UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

VIZIO, INC.,
Petitioner,

v.

MAXELL, LTD.,
Patent Owner

Case: IPR2022-01459

U.S. Patent No. 7,730,507

PATENT OWNER PRELIMINARY RESPONSE TO PETITION FOR *INTER PARTES REVIEW* OF U.S. PATENT NO. 7,730,507

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TABLE OF CONTENTS

Page

TABLE OF AUTHORITIES

Page(s)

Cases

Statutes

Other Authorities

PATENT OWNER'S EXHIBIT LIST

Exhibit No.	Description
2001	Final Rulings on *Markman*/Claim Construction in *Maxell, Ltd. v. VIZIO, Inc.*, Case No. 2:21-cv-06758 (C.D. Cal.) (Dkt. 158, December 21, 2022)
2002	Schedule in *Maxell, Ltd. v. VIZIO, Inc.*, Case No. 2:21-cv-06758 (C.D. Cal.) (Dkt. 162, December 28, 2022)
2003	District Court Invalidity Contentions

I. INTRODUCTION

Patent Owner Maxell, Ltd. ("Patent Owner") respectfully requests that the Board deny institution because Petitioner VIZIO INC. (hereinafter "Petitioner" or "VIZIO") has failed to demonstrate a reasonable likelihood of success on the grounds submitted in its Petition for challenging the patentability of claims 1, 2, 8-10, and 13 ("challenged claims") of U.S. Patent No. 7,730,507 ("the '507 patent") (Ex. 1001).

First, the Board should exercise its discretion pursuant to 35 U.S.C. § 314(a) and deny this petition. Application of the *Fintiv* factors weigh in favor of denying institution. One of the purposes of IPRs is to be an "effective and efficient alternative" to litigation. *Gen. Plastic Indus. Co., Ltd. v. Canon Kabushiki Kaisha,* IPR2016-01357, Paper 19 at 16-17 (PTAB Sept. 6, 2017) (precedential). Here, instituting an IPR would not be an effective or efficient alternative to litigation, particularly given the stage of the co-pending District Court case *Maxell, Ltd. v. Vizio, Inc.*, No. 2:21-cv-06758 (C.D. Cal.) ("District Court Action") and the finite resources of the Board.

Second, Petitioner fails to show a reasonable likelihood of prevailing because it has not shown that the cited references render obvious claims 1, 2, 8-10, and 13. None of the cited references alone or in combination disclose the arrangement of

each element of claims 1, 2, 8-10, and 13. Petitioner recognizes that Tichelaar and Kitamura, its main references, fail to disclose the claimed "started up by a predetermined OS," "first controller being smaller in consumption of electric power than the second controller," and "electric power supplied from the power source unit is controlled;" and then attempts to fill these gaps with the knowledge of a POSITA and secondary references. These attempts fail. Even when considering the supposed knowledge of a POSITA, the flaws of Tichelaar and Kitamura cannot be overcome.

Third, Petitioner further claims that combining Relan and Kim '616 render claims 1, 2, 8-10, and 13 obvious because the secondary reference discloses the "first controller being smaller in consumption of electric power than the second controller," "electric power supplied from the power source unit is controlled" and "started up by a predetermined OS" limitations. Petitioner is wrong.

Accordingly, the Board should decline to institute this *inter partes* review.

II. BACKGROUND

A. Brief Technology Background

Smart televisions were not yet available in the 2005-2006 timeframe, nor was it common for televisions to have dual waiting conditions with different power consumptions. Smart televisions were not readily available in the U.S. market until around 2011.

B. Overview of The ’507 Patent Invention

U.S. Patent No. 7,730,507 (“the ’507 Patent”) is generally directed to a broadcast program receiving apparatus, such as a television, that contains two waiting conditions with different electric power consumptions, such as televisions with two different power standby modes, and where the lower power mode turns off the television’s decoder and processor containing its operating system.

Prior to the filing of the ’507 Patent application, digital broadcast receiving systems took significant time to receive the digital broadcasting signal after powering on, and there was significant time until when they displayed an image on a screen after receiving a channel in comparison to a conventional analog broadcasting signal. This caused an unacceptable lag time that was irritating to a viewer. The claimed inventions solved this problem, for example, by providing a digital broadcast receiving apparatus with the claimed first and second waiting condition where no image is not displayed.

Under the first waiting condition, electric power is not supplied to a second controller configured to be started up by a predetermined operating system (OS) to control a processing of a received digital broadcasting signal via a decoder, and including the decoder. But under the second waiting condition, electric power is supplied to the second controller including the decoder. This shortened or reduced

the waiting time after the startup of the apparatus irrespective of existence of the CPU or digital processing circuitry and OS, improving the user experience, while still suppressing the electric power consumption under the waiting condition.

The challenged claims of ’507 Patent recite an improved broadcast program receiving apparatus. Specifically, they recite an improved broadcast program receiving apparatus that contains two waiting conditions with different electric power consumptions, such as television with two different power standby modes, and where the lower power mode turns off the television’s decoder and processor containing its operating system. This achieves an improved shortened waiting time after starting of the apparatus, irrespective of mounting the CPU and/or the LSI installing the OS, as well as, suppressing consumption of electric power during when the apparatus is in a waiting condition.

C. Relevant ’507 Patent Prosecution History

During prosecution of the application that led to the ’507 Patent, the Examiner issued an office action on July 8, 2009, citing US 6,774,926 (Nomoto) as anticipating claims 16-19, 21, and 25-27 and obvious over Nomoto in view of US 2006/0066757 (Numata) for claims 20, 22-23, 28, and 34. Upon consideration of Applicant’s Remarks and Amendments made October 8, 2009, the Examiner allowed the application over Nomoto and other prior art cited.

D. Summary of Petitioner's Proposed Grounds for Unpatentability

Ground	'507 Patent Claims	Type of Challenge	Primary Reference	Secondary Reference(s)
1	1, 2, 10, 13	§ 103	Tichelaar	The knowledge of a POSITA
2	1, 2, 8-10, 13	§ 103	Tichelaar	Relan and the knowledge of a POSITA
3	1, 2, 10, 13	§ 103	Tichelaar	Kim '616 and the knowledge of a POSITA
4	1, 2, 8-10, 13	§ 103	Tichelaar	Relan, Kim '616 and the knowledge of a POSITA
5	1, 2, 13	§ 103	Kitamura	Kim '616 and the knowledge of a POSITA
6	10	§ 103	Kitamura	Kim '616, Tichelaar, and the knowledge of a POSITA

E. The Cited References

Petitioner relies on four references to challenge the patentability of claims 1, 2, 8-10 and 13 of the '507 Patent.

