

Internal distribution code:

- (A) [-] Publication in OJ
- (B) [-] To Chairmen and Members
- (C) [-] To Chairmen
- (D) [X] No distribution

**Datasheet for the decision
of 20 January 2021**

Case Number: T 1115/15 - 3.5.06

Application Number: 02257546.8

Publication Number: 1308827

IPC: G06F1/26, G06F1/32

Language of the proceedings: EN

Title of invention:

Portable computer apparatus with power saving for wireless communication module

Applicant:

Unwired Planet International Limited

Headword:

Power saving for wireless communication/UNWIRED

Relevant legal provisions:

EPC Art. 56

RPBA 2020 Art. 13(1), 13(2)

Keyword:

Inventive step - (no)

Amendment to appeal case

Amendment after summons - exceptional circumstances (no) -
cogent reasons (no) - taken into account (no) - auxiliary
request 4

Decisions cited:

Catchword:



Beschwerdekammern
Boards of Appeal
Chambres de recours

Boards of Appeal of the
European Patent Office
Richard-Reitzner-Allee 8
85540 Haar
GERMANY
Tel. +49 (0)89 2399-0
Fax +49 (0)89 2399-4465

Case Number: T 1115/15 - 3.5.06

D E C I S I O N
of Technical Board of Appeal 3.5.06
of 20 January 2021

Appellant: Unwired Planet International Limited
(Applicant) The Hyde Building
Unit 32, The Park
Carrickmines
Dublin 18 (IE)

Representative: Grünecker Patent- und Rechtsanwälte
PartG mbB
Leopoldstraße 4
80802 München (DE)

Decision under appeal: **Decision of the Examining Division of the
European Patent Office posted on 5 January 2015
refusing European patent application No.
02257546.8 pursuant to Article 97(2) EPC.**

Composition of the Board:

Chairman M. Müller
Members: S. Krischer
A. Jimenez

Summary of Facts and Submissions

- I. This appeal lies from the decision of the examining division to refuse European Patent Application No. 02 257 546 because claim 1 of both pending requests lacked an inventive step, Article 56 EPC (1973) over document D1: US 2001/021981 A1,
- and because claim 1 of the then auxiliary request was unclear, Article 84 (1973) EPC. The decision also refers to this document cited in the search report:
- D3: EP 0 366 250 A.
- II. Notice of appeal was filed on 11 March 2015, the appeal fee being paid on the same day. A statement of grounds of appeal was received on 20 March 2015. The appellant requested that the decision be set aside and a patent be granted on the basis of claims 1-6, 1-8, 1-6 or 1-8 according to a main or three auxiliary requests, respectively, as filed with the grounds of appeal.
- III. In an annex to a summons to oral proceedings, the board informed the appellant of its preliminary opinion that claim 1 of all requests lacked inventive step over D1 in view of D3, Article 56 EPC 1973.
- IV. In response to the summons, with letter dated 18 December 2020, the appellant filed claims 1-5 according to a new auxiliary request 4.
- V. With letter of 29 December 2020, the appellant withdrew its request for oral proceedings and instead requested the board "to issue a decision according to the state

of the file". The board understands this request to express that the appellant did not want to make any further submissions.

VI. The oral proceedings were then cancelled.

VII. Claim 1 of the main request reads as follows:

"A portable computer apparatus comprising:

a main board (20, 20a);

a wireless communication module (30, 30a) connected to the main board through an interface (36); and

a wireless communication module program (53) stored on the computer apparatus and configured to determine whether use of the wireless communication module (30, 30a) is required, wherein the program (53) generates control signals in dependence on the result of said determination,

wherein the wireless communication module (30, 30a) includes:

a wireless communicating part including an AD converter and an RF transmitting and receiving part to transmit and receive analog signals; and

a control part (37) for controlling supply of power to the wireless communicating part of said wireless communication module (30, 30a) through the interface in dependence on the control signals such that the program (53) commands the control part (37) to control the supply of power to said wireless communicating part,

wherein the main board contains a central processing unit, and wherein the module is plugged into the main board."

