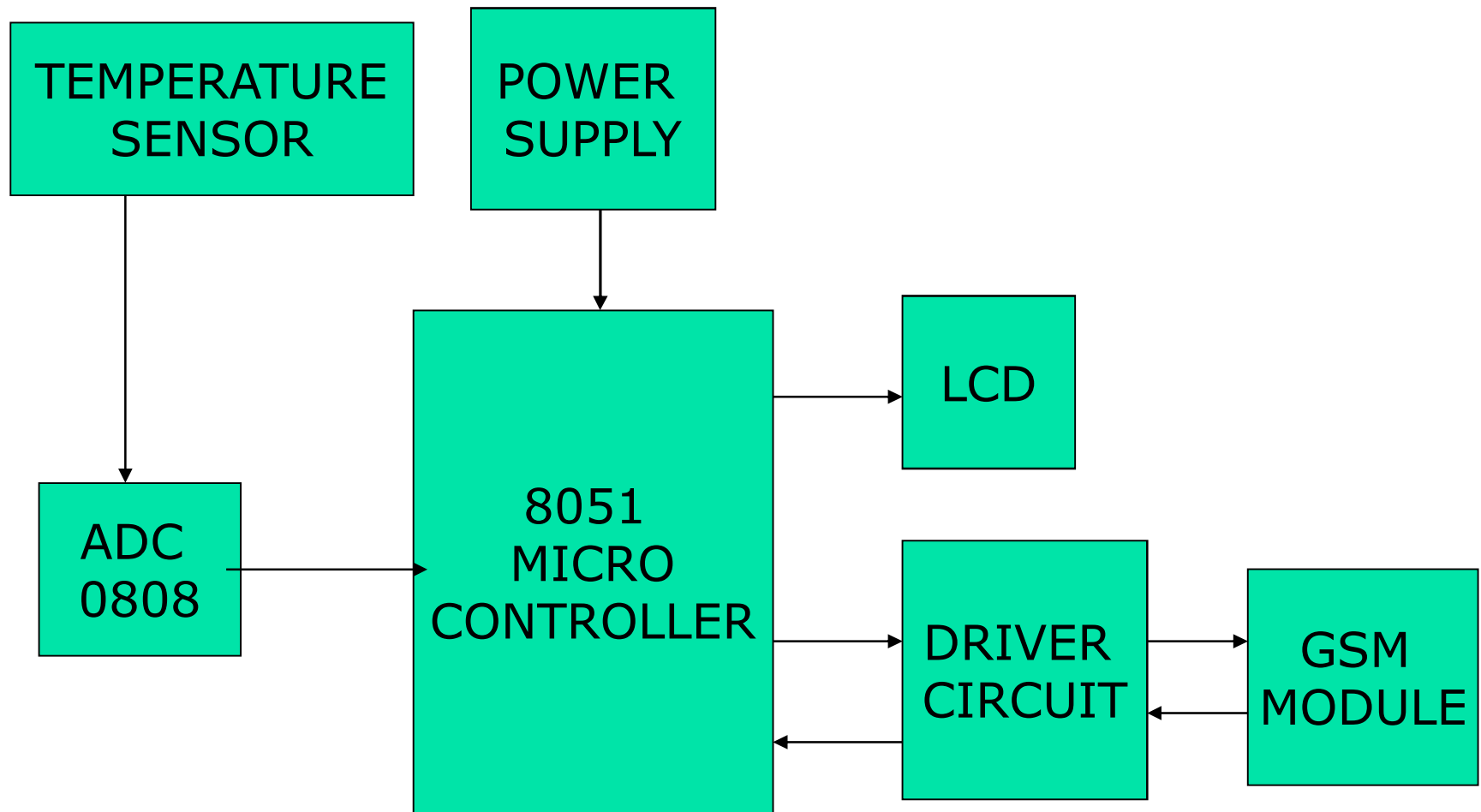


BODY TEMPERATURE MONITORING USING AN SMS-BASED TELEMEDICINE SYSTEM

HARDWARE COMPONENTS

- Microcontroller
- GSM modems
- MAX 232
- Temperature Sensor
- Liquid crystal display
- ADC
- Power supply
- Keil software

