

U.S. DEPARTMENT OF COMMERCE

Patent and Trademark Office

Attorney Docket No.: 81410-249068

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a tha Acciatant Commission	

To the Assistant Commissioner for Faterita, Freeze	original documents or copy thereof.		
Name of conveying party(ies):	Name and address of receiving party(ies):		
JOHN F. STOCKMAN DAVID M. MOTLEY RICHARD A. KOLBUSH ROBERT KRONINGER	PAIRGAIN TECHNOLOGIES, INC. 14402 Franklin Avenue, Tustin, CA 92780		
Additional name(s) of conveying party(ies) attached? □ Yes ⊠ No			
3. Nature of conveyance:			
☐ Merger			
☐ Security Agreement ☐ Change of Name			
☐ Other	Additional name(s) & address(es) attached? □ Yes ⊠ No		
Application number(s) or patent number(s):			
If this document is being filed together with a new application, the execution	n date of the application is: May 16, 17 and 18, 2000		
A. Patent Application No.(s)	B. Patent No.(s)		
Additional numbers attached? ☐ Yes ☒ No	09579077		
5. Name and address of party to whom correspondence concerning document should be mailed: Roger R. Wise, Esq. PILLSBURY MADISON & SUTRO LLP 725 South Figueroa Street, Suite 1200 Los Angeles, CA 90017-5443	6. Total number of applications and patents involved: [1] 7. Total fee (37 CFR 3.41)\$ 40.00 Enclosed Authorized to be charged to deposit account 8. Deposit account number:		
	16-1805		
DO NOT USE THIS SPACE	(Attach duplicate copy of this page if paying by deposit account)		
9. Statement and signature. To the best of my knowledge and belief, the foregoing is true and correct and Roger R Wise			
OMB No. 0651-0011 (exp. 4/94)			
Mail documents to be recorded with required cover sheet inform Assistant Commiss Box Assign FC:581 40.00 0P Washington,	sioner for Patents gnments		

ASSIGNMENT

	Attorne	y Docket No. <u>81410-249968</u>
1-8) Insert Name(s) of	(1) JOHN F. STOCKMAN	(5)
nventor(s)	(2) DAVE M. MOTLEY	(6)
	(3) RICHARD A. KOLBUSH	
	(4) ROBERT KRONINGER	(8)
	In consideration of the sun other good and valuable consid undersigned, the undersigned a does assign, transfer and set o	derations paid to each of the agree(s) to assign, and hereby
9) Insert name of Assignee	(9) PAIRGAIN TECHNOLOGIES, INC.	
10) Insert state of ncorporation of Assignee	(10) <u>California</u>	
11) Insert address of Assignee	(11) of <u>14402 Franklin Avenue</u> (hereinafter designated as the As right, title and interest in the inver	signee) the entire worldwide
12) Insert identification of Invention, such as Title, Case Number or Foreign Application Number	(12) PCM UPSTREAM AND DOUNIVERSAL DIGITAL LOOP CAI (Case No. 81410-249968) for which the undersigned has (hat for patent in the United States of A	RRIER ave) executed an application
13) Insert Date of Signing of Application	(13) on May 18, 2000	

- 1) The undersigned agree(s) to execute all papers necessary in connection with an application in each of the countries of Schedule A and any continuing or divisional applications thereof and also to execute separate assignments in connection with such applications as the Assignee may deem necessary or expedient.
- 2) The undersigned agree(s) to execute all papers necessary in connection with any interference which may be declared concerning this application or continuation or division thereof and to cooperate with the Assignee in every way possible in obtaining evidence and going forward with such interference.

PATENT REEL: 010847 FRAME: 0585

- 3) The undersigned agree(s) to execute all papers and documents and perform any act which may be necessary in connection with claims or provisions of the International Convention for Protection of Industrial Property or similar agreements.
- 4) The undersigned agree(s) to perform all affirmative acts which may be necessary to obtain a grant of a valid United States patent to the Assignee.
- 5) The undersigned hereby authorize(s) and request(s) the Commissioner of Patents to issue any and all Letters Patents of the United States resulting from said application or any division or divisions or continuing applications thereof to the said Assignee, as Assignee of the entire interest, and hereby covenants that he has (they have) full right to convey the entire interest herein assigned, and that he has (they have) full right to convey the entire interest herein assigned, and that he has (they have) not execute, any agreement in conflict herewith.
- 6) The undersigned hereby appoints
 Paul N. Kokulis, Reg. No. 16,773; Raymond F. Lippitt, Reg. No. 17,519; G. Lloyd Knight, Reg. No. 17,698; George M. Sirilla, Reg. No. 18,221; Carl G. Love, Reg. No. 18,781; Kevin E. Joyce, Reg. No. 20,508; Edgar H. Martin, Reg. No. 20,534; Jay M. Finkelstein, Reg. No. 21,082; G. Paul Edgell, Reg. No. 24,238; Donald J. Bird, Reg. No. 25,323; Peter W. Gowdey, Reg. No. 25,872; Richard H. Zaitlen, Reg. No. 27,248; Glenn J. Perry, Reg. No. 28,458; Dale S. Lazar, Reg. No. 28,872; Kendrew H. Colton, Reg. No. 30,368; Mark G. Paulson, Reg. No. 30,793; Paul E. White, Jr., Reg. No. 31,097; Roger R. Wise, Reg. No. 31,204; Stephen C. Glazier, Reg. No. 31,361; Paul F. McQuade, Reg. No. 31,542; David A. Jakopin, Reg. No. 32,995; Timothy J. Klima, Reg. No. 34,852; Lynn E. Eccleston, Reg. No. 35,861; Paul G. Nagy, Reg. No. 37,896; Steven W. Smyrski, Reg. No. 38,312; Eric S. Chen, Reg. No. 43,542; Vivian S. Shin, Reg. No. 43,919

the power to insert on this assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document.

Date:	1/19/00	Signature of Inventor	Man	4	Juhn_		_
Date:		Signature of Inventor					_
Date:		Signature of Inventor	-	-		 	-
Date:		Signature of Inventor					

ASSIGNMENT

	Attorney Docket No. 81410-249968
1-8) Insert Name(s) of	(1) JOHN F. STOCKMAN (5)
nventor(s)	(2) <u>DAVE M. MOTLEY</u> (6)
	(3) RICHARD A. KOLBUSH (7)
	(4) ROBERT KRONINGER (8)
	In consideration of the sum of one dollar (\$1.00) and other good and valuable considerations paid to each of the undersigned, the undersigned agree(s) to assign, and hereby does assign, transfer and set over to
9) Insert name of Assignee	(9) PAIRGAIN TECHNOLOGIES, INC.
10) Insert state of ncorporation of Assignee	(10) California
11) Insert address of Assignee	(11) of 14402 Franklin Avenue, Tustin, CA 92780 (hereinafter designated as the Assignee) the entire worldwide right, title and interest in the invention known as
12) Insert identification f Invention, such as Title, Case Number or Toreign Application Iumber	(12) PCM UPSTREAM AND DOWNSTREAM SYSTEM FOR UNIVERSAL DIGITAL LOOP CARRIER (Case No. 81410-249968) for which the undersigned has (have) executed an application for patent in the United States of America
13) Insert Date of Signing of Application	(13) on <u>5-16-00</u>

- 1) The undersigned agree(s) to execute all papers necessary in connection with an application in each of the countries of Schedule A and any continuing or divisional applications thereof and also to execute separate assignments in connection with such applications as the Assignee may deem necessary or expedient.
- 2) The undersigned agree(s) to execute all papers necessary in connection with any interference which may be declared concerning this application or continuation or division thereof and to cooperate with the Assignee in every way possible in obtaining evidence and going forward with such interference.

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- 3) The undersigned agree(s) to execute all papers and documents and perform any act which may be necessary in connection with claims or provisions of the International Convention for Protection of Industrial Property or similar agreements.
- 4) The undersigned agree(s) to perform all affirmative acts which may be necessary to obtain a grant of a valid United States patent to the Assignee.
- 5) The undersigned hereby authorize(s) and request(s) the Commissioner of Patents to issue any and all Letters Patents of the United States resulting from said application or any division or divisions or continuing applications thereof to the said Assignee, as Assignee of the entire interest, and hereby covenants that he has (they have) full right to convey the entire interest herein assigned, and that he has (they have) not execute, any agreement in conflict herewith.
- 6) The undersigned hereby appoints
 Paul N. Kokulis, Reg. No. 16,773; Raymond F. Lippitt, Reg. No. 17,519; G. Lloyd Knight, Reg. No. 17,698; George M. Sirilla, Reg. No. 18,221; Carl G. Love, Reg. No. 18,781; Kevin E. Joyce, Reg. No. 20,508; Edgar H. Martin, Reg. No. 20,534; Jay M. Finkelstein, Reg. No. 21,082; G. Paul Edgell, Reg. No. 24,238; Donald J. Bird, Reg. No. 25,323; Peter W. Gowdey, Reg. No. 25,872; Richard H. Zaitlen, Reg. No. 27,248; Glenn J. Perry, Reg. No. 28,458; Dale S. Lazar, Reg. No. 28,872; Kendrew H. Colton, Reg. No. 30,368; Mark G. Paulson, Reg. No. 30,793; Paul E. White, Jr., Reg. No. 31,097; Roger R. Wise, Reg. No. 31,204; Stephen C. Glazier, Reg. No. 31,361; Paul F. McQuade, Reg. No. 31,542; David A. Jakopin, Reg. No. 32,995; Timothy J. Klima, Reg. No. 34,852; Lynn E. Eccleston, Reg. No. 35,861; Paul G. Nagy, Reg. No. 37,896; Steven W. Smyrski, Reg. No. 38,312; Eric S. Chen, Reg. No. 43,542; Vivian S. Shin, Reg. No. 43,919

the power to insert on this assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document.

Date:	Signature of Inventor	
Date: <u>\$-7</u>	6-0 Signature of Inventor <u>Ulauf</u>	111 Matey
Date:	Signature of Inventor	
Date:	Signature of Inventor	

ASSIGNMENT

	Attorney Docket I	No. <u>81410-249968</u>
(1-8) Insert Name(s) of	(1) JOHN F. STOCKMAN (5)	
Inventor(s)		
	(4) ROBERT KRONINGER (8)	
	In consideration of the sum of one do other good and valuable considerations p undersigned, the undersigned agree(s) to does assign, transfer and set over to	paid to each of the
(9) Insert name of Assignee	(9) PAIRGAIN TECHNOLOGIES, INC.	
(10) Insert state of Incorporation of Assignee	(10) <u>California</u>	
(11) Insert address of Assignee	(11) of <u>14402 Franklin Avenue, Tustin, C</u> (hereinafter designated as the Assignee) th right, title and interest in the invention know	e entire worldwide
(12) Insert identification of Invention, such as Title, Case Number or Foreign Application Number	(12) PCM UPSTREAM AND DOWNSTRE UNIVERSAL DIGITAL LOOP CARRIER (Case No. 81410-249968) for which the undersigned has (have) executor patent in the United States of America	
(13) Insert Date of Signing of Application	(13) on $5/17/00$	

- 1) The undersigned agree(s) to execute all papers necessary in connection with an application in each of the countries of Schedule A and any continuing or divisional applications thereof and also to execute separate assignments in connection with such applications as the Assignee may deem necessary or expedient.
- 2) The undersigned agree(s) to execute all papers necessary in connection with any interference which may be declared concerning this application or continuation or division thereof and to cooperate with the Assignee in every way possible in obtaining evidence and going forward with such interference.

PATENT REEL: 010847 FRAME: 0589

- 3) The undersigned agree(s) to execute all papers and documents and perform any act which may be necessary in connection with claims or provisions of the International Convention for Protection of Industrial Property or similar agreements.
- 4) The undersigned agree(s) to perform all affirmative acts which may be necessary to obtain a grant of a valid United States patent to the Assignee.
- 5) The undersigned hereby authorize(s) and request(s) the Commissioner of Patents to issue any and all Letters Patents of the United States resulting from said application or any division or divisions or continuing applications thereof to the said Assignee, as Assignee of the entire interest, and hereby covenants that he has (they have) full right to convey the entire interest herein assigned, and that he has (they have) not execute, any agreement in conflict herewith.
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Date:		Signature of Inventor	
Date:		Signature of Inventor	
			Richt A. Klil
Date:	5/11/00	Signature of Inventor	White Komin

RECORDED: 05/25/2000