

## Parameter Files of PRM78F0547 (V1.05) Supplement Documentation

Be sure to read this document before using the product.

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## 1. The contents of the package

The kind and correspondence device of the parameter file included in this package (PRM78F0547) are as follows.

Table1-1 The contents of the package, and the correspondence device list

1/2

Package version	Subseries	Parameter file		Correspondence device	
		Name	Version		
V1.05	78K0/KB2	78F0500.prm	V1.04	UPD78F0500	*
		78F0501.prm	V1.04	UPD78F0501	*
		78F0502.prm	V1.04	UPD78F0502	*
		78F0503.prm	V1.04	UPD78F0503	*
		78F0503D.prm	V1.04	UPD78F0503D	*
	78K0/KC2	78F0511.prm	V1.04	UPD78F0511	*
		78F0512.prm	V1.04	UPD78F0512	*
		78F0513.prm	V1.04	UPD78F0513	*
		78F0513D.prm	V1.04	UPD78F0513D	*
		78F0514.prm	V1.04	UPD78F0514	*
		78F0515.prm	V1.04	UPD78F0515	*
		78F0515D.prm	V1.04	UPD78F0515D	*
	78K0/KD2	78F0521.prm	V1.04	UPD78F0521	*
		78F0522.prm	V1.04	UPD78F0522	*
		78F0523.prm	V1.04	UPD78F0523	*
		78F0524.prm	V1.04	UPD78F0524	*
		78F0525.prm	V1.04	UPD78F0525	*
		78F0526.prm	V1.04	UPD78F0526	*
		78F0527.prm	V1.04	UPD78F0527	*
		78F0527D.prm	V1.04	UPD78F0527D	*

**Note** "\*" is parameter file that was changed or added from the old package version.

Please refer to the change point from the old package version Chapter 4 for details.

Table1-1 The contents of the package, and the correspondence device list

2/2

Package version	Subseries	Parameter file		Correspondence device	
		Name	Version		
V1.05	78K0/KE2	78F0531.prm	V1.04	UPD78F0531	*
		78F0532.prm	V1.04	UPD78F0532	*
		78F0533.prm	V1.04	UPD78F0533	*
		78F0534.prm	V1.04	UPD78F0534	*
		78F0535.prm	V1.04	UPD78F0535	*
		78F0536.prm	V1.04	UPD78F0536	*
		78F0537.prm	V1.04	UPD78F0537	*
		78F0537D.prm	V1.04	UPD78F0537D	*
	78K0/KF2	78F0544.prm	V1.04	UPD78F0544	*
		78F0545.prm	V1.04	UPD78F0545	*
		78F0546.prm	V1.04	UPD78F0546	*
		78F0547.prm	V1.04	UPD78F0547	*
		78F0547D.prm	V1.04	UPD78F0547D	*

**Note** "\*" is parameter file that was changed or added from the old package version.

Please refer to the change point from the old package version Chapter 4 for details.

## 2. Correspondence version and notes of the flash programmer

The flash programmer corresponding to this parameter file becomes as follows.

Please refer to the chapter of each flash programmer on the next page for use.

- PG-FP4
- PG-FPL3
- MINICUBE2

Please refer to the user's manual for basic use concerning each flash programmer.

In addition, the latest version of each flash programmer's programming GUI and firmware is opened to the public on the homepage of NEC Electronics in the following address. Please download and use the latest version.

<http://www.necel.com/micro/ods/jpn/index.html>

(Japanese site)

<http://www.necel.com/micro/ods/eng/index.html>

(English site)

## 2-1. Correspondence version and notes of PG-FP4

### 1. Correspondence version

The correspondence of the version of this parameter file and PG-FP4 is as follows. Please use it in this combination.

Table2-1 Correspondence PG-FP4 version list

PG-FP4	Version
Control code	G or later
Programming GUI for PG-FP4	V2.15 or later
Firmware for PG-FP4	V1.33 or later

#### <Version confirmation>

- Control code: The “control code” is the second digit from the left in the 10-digit serial number in the warranty supplied with the product you purchased. If the product has been upgraded, a label indicating the new version is attached to the product and the x in V-UP LEVEL x on this label indicates the control code.
- Programming GUI: Displayed by selecting [About] from the [Help] menu
- Firmware: Displayed by selecting [Reset] from the [Programmer] menu

### 2. Notes

A. When you use Programming GUI for PG-FP4, please set up a communication system as follows.

In addition, please refer to PG-FP4 Users manual about the usage of PG-FP4.

Table2-2 Communication system setup of Programming GUI for PG-FP4

Communication port of Device	Communication port of PG-Fp4
CSI10 (Internal oscillator)	CSI-Internal-OSC
UART6 (External oscillator)	UART-Ext-OSC
UART6 (Programmer clock)	UART-Ext-FP4CLK

B. Multiply rate need not be changed.

## 2-2. Correspondence version and notes of PG-FPL3

The correspondence of the version of this parameter file and PG-FPL3 is as follows. Please use it in this combination.

