

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

KANGXI COMMUNICATION TECHNOLOGIES (SHANGHAI) CO., LTD.

Petitioner,

v.

SKYWORKS SOLUTIONS, INC.

Patent Owner.

Case No. IPR2025-00912

U.S. Patent 7,409,200

**PETITIONER’S OPPOSITION TO PATENT OWNER’S REQUEST FOR
DISCRETIONARY DENIAL OF INSTITUTION**

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LIST OF EXHIBITS

EX-1001	U.S. Patent No. 7,409,200 to Derbyshire et al. (“200 Patent”), Filing Date of June 2, 2004
EX-1002	Prosecution History of U.S. Patent No. 7,409,200
EX-1003	Declaration of Dr. Ayman Fayed
EX-1004	<i>Curriculum Vitae</i> of Dr. Ayman Fayed
EX-1005	U.S. Patent Publication No. 2003/0017809 A1 to Garlepp et al. (“ <i>Garlepp</i> ”), Filing Date of February 19, 2002 and Publication Date of January 23, 2003
EX-1006	R. Magoon et al., “A Single-Chip Quad-Band (850/900/1800/1900 MHz Direct Conversion GSM/GPRS RF Transceiver with Integrated VCOs and Fractional-N Synthesizer,” published in IEEE JOURNAL OF SOLID-STATE CIRCUITS, vol. 37, No. 12, pp. 1710-1720, December 2002 (“ <i>Magoon</i> ”)
EX-1007	E. Ngompe et al., “Architecture and Performance Overview of a Highly Integrated 13x13mm Single-Package Radio (SPR) Module for Dualband EGSM900 / GSM1800 Applications,” published in 2003 IEEE Radio Frequency Integrated Circuits Symposium, pp. 387-390 (“ <i>Ngompe</i> ”)
EX-1008	U.S. Patent Publication No. 2003/0089998 A1 to Chan et al. (“ <i>Chan</i> ”), Filing Date of November 9, 2001, Publication Date of May 15, 2003
EX-1009	P. Wambacq et al., “A single-package solution for wireless transceivers,” published in Design, Automation and Test in Europe Conference and Exhibition, 1999 (“ <i>Wambacq</i> ”)
EX-1010	L.E. Larson, “Integrated Circuit Technology Options for RFIC’s—Present Status and Future Directions,” published in IEEE JOURNAL OF SOLID-STATE CIRCUITS, vol. 33, No. 3, pp. 387-399, March 1998 (“ <i>Larson</i> ”)
EX-1011	J. Ryckaert et al., “Single-package 5GHz WLAN RF module with embedded patch antenna and 20dBm power amplifier,” published in 2003 MTT-S Digest, pp. 1037-1040 (“ <i>Ryckaert</i> ”)

EX-1012	U.S. Patent Publication No. 2003/0139147 A1 to Shi (“ <i>Shi</i> ”), Filing Date of March 21, 2002, and Publication Date of July 24, 2003.
EX-1013	U.S. Patent No. 5,898,909 to Yoshihara et al (“ <i>Yoshihara</i> ”), Filing Date of September 27, 1996, Issue Date of April 27, 1999
EX-1014	European Patent Application Publication No. EP 0 632 497 A2 to Pedder (“ <i>Pedder</i> ”), Filing Date of June 16, 1994, Publication Date of January 4, 1995
EX-1015	U.S. Patent No. 6,297,694 to Yamamoto (“ <i>Yamamoto</i> ”), Filing Date of November 24, 1999, Issue Date of October 2, 2001
EX-1016	WILEY ELECTRICAL AND ELECTRONICS ENGINEERING DICTIONARY (2004), p. 707 (signal conditioning)
EX-1017	Declaration of Ingrid Hsieh-Yee, Ph.D.
EX-1018	Order Granting Stay, Sept. 13, 2024, Dkt. 59, in <i>Skyworks Solutions Canada, Inc., Skyworks Global Pte Ltd v. Kangxi Communication Technologies (Shanghai) Co., Ltd et al.</i> , Case No. 8:24-cv-00976-FWS-ADS (C.D. Cal. May 6, 2024) (“Parallel District Court Litigation”)

