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Electromagnetic design and Bench Testing of ALS-U BPM Buttons and Assemblies

The ALS Upgrade Project (ALS-U) consists in the replacement of the existing ALS storage ring and the addition of a new accumulator ring in order to decrease the horizontal beam emittance to about 70 pm rad, resulting in an increase of two orders of magnitude in the soft X-Ray brightness. The vacuum chambers of two new rings, and of the transfer lines connecting them, will include 327 new beam position monitors (BPM). About 1500 buttons (including prototypes and spares) are purchased from the commercial vendors and must be tested. In this report, we will present the electromagnetic design and the bench testing work for the ALSU BPM buttons and assemblies. Up to now, we have finished the assembling of all the BPMs for the Accumulator Ring (AR). We are now working on the BPMs for the new Storage Ring, which are more challenging than AR due to the smaller apertures and the ante-chambers.

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