serial	(6) bi-directional RS-232/422/485 serial ports (6) DB9 Male Connectors NetLinx Ports 1-6 XON/XOFF (transmit on / transmit off), CTS/RTS, 300 - 115,200 baud
Relays	(8) single-pole, single-throw relays (2) 8-pin 3.5 mm (female) captive-wire connectors NetLinx Port 8, Channels 1-8 Each relay can switch up to 24 VDC or 28 VAC @ 1 A Each relay is independently controlled
IR/Serial	(8) IR Transmit / 1-way Serial ports (2) 8-pin 3.5 mm (female) captive-wire connectors NetLinx Ports 9-16 Supports high-frequency carriers up to 1.142 MHz
Input / Output	(8) binary I/O ports for contact closure / voltage sensing (1) 10-Pin 3.5mm (female) captive-wire connector NetLinx Port 17, Channels 1-8
Link / Act (green)	Link/Activity LED blinks when receiving Ethernet data packets
Status (green)	Status LED blinks to indicate that the system is programmed and communicating properly
Input (yellow)	Input LED blinks to indicate that the Controller is receiving data
Output (red)	Output LED blinks to indicate that the Controller is transmitting data
RS-232/422/485 (red/yellow)	(6) sets of LEDs indicate that RS-232/422/485 Ports (1-6) are transmitting or receiving data
Relays (red)	(8) LEDs indicate that one or more of the relay channels (1-8) are active (closed)
IR/Serial (red)	(8) LEDs indicate that one or more of the IR/Serial ports (1-8) are transmitting control data
I/O (yellow)	(8) LEDs indicate that one or more of the I/O channels (1-8) are active
Config Dip Switch (rear)	8-position Master configuration DIP switch allows setting the Serial Programming port baud rate and onboard Master execution mode (PRD or normal)
ID Pushbutton (rear)	Black ID pushbutton sets the NetLinx Device ID assignments of the Internal Control Device. It has no effect on the Internal Switcher Device

INTEGRATED AMPLIFIER	
Integrated Amplifier	DVX-3155HD-SP: 2 x 25W into 8 Ohms Class D stereo amplifier (4-ohm stable)

	DVX-3155HD-T: 75W, 70V / 100V mono amplifier
INTEGRATED MATRIX SWITCHER CONTROL	
Switch Pushbutton	Press to enter the SWITCH menu on the LCD display. Choose to switch audio, video or both from any input to any output. Press the TAKE pushbutton to implement the switch
Take Pushbutton	While in the SWITCH menu, press to implement an audio/video switch. When not in the SWITCH menu, press to cycle through audio and/or video inputs
LCD Display	Liquid crystal display (2 lines with 20 characters per line) indicates current volume level and displays the Video, Audio, and Tools menus
Video Menu Pushbutton	Press to access the Video menu on the LCD display. Multiple presses cycle through the various VIDEO menus
Audio Menu Pushbutton	Press to access the Audio menu on the LCD display. Multiple presses cycle through the various AUDIO menus
Navigation Pushbuttons	(4) directional buttons for navigating the options in the Video and Audio menu (on the LCD display)
Status Pushbutton	Press to access the STATUS menu on the LCD display
Exit Pushbutton	Press to exit any menu
Video Mute Pushbutton	Press to mute/un-mute (enable/disable) all video output displays. Video Mute results in a blank screen on the output display
Audio Mute Pushbutton	Press to mute/un-mute all audio outputs

INTEGRATED MATRIX SWITCHER	
Video Switching	10x4 Matrix Video Switching plus 2 mirrored DxLink outputs
Audio Switching	14 x 4 Matrix Audio Switching. Each of the 4 audio outputs has independent Volume, EQ, Ducking and Mixing. Any of the 4 audio paths can be routed to any analog, HDMI or S/PDIF output
HDCP Support	Yes, full matrix HDCP support (includes any input to any or all outputs) Key Management System AMX HDCP InstaGate Pro Technology Key support up to 16 sinks per output, independent of source device
Audio Breakaway	Yes, stereo audio from any analog input or de-embedded from any HDMI input can be broken away from its associated video, processed through the DSP, and switched independently to any analog, HDMI or S/PDIF audio output

