

# MICREX-SX Series About the Version Up of D300win System Software

## Preface

This document describes the content of the "version up" (from V2.1 $\Box$  to V2.2 $\Box$ ) of D300win system software, or MICREX-SX program support tool.

Please read this manual together with the following user's manuals.

MICREX-SX Series User's Manual D300win <REFERENCE>: manual No. FEH254a

Precaution for the Version Up-grade of Your System Be sure to uninstall the old version system before you install the new version system. Otherwise, the system may not correctly be installed.

### Before Using the D300win:

To ensure proper operation, be sure to read "Precautions for Using D300win" included in this manual, the User's Manual, and D300win program folder.

# **1. List of Newly Added Functions**

From version V2.2, the following functions are added or reinforced:

- 1) USB interface function
- 2) Project upload/download function
- 3) Adapted to 0.5 ms tact time
- 4) Assurance of data
- 5) Adapted to SFC retain
- 6) Adapted to automatic allocation in the copied memory by variable name
- 7) English/Japanese language switching function

Note: From version V2.2, D300win screen can be displayed in Japanese or English by switching. As a result, conventional software packages are unified.

D300win Japanese version: NP4H-SEDV2 D300win English version: NP4H-SEDEV2 
D300win Japanese/English common version: NP4H-SEDBV2

# 2. USB Interface Function

Full-Speed USB (Universal Serial Bus) 1.1 connecting method is added to the MICREX-SX loader connecting methods. This enables high-speed communication with CPU modules (NP1PS-117R) having USB connector, using commercially available USB connector. The operating systems for personal computer that can use the USB interface are Windows95 (OSR2.0 or later), Windows98 and Windows2000. Fuji electric guarantees the operation of the USB interface only on Windows98 and Windows2000.

### <How to use the USB interface>

- Turn on the power supply for the MICREX-SX system, and connect between the personal computer and SX-CPU with the USB cable. Then Plug and Play starts to install the USB driver. Follow the directions that appear on the screen to install the driver. The USB driver for D300win is stored in the CD-ROM used when you installed D300win.
- 2) Start D300win to bring up the [Resource setting of MICREX-SX] dialog box.

Elenanoo				
Data Types		Re	source setting of MICREX-S	x x l
Logical POUs	Right-click on this icon,			
LADDER*	and select "Setting"		Communication setting	
Physical Hardware	command.			
C_SX: MICREXSX*			CP <u>U</u> running definition	Then left-click on the
System_Definition			Memory allocation patting	[Communication setting]
🖻 🖓 📓 R_S117 : NP1PS-11	7*		Memory anocation setting	button.
🕂 👜 Tasks			Network setting	
🦾 🎧 Global_Variables	x			
			Com <u>p</u> iler setting	
			<u>C</u> lose <u>H</u> elp	
	Data Types Logical POUs Logical POUs Physical Hardware C_SX: MICREXSX* System_Definition R_S117: NP1PS-111 Global_Variables	Data Types Logical POUs LabDER* Physical Hardware System_Definition R_S117: NP1PS-117* Global_Variables* Right-click on this icon, and select "Setting" command.	Data Types Logical POUs LabDER* Physical Hardware System_Definition R_S117: NP1PS-117* Global_Variables*	Data Types Logical POUs Logical POUs LADDER* Physical Hardware System_Definition R_S117: NP1PS-117* Global_Variables* R_S117: NP1PS-117* R_S117: NP1PS-117* CPU running definition Memory allocation setting Compiler setting Compiler setting

3) The [Communication setting] dialog box is displayed. On this dialog, turn the [USB] optional button ON, and left-click on the [OK] button. Then you can use the USB interface.

○ <u>C</u> OM port =			n	
Port <u>N</u> o. :	COM1 💌	Mo <u>d</u> em :	<b>V</b>	
Baud rate :	38400 💌		Modem property	
Data length :	8 🔻			k on t
Parity :	Even 💌	Telephone		
		in unshor :		Dullo
<u>S</u> top bit : - • • • • • • • • • • • • • • • • • • •	1	number :	Number Setting	
<u>S</u> top bit : - O Communica Board select :	tion Board	number :	Number Setting	
Stop bit : C Communica Board select : Parameter :	tion Board	0 <u>r</u>	Number Setting       © USB       Only one PC can be connected	ed.
Stop bit : Communical Board select : Parameter : pommunication ter	tion Board	0 <u>r</u>	Only one PC can be connecte	ed.

