

**UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

SONRAI MEMORY LIMITED,

Plaintiff,

v.

APPLE INC.,

Defendant.

Case No. 6:22-cv-00787-ADA

JURY TRIAL DEMANDED

**SONRAI MEMORY LIMITED'S
SUR-REPLY CLAIM CONSTRUCTION BRIEF**

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I. INTRODUCTION

Plaintiff Sonrai Memory Limited (“Sonrai”) submits this sur-reply claim construction brief concerning U.S. Patent Nos. 6,724,241 (“the ’241 Patent”) and 6,874,014 (“the ’014 Patent”).

II. ’241 PATENT DISPUTED TERMS

A. “A charge pump circuit for generating a charge pump voltage having minimal voltage ripples”, ’241 Patent Claim 1

Sonrai’s Proposed Construction	Apple’s Proposed Construction
The preamble is not limiting except for “charge pump circuit”	The preamble is limiting and should be given its plain and ordinary meaning.

Apple fails to provide any “strong reason” that the Court should depart from its prior construction. *See TQP Dev., LLC v. Intuit Inc.*, No. 2:12-CV-180-WCB, 2014 WL 2810016, at *6 (E.D. Tex. June 20, 2014) (Bryson, J.) (“[P]revious claim constructions in cases involving the same patent are entitled to substantial weight, and the Court has determined that it will not depart from those constructions absent a strong reason for doing so.”). The Court’s prior construction was correct, and it should be adopted here.

Moreover, Apple fails to rebut the facts that (1) the body of the claim defines a structurally complete invention and (2) the “for generating a charge pump voltage having minimal voltage ripples” language states only a purpose or intended use for the invention. *See Shoes by Firebug LLC v. Stride Rite Children’s Grp., LLC*, 962 F.3d 1362, 1367 (Fed. Cir. 2020) (“[A] preamble is not limiting where a patentee defines a structurally complete invention in the claim body and uses the preamble only to state a purpose or intended use for the invention.”). Apple does not identify any structural aspect that is allegedly missing in the body of the claim in order to satisfy the intended use of the invention recited in the preamble. To the contrary, the structural aspects of the preferred embodiments are incorporated in the body of the claim in detail, including through the

corresponding structure for the means-plus-function term “load selector means.” Thus, this language in the preamble is not limiting.

B. “coupling... to / coupled ... to,” ’241 Patent Claims 1, 6, 9, 10, 11

Sonrai’s Proposed Construction	Apple’s Proposed Construction
No construction necessary. Alternatively, for claims 6, 9, 10, and 11 “connected without intervening components that substantially change the voltage”	“connected without intervening resistors or other components that substantially change the voltage”

Apple fails to justify its overreach that seeks to apply statements made by Sonrai in its IPR response in the context of Claim 10 to Claim 1, which recites a *different* term—“selectively coupling.” As such, Apple’s cited authority involving the *same* term is inapposite. Reply at 2. Apple cannot identify anything in Sonrai’s IPR arguments about Claim 10 to suggest that they are relevant to the “selectively coupling” language in Claim 1. Moreover, the “selectively coupling” language in Claim 1 is part of a means-plus-function term. Not only have the Parties agreed to the function and corresponding structure for that “load selector means” term, but Apple has not identified a reason as to why prosecution statements regarding structure should be applied to functional language and fails to analyze its proposed construction in light of that corresponding structure.¹ As such, there is no basis to apply Apple’s structural limitation when the corresponding structure is already agreed upon by the parties. Applying Apple’s construction to the means-plus-function term would only serve to confuse the jury as to whether the corresponding structure is the

¹ “Coupled to” is used in the context of singular connection points, e.g., “*the first terminal* [of each load] being coupled to the pump voltage” [claim 8] or “*the gate* of the load NMOS transistor being connected to the *output terminal* of the elevator circuit” [claim 9]. Claim 1 recites “selectively coupling a load,” not a singular connection point. Figures 3, 5A, 5B and 7 constitute the agreed corresponding structure and expressly define the connection configuration of the loads, switches, and transistors. In at least one of those, Fig. 5A, one terminal of the load is always connected to the pump output, at odds with Apple’s assertion that their proposed construction applies. At most, Figures 3, 5A, 5B and 7 show that the load is selectively connected to the pump output from ground without intervening components that substantially change the voltage.

parties' agreed structure or whether that corresponding structure illustrated in the identified figures must be further modified in some way based on Apple's construction. In any event, it would be improper to adopt a modified structure because the corresponding structure is what is disclosed in the patent. *See Sony Corp. v. Iancu*, 924 F.3d 1235, 1239 (Fed. Cir. 2019) ("[S]tructure disclosed in the specification is corresponding structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim.").

