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Majority Opinion >

UNITED STATES DISTRICT COURT FOR THE SOUTHERN DISTRICT OF NEW YORK

DYNAMICS INC., Plaintiff, -v- SAMSUNG ELECTRONICS CO., LTD, Defendant.

19-CV-6479 (JPO)

September 5, 2023, Filed

September 5, 2023, Decided

For Dynamics Inc., a Delaware corporation, Plaintiff: Bridget Montgomery, Eckert Seamans Cherin & Mellott LLC, Harrisburg, PA; Robert William Morris, Morris Law Group PLLC, New Rochelle, NY.

For Samsung Electronics Co., Ltd., a Korean corporatiion, Samsung Electronics America, Inc., a New York corporation, Samsung Research America, Inc., a California corporation, Defendants: Gregory Steven Arovas, LEAD ATTORNEY, James E. Marina, Joseph Allen Loy, Kirkland & Ellis LLP (NYC), New York, NY; Alan Martin Rabinowitz, Kirkland & Ellis LLP, New York, NY; Michael A. Pearson, Jr, Kirkland & Ellis LLP, Washington, DC.

J. PAUL OETKEN, United States District Judge.

J. PAUL OETKEN

OPINION AND ORDER

J. PAUL OETKEN, District Judge:

This is a patent infringement action brought by Plaintiff Dynamics Inc., against Samsung Electronics Co., Ltd. and certain of its subsidiaries ("Samsung").[1] Now pending before the Court are the parties' memoranda on claim construction. (*See* ECF Nos. 82, 84, 85, 87, 88, and 89.) The Court held a *Markman* hearing on May 17, 2023, to determine the proper construction of the disputed terms in this case. Having considered the parties' arguments and briefing on claim construction, the Court construes the disputed terms as set forth below.

I. Background

There were originally four patents at issue in this case: **US Patent Nos. 10** , **032** ,**100** ("the '**100** Patent"); **10,223,631** ("the '**631** Patent"), **10,255, 545** ("the '**545** Patent"), and **8,827,153** ("the '**153** Patent"). Following a joint stipulation by the parties, only one of these — the '**153** Patent — remains at issue. (*See* ECF No. 43.) This patent relates to technology that emulates the magnetic stripes of credit or debit cards. While the general technology to emulate magnetic encoding has been around for some time, the '**153** Patent pertains a particular way to emulate the magnetic stripes of credit or debit cards by storing digital waveforms in memory and then converting those digital waveforms into an analog waveform that

can then be run through a coil of wire to emulate the magnetic stripe. (*See* ECF No. 95 ("Tr.") at 10:12-25.)

The parties submitted a joint disputed claim terms chart on February 17, 2023, identifying five disputed claim terms and phrases. (ECF No. 79.) The disputed claim terms, as they appear in the '153 Patent, are as follows:

> 1. "Analog waveform"
>
> 2. "At least one track of magnetic stripe date" / "[digital representation] of said at least one track of magnetic stripe data"
>
> 3. "A waveform generator operable to generate said analog waveform from a digital representation of said at least one track of magnetic stripe data"
>
> 4. "Wherein said device is operable to retrieve said digital representation from a plurality of digital representations of said at least one track of magnetic stripe data"
>
> 5. "Wherein said digital representation is retrieved from a memory of said device based on a signal from said button"

Each party submitted an opening claim construction brief, an opposition to the other party's claim construction **[*2]** brief, and a reply in support of its opening claim construction brief. (ECF Nos. 82, 84, 85, 87, 88, and 89.) On May 17, 2023, the Court then held a *Markman* hearing on the disputed terms. (*See* Minute Entry, May 17, 2023.)

