

M523X Evaluation Board

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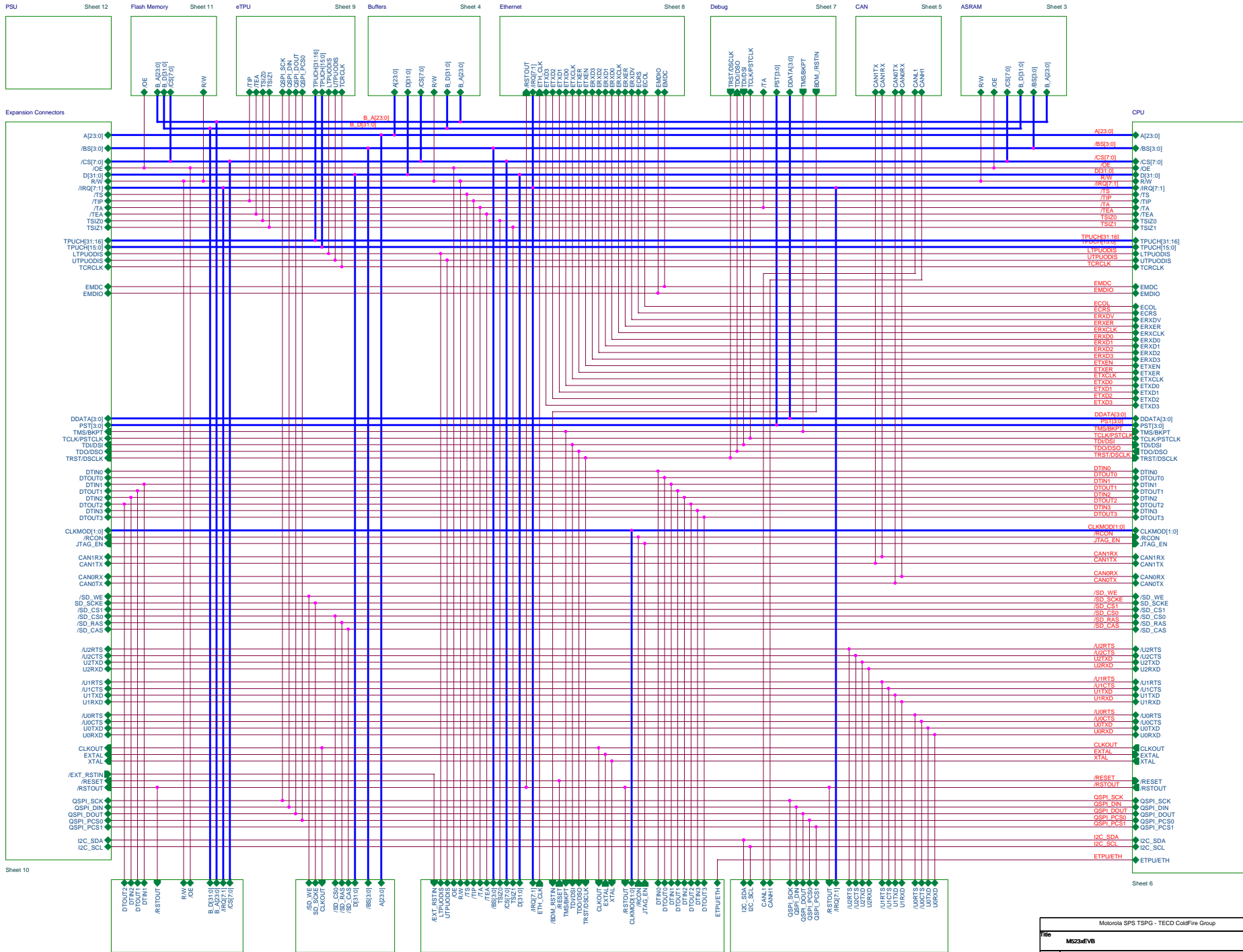
Revision Information

Rev	Date	Designer	Comments
0.0	02 Feb 04	L. Anderson	Provisional release
A	05 Mar 04	P. Highton	Added Metrowerks schematic part number and revision letter.
B	30 Apr 04	L. Anderson	Removed alternative footprint for 90-pin SSOP 32-bit Flash and replaced with 16-bit Flash, corrected RJ45 pinout and added 18Kohm pull-down resistors to U11 (ethernet transceiver).

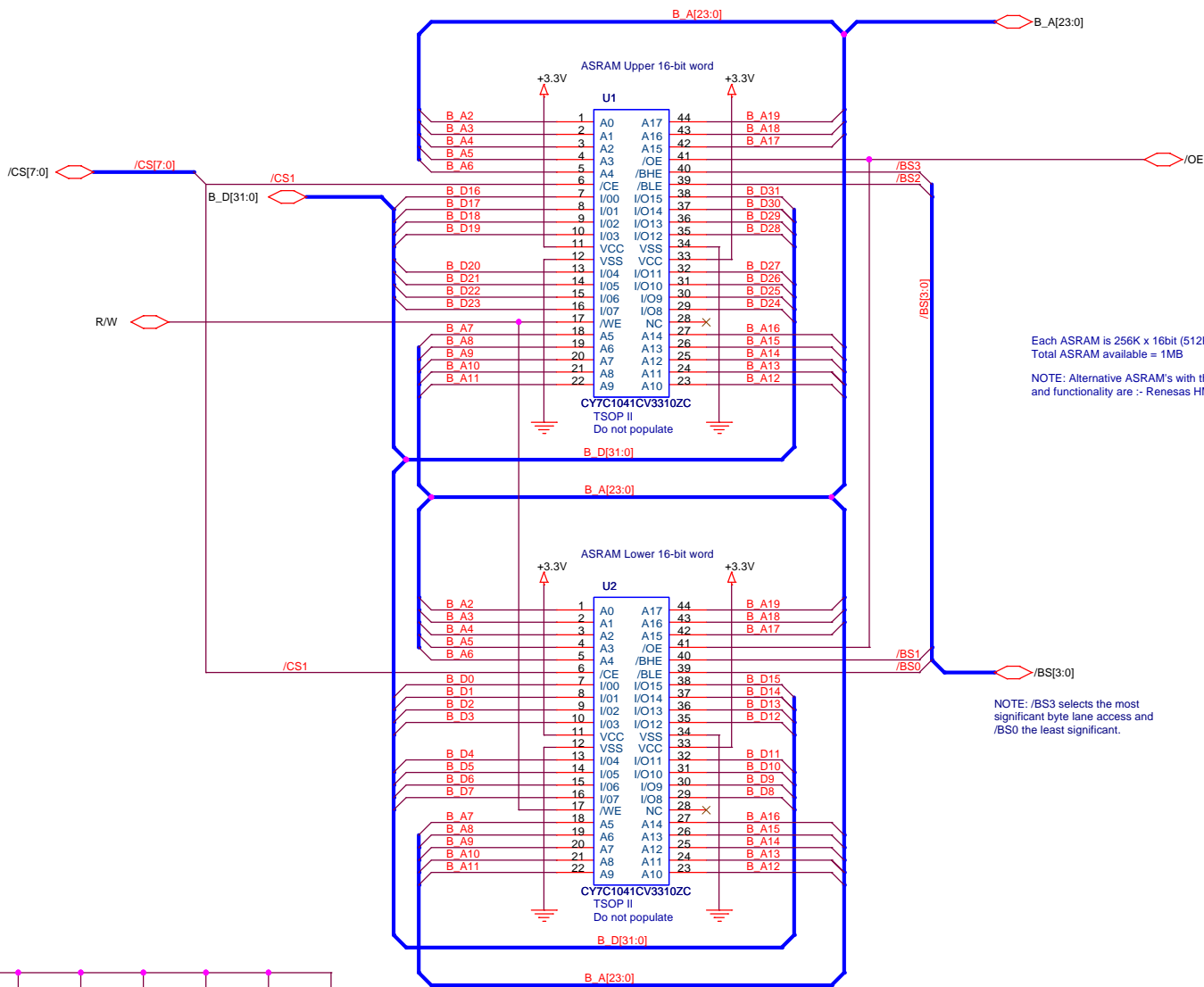
Notes:

- All decoupling caps less than 0.1uF are COG SMD 0805 unless otherwise stated
- All decoupling caps greater than 0.1uF are X7R SMD 0805 unless otherwise stated
- All connectors are denoted Jx
- All jumpers are denoted JPx
- All Switches are denoted SWx
- All test points are denoted TPx

Motorola SPS TSPG - TECD ColdFire Group			
Title		M523xEVB	
Size B	Document Number SCH-20380 General Notes and Information		Rev B
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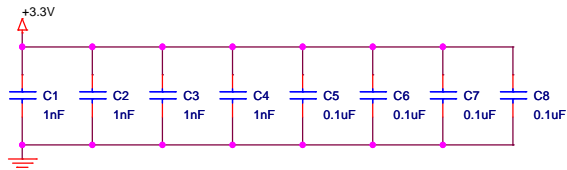


Motorola SPS TSPG - TECO ColdFire Group			
Title			
M623xEVb			
Size			
C Document Number			
SCH-20380 Hierarchical Block Diagram			
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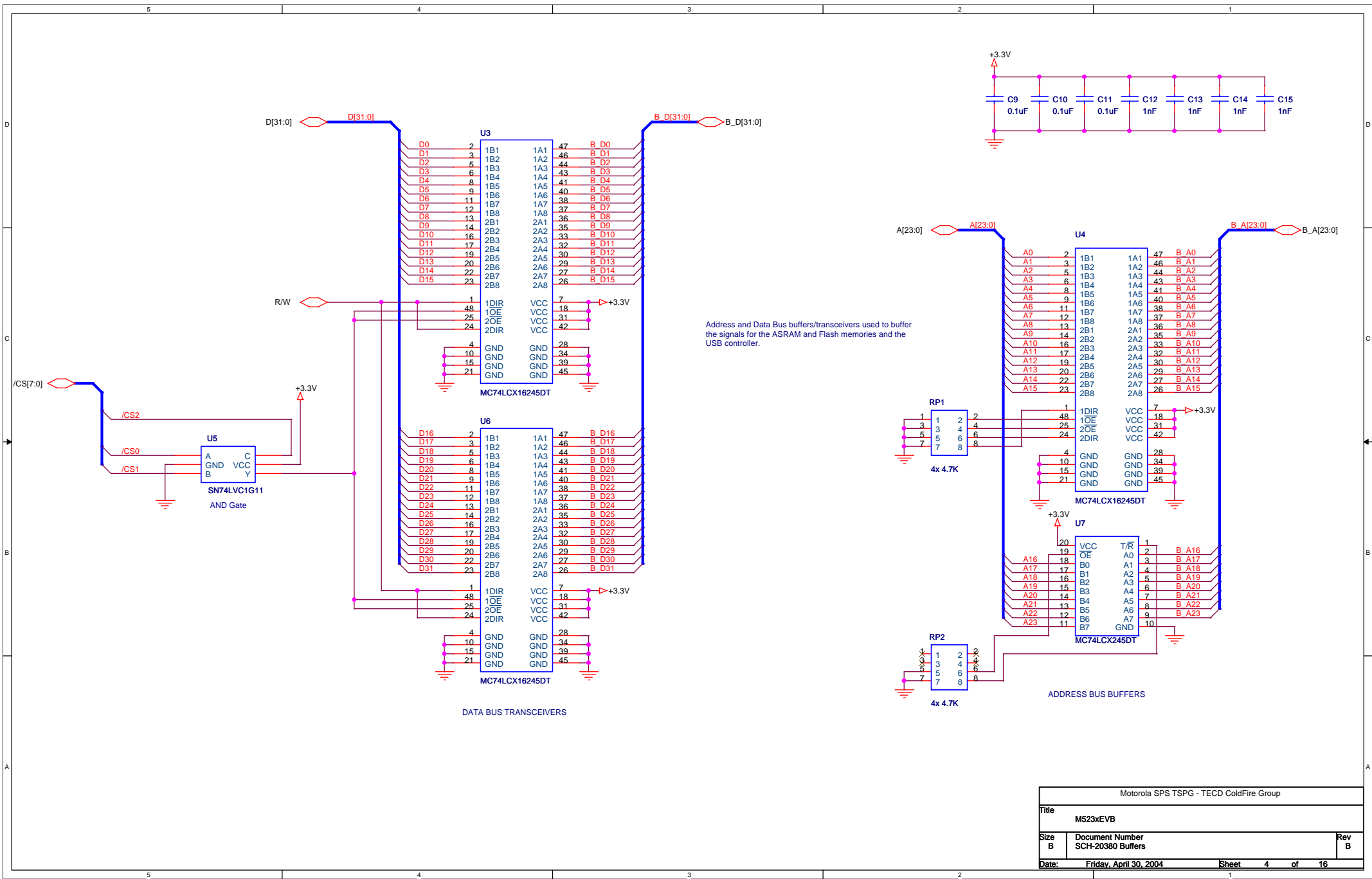