With respect to "coupled to" in Claims 6, 9, 10, and 11, Sonrai proposes that the term should be construed to mean "connected without intervening components that substantially change the voltage." The reference to "resistors" in Apple's revised construction only creates ambiguity in the construction because it is unclear whether it excludes all resistors or only those that substantially change the voltage. Apple agrees that any alleged disclaimer is limited to "preclud[ing] only those intervening components that cause a voltage change." Reply at 2. Thus, the Court should adopt Sonrai's construction.

C. "load selector means includes a target output pump selector for shutting down the variable charge pump circuit when the target output pump voltage (Vcfra) is greater than or equal to a reference voltage (Vref)," '241 Patent Claim 2

Sonrai's Proposed Construction	Apple's Proposed Construction
Means-plus-function limitation. Function: "shutting down the variable charge pump circuit when the target output pump voltage (Vcfra) is greater than or equal to a reference voltage (Vref)" Corresponding structure: comparator 702 as shown in Figure 7 and associated descriptions in the specification, and equivalents thereof.	Subject to § 112 ¶ 6. Function: "shutting down the variable charge pump circuit when the target output pump voltage (Vcfra) is greater than or equal to a reference voltage (Vref)." Structure: there is no corresponding structure in the specification that comprises a load selector means that includes a target output pump selector that performs the claimed function. Indefinite.

Apple does not cite any authority that suggests it is improper to add further function and structure to a means-plus-function term in a dependent claim. Indeed, there is no prohibition on means-plus-function limitations being drafted with multiple functions. *See, e.g., Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1351-52 (Fed. Cir. 2015) (“Where there are multiple claimed functions, ... the patentee must disclose adequate corresponding structure to perform all of the claimed functions.”). Nor does Apple respond to the fact that the inclusion of an additional function, and thus additional corresponding structure, is directly supported by the ’241 Patent specification. *See* ’241 Patent at 5:54-6:17 (Citing to Figure 7, “the selector means [is] **expanded**” to “disable[] the pump ... whenever the pump output voltage (V_{cfa}) ... is greater than the reference voltage (V_{ref})” using “comparator 702.”).² Thus, the specification confirms that “comparator 702” is “included” as part of the “load selector means.” Nor does Apple dispute that the specification clearly links “comparator 702” to the recited function.

Apple’s argument that the word “includes” in Claim 2 supposedly requires the additional structure to be found as part of the corresponding structure in Claim 1 is nonsensical and contrary to means-plus-function law. If the corresponding structure was already included as part of Claim 1, then dependent Claim 2 would not add any further limitation to the scope of Claim 1. Contrary to Apple’s argument (Reply at 4), the *Micro Chem.* and *Northrop Grumman* cases are directly relevant here because they confirm that it would be improper to include the “expanded” corresponding structure using “comparator 702” as part of Claim 1 where “comparator 702” is not necessary to perform the function recited in Claim 1.

Moreover, Claim 1 is a “comprising” claim—meaning that it allows for additional, unrecited elements. *See, e.g., Multilayer Stretch Cling Film Holdings, Inc. v. Berry Plastics Corp.*,

² All emphasis added unless stated otherwise.

831 F.3d 1350, 1358 (Fed. Cir. 2016) (“[The] transitional term ‘comprising’ creates a presumption that the recited elements are only a part of the device, that the claim does not exclude additional, unrecited elements.”). And the term “includes” is a patent law term of art that also means “comprising.” *See SanDisk Corp. v. Memorex Prod., Inc.*, 415 F.3d 1278, 1284 (Fed. Cir. 2005) (“As a patent law term of art, ‘includes’ means ‘comprising.’ Neither includes, nor comprising, forecloses additional elements that need not satisfy the stated claim limitations.”) (citations omitted). The use of the transitional terms “comprising” and “includes” in Claims 1 and 2 means that the claims allow for additional, unrecited elements for the “load selector means.” Thus, there is nothing improper about specifying a further function with corresponding structure in dependent Claim 2. The use of the word “includes” in Claim 2 is no different than any typical dependent claim using the word “comprising” that specifies a further limitation to the independent claim.

