It follows from the classification of unitary highest weight representations and the work of Kashiwara-Vergne that every unitary reduction point of the metaplectic group $Mp(n, \mathbb{R})$ can be embedded in $L^2(M_{n,k})$ for some $k < n$, where $M_{n,k}$ denotes the space of real $n \times k$ matrices. Furthermore, every reduction point can be embedded in a space of sections of a holomorphic vector bundle on the Segal upper halfplane or—via boundary values—in a degenerate principal series representation. In this paper, we give a new realization of unitary highest weight representations in the kernel of a system of Schrödinger equations on the space $M_{n,k} \times Sym_k$, where $Sym_k$ denotes the space of symmetric real $k \times k$ matrices. Our realization has simple intertwining maps to the previously known realizations mentioned above. (Received January 27, 2014)