

IPR2026-00231
U.S. Patent No. 11,303,011

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD. AND SAMSUNG ELECTRONICS
AMERICA, INC.,
Petitioners,

v.

AQ CORPORATION,
Patent Owner.

Case No. IPR2026-00231

U.S. PATENT NO. 11,303,011

**PETITIONERS' RESPONSE IN OPPOSITION TO PATENT OWNER'S
DISCRETIONARY DENIAL BRIEF**

TABLE OF CONTENTS

	<u>Page</u>
I. Introduction.....	1
II. “Relevant Considerations” Favor Institution.....	3
A. AQ Has Not Formed Settled Expectations.....	3
B. Samsung Has Identified All Real Parties In Interest.....	9
C. The Petition Appropriately Relies On Expert Testimony.....	10
III. The Fintiv Factors Favor Institution	11
A. Factor 1: Likelihood of Stay Weighs Against Denial or Is Neutral	11
B. Factor 2: The Texas Trial Date Is More Than Three Months After The Statutory Deadline, Which Weighs Strongly Against Denial	14
C. Factor 3: The Texas Case Is Nascent and Does Not Favor Denial	14
D. Factor 4: Samsung’s Sotera+ Stipulation Weighs Against Denial	15
E. Factor 5: The Identity of Parties Does Not Support Denial.....	16
F. Factor 6: Additional Factors Do Not Support Denial	17
IV. §325(d) Does Not Support Denial.....	17
V. Conclusion	20

TABLE OF AUTHORITIES

	Page(s)
Cases	
<i>Advanced Integrated Circuit Process LLC v. Taiwan Semiconductor Mfg. Co. Ltd.</i> , No. 2:25-cv-324, Dkt. 104 (E.D. Tex. Mar. 11, 2026)	4
<i>Am. Airlines, Inc. v. Intell. Ventures I LLC</i> , IPR2025-00785, Paper 11, Director Decision (Aug. 29, 2025)	14
<i>Amgen, Inc. v. Bristol-Myers Squibb Co.</i> , IPR2025-00601, Paper 9 (July 24, 2025)	8
<i>Apple Inc. v. Apex Beam Techs. LLC</i> , IPR2025-00896, Paper 10, Director Decision (Sept. 3, 2025)	8, 14
<i>Apple Inc. v. Fintiv, Inc.</i> , IPR2020-00019, Paper 11 (Mar. 20, 2020)	2, 11
<i>Berkshire Hathaway Energy Co. v. Birchtech Corp.</i> , IPR2025-00274 et al., Paper 23 (July 2, 2025)	3
<i>Cambridge Indus. USA, Inc. v. Applied Optoelectronics, Inc.</i> , IPR2025-00434, Paper No. 11, Director Decision (June 26, 2025)	17
<i>Carbyne, Inc. v. Tritech Software Sys.</i> , IPR2025-00959, Paper 11, Director Decision (Oct. 3, 2025)	20
<i>Corning Optical Commc'ns RF v. PPC Broadband, Inc.</i> , IPR2014-00440, Paper 68 (Aug. 18, 2015)	9, 10
<i>Dabico Airport Sols., Inc. v. AXA Power APS</i> , IPR2025-00408, Paper 21 (June 18, 2025)	7
<i>FreightCar Am., Inc. v. Nat'l Steel Car Ltd.</i> , IPR2025-01046, Paper 20, Director Decision (Oct. 10, 2025)	14
<i>Gonzalez v. Infostream Grp., Inc.</i> , No. 2:14-CV-906-JRG-RSP, IPR. 2015 WL 12910770 (E.D. Tex. Mar. 3, 2015)	13

IPR2026-00231
U.S. Patent No. 11,303,011

<i>Kahoot! AS v. Interstellar Inc.,</i> IPR2025-00696, Paper 12 (July 31, 2025)	8
<i>Motorola Solutions, Inc. v. Stellar, LLC,</i> IPR2024-01205, Paper 19 (Mar. 25, 2025)	16
<i>OnePlus Tech. (Shenzhen) Co. v. Pantech Corp.,</i> IPR2025-00756, Paper 11 (Oct. 3, 2025)	3
<i>Rembrandt Wireless Techs., LP v. Samsung Elecs. Co.,</i> No. 2:13-cv-213, 2015 WL 627887 (E.D. Tex. Jan. 29, 2015).....	12, 13
<i>Resonant Sys., Inc. v. Nintendo Co., Ltd.,</i> No. 2:25-CV-90-JRG (E.D. Tex. July 28, 2025).....	2, 12, 13, 14
<i>Samsung Elecs. Co., Ltd. v. Wilus Institute of Standards,</i> IPR2025-00935, Paper 12 (Sept. 26, 2025).....	3, 20
<i>Samsung Elecs. Co. v. Wilus Institute of Standards,</i> IPR2025-00933, Paper No. 11, Director Decision (Oct. 10, 2025).....	16
<i>Shenzen Tuozhu Tech. Co. v. Stratasys, Inc.,</i> IPR2025-00438 et al., Paper 10 (July 17, 2025)	3
<i>Snap v. SRK Tech.,</i> IPR2020-00820, Paper 15 (Oct. 21, 2020)	2
<i>Sotera Wireless, Inc. v. Masimo Corp.,</i> IPR2020-01019, Paper 12 (Dec. 1, 2020)	15, 16
<i>Straumann USA, LLC v. Smart Denture Conversations, LLC,</i> IPR2025-00956, Paper 11 (Sept. 19, 2025).....	3
<i>Suzhou Mojawa Intelligent Elec. Co., Ltd. v. Shenzhen Shokz Co.,</i> <i>Ltd.,</i> IPR2025-00842, Paper 14, Director Decision (Sept. 19, 2025)	8
<i>Tesla, Inc. v. Intell. Ventures II LLC,</i> IPR2025-00217, Paper 9, Director Decision (June 13, 2025).....	16
<i>Trover Group, Inc. v. Dedicated Micros USA,</i> No. 2:13-CV-1047, 2015 WL 1069179 (E.D. Tex. Mar. 11, 2015).....	12, 13

