PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT6181373

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SUCCESSION OF AGENCY (REEL 052777 / FRAME 0216)

CONVEYING PARTY DATA

Name	Execution Date
JPMORGAN CHASE BANK, N.A.	07/01/2020

RECEIVING PARTY DATA

Name:	MUFG UNION BANK, N.A.
Street Address:	350 CALIFORNIA STREET, 17TH FLOOR
City:	SAN FRANCISCO
State/Country:	CALIFORNIA
Postal Code:	94104

PROPERTY NUMBERS Total: 94

Property Type	Number
Patent Number:	10148480
Patent Number:	10003350
Patent Number:	10009034
Patent Number:	10050614
Patent Number:	10069514
Patent Number:	10084494
Patent Number:	10097195
Patent Number:	10097261
Patent Number:	10110315
Patent Number:	10141944
Patent Number:	10158368
Patent Number:	10200219
Patent Number:	10224946
Patent Number:	10224948
Patent Number:	10230515
Patent Number:	10250272
Patent Number:	10256898
Patent Number:	10263632
Patent Number:	10291246
Patent Number:	10312928

Property Type	Number
Patent Number:	10319418
Patent Number:	10326414
Patent Number:	10348409
Patent Number:	10355725
Patent Number:	10355903
Patent Number:	10447287
Patent Number:	10454653
Patent Number:	10469166
Patent Number:	10516444
Patent Number:	10601462
Patent Number:	10608700
Patent Number:	10615815
Patent Number:	10432202
Patent Number:	10498768
Patent Number:	10389404
Patent Number:	10425262
Patent Number:	10432243
Patent Number:	10324871
Patent Number:	10594672
Patent Number:	10237100
Patent Number:	10060773
Patent Number:	10201053
Patent Number:	10267662
Application Number:	15938937
Application Number:	16000491
Application Number:	16107031
Application Number:	16181664
Application Number:	16201220
Application Number:	16259021
Application Number:	16294244
Application Number:	16299246
Application Number:	16356077
Application Number:	16367538
Application Number:	16372569
Application Number:	16372572
Application Number:	16372577
Application Number:	16372587
Application Number:	16372595

Property Type	Number
Application Number:	16372600
Application Number:	16376504
Application Number:	16379759
Application Number:	16403812
Application Number:	16444524
Application Number:	16584423
Application Number:	16584504
Application Number:	16589600
Application Number:	16589791
Application Number:	16589907
Application Number:	16657725
Application Number:	16674594
Application Number:	16667127
Application Number:	16601315
Application Number:	16681244
Application Number:	15853175
Application Number:	15864985
Application Number:	15912225
Application Number:	16005295
Application Number:	16194320
Application Number:	16194322
Application Number:	16231457
Application Number:	16272345
Application Number:	16279446
Application Number:	16279454
Application Number:	16358093
Application Number:	16372904
Application Number:	16389808
Application Number:	16396859
Application Number:	16400483
Application Number:	16406720
Application Number:	16438842
Application Number:	16659170
Application Number:	16665563
Application Number:	16860587
Application Number:	16425863

CORRESPONDENCE DATA

Fax Number:	(800)914-4240

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:	800-713-0755
Email:	Michael.Violet@wolterskluwer.com
Correspondent Name:	CT CORPORATION
Address Line 1:	4400 EASTON COMMONS WAY
Address Line 2:	SUITE 125
Address Line 4:	COLUMBUS, OHIO 43219

NAME OF SUBMITTER:	DORIS KA
SIGNATURE:	/Doris Ka/
DATE SIGNED:	07/01/2020

Total Attachments: 8
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RECORDATION FORM COVER SHEET
PATENTS ONLY

To the Director of the U.S. Patent and Trademark Office: Please record the attached documents or the new address(es) below.

