

## **Arduino Talking Points:**

### **Walt -W7PRB and the **QST** Article and the "KIT" "Hooked on Arduinos"**

#### **Topics:**

+5V USB vs +9V Power Input  
+3.3V to CPU  
Tri-State I/O Pins (and PU's)  
Pulse-Width-Modulation  
Analog Inputs (no Analog Outputs)  
LEDs still require resistors (nothing magical about 330 Ohm)  
Rethinking the parallel LCD connections (Library Requirements)  
Serial 3-Wire LCDs  
Serial 4-Wire LCDs (and ID codes)  
Voltage-Divider Methods  
    >5V Measurements  
    Stepped Pbs for Relay Controls  
    5x5 Matrix PBs  
Shields

#### **Applications:**

Temperature & Humidity Devices  
Ultrasonic Transceivers (on a motorized wheel-chair)  
Servo Controls – Stepper circuit vs Feedback  
Wireless

### **The Nuences of the Parallel LCD and the PCB Interface Module**

#### **Arduino Illustrations:**

1. A pair of UNOs for the furnace control
2. Train Controls
  - Long Run – 4 Holding Tracks
  - Main Board Inside Track
  - Main Board Outside Track
  - Spiral
  - Alpine Express with 2 Stopping Points
3. Voltage Monitoring for the 4 Banks of Edison Cell Batteries (Nickle-Iron)
4. General Purpose Switches and LEDS, Analog Inputs, with LCD
5. Parallel LCD wiring
6. Parallel LCD Module
7. Serial 3-Wire LCDs
8. Serial 4-Wire LCDs
9. Multi-Layer PBs on Single-Analog
10. Variable WPM