

# WHEN THE ARDUINO MEETS YEAR

## 9

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**Australian Government**

**Department of Communications,  
Information Technology and the Arts**

**Australian Research Council**

**NICTA Members**



Department of State and  
Regional Development



The University of Sydney



Queensland University of Technology



**NICTA Partners**

# NCSS CHALLENGE

- High school students (Yrs 7–12)
- Online at home learn to program in Python
- starts in August each year
- Residential course in January.

# EMBEDDED CHALLENGE

Started an *embedded* challenge in 2008

Same format

# EMBEDDED CHALLENGE

Started an *embedded* challenge in 2008

Same format — with hardware to play with

# EMBEDDED CHALLENGE

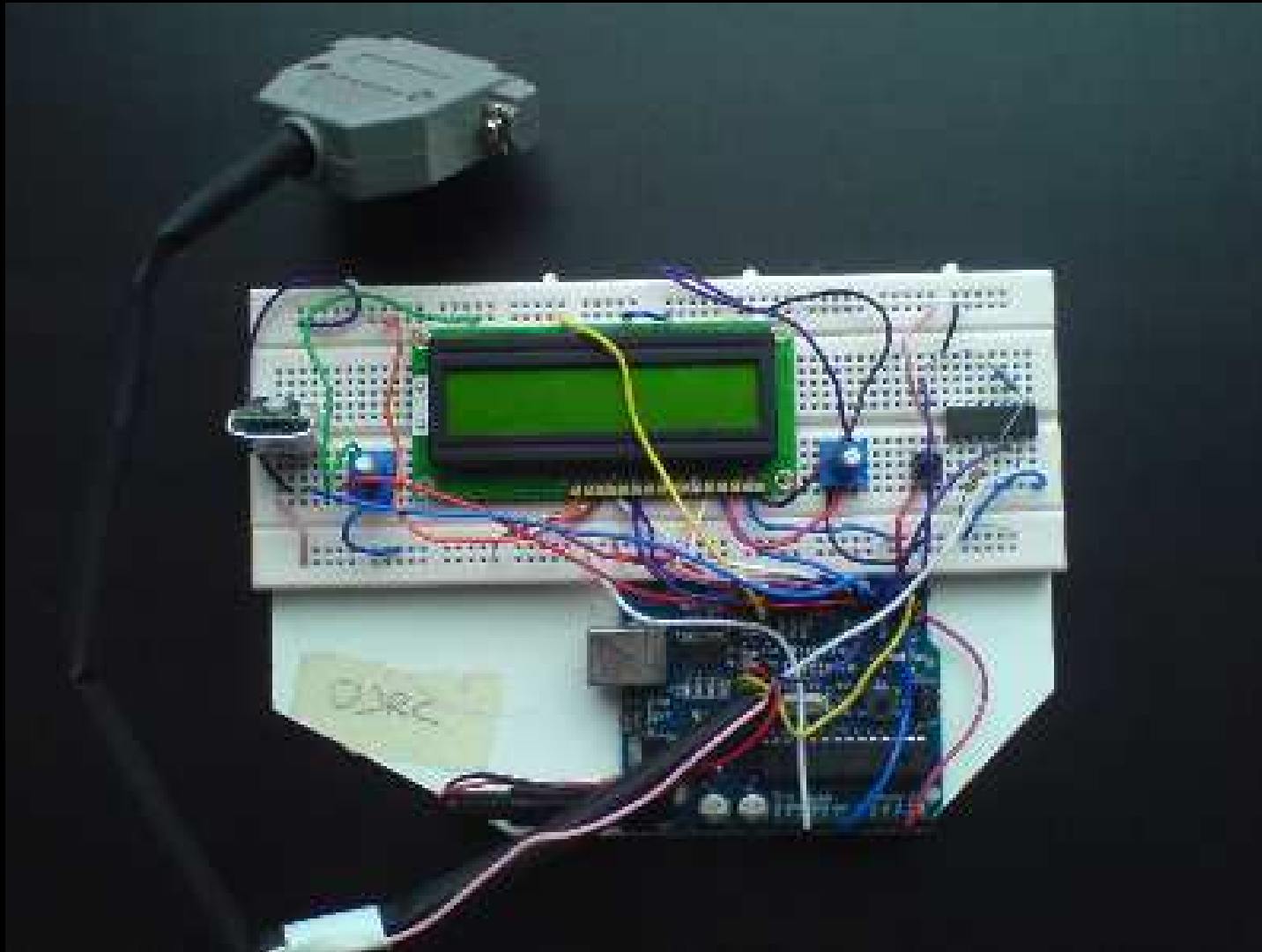
Started an *embedded* challenge in 2008

Same format — with hardware to play with

<http://challenge.ncss.edu.au/>



# EMBEDDED CHALLENGE



# EMBEDDED CHALLENGE







# EMBEDDED CHALLENGE

- Too much time debugging hardware
- Wiggle a wire and you're gone!!!

