

**UNITED STATES INTERNATIONAL TRADE COMMISSION
WASHINGTON, D.C.**

In the Matter of

CERTAIN POWER CONVERTER
MODULES AND COMPUTING SYSTEMS
CONTAINING THE SAME

Investigation No. _____

**VERIFIED COMPLAINT OF VICOR CORPORATION
UNDER SECTION 337 OF THE TARIFF ACT OF 1930, AS AMENDED**

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EXHIBIT LIST

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Exhibit 5	Certified Copy of U.S. Patent No. 10,199,950
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Appendix	Description
A1	Certified copy of the prosecution history of U.S. Patent No. 9,166,481
A2	References cited in the prosecution history of U.S. Patent No. 9,166,481
B1	Certified copy of the prosecution history of U.S. Patent No. 9,516,761
B2	References cited in the prosecution history of U.S. Patent No. 9,516,761
C1	Certified copy of the prosecution history of U.S. Patent No. 10,199,950
C2	References cited in the prosecution history of U.S. Patent No. 10,199,950

I. INTRODUCTION

1. Vicor Corporation (“Vicor” or “Complainant”) requests that the United States International Trade Commission (“Commission”) institute an investigation pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, to remedy the unlawful importation, sale for importation, and/or sale after importation by the Proposed Respondents of certain power converter modules and computing systems containing the same (the “Accused Products”). The Accused Products infringe, either literally or under the doctrine of equivalents, certain claims of U.S. Patent No. 9,166,481 (“481 Patent”), U.S. Patent No. 9,516,761 (“761 Patent”), and U.S. Patent No. 10,199,950 (“950 Patent”) (collectively, the “Vicor Patents”).

2. The Accused Products infringe at least the following claims of the Vicor Patents in violation of 19 U.S.C. § 1337(a)(1)(B)(i) and 35 U.S.C. § 271(a)-(c), either literally or under the doctrine of equivalents:

Asserted Vicor Patents	Asserted Independent Claims	Asserted Dependent Claims
U.S. Patent No. 9,166,481	1	
U.S. Patent No. 9,516,761	1	2, 3, 4, 5, 6, 7
U.S. Patent No. 10,199,950	9 and 33	13, 14, 34, 35, 36, 37, 38

3. The Vicor Patents are valid and enforceable United States Patents, the entire right, title, and interest to which Vicor owns by assignment.

4. The Proposed Respondents are Delta Electronics, Inc., Delta Electronics (Americas) Ltd., Delta Electronics (USA) Inc., and Cyntec Co., Ltd. (“Delta Respondents” or “Delta”); Quanta Computer Inc., Quanta Cloud Technology Inc., Quanta Cloud Technology USA LLC, and Quanta Computer USA, Inc. (“Quanta Respondents” or “Quanta”); and Hon Hai Precision Industry Co. Ltd. (d/b/a Foxconn Technology Group), Foxconn Industrial Internet Co. Ltd., FII USA Inc. (a/k/a Foxconn Industrial Internet USA Inc.), Ingrasys Technology Inc., and

Ingrasys Technology USA Inc. (“Foxconn Respondents” or “Foxconn”) (collectively, the “Proposed Respondents”).

5. On information and belief, and as set forth in this Complaint, each of the Proposed Respondents unlawfully imports into the United States, sells for importation into the United States, sells in the United States after importation, and/or instructs other Proposed Respondents regarding the use, manufacture, importation, and/or sale of one or more Accused Products that infringe one or more of the Vicor Patents, either literally or under the doctrine of equivalents.

6. A domestic industry exists under 19 U.S.C. § 1337(a)(2) and (3) as the result of Vicor’s activities and investments in the United States relating to products that practice the Vicor Patents. These activities include Vicor’s past and continuing substantial investments in domestic plants, equipment, labor, and capital devoted to Vicor’s power converter modules that practice one or more claims of the Vicor Patents.

7. Vicor seeks, as relief for the unfair acts of Proposed Respondents, the following relief from the Commission: (i) a limited exclusion order barring from entry into the United States the Accused Products manufactured by or on behalf of, or imported by or on behalf of, the Proposed Respondents that infringe one or more of the asserted Vicor Patents; (ii) a cease and desist order prohibiting the sale for importation, importation, sale after importation, use, distribution, offer for sale, promotion, marketing, advertising, testing, warehousing of inventory for distribution, solicitation of sales, programming, repair, maintenance, transfer, and other commercial activity relating to the Accused Products; (iii) the imposition of a bond on the importation and sales of the Accused Products during the Presidential Review Period pursuant to 19 U.S.C. § 1337(j); and (iv) such other relief as the Commission deems appropriate.

II. THE PARTIES

A. Complainant

8. Complainant Vicor Corporation is a Delaware corporation with its principal place of business at 25 Frontage Road, Andover, MA 01810. Vicor is the sole owner of all right, title, and interest in each Vicor Patent.

9. Vicor is a NASDAQ-listed public company that was founded in 1981 by Dr. Patrizio Vinciarelli in Massachusetts. Dr. Vinciarelli, the lead inventor of the patents asserted in this Complaint, remains Vicor's CEO to this day.

10. Headquartered in the United States, Vicor is a leading provider of high-performance power converter modules and systems for use in enterprise and high-performance computing, industrial equipment and automation, robotics, UAVs, vehicles and transportation, satellites, and aerospace and defense. *See, e.g.*, Exhibit 9.

11. Vicor manufactures its power converter modules at facilities located in the United States. In all, Vicor employs approximately 1,000 people in the United States, spread across offices in Andover, Massachusetts; Santa Clara, California; Lombard, Illinois; and Lincoln, Rhode Island. *See* Exhibit 10C.

12. Vicor has a portfolio of intellectual property relating to power distribution architectures, power conversion topologies, control systems, and power module technology, including the Vicor Patents asserted here. Due to the Proposed Respondents' unlawful importation of power converter modules and computing systems that infringe the Vicor Patents, Vicor's market standing and domestic industry relating to the Vicor Patents have been injured.

13. As a domestic developer and manufacturer of high-performance technology products, Vicor and its domestic industry represent precisely what the Tariff Act was designed to protect. Vicor's ability to protect its proprietary technology through, *inter alia*, enforcement of its

patent rights is important to the continued success of its domestic industry, including U.S.-based product design, development, and manufacturing activities.

B. Proposed Respondents

i. Delta Respondents

14. Proposed Respondent Delta Electronics, Inc. is a Taiwanese public company with its principal place of business at 186, Ruey Kuang Road, Neihu District, Taipei 114501, Taiwan; and has, as its U.S. subsidiaries, Proposed Respondents Delta Electronics (Americas) Ltd., Delta Electronics (USA) Inc., and Cytotec Co., Ltd. Delta Electronics (Americas) Ltd. is a U.S. company with its principal place of business at 46101 Fremont Blvd., Fremont, CA 94538. Delta Electronics (USA) Inc. is a U.S. company and has its principal place of business at 2925 E. Plano Pkwy, Plano, TX 75074. Cytotec Co., Ltd. is a company organized under the laws of Taiwan and has as its principal place of business 2 R&D 2nd Road, Science-Based Industry Park, Hsinchu 30076, Taiwan. The Complaint refers to Delta Electronics, Inc., Delta Electronics (Americas) Ltd., Delta Electronics (USA) Inc., and Cytotec Co., Ltd. collectively as the “Delta Respondents” or “Delta.”

15. On information and belief, each of the Delta Respondents imports into the United States, sells for importation, and/or sells within the United States after importation certain power converter modules and/or computing systems containing the same that infringe the Vicor Patents. *See Exhibits 11-17, 18C-19C, 20, 21C-23C, 47.*

ii. Foxconn Respondents

16. Proposed Respondent Hon Hai Precision Industry Co. Ltd. (d/b/a Foxconn Technology Group) is organized under the laws of China, with its principal place of business at No. 2, Zihyou St., Tucheng Dist., New Taipei City 236, Taiwan; and has as its subsidiaries Proposed Respondents Foxconn Industrial Internet Co. Ltd., FII USA Inc. (a/k/a Foxconn Industrial Internet USA Inc.), Ingrasys Technology Inc., and Ingrasys Technology USA Inc.

Foxconn Industrial Internet Co. Ltd. is organized under the laws of China, with its principal place of business at 2F C1 Foxconn Technology Park 2 Donghuan 2 Road Longhua, Shenzhen, 518109 China. FII USA Inc. is a U.S. company with its principal place of business at 611 East Wisconsin Avenue, Milwaukee, Wisconsin 53202. Ingrasys Technology Inc. is organized under the laws of Taiwan with its principal place of business at 5F., No. 1188, Nanqing Rd., Luzhu Dist., Taoyuan City, Taiwan. Ingrasys Technology USA Inc. is a U.S. company with its principal place of business at 2025 Gateway Place, Ste. 190, San Jose, CA 95110. The Complaint refers to Hon Hai Precision Industry Co. Ltd., Foxconn Industrial Internet Co. Ltd., FII USA Inc., Ingrasys Technology Inc., and Ingrasys Technology USA Inc. collectively as the “Foxconn Respondents” or “Foxconn.”