Apple’s argument that judicial estoppel should not apply here is also not persuasive. Application of the three factors confirms that judicial estoppel is appropriate. As to the first factor, Apple’s position is clearly inconsistent. Apple did not contend that Claim 2 was indefinite in the prior case—instead, Apple identified “comparator 702” as the corresponding structure for the identical function at issue here. Dkt. 38-6 at 3; *see also, e.g., Williamson*, 792 F.3d at 1351-52 (“The court must first identify the claimed function. Then, the court must determine what structure, if any, disclosed in the specification corresponds to the claimed function.”) (citation omitted). As such, the issue now—identifying the corresponding structure for the claimed function—is identical. As to the second factor, Apple filed its claim construction brief and joined in the Joint Claim Construction Statement memorializing the agreed construction prior to the Court staying the action against Apple. *See* Dkt. No. 38-6; 38-7. As to the third factor, Apple’s new indefiniteness position would unfairly detriment Sonrai by allowing Apple to completely change

its position for a term where Sonrai previously agreed to Apple's proposed construction.³ Thus, the Court should preclude Apple from advancing its inconsistent claim construction here.

D. “load selector means further includes a maximum ripple on the target output selector means for . . .”, ’241 Patent Claim 3

Sonrai’s Proposed Construction	Apple’s Proposed Construction
Means-plus-function limitation. Corresponding structure: comparator 714 as shown in Figure 7 and associated descriptions in the specification, and equivalents thereof.	Subject to § 112 ¶ 6. Structure: there is no corresponding structure in the specification that comprises a load selector means that also includes a maximum ripple on the target output selector that performs the claimed function. Indefinite.

Apple’s argument for this term raises the same dispute as for the immediately preceding term for Claim 2 and is wrong for the same reasons. Again, Apple’s argument is nonsensical because it incorrectly argues that an open-ended independent claim using the transition “comprising” should require the limitations of the dependent claim. Moreover, the inclusion of an additional function, and thus additional corresponding structure, is directly supported by the ’241 specification. *See* ’241 Patent at 5:54-6:17. Apple does not dispute that the specification clearly links “comparator 714 as shown in Figure 7” to the recited function. Therefore, the Court should adopt Sonrai’s proposed corresponding structure.

E. “coupled to each load”, ’241 Patent Claim 6

Sonrai’s Proposed Construction	Apple’s Proposed Construction
“coupled to each corresponding load”	“connected without intervening resistors or other components to each load”

³ Apple’s argument that Sonrai previously proposed that the “load selector means” of Claim 1 was not a means-plus-function term is inapposite. Reply at 6. The fact that Sonrai agreed to a means-plus-function construction for Claim 1 in an effort to limit the number of disputes for the Court here does not negate the prejudice to Sonrai due to Apple’s shifting positions.

Apple’s argument seeks to read the term “each load” in isolation, divorced from the teachings in the specification and the rest of the language in the claim. First, Apple cannot justify its attempt to improperly read the claim language in a manner that excludes every embodiment described or illustrated in the specification. *See Epos Techs. Ltd. v. Pegasus Techs.*, 766 F.3d 1338, 1347 (Fed. Cir. 2014) (“A claim construction that excludes a preferred embodiment is rarely, if ever correct and would require highly persuasive evidentiary support.”). The meaning of the claim is readily apparent when read in view of the specification, and, more specifically, in light of Figures 3 and 7. These figures, and their accompanying description, confirm Sonrai’s construction that the second terminal of each switch is “coupled to each corresponding load.” *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1315-16 (Fed. Cir. 2005) (*en banc*) (“in case of doubt or ambiguity it is proper in all cases to refer back to the descriptive portions of the specification to aid in solving the doubt or in ascertaining the true intent and meaning of the language employed in the claims”) (citation omitted).

