IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

RESONANT SYSTEMS, INC. d/b/a RevelHMI, Plaintiff, v. SONY GROUP CORP. and SONY INTERACTIVE ENTERTAINMENT INC.., Defendants.	Case No. 2:22-cv-00424-JRG-RSP **JURY DEMANDED**

PLAINTIFF RESONANT SYSTEMS, INC.'S
OPENING CLAIM CONSTRUCTION BRIEF

TABLE OF CONTENTS

I. INTRODUCTION 1

II. ASSERTED PATENTS 1

III. LEVEL OF ORDINARY SKILL IN THE ART 2

IV. DISPUTED CLAIM TERMS 2

- A. Preamble of ’337 Patent, Claim 2 2
- B. “vibration module” (’081 and ’830 Patents, Claims 1-8, 17) 4
- C. “moveable component” (’337 Patent, Claim 2; ’081 Patent, Claims 1, 2, 5-7, 17; ’830 Patent Claims 1, 2, 5-7, 17, 20) 5
- D. “a control component that controls supply of power from the power supply to the driving component to cause the moveable component to oscillate at a frequency and an amplitude specified by [user input received from the user-input features] / [one or more stored values]” (’337 Patent, Claim 2; ’081 Patent, Claim 1; ’830 Patent, Claims 1, 20) 6
- E. “a primary oscillation frequency modulated by a modulating oscillation frequency” (’337 Patent, Claim 3; ’830 Patent, Claim 16) 8
- F. “a beat frequency” (’337 Patent, claim 3; ’830 Patent, claim 16) 11
- G. “an aperiodic oscillation waveform” (’337 Patent, Claim 3; ’830 Patent, Claim 16) 12
- H. Typographical Error in Claim 4 (’081 and ’830 Patents, Claims 4, 5, 6) 12
- I. “a strength of vibration produced by the linear oscillation of the moveable component” (’081 Patent, Claim 5; ’830 Patent, Claim 5) 16

V. CONCLUSION 17

TABLE OF AUTHORITIES

Cases

Am. Med. Sys., Inc. v. Biolitec, Inc.,
618 F. 3d 1354 (Fed. Cir. 2010) 3
Apex Inc. v. Raritan Comp., Inc.,
325 F.3d 1364 (Fed. Cir. 2003) 6
Bicon, Inc. v. Straumann Co.,
441 F.3d 945 (Fed. Cir. 2006) 3
Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.,
289 F.3d 801 (Fed. Cir. 2002) 3
CBT Flint Partners, LLC v. Return Path, Inc.,
654 F.3d 1353 (Fed. Cir. 2011) 13
Dyfan, LLC v. Target Corp.,
28 F.4th 1360 (Fed. Cir. 2022) 5
Grp. One, Ltd. v. Hallmark Cards, Inc.,
407 F.3d 1297 (Fed. Cir. 2005) 13
HTC Corp. v. IPCom GmbH & Co., KG,
667 F.3d 1270 (Fed. Cir. 2012) 8
JVW Enters., Inc. v. Interact Accessories,
424 F.3d 1324 (Fed. Cir. 2005) 4, 8, 12, 16
Microprocessor Enhancement Corp. v. Texas Instruments Inc.,
520 F.3d 1367 (Fed. Cir. 2008) 15
Nanology Alpha LLC v. WITec Wissenschaftliche Instrumente und Technologie GmbH,
No. 6:16-CV-00445-RWS, 2017 WL 5905272 (E.D. Tex. Nov. 30, 2017) 6
Novo Indus., L.P. v. Micro Molds Corp.,
350 F.3d 1348 (Fed. Cir. 2003) 13
Ollnova Techs. Ltd. v. ecobee Techs., ULC d/b/a ecobee,
No. 2:22-CV-00072-JRG, Dkt. No. 105 (E.D. Tex. Apr. 10, 2023) 13, 14, 15
Oyster Optics, LLC v. Ciena Corporation,
No. 4:17-cv-005920, Dkt No. 127 (N.D. Cal. Aug. 10, 2020) 4
Oyster Optics, LLC v. Corian Am. Inc.,
No. 2:16-CV-1302-JRG, 2018 WL 3067727 (E.D. Tex. June 21, 2018) 4
Pavo Sols. LLC v. Kingston Tech. Co.,
35 F.4th 1367 (Fed. Cir. 2022) 13
Solas OLED Ltd. v. Samsung Elecs. Co.,
No. 2:21-CV-00105-JRG, 2022 WL 36222 (E.D. Tex. Jan. 4, 2022) 15
Thorner v. Sony Comp. Ent. Am. LLC,
669 F.3d 1362 (Fed. Cir. 2012) 4
Ultimax Cement Mfg. Corp. v. CTS Cement Mfg. Corp.,
587 F.3d 1339 (Fed. Cir. 2009) 13

Statutes

35 U.S.C. § 112 ¶ 6 ..... 1, 5, 6, 7

TABLE OF EXHIBITS

NO.	DESCRIPTION
1	U.S. Patent No. 9,369,081 ("'081 Patent")
2	U.S. Patent No. 9,941,830 ("'830 Patent")
3	U.S. Patent No. 8,860,337 ("'337 Patent")
4	Declaration of Dr. R. Jacob Baker, Resonant's claim construction expert ("Baker Decl.")

