Title: SECURITY MODULE SYSTEM, APPARATUS AND PROCESS

Abstract: A system, method and apparatus for protecting circuit components from unauthorized access. The circuit components (118) to be protected are disposed on a first layer of a substrate (104) with a plurality of layers. A cover member (106) composed of a plurality of layers is abutted to the substrate (104), defining an enclosure space for enclosing the circuit components (118) to be protected. A three-dimensional resistive network sensor surrounds the protected circuit components (118). The sensor comprises at least one conduction path in at least one of the layers below the first layer of the substrate (104) and at least one conduction path in at least one of the layers of the cover member (106) and also comprises a plurality of vias transverse to and electrically connecting the conduction paths. A short or open in the sensor will be detected by a tamper detection circuit that is disposed on the first layer of a substrate (104).
Published: with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(88) Date of publication of the international search report:
20 June 2002
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC(?) : H04L 9/00, 9/10
US CL : Please See Extra Sheet.
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields

Electronic database consulted during the international search (name of database and, where practicable, search terms used)
EAST
search terms: tamper, tamperproof, authorized, unauthorized, security

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
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<tr>
<th>Category*</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>US 4,593,384 A (KLEIJNE) 03 June 1986 (03.06.1986), Figs. 2, 3B1, 3C1, 6A,B, 7A,B; col.4, line 64-col.5, line 2; col.5, lines 38-51; col.9, lines 20-41.</td>
<td>1-13, 18-26</td>
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<td>X</td>
<td>US 4,691,350 A (KLEIJNE et al.) 01 September 1987 (01.09.1987), Figs. 2, 6A-L, 9; col.4, line 48-col.5, line 51; col.7, lines 32-35; col.12, lines 44-53; col.13, lines 3-25.</td>
<td>1-13, 18-26</td>
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<td>A</td>
<td>US 5,666,272 A (MOORE et al.) 09 September 1997 (09.09.1997), Figs. 1B, 4A-D, 5; col.6, lines 33-35.</td>
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Further documents are listed in the continuation of Box C. See patent family annex.

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<th>*</th>
<th>Special categories of cited documents:</th>
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<tr>
<td>&quot;A&quot;</td>
<td>document defining the general state of the art which is not considered to be of particular relevance</td>
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<td>&quot;E&quot;</td>
<td>earlier document published on or after the international filing date</td>
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<td>&quot;L&quot;</td>
<td>document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</td>
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<td>&quot;O&quot;</td>
<td>document referring to an oral disclosure, use, exhibition or other means</td>
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<tr>
<td>&quot;P&quot;</td>
<td>document published prior to the international filing date but later than the priority date claimed</td>
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Date of the actual completion of the international search: 15 SEPTEMBER 2001
Date of mailing of the international search report: 21 SEP 2001

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Form PCT/ISA/210 (second sheet) (July 1998)*
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER:
   US CL :

380/52, 59, 700/79; 713/194; 257/704, 922; 174/32.1, 52.3, 52.4; 361/752, 753, 777, 796, 800, 803; 29/830, 831, 846, 847

B. FIELDS SEARCHED
   Minimum documentation searched
   Classification System: U.S.

380/52, 59, 700/79; 713/194; 257/704, 922; 174/35.R, 35GC, 52.1, 52.3, 52.4; 361/752, 753, 777, 784, 796, 799, 800, 803, 816, 818; 29/830, 831, 846, 847; 340/317, 521, 652; 327/394, 603

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