IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

HFT SOLUTIONS, LLC, Plaintiff, v. CITADEL SECURITIES LLC, Defendant.	Case No. 1:24-cv-13213 JURY TRIAL DEMANDED

DEFENDANT CITADEL SECURITIES LLC'S
ANSWER, AFFIRMATIVE DEFENSES, AND COUNTERCLAIMS

Defendant Citadel Securities LLC ("Citadel Securities" or "Defendant"), by and through its undersigned counsel, respectfully submits this Answer to the Complaint for Patent Infringement filed by Plaintiff HFT Solutions, LLC ("HFT" or "Plaintiff"). Except as expressly admitted in this Answer, Citadel Securities denies each and every allegation in Plaintiff's Complaint. Citadel Securities responds in numbered paragraphs corresponding to the numbered paragraphs in the Complaint.

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.

ANSWER: Citadel Securities lacks knowledge or information sufficient to form a belief about the truth of the allegations in Paragraph 1 and therefore denies them.

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.

ANSWER: Citadel Securities admits that Exhibit 1 was attached to Plaintiff's Complaint and purports to be a copy of U.S. Patent No. 10,931,286. Citadel Securities admits that on its face, Exhibit 1 includes the title "Field programmable gate array with external phase-locked loop" and an issue date of February 23, 2021. Citadel Securities otherwise lacks knowledge or information sufficient to form a belief about the truth of the allegations in Paragraph 2 and therefore denies them.

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.

ANSWER: Citadel Securities admits that Exhibit 2 was attached to Plaintiff's Complaint and purports to be a copy of U.S. Patent No. 11,128,305. Citadel Securities admits that on its face, Exhibit 2 includes the title "Field programmable gate array with external phase-locked loop" and an issue date of September 21, 2021. Citadel Securities otherwise lacks knowledge or information sufficient to form a belief about the truth of the allegations in Paragraph 3 and therefore denies them.

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.

ANSWER: Citadel Securities admits that Exhibit 3 was attached to Plaintiff's Complaint and purports to be a copy of U.S. Patent No. 11,575,381. Citadel Securities admits that on its face, Exhibit 3 includes the title "Field programmable gate array with external phase-locked loop" and an issue date of February 7, 2023. Citadel Securities otherwise lacks knowledge or information sufficient to form a belief about the truth of the allegations in Paragraph 4 and therefore denies them.

DEFENDANT AND THE ACCUSED INSTRUMENTALITIES

5. On information and belief, Defendant Citadel Securities LLC is a corporation organized under the laws of Delaware, with a principal place of business at 131 South Dearborn Street, Chicago, IL 60603 USA.

ANSWER: Citadel Securities admits that Citadel Securities LLC is a corporation organized under the laws of Delaware. Citadel Securities denies the remaining allegations in Paragraph 5.

6. On information and belief, Citadel 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.

ANSWER: Citadel Securities admits that Citadel Securities is engaged in trading, including high frequency trading. The remaining allegations of Paragraph 6 include subjective characterizations to which no response is required. To the extent a response is required, Citadel Securities denies the remaining allegations in Paragraph 6.

7. The Accused Instrumentalities are FPGA systems and platforms made, used, offered for sale, sold, or imported by Defendant 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 UL3524 and UL3422 FPGA boards. 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.

ANSWER: To the extent that the allegations in Paragraph 7 purport to characterize a website or its contents, those materials speak for themselves. Paragraph 7 includes legal conclusions to which no response is required. To the extent a response is required, Citadel Securities denies the allegations in Paragraph 7. Citadel Securities specifically denies that it has committed any act of infringement.

8. On information and belief, in order to achieve competitive trading speeds, Citadel uses the fastest available FPGA systems and platforms, including the Accused Instrumentalities which Citadel configures and uses in the manner reflected in Exhibits 4-6. See, e.g.,

https://www.youtube.com/watch?v=q2dtZB39MG4 ("[W]e invest massive resources internally and with AMD as our partner to take microseconds, nanoseconds and soon picoseconds off our latency … [a]nd for the most latency sensitive strategies that we run, Xilinx FPGAs are absolutely essential."); 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.").