Exhibit 2003
Sony v. Resonant Systems, IPR2024-00569
Page 4 of 22

I. INTRODUCTION

The Sony Defendants' scattershot approach to claim construction is fundamentally flawed, and its proposed constructions and indefiniteness arguments should be rejected. In stark contrast, Plaintiff Resonant Systems Inc. ("Resonant") offers constructions that are consistent with the intrinsic evidence, the understanding of a POSITA, and applicable law.

Sony first seeks to construe several claim terms that it concedes are not subject to 35 U.S.C. § 112 ¶ 6. For most of these terms, Sony seeks a narrowing construction by importing limitations from the specification that describe exemplary embodiments, defying fundamental principles of claim construction. Sony also raises a meritless indefiniteness argument—unsupported by any expert declaration—that apparently feigns ignorance over an obvious, single-character typographical error.

As to the remaining two terms, Sony argues that they are subject to 35 U.S.C. § 112 ¶ 6. Sony's construction for the first term should be rejected because Sony cannot overcome the presumption that it is not a means-plus-function term (because the word "means" is not used). For the second term, Sony argues incorrectly that the corresponding structure can only be a general-purpose computer for performing the claimed function using a specific algorithm.

As detailed below and in the declaration of Resonant's claim construction expert, Dr. R. Jacob Baker, Sony's proposals should be rejected and Resonant's should be adopted.

II. ASSERTED PATENTS

This case involves 8,860,337 ("'337 Patent"), U.S. Patent No. 9,369,081 ("'081 Patent") and U.S. Patent No. 9,941,830 ("'830 Patent"), which are related and share the same specification. Because of this overlap, citations and other references to one patent are equally applicable to all

asserted patents, with only slight differences in specification line numbering and non-material differences in claim language noted with brackets herein.

The asserted patents relate to controlling vibration according to a desired amplitude and frequency. Claim 1 of the '081 Patent is exemplary and recites:

> 1. A linear vibration module comprising:
>
> a housing;
>
> a moveable component;
>
> a power supply;
>
> user-input features;
>
> a driving component that drives the moveable component in each of two opposite directions within the housing; and
>
> a control component that controls supply of power from the power supply to the driving component to cause the moveable component to oscillate at a frequency and an amplitude specified by user input received from the user-input features.

III. LEVEL OF ORDINARY SKILL IN THE ART

A POSITA at the time of the invention would have had at least a bachelor's degree or equivalent in mechanical or electrical engineering, including course work in electro-mechanical control systems and two years of industry experience. Baker Decl. ¶ 19. Additional relevant industry experience may compensate for lack of formal education or vice versa. *Id.* Resonant's expert, Dr. Baker, personally qualified as a POSITA as of the earliest claimed priority date. Baker Decl., ¶ 6 & Appx. A.

IV. DISPUTED CLAIM TERMS[1]

A. Preamble of '337 Patent, Claim 2

Resonant's Proposal	Sony's Proposal
The preamble is not limiting.	**The preamble is limiting.**

[1] The parties have also identified two agreed constructions, including that the preambles of '081 claim 1 and '830 claims 1 and 20 are limiting. *See* Dkt. No. 53 (JCCS) at 1-2.

With respect to the ’337 Patent, the preamble is not limiting. As this Court is no doubt aware, “[g]enerally, ... the preamble does not limit the claims.” *Am. Med. Sys., Inc. v. Biolitec, Inc.*, 618 F. 3d 1354, 1358 (Fed. Cir. 2010). “Preamble language that merely states the purpose or intended use of an invention is generally not treated as limiting the scope of the claim.” *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 952 (Fed. Cir. 2006). However, if a preamble “recites essential structure or steps, or if it is necessary to give life, meaning, and vitality to the claim,” the preamble limits the invention. *Catalina Mktg. Int'l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002).

Here, there is nothing about “linear vibration module” that recites any necessary structure or gives life, meaning, and vitality to the claims. The preamble phrase “linear vibration module” does not provide the antecedent basis for any terms used in the body of claim 2. In addition, claim 2 contains terms such as the “control component,” “driving component,” and “movable component” that describe how linear vibration is used in the claimed apparatus for which “linear vibration module” does not add any clarifying meaning. *See also* Baker Decl. ¶ 24.