Claim 1 of auxiliary request 1 is identical to claim 1 of the main request except that the underlined clause is added to the definition of the "control part":

"... control part (37) for controlling supply of power to the wireless communicating part of said wireless communication module (30, 30a) through the interface in dependence on the control signals such that the program (53) commands the control part (37) to transmit the control signals to the interface (36) to control the supply of power to said wireless communicating part,"

and that it lacks that last "wherein" clause.

Claim 1 of the auxiliary request 2 is identical to claim 1 of the main request with the underlined phrase in the definition of the "control part" added.

Claim 1 of auxiliary request 3 reads as follows:

"A portable computer apparatus comprising
a main board (20, 20a) and a wireless communication module (30, 30a) connected to the main board through an interface (36),

the apparatus further comprising a wireless communication module program (53) stored on the computer apparatus and configured to determine whether use of the wireless communication module (30, 30a) is required, wherein the program (53) generates control signals in dependence on the result of said determination,

further comprising a control part (37) disposed in the wireless communication module for controlling the supply of power to said module (30, 30a) through the interface in dependence on the control signals, such that the program (53) commands the control part (37) to control the supply of power to said module (30;30a) according to whether use of said module is not required, wherein the control part remains powered when

the supply of power to the rest of the module is cut off."

Claim 1 of auxiliary request 4 corresponds to claim 1 of auxiliary request 2, except that the last "wherein" clause is modified as follows and a further clause is added to its end (additions underlined):

"... wherein the main board (20, 20a) contains a central processing unit and a socket, and wherein the wireless communication module (30, 30a) is provided on a subsidiary board separate from the main board (20, 20a) and is plugged into the socket of the main board (20), and
wherein the main board (20, 20a) includes a USB bus and the wireless communication module (30, 30a) is configured to receive data and power from said bus."

Reasons for the Decision

The invention

1. The application relates to a mobile phone - or other portable computing apparatus (henceforth "computer") - with a wireless communication module, integrated or plugged into the main board of the computer and connected to the CPU of the computer via an "interface" (page 1, lines 2-3, and page 2, lines 5-6; see also figure 3, items 30 and 36).
- 1.1 The wireless communication module of the invention contains a wireless communicating "part" (according to the claims; or "wireless communication part" according to the description) which is disclosed as being a GSM

module, another mobile phone system, or a "wireless network protocol" (see page 4, last paragraph).

1.2 Moreover, a "control part" is provided, which interacts with the interface so as to control the supply of electric power from the main board of the computer to the module (see page 3, lines 18-20; see also figure 3, item 37). When the module is not required, i.e. if the computer does not use its wireless communication services, the control part transmits a control signal to the interface so that it interrupts the power supply to the module (page 3, last paragraph, and page 4, paragraph 1). Inversely, if the module is required, the control part sends a control signal to the interface so that power is (again) supplied to the module (page 3, last paragraph).

1.3 In the preferred - and claimed - embodiment, the "control part" is part of the wireless communication module (see figure 3). However, the description also envisages the control part of be "implemented in the device driver for the GSM module 30 which then generates control signals for the interface 36 directly" (page 4, penultimate paragraph).

The prior art

2. D1 discloses a hand-held computer capable of controlling power consumption of its communication line interface in accordance with the use of the communication line (paragraphs 1 and 15). More specifically, D1 discloses a CPU connected to an "Internetwork" via a "digital communication line interface circuit" (see figure 2). The interface contains what is called a "link state detect circuit" which determines that a link has been established between the interface and the

