

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

BOE TECHNOLOGY GROUP CO., LTD.,

Petitioner,

v.

PANELTOUCH TECHNOLOGIES LLC,

Patent Owner.

Case IPR2025-01267
U.S. Patent No. 11,126,025

**DECLARATION OF ERIC BRETSCHNEIDER, PH.D. IN SUPPORT OF
PATENT OWNER'S PRELIMINARY RESPONSE**

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	BACKGROUND AND QUALIFICATIONS	3
III.	THE LEVEL OF ORDINARY SKILL IN THE ART.....	10
IV.	APPLICABLE LEGAL STANDARDS	11
A.	Burden of Proof.....	11
B.	Date of Invention	11
C.	Anticipation.....	12
D.	Obviousness	12
E.	Claim Construction	16
F.	Section 112(f) Means Plus Function.....	18
G.	Section 112 Definiteness.....	18
V.	Kim Does Not Disclose Horizontal Gate Lines (Claim 1).	19
VI.	Yoshida does not disclose dummy touch lines.	22
VII.	CONCLUSION.....	23

1. I, Eric Bretschneider, declare as follows:

I. INTRODUCTION

2. I have been retained by counsel for Patent Owner Optronix Sciences LLC in this proceeding. My credentials are described in my curriculum vitae, which is Exhibit 2009. I offer this report in response to the Petition for *Inter Partes* Review, Case No. 2025-01267 regarding U.S. Patent No. 11,126,025 (the “’025 Patent”), filed by Petitioner BOE Technology Group Co., Ltd.

3. I have been asked by Patent Owner’s counsel to offer technical opinions relating to the ’025 Patent, the alleged prior art, and the arguments and opinions presented by Petitioner and its expert, Richard A. Flasck, M.S.

4. I am being compensated at my standard consulting rate of \$500 an hour, plus out-of-pocket expenses. My compensation does not depend on the testimony that I express in this Declaration, or on the outcome of these cases.

5. I have conducted a preliminary review of the papers and exhibits filed in this proceeding as of the date my declaration is signed. I understand that Petition challenged the patentability of claims 1–6, 8–11, 14, 17, and 18 of the ’025 Patent and that claims 1, 10, and 18 are independent claims. Specifically, I understand the Petition sets forth the following challenges:

Ground Number	Ground
1	Claims 1-3, 6 and 9 are obvious under 35 U.S.C. § 103 (post-AIA) (“obvious”) over Kim alone and in combination with Kim II
2	Claims 4, 5 and 8 are obvious over Kim in combination with Kim II and Yoshida
3	Claim 18 is obvious over Yoshida alone
4	Claims 10, 11, 14 and 17 are obvious over Yoshida in combination with Kim II

6. For purposes of my preliminary analysis, I opine on the theories presented in independent claims 1, 10 and 18. I reserve the right to supplement my analysis to address the full breadth of the Petition and to provide greater depth to my analysis of independent claims 1, 10 and 18 in the event the Board decides to institute trial in this proceeding.

7. After performing the analysis described herein and applying the standards outlined below, in my opinion, none of the authorized grounds provide a reasonable basis for concluding that independent claims 1, 10 and 18 of the '025 Patent should be found invalid. Accordingly, it is my opinion that the Petition does not provide a reasonable likelihood that any of the challenged claims are invalid due at least to their dependence from one of claims 1, 10 and 18 as well as the additional limitation recited. My opinions are based on the record evidence, my knowledge and experience in the field, and my opinion as to the level of ordinary skill in the art.

II. BACKGROUND AND QUALIFICATIONS

8. My complete qualifications and professional experience are described in my Curriculum Vitae, a copy of which is attached as Exhibit 2009.

9. I have over 30 years of experience with LEDs, displays, lighting fixtures, and lighting including a comprehensive background in a full range of LED technologies, including solid state lighting (SSL) fixture/lamp design, integration, and reliability, LED chip and package testing and reliability, fabrication, optical design, thermal management, and color conversion.

