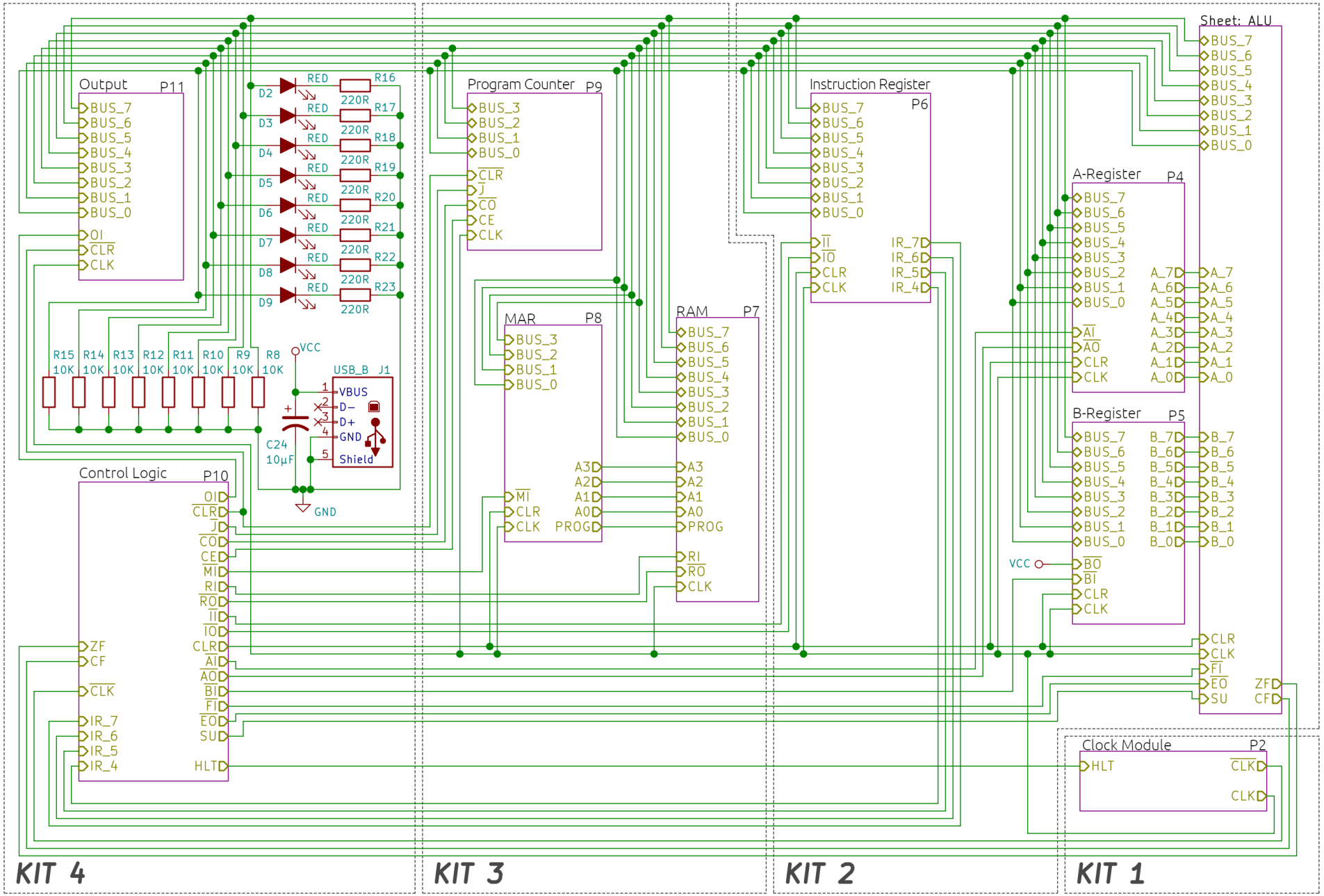
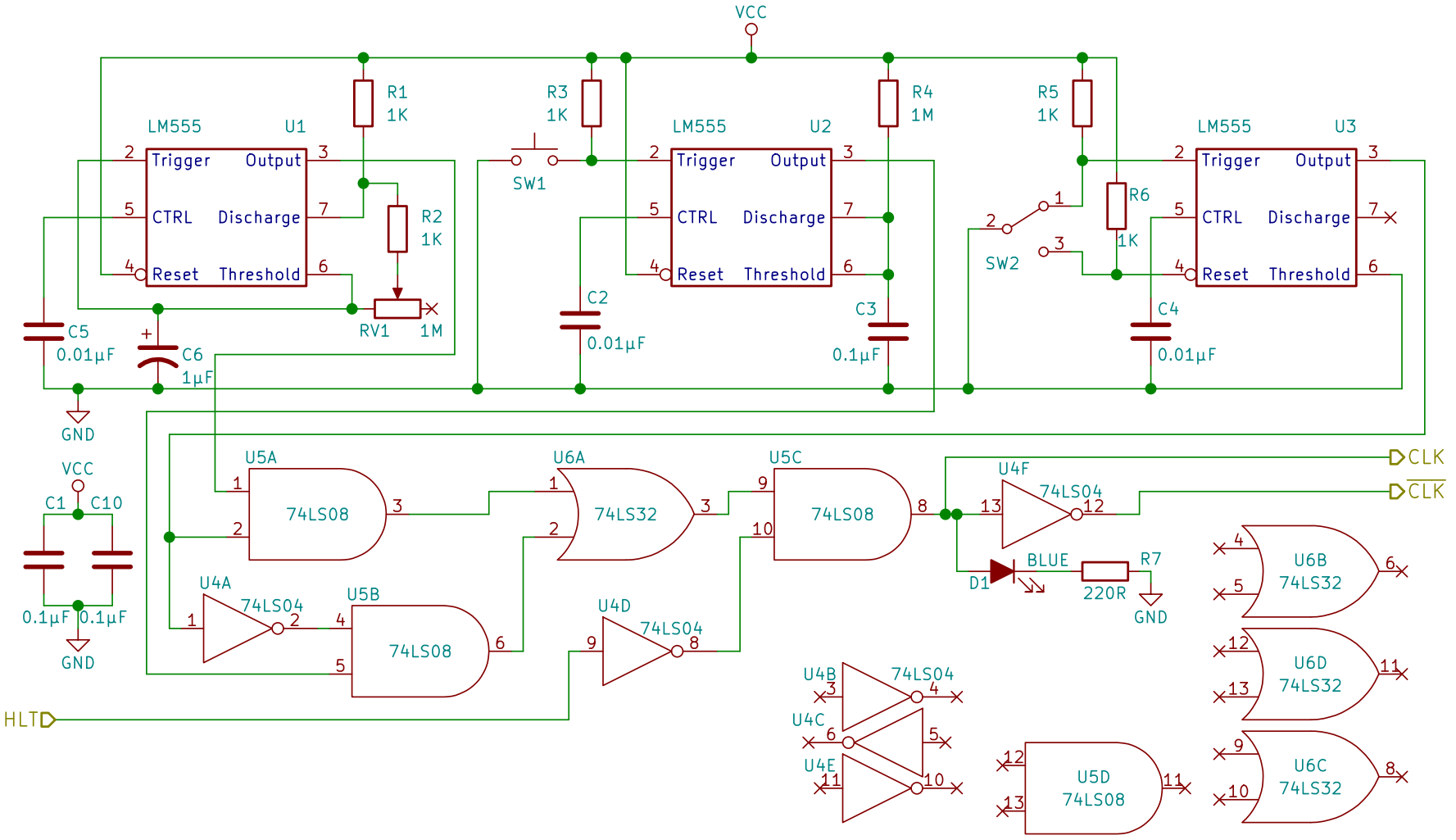
