505363534 03/07/2019

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT5410324

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
CHUNG CHIET EDWIN CHIN	03/05/2019
WADE ANDREW FARRIS MAPLE	03/01/2019
ANDREW PHILIP CHICK	03/05/2019

RECEIVING PARTY DATA

Name:	HEWLETT-PACKARD DEVELOPMENT COMPANY, L.P
Street Address:	10300 ENERGY DRIVE
City:	SPRING
State/Country:	TEXAS
Postal Code:	77389

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	29682726

CORRESPONDENCE DATA

Fax Number:

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Email: ajohnson@cantorcolburn.com

Correspondent Name: HP INC.

Address Line 1: 3390 E. HARMONY ROAD

Address Line 2: MAILSTOP 35

Address Line 4: FORT COLLINS, COLORADO 80528

ATTORNEY DOCKET NUMBER: 85685988 (HPI0050US)	
NAME OF SUBMITTER:	JAMES J. MERRICK
SIGNATURE:	/James J. Merrick/
DATE SIGNED:	03/07/2019

Total Attachments: 3 source=8961327#page1.tif

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PATENT REEL: 048533 FRAME: 0169

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PATENT	APPL	JUA	NULL

HP Inc. 3390 E. Harmony Road Mail Stop 35 Fort Collins, Colorado 80528

RECORD ID:	85685988
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ASSIGNMENT OF PATENT APPLICATION

I, the undersigned, for good and valuable consideration, the receipt of which is hereby acknowledged, agree to assign and transfer and hereby assign and transfer to HEWLETT-PACKARD DEVELOPMENT COMPANY, L.P., a Texas Limited Partnership having its principal place of business in Spring, Texas, (hereinafter "HPDC"), its successors, and its assigns, my entire right, title, and interest, including all rights of priority, in, to, and under an application for patent entitled (English-language title in parentheses if said application for patent is in another language):

and interest, including all rights of priorit if said application for patent is in another		on for pater	nt entitled (English-lan	guage title in parentheses
Printer				
Filing Date:	Application No.:			Patent Office: US ;
the subject matter, including any and all herein "patent" refers to any form of intel design rights, and utility model rights) country or region or under any internatic patent, any and all applications for patents and Inventions, any and all application indirectly claims priority or benefit, and a of, divisional applications of, national-plapplication for patent for any of said Invon or as a result of said Applications for Said Applications for Patent or said Patent	lectual property protection inclu (hereinafter "Inventions"); any sonal agreement for any of said ht directly or indirectly claiming is for patent from which any a sury and all continuation applica hase applications of, regional- lentions) (hereinafter "Applications) (hereinafter "Patents")	uding, withor and all extended in the control of th	out limitation, invention isting and future appli (including, without limi or benefit of any applic for patent for any of sontinuation-in-part applications of, renewals cent"); any and all pate	rights, utility patent rights, ications for patent of any tation, said application for cation for patent for any of said Inventions directly or ications (hereinafter CIPs) of, and substitutes for any nts which may be granted
I HEREBY represent that I convey entire right, title, and interest herein ass conflict herewith;				
AND I HEREBY authorize HPDC Applications for Patent in its name or authorize HPDC, its successors, its as number, and patent office of said application;	n my name in any country or ssigns, its nominees, and its	region or legal repre	under any international sentatives to insert the	al agreement, and further ne filing date, application
AND I HEREBY authorize and requiduty it is to issue patents, to issue to H Patents, in accordance with the terms of	PDC, its successors, or its ass			
AND I HEREBY covenant and agre such papers as may be necessary or HPDC, its successors, or its assigns; co all known facts respecting said Inventio and sign all lawful papers (including, applications) relating to said Inventions generally to do everything possible to a maintain, and enforce, for its or their ow and Patents, provided the expenses whits successors, its assigns, its nominees	desirable to perfect the title in mmunicate to HPDC, its succens, Applications for Patent, and without limitation, divisional a, Applications for Patent, and d HPDC, its successors, its as a benefit, proper intellectual proch may be incurred by me in le	n said Inversions, its as d Patents; the applications Patents; are ssigns, its nipperty prote	ntions, Applications for estigns, its nominees, of estify in any legal or a continuation applicand make all rightful of ominees, and its legal ction for said Invention	r Patent, and Patents, to r its legal representatives, idministrative proceedings itions, CIPs, and reissue iths and declarations and representatives to obtain, is, Applications for Patent,
IN WITNESS WHEREOF, I hereun	to set my hand and seal:			
all		5	March	2019
Inventor's Signature		Day	Month	Year
Chung Chiet Edwin Chin				
Given (First and Middle) Name(s) Far	nily Name			