10. Throughout the course of my career, I have designed and transferred into manufacturing over 150 different LED-based lighting products, including LED lighting products designed to be installed in fixtures and in different lighting environments and applications. I have also designed and transferred into manufacturing dozens of different LED chips and packages for a variety of different applications with a particular focus on display applications and general lighting.

11. I am recognized as a leading expert in matters related to reliability for all types of LED technology and have consulted with numerous companies to help develop internal testing methods and reliability standards for evaluating their products.

12. I am currently the Chief Technology Officer at EB Designs & Technology. In that capacity, I am, among other things, responsible for the design

of solid-state lighting technologies for clients ranging from startups to Fortune 100 companies.

13. I also served as a member of the University of Florida's Department of Chemical Engineering Advisory Board for 25 years, from 1998 until 2022. During my tenure on this Advisory Board, I served as Chair for a total of 8 years. I also served on the Dean's Advisory board for the College of Engineering at the University of Florida from 2007-2009 and 2017-2022. I have been a Conference Chair for LED Measurement and Standards. I am also a member of numerous professional societies, including the International Society for Optics and Photonics (SPIE), Optica, the Society for Information Display (SID), the Materials Research Society (MRS), and the Illuminating Engineering Society (IES).

14. Inside the IES, I am a founding member of the Science Advisory Panel, which has oversight over all testing and technical committees and work groups inside the IES. I am also a full member of the Test Procedures Committee which develops test, measurement and reliability standards for LEDs and lighting fixtures. Inside the Test Procedures Committee, I serve as chair of the projections and reliability subcommittee which develops reliability standards for LED based lighting products including utilizing all forms of lighting technologies. I recently led the work group that revised TM-21 which is the internationally accepted standard for predicting reliability of LED packages. I also developed a new mathematical model

that, for the first time, allows prediction of the color shift of an LED package over its time. This model is the basis for a new IES standard known as TM-35, which predicts the rate of color shift for LED products over time.

15. I joined the IES in 2006 and have been a member of the Test Procedures Committee since that time. As a result, I have been an active participant in the development of testing standards related and have helped to formalize the terminology for solid state lighting since the beginnings of the industry. Additionally, I serve on the IES Color Committee and the IES Photobiology Committee.

16. I previously served as Chief Technology Officer at QuarkStar, LLC., from 2016 until 2023. QuarkStar is primarily a technology development company that is focused on new approaches to improving performance and efficiency of products that rely on LED light sources. In this role, I helped negotiate the company's first technology license to a European manufacturer of lighting fixtures. This technology has since be incorporated into one of their premium product lines. I also lead the efforts to transition products into manufacturing to produce fixtures for the Museum of Fine Arts, Houston (MFAH). These fixtures provide over 60% of the artificial lighting in a \$500 million expansion.

17. Prior to my position at EB Designs & Technology, I served as the Director of Engineering at HeathCo, LLC. In that capacity, I was responsible for

advanced technology/product development related to solid-state lighting, sensors, notifications, and control products.

18. Prior to my position as Director of Engineering at HeathCo, I was at the Elec-Tech International Co., Ltd., where I held the positions of Chief Engineer, ETi Lighting Research Institute and VP of Research and Development, ETi Solid State Lighting. In my Elec-Tech capacities, my responsibilities included developing all technology and product roadmaps for markets in North America, China, Europe, and Japan. I designed and developed LEDs, LED packages and LED based lighting products for all of these markets.

19. Between 2008 and 2011, I was at Lighting Science Group Corporation (LSG), first as a product development manager, and my responsibilities included developing solid state lighting products, then as VP of Research, and my responsibilities included developing advanced LED models for product development and production control. In these roles, I was involved in the design and manufacture of numerous LED-based lighting fixtures and products. The products I helped launch included LSG's C2D (Curb to Door) products. These products were designed to be installed in outdoor locations including wall packs, parking lots, and streetlights. These fixtures, particularly the wall pack fixtures, were also suitable for installation in public transportation areas.

