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UNITED STATES DISTRICT COURT FOR THE

NORTHERN DISTRICT OF CALIFORNIA

OAKLAND DIVISION

NETLIST, INC.

Plaintiff,

v.

GOOGLE INC.,

Defendant.

Civil Action No. C09-05718 SBA

[Related to Civil Action No. C08 04144 SBA]

DEFENDANT GOOGLE INC.'S RESPONSIVE CLAIM CONSTRUCTION BRIEF

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I. INTRODUCTION

Netlist, Inc. ("Netlist") asks this Court to construe specific claim terms and phrases of United States Patent 7,619,912 ("the '912 Patent") in a way that attempts to avoid invalidity assertions by Google Inc. ("Google"). Netlist also asks the Court to fix mistakes that appear in the '912 Patent, or indeed overlook those mistakes. For example, in an unusual move for a plaintiff patentee, Netlist tries to read limitations from the specification into its proposed construction for the term "bank" as used in the context of a bank of memory. The reason for this is simple—Netlist wants to avoid Google's invalidity assertions based on prior art that shows multiple memory systems where banks of memory are used interchangeably with "ranks" of memory. Netlist also tries to convince the Court that despite a specific claim (*i.e.*, Claim 39) being drafted to allow for multiple embodiments ("at least one integrated circuit element comprising a logic element, a register and a phase lock loop device" allowing for one, two, three, or more integrated circuits to hold the three recited components), that claim should really be limited to embodiments where only *more than one* integrated circuit includes all three recited components. That is simply not what was claimed, and whatever Netlist tries to argue now cannot change that language.

Furthermore, despite several of the claims containing clear language that indicates to a person having ordinary skill in the art that the "input control signals" and related phrases do not include the claimed "command signal," Netlist wants the Court to read in the command signal into the set of input control signals nonetheless. Specifically, the language in several claims clearly recites that the circuit responds to a command signal and the set of input control signals. There is no doubt that the recited command signal therefore cannot be a part of the set of input control signals, otherwise it renders the command signal as mere surplusage. In fact, when Netlist intended for the invention to respond to the input control signals that included a command signal, it clearly stated that in other claims without calling out a separate command signal (e.g., claim 28). Google does not contest the inclusion of those claim elements when the claim is drafted properly. However, in other claims, it is clear that the intended use of the phrase "input

control signals" cannot include the command signal. Although Google asks for a construction that makes that clear, Netlist wants to gloss over those important claimed distinctions. The same issue arises in Netlist's use of the claim phrase "set of output control signals" and corresponding terms.

In addition to the poor draftsmanship that plagues the asserted claims of the '912 patent, rendering many of them either very limited or even indefinite, Netlist tries to re-write at least one other claim element ("operatively coupled") to require no coupling at all. It favors instead a more amorphous construction of "functionally cooperating with," which effectively eliminates the need for any connection at all. Netlist also fails to explain why several of the claims are not indefinite for failing to adequately describe what the phrase "spaced from" means in the context of this invention. In fact, Netlist apparently is claiming any space would satisfy this claim element—from nanometers to infinity. Netlist also tries to have this Court construe the phrase "at a time" to mean "at any time" when the specification only supports the conclusion that the inventors meant "at the same time." Finally, the phrase "in a direction along a first side" gives no instruction or context to a person of ordinary skill in the art and should be declared indefinite.

For at least all these reasons, Google asks this Court to construe the disputed claim terms to be clear to a person of ordinary skill in the art based on the intrinsic evidence, and to determine that certain claims are simply indefinite since it is not the role of the Court to fix the poor drafting of Netlist's patent attorneys during prosecution of the '912 Patent.

II. LEGAL STANDARD

A. Plain and Ordinary Meaning in the Context of the Intrinsic Record Generally Controls

During claim construction, "words of a claim 'are generally given their ordinary and customary meaning.'" *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (*en banc*) (citation omitted). A term's plain meaning is not determined in a vacuum, but rather is given its "meaning to the ordinary artisan after reading the entire patent." *Id*. at 1321, 1313. Extrinsic sources are less helpful than intrinsic sources, and "unlikely to result in a reliable interpretation of

patent claim scope unless considered in the context of the intrinsic evidence." *Id.* at 1319. "[H]eavy reliance on the dictionary divorced from the intrinsic evidence risks transforming the meaning of the claim term to the artisan into the meaning of the term in the abstract, out of its particular context, which is the specification." *Id*. at 1321.

B. The Specification is Always Highly Relevant and Typically Dispositive

The specification is always highly relevant to claim construction; it is the single best guide to the meaning of disputed terms, and is usually dispositive. *Id*. at 1315. The specification may reveal that claim scope is limited by narrow enabling disclosure. *Id.* at 1323; *Gentry Gallery*, 134 F.3d 1473, 1479-80 (Fed. Cir. 1998). Claim language is also important, and "the context in which a term is used in the asserted claim can be highly instructive." *Phillips*, 415 F.3d at 1314.

C. Each Claim Element Must Be Given Meaning

It is fundamental that "[e]ach element contained in a patent claim is deemed material to defining the scope of the patented invention." *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 29 (1997). Claims must be interpreted to "give[] effect to all terms in the claim." *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950 (Fed. Cir. 2006).