EDID Management	A preferred EDID can be selected for each input or any display EDID can be mirrored to any input independently
AUDIO / VIDEO INPUTS	
Multi-Format Video Inputs	(4) multi-format video inputs (1-4): 4 DVI-I input connectors provide multi-format video inputs for up to four video sources, each supports HDMI/HDCP, DVI, RGBHV, S-Video, composite, or component video input
Component (Y/Pb/Pr) on DVI-I	Requires DVI-I to 3 RCA Adapter or DVI-I to 5 BNC Adapter Input Level: 1 Vp-p nominal Input Impedance: 75 Ohms nominal AC coupled: Insensitive to DC offset
S-Video on DVI-I	Requires DVI-I to S-Video Adapter Input Level: 1 Vp-p nominal Input Impedance: 75 Ohms nominal AC coupled: Insensitive to DC offset
RBGHV / RGBS / RGsB on DVI-I	Requires DVI to HD15 Adapter or DVI-I to 5 BNC Adapter RGB Input Level: 1 Vp-p nominal RGB Input Impedance: 75 Ohms nominal Sync Input Level: 2 to 5 Vp-p Sync Input Impedance: 2.5 pf Typical, 10pF Maximum
DVI on DVI-I	Supports DVI 1.0 Format: RGB Sync Input Level: 2 to 5 Vp-p Sync Input Impedance: 2.5 pf Typical, 10pF Maximum
HDMI on DVI-I	Supports HDMI, HDCP Requires DVI to HDMI Adapter Signal Types: Supports full matrix switching, video processing and scaling of 8 bit per color standard Input video signals. Supports full matrix switching and pass-thru of all HDMI compliant video signals including 3-D and Deep Color
HDMI Audio/Video Inputs	(4) Digital Audio/Video Inputs on HDMI connectors (5-8): Each input supports HDMI, HDCP, DVI 1.0, DisplayPort++ (requires DisplayPort to HDMI Adapter Cable). Video Signal Types: Supports full matrix switching, video processing and scaling of 8 bit per color standard Input video signals. Supports full matrix switching and pass-thru of all HDMI compliant video signals including 3-D and Deep Color Audio Signal Types: Supports Dolby TrueHD, Dolby Digital*, DTS-HD Master Audio, DTS*, L-PCM
DXLink Audio/Video Inputs	(2) DXLink Inputs (9,10): 2 RJ-45 input connectors

	provide support for digital video, audio, Ethernet, bi-directional control and power over Category Cable from any DXLink Transmitter. Supports HDCP
Unbalanced Audio Inputs	(4) analog unbalanced line-level audio inputs on 1/8th-inch mini-jack connectors Nominal input level: -10 dBV (0.3162 Vrms) Maximum input level: +14 dBu Input impedance: >24 KOhms
Balanced Audio Inputs	(4) analog balanced/unbalanced line level audio inputs on 5-pin 3.5mm captive-wire connectors Nominal input level: +4 dBu (1.228 Vrms) balanced or -10 dBV (0.3162 Vrms) unbalanced Maximum input level: +14 dBu Input impedance:>17 KOhms balanced, >10 KOhms unbalanced
Microphone Inputs	(2) analog balanced mono microphones inputs on 3-pin 3.5mm captive-wire connectors Supports Line or Mic level, balanced or unbalanced audio Maximum input level: 5 dBu Phantom Power: switchable 48V to each microphone @ 8 mA total Mic Input Inpedance: 3.5 KOhms, accepts 60 to 600 Ohm sources

