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

(11) EP 2 305 104 A3

# (12) EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
**25.05.2011 Bulletin 2011/21**

(43) Date of publication A2:
**06.04.2011 Bulletin 2011/14**

(21) Application number: **10193356.2**

(22) Date of filing: **01.03.2006**

(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 HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR**

(30) Priority: **01.03.2005 US 657596 P**
**01.03.2005 US 657759 P**
**01.03.2005 US 657268 P**
**01.03.2005 US 657281 P**

(62) Document number(s) of the earlier application(s) in accordance with Art. 76 EPC:
**06736800.1 / 1 860 996**

(71) Applicant: **Masimo Laboratories, Inc.**
**Irvine, CA 92618 (US)**

(72) Inventors:
- **Al-Ali, Ammar**
  **Tustin, CA 92782 (US)**
- **Smith, Robert**
  **Lake Forest, CA92630 (US)**
- **Dalke, David**
  **Irvine, CA 92630 (US)**
- **Lamego, Marcelo**
  **Santa Margarita, CA 92688 (US)**
- **Diab, Mohamed**
  **Mission Viejo, CA 92692 (US)**

(74) Representative: **Vossius & Partner**
**Siebertstrasse 4**
**81675 München (DE)**

## (54) Multiple wavelength sensor drivers

(57) The present invention relates to a cable capable of communicating signals between a monitor and a physiological sensor, the monitor capable of activating individual light emitters of an emitter array arranged in an electrical grid by driving at least one of a plurality of row drive lines and at least one of a plurality of column drive lines of the electrical grid, the cable comprising a first row input, a first column input, a second row input, a second column input, a first output which combines the first row input and the first column input, and a second output which combines the second row input and the second column input, wherein the inputs are adapted to connect to electrical grid drive lines of a monitor, and wherein the outputs are adapted to connect to contacts of a physiological sensor having back-to-back configured LEDs in electrical communication with the contacts.

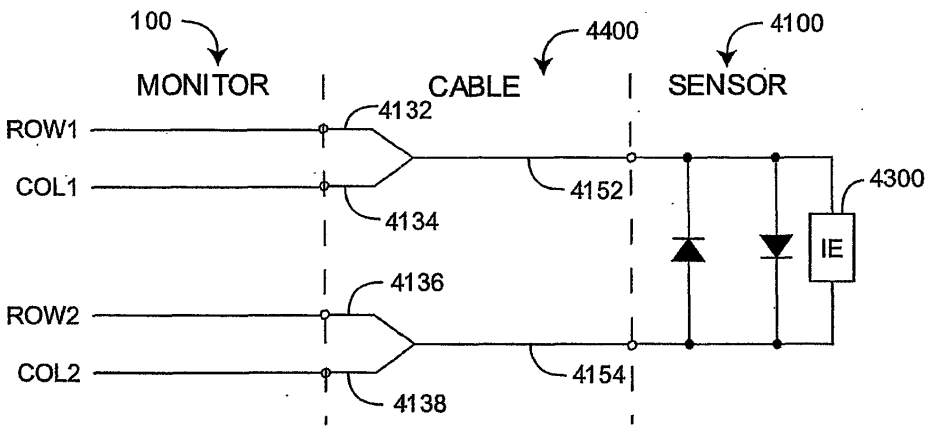


FIG. 41B

EP 2 305 104 A3

Europäisches Patentamt
European Patent Office
Office européen des brevets

# EUROPEAN SEARCH REPORT

Application Number
EP 10 19 3356

## 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 | US 2004/147823 A1 (KIANI MASSI E ET AL)<br>29 July 2004 (2004-07-29)<br>* paragraph [0006] - paragraph [0025] *<br>* paragraph [0053] - paragraph [0056] *<br>* paragraph [0076] - paragraph [0090] *<br>* figures 6,15-17 * | 1-19 | INV.<br>A61B5/00 |
| X | US 5 827 182 A (RALEY ET AL)<br>27 October 1998 (1998-10-27)<br>* column 2, line 28 - column 3, line 63 *<br>* column 4, line 23 - line 44 *<br>* column 6, line 55 - column 7, line 5 * | 1-19 | |
| X | US 2002/183819 A1 (STRUBLE CHESTER L)<br>5 December 2002 (2002-12-05)<br>* paragraph [0059] - paragraph [0064] *<br>* figures 8,9,11 * | 1-7 | |
| A | US 6 165 005 A (MILLS ET AL)<br>26 December 2000 (2000-12-26)<br>* column 2, line 13 - column 3, line 15 *<br>* figure 2 * | 1,8,16 | TECHNICAL FIELDS SEARCHED (IPC)<br>A61B |
| A | US 6 184 521 B1 (COFFIN, IV JAMES P ET AL)<br>6 February 2001 (2001-02-06)<br>* column 12, line 54 - column 13, line 23 *<br>* figure 8 * | 1,8,16 | |

The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| Berlin | 15 April 2011 | Abraham, Volkhard |

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

1

EPO FORM 1503 03.82 (P04C01)

## ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 10 19 3356

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.