IPR2026-00231

U.S. Patent No. 11,303,011

Yangtze Memory Techs. Co., Ltd. v. Micron Tech, Inc.,

IPR2025-00501, Paper 10 (Aug. 14, 2025) 8

TABLE OF EXHIBITS

Exhibit No.	Description
1001	U.S. Patent No. 11,303,011 (“’011 Patent”)
1002	Declaration of David K. Choi, Ph.D
1003	<i>Curriculum Vitae</i> of David K. Choi, Ph.D
1004	Excerpted File History of U.S. 11,303,011 (App. No. 17/105,012)
1005	PCT Publication 2017/175886 (“SeongPCT”)
1006	Certified English Translation of PCT Publication 2017/175886 (“Seong”)
1007	U.S. Pat. App. Pub. No. 2019/0109373 (“Ahn”)
1008	U.S. Patent No. 10,269,005 (“005Lee”)
1009	Korean Patent Publication 10-2017-0093670 (“ChoKPP”)
1010	Certified English Translation of Korean Patent Publication 10-2017-0093670 (“Cho”)
1011	U.S. Pat. App. Pub. No. 2017/0228721 (“721Lee”)
1012	U.S. Pat. App. Pub. 2018/0198209 (“Kang”)
1013	Comparison of the specifications of U.S. Patent No. 11,303,011 (“’011 Patent”) and U.S. Pat. App. Pub. 2018/0198209 (“Kang”)
1014	U.S. Pat. App. Pub. No. 2010/0090824 (“Rowell”)
1015	Exhibit A to Patent Owner’s Disclosure of Asserted Claims and Infringement Contentions in <i>AQ Corporation v. Samsung Electronics Co., Ltd. et al.</i> , Case No. 2:25-cv-01012-JRG (EDTX)
1016	William H. Hayt, Jr. and Jack E. Kemmerly, <i>Engineering Circuit Analysis</i> (1993)

Exhibit No.	Description
1017	Mohamed M. El Rayes, et al., “A Review on Wireless Power Transfer,” IJETT Vol. 40. No. 5 (2016)
1018	Sung-Gu Kang, et al., “Near-Field Communication in Biomedical Applications,” Sensors (2021)
1019	Zebra, RFID Inlay Placement/Power Guidelines (2014)
1020	Constantine A. Balanis, “The Evolution of Antenna Technology,” IEEE Antenna & Propagation Magazine (2024)
1021	G. Stojanovic and Lj. Zivanov, “Comparison of Optimal Design of Different Spiral Inductors,” MIEL Vol. 2 (2004)
1022	Chandrasekharan Nataraj, et al., “General Analysis of Resonance Coupled Wireless Power Transfer (WPT) Using Inductive Coils,” Technical Gazette 25, 3 (2018).
1023	Zachariah Peterson, “How to Design a Printed Circuit Board in 10 Easy Steps,” (2025), https://resources.altium.com/p/10-easy-steps-comprehensively-designing-circuit-board-altium-designer
1024	“The Discovery of Radio Waves – 1888,” Spark Museum, http://www.sparkmuseum.com/BOOK_HERTZ.HTM
1025	“How Do Checkpoint Labels and Hard Tags work?,” Loss Prevention Systems, https://www.losspreventionsystems.com/checkpoint-labels-hard-tags-work/
1026	“Qi: Mobile Charging Empowered,” Wireless Power Consortium, https://www.wirelesspowerconsortium.com/standards/qi-wireless-charging/
1027	“Wireless Charging,” NFC Forum, https://nfc-forum.org/build/specifications/wireless-charging/
1028	“Qi Wireless Charging,” Lenhardt, https://ib-lenhardt.com/kb/qi-wireless-charging

Exhibit No.	Description
1029	U.S. Patent No. 649,621
1030	U.S. Patent No. 1,119,732
1031	U.S. Patent No. 4,937,585
1032	Chinese Patent No. CN209266128
1033	Korean Patent No. KR20180113064
1034	PCT WO 2019/070090
1035	Korean Patent No. KR101832344
1036	U.S. Patent No. 4,313,152
1037	U.S. Patent No. 1,563,731
1038	Performance Specification: MIL-PRF-55110F (1993)
1039	Letter from A. Janes to N. Lenning, March 5, 2026

I. INTRODUCTION

This IPR presents an exceptionally strong case for institution. In April 2022, less than four years before the Petition was filed, Patent No. 11,303,011 (“’011 patent”) issued with no Examiner rejections. But what the Examiner did not know was that Patent Owner (“PO”) failed to disclose PO’s own Publication No. 2018/0198209 to Kang and its resulting Patent No. 10,547,112, which, apart from one column of added disclosure and some different figures, share an *identical specification* with the ’011 patent. Pet. at 10-11; Ex1013. The Examiner also did not know that ’011 patent named inventor Kyoungjun Choi described Kang as disclosing the only claim limitation that PO now argues is not taught by the prior art: electrically connecting antenna coils in “parallel.” Ex2001, 149. The Petition relies on Kang and five other undisclosed, invalidating prior art references, four of which also expressly teach parallel electrical connection. This is precisely the type of challenge the IPR system was designed to accommodate, and PO’s discretionary denial arguments fail.

