

CONVENIENCE PROBE: A PHONE-BASED SYSTEM FOR RETAIL TRADE-AREA ANALYSIS

ABSTRACT

Embedded systems are commonly found in consumer, cooking, industrial, automotive, medical, commercial and military applications. Telecommunications systems employ numerous embedded systems from telephone switches for the network to cell phones at the end-user. Computer networking uses dedicated routers and network bridges to route data.

Consumer electronics include personal digital assistants (PDAs), mp3 players, mobile phones, videogame consoles, digital cameras, DVD players, GPS receivers, and printers. Household appliances, such as microwave ovens, washing machines and dishwashers, include embedded systems to provide flexibility, efficiency and features. Advanced HVAC systems use networked thermostats to more accurately and efficiently control temperature that can change by time of day and season. Home automation uses wired- and wireless-networking that can be used to control lights, climate, security, audio/visual, surveillance, etc., all of which use embedded devices for sensing and controlling.

Systematically and quantitatively determining patterns in consumer flow is an important problem in marketing research. Identifying these patterns can facilitate an understanding of where and when consumers purchase products and services at physical retail shops. Collecting data on real consumers who shop at retail stores is one of the most challenging and expensive aspects of these studies. This article introduces Convenience Probe, a phone-based data collection system for retail trade-area analysis.

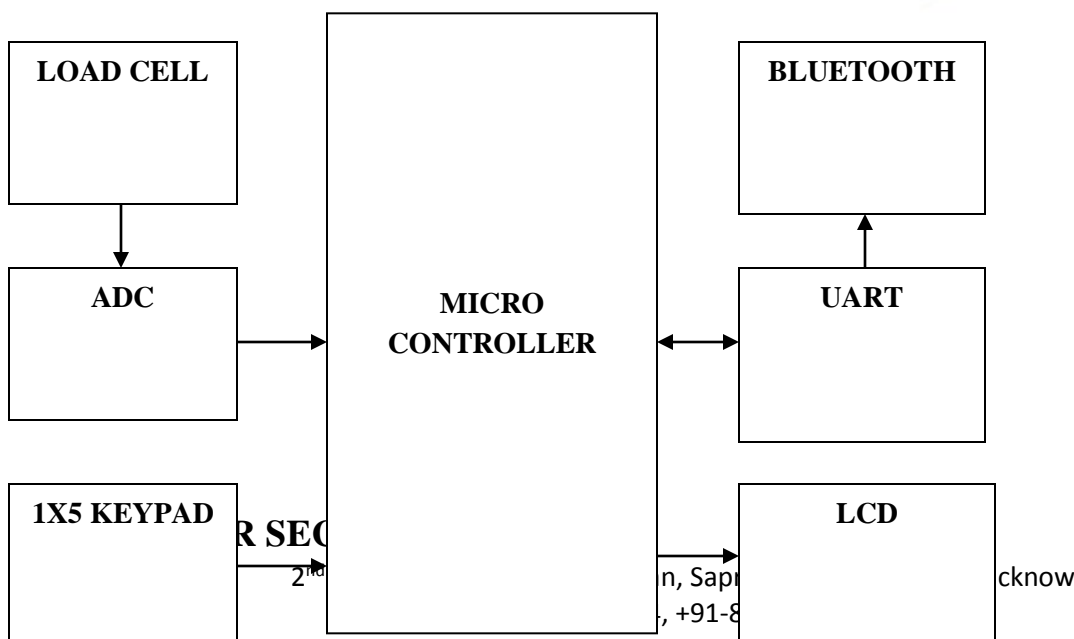
The proposed method targets local residents shopping at neighborhood convenience stores. This study deploys and tests the system by collecting real customer flow data in neighborhood convenience stores. Results show that the consumer flow data collected from the Convenience Probe system is comparable to that from a traditional face-to-face interview method.

PROPOSED SYSTEM:

In this paper, we are going to implement that a phone-based system for retail trade-area analysis. Here we are using load cell, which is used for analyze the count of the item and RFID used for read the rate of the item which is placed in the trolley. When we want remove any item, just click the key then show the item near the RFID reader then the item removed from the total item. And we can see this reading and bill amount in mobile via Bluetooth.

BLOK DIAGRAM:

- **TRANSMITTER SECTION:**





HARDWARE REQUIREMENTS:

- MICROCONTROLLER
- LOAD CELL
- BLUETOOTH
- UART
- 1X5 KEYPAD
- LCD
- MOBILE

SOFTWARE REQUIREMENTS

- MCU COMPIERS
- PROTEUS SOFTWARE

MICROCONTROLLER may ATMEGA,8051,PIC OR Arduino