Although Resonant agrees that a similar phrase from the preambles of claim 1 of the ’081 Patent and claims 1 and 20 of the ’830 Patent are limiting, that agreement is based on the fact that the preambles of those claims were used to distinguish prior art. This is one of the grounds that “transforms the preamble into a claim limitation.’ *Catalina*, 289 F.3d at 808 (“clear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art transforms the preamble into a claim limitation because such reliance indicates use of the preamble to define, in part, the claimed invention”). However, disclaimers in the prosecution of child patents such as the ’801 Patent and ’830 Patent do not attach to parent patents such as the ’337 Patent. *Oyster Optics, LLC v. Corian Am. Inc.*, No. 2:16-CV-1302-JRG, 2018 WL 3067727 at *4 (E.D. Tex. June 21,

2018) ("'no authority [] permits a disclaimer to be imputed from a progeny to ancestor when it is not, as *Microsoft* requires, a 'representation of [the patentee's] own understanding of the inventions disclosed in all [related] patents.'"); *Oyster Optics, LLC v. Ciena Corporation,* No. 4:17-cv-005920, Dkt No. 127, *slip. op.* at 14 (N.D. Cal. Aug. 10, 2020) (disclaimer "does not apply to statements made during prosecution of a child application where the parent application has already issued."). Accordingly, there is no basis to find the preamble limiting for the '337 Patent.

B. "vibration module" ('081 and '830 Patents, Claims 1-8, 17)

Resonant's Proposal	Sony's Proposal
Plain and ordinary meaning	"**vibrating device**"

The phrase "vibration module" does not require construction. This is a simple, two-word phrase that would be readily understood by a POSITA and jury. Baker Decl. ¶ 27. Sony's proposal seeks to change the form of one word "vibration" to "vibrating" and change "module" to "device." Niether change is supported by the intrinsic record or provides clarity to the term in a manner that would assist the jury. *See* Baker Decl. ¶¶ 27, 28.

Sony's approach here is emblematic of its proposals for other terms, in that Sony improperly seeks to limit the claims to particular disclosed embodiments, despite there being no lexicography or disclaimer to justify doing so. *See, e.g.*, *Thorner v. Sony Comp. Ent. Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012) ("There are **only two exceptions**" in which claim terms are not given their full ordinary and customary 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 a claim term either in the specification or during prosecution.");[2] *JVW Enters., Inc. v. Interact Accessories*, 424 F.3d 1324, 1335 (Fed. Cir. 2005) (without clear and unambiguous disclaimer or lexicography, courts

[2] All emphasis in quoted material has been added unless otherwise noted.

"**do not import limitations into claims from examples or embodiments** appearing only in a patent's written description, even when a specification describes very specific embodiments of the invention or even describes only a single embodiment"). Sony's attempt to rewrite the claims should be rejected.

C. "moveable component" ('337 Patent, Claim 2; '081 Patent, Claims 1, 2, 5-7, 17; '830 Patent Claims 1, 2, 5-7, 17, 20)

Resonant's Proposal	Sony's Proposal
Plain and ordinary meaning; **not subject to 35 U.S.C. § 112 ¶ 6**. If subject to 35 U.S.C. § 112 ¶ 6, then: **Function**: moving **Structures**: a mass/weight or plunger; and equivalents thereof	**Subject to 35 U.S.C. 112 ¶ 6**. **Function**: moving **Structures**: a mass/weight or plunger and equivalents thereof

Here, the parties only dispute whether the term "movable component" is a means-plus-function term subject to 35 U.S.C. § 112 ¶ 6. If 35 U.S.C. § 112 ¶ 6 applies, the parties agree on the corresponding function and structure.

The term "moveable component" is presumptively not a means-plus-function term because it does not include the word "means." *Dyfan, LLC v. Target Corp.*, 28 F.4th 1360, 1365 (Fed. Cir. 2022) ("we presume that a claim limitation is not drafted in means-plus-function format in the absence of the term 'means'"). Sony cannot overcome this presumption because "moveable component" does not fail to recite sufficiently definite structure, nor does it recite function without sufficient structure for performing that function. *Id.* The claims do not require the moveable component to perform any particular function—the claims merely require that it be moveable and describe circumstances that would cause it to be moved. The term "moveable component" does not even recite "a specified function" (as required by the statutory language of 35 U.S.C. § 112 ¶ 6), and thus cannot be a means-plus-function term. And where, as here, "it is clear that a claim

term itself connotes some structure to a person of ordinary skill in the art, 'the presumption that § 112, ¶ 6 does not apply is determinative' in the absence of 'more compelling evidence of the understanding of one of ordinary skill in the art.'" *Dyfan*, 28 F.4th at 1366 (quoting *Apex Inc. v. Raritan Comp., Inc*., 325 F.3d 1364, 1373 (Fed. Cir. 2003)).

Highly similar claim terms have been found not to invoke Section 112(6). For example, another court in this District found with respect to "moving mechanism" that "the claims not only describe the structural elements, but also recite the interaction between the structural elements," such that "the term 'moving mechanism' therefore imparts structure and its structure is described in the claims." *Nanology Alpha LLC v. WITec Wissenschaftliche Instrumente und Technologie GmbH*, No. 6:16-CV-00445-RWS, 2017 WL 5905272, at *10 (E.D. Tex. Nov. 30, 2017). The same is true here because the claim makes clear how the moveable component interacts with other recited structural elements. *E.g.*, '081 Patent at cls. 1, 2, 5-7, 17. The *Nanology* court also explained that § 112 ¶ 6 does not apply when the written description provides context as to how the claimed components 'interact[ ] with other components ... in a way that ... inform[s] the structural character of the limitation-in-question or otherwise impart[s] structure.'" *Nanology*, 2017 WL 5905272, at *11. The specification here also describes how the moveable component interacts with other structural elements. *E.g.*, '081 Patent at Figs. 4A-4G, 10-18, 24A-24B, 25, and corresponding text.

