

# ***FIPI-Adaptor board for Firebird V using Raspberry Pi B+***

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## **Objective**

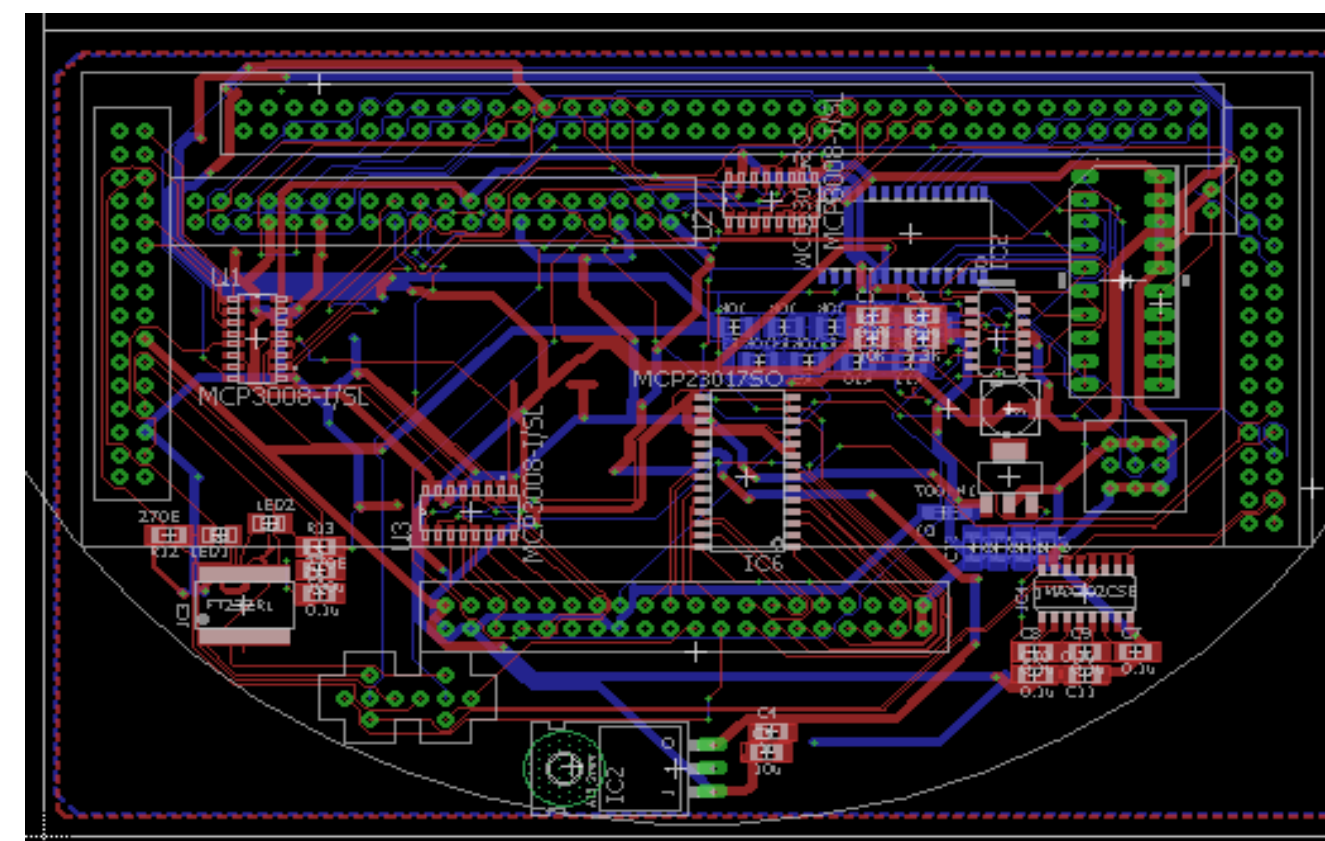
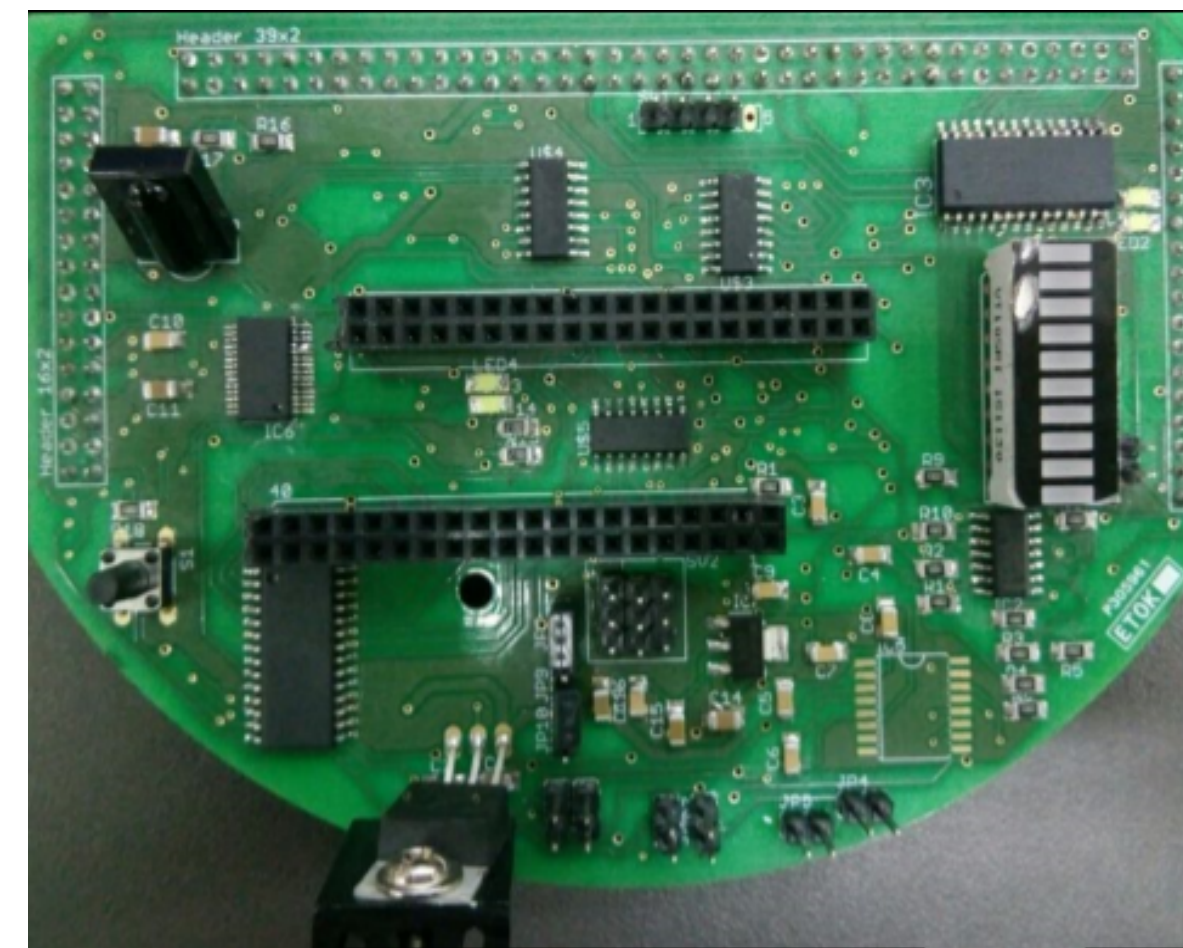


