

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 7,826,243 B2
APPLICATION NO. : 11/322442
DATED : November 2, 2010
INVENTOR(S) : Rey Bruce et al.

Page 1 of 4

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In the Drawings

Please insert Figure 5b by replacing Drawing Sheet 6 of 28 with Replacement Sheet 6 of 28 attached hereto.

In the Specification

Column 3, Line 39, replace "to be able to connect" with --for creating--;
Column 3, Line 39, replace "chain route from" with --chain route through--;
Column 3, Line 40, after "in a stack" insert --by connecting a set of serial chain connections,--;
Column 3, Line 40, replace "to an example" with --to another example--;

Column 9, Line 3, before "The controller" insert --An active pad may be also referred to herein as an "active port."--;

Column 9, Line 3, replace "is connected" with --is ultimately connected--;

Column 9, Line 4, delete "SDRAM module 0's";

Column 9, Line 4, replace "ball 1903, pad 01" with --ball 1903 of SDRAM module 0, active pad 01--;

Column 9, Line 4, after "pad 01" insert --is connected--;

Column 9, Lines 4-5, replace "SDRAM module 1's X0 ball 1902" with --X0 ball 1902 of SDRAM module 1--;

Column 9, Line 5, replace "The X0 balls" with --These X0 balls--;

Column 9, Line 6, replace "for the SDRAM modules." with --for these SDRAM modules. Thus, as illustrated in Figure 19, there is one active ball, such as X0, ultimately coupled to one active pad per module.--;

Column 9, Line 6, before "All SDRAM modules" insert paragraph break;

Column 9, Line 7, replace "identical which" with --identical, and in the example shown in FIG. 19,--;

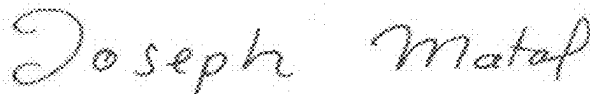
Column 9, Line 7, replace "include the connections as follows:" with --include the following:--;

Column 9, Line 7, replace "X1 ball" with --an X1 passive ball--;

Column 9, Line 8, replace "X1 pad" with --an X1 passive pad--;

Column 9, Line 8, replace "X2 ball to X2 pad" with --an X2 passive ball to X2 passive pad--;

Signed and Sealed this
Twenty-eighth Day of November, 2017



Joseph Matal
*Performing the Functions and Duties of the
Under Secretary of Commerce for Intellectual Property and
Director of the United States Patent and Trademark Office*

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Column 9, Line 8, after “and so on.” insert --The connection between a passive ball on one surface of a SDRAM module and a passive pad on another surface of the same SDRAM module, such as the X1 passive ball and X1 passive pad connection in FIG. 19, is named “passive port”, as as passive ports 1909 illustrated in FIG. 19.--;

Column 9, Line 12, after “module in the stack.” insert --Thus, an active signal applied at an active pad, such as active pad 02, shown with reference number 1904 on controller module 1910, is routed through at least one passive port connecting a passive ball and passive pad, such as the passive ports 1905 connecting passive ball X2 to passive pad X2 and passive ball X1 to passive pad X2, respectively, so that this active signal eventually reaches an active ball, such as X0 ball SDRAM Module 2, in Figure 19.--;

Column 9, Line 16, after “the repeating pattern.” insert --For example in Figure 19, an X1 passive ball is connected to an X1 passive pad, X2 passive ball to X2 passive pad, etc.--;

Column 9, Lines 16-17, replace “The importance is the approach using” with --By using--;

Column 9, Line 19, delete “also”;

Column 9, Line 19, replace “in other embodiment” with --in alternative embodiments--;

Column 9, Lines 19-20, replace “invention, e.g. using” with --invention. For example, an alternative embodiment may include using--;

Column 9, Lines 21-22, replace “The example embodiment does not limit” with --This alternative embodiment is not intended to limit--;

Column 9, Line 22, replace “the present invention.” with --the present invention in any way.--;

Column 9, Line 67, after “module 2103.” insert --The modules, including base module 2103, stack modules 2106 and 2130, and an end module, such as top module 2108, each have a ball and a pad that are coupled together by a serial chain circuit. For example, base module 2103 includes a serial chain circuit 2127 that couples IN ball 2104 with OUT pad 2105, and a serial chain circuit 2136 that couples OUT pad 1237 with OUT ball 2138; module 2106 includes a serial chain circuit 2128 that couples IN ball 2107 with OUT pad 2129, and a serial chain circuit 2139 that couples OUT pad 2140 with OUT ball 2141; module 2130 includes a serial chain circuit 2131 that couples IN ball 2132 with OUT pad 2133, and a serial chain circuit 2142 that couples OUT pad ball 2143 with OUT ball 2144; and top module 2108 includes a serial chain circuit 2134 that couples IN ball 2135 with OUT pad 2109 and a serial chain circuit 2145 that couples OUT pad 2110 with OUT ball 2113.--;

