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**Datasheet for the decision
of 12 March 2012**

Case Number: T 1877/07 - 3.5.06

Application Number: 99301798.7

Publication Number: 945778

IPC: G06F 1/32

Language of the proceedings: EN

Title of invention:

Low power CD-ROM player for portable computers

Applicant:

O2 Micro International Limited

Headword:

Low power CD-ROM player/O2 MICRO

Relevant legal provisions:

EPC Art. 84, 56

Keyword:

"Relevant common general knowledge not established - remittal for further prosecution"

Decisions cited:

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Catchword:

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Case Number: T 1877/07 - 3.5.06

D E C I S I O N
of the Technical Board of Appeal 3.5.06
of 12 March 2012

Appellant:
(Applicant)

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Decision under appeal:

Decision of the Examining Division of the
European Patent Office posted 12 June 2007
refusing European patent application
No. 99301798.7 pursuant to Article 97(1) EPC
1973.

Composition of the Board:

Chairman: D. H. Rees
Members: S. Krischer
M.-B. Tardo-Dino

Summary of Facts and Submissions

- I. The appeal is directed against the decision, posted on 12 June 2007, of the examining division, to refuse the application 99301798.
The reason for the refusal was lack of inventive step over document:

D1 EP 0 825 519 A, 25 February 1998.
- II. A notice of appeal was received on 10 August 2007. The fee was received the same day. A statement of the grounds of appeal was received on 19 October 2007. Oral proceedings were conditionally requested.
- III. The board issued a communication dated 22 August 2011. It declared its intention to remit the case to the first instance for further prosecution.
- IV. In a letter dated 16 December 2011, the appellant withdrew its request for oral proceedings on the condition that the board remitted the case to the examining division. Reimbursement of the appeal fee was also requested.
- V. The board issued a summons to attend oral proceedings to be held on 25 April 2012. It gave its opinion that the request for reimbursement of the appeal fee should be rejected.
- VI. In a letter dated 6 March 2012, the appellant withdrew its request for reimbursement of the appeal fee. It repeated its withdrawal of the request for oral

proceedings on the condition that the board remitted the case to the examining division.

VII. Oral proceedings were cancelled.

VIII. The appellant requests that the decision be aside and a patent granted on the basis of the sole request (claims 1-25), filed with the grounds of appeal. The further text on file is: description pages 1-6, 8-35 as originally filed; page 7 as filed by fax on 12 October 2004; drawings sheets 1-5 as originally filed.

IX. Claim 1 reads as follows:

"1. A computer system (100) adapted to play audio CDs, said computer system comprising:

a computer subsystem (104) comprising a system CPU (120);

and a CD-ROM subsystem (106) in communication with the system CPU (120) through a IDE bus (128), the CD-ROM subsystem comprising:

a CD-ROM drive (138) capable of playing audio CDs;

an audio output amplifier (146) coupled to said CD-ROM drive (138) and for receiving an analog audio signal from the CD-ROM drive;

characterised in that the CD-Rom subsystem further comprises,

an audio interface integrated circuit (102) coupled to said CD-ROM drive (138) and said audio output amplifier (146), and CD-ROM control buttons (142), wherein the audio interface IC (102) comprises transmission gates (402) to selectively couple and isolate the audio interface (102) and the IDE bus (128),

wherein the audio interface IC (102) relays signals for controlling operation of CD-ROM drive (138) from the computer subsystem (104), when power is being supplied to the computer subsystem (104)

and wherein the transmission gates isolate the audio interface IC (102) from the IDE bus of the computer system when power is not being supplied to the computer subsystem (104), wherein further the audio interface IC (102) originates signals for controlling operation of the CD-ROM drive (138) when power is not being supplied to the computer subsystem (104) thereby enabling the controlled playback of said audio CDs when power is not being supplied to said computer subsystem."