ANSWER: To the extent that the allegations in Paragraph 8 purport to characterize websites or their contents (including videos), those materials speak for themselves. Paragraph 8 includes subjective characterizations to which no response is required. Paragraph 8 includes legal conclusions to which no response is required. To the extent a response is required, Citadel Securities denies the allegations in Paragraph 8. Citadel Securities specifically denies that it has committed any act of infringement. Citadel Securities specifically denies that it has purchased or used Alveo UL3422 FPGA boards.

JURISDICTION AND VENUE

9. This action arises under the patent laws of the United States, Title 35 of the United States Code.

ANSWER: Paragraph 9 includes a legal conclusion to which no response is required. To the extent a response is required, Citadel Securities admits that HFT's Complaint purports to set forth an action for patent infringement arising under Title 35 of the United States Code. Citadel Securities denies that Citadel Securities has committed any act of infringement. Citadel Securities denies that there is any basis for the allegations of infringement set forth in the Complaint. Except as expressly admitted, Citadel Securities denies the allegations in Paragraph 9.

10. This Court has original subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

ANSWER: Paragraph 10 includes a legal conclusion to which no response is required. To the extent a response is required, Citadel Securities admits this Court has original subject matter jurisdiction over the purported claims set forth in HFT's Complaint. Citadel Securities denies that

Citadel Securities has committed any act of infringement. Citadel Securities denies that there is any basis for the allegations of infringement set forth in the Complaint.

11. This Court has personal jurisdiction over Defendant in this action because Defendant has committed acts of infringement within this District giving rise to this action, has a regular and established place of business in this District, and has established minimum contacts with this forum such that the exercise of jurisdiction over Defendant would not offend traditional notions of fair play and substantial justice.

ANSWER: Paragraph 11 includes a legal conclusion to which no response is required. To the extent a response is required, Citadel Securities admits, for purposes of this action only, that this Court has personal jurisdiction over Citadel Securities. Citadel Securities denies that it has committed any act of infringement in this District or elsewhere.

12. Defendant, directly and/or through subsidiaries or intermediaries, conducts its business extensively in this District, including by operating electronic trading platforms, performing trading and market making activities, and providing financial services to customers. Defendant regularly does business or solicits business, engages in other persistent courses of conduct, and/or derives substantial revenue from products and/or services provided to entities in Illinois, and commits acts of infringement of the Asserted Patents in this District, including by using the Accused Instrumentalities to perform high frequency trading.

ANSWER: Paragraph 12 includes legal conclusions to which no response is required. To the extent a response is required, Citadel Securities admits, for purposes of this action only, that this Court has personal jurisdiction over Citadel Securities. Citadel Securities denies that it has committed any act of infringement in this District or elsewhere. Except as expressly admitted, Citadel Securities denies the allegations in Paragraph 12.

13. Venue is proper in this District under 28 U.S.C. §§ 1391 and 1400(b). Defendant has transacted business and committed acts of infringement in this District, including through its use of the Accused Instrumentalities in this District.

ANSWER: Paragraph 13 includes a legal conclusion to which no response is required. To the extent a response is required, Citadel Securities admits, for purposes of this action only, that venue is proper in this District. Citadel Securities denies that it has committed any act of infringement in this District or elsewhere.

COUNT 1 – CLAIM FOR INFRINGEMENT OF THE ’286 PATENT

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

ANSWER: Citadel Securities restates and realleges by reference its responses to the allegations in the foregoing paragraphs as if fully set forth herein.

15. 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.

ANSWER: Citadel Securities admits that Exhibit 1 purports to be a copy of U.S. Patent No. 10,931,286. Citadel Securities admits that on its face, Exhibit 1 includes the title “Field programmable gate array with external phase-locked loop.” Citadel Securities denies the remaining allegations in Paragraph 15.

16. 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.

ANSWER: Citadel Securities lacks knowledge or information sufficient to form a belief about the truth of the allegations in Paragraph 16 and therefore denies them.