Table2-3 Correspondence PG-FPL3 version list

PG-FPL3	Version
Control code	A or later
Programming GUI for PG-FPL3	V1.01 or later

<Version confirmation>

- Control code: The “control code” is indicated by “X” in No. X marked on the main unit board.
- Programming GUI: Displayed by selecting [About FPL3...] from the [Help] menu

### 2. Notes

A. When you use Programming GUI for PG-FPL3, please set up a communication system as follows.

Table2-4 Communication system setup of Programming GUI for PG-FPL3

Communication port of Device	Communication port of PG-FPL3
UART6 (External oscillator)	UART-Ext-OSC *1
UART6 (Programmer clock)	UART-Ext-FPL3CLK *2

\*1: Please do not connect CLK line of PG-FPL3 when you use External oscillator.

\*2: Please input CLK line of PG-FPL3 in X1 and input the reversing signal through the buffer to X2 when you use Programmer clock.

B. Multiply rate need not be changed.

## 2-3. Correspondence version and notes of MINICUBE2

The correspondence of the version of this parameter file and MINICUBE2 is as follows. Please use it in this combination.

Table2-5 Correspondence MINICUBE2 version list

MINICUBE2	Version
Control code	A or later
Programming GUI for MINICUBE2 QB-Programmer	V1.00 or later
Firmware for MINICUBE2	V1.00 or later

### <Version confirmation>

- Control code: The “control code” is indicated by “X” in No. X marked on the main unit board.
- Programming GUI: Displayed in [Programmer] frame of the main window. (QB-Programmer)
- Firmware: Displayed in [Programmer] frame of the main window. (Firmware)

## 2. NOTES

- A. When you use Programming GUI for MINICUBE2 (QB-Programmer), please set up a communication system as follows.

Table2-6 Communication system setup of Programming GUI for MINICUBE2

Communication port of Device	Communication port of MINICUBE2
UART6 (External oscillator)	UART-Ext-OSC
UART6 (Programmer clock)	UART-Ext-QB2CLK

- B. Multiply rate need not be changed.

### 3. The example of connection used the flash Adapter (FA series)

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The example of connection in the case of communicating using a flash adapter is shown below.

**Note** FA series is a product of Naito Densei Machida Mfg. Co., Ltd.

#### 3-1. 78K0/KB2 flash adapter (FA-78F0503MC-5A4-MX)

As for FA-78F0503MC-5A4-MX, wiring of Table 3-1 is carried out.

Table3-1 Connection table of the flash adapter (FA-78F0503MC-5A4-MX)

Flash programmer			CSI10 (Internal oscillator)		UART6 (Programmer clock)	
Signal	I/O	Function	Pin name	Pin No.	Pin name	Pin No.
SI/RxD	I	Serial data input	P12/SO10	24	P13/TXD6	23
SO/TxD	O	Serial data output	P11/SI10/RXD0	25	P14/RXD6	22
SCK	O	Serial clock	P10/SCK10/TXD0	26	-	-
CLK	O	CPU clock	-	-	P121/X1	9
			-	-	P122/X2/EXCLK	8
/RESET	O	Reset	RESET	6	RESET	6
FLMD0	O	Flash mode0	FLMD0	7	FLMD0	7
VDD	-	VDD	V <sub>DD</sub>	12	V <sub>DD</sub>	12
			AV <sub>DD</sub>	27	AV <sub>DD</sub>	27
GND	-	Ground	V <sub>SS</sub>	11	V <sub>SS</sub>	11
			A V <sub>SS</sub>	28	A V <sub>SS</sub>	28

Caution1. CLK inputs the reversing signal to X2 through the buffer.

