FORM PTO-1595	RECORDATION FORM COVER SHEET PATENTS ONLY	U.S. Department of Commerce Patent and Trademark Office
To the Honorable Commissioner of Patents and Trademarks. Please record the attached original documents or copy thereof.		
Name of conveying party(ies):	2. Name and Address	
Texas Instruments Japan, Ltd. Soichiroh (NMI) ISHIZUKA	Name: Texas Instru Internal Address: P. Street Address: 783	O. Box 655474, M/S 3999
Toru (NMI) IDO	City: Dallas	
	State: Texas	Zip: 75265
Additional name(s) attached?Yes _XNo	Additional name(s) & ac	ldress(es) attached?Yes _X_No
Nature of Conveyance:		
X_ Assignment Merger		
Security Agreement Change of Name		
Other		
Execution Date: TIJ - September 28, 2005; Ishizuka - September 22, 2005; Ido - September 22, 2005		
Application number(s) or patent number(s): If this document is being filed together with a new application, the execution date of the application is A. Patent Application No.(s) 11/170,908 B. Patent No.(s)		
Additional numbers attached?Yes	sXNo Additional num	bers attached?Yes _XNo
Name and address of party to whom correspond document should be mailed:	ndence concerning 6. Number of application	ns and patents involved:1
Name: William B. Kempler Internal Address: P. O. Box 655474, M/S 39 Street Address: 7839 Churchill Way	999	
City: Dallas		
State:Texas Zip: 75265		
	7. Amount of fee enclose	sed or authorized to be charged: \$40.00
	Deposit account null paying by deposit a	mber (Attach two copies of this form if count): 20-0668
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Date <u>September 30, 2005</u> Total number of pages including cover sheet, attachments, and document: 3		

PATENT REEL: 016848 FRAME: 0587

ASSIGNMENT

WHEREAS, TEXAS INSTRUMENTS JAPAN, LTD. (hereinafter TIJ), a Japanese company having its headquarters at 24-1 Nishi-Shinjuku 6-chome, Shinjuku-ku, Tokyo, Japan, under the laws of Japan made application, in its own name, for Letters Patent in Japan in respect of an invention as set forth below;

WHEREAS, the or each below named inventor (hereinafter INVENTOR) is the or an inventor of the said invention:

WHEREAS, TEXAS INSTRUMENTS INCORPORATED, a corporation organized and existing under the laws of the State of Delaware, having a place of business at 7839 Churchill Way, Mail Station 3999, Dallas, Texas 75251, USA, is desirous of acquiring the entire right, title and interest in and to the said invention outside of Japan, and in and to the U.S. patent application as identified hereinafter and any Letters Patent that may issue thereon;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, by this Assignment, TJJ and INVENTOR sell and assign to the said TEXAS INSTRUMENTS INCORPORATED, its successors and assigns the entire right, title and interest in and to the said invention in the U.S.A. and all other countries outside Japan; in and to the U.S. patent application as identified below and all patents which may be granted therefor, and all divisions, reissues, substitutions, continuations, and extensions thereof; and the right to file applications and obtain patents in its own name in any said other country or group of countries, and to claim priority under the terms of the International Convention for the Protection of Industrial Property or any other relevant convention;

TIJ and INVENTOR hereby authorize and request the Commissioner of Patents to issue U.S. patents for said invention, or U.S. patents resulting therefrom, insofar as the interest of TIJ and INVENTOR is concerned to the said TEXAS INSTRUMENTS INCORPORATED, as assignee of the entire right, title and interest.

TIJ and INVENTOR further agree to communicate to TEXAS INSTRUMENTS INCORPORATED or to its successors, assigns and legal representatives, any facts known to TIJ and INVENTOR respecting the said invention, and at the expense of TEXAS INSTRUMENTS INCORPORATED, sign any and all patent applications, assignments, affidavits and other lawful papers, execute all divisional, continuation, reissue and substitute applications, make all lawful oaths, testify in any legal or quasi-legal proceedings and generally do everything possible to aid said TEXAS INSTRUMENTS INCORPORATED, its successors, assigns and nominees to obtain and enforce proper patent protection for said invention in all countries outside of Japan.

PATENT REEL: 016848 FRAME: 0588 09 08/50 HED TO:TI THY

Assignment TJJ-38750 Page 2 of 2

DIGITAL ENCODER AND DIGITAL-TO-ANALOG CONVERTER USING SAME Title of Invention 06/30/2004 2004-194984 Filed: Japanese Serial No.: 06/29/2005 11/170,908 Filed: U.S. Application Serial No.: IN WITNESS WHEREOF, this Agreement has been executed as set forth below; Signed at Tokyo, Japan on September 28, 2005 by Texas Instruments Japan, Ltd. Title Representative Director and President and by the INVENTOR:

713-7-301 Kashiwagaya, Ebina-shi Kanagawa, 243-0402, JAPAN

Address

Toru (NMI) IDO

RECORDED: 09/30/2005

6-12-7-A201 Takamori, Isehara-shi

Kanagawa, 259-1114, JAPAN Address

PATENT REEL: 016848 FRAME: 0589