$\frac{1}{2} \exp\left(\frac{f_i^c}{2} - \frac{(f_i^c)^2}{2}\omega_0^i\right) \prod_{c=1}^C 2^{-n_c^i} \exp\left(-\frac{n_c^i f_c^i}{2} - \frac{(f_c^i)^2}{2}\omega_c^i\right)$