I. Introduction

Patent Owner filed a request seeking discretionary denial (“Request”) on the sole basis that the Patent Owner has a settled expectation that U.S. Pat. No. 7,409,200 (“the ’200 Patent”) is valid because of the amount of time that it has been in force without being challenged. (Request, Paper 7, at 1-5). The record demonstrates that there is no factual support for the parties to have a settled expectation that the ’200 Patent is valid. Moreover, the mere passage of time, without more, cannot reasonably be considered as evidence of the parties’ settled expectations. More pertinent considerations, such as the strength of the validity challenge, and the fact that the parallel district court litigation is stayed and thus the district court will not reach the validity issue until years after the final written decision is due demonstrates that instituting trial would be a good use of the resources of the Board.

II. Overview of Related Litigation

On May 6, 2024, Patent Owner filed a complaint asserting infringement of the ’200 Patent.¹ On that same day, Patent Owner’s affiliates filed a second

¹ *Skyworks Solutions Canada, Inc., Skyworks Global Pte Ltd v. Kangxi Communication Technologies (Shanghai) Co., Ltd et al.*, Case No. 8:24-cv-00976-FWS-ADS (C.D. Cal. May 6, 2024) (stayed) (“Parallel District Court Litigation”).

complaint for patent infringement in the U.S. District Court in the Central District of California asserting infringement of four patents including the United States Patent Nos. 8,717,101 (“the ’101 Patent”), 9,917,563 (“the ’563 Patent”), 9,450,579 (“the ’579 Patent”), and 9,148,194 (“the ’194 Patent”).² On July 17, 2024, Patent Owner’s affiliate filed a complaint before the ITC asserting infringement of the same five patents.³ On September 13, 2024, the district court stayed the litigations (both the Parallel District Court Litigation and the Second District Court Litigation) in view of the Parallel ITC Investigation pursuant to the automatic stay provision of 28 U.S.C. 1659(A).

Between July 2024 and April 2025, Petitioner diligently prepared and filed five IPR petitions directed to the five patents asserted in the Parallel ITC Investigation. Patent Owner dropped the ’200 Patent on December 10, 2004, before Petitioner had finalized its petition challenging the patent. After Patent

² *Skyworks Solutions, Inc. v. Kangxi Communication Technologies (Shanghai) Co., Ltd et al.*, Case No. 8:24-cv-00974-FWS-ADS (C.D. Cal. May 6, 2024) (“Second District Court Litigation”).

³ Certain Wireless Front-End Modules, Devices Containing the Same, and Components Thereof; Inv. No. 337-TA-1413 (ITC)(July 16, 2024)(“Parallel ITC Investigation”).

Owner failed to dismiss the patent from the Parallel District Court Litigation, Petitioner finalized and filed the present Petition challenging the '200 Patent on April 22, 2025.

III. The Evidence Demonstrates that the Parties Cannot Have a Settled Expectation that the '200 Patent Is Valid Merely Due to its Time in Force.

The '200 Patent issued on August 5, 2008.⁴ The Request does not assert that the '200 Patent has ever been commercialized, marked, or licensed, or asserted, defended, or tested in any prior proceeding in a manner that might suggest that it would survive scrutiny by an interested party. There is no evidence of Patent Owner having given any party notice of the patent, or that it was part of any other proceeding or post-grant challenge in any forum. The Request admits that KCT was founded in September 2014, and asserts that since that time KCT has “participated in the U.S. patent system” and demonstrates “sophistication in patent prosecution and awareness of Skyworks as a competitor and market leader.” Request 3-4. Although the Request asserts that “KCT has filed tens of patent applications worldwide”, the Request fails to identify whether KCT ever ran across or learned of the '200 Patent during its patent prosecution activities, or otherwise.

⁴ The Request admits that KCT was founded in September 2014, and thus, by definition, had no “expectations” before coming into existence.

