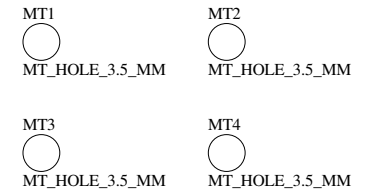
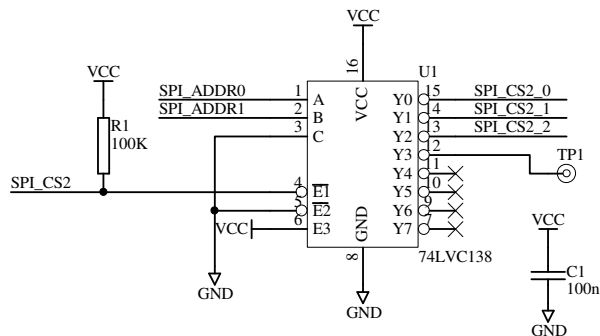
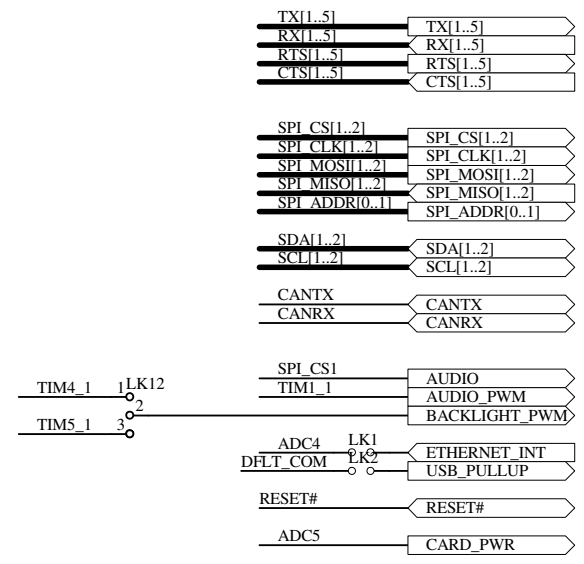
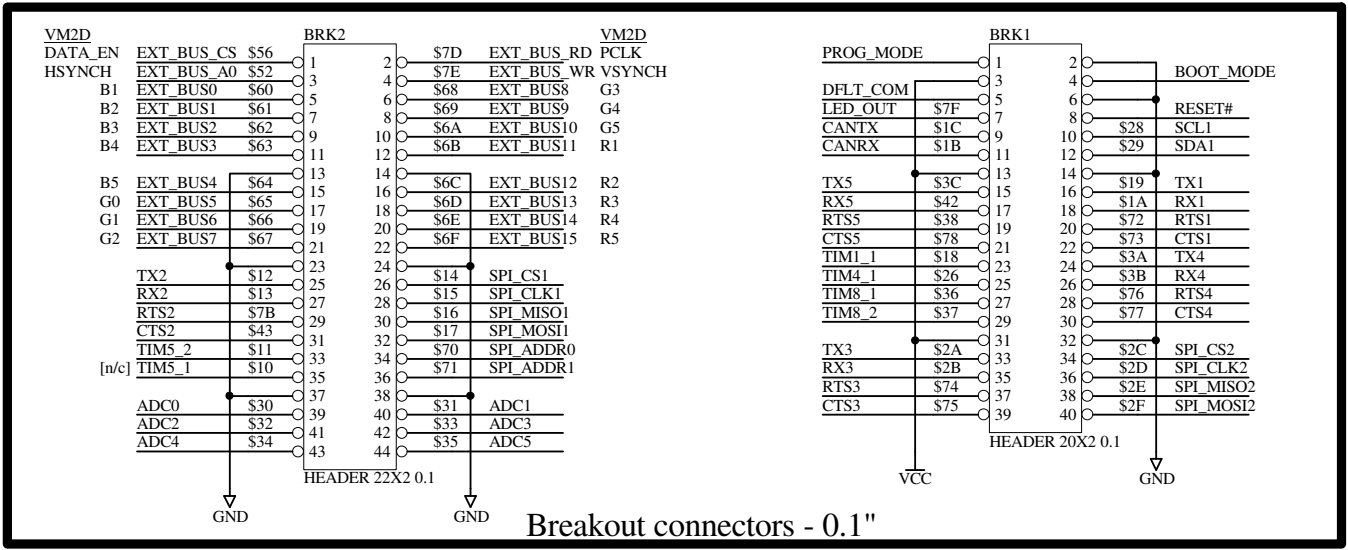
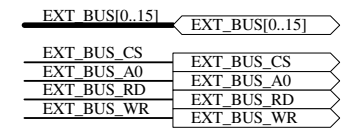
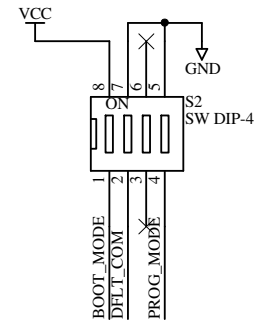
