European Patent Office

SUPPLEMENTARY EUROPEAN SEARCH REPORT

Application Number
EP 03 73 5107

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	WO 00/34838 A (EDGE DIAGNOSTIC SYSTEMS [US]) 15 June 2000 (2000-06-15) * page 21, line 20 - page 22, line 19; figure 4 * -----	1	INV. G06F19/00 A61B5/00 H03M3/00 G06F17/50
X	US 5 158 091 A (BUTTERFIELD ROBERT D [US] ET AL) 27 October 1992 (1992-10-27) * column 13, lines 28-48; figure 8 * -----	1	
X	US 4 476 869 A (BIHN DANIEL [US]) 16 October 1984 (1984-10-16) * column 12, line 38 - column 14, line 35; figures 4,4A,4B * -----	1	
A	WO 01/17425 A (TENSYS MEDICAL INC [US]) 15 March 2001 (2001-03-15) * abstract; figures 7,8 * * page 15, line 23 - page 17, line 11 * -----	1	

TECHNICAL FIELDS SEARCHED (IPC)

A61B
G06F
H03M

The supplementary search report has been based on the last set of claims valid and available at the start of the search.

Place of search	Date of completion of the search	Examiner
Berlin	20 March 2008	Jonsson, P.O.

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 (P04C04)

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims 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 the first ten claims.

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).

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:

1. claims: 1-4, 16

A circuit adapted to simulate one or more waveforms, comprising:
a digital-to-analog converter (DAC) and at least one amplifier operatively coupled to the output of said DAC,
Further comprising that the DAC is a multiplying DAC and the current source is bipolar.

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2. claims: 5,12

As in 1, but further comprising over-voltage protection.

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3. claims: 6-8

As in 1, but further comprising a window comparator.

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4. claims: 9,15

As in 1, but further comprising scale factor adjusting means.

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5. claims: 10,11

As in 1, but further comprising a filter element.

---

6. claims: 13,14

As in 1, further comprising a test circuit.

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7. claims: 17-24

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:

A method for simulating a time-variant output signal from a first device using a second device, comprising:
providing a first device having at least one transfer function;
providing said second device, said second device being adapted to sense at least one time-variant parameter from a substantially autonomous sensor and
provide a representation based at least in part thereon;
providing an excitation voltage to said second device;
generating a representation of said time-variant parameter using said second device;
applying a transfer function to said representation, said transfer function being substantially similar to that for said first device; and
generating at least one output signal based at least in part on said representation and said transfer function, said at least one output signal being substantially similar to that produced by said first device.

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8. claims: 25-28

A method of determining the status of electrical connection between a monitoring device and a sensing device, wherein said monitoring device provides an excitation signal to said sensing device during operation, comprising:
detecting the presence of the excitation signal provided by said monitoring device;
buffering said excitation signal to produce a buffered excitation signal; and
analyzing said buffered excitation signal to identify variations therein indicative of said status of electrical connection.

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9. claims: 29-39

An apparatus, comprising:
sensing apparatus adapted to sense at least one waveform, and generate a binary digital representation related thereto; and
an interface circuit operatively coupled to said sensing apparatus and adapted for interface, said interface circuit being adapted to applying a transfer function to said digital representation, and generate at least one output signal, said at least one output signal based at least in part on said binary digital representation and
said transfer function, said at least one output signal being substantially similar to that produced by a passive bridge device.

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:

Note: no basis have been found for claims 2 and 3; they have thus been left aside for the matter of Non-Unity.

There is no single general concept linking together the independent claims. The single general concept for claims 1-16 is stated in claim 1. This single general concept is not novel, see document WO00/34838, called D1 hereinafter, page 21, line 20- page 22, line 19 in comb. with fig. 4 Hence, the independent claims are considered to lack unity a Priori, and the dependent claims 2-16 are considered to lack unity a Posteriori for the following reasons:

Claims 1-4, 16:
D1 is considered to represent the closest prior art for these claims. The Special Technical Feature (STF) representing the contribution over D1 is the feature of a bipolar current source. This STF solves the technical problem of providing a DAC output with a larger swing.

Claims 5, 12:
The STF, representing the contribution over D1 of these claims is the provision of over-voltage protection. This STF solves the technical problem of protecting the circuit from electrical damage.

Claims 6-8:
The STF, representing the contribution over D1 of these claims is a window comparator. This STF solves the technical problem of detecting disconnections.

Claims 9, 15:
The STF, representing the contribution over D1 of these claims is scale factor adjusting means. This STF solves the technical problem of making the circuit work over a larger range.