D. The Court Should Not Re-draft Bad Claims

The Court should "construe claims with an eye toward giving effect to all of their terms, even if it renders the claims inoperable or invalid." *Haemonetics Corp. v. Baxter Healthcare Corp.*, 607 F.3d 776, 781 (Fed. Cir. 2010) (citations omitted). The Federal Circuit "repeatedly and consistently has recognized that courts may not redraft claims, whether to make them operable or to sustain their validity." *Chef America, Inc. v. Lamb-Weston, Inc.*, 358 F.3d 1371, 1374 (Fed. Cir. 2004) (citing *Allen Eng'g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1349 (Fed. Cir. 2002); *Elekta Instrument S.A. v. O.U.R. Scientific Int'l, Inc.*, 214 F.3d 1302, 1308-09 (Fed. Cir. 2000); *Process Control Corp. v. Hydreclaim Corp.*, 190 F.3d 1350, 1357 (Fed. Cir. 1999); *Rhine v. Casio, Inc.*, 183 F.3d 1342, 1345 (Fed. Cir. 1999); *Quantum Corp. v. Rodime, PLC*, 65 F.3d 1577, 1584 (Fed. Cir. 1995); *Becton Dickinson & Co. v. C.R. Bard, Inc.*, 922 F.2d 792, 799

n.6 (Fed. Cir. 1990)). "Even 'a nonsensical result does not require the court to redraft the claims of the [] patent.'" *Id*. (citing *Process Control Corp.*, 190 F.3d at 1357.

III. THE COURT SHOULD ADOPT GOOGLE'S CLAIM CONSTRUCTIONS

A. "bank"

CLAIM TERM	NETLIST'S PROPOSED CONSTRUCTION	GOOGLE'S PROPOSED CONSTRUCTION
bank	"a group of memory cells or locations inside a memory device"	"an addressable unit of memory cells"

The core dispute between the parties' proposed constructions is whether a "bank" is limited to be a location within a single memory device or whether a bank can span multiple memory devices. Google's construction allows the term "bank" to encompass its full range of meaning. Netlist's proposed construction attempts to import limitations from the preferred embodiment, for the express purpose of avoiding prior art.

This is not a circumstance where the patentee has acted as his own lexicographer. In fact, as Netlist's expert has explained, the specification of the '912 Patent barely addresses the term "bank." (Turley Dep., Decl. Ex. A, 332:2-20.) In the few instances where the '912 Patent discusses banks, it demands no exclusive limitations on the definition—it only identifies that a "bank" may be internal. The '912 Patent merely provides an example of such permissive language allowing that a bank can be internal to a DRAM device.

> **For example**, a 512-Megabyte memory module (termed a "512-MB" memory module, which actually has 2^{29} or 536,870,912 bytes of capacity) will typically utilize eight 512-Megabit DRAM devices (each identified as a "512-Mb" DRAM device, each actually having 2^{29} or 536,870,912 bits of capacity). The memory cells (or memory locations) of each 512-Mb DRAM device **can be arranged in four banks**, with each bank having an array of 2^{24} (or 16,777,216) memory locations arranged as 2^{13} rows and 2^{11} columns, and with each memory location having a width of 8 bits.

('912 Patent, Decl. Ex. B, 1:40-44 (emphasis added).) As the Federal Circuit has pointed out: "that a specification discloses only one embodiment does not require that each claim be limited to that one embodiment." *SRI Int'l, Inc. v. Matsushita Elec. Corp.*, 775 F.2d 1107, 1121 n.14 (Fed. Cir. 1985).

When the '912 Patent refers to banks with respect to some preferred embodiments, it adds the modifier "internal" to demonstrate that the bank of the embodiment is internal.

- "each of the *internal* banks (e.g., 4 **internal banks**) per memory device 30" ('912 Patent, Decl. Ex. B, 21:59-61) (emphasis added)
- "Byte 17: Defines the number of **banks internal** to the DRAM device" ('912 Patent, Decl. Ex. B, 9:57-58) (emphasis added)

Yet the addition of the term "internal" for these embodiments only further demonstrates that the term "bank" is not so limited. This is consistent with other uses of the word internal in the '912 Patent specification. For example, the '912 Patent also uses the word "internal" with regard to a preferred embodiment's use of termination resistors, but nothing in those uses requires that termination resistors by definition be internal to the memory device. ('912 Patent, Decl. Ex. B, 27:1-4, 27:10-12, 27:18-20, 27:44-62, 28:4-10, 31:60-66.) As with the word "bank," the use of the word "internal" with regard to termination resistors simply qualifies these termination resistors as those that are internal to the memory device.

Dictionary definitions can be useful in understanding what a person of ordinary skill in the art would understand a term to mean. *Lacks Indus., Inc. v. McKechnie Vehicle Components USA, Inc.*, 322 F.3d 1335, 1342 (Fed. Cir. 2003) (citing *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1584 n.6 (Fed. Cir. 1996) ("Additionally, dictionary definitions, although extrinsic, may be used to establish a claim term's ordinary meaning."). This is especially true when the disputed term is not explained within the specification itself. The IEEE definition of "bank" is

> A contiguous section of addressable memory. For example, eight memory devices, each of which is 64kB by 1: forming a 64kB x8 memory bank.

(IEEE Dictionary, Decl. Ex. C.) This definition demonstrates that a person of skill in the art would understand that the term "bank" refers to an area of addressable memory, including addressable memory that spans memory devices.

