

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

THERMALTAKE TECHNOLOGY CO., LTD. and
THERMALTAKE INC. (a.k.a. THERMALTAKE USA),

Petitioners,

v.

LIAN LI INDUSTRIAL CO., LTD., and CHEN, CHIEN-HAO,

Patent Owners.

IPR2024-01230
U.S. Patent No. 10,690,336

**PETITIONERS' SUR-REPLY TO PATENT OWNER'S
REVISED MOTION TO AMEND**

TABLE OF CONTENTS

	<u>Page</u>
I. PROPOSED CLAIMS 6-7 LACK WRITTEN DESCRIPTION	1
A. Limitations (B) and (C)	1
B. Limitations (A)(iii): “an illumination area located at the top of the body”	3
C. Limitation 7(A)(v)-(vi): “a first/second connector comprising a first/second flat surface disposed on the first/second side of the body”	4
II. PROPOSED SUBSTITUTE CLAIMS 6-7 ARE INDEFINITE.....	5
III. PROPOSED SUBSTITUTE CLAIMS 6-7 ARE OBVIOUS IN VIEW OF THE PRIOR ART AND A POSITA’S BACKGROUND KNOWLEDGE.....	6

TABLE OF AUTHORITIES

	<u>Page(s)</u>
<u>Cases</u>	
<i>Aylus Networks, Inc. v. Apple Inc.</i> , 856 F.3d 1353 (Fed. Cir. 2017)	4
<i>Springs Window Fashions LP v. Novo Inds., LP</i> , 323 F.3d 989 (Fed. Cir. 2003)	4

EXHIBIT LIST

<i>Exhibit No.</i>	<i>Description</i>
1001	U.S. Patent No. 10,690,336 B1 to Chen
1002	File History for U.S. Patent No. 10,690,336 B1 to Chen
1003	Taiwanese Patent Application No. 107217659 U, filed on December 26, 2018
1004	Declaration of Dr. Andrew Wolfe (“Wolfe Decl.”)
1005	<i>Curriculum Vitae</i> of Dr. Andrew Wolfe
1006	Japanese Publication No. 2018041147A to Tsuji et al. (“Tsuji”) published March 15, 2018
1007	Certified Translation of Tsuji
1008	U.S. Patent No. 10,082,286 B1 to Huang issued September 15, 2018 (“Huang”)
1009	U.S. Publication No. 2008/0124234 A1 to Echazarreta (“Echazarreta”)
1010	U.S. Publication No. 2008/0279694 A1 to Chou et al. (“Chou”)
1011	U.S. Publication No. 2015/0233391 A1 to Liu (“Liu”)
1012	U.S. Publication No. 2017/0314777A1 to Lai (“Lai”)
1013	Japanese Publication No. 2005051085A to Hasegawa (“Hasegawa”)
1014	Certified Translation of Hasegawa

<i>Exhibit No.</i>	<i>Description</i>
1015	Complaint for Patent Infringement, <i>Lian Li Industrial Co., Ltd., and, Chen, Chien-Hao v. Thermaltake Technology Co., Ltd. and Thermaltake Inc. (a.k.a. Thermaltake USA)</i> , No. 2:23-cv-07470-HDV-MARx (C.D. Cal.) (the “California Action”)
1016	Waiver of Service (Dkt. No. 22 of the California Action)
1017	Returned Summons (Dkt. No. 12 of the California Action)
1018	Disclosure of Asserted Claims and Infringement Contentions in the California Action, dated March 6, 2024
1019	Scheduling Conference and Order Setting Pretrial and Trial Schedule (Dkt. No. 37 of the California Action)
1020	<i>Ex Parte</i> Reexamination Request No. 90/019,565 (the “Axpertec Reexamination”)
1021	Finding of substantial new question of patentability in the Axpertec Reexamination, dated July 18, 2024
1022	Joint Claim Construction and Prehearing Statement (Dkt. No. 43 of the California Action)
1023	Declaration of Christopher Kao in Support of Petitioners’ Unopposed Motion for Admission <i>Pro Hac Vice</i> of Christopher Kao
1024	Declaration of David J. Tsai in Support of Petitioners’ Unopposed Motion for Admission <i>Pro Hac Vice</i> of David J. Tsai

