

IN THE CLAIMS

1. to 3. (Cancelled)

4. (Currently Amended) A solid-state imaging device comprising:

an imaging unit including a plurality of pixels arranged into a matrix for performing photoelectric conversion and a plurality of vertical transfer units arranged in columns for vertically transferring signal charges of the plurality of pixels on a column-by-column basis;

a charge control unit that uses a predetermined number of columns greater than one as a unit in a predetermined operation mode and that, in the predetermined operation mode, performs processing to stop transferring charges from a vertical transfer unit in a predetermined column of the predetermined number of columns and to add the signal charges transferred from the vertical transfer units in the remaining columns of the predetermined number of columns to output the added signal charges; and

a horizontal transfer unit that horizontally transfers the signal charges output from the charge control unit,

wherein,

in another operation mode different from the predetermined operation mode, the charge control unit

performs processing to convert signal charges transferred in parallel from the plurality of vertical transfer units in units of the predetermined number of columns into serially arranged signal charges and to sequentially output the serially arranged signal charges,

the charge control unit is provided with a charge holding unit for holding the signal charges transferred from the plurality of vertical transfer units on a column-by-column basis in units of the predetermined number of columns, and releases the signal charges held in the charge holding unit on a column-by-column basis, and

~~The solid-state imaging device according to Claim 3,~~ wherein the charge control unit is not provided with the charge holding unit for one of the predetermined number of columns.

5. (Currently Amended) The solid-state imaging device according to Claim ~~[[3]]~~4, wherein, with respect to the predetermined column, the charge control unit drains the signal charges held in the charge holding unit to a charge drain unit.

6. (Currently Amended) The solid-state imaging device according to Claim ~~[[1]]~~4, further comprising an

accumulation unit between the charge control unit and the horizontal transfer unit for temporarily accumulating the signal charges output from the charge control unit.

7. (Currently Amended) A solid-state imaging device comprising:

an imaging unit including a plurality of pixels arranged into a matrix for performing photoelectric conversion and a plurality of vertical transfer units arranged in columns for vertically transferring signal charges of the plurality of pixels on a column-by-column basis;

a charge control unit that uses a predetermined number of columns greater than one as a unit in a predetermined operation mode and that, in the predetermined operation mode, performs processing to stop transferring charges from a vertical transfer unit in a predetermined column of the predetermined number of columns and to add the signal charges transferred from the vertical transfer units in the remaining columns of the predetermined number of columns to output the added signal charges;

a horizontal transfer unit that horizontally transfers the signal charges output from the charge control unit; and

an accumulation unit between the charge control unit and the horizontal transfer unit for temporarily accumulating the signal charges output from the charge

control unit,~~The solid state imaging device according to~~
~~Claim 6,~~

wherein,

the accumulation unit is provided in units of the predetermined number of columns.

8. to 9. (Cancelled)

10. (Currently Amended) A solid-state imaging device comprising:

an imaging unit including a plurality of pixels arranged into a matrix for performing photoelectric conversion and a plurality of vertical transfer units arranged in columns for vertically transferring signal charges of the plurality of pixels on a column-by-column basis;

a charge control unit that uses a predetermined number of columns greater than one as a unit in a predetermined operation mode and that, in the predetermined operation mode, performs processing to stop transferring charges from a vertical transfer unit in a predetermined column of the predetermined number of columns and to transmit the signal charges transferred from the vertical transfer units in the remaining columns of the predetermined number of columns; and

an accumulation unit that temporarily accumulates the

signal charges output from the charge control unit; and
a horizontal transfer unit that horizontally transfers
the signal charges output from the accumulation unit,
wherein,
the accumulation unit is provided in units of the
predetermined number of columns.

11. (Original) The solid-state imaging device according to Claim 10, wherein, in another operation mode different from the predetermined operation mode, the charge control unit performs processing to sequentially output a plurality of blocks of signal charges transferred in parallel from the plurality of vertical transfer units in units of the predetermined number of columns.

12. (Original) The solid-state imaging device according to Claim 10, wherein the charge control unit is provided with a charge holding unit for holding the signal charges transferred from the vertical transfer unit in the predetermined column on a column-by-column basis.

13. (Original) The solid-state imaging device according to Claim 12, wherein, with respect to the predetermined column, the charge control unit drains the signal charges held in the charge holding unit to a charge drain unit.

14. to 20. (Cancelled)

15. to 20. (Cancelled)