

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION**

REHCO, LLC,

Plaintiff,

v.

SPIN MASTER, LTD.,

Defendant.

Case No. 13-cv-2245

Judge John Robert Blakey

MEMORANDUM OPINION AND ORDER

Before the Court is Defendant Spin Master's combined claim construction brief and renewed motion for summary judgment [230]. For the reasons explained below, the Court grants the request for additional claim construction, but denies the motion for summary judgment.

A. Background & Procedural History

Plaintiff Rehco, LLC and Defendant Spin Master, Ltd both are in the business of making toys – in particular, remote controlled toys. Rehco and Spin Master collaborated at times, but their relationship soured, and Rehco sued Spin Master on March 26, 2013 for patent infringement and breach of contract. *See* [1].

Rehco's second amended complaint [37], which is the operative complaint, alleged breach of two agreements (a radio-controlled helicopter agreement and a rechargeable radio-controlled airplane development agreement) and infringement of two patents (U.S. Patent No. 7,100,866 and U.S. Patent No. 6,612,893). *See id.* Spin Master filed a counterclaim alleging that Rehco breached the parties'

helicopter and airplane agreements; Spin Master also sought a declaratory judgment that Rehco had no right, title, or interest in the '893 patent, and it claimed a right to attorneys' fees based upon Rehco's bad faith assertion of an infringement claim as to that patent. *See* [78]. The Court dismissed the '893 patent infringement claim on March 17, 2014, *see* [86], leaving just the claim of infringement as to the '866 patent. In that claim, Rehco alleges that Spin Master directly infringes at least claims 1, 2, 10, 11 and 12 of the '866 patent by making, using, offering for sale, selling and/or importing auto hover toys that infringe the '866 patent. [37], ¶ 30. Alternatively, Rehco alleges that Spin Master indirectly infringed claims 1, 2, 10, 11 and 12 when it induced others to use the infringing products in a manner that violates one or more claims of the '866 patent. *Id.* at ¶ 31.

The parties engaged in extensive discovery and filed claim construction briefs, ultimately asking the Court to construe specific terms in claim 1, which recites:

1. A vehicle having a **means for propelling in a vertical direction**, further comprising:

a transmitter positioned on the bottom of said vehicle for transmitting a signal from the vehicle downwardly away from said vehicle;

a receiver positioned on the bottom of said vehicle for receiving said signal as it is bounced off of a surface, defined as a bounced signal; and

a control system that automatically sets a speed of the propelling means in response to the receiver, said control system having a

first means to set the speed of the propelling means to a first speed when the receiver receives the bounced signal and the control system having a **second means to set the speed of the propelling means to a second speed when the receiver does not receive the bounced signal**, the first speed being predefined as a speed that causes the vehicle to gain altitude and the second speed being predefined as a speed that causes the vehicle to lose altitude.

[37-4], p. 16 (‘866 Patent, col. 7, line 55–col. 8, line 6) (emphasis added). With regard to the “means for propelling in a vertical direction” element, the parties stipulated that the function is “propelling in a vertical direction” and the structure is “a single rotor assembly and a separate counter-torque assembly, or a counter-rotating assembly, and equivalents thereof.” See [104]. The parties asked the Court to construe: “first means to set the speed of the propelling means to a first speed when the receiver receives the bounced signal” and “second means to set the speed of the propelling means to a second speed when the receiver does not receive the bounced signal.” *Id.* And they offered conflicting constructions. The parties did not ask the Court to construe any other claim terms or language.

Based upon the parties’ submissions, the Court issued its claim construction ruling, [125], adopting Rehco’s proposed construction of the disputed claim language, as follows:

<p>“first means to set the speed of the propelling means to a first speed when the receiver receives the bounced signal”</p>	<p>Function: to set the speed of the propelling means to a first speed when the receiver receives the bounced signal</p>
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	<p>Structure: Circuit Board 136 programmed to set the speed of the propelling means to a first speed when the receiver receives the bounced signal or equivalents thereof</p>
<p>“second means to set the speed of the propelling means to a second speed when the receiver does not receive the bounced signal”</p>	<p>Function: to set the speed of the propelling means to a second speed when the receiver does not receive the bounced signal</p> <p>Structure: Circuit Board 136 programmed to set the speed of the propelling means to a second speed when the receiver does not receive the bounced signal or equivalents thereof</p>