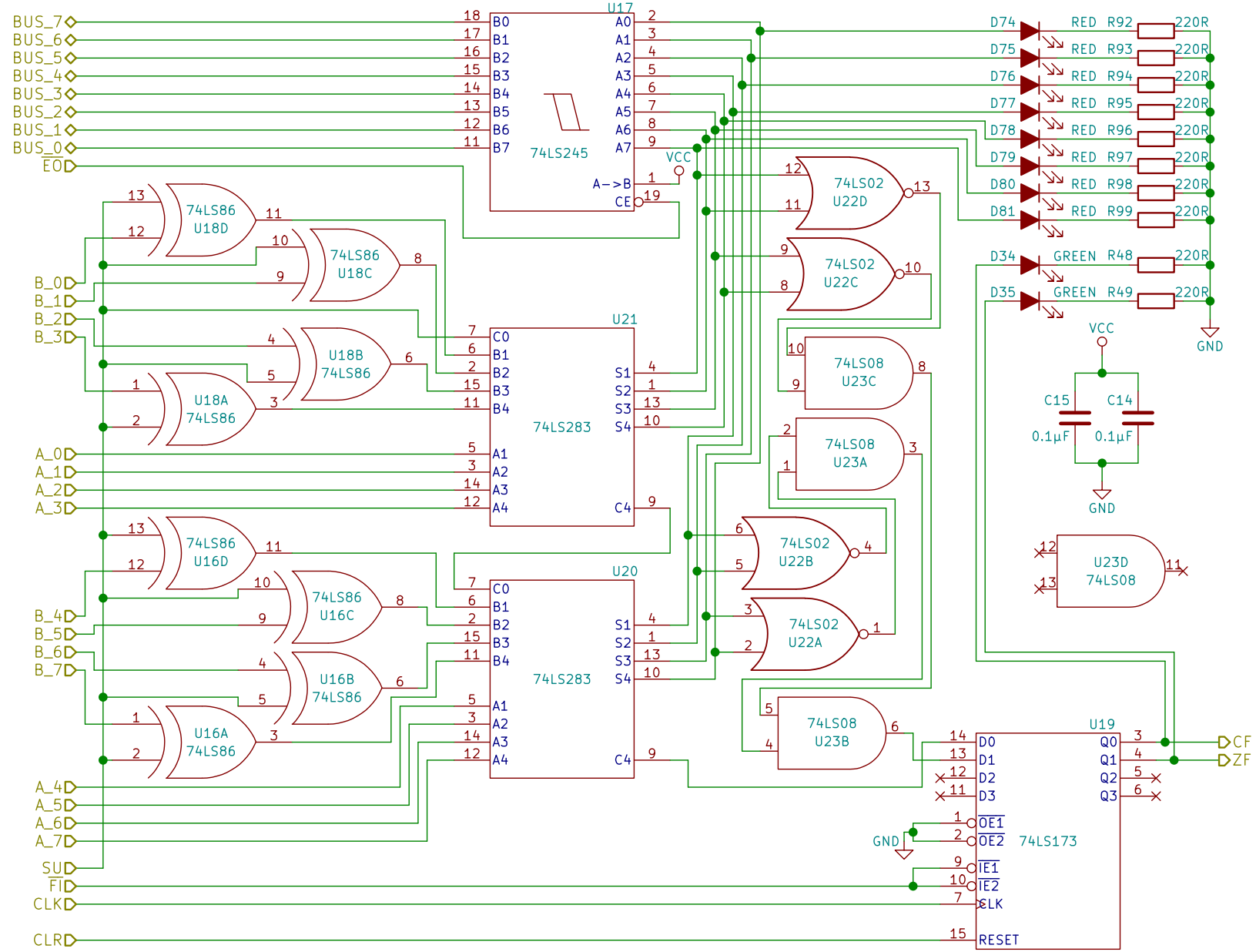