D. "a control component that controls supply of power from the power supply to the driving component to cause the moveable component to oscillate at a frequency and an amplitude specified by [user input received from the user-input features] / [one or more stored values]" ('337 Patent, Claim 2; '081 Patent, Claim 1; '830 Patent, Claims 1, 20)

Resonant's Proposal	Sony's Proposal
Subject to 35 U.S.C. § 112 ¶ 6. **Function**: controlling supply of power from the power supply to the driving component to cause the moveable component to oscillate at a	Subject to 35 U.S.C. 112 ¶ 6. **Function**: controlling supply of power from the power supply to the driving component to cause the moveable

Resonant's Proposal	Sony's Proposal
frequency and an amplitude specified by [user input received from the user-input features / one or more stored values] **Structures**: oscillator circuit; **microcontroller with internal or external memory;** processor; CPU; microprocessor; and equivalents thereof [if an algorithm is required] Where the corresponding structure is a processor, CPU, or microprocessor, the processor/CPU/microprocessor is programmed with an algorithm comprising the following steps: (a) set the mode and strength to [default values or] values representing selections made by user input to the user input features; and (b) provide a corresponding output to the power supply so that the power supply provides a corresponding output to the driving component *See, e.g.*, '081 patent at 7:10-24, 8:10-20, Figs. 7A, 7C; '830 patent at 7:20-34, 8:20-30, Figs. 7A, 7C	component to oscillate at a frequency and an amplitude specified by [user input received from the user-input features / one or more stored values] **Structures**: an oscillator circuit, a microcontroller with internal or external memory, a processor, a CPU, or a microprocessor **contained within the vibrating device** where the microcontroller, processor, CPU, or microprocessor are programmed with an algorithm comprising the following steps: (a) set the mode and strength to [default values or] values representing selections made by user input to the user input features; and (b) provide a corresponding output to the power supply so that the power supply provides a corresponding output to the driving component and equivalents thereof

Here, the parties agree that the terms are subject to 35 U.S.C. § 112 ¶ 6 and largely agree on the corresponding structure, with two remaining disputes.

The first dispute is whether a microcontroller-based embodiment of the claimed invention requires an algorithm to perform the claimed function. It does not. Sony acknowledges that the specification discloses a microcontroller as corresponding structure but wrongly asserts that it should be treated just like the disclosed processor, CPU, and microprocessor, for purposes of 35 U.S.C. § 112 ¶ 6. The microcontroller disclosed is not a general-purpose computer but instead provides more specific functionality sufficient to perform the claimed function without additional special programming. *E.g.*, '081 Patent at 10:53-13:51, 14:60-64; Baker Decl. ¶ 32. Thus, there is no need to identify an algorithm for the microcontroller to perform. *HTC Corp. v. IPCom GmbH*

& Co., KG, 667 F.3d 1270, 1279-80 (Fed. Cir. 2012). However, if the Court were to determine that an algorithm is necessary, the parties agree on the algorithm that is appropriate.

The second dispute relates to Sony's proposed insertion of "contained within the vibrating device." This additional language is unwarranted under § 112 ¶ 6, which limits what the claimed structure is rather than where it is located. Sony's insertion should also be rejected because it uses the phrase "vibrating device," which is wrong for the reasons explained above concerning the "vibration module" term.

E. "a primary oscillation frequency modulated by a modulating oscillation frequency" ('337 Patent, Claim 3; '830 Patent, Claim 16[3])

Resonant's Proposal	Sony's Proposal
No construction necessary; plain and ordinary meaning	"**a primary oscillation frequency modulated by a modulating oscillation frequency to produce low frequency pulses of high-frequency vibration such as depicted in Fig. 22B**"

The phrase "a primary oscillation frequency modulated by a modulating oscillation frequency" would be readily understood by a POSITA and jury. *See* Baker Decl. ¶¶ 33-38. It does not require construction.

There is no lexicography or disclaimer to support Sony's attempt to narrow the scope of this claim term. Sony seeks to limit the scope of the term only to particular usages within the specification, which is improper. *E.g.*, *JVW Enters.*, 424 F.3d 1324, 1335 (Fed. Cir. 2005) (courts "do not import limitations into claims from examples or embodiments appearing only in a patent's written description, even when a specification describes very specific embodiments of the invention or even describes only a single embodiment"). Specifically, Sony's construction, and

[3] This and other disputed terms were also previously identified with respect to claim 16 of the '081 Patent. However, on April 16, 2024, Resonant filed a statutory disclaimer with the Patent Office disclaiming claims 15 and 16 of the '081 Patent, such that those claims are no longer asserted here.

those of the terms below, seek to import the embodiments shown Figs. 22A, 22B, and 23 into the claims. These Figures are reproduced below:

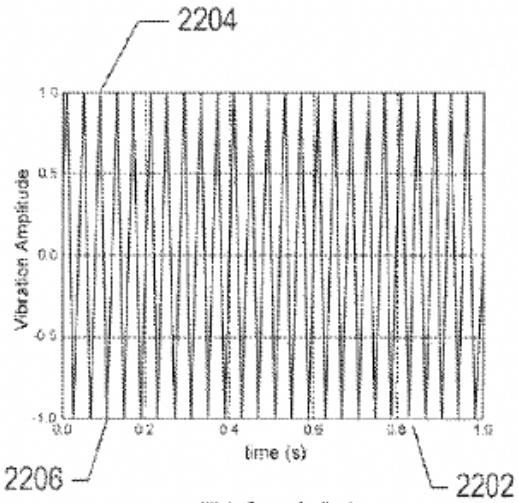

FIG. 22A

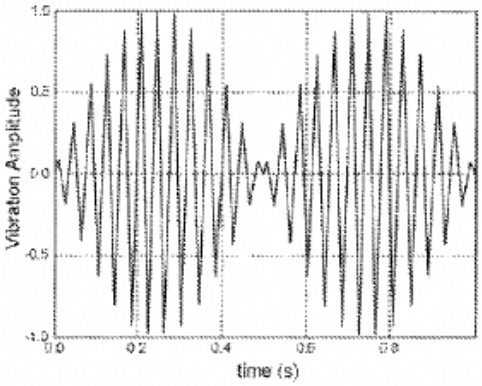

FIG. 22B

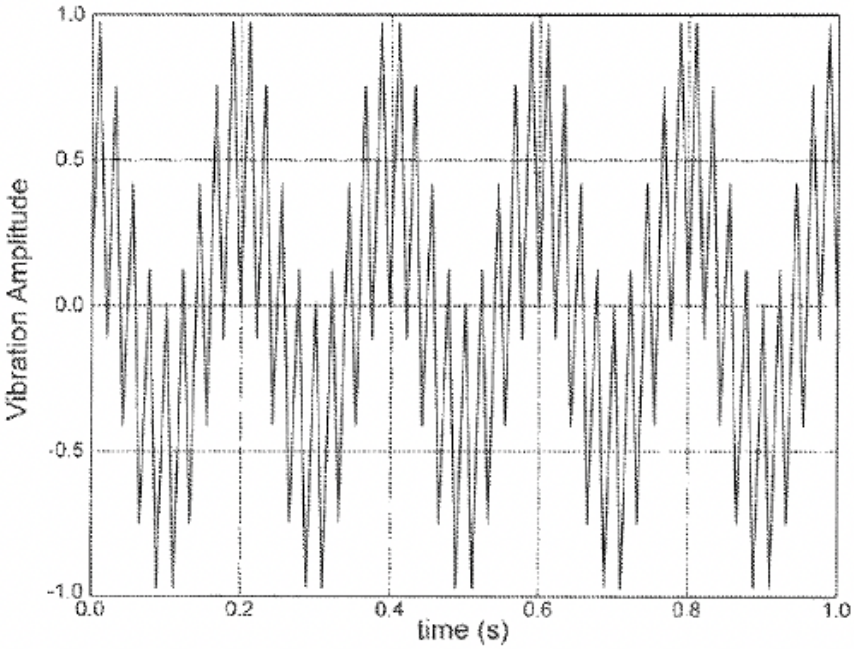

FIG. 23

With respect to these Figures, the patents teach:

> FIGS. 22A-23 illustrate interesting vibrational modes produced by driving a linear-resonant vibration module simultaneously at two different frequencies. FIG.22A shows a vibration mode of a linear vibration module driven at a frequency of 25 Hz. In a one-second duration of time, plotted with respect to horizontal axis 2202, 25 cycles, each including a positive and negative amplitude peak, Such as positive amplitude peak 2204 and negative amplitude peak 2206, occur. At a constant 25 Hz frequency of operation, the positive peaks and negative peaks are evenly spaced. FIG. 22B illustrates a vibration mode of the linear vibration module driven at a primary operational frequency of 25 Hz with an added modulating 1 Hz operational frequency. ***Driving the linear vibration module by both a primary and a modulating frequency produces low-frequency pulses of high-frequency vibration***. FIG. 23 illustrates a different complex vibrational mode in which two driving frequencies combine to produce a lower frequency beat-wave form. The vibrational mode illustrated in FIG. 23 is produced by a primary driving frequency of 25 HZ, as in FIG.22A, with a second driving frequency of 20 Hz. By varying the number, relative amplitudes, and frequencies of two or more driving signals, a microprocessor-controlled or microcontroller-controlled linear-resonance vibration module can be controlled to produce any number of complex vibrational patterns and modes, including periodic modes, modes with multiple different periods, various modulated vibration modes, and even fully a periodic vibration modes that do not repeat time.

'337 Patent at 13:14-41.

