

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION**

OPTRONIC SCIENCES LLC,

Plaintiff,

v.

BOE TECHNOLOGY GROUP CO., LTD.,

Defendant.

Case No. 2:24-cv-00577-JRG

JURY TRIAL DEMANDED

**DEFENDANT BOE TECHNOLOGY GROUP CO., LTD. (“BOE’S”) INVALIDITY  
CONTENTIONS**

**DEFENDANTS' INVALIDITY CONTENTIONS**  
***Optronic Sciences LLC v. BOE Technology Group Co., LTD., 2:24-cv-00577-JRG (E.D. Tex.)***

Pursuant to the Docket Control Order (D.I. 24) and Local Patent Rules for the Eastern District of Texas ("P.R.") 3-3 and 3-4, Defendant BOE Technology Group Co. ("BOE") hereby provides its Invalidity Contentions in response to the Infringement Contentions provided by Optronic Sciences LLC ("Optronic") on January 21, 2025, in which Optronic asserted:

- (1) U.S. Patent No. 7,688,934 (the "'934 patent"), claim 1;
- (2) U.S. Patent No. 8,208,084 (the "'084 patent"), claims 1, 2, 4, 8 and 11;
- (3) U.S. Patent No. 8,502,757 (the "'757 patent"), claims 1 and 16; and
- (4) U.S. Patent No. 8,604,471 (the "'471 patent"), claims 1 and 17.

(collectively, the "Asserted Patents" and "Asserted Claims"). In addition, based on its investigation to date, BOE hereby produces the prior art references on which these Invalidity Contentions are based, as well as other documents that P.R. 3-4 mandates.

By providing these contentions, BOE in no way admits to the adequacy of Optronic's Infringement Contentions. To the contrary, BOE expressly reserves the right to supplement these contentions if and/or when Optronic is granted leave to supplement its contentions in light of the numerous deficiencies therein.

**I. GENERAL RESERVATIONS**

BOE reserves the right to revise or supplement these contentions in light of party and third-party discovery (such as discovery from third party system developers), any amendment of Optronic's infringement contentions, any claim construction order issued by the Court, review and analysis by expert witnesses, and further investigation and discovery regarding the defenses asserted by BOE. For example, BOE expressly reserves the right to amend these contentions if Optronic amends its infringement contentions, after issuance of the claim construction order, in the event Optronic provides any information that it failed to provide in its disclosures, or if Optronic amends its disclosures in any way. Further, because discovery is ongoing, BOE

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reserves the right to revise, amend, and/or supplement the information provided herein, including identifying, charting, and relying on additional references. Further, BOE reserves the right to revise, amend, or supplement when Optronic provides additional discovery. Further, BOE reserves the right to revise their ultimate contentions concerning the invalidity of the asserted claims, which may change depending upon further and ongoing investigation, the construction of the asserted claims and/or positions that Optronic or expert witnesses may take concerning claim construction, infringement, and/or invalidity issues.

Prior art not included in this disclosure, whether known or not known to BOE, may become relevant. In particular, BOE is currently unaware of the extent, if any, to which Optronic will contend that limitations of the asserted claims are not disclosed in the prior art identified by BOE. To the extent that such an issue arises, BOE reserves the right to identify other references that would anticipate and/or render obvious the allegedly missing limitations of the claims. BOE reserves the right to rely on any reference found in the prosecution histories of the applications leading to the asserted patents or otherwise identified in connection with this action.

Many of the following contentions reflect constructions of claim limitations consistent with or implicit in Optronic's infringement allegations or proposed claim constructions and no inference is intended nor should any be drawn that BOE agrees with Optronic's infringement allegations or claim constructions, and BOE expressly reserves the right to contest such allegations and claim constructions. BOE offers such contentions in response to Optronic's Infringement Contentions and without prejudice to any position that BOE may ultimately take as to any claim construction issues. Specifically, BOE bases these invalidity contentions at least in part upon the claim scope and certain claim constructions that are implicitly or explicitly asserted

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by Optronic, and nothing herein should be construed or represented as evidencing any express or implied agreement with any of Optronic's claim constructions or infringement positions.

BOE intends to rely on admissions concerning the scope of the prior art relevant to the asserted patents found in, *inter alia*: the asserted patents and related patents and/or patent applications; the patent prosecution histories for the asserted patents and related patents and/or patent applications (including all prior art cited therein); any deposition testimony of the named inventors on the asserted patent and related patents and/or patent applications in this matter or any other matter; evidence and testimony relating to the level of skill in the art; and the papers filed and any evidence submitted by Optronic in connection with this matter.

BOE's claim charts cite to particular teachings and disclosures of the prior art as applied to features of the asserted claims. However, persons of ordinary skill in the art ("POSITA") generally may view an item of prior art in the context of other publications, literature, products, and understanding. As such, the cited portions are only examples, and BOE reserves the right to rely on uncited portions of the prior art references and on other publications, expert testimony, and other evidence as aids in understanding and interpreting the cited portions, as providing context thereto, and as additional evidence that the prior art discloses a claim limitation or any of the asserted claims as a whole. BOE further reserves the right to rely on uncited portions of the prior art references, other publications, and testimony, including expert testimony, to establish bases for combinations of certain cited references that render the asserted claims obvious.

The references discussed in the claim charts may disclose the elements of the asserted claims explicitly and/or inherently, and/or they may be relied upon to show the state of the art in the relevant timeframe. The suggested obviousness combinations are provided in addition to

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and/or in the alternative to BOE's anticipation contentions and are not to be construed to suggest that any reference included in the combinations is not by itself anticipatory.

The following discussion and exhibits provide exemplary prior art citations and obviousness positions. The citations and discussion in the charts are organized by claim (and claim limitation) for convenience, but each limitation or claim section applies to the larger context of each claim, to any related dependent or independent claims, as well as all claims containing similar limitations or elements. For example, citations as to any recited limitation, step, or component in the claims apply wherever each such limitation, step, or component is repeated elsewhere in the claim or patent. Where BOE cites to a particular drawing or figure in the attached claim charts, the citation encompasses the description of the drawing or figure, as well as any text associated with the drawing or figure. Similarly, where BOE cite to particular text concerning a drawing or figure, the citation encompasses that drawing or figure as well. Relatedly, certain portions of patent or other prior art disclosures build upon other disclosures, even if they are referred to as a separate or alternative embodiment. Thus, BOE's citations to structures or functions incorporate by references all disclosures to related structures or functions, including any additional detail provided as to the operation or design of those structures or functions.

Discovery, including discovery relating to inventorship, is ongoing. BOE reserves the right to assert that the asserted claims are invalid under 35 U.S.C. § 102(f) in the event BOE obtain additional evidence that the inventors of the asserted patents did not invent the subject matter claimed therein. Should BOE obtain such evidence, they will provide the name of the person(s) from whom and the circumstances under which the alleged invention or any part of it was derived.

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BOE also reserves its rights to challenge any of the claim terms herein under 35 U.S.C. § 112 including by arguing that they are indefinite, not supported by the written description, or not enabled. Nothing stated herein shall be construed as a waiver of any argument available under 35 U.S.C. §§ 101, 102, 103, and/or 112.

