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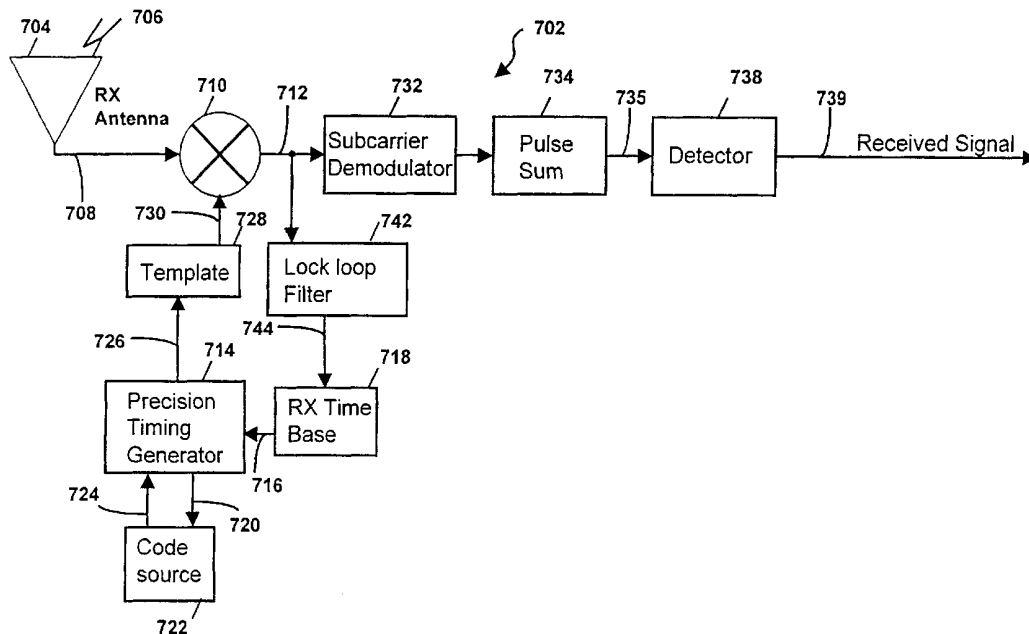
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- Published: — with international search report

[Continued on next page]

(54) Title: SYSTEM FOR FAST LOCK AND ACQUISITION OF ULTRA-WIDEBAND SIGNALS



(57) Abstract: A system (702) and method for detecting an impulse radio signal obtains a template pulse train (730) and a received impulse radio signal (708). The system (702) compares the template pulse train (730) and the received impulse radio signal (708) to obtain a comparison result (712). If the comparison result passes the threshold check, the system (702) locks on the received impulse radio signal (708). The system (702) may also perform a quick check, a synchronization check, and/or a command check of the impulse radio signal (708).



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4 July 2002

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/10127

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(7) : H04L 27/00

US CL : 375/150, 325, 365, 367, 368, 256

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)

U.S. : 375/150, 325, 365, 367, 368, 256

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)  
Standard databases on Dialog for the non-705 art; Internet; BRS

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,952,956 A (FULLERTON) 14 September, 1999. Col. 2, line 55 to Col. 4, line 31. Claim 1.	1, 34, 35, 53-55.
X	US 5,832,035 A (FULLERTON) 03 November, 1998. Figure 11; Col. 10, line 54 to Col. 11, line 23. Claim 1.	1, 34, 35, 53-55
A, E	US 6,239,741 B1 (FONTANA ET AL.) 29 May, 2001. Figure 1; Col. 2, line 41 to Col. 3, line 50.	1-49, 51, 53-55
Y	US 5,901,172 A (FONTANA ET AL.) 04 May, 1999. Figure 1, Col. 5, line 18 to Col. 7, line 32.	1, 34, 35, 53-55
Y	US 5,337,054 A (ROSS ET AL.) 09 August, 1994. Figure 4; Col. 5, line 1-56.	1, 34, 35, 53-55.
Y	US 5,952,954 A (BECKNER) 14 September, 1999. Figures, 1, 5; Col. 2, line 49 to Col. 3, line 57.	1, 34, 35 53-55.

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

"B" earlier application or patent 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" later 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

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Name and mailing address of the ISA/US

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# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US01/10127

## Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claim Nos.: 50 and 52  
because they relate to subject matter not required to be searched by this Authority, namely:  
Single step claims. The claims are confused since the preambles direct to a detecting method, while the bodies of the claims direct to method of transmitting and encoding.
2.  Claim Nos.: 50 and 52  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3.  Claim Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
  2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
- Remark on Protest**
- |                          |   |
|--------------------------|---|
| <input type="checkbox"/> | The additional search fees were accompanied by the applicant's protest. |
| <input type="checkbox"/> | No protest accompanied the payment of additional search fees.           |