20. Between 2004 and 2008, I was at Toyoda Gosei North America, where I was a sales manager, and my responsibilities included managing and developing LED die and package sales accounts from the eastern region of North America. I was also tasked with providing technical support for the entire western hemisphere. The support I provided included design of LED packages and design of lighting fixtures and products that incorporated LED packages. Notable successes at Toyoda Gosei included expanding market niches and applications for LED based backlights for LCD displays. I provided significant technical and design support to large customers, including 3M, Global Lighting Technologies, Apple, Dell, and Hewlett Packard related to LCD displays.

21. Between 2003 and 2004, I was at Beeman Lighting, where I was Director of Solid State Lighting Engineering, and my responsibilities included leading development of solid state lighting systems and materials.

22. Between 1998 and 2003, I was at Uniroyal Optoelectronics. Uniroyal Optoelectronics was a joint venture between Uniroyal Technology Corporation and Emcore Corporation which was initially focused on development and production of GaN-based and AlInGaP-based LED chips. Later, Uniroyal Optoelectronics expanded their scope to include LED packages. At Uniroyal Optoelectronics, I held a number of positions including Team Leader for the Epitaxial Growth and Materials Characterization areas, Sr. Epi Scientist, Director of Intellectual Property, University

Relations and Government Contracts. My responsibilities included MOCVD hardware modification, epitaxial process development as well as design, development and testing of new LED chip structures for both AlInGaP and GaN-based material systems. I was also responsible for providing technical support and assistance to customers on topics related to use of LED chips, design of LED packages and design of LED based lighting products and systems. This support included both optical and thermal design of LED packages and LED lighting products. My work at Uniroyal included providing technical support and package design for Kopin which resulted in the development of full color micro displays that were used as electronic viewfinders for Kodak digital cameras.

23. I have also authored and presented more than a total of 30 publications, presentations, and seminars, and I am a named inventor on over 65 issued patents and more than 25 pending patents.

24. I earned a bachelor's degree in Chemical Engineering from Tulane University in 1989.

25. I earned a Ph.D. in Chemical Engineering from the University of Florida in 1997, where my graduate work focused on development of optoelectronic devices, including novel silicon based visible LEDs and sulfide based TFELD structures and zinc selenide blue LEDs. As a graduate student, I was also an active participant in the Phosphor Technology Center of Excellence (PTCOE). The

PTCOE was a large research consortium that was focused on technology development of display technology for electroluminescent (both alternating current and direct current) displays, field emission displays, and plasma displays.

26. In 1989 I worked for Shell Oil Corporation in Norco, LA. I was tasked with modeling heat exchanger performance for the crude oil distillation column in order to identify cost saving opportunities. I developed an improved model for determining the operating efficiency of heat exchange units that incorporated determined the economic impact on different operating conditions. The model was designed to be compatible with all major operating units on site and resulted in costs savings of over \$20 million/year at the Norco Facility alone. My work was quickly adopted throughout the entire corporation and has resulted in sustained annual cost savings of approximately \$500 million/year.

27. Based on the above education and experience, I believe that I have a detailed understanding of the state of the art during the relevant period, as well as a sound basis for opining how persons of ordinary skill in the art at that time would understand the claim terms and technical issues in this case. I meet Petitioner's proposed definition, which is "a bachelor's degree in electrical engineering, physics, or a similar discipline, along with 2-3 years of display and touch panel technology experience. Relevant experience can substitute for education and *vice versa*",

because I have a B.S. and a Ph.D. in Chemical Engineering as well as over 30 years of experience in display and touch panel technology.

28. The opinions stated in this declaration are based on my own personal knowledge and professional judgment; if called as a witness during any proceeding in this matter I am prepared to testify competently about them.

29. In forming my opinions, I have considered the materials discussed and cited herein, including the asserted patents, the prosecution histories of the patents, and the prior art references discussed herein, and any other references referred to or cited in this declaration.

III. THE LEVEL OF ORDINARY SKILL IN THE ART

30. I have been informed that my analysis of the Challenged Claims should be viewed from the perspective of a person of ordinary skill in the art (POSITA) as the earliest claimed priority date, which I have been informed is February 28, 2019.