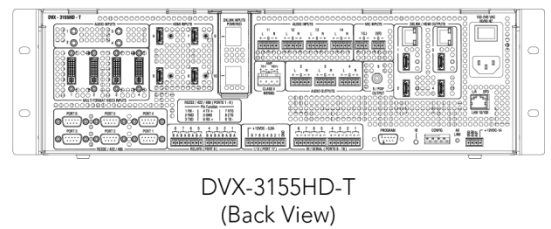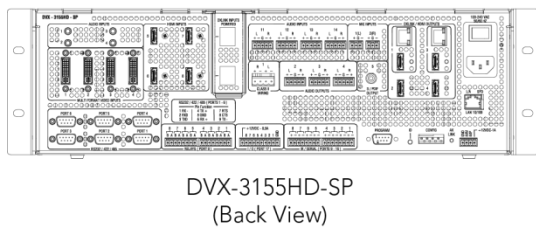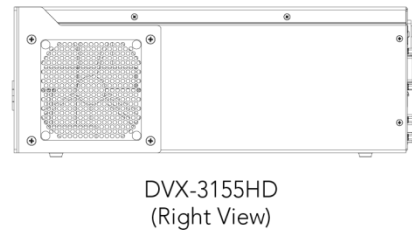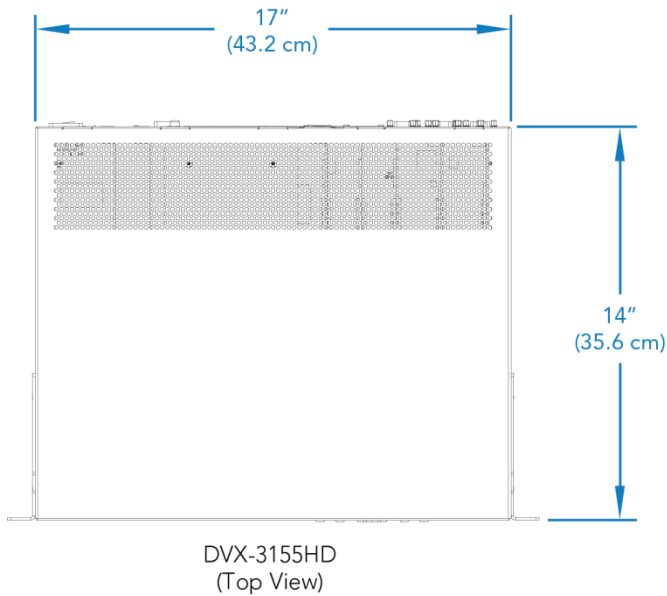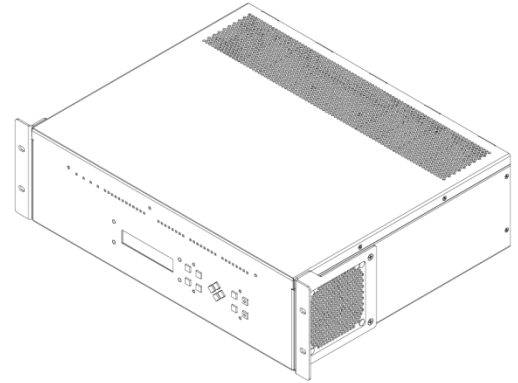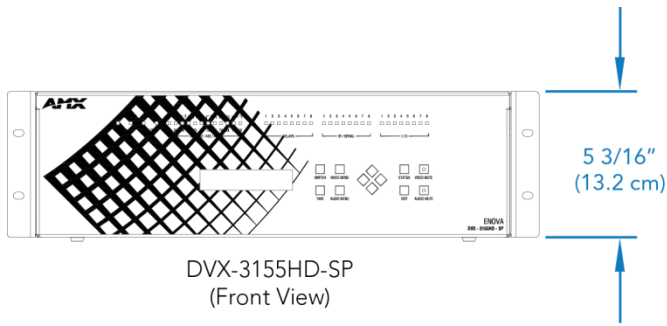| AUDIO / VIDEO OUTPUTS	
HDMI Audio/Video Outputs	(4) Digital Audio/Video Outputs on HDMI connectors Each output supports HDMI, HDCP and DVI 1.0 video signals Each output can deliver processed and scaled video or pass-thru video from any video input. Each output can embed audio from any of the 4 analog audio outputs as Stereo L-PCM or can pass-thru Dolby TrueHD, Dolby Digital, DTS-HD Master Audio, DTS and L-PCM audio from the selected video source
DXLink Audio/Video Output	(2) DxLink Digital Audio/Video Outputs on RJ-45 connectors (1, 3): 2 DXLink CAT5 outputs mirror HDMI outputs 1 and 3. They provide digital video, audio, Ethernet and bi-directional control over Category Cable to DXLink Receivers. Supports HDCP
Amplified Audio Output	Volume control: -100dB to +0dB in 1dB steps Balance control: 20 steps each left and right Volume control: -100dB to +0dB in 1dB steps Balance control: 20 steps each left and right DVX-2150HD-SP: (1) Stereo Amplified Audio Output on (2) 2-pin 5mm captive-wire connectors