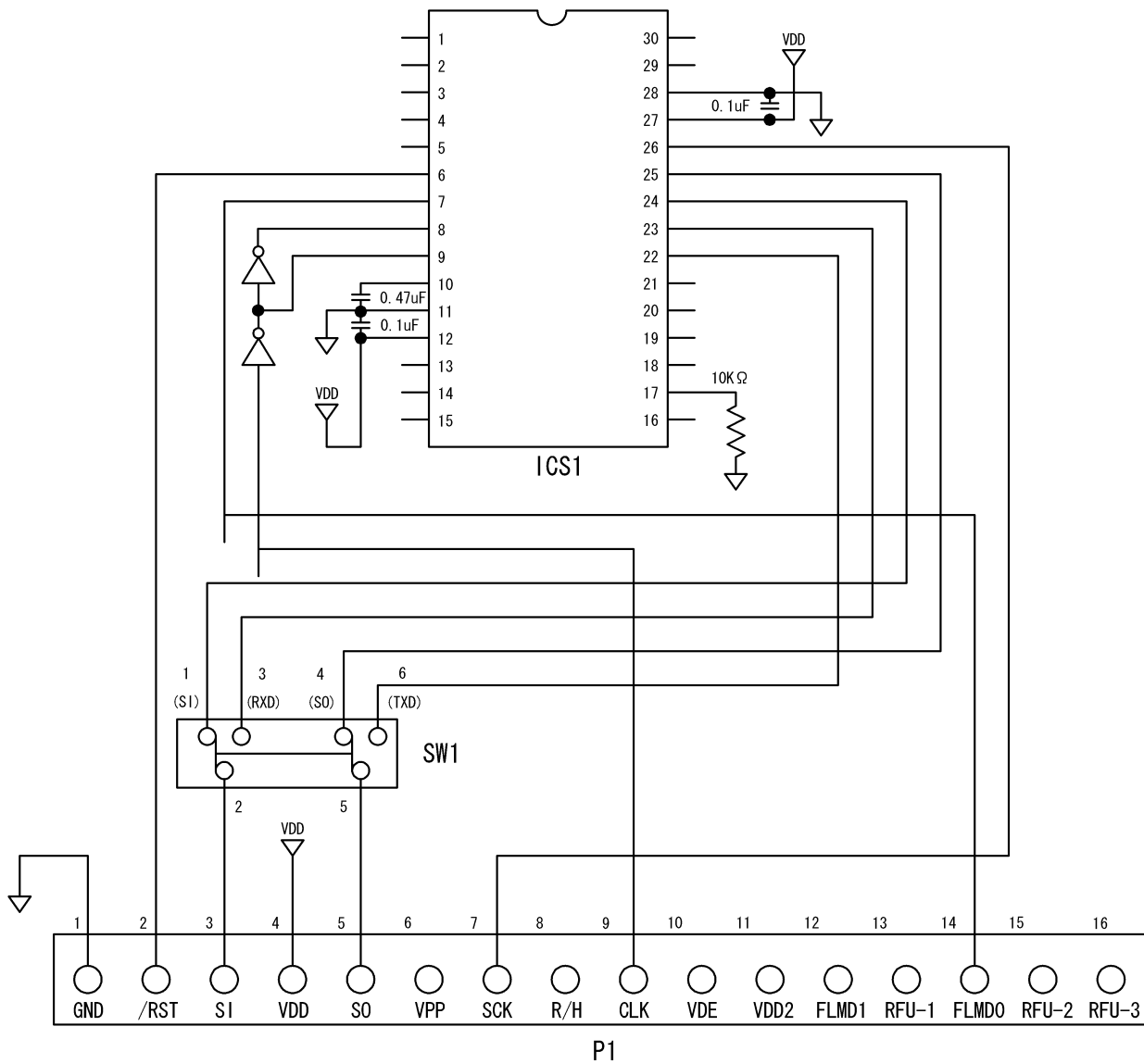
Caution2. The communication is switched with SW1.

Table3-2 Switch setting of the flash adaptor (FA-78F0503MC-5A4-MX)

SW1	UART	NON UART
Communication	UART6 (Programmer clock)	CSI10 (Internal oscillator)



Figure3-1 Example of connection of the flash adapter (FA-78F0503MC-5A4-MX)



### 3-2. 78K0/KB2 flash adapter (FA-78F0503FC-AA3-MX)

As for FA-78F0503FC-AA3-MX, wiring of Table 3-3 is carried out.

Table3-3 Connection table of the flash adapter (FA-78F0503FC-AA3-MX)

Flash programmer			CSI10 (Internal oscillator)		UART6 (Programmer clock)	
Signal	I/O	Function	Pin name	Pin No.	Pin name	Pin No
SI/RxD	I	Serial data input	P12/SO10	D2	P13/TXD6	C3
SO/TxD	O	Serial data output	P11/SI10/RXD0	D1	P14/RXD6	C2
SCK	O	Serial clock	P10/SCK10/TXD0	D3	-	-
CLK	O	CPU clock	-	-	P121/X1	C6-
			-	-	P122/X2/EXCLK	D6
/RESET	O	Reset	RESET	E6	RESET	E6
FLMD0	O	Flash mode0	FLMD0	E5	FLMD0	E5
VDD	-	VDD	V <sub>DD</sub>	C5	V <sub>DD</sub>	C5
			EV <sub>DD</sub>	B5	EV <sub>DD</sub>	B5
			AV <sub>DD</sub>	E1	AV <sub>DD</sub>	E1
GND	-	Ground	V <sub>SS</sub>	D5	V <sub>SS</sub>	D5
			EV <sub>SS</sub>	B6	EV <sub>SS</sub>	B6
			A V <sub>SS</sub>	E2	A V <sub>SS</sub>	E2

Caution1. CLK inputs the reversing signal to X2 through the buffer.

Caution2. The communication is switched with SW1.

Table3-4 Switch setting of the flash adaptor (FA-78F0503FC-AA3-MX)

SW1	UART	NON UART
Communication	UART6 (Programmer clock)	CSI10 (Internal oscillator)



### 3-3. 78K0/KC2 flash adapter (FA-78F0513GB-UES-MX)

As for FA-78F0503FC-AA3-MX, wiring of Table 3-5 is carried out.