[125], at p. 25. After the Court construed the disputed claim language, Spin Master moved for summary judgment, and it became clear that resolution of Spin Master’s summary judgment motion required construction of additional claim language relating to the “signal” and “control system” terms. In particular, the Court determined that “a signal,” “said signal,” and “the bounced signal,” as used in claim 1, referred to a single signal and not multiple signals. [187], p. 39. The Court acknowledged that this construction ran contrary to the general rule that “a” means “one or more” but found that the claim language, the specification, and the proffered expert testimony all supported the construction. *Id.* at pp. 35–39. With respect to the control system, the Court determined that claim 1 disclosed a clear-cut, two-step decision tree, where step one asks whether the bounced signal was received, and if the answer is “yes,” then the first speed is initiated, and if the answer is “no,” then

the second speed is initiated. *Id.* at pp. 44–45.

Applying these constructions, the Court granted summary judgment to Spin Master on Rehco’s infringement claim.¹ *See id.* The Court also granted summary judgment to Spin Master on Rehco’s claim for breach of the helicopter agreement and on Rehco’s claim for breach of the airplane agreement as to certain products (namely, the Osprey and Dominator products), but denied the motion as to other products (namely, the Jet Set, A-10 Warthog and Hawk Eye Blue Sky products). *Id.*

After the Court issued its summary judgment decision, Rehco dismissed with prejudice its claim for breach of the airplane agreement, and Spin Master dismissed with prejudice its claims for breach of both agreements, as well as its claim for attorneys’ fees. *See* [198]. The Court entered final judgment [201], and Rehco appealed.

On appeal, the Federal Circuit vacated this Court’s summary judgment and remanded the case for additional proceedings. *See* [210]. The Federal Circuit vacated summary judgment as to Rehco’s claim for breach of the helicopter agreement, overruling this Court’s finding that Rehco had released its claim for royalties on a particular product, the Havoc Heli. *Id.* at 7–9. The Court also overruled this Court’s construction of the term “a signal” to mean “one single signal,” holding instead that “a signal” must be construed to mean “one or more signals.” *Id.* at 10–11.

In remanding the case, the Federal Circuit noted that the parties’ appellate

¹ Familiarity with the Court’s prior claim construction and summary judgment rulings is presumed.

arguments revealed an additional dispute on claim construction; in particular, the parties, for the first time on appeal, disagreed about what would be required to satisfy claim 1's predefined-speed limitation. *See* [210], at 12. As a result, the Federal Circuit instructed this Court to consider whether the parties' disagreement reflected an actual dispute over claim construction and, if so, how to resolve that dispute. *Id.*

Spin Master filed a combined petition for panel rehearing and rehearing *en banc*, which the Federal Circuit denied, [219]; the mandate issued April 15, 2019. *See* [221]. This Court held a status hearing a week later. At that time, Spin Master indicated that it planned to pursue the additional claim construction issue flagged by the Federal Circuit. Rehco disagreed that there was a dispute as to the applicable construction of "a predefined speed" and argued instead that the issue represented a question of fact to be resolved at trial. The Court thus set a trial date and, at the parties' request, also set a schedule for additional claim construction and summary judgment briefing.

Spin Master filed a combined claim construction and summary judgment brief on May 17, 2019 [225]; the parties, a second time, briefed both claim construction and summary judgment, and the Court held a hearing on these issues on August 15, 2019.

This time, Spin Master asks the Court to construe one additional term from claim 1: "predefined." *See* [249], p. 3. In particular, Spin Master argues that

“predefined” is a further limitation on that “first speed” such that the speeds are predefined—that is, programmed into the circuit board. Spin Master asks the Court to construe “a first speed being predefined” to mean “a speed programmed on the circuit board in advance to cause a vehicle to gain altitude,” and it asks the Court to construe “a second speed being predefined” to mean “a speed programmed on the circuit board in advance to cause the vehicle to lose altitude.” *Id.* at 4–5. Spin Master also argues that, with the claim so construed, it is entitled to summary judgment of non-infringement. Alternatively, Spin Master argues that under Rehco’s proposed construction, the ‘866 patent is invalid.

