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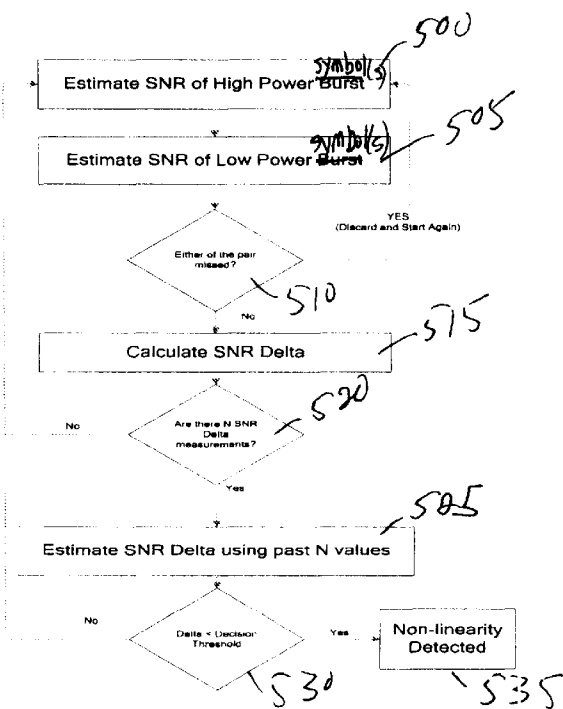
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[Continued on next page]

(54) Title: REMOTE NON-LINEARITY DETECTION VIA BURST POWER DITHERING

(57) Abstract: Nonlinearity characterization that transmits bursts of information where symbols vary by a value Delta. The bursts can be bursts of a constant power, followed by another burst of a different constant power. An alternative burst system uses interleaved power symbols, where some symbols in a single burst are at the first power and others are at the second power. The signal-to-noise ratio of the two groups of symbols is estimated, and the difference is used to determine whether or not to reduce the amount of saturation in the transmitter.



Flow Diagram of Non-Linearity Detection at Remote Receiver

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PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM,  
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**INTERNATIONAL SEARCH REPORT**

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PCT/US 07/72605

**A. CLASSIFICATION OF SUBJECT MATTER**

IPC(8) - H04L 27/00 (2007.10)

USPC - 375/259

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)

USPC: 375/259

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
USPC: 375/298; 375/324; 375/278 (view text search terms below)

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

pubWEST(PGPB,USPT,EPAB,JPAB); DialogPRO(Engineering); Google Scholar; Text search terms:

wireless communication systems, RF power amplifier transmission, amplifiers linear over certain range input power, Beyond that range RF power amplifier gradually saturates, link conditions change power control loop

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X -- Y	US 2003/0223507 A1 (DE GAUDENZI, et al.) 04 December 2003 (04.12.2003) entire document, especially Abstract and para [0052]-[0053], [0068], [0070]-[0071], [0081], [0095], [0126] and [0150]	1, 3-4, 20-21, 29, 31-32, 38A, 39-40, 52-53 ----- 2, 5-11, 22-28, 30, 33-35, 38B, 41-45, 54-57
X -- Y	US 2002/0187765 A1 (KOZAK, et al.) 12 December 2002 (12.12.2002) entire document, especially Abstract and para [0028], [0093]-[0094], [0111], [0122], [0130], [0179] and [0182]	12-14, 46-47, 51 ----- 2, 6-11, 15-19, 23-28, 30, 34-35, 38B, 42-45, 48-50, 55-57
X -- Y	US 5,673,291 A (DENT) 30 September 1997 (30.09.1997) entire document, especially Abstract and (col 4, ln 28-33), (col 17, ln 32-37) and (col 19, ln 45-56)	37 ----- 15-19, 48-50
Y	US 6,975,582 B1 (KARABINIS, et al.) 13 December 2005 (13.12.2005) entire document, especially Abstract and (col 9, ln 40-49) and (col 20, ln 37-38)	5, 19, 22, 33, 41, 54
Y	US 2004/0101061 A1 (YOSHIDA) 27 May 2004 (27.05.2004) entire document, especially Abstract, FIG.1 and para [0037] and [0048]	17-18, 50

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	"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
"E" earlier application or patent but published on or after the international filing date	"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
"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)	"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
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

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Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young  PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774
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