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20 ATTORNEYS FOR PLAINTIFF  
21 PARITY NETWORKS, LLC

22 **UNITED STATES DISTRICT COURT**  
23 **CENTRAL DISTRICT OF CALIFORNIA**  
24 **SOUTHERN DIVISION**

25 PARITY NETWORKS, LLC,

26 Plaintiff,

27 v.

28 EDGECORE USA CORPORATION,  
EDGECORE AMERICAS  
NETWORKING CORPORATION and  
EDGECORE NETWORKS  
CORPORATION,

Defendants.

Case No. 8:20-cv-00699-JVS-KES

**PLAINTIFF'S THIRD AMENDED  
COMPLAINT OF PATENT  
INFRINGEMENT**

**DEMAND FOR JURY TRIAL**

1 Plaintiff Parity Networks LLC (“Plaintiff” or “Parity Networks”), by and  
2 through its attorneys, for its Third Amended Complaint against Edgecore USA  
3 Corporation, Edgecore Americas Networking Corporation and Edgecore Networks  
4 Corporation (collectively, “Defendant” or “Edgecore”), and demanding trial by  
5 jury, hereby alleges as follows:

6 **I. NATURE OF THE ACTION**

7 1. This is an action for patent infringement arising under the patent laws  
8 of the United States, 35 U.S.C. §§ 271, *et seq.*, to enjoin and obtain damages  
9 resulting from Defendant’s unauthorized use, sale, and offer to sell in the United  
10 States of products, methods, processes, services and/or systems that infringe Parity  
11 Networks’ United States patents, as described herein.

12 2. Edgecore manufactures, provides, uses, sells, offers for sale, imports,  
13 and/or distributes infringing products and services; and encourages others to use  
14 its products and services in an infringing manner, including their customers, as set  
15 forth herein.

16 3. Parity Networks seeks past and future damages and prejudgment and  
17 post-judgment interest for Edgecore’s past infringement of the Patents-in-Suit, as  
18 defined below.

19 **II. PARTIES**

20 4. Plaintiff Parity Networks is a limited liability company organized and  
21 existing under the laws of the State of Texas.

22 5. On information and belief, Defendant Edgecore USA Corporation is  
23 a corporation organized under the laws of California, with a place of business at  
24 20 Mason, Irvine, CA 92618. Edgecore USA Corporation’s registered agent for  
25 service of process in California is Jen Tsung Shueh, 20 Mason, Irvine, CA 92618.

26 6. On information and belief, Defendant Edgecore Americas  
27 Networking Corporation is a corporation organized under the laws of California,  
28 with a place of business at 20 Mason, Irvine, CA 92618. Edgecore USA

1 Corporation's registered agent for service of process in California is Jen Tsung  
2 Shueh, 20 Mason, Irvine, CA 92618.

3 7. On information and belief, Defendant Edgecore Networks  
4 Corporation is a corporation organized under the laws of Taiwan, with a place of  
5 business at No.1, Creation Rd.3, Hsinchu Science Park, Hsinchu, 30077, Taiwan,  
6 R.O.C.

### 7 III. JURISDICTION AND VENUE

8 8. This is an action for patent infringement arising under the Patent Laws  
9 of the United States, in particular 35 U.S.C. §271, 281, 283, 284, and 285. This  
10 Court has jurisdiction over the subject matter of this action under 28 U.S.C. §1331  
11 and 1338(a).

12 9. Upon information and belief, Defendant transacts substantial business  
13 in the State of California and the Central District of California. Defendant, directly  
14 in its office in Irvine, California, and through subsidiaries or intermediaries  
15 (including distributors, retailers, resellers and others), has purposefully and  
16 voluntarily placed one or more of their infringing products, as described below,  
17 into the stream of commerce with the expectation that these infringing products  
18 will be purchased and used by customers in the District. Defendant has committed  
19 acts of patent infringement within the District.

20 10. Defendant has also placed downstream products containing infringing  
21 components into the stream of commerce by shipping infringing products into  
22 California, knowing that they would be shipped into California, and/or knowing  
23 that these infringing products would be incorporated into other products that would  
24 be shipped into California.

25 11. On information and belief, Defendant interacts with distributors and  
26 customers who sell the infringing products into California, knowing that these  
27 customers will sell the infringing products into California, either directly or  
28 through intermediaries.



1 18. Parity Networks is the owner of all right, title and interest in and to  
2 U.S. Patent No. 7,719,963 (the “’963 Patent”), entitled “System for Fabric Patent  
3 Control,” issued on May 18, 2010.

4 19. Together, the foregoing patents are referred to herein as the “Patents-  
5 in-Suit.” Parity Networks is the assignee of the Patents-in-Suit and has all rights to  
6 sue for infringement and collect past and future damages for the infringement  
7 thereof.

8 CLAIM CONSTRUCTION

9 20. On December 22, 2020, the Court issued its claim construction order  
10 that, among other findings, found the terms “packet processor” and “unsure  
11 sources” of U.S. Patent No. 7,103,046 (the “’046 Patent) to be indefinite.  
12 Accordingly, Parity has not alleged infringement of the ’046 Patent by Defendant  
13 in its Second Amended Complaint. However, Parity reserves the right to later seek  
14 to reassert infringement of the ’046 Patent in the event that the indefiniteness  
15 findings are reversed on appeal.

