



Avid® DNxchange™ is a groundbreaking I/O device that enables broadcasters to work with high-definition media without the need to upgrade their standard-definition serial digital interfaces and routers.

Using the rack-mountable, single RU Avid DNxchange device, postproduction and broadcast facilities can encode analog HD signals from cameras, switchers, routers, and decks into Avid DNxHD® media—which delivers mastering quality HD media within the bandwidth of SD video files. Once the HD-SDI material is encoded to the Avid DNxHD format, users can easily move the HD media over existing SD-SDI infrastructures in their facilities. In addition, professionals can then use the Avid DNxchange device to convert the media back into uncompressed HD files and output the media to any device with an HD-SDI interface. This makes the transition to HD production simpler and less expensive—while still ensuring the highest-quality picture.

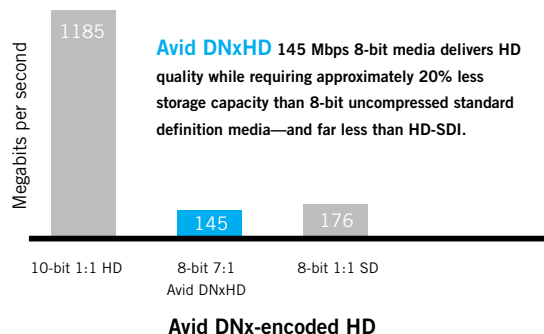
Simpler HD deployment

Avid DNxchange is designed to give broadcasters and postproduction operators an easy way to begin working with HD media without having to replace the widely deployed SDI and router technologies they have in place today. Most organizations have made significant investments to the underlying infrastructure within their facilities, and Avid DNxchange helps to preserve the value of those investments while facilitating the transition to HD. With Avid DNxchange, broadcasters can leverage the technology model they've established for producing news in SD, and avoid the painful step of deploying an entirely new HD infrastructure that could cost millions of dollars.

Beauty without the bandwidth

Most popular compressed HD formats do not natively support the full HD raster. Rather, they employ raster downsampling to reduce bandwidth. But downsampling can make HD images look softer, reducing the high frequency detail in the image, and can generate unwanted artifacts over multiple generations of postproduction processing. The Avid DNxHD codec is specifically designed for nonlinear editing and multi-generation compositing, including collaborative postproduction and broadcast news environments. It maintains the full raster of the active video, using two-pass encoding to sample every available pixel within the image.

The DNxchange I/O device converts HD material coming from a high-definition SDI source into Avid DNxHD encoded media, and feeds that stream into the SDI infrastructure. It also takes the Avid DNxHD SDI output and converts it to HD SDI. But it does all this without throwing data away to make it fit, because this is not accomplished by performing an up-convert or a down-convert like many other technologies. Instead, the 145 Mb Avid DNxHD signal is positioned into the same space as a standard SD signal. The full image is transported over the standard SDI signal path, but it's routed, switched, and stored in this optimal HD file format. Avid DNxHD encoding is far higher quality than MPEG-compressed HD or other techniques for squeezing HD video into limited bandwidth.



Input HD signal

Incoming HD SDI is converted to Avid DNxHD and transported in an SDI stream.



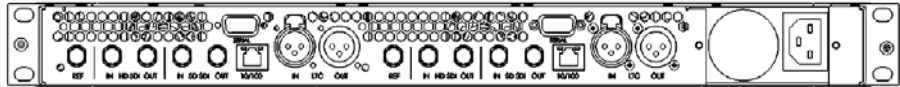
Output HD signal

Media for output is sent to DNxchange and converted to HD SDI.



Product highlights

Only Avid can offer the revolutionary, award-winning HD technology—Avid DNxHD. This encoding is engineered to let broadcast production and postproduction facilities easily move HD media using the infrastructure they own today. The Avid DNxHD encoding technology within the Avid DNxchange device provides HD signal mobility without compromising quality, to offer flexibility and time savings that other HD technologies simply cannot match.



Full chassis shown with dual DNxchange modules

Rear Panel Connections—each module:

- Reference in: 1 BNC connector
- SD SDI in: 1 BNC connector
- Ethernet remote RJ-45 connector
- HD SDI in: 1 BNC connector
- SD SDI out: 1 BNC connector
- LTC in: 1 XLR female connector
- HD SDI out: 1 BNC connector
- Serial remote 9-pin female D connector, RS-232C
- LTC out: 1 XLR male connector

System specifications (per module)

Dimensions

- Inches: 19.00 (w) x 1.75 (h) x 18.78 (d)
- cm: 48.26 (w) x 4.44 (h) x 47.70 (d)
- Rack Units: 1RU

Weight

- pounds: 20
- kilograms: 9.07

Power

- 100 to 240 VAC, 50/60 Hz auto ranging, 150 watts

Environmental

- 10° C to 35° C, 90 % RH non-condensing

Audio

- 8 channels
- 48 kHz sampling
- Embedded audio

Video

- 1 channel record or 1 channel play
- 525/625 selectable

Video input

- 1 SD SDI SMPTE 259 compatible in
 - NTSC ie 525 @ 29.97 Hz
 - PAL ie 625 @ 25 Hz
- 1 HD SDI SMPTE 292 compatible in
 - 720p @ 59.94 Hz
 - 720p @ 50 Hz
 - 1080i @ 59.94 Hz
 - 1080i @ 50 Hz

Video Output

- 1 SD SDI SMPTE 259 out
- 1 HD SDI SMPTE 292 out useable for monitoring during encode

Control and synchronization

External control

- Application Program Interface:
 - 10/100 Ethernet
 - RS232 C

Manual control

- On/Off switch

Timecode

- LTC SMPTE 12M balanced I/O

Output timing

- Genlock to BB (NTSC/PAL)

Closed caption

- Preserved through transport within the device

Data

- Ethernet 10 Base-T, 100 Base-T

Key benefits

Flexibility

- Capture and output HD via industry-standard HD-SDI input/output
- Utilize existing standard-definition SDI networks and routers to transport HD anywhere in the facility

Quality

- Real-time hardware encoding of the only HD technology specifically designed for postproduction and broadcast processes: Avid DNxHD encoding
- Initial supported resolutions include: 1080i 59.94, 50 fps; 720p 59.94, 50 fps
- Avid DNxHD encoding provides mastering-quality HD media with the storage and bandwidth footprint of uncompressed SD media

Efficiency

- Convert your facility infrastructure to full-quality HD for a fraction of the cost of HD-SDI
- Supports 8-bit Avid DNxHD encoding settings
- 1RU form factor simplifies installation and saves space

System specifications subject to change

Avid Total Services

Providing faster return on your investment by getting your systems and personnel up and running quickly, maximizing workflow efficiency, and meeting your production schedules. To learn more about Avid Total Services, please visit: www.avid.com/services.

To learn more—visit www.avid.com/DNxchange

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