

**HIGHLY CONFIDENTIAL –ATTORNEYS’ EYES ONLY**

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

SINOTECHNIX LLC,

*Plaintiff,*

v.

SAMSUNG ELECTRONICS CO., LTD.,  
SAMSUNG ELECTRONICS AMERICA,  
INC., AND SAMSUNG DISPLAY CO.,  
LTD.

*Defendants.*

Civil Action No. 2:24-cv-544-JRG-RSP

**JURY TRIAL DEMANDED**

**DEFENDANTS’ AMENDED LOCAL PATENT RULE 3-3  
INVALIDITY CONTENTIONS**

Defendants Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., and Samsung Display Co., Ltd., (collectively, “Samsung” or “Defendants”) hereby provide their Amended P.R. 3-3 Invalidity Contentions, including charts attached as Exhibits 162-1 through 162-14, 873-1 through 873-19, 113-1 through 113-13, 626-1 through 626-20, 952-1 through 952-17, and 913-1 through 913-16 and cited herein, to Plaintiff Sinotechnix LLC (“Sinotechnix” or “Plaintiff”), with respect to the asserted claims of U.S. Patent Nos. 7,618,162 (the “’162 Patent”), 7,748,873 (the “’873 Patent”), 7,901,113 (the “’113 Patent”), 7,951,626 (the “’626 Patent”), 8,132,952 (the “’952 Patent”), and 9,412,913 (the “’913 Patent”) (collectively, the “Asserted Patents”) identified in Plaintiff’s P.R. 3-1 Infringement Contentions, served on October 24, 2024, and Plaintiff’s P.R. 3-1 Amended Infringement Contentions, served on March 25, 2024 (collectively, the “P.R. 3-1 Infringement Contentions”).

In its P.R. 3-1 Infringement Contentions Sinotechnix has asserted the following claims (collectively, the “Asserted Claims”) against Samsung:

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LN-R460D, is prior art to the ’113 Patent, as demonstrated, for example, in Exhibit ’113-12. If the Court were to accept Plaintiff’s ’113 Patent Accusations, all Asserted Claims of the ’113 Patent are invalid due to anticipation.

**D. ’626 Patent**

Subject to the reservation of rights set forth above and based on Samsung’s present understanding of the Asserted Claims of the Asserted Patents, and the apparent application of claim terms Plaintiff is asserting based on its Infringement Contentions, the Asserted Claims of the ’626 Patent are anticipated by the following prior art references charted in Exhibits 626-1 to 626-19:

- US 2005/0281303 (“Horio”)
- WO 2002/059983 (“Eliashevich I”)
- US 2004/0113168 (“Eliashevich II”)
- US 2003/0190534 (“Kobayashi”)
- US 2003/0228740 (“Nagai”)
- US 5,174,857 (“Sung”)
- US 4,912,022 (“Urquhart”)
- US 6,404,125 (“Garbuzov”)
- US 5,378,309 (“Rabinzohn”)
- US 6,444,410 (“Huang”)
- US 2003/0189212 (“Yoo”)
- US 7,015,512 (“Park III”)
- J.R. LaRoche, *III-IV Semiconductor Processing* (2002) (“LaRoche”)
- Florida Process
- Samsung LEDs

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- GELcore LEDs
- Digimax
- Lumileds Luxeon
- Samsung LN-R460D
- Each reference cited in SINO\_0004146-SINO\_0004252 (*e.g.*, Akimoto, Dawson, Donofrio, Haberern, Jiang, Niki, Sakakura, Sakamoto, Salam, and Tanaka)

For example, Exhibit 626-1 contains a claim chart demonstrating that Horio disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the '626 Patent, at least under Plaintiff's apparent application of its claims. Horio is prior art to the '626 Patent. *See* Sec. III.A. As shown in Exhibit 626-1, at least under Plaintiff's apparent application of its claims, Horio included all claimed features of the '626 Patent, at least under Plaintiff's apparent application of its claims.

For example, Exhibit 626-2 contains a claim chart demonstrating that Eliashevich I disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the '626 Patent, at least under Plaintiff's apparent application of its claims. Eliashevich I is prior art to the '626 Patent. *See* Sec. III.A. As shown in Exhibit 626-2, at least under Plaintiff's apparent application of its claims, Eliashevich I included all claimed features of the '626 Patent, at least under Plaintiff's apparent application of its claims.

For example, Exhibit 626-3 contains a claim chart demonstrating that Eliashevich II disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the '626 Patent, at least under Plaintiff's apparent application of its claims. Eliashevich II is prior art to the '626 Patent. *See* Sec. III.A. As shown in Exhibit 626-3, at least under Plaintiff's apparent

application of its claims, Eliashevich II included all claimed features of the ’626 Patent, at least under Plaintiff’s apparent application of its claims.

For example, Exhibit 626-4 contains a claim chart demonstrating that Kobayashi disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the ’626 Patent, at least under Plaintiff’s apparent application of its claims. Kobayashi is prior art to the ’626 Patent. *See* Sec. III.A. As shown in Exhibit 626-4, at least under Plaintiff’s apparent application of its claims, Kobayashi included all claimed features of the ’626 Patent, at least under Plaintiff’s apparent application of its claims.

For example, Exhibit 626-5 contains a claim chart demonstrating that Nagai disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the ’626 Patent, at least under Plaintiff’s apparent application of its claims. Nagai is prior art to the ’626 Patent. *See* Section Sec. III.A. As shown in Exhibit 626-5, at least under Plaintiff’s apparent application of its claims, Nagai included all claimed features of the ’626 Patent, at least under Plaintiff’s apparent application of its claims.

For example, Exhibit 626-6 contains a claim chart demonstrating that Sung disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the ’626 Patent, at least under Plaintiff’s apparent application of its claims. Sung is prior art to the ’626 Patent. *See* Section Sec. III.A. As shown in Exhibit 626-6, at least under Plaintiff’s apparent application of its claims, Sung included all claimed features of the ’626 Patent, at least under Plaintiff’s apparent application of its claims.

For example, Exhibit 626-7 contains a claim chart demonstrating that Urquhart disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the ’626 Patent, at least under Plaintiff’s apparent application of its claims. Urquhart is prior art to the ’626

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Patent. *See* Section Sec. III.A. As shown in Exhibit 626-7, at least under Plaintiff's apparent application of its claims, Urquhart included all claimed features of the '626 Patent, at least under Plaintiff's apparent application of its claims.

For example, Exhibit 626-8 contains a claim chart demonstrating that Garbuzov disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the '626 Patent, at least under Plaintiff's apparent application of its claims. Garbuzov is prior art to the '626 Patent. *See* Section Sec. III.A. As shown in Exhibit 626-8, at least under Plaintiff's apparent application of its claims, Garbuzov included all claimed features of the '626 Patent, at least under Plaintiff's apparent application of its claims.

For example, Exhibit 626-9 contains a claim chart demonstrating that Rabinzohn disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the '626 Patent, at least under Plaintiff's apparent application of its claims. Rabinzohn is prior art to the '626 Patent. *See* Section Sec. III.A. As shown in Exhibit 626-9, at least under Plaintiff's apparent application of its claims, Rabinzohn included all claimed features of the '626 Patent, at least under Plaintiff's apparent application of its claims.

For example, Exhibit 626-10 contains a claim chart demonstrating that Huang disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the '626 Patent, at least under Plaintiff's apparent application of its claims. Huang is prior art to the '626 Patent. *See* Section Sec. III.A. As shown in Exhibit 626-10, at least under Plaintiff's apparent application of its claims, Huang included all claimed features of the '626 Patent, at least under Plaintiff's apparent application of its claims.

For example, Exhibit 626-11 contains a claim chart demonstrating that Yoo disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the '626

Patent, at least under Plaintiff’s apparent application of its claims. Yoo is prior art to the ’626 Patent. *See* Section Sec. III.A. As shown in Exhibit 626-11, at least under Plaintiff’s apparent application of its claims, Yoo included all claimed features of the ’626 Patent, at least under Plaintiff’s apparent application of its claims.

