

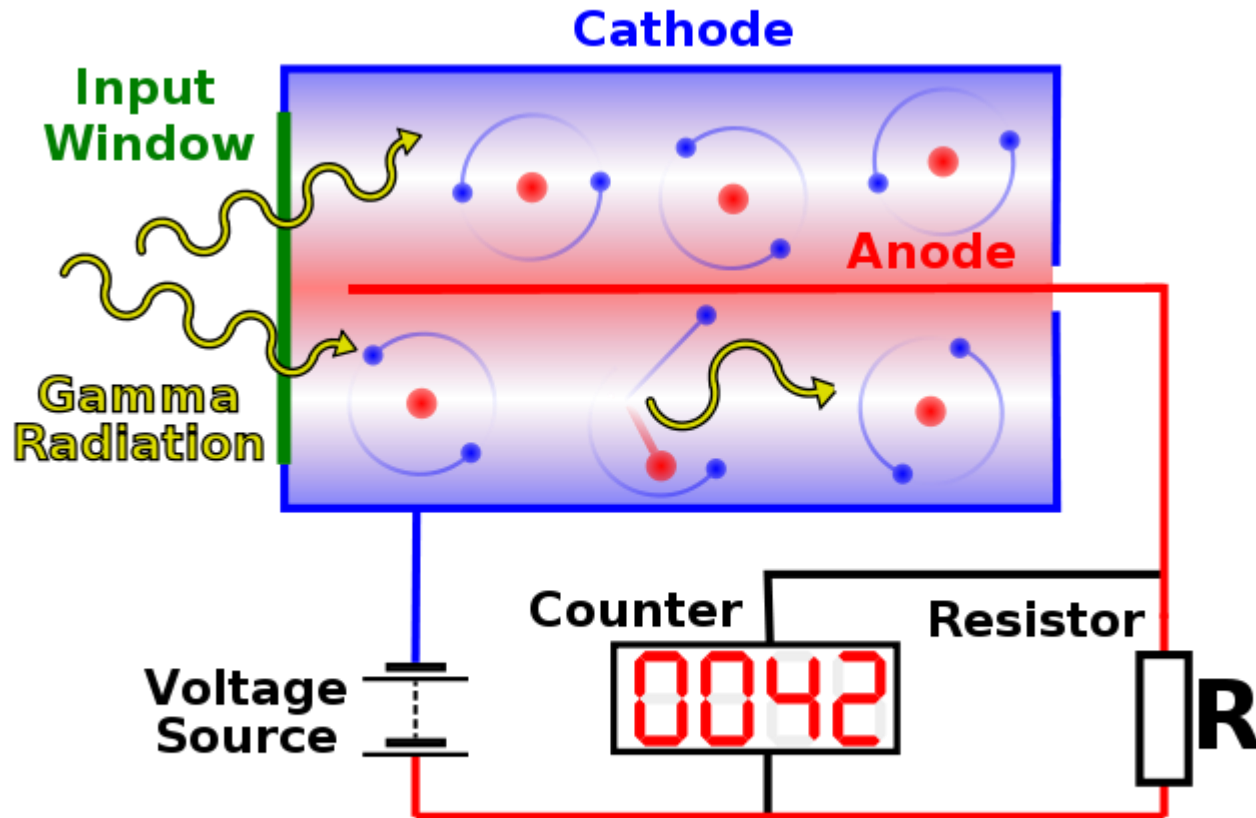
# 微處理機之危機處理 蓋格計數器

B97901121 劉彥廷

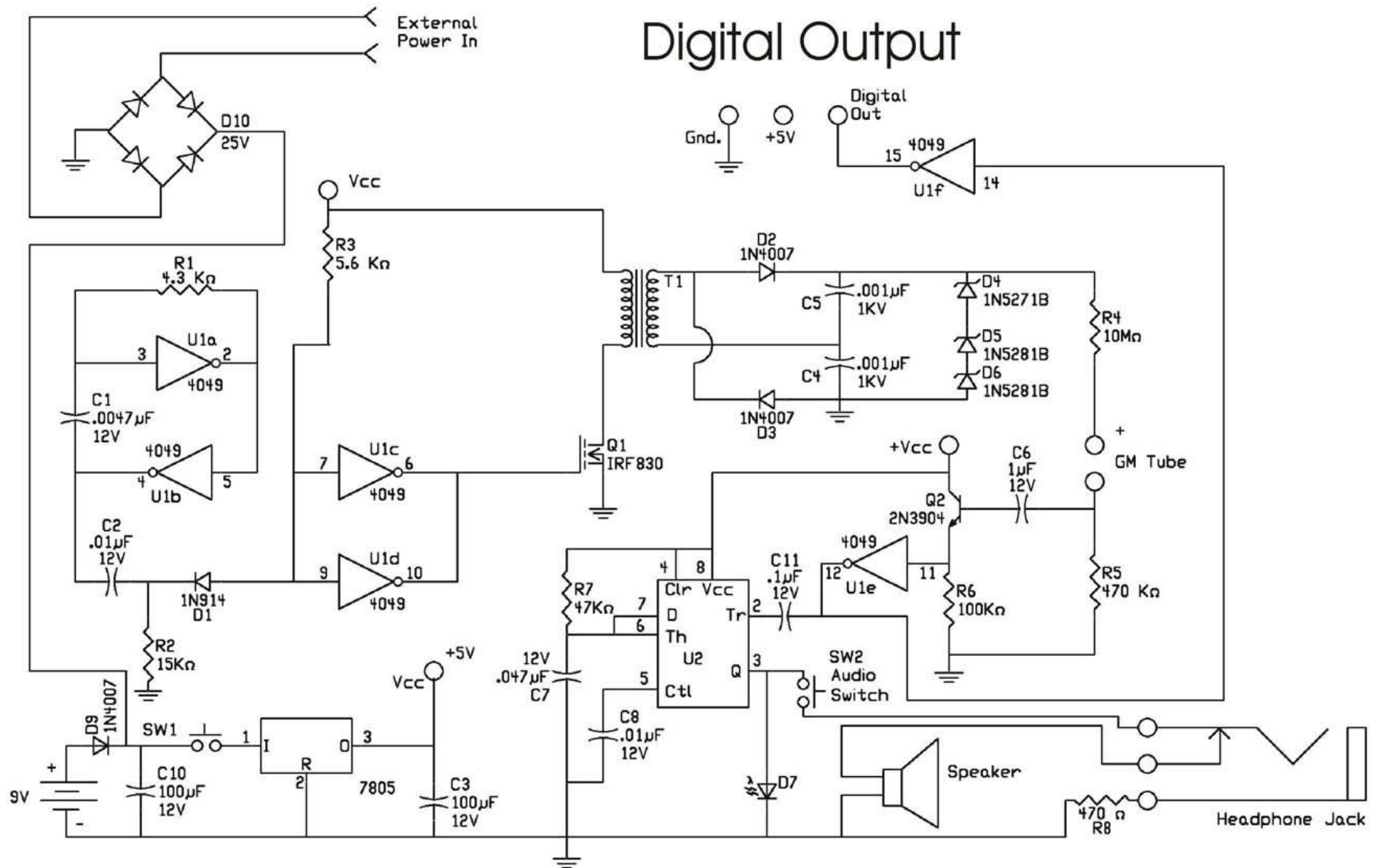
