

Filed on behalf of Resmed Corp.

Filed: October 8, 2026

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

RESMED CORP.

Petitioner

v.

FRACTUS, S.A.,

Patent Owner.

Case No. IPR2026-00341

U.S. Patent No. 8,362,960

**PETITIONER'S SUR-REPLY TO PATENT OWNER'S
REQUEST FOR DISCRETIONARY DENIAL**

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1002	File History of U.S. Patent No. 8,362,960
1003	Declaration of Manos M. Tentzeris, Ph.D (“Tentzeris”)
1004	Curriculum Vitae of Manos M. Tentzeris, Ph.D
1005	U.S. Patent Pub. No. 2003/0193437 to Kangasvieri et al. (“Kangasvieri”)
1006	U.S. Patent No. 6,195,048 to Chiba et al. (“Chiba”)
1007	U.S. Patent No. 6,909,402 to Vance (“Vance”)
1008	Karaboikis et al., “Compact Dual-Printed Inverted-F Antenna Diversity Systems for Portable Wireless Devices,” IEEE Antennas and Wireless Propagation Letters, Vol. 3 (2004)
1009	Inoue et al., “Pattern Calibration Free Antenna By Suppressing Mutual Coupling Between Elements,” Proceedings of ISAP’04, Sendai, Japan, 1A2-4 (2004)
1010	U.S. Patent No. 6,606,071 to Cheng (“Cheng”)
1011	U.S. Patent No. 6,424,300 to Stanford et al. (“Stanford”)
1012	U.S. Patent No. 6,204,819 to Hayes et al.
1013	U.S. Patent No. 6,518,929 to Gilmore
1014	Canadian Patent No. CA 2312542 C to Gagnon

Exhibit No.	Description
1015	U.S. Patent No. 6,639,560 to Kadambi et al.
1016	U.S. Patent No. 7,109,923 to Ollikainen et al.
1017	Ciais et al., “Design of an Internal Quad-Band Antenna for Mobile Phones,” IEEE Microwave and Wireless Components Letters, Vol. 14, No. 2 (Apr. 2004), pp. 148–150
1018	“IBM Unveils First Biometric ThinkPad, Offering Security at Your Fingertips,” Phys.org (Oct. 4, 2004)
1019	Dialogue Flybook User’s Manual, Revision 1.02, Part No. DTC-FA33I-01-02 (2003)
1020	Wong et al., “Isolation between GSM/DCS and WLAN Antennas in a PDA Phone,” Microwave and Optical Technology Letters, Vol. 45, No. 4 (2005), pp. 347–352
1021	U.S. Patent Application Publication No. 2006/0082503 to Gaucher et al.
1022	U.S. Patent Application Publication No. 2004/0113848 to Gaucher et al.
1023	IEICE Proceedings Archive entry for Inoue et al., “Pattern Calibration Free Antenna by Suppressing Mutual Coupling Between Elements,” Proceedings of the 2004 International Symposium on Antennas and Propagation (ISAP 2004), Session 1A2-4, listing publication date Aug. 18, 2004, Online ISSN 2188-5079, and DOI: 10.34385/proc.12.1A2-4, available at https://www.ieice.org/publications/proceedings/summary.php?expandable=12&iconf=ISAP&session_num=1A2&number=1A2-4&year=2004 .

Exhibit No.	Description
1024	Google Scholar Citation Record for Yuki Inoue et al., “Pattern Calibration Free Antenna by Suppressing Mutual Coupling Between Elements”
1025	Georgakopoulos et al., “Coupling Modeling and Reduction Techniques of Cavity-Backed Slot Antennas: FDTD Versus Measurements,” IEEE Transactions on Electromagnetic Compatibility, Vol. 43, No. 3, Aug. 2001, pp. 261–272
1026	Sievenpiper et al., “High-Impedance Electromagnetic Surfaces with a Forbidden Frequency Band,” IEEE Transactions on Microwave Theory and Techniques, Vol. 47, No. 11, Nov. 1999, pp. 2059–2074.
1027	U.S. Patent No. 6,961,545 to Tehrani et al.
1028	Complaint, <i>Fractus, S.A. v. Resmed Corp.</i> , No. 3:25-cv-02680-LL-JLB (S.D. Cal.) (Oct. 9, 2025)
1029	Declaration of Dr. Ingrid Hsieh-Yee
1030	Yang et al., “Microstrip Antennas Integrated With Electromagnetic Band-Gap (EBG) Structures: A Low Mutual Coupling Design for Array Applications,” 51 IEEE Trans. Antennas & Propagation 2936 (2003).
1031	Constantine A. Balanis, <i>Antenna Theory: Analysis and Design</i> , (3d ed. 2005) (excerpt).
1032	Declaration of Dwayne Wheatley (“Wheatley Decl.”)
1033	Case docket in <i>Fractus, S.A. v. Resmed Corp.</i> , No. 3:25-cv-02680-LL-JLB (S.D. Cal.) (last accessed Sept. 22, 2026)