Rev 8/2018 (HPDC Assignment)

PATENT APPLICATION

HP Inc. 3390 E. Harmony Road Mail Stop 35 Fort Collins, Colorado 80528

RECORD ID: 85685988

ASSIGNMENT OF PATENT APPLICATION

I, the undersigned, for good and valuable consideration, the receipt of which is hereby acknowledged, agree to assign and transfer and hereby assign and transfer to HEWLETT-PACKARD DEVELOPMENT COMPANY, L.P., a Texas Limited Partnership having its principal place of business in Spring, Texas, (hereinafter "HPDC"), its successors, and its assigns, my entire right, title, and interest, including all rights of priority, in, to, and under an application for patent entitled (English-language title in parentheses if said application for patent is in another language):

the subject matter, including any and all inventions, improvements, and discoveries, set forth in said application for patent (as us herein "patent" refers to any form of intellectual property protection including, without limitation, invention rights, utility patent right design rights, and utility model rights) (hereinafter "Inventions"); any and all existing and future applications for patent of a country or region or under any international agreement for any of said inventions (including, without limitation, said applications patent, any and all applications for patent directly or indirectly claiming priority to or benefit of any application for patent for any said inventions, any and all applications for patent for mow which any application for patent for any said inventions, any and all applications for patent for any applications of repatent for any applications of, activations, and substitutes for a application of patent for any of said Inventions) (hereinafter "Applications of, continuation-in-part applications (hereinafter of said Applications for Patent for any of said Inventions) (hereinafter "Patents"); and any and all patents which may be grant on or as a result of said Applications for Patent in Green and interest herein assigned and transferred, and that I have not executed and will not execute any agreement conflict herewith; AND I HEREBY authorize HPDC, its successors, its assigns, its nominees, and its legal representatives to file s Applications for Patent in its name or in my name in any country or region or under any international agreement, and furth authorize HPDC, its successors, its nominees, and its legal representatives to insert the filing date, applicat unmber, and patent office of said application for patent, now identified by the patent and patent office of said application for patent, now identified by the patent and patent office of said applications for Patent, and Patents, in accordance with the terms of this assignment and transfer; AND I HEREBY authorize and request the o	Printer			
herein 'patent' refers to any form of intellectual property protection including, without limitation, invention rights, utility patent right design rights, and utility model rights) (hereinafter "Inventions"); any and all existing and future applications for patent of a country or region or under any international agreement for any of said Inventions (including, without limitation, said application patent, any and all applications for patent from which any application for patent for any applications said Inventions, any and all applications for patent from which any application for patent for any of said Inventions directly indirectly claims priority or benefit, and any and all continuation applications of, continuation-in-part applications (hereinafter CII of, divisional applications of, national-phase applications for Patent'), any and all patients which may be grand on or as a result of said Applications for Patent (hereinafter "Patents"); and any and all patients which may be grand on or as a result of said Applications for Patent (hereinafter "Patents"); and any and all patients which may be grand or as a result of said Applications for Patent or said Patents. I HEREBY represent that I convey my full rights in all countries and regions and under all international agreements to the entire right, title, and interest herein assigned and transferred, and that I have not executed and will not execute any agreement conflict herewith; AND I HEREBY authorize HPDC, its successors, its assigns, its nominees, and its legal representatives to file is Applications for Patent in its name or in my mane in any country or region or under any international agreement, and furth authorize HPDC, its successors, its assigns, as assignee of insert the filling date, applicat number, and patent office of said application for patent, now identified by the Record ID and title set forth above, when known them; AND I HEREBY authorize and request the officials of all countries and regions and under all international agreements who d	Filing Date:	Application No.:		Patent Office: US
entire right, title, and interest herein assigned and transferred, and that I have not executed and will not execute any agreement conflict herewith; AND I HEREBY authorize HPDC, its successors, its assigns, its nominees, and its legal representatives to file so Applications for Patent in its name or in my name in any country or region or under any international agreement, and furth authorize HPDC, its successors, its assigns, its nominees, and its legal representatives to insert the filing date, application under, and patent office of said application for patent, now identified by the Record ID and title set forth above, when known them; AND I HEREBY authorize and request the officials of all countries and regions and under all international agreements who duty it is to issue patents, to issue to HPDC, its successors, or its assigns, as assignee of my entire right, title, and interest, so Patents, in accordance with the terms of this assignment and transfer; AND I HEREBY covenant and agree that I will, each time a request is made, and without undue delay, execute and deliver such papers as may be necessary or desirable to perfect the title in said Inventions, Applications for Patent, and Patents, HPDC, its successors, or its assigns; communicate to HPDC, its successors, its assigns, its nominees, or its legal representative all known facts respecting said Inventions, Applications for Patent, and Patents; testify in any legal or administrative proceedir and sign all lawful papers (including, without limitation, divisional applications, continuation applications, CIPs, and reiss applications) relating to said Inventions, Applications for Patent, and Patents; and make all rightful oaths and declarations agenerally to do everything possible to aid HPDC, its successors, its assigns, its nominees, and its legal representatives to obtain and enforce, for its or their own benefit, proper intellectual property protection for said Inventions, Applications for Patent and Patents, provided the expenses which may be inc	herein "patent" refers to any forr design rights, and utility model country or region or under any i patent, any and all applications said Inventions, any and all ap indirectly claims priority or bene of, divisional applications of, na application for patent for any of on or as a result of said Applica	n of intellectual property protection including, with rights) (hereinafter "Inventions"); any and all dinternational agreement for any of said Invention for patent directly or indirectly claiming priority to plications for patent from which any application fit, and any and all continuation applications of, ational-phase applications of, regional-phase applications for Patents (hereinafter "Applications for Patents"); and any	nout limitation, invention existing and future appliance including, without limbour or benefit of any appliance for patent for any of continuation-in-part applications of, renewals of atent"); any and all pate	rights, utility patent rights lications for patent of an itation, said application for cation for patent for any of said Inventions directly of lications (hereinafter CIPs of, and substitutes for an ents which may be grante
