$$\begin{array}{c} p_{X_1}(x) \stackrel{\operatorname{FT}}{\longrightarrow} \varphi_{X_1}(s) \\ \\ p_{X_1}(x) \longrightarrow \varphi_{X_2}(s) \stackrel{\operatorname{Product}}{\longrightarrow} \\ \\ \vdots \qquad \qquad \vdots \qquad \qquad \varphi_{\sum X_i}(s) \stackrel{\operatorname{IFT}}{\longrightarrow} p_{\sum X_i}(x) \\ \\ p_{X_n}(x) \longrightarrow \varphi_{X_n}(s) \end{array}$$