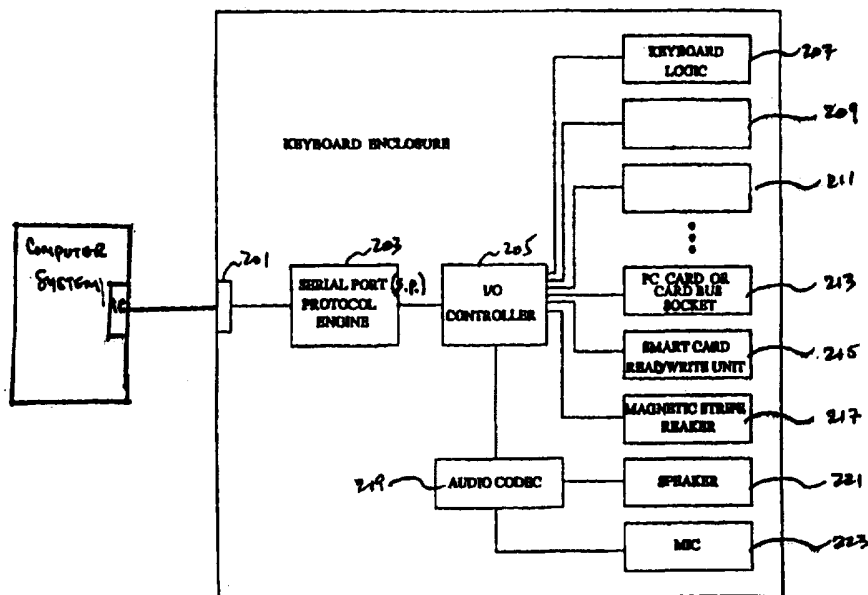




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(54) Title: KEYBOARD USING A HIGH-SPEED MULTIPLEXED SERIAL CONNECTION AND INCORPORATING I/O DEVICE



(57) Abstract

In a personal computer system, the omnipresent keyboard connection (201) is "souped up" by applying to the connection a known high-speed multiplexed serial connection protocol (203). Peripheral devices (213, 215, 217, 221, 223) are then incorporated into the keyboard, thereby minimizing cable and desktop clutter while providing a full feature set. Examples of peripheral devices that may be included in the keyboard include a PC CardTM or Card BusTM slot (213), a smart card read/write unit (215), speakers (221), microphones (223), etc. Consumers may thereby be afforded a greater degree of choice, since keyboard models are generally easier than computer models to make, ship, and inventory.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US97/11793

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :H03K 17/94; G06F 1/16, 3/00

US CL :341/22, 26; 364/708.1, 709.09

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)

U.S. : 341/22, 23, 20, 26, 27; 345/168, 169; 364/708.1, 709.01, 709.09, 710.01

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

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS-search terms: serial, keyboard, multiplex, multiple, I/O, computer, interface, PC card, card bus, geoport, smart card, card reader, integrate, combine.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4,431,988 A (MOLUSIS ET AL.) 14 February 1984, col. 3, line 4 to col. 5, line 10, FIGS. 1-4.	1-7
Y	US 4,461,013 A (LESE ET AL.) 17 July 1984, col. 2, line 40 to col. 7, line 59, FIGS. 1-4.	1-7
Y	US 5,515,373 A (LYNCH ET AL.) 07 May 1996, col. 2, lines 45-48, col. 4, lines 14-67, col. 11 line 30 to col. 12 line 30, FIG. 7.	1-7
Y	US 5,021,640 A (MUROI) 04 June 1991, col. 2 line 50 to col. 3 line 35, col. 5 lines 29-36, FIGS. 3 and 10.	1-7

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer ANDREW HILL <i>Jon Hill</i> Telephone No. (703) 305-8967

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,339,095 A (REDFORD) 16 August 1994, col. 3 line 20 to col. 4 line 12, col. 5 line 49 to col. 9 line 51, FIGS. 1, 2, 5A, 5B, 6, 7 & 8.	1-7
Y	US 5,499,108 A (COTTE ET AL.) 12 March 1996, col. 2, line 30 to col. 3 line 55, col. 6 lines 55-60, FIGS. 1-11A, 12, 25.	1-7
Y	US 5,459,304 A (EISENMANN) 17 October 1995, col. 8 lines 1-27, col. 9 lines 28-60, FIGS. 2, 4, 6, 8, 10 & 12.	1-7
Y	US 5,517,569 A (CLARK) 14 May 1996, col. 3 lines 15-67, col. 4 lines 15-21, col. 4 lines 35-40, FIGS. 2 & 11-17.	1-7