1. Tichelaar (Ex. 1008)

U.S. Patent Pub. No. 2005/0094036 ("Tichelaar," Ex. 1008) entitled "Power standby mode circuitry for audiovisual device" and published on May 5, 2005.

Tichelaar explains that an "increased power consumption due to infrared remote control false alarm handling by a main TV controller (88) and power dissipation due to leakage current is addressed by fully delegating standby tasks to a low power delegate controller." Ex. 1008, Abstract. Tichelaar generally relates to validating "autonomously a remote control (42) command" and a "switched power supply voltage (70)" that "reduces" the leakage current problem by using a micro-controller (delegate μC) and a main controller (main μC) that are included on the same IC die. *Id* .

Tichelaar discloses that "the delegate μC can have its own local power management control and is sleeping when the TV system is in low-power standby mode and no external triggers are present" and that "[t]he latter sends an interrupt to the delegate controller and its power management unit. The power management unit wakes up the delegate μC." *Id*. at [0035] and [0036]. Tiechelaar also discloses that "the delegate micro-controller is included on the same integrated circuit (IC) package as the main micro-controller, preferably on the same IC die" and that the "delegate micro-controller is preferably adjacent, or close to, the main micro-controller of the system-on-chip." *Id*. at [0021] and [0022]. Further, Tiechelaar describes that "the main μC 24 needs additional (high performance) SoC resources for doing loads and stores of code and data like, for instance, cache, scratch-pad

memory 21, maybe even external memory 29, internal bus 27, and the remote control unit 40." *Id*. at [0012].

However, Tiechelaar does not disclose an OS that is configured to start up the main μC 24. In addition, Tiechelaar lacks disclosures that the delegate μC consumes less power than the main μC 24.

2. Relan (Ex. 1010)

U.S. Patent Pub. No. 2005/0229226 ("Relan," Ex. 1010) entitled "Method employing power-saving modes in electronic devices decoding and displaying multimedia-programs" and was published on October 13, 2005.

Relan discloses a system that has power-saving states, determines whether an end-user is physically present, and prompts to the end use to enter an appropriate response. Ex. 1010, Abstract. The end-user, the network, and the electronic device may each be able to set the power-saving modes and the electronic device may be adapted to maintain an end-user's settings and preferences by employing the power-saving modes. *Id*.

Relan discloses a "power control processor 566A" that monitors and stores power information. *Id*. at [0223]. Additionally, Relan discloses a "processor 561" that conveys multimedia program transmission to audio/video decoder. *Id*. at [0218]. However, Relan does not disclose which processor controls the electric power

supplied to the remote control signal receiving portion.

3. Kim ’616 (Ex. 1011)

U.S. Patent Pub. No. 2002/0024616 (“Kim ’616,” Ex. 1011) entitled “Television based on operating system and method of displaying an initial screen thereof” published on February 28, 2002.

Kim ’616 discloses a “television based on an operating system, including: a first memory storing a boot loader program, the boot loader program performing a hardware basic test and a booting; a television signal generating portion outputting a television broadcast; a second memory storing a MPEG control program and preset channel information, the MPEG control program driving the television signal processing portion to output a video signal corresponding to a received television broadcast corresponding to the stored preset channel information; and a central processing unit executing the boot loader program, executing the MPEG control program after the hardware basic test of the boot loader program and loading the operating system onto a random access memory.” Ex. 1011, Abstract.

Petitioner uses Kim ’616 to fill in the gaps as to “a second controller configured to be started up by a predetermined OS” limitation in claims 1 and 2. *See generally* Petition at 66-68. However, as discussed below, instead of the OS starting the second controller, as claimed, Kim ’616’s CPU 10 starts the OS when power is

switched.

4. Kitamura (Ex. 1012)

U.S. Patent Pub. No. 2007/0046833 entitled "Television based on operating system and method of displaying an initial screen thereof" filed on July 7, 2006 and published on March 1, 2007.

Kitamura discloses a television receiver having three standby modes that includes a "standby power mode for supplying power only to hardware, such as a remote control receiver (full standby), a standby power mode for supplying power also to a security module other than the hardware supplied with power in the full standby (partial standby), and a standby power mode for stopping supply of power only to a monitor at minimum (false standby)." Ex. 1012, Abstract.

Kitamura discloses a "sub-CPU 114" and a "CPU 111," but does not disclose that the sub-CPU consumes less power than the CPU 111. Similarly, Kitamura discloses three standby conditions in which during the partial standby mode (second waiting condition) the power is not supplied to the decoder.

III. CLAIM CONSTRUCTION

For purposes of this proceeding, Petitioner applied the constructions proposed by the parties in the district court case. Petition at 12-17. For purposes of this Preliminary Response only, Patent Owner applies the constructions adopted by the

district court in its claim construction order dated December 21, 2022. Ex. 2001, Final Markman Order.[1] The Court construed the two terms below as follows:

A. "a first controller"/ "a sub-control circuit" (Claims 1 and 2)

Court's Construction: "Plain and ordinary meaning"

B. "a second controller"/"main control circuit" (Claims 1 and 2)

Court's Construction: "Plain and ordinary meaning"

To the extent Patent Owner has further objections to Petitioner's proposed or implicit constructions, such objections are not pertinent to this Preliminary

[1] The Petitioner and Patent Owner met and conferred regarding the timely submission of the Final Rulings on *Markman*/Claim Construction in *Maxell, Ltd. v. VIZIO, Inc.*, Case No. 2:21-cv-06758 (C.D. Cal.) (Dkt. 158, December 21, 2022) ("*Markman* Order") to the Board. In view of the PTAB Consolidated Trial Practice Guide (November 2019), Section II(B)(6) at 47, Petitioner and Patent Owner understand that it is generally preferable in this instance for the *Markman* Order to be submitted with the Patent Owner Preliminary Response. Accordingly, the *Markman* Order is submitted herewith. Petitioner reserves all rights to seek leave to reply to the Patent Owner Preliminary Response and/or address application of the *Markman* Order.

