

CLERK, U.S. DISTRICT COURT
WESTERN DISTRICT OF TEXAS

BY: KG
DEPUTY

Defendant.

JURY DEMANDED

PARTIES

1

W Parmer Lane, Austin, Texas 78729, and 3121 Palm Way, Austin, Texas 78758. Apple may be served with process through its registered agent, the CT Corporation System, at 1999 Bryan St., Ste. 900 Dallas, Texas 75201-3136. In November 2019, Apple stated that it had approximately 7,000 employees in Austin and that it expected to open, in 2022, a \$1 billion, 3 million-square-foot campus with capacity for 15,000 employees. *See* <https://www.apple.com/newsroom/2019/11/apple-expands-in-austin/>. In August 2025, Apple stated that “construction continues on Apple’s second campus in Austin,” and that “Apple has more than 13,000 team members across Texas, including thousands already working from the three completed office buildings, which exceed 1 million square feet,” and that “[t]he three buildings currently under construction include an expansive new R&D lab space for Apple’s Hardware Engineering, Hardware Technology, and Software Engineering teams.” *See* <https://www.apple.com/newsroom/2025/08/apple-increases-us-commitment-to-600-billionusd-announces-ambitious-program/>. Apple also maintains Apple Store locations at 2901 S. Capital of Texas Hwy, Austin, Texas 78746 and 3121 Palm Way, Austin, Texas 78758 (collectively, the “Austin Apple Store Locations”). Apple is registered to do business in the State of Texas and has been since at least May 16, 1980.

JURISDICTION AND VENUE

3. This is an action for patent infringement arising under the patent laws of the United States, Title 35, United States Code. Jurisdiction as to these claims is conferred on this Court by 35 U.S.C. §§1331 and 1338(a).

4. This Court has specific and personal jurisdiction over Apple consistent with the requirements of the Due Process Clause of the United States Constitution and the Texas Long Arm

Statute. Upon information and belief, Apple has sufficient minimum contacts with the forum because Apple transacts substantial business in the State of Texas and in this Judicial District.

5. This Court has specific personal jurisdiction over Apple at least in part because Apple conducts business in this Judicial District. Plaintiff's causes of action arise, at least in part, from Apple's contacts with and activities in the State of Texas and this Judicial District. The exercise of jurisdiction over Apple would not offend traditional notions of fair play and substantial justice. Apple, directly and/or through subsidiaries or intermediaries (including distributors, retailers, and others), has committed and continues to commit acts of infringement in this District by, among other things, offering to sell and selling products and/or services that infringe the patents-in-suit, including the accused devices as alleged herein.

6. On information and belief, Apple also has derived substantial revenues from infringing acts in this District, including from the sale and use of infringing products including, but not limited to, the products accused of infringement below.

7. On information and belief, Apple maintains authorized sellers and sales representatives that offer and sell products pertinent to this Complaint throughout the State of Texas, including this District and to consumers throughout this District.

8. The Western District of Texas has previously been established as a proper venue for patent infringement actions against Apple. As one example, in *Carbyne Biometrics, LLC v. Apple Inc.*, No. 1:23-cv-00324-ADA, Dkt. 84 (W.D. Tex. Feb. 12, 2024), the Court denied Apple's motion to transfer the patent infringement case to the Northern District of California and the Federal Circuit upheld this decision by denying Apple's petition for a writ of mandamus seeking to reverse this Court's ruling. See *In re Apple Inc.*, No. 2024-111, 2024 WL 1153977 (Fed. Cir.

Mar. 18, 2024). For substantially the same reasoning and facts as in the *Carbyne* litigation, the Western District of Texas is also the proper venue for Plaintiff's action against Apple here.

9. In addition, Defendant has knowingly induced and continues to knowingly induce infringement within this District by advertising, marketing, offering for sale and/or selling devices containing infringing functionality within this District, to consumers, customers, manufacturers, distributors, resellers, partners, and/or end users, and providing instructions, user manuals, advertising, and/or marketing materials which facilitate, direct or encourage the use of infringing functionality with knowledge thereof. On information and belief, Defendant has knowingly induced and continues to knowingly induce infringement within this District by virtue of the product information advice communicated by its employees at its Austin Apple Store Locations.

FACTUAL BACKGROUND

10. On or about September 22, 2025, Apple received a letter ("the Notice Letter") from ZephyrHub (under its former name, PatentBridge Solutions LLC), dated September 17, 2025, introducing Plaintiff and notifying Apple of seven Plaintiff-owned patents, including the Asserted Patents, and identifying hub or adapter devices, including Apple's USB-C Digital AV Multiport Adapter. In particular, the letter identified United States Patent Nos. 9,864,421 ("the '421 patent"); 9,997,939 ("the '939 patent"); 10,409,757 ("the '757 patent"); 10,673,256 ("the '256 patent"); 10,224,727 ("the '727 patent"); 10,951,055 ("the '055 patent"); and 10,574,070 ("the '070 patent"). Thus, Defendant has been aware of the Asserted Patents since at least September 22, 2025.

11. The Notice Letter is attached as Ex. A.

12. The Notice Letter states, in part, "It has come to the attention of PatentBridge that Apple Inc. ("Apple") is selling (directly or indirectly), advertising, offering for sale, or importing

into the United States devices (e.g., hub or adapter devices) that infringe PatentBridge's patents either directly, or indirectly through the acts of its end users or intermediaries."

13. The Notice Letter also states, in part, "By way of example, the '421 patent and '939 patent relate to a hub containing a DC/DC converter and connected to a portable device such as a phone or portable computer. I draw your attention to, for example, claim 1 of the '421 patent and claim 1 of the '939 patent. It has been brought to PatentBridge's attention that Apple sells a line of hubs (e.g., Apple's USB-C Digital AV Multiport Adapter) that contain a DC/DC converter and implement other elements of the cited claims, such that they infringe the '421 patent and '939 patent when used by end-users in the normal and customary way of using the hubs (e.g., connecting them to a portable device)."

14. The Notice Letter also provided a weblink, pointing to <https://www.apple.com/us/search/digital-multiport-adapter>, further identifying Apple's USB-C Digital AV Multiport Adapter.

15. The Notice Letter specifically identified the Asserted Patents.

16. The Notice Letter specifically identified Apple's USB-C Digital AV Multiport Adapter and accused Apple's hub or adapter devices of infringement.

17. The Notice Letter specifically accused Apple of infringing Plaintiff's patents, including the Asserted Patents, by selling, offering for sale, advertising, or importing hub or adapter devices, either directly or indirectly through the acts of end users or intermediaries.

18. The Notice Letter was received by Apple on September 22, 2025.

19. The Notice Letter's tracking and delivery confirmation documents are attached as Ex. B.

20. Apple had pre-suit knowledge of its infringement of the Asserted Patents.

21. In addition, Defendant has been aware of the Asserted Patents, and its infringement of those patents since, at least, the filing and/or service of the original Complaint in this case.

22. The accused products include the Apple USB-C Digital AV Multiport Adapter and the CalDigit TS5 Thunderbolt Dock (collectively, the “Accused Products”). Apple sells, offers for sale, advertises, and/or imports the Accused Products in the United States, including through its website, retail stores, authorized sales channels, and/or distribution channels. For example, Apple’s website offers the CalDigit TS5 Thunderbolt Dock for sale and describes the product as providing 15 ports of connectivity via a single Thunderbolt cable and charging a Mac with up to 140W power delivery. In addition, the Accused Products shall include those products identified in Plaintiff’s infringement contentions, to be served in accordance with the case scheduling order in this action.

COUNT I

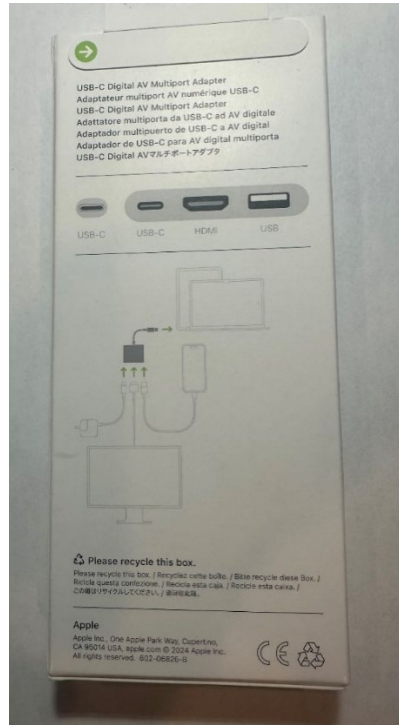
DEFENDANT’S INFRINGEMENT OF U.S. PATENT NO. 9,864,421

23. Plaintiff incorporates by reference all of the above allegations.

24. On January 9, 2018, United States Patent No. 9,864,421 entitled “Hub Having Complex Power Converters” was duly and legally issued after full and fair examination. Plaintiff is the owner of all right, title, and interest in and to the patent by assignment, with full right to bring suit to enforce the patent, including the right to recover for past infringement damages and the right to recover future royalties, damages, and income. A true copy of the ’421 Patent is incorporated by reference herein and may be accessed at <https://patents.google.com/patent/US9864421B2/>.

25. Defendant has infringed the ’421 Patent.

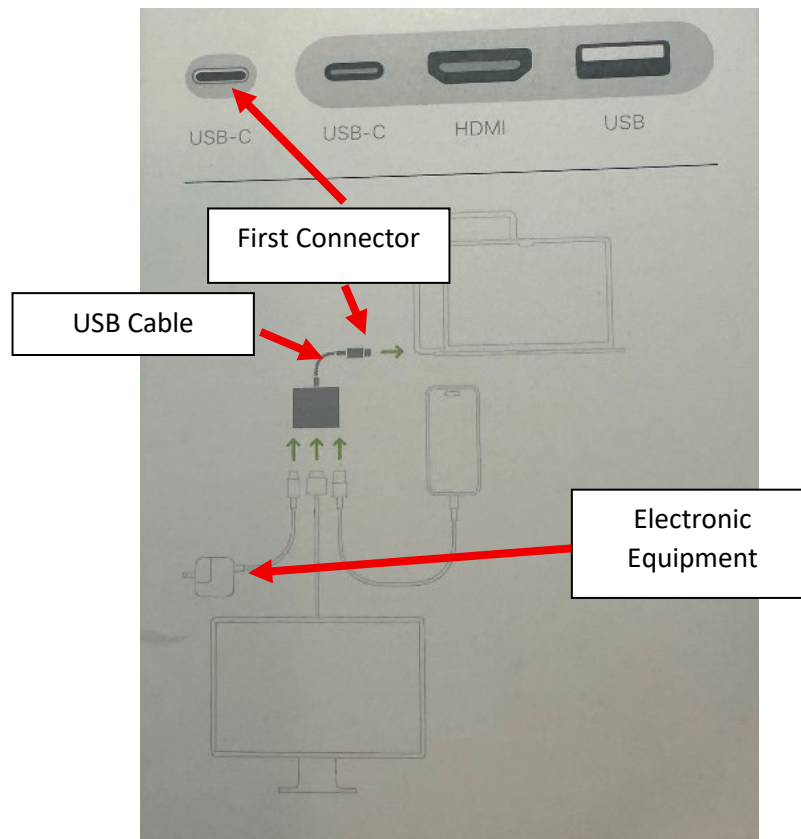
26. The Apple USB-C Digital AV Multiport Adapter is a hub electrically connecting to electronic equipment and a portable device located in an external environment via a Universal Serial Bus (USB) cable, the USB cable comprising a signal transmission line and a power transmission line. The back side of the package containing the Apple USB-C Digital AV Multiport Adapter describes this configuration, as follows:²



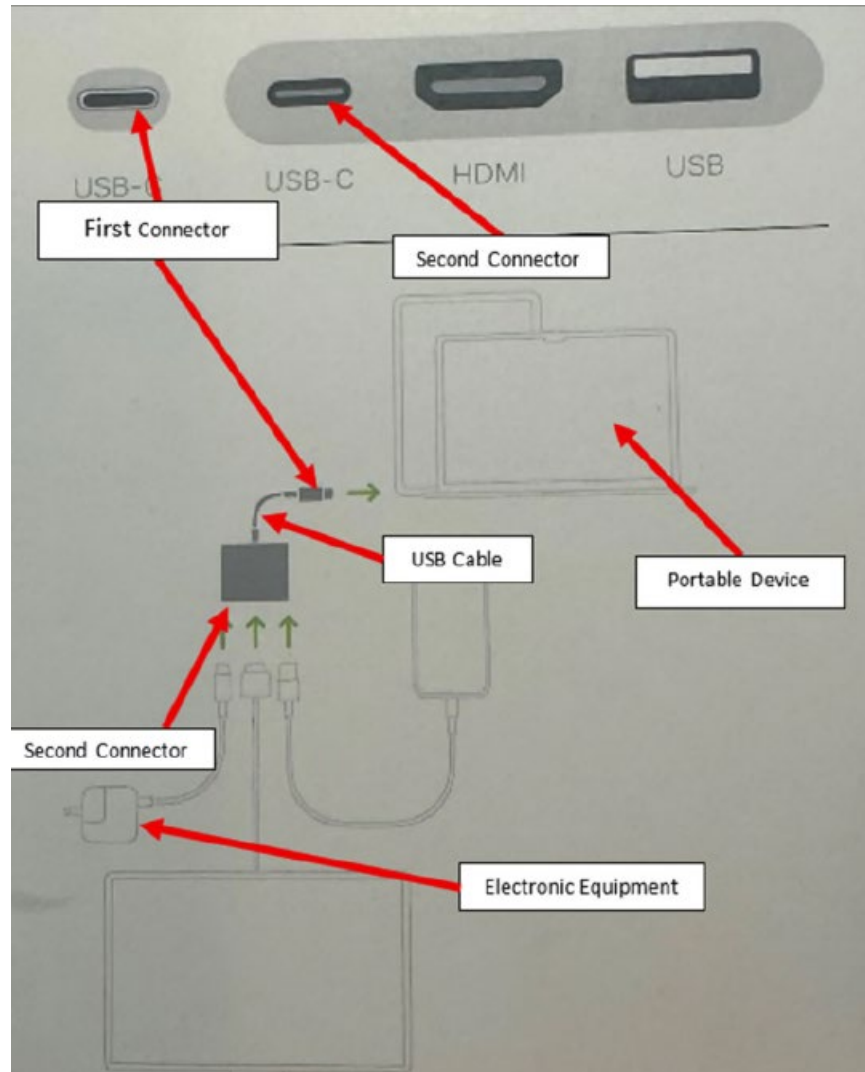
² The identification or location of components that correspond to claim terms, and the way that the claim terms are used here, is only exemplary, and is only provided to satisfy Plaintiff's pleading obligations. Plaintiff's infringement allegations will be described in its infringement contentions and infringement expert report in accordance with the case schedule in this action. Plaintiff may add, remove, change, or supplement its infringement theories. Similarly, Plaintiff may adopt claim construction positions that supersede any apparent or suggestive positions set forth in this Complaint, which is only provided to satisfy Plaintiff's pleading obligations.

