$$C_{ud}^{(8)\,i1\_i2\_i3\_i4\_} \to$$

$$\frac{1}{16\,\pi^2}\Bigg(-\frac{1}{18}\,\frac{1}{m_{\oplus}^2}\,\Big(\overline{y_d}^{pi3}\,\Big(9\,y_d{}^{ri4}\,\overline{y_u}^{ri1}\,y_u{}^{pi2}+4\,g_3{}^2\,s_\gamma{}^2\,y_d{}^{pi4}\,\delta_{i1i2}\Big)+4\,g_3{}^2\,c_\gamma{}^2\,\overline{y_u}^{pi1}\,y_u{}^{pi2}\,\delta_{i3i4}\Big)+$$
$$\frac{2}{3}\,g_3{}^4\,LF_{3,0}[m_3]\,\delta_{i1i2}\,\delta_{i3i4}+g_3{}^4\,LF_{4,-1}[m_3]\,\delta_{i1i2}\,\delta_{i3i4}-\frac{16}{15}\,g_3{}^4\,LF_{5,-2}[m_3]\,\delta_{i1i2}\,\delta_{i3i4}+$$
$$\frac{2}{9}\,\sum_p g_3{}^4\,LF_{3,0}\left[m_{\tilde{d}}{}^p\right]\,\delta_{i1i2}\,\delta_{i3i4}-\frac{5}{12}\,\sum_p g_3{}^4\,LF_{4,-1}\left[m_{\tilde{d}}{}^p\right]\,\delta_{i1i2}\,\delta_{i3i4}+$$
$$\frac{8}{45}\,\sum_p g_3{}^4\,LF_{5,-2}\left[m_{\tilde{d}}{}^p\right]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{4}{9}\,\sum_p g_3{}^4\,LF_{3,0}\left[m_{\tilde{q}}{}^p\right]\,\delta_{i1i2}\,\delta_{i3i4}-$$
$$\frac{5}{6}\,\sum_p g_3{}^4\,LF_{4,-1}\left[m_{\tilde{q}}{}^p\right]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{16}{45}\,\sum_p g_3{}^4\,LF_{5,-2}\left[m_{\tilde{q}}{}^p\right]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{2}{9}\,\sum_p g_3{}^4\,LF_{3,0}\left[m_{\tilde{u}}{}^p\right]$$
$$\delta_{i1i2}\,\delta_{i3i4}-\frac{5}{12}\,\sum_p g_3{}^4\,LF_{4,-1}\left[m_{\tilde{u}}{}^p\right]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{8}{45}\,\sum_p g_3{}^4\,LF_{5,-2}\left[m_{\tilde{u}}{}^p\right]\,\delta_{i1i2}\,\delta_{i3i4}+$$
$$\frac{1}{3}\,\Big(\overline{y_d}^{pi3}\,\Big(3\,y_d{}^{ri4}\,\overline{y_u}^{ri1}\,y_u{}^{pi2}\,\left(c_\gamma{}^2-s_\gamma{}^2\right)^2-2\,g_3{}^2\,s_\gamma{}^2\,y_d{}^{pi4}\,\delta_{i1i2}\Big)-2\,g_3{}^2\,c_\gamma{}^2\,\overline{y_u}^{pi1}\,y_u{}^{pi2}\,\delta_{i3i4}\Big)$$
$$LF_{1,2}[m_{\oplus}]+2\,s_\gamma{}^2\,c_\gamma{}^2\,\overline{y_d}^{pi3}\,y_d{}^{ri4}\,\overline{y_u}^{ri1}\,y_u{}^{pi2}\,LF_{2,1}[m_{\oplus}]+$$
$$\frac{1}{27}\,g_1{}^2\,g_3{}^2\,LF_{2,1,0}\left[m_1,m_{\tilde{d}}{}^{i4}\right]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{1}{27}\,g_1{}^2\,g_3{}^2\,LF_{2,2,-1}\left[m_1,m_{\tilde{d}}{}^{i4}\right]\,\delta_{i1i2}\,\delta_{i3i4}-$$
