Form PTO-1595

12-27-1999



U.S. DEPARTMENT OF COMMERCE

Name of conveying party(ies): Naoki Furuhashi Shauji Yamaguchi Additional name(s) of conveying party(ies) attached? Yes _No X Additional name(s) of conveying party(ies) attached? Yes _No X Street Address:	(Rev. 5/39) OMB No. 0651-0011 (exp. 4/94)		Patent and Trademark Office Docket No.: HIM 01001	
Nature of conveyance: (X) Assignment () Merger () Security Agreement () Change of Name () Other: Execution Date: December 10, 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 applications is: December 10, 1999 A. Patent Application No.(s) B. Patent No.(s) Additional numbers attached? Yes No X 5. Name and address of party to whom correspondence concerning document should be mailed: 6. Name: Patent Group Internal Address: Hutchins, Wheeler & Dittmar Street Address: 101 Federal Street (ity: Boston State: MA ZIP: 02110 7.Total fee (37 CFR 3.41)	O TO TO. OUT OWN WASHINGTON	101231419 -		
Nature of conveyance: (X) Assignment () Merger () Security Agreement () Change of Name () Other: Execution Date: December 10, 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 applications is: December 10, 1999 A. Patent Application No.(s) B. Patent No.(s) Additional numbers attached? Yes No X 5. Name and address of party to whom correspondence concerning document should be mailed: 6. Name: Patent Group Internal Address: Hutchins, Wheeler & Dittmar Street Address: 101 Federal Street (ity: Boston State: MA ZIP: 02110 7.Total fee (37 CFR 3.41)	1.Name of conveying party(ies):	2. Name and address of rece	eiving party(ies)	
Nature of conveyance: (X) Assignment () Merger () Security Agreement () Change of Name () Other: Execution Date: December 10, 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 applications is: December 10, 1999 A. Patent Application No.(s) B. Patent No.(s) Additional numbers attached? Yes No X 5. Name and address of party to whom correspondence concerning document should be mailed: 6. Name: Patent Group Internal Address: Hutchins, Wheeler & Dittmar Street Address: 101 Federal Street (ity: Boston State: MA ZIP: 02110 7.Total fee (37 CFR 3.41)		Name: NEC Corporation	¹ ° 2	
Nature of conveyance: (X) Assignment () Merger () Security Agreement () Change of Name () Other: Execution Date: December 10, 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 applications is: December 10, 1999 A. Patent Application No.(s) B. Patent No.(s) Additional numbers attached? Yes No X 5. Name and address of party to whom correspondence concerning document should be mailed: 6. Name: Patent Group Internal Address: Hutchins, Wheeler & Dittmar Street Address: 101 Federal Street (ity: Boston State: MA ZIP: 02110 7.Total fee (37 CFR 3.41)	Shuuji Yamaguchi	Internal Address:	1066	
Nature of conveyance: (X) Assignment () Merger () Security Agreement () Change of Name () Other: Execution Date: December 10, 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 applications is: December 10, 1999 A. Patent Application No.(s) B. Patent No.(s) Additional numbers attached? Yes No X 5. Name and address of party to whom correspondence concerning document should be mailed: 6. Name: Patent Group Internal Address: Hutchins, Wheeler & Dittmar Street Address: 101 Federal Street (ity: Boston State: MA ZIP: 02110 7.Total fee (37 CFR 3.41)			. 0	
Nature of conveyance: (X) Assignment () Merger () Security Agreement () Change of Name () Other: Execution Date: December 10, 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 applications is: December 10, 1999 A. Patent Application No.(s) B. Patent No.(s) Additional numbers attached? Yes No X 5. Name and address of party to whom correspondence concerning document should be mailed: 6. Name: Patent Group Internal Address: Hutchins, Wheeler & Dittmar Street Address: 101 Federal Street (ity: Boston State: MA ZIP: 02110 7.Total fee (37 CFR 3.41)	Additional name(s) of conveying party(ies) attached?		96	
Nature of conveyance: (X) Assignment () Merger () Security Agreement () Change of Name () Other: Execution Date: December 10, 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 applications is: December 10, 1999 A. Patent Application No.(s) Additional numbers attached? Yes No X 5. Name and address of party to whom correspondence concerning document should be mailed: 6. Name: Patent Group Internal Address: Hutchins, Wheeler & Dittmar Street Address: Hutchins, Wheeler & Dittmar Street Address: Hutchins, Wheeler & Dittmar Street Address: 101 Federal Street City: Roston State: MA ZIP: 02110 7. Total fee (37 CFR 3.41)	YesNo X	7.1.017	~ 3	
Additional name(s) & address(es) attached? Yes No X Additional number(s): If this document is being filed together with a new application, the execution date of the applications is: December 10, 1999 A. Patent Application No.(s) B. Patent No.(s) Additional numbers attached? Yes No X 5. Name and address of party to whom correspondence concerning document should be mailed: 6. Name: Patent Group Internal Address: Hutchins, Wheeler & Dittmar Street Address: Hutchins, Wheeler & Dittmar Street Address: 101 Federal Street City: Boston State: MA ZIP: 92110 7. Total fee (37 CFR 3.41)		Street Address: /-1 Shib	a 5 chome	
