

# ARM NOTES

3 Ocak 2025 Cuma 15:52

★ LPC2148 is a 32-bit ARM7 TDMI-S processor.

## TDMI-S

- T: Instruction set compatibility (ARM (32-bit) & Thumb (16-bit))
- D: Debug capabilities
- M: Performance-enhanced multiplier
- J: Embedded ICE macrocell
- S: Synthesizable design for RTL implementations.

★ LPC2148 has two 32-bit General Purpose I/O ports.

→ Port0: 32-bit port, only 28 pins can be configured as GPIO

$$\begin{array}{ccccccc} \star (P0.0 - P0.23) & , & (P0.25) & , & (P0.28 - P0.30) \\ \underbrace{\hspace{1.5cm}} & & \underbrace{\hspace{1.5cm}} & & \underbrace{\hspace{1.5cm}} \\ 24 & + & 1 & + & 3 & = & 28 \text{ pins} \end{array}$$

★ P0.31 → configured as general purpose output only.

★ P0.24, P0.26 & P0.27 → all reserved, not available for use.

★ Don't have any built in pull up/down resistors.

→ Port1: 32-bit port, only 16 pins are available for GPIO.

★ (P1.16 - P1.31) → can be used for GPIO.

## ★ PIN FUNCTION SELECT REGISTERS : PINSEL

there are 3 pin function select registers in LPC2148

1. PINSEL0 → Port0 pins: P0.0 - P0.15

2. PINSEL1 → " " : P0.16 - P0.31

3. PINSEL2 → Port1 " : P1.16 - P1.31

## \* SLOW GPIO REGISTERS

1. **IOxPIN**: reading pin values

2. **IOxSET**: setting pins high.

3. **IOxDIR**: Configuring pins as I/O.

4. **IOxCLR**: clearing pins (setting low).

x: { 0, 1 }

0: refers to PORT0  
1: " " PORT1

## \* FAST GPIO REGISTERS

1. **FIOxDIR**: Fast pin direction control.

2. **FIOxMASK**: Masking fast register effects.

3. **FIOxPIN**: Reading fast pin values.

4. **FIOxSET**: Setting pins using fast registers.

5. **FIOxCLR**: Clearing " " " " .