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**

P.R. 4-5 JOINT CLAIM CONSTRUCTION CHART

Pursuant to Local Patent Rule 4-5, and the Court's Docket Control Order (Dkt. No. 24), Plaintiff Resonant Systems, Inc. d/b/a RevelHMI ("Resonant") and Defendants Sony Group Corp. and Sony Interactive Entertainment Inc. (collectively, "Defendants") (all together, the "parties") file this Joint Claim Construction Chart. This chart addresses the agreed and disputed claim terms and phrases from the asserted claims of the following patents: U.S. Patent Nos. 8,860,337 ("'337 Patent"), 9,369,081 ("'081 Patent"), and U.S. Patent No. 9,941,830 ("'830 Patent").

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Respectfully submitted,

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Asserted claim of the '337 Patent	Term	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
2. **A linear vibration module comprising**: a housing; a moveable component[1]; 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**	Preamble. '337 Patent, Claim 2	The preamble is not limiting.	The preamble is limiting.	
	"a driving component that drives the moveable component in each of two opposite directions within the housing" '337 Patent, claim 2	**AGREED**	**AGREED**	Subject to 35 U.S.C. § 112 ¶ 6. **<u>Function</u>**: driving the moveable component in each of two opposite directions within the housing **<u>Structures</u>**: one or more coils or electromagnets; and equivalents thereof
	"vibration module" '337 Patent, claim 2	No construction necessary; plain and ordinary meaning	"vibrating device"	
	"a control component that controls supply of	Subject to 35 U.S.C. § 112 ¶ 6	Subject to 35 U.S.C. § 112 ¶ 6	

[1] Defendants are no longer seeking to construe "moveable component."

Asserted claim of the '337 Patent	Term	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
user input received from the user-input features, wherein the control component drives simultaneous oscillation of the moveable component at two or more frequencies to generate complex vibration modes.	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" '337 Patent, claim 2	**<u>Function</u>**: "controlling 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 user-input features" **<u>Structures</u>**: 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)	**<u>Function</u>**: "controlling 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 user-input features" **<u>Structures</u>**: 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 values representing selections	

Asserted claim of the '337 Patent	Term	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
		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	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	
3. The linear vibration module of claim 2 wherein the complex vibration modes include: **a primary oscillation frequency modulated** by a modulating oscillation frequency; **a beat frequency**; and	"a primary oscillation frequency modulated by a modulating oscillation frequency" '337 Patent, claim 3	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"	
	"a beat frequency" '337 Patent, claim 3	No construction necessary; plain and ordinary meaning	"two driving frequencies combine to produce a lower frequency beat waveform such as depicted in Fig. 23"	

Asserted claim of the '337 Patent	Term	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
an aperiodic oscillation waveform.	"an aperiodic oscillation waveform" '337 Patent, claim 3	No construction necessary; plain and ordinary meaning	"a vibration waveform that does not repeat in time"	

Asserted claim of the '081 Patent	Term	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
1. **A linear vibration module comprising:** a housing; a moveable component[2]; 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**	Preamble '081 Patent, claim 1	**AGREED**	**AGREED**	The preamble is limiting.
	"vibration module" '081 Patent, claim 1	No construction necessary; plain and ordinary meaning	"vibrating device"	
	"a driving component that drives the moveable component in each of two opposite directions within the housing" '081 Patent, claim 1	**AGREED**	**AGREED**	Subject to 35 U.S.C. § 112 ¶ 6. **Function**: driving the moveable component in each of two opposite directions within the housing **Structures**: one or more coils or electromagnets; and equivalents thereof
	"a control component that controls supply of power from the power supply to the driving	Subject to 35 U.S.C. § 112 ¶ 6 **Function**:	Subject to 35 U.S.C. § 112 ¶ 6 **Function**:	

[2] Defendants are no longer seeking to construe "moveable component."

Asserted claim of the '081 Patent	Term	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
from the user-input features.	component to cause the moveable component to oscillate at a frequency and an amplitude specified by user input received from the user-input features" '081 Patent, claim 1	controlling 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 user-input features" **<u>Structures</u>**: 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	"controlling 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 user-input features" **<u>Structures</u>**: 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 values representing selections made by user input to the user input features;	

Asserted claim of the ’081 Patent	Term	Plaintiff’s Proposed Construction	Defendants’ Proposed Construction	Court’s Construction
		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 (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	
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	“the one or more operational control outputs of the control component” ’081 Patent, claim 4	Plain and ordinary meaning; not indefinite	Indefinite	
	“claim 1” ’081 Patent, claim 4	“claim 3”	Plain and ordinary meaning	

Asserted claim of the ’081 Patent	Term	Plaintiff’s Proposed Construction	Defendants’ Proposed Construction	Court’s Construction
more operational control parameters.				
5. The linear vibration module of claim 4 wherein the one or more operational control parameters is **a strength of vibration produced by the linear oscillation of the moveable component**; and wherein the one or more operational control outputs is a frequency at which the control component drives the moveable component to linearly oscillate, the control component dynamically adjusting the power supplied to the driving component to produce linear oscillation of the movable component at a resonant frequency for	“a strength of vibration produced by the linear oscillation of the moveable component” ’081 Patent, claim 5	No construction necessary; plain and ordinary meaning	“a value that corresponds to the amount of current applied to the driving component”	

Asserted claim of the ’081 Patent	Term	Plaintiff’s Proposed Construction	Defendants’ Proposed Construction	Court’s Construction
the linear vibration module.				

