Abstract: The present invention presents apparatuses and systems for operating multiple computers from a single console using a secured KVM device, while preventing information leakage between the computers. The system comprises several hosts connected through a secured KVM device to keyboard and mouse and one or more user displays. Secured KVM enables standard bi-directional communication between Secured KVM and user keyboard and mouse and between hosts peripheral ports and Secured KVM. Secured KVM physically enforces unidirectional data flow from attached keyboard and mouse to attached hosts peripheral ports to avoid potential leakages between hosts.
INTERNATIONAL SEARCH REPORT

A CLASSIFICATION OF SUBJECT MATTER

IPC(8) - H04L 29/06 (2009.01)
USPC - 713/153
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)
USPC 713/153

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
USPC 713/150, 726/1 (keyword limited - see terms below)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PUWEST(PGPB, USPT, USOC, EPAB, JPAB), GOOGLE
Search Terms Used KVM, unidirectional, one-way, physically, force, transmission, protecting, bi-directional, secure, communication, data, select, switch, mode, isolator, link, microphone, resolution, administrator, window, modifying, SNMP

C DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No</th>
</tr>
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<tbody>
<tr>
<td>Y</td>
<td>US 2004/0177264 A1 (ANSON et al.) 09 September 2004 (09 09 2004), entire document, especially, abstract, para [0010], [0012], [0019], [0022], [0024], [0031]-[0034], [0038], [0042]</td>
<td>1-8, 14-19, 32-44, 45-39, 45(40), 45(41), 45(42), 45(43), 45(44), 46-60, 66-68</td>
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<td>Y</td>
<td>US 2005/0044266 A1 (O'NEIL) 24 February 2005 (24 02 2005), entire document, especially, abstract, para [0008]-[0010], [0013], [0023], [0029]</td>
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<td>Y</td>
<td>US 2006/0230110 A1 (VANHARLINGEN et al.) 12 October 2006 (12 10 2006), entire document, especially, abstract, para [0008]-[0010], [0013], [0020]-[0024]</td>
<td>17-19, 34-40, 45(39), 45(40), 45(41), 45(42), 45(43), 45(44), 58</td>
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D

Further documents are listed in the continuation of Box C

E

Date of the actual completion of the international search
19 December 2009 (19 12 2009)

Date of mailing of the international search report
2 9 JAN 2010

Name and mailing address of the ISA/US
Mail Stop PCT, Attn: ISA/US, Commissioner for Patents
P O Box 1450, Alexandria, Virginia 22313-1450

Facsimile No 571-273-3201

Form PCT/ISA/210 (second sheet) (July 2009)

Authorized officer
Lee W Young
PCT Helpdesk 571-272-4300
PCTOSP 571-272 7774
### DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
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<td>Y</td>
<td>US 2008/0081515 A1 (WU) 03 April 2008 (03 04 2008), entire document, especially, abstract, para [0018]</td>
<td>41-44, 45(41), 45(42), 45(43), 45(44)</td>
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<td>Y</td>
<td>US 2008/0062632 A1 (LIU) 13 March 2008 (13 03 2008), entire document, especially, abstract, para [0008], [0016], [0019]</td>
<td>39, 43, 45(39), 45(43), 56</td>
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### Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. **Claims Nos.**
   - because they relate to subject matter not required to be searched by this Authority, namely.

2. **Claims Nos**
   - because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically.

3. **Claims Nos** 9-13, 20-31, 61-65
   - because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 64(a).

### Box No. HI Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. **As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.**

2. **As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.**

3. **As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.**

4. **No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims, it is covered by claims Nos.**

### Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

Form PCT/ISA/210 (continuation of first sheet (2)) (July 2009)