1. Name of conveying party(ies) JPMorgan Chase Bank, N.A. Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No	**2. Name and address of receiving party(ies)** Name: MUFG Union Bank, N.A. Internal Address:_____

3. Nature of conveyance/Execution Date(s):

Execution Date(s) July 1, 2020

☐ Assignment   ☐ Merger

☐ Security Agreement   ☐ Change of Name

☐ Joint Research Agreement

☐ Government Interest Assignment

☐ Executive Order 9424, Confirmatory License

☒ Other_____ Succession of Agency _____ (Reel 052777 / Frame 0216)

Street Address: 350 California Street, 17th Floor

City: San Francisco

State: CA

Country: USA   Zip: 94104

Additional name(s) & address(es) attached? ☐ Yes ☒ No

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4. Application or patent number(s):   ☐ This document serves as an Oath/Declaration (37 CFR 1.63).

A. Patent Application No.(s)   B. Patent No.(s)

See attached Schedule A   See attached Schedule A

Additional numbers attached? ☒ Yes ☐ No

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5. Name and address to whom correspondence concerning document should be mailed:

Name: Doris Ka, Senior Paralegal (IP)

Internal Address: Cahill Gordon & Reindel LLP

Street Address: 80 Pine Street

City: New York

State: NY   Zip: 10005

Phone Number: (212) 701-3569

Docket Number: 59100.012 (MaxLinear patents 2020)

Email Address: dka@cahill.com

6. Total number of applications and patents involved: 94

7. Total fee (37 CFR 1.21(h) & 3.41) $_____

☐ Authorized to be charged to deposit account

☐ Enclosed

☐ None required (government interest not affecting title)

8. Payment Information

Deposit Account Number _____

Authorized User Name _____

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9. Signature: _____ *Doris Ka* _____   July 1, 2020

Signature   Date

Doris Ka

Name of Person Signing

Total number of pages including cover sheet, attachments, and documents: 8

Documents to be recorded (including cover sheet) should be faxed to (571) 273-0140, or mailed to:
Mail Stop Assignment Recordation Services, Director of the USPTO, P.O.Box 1450, Alexandria, V.A. 22313-1450

PATENT
REEL: 053116 FRAME: 0422

NOTICE OF SUCCESSION OF AGENCY
REEL/FRAME 052777/0216

This NOTICE OF SUCCESSION OF AGENCY (this "Notice"), dated as of July 1, 2020 (the "Effective Date"), is executed by JPMorgan Chase Bank, N.A., in its capacity as Collateral Agent under the Credit Agreement (as defined below) (the "Prior Collateral Agent"), and MUFG Union Bank, N.A, in its capacity as Collateral Agent pursuant to the Agency Replacement Agreement (as defined below) (the "Successor Collateral Agent").

WHEREAS, pursuant to that certain Credit Agreement, dated as of May 12, 2017 (as amended, supplemented, amended and restated or otherwise modified prior to the date hereof, the "Credit Agreement"), by and among MaxLinear, Inc. (the "Borrower"), the Prior Collateral Agent and certain other parties thereto, the Prior Collateral Agent and certain grantor parties identified on the signature page thereto (the "Grantors") entered into that certain Security Agreement, dated as of May 12, 2017 (as amended, supplemented, amended and restated or otherwise modified prior to the date hereof, the "Security Agreement"), and the Patent Security Agreement, dated as of May 28, 2020 (the "Patent Security Agreement"), pursuant to which the Grantors granted a security interest in and to certain collateral;

WHEREAS, the Patent Security Agreement was recorded with the United States Patent and Trademark Office on May 28, 2020 at Reel/Frame 052777/0216, with respect to the patents identified on Schedule A attached hereto; and

WHEREAS, the Prior Collateral Agent, the Successor Collateral Agent, the Borrowers and certain other parties have entered into that certain Resignation, Consent and Appointment Agreement, dated as of July 1, 2020 (the "Agency Replacement Agreement"), whereby the Prior Collateral Agent resigned as Collateral Agent and is succeeded to and replaced by the Successor Collateral Agent as Collateral Agent.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree as follows:
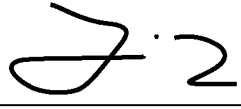
1. Defined Terms. All capitalized terms used, but not otherwise defined herein, shall have the respective meanings ascribed in or otherwise referenced in the Agency Replacement Agreement.