Table3-5 Connection table of the flash adapter (FA-78F0513GB-UES-MX)

Flash programmer			CSI10 (Internal oscillator)		UART6 (Programmer clock)	
Signal	I/O	Function	Pin name	Pin No.	Pin name	Pin No
SI/RxD	I	Serial data input	P12/SO10	29	P13/TXD6	28
SO/TxD	O	Serial data output	P11/SI10/RXD0	30	P14RXD6	27
SCK	O	Serial clock	P10/SCK10/TXD0	31	-	-
CLK	O	CPU clock	-	-	P121/X1	8
			-	-	P122/X2/EXCLK	7
/RESET	O	Reset	RESET	3	RESET	3
FLMD0	O	Flash mode0	FLMD0	6	FLMD0	6
VDD	-	VDD	V <sub>DD</sub>	11	V <sub>DD</sub>	11
			AV <sub>DD</sub>	32	AV <sub>DD</sub>	32
GND	-	Ground	V <sub>SS</sub>	10	V <sub>SS</sub>	10
			A V <sub>SS</sub>	33	A V <sub>SS</sub>	33

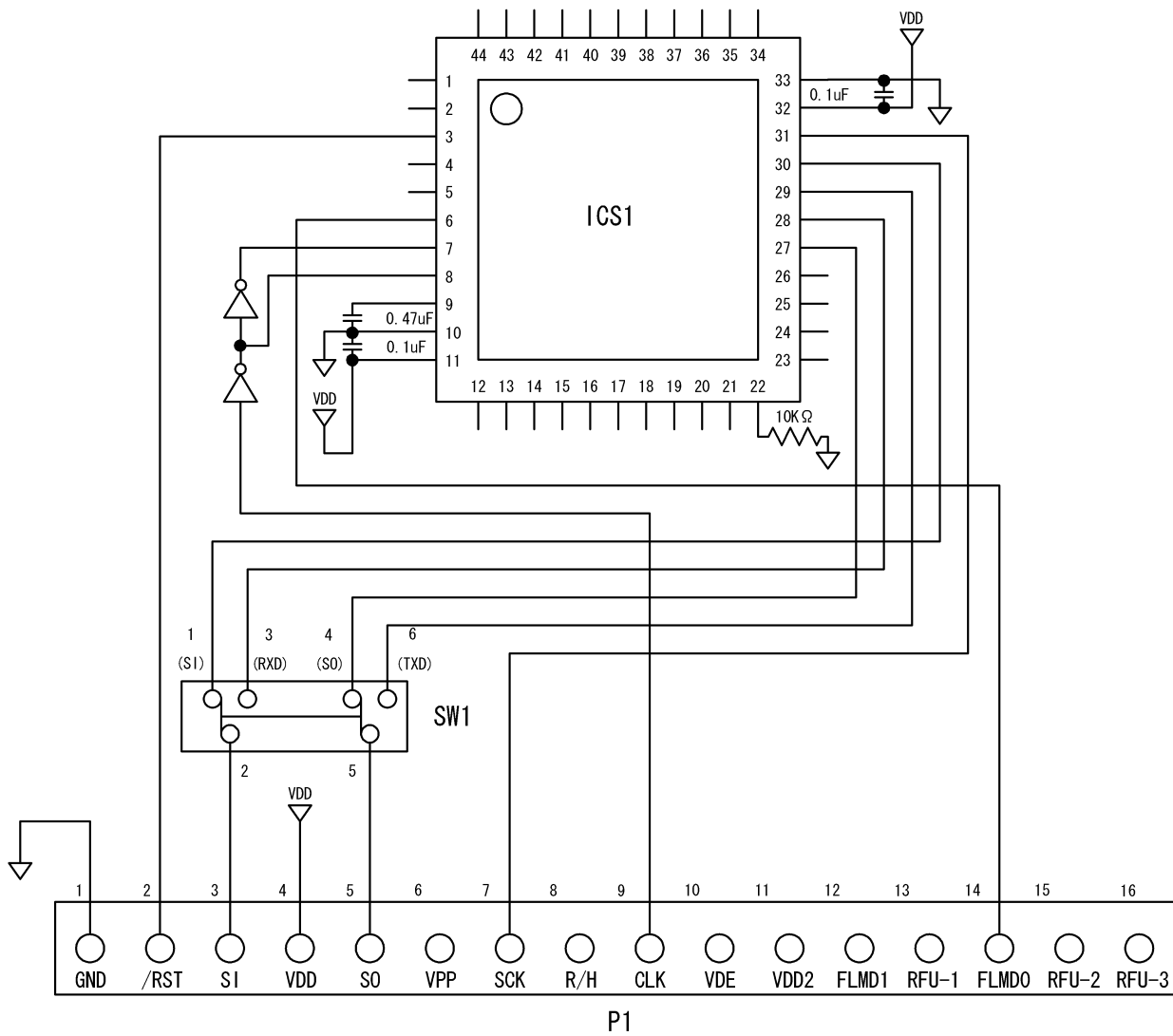
Caution1. CLK inputs the reversing signal to X2 through the buffer.

Caution2. The communication is switched with SW1.

Table3-6 Switch setting of flash adaptor (FA-78F0513GB-UES-MX)

SW1	UART	NON UART
Communication	UART6 (Programmer clock)	CSI10 (Internal oscillator)

Figure3-3 Example of connection of the flash adapter (FA-78F0513GB-UES-MX)



SW1:

1-2, 4-5	NON UART
2-3, 5-6	UART

**3-4. 78K0/KC2 flash adapter (FA-78F0515GA-8EU-MX)**

As for FA-78F0515GA-8EU-MX, wiring of Table 3-7 is carried out.

