abstract In the tight-binding approximation we consider multi-channel transmission through a billiard coupled to leads. Following Dittes we derive the coupling matrix, the scattering matrix and the effective Hamiltonian, but take into account the energy restriction of the conductance band. The complex eigenvalues of the effective Hamiltonian define the poles of the scattering matrix. For some simple cases, we present exact values for the poles. We derive also the condition for the appearance of double poles.