

Upgrade of the NSLS Multiplexed Beam Position Monitors

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The multiplexed beam position monitors developed at the NSLS have provided precise, low noise measurements for the past 15 years. However components used on the IF amplifier and detector board have become obsolete and are no longer available. This board has been redesigned using updated components to address long-term maintenance concerns. The dynamic range has been improved by 15dB and the noise has been reduced by a factor of two. At a 20kHz-switching rate, the X and Y outputs of the updated prototype vary by $\pm 10\mu\text{M}$ over a 60dB change in beam current with a noise floor at full current of $3.2\mu\text{M}$.