**UNITED STATES DISTRICT COURT**
**EASTERN DISTRICT OF TEXAS**
**MARSHALL DIVISION**

| | |
|---|---|
| SIONYX, LLC.<br><br>Plaintiff,<br><br>v.<br><br>SAMSUNG ELECTRONICS CO., LTD., SAMSUNG ELECTRONICS AMERICA, INC., and SAMSUNG SEMICONDUCTOR, INC.,<br><br>Defendants. | Civil Case No. 2:24-cv-00408-JRG<br><br>**JURY TRIAL DEMANDED** |

# DEFENDANTS' P.R. 3-3 INVALIDITY CONTENTIONS

Pursuant to the Amended Docket Control Order (Dkt. No. 37) and Local Patent Rule 3-3, Defendants Samsung Electronics Co., Ltd., Samsung Electronics America, Inc., and Samsung Semiconductor, Inc. (collectively, "Defendants" or "Samsung") hereby provide their Invalidity Contentions, which include the accompanying claim charts concerning U.S. Patent No. 10,347,682 ("the '682 patent"), (the "Asserted Patent") to Plaintiff SiOnyx, LLC. ("Plaintiff" or "SiOnyx").

The citation of prior art herein and the accompanying exhibits are not intended to reflect Samsung's claim construction contentions, which will be disclosed in due course in accordance with the Docket Control Order and may instead reflect Plaintiff's apparent (and potentially erroneous) claim constructions based on its Infringement Contentions.

## I. Introduction

As disclosed in its P.R. 3-1 Infringement Contentions served on Samsung, Plaintiff asserts the following patent and claims (with the independent claims bolded and underlined):

| Patent | Claims |
|---|---|
| U.S. Patent No. 10,347,682 | **1**, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, 16, 17, 18, 19, 21, 22, 23, **24**, 25, 26, 27 |



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Samsung reserves the right to supplement or otherwise amend these Invalidity Contentions in response to any relevant discovery provided by third parties, Plaintiff, opening or rebuttal expert reports, fact or expert depositions, or in response to any claim construction ruling(s) issued by this Court (regardless of how and when such ruling is made). Samsung also reserves the right to supplement or otherwise amend these Invalidity Contentions in response to any rebuttal evidence disclosed by Plaintiff or as otherwise may be necessary or appropriate under the circumstances.

## III. P.R. 3-3(a) – Identification of Prior Art

Pursuant to P.R. 3-3(a), and subject to Samsung's reservation of rights, Samsung identifies the prior art references below.[4]

Table 1-A identifies the prior art patents and publications, and Table 2-A identifies prior art products. Claim charts identifying relevant disclosures in the references identified in Tables 1-A and 2-A with regard to the Asserted Claims are provided in the attached Exhibits A1 through A11.

**Table 1-A: Prior Art Patents and Printed Publications for the '682 patent**

| Reference No. | Patent No. or Title (Primary Inventor/Author) | Date of Issue/ Publication | Filing Date |
|---|---|---|---|
| A1 | U.S. Patent Application Publication No. 2012/0068289 (Alie) | March 22, 2012 | March 22, 2011 |
| A2 | U.S. Patent Application Publication No. 2011/0227138 (Haddad138) | September 22, 2011 | September 17, 2010 |
| A3 | U.S. Patent Application Publication No. 2006/0081900 (Baggenstoss) | April 20, 2006 | December 5, 2005 |

[4] Samsung's disclosure of prior art is premised on the alleged priority dates of the Asserted Patent as identified in Plaintiff's infringement contentions. Samsung contends Plaintiff is not entitled to the alleged priority dates and reserve the right to modify, amend, or supplement their invalidity contentions with additional prior art references if any Asserted Claim is shown to not be entitled to the respective alleged priority date or if Plaintiff alleges any other priority date for any of the Asserted Claims. Notwithstanding that reservation of rights, Samsung also reserves the right to argue that they have been unduly prejudiced should Plaintiff allege a different priority date for any of the Asserted Claims, and that accordingly Plaintiff should not be allowed to do so.