16 DEFENDANT’S ACTS

17 21. Edgecore is a global provider of data networking products and  
18 solutions and provides hardware and software directed to switching and routing  
19 network data to its customers in the United States, including in this District.  
20 Edgecore provides a variety of networking switches. “Edgecore Networks provides  
21 a full range of managed switches to fulfill different deployment requirements, from  
22 small/medium business users, enterprises to carrier-level service providers, from  
23 simple web smart switches to Layer 2 and Layer 3 switches.” [https://www.edge-  
24 core.com/productsKind.php?cls=2](https://www.edgecore.com/productsKind.php?cls=2).

25 22. On information and belief, Edgecore designs, develops, supports and  
26 coordinates the importation into the United States of the Exemplary Accused  
27 Products set forth below, including its switches intended for business networking  
28 applications in the following series: AS4600 Series Switches, AS5600 Series

1 Switches, AS5700 Series Switches, AS5712 Series Switch, AS 5800 Series  
2 Switch, AS5812 Series Switches, AS6700 Series Switches, AS6701 Series Switch,  
3 AS7312 Series Switch, AS7700 Series Switches, ECS2100 Series Switch,  
4 ECS2110 Series Switch, ECS3500 Series Switch, ECS4100 Series Switches,  
5 ECS4120 Series Switch, ECS4210 Series Switches, ECS4510 Series Switches,  
6 ECS4620 Series Switch, ECS4660 Carrier Series Switches, ECS5520 Series  
7 Switches (collectively, the “Exemplary Accused Products”).

8 23. Parity served Edgecore with its preliminary infringement contentions  
9 on July 20, 2020 and its final infringement contentions on February 16, 2021. The  
10 preliminary infringement contentions comprised six claim charts, one for each of  
11 the patents asserted as of that date. The final infringement contentions comprised  
12 thirty claim charts with between two to eleven claim charts included for each of  
13 the Patents-in-Suit. Both the preliminary and final infringement contentions  
14 provide an element-by-element statement of the theories of infringement and  
15 exemplary evidence of Edgecore’s infringing hardware, software, and acts,  
16 including extensive citations to Edgecore’s publicly available technical and  
17 marketing materials. True and correct copies of one claim chart from Parity’s final  
18 infringement contentions for each of the five Patents-in-Suit are attached hereto as  
19 **Exhibit 1** (infringement of the ’005 Patent), **Exhibit 2** (infringement of the ’394  
20 Patent), **Exhibit 3** (infringement of the ’844 Patent), **Exhibit 4** (infringement of  
21 the ’352 Patent), and **Exhibit 5** (infringement of the ’963 Patent).

22 24. Generally, Edgecore is a global provider of high-performance  
23 Ethernet switches for industrial applications, which it provides to its customers in  
24 the United States, including in this District.

25 25. Many Edgecore switches support multiple operating systems. PicOS  
26 is one such example and Cumulus Linux is another.

27 26. Edgecore infringes the ’005 Patent through its provision of the  
28 Exemplary Accused Products as set forth in Count 1 and **Exhibit 1**. For example,

1 in the AS7700 Series Switches based on the Cumulus Linux operating system, a  
 2 hash function is used to process a source/destination address. The result based upon  
 3 the hash function is produced as a binary string.

4 27. Edgecore infringes the '394 Patent—as set forth in Count 2 and  
 5 **Exhibit 2**—and the '352 Patent—as set forth in Count 4 and **Exhibit 4**—through  
 6 its provision of the Exemplary Accused Products. For example, these Exemplary  
 7 Accused Products include access control lists (“ACLs”) implemented at the ingress  
 8 port for egress determinations, e.g. filtering and pass/drop determinations.

## 9 --- 10 Access Control Lists

11  
 12  
 13  
 14 Access Control Lists (ACL) provide packet filtering for IPv4 frames (based on  
 15 address, protocol, Layer 4 protocol port number or TCP control code), IPv6 frames  
 16 (based on address, DSCP traffic class, next header type, or flow label), or any frames  
 17 (based on MAC address or Ethernet type). To filter packets, first create an access list,  
 18 describes the Access Control List commands.

18 **Table 60: Access Control List Commands**

19 Command Group	Function
20 IPv4 ACLs	Configures ACLs based on IPv4 addresses, TCP/UDP port number, protocol type, and TCP control code
21 IPv6 ACLs	Configures ACLs based on IPv6 addresses
22 MAC ACLs	Configures ACLs based on hardware addresses, packet format, and Ethernet type
23 ARP ACLs	Configures ACLs based on ARP messages addresses
24 ACL Information	Displays ACLs and associated rules; shows ACLs assigned to each port

25 CLI Reference Guide-AS5812\_CLI-R02\_20191203, p. 331 (available at  
 26 [https://www.edge-core.com/upload/images/AS5812\\_CLI-R02\\_20191203.pdf](https://www.edge-core.com/upload/images/AS5812_CLI-R02_20191203.pdf)).

1           28. Edgecore infringes the '844 Patent through its provision of the  
2 Exemplary Accused Products as set forth in Count 3 and **Exhibit 3**. More  
3 specifically, certain of Edgecore's Exemplary Accused Products, including the  
4 AS6700, support multicasting by its implementation and promotion of multicast-  
5 specific protocols, *e.g.* Protocol Independent Multicasting (PIM) and Internet  
6 Group Management Protocol (IGMP).

7           29. In IP multicast forwarding, the packets assigned for multicasting  
8 arrive at a port on the egress path and are diverted for duplication and are forwarded  
9 to other output ports. The multicast routing table can be used for achieving the  
10 multicasting.

Multicast Input	The number of packets, delivered by this sub-layer to a higher (sub-layer), which were addressed to a multicast address at this sub-layer.
Multicast Output	The total number of packets that higher-level protocols requested be transmitted, and which were addressed to a multicast address at this sub-layer, including those that were discarded or not sent.