Second, even a cursory review of the claim language refutes Apple’s argument. Claim 6 depends from Claim 1 and recites one of the sets of corresponding structure for the “load selector means.” ’241 Patent, cl. 6 (“the load selector means is a plurality of switches, ***one switch for each of said loads.***”). Consistent with the corresponding structure of Figures 3 and 7, this phrase defines a one-to-one relationship between the plurality of switches and the plurality of loads—*i.e.*, one switch for one load. The Claim further recites, consistent with Figures 3 and 7, the connection structure of “each switch” with “each load.” *Id.* (“each switch ... coupled in series with each load”). To interpret all these aspects of Claim 6 consistently, “each” can only be interpreted by applying the plain meaning of “being one of two or more distinct individuals having a similar relation.” Ex. 7, Merriam-Webster at 1. Apple, however, seeks to apply the meaning of “every

one of two or more distinct individuals having a similar relation” to “each” as it modifies “load.” But Apple does not seek to apply that same meaning throughout the entirety of Claim 6. For example, Apple has not asserted that “one switch for each of said loads” means “one switch for every load.” “A claim term should be construed consistently with its appearance in other places in the same claim.” *Rexnord Corp. v. Laitram Corp.*, 274 F.3d 1336, 1342 (Fed. Cir. 2001). The only consistent meaning of “each” in Claim 6 dictates that “one switch” is coupled to “one load”—that is, there is a corresponding load for a single switch.

Accordingly, contrary to Apple’s argument, Sonrai is not seeking to redraft the claim language because Sonrai’s construction is the plain and ordinary meaning. The Court should hold Apple to the construction it previously agreed to in the prior consolidated action.

F. “an elevator circuit”, ’241 Patent Claim 9

Sonrai’s Proposed Construction	Apple’s Proposed Construction
No construction necessary. Alternatively, “a level shifter”	Indefinite.

Apple fails to rebut the fact that a POSITA would understand the meaning of the recited “elevator circuit” in the context of the embodiments illustrated in Figures 5A and 5B. Indeed, Apple does not even address Sonrai’s detailed explanation confirming that a POSITA would recognize that “elevator circuitry” is required to raise or “elevate” the voltage to the gate of the transistor in Figure 5B. Resp. at 14-15. As such, Apple cannot meet its burden to prove indefiniteness by clear and convincing evidence. Whether or not the term “elevator circuit” has a well-known meaning outside the context of the patent is irrelevant because the specification provides the meaning here. *See Intervet, Inc. v. Merial Ltd.*, 617 F.3d 1282, 1287 (Fed. Cir. 2010) (“Idiosyncratic language, highly technical terms, or terms coined by the inventor are best understood by reference to the specification.”).

Apple further fails to rebut the fact that the IPR petition and expert declaration demonstrate that a POSITA would understand the meaning of “an elevator circuit” with reasonable certainty in light of the specification. Resp. at 15. Apple’s attempt to avoid the clear understanding from a POSITA fails because a claim is definite where the specification provides an example sufficient to enable a POSITA to determine the scope of the claim (as the specification does here). *See Nevro v. Bos. Sci. Corp.*, 955 F.3d 35, 39 (Fed. Cir. 2020) (“[T]he ambiguity inherent in functional terms may be resolved where the patent ‘provides a general guideline and examples sufficient to enable a person of ordinary skill in the art to determine the scope of the claims.’” (quoting *Enzo Biochem. Inc. v. Applera Corp.*, 599 F.3d 1325, 1335 (Fed. Cir. 2010))).

G. “turning on a load”, ’241 Patent Claim 24

Sonrai’s Proposed Construction	Apple’s Proposed Construction
No construction necessary. Alternatively, “connecting a load”	Indefinite.

Apple cannot meet its burden to prove indefiniteness by clear and convincing evidence. The disputed term must be examined through the viewing glass of a POSITA in light of the specification. *See Phillips*, 415 F.3d at 1313; *Nautilus, Inc. v. Biosig Instrus., Inc.*, 572 U.S. 898, 908 (2014) (“[I]n assessing definiteness, claims are to be read in light of the patent’s specification and prosecution history.”). The meaning of the claim is readily apparent in light of the teachings in the specification. *See* Resp. at 16. Apple’s argument—that the plain language of the claim should be interpreted in a “nonsensical” manner—seeks to read the term in isolation, divorced from the understanding of a POSITA and the teachings in the specification. Apple’s approach to claim construction is contrary to well established Federal Circuit law and should be rejected.

To the extent that the Court finds the claim language ambiguous, Sonrai’s alternative construction should be adopted. Apple’s citation of dependent Claim 25 (“connecting a load”)

only confirms that Sonrai’s alternative construction (“connecting a load”) is correct and that a POSITA would understand the patentee used the two terms interchangeably. *See Baran v. Medical Device Techs., Inc.*, 616 F.3d 1309, 1316 (Fed. Cir. 2010) (holding that although the use of different terms usually implies that they have different meanings, “that implication is overcome where . . . the evidence indicates that the patentee used the two terms interchangeably”). Apple does not cite any intrinsic evidence that would suggest the patentee intended a different meaning in independent Claim 24.