First, the relevant considerations favor institution. PO has no settled expectations in the challenged claims, which had been in force for less than four years before this IPR, well short of the six-year threshold in PO’s cases. Knowing this, PO argues it gave Petitioners notice of the ’011 patent before it filed suit in October 2025, but PO concedes Petitioners’ alleged awareness was of a pre-amendment application publication—not the issued claims. PO cancelled the

publication's only claim and replaced it with claims of fundamentally different scope—transforming, in three amendments, a flat flexible PCB with coil antennas into a concentric-ring, dual-surface module with NFC extension lines and radially-extending gaps. Ex2001, 294-295; Ex1004, 1024-27, 1060-63, 1076-80. PO offers no evidence of licensing, commercialization, or industry reliance. Further, PO's claim that Samsung Construction & Trading Corporation ("C&T"), an entity that PO did not sue and an entity that has no input into these IPR proceedings, is nevertheless a real party in interest is meritless. And PO's argument that Petitioners improperly rely on expert testimony for the parallel electrical connection limitation mischaracterizes the Petition and ignores the teachings of its references.

Second, the *Fintiv* factors favor institution. Petitioners filed the Petition before answering PO's complaint in the Eastern District of Texas—prompt, diligent filing that weighs heavily against denial. *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 at 11-12 (Mar. 20, 2020) (precedential); *Snap v. SRK Tech.*, IPR2020-00820, Paper 15 at 12-13 (Oct. 21, 2020). The anticipated July 2027 Final Written Decision predates the scheduled November 2027 Texas trial by over three months. Petitioners' *Sotera+* stipulation precludes duplicative validity arguments. And PO's assertion that a stay is unlikely is contradicted by Judge Gilstrap's recent precedent. *Resonant Sys., Inc. v. Nintendo Co., Ltd.*, No. 2:25-CV-90-JRG (E.D. Tex. July 28, 2025).

Third, PO's claim that Petitioners' references are cumulative of the file history art under § 325(d) as purportedly not teaching parallel electrical connection fails for the same reason as PO's expert-reliance argument: four of Petitioners' references expressly teach this, including Kang as PO's named inventor admits. Ex2001, 149.

II. "RELEVANT CONSIDERATIONS" FAVOR INSTITUTION

A. AQ Has Not Formed Settled Expectations

"Early challenges to patents favor robust, predictable patent rights and weigh against discretionary denial." *Straumann USA, LLC v. Smart Denture Conversations, LLC*, IPR2025-00956, Paper 11 at 2 (Sept. 19, 2025). Challenges to claims that were in force for less than six years are "[e]arly challenges" as patent owners typically have not developed settled expectations by then. *OnePlus Tech. (Shenzhen) Co. v. Pantech Corp.*, IPR2025-00756, Paper 11 at 2 (Oct. 3, 2025); *Berkshire Hathaway Energy Co. v. Birchtech Corp.*, IPR2025-00274 et al., Paper 23 at 3 (July 2, 2025); *Shenzen Tuozhu Tech. Co. v. Stratasys, Inc.*, IPR2025-00438 et al., Paper 10 at 2 (July 17, 2025). In *Samsung Elecs. Co., Ltd. v. Wilus Institute of Standards*, a 2021 patent "ha[d] not been in force for a significant period of time" and thus "Patent Owner has not developed strong settled expectations." IPR2025-00935, Paper 12 at 2-3 (Sept. 26, 2025). Here, the '011 patent issued on April 12, 2022 and its claims were in force for less than four years at the time of the January 26, 2026 Petition.

Trying to resist this conclusion, PO claims it “provided Petitioner[s] with the publication leading to the ’011 Patent on November 8, 2021” and thus argues that Petitioners “have been aware of the claims of the ’011 Patent for almost five years.” PO’s Discretionary Denial Brief (“DD”) at 1, 3-5. PO cites an email that ’011 patent inventor, Mr. Choi, sent on November 8, 2021. Ex2001, 1, 149. That shows that PO sent Petitioners the *pre-amendment* publication of the ’011 patent’s application (No. 2021/0159587). Ex2001, 149, 219-95. The ’587 publication does not contain any of the ’011 patent’s issued claims. It has only one claim, which PO canceled in a November 5, 2021 preliminary amendment that PO *did not send* to Petitioners. That amendment added 6 materially different claims. Ex1004, 1024-27. The ’011 patent’s claims have been amended *three times* since the ’587 publication. *Id.* (11/5/21 amendment); *id.*, 1060-63 (2/16/22 amendment); *id.*, 1076-80 (3/4/22 amendment).

