

PXI-compatible amplifier and preamplifier card for proportional gas counters

Tuesday 12 October 2021 10:30 (15 minutes)

PXI-compatible card combining amplifier and preamplifier for proportional gas counters is presented. This PXI-compatible amplifier/preamplifier is developed for purpose of usage with proportional gas counter sensitive to 14.4 keV and PXI-based spectrometers developed on Palacký University in Olomouc [1], [2]. The card is based on Amptek A225 and Amptek A206 integrated circuits. It allows miniaturization of the spectrometric system, as the amplifier and preamplifier together are in form of one PXI card and thus built in the compact PXI-chassis. There is also no need for the additional power supply, as the developed card is powered by PXI connector from the backpane of PXI chassis. This study will deal with comparison of PXI-compatible amplifier/preamplifier board, amplifier/preamplifier board using same components but in form of stand-alone box and powered by lab power supply and other commercially available amplifiers and preamplifiers in the focus on the signal-to-noise ratio, MCA spectrum and quality and effect of Mössbauer spectrum.

References

- [1] J. Pechousek and M. Mashlan, "Mössbauer spectrometer as a virtual instrument in the PXI/Compact PCI modular system," *Czechoslov. J. Phys.*, vol. 55, no. 7, pp. 853–863, Jul. 2005, doi: 10.1007/s10582-005-0087-x.
- [2] J. Pechousek, R. Prochazka, D. Jancik, J. Frydrych, and M. Mashlan, "Universal LabVIEW-powered Mössbauer spectrometer based on USB, PCI or PXI devices," *J. Phys. Conf. Ser.*, vol. 217, no. 1, p. 012006, Mar. 2010, doi: 10.1088/1742-6596/217/1/012006.

Primary authors: KOHOUT, Pavel (JINR); Mr KOURIL, Lukas (Palacký University in Olomouc); OPICHAL, Antonin (Palacký University Olomouc); KOHOUTOVA, Alena; Prof. PECHOUSEK, Jiri (Palacký University Olomouc)

Presenter: KOHOUT, Pavel (JINR)

Session Classification: Nuclear Physics

Track Classification: Experimental Nuclear Physics