17. 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.

ANSWER: Citadel Securities denies the allegations in Paragraph 17.

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

ANSWER: Citadel Securities denies the allegations in Paragraph 18.

19. 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.

ANSWER: Citadel Securities denies the allegations in Paragraph 19.

20. 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.

ANSWER: Citadel Securities denies the allegations in Paragraph 20.

21. On information and belief, Defendant has 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.

ANSWER: Citadel Securities denies the allegations in Paragraph 21.

22. 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.

ANSWER: Citadel Securities denies the allegations in Paragraph 22.

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

ANSWER: Citadel Securities denies the allegations in Paragraph 23.

24. Since at least service of this Complaint, Defendant’s infringement has been and continues to be willful. Defendant has 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.

ANSWER: Citadel Securities denies the allegations in Paragraph 24.

25. Defendant and its customers derive benefits from Defendant’s 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.

ANSWER: Citadel Securities denies the allegations in Paragraph 25.

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

ANSWER: Citadel Securities denies the allegations in Paragraph 26.

COUNT 2 – CLAIM FOR INFRINGEMENT OF THE '305 PATENT

27. Each of the allegations in the foregoing paragraphs are incorporated by reference as if fully set forth herein.[1]

ANSWER: Citadel Securities restates and realleges by reference its responses to the allegations in the foregoing paragraphs as if fully set forth herein.

28. 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.

ANSWER: Citadel Securities admits that Exhibit 2 purports to be a copy of U.S. Patent No. 11,128,305. Citadel Securities admits that on its face, Exhibit 2 includes the title "Field programmable gate array with external phase-locked loop" and an issue date of September 21, 2021. Citadel Securities denies the remaining allegations in Paragraph 28.

29. 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.

ANSWER: Citadel Securities lacks knowledge or information sufficient to form a belief about the truth of the allegations in Paragraph 29 and therefore denies them.

30. 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.

ANSWER: Citadel Securities denies the allegations in Paragraph 30.

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

ANSWER: Citadel Securities denies the allegations in Paragraph 31.

32. 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

[1] The paragraph numbering in HFT's Complaint restarts at "1" beginning with the first allegation under Count 2. *See* D.I. 1 at 5. For ease of comprehension, Citadel Securities has maintained the sequential numbering of paragraphs in this Answer. Therefore this Answer paragraph "27" corresponds to the second instance of Complaint paragraph "1", Answer paragraph "28" corresponds to the second instance of Complaint paragraph "2", and so on.

crossing circuits, and phase synchronization between receiver and transmitter side clocks, in FPGA systems. *See, e.g.*, '305 patent at 1:34-58.

ANSWER: Citadel Securities denies the allegations in Paragraph 32.

33. 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.

ANSWER: Citadel Securities denies the allegations in Paragraph 33.

34. On information and belief, Defendant has 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.

ANSWER: Citadel Securities denies the allegations in Paragraph 34.

35. 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.

ANSWER: Citadel Securities denies the allegations in Paragraph 35.

36. 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.

ANSWER: Citadel Securities denies the allegations in Paragraph 36.

37. Since at least service of this Complaint, Defendant's infringement has been and continues to be willful. Defendant has 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.

ANSWER: Citadel Securities denies the allegations in Paragraph 37.

38. Defendant and its customers derive benefits from Defendant's 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.

ANSWER: Citadel Securities denies the allegations in Paragraph 38.

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

ANSWER: Citadel Securities denies the allegations in Paragraph 39.

COUNT 3 – CLAIM FOR INFRINGEMENT OF THE '381 PATENT

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

ANSWER: Citadel Securities restates and realleges by reference its responses to the allegations in the foregoing paragraphs as if fully set forth herein.

41. 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.

ANSWER: Citadel Securities admits that Exhibit 3 purports to be a copy of U.S. Patent No. 11,575,381. Citadel Securities admits that on its face, Exhibit 3 includes the title "Field programmable gate array with external phase-locked loop" and an issue date of February 7, 2023. Citadel Securities denies the remaining allegations in Paragraph 41.