17. On information and belief, each of the Foxconn Respondents imports into the United States, sells for importation, and/or sells within the United States after importation certain power converter modules and/or computing systems containing the same that infringe the Vicor Patents. *See* Exhibits 21C-23C, 24-36, 47.

iii. Quanta Respondents

18. Proposed Respondent Quanta Computer Inc. is incorporated in Taiwan with its principal place of business at No. 211, Wenhua 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan; and has as its subsidiaries Proposed Respondents Quanta Cloud Technology Inc., Quanta Cloud Technology USA LLC, and Quanta Computer USA, Inc. Quanta Cloud Technology Inc. has its principal place of business at 1F, No. 211 Wenhua 2nd Rd., Guishan Dist., Taoyuan City 33377, Taiwan. Quanta Cloud Technology USA LLC has its principal place of business at 1010 Rincon Circle San Jose, CA 95131. Quanta Computer USA, Inc. has its principal place of business at 45630 Northport Loop East, Fremont, CA 94538. The Complaint refers to Quanta Computer Inc.,

Quanta Cloud Technology Inc., Quanta Cloud Technology USA LLC, and Quanta Computer USA, Inc. collectively as the “Quanta Respondents” or “Quanta.”

19. On information and belief, each of the Quanta Respondents imports into the United States, sells for importation, and/or sells within the United States after importation certain power converter modules and/or computing systems containing the same that infringe the Vicor Patents. *See* Exhibits 18C-19C, 37-40, 47.

III. THE TECHNOLOGY AND PRODUCTS AT ISSUE

A. Products at Issue

20. Pursuant to 19 C.F.R. §§ 210.10(b)(1) and 210.12(a)(12), the categories of products accused of infringing one or more of the Vicor Patents are power converter modules used in computing systems and computing systems containing the same.

21. Proposed Respondents infringe the Vicor Patents through the sale for importation into the United States, importation into the United States, and/or sale within the United States after importation of the Accused Products.

22. Proposed Respondent Delta copied nearly every facet of the technology that enabled Vicor’s innovative power converter modules, including: (a) a patented non-isolated Sine Amplitude Converter (“SAC”) topology; (b) patented power train thermal management technology; (c) a patented SAC digital control system; and (d) a power converter module package with a novel footprint and terminal arrangement (the “pin out”).

23. Proposed Respondents Quanta and Foxconn purchase the infringing power converter modules from Delta, rather than Vicor, and use these power converter modules in their larger computing systems (e.g., server boards) that are then supplied to unlicensed Original Equipment Manufacturers (“OEMs”) in the United States.

24. Exemplary identifications of the infringing Accused Products are provided in Sections VI and VII below. They include the Delta U50SU Series High Power Density 48V / 12V Bi-Directional DC-DC Converter Power Module (e.g., the Delta U50SU4P162, the Delta U50SU4P162MAR, and the Delta U50SU4P162PMDRF) and Foxconn and Quanta products (e.g., server boards) that incorporate and/or utilize the Delta U50SU High Power Density 48V / 12V Bi-Directional DC-DC Converter Power Module.

25. Delta advertises the accused Delta U50SU Series High Power Density 48V / 12V Bi-Directional DC-DC Converter Power Module as offering “a highly efficient and reliable power supply” “packed into a compact form factor,” which “is a requirement for many data centers, super computers and other high-end equipment.” *See* Exhibits 14-15. Delta sells the accused Delta power modules to companies who incorporate the power modules into server boards and other computing equipment that are utilized by end customers in, for example, their data centers. *See, e.g.*, Exhibits 18C-19C, 20, 21C-23C, 47.

26. Without discovery, Vicor cannot exhaustively identify all power converter modules and computing systems containing the same that are sold for importation into the United States, imported into the United States, and/or sold within the United States after importation and infringe the Vicor Patents. Vicor reserves the right to supplement its allegations, to further amend this Complaint, and to add respondents, asserted patents, and accused products in the future if necessary based on discovery received during the investigation.

B. History of the Relevant Technology and Market

27. The technology at issue has a storied past. The telephone and central office equipment industry has been using a negative 48-volt power distribution in exchange equipment for over 60 years. A negative (positive grounded) polarity was selected by Bell Telephone to prevent electrochemical reactions from damaging buried copper cables and to protect against

sulfation on battery terminals. Negative 48-volt power distribution remained the standard for decades, including during the telecommunication industry's explosive growth following the advent of the Internet and e-commerce and as technology progressed from telephone switching operators to smart phones.

28. Once upon a time, digital logic circuits operated at 5-volt, powered from negative 48-volt through isolated DC-DC converters. As digital logic evolved from 5-volt to lower voltage nodes, isolated DC-DC converters could not keep up with the power density requirements of logic circuits. And so, nearly twenty years ago, the industry abandoned isolated DC-DC converters for an Intermediate Bus Architecture ("IBA") using isolated fixed ratio (4 to 1) converters (*i.e.*, "bus converters") to step negative 48-volt down to a positive 12-volt intermediate bus distributed on system circuit boards. Point of load ("PoL") "buck" voltage regulators powered from the 12-volt intermediate bus supplied the voltages required by each circuit load. Bus converters required isolation to convert negative 48-volt into positive 12-volt.

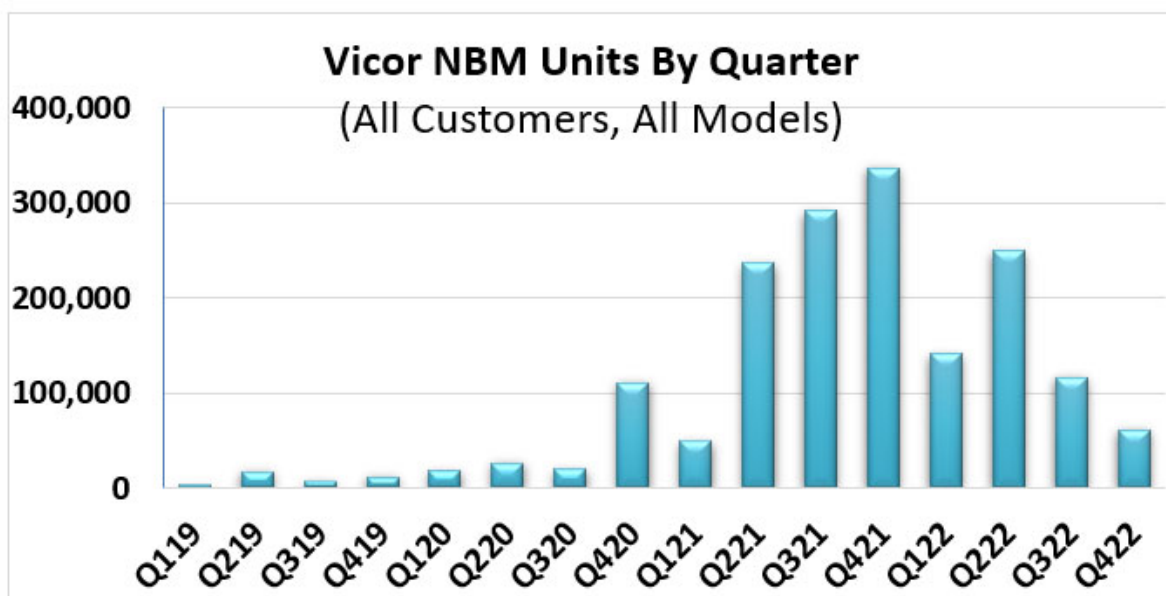
29. Over ten years ago, to address power density requirements in data centers and high-performance computing, Vicor conceived a new non-isolated power distribution architecture ("Non-IBA") that used a positive 48-volt bus and higher density, higher efficiency, non-isolated Sine Amplitude Converter ("SAC") bus converter modules ("NBMs"). Non-IBA power distribution using NBMs freed up space on customer boards and improved efficiency over 12-volt IBA legacy systems requiring isolated bus converters. In 2013, Vicor sought patent protection to the power conversion topology of NBMs and the Non-IBA power distribution architecture enabled by NBMs. By 2017, Vicor developed its first commercial NBM product, which also incorporated its patented digitally controlled fixed ratio SAC and high power density thermal management technology.

30. In April 2015, Vicor presented to a High Performance Computer and Data Center OEM its positive 48-volt power distribution architecture. Because of the stronghold of negative 48-volt power distribution, the industry was skeptical of using positive 48-volt without galvanic isolation, citing safety, reliability, and noise concerns. Vicor, however, persisted in its effort to bring positive 48-volt power distribution and its benefits to market and ultimately broke through that skepticism. Major OEMs, including Google, had adopted Vicor's positive 48-volt distribution in the form of Vicor's patented Factorized Power Architecture ("FPA"). Still, despite success with early adopters, FPA was largely viewed as a niche technology, and skepticism about positive 48-volt power distribution in high-performance computing and data center cloud servers remained.

