CLAIMS:

1. A display device having a substrate and a display area disposed on the substrate, the display area comprising a plurality of pixels arranged in a two-dimensional array, said display device comprising:

a first control circuit disposed on the substrate, the first control circuit comprising a plurality of first incoming signal lines, a plurality of first electronic components, and a plurality of data lines, the data lines arranged to provide image data to the pixels, the first electronic components configured to receive from the first incoming signal lines data signals indicative of the image data, wherein the first electronic components comprise a plurality of latches and a plurality of image data receiving elements;

a second control circuit disposed on the substrate, the second control circuit comprising a plurality of second incoming signal lines, a plurality of second electronic components and a plurality of scan lines, the scan lines arranged to provide timing control signals to the pixels, the second electronic components configured to receive from the second incoming signal lines timing pulses indicative of the timing control signals; and

a connecting cable comprising a plurality of first connection lines and a plurality of second connection lines, wherein the first incoming signal lines are electrically connected to the first connection lines to receive the data signals therefrom, and the second incoming signal lines are electrically connected to the second connection lines to receive the timing pulses therefrom, and wherein the data signals are digital signals;

wherein the connecting cable is further configured to provide reference signals to provide two reference voltages to the image data receiving elements

and the latches, the image data receiving elements and the latches are configured to provide the two reference voltages to the data lines as the image data in two levels, wherein the digital signals have an amplitude range greater than an amplitude range of the two reference signals.

2. The display device according to claim 1, wherein the first incoming signal lines comprise a data signal line for providing the data signals to the first electronic components.

3. The display device according to claim 1, wherein each of the pixels comprises a plurality of color sub-pixels, each color sub-pixel arranged to receive the image data from a different one of the data lines, and wherein each color sub-pixel comprises a plurality of color sub-areas, each color sub-area arranged to receive the timing control signals from a different one of the scan lines.

4. The display device according to claim 3, wherein the data lines comprise a first data line, a second data line and a third data line, and the color sub-pixels comprise a red sub-pixel, a green sub-pixel and a blue sub-pixel, the red sub-pixel comprising a plurality of red sub-areas arranged to receive the image data from the first data line, the green sub-pixel comprising a plurality of green sub-areas arranged in a first direction for receiving image data from the second data line, the blue sub-pixel comprising a plurality of blue sub-areas arranged to receive image data from the third data line.

5. The display device according to claim 4, wherein the sub-areas in each of

the red sub-pixel, the green sub-pixel and the blue sub-pixel comprise a first sub-area, a second sub-area and a third sub-area, wherein the third sub-area is two times larger than the second sub-area and the second sub-area is two times larger than the first sub-area.

6. The display device according to claim 1, wherein each pixel comprises a plurality of pixel sub-areas, each of the pixel sub-areas arranged to receive the timing control signals from a different scan line, each pixel sub-area comprising a red sub-area, a green sub-area and a blue sub-area.

7. The display device according to claim 3, wherein the first electronic components further comprise a plurality of first shift registers, and wherein the first incoming signal lines comprise a plurality of control signal lines arranged to provide shift clock signals and latch clock signals, the first shift registers configured to control the data receiving elements to provide the data signals to the latches in response to the shift clock signals, the latches configured to provide the image data to the color sub-pixels in response to the latch clock signals.

8. The display device according to claim 3, wherein the second electronic components comprise a plurality of second shift registers configured to control the timing control signals, the second incoming signal lines arranged to provide shift clock signals, the second shift registers configured to provide the timing control signals to the color sub-areas in response to the shift clock signals.

9. The display device according to claim 1, wherein the pixels are arranged in

a plurality of pixels rows in a first direction and a plurality of pixel columns in a second direction, and wherein each pixel comprises a plurality of pixel sub-areas arranged in the second direction, each of the pixel sub-areas arranged to receive the timing control signals from a different scan line, and wherein each pixel sub-area comprises a plurality of color sub-areas arranged in the first direction, each color sub-area arranged to receive the image data from a different data line.

10. The display device according to claim 9, wherein the color sub-areas of the pixel sub-areas comprise red sub-areas, green sub-areas and blue sub-areas, and wherein each pixel comprises a plurality of color sub-pixels, including a red sub-pixel having the red sub-areas, a green sub-pixel having the green sub-areas and a blue sub-pixel having the blue sub-areas, and wherein the first electronic components further comprise a plurality of first shift registers, and the first incoming signal lines comprise a plurality of control signal lines arranged to provide first shift clock signals and latch clock signals, the first shift registers configured to control the data receiving elements to provide the data signals to the latches in response to the first shift clock signals, the latches configured to provide the image data to the color sub-pixels in response to the latch clock signals.

11. The display device according to claim 10, wherein the second electronic components comprise a plurality of second shift registers configured to control the timing control signals, the second incoming signal lines arranged to provide second shift clock signals, the second shift registers configured to provide the timing control signals to the color sub-areas in response to the second shift

clock signals.

12. The display device according to claim 11, wherein each of the pixel rows comprises N color sub-pixels, N being a positive integer greater than one, wherein the first electronic components comprise N first shift registers and N latches, wherein the plurality of control signal lines arranged to provide N first shift clock signals and N latch clock signals in a row-time period, and wherein each of the timing pulses has a pulse width substantially equal to one row-time period.

13. The display device according to claim 12, wherein each of the pixel columns comprises M pixel sub-areas, M being a positive integer greater than one, wherein the second electronic components comprise M second shift registers and the second incoming signal lines are arranged to provide M consecutive second shift clock pulses to the M second shift registers in one frame time.

14. The display device according to claim 13, wherein said one frame time is equal to 1/60 of a second.

15. The display device according to claim 1, wherein the substrate comprises a glass substrate.

16. The display device according to claim 1, wherein the connecting cable comprises one or more flexible printed circuits arranged to receive the data signals and the timing pulses from a control system.

17. The display device according to claim 1, wherein the digital signals comprise a first voltage level and a second voltage level, wherein the first voltage level is substantially equal to 10V and the second voltage level is substantially equal to -10V.

18. The display device according to claim 1, wherein
the first electronic components comprise a plurality of first switching elements for controlling the image data, and
the second electronic components comprise a plurality of second switching elements for controlling the timing control signals, wherein the first and second switching elements are solely made of thin-film transistors.

19. The display device according to claim 18, wherein the connecting cable is further configured to provide reference signals to provide a voltage reference to some of the first and second switching elements, wherein the digital signals have an amplitude range greater than the amplitude range of the reference signals.

20. The display device according to claim 7, wherein each of first shift registers and latches comprises a plurality of switching elements made of thin-film transistors.