

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

PACT XPP SCHWEIZ AG,

Plaintiff,

v.

INTEL CORPORATION,

Defendant.

Case No. 1:19-cv-01006-JDW

MEMORANDUM

In law, one thing is paramount above all others: words matter. Lawyers and judges use different techniques to interpret the words depending on the context in which someone uses them. But they always matter. In this case, PACT XPP Schweiz AG made assertions to the U.S. Patent and Trademark Office to prevent the PTO from determining that its patent was obvious. The PTO accepted what PACT said and let the patent survive. Now, though, PACT wants to avoid the impact of what it told the PTO. It can't do so. Having made specific assertions to the PTO about the scope of its invention, PACT is bound by the words it used. When I consider those words, I conclude that the remaining patent claims at issue in this case should be construed more narrowly than PACT suggests. And that narrow construction means that no reasonable juror could conclude that the accused devices that Intel Corp. makes infringe on PACT's patent. I will therefore grant summary judgment on the remaining claims in this case.

I. BACKGROUND

A. Factual Background

PACT owns U.S. Patent No. 8,471,593 (“the ‘593 Patent”), which is directed to enabling efficient data processing by improving the data rate for transmissions within a logical cell array and bus system. In its most basic terms, the technology intends to improve the internal architecture of microprocessor chips to increase processing speeds and expand memory storage. The Patent sets forth two independent claims and twenty-eight dependent claims. Independent claim 1 recites, in relevant part:

a bus system flexibly interconnecting the plurality of processing cores, the plurality of memory units, and the at least one interface;

wherein:

the bus system includes a first structure dedicated for data transfer in a first direction and a second structure dedicated for data transfer in a second direction; and

each of at least some of the data processing cores includes a **physically dedicated connection** to at least one physically assigned one of the plurality of memory units, the assigned one of the plurality of memory units being accessible by another of the data processing cores via a secondary bus path of the bus system.

‘593 Patent, 12:31-44 (emphasis added to highlight disputed limitation). Independent claim 16 includes a substantially similar limitation. It recites, in relevant part:

a bus system flexibly interconnecting the plurality of processing cores, the plurality of memory units, and the at least one interface;

wherein:

the bus system includes a first structure dedicated for data transfer in a first direction and a second structure dedicated for data transfer in a second direction; and

each of at least some of the data processing cores includes a **dedicated connection** to at least one assigned one of the plurality of memory units each situated such that no other data processing core and no other memory unit is positioned between the respective data processing core and the respective assigned memory unit, the assigned one of the plurality of memory units being accessible by another of the data processing cores via a secondary bus path of the bus system.

Id. at 13:38-55 (emphasis added to highlight disputed limitation).

Intel manufactures a range of microprocessors that are “capable of executing instructions, performing computations on data, and reading from and writing to memory.” (ECF No. 591 at 4.) This includes the Sandy Bridge, Ivy Bridge, Haswell, Broadwell, Skylake, Coffee Lake, Ice Lake, Kaby Lake, Amber Lake, Whiskey Lake, Cascade Lake, Cannon Lake, and Lakefield Processors, all of which PACT alleges infringe certain claims of the ‘593 Patent.

B. Procedural History

On May 30, 2019, PACT filed a complaint asserting that Intel infringed 423 claims from twelve of its patents, including the ‘593 Patent. The scope of the dispute has narrowed significantly since. Through *inter partes* review, *ex parte* reexamination, summary judgment, and PACT’s voluntary dismissal of some claims with prejudice, only claims 1, 2, 4, 5, 10, 11, 14, 15, 16, 17, 21, and 22 of the ‘593 Patent remain in issue. During the claim construction proceedings in this case, I did not construe the term “dedicated

connection” because the Parties did not request it. Intel raised the possibility of a need for construction after the *Markman* hearing, but I denied that request while leaving open the possibility of alternative construction in a future motion.

