$$\begin{gathered}
\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} + \frac{1}{16\pi^{2}} \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}) - c_{\gamma}^{2} \\
(81 (4 s_{\gamma}^{2} \overline{y_u}^{ri3} y_u^{ri4} (\overline{y_d}^{i2p} y_d^{i1p} + 3 \overline{y_u}^{i2p} y_u^{i1p}) + \overline{y_u}^{pr} \overline{y_u}^{i2i3} y_u^{pi4} y_u^{i1r} (1+c_{\gamma}^{2})) + \\
3 y_u^{i1i4} (4 \overline{y_u}^{i2i3} (23 g_1^{2} + 27 g_2^{2} + 168 g_3^{2} - 54 s_{\gamma}^{2} \overline{y_u}^{pr} y_u^{pr}) + \\
9 \overline{y_u}^{ri3} (-\overline{y_d}^{i2p} y_d^{rp} (-1+s_{\gamma}^{2}) + 3 \overline{y_u}^{i2p} y_u^{rp} (1+c_{\gamma}^{2})))) + 14 g_1^{2} \overline{y_u}^{pi3} y_u^{pi4} \delta_{i1i2}) + \\
4 g_1^{2} (5 s_{\gamma}^{2} \overline{y_d}^{i2p} y_d^{i1p} - 13 c_{\gamma}^{2} \overline{y_u}^{i2p} y_u^{i1p}) \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}) \mathrm{LF}_{1,0}[m_{\tilde{d}}^{p}] + \frac{4}{243} \sum_p g_1^{4} \mathrm{LF}_{3,0}[m_{\tilde{d}}^{p}] \delta_{i1i2} \delta_{i3i4} - \\
\frac{5}{162} \sum_p g_1^{4} \mathrm{LF}_{4,-1}[m_{\tilde{d}}^{p}] \delta_{i1i2} \delta_{i3i4} + \frac{16}{1215} \sum_p g_1^{4} \mathrm{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}) \mathrm{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}) \mathrm{LF}_{1,0}[m_{\tilde{e}}^{p}] + \\
\frac{4}{81} \sum_p g_1^{4} \mathrm{LF}_{3,0}[m_{\tilde{e}}^{p}] \delta_{i1i2} \delta_{i3i4} - \frac{5}{54} \sum_p g_1^{4} \mathrm{LF}_{4,-1}[m_{\tilde{e}}^{p}] \delta_{i1i2} \delta_{i3i4} + \\
\frac{16}{405} \sum_p g_1^{4} \mathrm{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}) \mathrm{LF}_{1,0}[m_{\tilde{e}}^{r}] + \\
\frac{1}{12} c_{\gamma} \frac{1}{m_{\Phi}^{4}} \overline{y_u}^{i2i3} y_u^{i1i4} (-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})) \mathrm{LF}_{1,0}[m_{\tilde{l}}^{p}] + \\
\frac{2}{81} \sum_p g_1^{4} \mathrm{LF}_{3,0}[m_{\tilde{l}}^{p}] \delta_{i1i2} \delta_{i3i4} - \frac{5}{108} \sum_p g_1^{4} \mathrm{LF}_{4,-1}[m_{\tilde{l}}^{p}] \delta_{i1i2} \delta_{i3i4} + \\
\frac{8}{405} \sum_p g_1^{4} \mathrm{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} \\
(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})) \\
\mathrm{LF}_{1,0}[m_{\tilde{q}}^{p}] + \frac{2}{243} \sum_p g_1^{4} \mathrm{LF}_{3,0}[m_{\tilde{q}}^{p}] \delta_{i1i2} \delta_{i3i4} - \\
\frac{5}{324} \sum_p g_1^{4} \mathrm{LF}_{4,-1}[m_{\tilde{q}}^{p}] \delta_{i1i2} \delta_{i3i4} + \frac{8}{1215} \sum_p g_1^{4} \mathrm{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}) \mathrm{LF}_{1,0}[m_{\tilde{u}}^{p}] + \\
\frac{16}{243} \sum_p g_1^{4} \mathrm{LF}_{3,0}[m_{\tilde{u}}^{p}] \delta_{i1i2} \delta_{i3i4} - \frac{10}{81} \sum_p g_1^{4} \mathrm{LF}_{4,-1}[m_{\tilde{u}}^{p}] \delta_{i1i2} \delta_{i3i4} + \\
\frac{64}{1215} \sum_p g_1^{4} \mathrm{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}) \mathrm{LF}_{1,0}[m_{\tilde{u}}^{r}] + \\
\frac{1}{24} c_{\gamma} \frac{1}{m_{\Phi}^{4}} \overline{y_u}^{i2i3} y_u^{i1i4} (c_{\gamma} (g_1^{2} (1 - 3 c_{2\gamma}^{2}) - 3 g_2^{2} (-1 + c_{2\gamma}^{2})) + 3 s_{4\gamma} s_{\gamma} (g_1^{2} + g_2^{2})) \\
