

IMAGE PICKUP DEVICE, DISPLAY-AND-IMAGE-PICKUP DEVICE,
ELECTRONIC APPARATUS AND METHOD OF DETECTING AN OBJECT

ABSTRACT

An image pickup device capable of stably detecting an object irrespective of use conditions while reducing manufacturing costs is provided. When illumination light from a backlight 15 is emitted to a proximity object from an I/O display panel 20, an electric charge for charging is accumulated in each of image pickup pixels 33 in accordance with total light amount as a summation of reflected light L_{on} originating from the illumination light and environment light (outside light) L_0 . Moreover, when the above-described illumination light is not emitted, an electric charge for discharging is released from each of the image pickup pixels 33 in accordance with light amount of the environment light L_0 . Thereby, a component by the environment light L_0 is subtracted in an image pickup signal obtained from each of the image pickup pixels 33, so object information about the proximity object is obtainable without influence of the environment light L_0 . Moreover, in a light reception drive circuit 13, a smaller number of necessary frame memories 13A for producing a picked-up image from the image pickup signal than that in related art are necessary.