DN-150 Series

SDVoE Transmitter / Receiver

Unprecedented Value — The **DisplayNet® DN-150 Series** represents a breakthrough in performance and value for IP-based AV signal distribution applications. Starting at under $1,000 per endpoint, the DN-150 Series utilizes cutting edge SDVoE technology in a fanless, low-profile case that can be mounted unobtrusively nearly anywhere.

Top-Tier Performance — Utilizing SDVoE technology, the DN-150 Series delivers unconstrained scalability, fast switching, zero frame latency and zero artifact image quality, while distributing signals with resolutions of up to 4K /60p (4:4:4) with 8-bit color, or 4K /60p (4:2:2) with 10 or 12-bit color. Like other DisplayNet products, these units provide independent multi-layer routing of HDMI audio and video signals, as well as IR, RS-232, Analog Audio, and 1GbE.

Limitless Expandability — Unlike traditional matrix switchers, SDVoE systems have no limits or restrictions on the size or design of an AV distribution system; the matrix array can be as large as the number of non-blocking ports on the 10GbE network. Stacked switches enable very large systems with hundreds of ports, at a low marginal cost.

Exceptional Versatility — The DN-150 Series relies on the highly intuitive DisplayNet Manager® user interface that makes set-up and maintenance of these units incredibly fast and easy. Advanced features in this web-based application enables nearly effortless integration with third-party controllers. Full interoperability with other SDVoE products, including the DisplayNet DN-200 Series, greatly enhances system flexibility. The DN-150 Series utilizes optical fiber 10GbE transport, enabling signal extension distances of up 30 KM (18.6 miles) using single-mode fiber.

Thanks to their low-profile design, exceptional interoperability and outstanding array of features, these units enable system designers to conceive highly versatile AV signal distribution systems with robust performance and scalability at price points previously impossible using competitive products.

FEATURES

- Cost-effective AV signal distribution with Zero Artifacts and Zero Frame Latency
- Supports resolutions of up to 4K /60p with 8-bit color (4:4:4) or 4K /60p with 10 or 12-bit color (4:2:2 or 4:2:0)
- Independent multi-layer routing for HDMI Video, HDMI Audio, Analog Audio, RS-232, IR, and HDMI-CEC commands.
- Highly Scalable – supports systems from a few ports to hundreds – only limited by the size of the network switch.
- Long Range – supports up to 30KM (18.6 miles)
- Fully HDCP 2.2 and 1.4 compliant
- Compatible with SDVoE-compliant transmitters and receivers, including DisplayNet DN-200 Series.

Front Panel – DN-150F-TX

Front Panel – DN-150F-RX

DVIGear, Inc. is the owner of numerous trademarks, both registered and unregistered, including without limitation, the following marks: DVIGEAR®, DISPLAYNET®, DISPLAYNET SERVER®, DISPLAYNET MANAGER®, N/AV Design®, HYPERLIGHT® and WILDCAT®.

SDVoE is a registered trademark of the SDVoE Alliance and used under license. The terms HDMI, HDMI High-Definition Multimedia Interface, and the HDMI Logo are trademarks or registered trademarks of HDMI Licensing Administrator, Inc. All other third-party trademarks used herein are the properties of their respective owners.

DVIGear • 1059 Triad Court, Suite 8, Marietta, GA 30062 • Tel: +1.770.421.6699 • Toll Free: 888.463.9927 • Fax: +1.770.234.4207 • sales@dvigear.com • www.dvigear.com

