| _ | | | | | | | | | | _ |
|----|-------------|-----|-------------|-----|-------|-----|-------------|----|-----|----|
| BE | FORE | THE | PATE | ENT | TRIAL | AND | APPE | AL | BOA | RD |

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

Petitioner

v.

SOLAS OLED LTD.
Patent Owner.

DECLARATION OF MILTIADIS HATALIS, PH.D., IN SUPPORT OF PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 7,868,880



| I. | | RODU | CTION | 1 | | | | |
|------|---------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------|----|--|--|--|--|
| II. | BAC | BACKGROUND AND QUALIFICATIONS | | | | | | |
| III. | DOCUMENTS CONSIDERED IN FORMING MY OPINIONS | | | | | | | |
| IV. | LEGAL PRINCIPLES | | | | | | | |
| V. | OVE | RVIE | W OF '880 PATENT | | | | | |
| VI. | CLA | IM CC | ONSTRUCTION | | | | | |
| VII. | GROUNDS FOR INVALIDITY | | | | | | | |
| | A. | and/c | nds 1/1a: Claims 1-9, 11-14, and 25-32 Are Anticipated or Rendered Obvious by Miyazawa in Light of the vledge of a POSA | 22 | | | | |
| | | 1. | U.S. Patent Pub. No. 2005/0083270 ("Miyazawa") | 22 | | | | |
| | | 2. | Claim 1 | 28 | | | | |
| | | 3. | Claim 2 | 40 | | | | |
| | | 4. | Claim 3 | 46 | | | | |
| | | 5. | Claim 4 | 51 | | | | |
| | | 6. | Claim 5 | 53 | | | | |
| | | 7. | Claim 6: | 54 | | | | |
| | | 8. | Claim 7 | 55 | | | | |
| | | 9. | Claim 8 | 56 | | | | |
| | | 10. | Claim 9 | 58 | | | | |
| | | 11. | Claim 11 | 59 | | | | |
| | | 12. | Claim 12 | 59 | | | | |
| | | 13. | Claim 13 | 61 | | | | |
| | | 14. | Claim 14 | 63 | | | | |
| | | 15. | Claim 25 | 64 | | | | |



(continued)

| | 16. | Claim 26: | 67 | | | | |
|----|-------------------------------------------------------------------------------------------------------------------------|-----------|-----|--|--|--|--|
| | 17. | Claim 27 | 67 | | | | |
| | 18. | Claim 28 | 69 | | | | |
| | 19. | Claim 29 | 70 | | | | |
| | 20. | Claim 30 | 71 | | | | |
| | 21. | Claim 31 | 72 | | | | |
| | 22. | Claim 32 | 73 | | | | |
| В. | Ground 2/2a: Claims 1-14, and 25-33 are anticipated or rendered obvious by Morosawa in Light of the Knowledge of a POSA | | | | | | |
| | 1. | Morosawa | 73 | | | | |
| | 2. | Claim 1 | 81 | | | | |
| | 3. | Claim 2 | 99 | | | | |
| | 4. | Claim 3 | 106 | | | | |
| | 5. | Claim 4 | 109 | | | | |
| | 6. | Claim 5 | 110 | | | | |
| | 7. | Claim 6 | 111 | | | | |
| | 8. | Claim 7 | 115 | | | | |
| | 9. | Claim 8 | 116 | | | | |
| | 10. | Claim 9 | 118 | | | | |
| | 11. | Claim 10 | 119 | | | | |
| | 12. | Claim 11 | 119 | | | | |
| | 13. | Claim 12 | 119 | | | | |
| | 14. | Claim 13 | 121 | | | | |
| | 15. | Claim 14 | 123 | | | | |
| | 16. | Claim 25 | 125 | | | | |
| | 17 | Claim 26: | 128 | | | | |



(continued)

| | 18. | Claim 27 | 129 | | | |
|----|----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|-----|--|--|--|
| | 19. | Claim 28 | 129 | | | |
| | 20. | Claim 29 | 129 | | | |
| | 21. | Claim 30 | 130 | | | |
| | 22. | Claim 31 | 130 | | | |
| | 23. | Claim 32 | 130 | | | |
| | 24. | Claim 33 | 131 | | | |
| C. | Ground 3: Claims 18-24 and 34-40 are rendered obvious by the combination of Morosawa and Shirasaki in Light of the Knowledge of a POSA | | | | | |
| | 1. | Shirasaki | 131 | | | |
| | 2. | Motivation To Combine Morosawa and Shirasaki | 132 | | | |
| | 3. | Claims 18 and 34 | 134 | | | |
| | 4. | Claims 19/35 | 136 | | | |
| | 5. | Claims 20/36 | 137 | | | |
| | 6. | Claims 21/37 | 138 | | | |
| | 7. | Claim 22 | 140 | | | |
| | 8. | Claim 23 | 142 | | | |
| | 9. | Claim 24 | 145 | | | |
| | 10. | Claim 38 | 147 | | | |
| | 11. | Claim 39 | 147 | | | |
| | 12. | Claim 40 | 148 | | | |
| D. | comb | and 4: Claims 24 and 40 are rendered obvious by the bination of Morosawa, Shirasaki, and Koyama in Light of Knowledge of a POSA | 148 | | | |
| | 1. | Koyama and Motivation to Combine | | | | |
| | 2 | Claims 24 40 | 150 | | | |



(continued)

| Е. | Ε. | | und 5: Claims 15-17 are rendered obvious by the | | | |
|-------|-----|------|------------------------------------------------------------------------|-----|--|--|
| | | | combination of Morosawa and Hector in Light of the Knowledge of a POSA | | | |
| | | 1. | Hector | | | |
| | | 2. | Motivation to Combine Morosawa and Hector | 152 | | |
| | | 3. | Claim 15 | 154 | | |
| | | 4. | Claim 16 | 155 | | |
| | | 5. | Claim 17 | 158 | | |
| VIII. | COl | NCLU | SION | 158 | | |



DOCKET

Explore Litigation Insights



Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time** alerts and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.