Table3-7 Connection table of the flash adapter (FA-78F0515GA-8 EU-MX)

Flash programmer			CSI10 (Internal oscillator)		UART6 (Programmer clock)	
Signal	I/O	Function	Pin name	Pin No.	Pin name	Pin No
SI/RxD	I	Serial data input	P12/SO10	20	P13/TXD6	19
SO/TxD	O	Serial data output	P11/SI10/RXD0	21	P14RXD6	18
SCK	O	Serial clock	P10/SCK10/TXD0	22	-	-
CLK	O	CPU clock	-	-	P121/X1	45
			-	-	P122/X2/EXCLK	44
/RESET	O	Reset	RESET	40	RESET	40
FLMD0	O	Flash mode0	FLMD0	43	FLMD0	43
VDD	-	VDD	V <sub>DD</sub>	48	V <sub>DD</sub>	48
			AV <sub>DD</sub>	23	AV <sub>DD</sub>	23
GND	-	Ground	V <sub>SS</sub>	47	V <sub>SS</sub>	47
			A V <sub>SS</sub>	24	A V <sub>SS</sub>	24

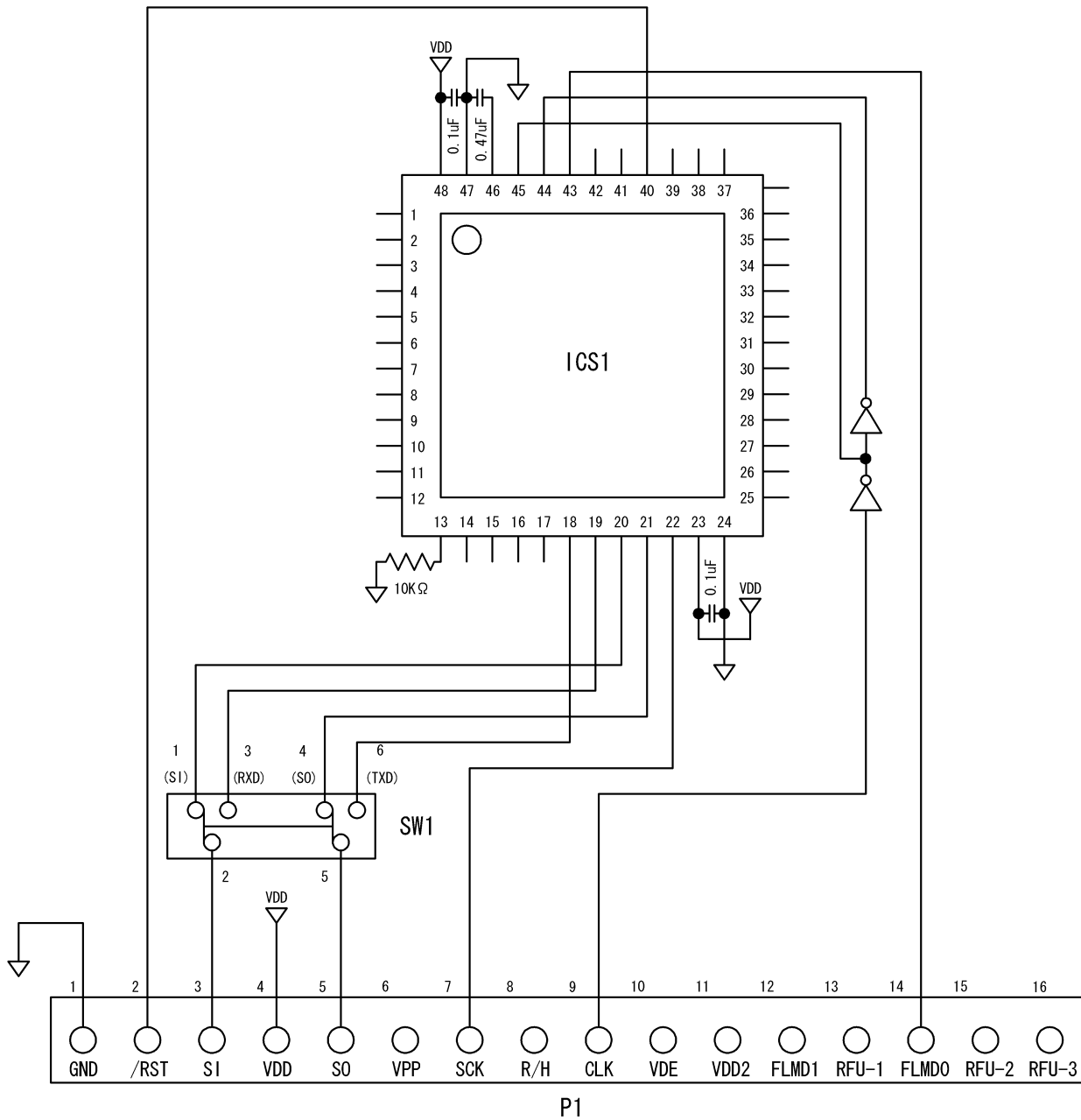
Caution1. CLK inputs the reversing signal to X2 through the buffer.

Caution2. The communication is switched with SW1.

Table3-8 Switch setting of the flash adaptor (FA-78F0515GA-8EU-MX)

SW1	UART	NON UART
Communication	UART6 (Programmer clock)	CSI10 (Internal oscillator)

Figure 3-4 Example of connection of the flash adapter (FA-78F0515GA-8EU-MX)



SW1:

1-2, 4-5	NON UART
2-3, 5-6	UART

**3-5. 78K0/KD2 flash adapter (FA-78F0527GB-UET-MX)**

As for FA-78F0527GB-UET-MX, wiring of Table 3-9 is carried out.

