

PATENT ASSIGNMENT

Electronic Version v1.1
 Stylesheet Version v1.1

SUBMISSION TYPE:	NEW ASSIGNMENT										
NATURE OF CONVEYANCE:	ASSIGNMENT										
CONVEYING PARTY DATA											
<table border="1"> <thead> <tr> <th>Name</th> <th>Execution Date</th> </tr> </thead> <tbody> <tr> <td>Timothy O. Dickson</td> <td>07/20/2012</td> </tr> <tr> <td>Daniel M. Dreps</td> <td>07/19/2012</td> </tr> <tr> <td>Frank D. Ferraiolo</td> <td>07/19/2012</td> </tr> <tr> <td>Douglas J. Joseph</td> <td>07/20/2012</td> </tr> </tbody> </table>		Name	Execution Date	Timothy O. Dickson	07/20/2012	Daniel M. Dreps	07/19/2012	Frank D. Ferraiolo	07/19/2012	Douglas J. Joseph	07/20/2012
Name	Execution Date										
Timothy O. Dickson	07/20/2012										
Daniel M. Dreps	07/19/2012										
Frank D. Ferraiolo	07/19/2012										
Douglas J. Joseph	07/20/2012										
RECEIVING PARTY DATA											
<table border="1"> <tr> <td>Name:</td> <td>International Business Machines Corporation</td> </tr> <tr> <td>Street Address:</td> <td>New Orchard Road</td> </tr> <tr> <td>City:</td> <td>Armonk</td> </tr> <tr> <td>State/Country:</td> <td>NEW YORK</td> </tr> <tr> <td>Postal Code:</td> <td>10504</td> </tr> </table>		Name:	International Business Machines Corporation	Street Address:	New Orchard Road	City:	Armonk	State/Country:	NEW YORK	Postal Code:	10504
Name:	International Business Machines Corporation										
Street Address:	New Orchard Road										
City:	Armonk										
State/Country:	NEW YORK										
Postal Code:	10504										
PROPERTY NUMBERS Total: 1											
<table border="1"> <thead> <tr> <th>Property Type</th> <th>Number</th> </tr> </thead> <tbody> <tr> <td>Application Number:</td> <td>13561446</td> </tr> </tbody> </table>		Property Type	Number	Application Number:	13561446						
Property Type	Number										
Application Number:	13561446										
CORRESPONDENCE DATA											
Fax Number: 5072532382 Phone: 507-253-5333 Email: sberge@us.ibm.com <i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent via US Mail.</i> Correspondent Name: IBM Corporation Address Line 1: 3605 Highway 52 North Address Line 4: Rochester, MINNESOTA 55901											
ATTORNEY DOCKET NUMBER:	ROC920110195US1										
NAME OF SUBMITTER:	Robert R. Williams										
Total Attachments: 8											

CH \$40.00 13561446

source=ROC920110195US1_SignedAssignments#page1.tif
source=ROC920110195US1_SignedAssignments#page2.tif
source=ROC920110195US1_SignedAssignments#page3.tif
source=ROC920110195US1_SignedAssignments#page4.tif
source=ROC920110195US1_SignedAssignments#page5.tif
source=ROC920110195US1_SignedAssignments#page6.tif
source=ROC920110195US1_SignedAssignments#page7.tif
source=ROC920110195US1_SignedAssignments#page8.tif

ASSIGNMENT

Whereas, the undersigned Inventor(s) has/have made certain inventions, improvements, and discoveries (herein referred to as the "Invention") in:

**EFFICIENT CALIBRATION OF A LOW POWER
PARALLEL DATA COMMUNICATIONS CHANNEL**

and further identified by the IBM Docket Number provided above in the header of this Assignment, for which an application for a United States Patent was executed concurrently herewith or was filed having:

Serial Number: 13/561,446

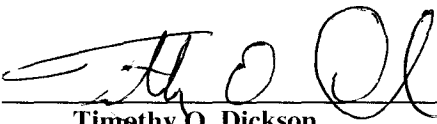
Whereas, International Business Machines Corporation, a corporation of New York having a place of business at Armonk, New York (herein referred to as "IBM"), desires to acquire, and each undersigned Inventor desires to grant to IBM, the entire worldwide right, title, and interest in and to the Invention and in and to any and all patent applications and patents directed thereto;

