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uemarks: Please record the attached original documents or copy thereof. To the Honorable Commissioner of Paters Name of conveying party(ies): 1. Jong-yoon KIM Chang-dong YEO Seung-hyun SONG MAY 1 8 2004 Geun-soo KIM 2. Name and Address of receiving party(ies): SAMSUNG ELECTRONICS CO., LTD. 416, Maetan-Dong, Yeongtong-gu, Suwon-si, Gyeonggi-do Republic of Korea Nature of conveyance: 3. Assignment Χ Merger Security Agreement Change of Name Other: Execution Date(s): May 17, 2004 4. Application number(s) or patent number(s): This document is being filed together with a new application: The execution date(s) of the application is/are: (a) (b) The title is: OR ☐ This document is being filed after filing of the application: Patent Application No(s). 10/733,818, filed December 12, 2003; or (a) (b) Patent No(s). , issued . Name and address of party to whom correspondence concerning document should be mailed: 5. STAAS & HALSEY LLP Our Docket: 1793.1084 Attention: Michael D. Stein 1201 New York Ave., N.W., Suite 700 Washington, D.C. 20005 6. Total number of applications and patents involved: 1 7. Total fee (37 CFR 3.41)..... (\$ 40.00 per Patent or Application in Assignment) Authorized to be charged to deposit account. 8. Deposit Account No.: 19-3935 (Any underpayment is authorized to be charged to this Deposit Account) (Attach duplicate copy of this page if paying by deposit account)

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**PATENT** 

REEL: 015337 FRAME: 0607

### U.S. ASSIGNMENT

DOK! MEZ

IN CONSIDERATION of the sum of One Dollar (\$1,00), and of other good and valuable consideration paid to the undersigned inventor(s) (hereinafter, "ASSIGNOR") by

(Insert Name(s) & Address(cs) of ASSIGNEE(S))

SAMSUNG ELECTRONICS CO., LTD 416 Maetan-dong, Yeongtong-gu, Suwon-si, Gyeoggi-do, Ropublic of Korea

(hereinafter, "ASSIGNEE"), the receipt of which is hereby acknowledged, the undersigned ASSIGNCR hereby sells, assigns and transfers to ASSIGNEE the entire and exclusive right, title and interest to the invention entitled (Title of Invention)

# METHODS OF OPTIMIZING RECORDING CURRENT AND SETTING RECORDING DENSITY OF HARD DISK DRIVE relating to international Patient Application PCT/JP / and/or for which application for Lutters Patient of the United States was executed on even date herewith or, if not so executed, was: (a) executed on 17 May 2004 : (Insert date of execution of application, 1.not concurrent) (b) filled on December 12, 2003 . Any registered attempt of STAAS & HALSEY LLP, 1201 New York Avenue, N.W., Suite 700 Westington, D.C. 20005 (202/434-1500) is hereby sufferized to insert in (b) the upsetflood date, when the provided to insert in (b) the upsetflood date, when

and to said application and all Letters Patent(s) of the United States granted on said application and any continuation, division, renewal, substitute, release or reexamination application based thereon, for the full term or terms for which the said Letters Patent(s) may be granted and including any extensions thereof (collectively, hereinafter, "said application(s) and Letters Patent(s)").

The ASSIGNOR agree(s), when requested by said ASSIGNEE and without charge to but at the expense of said ASSIGNEE, to do all acts witch the ASSIGNEE may deem necessary, desirable or expedient, for secting, methiatining and entorting protection for said invention, including in the preparation and prosecution of said application(s) and the issuance of said Letters Patent(s), in any interference, reissue, reasonination, or public use proceeding, and in any litigation or other tegal proceeding which may arise or be declared in relation to same, such acts to include but not be limited to executing all papers, including separate assignments and declarations, taking all rightful oaths, providing swom testimony and obtaining and producing evidence.

	N WITNESS WHEREOIT, the undersigned inver (Typed Name & Signature of inventor(s))	ntor(s) had (have) affixed hit (Date)	
1)	JONG YOON KIM	17 May 2004	
	Chang-dong YEO		A C N. Annial Annia
3) _	Seung-hyun SONG	***************************************	
4)	Geun-soo KIM	ACTION AND PROPERTY OF A PARTY SHAPE	
5) _			
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PATENT REEL: 015337 FRAME: 0608

### U.S. ASSIGNMENT

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IN CONSIDERATION of the sum of One Dollar (\$1.00), and of other good and valuable consideration paid to the undersigned inventor(s) (horolosite), "ASSIGNOR") by

(Insert Name(a) & Address(os) of ASSIGNEE(S))

Samsung Electronics Co., LTD 418 Maetan-dong, Yeongtong-gu, Suwon-si, Gyeoggi-do,