Netlist has asserted that the testimony of Google's expert, Mr. Hoffman, supports Netlist's proposed construction. (Netlist CC Brief at p. 9.) What Netlist fails to point out is that Mr. Hoffman was not speaking generally about the '912 Patent but was instead directing his answer to

the context of a single prior art reference. (Netlist CC Brief at p. 9.) Even more telling, Netlist's own expert, Dr. Turley, has admitted that prior art of record U.S. Patent No. 6,961,281 ("the '281 Wong reference") in the prosecution history of the '912 Patent uses the term "bank" to refer to addressable memory that spans several memory devices.

> Q. That allows you to, then, not only select what specific memory device but also the bank within the memory device?
> A. Well, I believe, if I'm reading this diagram correctly, **their bank relates not to the internal bank definition that we have been using earlier of DRAM devices, but rather to a *collection* of DRAM devices**.

(Turley Dep., Decl. Ex. A, 315:16-22 (emphasis added).) As Mr. Turley admits, the prior art of record in the '912 Patent uses the term "bank" to refer to memory that spans a collection of DRAM devices.

The specification, the intrinsic record (including the '281 Wong reference), and the extrinsic evidence all show that a person of skill in the art would understand that a "bank" could span multiple memory devices and is not limited to a group of memory cells inside a memory device. Netlist's proposed definition must be rejected.

B. "the at least one integrated circuit element comprising a logic element, a register, and a phase lock loop device" / Claim 45 is indefinite

CLAIM TERM	NETLIST'S PROPOSED CONSTRUCTION	GOOGLE'S PROPOSED CONSTRUCTION
the at least one integrated circuit element comprising a logic element, a register, and a phase lock loop device	"one or more integrated circuit elements, wherein a logic element, a register, and a phase-lock loop are distributed among the one or more integrated circuit elements"	*Google contends that the plain meaning of this phrase is apparent and, therefore, no construction by the Court is required.*
claim 45 – "The memory module of claim 39, wherein two or more of the logic element, the register, and the phase-lock loop device are portions of a single component."		*Indefinite*: Claim 45 is indefinite because it can't be construed in view of claim 39, which it depends from. Claim 39 includes the possible implementation that all three functional parts be included with a single integrated circuit. As a result, claim 45 is indefinite because it tries to remove one functional part in a dependent claim ("wherein two or more…") or claims nothing further than what is claimed in claim 39.

Google believes this claim term is clear on its face and therefore no construction is necessary. Yet surprisingly, Netlist has asserted its own construction should be adopted because "Google's construction [plain meaning] would render claim 45 indefinite." (Netlist CC Brief, at p. 11.) Nothing could argue more against Netlist's construction. The Federal Circuit has held that courts should not re-draft unambiguous claims; they should construe the claims as written, even if it results in the claims be nonsensical. *Chef America, Inc.*, 358 F.3d at 1374.

The claims of the '912 Patent are plagued by inartful drafting. One such example is claim 45, which recites:

> The memory module of claim 39, wherein **two or more** of the logic element, the register, and the phase-lock loop device **are portions of a single component**.

('912 Patent, Decl. Ex. B, 37:31-33 (emphasis added).) Claim 39, from which claim 45 depends, recites in relevant part:

> **at least one integrated circuit** element mounted to the printed circuit board, the at least one integrated circuit element **comprising a logic element, a register, and a phase-lock loop device**

('912 Patent, Decl. Ex. B, 36:49-51 (emphasis added).)

Claim 39 includes within its scope the possibility that the logic element, the register, and the phase-lock loop device are part of a single integrated circuit (as well as two, three, or more integrated circuits). Yet claim 45, which depends from claim 39, tries to take something away from that by claiming that just two of the logic element, register, and phase-lock loop device are part of a single component. In other words, because claim 39 includes the possibility that all three elements may be part of a single component, claim 45 has to be read to apply to all of the possible embodiments. However, claim 45 attempts to exclude the possibility that all three of the listed elements are part of a single component by specifying that only two of them are part of a single component. Accordingly, this renders claim 45 meaningless and therefore indefinite.[1] *See, also,* 35 U.S.C. §112(4); *Pfizer, Inc. v. Ranbaxy Labs. Ltd.*, 457 F.3d 1284, 1292 (Fed. Cir. 2006) (noting that "reading an additionally limitation from a dependent claim into an independent claim

[1] Netlist has falsely asserted that Google did not raise this issue in its invalidity contentions. Google clearly and unequivocally stated that the asserted claims of the patent are invalid under §112 ¶¶ 1 & 2. (Google Invalidity Contentions, Decl. Ex. D, at p. 6.)

would not only make that additional limitation superfluous, it might render the dependent claim invalid for failing to add a limitation to those recited in the independent claim, as required by 35 U.S.C. § 112, ¶ 4") (citation omitted).

C. Input Signal Limitations

Once again, the inartful drafting of the '912 Patent requires that terms common to claims 1, 15, 28, and 39 be interpreted differently for each of those claims. Netlist's proposed constructions for these limitations attempt to unreasonably broaden the claims beyond their intended scope. Google's proposed constructions clarify the distinctions explicitly set forth in the claims. Netlist has argued that claim terms need to be construed the same way from claim to claim (*see* Netlist's CC Brief at p. 12), and that is generally correct. Nevertheless, claim terms should be construed differently where the wording of the claims themselves require that there be different constructions, which is the case with the '912 Patent. *See, e.g., Haemonetics Corp.*, 607 F.3d at 781-783 (holding that a claim term that was common to multiple claims have a different meaning in one claim based on the plain language of the claim).