15-04-2011

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---|---|---|
| US 2004147823 A1 | 29-07-2004 | US 5995855 A | 30-11-1999 |
| | | US 2006189859 A1 | 24-08-2006 |
| | | US 6349228 B1 | 19-02-2002 |
| | | US 2002026107 A1 | 28-02-2002 |
| US 5827182 A | 27-10-1998 | DE 69825518 D1 | 16-09-2004 |
| | | EP 0868879 A2 | 07-10-1998 |
| | | ES 2224334 T3 | 01-03-2005 |
| | | JP 10305026 A | 17-11-1998 |
| US 2002183819 A1 | 05-12-2002 | NONE | |
| US 6165005 A | 26-12-2000 | NONE | |
| US 6184521 B1 | 06-02-2001 | NONE | |

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) | 多波长传感器驱动器 | | |
| 公开(公告)号 | EP2305104A3 | 公开(公告)日 | 2011-05-25 |
| 申请号 | EP2010193356 | 申请日 | 2006-03-01 |
| [标]申请(专利权)人(译) | MASIMO LAB | | |
| 申请(专利权)人(译) | MASIMO实验室，INC. | | |
| 当前申请(专利权)人(译) | MASIMO实验室，INC. | | |
| [标]发明人 | AL ALI AMMAR<br>SMITH ROBERT<br>DALKE DAVID<br>LAMEGO MARCELO<br>DIAB MOHAMED | | |
| 发明人 | AL-ALI, AMMAR<br>SMITH, ROBERT<br>DALKE, DAVID<br>LAMEGO, MARCELO<br>DIAB, MOHAMED | | |
| IPC分类号 | A61B5/00 | | |
| CPC分类号 | A61B5/02416 A61B5/14552 A61B5/6832 A61B5/746 A61B2562/08 A61B2562/085 A61B2562/222 G06F19/3418 G16H10/40 G16H40/67 Y10S439/909 A61B1/00 A61B5/0022 A61B5/0205 A61B5/02427 A61B5/0261 A61B5/0295 A61B5/14532 A61B5/14546 A61B5/1455 A61B5/14551 A61B5/1495 A61B5/6815 A61B5/6826 A61B5/6829 A61B5/6838 A61B5/7221 A61B5/7246 A61B5/7275 A61B5/7278 A61B5/7405 A61B5/742 A61B5/7475 H05K999/99 | | |
| 代理机构(译) | 法思博事务所 | | |
| 优先权 | 60/657596 2005-03-01 US<br>60/657759 2005-03-01 US<br>60/657268 2005-03-01 US<br>60/657281 2005-03-01 US<br>PCT/US2006/007539 2006-03-01 WO | | |
| 其他公开文献 | EP2305104A2<br>EP2305104B1 | | |
| 外部链接 | Espacenet | | |


摘要(译)

本发明涉及一种能够在监视器和生理传感器之间传递信号的电缆，该监视器能够通过驱动多个行驱动线中的至少一个来激活布置在电网中的发射器阵列的各个光发射器。电网的多个列驱动线中的至少一个，电缆包括第一行输入，第一列输入，第二行输入，第二列输入，组合第一行输入和第一列的第一输出输入，以及组合第二行输入和第二列输入的第二输出，其中输入适于连接到监视器的电网驱动线，并且其中输出适于连接到具有背部的生理传感器的触点背对配置的LED与触点电连通。

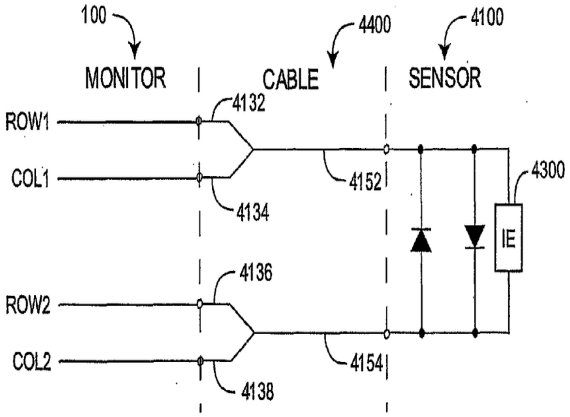
100
MONITOR
4400
CABLE
4100
SENSOR
ROW1
COL1
4132
4134
4152
4300
IE
ROW2
COL2
4136
4138
4154

FIG. 41B