Response. Accordingly, Patent Owner reserves all rights to provide additional arguments relating to Petitioner's claim construction positions if institution occurs.

IV. LEGAL STANDARD

A claim is not patentable if the differences between it and the prior art are such that the subject matter as a whole would have been obvious to a person of ordinary skill in the art at the time of the invention. 35 U.S.C. § 103(a) (pre-AIA). Obviousness requires assessing (1) the "level of ordinary skill in the pertinent art," (2) the "scope and content of the prior art," (3) the "differences between the prior art and the claims at issue," and (4) "secondary considerations" of non-obviousness such as "commercial success, long felt but unsolved needs, failure of others, etc." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007) (quoting *Graham v. John Deere Co. of Kansas City*, 383 U.S. 1, 17-18 (1966)).

It is the petitioner's burden "to demonstrate both 'that a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention, and that the skilled artisan would have had a reasonable expectation of success in doing so.'" *Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1367-68 (Fed. Cir. 2016) (quotations and citations omitted). However, a petitioner must first show that all of the claimed elements are disclosed in the prior art. *See Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1164

(Fed. Cir. 2006) (considering motivation to combine and reasonable expectation of success only "if all the elements of an invention are found in a combination of prior art references"). The Petition fails under this legal standard.

V. DISCRETIONARY FACTORS FAVOR DENIAL OF INSTITUTION

The Petition should be denied pursuant to the Director's discretion to deny institution of petitions. The Petition should be denied pursuant to 35 U.S.C. § 314(a) and the factors set forth in *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020). The PTAB has the authority, where warranted, to exercise discretion to deny institution in view of the *Fintiv* factors particularly where, as here, the merits of the challenge are not compelling (*see infra*, Section VI). *See* "Interim Procedure for Discretionary Denials in AIA Post-Grant Proceedings With Parallel District Court Litigation," issued June 21, 2022 ("Director's Guidance").

A. Application of *Fintiv* Factors Weighs in Favor of Denying Institution

There is no requirement that the Board institute IPR. *See, e.g., Harmonic Inc. v. Avid Tech.*, 815 F.3d 1356, 1367 (Fed. Cir. 2016). Instead, the decision to institute is delegated to the Board and is purely discretionary. As 35 U.S.C § 314(b) explains, "[t]he Director shall determine whether to institute an inter partes review." *See also Cuozzo Speed Techs., LLC v. Lee*, 136 S. Ct. 2131, 2140 (2016); 37 C.F.R. § 42.108(a). Here, instituting an IPR would not be an effective or efficient alternative

to litigation because the co-pending District Court Action (1) involves the same, or substantially the same prior art that VIZIO relies on here, and (2) will be complete well before a final decision in this proceeding. The majority of the *Fintiv* factors weigh in favor of the Board using its discretion to deny institution.

1. The Court Has Not Stayed The Underlying Litigation Nor Has a Motion to Stay Been Filed

Petitioner has not filed a motion to stay the underlying litigation in view of this Petition nor has it suggested it will request one. The Board "will not attempt to predict" how the district court will proceed. *Sand Revolution II, LLC v. Continental Intermodal Group-Trucking LLC*, IPR 2019-01393, Paper 24 at 7 (PTAB June 16, 2020) (informative). As such, given that no stay has been sought, the Board should not speculate that one may be granted in the future, especially where here only three out of the five asserted patents have IPR petitions on file and the filing deadline has passed. This *Fintiv* factor weighs in favor of denial.

2. Trial Will Occur Before the Board's Final Written Decision

The District Court Action will be complete three months before the Board's Final Written Decision. Fact discovery closes in the District Court Action on May 26, 2003 and expert discovery closes August 4, 2024. Ex. 2002. The District Court Action is set for trial beginning January 23,2024. *Id.*

In contrast, if this proceeding is instituted, a Final Written Decision would not be expected until April 2024, three months after the trial in the District Court Action. *See* 35 U.S.C. §316(a)(11). As the Board has recognized, this fact pattern weighs in favor of denying the Petition. There is no indication that the trial will be delayed for any reason at this point. The District Court Action was filed on August 20, 2021, almost one and a half years ago. Indeed, even considering Petitioner's noting an average time from *Markman* Order to trial in the CD Cal. of 15 months, VIZIO should have known a trial would still occur by about February/March 2024, about one month prior to the Board's issuance of a Final Written Decision as VIZIO is well aware that the CD Cal. District Court issues tentative rulings prior to the *Markman* hearing, which is usually adopted as the final shortly thereafter—precisely what happened in this case. This *Fintiv* factor weighs in favor of denial.

3. Significant Investment of Time and Resources by The Court And the Parties Has Already Occurred

Since the filing of the Petition, the parties have significantly invested in the District Court Action. For example, the parties have served and responded to discovery including making large document productions, engaged in early motion briefing, a technology tutorial and hearing on a motion to dismiss, engaged in full claim construction briefing and depositions of experts relating to claim construction, a claim construction hearing and Order, another scheduling conference, and

discovery continues and closes in about five months, around the time of the Board's anticipated decision on Institution. *See* Ex. 2002. This *Fintiv* factor weighs in favor of denial.

4. Petitioner Fails To Offer A *Sotera* Stipulation And There Is Significant Overlap Between Issues Raised In The Petition And In The District Court Litigation

The issues in this proceeding are substantially the same as in the District Court Action. Here, VIZIO asserts that Claims 1, 2, 8-10 and 13 of the '507 Patent are unpatentable. Petition at 1. These claims include the asserted claims against VIZIO in the District Court Action. The prior art that VIZIO relies on in supporting its Petition is the same as the prior art at issue in the District Court Action. *See* Ex. 2003. In light of the Director's Guidance, VIZIO's failure to make a *Sotera* stipulation weighs against institution. "When a petitioner stipulates not to pursue in a parallel district court proceeding the same grounds as in the petition *or any grounds that could have reasonably been raised in the petition*, it mitigates concerns of potentially conflicting decisions and duplicative efforts between the district court and the PTAB. *See Sotera*, Paper 12 at 18- 19." Director's Guidance at 7 (emphasis added). But VIZIO does not even address the overlap in prior art. Petition at 95. Of course, this leaves VIZIO free to raise the grounds in this petition and other grounds in the District Court Action that could have been raised in the petition, including all

of those set forth in its invalidity contentions (*see* Ex. 2003). Such an approach is directly opposite the intended effect of the Director's Guidance and the Board's guidance in *Sotera.*

Given that the Petition is directed toward the same claims, same grounds, same arguments, and significantly overlapping evidence at issue in the parallel District Court proceeding, and since Petitioner has not sought to mitigate any of these concerns, this factor favors denial of institution.

