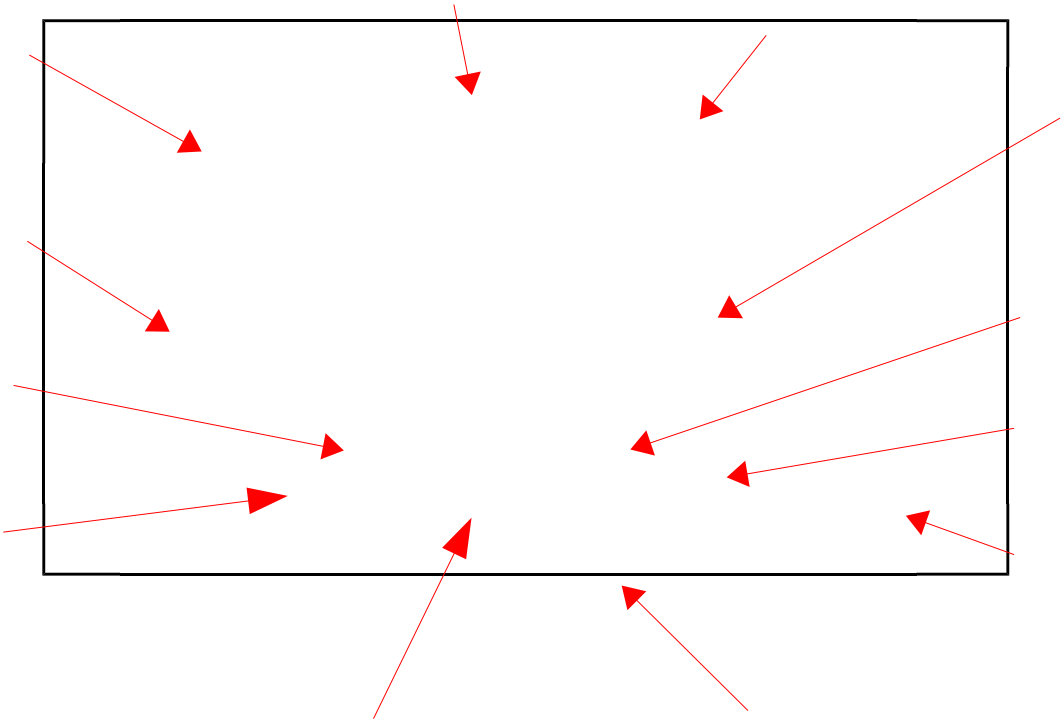
THE CURIOUS ELECTRIC CO.

Cheese Board: Cheddar Instructions

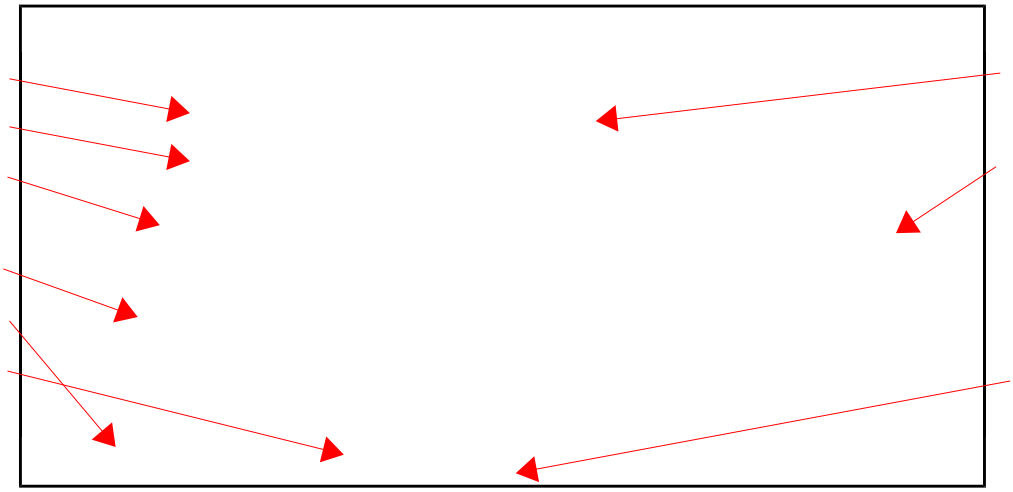
Date:	24/09/17	Version:	1.0	By:	Matt Little