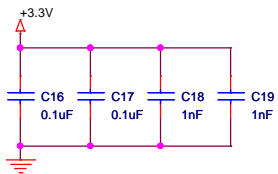
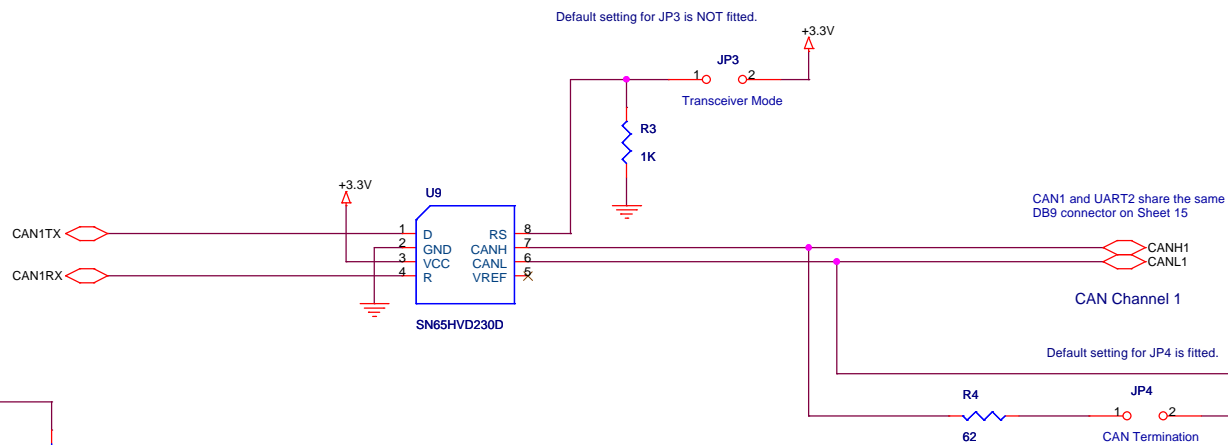
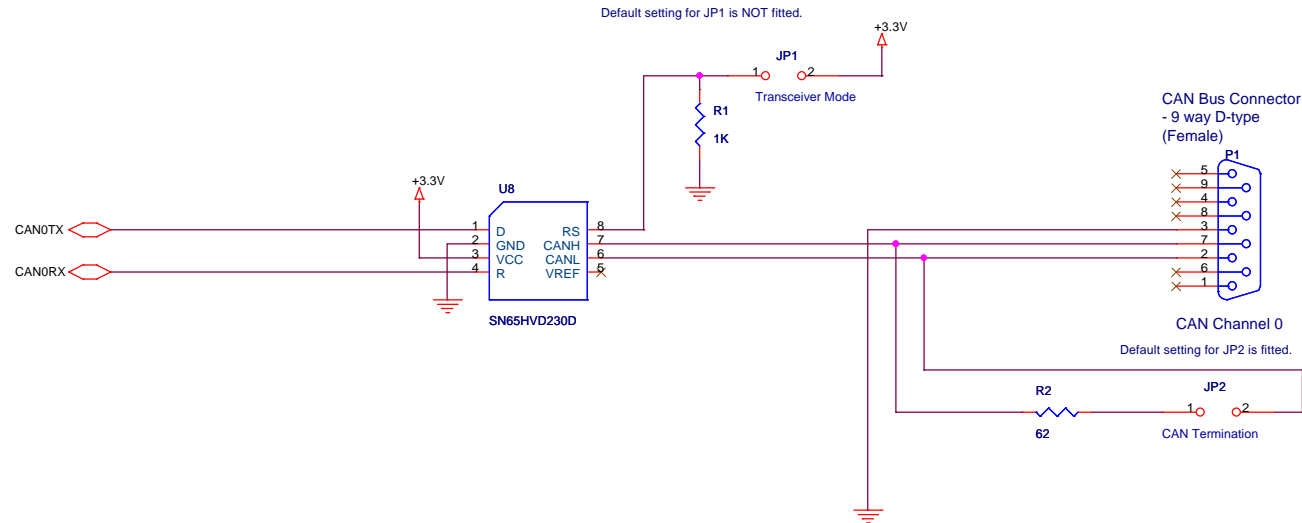
Each ASRAM is 256K x 16bit (512KB)
Total ASRAM available = 1MB
NOTE: Alternative ASRAM's with the same PCB footprint and functionality are :- Renesas HM62W16255HCJP-12

NOTE: /BS3 selects the most significant byte lane access and /BS0 the least significant.

