Claims

Claim 1

A display device comprising:

a scan line drive circuit which line-sequentially selects from among a plurality of scan signal lines;

at least one signal line drive circuit which has a receiving circuit that receives a data signal, and which sequentially supplies the data signal to pixels linked to a scan signal line selected by the scan line drive circuit;

a timing control section which defines, in accordance with sync signals received from an outside source, a non-scan period during which none of the scan signal lines is selected, and which transmits, to the at least one signal line drive circuit, a pause control signal that causes the receiving circuit to be underrun during at least part of the non-scan period thus defined,

the at least one signal line drive circuit and the timing control section being provided as separate entities.

Claim 2

The display device as set forth in claim 1, wherein:

the at least one signal line drive circuit comprises a plurality of signal line drive circuits; and

the timing control section simultaneously transmits the pause control signal to each of the receiving circuits of the

plurality of signal line driver circuits.

Claim 3

The display device as set forth in claim 1, wherein:

the at least one signal line drive circuit comprises a plurality of signal line drive circuits; and

the timing control section separately transmits, to each of the receiving circuits of the plurality of signal line driver circuits, a recovery control signal that causes the receiving circuits to recover from a pause state in which they are underrun.

Claim 4

The display device as set forth in any one of claims 1 to 3, wherein before a scan period starts during which the data signal is supplied to the pixels, the timing control section transmits, to the at least one signal line drive circuit, a recovery control signal that, causes the receiving circuit to recover from a pause state in which it is underrun.

Claim 5

The display device as set forth in any one of claims 1 to 4, wherein the at least one signal line drive circuit includes (i) an output circuit which outputs the data signal to the pixels and (ii) an output circuit control section which, in

accordance with the pause control signal, causes the output circuit to be underrun.

Claim 6

The display device as set forth in any one of claims 1 to 5, wherein the at least one signal line drive circuit includes a scan line drive circuit control section which, in accordance with the pause control signal, causes the scan line drive circuit to be underrun.

Claim 7

The display device as set forth in any one of claims 1 to 6, wherein when the receiving circuit is in a pause state in which it is underrun, the receiving circuit receives, from the timing control section, a recovery control signal that causes the receiving circuit to recover from the pause state, the recovery control signal being received before a timing at which the receiving circuit starts receiving a specific signal that it receives during an operating period to which it has recovered from the pause state.

Claim 8

The display device as set forth in any one of claims 1 to 6, wherein when the receiving circuit is in a pause state in which it is underrun and receives, from the timing control

section, a recovery control signal that causes the receiving circuit to recover from the pause state, the receiving circuit receives a specific signal that it receives during an operating period to which it has recovered from the pause state, with the specific signal fixed to a Low level.

Claim 9

The display device as set forth in claim 7 or 8, wherein the specific signal is a clock signal, the data signal, or both.

Claim 10

The display device as set forth in any one of claims 1 to 9, wherein the receiving circuit continuously receives a clock signal until a predetermined period of time has elapsed since the receiving circuit shifted to a pause period in which it is underrun.

Claim 11

The display device as set forth in any one of claims 1 to 10, wherein during a predetermined period of time including a point in time where the receiving circuit shifted to a pause period in which it is underrun, the receiving circuit receives the data signal with the data signal fixed at a Low level.

Claim 12

The display device as set forth in claim 9 or 10, wherein the clock signal or the data signal is inputted as a differential signal to the receiving circuit.

Claim 13

The display device as set forth in any one of claims 1 to 12, wherein the display device is a liquid crystal display device.

Claim 14

The display device as set forth in any one of claims 1 to 12, wherein the display device is an organic electroluminescent display device.

Claim 15

A method for driving a display device including:

a scan line drive circuit which line-sequentially selects from among a plurality of scan signal lines;

at least one signal line drive circuit which has a receiving circuit that receives a data signal, and which sequentially supplies the data signal to pixels linked to a scan signal line selected by the scan line drive circuit;

a timing control section which defines, in accordance with clock and sync signals received from an outside source, a non-scan period during which none of the scan signal lines

is selected,

the at least one signal line drive circuit and the timing control section being provided as separate entities,

the method comprising:

(a) a defining step in which the timing control section defines the non-scan period in accordance with the clock and sync signals received from the outside source; and

(b) a transmitting step in which the timing control section transmits, to the at least one signal line drive circuit, a pause control signal that causes the receiving circuit to be underrun during at least part of the non-scan period defined in the defining step.