“A Defendant’s knowledge of a publication or application that does not correspond to a patent is insufficient to support an allegation that the defendant knew of that patent.” *Advanced Integrated Circuit Process LLC v. Taiwan Semiconductor Mfg. Co. Ltd.*, No. 2:25-cv-324, Dkt. 104 at *7 (E.D. Tex. Mar. 11, 2026). Petitioners’ purported notice on November 8, 2021 of a claim that did not issue (and that PO had canceled) is not notice of the ’011 patent’s claims that issued in April 2022. Nor is PO’s description of the post-publication amendments as “minor” and covering

“identical claim scope to the issued claims of the ’011 Patent,” DD at 3-4, accurate.

As shown below—language deleted from ’587 publication claim in red; language added to ’011 patent claims in green—claim 1 of the ’587 publication recites a flat “flexible PCB comprising a sheet-like body” with three coil antennas arranged between “first and second edges,” a “magnetic sheet,” and a requirement that “no electric connection is formed between any two coil antennas.” Ex2001, 294–295.

US 2021/0159587 A1	'011 patent
1. A smartphone antenna module comprising: a flexible PCB comprising a sheet-like body with a first major surface and a second major surface facing away from the first major surface; the flexible PCB further comprising a first coil antenna, a second coil antenna and a third coil antenna formed in the sheet-like body between the first and second major surfaces; the first second and third coil antennas are located between a first and second edges of the flexible PCB; the first coil antenna located between the first and second edges; the third coil antenna located between the first edge and the first coil antenna; the second coil antenna surrounding the first coil antenna when viewed in a thickness direction of the flexible PCB; the third coil antenna not overlapping the first coil	1. A smartphone antenna module comprising: a substrate having a first major surface and a second major surface facing away from the first major surface; the first major surface comprising a first central portion, a first inner ring portion surrounding the first central portion, and a first outer ring portion surrounding the first inner ring portion; the second major surface comprising a second central portion overlapping the first central portion, a second inner ring portion surrounding the second central portion and overlapping the first inner ring portion, and a second outer ring portion surrounding the second inner ring portion and overlapping the first outer ring portion; a first antenna pattern formed on the first major surface and comprising an inner coil formed on the first inner ring portion and an outer coil on the first outer ring portion; a second antenna pattern formed on the second major surface and comprising an NFC antenna pattern formed on the second central portion, an inner antenna pattern formed on the second inner ring portion, an outer antenna pattern formed on the second inner ring portion; the inner antenna pattern comprising a plurality of concentric C-shaped lines forming a radially-extending inner gap on the second inner ring portion; the outer antenna pattern comprising a plurality of concentric C-shaped lines forming a radially-extending outer gap on the second outer ring portion; wherein the radially-extending outer gap on the second outer ring portion and the radially-extending inner gap on the second inner ring portion are connected and aligned in a radial direction; two NFC antenna extension lines formed on the second major surface, in which the two NFC antenna extension lines extend along the radial direction through both the radially-extending inner gap and the radially-extending outer gap;

US 2021/0159587 A1	'011 patent
antenna when viewed in the thickness direction, and a magnetic sheet attached to flexible PCB that overlaps entire portion of the first coil antenna, wherein no electric connection is formed between any two coil antennas of the first, second and third coil antennas in the flexible PCB, wherein the first coil antenna comprises an inner coil and an outer coil electrically connected to each other in parallel, wherein the inner coil has a wire width smaller than that of the outer coil, wherein the inner coil has the number of turns is greater than that of the outer coil, wherein the inner coil has a coil width is greater than that of the outer coil	an inner extension line formed on the second major surface, in which the inner extension line extends along the radial direction through both the radially-extending inner gap and the radially-extending outer gap; an outer extension line formed on the second major surface, in which the outer extension connects to the outer antenna pattern and extends along the radial direction through the radially-extending outer gap; wherein the two NFC antenna extension lines, the inner extension line, and the outer extension lines are extending substantially in parallel; wherein each of the two NFC antenna extension lines, the inner extension line, and the outer extension lines formed on the second major surface overlaps the outer coil formed on the first outer ring portion of the first major surface; wherein the inner coil and the outer coil are electrically connected in parallel. 2. The smartphone antenna module of claim 1, wherein the first antenna pattern and the second antenna pattern are electrically connected each other through a plurality of vias. 3. The smartphone antenna module of claim 1, wherein the inner extension line is referred to as a first inner extension line, wherein the smartphone antenna module further comprises a second inner extension line formed on the second major surface, in which the second inner extension connects to the inner antenna pattern and extends along the radial direction through the radially-extending outer gap. 4. The smartphone antenna module of claim 1, wherein the inner coil includes a wire line having a width different from that of a wire line of the outer coil. 5. The smartphone antenna module of claim 1, wherein the inner coil has a first number of turns that is greater than that off the outer coil. 6. A smartphone comprising: a battery; and the smartphone antenna module of claim 1, wherein the inner coil and the outer coil are configured for wireless battery charging.

As shown above, new claims 1-6 bear virtually no resemblance: they recite a concentric-ring, dual-surface substrate architecture with an NFC antenna pattern, C-shaped lines forming radially-extending gaps, and NFC extension lines—none of which appeared in the canceled claim. Ex2003, 2-3. The amendment eliminated the magnetic sheet, the third coil antenna, and the no-electric-connection requirement,

and virtually the only surviving limitation was the parallel connection of the inner and outer coils, now situated within an entirely different structural context.

