

Untethering Guitars via Bluetooth

Guitar players usually would like to connect their acoustic or electric guitar to an amplifier. While custom amplifiers are available for guitars, often it is expensive and casual guitar players and hobbyists rather just use their existing (often Bluetooth enabled) sound bar.

Current wireless solutions for guitar use a custom transmitter and receiver pair that is connected to the regular guitar amp, while useful it does not allow for easy connectivity. This project will develop a custom lightweight pickup which can seamlessly connect to a Bluetooth receiver. For guitars which already come equipped with a pickup the module should be able to connect via a stereo jack.



Figure 1: Conceptual Idea of the Wireless Transmitter

In this project students will couple the latest low power BLE wireless module, a mini touch screen and a rechargeable battery with a sound pickup or stereo jack to untether the guitar and enable easy interfacing with existing Bluetooth receivers.

Students undertaking this project will ideally have taken 137AB, ECE 152A, and ECE 153A or ECE 153B. Experience with microcontroller programming is a plus. The team will consist of 3-5 students.

Mentors: Luke Theogarajan & Ilan Ben-Yaacov