sign of q. Substituting each one of the values of w_2 and using the identities $\Gamma_e(qz)=\theta_p(z)\Gamma_e(z)$ and $\Gamma_e\big(pq^2z^{-1}\big)\Gamma_e(z)=\theta_p\big(q^{-1}z\big)$ we get

$$
\begin{aligned}
&\frac{1}{2}\frac{\Gamma_e(t^{-2})\Gamma_e\big(pq^3t^2A^{-2}B^2\big)\Gamma_e\big(q^{-1}t^{-2}B^{-2}\big)\Gamma_e\big(q^{-1}t^{-2}B^2\big)}{\theta_p(pq^2t^4A^{-2}B^2)}\\
&\quad\times\Gamma_e\big(q^{-1}t^{-2}AB^{-1}C^{\pm1}D^{\pm1}\big)\Gamma_e\big((pq)^{\frac12}tA^{-1}D^{\pm1}u^{\pm1}\big)\Gamma_e\big((pq)^{\frac12}tBD^{\pm1}u^{\pm1}\big)\\
&\quad\times\Gamma_e\big(q^{-\frac12}AB^{-1}u^{\pm1}\big(q^{\frac12}v\big)^{\pm1}\big)\Gamma_e\big((pq)^{\frac12}q^{\frac12}tBD^{\pm1}\big(q^{\frac12}v\big)^{\pm1}\big)\Gamma_e\big((pq)^{\frac12}q^{\frac12}tA^{-1}C^{\pm1}\big(q^{\frac12}v\big)^{\pm1}\big)\\
&\quad\times\frac{\theta_p\big(q^{-1}t^{-4}AB^{-1}vu^{\pm1}\big)\theta_p\big((pq)^{\frac12}q^{-1}tB^{-1}v^{-1}D^{\pm1}\big)\theta_p\big((pq)^{\frac12}q^{-1}tAv^{-1}C^{\pm1}\big)}{\theta_p\big(t^{-4}v^2\big)\theta_p\big(v^2\big)}\\
&\qquad+\frac{1}{2}\frac{\Gamma_e(t^{-2})\Gamma_e\big(pq^3t^2A^{-2}B^2\big)\Gamma_e\big(q^{-1}t^{-2}B^{-2}\big)\Gamma_e\big(q^{-1}t^{-2}B^2\big)}{\theta_p\big(pq^2t^4A^{-2}B^2\big)}\\
&\quad\times\Gamma_e\big(q^{-1}t^{-2}AB^{-1}C^{\pm1}D^{\pm1}\big)\Gamma_e\big((pq)^{\frac12}tA^{-1}D^{\pm1}u^{\pm1}\big)\Gamma_e\big((pq)^{\frac12}tBD^{\pm1}u^{\pm1}\big)\\
&\quad\times\Gamma_e\big(AB^{-1}u^{\pm1}v^{\pm1}\big)\Gamma_e\big((pq)^{\frac12}q^{\frac12}tBD^{\pm1}\big(q^{\frac12}v\big)^{\pm1}\big)\Gamma_e\big((pq)^{\frac12}q^{\frac12}tA^{-1}C^{\pm1}\big(q^{\frac12}v\big)^{\pm1}\big)\\
&\qquad\times\frac{\theta_p\big((pq)^{\frac12}q^{-1}t^{-3}B^{-1}vD^{\pm1}\big)\theta_p\big((pq)^{\frac12}q^{-1}t^{-3}AvC^{\pm1}\big)}{\theta_p\big(t^4v^{-2}\big)\theta_p\big(v^2\big)}+\big\{v\leftrightarrow v^{-1}\big\}.
\end{aligned}
$$

