Spill Ripple Compensation with direct field ripple measurements

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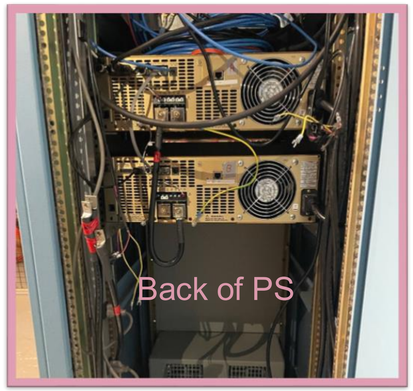
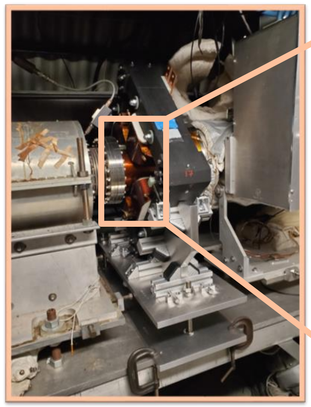
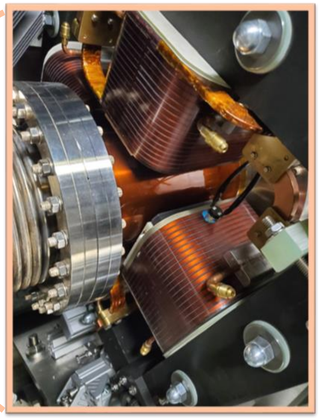


Status:
- Cables run and tested ✅
- Installed ✅

Delivers precisely controlled current to drive the compensation quadrupole.

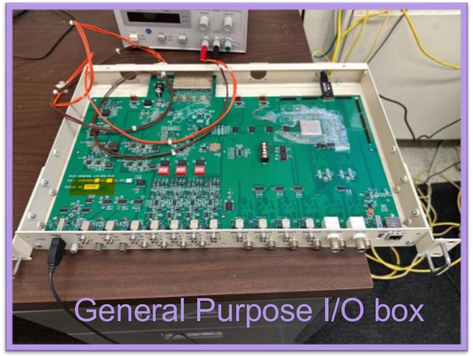




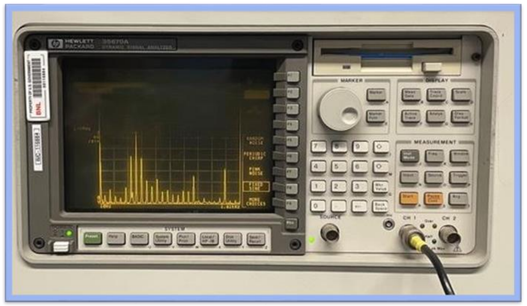
Generates corrective magnetic fields to counteract measured ripple.

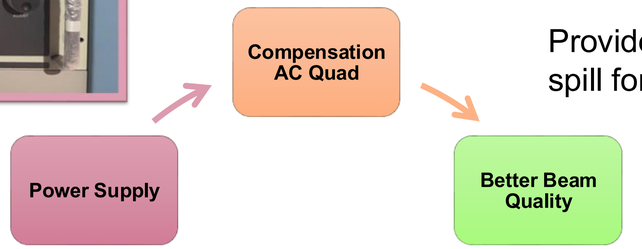
Status:
- Installed in Booster ✅
- Commissioning to follow controls integration ⏳

Provides digital control, phase/gain adjustments, and firmware for compensation logic.



Status:
- Hardware assembled ✅
- Firmware and Controls integration in progress ⏳

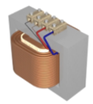




Filters, amplifies, and extracts ripple harmonics. Prepares correction signals.

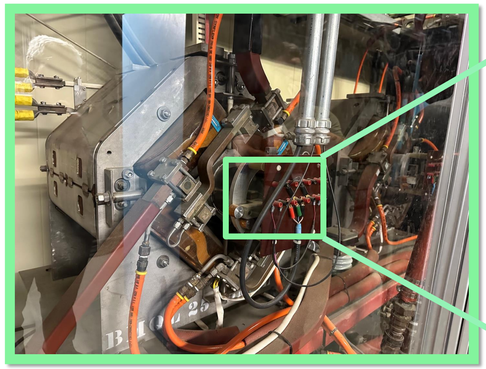
Status:
- Analog boards built ✅
- Signal processing under development ⏳

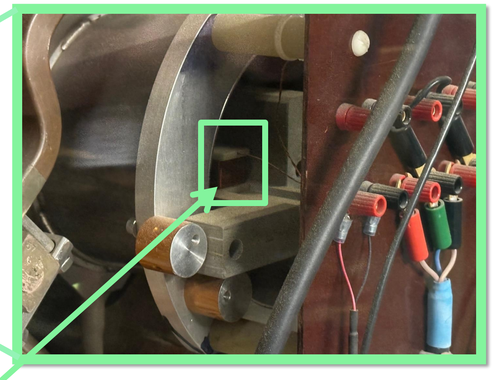
Pickup Coil



Provides smoother, more stable spill for sensitive experiments.

Status:
- Final commissioning pending ⏳
- Smoother beam delivery expected 🎯





Provides direct measurement of field ripple within the Booster magnet circuit, including eddy current effects.

Status:
- Installed in Booster circuit ✅
- Pickup coil connected & measuring ✅