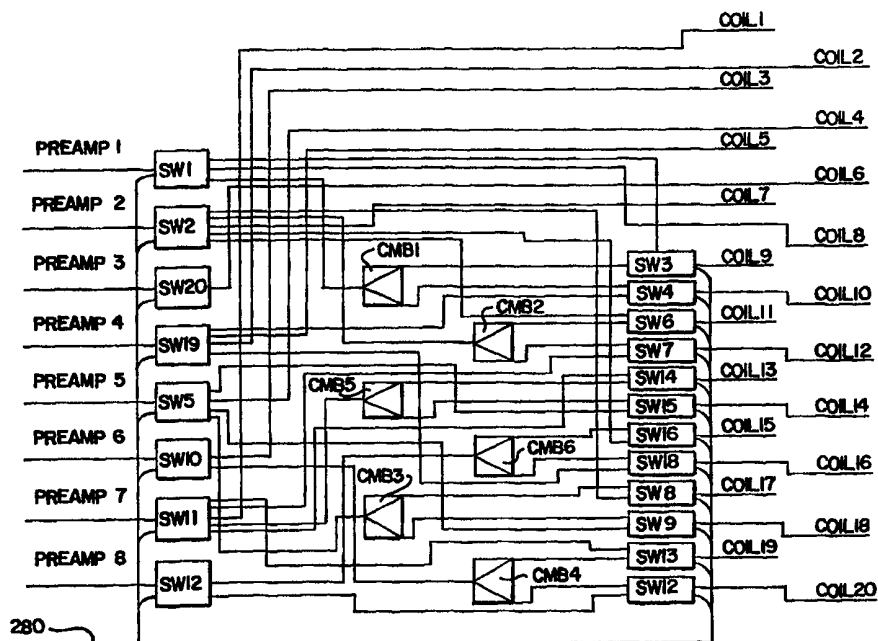




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(54) Title: PERIPHERAL VASCULAR MRI RF COIL ARRAY



(57) Abstract

An interface that couples a surface coil array having N receiving elements to an NMR scanner having M preamplifier inputs. The interface includes an RF switch array and a transmit/receive bias circuit. The RF switch array and the transmit/receive bias circuit are controlled by a control logic circuit. In response to a predetermined input, the control logic circuit causes a predetermined subset of the N receiving elements to be coupled to the preamplifier inputs of the NMR scanner. Preferably, N may be larger than M.

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 98/25300

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 G01R33/3415

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 G01R

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 practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 216 367 A (MORI ISSEI) 1 June 1993 see column 1, line 8 - column 1, line 25 see column 2, line 53 - column 3, line 61; figure 1	1,4,5, 10,21,24
Y		3
X	EP 0 803 736 A (PHILIPS PATENTVERWALTUNG ;PHILIPS ELECTRONICS NV (NL)) 29 October 1997 see column 1, line 3 - column 1, line 10 see column 2, line 10 - column 2, line 26 see column 5, line 25 - column 6, line 8; figure 4	1,2,10, 21,24
Y		3

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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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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

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Z document member of the same patent family

Date of the actual completion of the international search

11 March 1999

Date of mailing of the international search report

04.06.99

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Lersch, W

INTERNATIONAL SEARCH REPORT

Int. l. Application No.

PCT/US 98/25300

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 758 091 A (PICKER INT INC) 12 February 1997 see column 1, line 3 - column 1, line 12 see column 7, line 35 - column 9, line 19 see column 11, line 3 - column 12, line 51; figures 3,4,6,9,10	1,2,10, 21,24
A	---	11-13, 15-18,20
X	US 5 666 055 A (DAVIS FRED ET AL) 9 September 1997 see column 5, line 58 - column 6, line 40 see column 8, line 21 - column 10, line 50 see column 11, line 15 - column 11, line 36; figures 4-6,8,9	1,2,10, 21,24
A	---	11-13, 17,18,20
X	US 5 594 337 A (BOSKAMP EDDY B) 14 January 1997 see column 3, line 35 - column 3, line 67 see column 4, line 58 - column 5, line 6 see column 7, line 9 - column 9, line 22; figures 1-6	21,24
A	---	1-3
P,X	DE 197 09 244 C (SIEMENS AG) 10 June 1998 see column 1, line 3 - column 1, line 52 see column 3, line 8 - column 4, line 61; figures 1,2	1,2,4,5, 10,21,24
A	---	11-13, 15-18,20
	US 5 363 845 A (CHOWDHURY SRUBA ET AL) 15 November 1994 see column 2, line 46 - column 2, line 65 see column 3, line 26 - column 3, line 36 see column 6, line 34 - column 8, line 14; figures 3-5 -----	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 98/25300

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-21, 24

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

1. Claims: 1-21,24

Coil interface for coupling N image signal inputs to $M < N$ image signal outputs

2. Claims: 22,23

Adjustable array of mutually decoupled imaging coils

3. Claim : 25

Method of bolus tracking

4. Claims: 26-29

Coil housing shaped to bring different portions of the peripheral vasculature of a patient into mutual alignment

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 98/25300

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