27. For purposes of Plaintiff's infringement allegations, the referenced Universal Serial Bus (USB) cable includes the USB-C cable/dongle portion of the Apple USB-C Digital AV Multiport Adapter itself. The Apple USB-C Digital AV Multiport Adapter contains a single USB-C cable/dongle through which the accused electronic equipment and portable device are electrically connected via the adapter's connectors and internal circuitry. Accordingly, Plaintiff's infringement allegations do not rely on two separate external USB cables satisfying the claimed "USB cable" limitation.

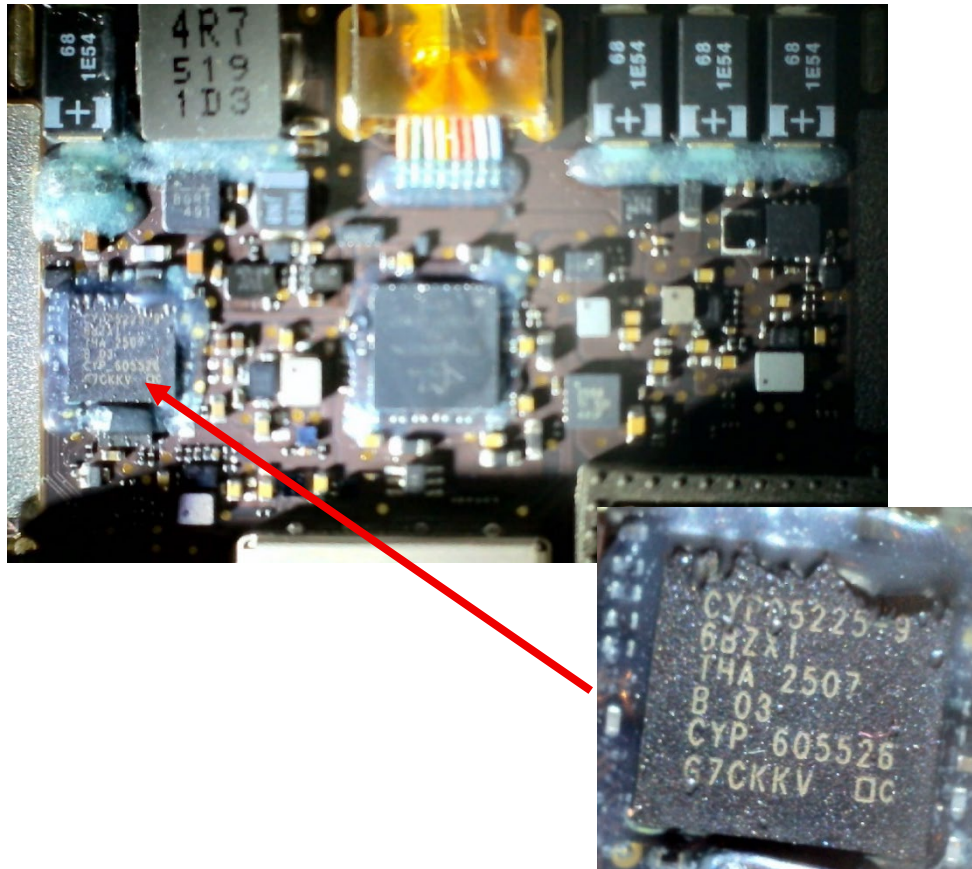
28. The Apple USB-C Digital AV Multiport Adapter comprises a first connector, electrically connected to the electronic equipment via the USB-C cable/dongle portion of the Apple USB-C Digital AV Multiport Adapter and the adapter's internal circuitry:



29. The Apple USB-C Digital AV Multiport Adapter comprises a second connector, electrically connected to the portable device via the USB-C cable/dongle portion of the Apple USB-C Digital AV Multiport Adapter and the adapter's internal circuitry:



30. The Apple USB-C Digital AV Multiport Adapter comprises a controller, electrically connected between the first connector and the second connector, the controller has data transmission between the portable device and the electronic equipment mutually via the signal transmission line. For example, the Apple USB-C Digital AV Multiport Adapter contains a Cypress Semiconductor Part Number CYPD5225-96BZX USB Type-C Port Controller:





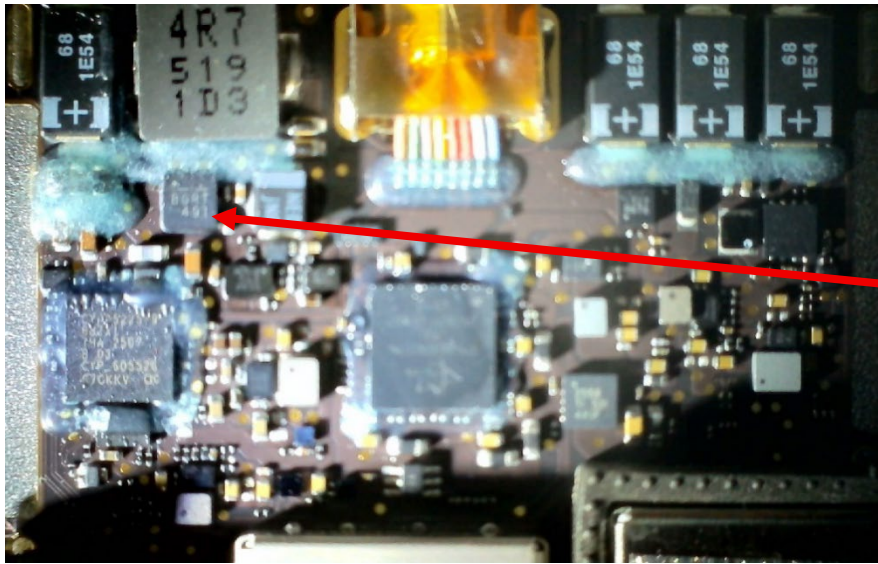
EZ-PD™ CCG5
USB Type-C Port Controller

General Description

EZ-PD™ CCG5 is a dual USB Type-C controller that complies with the latest USB Type-C and PD standards. EZ-PD CCG5 provides a complete dual USB Type-C and USB-Power Delivery port control solution for PCs, notebook, and dock. It can also be used in dual role and downstream-facing port applications. EZ-PD CCG5 uses Cypress' proprietary M0WS8 technology with a 32-bit, 48-MHz Arm® Cortex®-M0 processor with 128-KB flash and integrates two complete Type-C Transceivers including the Type-C termination resistors, R_P and R_D. CCG5 also integrates high-voltage regulator. CCG5 is available in 40-QFN (1 port⁽³⁾) and 96-BGA (2 ports) packages.

31. As reflected in Plaintiff's amended infringement contentions, USB Power Delivery ("USB-PD") communications provide further evidence of the Apple USB-C Digital AV Multiport Adapter's data transmission functionality. For example, when a source device and a sink device are connected, signal transmission occurs between them to negotiate the power required by the portable device and the power that the electronic equipment can provide. Based on this signal transmission, voltage and current requirements are negotiated between the connected devices through the first connector, the controller, the USB-C cable/dongle portion of the Apple USB-C Digital AV Multiport Adapter, and the second connector.

32. The Apple USB-C Digital AV Multiport Adapter comprises a first direct current (DC)/DC converter, an input terminal of the first DC/DC converter is electrically connected to the electronic equipment via the power transmission line, an output terminal of the first DC/DC converter is electrically connected to the portable device via the power transmission line, the first DC/DC converter is applied to output stable voltage to the portable device. The Apple USB-C Digital AV Multiport Adapter contains a Monolithic Power Systems MP8859 DC/DC Converter:



MP8859
 2.8 - 22V V_{IN} , 3A I_{OUT} , 4-Switch,
 Integrated Buck-Boost Converter
 with I²C Interface

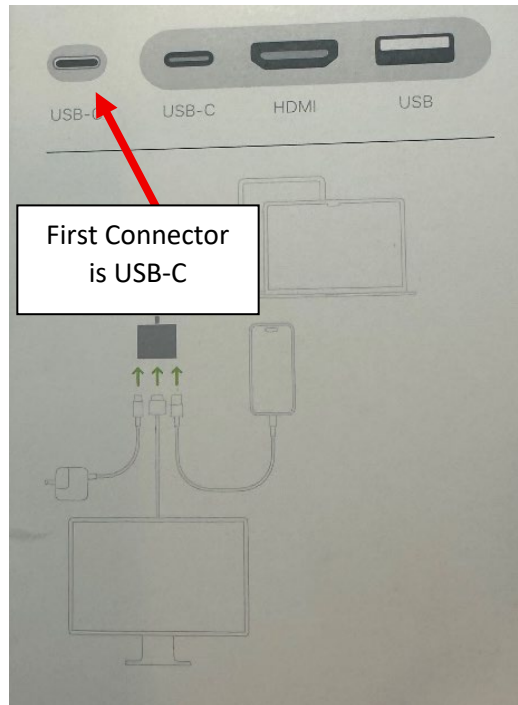
DESCRIPTION

The MP8859 is a synchronous, 4-switch, integrated buck-boost converter capable of regulating the output voltage from a 2.8V to 22V wide input voltage range with high efficiency. The integrated output voltage scaling and adjustable output current limit functions meet the USB power delivery (PD) requirement.

FEATURES

- Wide 2.8V to 22V Operating Input Voltage Range
- 1V ⁽¹⁾ to 20.47V Output Voltage Range (5V Default) with 10mV Resolution through I²C
- 3A Output Current or 4A Input Current
- Four Low $R_{DS(ON)}$ Internal Buck Power MOSFETs

33. The first connector is USB 3.1 Power Delivery (PD) type C port, and the electronic equipment is operable either in a charged mode or in a power supplying mode via the USB PD protocol.



34. The Monolithic Power Systems MP8859 DC/DC Converter datasheet states that the voltage and output current provided by the component “meet the USB power delivery (PD) requirement.”



MP8859
2.8 - 22V V_{IN} , 3A I_{OUT} , 4-Switch,
Integrated Buck-Boost Converter
with I²C Interface

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35. Apple’s website and support materials further describe the Apple USB-C Digital AV Multiport Adapter as providing HDMI, USB, and USB-C connections and as connecting to a Mac, iPad, or iPhone through a USB-C or Thunderbolt port. Apple’s website further states that the standard USB port may be used to connect devices such as a flash drive or camera or a USB cable

for syncing and charging iOS devices, and that a charging cable may be connected to the USB-C port to charge a Mac, iPad, or iPhone.

36. In addition, the CalDigit TS5 Thunderbolt Dock also infringes at least claim 1 of the '421 Patent. The CalDigit TS5 Thunderbolt Dock is a hub electrically connecting to electronic equipment and a portable device located in an external environment via a USB cable. The CalDigit TS5 Thunderbolt Dock includes, among other things, first and second connectors, a GL3590 controller configured for data transmission, an MPS MP4247 DC/DC converter configured to output stable voltage, and USB Power Delivery functionality.

COUNT II

DEFENDANT'S INFRINGEMENT OF U.S. PATENT NO. 9,997,939

37. Plaintiff incorporates by reference all of the above allegations.

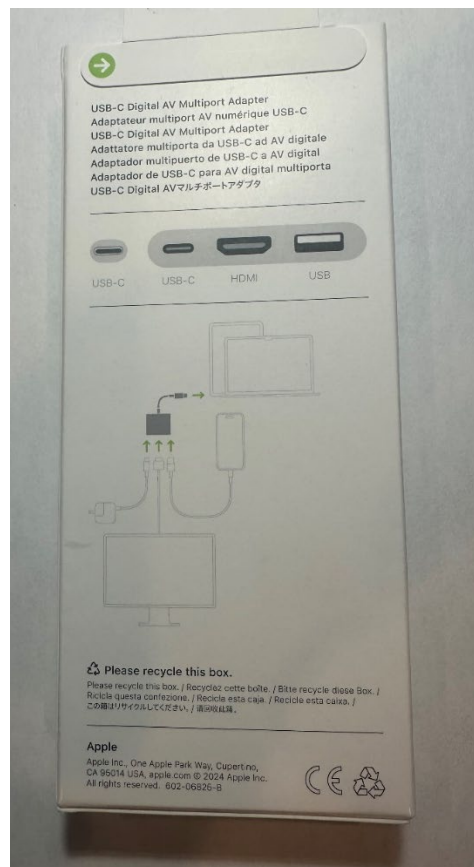
38. On June 12, 2018, United States Patent No. 9,997,939 entitled "Hub" was duly and legally issued after full and fair examination. Plaintiff is the owner of all right, title, and interest in and to the patent by assignment, with full right to bring suit to enforce the patent, including the right to recover for past infringement damages and the right to recover future royalties, damages, and income. A true copy of the '939 Patent is incorporated by reference herein and may be accessed at <https://patents.google.com/patent/US9997939B2/>.

