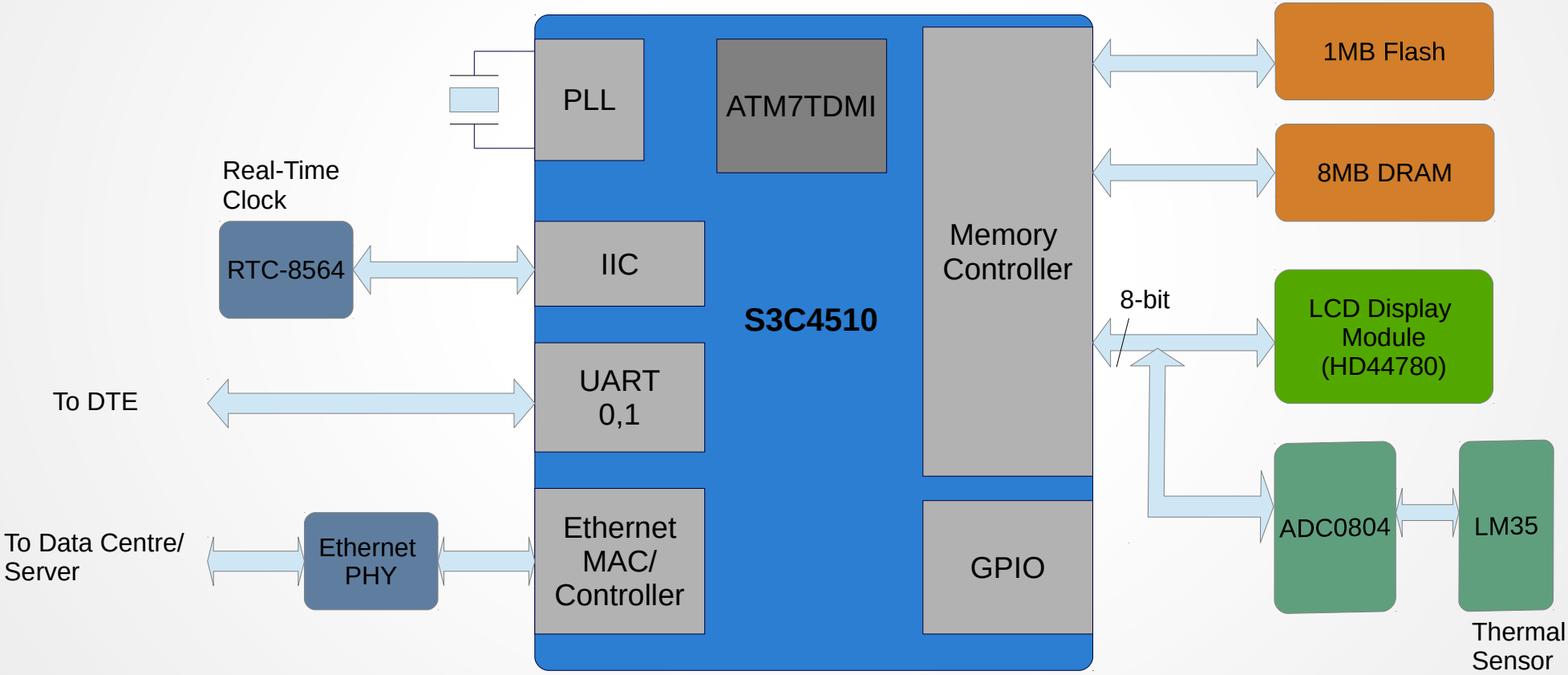
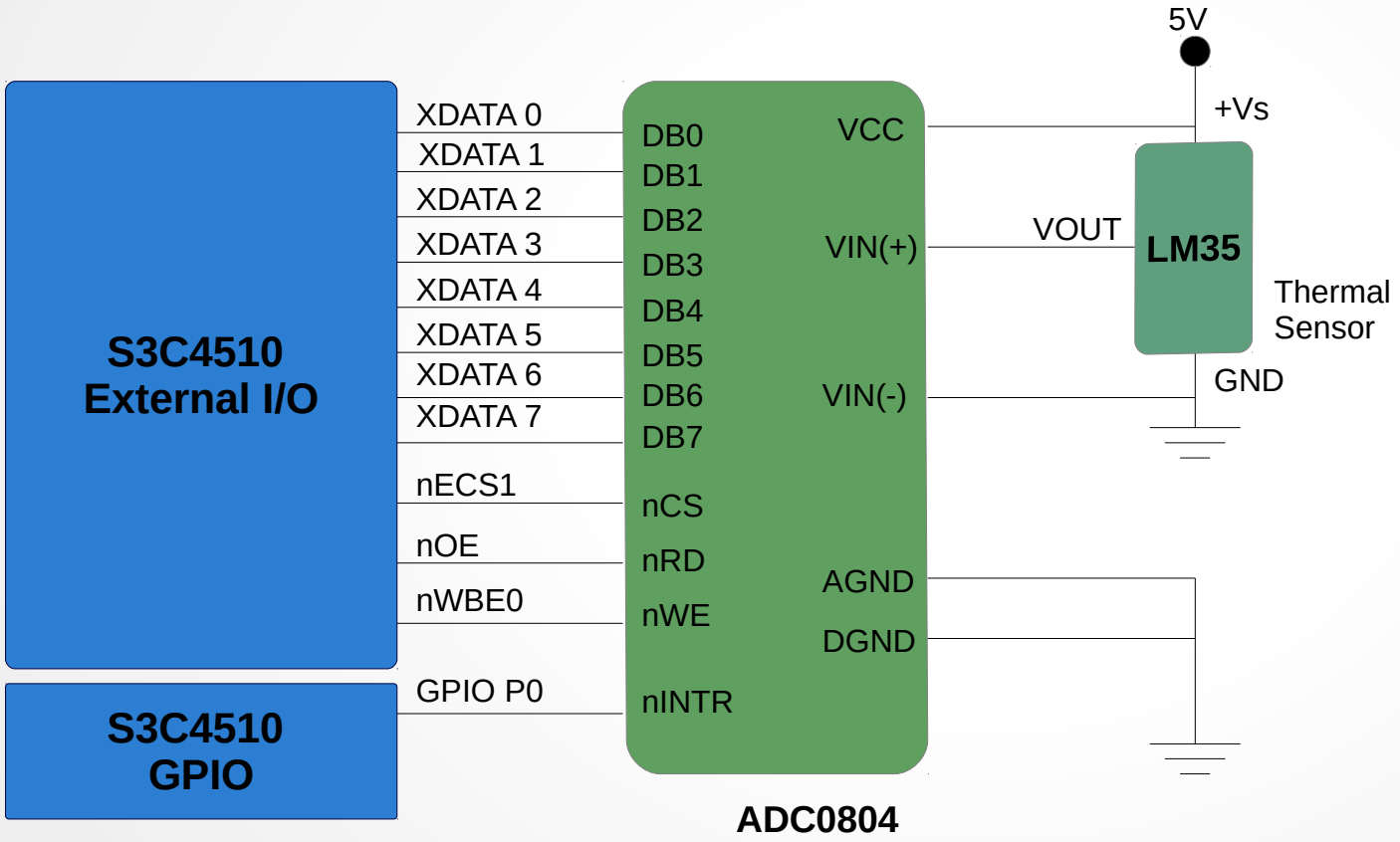
Board Level Block Diagram



