$$C_{Hq}^{(3)\,i1\_i2\_} \to \hbar\left(-\frac{1}{144}\frac{1}{m_s^2}\left(s_\gamma^2\,\overline{y_d}^{i2p}\left(g_2^2\,y_d^{i1p}+12\,c_\gamma^2\,y_d^{rp}\left(\overline{y_d}^{rs}\,y_d^{i1s}+3\,\overline{y_u}^{rs}\,y_u^{i1s}\right)\right)+\right.\right.$$
$$c_\gamma^2\left(36\,s_\gamma^2\,\overline{y_d}^{pr}\,y_d^{i1r}\,\overline{y_u}^{i2s}\,y_u^{ps}+\overline{y_u}^{i2p}\left(g_2^2\,y_u^{i1p}+12\,s_\gamma^2\,\overline{y_u}^{rs}\,y_u^{rp}\,y_u^{i1s}\right)\right)\Big)+$$
$$\frac{1}{9}g_2^4\,\text{LF}_{3,0}[m_2]\,\delta_{i1i2}+\frac{1}{6}g_2^4\,\text{LF}_{4,-1}[m_2]\,\delta_{i1i2}-\frac{8}{45}g_2^4\,\text{LF}_{5,-2}[m_2]\,\delta_{i1i2}+$$
$$\frac{1}{18}\sum_p g_2^4\,\text{LF}_{3,0}[m_{\tilde{l}}^{p}]\,\delta_{i1i2}-\frac{5}{48}\sum_p g_2^4\,\text{LF}_{4,-1}[m_{\tilde{l}}^{p}]\,\delta_{i1i2}+$$
$$\frac{2}{45}\sum_p g_2^4\,\text{LF}_{5,-2}[m_{\tilde{l}}^{p}]\,\delta_{i1i2}+\frac{1}{6}\sum_p g_2^4\,\text{LF}_{3,0}[m_{\tilde{q}}^{p}]\,\delta_{i1i2}-\frac{5}{16}\sum_p g_2^4\,\text{LF}_{4,-1}[m_{\tilde{q}}^{p}]\,\delta_{i1i2}+$$
$$\frac{2}{15}\sum_p g_2^4\,\text{LF}_{5,-2}[m_{\tilde{q}}^{p}]\,\delta_{i1i2}-\frac{1}{24}g_2^2\left(s_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}+c_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\right)\text{LF}_{2,1}[m_\Phi]+$$
$$\frac{1}{72}g_2^2\left(3\,s_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}+3\,c_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}+4\,g_2^2\,\delta_{i1i2}\right)\text{LF}_{3,0}[m_\Phi]-$$
$$\frac{5}{48}g_2^4\,\text{LF}_{4,-1}[m_\Phi]\,\delta_{i1i2}+\frac{2}{45}g_2^4\,\text{LF}_{5,-2}[m_\Phi]\,\delta_{i1i2}+\frac{1}{18}g_2^4\,\text{LF}_{3,0}[\tilde{\mu}]\,\delta_{i1i2}+$$
$$\frac{1}{12}g_2^4\,\text{LF}_{4,-1}[\tilde{\mu}]\,\delta_{i1i2}-\frac{4}{45}g_2^4\,\text{LF}_{5,-2}[\tilde{\mu}]\,\delta_{i1i2}+\frac{1}{18}g_1^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,\text{LF}_{2,1,0}[m_1,m_{\tilde{d}}^{p}]-$$
$$\frac{1}{9}g_1^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,\text{LF}_{3,1,-1}[m_1,m_{\tilde{d}}^{p}]+\frac{1}{18}g_1^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,\text{LF}_{4,1,-2}[m_1,m_{\tilde{d}}^{p}]+$$
$$\frac{1}{432}g_1^2\,g_2^2\,\text{LF}_{2,1,0}[m_1,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}+\frac{1}{432}g_1^2\,g_2^2\,\text{LF}_{2,2,-1}[m_1,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}-$$
$$\frac{1}{216}g_1^2\,g_2^2\,\text{LF}_{3,1,-1}[m_1,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}+\frac{1}{432}g_1^2\,g_2^2\,\text{LF}_{4,1,-2}[m_1,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}+$$
$$\frac{2}{9}g_1^2\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,\text{LF}_{2,1,0}[m_1,m_{\tilde{u}}^{p}]-\frac{4}{9}g_1^2\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,\text{LF}_{3,1,-1}[m_1,m_{\tilde{u}}^{p}]+$$
$$\frac{2}{9}g_1^2\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,\text{LF}_{4,1,-2}[m_1,m_{\tilde{u}}^{p}]-\frac{1}{48}g_2^4\,\text{LF}_{2,1,0}[m_2,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}-$$
$$\frac{1}{48}g_2^4\,\text{LF}_{2,2,-1}[m_2,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}-\frac{5}{24}g_2^4\,\text{LF}_{3,1,-1}[m_2,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}+\frac{1}{16}g_2^4\,\text{LF}_{4,1,-2}[m_2,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}-$$
$$\frac{1}{3}g_2^4\left(c_\gamma^2+s_\gamma^2\right)\text{LF}_{2,1,0}[m_2,\tilde{\mu}]\,\delta_{i1i2}-\frac{1}{3}g_2^4\left(c_\gamma^2+s_\gamma^2\right)\text{LF}_{2,2,-1}[m_2,\tilde{\mu}]\,\delta_{i1i2}-$$
$$\frac{2}{3}m_2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_2^4\,\text{LF}_{2,2,0}[m_2,\tilde{\mu}]\,\delta_{i1i2}+\frac{1}{6}g_2^4\left(c_\gamma^2+s_\gamma^2\right)\text{LF}_{3,1,-1}[m_2,\tilde{\mu}]\,\delta_{i1i2}+$$
$$\frac{1}{6}g_2^4\left(c_\gamma^2+s_\gamma^2\right)\text{LF}_{3,2,-2}[m_2,\tilde{\mu}]\,\delta_{i1i2}+\frac{1}{3}m_2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_2^4\,\text{LF}_{3,2,-1}[m_2,\tilde{\mu}]\,\delta_{i1i2}+$$
$$\frac{2}{3}g_3^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,\text{LF}_{2,1,0}[m_3,m_{\tilde{d}}^{p}]-\frac{4}{3}g_3^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,\text{LF}_{3,1,-1}[m_3,m_{\tilde{d}}^{p}]+$$
$$\frac{2}{3}g_3^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,\text{LF}_{4,1,-2}[m_3,m_{\tilde{d}}^{p}]+\frac{1}{9}g_2^2\,g_3^2\,\text{LF}_{2,1,0}[m_3,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}+$$
$$\frac{1}{9}g_2^2\,g_3^2\,\text{LF}_{2,2,-1}[m_3,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}-\frac{2}{9}g_2^2\,g_3^2\,\text{LF}_{3,1,-1}[m_3,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}+$$
$$\frac{1}{9}g_2^2\,g_3^2\,\text{LF}_{4,1,-2}[m_3,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}+\frac{2}{3}g_3^2\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,\text{LF}_{2,1,0}[m_3,m_{\tilde{u}}^{p}]-$$
$$\frac{4}{3}g_3^2\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,\text{LF}_{3,1,-1}[m_3,m_{\tilde{u}}^{p}]+\frac{2}{3}g_3^2\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,\text{LF}_{4,1,-2}[m_3,m_{\tilde{u}}^{p}]+$$
$$\frac{1}{8}g_2^2\left(c_\gamma\,\overline{a_e}^{pr}-s_\gamma\,\tilde{\mu}\,\overline{y_e}^{pr}\right)\left(c_\gamma\,a_e^{pr}-s_\gamma\,\tilde{\mu}\,y_e^{pr}\right)\text{LF}_{4,1,-1}[m_{\tilde{l}}^{p},m_{\tilde{e}}^{r}]\,\delta_{i1i2}-$$