On June 21, 2022, the Parties filed cross-motions for summary judgment. In an Order dated March 24, 2023, I granted in part and denied in part both. I denied Intel’s Motion as it pertained to the ‘593 Patent because a genuine dispute of material fact existed as to whether Intel’s accused devices practiced two of the patent’s limitations: namely, “(1) a system with two dedicated connections transferring data in different directions, and (2) processors with exclusive connections to corresponding memory units.” (D.I. 399 at 8.)

On June 10, 2021, Intel requested EPR of the ‘593 Patent. It argued that prior art, including U.S. Patent No. 6,457,087 to Fu, rendered the ‘593 Patent’s claims obvious. The USPTO instituted re-examination on August 13, 2021, and issued non-final rejections on October 4, 2022, and March 30, 2023. In the first rejection, the Examiner rejected the claims at issue for the ‘593 Patent as obvious because Fu recites a structure wherein devices, such as processors, connect to memories via a chain including a flow control unit (FCU), memory control unit (MCU), memory path, memory bus, and node switch. Because this internal transit grid creates a pathway between all memories and processors within the structure, and because the switches could be configured to allow for a processor to access the MCU to the exclusion of other devices, this structure constitutes the “dedicated

connection” that the ‘593 Patent contemplates. In reaching that conclusion, the Examiner rejected PACT’s argument that if multiple processors can connect to the memory line, then there is no dedicated connection. Instead, the Examiner concluded that “all that is required . . . is that there be a physically dedicated connection, i.e. a direct, uninterrupted connection, between a core and a memory unit.” (D.I. 598-9 at 27.)

In response, PACT argued that Fu fails to disclose a “dedicated connection” because it recites a structure in which “the memories to which one of the processors is connectable via the FCU is also available to connection by another of the processors over a same line of the FCU.” (D.I. 598-10 at 10 (numbered identifiers omitted).) Under PACT’s reading, the Examiner’s interpretation of “dedicated” as synonymous with “direct” and “uninterrupted” was overbroad. Instead, citing lay dictionary definitions and the claim language, PACT insisted that a person of ordinary skill in the art would understand that a direct connection is a dedicated connection *only* when that connection is devoted to connecting two units while excluding connection to any and all other units. Therefore, “a communication line(s) that is *shared* by a multitude of different devices cannot be a ‘dedicated’ connection.” (*Id.* at 11 (emphasis in original).) As PACT argued, it is not enough for a processor to connect to the memory via an uninterrupted, direct route. To fall within the ‘593 Patent’s “dedicated connection” limitation, that connection must connect *only* one processor to one memory.

Upon consideration of PACT's proposed constructions for "dedicated" as "devoted to a particular purpose or designed to interconnect exclusively," the Examiner adopted the latter as the term's plain and ordinary meaning. (D.I. 598-11, 4-5.) He reasoned that "since *part of* the connection between the memory and the [core] is shared [in Fu], there is no dedicated connection." (*Id.* at 4 (emphasis added).) The USPTO withdrew its rejections and confirmed the patentability of the '593 Patent's claims.

On September 15, 2023, Intel sought leave to file a renewed summary judgment motion based on a disclaimer that it argues PACT made during the EPR proceedings. I permitted Intel to renew its motion, and Intel moved for summary judgment (or, in the alternative, construction of the disputed term). The issue is now ripe.

II. LEGAL STANDARD

A. Summary Judgment

Federal Rule of Civil Procedure 56(a) permits a party to seek, and a court to enter, summary judgment "if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a). The moving party has the initial burden of proving the absence of a genuinely disputed material fact relative to the claims in question. *See Celotex Corp. v. Catrett*, 477 U.S. 317, 330 (1986). Material facts are those "that could affect the outcome" of the proceeding, and "a dispute about a material fact is 'genuine' if the evidence is sufficient to permit a reasonable jury to return a verdict for the nonmoving party." *Lamont v. New*

Jersey, 637 F.3d 177, 181 (3d Cir. 2011) (quoting *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 248 (1986)).