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| Reference No. | Patent No. or Title (Primary Inventor/Author) | Date of Issue/ Publication | Filing Date |
|---|---|---|---|
| A4 | U.S. Patent Application Publication No. 2012/0313204 (Haddad204) | December 13, 2012 | June 11, 2012 |
| A5 | U.S. Patent Application Publication No. 2010/0006969 (Park) | January 14, 2010 | June 29, 2009 |
| A6 | U.S. Patent Application Publication No. 2013/0207168 (Edwards) | August 15, 2013 | February 15, 2013 |
| A7 | U.S. Patent No. 7,928,389 (Yap) | April 19, 2011 | August 20, 2009 |
| A8 | U.S. Patent Application Publication No. 2009/0166628 (Han) | July 2, 2009 | December 27, 2008 |
| A9 | U.S. Patent Application Publication No. 2012/0146172 (Carey) | June 14, 2012 | June 20, 2011 |
| A10 | U.S. Patent Application Publication No. 2013/0134535 (Lenchenkov) | May 30, 2013 | May 25, 2012 |

**Table 2-A: Prior Art Product for the ’682 patent**

| Reference No. | Name of Product | Date of Sale / Offer for Sale / Public Use |
|---|---|---|
| A11 | Samsung S5K3L1YX03 (S5K3L1YX03) | May 2011 |

For each of the prior art product identified above, Samsung has listed and produced one or more documents as evidence of the relevant features and functionality. To the extent that one or more documents (e.g., user manuals) may be used to describe aspects of a particular device, that device is a single reference for prior art purposes under 35 U.S.C. § 102. Some or all of the corroborating references may also separately qualify as prior art publications under 35 U.S.C. § 102 and may be used as invalidating references under 35 U.S.C. §§ 102 and/or 103.

Samsung identifies Samsung S5K3L1YX03 Imager Process Review, ©TechInsights Group (SECDS-TX408-00000398–0576) (“S5K3L1YX03 Report”) as a document evidencing the structure of the S5K3L1YX03.



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counterparts, or any parent or child patent of the ’682 patent. Samsung reserves the right to use any and all portions of the publication, related publications, commercial embodiments of the publication, and other evidence that is discovered in these proceedings to demonstrate and/or evidence the components, functionality, and capabilities of the devices and systems disclosed in the references charted.

### A. Anticipation

The chart below identifies references that anticipate the Asserted Claims and specifies which claims each reference anticipates.

| | **Asserted Claims** | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Prior Art** | **1** | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 21 | 22 | 23 | **24** | 25 | 26 | 27 |
| Alie (A1) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Haddad138 (A2) | X | X | X | X | X | X | X | X | | | X | | | X | X | X | X | | X | X | X | | | X | X |
| Baggenstoss (A3) | X | | X | X | X | | | | | | | | X | X | X | | | | X | X | | | | | |
| Haddad204 (A4) | X | X | X | X | X | X | X | X | X | X | | X | X | X | X | X | X | | X | | X | | | X | X |
| Park (A5) | X | | X | X | X | X | | X | | | | | | X | X | | | X | X | | X | X | X | X | X |
| Yap (A7) | X | | X | X | | | | X | | | X | X | | X | X | | | X | X | X | | X | X | | |
| Carey (A9) | X | X | X | X | X | X | X | X | | | X | X | | X | X | X | X | | X | X | X | | | X | X |

### B. Obviousness

In addition to certain claims being anticipated at least under Plaintiff’s apparent claim constructions as indicated above, the Asserted Claims are also invalid as obvious over the same teachings identified for anticipation. Further, the Asserted Claims are obvious over various combinations of the references shown in the claim charts accompanying or incorporated by reference into this disclosure. No Asserted Claim goes beyond combining known elements to achieve predictable results or does more than choose between clear alternatives known to those of



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skill in the art. Thus, to the extent that an Asserted Claim is not anticipated, it is nevertheless invalid as obvious. Specifically, Samsung asserts that any charted or incorporated reference in combination with one or more other charted or incorporated references renders the Asserted Claims obvious.

Plaintiff has not identified any secondary considerations or other objective evidence of non-obviousness. Samsung reserves the right to submit evidence to rebut any secondary considerations or other objective evidence that SiOnyx may later identify.