5. VIZIO is Both Petitioner and Defendant

VIZIO is both petitioner and defendant. Paper 1 at 7. Contrary to Petitioner's argument, as set forth above the District Court is highly likely to address the challenged patent prior to the Board. Petition at 94-95. This *Fintiv* factor weighs in favor of denial.

6. Other Considerations

As further set forth below in Section VI, the weakness of the proposed grounds weighs strongly in favor of denial of institution

VI. THE PETITION DOES NOT SHOW A REASONABLE LIKELIHOOD OF PREVAILING WITH RESPECT TO ANY CHALLENGED CLAIM

Petitioner presents six obviousness grounds based on Tichelaar and Kitamura. All grounds fail because Tichelaar and Kitamura do not disclose: "a second controller configured to be started up by a predetermined OS," "the first controller

being smaller in consumption of electric power than the second controller," "configured to control the electric power supplied from the electric power source unit," "the waiting condition in which an image is not displayed after stopping a supply of the electric power to the display portion" and "the electric power supplied from the power source unit is controlled so as to supply the electric power to the remote control signal receiving portion" as required by claims 1 and 2. In addition, the secondary references fail to fill the gaps in Tichelaar and Kitamura in Grounds 2-4 and Ground 6.

A. Ground 1: Vizio Failed To Establish That Claims 1, 2, 10 and 13 Are Obvious Over *Tichelaar* in view of the Knowledge of a POSITA

The Petition should be denied because it does not establish a reasonable likelihood of prevailing on Ground 1 against any of the asserted claims. In Ground 1, Petitioner argues that Claims 1, 2, 10, and 13 of the '507 Patent are obvious over Tichelaar in view of the knowledge of a POSITA. For example, Petitioner has not shown "a second controller configured to be started up by a predetermined OS" as required by claim element 1[b]/2[f]. In addition, Petitioner fails to argue that Tichelaar shows that "the first controller being smaller in consumption of electric power than the second controller" and "configured to control the electric power supplied from the electric power source unit" as required by claim element 1[f]/2[g]. Further, Tiechelar fails to show "the waiting condition in which an image is not

displayed after stopping a supply of the electric power to the display portion" as required by claim element 1[g]/2[h]. Additionally, Tichelaar also fails to show the "the electric power supplied from the power source unit is controlled so as to supply the electric power to the remote control signal receiving portion" as required by the claim elements 1[i]/2[j] and 1[j]/2[k]. Therefore, as explained below, Ground 1 should be denied.

1. Tichelaar fails to disclose claim element 1[b]/2[f] ". . . configured to be started up by a predetermined OS . . ."

The Petitioner fails to show that Tichelaar discloses a second controller that is **configured to be started up by a predetermined OS**. Ground 1 relies on Petitioner's argument that the "main micro-controller 88" accesses SoC resources for doing loads and stores of code and data. Petition at 30. However, loading and storing of code and data is not the same as a controller configured to be started up by a predetermined OS.

In particular, Tichelaar does not disclose an operation system (OS) but instead describes its "main μC 24" needing resources to load and store code and data. Ex. 1008 at [0012]. For example, Tichelaar describes that "the main μC 24 needs additional (high performance) SoC resources for doing **loads and stores of code and data** like, for instance, cache, scratch-pad memory 21, maybe even external memory 29, internal bus 27, and the remote control unit 40." *Id*. (emphasis added).

Further, Petitioner argues that "**software downloads**" implicates OS capabilities. Petition at 30. Petitioner is wrong. A code or a software download does not specifically require an OS. A chip or a processor can download code or software in a memory without an OS.

Petitioner appears to acknowledge that Tichelaar does not disclose a controller configured to be started up by a predetermined OS when it concludes in a cursory fashion that "it would have been obvious to a POSITA to modify Tichelaar's 'main micro controller' to utilize an OS." Petition at 30. But, as stated above, Tichelaar's main controller uses SoC resource to only load and store code and data and does not utilize an OS. Neither Petitioner nor its expert explain why a POSITA would have found it obvious for Tichelaar's main controller to utilize an OS. Petitioner has failed to show that Tichelaar discloses a controller configured to be started up by a predetermined OS.

Therefore, Petitioner failed to establish a reasonable likelihood of success of any claim in Ground 1 and institution should be denied.

2. Tichelaar fails to disclose claim element 1[f]/2[g] "… being smaller in consumption of electric power than the second controller, and configured to control the electric power supplied from the electric power source unit . . ."

Petitioner also fails to show that Tichelaar discloses that the first controller being **smaller in consumption of electric power** than the second controller.

Petitioner argues that the delegate micro controller 90 is "low speed" and "low-power and small" with an interface towards the "main [micro-controller 88]." Petition at 33. But, Petitioner fails to show if Tichelaar discloses that the delegate micro controller 90 consumes less power than the main controller 88. In particular, Tichelaar discloses that "the delegate micro-controller is included on the same integrated circuit (IC) package as the main micro-controller, preferably on the **same IC die**" and that the "delegate micro-controller is preferably adjacent, or close to, the main micro-controller of the system-on-chip," as shown in the following figure in Tichelaar. Ex. 1008 at [0021] and [0022] (emphasis added). However, Tichelaar does not disclose if the two controllers consume the same or different electric power and Petitioner has failed to show where in Tichelaar it describes the electric power consumption comparisons of the two controllers.

