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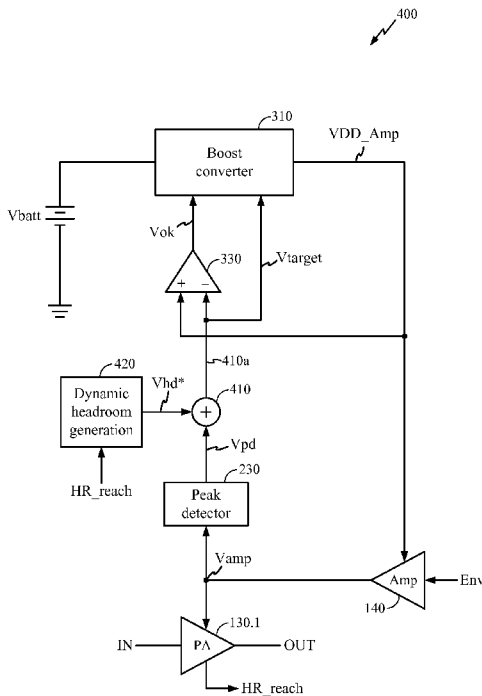
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[Continued on next page]

(54) Title: DYNAMIC HEADROOM FOR ENVELOPE TRACKING



(57) Abstract: Techniques for dynamically generating a headroom voltage for an envelope tracking system. In an aspect, an initial headroom voltage is updated when a signal from a power amplifier (PA) indicates that the PA headroom is insufficient. The initial headroom voltage may be updated to an operating headroom voltage that includes the initial voltage plus a deficiency voltage plus a margin. In this manner, the operating headroom voltage may be dynamically selected to minimize power consumption while still ensuring that the PA is linear. In a further aspect, a specific exemplary embodiment of a headroom voltage generator using a counter is described.

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TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

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Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
INV. H03F1/02
ADD.

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)
H03F

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 practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2011/007556 A1 (PANASONIC CORP [JP]; MORIMOTO SHIGERU; ISHIDA KAORU; NAKAMURA MAKI) 20 January 2011 (2011-01-20) paragraph [0051] - paragraph [0075]; figure 1A	1-20
A	US 2006/068830 A1 (KLOMSDORF ARMIN W [US] ET AL) 30 March 2006 (2006-03-30) paragraph [0030]; figure 5	1-20
A	US 2010/105343 A1 (STEBBINGS KENNETH E [US] ET AL STEBBINGS KENNETH [US] ET AL) 29 April 2010 (2010-04-29) paragraph [0013] - paragraph [0023]; figures 1-3	1-20
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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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"P" document published prior to the international filing date but later than the priority date claimed

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"&" document member of the same patent family

Date of the actual completion of the international search 13 October 2014	Date of mailing of the international search report 23/10/2014
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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 Lorenzo, Carlos
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INTERNATIONAL SEARCH REPORT

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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	WO 02/37672 A2 (LEWYN CONSULTING INC [US]) 10 May 2002 (2002-05-10) page 11, line 1 - page 13, line 33; figure 2 -----	1-20

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No PCT/US2014/012393

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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