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Color Picker: Relationship of Values to RGB Gun Voltages

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TOPIC ----------

Is there any relationship between the 65535 values (for example, of the Color Picker) and the analog voltages of RGB guns in color monitors?

DISCUSSION ----------

There isn't a direct relationship between the two, but there is a proportional relationship.

A zero setting of the Color Picker's red field causes minimum volts at the red gun of the monitor. The 65535 setting of the Color Picker's red field gives maximum voltage at the red gun. The same is true of the blue gun and the green gun.

No two monitors have the same voltage settings, because of differences in the gamma tables, the analog adjustments of the monitor, and the monitor's voltage specifications.

(The following discussion assumes the ability to measure the voltages of the guns in the color monitor.)

To get the exact voltage relationship to Color Picker values requires selecting the uncorrected gamma table in the Monitors CDEV.

1) Hold down the option key while selecting the option button in the CDEV.

2) Once the uncorrected gamma table is in use, set each of the red, blue, and green values of the Color Picker to 0 (zero). Measure the voltage of the guns. This will be the minimum voltage of the guns.

3) Set each value of the red, blue, and green Color Picker fields to 65535. Now measure the voltage of the guns. This will be the maximum voltage produced by the guns.

As long as the uncorrected gamma table is in use, there should be a linear relationship between the Color Picker values and the gun voltages.

However, the analog adjustments of the monitor can affect the linear nature of this relationship. Also, if a corrected gamma table is selected, the linear relationship is further perturbed.

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