ON-GROUND SIMULATION OF ON-ORBIT THERMAL ENVIRONMENT FOR SATELLITE FLIGHT ACCEPTANCE TEST

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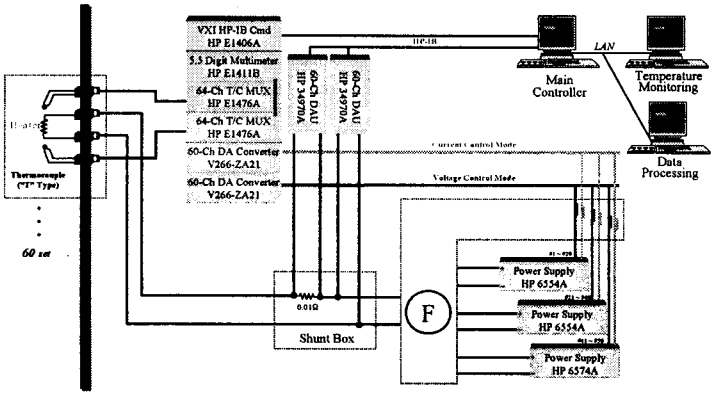
On-ground simulation of on-orbit thermal environment of satellite is described. For satellite ground test, high vacuum and extremely low temperature of deep space are achieved by space simulation chamber, while spatial environmental heating is simulated by employing an absorbed heat-flux method. The methodology is explained in detail with test requirement and setup implemented on a satellite. Developed heat-load control system is presented with an adjusted PID-control logic, and the system schematic realized is shown. A practical and successful application of the heat simulation method to KOMPSAT (Korea Multi-purpose Satellite) thermal environmental test is demonstrated, finally.



Schematic of Heat-Loads Control System