$$
\begin{aligned}
&\mathcal{C}_{qu}^{(1)\,i1_i2_i3_i4_} \to -\frac{1}{6}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}+\hbar\,\Big(\frac{1}{1296}\,\frac{1}{m_\Phi^{2}}\,\Big(27\,c_\gamma^{2}\,\overline{y_d}^{pr}\,y_d^{i1r}\,\overline{y_u}^{i2i3}\,y_u^{pi4}\,(-1+s_\gamma^{2})-\\
&\quad c_\gamma^{2}\,\Big(27\,\overline{y_d}^{i2p}\,\overline{y_u}^{ri3}\,\big(12\,s_\gamma^{2}\,y_d^{i1p}\,y_u^{ri4}-y_d^{rp}\,y_u^{i1i4}\,(-1+s_\gamma^{2})\big)+\\
&\quad\quad 81\,\overline{y_u}^{ri3}\,\overline{y_u}^{i2p}\,\big(12\,s_\gamma^{2}\,y_u^{ri4}\,y_u^{i1p}+y_u^{rp}\,y_u^{i1i4}\,(1+c_\gamma^{2})\big)+3\,\overline{y_u}^{i2i3}\\
&\quad\quad\big(y_u^{i1i4}\,(17\,g_1^{2}+27\,g_2^{2}+96\,g_3^{2})+27\,\overline{y_u}^{pr}\,\big(y_u^{pi4}\,y_u^{i1r}\,(1+c_\gamma^{2})-8\,s_\gamma^{2}\,y_u^{pr}\,y_u^{i1i4}\big)\big)+\\
&\quad\quad 14\,g_1^{2}\,\overline{y_u}^{pi3}\,y_u^{pi4}\,\delta_{i1i2}\Big)+4\,g_1^{2}\,\big(5\,s_\gamma^{2}\,\overline{y_d}^{i2p}\,y_d^{i1p}-13\,c_\gamma^{2}\,\overline{y_u}^{i2p}\,y_u^{i1p}\big)\,\delta_{i3i4}\Big)-\\
&\frac{1}{12}\,\sum_p c_\gamma\,g_1^{2}\,\frac{1}{m_\Phi^{4}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(c_{2\gamma}\,c_\gamma-2\,s_{2\gamma}\,s_\gamma)\,LF_{1,0}[m_{\tilde{d}}^{p}]+\\
&\frac{4}{243}\,\sum_p g_1^{4}\,LF_{3,0}[m_{\tilde{d}}^{p}]\,\delta_{i1i2}\,\delta_{i3i4}-\\
&\frac{5}{162}\,\sum_p g_1^{4}\,LF_{4,-1}[m_{\tilde{d}}^{p}]\,\delta_{i1i2}\,\delta_{i3i4}+\\
&\frac{16}{1215}\,\sum_p g_1^{4}\,LF_{5,-2}[m_{\tilde{d}}^{p}]\,\delta_{i1i2}\,\delta_{i3i4}-\\
&\frac{1}{2}\,s_\gamma\,c_\gamma\,\frac{1}{m_\Phi^{4}}\,\overline{y_d}^{pr}\,y_d^{pr}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(s_{2\gamma}+s_\gamma\,c_\gamma)\,LF_{1,0}[m_{\tilde{d}}^{r}]-\\
&\frac{1}{12}\,\sum_p c_\gamma\,g_1^{2}\,\frac{1}{m_\Phi^{4}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(c_{2\gamma}\,c_\gamma-2\,s_{2\gamma}\,s_\gamma)\,LF_{1,0}[m_{\tilde{e}}^{p}]+\\
&\frac{4}{81}\,\sum_p g_1^{4}\,LF_{3,0}[m_{\tilde{e}}^{p}]\,\delta_{i1i2}\,\delta_{i3i4}-\frac{5}{54}\,\sum_p g_1^{4}\,LF_{4,-1}[m_{\tilde{e}}^{p}]\,\delta_{i1i2}\,\delta_{i3i4}+\\
&\frac{16}{405}\,\sum_p g_1^{4}\,LF_{5,-2}[m_{\tilde{e}}^{p}]\,\delta_{i1i2}\,\delta_{i3i4}-\\
&\frac{1}{6}\,s_\gamma\,c_\gamma\,\frac{1}{m_\Phi^{4}}\,\overline{y_e}^{pr}\,y_e^{pr}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(s_{2\gamma}+s_\gamma\,c_\gamma)\,LF_{1,0}[m_{\tilde{e}}^{r}]+\\
&\frac{1}{12}\,c_\gamma\,\frac{1}{m_\Phi^{4}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,\Big(-2\,s_\gamma\,\overline{y_e}^{pr}\,y_e^{pr}\,(s_{2\gamma}+s_\gamma\,c_\gamma)+\sum_p g_1^{2}\,(c_{2\gamma}\,c_\gamma-2\,s_{2\gamma}\,s_\gamma)\Big)\,LF_{1,0}[m_{\tilde{l}}^{p}]+\\
&\frac{2}{81}\,\sum_p g_1^{4}\,LF_{3,0}[m_{\tilde{l}}^{p}]\,\delta_{i1i2}\,\delta_{i3i4}-\frac{5}{108}\,\sum_p g_1^{4}\,LF_{4,-1}[m_{\tilde{l}}^{p}]\,\delta_{i1i2}\,\delta_{i3i4}+\\
&\frac{8}{405}\,\sum_p g_1^{4}\,LF_{5,-2}[m_{\tilde{l}}^{p}]\,\delta_{i1i2}\,\delta_{i3i4}-\frac{1}{12}\,c_\gamma\,\frac{1}{m_\Phi^{4}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\\
&\quad\Big(6\,s_\gamma\,\overline{y_d}^{pr}\,y_d^{pr}\,(s_{2\gamma}+s_\gamma\,c_\gamma)+6\,\overline{y_u}^{pr}\,y_u^{pr}\,(c_\gamma^{3}-s_{2\gamma}\,s_\gamma)+\sum_p g_1^{2}\,(c_{2\gamma}\,c_\gamma-2\,s_{2\gamma}\,s_\gamma)\Big)\\
&\quad LF_{1,0}[m_{\tilde{q}}^{p}]+\frac{2}{243}\,\sum_p g_1^{4}\,LF_{3,0}[m_{\tilde{q}}^{p}]\,\delta_{i1i2}\,\delta_{i3i4}-\\
&\frac{5}{324}\,\sum_p g_1^{4}\,LF_{4,-1}[m_{\tilde{q}}^{p}]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{8}{1215}\,\sum_p g_1^{4}\,LF_{5,-2}[m_{\tilde{q}}^{p}]\,\delta_{i1i2}\,\delta_{i3i4}+\\
&\frac{1}{6}\,\sum_p c_\gamma\,g_1^{2}\,\frac{1}{m_\Phi^{4}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(c_{2\gamma}\,c_\gamma-2\,s_{2\gamma}\,s_\gamma)\,LF_{1,0}[m_{\tilde{u}}^{p}]+\\
&\frac{16}{243}\,\sum_p g_1^{4}\,LF_{3,0}[m_{\tilde{u}}^{p}]\,\delta_{i1i2}\,\delta_{i3i4}-\frac{10}{81}\,\sum_p g_1^{4}\,LF_{4,-1}[m_{\tilde{u}}^{p}]\,\delta_{i1i2}\,\delta_{i3i4}+\\
&\frac{64}{1215}\,\sum_p g_1^{4}\,LF_{5,-2}[m_{\tilde{u}}^{p}]\,\delta_{i1i2}\,\delta_{i3i4}-\frac{1}{2}\,c_\gamma\,\frac{1}{m_\Phi^{4}}\,\overline{y_u}^{pr}\,\overline{y_u}^{i2i3}\,y_u^{pr}\,y_u^{i1i4}\,(c_\gamma^{3}-s_{2\gamma}\,s_\gamma)\,LF_{1,0}[m_{\tilde{u}}^{r}]+\\
&\frac{1}{24}\,c_\gamma\,\frac{1}{m_\Phi^{4}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,\Big(c_\gamma\,\big(g_1^{2}\,(1-3\,c_{2\gamma}^{2})-3\,g_2^{2}\,(-1+c_{2\gamma}^{2})\big)+3\,s_{4\gamma}\,s_\gamma\,(g_1^{2}+g_2^{2})\Big)\\
&\quad LF_{1,0}[m_\Phi]+\frac{1}{24}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\Big(3\,\overline{y_u}^{i2i3}\,y_u^{pi4}\,(-s_\gamma^{2}\,\overline{y_d}^{pr}\,y_d^{i1r}+c_\gamma^{2}\,\overline{y_u}^{pr}\,y_u^{i1r})-\\
&\quad\quad y_u^{i1i4}\,\big(2\,\overline{y_u}^{i2i3}\,(g_1^{2}+3\,g_2^{2})+3\,\overline{y_u}^{ri3}\,(s_\gamma^{2}\,\overline{y_d}^{i2p}\,y_d^{rp}-c_\gamma^{2}\,\overline{y_u}^{i2p}\,y_u^{rp})\big)\Big)\,LF_{1,1}[m_\Phi]+\\