# Republic of Korea thereinafier, "ASSIGNEE"), the receipt of which is hereby acknowledged, the undersigned ASSIGNOR hareby solla, assigns and transfers to ASSIGNEE the entire and exclusive right, title and interest to the invention entitled (Title of Invantion) METHODS OF OPTIMIZING RECORDING CURRENT AND SETTING RECORDING DENSITY OF HARD DISK DRIVE relating to international Patent Application PCTMP. and/or for which application for Latiers Falent of the United States was executed on evan date herewith or, if hot so executed, was: (a) exposted on 17 May 2004 : (Insert date of execution of application, if not concurrent) Any registered etiorney of STAAS & HALSEY LLA, 1201 New York (b) filed on <u>Decamber 12, 2003</u> Avenue, N.W., Suite 700 Washington, D.C. 20005 (202/434-1500) is hemby authorized to insert in (b) the specified date, when Serial No. <u>10/733.818</u> known. and to said application and all Letiers Patentia) of the United States granted on said application and any continuation, division, renewal, substitute, release or recommender application based thereon, for the full term of terms for which the said Letters Patent(s) may be granted and including any extensions thereof (collectively, hereinafter, "said application(s) and Letters Patent(4)"). The ASSIGNOR agree(s), when requested by said ASSIGNEE and without charge to but at the expense of said ASSIGNEE, to do all goto which the ASSIGNEE may deem necessary, desirable or expedient, for ascuring, maintaining and entorong protection for sekt invention, including in the preparation and presecution of said application(s) and the issuance of said Letters Potoni(s), in any interference, release, recommended, or public use proceeding, and in any litigation or other legal proceeding which may arise or be declared in relation to same, such acts to include but not be limited to executing all popers. inobuding imparate eetigemeets and declarations, laking till rightful caths, providing towart namigant, and obtaining and producing evidence. IN WITNESS WHEREOF, the undersigned inventor(s) has (have) affixed his/her/liter signaturate). (Typed Name & Signature of Witness(es)) (Typed Name & Signalure of Inventor(s)) (Date) Jong-yoon KiM Change - Dung 17 May 2004 hang-dong YEO Soung-hyun BONG Goun-apo KiM Germ-Gu 17 May 2004

**PATENT** REEL: 015337 FRAME: 0609

## U.S. ASSIGNMENT

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IN CONSIDERATION of the sum of One Dollar (\$1.00), and of other good and valuable consideration paid to the undersigned inventor(s) (hereinafter, "ASSIGNOR") by

(insert Name(s) & Address(os) of ASSIGNEE(5))

SAMSUNG ELECTRONICS CO., LTD 416 Maetan-dong, Yeongtong-gu, Suwon-si, Gyeoggi-do.

RECORDED: 05/18/2004

# Republic of Korea (hareinafter, "ASSIGNEE"), the receipt of which is hereby acknowledged, the undersigned ASSIGNOR hereby sells, assigns and transfers to ASSIGNEE the entire and exclusive right, title and interest to the invention entitled (Titio of Invention) METHODS OF OPTIMIZING RECORDING CURRENT AND SETTING RECORDING DENSITY OF HARD DISK DRIVE relating to international Patent Application PCT/JP and/or for which application for Letters Patent of the United States was executed on even date herewith or, if not so executed, was: (a) executed on <u>17 May 2004</u>: (insert date of execution of application, if not concurrent) Any registered attorney of STAAS & HALSEY U.P., 1201 New York (b) filed on <u>December 12, 2003</u>, Avenue, N.W., Suite 700 Washington, D.C. 20005 (202/434-1500) is heroby authorized to insert in (b) the specified data, when Serial No. \_10/733,818 \_\_\_\_\_ known. and to said application and all Latters Patent(s) of the United States granted on said application and any continuation, division, renewal, substitute, release or reexamination application based thereon, for the full term or terms for which the said Letters Patent(s) may be granted and including any extensions thereof (cotlectively, hereinafter, "said application(s) and Letters Patent(s)"). The ASSIGNOR agree(s), when requested by said ASSIGNEE and without charge to but at the expense of said ASSIGNEE, to do all acts which the ASSIGNEE may deem necessary, desirable or expedient, for securing, maintaining and enforcing protection for said invention, including in the preparation and prosecution of said application(s) and the issuance of said Letters Palent(a), in any interference, reissue, reexamination, or public use proceeding, and in any litigation or other legal proceeding which may arise or be decirred in relation to same, such acts to include but not be limited to executing all papers, including separate assignments and declarations, taking all rightful caths, providing sworn testimony, and obtaining and producing evidence. IN WITNESS WHEREOF, the undersigned inventor(s) has (have) affixed his/her/their signature(s). (Typed Namo & Signature of Witness(es)) (Typed Name & Signature of Inventor(s)) (Date) Jong-yoon KIM 2) Chang-dong YEO 31 Sanny-Hyun Song-17 May 2004 Seung-hýun SONG Geun-soo KIM

**PATENT** REEL: 015337 FRAME: 0610