\mathrm{LF}_{1,0}[m_{\Phi}] + \frac{1}{24} \frac{1}{m_{\Phi}^{2}} c_{\gamma}^{2} (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}) - \\
y_u^{i1i4} (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}))) \mathrm{LF}_{1,1}[m_{\Phi}] + \\
\frac{1}{216} (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} (9 c_{\gamma}^{2} \overline{y_u}^{ri3} (-6 y_d^{i1p} y_u^{ri4} + y_d^{rp} y_u^{i1i4}) + \\
8 g_1^{2} y_d^{i1p} \delta_{i3i4}) + c_{\gamma}^{2} (9 \overline{y_u}^{i2i3} y_u^{i1i4} (g_1^{2} + 3 g_2^{2}) - \\
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}))) \\
\mathrm{LF}_{1,2}[m_{\Phi}] + \frac{1}{36} (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}) - \\
c_{\gamma}^{2} (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}))) \mathrm{LF}_{2,1}[m_{\Phi}] + \\
\frac{1}{324} g_1^{2} (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}) \\
\mathrm{LF}_{3,0}[m_{\Phi}] - \frac{5}{108} g_1^{4} \mathrm{LF}_{4,-1}[m_{\Phi}] \delta_{i1i2} \delta_{i3i4} + \frac{8}{405} g_1^{4} \mathrm{LF}_{5,-2}[m_{\Phi}] \delta_{i1i2} \delta_{i3i4} + \\
\frac{2}{81} g_1^{4} \mathrm{LF}_{3,0}[\tilde{\mu}] \delta_{i1i2} \delta_{i3i4} + \frac{1}{27} g_1^{4} \mathrm{LF}_{4,-1}[\tilde{\mu}] \delta_{i1i2} \delta_{i3i4} - \\
\frac{16}{405} g_1^{4} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{LF}_{2,1,-1}[m_1, m_{\tilde{q}}^{i2}] + \frac{1}{972} g_1^{4} \mathrm{LF}_{2,1,0}[m_1, m_{\tilde{q}}^{i2}] \delta_{i1i2} \delta_{i3i4} + \\
\frac{1}{972} g_1^{4} \mathrm{LF}_{2,2,-1}[m_1, m_{\tilde{q}}^{i2}] \delta_{i1i2} \delta_{i3i4} - \frac{1}{486} g_1^{4} \mathrm{LF}_{3,1,-1}[m_1, m_{\tilde{q}}^{i2}] \delta_{i1i2} \delta_{i3i4} + \\
\frac{1}{972} g_1^{4} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{LF}_{2,1,-1}[m_1, m_{\tilde{u}}^{i4}] + \frac{4}{243} g_1^{4} \mathrm{LF}_{2,1,0}[m_1, m_{\tilde{u}}^{i4}] \delta_{i1i2} \delta_{i3i4} + \\
\frac{4}{243} g_1^{4} \mathrm{LF}_{2,2,-1}[m_1, m_{\tilde{u}}^{i4}] \delta_{i1i2} \delta_{i3i4} - \frac{8}{243} g_1^{4} \mathrm{LF}_{3,1,-1}[m_1, m_{\tilde{u}}^{i4}] \delta_{i1i2} \delta_{i3i4} + \\
\frac{4}{243} g_1^{4} \mathrm{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} \mathrm{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}) \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{LF}_{2,1,-1}[m_2, m_{\tilde{q}}^{i2}] + \frac{1}{36} g_1^{2} g_2^{2} \mathrm{LF}_{2,1,0}[m_2, m_{\tilde{q}}^{i2}] \delta_{i1i2} \delta_{i3i4} + \\
\frac{1}{36} g_1^{2} g_2^{2} \mathrm{LF}_{2,2,-1}[m_2, m_{\tilde{q}}^{i2}] \delta_{i1i2} \delta_{i3i4} - \frac{1}{18} g_1^{2} g_2^{2} \mathrm{LF}_{3,1,-1}[m_2, m_{\tilde{q}}^{i2}] \delta_{i1i2} \delta_{i3i4} + \\
\frac{1}{36} g_1^{2} g_2^{2} \mathrm{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} \mathrm{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}) \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{LF}_{2,1,-1}[m_3, m_{\tilde{q}}^{i2}] + \\
