The Tektronix "Lightning" Display for Camera Set Up
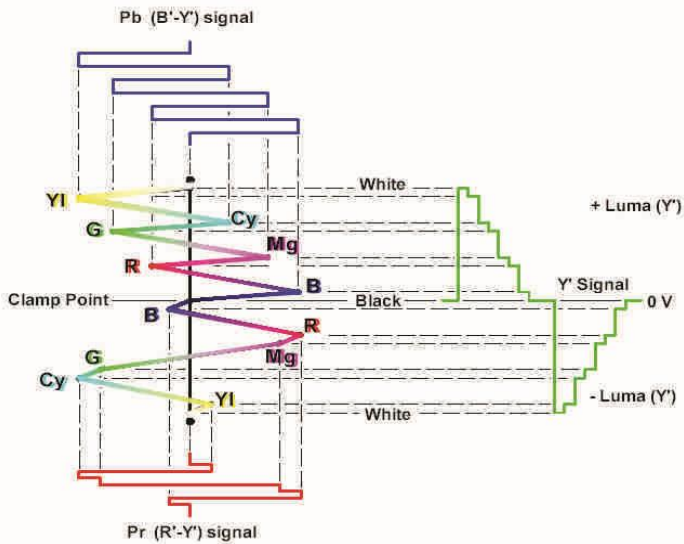

Figure 1: Plotting the Lightning display

Figure 2: Using the Lightning display

This Tips and Tricks relates to the Lightning display that is found in all Tektronix WFM/WVR Waveform Monitors and Rasterizers. Recognizing that a three-dimensional method would be desirable for monitoring the complete set of component signals, Tektronix developed a display that provides both amplitude and interchannel timing information for the three-signal channels on a single display.

The only test signal required for definitive measurements is standard color bars. The Lightning display is generated by plotting luma vs. P'b or C'b in the upper half of the screen and inverted luma vs. P'r or C'r in the lower half (see Figure1) – like two vector displays sharing the same screen.
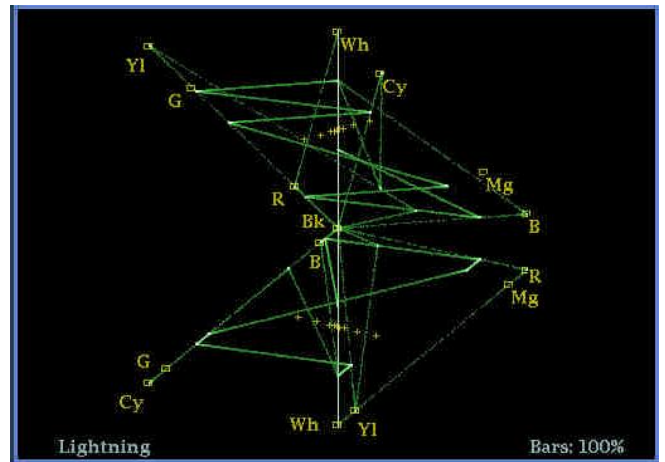
Using the Lightning Display (Figure 2):
Using a conventional color bar pattern, this display presents many advantages to the alignment of the cameras by using gain and Mag to expand the black region of the display. The Lightning display can also be used in production as it works in both SD and HD formats, and can be used during the acquisition of material to ensure the correct levels of the YPbPr signal are setup. The Lightning display is the perfect complement to the "Diamond" display that works in the RGB space. For DITs, clever configuration of the four display windows on a waveform monitor can allow you to see the luma level with the Lightning and Diamond displays (Figure 3).

