

User Guide: Multi-Room Communication System

Thank you for choosing our Multi-Room Communication System! This user manual will walk you through the system's function step-by-step. Before utilizing the system, please carefully read the instructions.

Overview

The Multi-Room Communication System is a customizable system that permits wireless quick messaging communication between subsystems in any situation when effective and dependable communication across several locations is needed. Three subsystems make up the system:

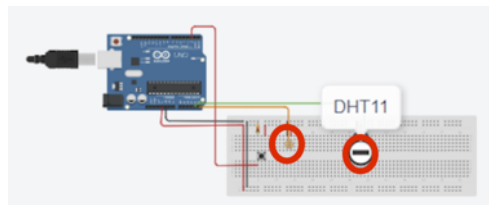
1. **Sensor Subsystem:** This allows users to environmental data including light, temperature, and humidity values using a photoresistor, a push button, and a DHT11.
2. **Communication Subsystem:** This enables wireless communication between the Sensor and Display subsystems using an NRF24L01+ transceiver. This subsystem also uses an LCD to identify the sender and receiver as well as an LED to distinguish between transmit and receive modes.
3. **Display Subsystem:** This subsystem allows the user to customize pre-set codes from potentiometer-mapped codes on an LCD screen to broadcast to other systems.

Sensor Subsystem

The Sensor Subsystem allows users to send and receive environmental data messages, such as light, temperature, and humidity values. Follow these steps to use the Sensor Subsystem:

To send a message:

1. Press the push button to start sending a message. The LED should turn on to indicate that recording is in progress.
2. If you are using a photoresistor (light sensor): Your light value is already being sent, you can adjust the light to modify the value being sent.
If you are using a DHT11 (temperature and humidity sensor): Your temperature value is already being sent, you can adjust the temperature to modify the value being sent.
3. Press the push button again to stop sending. The LED should turn off to indicate that the message has stopped being sent.



Communication Subsystem

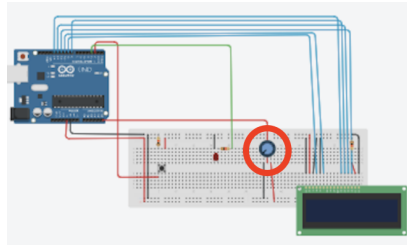
The Communication Subsystem enables wireless communication between each system, using the NRF24L01+ transceiver. The communication subsystem does not require any user input, it should work as it is already set up. However, if you encounter any connectivity issues, please ensure that the wires are connected properly.

To see if your message is being sent, the LED should turn on. Otherwise, it is off.

Display Subsystem

The Display Subsystem displays the sender's identity along with the pre-set emergency code on an LCD screen. Follow these steps to use the Display Subsystem:

To send a message:



If you are using the potentiometer:

1. Code Green: Rotate the potentiometer all the way to the right
2. Code Red: Rotate the potentiometer to the middle
3. Code Yellow: Rotate the potentiometer all the way to the left

To view the message:

The LCD will have the updated message displayed along with the sender's identity.