II. Legal Standard

The Federal Circuit's decisions in *Phillips v. AWH Corp.*, **415 F.3d 1303** (Fed. Cir. 2005) (en banc), and *Markman v. Westview Instruments, Inc.*, **52 F.3d 967** (Fed. Cir. 1995) (en banc), *aff'd*, **517 U.S. 370** (1996), guide this Court's claim construction analysis. Claim construction is an issue of law properly decided by the Court. *Markman*, **52 F.3d at 970-71** . "It is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude.'" *Phillips*, **415 F.3d at 1312** (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Sys., Inc.*, **381 F.3d 1111** , **1115** (Fed. Cir. 2004)).

In construing the meaning of the claims, the starting point and primary source is the intrinsic evidence. *Phillips*, **415 F.3d at 1313-14** . The intrinsic evidence includes the claims themselves, the specification, and the prosecution history. *See* ***id.*** **at 1314** . The general rule — subject to certain exceptions — is that each claim term is construed according to its ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the patent and intrinsic evidence. *See* ***id.*** **at 1312-13** . "There is a heavy presumption that claim terms are to be given their ordinary and customary meaning." *Mass. Inst. of Tech. v. Shire Pharm., Inc.*, **839 F.3d 1111** , **1118** (Fed. Cir. 2016) (quoting *Aventis Pharm. Inc. v. Amino Chems. Ltd.*, **715 F.3d 1363** , **1373** (Fed. Cir. 2013)).

The Federal Circuit, in *Phillips* , rejected any claim construction approach that sacrificed the intrinsic record — including the specification — in favor of extrinsic evidence, such as dictionary definitions or expert testimony. The *en banc* court disparaged the suggestion made by *Texas Digital Systems, Inc. v. Telegenix, Inc.*, **308 F.3d 1193** (Fed. Cir. 2002), that a court should discern the ordinary meaning of the claim terms (through dictionaries or otherwise) before turning to the specification. *Phillips*, **415 F.3d at 1319 - 24** . *Phillips* does not, however, preclude all uses of extrinsic evidence in claim construction proceedings. Instead, the court assigned extrinsic evidence a role subordinate to that of the intrinsic record. With respect to dictionaries, the Federal Circuit noted that, "[i]n 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. In such circumstances, general purpose dictionaries may be helpful." ***Id.* at 1314** (citation omitted).

The Federal Circuit has not imposed any particular sequence of steps for a district court to follow when it considers disputed claim language. *See* ***id.* at 1324** . Rather, *Phillips* held that a court must attach the appropriate weight to the intrinsic sources offered in support of a proposed claim construction, bearing in mind the general rule that the claims measure the scope of the patent grant.

There are "only two exceptions to [the] general rule" that claim terms are construed **[*3]** according to their plain and ordinary meaning: "1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of the claim term either in the specification or during prosecution." *Golden Bridge Tech., Inc. v. Apple Inc.*, **758 F.3d 1362** , **1365** (Fed. Cir. 2014) (quoting *Thorner v. Sony Computer Entm't Am. LLC*, **669 F.3d 1362** , **1365** (Fed. Cir. 2012)); *see also GE Lighting Solutions, LLC v. AgiLight, Inc.*, **750 F.3d 1304** , **1309** (Fed. Cir. 2014) ("[T]he specification and prosecution history only compel departure from the plain meaning in two instances: lexicography and disavowal."). The standards for finding lexicography or disavowal are "exacting." *GE Lighting Solutions*, **750 F.3d at 1309** .

III. Discussion

The parties generally agree that the relevant person of ordinary skill in the art ("POSITA") would have an undergraduate degree in either computer science or electrical engineering and at least three years of relevant experience in the use of magnetic fields to convey information. (Tr. at 28: 15-19.) Accordingly, the Court adopts this as the relevant POSITA.

