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INVALIDATION SEARCH

Title: "SENSOR ARRAY APPARATUS FOR MONITORING MEDICAL SIGNALS" Submitted to:

Address:

Email:

Client Reference No:

Patent Number: [US8238996](#)

Priority Date: **5 Dec 2006** Date:

09th JUNE, 2016.

Feature to Search

E1. A sensor array apparatus for monitoring medical signals, which comprises, a flexible substrate adapted for positioning relative to the torso of a patient, the flexible substrate including a central segment defining a central axis and adapted to generally conform to an area extending along the sternum of the patient, an upper segment extending at least to the central segment and adapted to generally conform to the chest area of the patient, and a lower segment extending bilaterally outwardly from the central segment, and an intermediate segment extending bilaterally outwardly from the central segment between the upper and lower segments.

E2. At least one medical electrode disposed on each of the segments, wherein more than one medical electrode is disposed on the lower segment on a common side of the central axis.

E3. A connector in electrical communication with the medical electrodes and adapted to connect to an electronic monitoring system.

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Search Strategy

Database: AcclaimIP, USPTO, Patentscope, Espacenet, Google Patents, Inpass.

Keywords:

Set 1	Flexible substrate, electrode patch, sensor patch, electrode strips
Set 2	Placed, located, positioned
Set 3	Patient body, torso, skin
Set 4	Sensor signals, medical electrode signals
Set 5	Transmitting, sending, communicating
Set 6	Monitoring, displaying, watching, broadcasting

US CLASSIFICATIONS

600/391 Adhesive:

600/509 Detecting heartbeat electric signal:

600/372 Structure of body-contacting electrode or electrode inserted in body:

INTERNATIONAL CLASSIFICATIONS

A61B5/0428 Input circuits specially adapted therefor

A61B5/0452 Detecting specific parameters of the electrocardiograph cycle A61B5/0408

Electrodes specially adapted therefor

Search Results Reference

1:

Patent/Publication Number: [US7970450](#)

Title: Wireless medical monitoring apparatus and system

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Assignee/Applicant: Halthion Medical Technologies, Inc.

Filing Date: 3 May 2002

Priority Date: 3 May 2001

Also Published as: CA2445385A1, EP1383425A1, US20060155183, WO2002089667A1

Relevant Excerpt E1

IN CLAIMS:

1. An apparatus for wireless monitoring of at least one electrical signal from a patient's skin, said apparatus comprising in combination a disposable electrode patch and a monitoring unit:

the disposable electrode patch having a relatively thin and flexible sealed housing having an adhesive surface effective for releasable adhering said electrode patch to the patient's skin, said housing having a single continuous surface with a pair of end portions and a center portion disposed between the end portions.....a plurality of electrodes operably connected with said circuit board and positioned only in the end portions of said housing and are spaced apart so as to detect the electrical signal when the patch is properly adhered to the patient's skin, one of the electrodes being a ground electrode for grounding the electrode patch to the patient.

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Relevant Excerpt E2	<u>IN CLAIMS:</u> 1. An apparatus for wireless monitoring of at least one electrical signal from a patient's skin, said apparatus comprising in combination a disposable electrode patch and a monitoring unit: the disposable electrode patch having a relatively thin and flexible sealed housing having an adhesive surface effective for releasable adhering said electrode patch to the patient's skin, said housing having a single continuous surface with a pair of end portions and a center portion disposed between the end portions.....one of the electrodes being a ground electrode for grounding the electrode patch to the
	patient.

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Relevant Excerpt E3	<u>IN CLAIMS:</u> 1. An apparatus for wireless monitoring of at least one electrical signal from a patient's skin, said apparatus comprising in combination a disposable electrode patch and a monitoring unit: the disposable electrode patch having a relatively thin and flexible sealed housing having an adhesive surface effective for releasibly adhering said electrode patch to the patient's skin, said housing having..... the monitoring unit being reusable and portable by the patient, the monitoring unit comprising a transceiver effective in wireless communication with said electrode patch for receiving the wireless signal transmitted by the electrode patch and then transmitting the processed digital signal via a cellular telephone system to a computer, the monitoring unit further comprising at least one communication port for external communications and the monitoring unit is remotely programmable from a base station processor communicating therewith through at least one communication port.
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Reference 2:

Patent/Publication Number: [US5634468](#)

