


























| Component ID | Image   | Component Name                              | Mounting Type  | Manufacturer                | Manufacturer Part #     | Manufacturer Link   | Supplier           | Supplier Part #   | Supplier Link   | Supplier Description  | ShenZhen OPL MPN       | Component Notes   | Quantity | EasyEDA BOM ID | Designator                             | Notes   |
|--------------|---|---|----------------|-----------------------------|-------------------------|---|--------------------|-------------------|---|---|------------------------|---|----------|----------------|--|---|
| 1            |  | Motion Plane v0.1.0                         | Fastener       | Seed Studio                 |                         |   | Octopi Team        | ODS-MPSv0.1.0     | <a href="https://github.com">https://github.com</a>                               | Motion Plane v0.1.0 for Squid   |                        |   | 1        | N/A            |  |   |
| 2            |  | 2x20 Female Header, Tall Stacking           | PTH            | Sullins Connector Solutions | PPPC202LFH N-M53 RC     | <a href="https://media.digikey.com">https://media.digikey.com</a>           | Pololu             | 2749              | <a href="https://www.pololu.com">https://www.pololu.com</a>                       | Stackable 0.100" Female Header with Extra 0.3" Spacer: 2x20-Pin, Straight |                        | Next version will replace with SMT headers.   | 3        | 6              | C1,C3,C2                               | The female side should be on the underside of the board, while the male pins should stick up.   |
| 3            |  | SilentStepStick Stepper Driver Board        | Daughter Board | Trinamic                    | TMC2209                 | <a href="https://www.trinamic.com">https://www.trinamic.com</a>             | Digi-Key           | 1460-1395-ND      | <a href="https://www.digikey.com">https://www.digikey.com</a>                     | TMC2209 STEPPER DRIVER BOARD  |                        |   | 4        | N/A            | Driver 1, Driver 2, Driver 3, Driver 4 | Solder the UART/PDN jumper pads on the board first! Then place on the male headers (short ends), confirm correct orientation, and solder. |
| 4            |  | 1x8 Female Header                           | SMT            | Sullins Connector Solutions | NPPC081KFX C-RC         | <a href="https://www.sullins.com">https://www.sullins.com</a>               | Digi-Key           | S5639-ND          | <a href="https://www.digikey.com">https://www.digikey.com</a>                     | CONN HDR 8POS 0.1 GOLD SMD  |                        |   | 8        |                | H4, H5, H6, H7, H8, H9, H10, H11       |   |
| 5            |  | 1X8 Male Header                             | PTH            | Pololu                      | 965                     | <a href="https://www.pololu.com">https://www.pololu.com</a>                 | Pololu             | 965               | <a href="https://www.pololu.com">https://www.pololu.com</a>                       | 0.100" (2.54 mm) Breakaway Male Header: 1x40-Pin, Straight, Black         |                        | Next version will replace with SMT header. Need to break off appropriate length of header.  | 8        | N/A            | H4, H5, H6, H7, H8, H9, H10, H11       | Break of appropriate length of header and insert long ends into the female headers.   |
| 6            |  | 100uF Electrolytic Capacitor                | SMT            | Nichicon                    | UCD1E470MC L1GS         | <a href="https://www.nichicon.com">https://www.nichicon.com</a>             | Digi-Key           | 493-6385-1-ND     | <a href="https://www.digikey.com">https://www.digikey.com</a>                     | CAP ALUM 47UF 20% 25V SMD   | UCD1E47 0MCL1GS        |   | 4        | 11             | C1,C2,C3, C4                           | Confirm correct orientation.  |
| 7            |  | DC Power Jack                               | SMT            | CUI Devices                 | PJ-037AH-SMT-TR         | <a href="https://www.cui.com">https://www.cui.com</a>                       | Digi-Key           | 037AHPJC T-ND     | <a href="https://www.digikey.com">https://www.digikey.com</a>                     | CONN PWR JACK 2X5.5MM SOLDER  |                        |   | 1        | 5              | J5                                     | Solder the SMT pads first, then solder the PTH pins.  |
| 8            |  | Green Indicator LED                         | SMT            | Everlight Electronics       | 17-21SYGC/S530 -E2/TR8  | <a href="http://www.everlight.com">http://www.everlight.com</a>             | Digi-Key           | 1080-1500-1-ND    | <a href="https://www.digikey.com">https://www.digikey.com</a>                     | LED YELLOW/GREEN CLEAR 0805 SMD   | 17-21SYGC/S 530-E2/TR8 |   | 2        | 12             | LED1,LED2                              | Confirm correct orientation.  |
