

MACROFUNCTION LIBRARY

DATABOOK

1st EDITION

MACROFUNCTION LIBRARY

SGS-THOMSON
Microelectronics

ORDER CODE: DBMACRO1



SGS-THOMSON
MICROELECTRONICS

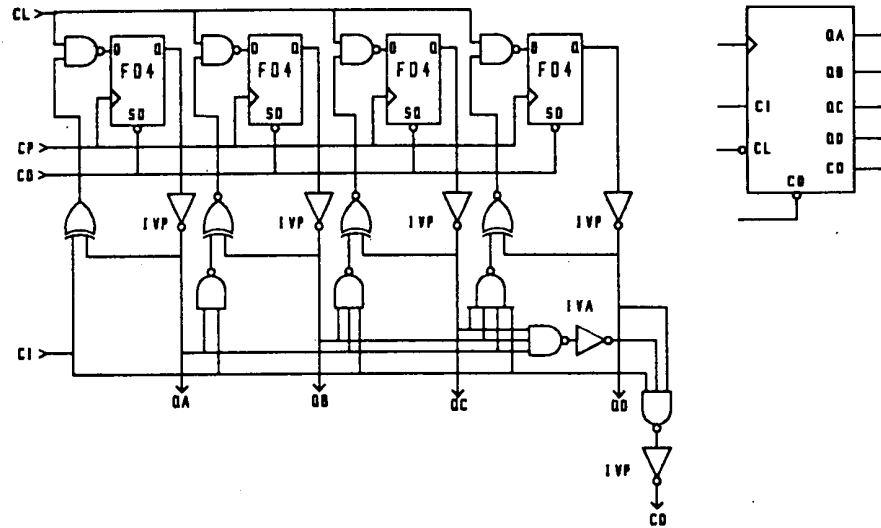
CB42

**4 BIT BINARY UP COUNTER,
EXPANDABLE ENABLE SYNC CLEAR, CD**

CB42

NETWORK SCHEMATIC

LOGIC DIAGRAM



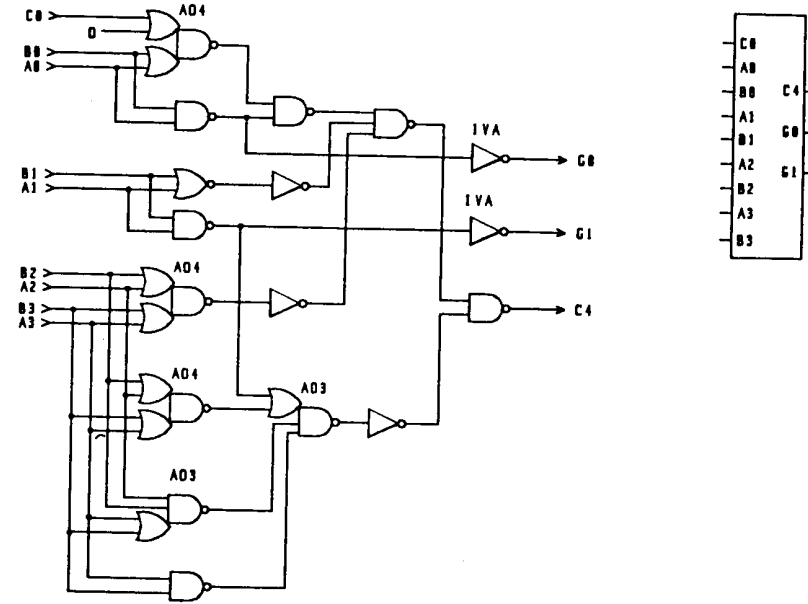
CLA1

**CARRY LOOK AHEAD FOR 4 BIT ADDER
(LEAST SIGNIFICANT NIBBLE)**

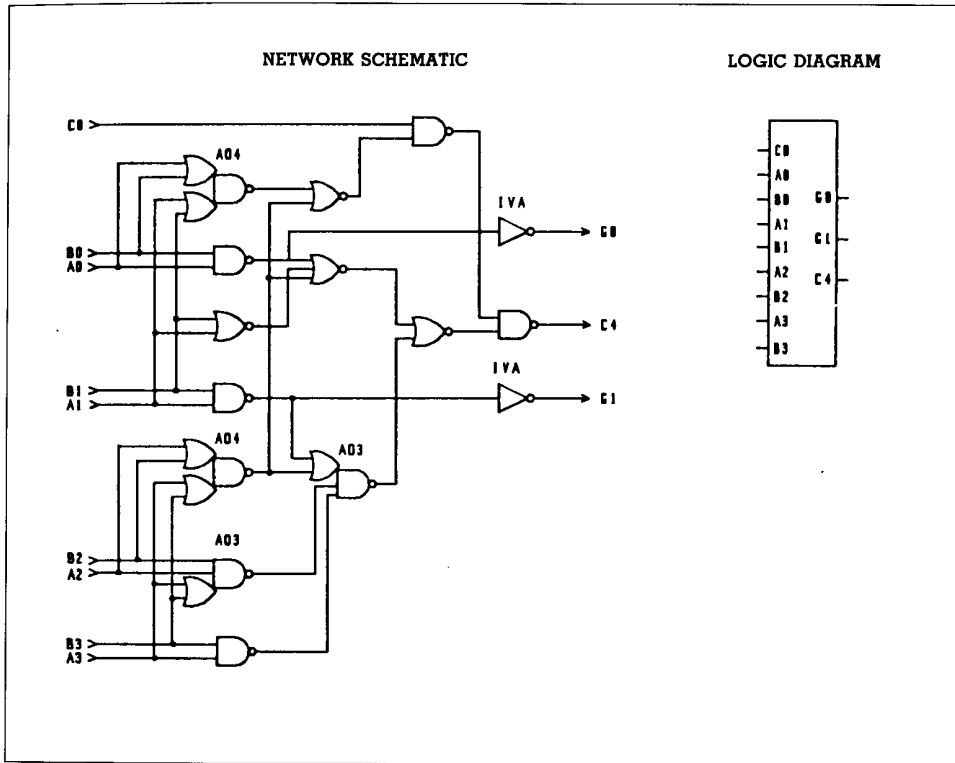
CLA1

NETWORK SCHEMATIC

