VD RF Horizontal Noise Report

2010.03.19

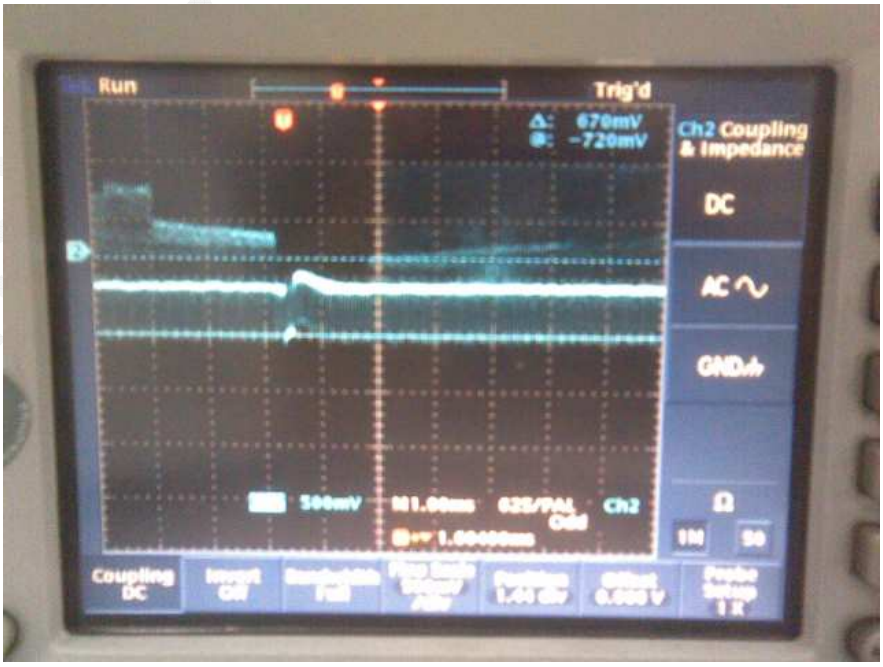
owner: BY.Tsai, review by: Book.Weng

Problem description

There's horizontal noise at channel 711.25Mhz.

Root cause

Abnormal Hsync in VBI region causes Hsync PLL detects phase error. Picture 1 shows the waveform. Because this phase error only happens at VBI region, the behavior is similar to VCR head switch. VCR is then false detected and Hsync PLL tracking speed is increased. At the same time, serious channel interference destroyed the Hsync edge and causes image skew. Picture 2 shows the worst case condition that will cause serious skew.



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Picture 1. Broken hsync in VBI region due to tuner DAGC function

Picture 2. Broken hsync in active region due to channel interference like fading, etc.

Solution

Please update new dsp code V007_2 for DVB model. We add backporch level detection in VBI region, when this kind of signal is detected, the VCR detection algorithm is slightly adjusted. The behavior will be almost the same as normal VCR mode, only the phase detector and loop filter will be adjusted to special mode to compensate the destroyed signal.

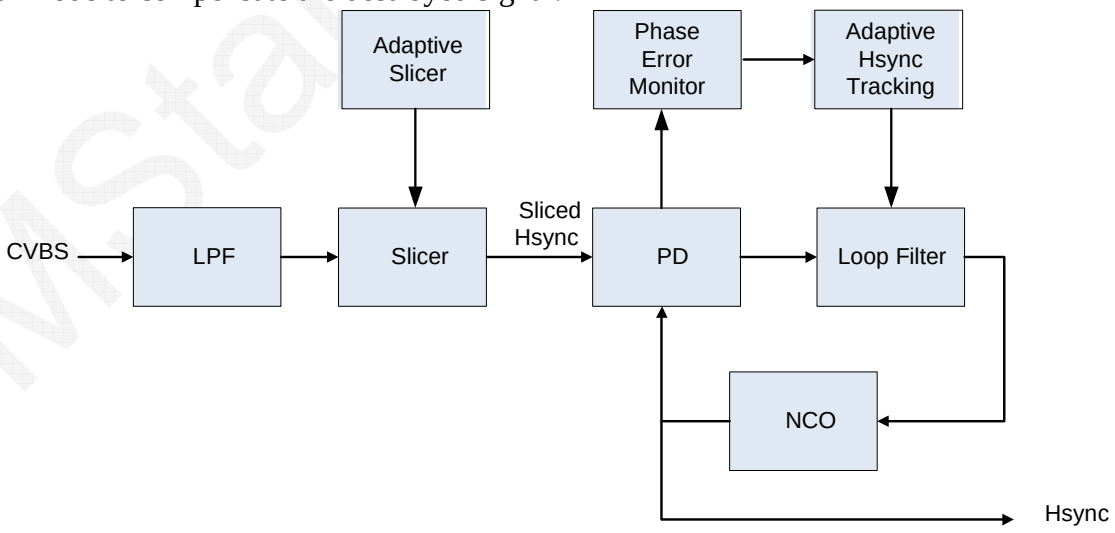

Figure 1 Video Decoder Block Diagram