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**Declaration under Rule 4.17:**

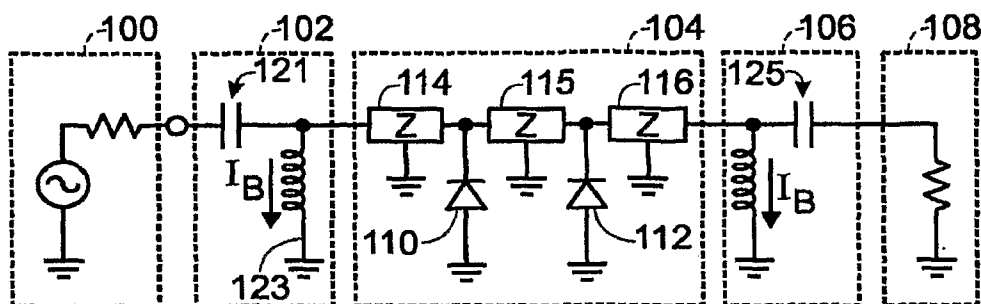
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28 February 2008

(54) Title: **BIASED NONLINEAR TRANSMISSION LINE COMB GENERATORS**



(57) **Abstract:** Comb generators include a nonlinear transmission line (NLTL) having one or more NLTL sections. Each NLTL section includes one or more nonlinear elements and transmission line portions that provide transmission line dispersion. Typically, the nonlinear elements are Schottky diodes, and a pulse forming bias network is configured to establish Schottky diode bias conditions using a periodic signal that is input to the comb generator. For input periodic signals at frequencies between about 500 MHz and 1 GHz, output signals are produced having substantial power in frequency components at frequencies up to at least about 50 GHz.



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**A. CLASSIFICATION OF SUBJECT MATTER*****H03B 19/16(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)

IPC 8 : H03B

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 since 1975

Japanese Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKIPASS(KIPO Internal), IEEEExplore, "Keywords : comb generator, bias network, NLTL, pulse forming, and similar terms"

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	D.W. Van Der Weide, "A YIG-tuned nonlinear transmission line multiplier", Microwave Symposium Digest, 1993., IEEE MTT-S International, Publication Date: 1993, On page(s): 557-560 vol.2 see abstract; figure 1; pages 558-559;	25-27 1-24, 28-29
A	US 06690247 B2 (MARK KINTIS ET AL.) 10 FEBRUARY 2004 see abstract; figure 1; column 1, line 21-column 2, line 24; claims 1, 4;	1-29
A	US 2004/0039283 A1 (ZORAN BANJANIN ET AL.) 26 FEBRUARY 2004 see abstract; figures 6-7; paragraph [0040]-paragraph [0051]	1-29



Further documents are listed in the continuation of Box C.



See patent family annex.

\* Special categories of cited documents:

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"P" document published prior to the international filing date but later than the priority date claimed

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"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

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Date of the actual completion of the international search

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Date of mailing of the international search report

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2007/012455**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US06690247 B2	10.02.2004	US20010011930A1 US2001011930A1 US2001011930AA US6690247BB	09.08.2001 09.08.2001 09.08.2001 10.02.2004
US2004039283A1	26.02.2004	US7094204BB US07094204	22.08.2006 22.08.2006