

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT5011787

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
TOSHIBA AMERICA ELECTRONIC COMPONENTS, INC.	05/30/2018
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	KABUSHIKI KAISHA TOSHIBA
<b>Street Address:</b>	1-1, SHIBAURA 1-CHOME
<b>City:</b>	MINATO-KU, TOKYO
<b>State/Country:</b>	JAPAN
<b>Postal Code:</b>	105-8001
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15456346
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	
<i>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.</i>	
<b>Phone:</b>	(202) 626-3600
<b>Email:</b>	toshibapatents@whitecase.com
<b>Correspondent Name:</b>	WHITE & CASE LLP
<b>Address Line 1:</b>	701 THIRTEENTH STREET, NW
<b>Address Line 4:</b>	WASHINGTON, D.C. 20005-3807
<b>ATTORNEY DOCKET NUMBER:</b>	1283810-0155-001 US
<b>NAME OF SUBMITTER:</b>	DAVID M. TENNANT
<b>SIGNATURE:</b>	/David M. Tennant/
<b>DATE SIGNED:</b>	06/18/2018
<b>Total Attachments: 5</b>	
source=0155-001 Assignment Document#page1.tif	
source=0155-001 Assignment Document#page2.tif	
source=0155-001 Assignment Document#page3.tif	
source=0155-001 Assignment Document#page4.tif	
source=0155-001 Assignment Document#page5.tif	

## ASSIGNMENT

WHEREAS, the undersigned inventor(s) desires to transfer all right, title, and interest in and to the inventions disclosed in the following Invention Disclosure Form(s):

- IOT SIDEBAND INTERFACE FOR SSD DEVICES submitted on [DATE], by Senthil Murugan Thangaraj, Narasimhulu Dharani Kotte, Chayan Biswas, Robert Reed, and Hitoshi Kondo (collectively, the "INVENTOR(S)");

And such inventions which if now or hereafter are disclosed in the patent application(s):

- (a)  U.S. patent application executed on \_\_\_\_\_
- (b)  U.S. application no. 15/456,346 filed on 3/10/2017
- (c)  International (e.g., PCT, JP) application no. \_\_\_\_\_ filed on \_\_\_\_\_

(collectively, the "INVENTIONS");

WHEREAS, Toshiba America Electronic Components, Inc. ("TAEC"), a U.S. corporation, having a place for the transaction of business at 9740 Irvine Boulevard, Suite D700, Irvine, CA 92618, USA, desires to acquire all of the right, title, and interest of Senthil Murugan Thangaraj, Narasimhulu Dharani Kotte, Chayan Biswas, Robert Reed, and Hitoshi Kondo (hereinafter referred to as "TAEC INVENTOR(S)") in, to, and under the INVENTIONS.

WHEREAS, TAEC desires to acquire all of the right, title, and interest of INVENTOR(S) in, to, and under the INVENTIONS and TAEC further desires to transfer all such right, title, and interest to Kabushiki Kaisha Toshiba (hereinafter referred to as "TOSHIBA") a corporation duly organized and existing under the laws of Japan, with offices at 1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-8001;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged:

- (1) TAEC INVENTOR(S) hereby sell(s), assign(s), and transfer(s) to TAEC the entire right, title, and interest for the United States and its territorial possessions, and in all foreign countries, in and to the INVENTIONS and any and all improvements thereon which are the subject of the INVENTIONS, and in and to any U.S. or foreign patent application for such INVENTIONS and improvements and any legal equivalent thereof in a foreign country, including the right to claim priority, and in and to any division, continuation or continuation-in-part, renewal or substitute thereof, and in and to all resulting Letters Patents or any reissue, reexamination certificate, supplemental examination certificate, post grant review certificate, inter partes review certificate, or otherwise, thereof, to have and to hold the same to the full end of the term or terms for which any and all of said Letters Patent may be granted (collectively, the "ASSIGNED INVENTIONS");
- (2) TAEC hereby sells, assigns, and transfers to TOSHIBA the entire right, title, and interest to the ASSIGNED INVENTIONS.

Without further payment or compensation by TAEC, TOSHIBA, or their successors and assigns, INVENTOR(S) further covenant(s) and agree(s) to communicate to TAEC, TOSHIBA, their representatives, agents, their successors or their assigns, or to subsequent assignees of the ASSIGNED INVENTIONS, any facts relating to the ASSIGNED INVENTIONS including evidence for purposes of interference or derivation proceedings or other administrative or legal proceedings whenever requested; to testify in any interference derivation, legal or administrative proceedings whenever requested; to execute and deliver, on request, all lawful papers required to make any of the foregoing provisions

effective; and to do everything possible to aid TAEC, TOSHIBA, their successors, assigns, nominees, or to subsequent assignees of the ASSIGNED INVENTIONS to secure, obtain, and enforce proper patent protection for the ASSIGNED INVENTIONS in this or any foreign country.

TAEC, and INVENTOR(S) each covenant that they have the full power to make their respective assignments, and that no assignment, sale, agreement, or encumbrance has been or will be made or entered into which would conflict with these assignments.

