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(71) Applicant: **Sgalambro, Gaetano**
37045 Legnago (VR) (IT)

(72) Inventor: **Sgalambro, Gaetano**
37045 Legnago (VR) (IT)

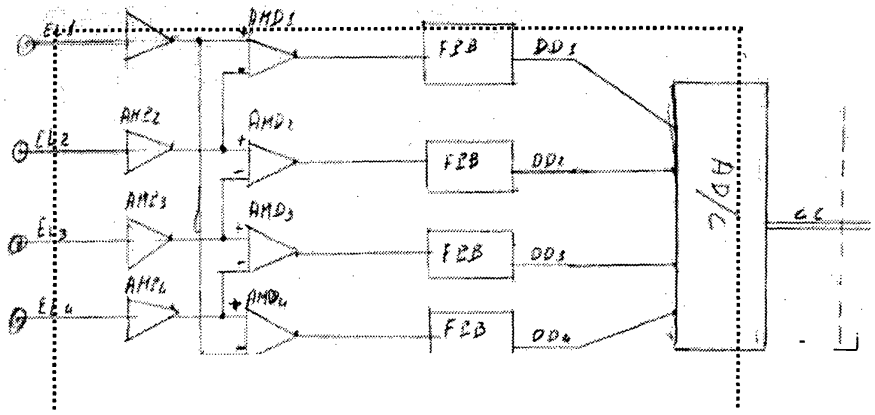
(74) Representative: **La Ciura, Salvatore**
Via Francesco Sforza, 3
20122 Milano (IT)

(54) Transtelephonic multifunctional electrocardiograph

(57) This application is a multifunctional diagnostic device and in particular an intermittent dynamic electrocardiographic device with smart control and telematic transmission.

More in particular it is a diagnostic device with different sensors which can collect different biological signals such as heart rate, arterial pressure etc., an Analogic/digital converter for sensor signals, a portable signal receiver which can analyse and process such data and a device to activate tele-transmission via GSM or other to the central server of all or part of the data.

The particular feature is the Analogic/digital converter close to the sensors so that the signals can be converted immediately on reception and transmitted digitally which is easier to manage and significantly reduces external interference.



Electrodes Module – Mod 7 B

Dotted Line: Module profile;
EL1, EL2, etc.: Wires attached to surface electrodes to collect cardiac signals;
AMP1, AMP2, etc.: Signal amplifier;
AMD1, AMD2, etc.: Differenzial amplifier;
FPB: Low frequency filter;
DD1, DD2, etc: Electrocardiograph chanel;
AD/C: Multi chanel analogic/digital convrter;
CC : Connecting wire to CPU Module (Mod.1).

Figura 3

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EUROPEAN SEARCH REPORT

Application Number
EP 04 00 1708

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	EP 0 779 057 A (CARDIAC TELECOM CORP) 18 June 1997 (1997-06-18) * column 8, paragraph 1; figures 2,4 *	1,2,7,8	G06F19/00 A61B5/0432
X	FR 2 533 816 A (ASCHER GILLES) 6 April 1984 (1984-04-06) * page 6, line 30 - line 34 *	1,2,7,8	

TECHNICAL FIELDS SEARCHED (Int.Cl.7)

G06F
A61B

~~The present search report has been drawn up for all claims~~

Place of search	Date of completion of the search	Examiner
Berlin	10 May 2004	Clevorn, J

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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Application Number
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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:

1, 2, 7, 8

European Patent Office

LACK OF UNITY OF INVENTION
SHEET B

Application Number
EP 04 00 1708

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: 1,2,7,8

Patient-activateable data transmission
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2. claims: 3,6

Diagnostic algorithm for comparing patient data with reference data and transmission of those data being above a threshold
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3. claim: 4

Inter-changeable biological signal sensors
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4. claim: 5

Inter-changeable transmission module

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 04 00 1708

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.

10-05-2004

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0779057 A	18-06-1997	JP 9173302 A	08-07-1997
		US 5522396 A	04-06-1996
		EP 0779057 A1	18-06-1997
		AU 4046495 A	19-06-1997
FR 2533816 A	06-04-1984	FR 2533816 A1	06-04-1984
		EP 0106756 A1	25-04-1984
		ES 8500037 A1	01-01-1985
		JP 60060836 A	08-04-1985

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)	Transtelephonic多功能心电图仪		
公开(公告)号	EP1443448A3	公开(公告)日	2004-10-27
申请号	EP2004001708	申请日	2004-01-27
[标]申请(专利权)人(译)	斯加兰布罗Gaetano		
[标]发明人	SGALAMBRO GAETANO		
发明人	SGALAMBRO, GAETANO		
IPC分类号	A61B5/00 A61B5/04 A61B5/0432 G06F19/00		
CPC分类号	A61B5/04325 A61B5/0006 A61B5/04004 A61B2560/0443 G06F19/3418 G16H10/20 G16H10/60 G16H15/00 G16H40/63		
优先权	MI2003000160 2003-01-30 IT		
其他公开文献	EP1443448A2		
外部链接	Espacenet		

摘要(译)

该应用是多功能诊断设备，尤其是具有智能控制和远程信息传输的间歇动态心电图设备。更具体地说，它是具有不同传感器的诊断设备，其可以收集不同的生物信号，例如心率，动脉压等，用于传感器信号的模拟/数字转换器，可以分析和处理这种数据的便携式信号接收器和设备。通过GSM或其他方式激活全部或部分数据的中心服务器的远程传输。特殊功能是靠近传感器的模拟/数字转换器，这样信号可以在接收时立即转换并以数字方式传输，这更易于管理并显着减少外部干扰。

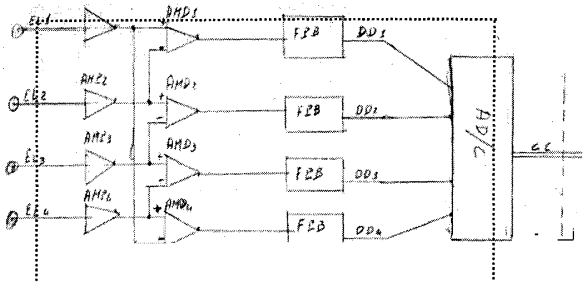

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Figura 3