X. Independent method claim 20 reads as follows:

"20. A method for playing audio CDs in a computer system adapted to play audio CDs comprising the steps of

de-energizing a computer CPU;

controlling a computer CD-ROM drive to play an audio CD in response to signals originating from an audio interface integrated circuit and isolating the audio interface IC from an IDE bus of the computer subsystem when said CPU is de-energised by providing transmission gates in the audio interface IC; and

controlling said CD-ROM drive and a computer audio amplifier to play the audio CD in response to signals relayed from said CPU by said audio interface integrated circuit when said CPU is energised."

Reasons for the Decision

1. *Admissibility of the appeal*

The appeal satisfies the requirements of the EPC for admissibility, see sections I and II above.

2. *Original disclosure*

2.1 Claim 1 of the current request differs from claim 1 of the refused sole request by three amendments:

- (1) in lines 6 and 7 added: "[a CD-ROM subsystem] in communication with the system CPU (120) through a IDE bus (128)"; basis: page 1, paragraph 2; figure 1 and page 16, lines 21-22;
- (2) in lines 13-15 added: "wherein the audio interface IC comprises transmission gates (402) to selectively couple and isolate the audio interface (102) and the IDE bus (128)"; basis: page 1, paragraph 3; figure 6, previous claim 4, and page 31, line 16 to page 32, line 2;
- (3) in lines 19-21 added: "and wherein the transmission gates isolate the audio interface IC (102) from the IDE bus of the computer system when power is not being supplied to the computer subsystem (104)"; basis: page 1, paragraph 3; previous claim 3, and page 20, lines 6-9.
There is also a disclosure starting at page 31, line 10 to page 32, line 7 for the isolation of the IDE bus from the IDE bus extension and the audio interface IC by transmission gates.

2.2 Independent method claim 20 of the current sole request differs from claim 22 of the refused sole request by two amendments:

- (1) in line 24 added: "and isolating the audio interface IC from an IDE bus of the computer subsystem [when said CPU is de-energised]";
- (2) in line 25 added: "by providing transmission gates in the audio interface IC".

They are analogous to the amendments of claim 1.

2.3 Dependent claim 23 which is based on claim 26 of the refused sole request has overcome the objection raised in the appealed decision, sections 5. and 5.2 concerning a lack of original disclosure (Article 123(2) EPC), since claim 23 no longer specifies the disputed audio amplifier. Claim 24 of the refused request has been deleted, thus also overcoming the similar objection to this claim.

2.4 Thus, the amendments contained in the current request are originally disclosed and there are no remaining objections raised by the examining division. The board concludes that Article 123(2) EPC is satisfied.

3. *Clarity*

3.1 The following clarifications are necessary:

- claim 1, lines 14, 16, 19, 21: "IC" is used instead of "integrated circuit" as in line 12; the terminology should be consistent everywhere;

- claim 1, line 15 "integrated circuit" or "IC" is missing between "audio interface" and "(102)";
- claim 20, lines 24, 26: "IC" is used instead of "integrated circuit" which has been used in the beginning of line 24;
- claim 20, line 25: the added phrase "by providing transmission gates in the audio interface IC" should be preceded by something like ", and the isolating is done", in order to avoid the wrong interpretation that the de-energising is done by the transmission gates.

3.2 In its letter dated 16 December 2011, page 1, paragraph 3, the appellant agreed with the suggested clarifications and authorised the examining division to make them in a communication according to Rule 71(3) EPC following remittal of the case by the board.

4. *Inventiveness*

4.1 The invention *relates* to a system and method for playing audio CDs in a computer with a built-in CD-ROM drive. The CD-ROM subsystem also contains an audio interface IC (= integrated circuit) which controls the CD-ROM drive for playing an audio CD when the CPU and the other components of the computer are not powered (e.g. in a power saving mode or switched off). This saves energy since the processor typically consumes a considerable amount of energy.

4.2 The *differences* of current *claim 1* when compared to closest prior art item D1 are the following:

in agreement with what is stated in the appealed decision and in the grounds of appeal (slightly rephrased according to the claim):

(i) in low power mode, the computer subsystem is not energised and an audio interface IC controls the CD-ROM drive for playing audio-CDs;
this corresponds to (iv) in the grounds of appeal (page 2);

(ii) in normal power mode (computer subsystem energised), the audio interface IC relays signals between CD-ROM drive and computer subsystem;
this corresponds to (v) in the grounds of appeal (page 2);

and in addition to the differences already found in the claim of the appealed decision:

(iii) the audio interface IC comprises transmission gates to isolate it from the IDE bus when the computer subsystem is not energised;
this corresponds to (vi) in the grounds of appeal (page 2); it also corresponds to amendments (2) and (3) noted above in the section concerning the original disclosure of claim 1.

