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. 2:23-cv-00549-JRG JURY TRIAL DEMANDED

DEFENDANT BOE TECHNOLOGY GROUP CO., LTD. ("BOE'S") INVALIDITY CONTENTIONS

Pursuant to the Docket Control Order (D.I. 34) 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 July 19, 2024, in which Optronic asserted:

(1) U.S. Patent No. 7,168,842 (the "'842 patent"), claims 3, 4, 5, 7, and 8;

(2) U.S. Patent No. 7,226,801 (the "'801 patent"), claims 9 and 10;

(3) U.S. Patent No. 7,586,121 (the "'121 patent"), claims 1-4 and 6;

(4) U.S. Patent No. 7,884,914 (the "'914 patent"), claims 1 and 5;

(5) U.S. Patent No. 9,263,509 (the "'509 patent"), claims 1, 5, 10, and 12;

(6) U.S. Patent No. 9,406,733 (the "'733 patent"), claim 1;

(7) U.S. Patent No. 7,915,117 (the "'117 patent"), claims 1 and 2;

(8) U.S. Patent No. 8,158,477 (the "'477 patent"), claim 1; and

(9) U.S. Patent No. 8,492,222 (the "'222 patent"), claims 1 and 4.

(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 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.

To the extent that the following contentions reflect constructions of claim limitations consistent with or implicit in Optronic's infringement allegations or proposed claim constructions, 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 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 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.

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. 7,168,842

BOE incorporates by reference the petition, exhibits, declarations, and all documents submitted in support of *Inter Partes* Review IPR2024-01130.

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 '842 patent was filed on December 1, 2004. Despite having the burden of proof, Optronic has failed to demonstrate that any asserted claim of the '842 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. 6,927,424 ("Uekusa")	Nov. 11, 2003	July 29, 2004	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
Japanese Patent Publication No. 2004/279262 ("Kurokawa")	Mar. 17, 2003	Oct. 7, 2004	Pre-AIA 35 U.S.C. §§ 102(a) & 102(b)

Patent or Pub. No.	Filing Date	Publication Date	Statutory Category
U.S. Patent Publication No.. 2002/0047978 ("Fukuta")	Aug.20, 2001	Apr. 25, 2002	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent Publication No. 2002/0140880 ("Weindorf")	Dec. 28, 2001	Oct. 3, 2002	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
Japanese Patent Publication No. 1997/237514 ("Yasuhisa")	May 16, 1996	Sept. 9, 1997	Pre-AIA 35 U.S.C. §§ 102(a) & 102(b)
U.S. Patent Publication No. 2002/0093810 ("Toyoda")	Jan. 11, 2002	July 18, 2002	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent No. 7,218,041 ("Isoda")	Nov. 5, 2003	Issued: May 15, 2007 Published: may 20, 2004	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
U.S. Patent No. 6,330,148 ("Won")	Jan. 11, 2000	Dec. 11, 2001	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(e)
Japanese Patent Publication No. 1999/316553 ("Kenzo")	Apr. 30, 1998	Nov. 16, 1999	Pre-AIA 35 U.S.C. §§ 102(a) & 102(b)
Japanese Patent Publication No. 2004/220887 ("Norihisa")	Jan. 14, 2003	Aug. 5, 2004	Pre-AIA 35 U.S.C. § 102(a)
Japanese Patent Publication No. 2004/22245 ("Shinichi")	June 13, 2002	Jan. 22, 2004	Pre-AIA 35 U.S.C. § 102(a)
Japanese Patent Publication No. 2001/160312 ("Takuo")	Dec. 1, 1999	June 12, 2001	Pre-AIA 35 U.S.C. §§ 102(a) & 102(b)
U.S. Patent No. 6285,420 ("Mizumo")	Jan. 29, 1996	Sept. 4, 2001	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), & 102(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.

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:

Prior Art System	Person/Entity	Date
2650	Nokia	June 2004
3210	Nokia	March 1999
3310	Nokia	
5140	Nokia	October 2003
6630	Nokia	June 2004
7210	Nokia	October 2002
7260	Nokia	September 2004
7650	Nokia	June 2002
9210i	Nokia	November 2000
9300	Nokia	September 2004
P50	BenQ	October 2004
S700	BenQ	Q1 2004
M300	BenQ	Q1 2004
M100	BenQ	Q1 2004
TM100	Sharp	March 2004
GX30	Sharp	February 2004
GX20	Sharp	June 2003
GX10i	Sharp	June 2003
Zaurus SL-C700	Sharp	Nov.12, 2002
7730	Blackberry	December 2003
7230	Blackberry	June 2003
SPH-i700	Samsung	August 2002
SCH-X430	Samsung	2002
SPH-I300	Samsung	Dec. 2001
A920	Motorola	Q1 2003
A925	Motorola	Q3 2003

