

The diagram illustrates the system architecture for the PIC18F57Q43 Curiosity Nano. The central component is the PIC18F57Q43 Curiosity Nano, which is connected to various external modules and sensors.

Power Supply: A 9V 3A Unregulated Power Supply (BestCH B09ZTKTLGW) provides power to a 3A Fuse (LittleFuse Inc 0235003.MXP). The fused power is then regulated to 5V 1.5A by a Voltage Regulator (STMicroelectronics L7805CV).

Analog Section: An Analog (0-5v, 1 pin) Moisture Signal is connected to an Op-Amp MCP6004, which is part of a Handmade Resistive Sensor setup. The output of the Op-Amp is connected to the RA2 pin of the PIC. The PIC also has an Analog I/O section with pins RA0 and RA1.

Digital I/O Section: The PIC's Digital I/O pins (RB0, RB6, R?, R?, RD6, RD7, RD5, RB5, RF2) are connected to various digital components:

- Push Button:** A Push Button (Same Sky TS02-66-60-BK-160-LCR-D) is connected to the R? pin.
- Debugging LED:** A Debugging LED (Würth Elektronik 151051BS04000) is connected to the RB5 pin.
- Limit Switches:** Two limit switches (Würth Elektronik 463093691402) are connected to the RD6 and RD7 pins. They provide digital/parallel 5v, 1 pin signals for reverse and forward limits.
- Backup Pin:** A Backup Pin (Connectors Implemented by jumper) is connected to the RB6 pin.
- Motor Control:** The PIC's Digital I/O pins are connected to an H Bridge (FAN8100N), which drives a motor (Fairchild Semiconductor 711). The H Bridge provides digital/parallel 5v, 1 pin signals for motor forward and reverse, and a digital/parallel 9v, 2pins signal to the motor.
- Processing Signal:** A digital/parallel 5v, 1 pin (Processing signal) is connected to the RB0 pin.
- Request Signal:** A digital/parallel 5v, 1 pin (Request Signal) is connected to the RB6 pin.
- Backup:** A digital 5v, 1 pin (Backup) signal is connected to the R? pin.

Connector 1: The system is connected to a connector with 8 pins. Pins 1, 2, 3, 4, 5, 6, 7, and 8 are labeled. Pins 1, 2, 3, 4, 5, and 6 are connected to the Analog (0-5v, 1 pin) Moisture Signal. Pins 7 and 8 are connected to the Digital and ANALOG sections of the connector.