

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT4261929

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
SABRA ROSSMAN	01/31/2017
GARY MATSUNAMI	02/02/2017
KARUN SHARMA	01/31/2017
STEVEN RILEY	01/31/2017
JOSHUA A. BAUDHUIN	01/31/2017
<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:	15425679
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(202)672-5399
<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>	2026725300
<b>Email:</b>	ipdocketing@foley.com, vmacmillan@foley.com
<b>Correspondent Name:</b>	FOLEY & LARDNER LLP
<b>Address Line 1:</b>	3000 K STREET, N.W.
<b>Address Line 2:</b>	SUITE 600
<b>Address Line 4:</b>	WASHINGTON, D.C. 20007
<b>ATTORNEY DOCKET NUMBER:</b>	113506-0112
<b>NAME OF SUBMITTER:</b>	VICTORIA A. MACMILLAN
<b>SIGNATURE:</b>	/Victoria A. MacMillan/
<b>DATE SIGNED:</b>	02/06/2017
<b>Total Attachments: 6</b>	

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Atty. Ref. No.: 113506-0112

Client Ref. No. 16PA172US01

**ASSIGNMENT**

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, each undersigned inventor hereby sells, assigns, transfers to **CADENCE DESIGN SYSTEMS, INC.**, a Delaware corporation having a principal place of business at **2655 SEELY AVENUE, SAN JOSE, CALIFORNIA 95134** ("ASSIGNEE"), and its successors, assigns, and legal representatives, all rights, title and interest in and to his/her invention relating to:

**TITLE: GENERATING A COLOR TRACK PATTERN OF NON-UNIFORM WIDTH  
FOR A SPARSE SET OF TRACKS**

in any form or embodiment thereof, in the United States and all other countries, including applications for patents in all countries throughout the world, as set forth in his/her United States Patent Application (check one):

- executed concurrently herewith,  
 executed on \_\_\_\_\_,  
 Serial No. \_\_\_\_\_, filed on \_\_\_\_\_,  
 PCT International Application No.: \_\_\_\_\_, filed on \_\_\_\_\_,

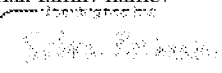
including any and all applications claiming priority to said applications, and to any provisional from which priority is claimed, divisions, continuations, renewal, substitute or reissue thereof and to any and all Letters Patent of the United States and all other countries, including any and all utility models, and design registrations, which may issue on any such application or for said invention, including any and all reissues or extensions thereof, to be held and enjoyed by said ASSIGNEE, its successors, legal representatives and assigns to the full end of the term or terms for which any and all such Letters patent may be granted as fully and entirely as would have been held and enjoyed by the undersigned had this Assignment not been made;

Each of the undersigned hereby authorizes and requests the issuing authority to issue any and all such Letters patent to said ASSIGNEE, its successors or assigns in accordance herewith;

Each of the undersigned warrants and covenants that he has the full and unencumbered right to sell, assign, and transfer the interests herein sold, assigned, and transferred and that he has not executed and will not execute any document or instrument in conflict herewith;

Each of the undersigned further covenants and agrees he will communicate to said ASSIGNEE, its successors, legal representatives or assigns all information known to him relating to said invention or patent application and that, without further remuneration, he will execute and deliver any papers, make all rightful oaths, testify in any legal proceedings and perform all other lawful acts deemed necessary or desirable by said ASSIGNEE, its successors, legal representatives or assigns to perfect title to said invention, to said application including divisions and continuations thereof and to any and all Letters Patent which may be granted therefor or thereon, including reissues or extensions, in said ASSIGNEE, its successors, or assigns or to assist said ASSIGNEE, its successors, legal representatives or assigns in obtaining, reissuing or enforcing Letters Patent of the United States or other countries for said invention; and

Each of the undersigned hereby grants the attorneys associated with Customer Number 141124, the power to insert in this Assignment any further identification which may be necessary or desirable to comply with the rules of the U.S. Patent and Trademark Office for recordation of this Assignment, including the power to insert on this assignment the application number and filing date of said application when known.

<b>Full Name of First Inventor:</b> (given name, middle initial, family name)		Sabra ROSSMAN	
Inventor's Signature		Execution Date	1/31/2017

<b>Full Name of Second Inventor:</b> (given name, middle initial, family name)		Gary MATSUNAMI	
Inventor's Signature		Execution Date	

Atty. Ref. No.: 113506-0112

Client Ref. No. 16PA172US01

<b>Full Name of Third Inventor:</b> <i>(given name, middle initial, family name)</i>	Karun SHARMA		
Inventor's Signature		Execution Date	

<b>Full Name of Fourth Inventor:</b> <i>(given name, middle initial, family name)</i>	Steven RILEY		
Inventor's Signature		Execution Date	

<b>Full Name of Fifth Inventor:</b> <i>(given name, middle initial, family name)</i>	Joshua A. BAUDHUIN		
Inventor's Signature		Execution Date	

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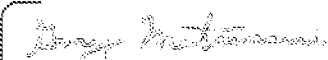
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<b>Full Name of First Inventor:</b> (given name, middle initial, family name)		Sabra ROSSMAN	
Inventor's Signature		Execution Date	

<b>Full Name of Second Inventor:</b> (given name, middle initial, family name)		Gary MATSUNAMI	
Inventor's Signature		Execution Date	2/2/2017

<b>Full Name of Third Inventor:</b> <i>(given name, middle initial, family name)</i>		Karun SHARMA	
Inventor's Signature		Execution Date	

<b>Full Name of Fourth Inventor:</b> <i>(given name, middle initial, family name)</i>		Steven James RILEY	
Inventor's Signature		Execution Date	

<b>Full Name of Fifth Inventor:</b> <i>(given name, middle initial, family name)</i>		Joshua A. BAUDHUIN	
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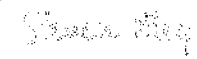
<b>Full Name of First Inventor:</b> <small>(given name, middle initial, family name)</small>		Sabra ROSSMAN	
Inventor's Signature		Execution Date	

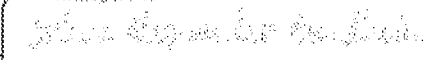
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Inventor's Signature		Execution Date	1/31/2017

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Inventor's Signature		Execution Date	1/31/2017