The burden then shifts to the nonmovant to demonstrate the existence of a genuine issue for trial. *See Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 586–87 (1986). A nonmoving party that asserts a genuine dispute about a fact must support its assertion by: “(A) citing to particular parts of materials in the record, including depositions, documents, electronically stored information, affidavits or declarations, stipulations . . . , admissions, interrogatory answers, or other materials; or (B) showing that the materials cited [by the opposing party] do not establish the absence . . . of a genuine dispute” Fed. R. Civ. P. 56(c)(1). When determining whether a genuine issue of material fact exists, a judge must view the evidence in the light most favorable to the non-moving party and draw all reasonable inferences in that party’s favor. *See Scott v. Harris*, 550 U.S. 372, 380 (2007).

In a patent case, the determination of the scope of the patent claims is a question of law, and a dispute about that legal issue does not preclude summary judgment. *See Phonometrics, Inc. v. Northern Telecom Inc.*, 133 F.3d 1459, 1464 (Fed. Cir. 1998). When the parties present a dispute about the scope of a claim term, the court must resolve that dispute. *See O2 Micro Intern. v. Beyond Innov.*, 521 F.3d 1351, 1362 (Fed. Cir. 2008).

B. Claim Construction And Prosecution Disclaimer

"Claim construction is a matter of resolution of disputed meanings and technical scope, to clarify and when necessary to explain what the patentee covered by the claims, for use in the determination of infringement. It is not an obligatory exercise in redundancy." *U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997). It is a question of law for a judge to decide. *See Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 387-91 (1996).

When construing a claim, words "are generally given their ordinary and customary meaning as understood by a person of ordinary skill in the art when read in the context of the specification and prosecution history." *Thorner v. Sony Comput. Ent. Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012) (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1313 (Fed. Cir. 2005) (*en banc*)). A judge may depart from a word's ordinary and customary meaning only when a patentee (1) sets out a definition and acts as his own lexicographer, or (2) disavows the full scope of a claim term either in the specification or during prosecution. *See id.* "In some cases, the ordinary meaning of claim language as understood by a person of skill in the art may be readily apparent even to lay judges, and claim construction in such cases involves little more than the application of the widely accepted meaning of commonly understood words." *Phillips*, 415 F.3d at 1314. If the meaning isn't readily apparent, "the court should look first to the intrinsic evidence of record, i.e., the patent itself, including the claims, the specification and, if in evidence, the prosecution history."

Interactive Gift Exp., Inc. v. Compuserve Inc., 256 F.3d 1323, 1331 (Fed. Cir. 2001). Then, a judge may review extrinsic evidence, cognizant of its potential unreliability and bias. See *Phillips*, 415 F.3d at 1318. The prosecution history, which “consists of the complete record of the proceedings before the PTO and includes the prior art cited during the examination of the patent,” is part of the intrinsic evidence. *Id.* at 1316. Reexaminations “are part of the prosecution history.” *Northpeak Wireless, LLC v. 3COM Corp.*, 674 F. App’x 982, 986 n.1 (Fed. Cir. 2016). The judge must interpret the claim “with an eye toward giving effect to all terms in the claim.” *Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1257 (Fed. Cir. 2010) (citation omitted). Readings that render claim language “superfluous” or “meaningless” are disfavored. *Id.* (collecting cases).

“Where the patentee has unequivocally disavowed a certain meaning to obtain his patent, the doctrine of prosecution disclaimer attaches and narrows the ordinary meaning of the claim congruent with the scope of the surrender.” *Omega Eng’g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1324 (Fed. Cir. 2003). The doctrine of prosecution disclaimer . . . preclud[es] patentees from recapturing through claim interpretation specific meanings disclaimed during prosecution.” *Mass. Inst. of Tech. v. Shire Pharm., Inc.*, 839 F.3d 1111, 1119 (Fed. Cir. 2016) (quote omitted). “[T]hrough statements made during prosecution or reexamination . . . a patent owner . . . may commit to a particular meaning for a patent term, which meaning is then binding in litigation.” *CVI/Beta Ventures, Inc. v. Tura LP*, 112 F.3d 1146, 1158 (Fed. Cir. 1997). An argument advanced during EPR can lead