### Notes:

- 1) If no USB driver is installed, [USB] (use of USB port) cannot be selected.
- 2) Only one CPU module can be connected to one D300win via USB.
- 3) When Windows2000 operating system is used, if USB communication is interrupted (due to the resetting of CPU or the interruption of system power source), the [Device Disconnection Alarm] dialog box is displayed. In such case, click the [OK] button.

🍜 Unsafe Removal of Device 🔹 👔	٢
You have unplugged or ejected a device without stopping it. Unplugging or ejecting devices without first stopping them can often cause your computer to crash and lose valuable data.	
To safely unplug or eject any of the following devices, first use the Hardware wizard in the Control Panel to stop the device.	
€ MICREX-SX	
If you frequently need to unplug this device, Windows can give you an icon on the taskbar to quickly unplug or eject your device. If you would like to use this option, check the following:	
Show Unplug/Eject icon on the taskbar.	
2:01 PM	Click the [OK] button.
ОК	

# 3. Project Upload/Download Function

The functions for downloading projects to the user ROM card (compact flash memory card) installed in the high-performance CPU module (NP1PS-117R), for uploading projects from the user ROM card, or for verifying projects are newly added.

User ROM installation place	Function	Description			
Online	Download	Download the Zip Project for user ROM.			
D300win and CPU module	Upload	Upload the Zip Project for user ROM.			
	Verification	For verification, compare the project in D300win with the project for user ROM.			
		For verification, compare the project in D300win with the Zip Project for user ROM.			
		For verification, compare the project in the CPU with the Zip Project for user ROM.			
		For verification, compare the project for user ROM with the Zip Project for user ROM.			
	Zip Project	Select the target CPU of download.			
	download setting	Switch to downloading when POU is changed.			
	User ROM data display	Display of "Installed/Uninstalled" of user ROM			
		Display of Zip Project name for user ROM			
		Write protect setting/cancellation			
Offline	Download	Project for user ROM			
in the personal computer in		Zip Project for user ROM			
which D300win is installed	Upload	Project for user ROM			
		Zip Project for user ROM			
	Verification	For verification, compare the project in D300win with the project for user ROM.			
		For verification, compare the project in D300win with the Zip Project for user ROM.			
		For verification, compare the project for user ROM with the Zip Project for user ROM.			
	Clear	Project for user ROM			
		Zip Project for user ROM			
	Format	-			
	Write protect Set/Release	-			
	Password setting	Registration of password			
		Release of password			

### <List of newly added upload, download and verification functions>

### 3-1 Downloading to CPU

This function downloads the project that is stored in D300win to the project storage area in the CPU memory (flash memory in CPU), to the project storage area in the user ROM (newly added feature), or to the Zip Project storage area in the user ROM (newly added feature).



\* Project is downloaded to user ROM when the key switch on the CPU module is set to TERM-UROM (when the UROM LED is lighting in user ROM mode). When the key switch is set at a TERM position other than that for user ROM mode, the project is sent only to the project storage area in the CPU.



### 3-2 Uploading to D300win

This function uploads a project that is stored in the CPU memory (flash memory in CPU) to the project in D300win, or a compressed project for user ROM to the project in D300win (newly added feature).



### <D300win operation screen>

1 R_S117 (CPU0)	[Upload CPU->Loader] dialog box
State : Run Keystate : TERM	Upload CPU->Loader
Batch operation     O Individual operation	C Zip Project in User ROM
<u>S</u> top <u>I</u> nitial start	Specification of folder :
St <u>a</u> rt <u>R</u> eset	
Download	C Project in <u>C</u> PU Memory
Uerify	Erogram
Program control Cal <u>e</u> nda atch	System definition
Resource information <u>F</u> ailure quosis	Eeffect a real structure
Password	Parameter <u>d</u> ata
	□ ZP file
	"Reflect a real structure" is used to generate system configuration information automatically
	when the system definition is not set in PC(At the power supply reclosing after a clear system
	definition or the resource is initialized).
	UK <u>Cancel H</u> elp

### **3-3 Verification**

This function compares, for verification, the project stored in D300win with the project stored in the CPU memory (flash memory in CPU) or the compressed project stored in the user ROM.