For example, Exhibit 626-12 contains a claim chart demonstrating that Park III disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the ’626 Patent, at least under Plaintiff’s apparent application of its claims. Park III is prior art to the ’626 Patent. *See* Section Sec. III.A. As shown in Exhibit 626-12, at least under Plaintiff’s apparent application of its claims, Park III included all claimed features of the ’626 Patent, at least under Plaintiff’s apparent application of its claims.

For example, Exhibit 626-13 contains a claim chart demonstrating that LaRoche disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the ’626 Patent, at least under Plaintiff’s apparent application of its claims. LaRoche is prior art to the ’626 Patent. *See* Section Sec. III.B. As shown in Exhibit 626-13, at least under Plaintiff’s apparent application of its claims, LaRoche included all claimed features of the ’626 Patent, at least under Plaintiff’s apparent application of its claims.

For example, Exhibit 626-14 contains a claim chart demonstrating that Florida Process disclosed, suggested, and/or rendered obvious each and every element of the Asserted Claims of the ’626 Patent, at least under Plaintiff’s apparent application of its claims. Florida Process were sold, offered for sale, and were known or used by others in this country before the alleged priority date of the ’626 Patent. *See* Sec. III.C.18. As shown in Exhibit 626-14, at least under Plaintiff’s apparent application of its claims, Florida Process included all claimed features of the ’626 Patent, at least under Plaintiff’s apparent application of its claims.

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For example, Exhibit 626-15 contains a claim chart demonstrating that the prior art Samsung LEDs included each and every element of the Asserted Claims of the '626 Patent, at least under Plaintiff's apparent application of its claims. The prior art Samsung LEDs were sold, offered for sale, and were known or used by others in this country before the asserted priority date of the '626 Patent. See Sec. III.C.10. As shown in Exhibit 626-15, at least under Plaintiff's apparent application of its claims, the prior art Samsung LEDs included all claimed features of the '626 Patent, at least under Plaintiff's apparent application of its claims.

For example, Exhibit 626-16 contains a claim chart demonstrating that the GELcore LEDs included each and every element of the Asserted Claims of the '626 Patent, at least under Plaintiff's apparent application of its claims. The GELcore LEDs were sold, offered for sale, and were known or used by others in this country before the alleged priority date of the '626 Patent. See Section Sec. III.C.10. As shown in Exhibit 626-16, at least under Plaintiff's apparent application of its claims, the GELcore LEDs included all claimed features of the '626 Patent, at least under Plaintiff's apparent application of its claims.

For example, Exhibit 626-17 contains a claim chart demonstrating that Digimax included each and every element of the Asserted Claims of the '626 Patent, at least under Plaintiff's apparent application of its claims. Digimax was sold, offered for sale, and were known or used by others in this country before the asserted priority date of the '626 Patent. See Sec. III.C.13. As shown in Exhibit 626-17, at least under Plaintiff's apparent application of its claims, Digimax included all claimed features of the '626 Patent, at least under Plaintiff's apparent application of its claims.

For example, Exhibit 626-18 contains a claim chart demonstrating that Lumileds Luxeon included each and every element of the Asserted Claims of the '626 Patent, at least under Plaintiff's apparent application of its claims. Lumileds Luxeon was sold, offered for sale, and were known

or used by others in this country before the asserted priority date of the '626 Patent. *See* Sec. III.C.2-5. As shown in Exhibit 626-18, at least under Plaintiff's apparent application of its claims, Lumileds Luxeon included all claimed features of the '626 Patent, at least under Plaintiff's apparent application of its claims.

For example, Exhibit 626-19 contains a claim chart demonstrating that Samsung LN-R460D included each and every element of the Asserted Claims of the '626 Patent, at least under Plaintiff's apparent application of its claims. Samsung LN-R460D was sold, offered for sale, and were known or used by others in this country before the asserted priority date of the '626 Patent. *See* Sec. III.C.24. As shown in Exhibit 626-19, at least under Plaintiff's apparent application of its claims, Samsung LN-R460D included all claimed features of the '626 Patent, at least under Plaintiff's apparent application of its claims.

For example, the disclosures contained in a claim chart produced at SINO\_0004146-SINO\_0004156 demonstrate that US 7,057,208 (“Akimoto”) disclosed, suggested, and/or rendered obvious each and every element of at least claim 9 of the '626 Patent, at least under Plaintiff's apparent application of its claims. Akimoto was published before the alleged priority date of the '626 Patent. As shown by the disclosures in the claim chart (which disclosures are incorporated by reference to these Invalidity Contentions), at least under Plaintiff's apparent application of its claims, Akimoto included all claimed features of the '626 Patent, at least under Plaintiff's apparent application of its claims.

For example, the disclosures contained in a claim chart produced at SINO\_0004157-SINO\_0004166 demonstrate that US 7,598,149 (“Dawson”) disclosed, suggested, and/or rendered obvious each and every element of at least claim 9 of the '626 Patent, at least under Plaintiff's apparent application of its claims. Dawson was published before the alleged priority date of the

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’626 Patent. As shown by the disclosures in the claim chart (which disclosures are incorporated by reference to these Invalidity Contentions), at least under Plaintiff’s apparent application of its claims, Dawson included all claimed features of the ’626 Patent, at least under Plaintiff’s apparent application of its claims.

For example, the disclosures contained in a claim chart produced at SINO\_0004167-SINO\_0004177 demonstrate that US 7,419,912 (“Donofrio”) disclosed, suggested, and/or rendered obvious each and every element of at least claim 9 of the ’626 Patent, at least under Plaintiff’s apparent application of its claims. Donofrio was published before the alleged priority date of the ’626 Patent. As shown by the disclosures in the claim chart (which disclosures are incorporated by reference to these Invalidity Contentions), at least under Plaintiff’s apparent application of its claims, Donofrio included all claimed features of the ’626 Patent, at least under Plaintiff’s apparent application of its claims.

For example, the disclosures contained in a claim chart produced at SINO\_0004178-SINO\_0004186 demonstrate that US 7,329,569 (“Haberern”) disclosed, suggested, and/or rendered obvious each and every element of at least claim 9 of the ’626 Patent, at least under Plaintiff’s apparent application of its claims. Haberern was published before the alleged priority date of the ’626 Patent. As shown by the disclosures in the claim chart (which disclosures are incorporated by reference to these Invalidity Contentions), at least under Plaintiff’s apparent application of its claims, Haberern included all claimed features of the ’626 Patent, at least under Plaintiff’s apparent application of its claims.

For example, the disclosures contained in a claim chart produced at SINO\_0004198-SINO\_0004204 demonstrate that US 7,213,942 (“Jiang”) disclosed, suggested, and/or rendered obvious each and every element of at least claim 9 of the ’626 Patent, at least under Plaintiff’s

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apparent application of its claims. Jiang was published before the alleged priority date of the '626 Patent. As shown by the disclosures in the claim chart (which disclosures are incorporated by reference to these Invalidity Contentions), at least under Plaintiff's apparent application of its claims, Jiang included all claimed features of the '626 Patent, at least under Plaintiff's apparent application of its claims.

For example, the disclosures contained in a claim chart produced at SINO\_0004205-SINO\_0004213 demonstrate that US 6,870,191 ("Niki") disclosed, suggested, and/or rendered obvious each and every element of at least claim 9 of the '626 Patent, at least under Plaintiff's apparent application of its claims. Niki was published before the alleged priority date of the '626 Patent. As shown by the disclosures in the claim chart (which disclosures are incorporated by reference to these Invalidity Contentions), at least under Plaintiff's apparent application of its claims, Niki included all claimed features of the '626 Patent, at least under Plaintiff's apparent application of its claims.

