IN THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF DELAWARE

Defendant.)
FORMFACTOR, INC.,)) JURY TRIAL DEMANDED
V.) C.A. No
Plaintiffs,	
FEINMETALL GMBH and TECHNOPROBE S.P.A.,))
FEINMETALL GMBH and)

COMPLAINT

Feinmetall GmbH ("Feinmetall") and Technoprobe S.p.A. ("Technoprobe," and collectively, "Plaintiffs"), by and through their undersigned counsel, hereby bring this action for patent infringement against Defendant FormFactor, Inc. ("FormFactor"), and allege as follows:

I. NATURE OF THE ACTION

1. This is an action for infringement of United States Patent No. 7,850,460 ("the '460 Patent") under the patent laws of the United States, 35 U.S.C. § 100 *et seq*.

II. PARTIES

Plaintiff Feinmetall is a German corporation with its principal place of business at
 Zeppelinstrasse 8, D – 71083, Herrenberg, Germany. Feinmetall is the owner of the '460 Patent.

3. Plaintiff Technoprobe is an Italian corporation with its principal place of business at Via Cavalieri di Vittorio Veneto 2, 23870 Cernusco Lombardone, Italy. Technoprobe is the exclusive licensee of the '460 Patent.

4. Defendant FormFactor is a corporation organized and existing under the laws of the State of Delaware, with its principal place of business at 7005 Southfront Road, Livermore, CA 94551.

III. JURISDICTION AND VENUE

5. This Court has subject matter jurisdiction over this action under 28 U.S.C. §§ 1331 and 1338(a) because this action concerns a federal question arising under the patent laws of the United States.

6. Personal jurisdiction exists over FormFactor at least because FormFactor is a Delaware corporation and thus resides in Delaware and has purposefully availed itself of the privileges of conducting business in the State of Delaware.

7. Venue is proper in this District under 28 U.S.C. § 1400(b) because FormFactor is a Delaware corporation and thus resides in this District.

IV. BACKGROUND

A. The '460 Patent

8. The '460 Patent bears the title "Electrical Contact Element for Contacting an Electrical Component Under Test and Contacting Apparatus," and was duly and legally issued on December 14, 2010. A true and correct copy of the '460 Patent is attached as Exhibit A to this Complaint.

9. The '460 Patent is valid and enforceable.

10. The '460 Patent is directed to an elongate electrical contact element and corresponding apparatus for physically contacting electrical components under test. Exhibit A, Abstract. Such contact elements, also known as contact probes, are typically used in probe cards to check for defects in an integrated circuit during fabrication.

11. Figure 1 of the '460 Patent demonstrates one embodiment of the invention:



12. As illustrated in Figure 1, the '460 Patent concerns a type of contact element known as a buckling beam probe that uses mechanical deflection to apply force to the device under test. The buckling beam probe in Figure 1 has a rectangular lamellar cross-section that creates open slots along the length of the probe in order to enhance its heat transfer capabilities and reduce incidences of probe failure.

B. Defendant's Infringing Activities

13. On information and belief, FormFactor has been developing buckling beam probes with a rectangular lamellar cross-section having open slots along its length.

14. Photographs and other details concerning FormFactor's probes obtained by Plaintiffs demonstrate features that infringe at least claim 1 of the '460 Patent.

15. Plaintiffs contacted FormFactor in or about July 2017 explaining that the FormFactor probes infringed the '460 Patent and seeking to resolve the situation amicably.

16. FormFactor has thus known of the '460 Patent and has been on notice of its infringement of that patent since at least July 2017.

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17. During communications since July 2017, Plaintiffs have provided information requested by FormFactor, including a detailed claim chart demonstrating infringement of the '460 Patent by the FormFactor probes.

18. During the communications with Plaintiffs, FormFactor has never denied that it infringed the '460 Patent.

19. FormFactor has refused to abandon its development, use, and sale of the infringing FormFactor probes, and has not provided a credible non-infringement position.

C. The Accused Products

20. FormFactor is, *inter alia*, making, selling, offering for sale, using, developing, and/or distributing probes that infringe the '460 Patent. FormFactor's probes include, but are not limited to, its Pyrana and Katana-RF line of probe card products (the "Accused Products").