31. At the 2017 Applied Power Electronics Conference and the 2017 Open Compute Project, Google began to publicly laud the benefits of positive 48-volt distribution based on its experience with FPA and visibility of Vicor's Non-IBA with NBMs. Others followed in Google's steps, first by using Vicor's FPA and then by using its Non-IBA with NBMs. Notably, NVidia's "A100" was the first Artificial Intelligence GPU using FPA and positive 48-volt power distribution. And NVidia's next generation H100 GPU used Vicor's Non-IBA with NBMs.

32. Wishing to source alternate NBMs from manufacturers other than Vicor, in 2021 a leading artificial intelligence ("AI") OEM licensed the Vicor Patents and started paying royalties on NBMs, including NBMs manufactured by Proposed Respondent Delta. *See* Exhibit 8C. Other parties using Vicor's patented technology—including the Proposed Respondents—did not. Having largely copied Vicor's NBM (specifically its patented power train topology, patented power train thermal management, patented control system, and package pinout), Proposed Respondent Delta supplied copy-cat NBMs to Proposed Respondents Quanta and Foxconn for incorporation into computing systems (e.g., server boards) shipped to unlicensed OEMs.

33. Proposed Respondents' infringement of Vicor's patented technology has included supplying unlicensed OEMs in the data center industry. Data center companies have been developing AI capabilities to enhance their services and grow significant revenues. AI services are enabled by large arrays of servers and AI accelerator cards mounted in thousands of rack systems within data centers. These computers require large amounts of power to operate and rely on the efficiency and density of NBMs, and the Non-IBA power distribution architecture enabled by NBMs. Google's transition from FPA to Non-IBA drove rising demand for NBMs manufactured by Vicor's Andover, Massachusetts, facility, until the Proposed Respondents switched to infringing NBMs manufactured by companies like Delta, as reflected in the following graph showing the impact on Vicor's revenues in an otherwise rapidly growing market:



IV. THE ASSERTED VICOR PATENTS

34. The asserted Vicor Patents relate to power converter module and power system technologies used in applications requiring high density and high efficiency, such as high-end computing.

35. The identification, ownership, non-technical description, and foreign counterparts for each asserted Vicor Patent are identified below.

A. U.S. Patent No. 9,166,481

i. Identification of the '481 Patent and Ownership by Vicor

36. The '481 Patent, titled "Digital Control of Resonant Power Converters," issued on October 20, 2015, from U.S. Patent Application No. 13/830,262, filed on March 14, 2013. Patrizio Vinciarelli and Sergey Luzanov are the named inventors of the '481 Patent. A certified copy of the '481 Patent is attached as Exhibit 1 and is incorporated by reference.

37. Vicor owns by assignment the entire right, title, and interest in the '481 Patent. A certified copy of the recorded assignments transferring title of the '481 Patent from the inventors to Vicor is attached as Exhibit 2.

38. Pursuant to Commission Rule 210.12(c) and the Commission's Temporary Change to Filing Procedures dated March 16, 2020, this Complaint is accompanied by an electronic certified copy of the '481 Patent at Exhibit 1, an electronic certified copy of the file history of the '481 Patent at Appendix A1, and electronic copies of each patent and applicable pages of each technical reference mentioned in the prosecution history of the '481 Patent at Appendix A2.

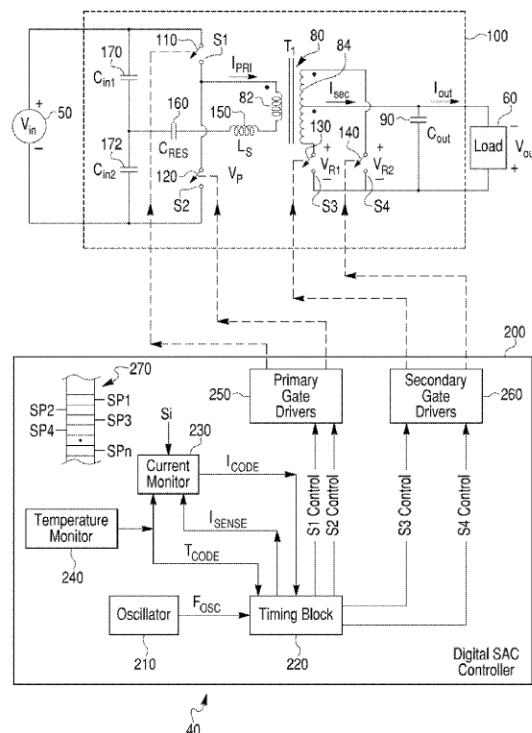
39. The '481 Patent is valid, enforceable, and currently in full force and effect. The '481 Patent expires on January 16, 2034.

ii. Non-Technical Description of the '481 Patent¹

40. The '481 Patent generally claims a method for digital control of Sine Amplitude Converters ("SAC"), i.e., zero-current and zero-voltage switching power converters operating at their resonant frequency as fixed ratio converters. The method uses digitally generated timing-

¹ The Non-Technical Descriptions throughout the Complaint do not, and are not intended to, construe or limit the Vicor Patents' scope or meaning.

control signals for turning switches on and off without power loss at essentially zero voltage and zero current. The patented technology has applications in high density, high efficiency power converters used to change a DC source voltage to a load voltage at an essentially fixed voltage ratio. Such converters find application in, among other things, datacenters. The following exemplary diagram, taken from Figure 2 of the '481 Patent, depicts a Digital SAC Controller:



iii. Foreign Counterparts to the '481 Patent

41. Pursuant to Commission Rule 210.12(a)(9)(v), Vicor submits the attached list of foreign patents, foreign patent applications (not already issued as a patent), and each foreign patent application that has been denied, abandoned, or withdrawn corresponding to the '481 Patent. *See* Exhibit 7.

B. U.S. Patent No. 9,516,761

i. Identification of the '761 Patent and Ownership by Vicor

42. The '761 Patent, titled "Encapsulated Modular Power Converter with Symmetric Heat Distribution," issued on December 6, 2016, from U.S. Patent Application No. 14/635,467, filed on March 2, 2015. The '761 Patent is a divisional of U.S. Patent Application No. 13/105,696, filed on May 11, 2011, and issued as United States Patent No. 8,966,757. Patrizio Vinciarelli, Michael LaFleur, Sean Timothy Fleming, Rudolph Mutter, and Andrew D'Amico are the named inventors of the '761 Patent. A certified copy of the '761 Patent is attached as Exhibit 3 and is incorporated by reference.

43. Vicor owns by assignment the entire right, title, and interest in the '761 Patent. A certified copy of the recorded assignments transferring title of the '761 Patent from the inventors to Vicor is attached as Exhibit 4.

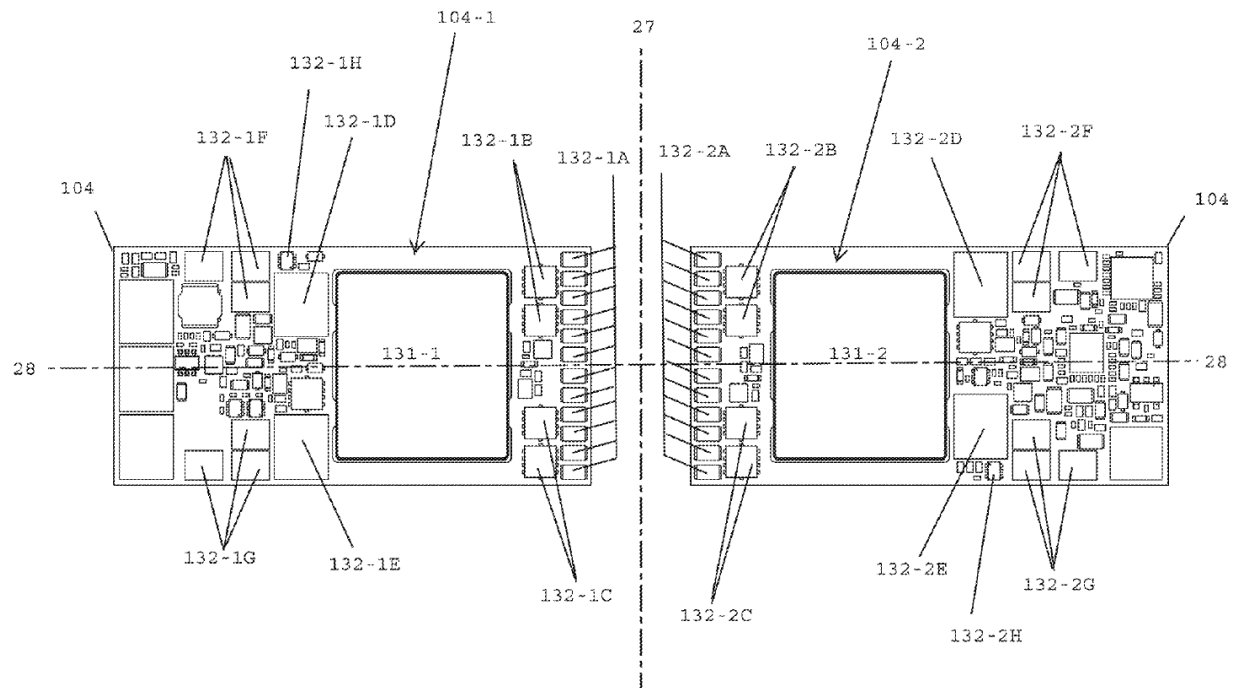
44. Pursuant to Commission Rule 210.12(c) and the Commission's Temporary Change to Filing Procedures dated March 16, 2020, this Complaint is accompanied by an electronic certified copy of the '761 Patent at Exhibit 3, an electronic certified copy of the file history of the '761 Patent at Appendix B1, and electronic copies of each patent and applicable pages of each technical reference mentioned in the prosecution history of the '761 Patent at Appendix B2.