**II. U.S. PATENT NO. 7,688,934**

**A. Relevant Prior Art**

BOE contends that the prior art references identified in BOE's contentions anticipate and/or render obvious the Asserted Claims. The '934 patent was filed in the United States on March 23, 2009. Despite having the burden of proof, Optronic has failed to demonstrate that any asserted claim of the '934 patent is entitled to a priority date earlier than the U.S. filing date. No claim is entitled to an earlier filing, priority or invention date because no prior application or evidence of invention supports or enables the full scope of the claims at least for the reasons identified below with respect to invalidity under Section 112. In fact, the asserted claim 1 improperly recites impermissible new matter that is not supported by the U.S. application or any alleged priority application, rendering the claim invalid under Sections 112(a/first paragraph) and 132. Below, BOE lists some of the prior art cited in these contentions:

**1. Patents and Patent Application Publications**

<b>Patent or Pub. No.</b>	<b>Filing Date</b>	<b>Publication Date</b>	<b>Statutory Category</b>
U.S. Patent No. 5,222,082 (Plus)	Feb. 28, 1991	June 22, 1993	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent No. 5,517,543 (Schleupen)	Mar. 8, 1994	May 14, 1996	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent No. 5,631,940 (Fujikura)	April 1, 1996	May 20, 1997	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent No. 6,556,646 (Yeo et al.)	Aug. 27, 1999	April 29, 2003	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent No. 7,283,603 (Chien et al.)	April 7, 2006	Oct. 16, 2007	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)

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<b>Patent or Pub. No.</b>	<b>Filing Date</b>	<b>Publication Date</b>	<b>Statutory Category</b>
U.S. Patent No. 7,310,402 (Wei et al.)	Dec. 13, 2005 (prov. Oct. 18, 2005)	Dec. 18, 2007 (and Apr. 19, 2007 as US2007/0086558A1)	Pre-AIA 35 U.S.C. §§ 102(a), (b) & 102(e) and Admitted Prior Art in '934 Patent.
U.S. Patent No. 7,327,161 (Jang et al.)	May 25, 2006	Feb. 5, 2008	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent No. 7,333,586 (Jang)	June 27, 2005	Feb. 19, 2008	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent No. 7,839,374 (Kim et al.)	June 30, 2005	Nov. 23, 2010 (and Mar. 23, 2006 as US2006/0061535A1)	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent No. 7,911,436 (Lee et al.)	Sept. 27, 2006	March 22, 2011	Pre-AIA 35 U.S.C. §§ 102(a) & 102(e)
U.S. Patent Publication No. 2004/0104882A1 (Kitani et al.)	Nov. 25, 2003	June 4, 2004	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent Publication No. 2005/0156859A1 (Jang et al.)	Dec. 27, 2004	July 21, 2005	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent Publication No. 2005/0264514A1 (Kim et al.)	May 31, 2005	Dec. 1, 2005	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent Publication No. 2006/0061535A1 (Kim et al.)	June 30, 2005	Mar. 23, 2006	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent Publication No. 2006/0262074A1 (Shimoda)	May 22, 2006	Nov. 23, 2006	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent Publication No. 2007/0063950A1 (Shin)	Aug. 18, 2006	Mar. 22, 2007	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent Publication No. 2007/0171179A1 (Morosowa)	Jan. 25, 2007	July 26, 2007	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent Publication No. 2007/0297559A1 (Cho et al.)	June 22, 2007	Dec. 27, 2007	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent Publication No. 2008/0116944A1 (Tobita et al.)	Aug. 14, 2007	May 22, 2008	Pre-AIA 35 U.S.C. §§ 102(a), & 102(e)
U.S. Patent Publication No. 2009/0096737A1 (Kim et al.)	May 28, 2008	April 16, 2009	Pre-AIA 35 U.S.C. §§ 102(e)
CN 1704804A	May 31, 2005	Dec. 7, 2005	Pre-AIA 35 U.S.C. §§ 102(a) & 102(b)
CN 1862650A	June 12, 2006	Nov. 15, 2006	Pre-AIA 35 U.S.C. §§ 102(a) & 102(b)

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Patent or Pub. No.	Filing Date	Publication Date	Statutory Category
CN 1881474A	June 13, 2006	Dec. 20, 2006	Pre-AIA 35 U.S.C. §§ 102(a) & 102(b)
CN 101042937A	April 24, 2007	Sept. 26, 2007	Pre-AIA 35 U.S.C. §§ 102(a) & 102(b)
CN 101114525A	Sept. 10, 2007	Jan. 30, 2008	Pre-AIA 35 U.S.C. §§ 102(a) & 102(b)
KR10-2006-0044119A	(Korea) Nov. 11, 2004	May 16, 2006	Pre-AIA 35 U.S.C. §§ 102(a) & 102(b)

### 2. Printed Publications

Defendant continues to investigate printed publications and reserves the right to supplement the contentions and accompanying claim charts after further discovery and investigation.

### 3. Prior Art Systems

The table below lists prior art systems and products identified that reveal the state of the art and/or render the Asserted Claims invalid under 35 U.S.C. §§ 102 and/or 103. Some or all of the supporting references for these systems may also qualify as prior art publications under 35 U.S.C. § 102 and may be used as invalidating prior art under 35 U.S.C. §§ 102 and 103. In particular, the manuals for these products, patents filed to cover these products, and any other publicly available information. Pursuant to P.R. 3-3(a), the date of the offer or use, or the system became known, and the identity of the person or entity are provided in the respective system's claim chart, where applicable, based on the information reasonably available to Defendant. In addition, Defendant continues to investigate the systems and products and reserves the right to supplement the contentions and accompanying claim charts after further discovery and investigation.



**B. Anticipation and Obviousness**

BOE attaches Exhibits A-2 to A-12, which provide exemplary disclosures showing how the prior art anticipates and/or renders obvious the asserted claims of the '934 patent. BOE may rely on any of the primary references identified those exhibits in combination with any secondary reference identified in those exhibits.

The U.S. Supreme Court in *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727 (2007) emphasized that inventions arising from ordinary innovation, ordinary skill, or common sense should not be patentable. *Id.* at 1732, 1738, 1742–1743, 1746. A patent claim may be obvious if the combination of elements was obvious to try or if there existed at the time of the invention a known problem for which there was an obvious solution encompassed by the patent's claims. When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, Section 103 likely bars its patentability. *Id.* at 1740. The Court stated that courts should “look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *Id.* at 1740–41. *KSR* does not mandate evidence of a motivation or suggestion to combine prior art references. *See TGIP, Inc. v. AT&T Corp.*, 527 F. Supp. 2d 561, 580–81 (E.D. Tex. 2007). “[A] court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ” to resolve the question of obviousness. *KSR*, 127 S. Ct. at 1741.

Based on all of these considerations, as further detailed in Exhibits, a POSITA would have combined the teachings of the prior art references discussed and charted in those exhibits.

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The combinations of these references would have rendered obvious to one of ordinary skill in the art the subject matter of the asserted claims of the '934 patent. The references identified in Exhibits are analogous prior art to the subject matter of the asserted claims and are properly combinable. Because these prior art references exist within a single field of art, particularly one in which individuals in the field often shared and/or collaborated on their work, it would have been obvious for a person of skill in the art to look from one piece of prior art to another in order to find any missing functionality they desired to implement. Therefore, these references provide interrelated teachings and one of ordinary skill would look to the concepts in any of these references when seeking to solve the problems purportedly addressed by the '934 patent.

