Apparatus and methods for setting wakeup times in a communication device are disclosed where setting the wakeup times includes estimating the lock on time of a frequency synthesizer in order to minimize the wakeup time and extend sleep times for maximal energy savings. A disclosed apparatus includes an estimator to receive a current lock on time of a frequency synthesizer, which is the time taken by the frequency synthesizer to lock on to particular frequency after a wakeup signal has been issued to turn on the synthesizer after a sleep period. The estimator calculates a latest estimated lock on time based at least on the current lock on time of the frequency synthesizer and determines an enable signal timing information based on the estimated lock on time. The apparatus also includes a timer configured to receive the enable signal timing information and issue at least one enable signal to turn on other circuitry in the transceiver after the synthesizer lock on period based thereon. Corresponding methods are also disclosed.
For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codex and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.
A. CLASSIFICATION OF SUBJECT MATTER
INV. H04B1/16

B. FIELDS SEARCHED
Minimum documentation searched (classification system followed by classification symbols)
H04B H04Q

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, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
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<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
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<td>EP 0 361 350 A2 (NIPPON ELECTRIC CO [JP]) 4 April 1990 (1990-04-04) column 1, line 44 - column 2, line 10; figure 3</td>
<td>1-42</td>
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☐ Further documents are listed in the continuation of Box C.

* 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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*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

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Date of the actual completion of the international search: 28 September 2007

Date of mailing of the international search report: 09/10/2007

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