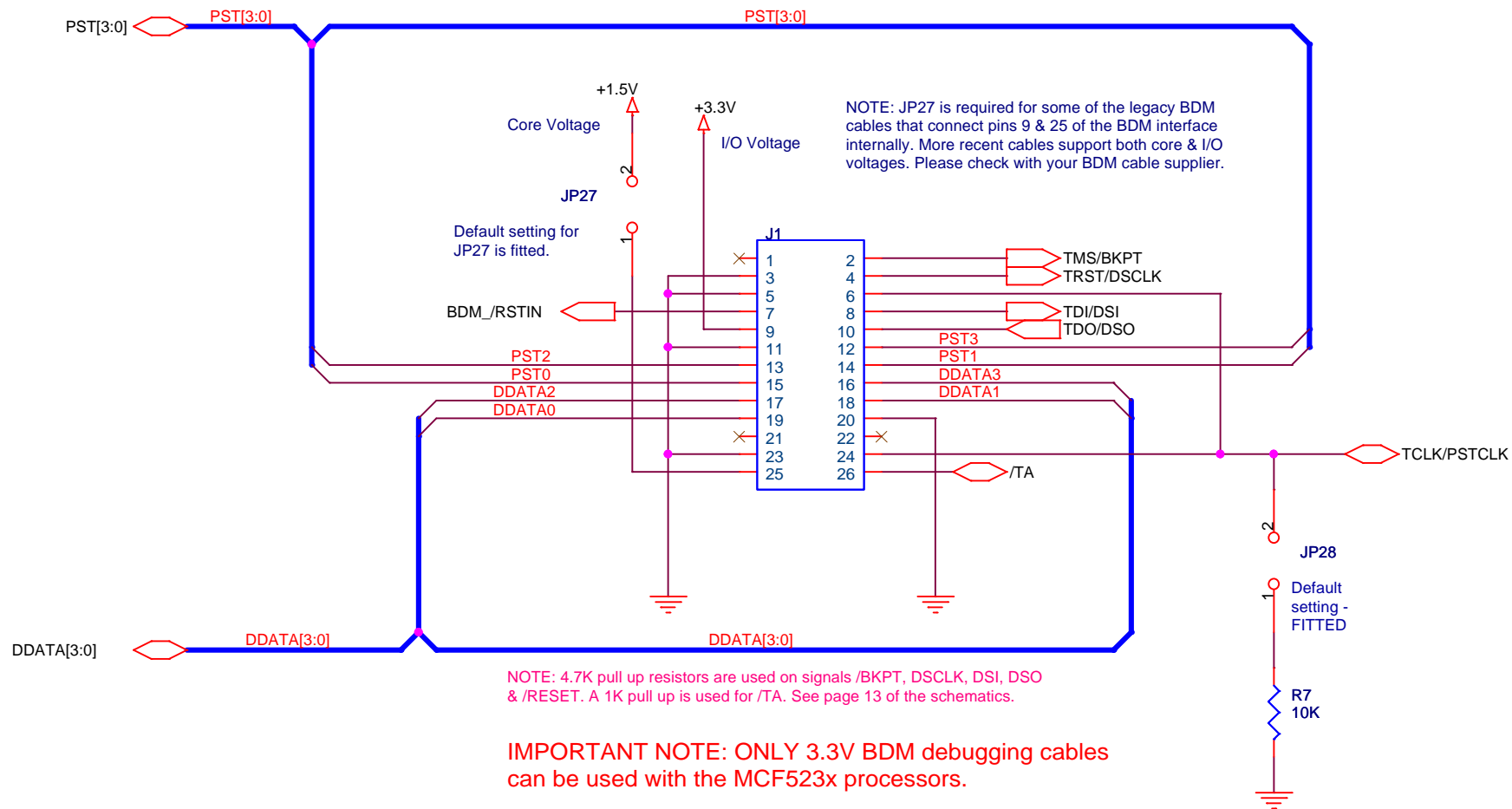


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Size	Document Number	Rev
B	SCH-20380 Asynchronous SRAM	B
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Title	M523xEVB	
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	SCH-20380 CAN Transceivers	
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Motorola SPS TSPG - TECD ColdFire Group		
Title		
M523xEVB		
Size	Document Number	Rev
A	SCH-20380 BDM/JTAG Debug Port	B
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ETH_CLK
/RSTOUT

NOTE: U11 KS8721BL has an on-chip LDO that derives the +2.5V supply from the +3.3V supply.

NOTE: Ethernet Ch. physical addr. default setting is addr. = 1 selected via internal resistor biasing during reset.

EMDIO
EMDC

ERXD3
ERXD2
ERXD1
ERXD0

ERXDV
ERXCLK
ERXER
ETXCLK

ETXER
ETXEN

ETXD0
ETXD1
ETXD2
ETXD3

ECOL
ECRS

Place RP4 & RP5 as close to U11 as possible.

Place RP6 & RP7 as close to the MCF523x (CPU) as possible.

NOTE: RP27 is present to ensure the correct configuration of U11 out of reset.

Place the capacitors above close to pins 7 and 24 on U11.

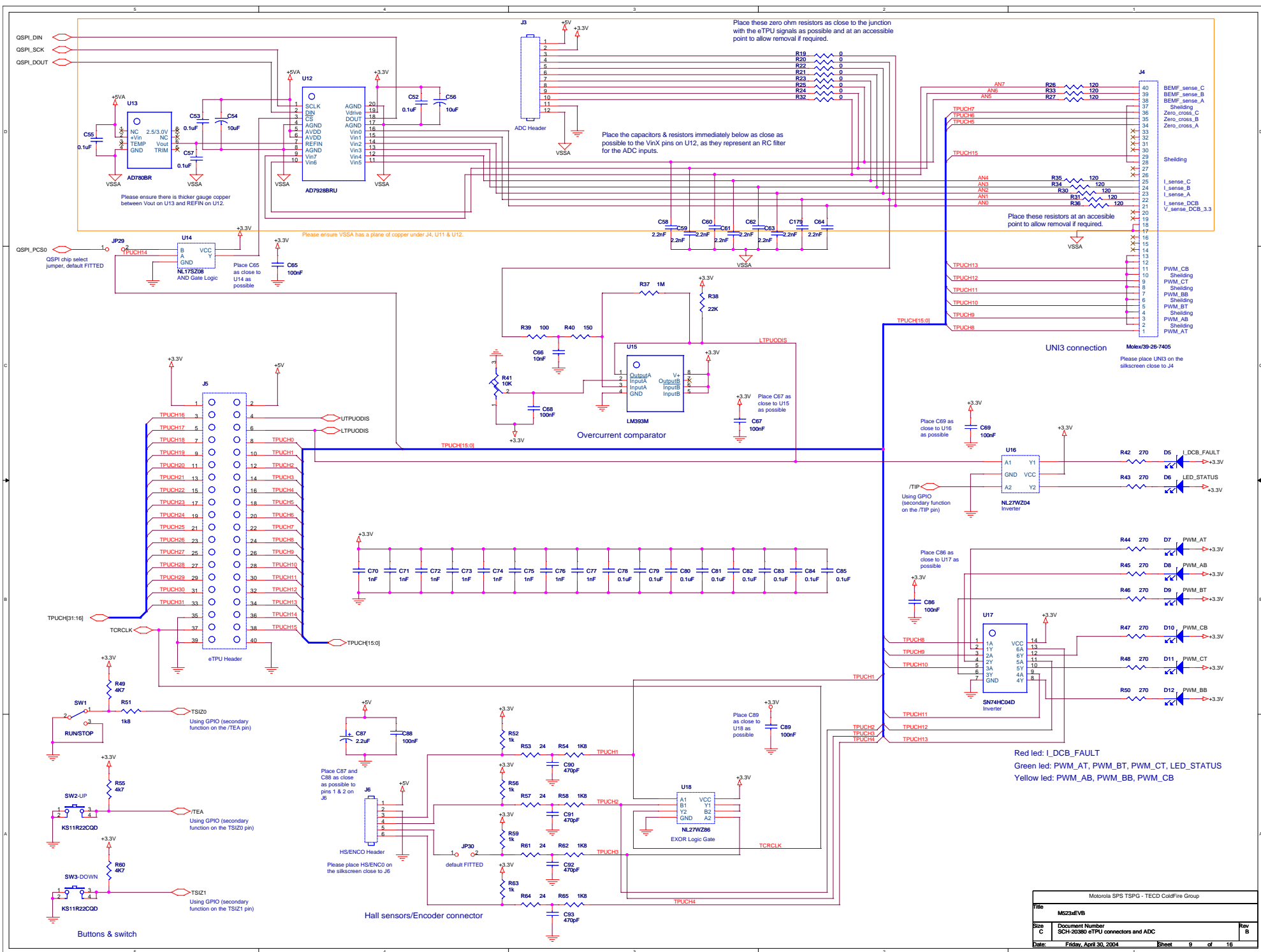
Place R8, R9, R10 & R11 close to U11.

