R1 D3 D2 D1 D0 F2 F1 F0 R0 COMPUTATION UNIT ROUTING UNIT REGISTER UNIT 0011 RegA 1010 В RegB COUNT / EXECUTE / SHIFT-COUNT ENABLE **CONTROL UNIT** (MEALY - GG 3.4) (INPUT) (OUTPUT) 0 LOAD A 0 LOAD B 00 Reset 00/0/0 EXECUTE COUNTER CLK D[3:0] XXXX F[2:0] 010 R[1:0] 10 Load A Load B Execute RegA 0011 1001 0100 0010 1001 1010 0101 1010 0101 1010 RegB

GG 3.3 (v15.3)

(Computation Unit				
F2	F1	F0	f(A, B)		
0	0	0	A AND B		
0	0	1	A OR B		
0	1	0	A XOR B		
0	1	1	1111		
1	0	0	A NAND B		
1	0	1	A NOR B		
1	1	0	A XNOR B		
1	1	1	0000		

GG 3.3 (v15.3)

Routing Unit				
R1	R0	A'	B'	
0	0	Α	В	
0	1	Α	F	
1	0	F	В	
1	1	В	Α	

R1 D3 D2 D1 D0 F2 F1 F0 R0 COMPUTATION UNIT ROUTING UNIT REGISTER UNIT 0011 RegA 1010 В RegB **CONTROL UNIT** COUNT / EXECUTE / SHIFT-COUNT ENABLE (MEALY - GG 3.4) (OUTPUT) (INPUT) 0 LOAD A 0 LOAD B 00 Reset 00/0/0 EXECUTE COUNTER CLK D[3:0] **XXXX** F[2:0] 010 R[1:0] 10 Load A Load B Execute RegA 1001 0100 0010 0011 1001 1010 0101 1010 0101 1010 RegB

GG 3.3 (v15.3)

Computation Unit				
F2	F1	F0	f(A, B)	
0	0	0	A AND B	
0	0	1	A OR B	
0	1	0	A XOR B	
0	1	1	1111	
1	0	0	A NAND B	
1	0	1	A NOR B	
1	1	0	A XNOR B	
1	1	1	0000	

GG 3.3 (v15.3)

Routing Unit				
R1	R0	A'	В'	
0	0	Α	В	
0	1	Α	F	
1	0	F	В	
1	1	В	Α	

R1 D3 D2 D1 D0 F2 F1 F0 R0 COMPUTATION UNIT ROUTING UNIT REGISTER UNIT 0011 RegA 1010 В RegB **CONTROL UNIT** COUNT / EXECUTE / SHIFT-COUNT ENABLE (MEALY - GG 3.4) (INPUT) (OUTPUT) 0 LOAD A 0 LOAD B 0 0 Reset 1 EXECUTE COUNTER CLK _ D[3:0] **XXXX** F[2:0] 010 R[1:0] 10 Load A Load B Execute RegA 0011 1001 0100 0010 1001 101) 0101 1010 0101 1010 RegB

GG 3.3 (v15.3)

Computation Unit				
F2	F1	F0	f(A, B)	
0	0	0	A AND B	
0	0	1	A OR B	
0	1	0	A XOR B	
0	1	1	1111	
1	0	0	A NAND B	
1	0	1	A NOR B	
1	1	0	A XNOR B	
1	1	1	0000	

GG 3.3 (v15.3)

Routing Unit				
R1	R0	A'	B'	
0	0	Α	В	
0	1	Α	F	
1	0	F	В	
1	1	В	Α	

R1 D3 D2 D1 D0 F2 F1 F0 R0 COMPUTATION UNIT ROUTING UNIT REGISTER UNIT 1001 RegA 1 0 1 В RegB COUNT / EXECUTE / SHIFT-COUNT ENABLE **CONTROL UNIT** (MEALY - GG 3.4) (OUTPUT) (INPUT) 0 LOAD A 0 LOAD B 0 1 Reset 1 EXECUTE COUNTER CLK ____ D[3:0] **XXXX** F[2:0] 010 R[1:0] 10 Load A Load B Execute 1001 0100 0010 RegA 0011 1001 1010 0101 1010 0101 1010 RegB

GG 3.3 (v15.3)

(Computation Unit				
F2	F1	F0	f(A, B)		
0	0	0	A AND B		
0	0	1	A OR B		
0	1	0	A XOR B		
0	1	1	1111		
1	0	0	A NAND B		
1	0	1	A NOR B		
1	1	0	A XNOR B		
1	1	1	0000		

GG 3.3 (v15.3)

