

# TLCS-870C

## Microcontroller board

- **Small-scale integration system development**
- **Uses 8 bit Toshiba microcontroller**
- **Utilizes Flash memory**
- **On-board Programming**
- **Customer circuit board can be easily connected**
- **Starter kit is available**
- **Lead-free**



# Development benefit

Shorten development process

Quick volume production

Learning tool

TOSHIBA Development Environment



- Not necessary to design the microcomputer peripheral circuitry
- Not necessary to have hardware debug, customer can focus on your own debug
- Designing circuit and board, efficient software development can be given

# Development benefit

Shorten development process

Quick volume production

Learning tool

TOSHIBA Development Environment



Quick transition to  
volume production

- Built-in process can be done
- Circuit can be built in the product
- Lead-free  
Can be built in Lead-free product
- OTP and Mask product are available

Developed as Flash product



Volume production as OTP and Mask product

# Development benefit

Shorten development process

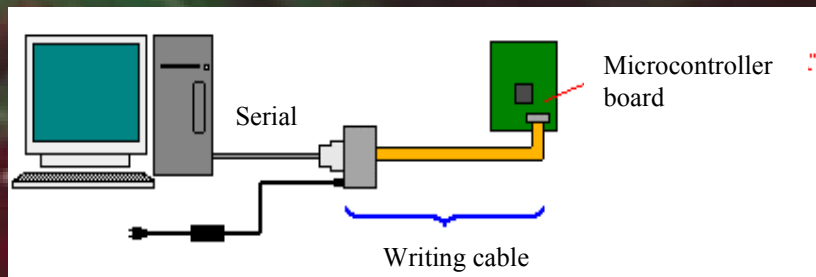
Quick volume production

Learning tool

TOSHIBA Development Environment

## As learning tool

- Sample program provides efficient learning (Free download available in HP)
- **Learning board is on sales**  
Together with TOSHIBA Microcomputer, effective learning environment can be gained.
- Software update can be done  
by onboard writing tool and writing cable



# Development benefit

Shorten development process

Quick volume production

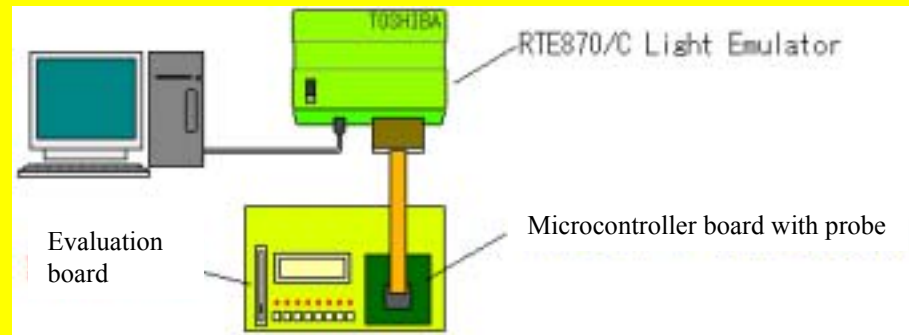
Learning tool

**TOSHIBA Development Environment**



## Development Environment for TLCS-870/C

- C compiler is available with reasonable price
- Low cost Full ICE can be connected



Let's get development environment ready

# Specification of TSE-TCPU-86FS49 (1)

## Specification of microcomputer

### TOSHIBA 8 bit microcomputer 870C TMP86FS49FG

<b>Packager</b>	QFP64 pin
<b>Memory</b>	ROM-60KB (FLASH) RAM-2KB
<b>IO PORT</b>	MAX 56 (AD/Serial terminal common use)
<b>Timer</b>	8 bit timer × 4 16 bit timer × 2
<b>Serial communication</b>	UART × 2 or High speed SIO × 2 I2C bass × 1
<b>AD converter</b>	10 bit AD converter × 16ch
<b>Clock frequency</b>	5V power、16MHz (Minimum instruction run-time=0.25 μs)



# Specification of TSE-TCPU-86FS49 (3)

## Specification of microcontroller board

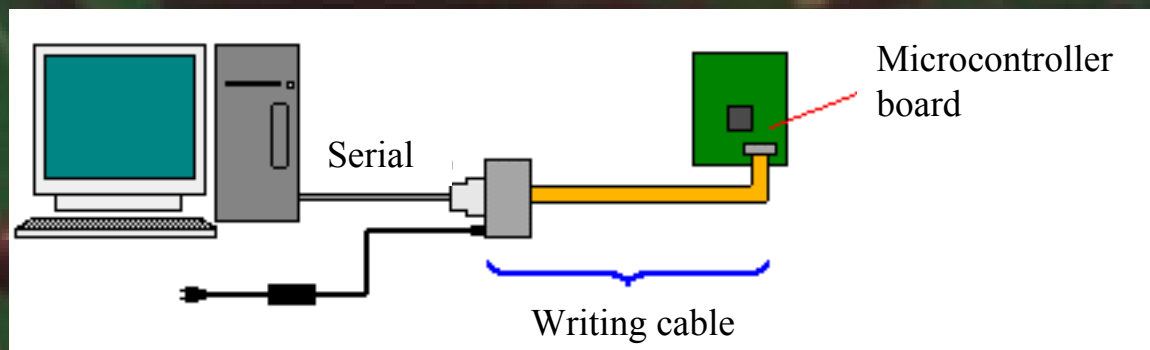
### ③ Specification of communication

- IC (Max. 232) is adopted, and can communicate with UART communication for external serial device

### ④ Onboard writing

- Using special writing cable and Special writing tool, onboard writing can be done.

- **Numbers of writing is guaranteed for 100 times**



# Sample formation

