For CGMY process X

$$\mathbb{E}(e^{pX_t}) = e^{tV(p)}$$

for some function $V(p)$ (including drift term bp) for $p \in (-G, M)$. Choose b so that $V(1) = 0$ (martingale condition).

Let $dV_t = \kappa(\theta - V_t)dt + \sigma\sqrt{V_t}dW_t$ denote usual CIR process and let $\tau_t = \int_0^t V_s ds$. $\mathbb{E}(X_t) = V'(0)t \leq \log \mathbb{E}(e^{X_t}) = 0$, so under the CGMY-SV model, using iterated expectations

$$\begin{aligned}
\mathrm{VIX}_T^2 = -\frac{2}{\Delta}\mathbb{E}(X_{\tau_{T+\Delta}} - X_{\tau_T}) = -\frac{2}{\Delta}\mathbb{E}(\mathbb{E}(X_{\tau_{T+\Delta}} - X_{\tau_T}|\tau_{T+\Delta} - \tau_T) &= -2V'(0)\,\frac{1}{\Delta}\mathbb{E}(\tau_{T+\Delta} - \tau_T) \\
&= -2V'(0)\,\frac{1}{\Delta}\mathbb{E}(\int_T^{T+\Delta} V_s ds) \\
&= -2V'(0)(aV_T + b)
\end{aligned}$$

from e.g. Eq 11 in [FS23], for two constants a, b which depend only on κ, θ, Δ (and $a = 1, b = 0$ if $\kappa = 0$ since V is a martingale in this case). As a sanity check note if $dX_t = -\frac{1}{2}dt + dW_t$, then $V(p) = \frac{1}{2}(p^2 - p)$, and $-2V'(0) = 1$, and we recover Eq 11 in [FS23] for the standard Heston model.