### <List of newly added verification functions>

Verification function	Source of verification	Destination of verification	Target object	Verified item	Version information
<ol> <li>Compare the project in loader with the project in the user ROM in the CPU</li> </ol>	Loader	User ROM	Program System definition ZIP file	File data Stored time	Selectable
<ol> <li>Compare the project in loader with the Zip Project in the user ROM installed in the CPU</li> </ol>	Loader	User ROM	Zip Project	File size Stored time	Not selectable
<ol> <li>Compare the project in the CPU with the Zip Project in the user ROM installed in the CPU</li> </ol>	CPU	User ROM	Zip Project	File size Stored time	Not selectable
<ol> <li>Compare the project in the user ROM installed in the CPU with the Zip Project in the user ROM installed in the CPU</li> </ol>	User ROM	User ROM	Zip Project	File size Stored time	Not selectable

<d300win operation<="" th=""><th>on screen&gt;</th><th></th></d300win>	on screen>	
🏭 R_\$117 (CPU0)		
State : Run Keystate : TERM		
<ul> <li>Batch operation</li> </ul>	C Individual operation	[Verify] dialog box
Stop	Initial start	
Start	<u>R</u> eset	
		Resource name : R_S117
<u>D</u> ownload	Upload	Source of verification
<u> </u>	)	
Program control	Calendar/Watch	Destination of verification
Besource information	Eailure diagnosis	O Gønnected CPU O Memory Module O User ROM
Pass <u>w</u> ord		- Tarnet object
Cl <u>o</u> se	<u>H</u> elp	Program     I     System definition     I     ZIP file
		Zip Project [CPU0]
		Connected : Default Working CPU
hen user ROM is installed	d in CPU (Zip Project n	nanage-
ent CPU in case of multi C	PU system), and the ke	y switch / Verified item:
CPU is set at the position	of "UROM", it is effect	ve. / 🗹 File contents 🗖 Save time
nis setting is effective on th	he redundancy system.	Version information
elect user ROM of default	working CPU or user	ROM of
efault standby CPU by this	s setting.	
	-	

\* Zip Project management CPU is CPU specified for a down-loading destination of the Zip Project in the configuration set dialog box .

### 3-4 Zip Project Download Setting

The Zip Project download setting function can be used from the [Configuration setting of MICREX-SX] dialog box.



### 3-5 User ROM Data Display

This function displays the data of the user ROM card that is installed in the CPU. This function is added to the [resource information display] dialog box.

State : Run Key state : TERM Batch operation O Individual operation Start Beset	
Key state     : TERM       Batch operation     O Individual operation       Stop     Initial start	
Batch operation     O Individual operation     Start     Beset	
Start Beset	
Start Beset	
Download	
Verify Clear	
Program control Calendar/Watch	
Pass <u>w</u> ord	
Cl <u>o</u> se <u>H</u> elp	
	[resource information display] dialog
R_S117 (CPU0)	
Model High performance	CPU version V00
Program capacity of CPU	User program size of CPU User program size of D300win
119808 Step	4 Step 3 Step
Trigger condition	Force Condition monitor No variables forced No monitor stop
View mode © Default <u>O D</u> ecimal	User ROM
C <u>B</u> inary C He <u>x</u> adecimal	Project name : UNTITLED
	Save Time : 2000/11/06 16:04:08
<u>R</u> unning time(micros)	
lask name lype	Lurre Min ti Max Curre Min c Max c
O       Binary       O       Hexadecimal         Bunning time(micro s)       Task name       Type	Project name : UNTITLED Save Time : 2000/11/06 16:04:08 Curre Min ti Max Curre Min c Max c

Function	Specification
Write protection	This box shows whether or not to write protect the user ROM card that is installed in the CPU. By changing the status of this check box and left-clicking on the [Close] button, you can set/cancel the write protection.
Zip Project name	When a Zip Project is stored in the user ROM card that is installed in the CPU, the project name is displayed in this text box.