$$\frac{1}{6}g_2^2\left(c_\gamma\,\overline{a_e}^{pr}-s_\gamma\,\tilde{\mu}\,\overline{y_e}^{pr}\right)\left(c_\gamma\,a_e^{pr}-s_\gamma\,\tilde{\mu}\,y_e^{pr}\right)\text{LF}_{5,1,-2}[m_{\tilde{l}}^{p},m_{\tilde{e}}^{r}]\,\delta_{i1i2}+$$
$$\frac{3}{8}g_2^2\left(c_\gamma\,\overline{a_d}^{pr}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{pr}\right)\left(c_\gamma\,a_d^{pr}-s_\gamma\,\tilde{\mu}\,y_d^{pr}\right)\text{LF}_{4,1,-1}[m_{\tilde{q}}^{p},m_{\tilde{d}}^{r}]\,\delta_{i1i2}-$$
$$\frac{1}{2}g_2^2\left(c_\gamma\,\overline{a_d}^{pr}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{pr}\right)\left(c_\gamma\,a_d^{pr}-s_\gamma\,\tilde{\mu}\,y_d^{pr}\right)\text{LF}_{5,1,-2}[m_{\tilde{q}}^{p},m_{\tilde{d}}^{r}]\,\delta_{i1i2}+$$
$$\frac{1}{4}g_2^2\left(s_\gamma\,\overline{a_u}^{pr}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{pr}\right)\left(s_\gamma\,a_u^{pr}-\tilde{\mu}\,c_\gamma\,y_u^{pr}\right)\text{LF}_{2,2,0}[m_{\tilde{q}}^{p},m_{\tilde{u}}^{r}]\,\delta_{i1i2}-$$
$$\frac{1}{8}g_2^2\left(s_\gamma\,\overline{a_u}^{pr}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{pr}\right)\left(s_\gamma\,a_u^{pr}-\tilde{\mu}\,c_\gamma\,y_u^{pr}\right)\text{LF}_{3,2,-1}[m_{\tilde{q}}^{p},m_{\tilde{u}}^{r}]\,\delta_{i1i2}-$$
$$\frac{1}{216}g_1^2\,g_2^2\,\text{LF}_{2,1,0}[m_{\tilde{q}}^{i2},m_1]\,\delta_{i1i2}+\frac{1}{432}g_1^2\,g_2^2\,\text{LF}_{3,1,-1}[m_{\tilde{q}}^{i2},m_1]\,\delta_{i1i2}+$$
$$\frac{1}{24}g_2^4\,\text{LF}_{2,1,0}[m_{\tilde{q}}^{i2},m_2]\,\delta_{i1i2}-\frac{1}{48}g_2^4\,\text{LF}_{3,1,-1}[m_{\tilde{q}}^{i2},m_2]\,\delta_{i1i2}-$$
$$\frac{2}{9}g_2^2\,g_3^2\,\text{LF}_{2,1,0}[m_{\tilde{q}}^{i2},m_3]\,\delta_{i1i2}+\frac{1}{9}g_2^2\,g_3^2\,\text{LF}_{3,1,-1}[m_{\tilde{q}}^{i2},m_3]\,\delta_{i1i2}-$$
$$\frac{1}{4}g_2^2\left(s_\gamma\,\overline{a_u}^{pr}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{pr}\right)\left(s_\gamma\,a_u^{pr}-\tilde{\mu}\,c_\gamma\,y_u^{pr}\right)\text{LF}_{3,1,0}[m_{\tilde{u}}^{r},m_{\tilde{q}}^{p}]\,\delta_{i1i2}-$$
$$\frac{1}{4}g_2^2\left(s_\gamma\,\overline{a_u}^{pr}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{pr}\right)\left(s_\gamma\,a_u^{pr}-\tilde{\mu}\,c_\gamma\,y_u^{pr}\right)\text{LF}_{3,2,-1}[m_{\tilde{u}}^{r},m_{\tilde{q}}^{p}]\,\delta_{i1i2}+$$
$$\frac{3}{4}g_2^2\left(s_\gamma\,\overline{a_u}^{pr}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{pr}\right)\left(s_\gamma\,a_u^{pr}-\tilde{\mu}\,c_\gamma\,y_u^{pr}\right)\text{LF}_{4,1,-1}[m_{\tilde{u}}^{r},m_{\tilde{q}}^{p}]\,\delta_{i1i2}-$$
$$\frac{1}{2}g_2^2\left(s_\gamma\,\overline{a_u}^{pr}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{pr}\right)\left(s_\gamma\,a_u^{pr}-\tilde{\mu}\,c_\gamma\,y_u^{pr}\right)\text{LF}_{5,1,-2}[m_{\tilde{u}}^{r},m_{\tilde{q}}^{p}]\,\delta_{i1i2}-$$
$$\frac{5}{24}g_1^2\,g_2^2\left(c_\gamma^2+s_\gamma^2\right)\text{LF}_{4,1,-2}[\tilde{\mu},m_1]\,\delta_{i1i2}-\frac{1}{4}m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^2\,g_2^2\,\text{LF}_{4,1,-1}[\tilde{\mu},m_1]\,\delta_{i1i2}+$$
$$\frac{1}{6}g_1^2\,g_2^2\left(c_\gamma^2+s_\gamma^2\right)\text{LF}_{5,1,-3}[\tilde{\mu},m_1]\,\delta_{i1i2}+\frac{1}{3}m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^2\,g_2^2\,\text{LF}_{5,1,-2}[\tilde{\mu},m_1]\,\delta_{i1i2}+$$
$$\frac{2}{3}g_2^4\left(c_\gamma^2+s_\gamma^2\right)\text{LF}_{3,1,-1}[\tilde{\mu},m_2]\,\delta_{i1i2}+\frac{2}{3}m_2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_2^4\,\text{LF}_{3,1,0}[\tilde{\mu},m_2]\,\delta_{i1i2}+$$
$$\frac{1}{3}g_2^4\left(c_\gamma^2+s_\gamma^2\right)\text{LF}_{3,2,-2}[\tilde{\mu},m_2]\,\delta_{i1i2}+\frac{2}{3}m_2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_2^4\,\text{LF}_{3,2,-1}[\tilde{\mu},m_2]\,\delta_{i1i2}-$$
$$\frac{9}{8}g_2^4\left(c_\gamma^2+s_\gamma^2\right)\text{LF}_{4,1,-2}[\tilde{\mu},m_2]\,\delta_{i1i2}-\frac{7}{4}m_2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_2^4\,\text{LF}_{4,1,-1}[\tilde{\mu},m_2]\,\delta_{i1i2}+$$
$$\frac{1}{2}g_2^4\left(c_\gamma^2+s_\gamma^2\right)\text{LF}_{5,1,-3}[\tilde{\mu},m_2]\,\delta_{i1i2}+m_2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_2^4\,\text{LF}_{5,1,-2}[\tilde{\mu},m_2]\,\delta_{i1i2}-$$
$$\frac{1}{8}g_2^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,\text{LF}_{3,1,-1}[\tilde{\mu},m_{\tilde{d}}^{p}]+\frac{1}{24}g_2^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,\text{LF}_{4,1,-2}[\tilde{\mu},m_{\tilde{d}}^{p}]+$$
$$\frac{1}{2}\left(c_\gamma^2\,\overline{y_d}^{rs}\,\overline{y_d}^{i2p}\,y_d^{rp}\,y_d^{i1s}+s_\gamma^2\,\overline{y_u}^{rs}\,\overline{y_u}^{i2p}\,y_u^{rp}\,y_u^{i1s}\right)\text{LF}_{2,1,0}[\tilde{\mu},m_{\tilde{q}}^{r}]+$$
$$\left(-c_\gamma^2\,\overline{y_d}^{rs}\,\overline{y_d}^{i2p}\,y_d^{rp}\,y_d^{i1s}-s_\gamma^2\,\overline{y_u}^{rs}\,\overline{y_u}^{i2p}\,y_u^{rp}\,y_u^{i1s}\right)\text{LF}_{3,1,-1}[\tilde{\mu},m_{\tilde{q}}^{r}]+$$
$$\frac{1}{2}\left(c_\gamma^2\,\overline{y_d}^{rs}\,\overline{y_d}^{i2p}\,y_d^{rp}\,y_d^{i1s}+s_\gamma^2\,\overline{y_u}^{rs}\,\overline{y_u}^{i2p}\,y_u^{rp}\,y_u^{i1s}\right)\text{LF}_{4,1,-2}[\tilde{\mu},m_{\tilde{q}}^{r}]-$$
