

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SAMSUNG ELECTRONICS CO., LTD,
Petitioner,

v.

UUSI, LLC d/b/a NARTRON,
Patent Owner.

Case IPR2016-00908
Patent 5,796,183

Before THOMAS L. GIANNETTI, CARL M. DEFRANCO, and
KAMRAN JIVANI, *Administrative Patent Judges*.

JIVANI, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Samsung Electronics Co., Ltd. (“Petitioner”) sought *inter partes* review of claims 37–41, 43, 45, 47, 48, 61–67, 69, 83–86, 88, 90, 91, 94, 96, 97, 99, 101, and 102 of U.S. Patent No. 5,796,183 (Ex. 1001, “the ’183 patent”), owned by UUSI, LLC d/b/a Nartron (“Patent Owner”). Paper 2 (“Petition” or “Pet.”). Patent Owner filed a Preliminary Response. Paper 10 (“Prelim. Resp.”). Upon consideration of the Petition and Preliminary Response, we instituted an *inter partes* review of claims 40, 41, 43, 45, 47, 48, 61–67, 69, 83–86, 88, 90, 91, 94, 96, 97, 99, 101, and 102 (the “Instituted Claims”) pursuant to 35 U.S.C. § 314. Paper 12 (“Decision on Institution” or “Dec. on Inst.”). We did not institute, however, review of claims 37–39 because we determined Petitioner had not established a reasonable likelihood that it would prevail with respect to those claims. *Id.*

During the trial, Patent Owner filed a Patent Owner Response (Paper 21, “PO Resp.”), and Petitioner filed a Reply thereto (Paper 24, “Reply”). An oral hearing was conducted on June 22, 2017. The record contains a transcript of the hearing (Paper 34, “Tr.”).

We have jurisdiction under 35 U.S.C. § 6. The evidentiary standard is preponderance of the evidence. *See* 35 U.S.C. § 316(e); *see also* 37 C.F.R. § 42.1(d). This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons discussed below, Petitioner has not shown by a preponderance of the evidence that any of the Instituted Claims are unpatentable.

A. *Related Proceedings*

The ’183 patent has been subject to two reexaminations: *Ex Parte* Reexamination Control Nos. 90/012,439, certificate issued April 29, 2013

IPR2016-00908
Patent 5,796,183

(“Reexam 1”) and 90/013,106, certificate issued June 27, 2014 (“Reexam 2”). The Instituted Claims were added during Reexam 2. *See generally* Ex. 1006.

The ’183 patent is the subject of ongoing litigation between the parties in the Western District of Michigan: *UUSI, LLC d/b/a Nartron v. Samsung Electronics Co., Ltd. and Samsung Electronics America, Inc.*, Case No. 1:15-cv-00146-JTN, originally filed on February 13, 2015 (W.D. Mich.) (the “District Court litigation”). Pet. 1. The District Court litigation is stayed and administratively closed until resolution of the instant *inter partes* review. Order, Case No. 1:15-cv-00146-JTN, Dkt. No. 62 (filed 05/02/16).

B. The ’183 patent (Ex. 1001)

The ’183 patent relates to a “capacitive responsive electronic switching circuit used to make possible a ‘zero force’ manual electronic switch.” Ex. 1001, 1:6–9. According to the ’183 patent, zero force touch switches have no moving parts and no contact surfaces that directly switch loads. *Id.* at 1:40–41. Instead, such switches detect an operator’s touch and use solid state electronics to switch loads or activate mechanical relays. *Id.* at 1:42–44. “A common solution used to achieve a zero force touch switch has been to make use of the capacitance of the human operator.” *Id.* at 3:12–14. The ’183 patent recites three methods used by capacitive touch switches to detect an operator’s touch, one of which relies on the change in capacitive coupling between a touch terminal and ground. *Id.* at 3:14–15, 3:44–46. In this method, “[t]he touch of an operator then provides a capacitive short to ground via the operator’s own body capacitance that lowers the amplitude of oscillator voltage seen at the touch terminal.” *Id.* at 3:52–56. Significantly, the operator of a capacitive touch switch using this method need not come in

conductive contact with the touch terminal. *Id.* at 3:57–59. Rather, the operator needs only to come into close proximity of the switch. *Id.*

Figure 11 of the '183 patent is reproduced below.