Clear

<u>M</u>easure

<u>C</u>lose

<u>H</u>elp

### 3-6 Downloading to the User ROM Card in the D300win Loader

This function downloads a project and/or a Zip Project for user ROM to the user ROM card that is installed in the PC card slot of the personal computer.



### <Operation of D300win>

1) Install the user ROM card in the PC card slot of the personal computer (commercially available compact flash card adapter is necessary). Then select [Memory Card Utility] from the Extras menu, and the [Memory Card Utility] dialog box will be displayed.



2) Select a resource as the source of data transfer, the data to be transferred, and a user ROM card as the destination of data transfer, and left-click the [Execution] button.

### 3-7 Uploading from the User ROM Card in the D300win Loader

This function uploads a compressed project for user ROM from the user ROM that is installed in the PC card slot of the personal computer.



Personal computer

### <Operation of D300win>

1) Left-click on the [Upload] tab of the [User ROM] dialog box to bring up the [Upload] tab window.

2) Select a ROM operation project and then the data to be uploaded.

3) Select a user ROM as the source of dat	ta transfer.
User ROM	×
Download Upload Verify Maintenance	
Source(User ROM) Drive : E:	Destination(Loader)       4) Select a resource as the destination of data transfer when a ROM operation project is uploaded.         Image: C_SX       Image: C_SX         Image: C_SX
Save time : 2000/11/22 14:24:2	Browse

5) Left-click the [Execution] button to start uploading.

- <Operation on D300win, uploading of zip project>

  Left-click the [Upload] tab of the [User ROM] dialog to display the [Upload] tab window.
- 2) Select a zip project.

	User ROM			×
	Download Upload Verify M	aintenance		
	Source(User ROM) Drive : E: ROM Operation Project Program System definition Zip file	• •	Destination(Loader) Resource Physical Hardware C_SX R_S117	
	Save time : 2000/11/22	14:24:2	Folder for Upload C:\D300win\PR0JECTS Browse	
			3) Specify a folder	r as the destination of data
When zip projects are	e stored in the user ROM,		transfer.	
their names and stor	ed date are displayed.			
		Execution C	Close	

4) Left-click the [Execution] button to start uploading.

### 3-8 Verification by Comparing the Project in D300win with that in the User ROM Card Installed in the D300win Loader

Personal computer



### <List of verification functions>

Verification function	Source of verification	Destination of verification	Target object	Verified item
1) Compare the project in loader with the project in the user ROM installed in the personal computer	Loader	User ROM	Program System definition Zip File	File data Stored time
2) Compare the project in loader with the Zip Project in the user ROM installed in the personal computer	Loader	User ROM	Zip Project	File size Stored time
3) Compare the project in the user ROM installed in the personal computer with the Zip Project in the user ROM installed in the personal computer	User ROM	User ROM	Zip Project	File size Stored time

### <Operation of D300win>

1) Left-click on the [Verify] tab of the [User ROM] dialog box to bring up the [Verify] tab window.



5) Select target data of verification and left-click the [Execution] button, and verification will be started. When verification ended successfully, the result of verification is displayed.

۷	erify			×
				_
	Contents		Result	<b>A</b>
	POU : LADDER	Contents	Identical	
		Save time	Different (Old file in User ROM)	
	System structure definition	Contents	Identical	
		Save time	Different (Old file in User ROM)	
	System property	Contents	Identical	
		Save time	Different (Old file in User ROM)	
	System output definition	Contents	Identical	
		Save time	Different (Old file in User ROM)	
	Direct I/O HOLD definition	Contents	Identical	
		Save time	Different (Old file in User ROM)	
	Direct I/O running mode	Contents	Identical	
		Save time	Different (Old file in User ROM)	<b>-</b>
	Pollo, and a Definition	Contents.		_
	* The configuration/resource to which	i the PC type is set	besides 'MICREXSX'. As for these,	
	the verification is excluded.			
		OK		
	L			

### 3-9 Maintenance

For the user ROM card, clears stored data, formats the card, sets/cancels write protection, or registers/ cancels password.