Instead, PO's evidence shows Mr. Choi failed to disclose the Petition's Kang reference (on which he is also an inventor) to the PTO despite acknowledging it was material. On November 8, 2021, Mr. Choi said the Kang patent disclosed a "[t]echnical section related to parallel structure antenna," which he highlighted. Ex2001, 149, 214 (highlighting "coil antennas that are parallel connected"). PO now contends this same disclosure in the Kang publication (Ex1012 ¶260) does not disclose the claimed parallel electrical connection of coils. DD at 8-9, 12-15.¹

AQ's settled-expectation cases are inapt. At best, they stand for the proposition that settled expectations may form when the challenged patent has been "in force" for six or more years. *Dabico Airport Sols., Inc. v. AXA Power APS*, IPR2025-00408, Paper 21 at 2 (June 18, 2025) (patent "in force for almost eight years"); *Yangtze Memory Techs. Co., Ltd. v. Micron Tech, Inc.*, IPR2025-00501, Paper 10 at 2 (Aug. 14, 2025) (patents "in force for approximately ten, six, and six years"); *Kahoot! AS v. Interstellar Inc.*, IPR2025-00696, Paper 12 at 2 (July 31, 2025) (patent "in force for over six years"); *Amgen, Inc. v. Bristol-Myers Squibb Co.*,

¹ Contrary to PO's argument, a certified translation of the email does not include an explanation regarding the '587 publication. Ex2001, 149.

IPR2025-00601, Paper 9 at 2-3 (July 24, 2025) (no settled expectations for patent “in force” for three years, but settled expectations for patents “in force for seven and six years”). The ’011 patent’s claims had been “in force” for less than four years before the Petition. The Director has consistently recognized that young patents, such as the ’011 patent, do not give rise to settled expectations favoring denial. *See Suzhou Mojawa Intelligent Elec. Co., Ltd. v. Shenzhen Shokz Co., Ltd.*, IPR2025-00842, Paper 14, Director Decision at 2 (Sept. 19, 2025) (patents issued in 2021 and 2022 had “not been in force for a significant period of time” and patent owner had “not developed strong settled expectations”); *Apple Inc. v. Apex Beam Techs. LLC*, IPR2025-00896, Paper 10, Director Decision at 3 (Sept. 3, 2025) (no settled expectations for patents in force for “two, three, or four years”).

PO can show no other basis to have settled expectations. Before suing Petitioners, PO had not previously asserted the ’011 patent in litigation, nor has PO alleged to have licensed or commercialized it. *AQ v. Samsung Elecs. Co., Ltd. et al.*, No. 2:25-cv-01012-JRG, Dkt. 1, ¶16 (EDTX Oct. 7, 2025) (“[N]o patented articles have ever been produced requiring marking.”). Nor has PO presented any evidence that the ’011 patent’s claims have been widely adopted or otherwise recognized. PO claims to have “reasonably relied on the absence of any challenge” to the ’011 patent’s claims’ validity, but offers no evidence or explanation supporting that claim.

B. Samsung Has Identified All Real Parties In Interest

Petitioners properly identified the only real parties in interest: Samsung Electronics Co., Ltd. (“SEC”) and Samsung Electronics America, Inc. (“SEA”). These are the same parties PO sued in Texas. PO argues Petitioners failed to disclose Samsung C&T on the sole basis that C&T purportedly has an “opportunity to control” this IPR proceeding. DD at 6. PO misapplies the law and is wrong on the facts.

As PO’s *Corning* case recognizes, RPIs are those that “possessed effective control over the IPR proceeding.” *Corning Optical Commc’ns RF v. PPC Broadband, Inc.*, IPR2014-00440, Paper 68 at 15 (Aug. 18, 2015). In *Corning*, a parent entity and a petitioner shared the same line of business and the same officers, the parent retained and paid outside counsel, the parent’s in-house counsel served as “case manager” and directed filings, and the entities were “so intertwined that it is difficult ... to determine precisely where one ends and another begins.” *Id.* at 18. Not so here. Petitioner SEC is a recognized, innovative global electronics company and Petitioner SEA is one of its U.S. subsidiaries. C&T operates in wholly different businesses: construction, resorts, and fashion. In fact, C&T stands for Construction & Trading Corporation. C&T has no interest in the challenged patent, and did not fund, direct, participate, or have any influence over this proceeding.

PO cites two financial disclosures describing C&T as a “related party,” and argues it is not an “independent entity whose interests are wholly disconnected from those of Samsung Electronics.” DD at 6-8 (citing Ex2004 and Ex2005). But this is not the test: the law requires “effective control over the IPR proceeding,” which PO has not alleged and cannot show. *Corning*, IPR2014-00440, Paper 68 at 15.

C. The Petition Appropriately Relies On Expert Testimony

The Petition presents three invalidity grounds under 35 U.S.C. § 103 and relies on Dr. David Choi to support and further explain why a POSA would have found it obvious to combine the petitioned references. PO asserts the Petition “turns almost entirely on expert testimony” because “[n]one of the cited references” disclose the claimed parallel connection element. PO misrepresents the Petition and the prior art.

Contrary to PO’s sweeping misstatements, at least four petitioned references expressly teach electrically connecting coils in parallel. As explained above, ’011 patent named inventor Mr. Choi admitted that Kang teaches this limitation. Kang teaches that “coils may be connected in parallel” and Kang depicts how. Ex1012, ¶¶214, 217, Fig. 24B; Ex2001, 149. Similarly, Ahn (U.S. Pub. No. 2019/0109373) teaches that “first and second spiral wirings may be connected to each other in series or in parallel” (Ex1007, ¶¶113, 120), 721Lee (U.S. Pub. No. 2017/0228721) teaches that “two coils ... may be connected in parallel” (Ex1011, ¶¶152, 134, 158-59), and

Cho (Korean Pub. 10-2017-0093670) teaches that a “first coil portion” and a “second coil portion” “may be connected in series ... or ... in parallel” (Ex1010, ¶¶90, 91).