Sony's proposed construction appears to be based on the italicized language noted above, which does not provide any sufficient legal basis for departing from the plain and ordinary meaning of the claim language. Instead, this language merely refers to the effect of using one specific "primary operational frequency" – 25 Hz, and one specific "modulating frequency" – 1 Hz. One of skill in the art would not understand that every single use of a primary and a modulating frequency would necessarily produce "low-frequency pulses of high frequency vibration," as Sony asserts. Baker Decl. ¶ 37. Indeed, the patents teach the opposite: "By varying the number, relative amplitudes, and frequencies of two or more driving signals, a microprocessor-controlled or microcontroller-controlled linear-resonance vibration module can be controlled to produce any number of complex vibrational patterns and modes, including periodic modes, modes with multiple different periods, various modulated vibration modes, and even fully a periodic vibration modes that do not repeat time." '337 Patent at 13:36-41. Accordingly, a POSITA would not understand this claim term to be as narrow as Sony proposes. Baker Decl. ¶ 37.

F. "a beat frequency" ('337 Patent, claim 3; '830 Patent, claim 16)

Resonant's Proposal	Sony's Proposal
No construction necessary; plain and ordinary meaning	"**two driving frequencies combine to produce a lower frequency beat waveform such as depicted in Fig. 23**"

The claim phrase "a beat frequency" would be readily understood by a POSITA and jury. *See* Baker Decl. ¶ 40. It does not require construction.

No lexicography or disclaimer supports Sony's attempt to narrow the scope of this short, simple claim term. As with "a primary oscillation frequency modulated by a modulating oscillation frequency," Sony appears to be importing the specification's discussion of Fig. 23 into the claims. Here, the patents teach: "FIG. 23 illustrates a different complex vibrational mode in which two driving frequencies combine to produce a lower frequency beat-wave form. The vibrational mode illustrated in FIG. 23 is produced by a primary driving frequency of 25 HZ, as in FIG.22A, with a second driving frequency of 20 Hz." '337 Patent at 13:31-34. Nothing in the patents teaches that this is the only example of a beat frequency. Indeed, it teaches the opposite. '337 Patent at 13:36-41 ("By varying the number, relative amplitudes, and frequencies of two or more driving signals, a microprocessor-controlled or microcontroller-controlled linear-resonance vibration module can be controlled to produce any number of complex vibrational patterns and modes, including periodic modes, modes with multiple different periods, various modulated vibration modes, and even fully a periodic vibration modes that do not repeat time."). *See* Baker Decl. ¶41.

These descriptions in the specification are consistent with a POSITA's understanding that "a beat frequency" has a plain and ordinary meaning, that the patents use the phrase in its ordinary sense, and that the scope of the term is not limited to Figure 23. Baker Decl. ¶42. For example, a POSITA would recognize that beats are produced by the combination of different frequencies in many configurations, not just that shown in Figure 23. *Id.* Accordingly, a POSITA would not view

the term as having the limitation suggested by Defendants. For this reason, Sony's construction should be rejected.

G. "an aperiodic oscillation waveform" ('337 Patent, Claim 3; '830 Patent, Claim 16)

Resonant's Proposal	Sony's Proposal
No construction necessary; plain and ordinary meaning	"**a vibration waveform that does not repeat in time**"

The claim phrase "an aperiodic oscillation waveform" would be readily understood by a POSITA and jury—it simply refers to a waveform that is irregular. *See* Baker Decl. ¶ 47. It does not require construction.

No lexicography or disclaimer supports Sony's attempt to narrow the scope of this claim term. As with the terms above, Sony appears to be importing the patent's discussion of Figs. 22A, 22B, and 23 into the claims. With respect to this term, the patents teach "even fully a periodic [aperiodic] vibration modes that do not repeat in time." '337 Patent at 13:40-41. To the extent Defendants are attempting to import this limitation into the claims, that is improper. *JVW Enters.*, 424 F.3d at 1335. Moreover, the patents are referring to a "fully" aperiodic vibration mode in this teaching. While a "fully" aperiodic mode may never repeat in time, "aperiodic" does not suggest such a strict limitation. For example, a POSITA would understand that a random noise waveform would be "aperiodic" even if it is played as a two-second repeating loop. Baker Decl. ¶ 48. Thus, Sony's construction should be rejected.

H. Typographical Error in Claim 4 ('081 and '830 Patents, Claims 4, 5, 6)

Claim Term	Resonant's Proposal	Sony's Proposal
"claim 1" ('081 and '830 Patents, Claim 4)	"**claim 3**"; not indefinite	Plain and ordinary meaning
"the one or more operational control outputs" ('081 and '830 Patents, Claims 4, 5, 6)	Plain and ordinary meaning; **not indefinite**	**Indefinite**

Claim 4 of the '081 and '830 Patents includes a one-character typographical error that

should be corrected. Instead of claim 4's preamble reciting "The [linear] vibration module of claim **1**," the preamble should read "The [linear] vibration module of claim **3**." It is clear from the claim language that this is a one-character typographical error, and the specification and prosecution history do not suggest any different interpretation. A POSITA would readily recognize this as a typo, and Sony cannot meet the heavy burden of proving indefiniteness by clear and convincing evidence with respect to "the one or more operational control outputs." *See* Baker Decl. ¶¶ 50-57.