	This is an ESP8266 breakout board with small display, user inputs and WS2812 LEDs. This is designed as a low cost platform to quickly get started with projects with the ESP8266. We wanted to design something that got you up and running with your project idea quickly and easily. The main processor is based upon the ESP8266 system-on-chip from Espressif Systems. This can be programmed via the Arduino IDE (or your favourite IDE). *This is a reasonably simple kit which requires some soldering.* *It should take 1-2 hours to build.* *Not suitable for under 12 years old.*

Parts included:



Enclosure Parts:



Parts list:

Item	Ref	Quantity
Capacitors. 100nf	C1-5	5
Diode. 1N5819	D1, D2	2
LED. WS2812 (pre soldered)	D3-7	5
LED. Red. NOT included	B8	Not Included
Display. OLED. 0.96" With 4-way header	DISP1	1
Encoder	ENC1	1
Fuse. 500MA	F1	1
USB micro Socket (pre-soldered)	P1	1
2 way screw terminal. 5V	P2	1
HC-11 Serial. Optional	P3	
Software Serial. Optional	P4	
Node MCU header. 15 way.	P5, P6	2
PCB – with SMD parts soldered		1
330ohm Resistor	R1	1
Switch	SW1	1
NodeMCU with 2 x 15 way headers	U1	
74LVC1G17 Level shifter (pre-soldered)	U2	

Hardware

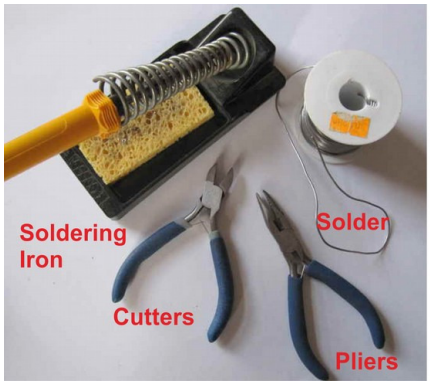
Item	Ref	Quantity
M2 Machine screws. Plastic. 6mm long		2
M2 Nuts. Plastic		2
M2 Spacers. Plastic. 12mm long		2
M3 Machine screws. 6mm long		4
M3 Machine screws 12mm long		4
M3 Threaded Hex spacers. 8mm long		4
M3 Threaded Hex spacers. 15mm long		4
Front. Laser cut 3mm Frosted Acrylic		1
Spacer. Laser cut 3mm Black. Acrylic		1
Back. Laser cut 3mm Frosted Acrylic		1

Tools required:

Soldering Iron

Solder

Side cutters



Long-nosed Pliers

Posi-drive Screwdriver

Instructions:

Step: 1	Solder capacitors

Step: 2	Solder diodes

Step: 3	Solder switch

Step: 4	Solder header pins
	For OLED and for NodeMCU

Step: 5	Solder encoder

Step: 6	Solder fuse

Step: 7	Solder screw terminals (if needed)

Step: 8	Fit LCD

Step: 9	Fit Node MCU

Step: 10	PCB is finished!
The NodeMCU has been pre-programmed with a test code. This should run when powered. Test with micro-USB cable. Switch on and check: • LEDs light • OLED screen shows data • Rotary Encoder changes data on OLED This should prove that the functions of the PCB and the NodeMCU are working OK.	Have a nice cup of tea. 

Step: 11	Add enclosure
Ad spacers	

Step: 12	Add enclosure
	Add back

Step: 13	Add enclosure
Add front and spacer	

Step: 14	Finished build!