Now, therefore, for good and valuable consideration, the receipt and sufficiency thereof being hereby acknowledged, each undersigned Inventor ("ASSIGNOR") hereby sells, assigns, and otherwise transfers to IBM (the "ASSIGNEE"), its successors, legal representatives, and assigns, the entire worldwide right, title, and interest in and to the Invention, the above-identified United States patent application, and any and all other patent applications and patents for the Invention which may be applied for or granted therefor in the United States and in all foreign countries and jurisdictions, including all divisions, continuations, reissues, reexaminations, renewals, extensions, counterparts, substitutes, and extensions thereof, and all rights of priority resulting from the filing of such applications and granting of such patents. In addition, each undersigned Inventor hereby authorizes and requests the Director of the United States Patent and Trademark Office to issue any United States Patent, and foreign patent authorities to issue any foreign patent, granted for the Invention, to IBM, its successors, legal representatives, and assigns, the entire worldwide right, title, and interest in and to the same to be held and enjoyed by IBM, its successors, legal representatives, and assigns to the full end of the terms for which any and all such patents may be granted, as fully and entirely as would have been held and enjoyed by the undersigned had this Assignment not been made; and each undersigned Inventor agrees to execute any and all documents and instruments and perform all lawful acts reasonably related to recording this Assignment or perfecting title to the Invention and all related patents and applications, in IBM, its successors, legal representatives, and assigns, whenever requested by IBM, its successors, legal representatives, or assigns.

Each undersigned Inventor acknowledges their prior and ongoing obligations to sell, assign, and transfer the rights under this Assignment to IBM and is unaware of any reason why they may not have the full and unencumbered right to sell, assign, and transfer the rights hereby sold, assigned, and transferred, and has not executed, and will not execute, any document or instrument in conflict herewith. Each undersigned Inventor also hereby grants IBM, its successors, legal representatives, and assigns, the right to insert in this Assignment any further identification (including, but not limited to, patent application Serial Number) which may be necessary or desirable for recordation of this Assignment. This Assignment is governed by the substantive laws of the State of New York, and any disputes will be resolved in a New York state court or federal court sited in New York.

[Inventor Signature Pages Follow]

Executed by Inventor 1 of 4

Signature:  Date: 7/20/2012
Timothy O. Dickson

Executed by Inventor 2 of 4

Signature: _____ Date: _____
Daniel M. Dreps

Executed by Inventor 3 of 4

Signature: _____ Date: _____
Frank D. Ferraiolo

Executed by Inventor 4 of 4

Signature: _____ Date: _____
Douglas J. Joseph

ASSIGNMENT

Whereas, the undersigned Inventor(s) has/have made certain inventions, improvements, and discoveries (herein referred to as the "Invention") in:

**EFFICIENT CALIBRATION OF A LOW POWER
PARALLEL DATA COMMUNICATIONS CHANNEL**

and further identified by the IBM Docket Number provided above in the header of this Assignment, for which an application for a United States Patent was executed concurrently herewith or was filed having:

Serial Number: 13/561,446

Whereas, International Business Machines Corporation, a corporation of New York having a place of business at Armonk, New York (herein referred to as "IBM"), desires to acquire, and each undersigned Inventor desires to grant to IBM, the entire worldwide right, title, and interest in and to the Invention and in and to any and all patent applications and patents directed thereto;

Now, therefore, for good and valuable consideration, the receipt and sufficiency thereof being hereby acknowledged, each undersigned Inventor ("ASSIGNOR") hereby sells, assigns, and otherwise transfers to IBM (the "ASSIGNEE"), its successors, legal representatives, and assigns, the entire worldwide right, title, and interest in and to the Invention, the above-identified United States patent application, and any and all other patent applications and patents for the Invention which may be applied for or granted therefor in the United States and in all foreign countries and jurisdictions, including all divisions, continuations, reissues, reexaminations, renewals, extensions, counterparts, substitutes, and extensions thereof, and all rights of priority resulting from the filing of such applications and granting of such patents. In addition, each undersigned Inventor hereby authorizes and requests the Director of the United States Patent and Trademark Office to issue any United States Patent, and foreign patent authorities to issue any foreign patent, granted for the Invention, to IBM, its successors, legal representatives, and assigns, the entire worldwide right, title, and interest in and to the same to be held and enjoyed by IBM, its successors, legal representatives, and assigns to the full end of the terms for which any and all such patents may be granted, as fully and entirely as would have been held and enjoyed by the undersigned had this Assignment not been made; and each undersigned Inventor agrees to execute any and all documents and instruments and perform all lawful acts reasonably related to recording this Assignment or perfecting title to the Invention and all related patents and applications, in IBM, its successors, legal representatives, and assigns, whenever requested by IBM, its successors, legal representatives, or assigns.

