

FPGA Based Battery Charge Control and Management system

U R Rao Satellite Centre (URSC) of Indian Space Research Organisation (ISRO) has developed FPGA Based Battery Charge Control and Management system for Battery Tied Power Bus for Satellites. It controls the battery charging for battery tied bus, in addition to carrying Protection Telemetry/telecommand processing and cell balancing functions. A new FPGA based system is designed to overcome the shortcomings and limitations of the existing system. It caters to all existing logics and features and besides being lighter, mass-producible, plug and play, easy to use for any Battery-tied mission and failure-proof.



Salient Features

- ✦ Modular, plug and play.
- ✦ Lighter and mass-producible.
- ✦ High power density, Programmable references.
- ✦ 16-cell battery support.
- ✦ Easy to use for any Battery-tied mission and failure-proof.

Major Specifications

TCR Function	30 strings in sets of 10 with a capacity of 4A
power handling	7kW,70V power bus
Cell Balancing	passive discharge balancing technique
Battery Protection Functions	Over voltage protection, Overcharge current protection, Battery and Cell Under Voltage protection (UVP) and Cell balancing IO failures
Telemetry and Telecommand Function	64 analog channels, 15 16bit words and 160 digital bits
Error Detection and Correction logic	detect and correct single-bit errors and detect and flag double-bit errors
Battery State of Charge Monitor	real-time state of charge like an Ampere Hour meter (AHM).

Technology Transfer

URSC/ISRO offers to transfer this technology of FPGA Based Battery Charge Control and Management system developed by URSC to industries in India with adequate experience and facilities. Industries interested in obtaining knowhow may write giving details of their present activities, infrastructure and facilities.

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