1. Analog waveform

Samsung's Proposed Construction	Dynamics' Proposed Construction	Cross-Reference to Contentions
"continuous wave with negative and positive peaks; a wave is	Plain and ordinary meaning such that "regardless of the	**Infringement**: Exs. A—P at 2, 5-15, 17-19, 54-55, 59-

Samsung's Proposed Construction	Dynamics' Proposed Construction	Cross-Reference to Contentions
continuous when the amplitude of the wave is moved through intervening values when changing, rather than jumping or stepping from one peak amplitude to the next"	proper construction, a real-world square wave falls within its scope"	61; Ex. Q at 2, 6-16, 18-20, 31, 36-37, 46, 59, 64-66. **Invalidity**: Cover Pl. at 18-19; Appx. A-01 at 21-63; Appx. A-02 at 4-35; Appx. A-03 at 4-29; Appx. A-04 at 3-36; Appx. A-05 at 15-45; Appx. A-06 at 6-32

Both sides appear to agree that a POSITA would generally understand the meaning of "analog waveform" as a foundational concept in the field of either electrical or computer engineering. (*See, e.g.*, Tr. 34:14-25; Tr. 35:19-25.) And yet, each defines "analog waveform" differently.

Classically, analog waveforms are represented as a sinusoidal wave. Generally speaking, their defining feature is that they include discrete points *in between* the peaks and valleys, such that the value of the wave, as time goes, may change continuously and incrementally, and all those intermediate points have value. For example, consider a dimmer switch: a light switch on a slide that can be stopped at multiple points in between "off" and "on" and held there, with each intermediate step between the poles having a value. Toggling the switch up and down, through all these intervening values, could create the representation over time of an analog wave. Moreover, one could toggle the switch at different speeds and to different light levels along the spectrum, thereby changing the shape of the wave infinitely.

Here, though it is not facially one of the terms requiring construction, it is also necessary to discuss "digital waveforms" as the alternative against which or inclusive of which both parties attempt to define "analog waveforms." Digital waveforms are represented as "square" waves, such that they have only two **[*4]** discrete values and "jump" between them. To continue the analogy, this would be a simple on-off light switch: in theory, toggling the switch can produce only two values: on and off.

In the real world, however, it is impossible for a light to turn from "on" immediately to "off," because the real world operates under the constraints of physics, and under the constraints of physics, change takes time. Values, or the properties of a light's being "on" and "off," do not instantaneously change from one to another.

Thus, the light must by necessity travel through the intervening light levels on its journey from "on" to "off," even though the *output* of the switch does not include any intervening values; by freezing time, one might end up with a room that is similarly lit to the one of the room with the dimmer switch set to somewhere in the middle. But in contrast to an "analog" wave, the interval between "on" and "off" is out of the user's control. Thus, there are far fewer ways that one could vary the shape of the wave generated by toggling the switch: one could not, for example, turn the lights half on and then turn them back all the way off as one could with a dimmer switch. There can be no intermediate "peak." But one *could* use the dimmer switch, using the appropriate time intervals, to create a "square" wave that resembled that of the on-off switch.

This example illustrates the central dispute here over "digital" waveforms in the real world: while in theory, digital waves have only two values and vary perfectly between them, in the real world, this is functionally impossible. That means that there really is no such thing as a perfect square, real-world "on/off" wave with only two values. The heart of the dispute between the parties, therefore, is not really what the meaning of "analog waveform" is, but whether "real world square waves" — that is, waves whose technical *output* might have only two values, but which when rendered in reality by necessity of physics have values *between* the two poles, are included in "analog" waves. Or, to put it even more simply: is a digital wave rendered in the real world really an analog wave? Dynamics contends that it is. Samsung, in contrast, takes great pains to define "analog" such that it excludes square waves.

