PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 :

H04Q 7/34, 7/38, G01S 11/06

(11) International Publication Number:

WO 98/16079

(43) International Publication Date:

16 April 1998 (16.04.98)

(21) International Application Number:

PCT/FI97/00610

A3

(22) International Filing Date:

8 October 1997 (08.10.97)

(30) Priority Data:

964046

9 October 1996 (09.10.96) FI

(71) Applicant (for all designated States except US): NOKIA TELECOMMUNICATIONS OY [FI/FI]; Keilalahdentie 4, FIN-02150 Espoo (FI).

(72) Inventors; and

- (75) Inventors/Applicants (for US only): HAKALIN, Petteri [FI/FI]; Koskitie 53 B 46, FIN-90500 Oulu (FI). NIEMELÄ, Kari [FI/FI]; Välskärintie 9 as 12, FIN-90630 Oulu (FI).
- (74) Agent: PATENTTITOIMISTO TEKNOPOLIS KOLSTER OY; c/o Kolster Oy AB, Iso Roobertinkatu 2, P.O. Box 148, FIN-00121 Helsinki (FI).

(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).

Published

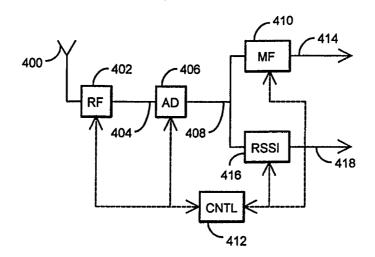
With international search report.

Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments. In English translation (filed in Finnish).

(88) Date of publication of the international search report:

11 June 1998 (11.06.98)

(54) Title: METHOD FOR DETERMINING SPEED OF TERMINAL, AND RECEIVER



(57) Abstract

The invention relates to a method for determining speed of terminal (112, 114) in a radio system, and to a receiver in a radio system, the receiver comprising means (406) for taking samples from a received signal at given intervals, means (416) for determining a signal instantaneous strength by measuring a signal strength of each sample, and means (412, 416) for calculating a mean strength for a sampled signal within a given time window. For preferably determining the terminal speed the receiver of the invention comprises the means (412) for comparing instantaneous strength values with a calculated mean strength and for calculating how frequently an instantaneous strength moves above or below a mean value within the given time window, and the means (412) for determining an apparatus speed based on the number of transitions.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav	TM	Turkmenistan
BF	Burkina Faso	GR	Greece		Republic of Macedonia	TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway ZW Zin		Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's	NZ	New Zealand		
CM	Cameroon		Republic of Korea	PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

INTERNATIONAL SEARCH REPORT

International application No.

PCT/FI 97/00610 CLASSIFICATION OF SUBJECT MATTER IPC6: H04Q 7/34, H04Q 7/38, G01S 11/06 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) IPC6: H04Q, G01S 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) WPI C. DOCUMENTS CONSIDERED TO BE RELEVANT Relevant to claim No. Citation of document, with indication, where appropriate, of the relevant passages Category* 1,7 X US 5239667 A (TOSHIHITO KANAI), 24 August 1993 (24.08.93), column 3, line 62 - column 4, line 30 Y 2-4 Y WO 9419704 A1 (FUJITSU LIMITED), 1 Sept 1994 2 (01.09.94), abstract 2 US 5585805 A (TETSUYOSHI TAKENAKA ET AL), L 17 December 1996 (17.12.96), column 24, line 17 - column 26, line 5, patent family member of WO 94/19704 A1 Further documents are listed in the continuation of Box C. See patent family annex. Χ Special categories of cited documents: "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand "A" document defining the general state of the art which is not considered the principle or theory underlying the invention to be of particular relevance "X" document of particular relevance: the claimed invention cannot be "E" erlier document but published on or after the international filing date considered novel or cannot be considered to involve an inventive document which may throw doubts on priority claim(s) or which is step when the document is taken alone 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 document referring to an oral disclosure, use, exhibition or other being obvious to a person skilled in the art document published prior to the international filing date but later than the priority date claimed "&" document member of the same patent family Date of the actual completion of the international search Date of mailing of the international search report 0 9 -04- 1998 8 April 1998 Name and mailing address of the ISA/ Authorized officer Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Friedrich Kühn

Telephone No. +4687822500

Facsimile No. +46 8 666 02 86

INTERNATIONAL SEARCH REPORT

International application No.
PCT/FI 97/00610

ategory*	Citation of document, with indication, where appropriate, of the relevant j	passages	Relevant to claim No
Y	US 5396645 A (DUANE L. HUFF), 7 March 1995 (07.03.95), column 11, line 48 - line 68		3,4

INTERNATIONAL SEARCH REPORT

Information on patent family members

02/03/98

International application No.
PCT/FI 97/00610

Patent document cited in search report			Publication date		Patent family member(s)		Publication date	
US	5239667	A	24/08/93	GB JP JP	2240696 3226127 3226126	A	07/08/91 07/10/91 07/10/91	
WO	9419704	A1	01/09/94	US	5585805	A	17/12/96	
US	5585805	Α	17/12/96	WO	9419704	Α	01/09/94	
US	5396645	Α	07/03/95	NONE				