Output P11
BUS_7
BUS_6
BUS_5
BUS_4
BUS_3
BUS_2
BUS_1
BUS_0
OI
CLR
CLK
D2 RED R16 220R
D3 RED R17 220R
D4 RED R18 220R
D5 RED R19 220R
D6 RED R20 220R
D7 RED R21 220R
D8 RED R22 220R
D9 RED R23 220R
R15 10K R14 10K R13 10K R12 10K R11 10K R10 10K R9 10K R8 10K
VCC
USB_B J1
VBUS
D-
D+
GND
Shield
C24 10µF
Control Logic P10
ZF
CF
CLK
IR_7
IR_6
IR_5
IR_4
HLT
Program Counter P9
CE
CO
J
MAR P8
MI
PROG
RAM P7
RI
RO
Instruction Register P6
II
IO
IR_7
IR_6
IR_5
IR_4
Sheet: ALU
A-Register P4
AI
AO
A_7
A_6
A_5
A_4
A_3
A_2
A_1
A_0
B-Register P5
BI
BO
B_7
B_6
B_5
B_4
B_3
B_2
B_1
B_0
FI
EO
SU
Clock Module P2
KIT 4
KIT 3
KIT 2
KIT 1

CLOCK KIT 1

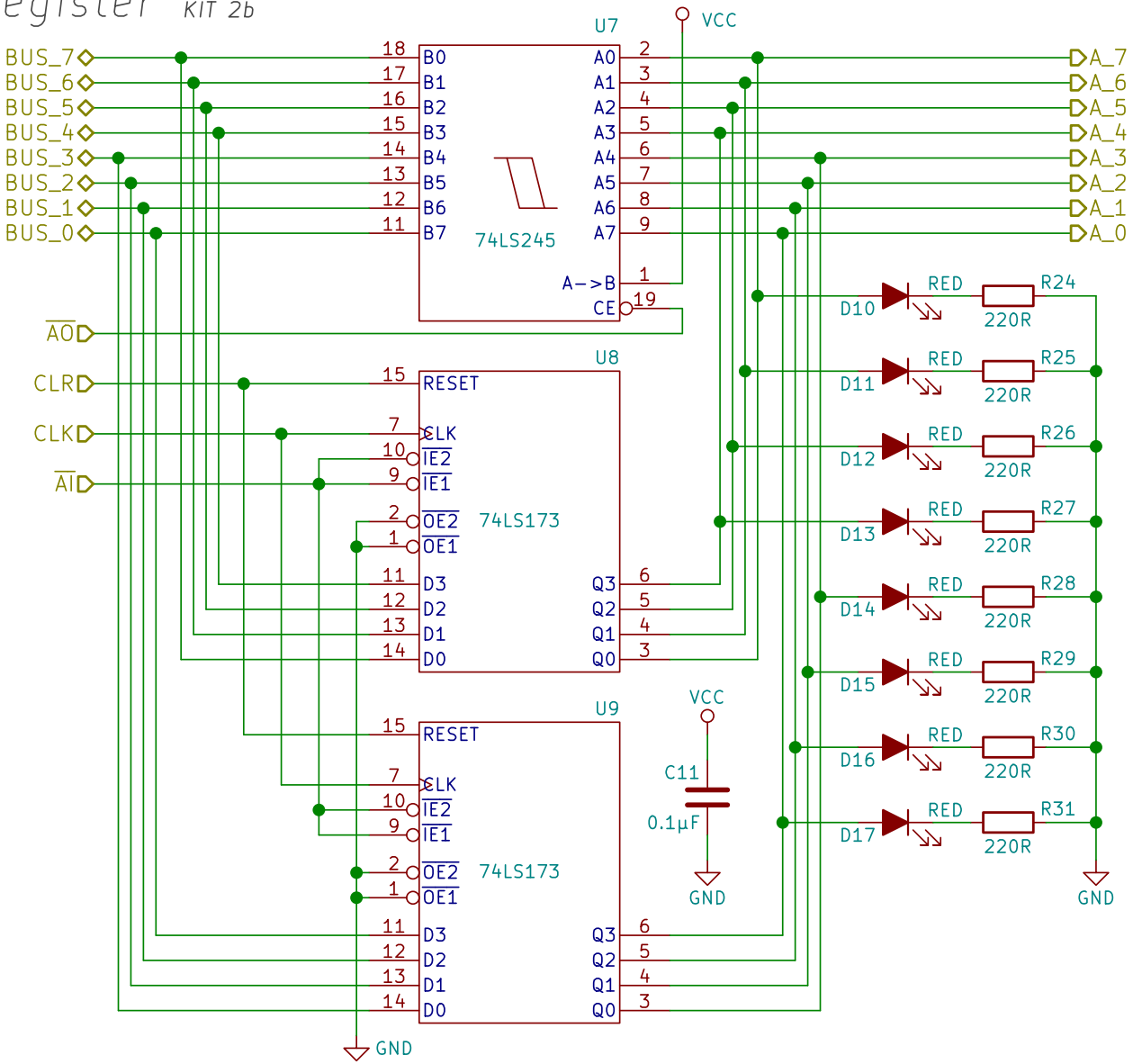


P2

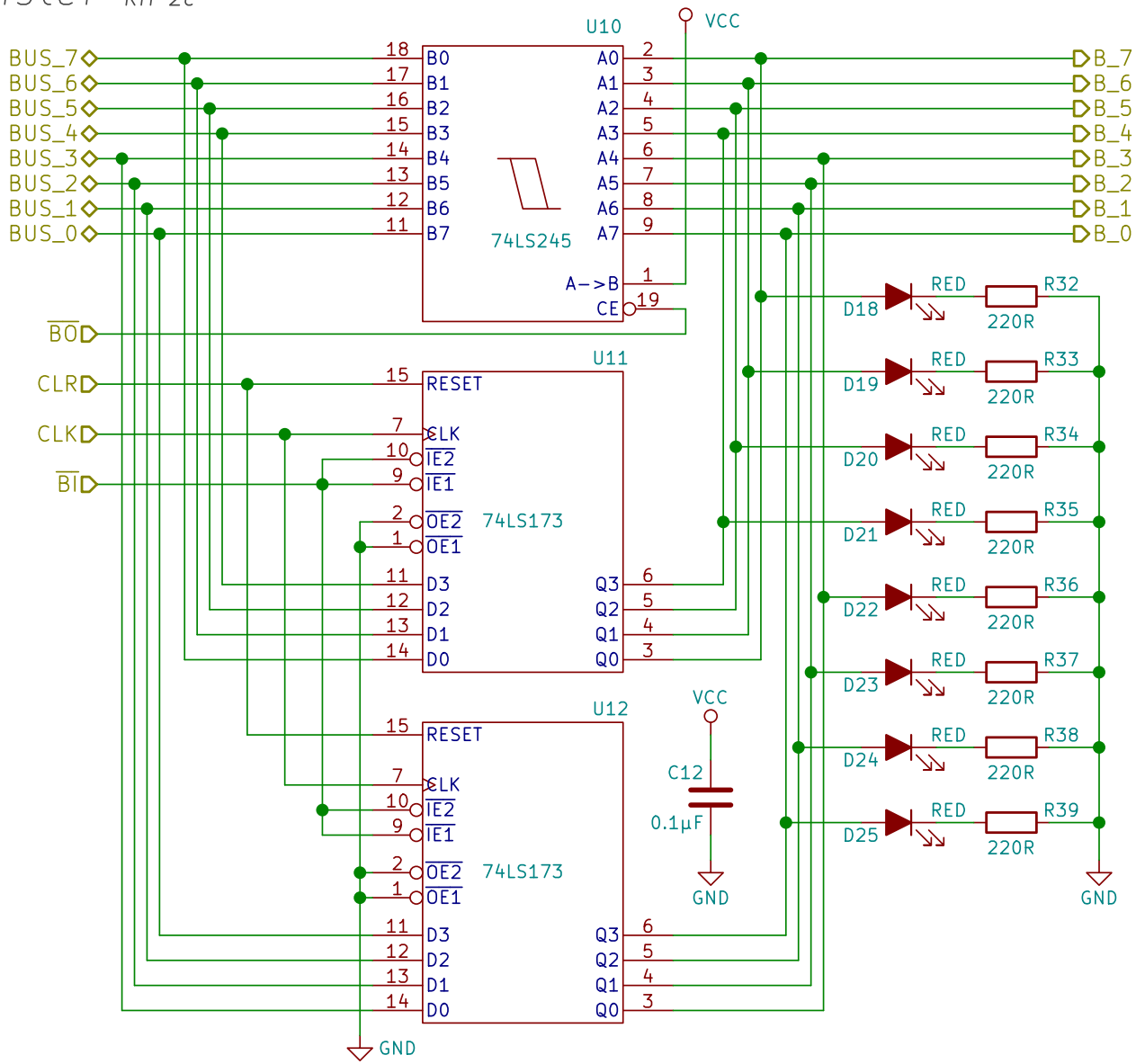
ALU KIT 2a


BUS_7
BUS_6
BUS_5
BUS_4
BUS_3
BUS_2
BUS_1
BUS_0
EO
U17
74LS245
A->B
CE
VCC
B_0
B_1
B_2
B_3
A_0
A_1
A_2
A_3
U18D
74LS86
U18C
U18B
U18A
U21
74LS283
B_4
B_5
B_6
B_7
A_4
A_5
A_6
A_7
U16D
U16C
U16B
U16A
U20
SU
FI
CLK
CLR
U22D
74LS02
U22C
U22B
U22A
U23C
74LS08
U23A
U23B
U23D
D74
D75
D76
D77
D78
D79
D80
D81
RED
R92
R93
R94
R95
R96
R97
R98
R99
220R
D34
D35
GREEN
R48
R49
GND
C15
C14
0.1µF
U19
74LS173
D0
D1
D2
D3
Q0
Q1
Q2
Q3
OE1
OE2
IE1
IE2
CLK
RESET
CF
ZF