The lengthy history of this case, which includes previous constructions of "analog waveform" by the International Trade Commission, is illuminating. (*See, e.g.*, the Full Commission Opinion from ITC Inv. 1170, Public Version at ECF No. 84-14.) The ALJ's Initial Determination, following a *Markman* hearing and consideration of the parties' proposed constructions, construed "analog waveform" such that "any construction consistent with the specification must encompass real-world square waves." (*See* summary at ECF No. 84-14, pg. 49 (separate views of Vice Chair Randolph J. Stayin.)) On review, the Commission majority defined "analog waveform" to mean "'a wave shape whose amplitude changes in a continuous fashion,' but includes real-world square waves." (*Id.*) Vice Chair Stayin disagreed with this construction, arguing that the proper definition should be a "continuous wave with negative **[*5]** and positive peaks." (*Id.*)

The Commission majority's analysis implicitly validates Dynamics' position here, as it explains that the plain and ordinary meaning of "analog waveform," to a POSITA, is a "wave shape whose amplitude changes in a continuous fashion," and that this includes real world square waves. Samsung urges the Court to adopt Commissioner Stayin's construction, but with added language defining "continuous." Notably, the ITC majority's construction in fact adopted *Samsung's* initial preferred construction of "analog waveform," which was "a wave shape whose amplitude changes in a continuous fashion," albeit with the added language about real-world square waves. (ECF No. 84-14 at 12, noting which constructions the parties initially submitted to the ALJ.) What Samsung objects to is the addition of the ITC's clarification about real-world square waves. The ITC's explanation makes clear, however, that this caveat is very nearly redundant because real world square

waves *also* change amplitude in a continuous fashion, and thus (by the ITC's understanding) necessarily fall within Samsung's original definition of "analog waveforms." Specifically, the Commission "adopt[ed] Samsung's proposed construction and constru[ed] 'analog waveform' to mean "a wave shape whose amplitude changes in a continuous fashion," and clarifie[d] that the construction includes so-called real-world square waves because they have waveforms with amplitudes that change in a continuous fashion." (ECF No. 84-14 at 11.)

Commissioner Stayin criticized this formulation for being "tailored to their infringement analysis, rather than limited to the plain meaning in light of the specification." (ECF No. 84-14 at 49.) Hence, he offered his alternative construction. Indeed, as he points out, the '**153** Patent does not mention "real world square waves," and thus the ALJ's and ITC majority's inclusion of the phrase in their claim construction could be viewed as answering a question not yet asked. Samsung's proposed construction here, however, commits the same sin. It is also tailored to *its* infringement analysis, and furthermore, adds additional language that could also cause confusion. Take "negative and positive peaks": Do the high and low values of a square wave constitute a peak? Or does "peak" mean "point" only?

Critically, Samsung's definition states that an analog waveform "is moved" through intervening values. This subtle introduction of the passive voice changes the focus of the definition from the form of the wave itself to who or what creates it, regardless of the actual shape of the resulting wave. It also allows Samsung to attempt to foreclose real-world square waves from the definition of "analog" and to side-step the issue posed by the real-world behavior of square waves. Sinusoidal analog waveforms, for example, *are moved* intentionally through intervening values, and square waves are not. Nonetheless, when considered in terms of the waveform itself, real world square waves *do* move through intervening values when in the real world.

This focus on output rather than actual **[*6]** wave shape is not disclosed in the '**153** Patent, which uses "analog waveform" as a description of the wave itself. Samsung's definition therefore improperly limits the definition of "analog waveform" in a way the patent does not necessarily specify. Samsung's definition also would alter the definition of "analog waveform" to exclude certain shapes of analog waves, when in fact a "real-world square wave" may be one of the variations available in analog waveforms. "Analog waveform" is a broad term, but it is claimed in the '**153** Patent and therefore Dynamics is entitled to its full scope.

The Court is not persuaded by Samsung to exclude "real-world square waves" from the definition of analog waveforms. Accordingly, the Court adopts the construction that accords with the ITC majority's opinion, and defines an "analog waveform" as "a wave shape whose amplitude changes in a continuous fashion," which includes real-world square waveforms.

