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Chiaki Minari (03/01/2012) and Tokio Taguchi (03/01/2012) Additional name(s) of conveying party(ies) attached? Yes X No	Name: Sharp Kabushiki Kaisha Internal Address:
3. Nature of conveyance/Execution Date(s): Execution Date(s): in parentheses after inventor name X Assignment Merger Change of Name Security Agreement Joint Research Agreement Government Interest Assignment Executive Order 9424, Confirmatory License Other	Street Address: 22-22, Nagaike-cho, Abeno-ku Osaka-shi, Osaka 545-8522 JAPAN City: State: Country: Additional name(s) & address(es) attached? X No
4. Application or patent number(s): A. Patent Application No.(s) 13/500,515 Additional numbers attached	
Name and address to whom correspondence concerning document should be mailed:	6. Total number of applications and patents involved:
Name: Donald J. Daley HARNESS, DICKEY & PIERCE, P.L.C. Internal Address: Atty. Dkt.: 15020SL-000032/US/NP Street Address: P.O. Box 8910	7. Total fee (37 CFR 1.21(h) & 3.41) \$ 40.00 X Authorized to be charged to deposit account Enclosed None required (government interest not affecting title
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Phone Number: (703) 668-8000 Fax Number: (703) 668-8200 Email Address: dcmailroom@hdp.com	Deposit Account Number 08-0750 Authorized User Name Donald J. Daley
9. Signature:	April 5, 2012
Signature Donald J. Daley - 34,313	Total number of pages including cover sheet, attachments, and documents:
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Atty. Docket No.

P.003

ASSIGNMENT

WHEREAS, the undersigned, hereinafter referred to collectively as Assignor, has invented:

WHEREAS, SHARP KABUSHIKI KAISHA, with address at 22-22, Nagaike-cho, NOW, THEREFORE, for good and Abeno-ku, Osaka-shi, Osaka 545-8522 Japan, valuable consideration, the receipt and adequacy whereof is hereby acknowledged, Assignor hereby confirms any prior assignment to Assignee, and to the extent that Assignor has not already done so, agrees to assign, and hereby does, sell, assign and transfer unto Assignee ar d its successors in interest, the full and exclusive right, title and interest in the United States of America and throughout the world, including the right to claim priority under the laws of the United States, the Paris Convention, and any foreign countries, to the inventions as described n the aforesaid application, to the aforesaid application itself, and all divisions, continuations, continuations-in-part, or other applications claiming priority directly or indirectly from the aforesaid application, and any United States or foreign Letters Patent, utility model, or other similar rights which may be granted thereon, including reissues, reexaminations and extensions thereof, and all copyright rights throughout the world in the aforesaid application and the subject matter disclosed therein, these rights, title and interest to be held and enjoyed by Assignee to the full end of the term for which the Letters Patent, utility model, or other similar rights, are granted and any extensions thereof as fully and entirely as the same would have been held by Assign or had this assignment and sale not been made, and the right to sue for, and recover for past infringements of, or liabilities for, any of the rights relating to any of the applications, patents, utility models, or other similar rights, resulting therefrom, and the copyright rights;

Assignor hereby covenants and agrees to execute all instruments or documents required or requested for the making and prosecution of any applications of any type for patent, util ty model, or other similar rights, and for copyright, in the United States and in all foreign countries including, but not limited to, any provisional, continuation, continuation-in-part, divisional, renew all or substitute thereof, and as to letters patent any reissue, re-examination, or extension thereof, and for litigation regarding, or for the purpose of protecting title and to the said invention, the United States application for patent, or Letters Patent therefor, and to testify in support thereof, for the benefit of Assignee without further or other compensation than that above set forth;

Assignor hereby covenants that no assignment, sale, license, agreement or encumbrance has been or will be entered into which would conflict with this Assignment; and

Assignor hereby requests the United States Patent and Trademark Office to issue the Letters Patent of the United States of America to Assignee, and requests that any official of any country or countries foreign to the United States, whose duty it is to issue or grant patents and applications as aforesaid, to issue the Letters Patent, Utility Model Registration or other similar right to Assignee.

The undersigned hereby grant(s) the law firm of Harness, Dickey & Pierce, P.L.C. the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the U.S. Patent and Trademark Office for recordation of this document.

PATENT REEL: 028005 FRAME: 0134

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ASSIGNMENT

March 1, 2012 Dated

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