

EF1SRP-01US2 User's Guide

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1. General Description

EF1SRP-01US2 serial writing unit is specially designed for EFP-S2/S2V/S2V and is mounted on EFP-S2/S2V/S2V. EF1SRP-01US2 can write and read to Renesas Electronics Flash memory built-in MCU by serial I/O mode.

The appearance of the EF1SRP-01US2 is shown in Fig. 1.1.

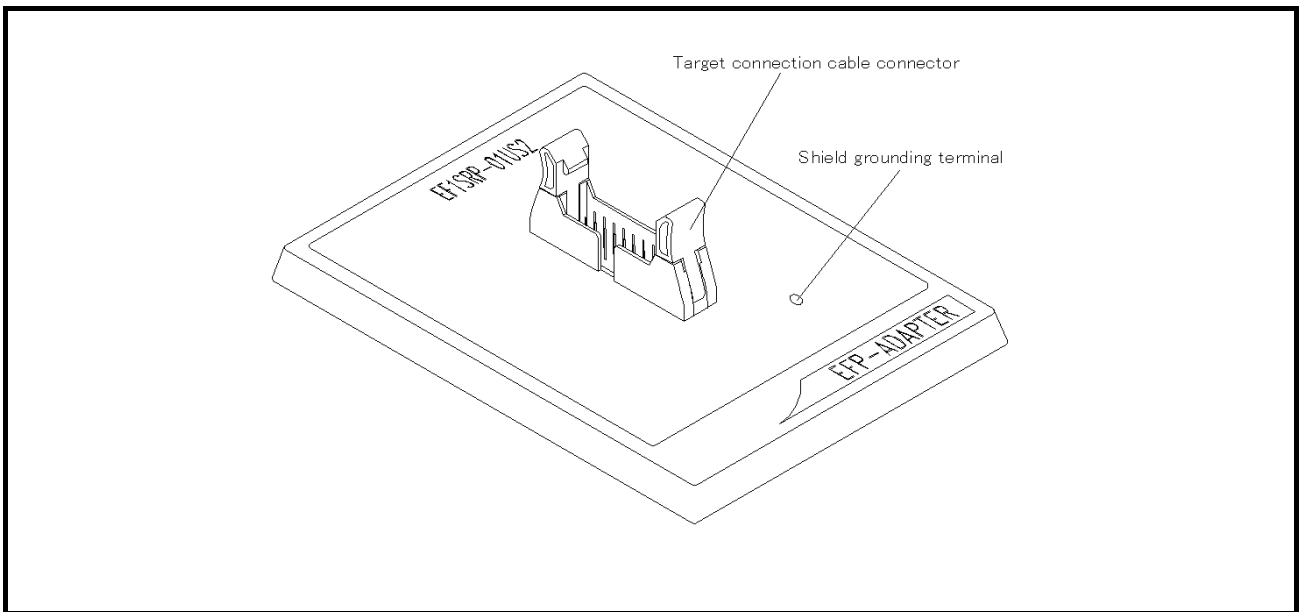


Fig.1.1: Appearance of EF1SRP-01US2

2. Setup

EF1SRP-01US2 unit is mounted as shown in Fig. 2.1.

