



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁷ : G11B 19/20, 21/12, 19/22		A1	(11) International Publication Number: WO 00/51118
			(43) International Publication Date: 31 August 2000 (31.08.00)
(21) International Application Number: PCT/SG99/00013		(81) Designated States: JP, SG, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).	
(22) International Filing Date: 25 February 1999 (25.02.99)		Published With international search report.	
(71) Applicant (for all designated States except US): STMICRO-ELECTRONICS ASIA PACIFIC PTE LTD [SG/SG]; 28 Ang Mo Kio Industrial Park 2, Singapore 569508 (SG).			
(72) Inventors; and (75) Inventors/Applicants (for US only): KRISHNAMOORTHY, Ravishanker [IN/SG]; Block 565, 3 Ang Mo Kio Avenue #08-3421, Singapore 560565 (SG). FONG, Hin, Sing [SG/SG]; Block 452, 42 Jurong West Street #05-168, Singapore 640452 (SG).			
(74) Agent: DONALDSON & BURKINSHAW; P.O. Box 3667, Singapore 905667 (SG).			

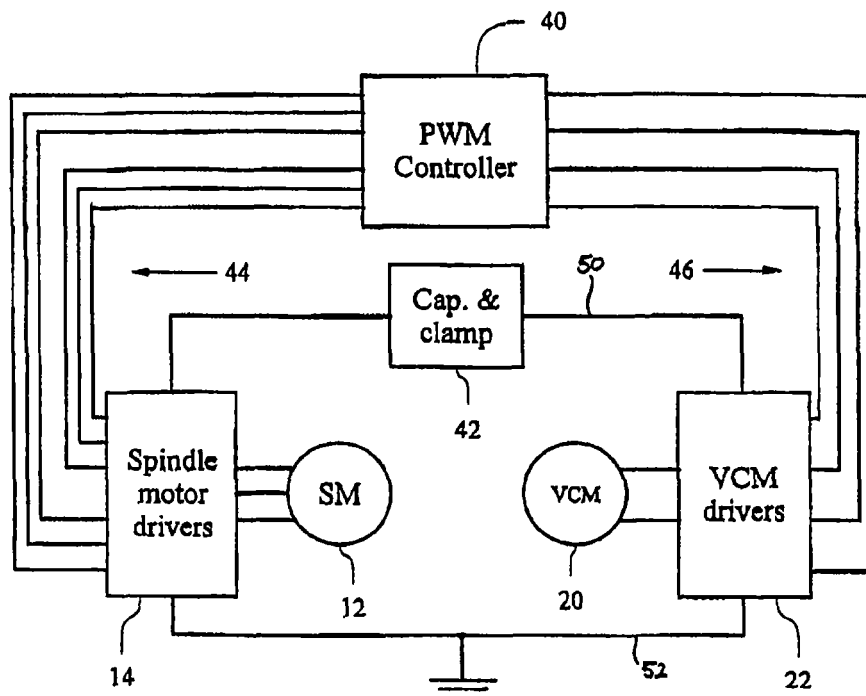


G00001

(54) Title: A METHOD AND APPARATUS FOR CONTROLLING A DISK DRIVE UNDER A POWER LOSS CONDITION

(57) Abstract

In a disk drive, a synchronized chopping scheme is described for deriving high peak currents from a coasting spindle motor under power down conditions to supply power to other circuits. These circuits need to perform certain functions to avoid physical damage to the data storage area as well as the read/write head. The maximum current that can be delivered by the back-emf (BEMF) in the spindle motor is limited by the motor parameters and the circuit elements. By synchronised out-of-phase chopping of the connections between a driving circuit and the spindle and head positioning motors, a storage capacitor in the driving circuit can be made much smaller, and the unused power dissipated as heat in a clamp circuit is minimized. This is achieved by directly transferring the energy from the spindle to the necessary circuits with synchronized control of the spindle and the circuits that need to operate under no power condition.



162162