Numerous prior art references, including those identified in the attached exhibits, reflect common knowledge and the state of the prior art before the earliest claimed effective filing date of the '934 patent. As it would be unduly burdensome to create detailed claim charts for all of the invalidating combinations, for at least the reasons described in these invalidity contentions, it would have been obvious to one of ordinary skill in the art to combine any of a number of prior art references, including any combination of those identified in the attached exhibits, to meet the limitations of the asserted claims of the '934 patent. BOE's inclusion of exemplary combinations, in view of the factors and motivations identified here, does not preclude BOE from identifying other invalidating combinations and/or motivations as appropriate.

No showing of a specific motivation to combine prior art is required to combine the references disclosed above and in the attached charts, because each combination of art would have no unexpected results, and at most would simply represent a known alternative to one of ordinary skill in the art. *See KSR*, 127 S. Ct. at 1739–40 (rejecting the Federal Circuit's "rigid" application of the teaching, suggestion, or motivation to combine test, instead espousing an

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“expansive and flexible” approach). Indeed, the Supreme Court held that a person of ordinary skill in the art is “a person of ordinary creativity, not an automaton” and “in many cases a person of ordinary skill in the art will be able to fit the teachings of multiple patents together like pieces of a puzzle.” *Id.* at 1742. Nevertheless, in addition to the information contained herein, BOE hereby identifies additional motivations and reasons to combine the cited art.

One or more combinations of the prior art references identified herein, including the exemplary combinations above, would have been obvious because these references would have been combined using: known methods to yield predictable results; known techniques in the same way; a simple substitution of one known, equivalent element for another to obtain predictable results; and/or a teaching, suggestion, or motivation in the prior art generally. In addition, it would have been obvious to combine the prior art references identified above because there were only a finite number of predictable solutions and/or because known work in one field of endeavor prompts variations based on predictable design incentives and/or market forces either in the same field or a different one. In addition, the combinations of the prior art references identified above would have been obvious because the combinations represent the known potential options with a reasonable expectation of success.

Additional evidence that there would have been a motivation or reason to combine the prior art references identified above includes the interrelated teachings of multiple prior art references; the effects of demands known to the design community or present in the marketplace; the existence of a known problem for which there was an obvious solution; the existence of a known need or problem in the field of endeavor at the time of the invention; and the background knowledge that would have been possessed by a person having ordinary skill in the art. For

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example, the prior art references are generally directed to the same problems. Thus, a skilled artisan seeking to solve these problems would look to these cited references in combination.

Thus, the motivation or reason to combine the teachings of the prior art references disclosed herein is found in the references themselves and in: (1) the nature of the problems being solved; (2) the express, implied, and inherent teachings of the prior art; (3) the knowledge of a POSITA; (4) the fact that the prior art is generally directed towards the same problems; and/or (5) the predictable results obtained in combining the different elements of the prior art; (6) the use of a known technique to improve similar devices, methods, or products in the same way; (7) the predictable results obtained in applying a known technique to a known device, method, or product ready for improvement; (8) the finite number of identified predictable solutions that had a reasonable expectation of success; and (9) known work in various technological fields that could be applied to the same or different technological fields based on design incentives or other market forces.

BOE incorporates by reference prior art from the prosecution histories and background sections of the '934 patent. BOE expects to rely on the testimony of one or more expert witnesses and documents referenced by those expert witnesses in support of these contentions and incorporate those forthcoming expert reports as if fully set forth herein.

BOE contends that there are no secondary considerations of non-obviousness evidencing the validity of any of the asserted claims. Secondary considerations of non-obviousness, also referred to as objective indicia of non-obviousness, "can include copying, long felt but unsolved need, failure of others, commercial success, unexpected results created by the claimed invention, unexpected properties of the claimed invention, licenses showing industry respect for the invention, awards or other industry praise for the invention, and skepticism of skilled artisans

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before the invention.” *Power Integrations, Inc. v. Fairchild Semiconductor Int’l, Inc.*, 711 F.3d 1348, 1368 (Fed. Cir. 2013). “A nexus between the merits of the claimed invention and evidence of secondary considerations is required in order for the evidence to be given substantial weight in an obviousness decision.” *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 668 (Fed. Cir. 2000). Moreover, even if a nexus exists, secondary considerations of non-obviousness “simply cannot overcome [a] strong prima facie showing of obviousness.” *Sundance, Inc. v. DeMonte Fabricating Ltd.*, 550 F.3d 1356, 1368 (Fed. Cir. 2008). Optronic has not established the existence of any objective indicia of non-obviousness or secondary considerations. BOE reserves the right to supplement their contentions to respond to any such arguments or evidence should Optronic be permitted to raise them in the future. While discovery in this case is ongoing, and BOE’s investigation continues (which will include expert discovery), to the extent Optronic contends that one or more asserted claims is not obvious based on secondary considerations recognized by relevant authority BOE contends such allegations are without merit. BOE reserves the right to supplement their contentions to respond to any such evidence should Optronic be permitted to raise it in the future.

### **III. U.S. PATENT NO. 8,208,084**

#### **A. Relevant Prior Art**

BOE contends that the prior art references identified in BOE’s contentions anticipate and/or render obvious the Asserted Claims. The ’084 patent was filed in the United States on February 12, 2009. Despite having the burden of proof, Optronic has failed to demonstrate that any asserted claim of the ’084 patent is entitled to a priority date earlier than the U.S. filing date. No claim is entitled to an earlier filing, priority or invention date because no prior application or evidence of invention supports or enables the full scope of the claims at least for the reasons identified below with respect to invalidity under Section 112. In fact, the asserted claim 1

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improperly recites impermissible new matter that is not supported by the U.S. application or any alleged priority application, rendering the claim invalid under Sections 112(a/first paragraph) and

132. Below, BOE lists some of the prior art cited in these contentions:

**1. Patents and Patent Application Publications**

<b>Patent or Pub. No.</b>	<b>Filing Date</b>	<b>Publication Date</b>	<b>Statutory Category</b>
U.S. Patent No. 6,392,719 (Kim)	May 26, 1998	May 21, 2002	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent No. 6,624,857 (Nagata et al.)	Mar. 25, 1999	Sept. 23, 2003	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent No. 7,492,438 (Lin et al.)	Feb. 1, 2007	Feb. 17, 2009	Pre-AIA 35 U.S.C. § 102(a) & 102(e)
U.S. Patent No. 8,154,674 (Chung et al.)	June 26, 2008	April 10, 2012 (and Oct. 1, 2009 as US2009/0244420A1)	Pre-AIA 35 U.S.C. § 102(e)
U.S. Patent Publication No. 2002/0089614A1 (Kim)	Dec. 28, 2001	July 11, 2002	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent Publication No. 2005/0195338A1 (Matsumoto et al.)	Feb. 25, 2005	Sept. 8, 2005	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent Publication No. 2005/0212782A1 (Brunner)	June 1, 2003	Sept. 29, 2005	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent Publication No. 2006/0103410A1 (Jeon)	Aug. 31, 2005	May 18, 2006	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent Publication No. 2007/0018680A1 (Jeon et al.)	June 16, 2006	Jan. 25, 2007	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent Publication No. 2007/0040794A1 (Kwak et al.)	Aug. 17, 2006	Feb. 22, 2007	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent Publication No. 2007/0170948A1 (Chang et al.).	Jan. 20, 2006	July 26, 2007	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)