Additional name(s) & address(es) attached? Yes No X Application number(s) or patent number(s): If this document is being filed together with a new application, the execution date of the applications is: December 10, 1999 A. Patent Application No.(s) B. Patent No.(S) Additional numbers attached? Yes No X 5. Name and address of party to whom correspondence concerning document should be mailed: 6. Name: Patent Group Internal Address: Hutchins, Wheeler & Dittmar Street Address: Hutchins, Wheeler & Dittmar Street Address: 101 Federal Street City: Roston State: MA ZIP: 02110 7. Total fee (37 CFR 3.41)	Nature of conveyance:	Minato-l	ku, Tokyo JAPAN	
Additional name(s) & address(es) attached? Yes No X Additional name(s) & address(es) attached? Yes No X 4. Application number(s) or patent number(s): If this document is being filed together with a new application, the execution date of the applications is: December 10, 1999 A. Patent Application No.(s) Additional numbers attached? Yes No X 5. Name and address of party to whom correspondence concerning document should be naitled: 6. Name: Patent Group Internal Address: Huchins, Wheeler & Dittmar Street Address: 101 Federal Street City: Boston State: MA ZIP: 02110 7.Total fee (37 CFR 3.41)\$ \$40.00 X Enclosed Authorized to be charged to deposit account 8.Deposit account number: (Attached duplicate copy of this page if pay ng by deposit account) 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. Donald W. Muirhead: 33.978 Signature Date	•			
() Security Agreement () Change of Name () Other: Execution Date: December 10, 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 applications is: December 10, 1999 A. Patent Application No.(s) Additional numbers attached? Yes No X 5. Name and address of party to whom correspondence concerning document should be mailed: 6. Name: Patent Group Internal Address: Hutchins, Wheeler & Dittmar Street Address: Hutchins, Wheeler & Dittmar Street Address: I01 Federal Street City: Boston State: MA ZIP: 02110 7.Total fee (37 CFR 3.41)	(X) Assignment () Merger	A ddia:1	Anna (an) a 44 a a land 19 Van - Nia - V	
() Other: Execution Date: December 10, 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 applications is: December 10, 1999 A. Patent Application No.(s) B. Patent No.(s) Additional numbers attached? Yes	() Security Agreement () Change of N		$\frac{1}{X}$ attached? Yes No $\frac{X}{X}$	
4. Application number(s) or patent number(s): If this document is being filed together with a new application, the execution date of the applications is: December 10, 1999 A. Patent Application No.(s) Additional numbers attached? YesNo X 5. Name and address of party to whom correspondence concerning document should be mailed: 6. Name: Patent Group Internal Address: Hutchins, Wheeler & Dittmar Street Address: Hutchins, Wheeler & Dittmar Street Address: 101 Federal Street City: Boston State: MA ZIP: 02110 7. Total fee (37 CFR 3.41)\$_\$40.00 X Enclosed Authorized to be charged to deposit account 8. Deposit account number: (Attached duplicate copy of this page if pay ng by deposit account) 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. Donald W. Muirhead: 33.978 Donald W. Muirhead: 33.978 Signature Signature Date	() Security regreement () Similar of the			
4. Application number(s) or patent number(s): If this document is being filed together with a new application, the execution date of the applications is: December 10, 1999 A. Patent Application No.(s) B. Patent No.(s) Additional numbers attached? YesNo X 5. Name and address of party to whom correspondence concerning document should be mailed: 6. Name: Patent Group Internal Address: Hutchins, Wheeler & Dittmar Street Address: 101 Federal Street City: Boston State: MA ZIP: 02110 7. Total fee (37 CFR 3.41)			100	
4. Application number(s) or patent number(s): If this document is being filed together with a new application, the execution date of the applications is: December 10, 1999 A. Patent Application No.(s) B. Patent No.(s) Additional numbers attached? YesNo X 5. Name and address of party to whom correspondence concerning document should be mailed: 6. Name: Patent Group Internal Address: Hutchins, Wheeler & Dittmar Street Address: 101 Federal Street City: Boston State: MA ZIP: 02110 7. Total fee (37 CFR 3.41)	Execution Date: <u>December 10, 1999</u>		1761 460600	
If this document is being filed together with a new application, the execution date of the applications is: December 10, 1999 A. Patent Application No.(s) Additional numbers attached? Yes No X 5. Name and address of party to whom correspondence concerning document should be mailed: 6. Name: Patent Group Internal Address: Hutchins, Wheeler & Dittmar Street Address: 101 Federal Street City: Boston State: MA ZIP: 02110 7. Total fee (37 CFR 3.41)\$ \$40.00			05/1 12	
If this document is being filed together with a new application, the execution date of the applications is: December 10, 1999 A. Patent Application No.(s) Additional numbers attached? Yes No X 5. Name and address of party to whom correspondence concerning document should be mailed: 6. Name: Patent Group Internal Address: Hutchins, Wheeler & Dittmar Street Address: 101 Federal Street City: Boston State: MA ZIP: 02110 7. Total fee (37 CFR 3.41)\$ \$40.00	Application number(s) or natent number(s):			
