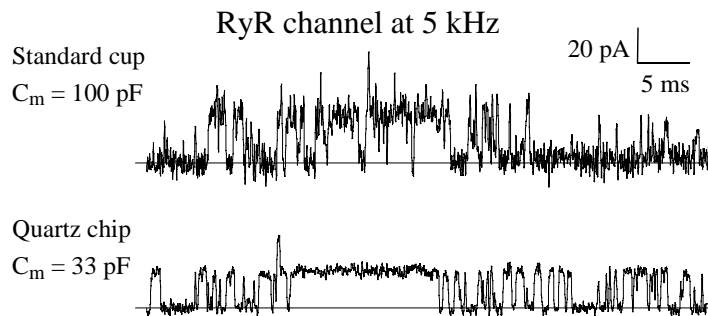


## QUARTZ “MICROCHIP” PARTITIONS FOR IMPROVED PLANAR LIPID BILAYER RECORDING OF SINGLE CHANNEL CURRENTS

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To reduce the background noise in planar lipid bilayer recording of ion channel currents, we have microfabricated quartz partitions using microlithography and anisotropic etching techniques to precisely define an aperture of small size and tapered shape that minimize the membrane capacitance and access resistance. Quartz is an ideal material for the partition as it has low dielectric loss and is both chemically inert and chemically resistant. Ryanodine receptor channel current recordings demonstrate the greatly improved signal-



to-noise ratio for the quartz chip over a standard polystyrene cup (see figure).