$$
\begin{aligned}
\Psi_{222} &= C_1 \left(|22uu\rangle + i\,|2uu2\rangle + i\,|u22u\rangle - |uu22\rangle \right) \\
&\quad + C_2 \left(|2u2u\rangle + i\,|u2u2\rangle \right)
\end{aligned}
$$

$$
C_1 = \frac{1}{4} - \frac{i}{4}
$$

$$
C_2 = \frac{i}{2}
$$