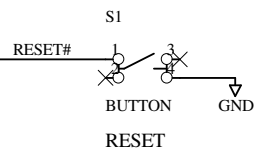
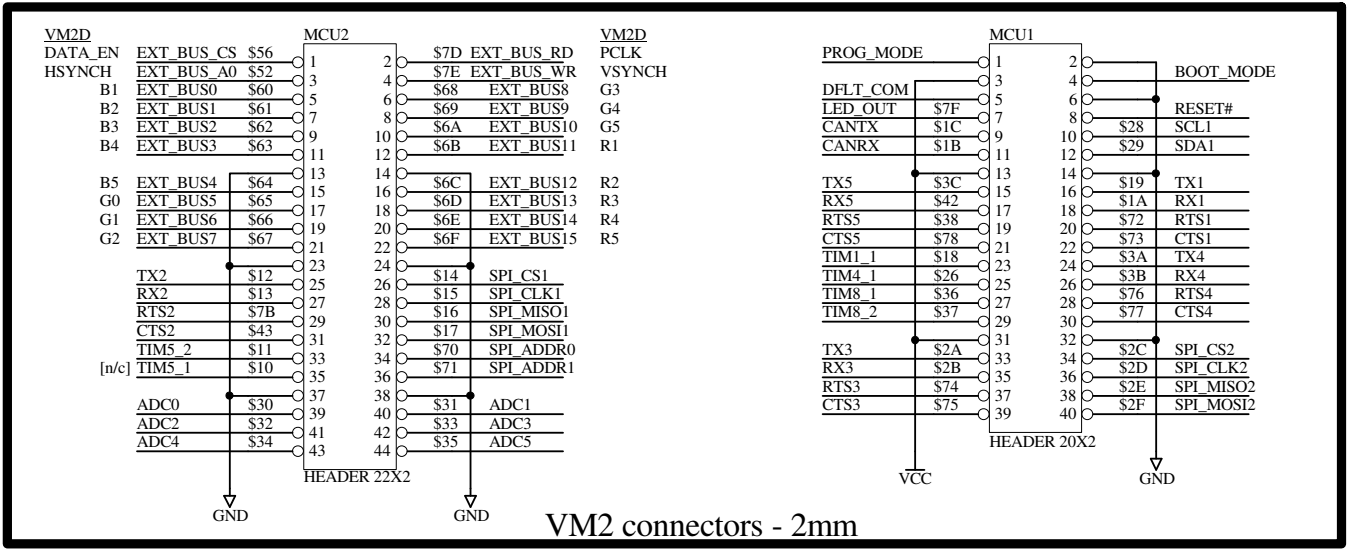
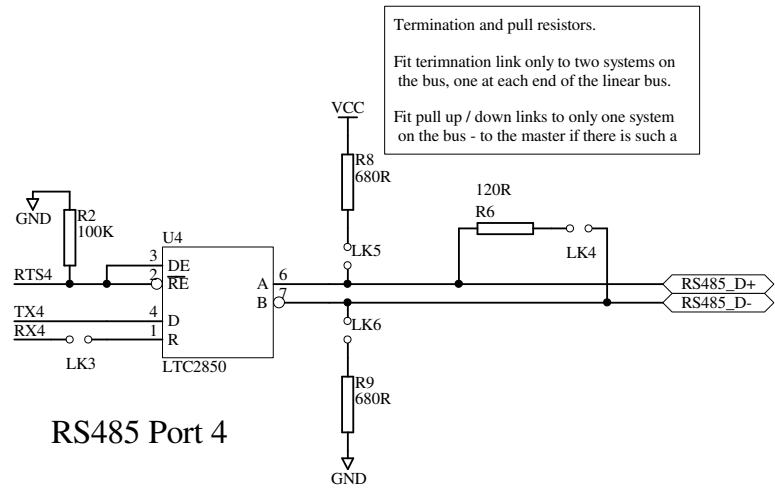
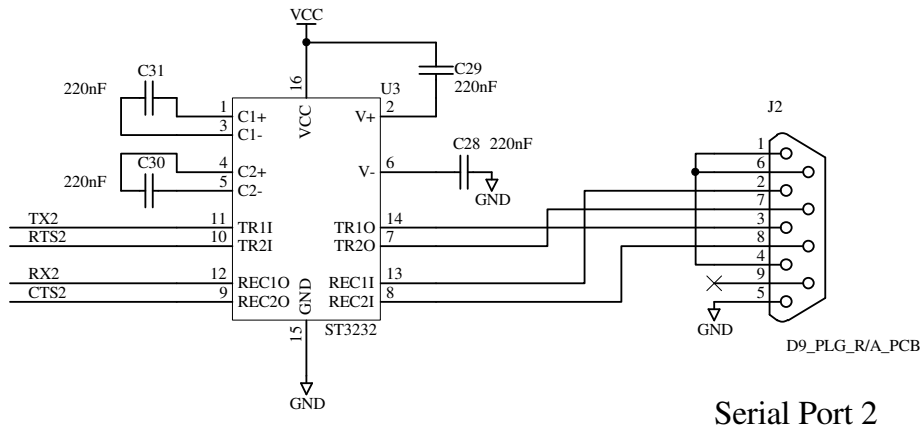
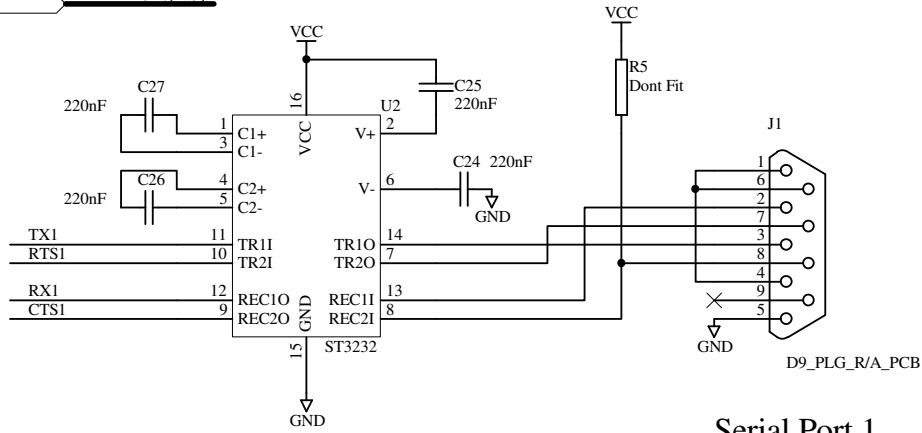
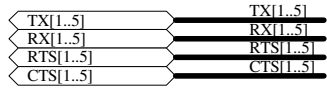