# 動機

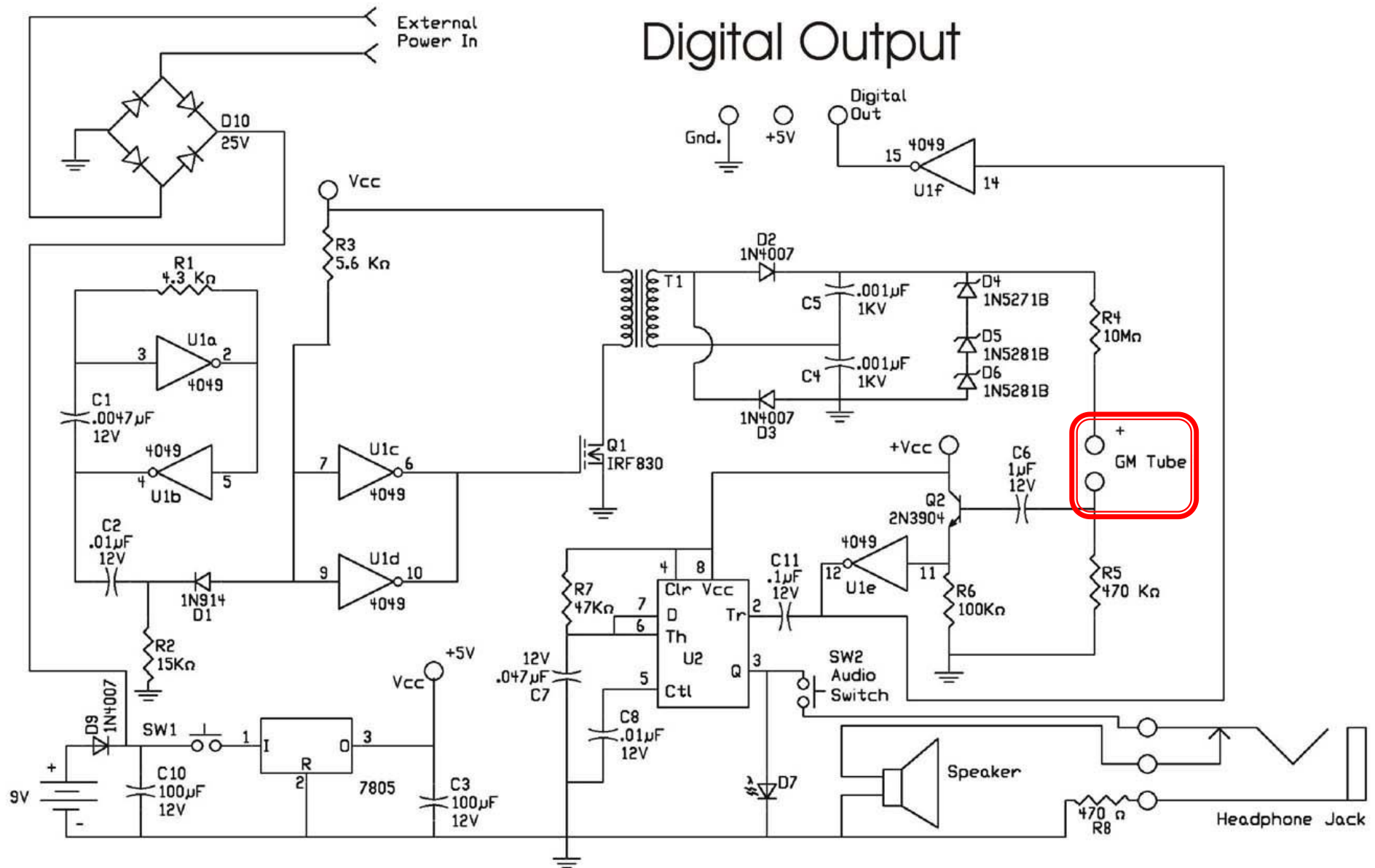
- ▶ 日本福島電廠輻射外洩事件
- ▶ 可以透過微處理機監測輻射量值
- ▶ 提高核能電廠、醫院的放射性監測密度