Both claim construction disputes listed above relate to this same issue. In the first dispute, Resonant proposes that the typographical error be corrected, such that the phrase "of claim 1" appearing at the start of claim 4 would be replaced with "of claim 3." Sony denies that this is a typographical error and argues that "claim 1" should be applied as written. Sony takes this position not out of principle but because doing so enables Sony to present an indefiniteness argument that is apparently premised on a lack of antecedent basis. But the challenged phrase ("the one or more operational control outputs") does have clear antecedent basis in claim 3. The typo identified by Resonant should be corrected. *See* Baker Decl. ¶¶ 55-56.

As this Court explained in the *Ollnova Technologies* case:

> "A district court may correct 'obvious minor typographical and clerical errors in patents.'" *Pavo Sols. LLC v. Kingston Tech. Co*., 35 F.4th 1367, 1373 (Fed. Cir. 2022) (quoting *Novo Indus., L.P. v. Micro Molds Corp*., 350 F.3d 1348, 1357 (Fed. Cir. 2003)). "Correction is appropriate 'only if (1) the correction is **not subject to reasonable debate** based on consideration of the claim language and the specification and (2) the **prosecution history does not suggest a different interpretation** of the claims.'" *Id*. (quoting *Novo Indus*., 350 F.3d at 1354). "The **error must be 'evident from the face of the patent**,' . . . and the determination 'must be made from the point of view of one skilled in the art[.]'" *Id*. (quoting *Grp. One, Ltd. v. Hallmark Cards, Inc*., 407 F.3d 1297, 1303 (Fed. Cir. 2005), and *Ultimax Cement Mfg. Corp. v. CTS Cement Mfg. Corp*., 587 F.3d 1339, 1353 (Fed. Cir. 2009)). "In deciding whether a particular correction is appropriate, the court 'must consider how a potential correction would impact the scope of a claim and if the inventor is entitled to the resulting claim scope based on the written description of the patent.'" *Id*. (quoting *CBT Flint Partners, LLC v. Return Path, Inc*., 654 F.3d 1353, 1359 (Fed. Cir. 2011)).

Ollnova Techs. Ltd. v. ecobee Techs., ULC d/b/a ecobee, No. 2:22-CV-00072-JRG, Dkt. No. 105 at 9 (E.D. Tex. Apr. 10, 2023) (hereinafter "*Ollnova*") (making judicial correction).

The requirements for judicial correction are met here. The parties agree that an error is evident from the face of the '081 and '830 Patents, which is what Sony uses as the basis for its indefiniteness argument. But that same indefiniteness argument demonstrates that there can be no reasonable debate that the preamble of claim 4 was intended to recite "The [linear] vibration module of claim 3." For example, claim 4 recites three phrases that are preceded by the word "the" but have no antecedent basis from earlier in claim 4 or from claim 1: (1) "the one or more operational control outputs," (2) "the received output signals from the sensors," and (3) "the [one or more] sensors." *See* '081 and '830 Patents, cl. 4. Sony recognizes that if Resonant's proposed correction (i.e., the change of a single character from "claim 1" to "claim 3") were implemented, then Sony's indefiniteness argument would be meritless because claim 3 provides proper antecedent basis for the phrase Sony alleges to be indefinite.

Sony's arguments are apparently premised on the notion that the patentee mistakenly introduced three new phrases in claim 4, each preceded by the definite article "the." That is not a credible argument. Baker Decl. ¶ 53. The patentee plainly intended to refer back to the immediately preceding claim 3, which provides clear antecedent basis for all three phrases, including the one Sony challenges. *Id.* Reading claims 3 and 4 together only further illustrates this, because claim 4 builds upon claim 3 by adding further limitations to the "adjusts" limitation of claim 3:

> 3. The linear vibration module of claim 1 wherein the control component receives output signals from sensors within the linear vibration module during operation of the linear vibration module and adjusts one or more operational control outputs of the control component according to the received output signals from the sensors.
>
> 4. The linear vibration module of claim 1 wherein the control component adjusts the one or more operational control outputs of the control component according to the received output signals from the sensors in order that subsequent operation of the linear vibration module produces desired outputs from the one or more sensors

corresponding to one or more operational control parameters.

'081 Patent at cls. 3, 4; *see also id.* at 6:24-42 (describing how sensor output signals are received and used in adjusting control outputs, consistent with the limitations of claims 3 and 4).

There can be no reasonable debate as to what correction should be made. It is far more likely that the patentee made a single-character typo (mistaking one numeral for another) than it is that the patentee mistakenly added the word "the" three separate times.

Neither the prosecution histories of the asserted patents, nor any other intrinsic evidence, suggest any different interpretation. As Dr. Baker explains, all intrinsic evidence either supports Resonant's conclusion (i.e., one-character typo) or is neutral on the subject. Baker Decl. ¶ 53.