network if in response to sending a "particular packet" to the network an acknowledgement response is received (see paragraph 62). Alternatively, a link is determined when a network cable is connected to the network (see paragraphs 74 and 77). Or, a link is confirmed if a "reception signal" is detected "at a particular signal level" (see paragraphs 23 and 88, and figure 3, item 200). A "power mode change circuit" (figures 2 and 3, item 180) is informed accordingly, which causes a transition of the interface into a power-off, a sleep-mode or a power-on state (see paragraph 26, 27, 63, 64, 88 and 90). More specifically, if a link has been established the power source supply to the interface circuit is changed to the low consumption power mode (paragraphs 22, 24 and 25). According to some embodiments (see figures 5 to 8), the CPU of the computer connects via an interface (items 170 and 607) and a modem circuit (items 190 and 610) to the communication line (see also paragraph 120), and a power control circuit (items 180 and 617) is provided to power the modem circuit on or off, partly in cooperation with a timer circuit (item 614; see also paragraphs 121 and 143-145), and possibly in response to a "use request" to the modem (paragraphs 118 and 134; see especially "access detection circuit" 604). *Inter alia*, the power control circuit uses a power-off signal 619 (not POWER GOOD) to notify the interface circuit when the modem is unavailable in the power-off state or becomes powered and operable again (see paragraphs 129 and 134).

3. D3 deals with modems for enabling a computer to communicate across telephone lines - a modem being a component separate from the computer - and is concerned with the power consumption of such devices (column 1, lines 1-4, and figure 1, items 10 and 14). It is proposed to provide such a modem with standby and power

down modes in which it uses less power than in the normal operating mode (see, e.g., column 6, lines 12-30). In the standby mode, the modem should remain capable of detecting incoming calls and computer commands; not so in the power down mode (see column 2, line 46, to column 3, line 10). The power-up and power-down signals are received by the module from the computer via a suitable interface (column 6, lines 12-45; more specifically: lines 24-33). A "UART" ("Universal Asynchronous Receiver/Transmitter") is provided on the module which always remains powered on, as is the computer interface logic (column 3, last line, to column 4, lines 8, and column 6, lines 31-45; see also figure 1, items 36 and 40). Moreover, during stand-by mode, a "function controller" will continue operation in a low power state while other components are unpowered (column 6, lines 19-24, and figure 1, item 34).

The decision under appeal

4. The examining division found the difference between claim 1 of the main request and D1 to be that a) the communication unit is a wireless one and that b) the wireless communication unit is a module (see point 15.3 of the reasons).
- 4.1 Regarding the "module" (difference b), the examining took the position that a module was "an abstraction of a set of elements grouped together in a logical manner" which was obvious for the person skilled in the art. Regarding the "wireless communication" (difference a), it argued that it was obvious by analogy to communication via cable according to D1 (see point 15.4 of the reasons).

- 4.2 Claim 1 of the then auxiliary request 1 was considered to be unclear because the control part was claimed as cutting off power to the module - of which itself was a part - while remaining powered itself (reasons 20.1). Furthermore, it was argued that, on proper construction, claim 1 of the auxiliary request was identical to claim 1 of the main request and thus obvious for the same reason (see point 21 of the reasons).

The appellant's position

5. In response to the decision under appeal, the appellant amended claim 1 of the then main request by requiring, that the communication module be "plugged into the main board" (see amended main request and auxiliary request 2) and/or that the control part "transmit [...] control signals to the interface" (see amended auxiliary requests 1 and 2), and amended claim 1 of the then auxiliary request by requiring that the control part remain powered on while only "the rest of" the module is powered down (see amended auxiliary request 3).
6. The amendments in the higher-ranking requests are meant to stress that a "module" is more than just a "logical" grouping of hardware concepts and that the "interface" is a separate component of the invention in itself and "capable of receiving signals" (see the grounds of appeal, page 4, paragraph 4). The amendment of auxiliary request 3 is meant to address the clarity objection against the then auxiliary request.

The board's position

7. The board accepts the appellant's position that D1 does not disclose a "module" which "is plugged into" the

main board of the computer, or a corresponding interface (component).

