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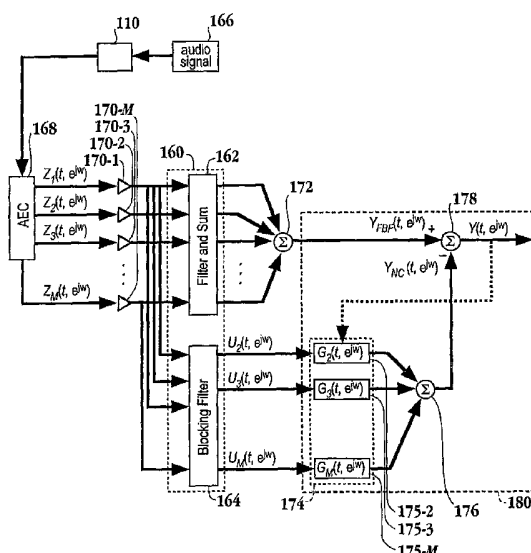
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[Continued on next page]

(54) Title: AUDIO INPUT SYSTEM



(57) Abstract: A method for reducing noise associated with an audio signal received through a microphone sensor array is provided. A first filter enhances a target signal component of the audio signal. A second filter is blocking the target signal component. The output of the first filter and the output of the second filter are combined in a manner to reduce noise without distorting the target signal. An acoustic set-up associated with the audio signal is periodically monitored. The first filter and the second filter are both calibrated based upon the acoustic set-up. Preferably the calibration of the filters includes a blind source separation scheme using second order statistics calculation. Preferably the first filter is an adaptive beam-forming module enhancing a target signal component and the second filter is an inverse adaptive beam-forming module blocking the target signal component. The system can be included in a video game controller.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
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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 H04R 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, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6 339 758 B1 (KANAZAWA HIROSHI ET AL) 15 January 2002 (2002-01-15) figures 1,2A,2B column 2, line 33 - line 52	1-39
Y	HOSHUYAMA O ET AL: "A ROBUST GENERALIZED SIDELOBE CANCELLER WITH A BLOCKING MATRIX USING LEAKY ADAPTIVE FILTERS" ELECTRONICS & COMMUNICATIONS IN JAPAN, PART III - FUNDAMENTAL ELECTRONIC SCIENCE, SCRIPTA TECHNICA. NEW YORK, US, vol. 80, no. 8, August 1997 (1997-08), pages 56-65, XP000736573 ISSN: 1042-0967 figure 1 paragraph '02.1!	1-39

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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INTERNATIONAL SEARCH REPORT

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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	<p>PARRA L ET AL: "Geometric source separation: merging convolutive source separation with geometric beamforming" NEURAL NETWORKS FOR SIGNAL PROCESSING. PROCEEDINGS OF THE IEEE SIGNAL PROCESSING SOCIETY WORKSHOP, XX, XX, 2001, pages 273-282, XP002203214 the whole document</p> <p style="text-align: center;">-----</p>	1-39
A	<p>SHOKO ARAKI ET AL: "Equivalence between Frequency Domain Blind Source Separation and Frequency Domain Adaptive Null Beamformers" EUROSPEECH 2001 SCANDINAVIA - 7TH EUROPEAN CONFERENCE ON SPEECH COMMUNICATION AND TECHNOLOGY, 2ND INTERSPEECH EVENT, vol. 4, 7 September 2001 (2001-09-07), page 2595, XP007004925 AALBORG, DENMARK the whole document</p> <p style="text-align: center;">-----</p>	1-39

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
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