Table3-9 Connection table of the flash adapter (FA-78F0527GB-UET-MX)

Flash programmer			CSI10 (Internal oscillator)		UART6 (Programmer clock)	
Signal	I/O	Function	Pin name	Pin No.	Pin name	Pin No
SI/RxD	I	Serial data input	P12/SO10	35	P13/TXD6	34
SO/TxD	O	Serial data output	P11/SI10/RXD0	33	P14RXD6	33
SCK	O	Serial clock	P10/SCK10/TXD0	36	-	-
CLK	O	CPU clock	-	-	P121/X1	10
			-	-	P122/X2/EXCLK	9
/RESET	O	Reset	RESET	5	RESET	5
FLMD0	O	Flash mode0	FLMD0	8	FLMD0	8
VDD	-	VDD	V <sub>DD</sub>	13	V <sub>DD</sub>	13
			AV <sub>DD</sub>	38	AV <sub>DD</sub>	38
GND	-	Ground	V <sub>SS</sub>	12	V <sub>SS</sub>	12
			A V <sub>SS</sub>	39	A V <sub>SS</sub>	39

Caution1. CLK inputs the reversing signal to X2 through the buffer.

Caution2. The communication is switched with SW1.

Table3-10 Switch setting of the flash adaptor (FA-78F0527GB-UET-MX)

SW1	UART	NON UART
Communication	UART6 (Programmer clock)	CSI10 (Internal oscillator)





**3-6. 78K0/KE2 flash adapter****(FA-78F0537GK-UET-MX/FA-78F0537GC-UES-MX/FA-78F0537GB-UEU-MX/FA-78F0537GA-8EV-MX)**

FA-MX for 78K0/KE2 is wiring of Table 3-11.

Table3-11 Connection table of the flash adapter

Flash programmer			CSI10 (Internal oscillator)		UART6 (Programmer clock)	
Signal	I/O	Function	Pin name	Pin No.	Pin name	Pin No.
SI/RxD	I	Serial data input	P12/SO10	44	P13/TXD6	43
SO/TxD	O	Serial data output	P11/SI10/RXD0	45	P14/RXD6	42
SCK	O	Serial clock	P10/SCK10/TXD0	46	-	-
CLK	O	CPU clock	-	-	P121/X1	11
			-	-	P122/X2/EXCLK	10
/RESET	O	Reset	RESET	6	RESET	6
FLMD0	O	Flash mode0	FLMD0	9	FLMD0	9
VDD	-	VDD	V <sub>DD</sub>	15	V <sub>DD</sub>	15
			EV <sub>DD</sub>	16	EV <sub>DD</sub>	16
			AV <sub>DD</sub>	47	AV <sub>DD</sub>	47
GND	-	Ground	V <sub>SS</sub>	13	V <sub>SS</sub>	13
			EV <sub>SS</sub>	14	EV <sub>SS</sub>	14
			A V <sub>SS</sub>	48	A V <sub>SS</sub>	48

Caution1. CLK inputs the reversing signal to X2 through the buffer.

Caution2. The communication is switched with SW1.

Table3-12 Switch setting of the flash adaptor

SW1	UART	NON UART
Communication	UART6 (Programmer clock)	CSI10 (Internal oscillator)



**3-7. 78K0/KE2 flash adapter (FA-78F0537FC-AA1-MX)**

As for FA-78F0537FC-AA1-MX, wiring of Table 3-13 is carried out.

Table3-13 Connection table of the flash adapter (FA-78F0537FC-AA1-MX)

Flash programmer			CSI10 (Internal oscillator)		UART6 (Programmer clock)	
Signal	I/O	Function	Pin name	Pin No.	Pin name	Pin No.
SI/RxD	I	Serial data input	P12/SO10	B3	P13/TXD6	A4
SO/TxD	O	Serial data output	P11/SI10/RXD0	A3	P14RXD6	B5
SCK	O	Serial clock	P10/SCK10/TXD0	C4	-	-
CLK*1	O	CPU clock	-	-	P121/X1	H6
			-	-	P122/X2/EXCLK	H5
/RESET	O	Reset	RESET	G4	RESET	G4
FLMD0	O	Flash mode0	FLMD0	H4	FLMD0	H4
VDD	-	VDD	V <sub>DD</sub>	G7	V <sub>DD</sub>	G7
			EV <sub>DD</sub>	H8	EV <sub>DD</sub>	H8
			AV <sub>DD</sub>	A2	AV <sub>DD</sub>	A2
GND	-	Ground	V <sub>SS</sub>	G6	V <sub>SS</sub>	G6
			E V <sub>SS</sub>	H7	E V <sub>SS</sub>	H7
			A V <sub>SS</sub>	A1	A V <sub>SS</sub>	A1