### <Operation of D300win>

1) Left-click the [Maintenance] tab of the [User ROM] dialog box to bring up the [Maintenance] tab window.

User ROM	
Download Upload Verify Maintenance	Clears the data (program, system definition, zip file, zip project) stored in the user ROM.
Drive : E: Contents ROM Operation Project exist. Zip Project exists. Name : SMP1122 Save time : 2000/11/22 14:24:28	Clear Password Click on this button to set password. Click this box to set write protection. Format
Execution	Click on this button to format the user ROM.

# 4. Adaptation to Tact Time Setting in Units of 0.5 ms

For high-performance CPUs (of V50 or newer firmware version), tact time can be set in units of 0.5 ms.

### <Operation of D300win>

Right-click on the [System Property] icon under in the System configuration definition window, and select [Properties...] command.

Then the [System Property] dialog box is displayed.

System property	×
System Running Definition Redundancy setting Fail-soft operation setting	
SX bus tact:       Default value(1.0ms)         Waiting time for structure check:       D5ms         Select initialization       D5ms         © Execute memory diagnosis       Can be set in units of 0.5 ms	
OK Cancel <u>H</u> elp	

Note: For standard CPUs or high-performance CPUs of V50 or older firmware version, tact time cannot be set in units of 0.5 ms.

# 5. Assurance of Data

### 5-1 Address Retention at Compilation

D300win automatically assigns variables when compiling a project. Because the assignment is optimized in the order of variable declarations, if compilation is made after the application is modified, the memory addresses allocated to the variables may change between before and after the compilation. The version up of this time adds the optional "address holding" function to the compiler.

### <Operation of D300win>

1) In the project tree, right-click on the resource icon, and select [Settings...] command. Then left-click on the [Memory allocation setting...] button.

Memory allocation setting(	MICREX-SX : NP1PS-117)	×
Non retain memory 128.0	AT range KW 0 • 511 (High spee 2048 • 10239 (Normal)	d) Reserve for POU (Word) Non-Retain 10 Retain 10
<u>R</u> etain memory 32.0	KW 0-4095	
User EB memory 32.0	KW None	F <u>B</u> Memory 10
System FB memory 64.0 Initial data 3200	KW None	Use reserve C All POUs C Selected P <u>O</u> Us C Not <u>U</u> se
Edge detection 4096	Point x 2W 8192W	OK
Counter 1024	Point x 4W 4096W	Cancel
Timer 2048	Point x 8W 16384W	Extended setting
Other system FB area	= 32768W	<u>D</u> efault
<ul> <li>Memory allocation for variable</li> </ul>	les	<u>H</u> elp
Do not change the addre has been compiled last time	iss of the <u>v</u> ariable which me.	

2) The [Memory allocation setting] dialog box is displayed. When the addresses to which the variables are assigned need not be changed, check the box for "Do not change the address of the variable which has been compiled last time".

### <Allocated address retaining range>

- 1) The variables that have the same names as before are assigned to the same addresses that were determined when successfully compiled last time.
- 2) The variables that are assigned to "Reserve" by the "Patch POU" function (online change) are also assigned to the same addresses.

### 5-2 Download Setup

It has become possible to retain the variables in the user function block and the system function block at the time of downloading.

Download loader->CPU	
Program     Program     Clear retain memory area(%M*.3)     Clear FB/SFB variables     Clear FB/SFB variables	
<u>System definition</u> <u>Zip file</u> <u>C Default Standby CPU</u> <u>Memory Module</u>	
Parameter <u>d</u> ata     P <u>C</u> card / LonWorks driver	The variables are effective only at the time of downloading to firmware version V.50 or later of the high-performance CPU.
☐ Zip Project -> User <u>R</u> OM OK Cancel <u>H</u> elp	They are not effective for firmware prior to version V.50 or the standard CPU; in this case, the variables are all cleared at the time of downloading.

