EFP-S2V Instruction Manual

First edition, Jun 2005

Suisei Electronics System Co., Ltd.

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- This product is a programming device specially designed for Mitsubishi Electric one-chip micro computer, with a built-in flash ROM/EPROM/One time PROM. It may not be used for programming to other device or different usage.

- Service warranty period of this product is 1(one) year after purchase. During this period, product trouble caused by manufacturing-oriented is repaired by us with free of charge. Contact sales dealer or us directly.
  Note products troubles caused by expendable supplies (like socket and switch) are chargeable.
  Trouble of MCU device written by this product, or trouble caused by disordered MCU device, is out of the warranty service.

- This product is made for the use as a development tool. In case for mass production use, check reliability at yourself with concerning ambient environment.

- This product does not fall under the application of Electrical Appliance and Material Safety Law and protection against electromagnetic interference when used in Japan.
  Also, this product is not obtained the UL safety standard and IEC standard.

- The contents of the EFP-S2V instruction manual are subject to change without notification for the purpose of future performance enhancement, etc.

- For inquiries of this instruction booklet and software contents, contact us at following address by E-MAIL or FAX. For FAX inquiries, use “Technical Support Form” in EFP-S2V Product CD-ROM.

Contact address:

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Introduction

Thank you for selecting the EFP-S2V. Check the attached package contents check list to make sure nothing is missing. If you find anything to be not in order, contact a sales dealer or us immediately.

Within the instruction manual:
1) the EFP-S2V itself is referred to as “EFP-S2V.”
2) EFP-S2V control software is referred to as “WinEFP2.”
3) the parallel unit and serial unit are collectively referred to as “MCU unit.”

Warnings and important advice are given in “1. Safety” on page 5 so that you may use the product as intended in order to prevent property damage or injury to you or others. You should read through and get a good understanding of the contents of this section before attempting to use the product. Warnings and important advice are as follows:

WARNING	If the requirements shown in the "WARNING" sentences are ignored, the equipment may cause serious personal injury or death through improper handling.
CAUTIONS	If the requirements shown in the "CAUTION" sentences are ignored, the equipment may cause injury or property damage through improper handling.
IMPORTANT	It means important information on using this product.

1. Safety

WARNING

● **Warnings for Installation:**

Do not set this product in water or areas of high humidity. Make sure that the product does not get wet. Spilling water or some other liquid into the product may cause unrepairable damage.

● **Warning for Use Environment:**

This equipment is to be used in an environment with a maximum ambient temperature of 40℃. Care should be taken that this temperature is not exceeded.

CAUTIONS

- Do not disassemble or modify the product. Doing so could result in equipment failure.
- Handle with care. Do not expose to strong impact such as dropping or knocking over.
- Do not directly touch the metal terminals of each connectors with your hands.
- The product should be never used in the standing position.
- If you don't plan to use the hardware for an extended period of time, place in a vinyl bag, etc., to control humidity, and store in a place not exposed to direct sunlight where the temperature is 0 – 37℃.

● **Caution for the MCU Unit Mounting:**

The MCU unit mounting method is shown in Fig. 1.1.

Mount the MCU unit while being careful not to touch the IC socket on MCU unit and the projection things. (Make sure orientation is correct.)

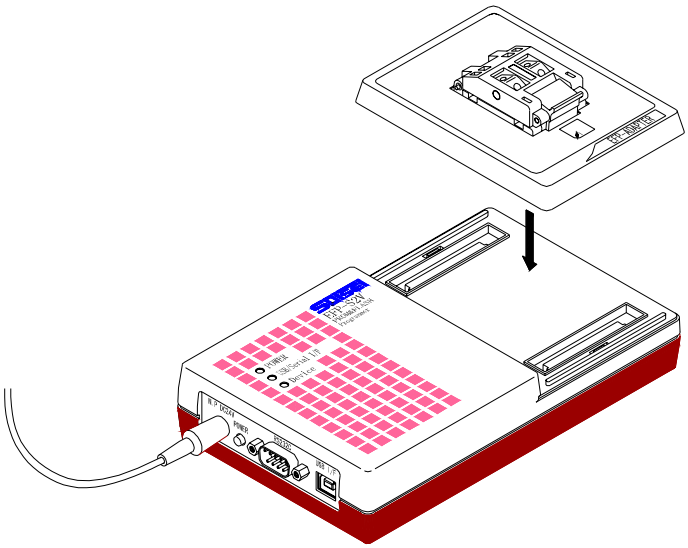


Fig. 1.1: MCU Unit Mounting Method

CAUTIONS

● **Caution for the MCU unit removal:**

The MCU unit removal method is shown in Fig. 1.2.

① Push down the MCU unit removal lever in the direction indicated by the arrow.

② Make sure the MCU unit is completely disconnected from the EFP-S2V and then remove.

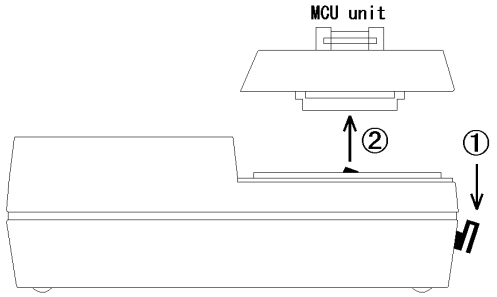


Fig. 1.2: MCU Unit Removal Method

● **Caution for EFP-S2V power supply injection procedure:**

When on-board programming to EFP-S2V with a serial unit of EF1SRP-01US2, etc., turn on the EFP-S2V first and then turn on the target board.

If power supply is done in a reverse procedure, EFP-S2V and target interface circuit of serial unit may be damaged (because target board's power may circulate to EFP-S2V and turn on it automatically).

● **Caution during Device LED lamps lighting:**

When a Device LED lamps (red) lighting, the power is supplied to the MCU unit. Do not make following actions during Device LED (red) lighting.

① Mounting and removal of MCU unit

② Opening and closing of IC socket

③ Replacement of MCU

IMPORTANT

● **Errors at start-up according to LEDs**

LEDs are illuminated as follows when an error is detected when the EFP-S2V starts up.

If the error is not disposed of when restarted EFP-S2V, contact sales dealer or us directly.

① System Check Error

USB/SERIAL I/F(yellow) and DEVICE(green) LED lamps flicker alternately off and on.

② F/W Program Writing Error

DEVICE(green) LED lamps flicker .

③ MCU Unit Error

USB/SERIAL I/F(yellow) and DEVICE(red) LED lamps flicker alternately off and on.

※ This error occurs when turning on EFP-S2V without connecting MCU unit. In this case, connect MCU unit to EFP-S2V, and then restart.

IMPORTANT

● **Power supply from USB I/F:**

EFP-S2V can operate with power supply from USB I/F of a personal computer.
In that case (power supply from USB I/F), EFP-S2V's maximum output voltage is 5V.
In case of using a model that needs 12V power supply for programming or a model that needs more than 5.1V for MCU working, use AC adaptor in the package.

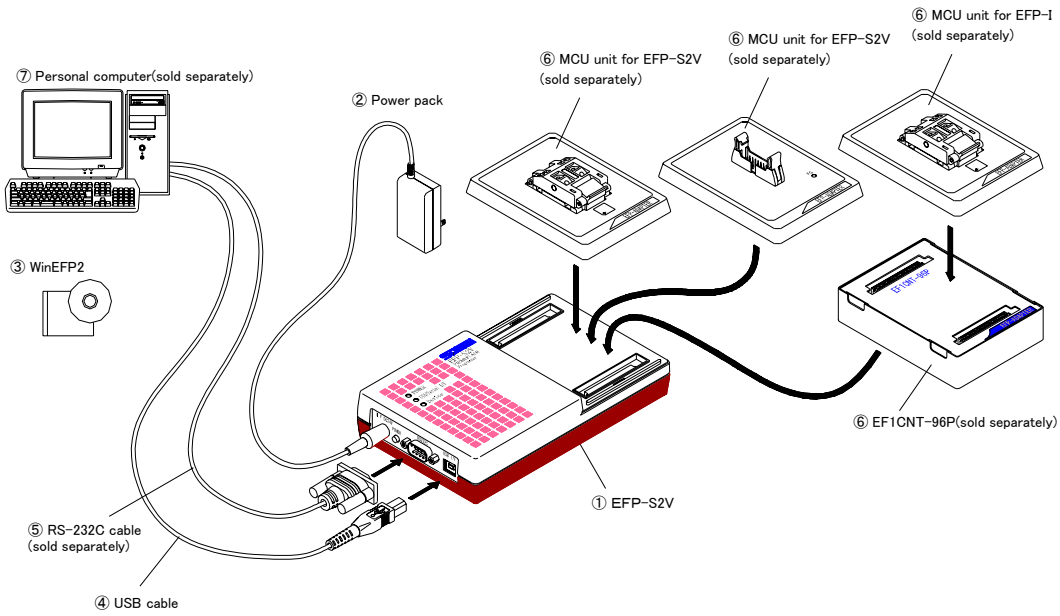
[Models of USB I/F power supply impossible]
4500, 720series
38000series NOR type with built-in FLASH ROM
M38039FFFP, M38869AHP etc.
7700series

※ Impossible models may be added due to future model enhancement.
※ Refer to the data book of each MCU about necessary power supply voltage in programming action.

2. System Configuration

2.1 System Configuration

The following equipment is required to use the EFP-S2V. System configuration of the EFP-S2V is shown in Fig.2.1.

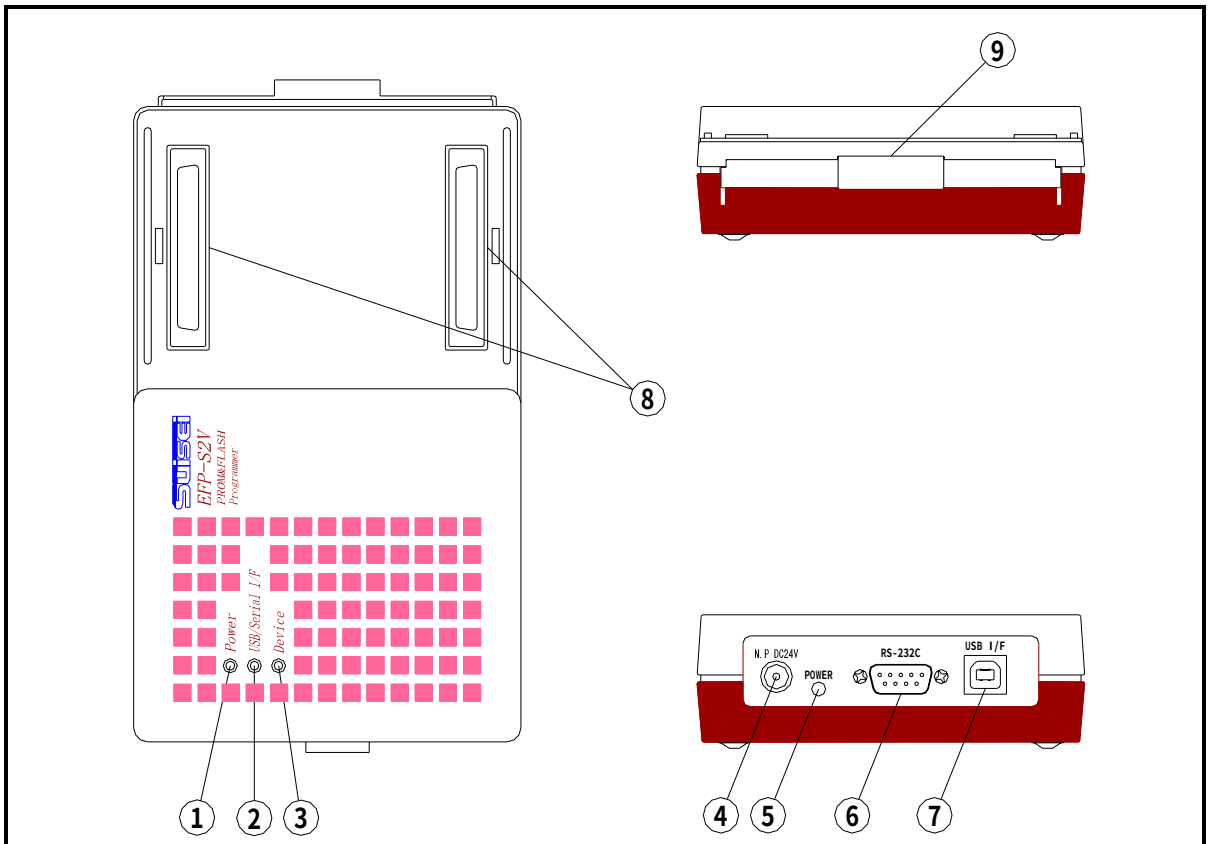


① EFP-S2V	EFP-S2V itself
② Power pack	Output: 17.5V, Current capacity: Min. 300mA
③ WinEFP2	Windows98SE/Me/2000/XP correspondence application
④ USB cable	USB specification 1.1 cable
⑤ RS-232C cable	D-sub 9-pin, Cross cable
⑥ MCU unit	When parallel unit, serial unit and unit conversion adapter for EFP-S2V are connected, EFP-I's MCU unit can be used also.
⑦ Personal computer	PC/AT-compatible personal computers, Windows98/2000/XP installed
②～④ are included with the ①EFP-S2V. The other equipment must be obtained separately.	

Fig. 2.1: System Configuration

2.2 EFP-S2V Panel Parts

Layout of the EFP-S2V's panel is shown in Fig. 2.2.



Symbol	Name	Description
①	POWER LED (Green)	Light to indicate when the EFP-S2V's power is on.
②	USB/SERIAL I/F LED (Yellow)	Lights when communicating with PC.
③	DEVICE LED (Red/green)	Lights red while device command is being executed. Lights green when abnormality of system error occurs to EFP-S2V.
④	Power connector	Provides DC17.5V - 24V from outside.
⑤	Power switch	Turns the EFP-S2V's power on/off.
⑥	Serial interface connector	Used when carrying out serial communication with PC.
⑦	USB interface connector	Used when carrying out USB communication with PC.
⑧	MCU unit connector	Connector for connecting the MCU unit.
⑨	MCU unit removal lever	Push down when removing the MCU unit.

Fig. 2.2: EFP-S2V Panel Layout

3. Set-Up Method

3.1 EFP-S2V Set-Up

Set-Up Method of the EFP-S2V is as follows:

① EFP-S2V can operate with AC 100V power input from AC adaptor, or with 5V power input from USB I/F of personal computer. In case that less than 5V power output from EFP-S2V is required for MCU programming, you can use power supply from USB I/F. If more than 5.1V power output is required, use AC adaptor.

※ Refer to the data book of each MCU about necessary power input voltage in programming action.

② Connect RS-232C cable or USB cable to [RS-232C] or [USB I/F] connector of EFP-S2V. Then connect the other side to the each connector of a personal computer.

③ Mount the MCU unit to the EFP-S2V. Make sure orientation is correct.

※ Attention: Refer to the “MCU Unit Mounting” method.

④ Turn EFP-S2V’s power on, and then LED operates as following.

EFP-S2V Start-Up

LED lamps of “POWER “(green), “USB/SERIAL I/F” (yellow) and “DEVICE “(red) are lighting. After system check (approx. 2 second), USB/SERIAL I/F and DEVICE lamps go off and the EFP-S2V is then waiting for a command.

3.2 WinEFP2 Start-Up

After confirmation in EFP-S2V being command wait state, start up WinEFP2.EXE.

About an operation of WinEFP2, refer to “WinEFP2 Instruction Manual”.

4. Specifications

4.1 General Specifications

General specifications of the EFP-S2V are given in Table 4.1.

Table 4.1: General Specifications

Programming system	Mitsubishi Electric MCU parallel and serial I/O mode	
Programming targets	Mitsubishi Electric MCU with flash memory and MCU with internal One-time PROM.	
Memories	RAM	2Mbytes for user program buffer
	ROM	256 Kbytes flash memory for storing firmware program
Interface	USB 1.1	Maximum transfer speed 12Mbps
	RS-232C	Speed setting to 9,600 - 115,200bps is possible
Control method	Control from WinEFP2	
Display	Facility displays an execution state of the EFP-S2V in LED	
Power input	USB 1.1	5V DC It can supply maximum 500mA from a PC.
	DC	17.5 – 24V DC (min. 300mA)
Outer dimensions	110 (W) x 180 (D) x 36 (H) mm (Projecting parts not included.)	
Weight	Approx. 600 g	
Ambient environment	Operating temperature: 0 - 40°C Operating humidity: Max. 80% (Must be no condensation.)	

4.2 RS-232C Cable Specifications (Optional)

RS-232C Cable Connection Diagram is shown in Fig. 4.1.

Cables on the market can be used if connection settings are same.

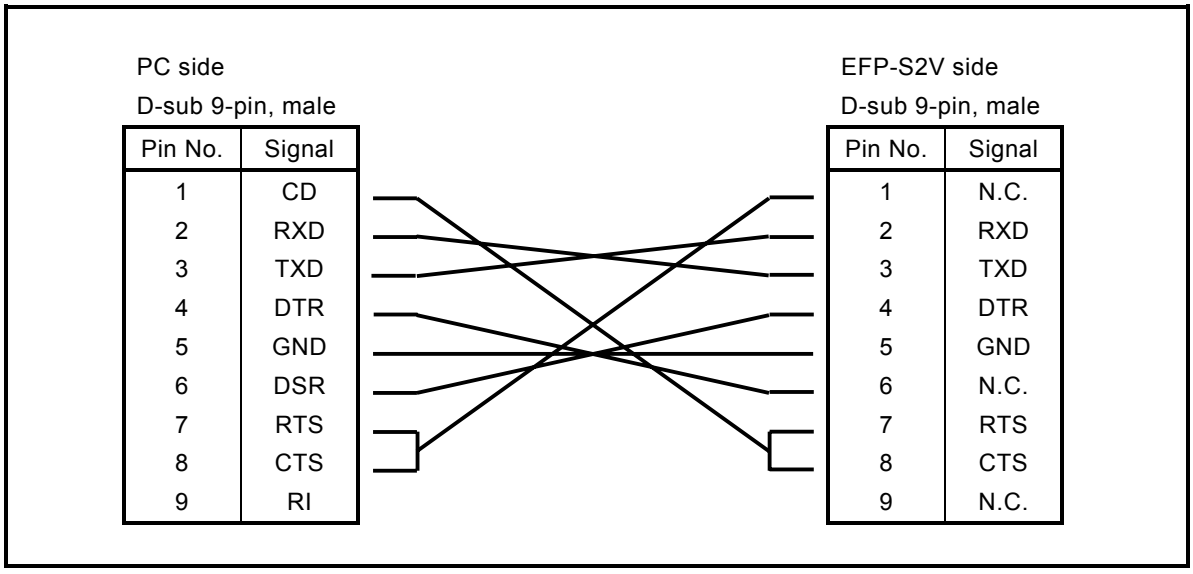


Fig. 4.1: RS-232C Cable Connection Diagram

4.3 Outer Dimensions

Outer dimensions of the EFP-S2V are given in Fig. 4.2.

