

1 Media format overview

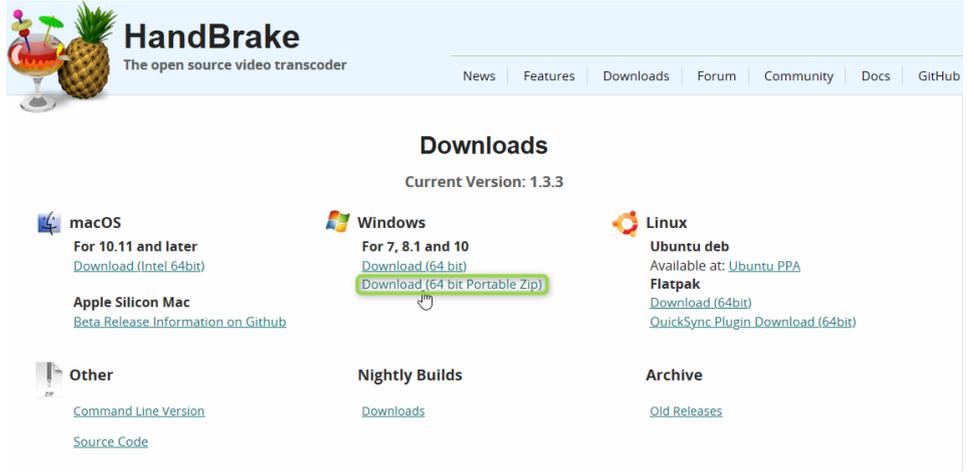
Use Cases				
Use Case	User <u>Provider</u>	CI's Interface	Resolution	Comment
Bring your own device - HDMI	Passenger <u>Tour Guide or Driver</u>	HDMI (CM-P)	720p@30fps 1080p@30fps	Cable or adapter required.
Bring your own content - HDMI	Passenger <u>Tour Guide or Driver</u> <u>Fleet Operator</u>	HDMI (CM-P)	720p@30fps 1080p@30fps	Cable or adapter required.
Bring your own content - USB	Passenger <u>Tour Guide or Driver</u>	USB (CM-P)	up to 1080p@25fps	Pre-processed content via tooling following the "Media system configuration guideline"
Mediathek (Pre-Processed Content) - USB	Passenger <u>Tour Guide or Driver</u> <u>Fleet Operator or Service Provider</u>	USB (CM-R)	up to 1080p@25fps	Pre-processed content via tooling following the "Media system configuration guideline"
Mediathek (DRM) - USB	Passenger <u>Fleet Operator or Service Provider</u>	USB (CM-R)	up to 1080p@25fps	Pre-processed content according to service provider specification