| 9            |  | 1K Resistor                                 | SMT            | Yageo                       | RC1206FR-071KL          | <a href="https://www.yageo.com">https://www.yageo.com</a>                   | Digi-Key           | 311-1.00 KFRCT-ND | <a href="https://www.digikey.com">https://www.digikey.com</a>                     | RES SMD 1K OHM 1% 1/4W 1206   | RC1206JR -071KL        |   | 2        | 9              | R1,R3                                  |   |
| 10           |  | 100 Resistor                                | SMT            | Yageo                       | RC1206FR-07100RL        | <a href="https://www.yageo.com">https://www.yageo.com</a>                   | Digi-Key           | 311-100FRCT-ND    | <a href="https://www.digikey.com">https://www.digikey.com</a>                     | RES SMD 100 OHM 1% 1/4W 1206  | RC1206JR -07100RL      |   | 1        | 13             | R2                                     |   |
| 11           |  | SP4T Mux/Demux                              | SMT            | Nexperia                    | 74HC4052D, 653          | <a href="https://www.nexperia.com">https://www.nexperia.com</a>             | Digi-Key           | 1727-2808-1-ND    | <a href="https://www.digikey.com">https://www.digikey.com</a>                     | IC MUX/DEMUX DUAL 4X1 16SOIC  | 74HC4052 D,653         | In a future version, we'll try using the MS1/MS2 UART addressing system instead of a UART mux/demux.  | 1        | 10             | U1                                     | Confirm correct orientation.  |
| 12           |  | 1x4 Spring Clamp Terminal Block             | SMT            | Phoenix Contact             | 1814650                 | <a href="https://www.phoenixcontact.com">https://www.phoenixcontact.com</a> | Digi-Key           | 277-10064-1-ND    | <a href="https://www.digikey.com">https://www.digikey.com</a>                     | TERM BLOCK 4POS   |                        |   | 4        | 2              | J1,J2,J3,J4                            | First solder the pads on the side, then solder the SMT pins.  |
| 13           |  | 1x6 1.5mm Pitch Right-Angle Header          | SMT            | JST                         | S6B-ZR-SM4A-TF(LF) (SN) | <a href="http://www.jst-usa.com">http://www.jst-usa.com</a>                 | Digi-Key           | 455-1610-1-ND     | <a href="https://www.digikey.com">https://www.digikey.com</a>                     | CONN HEADER SMD R/A 6POS 1.5MM  |                        |   | 4        |                | J7,J8,J9, J10                          | First solder the pads on the side, then solder the SMT pins.  |
| 14           |  | 16 Position 1.5mm Pitch Cable               | Wiring         | JST                         | A06ZR06ZR2 8H305B       | <a href="http://www.jst-usa.com">http://www.jst-usa.com</a>                 | Digi-Key           | 455-3043-ND       | <a href="https://www.digikey.com">https://www.digikey.com</a>                     | JUMPER 06ZR-8M-P - 06ZR-8M-P 12"  |                        |   | 3        | N/A            |  | On the underside of the board. First solder the pads on the side, then solder the SMT pins.   |
| 15           |  | 1x4 KK 254 Male Header                      | PTH            | Molex                       | 22292041                | <a href="https://www.molex.com">https://www.molex.com</a>                   | Digi-Key           | WM2746-ND         | <a href="https://www.digikey.com">https://www.digikey.com</a>                     | CONN HEADER VERT 4POS 2.54MM  |                        | SMT equivalent does not exist.  | 1        | 4              | J11                                    | Solder so that the plastic tab is closer to the outer perimeter of the board.   |
| 16           |  | 6-Bit Buffer                                | SMT            | Nexperia                    | 74LVC07AD, 118          | <a href="https://www.nexperia.com">https://www.nexperia.com</a>             | Digi-Key           | 1727-3089-1-ND    | <a href="https://www.digikey.com">https://www.digikey.com</a>                     | IC BUFFER NON-INVERT 5.5V 14SO  | 74LVC07A D,118         | Need to read with INPUT_PULLUP pins. Supply Vcc with the input voltage level (5V), from the connector.  | 2        | 3              | U2,U3                                  | Confirm correct orientation.  |
| 17           |  | AMP Mini CT Right-Angle Header, 16 position | SMT            | TE Connectivity             | 1-292228-6              | <a href="https://www.te.com">https://www.te.com</a>                         | Master Electronics | 1-292228-6        | <a href="https://www.masterelectronics.com">https://www.masterelectronics.com</a> | CONN HEADER SMD R/A 16POS 1.5MM   |                        | This version has no boss, but the 1-292227-6 version has a boss for alignment and is available on Digikey. The next version will add holes for the boss so we can use 1-292228-6. | 1        | 7              | J12                                    | On the underside of the board. First solder the pads on the side, then solder the SMT pins.   |