# EMBEDDED CHALLENGE

## 3-line LCD display

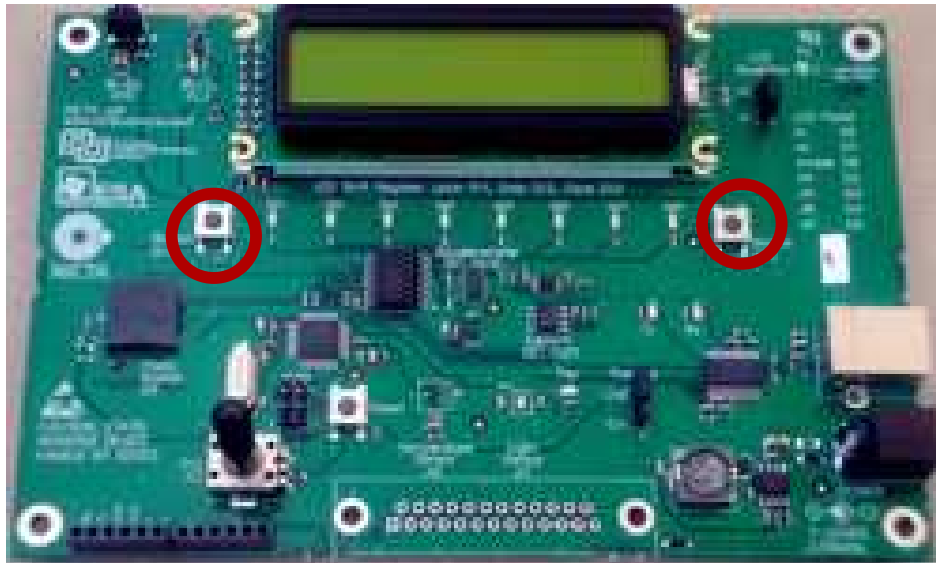


# EMBEDDED CHALLENGE



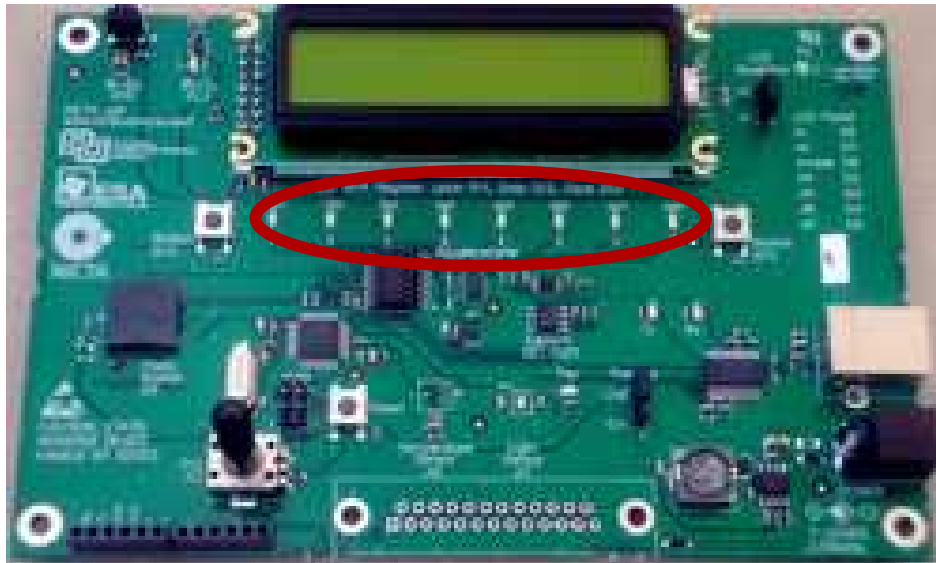
**Infra-Red Tx and Rx**

# EMBEDDED CHALLENGE



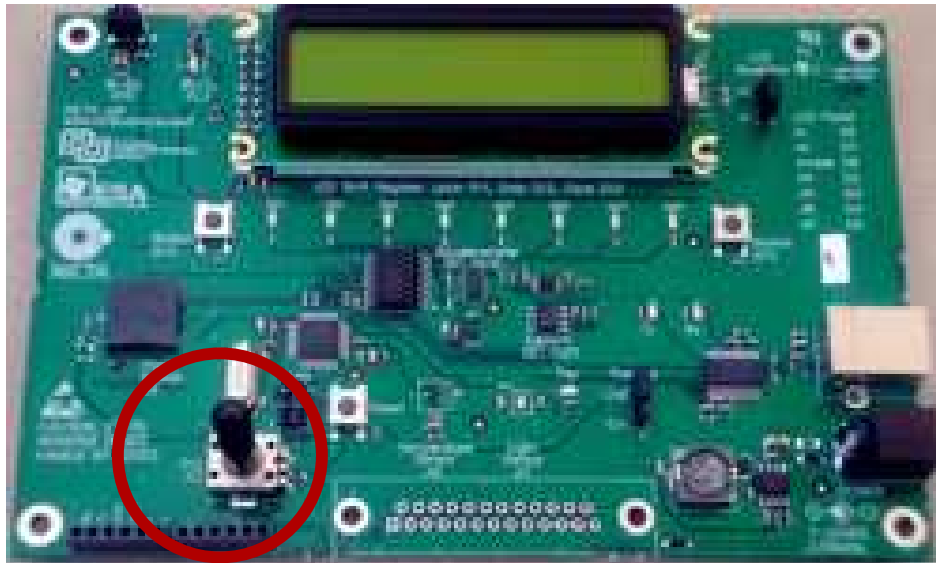
**Two push buttons**

# EMBEDDED CHALLENGE



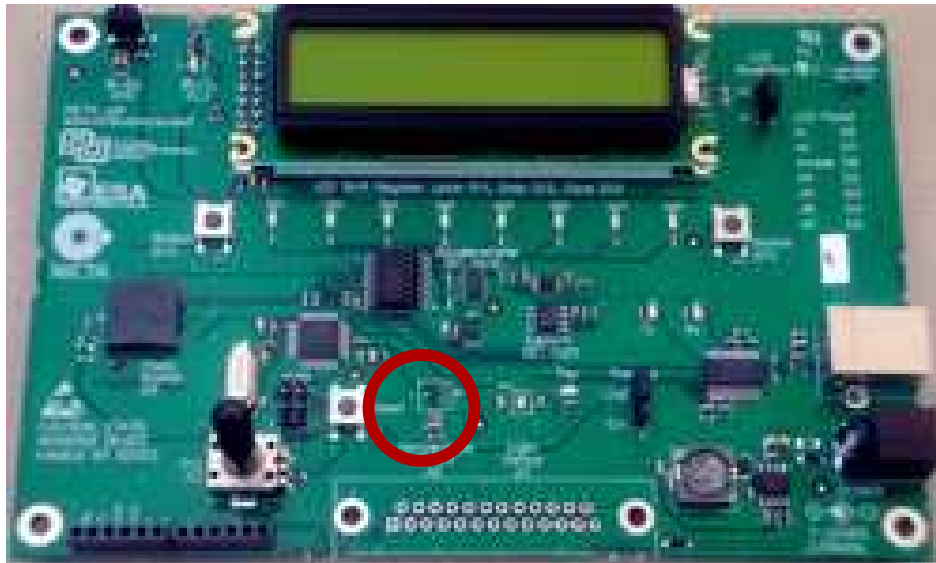