Applications for Patent in its name or in my name in any country or region or under any international agreement, and furth authorize HPDC, its successors, its assigns, its nominees, and its legal representatives to insert the filing date, application number, and patent office of said application for patent, now identified by the Record ID and title set forth above, when known them; AND I HEREBY authorize and request the officials of all countries and regions and under all international agreements who duty it is to issue patents, to issue to HPDC, its successors, or its assigns, as assignee of my entire right, title, and interest, see Patents, in accordance with the terms of this assignment and transfer; AND I HEREBY covenant and agree that I will, each time a request is made, and without undue delay, execute and deliver such papers as may be necessary or desirable to perfect the title in said Inventions, Applications for Patent, and Patents, HPDC, its successors, or its assigns; communicate to HPDC, its successors, its assigns, its nominees, or its legal representativall known facts respecting said Inventions, Applications for Patent, and Patents; testify in any legal or administrative proceeding and sign all lawful papers (including, without limitation, divisional applications, continuation applications, CIPs, and reise applications) relating to said Inventions, Applications for Patent, and Patents; and make all rightful oaths and declarations agenerally to do everything possible to aid HPDC, its successors, its assigns, its nominees, and its legal representatives to obtain and Patents, provided the expenses which may be incurred by me in lending such cooperation and assistance are paid by HPD its successors, its assigns, its nominees, or its legal representatives. IN WITNESS WHEREOF, I hereunto set my hand and seal:	entire right, title, and interest he	I convey my full rights in all countries and regionaries and transferred, and that I have no	ons and under all intern ot executed and will not	ational agreements to the execute any agreement is
duty it is to issue patents, to issue to HPDC, its successors, or its assigns, as assignee of my entire right, title, and interest, so Patents, in accordance with the terms of this assignment and transfer; AND I HEREBY covenant and agree that I will, each time a request is made, and without undue delay, execute and deliver such papers as may be necessary or desirable to perfect the title in said Inventions, Applications for Patent, and Patents, HPDC, its successors, or its assigns; communicate to HPDC, its successors, its assigns, its nominees, or its legal representativall known facts respecting said Inventions, Applications for Patent, and Patents; testify in any legal or administrative proceeding and sign all lawful papers (including, without limitation, divisional applications, continuation applications, CIPs, and reise applications) relating to said Inventions, Applications for Patent, and Patents; and make all rightful oaths and declarations agenerally to do everything possible to aid HPDC, its successors, its assigns, its nominees, and its legal representatives to obtain maintain, and enforce, for its or their own benefit, proper intellectual property protection for said Inventions, Applications for Patent and Patents, provided the expenses which may be incurred by me in lending such cooperation and assistance are paid by HPD its successors, its assigns, its nominees, or its legal representatives. IN WITNESS WHEREOF, I hereunto set my hand and seal:	Applications for Patent in its na authorize HPDC, its successor number, and patent office of sa	ame or in my name in any country or region o rs, its assigns, its nominees, and its legal rep	r under any internation resentatives to insert t	al agreement, and furthe he filing date, applicatio
such papers as may be necessary or desirable to perfect the title in said Inventions, Applications for Patent, and Patents, HPDC, its successors, or its assigns; communicate to HPDC, its successors, its assigns, its nominees, or its legal representative all known facts respecting said Inventions, Applications for Patent, and Patents; testify in any legal or administrative proceeding and sign all lawful papers (including, without limitation, divisional applications, continuation applications, CIPs, and reise applications) relating to said Inventions, Applications for Patent, and Patents; and make all rightful oaths and declarations a generally to do everything possible to aid HPDC, its successors, its assigns, its nominees, and its legal representatives to obtain maintain, and enforce, for its or their own benefit, proper intellectual property protection for said Inventions, Applications for Patents, provided the expenses which may be incurred by me in lending such cooperation and assistance are paid by HPD its successors, its assigns, its nominees, or its legal representatives. IN WITNESS WHEREOF, I hereunto set my hand and seal:	duty it is to issue patents, to iss	sue to HPDC, its successors, or its assigns, as a	ons and under all internations and under all internations assignee of my entire rig	ational agreements whos ght, title, and interest, sai
2 MARCH 2019	such papers as may be neces HPDC, its successors, or its assall known facts respecting said and sign all lawful papers (in applications) relating to said In generally to do everything poss maintain, and enforce, for its or and Patents, provided the expe	sary or desirable to perfect the title in said Investigns; communicate to HPDC, its successors, its Inventions, Applications for Patent, and Patents cluding, without limitation, divisional application ventions, Applications for Patent, and Patents; ible to aid HPDC, its successors, its assigns, its their own benefit, proper intellectual property pronses which may be incurred by me in lending su	rentions, Applications for assigns, its nominees, or testify in any legal or a ns, continuation applica and make all rightful or nominees, and its legal tection for said Invention	or Patent, and Patents, to or its legal representatives administrative proceeding ations, CIPs, and reissu- aths and declarations and representatives to obtain as, Applications for Paten
Inventor's Signature Day Month Year	IN WITNESS WHEREOF,	I hereunto set my hand and seal:		
Inventor's Signature Day Month Year		VCC 01	MARCH	2019
		Day	Month	

