

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

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Paper No. 30

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte HISASHI OHNO

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Appeal No. 95-0868  
Application 07/987,552<sup>1</sup>

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ON BRIEF

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Before THOMAS, HAIRSTON, and BARRETT, Administrative Patent Judges.

BARRETT, Administrative Patent Judge.

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<sup>1</sup> Application for patent filed December 8, 1992, entitled "Non-Contact IC Card Having Multiple Receivers With Different Signal Detection Thresholds For Minimizing Current Consumption," which is a continuation of Application 07/463,310, filed January 10, 1990, now abandoned, which claims the priority benefit of Japanese Application 1-247901, filed October 24, 1989.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 5 and 6, all the claims pending in the application. Claims 1-4 and 7 have been cancelled.

The invention is directed to a non-contact IC card. Prior art non-contact IC cards have a receiver with a single threshold level. The signal is detected by comparing the level of the received signal with the threshold level. As illustrated in appellant's figure 4, if the receiver has an excessively high threshold value  $V_H$  it cannot detect the data  $D_{11}$  and  $D_{12}$ , as shown by an output waveform  $S_H$ . If the receiver has an excessively low threshold value  $V_L$  there is the danger of detecting not only the true data  $D_{11}$  and  $D_{12}$  but also noise  $N_{11}$  and  $N_{12}$ , as shown by an output waveform  $S_L$ . Even if the threshold level is properly set, if the IC card is used in a different environment the threshold level may need to be reset. The invention allows a threshold level to be easily set in correspondence with the strength of the received signal.

The invention uses at least three receivers each with different signal detection threshold levels as shown in figure 2 (showing four receivers). Undisclosed structure determines which receivers accurately detect the data. In figure 2, receivers  $10_2$  and  $10_3$ , which output the signals  $S_2$  and  $S_3$ , accurately detect the data. Since the current consumed by a receiver having a high threshold level is large, the CPU selects from the receivers that have accurately detected the data the receiver having the lowest signal detection threshold. This minimizes current consumption.

Claim 5 is reproduced below.

5. A non-contact IC card comprising:

an antenna for receiving an external analog signal containing digital data;

at least three receivers, coupled to the antenna, for receiving the analog signal and for detecting the digital data wherein each of the at least three receivers has a different signal detection threshold level for detecting the digital data;

a CPU for controlling the IC card and processing the digital data; and

selection means coupled to the at least three receivers and controlled by the CPU for connecting a selected one of the at least three receivers to the CPU, the CPU controlling the selection means by connecting to the CPU, from the receivers of the at least three receivers that have accurately detected the digital data, the receiver having the lowest signal detection threshold level.

The examiner relies on the following references:

Davis et al. (Davis) 4,766,295 August 23, 1988

Claims 5 and 6 stand rejected under 35 U.S.C. § 103 as being unpatentable over Davis. The examiner finds that Davis teaches the subject matter recited in claim 5 except that Davis uses two receivers instead of three receivers. The examiner concludes (Examiner's Answer, page 2):

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have provided additional receivers in the Davis et al. system because providing additional receivers would not have changed the overall structure or operation of the system, and it would have provided for the system to utilize that particular receiver which was most power efficient based upon the received signal strength as already taught by Davis et al. (col. 5 lines 1-31).

OPINION

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We reverse but enter a new ground of rejection pursuant to our authority under 37 CFR § 1.196(b).

The examiner finds that the difference between the subject matter of claim 5 and Davis is that Davis teaches only two receivers instead of the "at least three receivers" (Examiner's Answer, page 2). Appellant argues two differences (Brief, page 9): "the absence of a selection means responsive to the strength of a received signal for selecting a receiver and the absence of a third or even more receivers." It is not necessary to address the question of the number of receivers because we conclude that the examiner has erred in finding that Davis otherwise contains the structure as recited in claim 5.

Davis does not meet the limitations of claim 5 for at least the following reasons:

First, the high gain/low gain receiver in Davis is not the same as a high threshold level/low threshold level receiver for detecting the digital data. "Threshold level" is the minimum signal level that can be detected. "Gain" is the ratio of output to input, the amount of amplification of the input signal. Gain and threshold level are different things. The examiner states that "Davis et al. teaches a selection means . . . for connecting . . . that receiver having the lowest signal detection threshold level" (Examiner's Answer, page 2), but errs in equating gain with threshold level. Therefore, the examiner has not shown that each of the receivers in Davis "has a different signal detection threshold level for detecting the digital data" (claim 1).

