

Filed on behalf of TPK Touch Solutions Inc.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

WINTEK CORPORATION
Petitioner,

v.

TPK TOUCH SOLUTIONS INC.
Patent Owner

Case IPR 2013-00567, 2013-00568
U.S. Patent No. 8,217,902

**DECLARATION OF TED TSAI IN SUPPORT OF PATENT OWNER'S
RESPONSE PURSUANT TO 37 C.F.R. § 42.120**

TPK 2017

Declaration of Ted Tsai

In Support of Patent Owner's Response Pursuant to 37 C.F.R. § 42.120

I, Ted Tsai, declare as follows:

1. I am over 18 years of age and otherwise competent to make this Declaration.

2. I currently work as Senior Vice President and Chief Sales Officer in the Sales & Marketing Department of TPK Touch Solutions Inc. ("TPK"). My office address is No. 13-18, Section 6, Min-Quan E. Rd., Neihu District, Taipei City 114, Taiwan. I have held this position since 2006.

3. TPK was established in 2003 and began manufacturing projected capacitance touch panels in 2006.

4. With the rapid development and growth in the mobile consumer device industry in the 2000s, there was a significant increase in demand for transparent, lightweight touch screens that are capable of detecting multiple touches. However, as of 2006, the industry was still searching for and developing solutions to achieve that goal.

5. The first-generation Apple iPhone, released in 2007, was a prominent example of a device with a transparent touch screen that included multi-touch capabilities. The iPhone's touch screen was transparent and used mutual-capacitance sensing to detect the positions of multiple simultaneous touches on the surface of the glass. Specifically, the iPhone's touch screen sensed the presence of one or more touches by measuring the capacitance between two separate layers of transparent indium tin oxide ("ITO") conductive sensors—a "driving" layer and a "sensing" layer—on opposite sides of a glass substrate.

6. Exhibit 2018 is a true and correct copy of a March 2012 market report on touch panel display technology conducted by Daiwa Capital Markets. As page 7 of this Exhibit illustrates, the iPhone (and Apple's subsequent products) made use of a "DITO" (double-sided ITO) touch panel with ITO sensors on opposing sides of the sensor glass.

7. Other commercially available transparent mutual-capacitance based touchscreens in 2006 and 2007—notably, the LG Prada phone—also relied on DITO solutions.

8. In late 2006, TPK developed an improvement on existing DITO mutual capacitance sensors that used a "SITO" (single-sided ITO) solution. Specifically, TPK designed a structure for touch panels in which both driving and sensing conductor elements are on the same surface of the substrate. The conductor elements include an array of sensor cells that are interconnected by conductive lines to form rows and columns along two perpendicular axes, one axis for driving and the other one for sensing. At the intersection of each driving line and sensing line, a thin, transparent insulator is placed between the lines to keep the lines electrically isolated.

9. An example of TPK's SITO touch panel structure is shown in Exhibit 2019, which contains diagrams of the touch panel of the Amazon Kindle PaperWhite, designed and provided by TPK.

10. TPK's single-sided transparent touch panel structure formed the basis for its "one-glass solution" (or "OGS") technology, with all electrodes placed on the underside of the cover lens. TPK's OGS technology improved on existing touch screens in multiple ways: First, it allowed for a touch screen that was both physically thinner and more lightweight than other commercially available options, making it highly appropriate for use in mobile devices such as laptops and phones.

Second, the reduced thickness of the substrate improved the transparency of the touch screen as a whole.

11. Exhibit 2020 is a true and correct copy of an April 2014 quarterly market analysis of the touch panel industry conducted by NPD DisplaySearch. On page 29 of this report, OGS sensor structures are compared to other DITO solutions and recognized as yielding the “best” module thickness and superior optical performance. As the report further notes, the “major appeal” of OGS sensor structures is that they are “thin and light.”

12. To the best of my knowledge and belief, TPK’s SITO mutual-capacitance touch screens were the first commercially available mutual capacitance touch panels that used this single-layer solution.

13. TPK began selling touch panels implementing its single-layer solution in the year 2008 to mobile handset makers, including to RIM for use in the BlackBerry Storm, and to Palm for use in the Palm Pre. Both products were commercially successful. A February 2009 article from Economic Daily News (Ex. 2021) reported that the Storm and Pre were two of only five touch-screen mobile phone devices to sell more than one million units.

14. TPK’s SITO touch panels were attractive to its customers for their thin profile—a key advantage in mobile devices. For instance, in 2009 RIM specifically requested that TPK reduce the thickness of its panels to support the thinnest possible product design.

15. As market demand for touch-screen devices has continued to increase, TPK has expanded to provide touch panels to customers for use in tablets and notebook computers as well. For instance, in 2012, TPK supplied single-layer

touch panels to Amazon for use in the Kindle Fire, and to Google/Asus for use in the Nexus 7.

16. Exhibit 2022 is a true and correct copy of a research report on TPK published by J.P. Morgan in October 2012. As page 3 of the report notes, by 2012, OGS had “emerge[d] as the mainstream” among tablet devices, resulting in a positive outlook for TPK. Figure 1 on page 3 of the report illustrates the “touch-panel structure evolution” from DITO solutions to single-layer solutions. Table 2 on page 4 of the report compares a number of touch-panel technologies known in 2012 and awards OGS a grade “A” for thickness and cost.

17. Exhibit 2023 is a true and correct copy of a December 2012 quarterly market analysis of the touch panel industry conducted by NPD DisplaySearch. As page 19 of this report notes, “OGS has become the major touch screen solution for Windows 8 notebook PCs,” as the technology provides “a better balance in terms of weight, thickness, cost, and supply sources.” Page 7 of this report estimates that OGS accounts for “more than 80% of the shipment share” of Windows-based notebook PCs optimized for touch.

18. TPK also has distinguished its competitors by introducing its SITO technology to customers outside the mobile computing industry. Electric vehicle manufacturer Tesla chose TPK to supply the 17-inch touch panel for its Model S, a prominent feature of the award-winning vehicle. Tesla awarded TPK as its “Excellent Development Partner.”

19. TPK’s other customers have expressed appreciation for the improved thinness, weight and transparency of TPK’s SITO touch screens, and have presented TPK with a number of awards recognizing its products. An exemplary chart of awards received from TPK’s customers appears below.

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