



US004972470C1

(12) **EX PARTE REEXAMINATION CERTIFICATE** (5028th)  
**United States Patent**  
**Farago**

(10) **Number:** **US 4,972,470 C1**  
(45) **Certificate Issued:** **Nov. 30, 2004**

(54) **PROGRAMMABLE CONNECTOR**

**FOREIGN PATENT DOCUMENTS**

(75) **Inventor:** **Steven Farago**, Mount Kisco, NY (US)  
(73) **Assignee:** **Acticon Technologies LLC**, Monsey, NY (US)

EP	0077657	*	4/1983	.....	G06F/3/04
EP	0157113		9/1985		
EP	0206259	*	12/1986	.....	G06F/13/10
GB	2130025		5/1984		
GB	2130818		6/1984		
JP	56061856		5/1981		
JP	57087255		5/1982		
JP	58047352		3/1983		
JP	59157738		9/1984		
JP	60110059		6/1985		

**Reexamination Request:**  
No. 90/006,859, Nov. 10, 2003

**Reexamination Certificate for:**  
**Patent No.:** **4,972,470**  
**Issued:** **Nov. 20, 1990**  
**Appl. No.:** **07/083,258**  
**Filed:** **Aug. 6, 1987**

- (51) **Int. Cl.<sup>7</sup>** ..... **H04L 9/00**
- (52) **U.S. Cl.** ..... **713/192; 310/71; 380/266**
- (58) **Field of Search** ..... **710/2, 8, 11, 14, 710/62, 63, 70, 71; 380/52, 266; 439/189, 955; 341/100, 101; 370/366; 713/192**

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

3,327,174	A	6/1967	Barre et al.
3,395,400	A	7/1968	De Witt et al.
3,406,368	A	10/1968	Curran
3,408,612	A	10/1968	Bute et al.
3,437,882	A	4/1969	Cayzer
3,573,799	A	4/1971	Drinnai et al.
3,643,135	A	2/1972	Devore et al.
3,646,573	A	2/1972	Holmes, Jr.
3,790,858	A	2/1974	Brancaleone et al.
3,863,226	A	1/1975	Ryburn
3,903,404	A	9/1975	Beall et al.
3,946,379	A	3/1976	Lippman
3,997,879	A	12/1976	Markley et al.
4,023,144	A	5/1977	Koenig
4,024,505	A	5/1977	Sperling
4,031,371	A	6/1977	DeVries
4,034,346	A	7/1977	Hostein
4,038,642	A	7/1977	Bouknecht et al.
4,048,673	A	9/1977	Hendrie et al.
4,053,950	A	10/1977	Bourke et al.
4,054,947	A	10/1977	Shanks et al.
4,065,662	A	12/1977	Garczynski et al.

(List continued on next page.)

**OTHER PUBLICATIONS**

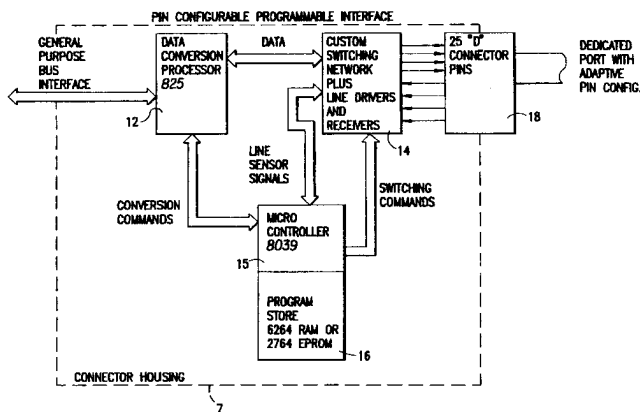
- "110 baud serial interface." Magga, W.S., *New Electronics*, vol. 18, No. 18, p. 29, abstract only, Sep. 17, 1985.
- "A mass-termination, filtered connector for RS-232-C circuits," Whittaker, B.F., *Thirteenth Annual Connector Symposium Proceedings*, pp. 197-204, abstract only, 1980.
- "A parallel-to-serial printer port adapter," Austerlitz, H., *BYTE*, vol. 10, No. 9, pp. 257-260, abstract only, Sep. 1985.

(List continued on next page.)

*Primary Examiner*—Fritz M. Fleming

(57) **ABSTRACT**

A configurable connector between two or more devices with at least one of the devices being capable of programming the connector through an interface therewith. The connector contains programmable electronic circuitry capable of being instructed by the device whereby the connector assumes a desired connecting configuration and/or function. In one embodiment the connector is programmed to inquire and determine the configuration of the device to which it is connected. With the results of its analysis the connector adapts the necessary timing, pin-outs, voltages, and other parameters to assure proper communication between the connected devices. In other embodiments the connector contains electronic components to add specific functions for data exchange, such as data buffering, data encryption and the like. In addition, the connector is programmable with interchangeable pin designations thereby obviating the need for rewiring for different applications and physical connections.



