

U.S. Department of Commerce

SHEET Patent and Trademark O
e attached original documents or copy thereof.
and Address of receiving party(ies): TEXAS INSTRUMENTS INCORPORATED is: P.O. Box 655474, MS 3999 Dallas TX Zip: 75265 name(s) & address(es) attached? Yes _X_ No
06-09-1999 101058718
No.(s) dditional numbers attached? YesX No
of applications and patents involved:(1)
t of fee enclosed or authorized to be charged: \$40 t Account No: 20-0668 (Duplicate copies not required
40E
rrect and any attached copy is a true copy of the original

PATENT REEL: 009999 FRAME: 0214

PAGE 1 OF 1

ASSIGNMENT

WHEREAS, I, the undersigned inventor (or one of the undersigned joint inventors), of residence as listed, having invented certain new and useful improvements as below entitled, for which application for United States Letters Patent is made, the said application having been executed on the date set forth below; and

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, MS 3999, Dallas, Texas 75251, P.O. Box 655474, MS 3999, Dallas, Texas 75265, is desirous of acquiring my entire right, title and interest in and to the said invention, and to the said application and any Letters Patent that may issue thereon;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, I hereby sell and assign to the said TEXAS INSTRUMENTS INCORPORATED, its successors and assigns, my entire right, title and interest in and to the said invention and in to the said application and all patents which may be granted therefor, and all divisions, reissues, substitutions, continuations, and extensions thereof; and I hereby authorize and request the Commissioner of Patents and Trademarks to issue all patents for said invention, or patent resulting therefrom, insofar as my interest is concerned, to the said TEXAS INSTRUMENTS INCORPORATED, as assignee of my entire right, title and interest.

I also hereby sell and assign to TEXAS INSTRUMENTS INCORPORATED, its successors and assigns, my foreign rights to the invention disclosed in said application, in all countries of the world, including the right to file applications and obtain patents under the terms of the International Convention for the Protection of Industrial Property, and of the European Patent Convention, and further agree to execute any and all patent applications, assignments, affidavits, and any other papers in connection therewith necessary to perfect such patent rights.

I hereby further agree that I will communicate to said TEXAS INSTRUMENTS INCORPORATED, or to its successors, assigns, and legal representatives, any facts known to me respecting said invention, and at the expense of said assignee company, testify in any legal proceedings, sign all lawful papers, execute all divisional, continuation, reissue and substitute applications, make all lawful oaths, 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.

IN WITNESS WHEREOF, I hereunto set my hand and seal this day and year;

TITLE OF INVENTION	High Speed Column Redundancy Scheme		
SIGNATURE OF INVENTOR AND NAME	Daniel B. Penney	Jason M. Brown	(3) Frank Alejano
DATE	3/6/98	3/6/98	
RESIDENCE (City, County, State)	Houston, Harris, Texas	Houston, Fort Bend, Texas	Houston, Harris, Texas
DATE APPLICATION EXECUTED	3/6/98	3/6/98	

After recordation, please return Assignment to:

Robby T. Holland Texas Instruments Incorporated P.O. Box 655474, M/S 3999 Dallas, TX 75265

> PATENT REEL: 009999 FRAME: 0215

PAGE 1 OF 1

ASSIGNMENT

WHEREAS, I, the undersigned inventor (or one of the undersigned joint inventors), of residence as listed, having invented certain new and useful improvements as below entitled, for which application for United States Letters Patent is made, the said application having been executed on the date set forth below; and

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TITLE OF INVENTION	High Speed Column Redundancy Scheme			
SIGNATURE OF INVENTOR AND NAME	Daniel B. Penney	Jason M. Brown	X Frank Alejano	
DATE	3/6/98	3/6/98	× 3/15/99	
RESIDENCE (City, County, State)	Houston, Harris, Texas	Houston, Fort Bend, Texas	Houston, Harris Texas Richardson, Texas	
DATE APPLICATION EXECUTED	3/6/98	3/6/98	x 3/15/19	

After recordation, please return Assignment to:

RECORDED: 06/01/1999

Robby T. Holland Texas Instruments Incorporated P.O. Box 655474, M/S 3999 Dallas, TX 75265

> PATENT REEL: 009999 FRAME: 0216