UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
MIDLAND/ODESSA DIVISION

HFT Solutions, LLC, Plaintiff, v. OPTIVER US LLC and OPTIVER TRADING US LLC, Defendants.	Case No. 7:25-cv-00415 **JURY TRIAL DEMANDED**

COMPLAINT FOR PATENT INFRINGEMENT AGAINST
OPTIVER US LLC AND OPTIVER TRADING US LLC

This is an action for patent infringement arising under the Patent Laws of the United States of America, 35 U.S.C. § 1 *et seq.*, in which Plaintiff HFT Solutions, LLC ("Plaintiff" or "HFT Solutions") makes the following allegations against Defendants Optiver US LLC and Optiver Trading US LLC. ("Defendants" or "Optiver[1]"):

PLAINTIFF HFT SOLUTIONS AND THE ASSERTED PATENTS

1. Plaintiff is a corporation organized under the laws of the State of Delaware, with a principal place of business at 65 Locust Avenue, Suite 300, New Canaan, CT 06840.

2. Plaintiff is the owner of all right, title, and interest in U.S. Patent No. 10,931,286, titled "Field programmable gate array with external phase-locked loop," and issued February 23, 2021. A copy of the '286 patent is attached as Exhibit 1.

[1] Plaintiff makes the below allegations against each named Optiver entity individually and collectively.

3. Plaintiff is the owner of all right, title, and interest in U.S. Patent No. 11,128,305, titled "Field programmable gate array with external phase-locked loop," and issued September 21, 2021. A copy of the '305 patent is attached as Exhibit 2.

4. Plaintiff is the owner of all right, title, and interest in U.S. Patent No. 11,575,381, titled "Field programmable gate array with external phase-locked loop," and issued February 7, 2023. A copy of the '381 patent is attached as Exhibit 3.

DEFENDANTS AND THE ACCUSED INSTRUMENTALITIES

5. On information and belief, Defendant Optiver US LLC is a corporation organized under the laws of Illinois, with a principal place of business at 130 E Randolph Street, Suite 800 Chicago, IL 60601. Optiver US LLC may be served with process via its registered agent CT Corporation System 1999 Bryan St. Ste. 900 Dallas, TX 75201.

6. On information and belief, Defendant Optiver Trading US LLC is a corporation organized under the laws of Illinois, with a principal place of business at 130 E Randolph Street, Suite 800 Chicago, IL 60601. Optiver Trading US LLC may be served with process via its registered agent CT Corporation System 1999 Bryan St. Ste. 900 Dallas, TX 75201.

7. On information and belief, Optiver is a trading firm engaged in various high frequency trading strategies. High frequency trading strategies are reliant on the speed at which certain transactions can be made to provide a superior market return. These strategies fundamentally rely on being able to execute trades faster, sometimes microseconds or nanoseconds faster, than competitors.

8. The Accused Instrumentalities are FPGA systems and platforms made, used, offered for sale, sold, or imported by Defendants in the United States since February 23, 2021, including trading systems and platforms that include FPGA boards such as the Bittware XUP-VV8 and AMD Alveo U55C, UL3524, and UL3422 FPGA boards. *See*

https://www.amd.com/en/newsroom/press-releases/2024-5-7-optiver-chooses-amd-enterprise-portfolio-to-power-.html. On information and belief, Xilinx, maker of the FPGAs in the Bittware XUP-VV8 board, was acquired by AMD in June 2022. *See* https://www.amd.com/en/newsroom/press-releases/2022-2-14-amd-completes-acquisition-of-xilinx.html.

9. On information and belief, in order to achieve competitive trading speeds, Optiver uses the fastest available FPGA systems and platforms, including the Accused Instrumentalities which Optiver configures and uses in the manner reflected in Exhibits 4-6. *See, e.g.*, https://www.youtube.com/watch?v=RCb8PsdipHI ("What if we can cut away all the extra overhead, latency, of PCI express and our software application and CPU and memory problems and we can do that by trying to place all the logic we need to make a trading decision as close as possible to the network and that would be here in the FPGA."); https://www.amd.com/en/products/accelerators/alveo/ul3524.html - product-brief ("The device features a breakthrough transceiver architecture to achieve less than 3ns latency for world-class trade execution, delivering 7X greater performance vs. previous FPGA technology."); https://www.amd.com/en/newsroom/press-releases/2024-5-7-optiver-chooses-amd-enterprise-portfolio-to-power-.html (similar).

JURISDICTION AND VENUE

10. This action arises under the patent laws of the United States, Title 35 of the United States Code. This Court has original subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

11. This Court has personal jurisdiction over Defendants in this action because Defendants are incorporated under the laws of the state of Illinois and have a place of business in

this district at 11501 Alterra Parkway Suite #600, Austin, Texas 78758. Defendants have committed acts within this District giving rise to this action and has established minimum contacts with this forum such that the exercise of jurisdiction over Defendants would not offend traditional notions of fair play and substantial justice. Defendants, directly and through subsidiaries or intermediaries, have committed and continue to commit acts of infringement in this District by, among other things, importing, offering to sell, and selling products and services that infringe the Asserted Patent.

12. Venue is proper in this District because Defendants have a regular and established place of business in this District and has committed acts of infringement within this District.

COUNT I

INFRINGEMENT OF THE ’286 PATENT

13. Each of the allegations in the foregoing paragraphs are incorporated by reference as if fully set forth herein.

14. On May 28, 2019, the United States Patent and Trademark Office issued U.S. Patent No. 10,931,286, titled “Field programmable gate array with external phase-locked loop.” Exhibit 1.

15. Plaintiff is the owner of the ’286 patent with full rights to pursue recovery of royalties for damages for infringement, including full rights to recover past and future damages.

16. The claims of the ’286 patent were duly issued by the United States Patent and Trademark Office and are presumed by statute to be valid.

17. The claims of the ’286 patent are patent eligible under 35 U.S.C. §101.

18. The claims of the ’286 patent are not directed to abstract ideas and recite technical solutions to technical problems related to, for example, processing delays caused by clock domain

crossing circuits, and phase synchronization between receiver and transmitter side clocks. *See, e.g.*, ’286 patent at 1:31-55.

19. The written description of the ’286 patent describes in technical detail each limitation of the claims, allowing a skilled artisan to understand the scope of the claims and how the nonconventional and non-generic combination of claim limitations is patentably distinct from and improved upon what may have been considered conventional or generic in the art at the time of the invention.

20. On information and belief, Defendants have directly infringed (literally and equivalently) the ’286 patent by, without a license or permission from Plaintiff, making, using, offering for sale, selling, or importing the Accused Instrumentalities in the United States to perform methods that infringe claims of the ’286 patent.

21. On information and belief, the Accused Instrumentalities employ, implement, or utilize materially the same features such that one Accused Instrumentality is representative of all Accused Instrumentalities.

22. Defendants’ use of the Accused Instrumentalities satisfies all claim limitations of one or more claims of the ’286 Patent. For example, Defendants’ use of the Accused Instrumentalities infringes claim 1 of the ’286 patent, as shown in Exhibit 4 which is incorporated herein by reference.

23. Since at least service of this Complaint, Defendants’ infringement has been and continues to be willful. Defendants have had knowledge of the ’286 patent—and without a good faith belief of invalidity or noninfringement, has known or been willfully blind to the fact that its use of the Accused Instrumentalities infringes the ’286 patent—since at least service of this Complaint.

24. Defendants and their customers derive benefits from Defendants' infringement including, for example, higher success rates and increased profits in latency sensitive trades, extremely latency sensitive trades, and other trading activities affected by latency.

25. Plaintiff has been damaged by Defendants' infringement of the '286 patent and is entitled to damages as provided for in 35 U.S.C. § 284, including reasonable royalty damages.

COUNT II

INFRINGEMENT OF THE '305 PATENT

26. Each of the allegations in the foregoing paragraphs are incorporated by reference as if fully set forth herein.

27. On September 21, 2021, the United States Patent and Trademark Office issued U.S. Patent No. 11,128,305, titled "Field programmable gate array with external phase-locked loop." Exhibit 2.

28. Plaintiff is the owner of the '305 patent with full rights to pursue recovery of royalties for damages for infringement, including full rights to recover past and future damages.

29. The claims of the '305 patent were duly issued by the United States Patent and Trademark Office and are presumed by statute to be valid.

30. The claims of the '305 patent are patent eligible under 35 U.S.C. §101.

31. The claims of the '305 patent are not directed to abstract ideas and recite technical solutions to technical problems related to, for example, processing delays caused by clock domain crossing circuits, and phase synchronization between receiver and transmitter side clocks, in FPGA systems. *See, e.g.*, '305 patent at 1:34-58.

32. The written description of the '305 patent describes in technical detail each limitation of the claims, allowing a skilled artisan to understand the scope of the claims and how

the nonconventional and non-generic combination of claim limitations is patentably distinct from and improved upon what may have been considered conventional or generic in the art at the time of the invention.

33. On information and belief, Defendants have directly infringed (literally and equivalently) the ’305 patent by, without a license or permission from Plaintiff, making, using, offering for sale, selling, or importing the Accused Instrumentalities, which infringe claims of the ’305 patent, in the United States.

34. On information and belief, the Accused Instrumentalities employ, implement, or utilize materially the same features such that one Accused Instrumentality is representative of all Accused Instrumentalities.