- 7.1 D1 does however disclose several "control part[s] for controlling supply of power to the [...] communication part" (see in particular items 604, 614, 617 and 618 in figures 6 and 7). Moreover, D1 discloses that the power control may also depend on "access" of the modem issuing from the computer (see paragraph 134). If a plugged-in module were provided, that "access" would have to be signalled, one way or other, through the module interface. Hence, D1 discloses a "program" which "commands the control part", via the interface, "to control signals [...] to control the supply of power to said wireless communicating part".
- 7.2 For lack of an explicit interface component to a plug-in module, however, D1 does not disclose that the power supply is provided over just that interface.
8. The appellant argued in its letter of 18 December 2020 (see page 6, paragraph 2) that D3 did not disclose that "a software program on a host computer can control the power supply to the modem circuitry by transmitting control signals to a controller provided on the modem" but that the power control would be "completely independent from any signal provided from the host computer" (page 6, paragraph 3).
 - 8.1.1 The board disagrees. D3 discloses that the return to normal, powered mode, may occur in response to "a command from the computer" (column 6, lines 24-30), that the power down mode is entered in response to "a power down signal from the computer" (lines 31-33), and only "when the computer has no need for the function"

(lines 39-41). So, the power control on the modem does depend on a "signal provided from the host computer".

8.1.2 That said, this argument is immaterial for the present assessment as D1 itself already discloses the power control to be dependent on signals issued by a program running on the host computer.

9. The board therefore considers that claim 1 of the main request differs from D1 in that

- i) the communication module is "plugged into" the main board via a suitable "interface",
- ii) power is provided through this interface,
- iii) a control part for controlling the supply of power is *contained in* the module, and
- iv) the communication provided by the module is wireless.

9.1 The appellant does not challenge this analysis (see the letter dated 18 December 2020, page 3, paragraph 5 *et seq.*).

9.2 As regards *difference iv)*, the appellant argues that the teaching of D1 is not applicable to wireless communication.

9.2.1 Whereas in D1 a "link" to the communication line can be established using the "connector switch" disclosed in figure 2 and discussed in paragraphs 74, 85 and 87 (see letter of 18 December 2020, page 4, penultimate paragraph, to page 5, paragraph 1), i.e. using a physical cable connection, the accessibility of wireless communication needs to be detected permanently

by receiving system information from the network (see that letter, page 5, paragraph 2).

- 9.2.2 D1 does not, however, disclose the network cable as the only way of detecting the "link state", but also discloses the "reception signal level" (see e.g. paragraph 29 and 34) and the "use requests" (paragraph 118). The latter approach is directly applicable to wireless communication and also the detection of a "reception level" of a wireless communication signal carries over in a straightforward manner.
- 9.2.3 The board thus agrees with the examining division that applying the power control of D1 to wireless communication would be obvious by analogy to wired communication as in D1.
- 9.3 As regards *difference i*), the board considers it commonly known in the art to provide communication modules to be "plugged into" the main computer.
- 9.3.1 To begin with, the application itself depicts such a scenario as prior art in figure 1 - which, as is noted in passing - is also wireless (*difference iii*). And D3 discloses a separate communication module, a modem, to be "plugged into" the computer using it (see claim 1 of the main request and auxiliary request 2). The board also takes it that modularizing the solution of D1 would be obvious. In such a scenario, the plug-in module would naturally comprise an interface over which suitable control signals would be sent (see claim 1 of auxiliary requests 1 and 2).
- 9.3.2 Although the board agrees with the appellant that modularizing the solution of D1 would require some work

(see e.g. the grounds of appeal, page 2, last paragraph, and the letter of 18 December 2020, page 4, paragraph 3), it holds that this work would not go beyond what would generally be obvious for the skilled person. Notably, the application itself does not express or suggest - or provide any details implying - that the pluggable design of the invention is, once devised in the abstract, not obvious to produce.

