We theoretically studied a triple-$\Lambda$ system comprising three pairs of coupling-probe fields. Three probe fields were phase-dependently switched with a switching depth above 80%, at which the group-velocity matching of all probe pulses was available under slow light-propagation conditions. We considered the probe susceptibility as the superposition of three-photon transitions to systematically understand the multi-photon interference in a triple-$\Lambda$ system, which can be applied to systems with $N - \Lambda$ ($N > 1$). This helped us to tailor the probe susceptibility by adjusting the detuning and phases of the coupling and probe fields. This work can be applied to all-optical switching gates for triple-photons and can enhance the speed of processing optical information.