Prior Art System	Person/Entity	Date
V690	Motorola	Q3 2003
V501	Motorola	Q1 2004
C550	Motorola	Q4 2003
E616	NEC	Q4 2003
N910	NEC	Q1 2004
E313	NEC	Q1 2004
M750	Mitsubishi	Q4 2003
M330	Mitsubishi	Q3 2003
M900	Mitsubishi	Q3 2004
CS65	Siemens	March 2004
Xelibri 7	Siemens	Q4 2003
A60	Siemens	Q4 2003
C60	Siemens	Q3 2003
S10	Siemens	1998
IBM X22	IBM	Oct. 2001
X31	IBM	Mar. 2003
IBM R50 53C	IBM	
IBM T40 76C	IBM	
ThinkPad T40	IBM	May 2000
T41	IBM	Nov 26, 2003
PowerBook G4 Ti	Apple	Jan 9, 2001
Portege 2000	Toshiba	1993
Portege 1620(Dyna Book SS)	Toshiba	
Portege R100	Toshiba	2004
PCG-C1M	SONY	Sept. 19, 1998
N760C	SONY	Feb. 12, 2003
N770C	SONY	Aug. 14, 2019
Clie T600C	SONY	Nov. 1, 2021
Palm m500series	SONY	Apr. 2001
Palm m505	SONY	
Palm m515	SONY	Mar. 4, 2002
PEG-NZ90	SONY	Jan. 10, 2003
Palm Tungsten T3	Fujitsu	Oct. 2003
Palm Tungsten T5	Fujitsu	Oct. 2004
Palm Tungsten T	Fujitsu	Nov. 2002
Palm Tungsten T2	Fujitsu	July 2003
MYPAL A730	ASUS	Feb. 9, 2005
MYPAL A716	ASUS	Dec. 2003
Z9422-D	ASUS	
S200N	ASUS	
2350	Dell	2002
Inspiron500M	Dell	2003
Inspiron1100	Dell	2003

Prior Art System	Person/Entity	Date
Inspiron300M	Dell	2003
NX7000	HP	2003
iPaq rz1700	HP	Aug. 2004
iPaq H1940	HP	2003
rz1710	HP	Jul. 2004
rz1715	HP	Jul. 2004
T616	Sony Ericsson	2003
BE-500	Cassio	Jun. 25, 2001
IT-10	Cassio	Nov. 2004
7280	RIM Blackberry	Nov. 2003
iQue 3600	Garmin	2003
Xplore G18	GSL	Jul. 15, 2003
Zodiac 1	TapWave	Oct. 2003
Zodiac 2	TapWave	Oct. 2003
QDA-700	Qool	Nov. 2004
YP3500	G.Mate Inc.	2003

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 '842 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. 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 '842 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 '842 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 '842 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 '842 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 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.

BOE incorporates by reference prior art from the prosecution histories and background sections of the '842 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

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. 7,226,801

BOE incorporates by reference the petition, exhibits, declarations, and all documents submitted in support of *Inter Partes* Review IPR2024-01131.

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 '801 patent was filed on December 28, 2005. Despite having the burden of proof, Optronic has failed to demonstrate that any asserted claim of the '801 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. 7,538,488	2/4/2005	5/26/2009	102(e)
CN 1538212A	10/22/2003	10/20/2004	102(a), (b)
U.S. Patent No. 6,406,636	6/2/1999	6/18/2002	102(a), (b), (e)
U.S. Patent Publication No. 2003/0076452	10/17/2002	4/24/2003	102(a), (b), (e)
U.S. Patent No. 7,446,336	8/26/2004	11/4/2008	102(a) and (e)
U.S. Patent Publication No. 2003/0209726	3/25/2003	11/13/2003	102(a), (b), (e)
U.S. Patent No. 7,786,496	4/23/2003	10/20/2003	102(a), (b), (e)
U.S. Patent No. 6,147,722	8/1/1997	11/14/2000	102(a), (b), (e)
U.S. Patent No. 5,907,376	3/20/1997	5/25/1999	102(a), (b), (e)
U.S. Patent No. 6,734,935	6/20/2002	5/11/2004	102(a), (b), (e)
U.S. Patent No. 7,538,039	4/25/2005	11/3/2005	102(a), (e)
U.S. Patent No. 6,011,608	3/27/1998	1/4/2000	102(a), (b), (e)
U.S. Patent No. 7,423,346	9/9/2004	9/9/2008	102(e)
U.S. Patent No. 6,876,416	4/9/2003	4/5/2005	102(a), (b), (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.

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:

Prior Art System	Person/Entity	Date
2650	Nokia	June 2004
3210	Nokia	March 1999
3310	Nokia	
5140	Nokia	October 2003
6630	Nokia	June 2004

