

## UHD Solutions

Software-based Video Processing for  
Live, Linear, Barker, Replay, D.R. channels

Ultra HD, also named 4K, is now a reality for a large number of linear and live channels around the world, mostly distributed over satellite broadcast and IPTV networks. Some OTT and terrestrial broadcast channels have already started in certain countries.

Indeniably, UHD has enough matured to deeply modify the video landscape along with emerging technologies such as High Dynamic Range [HDR], Wide Color Gamut [WCG ie. BT2020/2100], then followed by High Frame Rate [HFR] at 100/120 fps and finally 8K.

Being an Ultra HD pioneer since 2013, BBright proposes a range of solutions from the affordable UHD multi-stream playout, to feature-rich UHD contribution ingest or decode and up to the most advanced UHD baseband integrated playout for a linear channel.

Working with an UHD expert provides a wealth of experience, allowing to save deployment time with field proven software-based processing fully supporting these new and demanding video workflows.

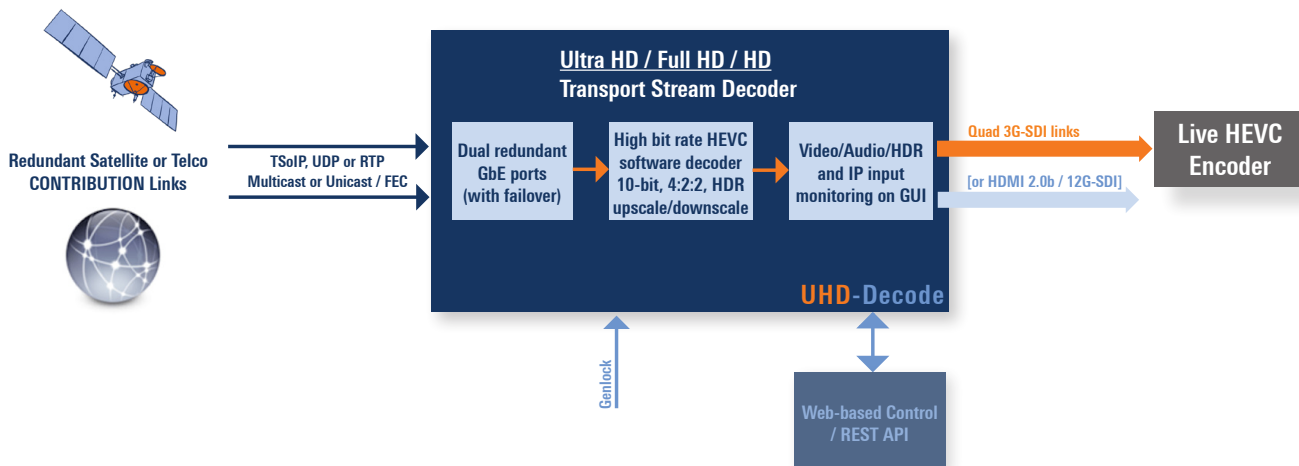


# UHD Solutions Decode - Ingest

## USE-CASE: Ultra HD Transport Stream DECODER

### For Live and Linear Channels Contribution Decoding and Delivery Monitoring

- Ultra HD (3840 x 2160p) at 23.98, 24, 25, 29.97, 30, 50, 59.94, 60 fps. Full-HD (1080p) and HD (1080i / 720p) decoding
- HEVC / H.265, AVC / H.264, 8 or 10-bit, 4:2:0 or 4:2:2 Codec's / Dolby™ Digital, Digital+, AC-4 audio data stream pass-through
- Dual redundant TSoIP Multicast (UDP / RTP) inputs, up to 160 Mbps
- Quad 3G-SDI outputs, Level A and Level B, four quadrants or 2-SI pixels and/or HDMI 2.0b output + 12G-SDI [hardware option]
- HDR compliant: HDR10-PQ and HLG, with signalization metadata pass-through
- Output video resolution independant of TS input video resolution; selectable down-scale and up-scale processing



