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(71) Applicant (for all designated States except US): **TELEFONAKTIEBOLAGET L M ERICSSON (PUBL)**
[SE/SE]; S-126 25 Stockholm (SE).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **BRANDT, Per-Olof**
[SE/SE]; Rönngatan 4, S-234 31 Lomma (SE).

(74) Agent: **ONSHAGE, Anders**; Ericsson Mobile Platforms
AB, IPR & Legal Support, S-221 83 Lund (SE).

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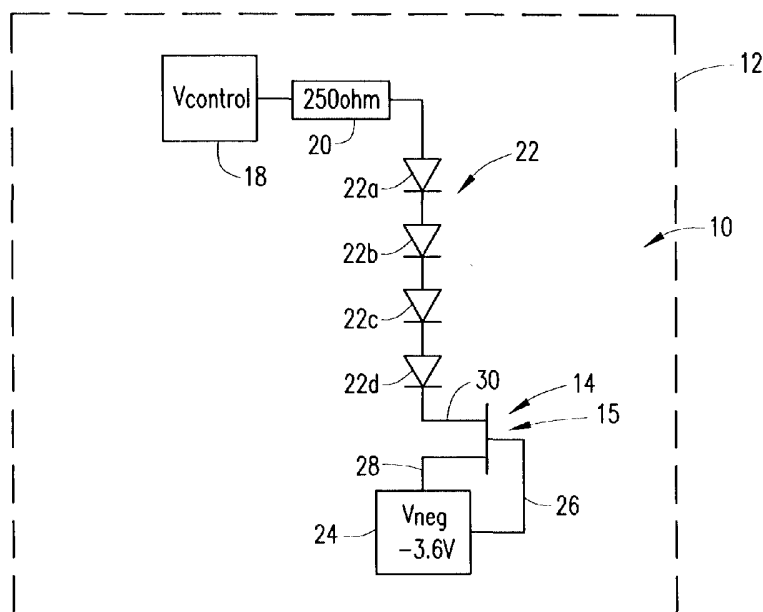
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(54) Title: LEVEL SHIFTER WITH GAIN



(57) Abstract: A level shifting circuit for level shifting a control signal which sets a Gate voltage of a power amplifier includes circuitry for adding gain to the level shift. The addition of gain to the level shift causes the gate voltage to change faster than the control voltage, and this, in turn, makes it possible to get higher dynamics to control the Gate voltage of the power amplifier. When the circuitry is utilized in a power amplifier including a plurality of amplifier stages, problems associated with the output stage showing non-monotonic behavior can be avoided. The level shifting circuit is particularly useful in power amplifiers using MESFET transistors such as power amplifiers used in cellular telephones.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 02/08161

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H03K19/094 H03K19/017 H03K19/0952

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 H03K G05F

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 4 558 235 A (WHITE WILLIAM A ET AL) 10 December 1985 (1985-12-10) the whole document	1,9 2-8, 10-13
X A	US 4 450 369 A (SCHUERMEYER FRITZ L) 22 May 1984 (1984-05-22) the whole document	1,9 2-8, 10-13
A	US 4 663 543 A (SITCH JOHN E) 5 May 1987 (1987-05-05) abstract	1-13
A	GB 2 166 312 A (GIGABIT LOGIC INC) 30 April 1986 (1986-04-30) abstract	1-13
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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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Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Schobert, D

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 02/08161

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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Information on patent family members

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