DALET

DALET Brio

# V3.21 Datasheet

## 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

- With more than 1000 deployments for news, channel automation, MAM, QC and Sports production, Dalet Brio has a successful track record that spans just about every broadcast server workflow scenario. More than its versatility, Brio has proven its load tolerance and scalability capabilities, supporting large content producers and broadcasters.

## Dalet Brio

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.

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.

## New in this version: V3.21

- RTMP/RTMPS Playout (YouTube, Facebook live integration)
- MP4 proxy (encoded with NVidia GPU)
- FFV1 encoding

## New in previous versions:

### V3.20:

- RTMP Ingest, SRT Ingest & Playout
- MPEG-DASH as a new proxy
- Multi-Brio monitoring with mosaic streaming

### V3.19:

- High density SMPTE-2110 ingest and playback
- Matrox X.mio5 SMPTE-2110 cards family support
- Ingest scheduler back up jobs

### V3.18:

- 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

### V3.17:

- 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

### V3.16:

- Different LTC reference per input channel
- JT-NM TR-1001-1:2018 support

## Dalet Brio Configurations

Reconfigurable models with frame synchronizers on inputs and UHD support
Brio 4 – 4 reconfigurable i/o multi-rate SD/HD/3G SDI
Brio 6 – 6 reconfigurable i/o multi-rate SD/HD/3G SDI (software upgrade to 8 and 12)
Brio 8 – 8 reconfigurable i/o multi-rate SD/HD/3G SDI (software upgrade to 12)
Brio 12 – 12 reconfigurable i/o multi-rate SD/HD/3G SDI

IP support
8in/8out IP high density for SMPTE ST-2110 only
4in/4out IP basic profile with SMPTE ST-2022-6 or ST-2110
Brio IP Flex – Flexible and multi-rate SD/HD/3G with SMPTE-2022-2 and Newtek NDI connectivity

### On-board Storage Configurations

3.3TB - 133 hours @50Mb/s
6.6TB - 267 hours @50Mb/s
9.8TB - 400 hours @50Mb/s
13TB - 530 hours @50Mb/s
22TB - 850 hours @50Mb/s

Additional local/shared storage available upon request.

## Codec/Wrapper Support

### Wrappers (codec dependent)

MXF Op1a, MXF Op Atom
QuickTime Reference, QuickTime Self-Contained
MP4, AVI, MPG, WMV

### Proxy

MP4 H264/AAC - Configurable profile/level/GOP size/bitrate/resolution
WMV
DALET MPEG-2 Proxy
MPEG-DASH

### SD (PAL, NTSC)

DV25, DV50, DVCPro25, DVCPro50
D10 IMX 30-40-50
MPEG-2@ML - 4:2:0 I-Frame 2-15 Mb/s - 4:2:2 Long GOP 10-50 Mb/s

### HD (720p50/59.94, 1080i50/59.94, 1080psf23,98, 1080p23,98, 1080p50/59.94)

DVCProHD
XDCAM HD - 4:2:0 (18-25-35 Mb/s) - 4:2:2 (50 Mb/s)
Avid DNxHD® 120/145 (8-bit), 185/220 (8-bit), 185x/220x (10-bit)
Apple ProRes 422LT-422-422HQ-444
AVC-Intra Class 50/100
Sony XAVC Intra and Long GOP
Panasonic AVC-LongG (playback only)
MPEG-4 SStP SQ/Lite
MPEG-2@HL - 4:2:0 I-Frame 5-80 Mb/s - 4:2:2 Long GOP 5-300 Mb/s
FFV1 (Ingest only)
JPEG-2000 (playback only, optional)
Uncompressed

### UHD-1 (up to 60p)

Apple ProRes 422LT-422-422HQ-444
Sony XAVC 4K Intra Class 300 and 480 (CBG and VBR)
Avid DNxHR® (HQX, HQ, SQ, LB)

## General Specifications

### Video specifications

SD SDI: SMPTE ST-259M, ITU-R601, 525/625 line component, 10-bit
HD-SDI: SMPTE ST-292M, 10-bit
3G-SDI: SMPTE ST-424M, 10 bit
75 Ohms BNC
ITU-R BT.601 (data and electrical)