**8 LEDs**

# EMBEDDED CHALLENGE



**Potentionmeter**

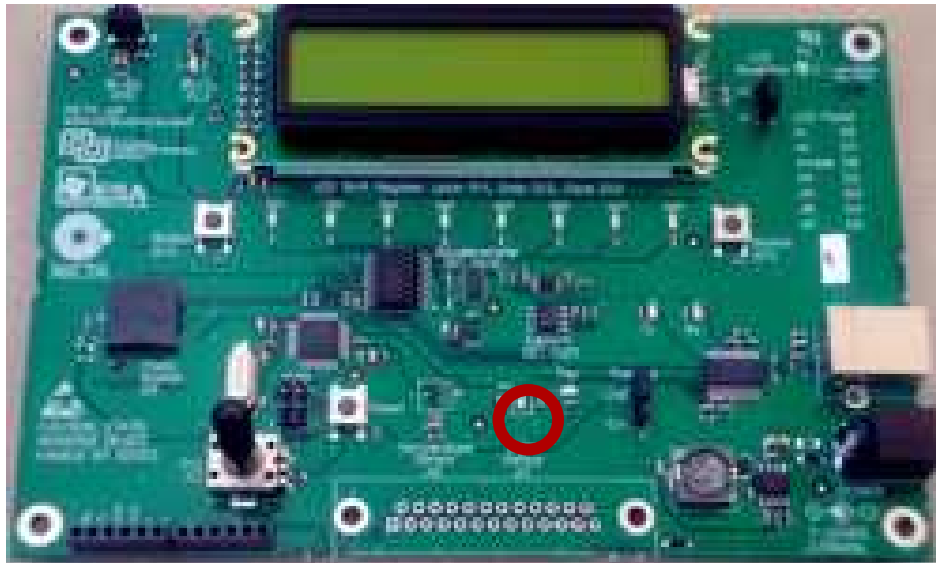
# EMBEDDED CHALLENGE



**Temp. sensor**

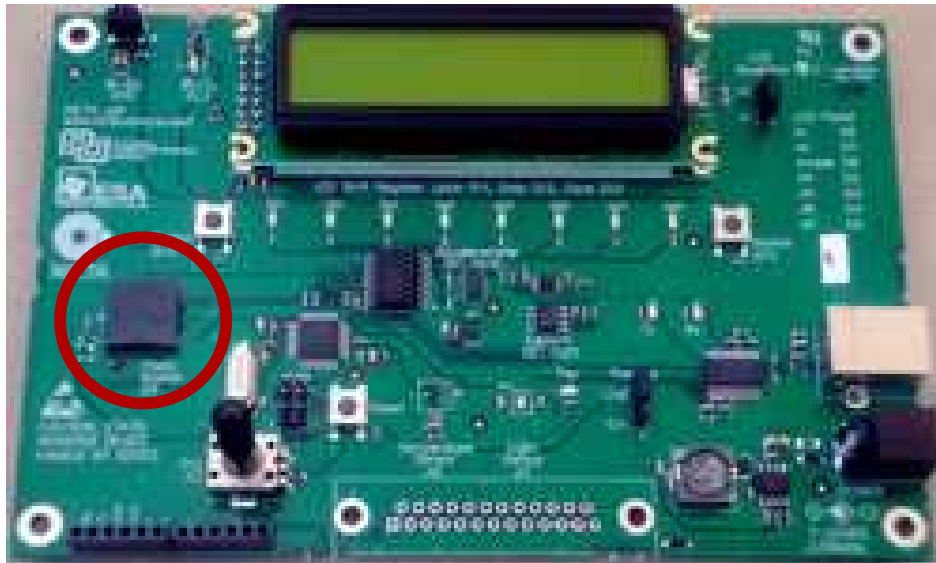


# EMBEDDED CHALLENGE



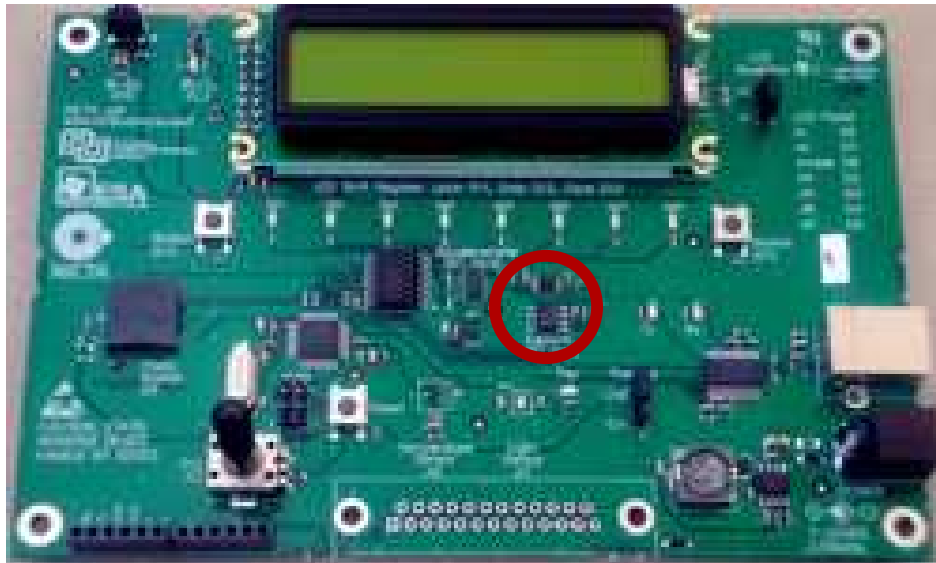