42. 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.

ANSWER: Citadel Securities lacks knowledge or information sufficient to form a belief about the truth of the allegations in Paragraph 42 and therefore denies them.

43. 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.

ANSWER: Citadel Securities denies the allegations in Paragraph 43.

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

ANSWER: Citadel Securities denies the allegations in Paragraph 44.

45. 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.

ANSWER: Citadel Securities denies the allegations in Paragraph 45.

46. 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.

ANSWER: Citadel Securities denies the allegations in Paragraph 46.

47. On information and belief, Defendant has 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.

ANSWER: Citadel Securities denies the allegations in Paragraph 47.

48. 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.

ANSWER: Citadel Securities denies the allegations in Paragraph 48.

49. Defendant’s 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, Defendant’s use of the Accused Instrumentalities infringes claim 1 of the ’381 patent.

ANSWER: Citadel Securities denies the allegations in Paragraph 49.

50. Since at least service of this Complaint, Defendant’s infringement has been and continues to be willful. Defendant has 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.

ANSWER: Citadel Securities denies the allegations in Paragraph 50.

51. Defendant and its customers derive benefits from Defendant’s 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.

ANSWER: Citadel Securities denies the allegations in Paragraph 51.

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

ANSWER: Citadel Securities denies the allegations in Paragraph 52.

RESPONSE TO PLAINTIFF’S JURY DEMAND

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

ANSWER: Citadel Securities demands a jury trial for all issues so triable pursuant to Federal Rule of Civil Procedure 38.

PLAINTIFF'S RELIEF REQUESTED

No response is required to Plaintiff's requested relief. To the extent that a response is required, Citadel Securities denies that Plaintiff is entitled to any relief whatsoever, either as prayed for in the complaint or otherwise. Citadel Securities has not infringed any valid and enforceable claim of any of the Asserted Patents. Plaintiff's requests for relief should therefore be denied in their entirety and with prejudice.

AFFIRMATIVE DEFENSES

Citadel Securities incorporates as if fully set forth herein its response to paragraphs 1 through 53 of the Complaint. Citadel Securities denies any allegation in the Complaint not specifically admitted in the preceding paragraphs. Citadel Securities asserts the following defenses. Citadel Securities asserts these defenses based on current information and belief. Citadel Securities reserves the right to amend and/or supplement these defenses, or allege additional defenses, at law or in equity, as additional facts become known through the course of discovery or otherwise through further investigation. Assertion of a defense is not a concession that Citadel Securities has any burden to prove the matter asserted. Citadel Securities undertakes the burden of proof only as to those defenses required by law, regardless of how such defenses are denominated herein.

FIRST AFFIRMATIVE DEFENSE
Failure to State a Claim

1. Plaintiff fails to state a claim on which relief can be granted.

SECOND AFFIRMATIVE DEFENSE
Non-Infringement

2. Citadel Securities does not infringe and has not infringed any valid and enforceable claim of the ’286 patent under any theory (including, but not limited to, directly, indirectly, literally, and/or under the doctrine of equivalents).

3. Citadel Securities does not infringe and has not infringed any valid and enforceable claim of the ’305 patent under any theory (including, but not limited to, directly, indirectly, literally, and/or under the doctrine of equivalents).

4. Citadel Securities does not infringe and has not infringed any valid and enforceable claim of the ’381 patent under any theory (including, but not limited to, directly, indirectly, literally, and/or under the doctrine of equivalents).

THIRD AFFIRMATIVE DEFENSE
Patent Ineligibility and Invalidity

5. Each claim of the ’286 patent is invalid for failing to meet one or more of the conditions for patentability set forth in 35 U.S.C. § 1 *et seq*., including, but not limited to, §§ 101, 102, 103, 112, 115, 116 and/or 135.

6. Each claim of the ’305 patent is invalid for failing to meet one or more of the conditions for patentability set forth in 35 U.S.C. § 1 *et seq*., including, but not limited to, §§ 101, 102, 103, 112, 115, 116, and/or 135.

