



Dalet Brio is an innovative and cost-effective platform for broadcast customers looking for non-proprietary hardware to digitize and playback their content, to either complement or replace their existing video servers.

## Flexible Codec Support

Dalet Brio supports a very wide range of software codecs. In order to ensure broad interoperability, industry-standard wrappers such as QuickTime & MXF are supported, allowing seamless workflow integration with third-party NLEs and Dalet production tools. Dalet Brio can play any supported files, including a mix of SD and HD, on the same timeline, back-to-back with dynamic cross-, up- and down conversion of the video signal, as well as the video signal, aspect ratio modifications.

## Rich Feature Set

Dalet Brio is designed to run as a standalone video server, or to seamlessly integrate with other applications to meet the needs of Sports, News, Production, Program Management and Archive workflows. Dalet Brio can also be controlled using VDCP, BVW, FIMS Capture or its RESTful API protocol making it simple to integrate with 3rd party control or automation.

## Proven Reliability

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## Dalet Brio

Built on an IT-based input and output video platform, it seamlessly integrates with Dalet Solutions to provide a highly flexible and scalable end-to-end solution.

Dalet Brio units are designed to ingest and playout broadcast quality video in Proxy, SD, HD and UHD formats. They come in a variety of input / output or local / central storage combinations. Each unit is built on robust IT equipment with built-in redundancy.

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## New in this 3.22 release:

- Brio on Windows Server 2019
- MPEG-DASH profile improvements for Galaxy integration
- Ingest optimization

## From previous recent releases:

- RTMP/RTMPS Playout (YouTube, Facebook live integration)
- MP4 proxy (encoded with NVidia GPU)
- FFV1 encoding
- RTMP Ingest, SRT Ingest & Playout
- MPEG-DASH as a new proxy
- Multi-Brio monitoring with mosaic streaming
- High density SMPTE-2110 ingest and playback
- Matrox Xmio5 SMPTE-2110 cards family support
- Ingest scheduler back up jobs
- Support of NMOS IS-04 v1.3, IS-05 v1.1 and IS-08 (audio mapping)
- Ingest Scheduler automatic channel assignment and job name customization
- Support of JL Cooper SloMo Pro with Media Navigator
- SDI monitoring with graphic overlay
- New streaming technology in MCM and MediaNavigator
- Media Navigator as a playout tool for Galaxy: MOS Integration
- Ingest TS (Transport Stream) without reencoding
- Different LTC reference per input channel

## Configuration

Reconfigurable models with frame synchronizers on inputs and UHD support	On-board Storage Configurations
<p><b>SDI</b></p> <ul style="list-style-type: none"> <li>Brio 4 – 4 reconfigurable i/o multi-rate SD/HD/3G SDI</li> <li>Brio 6 – 6 reconfigurable i/o multi-rate SD/HD/3G SDI (software upgrade to 8 and 12)</li> <li>Brio 8 – 8 reconfigurable i/o multi-rate SD/HD/3G SDI (software upgrade to 12)</li> <li>Brio 12 – 12 reconfigurable i/o multi-rate SD/HD/3G SDI</li> </ul> <p><b>IP</b></p> <ul style="list-style-type: none"> <li>8in/8out IP high density for SMPTE ST-2110 only</li> <li>4in/4out IP basic profile with SMPTE ST-2022-6 or ST-2110</li> <li>Brio IP Flex – Flexible and multi-rate SD/HD/3G with SMPTE-2022-2 and Newtek NDI connectivity</li> </ul>	<ul style="list-style-type: none"> <li>3.2TB - 133 hours @50Mb/s</li> <li>6.6TB - 266 hours @50Mb/s</li> <li>9.8TB - 400 hours @50Mb/s</li> <li>13TB - 530 hours @50Mb/s</li> <li>19,6TB - 800 hours @50Mb/s</li> </ul> <p>Additional local/shared storage available upon request.</p>