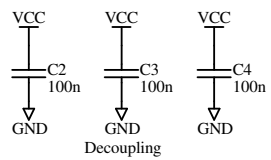
Address decode for devices on SPI bus 2.



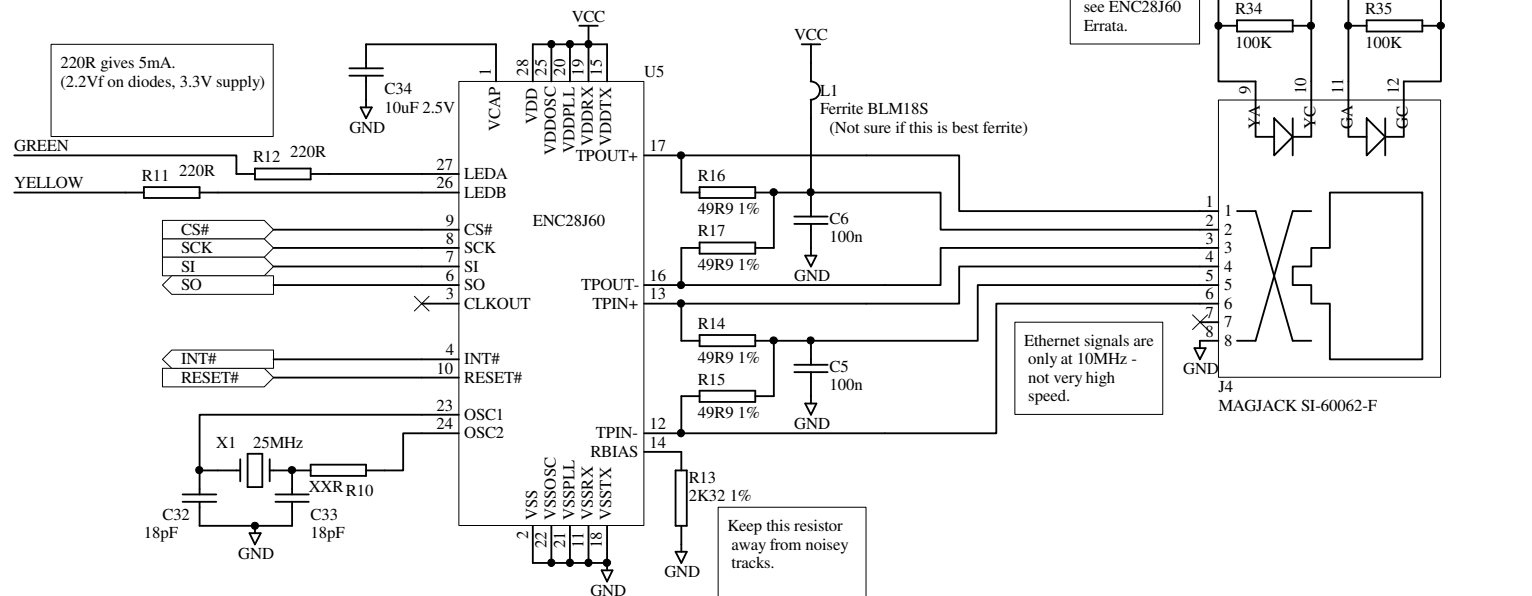




Termination and pull resistors.
 Fit termination link only to two systems on the bus, one at each end of the linear bus.
 Fit pull up / down links to only one system on the bus - to the master if there is such a



RS232 & 485		© Micro-Robotics Ltd. The Old Maltings 135 Ditton Walk Cambridge CB5 8QB Tel. +44 (0) 1223 523100
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File: H:\Products\VM2\VM2 AppBoard 3 - 5922\SERIAL.SCH		



220R gives 5mA.
(2.2Vf on diodes, 3.3V supply)

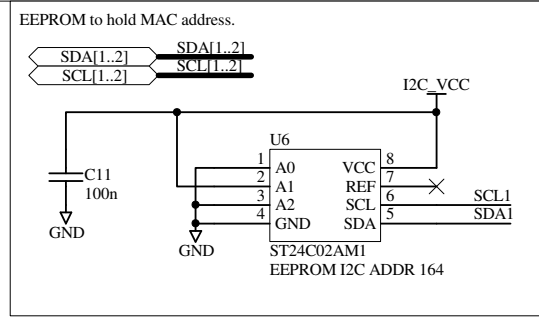
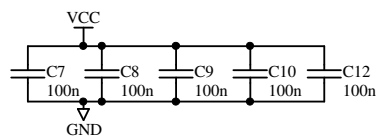
Rs ll to LEDs:
see ENC28J60
Errata.

Ethernet signals are
only at 10MHz -
not very high
speed.

Keep this resistor
away from noisy
tracks.

Default to full duplex: LEDB pull up or down
determines this.
Pulled up: Default is full duplex.