B. Claim Construction Issues

Spin Master argues that the term “predefined,” as used in claim 1 with respect to the speed, requires construction. Rehco disagrees.

Clearly, claim construction constitutes the first step in any infringement analysis. *Rehco LLC v. Spin Master, Ltd.*, 759 F. App’x 944, 948 (Fed. Cir. 2019) (“Determining infringement requires two steps: (1) properly construing the claim; and (2) comparing the properly construed claim to the accused product.”); *Duncan Parking Techs., Inc. v. IPS Grp., Inc.*, 914 F.3d 1347, 1360 (Fed. Cir. 2019) (“An infringement analysis entails two steps. The first step is determining the meaning and scope of the patent claims asserted to be infringed. The second step is comparing the properly construed claims to the device accused of infringing.”); *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995). 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 v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (quoting *Innova/Pure Water, Inc. v. Safari Water Filtration Systems, Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004) and citing *Vitronics Corp. v. Conceptoronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996) ("we look to the words of the claims themselves ... to define the scope of the patented invention"), and *Markman*, 52 F.3d at 980 ("The written description part of the specification itself does not delimit the right to exclude. That is the function and purpose of claims.")).

Generally, where the parties dispute the meaning of a claim, the law requires the trial court to construe the claims before turning to issues such as infringement and invalidity. Rehco indicates that it does not object to this Court construing the "predefined first speed" being construed as "a first speed based on a criterion or criteria defined in advance" and the "predefined second speed" being construed as "a second speed based on a criterion or criteria defined in advance." *See* [237], p. 10 n.4. Spin Master indicates that, to the extent Rehco is proposing an agreed construction of a "predefined first speed" to mean a "speed programmed on the circuit board in advance to cause the vehicle to gain altitude" and an agreed construction of a "predefined second speed" to mean a "speed programmed on the circuit board in advance to cause the vehicle to lose altitude," it agrees. *See* [246], p. 5. Thus, the parties appear to agree that "predefined" means "defined in advance."

But they appear to disagree about what is defined in advance and how or where that definition is achieved. Spin Master argues that the claim limitation requires that the speeds be pre-programmed into the Circuit Board; Rehco seems to be saying that the speeds just need to be defined somewhere in advance. Spin Master argues that Rehco is essentially reading “predefined” out of the claims when it argues that the speeds need not be programmed into the circuit board in advance of the operation.

As explained, the Court previously adopted Rehco’s proposed construction of the disputed claim 1 terms as follows:

Disputed Claim Term	Court’s Construction
<p>“first means to set the speed of the propelling means to a first speed when the receiver receives the bounced signal”</p>	<p>Function: to set the speed of the propelling means to a first speed when the receiver receives the bounced signal</p> <p>Structure: Circuit Board 136 programmed to set the speed of the propelling means to a first speed when the receiver receives the bounced signal or equivalents thereof</p>
<p>“second means to set the speed of the propelling means to a second speed when the receiver does not receive the bounced signal”</p>	<p>Function: to set the speed of the propelling means to a second speed when the receiver does not receive the bounced signal</p> <p>Structure: Circuit Board 136 programmed to set the speed of the propelling means to a second speed when the receiver does not receive the bounced signal or equivalents thereof</p>

The parties did not previously ask the Court to construe anything with respect to the “first speed being predefined as a speed that causes the vehicle to gain altitude” or the “second speed being predefined as a speed that causes the vehicle to lose altitude.” But in light of the Court’s prior claim construction, the Court agrees with Spin Master that the first and second speeds must be programmed in advance of the operation of the vehicle, and that any such programming necessarily involves Circuit Board 136. To the extent Rehco is arguing otherwise, the Court rejects that argument.

