

Figure 1- Internal architecture of an unsigned radix-4 Booth multiplier

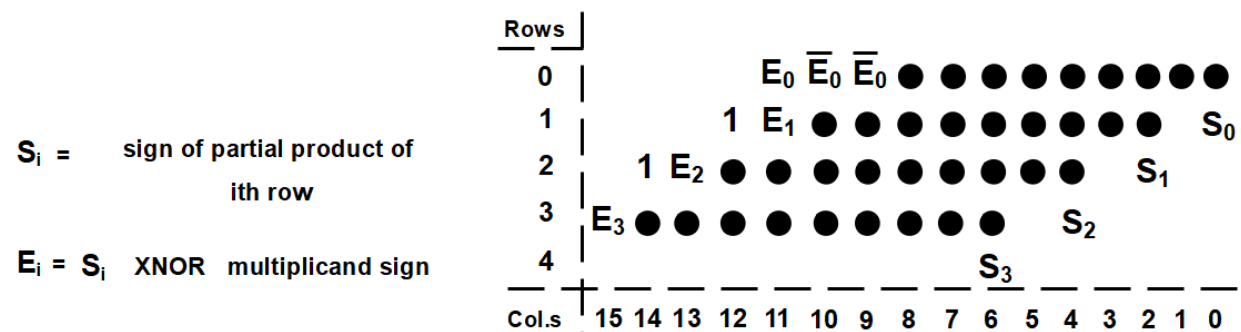


Figure 2- Internal architecture of a signed radix-4 Booth multiplier

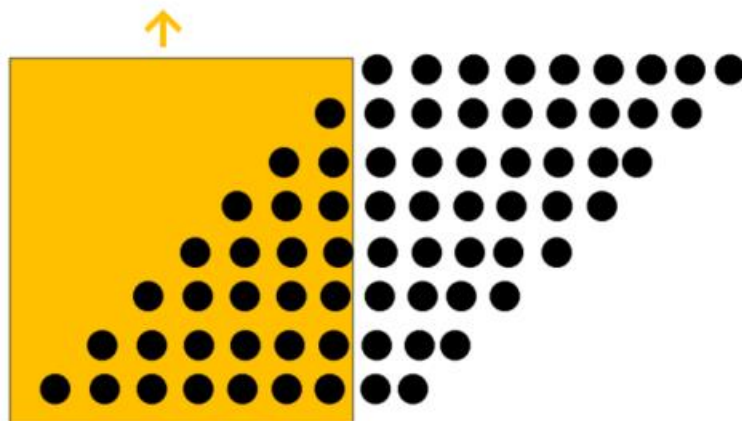


Figure 3- dot- diagram of an unsigned regular multiplier



Figure 4- dot- diagram of an unsigned regular multiplier

	y_7	y_6	y_5	y_4	y_3	y_2	y_1	y_0							
	x_7	x_6	x_5	x_4	x_3	x_2	x_1	x_0							
	1	$\overline{p_{70}}$	p_{60}	p_{50}	p_{40}	p_{30}	p_{20}	p_{10}	p_{00}						
	$\overline{p_{71}}$	p_{61}	p_{51}	p_{41}	p_{31}	p_{21}	p_{11}	p_{01}							
	$\overline{p_{72}}$	p_{62}	p_{52}	p_{42}	p_{32}	p_{22}	p_{12}	p_{02}							
	$\overline{p_{73}}$	p_{63}	p_{53}	p_{43}	p_{33}	p_{23}	p_{13}	p_{03}							
	$\overline{p_{74}}$	p_{64}	p_{54}	p_{44}	p_{34}	p_{24}	p_{14}	p_{04}							
	$\overline{p_{75}}$	p_{65}	p_{55}	p_{45}	p_{35}	p_{25}	p_{15}	p_{05}							
	$\overline{p_{76}}$	p_{66}	p_{56}	p_{46}	p_{36}	p_{26}	p_{16}	p_{06}							
	p_{77}	$\overline{p_{67}}$	$\overline{p_{57}}$	$\overline{p_{47}}$	$\overline{p_{37}}$	$\overline{p_{27}}$	$\overline{p_{17}}$	$\overline{p_{07}}$							
$\overline{s_{15}}$	s_{14}	s_{13}	s_{12}	s_{11}	s_{10}	s_9	s_8	s_7	s_6	s_5	s_4	s_3	s_2	s_1	s_0

Figure 5- internal architecture of a signed regular multiplier (Baugh_wooly)



Figure 6- dot diagram of an unsigned regular multiplier when 5 least columns are truncated



Figure 7- dot diagram of an unsigned regular multiplier when 5 least columns are replaced by "1"

- 1) Note that Figures 3 and 4 are identical (just different representation formats).
- 2) In Booth multipliers, S_i signals are also called neg_i or cor_i .
- 3) Approximations like truncation and replacement of the least significant bits are shown in Figures 6, and 7 for the unsigned regular multiplier. You can refer to these figures when you apply the same approximation to other multipliers as well.