- 9.4 As regards *difference ii*), the appellant stresses that the "interface" of the invention is a "distinct unit" which "enables passage of data ... and delivers electric power from the power supply". However, also the external modem of D3 is powered from the computer (column 1, lines 14-21). Accordingly, any interface between the modem of D3 and the computer must enable the passage of data and deliver electric power. *Difference ii*) is thus obvious over D1 in view of D3.
- 9.5 As regards *difference iii*), the board refers to the embodiments according to figures 5 and 6 of D1 and considers that it would have been obvious for the skilled person to include, in particular, the power control circuit (items 180 and 617, respectively) in the plug-in module, i.e. for proximity to the component being controlled, the modem, and so as to have a mostly self-contained module.
10. The board concludes that claim 1 of the main request lacks an inventive step over D1 in view of D3, Article 56 EPC 1973.
11. Claim 1 of auxiliary requests 1 and 2 comprises the additional feature that the program at the host computer "commands the control part (37) to transmit the control signals to the interface to control the

supply of power ...". In other words, the control part uses the control signals from the host computer not directly to "control the supply of power" but transmits them to the interface to do just that.

- 11.1 The board recalls (see point 9.3.1 above) that the control signals have to pass through some interface anyway to reach a control part on the plug-in module. What further effect is achieved by transmitting the control signals to another (part of the) interface is not specified in the claims and not explained in the description (see, in this regard, especially page 4, paragraph 3, of the description).
- 11.2 Therefore, this feature cannot change the above assessment. The board concludes that also claim 1 of auxiliary requests 1 and 2 lacks an inventive step over D1 in view of D3.
12. As regards auxiliary request 3, the board notes that also the modem of D3 contains parts which always remain powered on, notably the UART and the computer interface logic (see page 4, right column, lines 31-35).
- 12.1 The appellant points out that the UART of D3 is inaccessible to the host computer in the power down mode and thus could not enable the power up (letter of 18 December 2020, page 6, penultimate paragraph, making reference to D3, column 7, lines 24-28).
- 12.2 The board however recalls that D3 does disclose that the function controller continues to receive power during "stand-by mode" while the "controlled power sections" are unpowered.

- 12.3 In combination, the skilled person would, in the board's judgment, take from D3 the teaching that certain, essential control components will remain powered while "the rest" will be powered off and how this is in principle done.
- 12.4 Accordingly, the board concludes that also claim 1 of auxiliary request 3 lacks inventive step over D1 and D3, Article 56 EPC 1973.
- 12.5 The board notes in passing that also D1 suggests a sleep-mode in which the power to all circuits but one is turned off (see paragraph 64). The board appreciates that the sentence in this paragraph is grammatically incomplete, but considers that its first clause suggests that the second clause was also intended to end with the phrase "is turned off".
13. In claim 1 of auxiliary request 4 the features were added that the wireless communication module was provided on a subsidiary board separate from the main board and was plugged into a suitable socket of the main board, and that the main board provided a USB bus for communication with the wireless communication module.
- 13.1 The board considers that these features are not, at least *prima facie*, sufficient to overcome the above inventive step objection.
- 13.2 *A priori*, the use of a standardized bus such as USB would appear to be obvious for the skilled person. According to the appellant, claim 1 of auxiliary request 4 is non-obvious for the skilled person over D3 because the limited voltage a USB connection can provide is smaller than the voltage required by the

modem of D3 (see the letter of 18 December 2020, paragraph bridging pages 7 and 8). This issue has not been brought up, alluded to or discussed during appeal and thus, in the board's judgment, constitutes a substantial amendment to the appellant's case which shall be taken into account only under exceptional circumstances justified by cogent reasons by the appellant, see Article 13(2) RPBA 2020.

- 13.3 The appellant did not argue such exceptional reasons to exist, and the board is not aware of any itself. That the amendment "emphasizes the modularization approach of the present invention" (see the letter of 18 December 2020, page 7, penultimate paragraph) does not, by itself, establish such exceptional circumstances, nor does it represent "cogent reasons" as required.
14. Therefore, the board does not take auxiliary request 4 into account. The question whether the appellant's arguments regarding the required and provided voltages is correct and to what extent it affects inventive step of the claimed invention can therefore be left open.

Order

For these reasons it is decided that:

The appeal is dismissed.

The Registrar:

The Chairman:



L. Stridde

M. Müller

Decision electronically authenticated