# Geiger-Müller tube

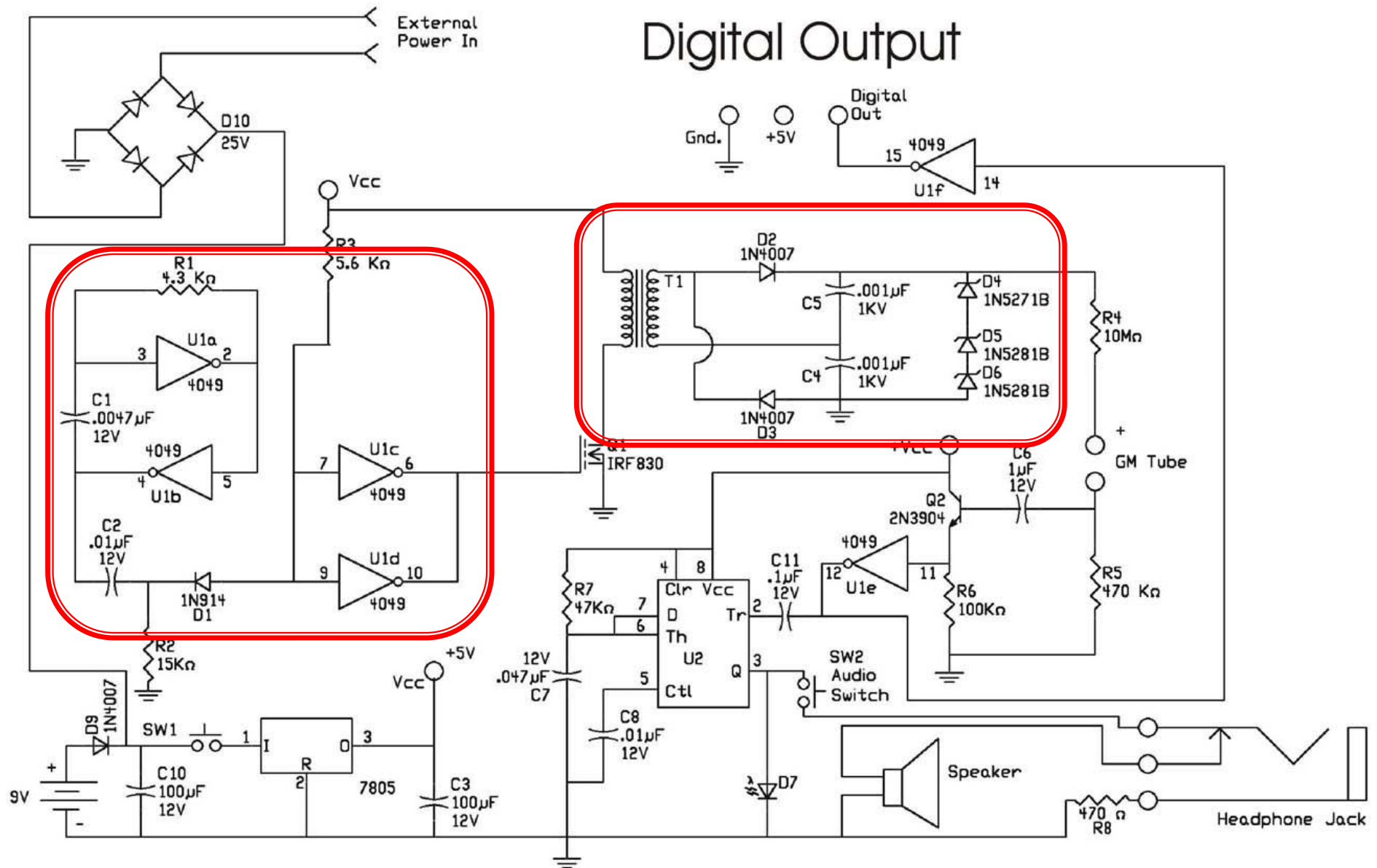


# Digital Output

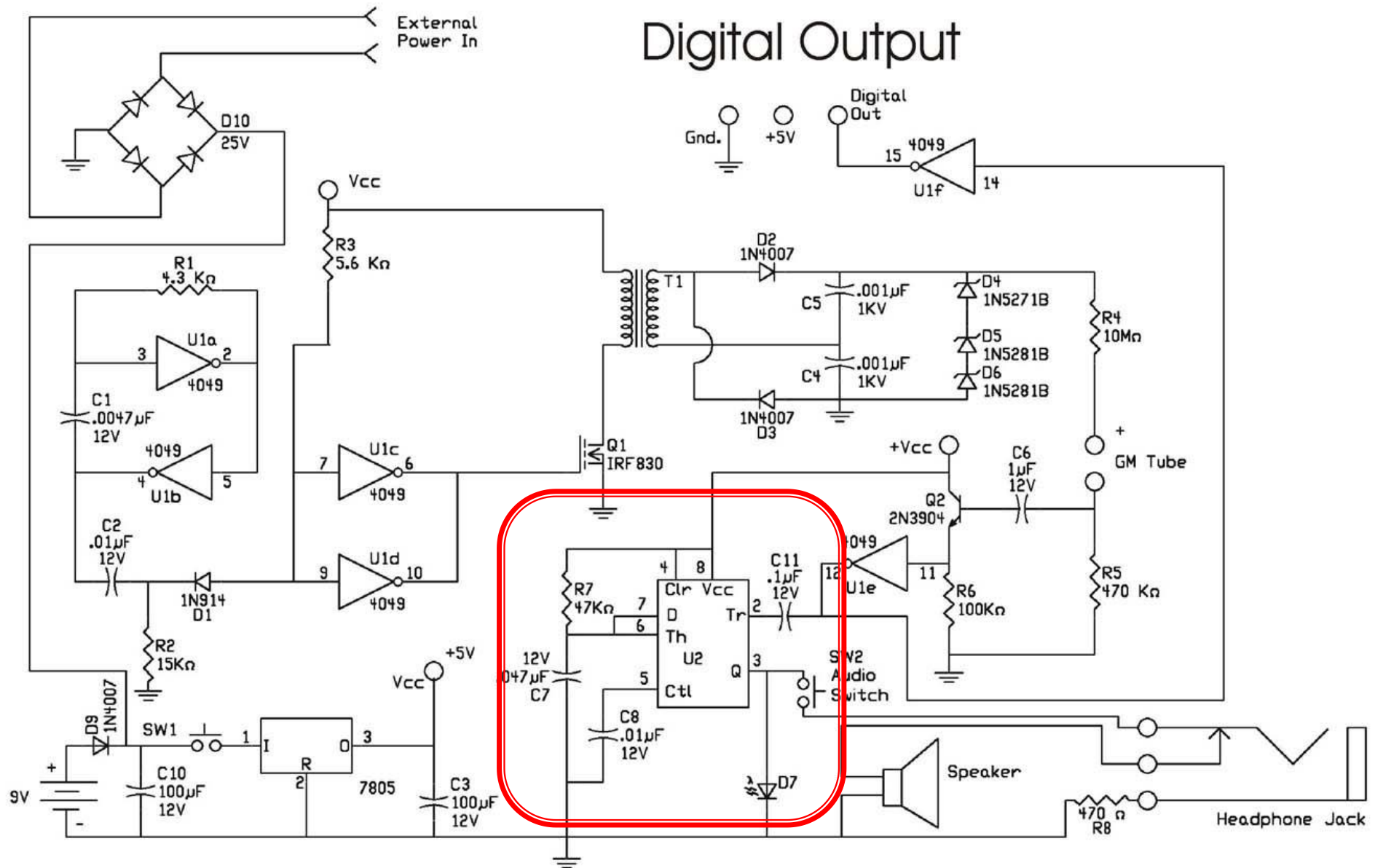




