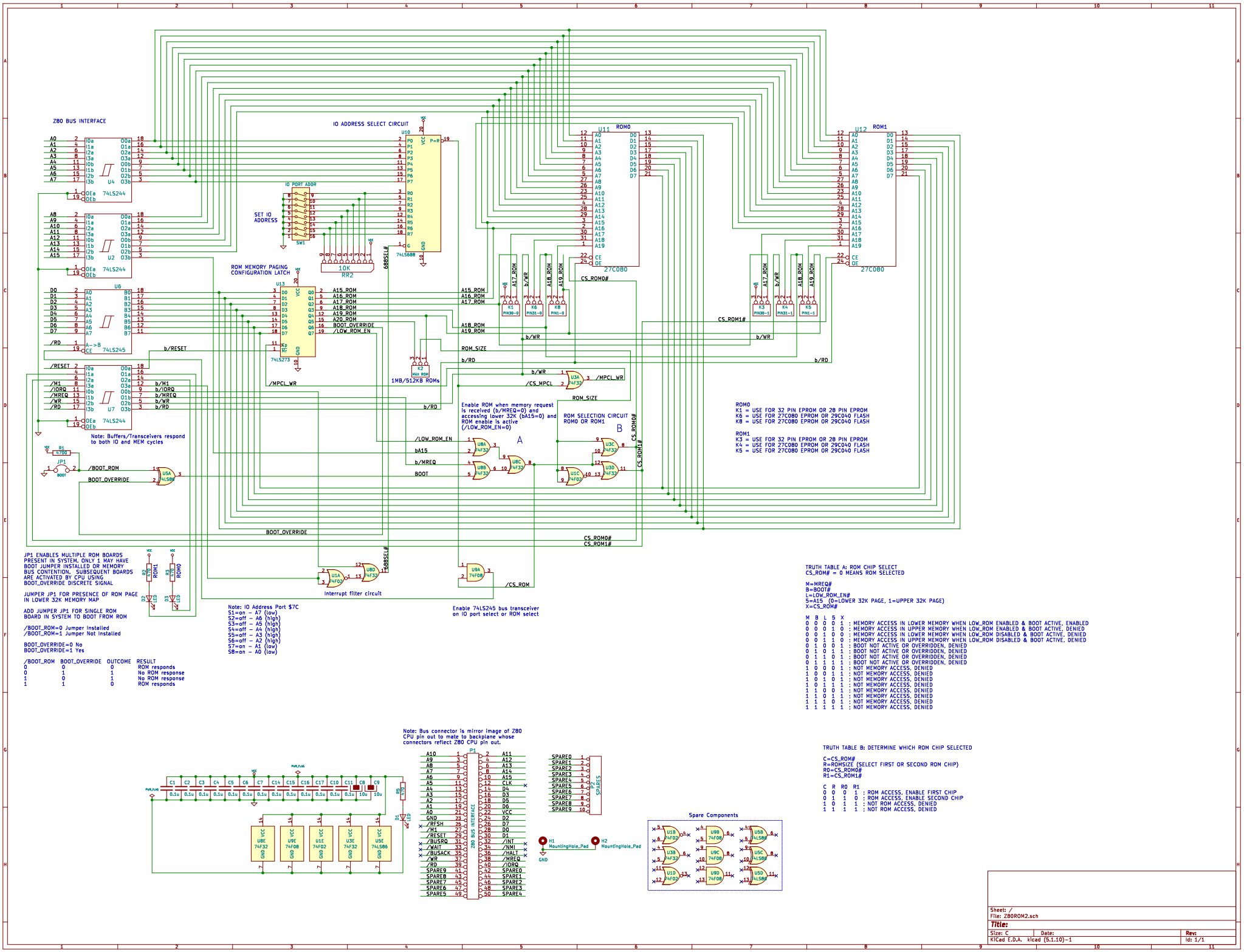
Z80 BUS INTERFACE
IO ADDRESS SELECT CIRCUIT
ROM MEMORY PAGING CONFIGURATION LATCH
SET IO ADDRESS
IO PORT ADDR
1MB/512KB ROMs
ROM SELECTION CIRCUIT ROMO OR ROM1
Enable ROM when memory request is received (b/MREQ=0) and accessing lower 32K (bA15=0) and ROM enable is active (/LOW_ROM_EN=0)
Note: Buffers/Transceivers respond to both IO and MEM cycles
Interrupt filter circuit
Note: IO Address Port $7C
S1=on - A7 (low)
S2=off - A6 (high)
S3=off - A5 (high)
S4=off - A4 (high)
S5=off - A3 (high)
S6=off - A2 (high)
S7=on - A1 (low)
S8=on - A0 (low)
Enable 74LS245 bus transceiver on IO port select or ROM select
Note: Bus connector is mirror image of Z80 CPU pin out to mate to backplane whose connectors reflect Z80 CPU pin out.
