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(71) Applicant (for all designated States except US): **TELEFONAKTIEBOLAGET LM ERICSSON (PUBL)**
[SE/SE]; Torshamnsgatan 23, S-164 83 Stockholm (SE).

(72) Inventors: **GRANT, Stephen J.**; 313 Arlington Ridge Rd, CARY, North Carolina 27513 (US). **MOLNAR, Karl J.**; 110 Flying Leaf Cou, CARY, North Carolina 27513 (US).

(74) Agent: **MAGNUSSON, Monica**; Ericsson AB, Patent Unit Radio Networks, S-SE-164 80 Stockholm (SE).

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(54) Title: REDUCED COMPLEXITY SOFT VALUE GENERATION FOR MIMO JD-GRAKE RECEIVERS

(57) Abstract: A receiver includes a receiver circuit that decodes multiple signals of interest contained in a composite receive signal. The receiver comprises at least one Generalized RAKE combining circuit and a joint demodulation circuit and generates a detected signal at an output. The joint demodulation circuit contains a reduced search soft value generator circuit and generates soft bit values that represent coded bits received from the transmitter.



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INTERNATIONAL SEARCH REPORT

International application No.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC7: H04B 1/69 // H04L 27/01, H04L 1/06

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)

IPC7: H04L, H04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

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

EPO-INTERNAL, WPI DATA, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GRANT, S J et al: "Generalized RAKE receivers for MIMO systems". Vehicular Technology Conference, 2003. VTC 2003-Fall. 2003 IEEE 58th, Publication Date: 6-9 Oct. 2003, Volume 1, On pages 424-428 Vol.1. ISBN 0-7803-7954-3. See figure 2 and page 426, left column	1-3,25-26
Y	See page 426, left column, 15 last lines	4-7,10-19, 22-24,27-36
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Y	DE YONG, Y L C ET AL: "Iterative tree search detection for M I M O wireless systems". Vehicular Technology Conference, 2002. Proceedings. VTC 2002-Fall. 2002 IEEE 56th, Publication Date 2002, Volume 2, On pages 1041-1045, vol.2, ISBN 0-7803-7467-3. See page 1041, chapter I., 10 last lines and chapters II. - III.A.	4-7,10-19, 22-24,27-36
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☒ Further documents are listed in the continuation of Box C.
 ☐ See patent family annex.

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Name and mailing address of the ISA/

Swedish Patent Office
Box 5055, S-102 42 STOCKHOLM
Facsimile No. +46 8 666 02 86

Authorized officer

Markus Stålö /LR
Telephone No. +46 8 782 25 00

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	SAFAR, Z ET AL: "A fast sphere decoding framework for space-frequency block codes". Communications, 2004 IEEE International Conference on, Publication Date: 20-24 June 2004, Volume 5, On pages 2591-2595 Vol.5, ISBN 0-7803-8533-0. See Abstract and chapter Introduction --	4,16,27
A	JEE WONG KANG ET AL: "Simplified ML detection scheme for MIMO systems". Vehicular Technology Conference, 2004. VTC 2004-Spring. 2004 IEEE 59th, Publication Date 17-19 May 2004, Volume 2, On pages 824- 827 Vol.2, ISBN 0-7803-8255-2 See Abstract and chapter I. Introduction and chapter III. Simplified ML detection scheme --	1-36
A	JUNGnickel, V ET AL: "Performance of MIMO Rake receivers in WCDMA systems". Wireless Communications and Networking Conference, 2004. WCNC. 2004 IEEE, Publication Date 21-25 March 2004 Volume 4, On pages 2075- 2080 Vol.4, ISBN 0-7803-8344-3. See Abstract --	1-36
A	EE-LIN KUAN ET AL: "Burst-by-burst adaptive multiuser detection cdma: a framework for existing and future wireless standards". Proceedings of the IEEE, Publication Date: Feb 2003, Volume 91, Issue 2, On pages 278- 302. ISSN 0018-9219 See Abstract and chapter II.C. Tree-Search Detection, and chapter II.I. Hybrid and Novel Multiuser Receivers -- -----	1-36