Smart Tap - Design Flow Diagram

+5V USB

USB B-MICRO

Controls charging of the battery
Shows charging status

CHARGING CIRCUIT (MCP73831)

CHARGING LED

FULL LED

+3.7V LI-ION BATTERY

+3.7V

+3.7V

DC-DC BOOST CIRCUIT

Ensures reliable working of the servo motor and IR sensors

LOW BATT LED

FDTI - UART PROGRAMMING

Receives signal from IR sensors when objects are detected and controls the motor to open or close the valve
Measures battery voltage level and lights up red LED for less than 10% level

ATMEGA328PB-AU

PWM

SERVO MOTOR

GPIO

GPIO

BOTTOM SENSOR

SIDE SENSOR

+5v