<i>Exhibit No.</i>	<i>Description</i>
1025	Declaration of Brock S. Weber in Support of Petitioners' Unopposed Motion for Admission <i>Pro Hac Vice</i> of Brock S. Weber
1026	Declaration of Surui Qu in Support of Petitioners' Unopposed Motion for Admission <i>Pro Hac Vice</i> of Surui Qu
1027	Demonstrative of Figure 2 of Ex[1001] ('336 Patent), marked during deposition of Dr. David Tuckerman
1028	Expert Declaration of Dr. David Tuckerman Regarding Claim Construction (Dkt. 50-2) in the California Action
1029	Page 20 of Declaration of Dr. David Tuckerman in Support of Patent Owner Response and Contingent Motion to Amend (Ex[2006])
1030	Transcript of Deposition of Dr. David Tuckerman, July 15, 2025
1031	Reply Declaration of Dr. Andrew Wolfe ("Wolfe Supp. Decl.")
1032	"Side," <i>Merriam-Webster's Collegiate Dictionary</i> , Eleventh Edition (2003)
1033	RayPCB Article, <i>What is the difference between WS2813 and WS2812B LED strips?</i> , accessed at: https://www.raypcb.com/ws2812b-vs-ws2813/
1034	Product page for WS2812B LED, accessed at: https://alitove.com/products/alitove-dream-color-led-strip-16-4ft
1035	Data sheet for Kingbright WP1503ID T-1 3/4 LED, Spec No. DSAF2382, Rev V.6A, dated January 20, 2015.

<i>Exhibit No.</i>	<i>Description</i>
1036	Tom's Hardware Article, <i>Thermaltake Launches Software-Controlled Riing RGB LED Radiator Fans</i> , accessed at: https://www.tomshardware.com/news/thermaltake-riing-led-rgb-fans,32338.html
1037	AnandTech, <i>Capsule Review: Sunon MagLev 120 mm Fan</i> , retrieved from: https://web.archive.org/web/20240902073447/https://www.anandtech.com/print/21376/capsule-review-sunon-maglev-120mm-fan
1038	Manual for Thermaltake Riing 12 RGB Radiator Fan TT Premium Edition
1039	Tom's Hardware Article, <i>Noctua Releases All-New NF-A12x25 120 mm Fan</i> , accessed at: https://www.tomshardware.com/news/noctua-releases-nf-a12x25-120mm-fan,36994.html
1040	"IEC 60320," Wikipedia entry, accessed at: https://en.wikipedia.org/wiki/IEC_60320
1041	User Manual for SilverStone Multi-RVZ01-E
1042	Exhibit 1042 to Transcript of Deposition of Dr. David Tuckerman, October 20, 2025
1043	Exhibit 1043 to Transcript of Deposition of Dr. David Tuckerman, October 20, 2025

<i>Exhibit No.</i>	<i>Description</i>
1044	Supplemental Reply Declaration of Dr. Andrew Wolfe in Support of Petitioners' Opposition to Patent Owner's Revised Contingent Motion to Amend dated October 29, 2025
1045	Transcript of Deposition of Dr. David Tuckerman, October 20, 2025
1046	U.S. Publication No. US 2019 / 0260150 A1 to Costello
1047	U.S. Patent No. 8,840,415 B2 to Orris Issued September 23, 2014
1048	Chinese Patent CN107871987B
1049	Serial ATA: High Speed Serialized AT Attachment Revision 1.0a; 7-January-2003
1050	Thermaltake RGB Fan Manual 2017
1051	Printout of https://www.dvtests.com/nzxt-aer-rgb120-and-rgb140-test-and-review/
1052	NZXT AER RGB120 manual
1053	Transcript of Deposition of Dr. David Tuckerman, November 25, 2025

I. PROPOSED CLAIMS 6-7 LACK WRITTEN DESCRIPTION

A. Limitations (B) and (C)

Patent Owner's ("PO") lone revision to Limitations (B) and (C), which the Board in its Preliminary Guidance properly rejected as lacking written description (Paper 25 at 5-11), is limited to requiring the "second connector of the first illumination fan" to be the source of external power, as opposed to the power socket. RMTA at 7-10, 21-22; Ex[1053] at 231:24-232:2. As conceded by PO's own expert, "the fans would not operate if there wasn't ultimately an external power source somewhere," but neither the figures nor the text of the specification of the '336 Patent provides any disclosure that external power is supplied to a second connector as claimed in proposed Limitations (B) and (C). Ex[1053] at 233:24-236:4. Indeed, the only written disclosure in the '336 Patent is that external power is provided directly to power socket 4. Ex[1001] at 3:29-34. And the '336 Patent does not provide a written description that addresses the intractable problem that the Board identified—once an illumination fan is connected with another illumination fan as the specification describes, the power socket is covered and becomes inaccessible to be supplied with external power.

