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FORM PTO-161		-16-2001		Department of Commerce ent and Trademark Office
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Name C	olin M. Raufer, Reg. No. 40.781			
Address (line 1)	Bidg. E1, M.S. E150			
Address (line 2)	P.O. Box 902			
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Address (ine 1)       HUGHES ELECTRONICS CORP.         Address (ine 2)       BLDG. 001, M/S A109         Address (ine 2)       BLDG. 001, M/S A109         Address (ine 3)       PO Box 956         Address (ine 4)       El Segundo. California 90245         Pages       Enter the total number of pages of the attached conveyance document including any attachments.       # 3         Application Number(s)       Mark if additional numbers attached         Enter other the Patent Application Number or the Patent Number (DO NOT ENTER BOTH numbers for the same property).         Patent Application Number or the Patent Application number (S)       Patent Number(s)         Patent Application Number or the Patent Application enter the date the patent application was       Month Day Year         signed by the first named executing inventor.       Petr [PCT]       PcT]         Patent Cooperation Treaty (PCT)       PcT]       PcT]       PcT]         Patent Application number of properties involved.       # 1         Test petro application number PcT]       PcT]       PcT]       PcT]         Patent Cooperation Treaty (PCT)       PcT]       PcT]       PcT]       PcT]         Patent the otal number of properties involved.       # 1	Correspondent Name and Address	Area Code and Telephone Number (3)	PATENT 10) 662-9919		
Address (line 2)       BLDG. 001, M/S A109       Address (line 3)         PO Box 956       Address (line 4)       El Segundo, California 90245         Pages       Enter the total number of pages of the attached conveyance document including any attachments.       mark if additional numbers attached         Application Number(s) or Patent Number(s)       Mark if additional numbers attached       mark if additional numbers attached         Enter either the Patent Application Number or the Patent Number (DO NOT ENTER BOTH numbers for the same property).       Patent Application Number or the Patent Number (DO NOT ENTER BOTH numbers for the same property).         Patent Application Number or the Patent Application, enter the date the patent application was       Month Day Year         signed by the first named executing inventor.       Petr       Petr         Patent Cooperation Treaty (PCT)       Petr       Petr       Petr         Enter PCT application number petr       Petr       Petr       Petr         Mumber of Properties       Enter the total number of properties involved. # 1       Image: same date the patent Application at the patent Application is for a same property if a U.S. Application Number petr       Petr       Petr         Bethod of Payment:       Enter the total number of properties involved. # 1       Image: same date the patent Application is for a same property if additional fees:       Yes       No         Method of Payment:       Enclosed	Name Patent Records Administra	tion			
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Address (line 4)       El Segundo, California 90245         Pages       Enter the total number of pages of the attached conveyance document including any attachments.       # 3         Application Number(s) or Patent Number(s)       Mark if additional numbers attached         Enter either the Patent Application Number or the Patent Number (D0 NOT ENTER BOTH numbers for the same property).         Patent Application Number(s)       Patent Number(s)         Patent Seling filed together with a Day. Patent Application, enter the date the patent application was       Menth. Day         Year       Signed by the first name executing inventor.       Pert         Patent Cooperation Treaty (PCT)       PcT       PcT       PcT         Enter PCT application number onky if a U.S. Application Number pcT       PcT       PcT       PcT         has not been assigned.       Menth total number of properties involved. # 1	Address (line 2) BLDG. 001, M/S A109	······			
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Patent Application Number(s)       Patent Number(s)         Patent Application Number(s)       Patent Number(s)         Image: Statement and Signature       Image: Statement and Signature         Statement and Signature       Signature         Colin M. Raufer, Reg. No. 40,781       Out A0,781	••				
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Enter PCT application number only if a U.S. Application Number has not been assigned.       PCT       PCT       PCT         Number of Properties       Enter the total number of properties involved.       #       1         Fee Amount       Fee Amount for Properties Listed (37 CFR 3.41):       \$ 40.00         Method of Payment:       Enclosed       Deposit Account       \$ 40.00         Method of Payment:       Enclosed       Deposit Account       \$ 40.00         Deposit Account (Enter for payment by deposit account or if additional fees can be charged to the account.) Deposit Account Number:       # 50-0616         Statement and Signature       Yes       X       No         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. Charges to deposit account are authorized, as indicated herein.         Colin M. Raufer, Reg. No. 40,781       WMM.       May       12/14/00	Patent Cooperation Treaty (PCT)	PCT	РСТ		
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Name (line 1)	Name (line 2)		
Receiving Party(ies)       Mark if additional names of receiving parties attached         Name (line 1)       If document to be recorded is an assignment and the receiving party is not domiciled in the United States, an appointment of a domestic representative assignment.)         Address (line 2)       State/Country         Address (line 3)       City         State/Country       Zip Code         Name (line 2)       assignment of a domestic representative is a stached. (Designation must be a separate domestic representative is a stached. (Designation must be a separate domestic representative is a stached. (Designation must be a separate document from Assignment.)         Address (line 2)       If document to be recorded is an assignment of a domestic representative is a stached. (Designation must be a separate document from Assignment.)         Address (line 2)       State/Country       Zip Code         Name (line 2)       State/Country       Zip Code         Address (line 3)       City       State/Country       Zip Co	Name (line 1)		
