

MPEG2 HD

File-Based Master Specifications

This document provides essential information, including recommended file settings and layout information, for delivering file-based masters to an Extreme Reach facility so your files can be prepared for broadcast.

If any of the requirements cannot be met, your content processing could be delayed. Please contact your Extreme Reach/Pathfire show coordinator with additional questions.

| MPEG2 HD | |
|---------------------------|---|
| Encoding & Video Bit Rate | MPEG2 (34Mbps) |
| Resolution / Frame Rate | 1920x1080 (29.97fps) |
| Aspect Ratio | 16:9 |
| Chroma Sampling | 4:2:2 |
| GOP | IBBP 15 |
| Stream Type | Transport |
| Profile / Level | 4:2:2P High |
| User Data | EIA 608/708 ATSC Compliant |
| Closed Captioning | VANC (Line9) And User Data |
| Nielsen | In Audio |
| V-Chip | VANC (Line 9) |
| Field Dominance | Upper (Odd) Field 1 |
| Timecode | VANC (Line 10) |
| AFD | VANC (Line 11) |
| Audio Encoding Format | Stereo - MPEG1 Layer 2 Multichannel - SMPTE 302M |
| Audio Bit Rate | Stereo - 192Kbps Multichannel - 2.304Mbps / Pair |
| Audio Bit Depth | Stereo - N/A Multichannel - 20 bit |
| Audio Levels | Reference -20dBFS Loudness -24LKFS ± 2dB (Max) |
| Audio Sample Rate | 48 KHz |
| Audio Channels | 4 (2 Stereo Pair) OR Multichannel (5.1 Audio & Stereo Pairs) |
| Audio Configuration | Stereo Ch1 - Left Stereo Ch2 - Right Stereo Ch3 - Left Stereo (LAS) Ch4 - Right Stereo (LAS) 5.1 Audio Ch1 - Left Front Ch2 - Right Front Ch3 - Center Ch4 - LFE Ch5 - Left Surround Ch6 - Right Surround Ch7 - Left Stereo Ch8 - Right Stereo Ch9 - Left Stereo (LAS) Ch10-Right Stereo (LAS) |

- Episode Number
- Episode Name
- Episode Duration
- Audio Channel Configuration
- Minimum 5 seconds black between each segment.
- Minimum 10 seconds of black / silence

File Naming Conventions:

- The filename must contain the full show name and episode number with no spaces.
- For HD content, the filename must end with an H.
- The filename must contain only alphanumeric characters.

Notes:

1. The Video Bit Rate and Audio Bit Rates stated are for the elementary streams. The resulting MUX rate will be the aggregate of all elementary streams. Please use care when configuring your encoders.
2. The specification in this document is the preferred format for HD Stereo and/or HD 5.1 content with all attributes present.
3. This document describes the base technical details of the file format required. The content delivery specifications of the program provider may contain additional requirements which need to be observed.
4. For shows supplied with HD masters please note that these will be down converted to SD at non-HD stations. The default SD down conversion is to 4x3 full frame therefore HD masters should be center-cut safe. If letterboxed 4x3 SD presentation is required all segments must contain AFD code 1010.

File Structure:

- Minimum 10 seconds of black / silence
- Minimum 30 seconds of bars / tone
- Minimum 10 seconds of slate
 - Show Name

Extreme Reach, Inc.

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