39. Defendant has infringed the '939 Patent.

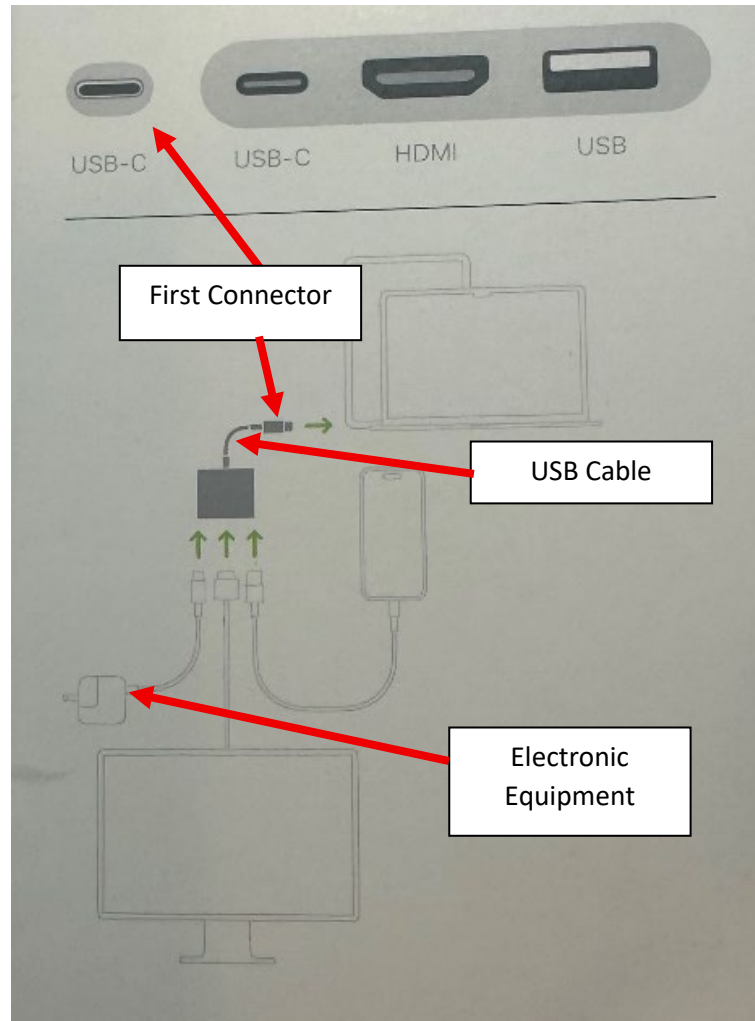
40. For purposes of Plaintiff's infringement allegations, the referenced Universal Serial Bus cable includes the USB-C cable/dongle portion of the Apple USB-C Digital AV Multiport Adapter itself. The Apple USB-C Digital AV Multiport Adapter contains a single USB-C cable/dongle through which the accused electronic equipment and portable device are electrically

connected via the adapter's connectors and internal circuitry. Accordingly, Plaintiff's infringement allegations do not rely on two separate external USB cables satisfying the claimed "Universal Serial Bus cable" limitation.

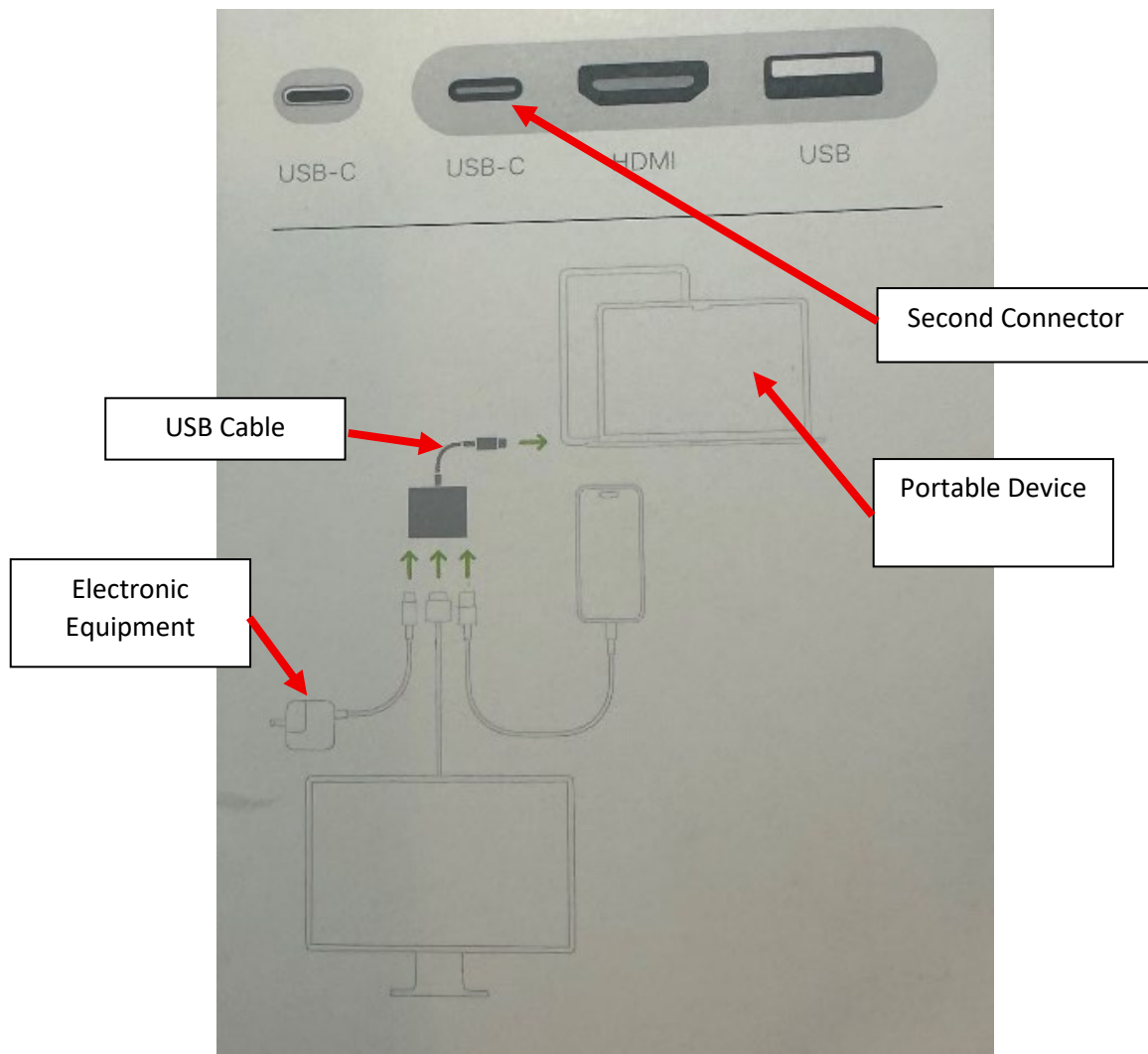
41. The Apple USB-C Digital AV Multiport Adapter is a hub electrically connecting to electronic equipment and at least a portable device located in an external environment via a Universal Serial Bus cable, the Universal Serial Bus cable comprising a signal transmission line and a power transmission line. The back side of the package containing the Apple USB-C Digital AV Multiport Adapter describes this configuration, as follows:



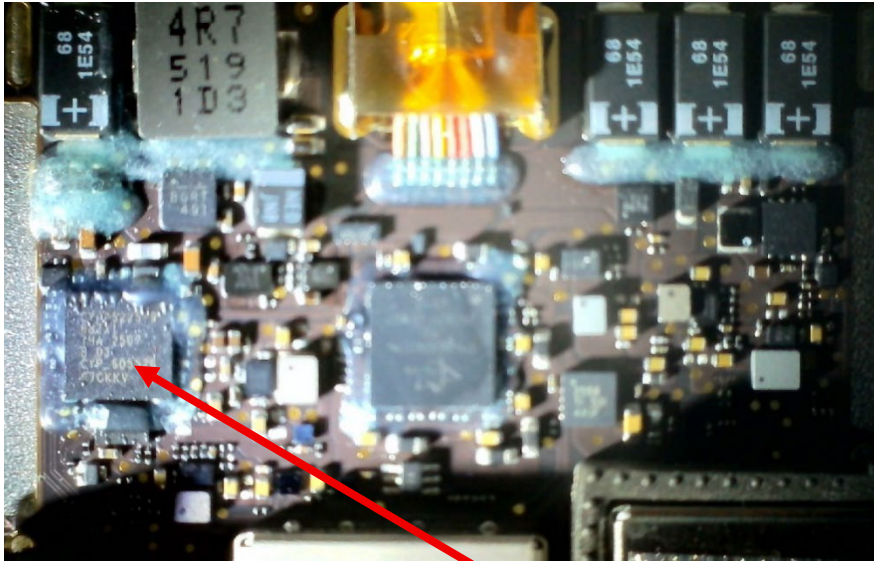
42. The Apple USB-C Digital AV Multiport Adapter comprises a first connector, electrically connected to the electronic equipment via the USB-C cable/dongle portion of the Apple USB-C Digital AV Multiport Adapter and the adapter's internal circuitry:



43. The Apple USB-C Digital AV Multiport Adapter comprises at least a second connector, communicatively connected to the first connector and electrically connected to the portable device via the USB-C cable/dongle portion of the Apple USB-C Digital AV Multiport Adapter and the adapter's internal circuitry, wherein a data transmission between the portable device and the electronic equipment mutually is via the signal transmission line, the first connector, and the second connector:



44. The hub also contains a controller, that is configured to provide data transmission between the portable device and the electronic equipment mutually via the signal transmission line, the first connector, and the second connector. For example, the Apple USB-C Digital AV Multiport Adapter contains a Cypress Semiconductor Part Number CYPD5225-96BZX USB Type-C Port Controller:



EZ-PD™ CCG5

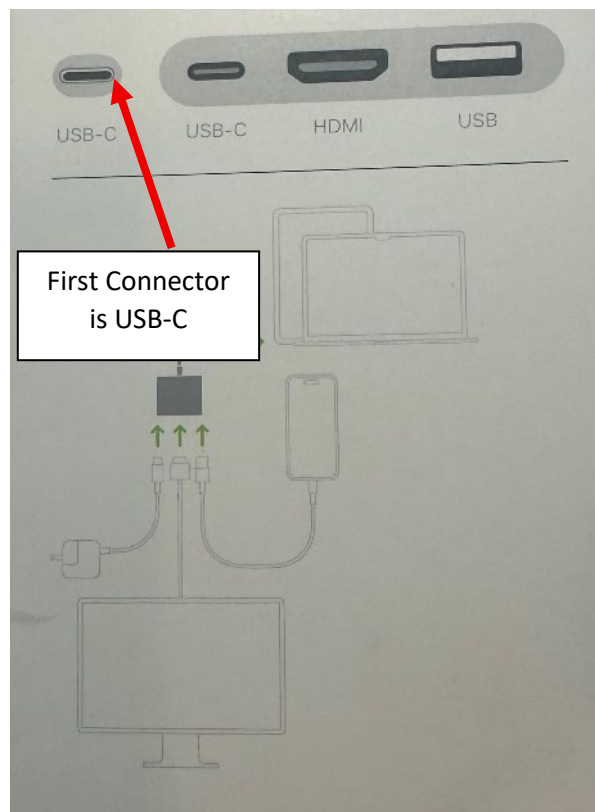
USB Type-C Port Controller

General Description

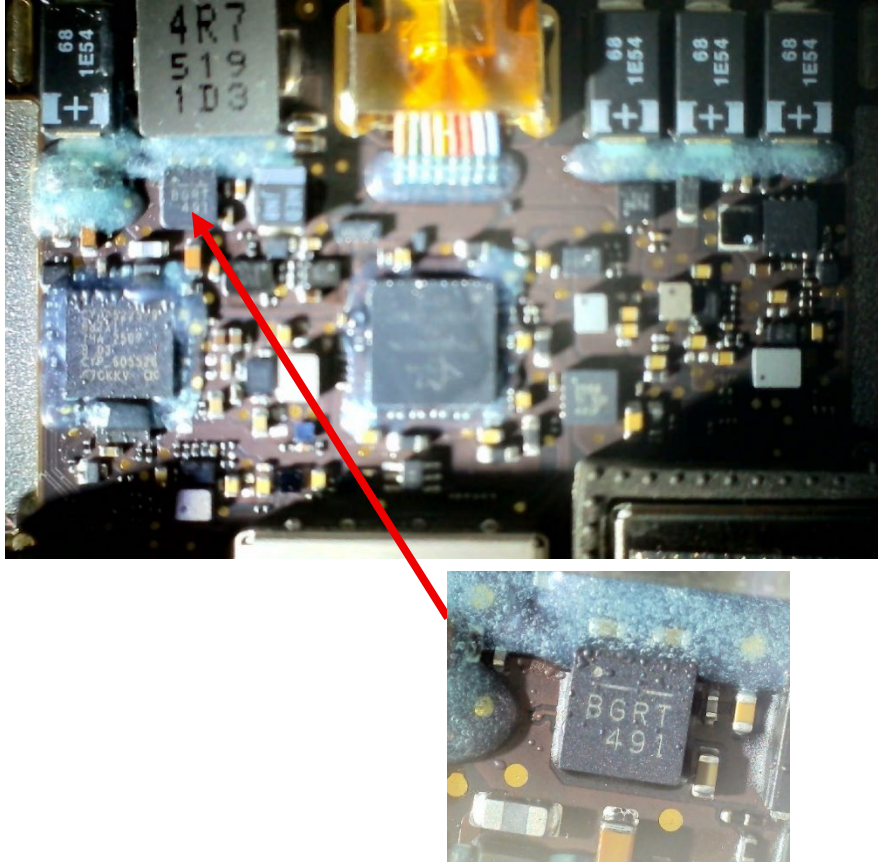
EZ-PD™ CCG5 is a dual USB Type-C controller that complies with the latest USB Type-C and PD standards. EZ-PD CCG5 provides a complete dual USB Type-C and USB-Power Delivery port control solution for PCs, notebook, and dock. It can also be used in dual role and downstream-facing port applications. EZ-PD CCG5 uses Cypress' proprietary M0WS8 technology with a 32-bit, 48-MHz Arm® Cortex®-M0 processor with 128-KB flash and integrates two complete Type-C Transceivers including the Type-C termination resistors, R_P and R_D . CCG5 also integrates high-voltage regulator. CCG5 is available in 40-QFN (1 port⁽³⁾) and 96-BGA (2 ports) packages.