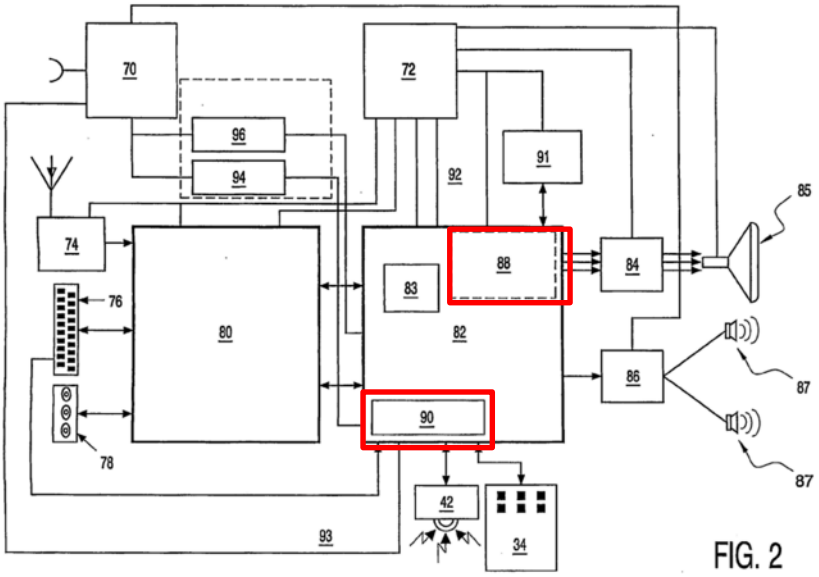


FIG. 2

Additionally, Tichelaar fails to disclose that the first controller is configured to control the power supplied from the electric power source unit. Instead, Tichelaar discloses that "the **delegate µC can have its own local power management control** and is **sleeping** when the TV system is in low-power standby mode and no external triggers are present" and that "[t]he latter sends an interrupt to the delegate controller and its power management unit. The **power management unit wakes up the delegate µC**." Ex. 1008 at [0035] and [0036] (emphasis added). Hence, Tichelaar discloses that instead of the first controller configured to control the power supplied, Tichelaar's "power management unit" controls and wakes up the delegate micro controller on an external trigger. *Id*. Petitioner has failed to show that Tichelaar discloses the first controller being smaller in consumption of electric power than the

second controller and that the first controller is configured to control the power supplied from the electric power source unit.

Therefore, Petitioner failed to establish a reasonable likelihood of success of any claim in Ground 1 and institution should be denied.

3. Tichelaar fails to disclose claim element 1[g]/2[h] "wherein the waiting condition in which an image is not displayed after stopping a supply of the electric power to the display portion, is controlled by the first controller, so as to be placeable into either of a first waiting condition or a second waiting condition"

Tichelaar also fails to disclose that the first controller controls placing into either a first waiting condition or a second waiting condition. Petitioner argues that Tichelaar discloses a "low power standby mode," a "TV active standby mode," and a delegate micro controller 90. However, Petitioner fails to show if Tichelaar discloses that the delegate micro controller 90 controls placing into either a "low power standby mode" or a "TV active standby mode."

Petitioner appears to acknowledge that Tichelaar does not disclose that the delegate micro controller 90 controls placing into either a "low power standby mode" or a "TV active standby mode" when it concludes in a cursory fashion that "Tichelaar also would have at least suggested to a POSITA to control 'active standby' with the 'DμC' in the same manner as it controls 'low-power standby' mode." Petition at 57. Neither Petitioner nor its expert explain why a POSITA would

have found it obvious for Tichelaar's delegate micro controller to control placing in a "low power standby mode," or a "TV active standby mode." Petitioner failed to show that Tichelaar discloses a first controller that controls placing into either a first waiting condition or a second waiting condition.

Therefore, Petitioner failed to establish a reasonable likelihood of success of any claim in Ground 1 and institution should be denied.

4. Tichelaar fails to disclose claim element 1[i]/2[j] "the electric power supplied from the power source unit is controlled, so as to supply the electric power to the remote control signal receiving portion . . ."

The Petitioner also fails to show that Tichelaar discloses that electric power supplied from the power source unit is controlled to supply the electric power to the remote control signal receiving portion. Petitioner argues that the delegate micro controller "controls voltage supplied from SMPS 70" and that the "infrared remote control receiver front-end 42" provides "received remote control signals" to micro controller in both standby modes. Petition at 42. However, as set forth above, Tichelaar discloses that "the delegate µC can have its own local power management control and is **sleeping** when the TV system is in low-power standby mode and no external triggers are present," and that "[t]he latter sends an interrupt to the delegate controller and its power management unit. The power management unit **wakes up the delegate µC**." Ex. 1008 at [0035] and [0036] (emphasis added). Hence,

Tichelaar discloses that instead of the first controller configured to control the power supplied, Tichelaar's "power management unit" controls and wakes up the delegate micro controller on an external trigger. *Id*.

Additionally, Tichelaar discloses that the "infrared receiver 42" is always on and its electric power supply is not controlled by the delegate micro controller. For example, Tichelaar discloses that "neither the infrared receiver front-end nor the capture timer 38 is capable of rejecting the false alarm. The μC 24 is interrupted for handling the capture timer's results. The **μC 24 wakes up when sleeping** (from non-triggered low-power standby mode), starts checking the cause of the interrupt." Ex. 1008 at [0012] (emphasis added). Petitioner has failed to show that Tichelaar discloses the power source unit is controlled to supply the electric power to the remote control signal receiving portion.

Therefore, Petitioner failed to establish a reasonable likelihood of success of any claim in Ground 1 and institution should be denied.

5. Tichelaar fails to disclose claim element 1[j]/2[k] "the electric power supplied from the power source unit is controlled so as to supply the electric power to the remote control signal receiving portion and the second controller including the decoder, under the second waiting condition"

The Petitioner also fails to show that Tichelaar discloses that electric power supplied from the power source unit is controlled to supply the electric power to the

remote control signal receiving portion and the second controller including the decoder. As discussed for limitation 1[i]/2[j], Petitioner fails to show that Tichelaar discloses that electric power supplied from the power source unit is controlled to supply the electric power to the remote control signal receiving portion.

In particular, Tichelaar discloses "low power standby mode" and "TV active standby mode," but does not disclose that electric power is supplied to the "infrared receiver 42" and the "main TV micro-controller 88" in either standby modes. Petitioner appears to acknowledge that Tichelaar does not disclose that the electric power is supplied to the "infrared receiver 42" and the "main TV micro-controller 88" in either standby modes when it concludes in a cursory fashion that Tichelaar would have motivated "a POSITA to provide power to the 'infrared remote control receiver front-end,' the 'main micro-controller, and 'decoder' functionality, in its 'active standby.'" Petition at 58. Neither Petitioner nor its expert explain why a POSITA would have found it obvious for Tichelaar to supply the electric power to the infrared remote control receiver front-end,' and the main micro-controller. Petitioner failed to show that Tichelaar discloses that electric power supplied from the power source unit is controlled to supply the electric power to the remote control signal receiving portion and the second controller including the decoder.

