

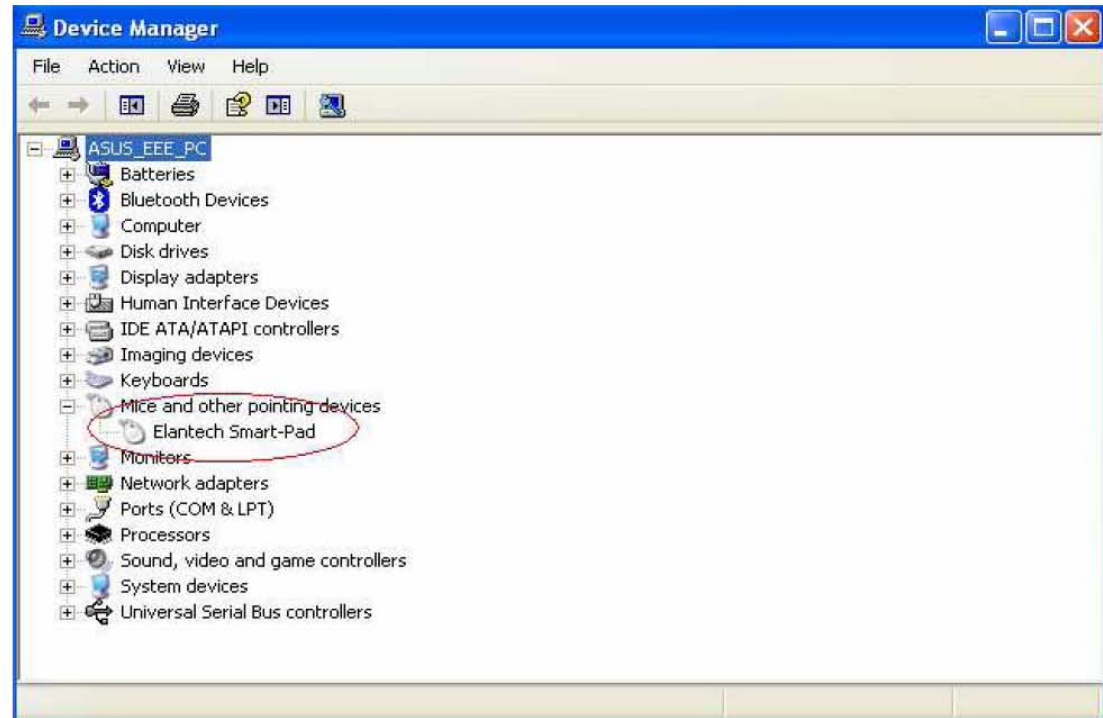
INFRINGEMENT CHART FOR U.S. PATENT NO. 7,495,659

Claim Language (7,495,659)

1. A touch pad assembly, comprising:

Elan Smart-Pad¹

Elan's Smart-Pad is a touch pad assembly. The Smart-Pad is included in at least the ASUS Eee 1000x line of computers. *See, e.g.,* below screenshot of the Device Manager of a ASUS 1000HE computer and below picture of a ASUS 1000HE computer.



See Exhibit 1

¹ The Elan Smart-Pad is incorporated into laptops sold into the United States, including for example, the ASUS Eee 1000x line of computers, which includes the ASUS Eee 1000, ASUS Eee 1000H, ASUS Eee 1000HD, ASUS Eee 1000HA, and ASUS Eee 1000HE computers. References herein are to the Elan Smart-Pad as included in the ASUS Eee 1000HE computer, which is believed to be exemplary of the ASUS Eee 1000x line.

