

A Gsm Signal - Based Positioning Technique For Mobile Application System

Aim:

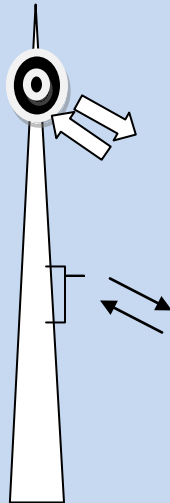
This project aims at designing tracking system for vehicles such that the position of the vehicle is detected without using GPS by utilizing RF and GSM communication. In this project the tracking is done depending on the feedback signal provided by the RF communication, which is the core part of this project.

Abstract:

The proposed technique is intended as a solution in those applicative scenarios where the GPS system fails to work to intimate the status of the vehicle to the customer when the customer is outside. So here this project is stands for tracking system for vehicles such that the position of the vehicle is detected without using GPS by utilizing RF and GSM communication and to give status of the vehicle whenever the owner needs, whether outside or inside. This project can also utilize for police for tracking a particular vehicle which is hijacked or else other reasons. You can see in **figure 1** how this is project is tracking the vehicle, tracking is done by density of the RF signal is traced. So here in figure 1 the RF signal density of GSM tower station 1 will be higher than tower 2 and 3. So the ID of the TOWER 1 will be received by the vehicle and the ID is send to the office through GSM communication. Like this the tracking is done.

Figure1:

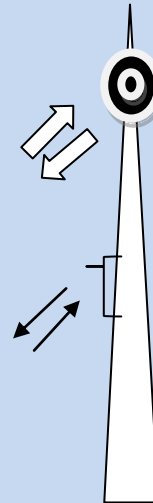
GSM Tower Station 2:



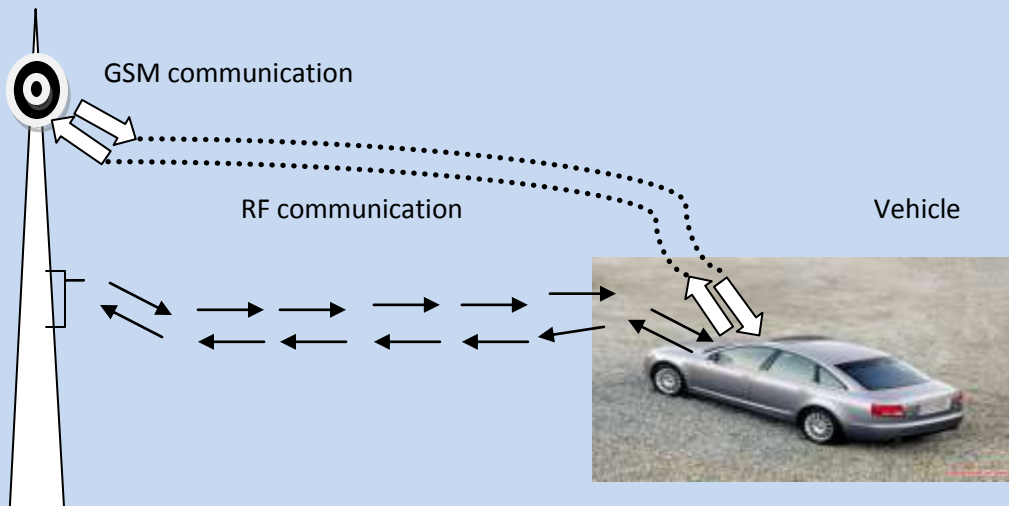
GSM communication

RF communication

GSM Tower Station 3:



GSM Tower Station 1:

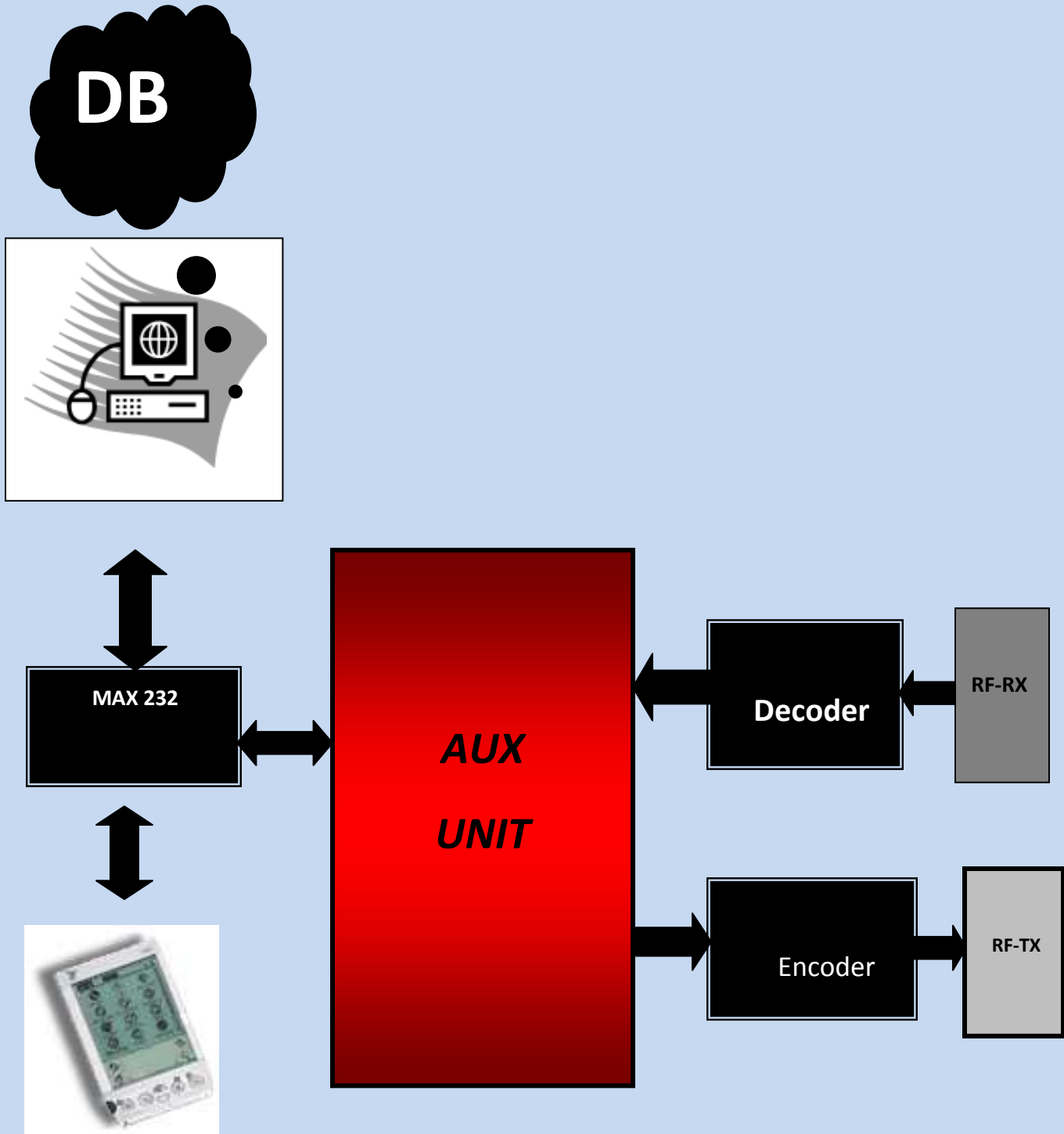


GSM communication

RF communication

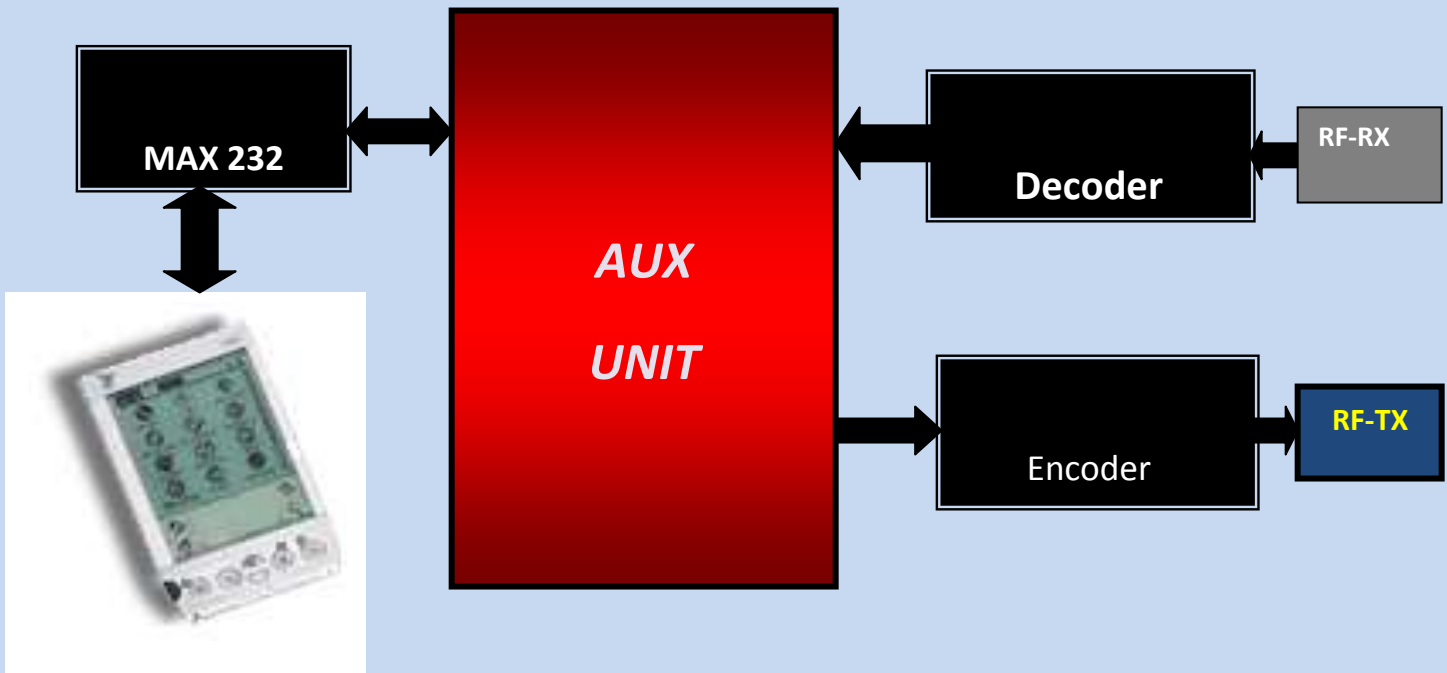
Vehicle

Office Module:



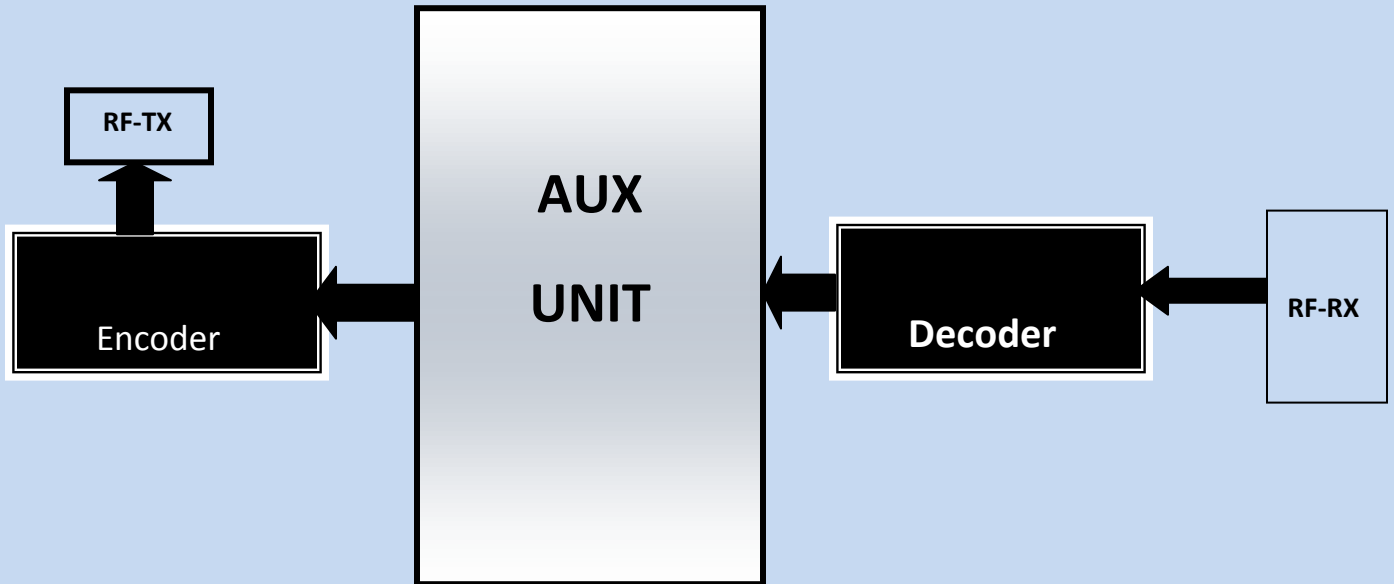
The entire database is done here; this unit is fixed in the office with PC. Tracking request and status can be done here, the request is given through PC the data is received by the aux unit through serial communication and the request is send to the relevant vehicle through GSM for tracking. The status is received from vehicle and stored in PC.

Vehicle Unit:



This unit will receive the tracking request and search the tower near to the vehicle and send the position of the vehicle as reply. So the main task here is to check the nearest tower of the vehicle this is done by the RF signal density of the towers near to the vehicle and then analyze which tower is having higher signal density. Next step is to get the ID of higher signal density tower. The next task is sending ID/place to the requested office/customer.

Tower Unit:



This unit is placed in GSM mobile tower the RF request data is received from vehicle and the ID is transmitted through RF.