The Request fails to explain why Patent Owner waited ten years since the founding of Petitioner to file a complaint for patent infringement of the '200 Patent, behavior that strongly suggests the patent was not relevant to Petitioner and/or that its validity would not survive scrutiny. The Request also fails to identify that Patent Owner waited five months after filing the Parallel ITC Investigation before it dropped the '200 Patent from the proceedings, during which time Petitioner had been preparing its invalidity defenses. Thus, at the time that Petitioner filed the Petition for the '200 Patent, both parties understood that Petitioner had recently learned of the '200 Patent and had prepared its invalidity defenses, which Patent Owner knew (or should have known) would be very strong for the '200 Patent.

The Request fails to account for the fact that the claims of the '200 Patent are directed to conventional concepts, well-known in the prior art as demonstrated by the grounds of the Petition. The Request does not account for the fact that any objective person active in the field at the time of the invention would readily conclude that the '200 Patent was not valid.

The premise of the Request is illogical and unsupported factually. The premise seems to be that Petitioner should have searched the USPTO's database, found the '200 Patent, divined that Patent Owner might take an aggressive position one day that the patent both applied to Petitioner, was actually valid, and worth asserting. On that tenuous ground, the Request seems to reason that therefore

Petitioner should have launched into the expense of what would have been a preemptive invalidity challenge out of the blue — all before there was a case or controversy necessary for Petitioner to even have a basic right of appeal of the Board’s findings. That makes no sense. That would be irrational, cost-prohibitive behavior. That is no less so for a plainly invalid patent like the ’200 Patent, which never should have been issued, much less asserted, in the first place. The reality is that it would be irrational and wildly wasteful of private and public resources for a petitioner to spend millions of dollars seeking out invalid patents and filing preemptive IPRs against them on the gamble that one day there *might* be a case and controversy concerning a patent that an aggressive patent owner *might* think pertains to the petitioner, who *might* think it would withstand scrutiny, and who *might* also be so bold as to assert it. The Request makes no attempt to present facts or arguments that would address the absurdity of its premise.

Nor is there anything relied upon in the Request that is specific or unique to this case and the interactions of the parties that is probative of the parties’ actual expectations of validity, nor specific or unique facts as to how and when such expectations would purportedly have become “settled.” The Request appears to be based on a belief that there is now a bright line rule or law that older patents are not eligible for *inter partes* review based merely on the passage of time.

For all of these reasons, Patent Owner’s assertion that the parties had a

settled expectation that the '200 Patent was valid based merely on the amount of time the '200 Patent was in force is without factual support.

IV. The Director Should Not Grant Patent Owner's Request for Discretionary Denial Because Instituting IPR Is a Good Use of the Board's Resources

A. The District Court Will Not Reach the Invalidity Issue Until Years After the Final Written Decision Is Due

The Parallel District Court Litigation is stayed until the ITC case is final (including any appeals), and thus is not expected to go to trial until September 2028 (if no ITC appeals), almost two years after the Final Written Decision deadline in the IPR (October 2026). Thus, *inter partes* review is an appropriate use of Board resources.⁵

⁵ The Parallel District Court Litigation will remain stayed “pending final resolution of the ITC proceedings, including any and all appeals and until the ITC proceedings are no longer subject to judicial review.” EX-1018 (Parallel District Court Litigation, Docket 59). Based on the schedule of the ITC Proceeding (*See* IPR2025-373, Paper 7 at 13-14), the ITC proceedings will not be final until at least May 2026 (if the ITC finds no violation and Patent Owner does not appeal). Based on statistical data, the C.D. Cal. case would not go to trial until September 2028, and much later if the ITC final decision is appealed. *See*

B. It Is Important to Adjudicate Petitioner’s Invalidity Challenge Notwithstanding the Future Expiration of the ’200 Patent Because Patent Owner Is Still Asserting the Patent