# Digital Output

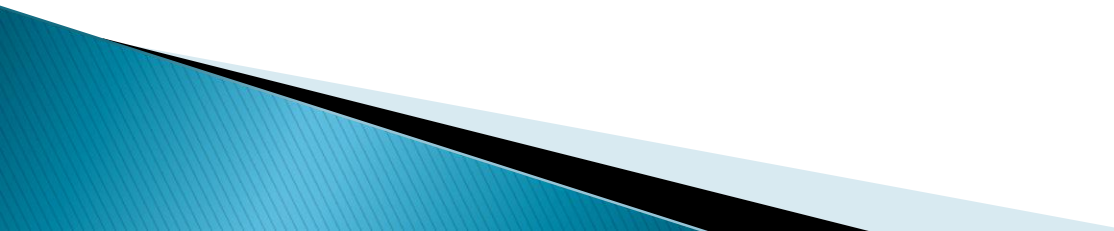


# Digital Output

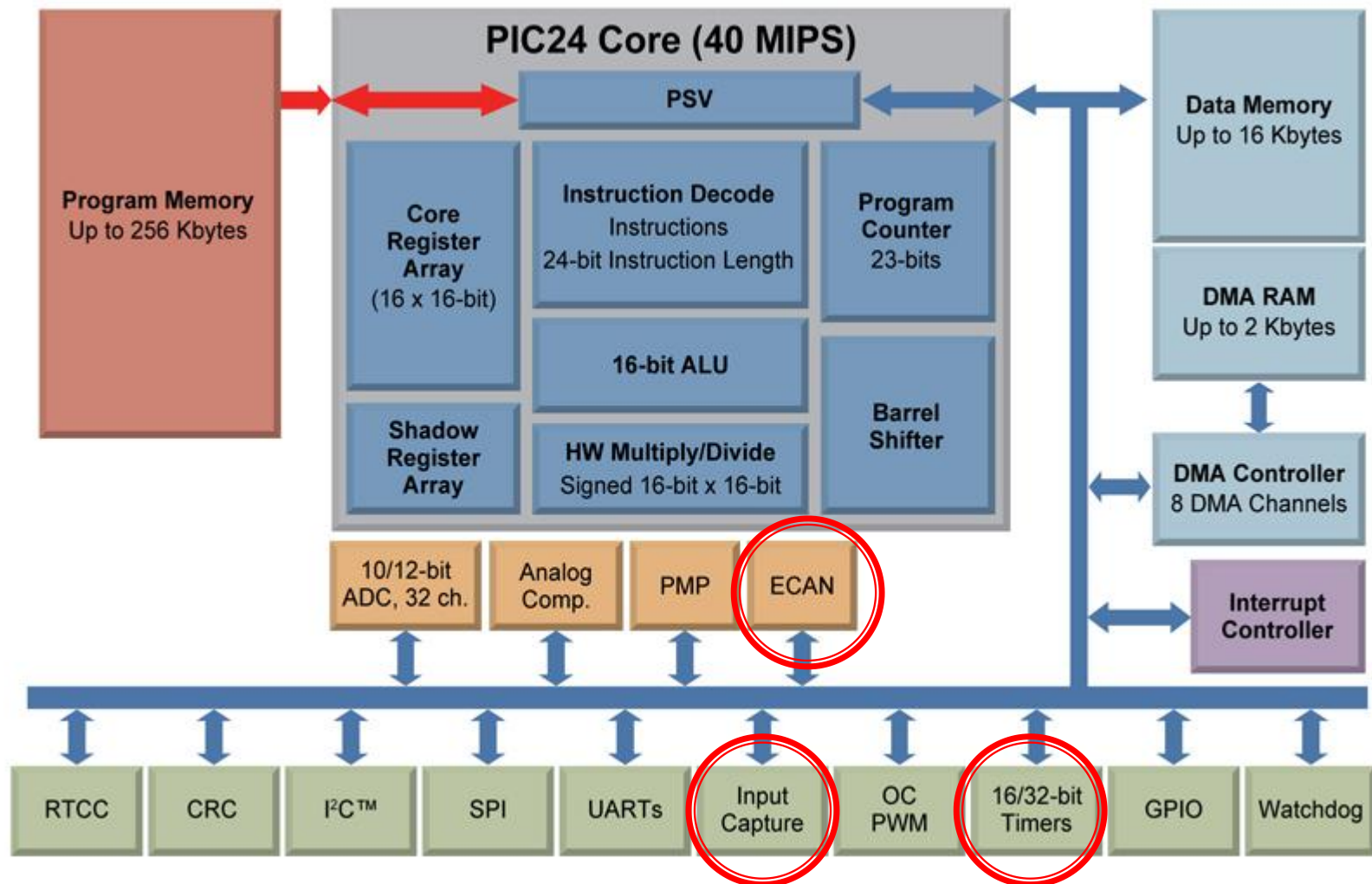


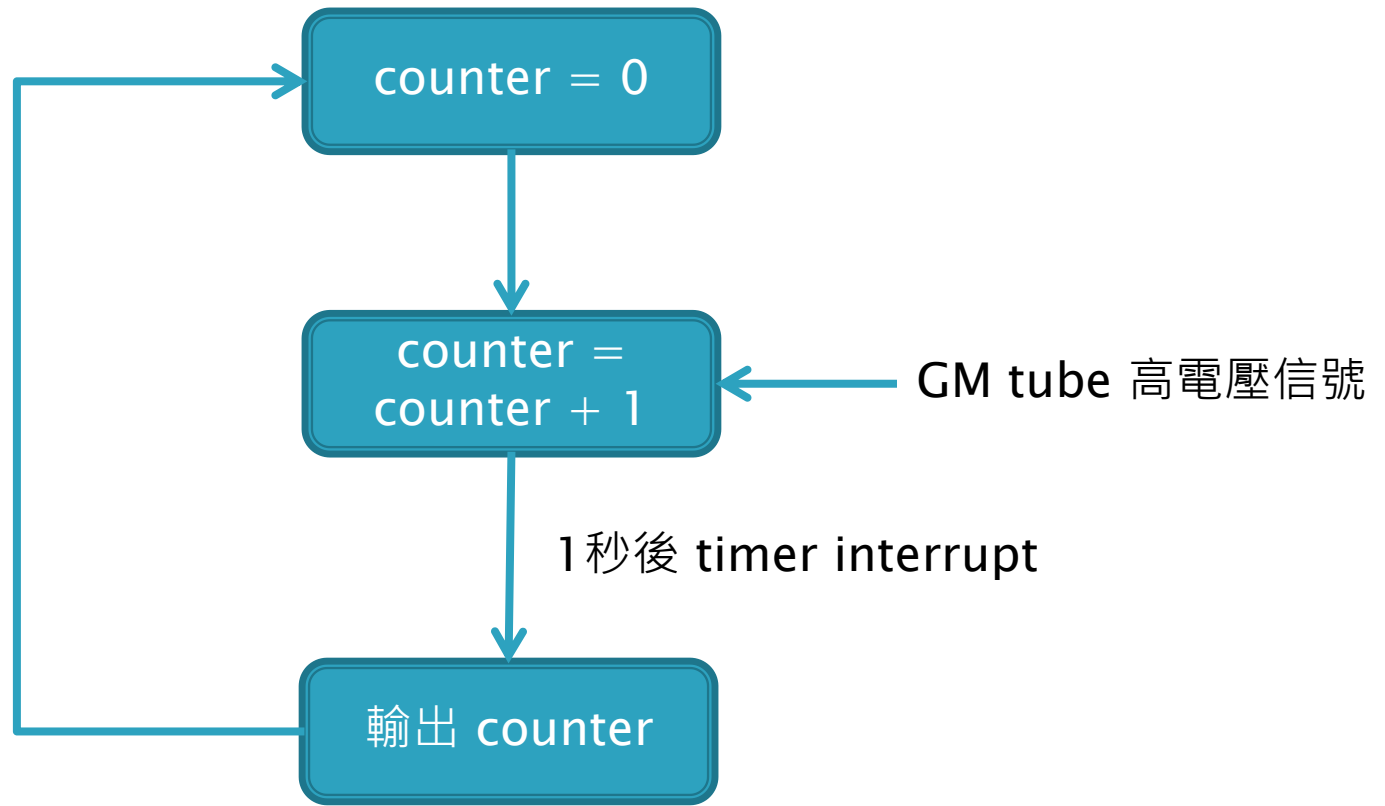


# 資料收集

- ▶ 使用 PIC24 系列
  - ▶ 利用 input pin 收集高電壓資訊
  - ▶ 利用 timer 計算頻率
  - ▶ 10000 counts/sec 即為危險劑量
  - ▶ 利用 CAN bus 收集資訊
- 