$$\frac{2}{27}\,g_1{}^2\,g_3{}^2\,LF_{3,1,-1}\left[m_1,m_{\tilde{d}}{}^{i4}\right]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{1}{27}\,g_1{}^2\,g_3{}^2\,LF_{4,1,-2}\left[m_1,m_{\tilde{d}}{}^{i4}\right]\,\delta_{i1i2}\,\delta_{i3i4}+$$
$$\frac{4}{27}\,g_1{}^2\,g_3{}^2\,LF_{2,1,0}\left[m_1,m_{\tilde{u}}{}^{i2}\right]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{4}{27}\,g_1{}^2\,g_3{}^2\,LF_{2,2,-1}\left[m_1,m_{\tilde{u}}{}^{i2}\right]\,\delta_{i1i2}\,\delta_{i3i4}-$$
$$\frac{8}{27}\,g_1{}^2\,g_3{}^2\,LF_{3,1,-1}\left[m_1,m_{\tilde{u}}{}^{i2}\right]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{4}{27}\,g_1{}^2\,g_3{}^2\,LF_{4,1,-2}\left[m_1,m_{\tilde{u}}{}^{i2}\right]\,\delta_{i1i2}\,\delta_{i3i4}-$$
$$\frac{1}{18}\,g_3{}^4\,LF_{2,1,0}\left[m_3,m_{\tilde{d}}{}^{i4}\right]\,\delta_{i1i2}\,\delta_{i3i4}-\frac{1}{18}\,g_3{}^4\,LF_{2,2,-1}\left[m_3,m_{\tilde{d}}{}^{i4}\right]\,\delta_{i1i2}\,\delta_{i3i4}-$$
$$\frac{25}{18}\,g_3{}^4\,LF_{3,1,-1}\left[m_3,m_{\tilde{d}}{}^{i4}\right]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{4}{9}\,g_3{}^4\,LF_{4,1,-2}\left[m_3,m_{\tilde{d}}{}^{i4}\right]\,\delta_{i1i2}\,\delta_{i3i4}-$$
$$\frac{1}{18}\,g_3{}^4\,LF_{2,1,0}\left[m_3,m_{\tilde{u}}{}^{i2}\right]\,\delta_{i1i2}\,\delta_{i3i4}-\frac{1}{18}\,g_3{}^4\,LF_{2,2,-1}\left[m_3,m_{\tilde{u}}{}^{i2}\right]\,\delta_{i1i2}\,\delta_{i3i4}-$$
$$\frac{25}{18}\,g_3{}^4\,LF_{3,1,-1}\left[m_3,m_{\tilde{u}}{}^{i2}\right]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{4}{9}\,g_3{}^4\,LF_{4,1,-2}\left[m_3,m_{\tilde{u}}{}^{i2}\right]\,\delta_{i1i2}\,\delta_{i3i4}-$$
$$\frac{2}{27}\,g_1{}^2\,g_3{}^2\,LF_{2,1,0}\left[m_{\tilde{d}}{}^{i4},m_1\right]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{1}{27}\,g_1{}^2\,g_3{}^2\,LF_{3,1,-1}\left[m_{\tilde{d}}{}^{i4},m_1\right]\,\delta_{i1i2}\,\delta_{i3i4}+$$
$$\frac{1}{9}\,g_3{}^4\,LF_{2,1,0}\left[m_{\tilde{d}}{}^{i4},m_3\right]\,\delta_{i1i2}\,\delta_{i3i4}-\frac{1}{18}\,g_3{}^4\,LF_{3,1,-1}\left[m_{\tilde{d}}{}^{i4},m_3\right]\,\delta_{i1i2}\,\delta_{i3i4}-$$
$$\frac{2}{3}\,g_3{}^2\,\left(\overline{y_d}^{pi3}\,y_d{}^{pi4}\,\delta_{i1i2}+\overline{y_u}^{pi1}\,y_u{}^{pi2}\,\delta_{i3i4}\right)\,LF_{2,1,0}\left[m_{\tilde{q}}{}^p,\tilde{\mu}\right]+$$