11  
12  
13  
14 AS6700-32X CLI Reference Guide, p. 371 (available at [https://www.edgecore.com/upload/images/AS5710-54X-EC\\_CLI\\_2016-03-25.pdf](https://www.edgecore.com/upload/images/AS5710-54X-EC_CLI_2016-03-25.pdf)).

15  
16           30. Additionally, certain of Edgecore's Exemplary Accused Products  
17 implement Priority Flow Control (PFC) to provide granular flow control for  
18 prioritizing packets from certain sources and limiting or pausing others.

19  
20           Priority Flow Control or PFC is a kind of flow control mechanism.  
21 The advantage of PFC over traditional Flow Control mechanisms is  
22 that PFC provides flow control based on per code point (priority). In  
23 other words, PFC provides a more granular form of flow control. This  
24 means that if traffic from one particular priority suffers from  
25 congestion, only that traffic is paused until congestion clears away,  
26 whereas traffic for other priorities continues unhindered. On each  
27 physical port, there are 8 (0 to 7) Class of Service (CoS) queues, if  
28 congestion is detected on the egress physical port, the ingress port will  
send a PAUSE frame to the transmitting node to pause transmission  
until the receiving node is ready to accept packets again. PFC applies  
only to packets entering a port.



1 PFC has a higher priority than flow control. So, for example, if both  
2 flow control and PFC are configured on the same port, PFC will have  
precedence over traditional flow control.

3 PFC uses the IEEE 802.1p CoS values in the IEEE 802.1Q VLAN tag  
4 to generate the flow control frame with corresponding  
5 priority on ingress physical port when egress physical port suffers  
6 congestion. It indicates the ingress port needs COS classifier  
configuration.

7 PicOS 2.11.16 Configuration Guide - QoS Configuration (available at  
8 <https://docs.pica8.com/display/PicOS36sp/QoS+Configuration>).

9 31. Edgecore infringes the '963 Patent through its provision of the  
10 Exemplary Accused Products set forth in Count 5 and **Exhibit 5**. Certain of  
11 Edgecore's Exemplary Accused products implement Weighted Random Early  
12 Detection (WRED). WRED is a congestion avoidance mechanism that makes use  
13 of the congestion control mechanism of TCP (Transmission Control Protocol). By  
14 selectively dropping packets before periods of congestion, WRED tells TCP  
15 senders to reduce their transmission rates.

16 32. Edgecore instructs its customers regarding the implementation and  
17 operation of the accused instrumentalities, including at [https://support.edge-](https://support.edgecore.com/hc/en-us)  
18 [core.com/hc/en-us](https://support.edgecore.com/hc/en-us) and in the technical manuals cited in **Exhibits 1-5**.

19 33. On information of belief, Defendant Edgecore also implements  
20 contractual protections in the form of license and use restrictions with its customers  
21 to preclude the unauthorized reproduction, distribution, and modification of its  
22 software.

23 34. Moreover, on information and belief, Defendant Edgecore  
24 implements technical precautions to attempt to thwart customers who would  
25 circumvent the intended operation of Edgecore's products.

26 Prior Communications

27 35. By letters dated October 5, 2016 and November 28, 2016, Edgecore  
28 was provided an identification of the Patents owned by Parity Networks, including

1 the Patents-in-Suit. True and correct copies of these letters are attached as **Exhibit**  
2 **6** and **Exhibit 7** (the “Letters”). The Letters were actually received by Edgecore.

3 36. By way of **Exhibit 6**, on October 5, 2016, Edgecore was provided  
4 with electronic copies of the ’005 Patent, the ’394 Patent, the ’844 Patent, the ’352  
5 Patent, and the ’963 Patent, including an identification of Parity Networks’ patents.  
6 The Letters identified Edgecore’s routers and switches as relevant to Parity  
7 Networks’ patents.

8 37. By way of **Exhibit 7**, Parity Networks apprised Edgecore that  
9 litigation regarding Parity Networks’ patents was underway, and that Edgecore’s  
10 routing and switching technology was within the scope of Parity Networks’  
11 patents. Parity Networks reminded Edgecore that it sought a licensing dialog and  
12 asked for a response within 30 days.

13 38. On information and belief, Edgecore never responded to either of the  
14 Letters, took no steps to investigate infringement and prepared no legal opinion  
15 regarding noninfringement or invalidity of the Patents-in-Suit.

16 39. Additionally, Defendant had knowledge of the Patents-in-Suit and the  
17 infringing conduct as early as the date when Parity Networks effected service of  
18 the Original Complaint. On information and belief, Edgecore has taken no steps to  
19 modify its infringing behavior, and is engaging in knowing conduct in violation of  
20 Parity Networks’ subsisting and presumptively valid patents.

## 21 **V. COUNTS OF PATENT INFRINGEMENT**

### 22 **COUNT ONE**

#### 23 **INFRINGEMENT OF U.S. PATENT NO. 6,553,005**

24 40. Parity Networks incorporates by reference its allegations in the  
25 preceding paragraphs and **Exhibit 1** as if fully restated in this paragraph.

26 41. Parity Networks is the assignee and owner of all right, title and  
27 interest to the ’005 Patent. Parity Networks has the legal right to enforce the patent,  
28 sue for infringement, and seek equitable relief and damages.

1           42. On information and belief, at least since its receipt of notice and/or  
2 the filing of the Original Complaint, Defendant Edgecore, without authorization or  
3 license from Parity Networks, has been and is presently directly infringing each  
4 and every element of at least claim 1 of the '005 Patent, either literally or  
5 equivalently, as infringement is defined by 35 U.S.C. § 271(a), including through  
6 making, using (including for testing purposes), selling, and offering for sale  
7 methods and articles infringing one or more claims of the '005 Patent. Defendant  
8 Edgecore is thus liable for direct infringement of the '005 Patent pursuant to 35  
9 U.S.C. § 271(a).