TAEC, and INVENTOR(S) further authorize and request the issuing authority to issue any and all patents on said application or applications to TOSHIBA or its successors and assigns.

Any attorney of record for TOSHIBA, and its successors and assigns, at the direction of TOSHIBA, is authorized and requested by the execution of these assignments to insert into these assignments any further patent or patent application information in the blanks and check boxes above as necessary for recordation of this document.

IN WITNESS WHEREOF, the INVENTOR(S) has/have hereunto affixed his/her/their signatures on the date below written.

1) Kandharam K. Kotte NARASIMHULU D KOTTE 03/08/2017  
(Signature) (Type or Print Name) (Date)  
181 WENATCHEE CMIN, FREMONT, CA 94539  
(Residence Address)

2) \_\_\_\_\_  
(Signature) (Type or Print Name) (Date)  
\_\_\_\_\_  
(Residence Address)

3) \_\_\_\_\_  
(Signature) (Type or Print Name) (Date)  
\_\_\_\_\_  
(Residence Address)

4) \_\_\_\_\_  
(Signature) (Type or Print Name) (Date)  
\_\_\_\_\_  
(Residence Address)

5) \_\_\_\_\_  
(Signature) (Type or Print Name) (Date)  
\_\_\_\_\_  
(Residence Address)

IN WITNESS WHEREOF, a representative of TAEC with authorization to make this assignment has hereunto affixed his/her signature on the date below written.

[Signature] Win Hwangbo, Managing Counsel, 5/30/2018  
(Signature) RICK Litigation (Date)  
Lin, IP Attorney



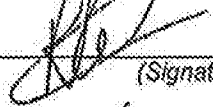
execute and deliver, on request, all lawful papers required to make any of the foregoing provisions effective; and to do everything possible to aid TAEC, TOSHIBA, their successors, assigns, nominees, or to subsequent assignees of the ASSIGNED INVENTIONS to secure, obtain, and enforce proper patent protection for the ASSIGNED INVENTIONS in this or any foreign country.

TAEC, and INVENTOR(S) each covenant that they have the full power to make their respective assignments, and that no assignment, sale, agreement, or encumbrance has been or will be made or entered into which would conflict with these assignments.

TAEC, and INVENTOR(S) further authorize and request the issuing authority to issue any and all patents on said application or applications to TOSHIBA or its successors and assigns.

Any attorney of record for TOSHIBA, and its successors and assigns, at the direction of TOSHIBA, is authorized and requested by the execution of these assignments to insert into these assignments any further patent or patent application information in the blanks and check boxes above as necessary for recordation of this document.

IN WITNESS WHEREOF, the INVENTOR(S) has/have hereunto affixed his/her/their signatures on the date below written

X1)  (Signature)      ROBERT REED (Type or Print Name)      3/9/17 (Date)  
1226 CROCKER DRIVE, EL DORADO HILLS, CA 95762 (Residence Address)

2) \_\_\_\_\_ (Signature)      \_\_\_\_\_ (Type or Print Name)      \_\_\_\_\_ (Date)  
 \_\_\_\_\_ (Residence Address)

3) \_\_\_\_\_ (Signature)      \_\_\_\_\_ (Type or Print Name)      \_\_\_\_\_ (Date)  
 \_\_\_\_\_ (Residence Address)

4) \_\_\_\_\_ (Signature)      \_\_\_\_\_ (Type or Print Name)      \_\_\_\_\_ (Date)  
 \_\_\_\_\_ (Residence Address)


execute and deliver, on request, all lawful papers required to make any of the foregoing provisions effective; and to do everything possible to aid TAEC, TOSHIBA, their successors, assigns, nominees, or to subsequent assignees of the ASSIGNED INVENTIONS to secure, obtain, and enforce proper patent protection for the ASSIGNED INVENTIONS in this or any foreign country.

TAEC, and INVENTOR(S) each covenant that they have the full power to make their respective assignments, and that no assignment, sale, agreement, or encumbrance has been or will be made or entered into which would conflict with these assignments.

TAEC, and INVENTOR(S) further authorize and request the issuing authority to issue any and all patents on said application or applications to TOSHIBA or its successors and assigns.

Any attorney of record for TOSHIBA, and its successors and assigns, at the direction of TOSHIBA, is authorized and requested by the execution of these assignments to insert into these assignments any further patent or patent application information in the blanks and check boxes above as necessary for recordation of this document.

IN WITNESS WHEREOF, the INVENTOR(S) has/have hereunto affixed his/her/their signatures on the date below written.

1)  HITOSHI KONDO Mar 9 2017  
(Signature) (Type or Print Name) (Date)

\_\_\_\_\_  
(Residence Address)

2) \_\_\_\_\_  
(Signature) (Type or Print Name) (Date)

\_\_\_\_\_  
(Residence Address)

3) \_\_\_\_\_  
(Signature) (Type or Print Name) (Date)

\_\_\_\_\_  
(Residence Address)

4) \_\_\_\_\_  
(Signature) (Type or Print Name) (Date)

\_\_\_\_\_  
(Residence Address)