45. The '761 Patent is valid, enforceable, and currently in full force and effect. The '761 Patent expires on May 11, 2031.

ii. Non-Technical Description of the '761 Patent

46. The '761 patent generally claims power converters with heat distribution through the converter's top and bottom surfaces, using conductive vias in the printed circuit board shared by complementary components on the top and bottom surfaces and symmetrical multi-cell converter topologies, reducing heat density and improving efficiency and power density. The

following exemplary diagram, taken from Figure 27 of the '761 Patent, depicts the top and bottom plan views of a section of a printed circuit board, illustrating patented component layout features:



iii. Foreign Counterparts to the '761 Patent

47. Pursuant to Commission Rule 210.12(a)(9)(v), Vicor submits the attached list of foreign patents, foreign patent applications (not already issued as a patent), and each foreign patent application that has been denied, abandoned, or withdrawn corresponding to the '761 Patent. *See* Exhibit 7.

C. U.S. Patent No. 10,199,950

i. Identification of the '950 Patent and Ownership by Vicor

48. The '950 Patent, titled "Power Distribution Architecture with Series-Connected Bus Converter," issued on February 5, 2019, from Application No. 13/933,252, filed on July 2, 2013. Patrizio Vinciarelli and Andrew D'Amico are named inventors to the '950 Patent. A certified copy of the '950 Patent is attached as Exhibit 5 and is incorporated by reference.

49. Vicor owns by assignment the entire right, title, and interest in the '950 Patent. A certified copy of the recorded assignment(s) transferring title of the '950 Patent from the inventors to Vicor is attached as Exhibit 6.

50. Pursuant to Commission Rule 210.12(c) and the Commission's Temporary Change to Filing Procedures dated March 16, 2020, this Complaint is accompanied by an electronic certified copy of the '950 Patent at Exhibit 5, an electronic certified copy of the file history of the '950 Patent at Appendix C1, and electronic copies of each patent and applicable pages of each technical reference mentioned in the prosecution history of the '950 Patent at Appendix C2.

51. The '950 Patent is valid, enforceable, and currently in full force and effect. The '950 Patent expires on October 30, 2035.

ii. Non-Technical Description of the '950 Patent

52. The '950 Patent generally claims Non-IBA power distribution using a class of fixed ratio SAC modules ("NBMs") which are non-isolated. NBMs enable efficient power distribution and provide superior power system density and efficiency. The patented technology has applications in high-performance computing, and communications and network infrastructure that have extreme power requirements and benefit from small, power-dense DC-DC converters that save space and weight. The following exemplary diagram, taken from Figure 5 of the '950 Patent, depicts a schematic of a series-connected SAC according to one of the illustrative embodiments of the patent:

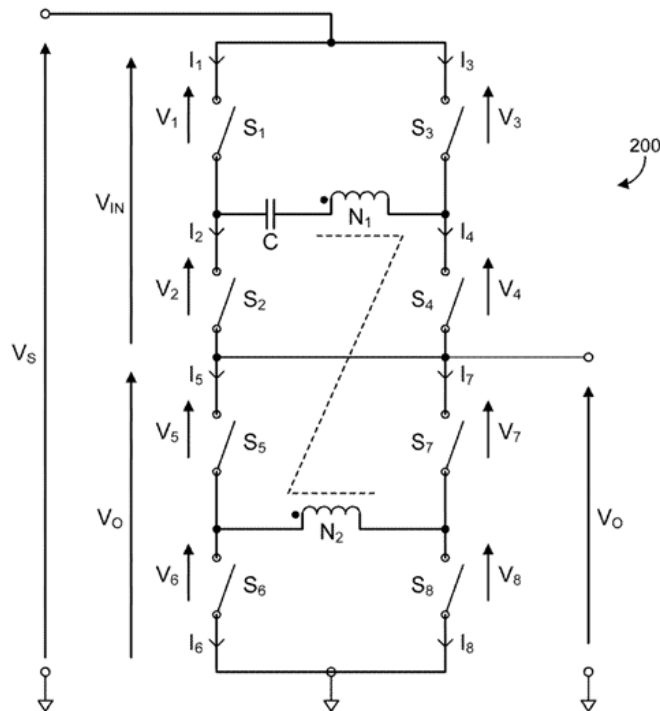


FIG. 5

iii. Foreign Counterparts to the '950 Patent

53. Pursuant to Commission Rule 210.12(a)(9)(v), Vicor submits the attached list of foreign patents, foreign patent applications (not already issued as a patent), and each foreign patent application that has been denied, abandoned, or withdrawn corresponding to the '950 Patent. *See* Exhibit 7.

D. Licensees

54. Pursuant to Commission Rule 210.12(a)(9)(iii), Exhibit 8C identifies all licensees to the Vicor Patents. Vicor is not relying upon any licensee to establish standing or to satisfy the domestic industry requirement.

V. THE DOMESTIC INDUSTRY

55. A domestic industry exists in the United States as defined under 19 U.S.C. § 1337(a)(2) and (3), as a result of Vicor's continuing significant investment in plant and equipment, significant employment of labor and capital, and substantial investment in exploitation,

including engineering, research, and development, with respect to articles protected by the Vicor Patents.

A. Technical Prong: Vicor’s Practice of the Vicor Patents

56. Vicor makes significant and substantial investments in plant and equipment, labor and capital, and engineering, research, and development with respect to products that practice one or more claims of the Vicor Patents (the “Domestic Industry Products”), including the Vicor NBM2317S60E1560T0R.

57. Confidential Exhibits 44C through 46C are claim charts demonstrating that the Domestic Industry Products practice the Asserted Patents. The following table identifies the exemplary Vicor Domestic Industry Product with the corresponding practiced Vicor Patent and exemplary practiced claims.

Asserted Vicor Patent	Exemplary Domestic Industry Product	Exemplary Practiced Claims
U.S. Patent No. 9,166,481	Vicor NBM2317S60D1580T0R	1
U.S. Patent No. 9,516,761	Vicor NBM2317S60D1580T0R	1, 2, 3, 4, 5, 6, 7
U.S. Patent No. 10,199,950	Vicor NBM2317S60D1580T0R	9, 13, 14, 33, 34, 35, 36, 37, 38

58. An exemplary claim chart showing how the Vicor Domestic Industry Products practice an exemplary claim of the ’481 Patent is attached as Confidential Exhibit 44C. This claim chart provides a basis for the technical domestic industry relating to the ’481 Patent.

59. An exemplary claim chart showing how the Vicor Domestic Industry Products practice exemplary claims of the ’761 Patent is attached as Confidential Exhibit 45C. This claim chart provides a basis for the technical domestic industry relating to the ’761 Patent.

60. An exemplary claim chart showing how the Vicor Domestic Industry Products practice exemplary claims of the ’950 Patent is attached as Confidential Exhibit 46C. This claim chart provides a basis for the technical domestic industry relating to the ’950 Patent.

B. Economic Prong: Vicor's Activities and Investments

61. Vicor engages in a broad range of qualifying domestic industry activities in the United States directed to the Domestic Industry Products protected by the Vicor Patents.

62. Vicor has made and continues to make significant investments in plant and equipment with respect to the Domestic Industry Products. Those investments are dedicated to research, design, development, engineering, product support, manufacturing, manufacturing support, firmware development, testing, and various customer support activities focused on the Domestic Industry Products.

63. Vicor has made and continues to make significant investments in labor and capital with respect to the Domestic Industry Products. Those investments in labor and capital are dedicated to research, development, design, engineering, product support, manufacturing, manufacturing support, firmware development, testing, and various customer support activities focused on the Domestic Industry Products.

64. Vicor further engages in the exploitation of the Vicor Patents through its substantial domestic investments in engineering, research, and development activities directed to the Domestic Industry Products that are protected by the Vicor Patents. These activities include, *inter alia*, engineering, research, development, and design tied to the claimed technology implemented in hardware, software, and firmware in the Domestic Industry Products. These activities have occurred in the past and are ongoing with respect to future versions of Vicor products currently under development.

65. Vicor was founded in Massachusetts in 1981 and has been headquartered there ever since. Vicor's technical activities directed to the Domestic Industry Products take place primarily at its Andover, Massachusetts facilities but also occur at facilities in California, Illinois,

and Rhode Island. *See* Exhibit 10C.

66. Vicor's investments and activities are significant and substantial both in absolute terms and relative to Vicor's overall operations, taking into account the nature of such expenditures in the power module industry in general, Vicor's relative size, and the relative importance of Vicor's domestic operations compared to its limited activities overseas.

67. Vicor's investments and activities are important to the protected articles and represent significant domestic added value, particularly where the protected articles are designed, developed, and produced domestically. Moreover, Vicor's investments and activities are significant and substantial in the context of comparable products, the company's overall investments, and the relevant marketplace.

68. Vicor's foreign product-related investments and activities related to the Domestic Industry Products, by contrast, are relatively small compared to Vicor's domestic activities.

69. The activities and investments described above are explained in detail in the confidential Declaration of Kemble Morrison, attached as Exhibit 10C.

II. SPECIFIC INSTANCES OF IMPORTATION AND SALE

70. On information and belief, the Proposed Respondents import, sell for importation, and/or sell within the United States after importation certain power converter modules and computing systems containing the same, that infringe, or are used to infringe, at least one valid and enforceable claim of each of the asserted Vicor Patents.

71. The Proposed Respondents' infringing products are not off-the-shelf products that are commercially available to the public through traditional sales channels. Instead, the infringing products are made for, and sold to, the Proposed Foxconn and Quanta Respondents and their OEM customers through individual company-to-company sales orders.

72. Pursuant to Commission Rule 201.12(a)(3), the following evidence establishes that the Proposed Respondents import, sell for importation, and/or sell within the United States after importation the following representative infringing power converter modules and computing systems (e.g., server boards) containing the same. The specific instances of importation, sale for importation, and/or sale after importation of infringing power converter modules and computing systems containing the same set forth below are illustrative and non-exhaustive examples of the Proposed Respondents' unlawful importation and/or sale of infringing products.

A. Delta

73. On information and belief, Delta is importing, selling for importation, and/or selling within the United States after importation, for example, the Delta U50SU Series High Power Density 48V / 12V Bi-Directional DC-DC Converter Power Module (e.g., the Delta U50SU4P162, the Delta U50SU4P162MAR, and the Delta U50SU4P162PMDRF) that infringe each of the Vicor Patents ("Delta Accused Products"). The specific instances set forth below are representative examples of Delta's unlawful importation, sale for importation, and/or sale within the United States after importation of infringing products.

74. On information and belief, Delta imports, sells for importation, and/or sells within the United States after importation the Delta Accused Products, including through its U.S.-based sales locations and employees. *See, e.g.*, Exhibit 11. For example, as detailed in Exhibit 47, Vicor's VP of Global Sales and Marketing obtained information from Quanta that confirms Quanta has qualified and tested server boards in the United States that include Delta U50SU4P162MAR power converters. As detailed in Exhibits 18C and 47, in October 2021, a Quanta employee confirmed to Vicor employees by email that several of Quanta's customers had completed in the United States their qualification testing of Delta U50SU4P162MAR power converters as a second source for their server boards supplied by Quanta.

75. Moreover, on or around January 18, 2022, Quanta verbally confirmed to a Vicor employee that Quanta shipped server boards with Delta U50SU4P162 power converter modules to a customer in the United States. *See* Exhibits 19C, 47.

76. Import records attached as Exhibit 20 provide examples of Delta importing Delta power modules into the United States. Accordingly, on information and belief, Delta has imported, sold for importation, and/or sold after importation to Quanta at least Delta U50SU4P162 and Delta U50SU4P162MAR power modules for incorporation in server boards sold to customers in the United States.

77. On information and belief, Delta manufactures the Delta Accused Products entirely outside the United States and imports them for sale in the United States. According to Delta's website, Delta does not manufacture any of the Delta Accused Products in the United States. *See* Exhibit 11 (identifying Delta's manufacturing plants as located entirely outside the United States with only sales offices located in the United States). The Delta Accused Products are part of Delta's "Power Module[]" offerings, which include Delta's "DC-DC converters integrating controller chips, chokes and I/O capacitors into a single power management package." *See* Exhibit 12 at 1. Delta's website explains that Delta's Power Modules are manufactured by Delta's wholly owned subsidiary Proposed Respondent Cyntec Co., Ltd. *See id.* (directing user to Cyntec's website for information regarding Delta Power Modules); Exhibit 13 at 16 (identifying Cyntec as wholly owned subsidiary); Exhibit 16 (Cyntec webpage advertising Delta Power Modules). Cyntec Co., Ltd.'s manufacturing facilities, in turn, are located exclusively in Taiwan and China. Exhibit 17 at 1.

78. Further, on information and belief, Delta also has imported, sold for importation, and/or sold within the United States after importation the Delta U50SU4P162PMDRF to Foxconn

for incorporation in server boards for U.S. customers. On November 9, 2021, a Foxconn employee from “FII-Foxconn” (*i.e.*, Proposed Respondent Foxconn Industrial Internet Co. Ltd.) contacted Vicor to review a schematic for a server board Foxconn designed for a U.S. customer that included a Delta U50SU4P162PMDRF power module. Exhibits 21C, 22C, 47. In the email, a Vicor employee confirms that a Foxconn engineer informed him that Vicor’s NBM product originally was on the schematic for the Foxconn server board but later was replaced by the Delta module. *See* Exhibits 21C, 47.

79. Additionally, on June 2, 2022, a Foxconn employee from “FII NA” (*i.e.*, Proposed Respondent FII USA Inc.) confirmed that another server board that Foxconn designed for a U.S. customer used a Delta power converter as the “main source” for the board. Exhibits 23C, 47. Per publicly available articles, Foxconn won the server business of U.S. customers—including major companies like Google—specifically because “Foxconn was the only manufacturer that could assemble the necessary components inside the US” at its Wisconsin facility. *E.g.*, Exhibits 24-27. When coupled with the evidence that Delta’s manufacturing occurs entirely abroad, and the import records demonstrating Delta’s importation of power modules into the United States, this correspondence further shows that Delta is importing, selling for importation, and/or selling within the United States after importation to Foxconn at least the Delta U50SU4P162PMDRF power module for incorporation in server boards.

B. Foxconn

80. On information and belief, Foxconn is importing, selling for importation, and/or selling within the United States after importation, for example, the infringing Delta U50SU4P162PMDRF power converter modules and/or computing systems (*e.g.*, servers, server boards, AI accelerators, and other computing equipment) containing the same (“Foxconn Accused Products”). The specific instances set forth below are representative examples of Foxconn’s

unlawful importation, sale for importation, and/or sale within the United States after importation of infringing products.

81. On information and belief, Foxconn imports the infringing Delta U50SU4P162PMDRF power modules into the United States for incorporation in server boards at its Wisconsin facility and sells computing systems containing the same within the United States.

82. For example, on November 9, 2021, a Foxconn employee from FII-Foxconn (*i.e.*, Proposed Respondent Foxconn Industrial Internet Co. Ltd.) contacted Vicor to review a schematic for a server board Foxconn manufactured for a U.S. customer that included the infringing Delta U50SU4P162PMDRF power converter module. Exhibits 21C, 22C, 47. In the email, a Vicor employee confirms that a Foxconn engineer informed him that Vicor’s NBM product originally was on the schematic for the Foxconn server board but later was replaced by the Delta module. *See* Exhibits 21C, 47.

83. Foxconn subsidiary Proposed Respondent FII USA Inc. operates a facility in Wisconsin that Foxconn touts on its public website and financial filings as specifically devoted to servers and server products that are then distributed across the country. *See, e.g.*, Exhibit 33 [Foxconn 2021 Q3 Statements] at 156 (identifying “[p]lants and datacenters” of FII USA Inc. as real estate of Foxconn); Exhibit 34 (<https://www.foxconnwiofficial.com/foxconn-in-wisconsin>).

84. Given that all Delta Accused Products are manufactured outside the United States, *see supra*, at ¶ 77, and Foxconn is manufacturing in the United States server boards that incorporate the Delta Accused Products, Foxconn is—at a minimum—selling after importation into the United States computing systems containing the accused Delta U50SU4P162PMDRF power modules.

85. Additionally, on June 2, 2022, a Foxconn employee from “FII NA” (*i.e.*, Proposed Respondent FII USA Inc.) confirmed that another server board that Foxconn designed for a U.S.

customer used a Delta power module as the “main source” for the board. Exhibits 23C, 47. Per publicly available articles, Foxconn won the server business of U.S. customers—including major companies like Google—specifically because “Foxconn was the only manufacturer that could assemble the necessary components inside the US” at its Wisconsin facility. *E.g.*, Exhibits 24-27.

86. Further, on information and belief, Foxconn also operates plants and facilities abroad that manufacture server boards and associated equipment, including in Taiwan, India, and China, that then import those servers to the United States. *E.g.*, Exhibits 28, 29. For example, Exhibit 30 contains importation records showing shipments of servers and server parts from Proposed Respondent Hon Hai Precision Industrial Co., Ltd. in China to the United States.

