Color Correction for Inputs and Channel

This article will show how to use Color Correction Tools for your Broadcasts.

→ Video Range (16-235) vs. Full Range (0-255)
→ Color Adjustment Controls
→ Tools: Waveform, Vectorscope & Histogram
→ Why is CPU Processing required?

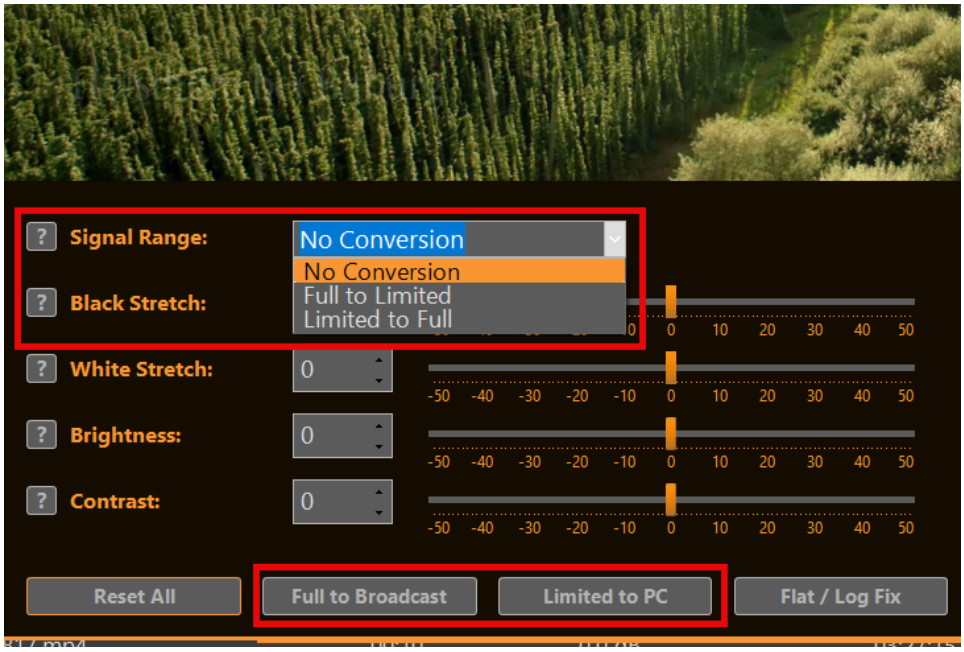
Video Range (16-235) vs. Full Range (0-255)

Video Range (Limited / Broadcast): Uses 16–235 (8-bit). Black = 16, white = 235. Standard for TV, broadcast, streaming – preserves headroom.

Full Range (PC / Data): Uses full 0–255. Black = 0, white = 255. Native for computer monitors, graphics, photos.

Color Range Expansion converts Video → Full Range (lifting blacks, expanding whites) to avoid washed-out appearance on PC displays. Mismatches cause crushed blacks, blown whites, or grayish/milky picture.

With PLAYDECK you can quickly convert between both modes by selecting the signal range or one of the preset buttons:



Color Adjustment Controls

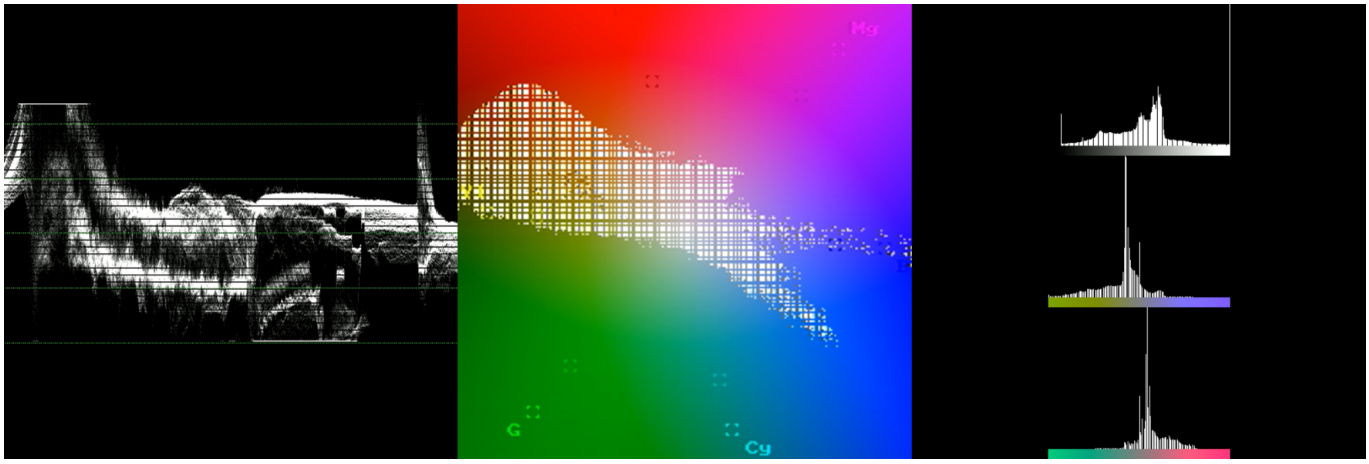
PLAYDECK's sliders help solve common broadcast and live-production challenges quickly:

- **Black Stretch** Recover lost shadow detail in underexposed footage or create deeper, more cinematic blacks for dramatic looks.
- **White Stretch** Bring back highlight detail in overexposed shots (e.g. skies, lights) or add punch to flat, washed-out highlights.
- **Brightness** Correct overall too-dark or too-bright sources without changing contrast — ideal for matching multiple cameras.
- **Contrast** Make flat, low-energy pictures pop for sports/news or reduce harsh contrast on harsh studio lighting.
- **Saturation** Boost dull, desaturated camera feeds (e.g. ENG cameras) or tone down overly vivid graphics/logos for broadcast-safe output.
- **Color Phase** Fix green/magenta casts from mismatched lighting, warm up cool skin tones, or match color temperature between sources.
- **Detail** Sharpen soft, low-resolution streams or reduce noise in low-light footage without introducing artifacts.

Tools: Waveform, Vectorscope & Histogram

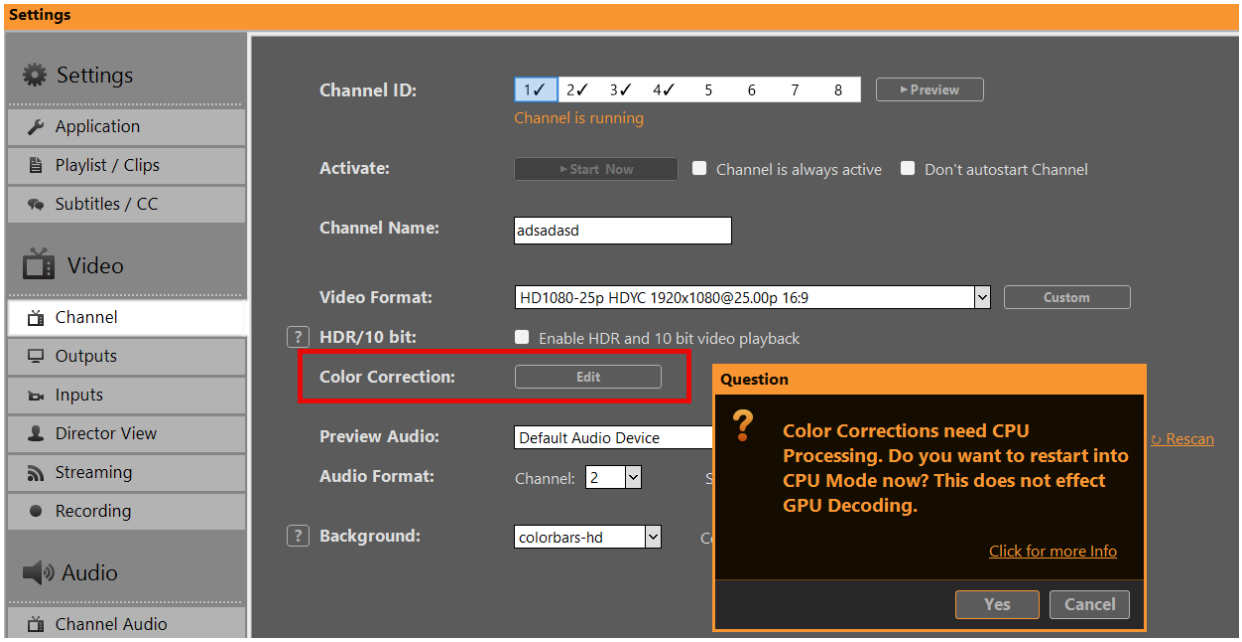
hese professional monitoring tools appear in a dedicated panel next to the video preview – perfect for precise color and exposure control during live production or playback.

- **Waveform:** Check overall exposure and luminance levels quickly. Spot clipped highlights (flat at 100 IRE), crushed blacks (piled at 0 IRE), or mismatched camera levels so you can adjust brightness/black/white stretch before broadcast.
- **Vectorscope:** Verify and correct color balance and saturation. Ensure skin tones stay in the correct flesh-tone line, detect unwanted color casts (e.g. green from LED lights), and confirm broadcast-legal saturation without over-the-top vividness.
- **Histogram:** Analyze tonal distribution across the image. Identify if shadows/midtones/highlights are evenly spread or if detail is lost in dark/bright areas – ideal for fine-tuning contrast and stretch sliders to achieve a balanced, professional picture.



Why is CPU Processing required?

When using Color Correction (or certain other video filters) for the first time, PLAYDECK may prompt you to switch to CPU Processing:



Reason: Certain video filters (vfilters) on inputs and playlists rely on FFmpeg processing, which runs **only on the CPU**. The GPU pipeline does not support these standard filters, so **CPU mode** is required for them to work correctly – ensuring reliable playback and effects.

GPU Processing handles: Scaling, Mixing, Overlays, Format Conversion, and many Effects.

Switching to **CPU mode** keeps all features working normally – the only difference is higher CPU usage (and lower GPU load).

You can switch back to **GPU Processing** anytime in the application settings: