CUSTOMER NOTIFICATION

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# IE-703079-MC-EM1
# User's Manual
# (Preliminary)

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# CHAPTER 1. OVERVIEW

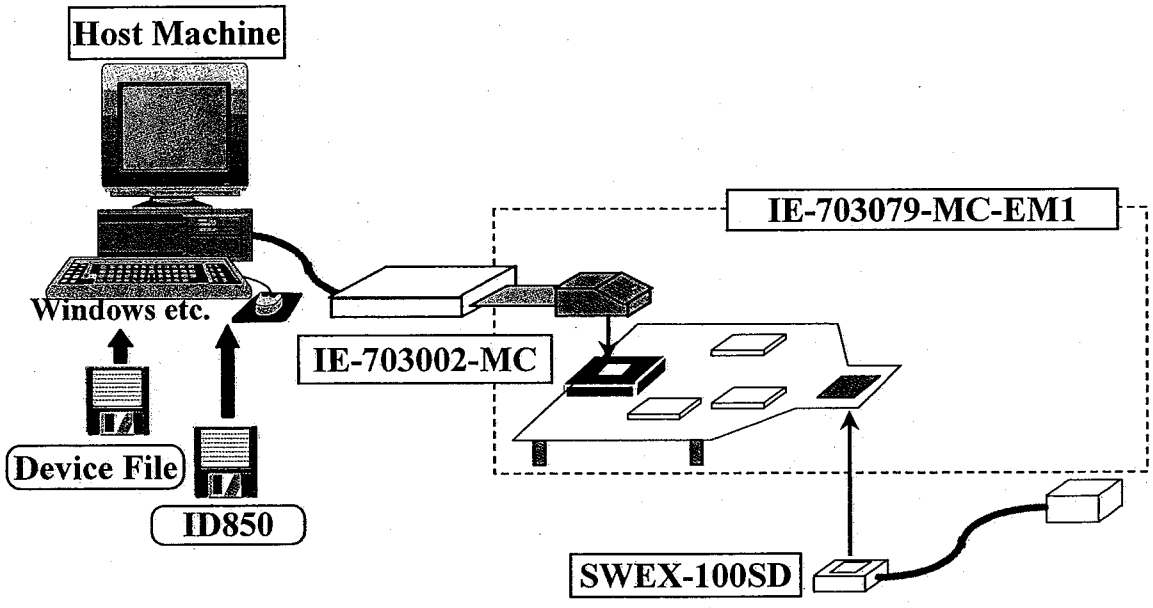
IE-703079-MC-EM1 is a development tool for effectively debugging the hardware or the software using the 32-bit single-chip microcomputer μPD78F3079Y series.

This chapter describes system configuration and basic specifications of the IE-703079-MC-EM1.

## 1.1 System Configuration

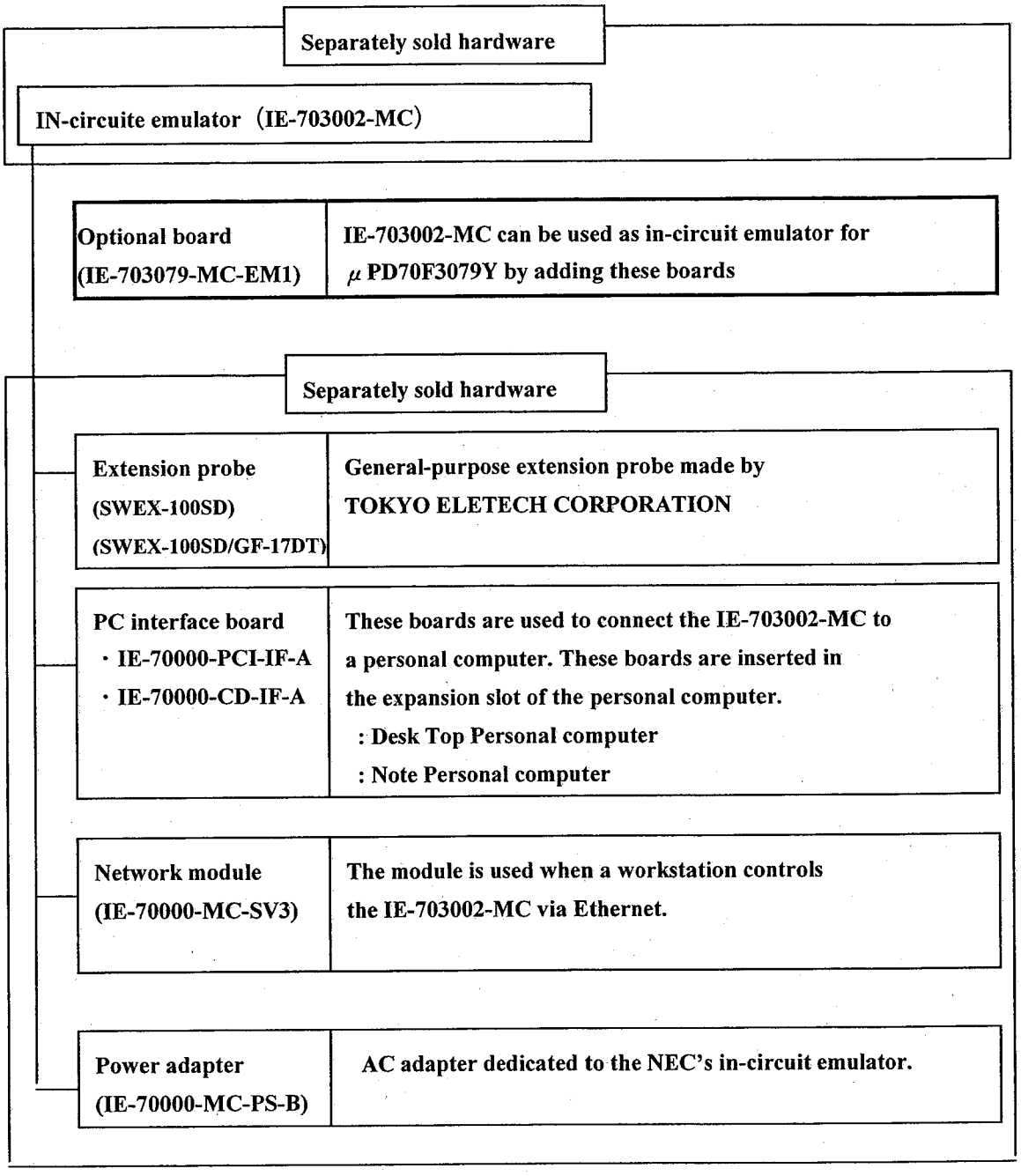
The IE-703079-MC-EM1 system configuration is as shown below.

<<IE-703079-MC-EM1 system configuration>>




注： General-purpose extension probe made by TOKYO ELETECH CORPORATION.
There is the following kind of extension probe.
GC Package : SWEX-100SD
GF Package : SWEX-100SD/GF-N17DT
It is named as the rest SWEX-100SD.

## 1.2 Hardware Configuration



## 1.3 Features(When Connected to IE-703079-MC-EM1)

- ○ Maximum operation frequency : 16MHz at 5V operation
- ○ Extremely lightweight and compact
- ○ Following pins can be masked
  RESET, NMI, WAIT, HLDRQ
- ○ Dimensions of the IE-703079-MC-EM1 are as follows.

| Item | | Specification |
|---|---|---|
| Power dissipation | | 2.5W (at 16-MHz operation frequency) |
| External dimensions | Height | 50mm |
| | Width | 130mm |
| | Length | 252mm |
| Weight | | 300g |

○ Function Specifications (When connected to IE-703002-MC)

| Parameter | | | Specification |
|---|---|---|---|
| Emulation memory capacity | Internal ROM | | 256Kbytes |
| | External memory | In ROM-less mode | 2Mbytes |
| | | When using iROM | 1Mbytes |
| Execution/pass detection Coverage memory capacity | Internal ROM | | 256Kbytes |
| | External memory | In ROM-less mode | 2Mbytes |
| | | When using iROM | 1Mbytes |
| Memory access detection Coverage memory capacity | External memory | | 1Mbytes |
| Divergence point is counted Coverage memory capacity | Internal ROM | | 256Kbytes |
| | External memory | In ROM-less mode | 2Mbytes |
| | | When using iROM | 1Mbytes |
| Trace memory capacity | | | 150 bits X 32K frames |
| Time measurement function | | | Can be measured with time tag and Timers (3 lines) |
| External logic probe | | | 4-bit external trace is possible |
| | | | Event setting for trace/break is possible |
| Break function | | | Event break |
| | | | Step execute break |
| | | | Forced break |
| | | | Combo break |
| | | | Fail safe break<br>・Illegal access to peripheral I/O<br>・Access to guard space<br>・Write to the ROM space |

## 1.4 Connection between IE-703002-MC and IE-703079-MC-EM1)

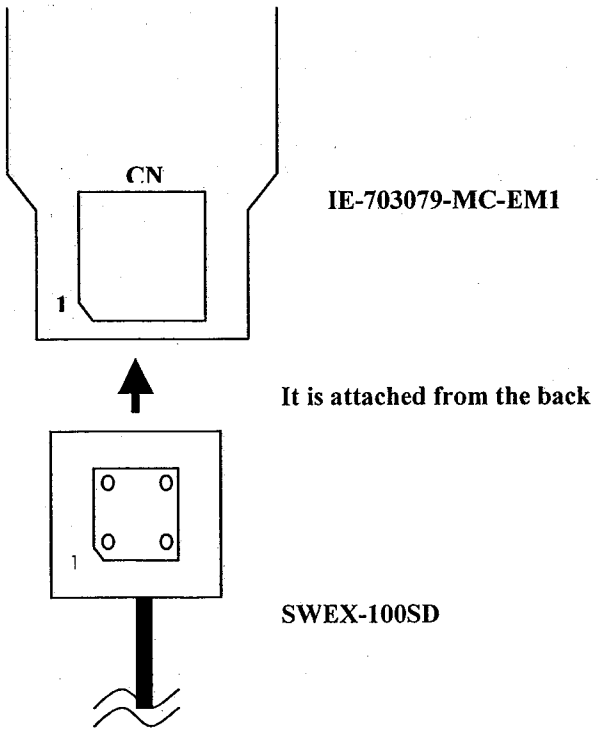
**With the connection process of IE-703002-MC and IE-703079-MC-EM1 and IE-703079-MC-EM1 A connection with extension probe (SWEX-100SD) is shown next.**

**Attention : Be careful that the pin of the attention connector isn't broken and not bent, and connect it.**

① **Remove the covers (upper side and lower side) of the pod of the IE-703002-MC.**
② **Set the IE-703079-MC-EM1 board PGA socket lever to the OPEN position.**
③ **Connect the IE-703079-MC-EM1 to the PGA socket at the back of the pod. When connecting, Position the IE-703002-MC and the IE-703079-MC-EM1 horizontally.**
④ **Set the IE-703079-MC-EM1 board PGA socket lever to the CLOSE position.**
⑤ **Secure the pod covers (upper and lower ) together with the IE-703079-MC-EM1 with the Provided plastic screws.**
⑥ **Secure the end of the pod cover (upper) with nylon rivets.**
⑦ **About the connection with IE-703079-MC-EM1 and extension probe (SWEX-100SD)**
- **Mount a SWEX-100SD cable from the back of the EM1 board.**
- **At that time, put 1 pin of CN2-1PIN and the SWEX-100SD cable together.**

⑧ **Connect an attached spacer (four) with the hole on the four corners of the EM1 board by the attached screw to make it fix IE-703079-MC-EM1.**

**[Connection between IE-703079-MC-EM1and SWEX-100SD]**



**Set jumpers of IE-703002-MC when using the IE-703079-MC-EM1 as shown below.**

<<List of Jumper Switch >>

| Product name | Switch | Setting |
|---|---|---|
| IE-703002-MC | JP1 | OPEN |
| | JP2 | 1-2 SHORT ,<br>3-4 OPEN ,<br>5-6 SHORT ,<br>7-8 OPEN |
| | JP3 | 1-2 SHORT |
| | JP4 | OPEN |
| | SW1 | ON |
| | SW2 | OFF |

# CHAPTER 2. NAME AND FUNCTION OF COMPONENTS

## 2.1 Component Name and Function of IE-703079-MC-EM1

(1) J P 1

**It is the jumper which mounts a crystal resonator for main clock and capacitor.**

**(Refer to 2.2 Clock setting for the details.)**

(2) J P 2

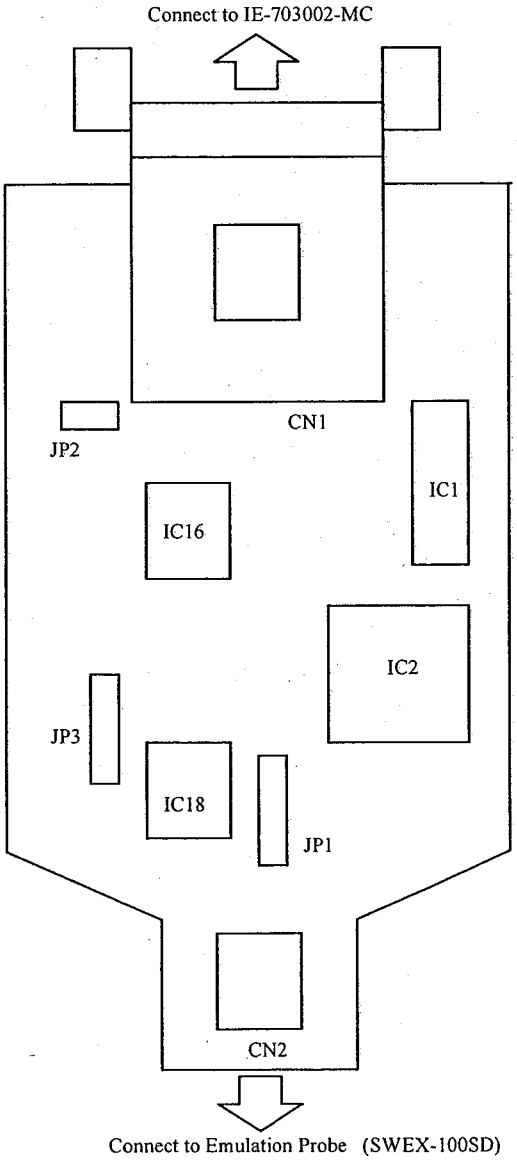
**Switching jumper of main clock supply.**

**(Refer to 2.2 Clock setting for the details.)**

(3) J P 3

**It is the jumper which mounts a crystal resonator for sub clock and capacitor.**

**[Diagram2-1]**

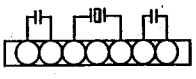


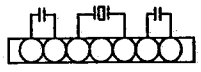
## 2.2 Clock Setting

It explains about the clock setting.

As for the position of JP1～JP3, refer to a figure 2-1

Figure 2-1Clock setting (When it is used only by the in-circuit emulator)

| How to supply main clock | JP1 Setting | JP2 Setting |
|---|---|---|
| Internal clock |  |  |

| How to supply sub clock | JP3 setting |
|---|---|
| Internal clock |  |

# CHAPTER 3. FACTORY SETTING

(1) JP1

1pin - 2pin : Capacitor is mounted (10pF)

6pin - 7pin : Capacitor is mounted (10pF)

3pin - 5pin : Crystal resonator is mounted (16MHz)

4pin : OPEN

(2) JP2

1pin - 2 pin: Short

3 pin : OPEN

(3) JP3

1pin - 2pin : Capacitor is mounted (27pF)

6pin - 7pin : Capacitor is mounted (27pF)

3pin - 5pin : Crystal resonator is mounted (32.768KHz)

4pin : OPEN

# CHAPTER 4. RESTRICTION ITEM

**Be careful of the next item when you use IE-703079-MC-EM1**

① **Please do it in start of software debugger(ID850) as follows when use FCAN function.**

- **Before start of software debugger, please supply a power supply to VDD pin of a target board.**
- **Please do the following setting.**

**(Software debugger in Memory mapping column of configuration panel)**

**Memory Attribute : Target**

**Mapping Address : <FCAN area address>**

**After the input of value, please push Add button.**

**Please do not mask the WAIT and HLDRQ. (no check)**

② **When the IE system is started up without connecting to a target board, initial values of all ports are indefinite.**

③ **POC function can't be used**

③ **When you access FCAN memory, please do not mask WAIT and HLDRQ.**