31. I understand that a POSITA is a hypothetical person presumed to have known the relevant art at the time of the invention. I have been informed that in determining the level of ordinary skill in the art the following factors may be considered none of which is predominant: (1) type of problems encountered in the art; (2) prior art solutions to those problems; (3) rapidity with which innovations are made; (4) sophistication of the technology; and (5) educational level of active workers in the field.

32. I understand that Mr. Flasck has opined that a POSITA “would have had at least a bachelor’s degree in electrical engineering, physics, or a similar discipline, along with 2-3 years of display and touch panel technology experience. Relevant experience can substitute for education and *vice versa*.” Ex. 1003, ¶35.

33. For purposes of my preliminary opinion, I will use Mr. Flasck’s proposed definition of a POSITA but reserve the right to supplement my opinion if trial is instituted. I was, at all relevant times, at least a POSITA in the art relevant to the challenged patent.

IV. APPLICABLE LEGAL STANDARDS

34. I am not a lawyer and offer no legal opinions. My analysis and opinions are based on my expertise in this technical field and on the instruction that counsel has given me for the legal standards outlined in the rest of this section. These principles are summarized below.

A. Burden of Proof

35. I understand that the petitioner must prove invalidity of a patent claim by a preponderance of the evidence, that is, the evidence must be sufficient to show that a fact or legal conclusion is more likely than not.

B. Date of Invention

36. I have been asked to use the date of the filing of the earliest application to which priority is claimed (i.e., February 28, 2019) as the date of invention for purposes of my analysis.

C. Anticipation

37. I understand that a claim may be anticipated if a prior art disclosure teaches each and every element required by the claim, either expressly or inherently. The identical invention must be shown in as complete detail as is contained in the claim. When a claim covers several structures or compositions, either generically or as alternatives, the claim is deemed anticipated if any of the structures or compositions within the scope of the claim is known in the prior art.

38. I understand that, once the claims of a patent have been properly construed, the next step in determining anticipation of a patent claim requires a comparison of the properly construed claim language to the prior art on a limitation-by-limitation basis.

D. Obviousness

39. I understand that even if a patent claim is not anticipated, it may still be invalid if the differences between the claimed subject matter and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person of ordinary skill in the pertinent art.

40. I also understand that a patent may be rendered obvious based on an alleged prior art reference or a combination of such references plus what a person of ordinary skill in the art would understand based on his or her knowledge and the references. It is also my understanding that in assessing the obviousness of claimed subject matter one should evaluate obviousness over the prior art from the perspective of one of ordinary skill in the art at the time the invention was made (and not from the perspective of either a layman or a genius in that art).

41. I understand that a patent claim composed of several elements is not proved obvious merely by demonstrating that each of its elements was known in the prior art. There must be a reason for combining the elements in the manner claimed. That is, there must be a showing that a person of ordinary skill in the art at the time of the invention would have thought of either combining two or more references or modifying a reference to achieve the claimed invention.

42. I understand that an obviousness determination includes the consideration of the following factors: (1) the scope and content of the prior art, (2) the differences between the prior art and the claims at issue, (3) the level of ordinary skill in the art, and (4) any secondary indicia of non-obviousness (*e.g.*, “secondary considerations” such as commercial success in the marketplace of the claimed invention), to the extent that they exist. I understand that the following are examples of approaches and rationales that may be considered:

43. Combining prior art elements according to known methods to yield predictable results;

44. Simple substitution of one known element for another to obtain predictable results;

45. Use of a known technique to improve similar devices (methods, or products) in the same way;

46. Applying a known technique to a known device (method or product) ready for improvement to yield predictable results;

47. Applying a technique or approach that would have been obvious to try (choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success);

48. Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to a person having ordinary skill in the art; and

49. Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

50. I understand that the burden is on the petitioner to explain how an invention is obvious if one of ordinary skill in the art, facing a wide range of needs

created by developments in the field, would have seen an obvious benefit to the solutions tried by the applicant. I further understand when there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, it may be obvious to a person of ordinary skill to try the known options. If a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique would have been obvious.