Prior Art System	Person/Entity	Date
7210	Nokia	October 2002
7260	Nokia	September 2004
7650	Nokia	June 2002
9210i	Nokia	November 2000
9300	Nokia	September 2004
P50	BenQ	October 2004
S700	BenQ	Q1 2004
M300	BenQ	Q1 2004
M100	BenQ	Q1 2004
TM100	Sharp	March 2004
GX30	Sharp	February 2004
GX20	Sharp	June 2003
GX10i	Sharp	June 2003
Zaurus SL-C700	Sharp	Nov.12, 2002
7730	Blackberry	December 2003
7230	Blackberry	June 2003
SPH-i700	Samsung	August 2002
SCH-X430	Samsung	2002
SPH-I300	Samsung	Dec. 2001
A920	Motorola	Q1 2003
A925	Motorola	Q3 2003
V690	Motorola	Q3 2003
V501	Motorola	Q1 2004
C550	Motorola	Q4 2003
E616	NEC	Q4 2003
N910	NEC	Q1 2004
E313	NEC	Q1 2004
M750	Mitsubishi	Q4 2003
M330	Mitsubishi	Q3 2003
M900	Mitsubishi	Q3 2004
CS65	Siemens	March 2004
Xelibri 7	Siemens	Q4 2003
A60	Siemens	Q4 2003
C60	Siemens	Q3 2003
S10	Siemens	1998
IBM X22	IBM	Oct. 2001
X31	IBM	Mar. 2003
IBM R50 53C	IBM	
IBM T40 76C	IBM	
ThinkPad T40	IBM	May 2000
T41	IBM	Nov 26, 2003
PowerBook G4 Ti	Apple	Jan 9, 2001
Portege 2000	Toshiba	1993

Prior Art System	Person/Entity	Date
Portege 1620(Dyna Book SS)	Toshiba	
Portege R100	Toshiba	2004
PCG-C1M	SONY	Sept. 19, 1998
N760C	SONY	Feb. 12, 2003
N770C	SONY	Aug. 14, 2019
Clie T600C	SONY	Nov. 1, 2021
Palm m500series	SONY	Apr. 2001
Palm m505	SONY	
Palm m515	SONY	Mar. 4, 2002
PEG-NZ90	SONY	Jan. 10, 2003
Palm Tungsten T3	Fujitsu	Oct. 2003
Palm Tungsten T5	Fujitsu	Oct. 2004
Palm Tungsten T	Fujitsu	Nov. 2002
Palm Tungsten T2	Fujitsu	July 2003
MYPAL A730	ASUS	Feb. 9, 2005
MYPAL A716	ASUS	Dec. 2003
Z9422-D	ASUS	
S200N	ASUS	
2350	Dell	2002
Inspiron500M	Dell	2003
Inspiron1100	Dell	2003
Inspiron300M	Dell	2003
NX7000	HP	2003
iPaq rz1700	HP	Aug. 2004
iPaq H1940	HP	2003
rz1710	HP	Jul. 2004
rz1715	HP	Jul. 2004
T616	Sony Ericsson	2003
BE-500	Cassio	Jun. 25, 2001
IT-10	Cassio	Nov. 2004
7280	RIM Blackberry	Nov. 2003
iQue 3600	Garmin	2003
Xplore G18	GSL	Jul. 15, 2003
Zodiac 1	TapWave	Oct. 2003
Zodiac 2	TapWave	Oct. 2003
QDA-700	Qool	Nov. 2004
YP3500	G.Mate Inc.	2003

B. Anticipation and Obviousness

BOE attaches Exhibits B2-B3, which provide exemplary disclosures showing how the prior art anticipates and/or renders obvious the asserted claims of the '801 patent. BOE may rely

on any of the primary references identified in Exhibits B2-B3 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. 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 '801 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 '801 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 '801 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 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.

BOE incorporates by reference prior art from the prosecution histories and background sections of the '801 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 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. 7,586,121

BOE incorporates by reference the petition, exhibits, declarations, and all documents submitted in support of *Inter Partes* Review IPR2024-01132.

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 '121 patent was filed on July 12, 2024. Despite having the burden of proof, Optronic has failed to demonstrate that any asserted claim of the '121 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. 7,330,168	April 30, 2003	January 22, 2004	Pre-AIA 35 U.S.C. §§ 102(a) and (e)
U.S. Patent No. 6,992,332	May 5, 2003	April 15, 2004	Pre-AIA 35 U.S.C. §§ 102(a) and (e)
PCT Publication No. WO 03/071511	December 10, 2003	August 28, 2003	Pre-AIA 35 U.S.C. §§ 102(a), (b), and (e)
U.S. Patent Publication No. 2003/0067266	April 29, 2002	April 10, 2003	Pre-AIA 35 U.S.C. §§ 102(a) and (e)
U.S. Patent No. 7,256,534	November 6, 2002	June 26, 2003	Pre-AIA 35 U.S.C. §§ 102(a) and (e)
U.S. Patent No. 6,246,179	November 30, 1999	June 12, 2001	Pre-AIA 35 U.S.C. §§ 102(a), (b), and (e)
U.S. Patent No. 6,476,419	February 9. 2000	November 5, 2002	Pre-AIA 35 U.S.C. §§ 102(a), (b), and (e)
PCT Publication No. WO 2004/075245	February 24, 2003	September 24, 2004	Pre-AIA 35 U.S.C. §§ 102(a) and (e)
U.S. Patent Publication No. 2002/0158576	March 27, 2002	October 31, 2002	Pre-AIA 35 U.S.C. §§ 102(a), (b) and (e)
U.S. Patent Publication No. 2005/0082969	October 13, 2004	April 21, 2005	Pre-AIA 35 U.S.C. §§ 102(e)
U.S. Patent Publication No. 2004/0233147	May 17, 2004	November 25, 2004	Pre-AIA 35 U.S.C. §§ 102(a) and (e)

Patent or Pub. No.	Filing Date	Publication Date	Statutory Category
U.S. Patent No. 7,948,170	August 24, 2005	February 8, 2007	Pre-AIA 35 U.S.C. §§ 102(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.

