# 5. Functional Description

The Global A RKE/TPM Receiver Module is a factory installed automotive module, powered from the automotive 12 Volt system. The module has an enable pin input that places the receiver in either the active or sleep mode. It receives the 433.92 MHz ASK / FSK 4.2 kb/s Manchester encoded transmitted signal from the driver carried Key Fob or the vehicle mounted tire pressure transmitters. This signal is received thru Antenna on board of the module. The signal is fed to 433.92 MHz SAW filter which then drives the low noise amplifier input of the high integration superheterodyne receiver integrated circuit. The output of the LNA drives the mixer, which also has the 423.22 MHz VCO/PLL derived local oscillator as an input. A 13.225625 MHz crystal oscillator is used as the frequency reference. The output of the mixer drives the 10.7 MHz ceramic filter which then drives the IF amplifier. The IF amp drives an ASK demodulator and FSK Demodulator. Each demodulator is followed by an active low pass filter and then the data slicer. The output of the FSK data slicer drives a digital switch which is control by the Microcontroller. The default FSK digital switch state is closed. Therefore the FSK data will drive the data buffer circuit and go to the DATA OUTPUT connector pin. The output of the ASK data slicer is fed to microcontroller which process the ASK data. If the wake up criteria of a RKE message is met then the microcontroller starts recording the message. The microcontroller send the message captured to the output buffer that is connected to the module data out connector pin while open the FSK digital switch.