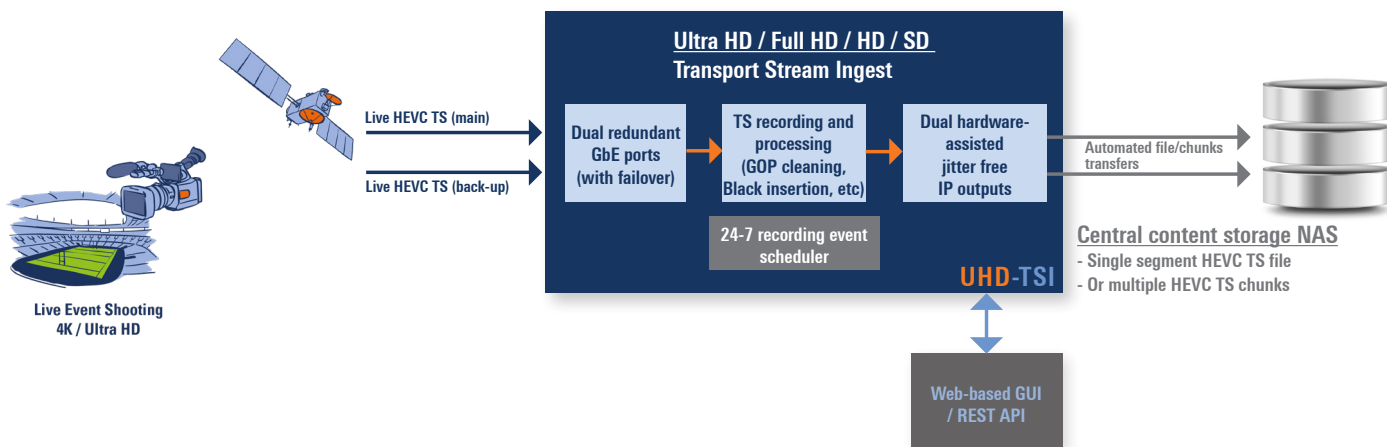
## ORDERING INFORMATION and OPTIONS

- Part number: **UHD-Decode**
- Options: **High bit rate (> 50 Mbps) contribution**  
**HDMI 2.0b output**  
**Dolby™ Digital and Dolby™ Digital+ decoding**

## USE-CASE: Ultra HD Transport Stream INGEST

### For any resolution and High Bit Rate transport stream Live Contribution Recording

- Ultra HD (3840 x 2160p) at 23.98, 24, 25, 29.97, 30, 50, 59.94, 60 fps, and Full-HD / HD / SD transport stream recording
- Dual redundant TSoIP Multicast (UDP or RTP) inputs, with IGMPv3 SSM and FEC CoP3, up to 130 Mbps
- Live stream input monitoring; video thumbnails and audio meters
- Codec agnostic and HDR compliant: HDR10-PQ and HLG
- 24 -7 recording event scheduler on GUI, with manual Start and Stop takeover
- Automated recorded file transfer to central storage (NFS or CIFS protocols)



## ORDERING INFORMATION and OPTIONS

- Part number: **UHD-TSI** (3 TB storage)