10           43. Exemplary infringing products include Edgecore's AS7700 Series  
11 Switches, AS6700 Series Switches, AS5600 Series Switches, AS5700 Series  
12 Switches, ECS4210 Series Switches, ECS2100 Series Switch, ECS4100 Series  
13 Switches, AS5812 Series Switches, ECS5520 Series Switches, ECS4120 Series  
14 Switch, ECS4660 Carrier Series Switches and the ECS4510 Series Switches.  
15 These products use hashing functions to determine the route and egress port used  
16 by particular packets such that packets with common source/destination address  
17 pairs use a common egress port.

18           44. On information and belief, at least since its receipt of notice and/or  
19 the filing of the Original Complaint, Defendant Edgecore, without authorization or  
20 license from Parity Networks, has been and is presently indirectly infringing each  
21 and every element of at least claim 1 of the '005 Patent, either literally or  
22 equivalently, including actively and knowingly inducing infringement of the '005  
23 Patent under 35 U.S.C. § 271(b). Such inducements include without limitation,  
24 with specific intent to encourage the infringement, knowingly inducing consumers  
25 to use infringing articles and methods that Edgecore knows or should know  
26 infringe one or more claims of the '005 Patent. Edgecore instructs its customers to  
27 make and use the patented inventions of the '005 Patent by operating Edgecore's  
28 products in accordance with Edgecore's instructions and specifications, as

1 reflected in the excerpts from Edgecore’s technical and customer-support materials  
2 cited in **Exhibit 1**. Edgecore specifically intends its customers to infringe by  
3 implementing hashing functions to determine the route and egress port used by  
4 particular packets such that packets with common source/destination address pairs  
5 use a common egress port.

6 45. On information and belief, at least since its receipt of notice and/or  
7 the filing of the Original Complaint, Defendant Edgecore, without authorization or  
8 license from Parity Networks, has been and is presently indirectly infringing each  
9 and every element of at least claim 1 of the ’005 Patent, including contributory  
10 infringement of the ’005 Patent under 35 U.S.C. § 271(c) and/or § 271(f), either  
11 literally and/or under the doctrine of equivalents. Defendant’s contributory  
12 infringement includes without limitation, Defendant’s offer to sell a component of  
13 a product or apparatus for use in a process, that (i) is material to practicing the  
14 invention claimed by claim 1 of the ’005 Patent, (ii) is not a staple article or  
15 commodity of commerce suitable for substantial non-infringing use, and (iii)  
16 Defendant is aware or knows to be especially made or especially adapted for use  
17 in infringement of the ’005 Patent. Defendant instructs its customers to make and  
18 use the patented inventions of the ’005 Patent by operating the “egress port-  
19 selection” software components of its products in accordance with its instructions  
20 and specifications. Defendant specifically intends its customers to infringe by  
21 implementing the “egress port-selection” software modules in its switches and  
22 routers that implement hashing functions to determine the route and egress port  
23 used by particular packets such that packets with common source/destination  
24 address pairs use a common egress port, as set forth above and in the excerpts from  
25 technical manuals describing its “egress port-selection” software components  
26 (attached as **Exhibit 1**).

27 46. For example, technical manuals for the accused products explain that  
28 “[e]gress traffic through a bond is distributed to a slave based on a packet hash

1 calculation” and “[t]he hash calculation uses packet header data to choose to which  
2 slave to transmit the packet.” Cumulus Linux User Guide, page 400, available at:  
3 <https://docs-cdn.cumulusnetworks.com/download/attachments/8362527/Cumulus>  
4 [%20Linux%203.6.0%20User%20Guide.pdf](https://docs-cdn.cumulusnetworks.com/download/attachments/8362527/Cumulus). Further, technical manuals for the  
5 accused products state that “[o]nce multiple routes are installed in the routing table,  
6 a hash is used to determine which path a packet follows.” *Id.* at 830. Defendant  
7 further instructs its customers that “Linux bonding provides a method for  
8 aggregating multiple network interfaces (*slaves*) into a single logical bonded  
9 interface (*bond*)” and “link aggregation mode [] allows one or more links to be  
10 aggregated together to form a *link aggregation group* (LAG), so that [a control  
11 client] can treat the link aggregation group as if it were a single link.” *Id.* at 399.

12 47. Defendant provides at least some of the accused products to its  
13 customers with the Cumulus Linux network operating system preloaded or  
14 preinstalled on its switches. For example, Defendant has explained that “[t]hrough  
15 an OEM agreement with Cumulus Networks, Edgecore will deliver and service a  
16 full portfolio of 1GbE, 10GbE, and 40GbE data center switches with Cumulus  
17 Linux built-in.” <https://www.edge-core.com/news-inquiry.php?cls=1&id=61>  
18 (further specifically identifying Defendant’s AS6701-32X-C and AS6701-32X-C  
19 as switches available with Cumulus Linux preloaded). Further, Defendant has  
20 stated that “Cumulus Linux is preloaded on the switches, with software license and  
21 support bundled” and “Edgecore is fulfilling the license.” *Id.*

22 48. Additionally, Defendant provides instructions to its customers on how  
23 to install the Cumulus Linux network operating system on their switches. *See*  
24 <https://www.edge-core.com/trainingVideos-inquiry.php?cls=1&id=9> (providing a  
25 video with instructions on “[h]ow to install Cumulus Linux in the AS5712-54X”).