\frac{4}{81} g_1^{2} g_3^{2} \mathrm{LF}_{2,1,0}[m_3, m_{\tilde{q}}^{i2}] \delta_{i1i2} \delta_{i3i4} + \frac{4}{81} g_1^{2} g_3^{2} \mathrm{LF}_{2,2,-1}[m_3, m_{\tilde{q}}^{i2}] \delta_{i1i2} \delta_{i3i4} - \\
\frac{8}{81} g_1^{2} g_3^{2} \mathrm{LF}_{3,1,-1}[m_3, m_{\tilde{q}}^{i2}] \delta_{i1i2} \delta_{i3i4} + \frac{4}{81} g_1^{2} g_3^{2} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{LF}_{2,1,-1}[m_3, m_{\tilde{u}}^{i4}] + \\
\frac{4}{81} g_1^{2} g_3^{2} \mathrm{LF}_{2,1,0}[m_3, m_{\tilde{u}}^{i4}] \delta_{i1i2} \delta_{i3i4} + \frac{4}{81} g_1^{2} g_3^{2} \mathrm{LF}_{2,2,-1}[m_3, m_{\tilde{u}}^{i4}] \delta_{i1i2} \delta_{i3i4} - \\
\frac{8}{81} g_1^{2} g_3^{2} \mathrm{LF}_{3,1,-1}[m_3, m_{\tilde{u}}^{i4}] \delta_{i1i2} \delta_{i3i4} + \frac{4}{81} g_1^{2} g_3^{2} \mathrm{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} \mathrm{LF}_{1,1,0}[m_{\tilde{d}}^{p}, \tilde{\mu}] + \frac{2}{27} g_1^{2} \overline{y_d}^{i2p} y_d^{i1p} \mathrm{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} \mathrm{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} \mathrm{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} (\tilde{\mu} \overline{y_d}^{pr} (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})) + \\
s_{\gamma} \overline{a_d}^{pr} (-3 s_{\gamma} c_{\gamma} a_d^{pr} + \tilde{\mu} y_d^{pr} (-2 c_{\gamma}^{2} + s_{\gamma}^{2}))) \mathrm{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} \mathrm{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} \\
(\tilde{\mu} \overline{y_e}^{pr} (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})) + \\
s_{\gamma} \overline{a_e}^{pr} (-3 s_{\gamma} c_{\gamma} a_e^{pr} + \tilde{\mu} y_e^{pr} (-2 c_{\gamma}^{2} + s_{\gamma}^{2}))) \mathrm{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} \\
(\tilde{\mu} \overline{y_e}^{pr} (a_e^{pr} (c_{\gamma}^{2} - s_{\gamma}^{2}) - 2 s_{\gamma} \tilde{\mu} c_{\gamma} y_e^{pr}) + \overline{a_e}^{pr} (2 s_{\gamma} c_{\gamma} a_e^{pr} + \tilde{\mu} y_e^{pr} (c_{\gamma}^{2} - s_{\gamma}^{2}))) \\
\mathrm{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} (\tilde{\mu} \overline{y_e}^{pr} (a_e^{pr} (-c_{\gamma}^{2} + s_{\gamma}^{2}) + 2 s_{\gamma} \tilde{\mu} c_{\gamma} y_e^{pr}) + \\
\overline{a_e}^{pr} (-2 s_{\gamma} c_{\gamma} a_e^{pr} + \tilde{\mu} y_e^{pr} (-c_{\gamma}^{2} + s_{\gamma}^{2}))) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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} \\
(\tilde{\mu} \overline{y_d}^{pr} (a_d^{pr} (c_{\gamma}^{2} - s_{\gamma}^{2}) - 2 s_{\gamma} \tilde{\mu} c_{\gamma} y_d^{pr}) + \overline{a_d}^{pr} (2 s_{\gamma} c_{\gamma} a_d^{pr} + \tilde{\mu} y_d^{pr} (c_{\gamma}^{2} - s_{\gamma}^{2}))) \\
\mathrm{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} (\tilde{\mu} \overline{y_d}^{pr} (a_d^{pr} (-c_{\gamma}^{2} + s_{\gamma}^{2}) + 2 s_{\gamma} \tilde{\mu} c_{\gamma} y_d^{pr}) + \\
\overline{a_d}^{pr} (-2 s_{\gamma} c_{\gamma} a_d^{pr} + \tilde{\mu} y_d^{pr} (-c_{\gamma}^{2} + s_{\gamma}^{2}))) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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} (s_{\gamma} \tilde{\mu} \overline{y_u}^{pr} (a_u^{pr} (-2 c_{\gamma}^{2} + s_{\gamma}^{2}) - 3 s_{\gamma} \tilde{\mu} c_{\gamma} y_u^{pr}) + \\
\overline{a_u}^{pr} (-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}))) \mathrm{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} \mathrm{LF}_{1,1,0}[m_{\tilde{q}}^{p}, \tilde{\mu}] - \frac{1}{54} g_1^{2} \overline{y_u}^{pi3} y_u^{pi4} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{LF}_{1,1,0}[m_{\tilde{q}}^{r}, \tilde{\mu}] - \frac{1}{486} g_1^{4} \mathrm{LF}_{2,1,0}[m_{\tilde{q}}^{i2}, m_1] \delta_{i1i2} \delta_{i3i4} + \\
\frac{1}{972} g_1^{4} \mathrm{LF}_{3,1,-1}[m_{\tilde{q}}^{i2}, m_1] \delta_{i1i2} \delta_{i3i4} - \frac{1}{18} g_1^{2} g_2^{2} \mathrm{LF}_{2,1,0}[m_{\tilde{q}}^{i2}, m_2] \delta_{i1i2} \delta_{i3i4} + \\
\frac{1}{36} g_1^{2} g_2^{2} \mathrm{LF}_{3,1,-1}[m_{\tilde{q}}^{i2}, m_2] \delta_{i1i2} \delta_{i3i4} - \frac{8}{81} g_1^{2} g_3^{2} \mathrm{LF}_{2,1,0}[m_{\tilde{q}}^{i2}, m_3] \delta_{i1i2} \delta_{i3i4} + \\
\frac{4}{81} g_1^{2} g_3^{2} \mathrm{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} \mathrm{LF}_{1,1,0}[m_{\tilde{u}}^{p}, \tilde{\mu}] - \\
\frac{4}{27} g_1^{2} \overline{y_u}^{i2p} y_u^{i1p} \mathrm{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} \mathrm{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} \mathrm{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} \\
(\tilde{\mu} \overline{y_u}^{pr} (a_u^{pr} (c_{\gamma}^{2} - s_{\gamma}^{2}) + 2 s_{\gamma} \tilde{\mu} c_{\gamma} y_u^{pr}) + \overline{a_u}^{pr} (-2 s_{\gamma} c_{\gamma} a_u^{pr} + \tilde{\mu} y_u^{pr} (c_{\gamma}^{2} - s_{\gamma}^{2}))) \\
\mathrm{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} (\tilde{\mu} \overline{y_u}^{pr} (a_u^{pr} (-c_{\gamma}^{2} + s_{\gamma}^{2}) - 2 s_{\gamma} \tilde{\mu} c_{\gamma} y_u^{pr}) + \\
\overline{a_u}^{pr} (2 s_{\gamma} c_{\gamma} a_u^{pr} + \tilde{\mu} y_u^{pr} (-c_{\gamma}^{2} + s_{\gamma}^{2}))) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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} \mathrm{LF}_{1,1,0}[m_{\tilde{u}}^{r}, \tilde{\mu}] - \\
\frac{8}{243} g_1^{4} \mathrm{LF}_{2,1,0}[m_{\tilde{u}}^{i4}, m_1] \delta_{i1i2} \delta_{i3i4} + \frac{4}{243} g_1^{4} \mathrm{LF}_{3,1,-1}[m_{\tilde{u}}^{i4}, m_1] \delta_{i1i2} \delta_{i3i4} - \\
\frac{8}{81} g_1^{2} g_3^{2} \mathrm{LF}_{2,1,0}[m_{\tilde{u}}^{i4}, m_3] \delta_{i1i2} \delta_{i3i4} + \frac{4}{81} g_1^{2} g_3^{2} \mathrm{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}) \mathrm{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} (s_{\gamma} m_{\Phi}^{2} + m_1 \tilde{\mu} c_{\gamma} (-c_{\gamma}^{2} + s_{\gamma}^{2})) \mathrm{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} \mathrm{LF}_{3,1,0}[\tilde{\mu}, m_1] - \frac{2}{3} g_1^{2} s_{\gamma}^{2} \overline{y_u}^{i2i3} y_u^{i1i4} \mathrm{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} \mathrm{LF}_{4,1,-1}[\tilde{\mu}, m_1] + \frac{1}{3} g_1^{2} s_{\gamma}^{2} \overline{y_u}^{i2i3} y_u^{i1i4} \mathrm{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} \mathrm{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}) \mathrm{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} (s_{\gamma} m_{\Phi}^{2} + m_2 \tilde{\mu} c_{\gamma} (-c_{\gamma}^{2} + s_{\gamma}^{2})) \mathrm{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} \mathrm{LF}_{3,1,0}[\tilde{\mu}, m_2] - 2 g_2^{2} s_{\gamma}^{2} \overline{y_u}^{i2i3} y_u^{i1i4} \mathrm{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} \mathrm{LF}_{4,1,-1}[\tilde{\mu}, m_2] + \\
g_2^{2} s_{\gamma}^{2} \overline{y_u}^{i2i3} y_u^{i1i4} \mathrm{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} \mathrm{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} \mathrm{LF}_{2,1,-1}[\tilde{\mu}, m_{\tilde{d}}^{p}] - \frac{1}{27} g_1^{2} \overline{y_d}^{i2p} y_d^{i1p} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{LF}_{2,1,-1}[\tilde{\mu}, m_{\tilde{q}}^{p}] + \\
\frac{1}{108} g_1^{2} \overline{y_u}^{pi3} y_u^{pi4} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{LF}_{2,1,-1}[\tilde{\mu}, m_{\tilde{u}}^{p}] + \frac{2}{27} g_1^{2} \overline{y_u}^{i2p} y_u^{i1p} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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}) \mathrm{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}) \mathrm{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} \mathrm{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} \mathrm{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}) \mathrm{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}) \mathrm{LF}_{2,2,1,-1}[m_1, m_{\tilde{q}}^{i2}, m_{\tilde{u}}^{i3}] - \\
\frac{1}{81} g_1^{4} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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}) \mathrm{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} \mathrm{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} \mathrm{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}) \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{LF}_{2,2,1,-1}[m_3, m_{\tilde{q}}^{i2}, m_{\tilde{u}}^{i3}] - \\
\frac{2}{9} g_3^{4} \mathrm{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} \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{LF}_{3,1,1,-1}[m_{\tilde{q}}^{p}, m_{\tilde{d}}^{r}, \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}) \mathrm{LF}_{2,2,1,-1}[m_{\tilde{q}}^{p}, \tilde{\mu}, m_{\tilde{d}}^{r}] + \\
\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}) \mathrm{LF}_{2,1,1,0}[m_{\tilde{q}}^{r}, m_{\tilde{d}}^{p}, \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}) \mathrm{LF}_{3,1,1,-1}[m_{\tilde{q}}^{r}, m_{\tilde{d}}^{p}, \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}) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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}) \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{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} \mathrm{LF}_{1,1,1,1,-1}[m_3, m_{\tilde{u}}^{i4}, m_{\tilde{u}}^{i3}, \tilde{\mu}]\Big)
\end{gathered}$$