

## SNS COLLEGE OF TECHNOLOGY



(An Autonomous Institution)
Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai
Accredited by NAAC-UGC with 'A++' Grade (Cycle III),
Accredited by NBA (B.E - CSE, EEE, ECE, Mech, B.Tech.IT)

COIMBATORE-641 035, TAMIL NADU

COURSE NAME : 23ITT202 – COMPUTER ORGANIZATION AND ARCHITECTURE

II YEAR/ III SEMESTER

**UNIT – II ARITHMETIC OPERATIONS** 

**Topic: SIGNED - OPERAND MULTIPLICATION** 

## **Signed-Operand Multiplication**

## **Booth Algorithm**

					×	1	0	0	1	1	(-13) (+11)
	1	1	1	1	-	1	0	0	1	1	
	1	ı	1	1	1	0	0	1	1		
Sign extension is shown in blue	0	0	0	0	0	0	0	0			
	1	1	1	0	0	1	1				
	0	0	0	0	0	σ					i
	1	1	0	1	1-	1	0	0	0	1	(-143)

Figure 6.8 Sign extension of negative multiplicand.

45\*30

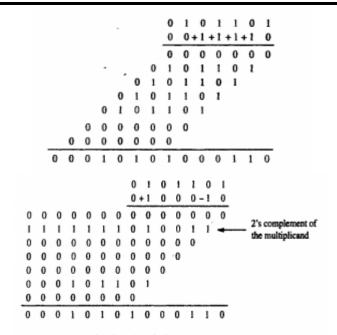


Figure 6.9 Normal and Booth multiplication schemes.

difference between two numbers:

Figure 6.10 Booth recoding of a multiplier.

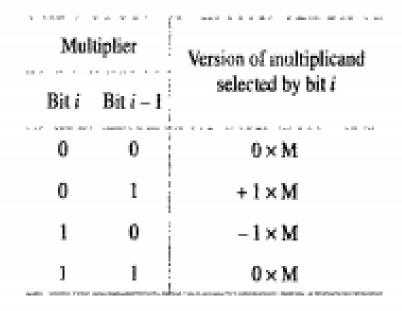


Figure 6.12 Booth multiplier recoding table.

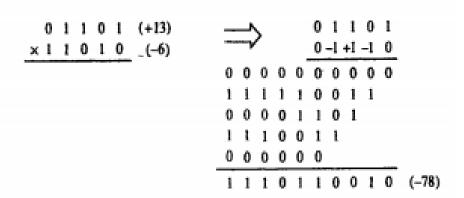


Figure 6.11 Booth multiplication with a negative multiplier.

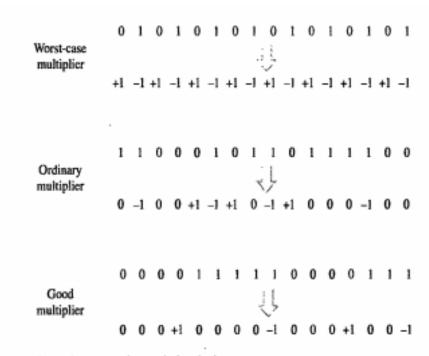


Figure 6.13 Booth recoded multipliers.