

(51) International Patent Classification 6 : H04R 25/00		A1	(11) International Publication Number: WO 00/05925
			(43) International Publication Date: 3 February 2000 (03.02.00)
(21) International Application Number: PCT/US99/15962 (22) International Filing Date: 14 July 1999 (14.07.99) (30) Priority Data: 60/093,600 21 July 1998 (21.07.98) US (71) Applicant: JBL INCORPORATED [US/US]; 8500 Balboa Boulevard, Northridge, CA 91329 (US). (72) Inventor: WILLIAMSON, Clayton, C.; 9141 Crebs Avenue, Northridge, CA 91342 (US). (74) Agents: MCILWAIN, Russell, L. et al.; Jones, Day, Reavis & Pogue, 77 West Wacker Drive, Chicago, IL 60601-1692 (US).		(81) Designated States: AL, AM, AU, AZ, BA, BB, BG, BR, BY, CA, CN, CU, CZ, EE, FI, GE, HU, ID, IL, IS, JP, KG, KP, KR, KZ, LC, LK, LR, LT, LV, MD, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UZ, VN, YU, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG). Published With international search report.	
(54) Title: MINIATURE FULL RANGE LOUDSPEAKER			
(57) Abstract			
<p>In a miniature loudspeaker (10) of the electromagnetic voice coil type with a stiff edge-driven concave diaphragm (16), a single suspension member (18) attached to a particular location on the voice coil form (26A) achieves high excursion performance to deliver a full audio range in a cylindrical package of minimal thickness and diameter suitable for sound systems of compact multi-media equipment including PC CRT monitors and flat displays as in lap top computers. The front end of the tubular voice coil form is attached to the perimeter of the diaphragm. The front end of the tubular voice coil form is attached to the perimeter of the diaphragm. The coaxial voice-coil-diaphragm assembly is supported by a single resilient surround suspension member with its inner edge attached around the voice coil form at a location that is offset slightly from the front end of the voice coil form.</p>			