SPI to Ethernet device

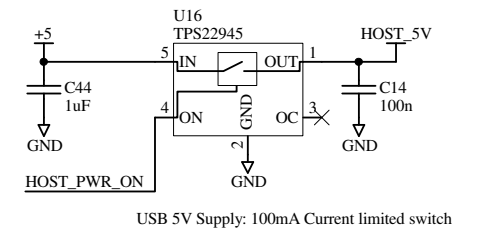
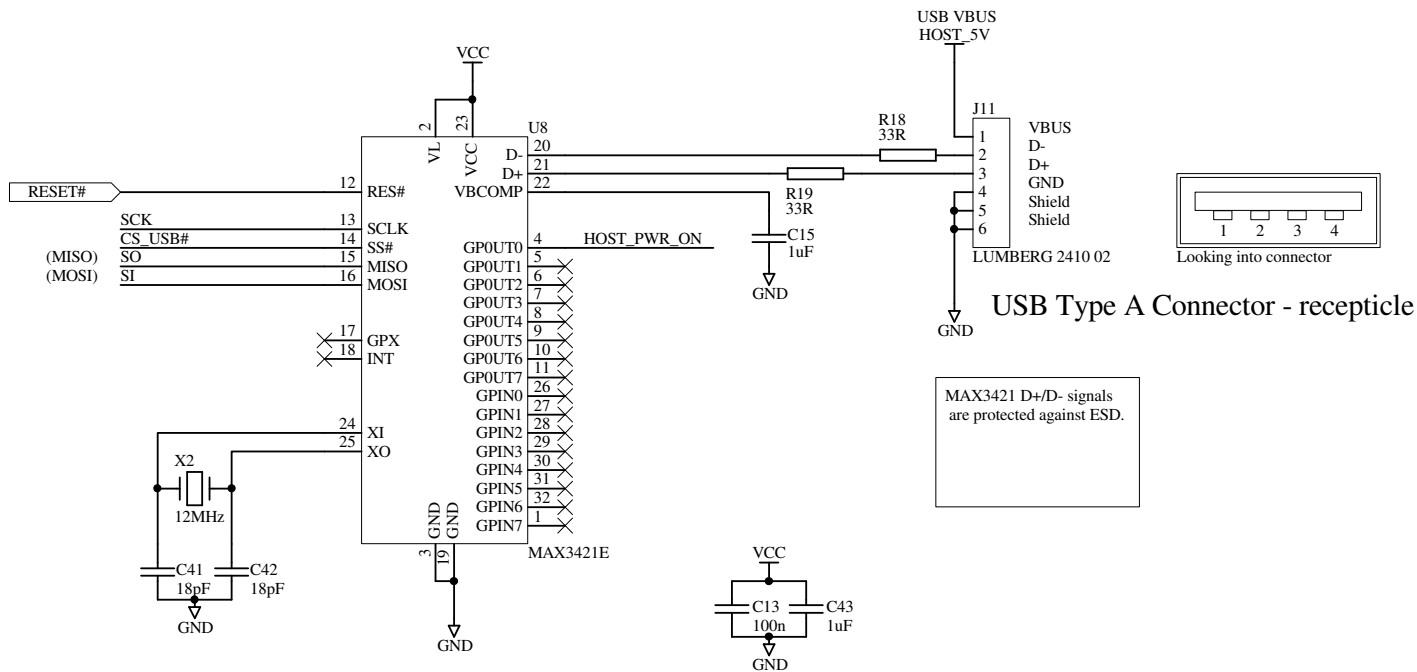
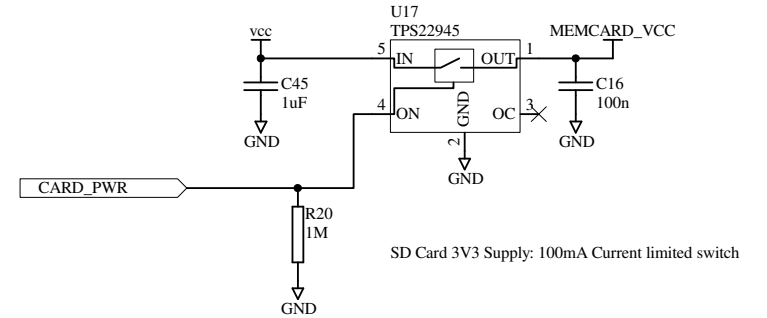
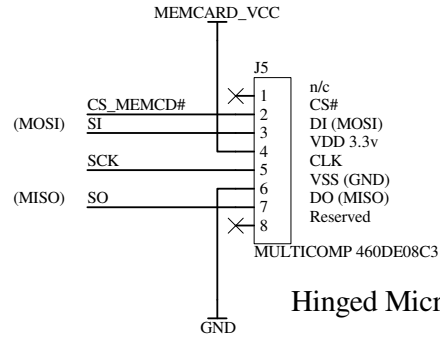


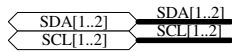
Ethernet	© Micro-Robotics Ltd. The Old Maltings 135 Ditton Walk Cambridge CB5 8QB Tel. +44 (0) 1223 523100
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Sheet 4 of 10	
File: H:\Products\VM2\VM2 AppBoard 3 - 5922\Ethernet.SCH	

CS_USB#	CS_USB#
CS_MEMCD#	CS_MEMCD#
SI	SI
SCK	SCK
SO	SO

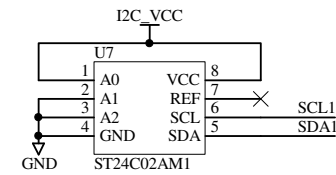
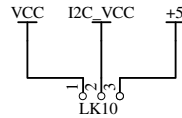