35. The Accused Instrumentalities satisfy all claim limitations of one or more claims of the ’305 Patent. For example, as shown in Exhibit 5, the Accused Instrumentalities infringe claim 1 of the ’305 patent.

36. Since at least service of this Complaint, Defendants’ infringement has been and continues to be willful. Defendants have had knowledge of—and without a good faith belief of invalidity or noninfringement, has known or been willfully blind to the fact that its use of the Accused Instrumentalities infringes—the ’305 patent, since at least service of this Complaint.

37. Defendants and their customers derive benefits from Defendants’ infringement including, for example, higher success rates and increased profits in latency sensitive trades, extremely latency sensitive trades, and other trading activities affected by latency.

38. Plaintiff has been damaged by Defendants’ infringement of the ’305 patent and is entitled to damages as provided for in 35 U.S.C. § 284, including reasonable royalty damages.

COUNT III

INFRINGEMENT OF THE ’381 PATENT

39. Each of the allegations in the foregoing paragraphs are incorporated by reference as if fully set forth herein.

40. On February 7, 2023, the United States Patent and Trademark Office issued U.S. Patent No. 11,575,381, titled “Field programmable gate array with external phase-locked loop.” Exhibit 3.

41. Plaintiff is the owner of the ’381 patent with full rights to pursue recovery of royalties for damages for infringement, including full rights to recover past and future damages.

42. The claims of the ’381 patent were duly issued by the United States Patent and Trademark Office and are presumed by statute to be valid.

43. The claims of the ’381 patent are patent eligible under 35 U.S.C. §101.

44. The claims of the ’381 patent are not directed to abstract ideas and recite technical solutions to technical problems related to, for example, processing delays caused by clock domain crossing circuits, and phase synchronization between receiver and transmitter side clocks, in FPGA systems. *See, e.g.*, ’381 patent at 1:39-62.

45. The written description of the ’381 patent describes in technical detail each limitation of the claims, allowing a skilled artisan to understand the scope of the claims and how the nonconventional and non-generic combination of claim limitations is patentably distinct from and improved upon what may have been considered conventional or generic in the art at the time of the invention.

46. On information and belief, Defendants have directly infringed (literally and equivalently) the ’381 patent by, without a license or permission from Plaintiff, making, using,

offering for sale, selling, or importing the Accused Instrumentalities in the United States to perform methods that infringe claims of the ’381 patent.

47. On information and belief, the Accused Instrumentalities employ, implement, or utilize materially the same features such that one Accused Instrumentality is representative of all Accused Instrumentalities.

48. Defendants’ use of the Accused Instrumentalities satisfies all claim limitations of one or more claims of the ’381 Patent. For example, as shown in Exhibit 6, Defendants’ use of the Accused Instrumentalities infringes claim 1 of the ’381 patent.

49. Since at least service of this Complaint, Defendants’ infringement has been and continues to be willful. Defendants have had knowledge of—and without a good faith belief of invalidity or noninfringement, has known or been willfully blind to the fact that its use of the Accused Instrumentalities infringes—the ’381 patent, since at least service of this Complaint.

50. Defendants and their customers derive benefits from Defendants’ infringement including, for example, higher success rates and increased profits in latency sensitive trades, extremely latency sensitive trades, and other trading activities affected by latency.

Plaintiff has been damaged by Defendants’ infringement of the ’381 patent and is entitled to damages as provided for in 35 U.S.C. § 284, including reasonable royalty damages.

JURY DEMAND

51. Plaintiff demands a jury trial pursuant to Federal Rule of Civil Procedure 38.

PRAYER FOR RELIEF

Plaintiff prays for the following relief:

A. A judgment in favor of Plaintiff that Defendants have infringed the Asserted Patents, and that the Asserted Patents are valid and enforceable;

B. A judgment and order requiring Defendants to pay Plaintiff past and future damages arising out of Defendants' infringement of the Asserted Patents in an amount no less than a reasonable royalty, costs, expenses, and pre- and post-judgment interest for its infringement of the Asserted Patents, as provided under 35 U.S.C. § 284;

C. A permanent injunction prohibiting Defendants from further acts of infringement of the Asserted Patents;

D. A judgment and order requiring Defendants to provide an accounting and to pay supplemental damages to Plaintiff, including, without limitation, pre-judgment and post-judgment interest;

E. A judgment that Defendants' infringement is willful and enhanced damages and fees as a result of that willfulness under 35 U.S.C. § 284;

F. A finding that this case is exceptional under 35 U.S.C. § 285, and an award of Plaintiff's reasonable attorney fees and costs; and

G. Any and all other relief to which Plaintiff may be entitled.

Dated: September 9, 2025

Respectfully submitted,

/s/ Marc A. Fenster

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