Mounting Bracket and Antenna Retainer Installation Notes

Seeed Studio XIAO processor modules, both nRF52840 and Wio ESP32S3, have a processor and a radio board that are stacked and are somewhat precarious. In addition, they both have u.FL connectors for the antenna wire which can pop off if stressed.

Private Perimeter supplies mounting brackets and antenna retainers to make these connections more secure. The mounting bracket for the ESP32S3 has an integrated antenna retainer, while the nRF version has a separate antenna retainer. This is because the configurations of these are different.



ESP32S3 Mounting Bracket / antenna retainer - nRF antenna retainer - nRF52840 Mounting bracket

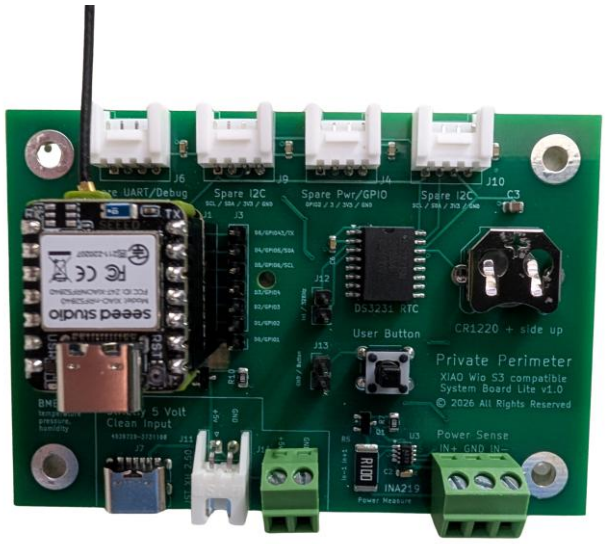
nRF52840 Antenna Retainer Installation

For the nRF52840, separate the radio board from the processor board and insert the antenna retainer so that the tabbed end covers the u.FL antenna connector. (This assumes that you have the antenna wire already attached that you plan to use in your design). Then plug the boards back together.

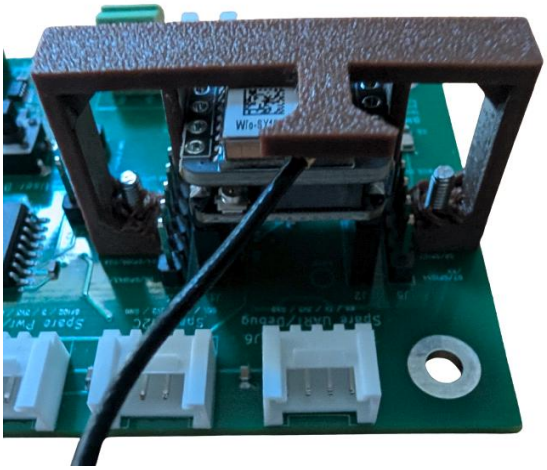


Both Wio ESP32S3 and nRF52840 Mounting Bracket Installation

Plug the assembly of both boards into the 2x7 pin sockets with the USB port pointing away from the Grove connectors, and with the antenna wire pointing towards the Grove connectors.

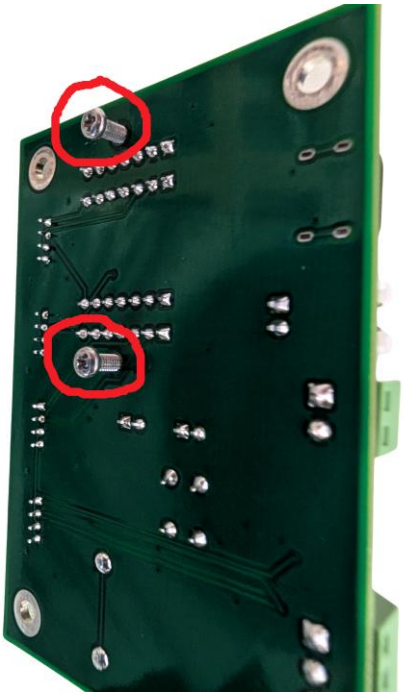


Separate the 2.5mm machine screws from the mounting bracket. Place the proper mounting bracket over the board stack and align the holds in the bracket with the holes in the PCB. For the Wio ESP32S3, make sure that the bracket is oriented so that the integrated antenna retainer sits on top of the u.FL and antenna wire port.



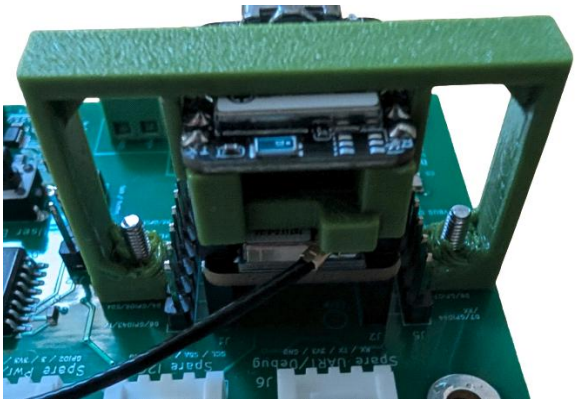
Wio ESP32S3 mounted bracket and antenna retainer example

Now take the machine screws and insert them into the holes from the bottomside of the board.



Use a Philips Head screwdriver to screw the machine screws through the PCB and into the bracket on the topside. It may take some effort since it is a tight fit. Do not overtighten else you may strip the delicate threads in the bracket, and you also do not want to scrape off any of the PCB material protecting the traces inside the board

.



nRF52840 Mounted bracket and antenna retainer