Therefore, Petitioner failed to establish a reasonable likelihood of success of

any claim in Ground 1 and institution should be denied.

6. Claims 8, 9, 10 and 13 Are Patentable

Claims 8, 9, 10 and 13 are dependent on Claim 2. For all the reasons set forth above, Petitioner has not shown that Tichelaar renders Claim 2 unpatentable. As such, Petitioner has not shown that dependent claims 8, 9, 10, and 13 are unpatentable.

B. Ground 2: Vizio Failed To Establish That Claims 1, 2, 8-10 and 13 Are Obvious Over *Tichelaar* in view of POSITA Knowledge and Relan

Petitioner relies on Relan to fill in the gaps as to certain limitations of the independent claims in Ground 1. *See generally* Petition at 61-65. However, Relan also does not disclose the claimed "the electric power supplied from the power source unit is controlled, so as to supply the electric power to the remote control signal receiving portion." *Id*.

Relan discloses a "power control processor 566A" that monitors and stores power information, as shown in the figure below. Ex1010 at [0223]. However, this processor does not control the electric power supplied to the remote control signal receiving portion.

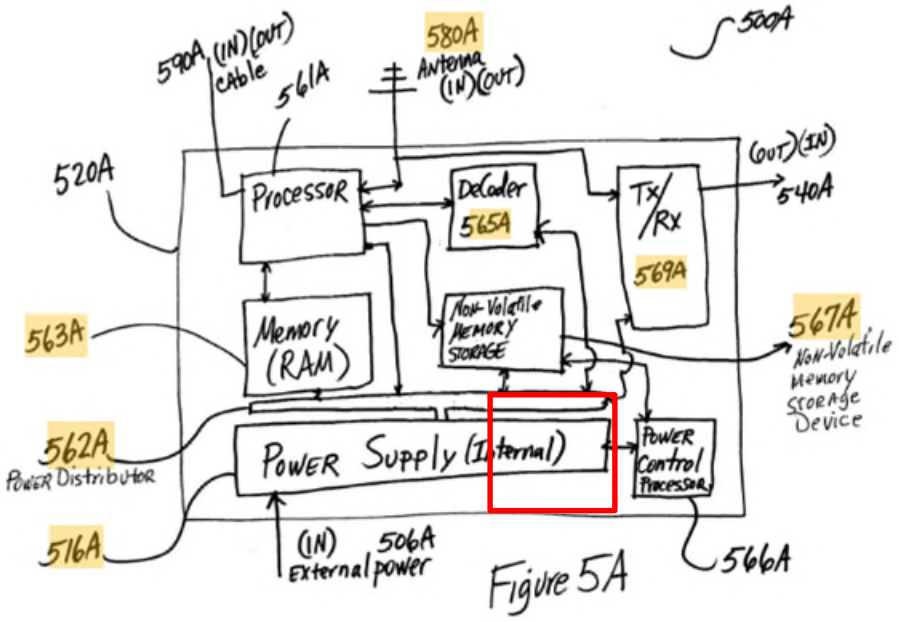


Figure 5A

Additionally, Relan discloses a "processor 561" that conveys multimedia program transmission to audio/video decoder. Ex1010 at [0218]. Petitioner has failed to show which processor, if any, in Relan controls the electric power supplied to the remote control signal receiving portion.

In particular, Relan discloses "standby mode" and "hibernate mode," but fails to disclose that the electric power is supplied to processor 561A, power control processor 566A and remote control signal receiver in "standby mode" and "hibernate mode." Therefore, Relan also does not disclose the claimed "the electric power supplied from the power source unit is controlled so as to supply the electric power to the remote control signal receiving portion and the second controller including the decoder, under the second waiting condition."

Because Ground 2 fails to show that Ticheclaar in view of Relan teaches every limitation of claims 1, 2, 8-10 and 13, Ground 2 should be denied.

C. Ground 3: Vizio Failed To Establish That Claims 1, 2, 10 and 13 Are Obvious Over *Tichelaar* in view of POSITA Knowledge and KIM '616

Petitioner uses Kim '616 to fill in the gaps as to certain limitations of the independent claims in Ground 1 and 2. *See generally* Petition at 66-68. However, Kim '616 also does not disclose the claimed "a second controller configured to be started up by a predetermined OS **to control a processing of a received digital broadcasting signal via a decode**r." *Id*.

In particular, Kim '616 discloses a "computer-based television" that has a TV receiver configured by inserting a TV card 170, including a tuner 171, and a video decoder 174 for MPEG decoding into a computer containing a CPU 110. Ex. 1012 at [0029]-[0038]. More specifically, in Kim '616's system, first the CPU 110 executes the bootloader program, second the video decoder 174 in the TV card 170 performs MPEG decoding, and finally the OS is loaded from HDD150 to RAM130. *Id*. at [0039]-[0042]. Hence, Kim '616's OS executes after and/or separately from the MPEG decoding. Therefore, Kim '616 fails to disclose the claimed "a second controller configured to be started up by a predetermined OS **to control a processing of a received digital broadcasting signal via a decode**r."

Because Ground 3 fails to show that Ticheclaar in view of Relan and Kim ’616 teaches every limitation of claims 1, 2, 10 and 13, Ground 3 should be denied.

D. Ground 4: Vizio Failed To Establish That Claims 1, 2, 10 and 13 Are Obvious Over *Tichelaar* in view of POSITA Knowledge, Relan and KIM ’616

For the same reasons as discussed above for Ground 1 with respect to Tichelaar, Ground 2 with respect to Relan, and Ground 3 with respect to Kim ’616, Petitioner’s Ground 4 obviousness combination also fails.

E. Ground 5: Vizio Failed To Establish That Claims 1, 2 and 13 Are Obvious Over *Kitamura* in view of POSITA Knowledge and KIM ’616

The Petitioner should be denied because it does not establish a reasonable likelihood of prevailing on Ground 5 against any of the asserted claims. In Ground 5, Petitioner argues that Claims 1, 2 and 13 of the ’507 Patent are obvious over Kitamura in view of the knowledge of a POSITA and Kim ’616. For example, Petitioner has not shown “a second controller configured to be **started up by a predetermined OS to control a processing of a received digital broadcasting signal via a decode**r” as required by claim element 1[b]/2[f]. In addition, Petitioner fails to argue that Kitamura shows that “the first controller **being smaller in consumption of electric power** than the second controller” as required by claim element 1[f]/2[g]. Additionally, Kitamura also fails to show the “the electric power supplied from the power source unit is controlled so as to supply the electric power

to the remote control signal receiving portion and the second controller including the decoder, under the second waiting condition" as required by the claim element 1[j]/2[j]. Therefore, as explained below, Ground 5 should be denied.