$$\frac{1}{8}g_2^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,\text{LF}_{3,1,-1}[\tilde{\mu},m_{\tilde{u}}^{p}]+\frac{1}{24}g_2^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,\text{LF}_{4,1,-2}[\tilde{\mu},m_{\tilde{u}}^{p}]+$$
$$\frac{1}{72}m_1\,c_\gamma\,g_1^2\,\overline{y_d}^{i2p}\left(c_\gamma\,a_d^{i1p}-s_\gamma\,\tilde{\mu}\,y_d^{i1p}\right)\text{LF}_{2,1,1,0}[m_1,m_{\tilde{d}}^{p},m_{\tilde{q}}^{i1}]+$$
$$\frac{1}{144}m_1\,c_\gamma\,g_1^2\,\overline{y_d}^{i2p}\left(c_\gamma\,a_d^{i1p}-s_\gamma\,\tilde{\mu}\,y_d^{i1p}\right)\text{LF}_{2,2,1,-1}[m_1,m_{\tilde{d}}^{p},m_{\tilde{q}}^{i1}]+$$
$$\frac{1}{72}m_1\,c_\gamma\,g_1^2\,\overline{y_d}^{i2p}\left(-c_\gamma\,a_d^{i1p}+s_\gamma\,\tilde{\mu}\,y_d^{i1p}\right)\text{LF}_{3,1,1,-1}[m_1,m_{\tilde{d}}^{p},m_{\tilde{q}}^{i1}]+$$
$$\frac{1}{72}m_1\,c_\gamma\,g_1^2\,y_d^{i1p}\left(c_\gamma\,\overline{a_d}^{i2p}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\right)\text{LF}_{2,1,1,0}[m_1,m_{\tilde{d}}^{p},m_{\tilde{q}}^{i2}]+$$
$$\frac{1}{144}m_1\,c_\gamma\,g_1^2\,y_d^{i1p}\left(c_\gamma\,\overline{a_d}^{i2p}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\right)\text{LF}_{2,2,1,-1}[m_1,m_{\tilde{d}}^{p},m_{\tilde{q}}^{i2}]+$$
$$\frac{1}{72}m_1\,c_\gamma\,g_1^2\,y_d^{i1p}\left(-c_\gamma\,\overline{a_d}^{i2p}+s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\right)\text{LF}_{3,1,1,-1}[m_1,m_{\tilde{d}}^{p},m_{\tilde{q}}^{i2}]-$$
$$\frac{1}{4}g_1^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,\text{LF}_{2,1,1,-1}[m_1,m_{\tilde{d}}^{p},\tilde{\mu}]-\frac{1}{6}m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,\text{LF}_{2,1,1,0}[m_1,m_{\tilde{d}}^{p},\tilde{\mu}]+$$
$$\frac{1}{6}g_1^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,\text{LF}_{3,1,1,-2}[m_1,m_{\tilde{d}}^{p},\tilde{\mu}]+\frac{1}{6}m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,\text{LF}_{3,1,1,-1}[m_1,m_{\tilde{d}}^{p},\tilde{\mu}]+$$
$$\frac{1}{144}m_1\,c_\gamma\,g_1^2\,\overline{y_d}^{i2p}\left(-c_\gamma\,a_d^{i1p}+s_\gamma\,\tilde{\mu}\,y_d^{i1p}\right)\text{LF}_{2,2,1,-1}[m_1,m_{\tilde{q}}^{i1},m_{\tilde{d}}^{p}]+$$
$$\frac{1}{36}m_1\,s_\gamma\,g_1^2\,\overline{y_u}^{i2p}\left(-s_\gamma\,a_u^{i1p}+\tilde{\mu}\,c_\gamma\,y_u^{i1p}\right)\text{LF}_{2,1,1,0}[m_1,m_{\tilde{q}}^{i1},m_{\tilde{u}}^{p}]+$$
$$\frac{1}{72}m_1\,s_\gamma\,g_1^2\,\overline{y_u}^{i2p}\left(s_\gamma\,a_u^{i1p}-\tilde{\mu}\,c_\gamma\,y_u^{i1p}\right)\text{LF}_{2,2,1,-1}[m_1,m_{\tilde{q}}^{i1},m_{\tilde{u}}^{p}]+$$
$$\frac{1}{36}m_1\,s_\gamma\,g_1^2\,\overline{y_u}^{i2p}\left(s_\gamma\,a_u^{i1p}-\tilde{\mu}\,c_\gamma\,y_u^{i1p}\right)\text{LF}_{3,1,1,-1}[m_1,m_{\tilde{q}}^{i1},m_{\tilde{u}}^{p}]+$$
$$\frac{1}{144}m_1\,c_\gamma\,g_1^2\,y_d^{i1p}\left(-c_\gamma\,\overline{a_d}^{i2p}+s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\right)\text{LF}_{2,2,1,-1}[m_1,m_{\tilde{q}}^{i2},m_{\tilde{d}}^{p}]+$$
$$\frac{1}{36}m_1\,s_\gamma\,g_1^2\,y_u^{i1p}\left(-s_\gamma\,\overline{a_u}^{i2p}+\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2p}\right)\text{LF}_{2,1,1,0}[m_1,m_{\tilde{q}}^{i2},m_{\tilde{u}}^{p}]+$$
$$\frac{1}{72}m_1\,s_\gamma\,g_1^2\,y_u^{i1p}\left(s_\gamma\,\overline{a_u}^{i2p}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2p}\right)\text{LF}_{2,2,1,-1}[m_1,m_{\tilde{q}}^{i2},m_{\tilde{u}}^{p}]+$$
$$\frac{1}{36}m_1\,s_\gamma\,g_1^2\,y_u^{i1p}\left(s_\gamma\,\overline{a_u}^{i2p}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2p}\right)\text{LF}_{3,1,1,-1}[m_1,m_{\tilde{q}}^{i2},m_{\tilde{u}}^{p}]+$$
$$\frac{1}{72}m_1\,s_\gamma\,g_1^2\,\overline{y_u}^{i2p}\left(-s_\gamma\,a_u^{i1p}+\tilde{\mu}\,c_\gamma\,y_u^{i1p}\right)\text{LF}_{2,2,1,-1}[m_1,m_{\tilde{u}}^{p},m_{\tilde{q}}^{i1}]+$$
$$\frac{1}{72}m_1\,s_\gamma\,g_1^2\,y_u^{i1p}\left(-s_\gamma\,\overline{a_u}^{i2p}+\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2p}\right)\text{LF}_{2,2,1,-1}[m_1,m_{\tilde{u}}^{p},m_{\tilde{q}}^{i2}]-$$
$$\frac{1}{2}g_1^2\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,\text{LF}_{2,1,1,-1}[m_1,m_{\tilde{u}}^{p},\tilde{\mu}]-\frac{1}{3}m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,\text{LF}_{2,1,1,0}[m_1,m_{\tilde{u}}^{p},\tilde{\mu}]+$$
$$\frac{1}{3}g_1^2\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,\text{LF}_{3,1,1,-2}[m_1,m_{\tilde{u}}^{p},\tilde{\mu}]+\frac{1}{3}m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,\text{LF}_{3,1,1,-1}[m_1,m_{\tilde{u}}^{p},\tilde{\mu}]+$$
$$\frac{7}{48}g_1^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,\text{LF}_{2,2,1,-2}[m_1,\tilde{\mu},m_{\tilde{d}}^{p}]+$$
$$\frac{1}{48}s_\gamma\,\tilde{\mu}\,g_1^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\left(10\,m_1\,c_\gamma+3\,s_\gamma\,\tilde{\mu}\right)\text{LF}_{2,2,1,-1}[m_1,\tilde{\mu},m_{\tilde{d}}^{p}]+$$
$$\frac{1}{48}g_1^2\left(c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}-s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\right)\text{LF}_{2,2,1,-2}[m_1,\tilde{\mu},m_{\tilde{q}}^{i1}]+$$
$$\frac{1}{48}m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^2\left(\overline{y_d}^{i2p}\,y_d^{i1p}-\overline{y_u}^{i2p}\,y_u^{i1p}\right)\text{LF}_{2,2,1,-1}[m_1,\tilde{\mu},m_{\tilde{q}}^{i1}]+$$
$$\frac{1}{48}g_1^2\left(c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}-s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\right)\text{LF}_{2,2,1,-2}[m_1,\tilde{\mu},m_{\tilde{q}}^{i2}]+$$