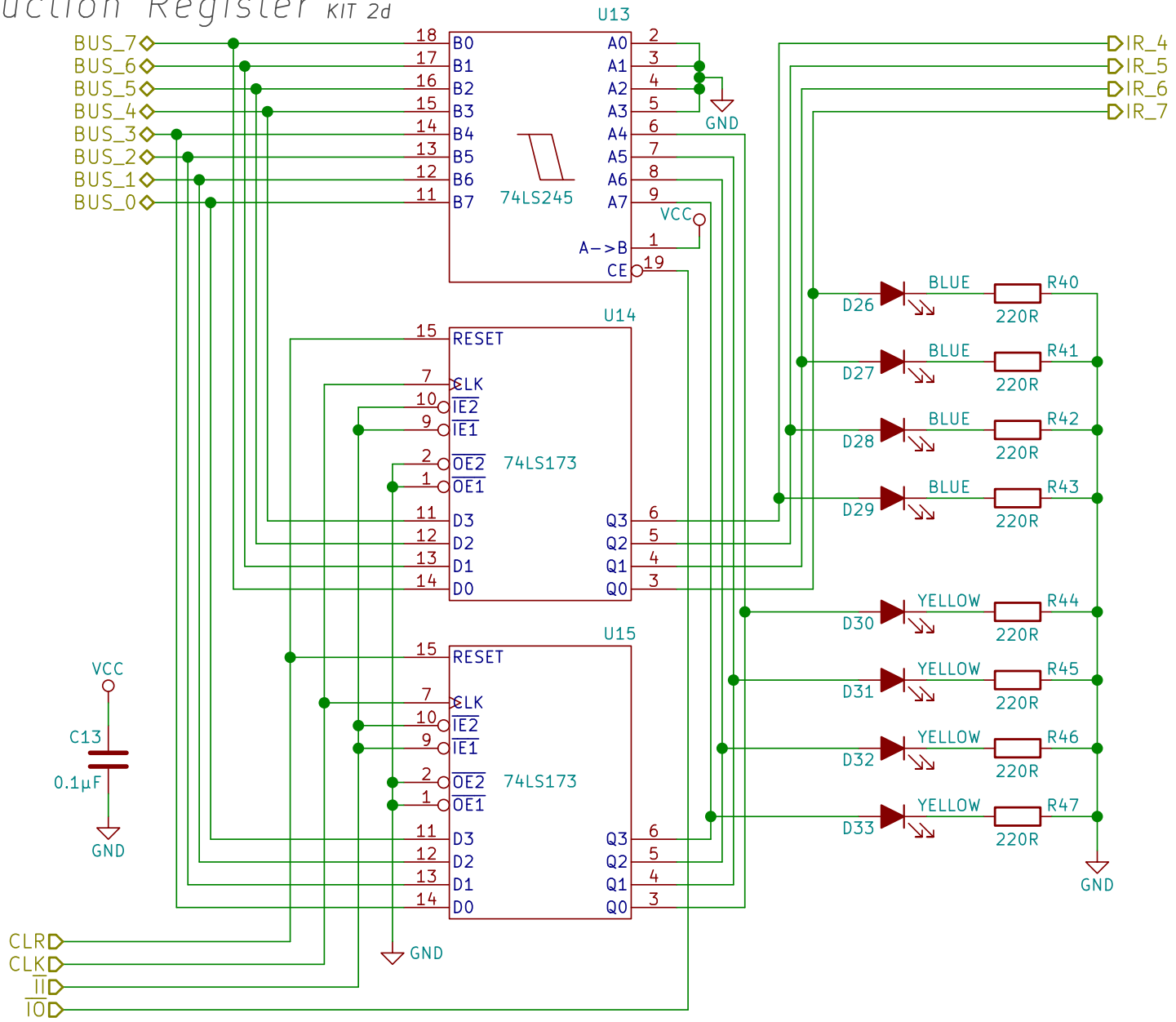
A–Register KIT 2b

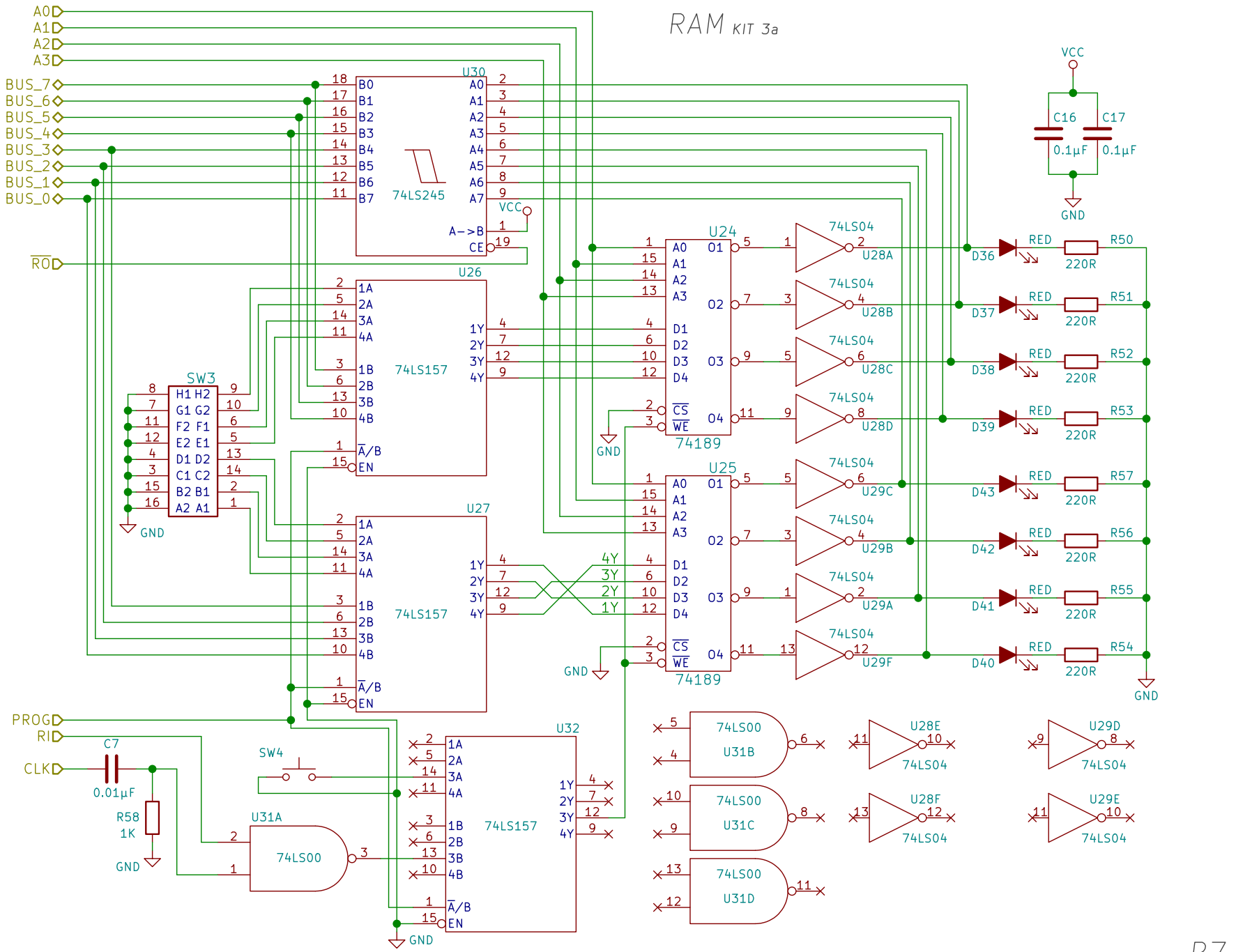


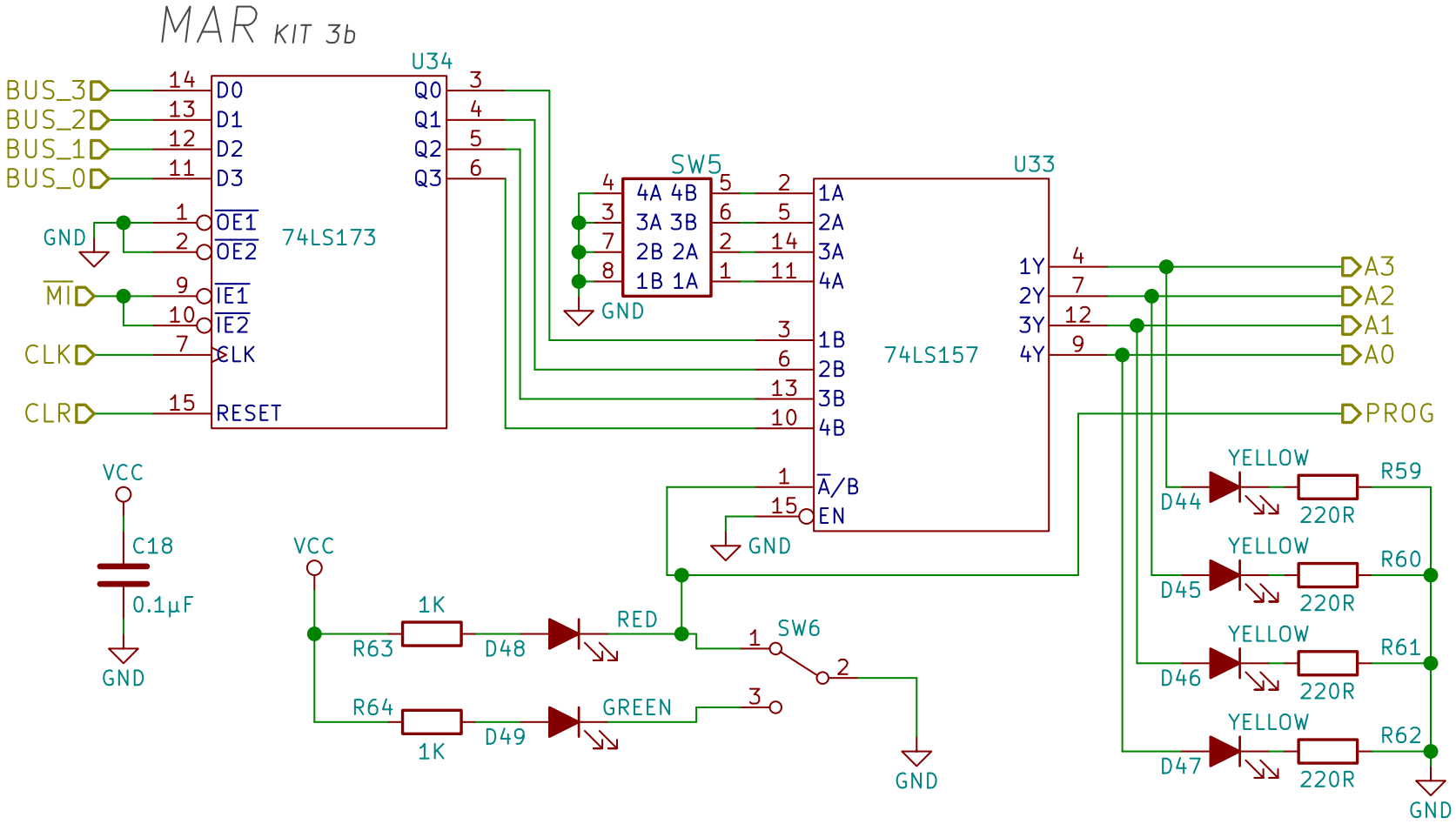
B–Register KIT 2c



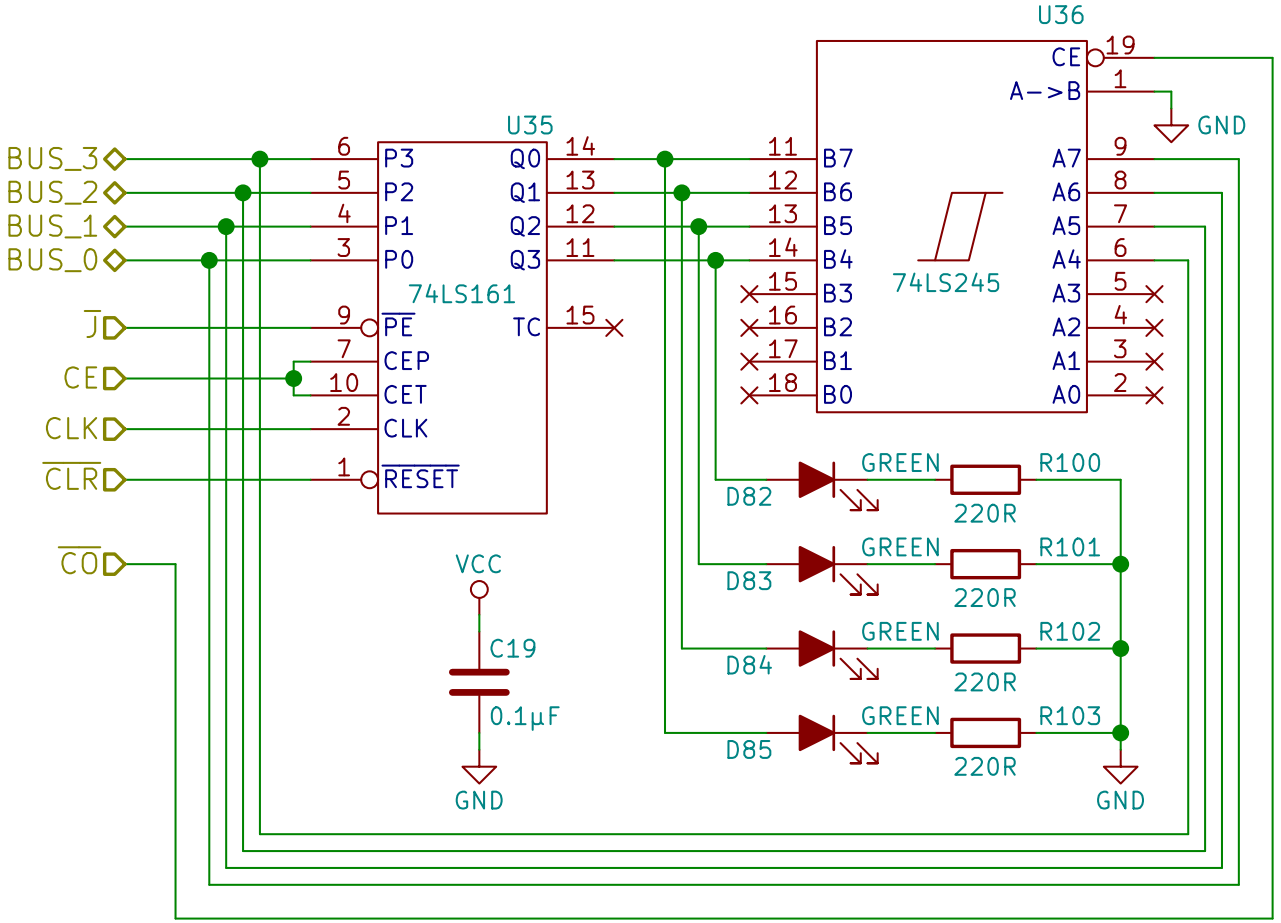
Instruction Register KIT 2d