The Petition does not rely on Dr. Choi to “stitch together unrelated disclosures,” as PO claims. DD, 8. Instead, Dr. Choi provides the type of expert analysis that routinely supports IPR petitions—explaining why a POSA would have combined the prior art’s express teachings and found it obvious to do so.

III. THE *FINTIV* FACTORS FAVOR INSTITUTION

The *Fintiv* factors favor institution. *Fintiv*, IPR2020-00019, Paper 11 at 5-6.

A. Factor 1: Likelihood of Stay Weighs Against Denial or Is Neutral

Petitioners filed the Petition before answering PO’s complaint in Texas, and then promptly moved to stay the Texas case. As PO acknowledges, the Board will not speculate on any stay, rendering Factor 1 at most neutral. DD at 9-10.

There is no support for PO’s claim that Factor 1 may favor denial. *Id.* As *Fintiv* explains, the possibility for a post-institution stay weighs against discretionary denial, even in cases that were not stayed pre-institution. *See Fintiv*, IPR2020-00019, Paper 11 at 6-7 (denial of pre-institution stay without prejudice “has usually weighed against exercising authority to deny institution under NHK”).

PO argues that a stay is unlikely, contending that Judge Gilstrap “normally, if not almost exclusively, denies motions to stay pending PTAB decisions.” DD at 9.

PO cites the “majority rule” and “universal practice” in the Eastern District of Texas that courts “uniformly” deny stays *before* the PTAB has acted on a petition, relying on *Trover Group, Inc. v. Dedicated Micros USA*, No. 2:13-CV-1047, 2015 WL 1069179, at *6 (E.D. Tex. Mar. 11, 2015) and *Rembrandt Wireless Techs., LP v. Samsung Elecs. Co.*, No. 2:13-cv-213, 2015 WL 627887 (E.D. Tex. Jan. 29, 2015). PO further predicts that Judge Gilstrap will decide Petitioners’ motion to stay about four months before the institution deadline and, based on these cases, will deny it.

Judge Gilstrap’s rulings refute PO’s characterizations. In *Resonant Systems, Inc. v. Nintendo Co., Ltd.*, No. 2:25-CV-90 (E.D. Tex. July 28, 2025), Judge Gilstrap granted a stay pending IPR in circumstances materially similar to this case. In *Nintendo*, like here, the defendant filed its IPR petition before the parties and the court had invested resources in discovery and claim construction. *Id.* at 4. Judge Gilstrap found the defendant’s promptness “supports this Motion in a material way,” observing that “[t]oo often, Defendants use the IPR process strategically and delay seeking it such that the PTAB’s decision will not issue until the Court and parties have spent many hours and significant resources that could have been saved if the Defendants had acted more promptly.” *Id.* All three stay factors, issue simplification, stage of litigation, and prejudice, weighed in favor of a stay. *Id.* at 3-6.

Like *Nintendo*, here, Petitioners filed the Petition before answering in Texas—the type of diligence Judge Gilstrap praised. Like *Nintendo*, the Texas case is nascent, with no significant discovery or claim construction. And like *Nintendo*, the anticipated FWD date precedes the trial date—here, by over three months.

AQ’s reliance on *Trover*, *Rembrandt Wireless*, and *Gonzalez* is misplaced. In *Trover*, the defendants waited nearly a year before filing their IPR petition, and the court found this “pattern of delay” cut “strongly against a stay” in a case where claim construction was complete and trial was imminent. 2015 WL 1069179, at *3–4. In *Rembrandt Wireless*, trial was a few weeks away, discovery was closed, and the PTAB had *denied* institution on the very claims to be asserted. 2015 WL 627887, at *1–2. And *Gonzalez v. Infostream Grp., Inc.* involved a denial of stay motion based on a CBM, not IPR, because the PTAB had not yet acted. No. 2:14-CV-906-JRG-RSP, 2015 WL 12910770, at *1 (E.D. Tex. Mar. 3, 2015). Not so here.

All three cases cited by PO share a final deficiency: they were decided in early 2015, years before *Fintiv* and the Process Memorandum. Judge Gilstrap himself cautioned in *Nintendo* that “parties are ill advised to see trends and patterns here that might prevail in future cases under dissimilar facts and involving disparate conduct.” *Nintendo*, slip op. at 5 n.2. AQ is doing exactly what Judge Gilstrap warned against.

B. Factor 2: The Texas Trial Date Is More Than Three Months After The Statutory Deadline, Which Weighs Strongly Against Denial

Factor 2 weighs strongly against discretionary denial. The July 2027 FWD deadline predates the November 2027 Texas trial date by more than three months. This favors institution. *FreightCar Am., Inc. v. Nat’l Steel Car Ltd.*, IPR2025-01046, Paper 20, Director Decision at 2 (Oct. 10, 2025); *Am. Airlines, Inc. v. Intell. Ventures I LLC*, IPR2025-00785, Paper 11, Director Decision at 2-3 (Aug. 29, 2025).