Place silk screen LED labels next to D1 thru D4.

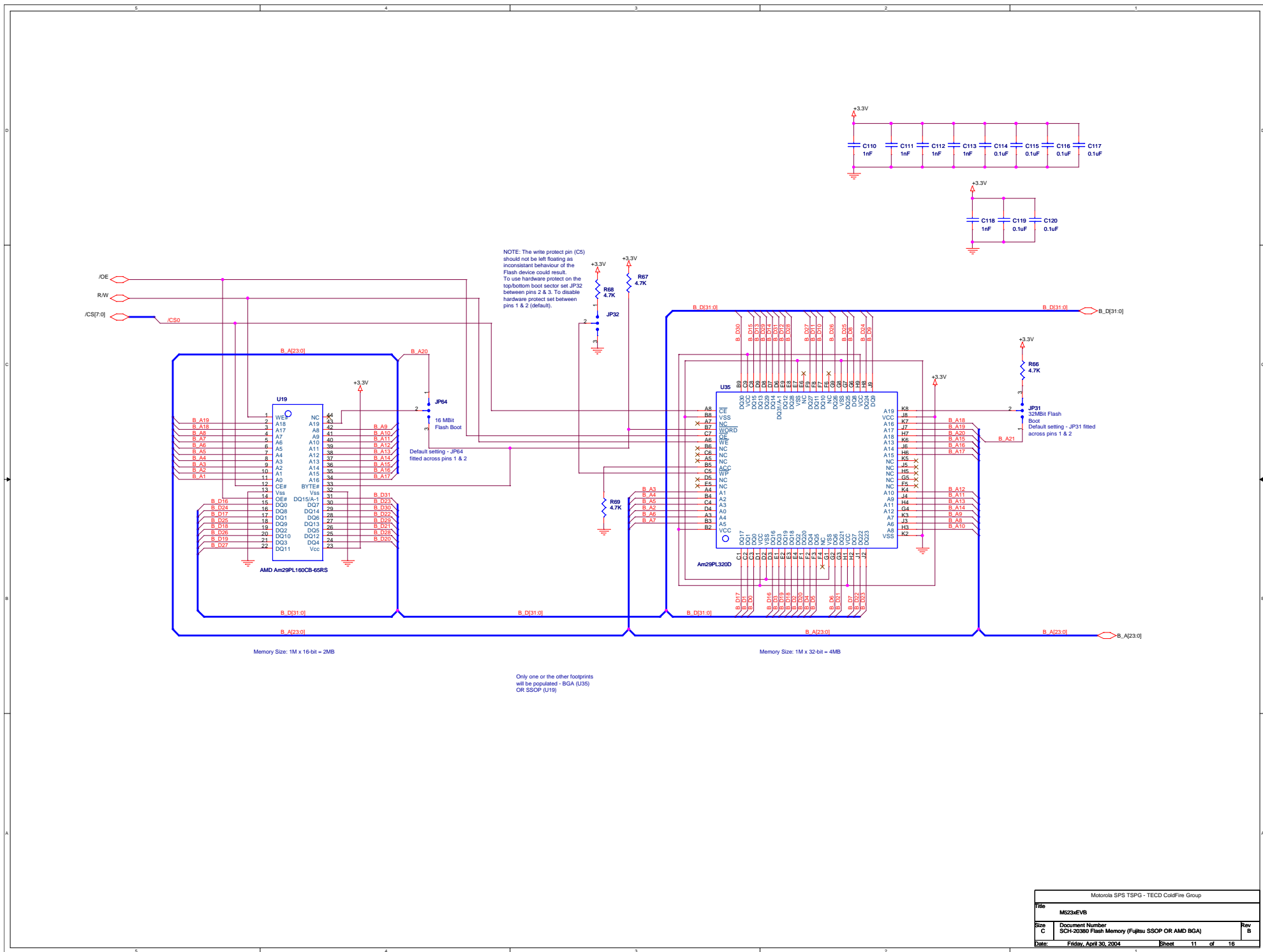
Separate RJ45 connector chassis ground.

Halo HFJ11-2450E

Motorola SPS TSPG - TECD ColdFire Group		
Title	M523xEVB	
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B	SCH-20380 10/100BaseT Ethernet Transceiver	B
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File	M633xVB		
Size	C		
Document Number	SCH-20380 eTPU connectors and ADC		
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DC voltage input range +7 to +14V

NOTE: the positive terminal of each power connector must be shown on the silkscreen of the PCB

Power Jack Connector -
P2 2.1mm diameter

Switchcraft RAPC712
2-way Bare Wire
Power Connector

P3

Augat 25V-02

POWER SW SLIDE-SPST(Board Edge)

SW4

C123
0.1uF

C124
1nF

F1
5A Fast blow.