Rev 8/2018 (HPDC Assignment)

HP Inc. 3390 E. Harmony Road Mail Stop 35 Fort Collins, Colorado 80528

	ICATION

RECORD	ID:	85685988

ASSIGNMENT OF PATENT APPLICATION

I, the undersigned, for good and valuable consideration, the receipt of which is hereby acknowledged, agree to assign and

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Printer	*.			
Filing Date:	Application No.:			Patent Office: US ;
the subject matter, including any and all inventions, improvements, and discoveries, set forth in said application for patent (as used herein "patent" refers to any form of intellectual property protection including, without limitation, invention rights, utility patent rights, design rights, and utility model rights) (hereinafter "Inventions"); any and all existing and future applications for patent of any country or region or under any international agreement for any of said Inventions (including, without limitation, said application for patent, any and all applications for patent directly or indirectly claiming priority to or benefit of any application for patent for any of said Inventions, any and all applications for patent from which any application for patent for any of said Inventions directly or indirectly claims priority or benefit, and any and all continuation applications of, continuation-in-part applications (hereinafter CIPs) of, divisional applications of, national-phase applications of, regional-phase applications of, renewals of, and substitutes for any application for patent for any of said Inventions) (hereinafter "Applications for Patent"); any and all patents which may be granted on or as a result of said Applications for Patent (hereinafter "Patents"); and any and all reissues, reexaminations, and extensions of said Applications for Patent or said Patents.				
I HEREBY represent that I convey my full rights in all countries and regions and under all international agreements to the entire right, title, and interest herein assigned and transferred, and that I have not executed and will not execute any agreement in conflict herewith;				
AND I HEREBY authorize HPDC, its successors, its assigns, its nominees, and its legal representatives to file said Applications for Patent in its name or in my name in any country or region or under any international agreement, and further authorize HPDC, its successors, its assigns, its nominees, and its legal representatives to insert the filing date, application number, and patent office of said application for patent, now identified by the Record ID and title set forth above, when known to them;				
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IN WITNESS WHEREOF, I hereunto set r	my hand and seal:			
Amer Chik		5	MAR	2019
Inventor's Signature I		Day	Month	Year
Andrew Philip Chick Given (First and Middle) Name(s) Family Name	ne			

Rev 8/2018 (HPDC Assignment)

PATENT REEL: 048533 FRAME: 0172

RECORDED: 03/07/2019