Software

Step: 15	Upload software
This is where the fun begins! This project has software	

Contact details:

This kit has been designed and produced by:

The Curious Electric Company
hello@curiouselectric.co.uk
www.curiouselectric.co.uk
Hopkinson Gallery, 21 Station Street, Nottingham, UK, NG2 3AJ

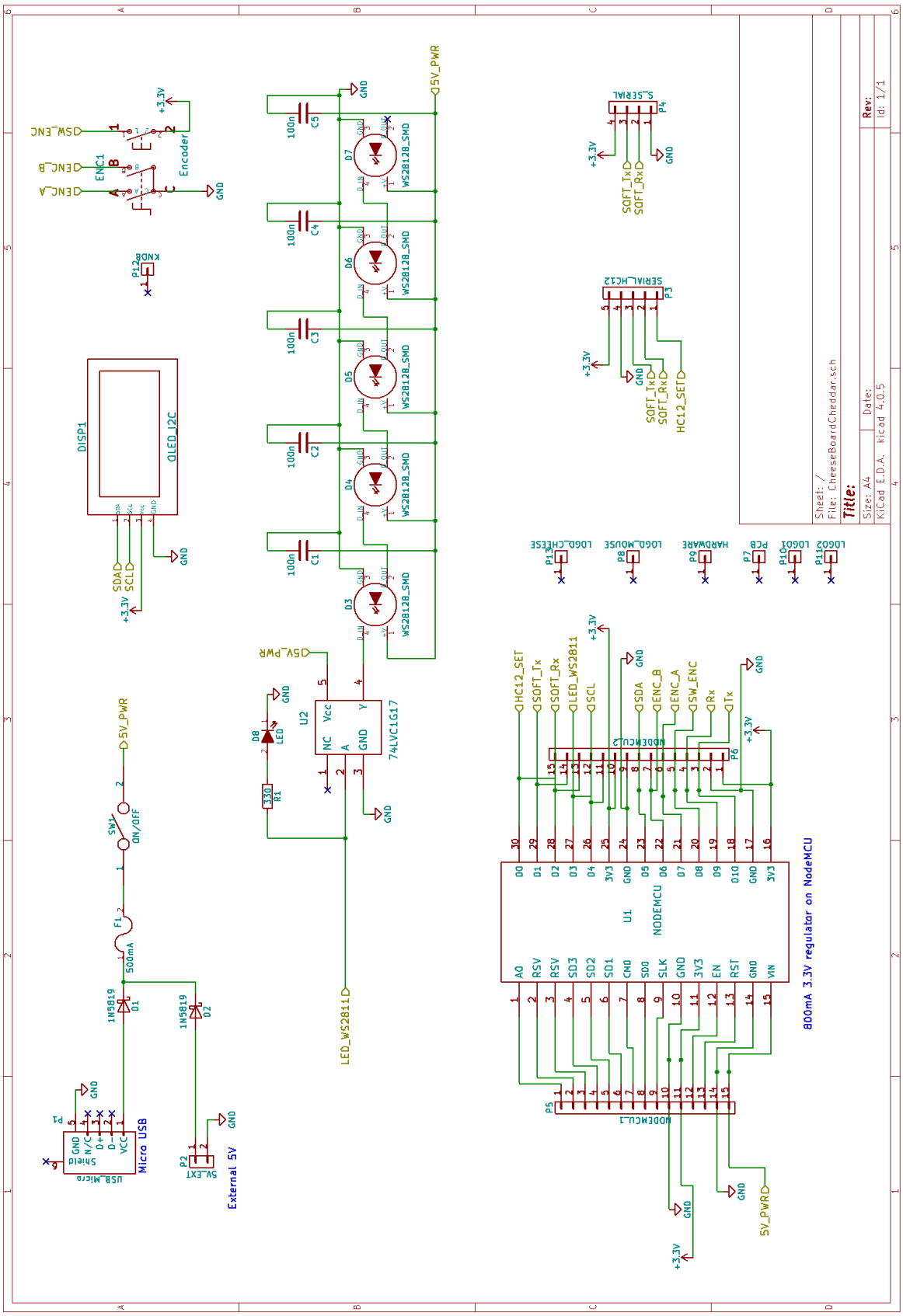
We would like you to be happy with this kit. If you are not happy for any reason then please contact us and we will help to sort it out.

Please email **hello@curiouselectric.co.uk** with any questions or comments.
Please tweet us at **@curiouselectric**

If any parts are missing from your kit then please email **hello@curiouselectric.co.uk** with details, including when and where the kit was purchased.

More technical information can be found via **www.curiouselectric.co.uk**

Circuit Schematic:



PCB Design: