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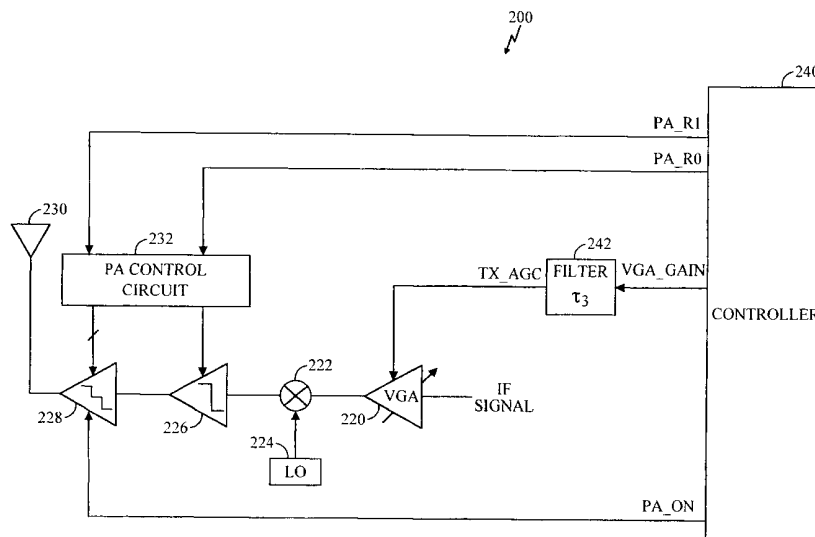
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[Continued on next page]

(54) Title: TRANSMITTER ARCHITECTURES FOR COMMUNICATIONS SYSTEMS



(57) Abstract: Transmitter architectures for a communications system having improved performance over conventional transmitter architectures. The improvements include a combination of the following: faster response time for the control signals, improved linearity, reduced interference, reduced power consumption, lower circuit complexity, and lower costs. For a cellular application, these improvements can lead to increased system capacity, smaller telephone size, increased talk and standby times, and greater acceptance of the product. Circuitry is provided to speed up the response time of a control signal. The control loop for various elements in the transmit signal path are integrated. A gain control mechanism allows for accurate adjustment of the output transmit power level. Control mechanisms are provided to power down the power amplifier, or the entire transmit signal path, when not needed. The gains of the various elements in the transmit signal path are controlled to reduce transients in the output transmit power, and to also ensure that transients are downward.



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— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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(88) Date of publication of the international search report:

2 May 2002

INTERNATIONAL SEARCH REPORT

International Application No

PC1/US 01/06740

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H03G3/30

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 7 H03G H04B

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)

EPO-Internal, PAJ, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 504 457 A (JENSEN OLE) 2 April 1996 (1996-04-02) column 3, line 51 -column 4, line 14; figures 6B,7,8A,8B ---	1,4-7
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A	US 5 697 073 A (DANIEL CHRISTOPHER JOHN ET AL) 9 December 1997 (1997-12-09) the whole document ---	8,11,13, 20
A	US 5 590 418 A (BONTRAGER PAUL R ET AL) 31 December 1996 (1996-12-31) abstract ---	8,11,13
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Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

° Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *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)
- *O* document referring to an oral disclosure, use, exhibition or other means
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- *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.
- * & * document member of the same patent family

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 0 797 299 A (NIPPON ELECTRIC CO) 24 September 1997 (1997-09-24) column 7, line 54 -column 9, line 57; figures 4,5 ---	8,11,13
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A	US 6 016 312 A (CALLICOTTE MARK J ET AL) 18 January 2000 (2000-01-18) the whole document -----	27,31,33

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 01/06740

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.:

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

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-7

Gain switching in a transmitter with an overdrive pulse to improve response time

2. Claims: 8-19

Device for providing linear adjustment of output power for cascaded amplifiers

3. Claims: 20-26

A method for controlling transients in cascaded amplifiers with switched gain settings

4. Claims: 27-35

Switching on/off of cascaded amplifiers with respect to a warm up period

5. Claims: 36-52

Distribution of gain ranges in cascaded amplifiers

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 01/06740

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Information on patent family members

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