SPECIFICATIONS

Supported AV Signals	
Video	HDMI 4K /60p, DVI 1.0
HDCP	Compliant with HDCP 1.4 and HDCP 2.2
Embedded Audio	Supports pass-through of embedded HDMI audio including up to 8 channels of LPCM or HBR audio formats such as: Dolby Digital TrueHD, and DTS-HD Master Audio
De-Embedded Audio	Supports independent routing of de-embedded HDMI audio: Up to 8 channels of LPCM digital audio with up to 24-bit depth and 192 kHz sampling rate
Downmixed Audio	Supports independent output of de-embedded, downmixed 2-channel HDMI audio from DN-200 Series transmitter
External Audio	Supports independent routing of analog stereo audio stream with up to 24-bit depth and a fixed 48 kHz sampling rate
Audio-over-IP	Supports networked audio pass-through using 1GbE port
Ethernet	Built-in 1GbE Ethernet switch on all TX and RX units supporting 10 Mbps. up to 1 Gbps.
IR Control	Supports bidirectional IR pass-through
RS-232 Control	Supports bidirectional RS-232 pass-through UART interface with to 115,200 baud
SDVoE Interoperability	Fully compatible with all SDVoE-compliant transmitters and receivers, including DisplayNet DN-200 Series
Connections / Indicators	
10GbE Port[1]	1ea. SFP+ Module on DN-150F Series
HDMI Input / HDMI Output	1ea. 19-pin Female HDMI connector
Analog Stereo Audio	1ea. 3.5mm Stereo-Mini Jack (Input / Output on TX and Output on RX)
1GbE Port	1ea. shielded RJ45 connector with LED indicators
RS-232	1ea. 4-pin, 3.5mm pitch, Phoenix connector
IR Control	1ea. IR IN: 3.5mm Stereo Mini-Jack; 1ea. IR OUT: 3.5mm Mini-Jack
DC Power	1ea. 5.5 mm / 2.0 mm female screw-locking connector
Diagnostic LEDs	TX Link, RX Link, Video, Power
Hardware Reset	1ea. Push-button to restore factory default values
Performance	
Supported Resolutions[2]	Up to 4K /60p with 8-bit color (4:4:4) Up to 4K /60p with 10-bit or 12-bit color (4:2:2 or 4:2:0)
Maximum Pixel Clock Freq.	Supports pixel clock rates up to 600 MHz
Maximum Video Bit Rate	Supports digital signal bit rates up to 6.0 Gbps./color, 18.0 Gbps. total
Switching Layers	Independent switching layers for all connected Video, Embedded Audio, Analog Audio, Downmixed Audio (output only), RS-232 and IR
Video Signal Latency[3]	Genlock: ≤ 30 µsec. (uncompressed), ≤ 120 µsec. (light compression)[3]
Supported I/O Switching Array	Size of I/O array is only limited by the size (number of ports) of the 10GbE network switch
Maximum Cable Distance	Up to 18.6 miles (30 KM) using single-mode fiber
HDMI Input Cable Equalization	Supports DVIGear's HR™ Series HDMI with cable lengths up to 10 meters at 4K /60p resolution
Operational Modes[4]	
Matrix Switching Mode	Fully non-blocking cross-point routing of nearly any size I/O array – only limited by size of 10GbE switch
Video Wall Mode	DN-150-TX devices may be used with DN-200 Series RX devices in Video Wall mode
Point-to-Point Mode	Supports Point-to-Point Extension up to 328 ft. (100 meters), or up to 18.6 miles (30 KM) with DN-150F optical version
Power	
Typical Power Consumption	DN-150F-TX: 13.6 watts / DN-150F-RX: 15.6 watts
External AC Power Adapter	Input: 100-240VAC, 50-60Hz / Output: +12VDC @ 2.0A

SPECIFICATIONS (CONTINUED)

Mechanical	
Construction	Heavy-duty steel enclosure with jet black finish
Dimensions (H x W x D)	Each Unit: 1.0" x 6.3" x 6.8" (25.5 mm x 160 mm x 173 mm)
Weight	Each Unit: 1.7 lbs. (0.77 kg)
Environmental	
Operating Temp. (Environment)	+32° to +104° F (0° to +40° C)
Typical Case Temperature	Top Case: 107.6° F (42° C) Bottom Case: 140.0° F (60° C)
Storage Temp. (Environment)	-4° to +158° F (-20° to +70° C)
Operating / Storage Humidity	10% to 90% (non-condensing)
Regulatory Approvals	
TX / RX Units	FCC, CE, RoHS
External AC Power Adapter	FCC, CE, UL, C-UL, CEC, TUV, GS, PSE, CCC, RoHS, WEEE
Warranty	
Limited Warranty	3 Years Parts and Labor
Model Numbers	
DN-150F-TX / DN-150F-RX	DisplayNet SDVoE Optical Transmitter / DisplayNet SDVoE Optical Receiver
DNS-20	DisplayNet Server®: Rack-mountable Linux PC with DisplayNet API and DisplayNet Manager® software pre-installed
Accessories Included	
1x External AC Power Adapter (per unit)	
2x Mounting Brackets with Screws (per unit)	
1x 4-pin RS-232 Phoenix Connector (per unit)	
1x IR Transmitter (per TX unit)	
1x IR Receiver (per RX unit)	
1x USB Flash Drive Loaded with: Hardware Manual, Software Manual	
Optional Accessories	
DisplayNet Server® (Model No. DNS-20)[5]	
External AC Power Adapter with USA, Euro, UK, or Australia Plugs	
Power Distribution Unit, 8x 12VDC (DVI-7520-PDU)	
Spare IR Transmitter, IR Receiver	
DVI-I Female to HDMI Male Adapter Cable (DVI-8511c)	

Note 1: *The 10GbE port is designed to connect to compatible DVIGear products and 10GbE network switches only. Do not connect any device to the 10GbE port of this product unless you are sure it is compatible.*

Note 2: *Video signals will be transported uncompressed unless the bandwidth exceeds the limits of 10GbE. For video signals that exceed 10Gbps. of raw data, light compression is employed. For the maximum resolutions shown above, the DN-200 Series employs a compression ratio of about 1.4:1.*

Note 3: *DN-150 Series uses lightweight compression for some high bit rate formats (e.g. 4K /60p), which adds a few extra lines of latency.*

Note 4: *A system may operate concurrently in Matrix Switching and Video Wall modes.*

Note 5: *The DisplayNet Server® is required for matrix switching operation. Please see the DisplayNet DN-150 Series Hardware Manual for details on the DisplayNet Server specifications, installation, and use.*

All specifications are subject to change without notice.

