

T2 4K Series

Digital Recorder/Players



T2 4K digital recorder/players models bring 4K DCI, 4K UHD or full high-definition capture and playback to the video professional.

The T2 4K digital recorder/players from Grass Valley, a Belden Brand, are 4K DCI, 4K UHD or HD/SD audio/video layout centers.

The front-panel transport controls have the look and feel of a traditional VTR. In 4K mode (DCI or UHD), one record or one output channel supports 4K content. In HD/SD mode one record and two output channels support SD and HD content.

The crisp, clear LCD front panel can display high-quality images and is complemented by a software application suite for managing and selecting media clips, clip editing and trimming, and payout — including playlist creation.

Featuring rear-panel video/audio/remote/LTC connectivity, T2 4K can also accept files via USB 3.0, or by data transfer over a standard Gigabit Ethernet network, including Grass Valley HQX, XAVC, XAVC S, XDCAM, P2, AVC-ULTRA, Apple ProRes 422, Avid DNxHD and MPEG-2 files.

Further, T2 4K digital recorder/players can be controlled by video production switchers, presentation mixers and audio mixers — to create a powerful presentation system. Every T2 4K has two payout HD/SD channels for independent editing and previewing, or for delivering content to two different display systems simultaneously, useful for edge-blending and displaying 3D content.

		T2 4K Pro	T2 4K Elite
Mode		HD/SD: 1 in 2 out	
		4K: 1 in 0 out	
		4K: 0 in 1 out	
Storage	System	M.2 SSD 64 GB	
	Data	HDD (RAID-0) 2 TB	SSD (RAID-0) 2 TB
Power supply unit		Single PSU	Redundant PSU
Media card reader		—	SD, SD UHS-II, Compact Flash, SxS, 2.5-inch SSD bay

KEY FEATURES

Recorder/Player

- 4K (2160p) ingest support (4K: 1 in 0 out mode)
- 4K (2160p) playback support (4K: 0 in 1 out mode)
- HD (1080p) ingest and playback support (HD: 1 in 2 out mode)
- Three decks for the price of one — HD 1 record and HD 2 playback channels work independently and simultaneously
- HD 2 channel synchronizes playback for key/fill rolls, edge blend displays, multiscreen and 3D applications
- Chasing playback while ingesting (HD/SD)
- Supports 720p to 1080p/i real-time crossconversion
- Direct ingest to external media/storage device
- Scheduled recording

Import/Export

- Native import/playback for most standard formats
- Multicodec support (transcoding to Grass Valley HQX AVI) for most standard and broadcast formats
- FTP transfer rate limited to maintain playback performance
- Watch folder transfers
- Export to Sony XDCAM drive (U1/U2)

Editing

- Direct access to a media folder with EDIUS and the ability to edit a growing file — AVI (Grass Valley HQX) and MXF (XDCAM). (*Elite only*)
- Export a growing AVI (Grass Valley HQX) file via CIFS
- Export a growing MXF (XDCAM) file via FTP
- Import from Final Cut Pro in QuickTime format using the free Grass Valley HQ codec for Mac onto an exFAT HDD

Front Panel

- Easy-to-use front panel interface and jog/shuttle

Workstation

- Workstation mode included as standard
- Simple on-the-fly editing, including trimming, mark in/out, markers with comments, basic transition effects and insertion of placeholders for playlists
- Keyboard shortcuts and mouse customization on workstation