Thermal I/F (Memory Bank 1)



- **Steps to read the thermal data:**
  a. Set the external bus width to 8-bit
  b. Write 0 to address of memory Bank-1 to trigger the ADC
  c. Polling GPIO P0 to check if ADC finish the translation
  d. Read data (digital) from ADC

- **ADC0804 is a 8-bit Analog-to-Digital convertor with 5V power supplied. The resolution is 5V/256**

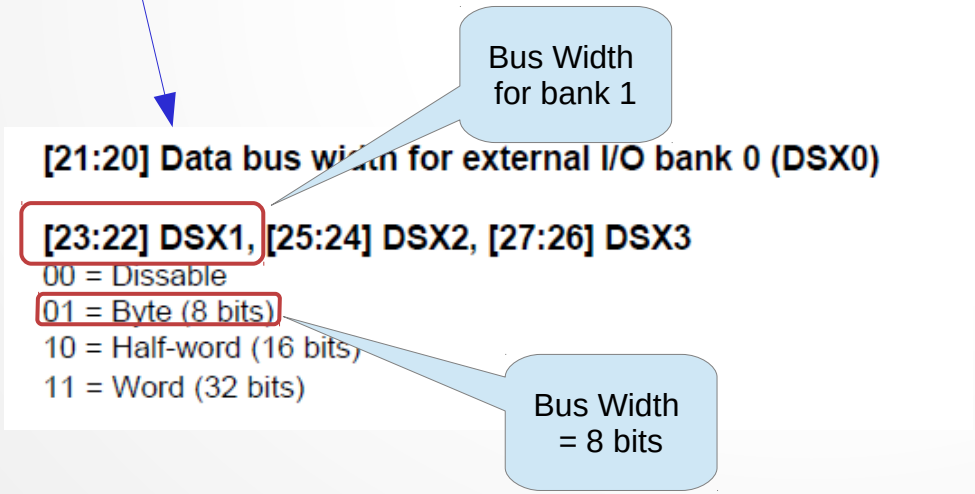
- **LM35 sensor output resolution: “10mV/degree”**