$$\frac{1}{48}m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^2\left(\overline{y_d}^{i2p}\,y_d^{i1p}-\overline{y_u}^{i2p}\,y_u^{i1p}\right)\text{LF}_{2,2,1,-1}[m_1,\tilde{\mu},m_{\tilde{q}}^{i2}]+$$
$$\frac{11}{48}g_1^2\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,\text{LF}_{2,2,1,-2}[m_1,\tilde{\mu},m_{\tilde{u}}^{p}]+\frac{1}{48}\tilde{\mu}\,c_\gamma\,g_1^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\left(14\,m_1\,s_\gamma+3\,\tilde{\mu}\,c_\gamma\right)$$
$$\text{LF}_{2,2,1,-1}[m_1,\tilde{\mu},m_{\tilde{u}}^{p}]+\frac{1}{8}g_2^4\left(c_\gamma^2+s_\gamma^2\right)\text{LF}_{2,1,1,-1}[m_2,m_{\tilde{q}}^{i2},\tilde{\mu}]\,\delta_{i1i2}-$$
$$\frac{1}{4}g_2^4\,m_2^2\left(c_\gamma^2+s_\gamma^2\right)\text{LF}_{2,1,1,0}[m_2,m_{\tilde{q}}^{i2},\tilde{\mu}]\,\delta_{i1i2}-\frac{1}{16}g_2^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,\text{LF}_{2,2,1,-2}[m_2,\tilde{\mu},m_{\tilde{d}}^{p}]-$$
$$\frac{1}{16}s_\gamma\,\tilde{\mu}\,g_2^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\left(2\,m_2\,c_\gamma+s_\gamma\,\tilde{\mu}\right)\text{LF}_{2,2,1,-1}[m_2,\tilde{\mu},m_{\tilde{d}}^{p}]+$$
$$\frac{3}{16}g_2^2\left(c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}+s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\right)\text{LF}_{2,2,1,-2}[m_2,\tilde{\mu},m_{\tilde{q}}^{i1}]+$$
$$\frac{3}{16}m_2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_2^2\left(\overline{y_d}^{i2p}\,y_d^{i1p}+\overline{y_u}^{i2p}\,y_u^{i1p}\right)\text{LF}_{2,2,1,-1}[m_2,\tilde{\mu},m_{\tilde{q}}^{i1}]+$$
$$\frac{1}{16}g_2^2\left(3\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}+3\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}+2\,g_2^2\left(c_\gamma^2+s_\gamma^2\right)\delta_{i1i2}\right)\text{LF}_{2,2,1,-2}[m_2,\tilde{\mu},m_{\tilde{q}}^{i2}]+$$
$$\frac{1}{16}m_2\,g_2^2\left(3\,s_\gamma\,\tilde{\mu}\,c_\gamma\left(\overline{y_d}^{i2p}\,y_d^{i1p}+\overline{y_u}^{i2p}\,y_u^{i1p}\right)+2\,g_2^2\left(m_2\left(c_\gamma^2+s_\gamma^2\right)+4\,s_\gamma\,\tilde{\mu}\,c_\gamma\right)\delta_{i1i2}\right)$$
$$\text{LF}_{2,2,1,-1}[m_2,\tilde{\mu},m_{\tilde{q}}^{i2}]-\frac{1}{16}g_2^2\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,\text{LF}_{2,2,1,-2}[m_2,\tilde{\mu},m_{\tilde{u}}^{p}]-$$
$$\frac{1}{16}\tilde{\mu}\,c_\gamma\,g_2^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\left(2\,m_2\,s_\gamma+\tilde{\mu}\,c_\gamma\right)\text{LF}_{2,2,1,-1}[m_2,\tilde{\mu},m_{\tilde{u}}^{p}]+$$
$$\frac{1}{3}m_3\,c_\gamma\,g_3^2\,\overline{y_d}^{i2p}\left(-c_\gamma\,a_d^{i1p}+s_\gamma\,\tilde{\mu}\,y_d^{i1p}\right)\text{LF}_{2,1,1,0}[m_3,m_{\tilde{d}}^{p},m_{\tilde{q}}^{i1}]+$$
$$\frac{1}{6}m_3\,c_\gamma\,g_3^2\,\overline{y_d}^{i2p}\left(-c_\gamma\,a_d^{i1p}+s_\gamma\,\tilde{\mu}\,y_d^{i1p}\right)\text{LF}_{2,2,1,-1}[m_3,m_{\tilde{d}}^{p},m_{\tilde{q}}^{i1}]+$$
$$\frac{1}{3}m_3\,c_\gamma\,g_3^2\,\overline{y_d}^{i2p}\left(c_\gamma\,a_d^{i1p}-s_\gamma\,\tilde{\mu}\,y_d^{i1p}\right)\text{LF}_{3,1,1,-1}[m_3,m_{\tilde{d}}^{p},m_{\tilde{q}}^{i1}]+$$
$$\frac{1}{3}m_3\,c_\gamma\,g_3^2\,y_d^{i1p}\left(-c_\gamma\,\overline{a_d}^{i2p}+s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\right)\text{LF}_{2,1,1,0}[m_3,m_{\tilde{d}}^{p},m_{\tilde{q}}^{i2}]+$$
$$\frac{1}{6}m_3\,c_\gamma\,g_3^2\,y_d^{i1p}\left(-c_\gamma\,\overline{a_d}^{i2p}+s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\right)\text{LF}_{2,2,1,-1}[m_3,m_{\tilde{d}}^{p},m_{\tilde{q}}^{i2}]+$$
$$\frac{1}{3}m_3\,c_\gamma\,g_3^2\,y_d^{i1p}\left(c_\gamma\,\overline{a_d}^{i2p}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\right)\text{LF}_{3,1,1,-1}[m_3,m_{\tilde{d}}^{p},m_{\tilde{q}}^{i2}]+$$
$$\frac{1}{6}m_3\,c_\gamma\,g_3^2\,\overline{y_d}^{i2p}\left(c_\gamma\,a_d^{i1p}-s_\gamma\,\tilde{\mu}\,y_d^{i1p}\right)\text{LF}_{2,2,1,-1}[m_3,m_{\tilde{q}}^{i1},m_{\tilde{d}}^{p}]+$$
$$\frac{1}{3}m_3\,s_\gamma\,g_3^2\,\overline{y_u}^{i2p}\left(-s_\gamma\,a_u^{i1p}+\tilde{\mu}\,c_\gamma\,y_u^{i1p}\right)\text{LF}_{2,1,1,0}[m_3,m_{\tilde{q}}^{i1},m_{\tilde{u}}^{p}]+$$
$$\frac{1}{6}m_3\,s_\gamma\,g_3^2\,\overline{y_u}^{i2p}\left(s_\gamma\,a_u^{i1p}-\tilde{\mu}\,c_\gamma\,y_u^{i1p}\right)\text{LF}_{2,2,1,-1}[m_3,m_{\tilde{q}}^{i1},m_{\tilde{u}}^{p}]+$$
$$\frac{1}{3}m_3\,s_\gamma\,g_3^2\,\overline{y_u}^{i2p}\left(s_\gamma\,a_u^{i1p}-\tilde{\mu}\,c_\gamma\,y_u^{i1p}\right)\text{LF}_{3,1,1,-1}[m_3,m_{\tilde{q}}^{i1},m_{\tilde{u}}^{p}]+$$
$$\frac{1}{6}m_3\,c_\gamma\,g_3^2\,y_d^{i1p}\left(c_\gamma\,\overline{a_d}^{i2p}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\right)\text{LF}_{2,2,1,-1}[m_3,m_{\tilde{q}}^{i2},m_{\tilde{d}}^{p}]+$$
$$\frac{1}{3}m_3\,s_\gamma\,g_3^2\,y_u^{i1p}\left(-s_\gamma\,\overline{a_u}^{i2p}+\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2p}\right)\text{LF}_{2,1,1,0}[m_3,m_{\tilde{q}}^{i2},m_{\tilde{u}}^{p}]+$$
$$\frac{1}{6}m_3\,s_\gamma\,g_3^2\,y_u^{i1p}\left(s_\gamma\,\overline{a_u}^{i2p}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2p}\right)\text{LF}_{2,2,1,-1}[m_3,m_{\tilde{q}}^{i2},m_{\tilde{u}}^{p}]+$$
$$\frac{1}{3}m_3\,s_\gamma\,g_3^2\,y_u^{i1p}\left(s_\gamma\,\overline{a_u}^{i2p}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2p}\right)\text{LF}_{3,1,1,-1}[m_3,m_{\tilde{q}}^{i2},m_{\tilde{u}}^{p}]+$$