Remote

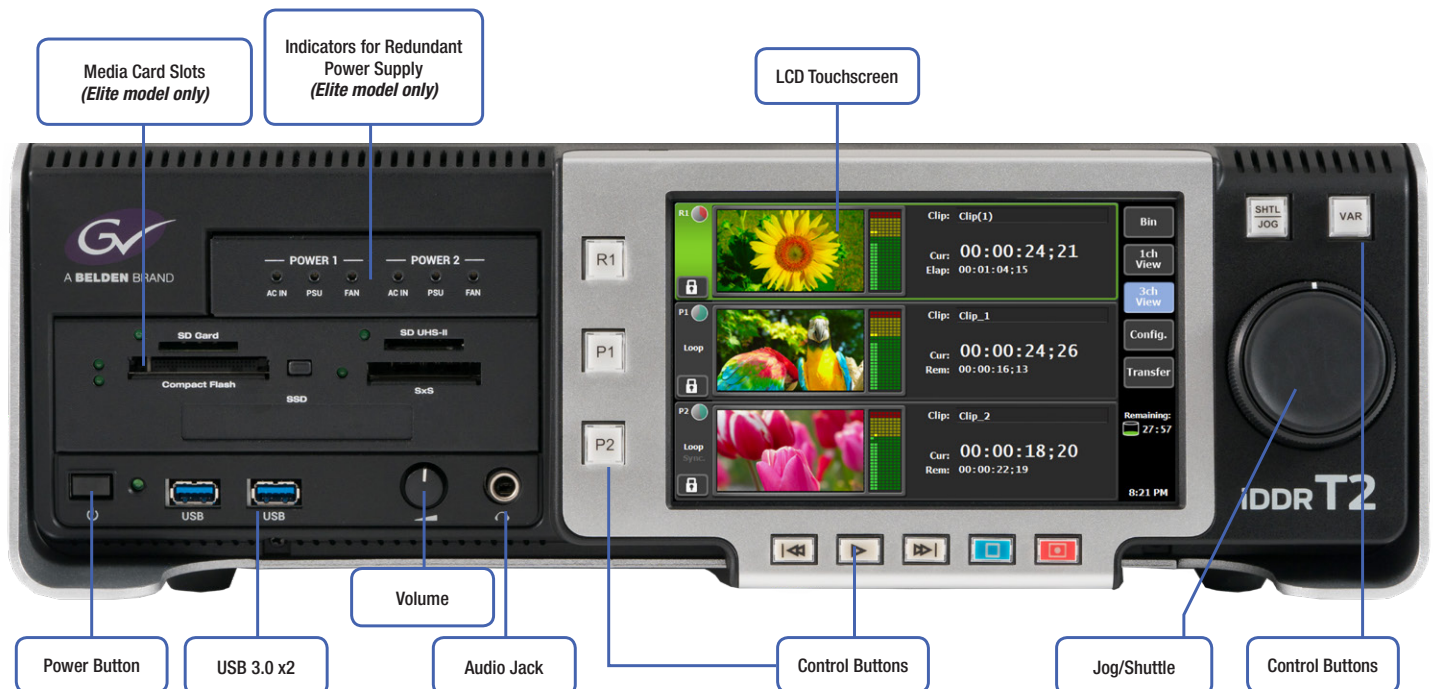
- Synchronized playback using LTC input (Timecode chasing)
- Synchronized playback for multiple T2s using GPI input/RS-422
- Integration support for third-party control (BVW, GPIO and AMP)