### Dynamic conversions

Output: PAL <-> 1080i50, PAL <-> 720p50
Output: NTSC <-> 1080i59.94, NTSC <-> 720p59.94, 720p59.94 -> 1080p59.94
Input: PAL -> 1080i50, NTSC -> 1080i59.94, SMPTE 2110 720p -> 1080p
Aspect ratio: AFD and WSS support for aspect ratio conversion (per channel)

### Special modes

Slow motion
Video + key
2D Graphics engine on each output channel
Loop recording with extraction and time delay
Ingest Once Write Many

### Video playback

Any supported format can be played seamlessly back-to-back

### Embedded audio tracks

16 tracks embedded per channel SDI (8AES-EBU)
Supports SDI embedded audio compliant with SMPTE 272M (SD) and SMPTE 299M (HD).

### Discrete AES/EBU audio tracks

Brio 4/6/8/12: Pool of 32 tracks (16 for inputs, 16 for outputs)

### Video Preview

Customizable text overlay per channel
Streaming multi-viewer for remote preview of multiple Brio channels in a web browser

### Video over IP specifications

SMPTE ST-2022-2
SMPTE ST-2022-6
SMPTE ST-2022-7
SMPTE ST-2059 for PTP
SMPTE ST-2110
NEWTEK NDI
RTMP/RTMPS
SRT

### Audio specifications

Input: 48 kHz, 16-bit, 20-bit or 24-bits digital audio PCM
Audio clock genlocked to video reference in accordance with SMPTE 272M and AES11-1997
Any video clip with supported audio format can be played seamlessly back-to-back
Dolby-E pass-through.

### Closed Caption specifications

Preservation of Captions in ingest and playout (CEA-608/708, OP-42/47)
OP-42/47 insertion from STL

### Reference Genlock

Analog black burst reference (tri-level or bi-level), SDI input as reference or free running mode.
Sub-pixel adjustment at 0.9 ns/step with respect to genlock in SD
Sub-pixel adjustment at 0.7 ns/step with respect to genlock in HD
Flywheel on genlock.

### Timecode

Up to 8 unbalanced LTC inputs in accordance with SMPTE 12M
LTC and VITC file reader/writer (ANC-TC)

### Control

BVW, VDCP over serial and IP
FIMS Capture v1.1 and FIMS Transfer v1.3 - RESTful implementation
Administration, Players, Ingest Scheduler API (RESTful)
AMWA NMOS IS-04, IS-05 and IS-08 (audio mapping) support

### Redundancy

Dual hot swappable power supplies
RAID1 for system drives, RAID50 or RAID6 for data drives
Hot spare drives
Dual 10Gb or Quad 1 Gb Eth network attachment
Dual FC attachment

### Monitoring

SNMP
Brio Administration API (RESTful)

### Connectivity

Four 100/1000Base-T Ethernet ports and Two 10Gb Ethernet
One USB 3.0 front, two USB 3.0 rear
One 15-pin SVGA
Multi-serial ports board (optional)

### File transfer protocols

CIFS, FTP, Amazon S3, Interplay

### Dimensions

Width: 44.55 cm (17.54 in.)
Height: 2 RU 8.9 cm (3.5 in.)
Depth: 74.93 cm (29.5 in.)
Weight: 28 kg (60 lbs) maximum

### Power requirements

Dual redundant Power supply, 750W hot-swap
50-60 Hz, 100-240 VAC

### Environmental characteristics

Operating temperature: +10°C to +35°C
Non-operating temperature (not in use): -30°C to +60°C

## Want to know more?

Dalet Digital Media Systems software solutions are used by Content Owners, Broadcasters, Sports Organizations and Post Production Facilities worldwide.

To find out more, contact your local Dalet channel partner, or contact Dalet:

**ddms@dalet.com**
**www.dalet.com**

**Headquarters:**

16, rue Rivay - 92300 Levallois-Perret - France

+33 1 41 27 67 00