For example, the disclosures contained in a claim chart produced at SINO\_0004214-SINO\_0004223 demonstrate that US 7,301,279 ("Sakakura") disclosed, suggested, and/or rendered obvious each and every element of at least claim 9 of the '626 Patent, at least under Plaintiff's apparent application of its claims. Sakakura was published before the alleged priority date of the '626 Patent. As shown by the disclosures in the claim chart (which disclosures are incorporated by reference to these Invalidity Contentions), at least under Plaintiff's apparent application of its claims, Sakakura included all claimed features of the '626 Patent, at least under Plaintiff's apparent application of its claims.

For example, the disclosures contained in a claim chart produced at SINO\_0004224-SINO\_0004231 demonstrate that US 7,358,544 ("Sakamoto") disclosed, suggested, and/or

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rendered obvious each and every element of at least claim 9 of the '626 Patent, at least under Plaintiff's apparent application of its claims. Sakamoto was published before the alleged priority date of the '626 Patent. As shown by the disclosures in the claim chart (which disclosures are incorporated by reference to these Invalidity Contentions), at least under Plaintiff's apparent application of its claims, Sakamoto included all claimed features of the '626 Patent, at least under Plaintiff's apparent application of its claims.

For example, the disclosures contained in a claim chart produced at SINO\_0004232-SINO\_0004240 demonstrate that US 2005/0023537 ("Salam") disclosed, suggested, and/or rendered obvious each and every element of at least claim 9 of the '626 Patent, at least under Plaintiff's apparent application of its claims. Salam was published before the alleged priority date of the '626 Patent. As shown by the disclosures in the claim chart (which disclosures are incorporated by reference to these Invalidity Contentions), at least under Plaintiff's apparent application of its claims, Salam included all claimed features of the '626 Patent, at least under Plaintiff's apparent application of its claims.

For example, the disclosures contained in a claim chart produced at SINO\_0004241-SINO\_0004252 demonstrate that US 7,683,386 ("Tanaka") disclosed, suggested, and/or rendered obvious each and every element of at least claim 9 of the '626 Patent, at least under Plaintiff's apparent application of its claims. Tanaka was published before the alleged priority date of the '626 Patent. As shown by the disclosures in the claim chart (which disclosures are incorporated by reference to these Invalidity Contentions), at least under Plaintiff's apparent application of its claims, Tanaka included all claimed features of the '626 Patent, at least under Plaintiff's apparent application of its claims.

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The Asserted Claims of the '626 Patent are further invalid under the doctrine of anticipation by accusation. *See Vanmoor v. Wal-Mart Stores, Inc.*, 201 F.3d 1363, 1367 (Fed. Cir. 2000); *Evans Cooling Sys. Inc. v. General Motors Corp.*, 125 F.3d 1448, 1448 (Fed. Cir. 1997). Plaintiff alleges that each Asserted Claim of the '626 Patent is infringed by: “televisions, monitors, laptops, or liquid crystal display modules (or their components) that use backlights with LEDs as their light-sources to provide the light that illuminates the display screen”; “LEDs ... included as part of LED assemblies used as the light-sources in the backlighting units of accused end-user products, i.e. televisions, monitors, and laptops, and their respective liquid crystal display modules”; “all Samsung backlit products that include reasonably similar LEDs”; and “each LED in Samsung’s backlit displays” (the “’626 Patent Accusations”). *See* Mar. 24, 2025 Amended Infringement Contentions, Exhibit D. Plaintiff contends that all of Samsung’s products encompassed by the '626 Patent Accusations satisfy each and every limitation of each asserted claim of the '626 Patent. *Id.* At least one product encompassed by the '626 Patent Accusations (and therefore accused of infringement), Samsung LN-R460D, is prior art to the '626 Patent, as demonstrated, for example, in Exhibit '626-19. If the Court were to accept Plaintiff’s '626 Patent Accusations, all Asserted Claims of the '626 Patent are invalid due to anticipation.

**E. '952 Patent**

Subject to the reservation of rights set forth above and based on Samsung’s present understanding of the Asserted Claims of the Asserted Patents, and the apparent application of claim terms Plaintiff is asserting based on its Infringement Contentions, the Asserted Claims of the '952 Patent are anticipated by the following prior art references charted in Exhibits 952-1 to 952-16:

- US 2005/0007516 (“Hong”)
- US 7,278,775 (“Yeo”)

a combination of lead frames having resin-holding components taught by the Resin-Holding Components References would have been an application of a known technique (using components to hold resin) to a known device (an encapsulated package) to yield predictable results (increased bonding force and reduced delamination). Furthermore, the modification would have been the use of a known technique (using components to hold resin) to improve a similar device (LED device with lead frame package) in the same way (the benefits of using resin-holding components would similarly have benefitted other packaged semiconductor devices, such as LEDs).

At a minimum, a person of ordinary skill in the art would have found it obvious to try to use a lead, lead frame, and/or lead terminal comprising resin-holding components with an LED device—using an intrinsic layer was one of a limited number of alternatives known in the art, where those alternatives include discrete package housing components and/or adhesives.

#### **H. '626 Patent**

Prior art references rendering the Asserted Claims of the '626 Patent obvious, alone or in combination with other references, are identified and discussed below and are included in the claim charts Exhibits 626-1 through 626-20. Exhibits 626-1 through 626-20 include exemplary claim charts for the '626 Patent showing specific combinations of references, including citations to where in the references the teachings, suggestions, and motivations to combine the references are disclosed. Further reasons to combine the references identified in Exhibits 626-1 through 626-20 include the nature of the problem being solved, the express, implied and inherent teachings of the prior art, the knowledge of persons of ordinary skill in the art, that such combinations would have yielded predictable results, and that such combinations would have represented known alternatives to a person of ordinary skill in the art.

The primary references cited in Defendants' exemplary claim charts, Exhibits 626-1 through 626-20 are Horio, Eliashevich I, Eliashevich II, Kobayashi, Nagai, Sung, Urquhart,

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Garbuzov, Rabinzohn, Huang, Yoo, Park III, LaRoche, Florida Process, Samsung LEDs, Digimax, Lumileds Luxeon, LN-R460D, and GELcore LEDs, as well as each additional reference cited in SINO\_0004146-SINO\_0004252 (*e.g.*, Akimoto, Dawson, Donofrio, Habernern, Jiang, Niki, Sakakura, Sakamoto, Salam, and Tanaka; *see* Section IV.D *supra*). Each of the primary references discloses and/or suggests all or, at a minimum, the vast majority of the limitations of the Asserted Claims of the '626 Patent. To the extent any claim elements are found to be missing from a particular primary reference, the claim element would have been rendered obvious by the particular primary reference in combination with other primary references and/or with secondary references identified and described in Sections V.B.25 (Light Emitting Device and Manufacture Methods), V.B.26 (Semiconductor Devices and Manufacture Methods), V.B.27 (Semiconductor Photolithography Processes), V.B.28 (Slope Etching Processes), V.B.29 (Photoresist Thickness), V.B.30 (Hard-Baking).

Specifically, subject to the reservation of rights above and based at least on Samsung's present understanding of the Asserted Claims of the '626 Patent and Sinotechnix's apparent application of its Asserted Claims, the following Asserted Claims of the '626 Patent are rendered obvious by the specified combinations of references. These specified combinations of references are meant to be illustrative only and are not meant to be limited to only the exemplary combinations explicitly noted below. For example, each of the primary reference can be combined with any one of the specific secondary references identified in Sections V.B.25 through V.B.30.

To the extent a finder of fact finds that a limitation of a given claim was not disclosed by one of the references identified above, those claims are nevertheless unpatentable as obvious because the asserted claims contain nothing that goes beyond ordinary creativity. To the extent not anticipated, no asserted claim goes beyond combining known elements to achieve predictable

results or does more than choose between clear alternatives known to those of ordinary skill in the art, particularly in view of the state of the art as reflected in the relevant references listed above in Sections V.B.25 (Light Emitting Device and Manufacture Methods), V.B.26 (Semiconductor Devices and Manufacture Methods), V.B.27 (Semiconductor Photolithography Processes), V.B.28 (Slope Etching Processes), V.B.29 (Photoresist Thickness), V.B.30 (Hard-Baking).