Unable to address these issues head-on, PO instead asks the Board to apply an oft-rejected legal standard for written description—what a "POSITA would have understood" (RMTA at 12-13, 21)—and accept doctored Figures 1 and 3 to illustrate

its imaginary “configuration” where “the first illumination fan’s second connector receiv[es] power from [a] preceding illumination fan [and] the preceding illumination fan’s second connector can receive power from a power supply” (RMTA at 11-13). Without any support in the figures or text of the ’336 Patent, PO merely asserts that “there is no reason why a POSITA would not have been able to connect a power supply to the second connector 6 of an illumination fan” and concludes that “a POSITA would have understood that, as a result, the overall configuration [i]s permitted and supported by the specification.” RMTA at 13. As discussed in the Opposition, PO’s arguments do not hold water. Paper 36 at 1-4.

PO’s Reply argues that the undisclosed configuration of external power supply from the preceding illumination fan is not relevant because the power supply and preceding illumination fan are “unclaimed.” Reply at 1-3. PO’s position fails.

PO’s added limitation to claims 6-7 requiring the second connector of the first illumination fan to be the source of external power supply must be supported by actual written description in the ’336 Patent. PO argues that its altered figures demonstrate a configuration that a POSITA would have understood from the specification, but that configuration is not described nor even hinted to in the patent, which simply does not speak to how external power supply can be provided to a preceding illumination fan, the power socket of which is covered and inaccessible

to the power supply when connected to the first illumination fan and the second connector of which is not disclosed to be directly supplied with external power. That the configuration PO relies on as purported support for the added limitation is not itself claimed is beside the point.

The fact that PO had to conjure new figures to demonstrate the supporting “configuration” a POSITA would have supposedly understood confirms that it is new matter and is not disclosed in the specification of the ’336 Patent. There is no dispute that PO’s doctored Figures 1 and 3 include a previously undisclosed direct power supply to the second connector of a preceding illumination fan, contradicting the plain discussion of those figures in the specification, and thus cannot provide written description support.

B. Limitations (A)(iii): “an illumination area located at the top of the body”

PO does not dispute that the area PO’s expert marks as the claimed “illumination area” (illumination area 3, RMTA at 6) does not itself generate light but is likely a diffuser that is admittedly a “passive element” as opposed to a light source. Opp. at 4; Ex[1053] at 253:24-254:3. Therefore, applying PO’s claim

construction requiring an “illumination area” to “actively illuminate[],”¹ there is no written description support for such a light generating element located at the top of the body as claimed.

C. Limitation 7(A)(v)-(vi): “a first/second connector comprising a first/second flat surface disposed on the first/second side of the body”

PO has consistently argued throughout this proceeding that the term “side” of the body should be construed to mean a lateral face. *See, e.g.*, Ex[2052], ¶30. This construction position, albeit wrong, should bind PO. *See Aylus Networks*, 856 F.3d at 1360-61; *Springs Window Fashions*, 323 F.3d at 993-96. Applying PO’s construction, Figure 1 of the ’336 Patent does not provide written description support for proposed Limitations 7(A)(iv) and 7(A)(v). Connector 5 as depicted in Figure 1 is disposed in an opening and attached to an interior surface and inset from the

¹ PO’s claim construction is contradicted by its own expert’s testimony. As PO’s expert concedes, an illumination area “would likely include buried LEDs and diffusers” and that a diffuser is “a passive device [that] receives optical power” and “function[s] to diffuse the light not to generate it.” Ex[2054], ¶29; Ex[1053] at 254:19-255:9 (underline added). Even though PO’s claim construction is wrong and should be rejected when considering the invalidity of the original claims, in this proceeding, PO has consistently, clearly and unambiguously advanced this construction, such that it rises to the level of prosecution-history disclaimer that binds the PO. *See Aylus Networks, Inc. v. Apple Inc.*, 856 F.3d 1353, 1360-61 (Fed. Cir. 2017) (disclaimer applies to statements made in IPRs); *see also Springs Window Fashions LP v. Novo Inds., LP*, 323 F.3d 989, 993-96 (Fed. Cir. 2003) (finding disclaimer applies based on arguments made during prosecution, even where the patent office rejected those arguments).

surface of the fan body in the drawing. Ex[1044], ¶69. A flat surface disposed on the lateral face of the fan body—as required under PO’s claim construction—is not clearly disclosed by connector 5 in Figure 1. *Id.*

II. PROPOSED SUBSTITUTE CLAIMS 6-7 ARE INDEFINITE

Just as the proposed substitute claims are invalid for lack of written description, they are also invalid as indefinite. As PO’s own expert concedes, the fans would not operate absent an external power source. PO argues that Limitations (B) and (C) can operate by receiving power supply from the first illumination fan’s second connector. However, the patent provides no clarity how external power is supplied to the second connector—the specification only discloses that the second connector is electrically connected to the first connector of another illumination fan. A POSITA would not be able to understand how external power is ultimately supplied to the second connector, which is covered and not accessible in the claimed configuration.