45. As reflected in Plaintiff's amended infringement contentions, USB Power Delivery ("USB-PD") communications provide further evidence of the Apple USB-C Digital AV Multiport Adapter's data transmission functionality. For example, when a source device and a sink device are connected, signal transmission occurs between them to negotiate the power required by the portable device and the power that the electronic equipment can provide. Based on this signal transmission, voltage and current requirements are negotiated between the connected devices through the first connector, the controller, the USB-C cable/dongle portion of the Apple USB-C Digital AV Multiport Adapter, and the second connector.

46. The first connector is a Universal Serial Bus 3.1 Power Delivery type C port.



47. The electronic equipment can be either in a charged mode or in a power supplying mode via the Universal Serial Bus Power Delivery protocol. For example, the Apple USB-C Digital AV Multiport Adapter contains a Monolithic Power Systems MP8859 DC/DC Converter:



48. The Monolithic Power Systems MP8859 DC/DC Converter datasheet states that the voltage and output current provided by the component “meet the USB power delivery (PD) requirement.”



MP8859
2.8 - 22V V_{IN} , 3A I_{OUT} , 4-Switch,
Integrated Buck-Boost Converter
with I²C Interface

DESCRIPTION

The MP8859 is a synchronous, 4-switch, integrated buck-boost converter capable of regulating the output voltage from a 2.8V to 22V wide input voltage range with high efficiency. The integrated output voltage scaling and adjustable output current limit functions meet the USB power delivery (PD) requirement.

FEATURES

- Wide 2.8V to 22V Operating Input Voltage Range
- 1V ⁽¹⁾ to 20.47V Output Voltage Range (5V Default) with 10mV Resolution through I²C
- 3A Output Current or 4A Input Current
- Four Low $R_{DS(ON)}$ Internal Buck Power MOSFETs

49. The electronic equipment is operable either in a charged mode or in a power supplying mode via the USB PD protocol. For example, the electronic equipment can act as a power receiver.

50. In addition, the CalDigit TS5 Thunderbolt Dock also infringes at least claim 1 of the '939 Patent. The CalDigit TS5 Thunderbolt Dock is a hub electrically connecting to electronic equipment and at least a portable device via a USB cable having signal and power transmission lines. The CalDigit TS5 Thunderbolt Dock includes, among other things, first and second connectors, a GL3590 controller for data transmission between the portable device and electronic equipment, an MPS MP4247 DC/DC converter, and USB Power Delivery functionality.

COUNT III

DEFENDANT'S INFRINGEMENT OF U.S. PATENT NO. 10,673,256

51. Plaintiff incorporates by reference all of the above allegations.

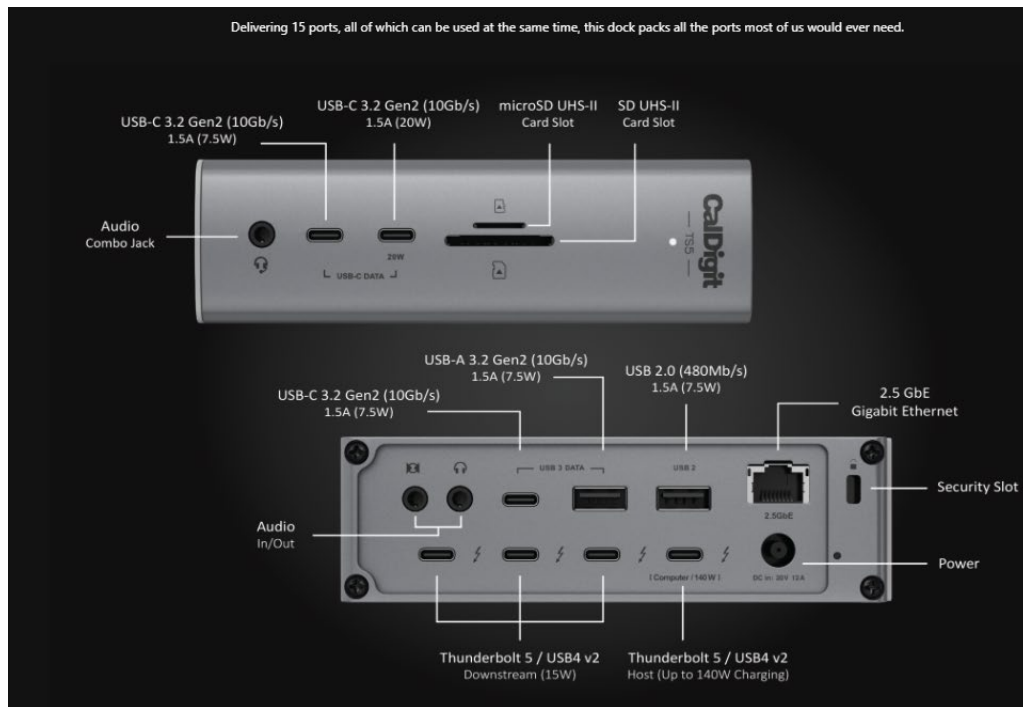
52. On June 2, 2020, United States Patent No. 10,673,256 entitled “Hub” was duly and legally issued after full and fair examination. Plaintiff is the owner of all right, title, and interest in

and to the patent by assignment, with full right to bring suit to enforce the patent, including the right to recover for past infringement damages and the right to recover future royalties, damages, and income. A true copy of the '256 Patent is incorporated by reference herein and may be accessed at <https://patents.google.com/patent/US10673256B2/>.

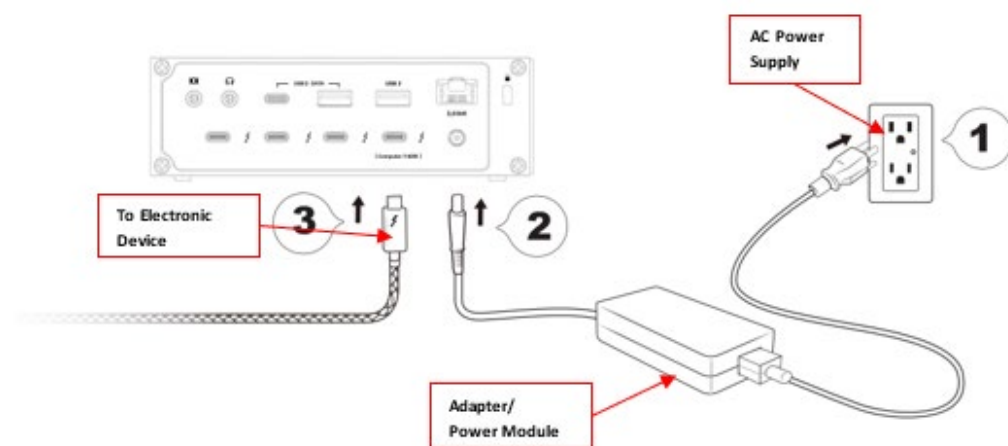
53. Defendant has infringed the '256 Patent.

54. The CalDigit TS5 Thunderbolt Dock is a hub suitable for electrically connecting an electronic device, an AC power supply, and at least one mobile device that are located outside the hub. For example, the CalDigit TS5 Thunderbolt Dock is a 15-in-1 hub providing 15 ports, including 6 USB-C ports and 2 USB-A ports, and is sold with a power adapter and a USB Type-C to Type-C cable, which collectively form a hub suitable for electrically connecting an electronic device, such as a laptop, an AC power supply, and at least one mobile device, such as a smartphone.



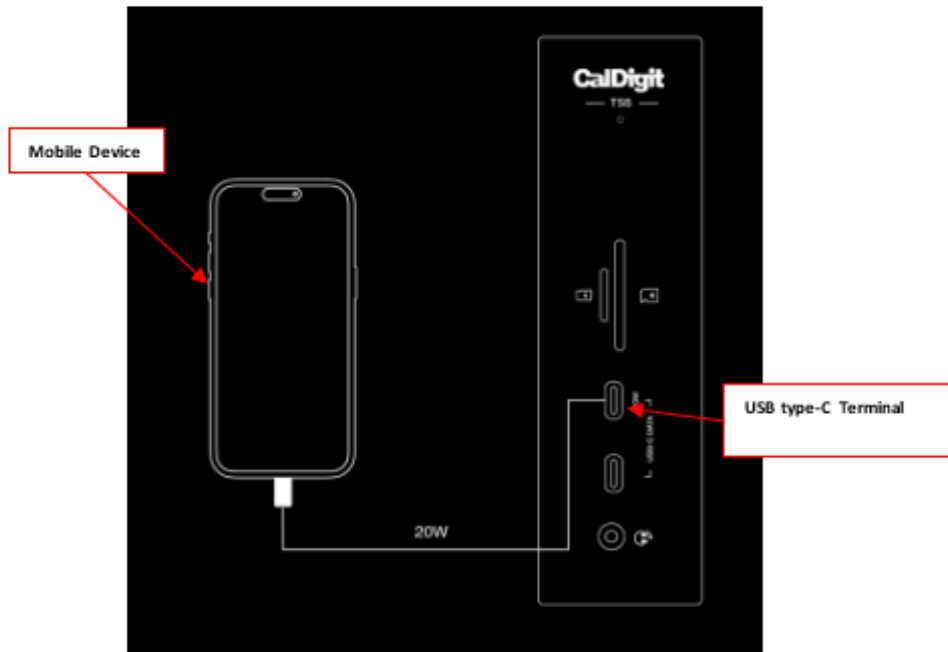


55. The CalDigit TS5 Thunderbolt Dock comprises a power module electrically connected to the AC power supply. For example, the CalDigit TS5 Thunderbolt Dock is used with an AC-connected power supply adapter, and the adapter is packaged with the CalDigit TS5 Thunderbolt Dock. The user manual further instructs users to connect the CalDigit TS5 Thunderbolt Dock to the power adapter.



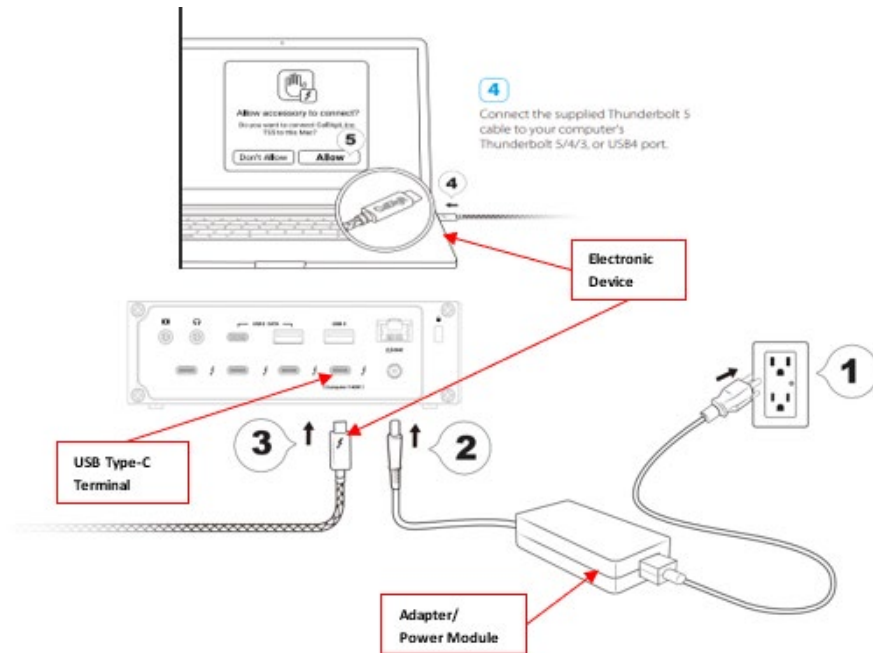
Exemplary usage of hub as depicted under Product manual of CalDigit TS5

56. The CalDigit TS5 Thunderbolt Dock comprises a USB connection terminal electrically connected to the power module and the mobile device. For example, a USB connection terminal is provided on the CalDigit TS5 Thunderbolt Dock and may be used to connect a mobile device, such as a smartphone, to the hub. The USB connection terminal is electrically connected to the power module through the hub's internal circuitry.



