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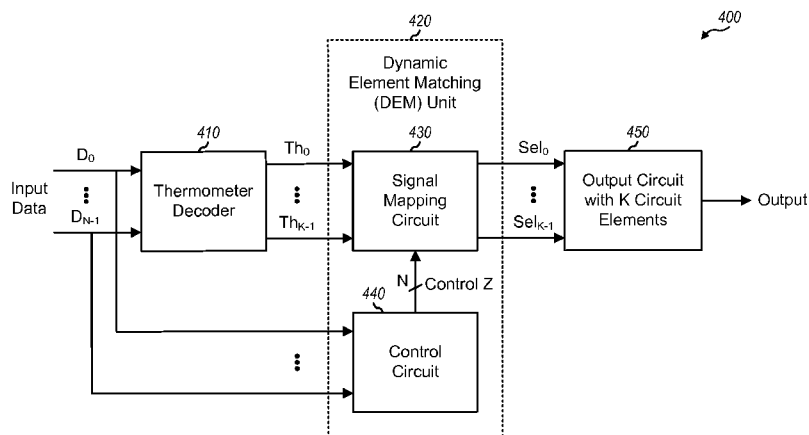
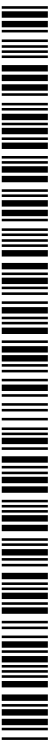


FIG. 4

(57) Abstract: According to at least one embodiment of the invention, an apparatus may include first, second and third circuits. The first circuit receives input data and provides a plurality of first signals asserted based on the input data. The second circuit receives the plurality of first signals and provides a plurality of second signals used to select a plurality of circuit elements. The third circuit generates a control for the second circuit using a fractional data weight of the input data, the second circuit mapping the plurality of first signals to the plurality of second signals based on the control from the third circuit.



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**INTERNATIONAL SEARCH REPORT**

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**A. CLASSIFICATION OF SUBJECT MATTER**  
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According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

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H03M

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	<p>EP 1 179 889 A1 (ST MICROELECTRONICS SRL [IT]) 13 February 2002 (2002-02-13)</p> <p>column 1, paragraph 1; figures 10-12 column 2, paragraph 6 - column 3, paragraph 13 column 5, paragraph 25 - column 6, paragraph 30</p> <p align="center">----- -/--</p>	<p>1-2,5,7, 16,18, 22, 24-27, 29-32, 35-36</p>

Further documents are listed in the continuation of Box C.

See patent family annex.

\* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
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- "&" document member of the same patent family

Date of the actual completion of the international search  <b>2 December 2009</b>	Date of mailing of the international search report  <b>10/12/2009</b>
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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, Fax: (+31-70) 340-3016	Authorized officer  <b>Brosa, Anna-Maria</b>
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International application No  
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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.
X	DA-HUEI LEE ET AL: "Nyquist-Rate Current-Steering Digital-to-Analog Converters With Random Multiple Data-Weighted Averaging Technique and Rotated Walk Switching Scheme" IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS II: EXPRESS BRIEFS, IEEE SERVICE CENTER, NEW YORK, NY, US, vol. 53, no. 11, 1 November 2006 (2006-11-01), pages 1264-1268, XP011150271 ISSN: 1057-7130 page 1265, right-hand column, paragraph III.A - page 1266, right-hand column, paragraph III.B; figures 1, 4, 7, 9 page 1267, left-hand column, paragraph IV - page 1268, right-hand column, paragraph V -----	1-2,5-7, 16,18, 22, 24-27, 29, 31-32, 34-36
X	US 2007/241950 A1 (PETILLI EUGENE M [US] ET AL) 18 October 2007 (2007-10-18) -----	1-2,5-6, 8-12,16, 19-20, 22, 25-27, 30-31
Y	page 1, paragraph 4; figures 2B, 3A-3D, 4 page 2, paragraphs 14, 16, 17, 19, 20 page 3, paragraphs 22, 27, 28 page 6, paragraphs 62, 64, 65 page 7, paragraph 77 page 8, paragraph 79 -----	7,18,24, 29,32-36
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Information on patent family members

International application No PCT/US2009/036444
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