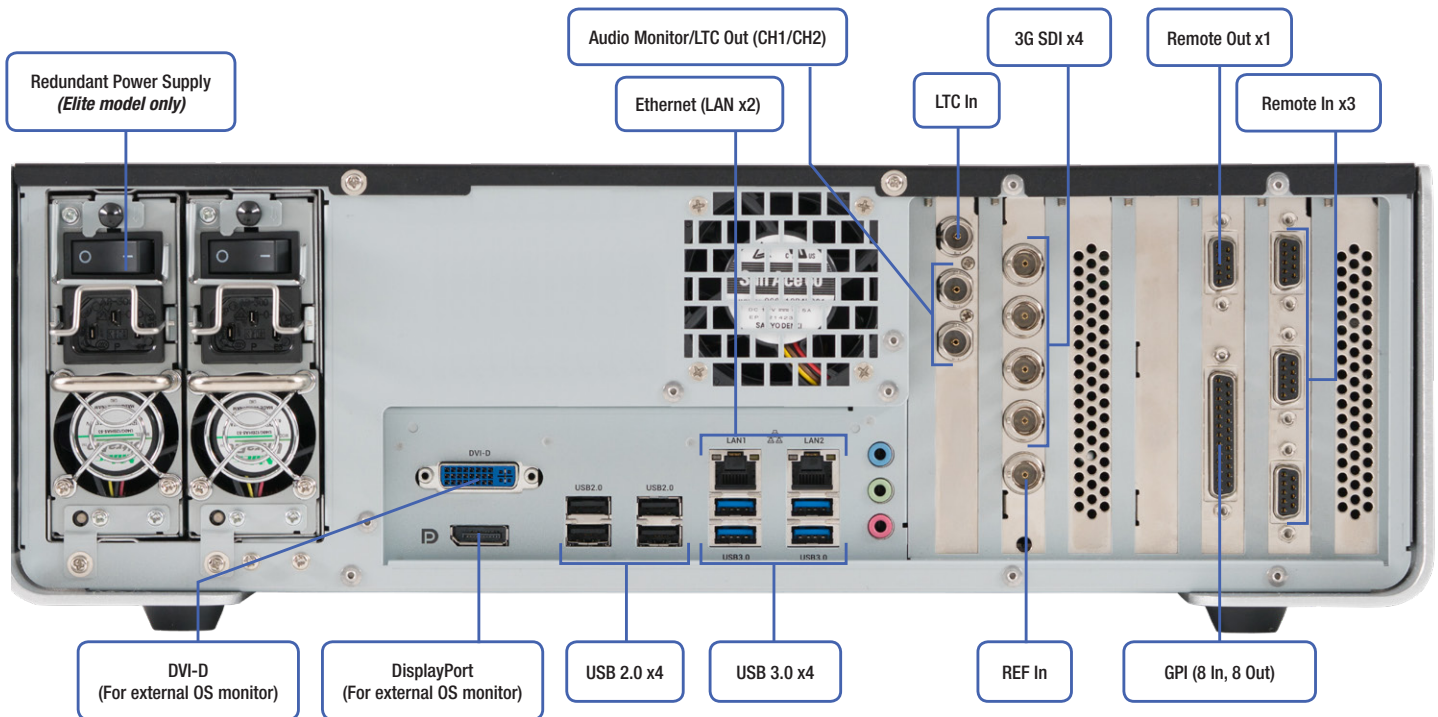
Device

- SDI embedded audio (8 channels)
- Robust design — engineered to withstand punishing live event and mobile production environments
- Redundant power supply (*Elite only*)
- Media card reader (*Elite only*) — SD, SD (UHS-II), CF, SxS, 2.5-inch SSD

Maintenance

- Full data backup and restore feature





ORDERING

218509

KTR4-ELT-CV40 — T2 4K Elite

- 2 TB usable SSD storage: 1 TB SSD x2 (RAID-0)
- Media card reader bay: SD, SD (UHS-II), CF, SxS, 2.5-inch SSD
- Redundant power supply unit
- Direct access to internal storage (CIFS)

Package Contents

- T2 4K Elite unit
- T2 4K read me first
- AC power supply cable x6 (NA/JP x2, UK x2, EMEA x2)
- Registration card for the T2

218493

KTR4-PRO-CV40 — T2 4K Pro

- 2 TB usable HDD storage: 1 TB HDD x2 (RAID-0)
- Single power supply unit

Package Contents

- T2 4K Pro unit
- T2 4K read me first
- AC power supply cable x3 (NA/JP x1, UK x1, EMEA x1)
- Registration card for the T2

Option

600476

iDDR2-RACK-W — T2 Rackmount Kit

Rackmount kit for T2 4K Series and T2 Series 3



Workstation mode.