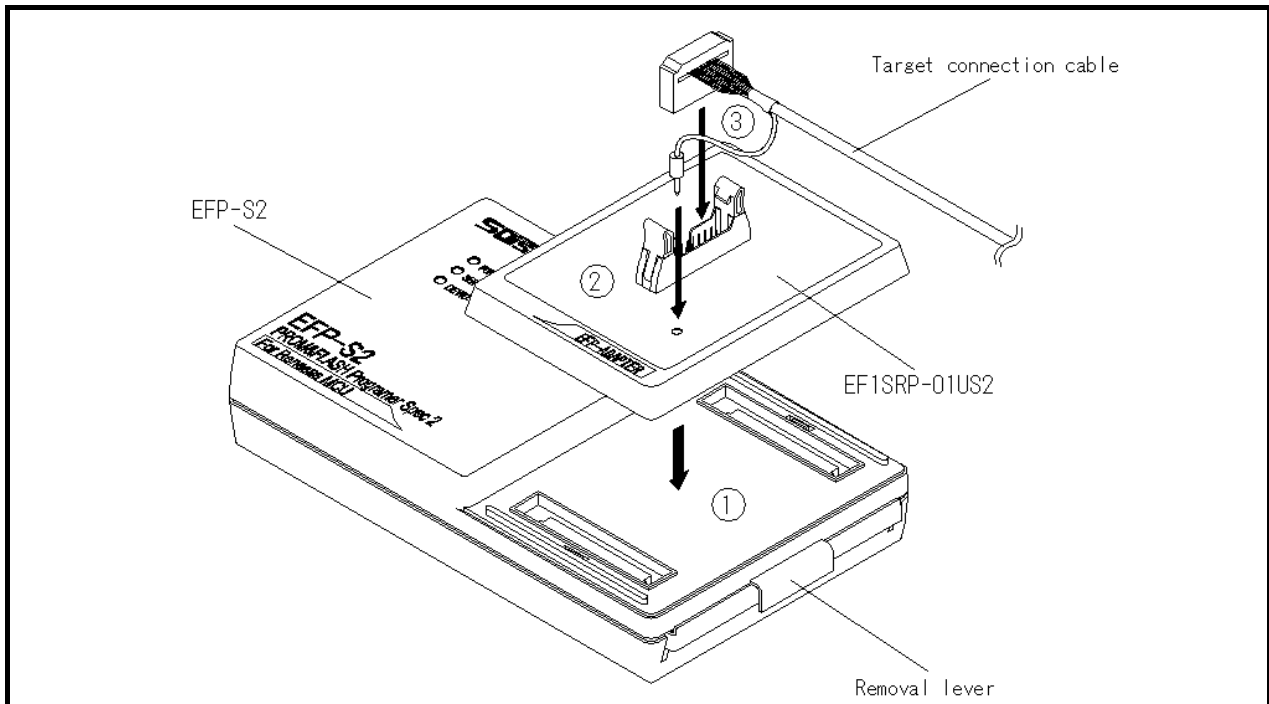


Fig. 2.1: EF1SRP-01US2 Unit Mounting

2.1 Connecting User target board

User target board is connected by following procedure.

Connect the target connection cable after connecting the signal GND of ⑤ in order to get rid of a potential difference of a user target base and a writer.

- ① Mount the EF1SRP-01US2 on the EFP-S2/S2V. (Make sure orientation is correct.)
- ② Insert the ground wire of the target connection cable in the terminal of EF1SRP-01US2.
- ③ Insert the target connection cable in the connector.
- ④ Turn on the EFP-S2/S2V's power.
- ⑤ Insert the ground wire (Green caterpillar clip) in the signal GND of the target board.
- ⑥ Connect the target side of the target connection cable.
- ⑦ Turn on the target board's power. (Pay attention to status of peripheral circuits.)
- ⑧ Execute write processing or read processing by PC operation.

2.2 Disconnecting User target board

User target board is disconnected by following procedure:

- ① Turn off the target board's power.
- ② Disconnect the target connection cable of the target board's side.

2.3 Notes

Notes about target connection are as follows:

1: The target connection cable is live when the EFP-S2/S2V's device LED (red) is lit. Do not plug or unplug the target connection cable when the LED is lit.

2: Depending on the type of MCU, power (T_VDD) is supplied from the EFP-S2/S2V or from the user target board.

If power is supplied from the user target board, about 400uA of current is consumed by the output buffer circuit and voltage measurement section in the serial unit. When designing the power source, it should be considered that serial unit current and MCU current demand when writing and clearing data.

3: Turn on the target board's power after turning on EFP-S2/S2V's power.

In case of turning on target board's power while EFP-S2/S2V is turned off, target board's power may circulate to EFP-S2/S2V and turn on EFP-S2/S2V automatically. It may cause of the damage for EFP-S2/S2V and/or target interface circuit of EF1SRP-01US2.

4: Connect the ground wire (Green caterpillar clip) of the target connection cable to the signal GND of the target board. However, the connection is not necessary when the signal GND of PC is connected to the signal GND of target board in advance.

3. Target Interface Circuit

The signal I/O circuit connected to the target board from EF1SRP-01US2 is as follows.

① Power source for writing (T_VPP)

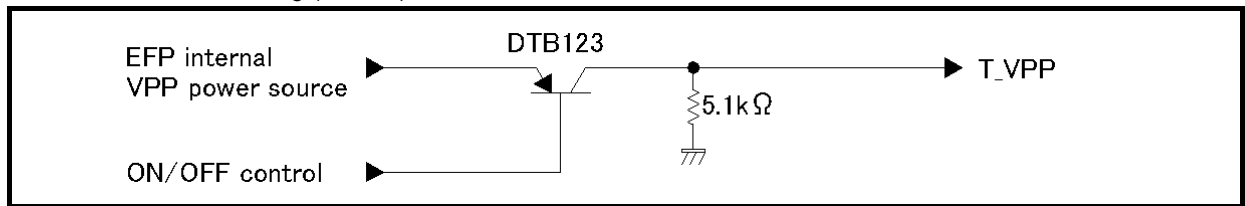


Fig. 3.1: T_VPP I/O Circuit

② MCU power source (T_VDD)