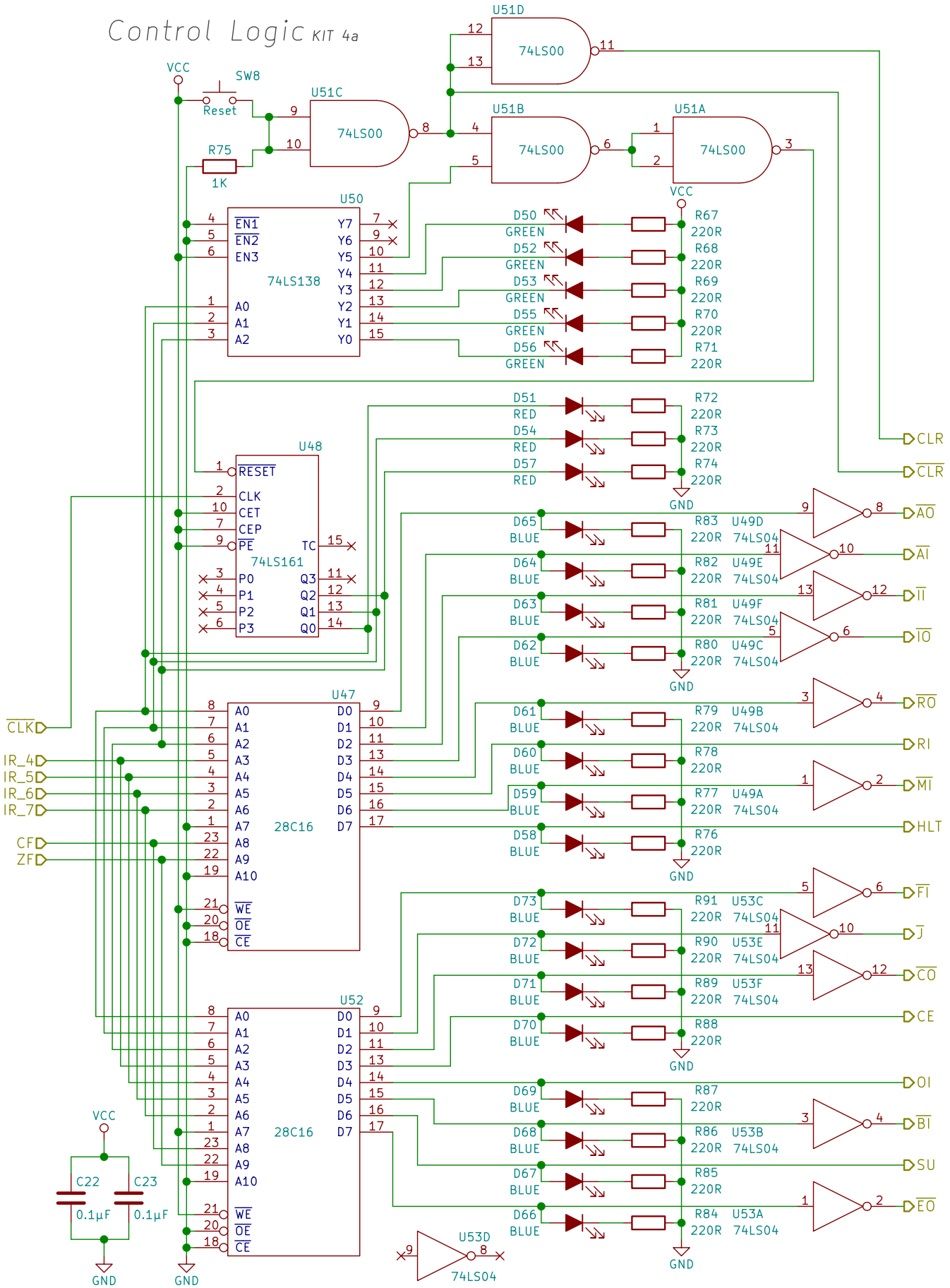



RAM KIT 3a
A0
A1
A2
A3
BUS_7
BUS_6
BUS_5
BUS_4
BUS_3
BUS_2
BUS_1
BUS_0
RO
U30
74LS245
A->B
CE
VCC
U26
U27
74LS157
SW3
GND
U24
U25
74189
74LS04
U28A
U28B
U28C
U28D
U29C
U29B
U29A
U29F
U28E
U28F
U29D
U29E
D36
D37
