Claims

What is claimed is:

1. A display comprising:

pixels that form an active area;

an inactive notch in the active area that does not include pixels; and

display driver circuitry that provides image data to the pixels in the active area and that provides null data corresponding to the inactive notch, wherein the null data includes black data and gray data.

2. The display defined in claim 1, wherein the inactive notch includes a transition portion adjacent to the active area, and wherein the gray data provided by the display driver circuitry corresponds to the transition portion.

3. The display defined in claim 2, wherein the inactive notch includes an upper portion, wherein the transition portion is between the active area and the upper portion, and wherein the black data provided by the display driver circuitry corresponds to the upper portion.

4. The display defined in claim 3, wherein the display driver circuitry provides the gray data to the transition portion using a plurality of different gray levels.

5. The display defined in claim 4, wherein the plurality of different gray levels includes first, second, and third gray levels that decrease linearly.

6. The display defined in claim 4, wherein the plurality of different gray levels includes first, second, and third gray levels that decrease exponentially.

7. The display defined in claim 1, wherein the inactive notch accommodates a speaker, a camera, and an ambient light sensor.

8. The display defined in claim 7, wherein the pixels comprise organic

light-emitting diodes.

9. A display comprising:

rows and columns of pixels that form an active area that is configured to display images, wherein the active area has a notch-shaped recess;

first data lines that extend across the rows of pixels and that terminate in an edge of the active area adjacent to the notch-shaped recess;

second data lines that extend across the active area and terminate at the notch-shaped recess;

first gate lines that control data loading from the first data lines and the second data lines into a first set of the rows of pixels in the active area;

second gate lines that control data loading into a second set of the rows of pixels in the active area from the first data lines and not the second data lines; and

display driver circuitry configured to:

while using the first gate lines to control the data loading, provide the second data lines with image data;

while using a first set of the second gate lines to control the data loading, provide the second data lines with black data; and

while using a second set of the second gate lines to control the data loading, provide the gray data, wherein the black and gray data comprise null date corresponding to the notch-shaped recess.

10. The display defined in claim 9, wherein the gray data includes a plurality of different gray levels.

11. The display defined in claim 10, wherein the second set of the second gate lines is interposed between the first set of the second gate lines and the first gate lines.

12. The display defined in claim 11, wherein the second set of the second gate lines includes:

a first gate line between the first gate lines and the first set of the second gate lines, wherein the display driver circuitry is configured to provide a first gray

level to the second data lines while using the first gate line to control the data loading;

a second gate line between the first gate line and the first set of the second gate lines, wherein the display driver circuitry is configured to provide a second gray level to the second data lines while using the second gate line to control the data loading; and

a third gate line between the second gate line and the first set of the second gate lines, wherein the display driver circuitry is configured to provide a third gray level to the second data lines while using the third gate line to control the data loading.

13. The display defined in claim 12, wherein the gray levels decrease exponentially from the first gray level to the third gray level.

14. The display defined in claim 12, wherein the gray levels decrease linearly from the first gray level to the third gray level.

15. The display defined in claim 9, wherein the null data is not provided to any of the pixels.

16. A method of operating a display having display driver circuitry that provides image data to data lines, a data signal attenuator, a data signal compensator, and pixels that form an active area configured to display the image data, the method comprising:

with the data signal attenuator, adjusting the image data to black data;

with the data signal compensator, adjusting a firsrt portion of the black data to gray data, wherein the gray data and a second portion of the black data comprise null data; and

with the display driver circuitry, providing the null data to the data lines corresponding to a notch-shaped recess in the active area.

17. The method defined in claim 16, further comprising:

with the display driver circuitry, providing at least some of the image data to the pixels that form the active area.

18. The method defined in claim 17, wherein the black data does not drive

any of the pixels.