	2 x 25 Watts RMS into 8 Ohms, 2 x 40 Watts RMS into 4 Ohms DVX-2150HD-T: (1) 70V, 75W Mono Amplified Audio Output on (1) 2-pin 5mm captive-wire connector. (1) 100V, 75W Mono Amplified Audio Output on (1) 2-pin 5mm captive wire connector
Balanced Audio Outputs	(3) analog balanced or unbalanced, mono or stereo line level audio outputs on 3.5mm 5-pin captive-wire connectors Independent EQ, Volume and Balance control per output Maximum output level: +17 dBu Output impedance: 200 Ohms
S/PDIF Audio Outputs	(1) S/PDIF Digital Audio Output on a Coaxial RCA connector Output can mirror any of the 4 analog audio outputs as Stereo digital audio, or L-PCM, Dolby Digital and DTS audio being passed-thru to any of the 4 HDMI outputs

VIDEO SPECIFICATIONS	
Supported Input Resolutions for HDMI, DVI and RGB	640x400@85Hz, 640x480@60Hz, 640x480@72Hz, 640x480@75Hz, 640x480@85Hz, 720x400@85Hz, 720x480p@60Hz, 720x480p@120Hz, 720x480p@240Hz, 720x576p@50Hz, 720x576p@100Hz, 720x576p@200Hz, 800x600@56Hz, 800x600@60Hz, 800x600@72Hz, 800x600@75Hz, 800x600@85Hz, 848x477@60Hz, 848x480@60Hz, 848x480@75Hz, 848x480@85Hz, 1024x640@60Hz, 1024x768@60Hz, 1024x768@70Hz, 1024x768@75Hz, 1024x768@85Hz, 1152x864@75Hz, 1280x720@50Hz, 1280x720@60Hz, 1280x720p@60Hz, 1280x720p@100Hz, 1280x720p@120Hz, 1280x768@59Hz, 1280x768@60Hz, 1280x768@74Hz, 1280x768@75Hz, 1280x768@84Hz, 1280x768@85Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x960@85Hz, 1280x1024@60Hz, 1280x1024@75Hz, 1280x1024@85Hz, 1360x764@60Hz, 1360x768@60Hz, 1440x900@60Hz, 1440x900@75Hz, 1440x900@85Hz, 1400x1050@60Hz, 1400x1050@75Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080i@50Hz, 1920x1080i@60Hz, 1920x1080i@100Hz, 1920x1080i@120Hz, 1920x1080p@24Hz, 1920x1080p@25Hz, 1920x1080p@30Hz, 1920x1080p@50Hz, 1920x1080@60Hz,

