

The PIP-II dedicated Radio Frequency Protection Interlock system full scale prototype design and integration

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The Radio Frequency Protection Interlock (RFPI) system watches over fifty signals near the superconducting cavities cryomodule. Its major role is to recognize faulty situations instantly and drop permits for the Low-Level Radio Frequency control system (LLRF) and Solid State Amplifier (SSA) operation.

The full-scale prototype RFPI is a recent version of the PIP-II dedicated system capable of fulfilling the requirements of this newly constructed Linac project. Its hardware structure is compact but still modular. It provides enough capability to protect four superconducting resonators and their close environment at the same time.

This work summarizes the production phase and integration process of this designed RFPI system. The work introduces also the hardware and software structures of this system. Moreover, we also summarize the on-the-bench testing experiences from the individual hardware module verification and integrated RFPI studies.

Footnotes

Funding Agency

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