

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 27

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte GORDON T. DAVIS, EDWARD E. HARBOUR,  
PAUL LEPPERT, LAURENCE V. MARKS,  
ANDRE B. MINN, and BRYAN S. STEVENS

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Appeal No. 1999-1697  
Application No. 08/550,270

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ON BRIEF

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Before HAIRSTON, FLEMING, and LEVY, Administrative Patent Judges.  
LEVY, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-25, which are all of the claims pending in this application.

BACKGROUND

Appellants' invention relates to a communications adapter having analog and digital interfaces for communications with remote systems. An understanding of the invention can be derived from a reading of exemplary claims 1 and 25, which are reproduced as follows:

1. An adapter for transferring data between a data processing system and at least one data communications system by remotely linking said at least one data communications system to said data processing system, said adapter comprising:

a casing having an aperture at one end of said casing;

a carrier board having a connector for connecting to a port of said data processing system, wherein said carrier board is mounted within said casing with said connector accessible via said aperture in said casing;

a single programmable digital signal processing means mounted on said carrier board;

a memory means mounted on said carrier board, said memory means storing software program means for instructing said single programmable digital signal processing means; and

a plurality of transceiving means mounted on said carrier board, wherein one or all of said plurality of transceiving means can be activated by said single programmable digital signal processing means for providing data communication to said at least one data communication system.

25. An adapter for coupling a computer to a communications network including:

a connector for coupling to the computer;

a single programmable digital signal processor;

a memory storing software for instructing said programmable digital signal processor to generate an analog data stream, a digital data stream or both; and

a plurality of transceivers responsive to signals provided by the single digital signal processor to transmit one or all of the data streams.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Hartley et al. (Hartley)	4,868,863	Sep. 19, 1989
Erhard et al. (Erhard)	5,165,022	Nov. 17, 1992
Blackwell et al. (Blackwell)	5,598,401	Jan. 28, 1997

Claims 1, 2, 5, 6, 9-11, 13, 14, 17, 18, 21-23, and 25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Hartley in view of Blackwell.

Claims 3, 4, 7, 8, 12, 15, 16, 19, 20, and 24 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Hartley in view of Blackwell and further in view of Erhard.

Rather than reiterate the conflicting viewpoints advanced by the examiner and appellants regarding the above-noted rejections, we make reference to the examiner's answer (Paper No. 17, mailed September 29, 1998) for the examiner's complete reasoning in support of the rejections, and to appellants' brief<sup>1</sup> (Paper No. 14, filed July 21, 1998) and reply brief (Paper No. 19, filed

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<sup>1</sup> We observe that a substantially complete copy of claim 10 appears in the appendix to appellants brief. On line 23, "according" should reads as "in response" (See Paper No. 6, filed September 8, 1997).

November 2, 1998) for appellants' arguments thereagainst. Only those arguments actually made by appellants have been considered in this decision. Arguments which appellants could have made but chose not to make in the brief have not been considered. See 37 CFR § 1.192(a).

#### OPINION

In reaching our decision in this appeal, we have carefully considered the subject matter on appeal, the rejections advanced by the examiner, and the evidence of obviousness relied upon by the examiner as support for the rejections. We have, likewise, reviewed and taken into consideration, in reaching our decision, appellants' arguments set forth in the briefs along with the examiner's rationale in support of the rejections and arguments in rebuttal set forth in the examiner's answer.

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the examiner to establish a factual basis to support the legal conclusion of obviousness. See In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467

(1966), and to provide a reason why one having ordinary skill in the pertinent art would have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985); ACS Hosp. Sys., Inc. v. Montefiore Hosp., 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the examiner are an essential part of complying with the burden of presenting a prima facie case of obviousness. Note In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). If that burden is met, the burden then shifts to the applicant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole. See id.; In re Hedges, 783 F.2d 1038, 1039, 228 USPQ 685, 686 (Fed. Cir. 1986); In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984); and In re Rinehart, 531 F.2d 1048, 1052, 189 USPQ 143, 147 (CCPA 1976).