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:

Prior Art System	Person/Entity	Date
Kodak EasyShare LS633	Kodak	April 2003

B. Anticipation and Obviousness

BOE attaches Exhibits F2-F9, which provide exemplary disclosures showing how the prior art anticipates and/or renders obvious the asserted claims of the '121 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 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 '121 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 '121 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 '121 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 '121 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 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.

BOE incorporates by reference prior art from the prosecution histories and background sections of the '121 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 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. 7,884,914

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 '914 patent was filed on November 8, 2005. Despite having the burden of proof, Optronic has failed to demonstrate that any asserted claim of the '914 patent is entitled to a priority date earlier than the filing date of the '914 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:

1. Patents and Patent Application Publications

Patent or Pub. No.	Filing Date	Publication Date	Statutory Category
U.S. Patent Publication No. 2003/0122983 ("Kim")	Dec. 9, 2003	Jul. 3, 2003	Pre-AIA 35 U.S.C. §§ 102(a) and 102(b)
U.S. Patent Publication No. 2002/0163615 ("Fujioka")	Apr. 18, 2002	Nov. 7, 2002	Pre-AIA 35 U.S.C. §§ 102(a) and 102(b)
Applicant Admitted Prior Art (as defined in the claim chart, including portions of the '914 patent, U.S. Patent Application No. 10/782,259 ("Chen 259") & file history) Chen 259 application published as part of its file history. Chen 259 also published as U.S. Pat. Pub. No. 2005/0178498	N/A for AAPA. Chen 259 was filed on Feb. 18, 2004 Each entry in the file history was filed on the date it was filed. U.S. Pat. Pub. No. 2005/0178498 was filed on Feb. 18, 2004	N/A for AAPA. Chen 259 was published as part of the file history on Aug. 18, 2005 Each filing in the file history after Aug. 18, 2005 was published on the day it was filed. U.S. Pat. Pub. No. 2005/0178498 was published on Aug. 18, 2005	Applicant Admitted Prior Art Additionally, each portion of Chen 259, its file history, and U.S. Pat. Pub. No. 2005/0178498 that constitutes AAPA is "buy another" and, therefore, qualifies as a prior art publication under Pre-AIA 35 U.S.C. §§ 102(a) and 102(e).
Chinese Patent Publication No. CN 1538212A ("Zhang")	Oct. 22, 2003	Oct. 20, 2004	Pre-AIA 35 U.S.C. §§ 102(a) and 102(b)
U.S. Patent No. 7,446,336 ("Yamazaki")	Aug. 26, 2004	Mar. 3, 2005	Pre-AIA 35 U.S.C. §§ 102(a) and 102(b)

Patent or Pub. No.	Filing Date	Publication Date	Statutory Category
U.S. Patent No. 6,057,898 ("Itoh")	Aug. 27, 1998	May 2, 2000	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), and 102(e)
Korean Patent Publication No. 2004/0008917A ("Hong")	July 19, 2002	Jan. 31, 2004	Pre-AIA 35 U.S.C. §§ 102(a) and 102(b)
U.S. Patent Publication No. 2004/0070723 ("Imayama")	Aug. 28, 2003	Apr. 15, 2004	Pre-AIA 35 U.S.C. §§ 102(a) and 102(b)
Korean Patent Publication No. 102004/0013469 ("Won")	Aug. 6, 2002	Feb. 14, 2004	Pre-AIA 35 U.S.C. §§ 102(a) and 102(b)
U.S. Patent Publication No. 2004/0017526 ("Kuo")	Dec. 6, 2002	Jan. 29, 2004	Pre-AIA 35 U.S.C. §§ 102(a), 102(b), and 102(e)
Japanese Patent No. 3206599 ("Coalfield")	May 31, 1996	Sept. 10, 2001	Pre-AIA 35 U.S.C. §§ 102(a) and 102(b)
Japanese Patent Publication No. 2003/280018 ("Tetsuya")	Mar. 20, 2002	Oct. 2, 2003	Pre-AIA 35 U.S.C. §§ 102(a) and 102(b)
U.S. Patent Publication No. 2002/0030769 ("Bae")	Sept. 24, 2001	Mar. 14, 2002	Pre-AIA 35 U.S.C. §§ 102(a) and 102(b)
U.S. Patent Publication No. 2003/0179328 ("Manabe")	Mar. 17, 2003	Sept. 25, 2003	Pre-AIA 35 U.S.C. §§ 102(a) and 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. 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
2650	Nokia	June 2004
3210	Nokia	March 1999
3310	Nokia	
5140	Nokia	October 2003
6630	Nokia	June 2004
7210	Nokia	October 2002
7260	Nokia	September 2004
7650	Nokia	June 2002
9210i	Nokia	November 2000
9300	Nokia	September 2004
P50	BenQ	October 2004
S700	BenQ	Q1 2004
M300	BenQ	Q1 2004
M100	BenQ	Q1 2004
TM100	Sharp	March 2004
GX30	Sharp	February 2004
GX20	Sharp	June 2003
GX10i	Sharp	June 2003
Zaurus SL-C700	Sharp	Nov.12, 2002
7730	Blackberry	December 2003
7230	Blackberry	June 2003
SPH-i700	Samsung	August 2002