The parties have agreed that "control signals" should be construed as "signals, *including address and command signals*, that regulate system operations." (emphasis added) The agreed definition requires that control signals include both address and command signals. Yet for at least claims 1 and 15, there is a "command signal" explicitly claimed that is not included within the "set of input control signals."

The "command signal" is not explicitly enumerated as one of the elements that comprises the "set of input control signals" of claims 1 and 15. Rather, the term "command signal" is recited later in the claim—for the first time—as "a command signal." This first recitation of an element, using "a" rather than "the," makes clear that the term cannot be construed as having first been introduced (implicitly) in the term "set of input control signals." Netlist's argument that "comprising" is a term of art that is "inclusive or open-ended" simply misses the point. The issue is that when "command signal" is explicitly introduced as "a command signal" long after the term "set of input control signals" is used, that command signal must be distinct from whatever the "set

of input control signals" covers. That is, even if the term "set of input control signals" were construed to include a command signal, that command signal would have to be distinct from "a command" signal introduced later in the claim without any reference to the "set of input control signals." distinct from "the set of input control signals" that mandates that claimed "command signal" not be part of "the set of input control signals."[2]

1. Claim 1

CLAIM TERM	NETLIST'S PROPOSED CONSTRUCTION	GOOGLE'S PROPOSED CONSTRUCTION
set of input control signals	*Netlist contends that the plain meaning of this phrase is apparent and, therefore, no construction by the Court is required. However, if the Court believes that construction is required, Netlist proposes the following:* "set of varying electrical impulse inputs that convey information for regulating system operations, including addresses and commands, from one point to another"	"input control signals including at least one row/column address signal, bank address signals, and at least one chip select signal, but not including a first command signal"

Claim 1 recites in relevant part:

> the logic element receiving **a set of input control signals** from the computer system, the set of input control signals comprising **at least one row/column address signal, bank address signals, and at least one chip-select signal**…wherein the circuit further responds to **a first command signal** and **the set of input control signals** from the computer system….

('912 Patent, Decl. Ex. B, 32:67-33:16 (emphasis added).) Claim 1 of the '912 Patent requires that the "set of input control signals" include "at least one row/column address signal, bank address signals, and at least one chip-select signal." Notably, this list does not include "a first command signal." The further language of claim 1 then requires that the circuit respond to "a first command signal" *and* "the set of input control signals." The recitation of "a first command signal" here means that this is the first mention of the "first command signal" in the claim. It would be unusual, at best, to have a recitation of a first command signal if that first command signal was already included in the set of input control signals already recited in the claim. By definition, therefore, "the set of input control signals" does not include the "first command

[2] Netlist has also incorrectly argued that Google's proposed constructions for the disputed "input signal" and related terms excises the word "set" or "plurality." Since all of Google's proposed constructions refer to input control signals (plural), they by definition cover a set or plurality of signals.

signal." Also semantically, if the circuit is to respond to a "first command signal" *and* "the set of input control signals," it would be wrong to include the first command signal within the set of input control signals. The claim would, under Netlist's proposed construction, be interpreted to effectively ignore the "first command signal" language if, like Netlist insists, it is already part of the recited "set of input control signals." Yet that is exactly what Netlist wants the Court to do. Netlist's construction should be rejected because it offers nothing to clarify this important claimed distinction.

2. Claim 15

CLAIM TERM	NETLIST'S PROPOSED CONSTRUCTION	GOOGLE'S PROPOSED CONSTRUCTION
set of input signals	*Netlist contends that the plain meaning of this phrase is apparent and, therefore, no construction by the Court is required. However, if the Court believes that construction is required, Netlist proposes the following:* "set of varying electrical impulse inputs that convey information from one point to another"	"input control signals including at least one row/column address signal, bank address signals, and at least one chip select signal, but not including a command signal"

Claim 15 recites in relevant part:

> the logic element receiving **a set of input signals** from the computer system, the set of input signals comprising **at least one row/column address signal, bank address signals, and at least one chip-select signal** . . . wherein the circuit further responds to **a command signal** and **the set of input signals** from the computer system ….

('912 Patent, Decl. Ex. B, 34:33-49 (emphasis added).) Claim 15 of the '912 Patent requires that the "set of input control signals" include "at least one row/column address signal, bank address signals, and at least one chip-select signal." Once again, this list does not include "a command signal." The further language of claim 15 requires that the circuit respond to "a command signal" *and* "the set of input signals." The recitation of "a command signal" here means that this is the first mention in the claim of the "command signal." By definition, then, "the set of input signals" does not include the "command signal" of the claim. Also, as with claim 1, the requirement that the circuit responds to "a command signal" *and* "the set of input signals" means that the "command signal" cannot also be part of "the set of input signals." To argue otherwise would be to assert that the claim calls for the circuit to respond to the set of input control signals which

includes the command signal, and then also to respond to the command signal. There is simply nothing in the specification that would support such a strange and duplicative construction. It is another example of sloppy claim drafting if Netlist insists that "the set of input signals" already includes the command signal. Netlist's construction should be rejected because it does not clarify this important claimed distinction.

3. Claim 28

CLAIM TERM	NETLIST'S PROPOSED CONSTRUCTION	GOOGLE'S PROPOSED CONSTRUCTION
set of input control signals	*Netlist contends that the plain meaning of this phrase is apparent and, therefore, no construction by the Court is required. However, if the Court believes that construction is required, Netlist proposes the following:* "set of varying electrical impulse inputs that convey information for regulating system operations, including addresses and commands, from one point to another"	"input control signals including a row/column address signal, bank address signals, a chip-select signal, and an input command signal"

Claim 28 recites in relevant part:

> the logic element receiving **a set of input control signals** from the computer system, the set of input control signals comprising **a row/column address signal, bank address signals, a chip-select signal, and an input command signal** . . . wherein the circuit further responds to **the set of input control signals** from the computer system ….

