

## 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>
ANUP K. SHARMA	09/28/2018
ANDREW K. MCMAHON	09/28/2018
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	APPLE INC.
<b>Street Address:</b>	ONE APPLE PARK WAY
<b>City:</b>	CUPERTINO
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	95014
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	16146942
<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>	713-228-6601
<b>Email:</b>	mbrininger@blankrome.com
<b>Correspondent Name:</b>	APPLE - BLANK ROME C/O BLANK ROME LLP
<b>Address Line 1:</b>	717 TEXAS AVENUE, SUITE 1400
<b>Address Line 4:</b>	HOUSTON, TEXAS 77002
<b>ATTORNEY DOCKET NUMBER:</b>	P33386US1 (119-1293US1)
<b>NAME OF SUBMITTER:</b>	KATHERINE A. FRANCO
<b>SIGNATURE:</b>	/Katherine A. Franco/
<b>DATE SIGNED:</b>	11/01/2018
<b>Total Attachments: 2</b>	
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source=P33386US1_Assignment#page2.tif	

## ASSIGNMENT

FOR GOOD AND VALUABLE CONSIDERATION, the receipt, sufficiency and adequacy of which is hereby acknowledged, the undersigned does hereby:

SELL, ASSIGN AND TRANSFER to Apple Inc., (the "Assignee"), a corporation of California having a place of business at One Apple Park Way, Cupertino, California 95014 the entire right, title and interest for the United States and all foreign countries, in and to any and all improvements which are disclosed in the application for United States Letters Patent entitled: **Graphics Hardware Driven Pause for Quality of Service Adjustment**, which was filed as indicated below (the below-signed Assignors hereby grant the Assignee's designated agent to fill in this information after their signatures are applied):

is to be filed herewith;

was filed on September 28, 2018, now bearing U.S. Serial Number 16/146,942,

and all non-provisional, divisional, continuing, continuation-in-part, substitute, renewal, reissue and all other applications for patent which have been or shall be filed in the United States and all foreign countries on any of such improvements; all original and reissued patents which have been or shall be issued in the United States and all foreign countries on such improvements; and specifically including the right to file foreign applications under the provisions of any convention or treaty and claim priority based on such application in the United States;

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


WARRANT AND COVENANT that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been or will 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 at the expense of the Assignee, to carry out in good faith the intent and purpose of this assignment, the undersigned will execute all non-provisional, divisional, continuing, continuation-in-part, substitute, renewal, reissue and all other patent applications on any and all such improvements; execute all rightful oaths, declarations, assignments, powers of attorney and other papers; communicate to the Assignee all facts known to the undersigned relating to such improvements and the history thereof; and generally do everything possible which the Assignee shall consider desirable for securing,

maintaining and enforcing proper patent protection for such improvements and for vesting title to such improvements in the Assignee;

TO BE BINDING on the heirs, assigns, representatives and successors of the undersigned and extend to the successors, assigns and nominees of the Assignee.

This Assignment may be executed in one or more counterparts, each of which shall be deemed an original and all of which may be taken together as one and the same Assignment.

Executed on 9/28/18 by   
Date Anup K. Sharma

Executed on 9/28/18 by   
Date Andrew K. McMahon