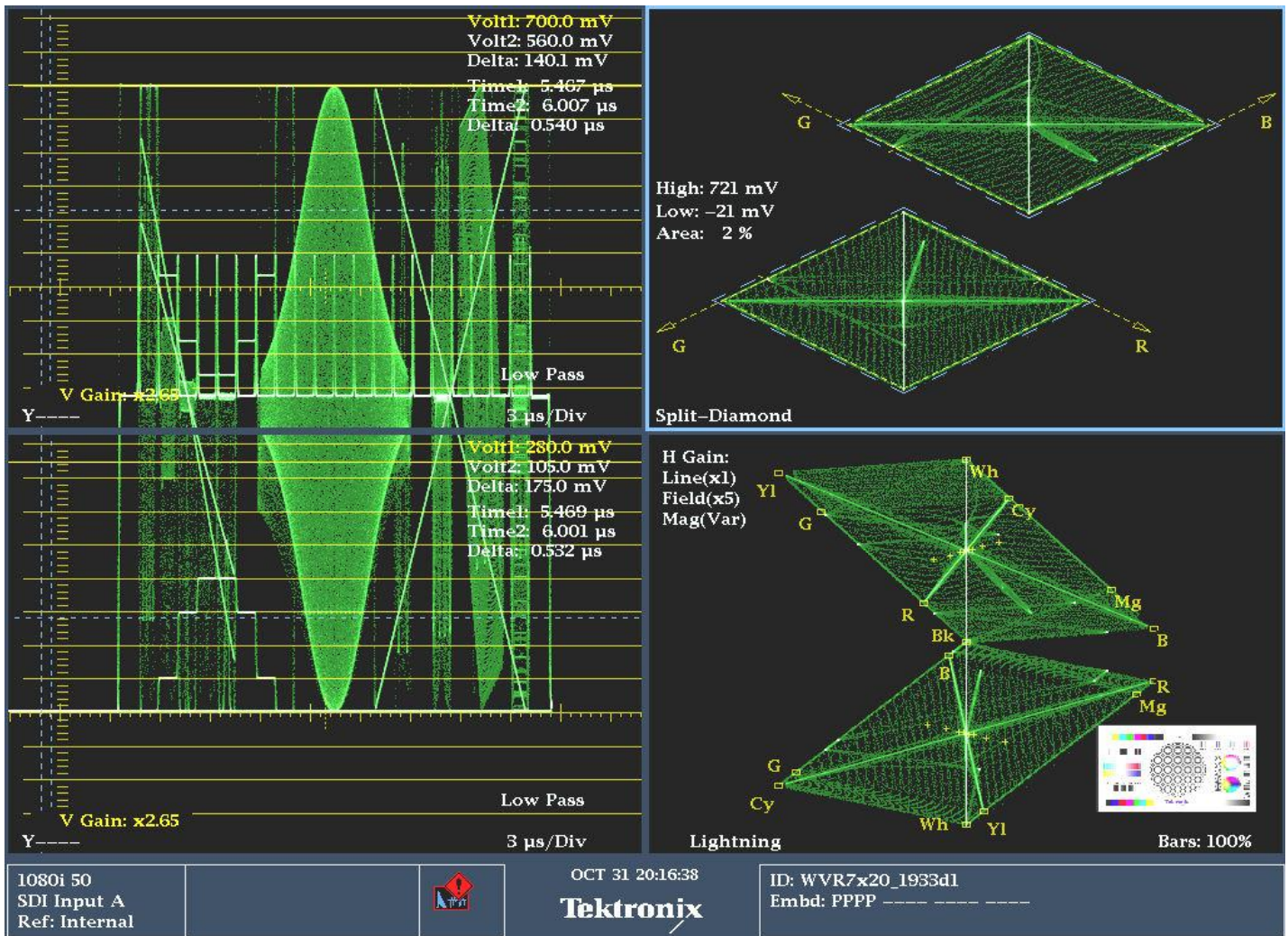# The Tektronix "Lightning" Display for Camera Set Up

Figure 3: Configuring the four display windows on a waveform monitor to see the luma level with the Lightning and Diamond displays.

Operational Set Up:

- Waveform Y luminance, magnified by 2.65 (top trace = white level)
- Diamond (RGB space)
- Waveform Y luminance, magnified by 2.65 (bottom trace = Black level)
- Lightning (YPbPr space)
- Image thumbnail

Note:

In two windows on the left, notice the clever use of horizontal cursors to quantify the vertical scale in mV.

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