51. I understand that the burden is on the petitioner to explain how specific references could be combined, which combinations of elements in specific references would yield a predictable result, and how any specific combination would operate or read on the claims. I further understand that the petitioner cannot rely on conclusory statements but must instead provide a reasoned explanation supported by evidence. I also understand that obviousness does not exist where the prior art discourages or teaches away from the claimed invention. I also understand that even if a reference does not teach away, its statements regarding preferences are relevant to a finding whether a person skilled in the art would be motivated to combine that reference with another reference.

52. I also understand that one of ordinary skill in the art must have a reasonable expectation of success in combining or modifying prior art references.

53. I also understand that all elements of a claim must be considered in an obviousness analysis.

54. I understand that it is impermissible to use hindsight to arrive at the claimed invention. My understanding is that the inventor's own path never leads to a conclusion of obviousness. I also understand that, when assessing whether there was a motivation to combine references to teach a claim element, defining the problem in terms of its solution reveals improper hindsight.

E. Claim Construction

55. I understand that claims are construed from the perspective of a person of ordinary skill as of the effective filing date of the patent application. A "person of ordinary skill in the art" is a hypothetical person who is presumed to have known the relevant art at the time of the invention.

56. I understand that persons of ordinary skill in the art are deemed to read the claims in the context of the entire patent, including the specification and prosecution history.

57. I understand that the claims define the invention and the terms used in the claims are generally given their plain and ordinary meanings they would have to a person of ordinary skill in the art at the time of the effective filing date of the application. The context of a claim can be particularly helpful, and other claims may inform the meaning of a term in a particular claim.

58. I understand that claim terms are normally used consistently throughout a patent. Thus, the meaning of a term may help inform the meaning of the same term in other claims. Differences between claims may also help define the terms, although this may not be the case where the specification or prosecution history indicate that such differences do not impact the scope of the claims.

59. I understand that a patentee can act as its own lexicographer by defining a term, in the patent specification, to have a specific meaning. It is my understanding that statements made to the patent office by the patentee or its legal representative during prosecution can serve to illuminate, or possibly narrow the proper scope of claim terms, and that such statements must be considered when construing the claim terms. This is sometimes referred to as a disclaimer. I have taken into account these principles in my analysis.

60. I understand that reference materials that were publicly available at the time that the patent application was filed, such as dictionaries, treatises or other technical references, may provide context and background for deciphering how one of ordinary skill in the art would have considered the terms used in the claims.

61. However, I understand that such references, as well as testimony (including this report) are generally known as “extrinsic evidence,” and are accorded less weight than evidence found within the patent and prosecution history. In addition, I understand that extrinsic evidence that is inconsistent with the claims,

specification, or prosecution history should not be considered in the claim construction process.

F. Section 112(f) Means Plus Function

62. I understand that under pre-America Invents Act (AIA) 35 U.S.C. § 112(6) and post-AIA § 112(f) “An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.”

63. I understand that when claim terms use the words “means . . . for” and recites a function, and the term does not recite any structure for performing that function, the term should be construed pursuant to Section 112(f) looking for a corresponding structure, material, or act described in the specification and equivalents.

G. Section 112 Definiteness

64. I understand that, under 35 U.S.C. § 112 ¶ 2, “[t]he specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.”

65. I understand that that claims must be definite. This means that the claims must particularly point out and distinctly claim the subject matter that the

applicant regards as her invention. I understand that indefiniteness is evaluated from the perspective of a person of ordinary skill in the art at the time of a patent's filing. I understand that a patent claim is indefinite if the claim, when read in light of the specification and the prosecution history, fails to inform, with reasonable certainty, a person of ordinary skill in the art of the scope of the invention. Absolute or mathematical precision in claim language is not required and even if more than one interpretation is presented for a claim term, the term may still be definite if an informed and confident choice is available among the contending alternative definitions.

V. Kim Does Not Disclose Horizontal Gate Lines (Claim 1).

66. Limitation [1-C] recites “gate lines that extend along the first direction and supply gate signals to the transistors respectively.” Under the Petition’s theory, the “first direction” is “horizontal.” *See* Pet. at 27 (“For purposes of this claim mapping, the ‘first direction’ will refer to horizontal....”). I have reviewed the teachings of Kim (Ex. 1005), and it is my opinion that nothing in Kim discloses, expressly or inherently, gate lines that run horizontally.

