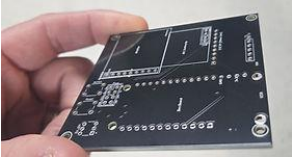






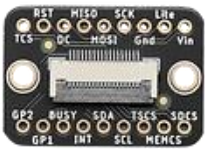
Parts List for the DIY Blackout Comms Touchscreen Pager













Required Components

These are the core components required to assemble an Altware Blackout Comms Pager, which is based mostly on Adafruit hardware. You can save some money by purchasing enough to make several at once.

<p>Altware Pager PCB</p> 	<p>You may purchase these from us or manufacture your own.</p> <p>This PCB (printed circuit board) makes it easy to assemble all the required components onto a board that fits nicely in a pager enclosure.</p> <p>The board has labels on it, telling you where different components go and how they should be oriented.</p>	<p>Buy from Us</p> <p>A cluster license included with ALL PCB purchases from us.</p> <p>Create your Own (gerber file)</p> <p>If you're creating a new cluster with this device, you'll need a license as well. In that case, you may do better buying the PCB from us, since it includes licenses.</p>
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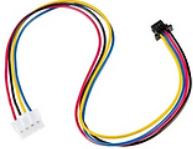
<p>Unexpected Maker ESP32S3(D)</p> 	<p>The prior version of Unexpected Maker's ESP32 S3 feather also works. Future versions may work, but the "D" version definitely works.</p>	<p>Unexpected Maker (\$22) Adafruit (\$25)</p>
<p>Adafruit 2.8" TFT</p> 	<p>Note: Must be Adafruit part 2090, which has Eyespi, Micro SD, and capacitive touch.</p>	<p>Adafruit (\$30) Digikey (\$30)</p>
<p>Adafruit RFM LoRa Module</p> 	<p>If you are in the US, you want the RFM95W version.</p> <p>Outside the US, if you want to use the 868 frequency range, get the RFM95W. If you want to use the 433 range, get the RFM96W version.</p> <p><i>If you are in the USA, do not get the 433 version!!</i></p>	<p>RFM95W 915/868 (USA & Others) Adafruit (\$20)</p> <p>RFM96W 433 (NOT USA) Adafruit (\$20)</p>
<p>Adafruit DS3231 RTC</p> 	<p>This is the realtime clock preferred by Blackout Comms. You may get the version with or without stemma connectors. Either works just fine.</p> <p>The version without stemma connectors is blue instead of black, both are OK.</p>	<p>Adafruit (\$17.50) Digikey (\$17.50)</p>
<p>Adafruit EYESPI Breakout</p> 	<p>Adafruit part 5613</p>	<p>Adafruit (\$1.95) Digikey (\$1.95)</p>



<p>Short Pin Headers</p> 	<p>These short pin headers are just for the ESP32 feather connection to the Altware PCB.</p> <p>You use less expensive pin headers, but trimming pins near the area where the feather sits on the PCB may cause breaks in the PCB.</p>	<p>Amazon (\$9)</p>
<p>Standard Pin Headers</p> 	<p>These are typically included with Adafruit components, so you probably don't need to buy more.</p>	<p>Amazon (\$5)</p>
<p>Push Button Power Switch</p> 	<p>For the enclosure to work properly, this needs to be a latching 5.8 x 5.8x7 mm switch. The pins are spaced closer for this switch than for the rest of the board, so if possible get exactly the switch linked.</p>	<p>Amazon (\$10 for 10)</p>
<p>Momentary Switches</p> 	<p>These are momentary push button switches, 6 x 6 x 12 mm.</p> <p>You will need two of these.</p>	<p>Amazon (\$9 for 26)</p>
<p>CR1220 Battery</p> 	<p>One battery is required for the realtime clock.</p>	<p>Amazon (\$6 for 10)</p>
<p>M2 32mm Socket Head Screws</p> 	<p>You will need 3 of these per pager.</p>	<p>Amazon (\$6.50 for 30)</p>
<p>M2 25 Socket Head Screws</p>	<p>One per pager</p>	<p>Amazon (\$10 for 50)</p>

		
<p>M2 4mm Socket Head Screws</p> 	4 per pager	Amazon (\$8 for 100)
<p>M2 Nuts</p> 	At least 8 per pager	Amazon (\$6 for 200)
<p>Push Button Cap</p> 	One per pager	Amazon (\$6 for 20)

Optional Components

If you want to add GPS or vibrate alerts, you'll need some of these.

<p>GPS/GNSS DFRobot TEL0157</p> 	If you want GPS, you will need this	Digikey (\$18)
<p>Qwiic Gravity Cable</p> 	<p>If using DFRobot GPS, you will need this (or need to make one).</p> <p>This cable is made by Sparkfun.</p>	Digikey (\$1.25)

<p>Sparkfun Haptic Driver</p>  A small red printed circuit board (PCB) with various electronic components including a black circular piezo buzzer, several integrated circuits, and a USB Type-C port.	<p>If you want vibrate message alerts, this is the component you need.</p>	<p>Digikey (\$11.57)</p>
<p>Qwiic Cable</p>  A flexible cable with four colored wires (red, yellow, blue, black) and two black plastic connectors at each end, used for connecting Qwiic modules.	<p>For each optional component you add (other than the DFRobot GPS), you will need one of these cables.</p> <p>These may also be called stemma cables.</p>	<p>Digikey (\$1.56)</p>