Enter additional Receiving Party(ies)   Name (line 1)   Name (line 2)   Address (line 1)   Address (line 1)   Address (line 2)   Address (line 2)   Address (line 3)   City   State/Country   Zip Code   Name (line 2)   Address (line 3)   City   State/Country   Zip Code   Name (line 2)   Address (line 3)   City   State/Country   Zip Code   Name (line 2)   Address (line 3)   City   State/Country   Zip Code   Name (line 2)   Address (line 3)   City   State/Country   Zip Code   Name (line 2)   Address (line 3)   City   State/Country   Zip Code   Address (line 3)   City   State/Country   Zip Code   Address (line 4)   Designment of a domestic representative is attached. (Designation must be a separate document from Assignment.)	Name (line 2)		S'n
Name (line 1)       If document to be recorded is an assignment and the receiving party is not domiciled in the United States, an appointment of a domestic representative is attached. (Designation must be a separate document from Assignment.)         Address (line 2)       If document to be recorded is an assignment and the receiving party is not document.)         Address (line 3)       City         States, an appointment of a domestic representative is attached. (Designation must be a separate document from Assignment.)         Address (line 3)       City         State/Country       Zip Code         Name (line 1)       If document to be recorded is an assignment and the receiving party is not domestic representative is attached. (Designation must be a separate document from Assignment.)         Address (line 2)       State/Country         Address (line 3)       City         States, an appointment of a domestic representative is attached. (Designation must be a separate document from Assignment.)         Address (line 3)       City         City       State/Country         Zip Code         Address (line 3)       City         City       State/Country         Zip Code       Zip Code         Address (line 3)       City         City       State/Country         Zip Code       Zip Code         Address (line 4)       City         <	-		s attached
Name (line 1)       is an assignment and the receiving party is not domiciled in the United States, an appointment of a domastic representative is attached. (Designation must be a separate document from Assignment.)         Address (line 1)	Enter additional R	eceiving Party(ies)	
Name (line 2)       domiciled in the United         Address (line 1)       must be a separate         Address (line 2)       document from         Address (line 3)       City         State/Country       Zip Code         Name (line 1)       is an assignment.)         Address (line 3)       City         State/Country       Zip Code         Name (line 1)       is an assignment and the receiving party is not domiciled in the United States, an appointment of a domestic representative is attached. (Designation must be a separate document to be recorded is an assignment.)         Address (line 2)       if document to be recorded States, an appointment of a domestic representative is attached. (Designation must be a separate document from Assignment.)         Address (line 1)       must be a separate document from Assignment.)         Address (line 2)       must be a separate document from Assignment.)         Address (line 3)       City         State/Country       Zip Code         Address (line 3)       City         State/Country       Zip Code         Address (line 3)       City         State/Country       Zip Code         Application Number(S)       Mark if additional numbers attached         Enter either the Patent Application Number or the Patent Number (DO NOT ENTER BOTH numbers (S)         Datent Number(	Name (line 1)		is an assignment and the
Address (line 1)       is attached. (Designation must be a separate document from Assignment.)         Address (line 2)	Name (line 2)		domiciled in the United States, an appointment
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Name (line 2)       receiving party is not domiciled in the United States, an appointment of a domestic representative is attached. (Designation must be a separate document from Assignment.)         Address (line 2)	Name (line 1)		
Name (line 2)       States, an appointment of a domestic representative is attached. (Designation must be a separate document from Assignment.)         Address (line 2)       State/Country       Zip Code         Address (line 3)       City       State/Country       Zip Code         Application Number(s) or Patent Number(s)       Mark if additional numbers attached         Application Number or the Patent Number (DO NOT ENTER BOTH numbers for the same property).       Patent Number(s)	reatine (mer) [		receiving party is not
Address (line 1)       attached. (Designation must be a separate document from Assignment.)         Address (line 2)       attached. (Designation must be a separate document from Assignment.)         Address (line 3)       City         City       State/Country         Zip Code         Application Number(s) or Patent Number(s)       Mark if additional numbers attached         Enter either the Patent Application Number or the Patent Number (DO NOT ENTER BOTH numbers for the same property).         Patent Number(s)	Name (line 2)		States, an appointment of a
Address (line 2)	Address (line 1)		attached. (Designation must be a separate document from
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Patent Application Number(s)     Patent Number(s)	Application N	and the Beating Number or the Patent Number (DO NOT Entrest and	me property).
	Enter eitner ure	tent Application Number(s) Patent Numb	oer(s)
	<b>_</b>		