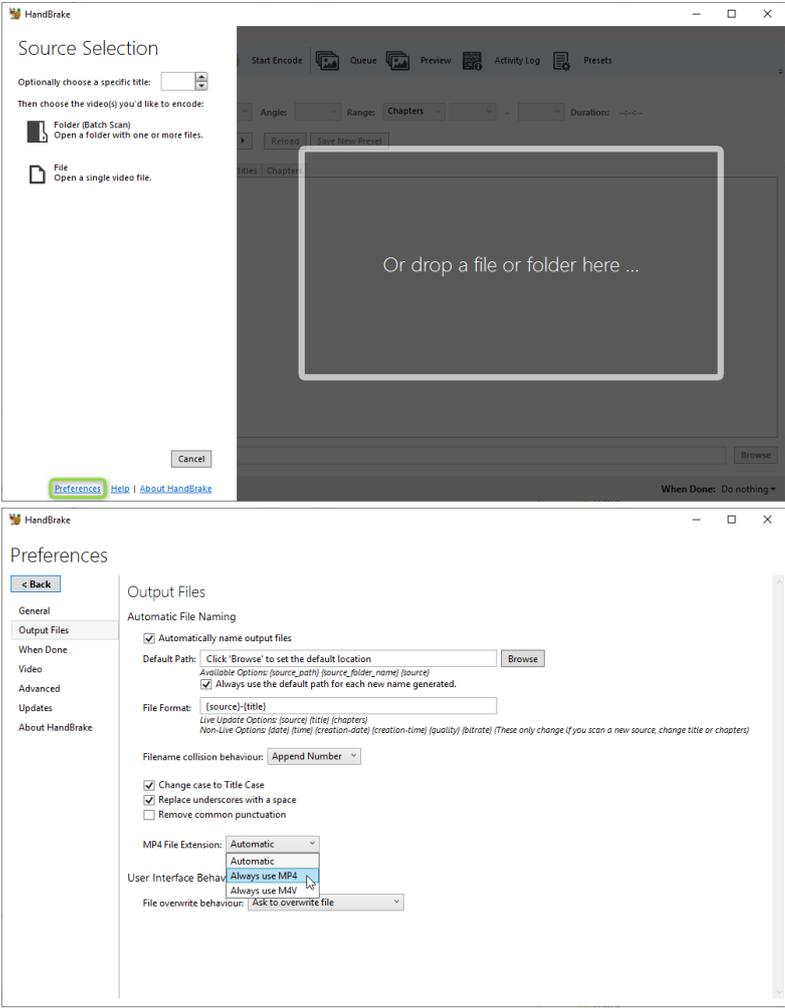
2 Media format support

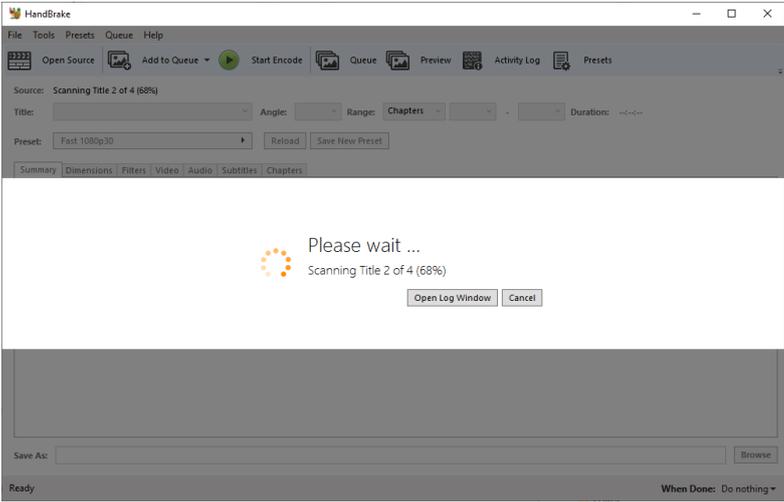
Video		FPS			
Codec	Resolutions	<=24fps	<=25fps	<=30fps	>30fps
h264	up to 1366x720	Yes	Yes	Yes	No
	up to 1920x1080	Yes	Yes	No	No
	beyond 1920x1080	No	No	No	No
other (wmv, vp8, flv, ...)	any	No	No	No	No
Container					
MP4					

