(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 977 688 A3

(12) EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
17.12.2008 Bulletin 2008/51

(43) Date of publication A2:
08.10.2008 Bulletin 2008/41

(21) Application number: **08006815.8**

(22) Date of filing: **03.04.2008**

(51) Int Cl.:
A61B 5/00 *(2006.01)*

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MT NL NO PL PT RO SE SI SK TR
Designated Extension States:
AL BA MK RS

(30) Priority: **04.04.2007 KR 20070033411**

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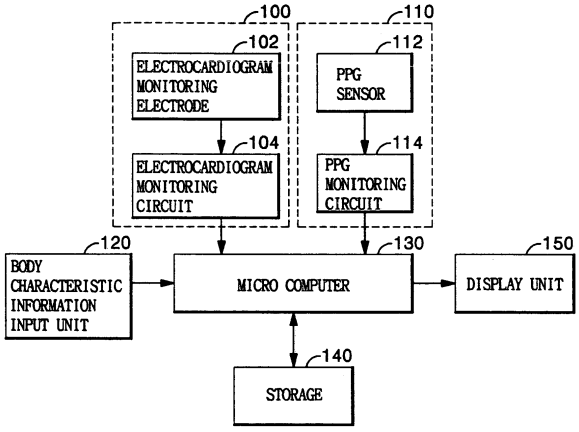
(54) Blood pressure monitoring apparatus and method

(57) The blood pressure monitoring apparatus and method are disclosed that can monitor a blood pressure of a subject using an electrocardiogram signal, a pulse wave signal and a body characteristic information of the subject, wherein the electrocardiogram signal and the pulse wave signal of the subject are monitored to remove a noise signal generated from monitoring of the pulse wave signal, allowing monitoring a precise blood pressure of the subject, and calculating the pulse wave analysis information using the monitored pulse wave signal, and using the electrocardiogram signal and the pulse wave signal to calculate a pulse transit time (PPT), and plugging a calculated pulse wave propagation time, pulse wave analysis information and body characteristic information of the subject into a predetermined regression equation to monitor the blood pressure.

FIG. 1



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EUROPEAN SEARCH REPORT

Application Number
EP 08 00 6815

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X Y	US 2002/193692 A1 (INUKAI HIDEKATSU [JP] ET AL) 19 December 2002 (2002-12-19) * paragraphs [0003], [0033] - [0047], [0051] * * figures 2,3 *	1,8,10, 11,14 2-7,12, 13,15	INV. A61B5/00
Y	US 5 995 858 A (KINAST ERIC [US]) 30 November 1999 (1999-11-30) * column 3, line 48 - column 4, line 66 * * column 7, line 12 - column 10, line 59 * * figure 4 *	2-7,15	
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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	7 November 2008	Rapp, Alexander

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

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EUROPEAN SEARCH REPORT

Application Number
EP 08 00 6815

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	WO 02/33846 A (WILDSEED LTD [US]) 25 April 2002 (2002-04-25) * page 2, lines 6-21 * * page 4, line 1 - page 5, line 5 * * page 6, lines 22-28 * * figures 1,2 * -----	12,13	
			TECHNICAL FIELDS SEARCHED (IPC)

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	7 November 2008	Rapp, Alexander

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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Application Number
EP 08 00 6815

CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).

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LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 08 00 6815

The Search Division considers that the present European patentapplication does not comply with the requirements of unity of invention and relates to severalinventions or groups of inventions, namely:

1. claims: 1-11, 14, 15

   Invention I relates to noise reduction in a blood pressure monitoring apparatus.

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2. claims: 1, 12, 13

   Invention II relates to the placement of electrodes on a mobile terminal comprising a blood pressure monitoring apparatus.

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 08 00 6815

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

07-11-2008

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EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

专利名称(译)	血压监测装置和方法		
公开(公告)号	EP1977688A3	公开(公告)日	2008-12-17
申请号	EP2008006815	申请日	2008-04-03
申请(专利权)人(译)	LG电子株式会社.		
当前申请(专利权)人(译)	LG电子株式会社.		
[标]发明人	OH HYUN HO SHIM BONG CHU LEE YOUN JAE LEE KWY RO CHO SEONG MOON HONG HYUNG KI		
发明人	OH, HYUN HO SHIM, BONG CHU LEE, YOUN JAE LEE, KWY RO CHO, SEONG MOON HONG, HYUNG KI		
IPC分类号	A61B5/00		
CPC分类号	A61B5/02416 A61B5/021 A61B5/02125 A61B5/0245 A61B5/0456 A61B5/6826 A61B5/6838 A61B5/7239		
优先权	1020070033411 2007-04-04 KR		
其他公开文献	EP1977688B1 EP1977688A2		
外部链接	Espacenet		

摘要(译)

公开了一种血压监测装置和方法，其能够使用心电图信号，脉搏波信号和对象的身体特征信息来监测对象的血压，其中监测对象的心电图信号和脉搏波信号。去除由监测脉搏波信号产生的噪声信号，允许监测受试者的精确血压，并使用监测的脉搏波信号计算脉搏波分析信息，并使用心电图信号和脉搏波信号计算脉冲传播时间（PPT），并将计算出的脉搏波传播时间，脉搏波分析信息和对象的身体特征信息插入预定的回归方程中以监测血压。

FIG. 1