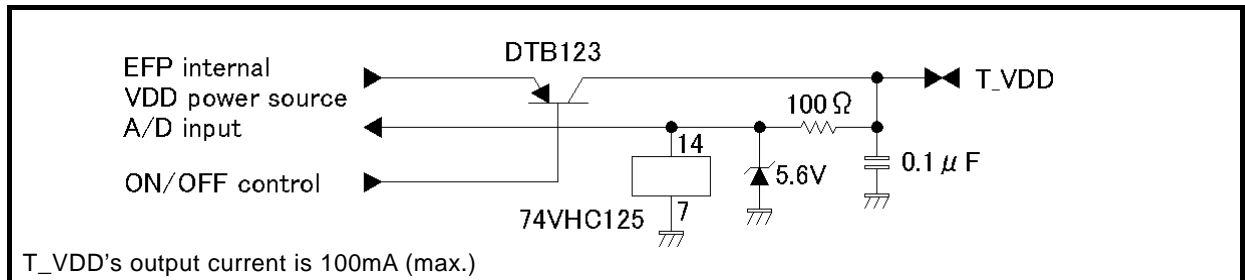


Fig. 3.2: T_VDD I/O Circuit

③ Output control signals (T_TXD, T_SCLK, T_PGM/OE/MD)

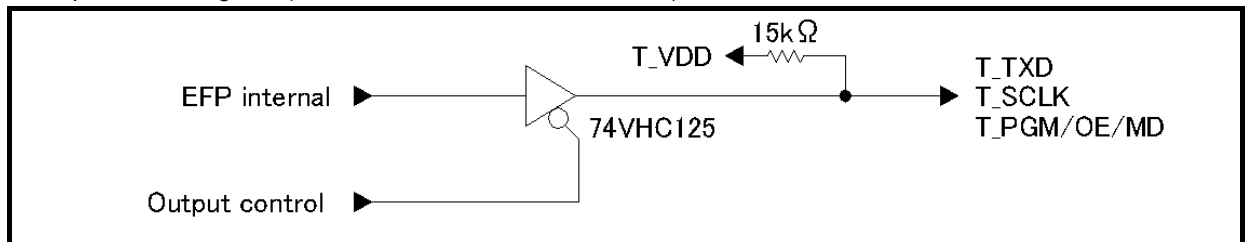


Fig. 3.3: Output control signals I/O Circuit

④ Input signals (T_RXD, T_BUSY)

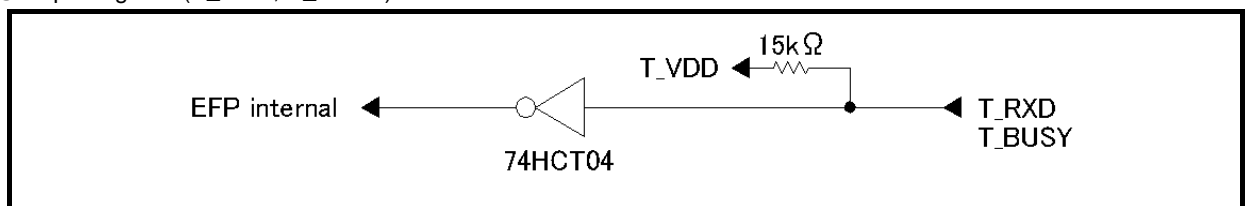


Fig. 3.4: Input signals I/O Circuit

⑤ Reset signal (T_RESET)

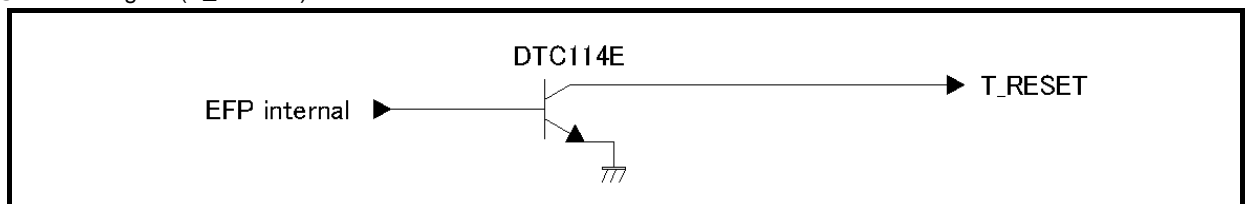


Fig. 3.5: T_RESET I/O Circuit

4. Target Connection Cable Specifications

The standard target connection cable that comes with the equipment is a frayed end type. In addition, a 3-wire type cable (8-pin, Connector processing product) and 4-wire type cable (10-pin, Connector processing product) are optionally available. These cable is similar to EFP-I.