© 2021 DVIGear, Inc. All Rights Reserved

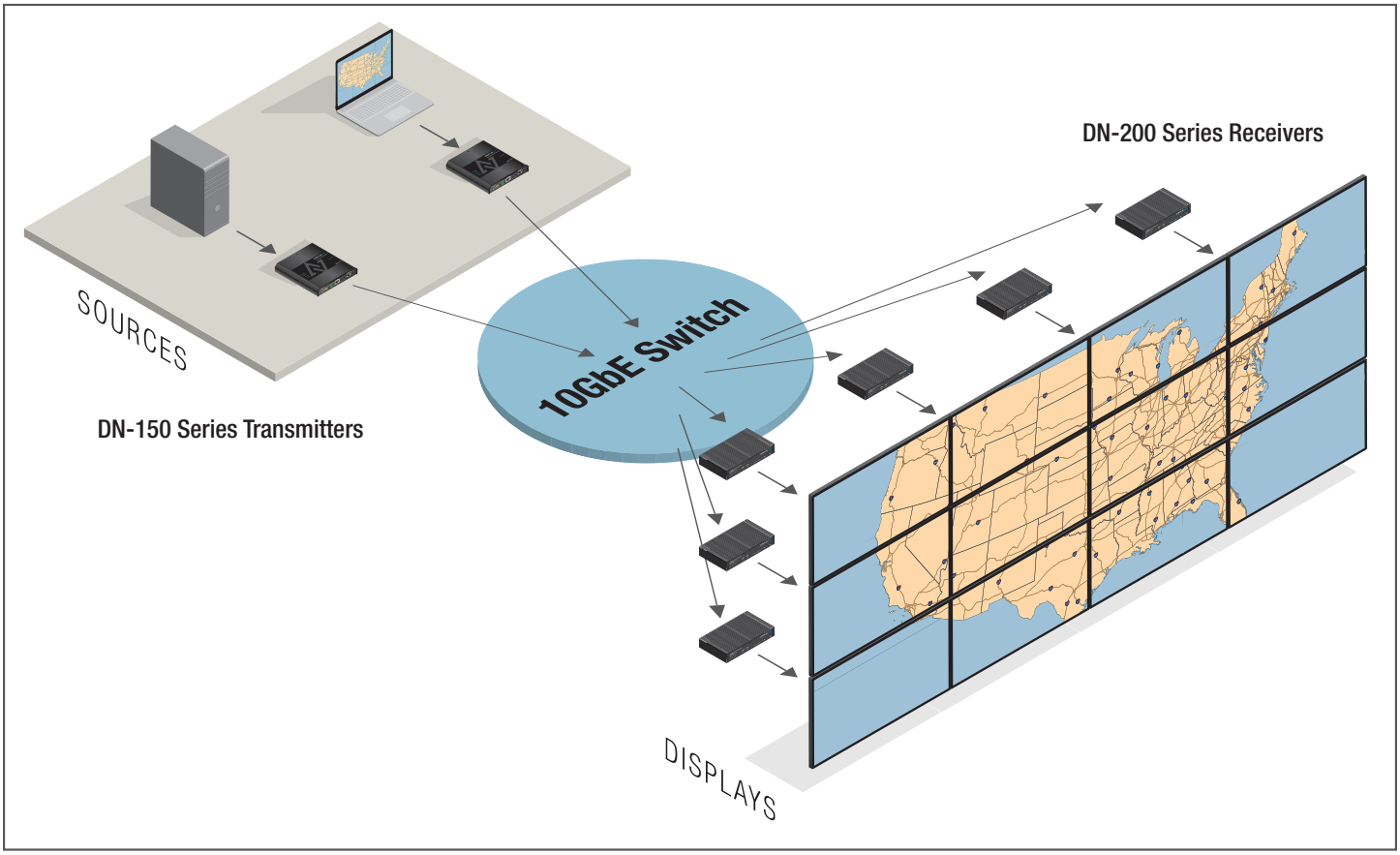
PART OF THE DISPLAYNET ECOSYSTEM

The DN-150 Series is fully compatible with DN-200 Series transmitters and receivers. Many of the DN-200 Series' advanced features are available when used with a DN-150 device. The table below provides an overview of the features and interoperability between these DisplayNet models:

Feature	Transmitter	DN-200		DN-150	
	Receiver	DN-200	DN-150	DN-200	DN-150
Point-to-Point Extension		✓	✓	✓	✓
Matrix Switching		✓	✓	✓	✓
Fast-Switched Video		✓	X	✓	X
Video Walls		✓	X	✓	X
Video Scaling		✓	X	✓	X
Multiviewer		✓	X	X	X
HDMI Audio Downmixing		✓	✓	X	X

INTEROPERABILITY DIAGRAM

The following diagram is an example of how DN-150 Series hardware can be integrated into a DN-200 Series system:



© 2019 DVIGear, Inc. All Rights Reserved