26 49. On information and belief, Defendant’s customers deploy the accused  
27 products on networks in combination with other products. The specific code  
28

1 portions and modules directed to the infringing functionality will be identified as  
2 those systems are made available for inspection and review by Parity Networks.

3 50. As a result of Edgecore's infringement of the '005 Patent, Parity  
4 Networks has suffered monetary damages, and is entitled to an award of damages  
5 adequate to compensate it for such infringement under 35 U.S.C. § 284, but in no  
6 event, less than a reasonable royalty.

7 COUNT TWO

8 INFRINGEMENT OF U.S. PATENT NO. 6,763,394

9 51. Parity Networks incorporates by reference its allegations in the  
10 preceding paragraphs and **Exhibit 2** as if fully restated in this paragraph.

11 52. Parity Networks is the assignee and owner of all right, title and  
12 interest to the '394 Patent. Parity Networks has the legal right to enforce the patent,  
13 sue for infringement, and seek equitable relief and damages.

14 53. On information and belief, at least since its receipt of notice and/or  
15 the filing of the Original Complaint, Defendant Edgecore, without authorization or  
16 license from Parity Networks, has been and is presently directly infringing each  
17 and every element of at least claim 1 of the '394 Patent, either literally or  
18 equivalently, as infringement is defined by 35 U.S.C. § 271(a), including through  
19 making, using (including for testing purposes), selling, and offering for sale  
20 methods and articles infringing one or more claims of the '394 Patent. Defendant  
21 Edgecore is thus liable for direct infringement of the '394 Patent pursuant to 35  
22 U.S.C. § 271(a).

23 54. Exemplary infringing products include Edgecore's AS 5800 Series  
24 Switch, ECS4620 Series Switch, ECS2100 Series Switch, ECS2110 Series Switch,  
25 ECS4100 Series Switch, ECS4120 Series Switch, ECS4510 Series Switch and  
26 ECS3500 Series Switch. These products use infringing technology including  
27 access control lists to implement egress determinations at ingress ports.  
28

1           55. On information and belief, at least since its receipt of notice and/or  
2 the filing of the Original Complaint, Defendant Edgecore, without authorization or  
3 license from Parity Networks, has been and is presently indirectly infringing each  
4 and every element of at least claim 1 of the '394 Patent, either literally or  
5 equivalently, including actively and knowingly inducing infringement of the '394  
6 Patent under 35 U.S.C. § 271(b). Such inducements include without limitation,  
7 with specific intent to encourage the infringement, knowingly inducing consumers  
8 to use infringing articles and methods that Edgecore knows or should know  
9 infringe one or more claims of the '394 Patent. Edgecore instructs its customers to  
10 make and use the patented inventions of the '394 Patent by operating Edgecore's  
11 products in accordance with Edgecore's instructions and specifications, as  
12 reflected in the excerpts from Edgecore's technical and customer-support materials  
13 cited in **Exhibit 2**. Edgecore specifically intends its customers to infringe by  
14 implementing access control lists to implement egress determinations at ingress  
15 ports as claimed.

16           56. On information and belief, at least since its receipt of notice and/or  
17 the filing of the Original Complaint, Defendant Edgecore, without authorization or  
18 license from Parity Networks, has been and is presently indirectly infringing each  
19 and every element of at least claim 1 of the '394 Patent, including contributory  
20 infringement of the '394 Patent under 35 U.S.C. § 271(c) and/or § 271(f), either  
21 literally and/or under the doctrine of equivalents. Defendant's contributory  
22 infringement includes without limitation, Defendant's offer to sell, a component of  
23 a product or apparatus for use in a process, that (i) is material to practicing the  
24 invention claimed by claim 1 of the '394 Patent, (ii) is not a staple article or  
25 commodity of commerce suitable for substantial non-infringing use, and (iii)  
26 Defendant is aware or knows to be especially made or especially adapted for use  
27 in infringement of the '394 Patent. Defendant instructs its customers to make and  
28 use the patented inventions of the '394 Patent by operating the "ingress port egress

1 determination” software components of its products in accordance with its  
2 instructions and specifications. Defendant specifically intends its customers to  
3 infringe by implementing the “ingress port egress determination” software  
4 modules in its switches and routers that to implement access control lists to  
5 implement egress determinations at ingress ports as claimed, as set forth above and  
6 in the excerpts from Defendant’s technical manuals describing its “ingress port  
7 egress determination” software components (attached as **Exhibit 2**).

8 57. For example, Defendant instructs its customers that “[t]o filter  
9 packets, first create an access list, add the required rules, and then bind the list to a  
10 specific port. This section describes the Access Control List commands.” CLI  
11 Reference Guide for AS5812-54X/T-EC, page 331, available at:  
12 [https://www.edge-core.com/\\_upload/images/AS5812\\_CLI-R02\\_20191203.pdf](https://www.edge-core.com/_upload/images/AS5812_CLI-R02_20191203.pdf).  
13 Defendant’s technical manuals describe the ACLs used by the “ingress port egress  
14 determination” software components: “Access Control Lists (ACL) provide packet  
15 filtering for IPv4 frames (based on address, protocol, Layer 4 protocol port number  
16 or TCP control code), IPv6 frames (based on address, DSCP traffic class, next  
17 header type, or flow label).” *Id.*

18 58. On information and belief, Defendant’s customers deploy the accused  
19 products on networks in combination with other products. The specific code  
20 portions and modules directed to the infringing functionality will be identified as  
21 those systems are made available for inspection and review by Parity Networks.

