

ABSTRACT

Power Supply Device, Liquid Crystal Display Device, And Method of Supplying Power

An objective of the present invention is to provide a power supply device, a liquid crystal display device, and a method of supplying power that can enable designs with lower power consumptions and can also enable higher display qualities. A first voltage V_x , which is a constant voltage, is generated by a first voltage generation portion in a voltage regulation portion. A second voltage V_y having a value independent of that of V_x is generated by a second voltage generation portion, and V_x and V_y are added by an adder portion to generate a regulated voltage V_{reg} . A control portion provides variable control of V_y within a voltage regulation range that is defined to include V_x . The regulated voltage V_{reg} is divided by a voltage divider portion within a multi-value voltage generation portion. The impedances of voltages V_2 and V_4 are converted by first impedance conversion portions (n-type OP-amps), and the impedances of voltages V_1 and V_3 are converted by second impedance conversion portions (p-type OP-amps).

Fig.1.