

# Manufacturing Considerations

Core 64: Interactive Core Memory Badge, Andrew Geppert, 2019-08-24

\* Highest risk items.

## General

No tooling investment factored in. Any plastic components are 3D printed.

## Sourcing

PCB(s): [www.OSHPARK.com](http://www.OSHPARK.com)

At least the main board.

\* Maybe the LED array board, pending licensing of Pimoroni, but the retail cost is quite high. May need to create this board on my own, and possible source lower cost LEDs at the same time.

\* COREs: [eBay sellers indicate limited quantities in the 1000s of NOS.](#) Need to find out how deep this inventory, the demand, and if anyone is still manufacturing cores.

Teensy LC. Need to contact PJRC to understand availability.

Adafruit Micro Lipo Charger. Need to contact PJRC to understand availability.

Enamel coated wire (must be meltable during soldering), jellybean components, commodity items.

## Assembly

Assembly does NOT include wiring of the core array. That is left to the user.

Assemble and test PCBAs in the US. Consider Adafruit, Sparkfun.

Somewhere warm so I can get away from the Minnesota winter, conveniently.

Easy to remove connection between main board and LED array to allow different diffuser layer experiments.

Consider

## Test

Standard/shippable firmware will have built-in test mode.

Test fixture will exercise all I/O and verify

All units will be versioned and serialized with a label, and in the emulated Teensy LC EEPROM

## Kitting

64 plus 6 spares in bag, total of 70 cores per kit.

Enamel wire approximately 70 inches, rolled, plastic bag.  
Consider tools: precision tweezers, forceps

#### Shipping

Both boards will be joined together for secure shipping.

#### Support

Github documentation and Wiki will be the primary resource.

Possibly a forum to share projects and ideas and ask questions (community and/or I will answer as we are able to).

#### Estimated Cost

QTY->	10	100	1000
Components	\$ 73.60	\$ 59.50	\$ 44.25
Assembly	\$ 25.00	\$ 3.00	\$ 2.00
Test	\$ 1.00	\$ 1.00	\$ 1.00
Attrition 10%	\$ 7.36	\$ 5.95	\$ 4.43
<b>UNIT COST</b>	<b>\$ 106.96</b>	<b>\$ 69.45</b>	<b>\$ 51.68</b>
w/Wholesale (50% mark-up)	\$ 160.44	\$ 104.18	\$ 77.51
w/Retail (50% mark-up)	\$ 240.66	\$ 156.26	\$ 116.27