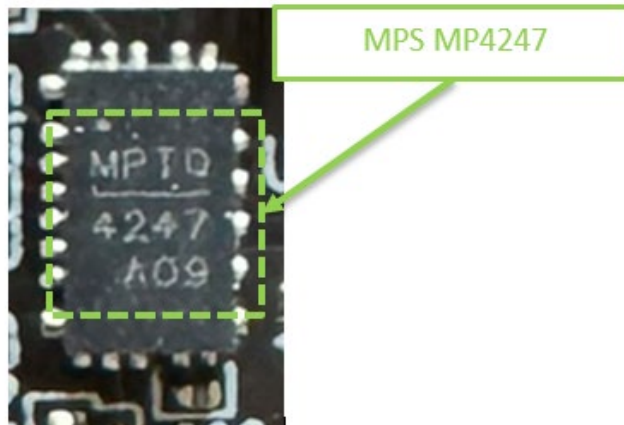
Exemplary usage of hub as depicted under Product manual of CalDigit TS5

57. The CalDigit TS5 Thunderbolt Dock comprises a USB Type-C connection terminal electrically connected to the power module and the electronic device. For example, the CalDigit TS5 Thunderbolt Dock includes a USB Type-C connection terminal that is electrically connected to the power module and to an electronic device, such as a laptop, through a USB Type-C cable.



Exemplary usage of hub as depicted under Product manual of CalDigit TS5

58. The CalDigit TS5 Thunderbolt Dock comprises a power distribution control circuit electrically connected to the power module, the power distribution control circuit being used for measuring a measurement value of the power module. For example, the CalDigit TS5 Thunderbolt Dock includes an MPS MP4247 chip controller, which is a synchronous buck-boost converter electrically connected to the power module. The MPS MP4247 regulates and controls current and/or voltage output from the power module, and on information and belief measures and controls a measurement value, such as current or voltage, of the power module.



Snapshot of MPS MP4247 appearing in CalDigit TS5 Dock



DESCRIPTION

The MP4247 is a buck-boost converter with two integrated low-side power switches. The device can deliver up to 100W of peak output power at certain input supplies with excellent efficiency.

The MP4247 is well-suited for USB power delivery (USB PD) applications. The device can work with an external USB PD controller via the I²C interface. The I²C interface and one-time programmable (OTP) memory provide flexible and configurable parameters.

Fault condition protection includes constant current (CC) current limiting, output over-voltage protection (OVP), and thermal shutdown (TSD).

The MP4247 requires a minimal number of readily available, standard external components, and is available in a QFN-20 (3mmx5mm) package.

MP4247

36V, 100W, Buck-Boost Converter with Integrated Low-Side MOSFETs and I²C Interface

FEATURES

- UL and IEC62368-1 Certified, Efile #322138
- 100W Buck-Boost Converter with Integrated Low-Side MOSFETs (LS-FETs)
- Integrated Gate Driver for High-Side Power MOSFETs (HS-FETs)
- 3.6V to 36V Start-Up Input Voltage (V_{IN}) Range
- Supports 2.8V Falling V_{IN} when the Output Voltage (V_{OUT}) > 3.5V
- 1V to 24V ⁽¹⁾ V_{OUT} Range with 1% Accuracy
- Up to 5A Output Current (I_{OUT})
- Up to 98% Peak Efficiency
- Configurable Reference Voltage (V_{REF}) Range (0.1V to 2.147V) with 1mV Resolution via I²C Interface
- Accurate Output CC Current Limit: $\pm 5\%$
- Meets USB PD 3.0 with PPS Specifications
- Selectable 280kHz, 420kHz, or 600kHz Switching Frequency (f_{SW})
- Selectable Forced PWM or Auto-PFM/PWM
- Output Biased VCC LDO for Higher Efficiency
- Output Current Monitor (IMON) Function
- Line Drop Compensation via R_{SENS}
- I²C, Alert, and One-Time Programmable (OTP) Memory
- EN Shutdown Passive Discharge
- Output OCP, OVP, and Thermal Shutdown
- Available in a QFN-20 (3mmx5mm) Package

APPLICATIONS

- USB Type-C and USB Power Delivery
- USB Type-C PD Monitors and Docking Stations
- USB Type-C Car Chargers
- Wireless Charging

59. The CalDigit TS5 Thunderbolt Dock comprises a first power delivery controller connected between the USB Type-C connection terminal and the power distribution control circuit. For example, the CalDigit TS5 Thunderbolt Dock includes a Texas Instruments TPS65994 chip, which is a USB Type-C and Power Delivery controller supporting USB Power Delivery charging

protocols. The TPS65994 chip is connected between the USB Type-C connection terminal and the power distribution control circuit.



Optical image showing the Controller Texas Instruments Semiconductor Part Number TPS65994



TPS65994AD
SLVSFM6 – AUGUST 2020

TPS65994AD Dual Port USB Type-C and USB PD Controller with Integrated Source Power Switches

1 Features

- USB Power Delivery (PD) controller
 - USB PD 3.0 certified (TID #3495)
 - USB4 compliant
 - Fast role swap support
 - Physical layer and policy engine
 - Configurable at Boot and host-controlled
- USB Type-C Specification compliant
 - Cable attach and orientation detection
 - Default, 1.5-A or 3-A power advertisement
 - Integrated VCONN switch
- Integrated VBUS sourcing port power switch
 - Two 5-V, 3-A, 38-mΩ Sourcing switches
 - Adjustable current limiting
 - Undervoltage and overvoltage protection
 - Fast turn-on mode to support fast-role swap
- UL recognized component (E169910)
- Alternate mode support
 - DisplayPort source
 - Thunderbolt™
 - User configure alternate modes
- QFN package (0.4-mm pitch)
- Supports extended industrial temperature range

2 Applications

- Desktop PC's
- Notebook PC's
- Docking Station DFP port
- Monitor
- Industrial PC

3 Description

The TPS65994AD is a stand-alone USB Type-C and Power Delivery (PD) controller providing cable plug and orientation detection for two USB Type-C connectors. Upon cable attachment, the TPS65994AD performs cable detection according to the USB Type-C specification. It also communicates on the CC wire using the USB PD protocol. When cable detection and USB PD negotiation are complete, the TPS65994AD enables the appropriate power path and configures alternate mode settings (USB4, DisplayPort video, or Thunderbolt) for external multiplexers.

Device Information

PART NUMBER ⁽¹⁾	PACKAGE	BODY SIZE (NOM)
TPS65994AD	QFN (RSL)	6.0 mm x 6.0 mm

(1) For all available packages, see the orderable addendum at the end of the data sheet.

Semiconductor reference for TPS65994

60. In the CalDigit TS5 Thunderbolt Dock, when the measurement value is not less than a measurement upper limit value, the power distribution control circuit decreases a charging power of the electronic device via the first power delivery controller. For example, the MPS MP4247 buck-boost controller and the Texas Instruments TPS65994 USB Type-C and Power

Delivery controller are configured to regulate charging power by altering current and/or voltage supplied to the electronic device. The USB Type-C connection terminal is a Power Delivery port that follows the USB Power Delivery standard, which allows connected devices to receive adjusted power according to device requirements. Accordingly, when the measured value reaches or exceeds an upper limit, the CalDigit TS5 Thunderbolt Dock decreases charging power to the electronic device via the first power delivery controller.

USB Power Delivery offers the following features:

- **Increased power levels from existing USB standards** up to 240W.
 - New 28V, 36V, and 48V fixed voltages enable up to **140W, 180W and 240W** power levels, respectively.
 - An **adjustable voltage supply mode** allows the device being powered an ability to request intermediate voltages between 15V and up to the maximum available fixed voltage of the charger.
- **Power direction is no longer fixed.** This enables the product with the power (Host or Peripheral) to provide the power.
- **Optimize power management across multiple peripherals** by allowing each device to take only the power it requires, and to get more power when required for a given application.
- **Intelligent and flexible system level management of power** via optional hub communication with the PC.
- **Allows low power cases** such as headsets to negotiate for only the power they require.

Source: www.usb.org/usb-charger-pd

61. Accordingly, Apple has directly infringed and continues to directly infringe at least claim 1 of the '256 Patent by selling, offering to sell, and/or importing the CalDigit TS5 Thunderbolt Dock in the United States.

COUNT IV

DEFENDANT'S INFRINGEMENT OF U.S. PATENT NO. 10,574,070

62. Plaintiff incorporates by reference all of the above allegations.

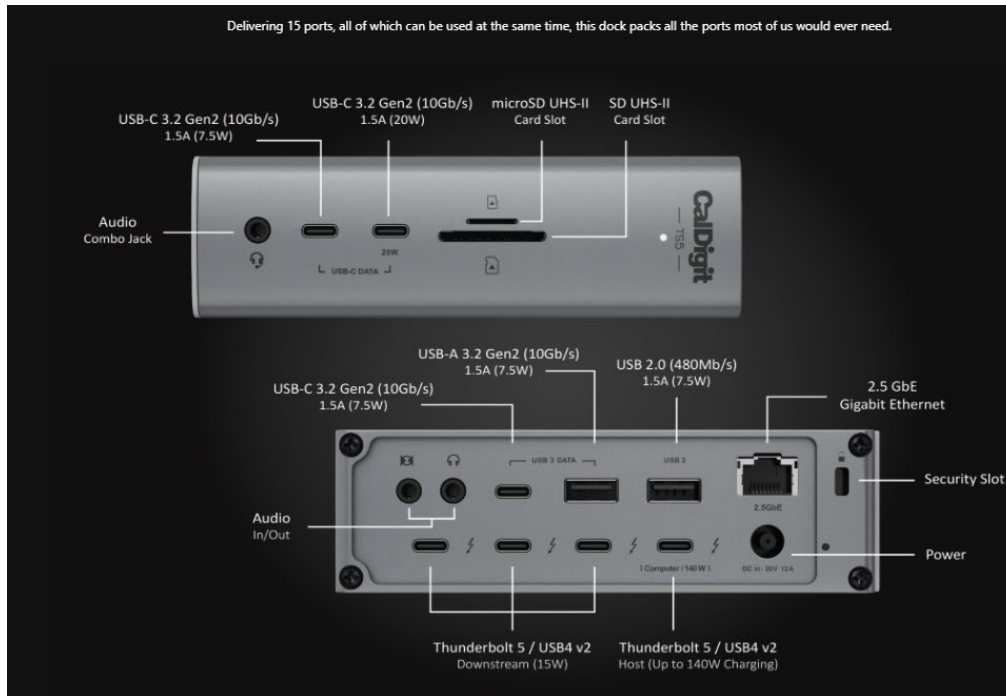
63. On February 25, 2020, United States Patent No. 10,574,070 entitled "Multi-functional hub integrated with AC power supply" was duly and legally issued after full and fair examination. Plaintiff is the owner of all right, title, and interest in and to the patent by assignment, with full right to bring suit to enforce the patent, including the right to recover for past infringement damages and the right to recover future royalties, damages, and income. A true copy of the '070

Patent is incorporated by reference herein and may be accessed at <https://patents.google.com/patent/US10574070B2/>.

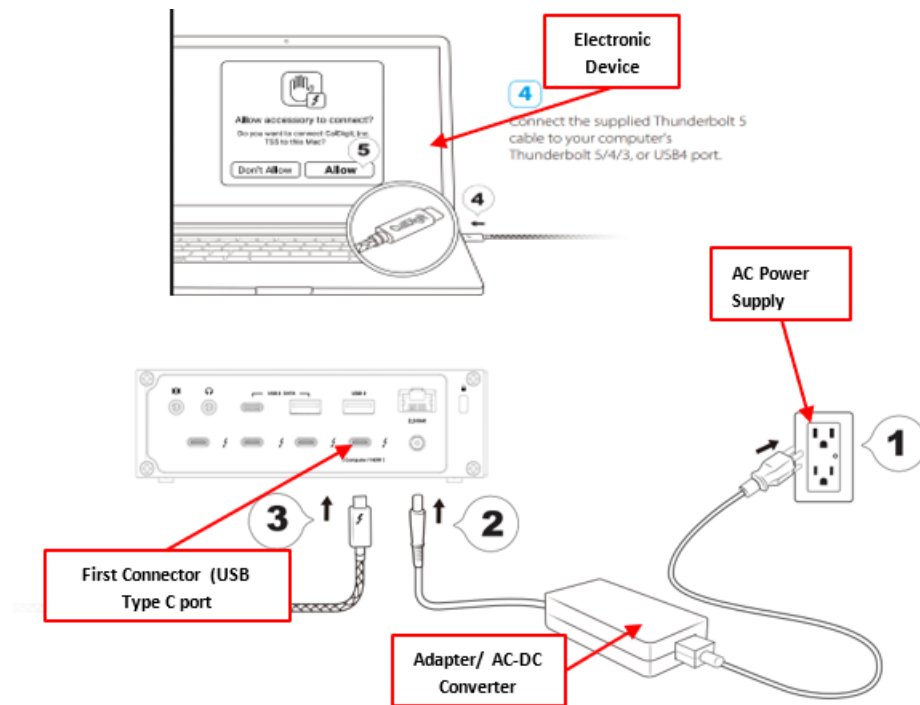
64. Defendant has infringed the '070 Patent.

65. The CalDigit TS5 Thunderbolt Dock is a hub electrically connected with an electronic device, an alternating current (AC), and at least one portable device. For example, the CalDigit TS5 Thunderbolt Dock is a 15-in-1 hub providing 15 ports, including 6 USB-C ports and 2 USB-A ports, and is sold with a power adapter and a USB Type-C to Type-C cable, which collectively form a hub suitable for electrically connecting an electronic device, such as a laptop or notebook computer, an AC power supply, and at least one portable device, such as a smartphone or SSD.

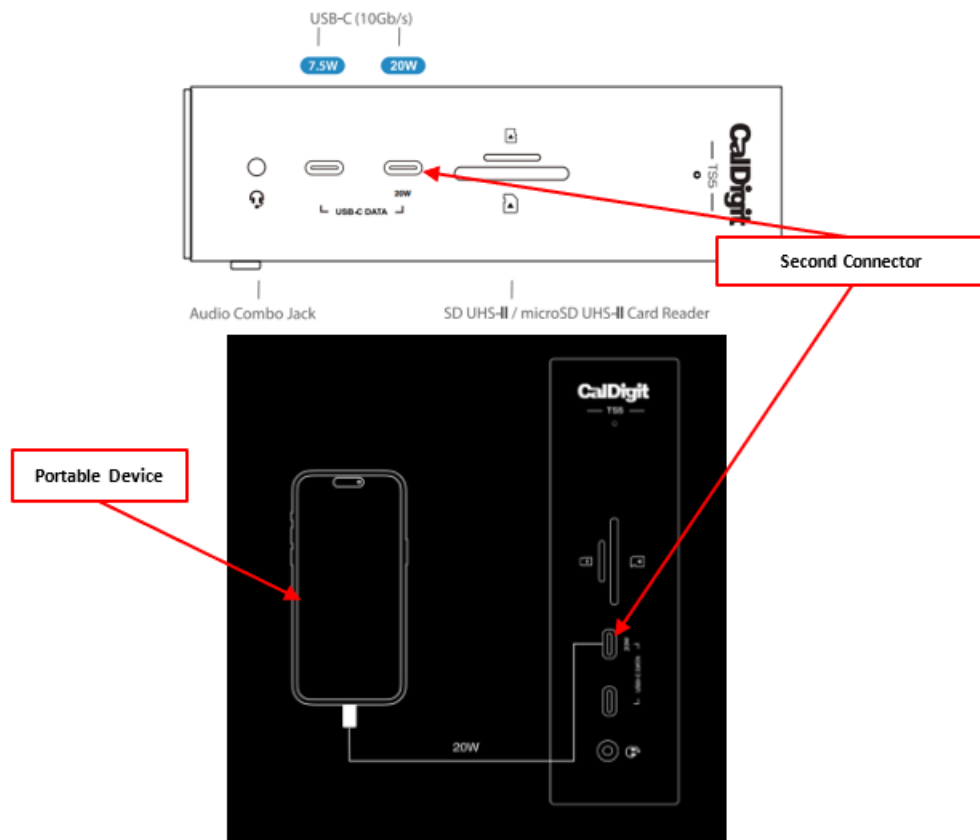




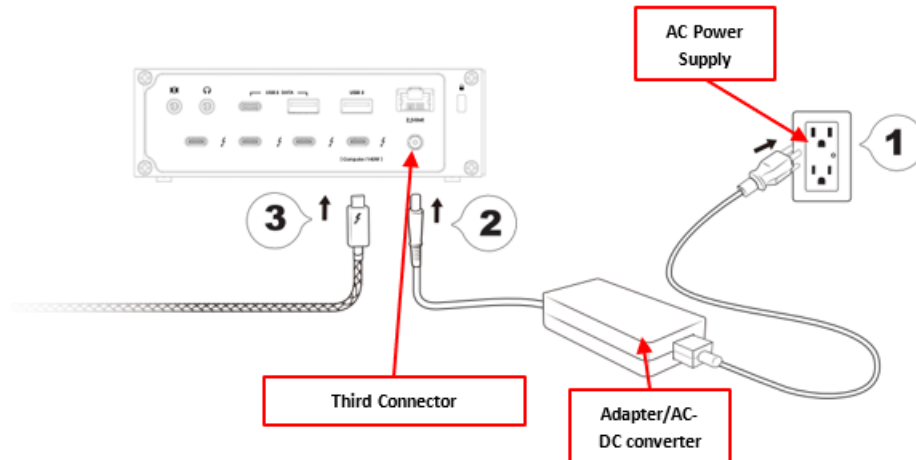
66. The CalDigit TS5 Thunderbolt Dock comprises a first connector electrically connected with the electronic device, the first connector being a Universal Serial Bus Type-C (USB-C) port. For example, the product documentation shows the CalDigit TS5 Thunderbolt Dock connected to an electronic device, such as a laptop or notebook computer, through a USB Type-C port.



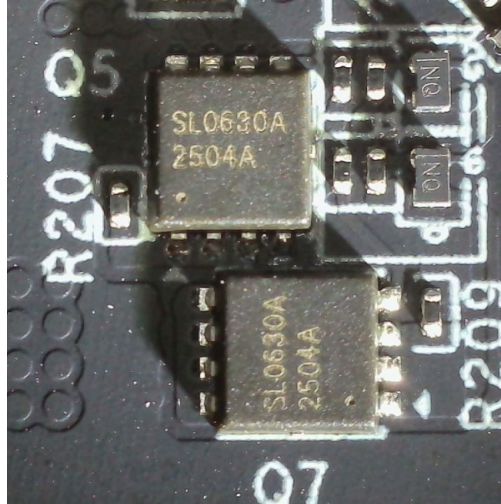
67. The CalDigit TS5 Thunderbolt Dock comprises at least one second connector electrically connected with the portable device. For example, the product documentation shows a second connector of the CalDigit TS5 Thunderbolt Dock connected to a portable device, such as a mobile phone or SSD.



68. The CalDigit TS5 Thunderbolt Dock comprises a third connector electrically connected with an alternating current (AC) source via an alternating current to direct current (AC/DC) converter. For example, the user of the CalDigit TS5 Thunderbolt Dock connects the hub to an AC-connected power supply adapter, and the product documentation identifies a power port/third connector connected to an AC power supply through an adapter/AC-DC converter.



69. The CalDigit TS5 Thunderbolt Dock comprises a first switch member wherein one end of the first switch member is electrically connected with the first connector. For example, the CalDigit TS5 Thunderbolt Dock includes a JMSL0630A MOSFET chip. On information and belief, one end of the JMSL0630A MOSFET chip is electrically connected with the first connector through the hub's internal circuitry.



Snapshot of JMSL0630A MOSFET Chip inside the CalDigit TS5.



JMSL0630AU

60V 22mΩ N-Ch Power MOSFET

Features

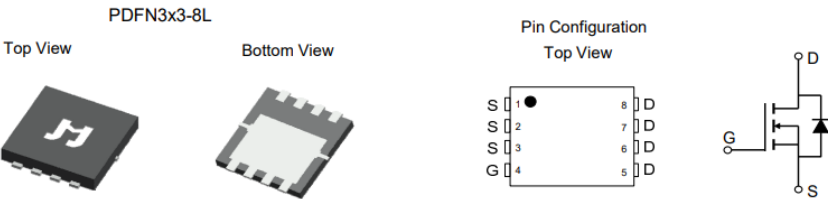
- Low $R_{DS(ON)}$
- Low Gate Charge
- 100% UIS Tested, 100% R_g Tested
- Pb-free Lead Plating
- Halogen-free and RoHS-compliant

Product Summary

Parameter	Value	Unit
V_{DS}	60	V
$V_{GS(th)}$	1.7	V
I_D (@ $V_{GS} = 10V$) ⁽¹⁾	20	A
$R_{DS(ON)}$ (@ $V_{GS} = 10V$)	22	mΩ
$R_{DS(ON)}$ (@ $V_{GS} = 4.5V$)	30	mΩ

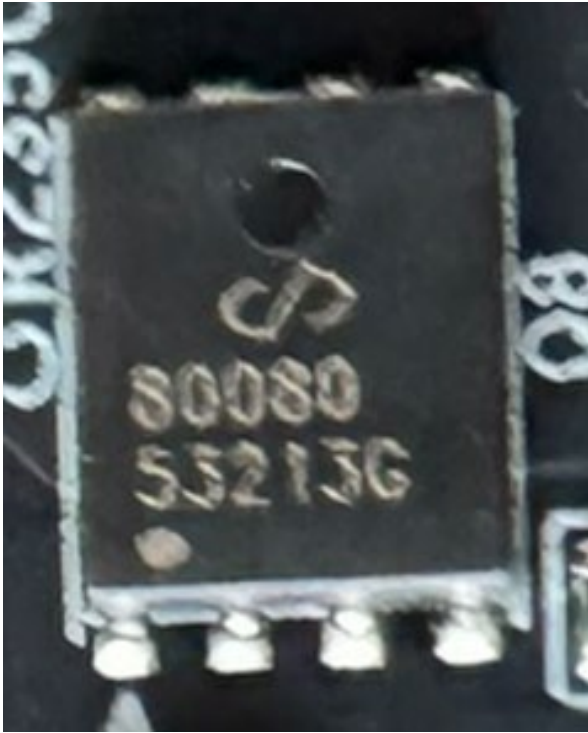
Applications

- Power Management in Telecom., Industrial Automation, CE
- Motor Driving in Power Tool, E-vehicle, Robotics
- Current Switching in DC/DC & AC/DC (SR) Sub-systems



Datasheet of JMSL0630A MOSFET Chip

70. The CalDigit TS5 Thunderbolt Dock comprises a second switch member wherein one end of the second switch member is electrically connected with the first switch member and another end of the second switch member is electrically connected with the second connector. For example, the CalDigit TS5 Thunderbolt Dock includes an LM80080NAK8A MOSFET chip. On information and belief, one end of the LM80080NAK8A MOSFET chip is electrically connected with the first switch member, and another end is electrically connected with the second connector through the hub's internal circuitry.

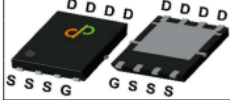
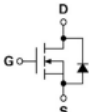


Snapshot of LM80080NAK8A MOSFET Chip inside the CalDigit TS5.

LM80080NAK8A



N-Channel Enhancement Mode MOSFET

Pin Description		Product Summary		
PDFN5*6 (TOP view) Top View Bottom View 		Symbol	N-Channel	Unit
		V _{DS}	80	V
		R _{DS(ON)} -Max	7.3	mΩ
		I _D	83	A

- Feature**

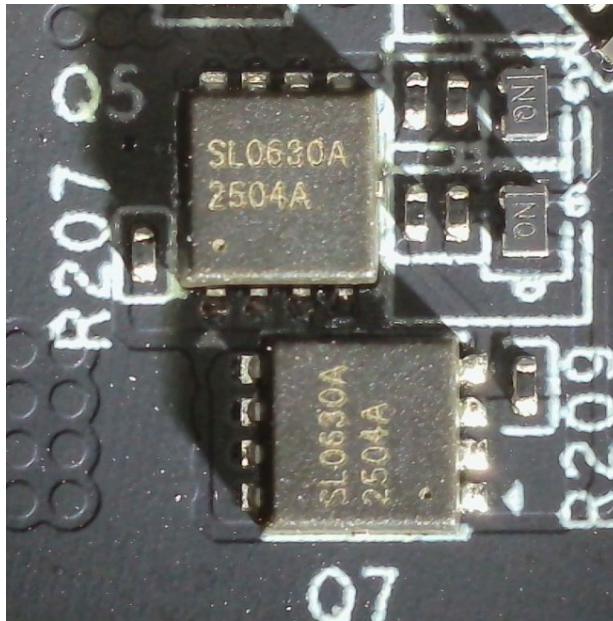
 - Advanced trench cell design
 - Reliable and Rugged
 - ROHS Compliant & Halogen-Free
 - 100% UIS and Rg Tested
- Applications**

 - Motor drivers
 - DC-DC Converter

Datasheet of LM80080NAK8A MOSFET Chip

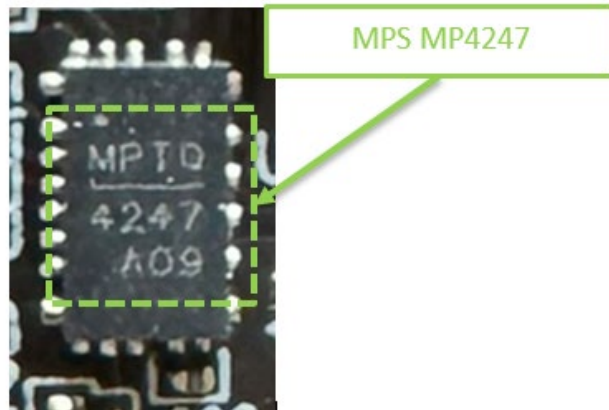
71. The CalDigit TS5 Thunderbolt Dock comprises a fourth switch member wherein one end of the fourth switch member is electrically connected with the second connector and another end of the fourth switch member is electrically connected with the alternating current to direct current (AC/DC) converter. For example, the CalDigit TS5 Thunderbolt Dock includes a

plurality of JMSL0630A MOSFET chips, including a second JMSL0630A MOSFET chip corresponding to the fourth switch member. On information and belief, one end of the fourth switch member is electrically connected with the second connector, and another end is electrically connected with the AC/DC converter through the hub's internal circuitry.



Snapshot of JMSL0630A Power MOSFET Chip inside the CalDigit TS5

72. The CalDigit TS5 Thunderbolt Dock comprises a direct current to direct current (DC/DC) converter wherein one end of the DC/DC converter is electrically connected with the third connector and another end of the DC/DC converter is electrically connected between the first switch member and the second switch member. For example, the CalDigit TS5 Thunderbolt Dock includes an MPS MP4247 DC/DC converter, which is a synchronous buck-boost controller. On information and belief, one end of the MPS MP4247 DC/DC converter is electrically connected with the third connector, and another end is electrically connected between the first switch member and the second switch member through the hub's internal circuitry.



