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Silicon microphones: a commercial success? and what comes next?

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The first silicon microphone commercial product was introduced to the market in late 2005. As of early 2008
the cumulative production is well over a half billion units and the production rates continue to rise. To date
the acoustical performance of these microphones is only as good as that of the of the lowest priced miniature
electret microphones. Yet acoustical systems manufacturers often prefer silicon microphones because they
are compatible with automated insertion and wave soldering assembly methods. Silicon microphones are also
more environmentally stable in sensitivity than are electrets which may be important in matched microphone
applications. Current research activities are investigating methods to reduce the internal noise improve
matching tolerances, and further reduce manufacturing costs. This paper will review the current state of
silicon microphones in commercial manufacture, and will survey some of the areas of current research in an
attempt to suggest some possible directions of future market development.