$$\frac{1}{6}m_3\,s_\gamma\,g_3^2\,\overline{y_u}^{i2p}\left(-s_\gamma\,a_u^{i1p}+\tilde{\mu}\,c_\gamma\,y_u^{i1p}\right)\text{LF}_{2,2,1,-1}[m_3,m_{\tilde{u}}^{p},m_{\tilde{q}}^{i1}]+$$
$$\frac{1}{6}m_3\,s_\gamma\,g_3^2\,y_u^{i1p}\left(-s_\gamma\,\overline{a_u}^{i2p}+\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2p}\right)\text{LF}_{2,2,1,-1}[m_3,m_{\tilde{u}}^{p},m_{\tilde{q}}^{i2}]+$$
$$\frac{1}{16}s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\,\overline{y_u}^{rs}\,y_u^{i1s}\left(-c_\gamma\,a_d^{rp}+s_\gamma\,\tilde{\mu}\,y_d^{rp}\right)\text{LF}_{2,2,1,-1}[m_{\tilde{d}}^{p},\tilde{\mu},m_{\tilde{q}}^{r}]+$$
$$\frac{1}{16}s_\gamma\,\tilde{\mu}\,y_d^{i1r}\,\overline{y_u}^{i2s}\,y_u^{ps}\left(-c_\gamma\,\overline{a_d}^{pr}+s_\gamma\,\tilde{\mu}\,\overline{y_d}^{pr}\right)\text{LF}_{2,2,1,-1}[m_{\tilde{d}}^{r},\tilde{\mu},m_{\tilde{q}}^{p}]+$$
$$\frac{1}{16}s_\gamma\,\tilde{\mu}\,y_d^{i1r}\,\overline{y_u}^{i2s}\,y_u^{ps}\left(c_\gamma\,\overline{a_d}^{pr}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{pr}\right)\text{LF}_{2,2,1,-1}[m_{\tilde{q}}^{p},\tilde{\mu},m_{\tilde{d}}^{r}]+$$
$$\frac{1}{16}s_\gamma\,\tilde{\mu}\,c_\gamma\,\overline{y_d}^{i2s}\,y_d^{ps}\,y_u^{i1r}\,\overline{a_u}^{pr}\,\text{LF}_{2,2,1,-1}[m_{\tilde{q}}^{p},\tilde{\mu},m_{\tilde{u}}^{r}]+$$
$$\frac{1}{16}\tilde{\mu}\,c_\gamma\,\overline{y_d}^{pr}\,y_d^{i1r}\,\overline{y_u}^{i2s}\left(s_\gamma\,a_u^{ps}-\tilde{\mu}\,c_\gamma\,y_u^{ps}\right)\text{LF}_{2,2,1,-1}[m_{\tilde{q}}^{p},\tilde{\mu},m_{\tilde{u}}^{s}]+$$
$$\frac{1}{16}s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\,\overline{y_u}^{rs}\,y_u^{i1s}\left(c_\gamma\,a_d^{rp}-s_\gamma\,\tilde{\mu}\,y_d^{rp}\right)\text{LF}_{2,2,1,-1}[m_{\tilde{q}}^{r},\tilde{\mu},m_{\tilde{d}}^{p}]-$$
$$\frac{1}{16}\tilde{\mu}^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{rp}\,\overline{y_u}^{rs}\,y_u^{i1s}\,\text{LF}_{2,2,1,-1}[m_{\tilde{q}}^{r},\tilde{\mu},m_{\tilde{u}}^{s}]-$$
$$\frac{1}{16}s_\gamma\,\tilde{\mu}\,c_\gamma\,\overline{y_d}^{i2s}\,y_d^{ps}\,y_u^{i1r}\,\overline{a_u}^{pr}\,\text{LF}_{2,2,1,-1}[m_{\tilde{u}}^{r},\tilde{\mu},m_{\tilde{q}}^{p}]+$$
$$\frac{1}{16}\tilde{\mu}\,c_\gamma\,\overline{y_d}^{pr}\,y_d^{i1r}\,\overline{y_u}^{i2s}\left(-s_\gamma\,a_u^{ps}+\tilde{\mu}\,c_\gamma\,y_u^{ps}\right)\text{LF}_{2,2,1,-1}[m_{\tilde{u}}^{s},\tilde{\mu},m_{\tilde{q}}^{p}]+$$
$$\frac{1}{16}\tilde{\mu}^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{rp}\,\overline{y_u}^{rs}\,y_u^{i1s}\,\text{LF}_{2,2,1,-1}[m_{\tilde{u}}^{s},\tilde{\mu},m_{\tilde{q}}^{r}]+$$
$$\frac{1}{16}g_1^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,\text{LF}_{2,1,1,-1}[\tilde{\mu},m_1,m_{\tilde{d}}^{p}]-\frac{1}{8}g_1^2\,s_\gamma^2\,\tilde{\mu}^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,\text{LF}_{2,1,1,0}[\tilde{\mu},m_1,m_{\tilde{d}}^{p}]+$$
$$\frac{1}{16}g_1^2\left(-c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}+s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\right)\text{LF}_{2,1,1,-1}[\tilde{\mu},m_1,m_{\tilde{q}}^{i1}]+$$
$$\frac{1}{24}m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^2\left(-\overline{y_d}^{i2p}\,y_d^{i1p}+\overline{y_u}^{i2p}\,y_u^{i1p}\right)\text{LF}_{2,1,1,0}[\tilde{\mu},m_1,m_{\tilde{q}}^{i1}]+$$
$$\frac{1}{24}g_1^2\left(c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}-s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\right)\text{LF}_{3,1,1,-2}[\tilde{\mu},m_1,m_{\tilde{q}}^{i1}]+$$
$$\frac{1}{24}m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^2\left(\overline{y_d}^{i2p}\,y_d^{i1p}-\overline{y_u}^{i2p}\,y_u^{i1p}\right)\text{LF}_{3,1,1,-1}[\tilde{\mu},m_1,m_{\tilde{q}}^{i1}]+$$
$$\frac{1}{16}g_1^2\left(-c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}+s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\right)\text{LF}_{2,1,1,-1}[\tilde{\mu},m_1,m_{\tilde{q}}^{i2}]+$$
$$\frac{1}{24}m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^2\left(-\overline{y_d}^{i2p}\,y_d^{i1p}+\overline{y_u}^{i2p}\,y_u^{i1p}\right)\text{LF}_{2,1,1,0}[\tilde{\mu},m_1,m_{\tilde{q}}^{i2}]+$$
$$\frac{1}{24}g_1^2\left(c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}-s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\right)\text{LF}_{3,1,1,-2}[\tilde{\mu},m_1,m_{\tilde{q}}^{i2}]+$$
$$\frac{1}{24}m_1\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_1^2\left(\overline{y_d}^{i2p}\,y_d^{i1p}-\overline{y_u}^{i2p}\,y_u^{i1p}\right)\text{LF}_{3,1,1,-1}[\tilde{\mu},m_1,m_{\tilde{q}}^{i2}]+$$
$$\frac{1}{16}g_1^2\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,\text{LF}_{2,1,1,-1}[\tilde{\mu},m_1,m_{\tilde{u}}^{p}]-\frac{1}{8}g_1^2\,\tilde{\mu}^2\,c_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,\text{LF}_{2,1,1,0}[\tilde{\mu},m_1,m_{\tilde{u}}^{p}]-$$
$$\frac{1}{16}g_2^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,\text{LF}_{2,1,1,-1}[\tilde{\mu},m_2,m_{\tilde{d}}^{p}]+\frac{1}{8}g_2^2\,s_\gamma^2\,\tilde{\mu}^2\,\overline{y_d}^{i2p}\,y_d^{i1p}\,\text{LF}_{2,1,1,0}[\tilde{\mu},m_2,m_{\tilde{d}}^{p}]-$$
$$\frac{9}{16}g_2^2\left(c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}+s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\right)\text{LF}_{2,1,1,-1}[\tilde{\mu},m_2,m_{\tilde{q}}^{i1}]-$$