AQ contends this factor is “neutral” because the Texas trial date is “around the same time as the projected statutory deadline.” DD at 10 (quoting *Fintiv*, Paper 15 at 9). But more than three months is not “at or around the same time” as the trial—it is substantially before. Director decisions have recognized that even a far smaller margin favors institution. *See Apple Inc.*, IPR2025-00896, Paper 10, Director Decision at 2 (denying discretionary denial, finding a FWD projected to issue just three weeks before trial sufficient to reduce concerns of inconsistent outcomes). Combined with Petitioners’ broad *Sotera+* stipulation, this timing allows the Board’s decision to inform and streamline the Texas proceedings well in advance of trial.

C. Factor 3: The Texas Case Is Nascent and Does Not Favor Denial

Factor 3 weighs strongly against discretionary denial because the Texas case is nascent. PO argues that proceeding in parallel with the Texas case is “an inefficient use of ... time and resources.” DD at 10. But PO’s argument rests on speculation

about where the case will be—not where it is now. The Texas case remains in its earliest stages: the Markman hearing is not scheduled until May 12, 2027—more than a year away—and the close of fact discovery is set for June 14, 2027, over thirteen months from now. No depositions, expert reports, or summary judgment motions have been performed. And Petitioner has moved to stay. Under *Sotera*, the relevant inquiry is the investment to date, which here has been minimal. *See Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019, Paper 12 at 16 (Dec. 1, 2020) (precedential). And Samsung’s broader *Sotera+* stipulation further ensures no duplication of invalidity arguments. This factor weighs against denial.

D. Factor 4: Samsung’s *Sotera+* Stipulation Weighs Against Denial

Factor 4 weighs strongly against discretionary denial because there is no overlap between the IPR and the Texas case. Petitioners’ *Sotera+* stipulation (which will take effect upon institution) goes beyond a standard *Sotera* stipulation, which commits the petitioner not to pursue in district court the same grounds raised or that reasonably could have been raised in the IPR. In its *Sotera+* stipulation, Petitioner further agrees not to pursue any ground based on a combination of system prior art and the references asserted as part of a ground raised in the instituted IPR. This expanded commitment “ensures that an [IPR] is a ‘true alternative’ to the district

court proceeding” and “weighs strongly in favor of not exercising discretion to deny institution.” *Sotera Wireless, Inc.*, IPR2020-01019, Paper 12 at 18-19 (precedential).

PO contends that Samsung’s *Sotera+* stipulation “is not dispositive,” citing *Motorola Sols., Inc. v. Stellar, LLC*, IPR2024-01205, Paper 19 at 4 (Mar. 25, 2025). DD at 11. But in *Motorola Sols.*, multiple *Fintiv* factors independently favored denial due to “substantial investment in the district court proceeding.” IPR2024-01205, Paper 19 at 4. Here, no such investment exists. The Texas case is nascent, and Petitioners’ stipulation eliminates the primary concern underlying discretionary denial—the risk of duplicative proceedings and inconsistent outcomes. Multiple Director precedents have treated *Sotera+* stipulation as favoring institution. *See, e.g., Samsung Elecs. Co. v. Wilus Institute of Standards*, IPR2025-00933, Paper No. 11 at 3, Director Decision (Oct. 10, 2015); *Tesla, Inc. v. Intell. Ventures II LLC*, IPR2025-00217, Paper 9 at 2, Director Decision (June 13, 2025).

E. Factor 5: The Identity of Parties Does Not Support Denial

PO asserts that Factor 5 favors discretionary denial because the parties in this IPR are the same as those in the district court litigation. DD at 11. However, the identity of parties is only one factor in the analysis and is not dispositive. *Cambridge Indus. USA, Inc. v. Applied Optoelectronics, Inc.*, IPR2025-00434, Paper No. 11,

Director Decision (June 26, 2025). This factor is, if anything, neutral, and merely underscores that PO's real-party-in-interest argument is meritless.

F. Factor 6: Additional Factors Do Not Support Denial

PO makes no arguments specific to Factor 6. Rather, PO refers back to its arguments in Sections A and C regarding settled expectations, RPI identification, expert reliance, and cumulativeness. But for the reasons stated in those sections, those arguments are meritless and do not support discretionary denial.

IV. §325(d) DOES NOT SUPPORT DENIAL

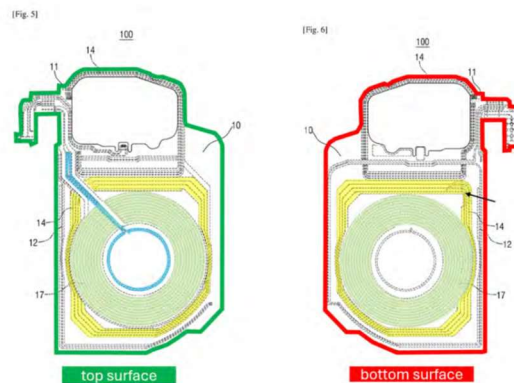
PO wrongly argues that Petitioners rely on references that are cumulative of the references considered during prosecution. PO's primary basis for this flawed argument is to rehash what it argued in Section A.iii regarding expert testimony—the Petition supposedly lacks references that disclose a parallel electrical connection of coils. But as explained above, that is wrong. PO mischaracterizes the petitioned references and grounds, which are indisputably stronger than what the Examiner considered. Notably, a named inventor of the '011 patent admitted that Kang, one of the petitioned references with a nearly identical specification to the '011 patent, discloses parallel electrical connection of coils. Ex2001, 149. PO however withheld Kang during prosecution, and Kang was not considered by the Examiner.