**1. Reasons For Modifications And/Or Combinations**

Applying the principles of obviousness described in Section V.A, it would have been obvious to a person of ordinary skill in the art at the time the application that issued as the '626 Patent was filed to combine, modify, or use the teachings of the prior art to make the purported inventions of those patents, including by making each of the combinations identified above. The motivation to combine the teachings of the prior art references disclosed herein can be found in each of (1) the references themselves, (2) the nature of the problem being solved, (3) the express, implied and inherent teachings of the prior art, (4) the knowledge of persons of ordinary skill in the art, (5) the fact that the prior art is generally directed towards the subject matter of each respective asserted patent, and (6) the predictable results obtained in combining the elements of the prior art.

Any reference or combination of references that anticipates or makes obvious an asserted independent claim also makes obvious any asserted claim dependent on that independent claim because every element of each dependent claim was known by a person of ordinary skill at the time of the alleged invention, and it would have been obvious to combine those known elements with the independent claims at least as a matter of common sense and routine development.

Numerous prior art references, including those identified above and in the Exhibits, reflect common knowledge and the state of the prior art before the priority date of the '626 Patent. Because it would be unduly burdensome to create detailed claim charts for the many invalidating

(citation omitted). “The scope of the claims must be less than or equal to the scope of the enablement.” *Nat’l Recovery Techs., Inc. v. Magnetic Separation Sys., Inc.*, 166 F.3d 1190, 1196 (Fed. Cir. 1999).

At least the Asserted Claims referenced below are invalid because the specifications fail to provide an enabling disclosure of at least the following limitations:

**1. ’162 Patent**

- “said entry surface spatially distributed such that said exit surface receives said deflected light with predominantly uniform irradiance” (’162 Patent Claim 1).
- “said entry surface having first concavity facing toward said light source, and second concavity facing toward the entry surface” (’162 Patent Claims 1, 39).
- “said second concavity being substantially greater than said first concavity,” (’162 Patent Claims 1, 39).
- “said LED means and said upper and lower surfaces configured to produce a profile of bounded flux at said target surface that provides substantially uniform illuminance,” (’162 Patent Claims 31, 43).
- “said entry-surface deflection spatially distributed such that said exit surface receives said deflected light with predominantly uniform irradiance,” (’162 Patent Claim 39).

**2. ’873 Patent**

- “a total reflection surface with a total reflection slope with respect to a central axis of the body” (’873 Patent Claims 1, 8).

**3. ’113 Patent**

- “a total reflection surface with a total reflection slope with respect to a central axis of the body” (’113 Patent Claim 1).

## EXHIBIT 626-14

### Invalidity Claim Chart for U.S. Patent No. 7,951,626

Prior work in the field of semiconductor processing conducted at the University of Florida [hereinafter “Florida Process”] is a method or process that was in public use, publicly available, offered for sale, and/or sold in the United States before the priority date of U.S. Patent No. 7,951,626 (the “’626 Patent”) and is prior art to the ’626 Patent pursuant to at least pre-AIA 35 U.S.C. §§ 102(a) and 102(b) under the ’626 Patent’s proper priority date. Florida Process anticipates and/or renders obvious the asserted claims of the ’626 Patent under pre-AIA 35 U.S.C. §§ 102 and/or 103.

As set forth in the chart below, all asserted claims of the ’626 patent are anticipated and/or obvious over Florida Process.<sup>1</sup>

The citations to portions of any reference in this chart are exemplary only. Defendants reserve the right to use the entirety of any reference described in Section IV of Defendants’ Invalidity Contentions to show that the asserted claims are anticipated and/or obvious.

The structure, function, technical operation, and manufacture of Florida Process prior to the ’626 Patent’s proper priority date is evidenced by at least:

- UF News Archive, *UF Engineers’ Lab-Altered Silicon Could Speed Up Computers Dramatically* (October 2, 1998) [hereinafter *UF Lab-Altered Silicon*]<sup>2</sup>
- UF News Archive, *UF Team Achieves Milestone in Design of New Semiconductors* (February 5, 1999) [hereinafter *UF Milestone*]<sup>3</sup>
- Jeffrey Ryan LaRoche, III-V Semiconductor Processing: Contacts, Etching, and Devices (Dec. 2000) (Ph.D. dissertation, University of Florida) [hereinafter LaRoche]<sup>4</sup>
- UF News Archive, *Marriage Of Carbon Nanotubes, LEDs Shows Unexpectedly Bright Prospects* (June 14, 2004) [hereinafter *UF Unexpectedly Bright*]<sup>5</sup>

The structure, function, technical operation, and manufacture of Florida Process prior to the ’626 Patent’s proper priority date is further expected to be evidenced by at least:

- Documents describing the equipment, materials, and process steps used according to Florida Process
- Samples, experimental results, and other tangible things used or created according to Florida Process
- Documents and things in custody of Jeffrey R. LaRoche Ph.D., Fan Ren, Ph.D., or the University of Florida or their affiliates

<sup>1</sup> The excerpts cited herein are exemplary. For any claim limitation, Defendants may rely on excerpts cited for any other limitation and/or additional excerpts not set forth fully herein to the extent necessary to provide a more comprehensive explanation for a reference’s disclosure of a limitation. Where an excerpt refers to or discusses a figure or figure items, that figure and any additional descriptions of that figure should be understood to be incorporated by reference as if set forth fully therein.

<sup>2</sup> <https://archive.news.ufl.edu/articles/1998/10/uf-engineers-lab-altered-silicon-could-speed-computers-dramatically.html>

<sup>3</sup> <https://archive.news.ufl.edu/articles/1999/02/uf-team-achieves-milestone-in-design-of-new-semiconductors.html>

<sup>4</sup> <https://ufdcimages.uflib.ufl.edu/AA/00/03/85/99/00001/iivsemiconducto00laro.pdf>

<sup>5</sup> <https://archive.news.ufl.edu/articles/2004/06/marriage-of-carbon-nanotubes-leds-shows-unexpectedly-bright-prospects.html>

- The knowledge of persons familiar with Florida Process, including Jeffrey R. LaRoche Ph.D., Fan Ren, Ph.D. or their affiliates.

Defendants expressly reserve the right to supplement these contentions to add additional information showing that Florida Process invalidates the asserted claims of the '626 patent.

To the extent that any of the below claim limitations are found to not be expressly disclosed by the below reference, it is Defendants' contention that any such limitation would have been obvious, either based the knowledge of one of ordinary skill in the art or based on any of the art cited in Exhibits 626-1 through 626-13 and 626-15 through 626-20 of these Invalidity Contentions, which are incorporated herein by reference. In particular, as evidenced by the below and in Section V.B and Section V.H of Defendants' Invalidity Contentions, the '626 patent is merely a collection of prior art elements that fails to meet the statutory requirement of nonobviousness under § 103, and the factors delineated in *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007), weigh against a finding of nonobviousness.

For example, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Florida Process with the teachings of the references charted as Exhibits 626-1 through 626-13 and 626-15 through 626-20 in Defendants' Invalidity Contentions; such references are in the same field of art, and discuss various techniques and improvements that would have been known to yield predictable results when applied to the technology claimed in the '626 patent, and a person of ordinary skill therefore would have been motivated to so combine them in view of the disclosures therein.

It is also Defendants' contention that one of ordinary skill in the art would find such limitation obvious for at least one or more of the following reasons: (1) the combination would unite old elements with no change in their respective function; (2) the combination would have been a predictable variation of a work in the same or a different field of endeavor; (3) the modification would have used a known technique to improve a similar device in the same way; (4) the modification was a known problem for which there was an obvious solution; (5) the modification would have been "obvious to try"; (6) the modification was known work in one field of endeavor that would have prompted variations of it for use in either the same or different field based on design incentives or other market forces; (7) there was an explicit teaching, suggestion, or motivation in the prior art for the modification.