Connected to SPI Bus #2

Note: if Mem card is depowered, then care must be taken in Venom Driver: SPI outputs from VM2 must be turned into inputs (pulled low) temporarily. Memcard must remain (or be) selected so that CS is low. SPI bus must be locked for duration of power down in order to prevent other devices on the SPI powering up their SO pins, which are ll to the memcard SO, and also stop them from attempting to use a disabled SPI bus.

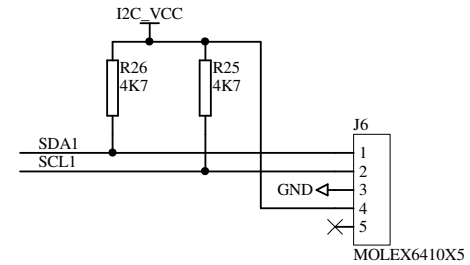




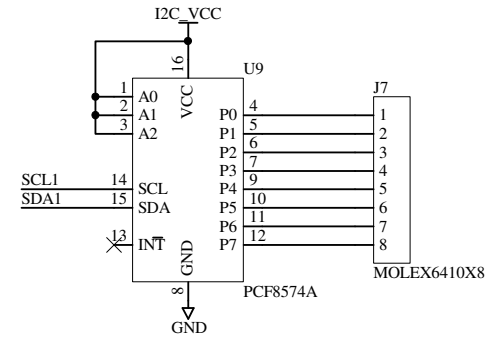
So users can change the I2C Bus voltage.
 ALL I2C Bus devices must be powered by I2C_VCC !