Prior Art System	Person/Entity	Date
SCH-X430	Samsung	2002
SPH-I300	Samsung	Dec. 2001
A920	Motorola	Q1 2003
A925	Motorola	Q3 2003
V690	Motorola	Q3 2003
V501	Motorola	Q1 2004
C550	Motorola	Q4 2003
E616	NEC	Q4 2003
N910	NEC	Q1 2004
E313	NEC	Q1 2004
M750	Mitsubishi	Q4 2003
M330	Mitsubishi	Q3 2003
M900	Mitsubishi	Q3 2004
CS65	Siemens	March 2004
Xelibri 7	Siemens	Q4 2003
A60	Siemens	Q4 2003
C60	Siemens	Q3 2003
S10	Siemens	1998
IBM X22	IBM	Oct. 2001
X31	IBM	Mar. 2003
IBM R50 53C	IBM	
IBM T40 76C	IBM	
ThinkPad T40	IBM	May 2000
T41	IBM	Nov 26, 2003
PowerBook G4 Ti	Apple	Jan 9, 2001
Portege 2000	Toshiba	1993
Portege 1620(Dyna Book SS)	Toshiba	
Portege R100	Toshiba	2004
PCG-C1M	SONY	Sept. 19, 1998
N760C	SONY	Feb. 12, 2003
N770C	SONY	Aug. 14, 2019
Clie T600C	SONY	Nov. 1, 2021
Palm m500series	SONY	Apr. 2001
Palm m505	SONY	
Palm m515	SONY	Mar. 4, 2002
PEG-NZ90	SONY	Jan. 10, 2003
Palm Tungsten T3	Fujitsu	Oct. 2003
Palm Tungsten T5	Fujitsu	Oct. 2004
Palm Tungsten T	Fujitsu	Nov. 2002
Palm Tungsten T2	Fujitsu	July 2003
MYPAL A730	ASUS	Feb. 9, 2005
MYPAL A716	ASUS	Dec. 2003
Z9422-D	ASUS	

Prior Art System	Person/Entity	Date
S200N	ASUS	
2350	Dell	2002
Inspiron500M	Dell	2003
Inspiron1100	Dell	2003
Inspiron300M	Dell	2003
NX7000	HP	2003
iPaq rz1700	HP	Aug. 2004
iPaq H1940	HP	2003
rz1710	HP	Jul. 2004
rz1715	HP	Jul. 2004
T616	Sony Ericsson	2003
BE-500	Cassio	Jun. 25, 2001
IT-10	Cassio	Nov. 2004
7280	RIM Blackberry	Nov. 2003
iQue 3600	Garmin	2003
Xplore G18	GSL	Jul. 15, 2003
Zodiac 1	TapWave	Oct. 2003
Zodiac 2	TapWave	Oct. 2003
QDA-700	Qool	Nov. 2004
YP3500	G.Mate Inc.	2003

B. Anticipation and Obviousness

BOE attaches Exhibits C-2 to C-7, which provide exemplary disclosures showing how the prior art anticipates and/or renders obvious the asserted claims of the '914 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 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 '914 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 '914 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 '914 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 '914 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 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.

BOE incorporates by reference prior art from the prosecution histories and background sections of the '914 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 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.

VI. U.S. PATENT NO. 9,263,509

BOE incorporates by reference the petition, exhibits, declarations, and all documents submitted in support of *Inter Partes* Review IPR2024-01133.

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 '509 patent was filed on July 31, 2014. Despite having the burden of proof, Optronic has failed to demonstrate that any asserted claim of the '509 patent is entitled to a priority date earlier than the filing date of the '509 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:

1. Patents and Patent Application Publications

Patent or Pub. No.	Filing Date	Publication Date	Statutory Category
U.S. Patent Publication No. 2004/0079945 ("Weaver")	October 28, 2002	April 29, 2004	Post-AIA 35 U.S.C. § 102(a)(1)
U.S. Patent Publication No. 2009/0015149 ("Lee149")	July 9, 2008	January 15, 2009	Post-AIA 35 U.S.C. § 102(a)(1)
U.S. Patent Publication No. 2006/0119259 ("Bae")	November 29, 2005	June 8, 2006	Post-AIA 35 U.S.C. § 102(a)(1)
U.S. Patent No. 9,088,003 ("Gupta")	March 6, 2013	July 21, 2015	Post-AIA 35 U.S.C. § 102(a)(2)
U.S. Patent Publication No. 2011/0248309 ("Han")	April 1, 2011	October 13, 2011	Post-AIA 35 U.S.C. § 102(a)(1)

