504305390 04/04/2017

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1 Stylesheet Version v1.2 EPAS ID: PAT4352071

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT

CONVEYING PARTY DATA

Name	Execution Date
KISHORE K. MUCHHERLA	03/24/2017
SAMPATH K. RATNAM	04/03/2017
PETER FEELEY	03/23/2017
MICHAEL G. MILLER	03/27/2017
DANIEL J. HUBBARD	03/23/2017
RENATO C. PADILLA	03/28/2017
ASHUTOSH MALSHE	03/24/2017
HARISH R. SINGIDI	03/27/2017

RECEIVING PARTY DATA

Name:	MICRON TECHNOLOGY, INC.	
Street Address:	8000 SOUTH FEDERAL WAY	
City:	BOISE	
State/Country:	IDAHO	
Postal Code:	83716-9632	

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15478631

CORRESPONDENCE DATA

Fax Number: (612)659-9344

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.

Phone: 612-659-9340 Email: hilden@bipl.net

Correspondent Name: BROOKS, CAMERON & HUEBSCH, PLLC

Address Line 1: 1201 MARQUETTE AVENUE SOUTH, SUITE 400

Address Line 4: MINNEAPOLIS, MINNESOTA 55403

ATTORNEY DOCKET NUMBER:	1005.0600001[16-017800US]	
NAME OF SUBMITTER:	NATHAN J. GALLUS	
SIGNATURE:	/Nathan J. Gallus/	

PATENT 5390 REEL: 041846 FRAME: 0061

504305390

DATE SIGNED:	04/04/2017
Total Attachments: 11	
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Docket No. 1005.0600001

Kishore K. Muchherla, et al.

Disclosure No. 2016-0178.00/US

Filed: Concurrently herewith

For: GARBAGE COLLECTION

ASSIGNMENT

FOR GOOD AND VALUABLE CONSIDERATION, the receipt, sufficiency and adequacy of which are hereby acknowledged, the undersigned does hereby:

SELL, ASSIGN, AND TRANSFER TO Micron Technology, Inc. (the "Assignee"), a corporation of Delaware, having a place of business at 8000 South Federal Way, Boise, Idaho 83716-9632, the entire right, title, and interest for the United States and all foreign countries, in and to any and all improvements which are disclosed in the application for United States Letters Patent, which has been executed by the undersigned concurrently herewith and is entitled "GARBAGE COLLECTION"; such application and all divisional, continuing, substitute, renewal, reissue and all other applications for patent which have been or shall be filed in the United States and all foreign countries on any of such improvements; all original and reissued patents which have been or shall be issued in the United States and all foreign countries on such improvements; and specifically including the right to file foreign applications under the provisions of any convention or treaty and claim priority based on such application in the United States of America;

AUTHORIZE AND REQUEST the issuing authority to issue and an all United States and foreign patents granted on such improvements to the Assignee;

Attorney Docket No.: 1005.0600001 [2016-0178.00/US]

COMM. #2145433 Notary Public - California Santa Clara County Wy Comm. Expires Mar. 28, 2020

Serial No.: Not Yet Assigned Filing Date: Concurrently Herewith

WARRANT AND CONVENANT that no assignment, grant mortgage, license, or other agreement affecting the right and property herein conveyed has been or will be made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned;

COVENANT that, when requested and at the expense of the Assignee, to carry out in good faith the intent and purpose of this assignment, the undersigned will execute all divisional, continuing, substitute, renewal, reissue, and all other patent applications on any and all such improvements; execute all rightful oaths, declarations, assignments, powers of attorney, and other papers; communicate to the Assignee all facts known to the undersigned relating to such improvements and the history thereof; and generally do everything possible which the Assignee shall consider desirable for securing, maintaining, and enforcing proper patent protection for such improvements and for vesting title to such improvement in the Assignee;

TO BE BINDING on the heirs, assigns, representatives, and successors of the undersigned and extend to the successors, assigns, and nominees of the Assignee.

Wilhe Kuma m	Date: 03/24/2017—
Kishore K. Muchherla	
STATE OF CALIFORNIA	
COUNTY OF THE CLOSE	
on <u>Mari 24, 2012</u>	before me, Syana A Mala
personally appeared . <u>Kishor</u>	
who proved to me on the basis of satisf subscribed to the within instrument and in his/her/their authorized capacity(ies)	actory evidence to be the person(s) whose name(s) is/are I acknowledged to me that he/she/they executed the same, and that by his/her/their signature(s) on the instrument of which the person(s) acted, executed the instrument.
I certify under PENALTY OF PERJUF foregoing paragraph is true and correct	tY under the laws of the State of California that the
WITNESS my hand and official seal	So. A MA
{SEAL}	Notary or Consular Officer My Commission Expires 12-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-2-
SUZANNE A. MCHUGH	·

ASSIGNMENT

Attorney Docket No.: 1005.0600001 [2016-0178.00/US]

Comm. Expires Mer. 26, 2020

Serial No.: Not Yet Assigned Filing Date: Concurrently Herewith

WARRANT AND CONVENANT that no assignment, grant mortgage, license, or other agreement affecting the right and property herein conveyed has been or will be made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned;

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TO BE BINDING on the heirs, assigns, representatives, and successors of the undersigned and extend to the successors, assigns, and nominees of the Assignee.