Rehco’s arguments to the contrary notwithstanding, this construction remains consistent with the language of the specification, which consistently indicates that the control system and circuit board dictate the speeds. *See, e.g.*, [37-4], pp. 13–14 (a “control system is provided that automatically sets a speed of the propelling means in response to the receiver”; “the control system includes a transmitter and a receiver in communication with a circuit board”; the “control system may either be a closed loop system or any open loop system,” the latter which can be “accomplished by including a compensation timer on the circuit board”). This Court previously determined that the ‘866 patent’s specification and drawings show that the Circuit Board 136 is part of the control system disclosed in the patent. [125], at p. 16. And that aspect of the Court’s ruling has not been disturbed.

Even the embodiment Rehco cites to suggest that no circuit board is required

demonstrates the necessity of a circuit board within the control system:

In one embodiment, a hover speed is predetermined. . . . Once the hover speed is determined the control system is given an upper range and lower range of rotor speeds. These include, in the least, a speed higher than hover speed to provide a climbing speed and a speed lower than hover speed to provide a full speed. However, a range could also be established, for example, 5% above the hover speed for a climbing speed and 2% below the hover speed for fall speed.

Once the vehicle is activated . . . the circuit board sends the vehicle into a climbing phase, by increasing the rotor speed to the climbing speed. In addition, the circuit board begins transmitting a signal. When the vehicle is close to a surface or object, the receiver will receive the transmission signal that is bounced off the surface. **As long as the receiver receives the signal, the circuit board maintains a climbing phase. . . . At the moment the receiver loses the signal, the circuit board will switch to the fall speed and enter a deceleration phase. . . . As the receiver regains the signal connection, the circuit board switches back to the climbing phase**

Id. at p. 14 (‘866 patent, col. 3, line 50–col. 4, line 19)(emphasis added). Claim 1 instructs that the speeds are predefined and that they are predefined on the circuit board.²

C. Spin Master’s Summary Judgment Arguments

Spin Master argues that its products do not, as a matter of law, infringe the asserted claims, properly construed. More specifically, Spin Master argues, Rehco has no evidence that Spin Master’s products contain claim 1’s “control system.”

Infringement, of course, is a question of fact. *E.g., i4i Ltd. P’ship v. Microsoft Corp.*, 598 F.3d 831, 849 (Fed. Cir. 2010), *aff’d*, 564 U.S. 91 (2011). Comparing the

² Based upon the parties’ submissions, Spin Master’s proposed construction does not seek to limit claim 1 to a single predefined first speed and a single predefined second speed. But even if Spin Master were to advocate for such a limitation, this Court would decline to adopt that construction as inconsistent with the Federal Circuit’s decision remanding the case.

construed claims to the accused products “requires a determination that every claim limitation or its equivalent be found in the accused device,” and those “determinations are questions of fact.” *State of Calif. Dep’t of Transp. v. Tycor Walls, Inc.*, 106 F. App’x 709, 712 (Fed. Cir. 2004) (citing *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 29 (1997); *Bai v. L & L Wings Inc.*, 160 F.3d 1350, 1353 (Fed. Cir. 1998)).

Infringement under the doctrine of equivalents occurs when “there is equivalence between the elements of the accused product” and the “claimed elements of the patented invention.” *Microsoft Corp. v. GeoTag, Inc.*, 817 F.3d 1305, 1313 (Fed. Cir.), *cert. denied sub nom. GeoTag, Inc. v. Google Inc.*, 137 S. Ct. 313 (2016) (citing *Southwall Techs., Inc. v. Cardinal IG Co.*, 54 F.3d 1570, 1575 (Fed. Cir. 1995); *Duramed Pharm., Inc. v. Paddock Labs., Inc.*, 644 F.3d 1376, 1380 (Fed. Cir. 2011)). Even if an accused product “differs enough from an asserted claim to preclude literal infringement, that product may infringe under the doctrine of equivalents if there is equivalence between those elements of the accused product and the claimed limitations of the patented invention that are not literally infringed.” *Zelinski v. Brunswick Corp.*, 185 F.3d 1311, 1316 (Fed. Cir. 1999) (citing *Warner-Jenkinson*, 520 U.S. at 21).