21. FormFactor's website indicates that the Accused Products are used in "RF device production test." *See Katana-RF – FormFactor, Inc.*, https://www.formfactor.com/product/probe-cards/rf-mmw-radar/katana-rf/ (last visited July 17, 2018) (stating that the Katana-RF product is a "High performance vertical MEMS probe card for RF production test"); *Pyrana - FormFactor, Inc.*, https://www.formfactor.com/product/probe-cards/rf-mmw-radar/pyrana/ (last visited July 17, 2018) (stating the same). Screen captures for these webpages are attached as Exhibit B to this Complaint.

22. FormFactor has also published a datasheet marketing the Accused Products (the "Datasheet"). *See* Pyrana and Katana-RF, RF-MEMS Probe Cards and Custom Probe Heads, https://www.formfactor.com/download/pyrana-and-katana-rf-data-

sheet/?wpdmdl=4920&refresh=5a7c6ff36aab61518104563 (last visited July 17, 2018). This Datasheet is attached as Exhibit C to this Complaint.

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23. The Datasheet states that Accused Products incorporate "thin-film technology" that allows for "minimum pad damage," "minimum contact force," and "easily replaceable probes." Exhibit C at 1.

24. The Datasheet further explains that these probes are offered in a variety of "probe types," including a "7-leaf," a "4-leaf," and a "3-leaf" type. Exhibit C at 2.

25. The description of the Accused Products as using "thin film technology" and being of a "leaf" type in the Datasheet refer to features that infringe the '460 Patent.

26. On or about June 4, 2018, FormFactor presented slides titled "Enabling High Parallelism in Product RF Test" (the "Presentation") at the 2018 Semiconductor Wafer Test Workshop ("SWTW") in San Diego, California. A copy of the Presentation is attached as Exhibit D to this Complaint.

27. The Presentation describes the development and use of FormFactor's probes having a low contact force, long lifetime, high current carrying capacity, and easy replaceability. *See* Exhibit D at 7.



28. A picture of FormFactor's probe from the Presentation is shown below:

Id.

29. FormFactor's probes described in the Presentation are the Accused Products referenced in the Datasheet. For example, the Presentation makes reference to the same "leaf" structures as the Datasheet:



See Exhibit D at 8 (charting "7-leaf," "4-leaf," and "3-leaf" probe types). The Presentation also uses the same numbering as the Datasheet to identify product numbers, such as "K400," "K150," and "K80." *Id.* Further, the Presentation relates to production RF testing just like the Accused Products outlined in the Datasheet. *Id.* at 1.

30. Thus, the design of FormFactor's probes described in the Presentation is representative of the Accused Products.

D. Infringement of the '460 Patent

31. Independent claim 1 of the '460 Patent recites:

An elongate electrical contact element for physically contacting an electrical component under test, said element comprising

- two electrical contacting end regions and an elongate intermediate region situated between the end regions,
- having an at least substantially rectangular cross-section, and
- configured lamellar along a longitudinal extent of the intermediate region,
- wherein the lamellar intermediate region comprises at least two lamellae extending in the longitudinal extent of the intermediate region,
- adjacent ones of the lamellae being separated from one another by at least one longitudinal slot,
- the lamellae being configured to bend if a contacting zone of the contact element is pressed against the electrical component under test.
- 32. The Accused Products are elongate electrical contact element[s] for physically

contacting an electrical component under test. For example, the Accused Products feature

probes used in semiconductor device testing. See Exhibit B at 1 (stating that the Katana-RF

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product is a "High performance vertical MEMS probe card for RF production test"); Exhibit B at 2 (same for Pyrana product).

33. The Accused Products each has two electrical contacting end regions and an elongate intermediate region situated between the end regions. *See*, *e.g.*, the following illustrations from the Presentation:





Exhibit D at 12-13.

34. The Accused Products have an at least substantially rectangular cross-section.

See, *e.g.*, the following illustration from the Presentation:



Exhibit D at 7.

35. The Accused Products are configured lamellar along a longitudinal extent of the intermediate region. *See*, *e.g.*, the following illustration from the Presentation:



Exhibit D at 7.