$$\frac{3}{8}m_2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_2^2\left(\overline{y_d}^{i2p}\,y_d^{i1p}+\overline{y_u}^{i2p}\,y_u^{i1p}\right)\text{LF}_{2,1,1,0}[\tilde{\mu},m_2,m_{\tilde{q}}^{i1}]+$$
$$\frac{3}{8}g_2^2\left(c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}+s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\right)\text{LF}_{3,1,1,-2}[\tilde{\mu},m_2,m_{\tilde{q}}^{i1}]+$$
$$\frac{3}{8}m_2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_2^2\left(\overline{y_d}^{i2p}\,y_d^{i1p}+\overline{y_u}^{i2p}\,y_u^{i1p}\right)\text{LF}_{3,1,1,-1}[\tilde{\mu},m_2,m_{\tilde{q}}^{i1}]-$$
$$\frac{9}{16}g_2^2\left(c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}+s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\right)\text{LF}_{2,1,1,-1}[\tilde{\mu},m_2,m_{\tilde{q}}^{i2}]-$$
$$\frac{3}{8}m_2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_2^2\left(\overline{y_d}^{i2p}\,y_d^{i1p}+\overline{y_u}^{i2p}\,y_u^{i1p}\right)\text{LF}_{2,1,1,0}[\tilde{\mu},m_2,m_{\tilde{q}}^{i2}]+$$
$$\frac{3}{8}g_2^2\left(c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{i1p}+s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\right)\text{LF}_{3,1,1,-2}[\tilde{\mu},m_2,m_{\tilde{q}}^{i2}]+$$
$$\frac{3}{8}m_2\,s_\gamma\,\tilde{\mu}\,c_\gamma\,g_2^2\left(\overline{y_d}^{i2p}\,y_d^{i1p}+\overline{y_u}^{i2p}\,y_u^{i1p}\right)\text{LF}_{3,1,1,-1}[\tilde{\mu},m_2,m_{\tilde{q}}^{i2}]-$$
$$\frac{1}{16}g_2^2\,s_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,\text{LF}_{2,1,1,-1}[\tilde{\mu},m_2,m_{\tilde{u}}^{p}]+\frac{1}{8}g_2^2\,\tilde{\mu}^2\,c_\gamma^2\,\overline{y_u}^{i2p}\,y_u^{i1p}\,\text{LF}_{2,1,1,0}[\tilde{\mu},m_2,m_{\tilde{u}}^{p}]+$$
$$\frac{1}{8}s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\,\overline{y_u}^{rs}\,y_u^{i1s}\left(c_\gamma\,a_d^{rp}-s_\gamma\,\tilde{\mu}\,y_d^{rp}\right)\text{LF}_{2,1,1,0}[\tilde{\mu},m_{\tilde{d}}^{p},m_{\tilde{q}}^{r}]+$$
$$\frac{1}{8}s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\,\overline{y_u}^{rs}\,y_u^{i1s}\left(-c_\gamma\,a_d^{rp}+s_\gamma\,\tilde{\mu}\,y_d^{rp}\right)\text{LF}_{3,1,1,-1}[\tilde{\mu},m_{\tilde{d}}^{p},m_{\tilde{q}}^{r}]+$$
$$\frac{1}{8}s_\gamma\,\tilde{\mu}\,y_d^{i1r}\,\overline{y_u}^{i2s}\,y_u^{ps}\left(c_\gamma\,\overline{a_d}^{pr}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{pr}\right)\text{LF}_{2,1,1,0}[\tilde{\mu},m_{\tilde{d}}^{r},m_{\tilde{q}}^{p}]+$$
$$\frac{1}{8}s_\gamma\,\tilde{\mu}\,y_d^{i1r}\,\overline{y_u}^{i2s}\,y_u^{ps}\left(-c_\gamma\,\overline{a_d}^{pr}+s_\gamma\,\tilde{\mu}\,\overline{y_d}^{pr}\right)\text{LF}_{3,1,1,-1}[\tilde{\mu},m_{\tilde{d}}^{r},m_{\tilde{q}}^{p}]+$$
$$\frac{1}{8}s_\gamma\,\tilde{\mu}\,c_\gamma\,\overline{y_d}^{i2s}\,y_d^{ps}\,y_u^{i1r}\,\overline{a_u}^{pr}\,\text{LF}_{2,1,1,0}[\tilde{\mu},m_{\tilde{q}}^{p},m_{\tilde{u}}^{r}]-$$
$$\frac{1}{8}s_\gamma\,\tilde{\mu}\,c_\gamma\,\overline{y_d}^{i2s}\,y_d^{ps}\,y_u^{i1r}\,\overline{a_u}^{pr}\,\text{LF}_{3,1,1,-1}[\tilde{\mu},m_{\tilde{q}}^{p},m_{\tilde{u}}^{r}]+$$
$$\frac{1}{8}\tilde{\mu}\,c_\gamma\,\overline{y_d}^{pr}\,y_d^{i1r}\,\overline{y_u}^{i2s}\left(s_\gamma\,a_u^{ps}-\tilde{\mu}\,c_\gamma\,y_u^{ps}\right)\text{LF}_{2,1,1,0}[\tilde{\mu},m_{\tilde{q}}^{p},m_{\tilde{u}}^{s}]+$$
$$\frac{1}{8}\tilde{\mu}\,c_\gamma\,\overline{y_d}^{pr}\,y_d^{i1r}\,\overline{y_u}^{i2s}\left(-s_\gamma\,a_u^{ps}+\tilde{\mu}\,c_\gamma\,y_u^{ps}\right)\text{LF}_{3,1,1,-1}[\tilde{\mu},m_{\tilde{q}}^{p},m_{\tilde{u}}^{s}]-$$
$$\frac{1}{8}\tilde{\mu}^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{rp}\,\overline{y_u}^{rs}\,y_u^{i1s}\,\text{LF}_{2,1,1,0}[\tilde{\mu},m_{\tilde{q}}^{r},m_{\tilde{u}}^{s}]+$$
$$\frac{1}{8}\tilde{\mu}^2\,c_\gamma^2\,\overline{y_d}^{i2p}\,y_d^{rp}\,\overline{y_u}^{rs}\,y_u^{i1s}\,\text{LF}_{3,1,1,-1}[\tilde{\mu},m_{\tilde{q}}^{r},m_{\tilde{u}}^{s}]+$$
$$\frac{1}{24}g_1^2\,g_2^2\left(c_\gamma^2-s_\gamma^2\right)\text{LF}_{1,1,1,1,-1}[m_1,m_2,m_{\tilde{q}}^{i2},\tilde{\mu}]\,\delta_{i1i2}+$$
$$\frac{1}{12}m_1\,m_2\,g_1^2\,g_2^2\left(c_\gamma^2-s_\gamma^2\right)\text{LF}_{1,1,1,1,0}[m_1,m_2,m_{\tilde{q}}^{i2},\tilde{\mu}]\,\delta_{i1i2}-$$
$$\frac{1}{48}g_1^2\,\overline{y_d}^{i2p}\left(m_1\,c_\gamma-s_\gamma\,\tilde{\mu}\right)\left(c_\gamma\,a_d^{i1p}-s_\gamma\,\tilde{\mu}\,y_d^{i1p}\right)\text{LF}_{1,1,1,1,0}[m_1,m_{\tilde{d}}^{p},m_{\tilde{q}}^{i1},\tilde{\mu}]-$$
$$\frac{1}{96}g_1^2\,\overline{y_d}^{i2p}\left(m_1\,c_\gamma+s_\gamma\,\tilde{\mu}\right)\left(c_\gamma\,a_d^{i1p}-s_\gamma\,\tilde{\mu}\,y_d^{i1p}\right)\text{LF}_{2,1,1,1,-1}[m_1,m_{\tilde{d}}^{p},m_{\tilde{q}}^{i1},\tilde{\mu}]-$$
$$\frac{1}{48}g_1^2\,y_d^{i1p}\left(m_1\,c_\gamma-s_\gamma\,\tilde{\mu}\right)\left(c_\gamma\,\overline{a_d}^{i2p}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\right)\text{LF}_{1,1,1,1,0}[m_1,m_{\tilde{d}}^{p},m_{\tilde{q}}^{i2},\tilde{\mu}]-$$
$$\frac{1}{96}g_1^2\,y_d^{i1p}\left(m_1\,c_\gamma+s_\gamma\,\tilde{\mu}\right)\left(c_\gamma\,\overline{a_d}^{i2p}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\right)\text{LF}_{2,1,1,1,-1}[m_1,m_{\tilde{d}}^{p},m_{\tilde{q}}^{i2},\tilde{\mu}]+$$
$$\frac{1}{48}g_1^2\,\overline{y_u}^{i2p}\left(m_1\,s_\gamma-\tilde{\mu}\,c_\gamma\right)\left(s_\gamma\,a_u^{i1p}-\tilde{\mu}\,c_\gamma\,y_u^{i1p}\right)\text{LF}_{1,1,1,1,0}[m_1,m_{\tilde{q}}^{i1},m_{\tilde{u}}^{p},\tilde{\mu}]+$$
$$\frac{1}{96}g_1^2\,\overline{y_u}^{i2p}\left(m_1\,s_\gamma+\tilde{\mu}\,c_\gamma\right)\left(s_\gamma\,a_u^{i1p}-\tilde{\mu}\,c_\gamma\,y_u^{i1p}\right)\text{LF}_{2,1,1,1,-1}[m_1,m_{\tilde{q}}^{i1},m_{\tilde{u}}^{p},\tilde{\mu}]+$$
$$\frac{1}{48}g_1^2\,y_u^{i1p}\left(m_1\,s_\gamma-\tilde{\mu}\,c_\gamma\right)\left(s_\gamma\,\overline{a_u}^{i2p}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2p}\right)\text{LF}_{1,1,1,1,0}[m_1,m_{\tilde{q}}^{i2},m_{\tilde{u}}^{p},\tilde{\mu}]+$$
$$\frac{1}{96}g_1^2\,y_u^{i1p}\left(m_1\,s_\gamma+\tilde{\mu}\,c_\gamma\right)\left(s_\gamma\,\overline{a_u}^{i2p}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2p}\right)\text{LF}_{2,1,1,1,-1}[m_1,m_{\tilde{q}}^{i2},m_{\tilde{u}}^{p},\tilde{\mu}]+$$
$$\frac{1}{16}g_2^2\,\overline{y_d}^{i2p}\left(m_2\,c_\gamma-s_\gamma\,\tilde{\mu}\right)\left(c_\gamma\,a_d^{i1p}-s_\gamma\,\tilde{\mu}\,y_d^{i1p}\right)\text{LF}_{1,1,1,1,0}[m_2,m_{\tilde{d}}^{p},m_{\tilde{q}}^{i1},\tilde{\mu}]+$$
$$\frac{1}{32}g_2^2\,\overline{y_d}^{i2p}\left(m_2\,c_\gamma+s_\gamma\,\tilde{\mu}\right)\left(c_\gamma\,a_d^{i1p}-s_\gamma\,\tilde{\mu}\,y_d^{i1p}\right)\text{LF}_{2,1,1,1,-1}[m_2,m_{\tilde{d}}^{p},m_{\tilde{q}}^{i1},\tilde{\mu}]+$$
$$\frac{1}{16}g_2^2\,y_d^{i1p}\left(m_2\,c_\gamma-s_\gamma\,\tilde{\mu}\right)\left(c_\gamma\,\overline{a_d}^{i2p}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\right)\text{LF}_{1,1,1,1,0}[m_2,m_{\tilde{d}}^{p},m_{\tilde{q}}^{i2},\tilde{\mu}]+$$
$$\frac{1}{32}g_2^2\,y_d^{i1p}\left(m_2\,c_\gamma+s_\gamma\,\tilde{\mu}\right)\left(c_\gamma\,\overline{a_d}^{i2p}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\right)\text{LF}_{2,1,1,1,-1}[m_2,m_{\tilde{d}}^{p},m_{\tilde{q}}^{i2},\tilde{\mu}]+$$
$$\frac{1}{16}g_2^2\,\overline{y_u}^{i2p}\left(m_2\,s_\gamma-\tilde{\mu}\,c_\gamma\right)\left(s_\gamma\,a_u^{i1p}-\tilde{\mu}\,c_\gamma\,y_u^{i1p}\right)\text{LF}_{1,1,1,1,0}[m_2,m_{\tilde{q}}^{i1},m_{\tilde{u}}^{p},\tilde{\mu}]+$$
$$\frac{1}{32}g_2^2\,\overline{y_u}^{i2p}\left(m_2\,s_\gamma+\tilde{\mu}\,c_\gamma\right)\left(s_\gamma\,a_u^{i1p}-\tilde{\mu}\,c_\gamma\,y_u^{i1p}\right)\text{LF}_{2,1,1,1,-1}[m_2,m_{\tilde{q}}^{i1},m_{\tilde{u}}^{p},\tilde{\mu}]+$$
$$\frac{1}{16}g_2^2\,y_u^{i1p}\left(m_2\,s_\gamma-\tilde{\mu}\,c_\gamma\right)\left(s_\gamma\,\overline{a_u}^{i2p}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2p}\right)\text{LF}_{1,1,1,1,0}[m_2,m_{\tilde{q}}^{i2},m_{\tilde{u}}^{p},\tilde{\mu}]+$$
$$\frac{1}{32}g_2^2\,y_u^{i1p}\left(m_2\,s_\gamma+\tilde{\mu}\,c_\gamma\right)\left(s_\gamma\,\overline{a_u}^{i2p}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2p}\right)\text{LF}_{2,1,1,1,-1}[m_2,m_{\tilde{q}}^{i2},m_{\tilde{u}}^{p},\tilde{\mu}]+$$
$$\frac{1}{96}g_1^2\,\overline{y_d}^{i2p}\left(m_1\,c_\gamma+s_\gamma\,\tilde{\mu}\right)\left(c_\gamma\,a_d^{i1p}-s_\gamma\,\tilde{\mu}\,y_d^{i1p}\right)\text{LF}_{2,1,1,1,-1}[m_{\tilde{d}}^{p},m_1,m_{\tilde{q}}^{i1},\tilde{\mu}]-$$
$$\frac{1}{144}g_1^2\left(c_\gamma\,\overline{a_d}^{i2p}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\right)\left(c_\gamma\,a_d^{i1p}-s_\gamma\,\tilde{\mu}\,y_d^{i1p}\right)\text{LF}_{2,1,1,1,-1}[m_{\tilde{d}}^{p},m_1,m_{\tilde{q}}^{i2},m_{\tilde{q}}^{i1}]+$$
$$\frac{1}{96}g_1^2\,y_d^{i1p}\left(m_1\,c_\gamma+s_\gamma\,\tilde{\mu}\right)\left(c_\gamma\,\overline{a_d}^{i2p}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\right)\text{LF}_{2,1,1,1,-1}[m_{\tilde{d}}^{p},m_1,m_{\tilde{q}}^{i2},\tilde{\mu}]-$$
$$\frac{1}{32}g_2^2\,\overline{y_d}^{i2p}\left(m_2\,c_\gamma+s_\gamma\,\tilde{\mu}\right)\left(c_\gamma\,a_d^{i1p}-s_\gamma\,\tilde{\mu}\,y_d^{i1p}\right)\text{LF}_{2,1,1,1,-1}[m_{\tilde{d}}^{p},m_2,m_{\tilde{q}}^{i1},\tilde{\mu}]+$$
$$\frac{1}{16}g_2^2\left(c_\gamma\,\overline{a_d}^{i2p}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\right)\left(c_\gamma\,a_d^{i1p}-s_\gamma\,\tilde{\mu}\,y_d^{i1p}\right)\text{LF}_{2,1,1,1,-1}[m_{\tilde{d}}^{p},m_2,m_{\tilde{q}}^{i2},m_{\tilde{q}}^{i1}]-$$
$$\frac{1}{32}g_2^2\,y_d^{i1p}\left(m_2\,c_\gamma+s_\gamma\,\tilde{\mu}\right)\left(c_\gamma\,\overline{a_d}^{i2p}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\right)\text{LF}_{2,1,1,1,-1}[m_{\tilde{d}}^{p},m_2,m_{\tilde{q}}^{i2},\tilde{\mu}]-$$
$$\frac{1}{3}g_3^2\left(c_\gamma\,\overline{a_d}^{i2p}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\right)\left(c_\gamma\,a_d^{i1p}-s_\gamma\,\tilde{\mu}\,y_d^{i1p}\right)\text{LF}_{2,1,1,1,-1}[m_{\tilde{d}}^{p},m_3,m_{\tilde{q}}^{i2},m_{\tilde{q}}^{i1}]-$$
$$\frac{1}{96}g_1^2\,\overline{y_d}^{i2p}\left(m_1\,c_\gamma+s_\gamma\,\tilde{\mu}\right)\left(c_\gamma\,a_d^{i1p}-s_\gamma\,\tilde{\mu}\,y_d^{i1p}\right)\text{LF}_{2,1,1,1,-1}[m_{\tilde{q}}^{i1},m_1,m_{\tilde{d}}^{p},\tilde{\mu}]+$$
$$\frac{1}{96}g_1^2\,\overline{y_u}^{i2p}\left(m_1\,s_\gamma+\tilde{\mu}\,c_\gamma\right)\left(s_\gamma\,a_u^{i1p}-\tilde{\mu}\,c_\gamma\,y_u^{i1p}\right)\text{LF}_{2,1,1,1,-1}[m_{\tilde{q}}^{i1},m_1,m_{\tilde{u}}^{p},\tilde{\mu}]+$$
$$\frac{1}{32}g_2^2\,\overline{y_d}^{i2p}\left(m_2\,c_\gamma+s_\gamma\,\tilde{\mu}\right)\left(c_\gamma\,a_d^{i1p}-s_\gamma\,\tilde{\mu}\,y_d^{i1p}\right)\text{LF}_{2,1,1,1,-1}[m_{\tilde{q}}^{i1},m_2,m_{\tilde{d}}^{p},\tilde{\mu}]+$$