D15
MBRS340T3

C125
1000uF

3.3V Regulator
U20 LM2596S-3.3

VIN
-ON/OFF GND TAB VOUT FB

L2
25uH

D13
MBRS340T3

C121
330uF

C122
0.1uF

JP33 SHOULD BE
INSTALLED DURING
ASSEMBLY

JP33

+3.3V

+3.3V GREEN POWER LED

5.0V Regulator
U21 LM2596S-5

VIN
-ON/OFF GND TAB VOUT FB

L3
25uH

D16
MBRS340T3

C126
330uF

C127
0.1uF

+5V

+5V GREEN POWER LED

1.5V Regulator
U22 LT1086CM

VIN
ADJ VOUT

C128
10uF TANT.

R73
120

C129
330uF

C130
0.1uF

R72
22

D21
+1.5V GREEN POWER LED

JP34 SHOULD BE
INSTALLED DURING
ASSEMBLY

JP34

+1.5VP

NOTE: Diodes prevent excessive
difference between 3.3V & 1.5V
rails, at power up

+3.3V

D18
MRA4003T3

D19
MRA4003T3

D20
MBRS340T3

+1.5V

NOTE: Schottky Diode prevents excessive
difference between 3.3V & 1.5V
rails, at power down

+3.3V

D22
MBRS340T3

+1.5V

+5V

FB3

+5VA

+5VA - filtered power for eTPU ADC

FB4

VSSA

VSSA - analog ground for eTPU channels

FB5

VSSPLL

VSSPLL - filtered ground for CPU PLL module

FB6

Filtered ground for plane for ethernet RJ45 connector

Motorola SPS TSPG - TECD ColdFire Group

Title

M523xEVB

Size

Document Number

SCH-20380 Power Supply

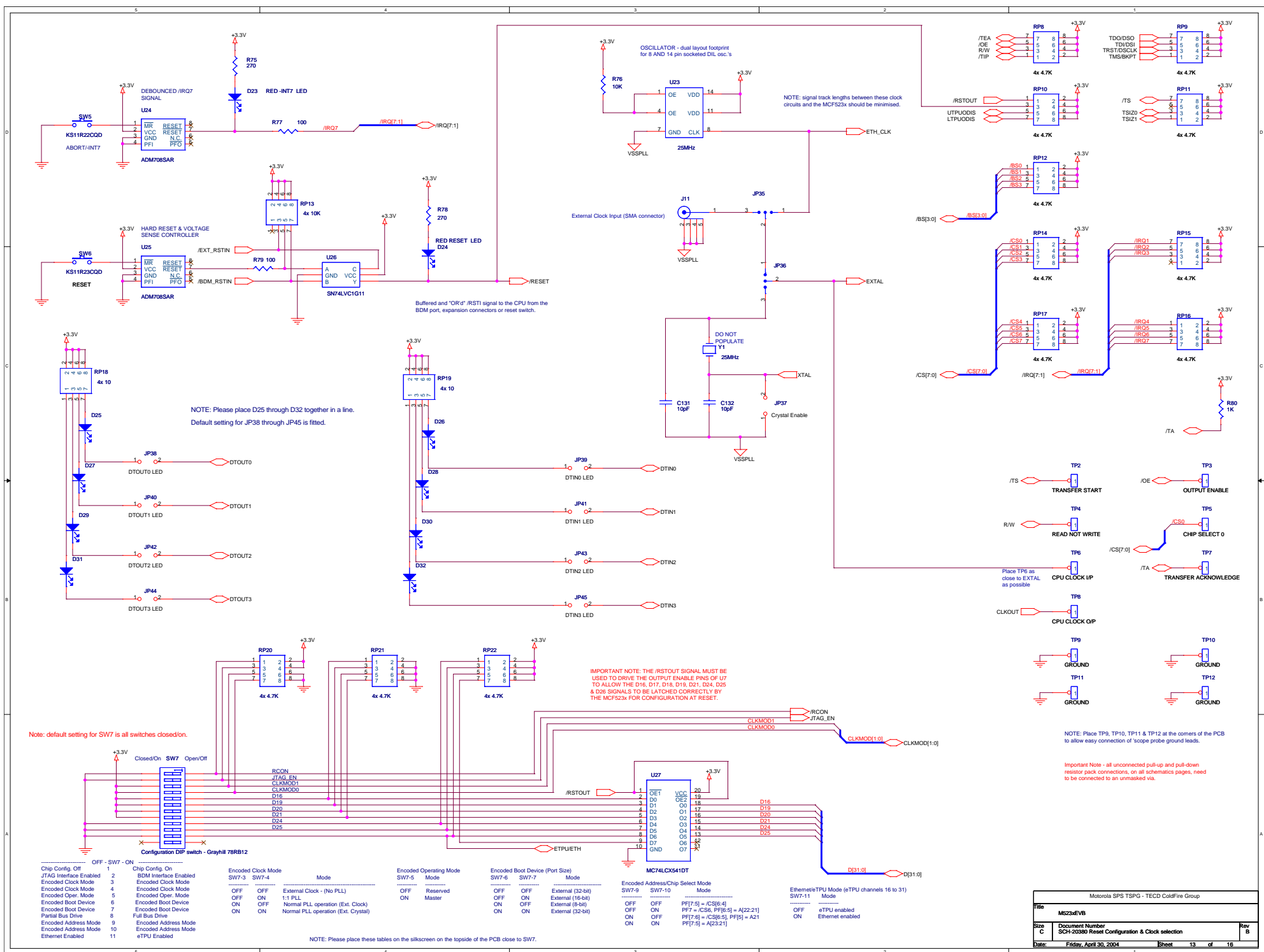
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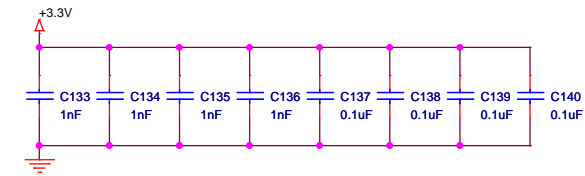
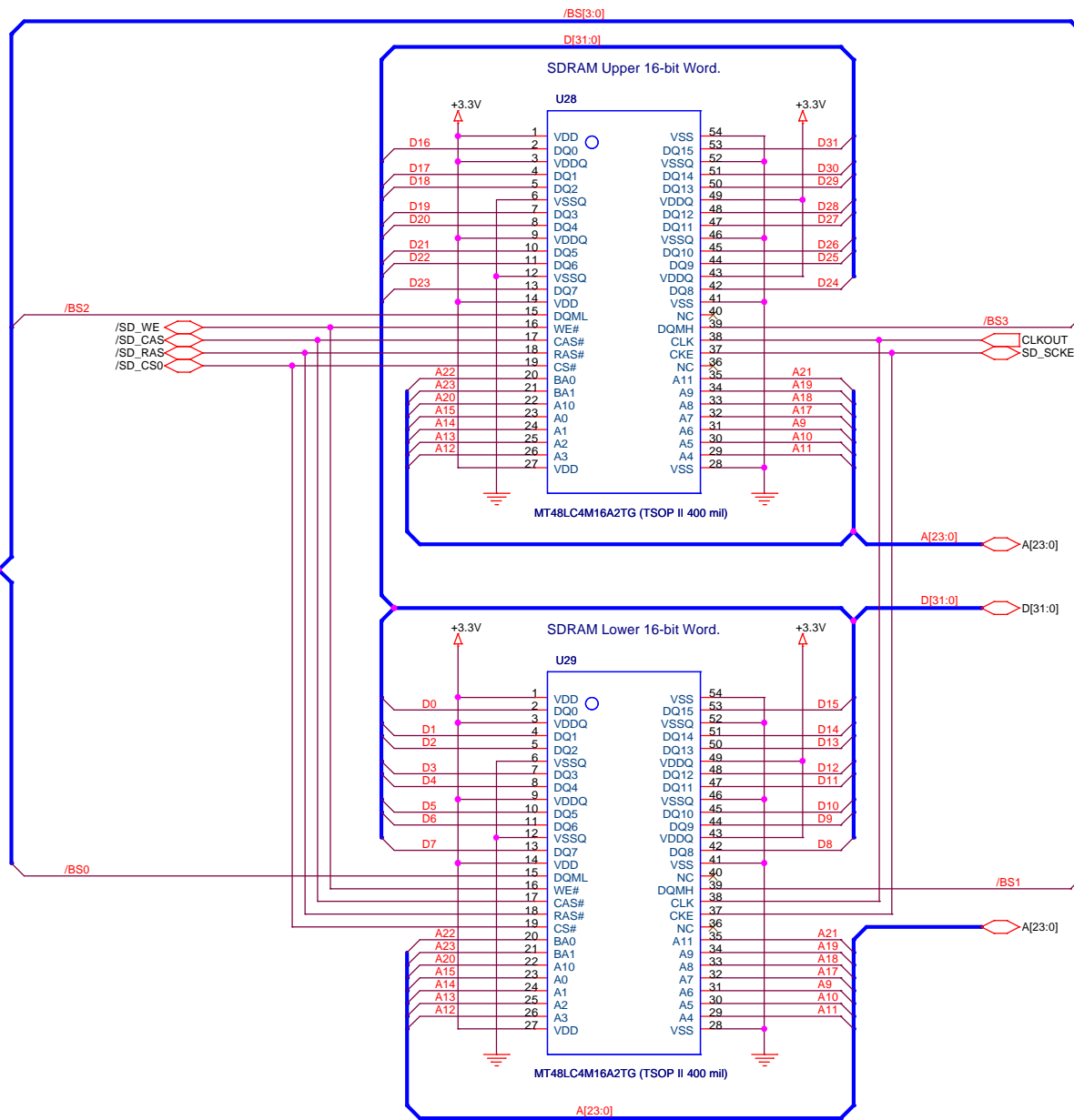
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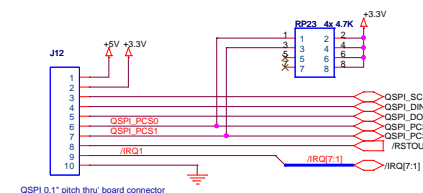
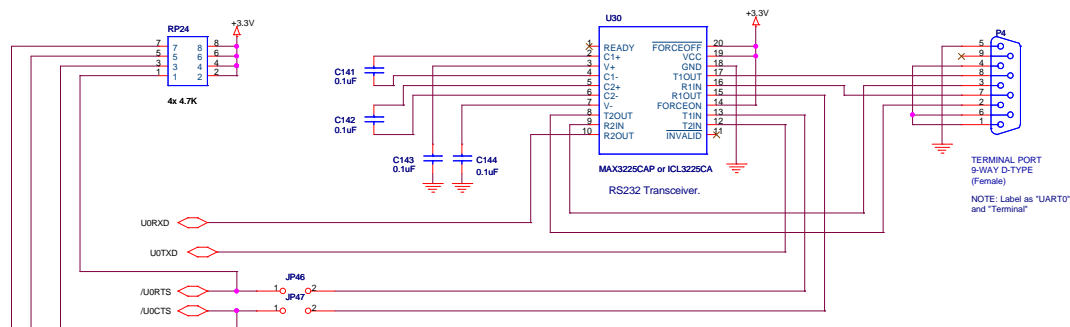