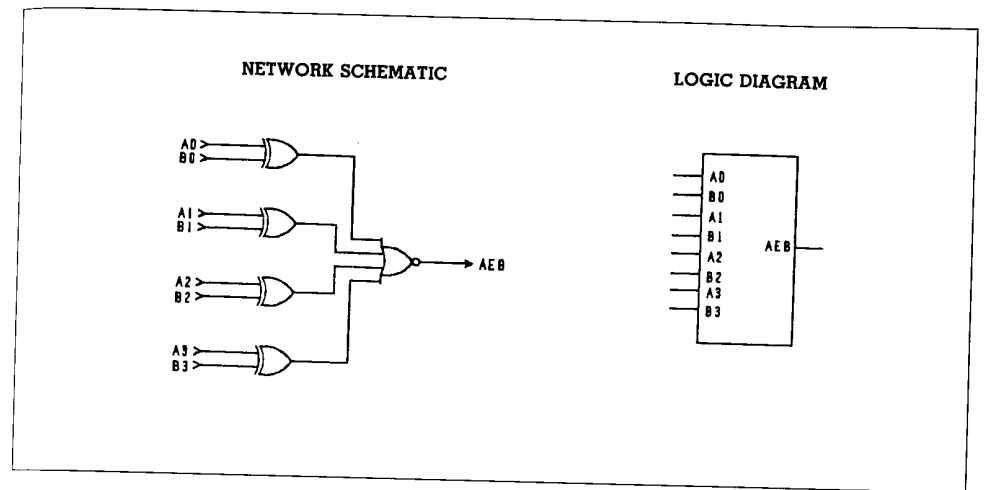
LOGIC DIAGRAM



CLA2 CARRY LOOK AHEAD FOR 4 BIT ADDER **CLA2**



CMP4 4 BIT EQUALITY COMPARATOR **CMP4**



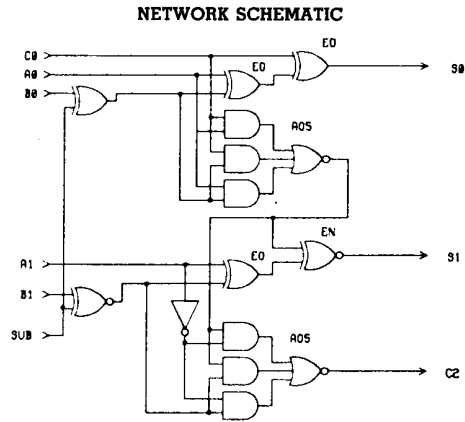
TRUTH TABLE

0-0	1-1	2-2	3-3	AEB
1	1	1	1	1
(ANY 0)				0

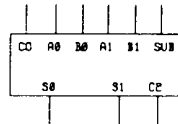
FAS2

**2 BIT BINARY ADDER SUBTRACTER,
A+B, A-B**

FAS2



LOGIC DIAGRAM



TRUTH TABLE

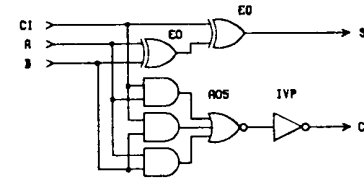
C0	A0	B0	A1	B1	SUB	S0	S1	S2
C0	A0	B0	A1	B1	0	S0	SEE FA2	
					SUB	S0	S1	C2
					1		SEE FA2	

