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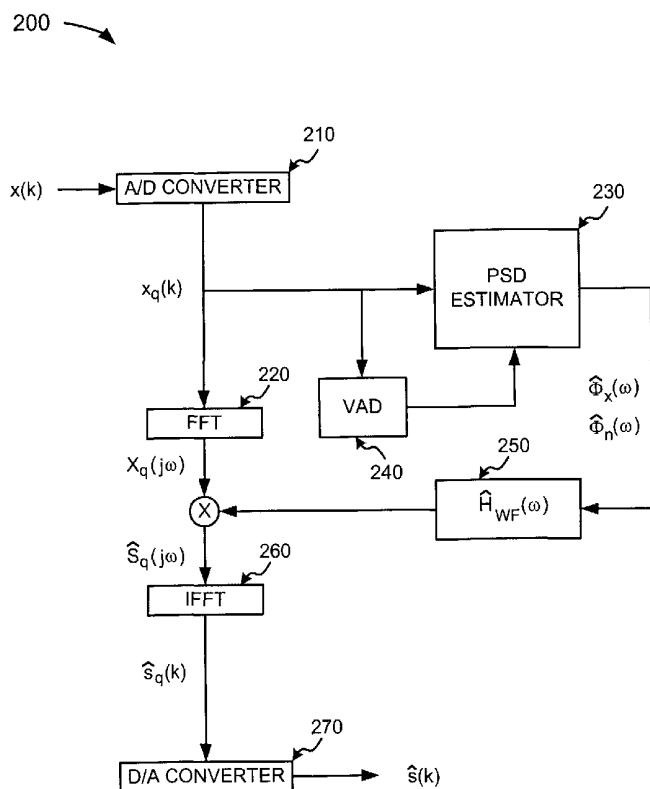
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- (74) Agent: **HARRITY, Paul, A.**; Harrity & Snyder, L.L.P., 11240 Waples Mill Road, Suite 300, Fairfax, VA 22030 (US).
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- (71) Applicant (*for all designated States except US*): **ERICSSON INC.** [US/US]; 511 Davis Drive, Research Triangle Park, NC 27709 (US).
- (71) Applicants and
- (72) Inventors: **KRASNY, Leonid** [US/US]; 111 Gray Mare's

[Continued on next page]

(54) Title: ESTIMATION OF THE SPECTRAL POWER DISTRIBUTION OF A SPEECH SIGNAL



(57) Abstract: A system (230) determines a power spectral density associated with an audio signal that includes a speech signal and/or a noise signal. The system (230) updates an autocorrelation function of the audio signal from samples in the audio signal, estimates an autocorrelation function of the speech signal from the updated autocorrelation function of the audio signal, and calculates a power spectral density of the speech signal using the estimated autocorrelation function. The system (230) then determines the power spectral density of the audio signal from the calculated power spectral density of the speech signal.

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INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 01/43084

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 7 G10L21/02

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 G10L

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, INSPEC, COMPENDEX, IBM-TDB

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 943 429 A (HAENDEL PETER) 24 August 1999 (1999-08-24)  abstract; claims 1,2 column 8, line 63 -column 9, line 2 column 11, line 33 - line 60 ---	1,2,5-7, 13,14, 17-19,28
A	US 6 122 610 A (ISABELLE STEVEN H) 19 September 2000 (2000-09-19)  abstract; claims 18-21 column 3, line 57 - line 65 ---	1-6,8, 13-18, 20,28,29
A	WO 95 15550 A (AT & T CORP) 8 June 1995 (1995-06-08)  abstract; claims 1-4 page 12, line 23 - line 33 ---	1-6, 13-18, 28,29
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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	*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
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*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	

Date of the actual completion of the international search  28 May 2002	Date of mailing of the international search report  06/06/2002
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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  Van Doremalen, J
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## INTERNATIONAL SEARCH REPORT

International Application No

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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	US 6 070 137 A (BLOEBAUM LELAND S ET AL) 30 May 2000 (2000-05-30) abstract; claim 1 column 7, line 52 - line 56 -----	12, 24, 30

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Information on patent family members

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