Patent or Pub. No.	Filing Date	Publication Date	Statutory Category
U.S. Patent Publication No. 2010/0276671 ("Sarma")	April 29, 2009	November 4, 2010	Post-AIA 35 U.S.C. § 102(a)(1)
U.S. Patent Publication No. 2010/0231490 ("Okano")	April 13, 2007	September 16, 2010	Post-AIA 35 U.S.C. § 102(a)(1)
Japanese Patent Publication No. 2007-103126 ("Yamaguchi")	October 3, 2005	April 19, 2007	Post-AIA 35 U.S.C. § 102(a)(1)
U.S. Patent Publication No. 2007/0241664 ("Sakamoto")	April 10, 2007	October 18, 2007	Post-AIA 35 U.S.C. § 102(a)(1)
U.S. Patent Publication No. 2008/0128686 ("Kwon")	September 28, 2007	June 5, 2008	Post-AIA 35 U.S.C. § 102(a)(1)
U.S. Patent Publication No. 2005/0200270 ("Kwak")	March 8, 2005	September 15, 2005	Post-AIA 35 U.S.C. § 102(a)(1)

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. 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
Galaxy S4 Android Smartphone ("S4")	Samsung	At least as of March 14, 2013
LS633	Kodak	April 2003
vz90	Sony	2004
XEL-1	Sony	2008
S88	BenQ-Siemens	2006

B. Anticipation and Obviousness

BOE attaches Exhibits D-2 to D-8, which provide exemplary disclosures showing how the prior art anticipates and/or renders obvious the asserted claims of the '509 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 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 D-2 TO D-8, 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 '509 patent. The references identified in Exhibits D-2 TO D-8 are analogous prior art to the subject matter of the asserted claims and, for at least the reasons set forth below, 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 '509 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 '509 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 '509 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 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; 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 '509 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 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.

VII. U.S. PATENT NO. 9,406,733

BOE incorporates by reference the petition, exhibits, declarations, and all documents submitted in support of *Inter Partes* Review IPR2024-01134.

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 '733 patent was filed on December 18, 2015. Despite having the burden of proof, Optronic has failed to demonstrate that any asserted claim of the '733 patent is entitled to a priority date earlier than the filing date of the '733 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:

1. Patents and Patent Application Publications

Patent or Pub. No.	Filing Date	Publication Date	Statutory Category
U.S. Patent No. 9,088,003 ("Gupta")	March 6, 2013	July 21, 2015	Post-AIA 35 U.S.C. § 102(a)(2)
U.S. Patent Publication No. 2011/0248309 ("Han")	April 1, 2011	October 13, 2011	Post-AIA 35 U.S.C. § 102(a)(1)
U.S. Patent Publication No. 2009/0015149 ("Lee149")	July 9, 2008	January 15, 2009	Post-AIA 35 U.S.C. § 102(a)(1)
U.S. Patent Publication No. 2004/0079945 ("Weaver")	October 28, 2002	April 29, 2004	Post-AIA 35 U.S.C. § 102(a)(1)
U.S. Patent Publication No. 2007/0132374 ("Park1")	December 13, 2006	June 14, 2007	Post-AIA 35 U.S.C. § 102(a)(1)
U.S. Patent Publication No. 2003/0205970 ("Park2")	December 27, 2002	November 6, 2003	Post-AIA 35 U.S.C. § 102(a)(1)
U.S. Patent Publication No. 2005/0142977 ("Park3")	December 28, 2004	June 30, 2005	Post-AIA 35 U.S.C. § 102(a)(1)

2. Printed Publications

Title	Author/Publisher	Date	Statutory Category
A novel TFT-OLED integration for OLED-independent pixel programming in amorphous-Si AMOLED pixels	Hekmatshoar et al./ Society for Information Display	2008	Post-AIA 35 U.S.C. § 102(a)(1)
Amorphous Silicon Thin Film Transistor Circuit Integration for Organic LED Displays on Glass and Plastic	Arokia Nathan et al., IEEE Journal Of Solid-State Circuits	2004	Post-AIA 35 U.S.C. § 102(a)(1)
Fundamentals of OLEDs	Amal Ghosh et al, Society for Information Display	2004	Post-AIA 35 U.S.C. § 102(a)(1)

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:

Prior Art System	Person/Entity	Date
Galaxy S4 Android Smartphone ("S4")	Samsung	At least as of March 14, 2013
LS633	Kodak	April 2003
vz90	Sony	2004
XEL-1	Sony	2008
S88	BenQ-Siemens	2006

B. Anticipation and Obviousness

BOE attaches Exhibits E-2 to E-8, which provide exemplary disclosures showing how the prior art anticipates and/or renders obvious the asserted claims of the '733 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 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 E-2 to E-8, 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 '733 patent. The references identified in Exhibits E-2 to E-8 are analogous prior art to the subject matter of the asserted claims and, for at least the reasons set forth below, 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 '733 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 '733 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 '733 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 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; 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 '733 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 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.

