

## PATENT ASSIGNMENT COVER SHEET

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Stylesheet Version v1.2

EPAS ID: PAT8345703

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	RELEASE OF SECURITY INTEREST
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
JPMORGAN CHASE BANK, N.A.	12/21/2023
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	HARMONIC INC.
<b>Street Address:</b>	4300 N FIRST ST
<b>City:</b>	SAN JOSE
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	95134
<b>PROPERTY NUMBERS Total: 141</b>	
<b>Property Type</b>	<b>Number</b>
Patent Number:	6784811
Patent Number:	6961377
Patent Number:	7079578
Patent Number:	7308003
Patent Number:	7660366
Patent Number:	8396159
Patent Number:	7342884
Patent Number:	6574225
Patent Number:	7006515
Patent Number:	6696996
Patent Number:	6522649
Patent Number:	7496098
Patent Number:	6895009
Patent Number:	7721157
Patent Number:	6665675
Patent Number:	7581016
Patent Number:	6571351
Patent Number:	6643702
Patent Number:	6545721
Patent Number:	7809778

Property Type	Number
Patent Number:	7876355
Patent Number:	7941455
Patent Number:	7979885
Patent Number:	8037392
Patent Number:	8103628
Patent Number:	8064479
Patent Number:	8121191
Patent Number:	8170121
Patent Number:	8266182
Patent Number:	8423872
Patent Number:	8228991
Patent Number:	8478873
Patent Number:	8504571
Patent Number:	8750409
Patent Number:	8867608
Patent Number:	8867624
Patent Number:	8910202
Patent Number:	9288497
Patent Number:	9031142
Patent Number:	9112761
Patent Number:	9185351
Patent Number:	9319326
Patent Number:	9307298
Patent Number:	9391455
Patent Number:	9554131
Patent Number:	9542611
Patent Number:	7971220
Patent Number:	8437403
Patent Number:	6654416
Patent Number:	7379604
Patent Number:	8335234
Patent Number:	7907666
Patent Number:	7561568
Patent Number:	8464308
Patent Number:	8879893
Patent Number:	9432707
Patent Number:	9467719
Patent Number:	9693095

Property Type	Number
Patent Number:	9749248
Patent Number:	9769500
Patent Number:	9769514
Patent Number:	9787987
Patent Number:	9930391
Patent Number:	9955160
Patent Number:	10020962
Patent Number:	10063485
Patent Number:	10063933
Patent Number:	10063455
Patent Number:	10104405
Patent Number:	10091561
Patent Number:	10097823
Patent Number:	10097889
Patent Number:	10103927
Patent Number:	10133605
Patent Number:	10211950
Patent Number:	10216541
Patent Number:	10291544
Patent Number:	10299009
Patent Number:	10313719
Patent Number:	10341686
Patent Number:	10341631
Patent Number:	10356448
Patent Number:	10356452
Patent Number:	10404585
Patent Number:	10412424
Patent Number:	10419066
Application Number:	15686541
Application Number:	14935791
Application Number:	15049066
Application Number:	15049051
Application Number:	15096614
Application Number:	15373235
Application Number:	16284881
Application Number:	16028195
Application Number:	16019390
Application Number:	15644789

Property Type	Number
Application Number:	15645741
Application Number:	15644823
Application Number:	15699544
Application Number:	15707411
Application Number:	15847099
Application Number:	15847029
Application Number:	15846989
Application Number:	15846926
Application Number:	16266621
Application Number:	16372952
Application Number:	16054979
Application Number:	16113890
Application Number:	16113433
Application Number:	16132136
Application Number:	62740582
Application Number:	16153415
Application Number:	16155687
Application Number:	16155715
Application Number:	16160918
Application Number:	62752921
Application Number:	16197124
Application Number:	16206908
Application Number:	16212278
Application Number:	62794904
Application Number:	62794847
Application Number:	62802446
Application Number:	62806250
Application Number:	62814716
Application Number:	62817388
Application Number:	62825211
Application Number:	16376581
Application Number:	16410721
Application Number:	62849039
Application Number:	62862302
Application Number:	62877682
Application Number:	16551444
Application Number:	62893625
Application Number:	62898416

Property Type	Number
Application Number:	62898432
Application Number:	16657909
Application Number:	16660479
Application Number:	16660571
Application Number:	16666913
Application Number:	62930201
Application Number:	62933183

#### CORRESPONDENCE DATA

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**ATTORNEY DOCKET NUMBER:** 8758.111

**NAME OF SUBMITTER:** QUI LU FLOOD

**SIGNATURE:** /Qui Lu Flood/

**DATE SIGNED:** 12/21/2023

#### Total Attachments: 8

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**TERMINATION AND RELEASE OF**  
**INTELLECTUAL PROPERTY SECURITY AGREEMENT**  
(Harmonic Inc.)

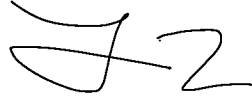
For good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, JPMorgan Chase Bank, N.A. (the “Lender”) pursuant to that certain Pledge and Security Agreement dated as of December 19, 2019, between Harmonic Inc. (the “Grantor”) and Lender (as amended, restated or otherwise modified from time to time, the “Security Agreement”) does hereby terminate and release its security interest in and to all of Grantor’s rights, title and interest in, to and under the Patents (as defined in the Security Agreement) that was granted pursuant to that certain Intellectual Property Security Agreement, dated as of December 19, 2019, between Grantor and Lender, which was recorded in the United States Patent and Trademark Office on or about December 20, 2019 at Reel/Frame 051395/0836 (“IP Security Agreement”), including that specific Patent Collateral shown on Exhibit “A” attached hereto. All capitalized terms used but not defined herein shall have the respective meanings ascribed to them in the Security Agreement or the IP Security Agreement, as applicable.

Executed as of the 21<sup>st</sup> day of December, 2023.

[Signatures on following page.]

**ADMINISTRATIVE AGENT:**

JPMorgan Chase Bank, N.A.,  
as Administrative Agent

A handwritten signature in black ink, appearing to be 'TL' or 'JL' with a stylized flourish.

By: \_\_\_\_\_

Name: Timothy Lee

Title: Authorized Signatory

EXHIBIT A

**RELEASED PATENTS AND PATENT APPLICATIONS**

<b>Title</b>	<b>Patent No.</b>	<b>Issue Date</b>
System and a method for an ultra-low delay MPEG-syntax video	6,784,811	8/31/2004
Transcoder System for Compressed Digital Video Bitstreams	6,961,377	11/1/2005
Partial Bitstream Transcoder System for Compressed Digital	7,079,578	7/18/2006
System and method for re-multiplexing multiple video streams	7,308,003	12/11/2007
Message Synchronization Over a Stochastic Network	7,660,366	2/9/2010
Message Synchronization Over a Stochastic Network	8,396,159 B2	3/12/2013
Method and Apparatus for One Directional Communications in Bidirectional Communications Channel	7,342,884	3/11/2008
Clock Recovery In A Packet-Based Data Network	6,574,225	6/3/2003
Isochronous Queue and Buffer Management	7,006,515	2/28/2006
Method and Apparatus to Eliminate Audible Clicking Transients When Switching Audio Streams	6,696,996	2/24/2004
Method of Distributing Video Reference Signals as Isochronous Network Packets	6,522,649	2/18/2003
Method of Generating Timestamps for Isochronous Data	7,496,098	2/24/2009
Method of Generating Timestamps for Isochronous Data	6,895,009	5/17/2005
Multi-Node Computer System Component Proactive Monitoring and Proactive Repair	7,721,157	5/18/2010
Shared File System Having A Token Ring Style Protocol for Managing Meta-Data	6,665,675	12/16/2003
System and Method for Automatic Media Track Routing	7,581,016	8/25/2009
Tightly Coupled Secondary Storage System and File System	6,571,351	5/27/2003
Traffic Scheduler for A First Tier Switch of a Two-Tier Switch	6,643,702	11/4/2003
Video Retiming Through Dynamic Fifo Sizing	6,545,721	4/8/2003
Idempotent Journal Mechanism for File System	7,809,778	10/5/2010
Video Abnormality Detection	7,876,355	1/25/2011
Notification for a Distributed File System	7,941,455	5/10/2011
Real Time Bit Rate Switching for Internet Protocol Television	7,979,885	7/12/2011