('912 Patent, Decl. Ex. B, 35:46-63 (emphasis added).) Claim 28 of the '912 Patent requires that the "set of input control signals" include "a row/column address signal, bank address signals, a chip-select signal, and an input command signal." This list does include "a command signal." In addition, the further language of claim 28 requires that the circuit respond to "the set of input control signals." Therefore, unlike claims 1 and 15, claim 28 does not require that the circuit respond to a separate "command signal" in addition to the "set of input control signals."

In this instance, the language "set of input control signals" is exactly the same as in claim 1, but there is a big difference in the elements that comprise the "set of input control signals." Specifically, the "set of input control signals" recited in claim 28 includes "an input command signal." Thus, Netlist's construction should be rejected because it does not address this important claimed distinction.

4. Claim 39

CLAIM TERM	NETLIST'S PROPOSED CONSTRUCTION	GOOGLE'S PROPOSED CONSTRUCTION
plurality of input control signals	*Netlist contends that the plain meaning of this phrase is apparent and, therefore, no construction by the Court is required. However, if the Court believes that construction is required, Netlist proposes the following:* "plurality of varying electrical impulse inputs that convey information for regulating system operations, including addresses and commands, from one point to another"	"input control signals including row address signals, column address signals, bank address signals, command signals, and a second number of chip-select signals less than the first number of chip-select signals"

Claim 39 recites in relevant part:

> the at least one integrated circuit element receiving **a plurality of input signals** from the computer system, the plurality of input signals comprising **row address signals, column address signals, bank address signals, command signals, and a second number of chip-select signals less than the first number of chip-select signals**, wherein the logic element receives the bank address signals and at least one command signal of the plurality of input signals . . . the at least one integrated circuit element further responsive to **the plurality of input signals** ….

('912 Patent, Decl. Ex. B, 36:53-37:1 (emphasis added).) Claim 39 of the '912 Patent requires that the "plurality of input signals" include "row address signals, column address signals, bank address signals, command signals, and a second number of chip-select signals less than the first number of chip select signals." The further language of claim 39 requires that the integrated circuit element be responsive to "the plurality of input signals," which, based on the enumerated list, includes command signals. Similar to claim 28, claim 39 does not require that the circuit respond to a separate "command signal" in addition to the "plurality of input signals." Thus, Netlist's construction should be rejected because it does not address this important claimed distinction.

5. Summary

Netlist appears shocked that similar (but not identical) terms in claims 1, 15, 28, and 39 require different constructions. But a brief overview of the relevant portions of these claims demonstrates the vast differences between each of these claims.

ELEMENT	CLAIM 1	CLAIM 15	CLAIM 28	CLAIM 39
claim element	set of input control signals	set of input signals	set of input control signals	plurality of input control signals
comprising	at least one	at least one	a row/column address	row address signals,

ELEMENT	CLAIM 1	CLAIM 15	CLAIM 28	CLAIM 39
	row/column address signal, bank address signals, and at least one chip-select signal	row/column address signal, bank address signals, and at least one chip-select signal	signal, bank address signals, a chip-select signal, and an input command signal	column address signals, bank address signals, command signals, and a second number of chip-select signals less than the first number of chip-select signals
responds to / responsive to	a first command signal and the set of input control signals	a command signal and the set of input signals	the set of input control signals	the plurality of input signals

The numerous differences in the claim language of claims 1, 15, 28, and 39 demonstrate why similar terms in those claims must be construed differently. Netlist is the party who was responsible for drafting these claims, and the fact that they were drafted in a way that is confusing and inconsistent does not change the wording of the claims, which the public has the right to rely upon. Netlist cannot now come to this Court and ask it to construe these disputed claim terms in the way that Netlist meant them to be written. As a result, Netlist's proposed constructions should be rejected.

D. Output Signal Limitations

Similar to the "input signal" limitations, the language of the '912 Patent requires that the "output signal" and related terms common to claims 1, 15, 28, and 39 be interpreted differently for each of those claims. Netlist's proposed constructions for these limitations attempts to unreasonably broaden the claims beyond their intended scope. Google's proposed constructions make clear the distinctions explicitly set forth in the claims.[3]

The parties have agreed that "control signals" should be construed as "signals, *including address and command signals*, that regulate system operations." (emphasis added) The agreed definition requires that the claimed "control signals" include both address and command signals.

[3] Similar to the "input signal" limitations, Netlist has incorrectly argued that Google's proposed constructions for the disputed "output signal" and related terms effectively write out the word "set" or "plurality." Again, since Google's proposed constructions refer to output control signal<u>s</u> (plural), it encompasses a set or plurality of signals.

Yet, for at least claims 1 and 15, there is a "command signal" explicitly claimed that is not included within the "set of output control signals."

