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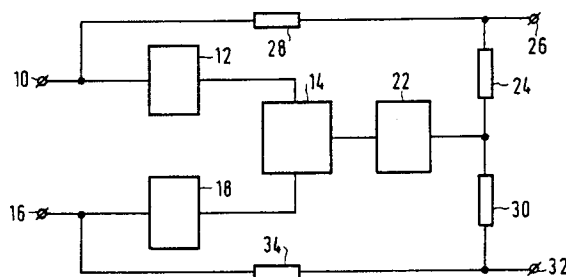
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NL-5656 AA Eindhoven (NL)**(54) **Low frequency audio doubling and mixing circuit.**

(57) A circuit for doubling and mixing low frequency audio signals includes an input for receiving an audio signal having a substantially wide frequency range, a circuit coupled to said input means for separating signal components in a low frequency band of the audio signal from the wide frequency range thereof, a frequency doubler coupled to the separating circuit for doubling the frequencies of the signal components in the low frequency band, and a mixer for mixing the frequency doubled signal components with the input audio signal, whereby the signal components in the low frequency band now also appear one octave higher.

**FIG.1****EP 0 546 619 A3**



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## EUROPEAN SEARCH REPORT

Application Number  
EP 92 20 3748

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
Y	US-A-3 710 146 (OHSAWA) * column 1, line 5-9 * * column 1, line 56-63 * * column 2, line 13-22 * * column 3, line 13 - column 4, line 43 * ---	1-6	H04S1/00 H04R5/04 H04R3/04
Y	GB-A-2 153 187 (LINN PRODUCTS) * page 1, line 30-61 *  * page 1, line 102 - line 115 * ---	1-6 7,8,10, 11	
A	US-A-4 734 591 (ICHITSUBO) * column 2, line 31-49 * * column 3, line 35 - column 5, line 21 * ---	1,4	
A	US-A-4 607 381 (SHIMIZU) * column 1, line 6-9 * * column 3, line 67 - column 4, line 60 * * column 9, line 28 - column 13, line 16 * -----	1-4	
			TECHNICAL FIELDS SEARCHED (Int.Cl.5)
			H04S H04R H03B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 25 February 1994	Examiner Zanti, P
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons ..... & : member of the same patent family, corresponding document	