The future expiration of the ’200 Patent does not justify a discretionary denial. Patent Owner briefly posits that the ’200 Patent expires next year (April 1, 2026) and then makes a conclusory argument that *inter partes* review would therefore purportedly be “an inefficient use of the Patent Office’s resources.” Request, 5. Notwithstanding the upcoming expiration of the ’200 Patent next year, Patent Owner continues to assert the patent. It has not dismissed the Parallel District Court Litigation. Because a patent carries certain rights post-expiration (35 U.S.C. § 286), adjudication of Petitioner’s meritorious invalidity challenge is an important function of the Board, as is well established. *See, e.g., Sony Corp. v. Iancu*, 924 F.3d 1235, 1239–41 (Fed. Cir. 2019) (articulating the importance of the

https://www.uscourts.gov/sites/default/files/document/fcms_na_distprofile0331.2025.pdf at 68 (median time to trial in C.D. California was 27.8 months as of 3-31-2025); <https://www.cafc.uscourts.gov/wp-content/uploads/reports/stats/FY2024/MedianDispositionTime-Merits.pdf> (median time to Fed. Cir. disposition of ITC decision was 24.5 months in FY2024). Based on these statistics, even if the stay were lifted today, a final written decision in this case would issue long before any trial in the Parallel District Court Litigation.

Board’s review of expired patents since expired patents can be asserted for past infringement); *Unified Patents, LLC v. Gesture Technology Partners, LLC*, IPR2021-00917, Paper 31, at 41-43 (PTAB Nov. 21, 2022) (discussing authorities for, and importance of, *inter partes* review of expired patents).

C. The Petition Presents a Strong Invalidity Challenge

The ’200 Patent issued in a first Office Action allowance, with no specific reason provided for allowance. Pet. 12 (citing EX-1002 pp. 53-59; pp. 190-196; pp. 213-231). Thus, the Petition affords the Board the first opportunity to substantively review the claims in view of the relevant prior art which is a good use of the Board’s resources.

The Petition describes that the ’200 Patent is directed to the problem of providing a high-performance, compact electronic module that incorporates electronic circuits for radio frequency (RF) front-end applications. In general, an RF front-end module is a collection of components that interfaces with the antenna and provides the initial processing of incoming radio signals (reception) and/or the final amplification of outgoing radio signals (transmission). A front-end module that handles both reception and transmission is referred to as a “transceiver.” The module’s components include signal conditioning circuits with specialized components, such as low noise amplifiers (LNAs) in the receive signal path and power amplifiers in the transmit signal path. The components also include

ancillary circuits (e.g., voltage regulators) for use by the signal conditioning circuits. RF front-end modules can include circuitry to support multiple different RF standards or frequency bands. Pet. 2 (citing EX-1003, ¶27).

According to the '200 Patent, one problem associated with a multi-standard RF module is that separate circuitry is needed for each standard, thus increasing the component count. This, in turn, increases cost, reduces yield and durability, and increases module size. EX-1001 1:36-55. The '200 Patent describes another problem: the semiconductor technology best suited for integrating some components of the circuitry often is not suited for integrating other components. Thus, RF module designers invariably included multiple different semiconductor dies in their modules. EX-1001 2:12-27; 4:3-13; EX-1003, ¶28. The '200 Patent purports to address these problems by providing a technique for partitioning the circuitry into functional portions along a signal path, and then integrating the different portions within discrete semiconductor dies. The dies are mounted on a common substrate within the module and electrically interconnected to complete the signal path. An example embodiment is an RF front-end module in which the partitioned circuitry is the PA circuitry for amplifying RF signals, which the '200 Patent generally refers to as a “signal conditioning circuit.” EX-1003, ¶29.

An embodiment of a module 500 implementing the '200 Patent's circuit partitioning and integration scheme is illustrated in FIG. 5:

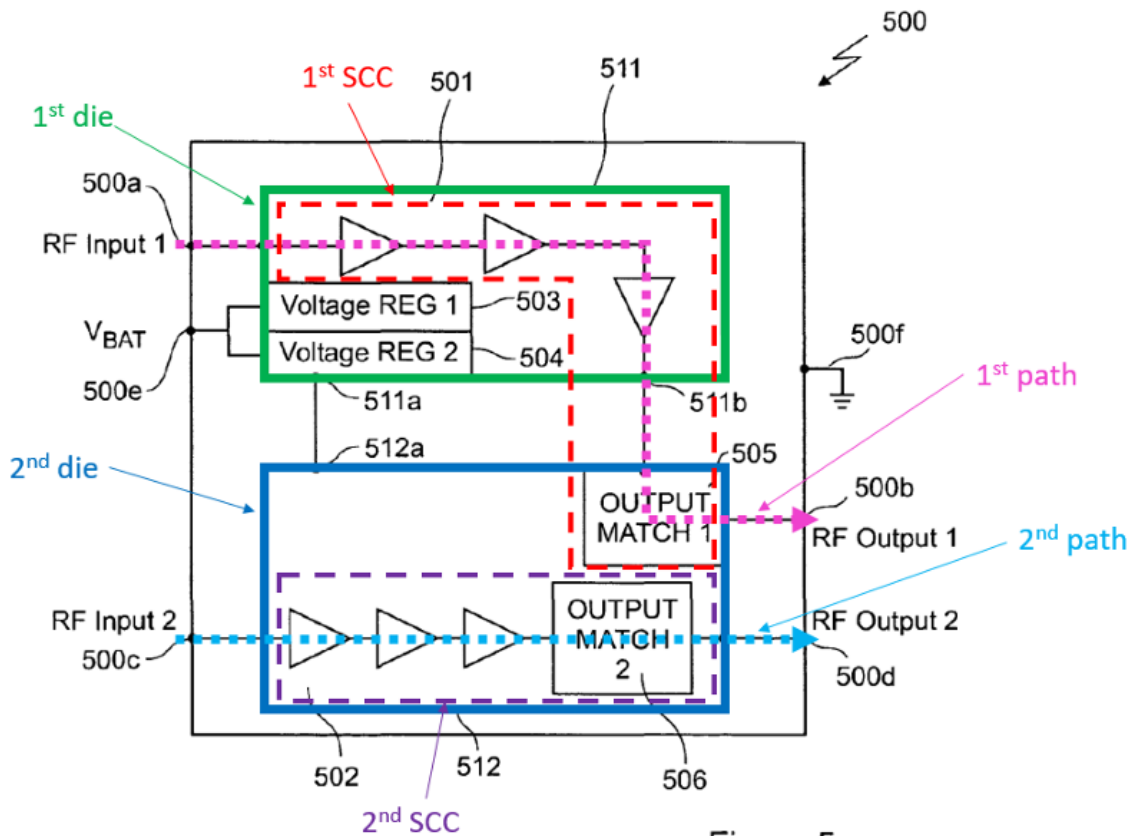


Figure 5

EX-1001, FIG. 5 (annotated); EX-1003, ¶30. Module 500 includes two signal conditioning circuits (“SCCs”): a first SCC 501, 505 disposed along a first signal path; and a second SCC 502, 506 disposed along a second signal path. Each SCC is implemented as a PA circuit and is partitioned into two series-connected portions—a PA portion 501/502 and an impedance matching portion 505/506. EX-1003, ¶31.

Module 500 also includes a first semiconductor die 511 made of silicon germanium (SiGe) and a second semiconductor die 512 made of gallium arsenide (GaAs). With respect to the first SCC, PA portion 501 is formed in the first die using SiGe BiCMOS technology, while the impedance matching portion 505 is

formed in the **second die** 512 using GaAs technology. EX-1001 7:32-8:66; EX-1003, ¶32. For the **second SCC**, portions 502 and 506 both are integrated in the **second die** 512.

According to the '200 Patent, partitioning the first SCC across different dies is implemented so that the “[s]ignal conditioning functions of each of [its] portions are facilitated by a predetermined type of semiconductor die within which they are formed.” EX-1001, Abstract. The '200 Patent states that this design scheme is “efficient in respect of die area usage,” “provides the module designer with the best attributes of both semiconductor [dies] . . . in order to achieve a high level of performance, and integration, with a low number of module components,” and results in a compact module size. EX-1001, 2:28-33; 8:43-47; 8:52-56; EX-1003, ¶33. In other words, the '200 Patent is directed to a RF module with multiple semiconductor dies that is implemented by partitioning signal conditioning circuits along their respective signal paths and integrating the resulting partitions into the die best suited for each portion’s functionality. EX-1003, ¶33.