D38
D39
D43
D42
D41
D40
RED
220R
R50
R51
R52
R53
R57
R56
R55
R54
C16
C17
0.1µF
PROG
RI
CLK
C7
0.01µF
R58
1K
SW4
U31A
U31B
U31C
U31D
74LS00
U32
P7

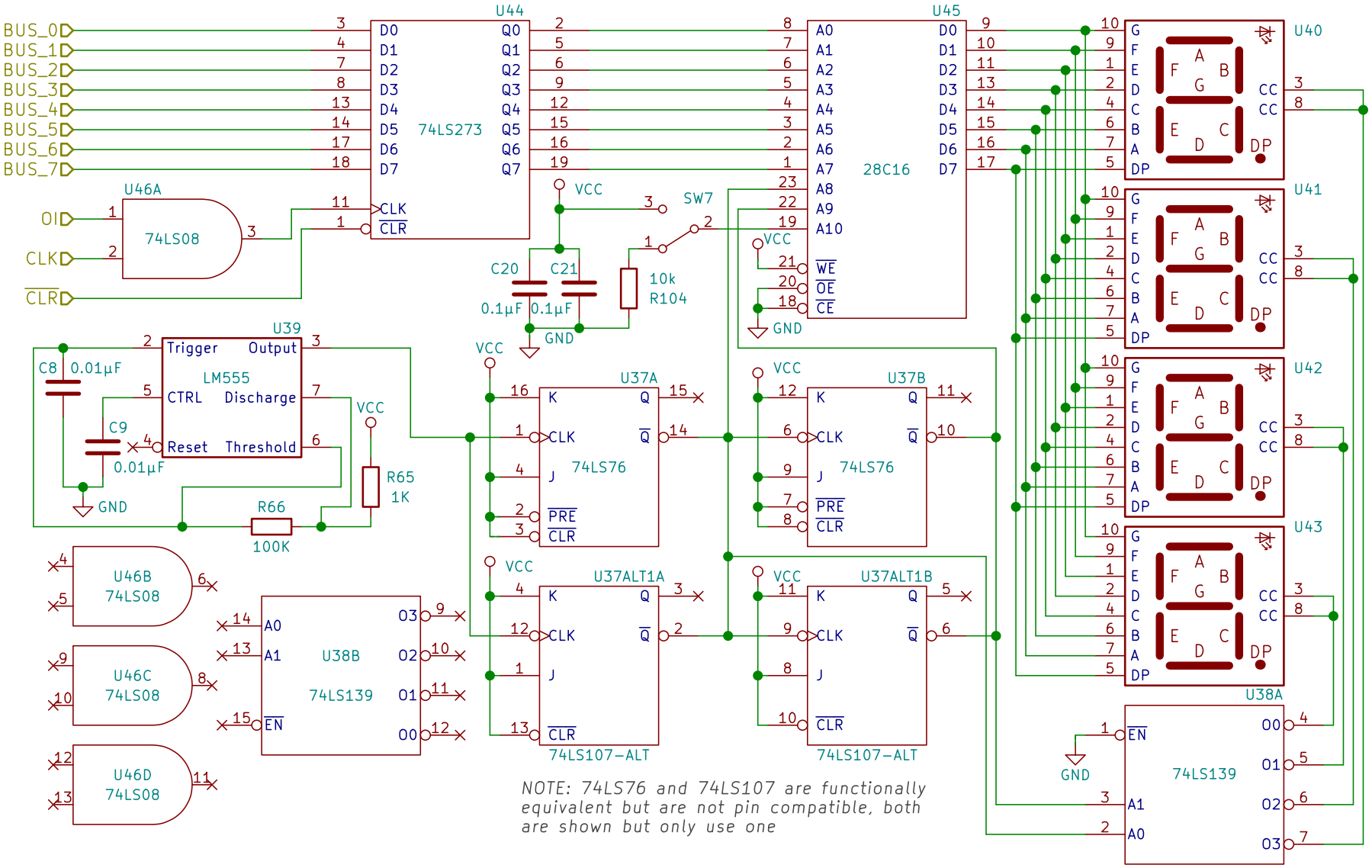

MAR KIT 3b
U34
74LS173
BUS_3
BUS_2
BUS_1
BUS_0
D0
D1
D2
D3
Q0
Q1
Q2
Q3
GND
OE1
OE2
MI
IE1
IE2
CLK
CLR
RESET
SW5
4A 4B
3A 3B
2B 2A
1B 1A
U33
74LS157
1A
2A
3A
4A
1B
2B
3B
4B
A/B
EN
1Y
2Y
3Y
4Y
A3
A2
A1
A0
PROG
VCC
C18
0.1µF
R63
1K
D48
RED
SW6
R64
D49
GREEN
D44
D45
D46
D47
YELLOW
220R
R59
R60
R61
R62