Claims

Claim 1

A display device comprising:

a scan line drive circuit which line-sequentially selects from among a plurality of scan signal lines;

at least one signal line drive circuit which has a receiving circuit that receives a data signal, and which sequentially supplies the data signal to pixels linked to a scan signal line selected by the scan line drive circuit;

a timing control section which defines, in accordance with sync signals received from an outside source, a non-scan period during which none of the scan signal lines is selected, and which transmits, to the at least one signal line drive circuit, a pause control signal that causes the receiving circuit to be underrun during at least part of the non-scan period thus defined,

the at least one signal line drive circuit and the timing control section being provided as separate entities,

wherein the at least one signal line drive circuit includes:

an output circuit which outputs the data signal to the pixels; and

an output circuit control section which, in accordance with the pause control signal, causes the output circuit to be underrun

Claim 2

The display device as set forth in claim 1, wherein:

the at least one signal line drive circuit comprises a plurality of signal line drive circuits; and

the timing control section simultaneously transmits the pause control signal to each of the receiving circuits of the plurality of signal line driver circuits.

Claim 3

The display device as set forth in claim 1, wherein:

the at least one signal line drive circuit comprises a plurality of signal line drive circuits; and

the timing control section separately transmits, to each of the receiving circuits of the plurality of signal line driver circuits, a recovery control signal that causes the receiving circuits to recover from a pause state in which they are underrun.

Claim 4

The display device as set forth in any one of claims 1 to 3, wherein before a scan period starts during which the data signal is supplied to the pixels, the timing control section transmits, to the at least one signal line drive circuit, a recovery control signal that, causes the receiving circuit to recover from a pause state in which it is underrun.

Claim 5

The display device as set forth in claim 1, wherein the at least one signal line drive circuit includes a scan line drive circuit control section which, in accordance with the pause control signal, causes the scan line drive circuit to be underrun.

Claim 6

The display device as set forth in claim 1, wherein when the receiving circuit is in a pause state in which it is underrun, the receiving circuit receives, from the timing control section, a recovery control signal that causes the receiving circuit to recover from the pause state, the recovery control signal being received before a timing at which the receiving circuit starts receiving a specific signal that it receives during an operating period to which it has recovered from the pause state.

Claim 7

The display device as set forth in claim 1, wherein when the receiving circuit is in a pause state in which it is underrun and receives, from the timing control section, a recovery control signal that causes the receiving circuit to

recover from the pause state, the receiving circuit receives a specific signal that it receives during an operating period to which it has recovered from the pause state, with the specific signal fixed to a Low level.

Claim 8

The display device as set forth in claim 7, wherein the specific signal is a clock signal, the data signal, or both.

Claim 9

The display device as set forth in claim 1, wherein the receiving circuit continuously receives a clock signal until a predetermined period of time has elapsed since the receiving circuit shifted to a pause period in which it is underrun.

Claim 10

The display device as set forth in claim 1, wherein during a predetermined period of time including a point in time where the receiving circuit shifted to a pause period in which it is underrun, the receiving circuit receives the data signal with the data signal fixed at a Low level.

Claim 11

The display device as set forth in claim 9, wherein the clock signal or the data signal is inputted as a differential

signal to the receiving circuit.

Claim 12

The display device as set forth in claim 1, wherein the display device is a liquid crystal display device.

Claim 13

The display device as set forth in claim 1, wherein the display device is an organic electroluminescent display device.

Claim 14

A method for driving a display device including:

a scan line drive circuit which line-sequentially selects from among a plurality of scan signal lines;

at least one signal line drive circuit which has a receiving circuit that receives a data signal, and which sequentially supplies the data signal to pixels linked to a scan signal line selected by the scan line drive circuit;

a timing control section which defines, in accordance with clock and sync signals received from an outside source, a non-scan period during which none of the scan signal lines is selected,

the at least one signal line drive circuit includes an output circuit which outputs the data signal to the pixels,

and an output circuit control section,

the at least one signal line drive circuit and the timing control section being provided as separate entities,

the method comprising:

(a) a defining step in which the timing control section defines the non-scan period in accordance with the clock and sync signals received from the outside source;

(b) a transmitting step in which the timing control section transmits, to the at least one signal line drive circuit, a pause control signal that causes the receiving circuit to be underrun during at least part of the non-scan period defined in the defining step; and

(c) a step in which the output circuit control section, in accordance with the pause control signal, causes the output circuit to be underrun.