But well before the '200 Patent, implementing modules in this manner was a well-known and conventional practice. For example, as described in Ground 1 of the Petition and as illustrated below, *Garlepp* discloses the same multiple-die architecture for RF modules where elements in common with the '200 Patent are color coded in the same color.

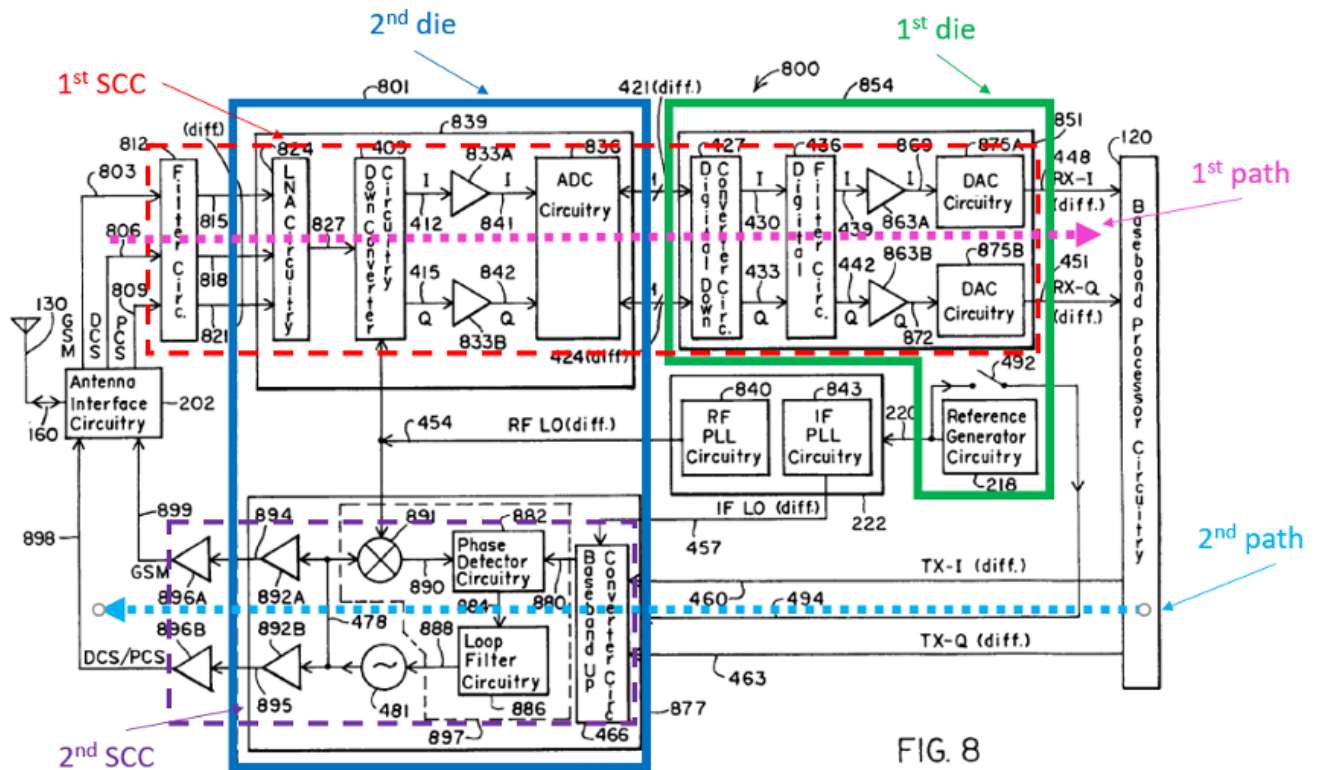


FIG. 8

EX-1005 (*Garlepp*), FIG. 8 (annotated), ¶¶5, 46; EX-1003, ¶34.

As in the '200 Patent, *Garlepp*'s module includes two signal conditioning circuits and two interconnected semiconductor dies fabricated using different semiconductor processes. Like the '200 Patent, the **first SCC** (i.e., “receive path circuitry”) is partitioned along a **first signal path** so that portion 851 is formed in **first die 854** and portion 839 is formed in **second die 801**. Also like the '200 Patent, the entirety of the **second SCC** (i.e., transmitter circuitry 877), which is disposed along a **second signal path**, is formed in **second die 801**. EX-1005, ¶¶86, 91-103, 164; EX-1003, ¶35.