## Codec/Wrapper

Wrappers	HD (720p50/59.94, 1080i50/59.94, 1080psf23,98, 1080p23,98, 1080p50/59.94)
<ul style="list-style-type: none"> <li>MXF Op1a, MXF Op Atom</li> <li>QuickTime Reference, QuickTime Self-Contained</li> <li>MP4, AVI, MPG, WMV</li> </ul>	<ul style="list-style-type: none"> <li>DVCPProHD</li> <li>XDCAM HD - 4:2:0 (18-25-35 Mb/s) - 4:2:2 (50 Mb/s)</li> <li>Avid DNxHD® 120/145 (8-bit), 185/220 (8-bit), 185x/220x (10-bit)</li> <li>Apple ProRes 422LT-422-422HQ-444</li> <li>AVC-Intra Class 50/100</li> <li>Sony XAVC Intra and Long GOP</li> <li>Panasonic AVC-LongG (playback only)</li> <li>MPEG-4 SSiP SQ/Lite</li> <li>MPEG-2@HL - 4:2:0 I-Frame 5-80 Mb/s - 4:2:2 Long GOP 5-300 Mb/s</li> <li>FFV1 (Ingest only)</li> <li>JPEG-2000 (playback only, optional)</li> <li>Uncompressed</li> </ul>
<p><b>Proxy</b></p> <ul style="list-style-type: none"> <li>MP4 H264/AAC - Configurable profile/level/GOP size/bitrate/resolution</li> <li>WMV</li> <li>DALET MPEG-2 Proxy</li> <li>MPEG-DASH</li> </ul>	
<p><b>SD (PAL, NTSC)</b></p> <ul style="list-style-type: none"> <li>DV25, DV50, DVCPPro25, DVCPPro50</li> <li>D10 IMX 30-40-50</li> <li>MPEG-2@ML - 4:2:0 I-Frame 2-15 Mb/s - 4:2:2 Long GOP 10-50 Mb/s</li> </ul>	<p><b>UHD (up to 60p)</b></p> <ul style="list-style-type: none"> <li>Apple ProRes 422LT-422-422HQ-444</li> <li>Sony XAVC 4K Intra Class 300 and 480 (CBG and VBR)</li> <li>Avid DNxHR® (HQX, HQ, SQ, LB)</li> </ul>