U.S. PATENT DOCUMENTS

4,079,372 A	3/1978	Koenig		4,571,456 A	2/1986	Paulsen et al.	
4,115,849 A	9/1978	Johnson et al.		4,579,407 A	4/1986	Shimada	
4,115,856 A	9/1978	Labeye-Voisin et al.		4,582,324 A *	4/1986	Koza et al. ....	463/16
4,124,888 A	11/1978	Washburn		4,593,959 A	6/1986	Simms	
4,124,889 A	11/1978	Kaufman et al.		4,597,631 A	7/1986	Flores	
4,127,896 A	11/1978	Raslavsky, III		4,603,320 A	7/1986	Farago	
4,137,559 A	1/1979	Reuting		4,607,170 A	8/1986	Wickman	
4,150,438 A	4/1979	Dorey et al.		4,607,379 A	8/1986	Marshall, Jr. et al.	
4,152,750 A	5/1979	Bremenour et al.		4,630,198 A *	12/1986	I-Yuan .....	711/118
4,181,933 A	1/1980	Benysek		4,633,489 A	12/1986	Morishita	
4,209,841 A	6/1980	Bambara et al.		4,639,863 A	1/1987	Harrison et al.	
4,217,624 A	8/1980	Tuck		4,641,263 A	2/1987	Perlman et al.	
4,242,721 A	12/1980	Krolak et al.		4,670,855 A	6/1987	Caprio et al.	
4,245,300 A	1/1981	Kaufman et al.		4,683,550 A	7/1987	Jindrick et al.	
4,246,637 A	1/1981	Brown et al.		4,688,170 A *	8/1987	Waite et al. ....	703/27
4,250,407 A	2/1981	Dorey et al.		4,689,023 A	8/1987	Strong, III et al.	
4,250,563 A	2/1981	Struger		4,691,350 A	9/1987	Kleijn et al.	
4,253,143 A	2/1981	Onodera et al.		4,691,355 A	9/1987	Wirstrom et al.	
4,253,146 A	2/1981	Bellamy et al.		4,694,492 A	9/1987	Wirstrom et al.	
4,254,462 A	3/1981	Raymond et al.		4,703,198 A	10/1987	Porter et al.	
4,261,035 A	4/1981	Raymond		4,723,195 A	2/1988	Mizzi et al.	
4,271,518 A *	6/1981	Birzele et al. ....	714/781	4,742,477 A	5/1988	Phillips et al.	
4,275,455 A	6/1981	Bartlett		4,744,006 A	5/1988	Duffield	
4,277,646 A	7/1981	Sams		4,749,362 A	6/1988	Hoffman et al.	
4,281,315 A *	7/1981	Bauer et al. ....	340/825.52	4,761,768 A *	8/1988	Turner et al. ....	365/185.22
4,293,924 A	10/1981	Struger et al.		4,771,378 A	9/1988	Halford	
4,309,754 A	1/1982	Dinwiddie, Jr.		4,780,883 A	10/1988	O'Connor et al.	
4,315,308 A	2/1982	Jackson		4,847,863 A	7/1989	Watson	
4,328,484 A	5/1982	Denecke		4,852,041 A	7/1989	Nakano	
4,333,696 A	6/1982	O'Neill et al.		4,898,547 A	2/1990	Bottoms et al.	
4,348,636 A	9/1982	Doundoulakis					
4,349,870 A *	9/1982	Shaw et al. ....	712/38				
4,350,973 A	9/1982	Petryk, Jr.					
4,354,268 A	10/1982	Michel et al.					
4,361,955 A	12/1982	Lancaster					
4,367,374 A	1/1983	Serrano					
4,375,103 A	2/1983	Armeth et al.					
4,395,610 A	7/1983	Downs et al.					
4,398,780 A	8/1983	Novotny et al.					
4,401,351 A	8/1983	Record					
4,403,111 A	9/1983	Kelly					
4,404,651 A	9/1983	Grudowski					
4,409,587 A	10/1983	Scott					
4,426,166 A	1/1984	Bowling					
4,428,043 A	1/1984	Catiller et al.					
4,428,044 A	1/1984	Liron					
4,432,604 A	2/1984	Schwab					
4,434,472 A	2/1984	Kachun					
4,443,850 A	4/1984	Harris					
4,443,865 A	4/1984	Schultz et al.					
4,443,884 A	4/1984	Swarz					
4,445,213 A	4/1984	Baugh et al.					
4,445,215 A	4/1984	Svensden					
4,447,804 A	5/1984	Allen					
4,451,884 A	5/1984	Heath et al.					
4,463,421 A	7/1984	Laws					
4,477,862 A	10/1984	Gonzales					
4,480,885 A	11/1984	Coppelman					
4,485,439 A *	11/1984	Rothstein .....	710/63				
4,489,419 A	12/1984	Wang					
4,490,775 A	12/1984	Quan					
4,493,028 A	1/1985	Heath					
4,498,716 A	2/1985	Ward					
4,509,113 A	4/1985	Heath					
4,514,823 A	4/1985	Mendelson et al.					
4,516,173 A	5/1985	Abe et al.					
4,525,802 A	7/1985	Hackamack					
4,534,011 A	8/1985	Andrews et al.					
4,543,450 A	9/1985	Brandt					
4,556,953 A	12/1985	Caprio et al.					