87. Further, Foxconn Industrial Internet Co. Ltd.’s website directs customers of Foxconn’s “Cloud Computing” products, including “High Performance Server[s],” “Edge Computing,” and “Storage Equipment,” to the website of Foxconn subsidiary Proposed Respondent Ingrasys Technology Inc. *See* Exhibit 35. As shown in the exemplary import records attached as Exhibit 31, Proposed Respondents Ingrasys Technology Inc. and Ingrasys Technology USA Inc. import server parts and products from abroad to the United States. *See also* Exhibit 32 at 727 (describing Ingrasys Technology USA Inc. as Foxconn’s subsidiary relating to “Computer Servers and Computer Storage Equipment”); *id.* at 809 (describing Ingrasys Technology Inc. as Foxconn’s subsidiary relating to, *inter alia*, “wired communication equipment and apparatus manufacturing, electronic parts and components manufacturing,” “retail sale of computing and business machinery equipment,” and “retail sale of electronic materials”). On information and belief, Foxconn then sells those components and systems throughout the United States through various U.S. sales offices, including in Texas, California, and Washington. *See* Exhibit 36.

C. Quanta

88. On information and belief, Quanta is importing, selling for importation, and/or selling within the United States after importation, for example, the Delta U50SU4P162 and Delta U50SU4P162MAR power converter modules and/or computing systems (e.g., server boards) containing the same that infringe each of the Vicor Patents (“Quanta Accused Products”). The specific instances set forth below are representative examples of Quanta’s unlawful importation, sale for importation, and/or sale within the United States after importation of infringing products.

89. On information and belief, Quanta imports, sells for importation, and/or sells within the United States after importation the Quanta Accused Products. For example, as detailed in Exhibit 47, Vicor’s VP of Global Sales and Marketing obtained information from Quanta that confirms Quanta has qualified and tested server boards in the United States that include Delta U50SU4P162MAR power converter modules. As explained in Exhibits 18C and 47, in October 2021, a Quanta employee confirmed to Vicor employees by email that several of Quanta’s customers had completed in the United States their qualification testing of Delta U50SU4P162MAR power converter modules as a second source (other than Vicor) for their Quanta-supplied server boards. *See also* Exhibit 37 (noting that Quanta supplies server, storage, and related devices to customers through Proposed Respondent Quanta Cloud Technology Inc. (“QCT”)).

90. Moreover, on or around January 18, 2022, Quanta verbally confirmed to a Vicor employee that Quanta shipped server boards with Delta U50SU4P162 power converter modules to a customer in the United States. Exhibits 19C, 47.

91. Further, as set forth *supra*, at ¶ 77, all Delta Accused Products are manufactured outside the United States. Accordingly, Quanta—at a minimum—is selling after importation (if not also directly importing) into the United States systems containing the accused Delta

U50SU4P162 power converter modules. For example, attached as Exhibit 39 are import records that show Proposed Respondent Quanta Computer Inc. imports servers, server boards, and server parts from Taiwan to the United States to various customers. And attached as Exhibit 40 are import records that show Proposed Respondent Quanta Cloud Technology Inc. imports servers from Taiwan to the United States to Quanta subsidiary and Proposed Respondent Quanta Cloud Technology USA LLC.

VII. UNLAWFUL AND UNFAIR ACTS COMMITTED BY THE PROPOSED RESPONDENTS

92. Vicor asserts that the Proposed Respondents infringe, literally or under the doctrine of equivalents, at least the following claims of the asserted Vicor Patents, in violation of 35 U.S.C. §§ 271(a), (b), and (c). Without discovery, Vicor cannot exhaustively identify all power converter modules and computing systems containing the same that infringe the asserted Vicor Patents and are sold for importation into the United States, imported into the United States, and/or sold within the United States after importation. Vicor reserves its right to supplement its allegations, to further amend this Complaint, and to add respondents and accused products in the future if necessary based on discovery received during the Investigation. Attached as Exhibits 41 through 43 are claim charts that show how exemplary Accused Products infringe independent claims of the Vicor Patents.

Asserted Vicor Patents	Asserted Independent Claims	Asserted Dependent Claims
U.S. Patent No. 9,166,481	1	
U.S. Patent No. 9,516,761	1	2, 3, 4, 5, 6, 7
U.S. Patent No. 10,199,950	9 and 33	13, 14, 34, 35, 36, 37, 38

A. Delta

i. Infringement of the '481 Patent

93. On information and belief, Delta imports, sells for importation, and/or sells within

the United States after importation certain Accused Products, such as the Delta U50SU Series High Power Density 48V / 12V Bi-Directional DC-DC Converter Power Module (e.g., the Delta U50SU4P162, the Delta U50SU4P162MAR, and the Delta U50SU4P162PMDRF), which directly infringe, literally and/or under the doctrine of the equivalents, at least claim 1 of the '481 Patent in violation of 35 U.S.C. § 271(a). The Delta Accused Products satisfy all claim limitations of claim 1 of the '481 Patent at the time of importation, sale for importation, and/or sale after importation.

94. Delta also knowingly and intentionally induces infringement of at least claim 1 of the '481 Patent in violation of 35 U.S.C. § 271(b). No later than as of the filing and service of this Complaint and also the filing of the related District Court complaint referenced in Section IX, Delta has had knowledge of the '481 Patent and the infringing nature of the Delta Accused Products. Despite this knowledge of the '481 Patent, Delta continues to actively encourage and instruct its customers and end users (for example, through its marketing and technical support) to use the Delta Accused Products in ways that directly infringe the '481 Patent literally and/or under the doctrine of equivalents. Delta does so knowing and intending that its customers and end users will commit these infringing acts. Delta also continues to import, sell for importation, and/or sell in the United States the Delta Accused Products, despite its knowledge of the '481 Patent, thereby specifically intending for and inducing its customers to infringe the '481 Patent through the customers' normal and customary use of the Delta Accused Products.

95. Delta also contributorily infringes the '481 Patent in violation of 35 U.S.C. § 271(c) by selling or offering to sell within the United States or import into the United States power converter modules and computing systems containing the same that incorporate or constitute a material part of the inventions claimed by the '481 Patent. Delta does so knowing that these

components are especially made or especially adapted for uses that infringe the '481 Patent, and are not staple articles or commodities of commerce suitable for substantial non-infringing use.

96. A claim chart comparing independent claim 1 of the '481 Patent to the Delta Accused Products, and including photographs and drawings where applicable, is attached as Exhibit 41.

ii. Infringement of the '761 Patent

97. On information and belief, Delta imports, sells for importation, and/or sells within the United States after importation certain Accused Products, such as the Delta U50SU Series High Power Density 48V / 12V Bi-Directional DC-DC Converter Power Module (e.g., the Delta U50SU4P162, the Delta U50SU4P162MAR, and the Delta U50SU4P162PMDRF), which directly infringe, literally and/or under the doctrine of the equivalents, at least claims 1, 2, 3, 4, 5, 6, and 7 of the '761 Patent in violation of 35 U.S.C. § 271(a). The Delta Accused Products satisfy all claim limitations of claims 1, 2, 3, 4, 5, 6, and 7 of the '761 Patent at the time of importation, sale for importation, and/or sale after importation.

98. Delta also knowingly and intentionally induces infringement of at least claims 1, 2, 3, 4, 5, 6, and 7 of the '761 Patent in violation of 35 U.S.C. § 271(b). No later than as of the filing and service of this Complaint and also the filing of the related District Court complaint referenced in Section IX, Delta has had knowledge of the '761 Patent and the infringing nature of the Delta Accused Products. Despite this knowledge of the '761 Patent, Delta continues to actively encourage and instruct its customers and end users (for example, through its marketing and technical support) to use the Delta Accused Products in ways that directly infringe the '761 Patent literally and/or under the doctrine of equivalents. Delta does so knowing and intending that its customers and end users will commit these infringing acts. Delta also continues to import, sell for

importation, and/or sell in the United States the Delta Accused Products, despite its knowledge of the '761 Patent, thereby specifically intending for and inducing its customers to infringe the '761 Patent through the customers' normal and customary use of the Delta Accused Products.

99. Delta also contributorily infringes the '761 Patent in violation of 35 U.S.C. § 271(c) by selling or offering to sell within the United States or import into the United States power converter modules and computing systems containing the same that incorporate or constitute a material part of the inventions claimed by the '761 Patent. Delta does so knowing that these components are especially made or especially adapted for uses that infringe the '761 Patent, and are not staple articles or commodities of commerce suitable for substantial non-infringing use.

100. A claim chart comparing independent claim 1 of the '761 Patent to the Delta Accused Products, and including photographs and drawings where applicable, is attached as Exhibit 42.

iii. Infringement of the '950 Patent

101. On information and belief, Delta imports, sells for importation, and/or sells within the United States after importation certain Accused Products, such as the Delta U50SU Series High Power Density 48V / 12V Bi-Directional DC-DC Converter Power Module (e.g., the Delta U50SU4P162, the Delta U50SU4P162MAR, and the Delta U50SU4P162PMDRF), which directly infringe, literally and/or under the doctrine of the equivalents, at least claims 9, 13, 14, 33, 34, 35, 36, 37, and 38 of the '950 Patent in violation of 35 U.S.C. § 271(a). The Delta Accused Products satisfy all claim limitations of claims 9, 13, 14, 33, 34, 35, 36, 37, and 38 of the '950 Patent at the time of importation, sale for importation, and/or sale after importation.

