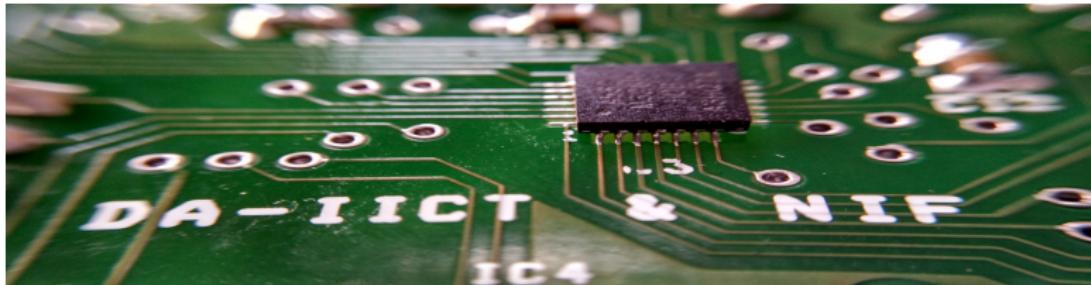


# 1. Indoor Navigation For Visually Impaired (VI-Navi)



# VI-Navi (version 1)



**Figure:** The first version was a handheld device, demonstrated to Late APJ Abdul Kalam inside IIM Ahmedabad building.

# VI-Navi (version 2)



**Figure:** In the ver 2 we placed the receiver on the head.

# VI-Navi (version 2)

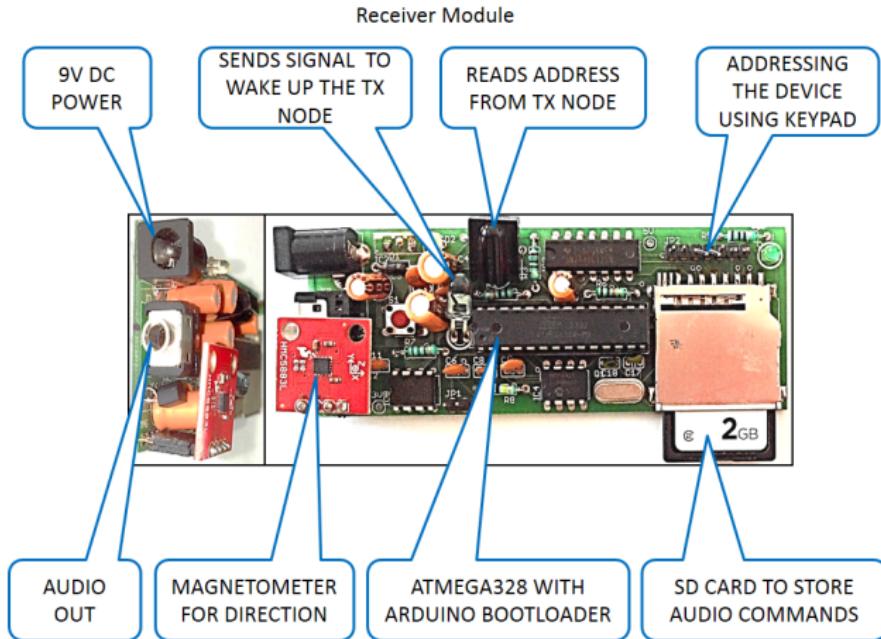


Figure: The Rx module of the indoor navigation system which is head mounted.

## Receiver Node (head mounted)

- ▶ Receiver node mainly consists two components for communication with Transmitter Node: (a) IR Transmitter (IR LED) and (b) IR Receiver (TSOP 1738).
- ▶ It also uses Magnetometer (HMC5883L) for the direction and path correction of the visually impaired person.
- ▶ It has ATMega328P-PU controller inside to perform all tasks.
- ▶ Map of the building is stored inside the controller.
- ▶ It uses Dijkstra algorithm for routing on shortest path from source to destination.
- ▶ A matrix keypad is used for addressing.