7. Each claim of the ’381 patent is invalid for failing to meet one or more of the conditions for patentability set forth in 35 U.S.C. § 1 *et seq*., including, but not limited to, §§ 101, 102, 103, 112, 115, 116, and/or 135.

FOURTH AFFIRMATIVE DEFENSE
Disclaimer and/or Prosecution History Estoppel

8. Plaintiff is precluded from construing any valid claim of any of the Asserted Patents to be infringed, literally or under the doctrine of equivalents, due to admissions, arguments, amendments, representations, and/or statements made to the U.S. Patent and Trademark Office (a) during prosecution of any of the Asserted Patents, (b) in the specifications and claims of any of the Asserted Patents, and/or (c) during the prosecutions of patents and applications related to any of the Asserted Patents.

FIFTH AFFIRMATIVE DEFENSE
Statutory Limitation on Damages

9. Plaintiff's right to seek damages or costs is limited, including without limitation by 35 U.S.C. §§ 286, 287, and 288. To the extent that Plaintiff, its alleged predecessor(s)-in-interest to the '286 patent, '305 patent, or the '386 patent, or any licensee of t the '286 patent, '305 patent, or the '386 patent failed to properly mark any of their relevant products as required by 35 U.S.C. § 287 or otherwise give proper notice that Citadel Securities' actions allegedly infringed any claim of the '286 patent, '305 patent, or the '386 patent, Citadel Securities is not liable to Plaintiff for the acts alleged to have been performed by Citadel Securities before it received actual notice of alleged infringement.

SIXTH AFFIRMATIVE DEFENSE
Non-Exceptional Case/No Enhanced Damages

10. Plaintiff is not entitled to enhanced damages under 35 U.S.C. § 284, at least because Plaintiff has failed to show, and cannot show, that any infringement has been willful and/or knowing or that this case is "exceptional."

SEVENTH AFFIRMATIVE DEFENSE
No Attorneys' Fees

11. Plaintiff is not entitled to an award of attorneys' fees under 35 U.S.C. § 285, at least because Plaintiff has failed to show, and cannot show, that this case is "exceptional" in Plaintiff's favor as would be required by the statute.

EIGHTH AFFIRMATIVE DEFENSE
No Costs

12. Under 35 U.S.C. § 288, Plaintiff is precluded from recovering costs associated with this action.

NINTH AFFIRMATIVE DEFENSE
No Injunctive Relief

13. Plaintiff is not entitled to any injunctive relief because any alleged injury to Plaintiff is not immediate or irreparable, and Plaintiff has an adequate remedy at law for any alleged injury.

TENTH AFFIRMATIVE DEFENSE
Equitable Defenses

14. Plaintiff's claims for relief are barred, in whole or in part, due to waiver, equitable estoppel and/or acquiescence because it or its predecessors-in-interest have long known of the basis for the allegations it now asserts against Citadel Securities but unreasonably delayed the seeking of relief. *See, e.g., A.C. Aukerman Co. v. R.L. Chaides Constr. Co.*, 960 F.2d 1020, 1042 (Fed. Cir. 1992) (*en banc*); *Hynix Semiconductor Inc. v. Rambus Inc.*, 645 F.3d 1336, 1348 (Fed. Cir. 2011).

15. Further, on information and belief, Plaintiff's claims are barred in whole or in part by the doctrines of implied license, patent misuse, and/or other equitable remedies.

ELEVENTH AFFIRMATIVE DEFENSE
License and Exhaustion

16. On information and belief, Plaintiff's claims for relief are barred, in whole or in part, by licenses and/or covenants not to sue granted under the Asserted Patents, and/or by patent exhaustion. *See, e.g., Impression Prods. v. Lexmark Intern.*, 137 S. Ct. 1523, 1534–35 (2017).

TWELFTH AFFIRMATIVE DEFENSE
Ensnarement

17. Plaintiff's claims are barred or limited by the doctrine of ensnarement.

THIRTEENTH AFFIRMATIVE DEFENSE
Territoriality

18. To the extent Plaintiff's claims are directed to acts occurring outside the United States, those claims are barred or limited by the doctrine of territoriality set forth by 35 U.S.C. § 271 *et seq.*, including but not limited to §§ 271(a) and (c).