Exhibit No.	Description
1034	Amended Complaint, <i>Fractus, S.A. v. Resmed Corp.</i> , No. 3:25-cv-02680-LL-JLB (S.D. Cal.) (Sept. 2, 2026)
1035	DocketNavigator – Stays Pending IPR for Southern District of California, 2020-2026
1036	U.S. District Courts – Median Time Intervals to Disposition, available at https://www.uscourts.gov/data-news/data-tables/2026/06/30/statistical-tables-federal-judiciary/c-5 (last accessed September 22, 2026)
1037	DocketNavigator, Judge Linda Lopez Patent Case Profile Overview
1038	Taoglas Website, available at https://www.taoglas.com/markets/aerospace-and-defense/ (last accessed September 22, 2026)
1039	“ResMed responds to ‘humanitarian emergency’ over demand for CPAP devices with new factory,” MEDTECHDIVE (January 10, 2023) (https://www.medtechdive.com/news/resmed-RMD-ceo-mick-farrell-jp-morgan-health-sleep-apnea-devices/640036/) (last accessed September 22, 2026)

Patent Owner (“PO”) now asks the Director to measure settled expectations against an unbounded technology space of “wirelessly connected devices.” Reply, 1. That category appears nowhere in the ’960 Patent, nowhere in PO’s original brief, and nowhere in PO’s evidence. The ’960 Patent claims a “handheld device,” and every piece of evidence PO offers about its own activity concerns small, handheld or wearable products. Resmed’s accused products are prescription medical devices for sleep therapy designed for bedside use. Under any framing, PO never asserted or licensed its patents in the medical field, and the parties’ pre-suit correspondence confirms it. Notably, PO’s Reply cites no authority for its “wirelessly connected devices” framing and does not engage the authorities on which Resmed relied, including *Home Depot*. Opp., 1, 2, 12. Those authorities stand un rebutted.

I. THE ’960 PATENT IS FOCUSED ON “HANDHELD DEVICES”

The ’960 Patent is titled “Handheld Device with Two Antennas[,]” and every claim recites “[a] *handheld device*.” Opp., 11 (citing Ex. 1001). Its stated object is “to provide a handset or handheld device (such as, for instance, a mobile phone, a smartphone, a PDA, an MP3 player, a headset, a USB dongle, a laptop, a PCMCIA or Cardbus 32 card),” addressing the scarcity of space on “typical handsets due to their small size.” Ex. 1001, 1:29-34, 2:59-66. Resmed made this point in its Opposition (Opp., 11) and PO’s Reply never responds: it does not identify in the specification, claims, or prosecution history that expands the patent to “wirelessly

connected devices,” and thus concedes the point. *See generally*, Reply. Each and every claim of the '960 Patent is directed to handheld devices, and Resmed's bedside medical device for sleep therapy is not one. Opp., 11.

PO's effort to fit the '960 Patent into the medical device space fares no better. To argue that the patent “itself indicates potential applicability for medical devices,” PO had to rely on a passage that merely lists an “Industrial, Scientific, Medical (ISM)” band among the exemplary frequency ranges in which a “wireless connectivity antenna” may operate. Reply, 5 (citing Ex. 1001, 9:44-49). But “ISM” is a designation for a category of frequency bands; it does not transform the claimed handheld device into a medical device, much less a stationary one.

Moreover, PO's proposed technology space has no limiting principle. PO contends that a device's “additional functionality” does not remove it from the “wirelessly connected device space.” Reply, 2. But that inverts the point. For a phone or tablet, wireless communication is the core function and gaming and other functions are the add-on; for Resmed's machines, delivering airway-pressure therapy for the “treatment of obstructive sleep apnea” is the core function. Ex. 2016, 2, Opp., 3, 11. The cellular link is the genuinely “additional” feature, optional and used to upload data after therapy, which places the machine in the medical device space even under PO's own test. Ex. 2016, 11-12. PO similarly tries to conflate the use of IoT connectivity with being in the technology space. At most, PO's exhibits

show that Resmed's medical devices incorporate wireless functionality. Reply, 1, 2-4. Indeed, those same exhibits identify each product as a CPAP device (EX2015, 2, 3) sold only "on the order of a physician" (Ex. 2016, 1 (addressing AirSense 10 models)) by Resmed that "build[s] medical devices" for "sleep apnea therapy." Ex. 2014, 1. Under PO's view, virtually any product with wireless connectivity will share a technology space with a handheld device, regardless of its function, form factor, or commercial application.

