

**Description:**

This project consists of accomplishing a mechanism of short distance remote control, making use of low-frequency radio (a few KHz).

The remote controls that we usually employ are based on infrared or ultrasounds, requiring both direct vision of the equipment to be controlled. Therefore, they can not be hidden off the sight as the case that is intended.

The use of radio in UHF or microwaves frequencies (ISM bands for instance) is another medium that is employed, but it demands a RF stage along with the digital controller, increasing the cost. On the other hand, these high frequency bands are also affected by the presence of nearby objects. When the quantity of information is a little and admits low speed transmission, it can be employed low-frequency radio that penetrates well in the objects (unless they are good conductors), so the receiving equipment can be hidden (outside of the sight, within a non-metallic cover).

Furthermore, in this case it does not exist the need of a RF stage but the own digital controller (in this case the NITRON) can be entrusted to excite the radiator element or antenna (that will be of small size because it is a remote control) in the transmitter. Simultaneously, other NITRON in the receiver will accomplish the digital demodulation, will understand the commands received and will execute them on the equipment to be controlled.

The equipment to be controlled will be, for the time being, a FM band car receiver that it will be housed within car (out of the sight). The commands will control, initially, the tuning (up and down) and the volume of the sound (to rise and to decrease). The objective of this project is to avoid the theft in cars to steal the radio receiver, simply giving the sensation that it does not have any because it is hidden.

The goal of this project is depicted in the file F2031\_Fig1.jpg. It is composed by a transmitter and a receiver Nitron based.

GOAL OF THE PROJECT

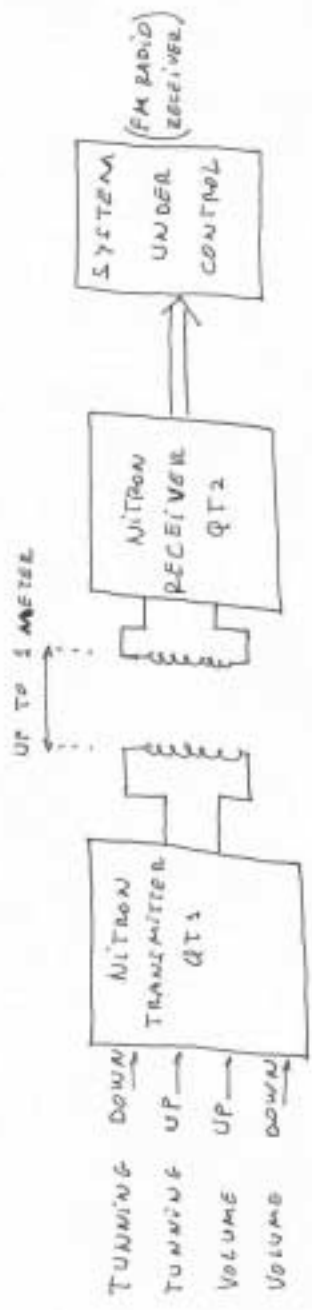


FIG 1

F 2011

RECEIVER

FIG. 7

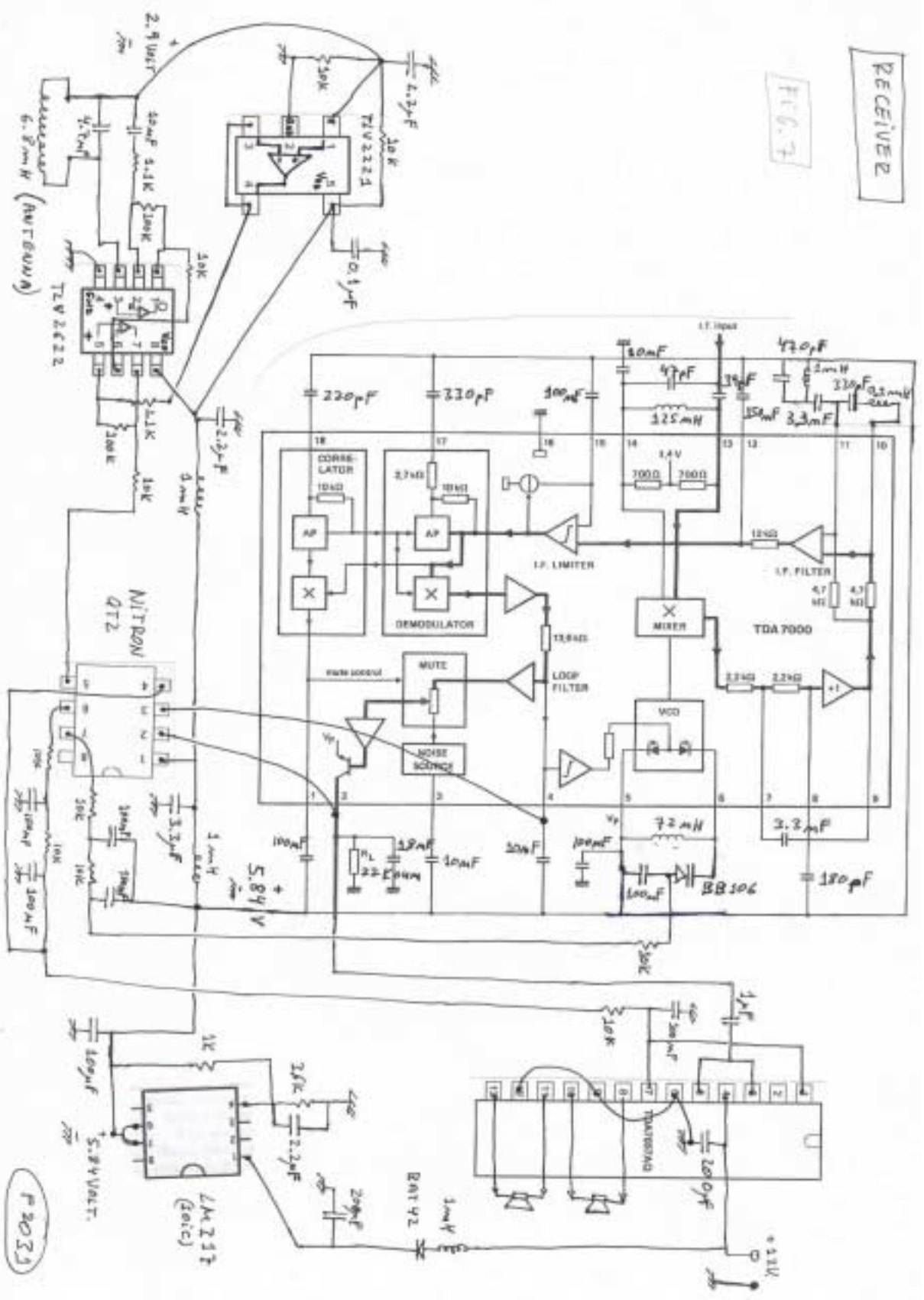


FIG. 7