III. ’014 PATENT DISPUTED TERMS

A. “multiple operating systems residing in a memory”, ’014 Patent Claims 1, 7 “multiple processors are connected to said memory via a bus”, ’014 Patent Claim 3

Disputed Term	Sonrai’s Proposed Construction	Apple’s Proposed Construction
“multiple operating systems residing in a memory” ’014 Patent Claims 1, 7	multiple operating systems residing in the same memory	No construction necessary/plain meaning.
“multiple processors are connected to said memory via a bus” ’014 Patent Claim 3	multiple processors are connected to said memory via the same bus	No construction necessary/plain meaning.

Sonrai seeks to maintain consistent constructions with the prior consolidated action. As is the case for several of the other disputed terms, Apple advocates to change the prior constructions. But the constructions of these terms should not be twisted like a nose of wax. In order to promote consistency across cases and maintain the public notice function of the scope of the claims, the Court should adopt these previously agreed constructions.

IV. CONCLUSION

Sonrai respectfully requests that the Court adopt its proposed constructions.

Dated: March 13, 2023

Respectfully submitted,

By: /s/ Brett E. Cooper

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CERTIFICATE OF SERVICE

I hereby certify that the counsel of record who are deemed to have consented to electronic service are being served on March 13, 2023 with a copy of this document via the Court's ECF system.

Brett E. Cooper

Brett E. Cooper

**UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

SONRAI MEMORY LIMITED,

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Case No. 6:22-cv-00787-ADA

JURY TRIAL DEMANDED

**DECLARATION OF DREW B. HOLLANDER IN SUPPORT OF PLAINTIFF
SONRAI MEMORY LIMITED'S SUR-REPLY CLAIM CONSTRUCTION BRIEF**

I, Drew B. Hollander, hereby declare under the penalty of perjury as follows:

1. I am an attorney and partner at BC Law Group, P.C., counsel of record for Sonrai Memory Limited (“Sonrai”). I am one of the attorneys responsible for representing Sonrai in this matter. I have personal knowledge of all facts stated in this declaration and if called as a witness, could and would competently testify to these facts. I respectfully submit this declaration in support of Sonrai’s sur-reply claim construction brief.

2. Attached hereto as **Exhibit 7** is a true and correct copy of the definition of “each” from the Merriam-Webster dictionary, available at <https://www.merriam-webster.com/dictionary/each>.

Executed on this 13th day of March, 2023 in Ardsley, NY.

/s/ Drew B. Hollander
Drew B. Hollander

Exhibit 7

Definition of EACH

[Synonyms of each](#)

: being one of two or more distinct individuals having a similar relation and often constituting an aggregate

Synonyms

Example Sentences

Adjective A rope was tied to *each* end of the boat. *Each* student had a different explanation. Adverb They cost 50 cents *each*. We were allowed two tries *each*.

Recent Examples on the Web

The applicants will *each* make a four-minute presentation and then answer questions at the special meeting. — *San Diego Union-Tribune*, 11 Jan. 2023 In exchange for clearing another, larger encampment, the city government and the PHA would *each* give the activists an additional twenty-five vacant houses, for a total of fifty-nine. — Wes Enzinna, *Harper's Magazine*, 5 Jan. 2023

See More

These example sentences are selected automatically from various online news sources to reflect current usage of the word 'each.' Views expressed in the examples do not represent the opinion of Merriam-Webster or its editors. [Send us feedback](#).

Word History

Etymology

Adjective

Middle English *ech*, from Old English *ǣlc*; akin to Old High German *iogilīh* each; both from West Germanic **aiw-* ever, always (whence Old English *ā* always) + **galīkaz* having the same form, like

(whence Old English *gelīc* like) — more at [aye](#), [like entry 1](#)

First Known Use

Adjective

before the 12th century, in the meaning defined [above](#)

Pronoun

before the 12th century, in the meaning defined [above](#)

Adverb

before the 12th century, in the meaning defined [above](#)

Time Traveler

The first known use of *each* was before the 12th century

Dictionary Entries Near *each*

Cite this Entry

“Each.” *Merriam-Webster.com Dictionary*, Merriam-Webster, <https://www.merriam-webster.com/dictionary/each>. Accessed 13 Mar. 2023.

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