SPECIFICATIONS

Description

4K/HD Recorder/Player

Model Number

T2 4K Pro: KTR4-PRO-CV40

T2 4K Elite: KTR4-ELT-CV40

Mode

HD/SD: 1 in 2 out

4K: 1 in 0 out

4K: 0 in 1 out

Storage

System:

M.2 SSD

64 GB

Data:

T2 4K Pro: HDD (RAID-0), 2 TB

T2 4K Elite: SSD (RAID-0), 2 TB

Capacity:

3.5 hours: 4K DCI (4096x2160) 59.94p @ Grass Valley HQX (1.2 Gb/s)

7.5 hours: 4K DCI (4096x2160) 29.97p @ Grass Valley HQX (600 Mb/s)

3.5 hours: 4K UHD (3840x2160) 59.94p @ Grass Valley HQX (1.2 Gb/s)

7.5 hours: 4K UHD (3840x2160) 29.97p @ Grass Valley HQX (600 Mb/s)

14 hours: HD (1920x1080) 59.94p @ Grass Valley HQX (300 Mb/s)

28 hours: HD (1920x1080) 59.94i @ Grass Valley HQX (150 Mb/s)

72 hours: HD (1920x1080) 59.94i @ XDCAM HD422 (50 Mb/s)

150 hours: HD (1440x1080) 59.94i @ XDCAM HD (35 Mb/s)

Power Supply Unit

T2 4K Pro: Single PSU

T2 4K Elite: Redundant PSU

Media Card Reader

T2 4K Elite: SD, SD UHS-II, Compact Flash, SxS, 2.5 inch SSD bay

Video Input Format

Format Support: 4K DCI, 4K UHD, HD, SD

Connector: BNC (3G-SDI) x4 (shared with video output)

Codec (4K DCI/4K UHD): AVI — Grass Valley HQX

Codec (HD/SD):

AVI — Grass Valley HQX

MXF — XDCAM HD422, XDCAM HD, IMX, DVCAM

Bit rate:

Up to 1.2 Gb/s (4K DCI/4K UHD 59.94/50)

Up to 600 Mb/s (4K DCI/4K UHD 29.97/25/24/23.98)

Up to 300 Mb/s (1080p 59.94/50)

Up to 150 Mb/s (HD, SD)

Resolution/frame rate:

[4K DCI] 4096x2160p (59.94p, 50p, 29.97p, 25p, 24p, 23.98p)

[4K UHD] 3840x2160p (59.94p, 50p, 29.97p, 25p, 24p, 23.98p)

[HD] 1920x1080p (59.94p, 50p, 29.97p, 25p, 24p, 23.98p),

1920x1080i (59.94i, 50i), 1440x1080p (29.97p, 25p, 23.98p),

1440x1080i (59.94i, 50i), 1280x720p (59.94p, 50p)

[SD] 720x486i (59.94i), 720x576i (50i)

Video Output Format

Format Support: 4K DCI, 4K UHD, HD, SD

Connector: BNC (3G-SDI) x4 (shared with video input)

Codec (4K DCI/4K UHD):

AVI — Grass Valley HQX, Grass Valley Lossless*, Grass Valley Uncompressed*

MXF — H.264/AVC*, Grass Valley HQX

QuickTime — ProRes422*, ProRes4444*, Grass Valley HQX

MP4 — H.264/AVC

XAVC — 4K Intra (480*/300*), QFHD Intra (480*/300*), QFHD Long422 (200*/140*/100*), QFHD Long (150/100/60)

XAVC S — H.264/AVC

P2 — AVC-Intra 4K (422*)

Windows Media — Windows Media Video*

Still Image — Targa*, Windows Bitmap*, JPEG*, TIFF*, PNG*, GIF*, DPX*, YUV Bitmap*

Codec (HD/SD):

AVI — Grass Valley HQX, Grass Valley HQ, Grass Valley Lossless*, Grass Valley Uncompressed*, DVCPRO HD, DVCPRO50, DVCPRO25, DV