Snapshot of MPS MP4247 chip inside the CalDigit TS5



MP4247
36V, 100W, Buck-Boost Converter
with Integrated Low-Side MOSFETs
and I²C Interface

DESCRIPTION

The MP4247 is a buck-boost converter with two integrated low-side power switches. The device can deliver up to 100W of peak output power at certain input supplies with excellent efficiency.

The MP4247 is well-suited for USB power delivery (USB PD) applications. The device can work with an external USB PD controller via the I²C interface. The I²C interface and one-time programmable (OTP) memory provide flexible and configurable parameters.

Fault condition protection includes constant current (CC) current limiting, output over-voltage protection (OVP), and thermal shutdown (TSD).

The MP4247 requires a minimal number of readily available, standard external components, and is available in a QFN-20 (3mmx5mm) package.

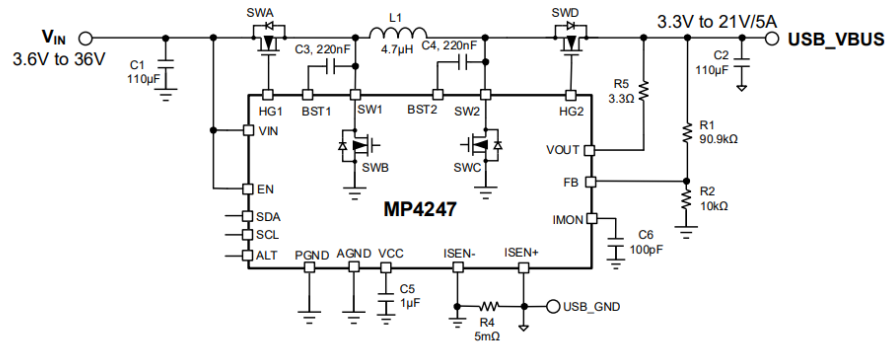
FEATURES

- UL and IEC62368-1 Certified, Efile #322138
- 100W Buck-Boost Converter with Integrated Low-Side MOSFETs (LS-FETs)
- Integrated Gate Driver for High-Side Power MOSFETs (HS-FETs)
- 3.6V to 36V Start-Up Input Voltage (V_{IN}) Range
- Supports 2.8V Falling V_{IN} when the Output Voltage (V_{OUT}) > 3.5V
- 1V to 24V ⁽¹⁾ V_{OUT} Range with 1% Accuracy
- Up to 5A Output Current (I_{OUT})
- Up to 98% Peak Efficiency
- Configurable Reference Voltage (V_{REF}) Range (0.1V to 2.147V) with 1mV Resolution via I²C Interface
- Accurate Output CC Current Limit: $\pm 5\%$
- Meets USB PD 3.0 with PPS Specifications
- Selectable 280kHz, 420kHz, or 600kHz Switching Frequency (f_{SW})
- Selectable Forced PWM or Auto-PFM/PWM
- Output Biased VCC LDO for Higher Efficiency
- Output Current Monitor (IMON) Function
- Line Drop Compensation via R_{SENS}
- I²C, Alert, and One-Time Programmable (OTP) Memory
- EN Shutdown Passive Discharge
- Output OCP, OVP, and Thermal Shutdown
- Available in a QFN-20 (3mmx5mm) Package

APPLICATIONS

- USB Type-C and USB Power Delivery
- USB Type-C PD Monitors and Docking Stations
- USB Type-C Car Chargers
- Wireless Charging

Datasheet of MPS MP4247 chip



Snapshot of datasheet reference for MPS MP4247

73. The CalDigit TS5 Thunderbolt Dock comprises a control circuit electrically connected with the first switch member, the second switch member, the third switch member, the fourth switch member, and the alternating current to direct current (AC/DC) converter. For example, the CalDigit TS5 Thunderbolt Dock includes a Texas Instruments TPS65982 chip, which is a USB Type-C and USB Power Delivery controller. On information and belief, the TPS65982 chip is electrically connected through the hub's circuitry with the first switch member, second switch member, third switch member, fourth switch member, and AC/DC converter.



Snapshot of Texas Instruments TPS65982 A chip inside the CalDigit TS5

74. The control circuit of the CalDigit TS5 Thunderbolt Dock is configured to control the first switch member, the second switch member, the third switch member, the fourth switch member, and the alternating current to direct current (AC/DC) converter. For example, the Texas

Instruments TPS65982 chip controls the switch members and the AC/DC converter in connection with USB Type-C and USB Power Delivery functionality.

TEXAS INSTRUMENTS TPS65982
SLVSD02E – MARCH 2015 – REVISED AUGUST 2021

TPS65982 USB Type-C® and USB PD Controller, Power Switch, and High-Speed Multiplexer

1 Features

- This device is certified by the USB-IF for PD2.0
 - PD2.0 is no longer certifiable on new designs as of June 2020
 - All new designs requiring certification should use a PD3.0 compliant device
 - Article on [PD2.0 vs PD3.0](#)
- Fully configurable USB PD controller
 - Control for external DC/DC supplies through GPIO
 - Ex: [TPS65982EVM](#)
 - Port data multiplexer
 - USB 2.0 HS data and low speed endpoint
 - Sideband-use data for alternate modes
 - [GUI tool](#) to easily configure TPS65982 for various applications
 - Support for DisplayPort alternate mode and thunderbolt alternate mode
 - For a more extensive selection guide and getting started information, please refer to [www.ti.com/usb-c](#) and [E2E guide](#)
- Integrated fully managed power paths:
 - Integrated 5-V, 3-A, 50-mΩ sourcing switch
 - Integrated 5-V to 20-V, 3-A, 95-mΩ bi-directional load switch
 - Gate control and current sense for external 5-V to 20-V, 5-A bidirectional switch (back-to-back NFETs)
 - UL2367 cert#: E169910-20150728
 - IEC62368-1 cert #: 111895
- Integrated robust power path protection
 - Integrated reverse current protection, undervoltage protection, overvoltage protection, and slew rate control the high-voltage bi-directional power path
 - Integrated undervoltage and overvoltage protection and current limiting for inrush current protection for the 5-V/3-A source power path
- USB Type-C® Power Delivery (PD) controller
 - 8 configurable GPIOs
 - 1 I2C secondary port

2 Applications

- Rugged PC and laptop
- Docking station
- Fiat panel monitor

3 Description

The TPS65982 device is a stand-alone USB Type-C and Power Delivery (PD) controller providing cable-plug and orientation detection at the USB Type-C connector. Upon cable detection, the TPS65982 device communicates on the CC wire using the USB PD protocol. After successful USB PD negotiation is complete, the TPS65982 enables the appropriate power path and configures alternate mode settings for internal and (optional) external multiplexers.

The mixed-signal front end on the CC pins advertises default, 1.5 A or 3 A for USB Type-C power sources, detects a plug event and determines the Type-C cable orientation, and autonomously negotiates USB PD contracts using a Bi-phase Marked Coding (BMC) and the Physical Layer (PHY) protocol.

Device Information⁽¹⁾

PART NUMBER	PACKAGE	BODY SIZE (NOM)
TPS65982	BGA MicroStar Junior (96) NFBGA (96)	6.00 mm × 6.00 mm

(1) For all available packages, see the orderable addendum at the end of the data sheet.

Snapshot of datasheet reference for Texas Instruments TPS65982 A

75. Accordingly, Apple has directly infringed and continues to directly infringe at least claim 1 of the '070 Patent by selling, offering to sell, and/or importing the CalDigit TS5 Thunderbolt Dock in the United States.

ACTS OF INFRINGEMENT

76. The paragraphs above under the headings “Count I,” “Count II,” “Count III,” and “Count IV” collectively explain in detail how the Asserted Patents are infringed when the Accused Products are configured and used as alleged above.

77. Defendant has infringed and is infringing, either literally or under the doctrine of equivalents, at least claim 1 of the '421 Patent, at least claim 1 of the '939 Patent, at least claim 1 of the '256 Patent, and at least claim 1 of the '070 Patent in violation of 35 U.S.C. § 271(a) by

making, using, offering for sale, and/or selling in the United States, and/or importing into the United States without authority or license, the Accused Products.

78. Alternatively, and in addition, upon information and belief, Defendant has directly infringed, and is continuing to directly infringe, literally or under the doctrine of equivalents, at least claim 1 of each Asserted Patent by displaying, demonstrating, configuring, and internally using and testing the Accused Products in infringing configurations in the United States, including in this judicial district, in violation of 35 U.S.C. § 271(a).

79. Defendant also infringes those claims of the Asserted Patents identified in Plaintiff's infringement contentions, including preliminary, supplemental, and final contentions.

80. Defendant's infringing acts also include selling, offering for sale, advertising, and/or providing product information for the CalDigit TS5 Thunderbolt Dock through Apple's website and sales channels. For example, Apple's website identifies the CalDigit TS5 Thunderbolt Dock as available for purchase, provides an "Add to Bag" option, and describes the product as providing 15 ports of connectivity via a single Thunderbolt cable and charging a Mac with up to 140W power delivery. Apple's website further describes the CalDigit TS5 Thunderbolt Dock as including, among other things, USB-C, USB-A, Ethernet, audio, SD, and microSD connections, and identifies the product as compatible with numerous Apple products, including iPhone, iPad, and Mac models. Through these acts, Apple sells, offers for sale, advertises, and encourages customers and end users to use the CalDigit TS5 Thunderbolt Dock in the infringing configurations alleged above.

CalDigit TS5
Thunderbolt Dock

\$399.95

Get 3% Daily Cash back with Apple Card

Order today. Delivers to 75201
Jul 23 – Aug 6 – Free

Order now. Pick up in store:
Thu, Aug 6 at Apple Knox Street

Check out with Apple Pay

Add to bag

Need a moment?
Keep all your selections by saving this device to
Your Saves, then come back anytime and pick
up right where you left off.

Save for later

Need some help? Contact us



Screenshot from Apple Website Identifying the CalDigit TS5 Thunderbolt Dock as Available for Purchase (Source: <https://www.apple.com/shop/product/hs9q2zm/a/caldigit-ts5-thunderbolt-dock>)

Compatibility

iPhone Models

iPhone Air
iPhone 17 Pro
iPhone 17 Pro Max
iPhone 17
iPhone 17e
iPhone 16 Pro
iPhone 16 Pro Max
iPhone 16
iPhone 16 Plus
iPhone 16e
iPhone 15 Pro
iPhone 15 Pro Max
iPhone 15
iPhone 15 Plus

iPad Models

iPad Pro 13-inch (M5)
iPad Pro 13-inch (M4)
iPad Pro 12.9-inch (6th generation)
iPad Pro 12.9-inch (5th generation)
iPad Pro 12.9-inch (4th generation)
iPad Pro 12.9-inch (3rd generation)
iPad Pro 11-inch (M5)
iPad Pro 11-inch (M4)
iPad Pro 11-inch (4th generation)
iPad Pro 11-inch (3rd generation)
iPad Pro 11-inch (2nd generation)
iPad Pro 11-inch (1st generation)
iPad Air 13-inch (M4)
iPad Air 11-inch (M4)
iPad Air 13-inch (M3)
iPad Air 11-inch (M3)
iPad Air 13-inch (M2)
iPad Air 11-inch (M2)
iPad Air (5th generation)
iPad Air (4th generation)
iPad (A16)
iPad (10th generation)
iPad mini (A17 Pro)
iPad mini (6th generation)

Mac Models

MacBook Air (13-inch, M5)
MacBook Air (15-inch, M5)
MacBook Air (13-inch, M4)
MacBook Air (15-inch, M4)
MacBook Air (13-inch, M3)
MacBook Air (15-inch, M3)
MacBook Air (15-inch, M2)
MacBook Air (13-inch, M2)
MacBook Air (M1)
MacBook Air (Retina, 13-inch, 2020)
MacBook Pro (14-inch, M5 Pro or M5 Max)
MacBook Pro (16-inch, M5 Pro or M5 Max)
MacBook Pro (14-inch, M5)
MacBook Pro (14-inch, 2024)
MacBook Pro (16-inch, 2024)
MacBook Pro (14-inch, 2023)
MacBook Pro (16-inch, 2023)
MacBook Pro (13-inch, M2, 2022)
MacBook Pro (14-inch, 2021)
MacBook Pro (16-inch, 2021)
MacBook Pro (16-inch, 2019)
MacBook Pro (13-inch, M1, 2020)
MacBook Pro (13-inch, 2020)
iMac (24-inch, M4, 2024)
iMac (24-inch, M3, 2023)
iMac (24-inch, M1, 2021)
iMac (Retina 4K, 21.5-inch, 2019)
iMac (Retina 5K, 27-inch, 2019–2020)
iMac Pro (2017)
Mac Studio (2025)
Mac Studio (2023)
Mac Studio (2022)
Mac mini (2024)
Mac mini (2023)
Mac mini (M1, 2020)

Screenshot from Apple website identifying the CalDigit TS5 Thunderbolt Dock as compatible with Apple products, including iPhone, iPad, and Mac models.

Product Information

Overview

The CalDigit Thunderbolt Station 5 (TS5) will connect to your Mac's Thunderbolt 5, Thunderbolt 4 or Thunderbolt 3 port, and instantly provide you with 15 ports of connectivity via a single Thunderbolt cable. As a Thunderbolt 5 dock, the TS5 provides up to 80Gb/s performance when connected to a Thunderbolt 5 Mac, as well as up to 120Gb/s when in Bandwidth Boost Mode. In addition to delivering all of this connectivity, the TS5 will also charge your Mac with up to 140W power delivery.

