$$
\begin{aligned}
\Psi_{72} &= C_1\left(-i\,|0dud\rangle - |d0du\rangle + |dud0\rangle + i\,|ud0d\rangle\right) \\
&\quad + C_2\left(-|0udd\rangle + i\,|d0ud\rangle + |dd0u\rangle - i\,|udd0\rangle\right) \\
&\quad + C_3\left(-i\,|0ddu\rangle + |ddu0\rangle + i\,|du0d\rangle - |u0dd\rangle\right) \\
&\quad + C_4\left(i\,|002d\rangle - |02d0\rangle - i\,|2d00\rangle + |d002\rangle\right) \\
&\quad + C_5\left(i\,|020d\rangle - i\,|0d02\rangle - |20d0\rangle + |d020\rangle\right) \\
&\quad + C_6\left(|00d2\rangle + i\,|0d20\rangle - i\,|200d\rangle - |d200\rangle\right)
\end{aligned}
$$

$$
C_1 = \frac{-\left(-8+\frac{\left(U-\sqrt{32\,t^2+U^2-4\,\sqrt{64\,t^4+3\,t^2\,U^2}}\right)\left(U+\sqrt{32\,t^2+U^2-4\,\sqrt{64\,t^4+3\,t^2\,U^2}}\right)^2}{t^2\left(U-2\,\sqrt{32\,t^2+U^2-4\,\sqrt{64\,t^4+3\,t^2\,U^2}}\right)}\right)}{24\,\sqrt{2}}
$$

$$
C_2 = \frac{-48\,t^3+i\,\sqrt{64\,t^4+3\,t^2\,U^2}\left(U+\sqrt{32\,t^2+U^2-4\,\sqrt{64\,t^4+3\,t^2\,U^2}}\right)-2\,i\,t^2\left(5\,U+2\,\sqrt{32\,t^2+U^2-4\,\sqrt{64\,t^4+3\,t^2\,U^2}}\right)+t\left(-3\,U^2+6\,\sqrt{64\,t^4+3\,t^2\,U^2}-3\,U\,\sqrt{32\,t^2+U^2-4\,\sqrt{64\,t^4+3\,t^2\,U^2}}\right)}{12\,\sqrt{2}\,t^2\left(-U+2\,\sqrt{32\,t^2+U^2-4\,\sqrt{64\,t^4+3\,t^2\,U^2}}\right)}
$$

$$
C_3 = \frac{48\,i\,t^3-\sqrt{64\,t^4+3\,t^2\,U^2}\left(U+\sqrt{32\,t^2+U^2-4\,\sqrt{64\,t^4+3\,t^2\,U^2}}\right)+2\,t^2\left(5\,U+2\,\sqrt{32\,t^2+U^2-4\,\sqrt{64\,t^4+3\,t^2\,U^2}}\right)-3\,i\,t\left(-U^2+2\,\sqrt{64\,t^4+3\,t^2\,U^2}-U\,\sqrt{32\,t^2+U^2-4\,\sqrt{64\,t^4+3\,t^2\,U^2}}\right)}{12\,\sqrt{2}\,t^2\left(-U+2\,\sqrt{32\,t^2+U^2-4\,\sqrt{64\,t^4+3\,t^2\,U^2}}\right)}
$$

$$
C_4 = \frac{-i+\frac{-8\,t^2+\sqrt{64\,t^4+3\,t^2\,U^2}}{t\,U-2\,t\,\sqrt{32\,t^2+U^2-4\,\sqrt{64\,t^4+3\,t^2\,U^2}}}}{2\,\sqrt{2}}
$$

$$
C_5 = \frac{-8\,t^2+\sqrt{64\,t^4+3\,t^2\,U^2}}{\sqrt{2}\left(t\,U-2\,t\,\sqrt{32\,t^2+U^2-4\,\sqrt{64\,t^4+3\,t^2\,U^2}}\right)}
$$

$$
C_6 = \frac{-i+\frac{8\,t^2-\sqrt{64\,t^4+3\,t^2\,U^2}}{t\,U-2\,t\,\sqrt{32\,t^2+U^2-4\,\sqrt{64\,t^4+3\,t^2\,U^2}}}}{2\,\sqrt{2}}
$$