FOURTEENTH AFFIRMATIVE DEFENSE
Lack of Standing

19. To the extent Plaintiff lacks all substantive right to bring suit and to exclude others from practicing the claims of one or more of the Asserted Patents, Plaintiff's claims are barred by a lack of standing.

FIFTEENTH AFFIRMATIVE DEFENSE
Judicial Estoppel

20. Plaintiff's patent infringement claims are barred, in whole or in part, based on judicial estoppel. The asserted claims of the Asserted Patents are invalid or unenforceable, and Citadel Securities has not infringed, and is not infringing, the asserted claims of the Asserted Patents at least due in part to statements, representations, admissions, elections, positions, concessions, and filings made by Plaintiff in prior judicial or administrative proceedings.

SIXTEENTH AFFIRMATIVE DEFENSE
Res Judicata and/or Collateral Estoppel

21. Plaintiff's claims, and issues relating to those claims, are barred, in whole or in part, as a result of adjudications on the merits of other judicial or administrative proceedings involving the Asserted Patents.

SEVENTEENTH AFFIRMATIVE DEFENSE
Reservation of Defenses

22. Citadel Securities reserves all affirmative defenses under Rule 8(c) of the Federal Rules of Civil Procedure, the patent laws of the United States, and any other defenses at law or in equity that may exist now or that may be available in the future, including (but not limited to) those related to the unenforceability of any claim of the Asserted Patents based on inequitable conduct, based on discovery and further factual investigation in this action.

CITADEL SECURITIES' COUNTERCLAIMS

1. Counterclaim-Plaintiff Citadel Securities LLC ("Citadel Securities") seeks declaratory judgment that each of the Asserted Patents is invalid, and that each of the Asserted Patents is not infringed by Citadel Securities.

PARTIES

2. Citadel Securities LLC is a corporation incorporated under the laws of the state of Delaware.

3. On information and belief, Counterclaim-Defendant HFT Solutions, LLC 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.

JURISDICTION AND VENUE

4. This Court has subject matter jurisdiction over Citadel Securities' counterclaims under 28 U.S.C. § 1331 and 1338(a), the patent laws of the United States set forth at 35 U.S.C. § 1 *et seq*, and the Declaratory Judgment Act, 28 U.S.C. §§ 2201–2202.

5. This Court has personal jurisdiction over Citadel Securities' counterclaims against HFT because, *inter alia*, HFT has consented to the personal jurisdiction of this Court by commencing its action for patent infringement in this District.

6. Venue is proper in this District as to Citadel Securities' counterclaims against HFT pursuant to 28 U.S.C. §§ 1391(a)–(c) and 1400(b) at least because HFT has consented to venue in this District and this Court by filing its Complaint in this Court.

COUNTERCLAIM COUNT ONE
Declaratory Judgment of Invalidity of U.S. Patent No. 10,931,286

7. Citadel Securities incorporates herein by reference and re-alleges the preceding paragraphs of its Answer, Affirmative Defenses, and Counterclaims as if fully set forth herein.

8. Each claim of the '286 patent is invalid for failure to comply with one or more of the statutory requirements of or conditions for patentability set forth in Title 35 of the United States Code, including but not limited to 35 U.S.C. §§ 101, 102, 103, 112, 115, 116, and/or 135, and under the doctrine of non-statutory double patenting. As a non-limiting example, all asserted claims of the '286 patent are invalid because they are anticipated by and/or obvious over the prior art of record that is cited on the face of the '286 patent.

9. By virtue of HFT's filing of the Complaint in this action asserting claims of the '286 patent against Citadel Securities, a definite and concrete, real and substantial, and continuing case or controversy exists between Citadel Securities and HFT with respect to the validity of the '286 patent.