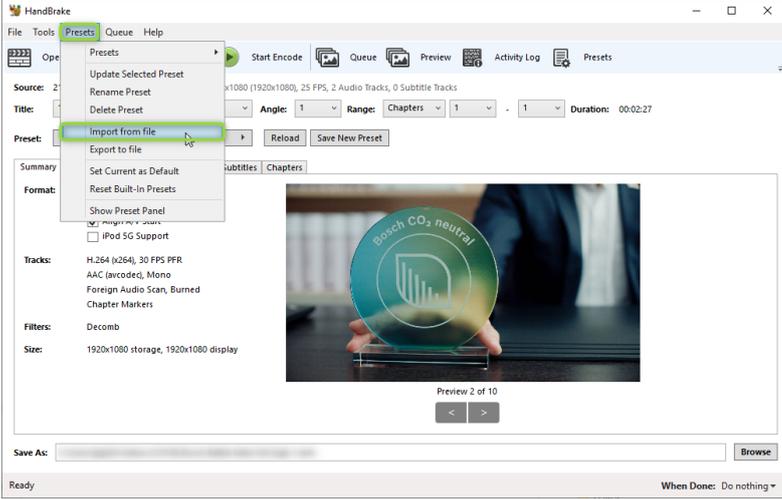
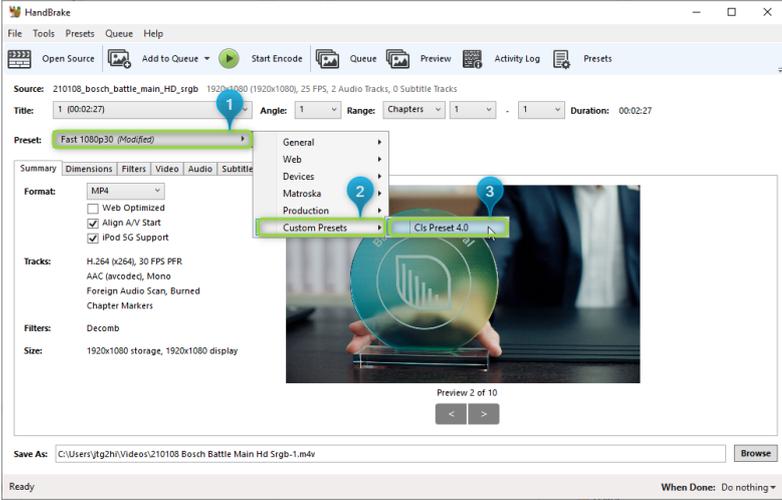
3 Media format conversion for compatibility

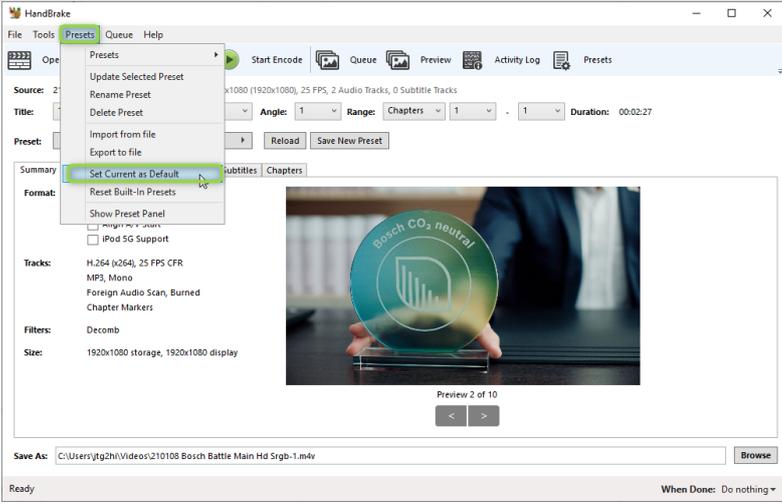
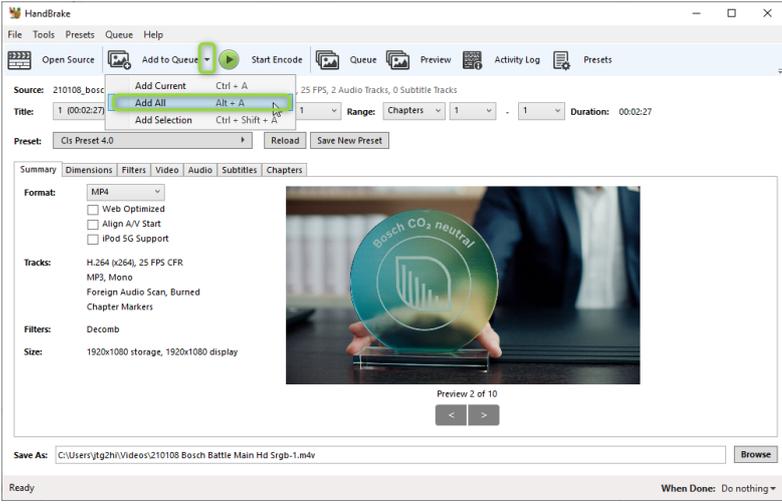
Motivation: Re-encode video files of any quality (e.g. 4K) into a suitable, compatible format for playback within the Coach Infotainment series ecosystem.