**LDR**

# EMBEDDED CHALLENGE



**Piezo Buzzer**

# EMBEDDED CHALLENGE



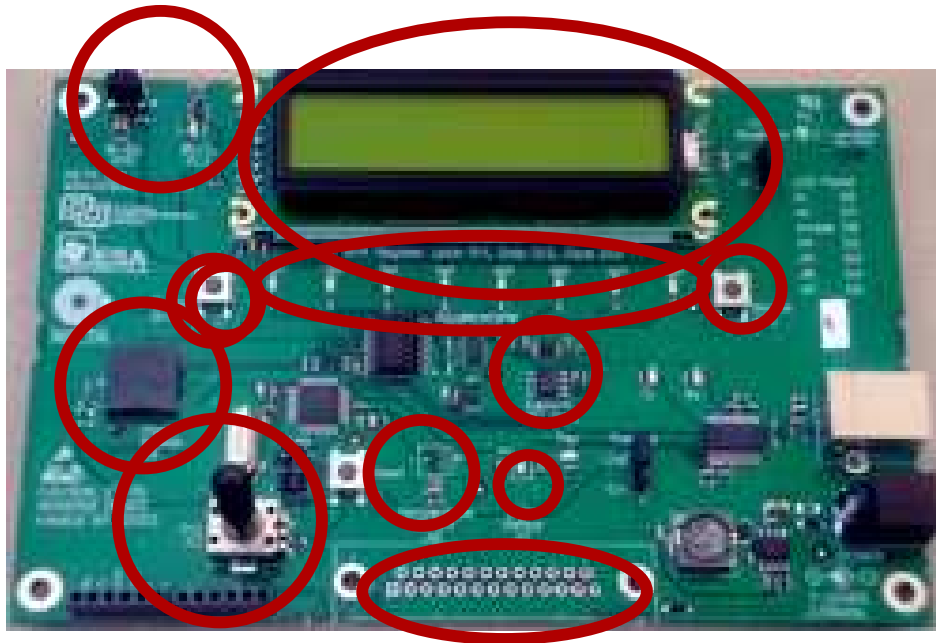
**Accelerometer**

# EMBEDDED CHALLENGE



**Connector for iRobot**

# EMBEDDED CHALLENGE



**Connector for iRobot**

- 3-line LCD display**
- Infra-Red Tx and Rx**
- Two push buttons**
- 8 LEDs**
- Potentionmeter**
- Temp. sensor**
- LDR**
- Piezo Buzzer**
- Acelerometer**

- On-line course very similar C content
  - C programming
  - $I^2C$
  - debouncing
  - Boolean logic
- *extra* challenge: What can you do with the board?

Zoi Petroulias

<http://sites.google.com/site/copthat2009>