Memory Bank Bus Width Configuration

- **Controlled by EXTDBWTH register, bits [23:22] are used to configure External Memory bank 1 bus width**

Table 4-20. EXTDBWTH Register Description

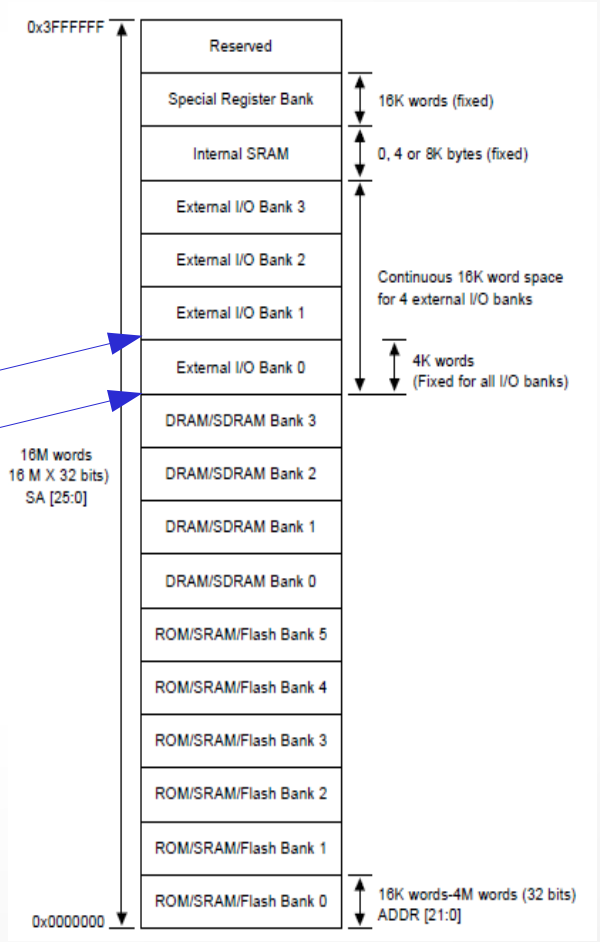
Registers	Offset	R/W	Description	Reset Value
EXTDBWTH	0x3010	R/W	Data bus width of each bank	0x00000000



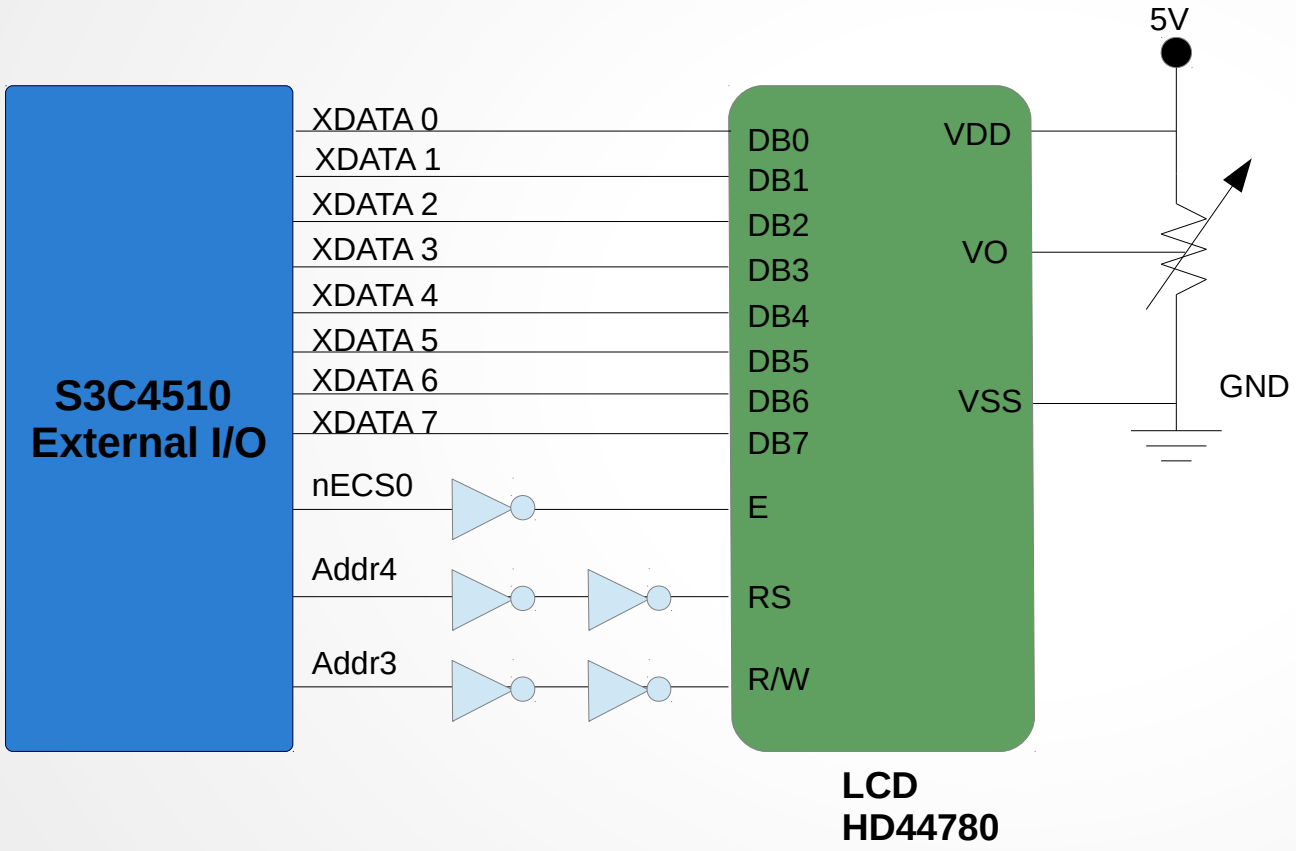
System Memory Map and External Memory I/O Address