Routing Unit						
R1	R1 R0 A' B'					
0	0	Α	В			
0	1	Α	F			
1	0	F	В			
1	1	В	Α			

R1 D3 D2 D1 D0 F2 F1 F0 R0 COMPUTATION UNIT ROUTING UNIT REGISTER UNIT 1001 RegA 1 0 1 В RegB **CONTROL UNIT** COUNT / EXECUTE / SHIFT-COUNT ENABLE (MEALY - GG 3.4) (INPUT) (OUTPUT) 0 LOAD A 0 LOAD B 0 1 Reset 1 EXECUTE COUNTER CLK _ D[3:0] **XXXX** F[2:0] 010 R[1:0] 10 Load A Load B Execute RegA 0011 1001 0100 0010 1001 1010 0101 1010 0101 1010 RegB

GG 3.3 (v15.3)

(Computation Unit				
F2	F1	F0	f(A, B)		
0	0	0	A AND B		
0	0	1	A OR B		
0	1	0	A XOR B		
0	1	1	1111		
1	0	0	A NAND B		
1	0	1	A NOR B		
1	1	0	A XNOR B		
1	1	1	0000		

GG 3.3 (v15.3)

Routing Unit				
R1	R0	A'	В'	
0	0	Α	В	
0	1	Α	F	
1	0	F	В	
1	1	В	Α	

D3 D2 D1 D0 F2 F1 F0 R0 R1 COMPUTATION UNIT ROUTING UNIT REGISTER UNIT A 0100 RegA 1010 В RegB **CONTROL UNIT** COUNT / EXECUTE / SHIFT-COUNT ENABLE (MEALY - GG 3.4) (INPUT) (OUTPUT) 0 LOAD A 0 LOAD B 10 Reset 1 EXECUTE COUNTER CLK TITTI D[3:0] **XXXX** F[2:0] 010 R[1:0] 10 Load A Load B Execute 0100 0010 RegA 0011 1001 1010 0101 1010 0101 1010 RegB

GG 3.3 (v15.3)

Computation Unit				
F2	F1	F0	f(A, B)	
0	0	0	A AND B	
0	0	1	A OR B	
0	1	0	A XOR B	
0	1	1	1111	
1	0	0	A NAND B	
1	0	1	A NOR B	
1	1	0	A XNOR B	
1	1	1	0000	

GG 3.3 (v15.3)

Routing Unit				
R1	R0	A'	B'	
0	0	Α	В	
0	1	Α	F	
1	0	F	В	
1	1	В	Α	

D3 D2 D1 D0 F2 F1 F0 R0 R1 COMPUTATION UNIT ROUTING UNIT REGISTER UNIT A 0100 RegA 1010 В RegB COUNT / EXECUTE / SHIFT-COUNT ENABLE **CONTROL UNIT** (MEALY - GG 3.4) (INPUT) (OUTPUT) 0 LOAD A 0 LOAD B 10 Reset 1 EXECUTE COUNTER CLK TITTI D[3:0] **XXXX** F[2:0] 010 R[1:0] 10 Load A Load B Execute RegA 1001 0100 0010 0011 1001 1010 0101 1010 0101 1010 RegB

GG 3.3 (v15.3)

(Computation Unit				
F2	F1	F0	f(A, B)		
0	0	0	A AND B		
0	0	1	A OR B		
0	1	0	A XOR B		
0	1	1	1111		
1	0	0	A NAND B		
1	0	1	A NOR B		
1	1	0	A XNOR B		
1	1	1	0000		

GG 3.3 (v15.3)

Routing Unit				
R1	R0	A'	В'	
0	0	Α	В	
0	1	Α	F	
1	0	F	В	
1	1	В	Α	

R1 D3 D2 D1 D0 F2 F1 F0 R0 COMPUTATION UNIT ROUTING UNIT REGISTER UNIT A RegA 0101 В RegB **CONTROL UNIT** COUNT / EXECUTE / SHIFT-COUNT ENABLE (MEALY - GG 3.4) (INPUT) (OUTPUT) 0 LOAD A 0 LOAD B 1 1 Reset 1 EXECUTE COUNTER CLK TITT D[3:0] XXXX F[2:0] ()10 R[1:0] 10 Load A Load B Execute 1001 0100 0010 RegA 0011 1001 1010 1010 0101 1010 0101 RegB

GG 3.3 (v15.3)

Computation Unit			
F2	F1	F0	f(A, B)
0	0	0	A AND B
0	0	1	A OR B
0	1	0	A XOR B
0	1	1	1111
1	0	0	A NAND B
1	0	1	A NOR B
1	1	0	A XNOR B
1	1	1	0000

GG 3.3 (v15.3)