20W Front-Facing USB-C Port

One of the front-facing USB-C ports on TS5 features 20W in order to provide more power for accessories. This is ideal for devices that require more than 7.5W of USB power such as an iPhone, Apple Watch, and iPad Pro.

2.5 Gigabit Ethernet

TS5 provides a 2.5Gb Ethernet connection that is 2.5 times faster than traditional Gigabit Ethernet, and is becoming the new standard for home and office network environment.*

Elegant Cable Management

The TS5 features a rear-facing host port in order to connect the dock to your Mac and provide a better cable management and a clean desktop experience.

Screenshot from Apple website describing the CalDigit TS5 Thunderbolt Dock as providing 15 ports of connectivity and up to 140W power delivery.

Highlights

- Charge your laptop up to 140 watts.
- 15 connectivity ports.
- 4 Thunderbolt 5 ports
- 3 USB-C (10Gb/s) ports
- 1 USB-A (10Gb/s) port
- 1 USB-A (480Mb/s) port
- 1 SD and 1 microSD 4.0 UHS-II card readers
- 2.5 Gigabit Ethernet port*
- Front and rear audio ports
- Supports high-refresh rate displays, including up to dual 4K 240Hz displays.

Screenshot from Apple website identifying CalDigit TS5 Thunderbolt Dock features.

81. In addition, upon information and belief, since at least the date when Defendant was on notice of its infringement, Defendant has actively induced, under 35 U.S.C. § 271(b),

infringement of at least claim 1 of each Asserted Patent by inducing its distributors, customers, subsidiaries, importers, and/or consumers to directly infringe one or more claims of the Asserted Patents by using, offering for sale, selling, and/or importing the Accused Products. Defendant's affirmative acts of selling the Accused Products, causing the Accused Products to be sold, advertised, offered for sale, and/or distributed, and providing instructions explaining how to use the Accused Products in infringing configurations have induced and continue to induce Defendant's customers and/or end-users to use the Accused Products in their normal and customary way to infringe the Asserted Patents.

82. For example, it can be reasonably inferred that end-users will use the infringing products, which will cause the end-users to use the elements that are the subject of the claimed invention. Defendant specifically intended and was aware that these normal and customary activities would infringe the Asserted Patents. Defendant specifically intended that end-users use the Accused Products in Infringing Configurations. In addition, Defendant provides marketing and/or instructional materials, such as user guides, product packaging, website content, and sales advice at its Austin Apple Store Locations and others, that specifically teach end-users to use the Accused Products in Infringing Configurations. By providing such instructions, Defendant knows (and has known), or was willfully blind to the probability that its actions have, and continue to, actively induce infringement.

83. Defendant has also established distribution channels for the Accused Products into and within the United States, sold and offered the Accused Products for sale, advertised the Accused Products, distributed or made available instructions, manuals, or product information for the Accused Products to purchasers and prospective buyers, and/or provided technical support, replacement parts, or services for the Accused Products to purchasers in the United States. By way

of example only, certain claim terms within the asserted claims of the Asserted Patents contain references to technical standards, e.g., USB-C and aspects of USB-C PD. Defendant has induced infringement and continues to induce infringement of, in addition to other claims, at least the specific claims identified above of the Asserted Patents by selling in the United States, and continuing to sell after being put on notice of its infringement, without Plaintiff's authority, infringing products and providing instructional materials. These actions have induced and continue to induce the direct infringement of the Asserted Patents by end-users. Defendant performed acts that constitute induced infringement, and would induce actual infringement, with knowledge of the Asserted Patents and with knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. Upon information and belief, Defendant knew of the Asserted Patents and knew of its infringement, including by way of the Notice Letter and service of the original complaint in this lawsuit as described above.

84. Apple's "shop" website further explains how to use the Apple USB-C Digital AV Multiport Adapter in an infringing manner. *See, e.g.,* <https://www.apple.com/shop/product/mw5m3am/a/usb-c-digital-av-multiport-adapter> containing the following excerpts:

Product Information

Overview

The USB-C Digital AV Multiport Adapter lets you connect your USB-C—enabled Mac, iPad, or iPhone to an HDMI display, while also connecting a standard USB device and a USB-C charging cable.

This adapter allows you to mirror your USB-C—enabled Mac, iPad, or iPhone to your HDMI-enabled TV or display.

Use the standard USB port to connect devices such as your flash drive or camera or a USB cable for syncing and charging your iOS devices. You can also connect a charging cable to the USB-C port to charge your Mac, iPad, or iPhone.

85. Apple’s “support” website further explains how to use the Apple USB-C Digital AV Multiport Adapter in an infringing manner. *See, e.g.,* <https://support.apple.com/en-us/119850> containing the following excerpts:

About the Apple USB-C Digital AV Multiport Adapter

Connect a Mac that has a Thunderbolt 4, Thunderbolt 3, or USB-C port to an HDMI display, while also charging your Mac and connecting to a USB-A device. iPad models that have a Thunderbolt or USB-C port can also use this adapter.

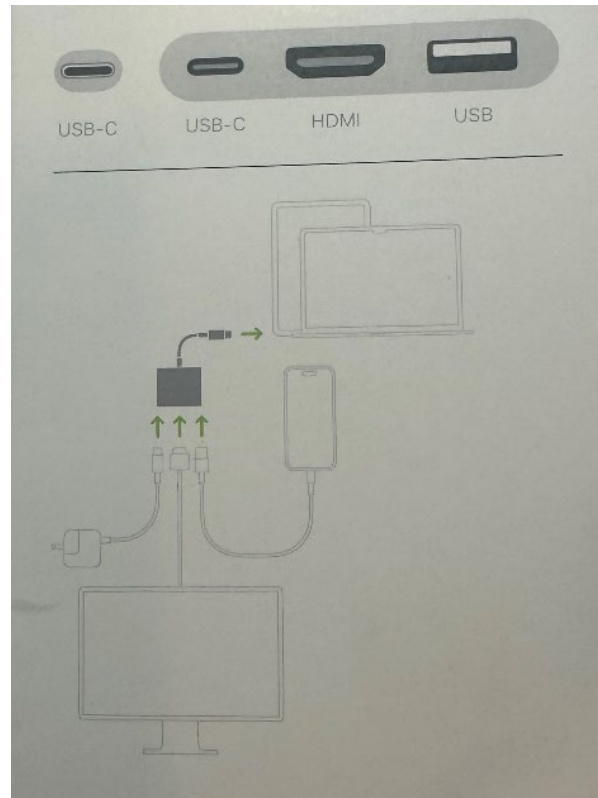
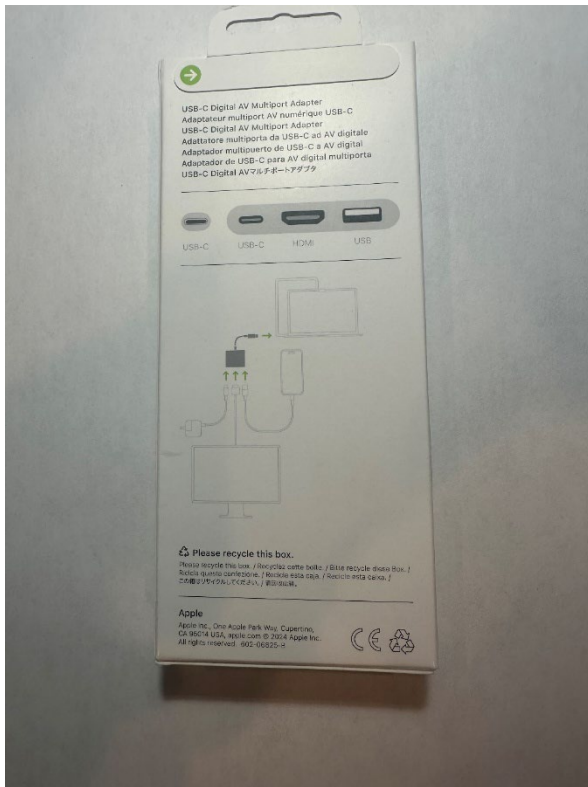
The [USB-C Digital AV Multiport Adapter](#) connects the following devices to a display that uses an HDMI cable:

- [Mac that has a Thunderbolt 4, Thunderbolt 3, or USB-C port](#)
- [iPad that has a Thunderbolt or USB-C port](#)

This adapter also connects your Mac or iPad to USB-A devices, and it includes a USB-C port for charging your Mac laptop or iPad. All three ports can be used simultaneously.



86. Apple’s product packaging further explains how to use the Apple USB-C Digital AV Multiport Adapter in an infringing manner. *See, e.g.,* the back image of the product packaging which provides exemplary use:



The same product packaging illustration is cited above in the Claim Chart Paragraphs above detailing the Infringing Configurations.

87. In addition, Defendant contributorily infringes under 35 U.S.C. § 271(c) at least claim 1 of each Asserted Patent through the Accused Products. Defendant knew, or should have known, at least as a result of Plaintiff's letter to Defendant, or as of the service of the original Complaint in this action, that third parties, such as end-users, would infringe the Asserted Patents, and with knowledge that the Accused Products are especially designed or adapted to operate in a

manner that infringes the Asserted Patents. The fact that infringing configurations are specifically depicted on the Accused Products' packaging, product documentation, user manuals, product information, and/or Apple's website is sufficient to infer that the Accused Products are especially designed to operate in infringing configurations. On information and belief, the Accused Products have no substantial non-infringing uses. On information and belief, no substantial non-infringing uses were depicted on the Accused Products' packaging, product documentation, user manuals, product information, and/or Apple's website. In addition, the specific and intended functions of the Accused Products are a material part of the inventions of the Asserted Patents, and do not constitute staple articles of commerce suitable for substantial non-infringing use. The Accused Products are a material part of the inventions of the Asserted Patents in that they provide the central connectivity for all involved devices, i.e., they are "hubs" and, as suggested by a hub-and-spoke topology, are the "middle" devices in the system.

FURTHER ASSERTIONS INVOLVING ALL CLAIMS

88. The Asserted Patents are presumed valid under 35 U.S.C. § 282.

89. The Asserted Patents are valid and enforceable.

90. Defendant has had knowledge of its infringement of the Asserted Patents as of its receipt of the Notice Letter, and alternatively, through service of the original Complaint in this action. Alternatively, and in addition, on information and belief, Defendant has a policy or practice of not reviewing the patents of others (including instructing its employees to not review the patents of others), and thus has been willfully blind of Plaintiff's patent rights.

91. Defendant's infringement has been and continues to be willful and deliberate. Upon information and belief, Defendant deliberately infringed the Asserted Patents and acted recklessly and in disregard to the Asserted Patents by making, having made, using, importing, and

offering for sale products that infringe the Asserted Patents. Upon information and belief, the risks of infringement were known to Defendant and/or were so obvious under the circumstances that the infringement risks should have been known. Upon information and belief, Defendant has no reasonable non-infringement theories. Upon information and belief, Defendant has not attempted any design/sourcing change to avoid infringement. Defendant has acted despite an objectively high likelihood that its actions constituted infringement of the Asserted Patents. In addition, this objectively-defined risk was known or should have been known to Defendant. Upon information and belief, Defendant has willfully infringed and/or continues to willfully infringe the Asserted Patents. Defendant exhibited egregious behavior beyond typical infringement in that, despite being aware of its infringement, defendant did not develop any non-infringement theories, did not attempt any design or sourcing change, and did not otherwise cease its infringement.

92. To the extent any marking or notice was required by 35 U.S.C. § 287, Plaintiff has complied with the applicable marking and/or notice requirements of 35 U.S.C. § 287.

DEMAND FOR JURY TRIAL

Plaintiff hereby demands a jury for all issues so triable.

PRAYER

WHEREFORE, Plaintiff prays for judgment that:

1. Defendant has infringed and continues to infringe, one or more claims of the Asserted Patents;
2. Defendant be ordered to pay damages caused to Plaintiff by Defendant's unlawful acts of infringement;
3. Defendant's acts of infringement have been, and are, willful;
4. Plaintiff recover actual damages under 35 U.S.C. § 284;

5. Plaintiff be awarded supplemental damages for any continuing post-verdict infringement up until final judgment;
6. Plaintiff be awarded a compulsory ongoing royalty;
7. Plaintiff be awarded an accounting of damages;
8. Plaintiff be awarded enhanced damages for willful infringement as permitted under the law;
9. A judgment and order requiring Defendant to pay to Plaintiff pre-judgment and post-judgment interest on the damages awarded, including an award of pre-judgment interest, pursuant to 35 U.S.C. § 284, from the date of each act of infringement by Defendant to the day a damages judgment is entered, and a further award of post-judgment interest, pursuant to 28 U.S.C. § 1961, continuing until such judgment is paid, at the maximum rate allowed by law;
10. An award to Plaintiff of the costs of this action and its reasonable attorneys' fees pursuant to 35 U.S.C. §285; and
11. Such other and further relief as the Court deems just and equitable.

DATED: July 15, 2026

Respectfully submitted,

/s/Robert D. Katz

Robert D. Katz

Texas Bar No. 24057936

KATZ PLLC

8350 N. Central Expressway, Suite 1900

Dallas, TX 75206

214-865-8000

888-231-5775 (fax)

rkatz@katzfirm.com

**ATTORNEY FOR PLAINTIFF
ZEPHYRHUB LLC**