1. Kitamura fails to disclose claim element 1[b]/2[f] "… configured to be started up by a predetermined OS to control a processing of a received digital broadcasting signal via a decoder"

Petitioner has failed to show that Kitamura discloses a second controller that is configured to be started up by a predetermined OS. Ground 5 relies on Petitioner's argument that the "CPU 111" controls television using programs and data stored in the memory. Petition at 75. However, controlling television using programs and data stored in memory is not the same as a controller configured to be started up by a predetermined OS.

Petitioner appears to acknowledge that Kitamura does not disclose a controller configured to be started up by a predetermined OS when it concludes in a cursory fashion that "[a] POSITA would have understood this to disclose, or at least render obvious, an OS-based main CPU." Petition at 75. But, as stated above, Kitamura's "CPU 111" only uses programs and data stored in the memory. Neither Petitioner nor its expert explain why a POSITA would have found it obvious for Kitamura's CPU 111 to utilize an OS. Petitioner also further states that "to the extent [] that Kitamura does not disclose, or render obvious, an OS-based main CPU, as claimed,

Kim'616 discloses it, as discussed in Grounds 3 and 4 above." Petition at 76. But neither Petitioner nor its expert explain with any detail why a POSITA would have found it obvious to include Kim '616's CPU into Kitamura. Further, as discussed above in Ground 3, Kim '616 also fails to disclose claim element 1[b]/2[f] as Kim '616's OS executes after and/or separately from the MPEG decoding and therefore, Kim '616's OS does not control a signal processing by the decoder. Petitioner has failed to show that Kitamura discloses a controller configured to be started up by a predetermined OS to control a processing of a received digital broadcasting signal via a decoder.

Therefore, Petitioner failed to establish a reasonable likelihood of success of any claim in Ground 5 and institution should be denied.

2. Kitamura fails to disclose claim element 1[f]/2[g] "… being smaller in consumption of electric power than the second controller . . ."

The Petitioner also fails to show that Kitamura discloses the first controller being smaller in consumption of electric power than the second controller. Petitioner fails to show if Kitamura discloses that the "sub-CPU 114" consumes less power than the main CPU. In particular, Kitamura does not disclose if the two CPUs consume the same or different electric power and Petitioner failed to show where in Kitamura it describes the electric power consumption comparisons of the two CPUs.

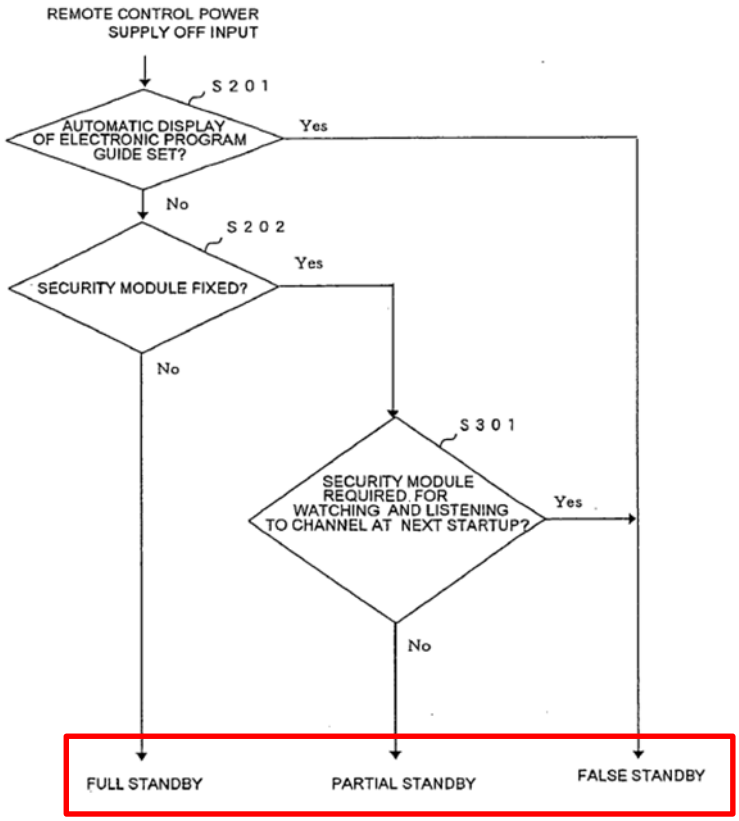
Petitioner failed to show that Kitamura discloses the first controller being smaller in consumption of electric power than the second controller.

Therefore, Petitioner failed to establish a reasonable likelihood of success of any claim in Ground 5 and institution should be denied.

3. Kitamura fails to disclose claim element 1[g]/2[h] "wherein the waiting condition in which an image is not displayed after stopping a supply of the electric power to the display portion, is controlled by the first controller, so as to be placeable into either of a first waiting condition or a second waiting condition"

Kitamura also fails to disclose that the first controller controls placing into either a first waiting condition or a second waiting condition. Petitioner argues that Kitamura discloses three standby power modes that include a "full standby", a "partial standby," and a "false standby," as shown in the following Kitamura figure.