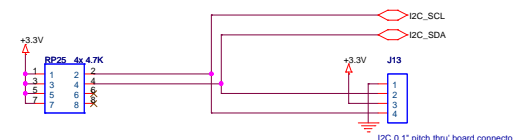
NOTE: Memory size: Each SDRAM memory is configured 4M x 16bit (8MB). Total available SDRAM is 16MB.

NOTE: Alternative SDRAM's with the same PCB footprint are:
Samsung K4S641632E
Hyundai HY57V641620HG
Toshiba TC59S6416CFT
Infineon HYB39S64160ET
Winbond W986416DH

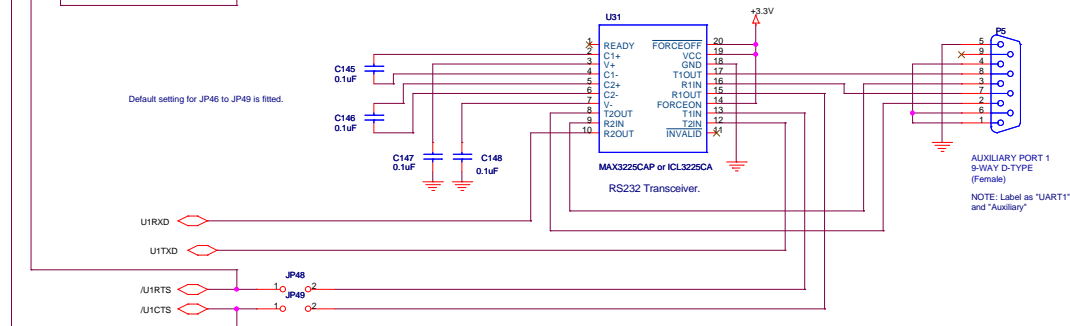
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Title M523xEVB		
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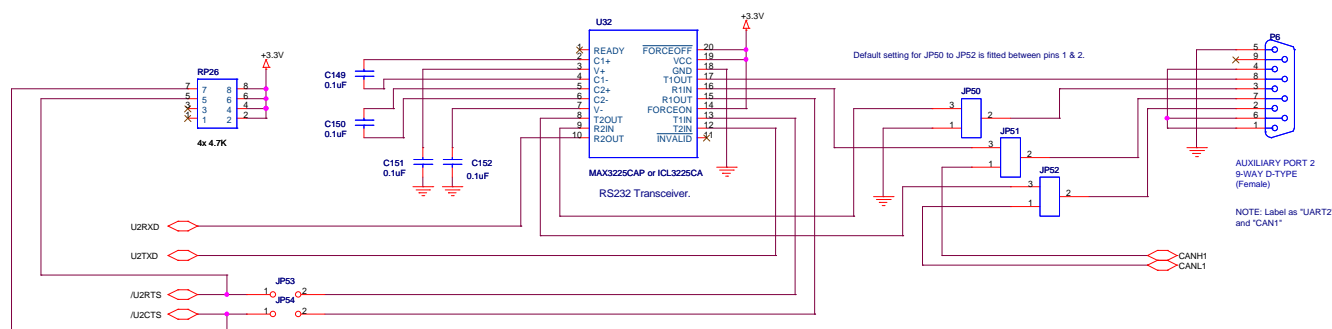
NOTE: the I2C bus on the MCF523x processor is 3.3V tolerant only. If connection to a 5V system is required high frequency voltage level shifters will be required between the peripheral and processor.



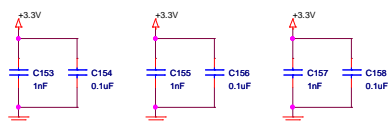
Default setting for JP46 to JP49 is fitted.



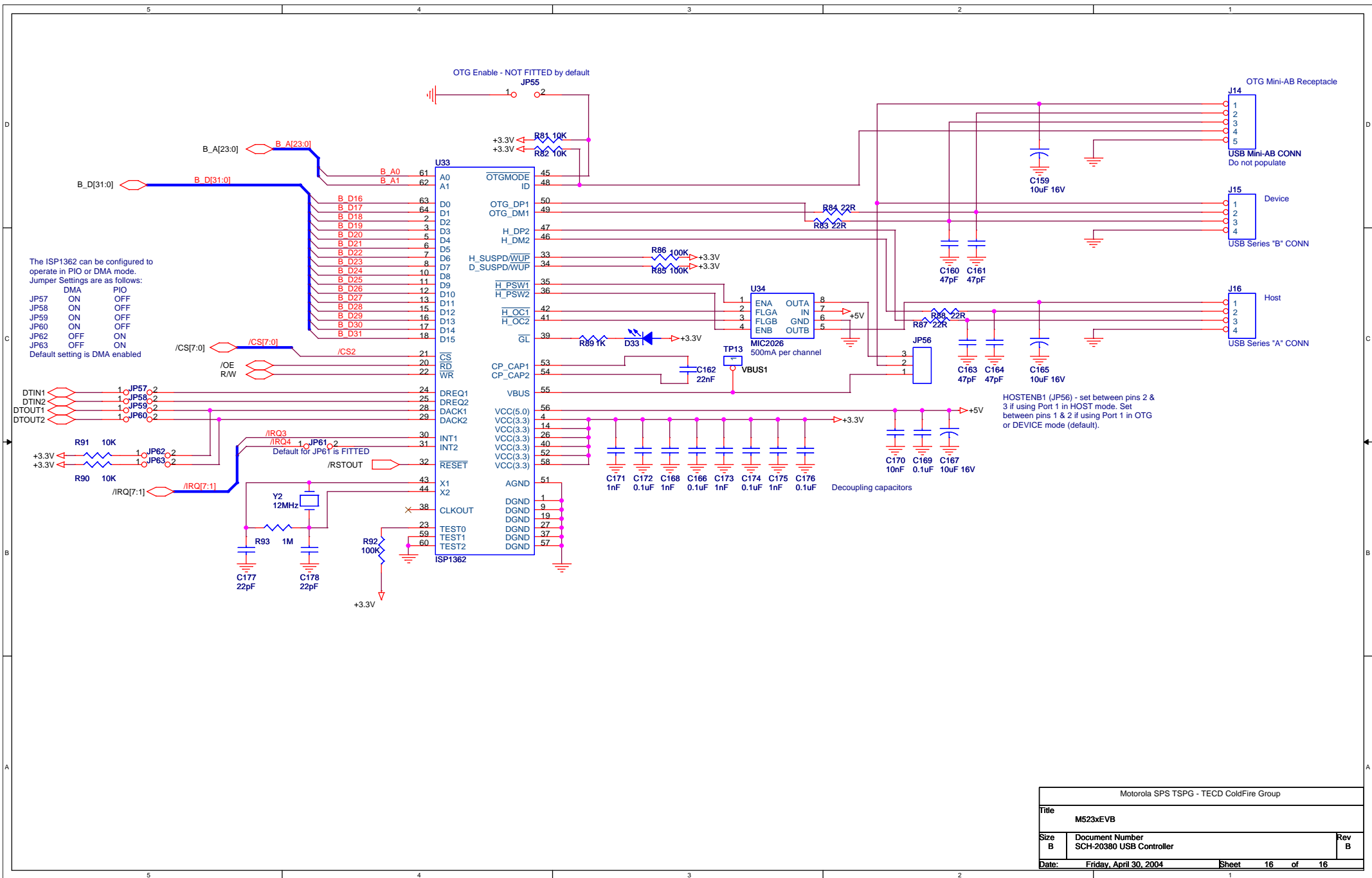
Default setting for JP50 to JP52 is fitted between pins 1 & 2.



Default setting for JP53 & JP54 is NOT fitted.



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C	SCH-20380 Serial IO	B	
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Motorola SPS TSPG - TECO ColdFire Group		
Title	M523xEVB	
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B	SCH-20380 USB Controller	B
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