2. Succession and Replacement of Agency. Pursuant to the terms and conditions set forth in the Agency Replacement Agreement, the Prior Collateral Agent has ceased to be Collateral Agent under such capacity and is succeeded to and replaced by the Successor Collateral Agent as Collateral Agent under such capacity. Nothing herein shall be deemed to terminate, interrupt or impair the continuity of the security interest in the collateral originally granted to the Prior Collateral Agent under the Patent Security Agreement, which security interest is now succeeded by and transferred to the Successor Collateral Agent.

[Remainder of Page Intentionally Blank.]

IN WITNESS WHEREOF, the parties have executed this Notice effective as of the Effective Date:

JPMORGAN CHASE BANK, N.A.

By: _____
Name: Timothy Lee
Title: Executive Director
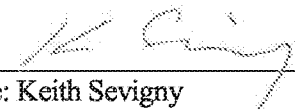

MUFG UNION BANK, N.A.

By: _____
Name:
Title:

IN WITNESS WHEREOF, the parties have executed this Notice effective as of the Effective Date:

JPMORGAN CHASE BANK, N.A.

By: _____
Name:
Title:

MUFG UNION BANK, N.A.

By: _____
Name: Keith Sevigny
Title: Vice President

PATENT
REEL: 053116 FRAME: 0425

Schedule A

United States Patent Registrations:

OWNER	REGISTRATION NUMBER	TITLE
MaxLinear, Inc.	10148480	Methods And Apparatus For Synchronization In Multiple-Channel Communication Systems
MaxLinear, Inc.	10003350	Successive Approximation Register Analog-To-Digital Converter
MaxLinear, Inc.	10009034	Method And System For An Analog-To-Digital Converter With Near-Constant Common Mode Voltage
MaxLinear, Inc.	10050614	Method And System For Reliable Bootstrapping Switches
MaxLinear, Inc.	10069514	Low-Power Low Density Parity Check Decoding
MaxLinear, Inc.	10084494	Method And System For Crest Factor Reduction
MaxLinear, Inc.	10097195	Digital-To-Analog Converter (DAC) With Enhanced Dynamic Element Matching (Dem) And Calibration
MaxLinear, Inc.	10097261	Hot-Swappable Hardware For Wireless Microwave Links
MaxLinear, Inc.	10110315	High-Speed, Low-Power Optical Communications
MaxLinear, Inc.	10141944	Method And System For Broadband Analog To Digital Converter Technology
MaxLinear, Inc.	10158368	Digital-To-Analog Converter (DAC) With Partial Constant Switching
MaxLinear, Inc.	10200219	Dynamically Calibrated Pre-Distortion
MaxLinear, Inc.	10224946	Digital-To-Analog Converter (DAC) With Enhanced Dynamic Element Matching (DEM) And Calibration
MaxLinear, Inc.	10224948	Successive Approximation Analog-To-Digital Converter (ADC) With Dynamic Search Algorithm
MaxLinear, Inc.	10230515	Method And Apparatus For Moca Network With Protected Set-Up
MaxLinear, Inc.	10250272	Localized Dynamic Element Matching And Dynamic Noise Scaling In Digital-To-Analog Converters (DACs)
MaxLinear, Inc.	10256898	Method And System For Guard Band Detection And Frequency Offset Detection
MaxLinear, Inc.	10263632	Method And System For Gain Control For Time-Interleaved Analog-To-Digital Convertor (ADC)
MaxLinear, Inc.	10291246	Digital-To-Analog Converter (DAC) With Digital Offsets
MaxLinear, Inc.	10312928	Successive Approximation Register Analog-To-Digital Converter
MaxLinear, Inc.	10319418	Methods And Systems For Parallel Column Twist Interleaving
MaxLinear, Inc.	10326414	Dynamic Biasing Of Power Amplifiers
MaxLinear, Inc.	10348409	Method and System For Continuous Gain Control In A Feedback Transimpedance Amplifier
MaxLinear, Inc.	10355725	Jitter Improvement In Serializer-Deserializer (SERDES) Transmitters

