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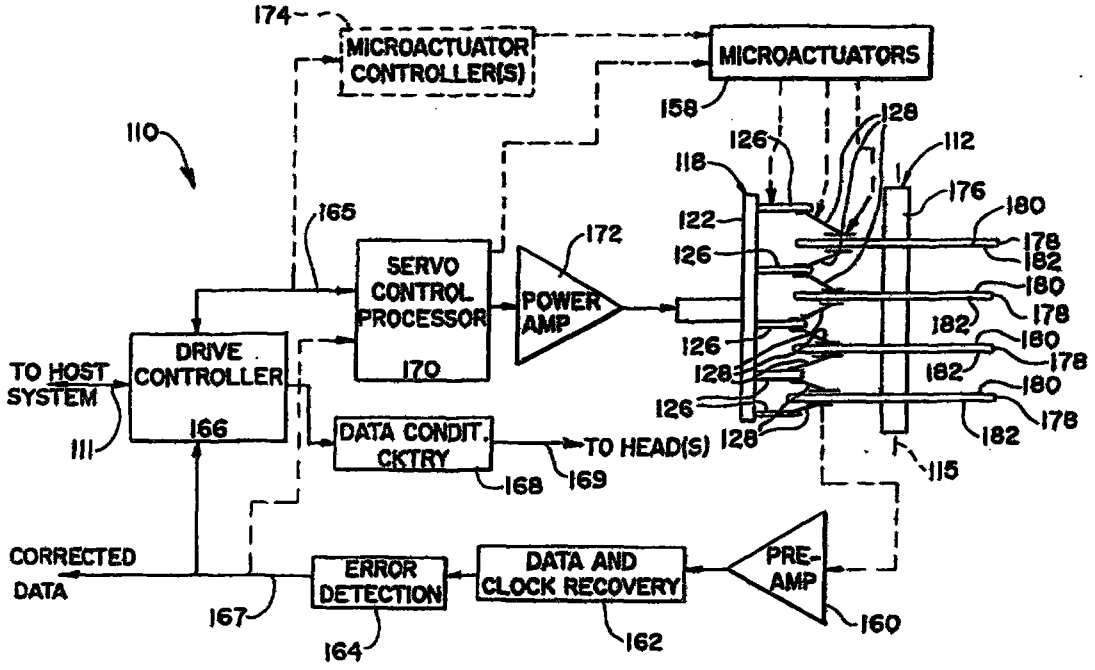
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(54) Title: METHOD OF IMPLEMENTING A LINEAR DISCRETE–TIME STATE–SPACE SERVO CONTROL SYSTEM ON A FIXED–POINT DIGITAL SIGNAL PROCESSOR IN A DISC DRIVE



(57) Abstract

A method of implementing a model–based servo controller (170, 174, 190) in a digital signal processor is a disc drive (110) includes obtaining matrices for a discrete–time state–space realization of the servo controller (170, 174, 190). Controller states of the controller (170, 174, 190) are scaled to reduce a worst case bound on the controller states. The controller states are transformed to a desired format which reduces a number of required mathematical operations. Further, the matrices are converted to fixed point format.