VIII. U.S. PATENT NO. 7,915,117

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 '117 patent was filed on December 28, 2006. Despite having the burden of proof, Optronic has failed to demonstrate that any asserted claim of the '117 patent is entitled to a priority date earlier than the filing date of the '117 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:

1. Patents and Patent Application Publications

Patent or Pub. No.	Filing Date	Publication Date	Statutory Category
U.S. Patent No. 6,963,173 to Kawachi et al. ("Kawachi")	May 17, 2004	November 25, 2004	Pre-AIA 35 U.S.C. § 102(a), (e)
U.S. Patent Application Publication No. 20050099369 to Lee ("Lee-369")	August 11, 2004	May 12, 2005	Pre-AIA 35 U.S.C. § 102(e)
U.S. Patent No. 6,359,606 to Yudasaka ("Yudasaka")	August 25, 1998	March 11, 1999	Pre-AIA 35 U.S.C. § 102(a), (b), (e).
US 6,057,896 to Rho et al. ("Rho")	November, 26, 1997	May 2, 2000	Pre-AIA 35 U.S.C. § 102(a), (b), (e).
U.S. Patent Application Publication No. 2004/0263072 to Park et al. ("Park-072")	June 23, 2004	December 30, 2004	Pre-AIA 35 U.S.C. § 102(e)
U.S. Patent Application Publication No. 20050275609 to Lee et al. ("Lee-609")	October 22, 2004	December 15, 2005	Pre-AIA 35 U.S.C. § 102(e)
U.S. Patent Application Publication No. 2004/0135501 to Nishikawa ("Nishikawa")	November 13, 2003	July 15, 2004	Pre-AIA 35 U.S.C. § 102(a), (e).
PCT Publication No. WO 03/071511 to Choi ("Choi")	December 10, 2002	August 28, 2003	Pre-AIA 35 U.S.C. § 102(a), (b)

Patent or Pub. No.	Filing Date	Publication Date	Statutory Category
U.S. Patent No. 7,330,168 to Anzai ("Anzai")	April 30, 2003	January 22, 2004	Pre-AIA 35 U.S.C. § 102(a), (e).
U.S. Patent Application Publication No. 2002/0021266 to Koyama at al. ("Koyama")	April 17, 2001	February 21, 2002	Pre-AIA 35 U.S.C. § 102(a), (b), (e).
U.S. Patent No. 7,420,212 to Kim et al. ("Kim")	November 19, 2004	June 2, 2005	Pre-AIA 35 U.S.C. § 102(e)
U.S. Patent Application Publication No. 2001/0025959 to Yamazaki et al. ("Yamazaki")	February 21, 2001	October 4, 2001	Pre-AIA 35 U.S.C. § 102(a), (b), (e).
U.S. Patent Application Publication No. 2003/0132896 to Matsueda ("Matsueda")	November 20, 2002	July 17, 2003	Pre-AIA 35 U.S.C. § 102(a), (b), (e).
U.S. Patent Application Publication No. 20020158576 to Yamada et al. ("Yamada")	March 27, 2002	October 31, 2002	Pre-AIA 35 U.S.C. § 102(a), (b), (e).
U.S. Patent Application Publication No. 2005/0082969 to Tokuda et al. ("Tokuda")	October 13, 2004	April 21, 2005	Pre-AIA 35 U.S.C. § 102(e)
KR20030035219 to Joo et al. ("Joo")	October 30, 2001	May 9, 2003	Pre-AIA 35 U.S.C. § 102(a), (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

Title	Author/Publisher	Date	Statutory Category
Organic electroluminescent devices with improved stability	Van Slyke, S. A., Chen, C. H., & Tang, C. W. *Applied Physics Letter*	1996	Pre-AIA 35 U.S.C. § 102(b)
Solid State Electronic Devices 4th Edition	Ben Streetman Prentice0Hall	1995	Pre-AIA 35 U.S.C. § 102(b)

3. Prior Art Systems

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.

Prior Art System	Person/Entity	Date
LS633	Kodak	April 2003

B. Anticipation and Obviousness

BOE attaches Exhibits G-2 to G-4, which provide exemplary disclosures showing how the prior art anticipates and/or renders obvious the asserted claims of the '117 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 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 '117 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 '117 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 '117 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 '117 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 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.

BOE incorporates by reference prior art from the prosecution histories and background sections of the '117 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 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.

IX. U.S. PATENT NO. 8,158,477

BOE incorporates by reference the petition, exhibits, declarations, and all documents submitted in support of *Inter Partes* Review IPR2024-01315.