Each undersigned Inventor acknowledges their prior and ongoing obligations to sell, assign, and transfer the rights under this Assignment to IBM and is unaware of any reason why they may not have the full and unencumbered right to sell, assign, and transfer the rights hereby sold, assigned, and transferred, and has not executed, and will not execute, any document or instrument in conflict herewith. Each undersigned Inventor also hereby grants IBM, its successors, legal representatives, and assigns, the right to insert in this Assignment any further identification (including, but not limited to, patent application Serial Number) which may be necessary or desirable for recordation of this Assignment. This Assignment is governed by the substantive laws of the State of New York, and any disputes will be resolved in a New York state court or federal court sited in New York.

[Inventor Signature Pages Follow]

Executed by Inventor 1 of 4

Signature: _____ Date: _____
Timothy O. Dickson

Executed by Inventor 2 of 4

Signature:  Date: 7/19/2012
Daniel M. Dreps

Executed by Inventor 3 of 4

Signature: _____ Date: _____
Frank D. Ferraiolo

Executed by Inventor 4 of 4

Signature: _____ Date: _____
Douglas J. Joseph

ASSIGNMENT

Whereas, the undersigned Inventor(s) has/have made certain inventions, improvements, and discoveries (herein referred to as the "Invention") in:

**EFFICIENT CALIBRATION OF A LOW POWER
PARALLEL DATA COMMUNICATIONS CHANNEL**

and further identified by the IBM Docket Number provided above in the header of this Assignment, for which an application for a United States Patent was executed concurrently herewith or was filed having:

Serial Number: 13/561,446

Whereas, International Business Machines Corporation, a corporation of New York having a place of business at Armonk, New York (herein referred to as "IBM"), desires to acquire, and each undersigned Inventor desires to grant to IBM, the entire worldwide right, title, and interest in and to the Invention and in and to any and all patent applications and patents directed thereto;

Now, therefore, for good and valuable consideration, the receipt and sufficiency thereof being hereby acknowledged, each undersigned Inventor ("ASSIGNOR") hereby sells, assigns, and otherwise transfers to IBM (the "ASSIGNEE"), its successors, legal representatives, and assigns, the entire worldwide right, title, and interest in and to the Invention, the above-identified United States patent application, and any and all other patent applications and patents for the Invention which may be applied for or granted therefor in the United States and in all foreign countries and jurisdictions, including all divisions, continuations, reissues, reexaminations, renewals, extensions, counterparts, substitutes, and extensions thereof, and all rights of priority resulting from the filing of such applications and granting of such patents. In addition, each undersigned Inventor hereby authorizes and requests the Director of the United States Patent and Trademark Office to issue any United States Patent, and foreign patent authorities to issue any foreign patent, granted for the Invention, to IBM, its successors, legal representatives, and assigns, the entire worldwide right, title, and interest in and to the same to be held and enjoyed by IBM, its successors, legal representatives, and assigns to the full end of the terms for which any and all such patents may be granted, as fully and entirely as would have been held and enjoyed by the undersigned had this Assignment not been made; and each undersigned Inventor agrees to execute any and all documents and instruments and perform all lawful acts reasonably related to recording this Assignment or perfecting title to the Invention and all related patents and applications, in IBM, its successors, legal representatives, and assigns, whenever requested by IBM, its successors, legal representatives, or assigns.

Each undersigned Inventor acknowledges their prior and ongoing obligations to sell, assign, and transfer the rights under this Assignment to IBM and is unaware of any reason why they may not have the full and unencumbered right to sell, assign, and transfer the rights hereby sold, assigned, and transferred, and has not executed, and will not execute, any document or instrument in conflict herewith. Each undersigned Inventor also hereby grants IBM, its successors, legal representatives, and assigns, the right to insert in this Assignment any further identification (including, but not limited to, patent application Serial Number) which may be necessary or desirable for recordation of this Assignment. This Assignment is governed by the substantive laws of the State of New York, and any disputes will be resolved in a New York state court or federal court sited in New York.