MXF — MPEG-2, H.264/AVC, DNxHD (220/145/100/36),

Grass Valley HQX, Grass Valley HQ, DVCPRO HD, DVCPRO50, DVCPRO25, DV, D10/IMX, JPEG2000*

QuickTime — ProRes 422, ProRes 4444*, XDCAM (HD422/HD), XDCAM EX, H.264*, MPEG-4*, Grass Valley HQX, Grass Valley HQ, DVCPRO HD*, DVCPRO 50*, DVCPRO 25*, DV*, Motion JPEG*, Uncompressed*

MP4 — H.264/AVC

XDCAM — XDCAM HD422, XDCAM HD, XDCAM IMX, XDCAM DV, XDCAM EX

XAVC — HD Intra (200, 100, 50), HD Long422 (50/35/25)

XAVC S — H.264/AVC

P2 — AVC-LongG (50/25/12), AVC-Intra (200/100/50), DVCPRO HD, DVCPRO 50, DVCPRO, DV

AVCHD — H.264/AVC

MPEG-2 — PS*, TS*

Windows Media — Windows Media Video*

GXF — Grass Valley HQ**, MPEG-2 (Intra Frame)***, H.264/AVC (Intra Frame)***, DVCPRO HD**, DVCPRO 50**, DVCPRO**, DV**

Still Image — Targa*, Windows Bitmap*, JPEG*, TIFF*, PNG*, GIF*, DPX*, YUV Bitmap*

Note: Some codecs are able to output in one channel only

Bit rate:

Up to 1.2 Gb/s (4K DCI/4K UHD 59.94/50)

Up to 600 Mb/s (4K DCI/4K UHD 29.97/25/24/23.98)

Up to 300 Mb/s (1080p 59.94/50)

Up to 150 Mb/s (HD, SD)

Resolution/frame rate:

[4K DCI] 4096x2160p (59.94p, 50p, 29.97p, 25p, 24p, 23.98p)

[4K UHD] 3840x2160p (59.94p, 50p, 29.97p, 25p, 24p, 23.98p)

[HD] 1920x1080p (59.94p, 50p, 29.97p, 25p, 24p, 23.98p),

1920x1080i (59.94i, 50i), 1280x720p (59.94p, 50p)

[SD] 720x486i (59.94i), 720x576i (50i)

Audio Input Format

Input digital: SDI embedded audio (8 ch)

Audio Output Format

Output digital: SDI embedded audio (8 ch)

Monitor output: BNC x2 (for L ch/R ch) (shared with timecode output)

Headphone: Stereo jack x1

Timecode

Input: BNC x1

Output: BNC x2 (shared with audio monitor output)

Reference

Input: BNC x1 (analog blackburst or HD tri-level sync)

Remote Control

GPIO: D-Sub 25-pin x1 (8 in 8 out)

RS-422 (BWW):

RS-422 (D-Sub 9-pin) for controller x1

RS-422 (D-Sub 9-pin) for device x3

Network: AMP (Advanced Media Protocol)

LAN: RJ45 x 2 (10Base-T/100Base-TX/1000Base-T)

USB:

USB 3.0 x6 (Front x2, Rear x4)

USB 2.0 x4 (Rear x4)

PC Display

DisplayPort x1

DVI-D x1

(DisplayPort and DVI-D cannot be used at the same time)

Mechanical Specifications

Dimensions (W x D x H): 430 x 550 x 140 mm (16.9 x 21.6 x 5.5 in.)

Weight: 16.5 kg (36.4 lbs.)

Operating Temperature: 5°C to 35°C (41°F to 95°F)

Operating Relative Humidity: Max. 80% (non-condensing)

Electric Power Consumption

Up to 200W

* Transcode to AVI (Grass Valley HQX) when importing

** Rewrap to MXF when importing