II. THE PRE-SUIT CORRESPONDENCE CONFIRMS THAT PO HAD NOT ENTERED THE MEDICAL DEVICE SPACE

A. PO confirmed that it had not licensed a healthcare company.

PO now claims a decade of presence in medical devices technology space but its only support is an August 2016 archived marketing page. Reply, 4 (citing Ex. 2018). That page proves nothing about licensing healthcare companies. It merely pairs "wearables" with "medical devices" under a pitch for "smart watches," "fitness trackers," and "smart glasses" and identifies no healthcare company licenses. Ex. 2018, 4. Had PO truly regarded healthcare/medical device as part of its established technology space, it would have said so when it was trying to license Resmed.

Only in 2023, roughly seven years after PO's alleged entry into the medical device technology did PO state that it was "progressing with several other companies in healthcare and other industries," indicating at most aspirational outreach, not completed healthcare licenses. Ex. 2004, 2. The omission is telling and suggests that

PO's newly asserted presence is a post hoc characterization advanced to expand its licensing campaign.

B. Resmed had settled expectations that PO would resolve any issues with Resmed's suppliers.

Resmed informed PO from the outset that its antenna supplier, Taoglas, “possess[es] the relevant technical information” and that any discussion would need to involve Taoglas. Opp., 17 (citing Ex. 2004, 3, 4, 9). Resmed's expectation was grounded in PO's own enforcement history, which includes suits against antenna manufacturers such as Amphenol. Opp., 11. PO's Reply reinforces the point by arguing that Resmed's devices “incorporate cellular antennas like those provide[d] by Amphenol.” Reply, 3. If the antenna is what matters, then the antenna supplier was the natural counterparty—exactly as Resmed told PO.

PO's assertion that Resmed “refus[ed] to sign an NDA,” Reply, 5, changes nothing. Resmed explained why none was needed: the charts would necessarily have information “originat[ing] from ResMed, from its supplier, or both,” and infringement analysis is drawn from “all publicly available information” which PO had already made public in its complaints. Ex. 2004, 6-8. Taoglas, in turn, asked to “see the claims from Fractus in order to assist our customer Resmed answer you in a meaningful way.” *Id.*, 1. PO never produced the claim charts and then went silent. Opp., 17. PO's Reply does not dispute any of this: it does not address Taoglas's request, does not explain why PO never engaged Taoglas, and does not account for

its years of silence. Reply, 5. On that unrebutted record, with Resmed pointing PO to its supplier and PO never pursuing Resmed directly, Resmed reasonably expected that any issue would be resolved with its supplier Taoglas. Opp., 17-18.

C. Even today, PO has not asserted litigation against any other medical device company nor announced a license.

Even today, PO still identifies no assertion against, and no announced license with, a medical device company. PO's litigation history is confined to handset manufacturers, cellular carriers, antenna manufacturers, wireless infrastructure providers, smart security systems, and location-based services. Opp., 11-12; Reply, 3. PO's reliance on a license agreement that includes "wearable and pendant safety monitoring devices" does not establish a license in the medical device space. Reply, 5 (citing Ex. 2007). By its own headline and framing, the agreement concerns "connected safety devices." Ex. 2007. And "wearable and pendant" devices are precisely the small products worn on the body that differ from Resmed's bedside sleep therapy device. If a decade of PO's history yields nothing more, it confirms that Resmed had no reason to expect the '960 Patent—a handheld-device patent—to be asserted against a stationary sleep-therapy machine. Settled expectations do not favor discretionary denial.

III. CONCLUSION

The Director should decline PO's request for discretionary denial.

Dated: October 8, 2026

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CERTIFICATE OF SERVICE

I hereby certify that on October 8, 2026, a true and correct copy of the foregoing **PETITIONER'S SUR-REPLY TO PATENT OWNER'S REQUEST FOR DISCRETIONARY DENIAL** is being served by electronic mail on PO's counsel of record listed below, pursuant to its Mandatory Notices.

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