(54) Title: RANDOM FREQUENCY CLOCK GENERATOR

(57) Abstract: What is disclosed is a system and method of generating a random frequency. First a fundamental noise signal from a fundamental noise source is detected. Then the fundamental noise signal is amplified. The amplified fundamental noise signal is then mixed with an oscillator signal. For one embodiment, the system is carried out in a single integrated circuit.
**INTFRNATIONAL SEARCH REPORT**

**A. CLASSIFICATION OF SUBJECT MATTER**
IPC 7 H03B29/00

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)
IPC 7 H03B H03K

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**

<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>
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</table>
| X        | US 6 061 702 A (HOFFMAN ERIC J)  
column 2, line 8 -column 3, line 23;  
figure 1 | 1–16, 21–32 |
| X        | US 4 475 090 A (STERN KURT)  
2 October 1984 (1984–10–02)  
the whole document | 1–4, 7, 8 |

Further documents are listed in the continuation of box C.  
Patent family members are listed in annex.

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**Date of the actual completion of the international search**

26 March 2002

**Date of mailing of the international search report**

09/04/2002

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<tr>
<td></td>
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<td>AU 2731697 A</td>
<td>05-12-1997</td>
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<td>WO 9743709 A1</td>
<td>20-11-1997</td>
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<td>US 4475090 A</td>
<td>02-10-1984</td>
<td>NONE</td>
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