FA1

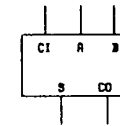
FULL ADDER

FA1

NETWORK SCHEMATIC



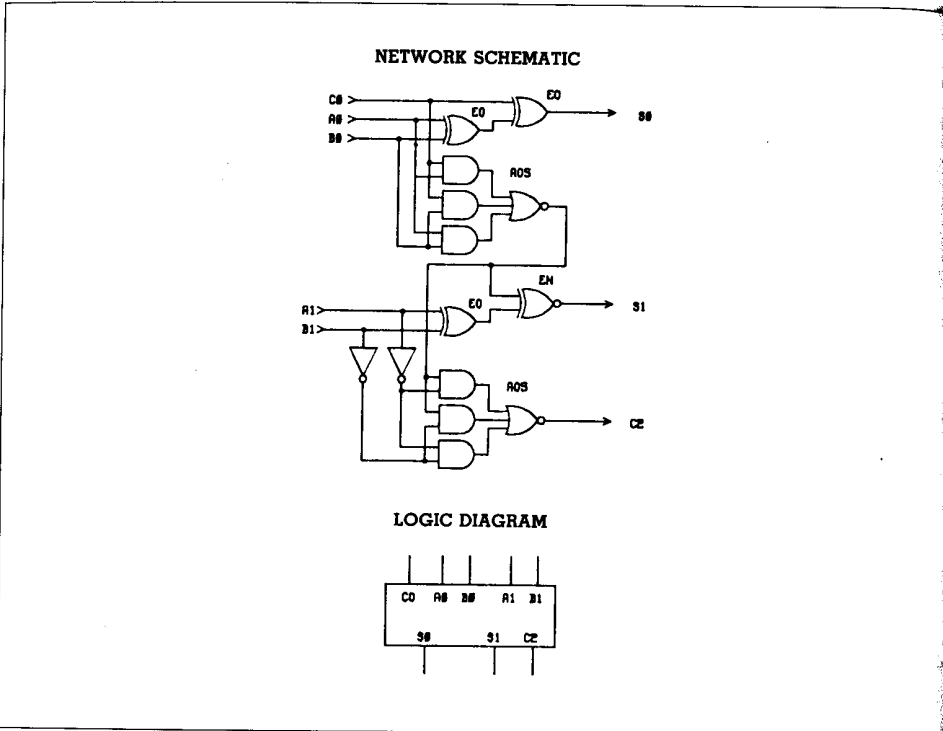
LOGIC DIAGRAM



TRUTH TABLE

C1	A	B	S	C0
0	0	0	0	0
1	0	0	1	0
0	1	0	1	0