1. Claim 1

CLAIM TERM	NETLIST'S PROPOSED CONSTRUCTION	GOOGLE'S PROPOSED CONSTRUCTION
set of output control signals	*Netlist contends that the plain meaning of this phrase is apparent and, therefore, no construction by the Court is required. However, if the Court believes that construction is required, Netlist proposes the following:* "set of varying electrical impulse outputs that convey information for regulating system operations, including addresses and commands, from one point to another"	"output control signals, not including a second command signal"

Claim 1 recites in relevant part:

> the circuit generating **a set of output control signals** in response to the set of input control signals . . . wherein the circuit further responds to a first command signal and the set of input control signals from the computer system by generating and transmitting **a second command signal** and **the set of output control signals** to the plurality of memory devices ….

('912 Patent, Decl. Ex. B, 33:10-19 (emphasis added).) Claim 1 of the '912 Patent requires that the circuit generate and transmit "a second command signal" *and* "the set of output control signals." The recitation of "a second command signal" here means that this is the first mention of the "second command signal" in the claim. By definition, therefore, "the set of output control signals" does not include the "second command signal." Also, similar to the preceding discussion related to "input control signals" of claim 1, when a claim requires that the circuit generates a "second command signal" *and* "the set of output control signals," the "second command signal simply cannot be a part of "the set of output control signals." Thus, Netlist's construction should be rejected because it disregards this important claimed distinction.

2. Claim 15

CLAIM TERM	NETLIST'S PROPOSED CONSTRUCTION	GOOGLE'S PROPOSED CONSTRUCTION
set of output signals	*Netlist contends that the plain meaning of this phrase is apparent and, therefore, no construction by the Court is required. However, if the Court believes that construction is required, Netlist proposes the following:* "set of varying electrical impulse outputs that convey information from one point to another"	"output address signals, not including a command signal"

Claim 15 recites in relevant part:

> the circuit generating **a set of output signals** in response to the set of input signals . . . wherein the circuit further responds to **a command signal** and the set of input signals from the computer system by selecting one or two ranks of the first number of ranks and transmitting **the command signal** to at least one DDR memory device ….

('912 Patent, Decl. Ex. B, 34:42-51 (emphasis added).) Claim 15 of the '912 Patent requires that the circuit generates "a set of output signals," responds to "a command signal" that is not part of the "input command signals," and then transmits "the command signal." Therefore, "the command signal" also cannot be part of the set of output command signals. Again, similar to the preceding discussion related to "input signals" of claim 15, the fact that the circuit responds to "a command signal" and "the set of input control signals" means that the "output command signals" generated by the circuit does not include "the command signal." Netlist's construction offers nothing to clarify this important claimed distinction.

3. Claim 28

CLAIM TERM	NETLIST'S PROPOSED CONSTRUCTION	GOOGLE'S PROPOSED CONSTRUCTION
set of output control signals	*Netlist contends that the plain meaning of this phrase is apparent and, therefore, no construction by the Court is required. However, if the Court believes that construction is required, Netlist proposes the following:* "set of varying electrical impulse outputs that convey information for regulating system operations, including addresses and commands, from one point to another"	"output address signals, including a command signal"

Claim 28 recites in relevant part:

> the circuit generating **a set of output control signals** in response to the set of input control signals, the set of output control signals comprising **an output command signal** . . . wherein the circuit further responds to the set of input control signals from the computer system by selecting at least one rank of the first number of ranks and transmitting **the set of output control signals** to at least one DDR DRAM device ….

('912 Patent, Decl. Ex. B, 35:56-66 (emphasis added).) Claim 28 of the '912 Patent explicitly recites that the "set of output control signals" includes an output command signal and requires that the circuit transmits the "set of output control signals." Google's proposed construction makes this important claimed distinction clear.

4. Claim 39

CLAIM TERM	NETLIST'S PROPOSED CONSTRUCTION	GOOGLE'S PROPOSED CONSTRUCTION

CLAIM TERM	NETLIST'S PROPOSED CONSTRUCTION	GOOGLE'S PROPOSED CONSTRUCTION
plurality of output signals	*Netlist contends that the plain meaning of this phrase is apparent and, therefore, no construction by the Court is required. However, if the Court believes that construction is required, Netlist proposes the following:* "plurality of varying electrical impulse outputs that convey information from one point to another"	"output control signals including an output command signal"

Claim 39 recites in relevant part:

> the at least one integrated circuit element generating **a plurality of output signals** in response to the plurality of input signals, the plurality of output signals comprising **row address signals, column address signals, bank address signals, command signals, and the first number of chip-select signals**, the at least one integrated circuit element further responsive to the plurality of input signals by selecting at least one rank of the two or more ranks and transmitting **the plurality of output signals** to at least one DDR memory device ….

('912 Patent, Decl. Ex. B, 33:10-19 (emphasis added).) Claim 39 of the '912 Patent requires that the "plurality of output signals" include "row address signals, column address signals, bank address signals, command signals, and the first number of chip-select signals." Similar to claim 28, this claim explicitly recites that the "plurality of output control signals" includes command signals and further requires that the "at least one integrated circuit" transmit "the plurality of output signals." Again, Google's proposed construction makes this important claimed distinction clear.

5. Summary

Netlist appears shocked that similar terms in claims 1, 15, 28, and 39 require a different construction. But a brief overview of the relevant portions of these claims demonstrates the vast differences between each of these claims.

ELEMENT	CLAIM 1	CLAIM 15	CLAIM 28	CLAIM 39
claim element	set of output control signals	set of output signals	set of output control signals	plurality of output control signals
comprising			an output command signal	row address signals, column address signals, bank address signals, command signals, and the first number of chip-select signals

ELEMENT	CLAIM 1	CLAIM 15	CLAIM 28	CLAIM 39
transmitting	a second command signal and the set of output control signals	the command signal	the set of output control signals	the plurality of output signals

The numerous differences in the claim language of claims 1, 15, 28, and 39 demonstrate why similar terms in those claims must be construed differently. As a result, Netlist's proposed constructions should be rejected.

