Title: MULTI-PASS ANALOG TO DIGITAL CONVERTER

Abstract: Multi-pass converter includes, as the input, a sample-and-hold block connected with the first input of theadder whose output is connected through the amplifier with the internal analog-to-digital converter. The second input of the adder is connected with the output of the digital-to-analog converter. The output of internal analog-to-digital converter (PAC) is connected through the multiplying block (M) with the second adder (S1), whose output is an output of the whole device, and which is connected by the feedback loop, through the time-delay block (D), with the second input of the second adder (S1). The second input of multiplying unit (M) is connected with a memory unit (L) which stores the gains and multiplying coefficients, and whose second output is connected with the digital controlling input of amplifier (W). The second output of time-delay block (D) is connected, through the digital-to-analog converter (PAC), with the second input of adder (S).
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H03M1/16

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 H03M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic database consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, INSPEC, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<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>X</td>
<td>GOODENOUGH F: &quot;NEXT-GENERATION 12-, 14-BIT IC ADCS SAMPLE SIGNALS&quot;, ELECTRONIC DESIGN, PENTON PUBLISHING, CLEVELAND, OH, US, VOL. 37, NR. 4, PAGE(S) 121-123 XP000039693 ISSN: 0013-4872 page 122</td>
<td>1</td>
</tr>
</tbody>
</table>

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
*P* document published prior to the international filing date but later than the priority date claimed

**T** Inter 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
**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
**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

Date of the actual completion of the international search
23 October 2003

Date of mailing of the international search report
08/01/2004

Name and mailing address of the ISA
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk
Tel. (+31-70) 940-2040, Tx. 31 651 epo nl
Fax. (+31-70) 940-3016

Authorized officer
Gerdes, R
<table>
<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>A</td>
<td>US 5 389 929 A (NAYEBI MOHAMMAD R ET AL) 14 February 1995 (1995-02-14) abstract; figure 2</td>
<td>1</td>
</tr>
<tr>
<td>Patent document cited in search report</td>
<td>Publication date</td>
<td>Patent family member(s)</td>
</tr>
<tr>
<td>---------------------------------------</td>
<td>-----------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>US 5389929</td>
<td>A</td>
<td>14-02-1995</td>
</tr>
</tbody>
</table>