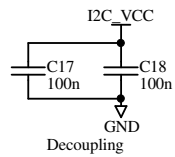
EEPROM I2C ADDR 162



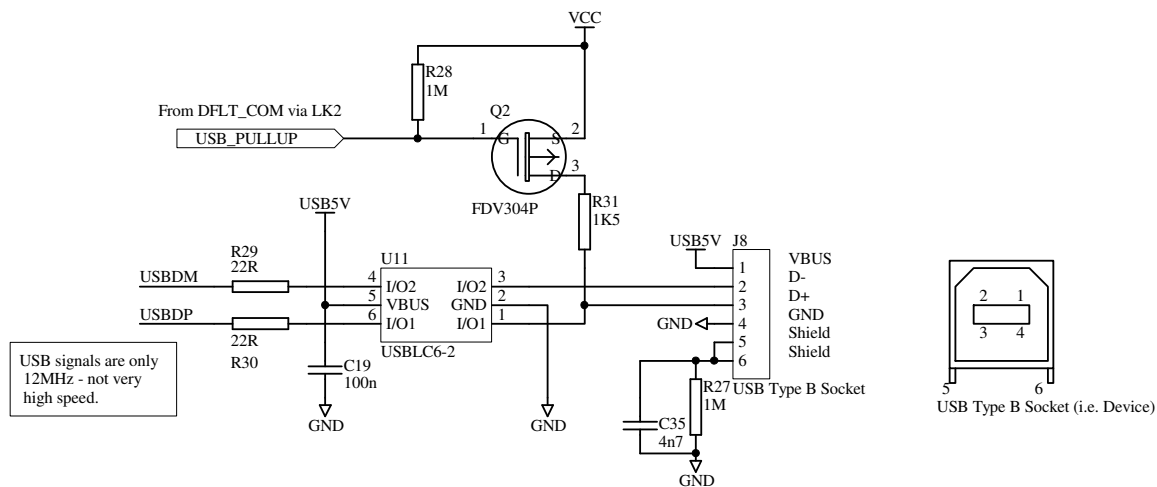
IIC Bus 1



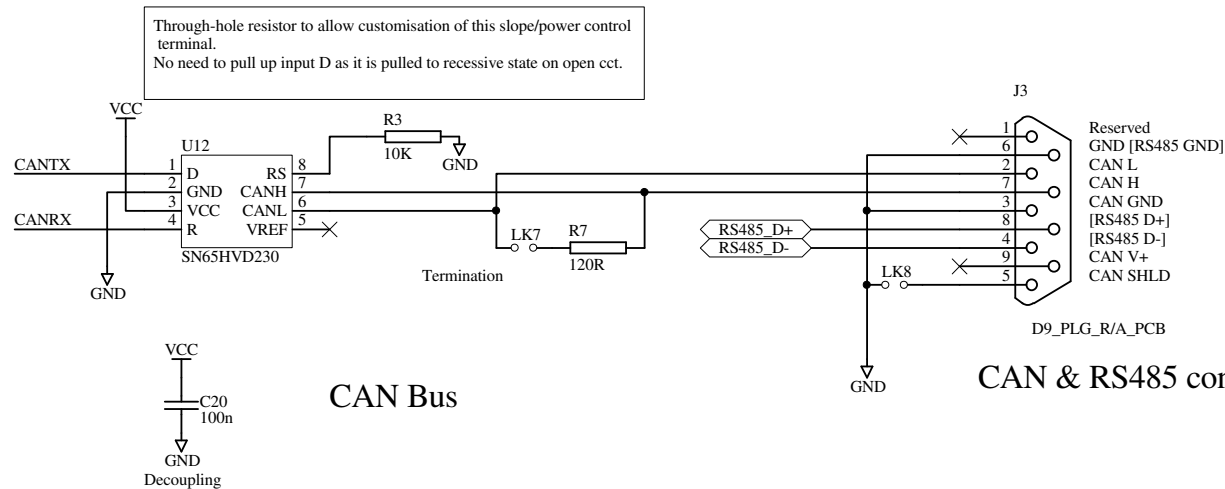
4x4 Matrix Keypad
 I2C ADDR 126



I2C Bus		© Micro-Robotics Ltd. The Old Maltings 135 Ditton Walk Cambridge CB5 8QB Tel. +44 (0) 1223 523100
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USB 'Slave' Port. 12MHz