| Designator                       | MPN                    | Quantity | Supplier Link   | BOM ID | Component ID | Image   | Component Name                     | Manufacturer                | Manufacturer Part #    | ShenZhen OPL MPN      | In OPL? | Ship to Seede? | Supplier | Supplier Part #  | Supplier Description            | Mounting Type | Notes  |
|----------------------------------|------------------------|----------|---|--------|--------------|---|------------------------------------|-----------------------------|------------------------|-----------------------|---------|----------------|----------|------------------|---------------------------------|---------------|--|
| LED1,LED2                        | 17-21SYGC/S530-E2/TR8  | 2        | <a href="https://www.digikey.com">https://www.digikey.com</a> | 8      | 20           |  | Green Indicator LED                | Everlight Electronics       | 17-21SYGC/S530-E2/TR8  | 17-21SYGC/S530-E2/TR8 | Yes     |                | Digi-Key | 1080-1500-1-ND   | LED YELLOW/GREEN CLEAR 0805 SMD | SMT           | Confirm correct orientation.                                 |
| R1,R3                            | RC1206JR-071KL         | 2        | <a href="https://www.digikey.com">https://www.digikey.com</a> | 9      | 21           |  | 1K Resistor                        | Yageo                       | RC1206FR-071KL         | RC1206JR-071KL        | Yes     |                | Digi-Key | 311-1.00KFRCT-ND | RES SMD 1K OHM 1% 1/4W 1206     | SMT           |  |
| R2                               | RC1206JR-07100RL       | 1        | <a href="https://www.digikey.com">https://www.digikey.com</a> | 10     | 22           |  | 100 Resistor                       | Yageo                       | RC1206FR-07100RL       | RC1206JR-07100RL      | Yes     |                | Digi-Key | 311-100FRCT-ND   | RES SMD 100 OHM 1% 1/4W 1206    | SMT           |  |
| C1,C2,C3,C4                      | UCD1E470MCL1GS         | 4        | <a href="https://www.digikey.com">https://www.digikey.com</a> | 6      | 18           |  | 100uF Electrolytic Capacitor       | Nichicon                    | UCD1E470MCL1GS         | UCD1E470MCL1GS        | Yes     |                | Digi-Key | 493-6385-1-ND    | CAP ALUM 47UF 20% 25V SMD       | SMT           | Confirm correct orientation.                                 |
| H4, H5, H6, H7, H8, H9, H10, H11 | NPPC081KFXC-RC         | 8        | <a href="https://www.digikey.com">https://www.digikey.com</a> | 4      | 17           |  | 1x8 Female Header                  | Sullins Connector Solutions | NPPC081KFXC-RC         |                       | No      | Yes            | Digi-Key | S5639-ND         | CONN HDR 8POS 0.1 GOLD SMD      | SMT           |  |
| U1                               | 74HC4052D,653          | 1        | <a href="https://www.digikey.com">https://www.digikey.com</a> | 11     | 23           |  | SP4T Mux/Demux                     | Nexperia                    | 74HC4052D,653          | 74HC4052D,653         | Yes     |                | Digi-Key | 1727-2808-1-ND   | IC MUX/DEMUX DUAL 4X1 16SOIC    | SMT           | Confirm correct orientation.                                 |
| J1,J2,J3,J4                      | 1814650                | 4        | <a href="https://www.digikey.com">https://www.digikey.com</a> | 12     | 24           |  | 1x4 Spring Clamp Terminal Block    | Phoenix Contact             | 1814650                |                       | No      | Yes            | Digi-Key | 277-10064-1-ND   | TERM BLOCK 4POS                 | SMT           | First solder the pads on the side, then solder the SMT pins. |
| U2,U3                            | 74LVC07AD,118          | 2        | <a href="https://www.digikey.com">https://www.digikey.com</a> | 16     | 27           |  | 6-Bit Buffer                       | Nexperia                    | 74LVC07AD,118          | 74LVC07AD,118         | Yes     |                | Digi-Key | 1727-3089-1-ND   | IC BUFFER NON-INVERT 5.5V 14SO  | SMT           | Confirm correct orientation.                                 |
| J7,J8,J9,J10                     | S6B-ZR-SM4A-TF(LF)(SN) | 4        | <a href="https://www.digikey.com">https://www.digikey.com</a> | 13     | 25           |  | 1x6 1.5mm Pitch Right-Angle Header | JST                         | S6B-ZR-SM4A-TF(LF)(SN) |                       | No      | Yes            | Digi-Key | 455-1610-1-ND    | CONN HEADER SMD R/A 6POS 1.5MM  | SMT           | First solder the pads on the side, then solder the SMT pins. |