&\frac{1}{216}\,\Big(18\,s_\gamma^{2}\,c_\gamma^{2}\,\overline{y_d}^{pr}\,y_d^{i1r}\,\overline{y_u}^{i2i3}\,y_u^{pi4}+2\,s_\gamma^{2}\,\overline{y_d}^{i2p}\,\big(9\,c_\gamma^{2}\,\overline{y_u}^{ri3}\,(-6\,y_d^{i1p}\,y_u^{ri4}+y_d^{rp}\,y_u^{i1i4})+\\
&\quad\quad 8\,g_1^{2}\,y_d^{i1p}\,\delta_{i3i4}\big)+c_\gamma^{2}\,\big(9\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(g_1^{2}+3\,g_2^{2})-\\
&\quad\quad 4\,g_1^{2}\,\overline{y_u}^{pi3}\,y_u^{pi4}\,\delta_{i1i2}-4\,\overline{y_u}^{i2p}\,y_u^{i1p}\,(27\,s_\gamma^{2}\,\overline{y_u}^{ri3}\,y_u^{ri4}+8\,g_1^{2}\,\delta_{i3i4})\big)\Big)\\
&\quad LF_{1,2}[m_\Phi]+\frac{1}{36}\,\Big(s_\gamma^{2}\,\overline{y_d}^{i2p}\,y_d^{i1p}\,(9\,c_\gamma^{2}\,\overline{y_u}^{ri3}\,y_u^{ri4}-2\,g_1^{2}\,\delta_{i3i4})-\\
&\quad\quad c_\gamma^{2}\,\big(g_1^{2}\,\overline{y_u}^{pi3}\,y_u^{pi4}\,\delta_{i1i2}+\overline{y_u}^{i2p}\,y_u^{i1p}\,(9\,c_\gamma^{2}\,\overline{y_u}^{ri3}\,y_u^{ri4}-2\,g_1^{2}\,\delta_{i3i4})\big)\Big)\,LF_{2,1}[m_\Phi]+\\
&\frac{1}{324}\,g_1^{2}\,\big(9\,c_\gamma^{2}\,\overline{y_u}^{pi3}\,y_u^{pi4}\,\delta_{i1i2}+2\,(9\,s_\gamma^{2}\,\overline{y_d}^{i2p}\,y_d^{i1p}-9\,c_\gamma^{2}\,\overline{y_u}^{i2p}\,y_u^{i1p}+4\,g_1^{2}\,\delta_{i1i2})\,\delta_{i3i4}\big)\\
&\quad LF_{3,0}[m_\Phi]-\frac{5}{108}\,g_1^{4}\,LF_{4,-1}[m_\Phi]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{8}{405}\,g_1^{4}\,LF_{5,-2}[m_\Phi]\,\delta_{i1i2}\,\delta_{i3i4}+\\
&\frac{2}{81}\,g_1^{4}\,LF_{3,0}[\tilde{\mu}]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{1}{27}\,g_1^{4}\,LF_{4,-1}[\tilde{\mu}]\,\delta_{i1i2}\,\delta_{i3i4}-\\
&\frac{16}{405}\,g_1^{4}\,LF_{5,-2}[\tilde{\mu}]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{1}{216}\,g_1^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,0}[m_1,m_{\tilde{q}}^{i1}]-\\
&\frac{1}{432}\,g_1^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{2,1,-1}[m_1,m_{\tilde{q}}^{i1}]+\\
&\frac{1}{216}\,g_1^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,0}[m_1,m_{\tilde{q}}^{i2}]-\\
&\frac{1}{432}\,g_1^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{2,1,-1}[m_1,m_{\tilde{q}}^{i2}]+\frac{1}{972}\,g_1^{4}\,LF_{2,1,0}[m_1,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}\,\delta_{i3i4}+\\
&\frac{1}{972}\,g_1^{4}\,LF_{2,2,-1}[m_1,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}\,\delta_{i3i4}-\frac{1}{486}\,g_1^{4}\,LF_{3,1,-1}[m_1,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}\,\delta_{i3i4}+\\
&\frac{1}{972}\,g_1^{4}\,LF_{4,1,-2}[m_1,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{2}{27}\,g_1^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,0}[m_1,m_{\tilde{u}}^{i3}]-\\
&\frac{1}{27}\,g_1^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{2,1,-1}[m_1,m_{\tilde{u}}^{i3}]+\\
&\frac{2}{27}\,g_1^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,0}[m_1,m_{\tilde{u}}^{i4}]-\frac{1}{27}\,g_1^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{2,1,-1}[m_1,m_{\tilde{u}}^{i4}]+\\
&\frac{4}{243}\,g_1^{4}\,LF_{2,1,0}[m_1,m_{\tilde{u}}^{i4}]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{4}{243}\,g_1^{4}\,LF_{2,2,-1}[m_1,m_{\tilde{u}}^{i4}]\,\delta_{i1i2}\,\delta_{i3i4}-\\
&\frac{8}{243}\,g_1^{4}\,LF_{3,1,-1}[m_1,m_{\tilde{u}}^{i4}]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{4}{243}\,g_1^{4}\,LF_{4,1,-2}[m_1,m_{\tilde{u}}^{i4}]\,\delta_{i1i2}\,\delta_{i3i4}+\\
&\frac{1}{6}\,g_1^{2}\,\frac{1}{m_\Phi^{4}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(c_\gamma^{2}+s_\gamma^{2})\,LF_{1,1,-1}[m_1,\tilde{\mu}]+\\
&\frac{1}{3}\,m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^{2}\,\frac{1}{m_\Phi^{4}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(-2\,c_\gamma^{2}+s_\gamma^{2})\,LF_{1,1,0}[m_1,\tilde{\mu}]+\\
&\frac{1}{8}\,g_2^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,0}[m_2,m_{\tilde{q}}^{i1}]-\frac{1}{16}\,g_2^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{2,1,-1}[m_2,m_{\tilde{q}}^{i1}]+\\
&\frac{1}{8}\,g_2^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,0}[m_2,m_{\tilde{q}}^{i2}]-\frac{1}{16}\,g_2^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{2,1,-1}[m_2,m_{\tilde{q}}^{i2}]+\\
&\frac{1}{36}\,g_1^{2}\,g_2^{2}\,LF_{2,1,0}[m_2,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{1}{36}\,g_1^{2}\,g_2^{2}\,LF_{2,2,-1}[m_2,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}\,\delta_{i3i4}-\\
&\frac{1}{18}\,g_1^{2}\,g_2^{2}\,LF_{3,1,-1}[m_2,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{1}{36}\,g_1^{2}\,g_2^{2}\,LF_{4,1,-2}[m_2,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}\,\delta_{i3i4}+\\
&\frac{1}{2}\,g_2^{2}\,\frac{1}{m_\Phi^{4}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(c_\gamma^{2}+s_\gamma^{2})\,LF_{1,1,-1}[m_2,\tilde{\mu}]+\\
