

PERFORMANCE EVALUATION OF EPICS OSCILLOSCOPES FOR REAL-TIME WAVEFORM MONITORING

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Abstract

The EPICS Oscilloscopes have been evaluated to perform simultaneous real-time pass-fail monitoring of two or four waveforms. The EPICS oscilloscopes are remotely controlled and monitored via LAN. Operators can control and query all instrument functions and settings, and monitor captured waveforms via EPICS PVs, an EDM panel, or via a “virtual front panel” application running in Linux or Windows. Upper and lower waveform masks used for pass-fail testing are automatically generated by the oscilloscope from a captured “golden waveform”. A variable-width output pulse is generated upon every captured waveform that passes (falls within the masks) or fails (falls outside the masks), depending on the operator’s requirements. Real-time pass-fail monitoring has been demonstrated on the teststand for the Spallation Neutron Source (SNS) injection and extraction kicker waveforms occurring both at 60Hz and 120Hz. We believe that the same instruments will also support SNS’s future requirements for real-time monitoring of waveforms at 120Hz.

**CONTRIBUTION NOT
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