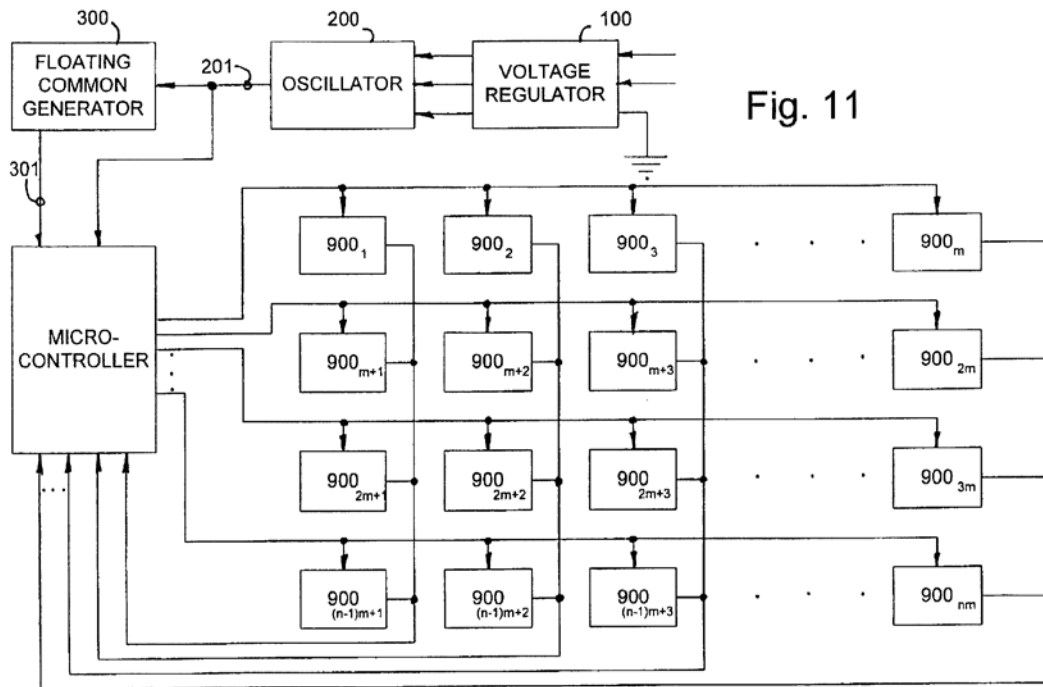


Fig. 11

Figure 11 depicts a “multiple touch pad circuit” including “an array of touch circuits.” *Id.* at 18:34–46. The '183 patent recognizes that placing capacitive touch switches in dense arrays can result in unintended actuations. *Id.* at 3:65–4:3. One method of addressing this problem known in the art involves placing guard rings around each touch pad. *Id.* at 4:4–10. Another known method of addressing this problem is to adjust the sensitivity of the touch pad such that the operator’s finger must entirely overlap a touch terminal. *Id.* at 4:10–14. “Although these methods (guard rings and sensitivity adjustment) have gone a considerable way in allowing touch switches to be spaced in comparatively close proximity, a susceptibility to surface contamination remains as a problem.” *Id.* at 4:14–18.

The '183 patent seeks to overcome the problem of unintended actuation of small capacitive touch switches “by using the method of sensing body capacitance to ground in conjunction with redundant detection circuits.” *Id.* at 5:33–35. Specifically, the '183 patent’s touch detection circuit operates at frequencies at or above 50 kHz, and preferably at or above 800 kHz, in order to minimize the effects of surface contamination on the touch pads. Operating at these frequencies also improves sensitivity, allowing close control of the proximity required for actuation of small-sized touch terminals in a close array, such as a keyboard. *Id.* at 5:48–57.

C. Illustrative Claim

Independent claim 40 illustrates the claimed subject matter and is reproduced below.

40. A capacitive responsive electronic switching circuit comprising:
- an oscillator providing a periodic output signal having a predefined frequency;
 - a microcontroller using the periodic output signal from the oscillator, the microcontroller selectively providing signal output frequencies to a plurality of small sized input touch terminals of a keypad, wherein the selectively providing comprises the microcontroller selectively providing a signal output frequency to each row of the plurality of small sized input touch terminals of the keypad;
 - the plurality of small sized input touch terminals defining adjacent areas on a dielectric substrate for an operator to provide inputs by proximity and touch; and
 - a detector circuit coupled to said oscillator for receiving said periodic output signal from said oscillator, and coupled to said input touch terminals, said detector circuit being responsive to signals from said oscillator via said microcontroller and a presence of an operator’s body capacitance to ground coupled to said touch terminals when

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.