22 59. As a result of Edgecore’s infringement of the ’394 Patent, Parity  
23 Networks has suffered monetary damages, and is entitled to an award of damages  
24 adequate to compensate it for such infringement under 35 U.S.C. § 284, but in no  
25 event, less than a reasonable royalty.  
26  
27  
28



COUNT THREE

INFRINGEMENT OF U.S. PATENT NO. 6,870,844

1  
2  
3 60. Parity Networks incorporates by reference its allegations in the  
4 preceding paragraphs and **Exhibit 3** as if fully restated in this paragraph.

5 61. Parity Networks is the assignee and owner of all right, title and  
6 interest to the '844 Patent. Parity Networks has the legal right to enforce the patent,  
7 sue for infringement, and seek equitable relief and damages.

8 62. On information and belief, at least since its receipt of notice and/or  
9 the filing of the Original Complaint, Defendant Edgecore, without authorization or  
10 license from Parity Networks, has been and is presently directly infringing each  
11 and every element of at least claim 1 of the '844 Patent, either literally or  
12 equivalently, as infringement is defined by 35 U.S.C. § 271(a), including through  
13 making, using (including for testing purposes), selling, and offering for sale  
14 methods and articles infringing one or more claims of the '844 Patent. Defendant  
15 Edgecore is thus liable for direct infringement of the '844 Patent pursuant to 35  
16 U.S.C. § 271(a).

17 63. Exemplary infringing products include Edgecore's AS6701-32X  
18 40GBE Data Center Switch, AS5712-54X 10GBE Data Center Switch, and  
19 AS7312-54XS 10GBE Data Center Switch. These products implement multicast  
20 protocols such as Protocol Independent Multicasting (PIM) and Internet Group  
21 Management Protocol (IGMP) in the manner claimed.

22 64. On information and belief, at least since its receipt of notice and/or  
23 the filing of the Original Complaint, Defendant Edgecore, without authorization or  
24 license from Parity Networks, has been and is presently indirectly infringing each  
25 and every element of at least claim 1 of the '844 Patent, either literally or  
26 equivalently, including actively and knowingly inducing infringement of the '844  
27 Patent under 35 U.S.C. § 271(b). Such inducements include without limitation,  
28 with specific intent to encourage the infringement, knowingly inducing consumers

1 to use infringing articles and methods that Edgecore knows or should know  
2 infringe one or more claims of the '844 Patent. Edgecore instructs its customers to  
3 make and use the patented inventions of the '844 Patent by operating Edgecore's  
4 products in accordance with Edgecore's instructions and specifications, as  
5 reflected in the excerpts from Edgecore's technical and customer-support materials  
6 cited in **Exhibit 3**. Edgecore specifically intends its customers to infringe by  
7 implementing multicast protocols such as Protocol Independent Multicasting  
8 (PIM) and Internet Group Management Protocol (IGMP) in the manner claimed,  
9 as set forth above and in **Exhibit 3**.

10 65. On information and belief, at least since its receipt of notice and/or  
11 the filing of the Original Complaint, Defendant, without authorization or license  
12 from Parity, has been and is presently indirectly infringing each and every element  
13 of at least claim 1 of the '844 Patent, including contributorily infringing the '844  
14 Patent under 35 U.S.C. § 271(c). Defendant's contributory infringement includes  
15 without limitation, Defendant's offer to sell, a component of a product or apparatus  
16 for use in a process, that (i) is material to practicing the invention claimed by claim  
17 1 of the '844 Patent, (ii) is not a staple article or commodity of commerce suitable  
18 for substantial non-infringing use, and (iii) Defendant is aware or knows to be  
19 especially made or especially adapted for use in infringement of the '844 Patent.  
20 Defendant instructs its customers to make and use the patented inventions of the  
21 '844 Patent by operating the "multicast filtering" software components of its  
22 products in accordance with its instructions and specifications. Defendant  
23 specifically intends its customers to infringe by implementing "multicast filtering"  
24 software modules in its switches that implement multicast protocols, such as  
25 Protocol Independent Multicasting (PIM) and Internet Group Management  
26 Protocol (IGMP), with a multicast-capable component coupled to the egress and  
27 ingress paths of the port in the manner claimed, as set forth above and in the  
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1 excerpts from Defendant’s technical manuals describing its “multicast filtering”  
2 software (attached as **Exhibit 3**).

3 66. For example, Defendant’s technical manuals explain that the  
4 “multicast filtering” software components “can use various kinds of multicast  
5 routing protocols to deliver IP multicast packets across different subnetworks. This  
6 router supports Protocol Independent Multicasting (PIM). (Note that IGMP will be  
7 enabled for any interface that is using multicast routing.)” AS6700-32X CLI  
8 Reference Guide, page 1031, available at: [https://www.edge-core.com/\\_upload](https://www.edge-core.com/_upload/images/AS5710-54X-EC_CLI_2016-03-25.pdf)  
9 [/images/AS5710-54X-EC\\_CLI\\_2016-03-25.pdf](https://www.edge-core.com/_upload/images/AS5710-54X-EC_CLI_2016-03-25.pdf). Defendant further instructs its  
10 customers on how to configure the “multicast filtering” software components, e.g.,  
11 “[t]his section describes commands used to configure multicast routing globally on  
12 the switch.” *Id.*

13 67. On information and belief, Defendant’s customers deploy the accused  
14 products on networks in combination with other products. The specific code  
15 portions and modules directed to the infringing functionality will be identified as  
16 those systems are made available for inspection and review by Parity Networks.

