



08-19-1999

TI - 24760

FORM PTO-1595



U.S. Department of Commerce
Patent and Trademark Office

5.7.99

101120920

To the Honorable Commissioner of Patents and Trademarks. Please record the attached original documents or copy thereof.

1. Name of conveying party(ies):

William C. Timm
Terence J. Riley
Michael O. Polley
Gregory L. Waters

Additional name(s) & address(es)
attached? ___ Yes X No

2. Name and Address of receiving party(ies):

Name: **Texas Instruments Incorporated**
Address: **P. O. Box 655474, M.S. 3999**
City: **Dallas**
State: **Texas** Zip: **75265**

Additional name(s) & address(es)
attached? ___ Yes X No

3. Nature of Conveyance:

X Assignment _____ Merger
____ Security Agreement _____ Change of Name
____ Other _____

Execution Date: January 25, 1999, January 26, 1999, and February 2, 1999

4. 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) 09/232,305 B. Patent No.(s)

Additional numbers attached? ___ Yes X No Additional numbers attached? ___ Yes X No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: **Tammy L. Williams**
Address: **Texas Instruments Incorporated**
P. O. Box 655474, M.S. 3999
City: **Dallas**
State: **Texas** Zip: **75265**

6. Number of applications and patents involved: 1

7. Amount of fee enclosed or authorized to be charged: \$40.00

8. Deposit account number : 20-0668

DO NOT USE THIS SPACE

9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Signature

Tammy L. Williams, Reg. No. 38,660
Name of Person Signing

5/7/99
Date

Total number of pages including cover sheet, attachments and document: 3

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

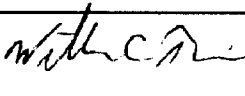
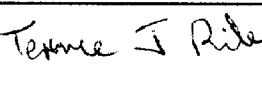
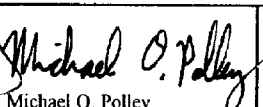
WHEREAS, TEXAS INSTRUMENTS INCORPORATED, a corporation organized and existing under the laws of the State of Delaware, with a place of business at 7839 Churchill Way, MS 3999, Dallas, Texas 75251, is desirous of acquiring my entire right, title and interest in and to the said invention, and to the said 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 hand and seal this day and year;

TITLE OF INVENTION	DSL Communication System with Improved Bandwidth			
SIGNATURE OF INVENTOR AND NAME	 William C. Timm	 Terence J. Riley	 Michael O. Polley	Gregory L. Waters
DATE	1-25-99	1-26-99	1-25-99	
RESIDENCE (City, County, State)	2720 Northview Drive McKinney, Texas 75050	785 Sunset Hill Drive Rockwall, Texas 75087	7617 Windmill Lane Garland, Texas 75044	3430 Park Place Bethlehem, PA 18017
DATE APPLICATION EXECUTED				

After recording returning Assignment to:

Tammy L. Williams, Esq.
Texas Instruments Incorporated
P.O. Box 655474, M/S 3999
Dallas, Texas 75265

 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, with a place of business at 7839 Churchill Way, MS 3999, Dallas, Texas 75251, 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 hand and seal this day and year;

TITLE OF INVENTION	DSL Communication System with Improved Bandwidth			
SIGNATURE OF INVENTOR AND NAME	William C. Timm	Terence J. Riley	Michael O. Polley	 Gregory L. Waters
DATE				Feb 2, 1999
RESIDENCE (City, County, State)	2720 Northview Drive McKinney, Texas 75050	785 Sunset Hill Drive Rockwall, Texas 75087	7617 Windmill Lane Garland, Texas 75044	3430 Park Place Bethlehem, PA 18017
DATE APPLICATION EXECUTED				Feb 2, 1999

After recording returning Assignment to:

Tammy L. Williams, Esq.
Texas Instruments Incorporated
P.O. Box 655474, M/S 3999
Dallas, Texas 75265