*Basic ripple-carry structure*

y(width-1)

x(width-1)

y(1)

x(1)

y(0)

x(0)

. . . .

cout

FA

FA

cin

FA

s(width-1)

s(1)

s(0)

*Resulting circuit*

*Pattern described with “for generate”*

cout

cin

. . . . . . . .

carry(width)

s(width-1)

x(width-1)

FA

y(width-1)

s(0)

carry(1)

carry(0)

y(0)

x(0)

FA

carry(i)

y(i)

s(i)

x(i)

FA

carry(i+1)