OWNER	REGISTRATION NUMBER	TITLE
MaxLinear, Inc.	10355903	Peak To Average Power Ratio Reduction In Multichannel Digital Front-Ends (DFES)
MaxLinear, Inc.	10447287	Multi-Zone Data Converters
MaxLinear, Inc.	10454653	Mixed-Mode Cable-Based Network
MaxLinear, Inc.	10469166	Feedback-Based Configuration Of A Hybrid Fiber-Coaxial Network
MaxLinear, Inc.	10516444	Method And System For Providing An Antenna That Is Optimized For Near-Field-Communication (NFC) And Reduces The Effect Of Far-Field-Communication (FFC)
MaxLinear, Inc.	10601462	Coordinated Background Training In A Full-Duplex Hybrid Fiber-Coaxial Network
MaxLinear, Inc.	10608700	Methods And Systems For Utilizing Low Gain Low Noise Signal Amplification And Ideal Taps In Coaxial Networks
MaxLinear, Inc.	10615815	High-Linearity Flash Analog to Digital Converter
MaxLinear, Inc.	10432202	Detection And Compensation Of Dielectric Resonator Oscillator Frequency Drift
MaxLinear, Inc.	10498768	Method And Apparatus For Moca Network With Protected Set-Up
MaxLinear, Inc.	10389404	PAPR Reduction In A Microwave Backhaul Outdoor Unit
MaxLinear, Inc.	10425262	Method And System For Adaptive Guard Interval (GI) Combining
MaxLinear, Inc.	10432243	Receiver Nonlinearity Estimation And Cancellation
MaxLinear, Inc.	10324871	Method And System For Buffer State Based Low Power Operation In A Moca Network
Entropic Communications, LLC	10594672	Secure Node Admission In A Communication Network
Entropic Communications, LLC	10237100	Method And Apparatus For Digitization Of Broadband Analog Signals
Exar Corporation	10060773	Method And Apparatus For Multi-Channel Sensor Interface With Programmable Gain, Offset And Bias
Exar Corporation	10201053	Ac Direct Drive System For Light Emitting Diodes With Ultra-Low Flicker, Low Harmonic Distortion, Dimming Compatibility And Power Line Regulation
Exar Corporation	10267662	Method And Apparatus For Multi-Channel Sensor Interface With Programmable Gain, Offset And Bias

United States Patent Applications:

OWNER	APPLICATION NUMBER	TITLE
MaxLinear, Inc.	15938937	Full Duplex Docsis Cable Modem Echo Cancellation With Training
MaxLinear, Inc.	16000491	Methods And Systems For Utilizing Ideal Taps In Coaxial Networks