E. "operatively coupled" / "operationally coupled"

CLAIM TERM	NETLIST'S PROPOSED CONSTRUCTION	GOOGLE'S PROPOSED CONSTRUCTION
operatively coupled / operationally coupled	"functionally cooperating with"	"directly or indirectly electrically connected to provide for operation signaling"

The claim term "operatively coupled" is used in claims 1, 15, and 28. The claim term "operationally coupled" is used in claim 39. These terms are used to describe the relationship between the claimed phase-lock loop device and other components on the memory module.

The parties have agreed that the phrase "coupled to the printed circuit board" means "electrically connected to the printed circuit board." Google's proposed construction draws from this definition to define that "operatively coupled" and "operationally coupled" also relate to an electrical connection: "directly or indirectly electrically connected."

The modifiers "operatively" and "operationally" relate to the nature of that electrical connection. The '912 Patent describes the nature of this electrical connection:

> In response to signals received from the computer system, the phase-lock loop device **transmits clock signals** to the plurality of memory devices 30, the logic element 50, and the register 60.

('912 Patent, Decl. Ex. B, 5:28-31 (emphasis added).) The '912 Patent describes that across this electrical connection, the phase-lock loop device sends clock signals, which are necessary to synchronize the operation of the memory devices, the logic element, and the register. In other words, the phase-lock loop device provides for operation signaling.

Netlist has ignored the word "coupled" to propose a definition that is ultimately without any meaning. Netlist has identified no support for its suggestion that the term "coupled" here should not refer to an electrical connection but rather to some undefined "cooperation," whatever

than means. Netlist neither cites to any support for this proposed construction nor offers to explain how a piece of electronic circuitry "cooperates" with other pieces of electronic circuitry. Yet even more bizarre, Netlist has attempted to suggest that statements made by the Federal Circuit with regard to a completely unrelated patent are somehow controlling for the '912 Patent. (Netlist CC Brief, at p. 19.)

Because Netlist has offered no reasonable basis, the Court should reject Netlist's proposed construction.

F. "spaced from"

CLAIM TERM	NETLIST'S PROPOSED CONSTRUCTION	GOOGLE'S PROPOSED CONSTRUCTION
spaced from	*Netlist contends that the plain meaning of this phrase is apparent and, therefore, no construction by the Court is required. However, if the Court believes that construction is required, Netlist proposes*: "positioned at a distance from"	*Indefinite*: The specification provides no instruction regarding what "spaced from" means; there is no specificity as to the spacing required

The claim term "spaced from" as used in asserted claims 10 and 11 of the '912 Patent is indefinite, and no amount of arbitrary box drawing by Netlist can save it. Claims 10 and 11 are reproduced herein.

> 10. The memory module of claim 1, wherein the plurality of DDR memory devices is arranged as a first set of DDR memory devices on a first side of the printed circuit board, a second set of DDR memory devices on the first side of the printed circuit board, a third set of DDR memory devices on a second side of the printed circuit board, and a fourth set of DDR memory devices on the second side of the printed circuit board, the DDR memory devices of the second set **spaced from** the DDR memory devices of the first set, the DDR memory devices of the fourth set **spaced from** the DDR memory devices of the third set.
>
> 11. The memory module of claim 10, wherein the DDR memory devices of the second set are **spaced from** the DDR memory devices of the first set in a direction along the first side and the memory devices of the fourth set are **spaced from** the memory devices of the third set in a direction along the second side.

('912 Patent, Decl. Ex. B, 33:60-34:9 (emphasis added).)

Tellingly, Netlist has not and, in fact, cannot cite to any support from the specification to teach one of ordinary skill in the art what the term "spaced from" means. Because of that, there is no way for a person of ordinary skill in the art to understand whether some grouping of memory devices are "spaced from" some other group of memory devices. "Spaced from" could mean 1 nanometer or 1 kilometer—the patent provides absolutely no guidance. A U.S. patent is supposed to allow a person of ordinary skill in the art to make and use the invention disclosed in that patent. There is nothing to teach such a person whether the distance between components will impact the operation of the invention, especially in a case, as Netlist insists, that the claimed memory modules include a higher density of memory components for the first time. Netlist cannot rely on the Figures of the patent for a determination of what "spaced from" means since it is clear that patent figures are not drawn to scale. *Hockerson-Halberstadt, Inc. v. Avia Group Int'l, Inc.*, 222 F.3d 951, 956 (Fed. Cir. 2000) ("Under our precedent, however, it is well established that patent drawings do not define the precise proportions of the elements and may not be relied on to show particular sizes if the specification is completely silent on the issue.") (citing *In re Wright*, 569 F.2d 1124, 1127 (CCPA 1977); *In re Olson*, 212 F.2d 590, 592 (CCPA 1954); *cf.* MANUAL OF PATENT EXAMINING PROCEDURE § 2125 (1998)).

Netlist has proposed the definition: "positioned at a distance from." This proposed construction does nothing to cure the problem. Whether the phrase is "positioned at a distance from" or "spaced from," these terms along with the specification provide no guidance about what that means.[4] As a result, the term "spaced from" is indefinite under 35 U.S.C. § 112(1), and Netlist's attempt to salvage some claim construction or meaning from this term must be rejected.