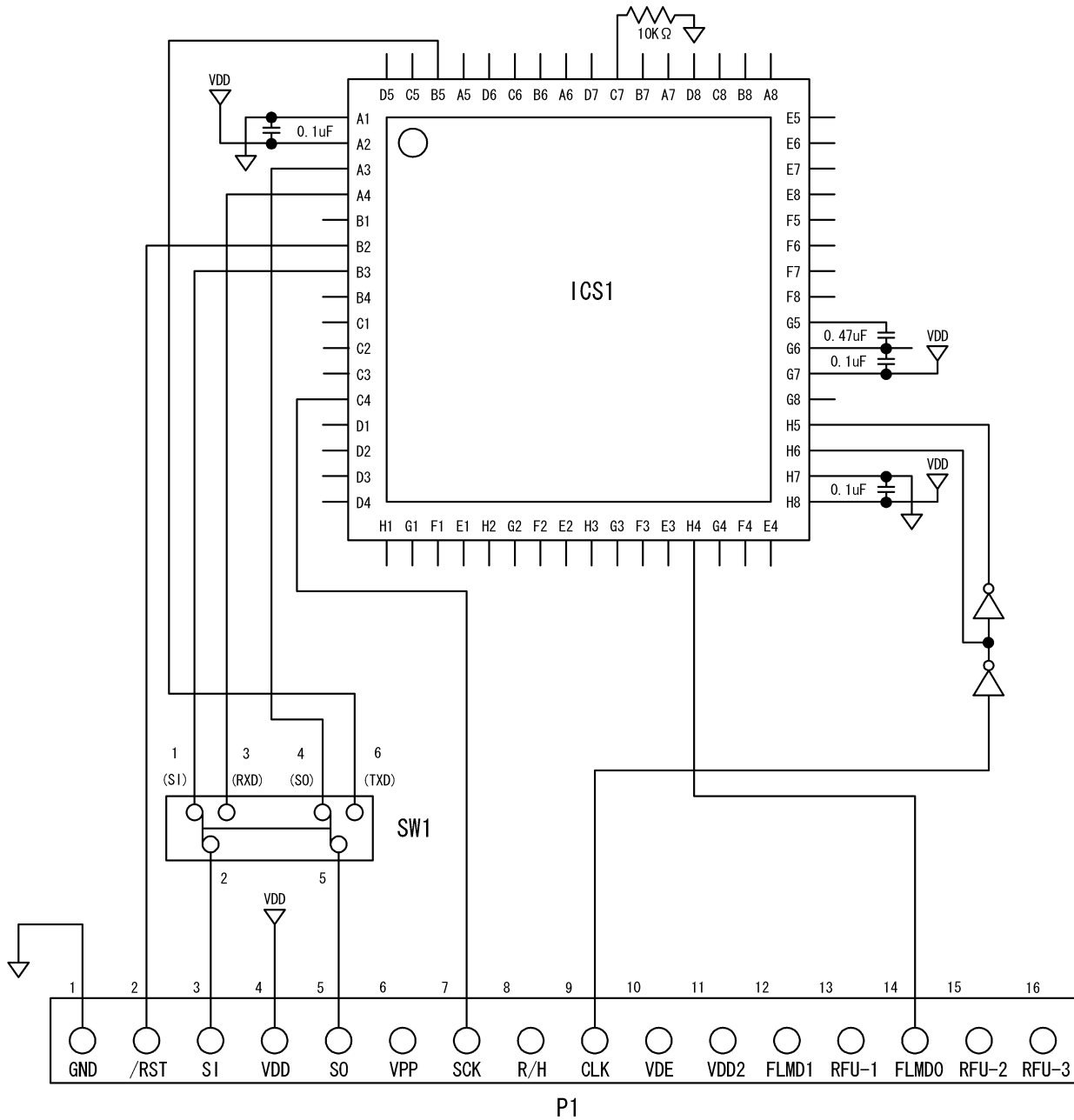
Caution1. CLK inputs the reversing signal to X2 through the buffer.

Caution2. The communication is switched with SW1.

Table3-14 Switch setting of the flash adapter (FA-78F0537FC-AA1-MX)

SW1	UART	NON UART
Communication	UART6 (Programmer clock)	CSI10 (Internal oscillator)

Figure 3-7 Example of connection of the flash adapter (FA-78F0537FC-AA1-MX)



SW1:

1-2, 4-5	NON UART
2-3, 5-6	UART

**3-8. 78K0/KF2 flash adapter (FA-78F0547GK-8EU-MX/FA-78F0547GC-UBT-MX)**

As for FA-78F0547GK-8EU-MX/FA-78F0547GC-UBT-MX, wiring of Table3-15 is carried out.