## General Specifications

Video Specifications	Video Over IP specifications	Redundancy
<ul style="list-style-type: none"> <li>SD SDI: SMPTE ST-259M, ITU-R601, 525/625-line component, 10-bit</li> <li>HD-SDI: SMPTE ST-292M, 10-bit</li> <li>3G-SDI: SMPTE ST-424M, 10-bit</li> <li>75 Ohms BNC</li> <li>ITU-R BT.601 (data and electrical)</li> </ul>	<ul style="list-style-type: none"> <li>SMPTE ST-2110</li> <li>SMPTE ST-2022-7</li> <li>SMPTE ST-2059 for PTP</li> <li>NEWTEK NDI</li> <li>RTMP/RTMPS</li> <li>SRT</li> <li>SMPTE ST-2022-2</li> </ul>	<ul style="list-style-type: none"> <li>Dual hot swappable power supplies</li> <li>RAID1 for system drives, RAID50 or RAID6 for data drives</li> <li>Hot spare drives</li> <li>Dual 10Gb or Quad 1 Gb Eth network attachment</li> <li>Dual FC attachment</li> </ul>
Dynamic Conversions	Dimensions	Connectivity
<ul style="list-style-type: none"> <li>Output: PAL &lt;-&gt; 1080i50 &amp; PAL &lt;-&gt; 720p50</li> <li>Output: NTSC &lt;-&gt; 1080i59.94, NTSC &lt;-&gt; 720p59.94</li> <li>Output: 720p59.94 -&gt; 1080p59.94</li> <li>Input: PAL -&gt; 1080i50 &amp; NTSC -&gt; 1080i59.94</li> <li>Input: SMPTE 2110 720p -&gt; 1080p</li> <li>Aspect ratio: AFD and WSS support (per channel)</li> </ul>	<ul style="list-style-type: none"> <li>Width: 44.55 cm (17.54 in.)</li> <li>Height: 2 RU 8.9 cm (3.5 in.)</li> <li>Depth: 74.93 cm (29.5 in.)</li> <li>Weight: 28 kg (60 lbs.) maximum</li> </ul>	<ul style="list-style-type: none"> <li>Four 100/1000Base-T Ethernet ports and Two 10Gb Ethernet</li> <li>One USB 3.0 front, two USB 3.0 rear</li> <li>One 15-pin SVGA</li> <li>Multi-serial ports board (optional)</li> </ul>
Audio Specifications	Closed Caption specifications	File transfer protocols
<ul style="list-style-type: none"> <li>Input: 48 kHz, 16-bit, 20-bit or 24-bits digital audio PCM</li> <li>Audio clock genlocked to video ref (SMPTE 272M and AES11-1997)</li> <li>Video clip with supported audio format can be played back-to-back</li> <li>Dolby-E pass-through.</li> </ul>	<ul style="list-style-type: none"> <li>Preservation of Captions in ingest and playout (CEA-608/708, OP-42/47)</li> <li>OP-42/47 insertion from STL</li> </ul>	<p>CIFS, FTP, Amazon S3, Interplay</p>
Reference Genlock	Special Modes	Special Modes
<ul style="list-style-type: none"> <li>Analog black burst reference (tri-level or bi-level), SDI input as reference or free running mode.</li> <li>Sub-pixel adjustment at 0.9 ns/step with respect to genlock in SD</li> <li>Sub-pixel adjustment at 0.7 ns/step with respect to genlock in HD</li> <li>Flywheel on genlock</li> </ul>	<ul style="list-style-type: none"> <li>Slow motion</li> <li>Video + key</li> <li>2D Graphics engine on each output channel</li> <li>Loop recording with extraction and time delay</li> <li>Ingest Once Write Many</li> </ul>	<ul style="list-style-type: none"> <li>Slow motion</li> <li>Video + key</li> <li>2D Graphics engine on each output channel</li> <li>Loop recording with extraction and time delay</li> <li>Ingest Once Write Many</li> </ul>
Embedded audio tracks	Timecode	Power requirements
<ul style="list-style-type: none"> <li>16 tracks embedded per channel SDI (8AES-EBU)</li> <li>Supports SDI embedded audio compliant with SMPTE 272M (SD) and SMPTE 299M (HD).</li> </ul>	<ul style="list-style-type: none"> <li>Up to 8 unbalanced LTC inputs in accordance with SMPTE 12M</li> <li>LTC and VITC file reader/writer (ANC-TC)</li> </ul>	<ul style="list-style-type: none"> <li>Dual redundant Power supply, 750W hot swap</li> <li>50-60 Hz, 100-240 VAC</li> </ul>
Control	Discrete AES/EBU audio tracks	Environmental characteristics
<ul style="list-style-type: none"> <li>BVW, VDCP over serial and IP</li> <li>FIMS Capture v1.1 and FIMS Transfer v1.3 - RESTful implementation</li> <li>Administration, Players, Ingest Scheduler API (RESTful)</li> <li>AMWA NMOS IS-04, IS-05 and IS-08 (audio mapping) support</li> </ul>	<ul style="list-style-type: none"> <li>Brio 4/6/8/12: Pool of 32 tracks (16 for inputs, 16 for outputs)</li> </ul>	<ul style="list-style-type: none"> <li>Operating temperature: +10°C to +35°C</li> <li>Non-operating temperature (not in use): -30°C to +60°C</li> </ul>
Video Preview	Monitoring	Video Playback
<ul style="list-style-type: none"> <li>Customizable text overlay per channel</li> <li>Streaming multi-viewer for remote preview of multiple Brio channels in a web browser.</li> </ul>	<ul style="list-style-type: none"> <li>SNMP</li> <li>Brio REST API</li> </ul>	<p>Any supported format can be played seamlessly back-to-back</p>