A. Patent Application No.(s) Additional numbers attached? Yes No X 5. Name and address of party to whom correspondence concerning document should be mailed: 6. Name: Patent Group Internal Address: Hutchins, Wheeler & Dittmar Street Address: 101 Federal Street City: Boston State: MA ZIP: 02110 7.Total fee (37 CFR 3.41)	4. Application number(s) or patent number(s).			
Additional numbers attached? Yes No X 5. Name and address of party to whom correspondence concerning document should be mailed: 6. Name: Patent Group Internal Address: Hutchins, Wheeler & Dittmar Street Address: 101 Federal Street City: Boston State: MA ZIP: 02110 7. Total fee (37 CFR 3.41)\$_\$40.00 X Enclosed Authorized to be charged to deposit account 8. Deposit account number: (Attached duplicate copy of this page if pay ng by deposit account) 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. Donald W. Muirhead: 33,978 Donald W. Muirhead: 33,978 Signature Date	If this document is being filed together with a new applica		ions is: December 10, 1999	
5. Name and address of party to whom correspondence concerning document should be mailed: 6. Name: Patent Group Internal Address: Hutchins, Wheeler & Dittmar Street Address: 101 Federal Street City: Boston State: MA ZIP: 02110 7. Total fee (37 CFR 3.41)	A. Patent Application No.(s)			
concerning document should be mailed: 6. Name: Patent Group Internal Address: Hutchins, Wheeler & Dittmar Street Address: 101 Federal Street City: Boston State: MA ZIP: 02110 7.Total fee (37 CFR 3.41)			and nationts involved: 1	
6. Name: Patent Group Internal Address: Hutchins, Wheeler & Dittmar Street Address: 101 Federal Street City: Boston State: MA ZIP: 02110 7.Total fee (37 CFR 3.41)\$ \$40.00 X Enclosed Authorized to be charged to deposit account 8.Deposit account number: (Attached duplicate copy of this page if pay ng by deposit account) 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. Donald W. Muirhead; 33,978 Donald W. Muirhead; 33,978 Signature Date		6. Total number of applican	ons and patents involved.	
Internal Address: Hutchins, Wheeler & Dittmar Street Address: 101 Federal Street City: Boston State: MA ZIP: 02110 7.Total fee (37 CFR 3.41)	6.			
Street Address: 101 Federal Street City: Boston State: MA ZIP: 02110 7.Total fee (37 CFR 3.41)	Name: Patent Group Land Land Harden Wheeler & Dittmer			
City: Boston State: MA ZIP: 02110 7.Total fee (37 CFR 3.41)\$ \$40.00 X Enclosed Authorized to be charged to deposit account 8.Deposit account number: (Attached duplicate copy of this page if pay ng by deposit account) 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. Donald W. Muirhead; 33,978 Donald W. Muirhead; 33,978 Signature Date	<u>- </u>			
7. Total fee (37 CFR 3.41)\$ \$40.00 X Enclosed Authorized to be charged to deposit account 8. Deposit account number: (Attached duplicate copy of this page if pay ng by deposit account) DO NOT USE THIS SPACE 9. Statement and signature. To the best of my knowledge and belief, the foregoing information is true and conrect and any attached copy is a true copy of the original document. Donald W. Muirhead; 33,978 December 13, 1999 December 13, 1999 Date	Street Address: 101 Federal Street			
X Enclosed Authorized to be charged to deposit account 8.Deposit account number: (Attached duplicate copy of this page if pay ng by deposit account) 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. Donald W. Muirhead; 33,978 Donald W. Muirhead; 33,978 Signature Date	City: Boston State: MA ZIP: 02110			
Authorized to be charged to deposit account 8.Deposit account number: (Attached duplicate copy of this page if pay ng by deposit account) 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. Donald W. Muirhead; 33,978 December 13, 1999 Date			\$_\$40.00	
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. Donald W. Muirhead; 33,978 December 13, 1999 Signature Date		X Enclosed	harged to deposit account	
(Attached duplicate copy of this page if pay ng by deposit account) 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. Donald W. Muirhead; 33,978 December 13, 1999 Signature Date			margor to deposit anyone.	
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. Donald W. Muirhead; 33,978 December 13, 1999 Signature Date				
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. Donald W. Muirhead; 33,978 December 13, 1999 Signature Date			of this page if paying by deposit	
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. Donald W. Muirhead; 33,978 December 13, 1999 Signature Date				
To the best of my knowledge and belief, the foregoing information is true and confect and any undertacted copy is described and confect and copy is described and confect and copy is described and copy is descri				
Donald W. Mullitead, 55,976 Signature Date	To the best of my knowledge and belief, the foregoing info	formation is true and conrect and any and	ttached copy is a true copy of the	
Name of Borgon Signing Signature Date	Donald W. Muirhead: 33.978		99	
Total number of pages including cover sheet, attachments, and document: 2	Name of Derson Signing Signal	- ···-	mant: 2	

12/23/1999 TTON11

00000156 09460662

01 FC:581

ASSIGNMENT WHEREAS, each of the Undersigned has developed certain inventions described in U.S. patent application entitled: POWER SUPPLY CIRCUIT (x) executed on even date herewith: () executed on _____;
() now U.S. Application No. _/____ filed _____; and has full right to convey their entire interest, both legal and equitable, in and to said inventions free from all prior assignments, agreements, licenses, mortgages, security interests, or other encumbrances whatsoever; and WHEREAS, NEC Corporation ("ASSIGNEE"), a Japanese corporation having executive offices at 7-1, Shiba 5-chome, Minato-ku, Tokyo, Japan, is desirous of acquiring the entire right, title and interest in and to said invention or inventions and any and all patents to be obtained therefor; NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00) and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged by each of the Undersigned, each of the Undersigned hereby sells, assigns and transfers unto said ASSIGNEE, its successors and assigns, their entire right. title and interest in and to said invention or inventions, as described in the aforesaid application and all applications resulting therefrom, including any and all divisionals, continuations, continuations in part, substitute applications, and reissues or extensions thereof; and all resulting patents; AND each of the Undersigned hereby authorizes and requests the issuing authority to issue any and all patents on said application or applications to said ASSIGNEE or its successors and assigns; the Undersigned agree(s) that the attorney of record in said application shall hereinafter act on behalf of said ASSIGNEE; AND, each of the Undersigned further agrees, without any further payment or compensation by said ASSIGNEE or its successors and assigns, to communicate to said ASSIGNEE, its representatives or agents or its successors and assigns, any facts relating to said invention or inventions including evidence for interference purposes or for other legal proceedings whenever requested; to testify in any interference or other legal proceedings, whenever requested; to execute and deliver, on request, all lawful papers required to make any of the foregoing provisions effective; and to generally do everything possible to aid said ASSIGNEE, its successors or assigns and nominees to secure, obtain and enforce proper patent protection for said invention or inventions in this or any foreign country; Each of the undersigned hereby authorizes Foley, Hoag & Eliot, of One Post Office Square, Boston, MA 02109, to insert hereon any further identification information necessary or desirable for recordation of this document. Date Signed Inventor(s) December 10, 1999 Hitoshi Clkai December 10, 1999 2. Shurist Jamaguchi Name:

() Additional inventors are being named on separately numbered sheets attached hereto.

Name:

Name:

PATENT
RECORDED: 12/13/1999 REEL: 010451 FRAME: 0172