to disclaimer even if the examiner did not rely on that argument; the patentee's statements "still inform the proper construction of the term." *American Piledriving Equipment, Inc. v. Geoquip, Inc.*, 637 F.3d 1324, 1336 (Fed. Cir. 2011) (cite omitted). The Federal Circuit has declined to find a prosecution disclaimer "[w]here the alleged disavowal is ambiguous, or even 'amenable to multiple reasonable interpretations.'" *Mass. Inst. of Tech.*, 839 F.3d at 1119 (quote omitted). "The party seeking to invoke prosecution history disclaimer bears the burden of proving the existence of a 'clear and unmistakable' disclaimer that would have been evident to one skilled in the art." *Trivascular, Inc. v. Samuels*, 812 F.3d 1056, 1063–64 (Fed. Cir. 2016) (quote omitted).

C. Infringement

Infringement occurs when a person "without authority makes, uses, offers to sell, or sells any patented invention, within the United States, or imports into the United States any patented invention during the term of the patent . . ." 35 U.S.C. § 271(a). "Determining infringement requires two steps: construing the claims and comparing the properly construed claims to the accused product." *Advanced Steel Recovery, LLC v. X-Body Equip., Inc.*, 808 F.3d 1313, 1316–17 (Fed. Cir. 2015). Still, "a good faith dispute about the meaning and scope of asserted claims does not, in and of itself, create a genuine dispute to preclude summary judgment in patent cases[.]" *Phonometrics*, 133 F.3d at 1464 (Fed. Cir. 1998).

Infringement is a question of fact. *See Thorner*, 669 F.3d at 1317. Accordingly, summary judgment of noninfringement “is proper when no reasonable jury could find that every limitation recited in a properly construed claim is found in the accused device either literally or under the doctrine of equivalents.” *Id.* (citation omitted). The patentee has the burden of proving infringement by a preponderance of the evidence. *See Duncan Parking Techs., Inc. v. IPS Grp., Inc.*, 914 F.3d 1347, 1360 (Fed. Cir. 2019). For literal infringement, “every limitation set forth in a claim must be found in an accused product, exactly.” *Id.* Literal infringement is a question of fact. *Absolute Software, Inc. v. Stealth Signal, Inc.*, 659 F.3d 1121, 1130 (Fed. Cir. 2011). As such, it is amenable to summary judgment when no reasonable factfinder could find that the accused product contains every claim limitation. *Akzo Nobel Coatings, Inc. v. Dow Chem. Co.*, 811 F.3d 1334, 1339 (Fed. Cir. 2016).

III. ANALYSIS

A. Claim Construction

PACT and Intel offer differing interpretations of the term “dedicated connection,” and I must construe the term to resolve that dispute. *See O2 Micro Int’l*, 521 F.3d 1351, 1360-62. During EPR, PACT made assertions about what a dedicated connection is and what it isn’t. In PACT’s view, it **is** a connection that is devoted to connecting two units while excluding connection to any and all other units, and it is **not** “a communication line(s) that is *shared* by a multitude of different devices.” ((D.I. 598-10 at 11 (emphasis in

original).) These assertions demonstrate a clear intent to exclude a particular interpretation to obtain claim allowance against Fu and therefore constitute a prosecution disclaimer. That disclaimer now binds PACT with respect to alleged infringement by Intel. *See Omega Eng'g*, 334 F.3d at 1324 (citing *Standard Oil Co. v. Am. Cyanamid Co.*, 774 F.2d 448, 452, 227 USPQ 293, 296 (Fed.Cir.1985)).