The specification also provides no clarity how a connector with a flat surface is disposed on the lateral surface of a fan body. The patent provides no clarity on “flat surface,” which PO’s expert opines may broadly encompass a surface with features extending outward or recessed from it. Ex[1045] at 191:13-20. To the extent

the “flat surface” is planar without a structure to maintain contact, that would be an unreliable connection mechanism to a POSITA. Ex[1031], ¶91.

III. PROPOSED SUBSTITUTE CLAIMS 6-7 ARE OBVIOUS IN VIEW OF THE PRIOR ART AND A POSITA’S BACKGROUND KNOWLEDGE

PO does not dispute that all limitations, except for Limitations (A)(iv) and (A)(v), were taught by the prior art. Moreover, as explained in Petitioners’ Opposition, where Petitioners’ analysis of the Tsuji-Huang and Lai-Hasegawa invalidity grounds in Petitioners’ prior filings and Dr. Wolfe’s declarations are expressly incorporated, the other limitations are obvious in view of the prior art. Paper 36 at 8.

With respect to Limitations (A)(iv)-(v), PO’s Reply relies on three mistaken arguments that: (i) Petitioners failed to provide the underlying factual basis supporting that a POSITA would find it obvious and be motivated to separate connectors for power and signals into two housings on the same side on an illumination fan (Reply at 8); (ii) the prior art does not disclose a separate and distinct power socket that receives power via the second connector of the same fan (*id.* at 8-9, 11-12); and (iii) Petitioners failed to show that a POSITA would find it obvious and be motivated to use a connector with a round shaped electrical terminal (*id.* at 12).

First, PO's assertion that Dr. Wolfe's expert testimony that it would have been obvious to a POSITA to separate power connections and signals into separate housings to implement a structurally distinct and separate first connector and power socket lacks an underlying factual basis is without merit. Dr. Wolfe clearly explains and refers to specific prior art that demonstrates that splitting power connections and signals into separate housings was a simple design choice well known in the industry. Opp. at 9-14 (citing Ex[1044], ¶¶42-47). PO notably does not dispute that the cited prior art teaches separating power and signals into two housings. Reply at 8-11. PO also neglects to address the references corroborating Dr. Wolfe's expert testimony that placing the power and signal connector on the same side of an illumination fan was well known and obvious to a POSITA. *Id.*; Opp. at 15-17 (citing Ex[1044], ¶¶48-50). A POSITA would have been motivated to adopt the same connector configuration that supports power and data connections on an illumination fan as is described in the cited references. Opp. at 10-17 (citing Ex[1044], ¶¶44, 48). PO's argument that the exact connector in certain prior art had not been used for a fan before is not consistent with the standard for obviousness.

Second, PO argues that because a VCC diode between Tsuji's power socket (CNA/CNB) and second connector (CND) prevents direct current flow from CND to CNA/CNB, Tsuji does not disclose a power socket that is supplied with power via

the second connector. Reply at 8-9; Ex[2054], ¶¶39, 48. However, PO has consistently argued that claims 6-7 do not require direct power supply. *See, e.g.*, RMTA at 21-22. In fact, Tsuji discloses the same configuration contemplated by PO for claims 6-7: Tsuji's fans are connected in a daisy chain via first connectors (CNC) and second connectors (CND) where a second connector of a fan receives power from a first connector of another, and for each fan, Tsuji's power socket (CNA/CNB, or alternatively, the power pins of CNC split in a separate housing as the power socket), first connector (CNC), and second connector (CND) are all electrically connected including through the ground signal and VCC signal. Ex[1044], ¶¶87-95; Ex[2053] at 314:7-316:5; Ex[1053] at 257:17-258:8. Power received by the second connector (CND) of a fan can indirectly reach CNA, CNB and the power pins on CNC in a separate connector housing because the connectors are all electrically connected. Ex[1044], ¶97.