Alalle	Date: 03/24/2017
Ashutosh Malshe	
STATE OF CALIFORNIA	
COUNTY OF SALLACION	
on March 24,2017	before me, SUZANE A. MOADA. (insert name and title of the officer)
personally appeared . Ash uto who proved to me on the basis of satisfaubscribed to the within instrument and in his/her/their authorized capacity(ies	} . s
I certify under PENALTY OF PERJUI foregoing paragraph is true and correct	RY under the laws of the State of California that the
WITNESS my hand and official seal	Drun Andhr
[SEAL]	Notary or Consular Officer My Commission Expires <u>Marz に えん チ</u> ロる
SUZANNE A. McHUGH COMM #2145433 Notary Public - California 8 Santa Clara County	

ASSIGNMENT Attorney Ducket No.: 1005.0600001 [2016-0178.00AJS] Serial No.: Not Yet Assigned Filing Date. Concurrently Herewith

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TO BE BINDING on the heirs, assigns, representatives, and successors of the undersigned and extend to the successors, assigns, and nominees of the Assignee.

S. Harish R. Singidi Date: 03/27/2017
STATE OF CALIFORNIA
COUNTY OF SAUTA CLORA
On MARCH 27 2017 before me, Suzawie A. McHugu- (insert name and title of the officer)
who 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.
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.
WITNESS my hand and official seal

Notary or Consular Officer,

My Commission Expires

[SEAL]

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Docket No. 1005.0600001

Kishore K. Muchherla, et al.

Disclosure No. 2016-0178.00/US

Filed: Concurrently herewith

For: GARBAGE COLLECTION

ASSIGNMENT

FOR GOOD AND VALUABLE CONSIDERATION, the receipt, sufficiency and adequacy of which are hereby acknowledged, the undersigned does hereby:

SELL, ASSIGN, AND TRANSFER TO Micron Technology, Inc. (the "Assignee"), a corporation of Delaware, having a place of business at 8000 South Federal Way, Boise, Idaho 83716-9632, the entire right, title, and interest for the United States and all foreign countries, in and to any and all improvements which are disclosed in the application for United States Letters Patent, which has been executed by the undersigned concurrently herewith and is entitled "GARBAGE COLLECTION"; such application and all divisional, continuing, substitute, renewal, reissue and all other applications for patent which have been or shall be filed in the United States and all foreign countries on any of such improvements; all original and reissued patents which have been or shall be issued in the United States and all foreign countries on such improvements; and specifically including the right to file foreign applications under the provisions of any convention or treaty and claim priority based on such application in the United States of America;

AUTHORIZE AND REQUEST the issuing authority to issue and an all United States and foreign patents granted on such improvements to the Assignee;

ASSIGNMENT

Attorney Docket No.: 1005.0600001 [2016-0178.00/US]

Serial No.: Not Yet Assigned Filing Date: Concurrently Herewith

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COVENANT that, when requested and at the expense of the Assignee, to carry out in good faith the intent and purpose of this assignment, the undersigned will execute all divisional, continuing, substitute, renewal, reissue, and all other patent applications on any and all such improvements; execute all rightful oaths, declarations, assignments, powers of attorney, and other papers; communicate to the Assignee all facts known to the undersigned relating to such improvements and the history thereof; and generally do everything possible which the Assignee shall consider desirable for securing, maintaining, and enforcing proper patent protection for such improvements and for vesting title to such improvement in the Assignee;

TO BE BINDING on the heirs, assigns, representatives, and successors of the undersigned and extend to the successors, assigns, and nominees of the Assignee.

IN TESTIMONY WHEREOF, I have hereunto set my hand this 3/May of April. 2017.

STATE OF Idado) ss.

BEFORE ME, this 3nd day of April , 2017 personally appeared the above-named individual, to me known to be the person who is described in and who executed the foregoing assignment instrument, and acknowledged to me that he/she executed the same of his/her own free will for the purpose therein expressed.

Notary or Consular Officer

My Commission Expires 05/02/17

Serial No.: Not Yet Assigned Filing Date: Concurrently Herewith

WARRANT AND CONVENANT that no assignment, grant mortgage, license, or other agreement affecting the right and property herein conveyed has been or will be made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned;

COVENANT that, when requested and at the expense of the Assignee, to carry out in good faith the intent and purpose of this assignment, the undersigned will execute all divisional, continuing, substitute, renewal, reissue, and all other patent applications on any and all such improvements; execute all rightful oaths, declarations, assignments, powers of attorney, and other papers; communicate to the Assignee all facts known to the undersigned relating to such improvements and the history thereof; and generally do everything possible which the Assignee shall consider desirable for securing, maintaining, and enforcing proper patent protection for such improvements and for vesting title to such improvement in the Assignee;

TO BE BINDING on the heirs, assigns, representatives, and successors of the undersigned and extend to the successors, assigns, and nominees of the Assignee.