Title	Patent No.	Issue Date
Method for Optimizing the Forward Error Correction Scheme	8,037,392	10/11/2011
Directed Placement of Data in a Redundant Data Storage System	8,103,628	1/24/2012
Methods and System for Efficient Data Transfer over Hybrid Fiber Coax Infrastructure	8,064,479	11/22/2011
AVC to SVC Transcoder	8,121,191	2/21/2012
H.264/AVC Based Approach to Scalable Video Compression	8,170,121	5/1/2012
Transcoding for a Distributed File System	8,266,182	9/11/2012
Method for Optimizing the Forward Error Correction Scheme	8,423,872	4/16/2013
System and Method for Adaptive Video Compression Motion Compensation	8,228,991	7/24/2012
Techniques for Use of a System-Unique Identifier In An Architecture Having A File System Utilizing Distributed Metadata Servers	8,478,873	7/2/2013
Directed Placement of Data in a Redundant Data Storage System	8,504,571	8/6/2013
Message Synchronization Over a Stochastic Network	8,750,409	6/10/2014
Systems and Methods for Segmenting and Communicating Video Data	8,867,608	10/21/2014
H.264/AVC Based Approach to Scalable Video Compression	8,867,624	10/21/2014
Modification and Distribution of Video Content	8,910,202	12/9/2014
Advanced Video Coding to Multiview Video Coding Transcoder	9,288,497	3/15/2016
Digital Up Converter	9,031,142	5/12/2015
System and Method for Routing and Up-Converting Narrowband Channels	9,112,761	8/18/2015
Browsing and Viewing Video Assets Using TV Set-Top Box	9,185,351	11/10/2015
System and Method for Feedback Based Traffic Management	9,319,326	4/19/2016
System and Method for Video Statistical Multiplexing Adapting to Internet Protocol Networks	9,307,298	4/5/2016
System for Switching Between Power Supply Units	9,391,455	7/12/2016
Multi-slice/tile Encoder with Overlapping Spatial Sections (as amended)	9,554,131	1/24/2017
Logo Detection for Macroblock-based Video Processing	9,542,611	1/10/2017

Title	Patent No.	Issue Date
System, method, computer program product, and apparatus for automatically ensuring consistency between program and system information protocol tables and program specific information tables in a digital television stream	7,971,220	6/28/2011
Procede Et Dispositif D'analyse D'images/Device and Method for Analyzing Images by Calculating the Variance of Each Pixel of A High Frequency Image	8,437,403	5/7/2013
Appareil Et Methode Pour La Regulation De Debit/Device and Process for Regulating Bit Rate in System for the Statistical Multiplexing of Image Streams Coded According to the Mpeg2 Coding	6,654,416	11/25/2003
Device and process for coding video images by motion compensation	7,379,604	5/27/2008
Procede de controle synchronise d'une pluralite/Synchronized Control Method of a Plurality of Formatting Equipment and Streamformatting Equipment	8,335,234	12/18/2012
Device and Method for Recoding A Video Data Stream	7,907,666	3/15/2011
Device and Method for Multiplexing Associated With A Coding Device	7,561,568	7/14/2009
Method for Processing a Channel Request in an Iptv System	8,464,308	6/11/2013
Scrambling and Descrambling Method for the Transport of MPEG2 Audio Video Data Streams	8,879,893	11/4/2014
Method for formatting a video stream for mobile terminals/Procede de formatage d'un flex video pour	9,432,707	8/30/2016
System and method for the transmission of data and streams containing video data D.sub.video in a channel with given bitrate	9,467,719	10/11/2016
Device and Method for Composing Programmes from Different Sources in Baseband/Dispositif et procede de composition de programmes de sources differentes en bande de base	9,693,095	6/27/2017
System and method for feedback-based traffic management	9,749,248	8/29/2017
Smart Small Form-Factor (SFP) Pluggable Transceiver	9,769,500	9/19/2017
Clock Recovery for Video Encoding/Transcoding Applications	9,769,514	9/19/2017
Adaptive pre-filtering based on video complexity and output bit rate	9,787,987	10/10/2017
A Network Personal Video Recorder Utilizing Personal Digital Storage	9,930,391	3/27/2018
Video encoding using adaptive pre-filtering	9,955,160	4/24/2018