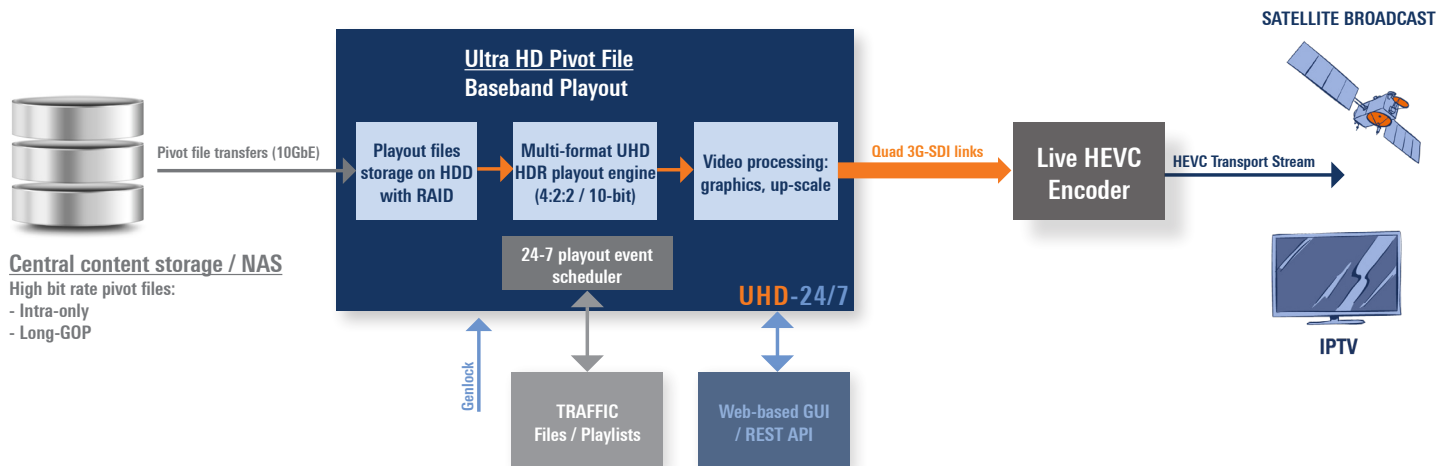


# UHD Solutions Live Playback - TS Playback

## USE-CASE: Ultra HD SDI - Baseband LIVE PLAYOUT

### For advanced Linear Channels with looping playlist or integrated Playout Scheduling and Automation

- Ultra HD output (3840 x 2160p) at 23.98, 24, 25, 29.97, 30, 50, 59.94, 60 fps, with progressive HD up-scale to UHD
- Multiple XAVC, AVC / H.264, HEVC / H.265 and other video codec (up to 4:2:2) pivot file formats
- HDR compliant: HDR10-PQ and HLG
- Multiple logo insertions, as secondary event [option]
- 24 - 7 playout event scheduler on GUI or external traffic playlist import in text format [option]
- Automatic unused content purge and faster than real-time large UHD file ingest



## ORDERING INFORMATION and OPTIONS

Part number: **UHD-24/7** (7 TB storage)

Options: **Integrated playout scheduler and automation**

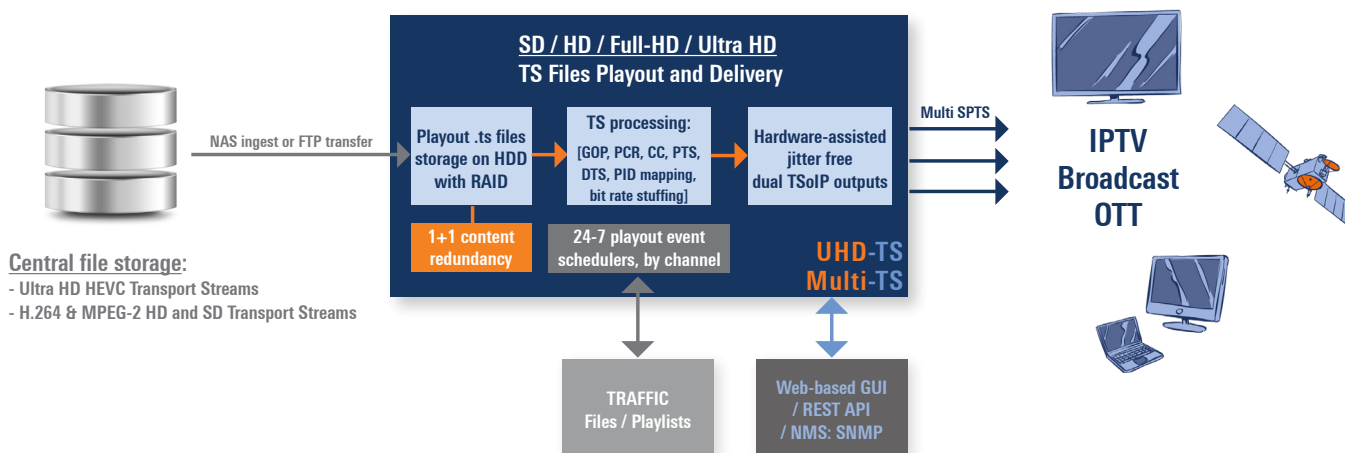
High performance pack for high bit rate HEVC files



## USE-CASE: Multiple Channel Transport Stream PLAYOUT

### For any resolution Linear Channels with looping playlist or integrated Playout Scheduling and Automation

- Ultra HD (3840 x 2160p) at 23.98, 24, 25, 29.97, 30, 50, 59.94, 60 fps, and Full-HD / HD / SD / PIP / Slave channel streaming
- HEVC / H.265, AVC / H.264 and MPEG-2 low-jitter TSolP Multicast (UDP or RTP), with FEC CoP3
- Raw TS, or PID remapping, bit rate stuffing, PCR and Continuity Counter alignment, PTS/DTS re-stamping, GOP cleaning
- HDR compliant: HDR10-PQ and HLG
- Advanced 24 - 7 playout event scheduler on GUI or external traffic playlist import in json, xml, text formats [option]
- Automatic video content replication between Main and Back-up units (1+1 redundancy)