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Elan Smart-Pad¹

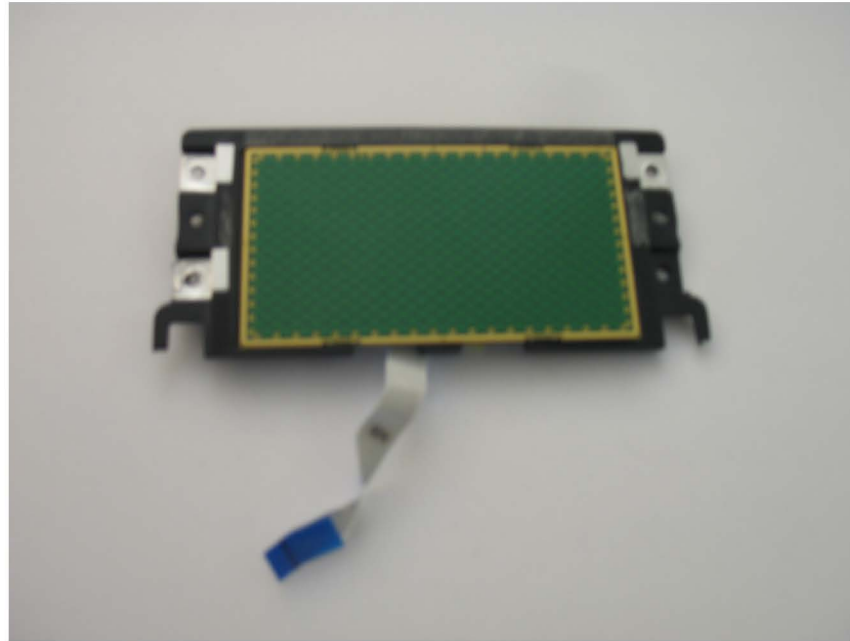


Elan Smart-Pad

See Exhibit 6

a touch pad having a surface and one or more sensors configured to map the touch pad surface into native sensor coordinates; and

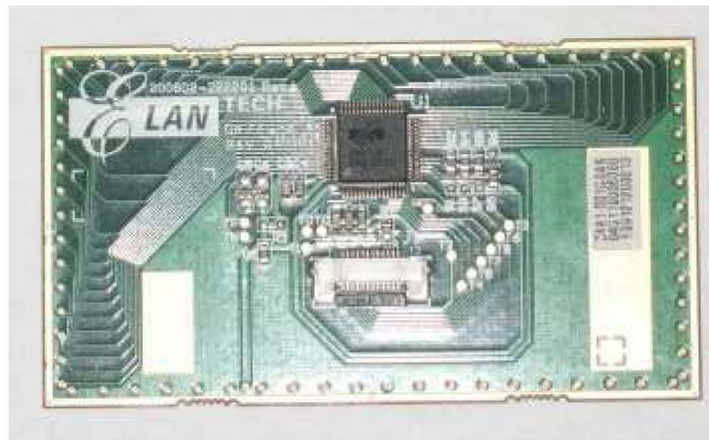
The Elan Smart-Pad has a surface and one or more sensors configured to map the touch pad surface into native sensor coordinates. *See, e.g.,* below picture of an Elan Smart-Pad.



See Exhibit 7

a controller configured to

The Elan Smart-Pad includes a controller. *See, e.g.,* below picture of Elan Smart-Pad.



See Exhibit 4

define one or more logical device units

The Elan Smart-Pad controller defines one or more logical device units associated

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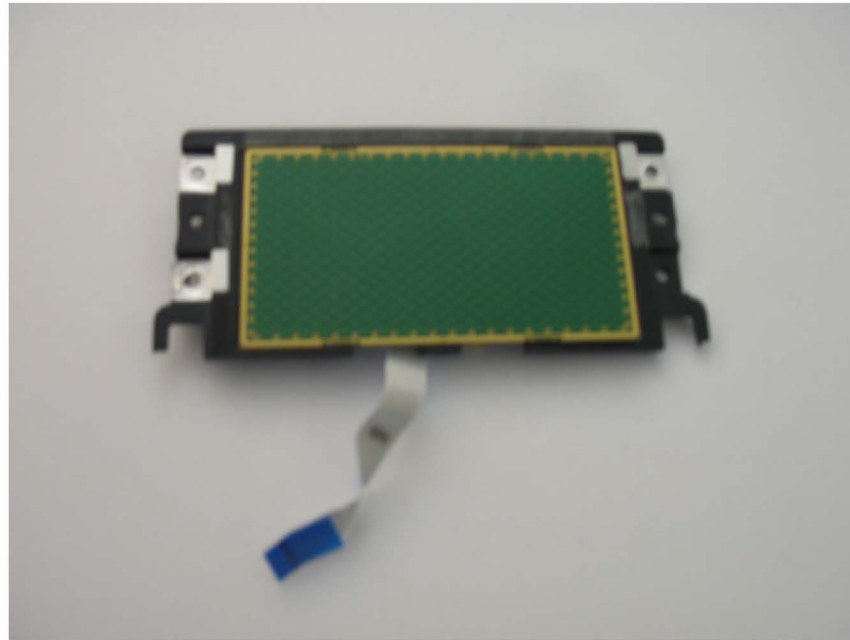
associated with the surface of the touch pad,

receive from the one or more sensors native values associated with the native sensor coordinates,

adjust the native values associated with the native sensor coordinates into new values associated with the logical

Elan Smart-Pad¹

with the surface of the touch pad. For example the Elan Smart-Pad controller can define a Cartesian coordinate system for the touch pad surface. *See, e.g.*, “[PATCH] input: Update Elantech touchpad driver to v5 for kernel 2.6.27-rc5-mm1,” Sept. 14, 2008, available at <http://lkml.org/lkml/2008/9/13/168>, at pp. 8, 15 (in the context of commenting driver code for the Elan Smart-Pad, explaining that the driver receives Cartesian coordinates for touches from the controller).