1	1	0	0	1
0	0	1	1	0
1	0	1	0	1
0	1	1	0	1
1	1	1	1	1

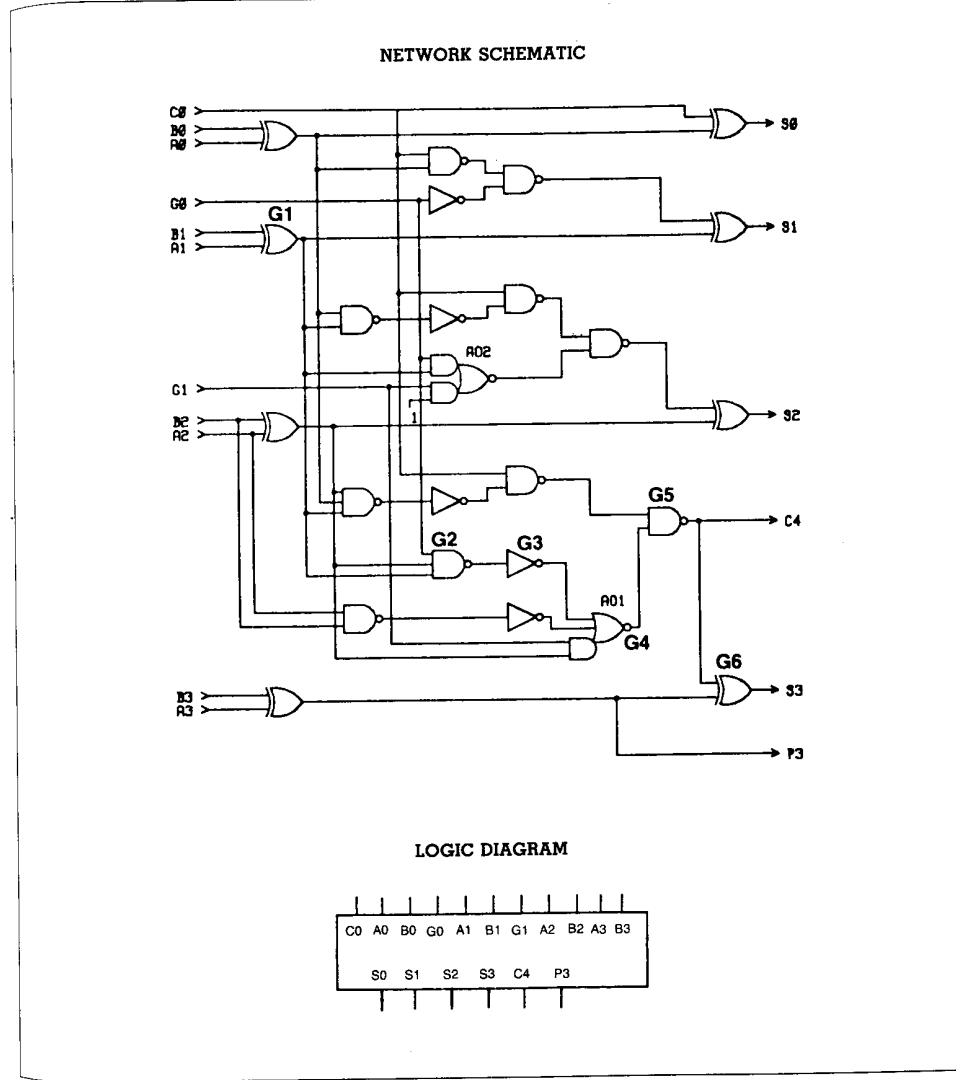
FA2	2 BIT BINARY FULL ADDER (SAME AS M82C)	FA2
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TRUTH TABLE