# 6. Continuous running of SFC program

When you compile SFC steps/actions as retain variables with D300win, SFC step variables and action variables are assigned in the retain memory. By this operation, SFC program can continue to run during the warm start of CPU.

### <Operation of D300win>

1) Left-click on the [Extended setting...] button on the [Memory allocation setting] dialog box to bring up the [Extended setting] dialog box.

	O Not Use	
8192W 4096W	OK	
4096W	Cancel	
16384W	Extended setting	
32768W	Help	
)le which		

[Extended setting] dialog box

xtended setting(MICREX-SX : NP	1PS-117]	)			×
AT range				Memory range	
Non retain High speed memory	0	~ 511	W	0-2047W	ОК
☑ Non retain normal memory	2048	~ 10239	W	2048-131071W	Cancel
Retain memory	0	~ 4095	W	0-32767W	Cancer
User FB memory				0-32767W	<u>H</u> elp
System FB memory				0-65535W	
Step/action of SFC is assumed to     Step/action of SFC is copied     Variables have following suffix to     EQ	to be retair o be copied	n variables d	Rese N <u>o</u> r R <u>e</u> t	erve for copied memor (WORD) h-Retain 10 ain 10	уу — ]

2) When warm operation is to be started from the step at which the system's power supply was turned off, check the box for [Step/action of SFC is assumed to be retain variables].

# 7. Adaptation to Automatic Assignment in Copied Memory by Variable Name

In constructing a redundant system (when warm standby), conventionally AT setting is necessary to allocate the variables, which require to be copied, in the copied memory. The version up of this time adds the function that automatically allocate variables in the copied memory during compilation as well as the function that allocates SFC step/action variables in the copied memory, when the variables have a given suffix.

### <Operation of D300win>

1) Left-click on the [Extended setting...] button on the [Memory allocation setting] dialog box to bring up the [Extended setting] dialog box.

	O Not Use	
8192W	ОК	
4096W	Cancel	
4096₩	Extended setting	
16384W	 Default	
32760W		
le which		$\prec$
		[Extended setting] dialog box

tended setting(MICREX-SX : NP	1PS-117)				
AT range Non retain High speed memory Non retain normal memory Betain memory User EB memory System FB memory	0 / / / / / / / / / / / / / / / / / / /	~ 511 ~ 10239 ~ 4095	W W W	Memory range 0-2047W 2048-131071W 0-32767W 0-32767W 0-65535W/	OK Cancel <u>H</u> elp
Step/action of SFC is assumed to SFC is assumed to Step/action of SFC is gopied     Ariables have following suffix to LEQ	to be retain v	variables	Reso N <u>o</u> R <u>e</u>	erve for copied memo (WORD) n-Retain 10 tain 10	יעזי   

- 2) For a redundant warm standby system, when SFC step variables or action variables need to be copied, check the box for [Step/action of SFC is copied]. When you want to copy the variables that become the target when having the suffix, check the box for [Variables have following suffix to be copied], and set an arbitrary suffix.
- Note: By this setting, copied area is allocated in the area that is specified by [Copied range] in [System Redundancy Definition] under [System Configuration Definition], excluding the [AT range] in the memory allocation setting. Therefore, to use this function, [Copied range] must be set greater than [AT range].



# 8. English/Japanese Language Switching Function

From this version, Japanese version D300win and English version D300win are integrated so that one type of D300win can meet all applications. On Windows of Japanese version, screen can be displayed in English. (Japanese may be displayed partly.)

### <Operation of D300win>

1) Execute the [Options] command from the [Extras] menu to bring up the [Options] dialog box. Then left-click on the [General] tab to bring up the [General] tab window.



2) Select a desired language (English or Japanese) from the [Language] list box, and left-click on the [OK] button. The selected language mode will be enabled when the D300win is started the next time.

Note1: It is impossible to display in Japanese on English version Windows.

Note2: D300win uses the resources of the operating system, so that when screen is displayed in English mode using Japanese version Windows, Japanese may be displayed partly.