

Spitfire MkIX – Kit A

Bill of Materials

Overview

This is a list of all the hardware and components you need to build the Spitfire MkIX flight stick as well as the Universal Hub to connect it to your PC as a fully functional flight control. All you need in addition to these items are the 3d printed parts.

Sourcing Advice and Comments

A key design criteria for this flight control is that all parts should be low cost commodity items readily available from Amazon or eBay. The vast majority of items cost \$2 or less each. The key exceptions to this are the Leo Bodnar game controller board BU0836A and the springs. Although there are some slightly cheaper options to the BU0836A, it was chosen as it requires no programming to use; has proven very robust (to many miswiring errors during design!) and can be assembled with simple push fit connectors rather than requiring electronics skills.

The other items which are a little more tricky to source and can become pricey are the springs. Stock springs available from the internet were deliberately chosen rather than custom specifications even though this made the design of the flight stick a lot harder. In the UK, US and Europe they should be easy to obtain and although fundamentally cheap items, postage costs can push the total cost up to £15 or more. Unfortunately if you are in Australia/New Zealand we have found that springs are much more expensive again to source.

IMPORTANT: Get the correct item by checking the specification in <https://authentikit.org/parts-directory/> and look up the code shown below.

Code	Description	Quantity	Price
ATK1S206	M2 Self tapping screws 6mm	2	£1.00
ATK1C306	M3 x 6mm countersunk	4	£0.80
ATK1F306	M3 x 6mm flange head machine screw	6	£1.20
ATK1C406	M4 x 6mm countersunk	9	£1.05
ATK1C408	M4 x 8mm countersunk	9	£1.05
ATK1C410	M4 x 10mm countersunk	13	£1.95
ATK1C414	M4 x 14mm countersunk	7	£1.05
ATK1C420	M4 x 20mm countersunk	10	£1.50
ATK1N4	M4 nut	4	£1.60
ATK1P560	M5 part threaded countersunk x 60mm	1	£1.00
ATK209W	26 AWG White (cm)	160	£1.50
ATK209R	26 AWG Red (cm)	160	£1.50
ATK209BU	26 AWG Blue (cm)	160	£1.50
ATK209G	26 AWG Green (cm)	160	£1.50
ATK209Y	26 AWG Yellow (cm)	160	£1.50
ATK209BK	26 AWG Black (cm)	160	£1.50
ATK207	Dupont connectors (strip)	1	£4.00
ATK208	Ferrules	14	£3.00
ATK210	Copper wire 0.5mm (2cm strip)	1	£1.40
ATK602	Neoprene strip 5mm (3cm length)	1	£1.00

Indicative price to self source: £125.40

Code	Description	Quantity	Price
ATK201	RJ45 jack	2	£5.00
ATK204	Tac switch projected	2	£3.20
ATK401	6003-2RS bearing	3	£6.00
ATK501	5mm neodymium magnet	3	£3.60
ATK202	Hall sensor	3	£9.00
ATK503	3mm dowel pin	5	£3.00
ATK403	6700ZZ Bearing	2	£4.00
ATK609	Raquet grip	1	£3.00
ATK601	3mm Bungee cord (cm)	20	£3.50
ATK703	3mm Allen key	1	£1.00
ATK612	Zip tie	1	£0.20
ATK301	Spring - Roll	1	£9.50
ATK302	Spring - Pitch	1	£7.00
“Starter Kit Parts” i.e. Tools / Universal Hub Parts			
ATK707	Red Blue Orientation Magnet	1	£3.00
ATK706	Simple wire stripper	1	£1.50
ATK211	USB Cable	1	£3.50
ATK200	BU0836A USB board	1	£27.00
ATK212-15	Ethernet cable 1.5m	1	£2.00

Ready made kit also available from: www.simkitsupplies.com at lower price