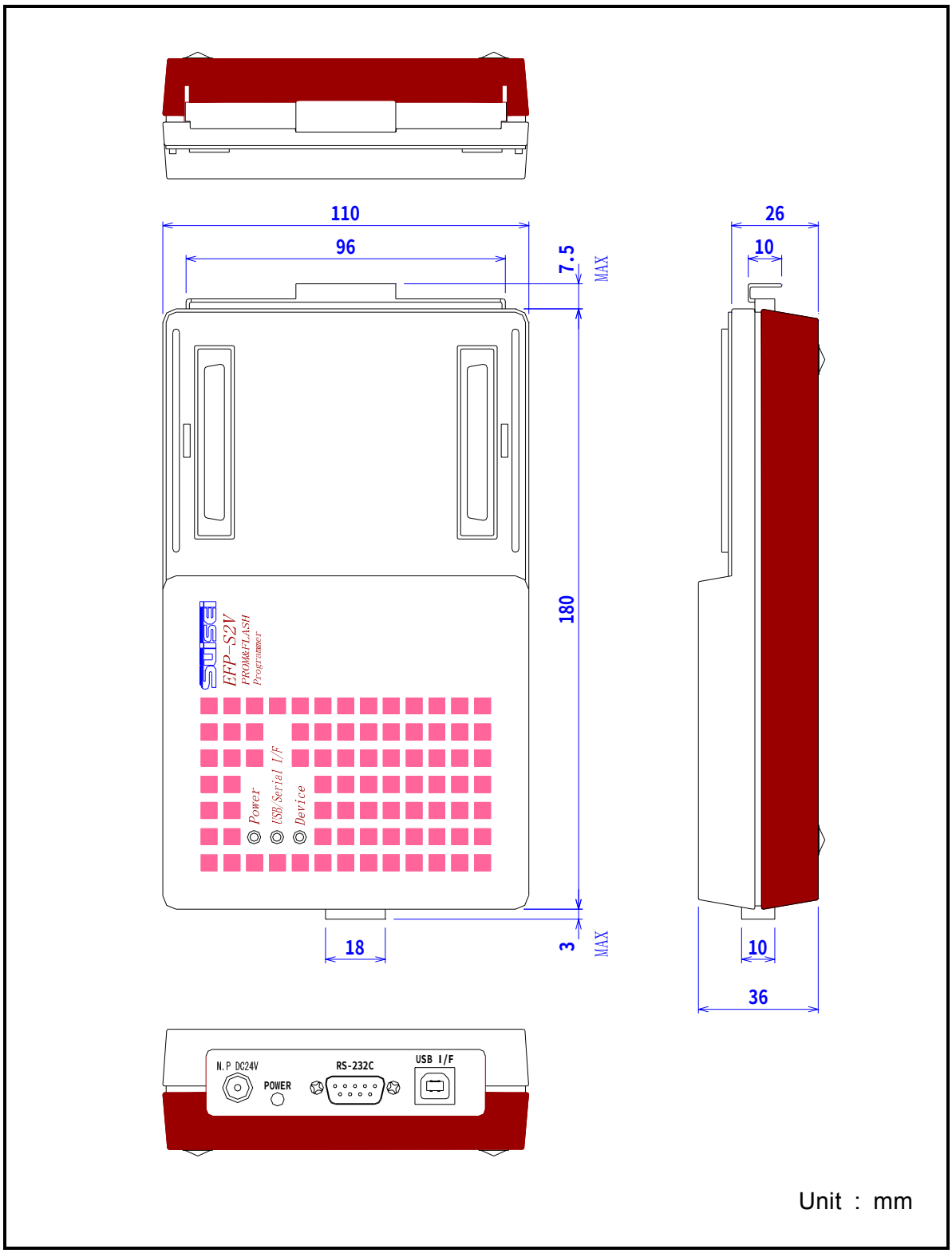


Fig. 4.2: Outer Dimensions