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## The preliminary design and fabrication of LLRF system in proton CT

*Thursday, 23 May 2024 16:00 (2 hours)*

A new proton CT(pCT) facility will be built in Shanghai Ruijin Hospital. The main structure of the proton CT includes a high gradient proton LINAC, a compact 360-degree gantry, and a proton imaging platform. In the proton LINAC, a 16 S-band proton accelerating tube increased the energy from 230 MeV to 350 MeV. To provide a more accurate and stable Radio-Frequency(RF) control, a CPCI-based Level Radio-Frequency(LLRF) control system was developed. In this paper, we introduce the LLRF control system both in firmware and software, which contains the front frequency conversion board with vector modulation RF output, the acquisition and digital processing board with 10 Channels 125 MSPS ADC, the clock and Local-Oscillator(LO) generator board, the RF distributions, and the feedback control.

### Footnotes

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