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(54) Title: LIGHTWEIGHT AUDIO SYSTEM FOR AUTOMOTIVE APPLICATIONS AND METHOD

(57) Abstract: A lightweight radio/CD player for vehicular application is virtually "fastenerless" and includes a case and frontal interface formed of polymer based material that is molded to provide details to accept audio devices such as playback mechanisms (if desired) and radio receivers, as well as the circuit boards required for electrical control and display. The case and frontal interface are of composite structure, including an insert molded electrically conductive wire mesh screen that has been pre-formed to contour with the molding operation. The wire mesh provides EMC, RFI, BCI and ESD shielding and grounding of the circuit boards via exposed wire mesh pads and adjacent ground clips. The PCB architecture is bifurcated into a first board carrying common circuit components in a surface mount configuration suitable for high volume production, and a second board carrying application specific circuit components in a wave soldered stick mount configuration. The major components and subassemblies are self-fixturing during the final assembly process, eliminating the need for dedicated tools, fixtures and assembly equipment. The major components and subassemblies self-interconnect by integral guide and connection features effecting "slide lock" and "snap lock" self-interconnection. The radio architecture includes improved push buttons employing 4-bar living hinge linkage and front loaded decorative trim buttons.



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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC: **H04B 1/00**(2006.01);**H05K 9/00**(2006.01)

USPC: 381/86;174/377

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)

U.S. : 381/86; 174/377

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 practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,097,830 (Zelinka et al) 1 Aug 2000 (01.08.2000), column 2, lines 19-40	1-6
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Y	US 6,940,730 B1 (Berg, Jr. et al) 6 Sep 2005 (06.09.2005), column 5, lines 25-40	3

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

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"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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"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	"&" document member of the same patent family

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