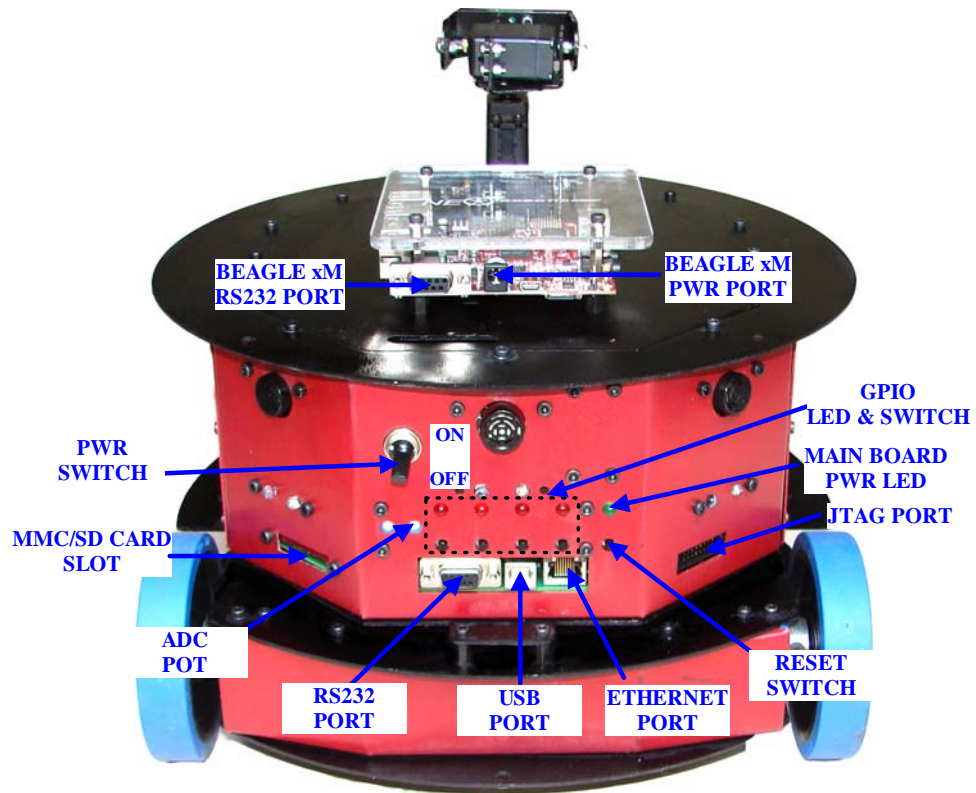
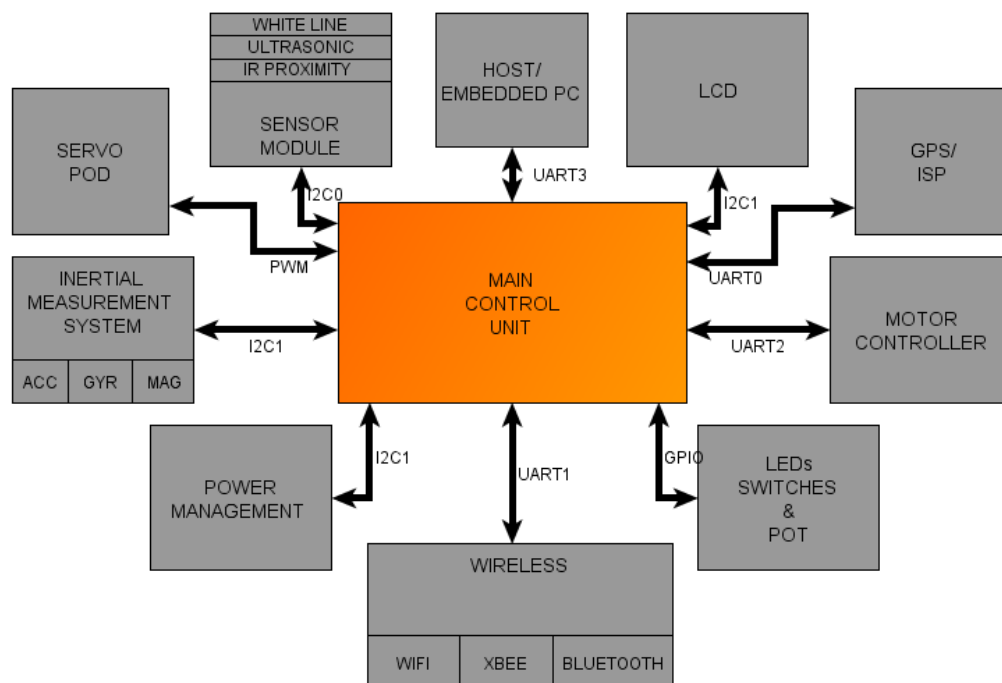


Overview of Fire Bird VI robot



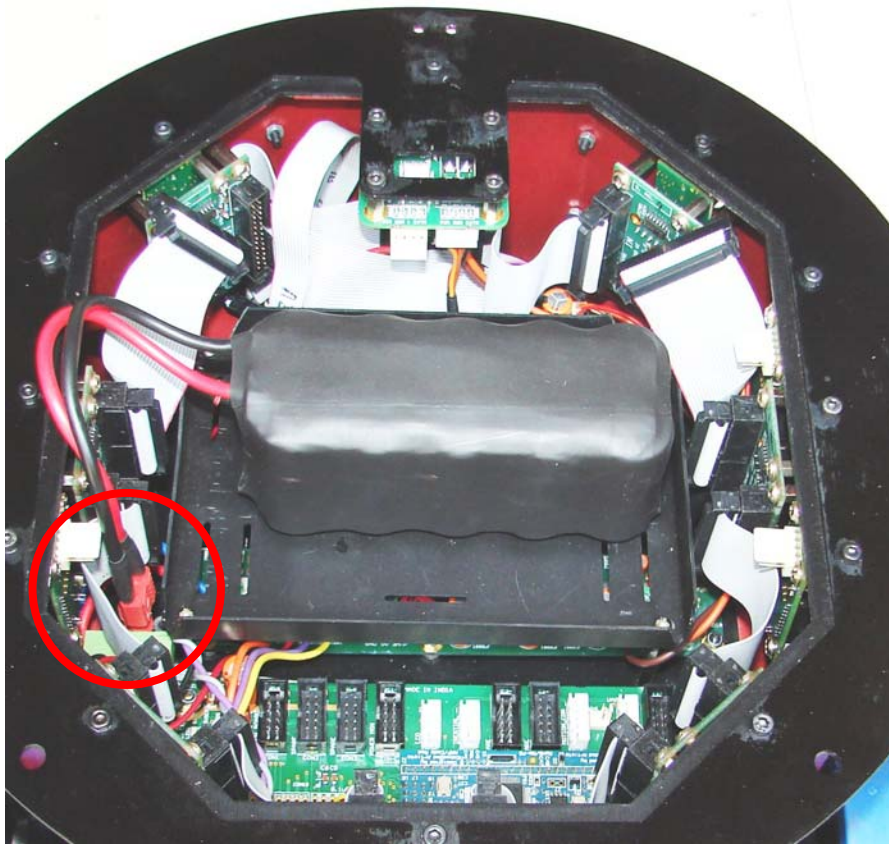
Block Diagram of Fire Bird VI



Switching the robot ON for the first time

1. Connecting the battery

- a. Fire Bird VI comes with the battery disconnected.
- b. Open the top hatch carefully.
- c. Connect the battery to the T-type connector present near the battery bay as shown in figure below.
- d. Close the top hatch.
- e. Now we are ready to run the pre-loaded self test program.



2. Switching the robot ON

- a. Place the robot on the floor in an open room without many obstacles. Flip the POWER switch located on back panel to ON position.
- b. The robot will start a self test routine.
- c. The self test routine should do following
 - i. Press Switch 1 to display readings from Ultrasonic sensors on LCD
 - ii. Press Switch 2 to display readings from White Line sensors on LCD
 - iii. Press Switch 3 to display readings from IMU sensors on LCD
 - iv. Press Switch 4 to move the robot in Forward, Backward, Left and Right directions in a predefined sequence.

3. Loading a sample program on Fire Bird VI

The Fire Bird VI series of robotics research platforms support the boot-loader functionality offered by LPC17xx series of microcontrollers. SW1 and RESET on the back panel is used for entering the boot-loader mode. Flash Magic utility provided by NXP is used for loading the firmware on the robot. The procedure for loading a sample program is as follows,

- a. Find the folder named /Experiments/HexFiles on the DVD-ROM.
- b. The folder will contain a set of .hex files that can be loaded on the Fire Bird VI.
- c. Use flash magic to load the .hex files on the robot. For more details on how to configure Flash Magic to load firmware on Fire Bird VI, please refer the document “Programming with Flashmagic.pdf” available on the DVD-ROM.

4. Go through the Hardware manual to understand the architecture of Fire Bird VI.

- 5. Programming the Fire Bird VI:** The Fire Bird VI series of robotics research platforms support LPCXpresso IDE. This allows us to use real time debug and trace functionality. Follow the software manual present on the DVD-ROM to know how to write programs for the Fire Bird VI series of robotics research platforms.