We consider first the rejection of claims 1, 2, 5, 6, 9-11, 13, 14, 17, 18, 21-23, and 25 under 35 U.S.C. § 103(a) based on the teachings of Hartley in view of Blackwell. We begin with claims 1 and 2. The examiner's position (answer, pages 4 and 5) is that Hartley does not disclose that the carrier board is within a casing with the connector accessible through an aperture at one end. The examiner takes Official notice that this feature is old and well known. The examiner further asserts that Hartley does not disclose a plurality of transceivers. To overcome this deficiency of Hartley, the examiner turns to Blackwell (see figures 4 and 5) for a teaching of two transceivers in a single data communications system.

Appellants assert (brief, pages 7-9) that Hartley and Blackwell do not disclose a single programmable digital signal processor (DSP), a plurality of transceiving means, and that all of the transceiving means can be activated by the single programmable DSP. Appellants further assert (brief, pages 5 and 6) that the examiner's characterization of element 3 of Hartley as a carrier board is in error because element 3 of Hartley is a modem. It is argued (brief, pages 9-11) that there is no basis in either of the references for their combination.

With respect to appellants' assertion that neither Hartley nor Blackwell discloses a single programmable DSP which can activate all of the plurality of transceiving means, and that Blackwell discloses two DSPs 370 and 308 (brief, page 8), the examiner takes the position (answer, pages 10 and 11) that the issue is moot because the language "one or all of said transceiving means can be activated . . ." reads of either of Blackwell or Hartley alone since each discloses one transceiving means which can be activated by a DSP means. The examiner adds that the claims do not require a single DSP to activate a plurality of transceivers. From our review of the claim, we do not agree with the examiner's interpretation of the claim and interpret the recited claim language as requiring the single DSP to be able to activate the plural transceiving means.

The examiner, in the alternative, asserts (answer, pages 11 and 12) that in figures 4 and 5 of Blackwell, since processor 370 performs control functions for the analog interface via bus 64, the functionality of the processors is not entirely separate.

We note at the outset that the examiner has not addressed the issue of whether both data pump 308 and processor 370 constitute two DSPs for controlling analog and digital signal processing in figures 4 and 5 of Blackwell. From our review of

Blackwell, we agree with appellants (brief, page 8) that data pump 308 of Blackwell is in essence a DSP; see (col. 7, lines 52 and 53) which discloses that data pump 308 may be a DSP programmed as a data pump. If we followed the line of reasoning advanced by the examiner and replaced the transceiver of Hartley with plural transceivers as advanced by the examiner, the resultant structure would have plural DSPs 308 and 370 as disclosed in figures 4 and 5 of Blackwell, and would not result in a single DSP controlling all of the transceivers as required by claim 1, as well as each of the other independent claims.

However, although not brought to our attention by either the examiner or appellants, we find that the third embodiment disclosed in figure 9 of Blackwell discloses a single DSP (data pump 508) activating both analog (512 and 514) and digital (518) transceivers. The controller selectively provides a first control signal to the data pump to selectively operate the data pump in an analog mode and to engage the linear code and the analog interface circuit. The controller further selectively provides a second control signal to the data pump to selectively operate the data pump in a digital mode and to engage the digital interface circuit (col. 12, line 63 through col. 13, line 59).

In addition, we observe that appellants' specification discloses (pages 2-4) that appellants' invention relates to an adapter for providing data communications between a computer and other remote data communications systems having various data communications platforms, such as an integrated services digital network (ISDN) for use at the office, or an analog public switched telephone network (PSTN) to be used from home. One solution has been to have an adapter designed for each type of telecommunication facilities. Another solution in the prior art was to have a hybrid adapter which combined several discrete functions in a single adapter, but this brute force approach does not save much when compared to separate adapters. Appellants add that it would be desirable to provide a single adapter which performs several functions by utilizing common hardware, which would be capable of transferring data to different communications systems, and would have the convenience of a hybrid adapter and a price comparable to a single adapter.