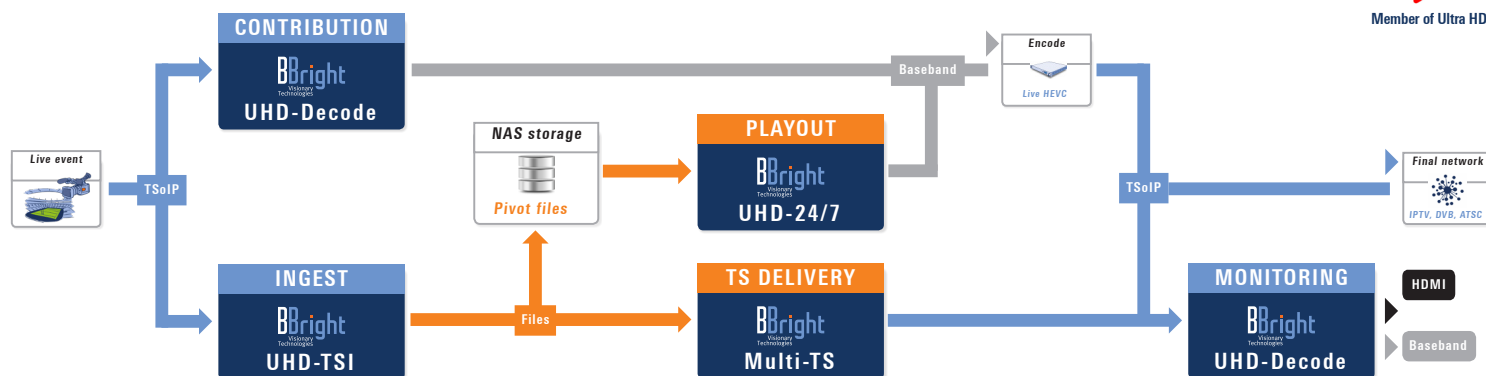
## ORDERING INFORMATION and OPTIONS

Part number: **UHD-TS** (1 TB or 3 TB storage)

**Multi-TS** (3 TB or 7 TB storage)

Software option: **Integrated playout scheduler and automation**





## HFR and 8K Upgrade Paths

■ **High Frame Rate:** **Multi-TS, UHD-TSI, UHD-TS** are software upgradeable to HFR (100/119.88/120 fps)

■ **8K / UHD Phase 2:** **UHD-TS, UHD-TSI** servers are software upgradeable to 8K video resolution

*Please contact sales for more information*

## UHD Solutions Tests - Labs

### UHD-Play, UHD-QC, Mini-TS: Versatile Lab Products for Ultra HD Test, PoC and File Control

■ **UHD-Play** is the legacy market reference Ultra HD SDR/HDR and HFR source from BBright with quad 3G-SDI outputs and allowing to playback fully uncompressed video content. It supports all advanced features such:

- Accept **any resolution, uncompressed or compressed file** for playback output as 2160p, 1080p, 1080i, 1080psf, 720p
- **1080p HFR** at 100, 119.88, 120, 200, 239.76, 240fps
- PQ and HLG **HDR signalization over 3G-SDI**
- Optional State-of-the-Art **SDR to HDR up-conversion algorithm**
- All Dolby™ audio data stream pass-through; Dolby Digital, Digital+, **Dolby E, Dolby AC-4**

■ **UHD-QC** is the newest BBright Ultra HD versatile SDR/HDR player with quad 3G-SDI, 12G-SDI and HDMI outputs allowing to playback with full flexibility HEVC, AVC, MPEG-2 transport streams or files, ProRes, XAVC NLE files.

- Advanced playback controls: **Skip / Fast-Forward / Fast-Rewind / Pause / Frame-by-Frame / Cue In** and **Cue Out** points
- Dolby™ audio data stream pass-through; Dolby Digital, Digital+, **Dolby Atmos, Dolby AC-4**
- PQ and HLG **HDR signalization over 3G-SDI** and **HDMI 2.0b**

■ **Mini-TS** is a lightweight, fanless and portable / lab version of BBright Multi-TS allowing to stream 3x Ultra HD channels over IP (individual SPTS Multicast in UDP per channel). This is an ideal source to test IP STB, professional decoders and also exercise an entire TSolP delivery chain.

- **Extensive Transport Stream reprocessing** for CC, PCR, video and audio PTS / DTS, PID remapping
- No video decoding/re-encoding to preserve the original encoded TS file quality
- **Slave channel can be synchronized** with another Main payout channel
- Optional **embedded scheduler** and **playout event automation** (using .txt, .json, .xml traffic files)



August 2018, rev. 1.50. Product specifications are subject to changes without notice and are not contractual