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<b>Patent or Pub. No.</b>	<b>Filing Date</b>	<b>Publication Date</b>	<b>Statutory Category</b>
U.S. Patent Publication No. 2007/00170949A1 (Pak et al.)	Jan. 18, 2007	July 26, 2007	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent Publication No. 2009/0167976A1 (Chung et al.)	March 28, 2008	July 2, 2009	Pre-AIA 35 U.S.C. § 102(e)
U.S. Patent Publication No. 2009/0213288A1 (Chen et al.)	Sept. 23, 2008	Aug. 27, 2009	Pre-AIA 35 U.S.C. §§ 102(e)
WO 98/31050 (Holmberg)	(U.S.) Jan. 13, 1997	July 16, 1998	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
CN 1845328A (Zhaotang)	(China) March 13, 2006	Oct. 11, 2006	Pre-AIA 35 U.S.C. §§ 102(a) & 102(b)
JP 2001-005027A1	(Japan) June 24, 1999	Jan. 12, 2001	Pre-AIA 35 U.S.C. §§ 102(a) & 102(b)
KR10-2007-0049718	(Korea) Nov. 9, 2005	May 14, 2005	Pre-AIA 35 U.S.C. §§ 102(a) & 102(b)

**2. Printed Publications**

Defendant continues to investigate printed publications and reserves the right to supplement the contentions and accompanying claim charts after further discovery and investigation.

**3. Prior Art Systems**

The table below lists prior art systems and products identified that reveal the state of the art and/or render the Asserted Claims invalid under 35 U.S.C. §§ 102 and/or 103. Some or all of the supporting references for these systems may also qualify as prior art publications under 35 U.S.C. § 102 and may be used as invalidating prior art under 35 U.S.C. §§ 102 and 103. In particular, the manuals for these products, patents filed to cover these products, and any other publicly available information. Pursuant to P.R. 3-3(a), the date of the offer or use, or the system became known, and the identity of the person or entity are provided in the respective system's

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claim chart, where applicable, based on the information reasonably available to Defendant. In addition, Defendant continues to investigate the systems and products and reserves the right to supplement the contentions and accompanying claim charts after further discovery and investigation. Defendant also reserves the right to rely on fact or expert witness testimony to establish the public knowledge, use, availability, sale, or offer for sale of any systems described below. Although additional information and prior art systems may be obtained through discovery, such prior art systems include at least the following:

Prior Art System	Person/Entity	Date
Sony Clié Series	Sony	October 4, 2001
Palm m515 Series	Palm	March 7, 2002
Motorola v551 Series	Motorola	2004

### **B. Anticipation and Obviousness**

BOE attaches Exhibits B2-B11, which provide exemplary disclosures showing how the prior art anticipates and/or renders obvious the asserted claims of the '084 patent. BOE may rely on any of the primary references identified in Exhibits B2-B11 in combination with any secondary reference identified in those exhibits.

The U.S. Supreme Court in *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727 (2007) emphasized that inventions arising from ordinary innovation, ordinary skill, or common sense should not be patentable. *Id.* at 1732, 1738, 1742–1743, 1746. A patent claim may be obvious if the combination of elements was obvious to try or if there existed at the time of the invention a known problem for which there was an obvious solution encompassed by the patent's claims. When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, Section 103 likely bars its patentability. *Id.* at 1740. The



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Court stated that courts should “look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *Id.* at 1740–41. *KSR* does not mandate evidence of a motivation or suggestion to combine prior art references. *See TGIP, Inc. v. AT&T Corp.*, 527 F. Supp. 2d 561, 580–81 (E.D. Tex. 2007). “[A] court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ” to resolve the question of obviousness. *KSR*, 127 S. Ct. at 1741.

Based on all of these considerations, as further detailed in Exhibits, a POSITA would have combined the teachings of the prior art references discussed and charted in those exhibits. The combinations of these references would have rendered obvious to one of ordinary skill in the art the subject matter of the asserted claims of the '801 patent. The references identified in Exhibits are analogous prior art to the subject matter of the asserted claims and are properly combinable. Because these prior art references exist within a single field of art, particularly one in which individuals in the field often shared and/or collaborated on their work, it would have been obvious for a person of skill in the art to look from one piece of prior art to another in order to find any missing functionality they desired to implement. Therefore, these references provide interrelated teachings and one of ordinary skill would look to the concepts in any of these references when seeking to solve the problems purportedly addressed by the '084 patent.

Numerous prior art references, including those identified in the attached exhibits, reflect common knowledge and the state of the prior art before the earliest claimed effective filing date of the '084 patent. As it would be unduly burdensome to create detailed claim charts for all of

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the invalidating combinations, for at least the reasons described in these invalidity contentions, it would have been obvious to one of ordinary skill in the art to combine any of a number of prior art references, including any combination of those identified in the attached exhibits, to meet the limitations of the asserted claims of the '084 patent. BOE's inclusion of exemplary combinations, in view of the factors and motivations identified here, does not preclude BOE from identifying other invalidating combinations and/or motivations as appropriate.

No showing of a specific motivation to combine prior art is required to combine the references disclosed above and in the attached charts, because each combination of art would have no unexpected results, and at most would simply represent a known alternative to one of ordinary skill in the art. *See KSR*, 127 S. Ct. at 1739–40 (rejecting the Federal Circuit's "rigid" application of the teaching, suggestion, or motivation to combine test, instead espousing an "expansive and flexible" approach). Indeed, the Supreme Court held that a person of ordinary skill in the art is "a person of ordinary creativity, not an automaton" and "in many cases a person of ordinary skill in the art will be able to fit the teachings of multiple patents together like pieces of a puzzle." *Id.* at 1742. Nevertheless, in addition to the information contained herein, BOE hereby identifies additional motivations and reasons to combine the cited art.

One or more combinations of the prior art references identified herein, including the exemplary combinations above, would have been obvious because these references would have been combined using: known methods to yield predictable results; known techniques in the same way; a simple substitution of one known, equivalent element for another to obtain predictable results; and/or a teaching, suggestion, or motivation in the prior art generally. In addition, it would have been obvious to combine the prior art references identified above because there were only a finite number of predictable solutions and/or because known work in one field of

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endeavor prompts variations based on predictable design incentives and/or market forces either in the same field or a different one. In addition, the combinations of the prior art references identified above would have been obvious because the combinations represent the known potential options with a reasonable expectation of success.

Additional evidence that there would have been a motivation or reason to combine the prior art references identified above includes the interrelated teachings of multiple prior art references; the effects of demands known to the design community or present in the marketplace; the existence of a known problem for which there was an obvious solution; the existence of a known need or problem in the field of endeavor at the time of the invention; and the background knowledge that would have been possessed by a person having ordinary skill in the art. For example, the prior art references are generally directed to the same problems. Thus, a skilled artisan seeking to solve these problems would look to these cited references in combination.

Thus, the motivation or reason to combine the teachings of the prior art references disclosed herein is found in the references themselves and in: (1) the nature of the problems being solved; (2) the express, implied, and inherent teachings of the prior art; (3) the knowledge of a POSITA; (4) the fact that the prior art is generally directed towards the same problems; and/or (5) the predictable results obtained in combining the different elements of the prior art; (6) the use of a known technique to improve similar devices, methods, or products in the same way; (7) the predictable results obtained in applying a known technique to a known device, method, or product ready for improvement; (8) the finite number of identified predictable solutions that had a reasonable expectation of success; and (9) known work in various technological fields that could be applied to the same or different technological fields based on design incentives or other market forces.