Title	Patent No.	Issue Date
Virtual Converged Cable Access Platform (CCAP) Core	10,020,962	7/10/2018
System and method for feedback-based traffic management	10,063,485	8/28/2018
Controlling Speed of the Display of Sub-Titles	10,063,933	8/28/2018
Obtaining Internet Protocol Subnet Scope	10,063,455	8/28/2018
Dynamic allocation of cpu cycles in video stream processing	10,104,405	10/16/2018
Watermarks in distributed construction of video on demand (vod) files	10,091,561	10/2/2018
Failure recovery for real-time audio and video encoding, decoding, and transcoding	10,097,823	10/9/2018
Method of adaptive broadcasting of multimedia streams using an energy index/procede de diffusion adaptative de flux multimedia en utilisant un indice d'energie	10,097,889	10/9/2018
System and method for distribution of broadcast channels	10,103,927	10/16/2018
Determining a computing capacity of one of a physical or a virtual machine	10,133,605	11/20/2018
High bit rate media FEC recovery	10,211,950	2/19/2019
Scheduler of processes having timed predictions of computing loads	10,216,541	2/26/2019
Bandwidth saving with programmable redistribution	10,291,544	5/14/2019
Controlling Speed of the Display of Sub-Titles	10,299,009	5/21/2019
Video stream splicing	10,313,719	6/4/2019
Method for dynamically adapting the encoding of an audio/or video stream transmitted to a device	10,341,686	7/2/2019
Controlling modes of sub-title presentation	10,341,631	7/2/2019
Multi representation edge server with enhanced open-gop compression	10,356,448	7/16/2019
Ensuring a target average bit rate in a multiplexed environment	10,356,452	7/16/2019
Dynamically Segregating Sources of Ingress at a Node	10,404,585	9/3/2019
Multi-channel variable bit-rate video compression	10,412,424	9/10/2019
Remote Radio Frequency (AGC) Loop	10,419,066	9/17/2019

Patent Application No.	File Date
15/686,541	8/25/17
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16/028,195	7/5/18
16/019,390	6/26/18
15/644,789	7/9/17
15/645,741	7/10/17
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15/847,029	12/19/17
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16/372,952	4/2/19
16/054,979	8/3/18
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16/113,433	8/27/18
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16/153,415	10/5/18
16/155,687	10/9/18
16/155,715	10/9/18
16/160,918	10/15/18
62/752,921	10/30/18
16/197,124	11/20/18
16/206,908	11/30/18
16/212,278	12/6/18
62/794,904	1/21/19
62/794,847	1/21/19
62/802,446	2/7/19
62/806,250	2/15/19
62/814,716	3/6/19
62/817,388	3/12/19
62/825,211	3/28/19
16/376,581	4/5/19
16/410,721	5/13/19
62/849,039	5/16/19
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62/877,682	7/23/19
16/551,444	8/26/19
62/893,625	8/29/19
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Patent Application No.	File Date
62/898,432	9/10/19
16/657,909	10/18/19
16/660,479	10/22/19
16/660,571	10/22/19
16/666,913	10/29/19
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