Z80 BUS INTERFACE
Spare Components
ROMO
K1 = USE FOR 32 PIN EPROM OR 28 PIN EPROM
K6 = USE FOR 27C080 EPROM OR 29C040 FLASH
K8 = USE FOR 27C080 EPROM OR 29C040 FLASH
ROM1
K3 = USE FOR 32 PIN EPROM OR 28 PIN EPROM
K4 = USE FOR 27C080 EPROM OR 29C040 FLASH
K5 = USE FOR 27C080 EPROM OR 29C040 FLASH
JP1 ENABLES MULTIPLE ROM BOARDS PRESENT IN SYSTEM. ONLY 1 MAY HAVE BOOT JUMPER INSTALLED OR MEMORY BUS CONTENTION. SUBSEQUENT BOARDS ARE ACTIVATED BY CPU USING BOOT_OVERRIDE DISCRETE SIGNAL
JUMPER JP1 FOR PRESENCE OF ROM PAGE IN LOWER 32K MEMORY MAP
ADD JUMPER JP1 FOR SINGLE ROM BOARD IN SYSTEM TO BOOT FROM ROM
/BOOT_ROM=0 Jumper Installed
/BOOT_ROM=1 Jumper Not Installed
BOOT_OVERRIDE=0 No
BOOT_OVERRIDE=1 Yes
/BOOT_ROM BOOT_OVERRIDE OUTCOME RESULT
0 0 0 ROM responds
0 1 1 No ROM response
1 0 1 No ROM response
1 1 0 ROM responds
TRUTH TABLE A: ROM CHIP SELECT
CS_ROM# = 0 MEANS ROM SELECTED
M=MREQ#
B=BOOT#
L=LOW_ROM_EN#
5=A15 (0=LOWER 32K PAGE, 1=UPPER 32K PAGE)
X=CS_ROM#
M B L 5 X
0 0 0 0 1 : MEMORY ACCESS IN LOWER MEMORY WHEN LOW_ROM ENABLED & BOOT ACTIVE, ENABLED
0 0 0 1 0 : MEMORY ACCESS IN UPPER MEMORY WHEN LOW_ROM ENABLED & BOOT ACTIVE, DENIED
0 0 1 0 0 : MEMORY ACCESS IN LOWER MEMORY WHEN LOW_ROM DISABLED & BOOT ACTIVE, DENIED
0 0 1 1 0 : MEMORY ACCESS IN UPPER MEMORY WHEN LOW_ROM DISABLED & BOOT ACTIVE, DENIED
0 1 0 0 1 : BOOT NOT ACTIVE OR OVERRIDDEN, DENIED
0 1 0 1 1 : BOOT NOT ACTIVE OR OVERRIDDEN, DENIED
0 1 1 0 1 : BOOT NOT ACTIVE OR OVERRIDDEN, DENIED
0 1 1 1 1 : BOOT NOT ACTIVE OR OVERRIDDEN, DENIED
1 0 0 0 1 : NOT MEMORY ACCESS, DENIED
1 0 0 1 1 : NOT MEMORY ACCESS, DENIED
1 0 1 0 1 : NOT MEMORY ACCESS, DENIED
1 0 1 1 1 : NOT MEMORY ACCESS, DENIED
1 1 0 0 1 : NOT MEMORY ACCESS, DENIED
1 1 0 1 1 : NOT MEMORY ACCESS, DENIED
1 1 1 0 1 : NOT MEMORY ACCESS, DENIED
1 1 1 1 1 : NOT MEMORY ACCESS, DENIED
TRUTH TABLE B: DETERMINE WHICH ROM CHIP SELECTED
C=CS_ROM#
R=ROMSIZE (SELECT FIRST OR SECOND ROM CHIP)
R0=CS_ROM0#
R1=CS_ROM1#
C R R0 R1
0 0 0 1 : ROM ACCESS, ENABLE FIRST CHIP
0 1 1 0 : ROM ACCESS, ENABLE SECOND CHIP
1 0 1 1 : NOT ROM ACCESS, DENIED
1 1 1 1 : NOT ROM ACCESS, DENIED
Sheet: /
File: Z80ROM2.sch
Title:
Size: C
Date:
Rev:
KiCad E.D.A. kicad (5.1.10)-1
Id: 1/1