Blackwell similarly discloses (col. 2, lines 37-58) that corporations may employ digital networks for internal communications, while continuing to need analog services for external communications such as allowing an employee to enter the system from a remote location over the PSTN. Blackwell notes

that current solutions have been to essentially build separate analog and digital devices which may be incorporated within a single housing, for example, hybrid devices and physically separate cards which separately perform these incompatible digital and analog functions and which separately connect to digital or analog interfaces. Blackwell recognizes (col. 2, line 59 to col. 3, line 2) that:

Current solutions to the analog and digital incompatibility problem have been inadequate, however, because such current solutions have simply physically combined otherwise separate sets of analog and digital hardware, into one package having both analog and digital interfaces, often with redundant hardware such as microprocessors, RAM and ROM. The need has arisen, therefore, for a single, integrated data communications device which will provide complete analog and digital data transmission services, heretofore provided by separate, independent, and incompatible devices.

From this background disclosure of Blackwell, we find that both appellants and Blackwell recognize similar problems in the prior art, as well as the solution of constructing a single integrated device for performing both analog and digital functions. From the embodiment of figure 9 of Blackwell, we find that Blackwell discloses a single device having a single DSP for activating both analog and digital transceivers. In addition, Blackwell states (col. 12, lines 65-68) that data communications device 500 is

coupled to terminal (computer) 100 through transmit and receive lines 150 and 151. Blackwell additionally discloses (col. 2, lines 54-58) that it is known to build separate digital and analog devices onto cards.

We find that Hartley is directed to connection of a data processing system, such as a personal computer, to a communications network (col. 1, lines 8-10). Hartley discloses (col. 4, lines 24-27) that modem 3 is connected to public telephone network 2 by coupler 4, and that modem 3 could either be constructed as a plug-in printed circuit card or could be integrated into the main planar board of the personal computer. Hartley additionally discloses (col. 9, lines 40-43) that although the invention is described with respect to a telephone network, that the invention is also applicable to digital networks.

From the disclosure of Hartley, we agree with appellants that element 3 of Hartley refers to the modem board, but find that because the modem can be constructed as a plug-in circuit card, that the modem is constructed as a carrier board having a connector. In addition, appellants' argument (brief, page 7) that neither Hartley nor Blackwell recognizes or put forth a solution to the mobility problem, does not directly address the

taking of Official notice by the examiner that this feature is old and well known. In view of: the combined teachings of: (a) the Official notice taken by the examiner (answer, pages 4 and 5) that "with modems as well as PCMCIA adapter interfaces it is well known to mount boards within casings (for component protection, for example), and that a connection must be made from the board to the exterior. In a typical PCMCIA interface, as well as other types of plug-in interfaces, this connection is made with a board mounted connector, through an aperture." which has not been specifically traversed by appellants<sup>2</sup>; (b)Hartley's disclosure that modem 3 (figure 3) can be either a plug-in card or integrated into the main PC board; and (c)Blackwell's disclosure that analog and digital devices (col. 2, lines 55 and 56) are built on cards, we find that the prior art would have suggested that the communications device could be attached to the computer in a number of equivalent ways, and that an artisan would have been motivated to install the data communications device of Blackwell as a plug-in carrier board accessible from outside

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<sup>2</sup> We observe that the examiner has cited U.S. Patent 5,430,618 to Huang to support the examiner's position of Official notice. Because appellants have not specifically traversed the examiner's holding, and the examiner has not positively included Huang in the statement of the rejection, we need not address the teachings of Huang, which was not formally included in the statement of the rejection.

computer terminal 100. In this regard, it must be borne in mind that where two known alternatives are interchangeable for their desired function, an express suggestion of the desirability of the substitution of one for the other is not needed to render such substitution obvious. See In re Fout, 675 F.2d 297, 301, 213 USPQ 532, 536 (CCPA 1982); In re Siebentritt, 372 F.2d 566, 568, 152 USPQ 618, 619 (CCPA 1967).