Step	Name	Description
1	Download HandBrake	<p>Go to https://handbrake.fr/downloads.php and download the version of HandBrake relevant for your platform.</p>  <p>For Windows, preferably use the 64-bit Portable Zip. It will also run directly from an USB stick without an installation.</p>
2	Download conversion preset file	<p>Go to https://downloads.bosch-carmultimedia.net/ and download the conversion preset file relevant for your platform (e.g. CIs, SmartSeries,...).</p> <p>CIs; cis-preset-4.0.json.</p> <p>SmartSeries: Smart-preset.json</p>

Step	Name	Description
3	HandBrake Preferences	<p>Go to "Tools" >> "Preferences" >> "Output Files" and set "MP4 File Extension" to "Always use MP4". Please use the "< Back" button to return to the start screen.</p> 

Step	Name	Description
4	HandBrake Source Selection	<p>Use one of the various variants to select files for conversion.</p> <p>The fastest approach is to put all files for conversion into a single directory and do a "Folder (Batch Scan)". Handbrake will take some time to pre-analyse the files regarding their encoder parameters.</p>  <p>The screenshot shows the HandBrake application window. At the top, there is a menu bar with 'File', 'Tools', 'Presets', 'Queue', and 'Help'. Below the menu bar is a toolbar with icons for 'Open Source', 'Add to Queue', 'Start Encode', 'Queue', 'Preview', 'Activity Log', and 'Presets'. The main area of the window displays 'Source: Scanning Title 2 of 4 (68%)'. Below this, there are fields for 'Title', 'Angle', 'Range' (set to 'Chapters'), and 'Duration'. A 'Preset' dropdown is set to 'Fast 1080p30'. At the bottom of the window, there is a 'Save As:' field and a 'Browse' button. The status bar at the very bottom shows 'Ready' and 'When Done: Do nothing'. A large dialog box is overlaid on the main area, containing a circular progress indicator, the text 'Please wait ...', and 'Scanning Title 2 of 4 (68%)'. There are 'Open Log Window' and 'Cancel' buttons in the dialog.</p>

Step	Name	Description
5	HandBrake Preset	<p>Download the most recent conversion preset for the Coach Infotainment series: cis-preset-4.0.json.</p> <p>Import the conversion preset.</p>  <p>Select the conversion preset.</p>  <p>For simplicity: Make the conversion preset your default.</p>

Step	Name	Description
		 <p>The screenshot shows the HandBrake application window. The 'Presets' menu is open, and the option 'Set Current as Default' is highlighted with a green box. Other menu options include 'Presets', 'Update Selected Preset', 'Rename Preset', 'Delete Preset', 'Import from file', and 'Export to file'. The main interface shows a source file '210108_bosc' and various encoding settings like 'Format: MP4', 'Tracks: H.264 (x264), 25 FPS CFR', and 'Filters: Decomb'. A preview window shows a video frame with a 'Bosch CO2 neutral' logo.</p>
6	HandBrake Queue	<p>To use HandBrake for file conversion, you will have to fill its queue with work items for each of your files.</p> <p>The fastest approach is to use the "Add All" function:</p>  <p>The screenshot shows the HandBrake application window with the 'Add to Queue' menu open. The 'Add All' option is highlighted with a green box. Other menu options include 'Add Current', 'Add Selection', and 'Add Selection'. The main interface shows the same source file and settings as the previous screenshot. The 'Queue' button in the toolbar is also highlighted with a green box.</p> <p>If everything worked, you will see that all of your files have been added to the queue:</p>  <p>The screenshot shows the HandBrake application window with the 'Queue' button in the toolbar highlighted with a green box. The button is labeled 'Queue (4)', indicating that four files have been added to the queue.</p>

Step	Name	Description
7	Conversion	<p>Because the conversion process may take a lot of time per file, I prefer to open "Queue" window and start the encoding process from there via "Start Queue".</p> 