G. "in a direction along the first side" / "in a direction along the second side"

CLAIM TERM	NETLIST'S PROPOSED CONSTRUCTION	GOOGLE'S PROPOSED CONSTRUCTION
in a direction along the first side / in a direction along the second side	*Netlist contends that the plain meaning of this phrase is apparent and, therefore, no construction by the Court is required.*	*Indefinite*: The specification provides no instruction regarding the placement or ranks "in a direction"

[4] Netlist has attempted to draw some inference from the fact that Google provided invalidity contentions with regard to the claims including the term "spaced from." Netlist's conclusions are wholly improper given the nature of alternative pleading—Google can plead invalidity in the alternative.

The claim terms "in a direction along the first side" and "in a direction along the second side" suffer from the same problem as the term "spaced from"—they are indefinite. Netlist has provided no plausible argument for the alleged scope of these claim terms.

> The memory module of claim 10, wherein the DDR memory devices of the second set are spaced from the DDR memory devices of the first set **in a direction along the first side** and the memory devices of the fourth set are spaced from the memory devices of the third set **in a direction along the second side**.

('912 Patent, Decl. Ex. B, 34:4-9 (emphasis added).)

Once again, Netlist has not and, in fact, cannot cite to any support from the specification to teach one of ordinary skill in the art what those terms mean. There is no way for a person of ordinary skill in the art to understand whether memory devices on a memory module are placed "in a direction."

Thus, the claim terms "in a direction along the first side" and "in a direction along the second side" are indefinite under 35 U.S.C. § 112(1) and, as a result, Netlist's attempts to salvage some claim construction or meaning from this term must be rejected.

H. "at a time"

CLAIM TERM	NETLIST'S PROPOSED CONSTRUCTION	GOOGLE'S PROPOSED CONSTRUCTION
at a time	*Netlist contends that the plain meaning of this phrase is apparent and, therefore, no construction by the Court is required.*	"at the same time"

The term "at a time" is used in claim 18 of the '912 Patent, which states in relevant part:

> The memory module of claim 15, wherein the command signal is transmitted to two ranks of the first number of ranks **at a time**.

('912 Patent, Decl. Ex. B, 34:63-65 (emphasis added).) The only reference in the specification to what "at a time" means suggests that it happens concurrently, and thus at the same time. In fact, with regard to Table 1, which Netlist relies on for its strained argument against Google's proposed construction, the specification unequivocally states that the selection of two of the four ranks happens concurrently:

> Certain embodiments utilize a logic table such as that of Table 1 to simulate a single memory device from two memory devices by **selecting two ranks concurrently**.

('912 Patent, Decl. Ex. B, 8:59-62 (emphasis added).) Netlist has not and, in fact, cannot point to any evidence to suggest that the '912 Patent teaches anything other than addressing two ranks at the same time. Nevertheless, Netlist attempts to invoke the doctrine of claim differentiation to suggest that "at a time" must mean something other than concurrently. The doctrine of claim differentiation is of no avail: "the doctrine of claim differentiation can not broaden claims beyond their correct scope, determined in light of the specification and the prosecution history and any relevant extrinsic evidence." *Multiform Desiccants, Inc. v. Medzam, Ltd.*, 133 F.3d 1473, 1480 (Fed. Cir. 1998). "[C]laims that are written in different words may ultimately cover substantially the same subject matter." *Id*. "Claim differentiation is a guide, not a rigid rule. If a claim will bear only one interpretation, similarity will have to be tolerated." *Autogiro Co. of America v. United States*, 384 F.2d 391, 404 (Ct. Cl. 1967). And Netlist offers no plausible interpretation for "at a time" that would give it meaning yet escape indefiniteness.

IV. CONCLUSION

Google's proposed constructions give meaning to every word of the claims, drawing from the intrinsic record along with extrinsic evidence where appropriate. Netlist's proposed constructions, however, seek to add limitations where they want to avoid prior art, attempt to broaden claims to maintain infringement, and ask that the Court fix claims that are poorly drafted. For at least all these reasons, the Court should apply Google's proposed constructions and reject Netlist's proposed constructions.

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APPENDIX A – AGREED CONSTRUCTIONS

The parties have agreed to the following constructions, including the constructions for "logic element," "signal," and "control signals," for which the Court provided constructions in the related case Google Inc. v. Netlist, Inc., CV-08-04144 SBA ("the '386 Patent case").

CLAIM TERM	AGREED CONSTRUCTION
logic element	"a hardware circuit that performs a predefined function on input signals from the computer system and presents the resulting signals as its output"
signal	"a varying electrical impulse that conveys information from one point to another"
control signals	"signals, including address and command signals, that regulate system operations"
memory devices	"devices in which data is stored and retrieved"
coupled to the printed circuit board	"electrically connected to the printed circuit board"
rank	"a group of memory devices enabled to receive and transmit data by a common chip-select signal"
command signal	"a signal that initiates a predetermined type of computer operation, such as read, write, refresh or precharge"
chip-select signal	"a control signal that enables the input and output of data to and/or from a memory device"
computer system	"a server or personal computer system including a set of hardware components that are related and connected and to which a memory module is connectable"
phase-lock loop device	"a device for generating a clock signal that is related to the phase of an input reference signal"
mounted to the printed circuit board	"attached to the printed circuit board"
register	"a circuit component or components that receive, buffer, and transmit signals"