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BOE incorporates by reference prior art from the prosecution histories and background sections of the '084 patent. BOE expects to rely on the testimony of one or more expert witnesses and documents referenced by those expert witnesses in support of these contentions and incorporate those forthcoming expert reports as if fully set forth herein.

BOE contends that there are no secondary considerations of non-obviousness evidencing the validity of any of the asserted claims. Secondary considerations of non-obviousness, also referred to as objective indicia of non-obviousness, “can include copying, long felt but unsolved need, failure of others, commercial success, unexpected results created by the claimed invention, unexpected properties of the claimed invention, licenses showing industry respect for the invention, awards or other industry praise for the invention, and skepticism of skilled artisans before the invention.” *Power Integrations, Inc. v. Fairchild Semiconductor Int’l, Inc.*, 711 F.3d 1348, 1368 (Fed. Cir. 2013). “A nexus between the merits of the claimed invention and evidence of secondary considerations is required in order for the evidence to be given substantial weight in an obviousness decision.” *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 668 (Fed. Cir. 2000). Moreover, even if a nexus exists, secondary considerations of non-obviousness “simply cannot overcome [a] strong prima facie showing of obviousness.” *Sundance, Inc. v. DeMonte Fabricating Ltd.*, 550 F.3d 1356, 1368 (Fed. Cir. 2008). Optronic has not established the existence of any objective indicia of non-obviousness or secondary considerations. BOE reserves the right to supplement their contentions to respond to any such arguments or evidence should Optronic be permitted to raise them in the future. While discovery in this case is ongoing, and BOE’s investigation continues (which will include expert discovery), to the extent Optronic contends that one or more asserted claims is not obvious based on secondary considerations recognized by relevant authority BOE contends such allegations are without

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merit. BOE reserves the right to supplement their contentions to respond to any such evidence should Optronic be permitted to raise it in the future.

#### IV. U.S. PATENT NO. 8,502,757

BOE incorporates by reference the petition, exhibits, declarations, and all documents submitted in support of *Inter Partes* Review IPR2025-00239.

##### A. Relevant Prior Art

BOE contends that the prior art references identified in BOE's contentions anticipate and/or render obvious the Asserted Claims. The '757 patent was filed in the U.S. on November 15, 2011. Despite having the burden of proof, Optronic has failed to demonstrate that any asserted claim of the '757 patent is entitled to a priority date earlier than the filing date. No claim is entitled to an earlier filing, priority or invention date because no prior application or evidence of invention supports or enables the full scope of the claims at least for the reasons identified below with respect to invalidity under Section 112. Below, BOE lists some of the prior art cited in these contentions:

##### 1. Patents and Patent Application Publications

Patent or Pub. No.	Filing Date	Publication Date	Statutory Category
U.S. Patent No. 8,674,914 ("Ohhashi")	June 1, 2009	February 11, 2010	Pre-AIA 35 U.S.C. §§ 102(a), (b), and (e)
U.S. Patent No. 7,414,599 ("Chung599")	July 06, 2004	January 27, 2005	Pre-AIA 35 U.S.C. §§ 102(a), (b), and (e)
US Patent Publication No. 2007/0103406 ("Kim406")	September 12, 2006	May 10, 2007	Pre-AIA 35 U.S.C. §§ 102(a), (b), and (e)
U.S. Patent Publication No. 2005/0110730 ("Kim730")	October 11, 2004	May 26, 2005	Pre-AIA 35 U.S.C. §§

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<b>Patent or Pub. No.</b>	<b>Filing Date</b>	<b>Publication Date</b>	<b>Statutory Category</b>
			102(a), (b), and (e)
U.S. Patent Publication No. 2009/0040150 ("Senda")	December 18, 2006	February 12, 2009	Pre-AIA 35 U.S.C. §§ 102(a), (b), and (e)
Korean Patent Application No. KR 100562664 ("Chung")	May 05, 2004	November 11, 2005	Pre-AIA 35 U.S.C. §§ 102(a), (b), and (e)
U.S. Patent Publication No. 2007/0124633 ("Kim633")	November 7, 2006	May 31, 2007	Pre-AIA 35 U.S.C. §§ 102(a), (b) and (e)
U.S. Patent Publication No. 2010/0013816 ("Kwak")	July 10, 2009	January 21, 2010	Pre-AIA 35 U.S.C. §§ 102(a), (b) and (e)
U.S. Patent Publication No. 2012/0001893 ("Jeong")	November 8, 2010	January 5, 2012	Pre-AIA 35 U.S.C. §§ 102(a) and (e)

**2. Printed Publications**

Defendant continues to investigate printed publications and reserves the right to supplement the contentions and accompanying claim charts after further discovery and investigation.

<b>Title</b>	<b>Author/Publisher</b>	<b>Date</b>	<b>Statutory Category</b>
High-speed Pixel Circuits for Large-Sized 3-D AMOLED Displays ("Park")	Dong-Wook Park Chul-Kyu Kang Yong-Sung Chung Kyung-Hoon Chung Keumnam Kim Byung-Hee Kim Sang Soo Kim	April 2011	Pre-AIA 35 U.S.C. §§ 102(a), (e)

**3. Prior Art Systems**

The table below lists prior art systems and products identified that reveal the state of the art and/or render the Asserted Claims invalid under 35 U.S.C. §§ 102 and/or 103. Some or all of the supporting references for these systems may also qualify as prior art publications under 35 U.S.C. § 102 and may be used as invalidating prior art under 35 U.S.C. §§ 102 and 103. In particular, the manuals for these products, patents filed to cover these products, and any other publicly available information. Pursuant to P.R. 3-3(a), the date of the offer or use, or the system became known, and the identity of the person or entity are provided in the respective system's claim chart, where applicable, based on the information reasonably available to Defendant. In addition, Defendant continues to investigate the systems and products and reserves the right to supplement the contentions and accompanying claim charts after further discovery and investigation. Defendant also reserves the right to rely on fact or expert witness testimony to establish the public knowledge, use, availability, sale, or offer for sale of any systems described below. Although additional information and prior art systems may be obtained through discovery, such prior art systems include at least the following:

<b>Prior Art System</b>	<b>Person/Entity</b>	<b>Date</b>
Samsung Galaxy S	Samsung	March 2010

**B. Anticipation and Obviousness**

BOE attaches Exhibits C2-C11, which provide exemplary disclosures showing how the prior art anticipates and/or renders obvious the asserted claims of the '757 patent. BOE may rely on any of the primary references identified in those exhibits in combination with any secondary reference identified in those exhibits.

The U.S. Supreme Court in *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727 (2007) emphasized that inventions arising from ordinary innovation, ordinary skill, or common sense

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should not be patentable. *Id.* at 1732, 1738, 1742–1743, 1746. A patent claim may be obvious if the combination of elements was obvious to try or if there existed at the time of the invention a known problem for which there was an obvious solution encompassed by the patent's claims. When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, Section 103 likely bars its patentability. *Id.* at 1740. The Court stated that courts should “look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *Id.* at 1740–41. *KSR* does not mandate evidence of a motivation or suggestion to combine prior art references. *See TGIP, Inc. v. AT&T Corp.*, 527 F. Supp. 2d 561, 580–81 (E.D. Tex. 2007). “[A] court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ” to resolve the question of obviousness. *KSR*, 127 S. Ct. at 1741.