Routing Unit				
R1	R0	A'	В'	
0	0	Α	В	
0	1	Α	F	
1	0	F	В	
1	1	В	Α	

R1 D3 D2 D1 D0 F2 F1 F0 R0 COMPUTATION UNIT ROUTING UNIT REGISTER UNIT A RegA 0101 В RegB **CONTROL UNIT** COUNT / EXECUTE / SHIFT-COUNT ENABLE (MEALY - GG 3.4) (INPUT) (OUTPUT) 0 LOAD A 0 LOAD B 1 1 Reset 1 EXECUTE COUNTER CLK _____ D[3:0] XXXX F[2:0] 010 R[1:0] 10 Load A Load B Execute 1001 0100 0010 RegA 0011 1001 1010 0101 1010 0101 1010 RegB

GG 3.3 (v15.3)

Computation Unit			
F2	F1	F0	f(A, B)
0	0	0	A AND B
0	0	1	A OR B
0	1	0	A XOR B
0	1	1	1111
1	0	0	A NAND B
1	0	1	A NOR B
1	1	0	A XNOR B
1	1	1	0000

GG 3.3 (v15.3)

Routing Unit				
R1	R0	A'	В'	
0	0	Α	В	
0	1	Α	F	
1	0	F	В	
1	1	В	Α	

D3 D2 D1 D0 F2 F1 F0 R0 R1 COMPUTATION UNIT ROUTING UNIT **REGISTER UNIT** RegA 1010 В RegB **CONTROL UNIT** COUNT / EXECUTE / SHIFT-COUNT ENABLE (MEALY - GG 3.4) (INPUT) (OUTPUT) 0 LOAD A 0 LOAD B 0 0 Reset 1 EXECUTE COUNTER CLK TTTTTT D[3:0] XXXX F[2:0] 010 R[1:0] 10 Load A Load B Execute RegA 1001 0100 0010 0011 1001 1010 0101 1010 0101 1010 RegB

GG 3.3 (v15.3)

(Computation Unit				
F2	F1	F0	f(A, B)		
0	0	0	A AND B		
0	0	1	A OR B		
0	1	0	A XOR B		
0	1	1	1111		
1	0	0	A NAND B		
1	0	1	A NOR B		
1	1	0	A XNOR B		
1	1	1	0000		

GG 3.3 (v15.3)

Routing Unit				
R1	R0	A'	В'	
0	0	Α	В	
0	1	Α	F	
1	0	F	В	
1	1	В	Α	

R1 D3 D2 D1 D0 F2 F1 F0 R0 COMPUTATION UNIT ROUTING UNIT **REGISTER UNIT** RegA 1010 В RegB **CONTROL UNIT** COUNT / EXECUTE / SHIFT-COUNT ENABLE (MEALY - GG 3.4) (INPUT) (OUTPUT) 0 LOAD A 0 LOAD B 0 0 Reset 1 EXECUTE COUNTER CLK ______ D[3:0] **XXXX** F[2:0] 010 R[1:0] 10 Load A Load B Execute RegA 1001 0100 0010 0011 1001 1010 X0101 X1010 X0101 RegB 1010

GG 3.3 (v15.3)

(Computation Unit				
F2	F1	F0	f(A, B)		
0	0	0	A AND B		
0	0	1	A OR B		
0	1	0	A XOR B		
0	1	1	1111		
1	0	0	A NAND B		
1	0	1	A NOR B		
1	1	0	A XNOR B		
1	1	1	0000		

GG 3.3 (v15.3)

Routing Unit				
R1	R0	A'	В'	
0	0	Α	В	
0	1	Α	F	
1	0	F	В	
1	1	В	Α	

R1 D3 D2 D1 D0 F2 F1 F0 R0 COMPUTATION UNIT ROUTING UNIT **REGISTER UNIT** RegA 1010 В RegB **CONTROL UNIT** COUNT / EXECUTE / SHIFT-COUNT ENABLE (MEALY - GG 3.4) (INPUT) (OUTPUT) 0 LOAD A 0 LOAD B 0 0 Reset 1 EXECUTE COUNTER CLK _______ D[3:0] XXXX F[2:0] 010 R[1:0] 10 Load A Load B Execute RegA 1001 0100 0010 1001 0011 1010 X0101 X1010 X0101 RegB 1010

GG 3.3 (v15.3)

(Computation Unit				
F2	F1	F0	f(A, B)		
0	0	0	A AND B		
0	0	1	A OR B		
0	1	0	A XOR B		
0	1	1	1111		
1	0	0	A NAND B		
1	0	1	A NOR B		
1	1	0	A XNOR B		
1	1	1	0000		

GG 3.3 (v15.3)