10. Citadel Securities is entitled to declaratory judgment that the ’286 patent is invalid.

COUNTERCLAIM COUNT TWO
Declaratory Judgment of Non-Infringement of U.S. Patent No. 10,931,286

11. Citadel Securities incorporates herein by reference and re-alleges the preceding paragraphs of its Answer, Affirmative Defenses, and Counterclaims as if fully set forth herein.

12. Citadel Securities has not and does not infringe any valid and enforceable claim of the ’286 patent, directly or indirectly, literally or under the doctrine of equivalents. The manufacture, use, sale, offer for sale, or importation of the Accused Instrumentalities has not infringed, does not infringe, and would not, if manufactured, used, sold, offered for sale, or imported, infringe, either directly, indirectly, or contributorily, and would not induce infringement of, the ’286 Patent.

13. By virtue of HFT’s filing of the Complaint in this action asserting claims of the ’286 patent against Citadel Securities, a definite and concrete, real and substantial, and continuing case or controversy exists between Citadel Securities and HFT with respect to Citadel Securities’ alleged infringement of the ’286 patent.

14. A judicial declaration is necessary and appropriate so that Citadel Securities may ascertain its rights regarding the ’286 patent.

15. Citadel Securities is entitled to declaratory judgment that the manufacture, use, sale, offer for sale, or importation of the Accused Instrumentalities has not infringed, does not infringe, and would not, if manufactured, used, sold, offered for sale, or imported, infringe, either directly, indirectly, or contributorily, and would not induce infringement of, any valid and enforceable claim of the ’286 Patent.

COUNTERCLAIM COUNT THREE
Declaratory Judgment of Invalidity of U.S. Patent No. 11,128,305

16. Citadel Securities incorporates herein by reference and re-alleges the preceding paragraphs of its Answer, Affirmative Defenses, and Counterclaims as if fully set forth herein.

17. Each claim of the ’305 patent is invalid for failure to comply with one or more of the statutory requirements of or conditions for patentability set forth in Title 35 of the United States Code, including but not limited to 35 U.S.C. §§ 101, 102, 103, 112, 115, 116, and/or 135, and under the doctrine of non-statutory double patenting. As a non-limiting example, all asserted claims of the ’305 patent are invalid because they are anticipated by and/or obvious over the prior art of record that is cited on the face of the ’305 patent.

18. By virtue of HFT’s filing of the Complaint in this action asserting claims of the ’305 patent against Citadel Securities, a definite and concrete, real and substantial, and continuing case or controversy exists between Citadel Securities and HFT with respect to the validity of the ’305 patent.

19. Citadel Securities is entitled to declaratory judgment that the ’305 patent is invalid.

COUNTERCLAIM COUNT FOUR
Declaratory Judgment of Non-Infringement of U.S. Patent No. 11,128,305

20. Citadel Securities incorporates herein by reference and re-alleges the preceding paragraphs of its Answer, Affirmative Defenses, and Counterclaims as if fully set forth herein.

21. Citadel Securities has not and does not infringe any valid and enforceable claim of the ’305 patent, directly or indirectly, literally or under the doctrine of equivalents. The manufacture, use, sale, offer for sale, or importation of the Accused Instrumentalities has not infringed, does not infringe, and would not, if manufactured, used, sold, offered for sale, or imported, infringe, either directly, indirectly, or contributorily, and would not induce infringement of, the ’305 Patent.

22. By virtue of HFT's filing of the Complaint in this action asserting claims of the '305 patent against Citadel Securities, a definite and concrete, real and substantial, and continuing case or controversy exists between Citadel Securities and HFT with respect to Citadel Securities' alleged infringement of the '305 patent.

23. A judicial declaration is necessary and appropriate so that Citadel Securities may ascertain its rights regarding the '305 patent.

24. Citadel Securities is entitled to declaratory judgment that the manufacture, use, sale, offer for sale, or importation of the Accused Instrumentalities has not infringed, does not infringe, and would not, if manufactured, used, sold, offered for sale, or imported, infringe, either directly, indirectly, or contributorily, and would not induce infringement of, any valid and enforceable claim of the '305 Patent.