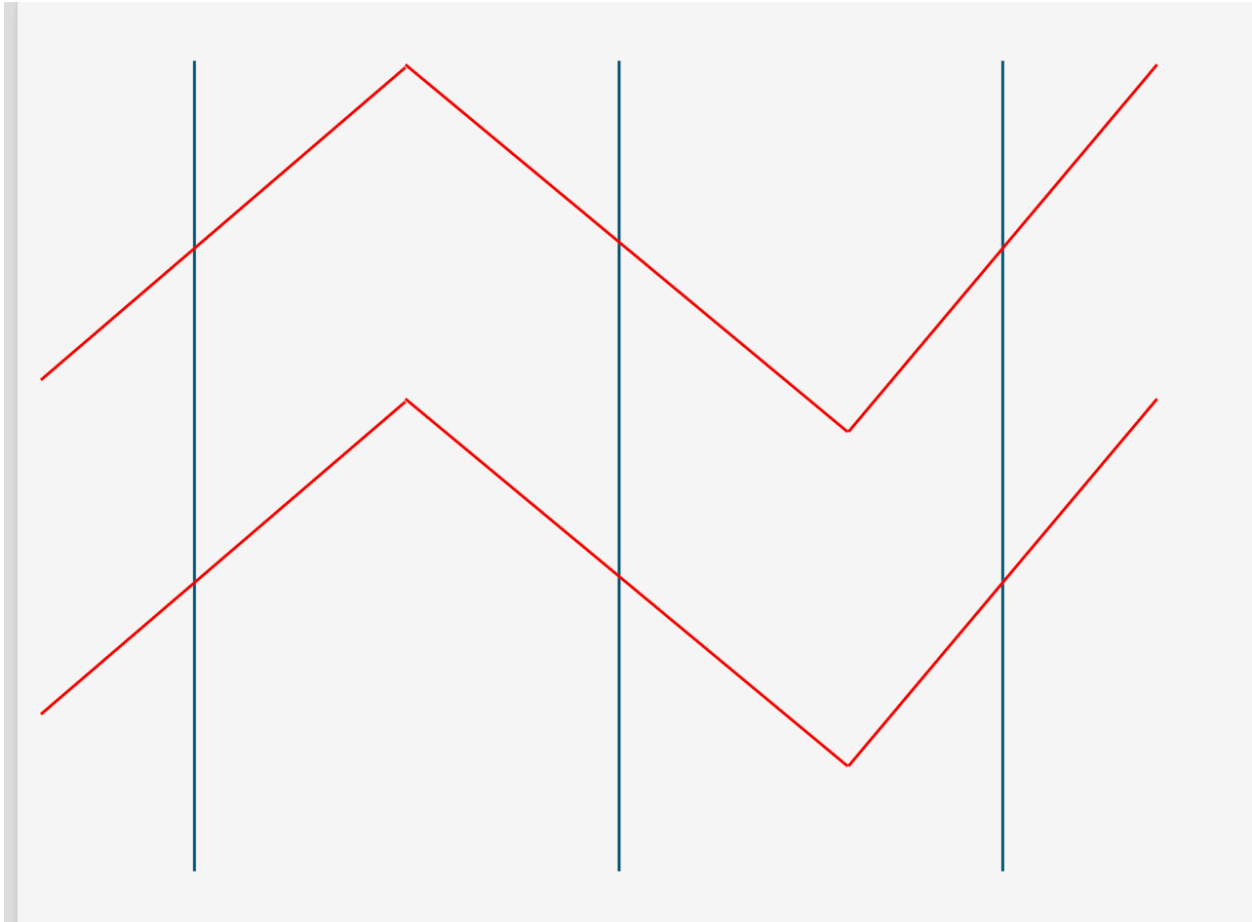
67. I have reviewed Mr. Flasck’s declaration, including the portion cited by the Petition for support that Kim’s gate lines would extend in a horizontal direction (Ex. 1003, ¶¶ 115–118). In my opinion, Mr. Flasck takes a very large leap of faith that is not expressly or inherently supported by the teachings of Kim.