Infringement lies under the doctrine of equivalents, however, “only if an equivalent or a literal correspondence of every limitation of the claim is found in the accused device.” *Id.* An element is equivalent “if the differences between the

element and the claim limitation are “insubstantial”—meaning, “the element performs substantially the same function in substantially the same way to obtain substantially the same result as the claim limitation.” *Id.* at 1316–17 (citing *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 608 (1950)). Summary judgment of noninfringement under the doctrine of equivalents is appropriate “only if no reasonable jury could determine that the limitation and the element at issue are equivalent.” *Id.* at 1317 (citing *Warner-Jenkinson*, 520 U.S. at 39 n.8). *See also Advanced Steel Recovery, LLC v. X-Body Equip., Inc.*, 808 F.3d 1313, 1317 (Fed. Cir. 2015) (summary judgment of noninfringement is proper when no reasonable jury could find that every limitation recited in a properly construed claim is found in the accused device either literally or under the doctrine of equivalents).

In response to Spin Master’s summary judgment motion, Rehco represents that, in the accused products, “if all signals are received, the products will modify the percentage of the [pulse width modulation or PWM] by a predetermined amount, which will in turn cause an increase in the speed of the motor, which will then cause an increase in the speed of the propeller.” [237] at p. 22. “Likewise, if no signals are received, the products will modify the percentage of PWM by a predetermined amount, which will in turn cause a decrease in the speed of the motor, which will then cause a decrease in the speed of the propeller.” *Id.* For example, Rehco argues, in Spin Master’s Vectron Wave product, “if all signals are received (i.e., it is at Level 1), the speed will be set to ‘Fly up level 4’ – a “speed that

is predefined to cause the vehicle to gain altitude (i.e., ‘Fly up level 4: PWM of fly up + 24%’).” [237] at p. 22. And, if none of the signals are received (i.e., the Vectron Wave is at a Level 8), “the speed will be set to ‘Go down level 2’” – a “speed that is predefined to cause the vehicle to lose altitude (i.e., ‘Go down level 2: PWM % of go down’).” *Id.* at pp. 22–23. Rehco argues that Spin Master’s Flutterbye Fairy and Atmosphere products behave similarly: “if all signals are received there is a predefined adjustment to motor speed, and in turn propeller speed, to cause the products to gain altitude” and “if no signals are received, there is a predefined adjustment to motor speed, and in turn propeller speed, to cause the products to lose altitude.” *Id.* at p. 23.

To support these representations, Rehco cites the testimony of T.W. Wong, an engineer with Spin Master. Wong generally testified about how the accused products work, indicating that the Vectron Wave sends out a series of different signals, and depending on how many of those signals it receives back, will analyze and determine whether the motor power should be increased or decreased. [238-3], at p. 7. Wong testified that if the Vectron Wave receiver receives no signals, “the power level is decreased by a certain amount and the Vectron Wave will then send another signal and try again to see how much it has decreased.” *Id.* at p. 8. He testified that the amount of the decrease is programmed into the Vectron Wave. *Id.* He testified that during operation, the Vectron Wave will know at certain times, based upon the receipt of a signal, that it should increase its altitude, and,

depending on the altitude, it will apply a different level increase to raise the altitude. *Id.* at p. 9. He testified that the Vectron Wave has a processor, which determines, based on which signals are received, “whether more or less power should be given to the motor.” *Id.* He testified that the amount of power given to the motor, based upon the analysis of those signals, is predefined. *Id.*

Wong testified that the Vectron Wave uses PWM to control the motor power. *Id.* at p. 10. He testified that the Vectron Wave does not have a predetermined motor speed; it will adjust the speed according to the altitude, as determined by the receipt or non-receipt of signals. *Id.* Wong agreed that, in the Vectron Wave, if the receiver receives all signals back, it will increase its altitude; more specifically, the processor will increase motor speed, which then results in an increase to the propeller speed. *Id.* at p. 20. Wong testified that the motor speed at any particular level is not predetermined; rather, what is predetermined is the increment for increasing or decreasing the motor speed, and thus, at different altitudes (as determined based upon the receipt and non-receipt of signals), the increase or decrease will be different, all of which is based upon a table in the processor that maps to the altitude determined by the Vectron’s receiver. *Id.* at pp. 20–21. Wong testified that Spin Master’s Vectron Wave, Vectron Wave Battle, and Atmosphere products all work the same way: each has a table in the processor that dictates the amount of the increase or decrease in the power level, though the control algorithm in the Atmosphere is different because it uses a series of signals in the same

