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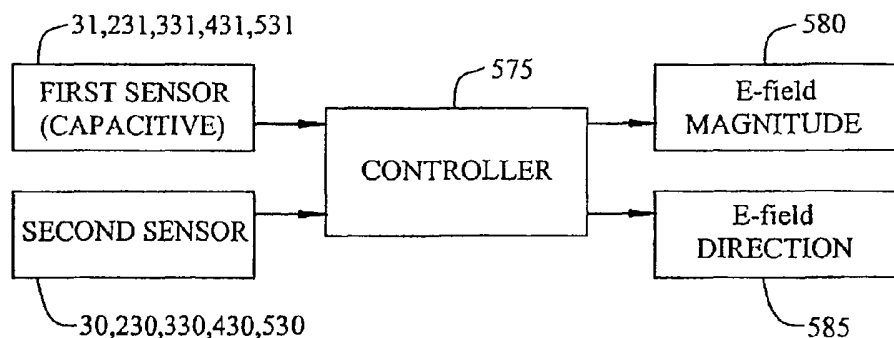
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(54) Title: MEASURING VECTOR COMPONENTS OF AN ELECTRIC FIELD



(57) Abstract: A sensor system (20; 200; 300; 400; 500) accurately measures, with a high level of sensitivity, one or more vector components of a small electric field, through the use of multiple, relatively fixed sensors (30, 31; 230, 231; 330, 331; 430, 431; 530, 531), at least one of which constitutes a weakly coupled capacitive sensor (31; 231; 331; 431; 531). The sensor system (20; 200; 300; 400; 500) enables the electric field to be determined in a direction normal to a surface or along multiple orthogonal axes. Measurement of the electric field vector can provide improved resolution and characterization of electrical signals produced, for example, by organs within the human body (10).

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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/33047

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC: <b>G01R 27/08( 2006.01),27/26( 2006.01),29/12( 2006.01)</b>  USPC: 324/457,458,658,686,690,691 According to International Patent Classification (IPC) or to both national classification and IPC																				
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) U.S. : 324/457,458,658,686,690,691  Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)																				
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b> <table border="1"> <thead> <tr> <th>Category *</th> <th>Citation of document, with indication, where appropriate, of the relevant passages</th> <th>Relevant to claim No.</th> </tr> </thead> <tbody> <tr> <td>Y</td> <td>GB 2,353,594 A (BRUN DEL RE et al.) 28 February 2001 (28.02.2001), page 5, lines 7-10, page 13, lines 26-28, page 15, lines 2-27, page 23, lines 5-12, page 24, lines 3-30 and</td> <td>1-15 and 22-24</td> </tr> <tr> <td>Y</td> <td>US 4,569,357 (SANZ et al.) 11 February 1986 (11.02.1986), abstract, column 4, lines 33-50 and column 15, lines 54-58.</td> <td>1-15 and 22-24</td> </tr> <tr> <td>Y</td> <td>US 6,242,911 B1 (MASCHEK) 05 June 2001 (05.06.2001), column 5, lines 28-32 and figures 1 and 4.</td> <td>12-15 and 24</td> </tr> </tbody> </table>			Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	Y	GB 2,353,594 A (BRUN DEL RE et al.) 28 February 2001 (28.02.2001), page 5, lines 7-10, page 13, lines 26-28, page 15, lines 2-27, page 23, lines 5-12, page 24, lines 3-30 and	1-15 and 22-24	Y	US 4,569,357 (SANZ et al.) 11 February 1986 (11.02.1986), abstract, column 4, lines 33-50 and column 15, lines 54-58.	1-15 and 22-24	Y	US 6,242,911 B1 (MASCHEK) 05 June 2001 (05.06.2001), column 5, lines 28-32 and figures 1 and 4.	12-15 and 24						
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<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.																				
<table border="0"> <tr> <td colspan="2">           * Special categories of cited documents:         </td> <td>           "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention         </td> </tr> <tr> <td>           "A" document defining the general state of the art which is not considered to be of particular relevance         </td> <td>           "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone         </td> <td></td> </tr> <tr> <td>           "E" earlier application or patent published on or after the international filing date         </td> <td>           "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art         </td> <td></td> </tr> <tr> <td>           "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)         </td> <td>           "&amp;" document member of the same patent family         </td> <td></td> </tr> <tr> <td>           "O" document referring to an oral disclosure, use, exhibition or other means         </td> <td></td> <td></td> </tr> <tr> <td>           "P" document published prior to the international filing date but later than the priority date claimed         </td> <td></td> <td></td> </tr> </table>			* Special categories of cited documents:		"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	"A" document defining the general state of the art which is not considered to be of particular relevance	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone		"E" earlier application or patent published on or after the international filing date	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art		"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&" document member of the same patent family		"O" document referring to an oral disclosure, use, exhibition or other means			"P" document published prior to the international filing date but later than the priority date claimed		
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Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (571) 273-3201		Authorized officer <i>Lydia Dole</i> Timothy J. Dole Telephone No. (571) 272-2229																		