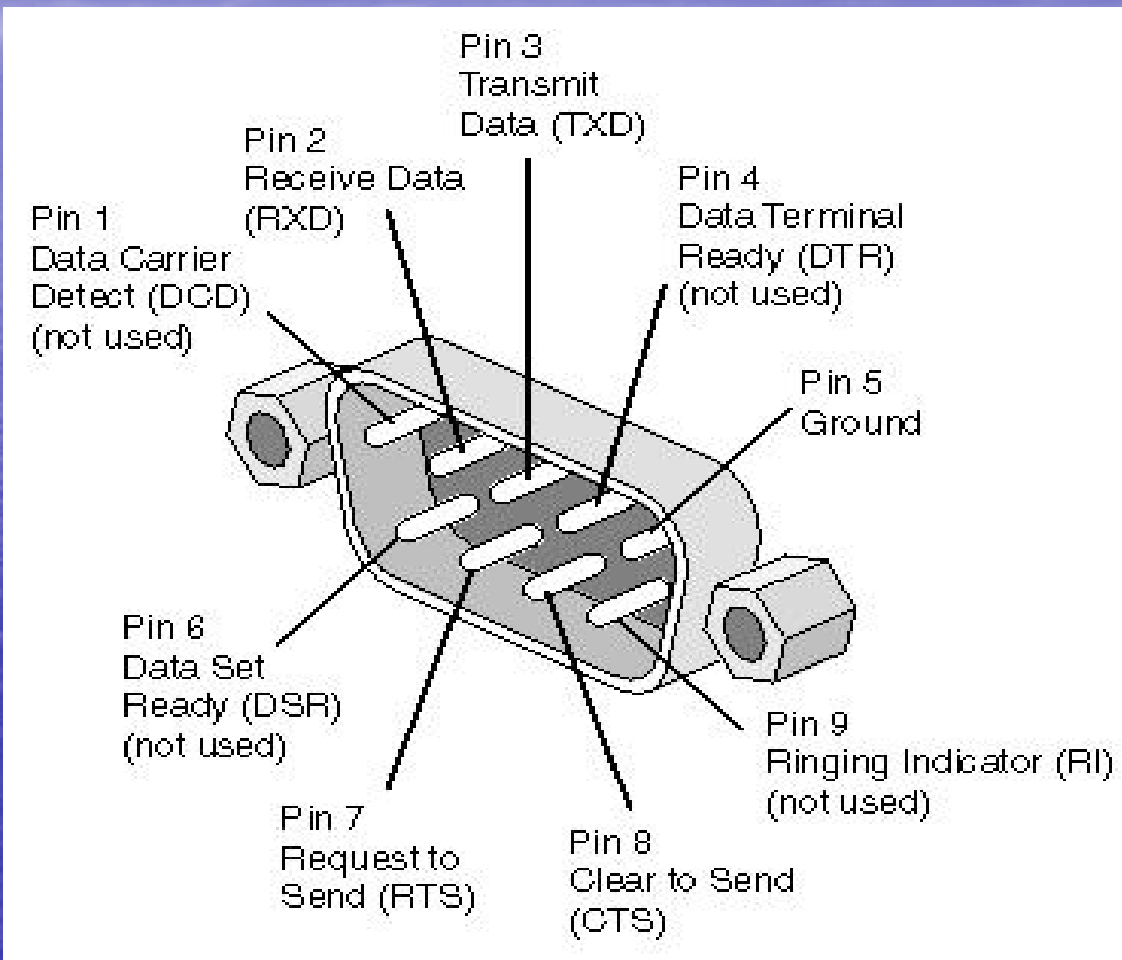
BLOCK DIAGRAM



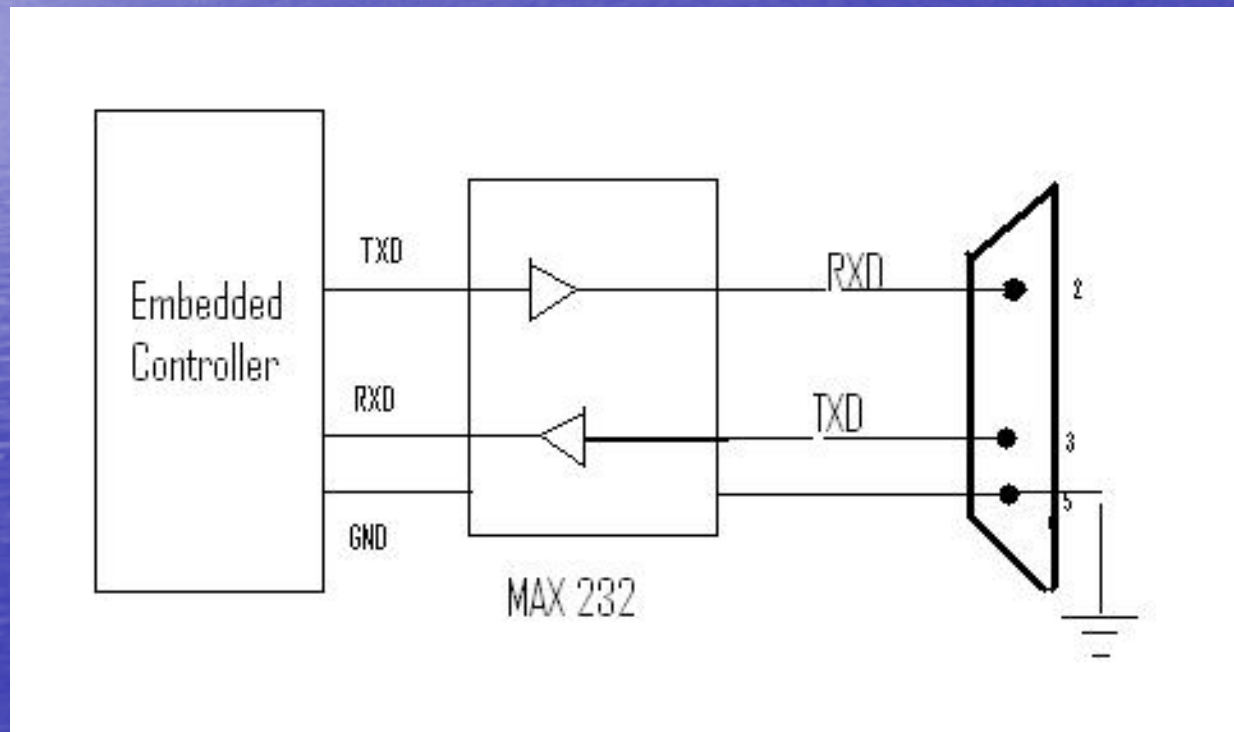
WHY ATMEL 89C51?

- 8 Bit CPU optimized for control applications
- Extensive Boolean processing (Single - bit Logic) Capabilities.
- On - Chip Flash Program Memory
- On - Chip Data RAM
- Bi-directional and Individually Addressable I/O Lines
- Multiple 16-Bit Timer/Counters
- Full Duplex UART
- Multiple Source / Vector / Priority Interrupt Structure
- On - Chip Oscillator and Clock circuitry.
- On - Chip EEPROM
- One Serial communication port

