504826288 03/19/2018

PATENT ASSIGNMENT COVER SHEET

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SUBMISSION TYPE:	NEW ASSIGNMENT	
NATURE OF CONVEYANCE:	ASSIGNMENT	
CONVEYING PARTY DATA		
	Name	Execution Date

L	Name	
l	CHEN-SHIEN CHEN	12/26/2017
l	HSIU-JEN LIN	12/26/2017
l	MING-CHIH YEW	12/26/2017
l	MING-DA CHENG	08/31/2017
l	YI-JEN LAI	12/26/2017
l	YU-TSE SU	12/26/2017
	SEY-PING SUN	01/17/2018
	YANG-CHE CHEN	08/31/2017

RECEIVING PARTY DATA

Name: TAIWAN SEMICONDUCTOR MANUFACTURING COMPANY, LTD.			
Street Address:	8, LI-HSIN RD. 6 HSINCHU SCIENCE PARK		
City:	HSINCHU		
State/Country:	TAIWAN		
Postal Code:	300-78		

PROPERTY NUMBERS Total: 1

Property Type	Number
Application Number:	15669563

CORRESPONDENCE DATA

Fax Number:	(972)732-1001			
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:	972-732-1001			
Email:	docketing@slatermatsil.com			
Correspondent Name:	SLATER MATSIL, LLP			
Address Line 1:	17950 PRESTON RD., SUITE 1000			
Address Line 4:	DALLAS, TEXAS 75252			
ATTORNEY DOCKET NUMBER:	TSMP20160670US01			
NAME OF SUBMITTER:	CINDY STOUTEN			
SIGNATURE:	/Cindy Stouten/			

DATE SIGNED:	03/19/2018			
Total Attachments: 4	Total Attachments: 4			
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ATTORNEY DOCKET NO. TSMP20160670US01 1.1

ASSIGNMENT

8 1702835 58-34-33

WHEREAS, I, the undersigned inventor (or one of the undersigned joint inventors), of residence as listed, having invented certain new and useful improvements as below entitled, for which application for United States Letters Patent is made; and

WHEREAS, Taiwan Semiconductor Manufacturing Company, Ltd. ("Assignee"), a corporation organized and existing under the laws of Taiwan, the Republic of China, with its principal office at 8, Li-Hsin Rd. 6 Hsinchu Science Park, Hsinchu 300-78 Taiwan, R.O.C., is desirous of acquiring my entire right, title and interest in and to said invention, and to said application and any Letters Patent that may issue therson in the United States and all other countries throughout the world;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, I hereby sell and assign to said Assignee, its successors and assigns, my entire right, title and interest in and to said invention and in and to said application and all patents which may be granted therefor, and all future non-provisional applications including divisions, reissues, substitutions, continuations, and extensions thereof; and I hereby authorize and request the Commissioner for Patents to issue all patents for said invention, or patent resulting thereform, insofar as my interest is concerned, to said Assignee, as assignee of my entire right, title and interest. I declare that I have not executed and will not execute any agreement in conflict herewith.

I also hereby sell and assign to Assignee, its successors and assigns, my foreign rights to the invention disclosed in said application, in all countries of the world, including, but not limited to, the right to file applications and obtain patents under the terms of the International Convention for the Protection of Industrial Property, and of the European Patent Convention, and further agree to execute any and all patent applications, assignments, affidavits, and any other papers in connection therewith necessary to perfect such patent rights.

I hereby further agree that I will communicate to said Assignee, or to its successors, assigns, and legal representatives, any facts known to me respecting said invention or the file history thereof, and at the expense of said Assignee, its legal representatives, successors, or assigns, will testify in any legal proceedings, sign all lawful papers, execute all divisional, continuation, reissue and substitute applications, make all lawful oaths, and generally do everything possible to aid said Assignee, its legal representatives, successors, and assigns, to obtain and enforce proper patent protection for said invention in all countries.

TITLE OF INVENTION	Semiconductor Packages having Dummy Connectors and Methods of Forming Same			
SIGNATURE OF INVENTOR AND NAME	a Small	-Hsu-Jou Lin	Hy-Clife Ya	
	Chen-Shien Chen	Hsiu-Jen Lin	Ming-Chih Yew	Ming-Da Cheng
DATE	2-17. D.A	>019. (2.36	2017. 12. 26	
RESIDENCE	Hsinchu, Taiwan	Zhubei City, Taiwan	Hsin-Chu, Taiwan	Jhubei City, Taiwan

IN WITNESS WHEREOF, I hereunto set my hand and seal this day and year;

Assignment

PATENT REEL: 045277 FRAME: 0233

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ATTORNEY DOCKET NO. TSMP20160670US01

ASSIGNMENT

WHEREAS, I, the undersigned inventor (or one of the undersigned joint inventors), of residence as listed, having invented certain new and useful improvements as below entitled, for which application for United States Letters Patent is made; and

WHEREAS, Taiwan Semiconductor Manufacturing Company, Ltd. ("Assignee"), a corporation organized and existing under the laws of Taiwan, the Republic of China, with its principal office at 8, Li-Hsin Rd. 6 Hsinchu Science Park, Hsinchu 300-78 Taiwan, R.O.C., is desirous of acquiring my entire right, little and interest in and to said invention, and to said application and any Letters Patent that may issue thereon in the United States and all other countries throughout the world;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, I hereby sell and assign to said Assignee, its successors and assigns, my entire right, title and interest in and to said invention and in and to said application and all patents which may be granted therefor, and all future non-provisional applications including divisions, reissues, substitutions, continuations, and extensions thereoi, and I hereby authorize and request the Commissioner for Patents to issue all patents for said invention, or patent resulting thereform, insofar as my interest is concerned, to said Assignee, as assignee of my entire right, title and interest. I declare that I have not executed and will not execute any agreement in conflict herewith.

I also hereby sell and assign to Assignee, its successors and assigns, my foreign rights to the invention disclosed in said application, in all countries of the world, including, but not limited to, the right to file applications and obtain patents under the terms of the International Convention for the Protection of Industrial Property, and of the European Patent Convention, and further agree to execute any and all patent applications, assignments, affidavits, and any other papers in connection therewith necessary to perfect such patent rights.

I hereby further agree that I will communicate to said Assignee, or to its successors, assigns, and legal representatives, any facts known to me respecting said invention or the file history thereof, and at the expense of said Assignee, its legal representatives, successors, or assigns, will testify in any legal proceedings, sign all lawful papers, execute all divisional, continuation, reissue and substitute applications, make all lawful oaths, and generally do everything possible to aid said Assignee, its legal representatives, successors, and assigns, to obtain and enforce proper patent protection for said invention in all countries.

TITLE OF INVENTION	Semiconductor Packages having Dummy Connectors and Methods of Forming Same			
SIGNATURE OF INVENTOR AND NAME	Vi-Jen Leic	Xa-Tibe Su	0	Yong-Che Chen
	Yi-Jen Lai	Yu-Tse Su	Sey-Ping Sun	Yang-Che Chen
DATE	2017,12,26	≫37, is, ×6		2017, 17,26
RESIDENCE	Hsinchu, Taiwan	Chiayl City, Taiwan	Hsin-Chu, Taiwan	Hsin-Chu, Taiwan

IN WITNESS WHEREOF, I hereunto set my hand and seal this day and year;

Page 2 of 2

PATENT REEL: 045277 FRAME: 0234

ASSIGNMENT

WHEREAS, I, the undersigned inventor (or one of the undersigned joint inventors), of residence as listed, having invented certain new and useful improvements as below entitled, for which application for United States Letters Patent is made; and

WHEREAS, Taiwan Semiconductor Manufacturing Company, Ltd. ("Assignee"), a corporation organized and existing under the laws of Taiwan, the Republic of China, with its principal office at 8, Li-Hsin Rd. 6 Hsinchu Science Park, Hsinchu 300-78 Taiwan, R.O.C., is desirous of acquiring my entire right, title and interest in and to said invention, and to said application and any Letters Patent that may issue thereon in the United States and all other countries throughout the world;

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, I hereby sell and assign to said Assignee, its successors and assigns, my entire right, title and interest in and to said invention and in and to said application and all patents which may be granted therefor, and all future non-provisional applications including divisions, reissues, substitutions, continuations, and extensions thereof; and I hereby authorize and request the Commissioner for Patents to issue all patents for said invention, or patent resulting thereform, insofar as my interest is concerned, to said Assignee, as assignee of my entire right, title and interest. I declare that I have not executed and will not execute any agreement in conflict herewith.

