CHIPS

amplifier
$x \ \longrightarrow px$
$yp \longleftarrow y$
$p \leftarrow p - \alpha py$

shift
$x \ \longrightarrow x + p$
$y \longleftarrow y$
$p \leftarrow p - \alpha y$

join: addition
$\sum_{i=0}^{n} x_i \mathbf{e}_i \ \longrightarrow \sum_{i=0}^{n} x_i$
$\sum_{i=0}^{n} y \mathbf{e}_i \longleftarrow y$

split / clone
$x \longrightarrow \sum_{i=0}^{n} x \mathbf{e}_i$
$\sum_{i=0}^{n} y \mathbf{e}_i \longleftarrow y$