Defendants are investigating this prior art and have not yet completed discovery from third parties who may have information concerning it. Defendants reserve the right to modify, amend, and/or supplement these contentions as information becomes available (*e.g.*, witness testimony and/or non-public documentation) and as discovery proceeds.

Except where specifically noted otherwise, this chart applies the apparent constructions of claim terms as used by Plaintiff in its infringement contentions; such use, however, does not imply that Defendants adopt or agree with Plaintiff's constructions in any way.

## EXHIBIT 626-15

### Invalidity Claim Chart for U.S. Patent No. 7,951,626

Samsung LEDs are a system, product, process, an/or method that was in public use, publicly available, offered for sale, and/or sold in the United States before the priority date of U.S. Patent No. 7,951,626 (the “’626 Patent”) and is prior art to the ’626 Patent pursuant to at least pre-AIA 35 U.S.C. §§ 102(a) and 102(b) under the ’626 Patent’s proper priority date.<sup>1</sup> Samsung LEDs anticipates and/or renders obvious the asserted claims of the ’626 Patent under pre-AIA 35 U.S.C. §§ 102 and/or 103.

As set forth in the chart below, all the ’626 Patent’s asserted claims are anticipated and/or obvious over Samsung LEDs under at least Plaintiff’s apparent claim constructions based on its P.R. 3-1 Infringement Contentions (the “Infringement Contentions”).<sup>2</sup>

The citations to portions of any reference in this chart are exemplary only. Defendants reserve the right to use the entirety of any reference described in Section IV of Defendants’ P.R. 3-3 Invalidity Contentions (the “Invalidity Contentions”) to show that the asserted claims are anticipated and/or obvious.

The structure, function, technical operation, and manufacture of Samsung LEDs prior to the ’626 Patent’s proper priority date is evidenced by at least:

- The Samsung LEDs product
- Public information concerning Samsung LEDs, including:
  - Samsung Electro-Mechs., *LED* (2004) [hereinafter SEM LED Datasheet], <https://web.archive.org/web/20060102234155/http://www.sem.samsung.com/cms/ifweb/en/products/productOverview.jsp?pcode=A090&pname=LED&loc=a&locag=0&navi=overview&pimage=N&tmp02=app>.
  - Samsung Electro-Mechs., *Light Emitting Diode - SMD LED* [hereinafter SEM SMD LED Datasheet], [http://www.sem.samsung.com/cms/DownFileServlet?filePath=/file/repository/subproduct/DATASHEET\\_RAW/A090a0/A090a0\\_DA\\_TASHEET\\_RAW.pdf](http://www.sem.samsung.com/cms/DownFileServlet?filePath=/file/repository/subproduct/DATASHEET_RAW/A090a0/A090a0_DA_TASHEET_RAW.pdf) (last visited Jan. 21, 2025).
  - Samsung Electro-Mechs., *Light Emitting Diode Production Process* [hereinafter SEM LED Production Process], [https://web.archive.org/web/20040406171953/http://www.sem.samsung.com/cms/DownFileServlet?filePath=/file/repository/product/PRODUCTION\\_PROCESS\\_RAW/A090/A090\\_PRODUCTION\\_PROCESS\\_RAW.pdf](https://web.archive.org/web/20040406171953/http://www.sem.samsung.com/cms/DownFileServlet?filePath=/file/repository/product/PRODUCTION_PROCESS_RAW/A090/A090_PRODUCTION_PROCESS_RAW.pdf).
- Patents and patent application publications, including:

<sup>1</sup> See, e.g., datasheets cited herein.

<sup>2</sup> The excerpts cited herein are exemplary. For any claim limitation, Defendants may rely on excerpts cited for any other limitation and/or additional excerpts not set forth fully herein to the extent necessary to provide a more comprehensive explanation for a reference’s disclosure of a limitation. Where an excerpt refers to or discusses a figure or figure items, that figure and any additional descriptions of that figure should be understood to be incorporated by reference as if set forth fully therein.

- o U.S. Patent No. 7,015,512 [hereinafter Park III] (filed May 25, 2004, published as a patent application publication June 23, 2005, issued Mar. 21, 2006).
- o U.S. Patent No. 7,459,846 [hereinafter Kang] (filed Nov. 1, 2004, published as a printed patent application publication May 5, 2005, issued Dec. 2, 2008)

The structure, function, technical operation, and manufacture of Samsung LEDs prior to the '952 Patent's proper priority date is further expected to be evidenced by at least:

- Documents and testimony from Samsung Electronics Co., Ltd.; Samsung Electro-Mechanics; or their affiliates
- The knowledge of persons familiar with Samsung LEDs, including without limitation its inventors.

Defendants expressly reserve the right to supplement these contentions to add additional information showing that Samsung LEDs invalidates the '626 Patent's asserted claims.

To the extent that any of the below claim limitations are found to not be expressly disclosed by the below reference, it is Defendants' contention that any such limitation would have been obvious, either based the knowledge of one of ordinary skill in the art or based on any of the art cited in Exhibits 626-1 through 626-14 and 626-16 through 626-20 of these Invalidity Contentions, which are incorporated herein by reference. In particular, as evidenced by the below and in Section V.B and Section V.H of Defendants' Invalidity Contentions, the '626 patent is merely a collection of prior art elements that fails to meet the statutory requirement of nonobviousness under § 103, and the factors delineated in *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007), weigh against a finding of nonobviousness.

For example, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Samsung LEDs with the teachings of the references charted as Exhibits 626-1 through 626-14 and 626-16 through 626-20 in Defendants' Invalidity Contentions; such references are in the same field of art, and discuss various techniques and improvements that would have been known to yield predictable results when applied to the technology claimed in the '626 patent, and a person of ordinary skill therefore would have been motivated to so combine them in view of the disclosures therein.

It is also Defendants' contention that one of ordinary skill in the art would find such limitation obvious for at least one or more of the following reasons: (1) the combination would unite old elements with no change in their respective function; (2) the combination would have been a predictable variation of a work in the same or a different field of endeavor; (3) the modification would have used a known technique to improve a similar device in the same way; (4) the modification was a known problem for which there was an obvious solution; (5) the modification would have been "obvious to try"; (6) the modification was known work in one field of endeavor that would have prompted variations of it for use in either the same or different field based on design incentives or other market forces; (7) there was an explicit teaching, suggestion, or motivation in the prior art for the modification.

Defendants are investigating this prior art and have not yet completed discovery from third parties who may have information concerning it. Defendants reserve the right to modify, amend, and/or supplement these contentions as information becomes available (*e.g.*, witness testimony and/or non-public documentation) and as discovery proceeds.

## EXHIBIT 626-16

### Invalidity Claim Chart for U.S. Patent No. 7,951,626

GELcore LEDs are a system, product, process, an/or method that was in public use, publicly available, offered for sale, and/or sold in the United States before the priority date of U.S. Patent No. 7,951,626 (the “’626 Patent”) and is prior art to the ’626 Patent pursuant to at least pre-AIA 35 U.S.C. §§ 102(a) and 102(b) under the ’626 Patent’s proper priority date.<sup>1</sup> GELcore LEDs anticipates and/or renders obvious the asserted claims of the ’626 Patent under pre-AIA 35 U.S.C. §§ 102 and/or 103.

As set forth in the chart below, all the ’626 Patent’s asserted claims are anticipated and/or obvious over GELcore LEDs under at least Plaintiff’s apparent claim constructions based on its P.R. 3-1 Infringement Contentions (the “Infringement Contentions”).<sup>2</sup>

The citations to portions of any reference in this chart are exemplary only. Defendants reserve the right to use the entirety of any reference described in Section IV of Defendants’ P.R. 3-3 Invalidity Contentions (the “Invalidity Contentions”) to show that the asserted claims are anticipated and/or obvious.