**(a) Identification of Obviousness Contentions**

Pursuant to P.R. 3-3(a) and (b), Samsung identifies in Exhibits A1 through A11 the prior art references that render obvious the Asserted Claims of the ’682 patent and include below exemplary and non-exhaustive combinations showing the obviousness of the Asserted Claims in view of the prior art. Samsung reserves the right to rely on any combination of the references reflected in their charts or incorporated herein by reference. The combinations of prior art listed below render obvious the Asserted Claims under the proper construction of the claims and/or under Plaintiff’s apparent interpretation of the claims as set forth by Plaintiff in its Complaint and Infringement Contentions. To the extent Plaintiff contends that an element is not disclosed in any one of the anticipatory references described in Exhibits A1 through A11, the limitation would have been obvious in light of the disclosures within the reference and the knowledge of one of skill in the art at the time of the ’682 patent. Moreover, to the extent Plaintiff contends that an element is not disclosed in any one of the anticipatory references described in Exhibits A1 through A11, such reference may be combined with any other references listed in Exhibits A1 through A11 for such element, thereby rendering the claims invalid for obviousness.



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The chart below discloses references or combinations of references that either anticipate or render obvious the Asserted Claims. The discussion below sets forth rationale and motivation for combining the respective references with respect to the claimed features they disclose.

| | **Asserted Claims** | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Prior Art** | **1** | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 21 | 22 | 23 | **24** | 25 | 26 | 27 |
| Alie (A1) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Alie (A1) & Edwards (A6) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Alie (A1) & Lenchenkov (A10) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Alie (A1) & Baggenstoss (A3) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Alie (A1) & Haddad204 (A4) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Alie (A1) & Park (A5) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Haddad138 (A2) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Haddad138 (A2) & Edwards (A6) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Haddad138 (A2) & Lenchenkov (A10) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Haddad138 (A2) & Baggenstoss (A3) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Haddad138 (A2) & Alie (A1) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Haddad138 (A2) & Haddad204 (A4) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Haddad138 (A2) & Park (A5) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Baggenstoss (A3) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Baggenstoss (A3) & Edwards (A6) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |



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| | Asserted Claims | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Prior Art** | **1** | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 21 | 22 | 23 | **24** | 25 | 26 | 27 |
| Baggenstoss (A3) & Lenchenkov (A10) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Baggenstoss (A3) & Alie (A1) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Baggenstoss (A3) & Haddad204(A4) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Baggenstoss (A3) & Park (A5) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Haddad204(A4) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Haddad204(A4) & Edwards (A6) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Haddad204(A4) & Lenchenkov (A10) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Haddad204(A4) & Alie (A1) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Haddad204(A4) & Baggenstoss (A3) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Park (A5) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Park (A5) & Edwards (A6) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Park (A5) & Lenchenkov (A10) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Park (A5) & Alie (A1) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Park (A5) & Baggenstoss (A3) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Edwards (A6) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Edwards (A6) & Alie (A1) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Yap (A7) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Yap (A7) & Edwards (A6) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |



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| | Asserted Claims | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Prior Art** | **1** | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 21 | 22 | 23 | **24** | 25 | 26 | 27 |
| Yap (A7) & Lenchenkov (A10) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Yap (A7) & Alie (A1) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Han (A8) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Han (A8) & Edwards (A6) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Han (A8) & Lenchenkov (A10) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Han (A8) & Alie (A1) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Carey (A9) & Edwards (A6) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Carey (A9) & Lenchenkov (A10) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Carey (A9) & Alie (A1) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Carey (A9) & Park (A5) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Lenchenkov (A10) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| Lenchenkov (A10) & Alie (A1) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| S5K3L1YX03 (A11) & Edwards (A6) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| S5K3L1YX03 (A11) Lenchenkov (A10) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| S5K3L1YX03 (A11) & Alie (A1) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |
| S5K3L1YX03 (A11) & Baggenstoss (A3) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |



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| | Asserted Claims | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Prior Art** | **1** | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 21 | 22 | 23 | **24** | 25 | 26 | 27 |
| S5K3L1YX03 (A11) & Park (A5) | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X | X |

For at least the reasons described in these 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 prior art references identified in Exhibits A1 through A11, along with the knowledge of one of ordinary skill in the art, to meet the limitations of the Asserted Claims. Moreover, as mentioned above, Samsung has not yet completed their search or discovery concerning additional prior art. As such, Samsung's inclusion of exemplary combinations does not preclude them from identifying other invalidating combinations as appropriate, and Samsung reserves the right to identify additional specific combinations as well as to detail and explain such combinations.

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, as the 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 innovation. Accordingly, Samsung contends that each Asserted Claim would have been obvious not only by the combinations described in these contentions, but also by any combination of references that renders obvious an Asserted Claim.

As mentioned above, Samsung has not yet completed their search or discovery concerning additional prior art. Moreover, the exemplary combinations are provided based on Samsung's



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