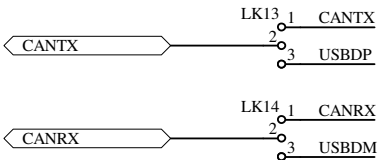


CAN Bus

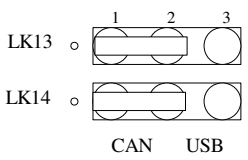
CAN & RS485 connector

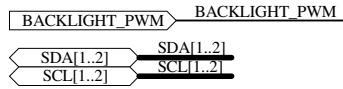
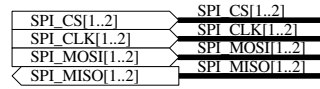
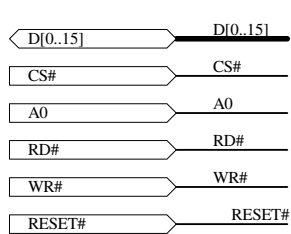
CAN Standard connector with 2 reserved pins used for RS485:

Pin Name	Description
1	Reserved Upgrade Path
2	CAN_L Dominant Low
3	CAN_GND Ground
4	[RS485 D-]
5	CAN_SHLD Shield, Optional
6	GND Ground, Optional
7	CAN_H Dominant High
8	[RS485 D+]
9	CAN_V+ Power, Optional



CAN Bus and USB are on the same processor pins. They can't be used concurrently. Diagram shows CAN function selected.

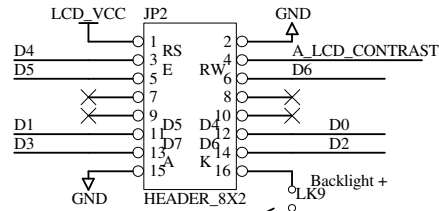




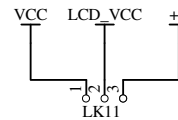
ALPHALCD REVERSE DIL IDC CONNECTOR

Can also support PLED displays

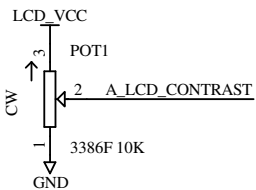
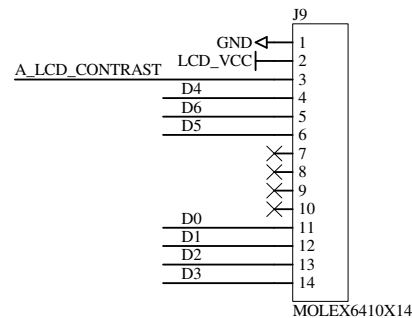
This pinout is for DIL connectors to an LCD where a transition connector has been soldered in to the BACK side of the LCD unit.



Only fit this link when you are sure that the backlight can be driven by direct connection to the LCD supply voltage.