Currently Firebird V robot comes with ATMEGA2560, 8051, ARM7 adaptor board. Using a raspberry pi based adaptor board would add to the functionality of the robot. The idea is to integrate the features of RPi to Firebird V robot.

This will facilitate any

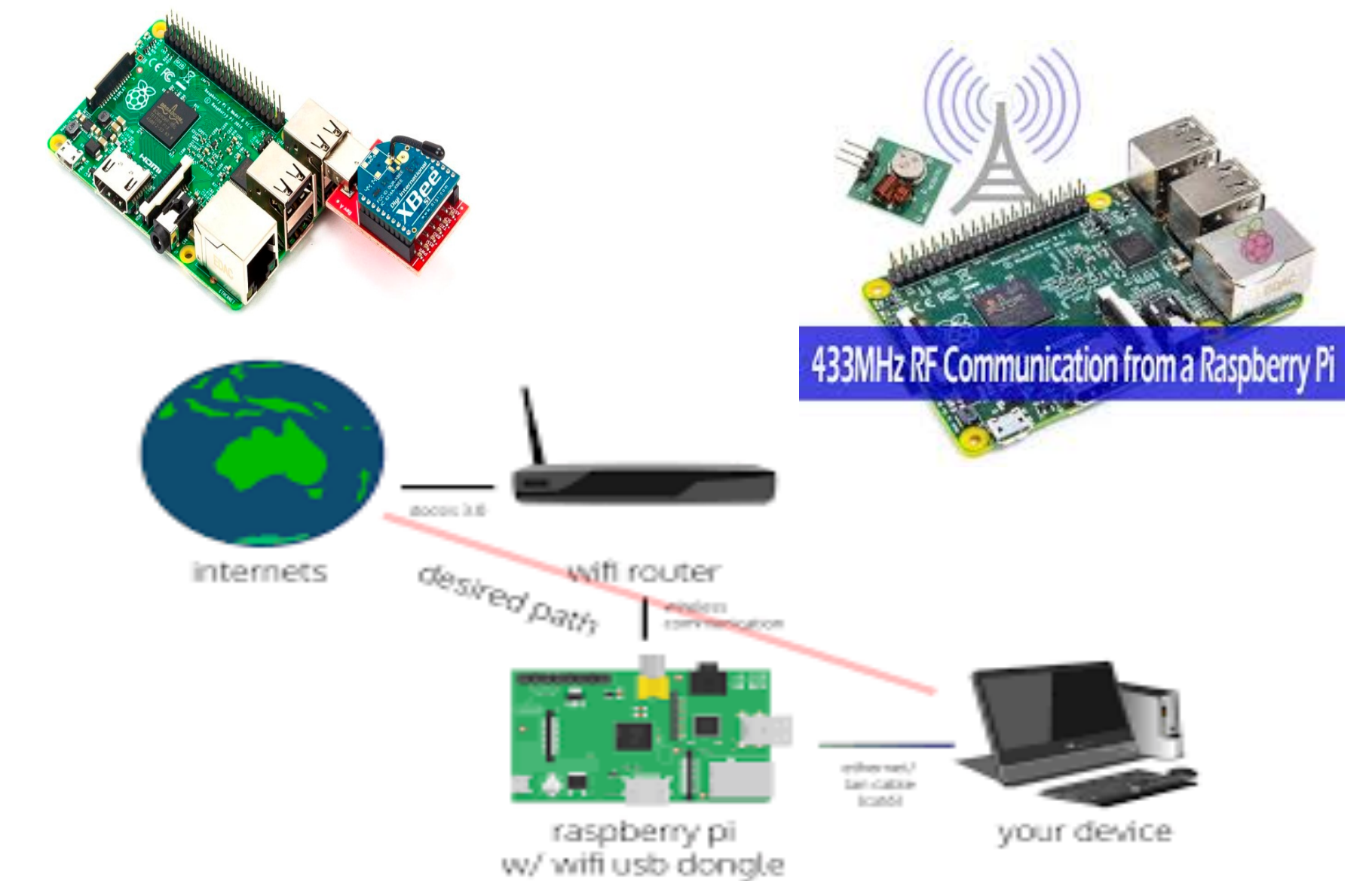
- (1) On-board computations
- (2) Image processing (PiCamera)
- (3) IOT applications

## **What does the Adaptor Board contain?**



1. Raspberry Pi B+
2. MCP3008 ADC (8 channel, 10-bit, SPI)
3. MCP23017 Port Expander (I2C protocol)
4. LM117 (Powering Servo motors)
5. Bar graph LED (Battery level indication)
6. Raspberry Pi port expansion socket

## **Communication with Rpi**



1. The OS of raspberry pi can be accessed by SSH (MobaXterm or Putty)
2. Parallel communication (with LCD)
3. UART communication:
  - \* RS232 (wired)
  - \* USB (wired)
  - \* Xbee (wireless)
  - \* Bluetooth (wireless)

However, any other communication type is also supported since the rpi port expander socket has extra RX TX pins.