

10-29-2003

FORM PTO-1595

TI-35949

10.18.03

RE



102586059

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.

1. Name of conveying party(ies):

- 1) Anuj Batra (09/10/2003)
- 2) Jaiganesh Balakrishnan (09/10/2003)
- 3) Anand G. Dabak (09/10/2003)
- 4) Ranjit Guarpurey (10/13/2003)
- 5) Paul H. Fontaine (09/10/2003)
- 6) Heng-Chih Lin (09/10/2003)

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

Name: TEXAS INSTRUMENTS INCORPORATED

Address: P.O. Box 655474, MS 3999

City: Dallas

State: TX Zip: 75265

Additional name(s) & address(es) attached? \_\_\_ Yes \_\_\_X\_\_\_ No

3. Nature of Conveyance:

- Assignment  Merger
- Security Agreement  Change of Name
- Other \_\_\_\_\_

Execution Date: *September 10, 2003; September 10, 2003; September 10, 2003; October 13, 2003; September 10, 2003; September 10, 2003*

4. Application number(s) or patent number(s).

10688189

This document is being filed together with a new application.

Execution date of the application: *Sept 10, 2003; Sept 10, 2003; Sept 10, 2003; Oct 13, 2003; Sept 10, 2003; Sept 10, 2003*

Title: *Time-Frequency Interleaved Orthogonal Frequency Division Multiplexing Ultra Wide Band Physical Layer*

Docket No: *TI-35949*

A. Patent Application No.(s)

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: Ronald O. Neerings  
 Texas Instruments Incorporated  
 Address: P.O. Box 655474, MS 3999  
 City: Dallas  
 State: TX Zip: 75265

6. Number of applications and patents involved: \_\_\_(1)\_\_\_

7. Amount of fee enclosed or authorized to be charged: \$40

8. Deposit Account No: 20-0668 of Texas Instruments Incorporated

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.

October 18, 2003  
Date

*Dwight N. Holmbo*  
 Dwight N. Holmbo, Reg. No. 36410

03945 U.S. PTO  
10/688169



10/28/2003 LMUELLER 00000164 200668 10688169  
01 FC:8021 40.00 DA

## ASSIGNMENT

Page 1 of 2

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

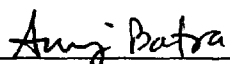

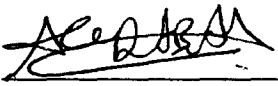
WHEREAS, TEXAS INSTRUMENTS INCORPORATED, a corporation organized and existing under the laws of the State of Delaware, with a place of business at 7839 Churchill Way, MS 3999, Dallas, Texas 75251, is desirous of acquiring my entire right, title and interest in and to the said invention, and to the said 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 therefore, 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	Time-Frequency Interleaved Orthogonal Frequency Division Multiplexing Ultra Wide Band Physical Layer		
SIGNATURE OF INVENTOR AND NAME	 Anuj Batra	 Jaiganesh Balakrishnan	 Anand G. Dabak
DATE	September 10, 2003	September 10, 2003	September 10, 2003
RESIDENCE (City, County, State)	8729 Southwestern Blvd #1504 Dallas, TX 75206	9000 Vantage Point Apt. 504 Dallas, TX 75243	8625 Kendall Drive Plano, TX 75025
DATE APPLICATION EXECUTED	September 10, 2003	September 10, 2003	September 10, 2003

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

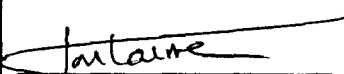
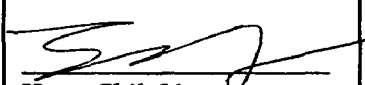
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TITLE OF INVENTION	<b>Time-Frequency Interleaved Orthogonal Frequency Division Multiplexing Ultra Wide Band Physical Layer</b>		
SIGNATURE OF INVENTOR AND NAME	_____ Ranjit Guarpurey	 Paul H. Fontaine	 Heng-Chih Lin
DATE		09/10/2003	9/10/2003
RESIDENCE (City, County, State)	3101 Austin Drive Plano, TX 75025	408 W. Arapaho Rd. Richardson, TX 75080	8412 Halkin Dr. Plano, TX 75024
DATE APPLICATION EXECUTED		09/10/2003	9/10/2003

**ASSIGNMENT** **Page 1 of 2**

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TITLE OF INVENTION	<b>Time-Frequency Interleaved Orthogonal Frequency Division Multiplexing Ultra Wide Band Physical Layer</b>		
SIGNATURE OF INVENTOR AND NAME	_____ <b>Anuj Batra</b>	_____ <b>Jaiganesh Balakrishnan</b>	_____ <b>Anand G. Dabak</b>
DATE			
RESIDENCE (City, County, State)	<b>8729 Southwestern Blvd #1504 Dallas, TX 75206</b>	<b>9000 Vantage Point Apt. 504 Dallas, TX 75243</b>	<b>8625 Kendall Drive Plano, TX 75025</b>
DATE APPLICATION EXECUTED			

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TITLE OF INVENTION	Time-Frequency Interleaved Orthogonal Frequency Division Multiplexing Ultra Wide Band Physical Layer		
SIGNATURE OF INVENTOR AND NAME	<u>Ranjit Gharpurey</u> Ranjit Gharpurey	<u>Paul H. Fontaine</u> Paul H. Fontaine	<u>Heng-Chih Lin</u> Heng-Chih Lin
DATE	October 13, 2003		
RESIDENCE (City, County, State)	219 Fieldcrest Street Ann Arbor, MI 48103	408 W. Arapaho Rd. Richardson, TX 75080	8412 Halkin Dr. Plano, TX 75024
DATE APPLICATION EXECUTED	October 13, 2003		