Likewise, as described in Ground 2 of the Petition, *Magoon* illustrates a

multiple-die module implemented by partitioning circuits into functional portions and then integrating each portion using a semiconductor technology most suited to the portion's functionality, as illustrated below, where elements in common with the '200 Patent are color coded in the same color:

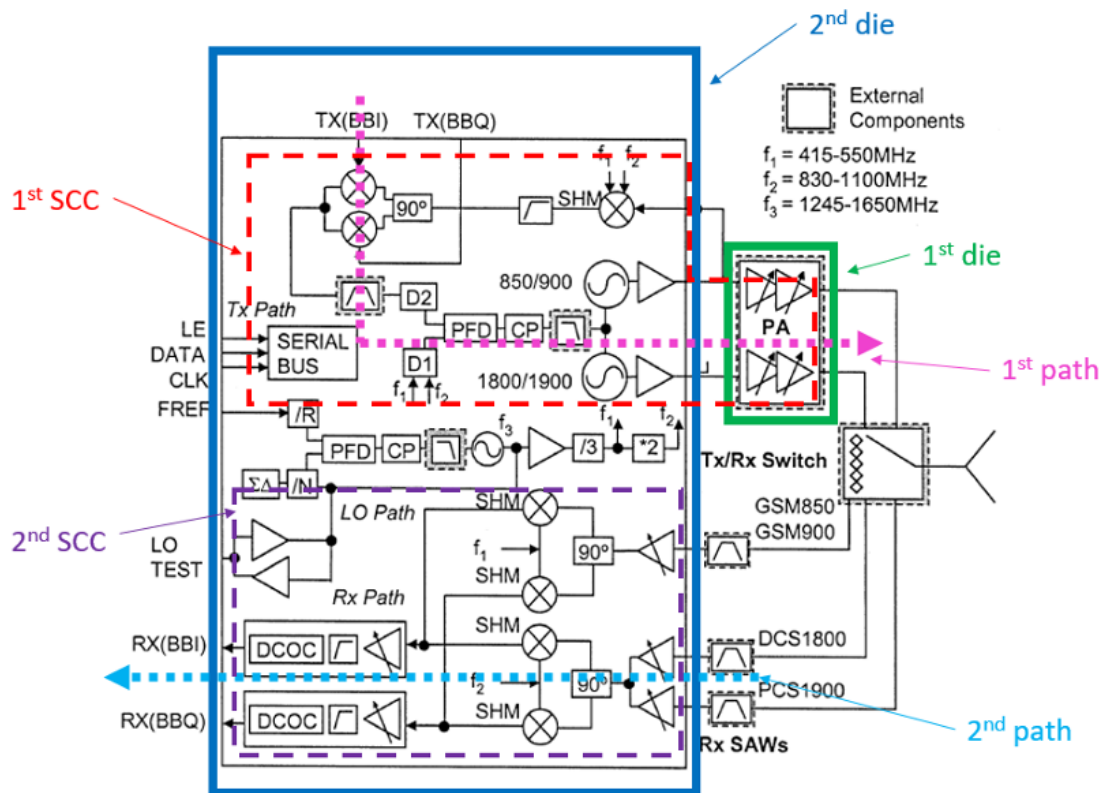


Fig. 1. Top-level schematic of transceiver, with external RF components.

EX-1006 (*Magoon*), FIG. 1 (annotated); EX-1003, ¶36.

Thus, the references in both Grounds 1 and 2 disclose multiple-die RF modules with the same partitioning of signal conditioning circuits and integration across semiconductor dies required by the Challenged Claims.

