$$
\begin{aligned}
\Psi_{168} &= C_1\left(|2uud\rangle - |d2uu\rangle + |ud2u\rangle - |uud2\rangle\right) \\
&\quad + C_2\left(|2udu\rangle + |du2u\rangle - |u2ud\rangle - |udu2\rangle\right) \\
&\quad + C_3\left(|2duu\rangle - |duu2\rangle - |u2du\rangle + |uu2d\rangle\right) \\
&\quad + C_4\left(-|022u\rangle + |22u0\rangle - |2u02\rangle + |u022\rangle\right) \\
&\quad + C_5\left(-|02u2\rangle + |202u\rangle + |2u20\rangle - |u202\rangle\right) \\
&\quad + C_6\left(|0u22\rangle - |20u2\rangle + |220u\rangle - |u220\rangle\right)
\end{aligned}
$$

$$
C_1 = \frac{\frac{-i}{12}\left(2\,t + U + \sqrt{16\,t^2 + 4\,t\,U + U^2}\right)}{t}
$$

$$
C_2 = \frac{\left(3 - i\,\sqrt{3}\right)\,\left(2\,t + U + \sqrt{16\,t^2 + 4\,t\,U + U^2}\right)}{12\,\left(-3\,i + \sqrt{3}\right)\,t}
$$

$$
C_3 = \frac{2\,t + U + \sqrt{16\,t^2 + 4\,t\,U + U^2}}{-6\,i\,t - 6\,\sqrt{3}\,t}
$$

$$
C_4 = \frac{-3\,i - \sqrt{3}}{12}
$$

$$
C_5 = \frac{3\,i - \sqrt{3}}{12}
$$

$$
C_6 = \frac{-1}{2\,\sqrt{3}}
$$