17 68. As a result of Edgecore’s infringement of the ’844 Patent, Parity  
18 Networks has suffered monetary damages, and is entitled to an award of damages  
19 adequate to compensate it for such infringement under 35 U.S.C. § 284, but in no  
20 event, less than a reasonable royalty.

#### 21 COUNT FOUR

#### 22 INFRINGEMENT OF U.S. PATENT NO. 7,107,352

23 69. Parity Networks incorporates by reference its allegations in the  
24 preceding paragraphs and **Exhibit 4** as if fully restated in this paragraph.

25 70. Parity Networks is the assignee and owner of all right, title and  
26 interest to the ’352 Patent. Parity Networks has the legal right to enforce the patent,  
27 sue for infringement, and seek equitable relief and damages.  
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1           71. On information and belief, at least since its receipt of notice and/or  
2 the filing of the Original Complaint, Defendant Edgecore, without authorization or  
3 license from Parity Networks, has been and is presently directly infringing each  
4 and every element of at least claim 1 of the '352 Patent, either literally or  
5 equivalently, as infringement is defined by 35 U.S.C. § 271(a), including through  
6 making, using (including for testing purposes), selling, and offering for sale  
7 methods and articles infringing one or more claims of the '352 Patent. Defendant  
8 Edgecore is thus liable for direct infringement of the '352 Patent pursuant to 35  
9 U.S.C. § 271(a).

10           72. Exemplary infringing products include Edgecore's AS 5800 Series  
11 Switch, ECS4620 Series Switch, ECS2100 Series Switch, ECS2110 Series Switch,  
12 ECS4100 Series Switch, ECS4120 Series Switch, ECS4510 Series Switch and  
13 ECS3500 Series Switch. These products use infringing technology including  
14 access control lists for filtering and dropping of packets implemented at the ingress  
15 port for egress pass/drop determination.

16           73. On information and belief, at least since its receipt of notice and/or  
17 the filing of the Original Complaint, Defendant Edgecore, without authorization or  
18 license from Parity Networks, has been and is presently indirectly infringing each  
19 and every element of at least claim 1 of the '352 Patent, either literally or  
20 equivalently, including actively and knowingly inducing infringement of the '352  
21 Patent under 35 U.S.C. § 271(b). Such inducements include without limitation,  
22 with specific intent to encourage the infringement, knowingly inducing consumers  
23 to use infringing articles and methods that Edgecore knows or should know  
24 infringe one or more claims of the '352 Patent. Edgecore instructs its customers to  
25 make and use the patented inventions of the '352 Patent by operating Edgecore's  
26 products in accordance with Edgecore's instructions and specifications, as  
27 reflected in the excerpts from Edgecore's technical and customer-support materials  
28 cited in **Exhibit 4**. Edgecore specifically intends its customers to infringe by

1 implementing access control lists for filtering and dropping of packets  
2 implemented at the ingress port for egress pass/drop determination.

3 74. On information and belief, at least since its receipt of notice and/or  
4 the filing of the Original Complaint, Defendant Edgecore, without authorization or  
5 license from Parity Networks, has been and is presently indirectly infringing each  
6 and every element of at least claim 1 of the '352 Patent, including contributory  
7 infringement of the '352 Patent under 35 U.S.C. § 271(c) and/or § 271(f), either  
8 literally and/or under the doctrine of equivalents. Defendant's contributory  
9 infringement includes without limitation, Defendant's offer to sell, a component of  
10 a product or apparatus for use in a process, that (i) is material to practicing the  
11 invention claimed by claim 1 of the '352 Patent, (ii) is not a staple article or  
12 commodity of commerce suitable for substantial non-infringing use, and (iii)  
13 Defendant is aware or knows to be especially made or especially adapted for use  
14 in infringement of the '352 Patent. Defendant instructs its customers to make and  
15 use the patented inventions of the '352 Patent by operating the "ingress port egress  
16 determination" software components of its products in accordance with its  
17 instructions and specifications. Defendant specifically intends its customers to  
18 infringe by implementing the "ingress port egress determination" software  
19 modules in its switches and routers that implement access control lists for filtering  
20 and dropping of packets implemented at the ingress port for egress pass/drop  
21 determination, as set forth above and in the excerpts from Defendant's technical  
22 manuals describing its "ingress port egress determination" software components  
23 (attached as **Exhibit 4**).

24 75. For example, Defendant instructs its customers that "[w]hen you  
25 create a new ACL or enter configuration mode for an existing ACL, use the **permit**  
26 or **deny** command to add new rules to the bottom of the list. To create an ACL,  
27 you must add at least one rule to the list." ECS4620 Series - CLI Reference Guide,  
28 page 404, available at: [https://www.edge-core.com/\\_upload/images/ECS4620-](https://www.edge-core.com/_upload/images/ECS4620-)

1 Series\_CLI-R06\_0220.pdf. Additionally, Defendant’s materials explain that “[t]he  
2 order in which actives ACLs are checked is as follows: 1. User-defined rules in IP  
3 and MAC ACLS for ingress or egress ports are checked in parallel.” *Id.* at 328.  
4 Defendant’s technical manuals describe the ACLs used by the “ingress port egress  
5 determination” software components: “Access Control Lists (ACL) provide packet  
6 filtering for IPv4 frames (based on address, protocol, Layer 4 protocol port number  
7 or TCP control code), IPv6 frames (based on address, DSCP traffic class, or next  
8 header type).” *Id.* at 395.

9 76. On information and belief, Defendant’s customers deploy the accused  
10 products on networks in combination with other products. The specific code  
11 portions and modules directed to the infringing functionality will be identified as  
12 those systems are made available for inspection and review by Parity Networks.