2. At least one track of magnetic strip data / [digital representation] of said at least	**one track of magnetic stripe data**

Samsung's Proposed Construction	Dynamics' Proposed Construction	Cross-Reference to Contentions
"at least one complete track of magnetic stripe data as defined by the ISO standards" / "[digital representation] of said at least one complete track of magnetic stripe data as defined by the ISO standards"	plain and ordinary meaning such that "at least one track of magnetic stripe data" is as defined by the ISO standards	**Infringement**: Exs. A—I, K-P at 2-45, 47, 49, 51, 53-60; Ex. J at 2-44; Ex. Q at 2-45 **Invalidity**: Cover Pl. at 18-21; Appx. A-01 at 21-72; Appx. A-02 at 4-46; Appx. A-03 at 4-35; Appx. A-04 at 3-47; Appx. A-05 at 15-60; Appx. A-06 at 6-37

The dispute here is over Samsung's insertion of the word "complete" into the definition, which Samsung argues it borrowed from Dynamics' own prior arguments regarding the scope of the '153 Patent. (*See* ECF No. 83-16 at 11, distinguishing the prior art Shoemaker because Shoemaker does not store "complete tracks in memory," or retrieve an "entire track from memory," but rather stores building blocks and builds what becomes the "complete" track dynamically.)

Dynamics' argument essentially appears to be that the word "complete" is superfluous and subject to manipulation that will allow Samsung to introduce ambiguity. (*See* Tr. at 55, in which Dynamics states "in this case the difference seems to be the insertion of the word 'complete,' and I don't see how or what that means," and at 64, in which Dynamics states "I don't know what 'complete' is . . . . I don't know if they're talking about they would say the 'complete' includes, for example, the start and the end sentinel and the LRC block, even though that's not the data that forms the track.")

Both parties agree, however, that the ISO standards define "one track of magnetic stripe data," and that this definition does not accept partial tracks. Accordingly, the word "complete" does appear to be, as Dynamics argues, "redundant." (*See* Tr. at 55.) But sometimes redundancy is clarifying, and it appears to be so

here. Moreover, Dynamics previously described the '153 Patent as pertaining to "complete" or "entire" **[*7]** tracks. Accordingly, the Court adopts Samsung's proposed construction.

Samsung's Proposed Construction	Dynamics' Proposed Construction	Cross-Reference to Contentions
3. A waveform generator operable to generate said analog waveform from a digital representation of said at least one track of magnetic stripe data		
"a component operable to generate said analog waveform by converting a digital representation of said at least one track of magnetic stripe data (as construed) received as an input"	plain and ordinary meaning	**Infringement**: Exs. A—P at 5-31, 54-61; Ex. Q at 8-32; 65-66 **Invalidity**: Cover Pl. at 18-19; Appx. A-01 at 43-63; Appx. A-02 at 19-35; Appx. A-03 at 18-29; Appx. A-04 at 21-36; Appx. A-05 at 31-45; Appx. A-06 at 22-32

As alluded to, this case has already run through multiple tribunals, including an initial determination before an ALJ, a determination by the ITC, the PTAB, and the Federal Circuit. In none of these did Samsung request a construction of "a waveform generator operable to generate said analog waveform from a digital representation of said at least one track of magnetic stripe data." And here, Samsung's addition of "component" and the limitation to the operation of the waveform generator of "by converting a digital representation . . . received as an input" adds confusion and limits the scope of the term in a way the '153 Patent does not. Dynamics is correct that a POSITA would understand the meaning of this term. Accordingly, the Court construes this term according to its plain and ordinary meaning.

4. Wherein said device is operable to retrieve said digital representation		

from a plurality of digital representations of said at least on track of	**magnetic stripe data**	
Samsung's Proposed Construction	**Dynamics' Proposed Construction**	**Cross-Reference to Contentions**
"wherein said device is	plain and ordinary meaning;	**Infringement**:Exs. A—I, K-
operable to retrieve said digital	such that wherein said device	P at 32-45; Ex. J at 32-44;
representation from any of a	is operable to read from	Ex. Q at 33-45
plurality of digital	memory said digital	
representations of said at least	representation of at least one	**Invalidity**: Cover Pl. at 20-
one track of magnetic stripe	track of magnetic stripe data	21, 27-28; Appx. A-01 at
data (as construed) already	from a plurality of digital	63-72; Appx. A-02 at 35-
existing in	representations	46; Appx. A-
memory rather than	of said at	03 at 29-35;
dynamically generated or built	least one track of magnetic	Appx. A-04 at 36-47; Appx.
on the fly"	stripe data	A-05 at 45-60; Appx. A-06
		at 32-37