Title: Sensor patch and system for physiological monitoring

Assignee/Applicant: Micromedical Industries Limited

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Filing Date: 2 Apr 1993

Priority Date: 3 Apr 1992

Also Published as: CA2133424A1, DE69329710D1, DE69329710T2, EP0636009A1, EP0636009A4, EP0636009B1, WO1993019667A1

Relevant Excerpt E1

IN CLAIMS:

1. A sensor patch for attachment to a patient's body for obtaining physiological data from the patient and transmitting the physiological data to monitoring equipment, **the sensor patch comprising structural support means for supporting the sensor patch on the patient's body, sensing means for sensing physiological data from the patient's body, adhesive means for attaching the sensor patch to the patient's body.**

Relevant Excerpt E2

IN CLAIMS:

2. A sensor patch for attachment to a patient's body for obtaining physiological data from the patient and transmitting the physiological data to monitoring equipment, the sensor patch comprising structural support means for supporting the sensor patch on the patient's body.....**a transmitter for transmitting the conditioned signal from the sensor patch to the monitoring equipment, wherein the electronics package and transmitter form part or parts of the sensor patch itself, and wherein the transmitter is an infra-red transmitter.**

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Relevant Excerpt E3	<u>IN CLAIMS:</u> 9. An ECG monitoring system comprising a) a sensor patch for attachment to a patient's body for obtaining physiological data from the patient and transmitting the physiological data to monitoring equipment, the sensor patch comprising structural support means for supporting the sensor patch on patient's body, sensing means for sensing physiological data from the
	patient's body, adhesive means for attaching the sensor patch to the patient's body, an electronics package including a power supply and circuitry means for processing the sensed data to produce a conditioned signal, communication means for passing the sensed data from the sensing means to the electronics package, and a transmitter for transmitting the conditioned signal from the sensor patch to the monitoring equipment, wherein the electronics package and transmitter form part or parts of the sensor patch itself, and wherein said sensor patch is suitable for sensing and transmitting data representing an ECG signal of a patient, b) means for receiving the sensed data from the sensor patch at a primary site in the vicinity of the patient and for storing the sensed data, and c) means for sending the stored data from the primary site to a monitoring station where the ECG signal is monitored and analyzed.

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Reference 3:

Patent/Publication Number: [US6055448](#)

Title: Sensor device

Assignee/Applicant: Anderson; John Mccune, Allen; James, Dempsey; George John

Filing Date: 7 Nov 1995

Priority Date: 7 Nov 1994

Also Published as: DE69508955D1, DE69508955T2, EP0790801A1, EP0790801B1, WO1996014015A1

Relevant Excerpt E1

IN CLAIMS:

1. A sensor device for monitoring bioelectric data from a body comprising:

a flexible dielectric substrate; a plurality of substantially parallel finger-like projections formed integrally from the flexible substrate; a plurality of sensors formed on and distributed along the length of each finger-like projection; a flexible, electrically conductive network formed on each fingerlike projection and respectively connecting each sensor to a terminal portion formed on the flexible substrate; positioning means for positioning the plurality of finger-like projections and therefore sensors on a body in predetermined positions, at a predetermined position on the body..... positioning the sensor device on a body in accordance with the positioning means.

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Relevant Excerpt E2	<u>IN CLAIMS:</u> 1. A sensor device for monitoring bioelectric data from a body comprising: a flexible dielectric substrate; a plurality of substantially parallel finger-like projections formed integrally from the flexible substrate; a plurality of sensors formed on and distributed along the length of each finger-like projection; a flexible, electrically conductive network formed on each finger-like projection and respectively connecting each sensor to a terminal portion formed on the flexible substrate;
	positioning means for positioning the plurality of finger-like projections and therefore sensors on a body in predetermined positions, at a predetermined position on the body; wherein each finger-like projection is spaced laterally from the others of the plurality of finger-like projections by a laterally extending portion of the flexible substrate for adjusting the lateral distance between the substantially parallel finger-like projections by means of bending or folding the laterally extending portion when positioning the sensor device on a body in accordance with the positioning means.

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Relevant Excerpt E3	<u>IN CLAIMS:</u> 12. The device of claim 1, wherein each of the finger-like projections is joined to each of the other finger-like projections on one end of each by a single section of the flexible substrate to produce a hand-like configuration, and wherein the terminal portion is formed on the single section of the substrate for adaption to connection with cardiac monitoring equipment.
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