Column 9, Line 67, replace “The base module’s” with --Thus, the base module’s--;

Column 10, Line 2, after “so on.” insert --A signal route that includes a serial chain circuit coupling an ball and pad is herein after referred to as a “serial chain connection”, and at least two serial chain connections connected in series are herein after referred to as a “serial chain route”, such as serial chain route 2146 or 2111.--;

Column 10, Line 4, replace “another pad 2110 which” with --another pad, such as OUT pad 2110, which--;

Column 10, Line 5, replace “ball 2113 underneath.” with --ball underneath, such as OUT ball 2113.--;

Column 10, Line 6, replace “passes through the pads and balls 2111 of the” with --passes through another set of serial chain connections that comprise another serial chain route, such as serial chain route 2111 for the--;

Column 10, Line 8, after “access,” insert --A serial chain connection includes a serial chain input and a serial chain output. A serial chain input is disposed to receive a signal, while a serial chain output is disposed to provide the signal. For example in Figure 21a, IN balls 2014, 2107, 2132, and 2135, and OUT pads 2110, 2143, and 2140 are serial chain inputs, respectively, OUT pads 2105, 2129, 2133,

and 2109, and OUT balls 2113, 2144, 2141, and 2138 are serial chain outputs, respectively. At least one of the balls and pads that are coupled to their respective chain circuit may be in the form of a passive ball and passive pad, respectively, since an active signal, such as signal 2102, applied at active pad 2101, can be routed through a series of serial chain circuits that couple respective balls and pads. In effect, each of these serial chain circuits functions as a passive port. A serial chain circuit, however, can also terminate a serial chain route, such as serial chain route 2146, and branching or routing this serial chain route to another pad that functions as a serial chain input of another serial chain route, such as serial chain route 2111, as described further below.--;

Column 10, Line 8, replace “How the top module terminates the serial” with --“Regarding the top module, the serial”--;

Column 10, Line 9, after “chain” insert --termination--;

Column 10, Line 9, replace “branches them out” with --branching--;

Column 10, Line 10, after “have” insert --a control circuit that includes--;

Column 10, Line 33, replace “diver” with --driver--.

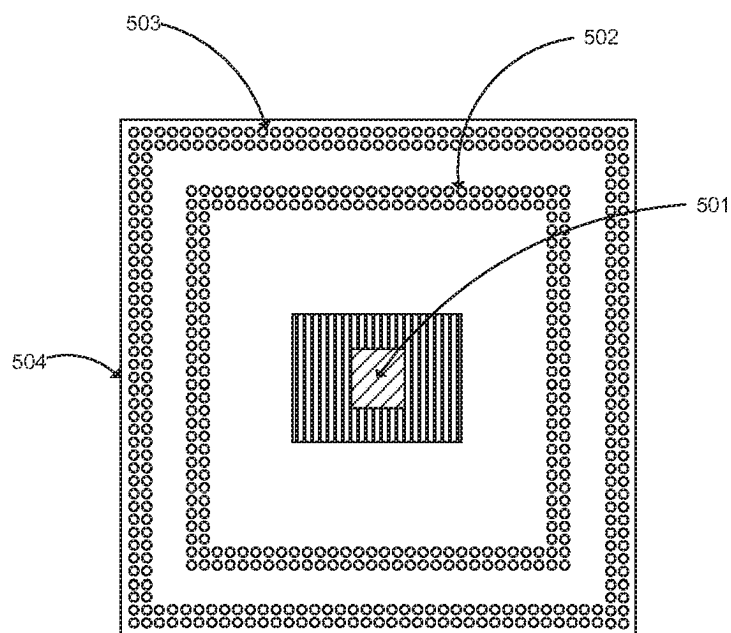


Figure 5a

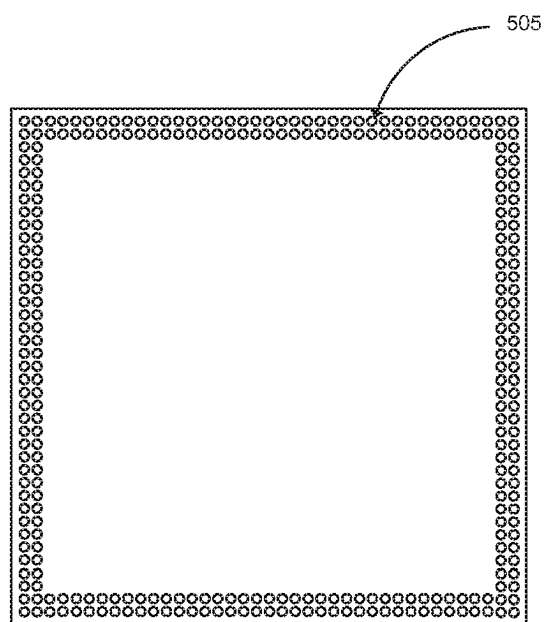


Figure 5b