&m_2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_2^{2}\,\frac{1}{m_\Phi^{4}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(-2\,c_\gamma^{2}+s_\gamma^{2})\,LF_{1,1,0}[m_2,\tilde{\mu}]+\\
&\frac{2}{9}\,g_3^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,0}[m_3,m_{\tilde{q}}^{i1}]-\frac{1}{9}\,g_3^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{2,1,-1}[m_3,m_{\tilde{q}}^{i1}]+\\
&\frac{2}{9}\,g_3^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,0}[m_3,m_{\tilde{q}}^{i2}]-\frac{1}{9}\,g_3^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{2,1,-1}[m_3,m_{\tilde{q}}^{i2}]+\\
&\frac{4}{81}\,g_1^{2}\,g_3^{2}\,LF_{2,1,0}[m_3,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{4}{81}\,g_1^{2}\,g_3^{2}\,LF_{2,2,-1}[m_3,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}\,\delta_{i3i4}-\\
&\frac{8}{81}\,g_1^{2}\,g_3^{2}\,LF_{3,1,-1}[m_3,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{4}{81}\,g_1^{2}\,g_3^{2}\,LF_{4,1,-2}[m_3,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}\,\delta_{i3i4}+\\
&\frac{2}{9}\,g_3^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,0}[m_3,m_{\tilde{u}}^{i3}]-\frac{1}{9}\,g_3^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{2,1,-1}[m_3,m_{\tilde{u}}^{i3}]+\\
&\frac{2}{9}\,g_3^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,0}[m_3,m_{\tilde{u}}^{i4}]-\frac{1}{9}\,g_3^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{2,1,-1}[m_3,m_{\tilde{u}}^{i4}]+\\
&\frac{4}{81}\,g_1^{2}\,g_3^{2}\,LF_{2,1,0}[m_3,m_{\tilde{u}}^{i4}]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{4}{81}\,g_1^{2}\,g_3^{2}\,LF_{2,2,-1}[m_3,m_{\tilde{u}}^{i4}]\,\delta_{i1i2}\,\delta_{i3i4}-\\
&\frac{8}{81}\,g_1^{2}\,g_3^{2}\,LF_{3,1,-1}[m_3,m_{\tilde{u}}^{i4}]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{4}{81}\,g_1^{2}\,g_3^{2}\,LF_{4,1,-2}[m_3,m_{\tilde{u}}^{i4}]\,\delta_{i1i2}\,\delta_{i3i4}+\\
&\frac{1}{12}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_d}^{i2p}\,y_d^{rp}\,\overline{y_u}^{ri3}\,y_u^{i1i4}\,LF_{1,1,0}[m_{\tilde{d}}^{p},\tilde{\mu}]+\frac{2}{27}\,g_1^{2}\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{2,1,0}[m_{\tilde{d}}^{p},\tilde{\mu}]\,\delta_{i3i4}-\\
&\frac{1}{27}\,g_1^{2}\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{2,2,-1}[m_{\tilde{d}}^{p},\tilde{\mu}]\,\delta_{i3i4}-\frac{1}{27}\,g_1^{2}\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{3,1,-1}[m_{\tilde{d}}^{p},\tilde{\mu}]\,\delta_{i3i4}+\\
&\frac{1}{2}\,c_\gamma\,\frac{1}{m_\Phi^{4}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,\Big(\tilde{\mu}\,\overline{y_d}^{pr}\,\big(a_d^{pr}\,(-2\,s_\gamma\,c_\gamma^{2}+s_\gamma^{3})-\tilde{\mu}\,c_\gamma\,y_d^{pr}\,(c_\gamma^{2}-2\,s_\gamma^{2})\big)+\\
&\quad\quad s_\gamma\,\overline{a_d}^{pr}\,\big(-3\,s_\gamma\,c_\gamma\,a_d^{pr}+\tilde{\mu}\,y_d^{pr}\,(-2\,c_\gamma^{2}+s_\gamma^{2})\big)\Big)\,LF_{1,1,0}[m_{\tilde{d}}^{r},m_{\tilde{q}}^{p}]+\\
&\frac{1}{12}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_d}^{pr}\,y_d^{i1r}\,\overline{y_u}^{i2i3}\,y_u^{pi4}\,LF_{1,1,0}[m_{\tilde{d}}^{r},\tilde{\mu}]+\frac{1}{6}\,c_\gamma\,\frac{1}{m_\Phi^{4}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\\
&\quad\Big(\tilde{\mu}\,\overline{y_e}^{pr}\,\big(a_e^{pr}\,(-2\,s_\gamma\,c_\gamma^{2}+s_\gamma^{3})-\tilde{\mu}\,c_\gamma\,y_e^{pr}\,(c_\gamma^{2}-2\,s_\gamma^{2})\big)+\\
&\quad\quad s_\gamma\,\overline{a_e}^{pr}\,\big(-3\,s_\gamma\,c_\gamma\,a_e^{pr}+\tilde{\mu}\,y_e^{pr}\,(-2\,c_\gamma^{2}+s_\gamma^{2})\big)\Big)\,LF_{1,1,0}[m_{\tilde{e}}^{r},m_{\tilde{l}}^{p}]+\frac{1}{6}\,s_\gamma\,c_\gamma\,\frac{1}{m_\Phi^{2}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\\
&\quad\Big(\tilde{\mu}\,\overline{y_e}^{pr}\,\big(a_e^{pr}\,(c_\gamma^{2}-s_\gamma^{2})-2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,y_e^{pr}\big)+\overline{a_e}^{pr}\,\big(2\,s_\gamma\,c_\gamma\,a_e^{pr}+\tilde{\mu}\,y_e^{pr}\,(c_\gamma^{2}-s_\gamma^{2})\big)\Big)\\
&\quad LF_{2,1,0}[m_{\tilde{l}}^{p},m_{\tilde{e}}^{r}]+\frac{1}{6}\,s_\gamma\,c_\gamma\,\frac{1}{m_\Phi^{2}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,\Big(\tilde{\mu}\,\overline{y_e}^{pr}\,\big(a_e^{pr}\,(-c_\gamma^{2}+s_\gamma^{2})+2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,y_e^{pr}\big)+\\
&\quad\quad\overline{a_e}^{pr}\,\big(-2\,s_\gamma\,c_\gamma\,a_e^{pr}+\tilde{\mu}\,y_e^{pr}\,(-c_\gamma^{2}+s_\gamma^{2})\big)\Big)\,LF_{3,1,-1}[m_{\tilde{l}}^{p},m_{\tilde{e}}^{r}]-\\
&\frac{1}{6}\,s_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(-c_\gamma\,\overline{a_e}^{pr}+s_\gamma\,\tilde{\mu}\,\overline{y_e}^{pr})\,(-c_\gamma\,a_e^{pr}+s_\gamma\,\tilde{\mu}\,y_e^{pr})\,LF_{3,1,0}[m_{\tilde{l}}^{p},m_{\tilde{e}}^{r}]+\\
&\frac{1}{2}\,s_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(-c_\gamma\,\overline{a_e}^{pr}+s_\gamma\,\tilde{\mu}\,\overline{y_e}^{pr})\,(-c_\gamma\,a_e^{pr}+s_\gamma\,\tilde{\mu}\,y_e^{pr})\,LF_{4,1,-1}[m_{\tilde{l}}^{p},m_{\tilde{e}}^{r}]-\\