Based on all of these considerations, as further detailed in Exhibits, a POSITA would have combined the teachings of the prior art references discussed and charted in those exhibits. The combinations of these references would have rendered obvious to one of ordinary skill in the art the subject matter of the asserted claims of the '757 patent. The references identified in Exhibits are analogous prior art to the subject matter of the asserted claims and are properly combinable. Because these prior art references exist within a single field of art, particularly one in which individuals in the field often shared and/or collaborated on their work, it would have been obvious for a person of skill in the art to look from one piece of prior art to another in order



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to find any missing functionality they desired to implement. Therefore, these references provide interrelated teachings and one of ordinary skill would look to the concepts in any of these references when seeking to solve the problems purportedly addressed by the '757 patent.

Numerous prior art references, including those identified in the attached exhibits, reflect common knowledge and the state of the prior art before the earliest claimed effective filing date of the '757 patent. As it would be unduly burdensome to create detailed claim charts for all of the invalidating combinations, for at least the reasons described in these invalidity contentions, it would have been obvious to one of ordinary skill in the art to combine any of a number of prior art references, including any combination of those identified in the attached exhibits, to meet the limitations of the asserted claims of the '757 patent. BOE's inclusion of exemplary combinations, in view of the factors and motivations identified here, does not preclude BOE from identifying other invalidating combinations and/or motivations as appropriate.

No showing of a specific motivation to combine prior art is required to combine the references disclosed above and in the attached charts, because each combination of art would have no unexpected results, and at most would simply represent a known alternative to one of ordinary skill in the art. *See KSR*, 127 S. Ct. at 1739–40 (rejecting the Federal Circuit's "rigid" application of the teaching, suggestion, or motivation to combine test, instead espousing an "expansive and flexible" approach). Indeed, the Supreme Court held that a person of ordinary skill in the art is "a person of ordinary creativity, not an automaton" and "in many cases a person of ordinary skill in the art will be able to fit the teachings of multiple patents together like pieces of a puzzle." *Id.* at 1742. Nevertheless, in addition to the information contained herein, BOE hereby identifies additional motivations and reasons to combine the cited art.

## DEFENDANTS' INVALIDITY CONTENTIONS

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One or more combinations of the prior art references identified herein, including the exemplary combinations above, would have been obvious because these references would have been combined using: known methods to yield predictable results; known techniques in the same way; a simple substitution of one known, equivalent element for another to obtain predictable results; and/or a teaching, suggestion, or motivation in the prior art generally. In addition, it would have been obvious to combine the prior art references identified above because there were only a finite number of predictable solutions and/or because known work in one field of endeavor prompts variations based on predictable design incentives and/or market forces either in the same field or a different one. In addition, the combinations of the prior art references identified above would have been obvious because the combinations represent the known potential options with a reasonable expectation of success.

Additional evidence that there would have been a motivation or reason to combine the prior art references identified above includes the interrelated teachings of multiple prior art references; the effects of demands known to the design community or present in the marketplace; the existence of a known problem for which there was an obvious solution; the existence of a known need or problem in the field of endeavor at the time of the invention; and the background knowledge that would have been possessed by a person having ordinary skill in the art. For example, the prior art references are generally directed to the same problems. Thus, a skilled artisan seeking to solve these problems would look to these cited references in combination.

Thus, the motivation or reason to combine the teachings of the prior art references disclosed herein is found in the references themselves and in: (1) the nature of the problems being solved; (2) the express, implied, and inherent teachings of the prior art; (3) the knowledge of a POSITA; (4) the fact that the prior art is generally directed towards the same problems;

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and/or (5) the predictable results obtained in combining the different elements of the prior art; (6) the use of a known technique to improve similar devices, methods, or products in the same way; (7) the predictable results obtained in applying a known technique to a known device, method, or product ready for improvement; (8) the finite number of identified predictable solutions that had a reasonable expectation of success; and (9) known work in various technological fields that could be applied to the same or different technological fields based on design incentives or other market forces.

BOE incorporates by reference prior art from the prosecution histories and background sections of the '757 patent. BOE expects to rely on the testimony of one or more expert witnesses and documents referenced by those expert witnesses in support of these contentions and incorporate those forthcoming expert reports as if fully set forth herein.

BOE contends that there are no secondary considerations of non-obviousness evidencing the validity of any of the asserted claims. Secondary considerations of non-obviousness, also referred to as objective indicia of non-obviousness, "can include copying, long felt but unsolved need, failure of others, commercial success, unexpected results created by the claimed invention, unexpected properties of the claimed invention, licenses showing industry respect for the invention, awards or other industry praise for the invention, and skepticism of skilled artisans before the invention." *Power Integrations, Inc. v. Fairchild Semiconductor Int'l, Inc.*, 711 F.3d 1348, 1368 (Fed. Cir. 2013). "A nexus between the merits of the claimed invention and evidence of secondary considerations is required in order for the evidence to be given substantial weight in an obviousness decision." *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 668 (Fed. Cir. 2000). Moreover, even if a nexus exists, secondary considerations of non-obviousness "simply cannot overcome [a] strong prima facie showing of obviousness." *Sundance, Inc. v. DeMonte*

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*Fabricating Ltd.*, 550 F.3d 1356, 1368 (Fed. Cir. 2008). Optronic has not established the existence of any objective indicia of non-obviousness or secondary considerations. BOE reserves the right to supplement their contentions to respond to any such arguments or evidence should Optronic be permitted to raise them in the future. While discovery in this case is ongoing, and BOE's investigation continues (which will include expert discovery), to the extent Optronic contends that one or more asserted claims is not obvious based on secondary considerations recognized by relevant authority BOE contends such allegations are without merit. BOE reserves the right to supplement their contentions to respond to any such evidence should Optronic be permitted to raise it in the future.

### **V. U.S. PATENT NO. 8,604,471**

BOE incorporates by reference the petition, exhibits, declarations, and all documents submitted in support of *Inter Partes* Review IPR2025-00238.

#### **A. Relevant Prior Art**

BOE contends that the prior art references identified in BOE's contentions anticipate and/or render obvious the Asserted Claims. The '471 patent was filed on August 12, 2011. Despite having the burden of proof, Optronic has failed to demonstrate that any asserted claim of the '471 patent is entitled to a priority date earlier than the filing date of the '471 patent. No claim is entitled to an earlier filing, priority or invention date because no prior application or evidence of invention supports or enables the full scope of the claims at least for the reasons identified below with respect to invalidity under Section 112. Below, BOE lists some of the prior art cited in these contentions:

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### 1. Patents and Patent Application Publications