Claims 10,11:
The STF, representing the contribution over D1 of these claims is a filter element. This STF solves the technical problem of making the output signal free from noise.

Claims 13,14:
The STF, representing the contribution over D1 of these claims is the provision of a test circuit. This STF solves the technical problem of easier control the function of the circuit.

Claims 17-24:
The STF, representing the contribution over D1 of these claims is a method for simulating a time variant output signal. This STF solves the technical problem of providing a suitable transfer function between two devices.

Claims 25-28:
The STF, representing the contribution over D1 of these claims is a

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:

method of determining the status of electrical connection. This STF solves the technical problem of easier control if a sensor is attached to a monitor device.

Claims 29-39 :
The STF, representing the contribution over D1 of these claims is an apparatus adapted to sense a waveform. This STF solves the technical problem of simulating an output signal produced by a passive bridge device.

As apparent from the above, there is no technical relationship between these objective problems and their STFs. Since the STFs are not the same and do not correspond, the requirements for unity of invention acc. to Art. 82 and Rule 44 EPC are not fulfilled. Hence this Authority considers that the above mentioned inventions or groups of inventions are not so linked as to form a single general inventive concept.

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 03 73 5107

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.

20-03-2008

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 0034838 A	15-06-2000	AU 1750000 A	26-06-2000
US 5158091 A	27-10-1992	CA 2055850 A1	31-05-1992
		DE 4139171 A1	04-06-1992
		ES 2081733 A2	01-03-1996
		FR 2669819 A1	05-06-1992
		GB 2250816 A	17-06-1992
		JP 6292659 A	21-10-1994
		JP 2002330931 A	19-11-2002
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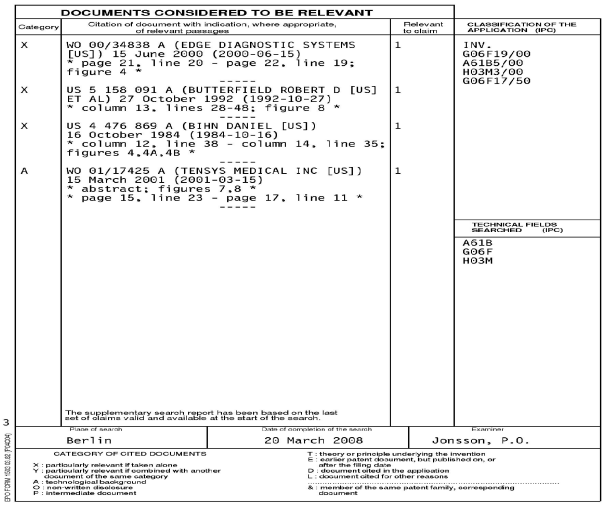
WO 0117425 A	15-03-2001	AU 7107600 A	10-04-2001
		EP 1211975 A2	12-06-2002
		JP 2003508145 T	04-03-2003

专利名称(译)	用于连接时变信号的装置和方法		
公开(公告)号	EP1470505A4	公开(公告)日	2008-04-30
申请号	EP2003735107	申请日	2003-01-30
[标]申请(专利权)人(译)	坦西斯医药股份有限公司		
申请(专利权)人(译)	TENSYS MEDICAL，INC.		
当前申请(专利权)人(译)	TENSYS MEDICAL，INC.		
[标]发明人	CONERO RONALD S		
发明人	CONERO, RONALD, S.		
IPC分类号	G01R13/00 G06F19/00 A61B5/00 A61B5/021 A61B5/022 G06F17/50 H03M3/00		
CPC分类号	A61B5/021 G16H40/63 A61B5/4839 A61B8/04 G01R31/50		
优先权	10/060646 2002-01-30 US		
其他公开文献	EP1470505A2		
外部链接	Espacenet		

摘要(译)

用于在两个硬件环境之间接口时变波形的改进的设备和方法。 一方面，本发明包括一种电路，该电路用于精确地模拟一种或多种类型的感测设备（例如，无源桥压力传感器）的输出，以与多个不同的监视和/或分析设备一起使用，从而消除了对专用设备的需求。 接口电路适用于每个不同的监视器/分析仪。 在一个示例性实施例中，感测设备包括非侵入性血压监测器（NIBPM），其经由本发明的接口电路与现有技术的病人监测器通用接口。 在本发明的第二方面，公开了一种结合了接口电路的改进的NIBPM设备。 还描述了一种改进的断开电路，其适于感测在感测设备和监视器之间的电连接的状态。



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L : document cited for other reasons

& : member of the same patent family, corresponding document