

**METHOD AND APPARATUS FOR HANDLING MULTIPLE RESONANCE
FREQUENCIES IN DISC DRIVES USING ACTIVE DAMPING**

Abstract of the Disclosure

5 A method of handling multiple resonance frequencies in a disc drive includes
monitoring a position error signal (PES) for an actuator arm, generating a plurality of
feedforward compensation signals from the PES using a plurality of bandpass filters,
and applying the compensation signals to a servo control signal. Each filter has a
center frequency that is set to a problematic resonance frequency. The method may
10 also include identifying the problematic frequencies by, for example, commanding a
movement of the actuator arm, collecting data points for the PES that are associated
with the movement, and performing a digital fourier transform of the data points to
identify resonant frequencies. Other methods of identifying problematic frequencies
include analyzing PES zero-crossing data, or using principal component analysis.

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FIG. 6