Patent or Pub. No.	Filing Date	Publication Date	Statutory Category
US 20080158108 (“Hwang”)	June 22, 2007	July 3, 2008	pre-AIA 35 U.S.C. § 102(b)
US 20080122373 (“Cho”)	June 25, 2007	May 29, 2008	pre-AIA 35 U.S.C. § 102(b)
US 20100038643 (“Park”)	August 12, 2009	February 18, 2010	pre-AIA 35 U.S.C. § 102(b)
WO 2010002029 (“Tateishi”)	July 3, 2008	January 7, 2010	pre-AIA 35 U.S.C. § 102(b)
JP H09-90425 (“Masumitsu”)	September 19, 1995	April 4, 1997	pre-AIA 35 U.S.C. § 102(b)
KR 20060001753 (“Lee”)	June 30, 2004	December 19, 2006	pre-AIA 35 U.S.C. § 102(b)
US 20100148175 (“Godo”)	December 8, 2009	June 17, 2010	pre-AIA 35 U.S.C. §§ 102(a), (b), (e)
US 20090184898 (“Yamashita”)	December 15, 2008	July 23, 2009	pre-AIA 35 U.S.C. § 102(b)
KR100659756	June 30, 2004	January 6, 2006	pre-AIA 35 U.S.C. § 102(b)
KR100853543	March 7, 2007	August 14, 2008	pre-AIA 35 U.S.C. § 102(b)
US 5838399 (“Someya”)	June 10, 1988	November 17, 1998	pre-AIA 35 U.S.C. § 102(b)
US 6278504 (“Sung”)	January 22, 1997	August 21, 2001	pre-AIA 35 U.S.C. § 102(b)
US 20070296333 (“Kim”)	December 26, 2006	December 27, 2007	pre-AIA 35 U.S.C. § 102(b)
US 20070290227 (“Liang”)	June 14, 2007	December 20, 2007	pre-AIA 35 U.S.C. § 102(b)

### 2. Printed Publications

The table below lists prior art printed publications identified that reveal the state of the art and/or render the Asserted Claims invalid under 35 U.S.C. §§ 102 and/or 103. Defendant continues to investigate printed publications and reserves the right to supplement the contentions and accompanying claim charts after further discovery and investigation.

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Title	Author/Publisher	Date	Statutory Category
Solid State Electronic Devices 4 <sup>th</sup> Edition (“Streetman”)	Ben Streetman / Prentice Hall	1995	pre-AIA 35 U.S.C. § 102(b)
Introduction to VLSI Systems (“Mead”)	Carver Mead and Lynn Conway / Addison Wesley	1980	pre-AIA 35 U.S.C. § 102(b)
Schaum’s Outline of Theory and Problems of Basic Circuit Analysis 2nd Edition (“Schaum”)	John O’Malley / McGraw Hill	1992	pre-AIA 35 U.S.C. § 102(b)
Handbook of Optics 2nd Edition Volume II (“HandbookII”)	Michael Bass et al. / McGraw Hill	1995	pre-AIA 35 U.S.C. § 102(b)

### 3. Prior Art Systems

The table below lists prior art systems and products identified that reveal the state of the art and/or render the Asserted Claims invalid under 35 U.S.C. §§ 102 and/or 103. Some or all of the supporting references for these systems may also qualify as prior art publications under 35 U.S.C. § 102 and may be used as invalidating prior art under 35 U.S.C. §§ 102 and 103. In particular, the manuals for these products, patents filed to cover these products, and any other publicly available information. Pursuant to P.R. 3-3(a), the date of the offer or use, or the system became known, and the identity of the person or entity are provided in the respective system’s claim chart, where applicable, based on the information reasonably available to Defendant. In addition, Defendant continues to investigate the systems and products and reserves the right to supplement the contentions and accompanying claim charts after further discovery and investigation. Defendant also reserves the right to rely on fact or expert witness testimony to establish the public knowledge, use, availability, sale, or offer for sale of any systems described below. Although additional information and prior art systems may be obtained through discovery, such prior art systems include at least the following:

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Prior Art System	Person/Entity	Date
Galaxy S	Samsung	2010

**B. Anticipation and Obviousness**

BOE attaches Exhibits D-2 through D-8, which provide exemplary disclosures showing how the prior art anticipates and/or renders obvious the asserted claims of the '471 patent. BOE may rely on any of the primary references identified in those exhibits in combination with any secondary reference identified in those exhibits.

The U.S. Supreme Court in *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727 (2007) emphasized that inventions arising from ordinary innovation, ordinary skill, or common sense should not be patentable. *Id.* at 1732, 1738, 1742–1743, 1746. A patent claim may be obvious if the combination of elements was obvious to try or if there existed at the time of the invention a known problem for which there was an obvious solution encompassed by the patent's claims. When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, Section 103 likely bars its patentability. *Id.* at 1740. The Court stated that courts should “look to interrelated teachings of multiple patents; the effects of demands known to the design community or present in the marketplace; and the background knowledge possessed by a person having ordinary skill in the art, all in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue.” *Id.* at 1740–41. *KSR* does not mandate evidence of a motivation or suggestion to combine prior art references. *See TGIP, Inc. v. AT&T Corp.*, 527 F. Supp. 2d 561, 580–81 (E.D. Tex. 2007). “[A] court can take account of the inferences and creative steps that a

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person of ordinary skill in the art would employ” to resolve the question of obviousness. *KSR*, 127 S. Ct. at 1741.

Based on all of these considerations, as further detailed in Exhibits, a POSITA would have combined the teachings of the prior art references discussed and charted in those exhibits. The combinations of these references would have rendered obvious to one of ordinary skill in the art the subject matter of the asserted claims of the '471 patent. The references identified in Exhibits are analogous prior art to the subject matter of the asserted claims and are properly combinable. Because these prior art references exist within a single field of art, particularly one in which individuals in the field often shared and/or collaborated on their work, it would have been obvious for a person of skill in the art to look from one piece of prior art to another in order to find any missing functionality they desired to implement. Therefore, these references provide interrelated teachings and one of ordinary skill would look to the concepts in any of these references when seeking to solve the problems purportedly addressed by the '471 patent.

Numerous prior art references, including those identified in the attached exhibits, reflect common knowledge and the state of the prior art before the earliest claimed effective filing date of the '471 patent. As it would be unduly burdensome to create detailed claim charts for all of the invalidating combinations, for at least the reasons described in these invalidity contentions, it would have been obvious to one of ordinary skill in the art to combine any of a number of prior art references, including any combination of those identified in the attached exhibits, to meet the limitations of the asserted claims of the '471 patent. BOE's inclusion of exemplary combinations, in view of the factors and motivations identified here, does not preclude BOE from identifying other invalidating combinations and/or motivations as appropriate.



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No showing of a specific motivation to combine prior art is required to combine the references disclosed above and in the attached charts, because each combination of art would have no unexpected results, and at most would simply represent a known alternative to one of ordinary skill in the art. *See KSR*, 127 S. Ct. at 1739–40 (rejecting the Federal Circuit’s “rigid” application of the teaching, suggestion, or motivation to combine test, instead espousing an “expansive and flexible” approach). Indeed, the Supreme Court held that a person of ordinary skill in the art is “a person of ordinary creativity, not an automaton” and “in many cases a person of ordinary skill in the art will be able to fit the teachings of multiple patents together like pieces of a puzzle.” *Id.* at 1742. Nevertheless, in addition to the information contained herein, BOE hereby identifies additional motivations and reasons to combine the cited art.

One or more combinations of the prior art references identified herein, including the exemplary combinations above, would have been obvious because these references would have been combined using: known methods to yield predictable results; known techniques in the same way; a simple substitution of one known, equivalent element for another to obtain predictable results; and/or a teaching, suggestion, or motivation in the prior art generally. In addition, it would have been obvious to combine the prior art references identified above because there were only a finite number of predictable solutions and/or because known work in one field of endeavor prompts variations based on predictable design incentives and/or market forces either in the same field or a different one. In addition, the combinations of the prior art references identified above would have been obvious because the combinations represent the known potential options with a reasonable expectation of success.