The structure, function, technical operation, and manufacture of GELcore LEDs prior to the ’626 Patent’s proper priority date is evidenced by at least:

- The GELcore LEDs product, including at least GELcore Tetra, Tetra White, Tetra XL, Tetra BT, GEBLTL120-CA, GEELTL120-CA, GEGLTL120-CA, GEYATL120-CA, GEPCTL120-CA, GERDTL120-CA, GEBLSM020-CB, GEGLSM020-CB, GEYASM030-CB, GEPCSM030-CB, GERDSM030-CB, GEW NTL120-CA, GEBMTL120-CA, GEEMTL120-CA, GEGMTL120-CA, GEBMSM020-CB, GEEMSM020-CB, and/or GEGMSM020-CB, and the equipment and/or processes used to manufacture the same (e.g., EMCORE D180 or similar systems)
- Public information concerning GELcore LEDs, including:
  - EMCORE, *GELcore Joint Venture* (2004)<sup>3</sup>
  - GELcore, *GELcore Automotive Product Page* (2004)<sup>4</sup>
  - GELcore, *GELcore Tetra Product Page* (2004)<sup>5</sup>
  - GE, Press Release, *White Led Now Available In GE LED Lighting System*<sup>6</sup> (2004) [hereinafter *Tetra Press Release*]
- Patents and patent application publications, including:

<sup>1</sup> See, e.g., datasheets and websites cited herein.

<sup>2</sup> The excerpts cited herein are exemplary. For any claim limitation, Defendants may rely on excerpts cited for any other limitation and/or additional excerpts not set forth fully herein to the extent necessary to provide a more comprehensive explanation for a reference’s disclosure of a limitation. Where an excerpt refers to or discusses a figure or figure items, that figure and any additional descriptions of that figure should be understood to be incorporated by reference as if set forth fully therein.

<sup>3</sup> <https://web.archive.org/web/20040812191728/http://www.emcore.com/about/gelcore.php>

<sup>4</sup> <https://web.archive.org/web/20040617000827/http://www.gelcore.com/markets/Auto/index.asp>

<sup>5</sup> [https://web.archive.org/web/20040804041709/http://www.gelcore.com/markets/channel\\_letter/index.asp](https://web.archive.org/web/20040804041709/http://www.gelcore.com/markets/channel_letter/index.asp)

<sup>6</sup> [https://web.archive.org/web/20040808052628/http://www.geconsumerproducts.com:80/pressroom/current/Lighting/gelcore/tetra\\_white.htm](https://web.archive.org/web/20040808052628/http://www.geconsumerproducts.com:80/pressroom/current/Lighting/gelcore/tetra_white.htm)

- o WO 2002/059983 [hereinafter “Eliashovich I”]
- o US 2004/0113168 [hereinafter “Eliashovich II”]
- o US 6,404,125 [hereinafter “Garbuzov”]
- o US 7,125,734 [hereinafter “Sackrisson”]

The structure, function, technical operation, and manufacture of GELcore LEDs prior to the ’952 Patent’s proper priority date is further expected to be evidenced by at least:

- Documents and testimony from EMCORE Corporation; GE; or their affiliates
- The knowledge of persons familiar with GELcore LEDs, including without limitation its inventors.

Defendants expressly reserve the right to supplement these contentions to add additional information showing that GELcore LEDs invalidates the ’626 Patent’s asserted claims.

To the extent that any of the below claim limitations are found to not be expressly disclosed by the below reference, it is Defendants’ contention that any such limitation would have been obvious, either based the knowledge of one of ordinary skill in the art or based on any of the art cited in Exhibits 626-1 through 626-15 and 626-20 of these Invalidity Contentions, which are incorporated herein by reference. In particular, as evidenced by the below and in Section V.B and Section V.H of Defendants’ Invalidity Contentions, the ’626 patent is merely a collection of prior art elements that fails to meet the statutory requirement of nonobviousness under § 103, and the factors delineated in *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007), weigh against a finding of nonobviousness.

For example, it would have been obvious to a person of ordinary skill in the art to combine the teaching of GELcore LEDs with the teachings of the references charted as Exhibits 626-1 through 626-15 and 626-20 in Defendants’ Invalidity Contentions; such references are in the same field of art, and discuss various techniques and improvements that would have been known to yield predictable results when applied to the technology claimed in the ’626 patent, and a person of ordinary skill therefore would have been motivated to so combine them in view of the disclosures therein.

It is also Defendants’ contention that one of ordinary skill in the art would find such limitation obvious for at least one or more of the following reasons: (1) the combination would unite old elements with no change in their respective function; (2) the combination would have been a predictable variation of a work in the same or a different field of endeavor; (3) the modification would have used a known technique to improve a similar device in the same way; (4) the modification was a known problem for which there was an obvious solution; (5) the modification would have been “obvious to try”; (6) the modification was known work in one field of endeavor that would have prompted variations of it for use in either the same or different field based on design incentives or other market forces; (7) there was an explicit teaching, suggestion, or motivation in the prior art for the modification.

Defendants are investigating this prior art and have not yet completed discovery from third parties who may have information concerning it. Defendants reserve the right to modify, amend, and/or supplement these contentions as information becomes available (*e.g.*, witness testimony and/or non-public documentation) and as discovery proceeds.

## EXHIBIT 626-17

### Invalidity Claim Chart for U.S. Patent No. 7,951,626

The Samsung Digimax 301 [hereinafter “Digimax”], is a system or product that was in public use, publicly available, offered for sale, and/or sold in the United States before the priority date of U.S. Patent No. 7,951,626 (the “’626 Patent”) and is prior art to the ’626 Patent pursuant to at least pre-AIA 35 U.S.C. §§ 102(a) and 102(b) under the ’626 Patent’s proper priority date.<sup>1</sup> Digimax anticipates and/or renders obvious the asserted claims of the ’626 Patent under pre-AIA 35 U.S.C. §§ 102 and/or 103.

As set forth in the chart below, all the ’626 Patent’s asserted claims are anticipated and/or obvious over Digimax under at least Plaintiff’s apparent claim constructions based on its P.R. 3-1 Infringement Contentions and its P.R. 3-1 Amended Infringement Contentions (collectively, the “Infringement Contentions”).<sup>2</sup>

The citations to portions of any reference in this chart are exemplary only. Defendants reserve the right to use the entirety of any reference described in Section IV of Defendants’ P.R. 3-3 Invalidity Contentions (the “Invalidity Contentions”) to show that the asserted claims are anticipated and/or obvious.

The structure, function, technical operation, and manufacture of Digimax prior to the ’626 Patent’s proper priority date is evidenced by at least:

- The Samsung Digimax product
- Documentation concerning Samsung Digimax, including:
  - Samsung Techwin Co., Ltd., *Samsung Camera User’s Manual Digimax 301* [hereinafter Digimax User Manual].
  - Samsung Techwin Co., Ltd., *Service Manual Digimax 202/301* [hereinafter Digimax Service Manual].
  - Michael R. Thomkins, *Samsung: Three More Digimax Cameras*, Imaging Res. (Feb. 19, 2004, 12:23 EST) [hereinafter Thomkins], <https://www.imaging-resource.com/EVENTS/PMAS04/1077226406.html>.

The structure, function, technical operation, and manufacture of Digimax prior to the ’626 Patent’s proper priority date is further expected to be evidenced by at least:

- Documents and testimony from Samsung Techwin or its affiliates
- The knowledge of persons familiar with Samsung Digimax, including without limitation its inventors.

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<sup>1</sup> See, e.g., Thomkins (dated 2004).