&\frac{1}{3}\,s_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(-c_\gamma\,\overline{a_e}^{pr}+s_\gamma\,\tilde{\mu}\,\overline{y_e}^{pr})\,(-c_\gamma\,a_e^{pr}+s_\gamma\,\tilde{\mu}\,y_e^{pr})\,LF_{5,1,-2}[m_{\tilde{l}}^{p},m_{\tilde{e}}^{r}]+\\
&\frac{1}{2}\,s_\gamma\,c_\gamma\,\frac{1}{m_\Phi^{2}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\\
&\quad\Big(\tilde{\mu}\,\overline{y_d}^{pr}\,\big(a_d^{pr}\,(c_\gamma^{2}-s_\gamma^{2})-2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,y_d^{pr}\big)+\overline{a_d}^{pr}\,\big(2\,s_\gamma\,c_\gamma\,a_d^{pr}+\tilde{\mu}\,y_d^{pr}\,(c_\gamma^{2}-s_\gamma^{2})\big)\Big)\\
&\quad LF_{2,1,0}[m_{\tilde{q}}^{p},m_{\tilde{d}}^{r}]+\frac{1}{2}\,s_\gamma\,c_\gamma\,\frac{1}{m_\Phi^{2}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,\Big(\tilde{\mu}\,\overline{y_d}^{pr}\,\big(a_d^{pr}\,(-c_\gamma^{2}+s_\gamma^{2})+2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,y_d^{pr}\big)+\\
&\quad\quad\overline{a_d}^{pr}\,\big(-2\,s_\gamma\,c_\gamma\,a_d^{pr}+\tilde{\mu}\,y_d^{pr}\,(-c_\gamma^{2}+s_\gamma^{2})\big)\Big)\,LF_{3,1,-1}[m_{\tilde{q}}^{p},m_{\tilde{d}}^{r}]-\\
&\frac{1}{2}\,s_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(-c_\gamma\,\overline{a_d}^{pr}+s_\gamma\,\tilde{\mu}\,\overline{y_d}^{pr})\,(-c_\gamma\,a_d^{pr}+s_\gamma\,\tilde{\mu}\,y_d^{pr})\,LF_{3,1,0}[m_{\tilde{q}}^{p},m_{\tilde{d}}^{r}]+\\
&\frac{3}{2}\,s_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(-c_\gamma\,\overline{a_d}^{pr}+s_\gamma\,\tilde{\mu}\,\overline{y_d}^{pr})\,(-c_\gamma\,a_d^{pr}+s_\gamma\,\tilde{\mu}\,y_d^{pr})\,LF_{4,1,-1}[m_{\tilde{q}}^{p},m_{\tilde{d}}^{r}]-\\
&s_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(-c_\gamma\,\overline{a_d}^{pr}+s_\gamma\,\tilde{\mu}\,\overline{y_d}^{pr})\,(-c_\gamma\,a_d^{pr}+s_\gamma\,\tilde{\mu}\,y_d^{pr})\,LF_{5,1,-2}[m_{\tilde{q}}^{p},m_{\tilde{d}}^{r}]+\\
&\frac{1}{2}\,c_\gamma\,\frac{1}{m_\Phi^{4}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,\Big(s_\gamma\,\tilde{\mu}\,\overline{y_u}^{pr}\,\big(a_u^{pr}\,(-2\,c_\gamma^{2}+s_\gamma^{2})-3\,s_\gamma\,\tilde{\mu}\,c_\gamma\,y_u^{pr}\big)+\\
&\quad\quad\overline{a_u}^{pr}\,\big(-a_u^{pr}\,(c_\gamma^{3}-2\,c_\gamma\,s_\gamma^{2})+s_\gamma\,\tilde{\mu}\,y_u^{pr}\,(-2\,c_\gamma^{2}+s_\gamma^{2})\big)\Big)\,LF_{1,1,0}[m_{\tilde{q}}^{p},m_{\tilde{u}}^{r}]+\\
&\frac{1}{6}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{pr}\,\overline{y_u}^{i2i3}\,y_u^{pi4}\,y_u^{i1r}\,LF_{1,1,0}[m_{\tilde{q}}^{p},\tilde{\mu}]-\frac{1}{54}\,g_1^{2}\,\overline{y_u}^{pi3}\,y_u^{pi4}\,LF_{2,1,0}[m_{\tilde{q}}^{p},\tilde{\mu}]\,\delta_{i1i2}+\\
&\frac{1}{108}\,g_1^{2}\,\overline{y_u}^{pi3}\,y_u^{pi4}\,LF_{2,2,-1}[m_{\tilde{q}}^{p},\tilde{\mu}]\,\delta_{i1i2}+\frac{1}{108}\,g_1^{2}\,\overline{y_u}^{pi3}\,y_u^{pi4}\,LF_{3,1,-1}[m_{\tilde{q}}^{p},\tilde{\mu}]\,\delta_{i1i2}+\\
&\frac{1}{6}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{ri3}\,\overline{y_u}^{i2p}\,y_u^{rp}\,y_u^{i1i4}\,LF_{1,1,0}[m_{\tilde{q}}^{r},\tilde{\mu}]-\frac{1}{486}\,g_1^{4}\,LF_{2,1,0}[m_{\tilde{q}}^{i2},m_1]\,\delta_{i1i2}\,\delta_{i3i4}+\\
&\frac{1}{972}\,g_1^{4}\,LF_{3,1,-1}[m_{\tilde{q}}^{i2},m_1]\,\delta_{i1i2}\,\delta_{i3i4}-\frac{1}{18}\,g_1^{2}\,g_2^{2}\,LF_{2,1,0}[m_{\tilde{q}}^{i2},m_2]\,\delta_{i1i2}\,\delta_{i3i4}+\\
&\frac{1}{36}\,g_1^{2}\,g_2^{2}\,LF_{3,1,-1}[m_{\tilde{q}}^{i2},m_2]\,\delta_{i1i2}\,\delta_{i3i4}-\frac{8}{81}\,g_1^{2}\,g_3^{2}\,LF_{2,1,0}[m_{\tilde{q}}^{i2},m_3]\,\delta_{i1i2}\,\delta_{i3i4}+\\
&\frac{4}{81}\,g_1^{2}\,g_3^{2}\,LF_{3,1,-1}[m_{\tilde{q}}^{i2},m_3]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{1}{12}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{ri3}\,\overline{y_u}^{i2p}\,y_u^{rp}\,y_u^{i1i4}\,LF_{1,1,0}[m_{\tilde{u}}^{p},\tilde{\mu}]-\\
&\frac{4}{27}\,g_1^{2}\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{2,1,0}[m_{\tilde{u}}^{p},\tilde{\mu}]\,\delta_{i3i4}+\frac{2}{27}\,g_1^{2}\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{2,2,-1}[m_{\tilde{u}}^{p},\tilde{\mu}]\,\delta_{i3i4}+\\
&\frac{2}{27}\,g_1^{2}\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{3,1,-1}[m_{\tilde{u}}^{p},\tilde{\mu}]\,\delta_{i3i4}+\frac{1}{2}\,s_\gamma\,c_\gamma\,\frac{1}{m_\Phi^{2}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\\
&\quad\Big(\tilde{\mu}\,\overline{y_u}^{pr}\,\big(a_u^{pr}\,(c_\gamma^{2}-s_\gamma^{2})+2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,y_u^{pr}\big)+\overline{a_u}^{pr}\,\big(-2\,s_\gamma\,c_\gamma\,a_u^{pr}+\tilde{\mu}\,y_u^{pr}\,(c_\gamma^{2}-s_\gamma^{2})\big)\Big)\\
&\quad LF_{2,1,0}[m_{\tilde{u}}^{r},m_{\tilde{q}}^{p}]+\frac{1}{2}\,s_\gamma\,c_\gamma\,\frac{1}{m_\Phi^{2}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,\Big(\tilde{\mu}\,\overline{y_u}^{pr}\,\big(a_u^{pr}\,(-c_\gamma^{2}+s_\gamma^{2})-2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,y_u^{pr}\big)+\\