V. The Implementation of the New “Settled Expectations” Doctrine Amounts to Arbitrary Agency Action that Violates Constitutional Rights

The implementation of the new “settled expectations” doctrine has been arbitrary in violation of the U.S. Constitution. On March 26, 2025, the Director issued the Interim Processes for PTAB Workload Management (“Stewart Memo”), setting forth as one new “factor” for discretionary denials the “settled expectations of the parties” and referencing “the length of time the claims have been in force.” Stewart Memo at 2. This settled expectations doctrine cannot be found in any statute, rule, notice or policy. Indeed, the AIA statute sets up the opposite expectation. *See, e.g.*, 35 U.S.C. §311(c) (precluding IPRs filed prior to 9 months after grant but allowing them thereafter); 35 U.S.C. §315(b) (precluding IPRs filed more than 1 year after suit but otherwise allowing them at any time); 35 U.S.C. § 282 (no time-dependent change to the presumption of validity).

The Office violated constitutional due process by adopting and implementing the new “settled expectations” doctrine. The Stewart Memo appears to have effectively created a vague rule (law?) that older patents are ineligible for *inter partes* review. The announcement and implementation of the doctrine was arbitrary action in violation of Petitioner’s constitutional rights for at least the following reasons:

First, the doctrine was announced without guidance as to what it meant, or

what “length of time” is too long. Whose expectations? Subjective or objective?

What circumstances would lead to exercise of discretion? The Stewart Memo does not provide any standards to be used by the Office in determining what constitutes the “settled expectations of the parties”, briefly positing an open-ended statement referencing “the length of time the claims have been in force.” *Id.* The memo cites no law, case or legislative history to fill in the gap. *Id.* The vagueness precludes petitioners from understanding the doctrine and ordering its affairs accordingly.

Guidance is particularly critical here where the “expectation” of a party is a subjective inquiry being decided as a matter of agency “discretion.” That leads very quickly to an arbitrary application of facts due to the absence of clear guidelines establishing objective considerations.

Second, the new doctrine goes beyond any statutory authority given to the Office. The doctrine appears to effectively legislate a new time limit on the availability of *inter partes* reviews. But this conflicts with the statutory presumption of validity that does not change with time (35 U.S.C. § 282), and conflicts with statutes allowing IPRs of such patents throughout their life (35 U.S.C. §311(c) and 35 U.S.C. §315(b)). While the Office is given some discretion to deny institution, the doctrine is being used to exclude entire categories of patents from review based on a new time limit. That exercise of discretion extends well beyond any statutory authority grant — as is apparent from the actual statutes

reasonably relied upon by petitioners — denying petitioners due process under the U.S. Constitution.

Third, the new sweeping doctrine was announced informally by memorandum, without notice and rule-making that would have given petitioners notice of the new policy, allowed petitioners an opportunity to have been heard, and allowed petitioner an opportunity to conduct themselves accordingly. Implementing such a sweeping new doctrine in this manner by way of a memorandum amounts to arbitrary action, violating constitutional rights, including the right of due process.

VI. Conclusion

When viewed holistically, the timing of the present Petition is reasonable, the Parallel District Court Litigation remains stayed in its infancy (pre-answer) and thus is years behind the PTAB schedule, and the Petition provides an overwhelming case of unpatentability for a patent that received a first Office Action allowance. These considerations should greatly outweigh the fact that the Patent Owner asserted the '200 Patent for the first time late in its life. The Director should decline to exercise its discretion and allow the Petition to be considered on its merits as a good and appropriate use of the Board's resources.

Date: August 22, 2025

Respectfully submitted,

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CERTIFICATION OF WORD COUNT

Pursuant to 37 C.F.R. § 42.24, Petitioners certify that the word count of
Petitioners' Opposition to Patent Owner's Request for Discretionary Denial
(exclusive of any table of contents, table of authorities, mandatory notices under §
42.8, certificates of service and word count, and list of exhibits or claim listing) as
measured by Microsoft Word is 3248 words, which is less than the 14,000 words
allowed.

Dated: August 22, 2025

By: /Diana M. Sangalli/
Diana M. Sangalli, Reg. No. 40,798

CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. §§ 42.6(e) and 42.105(a), the undersigned certifies that on a copy of the foregoing Petitioner's Opposition to Patent Owner's Request for Discretionary Denial was served by electronic means to counsel of record in the present IPR.

Date: August 22, 2025

By: /Diana M. Sangalli/
Diana M. Sangalli, Reg. No. 40,798