

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
11 April 2002 (11.04.2002)

PCT

(10) International Publication Number
WO 02/029996 A3

(51) International Patent Classification⁷: H04B 1/707

NL-5656 AA Eindhoven (NL). **JEONG, Gibong**; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). **HSIA, Daniel**; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). **LIU, Juncheng, C.**; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

(21) International Application Number: PCT/EP01/11405

(22) International Filing Date: 2 October 2001 (02.10.2001)

(25) Filing Language: English

(74) Agent: **VOLMER, Georg**; Internationaal Octrooibureau B.V., Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

(26) Publication Language: English

(81) Designated States (*national*): JP, KR.

(30) Priority Data:
09/678,480 2 October 2000 (02.10.2000) US

(84) Designated States (*regional*): European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR).

(71) Applicant: **KONINKLIJKE PHILIPS ELECTRONICS N.V.** [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

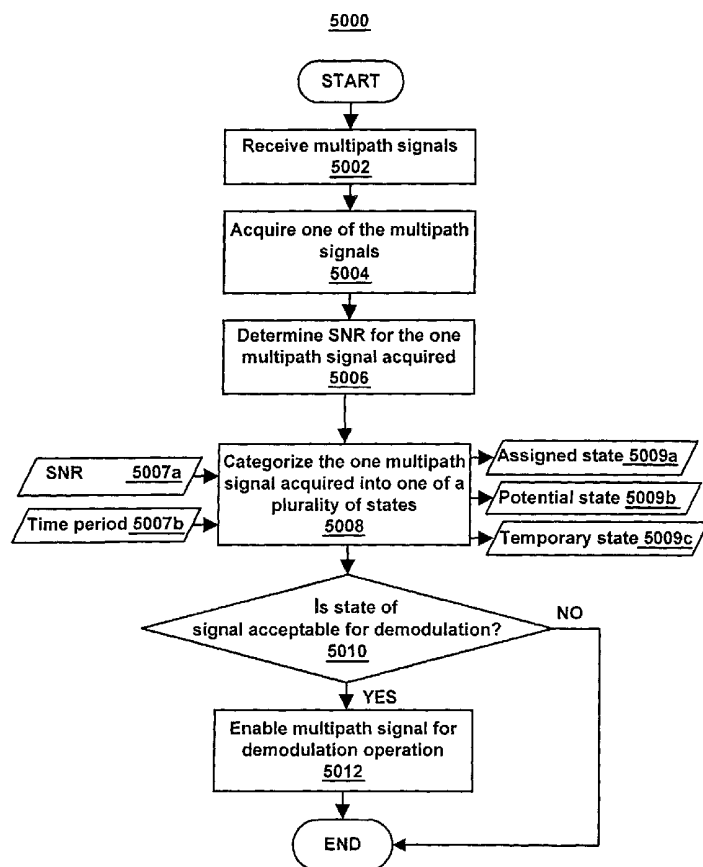
Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(72) Inventors: **ALDAZ, Luis**; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL). **LUKER, Greg**; Prof. Holstlaan 6,

[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR COMBINED FINGER MANAGEMENT AND FINGER LOCK FOR MULTIPATH SIGNALS IN A WIRELESS COMMUNICATION SYSTEM.



(57) Abstract: A method of managing fingers for multipath signals in a wireless communication device. In one embodiment, the present invention recites receiving multipath signals (5002) at a wireless communication device. The present embodiment then acquires one of the multipath signal (5004) in a searcher portion of the wireless communication device and determines a signal-to-noise ratio (SNR) level of the one multipath signal (5006). Next, the present embodiment evaluates the multipath signal for categorization (5008) into one of a plurality of states (5009a-5009c) and then generates a finger assignment by selectively providing the multipath signal for a demodulation operation based upon its state (5010). The present embodiment then receives the finger assignment from the searcher portion of the communication device and determines a signal-strength for the finger assignment. The present embodiment then enables the finger assignment for a combine operation (5012) if the signal-strength for the finger assignment satiates a first signal-strength threshold. The present embodiment also prevents the finger assignment from being deassigned if the signal-strength of the finger assignment satiates a second threshold, wherein the second signal-strength threshold is less than the first signal-strength threshold.

WO 02/029996 A3



(88) Date of publication of the international search report:
15 August 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/EP 01/11405

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04B1/707

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 H04B

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, 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	US 6 072 807 A (DAUDELIN DOUGLAS STREETER) 6 June 2000 (2000-06-06)	1-14, 16-32, 34-50, 52-54
Y	column 2, line 5 -column 3, line 54; figure 3 column 4, line 7 -column 7, line 50; claims 1-10; figures 4-6 ---	15, 33, 51
X	US 5 930 288 A (EBERHARDT MICHAEL A) 27 July 1999 (1999-07-27)	1, 19, 37
Y	abstract column 2, line 21 - line 67; claims 1-6 ---	15, 33, 51
	-/--	

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

* Special categories of cited documents :

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but 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

23 May 2002

Date of mailing of the international search report

04/06/2002

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Nilsson, M

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 01/11405

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 490 165 A (WEAVER JR LINDSAY A ET AL) 6 February 1996 (1996-02-06) abstract column 4, line 59 -column 5, line 22 column 5, line 46 -column 6, line 57 column 7, line 36 -column 8, line 20; figure 1 column 9, line 21 -column 10, line 49; figures 3A-C column 11, line 13 -column 15, line 25; claims 1-26; figures 4-5D -----	1-54

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 01/11405

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 6072807	A	06-06-2000	NONE	
US 5930288	A	27-07-1999	US 5754583 A BR 9703053 A CN 1185702 A DE 19718942 A1 FR 2748363 A1 GB 2313023 A ,B JP 10065611 A KR 236571 B1	19-05-1998 10-11-1998 24-06-1998 13-11-1997 07-11-1997 12-11-1997 06-03-1998 15-12-1999
US 5490165	A	06-02-1996	AU 685869 B2 AU 8096394 A BR 9405888 A CA 2150932 A1 EP 0676107 A1 FI 953210 A IL 111432 A JP 2938573 B2 JP 8508152 T RU 2138918 C1 WO 9512262 A1 ZA 9407841 A	29-01-1998 22-05-1995 26-12-1995 04-05-1995 11-10-1995 28-08-1995 10-03-1998 23-08-1999 27-08-1996 27-09-1999 04-05-1995 18-05-1995