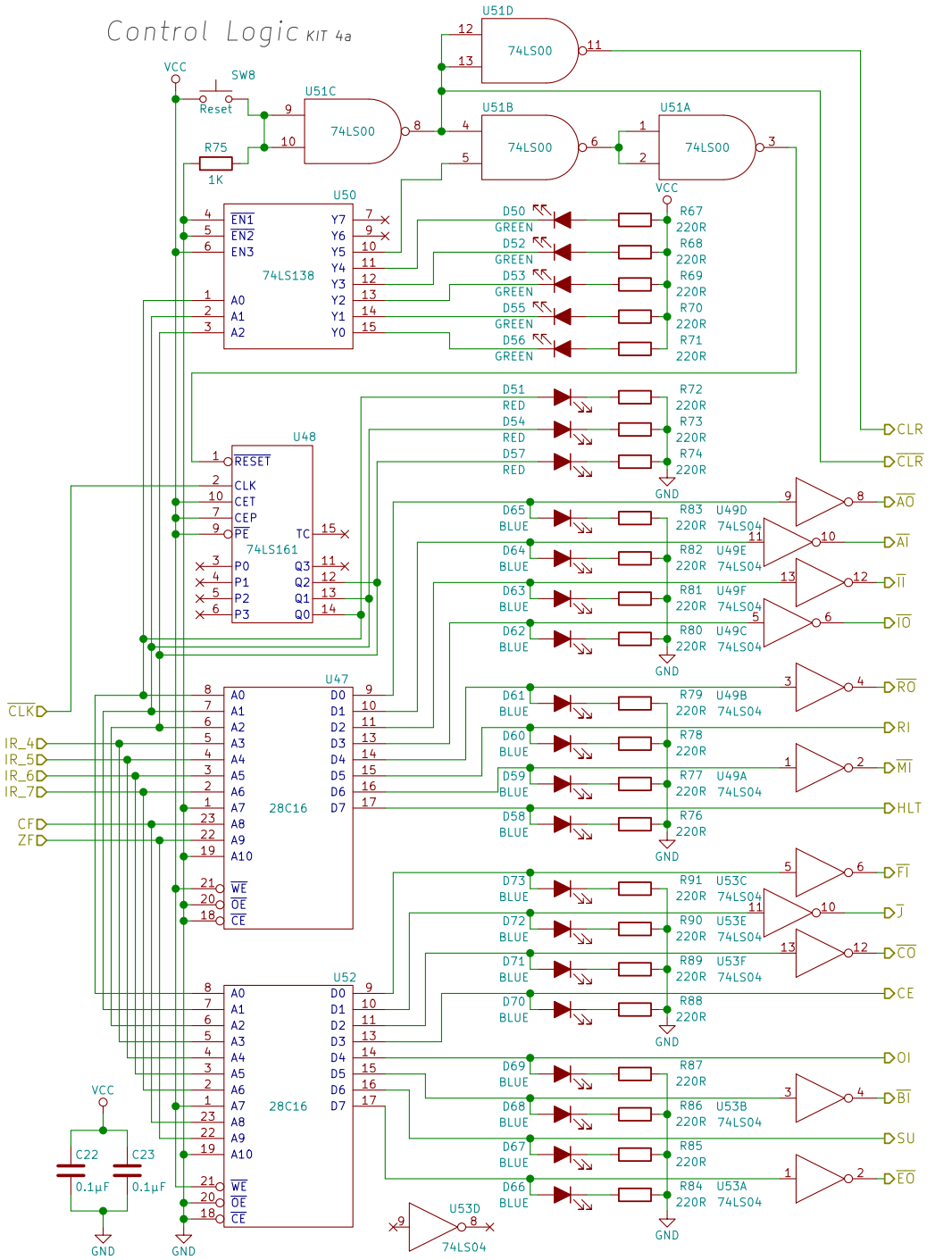
Program Counter KIT 3c




Control Logic KIT 4a
U51D
74LS00
U51C
74LS00
U51B
74LS00
U51A
74LS00
SW8
Reset
R75
1K
VCC
U50
74LS138
EN1
EN2
EN3
A0
A1
A2
Y7
Y6
Y5
Y4
Y3
Y2
Y1
Y0
D50 GREEN
D52 GREEN
D53 GREEN
D55 GREEN
D56 GREEN
R67 220R
R68 220R
R69 220R
R70 220R
R71 220R
D51 RED
D54 RED
D57 RED
R72 220R
R73 220R
R74 220R
GND
U48
74LS161
RESET
CLK
CET
CEP
PE
TC
P0
P1
P2
P3
Q3
Q2
Q1
Q0
D65 BLUE
D64 BLUE
D63 BLUE
D62 BLUE
R83 220R U49D 74LS04
R82 220R U49E 74LS04
R81 220R U49F 74LS04
R80 220R U49C 74LS04
AO
AI
II
IO
U47
28C16
D61 BLUE
D60 BLUE
D59 BLUE
D58 BLUE
R79 220R U49B 74LS04
R78 220R
R77 220R U49A 74LS04
R76 220R
RO
RI
MI
HLT
U52
28C16
D73 BLUE
D72 BLUE
D71 BLUE
D70 BLUE
R91 220R U53C 74LS04
R90 220R U53E 74LS04
R89 220R U53F 74LS04
R88 220R
FI
J
CO
CE
D69 BLUE
D68 BLUE
D67 BLUE
D66 BLUE
R87 220R
R86 220R U53B 74LS04
R85 220R
R84 220R U53A 74LS04
OI
BI
SU
EO
U53D
74LS04
C22 0.1µF
C23 0.1µF
CLR
CLK
IR_4
IR_5
IR_6
IR_7
CF
ZF
WE
OE
CE

Output/Display KIT 4b




Control Logic KIT 4a
U51D
74LS00
U51C
74LS00
U51B
74LS00
U51A
74LS00
VCC
SW8
Reset
R75
1K
U50
74LS138
EN1
EN2
EN3
A0
A1
A2
Y7
Y6
Y5
Y4
Y3
Y2
Y1
Y0
D50 GREEN
D52 GREEN
D53 GREEN
D55 GREEN
D56 GREEN
R67 220R
R68 220R
R69 220R
R70 220R
R71 220R
D51 RED
D54 RED
D57 RED
R72 220R
R73 220R
R74 220R
GND
U48
74LS161
RESET
CLK
CET
CEP
PE
TC
P0
P1
P2
P3
Q3
Q2
Q1
Q0
D65 BLUE
D64 BLUE
D63 BLUE
D62 BLUE
R83 220R U49D 74LS04
R82 220R U49E 74LS04
R81 220R U49F 74LS04
R80 220R U49C 74LS04
AO
AI
II
IO
U47
28C16
D61 BLUE
D60 BLUE
D59 BLUE
D58 BLUE
R79 220R U49B 74LS04
R78 220R
R77 220R U49A 74LS04
R76 220R
RO
RI
MI
HLT
CLK
IR_4
IR_5
IR_6
IR_7
CF
ZF
U52
28C16
D73 BLUE
D72 BLUE
D71 BLUE
D70 BLUE
R91 220R U53C 74LS04
R90 220R U53E 74LS04
R89 220R U53F 74LS04
R88 220R
FI
J
CO
CE
D69 BLUE
D68 BLUE
D67 BLUE
D66 BLUE
R87 220R
R86 220R U53B 74LS04
R85 220R
R84 220R U53A 74LS04
OI
BI
SU
EO
U53D
74LS04
C22 0.1µF
C23 0.1µF
P10