Furthermore, Resonant's proposed correction "will not impact the scope of the claim, as the correction aligns with how a skilled artisan would understand the limitation in its uncorrected form." *Ollnova* at 11; *see also* Baker Decl. ¶¶ 53-54. And there can be no dispute that claim 4 as corrected would be fully supported by the specification. *See, e.g.*, '081 Patent at 6:24-42, 7:32-8:9, Figs. 6, 7B.

With Resonant's proposed correction (i.e., replacing "of claim 1" with "of claim 3"), Sony's lack of antecedent basis argument falls away, mooting its indefiniteness position. Resonant respectfully requests that the Court make this judicial correction.[4]

---

[4] Notably, "claims are not necessarily invalid for a lack of antecedent basis." *Microprocessor Enhancement Corp. v. Texas Instruments Inc*., 520 F.3d 1367, 1376 (Fed. Cir. 2008). In particular, "when a claim's meaning would reasonably be understood by skilled artisans when read in light of the specification, it is not invalid." *Solas OLED Ltd. v. Sony Elecs. Co*., No. 2:21-CV-00105-JRG, 2022 WL 36222, at *5 (E.D. Tex. Jan. 4, 2022). Even without Resonant's proposed correction, it is clear from surrounding claim language and the specification what the allegedly indefinite phrase refers to, such that its meaning would still be readily understood. Baker Decl. ¶¶ 53-54.

I. "a strength of vibration produced by the linear oscillation of the moveable component" ('081 Patent, Claim 5; '830 Patent, Claim 5)

Resonant's Proposal	Sony's Proposal
No construction necessary; plain and ordinary meaning	"**a value the corresponds to the amount of current applied to the driving component**"

The claim phrase "a strength of virbration produced by the linear oscillation of the moveable component" would be readily understood by a POSITA and jury. *See* Baker Decl. ¶ 59. It does not require construction.

No lexicography or disclaimer supports Sony's attempt to narrow the scope of this claim term. Sony's argument is apparently based on a portion of the specification that reads "strength of vibration, which corresponds to the current applied to the coil." *E.g.*, '337 Patent at 6:21-22. However, this teaching only relates to "one example" of the invention, making it improper to limit claim scope on this basis. *Id.* at 6:21; *see JVW Enters.*, 424 F.3d 1324, 1335 (Fed. Cir. 2005) (courts "do not import limitations into claims from examples or embodiments appearing only in a patent's written description, even when a specification describes very specific embodiments of the invention or even describes only a single embodiment"). Moreover, nothing in the specification states that the current applied to the driving component, and that current alone, dictates the strength of vibration.

Notably, the patents also teach embodiments where, for example, one or more electromechanical sensors generate signals that correspond to the strength of vibration, and not just the current:

> As one example, the user controls may include. [sic] a dial to select a strength of vibration, which corresponds to the current applied to the coil, a switch to select one of various different operational modes, and a power button. The user controls generate signals input to the CPU 608-610. A power supply 612 provides power, as needed, to user controls 614, to the CPU 616 and optional, associated memory, to the H-bridge switch 618, and, when needed, to one or more sensors 632. The voltage and current supplied by the power Supply to the various components may vary, depending on the operational characteristics and requirements of the

> components. The H-bridge switch 620 receives a control-signal input d 622 from the CPU. The power supply 612 receives a control input 624 from the CPU to control the current supplied to the H-bridge switch 618 for transfer to the coil 626. The CPU receives input 630 from *one or more electromechanical sensors 632 that generate a signal corresponding to the strength of vibration currently being produced by the linearly oscillating mass 634. Sensors may include one or more of accelerometers, piezoelectric devices, pressure-sensing devices, or other types of sensors that can generate signals corresponding to the strength of desired vibrational forces*.

'337 Patent at 6:21-43. Accordingly, there is no reason to limit this claim term as Sony suggests, and it should instead be left to its plain and ordinary meaning. Baker Decl. ¶ 62.

V. CONCLUSION

For the foregoing reasons, Resonant's proposed constructions should be adopted.

Date: May 2, 2024

/s/ Reza Mirzaie

Reza Mirzaie
California Bar No. 246953
rmirzaie@raklaw.com
Kristopher Davis
California Bar No. 329627
kdavis@raklaw.com
Christian W. Conkle
California Bar No. 306374
cconkle@raklaw.com
Jason Wietholter
California Bar No. 337139
jwietholter@raklaw.com
Paul A. Kroeger
California Bar No. 229074
kroeger@raklaw.com
Qi Tong
California Bar No. 330347
ptong@raklaw.com
RUSS AUGUST & KABAT
12424 Wilshire Blvd. 12th Floor
Los Angeles, CA 90025
Phone: (310) 826-7474
Facsimile: (310) 826-6991

Attorneys for Plaintiff
Resonant Systems, Inc. d/b/a RevelHMI

CERTIFICATE OF SERVICE

I hereby certify that counsel of record who are deemed to have consented to electronic service are being served on May 2, 2024, with a copy of this document via the Court's CM/ECF.

/s/ Reza Mirzaie
Reza Mirzaie