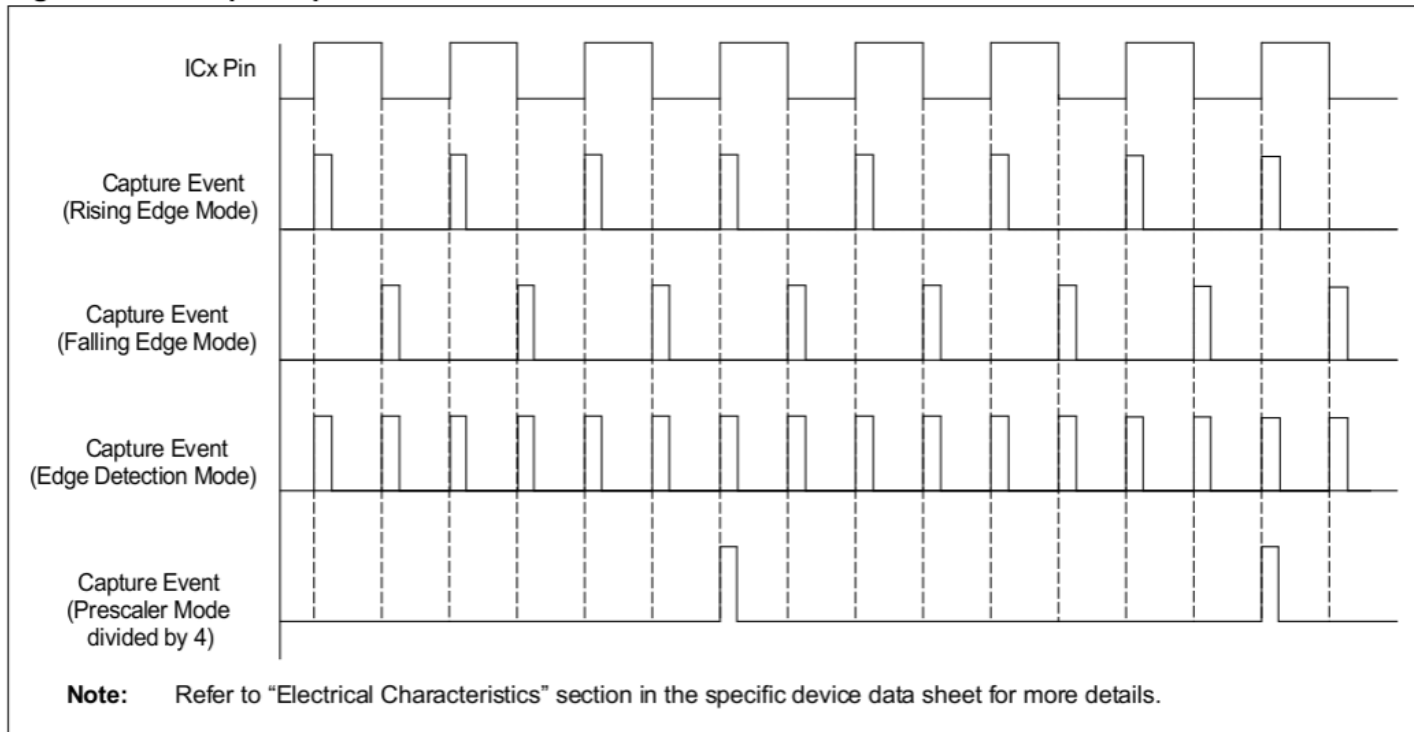






# Input Capture

**Figure 12-2: Input Capture Event Generation**

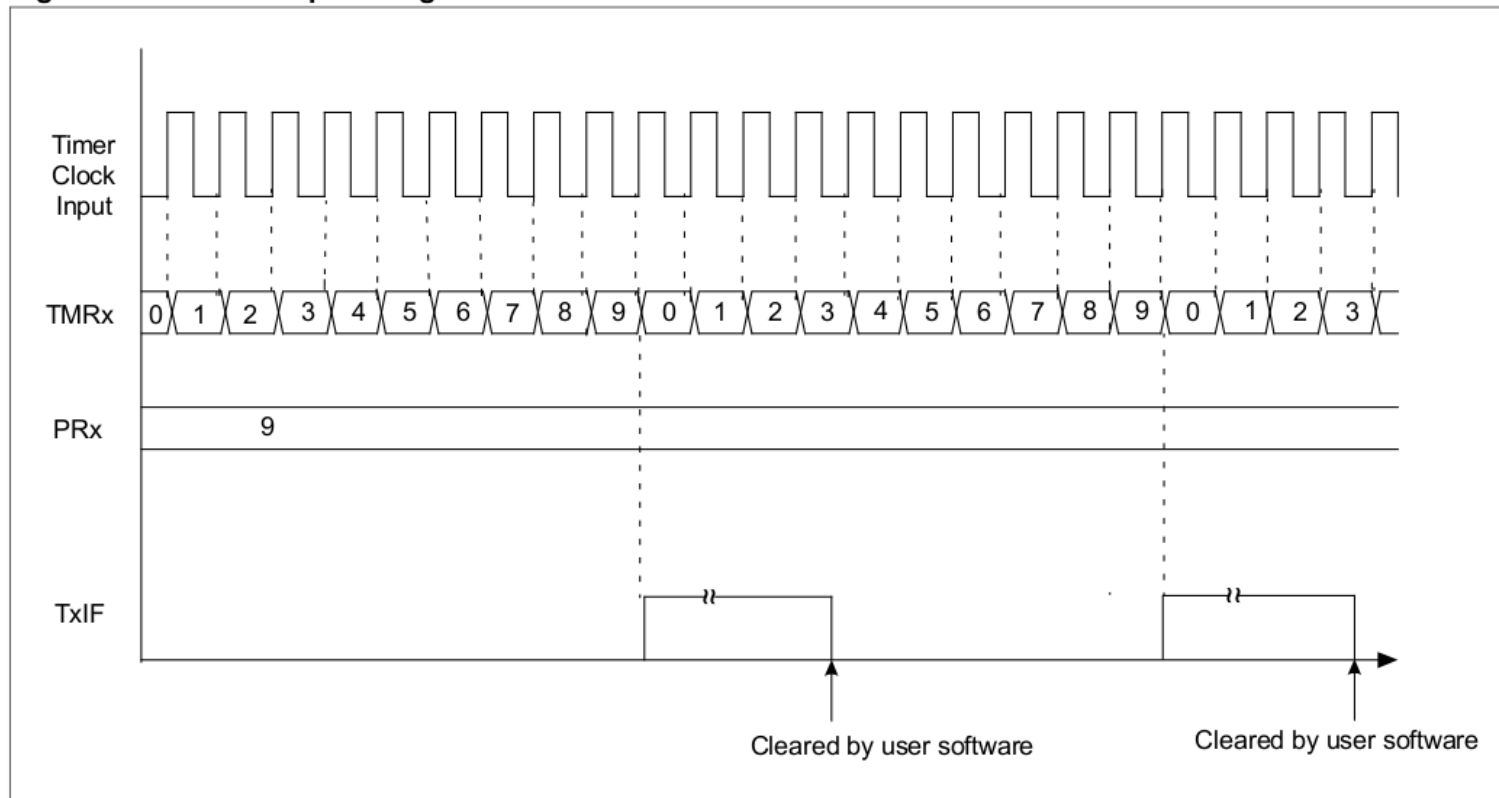


**Note 1:** The Input Capture (ICx) pin has minimum high time and low time specifications. Refer to the specific device data sheet for more details.