$$\frac{1}{32}g_2^2\,\overline{y_u}^{i2p}\left(m_2\,s_\gamma+\tilde{\mu}\,c_\gamma\right)\left(s_\gamma\,a_u^{i1p}-\tilde{\mu}\,c_\gamma\,y_u^{i1p}\right)\text{LF}_{2,1,1,1,-1}[m_{\tilde{q}}^{i1},m_2,m_{\tilde{u}}^{p},\tilde{\mu}]-$$
$$\frac{1}{96}g_1^2\,y_d^{i1p}\left(m_1\,c_\gamma+s_\gamma\,\tilde{\mu}\right)\left(c_\gamma\,\overline{a_d}^{i2p}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\right)\text{LF}_{2,1,1,1,-1}[m_{\tilde{q}}^{i2},m_1,m_{\tilde{d}}^{p},\tilde{\mu}]+$$
$$\frac{1}{96}g_1^2\,y_u^{i1p}\left(m_1\,s_\gamma+\tilde{\mu}\,c_\gamma\right)\left(s_\gamma\,\overline{a_u}^{i2p}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2p}\right)\text{LF}_{2,1,1,1,-1}[m_{\tilde{q}}^{i2},m_1,m_{\tilde{u}}^{p},\tilde{\mu}]+$$
$$\frac{1}{32}g_2^2\,y_d^{i1p}\left(m_2\,c_\gamma+s_\gamma\,\tilde{\mu}\right)\left(c_\gamma\,\overline{a_d}^{i2p}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\right)\text{LF}_{2,1,1,1,-1}[m_{\tilde{q}}^{i2},m_2,m_{\tilde{d}}^{p},\tilde{\mu}]+$$
$$\frac{1}{32}g_2^2\,y_u^{i1p}\left(m_2\,s_\gamma+\tilde{\mu}\,c_\gamma\right)\left(s_\gamma\,\overline{a_u}^{i2p}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2p}\right)\text{LF}_{2,1,1,1,-1}[m_{\tilde{q}}^{i2},m_2,m_{\tilde{u}}^{p},\tilde{\mu}]-$$
$$\frac{1}{96}g_1^2\,\overline{y_u}^{i2p}\left(m_1\,s_\gamma+\tilde{\mu}\,c_\gamma\right)\left(s_\gamma\,a_u^{i1p}-\tilde{\mu}\,c_\gamma\,y_u^{i1p}\right)\text{LF}_{2,1,1,1,-1}[m_{\tilde{u}}^{p},m_1,m_{\tilde{q}}^{i1},\tilde{\mu}]-$$
$$\frac{1}{144}g_1^2\left(s_\gamma\,\overline{a_u}^{i2p}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2p}\right)\left(s_\gamma\,a_u^{i1p}-\tilde{\mu}\,c_\gamma\,y_u^{i1p}\right)\text{LF}_{2,1,1,1,-1}[m_{\tilde{u}}^{p},m_1,m_{\tilde{q}}^{i2},m_{\tilde{q}}^{i1}]-$$
$$\frac{1}{96}g_1^2\,y_u^{i1p}\left(m_1\,s_\gamma+\tilde{\mu}\,c_\gamma\right)\left(s_\gamma\,\overline{a_u}^{i2p}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2p}\right)\text{LF}_{2,1,1,1,-1}[m_{\tilde{u}}^{p},m_1,m_{\tilde{q}}^{i2},\tilde{\mu}]-$$
$$\frac{1}{32}g_2^2\,\overline{y_u}^{i2p}\left(m_2\,s_\gamma+\tilde{\mu}\,c_\gamma\right)\left(s_\gamma\,a_u^{i1p}-\tilde{\mu}\,c_\gamma\,y_u^{i1p}\right)\text{LF}_{2,1,1,1,-1}[m_{\tilde{u}}^{p},m_2,m_{\tilde{q}}^{i1},\tilde{\mu}]+$$
$$\frac{1}{16}g_2^2\left(s_\gamma\,\overline{a_u}^{i2p}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2p}\right)\left(s_\gamma\,a_u^{i1p}-\tilde{\mu}\,c_\gamma\,y_u^{i1p}\right)\text{LF}_{2,1,1,1,-1}[m_{\tilde{u}}^{p},m_2,m_{\tilde{q}}^{i2},m_{\tilde{q}}^{i1}]-$$
$$\frac{1}{32}g_2^2\,y_u^{i1p}\left(m_2\,s_\gamma+\tilde{\mu}\,c_\gamma\right)\left(s_\gamma\,\overline{a_u}^{i2p}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2p}\right)\text{LF}_{2,1,1,1,-1}[m_{\tilde{u}}^{p},m_2,m_{\tilde{q}}^{i2},\tilde{\mu}]-$$
$$\frac{1}{3}g_3^2\left(s_\gamma\,\overline{a_u}^{i2p}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2p}\right)\left(s_\gamma\,a_u^{i1p}-\tilde{\mu}\,c_\gamma\,y_u^{i1p}\right)\text{LF}_{2,1,1,1,-1}[m_{\tilde{u}}^{p},m_3,m_{\tilde{q}}^{i2},m_{\tilde{q}}^{i1}]+$$
$$\frac{1}{24}g_1^2\,g_2^2\left(c_\gamma^2-s_\gamma^2\right)\text{LF}_{2,1,1,1,1,-2}[\tilde{\mu},m_1,m_2,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}+$$
$$\frac{1}{24}m_1\,m_2\,g_1^2\,g_2^2\left(-c_\gamma^2+s_\gamma^2\right)\text{LF}_{2,1,1,1,1,-1}[\tilde{\mu},m_1,m_2,m_{\tilde{q}}^{i2}]\,\delta_{i1i2}+$$
$$\frac{1}{96}g_1^2\,\overline{y_d}^{i2p}\left(m_1\,c_\gamma+s_\gamma\,\tilde{\mu}\right)\left(c_\gamma\,a_d^{i1p}-s_\gamma\,\tilde{\mu}\,y_d^{i1p}\right)\text{LF}_{2,1,1,1,-1}[\tilde{\mu},m_1,m_{\tilde{d}}^{p},m_{\tilde{q}}^{i1}]+$$
$$\frac{1}{96}g_1^2\,y_d^{i1p}\left(m_1\,c_\gamma+s_\gamma\,\tilde{\mu}\right)\left(c_\gamma\,\overline{a_d}^{i2p}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\right)\text{LF}_{2,1,1,1,-1}[\tilde{\mu},m_1,m_{\tilde{d}}^{p},m_{\tilde{q}}^{i2}]-$$
$$\frac{1}{96}g_1^2\,\overline{y_u}^{i2p}\left(m_1\,s_\gamma+\tilde{\mu}\,c_\gamma\right)\left(s_\gamma\,a_u^{i1p}-\tilde{\mu}\,c_\gamma\,y_u^{i1p}\right)\text{LF}_{2,1,1,1,-1}[\tilde{\mu},m_1,m_{\tilde{q}}^{i1},m_{\tilde{u}}^{p}]-$$
$$\frac{1}{96}g_1^2\,y_u^{i1p}\left(m_1\,s_\gamma+\tilde{\mu}\,c_\gamma\right)\left(s_\gamma\,\overline{a_u}^{i2p}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2p}\right)\text{LF}_{2,1,1,1,-1}[\tilde{\mu},m_1,m_{\tilde{q}}^{i2},m_{\tilde{u}}^{p}]-$$
$$\frac{1}{32}g_2^2\,\overline{y_d}^{i2p}\left(m_2\,c_\gamma+s_\gamma\,\tilde{\mu}\right)\left(c_\gamma\,a_d^{i1p}-s_\gamma\,\tilde{\mu}\,y_d^{i1p}\right)\text{LF}_{2,1,1,1,-1}[\tilde{\mu},m_2,m_{\tilde{d}}^{p},m_{\tilde{q}}^{i1}]-$$
$$\frac{1}{32}g_2^2\,y_d^{i1p}\left(m_2\,c_\gamma+s_\gamma\,\tilde{\mu}\right)\left(c_\gamma\,\overline{a_d}^{i2p}-s_\gamma\,\tilde{\mu}\,\overline{y_d}^{i2p}\right)\text{LF}_{2,1,1,1,-1}[\tilde{\mu},m_2,m_{\tilde{d}}^{p},m_{\tilde{q}}^{i2}]-$$
$$\frac{1}{32}g_2^2\,\overline{y_u}^{i2p}\left(m_2\,s_\gamma+\tilde{\mu}\,c_\gamma\right)\left(s_\gamma\,a_u^{i1p}-\tilde{\mu}\,c_\gamma\,y_u^{i1p}\right)\text{LF}_{2,1,1,1,-1}[\tilde{\mu},m_2,m_{\tilde{q}}^{i1},m_{\tilde{u}}^{p}]-$$
$$\left.\frac{1}{32}g_2^2\,y_u^{i1p}\left(m_2\,s_\gamma+\tilde{\mu}\,c_\gamma\right)\left(s_\gamma\,\overline{a_u}^{i2p}-\tilde{\mu}\,c_\gamma\,\overline{y_u}^{i2p}\right)\text{LF}_{2,1,1,1,-1}[\tilde{\mu},m_2,m_{\tilde{q}}^{i2},m_{\tilde{u}}^{p}]\right)$$