IN TESTIMONY WHEREOF, I have hereunto set my hand this 23 day of march, 2017.

STATE OF Idaha ss.

BEFORE ME, this 23 day of max 4. 2017 personally appeared the above-named individual, to me known to be the person who is described in and who executed the foregoing assignment instrument, and acknowledged to me that he/she executed the same of his/her own free will for the purpose therein expressed,

Notary or Consular Officer
My Commission Expires 05/0 2/19

ASSIGNMENT Attorney Docket No.: 1005.0600001 [2016-0178.00/US] Serial No.: Not Yet Assigned

Filing Date: Concurrently Herewith

WARRANT AND CONVENANT that no assignment, grant mortgage, license, or other agreement affecting the right and property herein conveyed has been or will be made to others by the undersigned, and that full right to convey the same as herein expressed is possessed by the undersigned;

COVENANT that, when requested and at the expense of the Assignee, to carry out in good faith the intent and purpose of this assignment, the undersigned will execute all divisional, continuing, substitute, renewal, reissue, and all other patent applications on any and all such improvements; execute all rightful oaths, declarations, assignments, powers of attorney, and other papers; communicate to the Assignee all facts known to the undersigned relating to such improvements and the history thereof; and generally do everything possible which the Assignee shall consider desirable for securing, maintaining, and enforcing proper patent protection for such improvements and for vesting title to such improvement in the Assignee;

TO BE BINDING on the heirs, assigns, representatives, and successors of the undersigned and extend to the successors, assigns, and nominees of the Assignee.

Mydulla	Date:	March	
Michael G. Miller	,		
STATE OF Ilah.			
COUNTY OF Ale			

BEFORE ME, this 17 day of 100 day, 2017 personally appeared the above-named individual, to me known to be the person who is described in and who executed the foregoing assignment instrument, and acknowledged to me that he/she executed the same of his/her own free will for the purpose therein expressed.

Notary or Consular Officer
My Commission Expires \$\sigmu \subseteq \frac{1}{2}/19

ASSIGNMENT

Attorney Docket No.: 1005.0600001 [2016-0178.00/US]

Serial No.: Not Yet Assigned Filing Date. Concurrently Herewith

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TO BE BINDING on the heirs, assigns, representatives, and successors of the undersigned and extend to the successors, assigns, and nominees of the Assignee.

IN TESTIMONY WHEREOF, I have hereunto set my hand this 25 day of March . 2017.

Sand & Alder	Date: 3/23/2017
Daniel J. Hubbard	and the second s
STATE OF Ilaho	
COUNTY OF Ada) ss.	

BEFORE ME, this 23 day of Mer 2, 2017 personally appeared the above-named individual, to me known to be the person who is described in and who executed the foregoing assignment instrument, and acknowledged to me that he/she executed the same of his/her own free will for the purpose therein expressed.

Notary or Consular Officer

My Commission Expires 05/02/19

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Docket No. 1005.0600001

Kishore K. Muchherla, et al.

Disclosure No. 2016-0178.00/US

Filed: Concurrently herewith

For: GARBAGE COLLECTION

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Attorney Docket No.: 1005.0600001 [2016-0178.00/US]

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and extend to the successios, assigns, and	s nonunees of the Assignee.
James C. J. Cartin	Date: リクタ//チ
Renato C. Padilla	
STATE OF CALIFORNIA	A history Public or other officer completing the certificate various curity to intentity of the individual wind algored the discussment to which this certificate is effectived, and not the buildivises, accuracy, or resisting of buildivises.
COUNTY OF THE PROPERTY OF	
On <u>II Maid — 2017</u>	before me, D. Shina, Nolary Public
	(insert name and title of the officer)
personally appeared, Ronato Caus	2 Dod 1/2 250
who proved to me on the basis of satisfac subscribed to the within instrument and a in his/her/their authorized capacity(ies), a	tory evidence to be the person(s) whose name(s) is/ar- cknowledged to me that he/she/they executed the sam and that by his/her/their signature(s) on the instrument which the person(s) acted, executed the instrument.
I certify under PENALTY OF PERJURY foregoing paragraph is true and correct.	under the laws of the State of California that the
WITNESS my hand and official seal	
[SEAL]	Notary or Consular Officer
	My Commission Expires <u>Jan 14, 10/1</u>
D. SHIRA COMM. # 2095461 MOTANY PUBLIC CALIFORNIA U SACHAMENTO GOMPY MY COMM. East, SAN 28, 2018 T	