See Exhibit 7

The Elan Smart-Pad controller receives from the one or more sensors native values associated with the native sensor coordinates. The controller, for example, receives values for each sensor on the capacitive touch-pad. *See, e.g.*, Elan News, ELAN's Transparent Touchpad Awarded with “Best Choice of the Year” by COMPUTEX 2009, June 2, 2009, available at http://www.emc.com.tw/eng/news_1_1.asp?id=73 (noting that the Smart-Pad is a “capacitive touch-pad solution[.]”).

The Elan Smart-Pad controller adjusts the native values associated with the native sensor coordinates into new values associated with the logical device units. The Elan Smart-Pad controller, for example, reports the Cartesian coordinates of touches in logical device units according to a resolution that is dependent on the number of

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device units and	touches. <i>See, e.g.</i> , “[PATCH] input: Update Elantech touchpad driver to v5 for kernel 2.6.27-rc5-mm1,” Sept. 14, 2008, available at http://lkml.org/lkml/2008/9/13/168 , at pp. 8, 15 (in the context of commenting driver code for the Elan Smart-Pad, explaining that the driver receives Cartesian coordinates for touches from the controller, the Cartesian coordinates being in differing resolutions depending on the number of touches).
report the new values to a host device, the logical device units associated with areas of the touch pad that can be actuated by a user,	<p>The Elan Smart-Pad reports the new values to a host device. These values are reported to the software driver. <i>See, e.g.</i>, “[PATCH] input: Update Elantech touchpad driver to v5 for kernel 2.6.27-rc5-mm1,” Sept. 14, 2008, available at http://lkml.org/lkml/2008/9/13/168, at pp. 8, 15 (in the context of commenting driver code for the Elan Smart-Pad, explaining that the driver receives Cartesian coordinates for touches from the controller).</p> <p>The logical device units are associated with areas of the touch pad that can be actuated by a user. <i>See, e.g.</i>, “[PATCH] input: Update Elantech touchpad driver to v5 for kernel 2.6.27-rc5-mm1,” Sept. 14, 2008, available at http://lkml.org/lkml/2008/9/13/168, at p. 15 (in the context of commenting driver code for the Elan Smart-Pad, disclosing the logical device Cartesian coordinates that correspond to areas on the touchpad).</p>
the controller configured to pass the native values through a filtering process before reporting the new values to the host device, thereby reducing an amount of data sent to the host.	<p>The Elan Smart-Pad’s controller is configured to pass the native values through a filtering process before reporting the new values to the host device. For example, the Elan Smart-Pad reads the native values and filters these values into single contact points on a Cartesian coordinate system before reporting the values to the host device. <i>See, e.g.</i>, “[PATCH] input: Update Elantech touchpad driver to v5 for kernel 2.6.27-rc5-mm1,” Sept. 14, 2008, available at http://lkml.org/lkml/2008/9/13/168, at pp. 5, 15 (in the context of commenting driver code for the Elan Smart-Pad, disclosing that the driver receives single Cartesian coordinate points for each contact).</p> <p>This filtering process reduces the amount of data sent to the host because not all native values related to a contact are sent to the host device. <i>See, e.g., id.</i></p>

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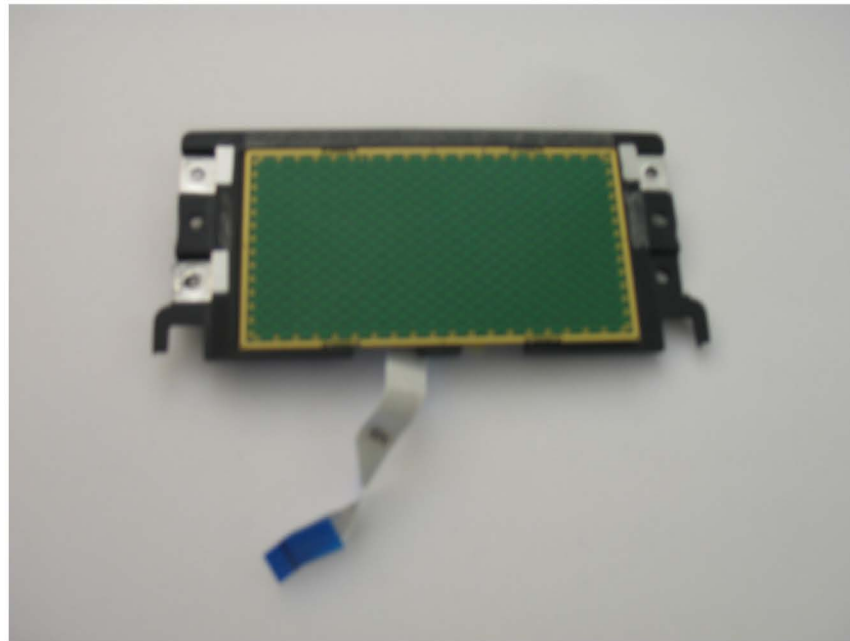
2. The touch pad assembly as recited in claim 1 wherein the filtering process comprises removing redundant or non-essential data.