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 '477 patent was filed on August 28, 2004. Despite having the burden of proof, Optronic has failed to demonstrate that any asserted claim of the '477 patent is entitled to a priority date earlier than the filing date of the '477 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:

1. Patents and Patent Application Publications

Patent or Pub. No.	Filing Date	Publication Date	Statutory Category
U.S. Patent No. 7,330,168	April 30, 2003	January 22, 2004	Pre-AIA 35 U.S.C. §§ 102(a) and (e)
U.S. Patent No. 6,992,332	May 5, 2003	April 15, 2004	Pre-AIA 35 U.S.C. §§ 102(a) and (e)
PCT Publication No. WO 03/071511	December 10, 2003	August 28, 2003	Pre-AIA 35 U.S.C. §§ 102(a), (b), and (e)
U.S. Patent Publication No. 2003/0067266	April 29, 2002	April 10, 2003	Pre-AIA 35 U.S.C. §§ 102(a) and (e)
U.S. Patent No. 6,246,179	November 30, 1999	June 12, 2001	Pre-AIA 35 U.S.C. §§ 102(a), (b), and (e)
U.S. Patent No. 7,420,212	November 19, 2004	June 2, 2005	Pre-AIA 35 U.S.C. §§ 102(e)
U.S. Patent Publication No. 2005/0082969	October 13, 2004	April 21, 2005	Pre-AIA 35 U.S.C. §§ 102(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

3. Prior Art Systems

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 H2-H6, which provide exemplary disclosures showing how the prior art anticipates and/or renders obvious the asserted claims of the '477 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 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 '477 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 '477 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 '477 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 '477 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 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.

BOE incorporates by reference prior art from the prosecution histories and background sections of the '477 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 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.

X. U.S. PATENT NO. 8,492,222

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 '222 patent was filed on March 14, 2012. Despite having the burden of proof, Optronic has failed to demonstrate that any asserted claim of

the '222 patent is entitled to a priority date earlier than the filing date of the '222 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:

1. Patents and Patent Application Publications

Patent or Pub. No.	Filing Date	Publication Date	Statutory Category
U.S. Patent No. 6,963,173 to Kawachi et al. ("Kawachi")	May 17, 2004	November 25, 2004	Pre-AIA 35 U.S.C. § 102(a), (e)
U.S. Patent Application Publication No. 20050099369 to Lee ("Lee-369")	August 11, 2004	May 12, 2005	Pre-AIA 35 U.S.C. § 102(e)
U.S. Patent Application Publication No. 2004/0135501 to Nishikawa ("Nishikawa")	November 13, 2003	July 15, 2004	Pre-AIA 35 U.S.C. § 102(a), (e).
PCT Publication No. WO 03/071511 to Choi ("Choi")	December 10, 2002	August 28, 2003	Pre-AIA 35 U.S.C. § 102(a), (b)
U.S. Patent No. 7,330,168 to Anzai ("Anzai")	April 30, 2003	January 22, 2004	Pre-AIA 35 U.S.C. § 102(a), (e).
U.S. Patent Application Publication No. 2002/0021266 to Koyama at al. ("Koyama")	April 17, 2001	February 21, 2002	Pre-AIA 35 U.S.C. § 102(a), (b), (e).
U.S. Patent No. 7,420,212 to Kim et al. ("Kim")	November 19, 2004	June 2, 2005	Pre-AIA 35 U.S.C. § 102(e)
U.S. Patent Application Publication No. 2001/0025959 to Yamazaki et al. ("Yamazaki")	February 21, 2001	October 4, 2001	Pre-AIA 35 U.S.C. § 102(a), (b), (e).
U.S. Patent Application Publication No. 20020158576 to Yamada et al. ("Yamada")	March 27, 2002	October 31, 2002	Pre-AIA 35 U.S.C. § 102(a), (b), (e).
U.S. Patent Application Publication No. 2005/0082969 to Tokuda et al. ("Tokuda")	October 13, 2004	April 21, 2005	Pre-AIA 35 U.S.C. § 102(e)
U.S. Patent No. 6,771,328 to Park et al. ("Park")	June 26, 2002	January, 22, 2004	Pre-AIA 35 U.S.C. § 102(a), (e)
KR20030035219 to Joo et al. ("Joo")	October 30, 2001	May 9, 2003	Pre-AIA 35 U.S.C. § 102(a), (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

Title	Author/Publisher	Date	Statutory Category
Organic electroluminescent devices with improved stability	Van Slyke, S. A., Chen, C. H., & Tang, C. W. *Applied Physics Letter*	1996	Pre-AIA 35 U.S.C. § 102(b)
Solid State Electronic Devices 4th Edition	Ben Streetman Prentice0Hall	1995	Pre-AIA 35 U.S.C. § 102(b)

3. Prior Art Systems

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.

Prior Art System	Person/Entity	Date
LS633	Kodak	April 2003

B. Anticipation and Obviousness

BOE attaches Exhibits I-2 to I-5, which provide exemplary disclosures showing how the prior art anticipates and/or renders obvious the asserted claims of the '222 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 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 '222 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 '222 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 '222 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 '222 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 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.

BOE incorporates by reference prior art from the prosecution histories and background sections of the '222 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 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 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 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 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: October 25, 2024

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on October 25, 2024, I electronically filed the foregoing with the Clerk of Court using the CM/ECF system which will send notification of such filing via electronic mail to all counsel of record. Any other counsel of record will be served by first class U.S. mail.

/s/ John M. Guaragna
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