Second, the claim limitation of "at least three receivers, coupled to the antenna, for receiving the analog signal and for detecting the digital data wherein each of the . . . receivers has a different signal

detection threshold level for detecting the digital data" requires that all receivers detect the digital data at the same time in order to meet the subsequent limitation of determining the "receivers that have accurately detected the digital data." We agree that the two mode (high gain/low gain) receiver in Davis can be broadly considered to be two receivers even though only one receiver can operate at a time due to the receivers sharing common amplifier stages. However, since the receivers in Davis can operate only one at a time they do not simultaneously receive and detect the digital data and the interpretation of a receiver switchable between two modes as two receivers does not fit the claim language.

Third, Davis does not check which receivers (high gain or low gain or both) have accurately detected data and therefore does not select from among the "receivers that have accurately detected the digital data." The examiner states that "[a]s described in Davis et al. at col. 5, if the low gain mode will receive the signal accurately, then the low gain mode is utilized, and if the low gain mode will not receive the signal accurately, then the high gain mode will be tested to determine if the high gain mode will receive the signal accurately" (Examiner's Answer, pages 2-3). As appellant correctly points out (Reply Brief, page 2): "There is no testing as to whether a signal is accurately received in determining which gain mode to employ." The selection of gain mode in the Davis receiver is based on time and whether the tags 18 sense emitted signals from transmitter heads 20, not the accuracy of the detected digital data. See Davis, column 5, lines 21-28. Furthermore, since the receivers in Davis must operate one at a time there is no way that Davis could determine the "receivers that have accurately detected the digital data" since this is based on a comparison between the detected signals from the different receivers.

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Fourth, since the receivers in Davis do not have different detection threshold levels for detecting the digital data and since Davis does not check which receivers accurately detected data, Davis does not select "from the receivers . . . that have accurately detected the digital data, the receiver having the lowest signal detection threshold level." The selection of receivers in Davis is based on time, not accuracy of the detected data and manifestly not accuracy and minimum threshold level.

For the reasons stated above, the obviousness rejection of claims 5 and 6 is reversed.

NEW GROUNDS OF REJECTION PURSUANT TO 37 CFR § 1.196(b)

Claims 5 and 6 are rejected under 35 U.S.C. § 112, first paragraph, as based on a lack of enabling disclosure of how to make and use the claimed invention. Claim 5 passively requires structure for determining which receivers "have accurately detected the digital data" so that the CPU can control the selection means to connect to the CPU "the receiver having the lowest signal detection threshold level." The specification does not provide an enabling disclosure of how to make and use structure for determining which receivers "have accurately detected the digital data."

"The test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation." United States v. Telectronics, Inc., 857 F.2d 778, 785, 8 USPQ2d 1217, 1223 (Fed. Cir. 1988), citing Hybritech, Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 1384, 231 USPQ 81, 94 (Fed. Cir. 1986). The specification need not disclose what is well known in the art. In re Buchner, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991).

Figure 2 shows that receivers 10<sub>2</sub> and 10<sub>3</sub> having threshold levels V<sub>2</sub> and V<sub>3</sub>, respectively, accurately detect the digital data. This is described in the specification at the paragraph bridging pages 5-6. However, the specification does not describe any circuitry or programming that would permit one skilled in the art to detect which receivers are accurately detecting the data. To the best of our knowledge, and from a review of the prior art cited in the record, an element to accurately detect data from multiple receivers each with a different threshold level is not conventional in the art. Since the element to accurately detect data is integral to the practice of the invention and neither the application nor the prior art describe its structure, we have reason to doubt that the claimed invention could be carried out based on the disclosure. See Id. It is not enough that a person skilled in the art, by carrying on investigations along the line indicated in the subject application, and by a great amount of work eventually might find out how to make and use the instant invention. The statute requires the application itself to inform, not to direct others to find out for themselves. Cf. In re Gardner, 427 F.2d 786, 789, 166 USPQ 138, 141 (CCPA 1970) ("the law requires that the disclosure in the application shall inform [those skilled in the art] how to use, not how to find out how to use for themselves").

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### CONCLUSION

The rejection of claims 5 and 6 is reversed.

A new ground of rejection of claims 5 and 6 is entered pursuant to 37 CFR § 1.196(b).

Any request for reconsideration or modification of this decision by the Board of Patent Appeals and Interferences based upon the same record must be filed within one month from the date of the decision. 37 CFR § 1.197. Should appellant elect to have further prosecution before the examiner in response to the new rejection under 37 CFR § 1.196(b) by way of amendment or showing of facts, or both, not previously of record, a shortened statutory period for making such response is hereby set to expire two months from the date of this decision.

NOTE: This is not a final decision for the purpose of judicial review because it includes a new ground of rejection pursuant to 37 CFR § 1.196(b) ("A new rejection shall not be considered final for the purpose of judicial review.").

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

REVERSED - § 1.196(b)

JAMES D. THOMAS )  
Administrative Patent Judge )  
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 ) BOARD OF PATENT  
KENNETH W. HAIRSTON ) APPEALS  
Administrative Patent Judge ) AND  
 ) INTERFERENCES  
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