

Design Project Work

Wireless Communications (EENG464)

Designing a Mobile Phone using a Single-Board Microcontroller

1. The required materials are easily available as they are standard daily materials used in the market. Required Materials: A Single-Board Microcontroller (SBM) such as Arduino Uno, Thin-Film-Transistor (TFT) Liquid Crystal Display Touch Shield, Generalized Packet Data Service (GPRS) Shield, Real-Time Clock (RTC), Custom ArduinoPhone Charge Circuit (or Lipo Rider), Lipo battery and a shell for housing the device. The housing shell should be cut and glued by the students to the required shape for professional look.
2. After the materials are obtained, you need to assemble the above electronic components in the following order for installation.
 - a) Plug GPRS Shield into Arduino UNO.
 - b) Then connect TFT Touch Shield to GPRS.
 - c) Connect the RTC module to Arduino UNO.
 - d) Plug in the power module and connect your headset to the headphone jack on the GPRS.
3. Your Arduino Phone should perform the following main functions.
 - a) Receiving and sending messages, entering letters
 - b) Dial and answer calls
 - c) Real time clock display
 - d) A convenient and concise user interface, you can change the function by swiping your finger on the screen. A standard 12-key input method for entering messages.

You can get the required Arduino phone code from the Github link below.

<https://github.com/Seeed-Studio/ArduinoPhone>

More information is available at the link below

<https://www.instructables.com/ArduinoPhone/#:~:text=1%20Step%201%3A%20Preparing%20Stuffs.%20At%20the%20very,3D%20printer%20as%20shown%20below.%20Then%2C...%20More%20>

Important Dates	Task to Complete
31 Mar. 2023	: Submission of the extended abstract with a complete diagram of the smart wireless communication device.
14 Apr. 2023	: Describing the equipment required and methods of obtaining them.
28 Apr. 2023	: Showing the preliminary code to the course instructor.
12 May 2023	: Showing the complete hardware and software of the smart wireless communication device.
22 May 2023	: Demonstration of the communication device working with similar devices.