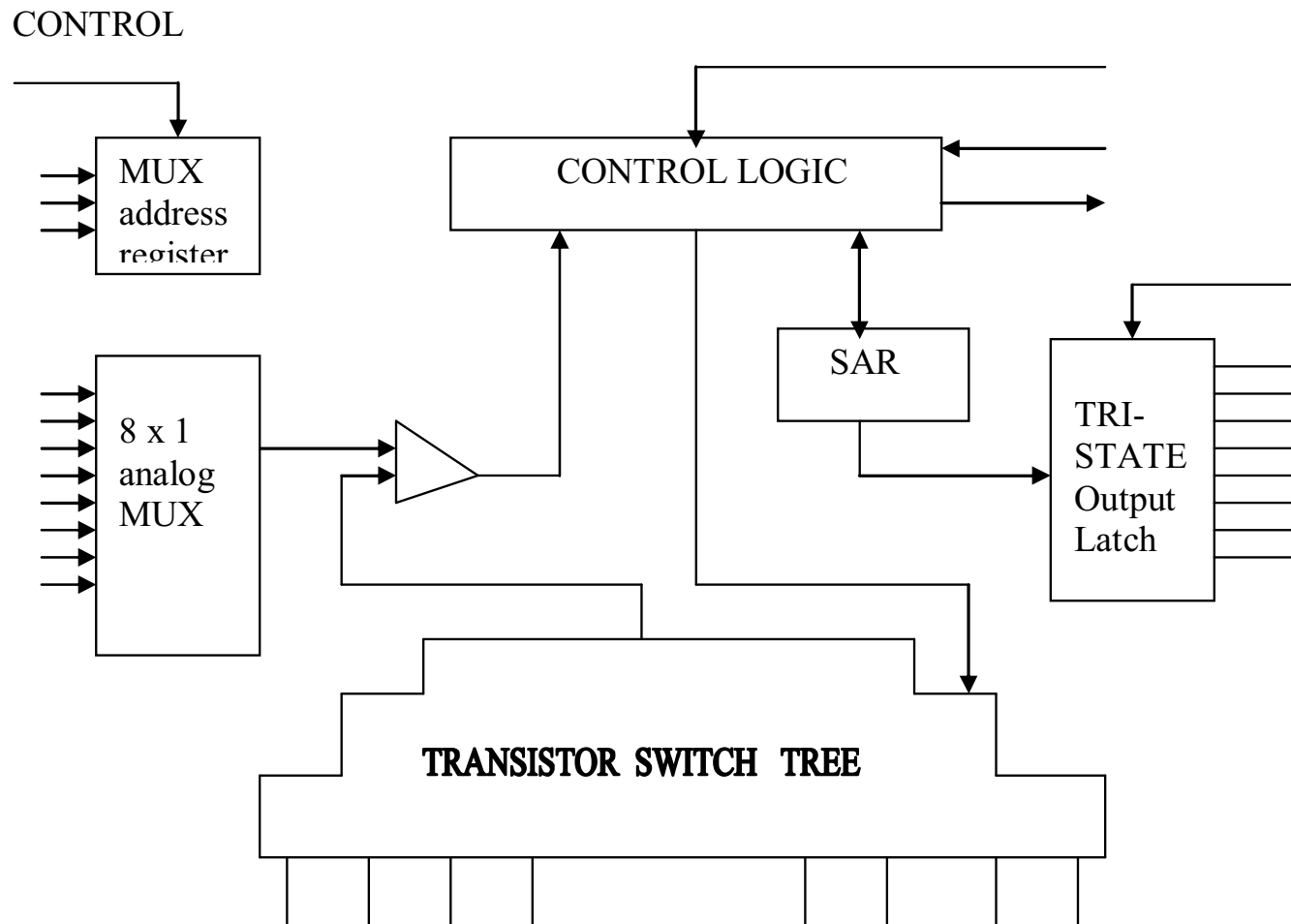
DB-9 PIN CONNECTOR



8051 CONNECTION TO RS-232



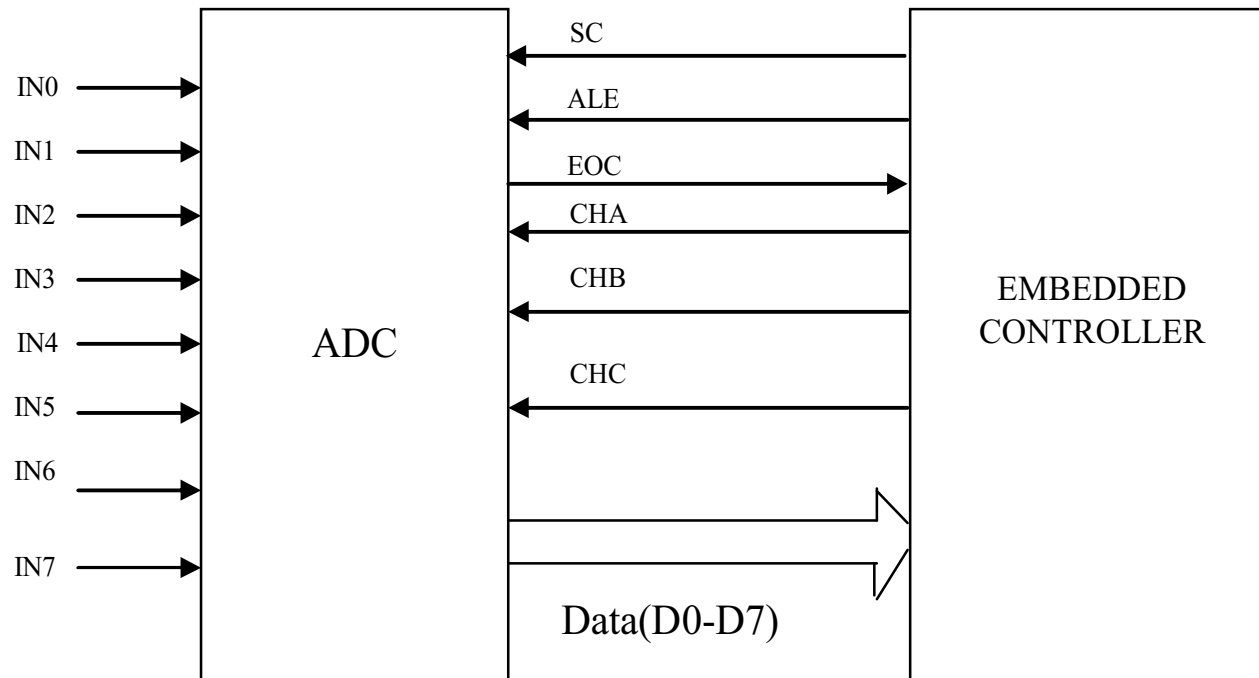
FUNCTIONAL BLOCK DIAGRAM OF ADC



FEATURES OF ADC 0808

- Easy interface to all micro processors
- operates ratio Metrically or with 5V DC or analog span adjusted voltage reference.
- No zero or full scale adjust Required.
- 8 Channel Multiplexer with address logic.
- 0v to 5v Input range with single 5v power supply.
- Outputs meet TTL Voltage Level Specification.

INTERFACING OF 0808 ADC TO MICROCONTROLLER

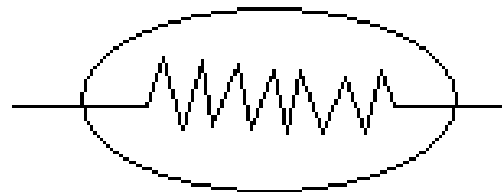




THERMISTOR

- Temperature Sensitive Resistor.
- Negative Temperature Coefficients.
- Manufacture

Schematic Symbol:

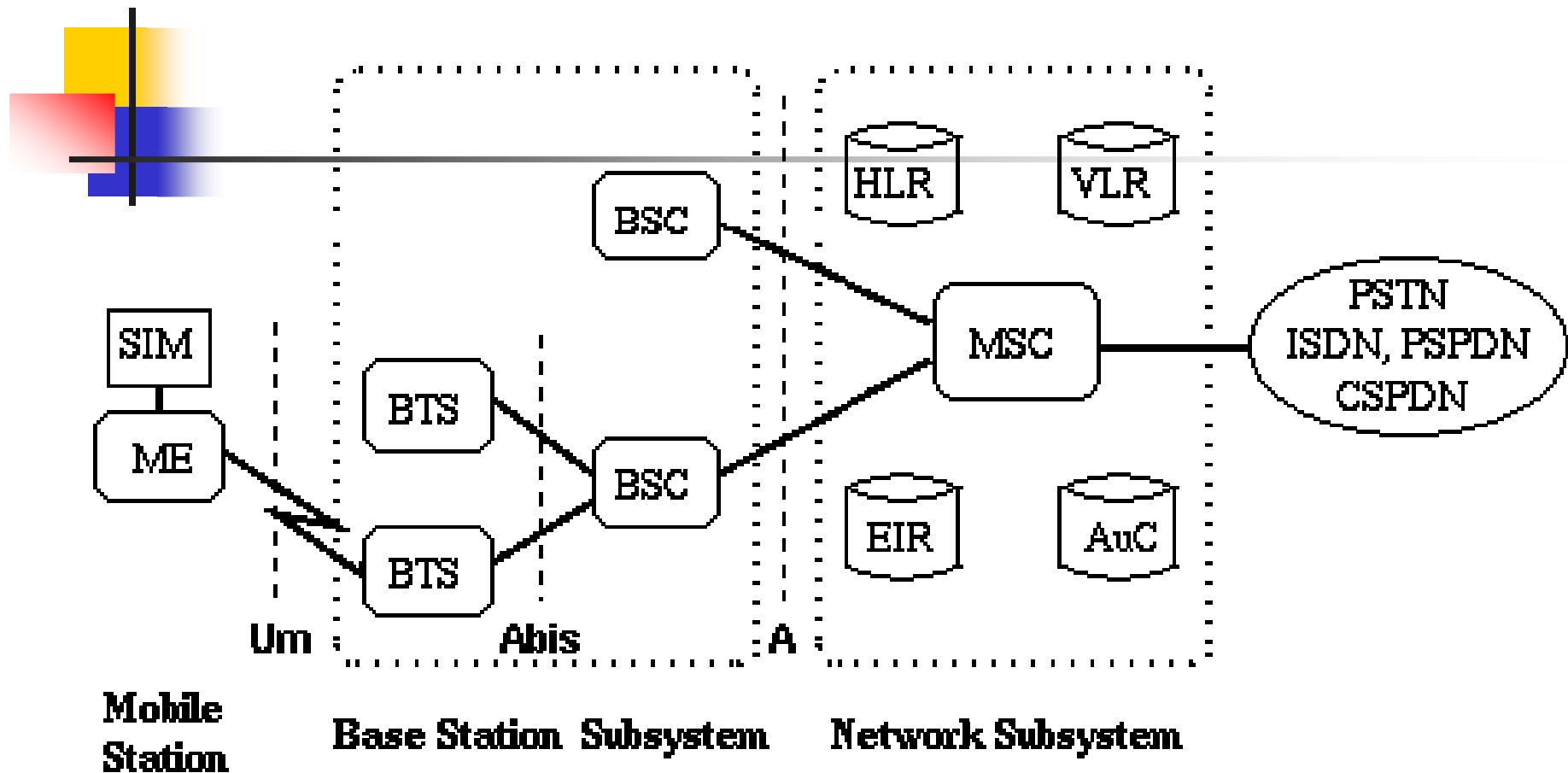


GSM smart modem:



- o A GSM modem can be a PC Card installed in a notebook computer

General architecture of a GSM network:

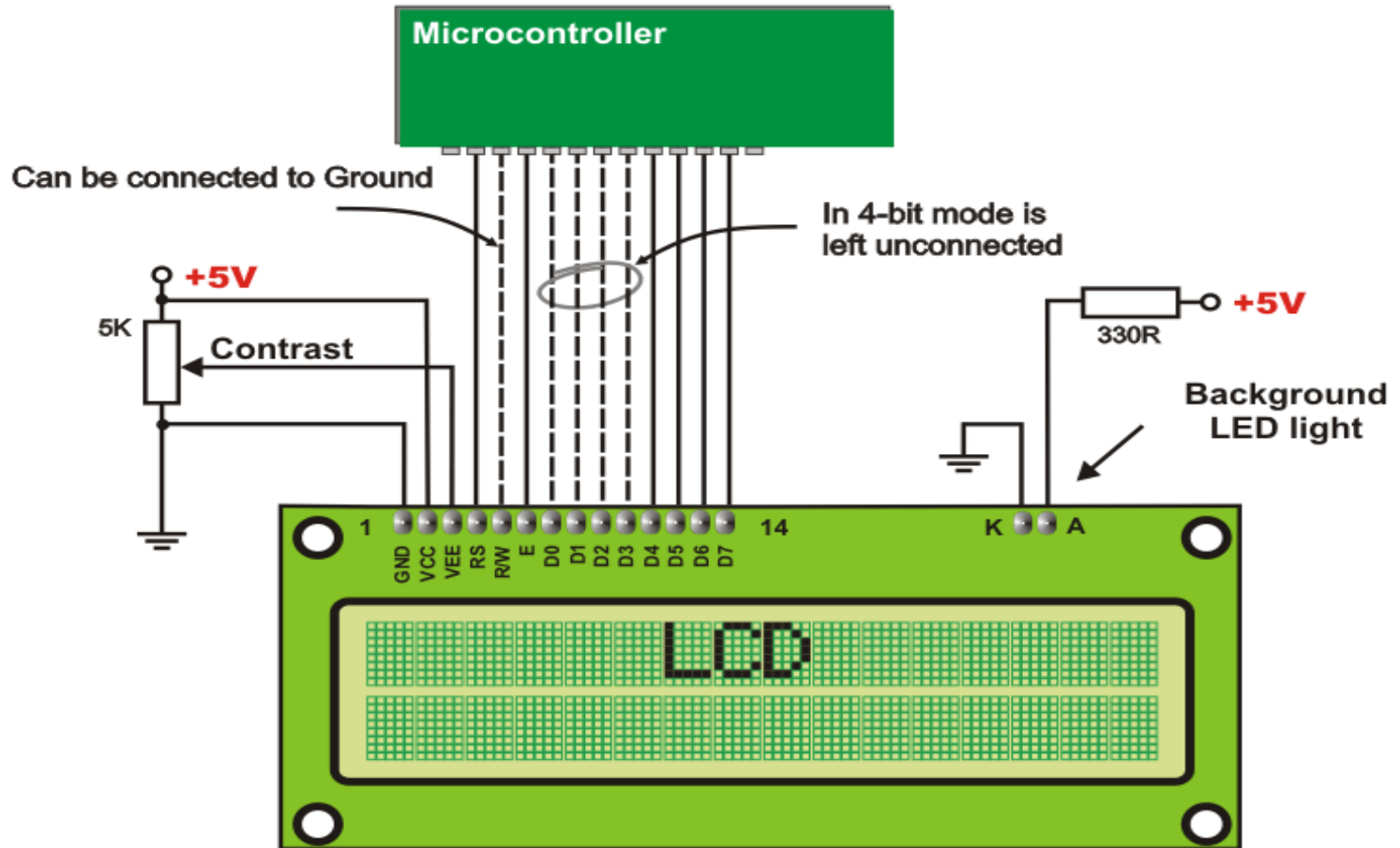
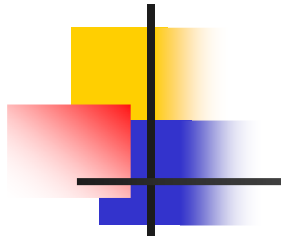


SIM	Subscriber Identity Module	BSC	Base Station Controller	MSC	Mobile services Switching Center
ME	Mobile Equipment	HLR	Home Location Register	EIR	Equipment Identity Register
BTS	Base Transceiver Station	VLR	Visitor Location Register	AuC	Authentication Center

LIQUID CRYSTAL DISPLAY

- combine the properties of both liquids and crystals.
- Most common LCD's connect to the 89C52 are 16x2.
- It consist 3 control lines namely EN,RS and RW.

LCD INTERFACING TO THE MICROCONTROLLER:



Keil software

- Embedded software development
- The μ Vision Simulator allows to debug programs using PC

APPLICATIONS

- medical
- Heat measurement

CONCLUSION

- Enable transmission of Temperature
- Utilizing SMS with low cost
- Medical attentions



Thank you

