GEM

GEM Critical Mix Review Audio Delivery Specifications

Purpose

Critical Mix Reviews take place in GEM's technical review rooms, offering calibrated, reference-standard environments for detailed in-progress notes and final mix approvals. These sessions are intended to facilitate precise audio evaluation only.

Recommended Delivery Formats

Preferred for Atmos review:

- BWAV ADM file, with a separate video guide

Other Options:

- Pro Tools session plus separate video guide
- Pro Tools session with video guide embedded in session
- 5.1 audio stems, plus separate video guide (only for dedicated 5.1 mix review)

GEM review rooms operate on Pro Tools v2024.10

When delivering assets via GEM Content Hub, audio files may be alone, within session folders, or grouped with related media. If the video guide is delivered separately (not embedded), include a note specifying which guide file should be pulled for proper sync.

GEM

Core Audio Specifications

- **Sample Rate:** 48 kHz for all formats
- **Frame Rate:** All audio must sync to the frame rate of its corresponding video
- Supported Codecs for Pro Tools Playback:
  - QuickTime (MOV/MP4/M4V)
  - DNxHR / DNxHD
  - Apple ProRes 422 (HQ, LT, Proxy)
  - H.264 (CFR only)

File Naming Convention

- Assets should clearly indicate frame rate, sample rate, version number, and channel configuration.
  - Example: `project_s01e02_v03_FXSTEM_6ch_48k_24b_23976`

- Clearly label each stem (FX, MX, DX, etc.).

Audio Stem Delivery

When providing stems outside of a Pro Tools session, ensure they start at the same timecode as the video guide for accurate sync.

Content Hub/PIX File Format Specs

MP4 or MOV

- Codec: AAC-LC
- Sample Rate: 48 kHz
- Channel Layouts:
  - Interleaved Stereo: L, R
  - Interleaved Matrixed Stereo: LT, RT

GEM

Editorial Cut Turnovers

OPTION 1: MP4/MOV

- Codec: HE-AACv1, HE-AACv2, or AAC-LC
- Sample Rate: 48 kHz
- Channels:
    - Interleaved Stereo: L, R
    - Interleaved Matrixed Stereo: LT, RT
    - Interleaved 5.1: C, L, R, Ls, Rs, LFE

OPTION 2: MOV ONLY

- Codec: PCM
- Sample Rate: 48 kHz
- Channels: Properly tagged within the MOV container

Supported Channel Layouts

- Stereo, Matrixed, 5.1, Multi-track arrangements (see the technical guide for details)

GEM

GEM Content Hub Editorial Cut Turnover Audio Specifications

H.264 (MP4 or MOV) Option 1

Parameter	Value
Codec	HE-AACv1, HE-AACv2, or AAC-LC
Sample Rate	48 kHz
Bit Depth	16 or 24 bit
Track Count	1

Channel Configuration	Mapping
Interleaved Stereo	L, R

GEM

Interleaved Matrixed	LT, RT
Interleaved 5.1	C, L, R, Ls, Rs, LFE

H.264 (MOV Only) Option 2 – Uncompressed PCM

Parameter	Value
Codec	PCM
Sample Rate	48 kHz (Big/Little Endian)
Bit Depth	16 or 24 bit
Track Count	1, 2, 3, 7, or 8

Configuration	Mapping

GEM

Single Track Stereo	L, R
Single Track Stereo (Matrixed)	L, R
Interleaved 5.1 + Stereo (Matrixed)	L, R, C, LFE, LS, RS, LT, RT
2-Track Discrete Stereo	L / R
2-Track Discrete Stereo (Matrixed)	LT / RT
Interleaved 5.1 + Stereo Matrix Interleaved	L, R, C, LFE, LS, RS / LT, RT
3-Track: Discrete Stereo (Matrixed)+Interleaved 5.1	L, R, C, LFE, LS, RS / LT / RT
8-Track: Discrete 5.1 + Discrete Stereo (Matrixed)	L / R / C / LFE / LS / RS / LT / RT

GEM

ProRes 422 (HQ) MOV

Parameter	Value
Codec	PCM
Sample Rate	48 kHz
Bit Depth	16 or 24 bit
Track Count	1, 2, 3, 7, or 8

Configuration	Mapping
Single Track Stereo	L, R
Single Track Stereo (Matrixed)	L, R
Interleaved 5.1 + Stereo (Matrixed)	L, R, C, LFE, LS, RS, LT, RT

GEM

2-Track Discrete Stereo	L / R
2-Track Discrete Stereo (Matrixed)	LT / RT
Interleaved 5.1 + Stereo Matrix Interleaved	L, R, C, LFE, LS, RS / LT, RT
3-Track: Discrete Stereo (Matrixed)+Interleaved 5.1	L, R, C, LFE, LS, RS / LT / RT
7-Track: Discrete 5.1 + Interleaved Stereo (Matrixed)	L / R / C / LFE / LS / RS / LT, RT
8-Track: Discrete 5.1 + Discrete Stereo (Matrixed)	L / R / C / LFE / LS / RS / LT / RT

DNxHD (MOV)

Parameter	Value
Codec	PCM
Sample Rate	48 kHz

GEM

Bit Depth	16 or 24 bit
Track Count	1, 2, 3, 7, or 8

Configuration	Mapping
Single Track Stereo	L, R
Single Track Stereo (Matrixed)	L, R
Interleaved 5.1 + Stereo (Matrixed)	L, R, C, LFE, LS, RS, LT, RT
2-Track Discrete Stereo	L / R
2-Track Discrete Stereo (Matrixed)	LT / RT
Interleaved 5.1 + Stereo Matrix Interleaved	L, R, C, LFE, LS, RS / LT, RT

GEM

3-Track: Discrete Stereo (Matrixed)+Interleaved 5.1	L, R, C, LFE, LS, RS / LT / RT
7-Track: Discrete 5.1 + Interleaved Stereo (Matrixed)	L / R / C / LFE / LS / RS / LT, RT
8-Track: Discrete 5.1 + Discrete Stereo (Matrixed)	L / R / C / LFE / LS / RS / LT / RT

Example Layouts

- Stereo (L/R), Matrixed (LT/RT), 5.1 (C/L/R/LFE/LS/RS), combinations thereof, multi-track as required

By following these GEM standards, mix teams and review engineers will ensure dependable sync, accurate asset organization, and a seamless technical review process.