[Inventor Signature Pages Follow]

Executed by Inventor 1 of 4

Signature: _____ Date: _____
Timothy O. Dickson

Executed by Inventor 2 of 4

Signature: _____ Date: _____
Daniel M. Dreps

Executed by Inventor 3 of 4

Signature: Frank D. Ferraiolo Date: 7/19/12
Frank D. Ferraiolo

Executed by Inventor 4 of 4

Signature: _____ Date: _____
Douglas J. Joseph

ASSIGNMENT

Whereas, the undersigned Inventor(s) has/have made certain inventions, improvements, and discoveries (herein referred to as the "Invention") in:

**EFFICIENT CALIBRATION OF A LOW POWER
PARALLEL DATA COMMUNICATIONS CHANNEL**

and further identified by the IBM Docket Number provided above in the header of this Assignment, for which an application for a United States Patent was executed concurrently herewith or was filed having:

Serial Number: 13/561,446

Whereas, International Business Machines Corporation, a corporation of New York having a place of business at Armonk, New York (herein referred to as "IBM"), desires to acquire, and each undersigned Inventor desires to grant to IBM, the entire worldwide right, title, and interest in and to the Invention and in and to any and all patent applications and patents directed thereto;

Now, therefore, for good and valuable consideration, the receipt and sufficiency thereof being hereby acknowledged, each undersigned Inventor ("ASSIGNOR") hereby sells, assigns, and otherwise transfers to IBM (the "ASSIGNEE"), its successors, legal representatives, and assigns, the entire worldwide right, title, and interest in and to the Invention, the above-identified United States patent application, and any and all other patent applications and patents for the Invention which may be applied for or granted therefor in the United States and in all foreign countries and jurisdictions, including all divisions, continuations, reissues, reexaminations, renewals, extensions, counterparts, substitutes, and extensions thereof, and all rights of priority resulting from the filing of such applications and granting of such patents. In addition, each undersigned Inventor hereby authorizes and requests the Director of the United States Patent and Trademark Office to issue any United States Patent, and foreign patent authorities to issue any foreign patent, granted for the Invention, to IBM, its successors, legal representatives, and assigns, the entire worldwide right, title, and interest in and to the same to be held and enjoyed by IBM, its successors, legal representatives, and assigns to the full end of the terms for which any and all such patents may be granted, as fully and entirely as would have been held and enjoyed by the undersigned had this Assignment not been made; and each undersigned Inventor agrees to execute any and all documents and instruments and perform all lawful acts reasonably related to recording this Assignment or perfecting title to the Invention and all related patents and applications, in IBM, its successors, legal representatives, and assigns, whenever requested by IBM, its successors, legal representatives, or assigns.

Each undersigned Inventor acknowledges their prior and ongoing obligations to sell, assign, and transfer the rights under this Assignment to IBM and is unaware of any reason why they may not have the full and unencumbered right to sell, assign, and transfer the rights hereby sold, assigned, and transferred, and has not executed, and will not execute, any document or instrument in conflict herewith. Each undersigned Inventor also hereby grants IBM, its successors, legal representatives, and assigns, the right to insert in this Assignment any further identification (including, but not limited to, patent application Serial Number) which may be necessary or desirable for recordation of this Assignment. This Assignment is governed by the substantive laws of the State of New York, and any disputes will be resolved in a New York state court or federal court sited in New York.

[Inventor Signature Pages Follow]

Executed by Inventor 1 of 4

Signature: _____ Date: _____
Timothy O. Dickson

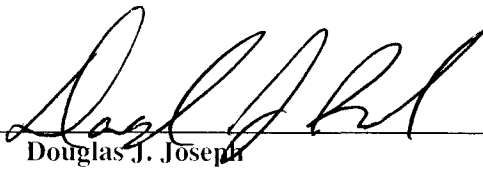
Executed by Inventor 2 of 4

Signature: _____ Date: _____
Daniel M. Dreps

Executed by Inventor 3 of 4

Signature: _____ Date: _____
Frank D. Ferraiolo

Executed by Inventor 4 of 4

Signature:  _____ Date: 7/20/2012
Douglas J. Joseph