$$\frac{1}{3}\,g_3{}^2\,\left(\overline{y_d}^{pi3}\,y_d{}^{pi4}\,\delta_{i1i2}+\overline{y_u}^{pi1}\,y_u{}^{pi2}\,\delta_{i3i4}\right)\,LF_{2,2,-1}\left[m_{\tilde{q}}{}^p,\tilde{\mu}\right]+$$
$$\frac{1}{3}\,g_3{}^2\,\left(\overline{y_d}^{pi3}\,y_d{}^{pi4}\,\delta_{i1i2}+\overline{y_u}^{pi1}\,y_u{}^{pi2}\,\delta_{i3i4}\right)\,LF_{3,1,-1}\left[m_{\tilde{q}}{}^p,\tilde{\mu}\right]-$$
$$\frac{8}{27}\,g_1{}^2\,g_3{}^2\,LF_{2,1,0}\left[m_{\tilde{u}}{}^{i2},m_1\right]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{4}{27}\,g_1{}^2\,g_3{}^2\,LF_{3,1,-1}\left[m_{\tilde{u}}{}^{i2},m_1\right]\,\delta_{i1i2}\,\delta_{i3i4}+$$
$$\frac{1}{9}\,g_3{}^4\,LF_{2,1,0}\left[m_{\tilde{u}}{}^{i2},m_3\right]\,\delta_{i1i2}\,\delta_{i3i4}-\frac{1}{18}\,g_3{}^4\,LF_{3,1,-1}\left[m_{\tilde{u}}{}^{i2},m_3\right]\,\delta_{i1i2}\,\delta_{i3i4}+$$
$$\frac{1}{3}\,g_3{}^2\,\left(\overline{y_d}^{pi3}\,y_d{}^{pi4}\,\delta_{i1i2}+\overline{y_u}^{pi1}\,y_u{}^{pi2}\,\delta_{i3i4}\right)\,LF_{2,1,0}\left[\tilde{\mu},m_{\tilde{q}}{}^p\right]-$$
$$\frac{2}{3}\,g_3{}^2\,\left(\overline{y_d}^{pi3}\,y_d{}^{pi4}\,\delta_{i1i2}+\overline{y_u}^{pi1}\,y_u{}^{pi2}\,\delta_{i3i4}\right)\,LF_{3,1,-1}\left[\tilde{\mu},m_{\tilde{q}}{}^p\right]+$$
$$\frac{1}{3}\,g_3{}^2\,\left(\overline{y_d}^{pi3}\,y_d{}^{pi4}\,\delta_{i1i2}+\overline{y_u}^{pi1}\,y_u{}^{pi2}\,\delta_{i3i4}\right)\,LF_{4,1,-2}\left[\tilde{\mu},m_{\tilde{q}}{}^p\right]+$$
$$\frac{7}{6}\,g_3{}^4\,LF_{2,1,1,-1}\left[m_3,m_{\tilde{d}}{}^{i4},m_{\tilde{u}}{}^{i2}\right]\,\delta_{i1i2}\,\delta_{i3i4}-\frac{2}{3}\,g_3{}^4\,m_3{}^2\,LF_{2,1,1,0}\left[m_3,m_{\tilde{d}}{}^{i4},m_{\tilde{u}}{}^{i2}\right]\,\delta_{i1i2}\,\delta_{i3i4}+$$
$$\overline{y_d}^{pi3}\,y_d{}^{ri4}\,\overline{y_u}^{ri1}\,y_u{}^{pi2}\,LF_{2,1,1,-1}\left[\tilde{\mu},m_{\tilde{q}}{}^p,m_{\tilde{q}}{}^r\right]-2\,\tilde{\mu}^2\,\overline{y_d}^{pi3}\,y_d{}^{ri4}\,\overline{y_u}^{ri1}\,y_u{}^{pi2}$$
$$LF_{2,1,1,0}\left[\tilde{\mu},m_{\tilde{q}}{}^p,m_{\tilde{q}}{}^r\right]-\frac{4}{9}\,g_1{}^2\,g_3{}^2\,LF_{1,1,1,1,-1}\left[m_1,m_3,m_{\tilde{d}}{}^{i4},m_{\tilde{u}}{}^{i2}\right]\,\delta_{i1i2}\,\delta_{i3i4}-$$
$$\frac{8}{9}\,m_1\,m_3\,g_1{}^2\,g_3{}^2\,LF_{1,1,1,1,1,0}\left[m_1,m_3,m_{\tilde{d}}{}^{i4},m_{\tilde{u}}{}^{i2}\right]\,\delta_{i1i2}\,\delta_{i3i4}\Bigg)$$