4.1 Target Connection Cable Specifications

Fig. 4.1 shows the pin layout of the EF1SRP-01US2 side target connection cable connector.

Table 4.1 lists the target connection connector pins.

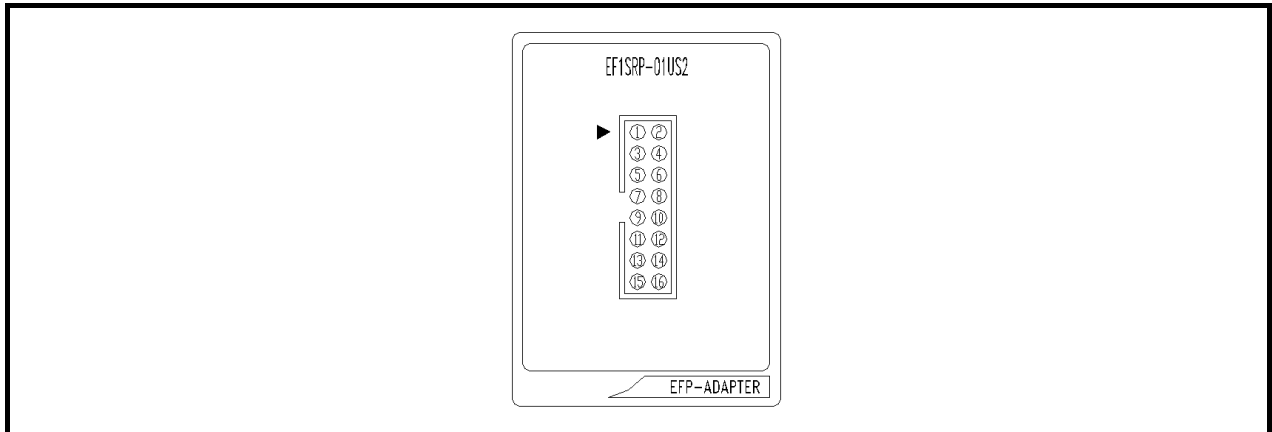


Fig. 4.1: Target Connection Connector Pin Layout

Table 4.1: Target Connection Connector Pins

Target Connection Connector Pin No.	Signal	Wire Color ※4	MCU Connection Method			
			3-Wire ※1	Pin No.	4-Wire ※1	Pin No.
①	GND	Orange/red dotted 1	GND ※3	—	GND ※3	①
②	GND	Orange/black dotted 1				
③	T_VPP ※2	Gray/red dotted 1	VPP	②	See the MCU data book	④
④	T_VDD ※2	Gray/black dotted 1	MCU VCC	③	MCU VCC	⑤
⑤	N.C.	—	—	—	—	—
⑥	N.C.	—	—	—	—	—
⑦	N.C.	White/red dotted 1	—	—	—	—
⑧	T_PGM/OE/MD	White/black dotted 1	PGM or OE	⑥	CNVSS	⑧
⑨	T_SCLK	Yellow /red dotted 1	SCLK	④	SCLK	⑥
⑩	T_TXD	Yellow/black dotted 1	SDA	⑤	RXD	⑦
⑪	T_RXD	Pink/red dotted 1			TXD	②
⑫	T_BUSY	Pink/black dotted 1	BUSY	①	BUSY	③
⑬	N.C.	Orange/red dotted 2	—	—	—	—
⑭	T_RESET	Orange/black dotted 2	RESET	⑦	RESET	⑨
⑮	GND	Gray/red dotted 2	—	⑧	GND ※3	⑩
⑯	GND	Gray/black dotted 2				

※1: “3-wire” and “4-wire” indicates the type of serial writing.

※2: T_VPP and T_VDD connection differs according to MCU type. For details, see the supplement or MCU data book.

※3: The signal GND has 4 pins. When connecting to the target board, you can connect with using only one pin, but connecting more than 2 pins is recommended.

※4: Fig. 4.2 shows an identification method of the Color Code.