<sup>2</sup> The excerpts cited herein are exemplary. For any claim limitation, Defendants may rely on excerpts cited for any other limitation and/or additional excerpts not set forth fully herein to the extent necessary to provide a more comprehensive explanation for a reference’s disclosure of a limitation. Where an excerpt refers to or discusses a figure or figure items, that figure and any additional descriptions of that figure should be understood to be incorporated by reference as if set forth fully therein.

Defendants expressly reserve the right to supplement these contentions to add additional information showing that Digimax invalidates the '626 Patent's asserted claims.

To the extent that any of the below claim limitations are found to not be expressly disclosed by the below reference, it is Defendants' contention that any such limitation would have been obvious, either based on the knowledge of one of ordinary skill in the art or based on any of the art cited in Exhibits 626-1 through 626-16 and 626-18 through 626-20 of these Invalidity Contentions, which are incorporated herein by reference. In particular, as evidenced by the below and in Section V.B and V.H of Defendants' Invalidity Contentions, the '626 patent is merely a collection of prior art elements that fails to meet the statutory requirement of non-obviousness under § 103, and the factors delineated in *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007), weigh against a finding of non-obviousness.

For example, it would have been obvious to a person of ordinary skill in the art to combine the teaching of Digimax with the teachings of the references charted as Exhibits 626-1 through 626-16 and 626-18 through 626-20 in Defendants' Invalidity Contentions; such references are in the same field of art, and discuss various techniques and improvements that would have been known to yield predictable results when applied to the technology claimed in the '626 patent, and a person of ordinary skill therefore would have been motivated to so combine them in view of the disclosures therein.

It is also Defendants' contention that one of ordinary skill in the art would find such limitation obvious for at least one or more of the following reasons: (1) the combination would unite old elements with no change in their respective function; (2) the combination would have been a predictable variation of a work in the same or a different field of endeavor; (3) the modification would have used a known technique to improve a similar device in the same way; (4) the modification was a known problem for which there was an obvious solution; (5) the modification would have been "obvious to try"; (6) the modification was known work in one field of endeavor that would have prompted variations of it for use in either the same or different field based on design incentives or other market forces; (7) there was an explicit teaching, suggestion, or motivation in the prior art for the modification.

Defendants are investigating this prior art and have not yet completed discovery from third parties who may have information concerning it. Defendants reserve the right to modify, amend, and/or supplement these contentions as information becomes available (*e.g.*, witness testimony and/or non-public documentation) and as discovery proceeds.

Except where specifically noted otherwise, this chart applies the apparent constructions of claim terms as used by Plaintiff in its infringement contentions; such use, however, does not imply that Defendants adopt or agree with Plaintiff's constructions in any way.

## EXHIBIT 626-18

### Invalidity Claim Chart for U.S. Patent No. 7,951,626

The Lumileds Luxeon® III Side-Emitter (“Luxeon”) is a system or product that was in public use, publicly available, offered for sale, and/or sold in the United States before the priority date of U.S. Patent No. 7,951,626 (the “’626 Patent”) and is prior art to the ’626 Patent pursuant to at least pre-AIA 35 U.S.C. §§ 102(a) and 102(b) under the ’626 Patent’s proper priority date.<sup>1</sup> Luxeon anticipates and/or renders obvious the asserted claims of the ’626 Patent under pre-AIA 35 U.S.C. §§ 102 and/or 103.

As set forth in the chart below, all the ’626 Patent’s asserted claims are anticipated and/or obvious over Luxeon under at least Plaintiff’s apparent claim constructions based on its P.R. 3-1 Infringement Contentions and its P.R. 3-1 Amended Infringement Contentions (collectively, the “Infringement Contentions”).<sup>2</sup>

The citations to portions of any reference in this chart are exemplary only. Defendants reserve the right to use the entirety of any reference described in Section IV of Defendants’ P.R. 3-3 Invalidity Contentions (the “Invalidity Contentions”) to show that the asserted claims are anticipated and/or obvious.

The structure, function, technical operation, and manufacture of Luxeon prior to the ’626 Patent’s proper priority date is evidenced by at least:

- The Luxeon product
- Public information concerning Luxeon, including:
  - Lumileds Lighting U.S., LLC, *Luxeon® III Emitter Technical Datasheet DS45* (May 28, 2004) [hereinafter Luxeon Datasheet].
  - Mark Pugh, *LED Backlighting from Revolution to Reality* (6th Ann. DisplaySearch US FPD Conf., San Diego, Cal.), 2004 [hereinafter Pugh], [https://web.archive.org/web/20060111192241/http://www.lumileds.com/pdfs/TP39\\_US\\_FPD\\_2004.PDF](https://web.archive.org/web/20060111192241/http://www.lumileds.com/pdfs/TP39_US_FPD_2004.PDF).
  - Press Release, Lumileds Lighting U.S., LLC, Lumileds’ Luxeon LEDs Power World’s First LED-Based TVs from Sony (Aug. 25, 2004) [hereinafter Lumileds Press Release], [https://web.archive.org/web/20051125024405/http://www.lumileds.com/newsandevents/releases/LuxeonTV8-24\\_F\\_r0825.pdf](https://web.archive.org/web/20051125024405/http://www.lumileds.com/newsandevents/releases/LuxeonTV8-24_F_r0825.pdf).
  - Wiep Folkerts & R. Scott West III, *LED Backlight Designs Using Luxeon High Flux Light Source Solutions* (Soc’y Info. Display, Seattle, Wash.), 2004 [hereinafter Folkerts], [https://web.archive.org/web/20060112221754/http://www.lumileds.com/pdfs/Luxeon\\_light\\_source\\_solutions.PDF](https://web.archive.org/web/20060112221754/http://www.lumileds.com/pdfs/Luxeon_light_source_solutions.PDF).

<sup>1</sup> See, e.g., Luxeon Datasheet (dated 2004).

<sup>2</sup> The excerpts cited herein are exemplary. For any claim limitation, Defendants may rely on excerpts cited for any other limitation and/or additional excerpts not set forth fully herein to the extent necessary to provide a more comprehensive explanation for a reference’s disclosure of a limitation. Where an excerpt refers to or discusses a figure or figure items, that figure and any additional descriptions of that figure should be understood to be incorporated by reference as if set forth fully therein.

- o R. Scott Kern, *Light-Emitting Diodes in Automotive Forward Lighting Applications: Materials Engineering Solutions to Fundamental Challenges* (Soc'y Auto. Eng'rs, Detroit, Mich., Paper No. 2004-01-0255), 2004 [hereinafter Kern], [https://web.archive.org/web/20060514203923/http://www.lumileds.com/pdfs/techpaperspres/presentation\\_SAE%202004\\_kern.PDF](https://web.archive.org/web/20060514203923/http://www.lumileds.com/pdfs/techpaperspres/presentation_SAE%202004_kern.PDF).
- o Keith Scott, *From Concept to Reality to the Future* (Illuminating Eng'g Soc. N. Am., Buffalo, N.Y.), 2004 [hereinafter Scott], [https://web.archive.org/web/20050818124236/http://www.lumileds.com/pdfs/TP41\\_IESNA\\_Buffalo\\_6-04.pdf](https://web.archive.org/web/20050818124236/http://www.lumileds.com/pdfs/TP41_IESNA_Buffalo_6-04.pdf).
- o Werner Goetz, *White Lighting (Illumination) with LEDs* (5th Int'l Conf. Nitride Semiconductors, Nara, Japan), May 2003 [hereinafter Goetz], <https://web.archive.org/web/20060524160205/http://www.lumileds.com/pdfs/techpaperspres/RumpSessionIII.PDF>.
- o Lumileds Lighting U.S., LLC, *LED Backlighting: Disruptive Technology Made Easy* (2004) [hereinafter Lumileds LED Backlighting], [https://web.archive.org/web/20051212070712mp\\_/http://www.lumileds.com/pdfs/TP43.pdf](https://web.archive.org/web/20051212070712mp_/http://www.lumileds.com/pdfs/TP43.pdf).