Additional evidence that there would have been a motivation or reason to combine the prior art references identified above includes the interrelated teachings of multiple prior art

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references; the effects of demands known to the design community or present in the marketplace; the existence of a known problem for which there was an obvious solution; the existence of a known need or problem in the field of endeavor at the time of the invention; and the background knowledge that would have been possessed by a person having ordinary skill in the art. For example, the prior art references are generally directed to the same problems. Thus, a skilled artisan seeking to solve these problems would look to these cited references in combination.

Thus, the motivation or reason to combine the teachings of the prior art references disclosed herein is found in the references themselves and in: (1) the nature of the problems being solved; (2) the express, implied, and inherent teachings of the prior art; (3) the knowledge of a POSITA; (4) the fact that the prior art is generally directed towards the same problems; and/or (5) the predictable results obtained in combining the different elements of the prior art; (6) the use of a known technique to improve similar devices, methods, or products in the same way; (7) the predictable results obtained in applying a known technique to a known device, method, or product ready for improvement; (8) the finite number of identified predictable solutions that had a reasonable expectation of success; and (9) known work in various technological fields that could be applied to the same or different technological fields based on design incentives or other market forces.

BOE incorporates by reference prior art from the prosecution histories and background sections of the '471 patent. BOE expects to rely on the testimony of one or more expert witnesses and documents referenced by those expert witnesses in support of these contentions and incorporate those forthcoming expert reports as if fully set forth herein.

BOE contends that there are no secondary considerations of non-obviousness evidencing the validity of any of the asserted claims. Secondary considerations of non-obviousness, also

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referred to as objective indicia of non-obviousness, “can include copying, long felt but unsolved need, failure of others, commercial success, unexpected results created by the claimed invention, unexpected properties of the claimed invention, licenses showing industry respect for the invention, awards or other industry praise for the invention, and skepticism of skilled artisans before the invention.” *Power Integrations, Inc. v. Fairchild Semiconductor Int’l, Inc.*, 711 F.3d 1348, 1368 (Fed. Cir. 2013). “A nexus between the merits of the claimed invention and evidence of secondary considerations is required in order for the evidence to be given substantial weight in an obviousness decision.” *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 668 (Fed. Cir. 2000). Moreover, even if a nexus exists, secondary considerations of non-obviousness “simply cannot overcome [a] strong prima facie showing of obviousness.” *Sundance, Inc. v. DeMonte Fabricating Ltd.*, 550 F.3d 1356, 1368 (Fed. Cir. 2008). Optronic has not established the existence of any objective indicia of non-obviousness or secondary considerations. BOE reserves the right to supplement their contentions to respond to any such arguments or evidence should Optronic be permitted to raise them in the future. While discovery in this case is ongoing, and BOE’s investigation continues (which will include expert discovery), to the extent Optronic contends that one or more asserted claims is not obvious based on secondary considerations recognized by relevant authority BOE contends such allegations are without merit. BOE reserves the right to supplement their contentions to respond to any such evidence should Optronic be permitted to raise it in the future.

### **I. INAVLIDITY UNDER SECTION 112, 132 AND LACK OF PRIORITY**

BOE hereby identifies grounds of invalidity based on (1) lack of written description under 35 U.S.C. § 112; (2) lack of enablement under 35 U.S.C. § 112; (3) indefiniteness under 35 U.S.C. § 112; and new matter under 35 U.S.C. § 132. Limitations in the asserted claims related to these defenses and related lack of priority are identified in the first exhibit for each

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patent. These contentions shall not be construed as an admission that any claim construction advanced by BOE in this case is in any way inconsistent, flawed, or erroneous. Nor should these contentions prevent BOE from advancing claim construction and/or non-infringement positions in lieu of, or in addition to, invalidity positions. Further, these contentions shall not be construed as an admission of or acquiescence to Optronic's purported construction of the claim language or of other positions advanced by Optronic during the course of this litigation. BOE's Invalidity Contentions under 35 U.S.C. § 112 may depend, in part, on the Court's claim construction, as well as Optronic's alleged scope of the asserted claims of the asserted claims. Consequently, BOE only identifies the issues under 35 U.S.C. § 112 of which they are presently aware.

### 1. Lack of Written Description under 35 U.S.C. § 112

The asserted claims are invalid under 35 U.S.C. § 112, because each asserted patent does not provide sufficient written description to establish that the alleged inventors were in possession of the full scope of the alleged inventions recited in the asserted claims at the time the patent was filed. *See e.g. Ariad v. Lilly*, 598 F.3d 1336 (Fed. Cir. 2010) (en banc); *LizardTech Inc. v. Earth Resource Mapping, Inc.*, 424 F.3d 1336, 1345 (Fed. Cir. 2005) (finding claims invalid under 35 U.S.C. § 112 where the specification failed to include a written description of the full scope of the claimed invention); *In re Katz Interactive Call Processing Pat. Litig.*, 639 F.3d 1303, 1320 (Fed. Cir. 2011) (“[W]hen analyzing whether a patent meets the written description requirement, one cannot ‘bootstrap’ the knowledge of a person of ordinary skill in the art (‘POSITA’) into the analysis and fill the gap in the disclosure through obviousness.”).

### 2. Lack of Enablement under 35 U.S.C. § 112(a)

The asserted claims are also invalid under 35 U.S.C. § 112, because each asserted patent does not enable one of ordinary skill in the art to make and/or use the full scope of certain recited elements of the asserted claims of the patent without undue experimentation. *See, e.g., United*

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*States v. Telectronics, Inc.*, 857 F.2d 778, 785, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988) (“The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation.”); *Trustees of Bos. Univ. v. Everlight Elecs. Co.*, 896 F.3d 1357, 1362 (Fed. Cir. 2018) (“to be enabling, the specification of a patent must teach those skilled in the art how to make and use the full scope of the claimed invention without ‘undue experimentation.’”).

### **3. Indefiniteness Pursuant to 35 U.S.C. § 112**

The asserted claims of each asserted patent are also invalid because they fail to inform those skilled in the art about the scope of the alleged invention with reasonable certainty and are indefinite under 35 U.S.C. § 112, second paragraph, for failing to particularly point out and distinctly claim the subject matter the applicants regard as their alleged invention. *See, e.g., Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901, (2014) (“a patent is invalid for indefiniteness if its claims, read in light of the specification delineating the patent, and the prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention.”).

## **II. DOCUMENT PRODUCTION ACCOMPANYING INVALIDITY CONTENTIONS (P.R. 3-4)**

Pursuant to P.R. 3-4(a), Defendant has produced documentation sufficient to show the operation of aspects or elements of the Accused Instrumentalities identified by the patent claimant in the P.R. 3-1(c) chart, to the extent the Defendant could understand those contentions.

Pursuant to P.R. 3-4(b), Defendant is also producing prior art references and corroborating evidence concerning prior art systems. Defendant’s search for prior art references, additional documentation, and/or corroborating evidence concerning prior art systems is ongoing. Accordingly, Defendant reserves the right to continue to supplement its production as

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Defendant obtains additional prior art references, documentation, and/or corroborating evidence concerning invalidity during the course of discovery.

Defendant is contemporaneously making source code available for inspection.

Dated: April 1, 2025

Respectfully submitted,

By: /s/ John M. Guaragna

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**ATTORNEYS FOR DEFENDANT**  
**BOE TECHNOLOGY GROUP CO., LTD.**

**CERTIFICATE OF SERVICE**

I hereby certify that on April 1, 2025, a copy of the foregoing was served on all counsel of record by electronic mail.

/s/ John M. Guaragna

John M. Guaragna