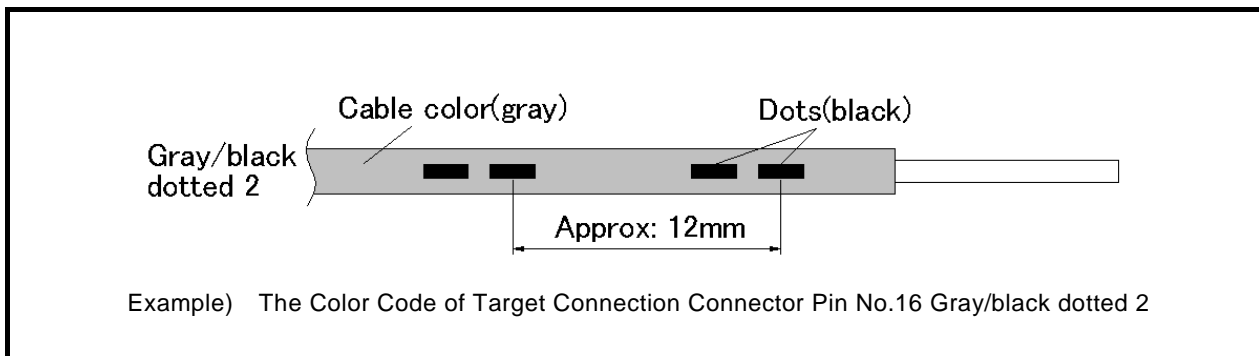


Fig. 4.2: Identification Method of the Color Code

4.2 Target Connection Cable Appearance

The appearance of the target cable is as follows.

① Frayed end cable (Standard)

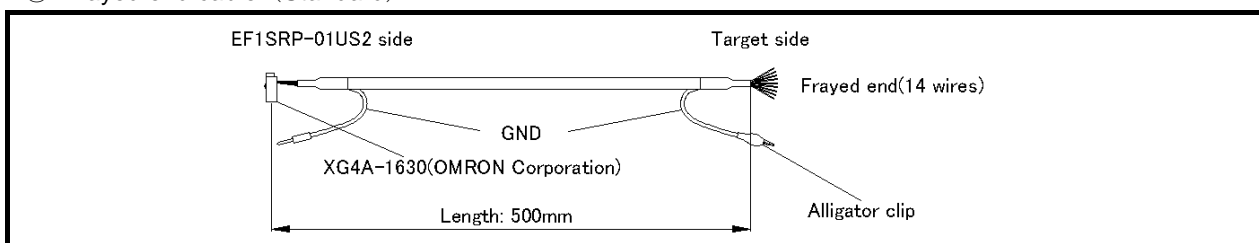


Fig. 4.3: Appearance of Frayed end cable

② 3-wire cable (optional)

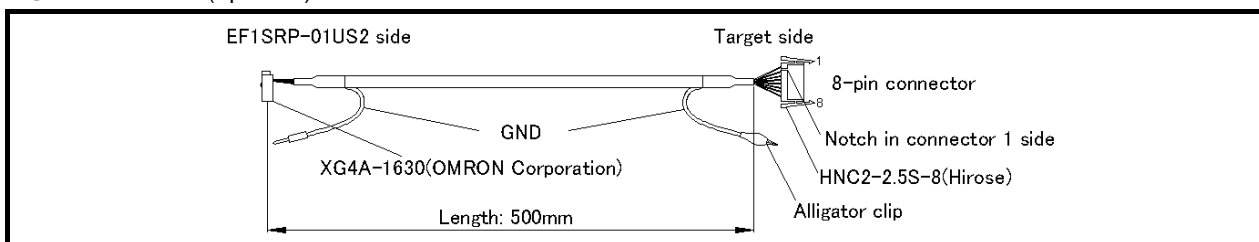


Fig. 4.4: Appearance of 3-wire cable

③ 4-wire cable (optional)

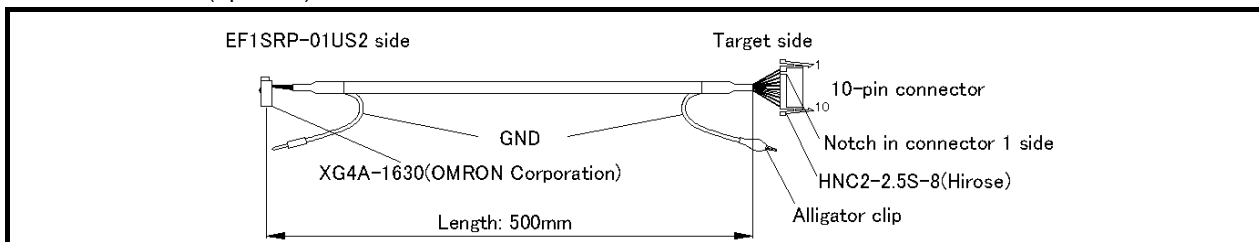


Fig. 4.5: Appearance of 4-wire cable