The structure, function, technical operation, and manufacture of Luxeon prior to the '626 Patent's proper priority date is further expected to be evidenced by at least:

- Documents and testimony from Lumileds Lighting U.S., LLC or its affiliates
- The knowledge of persons familiar with Luxeon, including without limitation its inventors.

Defendants expressly reserve the right to supplement these contentions to add additional information showing that Luxeon invalidates the '626 Patent's asserted claims.

To the extent that any of the below claim limitations are found to not be expressly disclosed by the below reference, Defendants contend that any such limitation would have been obvious, either based on the knowledge of one of ordinary skill in the art or based on any of the art cited in Exhibits 626-1 through 626-17 and 626-19 through 626-20 of Defendants' Invalidity Contentions, which are incorporated herein by reference. In particular, as evidenced by the below and in Sections V.B and V.H of Defendants' Invalidity Contentions, the '626 Patent is merely a collection of prior art elements that fails to meet the statutory requirement of nonobviousness under § 103, and the factors delineated in *KSR International Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007), weigh against a finding of nonobviousness.

For example, it would have been obvious to a person of ordinary skill in the art (a "POSITA") to combine the teaching of Luxeon with the teachings of the references charted as Exhibits 626-1 through 626-17 and 626-19 through 626-20; such references are in the same field of art, and discuss various techniques and improvements that would have been known to yield predictable results when applied to the technology claimed in the '626 Patent, and a person of ordinary skill therefore would have been motivated to so combine them in view of the disclosures therein.

Defendants also contend that one of ordinary skill in the art would find such limitation obvious for at least one or more of the following reasons: (1) the combination would unite old elements with no change in their respective function; (2) the combination would have been a predictable variation of a work in the same or a different field of endeavor; (3) the modification would have used a known technique to improve a similar device in the same way; (4) the modification was a known problem for which there was an obvious solution; (5) the modification would have been "obvious to try"; (6)

**EXHIBIT 626-19**

**Invalidity Claim Chart for U.S. Patent No. 7,951,626**

The Samsung LN-R460D LCD-TV [hereinafter “LN-R460D”], is a system or product that was in public use, publicly available, offered for sale, and/or sold in the United States before the priority date of U.S. Patent No. 7,951,626 (the “’626 Patent”) and is prior art to the ’626 Patent pursuant to at least pre-AIA 35 U.S.C. §§ 102(a) and 102(b) under the ’626 Patent’s proper priority date.<sup>1</sup> LN-R460D anticipates and/or renders obvious the asserted claims of the ’626 Patent under pre-AIA 35 U.S.C. §§ 102 and/or 103.

As set forth in the chart below, all the ’626 Patent’s asserted claims are anticipated and/or obvious over LN-R460D under at least Plaintiff’s apparent claim constructions based on its P.R. 3-1 Infringement Contentions and its P.R. 3-1 Amended Infringement Contentions (collectively, the “Infringement Contentions”).<sup>2</sup>

The citations to portions of any reference in this chart are exemplary only. Defendants reserve the right to use the entirety of any reference described in Section IV of Defendants’ P.R. 3-3 Invalidity Contentions (the “Invalidity Contentions”) to show that the asserted claims are anticipated and/or obvious.

The structure, function, technical operation, and manufacture of LN-R460D prior to the ’626 Patent’s proper priority date is evidenced by at least:

- The Samsung LN-R460D product
- Documentation concerning Samsung LN-R460D, including:
  - *CES Innovations 2005 Awards Call for Entries – Now Open!*, Consumer Elecs. Ass’n (October 10, 2004), <https://web.archive.org/web/20041001010723/http://www.cesweb.org/attendees/awards/innovations/CFE.asp> [hereinafter Call for Entries].
  - *LEDs Are Light Source of Choice at CES*, Buildings (Jan. 13, 2005), <https://www.buildings.com/architecture/interiors/article/55257006/leds-are-light-source-of-choice-at-ces> [hereinafter Light Source of Choice].
  - *Making Sense of It All*, Sound & Vision (Jan. 16, 2005), <https://www.soundandvision.com/content/making-sense-it-all> [hereinafter Making Sense of It All].
  - *Best of CES Finalists*, G4 Tech TV (2005) [hereinafter G4 Tech], [https://web.archive.org/web/20050120041838/http://www.g4techtv.com/CES2005/features/50705/Best\\_of\\_CES\\_Finalists.html](https://web.archive.org/web/20050120041838/http://www.g4techtv.com/CES2005/features/50705/Best_of_CES_Finalists.html).

<sup>1</sup> See, e.g., Call for Entries (“The final entry deadline is October 4, 2004.”); Award Winners (“Finalists: . . . Samsung 46 Widescreen LCD HDTV w/LED Backlight LN-R460D by Samsung Electronics America”); G4 Tech (dated January 2005).

<sup>2</sup> The excerpts cited herein are exemplary. For any claim limitation, Defendants may rely on excerpts cited for any other limitation and/or additional excerpts not set forth fully herein to the extent necessary to provide a more comprehensive explanation for a reference’s disclosure of a limitation. Where an excerpt refers to or discusses a figure or figure items, that figure and any additional descriptions of that figure should be understood to be incorporated by reference as if set forth fully therein.

- o 2005 Award Winners, Consumer Elecs. Ass’n [hereinafter Award Winners], [https://web.archive.org/web/20050303010540/http://www.cesweb.org/attendees/awards/best\\_of\\_ces/2004.asp](https://web.archive.org/web/20050303010540/http://www.cesweb.org/attendees/awards/best_of_ces/2004.asp) (last visited Mar. 13, 2025).
- o Samsung Elecs. Co., Ltd., *LN-R460D LCD-TV Service Manual* (2005) [hereinafter LN-R460D Service Manual].

The structure, function, technical operation, and manufacture of LN-R460D prior to the ’626 Patent’s proper priority date is further expected to be evidenced by at least:

- Documents and testimony from SEC or its affiliates
- Documents and Testimony from Lumileds or its affiliates
- The knowledge of persons familiar with Samsung LN-R460D, including without limitation its inventors
- The knowledge of persons familiar with Lumileds LEDs, including without limitation its inventors.

Defendants expressly reserve the right to supplement these contentions to add additional information showing that LN-R460D invalidates the ’626 Patent’s asserted claims.

To the extent that any of the below claim limitations are found to not be expressly disclosed by the below reference, it is Defendants’ contention that any such limitation would have been obvious, either based the knowledge of one of ordinary skill in the art or based on any of the art cited in Exhibits 626-1 through 626-18 and 626-20 of these Invalidity Contentions, which are incorporated herein by reference. In particular, as evidenced by the below and in Section V.B and V.H of Defendants’ Invalidity Contentions, the ’626 patent is merely a collection of prior art elements that fails to meet the statutory requirement of non-obviousness under § 103, and the factors delineated in *KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398 (2007), weigh against a finding of non-obviousness.

For example, it would have been obvious to a person of ordinary skill in the art to combine the teaching of LN-R460D with the teachings of the references charted as Exhibits 626-1 through 626-18 and 626-20 in Defendants’ Invalidity Contentions; such references are in the same field of art, and discuss various techniques and improvements that would have been known to yield predictable results when applied to the technology claimed in the ’626 patent, and a person of ordinary skill therefore would have been motivated to so combine them in view of the disclosures therein.

It is also Defendants’ contention that one of ordinary skill in the art would find such limitation obvious for at least one or more of the following reasons: (1) the combination would unite old elements with no change in their respective function; (2) the combination would have been a predictable variation of a work in the same or a different field of endeavor; (3) the modification would have used a known technique to improve a similar device in the same way; (4) the modification was a known problem for which there was an obvious solution; (5) the modification would have been “obvious to try”; (6) the modification was known work in one field of endeavor that would have prompted variations of it for use in either the same or different field based on design incentives or other market forces; (7) there was an explicit teaching, suggestion, or motivation in the prior art for the modification.