102. Delta also knowingly and intentionally induces infringement of at least claims 9, 13, 14, 33, 34, 35, 36, 37, and 38 of the '950 Patent in violation of 35 U.S.C. § 271(b). No later

than as of filing and service of this Complaint and also the filing of the related District Court complaint referenced in Section IX, Delta has had knowledge of the '950 Patent and the infringing nature of the Delta Accused Products. Despite this knowledge of the '950 Patent, Delta continues to actively encourage and instruct its customers and end users (for example, through its marketing and technical support) to use the Delta Accused Products in ways that directly infringe the '950 Patent literally and/or under the doctrine of equivalents. Delta does so knowing and intending that its customers and end users will commit these infringing acts. Delta also continues to import, sell for importation, and/or sell in the United States the Delta Accused Products, despite its knowledge of the '950 Patent, thereby specifically intending for and inducing its customers to infringe the '950 Patent through the customers' normal and customary use of the Delta Accused Products.

103. Delta also contributorily infringes the '950 Patent in violation of 35 U.S.C. § 271(c) by selling or offering to sell within the United States or import into the United States power converter modules and computing systems containing the same that incorporate or constitute a material part of the inventions claimed by the '950 Patent. Delta does so knowing that these components are especially made or especially adapted for uses that infringe the '950 Patent, and are not staple articles or commodities of commerce suitable for substantial non-infringing use.

104. A claim chart comparing independent claims 9 and 33 of the '950 Patent to the Delta Accused Products, and including photographs and drawings where applicable, is attached as Exhibit 43.

B. Foxconn

i. Infringement of the '481 Patent

105. On information and belief, Foxconn imports, sells for importation, and/or sells within the United States after importation certain Accused Products, such as the Delta U50SU Series High Power Density 48V / 12V Bi-Directional DC-DC Converter Power Module (e.g., the

Delta U50SU4P162 and the Delta U50SU4P162PMDRF) and/or computing systems (e.g., server boards, servers, computers, and other computing equipment) containing the same, which directly infringe, literally and/or under the doctrine of the equivalents, at least claim 1 of the '481 Patent in violation of 35 U.S.C. § 271(a). The Foxconn Accused Products satisfy all claim limitations of claim 1 of the '481 Patent at the time of importation, sale for importation, and/or sale after importation.

106. Foxconn also knowingly and intentionally induces infringement of at least claim 1 of the '481 Patent in violation of 35 U.S.C. § 271(b). No later than as of the filing and service of this Complaint and also the filing of the related District Court complaint referenced in Section IX, Foxconn has had knowledge of the '481 Patent and the infringing nature of the Foxconn Accused Products. Despite this knowledge of the '481 Patent, Foxconn continues to actively encourage and instruct its customers and end users (for example, through its marketing and technical support) to use the Foxconn Accused Products in ways that directly infringe the '481 Patent literally and/or under the doctrine of equivalents. Foxconn does so knowing and intending that its customers and end users will commit these infringing acts. Foxconn also continues to import, sell for importation, and/or sell in the United States the Foxconn Accused Products, despite its knowledge of the '481 Patent, thereby specifically intending for and inducing its customers to infringe the '481 Patent through the customers' normal and customary use of the Foxconn Accused Products.

107. Foxconn also contributorily infringes the '481 Patent in violation of 35 U.S.C. § 271(c) by selling or offering to sell within the United States or import into the United States power converter modules and computing systems containing the same that incorporate or constitute a material part of the inventions claimed by the '481 Patent. Foxconn does so knowing that these components are especially made or especially adapted for uses that infringe the '481

Patent, and are not staple articles or commodities of commerce suitable for substantial non-infringing use.

108. A claim chart comparing independent claim 1 of the '481 Patent to the Foxconn Accused Products, and including photographs and drawings where applicable, is attached as Exhibit 41.

ii. Infringement of the '761 Patent

109. On information and belief, Foxconn imports, sells for importation, and/or sells within the United States after importation certain Accused Products, such as the Delta U50SU Series High Power Density 48V / 12V Bi-Directional DC-DC Converter Power Module (e.g., the Delta U50SU4P162 and the Delta U50SU4P162PMDRF) and/or computing systems (e.g., server boards, servers, computers, and other computing equipment) containing the same, which directly infringe, literally and/or under the doctrine of the equivalents, at least claims 1, 2, 3, 4, 5, 6, and 7 of the '761 Patent in violation of 35 U.S.C. § 271(a). The Foxconn Accused Products satisfy all claim limitations of claims 1, 2, 3, 4, 5, 6, and 7 of the '761 Patent at the time of importation, sale for importation, and/or sale after importation.

110. Foxconn also knowingly and intentionally induces infringement of at least claims 1, 2, 3, 4, 5, 6, and 7 of the '761 Patent in violation of 35 U.S.C. § 271(b). No later than as of the filing and service of this Complaint and also the filing of the related District Court complaint referenced in Section IX, Foxconn has had knowledge of the '761 Patent and the infringing nature of the Foxconn Accused Products. Despite this knowledge of the '761 Patent, Foxconn continues to actively encourage and instruct its customers and end users (for example, through its marketing and technical support) to use the Foxconn Accused Products in ways that directly infringe the '761 Patent literally and/or under the doctrine of equivalents. Foxconn does so knowing and intending

that its customers and end users will commit these infringing acts. Foxconn also continues to import, sell for importation, and/or sell in the United States the Foxconn Accused Products, despite its knowledge of the '761 Patent, thereby specifically intending for and inducing its customers to infringe the '761 Patent through the customers' normal and customary use of the Foxconn Accused Products.

111. Foxconn also contributorily infringes the '761 Patent in violation of 35 U.S.C. § 271(c) by selling or offering to sell within the United States or import into the United States power converter modules and computing systems containing the same that incorporate or constitute a material part of the inventions claimed by the '761 Patent. Foxconn does so knowing that these components are especially made or especially adapted for uses that infringe the '761 Patent, and are not staple articles or commodities of commerce suitable for substantial non-infringing use.

112. A claim chart comparing independent claim 1 of the '761 Patent to the Foxconn Accused Products, and including photographs and drawings where applicable, is attached as Exhibit 42.

iii. Infringement of the '950 Patent

113. On information and belief, Foxconn imports, sells for importation, and/or sells within the United States after importation certain Accused Products, such as the Delta U50SU Series High Power Density 48V / 12V Bi-Directional DC-DC Converter Power Module (e.g., the Delta U50SU4P162 and the Delta U50SU4P162PMDRF) and/or computing systems (e.g., server boards, servers, computers, and other computing equipment) containing the same, which directly infringe, literally and/or under the doctrine of the equivalents, at least claims 9, 13, 14, 33, 34, 35, 36, 37, and 38 of the '950 Patent in violation of 35 U.S.C. § 271(a). The Foxconn Accused Products

satisfy all claim limitations of claims 9, 13, 14, 33, 34, 35, 36, 37, and 38 of the '950 Patent at the time of importation, sale for importation, and/or sale after importation.

114. Foxconn also knowingly and intentionally induces infringement of at least claims 9, 13, 14, 33, 34, 35, 36, 37, and 38 of the '950 Patent in violation of 35 U.S.C. § 271(b). No later than as of the filing and service of this Complaint and also the filing of the related District Court complaint referenced in Section IX, Foxconn has had knowledge of the '950 Patent and the infringing nature of the Foxconn Accused Products. Despite this knowledge of the '950 Patent, Foxconn continues to actively encourage and instruct its customers and end users (for example, through its marketing and technical support) to use the Foxconn Accused Products in ways that directly infringe the '950 Patent literally and/or under the doctrine of equivalents. Foxconn does so knowing and intending that its customers and end users will commit these infringing acts. Foxconn also continues to import, sell for importation, and/or sell in the United States the Foxconn Accused Products, despite its knowledge of the '950 Patent, thereby specifically intending for and inducing its customers to infringe the '950 Patent through the customers' normal and customary use of the Foxconn Accused Products.

115. Foxconn also contributorily infringes the '950 Patent in violation of 35 U.S.C. § 271(c) by selling or offering to sell within the United States or import into the United States power converter modules and computing systems containing the same that incorporate or constitute a material part of the inventions claimed by the '950 Patent. Foxconn does so knowing that these components are especially made or especially adapted for uses that infringe the '950 Patent, and are not staple articles or commodities of commerce suitable for substantial non-infringing use.

116. A claim chart comparing independent claims 9 and 33 of the '950 Patent to the Foxconn Accused Products, and including photographs and drawings where applicable, is attached as Exhibit 43.