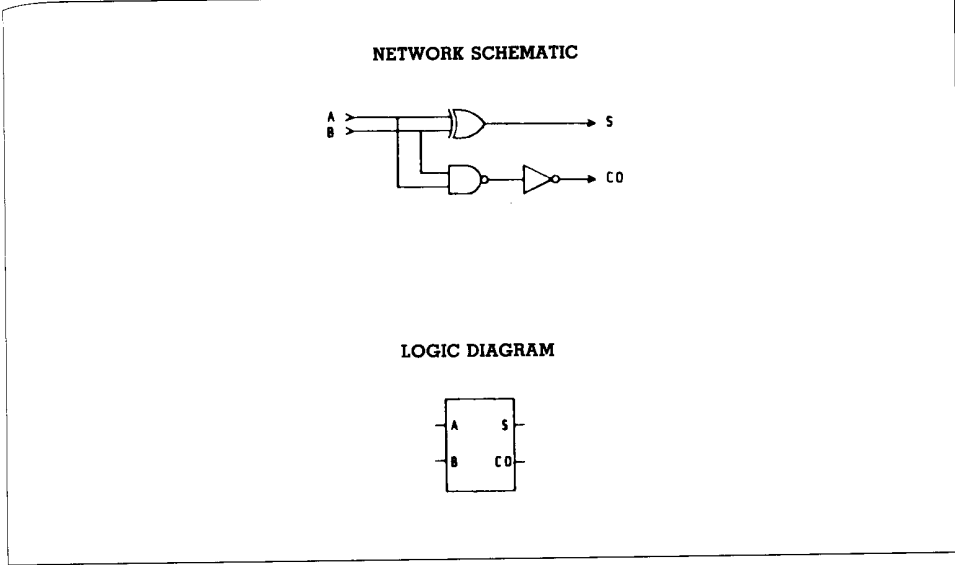
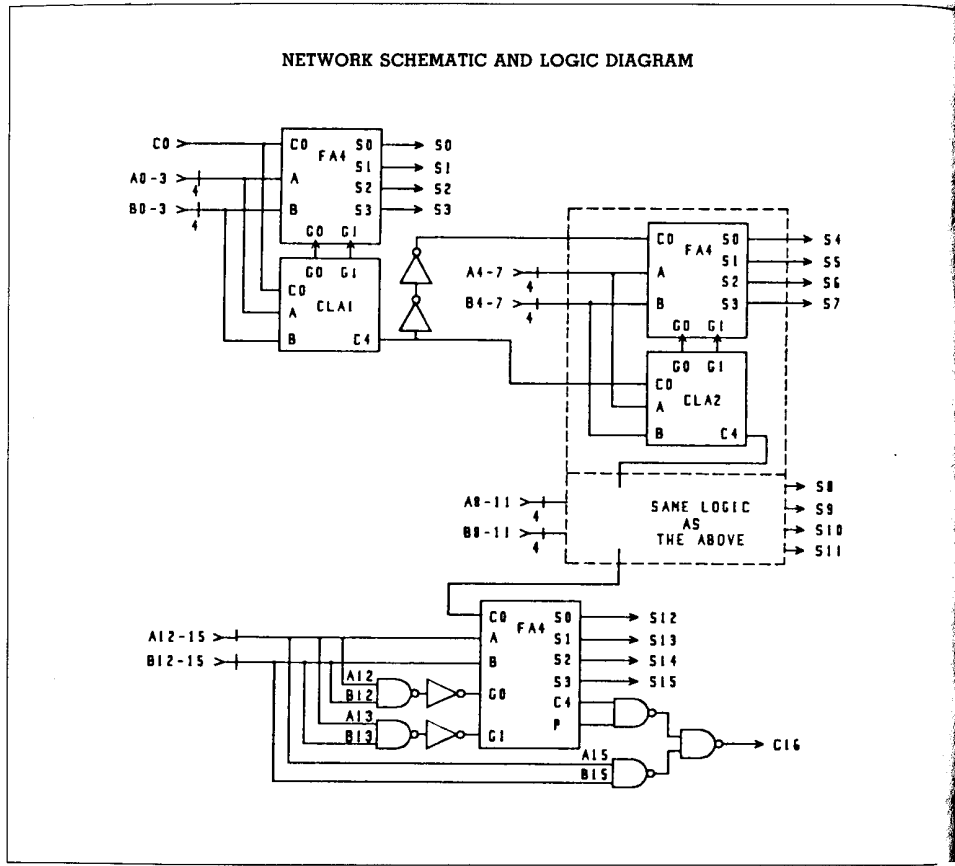
C0	A0	B0	A1	B1	S0	S1	S2
0	0	3	0	0	2	0	0
1	0	3	0	0	2	1	0
2	0	3	0	0	2	0	1
3	0	3	0	0	2	1	0
0	0	3	1	0	2	0	1
1	0	3	1	0	2	1	0
2	0	3	1	0	2	0	1
3	0	3	1	0	2	1	0
0	0	3	1	1	2	1	1
1	0	3	2	0	2	0	1
2	0	3	2	0	2	1	0
3	0	3	2	0	2	0	1
0	1	3	0	1	2	1	1
1	1	3	0	1	2	0	1
2	1	3	0	1	2	1	0
3	1	3	0	1	2	0	1

FA4	4 BIT BINARY FULL ADDER	FA4
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FA16	16 BIT FAST ADDER	FA16
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HA1	HALF ADDER	HA1
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TRUTH TABLE

A	B	S	CO
0	0	0	0
1	0	1	0
0	1	1	0
1	1	0	1