Routing Unit				
R1	R0	A'	В'	
0	0	Α	В	
0	1	Α	F	
1	0	F	В	
1	1	В	Α	

R1 D3 D2 D1 D0 F2 F1 F0 R0 COMPUTATION UNIT ROUTING UNIT **REGISTER UNIT** RegA 1010 В RegB **CONTROL UNIT** COUNT / EXECUTE / SHIFT-COUNT ENABLE (MEALY - GG 3.4) (INPUT) (OUTPUT) 0 LOAD A 0 LOAD B 0 0 Reset 1 EXECUTE COUNTER CLK ______ D[3:0] XXXX F[2:0] 010 R[1:0] 10 Load A Load B Execute RegA 1001 0100 0010 0011 1001 1010 0101 1010 0101 1010 RegB

GG 3.3 (v15.3)

(Computation Unit				
F2	F1 F0		f(A, B)		
0	0	0	A AND B		
0	0	1	A OR B		
0	1	0	A XOR B		
0	1	1	1111		
1	0	0	A NAND B		
1	0	1	A NOR B		
1	1	0	A XNOR B		
1	1	1	0000		

GG 3.3 (v15.3)

Routing Unit					
R1	R0 A' B'				
0	0	Α	В		
0	1	Α	F		
1	0 F B				
1	1	В	Α		

R1 D3 D2 D1 D0 F1 F0 R0 COMPUTATION UNIT ROUTING UNIT **REGISTER UNIT** RegA 1010 В RegB **CONTROL UNIT** COUNT / EXECUTE / SHIFT-COUNT ENABLE (MEALY - GG 3.4) (INPUT) (OUTPUT) 0 LOAD A 0 LOAD B 0 0 Reset 1 EXECUTE COUNTER D[3:0] XXXX F[2:0] 010 R[1:0] 10 Load A Load B Execute RegA 1001 0100 0010 0011 1001 1010 X0101 X1010 X0101 1010 RegB

GG 3.3 (v15.3)

(Computation Unit				
F2	F1 F0		f(A, B)		
0	0	0	A AND B		
0	0	1	A OR B		
0	1	0	A XOR B		
0	1	1	1111		
1	0	0	A NAND B		
1	0	1	A NOR B		
1	1	0	A XNOR B		
1	1	1	0000		

GG 3.3 (v15.3)

Routing Unit					
R1	R0 A' B'				
0	0	Α	В		
0	1	Α	F		
1	0	F	В		
1	1	В	Α		

R1 D3 D2 D1 D0 F1 F0 R0 COMPUTATION UNIT ROUTING UNIT REGISTER UNIT RegA 1010 В RegB **CONTROL UNIT** COUNT / EXECUTE / SHIFT-COUNT ENABLE (MEALY - GG 3.4) (INPUT) (OUTPUT) 0 LOAD A 0 LOAD B 0 0 Reset EXECUTE COUNTER D[3:0] XXXX F[2:0] 010 R[1:0] 10 Load A Load B Execute RegA 1001 0100 0010 0011 1001 1010 X0101 X1010 X0101 1010 RegB

GG 3.3 (v15.3)

Computation Unit				
F2	F1	F0 f(A, B)		
0	0	0	A AND B	
0	0	1	A OR B	
0	1	0	A XOR B	
0	1	1	1111	
1	0	0	A NAND B	
1	0	1	A NOR B	
1	1	0	A XNOR B	
1	1	1	0000	

GG 3.3 (v15.3)

Routing Unit					
R1	R0 A' B'				
0	0	Α	В		
0	1	Α	F		
1	1 0 F B				
1	1	В	Α		

R1 D3 D2 D1 D0 F2 F1 F0 R0 COMPUTATION UNIT ROUTING UNIT REGISTER UNIT RegA 1010 В RegB **CONTROL UNIT** COUNT / EXECUTE / SHIFT-COUNT ENABLE (MEALY - GG 3.4) (INPUT) (OUTPUT) O LOAD A 0 LOAD B 0 0 Reset EXECUTE COUNTER D[3:0] XXXX F[2:0] 010 R[1:0] 10 Load A Load B Execute RegA 1001 0100 0010 0011 1001 1010 X0101 X1010 X0101 1010 RegB

GG 3.3 (v15.3)

(Computation Unit				
F2	F1 F0		f(A, B)		
0	0	0	A AND B		
0	0	1	A OR B		
0	1	0	A XOR B		
0	1	1	1111		
1	0	0	A NAND B		
1	0	1	A NOR B		
1	1	0	A XNOR B		
1	1	1	0000		

GG 3.3 (v15.3)

Routing Unit					
R1	R0 A' B'				
0	0	Α	В		
0	1	Α	F		
1	0	F	В		
1	1	В	Α		