FIG.3



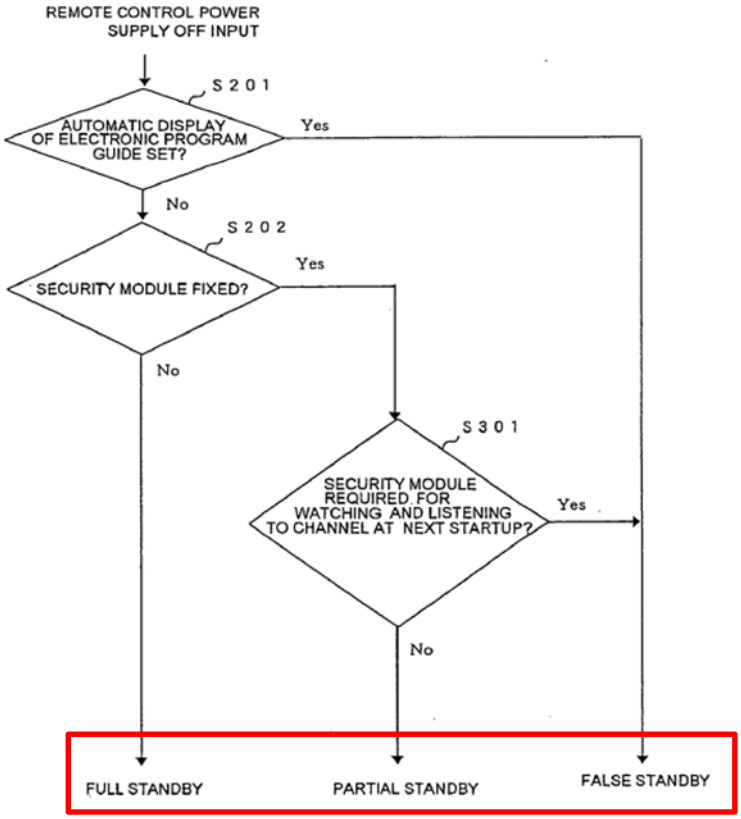
However, Kitamura does not disclose that the "sub-CPU 114" selects the three standby power modes at S201, S202, and S301. In particular, Petitioner fails to disclose which component in Kitamura runs the algorithm, as shown in the above figure, to select the three standby power modes. Hence, the Petitioner has failed to show that Kitamura discloses that the first controller controls placing into either a first waiting condition or a second waiting condition

Therefore, Petitioner failed to establish a reasonable likelihood of success of any claim in Ground 5 and institution should be denied.

4. Kitamura fails to disclose claim element 1[i]/2[j] "the electric power supplied from the power source unit is controlled, so as to supply the electric power to the remote control signal receiving portion and the second controller including the decoder, under the second waiting condition"

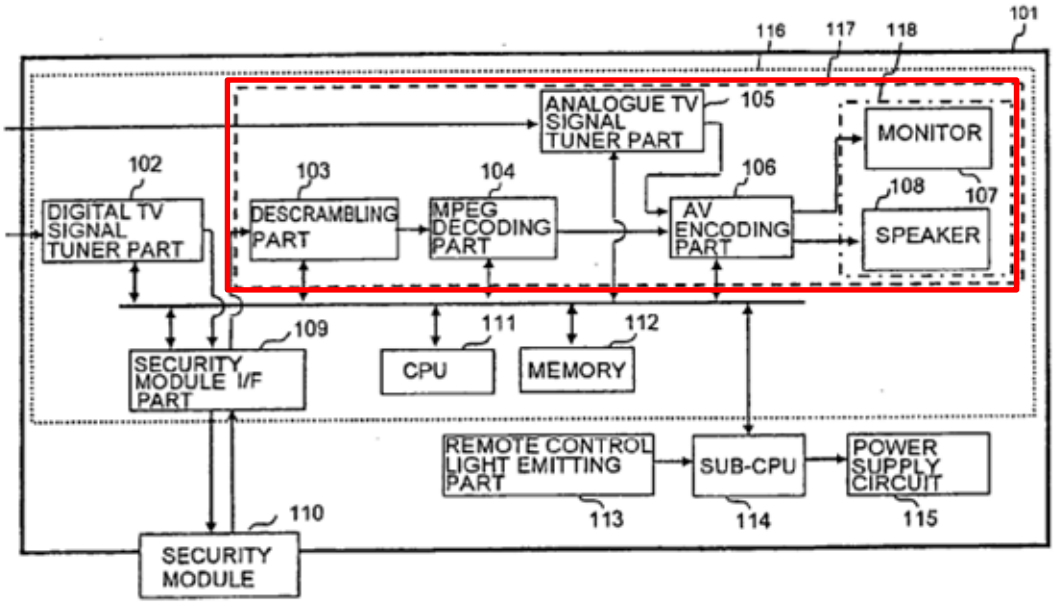
Kitamura also fails to disclose that electric power supplied from the power source unit is controlled to supply the electric power to the remote control signal receiving portion and the second controller including the decoder, under the second waiting condition. Kitamura discloses three standby power modes: a "Full standby" (first waiting condition), a "Partial standby" (second waiting condition), and a "False standby" (third waiting condition) (illustrated in Figure 3). Ex. 1012 at [0030]-[0031].

FIG.3



In the full standby mode (first waiting condition) the power is supplied only to the minimum required hardware. *Id*. Further, in the partial standby mode (second waiting condition) the power is supplied to the minimum required hardware and the security module 111. *Id*. However, as shown in the following Kitamura figure, during the partial standby the electric power is not supplied to the hardware enclosed with dashed lines 117, which includes the MPEG decoder 104. *Id.*

FIG.1



Petitioner failed to show that Kitamura discloses the power source unit is controlled to supply the electric power to the second controller including the decoder, under the second waiting condition.

Therefore, Petitioner failed to establish a reasonable likelihood of success of any claim in Ground 5 and institution should be denied.

5. Claim 13 Is Patentable

Claim 13 is dependent on Claim 2. For all the reasons set forth above, Petitioner has not shown that Kitamura render Claim 2 unpatentable. As such, Petitioner has not shown that dependent claim 13 is unpatentable

F. Ground 6: Vizio Failed To Establish That Claim 10 is Obvious Over *Kitamura* in view of POSITA Knowledge, KIM '616 and Tichelaar

For the same reasons discussed above for Ground 5 with respect to Kitamura, Ground 1 with respect to Tichelaar and Ground 3 with respect to Kim '616, Petitioner's Ground 6 obviousness combination also fails.

VII. CONCLUSION

For at least the foregoing reasons, the Board should deny institution.

Dated: January 13, 2023

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on this 13th day of January, 2023, a copy of the attached **PATENT OWNER'S PRELIMINARY RESPONSE** was served by electronic mail to the attorneys of record, at the following addresses:

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CERTIFICATION PURSUANT TO 37 C.F.R. § 42.24(d)

Pursuant 37 CFR 42.24(d), the undersigned certifies that this Preliminary Response complies with the type-volume limitation of 37 CFR §42.24(a). The word count application of the word processing program used to prepare this Preliminary Response indicates that the Preliminary Response contains 7315 words, excluding the parts of the brief exempted by 37 C.F.R. § 42.24(a).

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