Asserted claim of the '830 Patent	Term	Plaintiff's Proposed Construction	Defendants' Proposed Construction	Court's Construction
1. **A vibration module comprising**: a housing; a moveable component[3]; a power supply; user-input features; **a driving component that drives the moveable component to oscillate 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 one or more stored values**.	Preamble '830 Patent, claim 1	**AGREED**	**AGREED**	The preamble is limiting.
	"vibration module" '830 Patent, claim 1	No construction necessary; plain and ordinary meaning	"vibrating device"	
	"a driving component that drives the moveable component in each of two opposite directions within the housing" '830 Patent, claim 1	**AGREED**	**AGREED**	Subject to 35 U.S.C. § 112 ¶ 6. **Function**: driving the moveable component to oscillate within the housing **Structures**: one or more coils or electromagnets; and equivalents thereof
	"a control component that controls supply of power from the power supply to the driving component to cause the	Subject to 35 U.S.C. § 112 ¶ 6 **Function**:	Subject to 35 U.S.C. § 112 ¶ 6 **Function**:	

[3] Defendants are no longer seeking to construe "moveable component."

	moveable component to oscillate at a frequency and an amplitude specified by one or more stored values" '830 Patent, claim 1	"controlling 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 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	"controlling 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 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; and (b) provide a corresponding output to the power supply so that the power supply provides a corresponding output 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	the driving component and equivalents thereof	
4. The 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 vibration module produces desired outputs from the one or more sensors corresponding to one or more operational control parameters.	"the one or more operational control outputs of the control component" '830 Patent, claim 4	Plain and ordinary meaning; not indefinite	Indefinite	
	"claim 1" '830 Patent, claim 4	"claim 3"	Plain and ordinary meaning	
5. The vibration module of claim 4 wherein the one or more operational control parameters is **a**	"a strength of vibration produced by the linear oscillation of the moveable component"	No construction necessary; plain and ordinary meaning	"a value that corresponds to the amount of current applied to the driving	

strength of vibration produced by the oscillation of the moveable component; and wherein the one or more operational control outputs is a frequency at which the control component drives the moveable component to oscillate, the control component dynamically adjusting the power supplied to the driving component to produce oscillation of the movable component at a resonant frequency for the vibration module.	’830 Patent, claim 5		component”	
16. The vibration module of claim 15 wherein the complex vibration modes include: **a primary oscillation frequency modulated by a modulating oscillation frequency;**	“a primary oscillation frequency modulated by a modulating oscillation frequency” ’830 Patent, claim 16	No construction necessary; plain and ordinary meaning	“a primary oscillation frequency modulated by a modulating oscillation frequency to produce lowfrequency pulses of high-frequency vibration such as depicted in Fig. 22B”	
	“a beat frequency” ’830 Patent, claim 16	No construction necessary; plain and ordinary meaning	“two driving frequencies combine to produce a lower	

a beat frequency; and **an aperiodic oscillation waveform.**			frequency beat waveform such as depicted in Fig. 23"	
	"an aperiodic oscillation waveform" '830 Patent, claim 16	No construction necessary; plain and ordinary meaning	"a vibration waveform that does not repeat in time"	
20. **A vibration module comprising**: a housing; a moveable component[4]; a power supply; user-input features; **a driving component that drives the moveable component to oscillate within the housing**; and **a control component that controls supply of power from the power supply to the driving component to cause the moveable**	Preamble '830 Patent, claim 20	**AGREED**	**AGREED**	The preamble is limiting.
	"vibration module" '830 Patent, claim 20	No construction necessary; plain and ordinary meaning	"vibrating device"	
	"a driving component that drives the moveable component in each of two opposite directions within the housing" '830 Patent, claim 20	**AGREED**	**AGREED**	Subject to 35 U.S.C. § 112 ¶ 6. **<u>Function</u>**: driving the moveable component to oscillate within the housing **<u>Structures</u>**: one or more coils or electromagnets; and equivalents thereof

[4] Defendants are no longer seeking to construe "moveable component."

component to oscillate at a frequency and an amplitude specified by one or more stored values, wherein the control component drives simultaneous oscillation of the moveable component at two or more frequencies to generate complex vibration modes.	"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 one or more stored values" '830 Patent, claim 20	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 frequency and an amplitude specified by 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	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 frequency and an amplitude specified by 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; and (b) provide a corresponding output	

		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	to the power supply so that the power supply provides a corresponding output to the driving component and equivalents thereof	

CERTIFICATE OF SERVICE

I hereby certify that on May 30, 2024, I served the foregoing document via electronic service on all counsel of record.

/s/ *Reza Mirzaie*
Reza Mirzaie