C. Quanta

i. Infringement of the '481 Patent

117. On information and belief, Quanta imports, sells for importation, and/or sells within the United States after importation certain Accused Products, such as the Delta U50SU Series High Power Density 48V / 12V Bi-Directional DC-DC Converter Power Module (e.g., the Delta U50SU4P162 and Delta U50SU4P162MAR) and/or computing systems (e.g., server boards, servers, computers, and other computing equipment) containing the same, which directly infringe, literally and/or under the doctrine of the equivalents, at least claim 1 of the '481 Patent in violation of 35 U.S.C. § 271(a). The Quanta Accused Products satisfy all claim limitations of claim 1 of the '481 Patent at the time of importation, sale for importation, and/or sale after importation.

118. Quanta also knowingly and intentionally induces infringement of at least claim 1 of the '481 Patent in violation of 35 U.S.C. § 271(b). No later than as of the filing and service of this Complaint and also the filing of the related District Court complaint referenced in Section IX, Quanta has had knowledge of the '481 Patent and the infringing nature of the Quanta Accused Products. Despite this knowledge of the '481 Patent, Quanta continues to actively encourage and instruct its customers and end users (for example, through its marketing and technical support) to use the Quanta Accused Products in ways that directly infringe the '481 Patent literally and/or under the doctrine of equivalents. Quanta does so knowing and intending that its customers and end users will commit these infringing acts. Quanta also continues to import, sell for importation, and/or sell in the United States the Quanta Accused Products, despite its knowledge of the '481

Patent, thereby specifically intending for and inducing its customers to infringe the '481 Patent through the customers' normal and customary use of the Quanta Accused Products.

119. Quanta also contributorily infringes the '481 Patent in violation of 35 U.S.C. § 271(c) by selling or offering to sell within the United States or import into the United States power converter modules and computing systems containing the same that incorporate or constitute a material part of the inventions claimed by the '481 Patent. Quanta does so knowing that these components are especially made or especially adapted for uses that infringe the '481 Patent, and are not staple articles or commodities of commerce suitable for substantial non-infringing use.

120. A claim chart comparing independent claim 1 of the '481 Patent to the Quanta Accused Products, and including photographs and drawings where applicable, is attached as Exhibit 41.

ii. Infringement of the '761 Patent

121. On information and belief, Quanta imports, sells for importation, and/or sells within the United States after importation certain Accused Products, such as the Delta U50SU Series High Power Density 48V / 12V Bi-Directional DC-DC Converter Power Module (e.g., the Delta U50SU4P162 and Delta U50SU4P162MAR) and/or computing systems (e.g., server boards, servers, computers, and other computing equipment) containing the same, which directly infringe, literally and/or under the doctrine of the equivalents, at least claims 1, 2, 3, 4, 5, 6, and 7 of the '761 Patent in violation of 35 U.S.C. § 271(a). The Quanta Accused Products satisfy all claim limitations of claims 1, 2, 3, 4, 5, 6, and 7 of the '761 Patent at the time of importation, sale for importation, and/or sale after importation.

122. Quanta also knowingly and intentionally induces infringement of at least claims 1, 2, 3, 4, 5, 6, and 7 of the '761 Patent in violation of 35 U.S.C. § 271(b). No later than as of the filing and service of this Complaint and also the filing of the related District Court complaint referenced in Section IX, Quanta has had knowledge of the '761 Patent and the infringing nature of the Quanta Accused Products. Despite this knowledge of the '761 Patent, Quanta continues to actively encourage and instruct its customers and end users (for example, through its marketing and technical support) to use the Quanta Accused Products in ways that directly infringe the '761 Patent literally and/or under the doctrine of equivalents. Quanta does so knowing and intending that its customers and end users will commit these infringing acts. Quanta also continues to import, sell for importation, and/or sell in the United States the Quanta Accused Products, despite its knowledge of the '761 Patent, thereby specifically intending for and inducing its customers to infringe the '761 Patent through the customers' normal and customary use of the Quanta Accused Products.

123. Quanta also contributorily infringes the '761 Patent in violation of 35 U.S.C. § 271(c) by selling or offering to sell within the United States or import into the United States power converter modules and computing systems containing the same that incorporate or constitute a material part of the inventions claimed by the '761 Patent. Quanta does so knowing that these components are especially made or especially adapted for uses that infringe the '761 Patent, and are not staple articles or commodities of commerce suitable for substantial non-infringing use.

124. A claim chart comparing independent claim 1 of the '761 Patent to the Quanta Accused Products, and including photographs and drawings where applicable, is attached as Exhibit 42.

iii. Infringement of the '950 Patent

125. On information and belief, Quanta imports, sells for importation, and/or sells within the United States after importation certain Accused Products, such as the Delta U50SU Series High Power Density 48V / 12V Bi-Directional DC-DC Converter Power Module (e.g., the Delta U50SU4P162 and Delta U50SU4P162MAR) and/or computing systems (e.g., server boards, servers, computers, and other computing equipment) containing the same, which directly infringe, literally and/or under the doctrine of the equivalents, at least claims 9, 13, 14, 33, 34, 35, 36, 37, and 38 of the '950 Patent in violation of 35 U.S.C. § 271(a). The Quanta Accused Products satisfy all claim limitations of claims 9, 13, 14, 33, 34, 35, 36, 37, and 38 of the '950 Patent at the time of importation, sale for importation, and/or sale after importation.

126. Quanta also knowingly and intentionally induces infringement of at least claims 9, 13, 14, 33, 34, 35, 36, 37, and 38 of the '950 Patent in violation of 35 U.S.C. § 271(b). No later than as of the filing and service of this Complaint and also the filing of the related District Court complaint referenced in Section IX, Quanta has had knowledge of the '950 Patent and the infringing nature of the Quanta Accused Products. Despite this knowledge of the '950 Patent, Quanta continues to actively encourage and instruct its customers and end users (for example, through its marketing and technical support) to use the Quanta Accused Products in ways that directly infringe the '950 Patent literally and/or under the doctrine of equivalents. Quanta does so knowing and intending that its customers and end users will commit these infringing acts. Quanta also continues to import, sell for importation, and/or sell in the United States the Quanta Accused Products, despite its knowledge of the '950 Patent, thereby specifically intending for and inducing its customers to infringe the '950 Patent through the customers' normal and customary use of the Quanta Accused Products.

127. Quanta also contributorily infringes the '950 Patent in violation of 35 U.S.C. § 271(c) by selling or offering to sell within the United States or import into the United States power converter modules and computing systems containing the same that incorporate or constitute a material part of the inventions claimed by the '950 Patent. Quanta does so knowing that these components are especially made or especially adapted for uses that infringe the '950 Patent, and are not staple articles or commodities of commerce suitable for substantial non-infringing use.

128. A claim chart comparing independent claims 9 and 33 of the '950 Patent to the Quanta Accused Products, and including photographs and drawings where applicable, is attached as Exhibit 43.

VIII. CLASSIFICATION OF THE ACCUSED PRODUCTS UNDER THE HARMONIZED TARIFF SCHEDULE

129. The Accused Products are classified under at least the following classifications of the Harmonized Tariff Schedule of the United States: 8501, 8504, 8504.40, 8504.40.90, 8504.90, 8504.90.96, 8537.10.6000, 8541, and 8542.31. These HTS identifications are illustrative and not exhaustive. These classifications are exemplary in nature, are intended for illustration only, and are not intended to restrict the scope of the Accused Products, the investigation, any exclusion order, or any of the requested relief.

IX. RELATED LITIGATION

130. Vicor has filed a complaint in the United States District Court for the Eastern District of Texas against the Proposed Respondents, alleging infringement of one or more claims of the Vicor Patents asserted in this Complaint. *See Vicor Corp. v. Delta Electronics, Inc., et. al.*, 2:23-cv-00323-JRG-RSP.

131. To Vicor's knowledge, the asserted Vicor Patents are not and have not been the subject of any current or prior litigation other than the litigation specified above.

X. RELIEF REQUESTED

WHEREFORE, by reason of the foregoing, Complainant Vicor respectfully requests that the United States International Trade Commission:

- (a) institute an investigation pursuant to Section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. § 1337, with respect to the Proposed Respondents' violations of that section based on the importation into the United States, sale for importation, and/or the sale within the United States after importation of Proposed Respondents' infringing products;
- (b) issue a limited exclusion order pursuant to 19 U.S.C. § 1337(d) forbidding entry into the United States of Proposed Respondents' products that infringe one or more claims of United States Patent Nos. 9,166,481, 9,516,761, and 10,199,950;
- (c) issue a cease and desist order, pursuant to 19 U.S.C. § 1337(f), prohibiting the Proposed Respondents, their domestic subsidiaries, and their related companies and agents from engaging in the importation, sale for importation, marketing, distribution, offering for sale, the sale after importation of, or otherwise transferring within the United States products that infringe United States Patent Nos. 9,166,481, 9,516,761, and 10,199,950;
- (d) impose a bond upon importation and sales of infringing products during the 60-day Presidential review period pursuant to 19 U.S.C. § 1337(j); and
- (e) issue such other and further relief as the Commission deems just and proper under the law, based upon the facts determined by the investigation and the authority of the Commission.

Dated: July 12, 2023

Respectfully submitted,

Louis S. Mastriani

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