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(54) Title: METHODS AND SYSTEMS FOR SUB-PIXEL RENDERING WITH GAMMA ADJUSTMENT AND ADAPTIVE FILTERING

(57) Abstract: Thus, methods and systems for sub-pixel rendering with gamma adjustment are disclosed. The gamma adjustment allows the luminance for the sub-pixel arrangement to match the non-linear gamma response of the human eye's luminance channel, while the chrominance can match the linear response of the human eye's chrominance channels. The gamma correction allows the algorithms to operate independently of the actual gamma of a display device. The sub-pixel rendering techniques disclosed with gamma adjustment can be optimized for a display device gamma to improve response time, dot inversion balance, and contrast because gamma correction and compensation of the sub-pixel rendering algorithm provides the desired gamma through sub-pixel rendering. These techniques can adhere to any specified gamma transfer curve. Processing data for a display including pixels, each pixel having color sub-pixels, comprises receiving pixel data. Once the pixel data is received, processing data for a display includes converting the pixel data to sub-pixel rendered data, the conversion generating the sub-pixel rendered data for a sub-pixel arrangement including alternative red and green sub-pixels on at least one of a horizontal and vertical axis. Next processing data for a display includes correcting the sub-pixel rendered data if a condition exists and outputting the sub-pixel rendered data.