Adding the contribution of (**??**) and taking away overall factors the final result is

$$
\begin{aligned}
&T_{\mathfrak{J}_B,\mathfrak{J}_C,\mathfrak{J}_D}(w,u,v)\times_w C^{(1,0;AB^{-1})}_{\mathfrak{J}_B}(w)\\
&\sim\frac{\theta_p\big(pq^2t^2A^{-2}B^2\big)\theta_p\big((pq)^{-1}q^{-1}t^{-4}A^2B^{-2}\big)}{\theta_p(t^{-2})\theta_p\big(q^{-1}t^{-2}B^{-2}\big)\theta_p\big(q^{-1}t^{-2}A^2\big)\theta_p\big(pq^2t^4A^{-2}B^2\big)\theta_p\big(q^{-1}t^{-2}AB^{-1}C^{\pm1}D^{\pm1}\big)}\\
&\quad\times\frac{\theta_p\big(q^{-1}t^{-4}AB^{-1}vu^{\pm1}\big)\theta_p\big((pq)^{\frac12}q^{-1}tB^{-1}v^{-1}D^{\pm1}\big)\theta_p\big((pq)^{\frac12}q^{-1}tAv^{-1}C^{\pm1}\big)}{\theta_p\big(t^{-4}v^2\big)\theta\big(v^2\big)}\\
&\quad\times\Gamma_e\big(q^{-\frac12}AB^{-1}u^{\pm1}\big(q^{\frac12}v\big)^{\pm1}\big)\Gamma_e\big((pq)^{\frac12}q^{\frac12}tBD^{\pm1}\big(q^{\frac12}v\big)^{\pm1}\big)\Gamma_e\big((pq)^{\frac12}q^{\frac12}tA^{-1}C^{\pm1}(q^{\frac12}v)^{\pm1}\big)\\
&\qquad\times\Gamma_e\big((pq)^{\frac12}tA^{-1}u^{\pm1}D^{\pm1}\big)\Gamma_e\big((pq)^{\frac12}tBu^{\pm1}C^{\pm1}\big)\\
&\quad+\frac{\theta_p\big(pq^2t^2A^{-2}B^2\big)\theta_p\big((pq)^{-1}q^{-1}t^{-4}A^2B^{-2}\big)}{\theta_p\big(t^{-2}\big)\theta_p\big(q^{-1}t^{-2}B^{-2}\big)\theta_p\big(q^{-1}t^{-2}A^2\big)\theta_p\big(pq^2t^4A^{-2}B^2\big)\theta_p\big(q^{-1}t^{-2}AB^{-1}C^{\pm1}D^{\pm1}\big)}\\
&\qquad\times\Gamma_e\big((pq)^{\frac12}tA^{-1}u^{\pm1}D^{\pm1}\big)\Gamma_e\big((pq)^{\frac12}tBu^{\pm1}C^{\pm1}\big)\\
&\quad\times\Gamma_e\big(AB^{-1}u^{\pm1}v^{\pm1}\big)\Gamma_e\big((pq)^{\frac12}q^{\frac12}tBD^{\pm1}\big(q^{\frac12}v\big)^{\pm1}\big)\Gamma_e\big((pq)^{\frac12}q^{\frac12}tA^{-1}C^{\pm1}\big(q^{\frac12}v\big)^{\pm1}\big)\\
&\qquad\times\frac{\theta_p\big((pq)^{\frac12}q^{-1}t^{-3}B^{-1}vD^{\pm1}\big)\theta_p\big((pq)^{\frac12}q^{-1}t^{-3}AvC^{\pm1}\big)}{\theta_p\big(v^2\big)\theta_p\big(t^4v^{-2}\big)}+\big\{v\leftrightarrow v^{-1}\big\}\\
&\qquad+\Gamma_e\big(AB^{-1}u^{\pm1}v^{\pm1}\big)\Gamma_e\big((pq)^{\frac12}tBD^{\pm1}v^{\pm1}\big)\Gamma_e\big((pq)^{\frac12}tA^{-1}C^{\pm1}v^{\pm1}\big)\\
&\qquad\times\Gamma_e\big((pq)^{\frac12}tA^{-1}u^{\pm1}D^{\pm1}\big)\Gamma_e\big((pq)^{\frac12}tBu^{\pm1}C^{\pm1}\big).
\end{aligned}
\tag{1}
$$