| BOM ID | Component ID | Image   | Component Name                              | Manufacturer                | Manufacturer Part # | Supplier           | Supplier Part #  | Supplier Link                                     | Supplier Description  | ShenZhen OPL MPN | Mounting Type  | Quantity | Designator                           | Notes   |
|--------|--------------|---|---|-----------------------------|---------------------|--------------------|------------------|---|---|------------------|----------------|----------|--------------------------------------|---|
| 1      | 15           |  | Motion Plane v0.1.0                         | Seeed Studio                |                     | Octopi Team        | ODS-MPSv0.1.0    | <a href="https://github.co">https://github.co</a> | Motion Plane v0.1.0 for Squid   |                  | Fastener       | 1        |                                      |   |
| 17     | 12           |  | AMP Mini CT Right-Angle Header, 16 position | TE Connectivity             | 1-292228-6          | Master Electronics | 1-292228-6       | <a href="https://www.ma">https://www.ma</a>       | CONN HEADER SMD R/A 16POS 1.5MM   |                  | SMT            | 1        | J12                                  | On the underside of the board. First solder the pads on the side, then solder the SMT pins.   |
| 7      | 19           |  | DC Power Jack                               | CUI Devices                 | PJ-037AH-SMT-TR     | Digi-Key           | CP-037AHPJC T-ND | <a href="https://www.digi">https://www.digi</a>   | CONN PWR JACK 2X5.5MM SOLDER  |                  | SMT            | 1        | J5                                   | Solder the SMT pads first, then solder the PTH pins.  |
| 15     | 26           |  | 1x4 KK 254 Male Header                      | Molex                       | 22292041            | Digi-Key           | WM2746-ND        | <a href="https://www.digi">https://www.digi</a>   | CONN HEADER VERT 4POS 2.54MM  |                  | PTH            | 1        | J11                                  | Solder so that the plastic tab is closer to the outer perimeter of the board.   |
| 2      | 5            |  | 2x20 Female Header, Tall Stacking           | Sullins Connector Solutions | PPPC202LFH N-M53 RC | Pololu             | 2749             | <a href="https://www.pol">https://www.pol</a>     | Stackable 0.100" Female Header with Extra 0.3" Spacer: 2x20-Pin, Straight |                  | PTH            | 3        | C1,C3,C2                             | The female side should be on the underside of the board, while the male pins should stick up.   |
| 5      | 9            |  | 1X8 Male Header                             | Pololu                      | 965                 | Pololu             | 965              | <a href="https://www.pol">https://www.pol</a>     | 0.100" (2.54 mm) Breakaway Male Header: 1x40-Pin, Straight, Black         |                  | PTH            | 8        | H4, H5, H6, H7, H8, H9, H10, H11     | Break of appropriate length of header and insert long ends into the female headers.   |
| 3      | 16           |  | SilentStepStick Stepper Driver Board        | Trinamic                    | TMC2209             | Digi-Key           | 1460-1395-ND     | <a href="https://www.digi">https://www.digi</a>   | TMC2209 STEPPER DRIVER BOARD  |                  | Daughter Board | 4        | Driver 1,Driver 2, Driver 3,Driver 4 | Solder the UART/PDN jumper pads on the board first! Then place on the male headers (short ends), confirm correct orientation, and solder. |
| 14     | 28           |  | 16 Position 1.5mm Pitch Cable               | JST                         | A06ZR06ZR2 8H305B   | Digi-Key           | 455-3043-ND      | <a href="https://www.digi">https://www.digi</a>   | JUMPER 06ZR-8M-P - 06ZR-8M-P 12"  |                  | Wiring         | 3        |                                      | On the underside of the board. First solder the pads on the side, then solder the SMT pins.   |

| Name                 | Column Number |
|----------------------|---------------|
| ID                   | 1             |
| Component ID         | 2             |
| Image                | 3             |
| Component Name       | 4             |
| Mounting Type        | 5             |
| Manufacturer         | 6             |
| Manufacturer Part #  | 7             |
| Manufacturer Link    | 8             |
| Supplier             | 9             |
| Supplier Part #      | 10            |
| Supplier Link        | 11            |
| Supplier Description | 12            |
| ShenZhen OPL MPN     | 13            |
| Component Notes      | 14            |
| Quantity             | 15            |
| EasyEDA BOM ID       | 16            |
| Designator           | 17            |
| Notes                | 18            |

|            | Spreadsheet Key                              | Test | Connect |
|------------|--|------|---------|
| Components | 1zAloSpcvtBr9TqI6Yx1EZMmtNOi7asDnlvC0D3OLPuA | ID   | ID      |