&\quad\quad\overline{a_u}^{pr}\,\big(2\,s_\gamma\,c_\gamma\,a_u^{pr}+\tilde{\mu}\,y_u^{pr}\,(-c_\gamma^{2}+s_\gamma^{2})\big)\Big)\,LF_{3,1,-1}[m_{\tilde{u}}^{r},m_{\tilde{q}}^{p}]-\\
&\frac{1}{2}\,s_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(s_\gamma\,\overline{a_u}^{pr}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{pr})\,(s_\gamma\,a_u^{pr}-\tilde{\mu}\,c_\gamma\,y_u^{pr})\,LF_{3,1,0}[m_{\tilde{u}}^{r},m_{\tilde{q}}^{p}]+\\
&\frac{3}{2}\,s_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(s_\gamma\,\overline{a_u}^{pr}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{pr})\,(s_\gamma\,a_u^{pr}-\tilde{\mu}\,c_\gamma\,y_u^{pr})\,LF_{4,1,-1}[m_{\tilde{u}}^{r},m_{\tilde{q}}^{p}]-\\
&s_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(s_\gamma\,\overline{a_u}^{pr}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{pr})\,(s_\gamma\,a_u^{pr}-\tilde{\mu}\,c_\gamma\,y_u^{pr})\,LF_{5,1,-2}[m_{\tilde{u}}^{r},m_{\tilde{q}}^{p}]+\\
&\frac{1}{12}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{pr}\,\overline{y_u}^{i2i3}\,y_u^{pi4}\,y_u^{i1r}\,LF_{1,1,0}[m_{\tilde{u}}^{r},\tilde{\mu}]-\\
&\frac{8}{243}\,g_1^{4}\,LF_{2,1,0}[m_{\tilde{u}}^{i4},m_1]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{4}{243}\,g_1^{4}\,LF_{3,1,-1}[m_{\tilde{u}}^{i4},m_1]\,\delta_{i1i2}\,\delta_{i3i4}-\\
&\frac{8}{81}\,g_1^{2}\,g_3^{2}\,LF_{2,1,0}[m_{\tilde{u}}^{i4},m_3]\,\delta_{i1i2}\,\delta_{i3i4}+\frac{4}{81}\,g_1^{2}\,g_3^{2}\,LF_{3,1,-1}[m_{\tilde{u}}^{i4},m_3]\,\delta_{i1i2}\,\delta_{i3i4}+\\
&\frac{1}{3}\,m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^{2}\,\frac{1}{m_\Phi^{2}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(c_\gamma^{2}-s_\gamma^{2})\,LF_{2,1,0}[\tilde{\mu},m_1]+\\
&\frac{1}{3}\,s_\gamma\,g_1^{2}\,\frac{1}{m_\Phi^{2}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,\big(s_\gamma\,m_\Phi^{2}\,(c_\gamma^{2}+s_\gamma^{2})+m_1\,\tilde{\mu}\,c_\gamma\,(-c_\gamma^{2}+s_\gamma^{2})\big)\,LF_{3,1,-1}[\tilde{\mu},m_1]+\\
&\frac{1}{3}\,m_1\,\tilde{\mu}\,c_\gamma\,g_1^{2}\,s_\gamma^{3}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{3,1,0}[\tilde{\mu},m_1]-\\
&\frac{2}{3}\,g_1^{2}\,s_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(c_\gamma^{2}+s_\gamma^{2})\,LF_{4,1,-2}[\tilde{\mu},m_1]-\\
&m_1\,\tilde{\mu}\,c_\gamma\,g_1^{2}\,s_\gamma^{3}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{4,1,-1}[\tilde{\mu},m_1]+\frac{1}{3}\,g_1^{2}\,s_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(c_\gamma^{2}+s_\gamma^{2})\,LF_{5,1,-3}[\tilde{\mu},m_1]+\\
&\frac{2}{3}\,m_1\,\tilde{\mu}\,c_\gamma\,g_1^{2}\,s_\gamma^{3}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{5,1,-2}[\tilde{\mu},m_1]+\\
&m_2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_2^{2}\,\frac{1}{m_\Phi^{2}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(c_\gamma^{2}-s_\gamma^{2})\,LF_{2,1,0}[\tilde{\mu},m_2]+\\
&s_\gamma\,g_2^{2}\,\frac{1}{m_\Phi^{2}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,\big(s_\gamma\,m_\Phi^{2}\,(c_\gamma^{2}+s_\gamma^{2})+m_2\,\tilde{\mu}\,c_\gamma\,(-c_\gamma^{2}+s_\gamma^{2})\big)\,LF_{3,1,-1}[\tilde{\mu},m_2]+\\
&m_2\,\tilde{\mu}\,c_\gamma\,g_2^{2}\,s_\gamma^{3}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{3,1,0}[\tilde{\mu},m_2]-2\,g_2^{2}\,s_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(c_\gamma^{2}+s_\gamma^{2})\,LF_{4,1,-2}[\tilde{\mu},m_2]-\\
&3\,m_2\,\tilde{\mu}\,c_\gamma\,g_2^{2}\,s_\gamma^{3}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{4,1,-1}[\tilde{\mu},m_2]+\\
&g_2^{2}\,s_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,(c_\gamma^{2}+s_\gamma^{2})\,LF_{5,1,-3}[\tilde{\mu},m_2]+2\,m_2\,\tilde{\mu}\,c_\gamma\,g_2^{2}\,s_\gamma^{3}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{5,1,-2}[\tilde{\mu},m_2]-\\
&\frac{1}{24}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_d}^{i2p}\,y_d^{rp}\,\overline{y_u}^{ri3}\,y_u^{i1i4}\,LF_{2,1,-1}[\tilde{\mu},m_{\tilde{d}}^{p}]-\frac{1}{27}\,g_1^{2}\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{2,1,0}[\tilde{\mu},m_{\tilde{d}}^{p}]\,\delta_{i3i4}-\\
&\frac{5}{54}\,g_1^{2}\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{3,1,-1}[\tilde{\mu},m_{\tilde{d}}^{p}]\,\delta_{i3i4}+\frac{1}{54}\,g_1^{2}\,\overline{y_d}^{i2p}\,y_d^{i1p}\,LF_{4,1,-2}[\tilde{\mu},m_{\tilde{d}}^{p}]\,\delta_{i3i4}-\\
&\frac{1}{24}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_d}^{pr}\,y_d^{i1r}\,\overline{y_u}^{i2i3}\,y_u^{pi4}\,LF_{2,1,-1}[\tilde{\mu},m_{\tilde{d}}^{r}]-\\
&\frac{1}{12}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{pr}\,\overline{y_u}^{i2i3}\,y_u^{pi4}\,y_u^{i1r}\,LF_{2,1,-1}[\tilde{\mu},m_{\tilde{q}}^{p}]+\\
&\frac{1}{108}\,g_1^{2}\,\overline{y_u}^{pi3}\,y_u^{pi4}\,LF_{2,1,0}[\tilde{\mu},m_{\tilde{q}}^{p}]\,\delta_{i1i2}-\frac{11}{108}\,g_1^{2}\,\overline{y_u}^{pi3}\,y_u^{pi4}\,LF_{3,1,-1}[\tilde{\mu},m_{\tilde{q}}^{p}]\,\delta_{i1i2}+\\
&\frac{1}{27}\,g_1^{2}\,\overline{y_u}^{pi3}\,y_u^{pi4}\,LF_{4,1,-2}[\tilde{\mu},m_{\tilde{q}}^{p}]\,\delta_{i1i2}-\frac{1}{12}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{ri3}\,\overline{y_u}^{i2p}\,y_u^{rp}\,y_u^{i1i4}\,LF_{2,1,-1}[\tilde{\mu},m_{\tilde{q}}^{r}]-\\
&\frac{1}{24}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{ri3}\,\overline{y_u}^{i2p}\,y_u^{rp}\,y_u^{i1i4}\,LF_{2,1,-1}[\tilde{\mu},m_{\tilde{u}}^{p}]+\frac{2}{27}\,g_1^{2}\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{2,1,0}[\tilde{\mu},m_{\tilde{u}}^{p}]\,\delta_{i3i4}+\\
&\frac{1}{54}\,g_1^{2}\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{3,1,-1}[\tilde{\mu},m_{\tilde{u}}^{p}]\,\delta_{i3i4}+\frac{1}{54}\,g_1^{2}\,\overline{y_u}^{i2p}\,y_u^{i1p}\,LF_{4,1,-2}[\tilde{\mu},m_{\tilde{u}}^{p}]\,\delta_{i3i4}-\\
&\frac{1}{24}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{pr}\,\overline{y_u}^{i2i3}\,y_u^{pi4}\,y_u^{i1r}\,LF_{2,1,-1}[\tilde{\mu},m_{\tilde{u}}^{r}]-\\
&\frac{1}{27}\,m_1\,c_\gamma\,g_1^{2}\,\frac{1}{m_\Phi^{2}}\,\overline{y_u}^{i2i3}\,(c_\gamma\,a_u^{i1i4}+s_\gamma\,\tilde{\mu}\,y_u^{i1i4})\,LF_{1,1,1,0}[m_1,m_{\tilde{q}}^{i1},m_{\tilde{u}}^{i4}]+\\
&\frac{1}{108}\,m_1\,s_\gamma\,g_1^{2}\,\overline{y_u}^{i2i3}\,(s_\gamma\,a_u^{i1i4}-\tilde{\mu}\,c_\gamma\,y_u^{i1i4})\,LF_{2,2,1,-1}[m_1,m_{\tilde{q}}^{i1},m_{\tilde{u}}^{i4}]+\\
&\frac{1}{36}\,g_1^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,1,-1}[m_1,m_{\tilde{q}}^{i1},\tilde{\mu}]-\\
&\frac{1}{36}\,m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^{2}\,\frac{1}{m_\Phi^{2}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,1,0}[m_1,m_{\tilde{q}}^{i1},\tilde{\mu}]-\\
&\frac{1}{27}\,m_1\,c_\gamma\,g_1^{2}\,\frac{1}{m_\Phi^{2}}\,y_u^{i1i4}\,(c_\gamma\,\overline{a_u}^{i2i3}+s_\gamma\,\tilde{\mu}\,\overline{y_u}^{i2i3})\,LF_{1,1,1,0}[m_1,m_{\tilde{q}}^{i2},m_{\tilde{u}}^{i3}]+\\
&\frac{1}{108}\,m_1\,s_\gamma\,g_1^{2}\,y_u^{i1i4}\,(s_\gamma\,\overline{a_u}^{i2i3}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2i3})\,LF_{2,2,1,-1}[m_1,m_{\tilde{q}}^{i2},m_{\tilde{u}}^{i3}]-\\
&\frac{1}{81}\,g_1^{4}\,LF_{2,1,1,-1}[m_1,m_{\tilde{q}}^{i2},m_{\tilde{u}}^{i4}]\,\delta_{i1i2}\,\delta_{i3i4}-\frac{2}{81}\,g_1^{4}\,m_1^{2}\,LF_{2,1,1,0}[m_1,m_{\tilde{q}}^{i2},m_{\tilde{u}}^{i4}]\,\delta_{i1i2}\,\delta_{i3i4}+\\
&\frac{1}{36}\,g_1^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,1,-1}[m_1,m_{\tilde{q}}^{i2},\tilde{\mu}]-\\
&\frac{1}{36}\,m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^{2}\,\frac{1}{m_\Phi^{2}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,1,0}[m_1,m_{\tilde{q}}^{i2},\tilde{\mu}]+\\
&\frac{1}{108}\,m_1\,s_\gamma\,g_1^{2}\,y_u^{i1i4}\,(s_\gamma\,\overline{a_u}^{i2i3}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2i3})\,LF_{2,2,1,-1}[m_1,m_{\tilde{u}}^{i3},m_{\tilde{q}}^{i2}]-\\
&\frac{1}{9}\,g_1^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,1,-1}[m_1,m_{\tilde{u}}^{i3},\tilde{\mu}]+\\
&\frac{1}{9}\,m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^{2}\,\frac{1}{m_\Phi^{2}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,1,0}[m_1,m_{\tilde{u}}^{i3},\tilde{\mu}]+\\
&\frac{1}{108}\,m_1\,s_\gamma\,g_1^{2}\,\overline{y_u}^{i2i3}\,(s_\gamma\,a_u^{i1i4}-\tilde{\mu}\,c_\gamma\,y_u^{i1i4})\,LF_{2,2,1,-1}[m_1,m_{\tilde{u}}^{i4},m_{\tilde{q}}^{i1}]-\\
&\frac{1}{9}\,g_1^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,1,-1}[m_1,m_{\tilde{u}}^{i4},\tilde{\mu}]+\\
&\frac{1}{9}\,m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^{2}\,\frac{1}{m_\Phi^{2}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,1,0}[m_1,m_{\tilde{u}}^{i4},\tilde{\mu}]+\\
&\frac{1}{72}\,g_1^{2}\,s_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{2,2,1,-2}[m_1,\tilde{\mu},m_{\tilde{q}}^{i1}]+\\
&\frac{1}{72}\,m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{2,2,1,-1}[m_1,\tilde{\mu},m_{\tilde{q}}^{i1}]+\\
&\frac{1}{72}\,g_1^{2}\,s_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{2,2,1,-2}[m_1,\tilde{\mu},m_{\tilde{q}}^{i2}]+\\
&\frac{1}{72}\,m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{2,2,1,-1}[m_1,\tilde{\mu},m_{\tilde{q}}^{i2}]-\\
&\frac{1}{18}\,g_1^{2}\,s_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{2,2,1,-2}[m_1,\tilde{\mu},m_{\tilde{u}}^{i3}]-\\
&\frac{1}{18}\,m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{2,2,1,-1}[m_1,\tilde{\mu},m_{\tilde{u}}^{i3}]-\\
&\frac{1}{18}\,g_1^{2}\,s_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{2,2,1,-2}[m_1,\tilde{\mu},m_{\tilde{u}}^{i4}]-\\
&\frac{1}{18}\,m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{2,2,1,-1}[m_1,\tilde{\mu},m_{\tilde{u}}^{i4}]-\\
&\frac{1}{4}\,g_2^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,1,-1}[m_2,m_{\tilde{q}}^{i1},\tilde{\mu}]+\\
&\frac{1}{4}\,m_2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_2^{2}\,\frac{1}{m_\Phi^{2}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,1,0}[m_2,m_{\tilde{q}}^{i1},\tilde{\mu}]-\\
&\frac{1}{4}\,g_2^{2}\,\frac{1}{m_\Phi^{2}}\,c_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,1,-1}[m_2,m_{\tilde{q}}^{i2},\tilde{\mu}]+\\
&\frac{1}{4}\,m_2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_2^{2}\,\frac{1}{m_\Phi^{2}}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,1,0}[m_2,m_{\tilde{q}}^{i2},\tilde{\mu}]-\\
&\frac{1}{8}\,g_2^{2}\,s_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{2,2,1,-2}[m_2,\tilde{\mu},m_{\tilde{q}}^{i1}]-\\
&\frac{1}{8}\,m_2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_2^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{2,2,1,-1}[m_2,\tilde{\mu},m_{\tilde{q}}^{i1}]-\\
&\frac{1}{8}\,g_2^{2}\,s_\gamma^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{2,2,1,-2}[m_2,\tilde{\mu},m_{\tilde{q}}^{i2}]-\\
&\frac{1}{8}\,m_2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_2^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{2,2,1,-1}[m_2,\tilde{\mu},m_{\tilde{q}}^{i2}]-\\
&\frac{4}{9}\,m_3\,c_\gamma\,g_3^{2}\,\frac{1}{m_\Phi^{2}}\,\overline{y_u}^{i2i3}\,(c_\gamma\,a_u^{i1i4}+s_\gamma\,\tilde{\mu}\,y_u^{i1i4})\,LF_{1,1,1,0}[m_3,m_{\tilde{q}}^{i1},m_{\tilde{u}}^{i4}]+\\
&\frac{1}{9}\,m_3\,s_\gamma\,g_3^{2}\,\overline{y_u}^{i2i3}\,(s_\gamma\,a_u^{i1i4}-\tilde{\mu}\,c_\gamma\,y_u^{i1i4})\,LF_{2,2,1,-1}[m_3,m_{\tilde{q}}^{i1},m_{\tilde{u}}^{i4}]-\\
&\frac{4}{9}\,m_3\,c_\gamma\,g_3^{2}\,\frac{1}{m_\Phi^{2}}\,y_u^{i1i4}\,(c_\gamma\,\overline{a_u}^{i2i3}+s_\gamma\,\tilde{\mu}\,\overline{y_u}^{i2i3})\,LF_{1,1,1,0}[m_3,m_{\tilde{q}}^{i2},m_{\tilde{u}}^{i3}]+\\
&\frac{1}{9}\,m_3\,s_\gamma\,g_3^{2}\,y_u^{i1i4}\,(s_\gamma\,\overline{a_u}^{i2i3}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2i3})\,LF_{2,2,1,-1}[m_3,m_{\tilde{q}}^{i2},m_{\tilde{u}}^{i3}]-\\
&\frac{2}{9}\,g_3^{4}\,LF_{2,1,1,-1}[m_3,m_{\tilde{q}}^{i2},m_{\tilde{u}}^{i4}]\,\delta_{i1i2}\,\delta_{i3i4}-\frac{4}{9}\,g_3^{4}\,m_3^{2}\,LF_{2,1,1,0}[m_3,m_{\tilde{q}}^{i2},m_{\tilde{u}}^{i4}]\,\delta_{i1i2}\,\delta_{i3i4}+\\
&\frac{1}{9}\,m_3\,s_\gamma\,g_3^{2}\,y_u^{i1i4}\,(s_\gamma\,\overline{a_u}^{i2i3}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2i3})\,LF_{2,2,1,-1}[m_3,m_{\tilde{u}}^{i3},m_{\tilde{q}}^{i2}]+\\
&\frac{1}{9}\,m_3\,s_\gamma\,g_3^{2}\,\overline{y_u}^{i2i3}\,(s_\gamma\,a_u^{i1i4}-\tilde{\mu}\,c_\gamma\,y_u^{i1i4})\,LF_{2,2,1,-1}[m_3,m_{\tilde{u}}^{i4},m_{\tilde{q}}^{i1}]-\\
&\frac{1}{6}\,\tilde{\mu}\,c_\gamma\,\frac{1}{m_\Phi^{2}}\,\overline{y_d}^{i2p}\,\overline{y_u}^{ri3}\,y_u^{i1i4}\,(s_\gamma\,a_d^{rp}+\tilde{\mu}\,c_\gamma\,y_d^{rp})\,LF_{1,1,1,0}[m_{\tilde{d}}^{p},m_{\tilde{q}}^{r},\tilde{\mu}]+\\
&\frac{1}{12}\,s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\,\overline{y_u}^{ri3}\,y_u^{i1i4}\,(c_\gamma\,a_d^{rp}-s_\gamma\,\tilde{\mu}\,y_d^{rp})\,LF_{2,1,1,0}[m_{\tilde{d}}^{p},m_{\tilde{q}}^{r},\tilde{\mu}]+\\
&\frac{1}{12}\,s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\,\overline{y_u}^{ri3}\,y_u^{i1i4}\,(-c_\gamma\,a_d^{rp}+s_\gamma\,\tilde{\mu}\,y_d^{rp})\,LF_{3,1,1,-1}[m_{\tilde{d}}^{p},m_{\tilde{q}}^{r},\tilde{\mu}]+\\
&\frac{1}{24}\,s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\,\overline{y_u}^{ri3}\,y_u^{i1i4}\,(-c_\gamma\,a_d^{rp}+s_\gamma\,\tilde{\mu}\,y_d^{rp})\,LF_{2,2,1,-1}[m_{\tilde{d}}^{p},\tilde{\mu},m_{\tilde{q}}^{r}]-\\
&\frac{1}{6}\,\tilde{\mu}\,c_\gamma\,\frac{1}{m_\Phi^{2}}\,y_d^{i1r}\,\overline{y_u}^{i2i3}\,y_u^{pi4}\,(s_\gamma\,\overline{a_d}^{pr}+\tilde{\mu}\,c_\gamma\,\overline{y_d}^{pr})\,LF_{1,1,1,0}[m_{\tilde{d}}^{r},m_{\tilde{q}}^{p},\tilde{\mu}]+\\
&\frac{1}{12}\,s_\gamma\,\tilde{\mu}\,y_d^{i1r}\,\overline{y_u}^{i2i3}\,y_u^{pi4}\,(c_\gamma\,\overline{a_d}^{pr}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{pr})\,LF_{2,1,1,0}[m_{\tilde{d}}^{r},m_{\tilde{q}}^{p},\tilde{\mu}]+\\
&\frac{1}{12}\,s_\gamma\,\tilde{\mu}\,y_d^{i1r}\,\overline{y_u}^{i2i3}\,y_u^{pi4}\,(-c_\gamma\,\overline{a_d}^{pr}+s_\gamma\,\tilde{\mu}\,\overline{y_d}^{pr})\,LF_{3,1,1,-1}[m_{\tilde{d}}^{r},m_{\tilde{q}}^{p},\tilde{\mu}]+\\
&\frac{1}{24}\,s_\gamma\,\tilde{\mu}\,y_d^{i1r}\,\overline{y_u}^{i2i3}\,y_u^{pi4}\,(-c_\gamma\,\overline{a_d}^{pr}+s_\gamma\,\tilde{\mu}\,\overline{y_d}^{pr})\,LF_{2,2,1,-1}[m_{\tilde{d}}^{r},\tilde{\mu},m_{\tilde{q}}^{p}]+\\
&\frac{1}{12}\,s_\gamma\,\tilde{\mu}\,y_d^{i1r}\,\overline{y_u}^{i2i3}\,y_u^{pi4}\,(c_\gamma\,\overline{a_d}^{pr}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{pr})\,LF_{2,1,1,0}[m_{\tilde{q}}^{p},m_{\tilde{d}}^{r},\tilde{\mu}]+\\
&\frac{1}{12}\,s_\gamma\,\tilde{\mu}\,y_d^{i1r}\,\overline{y_u}^{i2i3}\,y_u^{pi4}\,(-c_\gamma\,\overline{a_d}^{pr}+s_\gamma\,\tilde{\mu}\,\overline{y_d}^{pr})\,LF_{3,1,1,-1}[m_{\tilde{q}}^{p},m_{\tilde{d}}^{r},\tilde{\mu}]+\\
&\frac{1}{24}\,s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\,\overline{y_u}^{ri3}\,y_u^{i1i4}\,(-c_\gamma\,a_d^{rp}+s_\gamma\,\tilde{\mu}\,y_d^{rp})\,LF_{2,2,1,-1}[m_{\tilde{q}}^{r},\tilde{\mu},m_{\tilde{d}}^{p}]+\\
&\frac{1}{54}\,m_1\,s_\gamma\,g_1^{2}\,\overline{y_u}^{i2i3}\,(-s_\gamma\,a_u^{i1i4}+\tilde{\mu}\,c_\gamma\,y_u^{i1i4})\,LF_{2,1,1,0}[m_{\tilde{q}}^{i1},m_1,m_{\tilde{u}}^{i4}]+\\
&\frac{1}{54}\,m_1\,s_\gamma\,g_1^{2}\,\overline{y_u}^{i2i3}\,(s_\gamma\,a_u^{i1i4}-\tilde{\mu}\,c_\gamma\,y_u^{i1i4})\,LF_{3,1,1,-1}[m_{\tilde{q}}^{i1},m_1,m_{\tilde{u}}^{i4}]+\\
&\frac{2}{9}\,m_3\,s_\gamma\,g_3^{2}\,\overline{y_u}^{i2i3}\,(-s_\gamma\,a_u^{i1i4}+\tilde{\mu}\,c_\gamma\,y_u^{i1i4})\,LF_{2,1,1,0}[m_{\tilde{q}}^{i1},m_3,m_{\tilde{u}}^{i4}]+\\
&\frac{2}{9}\,m_3\,s_\gamma\,g_3^{2}\,\overline{y_u}^{i2i3}\,(s_\gamma\,a_u^{i1i4}-\tilde{\mu}\,c_\gamma\,y_u^{i1i4})\,LF_{3,1,1,-1}[m_{\tilde{q}}^{i1},m_3,m_{\tilde{u}}^{i4}]+\\
&\frac{1}{54}\,m_1\,s_\gamma\,g_1^{2}\,y_u^{i1i4}\,(-s_\gamma\,\overline{a_u}^{i2i3}+\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2i3})\,LF_{2,1,1,0}[m_{\tilde{q}}^{i2},m_1,m_{\tilde{u}}^{i3}]+\\
&\frac{1}{54}\,m_1\,s_\gamma\,g_1^{2}\,y_u^{i1i4}\,(s_\gamma\,\overline{a_u}^{i2i3}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2i3})\,LF_{3,1,1,-1}[m_{\tilde{q}}^{i2},m_1,m_{\tilde{u}}^{i3}]+\\
&\frac{2}{9}\,m_3\,s_\gamma\,g_3^{2}\,y_u^{i1i4}\,(-s_\gamma\,\overline{a_u}^{i2i3}+\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2i3})\,LF_{2,1,1,0}[m_{\tilde{q}}^{i2},m_3,m_{\tilde{u}}^{i3}]+\\
&\frac{2}{9}\,m_3\,s_\gamma\,g_3^{2}\,y_u^{i1i4}\,(s_\gamma\,\overline{a_u}^{i2i3}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2i3})\,LF_{3,1,1,-1}[m_{\tilde{q}}^{i2},m_3,m_{\tilde{u}}^{i3}]+\\
&\frac{1}{54}\,m_1\,s_\gamma\,g_1^{2}\,y_u^{i1i4}\,(-s_\gamma\,\overline{a_u}^{i2i3}+\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2i3})\,LF_{2,1,1,0}[m_{\tilde{u}}^{i3},m_1,m_{\tilde{q}}^{i2}]+\\
&\frac{1}{54}\,m_1\,s_\gamma\,g_1^{2}\,y_u^{i1i4}\,(s_\gamma\,\overline{a_u}^{i2i3}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2i3})\,LF_{3,1,1,-1}[m_{\tilde{u}}^{i3},m_1,m_{\tilde{q}}^{i2}]+\\
&\frac{2}{9}\,m_3\,s_\gamma\,g_3^{2}\,y_u^{i1i4}\,(-s_\gamma\,\overline{a_u}^{i2i3}+\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2i3})\,LF_{2,1,1,0}[m_{\tilde{u}}^{i3},m_3,m_{\tilde{q}}^{i2}]+\\
&\frac{2}{9}\,m_3\,s_\gamma\,g_3^{2}\,y_u^{i1i4}\,(s_\gamma\,\overline{a_u}^{i2i3}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2i3})\,LF_{3,1,1,-1}[m_{\tilde{u}}^{i3},m_3,m_{\tilde{q}}^{i2}]+\\
&\frac{1}{54}\,m_1\,s_\gamma\,g_1^{2}\,\overline{y_u}^{i2i3}\,(-s_\gamma\,a_u^{i1i4}+\tilde{\mu}\,c_\gamma\,y_u^{i1i4})\,LF_{2,1,1,0}[m_{\tilde{u}}^{i4},m_1,m_{\tilde{q}}^{i1}]+\\
&\frac{1}{54}\,m_1\,s_\gamma\,g_1^{2}\,\overline{y_u}^{i2i3}\,(s_\gamma\,a_u^{i1i4}-\tilde{\mu}\,c_\gamma\,y_u^{i1i4})\,LF_{3,1,1,-1}[m_{\tilde{u}}^{i4},m_1,m_{\tilde{q}}^{i1}]+\\
&\frac{2}{9}\,m_3\,s_\gamma\,g_3^{2}\,\overline{y_u}^{i2i3}\,(-s_\gamma\,a_u^{i1i4}+\tilde{\mu}\,c_\gamma\,y_u^{i1i4})\,LF_{2,1,1,0}[m_{\tilde{u}}^{i4},m_3,m_{\tilde{q}}^{i1}]+\\
&\frac{2}{9}\,m_3\,s_\gamma\,g_3^{2}\,\overline{y_u}^{i2i3}\,(s_\gamma\,a_u^{i1i4}-\tilde{\mu}\,c_\gamma\,y_u^{i1i4})\,LF_{3,1,1,-1}[m_{\tilde{u}}^{i4},m_3,m_{\tilde{q}}^{i1}]-\\
&\frac{1}{2}\,\tilde{\mu}^{2}\,\overline{y_d}^{i2p}\,y_d^{i1p}\,\overline{y_u}^{ri3}\,y_u^{ri4}\,LF_{2,1,1,0}[\tilde{\mu},m_{\tilde{d}}^{p},m_{\tilde{q}}^{r}]-\\
&\frac{1}{4}\,\overline{y_u}^{ri3}\,\overline{y_u}^{i2p}\,y_u^{ri4}\,y_u^{i1p}\,LF_{2,1,1,-1}[\tilde{\mu},m_{\tilde{q}}^{r},m_{\tilde{u}}^{p}]-\\
&\frac{1}{54}\,g_1^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,1,1,-1}[m_1,m_{\tilde{q}}^{i1},m_{\tilde{u}}^{i3},\tilde{\mu}]+\\
&\frac{1}{216}\,g_1^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,1,1,-1}[m_1,m_{\tilde{q}}^{i2},m_{\tilde{q}}^{i1},\tilde{\mu}]-\\
&\frac{1}{54}\,g_1^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,1,1,-1}[m_1,m_{\tilde{q}}^{i2},m_{\tilde{u}}^{i4},\tilde{\mu}]+\\
&\frac{2}{27}\,g_1^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,1,1,-1}[m_1,m_{\tilde{u}}^{i4},m_{\tilde{u}}^{i3},\tilde{\mu}]+\\
&\frac{1}{8}\,g_2^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,1,1,-1}[m_2,m_{\tilde{q}}^{i2},m_{\tilde{q}}^{i1},\tilde{\mu}]-\\
&\frac{2}{9}\,g_3^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,1,1,-1}[m_3,m_{\tilde{q}}^{i1},m_{\tilde{u}}^{i3},\tilde{\mu}]+\\
&\frac{2}{9}\,g_3^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,1,1,-1}[m_3,m_{\tilde{q}}^{i2},m_{\tilde{q}}^{i1},\tilde{\mu}]-\\
&\frac{2}{9}\,g_3^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,1,1,-1}[m_3,m_{\tilde{q}}^{i2},m_{\tilde{u}}^{i4},\tilde{\mu}]+\\
&\frac{2}{9}\,g_3^{2}\,\overline{y_u}^{i2i3}\,y_u^{i1i4}\,LF_{1,1,1,1,-1}[m_3,m_{\tilde{u}}^{i4},m_{\tilde{u}}^{i3},\tilde{\mu}]\Big)
\end{aligned}
$$