OWNER	APPLICATION NUMBER	TITLE
MaxLinear, Inc.	16107031	Method And System For A Matching Circuit For A Broadband Bus In Automotive Applications
MaxLinear, Inc. and Entropic Communications, LLC	16181664	Methods And Systems For Power Management In Communication Devices Based On Cable Connectivity
MaxLinear, Inc.	16201220	Method And System For Broadband Analog To Digital Converter Technology
MaxLinear, Inc.	16259021	Method And System For Integrated Stacking For Handling Channel Stacking Or Band Stacking
MaxLinear, Inc.	16294244	Foreground Training In A Hybrid Fiber-Coaxial Network With Remote-PHY
MaxLinear, Inc.	16299246	METHOD AND APPARATUS FOR Moca NETWORK WITH PROTECTED SET-UP
MaxLinear, Inc.	16356077	Digital Predistortion For A Frequency-Selective Channel
MaxLinear, Inc.	16367538	Low-Power Block Code Forward Error Correction Decoder
MaxLinear, Inc.	16372569	Calibration in a Phased Array System
MaxLinear, Inc.	16372572	Distortion Redirection In A Phased Array
MaxLinear, Inc.	16372577	Local Oscillator Spur Suppression In A Phased Array System
MaxLinear, Inc.	16372587	Signaling in an Orthogonal Frequency Division Multiplexed Radar System
MaxLinear, Inc.	16372595	Gain Control in an Orthogonal Frequency Division Multiplexed Radar System
MaxLinear, Inc.	16372600	Phased Array Automotive Radar
MaxLinear, Inc.	16376504	Reconfigurable Digital Predistortion Circuit
MaxLinear, Inc.	16379759	Multi-Waveform Digital Predistortion Calibration
MaxLinear, Inc.	16403812	Dynamic Element Matching
MaxLinear, Inc.	16444524	Method And System For Buffer State Based Low Power Operation In A Moca Network
MaxLinear, Inc.	16584423	Clocking Scheme In Nonlinear Systems For Distortion Improvement
MaxLinear, Inc.	16584504	Methods And Systems For Dynamically Calibrated Pre-Distortion
MaxLinear, Inc.	16589600	Detection And Compensation Of Dielectric Resonator Oscillator Frequency Drift
MaxLinear, Inc.	16589791	Receiver Nonlinearity Estimation And Cancellation
MaxLinear, Inc.	16589907	Successive-Approximation Register (SAR) Analog-To-Digital Converter (ADC) With Ultra Low Burst Error Rate
MaxLinear, Inc.	16657725	Methods And Systems For Digital Beamforming
MaxLinear, Inc.	16674594	Feedback-Based Configuration Of A Hybrid Fiber-Coaxial Network
MaxLinear, Inc.	16667127	Method And System For Electro-Absorption Modulator Drivers In CMOS
Entropic Communications, LLC	16601315	Frequency Scanning To Form A Communication Network

OWNER	APPLICATION NUMBER	TITLE
Entropic Communications, LLC	16681244	Parameterized Quality Of Service In A Network
Exar Corporation	15853175	Baseline Tracking And Gesture Recognition Of Button/Key Presses And Releases
MaxLinear, Inc.	15864985	Digital Cw Cancellation For High Qam For Point-To-Point Fdd Systems
MaxLinear, Inc.	15912225	Methods And Systems For Utilizing Ultra-Efficiency Low Noise Configurations For Phased Array Antennas
MaxLinear, Inc.	16005295	Methods And Systems For Digital Beamforming
MaxLinear, Inc.	16194320	Methods And Systems For Distortion Redirection In Phased Arrays
MaxLinear, Inc.	16194322	Methods And Systems For Integrated Force Touch Solutions
MaxLinear, Inc.	16231457	Systems And Methods Are Provided For Utilizing Randomized Array Offsets In Phased Arrays
MaxLinear, Inc.	16272345	Full-Duplex Cable Modem Calibration
MaxLinear, Inc.	16279446	Method And System For Multiple-Input Multiple-Output Power Line Communication Coupling
MaxLinear, Inc.	16279454	Method And System For Power Line Communication Coupling And Zero Cross Detector Combination
MaxLinear, Inc.	16358093	Method And System For Power Line Communication Coupling And Zero Cross Detector Combination
MaxLinear, Inc.	16372904	Methods And Systems For Enhanced Force-Touch Based Gesture Solutions
MaxLinear, Inc.	16389808	Multi-Ladder Digital To Analog Converter
MaxLinear, Inc.	16396859	Predictive Decision Feedback Equalizer
MaxLinear, Inc.	16400483	Highly Linear Low Noise Transconductor
MaxLinear, Inc.	16406720	Methods And Systems For Use Of Common Mode Rejection (Cmr) For Echo Cancellation In Uplink Communications
MaxLinear, Inc.	16425863	Digital-To-Analog Converter With Integrated Comb Filter
MaxLinear, Inc.	16438842	Excess Loop Delay Estimation And Correction
MaxLinear, Inc.	16659170	Methods And Systems For Supporting Redundancy And Outage Resolution In Coaxial Networks With Ideal Taps
MaxLinear, Inc.	16665563	Method And System For Ripple Suppression In Multi-Phase Buck Converters
MaxLinear, Inc.	16860587	Receiver Filtering