68. Mr. Flasck's opinion states: "Kim's disclosures nonetheless make clear that the gate lines extend horizontally. Kim teaches that the gate lines intersect with the data lines, which, in an array-based panel such as Kim's, would be understood to mean that the gate lines are perpendicular to the data lines. [] Because Kim makes clear that its data lines run in the vertical direction . . . it follows that the gate lines must run horizontally." Ex. 1003, ¶ 116.

69. In my opinion, the disclosure of Kim does not support Mr. Flasck's inference that Kim's gate lines must run horizontally. Mr. Flasck is conflating "intersect with" and "perpendicular to." A POSITA would have known that there are a variety of configurations that allow gate lines to intersect with data lines without the gate and data lines being perpendicular, and nothing in Kim supports his theory that Kim's gate lines must extend horizontally.

70. I note that any line that is not exactly parallel to another line can intersect with each other. In other words, nothing about two lines intersecting *requires* that the lines be *perpendicular*. In my experience, this holds true for gate lines in touch panels, which could extend a variety of directions within a panel. For example, a line that extends at a 30 degree or a 45 degree angle is not horizontal but would still intersect with Kim's data lines.

71. For example, I have produced the image below showing a common configuration of gate lines that intersect with data lines without being orthogonal to the data lines:



72. I note that the depiction above is simply one exemplary option that was known to a POSITA at the time of the '025 Patent. There are many other configurations used in the art that similarly do not require that the data and gate lines be perpendicular with each other. For these reasons, I do not agree that a POSITA reading Kim would understand that the gate lines extend horizontally.

VI. Yoshida does not disclose dummy touch lines.

73. I have been asked to consider whether Yoshida's spare touch line is a dummy touch lines under the construction that a dummy touch line is a "a line that does not carry a touch signal" and is "non-functional as a touch line." In my opinion, Yoshida's spare touch lines do not meet this definition.

74. In fact, Yoshida is clear that the spare touch lines are functional lines that do carry touch signals—they are "spare" touch lines used in repairs. Ex. 1008, ¶ [0035] ("The present embodiment is provided with the spare touch line (line, spare position detection line) 41 enabling a repair when a disconnection has occurred in the touch lines 31 configured as described above"), ¶ [0037] ("If a disconnection has occurred in the touch line 31, as illustrated in FIG. 7, laser light is irradiated onto overlapping parts of the first connection-enabling portion 42 connected, via the first spare touchline contact hole CH3, to the touch electrode 30 being connected to the touch line 31 having the disconnection, and the spare touch line 41."). While spare touch lines may not always be in use, neither are touch lines—for example, when the device is powered off. Yoshida's spare touch lines ***must be functional touch lines in order to be spare touch lines that allow for repair***—otherwise they could not be used for repairs as explicitly contemplated by Yoshida.

75. In my opinion, to the extent the proposed definition "dummy touch lines" is interpreted to encompass every line that is not actively carrying a touch

signal (e.g., a “dummy touch line” is “a line that does not carry a touch signal”), the construction would render the terms meaningless. For example, under such an interpretation, every line in the device that is not actively carrying a touch signal would be a dummy touch line. When the device is powered off, this would include nearly every, if not every line (including, for example, touch lines, power supply lines, data lines, and clock lines) when the device is powered off—no POSITA would consider such lines to be “dummy touch lines.” As such, there would be no distinction between the claimed “touch lines” and “dummy touch lines” and the terms would not have any meaning.

VII. CONCLUSION

76. It is my opinion that the Petition does not have a reasonable likelihood of success on the merits. I reserve the right to supplement my opinion in the event trial is instituted.

77. In signing this Declaration, I understand that the Declaration will be filed as evidence in contested cases before the Patent Trial and Appeal Board of the United States Patent and Trademark Office. I acknowledge that I may be subject to cross-examination in this case and that cross examination will take place within the United States. If cross examination is required of me, I will appear for cross examination within the United States during the time allotted for cross examination.

78. I declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the '025 Patent.

Executed on November 18, 2025 at Parker, Colorado.



Eric Bretschneider, Ph.D.