I am not persuaded by PACT's arguments against applying the doctrine of prosecution disclaimer. PACT suggests that I have to consider other statements in the prosecution history that render this assertion ambiguous. PACT is correct, of course, that I can't view its statements in isolation. *See Ecolab, Inc. v. FMC Corp.*, 569 F.3d 1335, 1342 (Fed. Cir. 2009). But that doesn't mean that I have to credit arguments that PACT advanced but then abandoned in the prosecution history. Rather, I have to view the statements that PACT made in light of the context of the prosecution history as a whole to understand what, exactly, PACT was telling the examiner. To hold otherwise, as PACT seems to urge, would give an applicant an incentive to make a broad spectrum of potentially contradictory assertions to an examiner during a prosecution to make sure that none of those statements could be controlling at a later date. That's not the law.

With that concept in mind, I can read, and reject the significance of, the statements that PACT identifies as a basis to avoid prosecution disclaimer. In particular, PACT now notes that it argued to the Examiner that "the 'dedicated connection' to the assigned memory unit is different from, and requires more than, the mere shared bus system that

interconnects the components” (D.I. 598-10 at 11.) But the context of that statement matters. PACT made this statement to refute the Examiner’s construction of “dedicated” as “direct.” PACT was not arguing that there needed to be more connective elements, as it suggests now, but instead that a mere direct route from device to memory unit—without exclusivity of purpose or connectivity—was insufficient to satisfy the “dedicated” limitation. PACT can’t now take that assertion and invert it for purposes of creating an ambiguity because the context doesn’t allow it. It’s also significant that the Examiner did not rely on this distinction. Nor does it follow logically from the plain language of the claims.

Considering the prosecution record in its entirety, PACT made an explicit disclaimer of the ‘593 patent’s scope which limits its construction now. PACT has not shown ambiguity or that another reasonable interpretation exists with respect to this term. Given this, I construe the term “dedicated connection” to mean “a connection designed to directly interconnect a particular device to a particular memory via a link inaccessible to other devices and memories.”

B. Infringement

Having construed this term, no reasonable juror could find that the Accused Devices practice every limitation of the ‘593 Patent, so I will grant summary judgment for Intel. The Accused Products each include multiple processor cores and on-chip, high-speed memory caches that store portions of data in memory. The memory caches are

layered, denoting a cache's physical distance from the processor core. The outermost layer (the "LLC") is partitioned into an equal number of slices as the microchip has cores. A core can communicate with both its collocated slice, which is physically adjacent to it, and non-collocated slices, which are not. To enable communication between a core and the non-collocated slices, the Accused Products contain a ring interconnect that functions as a transit loop between the components. The processor cores and LLC slices are joined to the ring interconnect using a C-Bo, which is itself composed of a CoreBo, RingBo, and CacheBo.

The C-Bo acts as a bridge between a processing core and an LLC. Within the C-Bo, the CoreBos are assigned to a particular core and connect that core to the ring structure via a RingBo. A RingBo facilitates communication along the bus's circuitous route by interfacing with the CoreBos and transmitting information to adjacent RingBos. (¶ 22–25.) The CacheBos function as the inverse of the CoreBos by receiving communications from a RingBo and delivering it to a collocated memory.

The ring structure is thus akin to a closed-loop rail system: a passenger can get from any station to another, but even if she travels to an adjacent stop she must use the shared train infrastructure. Any processor can communicate with any memory, but it must go through the ring structure. Even if the processor is communicating with its co-located LLC, a communication must pass from processor to CoreBo to RingBo to CacheBo to memory. All connective structures in this chain directly interconnect a particular device to

a particular memory, as the claim language requires, but no structure does so while excluding other devices and memories. No reasonable juror could find that the Accused Devices practice all of the '593 Patent's limitations, so summary judgment is appropriate.

IV. CONCLUSION

In many instances, the law permits a party to take contradictory positions on a particular issue at different times and in different courts. But patent prosecution and subsequent litigation isn't one of them; a patentee cannot have his claim and eat it, too. I will grant summary judgment for Intel and deny the Parties' motions *in limine* and *Daubert* motions as moot. An appropriate Order follows.

BY THE COURT:

/s/ Joshua D. Wolson

JOSHUA D. WOLSON, J.

July 26, 2024