Bank 1 Starting Address: 0x3604000

Bank 0 Starting Address: 0x3600000



LCD I/F (Memory Bank 0)



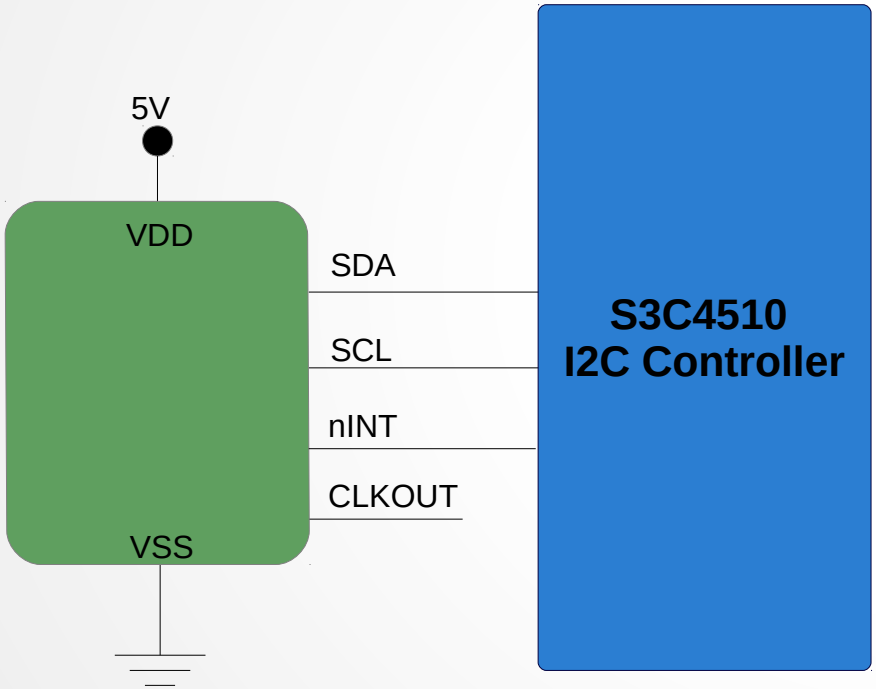
- **LCD has two registers selected and accessed by “RS” & “R/W” signal**
  a. RS = 0, R/W = 0: Write command or RAM address to instruction register
  b. RS = 0, R/W = 1: Read “Busy Flag”
  c. RS = 1, R/W = 0: Write data to data register(then to RAM automatically)
  d. RS = 1, R/W = 1: Read data from data register

- **RS and R/W signal are implemented by Addr4 and Addr3**

- **Inverters (74HC14) are used to match signal type and timing**

- **VO input voltage value is used to adjusted the lightness of LCD**

I2C for RTC



- **Key H/W features of RTC-8564**
  a. I2C slave address: 0x51h
  b. Build in 32.768KHz OSC
  c. Max clock speed for I2C: 400KHz
  d. Programmable CLKOUT frequency