Note that amendment (1) discussed in the section concerning the original disclosure of claim 1 (i.e. an IDE bus between CPU and CD-ROM drive) is a feature already disclosed in D1, figure 1 (50) and (60). This is not contested in the grounds of appeal, page 2.

- 4.3 The objective technical *problem* can be formulated as reducing the power consumption of the computer in D1, while allowing it to play audio-CDs at any time.
- 4.4 A *solution* could be to integrate into the computer of D1 the missing features from a system comprising a computer and a separate audio-CD player connected to the computer.
- 4.5 However, on closer consideration the combination of D1 with such a system, would not appear to yield the claimed invention: differentiating features (ii) and (iii) would still be missing. Especially feature (ii), the "relaying of signals", i.e. the handover of the control over the CD-ROM drive from the audio interface IC to the CPU, if the latter is energised, would not be present in the mere combination of a computer and an audio-CD player, linked by a cable. However the board notes that if such a cable standard existed (i.e. when plugging the audio-CD player into a switched-on computer, it works like an IDE connection and transmits the control signals from the computer to the player; and when the computer is suspended, the cable is isolated from the computer), the claimed subject-matter would indeed not seem to be inventive.
- 4.6 Moreover, the board supposes that a simple audio-CD player at the filing date was usually not capable of reading data CD-ROMs (especially not CD-RWs = read-write data CDs), as is implicit in the specification of the "CD-ROM drive" of the claim.
- 4.7 A combination of D1 and a computer audio-CD-player system yielding the claimed subject-matter only seems

to be arguably obvious on the premise that it was common general knowledge that such a system would contain the differentiating feature (ii), i.e. that the computer would be able to control the audio-CD player for playing an audio-CD when the computer was energised.

4.8 However, it has not been established in the appealed decision that this was common general knowledge, nor is there anything in the examination file which would indicate that the appellant at any point accepted that it was.

The decision states on page 5, last paragraph that the applicant had acknowledged during the oral proceedings "to have an independent computer and independent audio device (e.g. a fully detached CD player) linked to the computer by a cable interface" and refers to the minutes, section 3.1. However, the minutes merely say in the mentioned section 3.1 that the representative acknowledged "that it was known to have a CD player separate from the computer" without any mention of a cable interface. In either case, this does not touch the question of whether the computer in such a system would be able to control the audio CD player.

4.9 As to differentiating feature (iii), the coupling and isolating by transmission gates is not mentioned in any document of the search report nor in D2. Such a transmission gate is known to be a special combination of one nMOS- and one pMOS-transistor for isolating and coupling circuits.

Since the use of transmission gates for isolating the *audio interface IC* and the IDE bus was not contained in any of the previous claims, the decision is silent

about it. But in section 4.2, there is an assessment of the refused claim 4 relating to the use of transmission gates for isolating the *CD-ROM drive* and the IDE bus which reads:

"The features added by claim 4 (use of transmission gates) are well known in the field of bus interfaces and its application to the device of D1 would be therefore straightforward for the skilled person."

5. *Conclusion*

The board remits the case to the first instance for further prosecution so that the examining division will have the possibility to procure evidence that the alleged system including feature (ii) was common general knowledge. If such evidence turns out to be available, the examining division will have the opportunity to back up its arguments, clarify and modify those arguments to take account of the actual features disclosed by that evidence, and further consider the newly claimed feature (iii). On the other hand, if no such evidence is found, it appears that the examining division will have to acknowledge that the claimed subject-matter involves an inventive step.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The application is remitted to the department of first instance for further prosecution.

The Registrar:

The Chairman:

B. Atienza Vivancos

D. H. Rees