## ASSIGNMENT

WHEREAS, I, as below named sole inventor (if only one name is listed below) or joint inventor (if plural names are listed below) of the city and state as stated below next to my name, have invented a(an) **HIGH GAIN LASER AMPLIFIER** for which application for Letters Patent of the United States has been executed by me on this day, or (if the following is completed) filed on as Serial No. ; and

WHEREAS, HUGHES ELECTRONICS CORPORATION, (hereinafter referred to as HUGHES), a Delaware Corporation, having its principal place of business in El Segundo, California, is desirous of acquiring the entire and exclusive right, title and interest in, to and under said invention, said application and any and all Letters Patent that may be granted therefor in the United States and throughout the world;

NOW, THEREFORE, in consideration of the obligations voluntarily assumed by me and set forth in an invention agreement between me and my employer, effective the date as stated below next to my name, and other good and valuable consideration, receipt of which is hereby acknowledged, I do hereby sell, assign and transfer to HUGHES, its successors, assigns or other legal representatives, the entire and exclusive right, title and interest in and to said invention invented by me, to said application and any and all applications which are continuations, continuations-in- part, divisions or substitutes of said application and any and all Letters Patent that may be granted therefor in the United States and throughout the world on any of said applications and to any and all reexaminations, reissues, renewals or extensions of said Letters Patent in the United States and throughout the world for the full term or terms for which said Letters patent may be granted in the United States and throughout the world; authorize and request The Commissioner of Patents and Trademarks of the United States and all foreign countries to issue all such Letters Patent to said HUGHES, its successors, assigns or other legal representatives; covenant that no assignment, sale, agreement, transfer or encumbrance has been, or will be, made or entered into which would conflict with this assignment, sale and transfer; and agree to communicate to HUGHES, its successors, assigns or other legal representatives, upon request and at no cost or expense to me, any facts known by me respecting said invention, do all lawful acts, including the execution and delivery of all papers and proper oaths and giving of testimony that is deemed necessary or desirable by HUGHES, its successors, assigns or other legal representatives with regard to said invention for protecting, obtaining, maintaining and enforcing any and all of said Letters Patent in the United States and throughout the world for said invention and for perfecting, affirming, recording and maintaining the title of HUGHES, its successors, assigns or other legal representatives, and generally cooperate to the fullest extent in all matters pertaining to said invention, and any and all of said Letters Patent and the title thereto in HUGHES, its successors, assigns or other legal representatives.

