

## A CPCI based LLRF system for proton CT

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, 16 S band proton accelerating tube were used to increase the energy from 230 MeV to 350 MeV. To provide a more accurate and stable Radio-Frequency(RF) control, a CPCI based Low-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.

### Keyword

**Primary authors:** XIAO, Chengcheng (Shanghai Synchrotron Radiation Facility); FANG, Wencheng (Shanghai Synchrotron Radiation Facility); XU, Yiming (Shang Advanced Research Institute, Chinese Academy of Sciences)

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