13 77. As a result of Edgecore’s infringement of the ’352 Patent, Parity  
14 Networks has suffered monetary damages, and is entitled to an award of damages  
15 adequate to compensate it for such infringement under 35 U.S.C. § 284, but in no  
16 event, less than a reasonable royalty.

17 COUNT FIVE

18 INFRINGEMENT OF U.S. PATENT NO. 7,719,963

19 78. Parity Networks incorporates by reference its allegations in the  
20 preceding paragraphs and **Exhibit 5** as if fully restated in this paragraph.

21 79. Parity Networks is the assignee and owner of all right, title and  
22 interest to the ’963 Patent. Parity Networks has the legal right to enforce the patent,  
23 sue for infringement, and seek equitable relief and damages.

24 80. On information and belief, at least since its receipt of notice and/or  
25 the filing of the Original Complaint, Defendant Edgecore, without authorization or  
26 license from Parity Networks, has been and is presently directly infringing each  
27 and every element of at least claim 1 of the ’963 Patent, either literally or  
28 equivalently, as infringement is defined by 35 U.S.C. § 271(a), including through

1 making, using (including for testing purposes), selling, and offering for sale  
2 methods and articles infringing one or more claims of the '963 Patent. Defendant  
3 Edgecore is thus liable for direct infringement of the '963 Patent pursuant to 35  
4 U.S.C. § 271(a).

5 81. Exemplary infringing products include Edgecore's AS5700 Series  
6 Switches and AS6700 Series Switches, which implement a WRED algorithm on  
7 packet queues to drop packets as a function of queue size (or buffer) in order to  
8 manage congestion in the switch.

9 82. On information and belief, at least since its receipt of notice and/or  
10 the filing of the Original Complaint, Defendant Edgecore, without authorization or  
11 license from Parity Networks, has been and is presently indirectly infringing each  
12 and every element of at least claim 1 of the '963 Patent, either literally or  
13 equivalently, including actively and knowingly inducing infringement of the '963  
14 Patent under 35 U.S.C. § 271(b). Such inducements include without limitation,  
15 with specific intent to encourage the infringement, knowingly inducing consumers  
16 to use infringing articles and methods that Edgecore knows or should know  
17 infringe one or more claims of the '963 Patent. Edgecore instructs its customers to  
18 make and use the patented inventions of the '963 Patent by operating Edgecore's  
19 products in accordance with Edgecore's instructions and specifications, as  
20 reflected in the excerpts from Edgecore's technical and customer-support materials  
21 cited in **Exhibit 5**. Edgecore specifically intends its customers to infringe by,  
22 among others, designing and fabricating its switches to use a WRED algorithm on  
23 packet queues to drop packets as a function of queue size (or buffer) in order to  
24 manage congestion in the switch.

25 83. Defendant's "managed queuing system" software components  
26 operate, in part, by "drop[ping] packets based on the queue length exceeding  
27 certain threshold value." PICA8, Weighted Random Early Detection, page 6,  
28 available at: <https://docs.pica8.com/display/PicOS21119sp/WRED+Overview>.

1 Defendant instructs its customers on how to use commands to set the threshold to  
2 drop packets, e.g. “[t]he following command can be used to set the maximum  
3 threshold value, “[t]he following command can be used to set the minimum  
4 threshold value,” and “[t]he following command can be used to configure drop  
5 probability.” *Id.* at 5-6.

6 84. Further, Defendant coordinates with others to provide its customers  
7 with the infringing articles and methods. *See* <https://www.pica8.com/how-to-buy/>  
8 (“To order your PICOS NOS with Edgecore switches that you also need to  
9 purchase, complete the form to the right . . . and we will coordinate with Edgecore  
10 and their partners on your behalf to provide a quote.).

11 85. On information and belief, Defendant’s customers deploy the accused  
12 products on networks in combination with other products. The specific code  
13 portions and modules directed to the infringing functionality will be identified as  
14 those systems are made available for inspection and review by Parity Networks.

15 86. As a result of Edgecore’s infringement of the ’963 Patent, Parity  
16 Networks has suffered monetary damages, and is entitled to an award of damages  
17 adequate to compensate it for such infringement under 35 U.S.C. § 284, but in no  
18 event, less than a reasonable royalty.

19 **VI. PRAYER FOR RELIEF**

20 WHEREFORE, Parity Networks prays for judgment and seeks relief against  
21 Defendant as follows:

- 22 A. That the Court determine that one or more claims of the Patents-in-  
23 Suit is infringed by Defendant Edgecore, either literally or under the  
24 doctrine of equivalents;
- 25 B. That the Court award damages adequate to compensate Parity  
26 Networks for the patent infringement that has occurred, together with  
27 prejudgment and post-judgment interest and costs, and an ongoing  
28 royalty for continued infringement; and



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C. That the Court award such other relief to Parity Networks as the Court deems just and proper.

DATED: May 14, 2021

DINOVO PRICE LLP

By: /s/ Daniel L. Schmid

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**DEMAND FOR JURY TRIAL**

Pursuant to Rule 38(b) of the Federal Rules of Civil Procedure and Local Rule 38-1, Plaintiff Parity Networks, LLC hereby demands a trial by jury on all issues raised by the Complaint.

Dated: May 14, 2021

DINOVO PRICE LLP

By: /s/ Daniel L. Schmid

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**CERTIFICATE OF SERVICE**

The undersigned hereby certifies that a true and correct copy of the foregoing document has been served on this date to all counsel of record who are deemed to have consented to electronic service via the Court’s CM/ECF system.

Dated: May 14, 2021

/s/ Daniel L. Schmid  
Daniel L. Schmid