Petitioners' grounds are non-cumulative and are compelling. The '011 patent's claims cover smartphone antenna modules having rings of NFC and wireless-charging coils on both sides of a substrate. Ex1001, claims, Figs. 48-49:

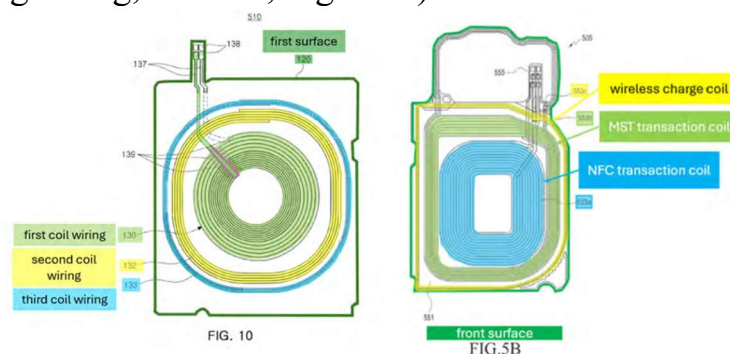


Ex1001, Figs. 48-49.

Petitioners' primary references depict remarkably similar arrangements:



Pet. at 2 (depicting Seong, Ex1006, Figs. 5-6).



Pet. at 3 (depicting Ahn, Ex1007, Fig. 10, and 005Lee, Ex1008, Fig. 5B).

Ground 1 (Seong + Kang + Cho) combines Seong's NFC and wireless-charging antenna module with Kang, which expressly teaches that concentric-circle coils that "may be connected in parallel" (Ex1012, ¶¶214, 217), and Cho, which independently teaches parallel connection (Ex1010, ¶¶90, 91). Pet. at 20-23.

Ground 2 (Ahn + 721Lee) combines Ahn's NFC and wireless-charging antenna module having coils that "may be connected to each other in series or in parallel" (Ex1007, ¶¶113, 120), with 721Lee, which teaches running extension lines through gaps in coils that are electrically connected in parallel to provide security benefits for NFC payment transactions (Ex1011, ¶¶134, 152). Pet. at 65-68.

Ground 3 (005Lee + Seong + Cho) combines 005Lee's NFC and wireless-charging antenna module with coil antenna patterns on both sides of the same substrate (Ex1008, 17:4-9), with Seong, which provides details on how to implement coil antenna patterns on both sides of the same substrate, including by running extension lines through gaps (Ex1006, Figs. 5-6), and Cho, which teaches electrically connecting coils in parallel (Ex1010 ¶¶90, 91). Pet. at 103-109.

None of the prosecution art, including the two references PO identifies (DD at 12-20), are remotely as strong as the references relied on in the Petition, and unlike Kang, Ahn, 721Lee, and Cho, none of the prosecution art teaches parallel electrical connection. PO's cumulativeness argument therefore fails. Discretionary denial

under § 325(d) is not appropriate where, as here, the petitioned references disclose the “purportedly missing claim limitations” over which the Examiner allowed claims. *Carbyne, Inc. v. Tritech Software Sys.*, IPR2025-00959, Paper 11 at 2, Director Decision (Oct. 3, 2025); *Samsung Elecs. Co., Ltd.*, IPR2025-00935, Paper 12, Director Decision at 2-3. This is an especially compelling case for Board review because Kang—a reference with a nearly identical specification to the ’011 patent—should have been before the Examiner in the first instance. PO’s named inventor was aware that Kang disclosed the purportedly critical parallel electrical connection limitation. Far from counseling against institution, these circumstances demonstrate that Board review is an appropriate use of Board resources.

V. CONCLUSION

The Petitions should proceed to institution and be addressed on the merits.

Date: April 29, 2026

Respectfully submitted,

/s/ Robert A. Appleby

Robert A. Appleby, P.C.
Reg. No. 40,897

Attorneys for Petitioner

CERTIFICATE OF COMPLIANCE

The undersigned certifies that the foregoing Petitioners' Response to Patent Owner's Discretionary Denial Brief contains 20 pages, exclusive of parts exempted as provided in 37 C.F.R. 42.24(a), and therefore complies with the 20-page limit.

Date: April 29, 2026

Respectfully submitted,

/s/ Robert A. Appleby

Robert A. Appleby, P.C.
Reg. No. 40,897

Attorneys for Petitioner

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e)(4), it is hereby certified that on April 29, 2026, an electronic copy of this Petitioners' Response to Patent Owner's Discretionary Denial Brief and supporting exhibits were served via email on Patent Owner's counsel of record in this proceeding:

Jason Engel

Reg. No. 51,654

Anna Rebekah Hill

Reg. No. 81,745

K&L Gates LLP

70 W. Madison Street, Suite 3100

Chicago, IL 60602

Jason.Engel.PTAB@klgates.com

rebekah.hill@klgates.com

Erik J. Halverson

Reg. No. 73,552

K&L Gates LLP

4 Embarcadero Center, Suite 1200

San Francisco, CA 94111

erik.halverson@klgates.com

Date: April 29, 2026

Respectfully submitted,

/s/ Robert A. Appleby

Robert A. Appleby, P.C.

Reg. No. 40,897

Attorneys for Petitioner