Lai discloses the same configuration: the power socket (the ground connector and VCC connectors of 111 in a separate housing), first connector (the LED data signal, PWM signal, sense signal, power and ground signal connectors of 111 in a separate housing) and second connector (112, comprised of the ground connector and the two VCC connectors, LED data signal, and the PWM signal) of a fan are electrically connected including through the ground and VCC connectors. Ex[1044],

¶¶129, 133-136. Because these power connections are shared, providing power to the second connector would also provide power to the power socket of the same fan.
Id.

With respect to Limitation (A)(v) requiring that the flat surface of the first connector comprise a round electrical terminal, PO again neglects to address the prior art demonstrating that such connectors were commonplace in the industry. A simple search for connector patents from popular connector manufacturers provides numerous suitable examples well known to a POSITA. Opp. at 19-20 (citing Ex[1046], Figures 2-4). A POSITA would have been motivated to use such connectors in the prior art relied upon in this matter because almost all ordinary connectors easily meet this requirement. Ex[1044], ¶51. PO cannot credibly dispute that the use of such connectors on an illumination fan was conventional and obvious to a POSITA.

Dated: December 4, 2025

Respectfully submitted,

/Robert C.F. Pérez/

Robert C.F. Pérez (Reg. No. 39,328)
PILLSBURY WINTHROP SHAW PITTMAN LLP
7900 Tysons One Place, Suite 500
Tysons, VA 22102
Telephone: 703.770.7759
Facsimile: 703.770.7901
Email: robert.perez@pillsburylaw.com

Jaclyn Schade (Reg. No. 50,569)
PILLSBURY WINTHROP SHAW PITTMAN LLP
7900 Tysons One Place, Suite 500
McLean, VA 22102
Telephone: 703.770.7900
Facsimile: 703.770.7901
Email: jaclyn.schade@pillsburylaw.com

Christopher Kao (*pro hac vice*)
David J. Tsai (*pro hac vice*)
Brock S. Weber (*pro hac vice*)
Surui Qu (*pro hac vice*)
PILLSBURY WINTHROP SHAW PITTMAN LLP
Four Embarcadero Center, 22nd Floor
San Francisco, CA 94111
Telephone: 415.983.1000
Email: christopher.kao@pillsburylaw.com
Email: david.tsai@pillsburylaw.com
Email: brock.weber@pillsburylaw.com
Email: surui.qu@pillsburylaw.com

Counsel for Petitioners

CERTIFICATE OF COMPLIANCE

The undersigned certifies that this brief complies with the type volume limitations of 37 CFR § 42.24(a)(1)(i). This brief contains 2169 words (excluding the table of contents, the table of authorities, mandatory notices under 37 CFR § 42.8, the certificate of service, certificate of compliance, and appendix of exhibits), as calculated by the “Word Count” feature of Microsoft Word 360, the word processing program used to create it.

The undersigned further certifies that this brief complies with the typeface requirements of 37 CFR § 42.6(a)(2)(ii) and typestyle requirements of 37 CFR § 42.6(a)(2)(iii). This brief has been prepared in a proportionally spaced typeface using Microsoft Word in Times New Roman 14-point font.

Dated: December 4, 2025

Respectfully submitted,

By: /Robert C.F. Pérez/
Robert C.F. Pérez (Reg. No. 39,328)
Lead Counsel

Counsel for Petitioners

CERTIFICATE OF SERVICE

The undersigned hereby certifies that on December 4, 2025, a true and correct copy of the foregoing **PETITIONERS' SUR-REPLY TO PATENT OWNER'S REVISED MOTION TO AMEND** is being served via electronic mail as agreed by the parties on the following attorneys of record:

LEAD COUNSEL	BACK-UP COUNSEL
Heath J. Briggs (Reg. No. 54,919) GREENBERG TRAURIG, LLP 1144 15th Street, Suite 3300 Denver, CO 80202 Telephone: 303-685-7418 Facsimile: 720-904-6118 Email: BriggsH@gtlaw.com	James L. Ryerson (Reg. No. 64,617) GREENBERG TRAURIG, LLP 500 Campus Drive, Suite 400 Florham, NJ 07932 Telephone: 973-360-7900 Facsimile: 973-301-8410 Email: ryersonj@gtlaw.com
	Kyle Chen (<i>Pro Hac Vice</i>) GREENBERG TRAURIG, LLP 1900 University Avenue, 5th Floor East Palo Alto, CA 94303 Telephone: 650-328-8500 Facsimile: 650-328-8508 Email: kchen@gtlaw.com

By: /Robert C.F. Pérez/
Robert C.F. Pérez (Reg. No. 39,328)
Lead Counsel

Counsel for Petitioners