6. The touch pad assembly as recited in claim 1 wherein the native sensor coordinates comprise Cartesian coordinates.

Elan Smart-Pad¹

The Elan Smart-Pad's controller is configured to perform a filtering process that removes redundant or non-essential data. For example, the filtering process removes certain native values associated with contacts, reporting single Cartesian coordinates to the host device. *See, e.g.*, "[PATCH] input: Update Elantech touchpad driver to v5 for kernel 2.6.27-rc5-mm1," Sept. 14, 2008, available at <http://lkml.org/lkml/2008/9/13/168>, at pp. 5, 15 (in the context of commenting driver code for the Elan Smart-Pad, disclosing that the driver receives single Cartesian coordinate points for each contact).

The Elan Smart-Pad's native sensor coordinates comprise Cartesian coordinates. The device employs traces along the x and y coordinates that form a Cartesian coordinate system. *See, e.g.*, below picture of Elan Smart-Pad (the controller is configured to receive the native values of the sensors pictured below).



See Exhibit 7

The conventional x and y traces are consistent with Elan's touchpad technology.

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	<i>See, e.g.</i> , U.S. Pat. No. 7,436,395, at 1:13-18 and U.S. Pat. No. 7,274,353, at 1:13-30.
8. The touch pad assembly as recited in claim 1 wherein the logical device units comprise Cartesian coordinates.	The Elan Smart-Pad controller defines logical device unit(s) that comprise Cartesian coordinates. The Elan Smart-Pad controller, for example, reports the Cartesian coordinates of touches in logical device units according to a resolution that is dependent on the number of touches. <i>See, e.g.</i> , “[PATCH] input: Update Elantech touchpad driver to v5 for kernel 2.6.27-rc5-mm1,” Sept. 14, 2008, available at http://lkml.org/lkml/2008/9/13/168 , at pp. 8, 15 (in the context of commenting driver code for the Elan Smart-Pad, explaining that the driver receives Cartesian coordinates for touches from the controller, the Cartesian coordinates being in differing resolutions depending on the number of touches).
10. The touch pad assembly as recited in claim 1 wherein the new values of the logical device units are reported in an absolute mode.	The Elan Smart-Pad controller reports the new values of the logical device unit(s) in an absolute mode. The Smart-Pad includes a “native absolute mode” in which it reports contacts as absolute values in logical device units. <i>See, e.g.</i> , “[PATCH] input: Update Elantech touchpad driver to v5 for kernel 2.6.27-rc5-mm1,” Sept. 14, 2008, available at http://lkml.org/lkml/2008/9/13/168 , at pp. 5-7 (in the context of commenting driver code for the Elan Smart-Pad, explaining the “native absolute mode 6 byte packet format” in which the controller reports the absolute Cartesian coordinates of touches).
12. The touch pad assembly as recited in claim 1 wherein the new values of the logical device units are reported in a Cartesian absolute mode, a Cartesian relative mode, a Polar absolute mode or a Polar relative mode.	The Elan Smart-Pad controller reports new values of the logical device unit(s) in a Cartesian absolute mode, a Cartesian relative mode, a Polar absolute mode or a Polar relative mode. For example, the Smart-Pad includes a “native absolute mode” in which it reports contacts as absolute values in logical device units. <i>See, e.g.</i> , “[PATCH] input: Update Elantech touchpad driver to v5 for kernel 2.6.27-rc5-mm1,” Sept. 14, 2008, available at http://lkml.org/lkml/2008/9/13/168 , at pp. 5-7 (in the context of commenting driver code for the Elan Smart-Pad, explaining the “native absolute mode 6 byte packet format” in which the controller reports the absolute Cartesian coordinates of touches).

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<p>13. The touch pad assembly as recited in claim 1 wherein the new values of the logical device units implement a specific control function in the host device.</p>	<p>The Elan Smart-Pad provides that the new values of the logical device unit(s) may implement specific control functions in the host device. For example, the controller reports the number of fingers that contact the touch pad, which may implement specific control functions. <i>See, e.g.</i>, “[PATCH] input: Update Elantech touchpad driver to v5 for kernel 2.6.27-rc5-mm1,” Sept. 14, 2008, available at http://lkml.org/lkml/2008/9/13/168, at pp. 3-5 (in the context of commenting driver code for the Elan Smart-Pad, noting that the driver receives the “number of fingers on the touchpad” which may map to specific mouse functions).</p>