

## PATENT ASSIGNMENT COVER SHEET

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EPAS ID: PAT5475174

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
GRACIELI POSSER	03/29/2019
WING-KAI CHOW	03/28/2019
MEHMET CAN YILDIZ	03/29/2019
ZHUO LI	04/13/2019
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	CADENCE DESIGN SYSTEMS, INC.
<b>Street Address:</b>	2655 SEELY AVENUE
<b>City:</b>	SAN JOSE
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	95134
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	16384689
<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>	612.376.6900
<b>Email:</b>	request@slwip.com
<b>Correspondent Name:</b>	SLW / CADENCE DESIGN SYSTEMS
<b>Address Line 1:</b>	P.O. BOX 2938
<b>Address Line 4:</b>	MINNEAPOLIS, MINNESOTA 55402
<b>ATTORNEY DOCKET NUMBER:</b>	3225.247US1 / 18PA192US01
<b>NAME OF SUBMITTER:</b>	JONATHAN FERGUSON
<b>SIGNATURE:</b>	/JONATHAN FERGUSON/
<b>DATE SIGNED:</b>	04/15/2019
<b>Total Attachments: 6</b>	
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**PATENT**

**REEL: 048888 FRAME: 0967**

### ASSIGNMENT

WHEREAS, Gracieli Posser, Wing-Kai Chow, Mehmet Can Yildiz and Zhuo Li (hereinafter the "Undersigned") have made one or more inventions and other subject matter (hereinafter collectively referred to as the "Invention"); as described in the patent application filed on April 15, 2019, assigned US application serial number 16/384,689, and titled ROUTING CONGESTION BASED ON VIA SPACING AND PIN DENSITY.

FOR GOOD AND VALUABLE CONSIDERATION, the receipt, sufficiency, and adequacy of which are hereby acknowledged by the Undersigned, the Undersigned do hereby irrevocably and unconditionally:

CONVEY, ASSIGN, AND TRANSFER to Cadence Design Systems, Inc. (the "Assignee"), a corporation of the State of Delaware, having a place of business at 2655 Seely Avenue, Building 5, San Jose, CA 95134, the Undersigned's entire right, title, and interest for the United States and all foreign countries and jurisdictions in and to:

the Invention which is disclosed in the above-identified application or applications;

such application or applications, and all divisional, continuing (including continuation-in-part), substitute, renewal, reissue, and all other applications for a patent or patents which have been or shall be filed in the United States (including all provisional and non-provisional applications), and in all foreign countries and jurisdictions based in whole or in part on any of such Invention (including any application for a utility model or an innovation patent application);

all original and reissued patents which have been or shall be issued in the United States and all foreign countries and jurisdictions based in whole or in part on any of such Invention;

including the right to claim priority to the above-identified patent application or applications in relation to subject matter based in whole or in part on the above-identified patent application or applications and any of the foregoing including the right to file foreign applications under the provisions of any convention or treaty;

and including the right to all causes of action, remedies, and other enforcement rights related to the above-identified application or applications, including without limitation the right to sue for past, present, or future infringement, misappropriation, or violation of any and all rights related to the above-identified patent application or applications and any of the foregoing, including the right to obtain and collect damages for past, present, or future infringement;

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

AUTHORIZE AND REQUEST that any attorney associated with U.S. Patent and Trademark Office (USPTO) Customer No. 97337 may (directly or through his/her designee) delete, insert, or alter any information related to the above-identified patent application or applications or any of the foregoing, after execution of this Assignment;

**Assignment**

Assignors: Gracieli Posser et al.

Title: ROUTING CONGESTION BASED ON VIA SPACING AND PIN DENSITY

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Docket No: 3225,247US1 / 18PA192US01

Client Ref. No. 18PA192US01

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

COVENANT, that when requested and without compensation, but at the expense of the Assignee, in order to carry out in good faith the intent and purpose of this Assignment, the Undersigned shall (1) execute all provisional, non-provisional, divisional, continuing (including continuation-in-part), substitute, renewal, reissue, and all other patent applications for the Invention; (2) execute all rightful oaths, declarations, assignments, powers of attorney and other papers for the Invention; (3) communicate to the Assignee all facts known to the Undersigned relating to the Invention and the history thereof; (4) cooperate with the Assignee in any interference, reexamination, reissue, opposition, dispute, or litigation involving any of the applications or patents for the Invention; and (5) take such further actions as the Assignee shall reasonably consider necessary or desirable for vesting title to such Invention in the Assignee, or for securing, maintaining and enforcing proper patent protection for the Invention;

COVENANT, that should any provision of this agreement be held unenforceable by an authority of competent jurisdiction, such a ruling shall not affect the validity and enforceability of the remaining provisions.

THIS AGREEMENT IS TO BE BINDING on the heirs, assigns, representatives, and successors of the Undersigned, and is to extend to the benefit of the successors, assigns, and nominees of the Assignee.

AGREED as of the date of my signature below:

**Assignment**

Assignors: Gracieli Posser et al.

Title: ROUTING CONGESTION BASED ON VIA SPACING AND PIN DENSITY

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Docket No: 3225,247US1 / 18PA192US01

Client Ref. No. 18PA192US01

**Assignor:**

(Signature):     /     *Gracieli Posser*     /

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Name: Gracieli Posser

City/State: Austin, TX

Date: 3/29/2019

**Assignment**

Assignors: Gracieli Posser et al.

Title: ROUTING CONGESTION BASED ON VIA SPACING AND PIN DENSITY

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Docket No: 3225,247US1 / 18PA192US01

Client Ref. No. 18PA192US01

**Assignor:**

(Signature):     /     *Wing-kai Chow*     /

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Name: Wing-Kai Chow

City/State: Austin, TX

Date:     3/28/2019

**Assignment**

Assignors: Gracieli Posser et al.

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Docket No: 3225,247US1 / 18PA192US01

Client Ref. No. 18PA192US01

**Assignor:**

(Signature):     /     *Mehmet Can Yildiz*     /

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Name: Mehmet Can Yildiz

City/State: Austin, TX

Date:     3/29/2019

**Assignment**

Assignors: Gracieli Posser et al.

Title: ROUTING CONGESTION BASED ON VIA SPACING AND PIN DENSITY

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Docket No: 3225,247US1 / 18PA192US01

Client Ref. No. 18PA192US01

**Assignor:**

(Signature): / Zhuo Li /

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Name: Zhuo Li

City/State: Austin, TX

Date: 4/13/2019