The primary disagreement as to these terms is over Samsung's addition of the limitation "already existing in memory rather than dynamically generated or built on the fly." Again, this hearkens back to Dynamics' argument distinguishing the '**153** Patent from Shoemaker, wherein Dynamics described Shoemaker as creating its tracks "dynamically" and "on the fly" as opposed to the '**153** Patent, which retrieves full tracks from memory. (*See, e.g.*, ECF No. 83-16.) Both parties agree, however, that "retrieve" means to obtain something that is already created **[*8]** from memory. For example, Samsung cites the Merriam-Webster dictionary definition of "retrieve" as "to locate and bring in," "to get back again," and "to get and bring back, especially to recover from storage"; and the Oxford English Dictionary as "to find or extract (information stored in a computer)." (*See* ECF Nos. 83-35; 83-36.) Samsung is correct that the plain and ordinary meaning of "retrieve" means to locate and bring in something that already

exists, rather than something that must be generated at the time of retrieval. This specification, however, is covered by the plain and ordinary meaning of "retrieve from memory," which is included in Dynamics' construction. Samsung's concern that Dynamics may argue for a meaning that allows for dynamic construction of tracks sounds in infringement, not claim construction, and moreover is covered by the above insertion of the word "complete" into the construction of phrase 3.

Ultimately, Dynamics' construction is the same as was adopted by the ITC, and agreed to then by both parties. Adding Samsung's "on the fly" language merely adds unnecessary language that will provide no clarity to the finder of fact beyond the plain and ordinary meaning of "retrieve," which both parties agree means to get something from memory that already exists. Accordingly, the Court adopts Dynamics' proposed construction.

5. Wherein said digital representation is retrieved from a memory of said device based on a signal from said button

Samsung's Proposed Construction	Dynamics' Proposed Construction	Cross-Reference to Contentions
"wherein a signal from said button causes said digital representation to be read out of a location in a memory of said device in which it was stored prior to the selection of said button"	plain and ordinary meaning	**Infringement**: Ex. A—I, K—P at 3-4, 45-54; Ex. J at 3-4, 44-53; Ex. Q at 46-58 **Invalidity**: Cover Pl. at 21-22; Appx. A-01 at 72-78; Appx. A-02 at 46-53; Appx. A-03 at 35-40; Appx. A-04 at 47-56; Appx. A-05 at 60-66; Appx. A-06 at 37-43

The dispute over this phrase is much the same as the dispute over phrase 4, and again focuses on clarifying that "retrieve" means to retrieve something that already exists in memory. Here again, however, this distinction is covered by the language in the phrase itself that the digital representation is "retrieved from a memory." Neither party requested claim construction of this

claim in the previous proceedings, and its meaning is clear from the language itself. Accordingly, the Court construes this term according to its plain and ordinary meaning.

IV. Conclusion

For the foregoing reasons, the Court adopts the constructions set forth in this Opinion.

SO ORDERED.

Dated: September 5, 2023

New York, New York

/s/ J. Paul Oetken

J. PAUL OETKEN

United States District Judge

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The Samsung Defendants are Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., and Samsung Research America, Inc.

General Information

Case Name	Dynamics Inc. v. Samsung Elecs. Co.
Court	U.S. District Court for the Southern District of New York
Date Filed	Tue Sep 05 00:00:00 EDT 2023
Judge(s)	J. PAUL OETKEN
Parties	DYNAMICS INC., Plaintiff, -v- SAMSUNG ELECTRONICS CO., LTD, Defendant.
Topic(s)	Civil Procedure; Patent Law