	1920x1080p@60Hz, 1920x1200@59Hz, 1920x1200@60Hz
Supported Input Resolutions for Y/Pb/Pr	720x480i@60Hz, 720x480p@60Hz, 720x576i@50Hz, 720x576p@50Hz, 1280x720p@50Hz, 1280x720p@60Hz, 1440x960p@60Hz, 1920x1080i@50Hz, 1920x1080is@50Hz, 1920x1080i@60Hz, 1920x1080p@50Hz, 1920x1080ps@50Hz, 1920x1080P@60Hz
Supported Input Resolutions for S-Video and Composite	720x480i@60Hz, 720x576i@50Hz
Supported Manual Output Resolutions	640x480@60Hz, 640x480@72Hz, 640x480@75Hz, 800x600@60Hz, 800x600@72Hz, 800x600@75Hz, 1024x768@60Hz, 1024x768@70Hz, 1024x768@75Hz, 1280x720p@60Hz, 1280x768@60Hz, 1280x800@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1440x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080p@60Hz, 1920x1080@60Hz, 1920x1200@60Hz
Data Rate (Max)	4.95 Gbps (6.75 Gpbs in passthru mode up to 1080p)
Pixel Clock (Max)	165 MHz (225 MHz in passthru mode up to 1080p)
Input Equalization	Yes
Input Re-Clocking (CDR)	Yes
Output Re-Clocking	Yes
Output Scaling	SmartScale, Manual Configuration, Bypass
Deep Color Support	SmartScale Output Resolution Support: All resolutions between 480p and 1920 x 1200 @ 60 Hz via automatic SmartScale query of the display's declared EDID Detailed Timing Definition"
Color Space Support	Scaled Outputs: 24-bit, Passthru Outputs: 30-bit, 36-bit
3D Format Support	Y,Cb,Cr & RGB
Pixel Clock (Max)	Yes (Passthru mode only) (HDMI Primary Formats)

AUDIO SPECIFICATIONS	
A/D & D/A Conversions	24-bit, 48 KHz
Output Equalizer	10-band parametric EQ with variable center frequency, filter type and Q per band Center Frequency: 20 to 20K Hz EQ Gain: -12 to +12 dB Q: 0.1 to 20 Filter Types: Bell, Base Shelving, Treble Shelving, Low Pass, High Pass, Band Pass, Band Stop
Output Sync Delay	0 to 200 ms
Input Formats	Stereo or Mono
Input Gain Compensation	-24dB to +24dB, 1dB steps
Input Compression	Independent Compression per input Attack: 1 to 2000 ms

	Release: 10 to 5000 ms Compression Ratio: 1 to 20 Threshold: -60 to 0 dB
Mic Input Gain	-24dB to +89dB, 1dB steps
Mic Input Equalizer	3-band parametric EQ with variable center frequency, filter type and Q Center Frequency: 20 to 20K Hz EQ Gain per Band: -12 to +12 dB Q per band: 0.1 to 20 Filter Types: Bell, Base Shelving, Treble Shelving, Low Pass, High Pass, Band Pass, Band Stop
Mic Input Compression	Independent Compression per Microphone Attack: 1 to 2000 ms Release: 10 to 5000 ms Compression Ratio: 1 to 20 Threshold: -60 to 0 dB
Mic Gating	Independent Gating per Microphone Attack: 1 to 2000 ms Release: 10 to 5000 ms Depth: 0 to 20 dB Hold Off: 0 to 2000 ms Threshold: -60 to 0 dB
Mic Limiter	Independent Limiting per Microphone Attack: 1 to 2000 ms Release: 10 to 5000 ms Threshold: -60 to 0 dB
Mic Ducking	Independent Ducking per each of 4 audio paths Attack: 1 to 2000 ms Release: 10 to 5000 ms Attenuation: 0 to 20 dB Hold Off: 0 to 4000 ms Threshold: -60 to 0 dB
Frequency Response	AMP: 20Hz to 20kHz ±0.75dB @ 8 ohms Line: 20Hz to 20KHz ±0.1dB
S/N Ratio	AMP: 85 dB @ 8 ohms, full output, 1 kHz A-weighted Line: 105dB @ 10dBV, AES17
THD+N	AMP: < 0.15% @ 8 ohms, 20 Watts, 20Hz to 20KHz Line: 0.003% @ 0dBV, 1KHz
Channel Crosstalk	Balanced Line Inputs: -98dB @ 0dBV, 20Hz to 20KHz Unbalanced Line Inputs: -70dB @0dBV, 20Hz to 20KHz

DVX-3155HD-SP
(Front View)

5 3/16"
(13.2 cm)

17"
(43.2 cm)

14"
(35.6 cm)

DVX-3155HD
(Top View)

DVX-3155HD
(Isometric View)

DVX-3155HD
(Right View)

DVX-3155HD-SP
(Back View)

DVX-3155HD-T
(Back View)