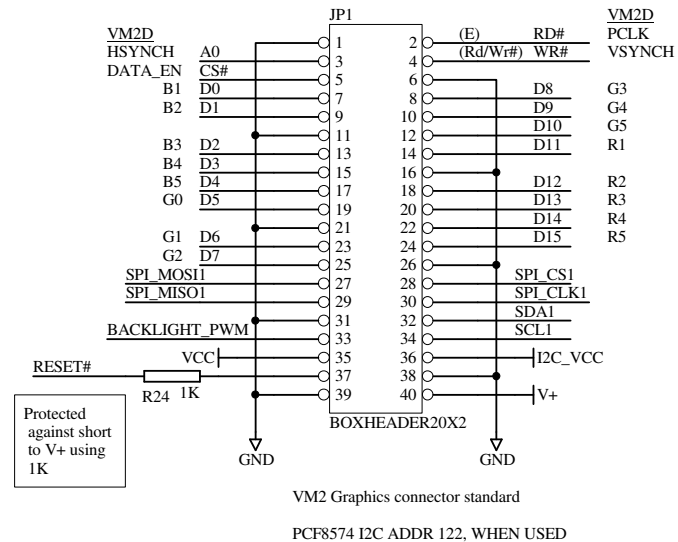


Select voltage for LCD display. Most Alphanumeric displays need



ALPHA LCD - SIL connector

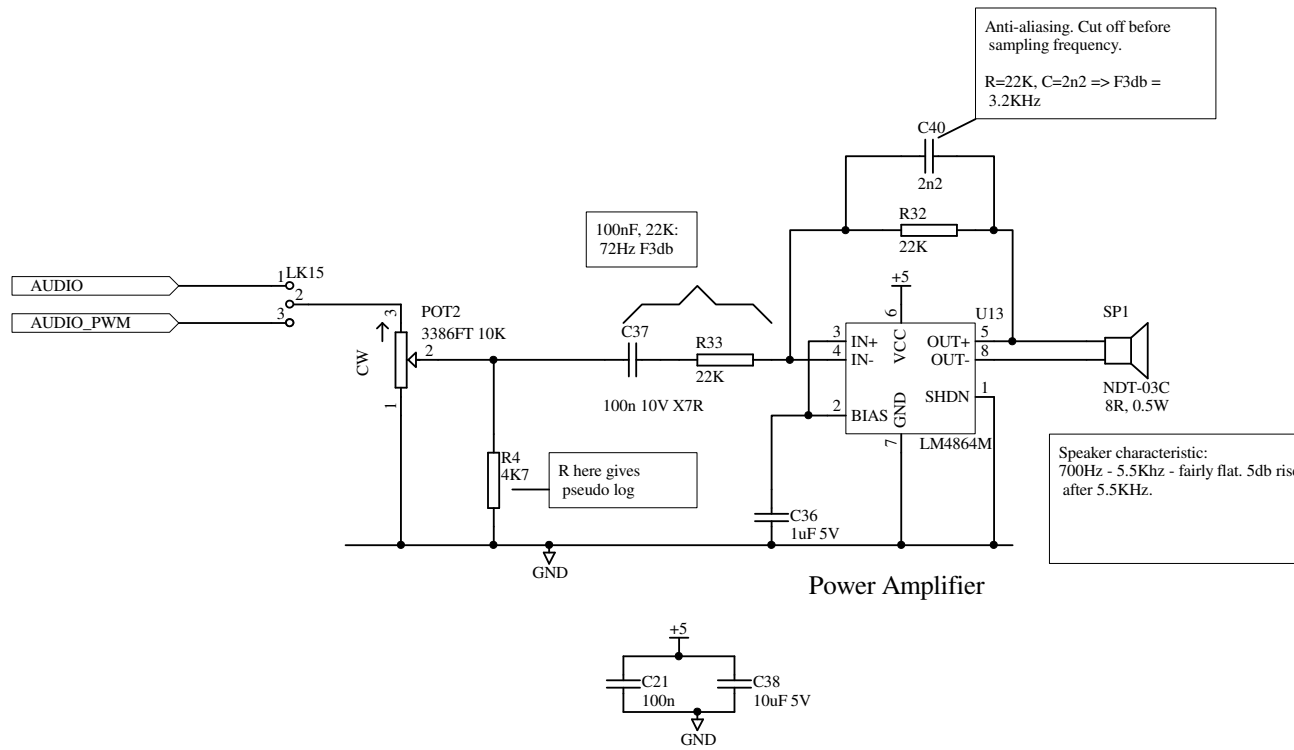
Can also support PLED displays

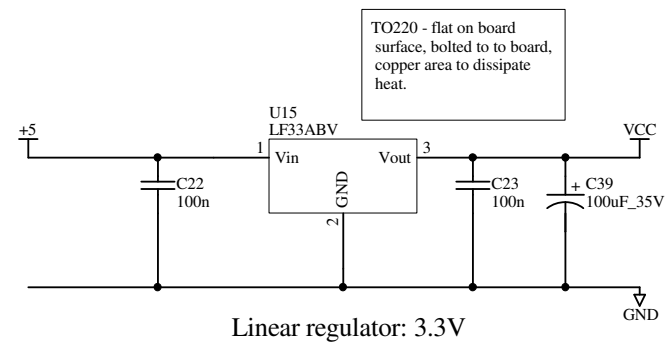
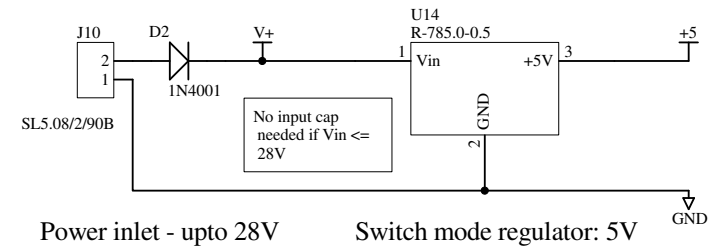


Protected against short to V+ using 1K

VM2 Graphics connector standard
PCF8574 I2C ADDR 122, WHEN USED

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PSU	© Micro-Robotics Ltd. The Old Maltings 135 Ditton Walk Cambridge CB5 8QB Tel. +44 (0) 1223 523100
Revision:	
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Sheet 10 of 10	
File: H:\Products\VM2\VM2 AppBoard 3 - 5922\PSU.sch	