A transmitter adjusts a transmitted power level by modifying a control input of a variable gain amplifier. A power amplifier control system includes an envelope extractor, an error extractor, and a feed-forward multiplier. The envelope extractor receives data signal inputs and computes the envelope of the combined signal. The error extractor generates an error signal as a function of the combined signal and the output power generated by the power amplifier. The feed-forward multiplier generates a modified error signal that is responsive to a function of the gain in a feedback path. A corresponding method for controlling a power level is also disclosed. In some embodiments, a transmit chain with a power control loop is used to adjust the transmit signal power applied at an input of a variable gain amplifier. A corresponding method for adjusting the transmit signal power level is also included.
A. CLASSIFICATION OF SUBJECT MATTER

H04W 52/52(2009.01)i, H04W 52/08(2009.01)i, H04B 1/04(2006.01)i

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)
H04W 52/52; H01Q 11/12; H03G 3/20; H01B 1/04; H04B 1/04

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Korean utility models and applications for utility models
Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
eKOMPASS(KIPO internal) & Keywords: power control, envelope, gain, loop

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>A</td>
<td>US 2009-0156143 Al (NICK SHUTE) 18 June 2009 See claims 1, 16, 32, 42, paragraphs [0037], [0049], [0050] and figures 3-11.</td>
<td>1-50</td>
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<td>A</td>
<td>US 2009-0298448 Al (CHRISTIAN MAYER et al.) 03 December 2009 See claims 1, 6, 10, 11, 17, 21, paragraphs [0019], [0020], [0024], [0031], [0034], [0035] and figures 1-4.</td>
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<td>A</td>
<td>US 7277678 B2 (DMITRIY ROZENBLIT et al.) 02 October 2007 See claim 1, column 7, line26 - line 50 and figures 1, 2.</td>
<td>1-50</td>
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<td>A</td>
<td>US 7353006 B2 (ROBER G. GELS et al.) 01 April 2008 See claims 1, 8, 10, 11, column 5, line 1 - line 42 and figure 4.</td>
<td>1-50</td>
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* 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 application or patent 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 citation or other special reason (as specified)
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"&" document member of the same patent family

Date of the actual completion of the international search
27 JULY 2012 (27.07.2012)

Date of mailing of the international search report
27 JULY 2012 (27.07.2012)

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<td>US 7970364 B2</td>
<td>28.06.2011</td>
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