**2:** The latency from the time the transition happens at the ICx pin to the time the capture event is generated is two instruction cycles.

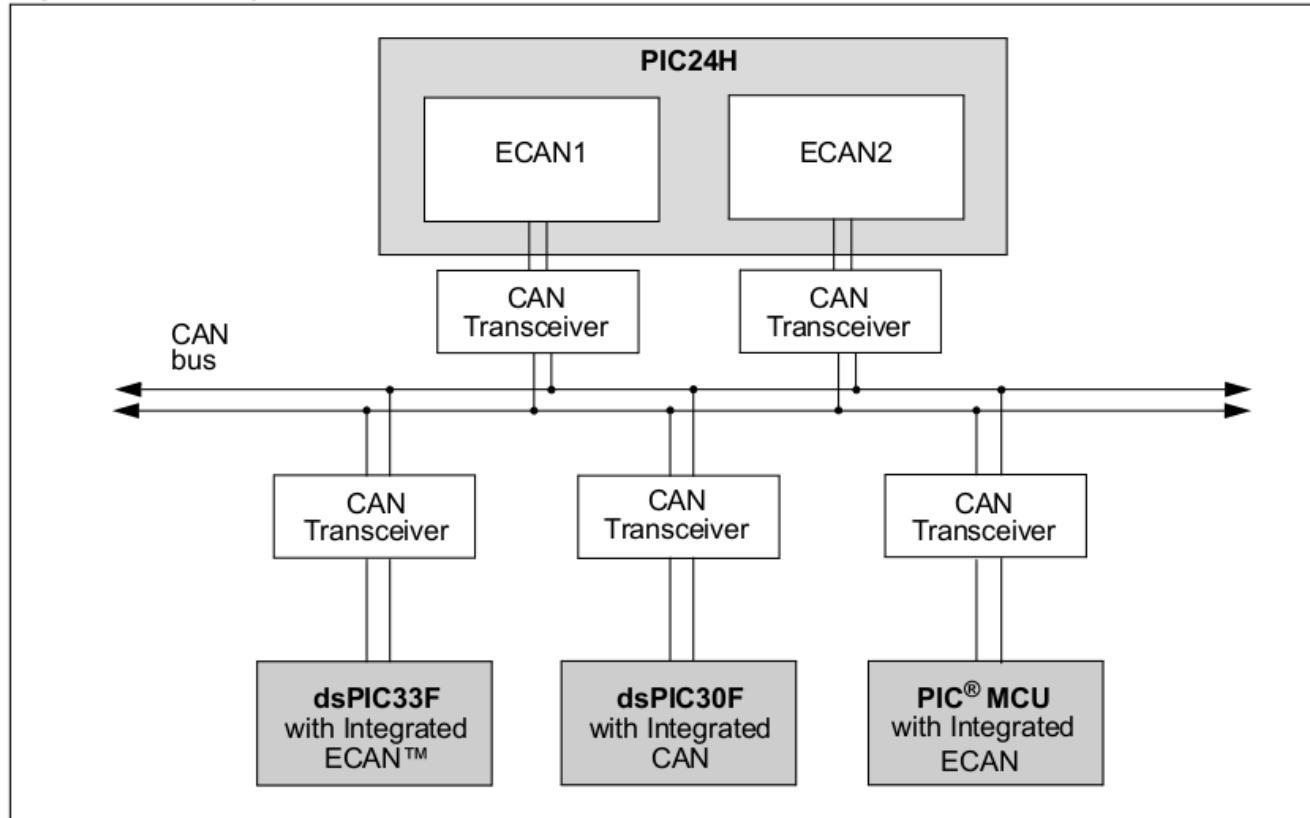
# Timer Interrupt

Figure 11-4: Interrupt Timing for Timer Period Match



# CAN

Figure 21-1: Typical CAN Bus Network



# 測試

## Radioactive Sources



Sample radioactive sources for testing the functionality of a geiger counter. Safe, uncalibrated solid sealed sources are fabricated by depositing a license exempt quantity of activity in the well of a 1-inch diameter (25mm) by 1/8-inch thick (3mm) plastic disk. After drying, the well is filled with an epoxy material; sealing the radioactivity inside the source. Contains  $\pm 20\%$  of the stated activity and are routinely compared to calibrated reference standards. Each disk is identified by radio nuclide, amount of activity, serial number and calibration date. The words "Caution - Radioactive Material" appear on the label

of each source.

These radioactive sources are dropped shipped from separate location.

Pb-210 Needle Cloud Chamber Source Contains Pb-210  $< 0.01 \mu\text{Ci}$

For More Radioactive Sources [Click Here](#)

### CS-137 - \$80.00

Cs-137 Radioactive Source, 5 micro curie ( $\mu\text{Ci}$ ) (gamma source)

### S-7 - \$234.95

Set of Radioactive Sources: Po-210, .1  $\mu\text{Ci}$  (alpha); Sr-90, .1  $\mu\text{Ci}$  (beta); Co-60, 1  $\mu\text{Ci}$  (gamma)

CS-137 \$80.00 ▼

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