\textbf{Abstract.} Let \( \Pi \) be a generic cuspidal automorphic representation of \( \text{GSp}(2) \) defined over a totally real algebraic number field \( k \) whose archimedean type is either a (limit of) large discrete series representation or a certain principal series representation. Through explicit computation of archimedean local zeta integrals, we prove the functional equation of tensor product \( L \)-functions \( L(s, \Pi \times \sigma) \) for an arbitrary cuspidal automorphic representation \( \sigma \) of \( \text{GL}(2) \). We also give an application to the spinor \( L \)-function of \( \Pi \).

\textit{Department of Mathematics, Osaka University, Machikaneyama 1-1, Toyonaka, Osaka, 560-0043, Japan e-mail: moriyama@math.sci.osaka-u.ac.jp}