Table3-15 Connection table of the flash adapter (FA-78F0547GK-8EU-MX/FA-78F0547GC-UBT-MX)

Flash programmer			CSI10 (Internal oscillator)		UART6 (Programmer clock)	
Signal	I/O	Function	Pin name	Pin No.	Pin name	Pin No
SI/RxD	I	Serial data input	P12/SO10	52	P13/TXD6	51
SO/TxD	O	Serial data output	P11/SI10/RXD0	53	P14RXD6	50
SCK	O	Serial clock	P10/SCK10/TXD0	54	-	-
CLK*1	O	CPU clock	-	-	P121/X1	15
			-	-	P122/X2/EXCLK	14
/RESET	O	Reset	RESET	10	RESET	10
FLMD0	O	Flash mode0	FLMD0	13	FLMD0	13
VDD	-	VDD	V <sub>DD</sub>	19	V <sub>DD</sub>	19
			EV <sub>DD</sub>	20	EV <sub>DD</sub>	20
			AV <sub>DD</sub>	59	AV <sub>DD</sub>	59
GND	-	Ground	V <sub>SS</sub>	17	V <sub>SS</sub>	17
			EV <sub>SS</sub>	18	EV <sub>SS</sub>	18
			A V <sub>SS</sub>	60	A V <sub>SS</sub>	60

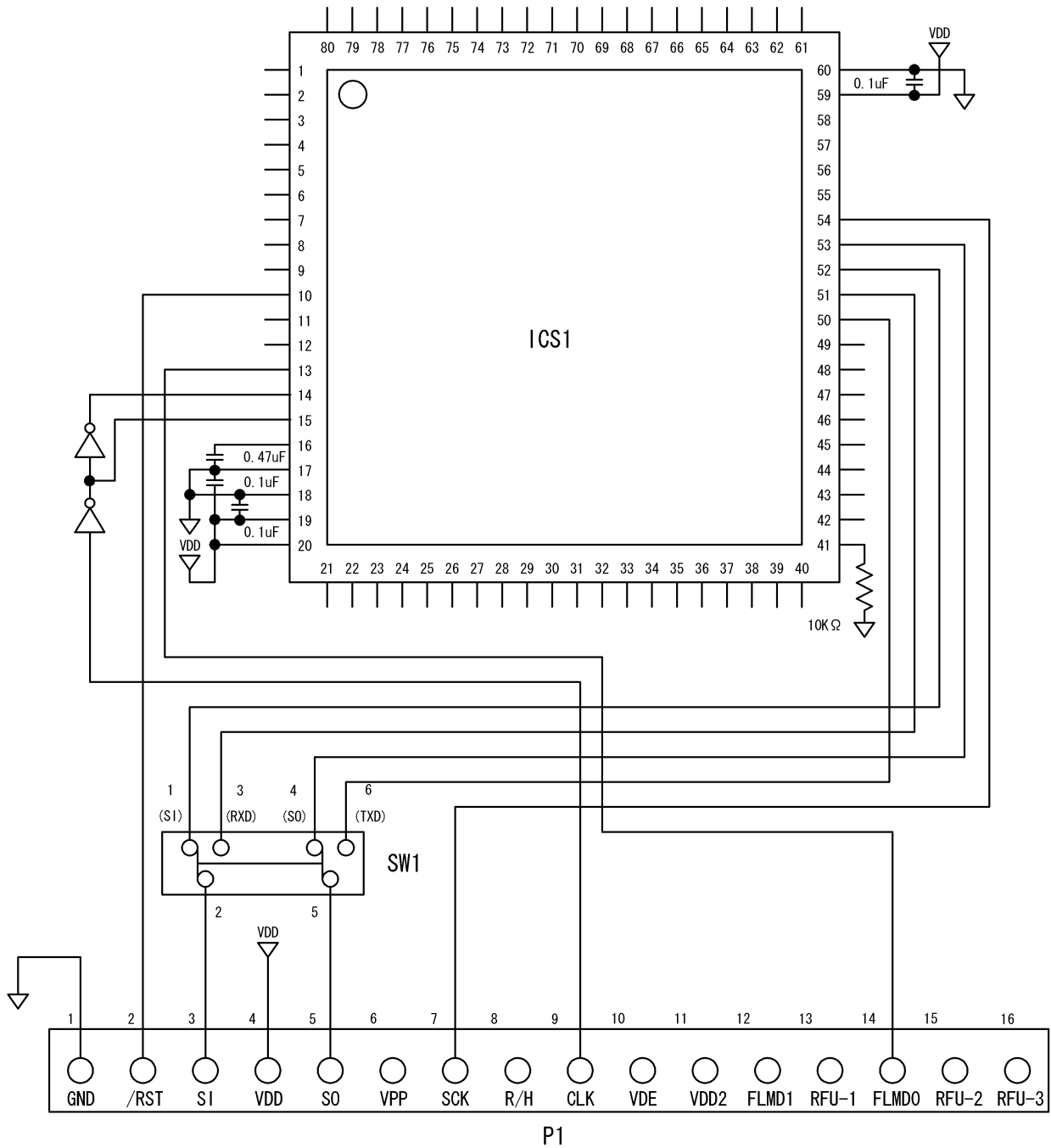
Caution1. CLK inputs the reversing signal to X2 through the buffer.

Caution2. The communication is switched with SW1.

Table3-16 Switch setting of the flash adapter (FA-78F0547GK-8EU-MX/FA-78F0547GC-UBT-MX)

SW1	UART	NON UART
Communication	UART6 (Programmer clock)	CSI10 (Internal oscillator)

Figure3-8 Example of connection of the flash adapter (FA-78F0547GK-8EU-MX/FA-78F0547GC-UBT-MX)



SW1:

1-2, 4-5	NON UART
2-3, 5-6	UART

## **4. Change point from old package version**

The change point of V1.05 is described from V1.04 of PRM78F0547 as follows.

- Optimization of communication by tuning of parameter value.