OTHER PUBLICATIONS

"A shielded computer interface connector," Hodgetts, M.A., *Fourteenth Annual Connectors and Interconnections Symposium Proceedings*, pp. 113-118, abstract only, 1981.

"An RS232 to centronics-converter," *Practical Electronics*, vol. 21, No. 9, pp. 46-49, abstract only, Sep., 1985.

"Chips Inside Connector Cut Costs, Save Space," *Electronics*, pp. 25, abstract only, Jan. 13, 1986.

"Give your computer an RS-232C interface," Rowe, J., *Electronics Australia*, vol. 41, No. 9, pp. 81, 83-84, 139, abstract only, 1979.

"Interfacing for data acquisition," Clune, T.R., *BYTE*, vol. 10, No. 2, pp. 269-282, abstract only, Feb. 1985.

"Low-cost parallel to serial converter," Gareb, R., *Electronics Australia*, vol. 45, No. 7, pp. 96-99, abstract only, Jul. 1983.

"Making a DIN about connections (S5/8 serial interface)," Hardie, A; Chapman, P., *Computing, The Magazine*, p. 23, abstract only, Oct. 18, 1984.

"Modern Survey," *Datamation*, vol. 25, No. 3, pp. 167-226, abstract only, Mar. 1979.

"Modems," Which Computer?, pp. 131-141, abstract only, Sep. 1985.

"Modems—Integral Approach Gains Momentum," Goldman Norman, Data Communications User, pp. 31, abstract only, Dec. 1975.

"Operating Note model 15104A 15115 A 15116A," Hewlett Packard, Inc., 1982.

"Parallel to serial converter," Penfold, R.A., *Practical Electronics*, vol. 20, No. 9, pp. 17-20, abstract only, Sep. 1984.

"RS232/Centronics converter," *Elektor*, vol. 10, No. 10, pp. 58-63, abstract only, Oct. 1984.

"Serial to parallel—a flexible utility box," Wilcox, A.D., *Dr. Dobb's Journal*, vol. 8, No. 8 pp. 28-35, abstract only, Aug. 1983.

"Something Substantial: The Access Matrix Transportable Computer," Bassett, S.B., *Small Business Computers Magazine*, vol. 7, No. 4, pp. 42-45, abstract only, Oct. 1983.

"The Business Computer Network Corp has introduced the 'Network Inquirer,' a handheld computer that enables users to access hundreds of public databases by selecting the network desired from a list and pressing an appropriate selection number," *Magazine of Direct Marketing*, pp. 1291, abstract only, Nov. 1982.

"The microcomputer RS232C interface system," Malcome-Lawes, D.J., *Laboratory Microcomputer*, vol. 3, No. 3, pp. 89-100, abstract only, 1984.

"The modem for the house telephone," HC Mein Home Computer, No. 9, pp. 36-42, abstract only, Sep. 1984.

"The standard interface," Repko, M., *Systems International*, vol. 9, No. 6, pp. 40-42, abstract only, Jun. 1981.

"UART forms RS-232C/Centronics interface," Perianayagam, K.S., Kalyanaramudu, United Kingdom, *EDN*, vol. 30, No. 27, pp. 263-264, abstract only, Dec. 12, 1985.

"Universal RS232C cable," Vaidya, D.M., *Microprocessors and Microsystems*, vol. 9, No. 5, pp. 231-233, abstract only, Jun. 1985.

"Universal VDU interface," Polecat, H., *Electronic Product Design*, vol. 2, No. 2, p. 23, abstract only, Feb. 1981.

"Vic-20 The friendly computer VICMODEM," Commodore Business Machines, Inc. copyright 1982.

"You Can Take It with You," Smith, Amy E., *Business Computer Systems*, vol. 1, No. 1, pp. 94-99, abstract only, Sep. 1981.

National Semiconductor PC16450C/NS16450, PC8250A/INS8250A, Universal Asynchronous Receiver/Transmitter, Jul. 1990.

Martin S. Michael, A Comparison of the INS8250, NS16450 and NS16550AF Series of UARTs, National Semiconductor Application Note 493, Apr. 1989.

Radio Shack TRS-80 Color Computer Disk System Owner's Manual and Programming Guide, Copyright 1981.

Radio Shack Service Manual TRS-80 Color Computer Disk Interface Catalog No. 26-3022, 1/82.

Radio Shack TRS-80 Micro Computer System Expansion Interface Catalog No. 26-1140/1141/1142, Copyright 1979.

Radio Shack TRS-80 Hardware TRS-80 RS-232-C Interface Catalog No. 26-1145, no date provided.

Hewlett-Packard HP 82938A HP-IL Interface Owner's Manual Series 80, Jan. 1982.

\* cited by examiner

**1**  
**EX PARTE**  
**REEXAMINATION CERTIFICATE**  
**ISSUED UNDER 35 U.S.C. 307**

NO AMENDMENTS HAVE BEEN MADE TO  
THE PATENT

**2**  
AS A RESULT OF REEXAMINATION, IT HAS BEEN  
DETERMINED THAT:

5 The patentability of claims 1-13 is confirmed.

\* \* \* \* \*