

$$\begin{aligned}
 & a(\tfrac{1}{2}|000\rangle + \tfrac{1}{2}|011\rangle + \tfrac{1}{2}|100\rangle + \tfrac{1}{2}|111\rangle) \\
 & + b(\tfrac{1}{2}|001\rangle + \tfrac{1}{2}|010\rangle - \tfrac{1}{2}|101\rangle - \tfrac{1}{2}|110\rangle).
 \end{aligned}$$