

ABSTRACT

Bram Sabattino, 2022. *Design and Implementation Solar Panel as a Power Supply for Field Server*

Charge Controller is a device that can control the output voltage and current so that there is no overcharge and overvoltage in the battery charging process which can cause damage to the battery. Previously, there have been many studies on Charge Controllers that are used to supply various purposes, such as using the MPPT (Maximum Power Point Tracking) and PWM (Pulse Width Modulation) methods. This method is usually applied to wind turbine power generation systems and solar systems to maximize the voltage output from the source. Field Server is an instrument for monitoring environmental parameters in real time via the internet which will be placed in the middle of the plantation fields and far from the power source, so a device that can supply power is needed even though it is far from a power source.

In this research, the design of a Charge Controller with a solar panel source is carried out to supply Field Server devices. Several tests have been carried out on the Charge Controller as a device for supplying the Field Server. And it is known that the Charge Controller device that has been designed is able to charge for ± 3 hours and discharge the battery for 27 hours and is able to supply the Field Server for 24 hours in full running condition.

Keywords: *Charge Controller, Power Supply, Field Server.*