

ABSTRACT

The project, “Bus ID for the visually impaired” is especially designed for the visually impaired as a portable device that will announce or indicate the route number of the incoming buses.

Why do the visually impaired need the “Bus ID Indicator Device”? Nowadays, bus drivers do not stop at each bus stop unless the passenger requests to the bus to stop. If the passenger at the bus stop is visually impaired, it is quite difficult for them to stop a specific bus because they can not see the route number of the incoming bus. Hence, the visually impaired need a handheld device to indicate or announce the route number of the incoming bus to get ready.

This project is divided into two parts, namely the bus ID transmitter and the bus ID indicator. The bus ID transmitter is designed as a fixed device and installed in the bus to transmit the RF signals. The bus ID indicator is designed as a portable device for the visually impaired to receive the RF signals. The operating frequency range for both devices is 315 MHz. They are designed as low power devices and Amplitude Shift Keying (ASK) is used as the modulation technique. The microcontroller is used to control the operations of transmitter and receiver. Besides this, the bus ID indicator device is able to make announcements through the earphone by a simple voice message playback system.

The bus ID indicator device is able to differentiate up to 16 different buses. The maximum transmission range is 170 meters with a 9V battery. The bus ID transmitter is controlled by the microcontroller to transmit the serial coded signals for a certain period. The receiver is able to differentiate which bus a particular signal is received from and the route number of that bus is announced through the voice message playback system.