I also hereby sell and assign to Assignee, its successors and assigns, my foreign rights to the invention disclosed in said application, in all countries of the world, including, but not limited to, the right to file applications and obtain patents under the terms of the International Convention for the Protection of Industrial Property, and of the European Patent Convention, and further agree to execute any and all patent applications, assignments, affidavits, and any other papers in connection therewith necessary to perfect such patent rights.

I hereby further agree that I will communicate to said Assignee, or to its successors, assigns, and legal representatives, any facts known to me respecting said invention or the file history thereof, and at the expense of said Assignee, its legal representatives, successors, or assigns, will testify in any legal proceedings, sign all lawful papers, execute all divisional, continuation, reissue and substitute applications, make all lawful oaths, and generally do everything possible to aid said Assignee, its legal representatives, successors, and assigns, to obtain and enforce proper patent protection for said invention in all countries.

TITLE OF INVENTION	Semiconductor Packages having Dummy Connectors and Methods of Forming Same			
SIGNATURE OF INVENTOR AND NAME	Chen-Shien Chen	Hsiu-Jen Lin	Ming-Chih Yew	Ming-Da Chang Ming-Da Chang
DATE				>017 8/31
RESIDENCE	Hsinchu, Taiwan	Zhubei City, Taiwan	Hsin-Chu, Taiwan	Jhubel City, Talwan

IN WITNESS WHEREOF, I hereunto set my hand and seal this day and year;

Assignment

PATENT REEL: 045277 FRAME: 0235 WHEREAS, I, the undersigned inventor (or one of the undersigned joint inventors), of residence as listed, having invented certain new and useful improvements as below entitled, for which application for United States Letters Patent is made; and

WHEREAS, Talwan Semiconductor Manufacturing Company, Ltd. ("Assignee"), a corporation organized and existing under the laws of Talwan, the Republic of China, with its principal office at 8, Li-Hsin Rd. 6 Hsinchu Science Park, Hsinchu 300-78 Talwan, R.O.C., is desirous of acquiring my entire right, title and interest in and to said invention, and to said application and any Letters Patent that may issue thereon in the United States and all other countries throughout the world.

NOW, THEREFORE, for good and valuable consideration, the receipt of which is hereby acknowledged, I hereby sell and assign to said Assignee, its successors and assigns, my entire right, title and interest in and to said invention and in and to said application and all patents which may be granted therefor, and all future non-provisional applications including divisions, reissues, substitutions, continuations, and extensions thereof; and I hereby authorize and request the Commissioner for Patents to issue all patents for said invention, or patent resulting thereform, insofar as my interest is concerned, to said Assignee, as assignee of my entire right, title and interest. I declare that I have not executed and will not execute any agreement in conflict herewith.

I also hereby sell and assign to Assignee, its successors and assigns, my foreign rights to the invention disclosed in said application, in all countries of the world, including, but not limited to, the right to file applications and obtain patents under the terms of the International Convention for the Protection of Industrial Property, and of the European Patent Convention, and further agree to execute any and all patent applications, assignments, affidavits, and any other papers in connection therewith necessary to perfect such patent rights.

I hereby further agree that I will communicate to said Assignee, or to its successors, assigns, and legal representatives, any facts known to me respecting said invention or the file history thereof, and at the expense of said Assignee, its legal representatives, successors, or assigns, will testify in any legal proceedings, sign all lawful papers, execute all divisional, continuation, reissue and substitute applications, make all lawful caths, and generally do everything possible to aid said Assignee, its legal representatives, successors, and assigns, to obtain and enforce proper patent protection for said invention in all countries.

TITLE OF INVENTION	Semiconductor Packages having Dummy Connectors and Methods of Forming Same			
SIGNATURE OF INVENTOR AND NAME	Yi-Jen Lai	Yu-Tse Su	Syly Sm-	Yang-Che Chen
DATE			2018: 1.17	
RESIDENCE	Hsinchu, Taiwan	Chiayi City, Taiwan	Hsin-Chu, Taiwan	Hsin-Chu, Taiwan

IN WITNESS WHEREOF, I hereunto set my hand and seal this day and year;