We are not persuaded by appellants' assertion (brief, page 8) that "[i]n Blackwell, the analog and digital data paths are handled separately. Data Pump 308 handles data on the analog data path, while Processor 370 handles data on the digital path. It is as if two different types of circuits co-habitate on the same card without sharing functions." As discussed above, the figure 9 embodiment of Blackwell discloses a single control of both the analog and digital portions of the communications device. From all of the above, the rejection of claims 1 and 2 is affirmed.

With respect to independent claims 5, 10, 17, and 22, independent claim 5 requires that the connection of the at least one interface cable to the adapter can be detected by the single DSP means. Appellants assert (brief, page 12) that Blackwell and Hartley do not show this feature because "Hartley only activates

Converter/Control Logic 25 regardless of which Country Dependent Coupler 4 is connected to the Modem 3." The examiner asserts that in Hartley, connection of the cable is detected by the DSP. We find that in Hartley, the coupler is detected by the converter/control logic unit and not by the DSP. Although the DSP, in conjunction with the converter/control logic unit, checks the country code read from the coupler against the stored country code, this not the same as the DSP detecting the connection. In addition, it is unclear from the disclosure of Blackwell whether the DSP detects the connection. Rather, it appears that controller 504 detects the connection and sends first or second control signals to operate the data pump (DSP) in analog or digital modes. Accordingly, the rejection of claim 5, as well as claims 6 and 9 which depend therefrom, is reversed. Independent claims 10, 17, and 22 contain similar limitations. We therefore reverse the rejection of independent claims 10, 17, and 22, as well as claims 11, 18, 21, and 23, dependent therefrom.

We turn next to independent claims 13 and 25. We affirm the rejection of these claims based upon our findings above with respect to claim 1. Accordingly, the rejection of independent claims 13 and 25, and claim 14 dependent therefrom, is affirmed.

We turn next to the rejection of claims 3, 4, 7, 8, 12, 15, 16, 19, 20, and 24 under 35 U.S.C. § 103(a) as unpatentable over Hartley and Blackwell in view of Erhard. At the outset, we reverse the rejections of claims 7, 8, 12, 19, 20, and 24 which depend from independent claims 5, 10, 17, and 22 because Erhard does not make up for the deficiencies of Blackwell and Hartley.

Turning to claims 3, 4, 15, and 16, the examiner takes the position that Hartley and Blackwell do not disclose an ethernet transceiver. To overcome this deficiency in Hartley and Blackwell, the examiner turns to Erhard (answer, page 8) for a teaching that "it would be desirable to provide an interface to ethernet, and this involves a transceiving means (for example, I/O adapter 48)." The examiner's rationale (answer, page 9) is to improve redundancy and reliability. Appellants (brief, page 22) argue that an artisan having "the knowledge of reliability through redundancy would not pursue the path of integrated functions in a single DSP as is required by the claims." Appellants add that the claims require an ethernet transceiver, and that this aids worker mobility.

We find that Blackwell discloses downloading data files from and transmitting documents to various networks (col. 1, lines 45 and 46). Erhard discloses that computer systems communicate with

a variety of I/O devices such as printers, personal computers, etc. through the use of token ring networks and ethernet networks (col. 1, lines 27-35). From these teachings, we find that Erhard and Blackwell would have suggested to an artisan that the computer terminal 100 of Blackwell can communicate with other personal computers and printers through an ethernet network. In addition, we find that connecting to an ethernet network will inherently include or suggest the use of a transceiver. Accordingly, the rejection of claims 3, 4, 15, and 16 is affirmed.

CONCLUSION

To summarize, the decision of the examiner to reject claims 5-12, and 17-24 under 35 U.S.C. § 103(a) is reversed. The decision of the examiner to reject claims 1-4, 13-16, and 25 under 35 U.S.C. § 103(a) is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136 (a).

AFFIRMED-IN-PART

KENNETH W. HAIRSTON	)	
Administrative Patent Judge	)	
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	)	BOARD OF PATENT
MICHAEL R. FLEMING	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
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STUART S. LEVY	)	
Administrative Patent Judge	)	

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