

## PATENT ASSIGNMENT COVER SHEET

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<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
CHIA-CHANG LI	10/17/2017
ERIC WONG	10/17/2017
VENGATARAJULU RAJASEKAR	10/17/2017
SATISH SAMPANGIRAMIAH	10/17/2017
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<b>State/Country:</b>	PENNSYLVANIA
<b>Postal Code:</b>	19103
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	15783766
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<b>NAME OF SUBMITTER:</b>	BENJAMIN M. KOOPFERSTOCK
<b>SIGNATURE:</b>	/Benjamin M. Koopferstock/
<b>DATE SIGNED:</b>	10/23/2017
<b>Total Attachments: 3</b>	
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ASSIGNMENT

Attorney Docket No.: 007412.03711

Serial Number:

Filing Date: October 13, 2017

Inventors: Chia-Chang Li, Eric Wong, Vengatarajulu Rajasekar, Satish Sampangiramah

For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the undersigned hereby assign to:

**COMCAST CABLE COMMUNICATIONS, LLC**

*(for Cable Division apps, like NETO, OCTO, CMC, BUMPB, SPOTLIGHT, STREAMSAGE,  
Comcast Interactive Media (CIM))*

having a place of business at 1701 JFK Boulevard, Philadelphia, PA 19103, its successors and assigns, the entire right, title and interest in the invention or improvements of the undersigned disclosed in an application for Letters Patent of the United States, entitled:

and identified as Attorney Docket No. 007412.03711 in the offices of Banner & Witcoff, Ltd. and in said application and any and all other applications, both United States and foreign, which the undersigned may file, either solely or jointly with others, on said invention or improvements, and in any and all Letters Patent of the United States and foreign countries, which may be obtained on any of said applications, and in any reissue or extension of such patents, and further assigns to said assignee the priority right provided by the International Convention.

The undersigned hereby authorize and request the Commissioner of Patents and Trademarks to issue said Letters Patent to said assignee.

The undersigned hereby authorize and request the attorneys of record in said application to insert in this assignment the filing date and serial number of said application when officially known.

The undersigned warrant themselves to be the owners of the entire right, title and interest in said invention or improvements and to have the right to make this assignment, and further warrant that there are no outstanding prior assignments, licenses, or other encumbrances on the interest herein assigned.

For said considerations and without additional charge the undersigned hereby agree, upon the request and at the expense of said assignee, its successors and assigns, to execute any and all divisional, continuation and substitute applications for said invention or improvements, and any necessary oath, affidavit or declaration relating thereto, and any application for the reissue or extension of any Letters Patent that may be granted upon said application and any and all applications and other documents for Letters Patent in foreign countries on said invention or improvements, that said assignee, its successors or assigns may deem necessary or expedient, and for the said considerations and without additional charge the undersigned authorize said assignee to apply for patents for said invention or improvements in its own name in such countries where such procedure is proper and further agree, upon the request of and without additional charge to said assignee, its successors and assigns, to cooperate to the best of the ability of the undersigned with said assignee, its successors and assigns, in any proceedings or transactions involving such applications or patents, including the preparation and execution of preliminary statements, giving and producing evidence, and performing any and all other acts necessary to obtain, maintain and enforce said Letters Patent, both United States and foreign, and vest all rights therein hereby conveyed in the assignee, its successors and assigns, whereby said Letters Patent will be held and enjoyed by the said assignee, its successors and assigns, to the full end of the term for which said Letters Patent will be granted, as fully and entirely as the same would have been held and enjoyed by the undersigned if this assignment had not been made.

Date: 10/17/2017

Chia-Chang Li  
Chia-Chang Li

Date: 10/17/2017

[Signature]  
Witness - SNEHAL PATEL

Date: 10/17/2017

[Signature]  
Witness - SRIKANT REDDY

Date: 10/17/2017

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Eric Wong

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Witness - SNEHAL PATEL

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Witness - SRIKANT REDDY

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Vengatarajulu Rajasekar

Date: 10/17/2017

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Witness - SRIKANT REDDY

Date: \_\_\_\_\_

\_\_\_\_\_  
Satish Sampangiramah

Date: \_\_\_\_\_

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Date: \_\_\_\_\_  
Chia-Chang Li

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Vengatarajulu Rajasckar

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Date: \_\_\_\_\_  
Witness

Date: 10/18/2018  
Satisht Sampangpanfah

Date: 10/19/2018  
Witness

Date: 10/19/2018  
Witness  
James Handcock

JERRY MASON