36. The Accused Products contain a lamellar intermediate region [that] comprises at least two lamellae extending in the longitudinal extent of the intermediate region. For example, the Datasheet references "7-leaf," "4-leaf," and "3-leaf" structures:

Probe type	K400 ¹ (7-leaf)	K150' (4-leaf)	K80 ² (3-leaf)
robe technology	Vertical MEMS	Vertical MEMS	Vertical MEMS
wailable probe tip shape	Flat	Flat, Pointed	Flat, Pointed

See Exhibit C at 2. The FormFactor Presentation also makes reference to these "leaf" structures:



See Exhibit D at 8 (charting "7-leaf," "4-leaf," and "3-leaf" probe types). Finally, the Presentation depicts these structures as well:



Exhibit D at 7.

37. The Accused Products feature adjacent ones of the lamellae [that are] separated from one another by at least one longitudinal slot. *See*, *e.g.*, the following illustration from the Presentation:



Exhibit D at 7.

38. The Accused Products feature lamellae being configured to bend if a contacting zone of the contact element is pressed against the electrical component under test. For example, the Datasheet's reference to "Vertical MEMS" technology demonstrates that the Accused Products are configured to bend:

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Probe type	K400' (7-leaf)	K150' (4-leaf)	K80 ² (3-leaf)	
Probe technology	Vertical MEMS	Vertical MEMS	Vertical MEMS	
Available probe tip shape	Flat	Flat, Pointed	Flat, Pointed	

Exhibit C at 2. Also, the Presentation separately refers to the Accused Products as having a "buckling action" that "makes good contact quickly, and leaves plenty of usable overtravel." Exhibit D at 8.

V. CLAIM FOR RELIEF – INFRINGEMENT OF U.S. PATENT NO. 7,850,460

39. Plaintiffs re-allege and incorporate by reference as if fully set forth herein the allegations in paragraphs 1–38.

40. FormFactor has infringed, and continues to infringe, one or more claims of the '460 Patent under 35 U.S.C. § 271(a), literally or under the doctrine of equivalents, by making, using, offering to sell, and/or selling in the United States, and/or importing into the United States, products, components or devices, including the Accused Products that are covered by the '460 Patent.

41. FormFactor has been aware of the 460 Patent and its infringement of that patent since at least July 2017, and has continued its infringement with disregard of the 460 Patent. FormFactor's infringement of the 460 Patent has been and continues to be willful, intentional and deliberate.

42. FormFactor's infringement of the '460 Patent has caused and will continue to cause the Plaintiffs substantial and irreparable injury, for which Plaintiffs are entitled to all of the relief provided by 35 U.S.C. §§ 281, 283, 284, and 285, including but not limited to injunctive relief and compensatory damages.

43. This is an exceptional case.

DEMAND FOR JURY TRIAL

Pursuant to Rule 38 of the Federal Rules of Civil Procedure, Plaintiffs respectfully request a trial by jury of all issues properly triable by jury.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs pray for relief, as follows:

A. A judgment that FormFactor has infringed one or more claims of the '460 Patent;

B. An order and judgment preliminarily and permanently enjoining FormFactor, its employees, agents, officers, directors, attorneys, successors, affiliates, subsidiaries and assigns, and all of those in active concert and participation with any of the foregoing persons or entities from further acts of infringement of the '460 Patent;

C. A judgment awarding Plaintiffs damages adequate to compensate for FormFactor's infringement of the '460 Patent, and in no event less than a reasonable royalty for FormFactor's acts of infringement, including all pre-judgment and post-judgment interest at the maximum rate permitted by law;

D. A judgment that FormFactor's infringement of the '460 Patent has been willful and deliberate;

E. A judgment awarding Plaintiffs treble damages as a result of FormFactor's willful and deliberate infringement of the '460 Patent, pursuant to 35 U.S.C. 284;

F. A judgment declaring this case is exceptional under 35 U.S.C. § 285 and awarding costs, expenses, and attorneys' fees to Plaintiffs; and

G. Such further relief as this Court deems just and proper under the circumstances.

MORRIS, NICHOLS, ARSHT & TUNNELL LLP

/s/ Jeremy A. Tigan

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