



Saturation control for high definition video

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Saturation control for high definition video

This disclosure relates to the field of video imaging.

A system is disclosed that provides a color saturation control for high definition video by modifying the gain control on the color difference channels on the input analog to digital converters.

For standard definition sources, it is expected that picture quality controls such as color saturation, color hue (or tint), brightness, and contrast will be available. For high definition sources, users often expect the same set of controls. However, existing high definition video solutions typically do not provide these controls, because implementing a high definition saturation control required using an expensive video processing chip that can run at a sufficiently high rate of speed or designing a custom integrated circuit to implement this feature.

The present disclosure provides a color saturation control for high definition sources. As understood with reference to the block diagram of the Figure, a video system includes a high definition (HD) video input 10. The HD video input 10 includes a luminance channel (Y) and two color difference channels (Pb and Pr). The analog HD video is input to analog to digital converters (ADCs) 20. The digital output of the ADCs 20 is sent to the scaler 30 for scaling and possible frame rate conversion. The output of the scaler 30 is sent to the plasma panel 50 via the LVDS transmitter 40.

The ADCs 20 provide a gain control 6 on each of the three input channels. Using the IIC bus (not shown), the gain controls 60 can be adjusted by an external device (typically a microcontroller, not shown, which also controls the user interface). By changing the gain on the color difference channels (Pb and Pr) and not the luminance channel (Y), the saturation of the color can be modified without affecting the luminance. Increasing the gain of the color difference channels will increase the color saturation, and reducing the gain will reduce the color saturation.

This system advantageously does not require any additional hardware to process the digital video in order to implement the control. It is feasible to provide the previously-infeasible color saturation control without adding cost, providing suitable ADCs 20 are utilized.