## IN WITNESS WHEREOF, I have executed this instrument.

FULL NAME OF SOLE OR JOINT INVENTOR	INVENTOR'S SIGNATURE		DATE
Hans W. Bruesselbach	A-A-M	6	11-15-2000
RESIDENCE (CITY AND STATE)	· L		ON AGREEMENT DATE
Calabasas, CA 91302		Septem	ber 25, 1972
			DATE
FULL NAME OF SOLE OR JOINT INVENTOR	INVENTOR'S SIGNATURE		DATE
Alexander A. Betin			
RESIDENCE (CITY AND STATE)			ON AGREEMENT DATE
Manhattan Beach, CA 90266		March 2	28, 1994
FULL NAME OF SOLE OR JOINT INVENTOR	INVENTOR'S SIGNATURE		DATE
David S. Sumida	Chin Ahmse		15 Nov. 2000
RESIDENCE (CITY AND STATE)	Course Marines		ON AGREEMENT DATE
Los Angeles, CA 90066		October	r 29, 1984
		CCIODE	29, 1904
FULL NAME OF SOLE OR JOINT INVENTOR	INVENTOR'S SIGNATURE		DATE
			ON AGREEMENT DATE
RESIDENCE (CITY AND STATE)			
	INVENTOR'S SIGNATURE		DATE
FULL NAME OF SOLE OR JOINT INVENTOR			
			ON AGREEMENT DATE
RESIDENCE (CITY AND STATE)			
STATE OF Calif.	) ) SS:		
COUNTY OF LOS ANGRICS	,		
NOV 1 5 2000 bef	ore me, <u>SLSROSPU, N</u>	star	×
Un	monally appeared		
On a Notary Public in and for said State, per	r David S Sumina		······································

Spersonally known to me or o proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/ahe/they executed the same in his/her/their authorized capacity(ies), and that by hie/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

My Comm. Expires Apr 18, 2001
-------------------------------

Notary Public 535RODIn

## IN WITNESS WHEREOF, I have executed this instrument.

FULL NAME OF SOLE OR JOINT INVENTOR	INVENTOR'S SIGNATURE	DATE
Hans W. Bruesselbach		
RESIDENCE (CITY AND STATE)	•	INVENTION AGREEMENT DATE
Calabasas, CA 91302		September 25, 1972
FULL NAME OF SOLE OR JOINT INVENTOR	INVENTOR'S SIGNATURE	DATE
Alexander A. Betin	ben	11/15/00
RESIDENCE (CITY AND STATE)		INVENTION AGREEMENT DATE
Manhattan Beach, CA 90266		March 28, 1994
FULL NAME OF SOLE OR JOINT INVENTOR	INVENTOR'S SIGNATURE	DATE
David S. Sumida		
RESIDENCE (CITY AND STATE)		INVENTION AGREEMENT DATE
Los Angeles, CA 90066		October 29, 1984

FULL NAME OF SOLE OR JOINT INVENTOR	INVENTOR'S SIGNATURE	DATE
RESIDENCE (CITY AND STATE)		INVENTION AGREEMENT DATE

FULL NAME OF SOLE OR JOINT INVENTOR	INVENTOR'S SIGNATURE		DATE
		INVENTIO	ON AGREEMENT DATE
RESIDENCE (CITY AND STATE)			

STATE OF	California	}	SS:	
COUNTY OF	Los Angeles	)		
On <u>November</u> a Notary Public i	15, 2000 In and for said State ler A. Betin	_ before me,Leon e, personally appeared	hard A. Alkov	,

o personally known to me or o proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.



Notary Public Linard allha