THIN FILM SPEAKER APPARATUS FOR USE IN A THIN FILM VIDEO MONITOR DEVICE

Abstract

A speaker system for use in a thin film video monitor apparatus is disclosed. The video monitor apparatus includes a thin film video display panel as well as a stiffening panel adjacent to the thin film video display panel. Next, a plurality of piezo speaker transducers are attached to one of the sides of the stiffening panel. The stiffening panel typically is composed of a material such as aluminum honeycomb sheets or a polycarbonate sheet. Other materials for use as the stiffener may include magnesium shells or ABS plastic. The speakers are defined so that a first sound channel and a second sound channel are provided, and these sound channels can define a left and right channel for proper stereo imaging. Between the video monitor and the stiffening panel is located an electromagnetic interference (EMI) shield. Further, a transmission line is provided to connect a first piezo transducer to a second piezo transducer in such a way so that frequency overlap can occur between the two transducers based upon the transmission line distance defined for the first piezo transducer and for the second piezo transducer. Further, the transmission line may have the same distance between both speakers where frequency overlap is not a concern. The stiffening panel is provided to increase the mobile energy in the lower frequencies during operation.

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