

## Generalized Signal Conditioning Module for Spectrometers at CSNS-WNS

There are several spectrometers in the white neutron source at China Spallation Neutron Source (WNS-CSNS) including detectors of C6D6, Silicon, fission chamber and light charged particle etc. Matching signals from these various detectors becomes design challenge for readout electronics design. In this paper, a generalized readout structure based on PXIe platform is proposed. In this structure, signal conditioning module named with SCM plays important role in connecting signals from various detectors to a uniform readout system. SCM module can receive the single-ended signal from detector, condition and then fan out to waveform digitizer with uniform differential-ended level signal. For all detector applications, each SCM has the same structure and formation. With simple parameter adjustment, SCM can be used to receive signal from these detectors. Test results show that this SCM has good performance of frequency bandwidth, noise and linearity, which meets the requirement of detectors at WNS-CSNS.

### Summary

In conclusion, this paper introduces the design and test of generalized SCM which are ready to be applied to the first experiment at CSNS-WNS.

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