frequency but with different strengths, whereas the Vectron Wave uses a series of signals at different frequencies. *Id.* at p. 23. Wong testified that Spin Master’s Flutterbye Fairy product similarly has a processor that controls the transmitter; it sends out a series of sequential signals in fixed intervals and analyzes which are received to determine whether more or less power is given to the motor. *Id.* at p. 29. A table in the processor dictates the amount of the increase or decrease. *Id.*

Based upon Wong’s testimony, what is predefined in the accused products is not a speed *per se*, but rather a specified increase or decrease in speed. Additionally, it is clear that Spin Master’s products use a “processor” with a “table” and not a circuit board. As this Court said in its initial summary judgment ruling, that a claimed invention and an accused device “may perform substantially the same function and may achieve the same result will not make the latter an infringement under the doctrine of equivalents where it performs the function and achieves the result in a substantially different way.” [187], at p. 44 (quoting *Advanced Steel Recovery, LLC v. X-Body Equip., Inc.*, 808 F.3d 1313, 1319–20 (Fed. Cir. 2015)). But, as explained above, infringement under the doctrine of equivalents does occur when “there is equivalence between the elements of the accused product ... and the claimed elements of the patented invention,” *Microsoft*, 817 F.3d at 1313. Whether the accused products’ predefined increases and decreases in speed perform substantially the same function in substantially the same way to obtain substantially the same result as the claim limitation’s predefined speeds is a factual

question for the jury. Similarly, whether those set changes predefined in the table in the processor are the equivalent to the predefined speeds programmed into the control system's circuit board is also a question for the jury. For now, it is enough to say that a reasonable jury could answer these questions in the affirmative. Accordingly, in light of the genuine issues of material fact in the record, the Court denies Spin Master's motion for summary judgment.

D. Invalidity

Spin Master next argues that Rehco's proposed construction of the asserted claims reads out several limitations that would render at least claim 1 of the '866 patent invalid as anticipated in the prior art. This Court, of course, presumes the validity of a patent, and overcoming that presumption "requires clear and convincing evidence." *Indivior Inc. v. Dr. Reddy's Labs., S.A.*, 930 F.3d 1325, 1343 (Fed. Cir. 2019). Initially, if Rehco were, as Spin Master suggests, stretching the claims of the '866 patent to cover anything that hovers, this Court would agree that Rehco's overreaching would fail. Indeed, that is exactly what this Court said in its initial summary judgment ruling. *See* [187], pp. 46–47. But this Court does not read Rehco's arguments so broadly.

Spin Master argues that *Jackson* (issued in 1987) anticipated a hovering vehicle with a microcontroller programmed to analyze signals received from sensors to determine the vehicle's height; if the vehicle is below a predetermined height, the microprocessor changes the engine speed to increase lift until the vehicle ascends to

the correct altitudes; conversely, if the vehicle is above a predetermined height, the microprocessor changes the vehicle's engine speed to decrease lift until the vehicle descends to the correct altitude. *See* [230], p. 21. The relevant predetermination in *Jackson* would seem to be height, not speed, *see* [240-12], and, as a result, the Court is not persuaded that *Jackson* renders the '866 invalid.


Spin Master also argues that claim 1 is invalid as indefinite. Spin Master raised this same argument in its prior claim construction submissions, and the Court rejected it. *See* [125], pp. 20–21. The Court does so again today. As construed by this Court, claim 1 does not disclose a general-purpose computer or generic circuit board; rather, it discloses Circuit Board 136 programmed to achieve the function disclosed in the patent, according to the process described in the specification.

E. Conclusion

For the reasons explained above, the Court denies Spin Master's motion for summary judgment. The case remains set for final pretrial conference on November 13, 2019 and for trial on November 18, 2019.

Date: October 28, 2019

ENTERED:


John Robert Blakey
United States District Judge