COUNTERCLAIM COUNT FIVE
Declaratory Judgment of Invalidity of U.S. Patent No. 11,575,381

25. Citadel Securities incorporates herein by reference and re-alleges the preceding paragraphs of its Answer, Affirmative Defenses, and Counterclaims as if fully set forth herein.

26. Each claim of the '381 patent is invalid for failure to comply with one or more of the statutory requirements of or conditions for patentability set forth in Title 35 of the United States Code, including but not limited to 35 U.S.C. §§ 101, 102, 103, 112, 115, 116, and/or 135, and under the doctrine of non-statutory double patenting. As a non-limiting example, all asserted claims of the '381 patent are invalid because they are anticipated by and/or obvious over the prior art of record that is cited on the face of the '381 patent.

27. By virtue of HFT's filing of the Complaint in this action asserting claims of the '381 patent against Citadel Securities, a definite and concrete, real and substantial, and continuing

case or controversy exists between Citadel Securities and HFT with respect to the validity of the ’381 patent.

28. Citadel Securities is entitled to declaratory judgment that the ’381 patent is invalid.

COUNTERCLAIM COUNT SIX
Declaratory Judgment of Non-Infringement of U.S. Patent No. 11,575,381

29. Citadel Securities incorporates herein by reference and re-alleges the preceding paragraphs of its Answer, Affirmative Defenses, and Counterclaims as if fully set forth herein.

30. Citadel Securities has not and does not infringe any valid and enforceable claim of the ’381 patent, directly or indirectly, literally or under the doctrine of equivalents. The manufacture, use, sale, offer for sale, or importation of the Accused Instrumentalities has not infringed, does not infringe, and would not, if manufactured, used, sold, offered for sale, or imported, infringe, either directly, indirectly, or contributorily, and would not induce infringement of, the ’381 Patent.

31. By virtue of HFT’s filing of the Complaint in this action asserting claims of the ’381 patent against Citadel Securities, a definite and concrete, real and substantial, and continuing case or controversy exists between Citadel Securities and HFT with respect to Citadel Securities’ alleged infringement of the ’381 patent.

32. A judicial declaration is necessary and appropriate so that Citadel Securities may ascertain its rights regarding the ’381 patent.

33. Citadel Securities is entitled to declaratory judgment that the manufacture, use, sale, offer for sale, or importation of the Accused Instrumentalities has not infringed, does not infringe, and would not, if manufactured, used, sold, offered for sale, or imported, infringe, either directly, indirectly, or contributorily, and would not induce infringement of, any valid and enforceable claim of the ’381 Patent.

JURY DEMAND

Citadel Securities demands a trial by jury for all issues so triable pursuant to Federal Rule of Civil Procedure 38.

PRAYER FOR RELIEF

WHEREFORE, Citadel Securities respectfully seeks the following relief from this Court:

A. Find and declare that Citadel Securities has not directly, indirectly, contributorily, by inducement, literally, or under the doctrine of equivalents infringed the ’286 patent;

B. Find and declare that the asserted claims of the ’286 patent are invalid and/or unenforceable;

C. Find and declare that Citadel Securities has not directly, indirectly, contributorily, by inducement, literally, or under the doctrine of equivalents infringed the ’305 patent;

D. Find and declare that the asserted claims of the ’305 patent are invalid and/or unenforceable;

E. Find and declare that Citadel Securities has not directly, indirectly, contributorily, by inducement, literally, or under the doctrine of equivalents infringed the ’381 patent;

F. Find and declare that the asserted claims of the ’381 patent are invalid and/or unenforceable;

G. Deny all relief requested by Plaintiff;

H. Dismiss this action in its entirety with prejudice;

I. Grant Citadel Securities its costs (including expert fees), disbursements, and reasonable attorneys’ fees in this action, pursuant to 35 U.S.C. § 285 and 28 U.S.C. § 1920; and

J. Grant all other and further relief as the Court may deem just and proper.

Dated: January 5, 2026

Respectfully submitted,

/s/ Meg E. Fasulo

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